WIS

SEPT 2024

PROJECT ID: 6180-00-60, 6180-00-71

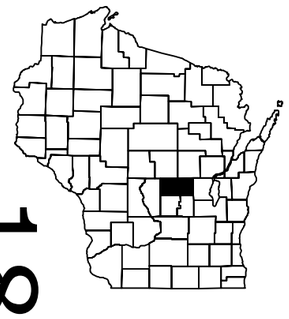
WITH: N/A

COUNTY: WAUSHARA

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 = 270



18

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6180-00-60	WISC 2024438	1
6180-00-71	WISC 2024439	1

REDGRANITE - OSHKOSH

CULVERT REPLACEMENT C-69-0019

STH 21

WAUSHARA COUNTY

STATE PROJECT NUMBER

6180-00-60

REDGRANITE - OSHKOSH

STH 49 TO WINNEBAGO COUNTY LINE

STH 21

WAUSHARA COUNTY

STATE PROJECT NUMBER

6180-00-71

DESIGN DESIGNATION			6180-00-60	6180-00-71
A.A.D.T.	2025	=	5,420	5,340
A.A.D.T.	2045	=	5,950	5,860
D.H.V.		=	655	645
D.D.		=	60/40	60/40
T.		=	19.70%	19.70%
DESIGN SPEED		=	60 MPH	60 MPH
ESALS		=	2,600,000	1,790,000

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE (300'EB')
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

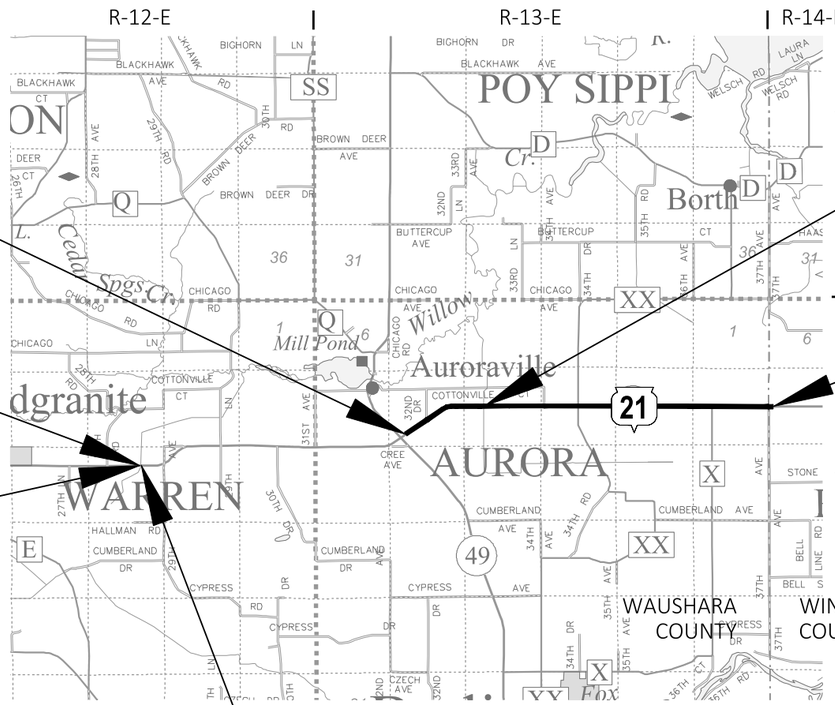
PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES

- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

N



BEGIN PROJECT 6180-00-71
STA 23+97.48
Y= 122258.53
X= 462152.04

BEGIN PROJECT 6180-00-60
STA 126+00.00A
Y= 120072.71
X= 443036.98

STRUCTURE C-69-9000

END PROJECT 6180-00-60
STA 139+50.00A

B-69-0038
EXCEPTION TO NET CL LENGTH
STA 85+05.89 TO STA 85+28.87

END PROJECT 6180-00-71
STA 286+06.00

LAYOUT SCALE 0 2

TOTAL NET LENGTH OF CENTERLINE = 0.256 MI (6180-00-60)
TOTAL NET LENGTH OF CENTERLINE = 4.959 MI (6180-00-71)

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

ORIGINAL PLANS PREPARED BY

AECOM

WISCONSIN
ANDREW J CZECH
E-45342
MADISON
WISCONSIN
PROFESSIONAL ENGINEER

Andrew Czech 4/29/2024

DATE: _____ (Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	AECOM
Designer	AECOM
Project Manager	WENDY ARNESON
Regional Examiner	FRED SCHUNKE
Regional Supervisor	ELIZABETH NEMEC

APPROVED FOR THE DEPARTMENT

Digitally signed by Wendy Arneson
Contact Info: WisDOT Project Manager
Date: 2024.04.29 11:26:44-05'00'

Wendy Arneson

DATE: _____ (Signature)

E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\010101-TI.DWG PLOT DATE : 3/4/2024 8:27 AM PLOT BY : DEGNER, MARK PLOT NAME :

GENERAL NOTES

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

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

SECTIONS AS SHOWN ON THE CROSS SECTION SHEETS INCLUDE THE THICKNESS OF TOPSOIL.

THE BASE AGGREGATE DENSE 3/4-INCH CALCULATIONS ARE BASED ON A UNIT WEIGHT OF 2.1 TONS/CY,

THE BASE AGGREGATE DENSE 1 1/4-INCH CALCULATIONS ARE BASED ON A UNIT WEIGHT OF 2.0 TONS/CY,

HMA PAVEMENT CALCULATIONS ARE BASED ON A UNIT WEIGHT OF 112 LB/SY/INCH.

SECTION 2 SHEETS

PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
PLAN DETAILS
EROSION CONTROL
STORM SEWER
PAVEMENT MARKING
TRAFFIC CONTROL
DETOUR
ALIGNMENT DETAILS

UTILITY CONTACTS

ALLIANT ENERGY
ELECTRICITY
COREY CLINCH
880 N WISCONSIN ST
BERLIN, WI 54923
920-361-5668
COREYCLINCH@ALLIANTENERGY.COM

ALLIANT ENERGY
GAS/PETROLEUM
COREY CLINCH
880 N WISCONSIN ST
BERLIN, WI 54923
920-361-5668
COREYCLINCH@ALLIANTENERGY.COM

AMERICAN TRANSMISSION COMPANY
ELECTRICITY - TRANSMISSION
DOUG VOSBERG
2489 RINDEN RD
COTTAGE GROVE, WI 53527
608-877-7650
DVOSBERG@ATCLLC.COM

BRIGHTSPEED OF NORTH CENTRAL WISCONSIN
COMMUNICATION
SCOTT HEINZELMAN
144 N PEARL ST
BERLIN, WI 54923
608-716-5964
SCOTT.HEINZELMAN@BRIGHTSPEED.COM

BUG TUSSEL WIRELESS
COMMUNICATION
GEREMIAH YOUNG
417 PINE STREET
GREEN BAY, WI 54301
920-328-3442
Geremiah.Young@btussel.com

OTHER CONTACTS

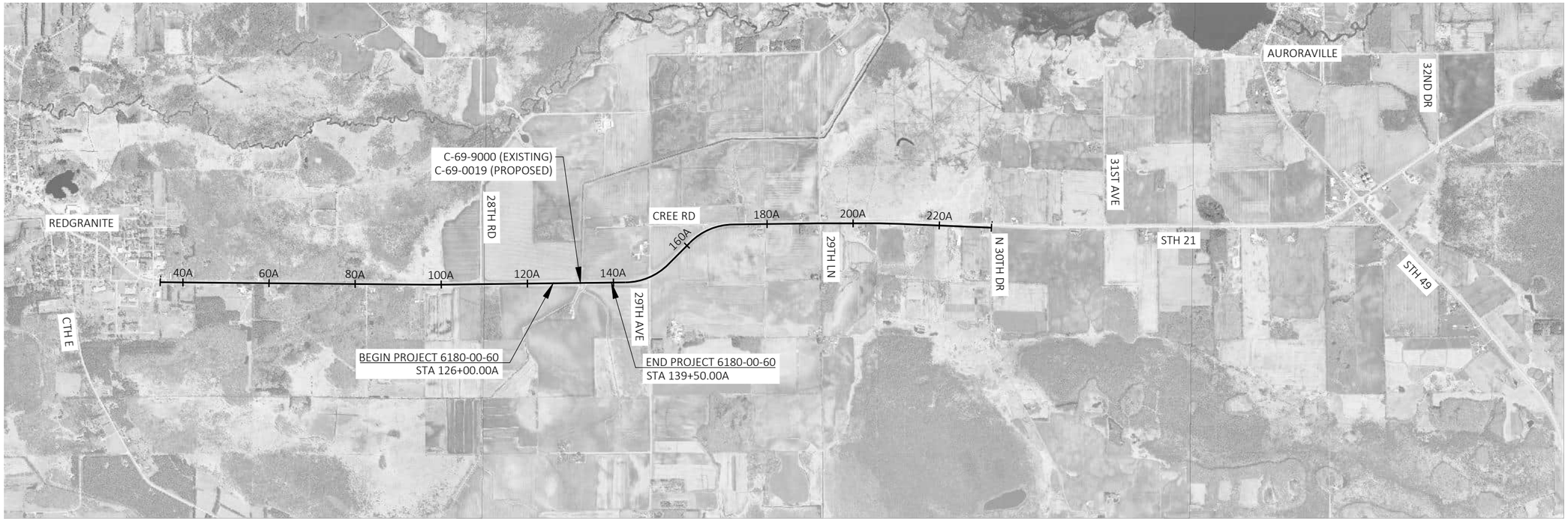
WDNR
BRAD BETTHAUSER
BLACK RIVER FALLS DNR SERVICE CENTER
910 HWY 54 E
BLACK RIVER FALLS, WI 54615
715-213-9064
BRADLEY.BETTHAUSER@WISCONSIN.GOV

DIGGERS HOTLINE
Dial 811 or (800)242-8511
www.DiggersHotline.com

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 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .50	.19 .34	.28 .41	.38 .56
MEDIAN STRIP- TURF	.19 .24	.20 .26	.24 .30	.19 .25	.22 .28	.26 .33	.20 .26	.23 .30	.30 .37	.20 .27	.25 .32	.30 .40
SIDE SLOPE- TURF			.25 .32			.27 .34			.28 .36			.30 .38
PAVEMENT:												
ASPHALT	.70 - .95											
CONCRETE	.80 - .95											
BRICK	.70 - .80											
DRIVES, WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

6180-00-60 TOTAL PROJECT AREA = 6.324 ACRES
6180-00-60 TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 2.234 ACRES
6180-00-71 TOTAL PROJECT AREA = 82.334 ACRES
6180-00-71 TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 3.074 ACRES



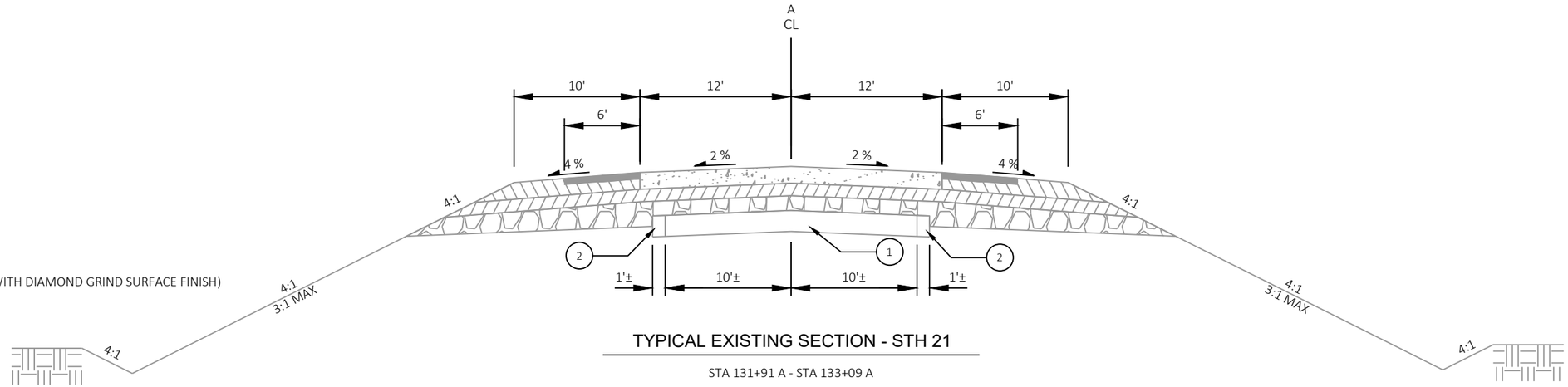


PROJECT NO: 6180-00-60 / 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	PROJECT OVERVIEW	SHEET 3	E

2

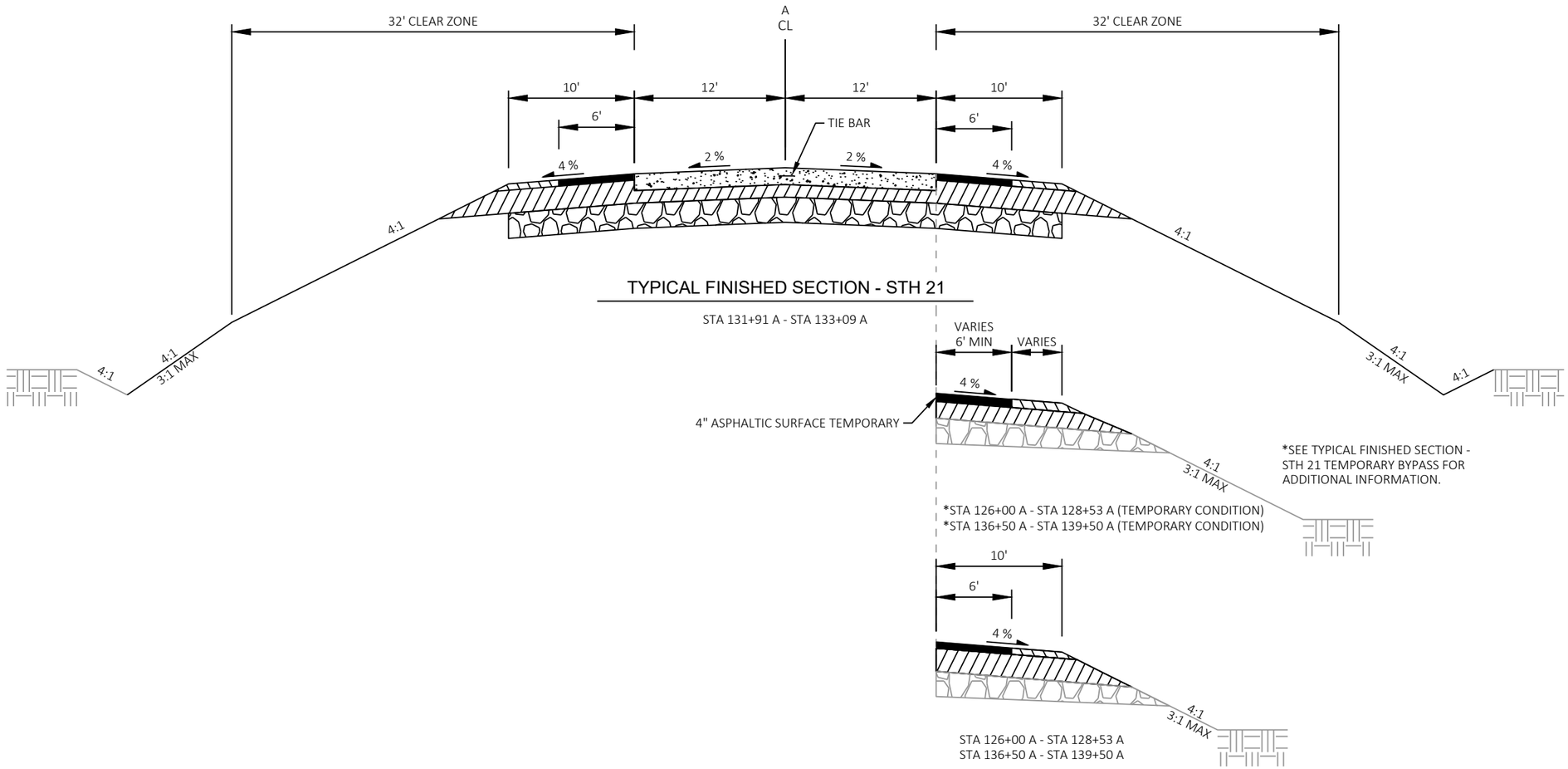
LEGEND

- 8" CONCRETE PAVEMENT
- 3" RECYCLED BIT. SURFACE
- CRUSHED AGGREGATE SHOULDERS
- 6" CRUSHED AGGREGATE BASE COURSE
- 6" BREAKER RUN
- 8" CONCRETE PAVEMENT (DOWELED AND TINED WITH DIAMOND GRIND SURFACE FINISH)
- 3.5" ASPHALTIC SURFACE
- 3.5 " BASE AGGREGATE DENSE 3/4-INCH
- 6" BASE AGGREGATE DENSE 1 1/4-INCH
- 12" BREAKER RUN
- (1) 6" ± CONCRETE SURFACE (CRACKED & SEATED)
- (2) 6"± BITUMINOUS WIDENING



TYPICAL EXISTING SECTION - STH 21

STA 131+91 A - STA 133+09 A



TYPICAL FINISHED SECTION - STH 21

STA 131+91 A - STA 133+09 A

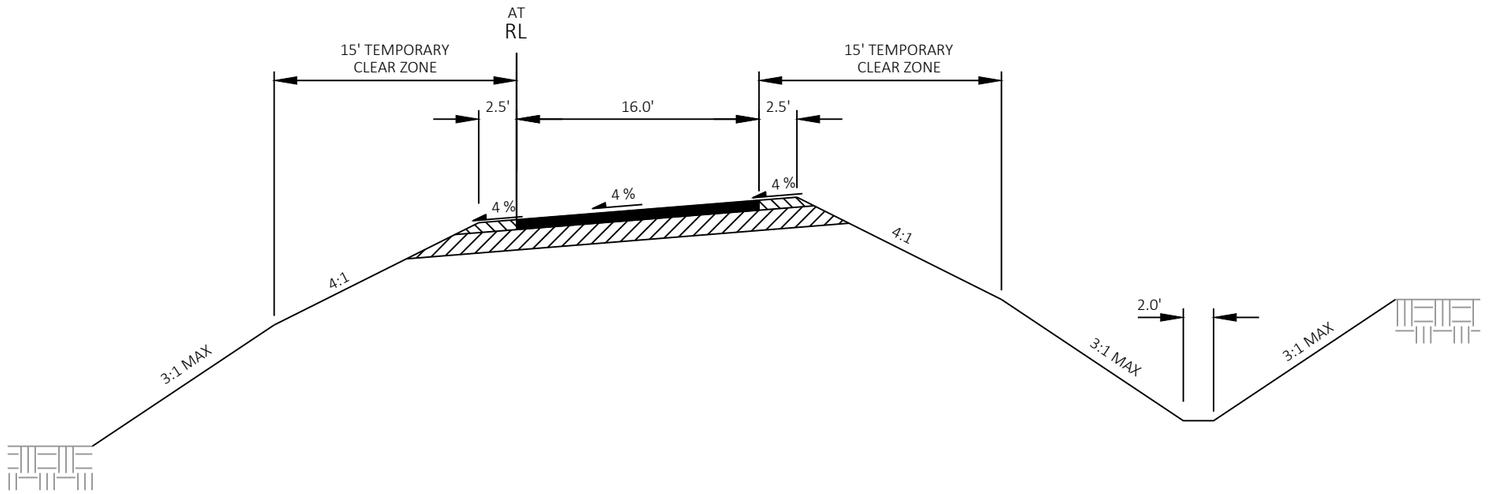
STA 126+00 A - STA 128+53 A
STA 136+50 A - STA 139+50 A

PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	TYPICAL SECTIONS	SHEET 4	E

2

LEGEND

- 4" ASPHALTIC SURFACE TEMPORARY
- 4 " BASE AGGREGATE DENSE 3/4-INCH
- 8" BASE AGGREGATE DENSE 1 1/4-INCH



TYPICAL FINISHED SECTION - STH 21 TEMPORARY BYPASS

STA 126+00 AT - STA 139+70 AT

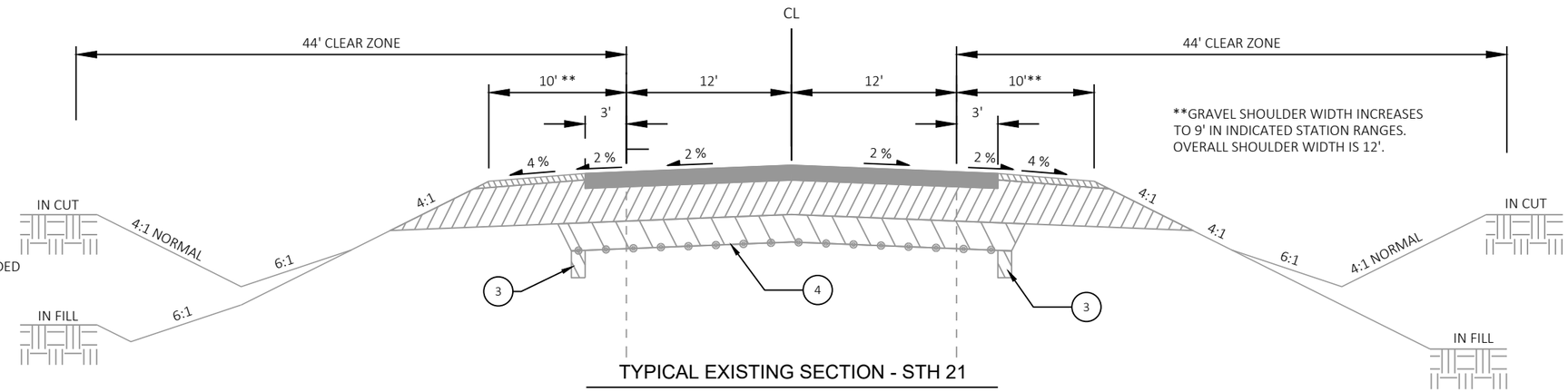
PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	TYPICAL SECTIONS	SHEET 5	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - 020301A-ts
PLOT DATE : 7/25/2024 3:17 PM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

2

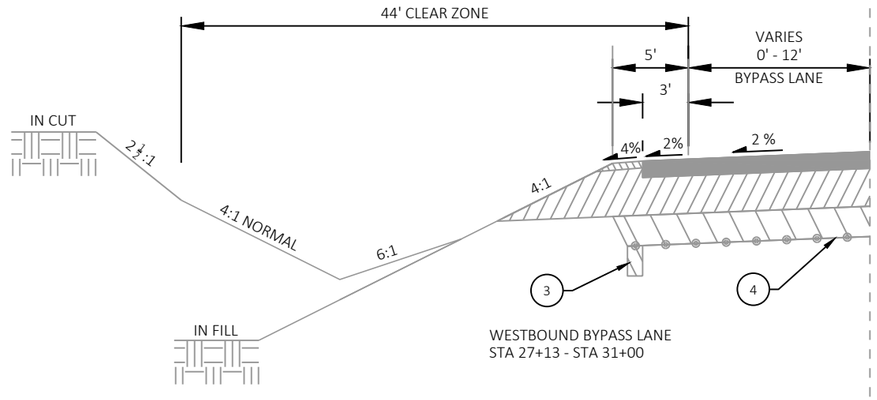
LEGEND

- 6½" HMA PAVEMENT
- 15" CRUSHED AGGREGATE BASE COURSE
- BASE AGGREGATE FOR SHOULDERS
- 12" BREAKER RUN STONE
- (3) CRUSHED AGGREGATE BASE COURSE, OPEN GRADED
- (4) GEOGRID REINFORCEMENT

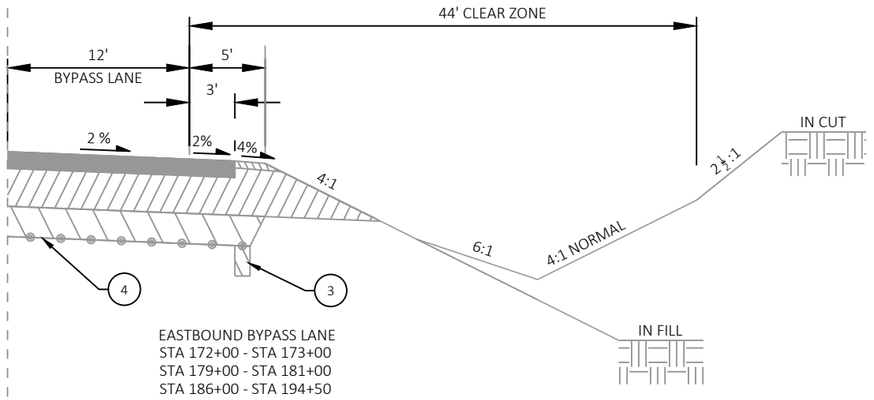


TYPICAL EXISTING SECTION - STH 21

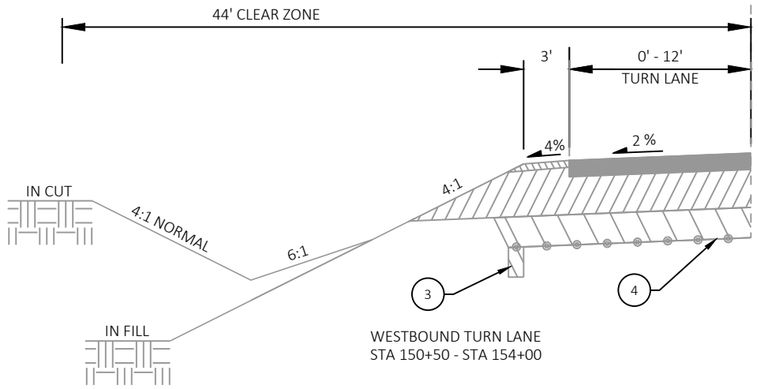
STA 23+97.48 - STA 31+00
STA 81+50 - STA 84+85
STA 85+49 - STA 89+50
STA 118+20 - STA 123+50
STA 144+00 - STA 157+00
STA 160+00 - STA 161+00
STA 172+00 - STA 173+00
STA 179+00 - STA 181+00
STA 186+00 - STA 194+00
STA 199+50 - STA 205+90
STA 239+50 - STA 240+50
STA 244+00 - STA 255+00**
STA 271+10 - STA 276+25**
STA 279+25 - STA 283+00**
STA 283+00 - STA 286+06



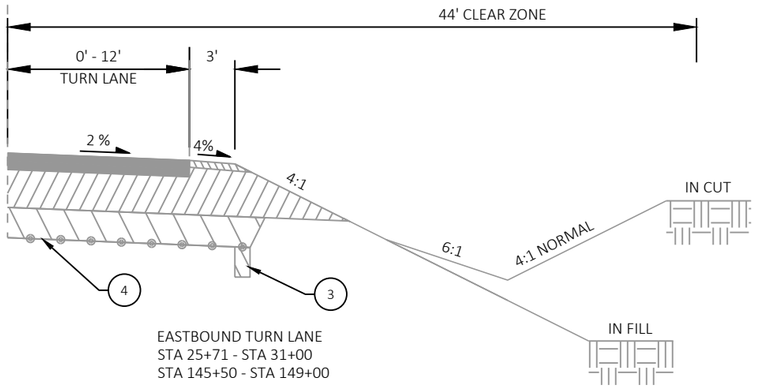
WESTBOUND BYPASS LANE
STA 27+13 - STA 31+00



EASTBOUND BYPASS LANE
STA 172+00 - STA 173+00
STA 179+00 - STA 181+00
STA 186+00 - STA 194+50
STA 199+00 - STA 205+90



WESTBOUND TURN LANE
STA 150+50 - STA 154+00



EASTBOUND TURN LANE
STA 25+71 - STA 31+00
STA 145+50 - STA 149+00

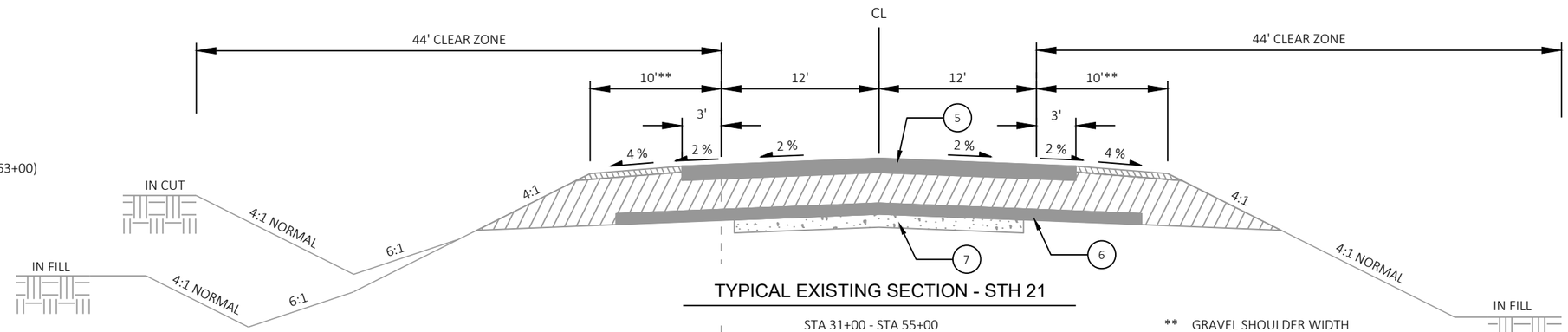
PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	TYPICAL SECTIONS	SHEET 6	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - 020302-ts
PLOT DATE : 7/25/2024 3:17 PM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:10 FT

2

LEGEND

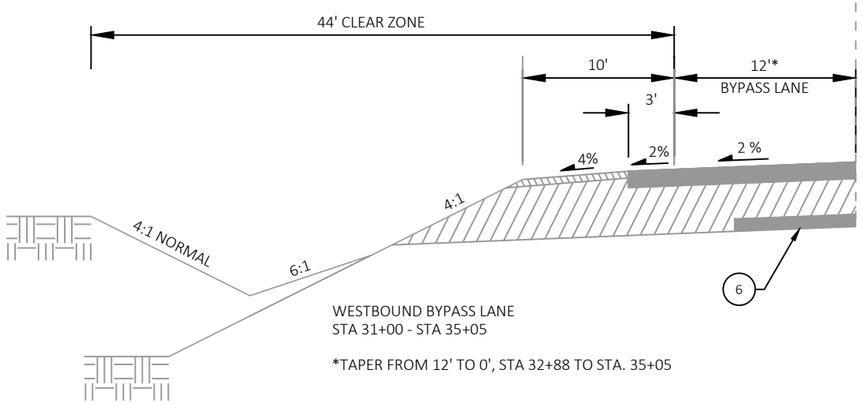
- HMA PAVEMENT
- 14" (NOMINAL) CRUSHED AGGREGATE BASE COURSE
  CRUSHED AGGREGATE BASE COURSE, OPEN GRADED
  (ACTUAL THICKNESS MAY VARY FOR STA 55+00 TO STA 63+00)
- BASE AGGREGATE FOR SHOULDERS
- 8"+/- CRUSHED AGGREGATE BASE COURSE
- (5) 6 1/2" THICKNESS
- (6) 4" - 6" THICKNESS
- (7) 6" CONCRETE PAVEMENT (CRACKED & SEATED)
- (9) 6" CONCRETE PAVEMENT (NON-CRACKED & SEATED)



TYPICAL EXISTING SECTION - STH 21

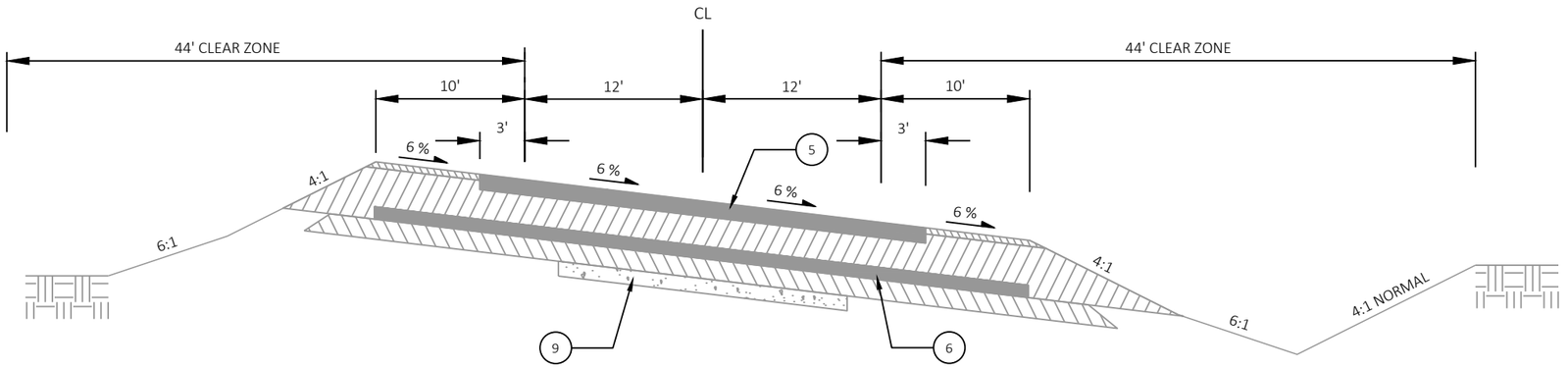
STA 31+00 - STA 55+00
STA 123+50 - STA 144+00
STA 215+00 - STA 239+50
STA 258+50 - STA 270+00**

** GRAVEL SHOULDER WIDTH INCREASES TO 9' IN INDICATED STATION RANGE. OVERALL SHOULDER WIDTH IS 12'.



WESTBOUND BYPASS LANE
STA 31+00 - STA 35+05

*TAPER FROM 12' TO 0', STA 32+88 TO STA. 35+05



TYPICAL SUPERELEVATED EXISTING SECTION - STH 21

STA 55+00 - STA 63+00

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	TYPICAL SECTIONS	SHEET 7	E

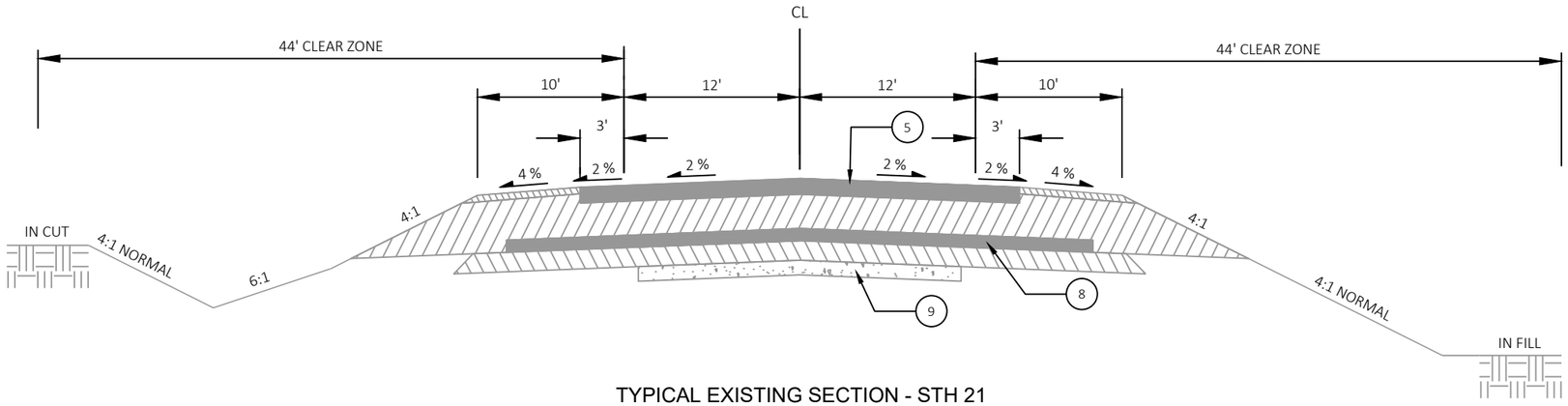
2

LEGEND

- HMA PAVEMENT
- 6 ½" HMA PAVEMENT*
- CRUSHED AGGREGATE BASE COURSE, OPEN GRADED**
- 15" CRUSHED AGGREGATE BASE COURSE*
- BASE AGGREGATE FOR SHOULDERS
- 8"+/- CRUSHED AGGREGATE BASE COURSE
- GRANULAR BACKFILL GRADE 2
- (5) 6 1/2" THICKNESS
- (8) 4" - 6" THICKNESS
- (9) 6" CONCRETE PAVEMENT (NON-CRACKED & SEATED)
- (10) CROSS DRAIN NEAR CENTER OF WEDGING SECTION

* STA 95+75 - STA 98+00
STA 117+10 - STA 118+20
STA 205+90 - STA 207+00
STA 270+00 - STA 271+10

** NOMINAL (ACTUAL THICKNESS MAY VARY)



TYPICAL EXISTING SECTION - STH 21

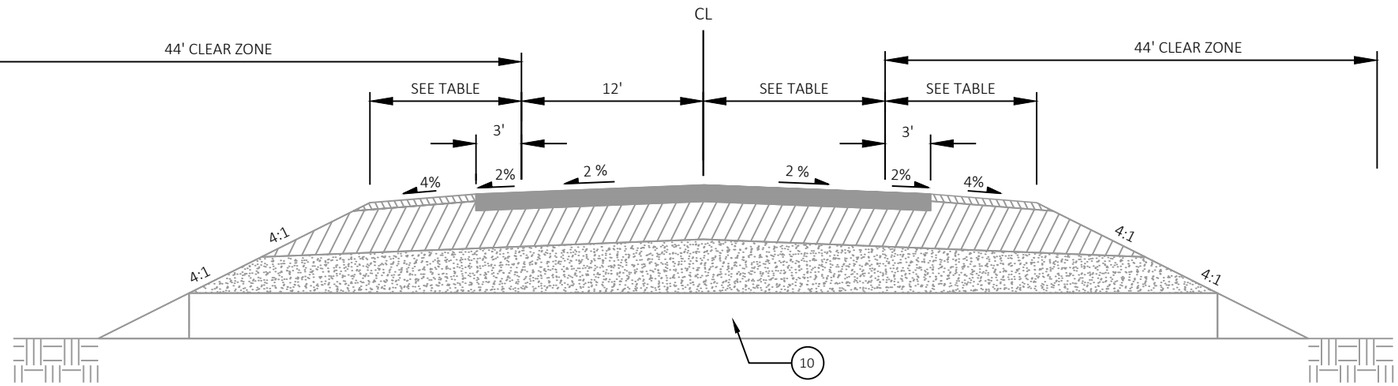
STA 63+00 - STA 81+50
STA 89+50 - STA 95+75
STA 98+00 - STA 112+00

NOTE:
LT OUTSIDE 8 FEET OF EXISTING HMA PAVEMENT
MAY INCLUDE ADDITIONAL 12-INCHES OF ASPHALT
WEDGING AT THESE APPROXIMATE STATION RANGES:

STA 66+87 to STA 79+17
STA 89+00 TO STA 95+20
STA 98+70 TO STA 112+20

NOTE:
RT OUTSIDE 8 FEET OF EXISTING HMA PAVEMENT
MAY INCLUDE ADDITIONAL 12-INCHES OF ASPHALT
WEDGING AT THESE APPROXIMATE STATION RANGES:

STA 67+00 TO STA 82+20
STA 92+50 TO STA 97+00



TYPICAL EXISTING SECTION - STH 21

CROSS DRAIN WITH WEDGING

STA 95+75 - STA 98+00
STA 117+10 - STA 118+20
STA 205+90 - STA 207+00
STA 270+00 - STA 271+10

STATION RANGE	LANE WIDTH	SHOULDER WIDTH
STA 95+75 - STA 98+00	12'	10'
STA 117+10 - STA 118+20	12'	10'
STA 205+90 - STA 207+00	2 X 12'	10'
STA 270+00 - STA 271+10	12'	12'

2

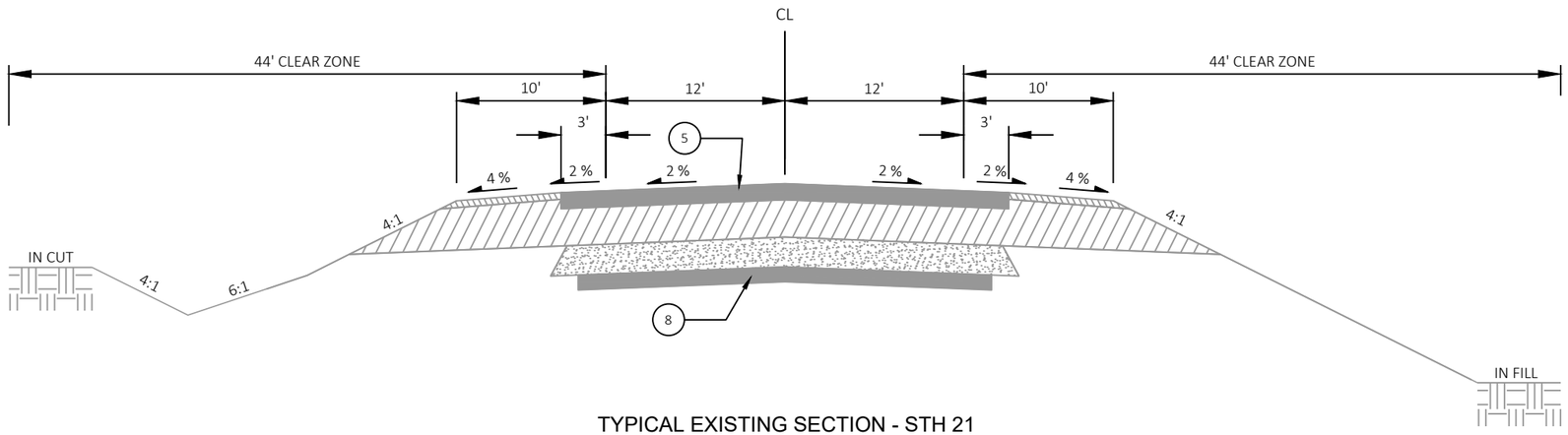
LEGEND

- HMA PAVEMENT
- 6 1/2" HMA PAVEMENT**
- 15" CRUSHED AGGREGATE BASE COURSE
- BASE AGGREGATE FOR SHOULDERS
- GRANULAR BACKFILL GRADE 2*
- 12" BREAKER RUN STONE

- (3) CRUSHED AGGREGATE BASE COURSE, OPEN GRADED
- (4) GEOGRID REINFORCEMENT
- (5) 6 1/2" THICKNESS
- (8) 4" - 6" THICKNESS
- (11) CONCRETE CURB & GUTTER, 36-INCH, TYPE D, 4" MOUNTABLE

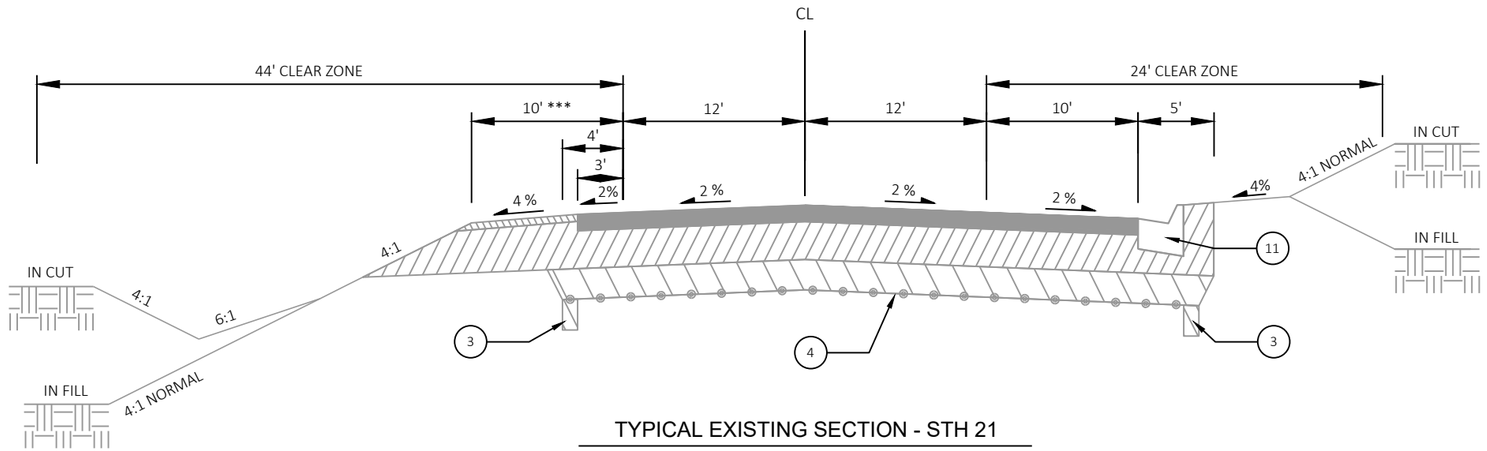
* VARIABLE THICKNESS. GRANULAR BACKFILL GRADE 2 IF > 3" THICKNESS AND CRUSHED AGGREGATE BASE COURSE IF < 3" THICKNESS

** STA 157+00 - 160+00
STA 255+00 - 258+50
STA 276+25 - 279+25



TYPICAL EXISTING SECTION - STH 21

STA 112+00 - STA 117+10



TYPICAL EXISTING SECTION - STH 21

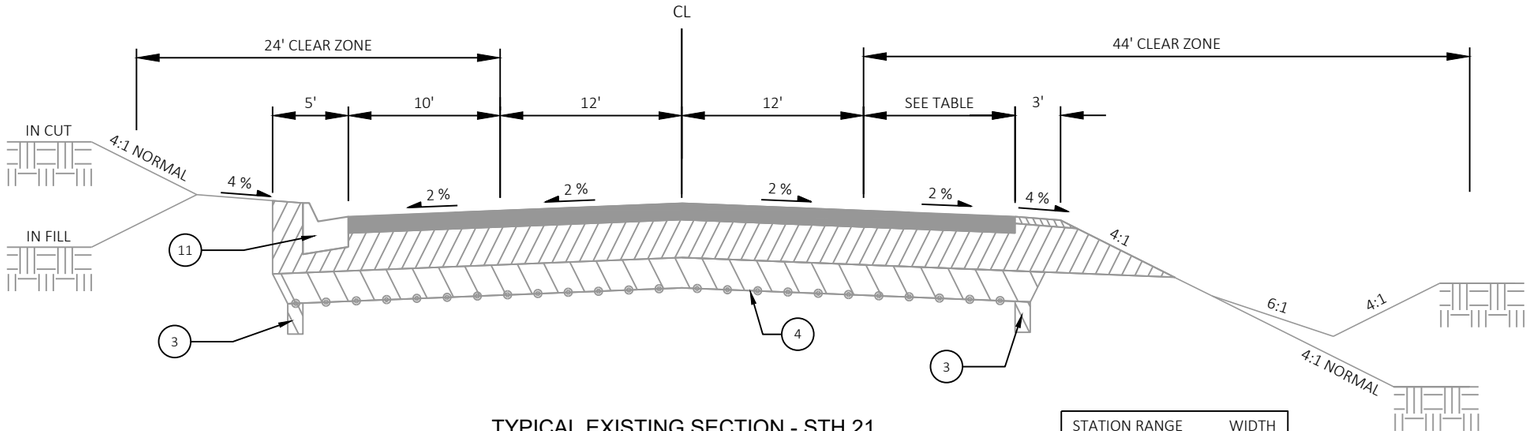
STA 157+00 - STA 160+00
STA 255+00 - STA 258+50**
STA 276+25 - STA 279+25**

*** GRAVEL SHOULDER WIDTH INCREASES TO 9' IN INDICATED STATION RANGES. OVERALL SHOULDER WIDTH IS 12'.

2

LEGEND

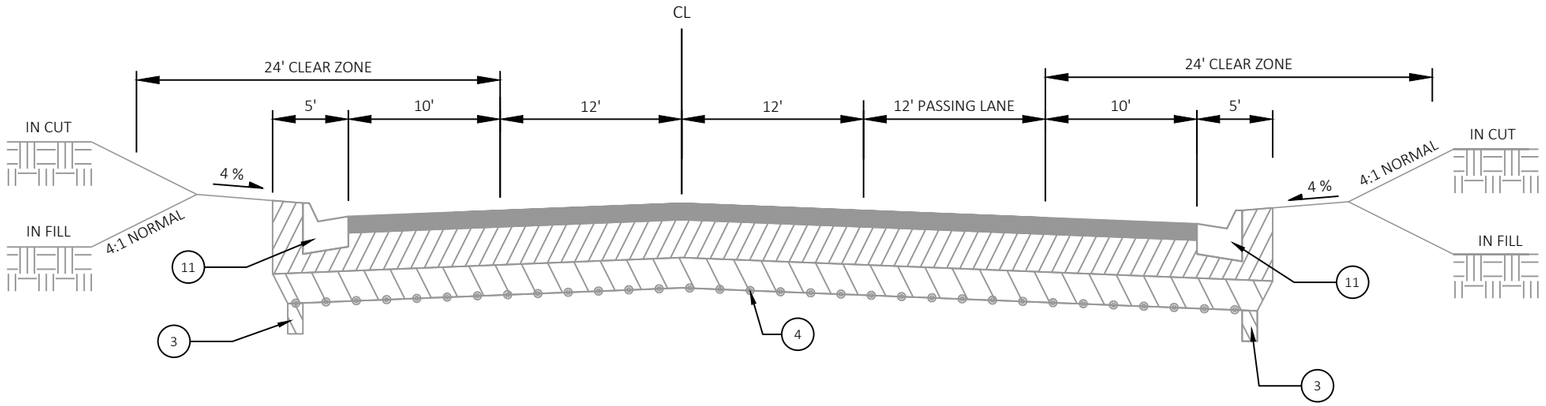
- $6\frac{1}{2}$" HMA PAVEMENT
- 15" CRUSHED AGGREGATE BASE COURSE
- BASE AGGREGATE FOR SHOULDERS
- 12" BREAKER RUN STONE
- (3) CRUSHED AGGREGATE BASE COURSE, OPEN GRADED
- (4) GEOGRID REINFORCEMENT
- (11) CONCRETE CURB & GUTTER, 36-INCH, TYPE D, 4" MOUNTABLE



TYPICAL EXISTING SECTION - STH 21

STA 161+00 - STA 167+00
STA 240+50 - STA 244+00

STATION RANGE	WIDTH
161+00 - 167+00	22'
240+50 - 244+00	24'



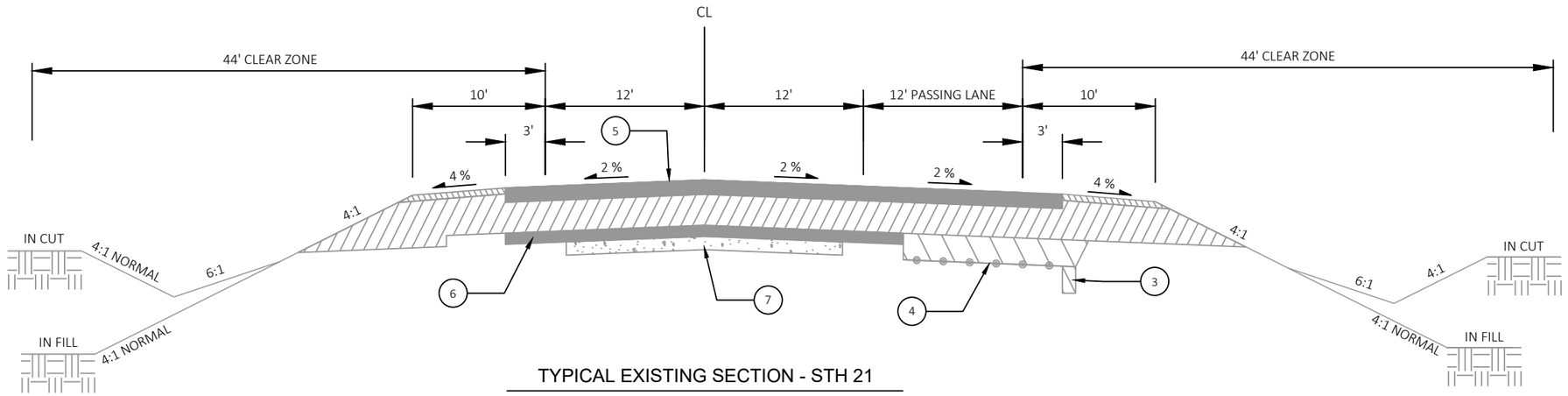
TYPICAL EXISTING SECTION - STH 21

STA 167+00 - STA 172+00
STA 181+00 - STA 186+00
STA 194+50 - STA 199+50

2

LEGEND

- HMA PAVEMENT
- 14"-15" CRUSHED AGGREGATE BASE COURSE
- BASE AGGREGATE FOR SHOULDERS
- 12" BREAKER RUN STONE
- (3) CRUSHED AGGREGATE BASE COURSE, OPEN GRADED
- (4) GEOGRID REINFORCEMENT
- (5) 6 1/2" THICKNESS
- (6) 4"-5 1/2" THICKNESS
- (7) 6" CONCRETE PAVEMENT (CRACKED & SEATED)



TYPICAL EXISTING SECTION - STH 21

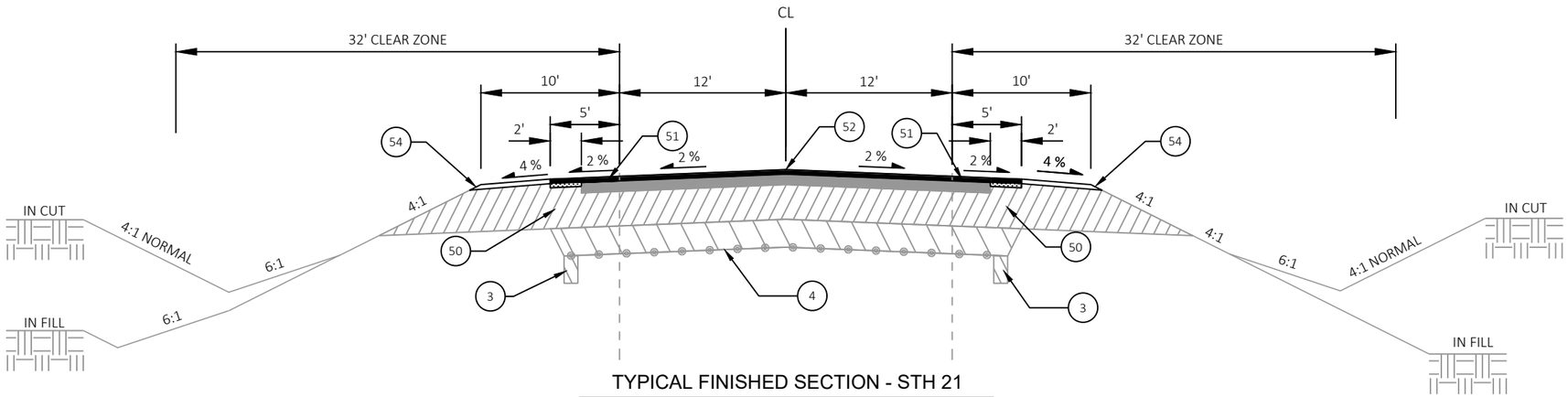
EASTBOUND PASSING LANE
STA 173+00 - STA 179+00
STA 207+00 - STA 215+00

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	TYPICAL SECTIONS	SHEET 11	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - 020307-ts
PLOT DATE : 7/25/2024 3:17 PM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

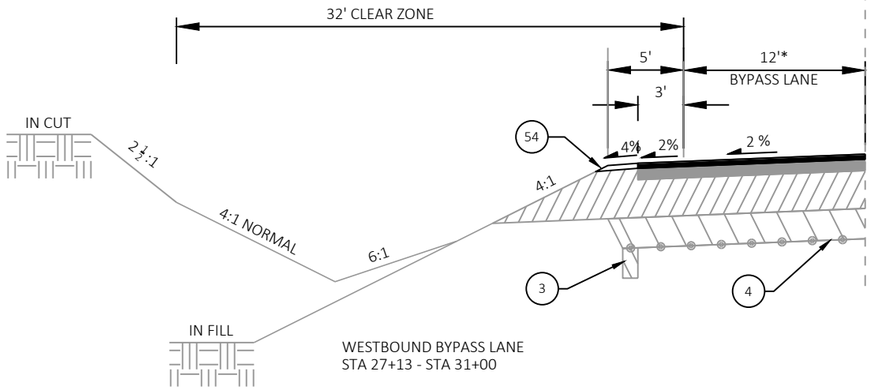
LEGEND

- 1-3/4" ASPHALTIC SURFACE
- 2" REMOVING ASPHALTIC SURFACE MILLING
  2" HMA PAVEMENT 4 MT 58-28S
- EXISTING HMA PAVEMENT
- EXISTING 15" CRUSHED AGGREGATE BASE COURSE
- EXISTING 12" BREAKER RUN STONE
- (3) EXISTING CRUSHED AGGREGATE BASE COURSE, OPEN GRADED
- (4) EXISTING GEOGRID REINFORCEMENT
- (50) PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS
- (51) ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL (TYPE 1)
- (52) ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL
- (54) BASE AGGREGATE DENSE 3/4-INCH



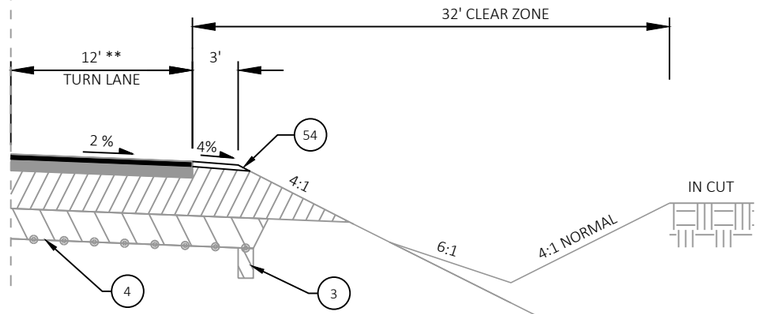
TYPICAL FINISHED SECTION - STH 21

STA 23+97.48 - STA 31+00
STA 118+20 - STA 123+50
STA 144+00 - STA 149+80



WESTBOUND BYPASS LANE
STA 27+13 - STA 31+00

*TAPER FROM 0' TO 12', STA 27+13 TO STA 30+38



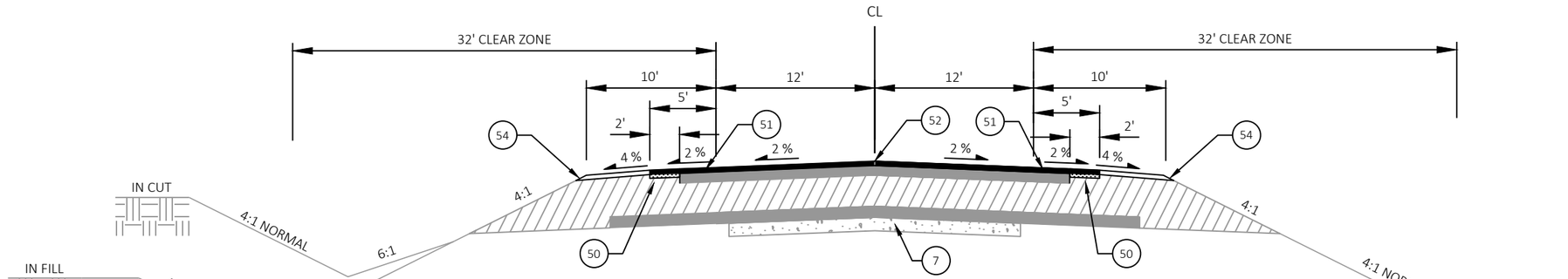
EASTBOUND TURN LANE
STA 25+71 - STA 31+00
STA 145+50 - STA 149+00

**TAPER FROM 0' TO 12', STA 25+71 TO STA 27+21
TAPER FROM 0' TO 12', STA 145+50 TO STA 147+00

2

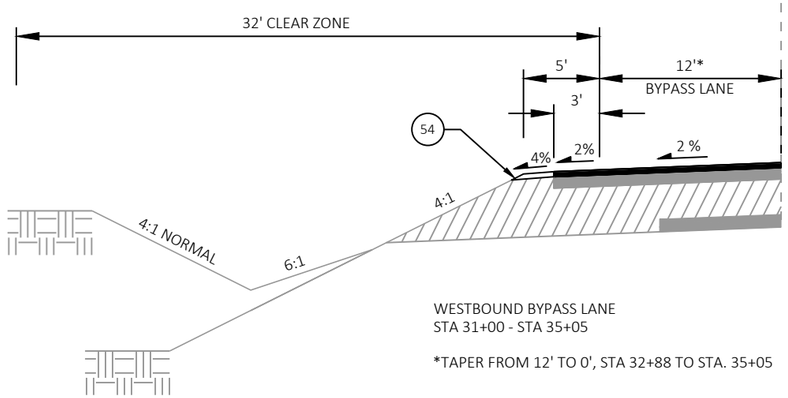
LEGEND

- 1-3/4" ASPHALTIC SURFACE
- 2" REMOVING ASPHALTIC SURFACE MILLING
  2" HMA PAVEMENT 4 MT 58-28S
- EXISTING HMA PAVEMENT
- EXISTING 14" (NOMINAL) CRUSHED AGGREGATE BASE COURSE
  EXISTING CRUSHED AGGREGATE BASE COURSE, OPEN GRADED
  (ACTUAL THICKNESS MAY VARY FOR STA 55+00 TO STA 63+00)
- EXISTING 8"+/- CRUSHED AGGREGATE BASE COURSE
- (7) EXISTING 6" CONCRETE PAVEMENT (CRACKED & SEATED)
- (50) PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS
- (51) ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL (TYPE 1)
- (52) ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL
- (54) BASE AGGREGATE DENSE 3/4-INCH



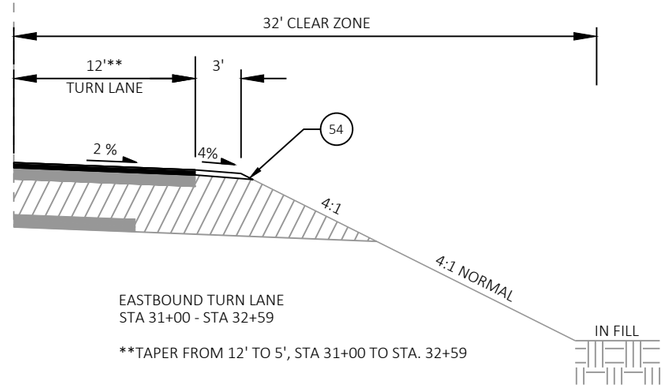
TYPICAL FINISHED SECTION - STH 21

STA 31+00 - STA 55+00
STA 123+50 - STA 144+00



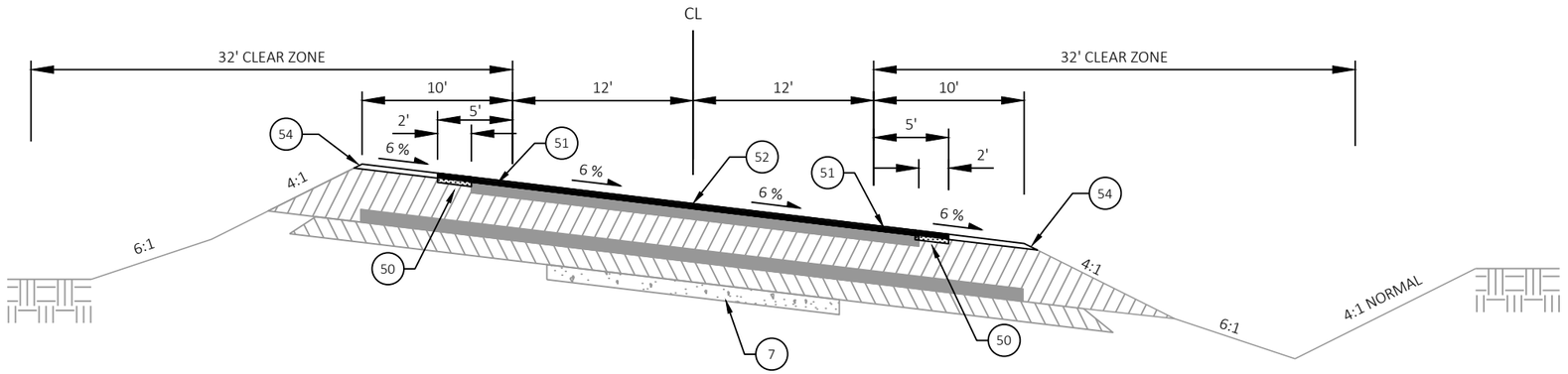
WESTBOUND BYPASS LANE
STA 31+00 - STA 35+05

*TAPER FROM 12' TO 0', STA 32+88 TO STA. 35+05



EASTBOUND TURN LANE
STA 31+00 - STA 32+59

**TAPER FROM 12' TO 5', STA 31+00 TO STA. 32+59



TYPICAL SUPERELEVATED PROPOSED SECTION - STH 21

STA 55+00 - STA 63+00

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	TYPICAL SECTIONS	SHEET 13	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - 020309-ts

PLOT DATE : 7/25/2024 3:17 PM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:10 FT

LEGEND

1-3/4" ASPHALTIC SURFACE

OVERLAY AREA
2" REMOVING ASPHALTIC SURFACE MILLING
2" HMA PAVEMENT 4 MT 58-28S

RECONSTRUCTION AREA
6 ¼" HMA PAVEMENT
- 1 ¾" HMA PAVEMENT 4 MT 58-28S (UPPER)
- 2 ½" HMA PAVEMENT 3 MT 58-28S (MIDDLE)
- 2 ¾" HMA PAVEMENT 3 MT 58-28S (LOWER)

EXISTING HMA PAVEMENT

EXISTING CRUSHED AGGREGATE BASE COURSE, OPEN GRADED*

EXISTING 8"+/- CRUSHED AGGREGATE BASE COURSE

6 ¼" BASE AGGREGATE DENSE 3/4-INCH

16" BASE AGGREGATE DENSE 1 1/4-INCH

18" BREAKER RUN

GEOGRID

(9) EXISTING 6" CONCRETE PAVEMENT (NON-CRACKED & SEATED)

(50) PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

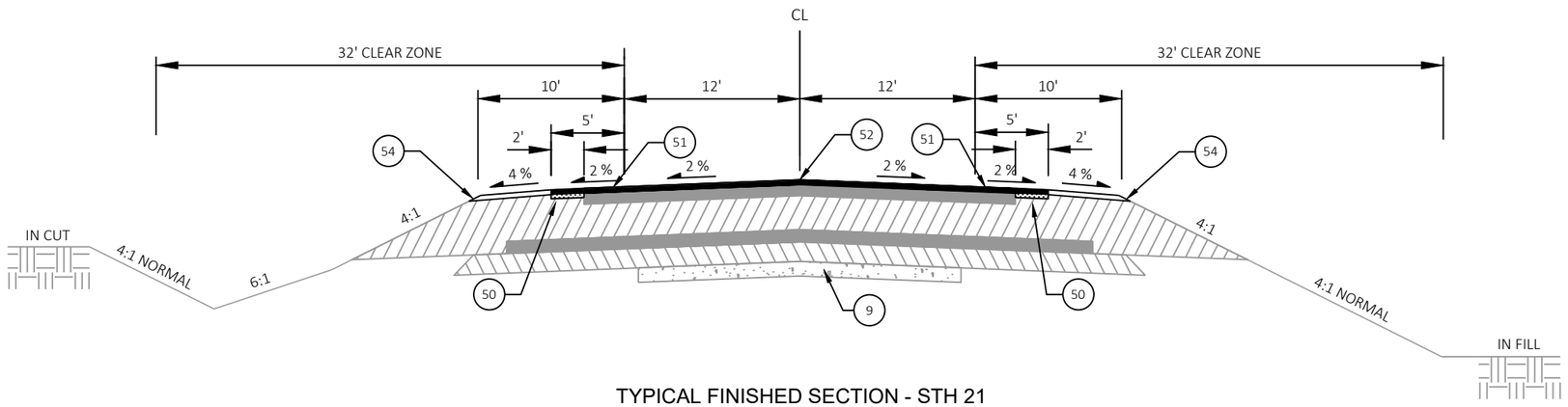
(51) ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL (TYPE 1)

(52) ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL

(54) BASE AGGREGATE DENSE 3/4-INCH

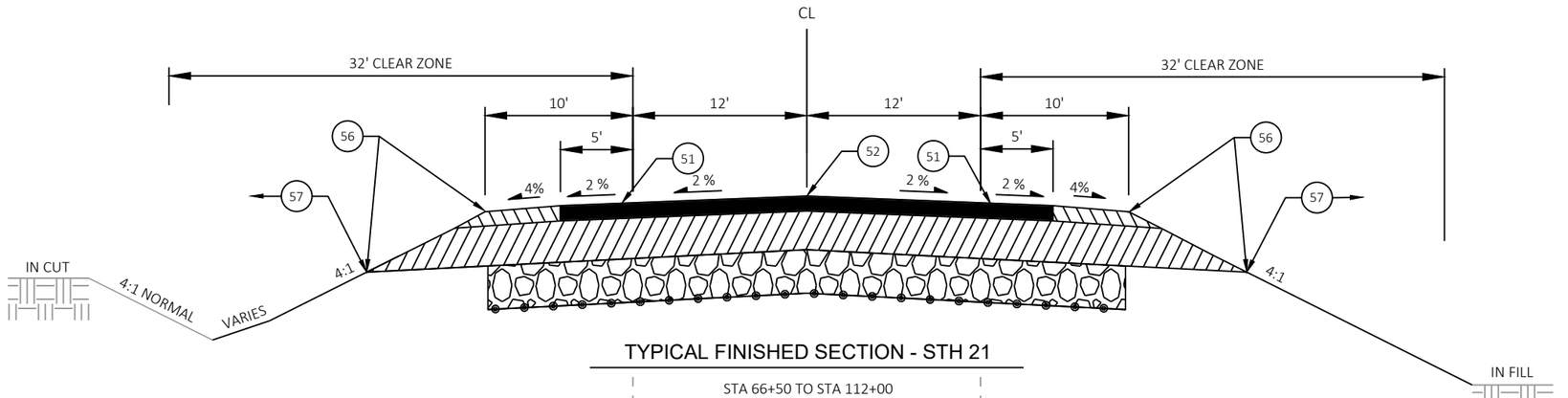
(56) SEED & FERTILIZE

(57) SALVAGED TOPSOIL, SEED, FERTILIZE & EROSION MAT**



TYPICAL FINISHED SECTION - STH 21

STA 63+00 - STA 66+50



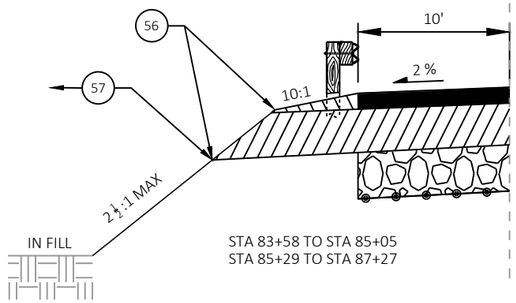
TYPICAL FINISHED SECTION - STH 21

STA 66+50 TO STA 112+00

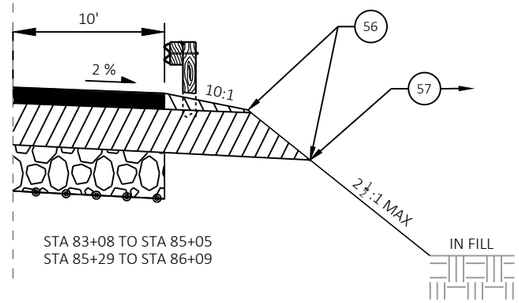
* NOMINAL (ACTUAL THICKNESS MAY VARY)

** SEE "EROSION CONTROL - SUBGRADE IMPROVEMENT AREA" SHEETS FOR FURTHER INFORMATION

NOTE:
RELIEF TRENCHES UTILIZED TO DRAIN BREAKER RUN
SEE CONSTRUCTION DETAILS



STA 83+58 TO STA 85+05
STA 85+29 TO STA 87+27



STA 83+08 TO STA 85+05
STA 85+29 TO STA 86+09

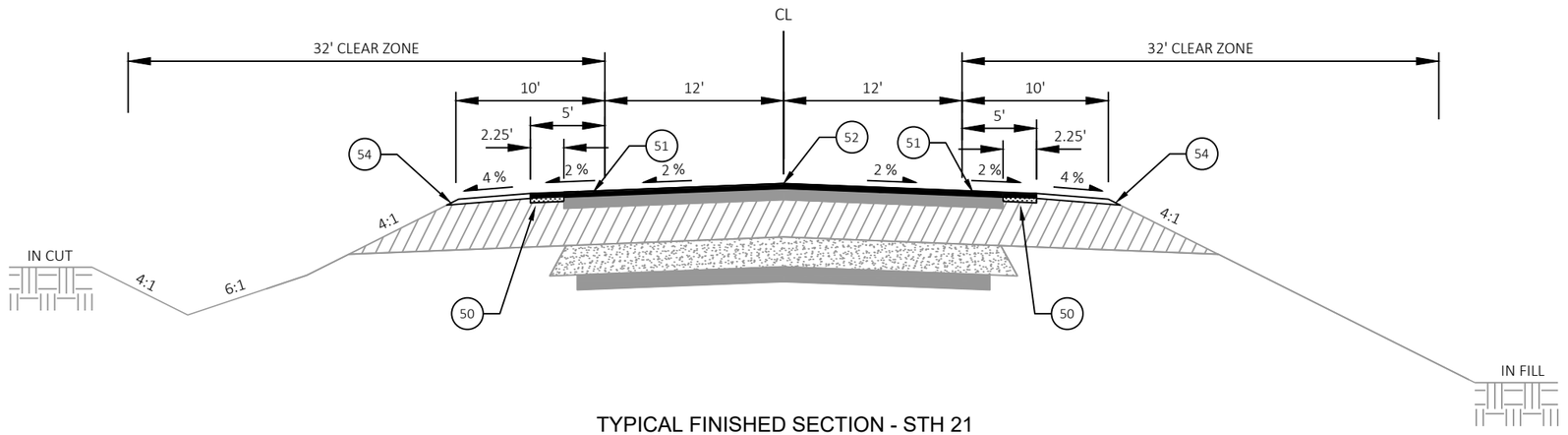
PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	TYPICAL SECTIONS	SHEET 14	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - 020310-ts
PLOT DATE : 7/25/2024 3:17 PM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:10 FT

LEGEND

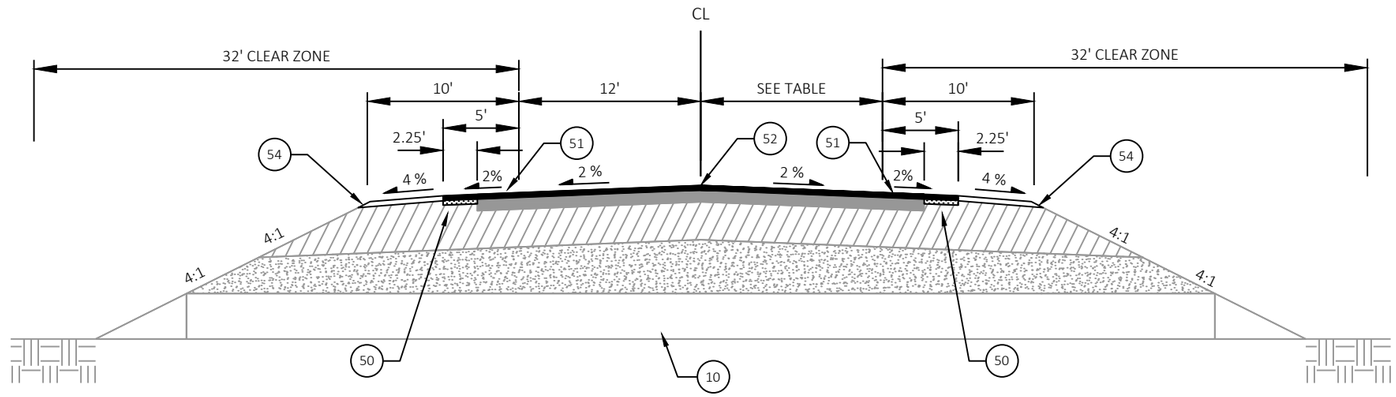
- 1-3/4" ASPHALTIC SURFACE
- 2" REMOVING ASPHALTIC SURFACE MILLING
  2" HMA PAVEMENT 4 MT 58-28S
- EXISTING HMA PAVEMENT
- EXISTING 15" CRUSHED AGGREGATE BASE COURSE
- EXISTING GRANULAR BACKFILL GRADE 2**
- (10) EXISTING CROSS DRAIN NEAR CENTER OF WEDGING SECTION
- (50) PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS
- (51) ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL (TYPE 1)
- (52) ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL
- (54) BASE AGGREGATE DENSE 3/4-INCH

** VARIABLE THICKNESS. GRANULAR BACKFILL GRADE 2 IF > 3" THICKNESS AND CRUSHED AGGREGATE BASE COURSE IF < 3" THICKNESS



TYPICAL FINISHED SECTION - STH 21

STA 112+00 - STA 117+10



TYPICAL FINISHED SECTION - STH 21

CROSS DRAIN WITH WEDGING

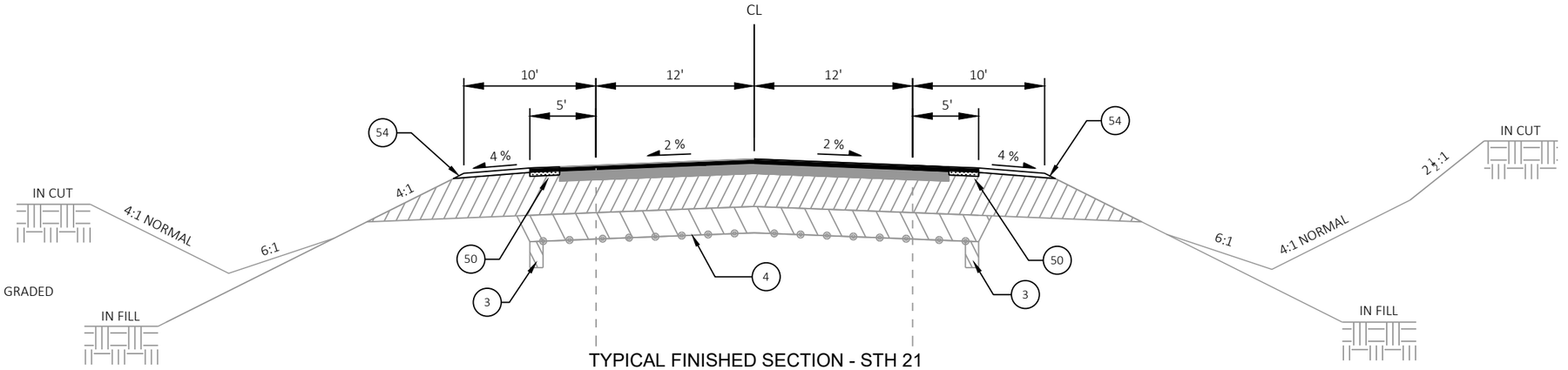
STA 117+10 - STA 118+20
STA 205+90 - STA 207+00

STATION RANGE	WIDTH
STA 117+10 - STA 118+20	12'
STA 205+90 - STA 207+00	24'

2

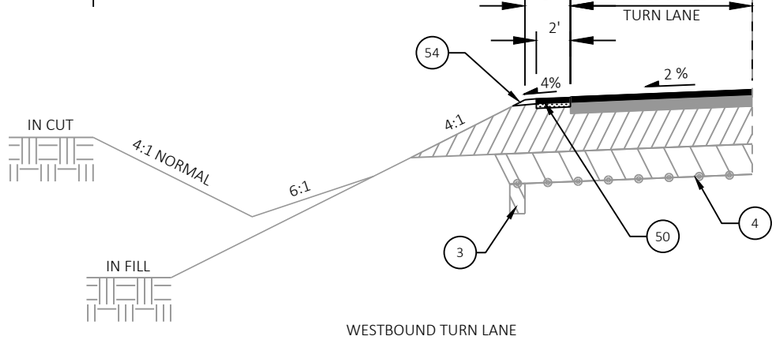
LEGEND

- 1-3/4" ASPHALTIC SURFACE
- 2" REMOVING ASPHALTIC SURFACE MILLING
  2" HMA PAVEMENT 4 MT 58-28S
- EXISTING HMA PAVEMENT
- EXISTING 15" CRUSHED AGGREGATE BASE COURSE
- EXISTING 12" BREAKER RUN STONE
- 3 — EXISTING CRUSHED AGGREGATE BASE COURSE, OPEN GRADED
- 4 — EXISTING GEOGRID REINFORCEMENT
- 50 — PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS
- 51 — ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL (TYPE 1)
- 52 — ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL
- 54 — BASE AGGREGATE DENSE 3/4-INCH

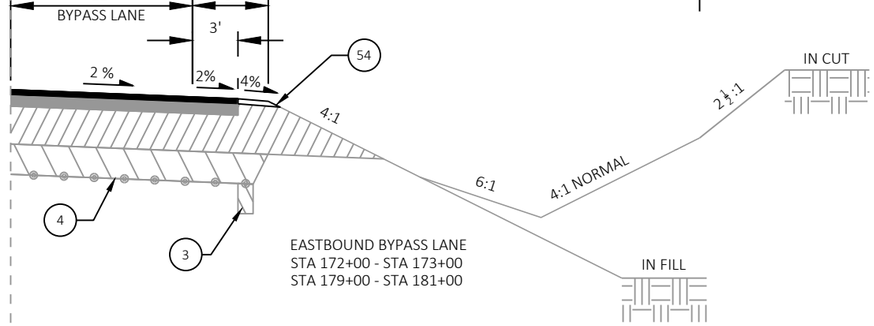


TYPICAL FINISHED SECTION - STH 21

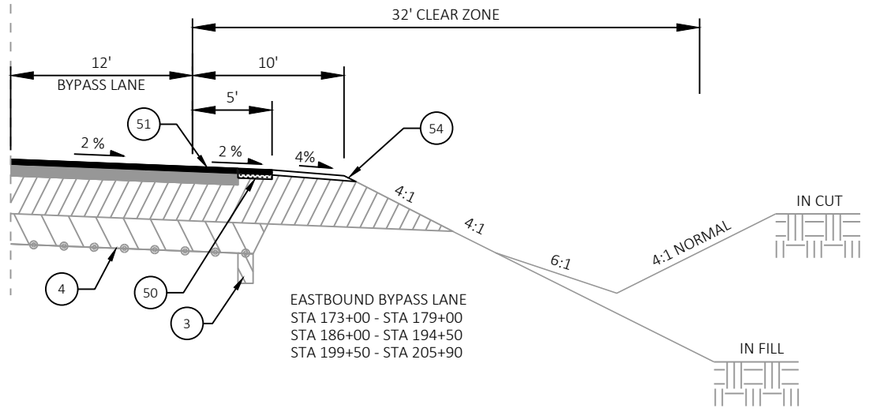
STA 149+80 - STA 155+69
STA 156+72 - STA 157+00
STA 160+00 - STA 161+00
STA 172+00 - STA 173+00
STA 179+00 - STA 181+00
STA 186+00 - STA 194+50
STA 199+50 - STA 205+90
STA 239+50 - STA 240+50
STA 283+00 - STA 286+06



WESTBOUND TURN LANE
STA 150+50 - STA 154+00



EASTBOUND BYPASS LANE
STA 172+00 - STA 173+00
STA 179+00 - STA 181+00



EASTBOUND BYPASS LANE
STA 173+00 - STA 179+00
STA 186+00 - STA 194+50
STA 199+50 - STA 205+90

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	TYPICAL SECTIONS	SHEET 16	E

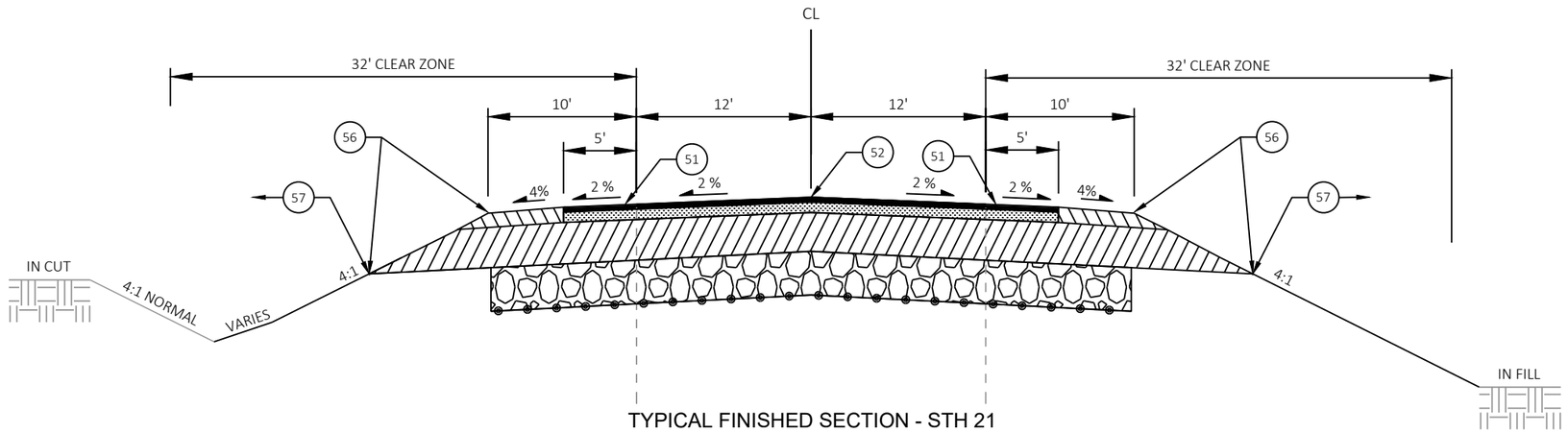
FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - 020312-ts
PLOT DATE : 7/25/2024 3:17 PM
PLOT BY : CZECH, ANDREW
PLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

2

LEGEND

- 2" HMA PAVEMENT 4 MT 58-28S
- 4-1/2" ASPHALTIC SURFACE
- 6-1/2" BASE AGGREGATE DENSE 3/4-INCH
- 16" BASE AGGREGATE DENSE 1 1/4-INCH
- 18" BREAKER RUN
- GEOGRID
- (51) ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL (TYPE 1)
- (52) ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL
- (56) SEED & FERTILIZE
- (57) SALVAGED TOPSOIL, SEED, FERTILIZE & EROSION MAT*
- (58) CONCRETE CURB & GUTTER, 36-INCH, TYPE D 4" MOUNTABLE

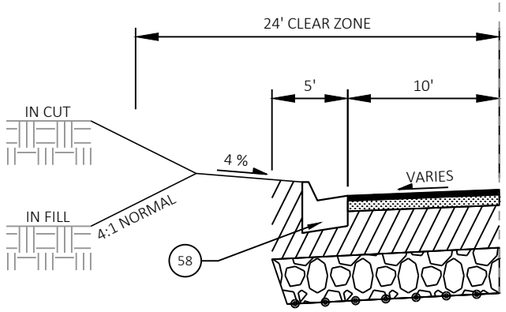
* SEE "EROSION CONTROL - CULVERT REPLACEMENTS" SHEETS FOR FURTHER INFORMATION



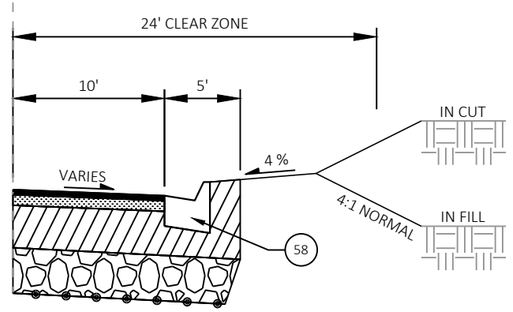
TYPICAL FINISHED SECTION - STH 21

STA 155+69 TO STA 156+72
STA 270+07 TO STA 271+10

NOTE:
RELIEF TRENCHES UTILIZED TO DRAIN BREAKER RUN.
SEE CONSTRUCTION DETAILS



STA 168+48 - STA 169+52



STA 168+48 - STA 169+52

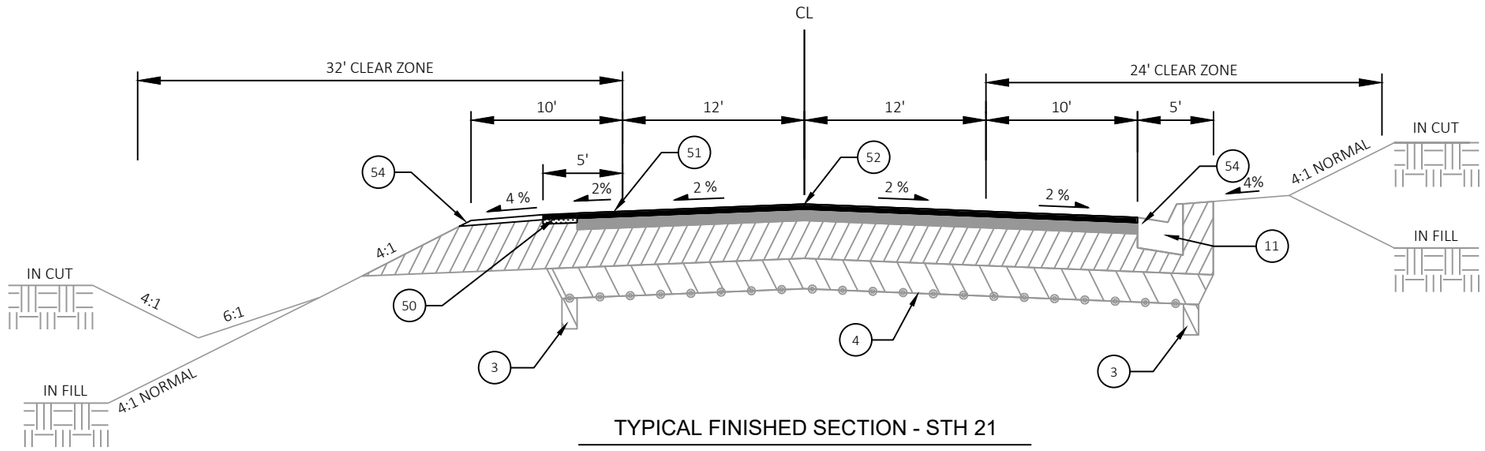
PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	TYPICAL SECTIONS	SHEET 17	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - 020313-ts
PLOT DATE : 7/25/2024 3:17 PM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

2

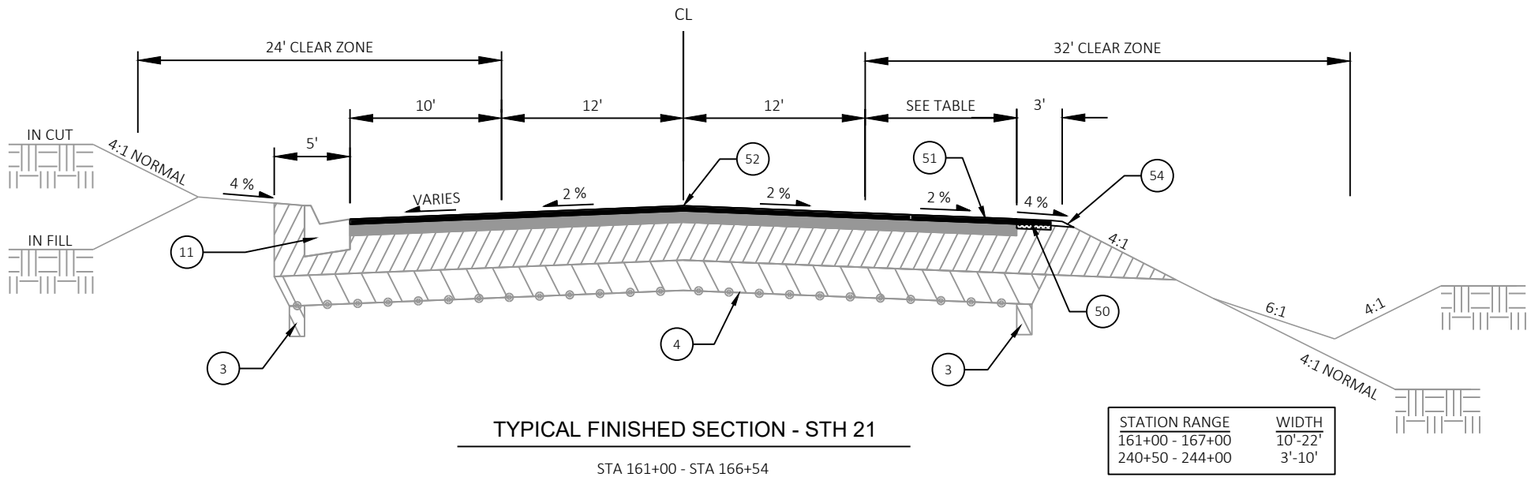
LEGEND

- 1-3/4" ASPHALTIC SURFACE
- 2" REMOVING ASPHALTIC SURFACE MILLING
  2" HMA PAVEMENT 4 MT 58-28S
- EXISTING HMA PAVEMENT
- EXISTING 15" CRUSHED AGGREGATE BASE COURSE
- EXISTING 12" BREAKER RUN STONE
- (3) EXISTING CRUSHED AGGREGATE BASE COURSE, OPEN GRADED
- (4) EXISTING GEOGRID REINFORCEMENT
- (11) EXISTING CONCRETE CURB & GUTTER, 36-INCH, TYPE D, 4" MOUNTABLE
- (50) PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS
- (51) ASPHALTIC SHOUDLER RUMBLE STRIPS 2-LANE RURAL (TYPE 1)
- (52) ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL
- (54) BASE AGGREGATE DENSE 3/4-INCH



TYPICAL FINISHED SECTION - STH 21

STA 157+00 - STA 160+00



TYPICAL FINISHED SECTION - STH 21

STA 161+00 - STA 166+54
STA 240+50 - STA 244+00

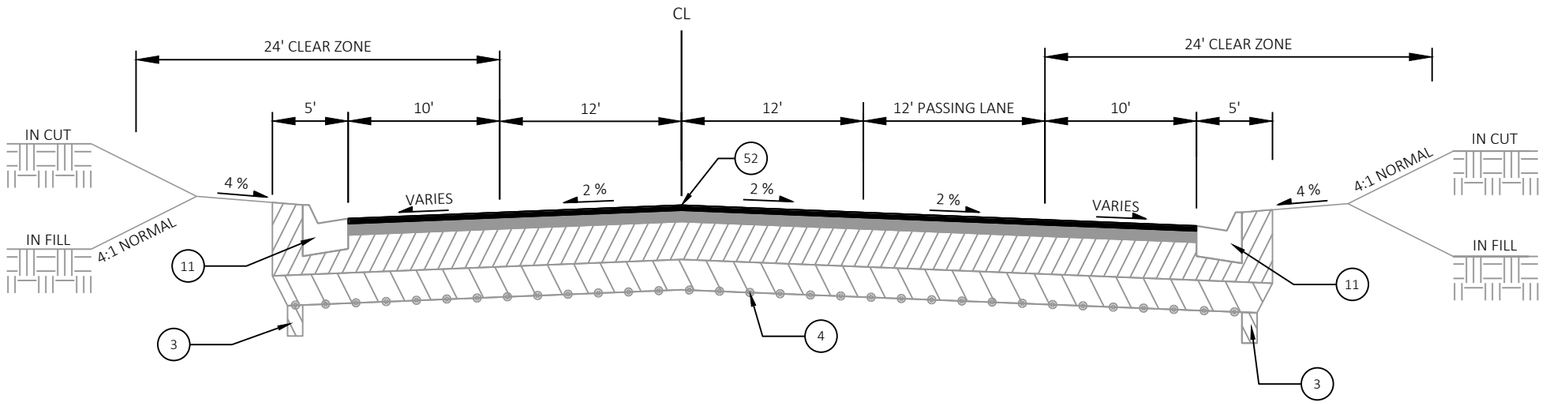
STATION RANGE	WIDTH
161+00 - 167+00	10'-22'
240+50 - 244+00	3'-10'

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	TYPICAL SECTIONS	SHEET 18	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - 020314-ts
PLOT DATE : 7/25/2024 3:17 PM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

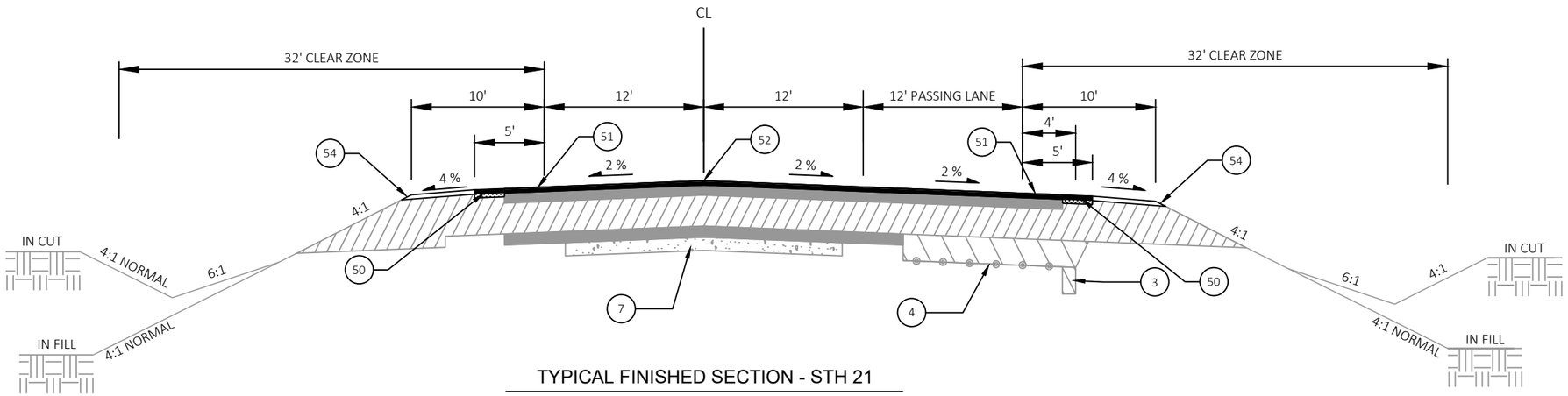
LEGEND

- 1-3/4" ASPHALTIC SURFACE
- 2" REMOVING ASPHALTIC SURFACE MILLING
  2" HMA PAVEMENT 4 MT 58-28S
- EXISTING HMA PAVEMENT
- EXISTING 15" CRUSHED AGGREGATE BASE COURSE
- EXISTING 12" BREAKER RUN STONE
- (3) EXISTING CRUSHED AGGREGATE BASE COURSE, OPEN GRADED
- (4) EXISTING GEOGRID REINFORCEMENT
- (7) EXISTING 6" CONCRETE PAVEMENT (CRACKED & SEATED)
- (11) EXISTING CONCRETE CURB & GUTTER, 36-INCH, TYPE D 4" MOUNTABLE
- (50) PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS
- (51) ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL (TYPE 1)
- (52) ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL
- (54) BASE AGGREGATE DENSE 3/4-INCH



TYPICAL FINISHED SECTION - STH 21

STA 166+54 - STA 168+48
STA 169+52 - STA 172+15
STA 181+00 - STA 186+00
STA 194+50 - STA 199+50



TYPICAL FINISHED SECTION - STH 21

EASTBOUND PASSING LANE
STA 173+00 - STA 179+00
STA 207+00 - STA 215+00

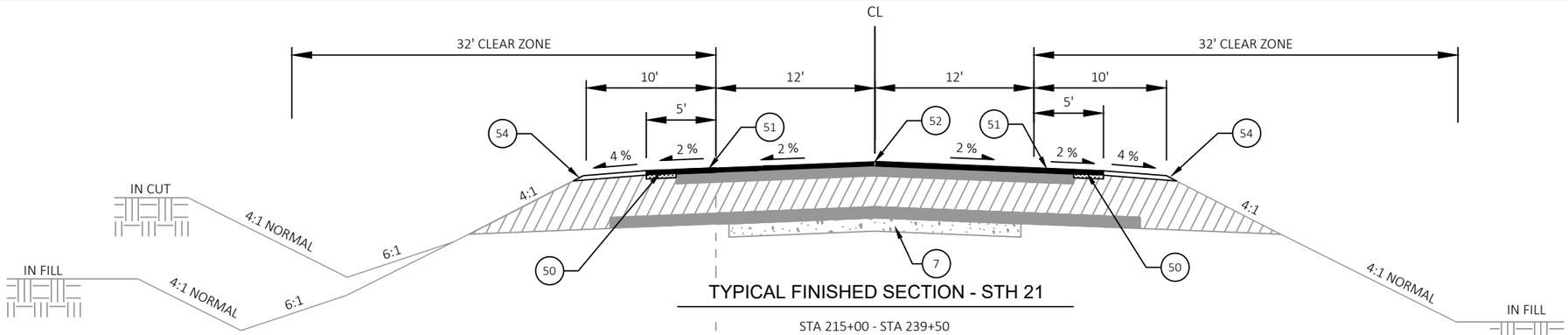
PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	TYPICAL SECTIONS	SHEET 19	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - 020315-ts
PLOT DATE : 7/25/2024 3:17 PM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

2

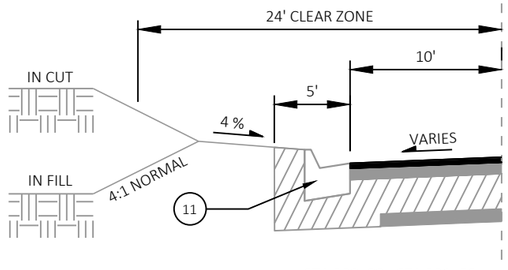
LEGEND

- 1-3/4" ASPHALTIC SURFACE
- 2" REMOVING ASPHALTIC SURFACE MILLING
  2" HMA PAVEMENT 4 MT 58-28S
- 6-1/2" BASE AGGREGATE DENSE 3/4-INCH
- EXISTING HMA PAVEMENT
- EXISTING 12" BREAKER RUN STONE
- EXISTING 14" (NOMINAL) CRUSHED AGGREGATE BASE COURSE (STA 215+00 - STA 239+50)
  EXISTING 15" CRUSHED AGGREGATE BASE COURSE
- (3) EXISTING CRUSHED AGGREGATE BASE COURSE, OPEN GRADED
- (4) EXISTING GEOGRID REINFORCEMENT
- (7) EXISTING 6" CONCRETE PAVEMENT (CRACKED & SEATED)
- (11) EXISTING CONCRETE CURB & GUTTER, 36-INCH, TYPE D 4" MOUNTABLE
- (50) PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS
- (51) ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL (TYPE 1)
- (52) ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL
- (54) BASE AGGREGATE DENSE 3/4-INCH

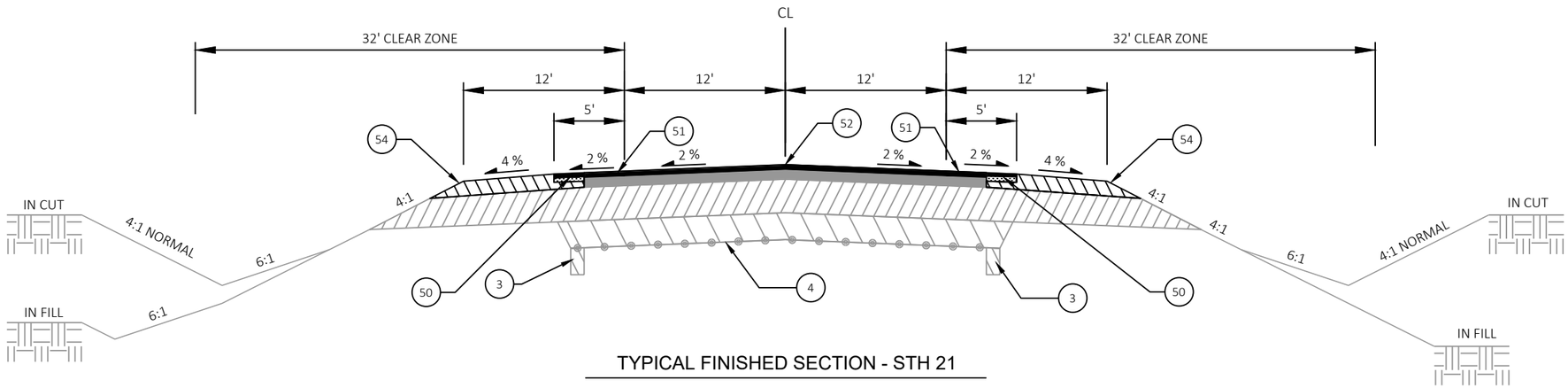


TYPICAL FINISHED SECTION - STH 21

STA 215+00 - STA 239+50



STA 230+00 - STA 231+50



TYPICAL FINISHED SECTION - STH 21

STA 244+00 - STA 255+00
STA 271+10 - STA 276+25
STA 279+25 - STA 283+00

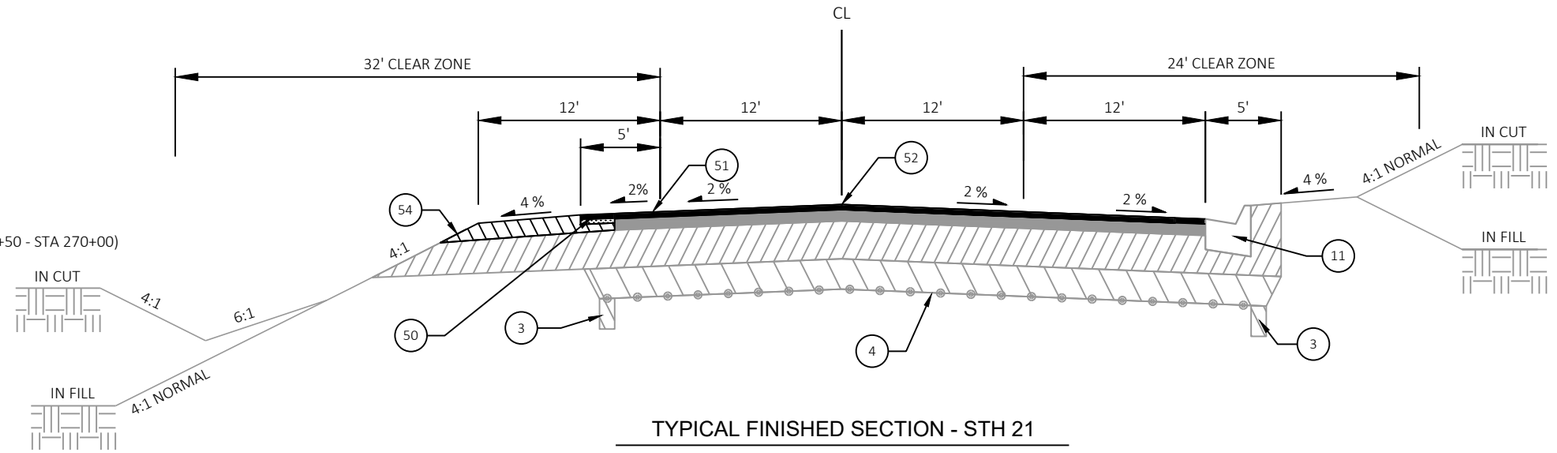
PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	TYPICAL SECTIONS	SHEET 20	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - 020316-ts
PLOT DATE : 7/25/2024 3:17 PM
PLOT BY : CZECH, ANDREW
PLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

2

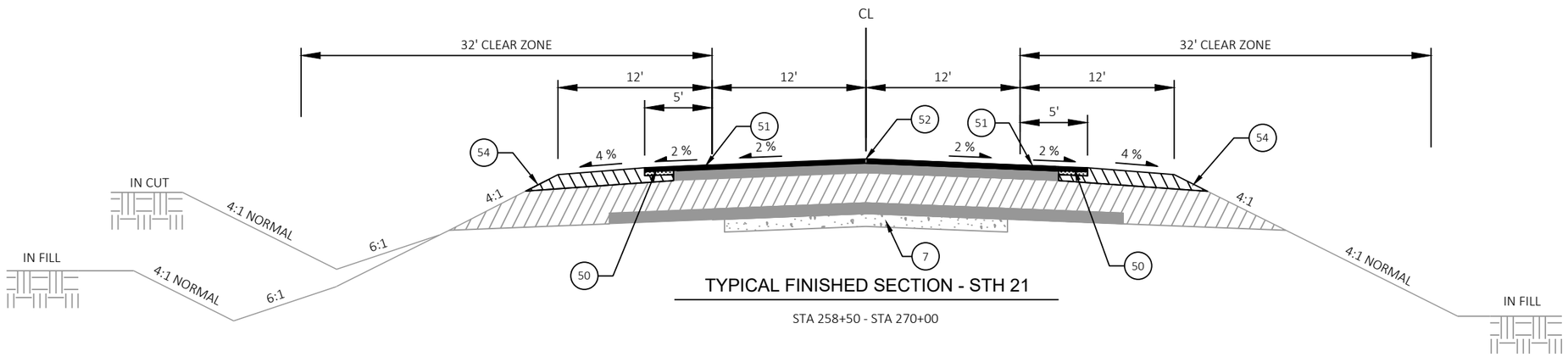
LEGEND

- 1-3/4" ASPHALTIC SURFACE
- 2" REMOVING ASPHALTIC SURFACE MILLING
  2" HMA PAVEMENT 4 MT 58-28S
- 6-1/2" BASE AGGREGATE DENSE 3/4-INCH
- EXISTING HMA PAVEMENT
- EXISTING 15" CRUSHED AGGREGATE BASE COURSE
  EXISTING 14" (NOMINAL) CRUSHED AGGREGATE BASE COURSE (STA 258+50 - STA 270+00)
- EXISTING 12" BREAKER RUN STONE
- (3) EXISTING CRUSHED AGGREGATE BASE COURSE, OPEN GRADED
- (4) EXISTING GEOGRID REINFORCEMENT
- (7) EXISTING 6" CONCRETE PAVEMENT (CRACKED & SEATED)
- (11) EXISTING CONCRETE CURB & GUTTER, 36-INCH, TYPE D 4" MOUNTABLE
- (50) PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS
- (51) ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL (TYPE 1)
- (52) ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL
- (54) BASE AGGREGATE DENSE 3/4-INCH



TYPICAL FINISHED SECTION - STH 21

STA 255+00 - STA 258+50
STA 276+25 - STA 279+25



TYPICAL FINISHED SECTION - STH 21

STA 258+50 - STA 270+00

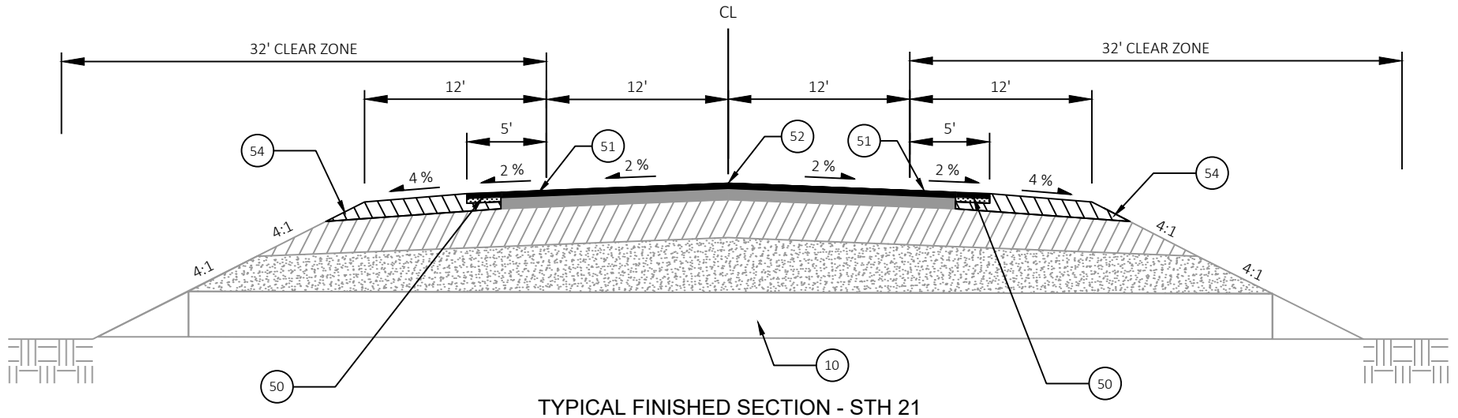
PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	TYPICAL SECTIONS	SHEET 21	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - 020317-ts
PLOT DATE : 7/25/2024 3:17 PM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

LEGEND

- 1-3/4" ASPHALTIC SURFACE
  1-3/4" LOWER LIFT
  2" UPPER LIFT
- 2" REMOVING ASPHALTIC SURFACE MILLING
  2" HMA PAVEMENT 4 MT 58-28S
- 6-1/2" BASE AGGREGATE DENSE 3/4-INCH
- EXISTING HMA PAVEMENT
- EXISTING 15" CRUSHED AGGREGATE BASE COURSE
- EXISTING GRANULAR BACKFILL GRADE 2

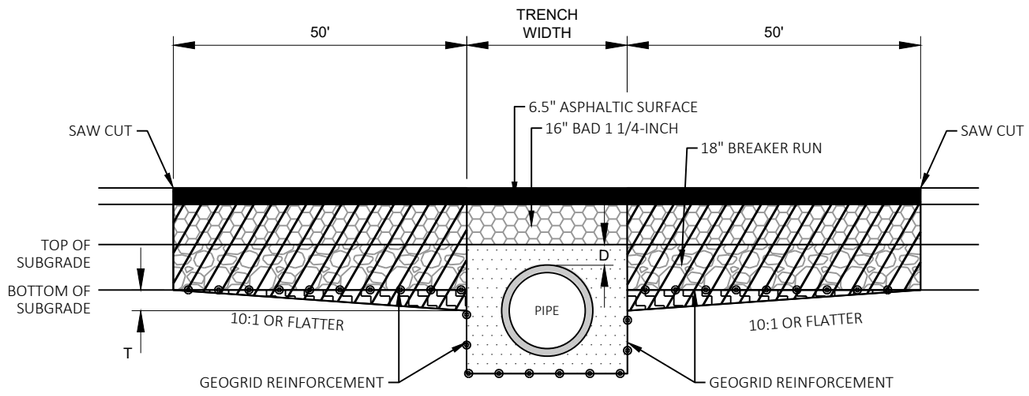
- 10 EXISTING CROSS DRAIN NEAR CENTER OF WEDGING SECTION
- 50 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS
- 51 ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL (TYPE 1)
- 52 ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL
- 54 BASE AGGREGATE DENSE 3/4-INCH



TYPICAL FINISHED SECTION - STH 21

CROSS DRAIN WITH WEDGING

STA 270+00 - STA 270+07
STA 270+10 - STA 271+10



DEPTH D < 6 FT

TRANSITION CUT DEPTH (T) = THE LESSER OF DEPTH TO CENTER OF PIPE OR 5 FT.
DO NOT EXTEND TRANSITION CUT BELOW HORIZONTAL CENTER OF PIPE.

KEY

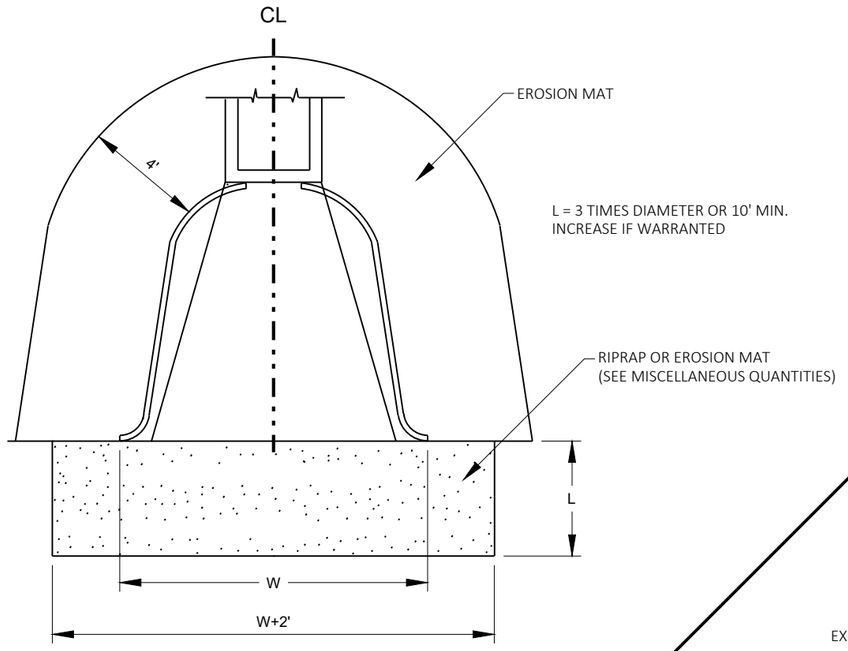
- PROPOSED SURFACE
- PROPOSED BASE
- PROPOSED BREAKER RUN
- TRENCH OR FOUNDATION BACKFILL
- FOUNDATION BACKFILL
- TRANSITION CUT

NOTES

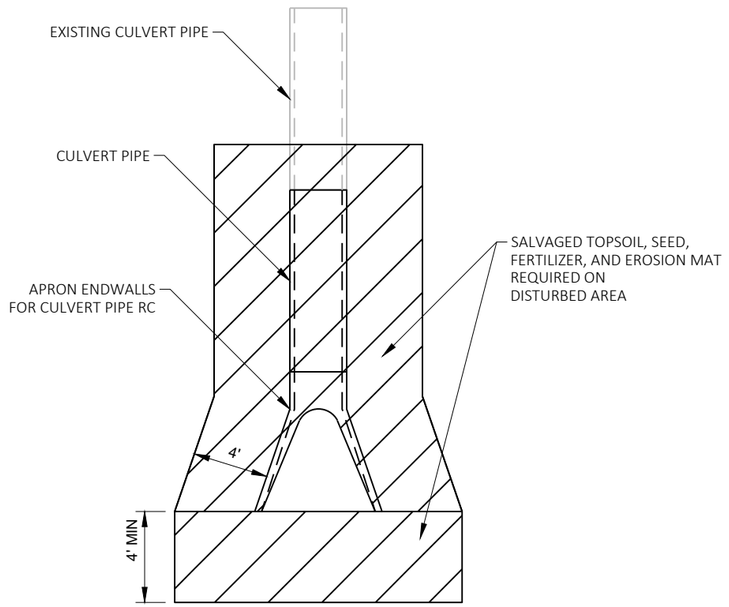
TRANSITION CUT IS PAID AS EXCAVATION COMMON.
TRANSITION CUT WIDTH IS FROM SUBGRADE SHOULDER POINT TO SUBGRADE SHOULDER POINT.
BACKFILL THE TRANSITION CUT AREAS WITH FOUNDATION AND TRENCH BACKFILL AS SPECIFIED IN STANDARD SPEC 520.
PERFORM CULVERT PIPE INSTALLATION BEFORE MILLING AND PAVING.

PIPE TRANSITION

ROUTE	STA (CL)	STA (SAWCUT 1)	STA (SAWCUT 1)	DEPTH D (FT) FROM BASE TO PIPE	PIPE DIA (IN)
STH 21	156+20.37	155+69.11	156+71.62	0.27'	24"
STH 21	169+00.14	168+48.14	169+52.14	0.87'	12"
STH 21	270+58.42	270+07.17	271+09.67	0.00'	24"

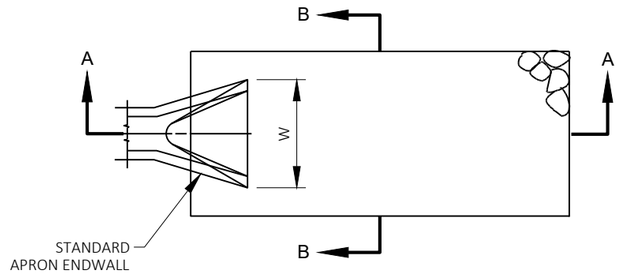


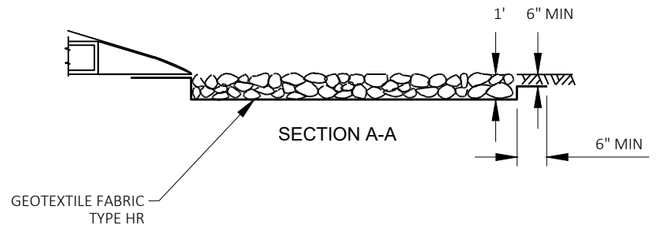
EROSION CONTROL AT PIPE ENDS

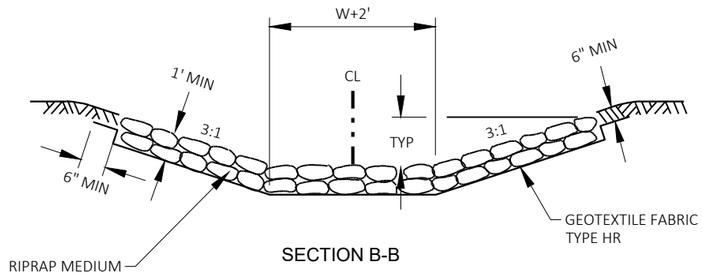


EROSION CONTROL FOR CROSS DRAIN RESTORATION

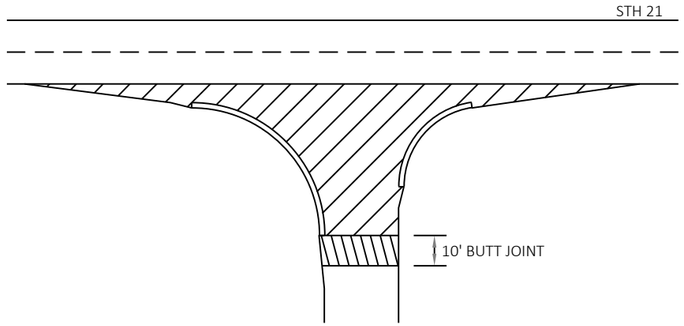
SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS







RIP RAP AND GEOTEXTILE



REMOVING ASPHALTIC SURFACE MILLING

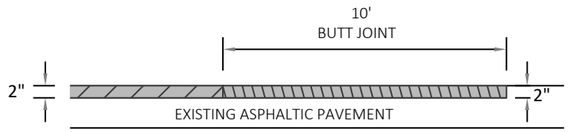
REMOVING ASPHALTIC SURFACE BUTT JOINTS
SEE BUTT JOINT DETAIL

NOTE: WHEN MATCHING TO AN UNPAVED SURFACE
BUTT JOINT IS NOT REQUIRED

SIDE ROADS

WITH CURB AND GUTTER

32ND DRIVE
COTTONVILLE CT
CTH XX
CTH X
37TH AVE



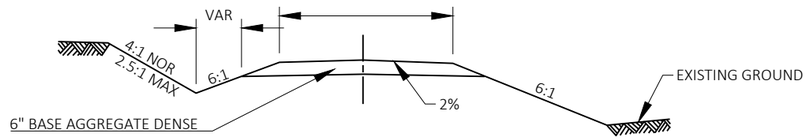
HMA PAVEMENT

REMOVING ASPHALTIC SURFACE MILLING

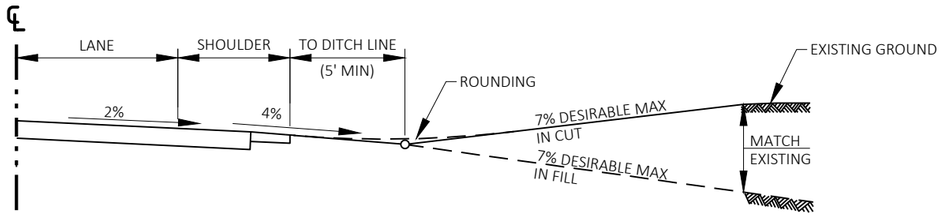
REMOVING ASPHALTIC SURFACE BUTT JOINTS

BUTT JOINT

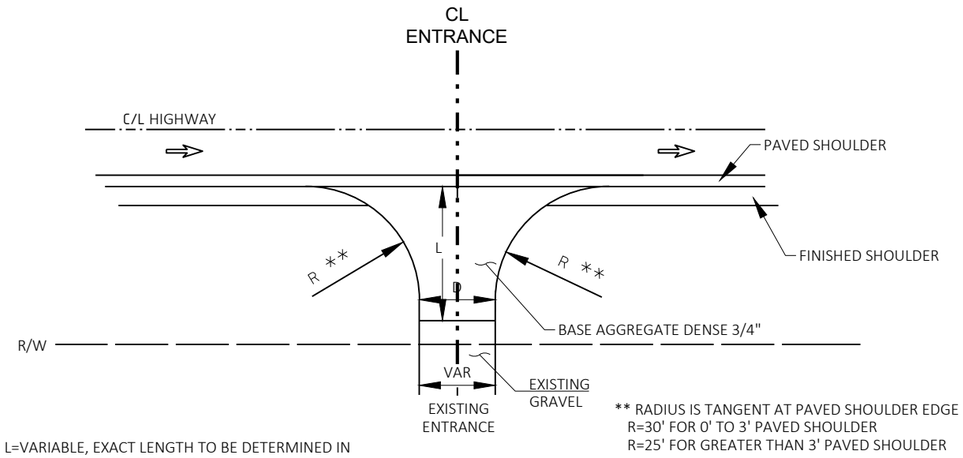
MAINLINE AND SIDE ROADS



TYPICAL CROSS SECTION



TYPICAL PROFILE VIEW



** RADIUS IS TANGENT AT PAVED SHOULDER EDGE
R=30' FOR 0' TO 3' PAVED SHOULDER
R=25' FOR GREATER THAN 3' PAVED SHOULDER

L=VARIABLE, EXACT LENGTH TO BE DETERMINED IN THE FIELD BY THE ENGINEER

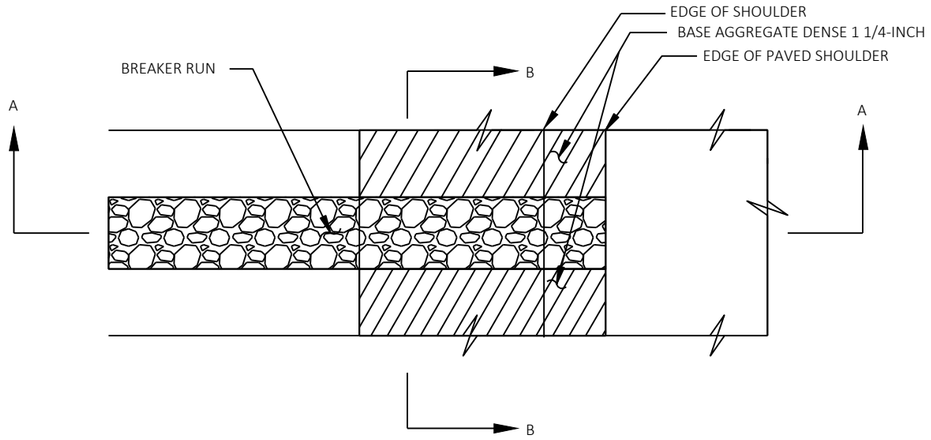
D=DRIVEWAY WIDTH
D=20'TYP(PE & FE) (16'MIN-24'MAX)
D=28'TYP(CE & FARM ENT) (24'MIN-35'MAX)

PLAN VIEW

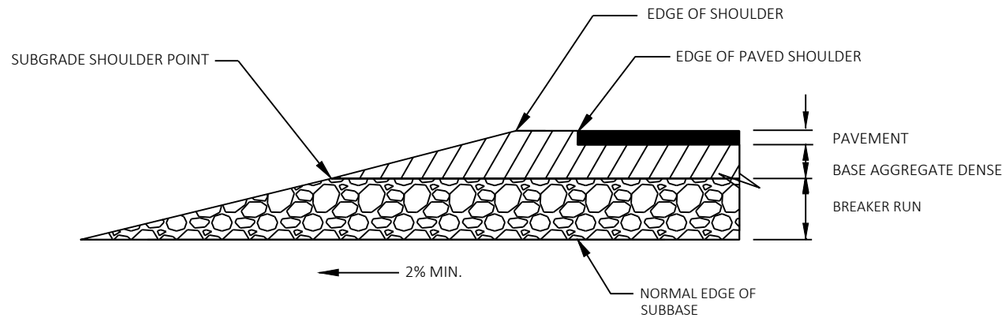
RURAL DRIVEWAY INTERSECTION (PE, FE & CE)

(FOR NEW CONSTRUCTION)

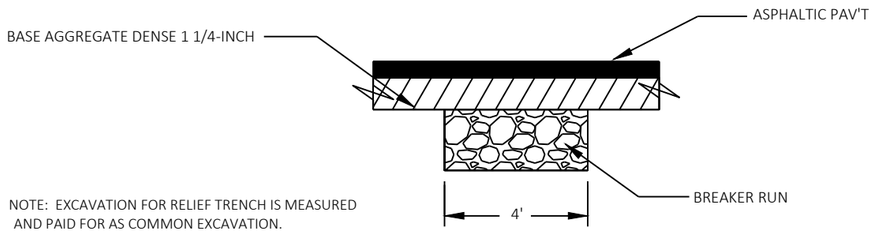
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PLAN VIEW



SECTION A - A



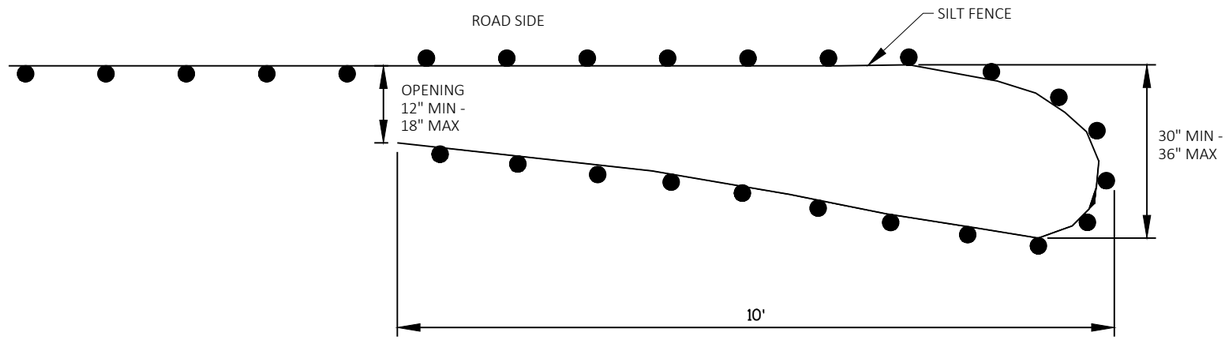
NOTE: EXCAVATION FOR RELIEF TRENCH IS MEASURED AND PAID FOR AS COMMON EXCAVATION.

SECTION B - B

RELIEF TRENCH DETAIL

CONSTRUCT RELIEF TRENCH AT SAG POINTS OR EVERY 250 FEET OR AS DIRECTED BY THE ENGINEER

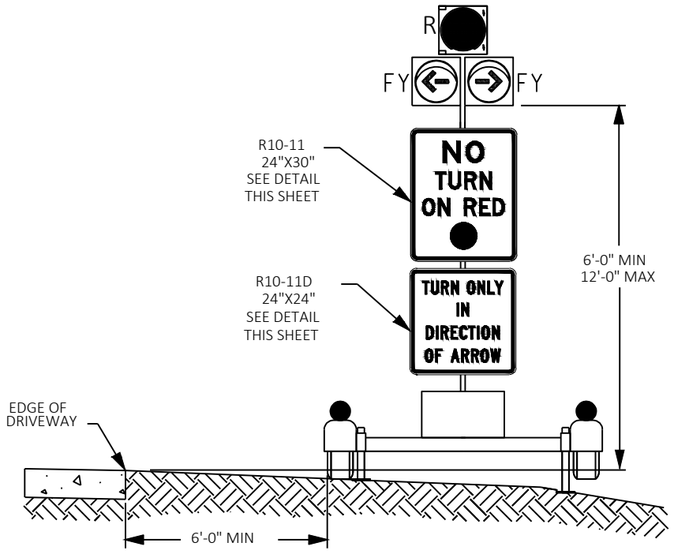
2



PLAN VIEW

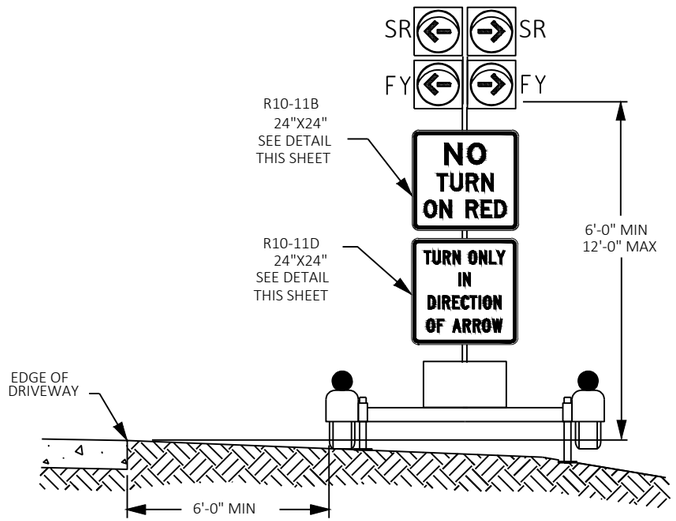
GENERAL NOTES:
SILT FENCE POSTS FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE TURN-AROUND. AND TRENCHED IN ACCORDING TO SILT FENCE REQUIREMENTS.

TEMPORARY SMALL ANIMAL TURN-AROUND



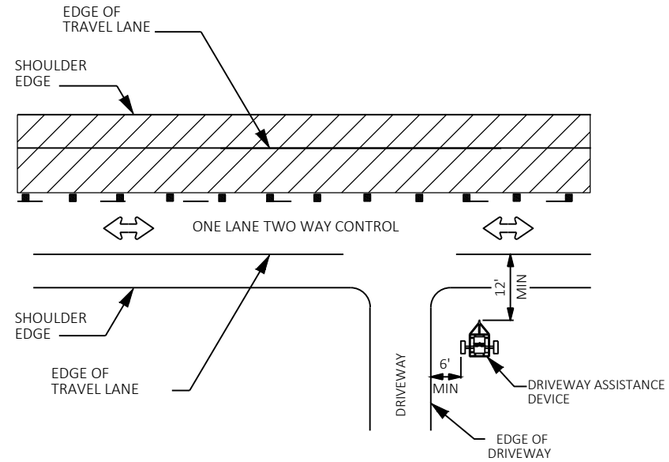
ELEVATION VIEW

DAD 3 HEAD DEVICE



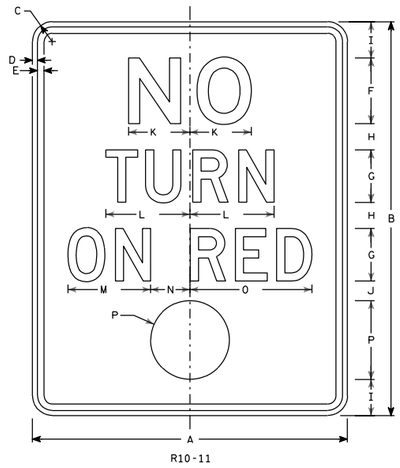
ELEVATION VIEW

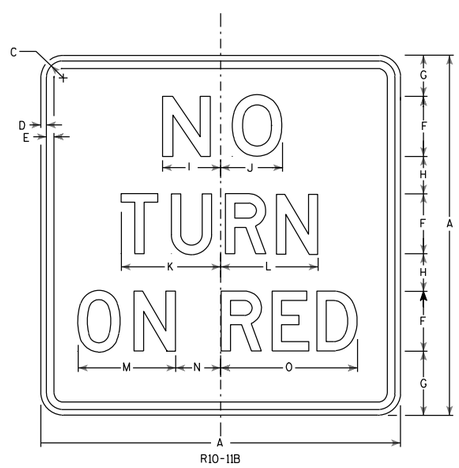
DAD 4 HEAD DEVICE

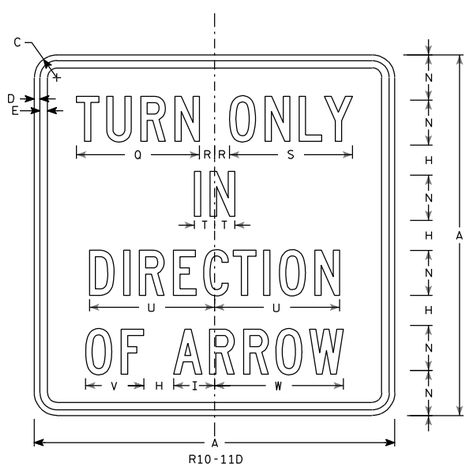


PLAN VIEW

TYPICAL DAD INSTALLATION







SIGN	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 sq. ft.
R10-11	24	30	1 ½	⅜	½	5	4	2	2 ¾	1 ½	4 ⅝	6 ⅜	6 ¼	3	9 ¼	6	8 ¼	1	8 ¼	1 ⅜	8 ⅜	3 ⅞	8 ⅝				5.0
R10-11B	24		1 ⅛	⅜	½	4	3 ½	2 ½	3 ⅞	4 ⅛	6 ⅝	6 ½	6 ½	3	9 ⅛												4.0
R10-11D	24	30	1 ½	⅜	½	5	4	2	2 ¾	1 ½	4 ⅝	6 ⅜	6 ¼	3	9 ¼	6	8 ¼	1	8 ¼	1 ⅜	8 ⅜	3 ⅞	8 ⅝				5.0

SIGN DETAILS

GENERAL NOTES

1. THREE HEAD UNIT. EACH DAD MUST HAVE ONE SIGNAL HEAD CONSISTING OF 3 LED INDICATIONS AS FOLLOWS; ONE 12 IN. DIAMETER STEADY RED BALL INDICATION CENTERED OVER ONE 12 IN. DIAMETER YELLOW FLASHING LEFT ARROW AND ONE 12 IN. DIAMETER YELLOW FLASHING RIGHT ARROW.
2. FOUR HEAD UNIT. ONE SIGNAL HEAD CONSISTING OF 4 LED INDICATIONS AS FOLLOWS; ONE 12 IN. DIAMETER STEADY RED LEFT ARROW INDICATION AND ONE 12 IN. DIAMETER STEADY RED RIGHT ARROW INDICATION, OVER ONE 12 IN. DIAMETER YELLOW FLASHING LEFT ARROW AND ONE 12 IN. DIAMETER YELLOW FLASHING RIGHT ARROW.
3. SEE SPECIAL PROVISION SPV.0045.01 DRIVEWAY ASSISTANCE DEVICE SYSTEM FOR ADDITIONAL INFORMATION.

LEGEND	
⇨	TRAFFIC FLOW
SR	STEADY RED
FY	FLASHING YELLOW

DRIVEWAY ASSISTANCE DEVICES DETAIL

2

N

PERMANENT LIMITED HIGHWAY EASEMENT

BUG TUSSEL (FO) INSTALLED IN 2024 APPROXIMATELY ALONG THE NORTH DITCH LINE AND RIGHT OF WAY

ALLIANT ENERGY

STRUCTURE C-69-0019 REQUIRED

EXISTING R/W

COVER EXISTING SIGN DURING TEMPORARY BYPASS PHASE

EXISTING R/W

BEGIN PROJECT
STA 126+00.00 A

END PROJECT
STA 139+50.00 A

REMOVING SMALL PIPE CULVERTS

126+00AT
126+00A
128+00A
130+00A
132+00A
134+00A
136+00A
138+00A
138+00AT
140+00AT
140+00

STH 21
A+00.00
12.00'RT
778.00
A+00.00
22.00'RT
777.52

A+52.76
12.00'RT
777.79

128+00AT
130+00AT
132+00AT
134+00AT
136+00AT

16'
2.5'
2.5'

EXISTING CPCS 24-INCH (TO REMAIN)

MAILBOX

A+50.00
12.00'RT
778.81

STH 21
A+50.00
12.00'RT
780.43
A+50.00
22.00'RT
779.91

EXISTING R/W
BRIGHTSPEED
SLOPE INTERCEPT (TEMPORARY)
4" ASPHALTIC SURFACE TEMPORARY OVER 8" BAD 1 1/4-INCH
MAINTAIN FIELD ENTRANCE BASE AGGREGATE DENSE 3/4-INCH
TLE
4" BAD 3/4-INCH
CP TEMPORARY 24-INCH
TEMPORARY SINGLE LANE BYPASS ROADWAY
CP TEMPORARY 72-INCH
PERMANENT LIMITED HIGHWAY EASEMENT
CP TEMPORARY 15-INCH
CP TEMPORARY 24-INCH
MAINTAIN GRAVEL DRIVEWAY BASE AGGREGATE DENSE 3/4-INCH
TLE
4" BAD 3/4-INCH
4" ASPHALTIC SURFACE TEMPORARY OVER 8" BAD 1 1/4-INCH
EXISTING R/W
BRIGHTSPEED
SLOPE INTERCEPT (TEMPORARY)

PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	PLAN DETAILS - TEMPORARY BYPASS ROAD	SHEET 29	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-021201-PD_TEMP-BYPASS-ROAD.DWG
LAYOUT NAME - 1
PLOT DATE : 3/4/2024 2:41 PM
PLOT BY : CZECH, ANDREW
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

2

N

PERMANENT LIMITED HIGHWAY EASEMENT

TEMPORARY CULVERT

132+00 AT

STH 21

EXISTING R/W

BUG TUSSEL (FO) INSTALLED IN 2024 APPROXIMATELY ALONG THE NORTH DITCH LINE AND RIGHT OF WAY

SLOPE INTERCEPTS

PERMANENT LIMITED HIGHWAY EASEMENT

XXXXXXXXXXXXXXXXXXXXXXXXXX

132+00 A

776
774
772
770
768
766
764
766
764
766
764
766
764
766
764
770
768
766
764
764

STA 1D+93
0.00'
EL 764.03

2+00 D

3+00 D

STA 3D+43
0.00'
EL 763.28

STA 132A+57.73
-70.24' LT
EL 764.10

768
768
770

C-69-0019

STA 132A+80
-55.04' LT
EL 770.05

TEMPORARY CULVERT

133+00 AT

STH 21

133+00 A

TEMPORARY CULVERT

CONTRACTOR TO GRADE DITCH TO DRAIN FOR TEMPORARY AND PERMANENT CONDITION

PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	PLAN DETAIL - TEMPORARY WATER DIVERSION CHANNEL	SHEET 30	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-021202-PD_TEMP-DIVERSION-CHANNEL.DWG PLOT DATE : 2/27/2024 3:41 PM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:20 FT
LAYOUT NAME - 6130-021201-pd_Bypass Diversion

2

2

N

PERMANENT LIMITED HIGHWAY EASEMENT

BUG TUSSEL (FO) INSTALLED IN 2024 APPROXIMATELY ALONG THE NORTH DITCH LINE AND RIGHT OF WAY

ALLIANT ENERGY

STRUCTURE C-69-0019 REQUIRED

EXISTING R/W

EXISTING R/W

BEGIN PROJECT
STA 126+00.00A

END PROJECT
STA 139+50.00A

CP 900
Y = 120127.515
X = 443503.459

A+00.00
12.00'RT
778.00

126+00A

128+00A

130+00A

132+00A

134+00A

136+00A

138+00A

140+00

STH 21

STH 21

A+52.76
12.00'RT
777.79

A+52.76
22.00'RT
777.38

A+91.00
-22.00'LT
776.96

A+82.00
-22.00'LT
777.04

A+50.00
12.00'RT
778.81

A+50.00
12.00'RT
780.43

A+82.00
22.00'RT
776.98

A+50.00
22.00'RT
778.37

A+50.00
22.00'RT
779.91

CSCP 24-INCH

A+00.00
22.00'RT
777.52

A+70.76
25.90'RT
777.22

R10'

R10'

A+12.89
25.69'RT
777.12

A+91.00
22.00'RT
776.81

A+50.60
25.84'RT
776.96

A+69.70
49.78'RT
775.44

R20'

R30'

A+18.93
25.32'RT
777.14

A+91.68
42.65'RT
776.31

A+80.91
36.57'RT
776.03

A+79.20
60.82'RT
773.75

A+01.65
61.67'RT
773.61

A+03.06
35.01'RT
776.32

A+36.49
133.15'RT
773.22

A+47.16
138.79'RT
773.22

BRIGHTSPEED

BRIGHTSPEED

EXISTING R/W

EXISTING R/W

FIELD ENTRANCE
BASE AGGREGATE DENSE 3/4-INCH

TLE

CP 902a
Y = 119999.363
X = 442679.720

SLOPE INTERCEPT

CP 915
Y = 119951.729
X = 443636.581

CP 903
Y = 120028.330
X = 443832.889

TLE

GRAVEL DRIVEWAY
BASE AGGREGATE DENSE 3/4-INCH

PERMANENT LIMITED
HIGHWAY EASEMENT

NOTE: TEMPORARY BYPASS TO BE REMOVED AND THE EXISTING GRADING CONDITION (PRIOR TO CONSTRUCTION) TO BE RESTORED FOR PERMANENT CONDITION.

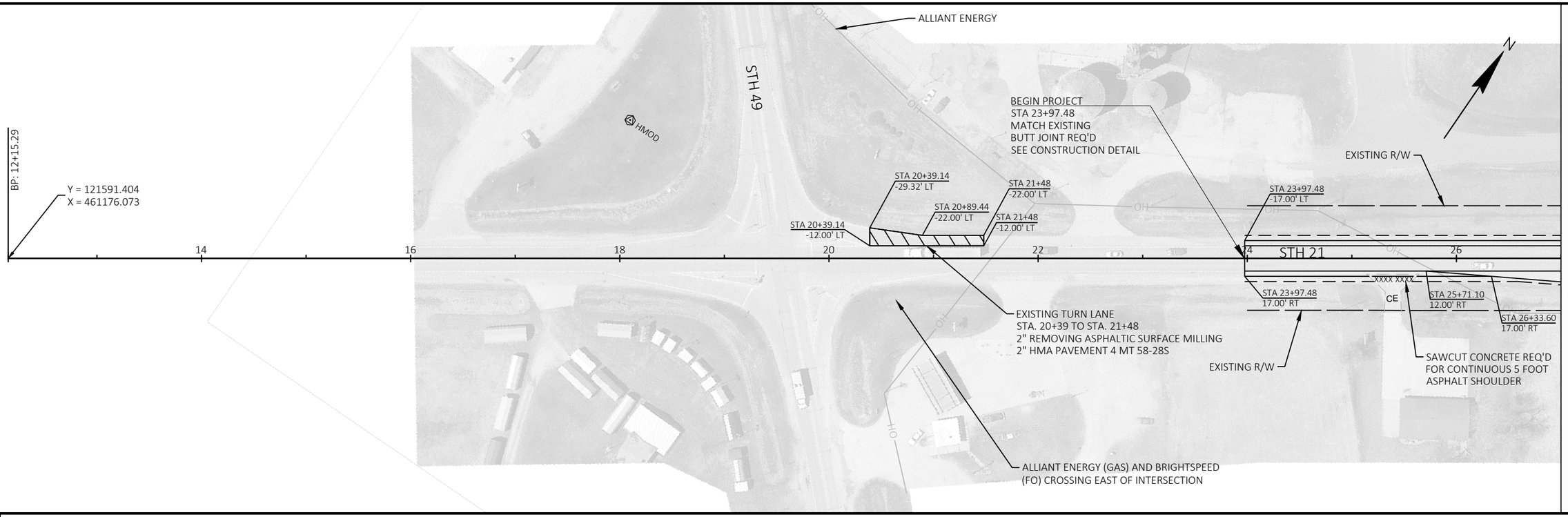
BENCH MARKS				
NO.	STATION	OFFSET	DESCRIPTION	ELEV.
1	132+51.11A	144.92RT	SPIKE IN PP	772.00
2	132+73.69A	78.43LT	SPIKE IN PP 18-12-15 36/40	770.89

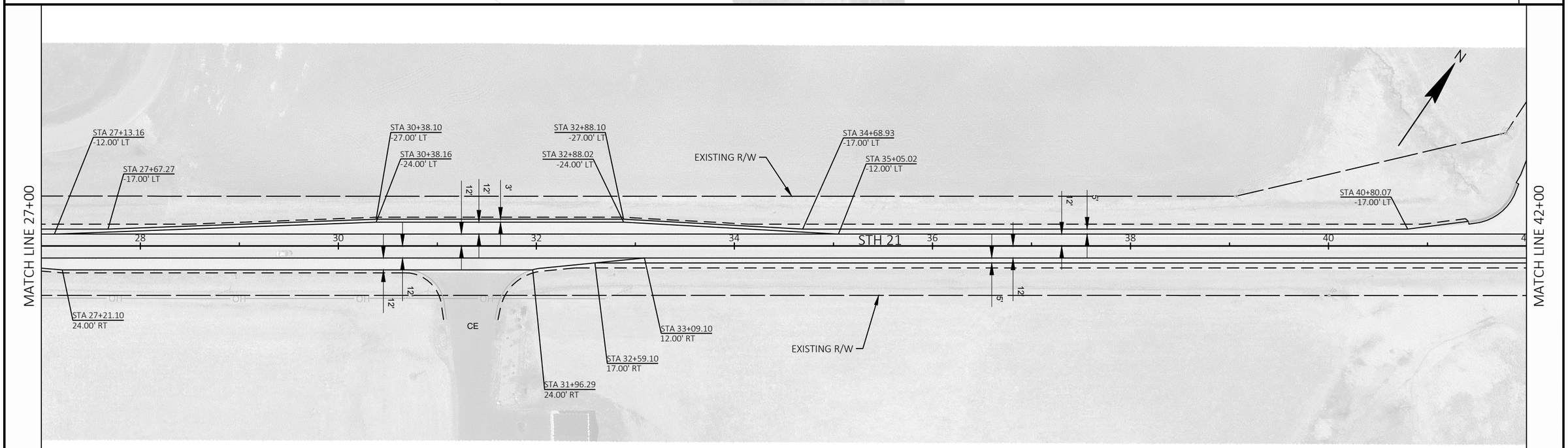
PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	PLAN DETAILS - PERMANENT CONDITION	SHEET 31	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-021203-PD_PERM.DWG
LAYOUT NAME - 1

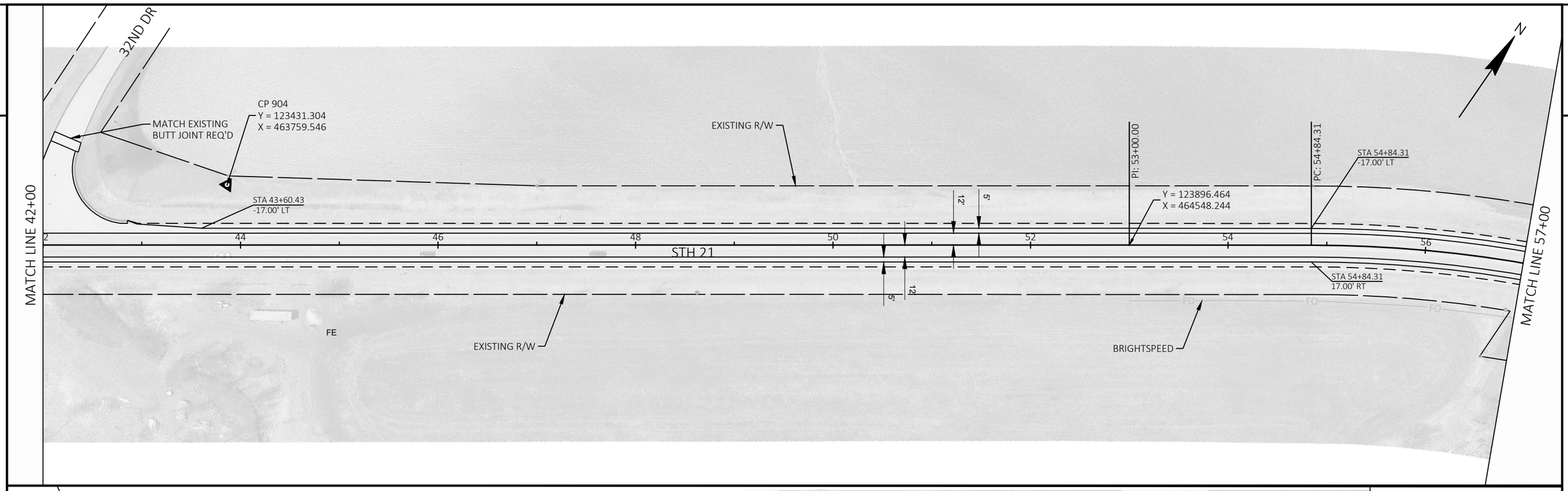
PLOT DATE : 3/4/2024 3:59 PM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:100 FT

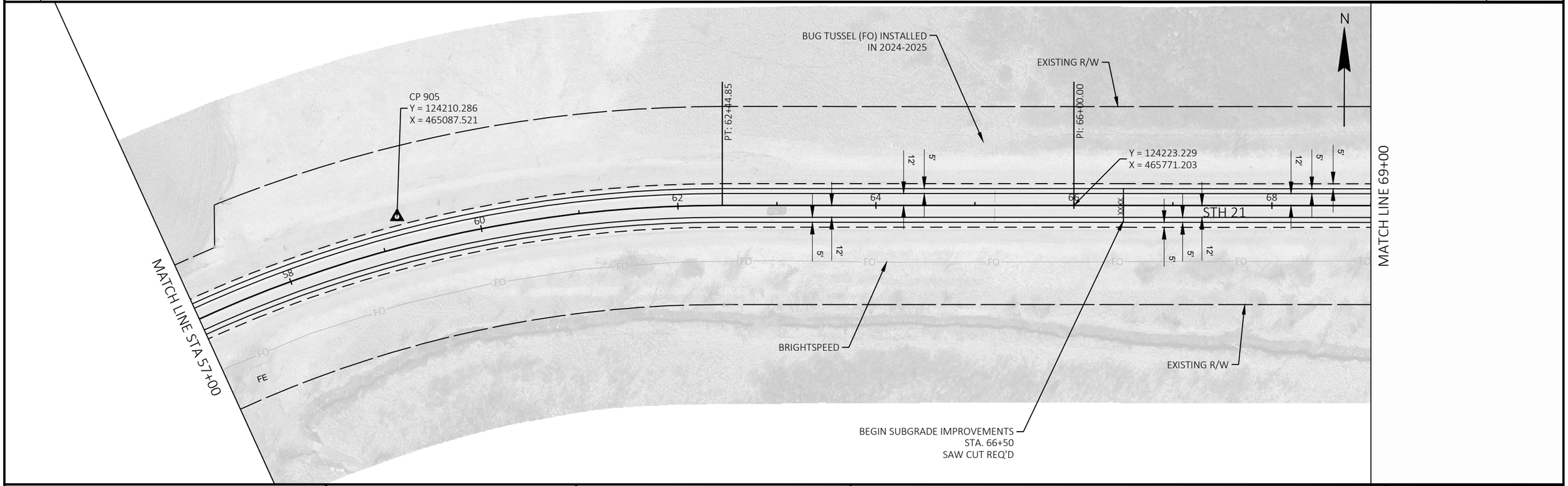
WISDOT/CADDS SHEET 42





PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	PLAN DETAILS	SHEET 32	E

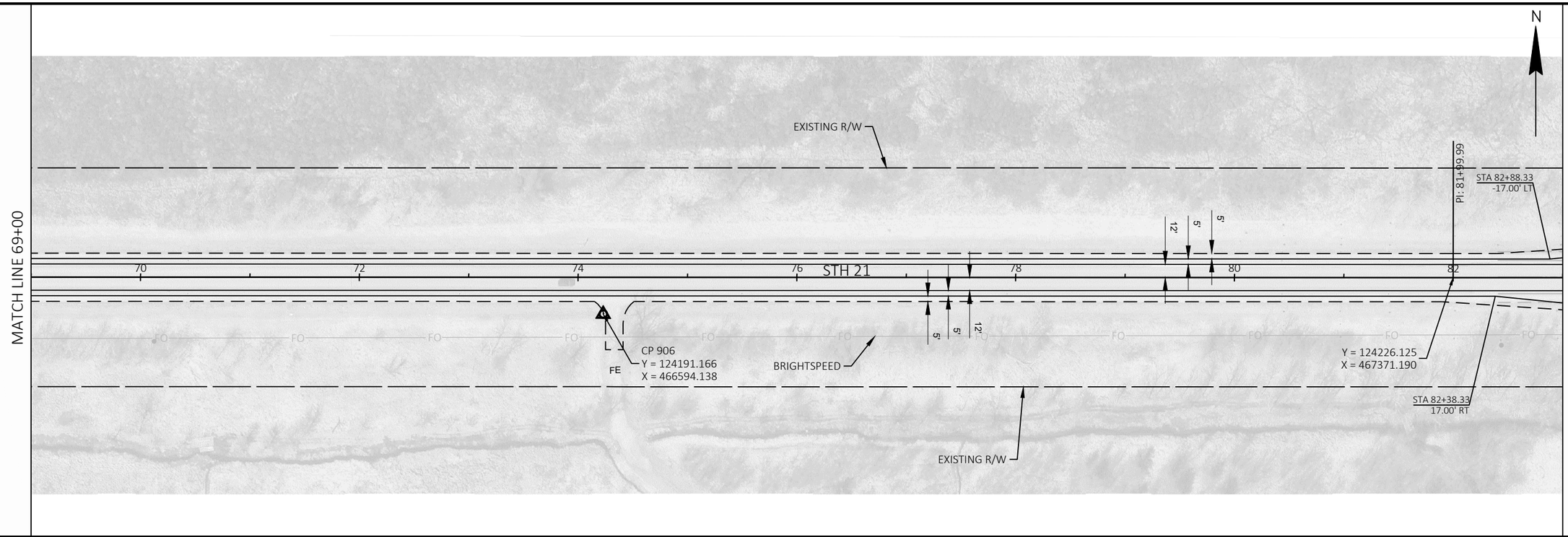




PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	PLAN DETAILS	SHEET 33 E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 021202-pd
PLOT DATE : 3/4/2024 9:28 AM PLOT BY : DEGNER, MARK PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

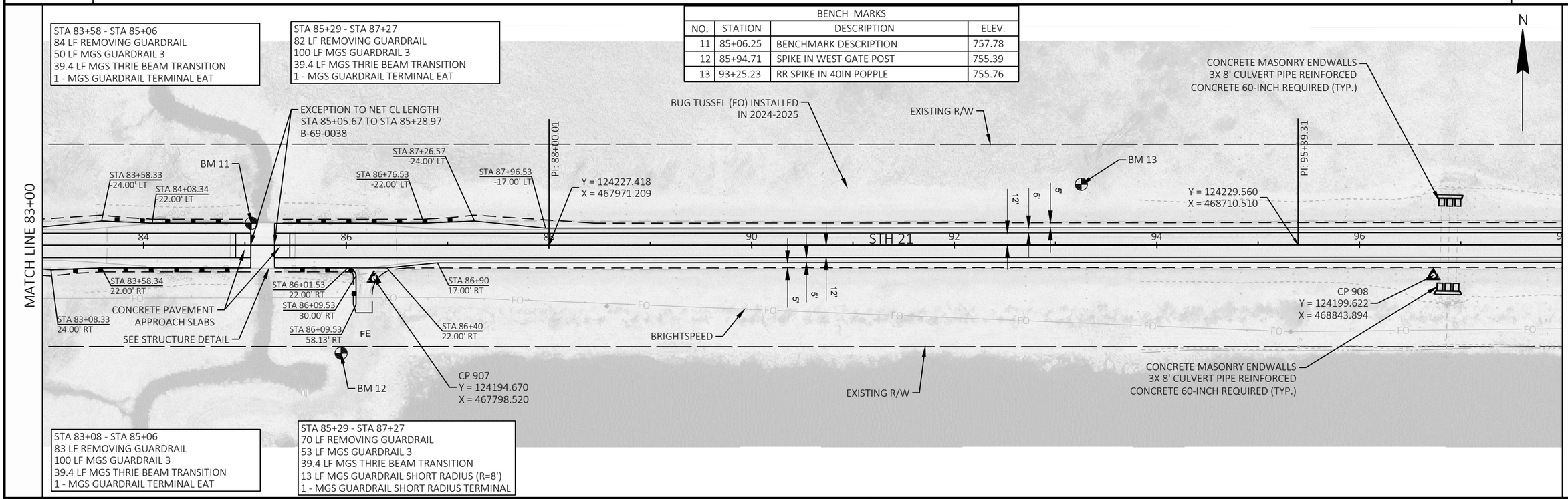
2



BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
11	85+06.25	BENCHMARK DESCRIPTION	757.78
12	85+94.71	SPIKE IN WEST GATE POST	755.39
13	93+25.23	RR SPIKE IN 40IN POPPLE	755.76

STA 83+58 - STA 85+06
84 LF REMOVING GUARDRAIL
50 LF MGS GUARDRAIL 3
39.4 LF MGS THRIE BEAM TRANSITION
1 - MGS GUARDRAIL TERMINAL EAT

STA 85+29 - STA 87+27
82 LF REMOVING GUARDRAIL
100 LF MGS GUARDRAIL 3
39.4 LF MGS THRIE BEAM TRANSITION
1 - MGS GUARDRAIL TERMINAL EAT

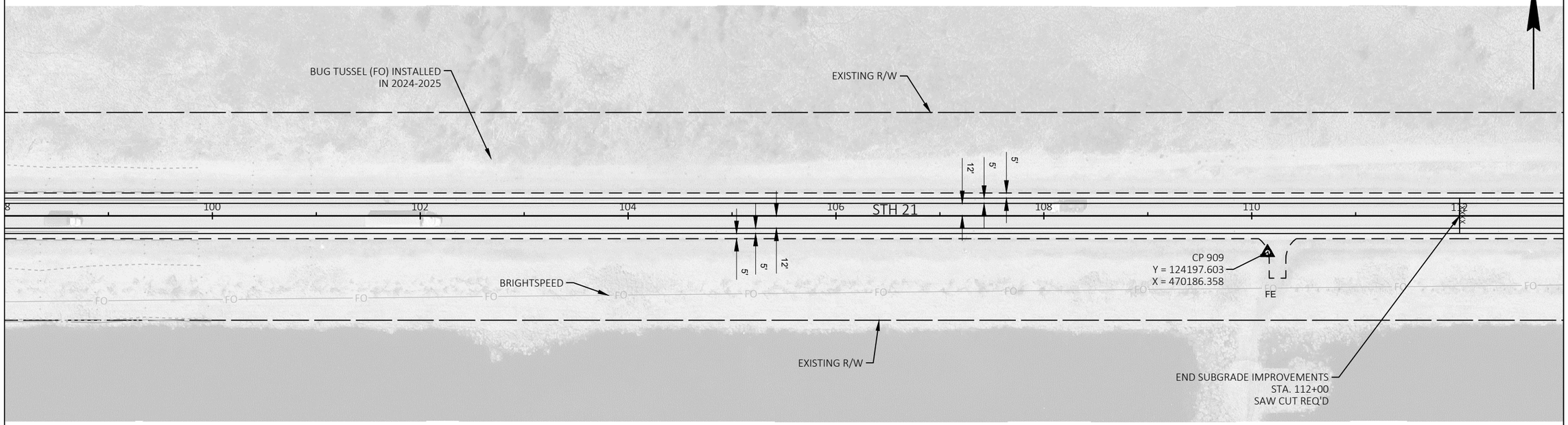


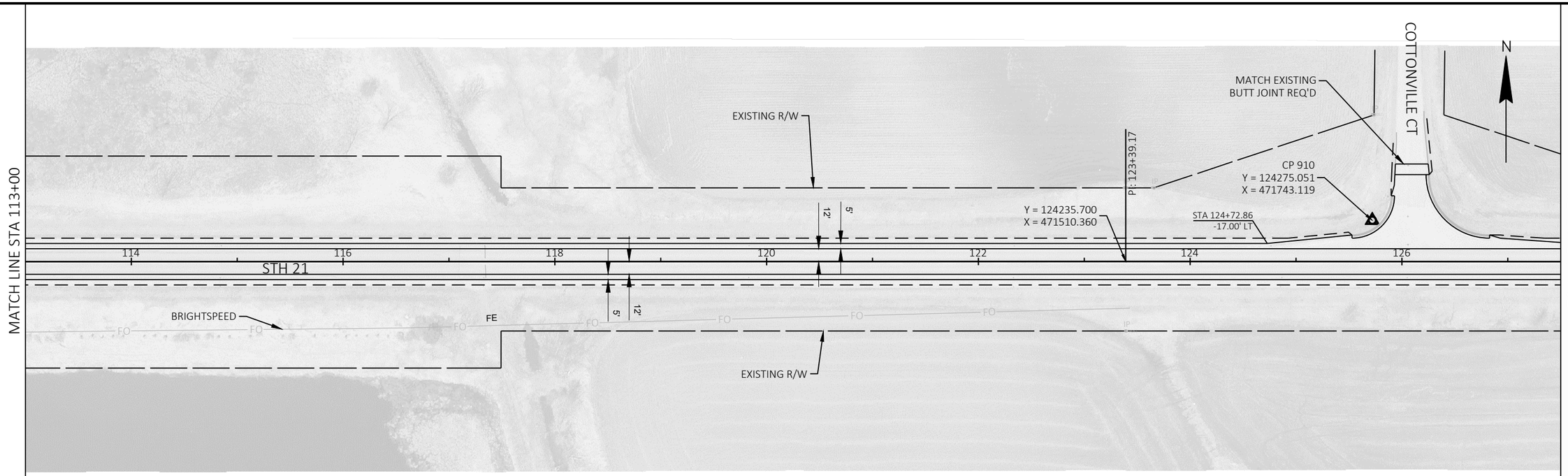
STA 83+08 - STA 85+06
83 LF REMOVING GUARDRAIL
100 LF MGS GUARDRAIL 3
39.4 LF MGS THRIE BEAM TRANSITION
1 - MGS GUARDRAIL TERMINAL EAT

STA 85+29 - STA 87+27
70 LF REMOVING GUARDRAIL
53 LF MGS GUARDRAIL 3
39.4 LF MGS THRIE BEAM TRANSITION
13 LF MGS GUARDRAIL SHORT RADIUS (R=8')
1 - MGS GUARDRAIL SHORT RADIUS TERMINAL

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	PLAN DETAILS	SHEET 34	E

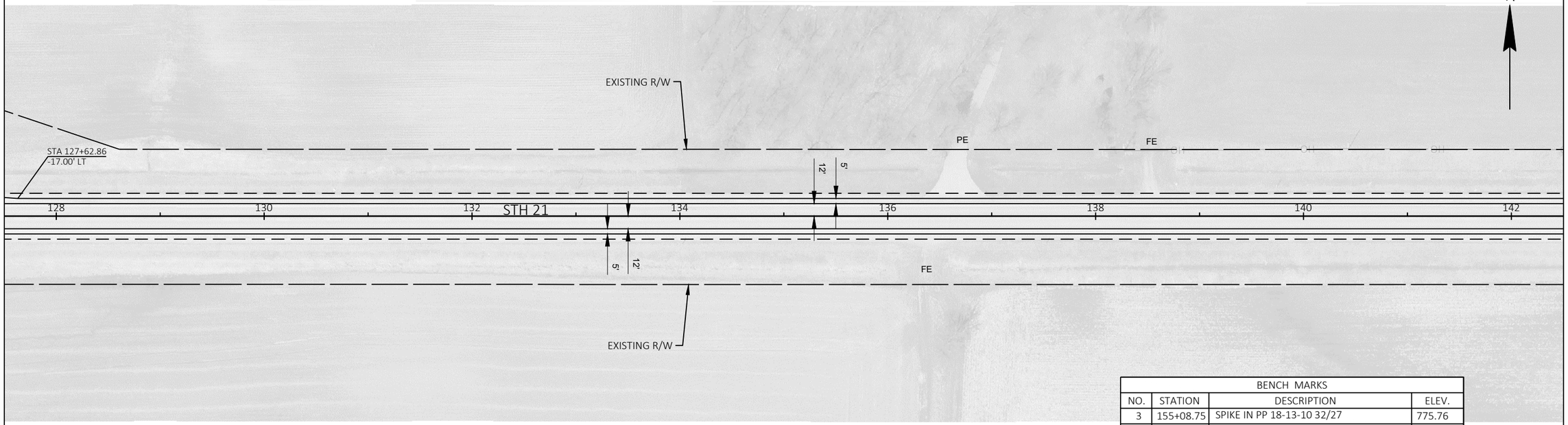
FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 021203-pd
PLOT DATE : 3/4/2024 9:28 AM
PLOT BY : DEGNER, MARK
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44



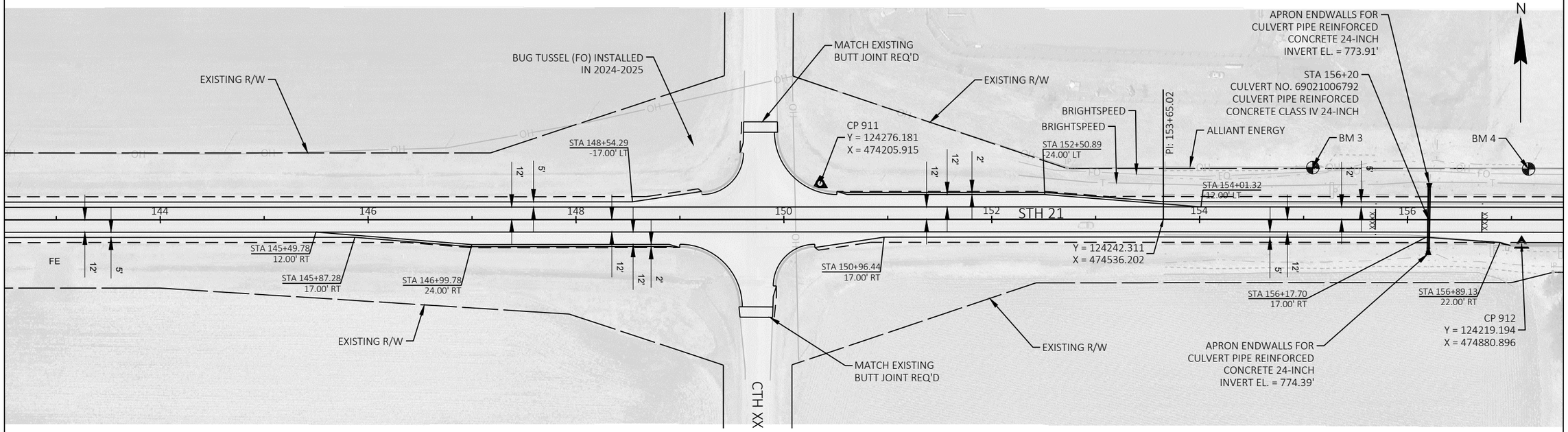


PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	PLAN DETAILS	SHEET 35	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 021204-pd
PLOT DATE : 3/4/2024 9:29 AM
PLOT BY : DEGNER, MARK
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44



BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
3	155+08.75	SPIKE IN PP 18-13-10 32/27	775.76
4	157+16.40	SPIKE IN PP 18-13-10 34/27	773.60



PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	PLAN DETAILS	SHEET 36	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 021205-pd
PLOT DATE : 3/4/2024 9:29 AM PLOT BY : DEGNER, MARK PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

2

MATCH LINE 157+50

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
5	166+97.86	SPIKE IN PP 18-13-10 44/27	779.53
6	171+77.00	SPIKE IN PP 18-13-10 48/27	775.72

ALLIANT ENERGY
BRIGHTSPEED
BRIGHTSPEED
PE
STA 160+17.35
-17.00' LT
STA 160+88.78
-22.00' LT
EXISTING R/W
PI: 163+01.59
FE
Y = 124243.220
X = 475472.770
CP 922
Y = 124276.336
X = 475947.321
BM 5
ALLIANT ENERGY
PE
STA 172+15.08
-22.00' LT
CP 928
Y = 124270.492
X = 476348.300
BM 6
FE
12'
10'
158
160
162
164
STH 21
166
168
170
172
PE
STA 160+11.70
22.00' RT
STA 160+87.94
22.00' RT
STA 165+64.72
27.70' RT
FE
PE
PE
12'
12'
10'
STA 157+50
12.00' RT
EXISTING R/W
STA 166+54.78
34.00' RT
STA 167+00
24.00' RT
SEE STORM SEWER
SHEET

MATCH LINE 172+50

MATCH LINE 172+50

PI: 176+19.21
EXISTING R/W
STA 180+17.95
-17.00' LT
STA 180+89.38
-22.00' LT
PE
PE
FE
STA 186+08.77
-22.00' LT
STA 186+80.20
-17.00' LT
PE
STA 172+86.51
-17.00' LT
Y = 124237.710
X = 476790.380
12'
5'
174
176
178
STH 21
180
182
184
186
STA 173+17.55
29.00' RT
5'
12'
12'
PE
FE
PE
PE
STA 180+16.67
29.00' RT
STA 180+88.10
34.00' RT
STA 186+10
34.00' RT
STA 186+81.43
29.00' RT
EXISTING R/W

MATCH LINE 187+50

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	PLAN DETAILS	SHEET 37	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 021206-pd
PLOT DATE : 3/4/2024 9:29 AM
PLOT BY : DEGNER, MARK
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

MATCH LINE 187+50

EXISTING R/W

STA 193+71.65
-17.00' LT

STA 194+43.08
-22.00' LT

STA 199+57.47
-22.00' LT

STA 200+28.90
-17.00' LT

188 190 192 194 196 STH 21 198 200 202

STA 193+68.57
29.00' RT

STA 194+40
34.00' RT

STA 200+31.43
29.00' RT

STA 199+60
34.00' RT

EXISTING R/W

PE PE PE PE PE FE

12' 12' 5' 5'

N

MATCH LINE 202+50

PI: 203+11.27

Y = 124227.110
X = 479482.420

EXISTING R/W

204 206 208 STH 21 210 212 214 216

STA 215+00.09
29.00' RT

EXISTING R/W

JUNCTION LN

PE PE PE FE FE

12' 12' 5' 5'

N

MATCH LINE 217+50

2

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	PLAN DETAILS	SHEET 38	E

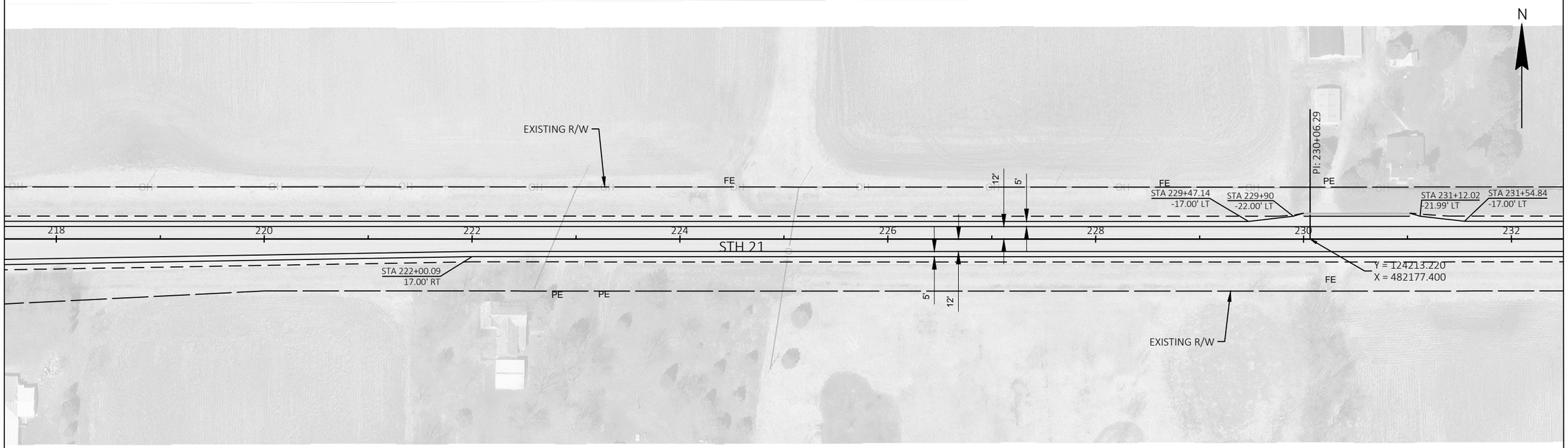
FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 021207-pd

PLOT DATE : 3/4/2024 9:29 AM PLOT BY : DEGNER, MARK PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

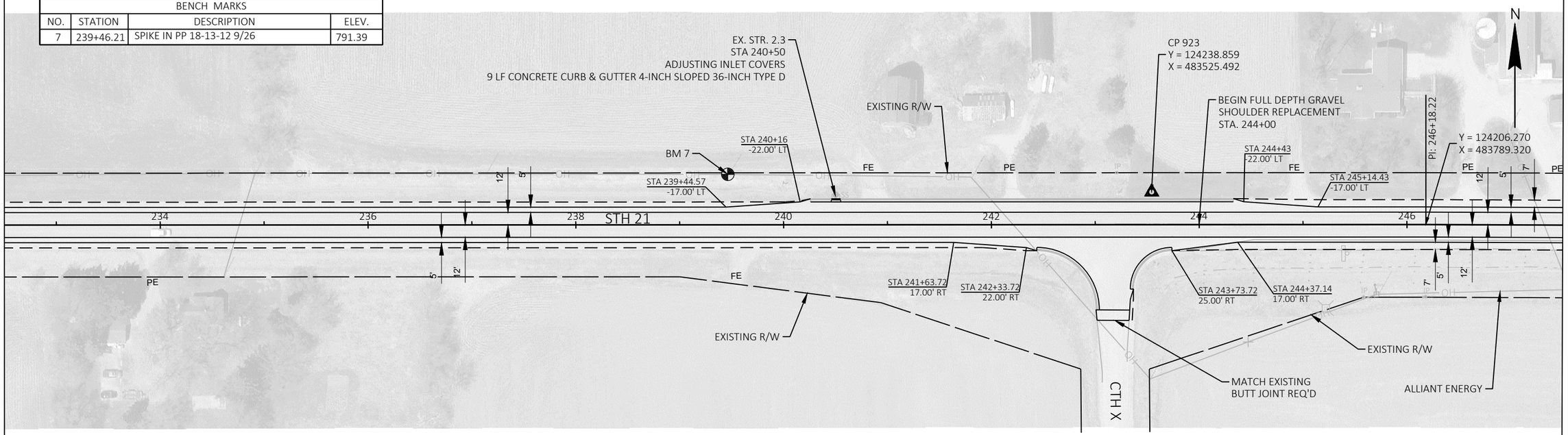
2

MATCH LINE 217+50



MATCH LINE 232+50

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
7	239+46.21	SPIKE IN PP 18-13-12 9/26	791.39

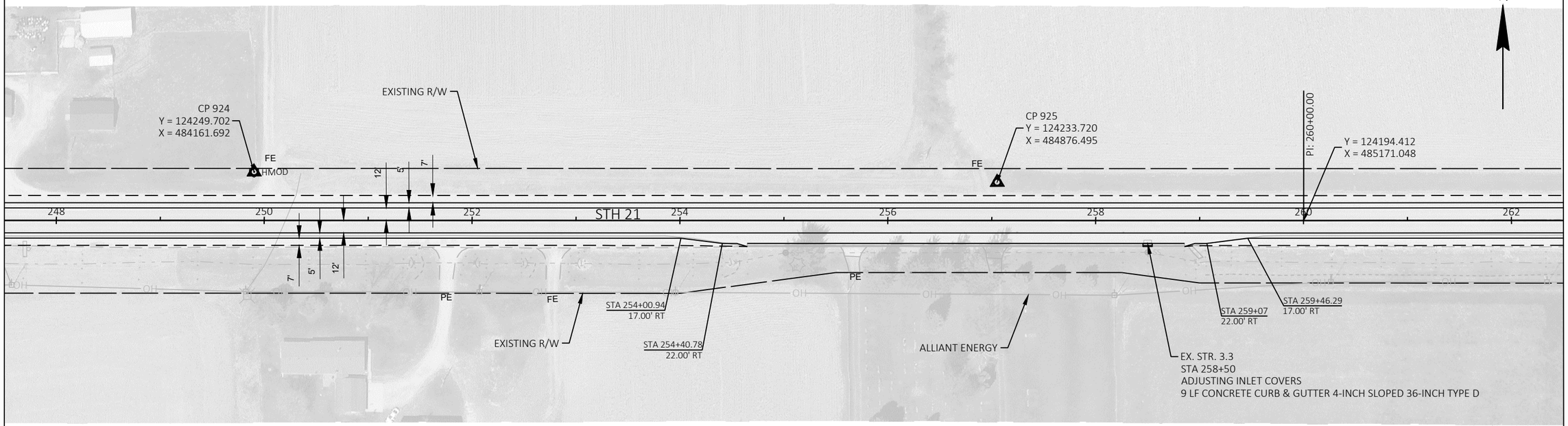


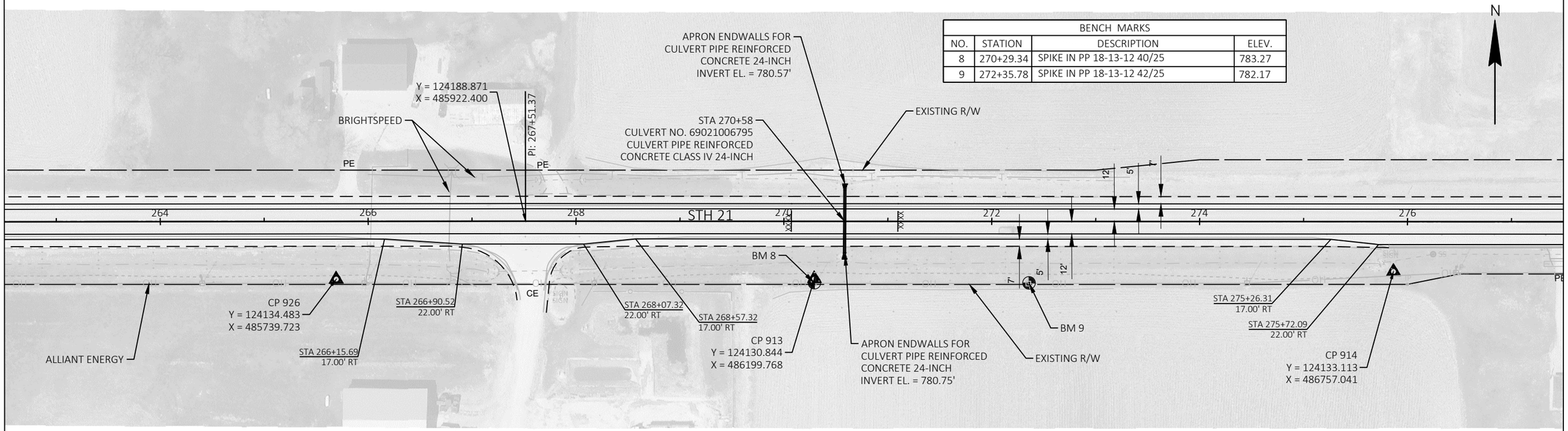
MATCH LINE 247+50

2

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	PLAN DETAILS	SHEET 39	E

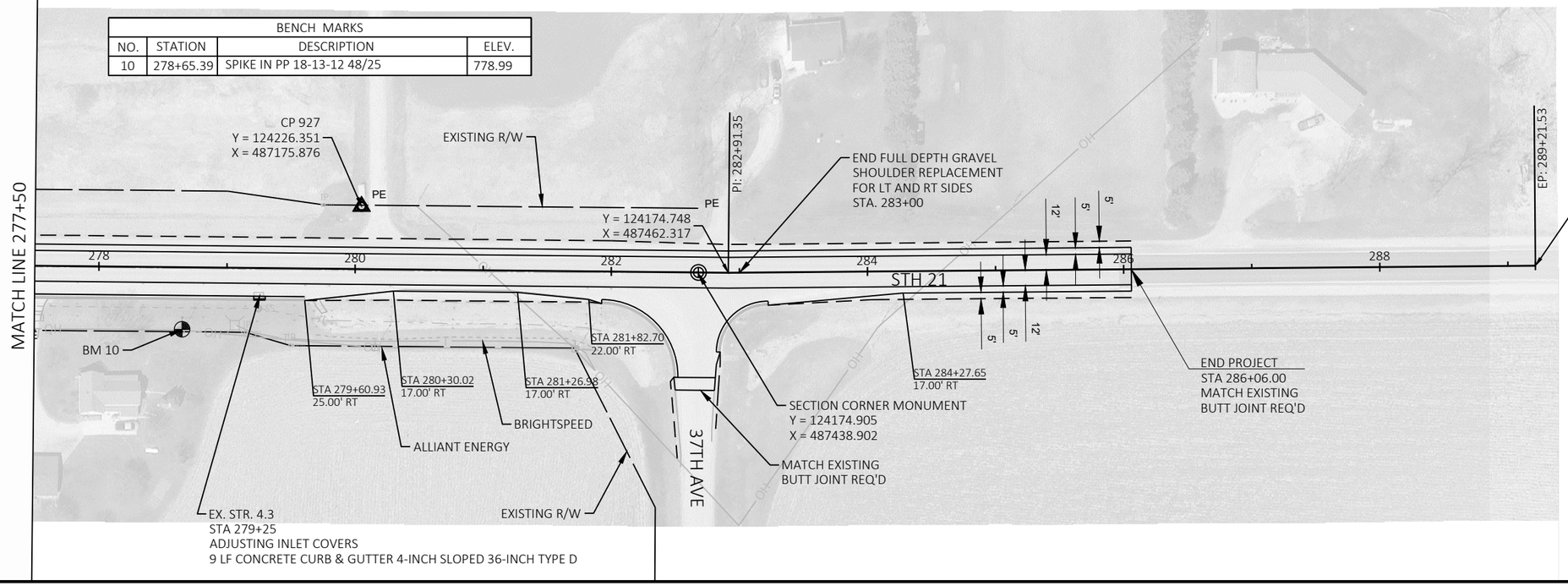
FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 021208-pd
PLOT DATE : 3/4/2024 9:30 AM PLOT BY : DEGNER, MARK PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44





BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
8	270+29.34	SPIKE IN PP 18-13-12 40/25	783.27
9	272+35.78	SPIKE IN PP 18-13-12 42/25	782.17

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
10	278+65.39	SPIKE IN PP 18-13-12 48/25	778.99



THIS FRAME INTENTIONALLY LEFT BLANK

2

LEGEND

- SILT FENCE
- ROCK BAGS
- CULVERT PIPE CHECK
- SURFACE WATER FLOW

NOTE:
EROSION MAT URBAN CLASS I TYPE B
TO BE USED OVER SALVAGED TOPSOIL
IN ALL DISTURBED AREAS.

BIODEGRADABLE MAT REQUIRED NEAR
WATER AND WETLANDS.

N

2

PERMANENT LIMITED HIGHWAY EASEMENT

COFFERDAMS OR OTHER WATER DIVERSION TECHNIQUES,
PAID FOR AS PART OF SPV.0060.01 TEMPORARY WATER DIVERSION - C-69-0019

WETLAND BOUNDARY

ALLIANT ENERGY

SLOPE INTERCEPT (TEMPORARY)

WETLAND
BOUNDARY

EXISTING R/W

C-69-0019

WETLAND BOUNDARY

126 A 128 A STH 21 130 A 132 A 134 A 136 A 138 A 140 A

EXISTING R/W

BRIGHTSPEED

WETLAND BOUNDARY

SLOPE INTERCEPT (TEMPORARY)

TLE

POTENTIAL FARM FIELD TOPSOIL
STOCKPILE LOCATION WITH SILT
FENCE

POTENTIAL FARM FIELD TOPSOIL
STOCKPILE LOCATION WITH SILT FENCE

PERMANENT LIMITED HIGHWAY EASEMENT

PROPERTY LINE

PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	EROSION CONTROL - TEMPORARY GRADING CONDITION	SHEET 42	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-022001-EC_TEMP.DWG
LAYOUT NAME - 01
PLOT DATE : 7/23/2024 11:06 AM
PLOT BY : CZECH, ANDREW
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

2

2

LEGEND

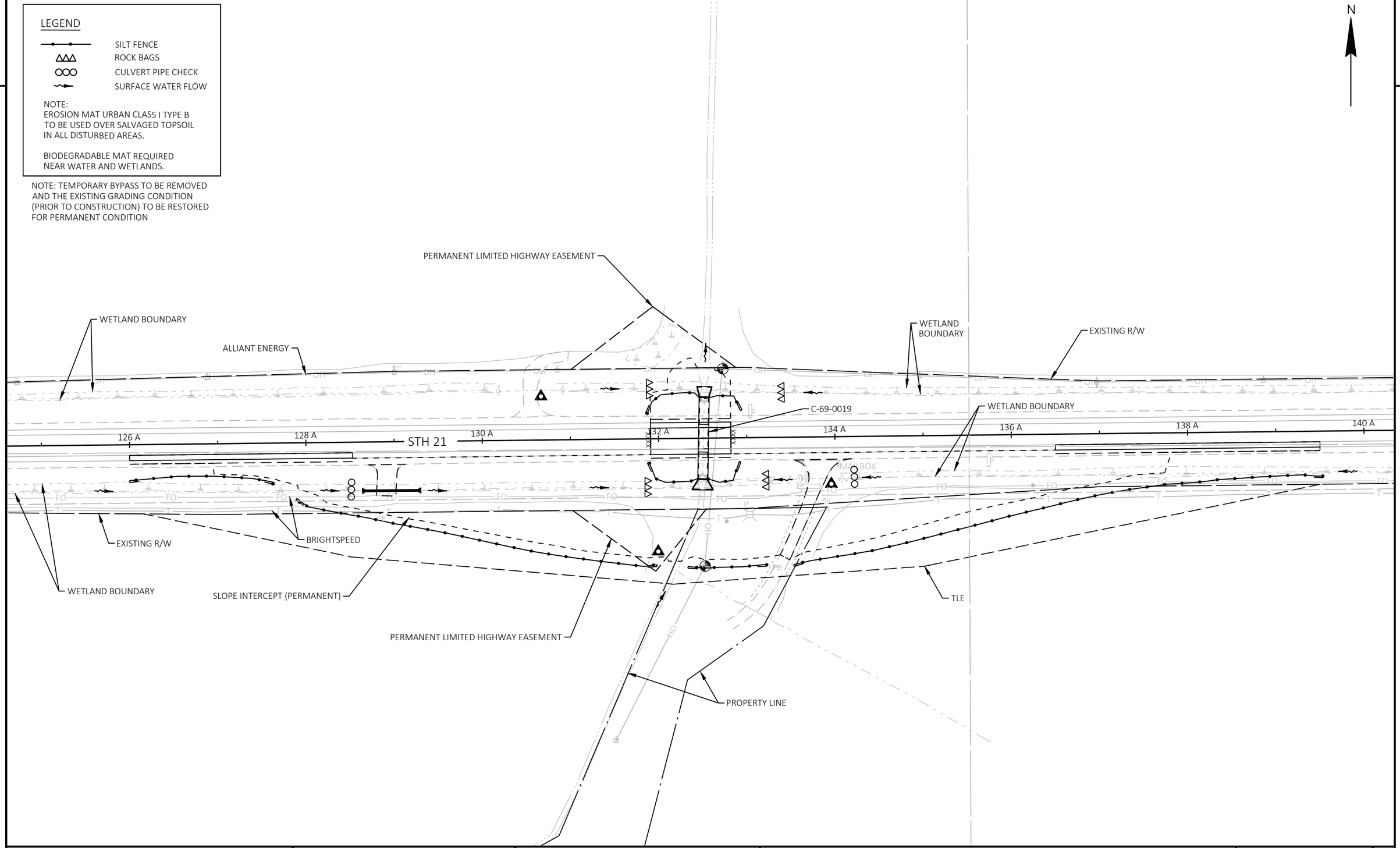
- SILT FENCE
- ROCK BAGS
- CULVERT PIPE CHECK
- SURFACE WATER FLOW

NOTE:
EROSION MAT URBAN CLASS I TYPE B
TO BE USED OVER SALVAGED TOPSOIL
IN ALL DISTURBED AREAS.

BIODEGRADABLE MAT REQUIRED
NEAR WATER AND WETLANDS.

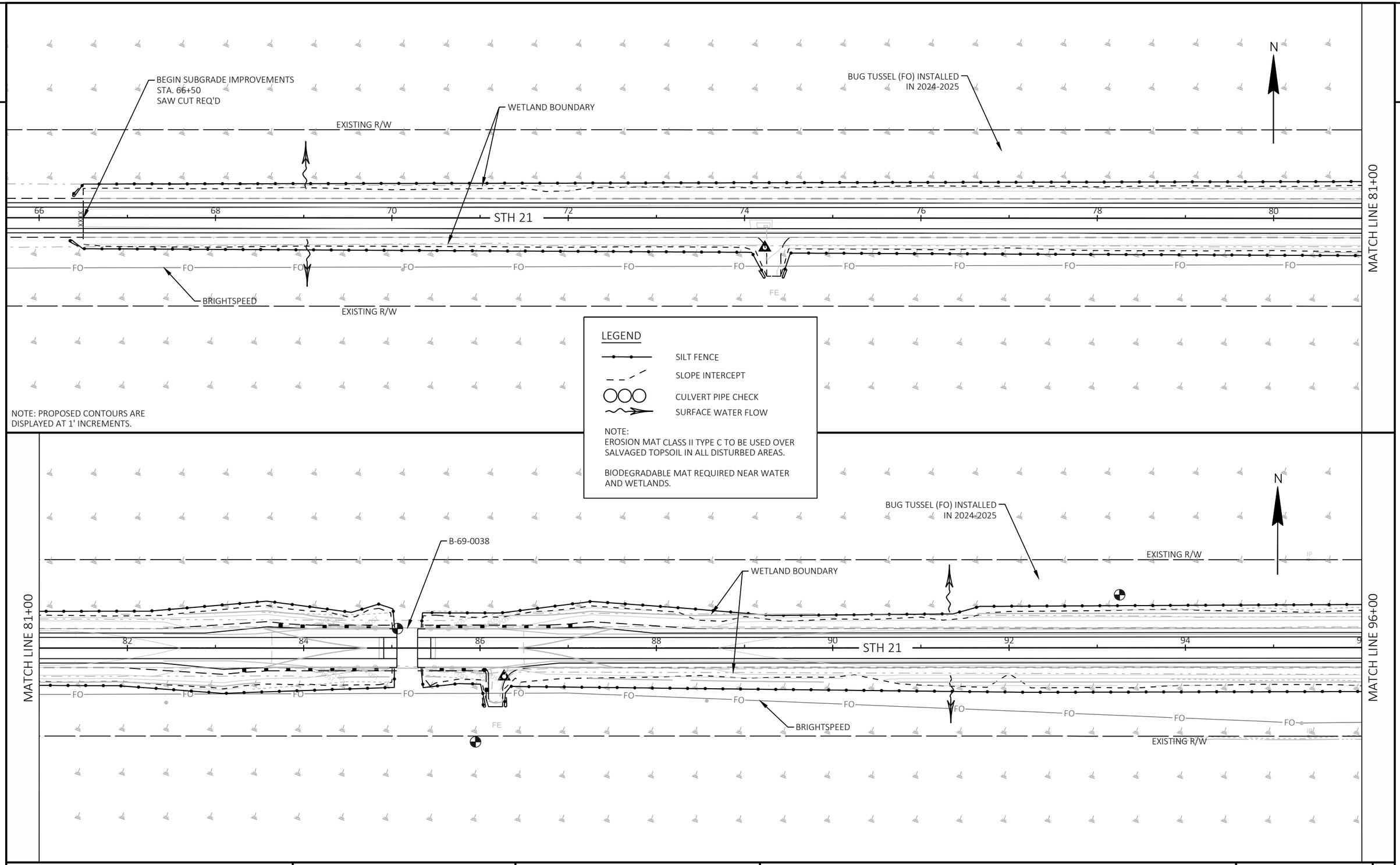
NOTE: TEMPORARY BYPASS TO BE REMOVED AND THE EXISTING GRADING CONDITION (PRIOR TO CONSTRUCTION) TO BE RESTORED FOR PERMANENT CONDITION

N

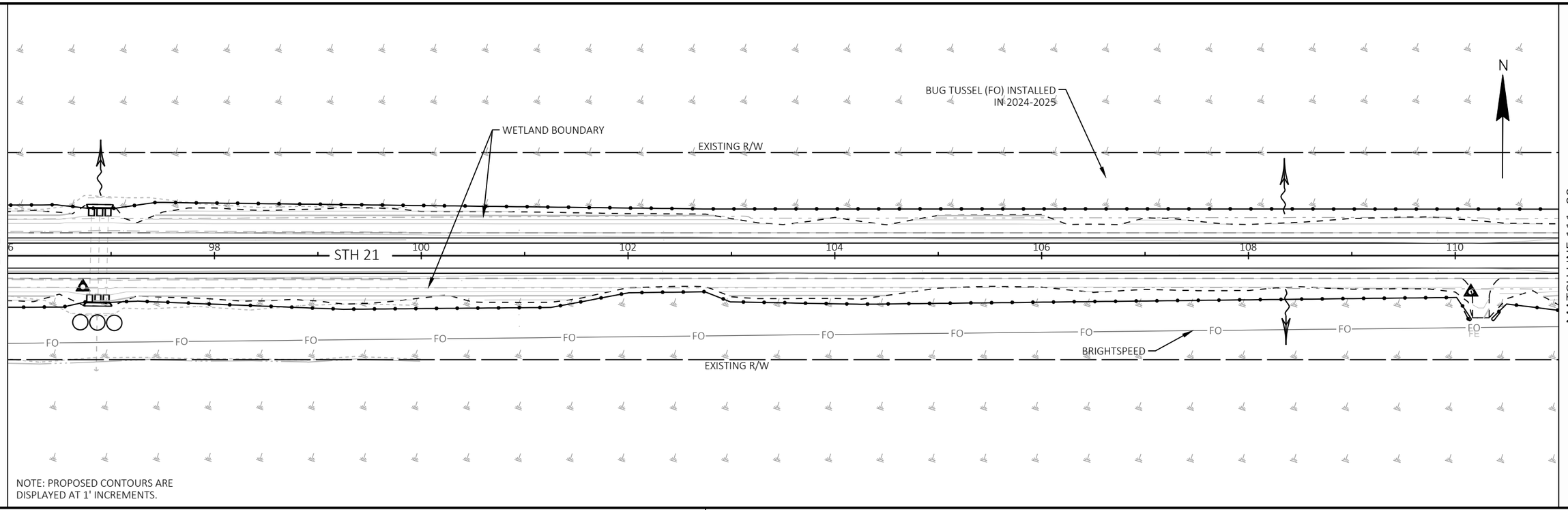


PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	EROSION CONTROL - PERMANENT GRADING CONDITION	SHEET 43	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-022002-EC_PERM.DWG
LAYOUT NAME - 01
PLOT DATE : 7/23/2024 11:06 AM
PLOT BY : CZECH, ANDREW
PLOT NAME :
PLOT SCALE : 1 IN:100 FT



PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	EROSION CONTROL - SUBGRADE IMPROVEMENT AREA	SHEET 44	E



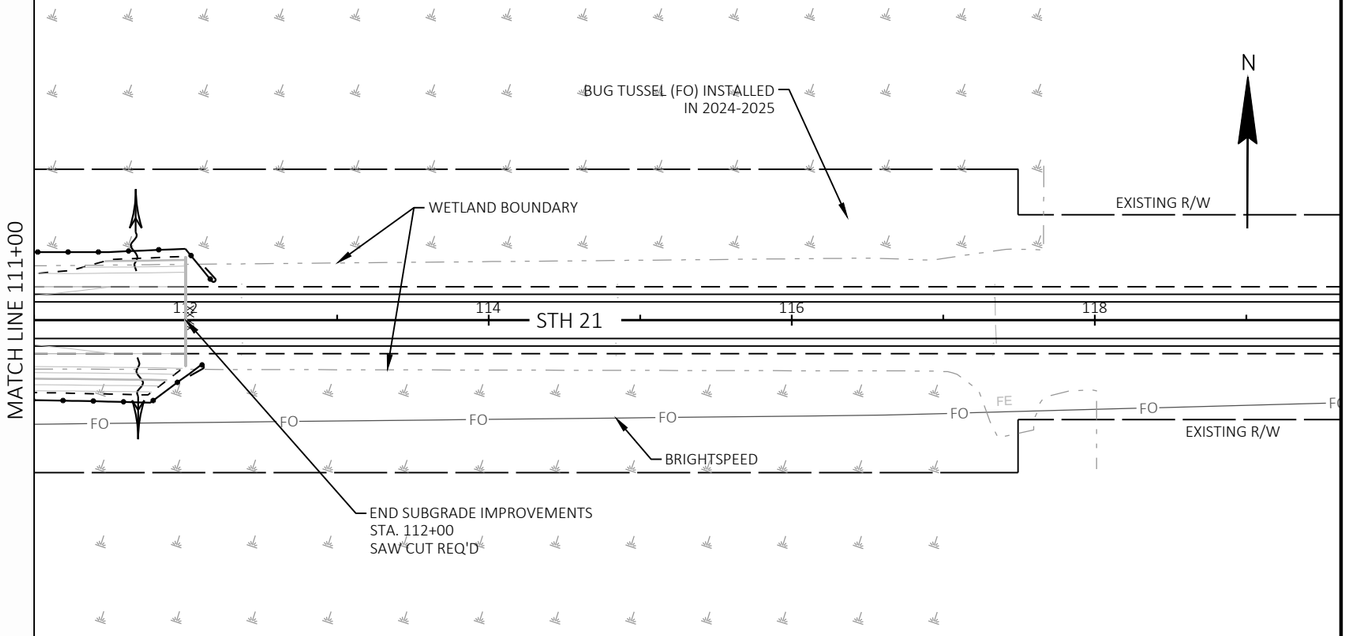
NOTE: PROPOSED CONTOURS ARE DISPLAYED AT 1' INCREMENTS.

LEGEND

- SILT FENCE
- SLOPE INTERCEPT
- CULVERT PIPE CHECK
- SURFACE WATER FLOW

NOTE:
EROSION MAT CLASS II TYPE C TO BE USED OVER SALVAGED TOPSOIL IN ALL DISTURBED AREAS.

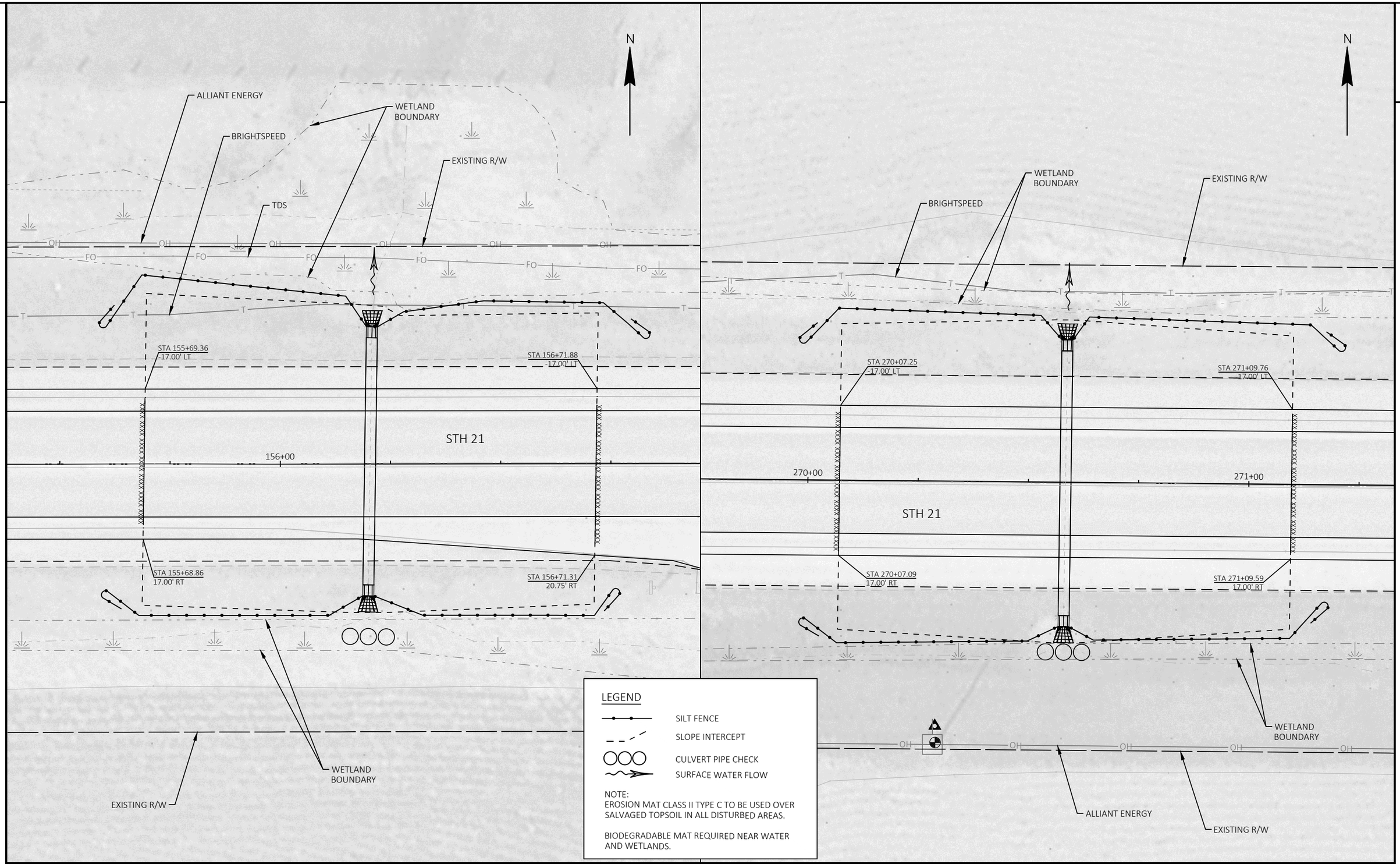
BIODEGRADABLE MAT REQUIRED NEAR WATER AND WETLANDS.



PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	EROSION CONTROL - SUBGRADE IMPROVEMENT AREA	SHEET 45	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022002-ec
PLOT DATE : 7/23/2024 11:28 AM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

2



2

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	EROSION CONTROL - CULVERT REPLACEMENTS	SHEET 46	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\022002-EC.DWG
LAYOUT NAME - Plan 1 IN 20 FT
PLOT DATE : 7/23/2024 11:15 AM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET 42

2

1 REMOVING INLETS
1 SALVAGED INLET COVERS
1 INLETS 2X3-FT
104 LF REMOVING CURB & GUTTER
104 LF CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D

ALLIANT ENERGY

1.3 STA 169+00, 24.1' LT
INLETS 2x3-HM

BRIGHTSPEED

N

STA 168+48.32, -22.00' LT

STA 169+52.33, -22.00' LT

STH 21

STA 169+52.14, 0.00'

168+00

169+00

170+00

STA 168+48.14, 0.00'

REMOVING STORM SEWER REQUIRED

STA 169+01
SSPRC CLASS IV 12-INCH REQUIRED
INVERT EL. = 773.30 (N)
INVERT EL. = 773.12 (S)

STA 168+99
SSPRC CLASS III 15-INCH REQUIRED
INVERT EL. = 773.02 (N)
INVERT EL. = 773.00 (S)

STA 169+51.86, 34.00' RT

STA 168+47.86, 34.00' RT

1.4 STA 169+00, 35.7' RT
INLETS 2x3-HM

REMOVING STORM SEWER REQUIRED

1 REMOVING INLETS
1 SALVAGED INLET COVERS
1 INLETS 2X3-FT
104 LF REMOVING CURB & GUTTER
104 LF CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D

EX. STR. 1.5
STA 169+00
LOWER PIPE INVERT TO EXISTING MANHOLE
N INV ELEV: 773.30' (EXISTING)
N INV ELEV: 773.00' (PROPOSED)
W INV ELEV: 773.00' (EXISTING)
E INV ELEV: 773.00' (EXISTING)
RECONSTRUCTING MANHOLES REQUIRED
TO ADJUST FINAL N INV ELEVATION
FROM 773.30 TO 773.00

780

EXISTING GROUND

1.3

1.4

EXISTING MH
STRUCTURE 1.5

775

SSPRC CLASS III 15-INCH @ 0.29%

SSPRC CLASS IV 12-INCH @ 0.30%

CONNECT TO EX. STR. 1.5

773.30

773.12

773.00

773.02

59.81' LENGTH

770

765

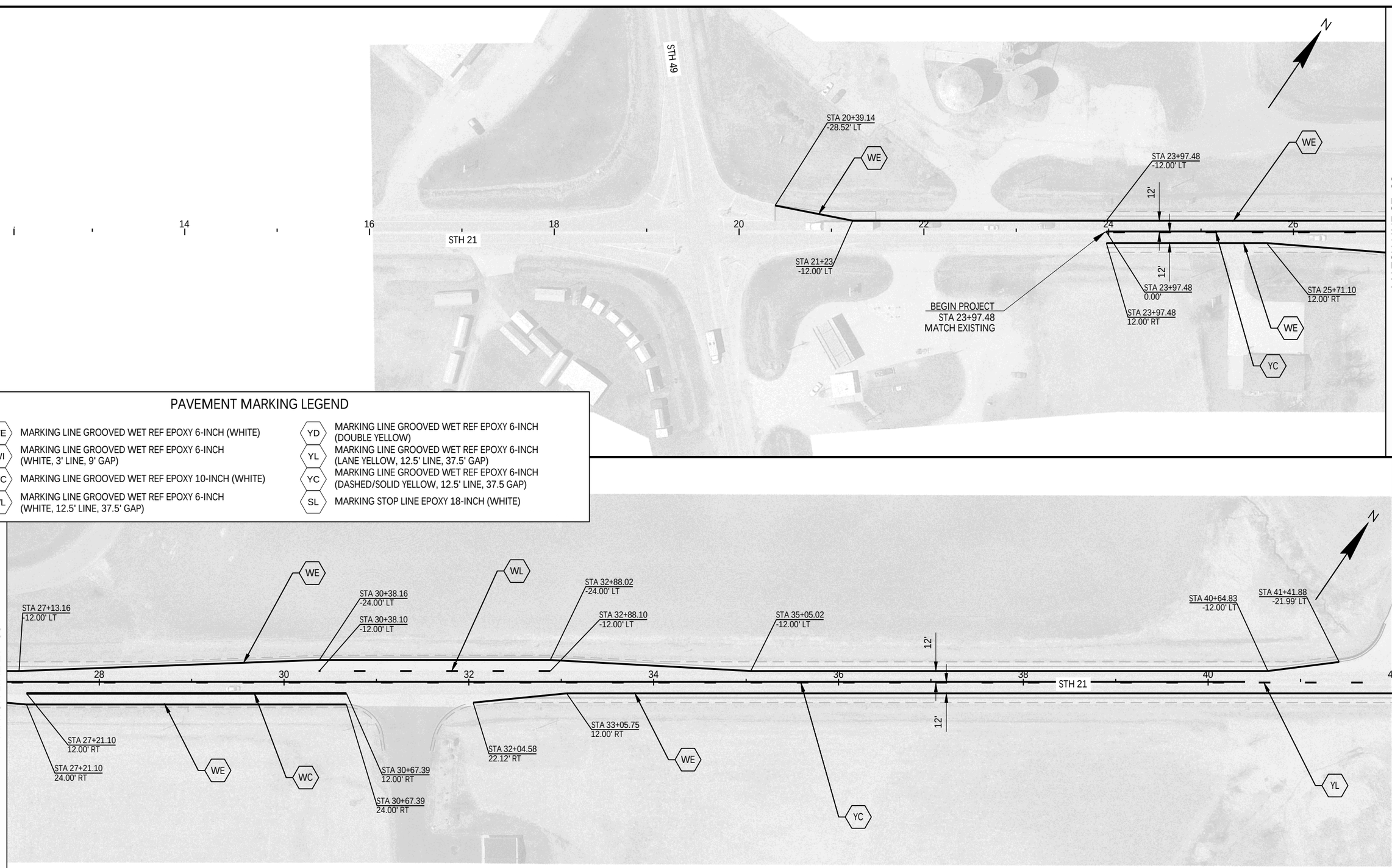
2

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	STORM SEWER	SHEET 47	E

2

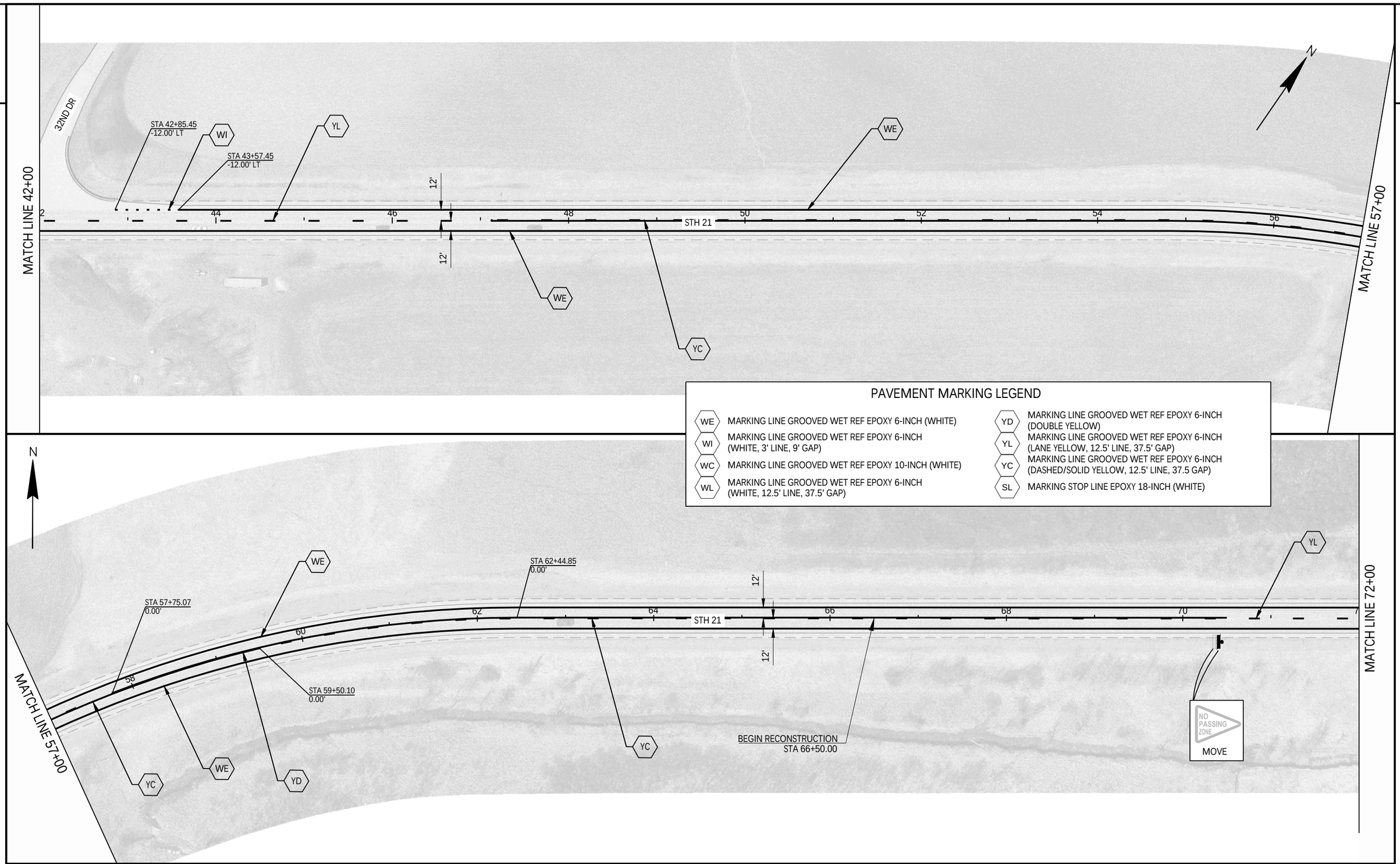
PAVEMENT MARKING LEGEND

- WE — MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
- WI — MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE, 3' LINE, 9' GAP)
- WC — MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)
- WL — MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE, 12.5' LINE, 37.5' GAP)
- YD — MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOUBLE YELLOW)
- YL — MARKING LINE GROOVED WET REF EPOXY 6-INCH (LANE YELLOW, 12.5' LINE, 37.5' GAP)
- YC — MARKING LINE GROOVED WET REF EPOXY 6-INCH (DASHED/SOLID YELLOW, 12.5' LINE, 37.5 GAP)
- SL — MARKING STOP LINE EPOXY 18-INCH (WHITE)



PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	PERMANENT SIGNING & PAVEMENT MARKING	SHEET 48	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\024501-PM.DWG
LAYOUT NAME - 01
PLOT DATE : 3/29/2024 10:41 AM
PLOT BY : CZECH, ANDREW
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

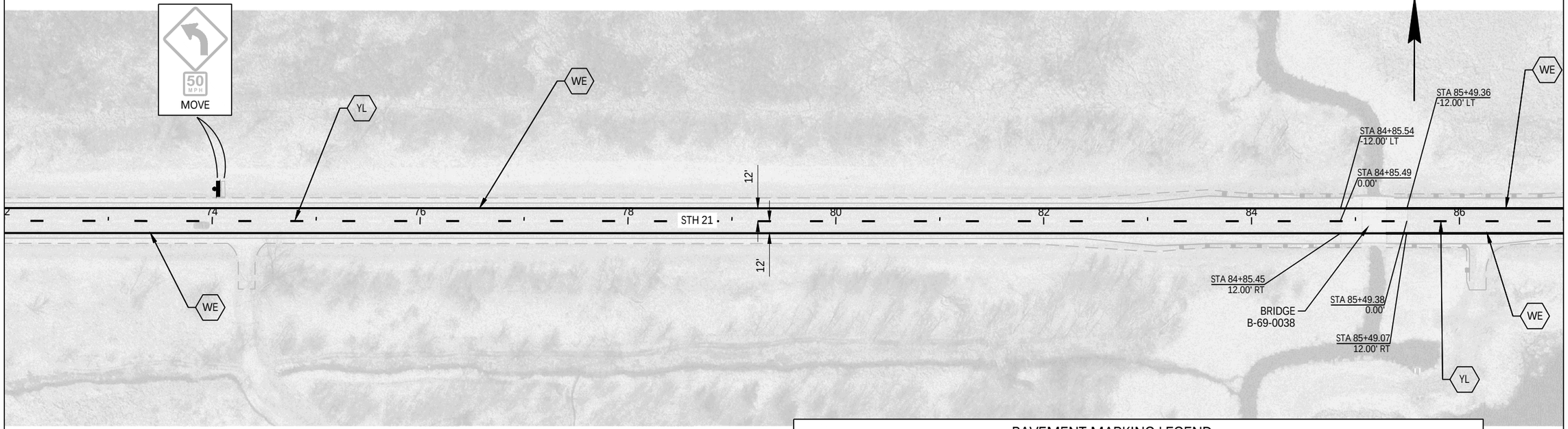


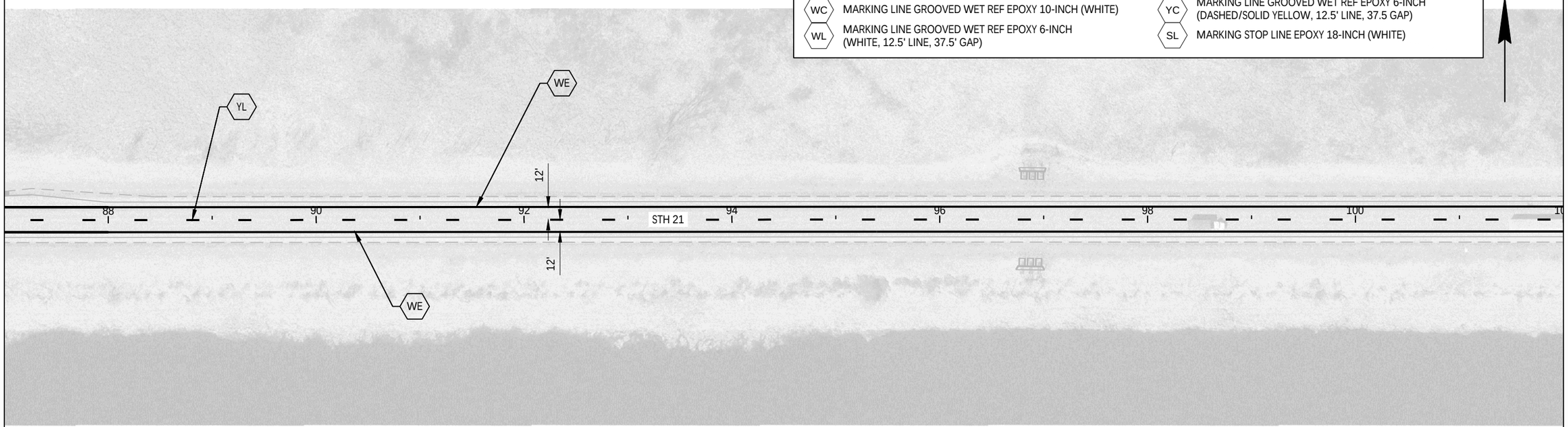
PAVEMENT MARKING LEGEND

WE	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)	YD	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOUBLE YELLOW)
WI	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE, 3' LINE, 9' GAP)	YL	MARKING LINE GROOVED WET REF EPOXY 6-INCH (LANE YELLOW, 12.5' LINE, 37.5' GAP)
WC	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)	YC	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DASHED/SOLID YELLOW, 12.5' LINE, 37.5 GAP)
WL	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE, 12.5' LINE, 37.5' GAP)	SL	MARKING STOP LINE EPOXY 18-INCH (WHITE)

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	PERMANENT SIGNING & PAVEMENT MARKING	SHEET 49	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\024501-PM.DWG
LAYOUT NAME - 02
PLOT DATE : 3/29/2024 10:41 AM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44



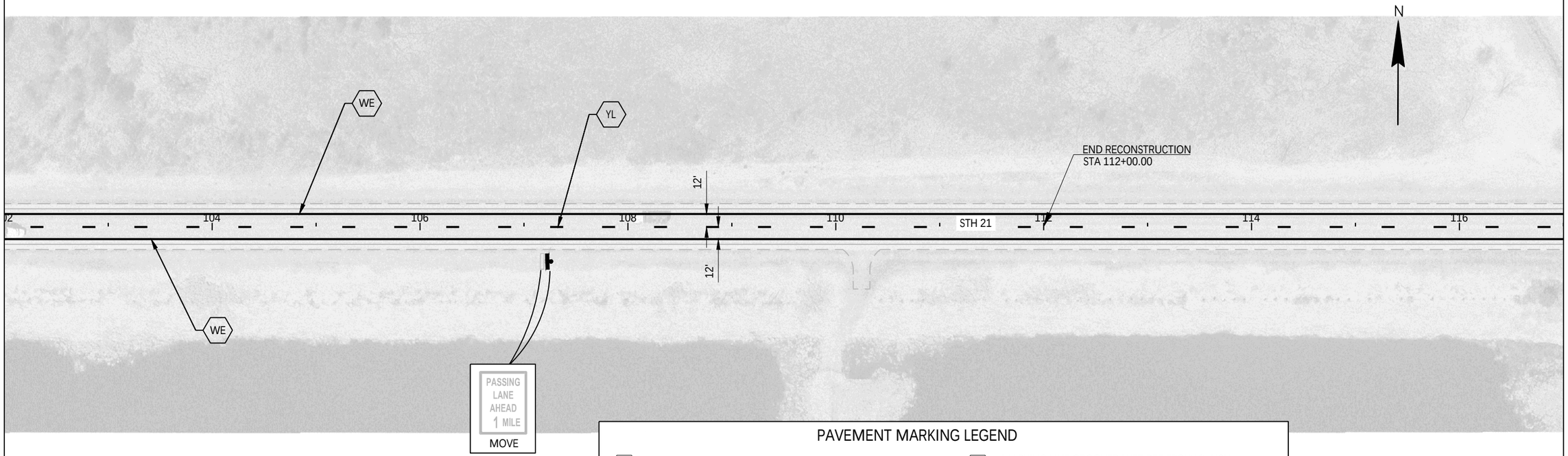


PAVEMENT MARKING LEGEND

WE	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
WI	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE, 3' LINE, 9' GAP)
WC	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)
WL	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE, 12.5' LINE, 37.5' GAP)
YD	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOUBLE YELLOW)
YL	MARKING LINE GROOVED WET REF EPOXY 6-INCH (LANE YELLOW, 12.5' LINE, 37.5' GAP)
YC	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DASHED/SOLID YELLOW, 12.5' LINE, 37.5 GAP)
SL	MARKING STOP LINE EPOXY 18-INCH (WHITE)

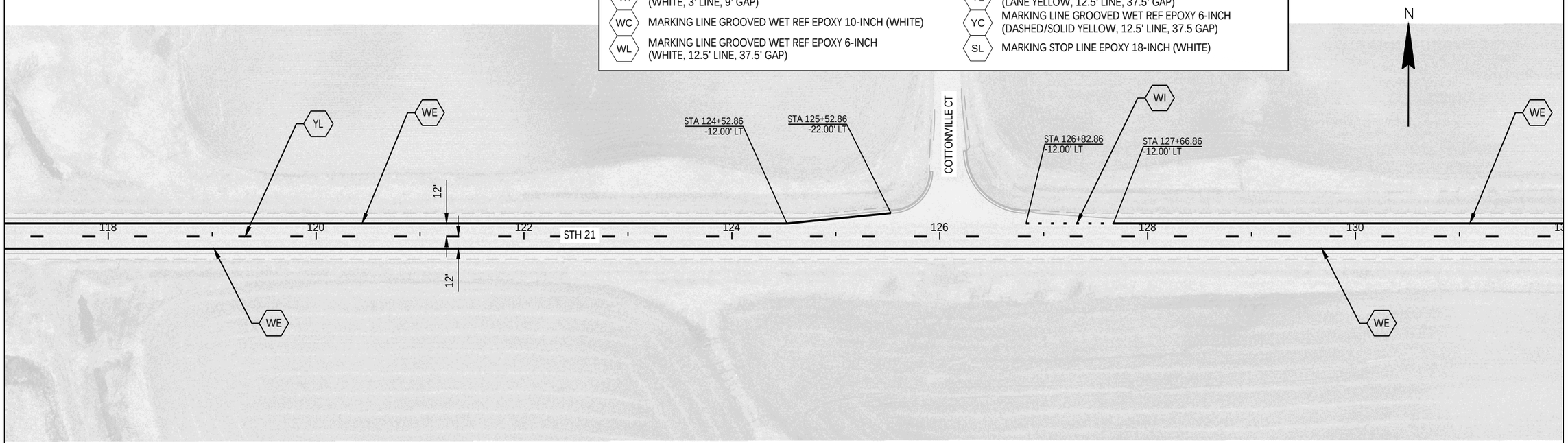
PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	PERMANENT SIGNING & PAVEMENT MARKING	SHEET 50 E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\024501-PM.DWG
LAYOUT NAME - 03
PLOT DATE : 3/29/2024 10:41 AM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

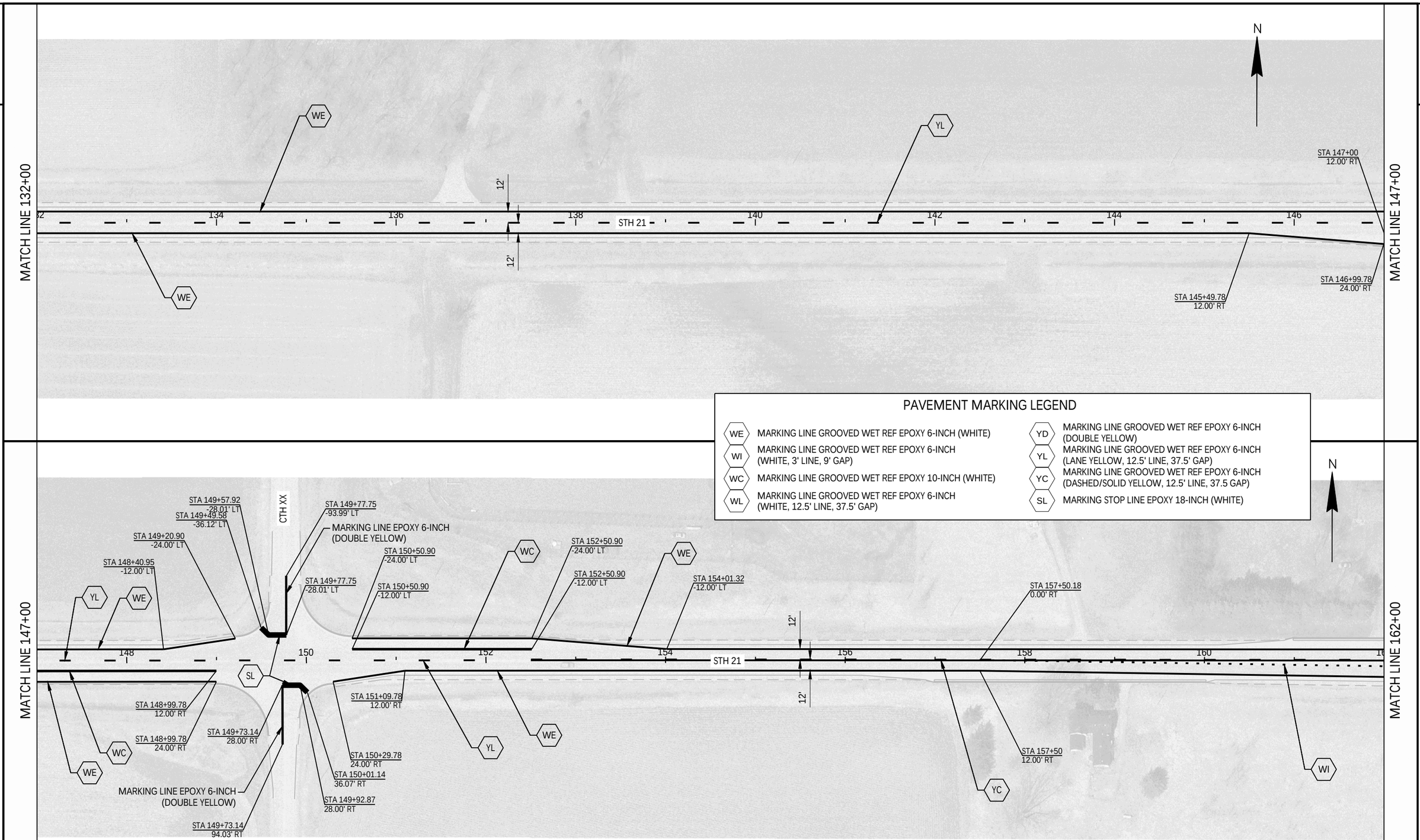


PAVEMENT MARKING LEGEND

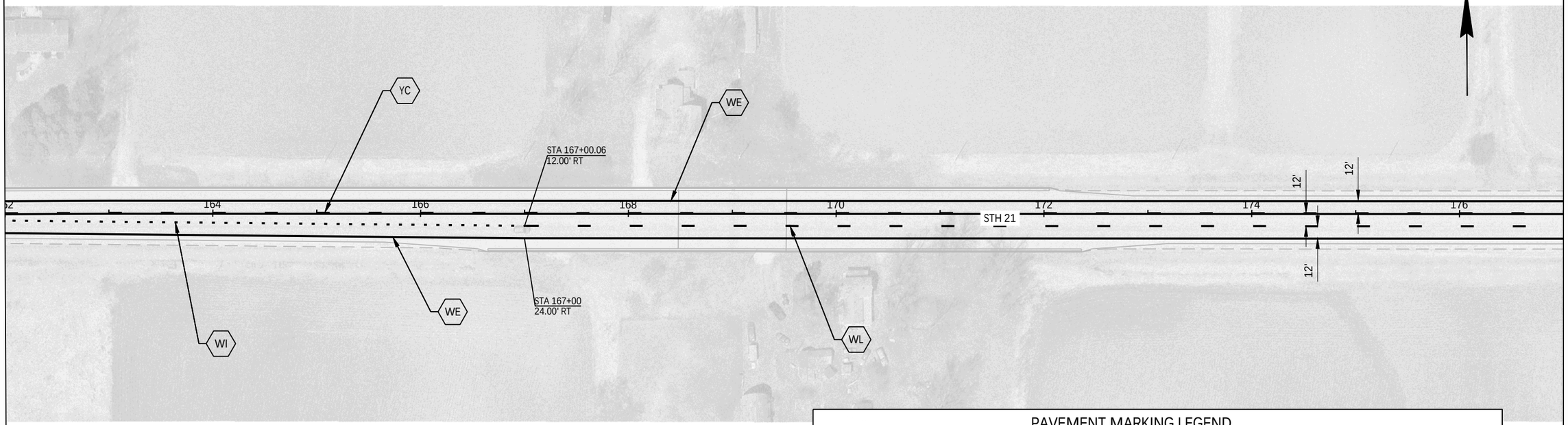
WE	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)	YD	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOUBLE YELLOW)
WI	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE, 3' LINE, 9' GAP)	YL	MARKING LINE GROOVED WET REF EPOXY 6-INCH (LANE YELLOW, 12.5' LINE, 37.5' GAP)
WC	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)	YC	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DASHED/SOLID YELLOW, 12.5' LINE, 37.5 GAP)
WL	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE, 12.5' LINE, 37.5' GAP)	SL	MARKING STOP LINE EPOXY 18-INCH (WHITE)



PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	PERMANENT SIGNING & PAVEMENT MARKING	SHEET 51	E

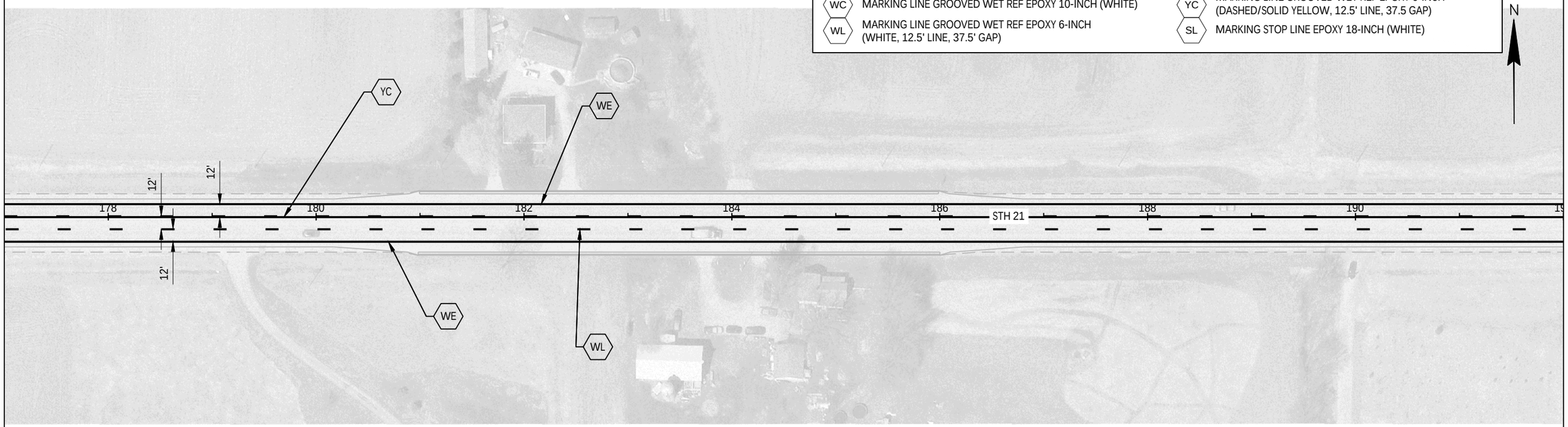


PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	PERMANENT SIGNING & PAVEMENT MARKING	SHEET 52	E



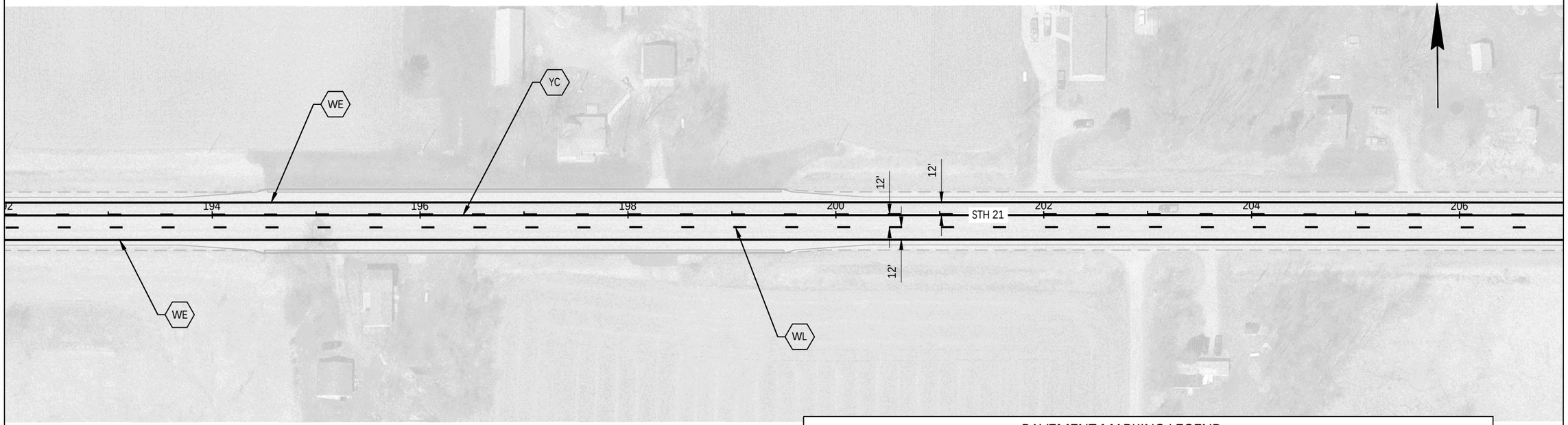
PAVEMENT MARKING LEGEND

WE	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)	YD	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOUBLE YELLOW)
WI	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE, 3' LINE, 9' GAP)	YL	MARKING LINE GROOVED WET REF EPOXY 6-INCH (LANE YELLOW, 12.5' LINE, 37.5' GAP)
WC	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)	YC	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DASHED/SOLID YELLOW, 12.5' LINE, 37.5 GAP)
WL	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE, 12.5' LINE, 37.5' GAP)	SL	MARKING STOP LINE EPOXY 18-INCH (WHITE)



PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	PERMANENT SIGNING & PAVEMENT MARKING	SHEET 53 E

2



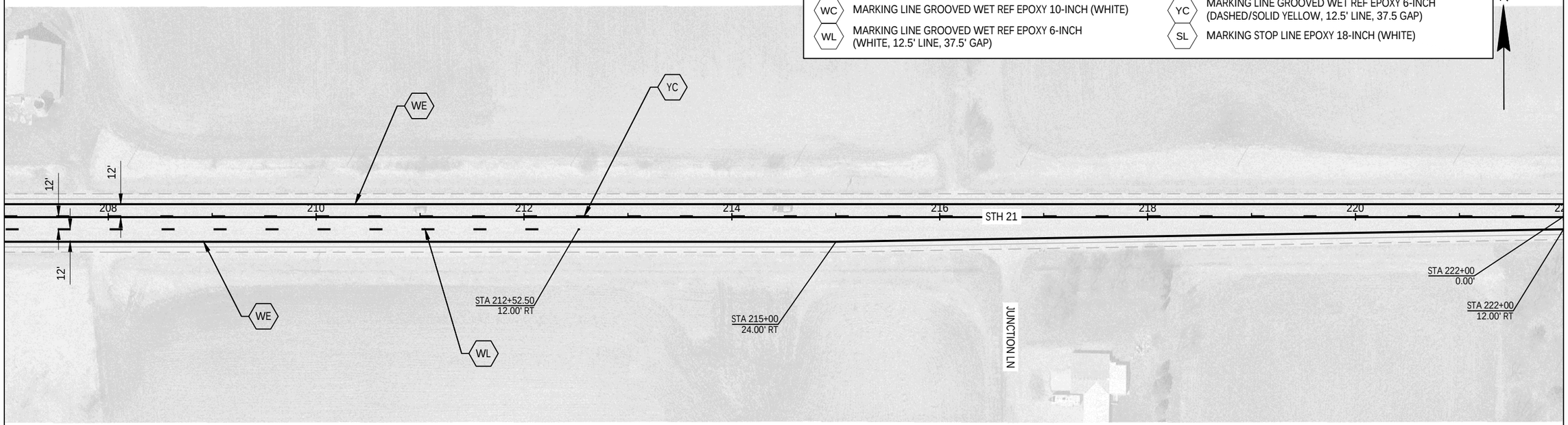
MATCH LINE 192+00

MATCH LINE 207+00

2

PAVEMENT MARKING LEGEND

WE	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)	YD	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOUBLE YELLOW)
WI	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE, 3' LINE, 9' GAP)	YL	MARKING LINE GROOVED WET REF EPOXY 6-INCH (LANE YELLOW, 12.5' LINE, 37.5' GAP)
WC	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)	YC	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DASHED/SOLID YELLOW, 12.5' LINE, 37.5 GAP)
WL	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE, 12.5' LINE, 37.5' GAP)	SL	MARKING STOP LINE EPOXY 18-INCH (WHITE)



MATCH LINE 207+00

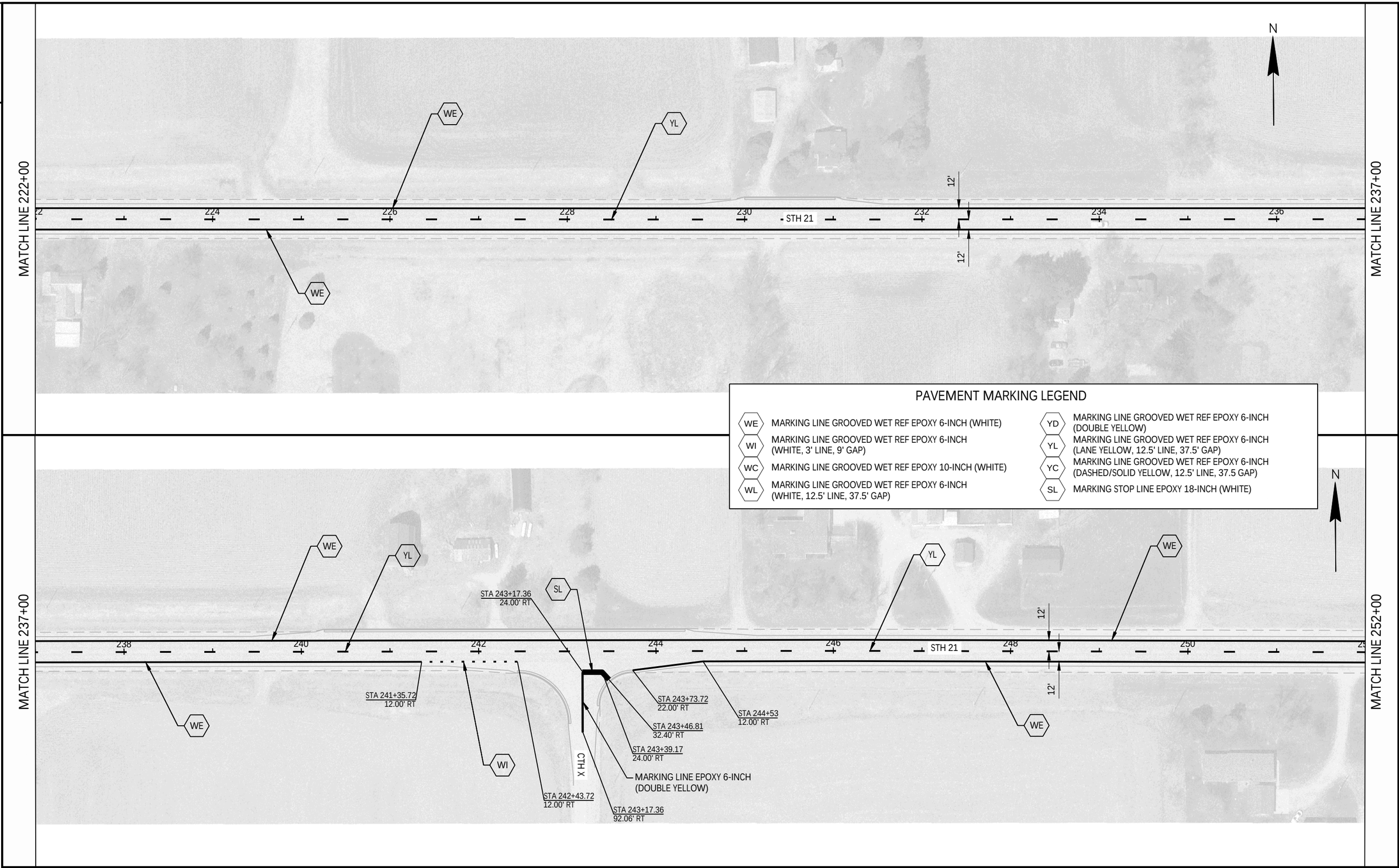
MATCH LINE 222+00

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	PERMANENT SIGNING & PAVEMENT MARKING	SHEET 54	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\024501-PM.DWG
LAYOUT NAME - 07

PLOT DATE : 3/29/2024 10:42 AM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:100 FT

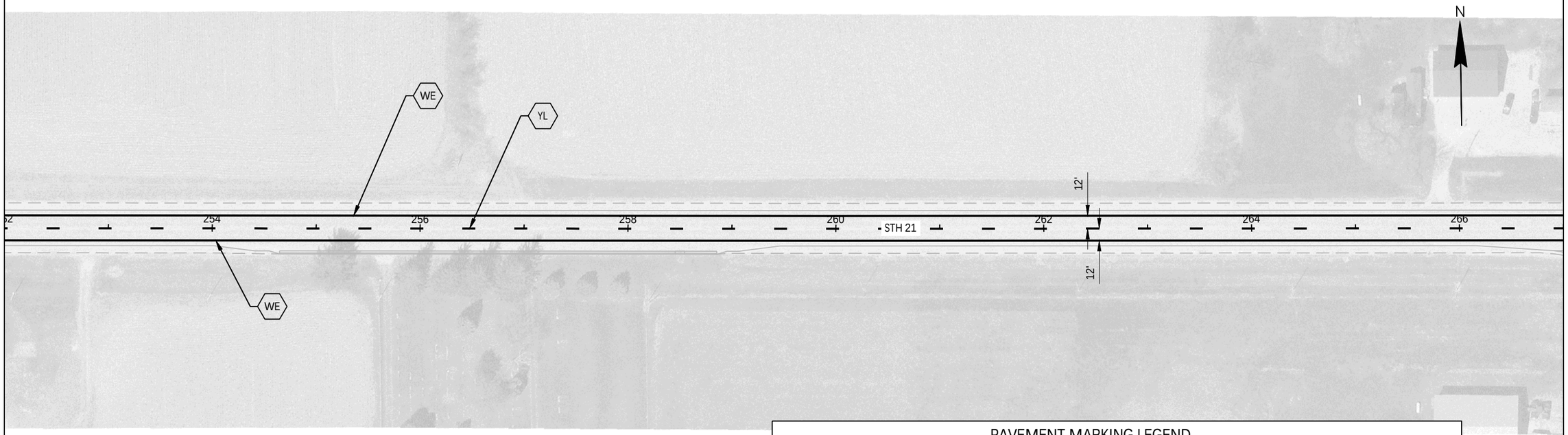
WISDOT/CADDS SHEET 44

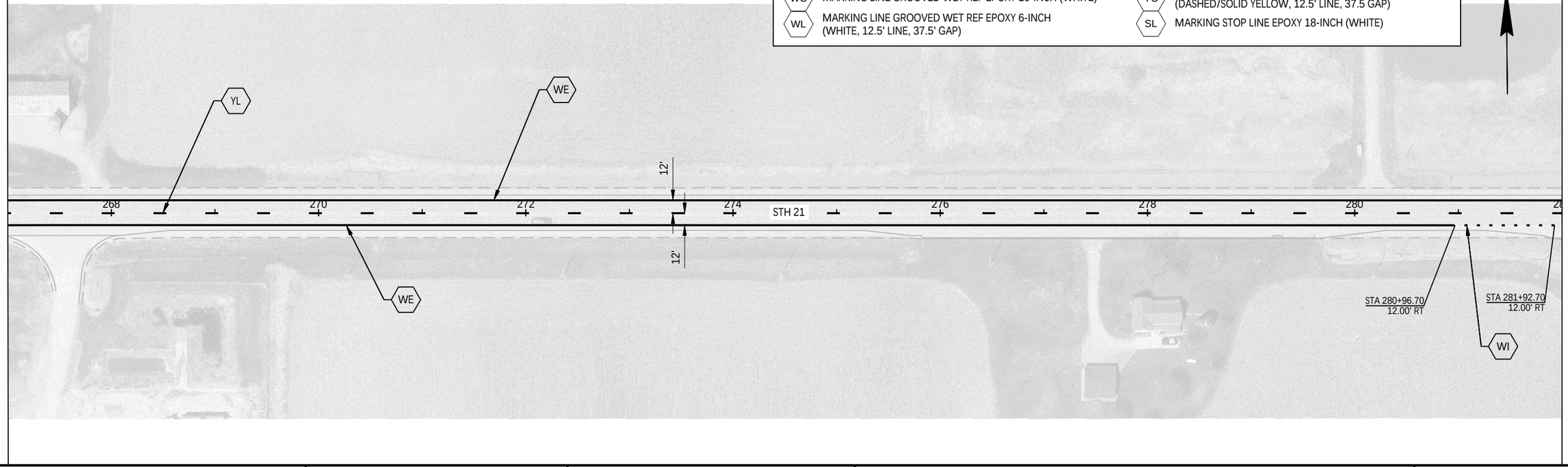


PAVEMENT MARKING LEGEND

WE	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
WI	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE, 3' LINE, 9' GAP)
WC	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)
WL	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE, 12.5' LINE, 37.5' GAP)
YD	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOUBLE YELLOW)
YL	MARKING LINE GROOVED WET REF EPOXY 6-INCH (LANE YELLOW, 12.5' LINE, 37.5' GAP)
YC	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DASHED/SOLID YELLOW, 12.5' LINE, 37.5 GAP)
SL	MARKING STOP LINE EPOXY 18-INCH (WHITE)

2





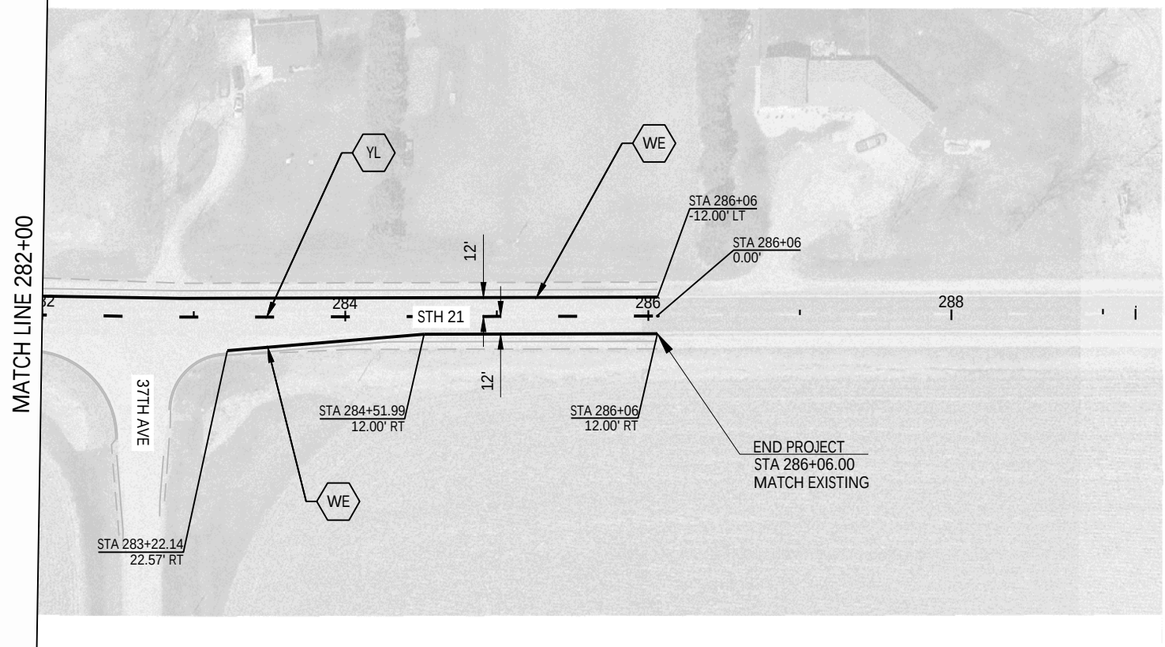
PAVEMENT MARKING LEGEND

WE	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
WI	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE, 3' LINE, 9' GAP)
WC	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)
WL	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE, 12.5' LINE, 37.5' GAP)
YD	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOUBLE YELLOW)
YL	MARKING LINE GROOVED WET REF EPOXY 6-INCH (LANE YELLOW, 12.5' LINE, 37.5' GAP)
YC	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DASHED/SOLID YELLOW, 12.5' LINE, 37.5 GAP)
SL	MARKING STOP LINE EPOXY 18-INCH (WHITE)

2

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	PERMANENT SIGNING & PAVEMENT MARKING	SHEET 56	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\024501-PM.DWG
LAYOUT NAME - 09
PLOT DATE : 3/29/2024 10:42 AM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

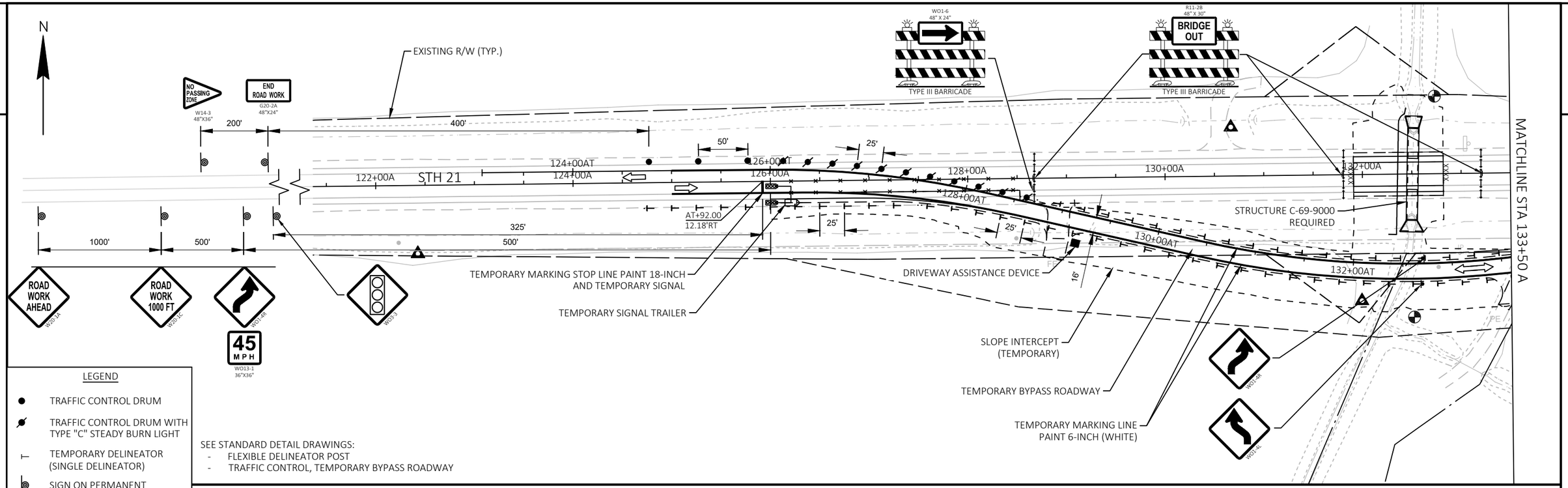




2

PAVEMENT MARKING LEGEND

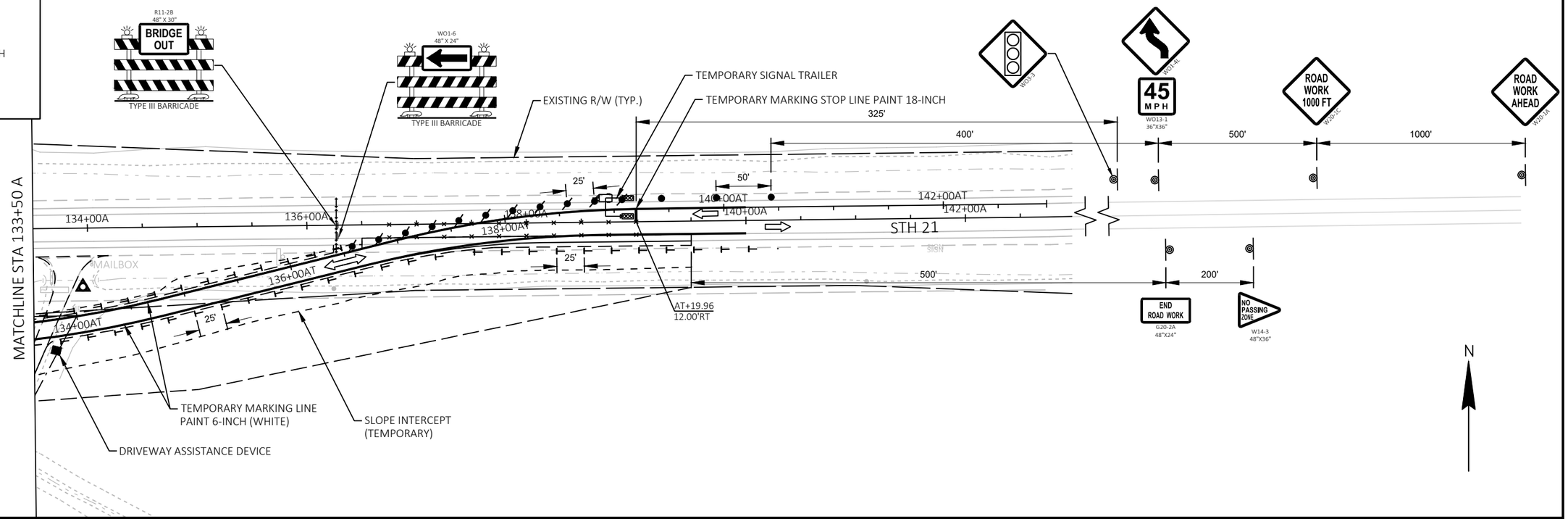
WE	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)	YD	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOUBLE YELLOW)
WI	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE, 3' LINE, 9' GAP)	YL	MARKING LINE GROOVED WET REF EPOXY 6-INCH (LANE YELLOW, 12.5' LINE, 37.5' GAP)
WC	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)	YC	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DASHED/SOLID YELLOW, 12.5' LINE, 37.5 GAP)
WL	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE, 12.5' LINE, 37.5' GAP)	SL	MARKING STOP LINE EPOXY 18-INCH (WHITE)



LEGEND

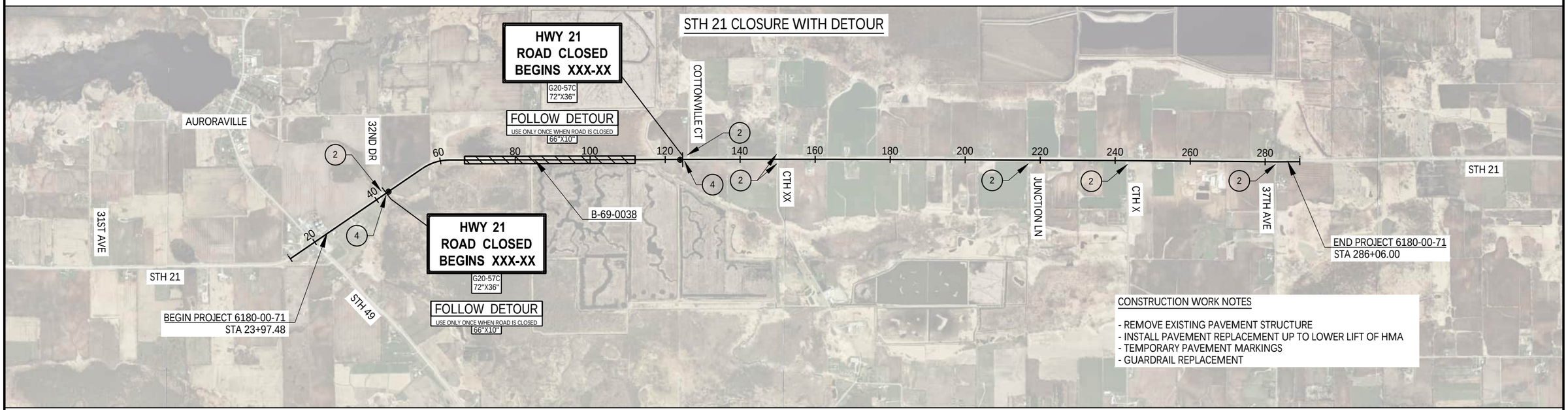
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TEMPORARY DELINEATOR (SINGLE DELINEATOR)
- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- REMOVING PAVEMENT MARKINGS

SEE STANDARD DETAIL DRAWINGS:
- FLEXIBLE DELINEATOR POST
- TRAFFIC CONTROL, TEMPORARY BYPASS ROADWAY



PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	TRAFFIC CONTROL - TEMPORARY BYPASS ROAD	SHEET 58	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-025101-TC_TEMP-BYPASS-ROAD.DWG
LAYOUT NAME - 6130-025101-TC
PLOT DATE : 2/27/2024 10:08 AM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44



GENERAL NOTES FOR TRAFFIC CONTROL

CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL MUTCD AND WISDOT STANDARD DETAIL DRAWING (SDD) GUIDELINES.

PLACE FIXED MESSAGE SIGNS (G20-57C) 7 DAYS PRIOR TO BEGINNING RECONSTRUCTION WORK AND REMOVE WHEN RECONSTRUCTION WORK BEGINS.

LEGEND - TRAFFIC CONTROL SYMBOLS

SIGN ON PERMANENT SUPPORT

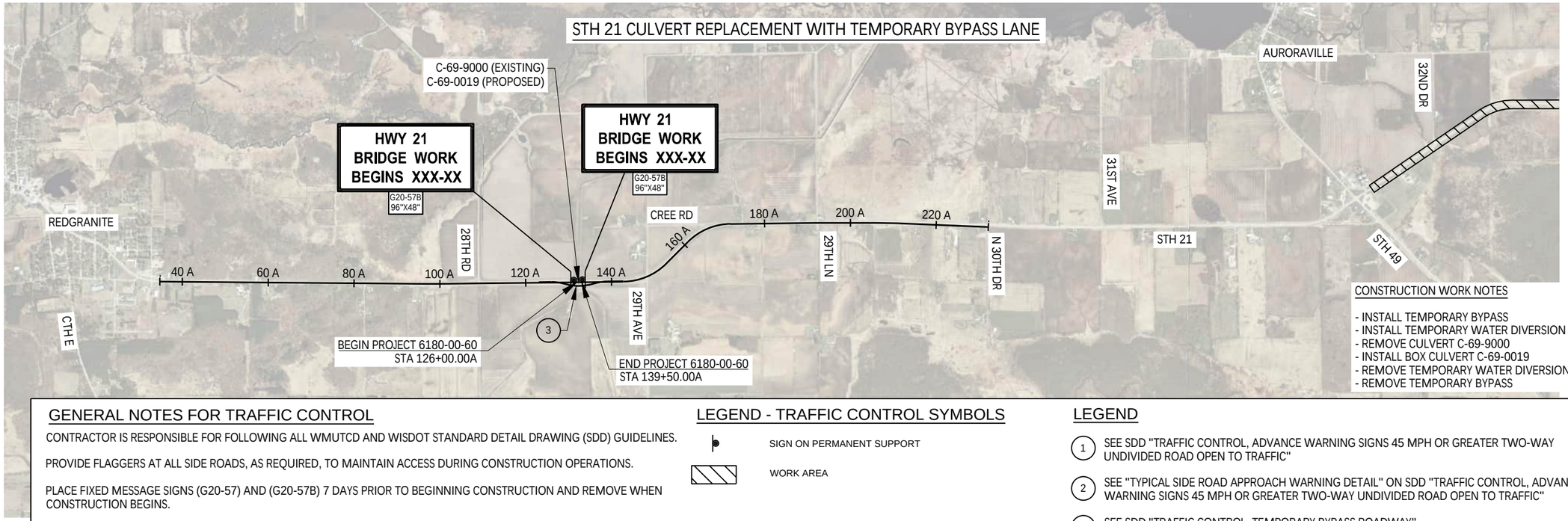
WORK AREA

LEGEND

1. SEE SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC"
2. SEE "TYPICAL SIDE ROAD APPROACH WARNING DETAIL" ON SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC"
3. SEE SDD "TRAFFIC CONTROL, TEMPORARY BYPASS ROADWAY"
4. SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"

PROJECT NO: 6180-00-60/6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	TRAFFIC CONTROL - OVERVIEW - RECONSTRUCTION	SHEET 59	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\025101-TC-OVERVIEW.DWG
LAYOUT NAME - 025101-tc-overview
PLOT DATE : 3/28/2024 11:38 AM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:0.5 MI
WISDOT/CADDS SHEET 42



GENERAL NOTES FOR TRAFFIC CONTROL

CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL WMUTCD AND WISDOT STANDARD DETAIL DRAWING (SDD) GUIDELINES.

PROVIDE FLAGGERS AT ALL SIDE ROADS, AS REQUIRED, TO MAINTAIN ACCESS DURING CONSTRUCTION OPERATIONS.

PLACE FIXED MESSAGE SIGNS (G20-57) AND (G20-57B) 7 DAYS PRIOR TO BEGINNING CONSTRUCTION AND REMOVE WHEN CONSTRUCTION BEGINS.

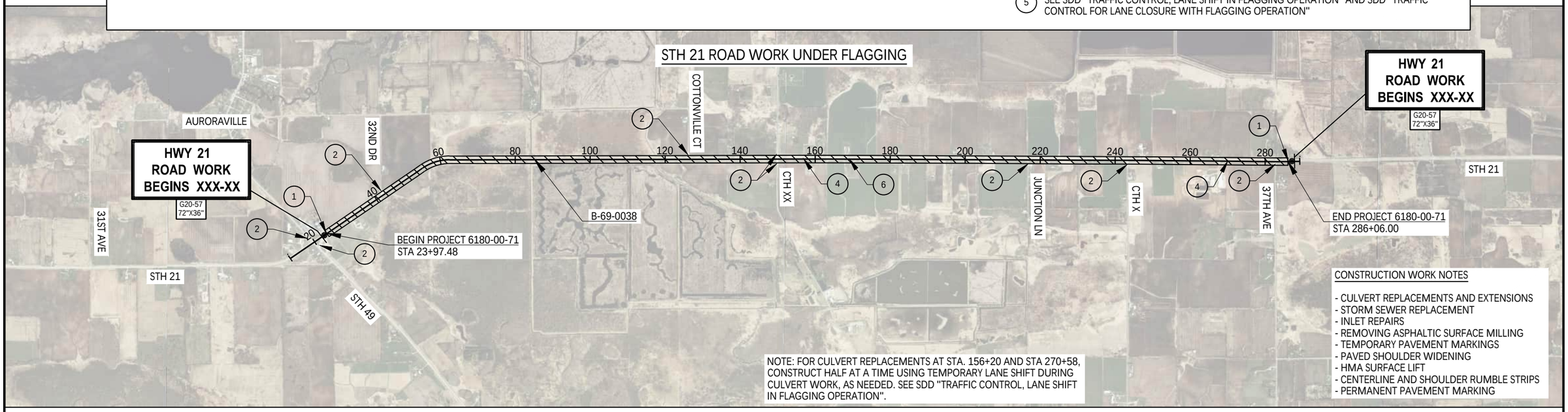
LEGEND - TRAFFIC CONTROL SYMBOLS

SIGN ON PERMANENT SUPPORT

WORK AREA

LEGEND

1. SEE SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC"
2. SEE "TYPICAL SIDE ROAD APPROACH WARNING DETAIL" ON SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC"
3. SEE SDD "TRAFFIC CONTROL, TEMPORARY BYPASS ROADWAY"
4. SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION"
5. SEE SDD "TRAFFIC CONTROL, LANE SHIFT IN FLAGGING OPERATION" AND SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION"



PROJECT NO: 6180-00-60/6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	TRAFFIC CONTROL - OVERVIEW - MILL & OVERLAY AND BOX CULVERT REPLACEMENT	SHEET 60	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\025101-TC-OVERVIEW.DWG
LAYOUT NAME - 025102-tc-overview
PLOT DATE : 3/28/2024 11:38 AM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:0.5 MI
WISDOT/CADDS SHEET 42

WORK ZONE

STH 21

STH 49

STH 44

STH 23

I-41

SEE TRAFFIC CONTROL - DETOUR PLAN - DETAIL SHEET 1

SEE TRAFFIC CONTROL - DETOUR PLAN - DETAIL SHEET 2

SEE TRAFFIC CONTROL - DETOUR PLAN - DETAIL SHEET 3

EXIT 119

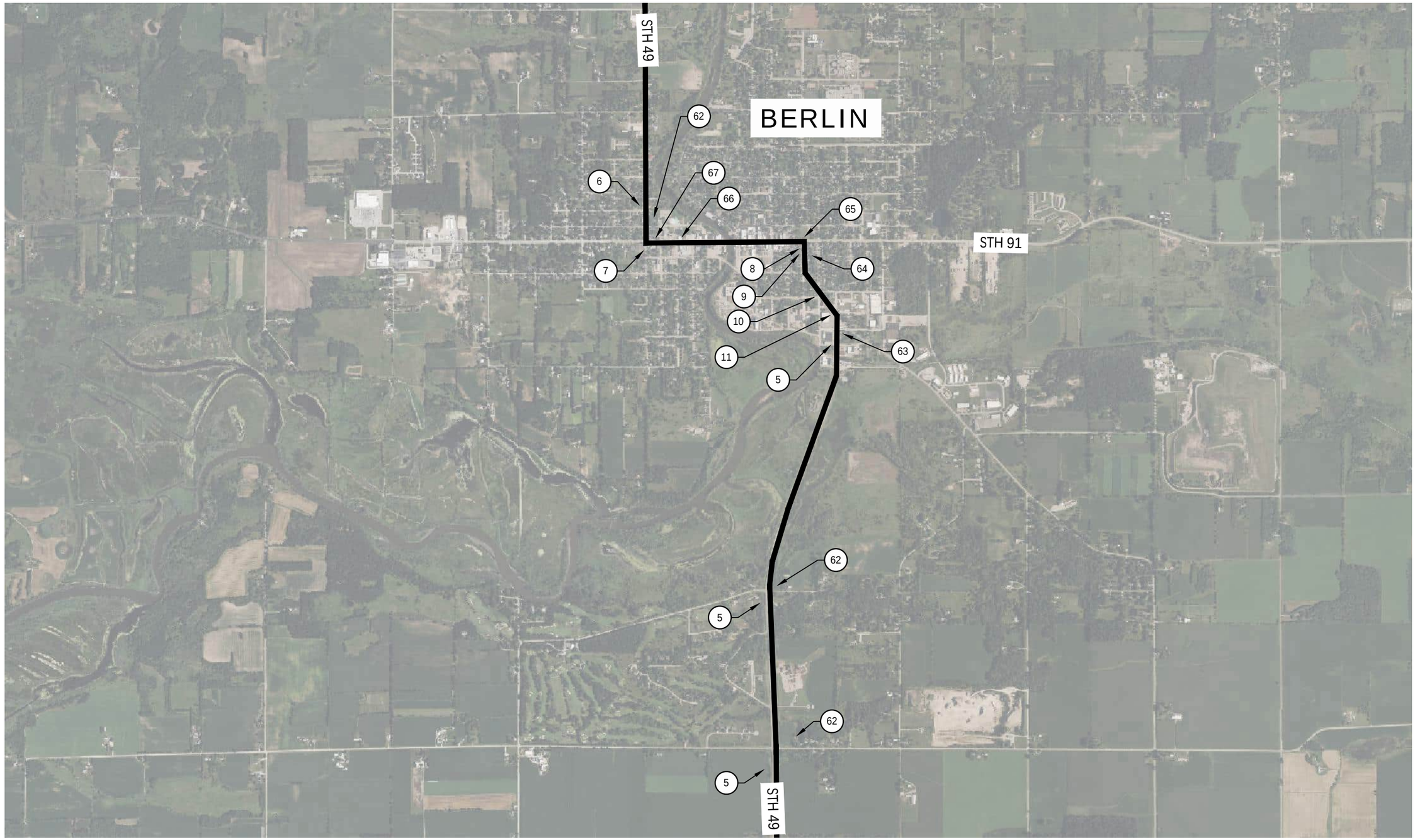
EXIT 116

EXIT 99

N

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	TRAFFIC CONTROL - DETOUR PLAN	SHEET 61	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\027001_DT.DWG
LAYOUT NAME - 020101-gn
PLOT DATE : 1/2/2024 4:15 PM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:2 MI
WISDOT/CADDS SHEET 42



PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	TRAFFIC CONTROL - DETOUR PLAN - DETAIL SHEET 1	SHEET 62	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\027002_DT_DETAIL.DWG
LAYOUT NAME - 027002-dt-detail-1
PLOT DATE : 3/28/2024 11:23 AM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:2000 FT

2

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STH 44

STH 23

RIPON

METOMEN ST

STH 23

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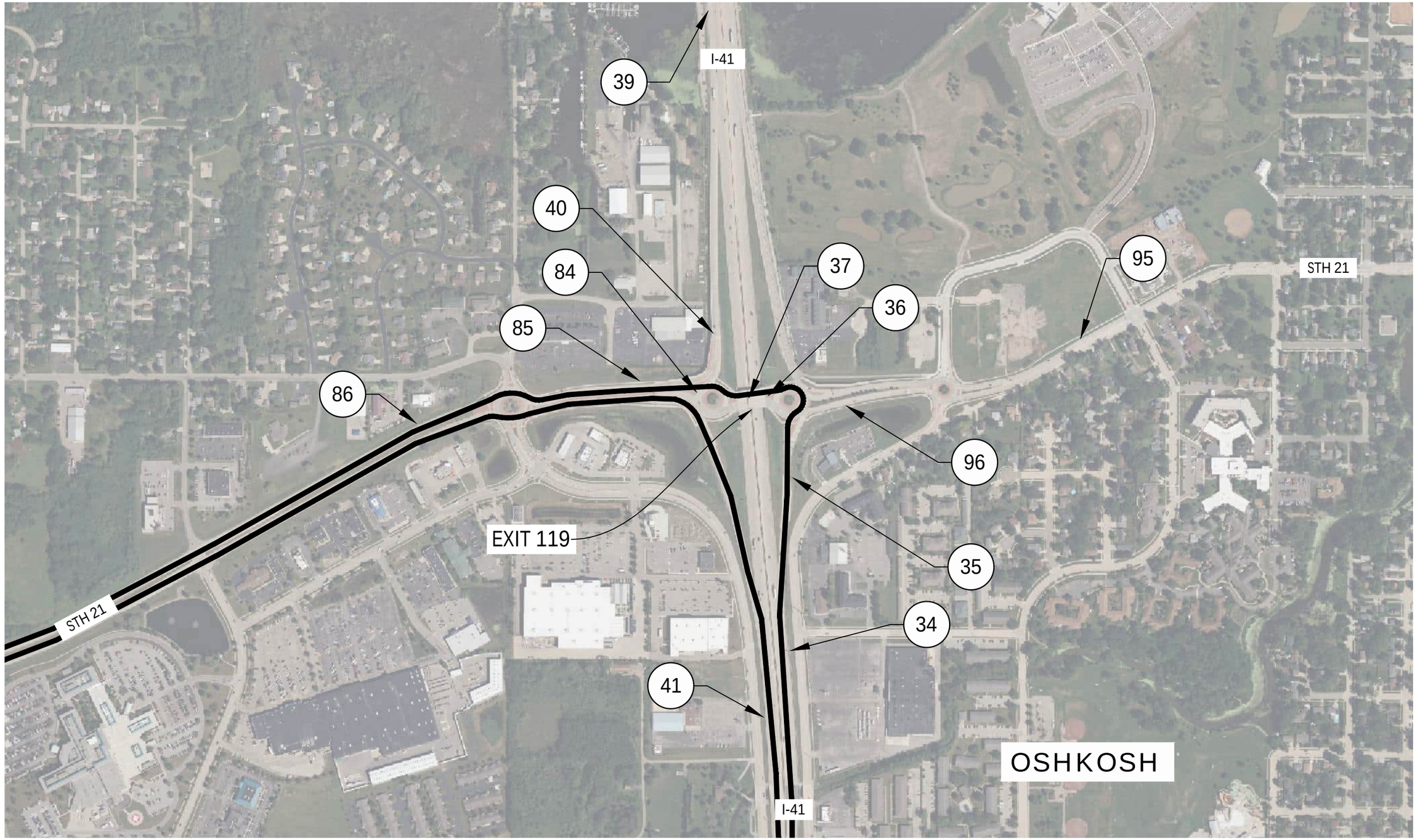
PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	TRAFFIC CONTROL - DETOUR PLAN - DETAIL SHEET 2	SHEET 63	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\027002_DT_DETAIL.DWG
LAYOUT NAME - 027002-dt-detail-2
PLOT DATE : 3/28/2024 11:23 AM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:1000 FT
WISDOT/CADDS SHEET 42

2

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PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	TRAFFIC CONTROL - DETOUR PLAN - DETAIL SHEET 3	SHEET 64	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\027002_DT_DETAIL.DWG
LAYOUT NAME - 027002-dt-detail-3

PLOT DATE : 3/28/2024 11:23 AM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:500 FT

WISDOT/CADDS SHEET 42

2

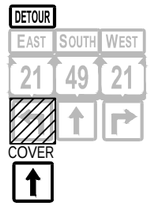
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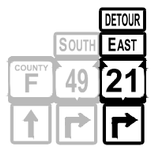
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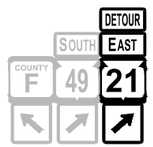
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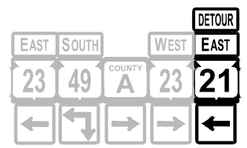
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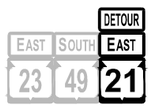
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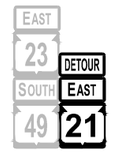
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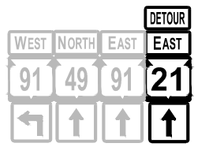
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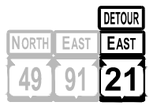
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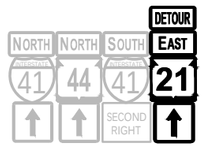
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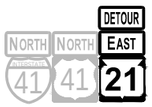
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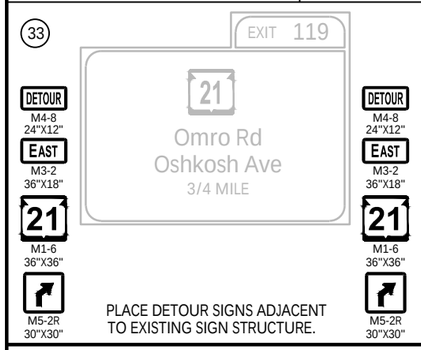
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32

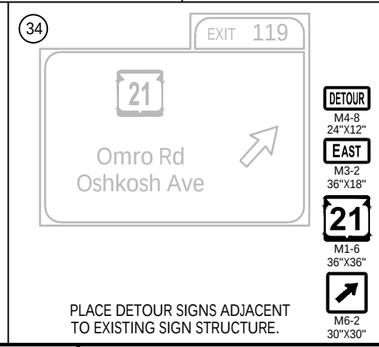


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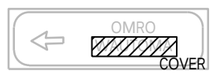
PLACE DETOUR SIGNS ADJACENT TO EXISTING SIGN STRUCTURE.

34



PLACE DETOUR SIGNS ADJACENT TO EXISTING SIGN STRUCTURE.

35

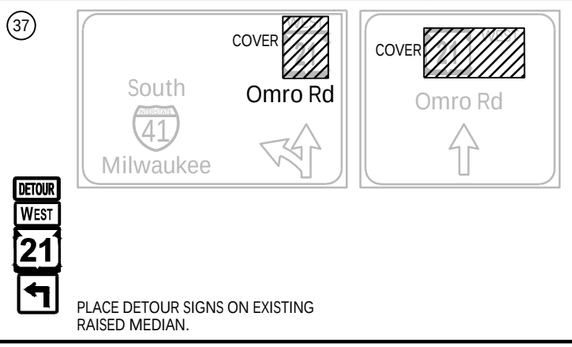


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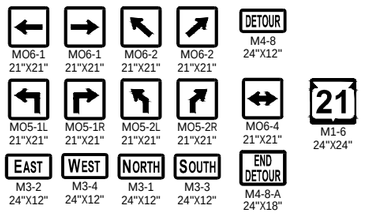
TYPE III BARRICADE TO BE PLACED OFF OF THE ROADWAY

37



PLACE DETOUR SIGNS ON EXISTING RAISED MEDIAN.

LEGEND

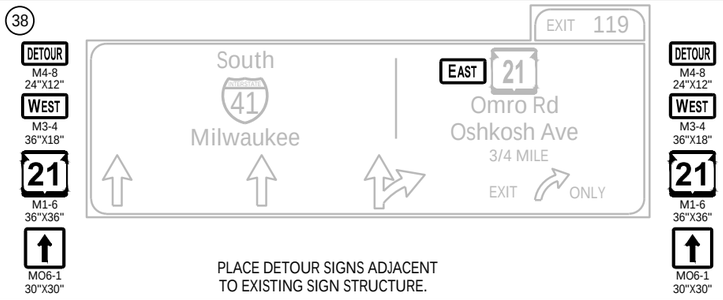


NOTE: ALL DETOUR SIGNS ARE TO BE THESE SIZES UNLESS SPECIFIED OTHERWISE.

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	TRAFFIC CONTROL - DETOUR PLAN	SHEET 65	E

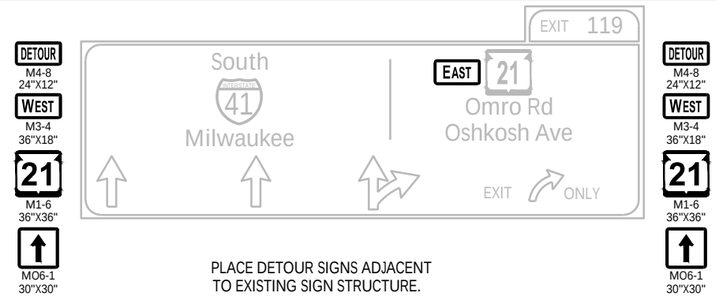
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LAYOUT NAME - 020103-gn
PLOT DATE : 3/28/2024 11:23 AM
PLOT BY : CZECH, ANDREW
PLOT NAME :
PLOT SCALE :
WISDOT/CADDS SHEET 42

(38)



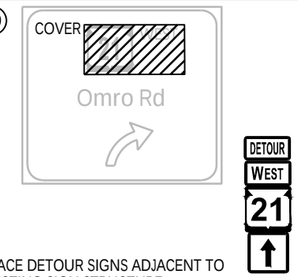
PLACE DETOUR SIGNS ADJACENT TO EXISTING SIGN STRUCTURE.

(39)



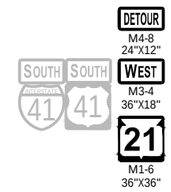
PLACE DETOUR SIGNS ADJACENT TO EXISTING SIGN STRUCTURE.

(40)

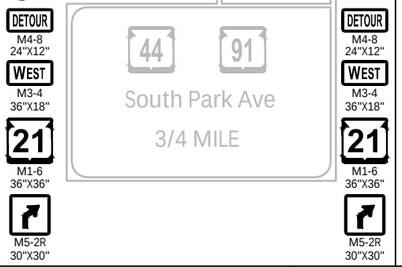


PLACE DETOUR SIGNS ADJACENT TO EXISTING SIGN STRUCTURE.

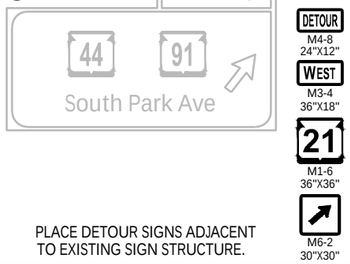
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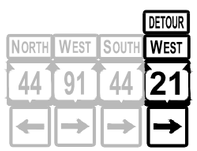


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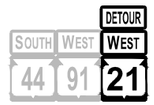


PLACE DETOUR SIGNS ADJACENT TO EXISTING SIGN STRUCTURE.

(43A)



(43B)



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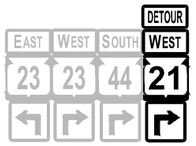
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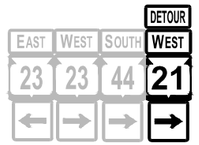
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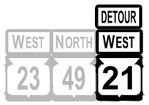
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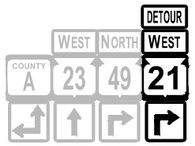
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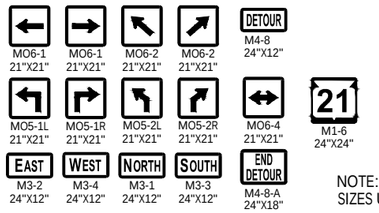
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(67)



LEGEND



NOTE: ALL DETOUR SIGNS ARE TO BE THESE SIZES UNLESS SPECIFIED OTHERWISE.

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	TRAFFIC CONTROL - DETOUR PLAN	SHEET 66	E

NOTE: NUMBERS 68 THROUGH 76 INTENTIONALLY EXCLUDED

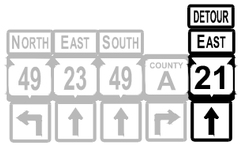
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(78)



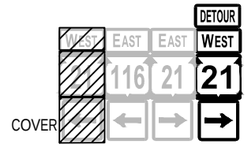
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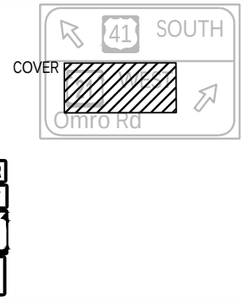
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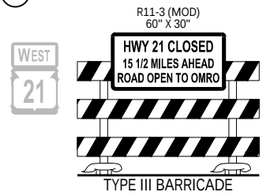
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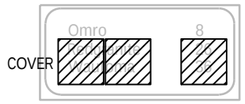


(85)



TYPE III BARRICADE TO BE PLACED OFF OF THE ROADWAY

(86)



(87)

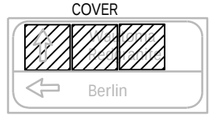


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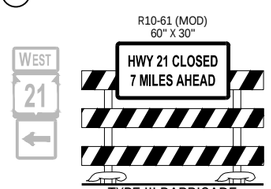


TYPE III BARRICADE TO BE PLACED OFF OF THE ROADWAY

(89)

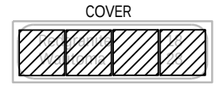


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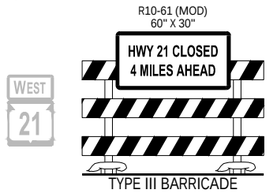


TYPE III BARRICADE TO BE PLACED OFF OF THE ROADWAY

(91)

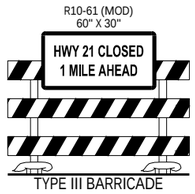


(92)



TYPE III BARRICADE TO BE PLACED OFF OF THE ROADWAY

(93)



TYPE III BARRICADE TO BE PLACED OFF OF THE ROADWAY

(94)



(95)



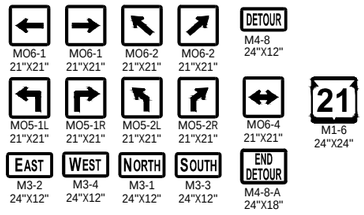
(96)



(97)



LEGEND



NOTE: ALL DETOUR SIGNS ARE TO BE THESE SIZES UNLESS SPECIFIED OTHERWISE.

2

R-12-E

N

8 | 9 | 10 | 11 | 12

PI STA = 98+00.76 A
Y = 120040.711
X = 440237.906
DELTA = 1°09'03" LT
D = 0°30'00"
T = 115.10'
L = 230.19'
R = 11459.16'
PC STA = 96+85.66 A
PT STA = 99+15.85 A

28TH RD

PC: 142+74.14 A

PI STA = 166+79.90 A
Y = 121428.778
X = 446624.434
DELTA = 44°13'46" RT
D = 4°00'00"
T = 582.06'
L = 1105.73'
R = 1432.39'
PC STA = 160+97.84 A
PT STA = 172+03.57 A

PT: 172+03.57 A

PI: 191+76.11 A

PC: 206+18.56 A

PT: 210+99.44 A

EP: 232+13.79 A

CREE RD

T-18-N

40A | 60A | 80A | 100A | 120A | 140A | 160A | 180A | 200A | 220A

S89°30'15"E | N89°20'42"E | N89°12'45"E | S89°59'53"E | S87°35'37"E

C-69-0019

PC: 160+97.84 A

N44°59'00"E

PT: 153+83.18 A

29TH LN

N 30TH DR

PI STA = 208+59.04 A
Y = 121463.828
X = 450861.719
DELTA = 2°24'16" RT
D = 0°30'00"
T = 240.48'
L = 480.88'
R = 11459.16'
PC STA = 206+18.56 A
PT STA = 210+99.44 A

BP: 34+74.56 A

PC: 96+85.66 A

PT: 99+15.85 A

29TH AVE

PI STA = 148+58.13 A
Y = 120098.526
X = 445294.960
DELTA = 44°21'42" LT
D = 4°00'00"
T = 583.99'
L = 1109.04'
R = 1432.39'
PC STA = 142+74.14 A
PT STA = 153+83.18 A

BEGIN PROJECT 6180-00-60
STA 126+00.00A
MATCH EXISTING
SAW CUT REQ'D

END PROJECT 6180-00-60
STA 139+50.00A
MATCH EXISTING
SAW CUT REQ'D

17 | 16 | 15 | 14 | 13

PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	ALIGNMENT DIAGRAM - UNNAMED DRAINAGEWAY CULVERT REPLACEMENT	SHEET 68	E

FILE NAME : C:\USERS\JOHN.DAY\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\027201-AD.DWG
LAYOUT NAME - 027201-ad
PLOT DATE : 2/27/2024 9:09 AM PLOT BY : DAY, JOHN PLOT NAME : PLOT SCALE : 1 IN:1500 FT
WISDOT/CADDS SHEET 42

2

N

CURVE 1

PI STA = 127+09.17 AT
Y = 120085.959
X = 443146.002
DELTA = 13°19'16" RT
D = 6°01'52"
T = 110.94'
L = 220.87'
R = 950.00'
PC STA = 125+98.23 AT
PT STA = 128+19.11 AT

SUPERELEVATION TABLE	
STATION	CROSS SLOPE (%)
126+00 AT	MATCH EXISTING
127+00 AT	-4.0
128+50 AT	-4.0
129+00 AT	-2.0
129+50 AT	0.0
130+00 AT	2.0

CURVE 2

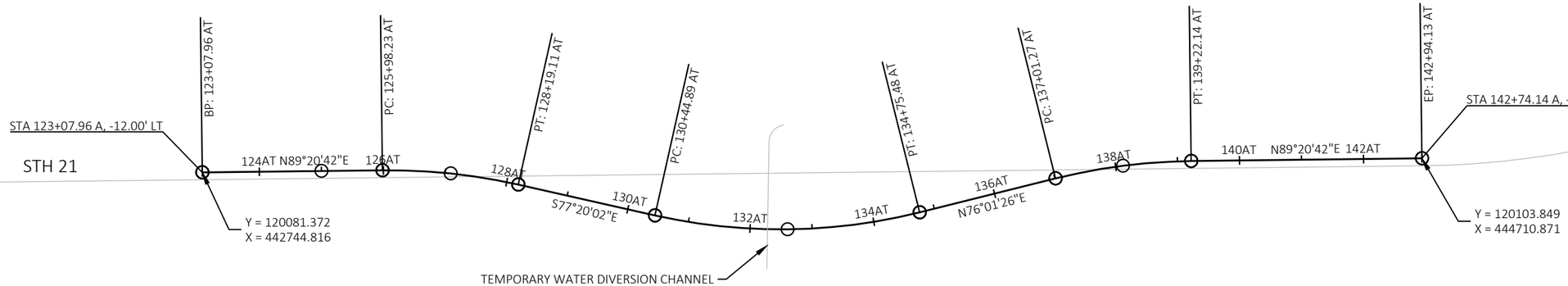
PI STA = 132+64.15 AT
Y = 119964.048
X = 443688.453
DELTA = 26°38'33" LT
D = 6°11'15"
T = 219.26'
L = 430.59'
R = 926.00'
PC STA = 130+44.89 AT
PT STA = 134+75.48 AT

SUPERELEVATION TABLE	
STATION	CROSS SLOPE (%)
130+29 AT	2.0
130+77 AT	4.0
134+43 AT	4.0
134+91 AT	2.0
135+39 AT	0.0
135+87 AT	-2.0

CURVE 3

PI STA = 138+12.20 AT
Y = 120098.329
X = 444227.975
DELTA = 13°19'16" RT
D = 6°01'52"
T = 110.94'
L = 220.87'
R = 950.00'
PC STA = 137+01.27 AT
PT STA = 139+22.14 AT

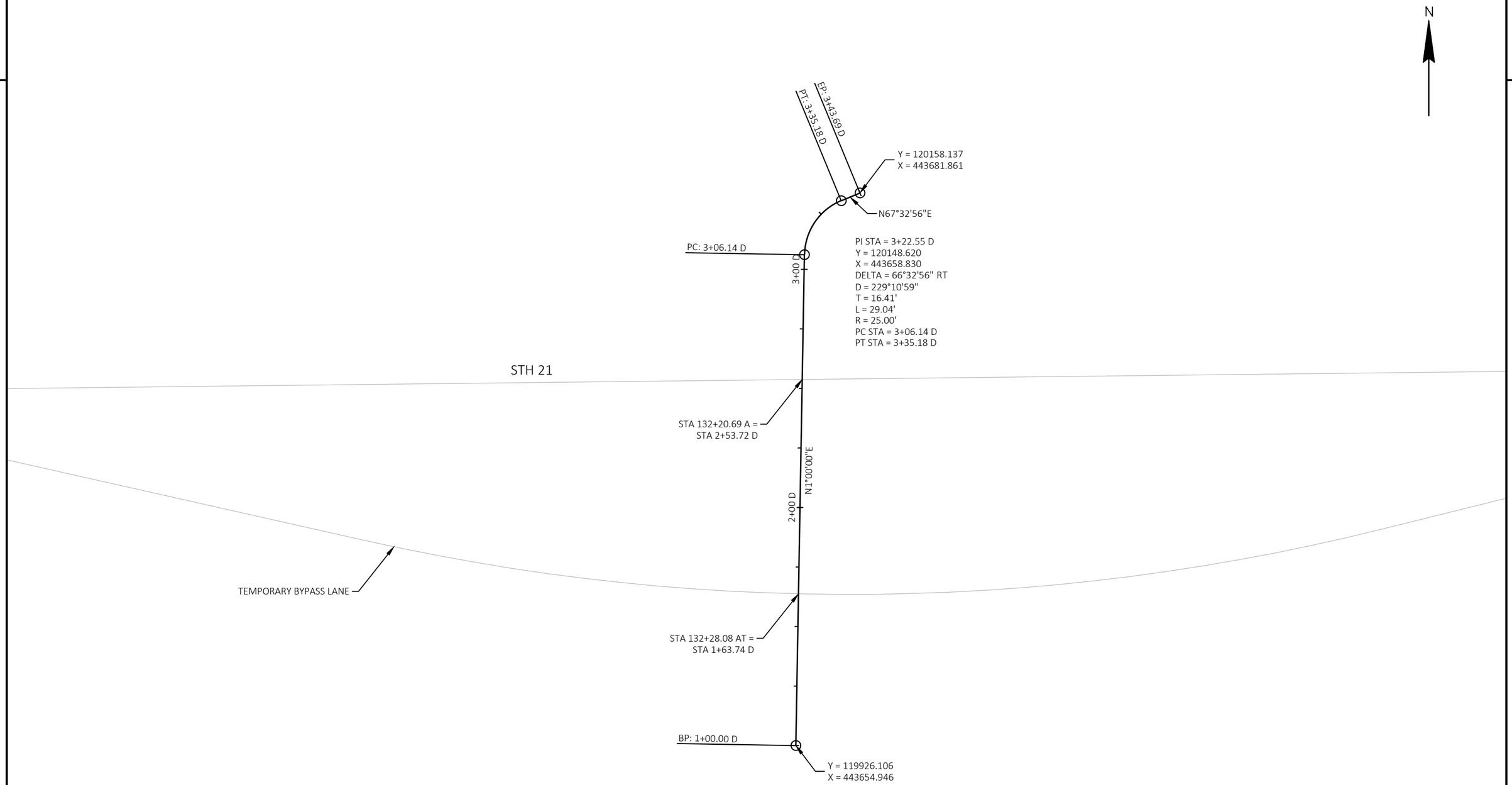
SUPERELEVATION TABLE	
STATION	CROSS SLOPE (%)
136+00 AT	-2.0
136+50 AT	-4.0
138+00 AT	-4.0
139+00 AT	MATCH EXISTING
139+70 AT	MATCH EXISTING



PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	ALIGNMENT DIAGRAM - TEMPORARY BYPASS LANE	SHEET 69	E

2

N



PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	ALIGNMENT DIAGRAM - TEMPORARY WATER DIVERSION CHANNEL	SHEET 70	E

FILE NAME : C:\USERS\JOHN.DAY\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\027203-AD.DWG
LAYOUT NAME - 027203-ad
PLOT DATE : 2/27/2024 9:16 AM PLOT BY : DAY, JOHN PLOT NAME : PLOT SCALE : 1 IN:200 FT
WISDOT/CADDS SHEET 42

2

N

R-13-E

T-18-N

7

8

9

10

11

12

7

18

17

16

15

14

13

18

PC: 54+84.31

PI: 53+00.00

32ND DR

N55°39'09"E

BP: 12+15.29

40

N55°38'43"E

20

BEGIN PROJECT 6180-00-71
STA 23+97.48

STH 49

60

N89°53'47"E

PI: 66+00.00

N89°52'36"E

PT: 62+44.85

80

PI: 81+99.99

N89°52'36"E

PI: 88+00.01

N89°50'02"E

PI: 95+39.31

100

N89°52'28"E

B-69-0038

PI STA = 58+76.31
Y = 124221.620
X = 465024.060
DELTA = 34°13'26" RT
D = 4°30'00"
T = 391.99'
L = 760.53'
R = 1273.24'
PC STA = 54+84.31
PT STA = 62+44.85

120

PI: 123+39.17

COTTONVILLE CT

140

N89°52'29"E

PI: 153+65.02

N89°56'40"E

PI: 163+01.59

160

S89°45'37"E

CTH XX

180

PI: 176+19.21

S89°46'28"E

200

PI: 203+11.27

S89°42'17"E

JUNCTION LN

220

PI: 230+06.29

S89°45'11"E

240

PI: 246+18.22

S89°30'30"E

CTH X

260

PI: 260+00.00

S89°34'39"E

PI: 267+51.37

280

S89°28'28"E

PI: 282+91.35

N89°27'56"E

EP: 289+21.53

STH 21

37TH AVE

END PROJECT 6180-00-71
STA 286+06.00

WAUSHARA
COUNTY LINE

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	ALIGNMENT DIAGRAM	SHEET 71	E

FILE NAME : C:\USERS\JOHN.DAY\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\027204-AD.DWG
LAYOUT NAME - 027204-ad
PLOT DATE : 2/26/2024 3:29 PM
PLOT BY : DAY, JOHN
PLOT NAME :
PLOT SCALE : 1 IN:2000 FT
WISDOT/CADDS SHEET 42

Estimate Of Quantities

Line	Item	Item Description	Unit	Total	6180-00-60 Qty	6180-00-71 Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	5.000	3.000	2.000
0004	203.0220	Removing Structure (structure) 01. C-69-9000	EACH	1.000	1.000	
0006	204.0100	Removing Concrete Pavement	SY	9,332.000	446.000	8,886.000
0008	204.0110	Removing Asphaltic Surface	SY	370.000	370.000	
0010	204.0115	Removing Asphaltic Surface Butt Joints	SY	312.000		312.000
0012	204.0120	Removing Asphaltic Surface Milling	SY	90,150.000		90,150.000
0014	204.0150	Removing Curb & Gutter	LF	235.000		235.000
0016	204.0165	Removing Guardrail	LF	318.000		318.000
0018	204.0220	Removing Inlets	EACH	2.000		2.000
0020	204.0245	Removing Storm Sewer (size) 01. 12-Inch	LF	59.000		59.000
0022	204.0245	Removing Storm Sewer (size) 02. 15-Inch	LF	7.000		7.000
0024	204.9060.S	Removing (item description) 01. Apron Endwalls	EACH	10.000		10.000
0026	205.0100	Excavation Common	CY	34,779.000	5,005.000	29,774.000
0028	206.2001	Excavation for Structures Culverts (structure) 01. C-69-0019	EACH	1.000	1.000	
0030	208.0100	Borrow	CY	2,918.000	2,918.000	
0032	208.1500.S	Temporary Lane Shift During Culvert Work	EACH	4.000		4.000
0034	210.2500	Backfill Structure Type B	TON	1,280.000	1,280.000	
0036	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	333.000		333.000
0038	213.0100	Finishing Roadway (project) 01. 6180-00-60	EACH	1.000	1.000	
0040	213.0100	Finishing Roadway (project) 02. 6180-00-71	EACH	1.000		1.000
0042	305.0110	Base Aggregate Dense 3/4-Inch	TON	9,397.000	501.000	8,896.000
0044	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	26,425.000	1,715.000	24,710.000
0046	311.0110	Breaker Run	TON	23,838.000	578.000	23,260.000
0048	415.0080	Concrete Pavement 8-Inch	SY	243.000	243.000	
0050	415.0410	Concrete Pavement Approach Slab	SY	80.000		80.000
0052	420.1000	Continuous Diamond Grinding Concrete Pavement	SY	243.000	243.000	
0054	450.4000	HMA Cold Weather Paving	TON	6,121.000		6,121.000
0056	455.0605	Tack Coat	GAL	12,382.000	35.000	12,347.000
0058	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	1.000		1.000
0060	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	1.000		1.000
0062	460.2000	Incentive Density HMA Pavement	DOL	2,830.000		2,830.000
0064	460.2005	Incentive Density PWL HMA Pavement	DOL	8,400.000		8,400.000
0066	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	6,200.000		6,200.000
0068	460.2010	Incentive Air Voids HMA Pavement	DOL	13,010.000		13,010.000
0070	460.6223	HMA Pavement 3 MT 58-28 S	TON	4,419.000		4,419.000
0072	460.6224	HMA Pavement 4 MT 58-28 S	TON	13,000.000		13,000.000
0074	465.0105	Asphaltic Surface	TON	1,365.000	101.000	1,264.000
0076	465.0110	Asphaltic Surface Patching	TON	206.000		206.000
0078	465.0125	Asphaltic Surface Temporary	TON	416.000	416.000	
0080	465.0520	Asphaltic Rumble Strips, Shoulder	LF	48,415.000		48,415.000
0082	465.0560	Asphaltic Rumble Strips, Centerline	LF	24,095.000		24,095.000
0084	504.0100	Concrete Masonry Culverts	CY	115.000	115.000	
0086	504.0900	Concrete Masonry Endwalls	CY	6.000		6.000
0088	505.0400	Bar Steel Reinforcement HS Structures	LB	13,730.000	13,730.000	
0090	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	1,490.000	1,490.000	
0092	516.0500	Rubberized Membrane Waterproofing	SY	25.000	25.000	
0094	520.1024	Apron Endwalls for Culvert Pipe 24-Inch	EACH	2.000		2.000
0096	520.2015	Culvert Pipe Temporary 15-Inch	LF	44.000	44.000	
0098	520.2024	Culvert Pipe Temporary 24-Inch	LF	96.000	96.000	

					6180-00-60	6180-00-71
Line	**Item**	**Item Description**	**Unit**	**Total**	**Qty**	**Qty**
0100	520.2072	Culvert Pipe Temporary 72-Inch	LF	64.000	64.000	
0102	521.1015	Apron Endwalls for Culvert Pipe Steel 15-Inch	EACH	2.000	2.000	
0104	521.1024	Apron Endwalls for Culvert Pipe Steel 24-Inch	EACH	6.000	6.000	
0106	521.1072	Apron Endwalls for Culvert Pipe Steel 72-Inch	EACH	2.000	2.000	
0108	521.3124	Culvert Pipe Corrugated Steel 24-Inch	LF	60.000	60.000	
0110	522.0160	Culvert Pipe Reinforced Concrete Class III 60-Inch	LF	48.000		48.000
0112	522.0424	Culvert Pipe Reinforced Concrete Class IV 24-Inch	LF	88.000		88.000
0114	522.2429	Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 29x45-Inch	LF	88.000		88.000
0116	522.2629	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 29x45-Inch	EACH	2.000		2.000
0118	601.0553	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type D	LF	235.000		235.000
0120	606.0200	Riprap Medium	CY	53.000	5.000	48.000
0122	608.0412	Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	LF	59.000		59.000
0124	608.0415	Storm Sewer Pipe Reinforced Concrete Class IV 15-Inch	LF	7.000		7.000
0126	611.0420	Reconstructing Manholes	EACH	1.000		1.000
0128	611.3230	Inlets 2x3-FT	EACH	2.000		2.000
0130	611.8115	Adjusting Inlet Covers	EACH	3.000		3.000
0132	611.9710	Salvaged Inlet Covers	EACH	2.000		2.000
0134	614.2300	MGS Guardrail 3	LF	303.000		303.000
0136	614.2350	MGS Guardrail Short Radius	LF	13.000		13.000
0138	614.2500	MGS Thrie Beam Transition	LF	157.600		157.600
0140	614.2610	MGS Guardrail Terminal EAT	EACH	3.000		3.000
0142	614.2630	MGS Guardrail Short Radius Terminal	EACH	1.000		1.000
0144	619.1000	Mobilization	EACH	1.000	0.250	0.750
0146	624.0100	Water	MGAL	598.000	26.000	572.000
0148	625.0500	Salvaged Topsoil	SY	30,820.000	14,570.000	16,250.000
0150	628.1504	Silt Fence	LF	16,615.000	3,550.000	13,065.000
0152	628.1520	Silt Fence Maintenance	LF	16,615.000	3,550.000	13,065.000
0154	628.1905	Mobilizations Erosion Control	EACH	6.000	3.000	3.000
0156	628.1910	Mobilizations Emergency Erosion Control	EACH	6.000	3.000	3.000
0158	628.2008	Erosion Mat Urban Class I Type B	SY	16,250.000		16,250.000
0160	628.2027	Erosion Mat Class II Type C	SY	12,510.000	12,510.000	
0162	628.7555	Culvert Pipe Checks	EACH	72.000	27.000	45.000
0164	628.7570	Rock Bags	EACH	190.000	140.000	50.000
0166	629.0210	Fertilizer Type B	CWT	22.000	10.000	12.000
0168	630.0130	Seeding Mixture No. 30	LB	503.000	163.000	340.000
0170	630.0200	Seeding Temporary	LB	166.000	166.000	
0172	630.0500	Seed Water	MGAL	735.000	320.000	415.000
0174	633.1100	Delineators Temporary	EACH	95.000	95.000	
0176	633.5200	Markers Culvert End	EACH	4.000		4.000
0178	638.2102	Moving Signs Type II	EACH	4.000		4.000
0180	638.4000	Moving Small Sign Supports	EACH	3.000		3.000
0182	642.5001	Field Office Type B	EACH	1.000		1.000
0184	643.0300	Traffic Control Drums	DAY	1,400.000	1,400.000	
0186	643.0420	Traffic Control Barricades Type III	DAY	1,900.000	1,000.000	900.000
0188	643.0705	Traffic Control Warning Lights Type A	DAY	2,200.000	1,200.000	1,000.000
0190	643.0715	Traffic Control Warning Lights Type C	DAY	1,100.000	1,100.000	
0192	643.0900	Traffic Control Signs	DAY	25,210.000	1,050.000	24,160.000
0194	643.0910	Traffic Control Covering Signs Type I	EACH	4.000		4.000
0196	643.0920	Traffic Control Covering Signs Type II	EACH	9.000	1.000	8.000

Line	Item	Item Description	Unit	Total	6180-00-60 Qty	6180-00-71 Qty
0198	643.1000	Traffic Control Signs Fixed Message	SF	136.000		136.000
0200	643.3165	Temporary Marking Line Paint 6-Inch	LF	3,040.000	3,040.000	
0202	643.3805	Temporary Marking Stop Line Paint 18-Inch	LF	24.000	24.000	
0204	643.5000	Traffic Control	EACH	1.000	0.150	0.850
0206	645.0105	Geotextile Type C	SY	340.000	340.000	
0208	645.0120	Geotextile Type HR	SY	179.000	18.000	161.000
0210	645.0220	Geogrid Type SR	SY	24,070.000		24,070.000
0212	646.2020	Marking Line Epoxy 6-Inch	LF	200.000		200.000
0214	646.2040	Marking Line Grooved Wet Ref Epoxy 6-Inch	LF	74,752.000	4,125.000	70,627.000
0216	646.4040	Marking Line Grooved Wet Ref Epoxy 10-Inch	LF	746.000		746.000
0218	646.4705	Marking Line Same Day Paint 6-Inch	LF	40,163.000		40,163.000
0220	646.9000	Marking Removal Line 4-Inch	LF	1,298.000	940.000	358.000
0222	648.0100	Locating No-Passing Zones	MI	4.960		4.960
0224	650.4000	Construction Staking Storm Sewer	EACH	2.000		2.000
0226	650.4500	Construction Staking Subgrade	LF	4,641.000	91.000	4,550.000
0228	650.5000	Construction Staking Base	LF	4,550.000		4,550.000
0230	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	235.000		235.000
0232	650.6000	Construction Staking Pipe Culverts	EACH	7.000	1.000	6.000
0234	650.6501	Construction Staking Structure Layout (structure) 01. C-69-0019	EACH	1.000	1.000	
0236	650.7000	Construction Staking Concrete Pavement	LF	91.000	91.000	
0238	650.8000	Construction Staking Resurfacing Reference	LF	21,659.000		21,659.000
0240	650.9911	Construction Staking Supplemental Control (project) 01. 6180-00-60	EACH	1.000	1.000	
0242	650.9911	Construction Staking Supplemental Control (project) 02. 6180-00-71	EACH	1.000		1.000
0244	650.9920	Construction Staking Slope Stakes	LF	5,900.000	1,350.000	4,550.000
0246	661.0101	Temporary Traffic Signals for Bridges (structure) 01. C-69-0019	EACH	1.000	1.000	
0248	690.0150	Sawing Asphalt	LF	16,313.000	48.000	16,265.000
0250	690.0250	Sawing Concrete	LF	124.000	48.000	76.000
0252	715.0502	Incentive Strength Concrete Structures	DOL	690.000	690.000	
0254	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	1,000.000	500.000	500.000
0256	740.0440	Incentive IRI Ride	DOL	21,660.000		21,660.000
0258	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	200.000		200.000
0260	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	200.000		200.000
0262	SPV.0045	Special 01. Driveway Assistance Device System	DAY	100.000	100.000	
0264	SPV.0060	Special 01. Temporary Water Diversion - C-69-0019	EACH	1.000	1.000	
0266	SPV.0090	Special 01. Railing Adjustment Structure B-69-0038	LF	81.000		81.000

REMOVING PIPE

STATION	-	STATION	OFFSET	SIZE (IN)	LENGTH (FT)	TYPE	203.0100 REMOVING SMALL PIPE CULVERTS EACH	REMARKS
PROJECT 6180-00-60 CATEGORY 0010								
129+00 A			RT	24	60	CMP	1	EXISTING FIELD ENTRANCE
129+00 A			RT	24	48	CPCS	1	TEMPORARY FIELD ENTRANCE
133+50 A			RT	24	48	CPCS	1	TEMPORARY GRAVEL DRIVEWAY
PROJECT 6180-00-60 CATEGORY 0010 TOTAL							3	
PROJECT 6180-00-71 CATEGORY 0010								
156+20			LT/RT	24	60	RCP	1	
270+58			LT/RT	24	62	RCP	1	
PROJECT 6180-00-71 CATEGORY 0010 TOTAL							2	
CONTRACT TOTAL							5	

REMOVING ASPHALTIC SURFACE

STATION	-	STATION	LOCATION	204.0110 REMOVING ASPHALTIC SURFACE SY	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS SY	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY
126+00 A	-	128+53 A	STH 21 RT SHOULDER	170	---	---
136+50 A	-	139+50 A	STH 21 RT SHOULDER	200	---	---
PROJECT 6180-00-60 CATEGORY 0010 TOTAL				370	0	0
20+39	-	21+48	STH 21 WB RT TURN LANE	---	30	120
23+97	-	66+50	STH 21 MAINLINE	---	34	15,500
112+00	-	286+06	STH 21 MAINLINE	---	34	70,800
40+80	-	43+60	32ND DR	---	33	620
124+73	-	127+63	COTTONVILLE CT	---	36	510
148+54	-	153+64	CTH XX (NORTH)	---	37	760
145+87	-	151+10	CTH XX (SOUTH)	---	36	770
241+36	-	244+53	CTH X	---	36	520
281+22	-	284+52	37TH AVE	---	36	550
PROJECT 6180-00-71 CATEGORY 0010 TOTAL				0	312	90,150
CONTRACT TOTAL				370	312	90,150

REMOVING PAVEMENT

STATION	-	STATION	OFFSET	204.0100 REMOVING CONCRETE PAVEMENT SY
PROJECT 6180-00-60 CATEGORY 0010				
131+91 A	-	132+82 A	LT/RT	243
131+91 A	-	132+82 A	LT/RT	203
PROJECT 6180-00-60 CATEGORY 0010 TOTAL				446
PROJECT 6180-00-71 CATEGORY 0010				
25+14	-	25+65	RT	11
66+50	-	81+50	LT/RT	3670
84+86	-	85+06	LT/RT	49
85+29	-	85+49	LT/RT	49
89+50	-	95+75	LT/RT	1530
98+00		112+00	LT/RT	3580
PROJECT 6180-00-71 CATEGORY 0010 TOTAL				8,889
CONTRACT TOTAL				9,335

REMOVING CURB & GUTTER

STATION	-	STATION	OFFSET	204.0150 REMOVING CURB & GUTTER LF
168+48	-	169+52	LT	104
168+48	-	169+52	RT	104
240+46	-	240+55	LT	9
258+45	-	258+54	RT	9
279+21	-	279+30	RT	9
PROJECT 6180-00-71 TOTAL				235

REMOVING GUARDRAIL

STATION	-	STATION	OFFSET	204.0165 REMOVING GUARDRAIL LF
84+14	-	84+97	RT	83
84+14	-	84+97	LT	83
85+38	-	86+08	RT	70
85+38	-	86+20	LT	82
PROJECT 6180-00-71 TOTAL				318

REMOVING INLETS

STATION	OFFSET	204.0220 REMOVING INLETS EACH
169+00	LT	1
169+00	RT	1
PROJECT 6180-00-71 TOTAL		2

REMOVING STORM SEWER

STATION	-	STATION	OFFSET	204.0245 REMOVING STORM SEWER .01 12-INCH LF	.02 15-INCH LF
169+00	-	169+00	LT/RT	59	---
169+00	-	169+00	RT	---	7
PROJECT 6180-00-71 TOTAL				59	7

REMOVING ENDWALLS

STATION	LOCATION	204.9060.S REMOVING APRON ENDWALLS EACH
96+80	LT/RT	2
96+88	LT/RT	2
96+96	LT/RT	2
156+20	LT/RT	2
270+58	LT/RT	2
PROJECT 6180-00-71 TOTAL		10

PREPARE FOUNDATION

CATEGORY	STATION	-	STATION	OFFSET	211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA
0020	23+97	-	27+67	LT	4
	23+97	-	26+34	RT	3
	32+59	-	66+50	RT	34
	34+69	-	40+92	LT	7
	43+40	-	66+50	LT	24
	112+00	-	124+89	LT	13
	112+00	-	146+12	RT	35
	127+43	-	148+65	LT	22
	150+96	-	156+18	RT	6
	153+38	-	160+17	LT	7
	172+87	-	180+18	LT	8
	173+17	-	180+17	RT	7
	186+80	-	193+72	LT	7
	186+80	-	193+69	RT	7
	200+28	-	229+47	LT	30
	200+32	-	241+64	RT	42
	231+55	-	239+45	LT	8
	244+37	-	254+02	RT	10
	245+34	-	286+06	LT	41
	259+46	-	266+16	RT	7
	268+57	-	275+26	RT	7
	280+23	-	281+42	RT	2
	284+28	-	286+06	RT	2
PROJECT 6180-00-71 TOTAL					333

BASE AGGREGATE

STATION	-	STATION	LOCATION	305.0110 DENSE 3/4-INCH TON	305.0120 DENSE 1 1/4-INCH TON	311.0110 BREAKER RUN TON	624.0100 WATER MGAL
PROJECT 6180-00-60							
CATEGORY 0010							
131+91 A	-	132+82 A	STH 21	---	250	146	---
131+91 A	-	132+82 A	STH 21 SHOULDERS	17	---	122	---
126+00 A	-	129+25 A	STH 21 SHOULDER RESTORATION	60	100	---	---
136+00 A	-	139+50 A	STH 21 SHOULDER RESTORATION	60	100	---	---
126+00 AT	-	139+50 AT	TEMPORARY BYPASS LANE	190	1,180	---	---
129+00 AT			TEMPORARY FIELD ENTRANCE	35	---	---	---
133+75 AT			TEMPORARY DRIVEWAY	30	---	---	---
129+00 A			PERMANENT FIELD ENTRANCE	25	---	---	---
133+75 A			PERMANENT DRIVEWAY	60	---	---	---
UNDISTRIBUTED				24	85	20	26
PROJECT 6180-00-60 TOTAL				501	1,715	288	26

STATION	-	STATION	LOCATION	305.0110 DENSE 3/4-INCH TON	305.0120 DENSE 1 1/4-INCH TON	311.0110 BREAKER RUN TON	624.0100 WATER MGAL
PROJECT 6180-00-71							
CATEGORY 0010							
66+50	-	84+85	STH 21 RECONSTRUCTION	940	8,940	8,430	---
85+49	-	112+00	STH 21 RECONSTRUCTION	1,310	12,660	12,000	---
155+67	-	156+73	STH 21 LT/RT (CULV REPL)	52	630	500	---
168+88	-	169+11	STH 21 LT/RT (STM SWR REPL)	---	640	650	---
270+07	-	271+10	STH 21 LT/RT (CULV REPL)	51	660	530	---
244+00	-	283+00	STH 21 LT/RT MANURE CONTAMINATION	3,120	---	---	---
66+50	-	112+00	RELIEF TRENCHES	---	---	40	---
UNDISTRIBUTED				280	1,180	1,110	540
PROJECT 6180-00-71 CATEGORY 0010 TOTAL				5,753	24,710	23,260	540

BASE AGGREGATE (CONTINUED)

STATION	-	STATION	LOCATION	305.0110 DENSE 3/4-INCH TON	305.0120 DENSE 1 1/4-INCH TON	311.0110 BREAKER RUN TON	624.0100 WATER MGAL
PROJECT 6180-00-71							
CATEGORY 0020							
23+97	-	41+41	STH 21 SHOULDER WIDENING LT	88	---	---	---
23+97	-	66+50	STH 21 SHOULDER WIDENING RT	260	---	---	---
42+85	-	66+50	STH 21 SHOULDER WIDENING LT	160	---	---	---
66+50	-	84+98	STH 21 SHOULDER WIDENING LT	130	---	---	---
66+50	-	85+06	STH 21 SHOULDER WIDENING RT	130	---	---	---
85+29	-	112+00	STH 21 SHOULDER WIDENING RT	180	---	---	---
85+37	-	112+00	STH 21 SHOULDER WIDENING LT	180	---	---	---
112+00	-	125+53	STH 21 SHOULDER WIDENING LT	87	---	---	---
112+00	-	149+00	STH 21 SHOULDER WIDENING RT	240	---	---	---
126+83	-	149+21	STH 21 SHOULDER WIDENING LT	150	---	---	---
150+30	-	157+00	STH 21 SHOULDER WIDENING RT	40	---	---	---
150+51	-	161+00	STH 21 SHOULDER WIDENING LT	58	---	---	---
160+00	-	166+65	STH 21 SHOULDER WIDENING RT	50	---	---	---
172+05	-	181+00	STH 21 SHOULDER WIDENING LT	53	---	---	---
172+36	-	181+00	STH 21 SHOULDER WIDENING RT	51	---	---	---
186+00	-	194+53	STH 21 SHOULDER WIDENING LT	51	---	---	---
186+00	-	194+50	STH 21 SHOULDER WIDENING RT	51	---	---	---
199+50	-	230+00	STH 21 SHOULDER WIDENING LT	200	---	---	---
199+50	-	242+44	STH 21 SHOULDER WIDENING RT	280	---	---	---
231+00	-	240+26	STH 21 SHOULDER WIDENING LT	56	---	---	---
243+74	-	254+65	STH 21 SHOULDER WIDENING RT	110	---	---	---
244+33	-	286+06	STH 21 SHOULDER WIDENING LT	280	---	---	---
258+85	-	266+91	STH 21 SHOULDER WIDENING RT	79	---	---	---
268+07	-	275+82	STH 21 SHOULDER WIDENING RT	77	---	---	---
279+61	-	281+93	STH 21 SHOULDER WIDENING RT	17	---	---	---
283+22	-	286+06	STH 21 SHOULDER WIDENING RT	15	---	---	---
UNDISTRIBUTED				70	---	---	32
PROJECT 6180-00-71 CATEGORY 0020 TOTAL				3,143	0	0	32
CONTRACT TOTAL				9,397	26,425	23,967	598

NOTE: ADDITIONAL QUANTITIES FOR ITEM 311.0110 BREAKER RUN ARE LISTED IN THE BRIDGE PLANS.

EARTHWORK SUMMARY

Category	Project	Division	From/To Station	Location	205.0100 Excavation Common (1) Cut (2)	Salvaged/ Unusable Pavement Material (3)	Available Material (4)	Unexpanded Fill	Expanded Fill (5) Factor 1.3	Mass Ordinate +/- (6)	208.0100 Borrow (7)	Comment
0010	6180-00-60	1	126+00AT - 139+70AT	STH 21 TEMPORARY BYPASS LANE CONSTRUCTION	831	0	831	2,415	3,140	-2,309	2,309	
			131+91A - 132+82A	STH 21 RECONSTRUCTION OVER C-69-0019	450	93	357	158	205	245	---	
			1+93D - 3+43D	TEMPORARY WATER DIVERSION CHANNEL EXCAVATION	1,609	0	1,609	0	0	1,609	---	FOR INFORMATION PURPOSES, SEE NOTE A
			1+93D - 3+43D	TEMPORARY WATER DIVERSION CHANNEL BACKFILL	0	0	0	1,168	1,519	-1,519	1,519	FOR INFORMATION PURPOSES, SEE NOTE B
			131+91A - 132+82A	TOP OF STRUCTURAL BACKFILL TO ROAD DATUM	0	0	0	469	610	-610	610	SEE NOTE C
			126+00AT - 139+70AT	STH 21 TEMPORARY BYPASS LANE REMOVAL	3,724	182	870	673	875	2,849	---	
		PROJECT 6180-00-60 TOTAL (DIVISION 1 SUBTOTAL)			5,005	275	3,668	4,883	6,348	266	2,918	
0010	6180-00-71	2	66+50 - 112+00	STH 21 RECONSTRUCTION	26,317	1,498	24,819	1,041	1,353	24,964	---	
			66+50 - 112+00	RELIEF TRENCHES	160	0	0	0	0	160	---	
		DIVISION 2 SUBTOTAL			26,477	1,498	24,819	1,041	1,353	25,124	0	
		3	155+69 - 156+72	CULVERT REPLACEMENT	581	72	509	133	173	408	---	
			168+48 - 169+52	STORM SEWER REPLACEMENT	942	117	825	215	280	662	---	
			270+07 - 271+10	CULVERT REPLACEMENT	565	70	495	129	168	397	---	
		DIVISION 3 SUBTOTAL			2,088	258	1,829	477	620	1,467	0	
		4	244+00 - 283+00	STH 21 MANURE CONTAMINATED SHOULDER AGGREGATE	860	---	---	0	0	860	---	
		DIVISION 4 SUBTOTAL			860	0	0	0	0	860	0	
		PROJECT 6180-00-71 TOTAL (DIVISIONS 2-4 SUBTOTAL)			29,424	1,756	26,648	1,518	1,974	27,451	0	
0010	UNDISTRIBUTED				350	---	---	---	---	---	---	
GRAND TOTAL					34,779	2,031	30,316	6,402	8,322	27,716	2,918	

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100.
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) Salvaged/Unusable Pavement Material.
4) Available Material = Cut - Salvaged/Unusuable Pavement Material.
5) Expanded Fill = Unexpanded Fill * Fill Factor
6) Mass Ordinate + or - Quantity Calculated for the Division. Plus Quantity indicates an excess of material. Minus indicates a shortage of material.
7) Factors Used To Compute Anticipated Waste And The Computed Waste Volume Identified Are For General Information Only.

NOTE A: Excavation of this materiall is incidental to item SPV.0060.01 Temporary Water Diversion - C-69-0019; volumes listed are for information purposes only and are not included in 205.0100 Excavation Common.
NOTE B: Backfill materiall is incidental to item SPV.0060.01 Temporary Water Diversion - C-69-0019; volumes listed are for information purposes only and are not included in 208.0100 Borrow. Material excavated as part of Temporary Water Diversion Channel Excavation is assumed to be Available Material and may be used as backfill, excluding within the structural backfill.
NOTE C: Material excavated as part of 206.2001 Excavation for Structures Culverts C-69-0019 is assumed to be Available Material and may be used as fill between top of structural backfill and road datum.

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FINISHING ROADWAY

PROJECT	213.0100 **FINISHING** ROADWAY (PROJECT) EACH
6180-00-71	1
6180-00-60	1
CONTRACT TOTAL	2

CONCRETE PAVEMENT

STATION - STATION	LOCATION	415.0080 CONCRETE PAVEMENT 8-INCH SY	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY	420.1000 CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT SY
PROJECT 6180-00-60 CATEGORY 0010				
131+93 A - 132+82 A	STH 21	243	---	243
PROJECT 6180-00-60 TOTAL		243	0	243
PROJECT 6180-00-71 CATEGORY 0010				
84+90 - 85+05	STH 21	---	40	---
85+29 - 85+44	STH 21	---	40	---
PROJECT 6180-00-71 TOTAL		0	80	0

ASPHALTIC ITEMS

STATION	-	STATION	LOCATION	450.4000 HMA COLD WEATHER PAVING TON	455.0605 TACK COAT GAL	460.6223 HMA PAVEMENT 3 MT 58-28 S TON	460.6224 HMA PAVEMENT 4 MT 58-28 S TON	465.0105 ASPHALTIC SURFACE TON	465.0110 ASPHALTIC SURFACE PATCHING TON	465.0125 ASPHALTIC SURFACE TEMPORARY TON	REMARKS
PROJECT 6180-00-60											
CATEGORY 0010											
131+91 A	-	132+82 A	STH 21 SHOULDERS	---	9	---	---	24	---	---	
126+00 AT	-	139+50 AT	TEMPORARY BYPASS LANE	---	---	---	---	---	---	378	
126+00 A	-	128+53 A	STH 21 SHOULDER RESTORATION	---	12	---	---	34	---	---	
136+50 A	-	139+50 A	STH 21 SHOULDER RESTORATION	---	14	---	---	40	---	---	
			UNDISTRIBUTED		---	---	---	3	---	38	
PROJECT 6180-00-60 CATEGORY 0010 TOTAL				0	35	0	0	101	0	416	
PROJECT 6180-00-71											
CATEGORY 0010											
20+32	-	21+48	STH 21 WB RT TURN LANE	6	10	---	16	---	---	---	
23+97	-	66+50	STH 21 MAINLINE	448	794	---	1,280	---	---	---	
23+97	-	66+50	STH 21 SHOULDERS	103	183	---	292	---	---	---	
25+74	-	33+09	STH 21 TURN LANE	32	57	---	91	---	---	---	
27+13	-	35+05	STH 21 PASSING LANE	28	49	---	78	---	---	---	
40+80	-	43+60	32ND AVENUE	27	47	---	75	---	---	---	
66+50	-	84+85	STH 21 MAINLINE	603	1380	1,240	482	---	---	---	
66+50	-	85+05	STH 21 SHOULDERS	178	405	364	142	---	---	---	
85+29	-	112+00	STH 21 SHOULDERS	243	554	498	194	---	---	---	
85+49	-	112+00	STH 21 MAINLINE	870	1990	1,790	695	---	---	---	
112+00	-	167+00	STH 21 MAINLINE	578	1030	---	1,650	---	---	---	
112+00	-	286+06	STH 21 SHOULDERS	707	1260	---	2,020	---	---	---	INCLUDES PASSING LANE
124+73	-	127+63	COTTONVILLE CT	23	40	---	63	---	---	---	
167+00	-	215+00	STH 21 MAINLINE	756	1350	---	2,160	---	---	---	INCLUDES PASSING LANE
215+00	-	286+06	STH 21 MAINLINE	746	1330	---	2,130	---	---	---	
148+54	-	153+64	CTH XX (NORTH)	32	56	---	89	---	---	---	
145+87	-	151+10	CTH XX (SOUTH)	35	61	---	98	---	---	---	
155+67	-	156+73	STH 21 MAINLINE/SHOULDERS	16	112	---	45	146	---	---	CULVERT REPLACEMENT
168+88	-	169+11	STH 21 MAINLINE/SHOULDERS	26	181	---	73	236	---	---	STORM SEWER REPLACEMENT
240+44	-	240+58	STH 21 PATCH	0	1	---	---	---	2	---	INLET RING REPLACEMENT
258+43	-	258+56	STH 21 PATCH	0	1	---	---	---	2	---	INLET RING REPLACEMENT
270+05	-	271+11	STH 21 MAINLINE/SHOULDERS	16	109	---	44	141	---	---	CULVERT REPLACEMENT
279+19	-	279+32	STH 21 PATCH	0	1	---	---	---	2	---	INLET RING REPLACEMENT
281+22	-	284+52	37TH AVENUE	24	41	---	66	---	---	---	
			UNDISTRIBUTED	---	---	---	---	---	200	---	RAMPING, MILLED SURFACE REPAIRS
PROJECT 6180-00-71 CATEGORY 0010 TOTAL				5,497	11,042	3,892	11,783	523	206	0	

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ASPHALTIC ITEMS (CONTINUED)

STATION	-	STATION	LOCATION	450.4000 HMA COLD WEATHER PAVING TON	455.0605 TACK COAT GAL	460.6223 HMA PAVEMENT 3 MT 58-28 S TON	460.6224 HMA PAVEMENT 4 MT 58-28 S TON	465.0105 ASPHALTIC SURFACE TON	465.0110 ASPHALTIC SURFACE PATCHING TON	465.0125 ASPHALTIC SURFACE TEMPORARY TON	REMARKS
PROJECT 6180-00-71											
CATEGORY 0020											
23+97	-	27+67	STH 21 SHOULDER WIDENING LT	4	11	---	11	8	---	---	
23+97	-	26+34	STH 21 SHOULDER WIDENING RT	3	7	---	7	6	---	---	
32+59	-	66+50	STH 21 SHOULDER WIDENING RT	37	105	---	105	77	---	---	
34+69	-	40+92	STH 21 SHOULDER WIDENING LT	7	19	---	19	14	---	---	
43+40	-	66+50	STH 21 SHOULDER WIDENING LT	26	72	---	72	53	---	---	
66+50	-	84+13	STH 21 SHOULDER WIDENING LT	53	60	107	42	---	---	---	
66+50	-	84+04	STH 21 SHOULDER WIDENING RT	56	64	114	45	---	---	---	
86+22	-	112+00	STH 21 SHOULDER WIDENING LT	79	90	161	63	---	---	---	
86+26	-	112+00	STH 21 SHOULDER WIDENING RT	71	81	145	57	---	---	---	
112+00	-	124+89	STH 21 SHOULDER WIDENING LT	14	40	---	40	29	---	---	
112+00	-	146+12	STH 21 SHOULDER WIDENING RT	38	106	---	106	78	---	---	
127+43	-	148+65	STH 21 SHOULDER WIDENING LT	24	67	---	67	49	---	---	
150+96	-	156+18	STH 21 SHOULDER WIDENING RT	6	16	---	16	12	---	---	
150+51	-	160+17	STH 21 SHOULDER WIDENING LT	11	30	---	30	22	---	---	
172+87	-	180+18	STH 21 SHOULDER WIDENING LT	8	22	---	22	16	---	---	
173+17	-	180+17	STH 21 SHOULDER WIDENING RT	8	21	---	21	16	---	---	
186+80	-	193+72	STH 21 SHOULDER WIDENING LT	8	21	---	21	16	---	---	
186+80	-	193+69	STH 21 SHOULDER WIDENING RT	8	21	---	21	15	---	---	
200+28	-	229+47	STH 21 SHOULDER WIDENING LT	32	91	---	91	66	---	---	
200+32	-	241+64	STH 21 SHOULDER WIDENING RT	45	128	---	128	94	---	---	
231+55	-	239+45	STH 21 SHOULDER WIDENING LT	9	24	---	24	18	---	---	
244+37	-	254+02	STH 21 SHOULDER WIDENING RT	11	30	---	30	22	---	---	
245+34	-	286+06	STH 21 SHOULDER WIDENING LT	45	127	---	127	93	---	---	
259+46	-	266+16	STH 21 SHOULDER WIDENING RT	8	21	---	21	15	---	---	
268+57	-	275+26	STH 21 SHOULDER WIDENING RT	8	21	---	21	15	---	---	
280+23	-	281+42	STH 21 SHOULDER WIDENING RT	2	4	---	4	3	---	---	
284+28	-	286+06	STH 21 SHOULDER WIDENING RT	3	6	---	6	4	---	---	
PROJECT 6180-00-71 CATEGORY 0020 TOTAL				624	1,305	527	1,217	741	0	0	
CONTRACT TOTAL				6,121	12,382	4,419	13,000	1,365	206	416	

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PWL MIXTURE USE TABLE

THE FOLLOWING ACCEPTANCE CRITERIA ARE APPLICABLE FOR THIS PROJECT:

							QUALITY MANAGEMENT PROGRAM TO BE USED FOR:	
LOCATION	STATION - STATION	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS	MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
TEMPORARY BYPASS	126+00 AT - 139+70 AT	ASPHALTIC SURFACE	BASE AGGREGATE	ASPHALTIC SURFACE TEMPORARY	416	4.0"	QMP AS PER SS 465	ACCEPTANCE TESTING BY ORDINARY COMPACTION
STH 21 SHOULDERS	131+91 A - 132+82 A	ASPHALTIC SURFACE	BASE AGGREGATE	ASPHALTIC SURFACE	101	3.5"	QMP AS PER SS 465	ACCEPTANCE TESTING BY ORDINARY COMPACTION
STH 21 SHOULDER RESTORATION	126+00 A - 128+53 A 136+50 A - 139+50 A	ASPHALTIC SURFACE	BASE AGGREGATE	ASPHALTIC SURFACE	74	3.5"	QMP AS PER SS 465	ACCEPTANCE TESTING BY ORDINARY COMPACTION
STH 21 DRIVING LANES	23+97 - 66+50 112+00 - 286+06	UPPER LAYER	MILLED EXISTING HMA	4 MT 58-28 S	7,220	2.0"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
STH 21 SHOULDERS & PASSING LANES <1500'	20+39 - 21+48 23+97 - 66+50 112+00 - 286+06	UPPER LAYER	MILLED EXISTING HMA OR 4 MT58-28 S	4 MT 58-28 S	3,036	2.0"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
STH 21 SHOULDERS WIDENING	23+97 - 66+50 112+00 - 286+06	LOWER LAYER	BASE AGGREGATE	4 MT 58-28 S	471	1.75	QMP AS PER SS 460	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
STH 21 DRIVING LANES	66+50 - 84+91 85+44 - 112+00	UPPER LAYER	3 MT 58-28 S	4 MT 58-28 S	1,177	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
STH 21 DRIVING LANES	66+50 - 84+91 85+44 - 112+00	LOWER LAYER	BASE AGGREGATE	3 MT 58-28 S	3,030	4.5" TOTAL	QMP AS PER SS 460	INCENTIVE DENSITY HMA PAVEMENT 460.2000
STH 21 SHOULDERS	66+50 - 85+06 85+29 - 112+00	UPPER LAYER	3 MT 58-28 S	4 MT 58-28 S	543	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
STH 21 SHOULDERS	66+50 - 85+06 85+29 - 112+00	LOWER LAYER	BASE AGGREGATE	3 MT 58-28 S	1,389	4.5" TOTAL	QMP AS PER SS 460	INCENTIVE DENSITY HMA PAVEMENT 460.2000
VARIOUS CULVERT REPLACEMENTS	155+69 - 156+72 168+48 - 169+52 270+07 - 271+10	ASPHALTIC SURFACE	BASE AGGREGATE	ASPHALTIC SURFACE & PATCHING	729	6.5" TOTAL	QMP AS PER SS 465	ACCEPTANCE TESTING BY ORDINARY COMPACTION
SIDE ROADS	23+97 - 286+06	UPPER LAYER	MILLED EXISTING HMA	4 MT 58-28 S	391	2.0"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE

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ASPHALTIC RUMBLE STRIPS

STATION	-	STATION	LOCATION	465.0520 ASPHALTIC RUMBLE STRIPS, SHOULDER LF	465.0560 ASPHALTIC RUMBLE STRIPS, CENTERLINE LF
				CATEGORY 0020	CATEGORY 0010
23+97	-	40+00	CTR	-	1,603
44+00	-	84+60	CTR	-	4,060
85+74	-	124+00	CTR	-	3,826
128+00	-	147+75	CTR	-	1,975
151+75	-	241+20	CTR	-	8,945
245+20	-	280+70	CTR	-	3,550
284+70	-	286+06	CTR	-	136
23+97	-	40+15	LT	1,618	-
23+97	-	25+75	RT	178	-
33+05	-	84+65	RT	5,160	-
43+57	-	84+65	LT	4,108	-
85+69	-	124+23	LT	3,854	-
85+69	-	145+50	RT	5,981	-
127+63	-	136+00	LT	837	-
137+25	-	148+04	LT	1,079	-
151+46	-	241+64	RT	9,018	-
154+01	-	286+06	LT	13,205	-
244+87	-	265+16	RT	2,029	-
269+07	-	281+27	RT	1,220	-
284+78	-	286+06	RT	128	-
PROJECT 6180-00-71 TOTAL				48,415	24,095

CULVERT PIPES

STATION - STATION	OFFSET	504.0900 CONCRETE MASONRY ENDWALLS CY	520.1024 APRON ENDWALL FOR CULVERT PIPE 24-INCH EACH	520.2015 CULVERT PIPE TEMPORARY 15-INCH LF	520.2024 CULVERT PIPE TEMPORARY 24-INCH LF	520.2072 CULVERT PIPE TEMPORARY 72-INCH LF	521.1015 APRON ENDWALL FOR CULVERT PIPE STEEL 15-INCH EACH	521.1024 APRON ENDWALL FOR CULVERT PIPE STEEL 24-INCH EACH	521.1072 APRON ENDWALL FOR CULVERT PIPE STEEL 72-INCH EACH	521.3124 CULVERT PIPE CORRUGATED STEEL 24-INCH (0.064" THICKNESS) LF	522.0160 CULVERT PIPE REINFORCED CONCRETE CLASS III 60-INCH LF	522.0424 CULVERT PIPE REINFORCED CONCRETE CLASS IV 24-INCH LF	522.2429 CULVERT PIPE REINF CONC HORIZONTAL ELLIPTICAL CLASS HE-IV 29X45-INCH LF	522.2629 APRON ENDWALL FOR CONCRETE CULVERT PIPE REINF CONC HORIZONTAL ELLIPTICAL 29X45-INCH LF	NOTES
PROJECT 6180-00-60															
128+77 AT - 129+26 AT	RT	---	---	---	48	---	---	2	---	---	---	---	---	---	TEMPORARY CONDITION
132+28 AT	LT/RT	---	---	---	---	64	---	---	2	---	---	---	---	---	TEMPORARY CONDITION
132+86 AT	RT	---	---	44	---	---	2	---	---	---	---	---	---	---	TEMPORARY CONDITION
133+31 AT - 133+78 AT	RT	---	---	---	48	---	---	2	---	---	---	---	---	---	TEMPORARY CONDITION
128+66 A - 129+27 A	RT	---	---	---	---	---	---	2	---	60	---	---	---	---	PERMANENT CONDITION
PROJECT 6180-00-60 TOTAL		0	0	44	96	64	2	6	2	60	0	0	0	0	
PROJECT 6180-00-71															
96+73 - 97+00	RT	3	---	---	---	---	---	---	---	---	---	---	---	---	
96+76 - 97+02	LT	3	---	---	---	---	---	---	---	---	---	---	---	---	
96+80	LT	---	---	---	---	---	---	---	---	---	8	---	---	---	
96+80	RT	---	---	---	---	---	---	---	---	---	8	---	---	---	
96+88	LT	---	---	---	---	---	---	---	---	---	8	---	---	---	
96+88	RT	---	---	---	---	---	---	---	---	---	8	---	---	---	
96+96	LT	---	---	---	---	---	---	---	---	---	8	---	---	---	
96+96	RT	---	---	---	---	---	---	---	---	---	8	---	---	---	
156+20	LT/RT	---	2	---	---	---	---	---	---	---	---	88	---	---	
270+58	LT/RT	---	---	---	---	---	---	---	---	---	---	---	88	2	
PROJECT 6180-00-71 TOTAL		6	2	0	0	0	0	0	0	0	48	88	88	2	

CONCRETE CURB & GUTTER

STATION - STATION	LOCATION	601.0553 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D LF
168+48 - 169+52	LT	104
168+48 - 169+52	RT	104
240+46 - 240+55	LT	9
258+45 - 258+54	RT	9
279+21 - 279+30	RT	9
PROJECT 6180-00-71 TOTAL		235

3

RIPRAP & GEOTEXTILE

STATION	-	STATION	LOCATION	606.0200 RIPRAP MEDIUM CY	645.0120 GEOTEXTILE TYPE HR SY
PROJECT 6180-00-60					
129+30	-	129+45	PERMANENT DRIVEWAY CULVERT	5	18
PROJECT 6180-00-60 TOTAL				5	18
PROJECT 6180-00-71					
96+73	-	97+01	TRIPLE CULVERT PARTIAL REPLACEMENT	40	133
156+18	-	156+24	CULVERT REPLACEMENT	4	14
270+55	-	270+62	CULVERT REPLACEMENT	4	14
PROJECT 6180-00-71 TOTAL				48	161
CONTRACT TOTAL				53	179

STORM SEWER

STATION	LOCATION	FROM STR	-	TO STR	STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 608.0412 12-INCH LF	608.0415 15-INCH LF
169+00	LT/RT	1.3	-	1.4	59	---
169+00	RT	1.4	-	1.5	---	7
PROJECT 6180-00-71 TOTAL					59	7

INLETS

STATION	OFFSET	611.0420 RECONSTRUCTING MANHOLES EACH	611.3230 INLETS 2X3-FT EACH	611.8115 ADJUSTING INLET COVERS EACH	611.9710 SALVAGED INLET COVERS EACH
169+00	LT	---	1	---	1
169+00	RT	1	1	---	1
240+50	LT	---	---	1	---
258+50	RT	---	---	1	---
279+25	RT	---	---	1	---
PROJECT 6180-00-71 TOTAL		1	2	3	2

GUARDRAIL

STATION	-	STATION	OFFSET	614.2300 MGS GUARDRAIL 3 LF	614.2350 MGS GUARDRAIL SHORT RADIUS LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH	614.2630 MGS GUARDRAIL SHORT RADIUS TERMINAL EACH
83+08	-	84+97	RT	100	---	39.4	1	---
83+58	-	84+97	LT	50	---	39.4	1	---
85+38	-	86+09	RT	53	13	39.4	---	1
85+38	-	87+26	LT	100	---	39.4	1	---
PROJECT 6180-00-71 SUBTOTAL				303	13	157.6	3	1

EROSION CONTROL MOBILIZATION

PROJECT	628.1905 MOBILIZATIONS EROSION **CONTROL** EACH	628.1910 MOBILIZATION EMERGENCY EROSION CONTROL EACH
6180-00-60	3	3
6180-00-71	3	3
CONTRACT TOTAL	6	6

LANDSCAPING

STATION - STATION	OFFSET	625.0500 SALVAGED TOPSOIL SY	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.2027 EROSION MAT CLASS II TYPE C SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	630.0200 SEEDING TEMPORARY LB	630.0500 SEED WATER MGAL	COMMENTS
PROJECT 6180-00-60									
TEMPORARY GRADING / BYPASS CONDITION									
126+00 AT - 139+70 AT	RT	3,550	---	3,550	2.3	---	96	79.7	
129+00 AT - 136+75 AT	LT	760	---	760	0.5	---	21	17.1	
131+90 A - 132+10 A	RT	100	---	100	0.1	---	3	2.2	
131+90 A - 132+40 A	LT	90	---	90	0.1	---	3	2.0	
132+70 A - 133+10 A	LT	90	---	90	0.1	---	3	2.0	
UNDISTRIBUTED	---	460	---	460	1	---	40	26	
PERMANENT GRADING CONDITION / RESTORATION									
126+00 A - 132+40 A	RT	2,940	---	2,940	1.9	53	---	66.0	
128+50 A - 132+40 A	RT	1,020	---	---	---	---	---	---	FARM FIELD
132+60 A - 139+50 A	RT	3,370	---	3,370	2.2	61	---	75.7	
131+90 A - 132+40 A	LT	260	---	260	0.2	5	---	5.8	
132+70 A - 133+10 A	LT	210	---	210	0.2	4	---	4.7	
133+50 A - 137+00 A	RT	850	---	---	---	---	---	---	FARM FIELD
UNDISTRIBUTED	---	870	---	680	1.4	40	---	39	
PROJECT 6180-00-60 TOTAL		14,570	0	12,510	10	163	166	320	
PROJECT 6180-00-71									
66+50 - 85+06	LT	2,730	2,730	---	1.8	50	---	61.3	
66+50 - 74+22	RT	900	900	---	0.6	17	---	20.2	
74+43 - 85+06	RT	1,720	1,720	---	1.1	31	---	38.6	
85+29 - 112+00	LT	4,680	4,680	---	3.0	85	---	105.1	
85+29 - 86+05	RT	90	90	---	0.1	2	---	2.0	
86+30 - 110+13	RT	4,260	4,260	---	2.7	77	---	95.7	
110+34 - 112+00	RT	390	390	---	0.3	8	---	8.8	
UNDISTRIBUTED	---	1,480	1,480	0	2.4	70	---	83	
PROJECT 6180-00-71 TOTAL		16,250	16,250	0	12	340	0	415	
CONTRACT TOTAL		30,820	16,250	12,510	22	503	166	735	

3

EROSION CONTROL

STATION	- STATION	OFFSET	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.7555 CULVERT PIPE CHECKS EACH	628.7570 ROCK BAGS EACH	NOTES
PROJECT 6180-00-60 TEMPORARY GRADING / BYPASS CONDITION							
126+00 AT	- 127+75 AT	RT	200	200	---	---	*
128+00 AT	- 132+00 AT	RT	410	410	---	---	*
132+40 AT	- 133+25 AT	RT	120	120	---	---	*
133+60 AT	- 139+75 AT	RT	665	665	---	---	*
132+40 A	- 132+40 A	LT/RT	130	130	---	---	
132+60 A	- 133+10 A	LT/RT	185	185	---	---	
FARM FIELD TOPSOIL STOCKPILE WEST			635	635	---	---	**
FARM FIELD TOPSOIL STOCKPILE EAST			500	500	---	---	**
128+66 AT		RT	---	---	3	---	
131+00 AT		RT	---	---	---	20	1 DITCH CHECK, 20 BAGS PER DITCH CHECK
131+95 AT		LT	---	---	---	20	1 DITCH CHECK, 20 BAGS PER DITCH CHECK; *
132+28 AT		RT	---	---	13	---	
132+86 AT		LT	---	---	2	---	
133+00 AT		RT	---	---	---	20	1 DITCH CHECK, 20 BAGS PER DITCH CHECK
133+35 AT		LT	---	---	---	20	1 DITCH CHECK, 20 BAGS PER DITCH CHECK; *
134+00 AT		RT	---	---	3	---	
134+40 AT		LT	---	---	3	---	*
131+95 A		LT	---	---	---	20	1 DITCH CHECK, 20 BAGS PER DITCH CHECK; *
133+40 A		LT	---	---	---	20	1 DITCH CHECK, 20 BAGS PER DITCH CHECK; *
UNDISTRIBUTED		---	290	290	---	20	
PROJECT 6180-00-60 PERMANENT GRADING CONDITION / RESTORATION							
130+96 A	- 133+20 A	LT	190	190	---	---	
130+96 A	- 133+20 A	RT	185	185	---	---	
128+50 A		RT	---	---	3	---	
UNDISTRIBUTED		---	40	40	---	---	
PROJECT 6180-00-60 TOTAL			3550	3550	27	140	
PROJECT 6180-00-71							
66+35	- 74+20	RT	875	875	---	---	
66+38	- 85+00	LT	2005	2005	---	---	
74+46	- 85+00	RT	1170	1170	---	---	
85+36	- 86+02	RT	130	130	---	---	
85+36	- 112+20	LT	2865	2865	---	---	
86+29	- 110+10	RT	2570	2570	---	---	
96+79		RT	---	---	13	---	
96+87		RT	---	---	13	---	
96+95		RT	---	---	13	---	
110+38	- 112+12	RT	225	225	---	---	
155+58	- 156+82	RT	145	145	---	---	
155+58	- 156+83	LT	160	160	---	---	
156+20		RT	---	---	3	---	2 DITCH CHECKS, 20 BAGS PER DITCH CHECK
269+95	- 271+19	LT	155	155	---	---	
269+98	- 271+22	RT	145	145	---	---	
270+58		RT	---	---	3	40	2 DITCH CHECKS, 20 BAGS PER DITCH CHECK
UNDISTRIBUTED		---	2620	2620	---	10	
PROJECT 6180-00-71 TOTAL			13,065	13,065	45	50	
CONTRACT TOTAL			16,615	16,615	72	190	

NOTES: * EROSION CONTROL MEASURE TO REMAIN IN PLACE FOR BOTH TEMPORARY AND PERMANENT GRADING CONDITIONS
** FARM FIELD TOPSOIL TO BE STOCKPILED DURING CONSTRUCTION AND REPLACED IN FARM FIELD AS PART OF RESTORATION

MARKERS

STATION	LOCATION	633.5200 MARKERS CULVERT END EACH
156+20	LT/RT	2
270+58	LT/RT	2
PROJECT 6180-00-71 TOTAL		4

PERMANENT SIGNING

STATION	OFFSET	638.2102 MOVING SIGNS TYPE II EACH	638.4000 MOVING SMALL SIGN SUPPORTS EACH	DESCRIPTION
PROJECT 6180-00-71				
70+39	RT	1	1	NO PASSING ZONE
74+07	LT	2	1	LEFT CURVE AND SPEED LIMIT 50 MPH
107+20	RT	1	1	PASSING LANE AHEAD 1 MILE
PROJECT 6180-00-71 TOTAL		4	3	

FIELD OFFICE

PROJECT	642.5001 TYPE B EACH
6180-00-71	1
CONTRACT TOTAL	1

TRAFFIC CONTROL COVERING SIGNS

STATION	SIGN DETAIL NUMBER	SIGN COVERED	NO. OF COVERING CYCLES	643.0910 TRAFFIC CONTROL COVERING SIGNS TYPE I EACH	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II EACH
PROJECT 6180-00-60 CATEGORY 0010					
136+00 AT	N/A	WI-4 ROAD CURVES AHEAD (LEFT)	1	---	1
PROJECT 6180-00-60 TOTAL				0	1
PROJECT 6180-00-71 CATEGORY 0010					
N/A	1	UP ARROW	1	---	1
N/A	3	LEFT ARROW	1	---	1
N/A	4	LEFT ARROW	1	---	1
N/A	35	WAUTOMA	1	---	1
N/A	37	WEST 21	1	1	---
N/A	37	21 / WEST	1	1	---
N/A	40	21 / WEST	1	1	---
N/A	81	WEST / 21 / LEFT ARROW	1	---	1
N/A	84	21 / WEST	1	1	---
N/A	86	REDGRANITE / WAUTOMA / 26 / 36	1	---	1
N/A	89	UP ARROW / WAUTOMA / REDGRANITE	1	---	1
N/A	91	REDGRANITE / WAUTOMA / 18 / 28	1	---	1
PROJECT 6180-00-71 TOTAL				4	8
CONTRACT TOTAL				4	9

TRAFFIC CONTROL SIGNS FIXED MESSAGE

SIGN CODE	IN	X	IN	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE SF	DESCRIPTION
G20-57C	72	X	36	18	HWY 21 ROAD CLOSED BEGINS XXX-XX
---	66	X	10	---	FOLLOW DETOUR (PLAQUE)
G20-57C	72	X	36	18	HWY 21 ROAD CLOSED BEGINS XXX-XX
---	66	X	10	---	FOLLOW DETOUR (PLAQUE)
G20-57B	96	X	48	32	HWY 21 BRIDGE WORK BEGINS XXX-XX
G20-57B	96	X	48	32	HWY 21 BRIDGE WORK BEGINS XXX-XX
G20-57	72	X	36	18	HWY 21 ROAD WORK BEGINS XXX-XX
G20-57	72	X	36	18	HWY 21 ROAD WORK BEGINS XXX-XX
PROJECT 6180-00-71 TOTAL				136	

GEOSYNTHETICS

STATION	-	STATION	645.0220 GEOGRID TYPE SR SY
66+50	-	112+00	22,250
155+69	-	156+72	510
168+48	-	169+52	770
270+07	-	271+10	540
PROJECT 6180-00-71 TOTAL			24,070

TRAFFIC CONTROL

LOCATION	DAYS IN SERVICE	SPV.0045.01 DRIVEWAY ASSISTANCE DEVICE SYSTEM NO.	DAY	633.1100 DELINEATORS TEMPORARY EACH	643.0300 TRAFFIC CONTROL DRUMS NO.	DAY	643.0420 TRAFFIC CONTROL BARRICADES TYPE III NO.	DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A NO.	DAY	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C NO.	DAY	643.0900 TRAFFIC CONTROL SIGNS NO.	DAY
PROJECT 6180-00-60														
CULVERT REPLACEMENT	50	2	100	95	28	1400	20	1000	24	1200	22	1100	21	1050
PROJECT 6180-00-60 TOTAL			100	95		1400		1000		1200		1100		1050
PROJECT 6180-00-71														
PROJECT 6180-00-71 CLOSURE & DETOUR	50	---	---	---	---	---	18	900	20	1000	---	---	468	23400
PROJECT 6180-00-71 MILL & OVERLAY	40	---	---	---	---	---	---	---	---	---	---	---	19	760
PROJECT 6180-00-71 TOTAL			0	0		0		900		1,000		0		24,160
CONTRACT TOTAL			100	95		1,400		1,900		2,200		1,100		25,210

3

PAVEMENT MARKING ITEMS

STATION	-	STATION	OFFSET	TYPE	646.2020 MARKING LINE EPOXY 6-INCH YELLOW LF	646.2040 MARKING LINE GROOVED WET REF EPOXY 6-INCH YELLOW LF	646.2040 MARKING LINE GROOVED WET REF EPOXY 6-INCH WHITE LF	646.4040 MARKING LINE GROOVED WET REF EPOXY 10-INCH WHITE LF	646.4705 MARKING LINE SAME DAY PAINT 6-INCH YELLOW LF	646.4705 MARKING LINE SAME DAY PAINT 6-INCH WHITE LF	643.3165 TEMPORARY MARKING LINE PAINT 6-INCH YELLOW LF	643.3165 TEMPORARY MARKING LINE PAINT 6-INCH WHITE LF	643.3805 TEMPORARY MARKING STOP LINE PAINT 18-INCH LF	646.9000 MARKING REMOVAL LINE 4-INCH LF
PROJECT 6180-00-60														
125+00 A	-	140+00 A	LT	EDGELINE (SOLID) - TEMP BYPASS	---	---	---	---	---	---	---	1,520	12	470
125+00 A	-	140+00 A	RT	EDGELINE (SOLID) - TEMP BYPASS	---	---	---	---	---	---	---	1,520	12	470
125+00 A	-	140+00 A	LT	EDGELINE (SOLID)	---	---	1,500	---	---	---	---	---	---	---
125+00 A	-	140+00 A	CTR	CENTERLINE (DASHED)	---	1,125	---	---	---	---	---	---	---	---
125+00 A	-	140+00 A	RT	EDGELINE (SOLID)	---	---	1,500	---	---	---	---	---	---	---
PROJECT 6180-00-60 TOTAL					0	4,125		0	0		3,040		24	940

PAVEMENT MARKING ITEMS (CONTINUED)

STATION	-	STATION	OFFSET	TYPE	646.2020 MARKING LINE EPOXY 6-INCH YELLOW LF	646.2040 MARKING LINE GROOVED WET REF EPOXY 6-INCH YELLOW LF	646.2040 MARKING LINE GROOVED WET REF EPOXY 6-INCH WHITE LF	646.4040 MARKING LINE GROOVED WET REF EPOXY 10-INCH WHITE LF	646.4705 MARKING LINE SAME DAY PAINT 6-INCH YELLOW LF	646.4705 MARKING LINE SAME DAY PAINT 6-INCH WHITE LF	643.3165 TEMPORARY MARKING LINE PAINT 6-INCH YELLOW LF	643.3165 TEMPORARY MARKING LINE PAINT 6-INCH WHITE LF	643.3805 TEMPORARY MARKING STOP LINE PAINT 18-INCH LF	646.9000 MARKING REMOVAL LINE 4-INCH LF
PROJECT 6180-00-71														
20+39	-	23+97	LT	EDGELINE (SOLID)	---	---	358	---	---	---	---	---	---	358
23+97	-	41+42	LT	EDGELINE (SOLID)	---	---	1,745	---	---	---	---	---	---	---
23+97	-	40+40	CTR	CENTERLINE (DASHED/SOLID)	---	2,054	---	---	5,323	---	---	---	---	---
23+97	-	30+67	RT	EDGELINE (SOLID)	---	---	670	---	---	---	---	---	---	---
27+21	-	30+67	RT	TURN LANE LINE	---	---	---	346	---	---	---	---	---	---
30+38	-	32+88	LT	LANE LINE (DASH); NO PASSING ZONE	---	---	63	---	---	60	---	---	---	---
32+05	-	84+85	RT	EDGELINE (SOLID)	---	---	5,280	---	---	---	---	---	---	---
40+40	-	47+13	CTR	CENTERLINE (DASHED)	---	168	---	---	162	---	---	---	---	---
42+85	-	43+57	LT	EDGELINE (SHORT DASH)	---	---	18	---	---	---	---	---	---	---
43+57	-	84+85	LT	EDGELINE (SOLID)	---	---	4,128	---	---	---	---	---	---	---
47+13	-	57+75	CTR	CENTERLINE (DASHED/SOLID)	---	1,328	---	---	3,441	---	---	---	---	---
57+75	-	59+50	CTR	CENTERLINE (DOUBLE SOLID)	---	350	---	---	1,050	---	---	---	---	---
59+50	-	70+50	CTR	CENTERLINE (DASHED/SOLID)	---	1,375	---	---	3,564	---	---	---	---	---
70+50	-	152+50	CTR	CENTERLINE (DASHED)	---	2,050	---	---	1,968	---	---	---	---	---
84+85	-	85+49	LT	EDGELINE (SOLID)	---	---	64	---	---	---	---	---	---	---
84+85	-	85+49	RT	EDGELINE (SOLID)	---	---	64	---	---	---	---	---	---	---
84+85	-	85+49	RT	EDGELINE (SOLID)	---	---	64	---	---	---	---	---	---	---
85+49	-	125+53	LT	EDGELINE (SOLID)	---	---	4,004	---	---	---	---	---	---	---
85+49	-	149+00	RT	EDGELINE (SOLID)	---	---	6,351	---	---	---	---	---	---	---
126+83	-	127+67	LT	EDGELINE (SHORT DASH)	---	---	21	---	---	---	---	---	---	---
127+67	-	149+21	LT	EDGELINE (SOLID)	---	---	2,154	---	---	---	---	---	---	---
147+00	-	149+00	RT	TURN LANE LINE	---	---	---	200	---	---	---	---	---	---
150+30	-	241+35	RT	EDGELINE (SOLID)	---	---	9,105	---	---	---	---	---	---	---
150+50	-	152+50	LT	TURN LANE LINE	---	---	---	200	---	---	---	---	---	---
150+50	-	286+06	LT	EDGELINE (SOLID)	---	---	13,556	---	---	---	---	---	---	---
152+50	-	222+00	CTR	CENTERLINE (DASHED/SOLID)	---	8,688	---	---	22,518	---	---	---	---	---
157+50	-	167+00	RT	LANE LINE (SHORT DASH)	---	---	238	---	---	---	---	---	---	---
167+00	-	212+50	RT	LANE LINE (DASH); NO PASSING ZONE	---	---	1,138	---	---	1,092	---	---	---	---
222+00	-	286+06	CTR	CENTERLINE (DASHED)	---	1,602	---	---	1,537	---	---	---	---	---
241+35	-	242+44	RT	EDGELINE (SHORT DASH)	---	---	27	---	---	---	---	---	---	---
243+74	-	280+97	RT	EDGELINE (SOLID)	---	---	3,723	---	---	---	---	---	---	---
280+97	-	281+93	RT	EDGELINE (SHORT DASH)	---	---	24	---	---	---	---	---	---	---
283+22	-	286+06	RT	EDGELINE (SOLID)	---	---	284	---	---	---	---	---	---	---
149+73	-	149+73	RT	CTH XX, CENTERLINE (DOUBLE SOLID)	66	---	---	---	198	---	---	---	---	---
149+78	-	149+78	LT	CTH XX, CENTERLINE (DOUBLE SOLID)	66	---	---	---	198	---	---	---	---	---
243+17	-	243+17	RT	CTH X, CENTERLINE (DOUBLE SOLID)	68	---	---	---	204	---	---	---	---	---
PROJECT 6180-00-71 TOTAL					200	70,627		746	40,163		0		0	358
CONTRACT TOTAL					200	74,752		746	40,163		3,040		24	1,298

CONSTRUCTION STAKING

STATION	-	STATION	LOCATION	CATEGORY	650.4000 CONSTRUCTION STAKING STORM SEWER EACH	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.5500 CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER LF	650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH	650.6501 CONSTRUCTION STAKING STRUCTURE LAYOUT C-69-0019 EACH	650.7000 CONSTRUCTION STAKING CONCRETE PAVEMENT LF	650.8000 CONSTRUCTION STAKING RESURFACING REFERENCE LF	650.9911 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL EACH	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
PROJECT 6180-00-60														
126+00 A	-	139+50 A		0010	---	---	---	---	---	---	---	---		1350
131+91 A	-	132+82 A		0010	---	91	---	---	---	---	91	---	---	---
	129+00 A			0010	---	---	---	---	1	---	---	---	---	---
	C-69-0019			0010	---	---	---	---	---	1	---	---	---	---
	6180-00-60			0010	---	---	---	---	---	---	---	---	1	---
PROJECT 6180-00-60 TOTAL					0	91	0	0	1	1	91	0	1	1,350
PROJECT 6180-00-71														
23+97	-	66+50		0010	---	---	---	---	---	---	---	4253	---	---
66+50	-	112+00		0010	---	4550	4550	---	---	---	---	---	---	4550
112+00	-	286+06		0010	---	---	---	---	---	---	---	17406	---	---
	96+80		LT/RT	0010	---	---	---	---	1	---	---	---	---	---
	96+88		LT/RT	0010	---	---	---	---	1	---	---	---	---	---
	96+96		LT/RT	0010	---	---	---	---	1	---	---	---	---	---
168+48	-	169+52	LT/RT	0010	---	---	---	208	---	---	---	---	---	---
240+46	-	240+55	LT	0010	---	---	---	9	---	---	---	---	---	---
258+45	-	258+54	RT	0010	---	---	---	9	---	---	---	---	---	---
279+21	-	279+30	RT	0010	---	---	---	9	---	---	---	---	---	---
	156+20			0010	---	---	---	---	1	---	---	---	---	---
	156+20			0010	---	---	---	---	1	---	---	---	---	---
	169+00			0010	2	---	---	---	---	---	---	---	---	---
	270+58			0010	---	---	---	---	1	---	---	---	---	---
	6180-00-71			0010	---	---	---	---	---	---	---	---	1	---
PROJECT 6180-00-71 TOTAL					2	4,550	4,550	235	6	0	0	21,659	1	4,550
CONTRACT TOTAL					2	4,641	4,550	235	7	1	91	21,659	2	5,900

SAWING

STATION	-	STATION	OFFSET	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF	REMARKS
PROJECT 6180-00-60						
CATEGORY 0010						
131+91 A	-		RT/LT	12	24	
132+82 A	-		RT/LT	12	24	
126+00 A	-		RT	6	---	
128+53 A	-		RT	6	---	
136+50 A	-		RT	6	---	
139+50 A	-		RT	6	---	
PROJECT 6180-00-60 CATEGORY 0010 TOTAL				48	48	
PROJECT 6180-00-71						
CATEGORY 0010						
25+16	-	25+62	RT	---	46	DRIVEWAY
	66+50		LT/RT	30	---	
	112+00		LT/RT	30	---	
	155+69		LT/RT	30	---	
	156+72		LT/RT	36	---	
	168+48		LT	22	3	STORM SEWER REPLACEMENT
	168+48		RT	34	3	STORM SEWER REPLACEMENT
	169+52		LT	22	3	STORM SEWER REPLACEMENT
	169+52		RT	34	3	STORM SEWER REPLACEMENT
240+46	-	240+55	LT	---	6	INLET REPLACEMENT
258+45	-	258+54	RT	---	6	INLET REPLACEMENT
279+21	-	279+30	RT	---	6	INLET REPLACEMENT
PROJECT 6180-00-71 CATEGORY 0010 TOTAL				238	76	
PROJECT 6180-00-71						
CATEGORY 0020						
23+97	-	27+75	LT	378	---	SHOULDER
23+97	-	26+25	RT	228	---	SHOULDER
32+65	-	66+50	RT	3,385	---	SHOULDER
34+70	-	40+90	LT	620	---	SHOULDER
46+40	-	66+50	LT	2,010	---	SHOULDER
112+00	-	124+75	LT	1,275	---	SHOULDER
112+00	-	146+00	RT	3,400	---	SHOULDER
127+50	-	148+55	LT	2,105	---	SHOULDER
151+00	-	156+17	RT	517	---	
153+38	-	160+17	LT	679	---	
172+88	-	180+18	LT	730	---	
173+18	-	180+18	RT	700	---	
PROJECT 6180-00-71 CATEGORY 0020 TOTAL				16,027	0	
CONTRACT TOTAL				16,313	124	

LOCATING NO-PASSING ZONES

PROJECT	648.0100 MI
6180-00-71	4.96
TOTAL	4.96

3

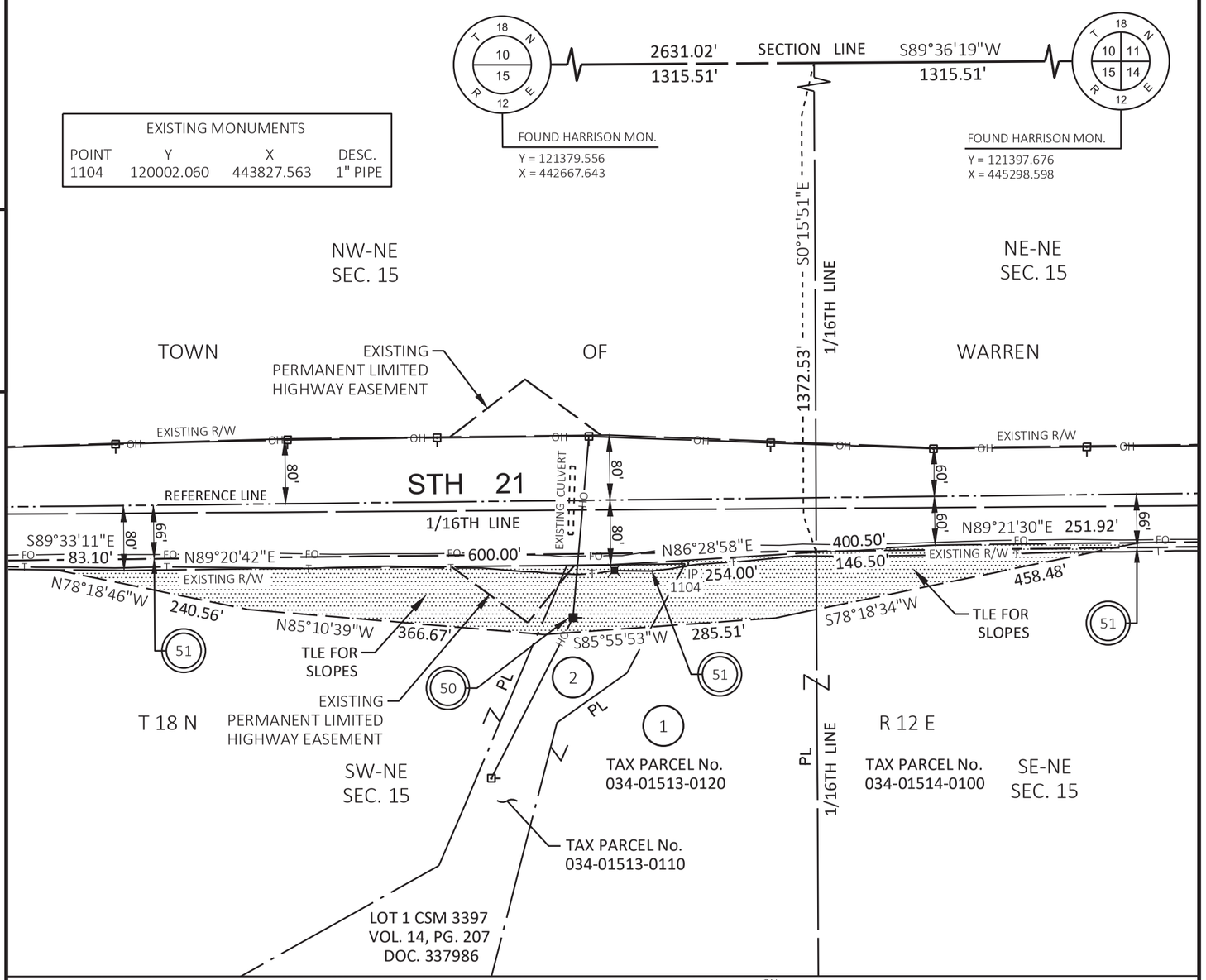
4

NOTES:
THIS EXHIBIT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSES ONLY. REFER TO THE CONVEYANCE DOCUMENT FOR PARCEL RELATED DETAILS.

R/W PROJECT NUMBER: 6180-00-20	SHEET NUMBER: 1

TLE ACQUISITION EXHIBIT
REDGRANITE - OSHKOSH
STH 49 TO WINNEBAGO COUNTY LINE
STH 21 WAUSHARA COUNTY

PART OF THE SW-NE AND PART OF THE SE-NE, ALL IN SECTION 15, T18N, R12E, TOWN OF WARREN, WAUSHARA COUNTY, WISCONSIN.



SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT

PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	TLE ACRES
1	JOHN L. SOBIESKI AND CHERYL L. SOBIESKI, HUSBAND AND WIFE,AND THOMAS L. SOBIESKI AND THERESA D. SOBIESKI, HUSBAND AND WIFE, AS TENANTS IN COMMON BETWEEN COUPLES.	TLE	1.382
2	ADDISON MARTIN AND BENJAMIN MARTIN, WIFE AND HUSBAND	TLE	0.268

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	UTILITY OWNER(S)	INTEREST REQUIRED
50	ALLIANT ENERGY	CONVEYANCE OF RIGHTS
51	BRIGHTSPEED OF NORTH CENTRAL WISCONSIN, LLC	CONVEYANCE OF RIGHTS

GN

SCALE, FEET
0 100 200

50 ALLIANT ENERGY
NO EASEMENT OF RECORD
PARCEL 2

51 BRIGHTSPEED OF NORTH CENTRAL WISCONSIN, LLC
EASEMENT (TELEPHONE)
VOL. 58, PG. 117, DOC. 102859
PARCELS 1, 2

51 BRIGHTSPEED OF NORTH CENTRAL WISCONSIN, LLC
RIGHT-OF-WAY GRANT (TELEPHONE)
VOL. 179, PG. 587, DOC. 205221
PARCEL 1

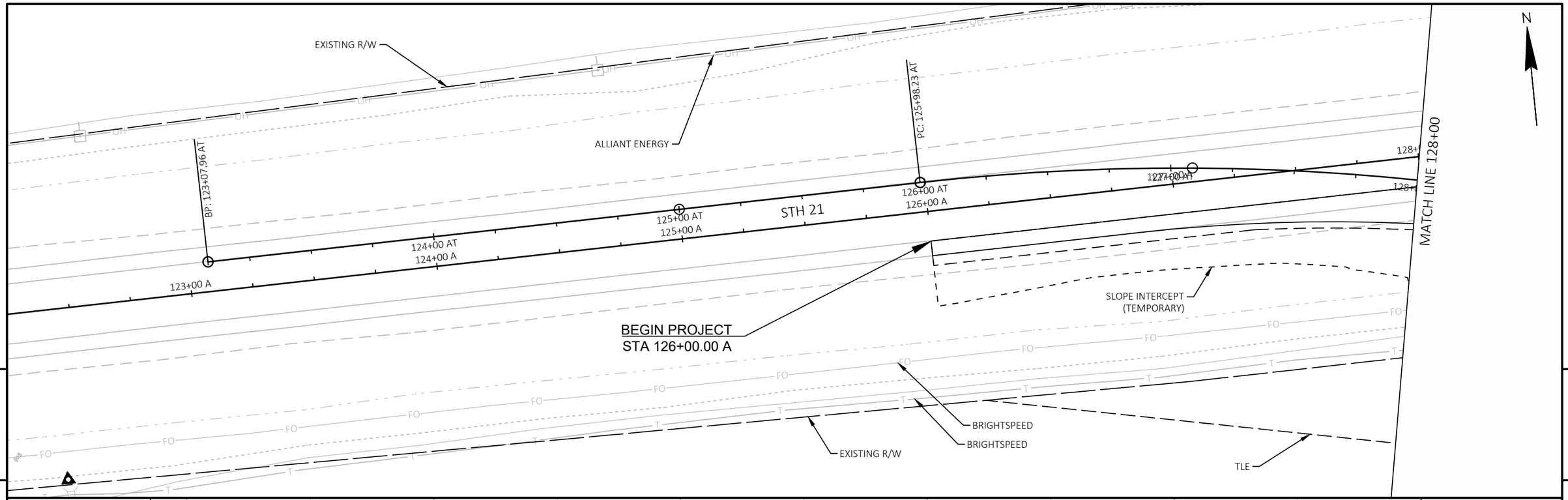
THIS MAP PREPARED BY AECOM, FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

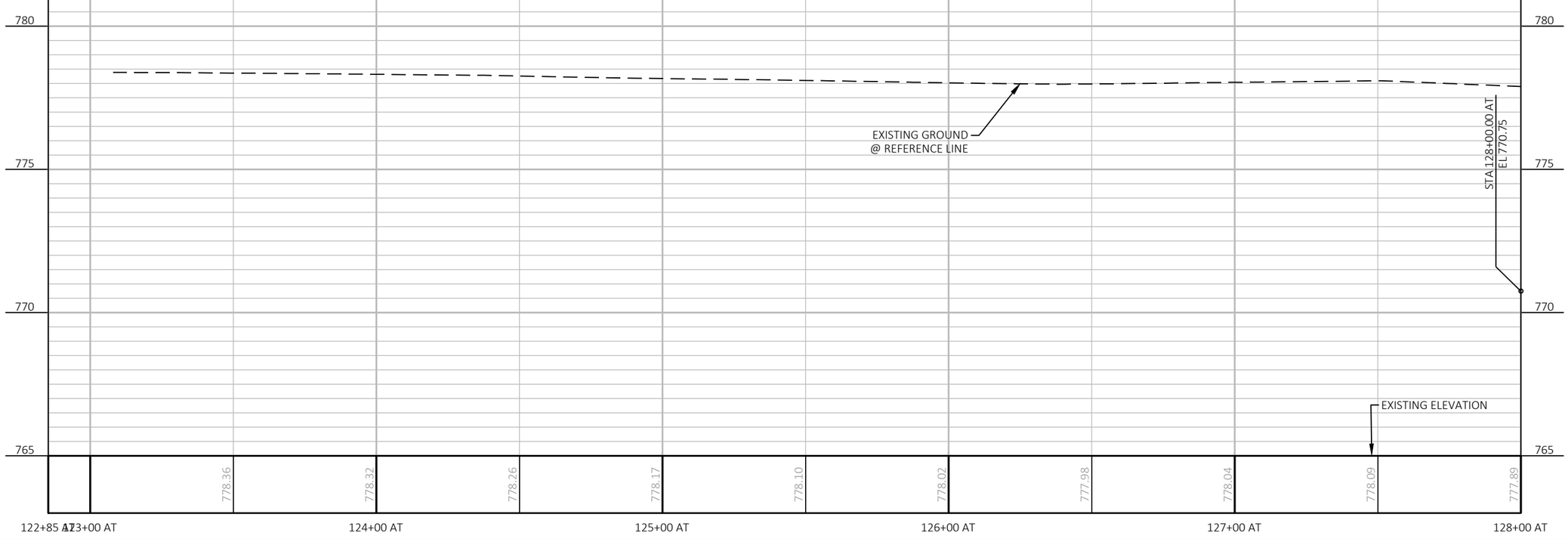
THIS MAP IS APPROVED FOR THE DEPARTMENT OF TRANSPORTATION NORTH CENTRAL REGION OFFICE.

SIGNATURE: Brent L Stella DATE: 1/10/24

PRINT NAME: BRENT L. STELLA

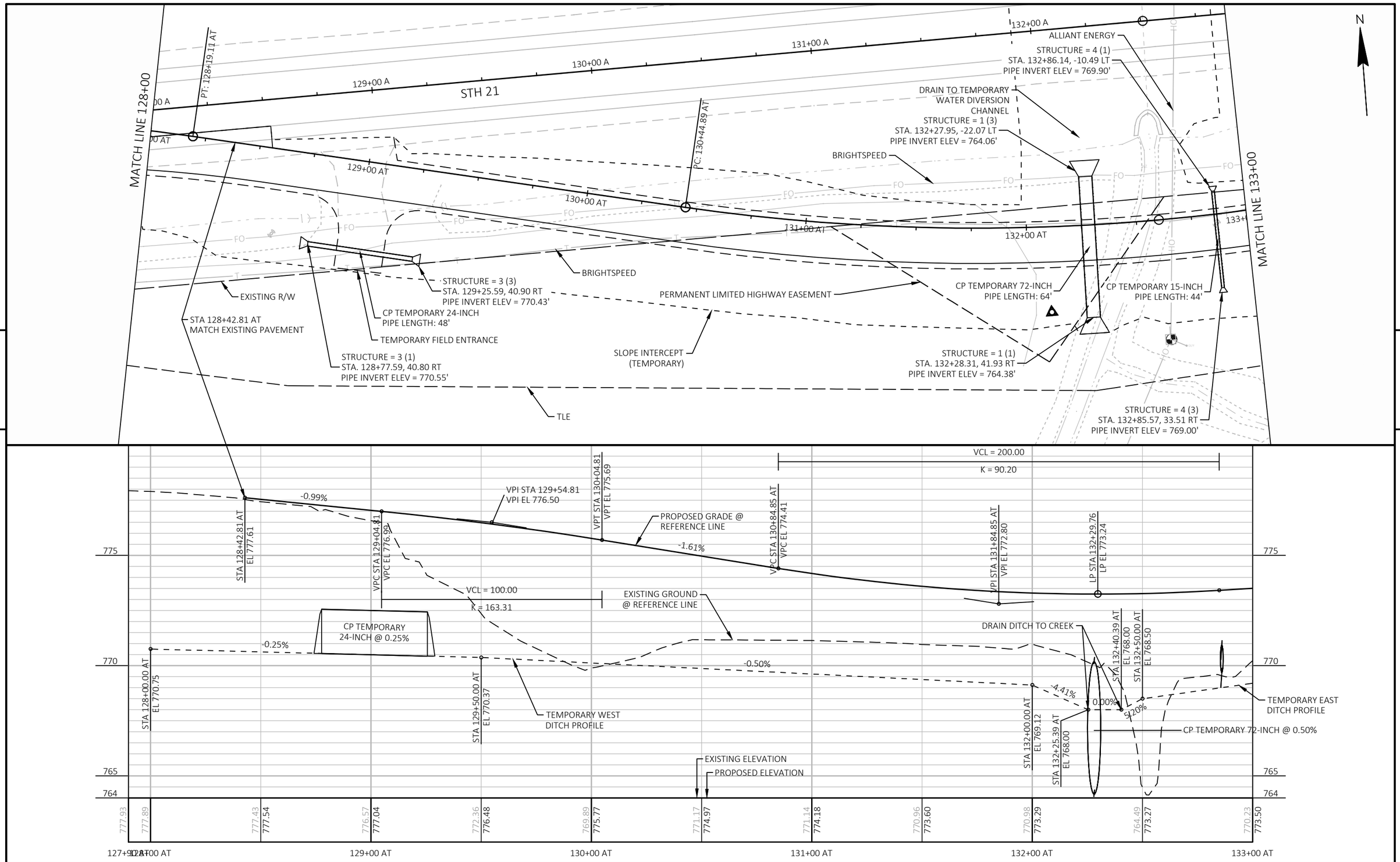
FILE NAME : 61800020-TLE.DWG PLOT DATE : 1/10/2024 11:14 AM R/W PROJECT: 6180-00-20





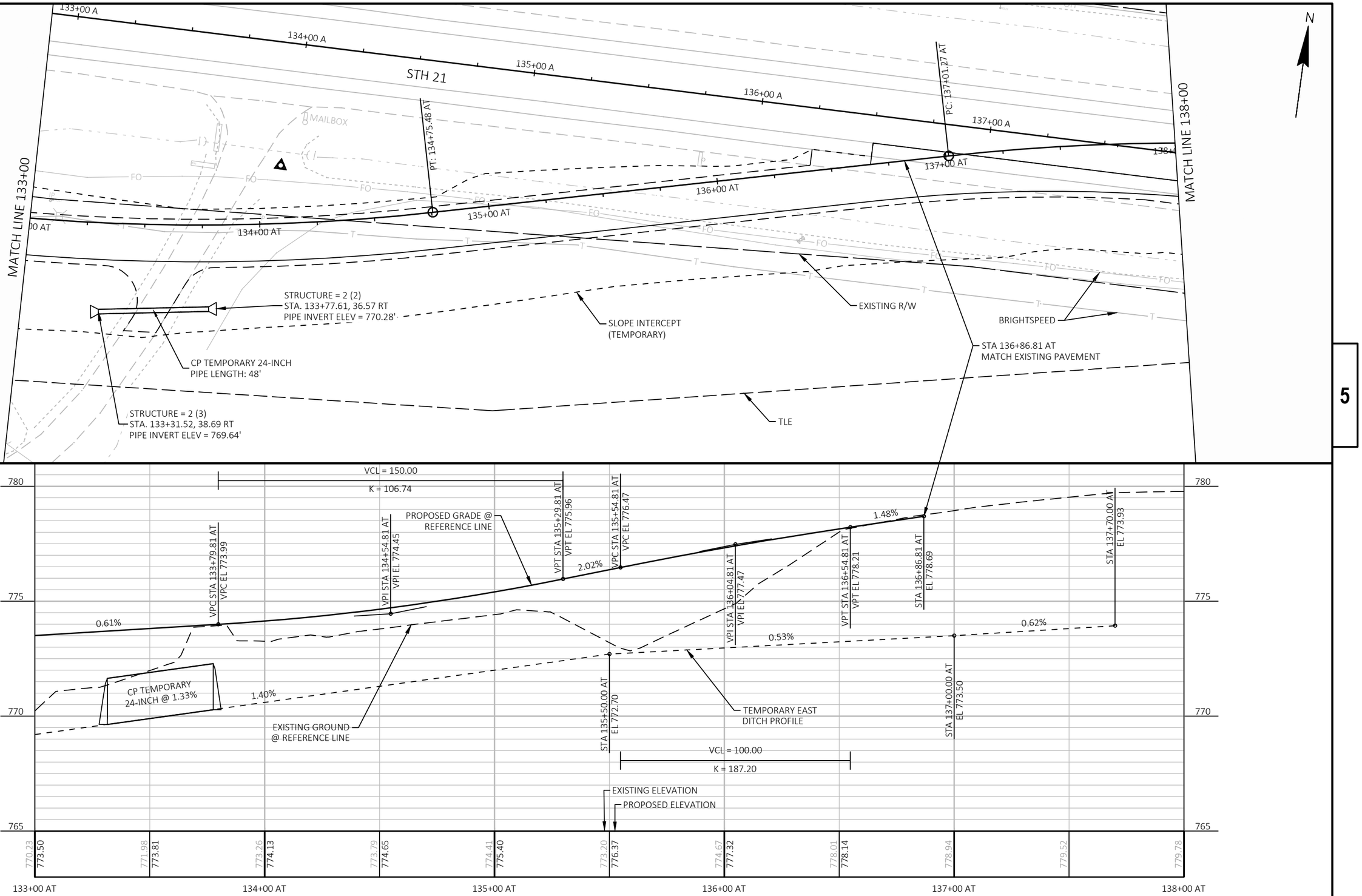
PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	PLAN AND PROFILE: TEMPORARY BYPASS ROAD	SHEET 94	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-050101-PP_TEMP-BYPASS-ROAD.DWG
LAYOUT NAME - 050101-pp_Bypass
PLOT DATE : 2/28/2024 1:15 PM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:40 FT



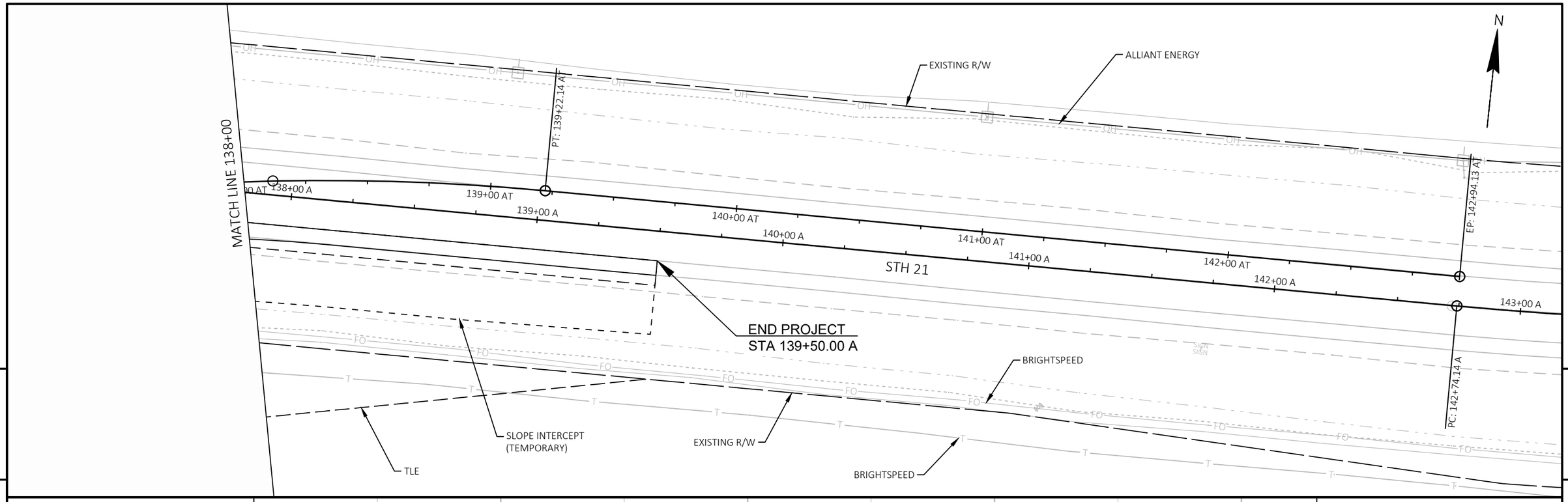
PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	PLAN AND PROFILE: TEMPORARY BYPASS ROAD	SHEET 95 E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-050101-PP_TEMP-BYPASS-ROAD.DWG
LAYOUT NAME - 050102-pp_Bypass
PLOT DATE : 2/28/2024 1:15 PM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:40 FT



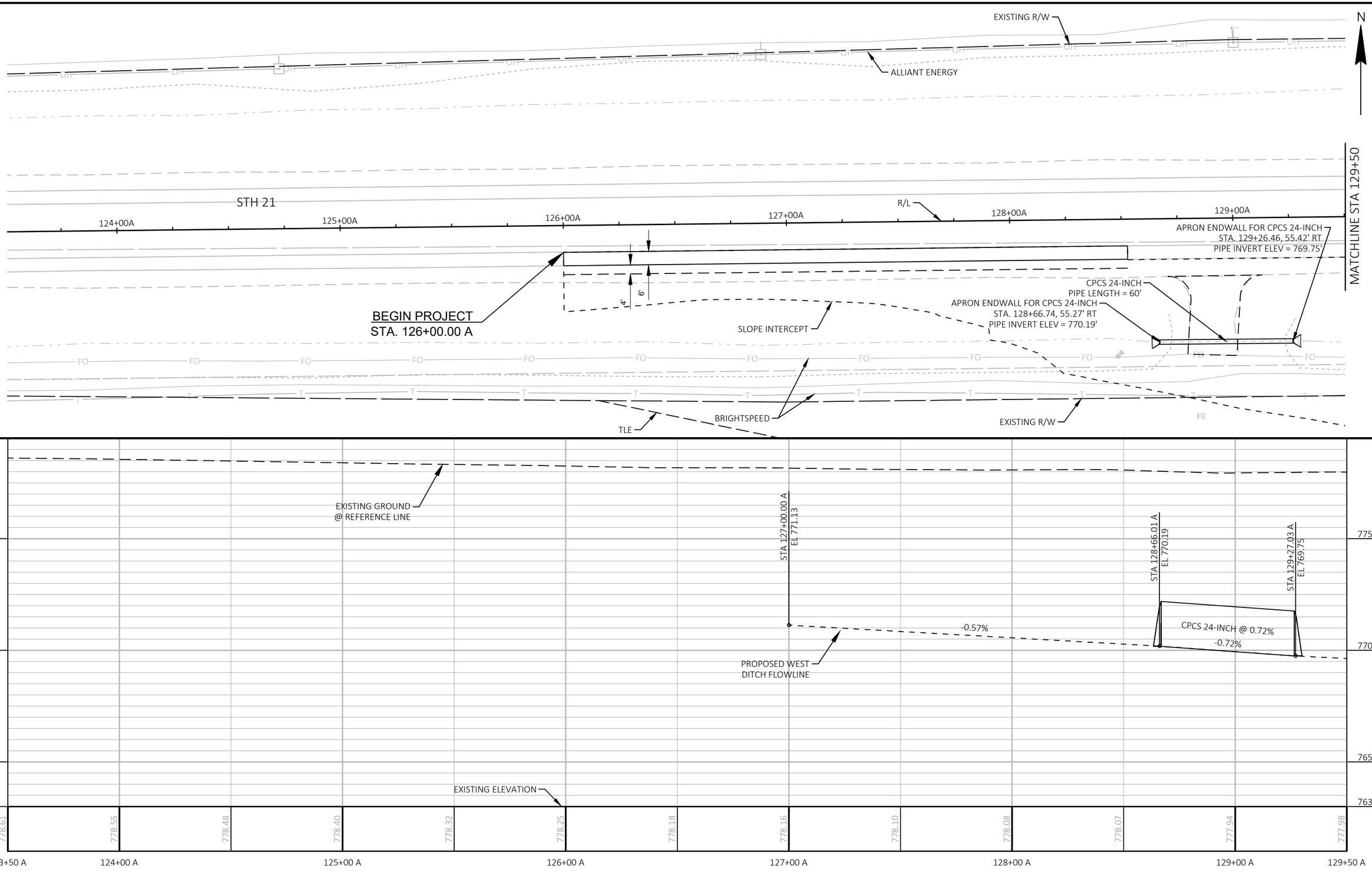
PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	PLAN AND PROFILE: TEMPORARY BYPASS ROAD	SHEET 96 E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-050101-PP_TEMP-BYPASS-ROAD.DWG
LAYOUT NAME - 050103-pp_Bypass
PLOT DATE : 2/28/2024 1:15 PM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44



PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	PLAN AND PROFILE: TEMPORARY BYPASS ROAD	SHEET 97	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-050101-PP_TEMP-BYPASS-ROAD.DWG
LAYOUT NAME - 050104-pp_Bypass
PLOT DATE : 2/28/2024 1:15 PM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:40 FT



PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	PLAN & PROFILE - STH 21	SHEET 98	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-050101-PP.DWG
LAYOUT NAME - 6130-050101-pp
PLOT DATE : 2/28/2024 12:48 PM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44

PERMANENT LIMITED HIGHWAY EASEMENT

EXISTING R/W

N

BM 2

ALLIANT ENERGY

SLOPE INTERCEPT

REMOVE EXISTING
STRUCTURE C-69-9000
9.5'X6.4' SPPA

MATCHLINE STA 129+50

STH 21

130+00A

131+00A

132+00A

133+00A

R/L

134+00A

135+00A

MATCHLINE STA 135+50

SLOPE INTERCEPT

BEGIN CONSTRUCTION
STA 131+91.00 A
MATCH EXISTING
SAW CUT REQ'D

STRUCTURE C-69-0019
REQUIRED

ALLIANT
ENERGY

END CONSTRUCTION
STA 132+82.00 A
MATCH EXISTING
SAW CUT REQ'D

EXISTING CPCS 24-INCH
(TO REMAIN)

EXISTING R/W

BRIGHTSPEED

PERMANENT LIMITED HIGHWAY EASEMENT

0.15%

EXISTING GROUND
@ REFERENCE LINE

PROPOSED GRADE @
REFERENCE LINE

STA 131+91.00 A
EL 777.62

STA 132+82.00 A
EL 777.76

STA 132+24.76 A
EL 768.30

STA 132+59.71 A
EL 768.36

STA 132+73.77 A
EL 769.91

STA 133+57.64 A
EL 770.87

STA 134+06.38 A
EL 771.32

STA 135+08.05 A
EL 772.69

-0.49%

1.14%

0.93%

1.34%

11.05%

PROPOSED WEST
DITCH FLOWLINE

PROPOSED EAST
DITCH FLOWLINE

PROPOSED BOX CULVERT
(SEE STRUCTURE PLANS)

EXISTING ELEVATION

PROPOSED ELEVATION

775
770
765
763

777.98 | 777.91 | 777.78 | 777.69 | 777.63 | 777.62 | 777.64 | 777.74 | 777.71 | 777.76 | 777.87 | 778.00 | 778.18 | 778.32 | 778.52

129+50 A | 130+00 A | 131+00 A | 132+00 A | 133+00 A | 134+00 A | 135+00 A | 135+50 A

PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	PLAN & PROFILE - STH 21	SHEET 99	E

N

EXISTING R/W

ALLIANT ENERGY

MATCHLINE STA 135+50

136+00A

STH 21

137+00A

138+00A

R/L

139+00A

140+00A

141+00A

4'

6'

END PROJECT
STA. 139+50.00 A

SLOPE INTERCEPT

EXISTING R/W

BRIGHTSPEED

TLE

5

5

780

775

770

766

EXISTING GROUND
@ REFERENCE LINE

STA 137+75.00 A
EL 774.19

0.56%

PROPOSED EAST
DITCH FLOWLINE

EXISTING ELEVATION

778.52	778.78	779.07	779.41	779.71	779.96	780.20	780.45	780.70	780.93	781.17	781.43	781.76

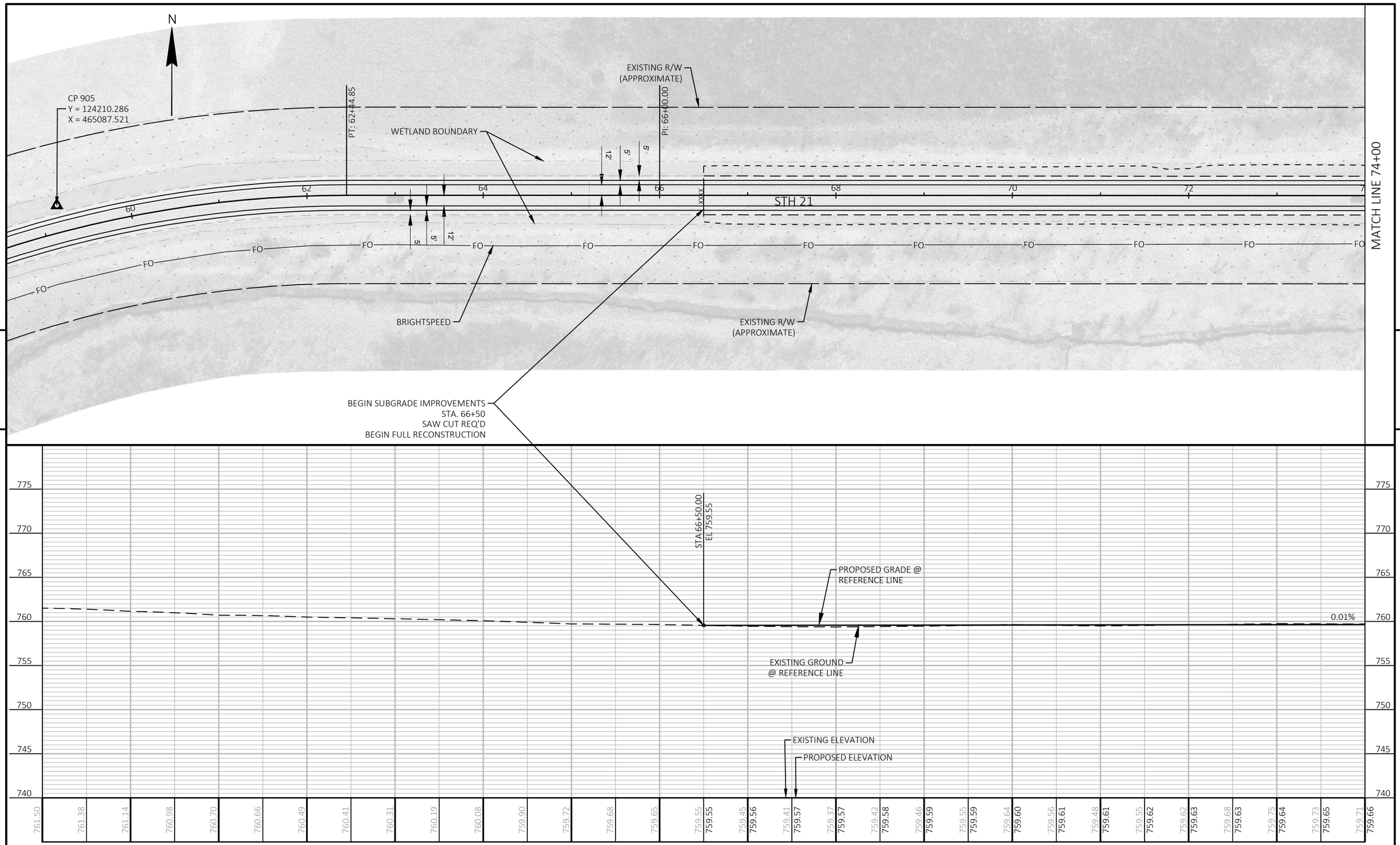
135+50 A | 136+00 A | 137+00 A | 138+00 A | 139+00 A | 140+00 A | 141+00 A | 141+50 A

PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	PLAN & PROFILE - STH 21	SHEET 100	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-050101-PP.DWG
LAYOUT NAME - 6130-050103-pp

PLOT DATE : 2/28/2024 12:49 PM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:40 FT

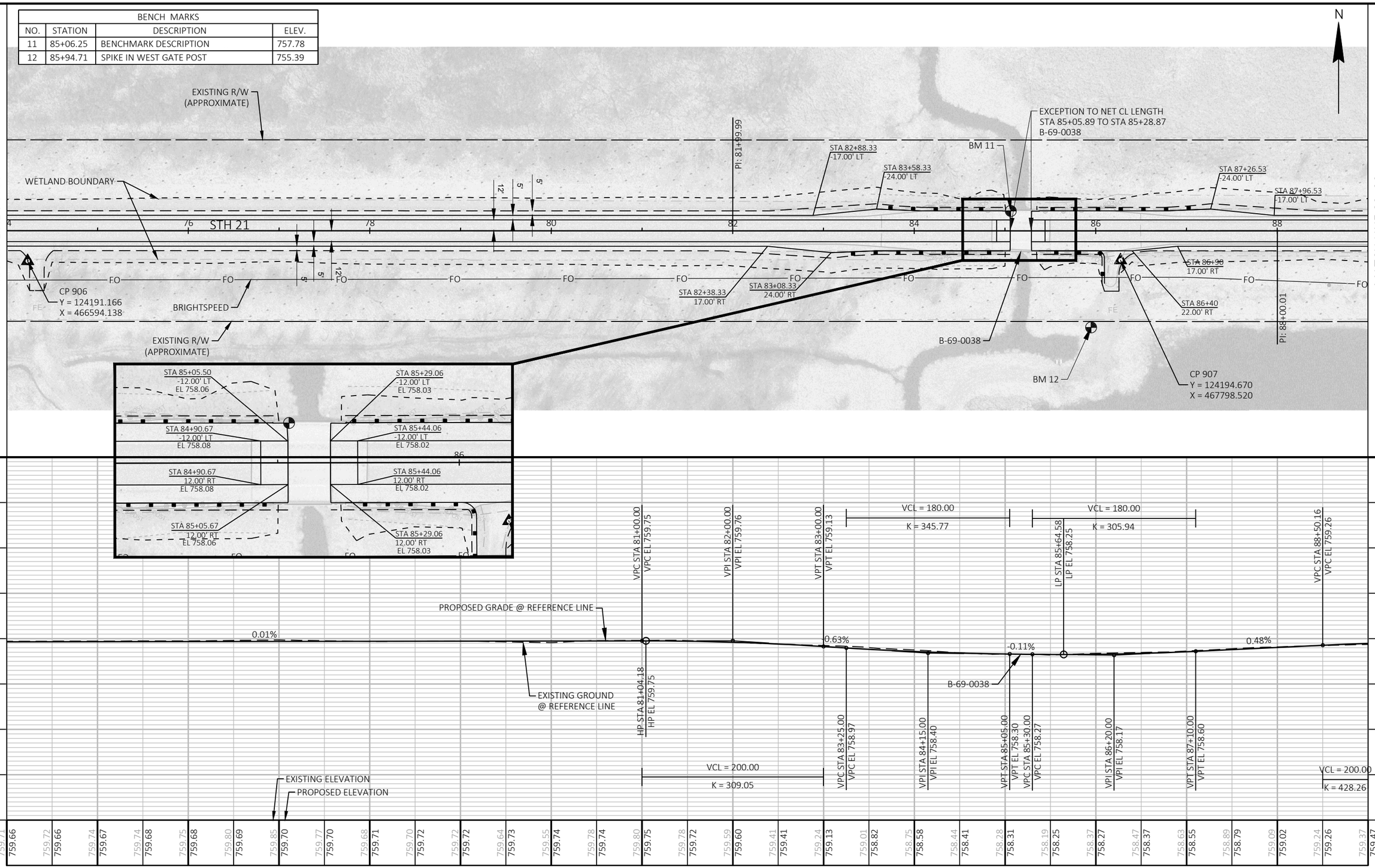
WISDOT/CADDS SHEET 44



PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	PLAN AND PROFILE: STH 21 - SUBGRADE IMPROVEMENT AREA	SHEET 101	E

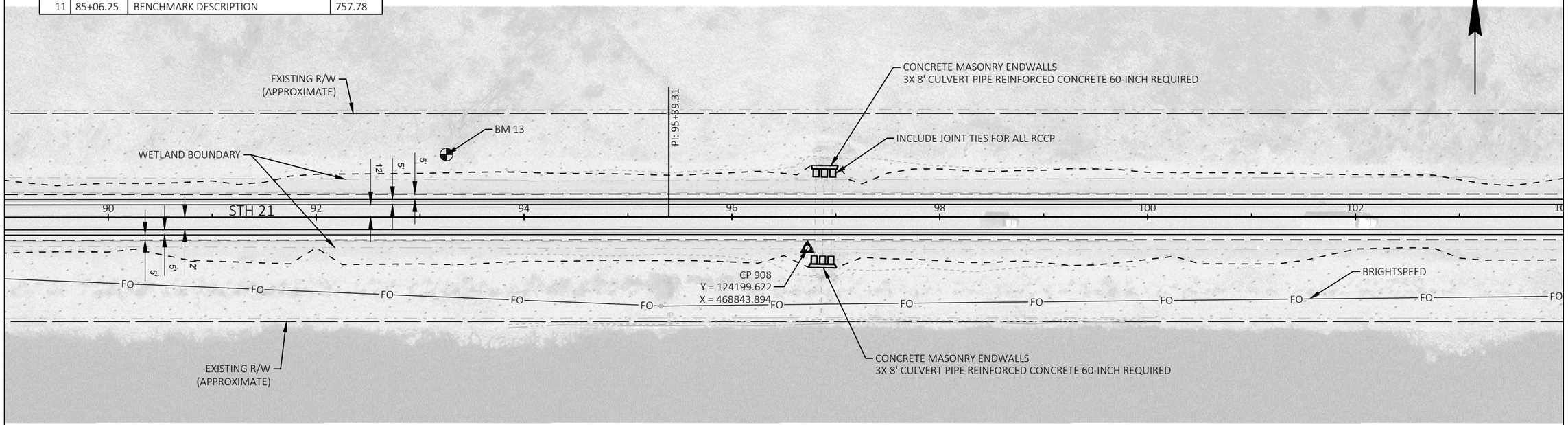
FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\050101-PP.DWG
LAYOUT NAME - 050101-pp
PLOT DATE : 12/21/2023 10:49 AM
PLOT BY : CZECH, ANDREW
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

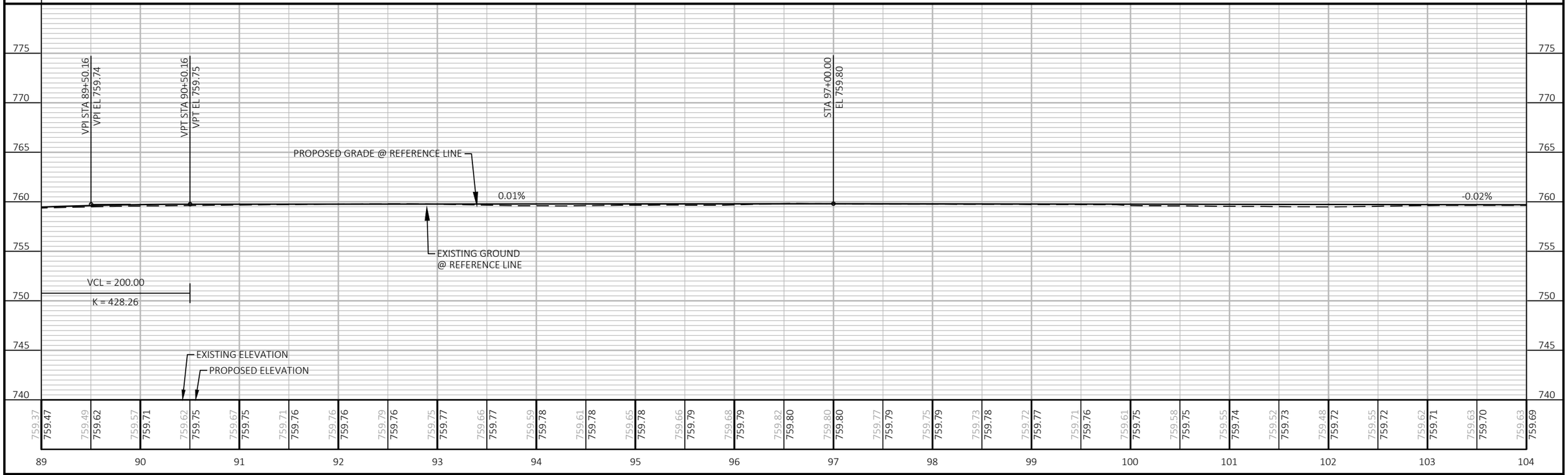
BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
11	85+06.25	BENCHMARK DESCRIPTION	757.78
12	85+94.71	SPIKE IN WEST GATE POST	755.39



PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	PLAN AND PROFILE: STH 21 - SUBGRADE IMPROVEMENT AREA	SHEET 102	E

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
11	85+06.25	BENCHMARK DESCRIPTION	757.78





PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	PLAN AND PROFILE: STH 21 - SUBGRADE IMPROVEMENT AREA	SHEET 103	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\050101-PP.DWG
LAYOUT NAME - 050103-pp
PLOT DATE : 12/21/2023 10:50 AM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

MATCH LINE 104+00

N

EXISTING R/W
(APPROXIMATE)

WETLAND BOUNDARY

STH 21

CP 909
Y = 124197.603
X = 470186.358

BRIGHTSPEED

EXISTING R/W
(APPROXIMATE)

END SUBGRADE IMPROVEMENTS
STA. 112+00
SAW CUT REQ'D
END FULL RECONSTRUCTION

VCL = 200.00

K = 520.07

LP STA 110+08.03
LP EL 759.60

STA 112+00.00
EL 759.95

PROPOSED GRADE @ REFERENCE LINE

-0.02%

EXISTING GROUND
@ REFERENCE LINE

VPC STA 110+00.00
VPC EL 759.60

VPI STA 111+00.00
VPI EL 759.58

VPT STA 112+00.00
VPT EL 759.95

EXISTING ELEVATION

PROPOSED ELEVATION

104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119
759.63	759.61	759.59	759.62	759.65	759.58	759.51	759.46	759.40	759.53	759.66	759.61	759.56	759.64	759.73	759.84	759.95	760.08	760.20	760.58	760.96	761.30	761.63	762.05	762.46	762.72	762.98	763.32	763.65	764.09	764.54
759.69	759.68	759.68	759.67	759.66	759.65	759.65	759.64	759.63	759.62	759.62	759.61	759.60	759.62	759.68	759.79															

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	PLAN AND PROFILE: STH 21 - SUBGRADE IMPROVEMENT AREA	SHEET 104	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\050101-PP.DWG
LAYOUT NAME - 050104-pp
PLOT DATE : 12/21/2023 10:50 AM PLOT BY : CZECH, ANDREW PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

Standard Detail Drawing List

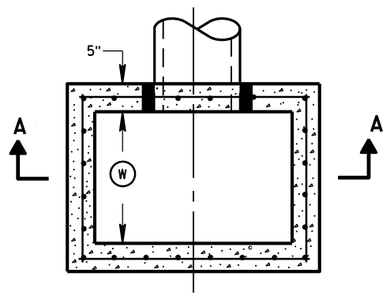
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-23A	CONCRETE CURB & GUTTER
08D01-23B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F10-02	CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH
09A01-14A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
13A10-03A	SHOULDER RUMBLE STRIPS - ASPHALT
13A10-03G	SHOULDER AND EDGE LINE RUMBLE STRIPS - CROSSINGS, INTERSECTIONS, BRIDGES, DRIVEWAYS
13A10-03H	SHOULDER AND EDGE LINE RUMBLE STRIPS - RAILROAD, PASSING, CLIMBING AND BYPASS LANES
13A11-04A	CENTERLINE RUMBLE STRIPS - ASPHALT
13A11-04D	CENTERLINE RUMBLE STRIPS - INTERSECTIONS, DRIVEWAYS, BRIDGES, RAILROADS
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C11-14A	RURAL DOWELED CONCRETE PAVEMENT
13C11-14B	RURAL DOWELED CONCRETE PAVEMENT
13C19-03	HMA LONGITUDINAL JOINTS
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)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B53-02A	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02B	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02C	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02D	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02E	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02F	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02G	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02H	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02I	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-09C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C02-09H	MODIFIED ROUTE ASSEMBLY FOR DETOUR SIGNING
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-23B	TEMPORARY LONGITUDINAL PAVEMENT MARKING
15C08-23C	PAVEMENT MARKING (TURN LANES)
15C08-23D	PAVEMENT MARKING (TURN LANES)
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
15C19-08A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C19-08B	MOVING PAVEMENT MARKING OPERATION MULTI-LANE UNDIVIDED ROADWAY
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-06A	PAVEMENT MARKING (INTERSECTIONS)

6

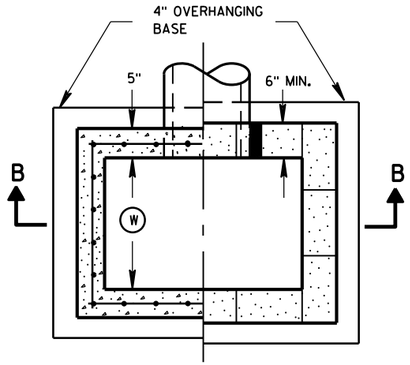
Standard Detail Drawing List

15C35-06B	PAVEMENT MARKING AND SIGNING (CLIMBING LANE & PASSING LANE)
15C35-06C	PAVEMENT MARKING AND SIGNING (CLIMBING LANE & PASSING LANE)
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D31-05	TRAFFIC CONTROL, TEMPORARY BYPASS ROADWAY
15D33-09	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
15D44-02	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES
15D45-03	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH LOOSE GRAVEL
15D48-01	TRAFFIC CONTROL, LANE SHIFT IN FLAGGING OPERATION
15D51-01	TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY

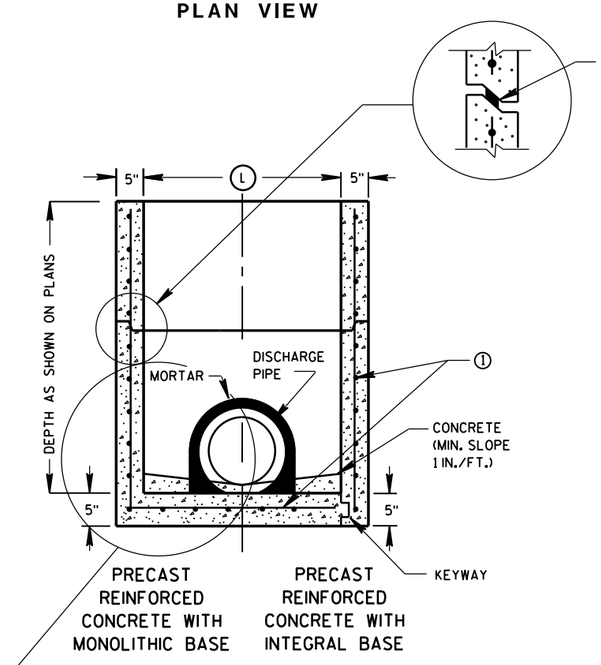
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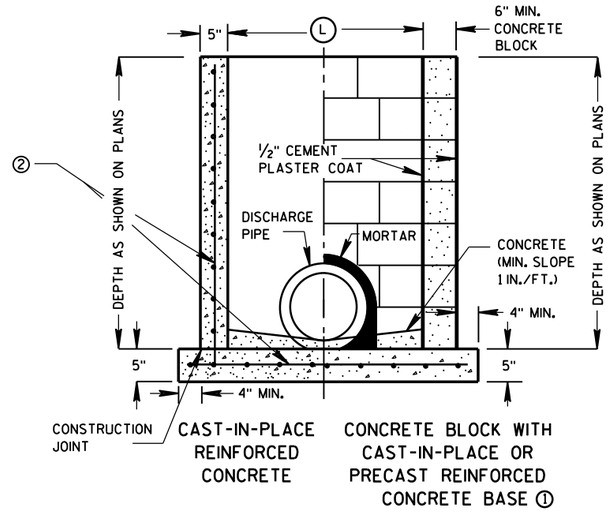
PLAN VIEW



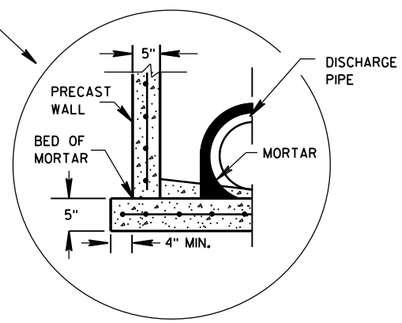
PLAN VIEW



SECTION A-A



SECTION B-B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

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

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS.
4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED.
OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3 INCH CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

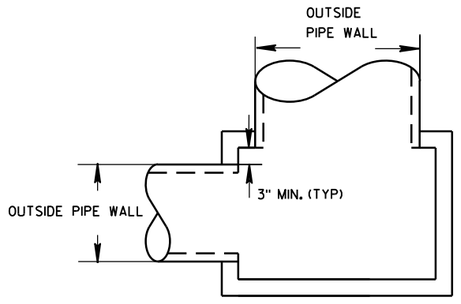
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE		INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH (W) (FT)	LENGTH (L) (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
2X2-FT	12	12
2X2.5-FT	12	18
2X3-FT	12	24
2.5X3-FT	18	24



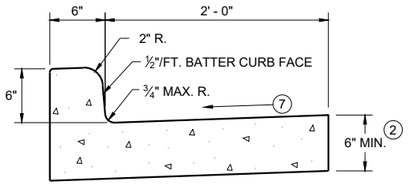
DETAIL "A"

INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

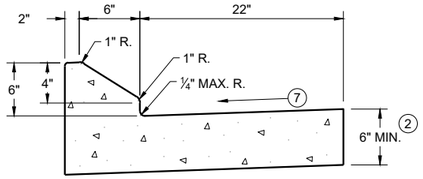
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D IT
UNIT SUPERVIS
FHWA

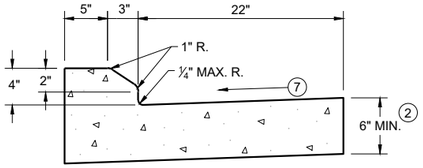
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT



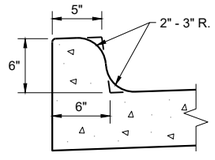
TYPES A (1) & D



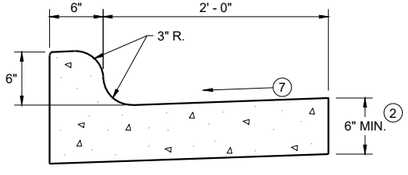
6" SLOPED CURB TYPES G (1) & J



4" SLOPED CURB TYPES G (1) & J

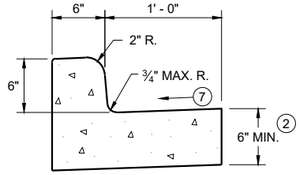


TYPES K (1) & L
(OPTIONAL CURB SHAPE)



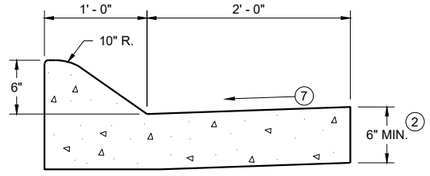
TYPES K (1) & L

CONCRETE CURB AND GUTTER 30"

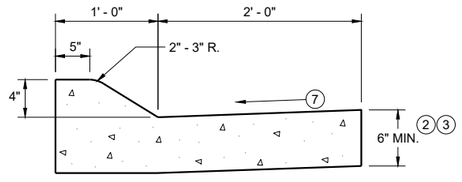


TYPES A (1) & D

CONCRETE CURB AND GUTTER 18"

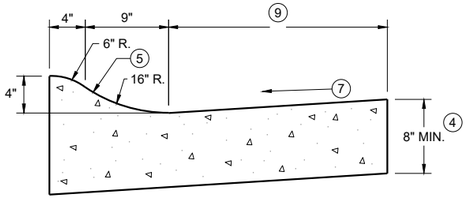


6" SLOPED CURB TYPES A (1) & D



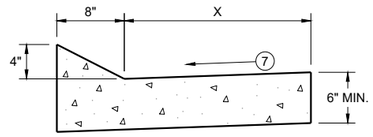
4" SLOPED CURB TYPES A (1) & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R (1) & T

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

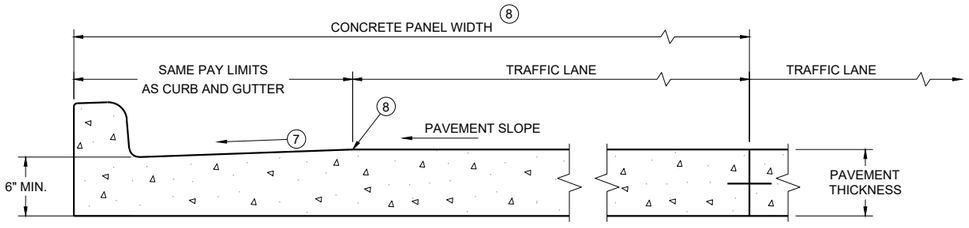


TYPES TBT & TBTT (1)

CONCRETE CURB AND GUTTER

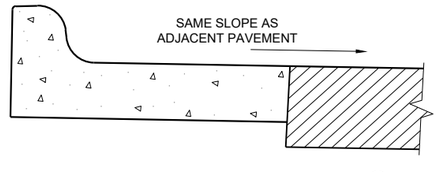
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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 (6)
(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.

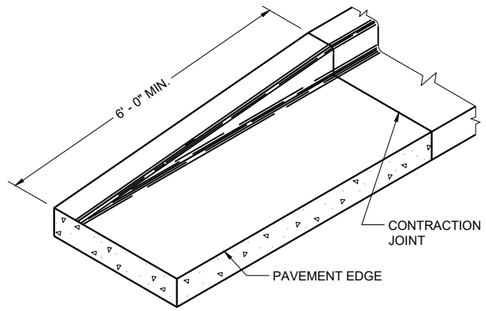
(8) INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

(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

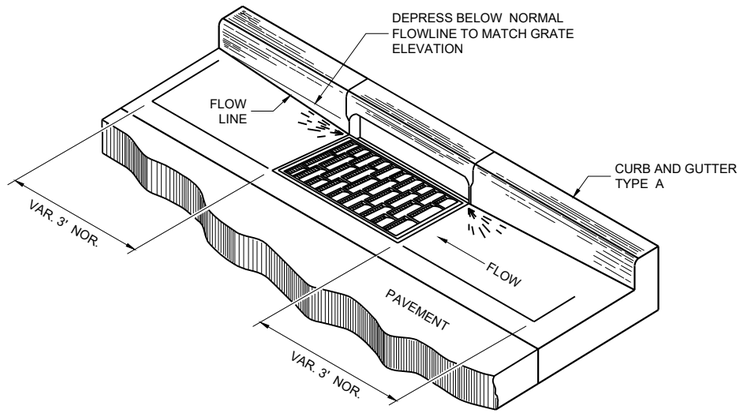
CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 08D01-23a



END SECTION CURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS

(TYPICAL H INLET COVER SHOWN)

GENERAL NOTES

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

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

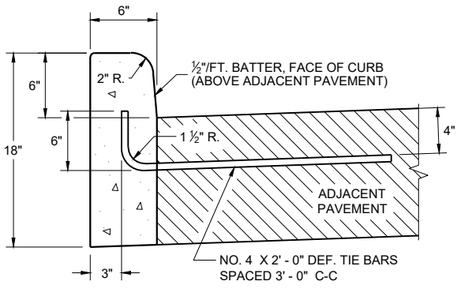
UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

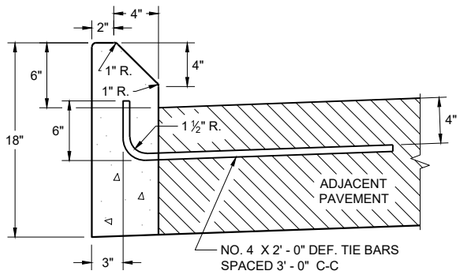
(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(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.

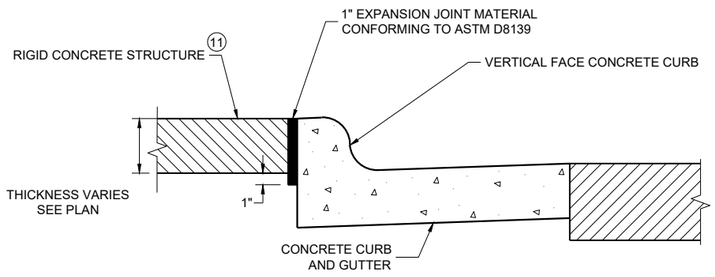


TYPES A (1) & D

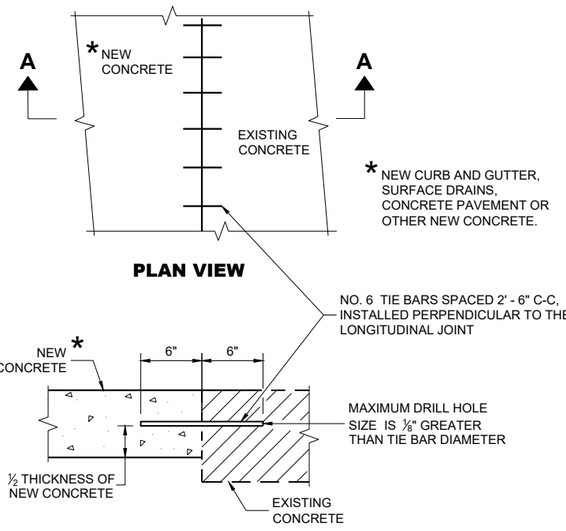


TYPES G (1) & J

CONCRETE CURB



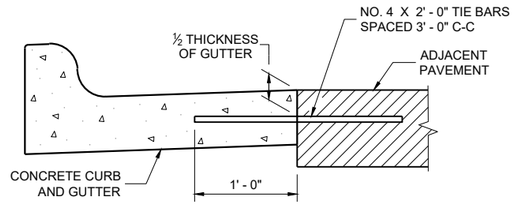
EXPANSION JOINT DETAIL FOR VERTICAL CURB ABUTTING A RIGID STRUCTURE (11)



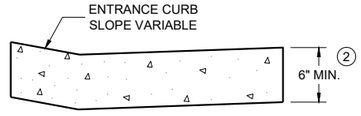
PLAN VIEW

SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



TYPICAL TIE BAR LOCATION (1)



DRIVEWAY ENTRANCE CURB (10)

(WHEN DIRECTED BY THE ENGINEER)

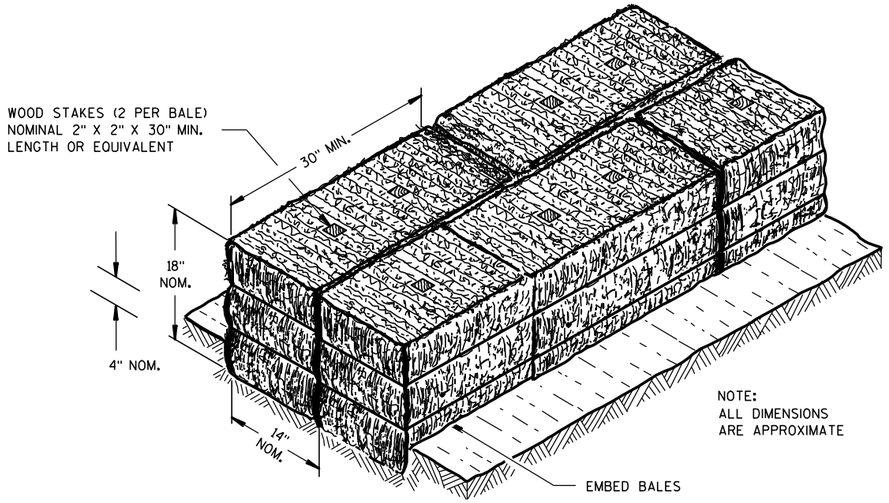
CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

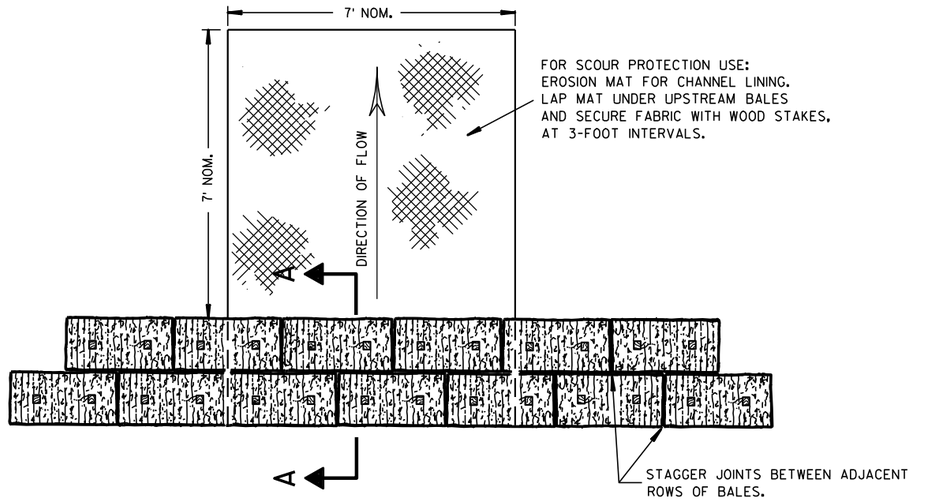
APPROVED
May 2023 — DATE
/S/ Rodnery Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

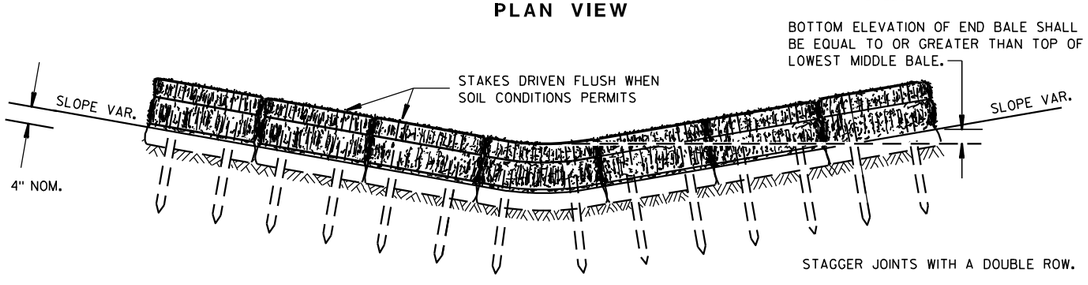
6
SDD 08D01-23b



SECTION A-A



PLAN VIEW



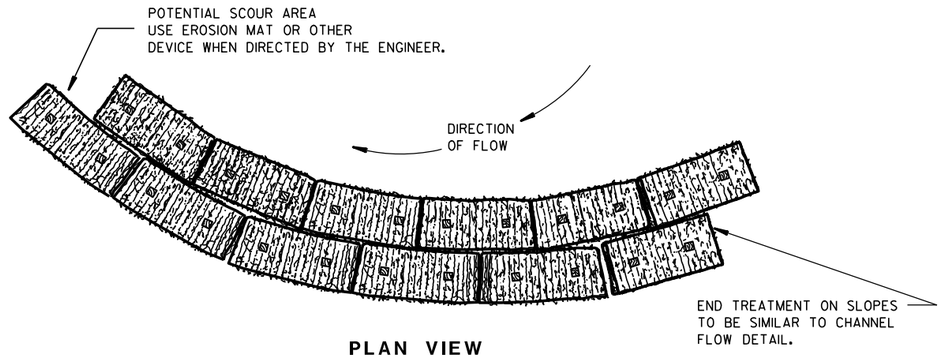
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

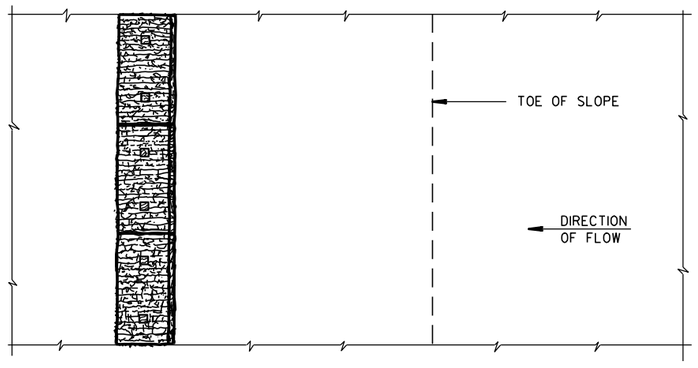
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(1) TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

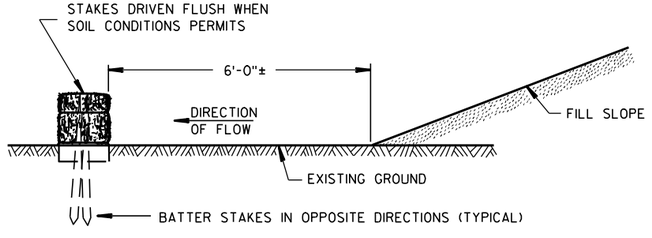


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02 DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

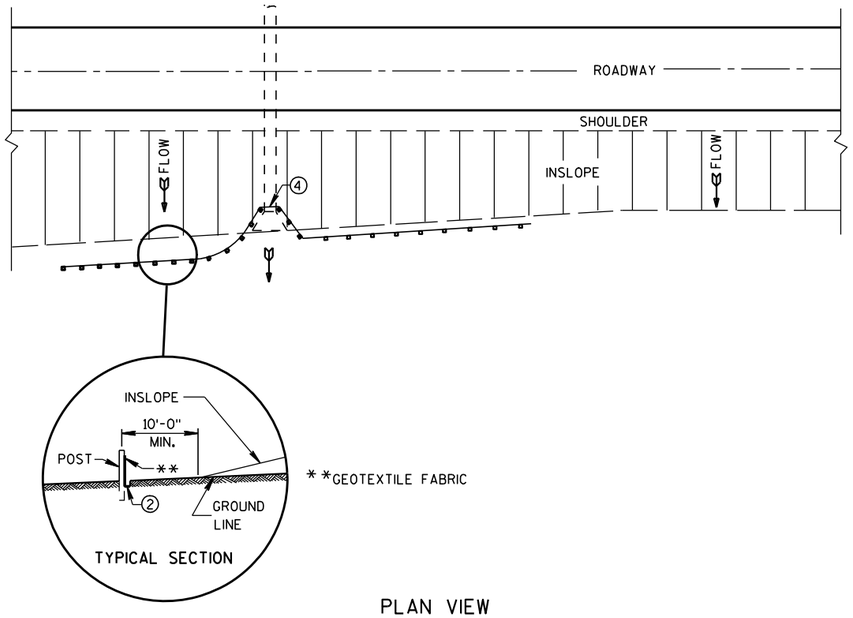
FHWA

6

S.D.D. 8 E 8-3

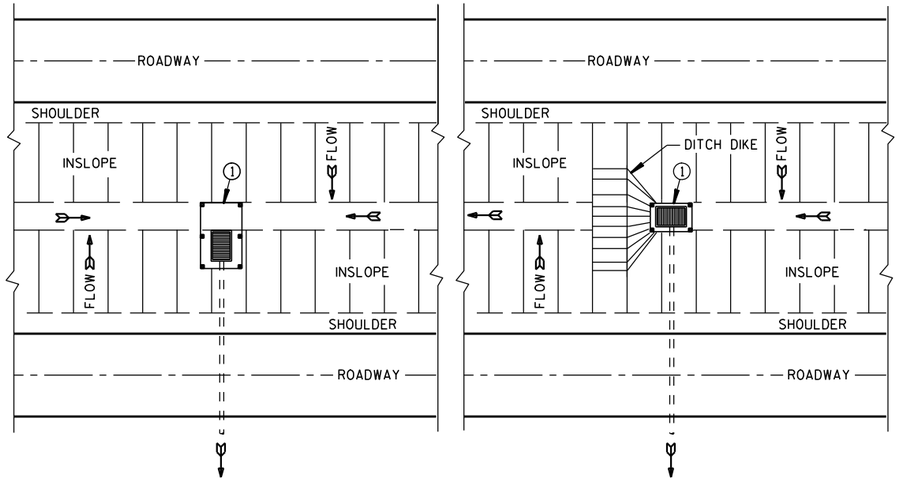
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S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



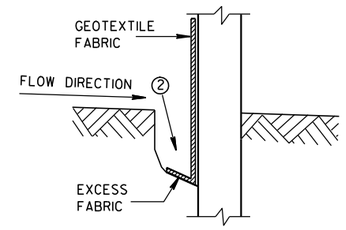
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

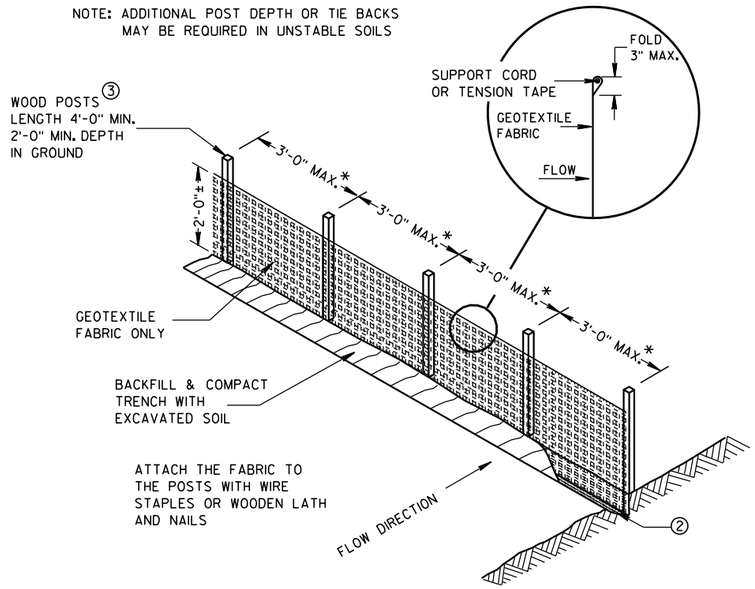
GENERAL NOTES

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

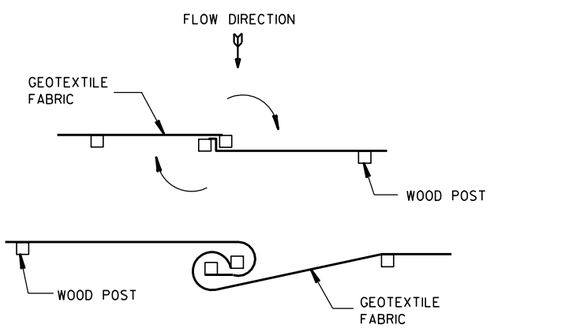
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



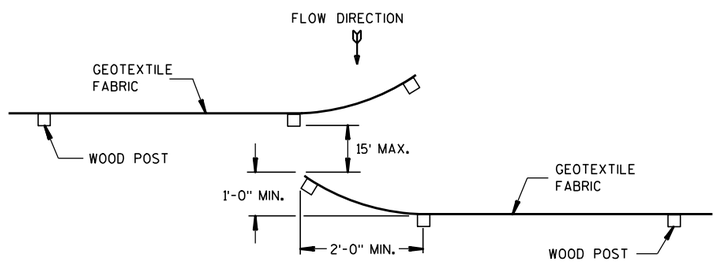
TRENCH DETAIL



SILT FENCE

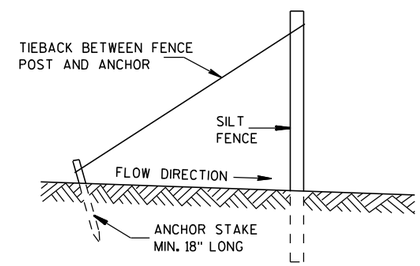


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

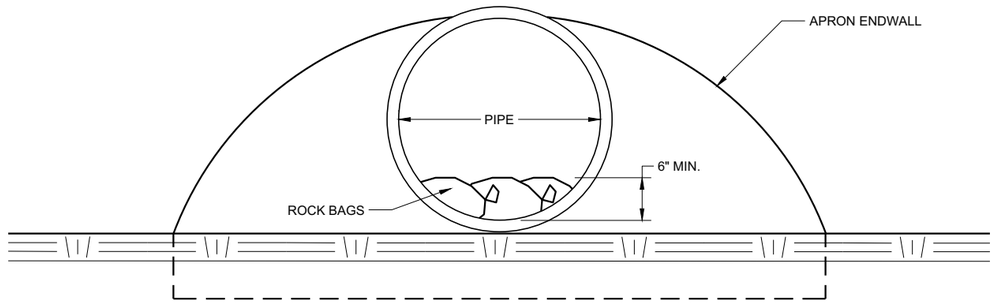
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

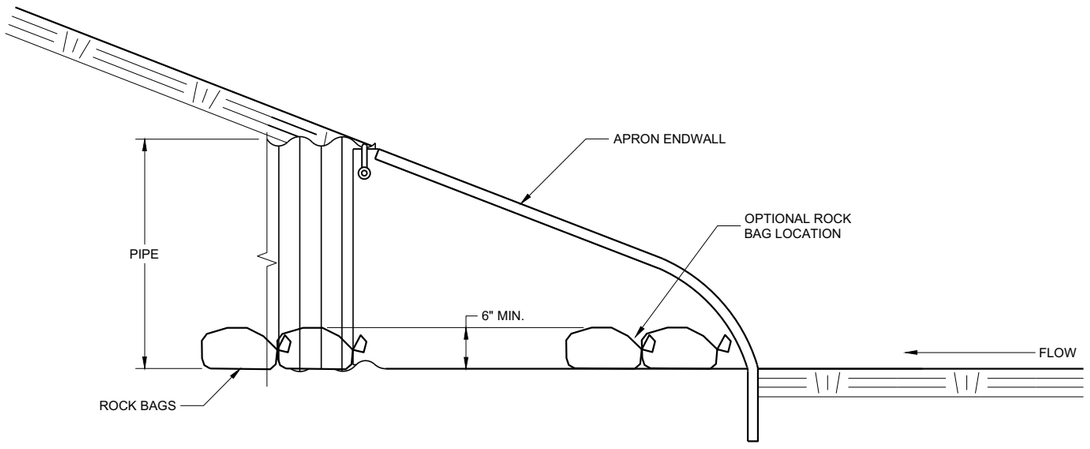
S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6



END VIEW



SIDE VIEW

CULVERT PIPE CHECK

(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019
DATE

/S/ Daniel Schave
EROSION CONTROL ENGI

FHWA

6

SDD 08E15 - 01

6

SDD 08E15 - 01

METAL APRON ENDWALLS

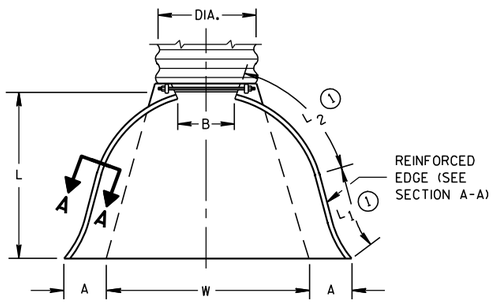
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

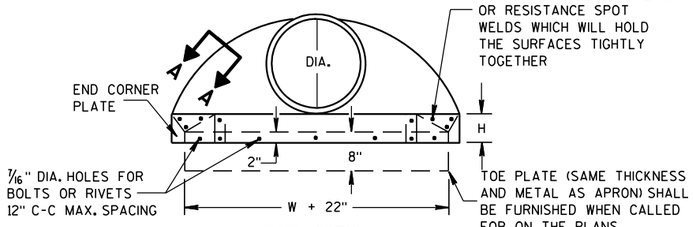
REINFORCED CONCRETE APRON ENDWALLS

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

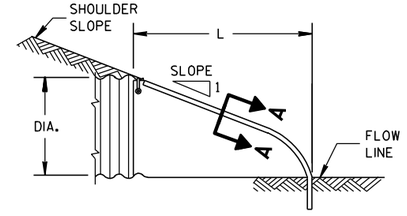
*MINIMUM
**MAXIMUM



PLAN VIEW

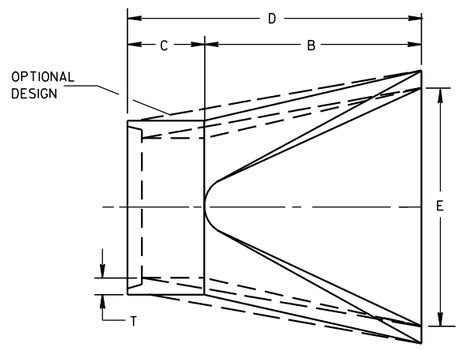


END VIEW

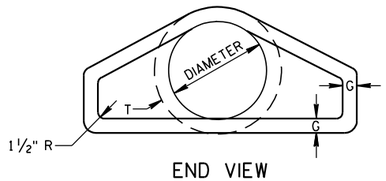


SIDE ELEVATION

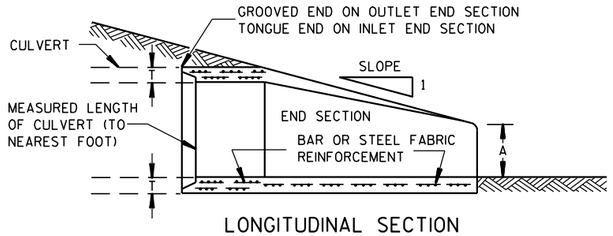
METAL ENDWALLS



PLAN

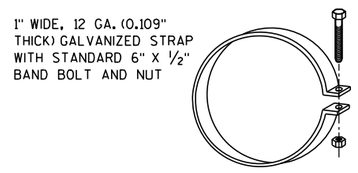


END VIEW



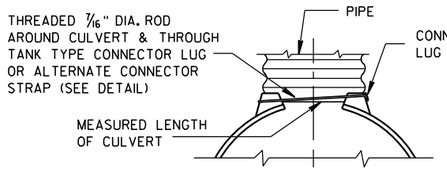
LONGITUDINAL SECTION

CONCRETE ENDWALLS

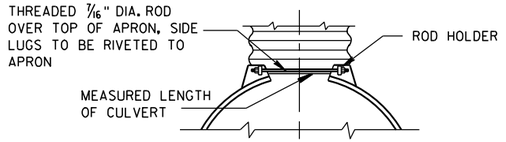


ALTERNATE FOR TYPE 1 CONNECTION

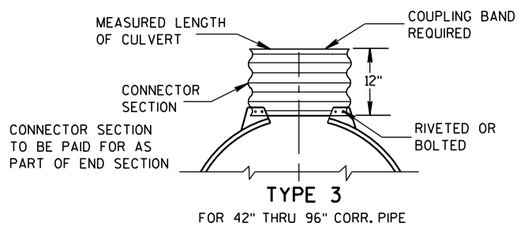
END SECTION CONNECTOR STRAP



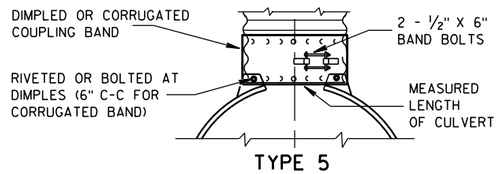
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

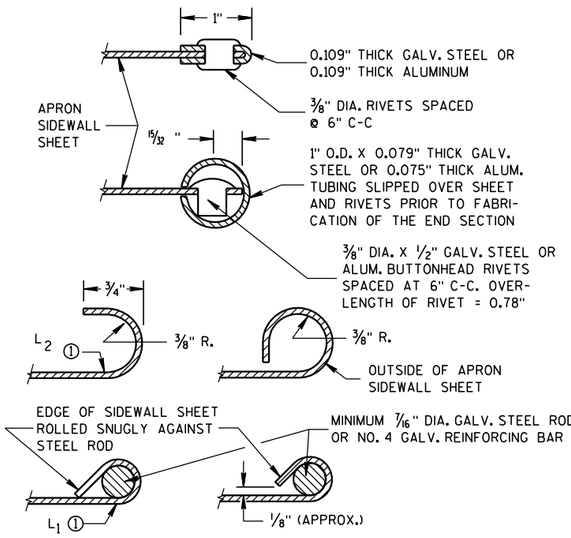
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

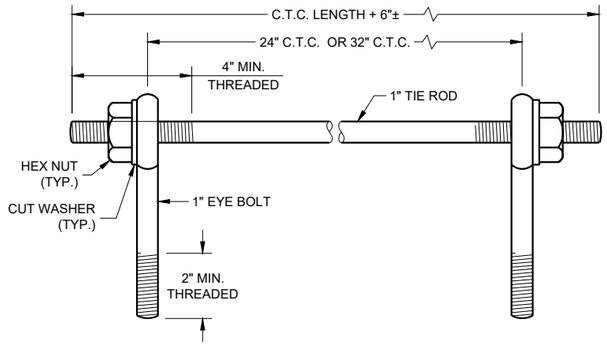
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

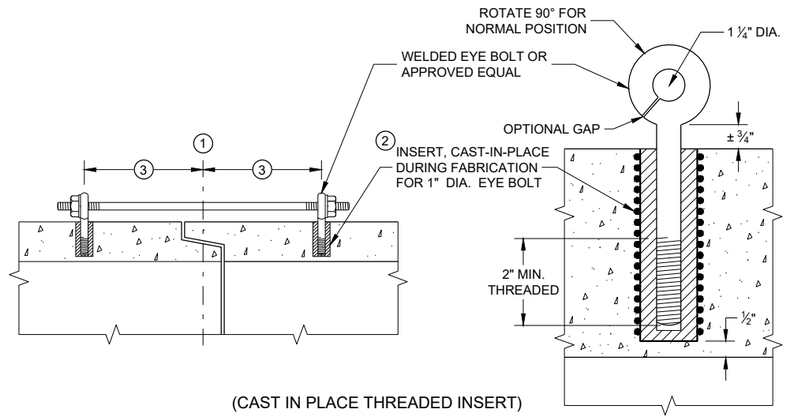
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6
S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST IN PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)

GENERAL NOTES

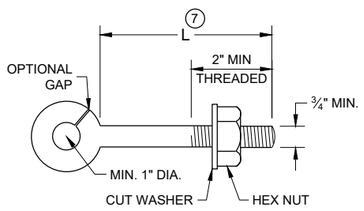
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

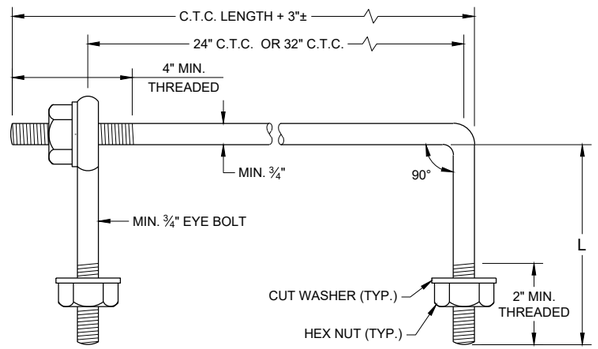
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

1. CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
2. THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
3. HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.
4. BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
5. OPENING TO BE ROD DIAMETER PLUS 1 INCH.
6. LENGTH ADEQUATE TO EXTEND TO WITHIN ½ INCH OF THE INNER SURFACE OF THE PIPE.
7. EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.

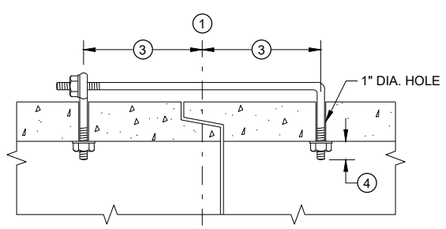


EYE BOLT 7

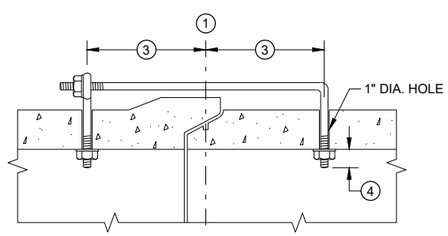
NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD



(TONGUE AND GROOVE PIPE)



(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

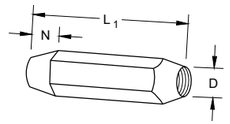
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

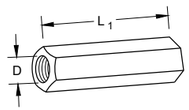
ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12 - 60	⅝	⅝	5	½
66 - 84	¾	¾	5	½
90 - 144	1	1	7	1 7/16

DIMENSIONS SHOWN ARE IN INCHES



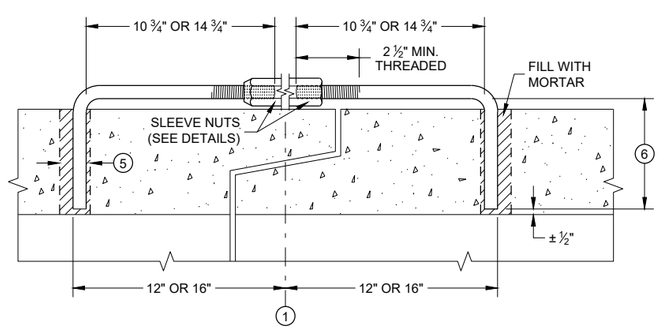
TAPERED



PLAIN

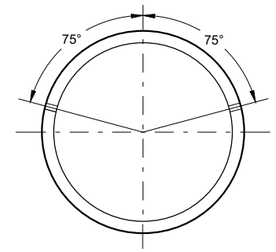
RIGHT AND LEFT THREADS

SLEEVE NUTS



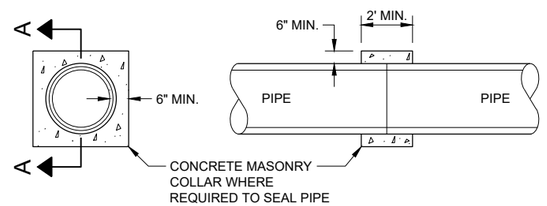
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A - A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

FHWA

SDD 08F04 - 08

SDD 08F04 - 08

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.

FILL SLOPES FLATTER THAN 2 ½:1 SHALL BE WARPED TO MEET THE TOP OF THE WINGWALLS.

ALL STEEL REINFORCEMENT AND WELDED STEEL WIRE FABRIC SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE NOTED.

(1) MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS SPACED 12" C-C IN BOTH DIRECTIONS.

(2) THE SPACE BETWEEN PIPES SHALL BE AS FOLLOWS:

DIAMETER OR SPAN	SPACE
UP TO AND INCLUDING 48"	2' - 0"
OVER 48" TO 72"	½ DIA. OR SPAN
OVER 72"	3' - 0"

(3) LIMITS OF TRENCH BACKFILL

(4) LIMITS OF FOUNDATION BACKFILL

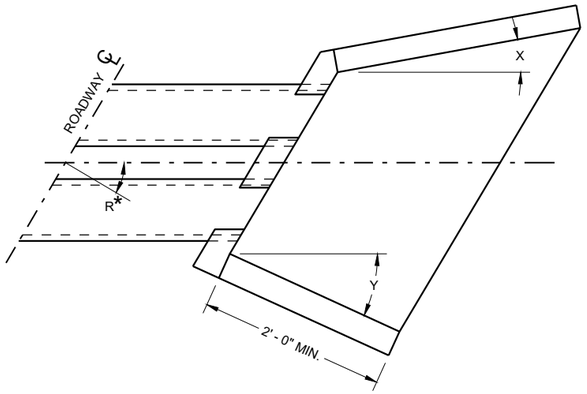
(5) FOUNDATION AND TRENCH BACKFILL ARE MATERIALS INCLUDED IN PAYMENT FOR CULVERT PIPE, PIPE ARCH, CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPSE OR CONCRETE MASONRY ENDWALLS.

(6) DO NOT PLACE FOUNDATION BACK FILL OR ANY OTHER GRANULAR BACKFILL AROUND OR BELOW CUT OFF WALL. POUR CUT OFF WALL AGAINST NATIVE SOIL

(7) MINIMUM HEIGHT SHALL BE THE GREATER OF 1'- 0" OR ¼ HEIGHT OF CULVERT PIPE.

TRENCH BACKFILL

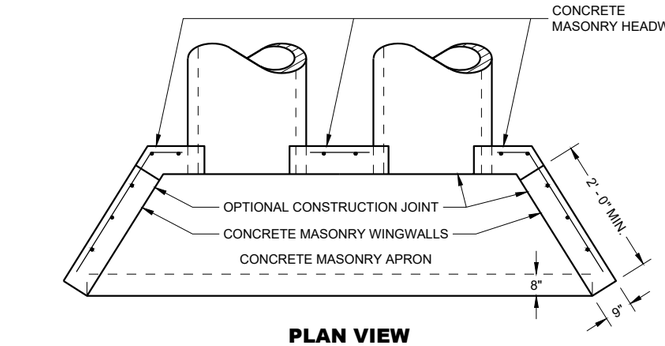
FOUNDATION BACKFILL



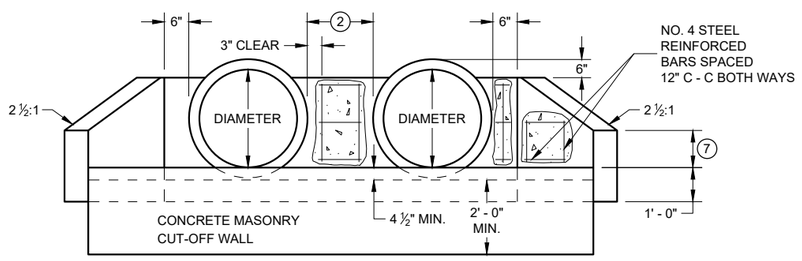
WINGWALL ANGLE DETAILS

INLET			OUTLET		
R*	X	Y	R*	X	Y
0 - 7°	30°	30°	0 - 15°	15°	15°
8 - 22°	25°	30°	16 - 45°	10°	15°
23 - 37°	20°	30°	46 - 75°	5°	15°
38 - 52°	15°	30°	OVER 75°	0°	15°
53 - 67°	10°	30°			
68 - 82°	5°	30°			
OVER 82°	0°	30°			

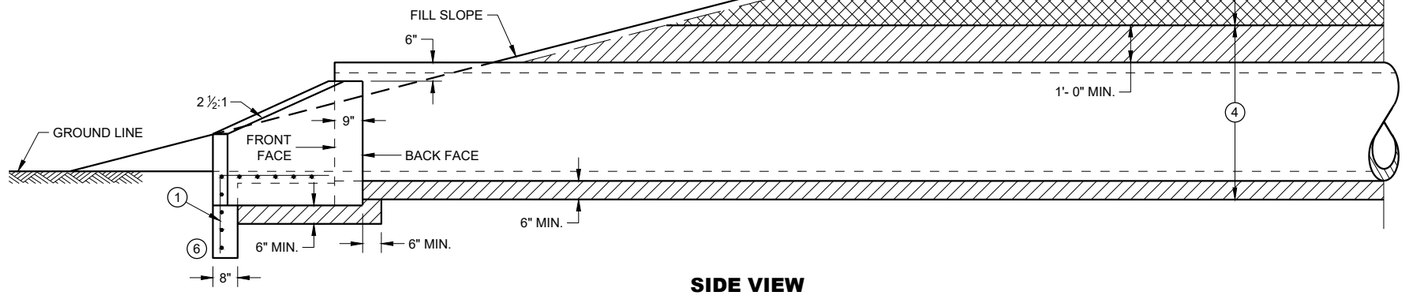
R* = NUMBER OF DEGREES RIGHT OR LEFT HAND FORWARD



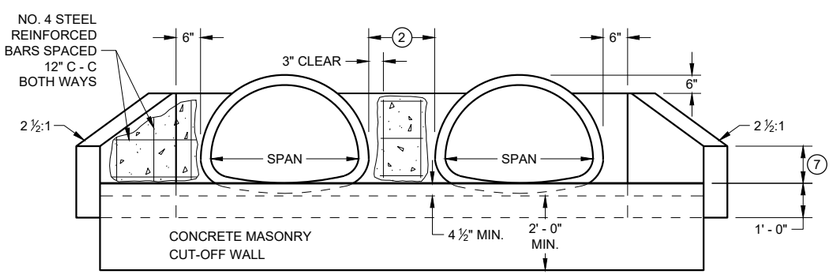
PLAN VIEW



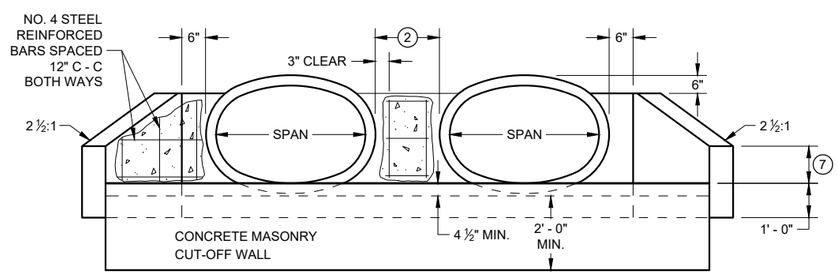
END VIEW
CIRCULAR PIPE



SIDE VIEW
CIRCULAR PIPE, PIPE ARCH OR HORIZONTAL ELLIPSE



END VIEW
PIPE ARCH



END VIEW
HORIZONTAL ELLIPSE

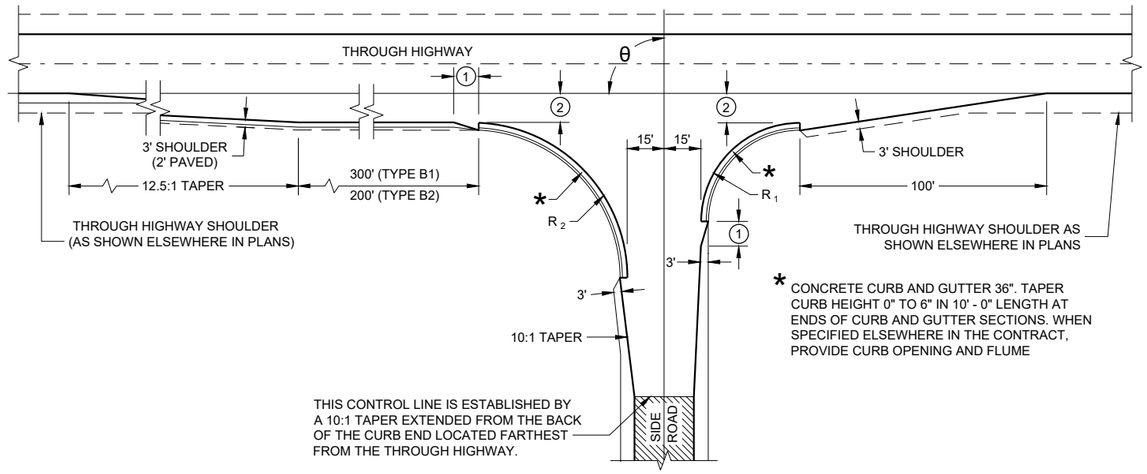
CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER

FHWA

6
SDD 08F10 - 02



* CONCRETE CURB AND GUTTER 36". TAPER CURB HEIGHT 0" TO 6" IN 10' - 0" LENGTH AT ENDS OF CURB AND GUTTER SECTIONS. WHEN SPECIFIED ELSEWHERE IN THE CONTRACT, PROVIDE CURB OPENING AND FLUME

TYPE "B1" AND "B2"

RADII DIMENSIONS FOR TYPES "B1", "B2", "C" AND "D" INTERSECTIONS

θ	R_1	R_2
65 - 70	35	70
71 - 80	40	70
81 - 90	40	60
91 - 100	50	55
101 - 110	60	45

GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

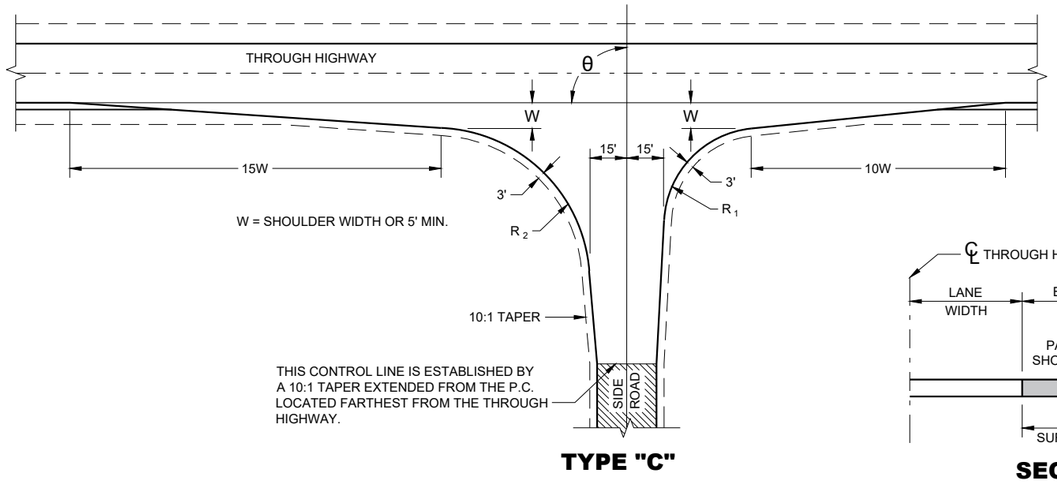
(1) 10-FT TYPICAL.

(2) 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

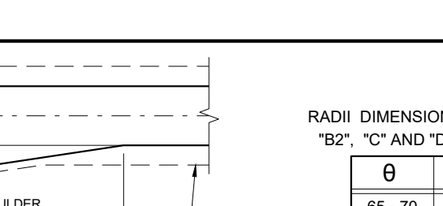
**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.

(3) BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
- ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH
- PC CONCRETE = 13-FT PLUS PAVED SHOULDER WIDTH

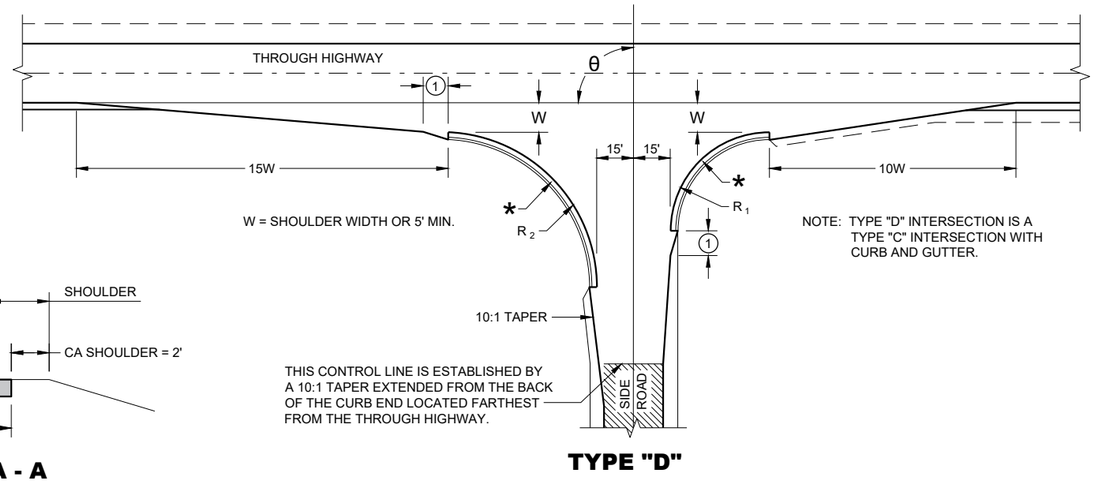
(4) BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.



TYPE "C"

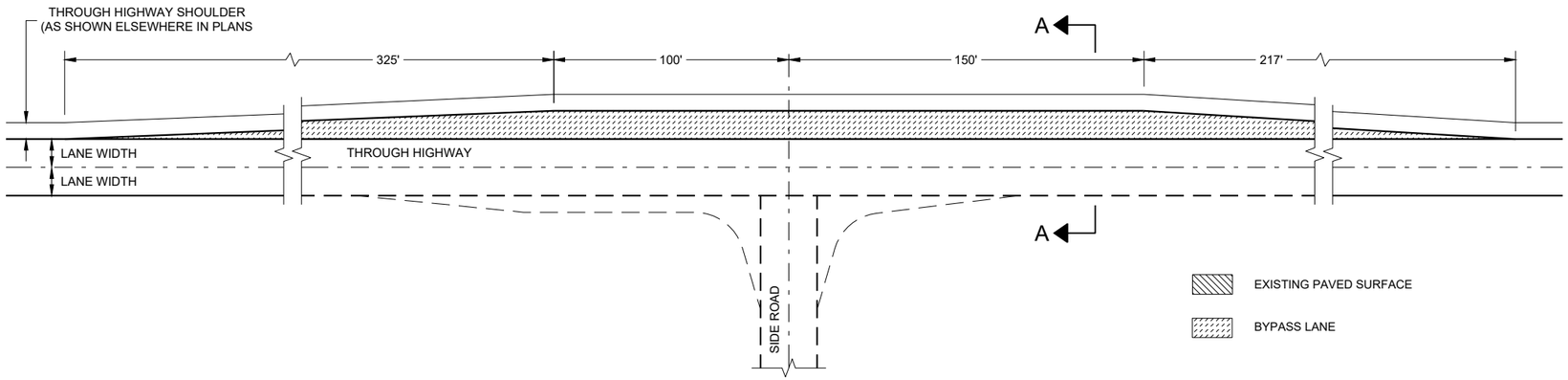


SECTION A - A
(SHOWING BYPASS LANE AND SHOULDER)



NOTE: TYPE "D" INTERSECTION IS A TYPE "C" INTERSECTION WITH CURB AND GUTTER.

TYPE "D"



TEE INTERSECTION BYPASS LANE DETAIL

AT GRADE SIDE ROAD INTERSECTION TYPES "B1", "B2", "C", "D" AND TEE INTERSECTION BYPASS LANE

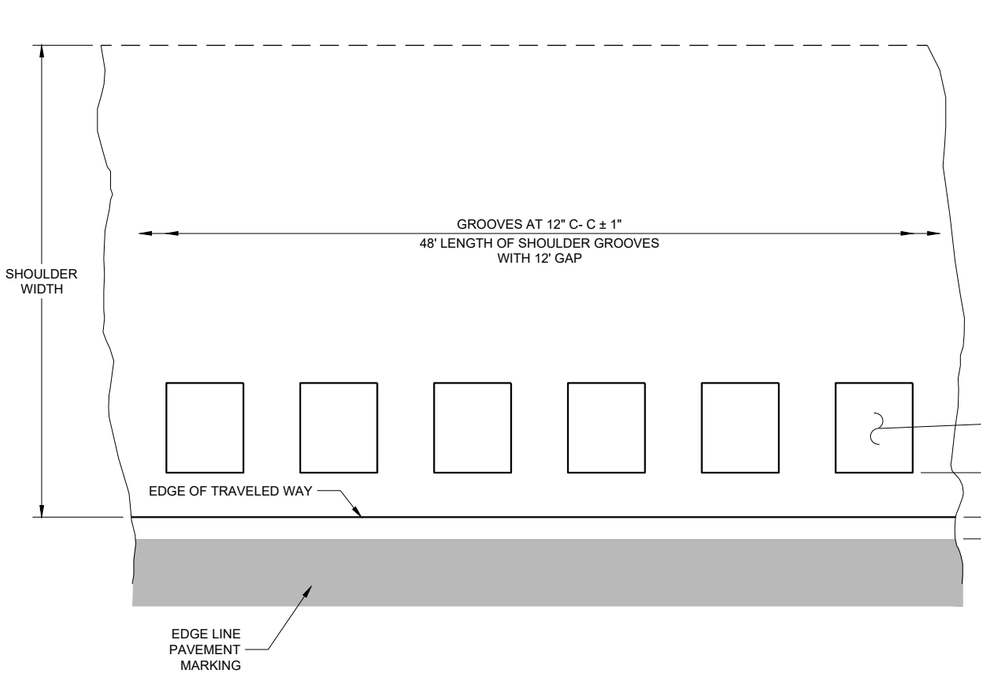
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

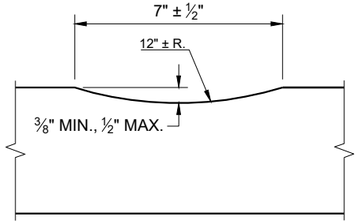
SDD 09A01 - 14a

6

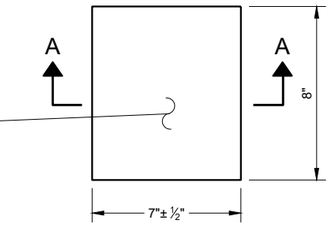
SDD 09A01 - 14a



PLAN DETAIL VIEW
SHOULDER WITH GROOVES



SECTION A - A

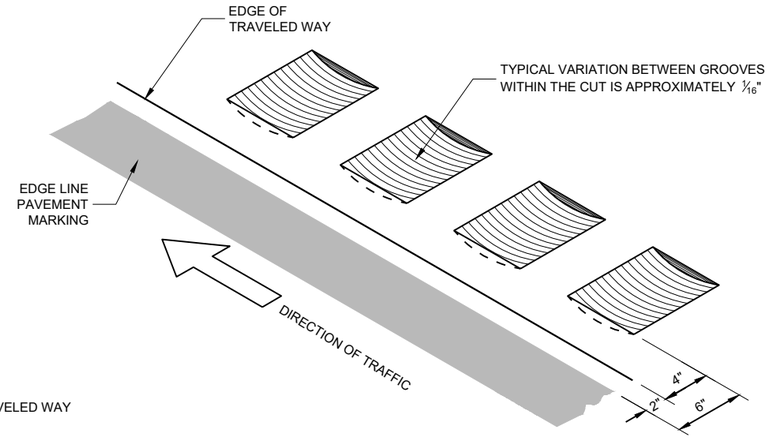


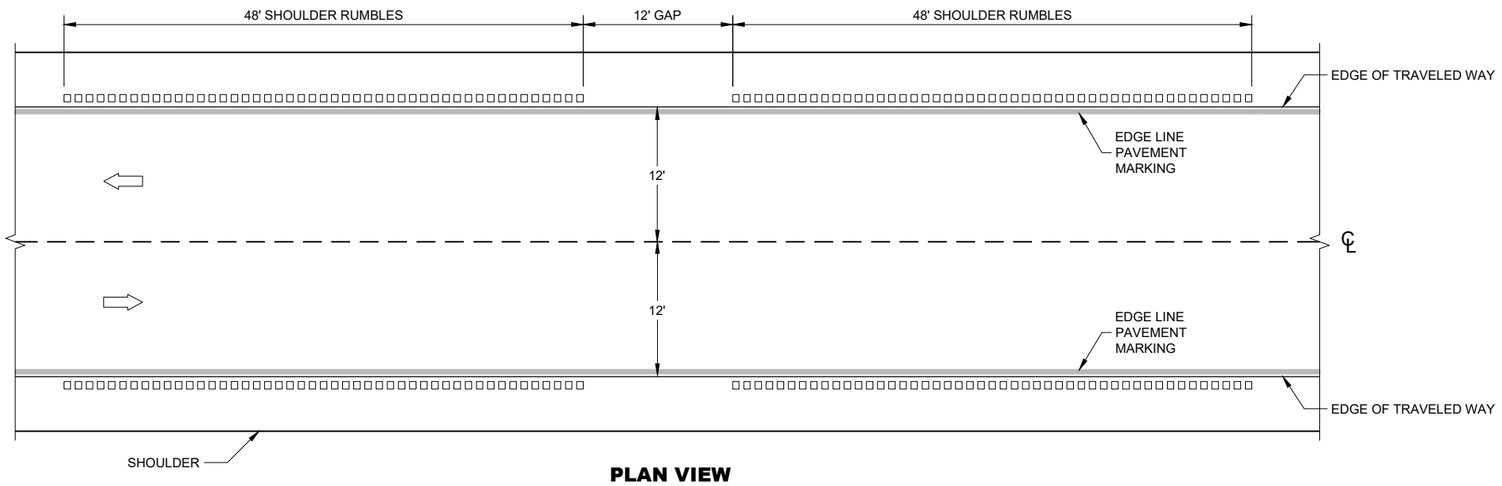
PLAN VIEW
(SINGLE GROOVE)

GENERAL NOTES

DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A10 SHEETS "g" AND "h".

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





PLAN VIEW

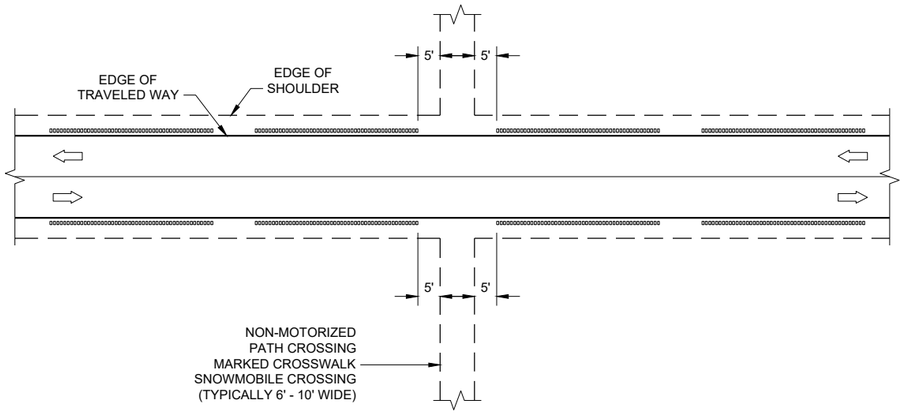
SHOULDER RUMBLE STRIPS - ASPHALT

SHOULDER RUMBLE STRIPS ASPHALT

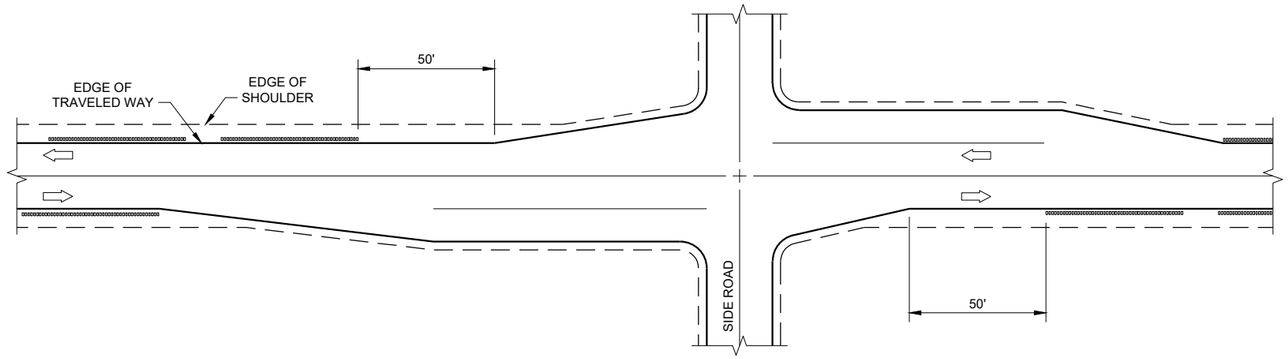
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA

6

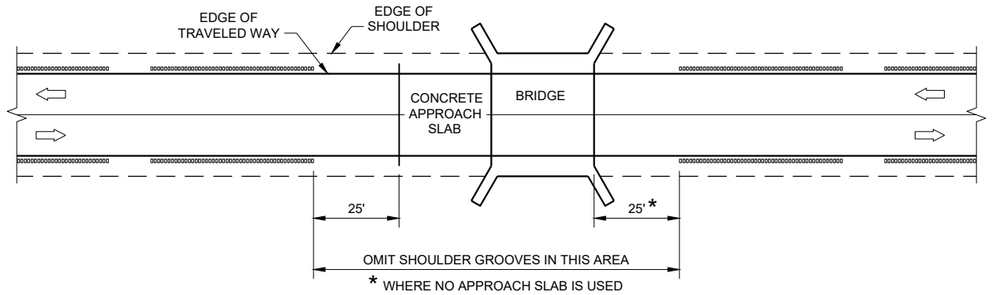
SDD 13A10 - 03a



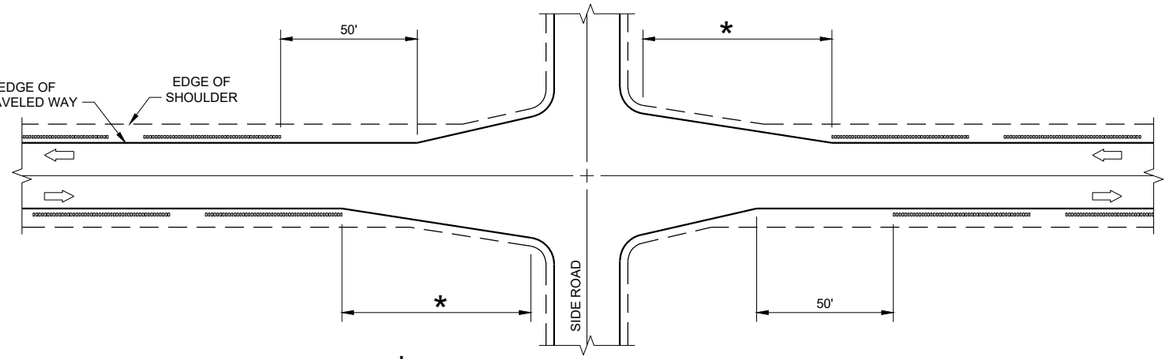
GROOVES AT MISCELLANEOUS CROSSINGS



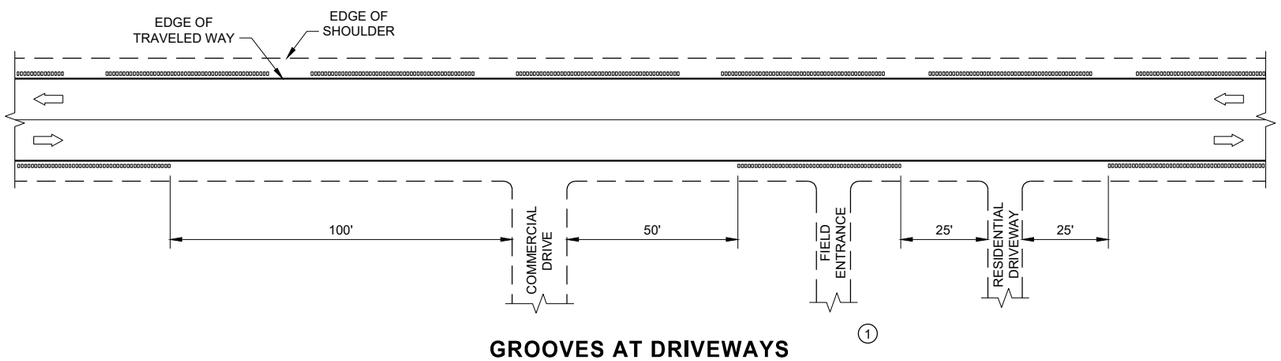
GROOVES AT RIGHT TURN LANE



GROOVES AT BRIDGES



GROOVES AT INTERSECTIONS WITH APPROACH TAPER



GROOVES AT DRIVEWAYS ①

GENERAL NOTES

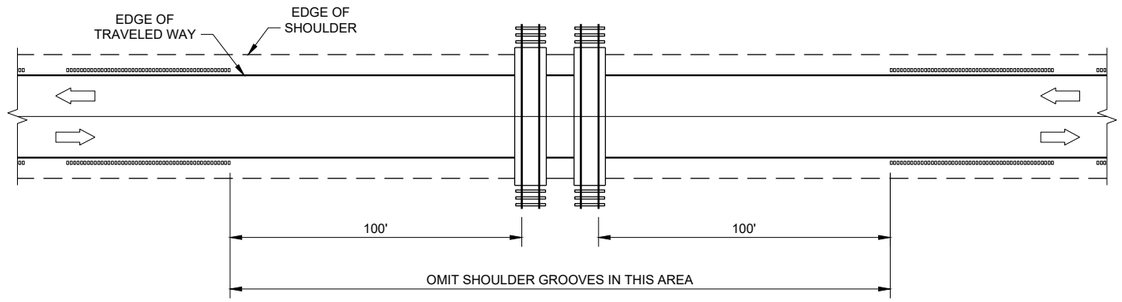
① SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.

SHOULDER AND EDGE LINE RUMBLE STRIPS CROSSINGS, INTERSECTIONS, BRIDGES, DRIVEWAYS

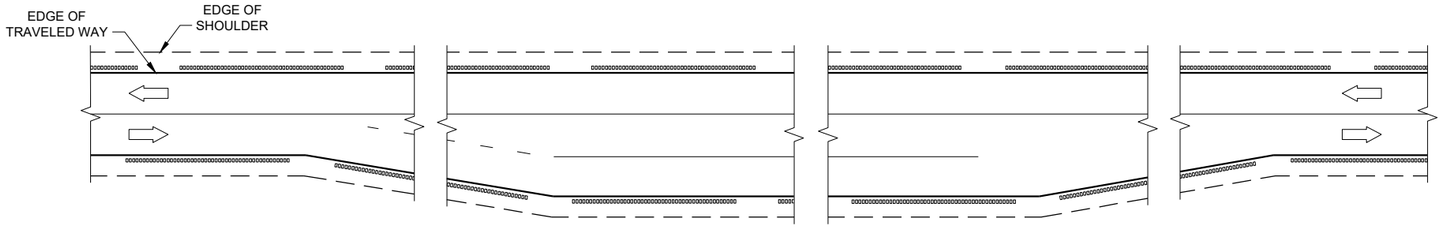
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA

6

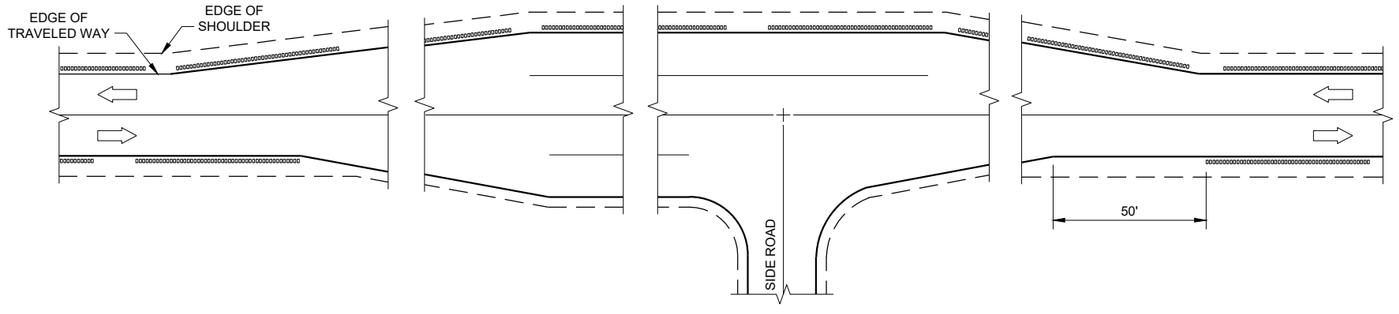
SDD 13A10 - 03g



GROOVES AT RAILROADS



GROOVES AT PASSING AND CLIMBING LANES



GROOVES AT BYPASS LANES

6

SDD 13A10 - 03h

SHOULDER AND EDGE LINE RUMBLE STRIPS - RAILROAD, PASSING, CLIMBING AND BYPASS LANES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

May 2023
DATE

/S/ John Jenkins
ROADWAY STANDARDS DEVE ENGINEER

FHWA

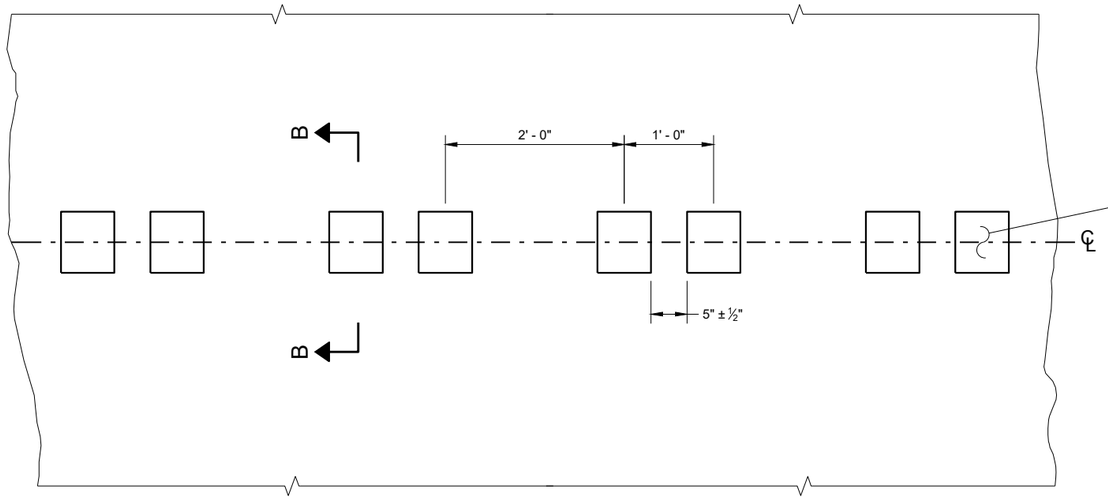
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SDD 13A10 - 03h

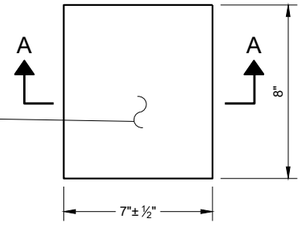
GENERAL NOTES

DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A11 SHEETS "d" AND "e".

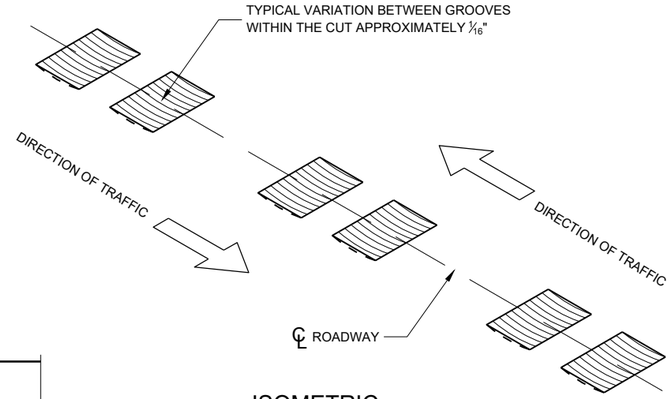
CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.



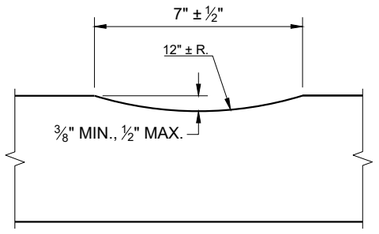
PLAN DETAIL VIEW



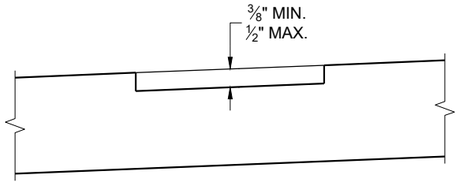
PLAN VIEW
(SINGLE GROOVE)



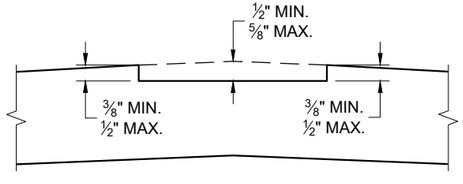
ISOMETRIC



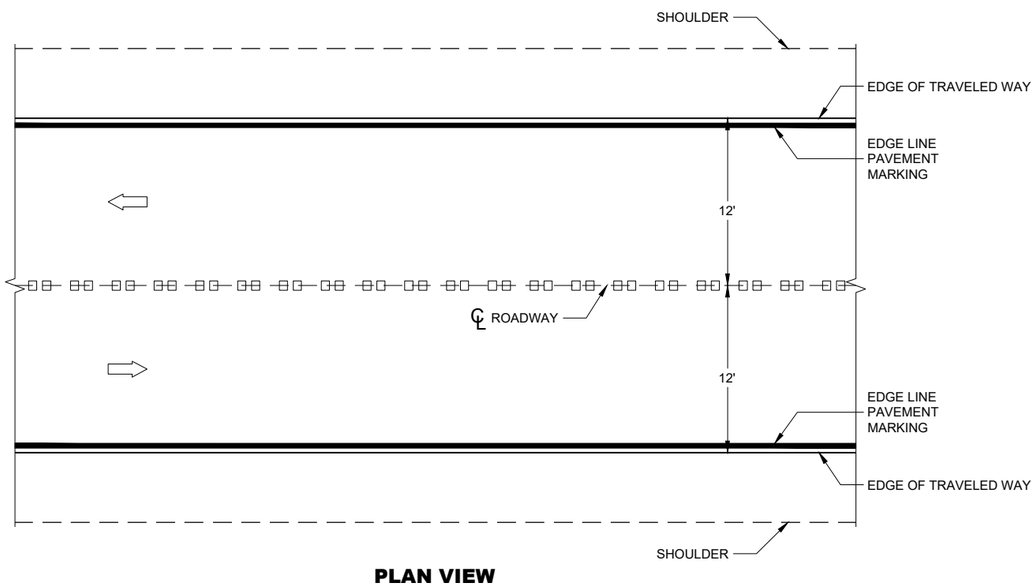
SECTION A - A



SECTION B - B
SUPERELEVATED ROADWAY



SECTION B - B
CROWNED ROADWAY



PLAN VIEW

CENTERLINE RUMBLE STRIPS - ASPHALT

6

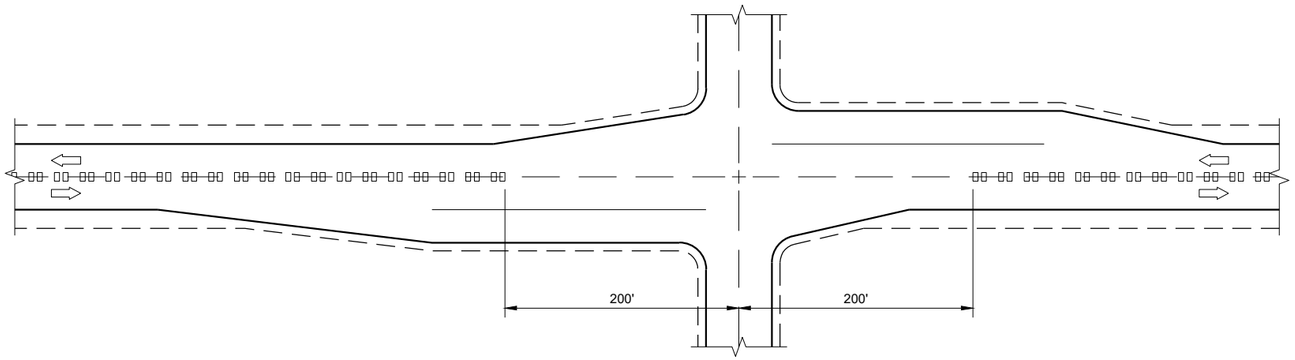
SDD 13A11 - 04a

CENTERLINE RUMBLE STRIPS - ASPHALT

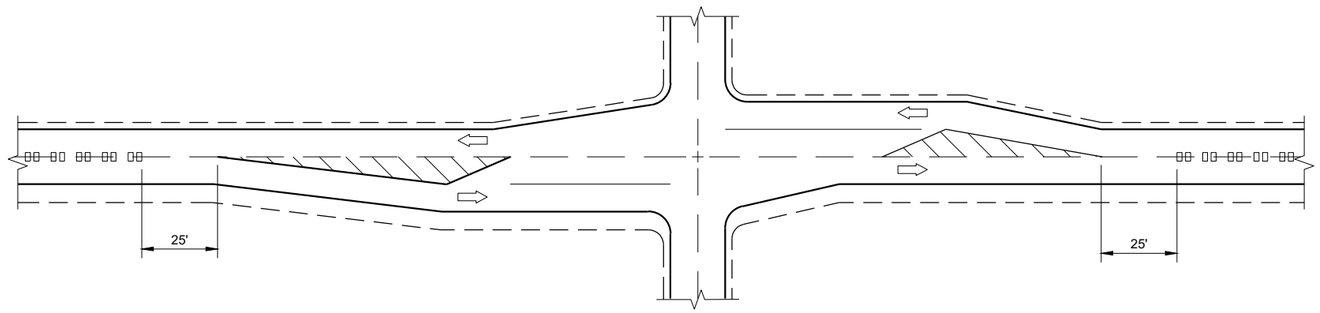
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA

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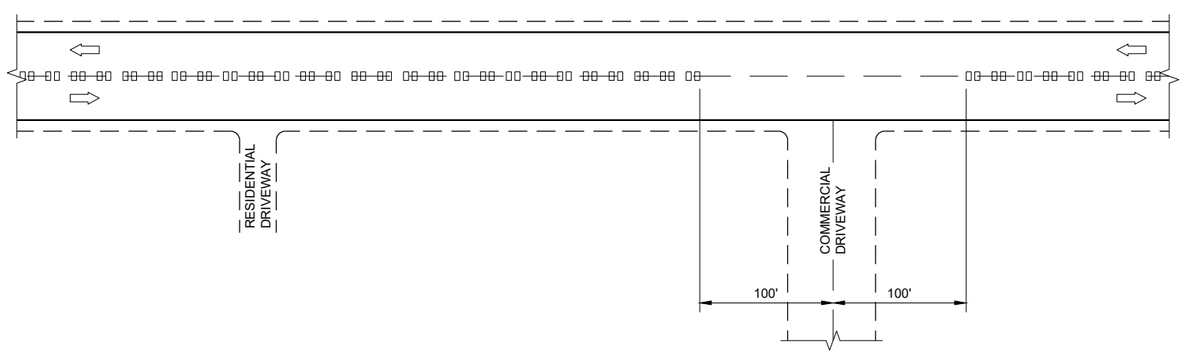
SDD13A11 - 04a



CENTERLINE GROOVES AT INTERSECTIONS



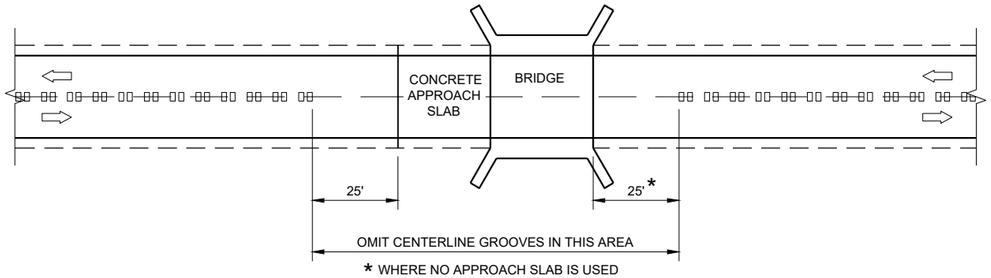
CENTERLINE GROOVES AT INTERSECTIONS (WITH LEFT TURN LANES)



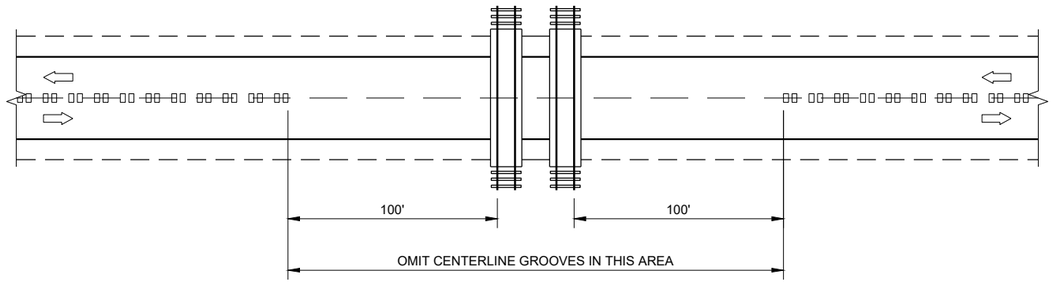
CENTERLINE GROOVES AT DRIVEWAYS (1)

GENERAL NOTES

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



CENTERLINE GROOVES AT BRIDGES



CENTERLINE GROOVES AT RAILROADS

CENTER LINE RUMBLE STRIPS - INTERSECTIONS, DRIVEWAYS, BRIDGES, RAIL ROADS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 — DATE
/S/ John Jenkins — ROADWAY STANDARDS DEVE ENGINEER

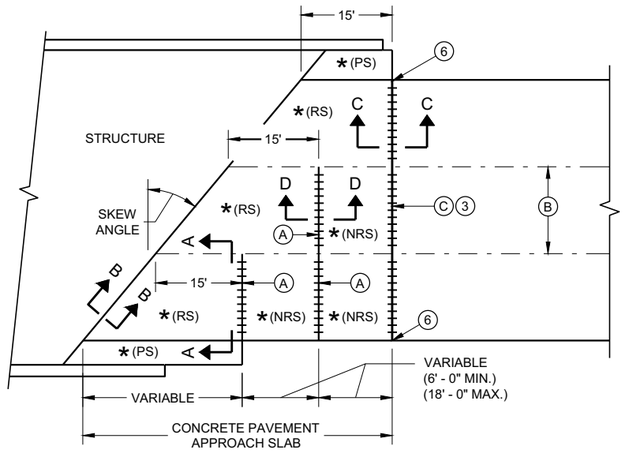
FHWA

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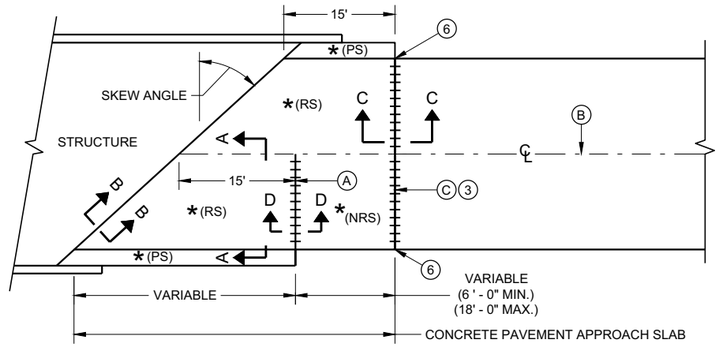
SDD 13A11 - 04d

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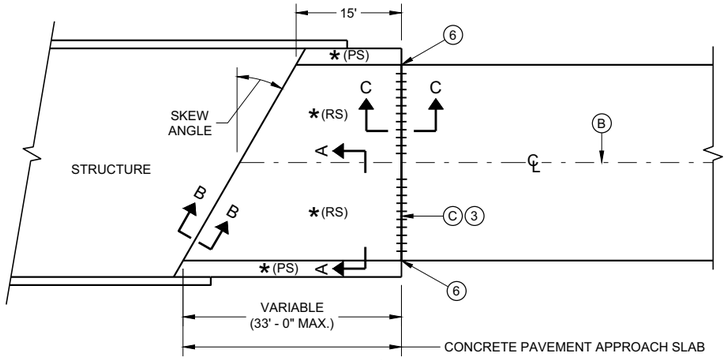
SDD 13A11 - 04d



SKEWED APPROACH
(PAVEMENT MORE THAN TWO LANES)



SKEWS > 20°
(PAVEMENT WIDTH ≤ 30')



SKEWS ≤ 20°
(PAVEMENT WIDTH ≤ 30')

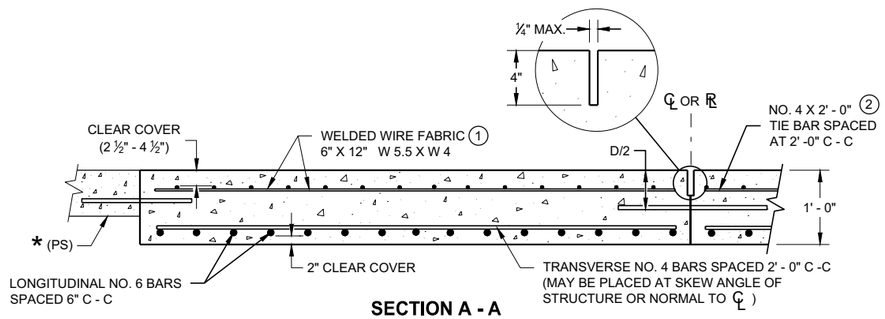
APPROACH SLAB AND ADJACENT PAVEMENT

* (RS) = REINFORCED CONCRETE SLAB

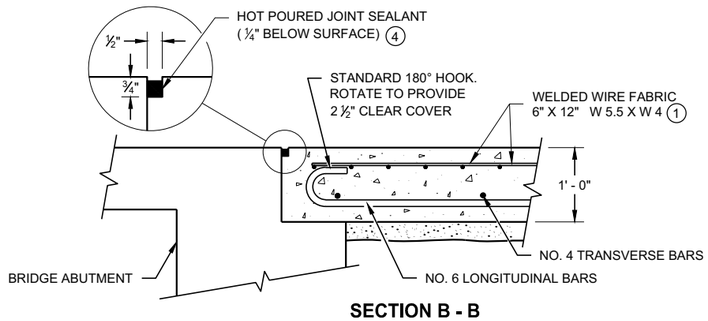
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB

* (NRS) - NON - REINFORCED CONCRETE SLAB

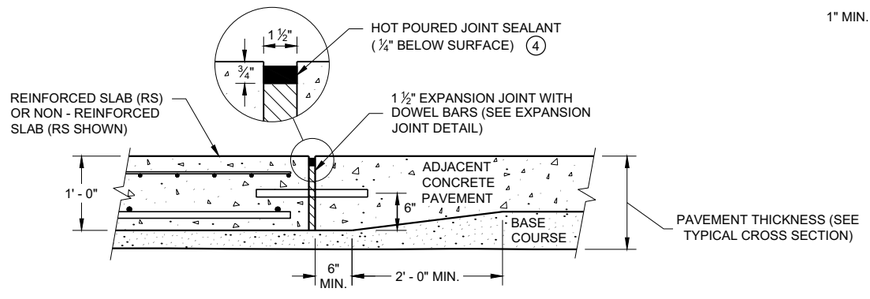
*** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



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.

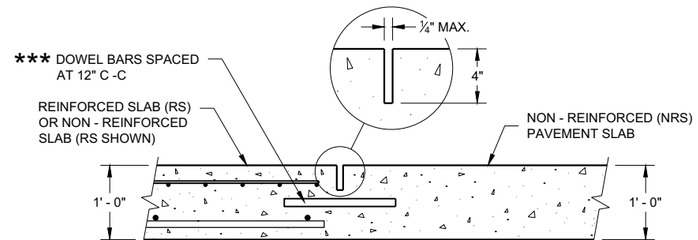
(5) PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.

(6) EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.

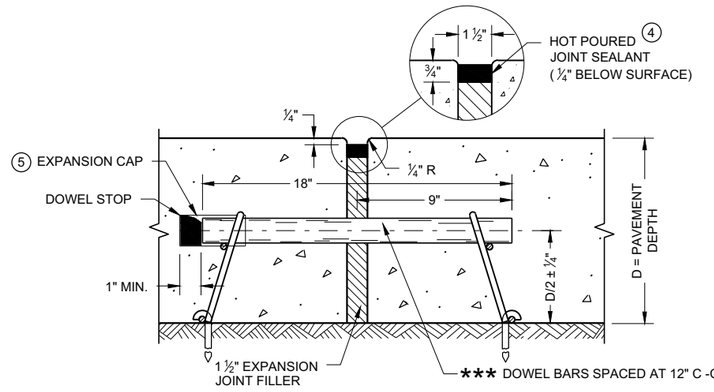
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℞.

(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.

(C) 1 ½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℞ .



SECTION D - D
CONTRACTION JOINT



EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

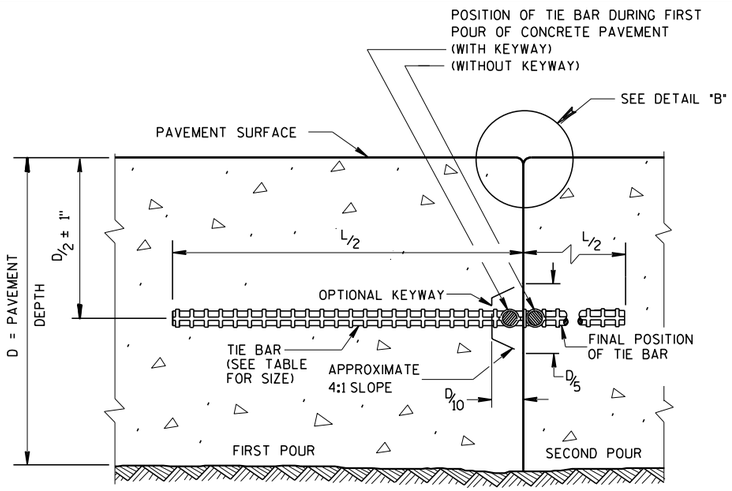
APPROVED
November 2018
DATE

/S/ Peter Kemp, P.E.
PAVEMENT SUPERVIS

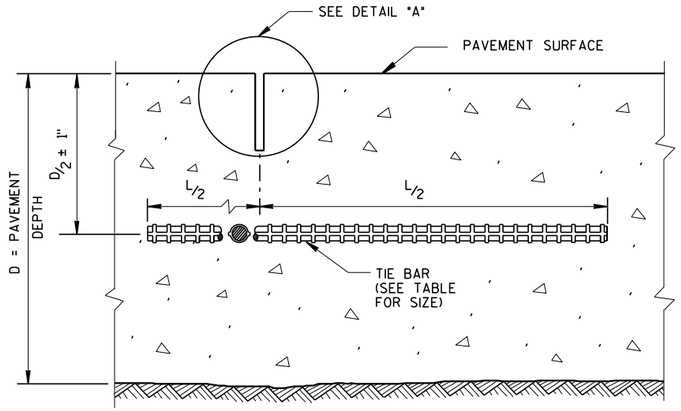
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SDD 13B02 - 09a



CONSTRUCTION JOINT



SAWED JOINT

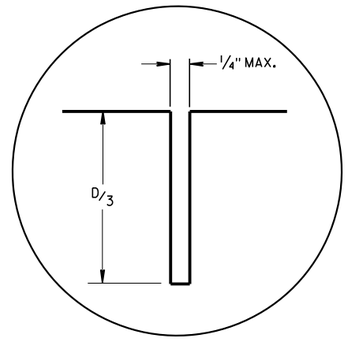
GENERAL NOTES

CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

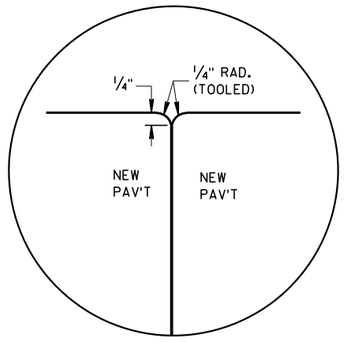
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

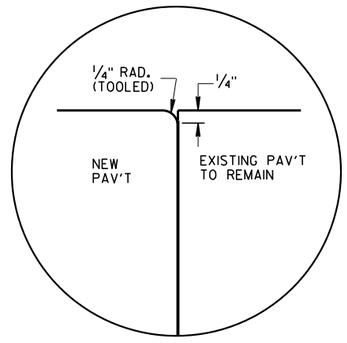
(2) PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.



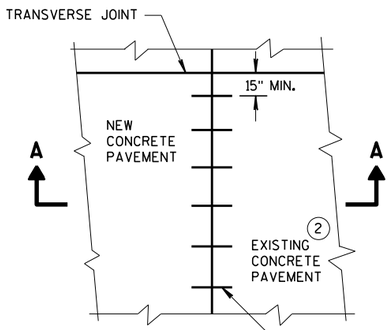
DETAIL "A"



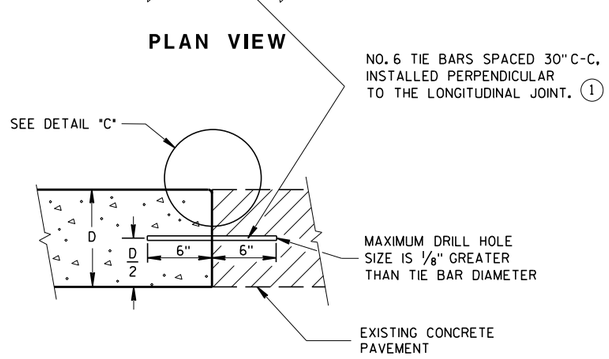
DETAIL "B"



DETAIL "C"



PLAN VIEW



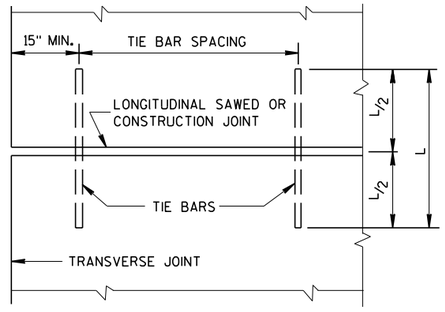
SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINUMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

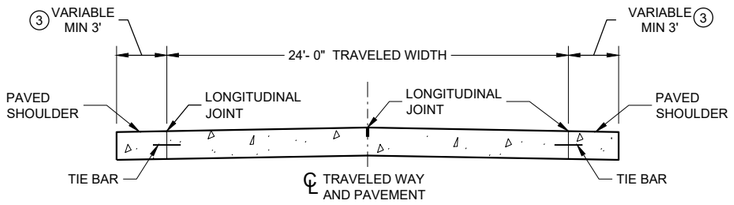
APPROVED
March 2018 — DATE
/S/ Peter Kemp PE — PAVEMENT SUPE
FHWA

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S.D.D. 13 C 1-19

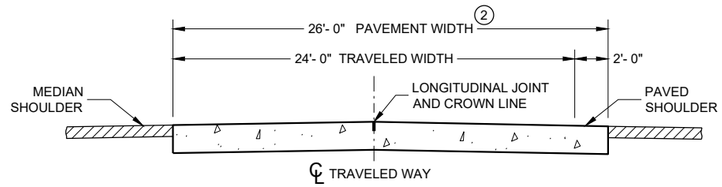
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S.D.D. 13 C 1-19

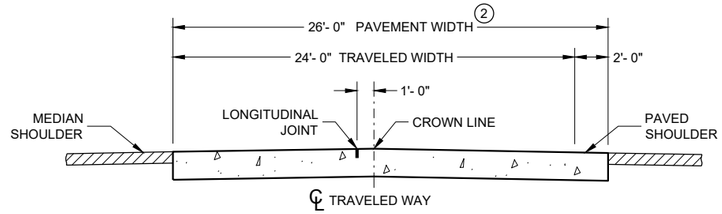


SECTION A - A

TWO-LANE TWO-WAY HIGHWAY (1)



SECTION B - B



ALTERNATIVE SECTION B - B

DIVIDED HIGHWAY (1)

GENERAL NOTES

CONTRACTION JOINTS

CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE. SHOW THE LOCATION OF CONTRACTION JOINTS THROUGH INTERSECTIONS ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

FOR PAVEMENT SLABS OF VARYING WIDTHS, LOCATE THE OUTER MOST DOWEL BAR SO THAT THE CENTER OF THE BAR IS A MINIMUM OF 6 INCHES FROM AND A MAXIMUM OF 18 INCHES FROM THE FREE EDGE OF PAVEMENT.

CONSTRUCTION JOINTS

LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO THE CONTRACTION JOINTS.

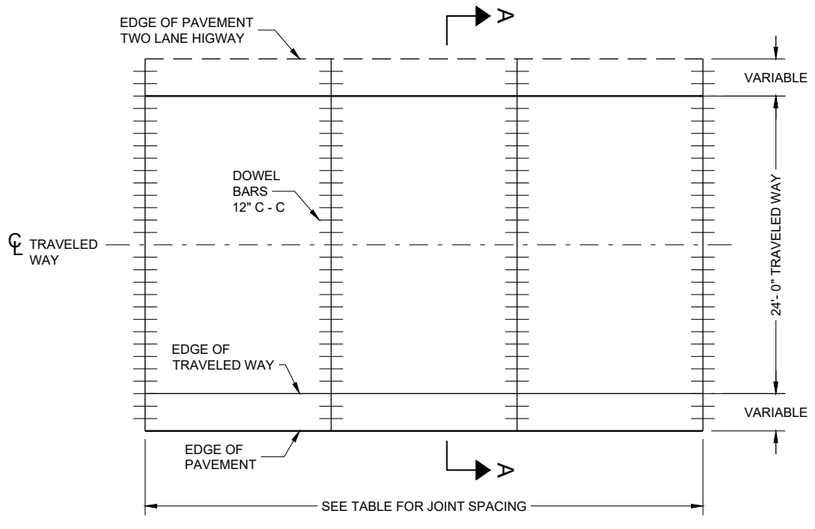
(1) REFER TO TYPICAL CROSS SECTIONS FOR ADDITIONAL DETAILS.

(2) MEASURE THE ENTIRE PAVED WIDTH INCLUDING THE PORTION(S) LABELED "PAVED SHOULDER" AS CONCRETE PAVEMENT.

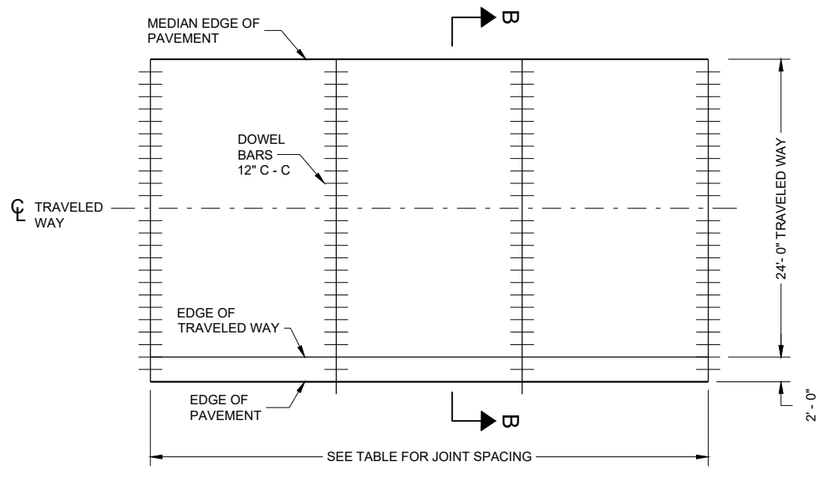
(3) SHOULDER WIDTHS LESS THAN 3 FEET SHALL BE PAVED INTEGRAL TO THE MAINLINE CONCRETE PAVEMENT, SEE SECTION B-B.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8" & ABOVE	1 ¼"	15'



CONTRACTION JOINT LAYOUT FOR TWO-LANE TWO-WAY HIGHWAY



CONTRACTION JOINT LAYOUT FOR DIVIDED HIGHWAY

RURAL DOWELED CONCRETE PAVEMENT

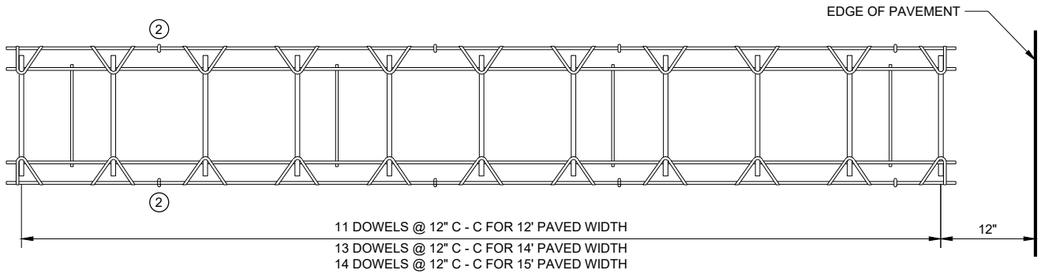
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 13C11 - 14a

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SDD13C11 - 14a



PLAN VIEW



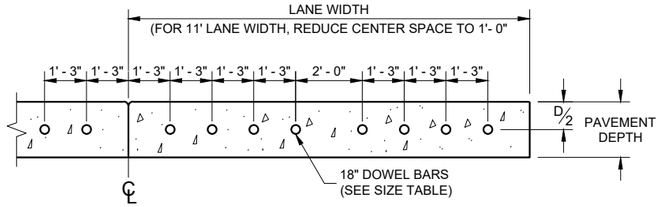
SIDE VIEW

(NORMAL TO CENTERLINE)

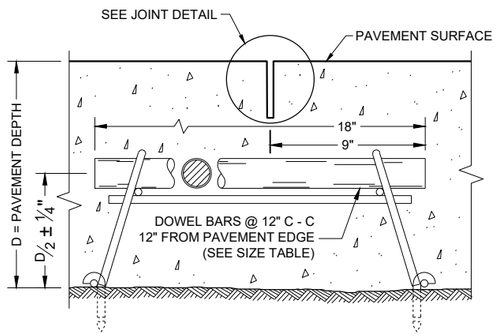
CONTRACTION JOINT DOWEL ASSEMBLY (1)

GENERAL NOTES

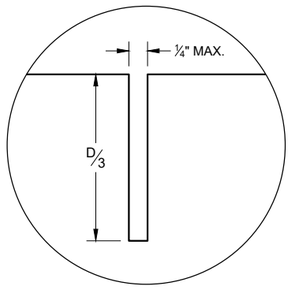
1. OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTION CONTRACTION JOINTS.
2. SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.
3. FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A ¼" RADIUS AT FORMED JOINTS.
4. PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.
5. INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C - C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO THE "DRILLED DOWEL BAR CONSTRUCTION JOINT" DETAIL.
6. APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.
7. ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS ⅛" GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.



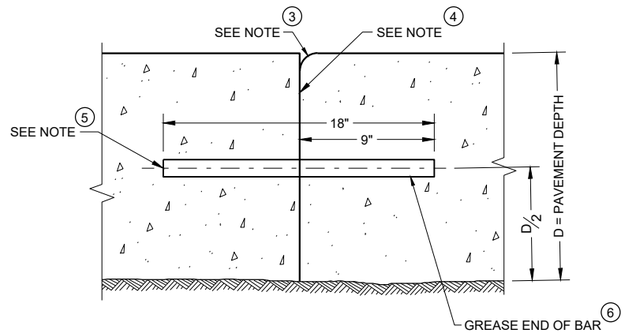
DRILLED DOWEL BAR CONSTRUCTION JOINT (7)



DOWELED CONTRACTION JOINT



JOINT DETAIL



TRANSVERSE CONSTRUCTION JOINT

RURAL DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022
DATE

/S/ Peter Kemp P.E.
PAVEMENT SUPERVIS

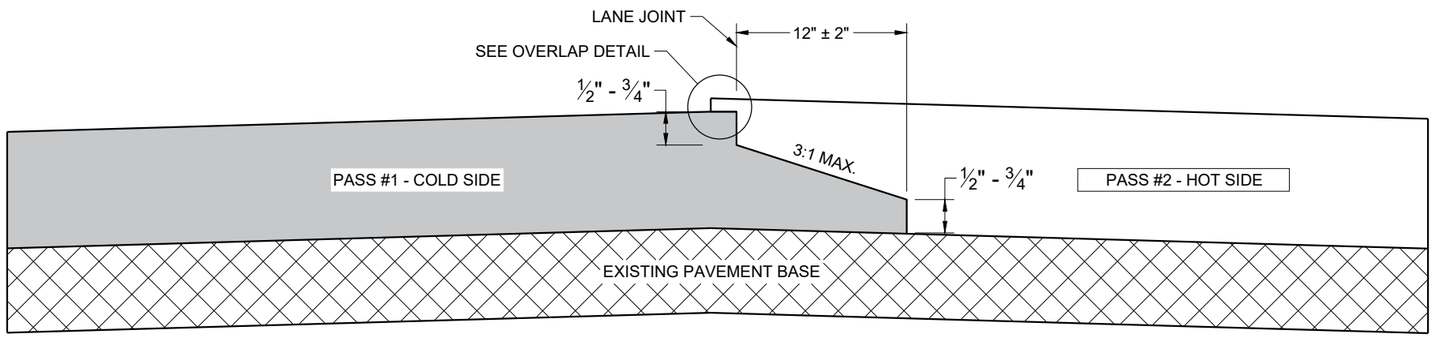
FHWA

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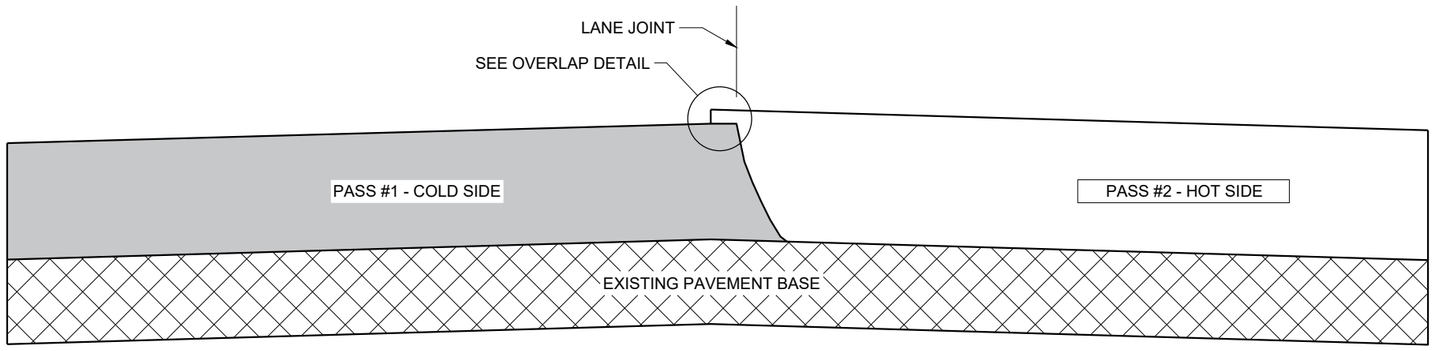
SDD 13C11 - 14b

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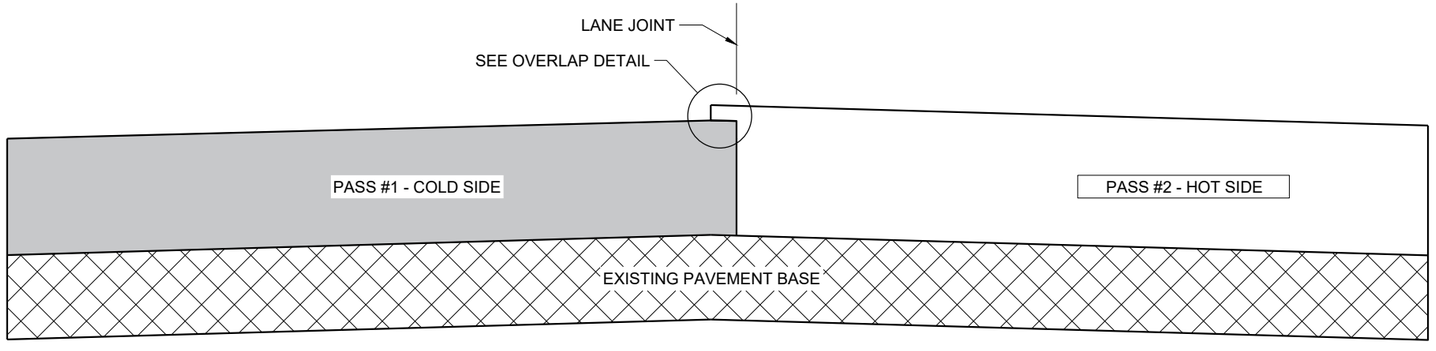
SDD 13C11 - 14b



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

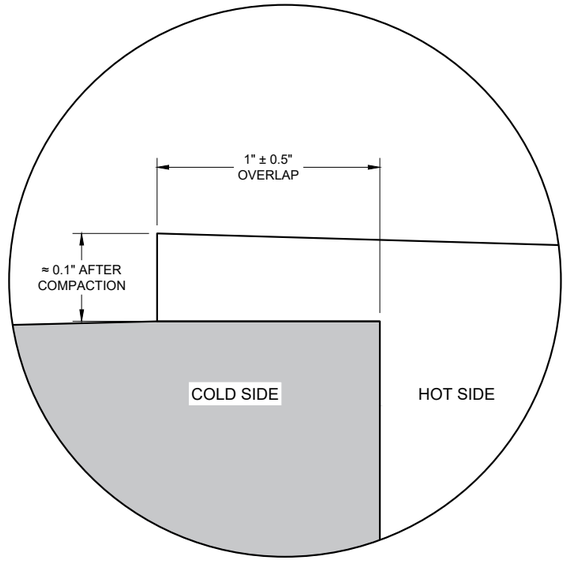
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



OVERLAP DETAIL (TYPICAL)

6

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SDD 13C19 - 03

SDD 13C19 - 03

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020
DATE

/S/ Steven Hefel
HMA PAVEMENT ENGIN

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.

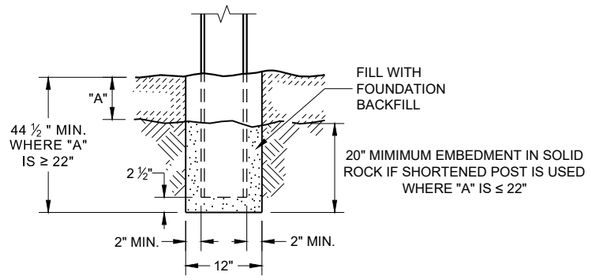
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL 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).

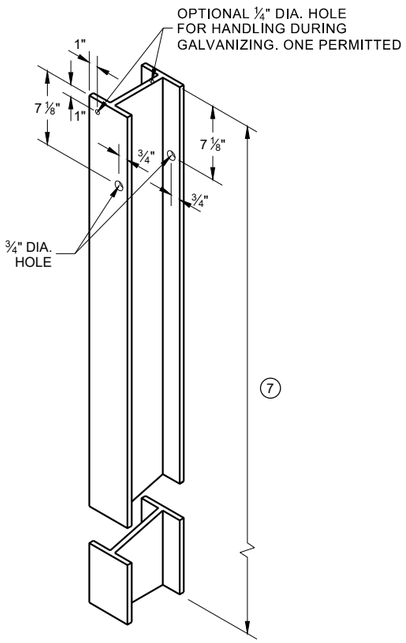
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(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.

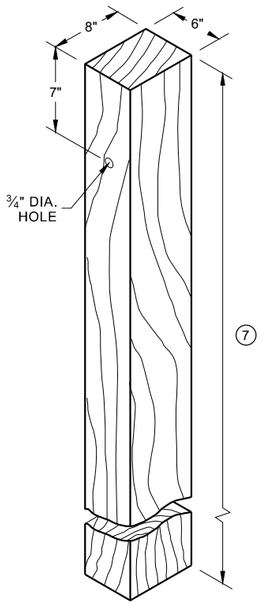
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



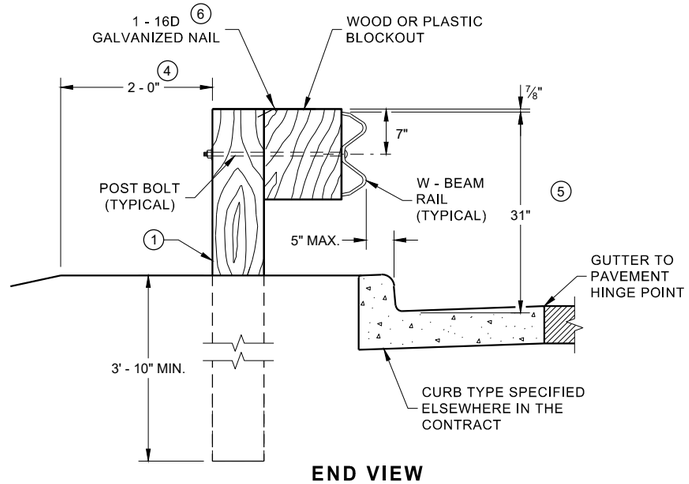
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



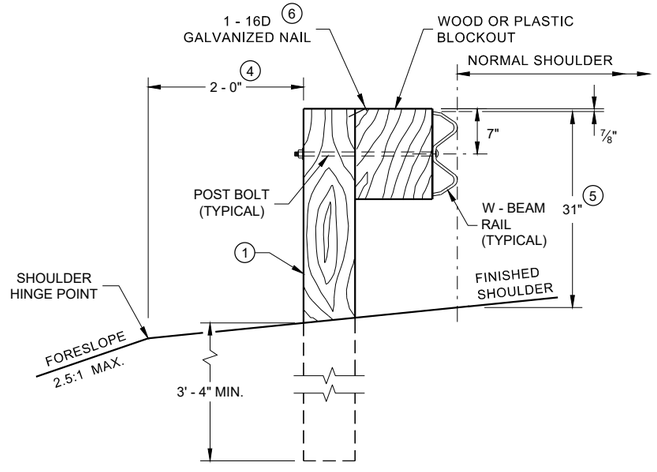
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



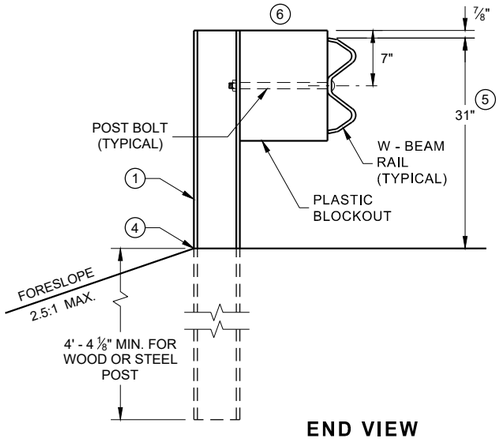
WOOD POST (6" X 8") NOMINAL (1)



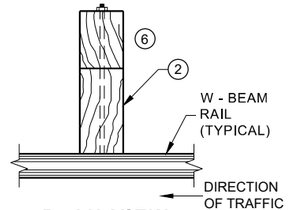
END VIEW
LOCATED ALONG A CURBED ROADWAY



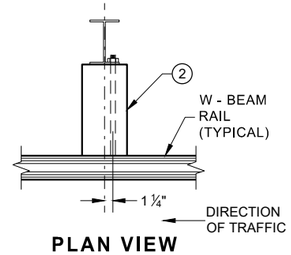
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



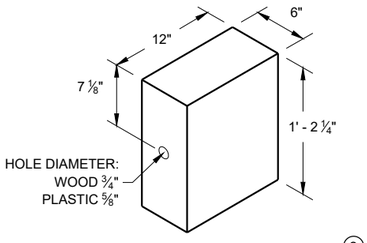
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



WOOD OR PLASTIC BLOCKOUT (2)

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

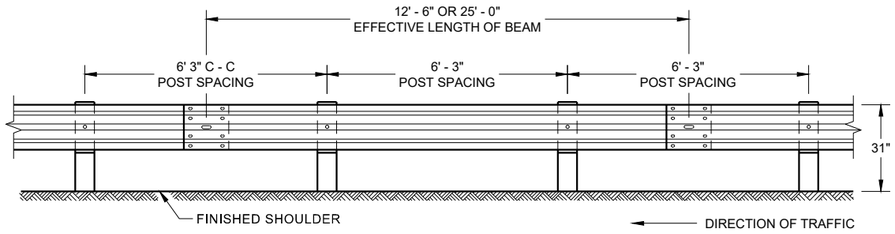
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

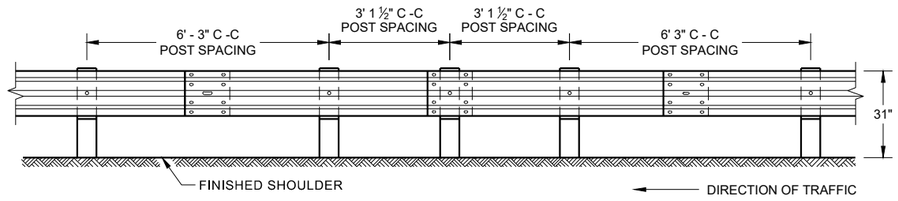
SDD 14B42 - 07a

6

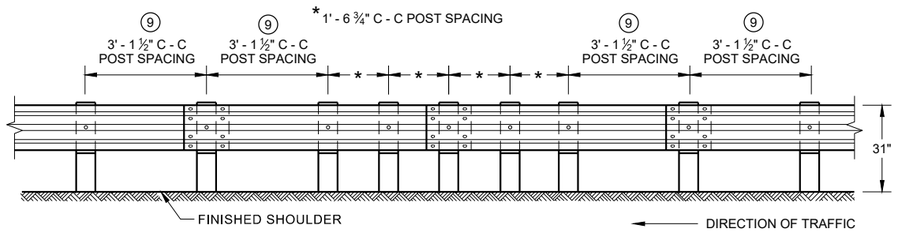
SDD 14B42 - 07a



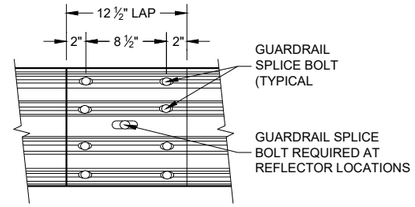
FRONT VIEW
POST SPACING STANDARD INSTALLATION



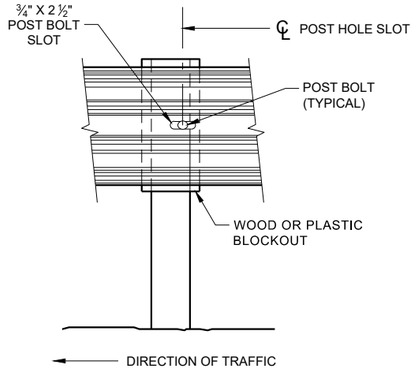
FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)



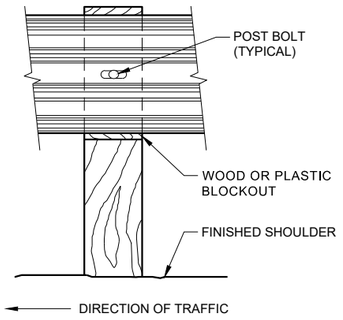
FRONT VIEW
QUARTER POST SPACING (QS)



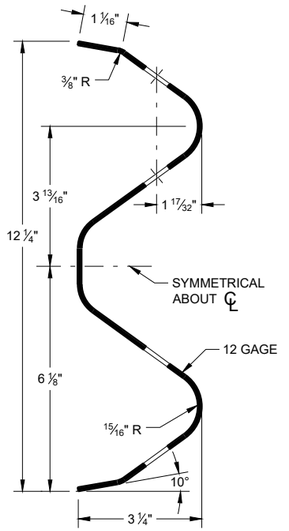
FRONT VIEW
MID-SPAN BEAM SPLICE



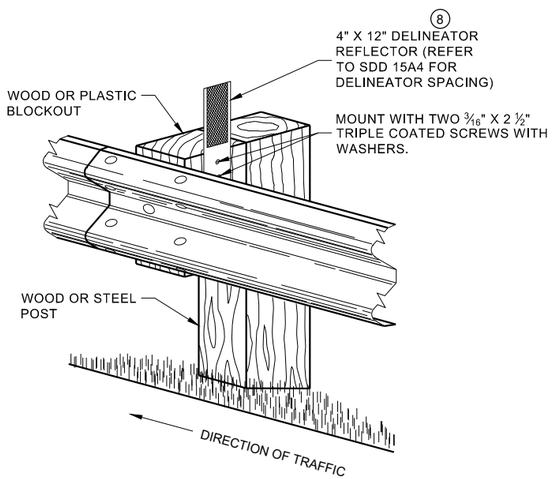
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



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 ⅝" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

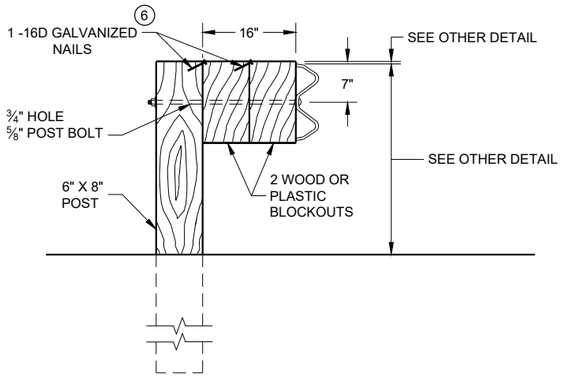
GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B42 - 07b

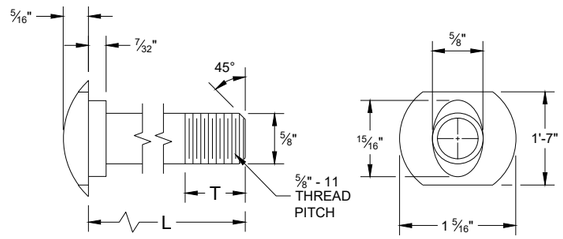


DETAIL FOR 16" BLOCKOUT DEPTH

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.

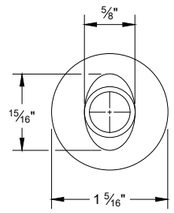
NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3⁄16".
2. IF THE BOLT EXTENDS MORE THAN ¼" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

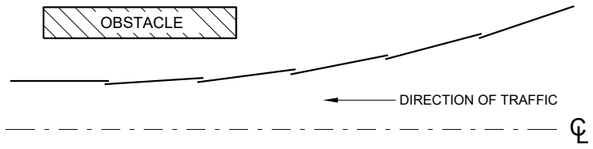


POST BOLT TABLE

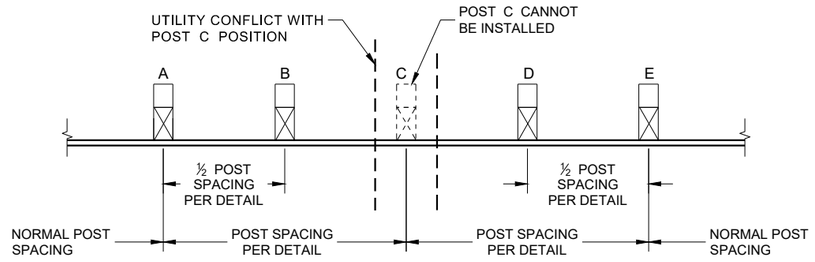
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



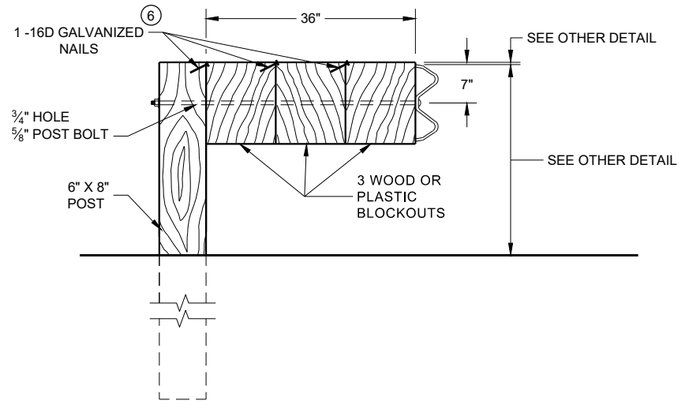
ALTERNATE BOLT HEAD



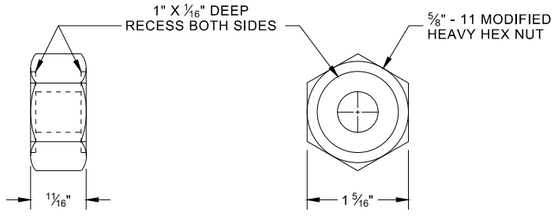
PLAN VIEW
BEAM LAPPING DETAIL



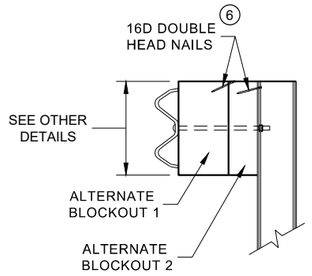
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



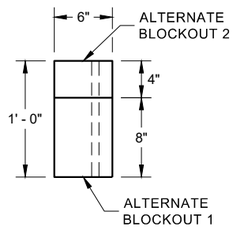
DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW



PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

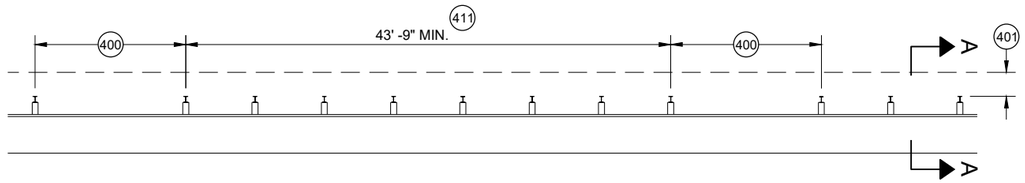
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

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.

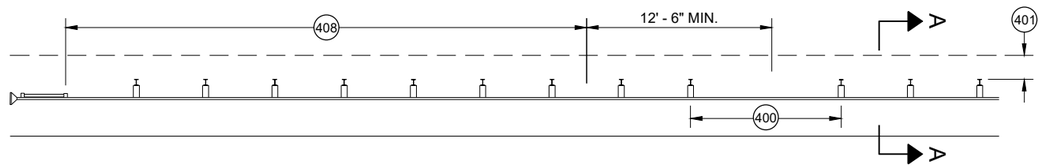
(6) WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

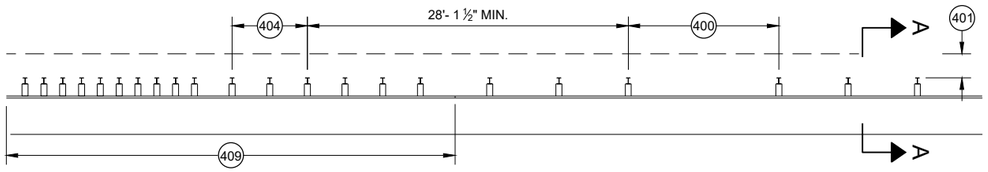
6
SDD 14B42 - 07c



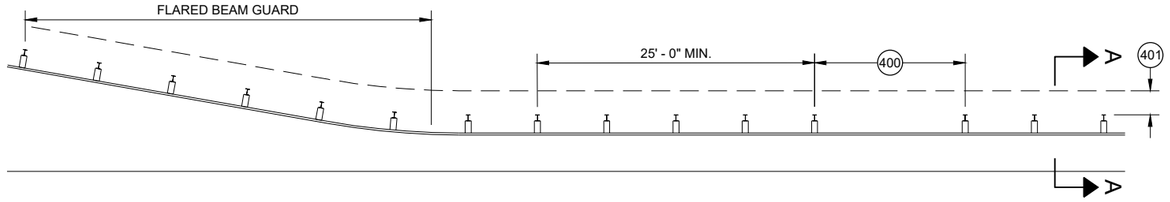
MISSING POST IN MGS GUARDRAIL



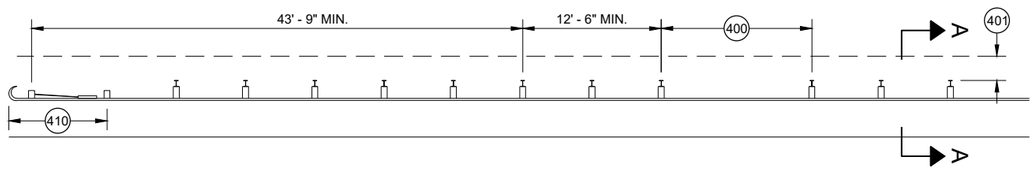
MISSING POST IN MGS GUARDRAIL NEAR EAT



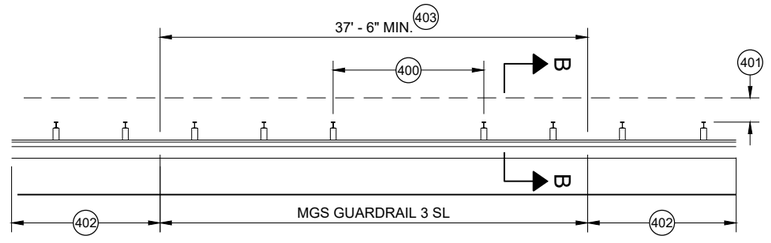
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

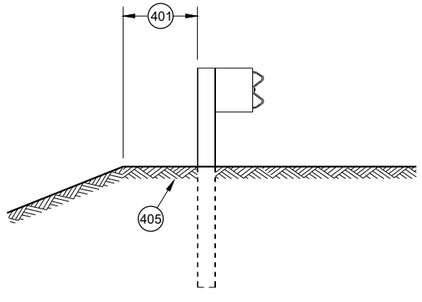


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

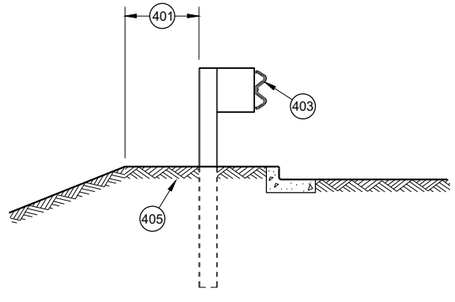


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL) 407

(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 406



SECTION B - B 406

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

SDD 14B42 - 07d

GENERAL NOTES

(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.

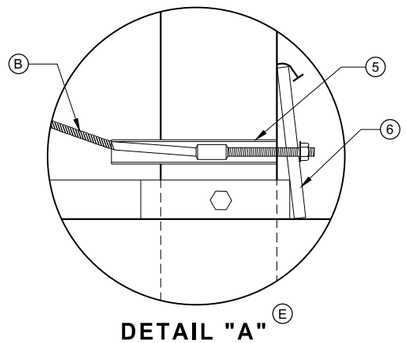
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

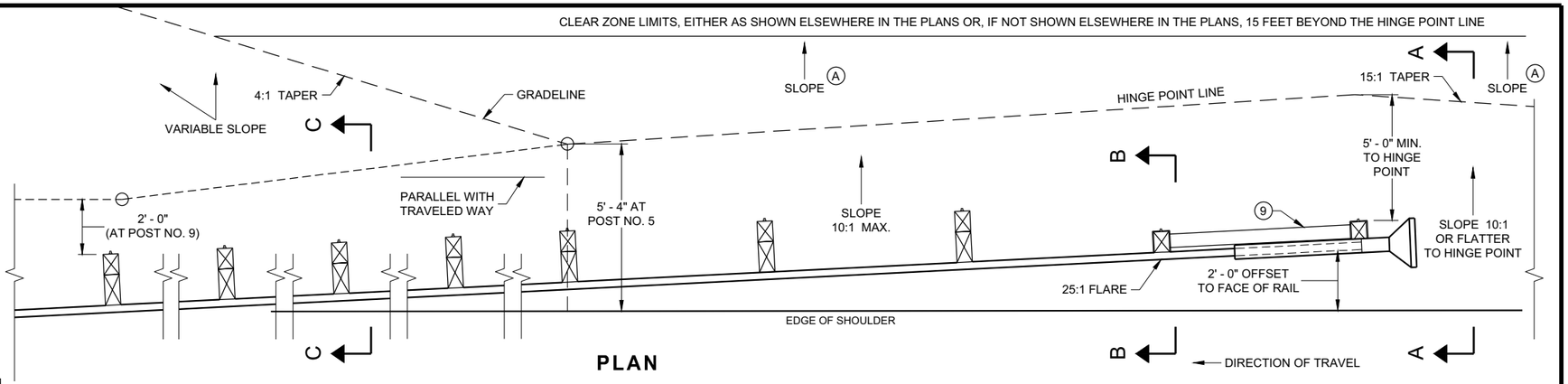
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

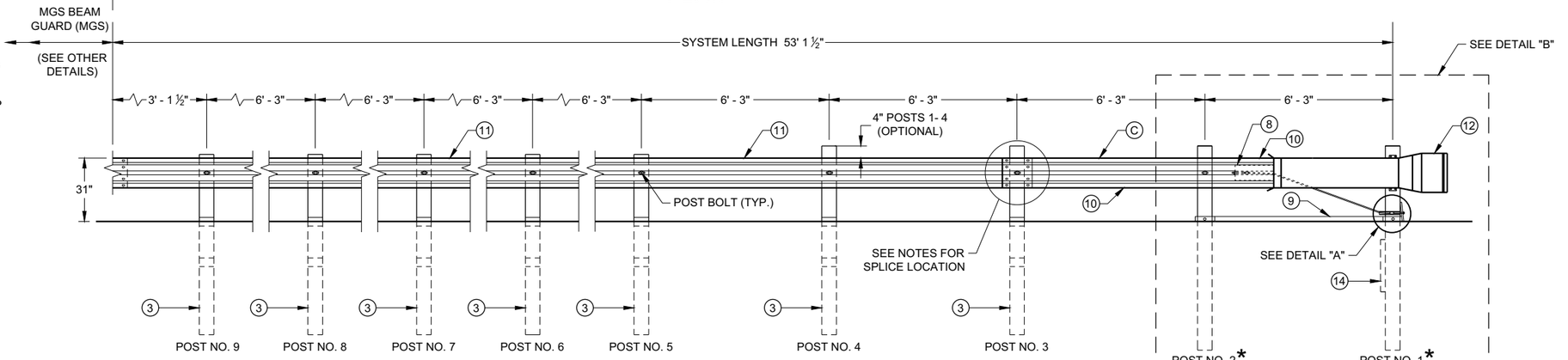
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



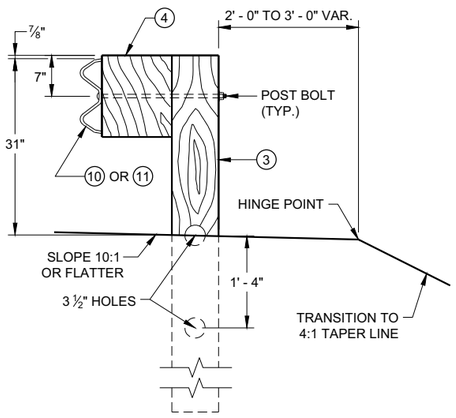
DETAIL "A" (E)



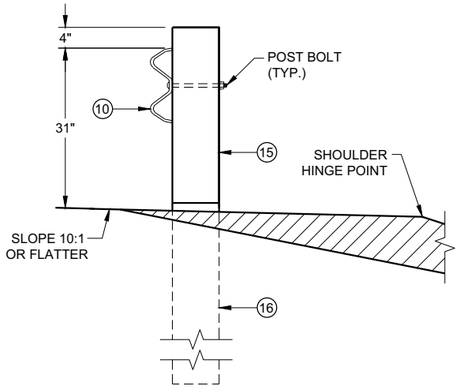
PLAN



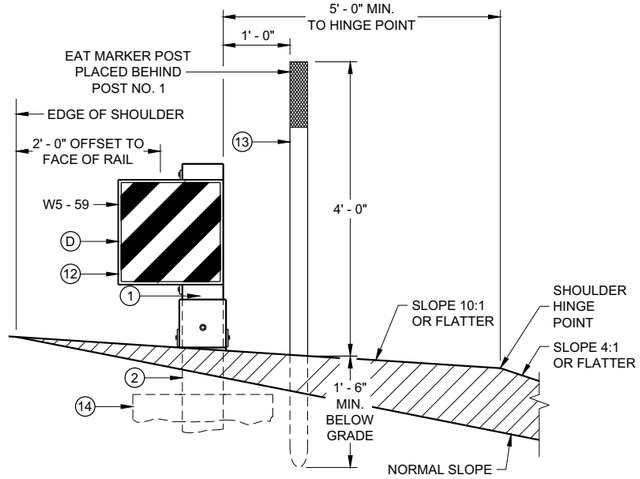
ELEVATION



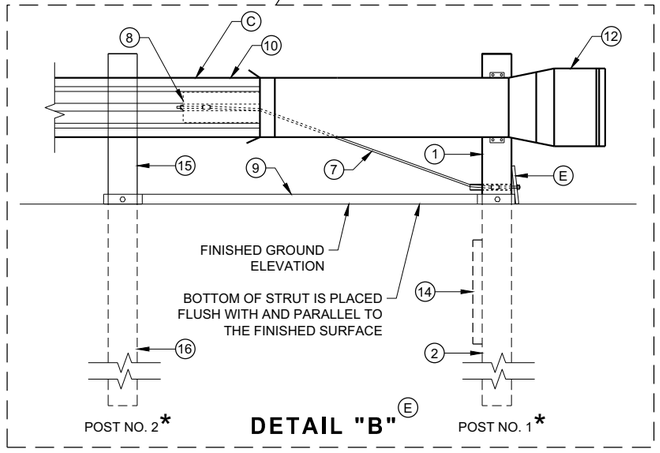
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



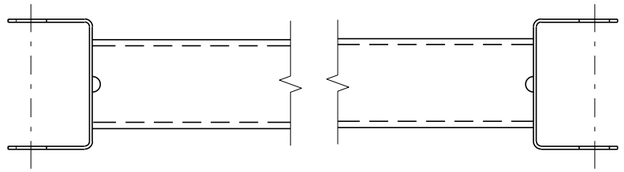
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

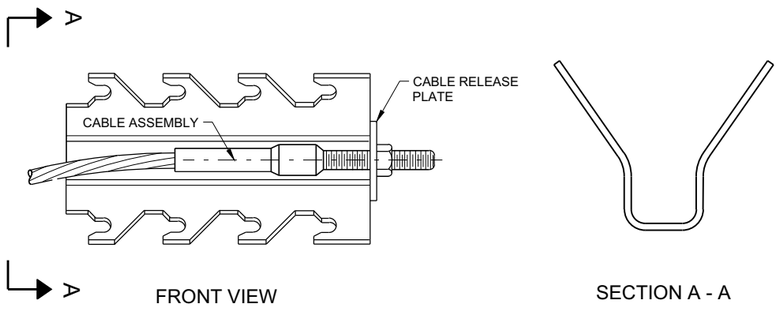
SDD 14B44 - 04a



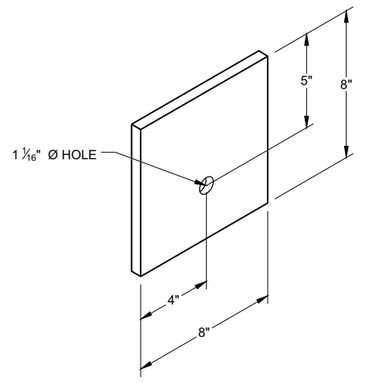
GENERIC GROUND STRUT ⑨ Ⓔ

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUGACTURER'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. SECTIONS VARY IN LENGTH.
⑫	IMPACT HEAD
⑬	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
⑭	SOIL PLATE
⑮	UPPER POST NO. 2
⑯	LOWER POST NO. 2



GENERIC ANCHOR CABLE BOX ⑧ Ⓔ



BEARING PLATE ⑥ Ⓔ

6

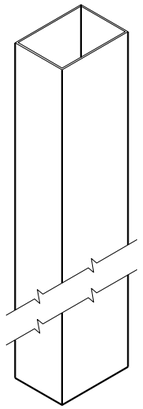
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SDD 14B44 - 04b

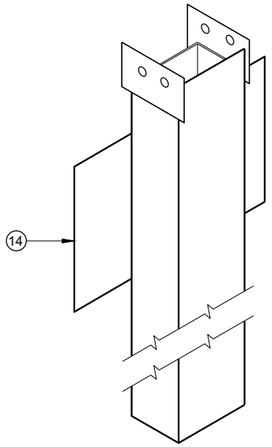
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

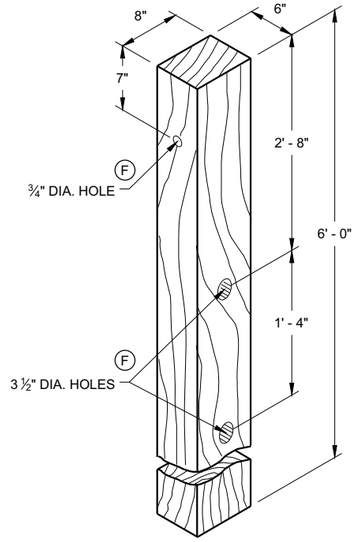
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



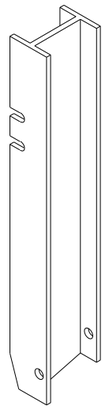
UPPER POST NO. 1 (1) (E)



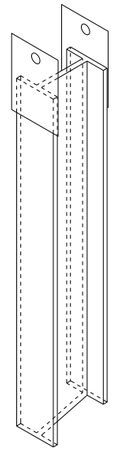
LOWER POST NO. 1 (2) (E)



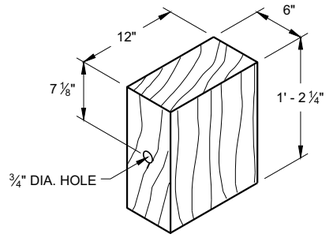
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



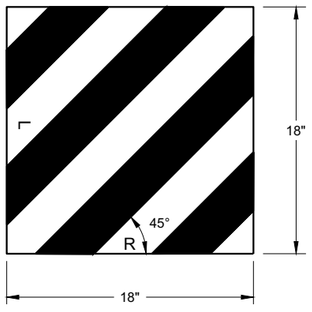
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

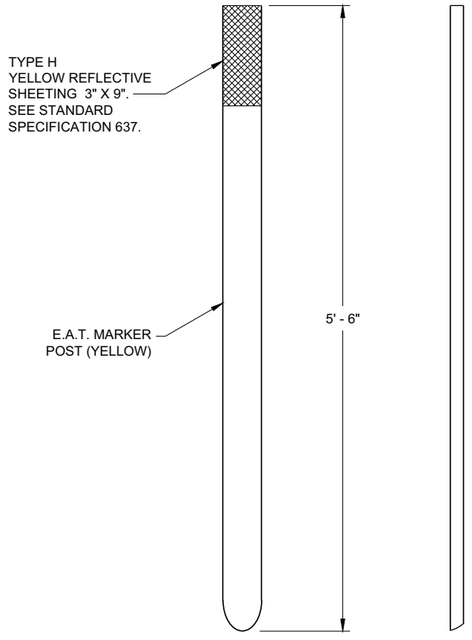


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



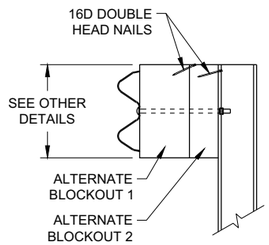
W5 - 59

REFLECTIVE SHEETING DETAIL (E)

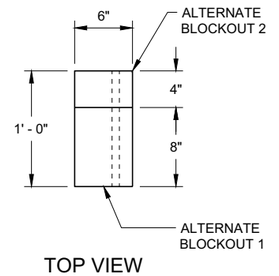


FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

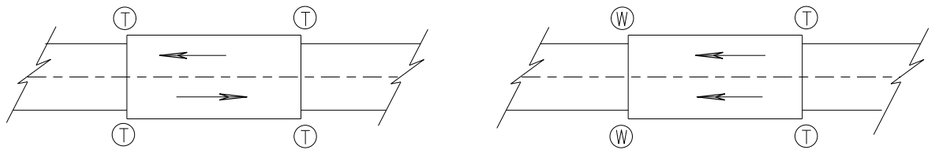
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE
UNIT SUPERVISOR

FHWA

6

SDD 14B44 - 04c



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 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

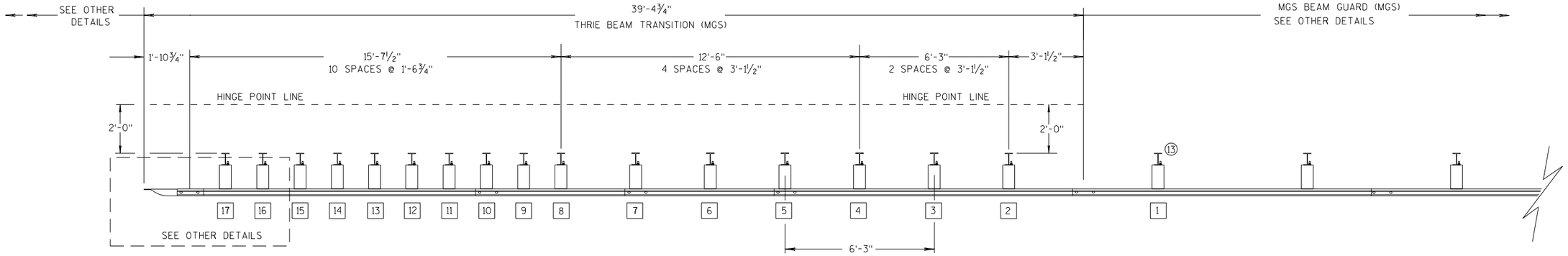
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

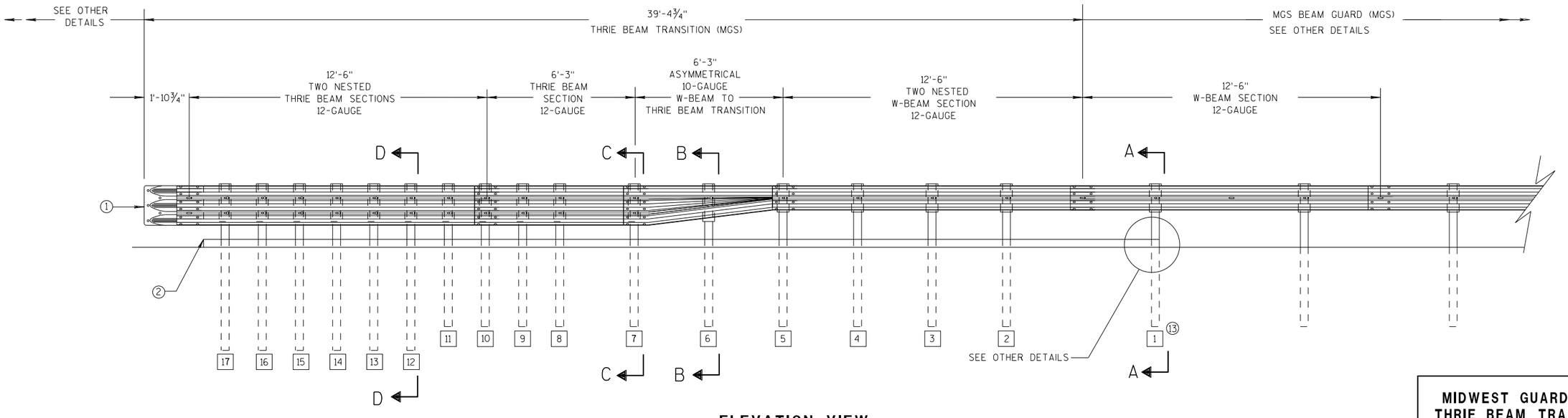
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

(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 TRANSPOR

6

S.D.D. 14 B 45-5a

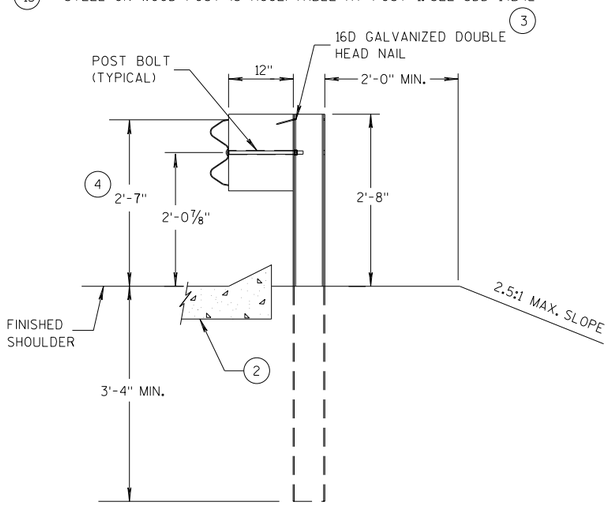
GENERAL NOTES

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

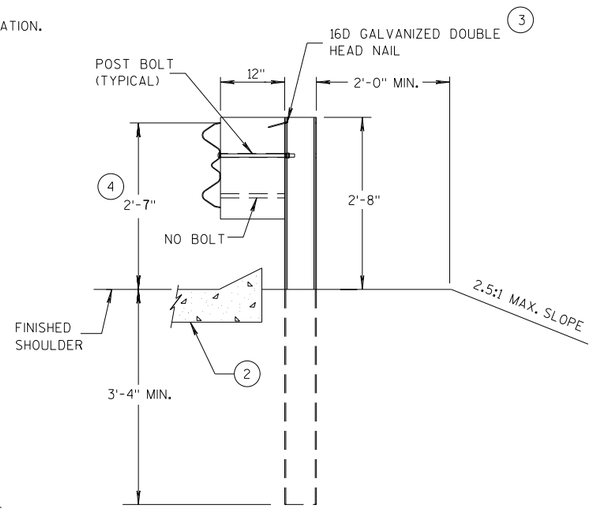
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



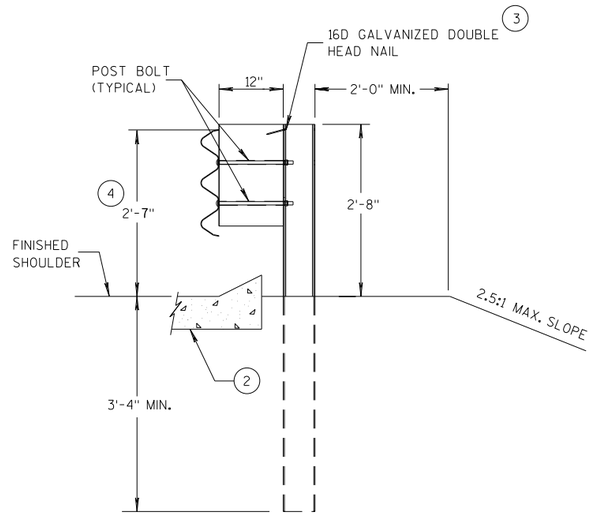
SECTION A-A (13)

POSTS 1-5



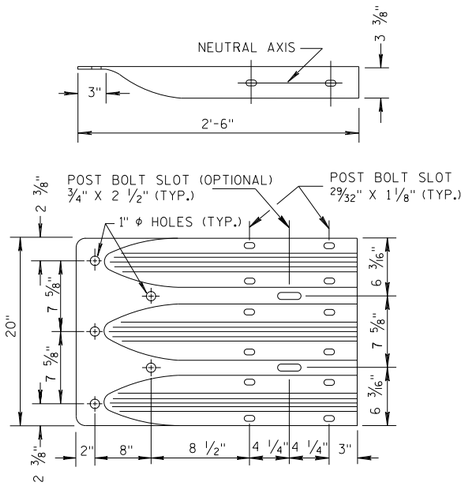
SECTION B-B

POST 6

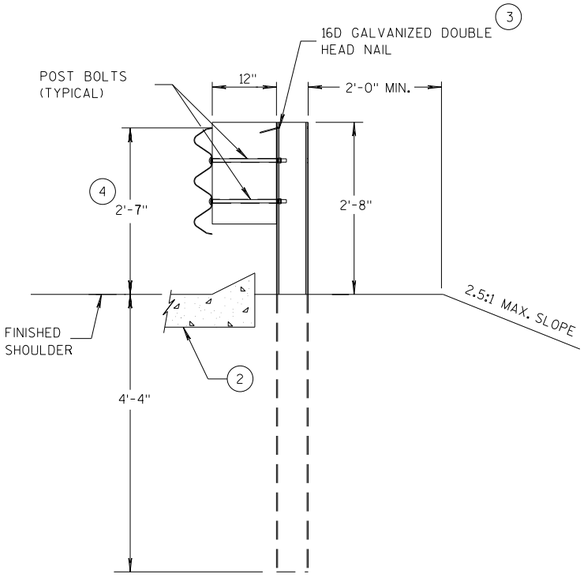


SECTION C-C

POSTS 7-11

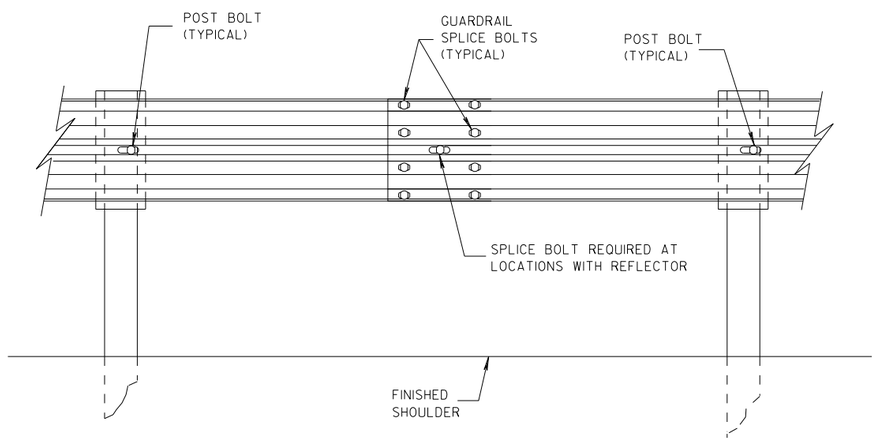


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

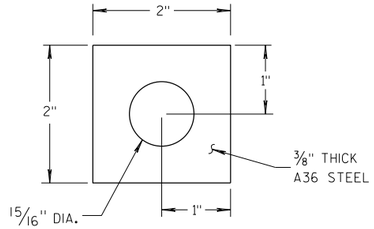
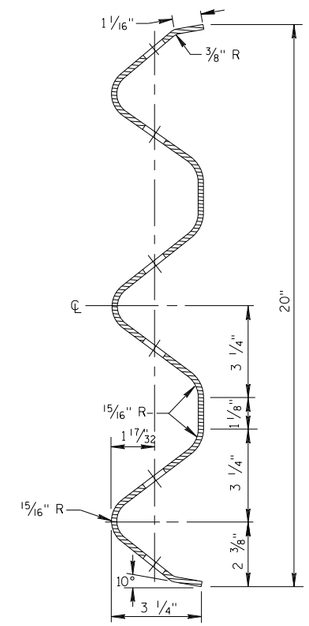


PLATE WASHER DETAIL



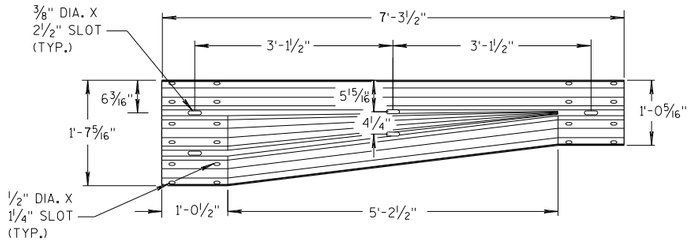
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

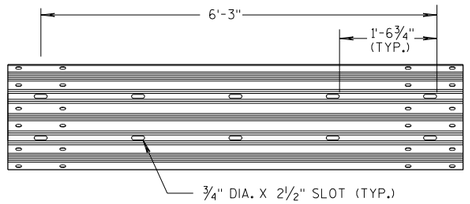
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

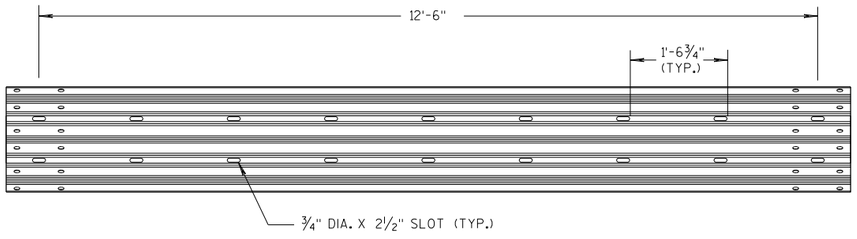
S.D.D. 14 B 45-5b



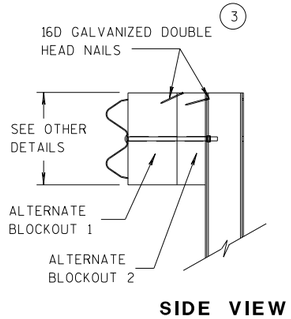
W-BEAM TO THRIE BEAM TRANSITION SECTION



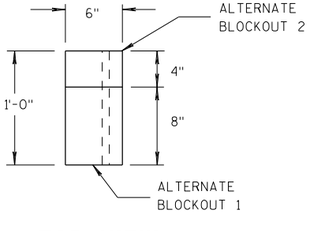
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

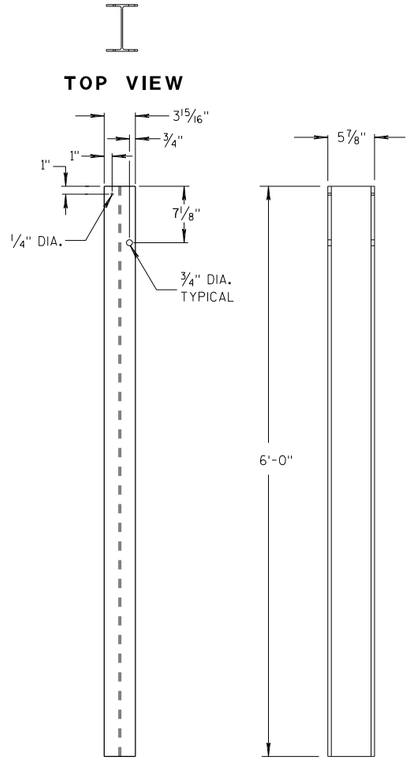


SIDE VIEW



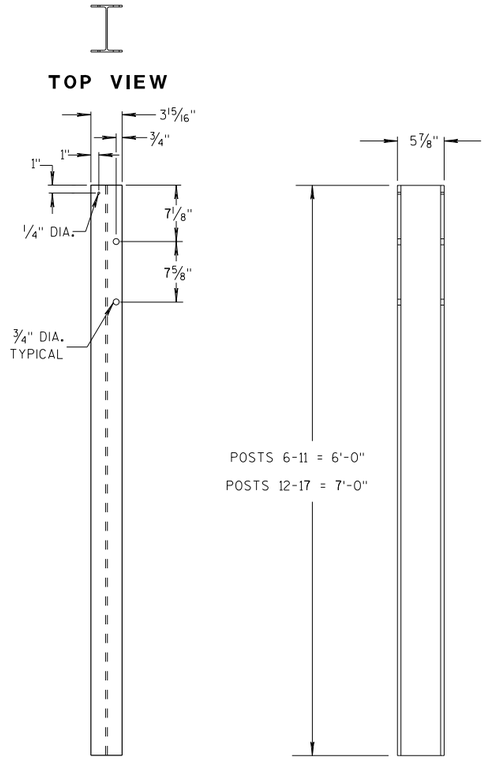
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



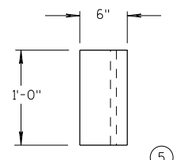
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

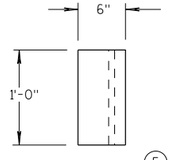


FRONT VIEW SIDE VIEW

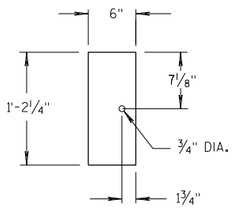
STEEL POSTS 6-17



TOP VIEW (5)

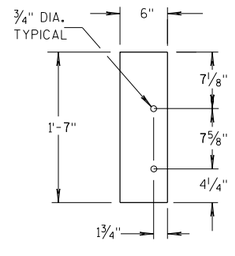


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

(3) WHEN USING STEEL POSTS 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.

(5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

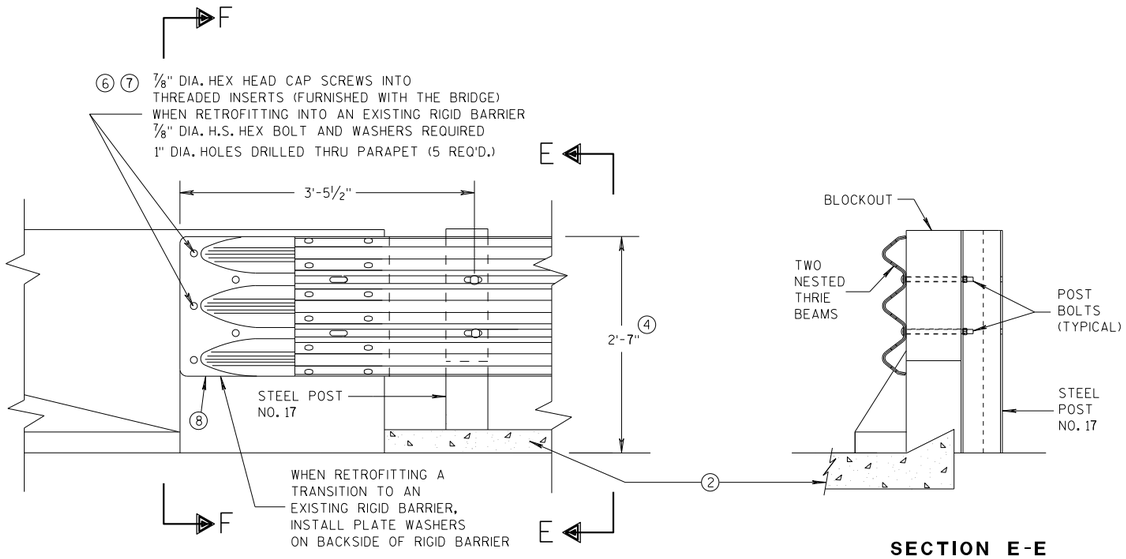
(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 14 B 45-5c



FRONT VIEW

SECTION E-E

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

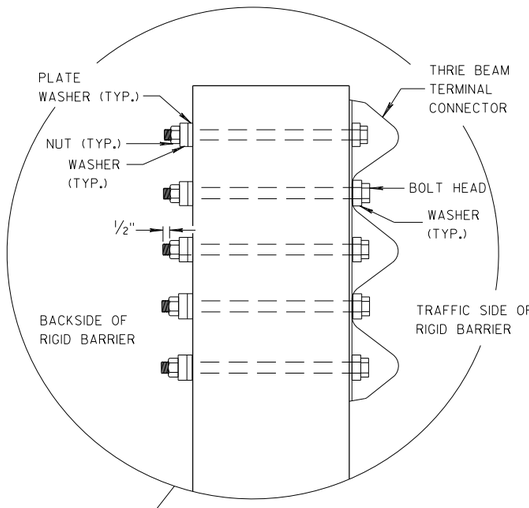
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

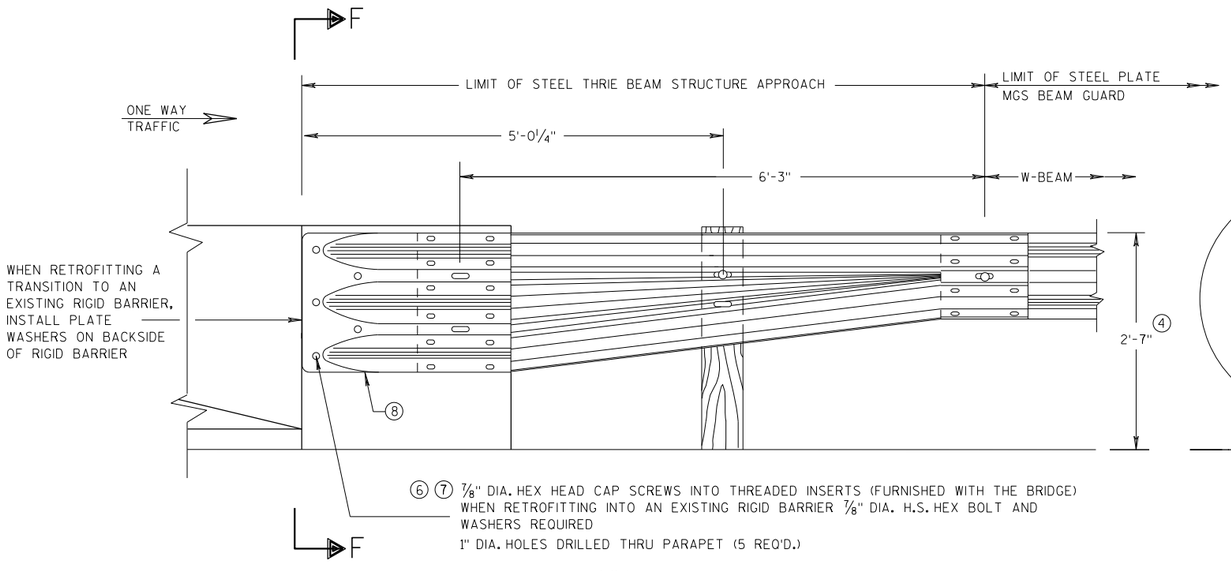
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

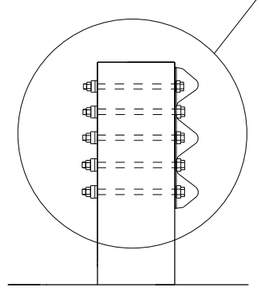
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

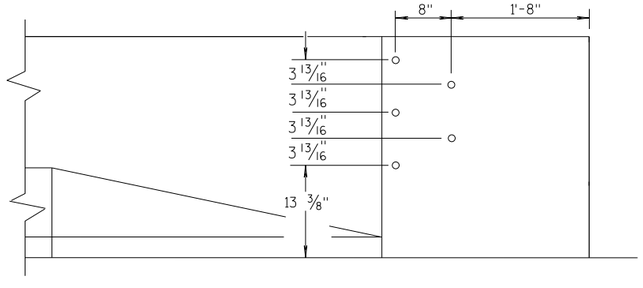




FRONT VIEW



SECTION F-F



DRILL HOLE LOCATION

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS D UNIT SUPERVIS NT
FHWA

6

S.D.D. 14 B 45-5d

6

S.D.D. 14 B 45-5d

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

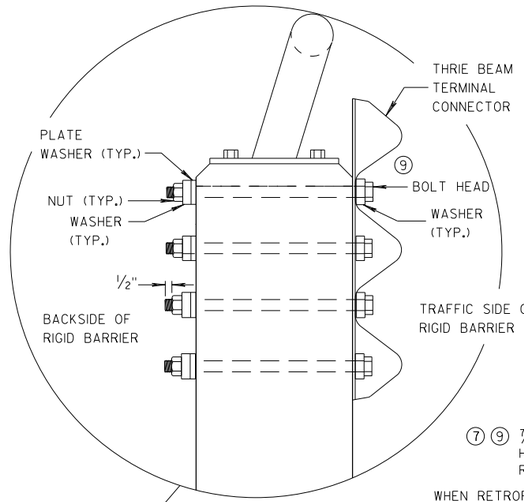
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

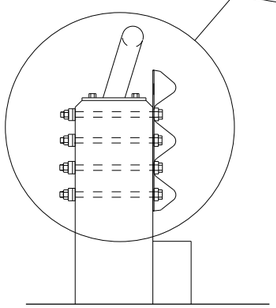
(6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

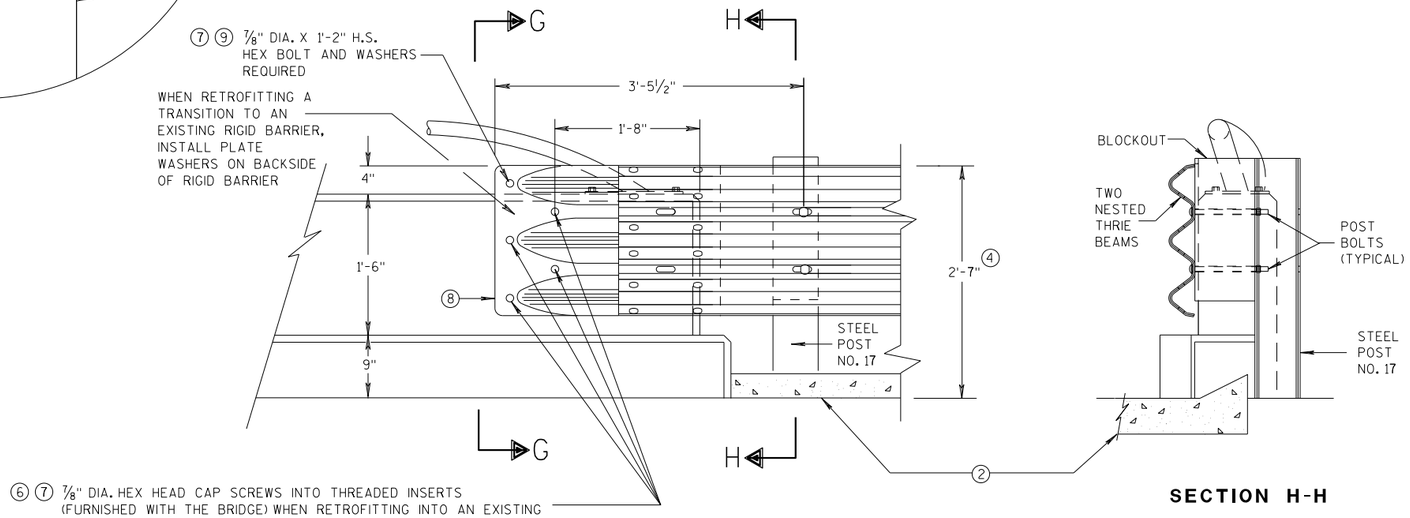
(8) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

(9) BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.





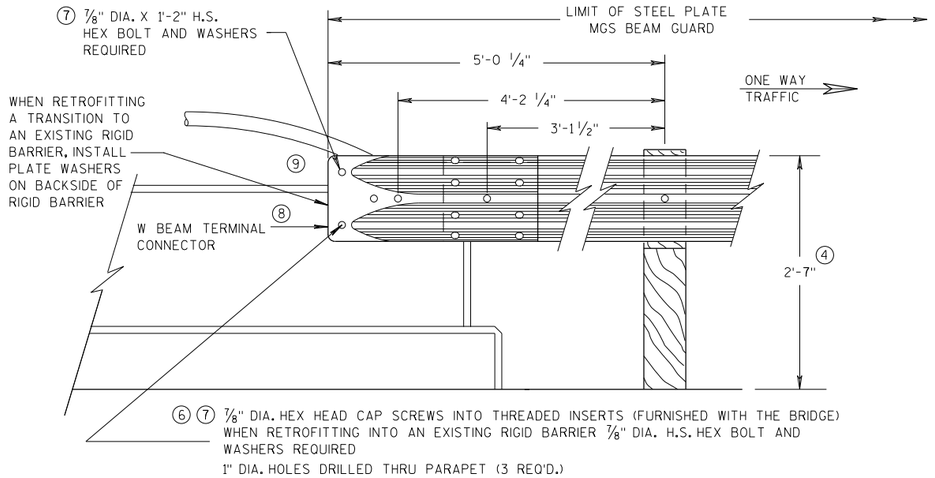
SECTION G-G



FRONT VIEW

SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

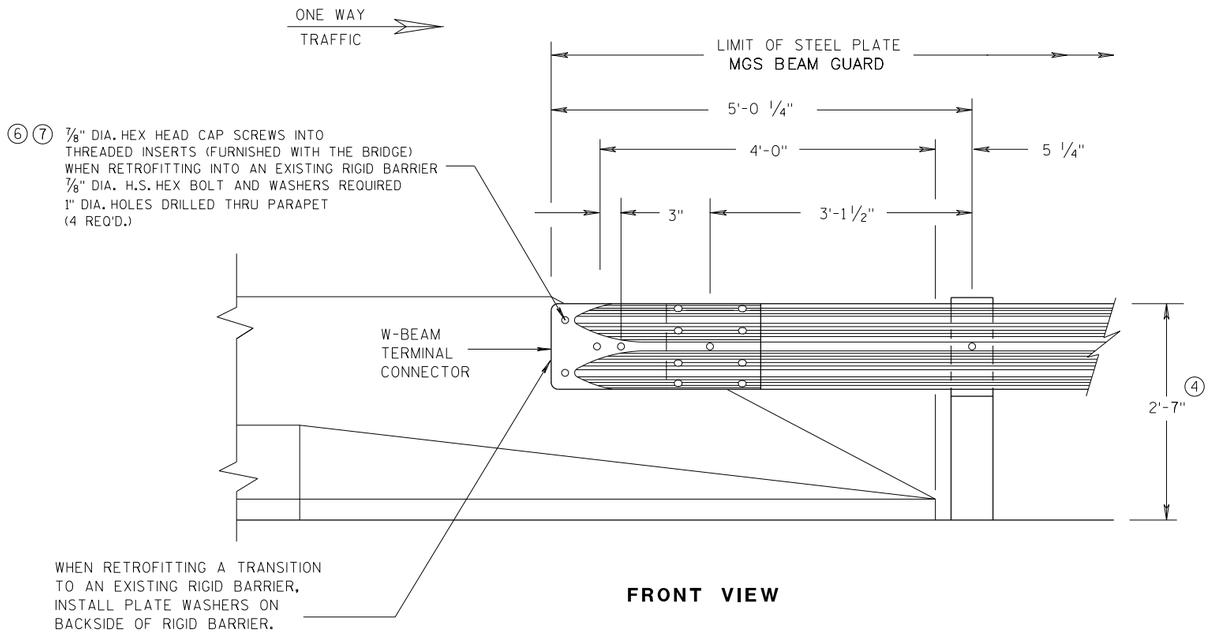
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FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

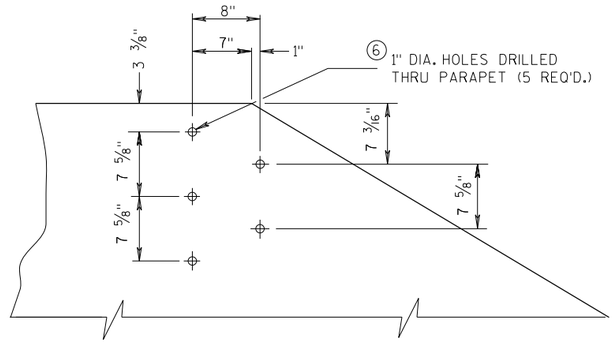
GENERAL NOTES

② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

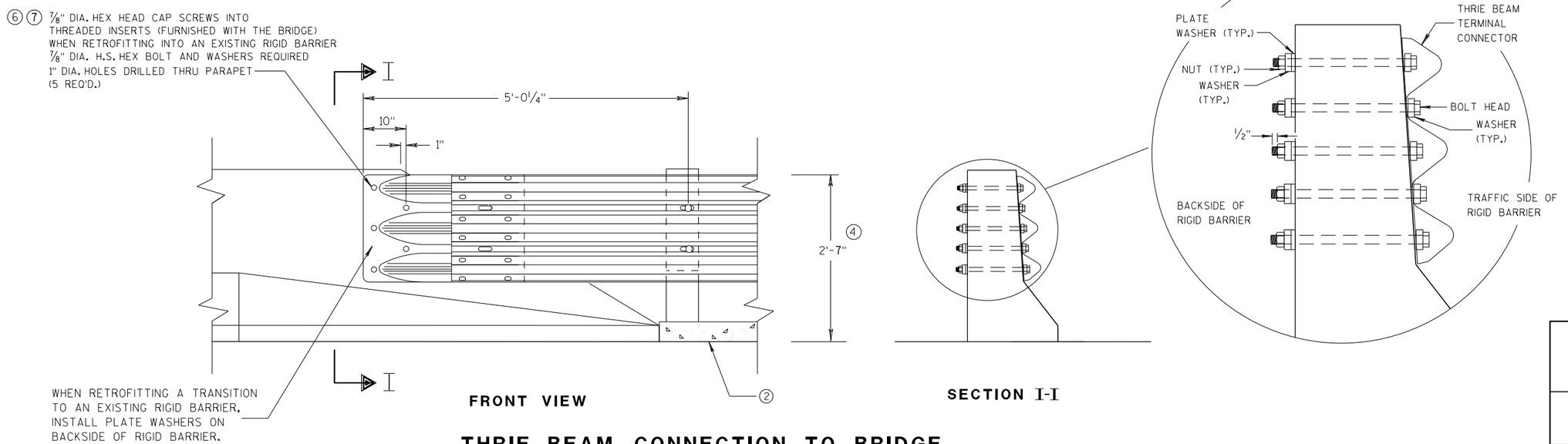
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW

SECTION I-I

THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

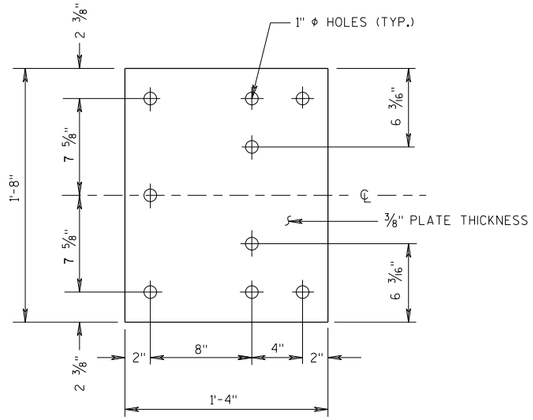
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

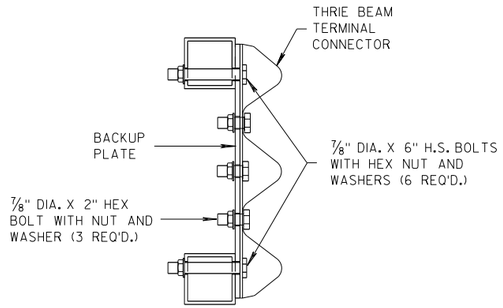
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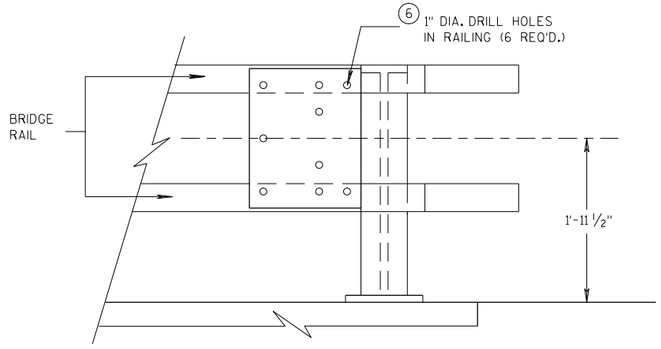
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BACK-UP PLATE DETAIL



SECTION J-J

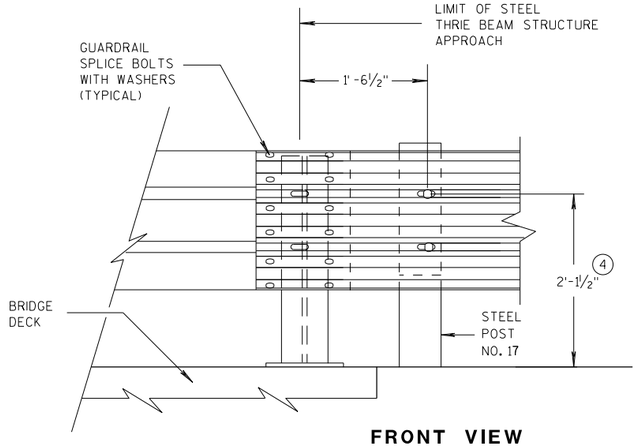


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

GENERAL NOTES

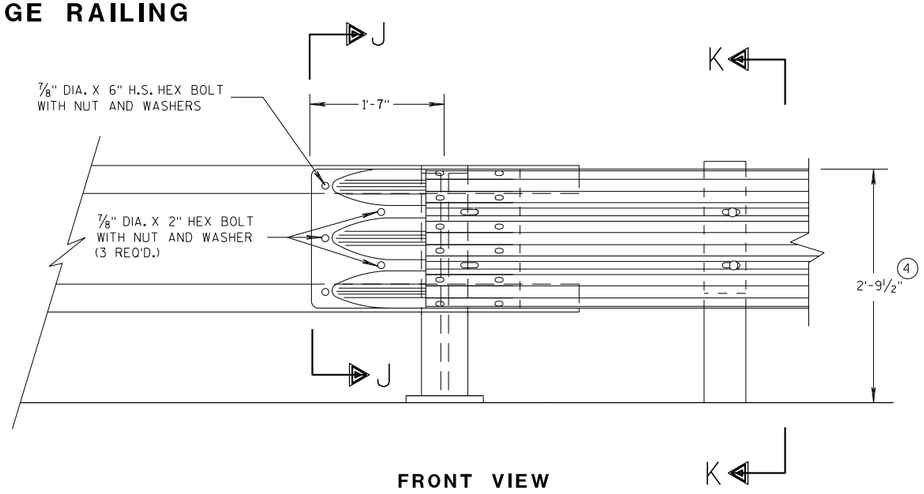
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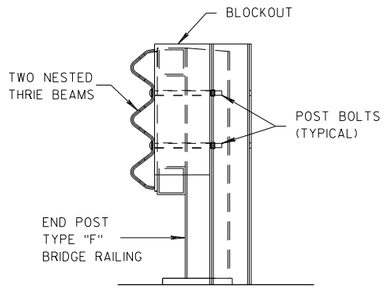


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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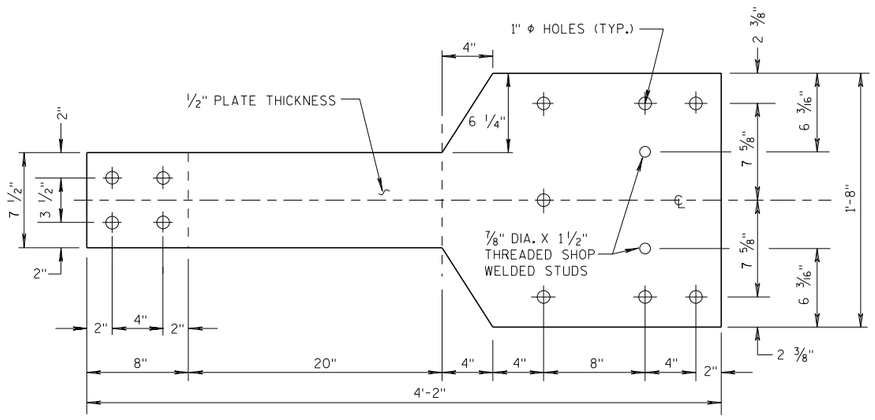
S.D.D. 14 B 45-5g

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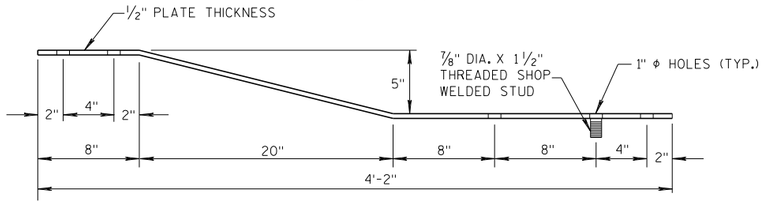
S.D.D. 14 B 45-5g

GENERAL NOTES

(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

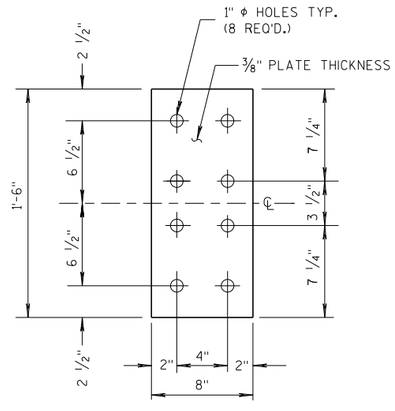


FRONT VIEW



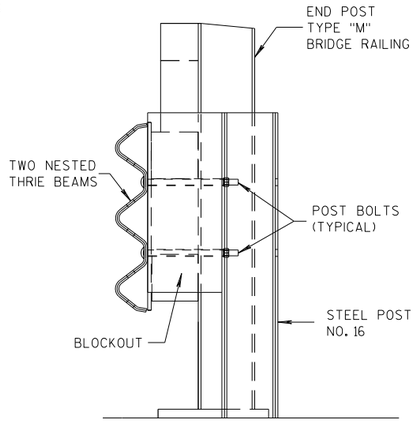
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

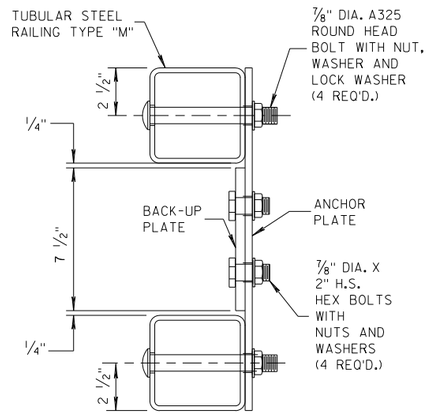


FRONT VIEW

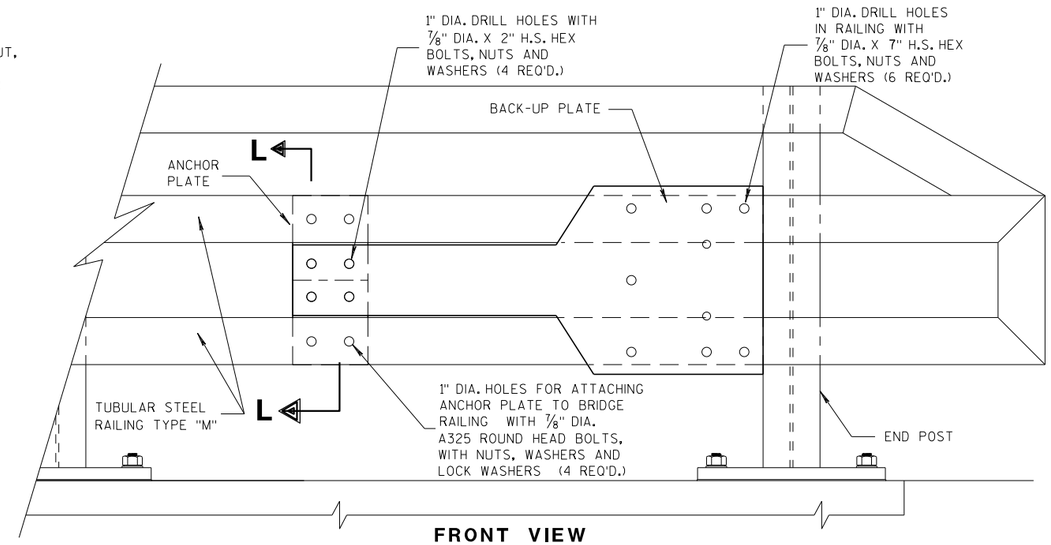
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

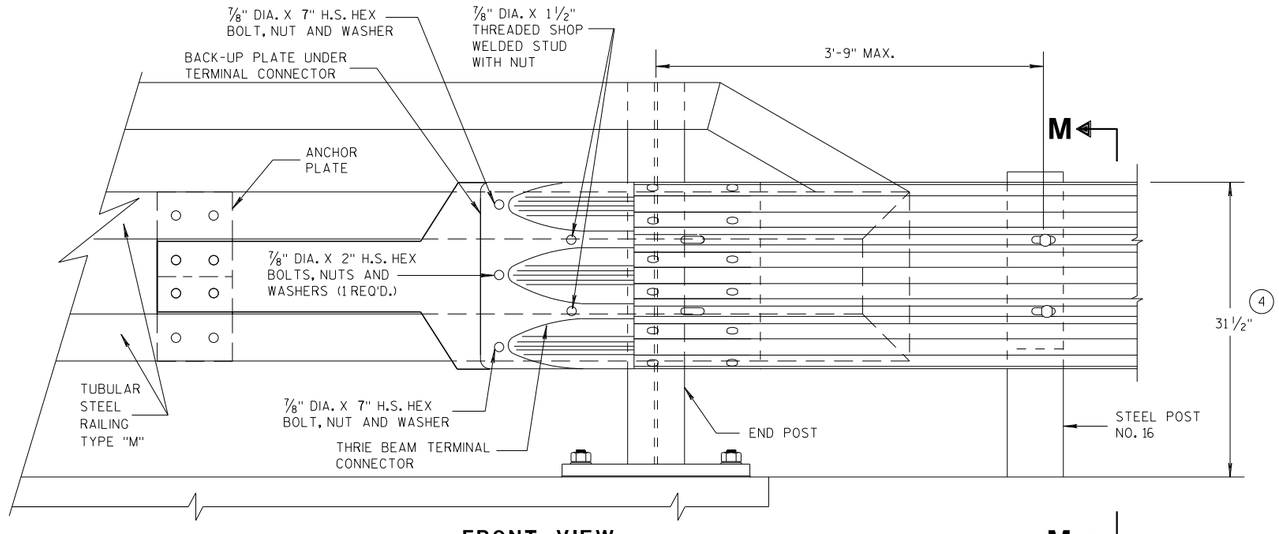


SECTION L-L

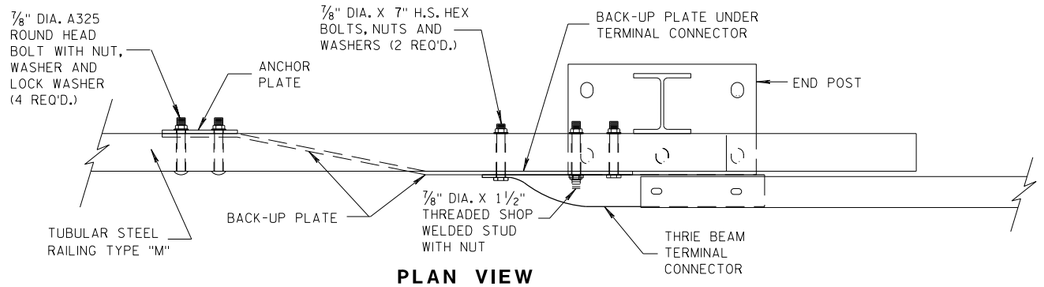


FRONT VIEW

ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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07/2018 — DATE
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GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

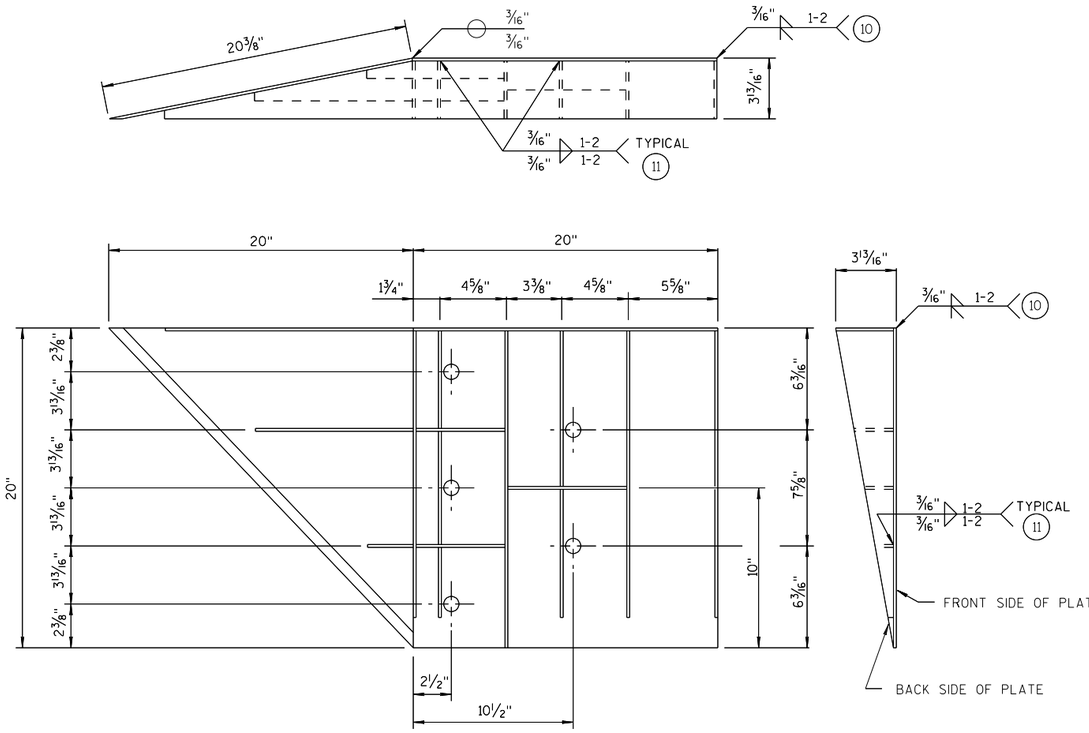
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

(10) STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.

(11) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

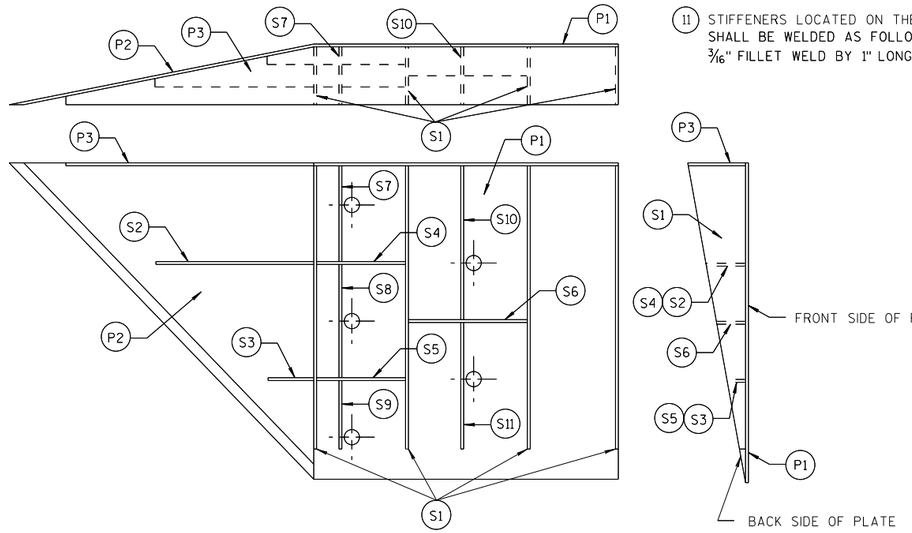


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 9/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 13/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

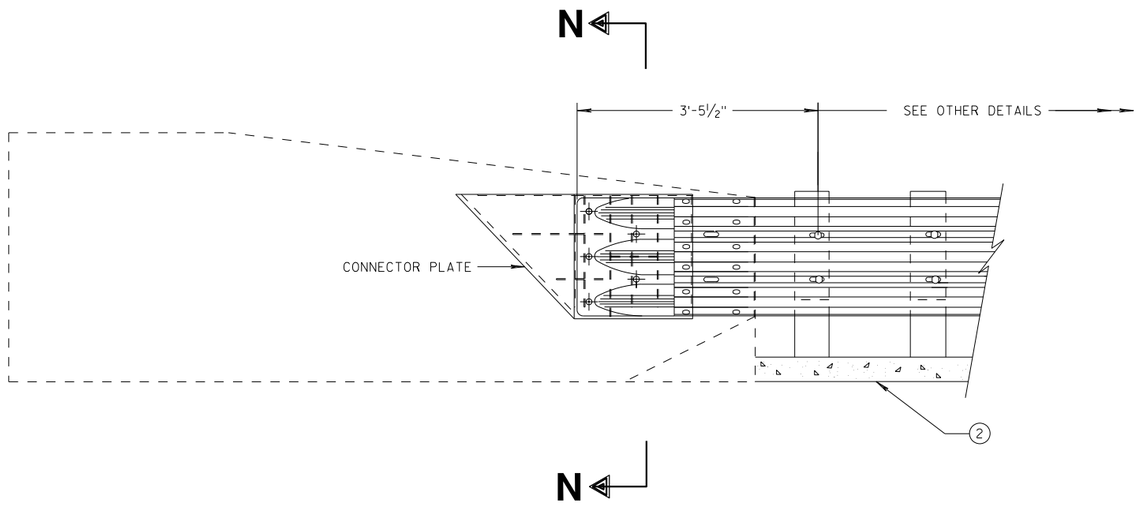
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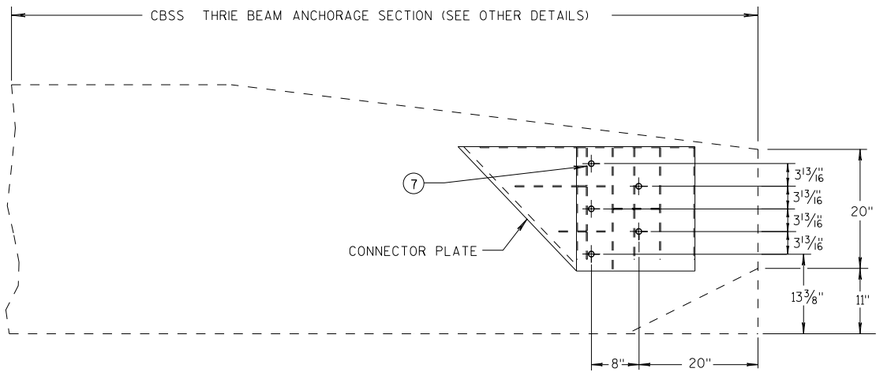
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THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



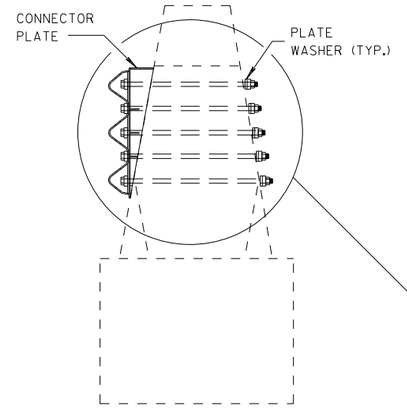
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

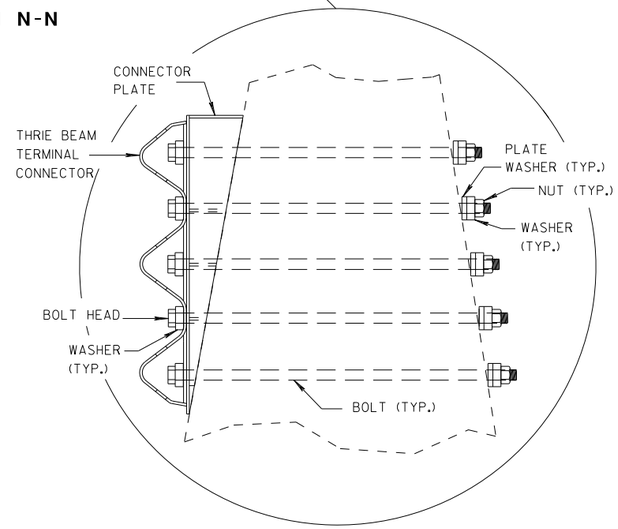
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

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SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

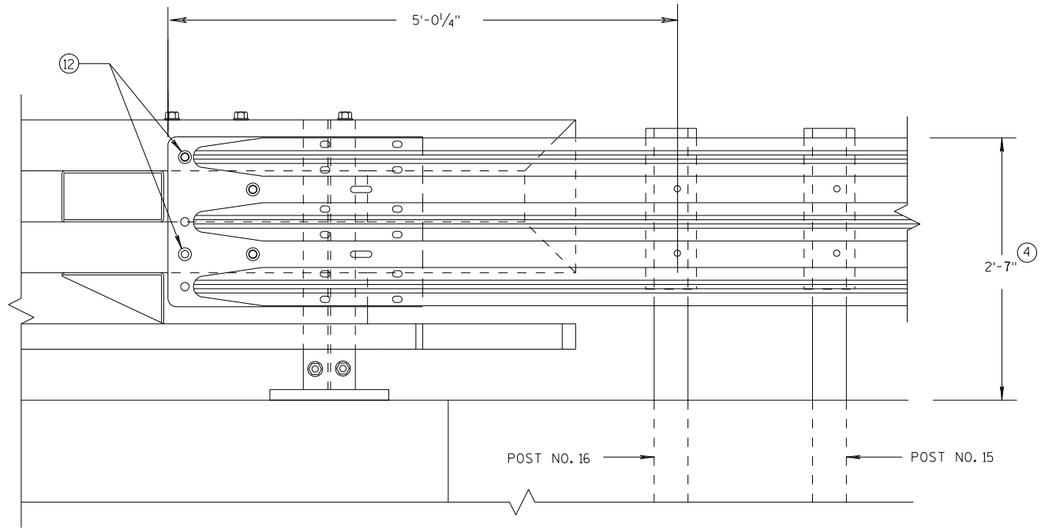
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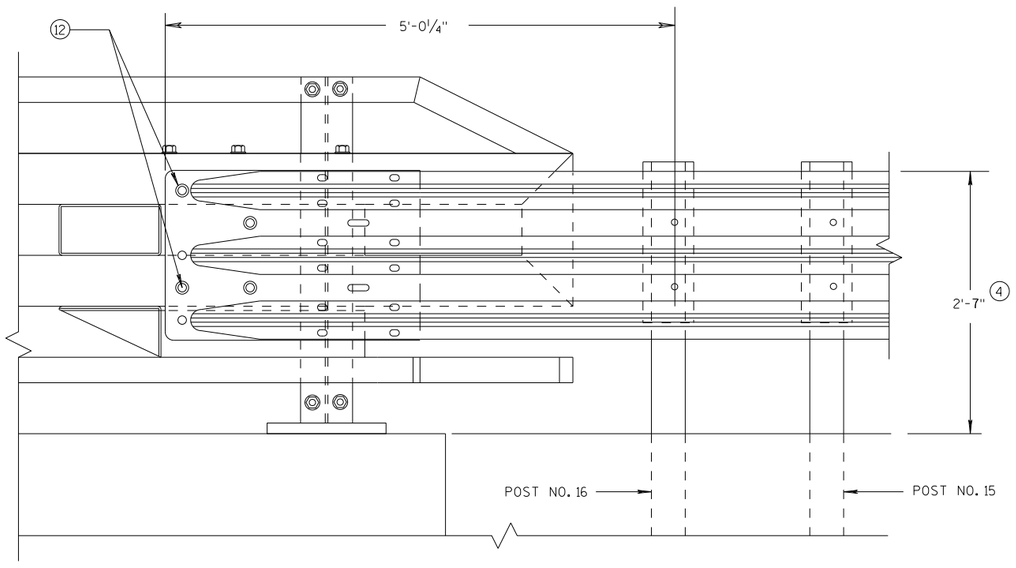
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ELEVATION OF DETAIL AT NY3 END POST

THRIE BEAM RAIL ATTACHMENT



ELEVATION OF DETAIL AT NY4 END POST

THRIE BEAM RAIL ATTACHMENT

GENERAL NOTES

(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

(12) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND 1/2-INCH BEYOND NUT.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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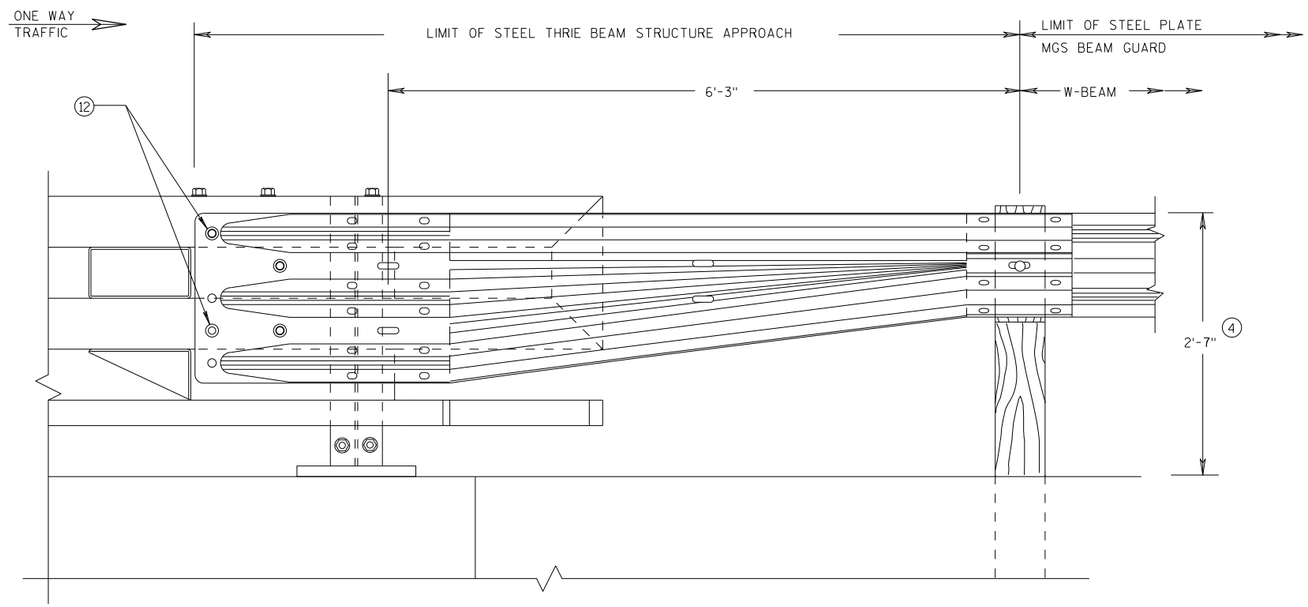
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FRONT VIEW

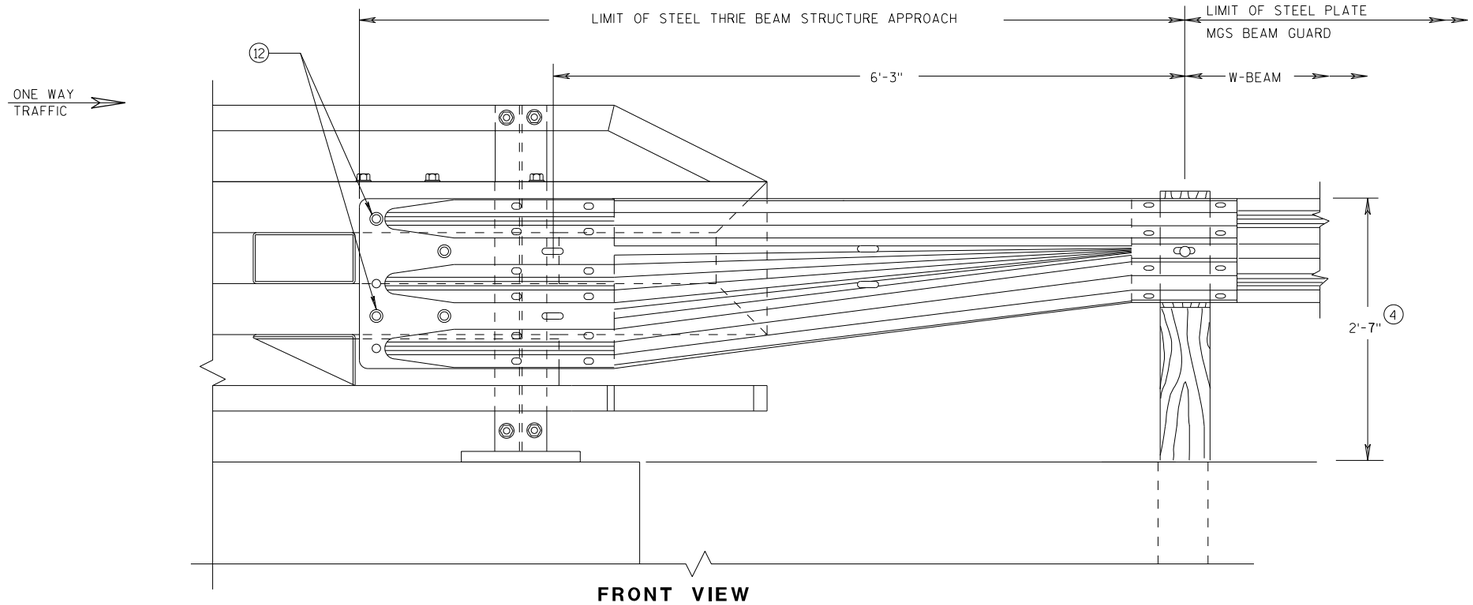
W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY3"

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

GENERAL NOTES

(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

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FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY4"

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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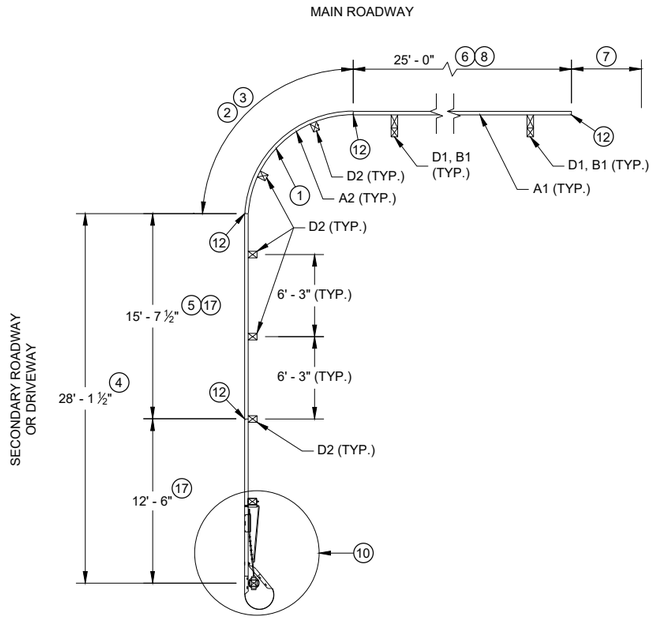
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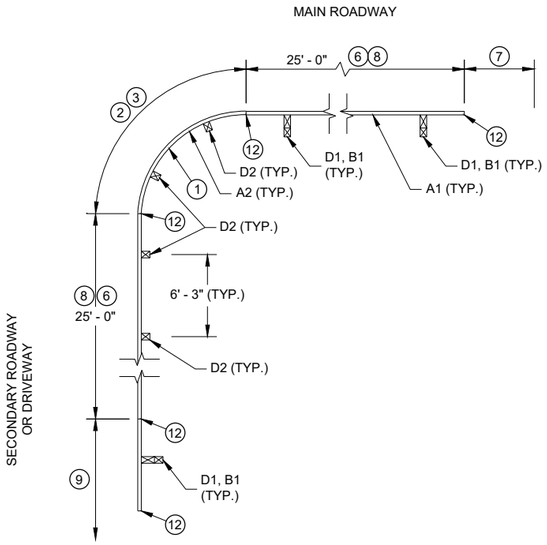
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S.D.D. 14 B 45-5L



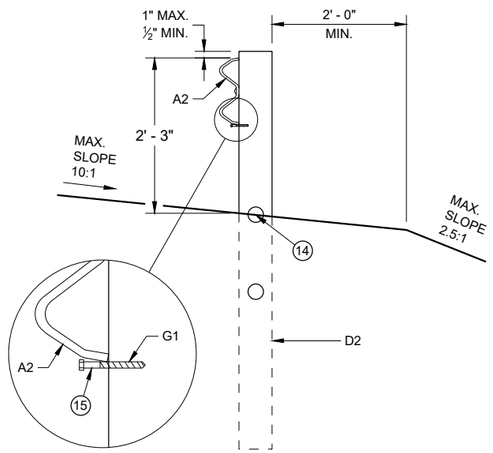
PLAN VIEW

SHORT RADIUS BEAM GUARD WITH SHORT RADIUS TERMINAL ON SECONDARY ROAD OR DRIVEWAY

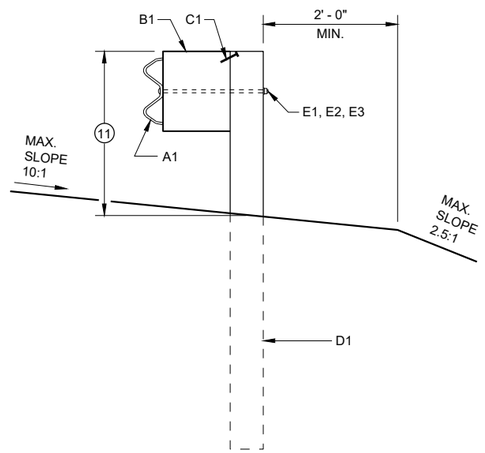


PLAN VIEW

SHORT RADIUS BEAM GUARD WITH EAT, ADDITIONAL BEAM GUARD OR TRANSITION TO RIGID BARRIER ON SECONDARY ROAD OR DRIVEWAY



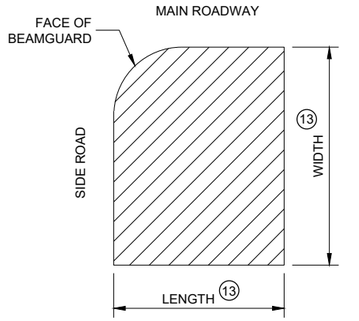
CONTROLLED RELEASE TERMINAL POST (CRT) IN RADIUS



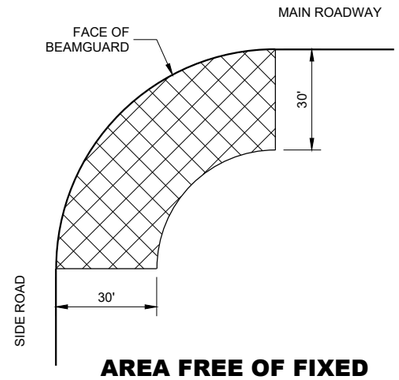
BEAM GUARD POSTS IN HEIGHT TRANSITION

TABLE FOR RADIUS OF 32' AND LESS

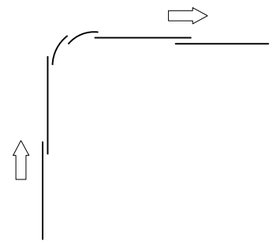
RADIUS (FT)	LENGTH (FT)	WIDTH (FT)
8	25	15
16	30	15
24	40	20
32	50	30



AREA FREE OF FIXED OBJECTS FOR RADIUS 32' AND LESS (16)



AREA FREE OF FIXED OBJECTS FOR RADIUS GREATER THAN 32'



LAP SPLICE DETAIL

GENERAL NOTES

SEE PLANS FOR OTHER BARRIER SYSTEM AND LOCATION SPECIFICS.

SEE SDD 14B42 FOR MORE INFORMATION ON BEAM GUARD INSTALLATION, PARTS, MATERIALS, AND INSTALLATION INFORMATION.

GALVANIZE PARTS AFTER FABRICATION.

WELDING TO FOLLOW CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI / AWS D1.1.

UNLESS NOTED OTHERWISE, ALL PLATES ARE FLAT AND FREE OF WARP.

UNLESS NOTED OTHERWISE, ALL EDGES ARE SMOOTH, STRAIGHT AND VERTICAL.

ALL CUTS AND HOLES, EXCEPT IN BEAM GUARD RAIL ARE TO BE MACHINED OR MACHINE FLAME CUT.

UNLESS NOTED OTHERWISE, CUT OR PROVIDE BOLTS THAT ARE ¼" TO ½" BEYOND THE NUT.

DRAWINGS ARE NOT TO SCALE.

(1) RADIUS MEASURE FROM INSIDE OF RAIL. LENGTH OF BEAM GUARD SHORT RADIUS GUARD MEASURED ALONG TRAFFIC SIDE OF RAIL. RADIUS BETWEEN 8 FEET TO 150 FEET. SEE PLAN FOR REQUIRED RADIUS. BEAM GUARD RAIL IN RADIUS IS SHOP BENT. ODD RAIL LENGTH OR FIELD CUTS MAY BE REQUIRED.

(2) CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE USED IN THE RADIUS. CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE SPACED 6' - 3". SEE PLAN FOR NUMBER OF CONTROLLED RELEASE (CRT) POSTS.

(3) WITHIN RADIUS BEAM GUARD RAILS ARE NOT BOLTED TO POSTS. BEAM GUARD RAIL IS RESTED ON TOP OF LAG SCREW.

(4) MINIMUM LENGTH OF BEAM GUARD ALONG SIDE ROAD OR DRIVEWAY TO INSTALL SHORT RADIUS TERMINAL. BEAM GUARD IS PAID WITH BEAM GUARD ITEM.

(5) ODD LENGTH OF BEAM GUARD REQUIRED TO INSTALL SHORT RADIUS TERMINAL.

(6) MINIMUM AMOUNT OF BEAM GUARD TO BE INSTALLED PRIOR TO TRANSITION TO RIGID BARRIER. ADDITIONAL BEAM GUARD, OR EAT. BEAM GUARD PAID FOR WITH BEAM GUARD ITEM. SEE PLANS FOR MORE DETAIL.

(7) BEAM GUARD, EAT, OR TRANSITION TO RIGID BARRIER. SEE PLAN.

(8) TOP OF BEAM GUARD BY THE RADIUS IS 27". HEIGHT OF BEAM GUARD IS 31" BY TRANSITION TO RIGID BARRIER, ADDITIONAL BEAM GUARD OR EAT.

(9) ADDITIONAL BEAM GUARD, EAT OR TRANSITION TO RIGID BARRIER. BEAM GUARD SHOWN. SEE PLAN FOR DETAILS.

(10) SHORT RADIUS TERMINAL (SEE OTHER DETAILS).

(11) HEIGHT VARIES. SEE NOTE (8) AND (8).

(12) BEAM GUARD RAIL SPLICE LOCATION. SPLICE LOCATION REQUIRES PART F1 AND F2. SEE SDD 14B42 FOR DETAILS.

(13) SEE TABLE FOR VALUES.

(14) MAXIMUM HEIGHT FOR CENTER OF HOLE IS ¾" ABOVE FINISHED GROUND ±1".

(15) DRILL POST $^{15}/_{64}$" DIA. PILOT HOLE. DO NOT HAMMER LAG SCREW INTO POST.

(16) SMALL SIGNS ON BREAKAWAY HARDWARE ARE ACCEPTABLE.

(17) TOP OF RAIL HEIGHT IS 27" WHEN USING A SHORT RADIUS TERMINAL (CRT).

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

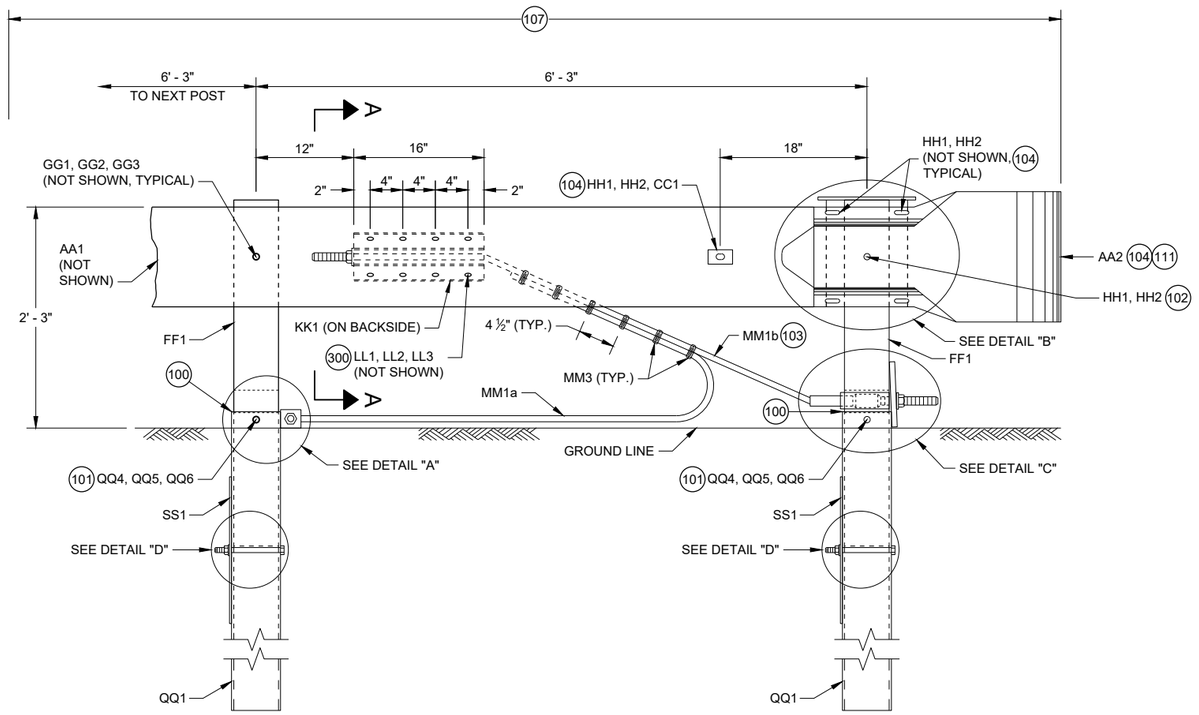
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 14B53 - 02a

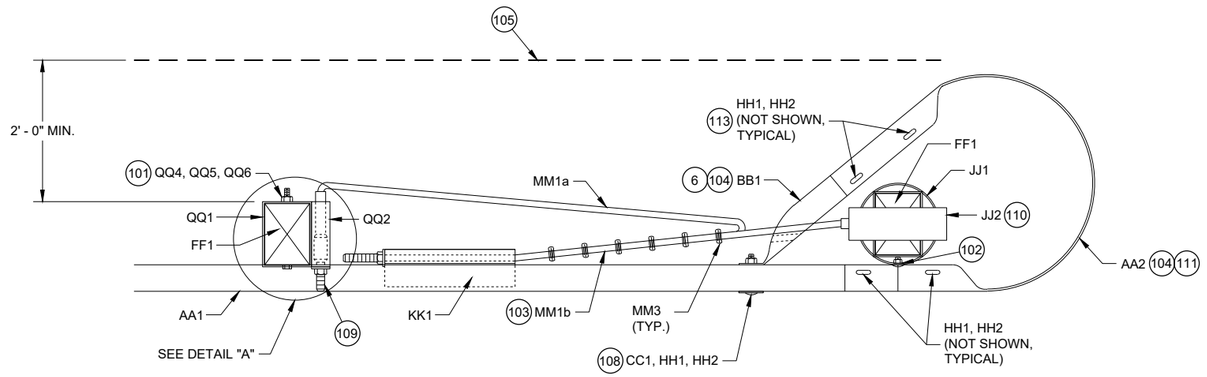
6

SDD 14B53 - 02a



PROFILE VIEW

SHORT RADIUS TERMINAL



TOP VIEW

SHORT RADIUS TERMINAL

GENERAL NOTES

100 TOP OF FOUNDATION TUBE 2 INCHES MAXIMUM ABOVE FINISHED GROUND.

101 WASHERS REQUIRED BETWEEN BOLT HEAD AND FOUNDATION TUBE AND BETWEEN NUT AND FOUNDATION TUBE.

102 SPLICE BOLT AND NUT CONNECTS BEAM GUARD RAIL, W-BEAM SECTION BUFFER, AND STEEL PIPE ASSEMBLY. NO WASHER REQUIRED. SEE DETAIL "B".

103 CABLE IS TAUT.

104 ADJUST AA2 AND BB1 TO FIT.

105 BREAK POINT OF SHOULDER.

106 TACK WELD CABLE CONNECTOR TUBE PLATE TO CABLE CONNECTION TUBE. SEE DETAIL "A" PROFILE VIEW.

107 PAY LIMIT FOR BEAM GUARD.

108 SQUARE WASHER BETWEEN HEAD OF BOLT AND TRAFFIC FACE OF BEAM GUARD. ROUND WASHER REQUIRED BETWEEN NUT AND BB1.

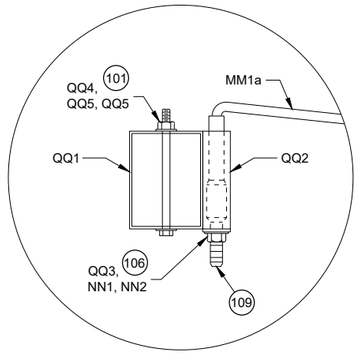
109 CUT OR PROVIDE THREADED STUD THAT IS FLUSH WITH FACE OF BEAM GUARD RAIL KK1 (PLUS OR MINUS ½" TOLERANCE). DEBURR AFTER CUTTING.

110 SEE STEEL PIPE ASSEMBLY DETAILS.

111 ATTACH UU2 WITH UU3. SHOP APPLY UU1 TO UU2.

112 FOUR (4) HH1 AND HH2 REQUIRED TO ATTACH AA1 TO AA2.

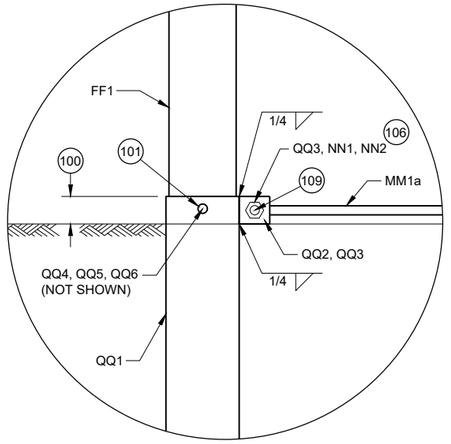
113 FOUR (4) HH1 AND HH2 REQUIRED TO ATTACH AA2 TO BB1.



TOP VIEW

DETAIL "A"

(WOOD BREAKAWAY AND BEAM GUARD RAIL POSTS NOT SHOWN)



PROFILE VIEW

DETAIL "A"

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

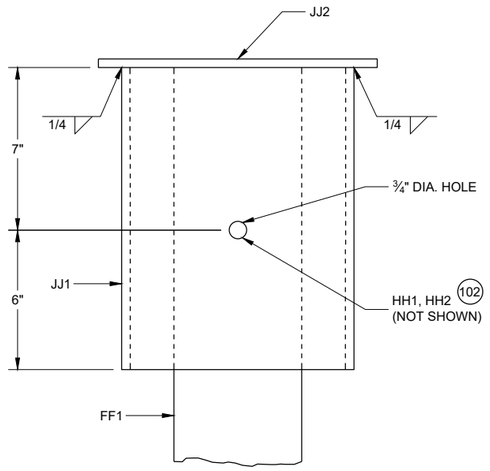
SDD 14B53 - 02b

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SDD 14B53 - 02b

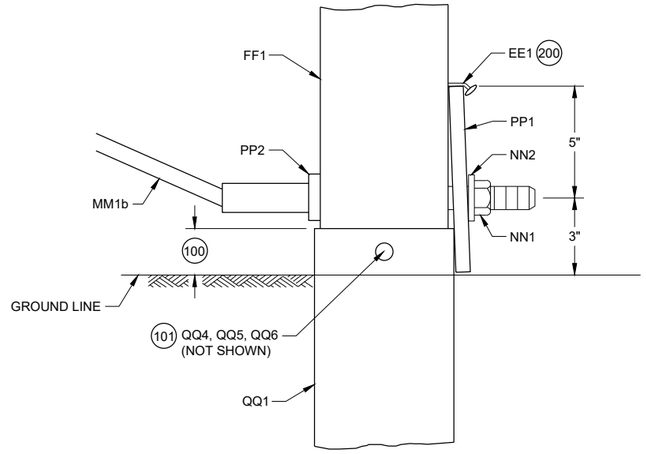
GENERAL NOTES

(200) TWO (2) NAILS SPACED 4 INCHES CENTER TO CENTER.



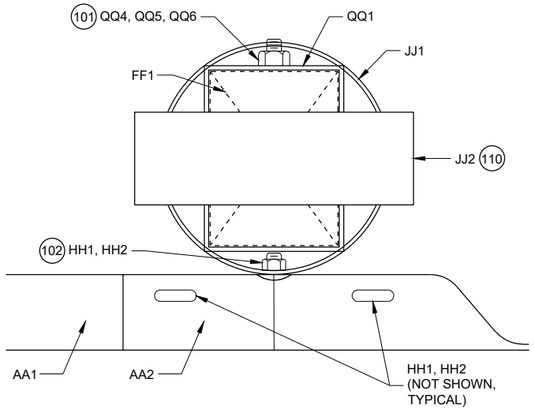
PROFILE VIEW

DETAIL "B"
STEEL PIPE ASSEMBLY
(BEAM GUARD AND W BEAM END SECTION NOT SHOWN)



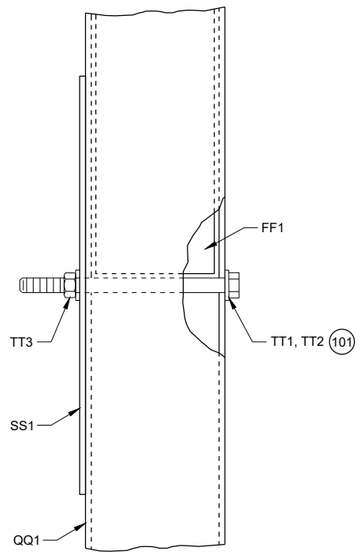
PROFILE VIEW

DETAIL "C"



PLAN VIEW

DETAIL "B"
STEEL PIPE ASSEMBLY



PROFILE VIEW

DETAIL "D"

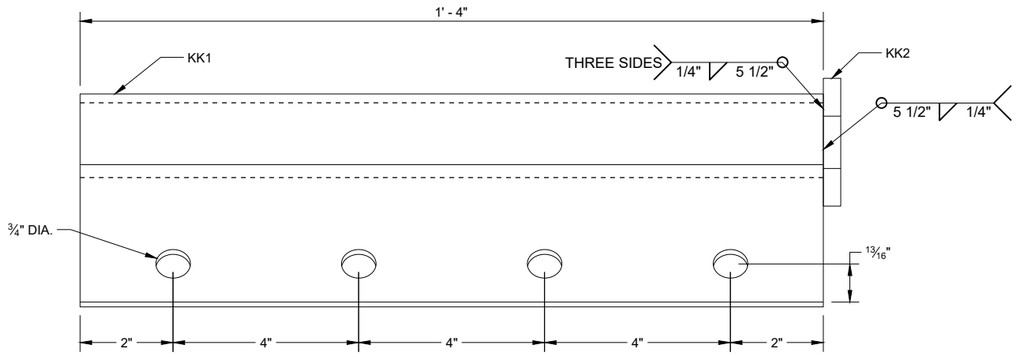
SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

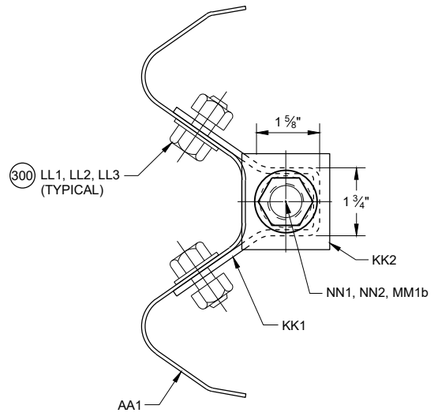
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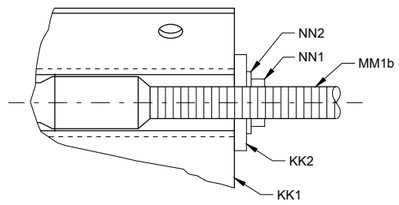
SDD 14B53 - 02c

GENERAL NOTES

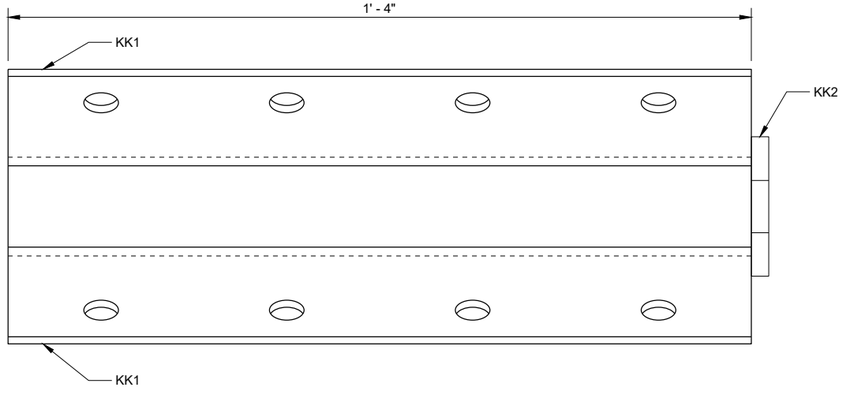
(300) WASHERS REQUIRED BETWEEN BOLT HEAD AND BEAM GUARD RAIL AND BETWEEN NUT AND ANCHOR BRACKET. EIGHT (8) LL1 AND LL3 REQUIRED. SIXTEEN (16) LL2 REQUIRED.

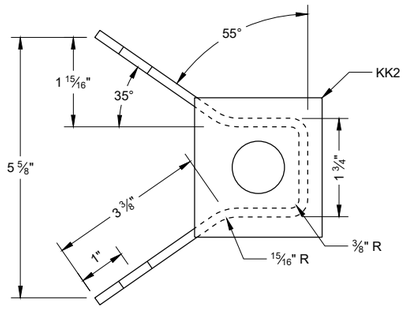




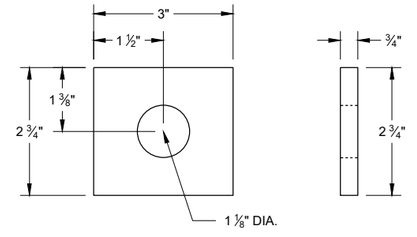


SECTION A - A





ANCHOR BRACKET (KK1, KK2)



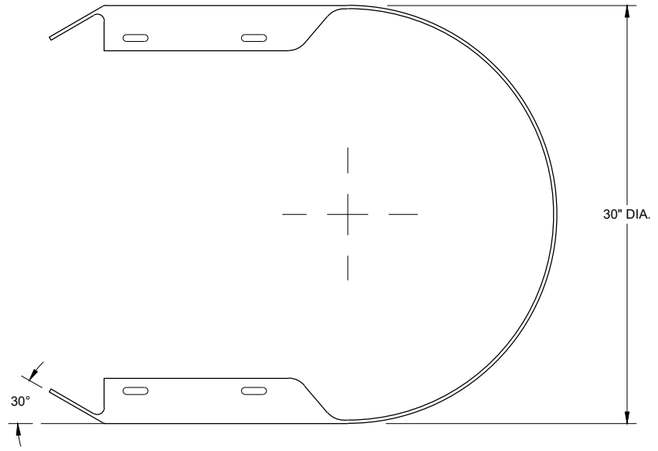
ANCHOR BRACKET BEARING PLATE (KK2)

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

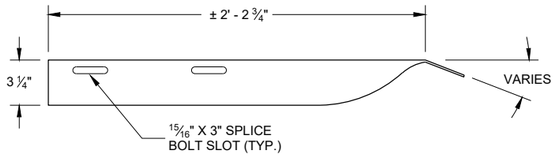
GENERAL NOTES

(400) CROSS SECTION OF PART IS TO FIT OVER AA1 .

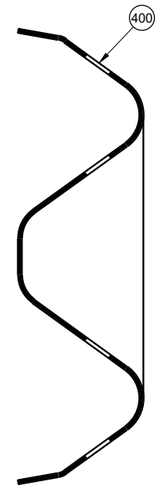
(401) CROSS SECTION OF PART IS TO FIT OVER OR UNDER AA1 .



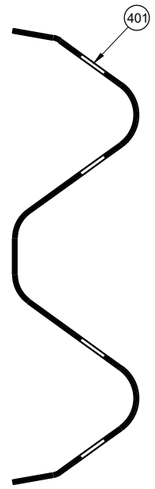
TOP VIEW



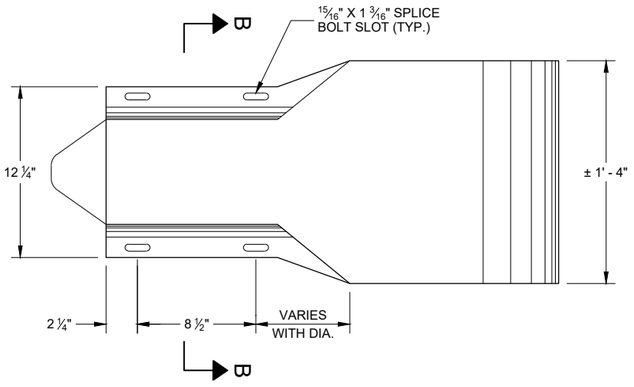
TOP VIEW



SECTION B -B

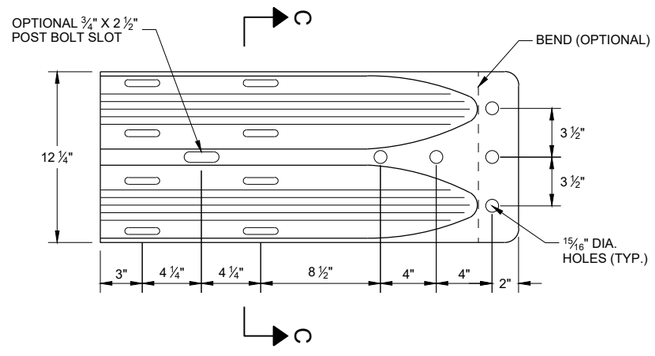


SECTION C -C



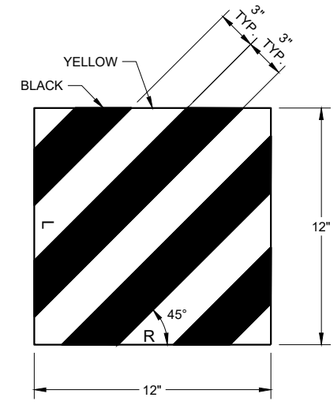
PROFILE VIEW

W BEAM
END SECTION BUFFER (AA2)



PROFILE VIEW

W BEAM
TERMINAL CONNECTOR (BB1)



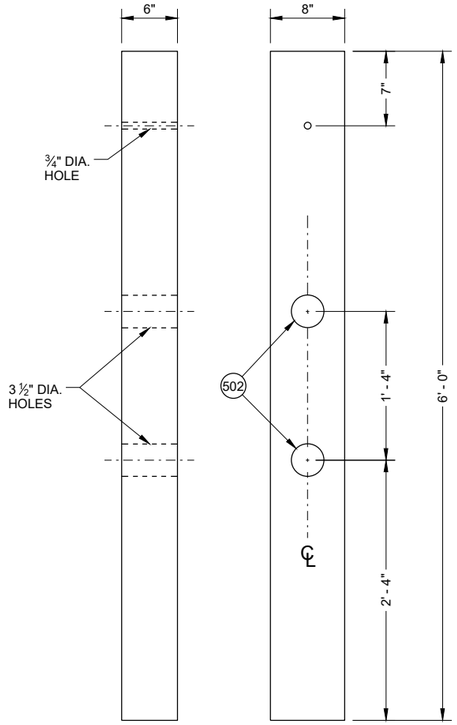
REFLECTIVE SHEETING (UU1, UU2)

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

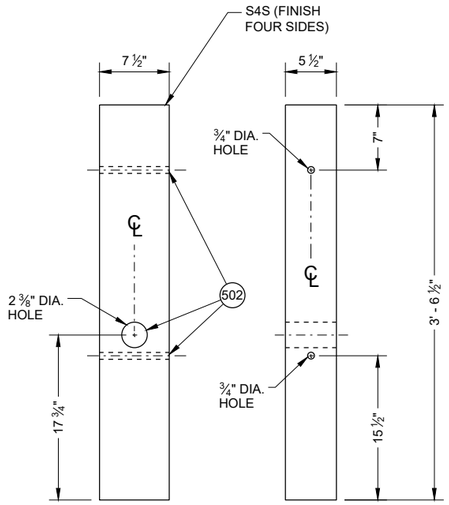
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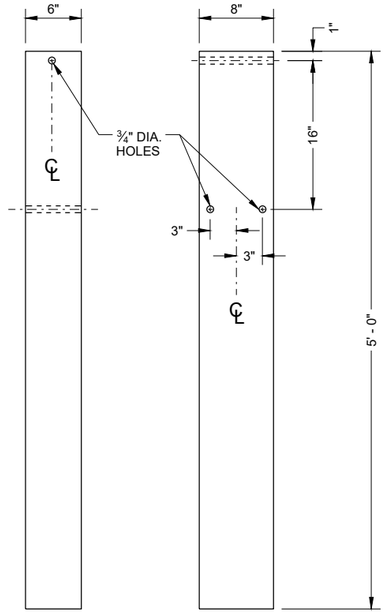
FRONT VIEW SIDE VIEW

CONTROLLED RELEASE POST (CRT) (DD2)



FRONT VIEW SIDE VIEW

WOOD BREAKAWAY POST (FF1)



FRONT VIEW SIDE VIEW

FOUNDATION TUBE (QQ1) (500)

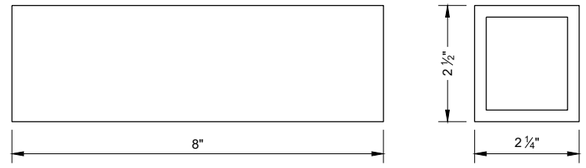
GENERAL NOTES

(500) SEE DETAIL "D" FOR LOCATION AND ATTACHMENT OF SS1.

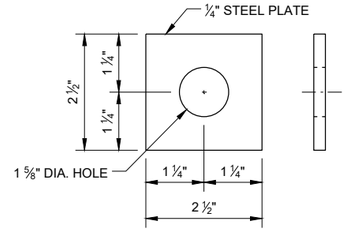
(501) FOR MM1a THREADED STUD ONLY REQUIRED ON ONE END. SWAGED FITTING REQUIRED.

(502) LOCATE HOLES ON THE CENTERLINE OF THE SIDE OF THE POST.

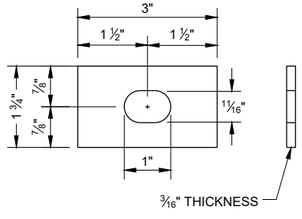
(503) MM1a MAY HAVE ONE THREADED STUD 4 INCHES LONG. SEE NOTE (109).



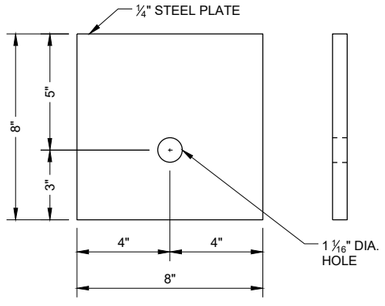
FOUNDATION TUBE - ANCHOR CABLE TUBE (QQ2)



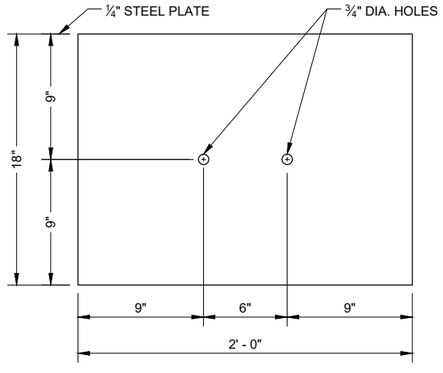
ANCHOR CABLE TUBE END PLATE (QQ3)



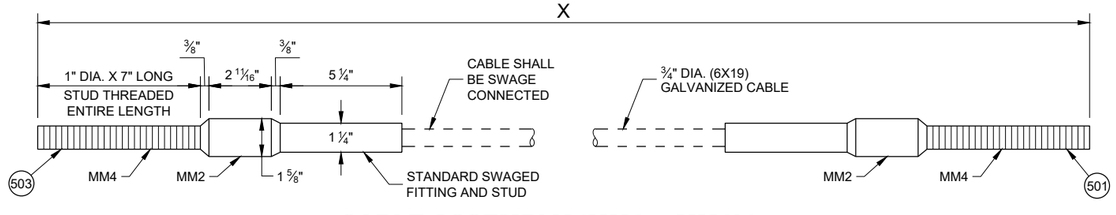
RECTANGULAR PLATE WASHER (CC1)



BEARING PLATE (PP1)



SOIL PLATE (SS1)



CABLE ASSEMBLY (MM1a, MM1b)

"X" LENGTH

MM1b	9' - 0"
MM1b	6' - 8"

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 14B53 - 02f

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	BEAM GUARD RAIL	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
A2	BEAM GUARD RAIL - SHOP BENT	INDICATE ON BACK OF RAIL THE RADIUS THAT RAIL WAS BENT TO. SHOP BEND RADIUS IS TO THE NEAREST FOOT. FOLLOW AASHTO M180 ON HOW TO MARK RADIUS INFORMATION.	
		AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
B1	BLOCK - WOOD	WISDOT SPEC. 614	SEE SDD 14B42
C1	NAIL	ASTM A153 HOT DIP CLASS D	
		ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEAD)	
D1	POST-STRONG POST-WOOD	WISDOT SPEC. 614	SEE SDD 14B42
D2	POST-CRT-WOOD	WISDOT SPEC. 614	
E1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
E2	POST BOLT - WASHER	ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	5/8" DIA.
		GALV. AASHTO M111 / ASTM A 123 OR GALV. HOT DIP. TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
E3	POST BOLT - NUT	AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		ASTM A563 GRADE A HEAVY HEX HEAD	
F1	SPLICE BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		ASTM A307 GRADE A OR SAE J429 GRADE 2	
		UNC	
		AASHTO M180	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
F2	SPLICE BOLT - NUT	ASTM A563 GRADE A	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
G1	LAG SCREW	ASTM A308 GRADE A ASTM A153 CLASS D	1/2" DIA. 6" LONG
H1	DELINEATOR - BEAM GUARD		SEE SDD 14B42 FOR MORE INFORMATION
H2	DELINEATION - SHEETING	YELLOW OR WHITE	
		WISDOT SPEC 637 TYPE SH	
		APPROVED PRODUCT LIST	
J1	FOUNDATION BACKFILL	STANDARD SPEC. 614	
AA1	BEAM GUARD RAIL - PUNCHED	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
AA2	BEAM GUARD RAIL - END SECTION BUFFER	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
BB1	BEAM GUARD RAIL - TERMINAL CONNECTOR MODIFIED	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
CC1	SHORT RADIUS - SQUARE WASHER	AASHTO M180	
		GALV. AASHTO M111 / ASTM A123	
EE1	NAIL	ASTM A153 HOT DIP CLASS D	
		ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEADED)	
FF1	POST - BCT - WOOD	S4S FINISH ON 4 SIDES	
		WISDOT SPEC. 614	
GG1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	3/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
GG2	POST BOLT - WASHER	ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	3/8" DIA.
		GALV. AASHTO M111 / ASTM A 123 OR GALV. HOT DIP. TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329	

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA

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SDD 14B53 - 02g

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
GG3	POST BOLT - NUT	ASTM A563 GRADE A	⅜" DIA. SEE 14B42 FOR GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		ASTM A563 GRADE A HEAVY HEX HEAD	
HH1	SPLICE BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	⅜" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		ASTM A307 GRADE A OR SAE J429 GRADE 2	
		UNC	
		AASHTO M180 HEAD GEOMETRY	
HH2	SPLICE BOLT - NUT	ASTM A563 GRADE A	⅜" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
JJ1	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	10" O.D.
JJ2	TOP PLATE	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS ⅜" X 4" X 1' - 0"
		GALV. AASHTO M111 / ASTM A123	
KK1	ANCHOR BRACKET	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
KK2	ANCHOR BRACKET - BEARING PLATE	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
LL1	ANCHOR BRACKET - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	⅝" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
LL2	ANCHOR BRACKET - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	⅝" DIA.
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
LL3	ANCHOR BRACKET - NUT	ASTM A563 GRADE A	⅝" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
MM1a	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIc CLASS C ZINC COATED	
MM1b	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIc CLASS C ZINC COATED	
MM2	ANCHOR CABLE - SWAGE FITTING	ASTM A576 GRADE 1035	
		SWAGE FITTINGS ARE TO BE FACTORY SWEDGED. WITH A BREAKING STRENGTH 40,000 LBS.	
		GALV. AASHTO M111 / ASTM A123	
		ASME B30.26 FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING INTO CONNECTION: NAME OF MANUFACTURER OR TRADEMARK OF CONNECTION'S MANUFACTURER, SIZE OR RATED LOAD, GRADE.	
MM3	WIRE ROPE CABLE CLAMPS	FF-C-450D TYPE 1 CLASS 1	¾"
		ASTM A153 HOT DIP CLASS D	
MM4	ANCHOR CABLE - SWAGE FITTING - STUD	ASTM F3125 GRADE A325 TYPE 1 OR SAE GRADE 5 OR ASTM A449 TYPE 1 HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
NN1	ANCHOR CABLE - NUT	ASTM A563 GRADE A	1" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
NN2	ANCHOR CABLE - NUT - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	1" DIA.
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

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SDD 14B53 - 02h

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
PP1	BEARING PLATE AT POST	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
PP2	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	2" DIA. x 6" LONG
QQ1	FOUNDATION TUBE	ASTM A500 GRADE B	8" X 6" X 3/16"
		GALV. AASHTO M111 / ASTM A123	
QQ2	SHORT RADIUS - FOUNDATION TUBE - ANCHOR CABLE - TUBE	ASTM A500 GRADE B	DIMENSIONS 2 1/2" X 2 1/4" X 1/4" X 8"
		GALV. AASHTO M111 / ASTM A123	
QQ3	SHORT RADIUS - SOIL TUBE - ANCHOR CABLE - TUBE - END PLATE	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS 2 1/2" X 2 1/2" X 1/4"
		GALV. AASHTO M111 / ASTM A123	
QQ4	GROUND STRUT AND YOKE - BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	5/8 DIA.
		ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	
		UNC	
QQ5	GROUND PLATE AND YOKE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	5/8 DIA.
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
QQ6	GROUND STRUT AND YOKE - NUT	HEAVY HEX	5/8 DIA.
		UNC	
		ASTM A563 GRADE A	
		OVER TAPPED NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
SS1	SOIL PLATE	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / A123	
TT1	SOIL PLATE - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	5/8 DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
TT2	SOIL PLATE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	5/8 DIA.
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
TT3	SOIL PLATE - NUT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	5/8 DIA.
UU1	OBJECT MARKER - SHEETING	MUTCD / WISDOT OBJECT MARKER TYPE 3	PATTERN AND COLOR FOR SHEETING. SHEETING TYPE FOR MARKER.
		WISDOT SPEC 637 TYPE F	
		APPROVED PRODUCT LIST	
UU2	OBJECT MARKER - ALUMINUM PLATE	WISDOT SPEC 637 ALUMINUM PLATE	MATERIAL AND THICKNESS OF MATERIALS
UU3	OBJECT MARKER - SCREWS	STAINLESS SELF-TAPPING SCREWS	
VV1	FOUNDATION BACKFILL	WISDOT SPEC 614	

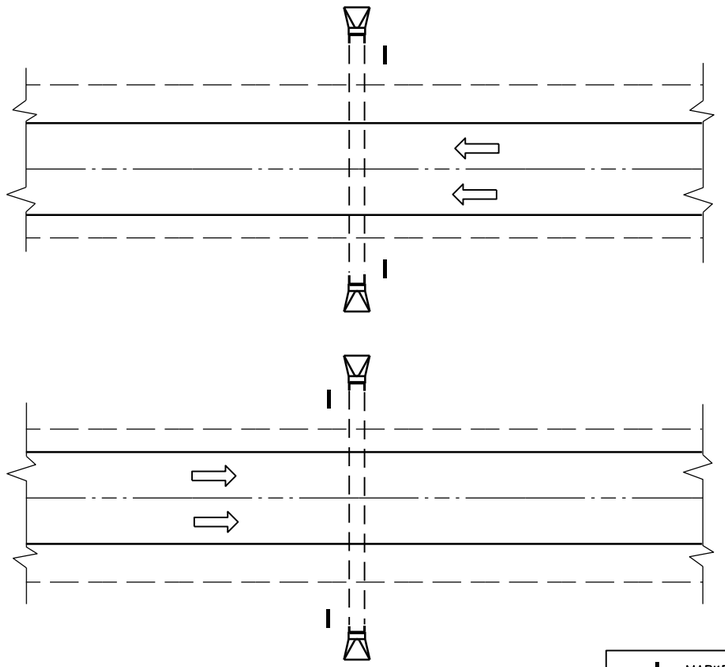
SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER
FHWA

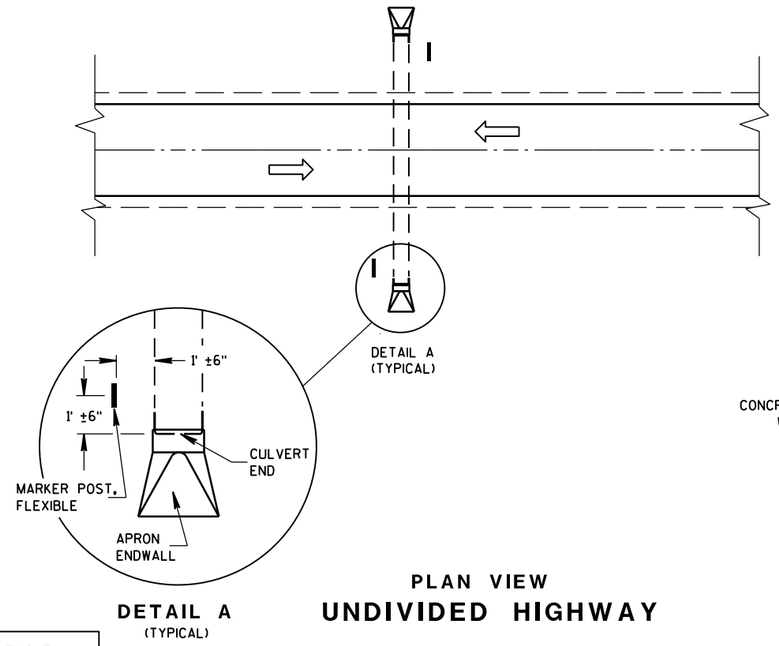
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SDD 14B53 - 02i



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

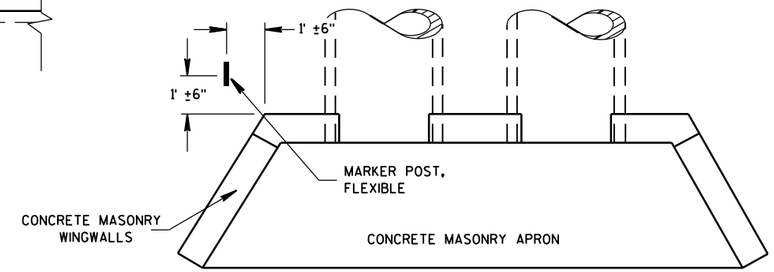
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

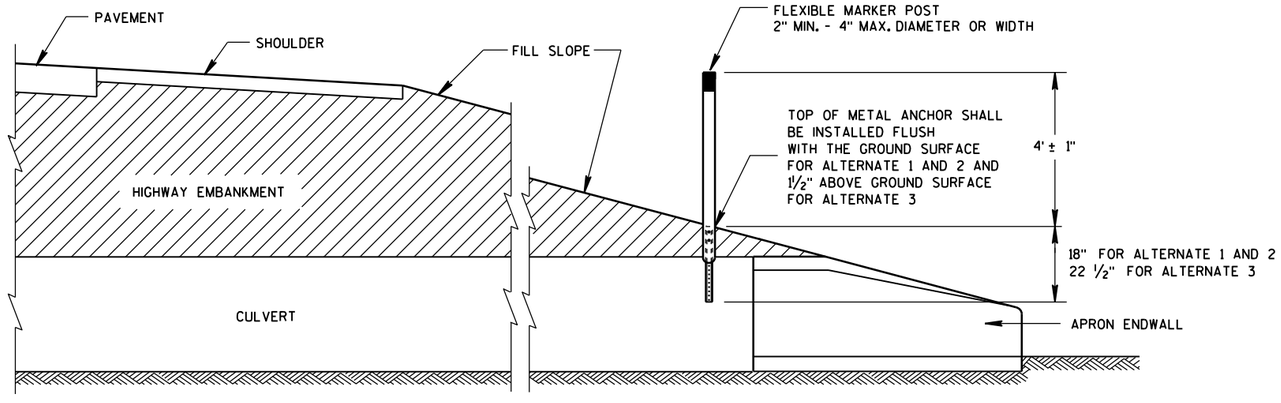
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

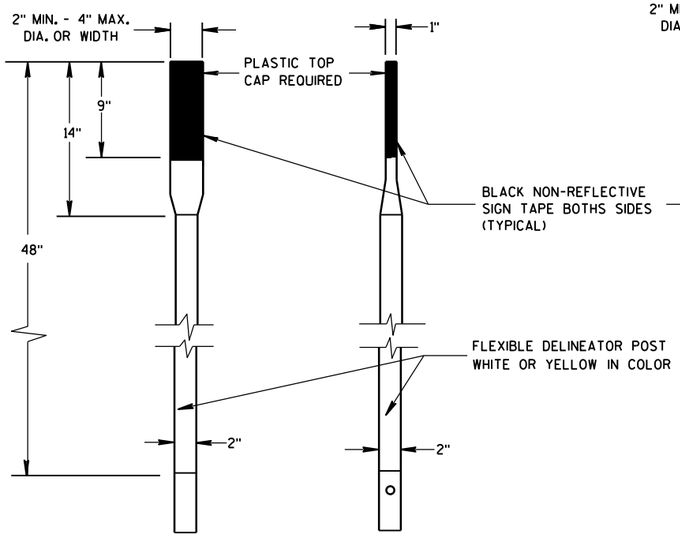
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

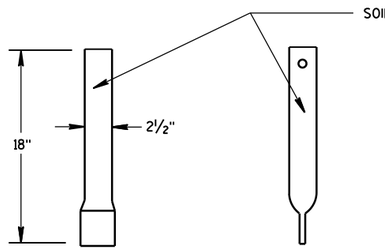
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S.D.D. 15 A 3-2a

6

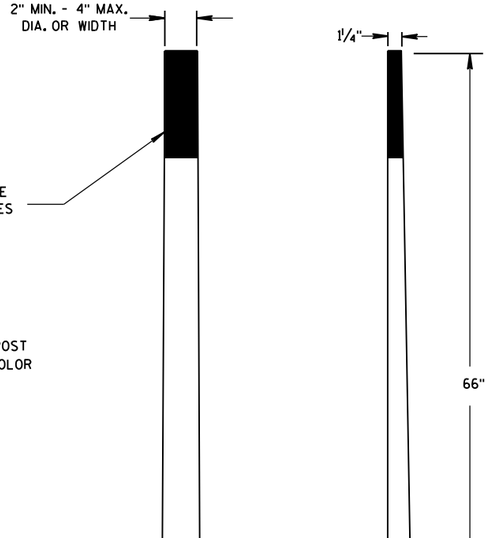
S.D.D. 15 A 3-2a





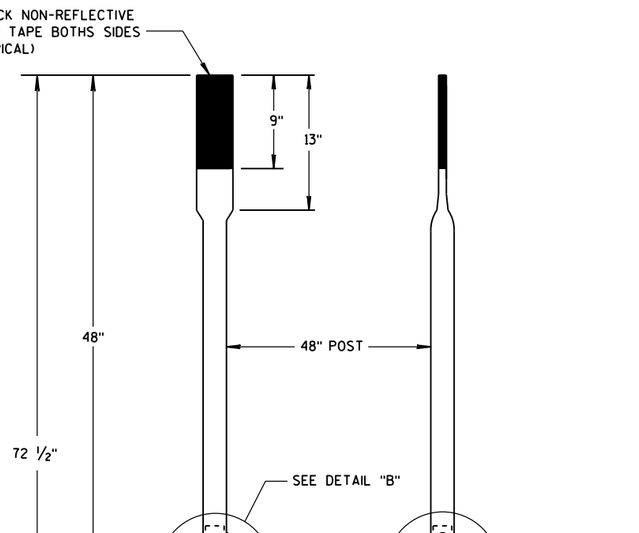
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

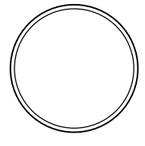
ALTERNATE 2



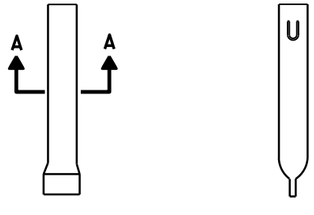
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POSTS

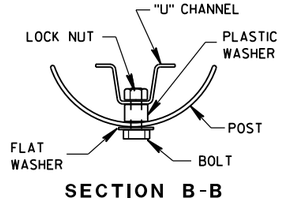


SECTION A-A

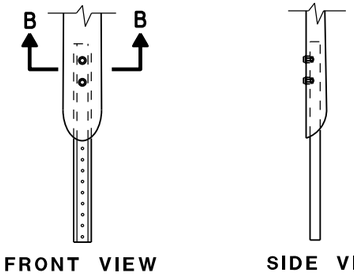


FRONT VIEW SIDE VIEW

ALTERNATE 1

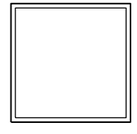


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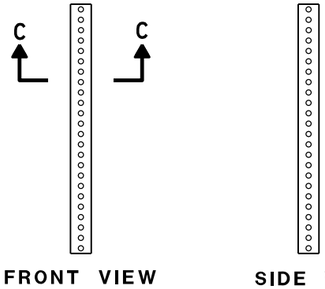


FRONT VIEW SIDE VIEW

ALTERNATE 2



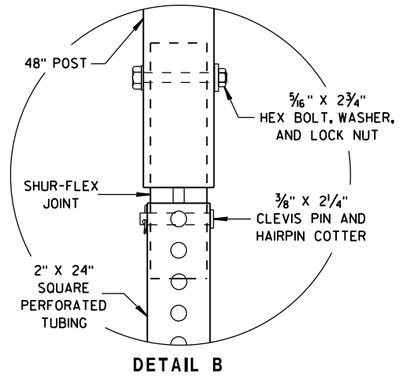
SECTION C-C



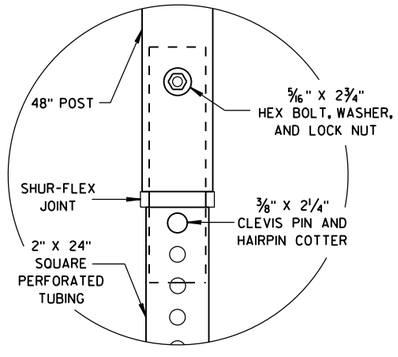
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS



DETAIL B



DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

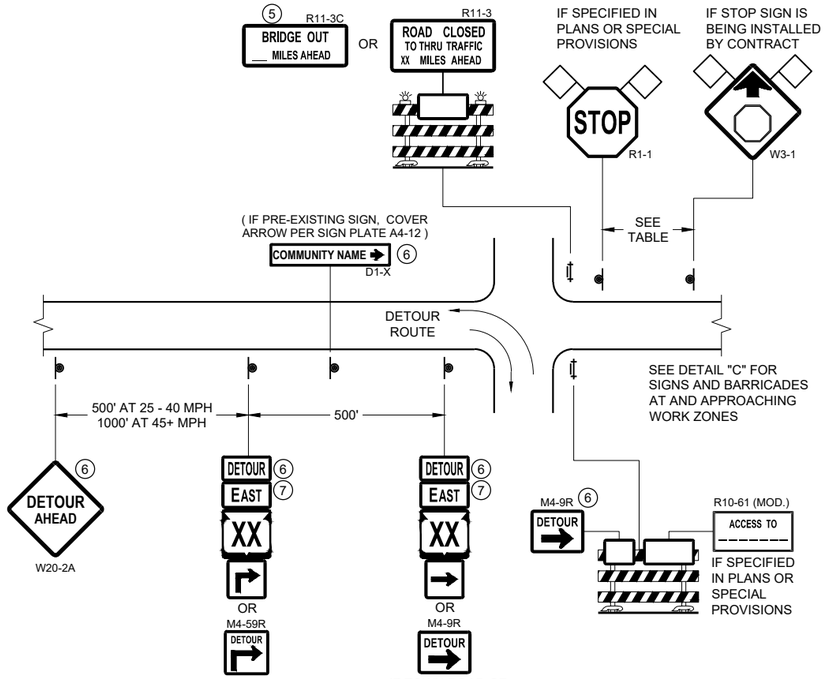
APPROVED
10/1/2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

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S.D.D. 15 A 3-2b

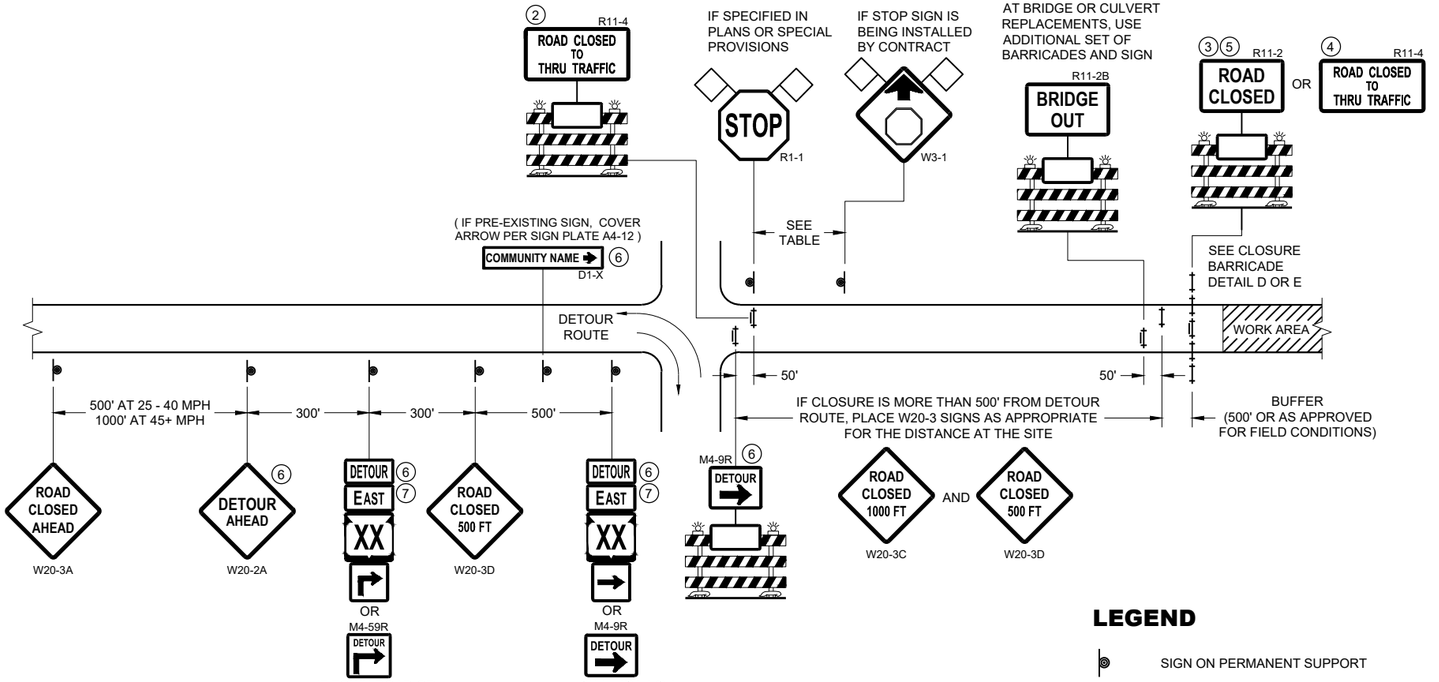
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S.D.D. 15 A 3-2b



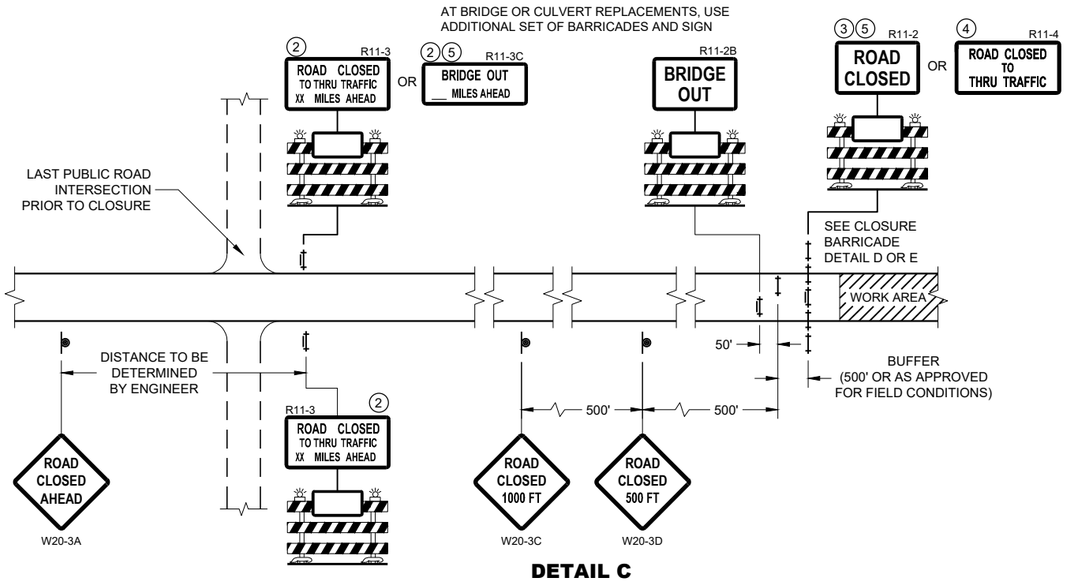
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

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
- M05 - 1 OR M06 - 1

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

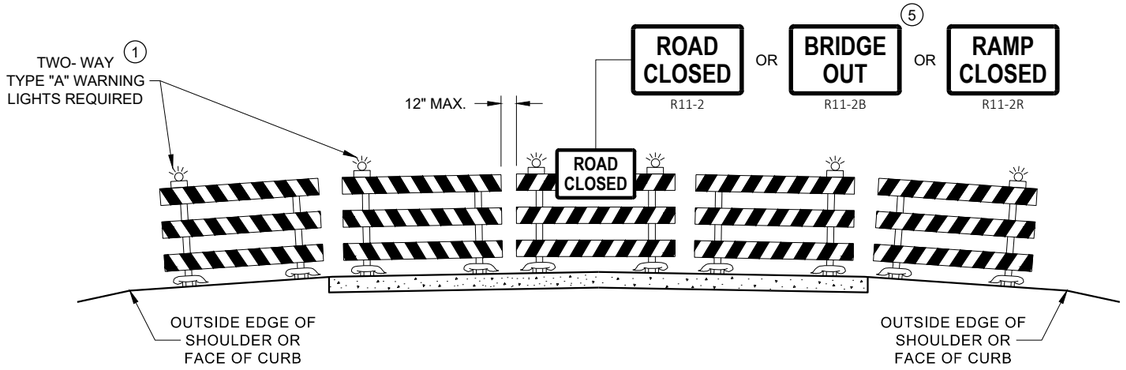
APPROVED
May 2023
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

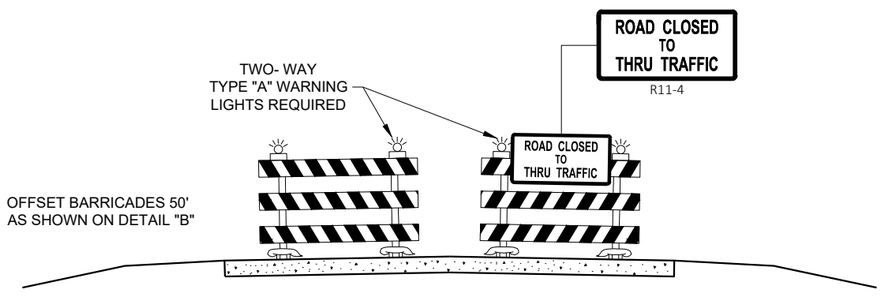
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SDD 15C02 - 09a

SDD 15C02 - 09a



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
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE
FHWA

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SDD 15C02 - 09b

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THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR / EAST — M4 - 8, M3 - X
- XX — M1 - 4
- OR XX — M1 - 6
- OR COUNTY X — M1 - 5A
- M05 - 1
- OR M06 - 1
- OR M06 - 1

GENERAL NOTES

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

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. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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.

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

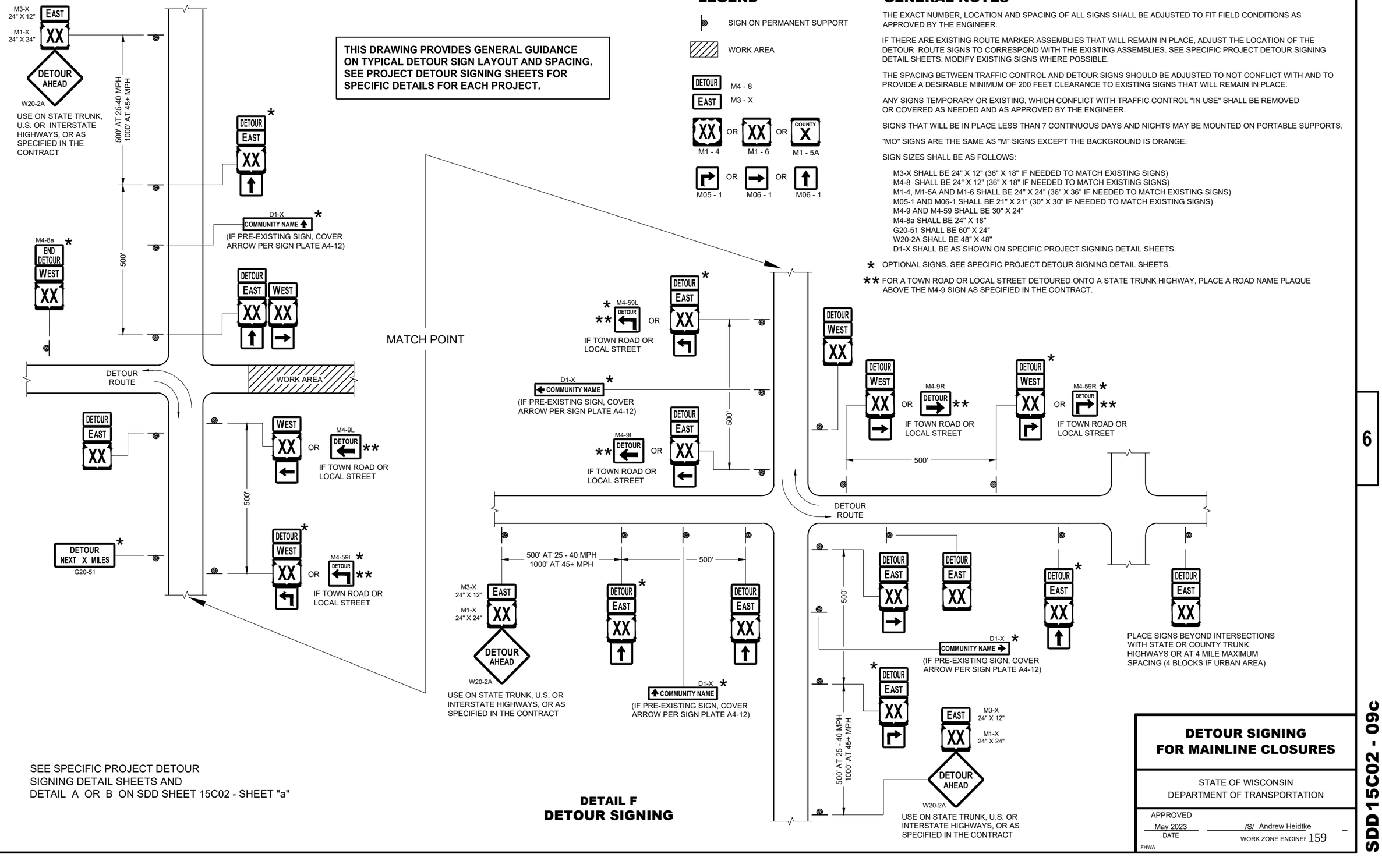
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

- 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)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

DETAIL F
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

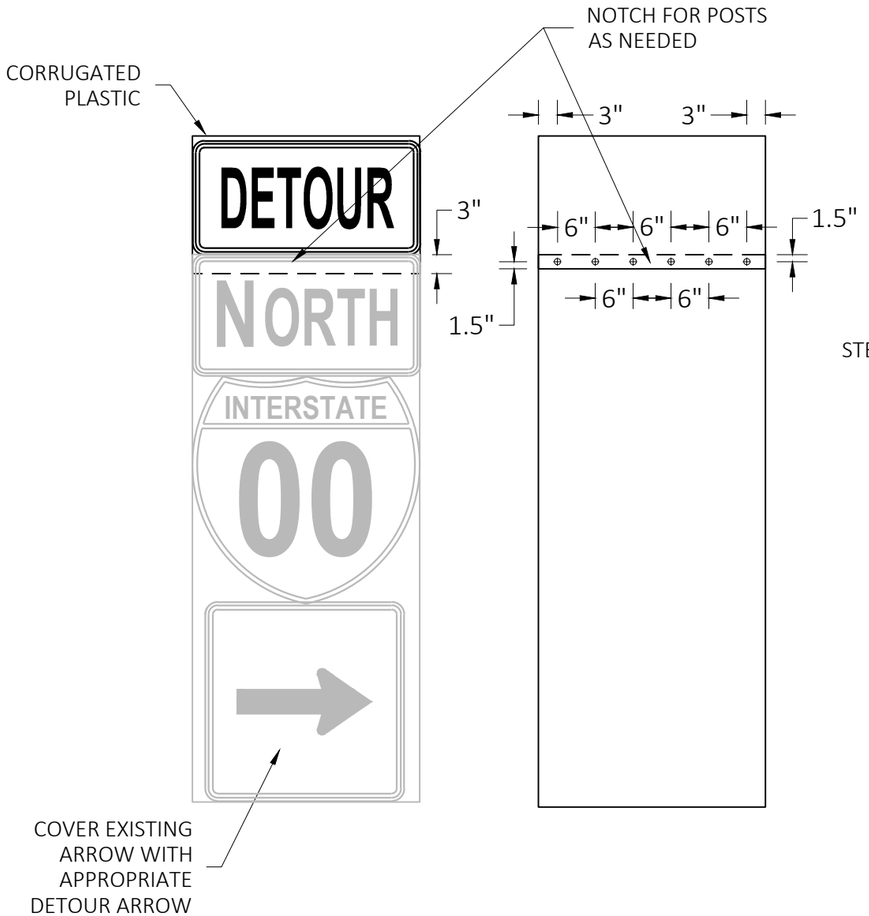
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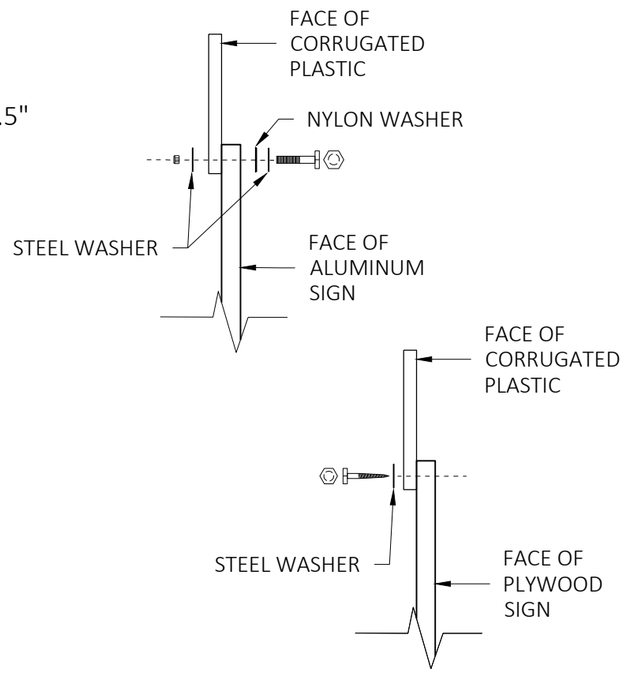
SDD 15C02 - 09c

FRONT SIDE

BACK SIDE

SIDE VIEW





GENERAL NOTES

CELLS OF CORRUGATED PLASTIC SHALL BE VERTICALLY ORIENTED.

PROVIDE A 0.4-INCH THICK BASE CORRUGATED PLASTIC WITH A 0.035-INCH WALL THICKNESS AND 0.4-INCH CELL SIZE.

FOR 36" WIDE SIGNS: USE 6 FASTENERS AS SHOWN.

FOR 24" WIDE SIGNS: USE 4 FASTENERS WITH EDGE SPACING AS SHOWN AND 6" SPACING BETWEEN FASTENERS.

METAL WASHERS, NUTS, BOLTS AND LAGS 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, SC3

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.

PLYWOOD SIGNS:
LAG SCREWS - 5/16" x 1"
ALUMINUM SIGNS:
MACHINE BOLTS - 5/16" x 1-1/4" LENGTH W/NUTS
WASHERS:
1-1/4" O.D. x 3/8" I.D. x 1/16" STEEL
1-1/4" O.D. x 3/8" I.D. x .080 NYLON

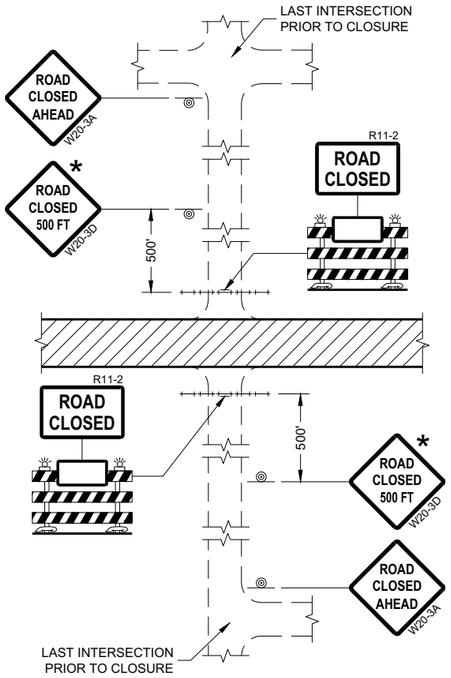
MODIFIED ROUTE ASSEMBLY FOR DETOUR SIGNING

MODIFIED ROUTE ASSEMBLY FOR DETOUR SIGNING

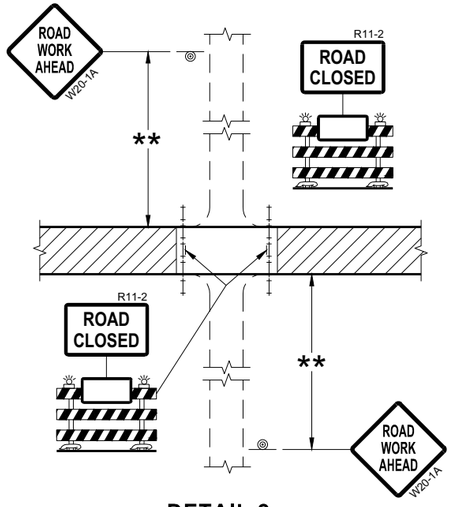
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 — DATE
/S/ Andrew Heidtke — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

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SDD 15C02-09h



DETAIL 1
(NO ACCESS TO PROJECT)



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

GENERAL NOTES

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

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

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

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

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

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

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

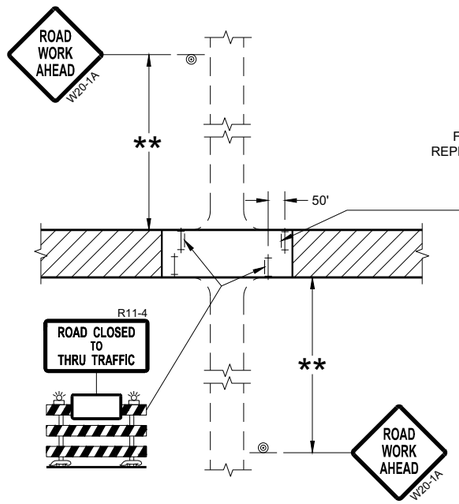
TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

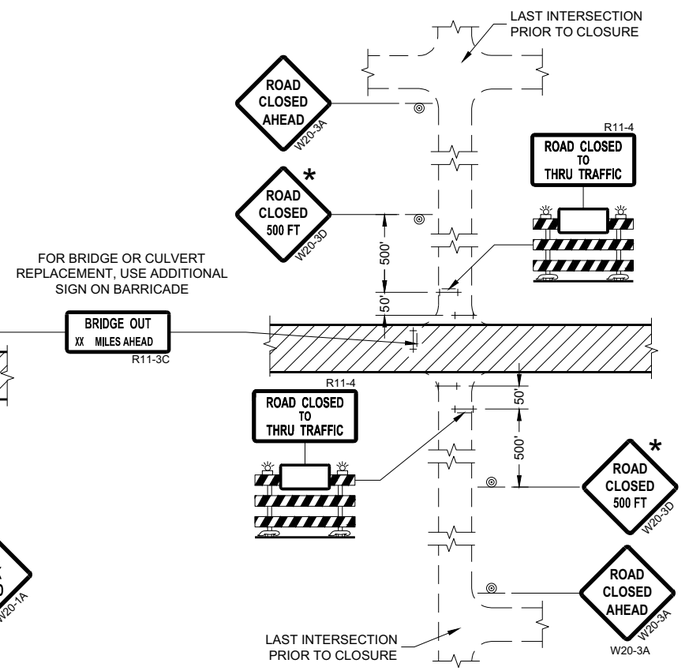
THE R11-2, R11-3, AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

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

** 500' MAX. OR AT LAST INTERSECTION, WHICHEVER IS CLOSEST.





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

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

LEGEND

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

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15C03 - 05

GENERAL NOTES

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

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

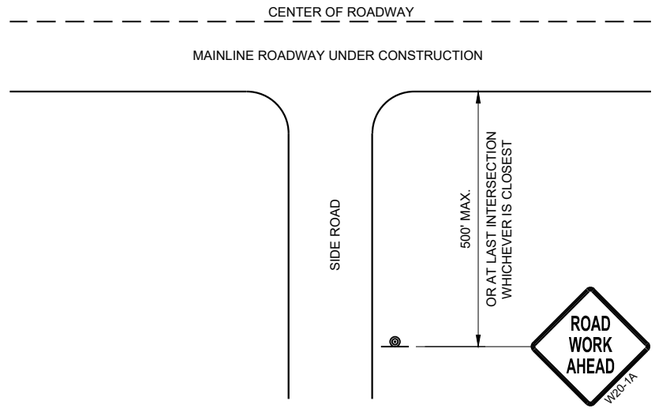
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

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

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

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



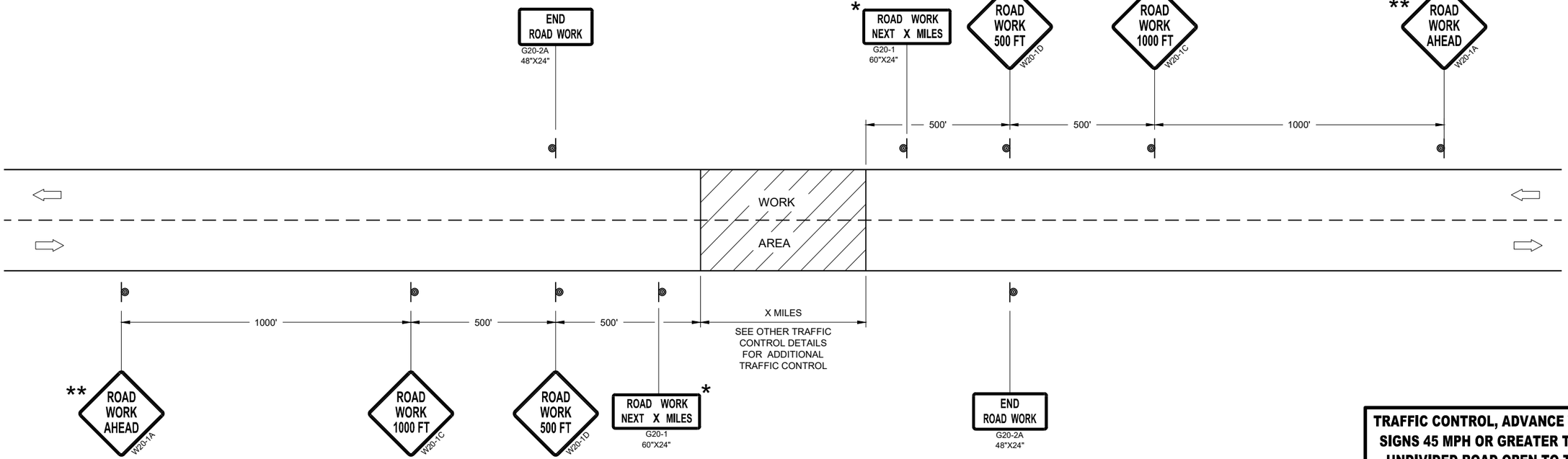
TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

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SDD 15C04 - 05

GENERAL NOTES

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

(1) LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING

(2) MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

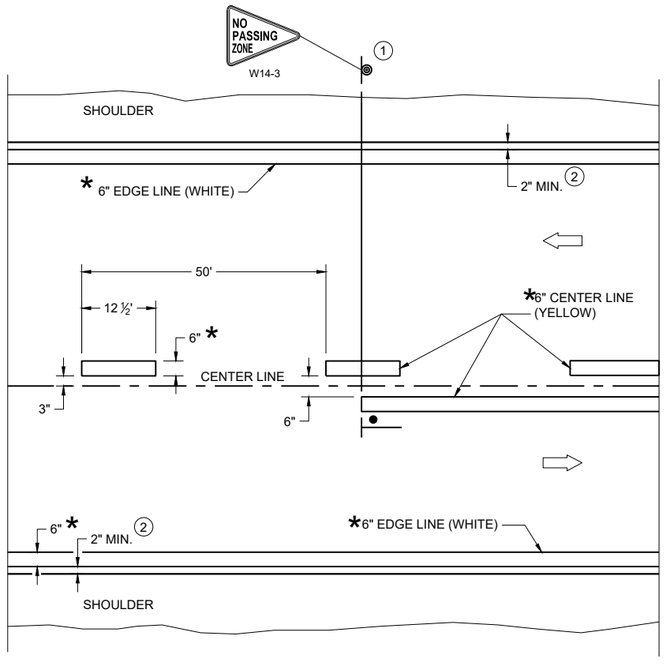
*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

LEGEND

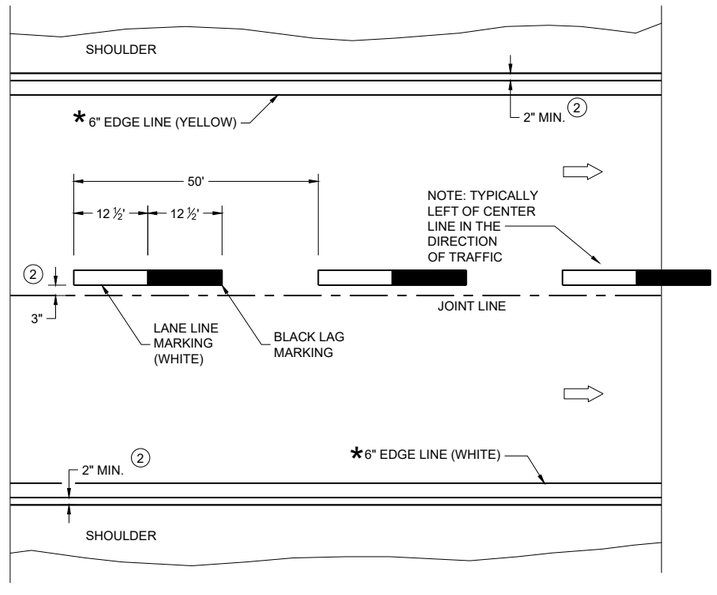
"T" MARKING

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

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SDD 15C08-23a

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

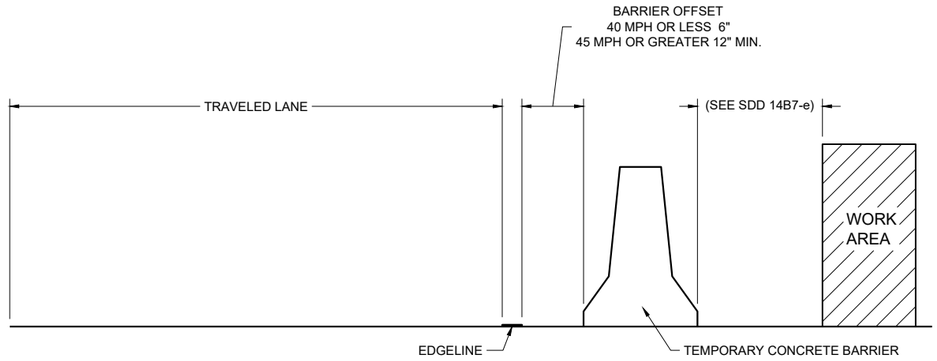
May 2023
DATE

/S/ Jeannie Silver
Statewide Pavement Marking Engineer

FHWA

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SDD 15C08-23a



TEMPORARY BARRIER OFFSET FROM EDGELINE

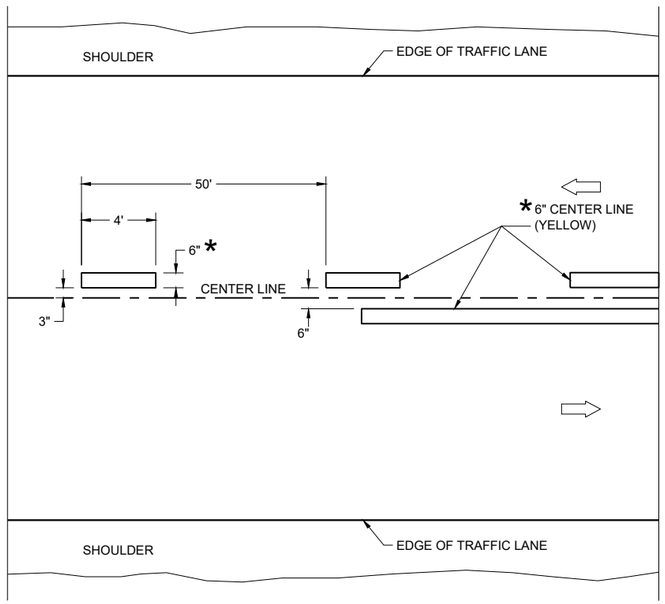
GENERAL NOTES

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

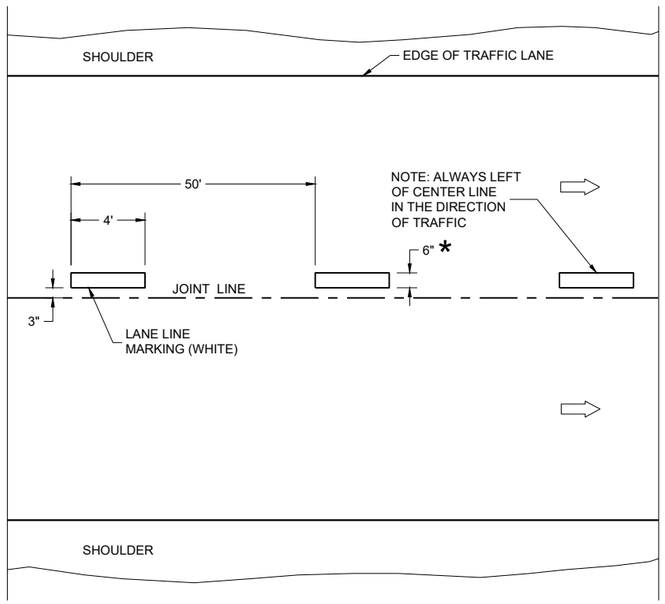
LEGEND

⇨ DIRECTION OF TRAFFIC

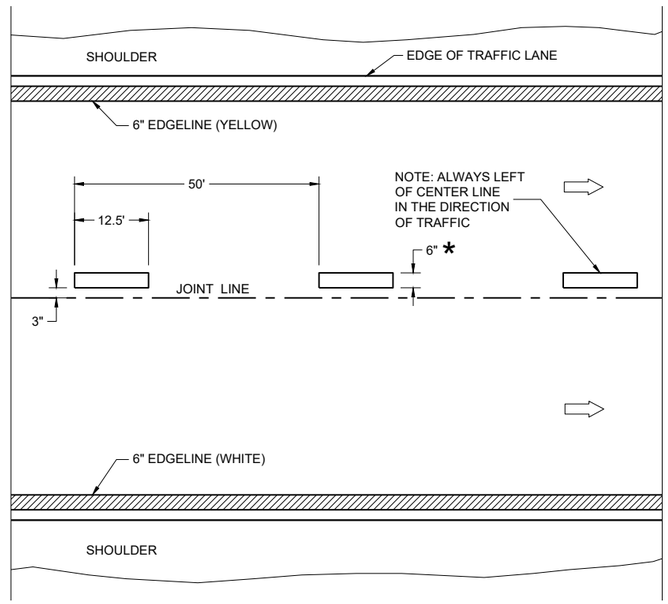
*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



ONE WAY TRAFFIC



FREEWAYS AND EXPRESSWAYS

TEMPORARY PAVEMENT MARKING

TEMPORARY LONGITUDINAL PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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SDD 15C08-23b

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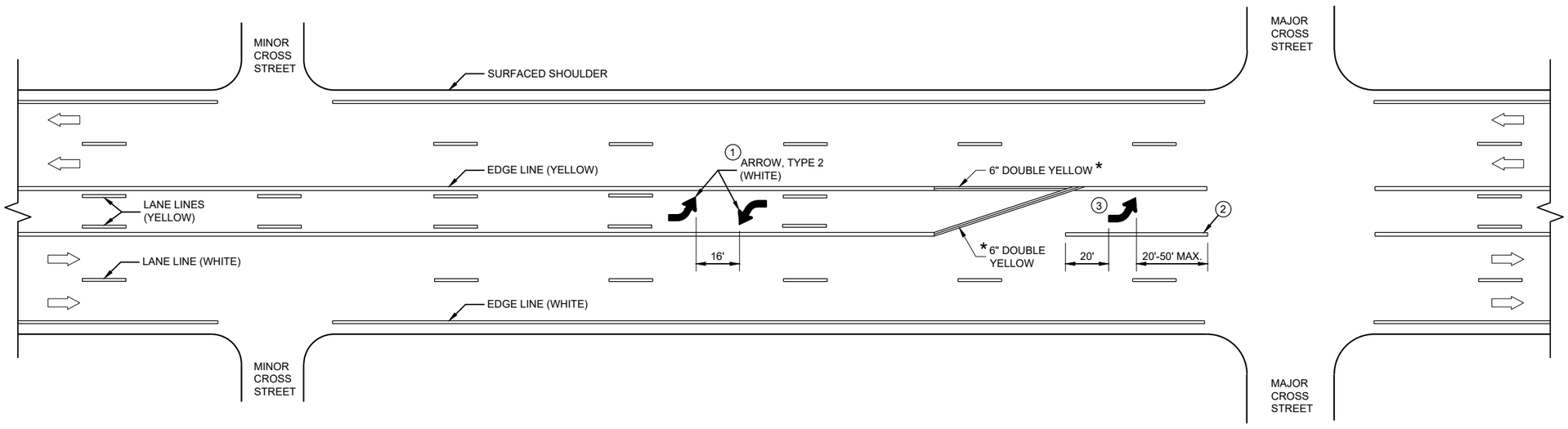
SDD 15C08-23b

GENERAL NOTES

1. A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
2. 10" WHITE
3. TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT.

DIRECTION OF TRAFFIC

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



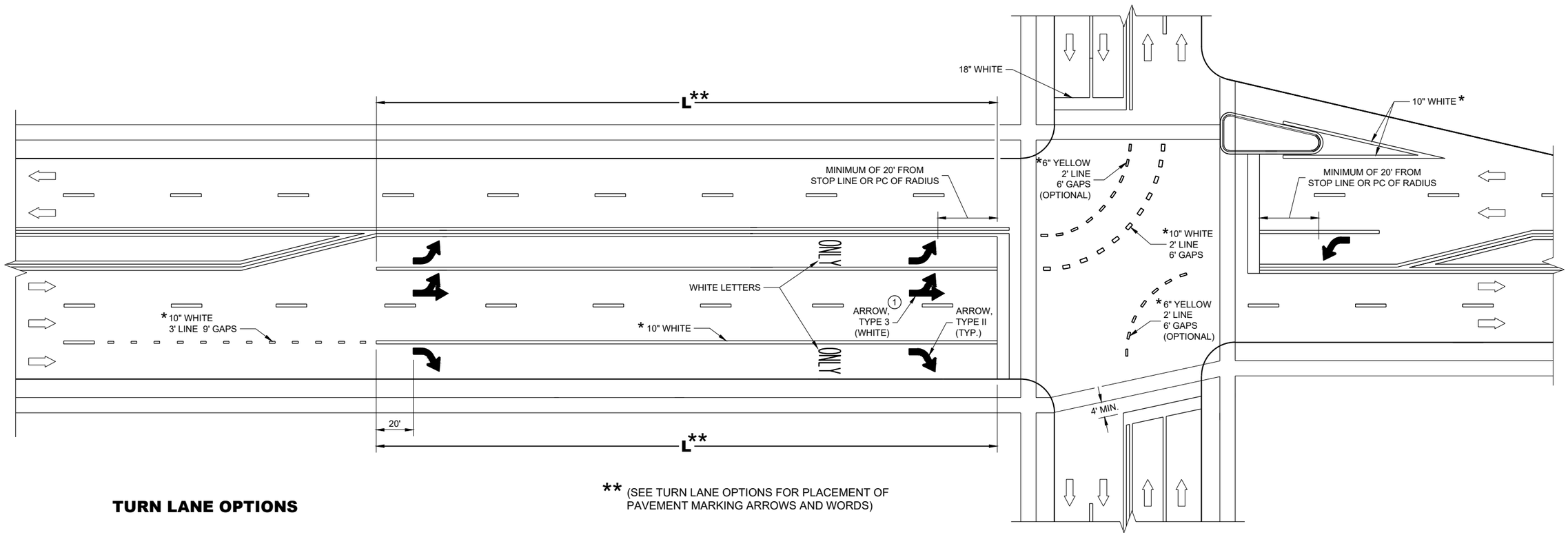
TWO WAY LEFT TURN LANE

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA 165

SDD 15C08-23c

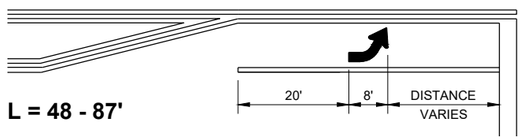
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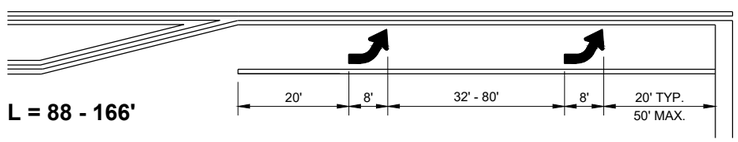
** (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

TURN LANE OPTIONS

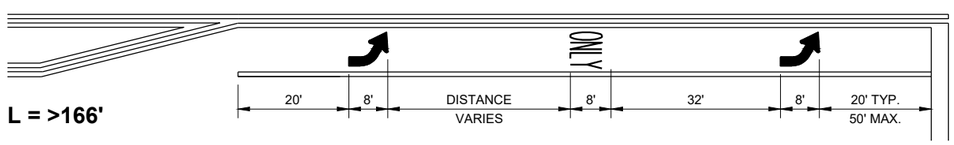
LENGTH OF TURN BAY (**L**) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



L = 48 - 87'



L = 88 - 166'



L = >166'

GENERAL NOTES

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

DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

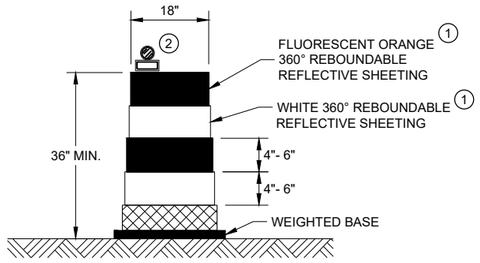
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SDD 15C08-23d

SDD 15C08-23d

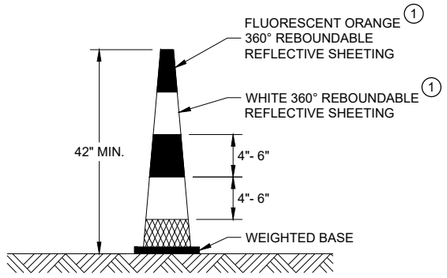
GENERAL NOTES

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.



DRUM

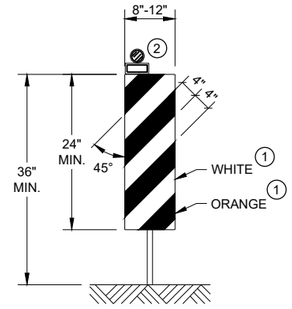
BALLAST WIDTHS
RANGE FROM 24"-36"



42" CONE

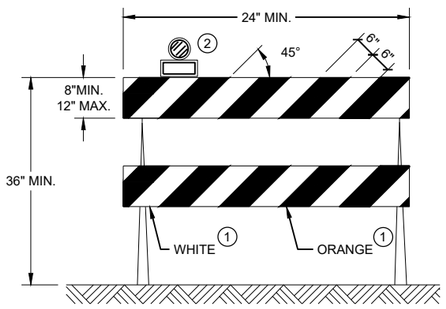
DO NOT USE IN TAPERS
½ SPACING OF DRUMS

BALLAST WIDTHS
RANGE FROM 14"-20"



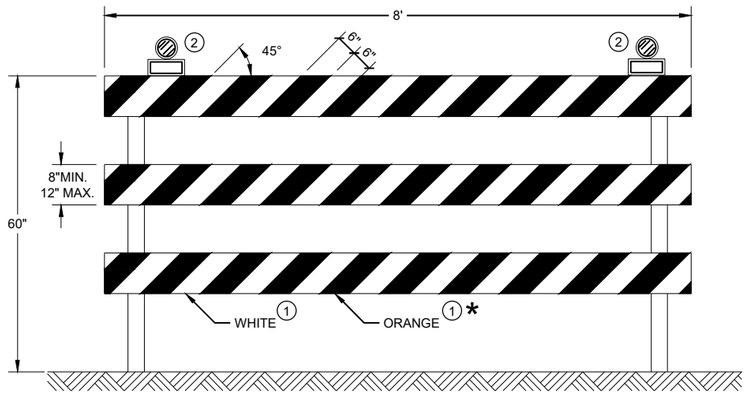
VERTICAL PANEL

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.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15C11 - 10b

6

SDD 15C11 - 10b

LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

TEMPORARY PORTABLE RUMBLE STRIP ARRAY

DIRECTION OF TRAFFIC

WORK AREA

FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

GENERAL NOTES

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

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

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

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

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

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

FLAGGING

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

(1) FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

(2) SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

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

TEMPORARY PORTABLE RUMBLE STRIPS

UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

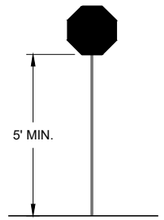
(3) EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER

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

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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



STOP/SLOW PADDLE ON SUPPORT STAFF

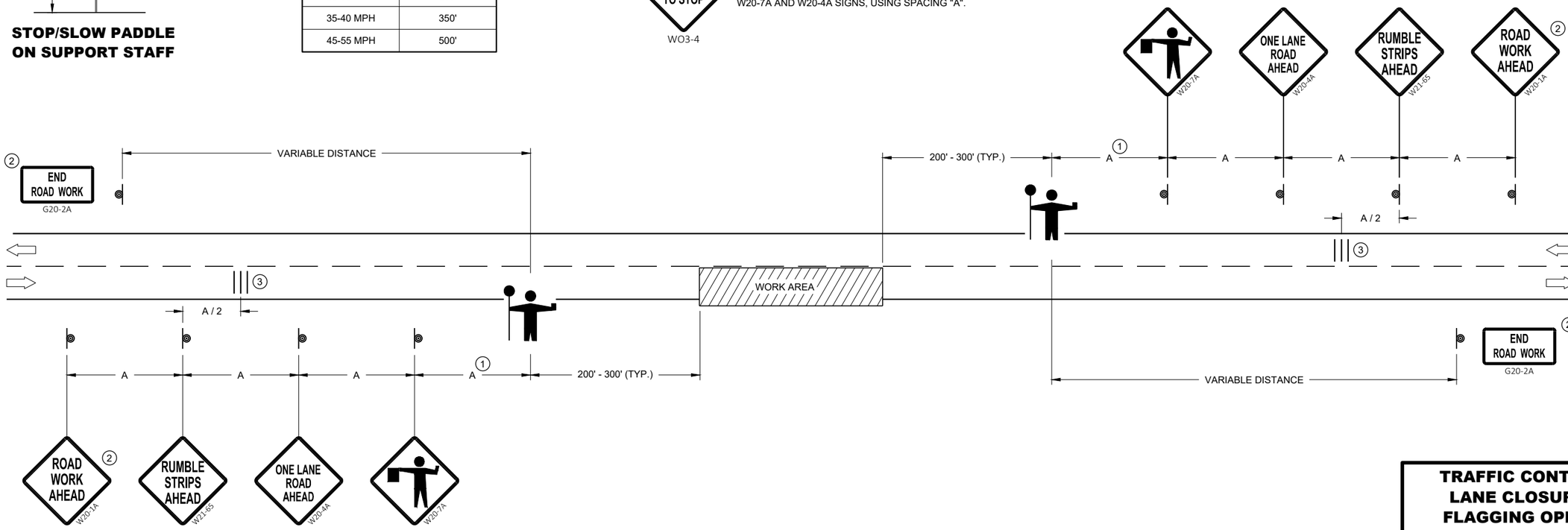
SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



WO3-4

USE OF WO3-4 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
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

SDD 15C12 - 09a

SDD 15C12 - 09a

GENERAL NOTES

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

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

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 WO3-4 SIGNS WITH W20-7A SIGNS.

TEMPORARY PORTABLE RUMBLE STRIPS

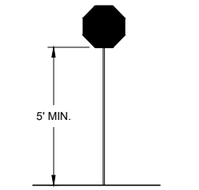
UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

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.

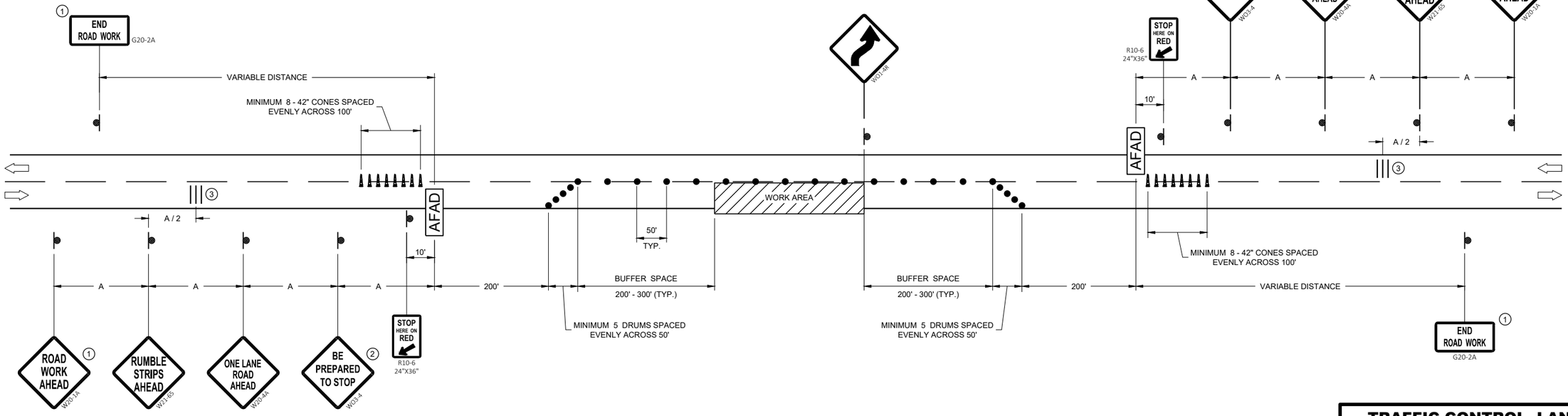
(3) EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSELY AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER.



STOP/SLOW PADDLE ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



TRAFFIC CONTROL, LANE CLOSURE WITH AUTOMATED FLAGGER ASSISTANCE DEVICE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA

SDD 15C12 - 09b

6
SDD 15C12 - 09b

LEGEND

V1 LEAD VEHICLE

V2 MARKING VEHICLE

V3 SHADOW VEHICLE

TRUCK MOUNTED ATTENUATOR (TMA)

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC

FLASHING ARROW PANEL (CAUTION)

GENERAL NOTES

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

ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL OPERATING IN CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

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

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL AND HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

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

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

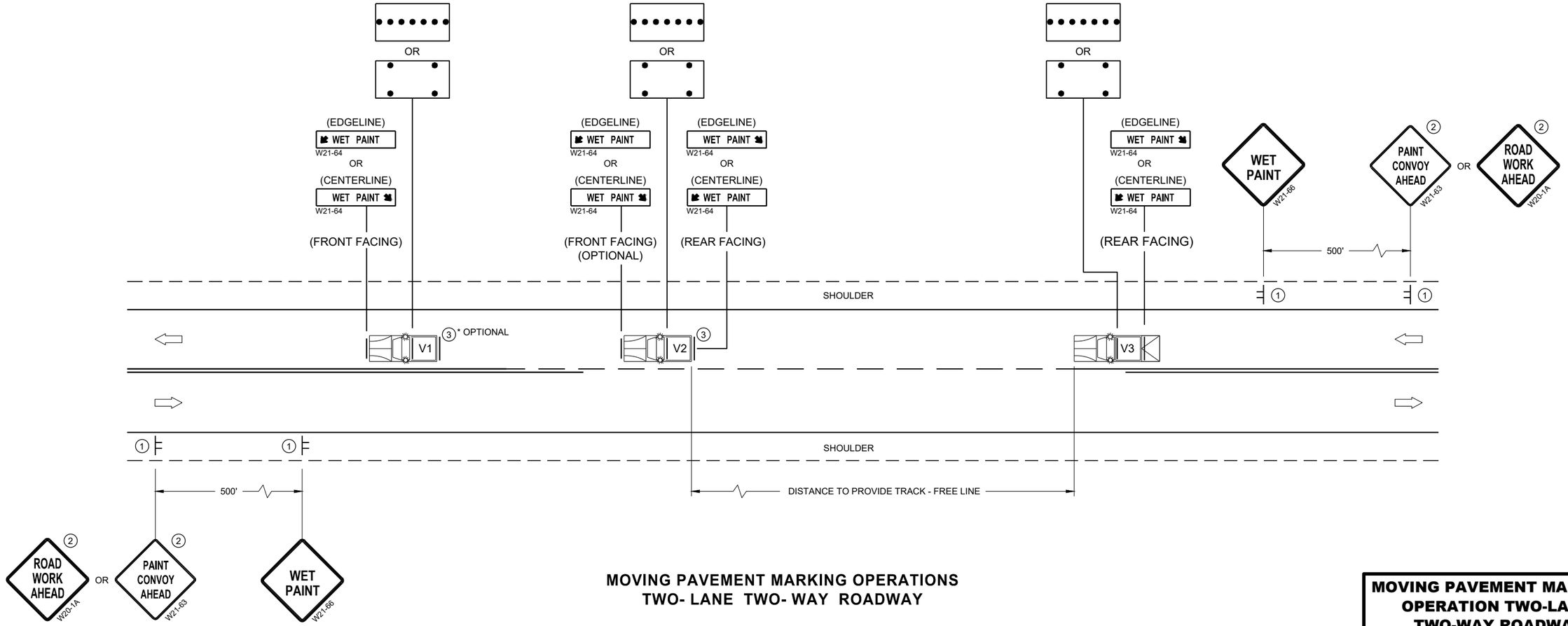
CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLE AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

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

(1) SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.

(2) IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.

(3) V1 AND V2 CAN BE SWITCHED SO THAT THE MARKER IS THE LEAD VEHICLE.



MOVING PAVEMENT MARKING OPERATIONS
TWO- LANE TWO- WAY ROADWAY

MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2023
DATE

/S/ Andrew I...
WORK ZONE EN

FHWA

6

SDD 15C19-08a

6

SDD 15C19-08a

LEGEND

V1 LEAD VEHICLE

V2 MARKING VEHICLE

V3 SHADOW VEHICLE

TRUCK MOUNTED ATTENUATOR (TMA)

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC

FLASHING ARROW PANEL (MERGE)

FLASHING ARROW PANEL (CAUTION)

GENERAL NOTES

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

ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

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

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL AND HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

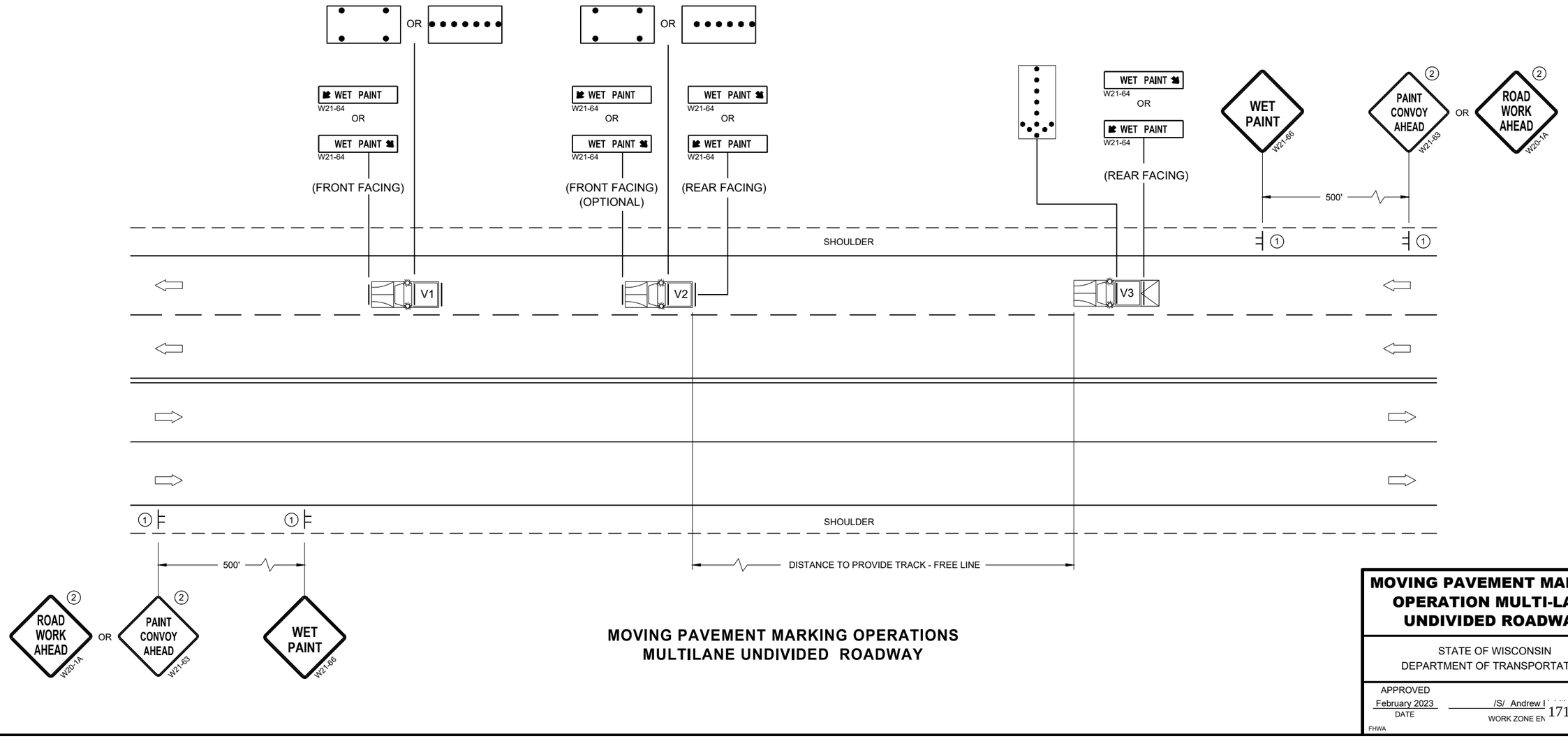
WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

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

CONES SHALL HAVE A MINIMUM HEIGHT OF 28" FOR WET PAVEMENT MARKINGS.

(1) SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.

(2) IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.



MOVING PAVEMENT MARKING OPERATIONS
MULTILANE UNDIVIDED ROADWAY

MOVING PAVEMENT MARKING OPERATION MULTI-LANE UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2023
DATE

/S/ Andrew I...
WORK ZONE EN

FHWA

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SDD 15C19-08b

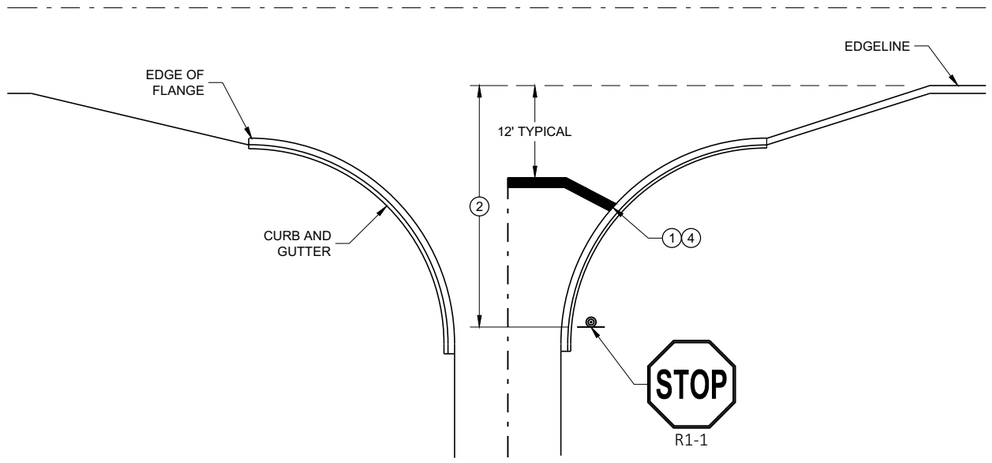
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SDD 15C19-08b

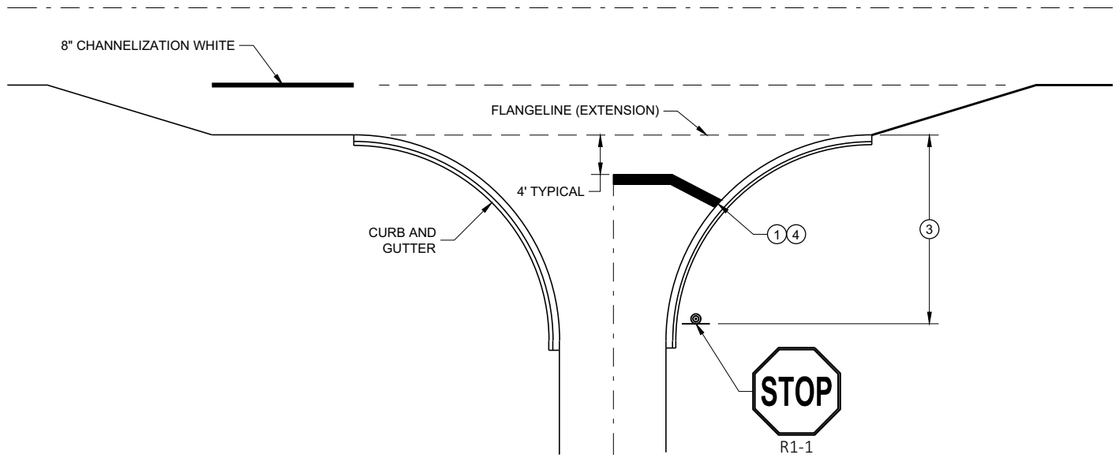
GENERAL NOTES

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

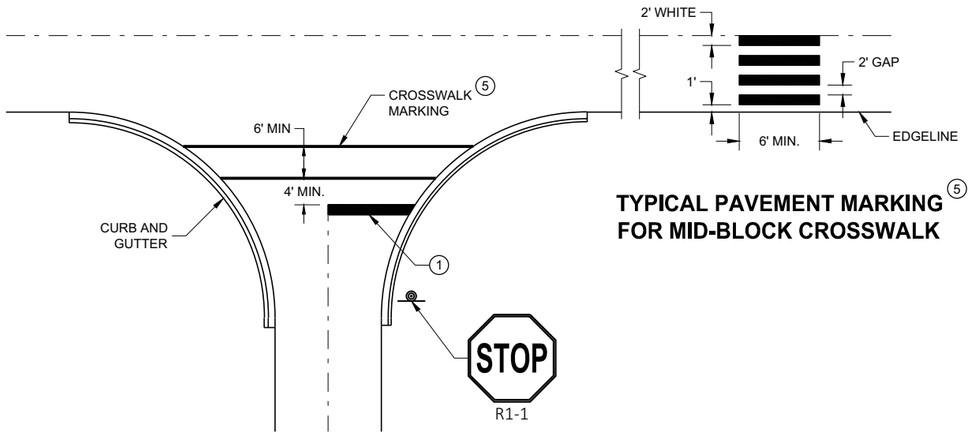
1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
3. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE 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 INSTEAD.



TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER

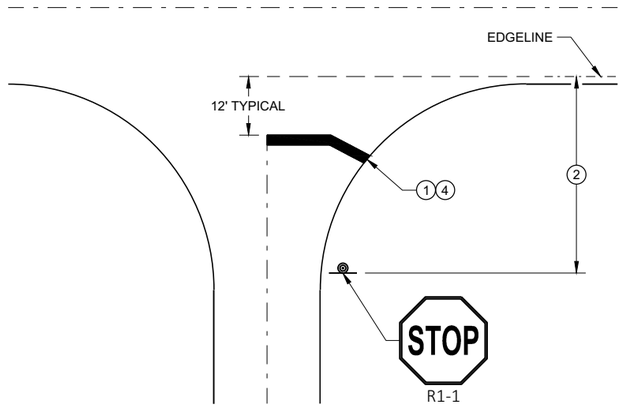


TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL PAVEMENT MARKING FOR MID-BLOCK CROSSWALK 5

TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 — DATE
/S/ Matthew Rauch — STATE SIGNING AND MARKING ENGINEER

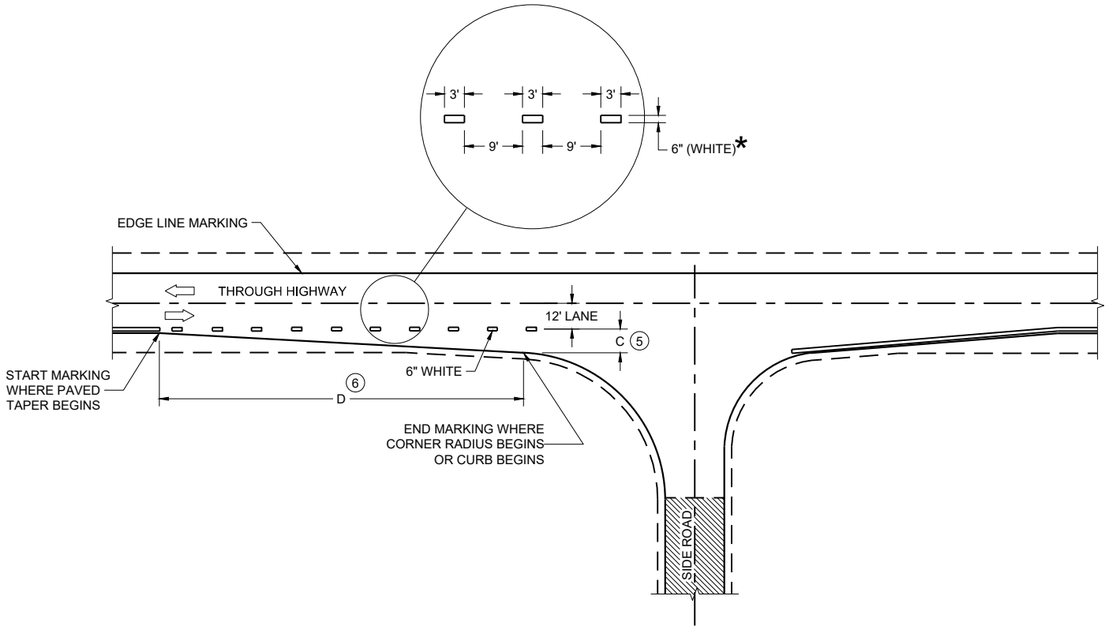
FHWA

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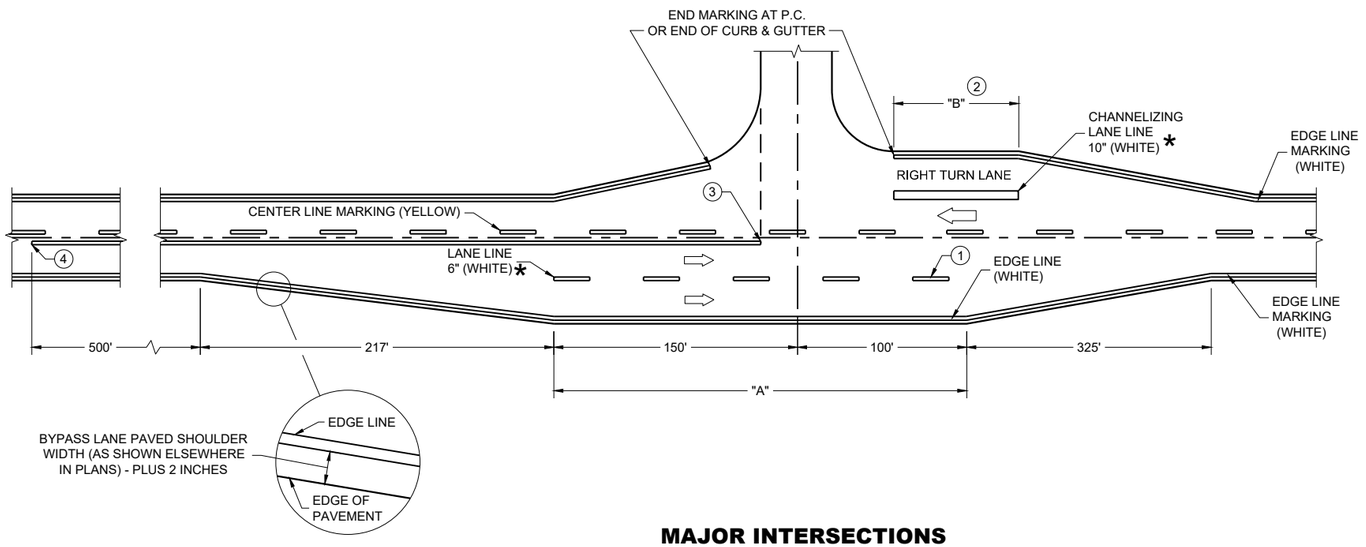
SDD 15C33 - 04

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SDD 15C33 - 04



MINOR INTERSECTION



MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

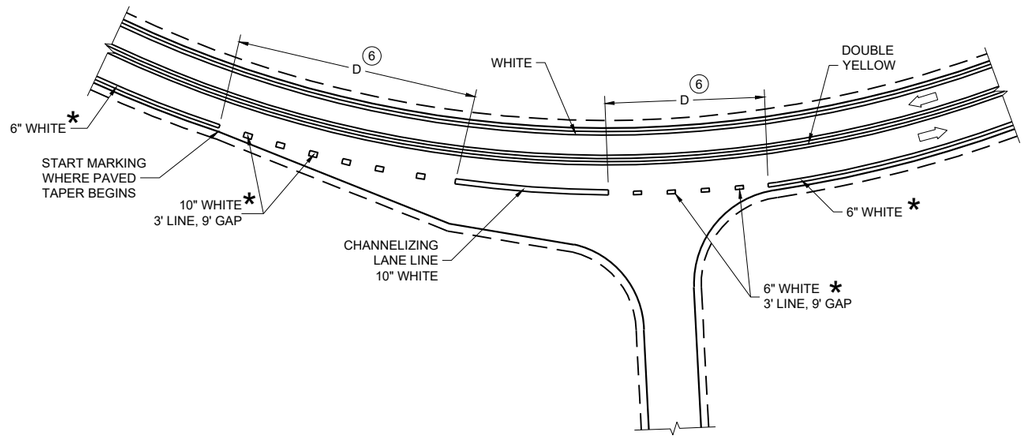
GENERAL NOTES

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

1. WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
2. WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
3. BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
4. BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
5. WHEN DISTANCE "C" IS LESS THAN 4 FEET, OMIT DOTTED EXTENSION.
6. WHEN DISTANCE "D" IS LESS THAN 50 FEET, OMIT DOTTED EXTENSION.

LEGEND

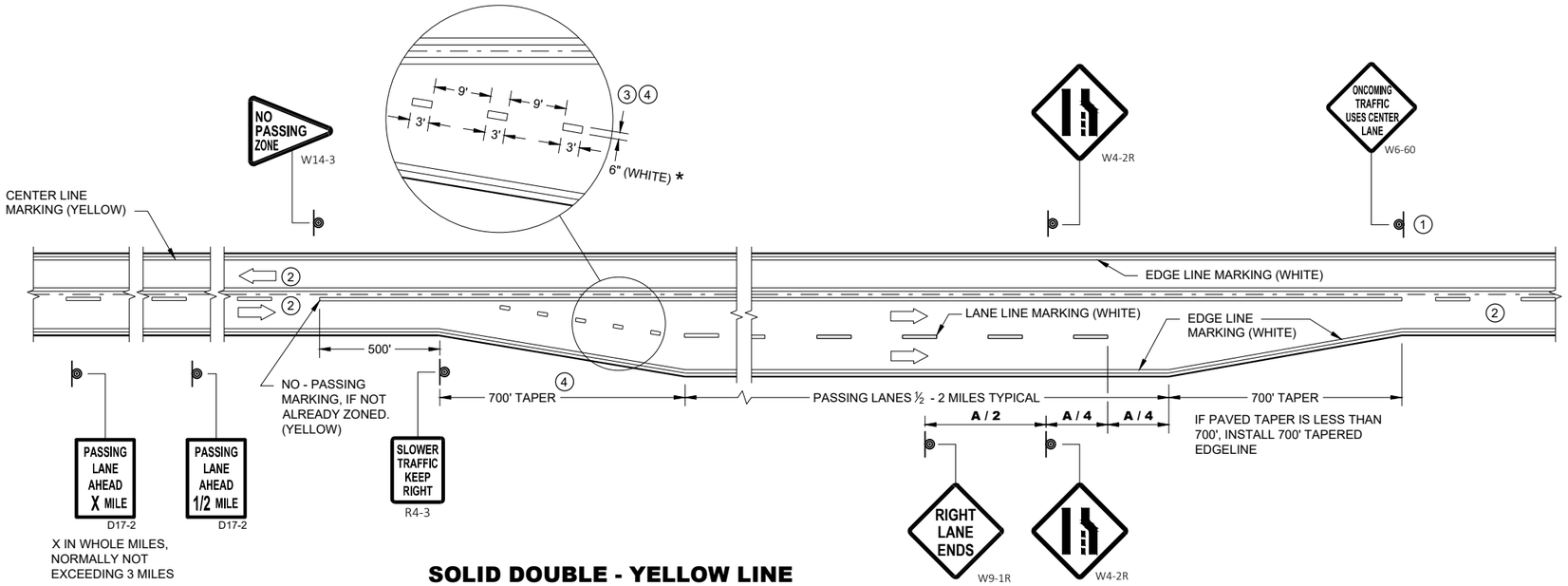
DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING (INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



SOLID DOUBLE - YELLOW LINE
(THROUGHOUT ENTIRE PASSING / CLIMBING LANE)

GENERAL NOTES

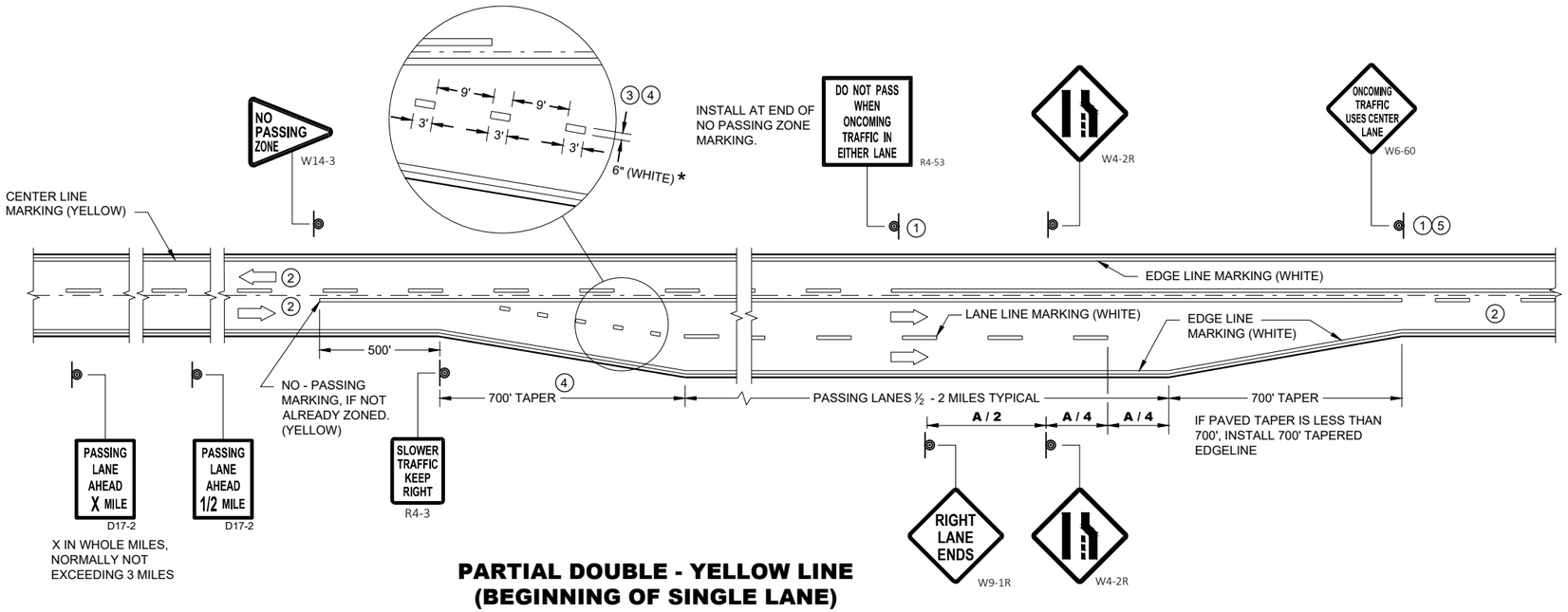
1. SIGN SHALL BE REPEATED AT 1 MILE INCREMENTS OR AT THE DISCRETION OF THE REGIONAL TRAFFIC ENGINEER.
2. THERE MAY BE SOLID YELLOW ON THE CENTERLINE DUE TO SIGHT CONDITIONS.
3. THE TAPER LENGTH OF THE DOTTED LINE PAVEMENT MARKING SHALL BE 700 FEET, 3' LINE, 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
4. WHEN THE ENTRANCE TAPER IS LESS THAN 700 FEET OR THE SHOULDER WIDTH IN THE PASSING / CLIMBING LANE IS LESS THAN THE ADJACENT HIGHWAY, DO NOT INSTALL DOTTED LINE PAVEMENT MARKING.
5. REPEAT EVERY 1 MILE UP UNTIL R4-53.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
45	775
50	885
55	990

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

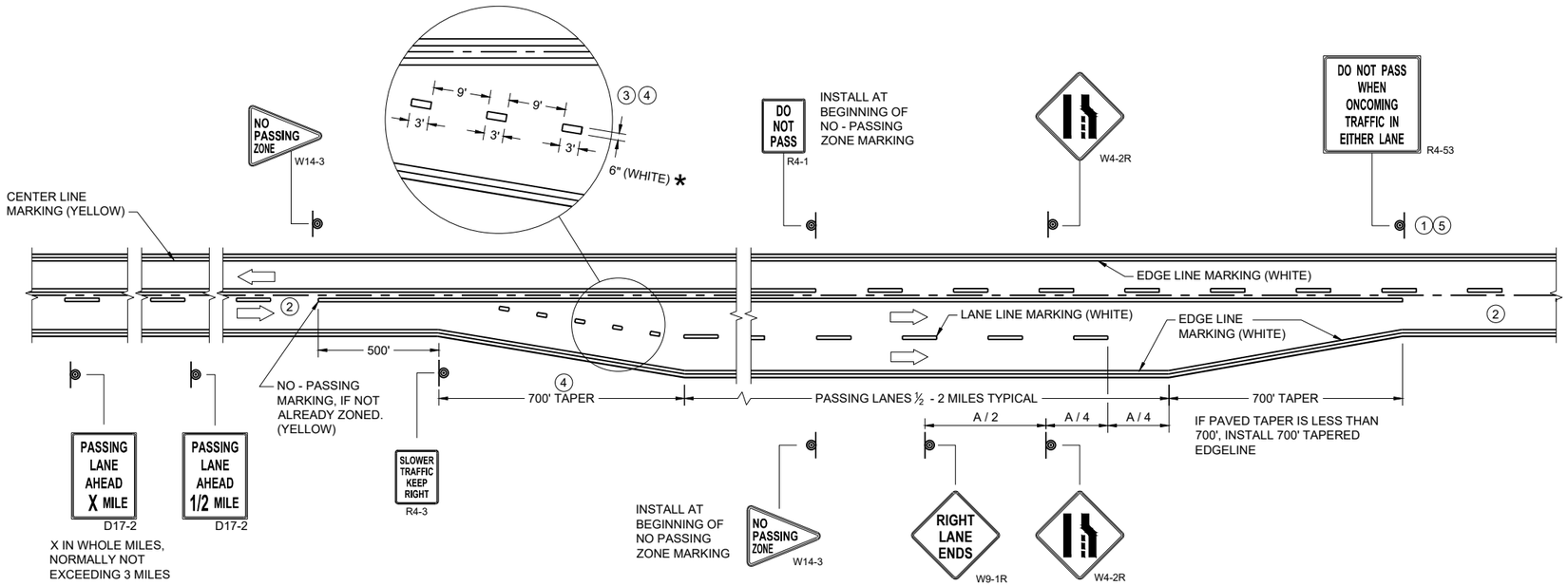


PARTIAL DOUBLE - YELLOW LINE
(BEGINNING OF SINGLE LANE)

PAVEMENT MARKING & SIGNING (CLIMBING LANE & PASSING LANE)

6

SDD 15C35-06b



SOLID DOUBLE - YELLOW LINE
(END OF SINGLE LANE)

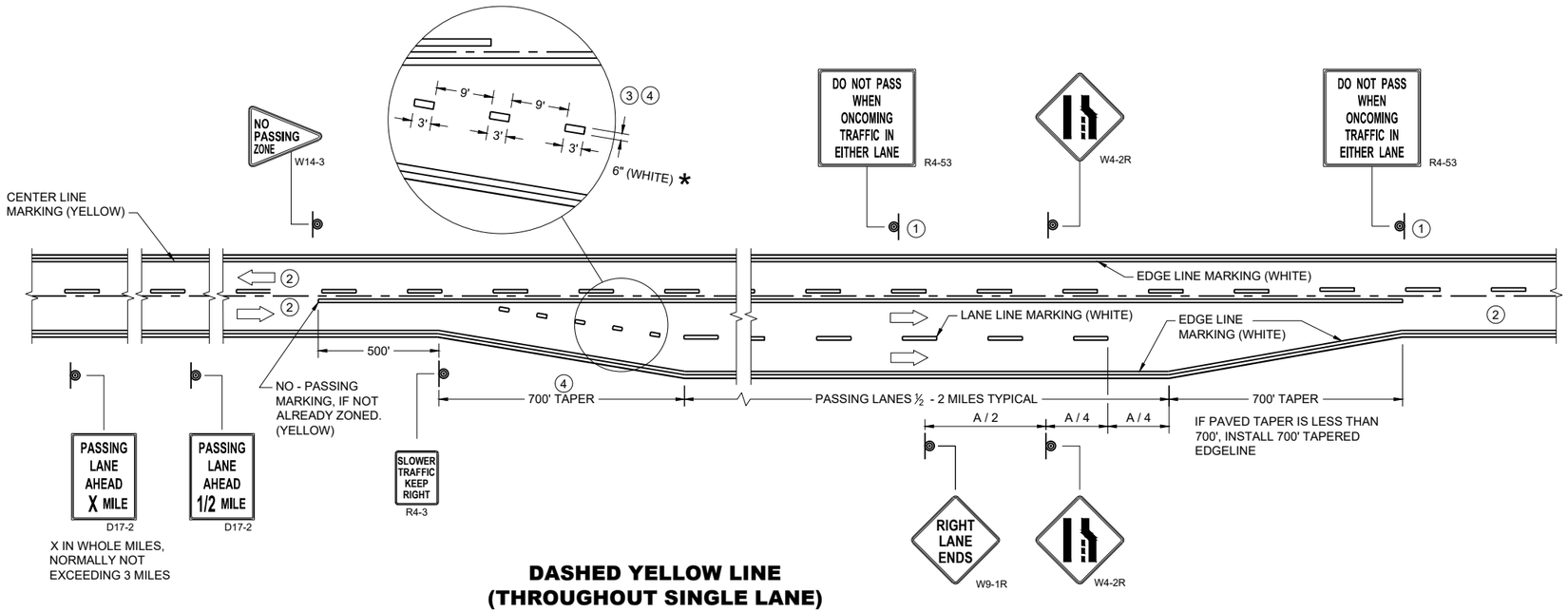
GENERAL NOTES

1. SIGN SHALL BE REPEATED AT 1 MILE INCREMENTS OR AT THE DISCRETION OF THE REGIONAL TRAFFIC ENGINEER.
2. THERE MAY BE SOLID YELLOW ON THE CENTERLINE DUE TO SIGHT CONDITIONS.
3. THE TAPER LENGTH OF THE DOTTED LINE PAVEMENT MARKING SHALL BE 700 FEET, 3' LINE, 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
4. WHEN THE ENTRANCE TAPER IS LESS THAN 700 FEET OR THE SHOULDER WIDTH IN THE PASSING / CLIMBING LANE IS LESS THAN THE ADJACENT HIGHWAY, DO NOT INSTALL DOTTED LINE PAVEMENT MARKING.
5. REPEAT EVERY ONE MILE UP UNTIL NO PASSING ZONE.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
45	775
50	885
55	990



DASHED YELLOW LINE
(THROUGHOUT SINGLE LANE)

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

PAVEMENT MARKING & SIGNING (CLIMBING LANE & PASSING LANE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6
SDD 15C35-06c

LEGEND

SIGN ON PERMANENT SUPPORT

TRAFFIC CONTROL DRUM

DIRECTION OF TRAFFIC

WORK ZONE

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY THE REGIONAL TRAFFIC UNIT.

"WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.

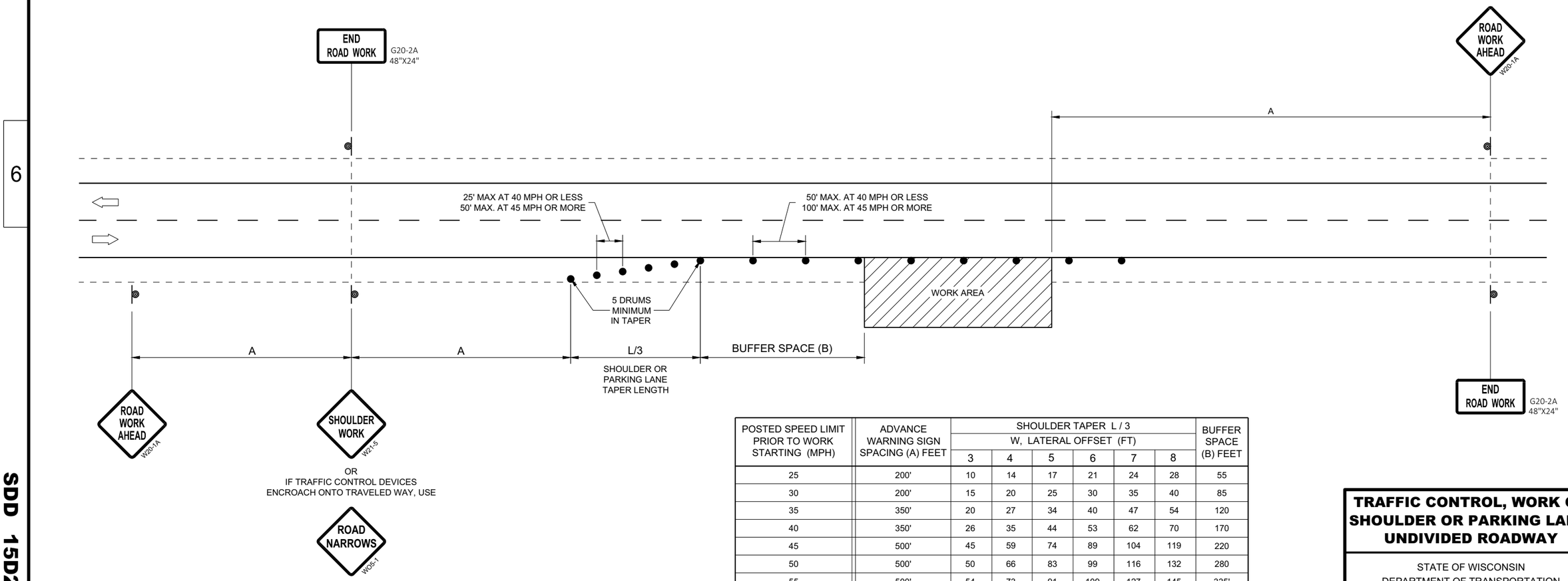
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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

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

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.



POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHOULDER TAPER L / 3 W, LATERAL OFFSET (FT)						BUFFER SPACE (B) FEET
		3	4	5	6	7	8	
25	200'	10	14	17	21	24	28	55
30	200'	15	20	25	30	35	40	85
35	350'	20	27	34	40	47	54	120
40	350'	26	35	44	53	62	70	170
45	500'	45	59	74	89	104	119	220
50	500'	50	66	83	99	116	132	280
55	500'	54	73	91	109	127	145	335'

TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020
DATE

/S/ Andrew Heidtke
STATEWIDE WORK ZONE T SAFETY ENGINEER

FHWA

SDD 15D28 - 04

SDD 15D28 - 04

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TEMPORARY DELINEATOR (WHITE, SINGLE DELINEATOR)
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- TEMPORARY RAISED PAVEMENT MARKERS (TWO WAY YELLOW)
- TEMPORARY STEEL PLATE BEAM GUARD AND END TREATMENT
- DIRECTION OF TRAFFIC
- REMOVE PAVEMENT MARKINGS
- WORK AREA

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

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

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

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL ON STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

EQUIPMENT, VEHICLES, OR MATERIAL SHOULD NOT BE STORED IN BUFFER SPACE.

(1) IF ADVISORY SPEED IS GREATER THAN 30 MPH, USE THE WO1-4 SIGN. IF ADVISORY SPEED IS 30 MPH OR LESS, USE THE WO1-3 SIGN.

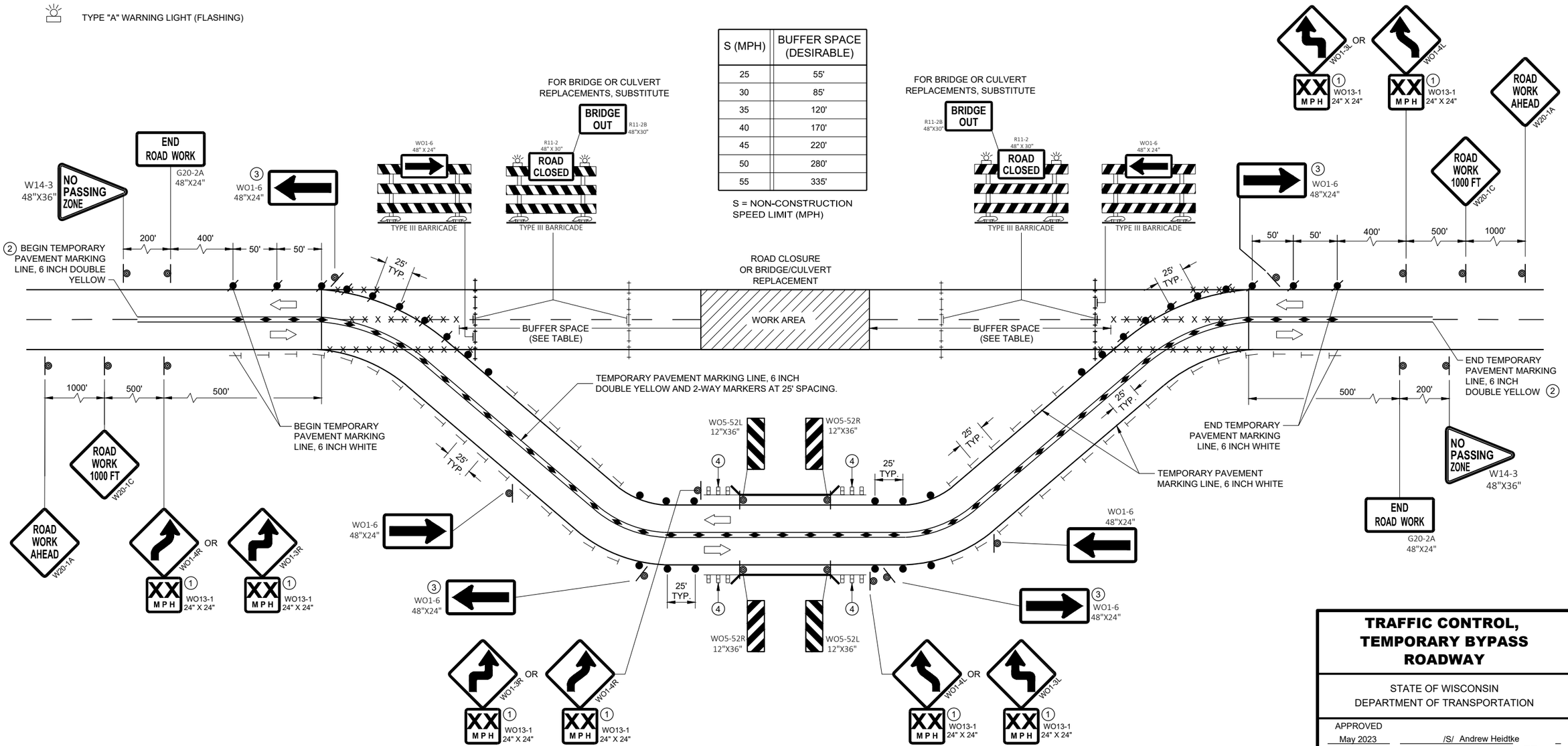
(2) WHEN THE DISTANCE TO / FROM THE NEXT CLOSEST NO-PASSING ZONE IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES AS INDICATED IN THE SPECIFICATIONS, THE TWO ZONES SHALL BE CONNECTED.

(3) OMIT THESE W01-6 SIGNS IF THE ADVISORY SPEED OF THE CURVE IS GREATER THAN 30 MPH.

(4) TEMPORARY STEEL PLATE BEAM GUARD AND END TREATMENT WHEN INCLUDED IN THE CONTRACT. FOR LAYOUT, SEE DETAILS ELSEWHERE IN THE PLAN.

S (MPH)	BUFFER SPACE (DESIRABLE)
25	55'
30	85'
35	120'
40	170'
45	220'
50	280'
55	335'

S = NON-CONSTRUCTION SPEED LIMIT (MPH)



TRAFFIC CONTROL, TEMPORARY BYPASS ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

6 SDD 15D31-05

LEGEND

TYPE III BARRICADE WITH ATTACHED SIGN

SIGN ON PERMANENT SUPPORT

TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT

TRAFFIC CONTROL DRUM

FLAGS, 16" X 16" MIN. (ORANGE)

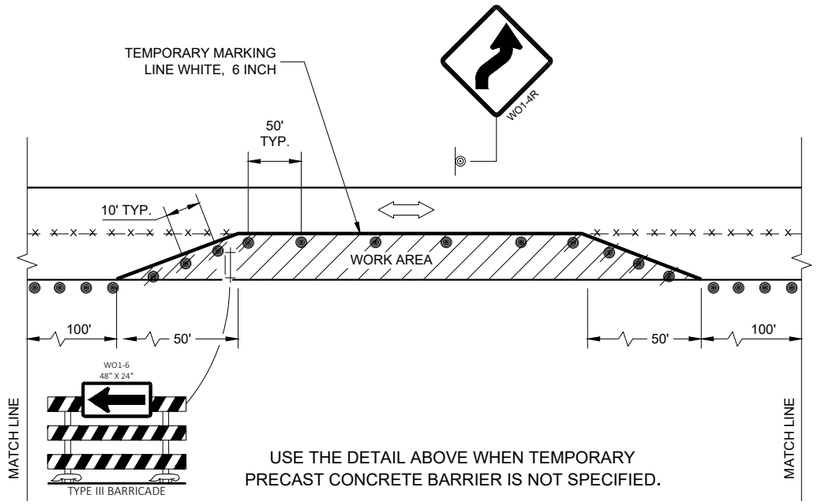
REMOVING PAVEMENT MARKING

DIRECTION OF TRAFFIC

ASPHALTIC PAVEMENT WIDENING

CONCRETE BARRIER TEMPORARY PRECAST

TEMPORARY SIGNAL. SEE SDD 09G02 FOR EXACT PLACEMENT



USE THE DETAIL ABOVE WHEN TEMPORARY PRECAST CONCRETE BARRIER IS NOT SPECIFIED.

GENERAL NOTES

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

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

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

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

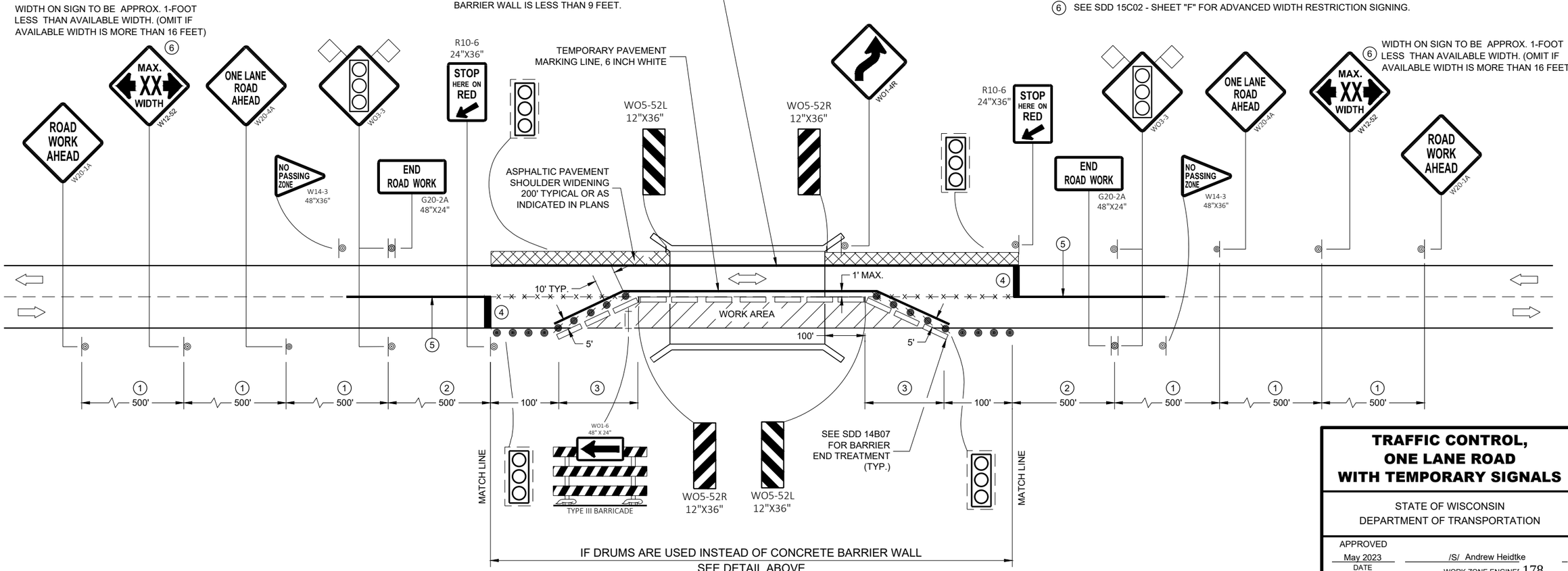
"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

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

REMOVE PAVEMENT MARKING AND PLACE TEMPORARY PAVEMENT MARKING LINES IF THE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

INSTALL OVERHEAD TEMPORARY SIGNAL HEADS ABOVE THE MIDDLE OF THE TRAVEL LANE THEY ARE CONTROLLING.

1. 500 FOOT SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35 - 40 MPH, USE 350 FOOT TYPICAL SPACING. FOR 25 - 30 MPH, USE 200 FOOT TYPICAL SPACING.
2. USE 300 FOOT SPACING IF THE PRE - CONSTRUCTION REGULATORY SPEED IS 35 MPH OR LESS.
3. DIMENSION DETERMINED BY CBTP TAPER FROM EDGE LINE TO TANGENT SECTION OF THE ROAD.
4. TEMPORARY PAVEMENT MARKING LINE, 18 INCH WHITE STOP LINE.
5. 700 FOOT TEMPORARY PAVEMENT MARKING LINE, 6 INCH DOUBLE YELLOW . WHEN THE DISTANCE FOR THE PRECEDING NO - PASSING ZONE IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES AS INDICATED IN THE SPECIFICATIONS, THE TWO ZONES SHALL BE CONNECTED.
6. SEE SDD 15C02 - SHEET "F" FOR ADVANCED WIDTH RESTRICTION SIGNING.



TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15D33-09

6

SDD 15D33-09

GENERAL NOTES

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD). SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISDOT STANDARD SIGN PLATES.

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

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

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

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

SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

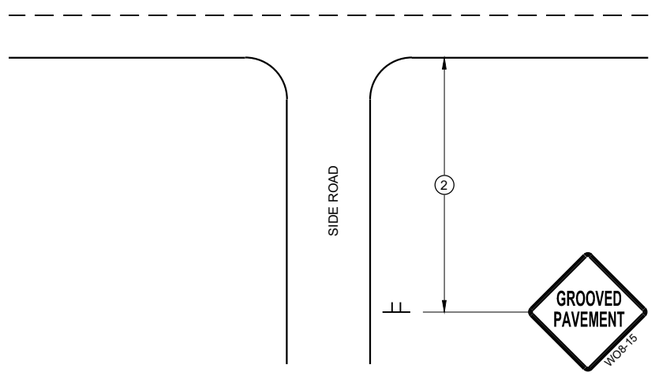
(1) PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.

(2) PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

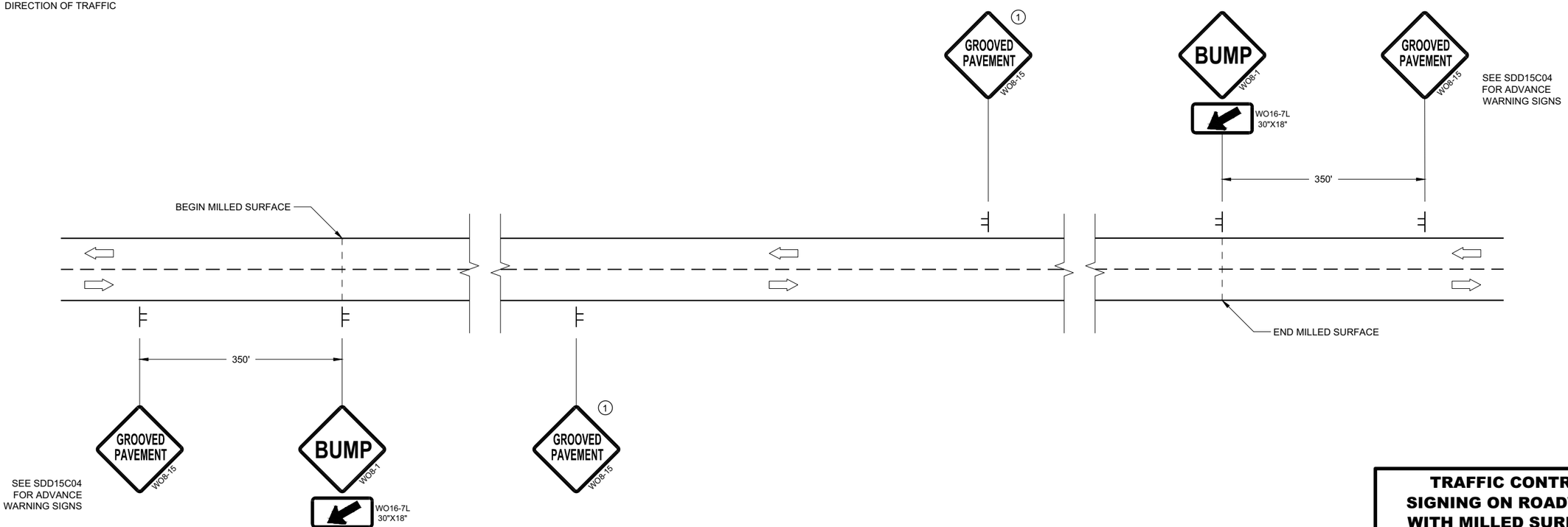
LEGEND

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH SIGN DETAIL



DETAIL FOR SIGNING ON MILLED SURFACES

TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6
SDD 15D44 - 02

GENERAL NOTES

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD). SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISDOT STANDARD SIGN PLATES.

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

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

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

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

SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

(1) PLACE SIGNS 350' IN ADVANCE OF CHIP SEALED OR LOOSE GRAVEL SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.

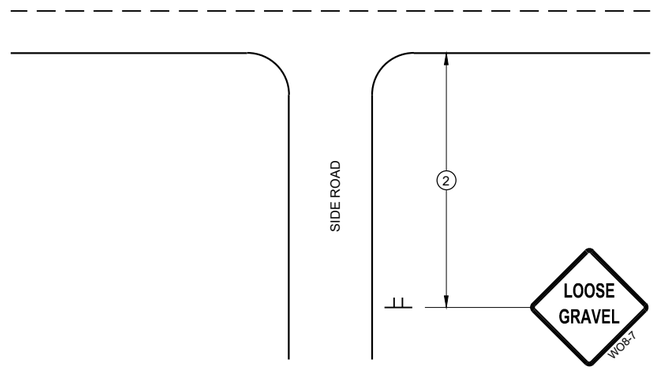
(2) PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

(3) ADD WO8-1 OR WO8-2 SIGN WHEN THE CONDITION IS PRESENT.

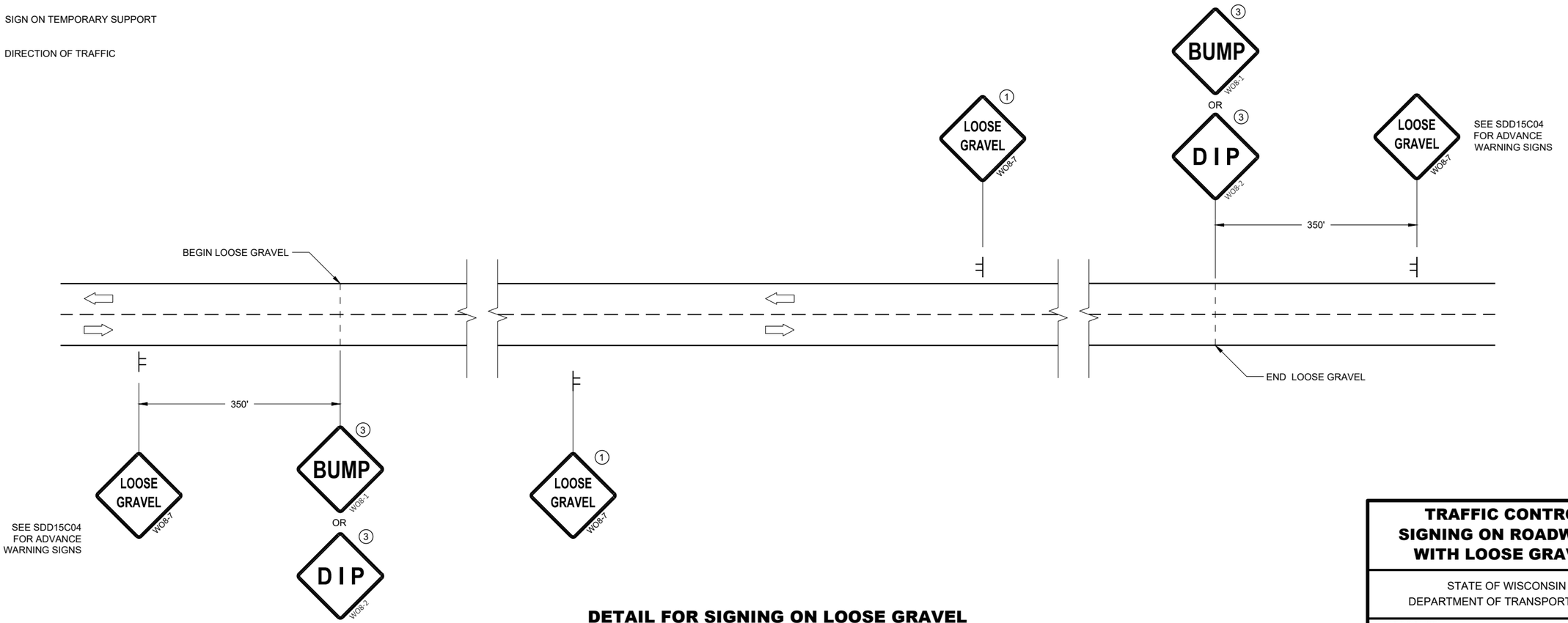
LEGEND

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH SIGN DETAIL



DETAIL FOR SIGNING ON LOOSE GRAVEL OR CHIP SEALED SURFACES

TRAFFIC CONTROL SIGNING ON ROADWAYS WITH LOOSE GRAVEL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

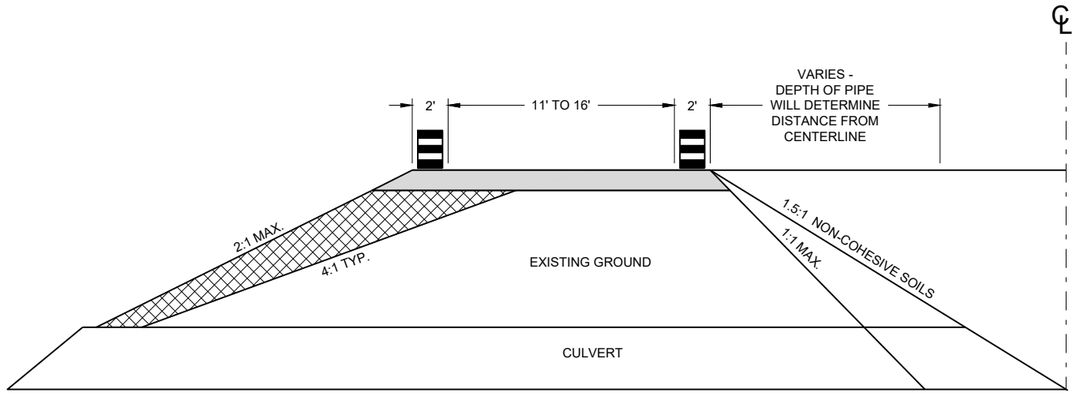
APPROVED
February 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15D45 - 03



CROSS SECTION

GENERAL NOTES

USE 1:1 FOR COHESIVE CLAYS AND SILTS, LOAMS, SANDY CLAYS AND ANGULAR GRAVEL SOILS.
USE 1.5:1 FOR NON-COHESIVE SOILS.

THE TAPER SHOULD EXTEND ACROSS THE SHOULDER UNLESS DOING SO WOULD GREATLY CONFLICT WITH THE WORK OPERATION.

ALL LANE CLOSURE SIGNS SHALL BE REMOVED OR COVERED AND ALL DEVICES REMOVED BEYOND THE SHOULDER WHEN WORK IS NOT IN PROGRESS AND THE LANE IS RESTORED TO A SAFE OPERATING CONDITION.

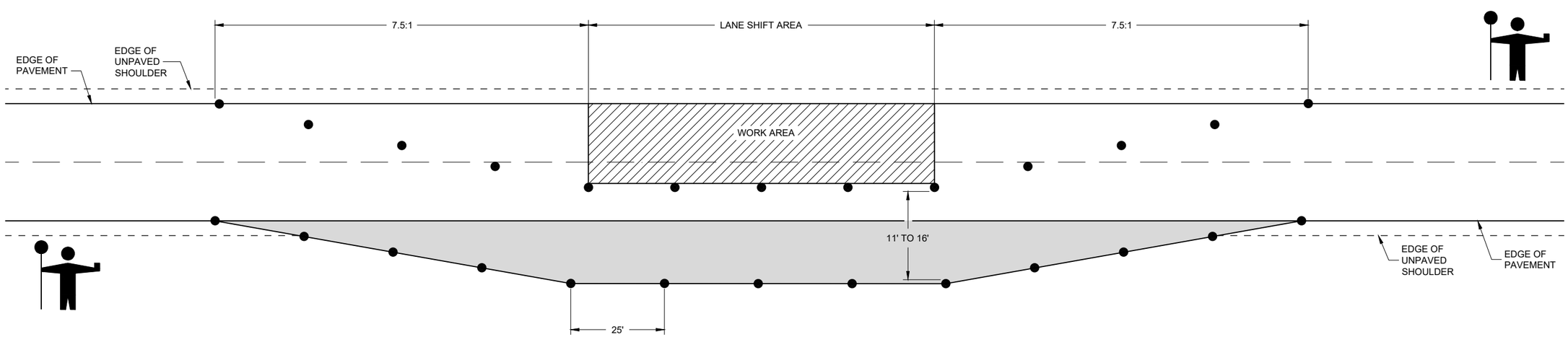
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

USE WITH SDD 15C12 "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATIONS"

USE WITH SDD 15D45 "SIGNING ON ROADWAYS WITH LOOSE GRAVEL"

LEGEND

- DRUM WITHOUT WARNING LIGHT
- 6" BASE AGGREGATE DENSE 1 ¼" -INCIDENTAL TO LANE SHIFT ITEM
- FILL - INCIDENTAL TO LANE SHIFT ITEM
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF



LANE SHIFT IN FLAGGING OPERATION

TRAFFIC CONTROL, TEMPORARY LANE SHIFT DURING CULVERT WORK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

6

SDD 15D48 - 01

6

SDD 15D48 - 01

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.

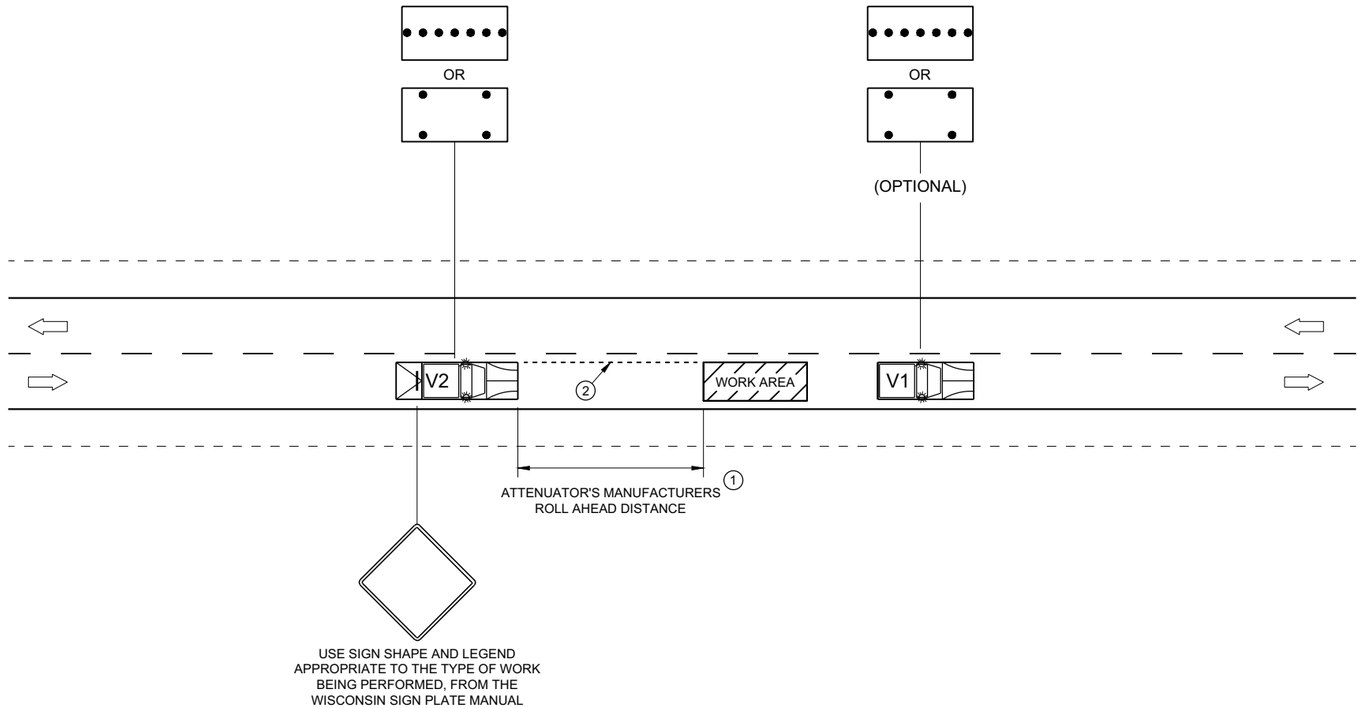
ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

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.



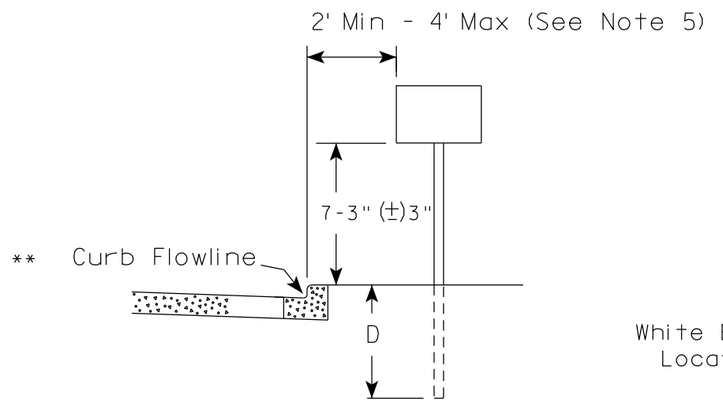
TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

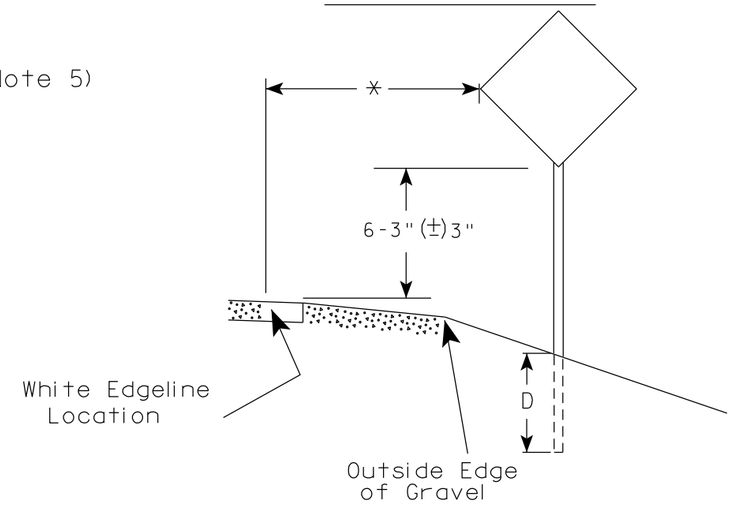
APPROVED
February 2021 — DATE
/S/ Andrew Heidtke — STATEWIDE WORK ZONE T SAFETY ENGINEER
FHWA

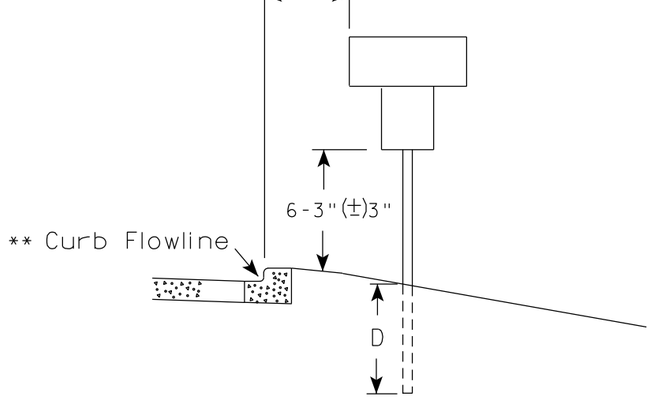
6
SDD 15D51 - 01

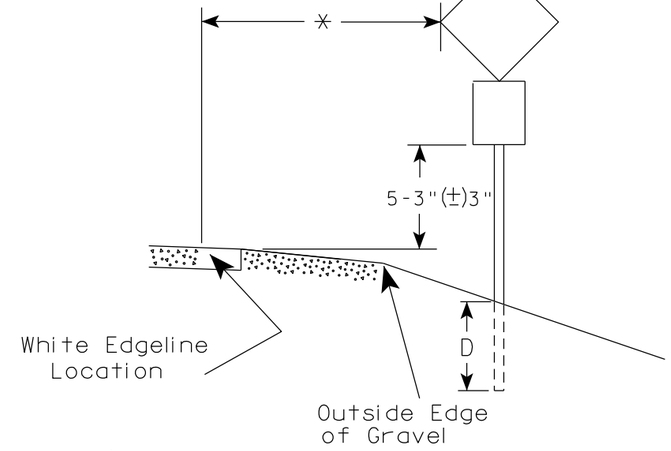
URBAN AREA



RURAL AREA (See Note 2)







** 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.

* 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

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. 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".
3. For expressways and freeways, mounting height is 7'- 3" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±) 3".
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directd by the Engineer.

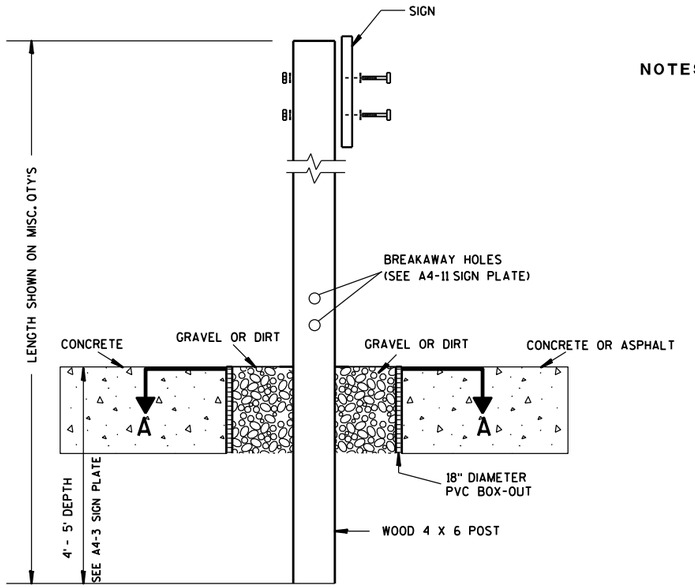
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

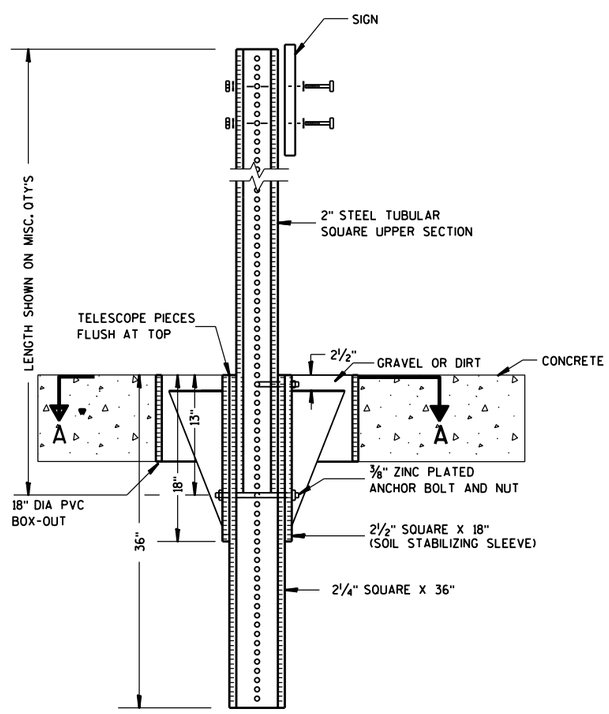
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 183	E



ELEVATION VIEW

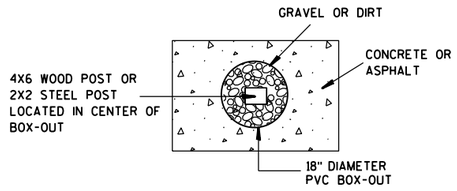
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

NOTES:
1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

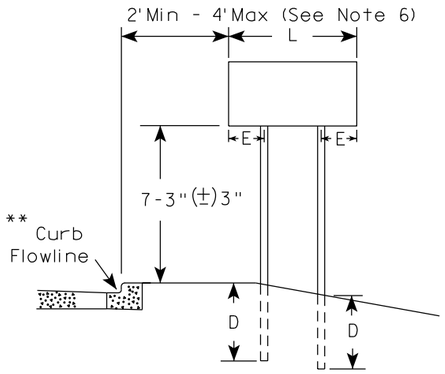
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

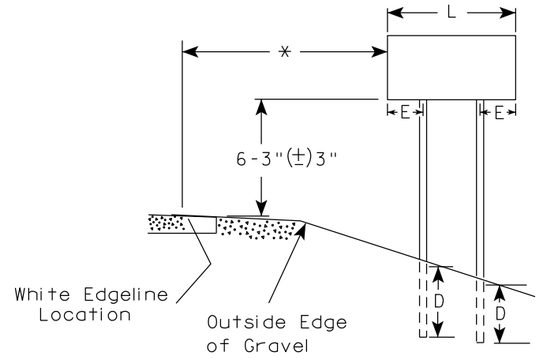
DATE 1/27/14 PLATE NO. A4-3B.1

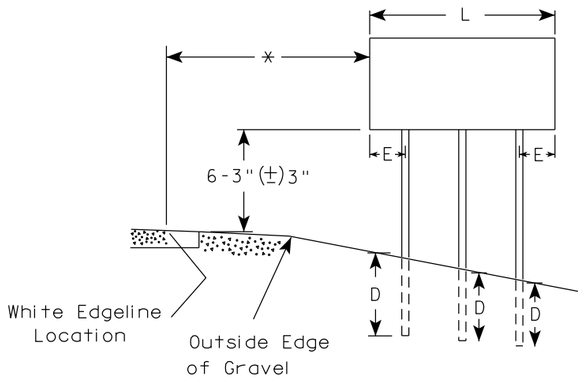
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

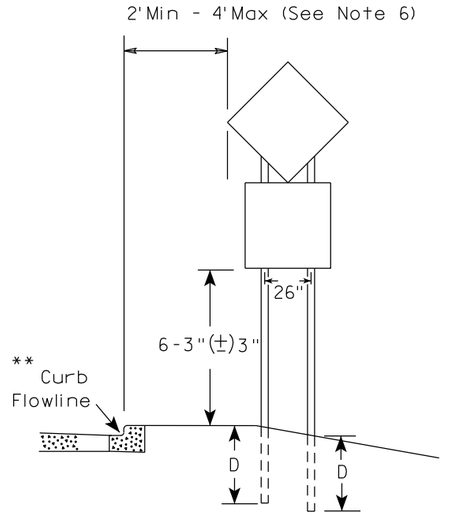
URBAN AREA



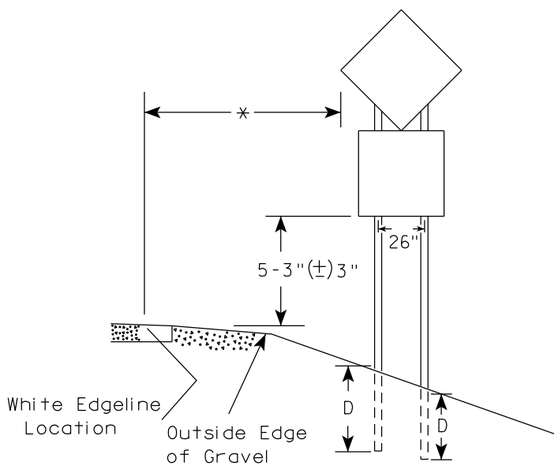
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)		
	L	E
***	Greater than 48" Less than 60"	12"
	60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

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.

POST EMBEDMENT DEPTH

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

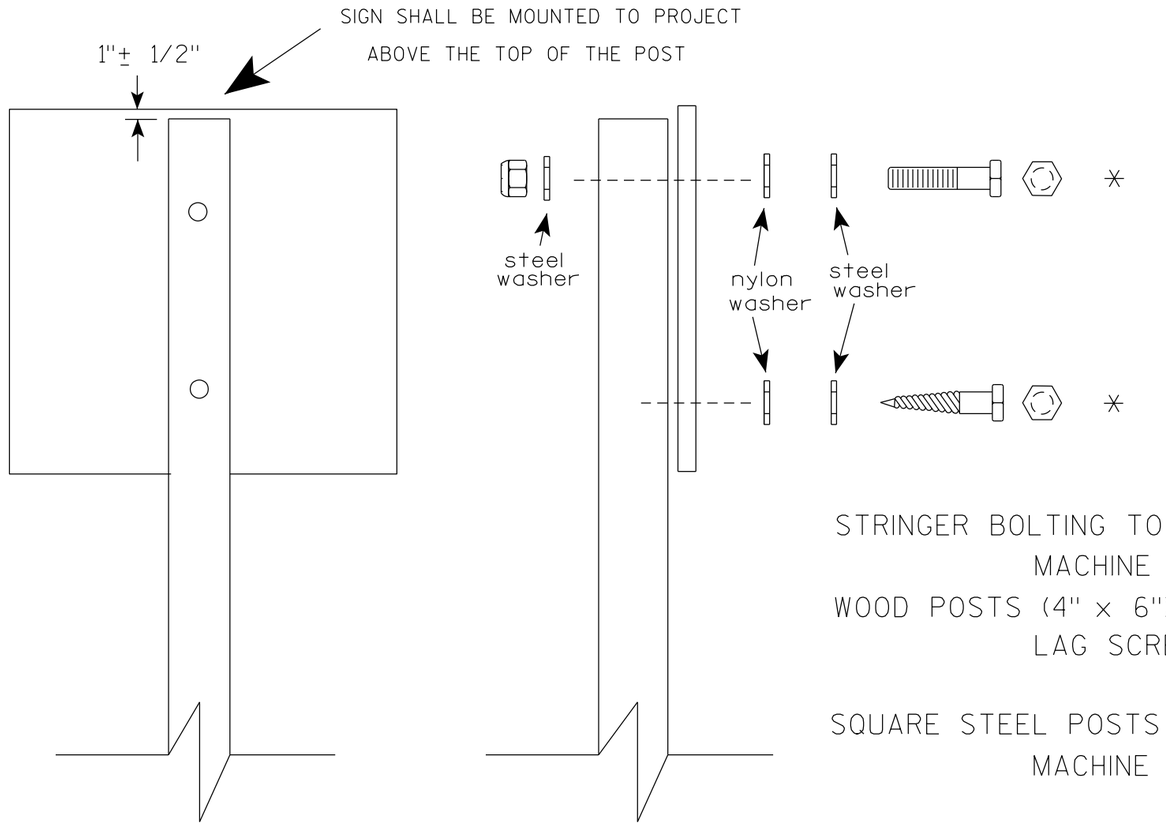
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 185	E



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 - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

RIVETS - 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 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 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 TO POSTS

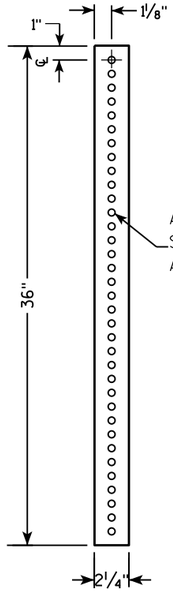
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

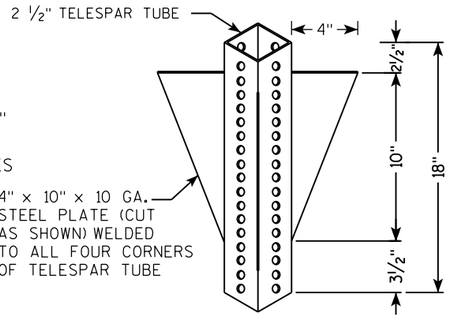
DATE 4/1/2020 PLATE NO. A4-8.9

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

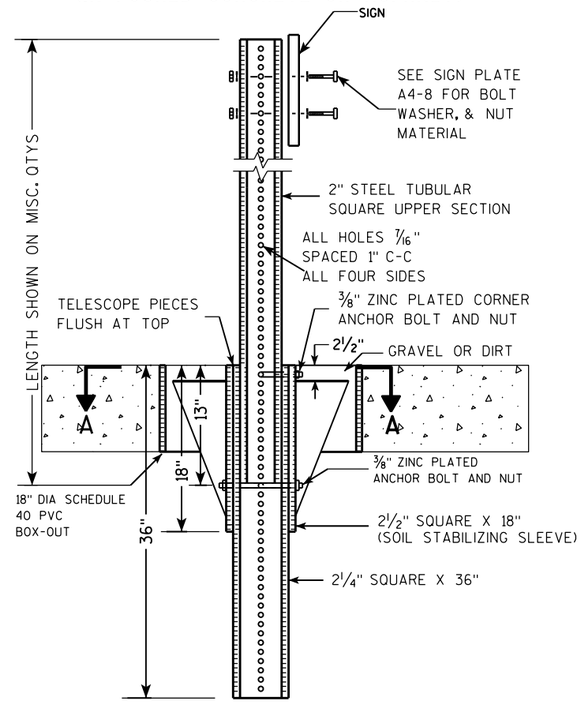
2 ¼ " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



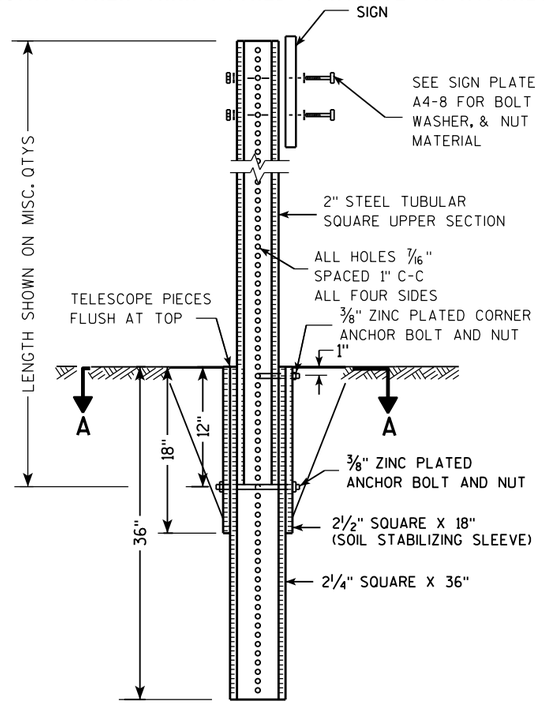
2 ½ " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

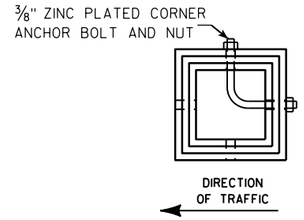


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

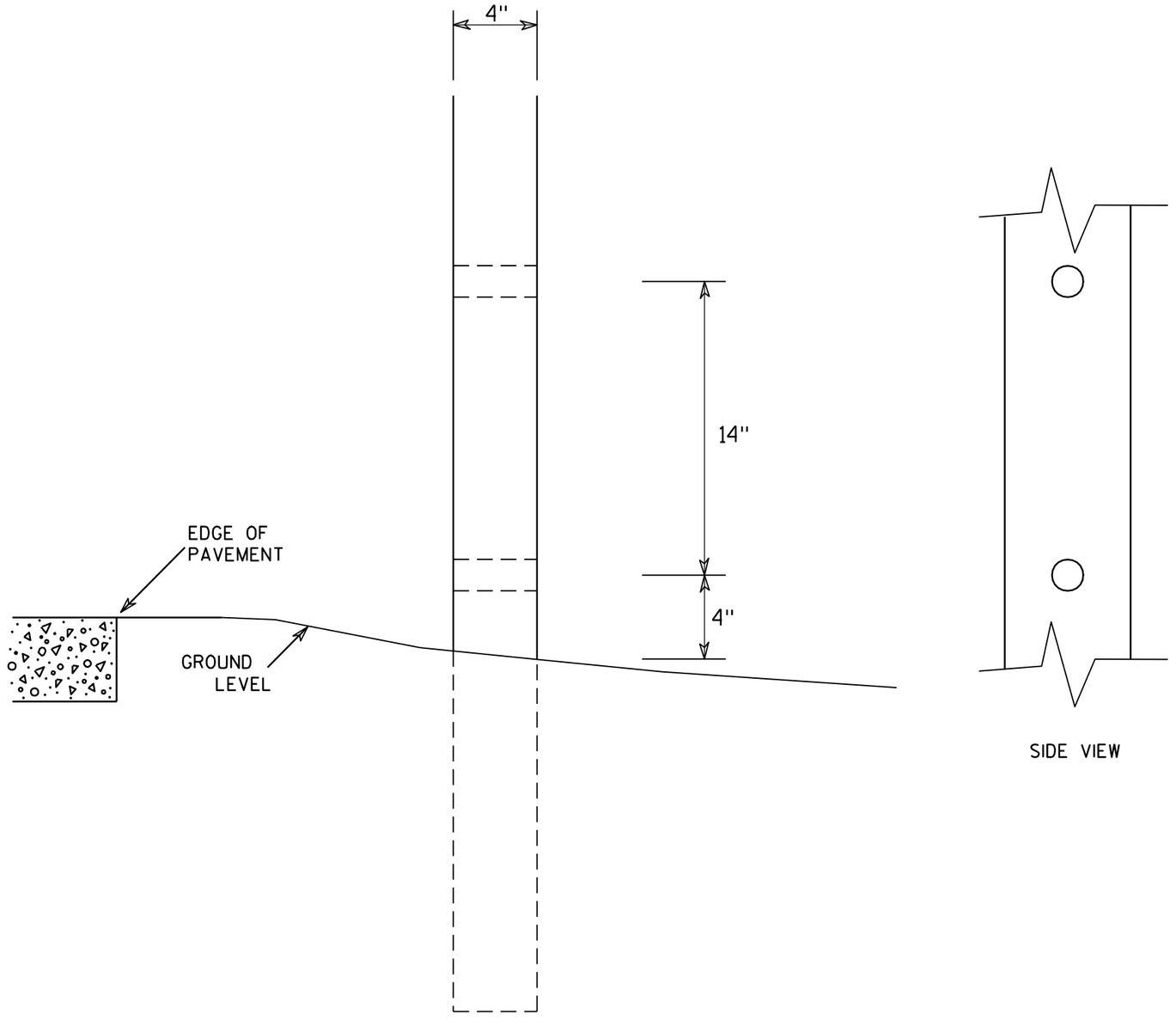
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE : 05-FEB-2015 17:09 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42



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

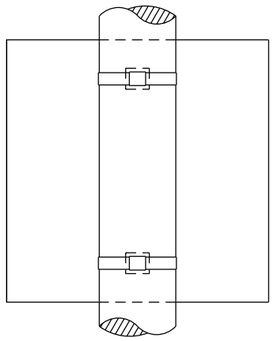
APPROVED Chester J Spang for State Traffic Engineer

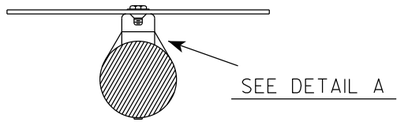
DATE 3/27/97 PLATE NO. A4-11.2

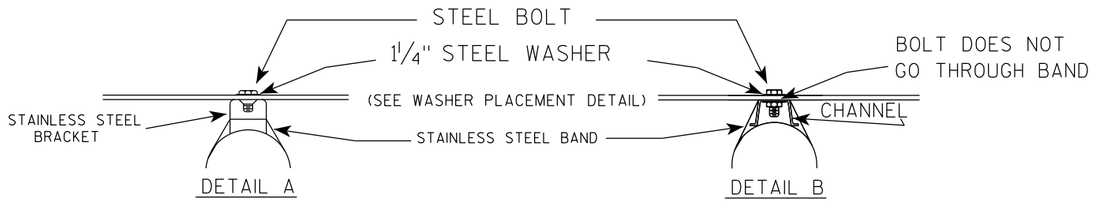
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 188	E

BANDING

SINGLE SIGN



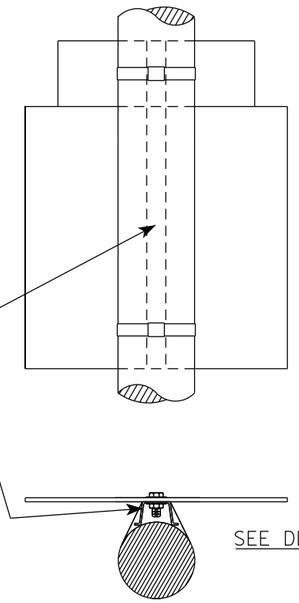




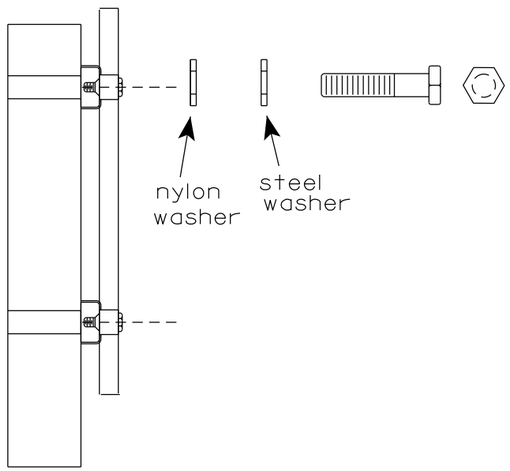
GENERAL NOTES

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 ¾" 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



WASHER PLACEMENT



WASHERS (ALL POSTS) -
1-1/4" O.D. X ⅜" I.D. X 1/16" STEEL
1-1/4" O.D. X ⅜" 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

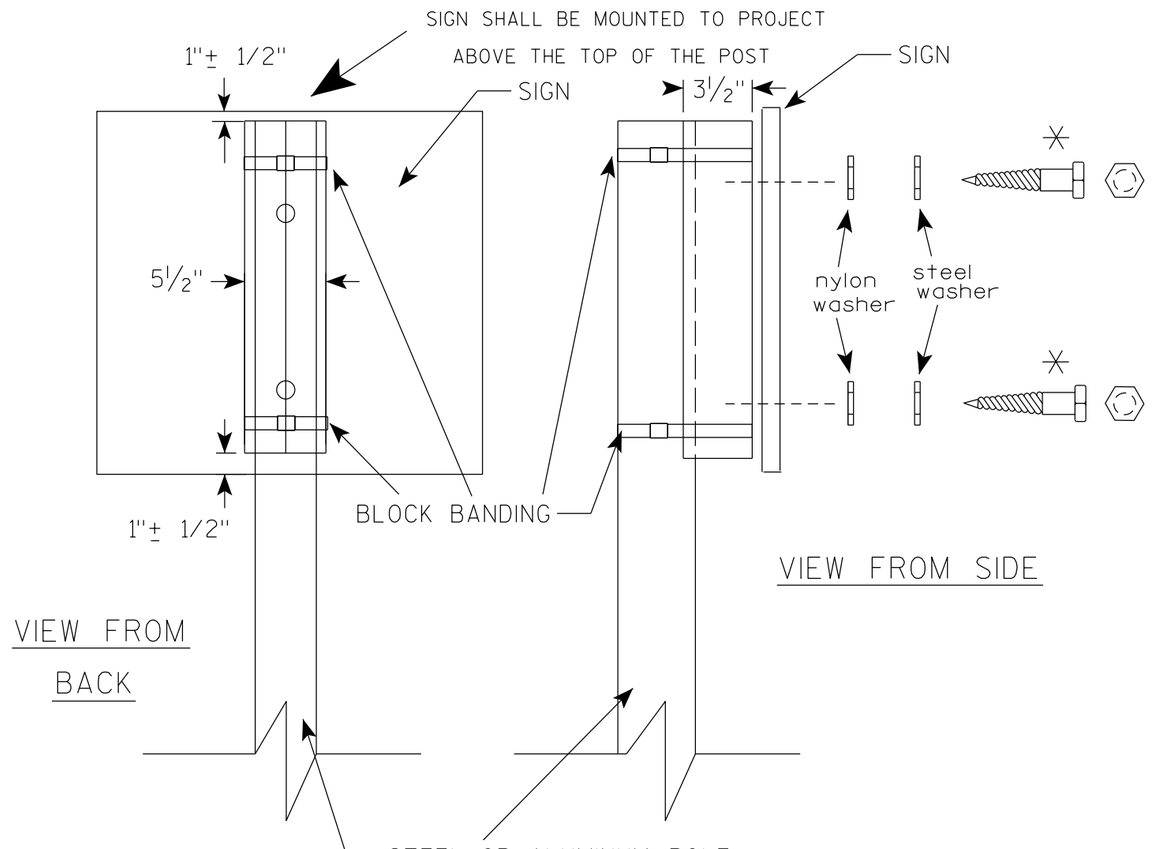
DATE 6/10/19 PLATE NO. A5-9.4

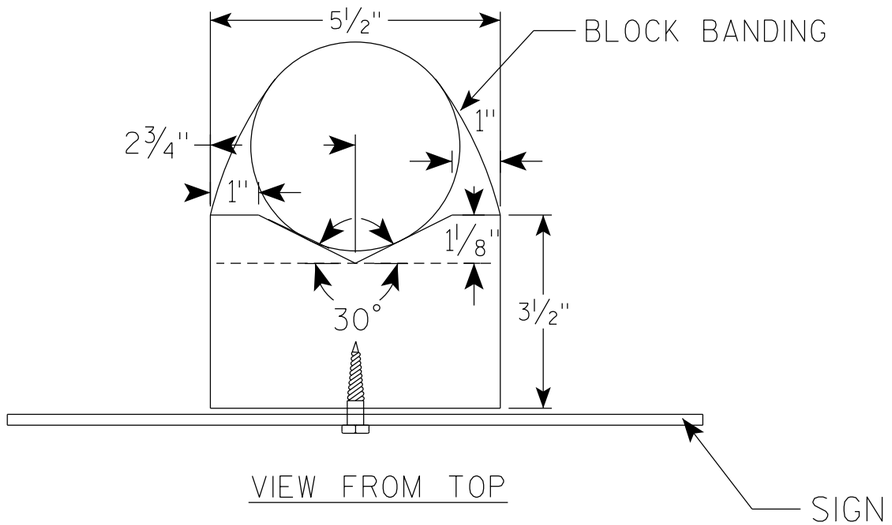
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 189	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A59.dgn PLOT DATE : 10-JUN 2019 4:10 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

7

7





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, ¾" 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 NORNALLY 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 1¼" O.D. X ⅜" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✳ LAG BOLTS SHALL BE ⅜" X 2½"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

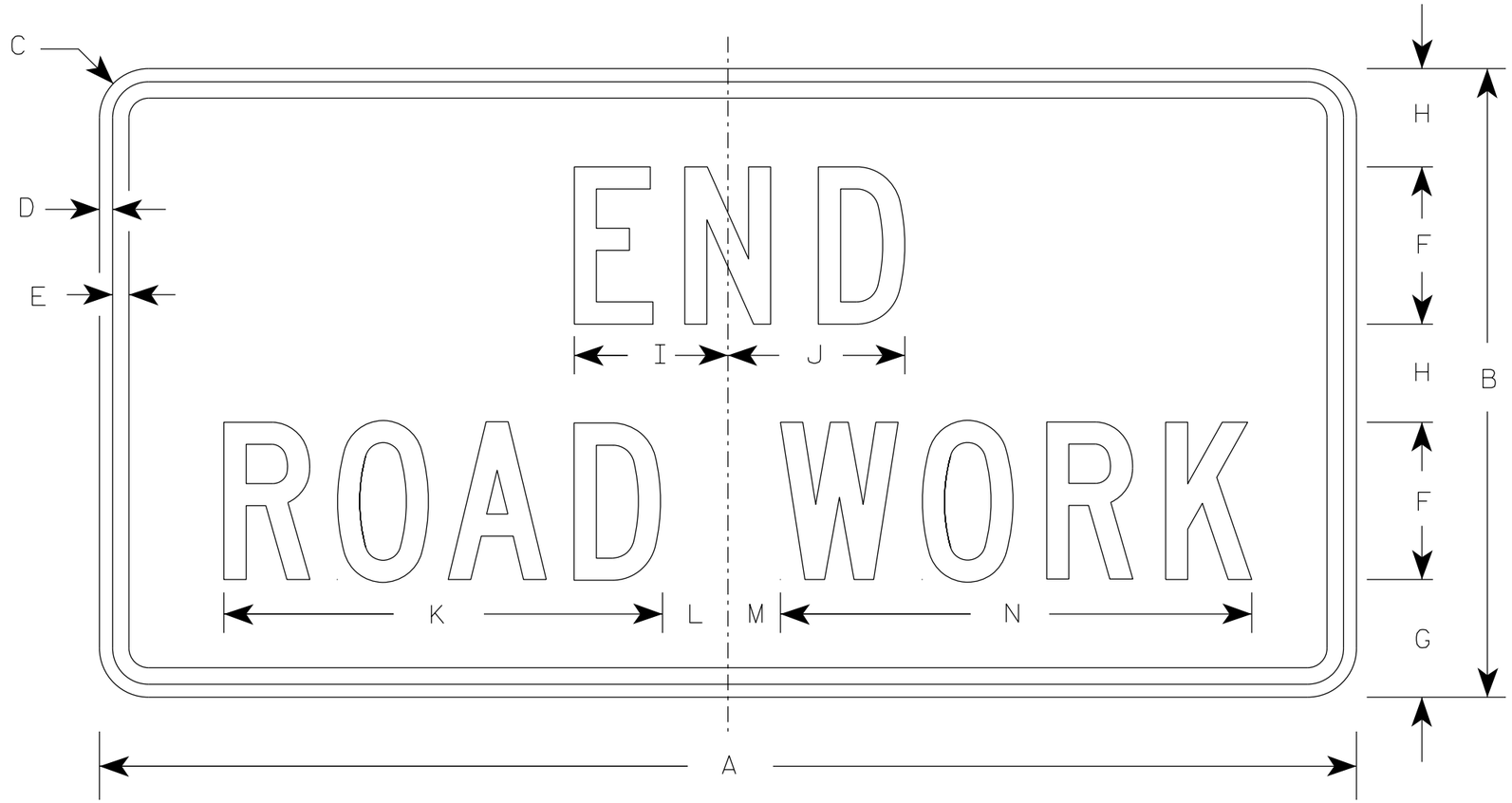
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:

SHEET NO: 190 E



G20-2A

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   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.

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 sq. ft.
1	36	18	1 1/2	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5
2	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
2M	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
3	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
4	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
5	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0

STANDARD SIGN

G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

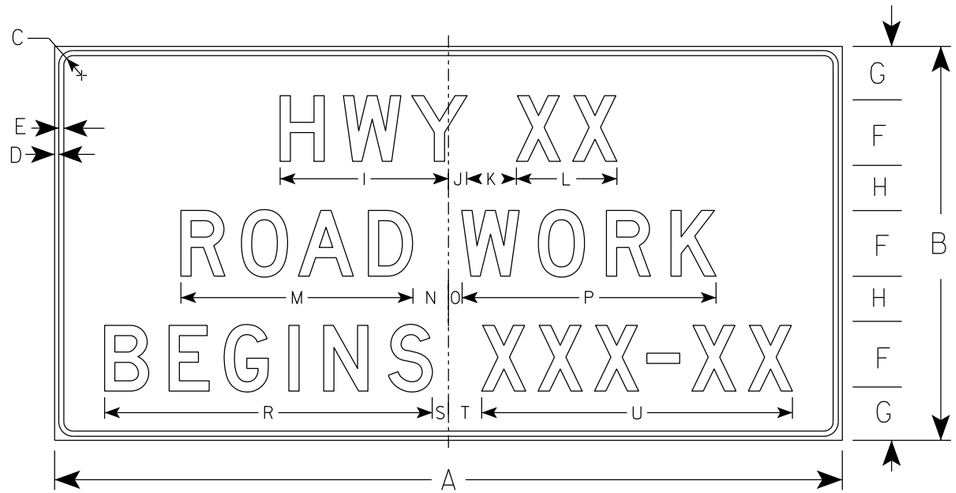
DATE 1/26/2023 PLATE NO. G20-2A.10

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

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\G202A.dgn PLOT DATE : 26-JAN 2023 8:27 PLOT BY : dotc4c PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - D
4. Substitute appropriate numeral and adjust spacing to achieve proper balance.



G20-57

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 sq. ft.
1																											
2																											
3	72	36	1 1/8	1/2	5/8	6	5	4	15 5/8	1 5/8	5	9 1/4	21 1/4	3 1/2	1 1/2	23 1/4		29 7/8	1 3/4	3 1/4	28 1/2						18.0
4	96	48	2 1/4	3/4	1	8	6 1/2	5 1/2	20 5/8	2 1/4	6	12 1/4	28 1/4	4 3/8	1 5/8	31		39 1/4	2	4	37 7/8						32.0
5																											

STANDARD SIGN
G20-57

WISCONSIN DEPT OF TRANSPORTATION

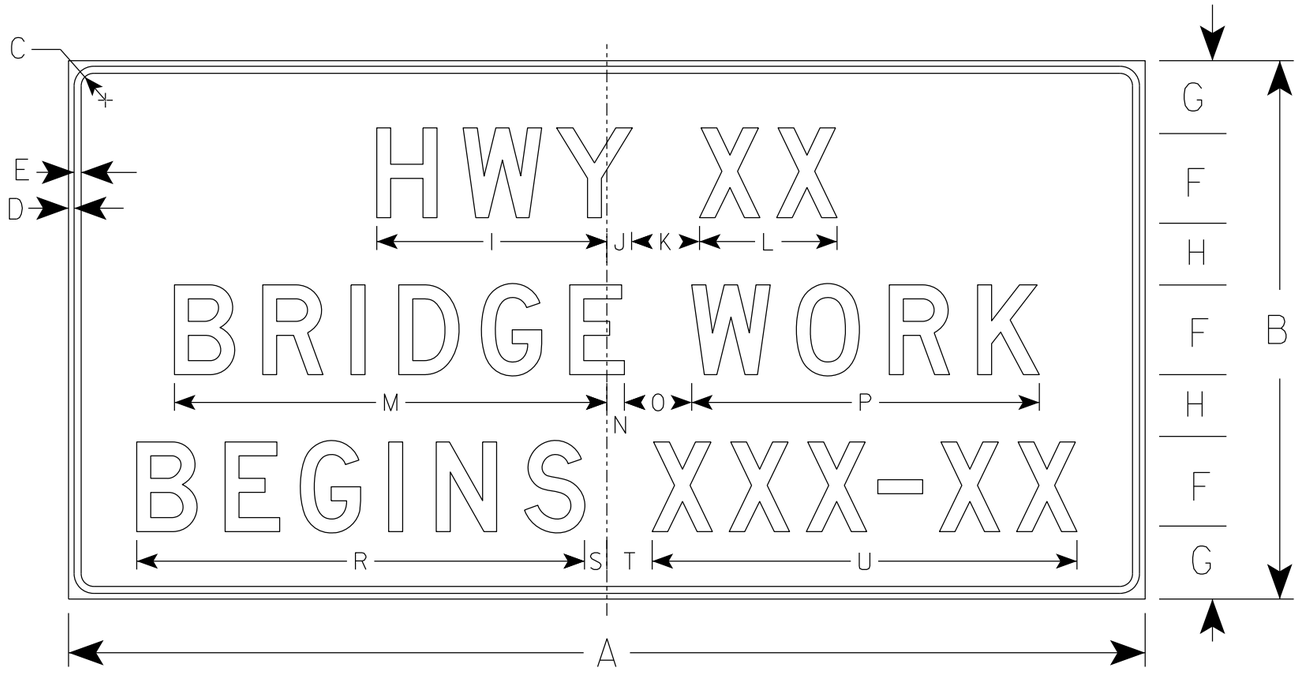
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 1/22/19 PLATE NO. G20-57.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 192 | E

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - D
4. Substitute appropriate numeral and adjust spacing to achieve proper balance.



G20-57B

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 sq. ft.
1																											
2																											
3	72	36	1 1/8	1/2	5/8	6	5	4	15 5/8	1 5/8	5	9 1/4	29 1/8	7/8	5	23 1/4		29 7/8	1 3/4	3 1/4	28 1/2						18.0
4	96	48	2 1/4	3/4	1	8	6 1/2	5 1/2	20 5/8	2 1/4	6	12 1/4	38 1/2	1 1/2	6	31		39 1/4	2	4	37 7/8						32.0
5																											

STANDARD SIGN
G20-57B

WISCONSIN DEPT OF TRANSPORTATION

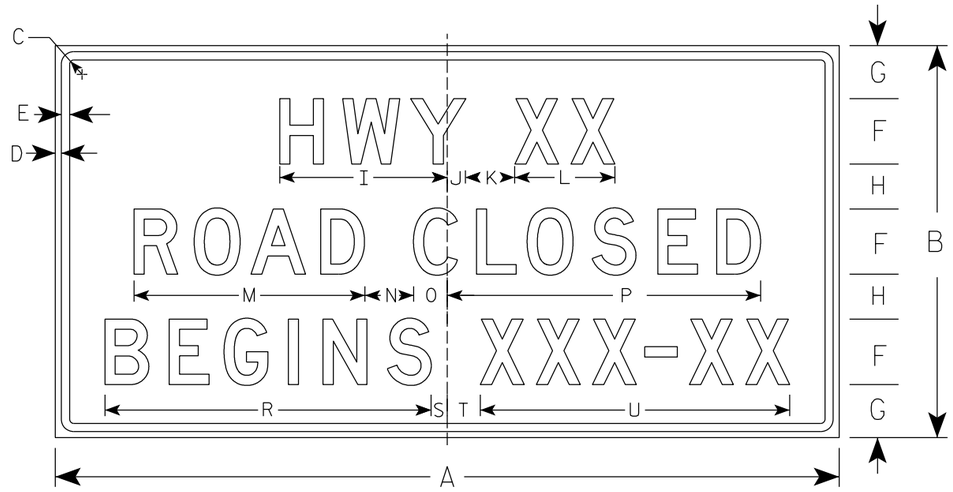
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 1/22/19 PLATE NO. G20-57B.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 193	E

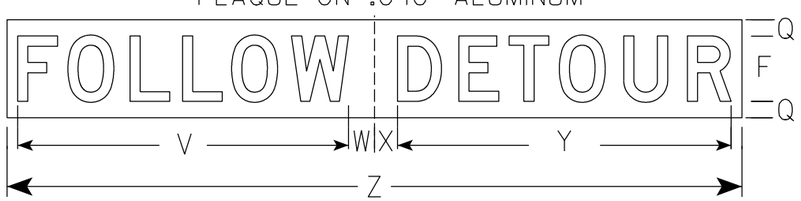
FILE NAME : C:\CAEfiles\Projects\tr_stdplate_G2057B.dgn PLOT DATE : 22-JAN-2019 1:31 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

7



G20-57C

PLAQUE ON .040" ALUMINUM



USE ONLY ONCE WHEN ROAD IS CLOSED

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - D
4. Substitute appropriate numeral and adjust spacing to achieve proper balance.

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 sq. ft.
1																											
2																											
3	72	36	1 1/8	1/2	5/8	6	5	4	15 5/8	1 5/8	5	9 1/4	21 1/8	5	2 7/8	29	2	30	1 3/4	3 1/4	28 3/8	40 1/2	2	2	29 3/4	66	18.0
4	96	48	2 1/4	3/4	1	8	6 1/2	5 1/2	20 5/8	2 1/4	6	12 1/4	28 1/4	6	4 1/8	38 3/8	2	39 7/8	2	4	37 7/8	29 3/4	3 1/8	2 7/8	40 7/8	90	32.0
5																											

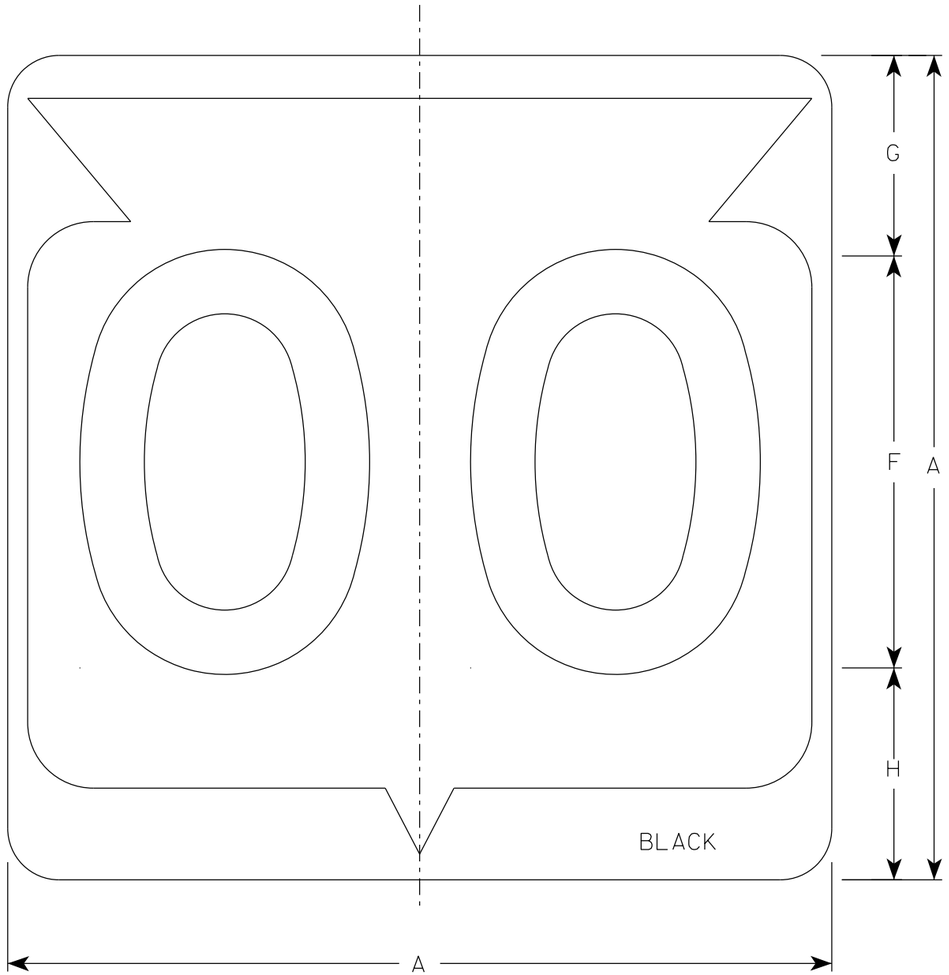
STANDARD SIGN
G20-57C

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/25/19 PLATE NO. G20-57C.1

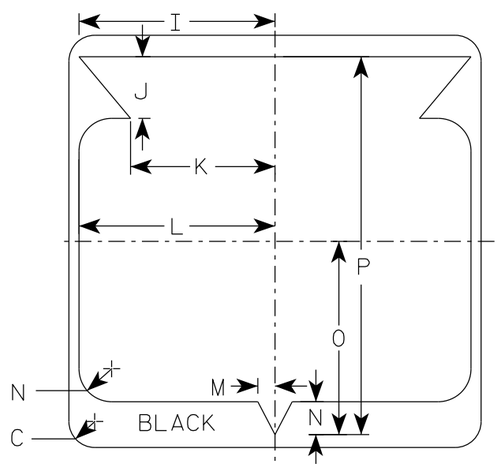
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 194 E



M1-6

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - D except 3 number signs Series C



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 sq. ft.
1																											
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0
2M	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0

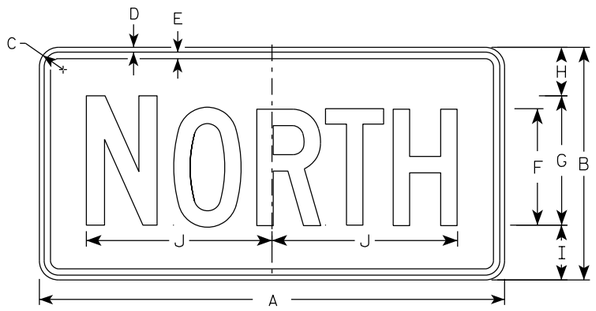
STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

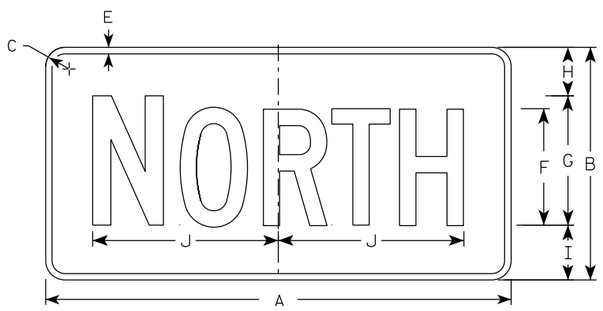
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/8/2022 PLATE NO. M1-6.11

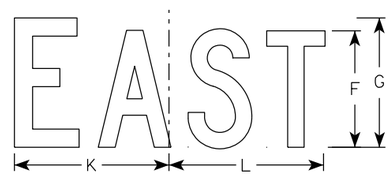
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 195	E



M3-1
MM3-1
MP3-1



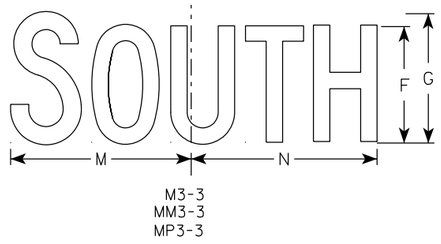
MB3-1
MK3-1
MN3-1



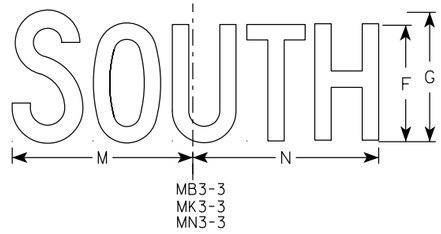
M3-2
MM3-2
MP3-2



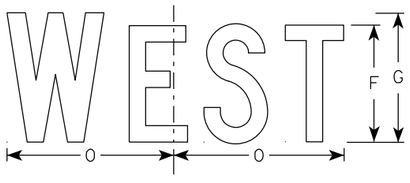
MB3-2
MK3-2
MN3-2



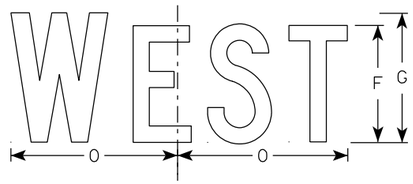
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H Reflective
2. Color:
   Background - See note 5
   Message - See note 5
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. M3-1 thru M3-4 Background - White
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White
   MK3-1 thru MK3-4 Background - Green
   Message - White
   MM3-1 thru MM3-4 Background - White
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White
   MP3-1 thru MP3-4 Background - White
   Message - Blue
6. Note the first letter of each direction is larger than the remainder of the message.

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 sq. ft.
1																											
2S	24	12	1 1/2	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4												2.00
2M	24	12	1 1/2	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4												2.00
3	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
4	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
5	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5

STANDARD SIGNS
M3-1 THRU M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

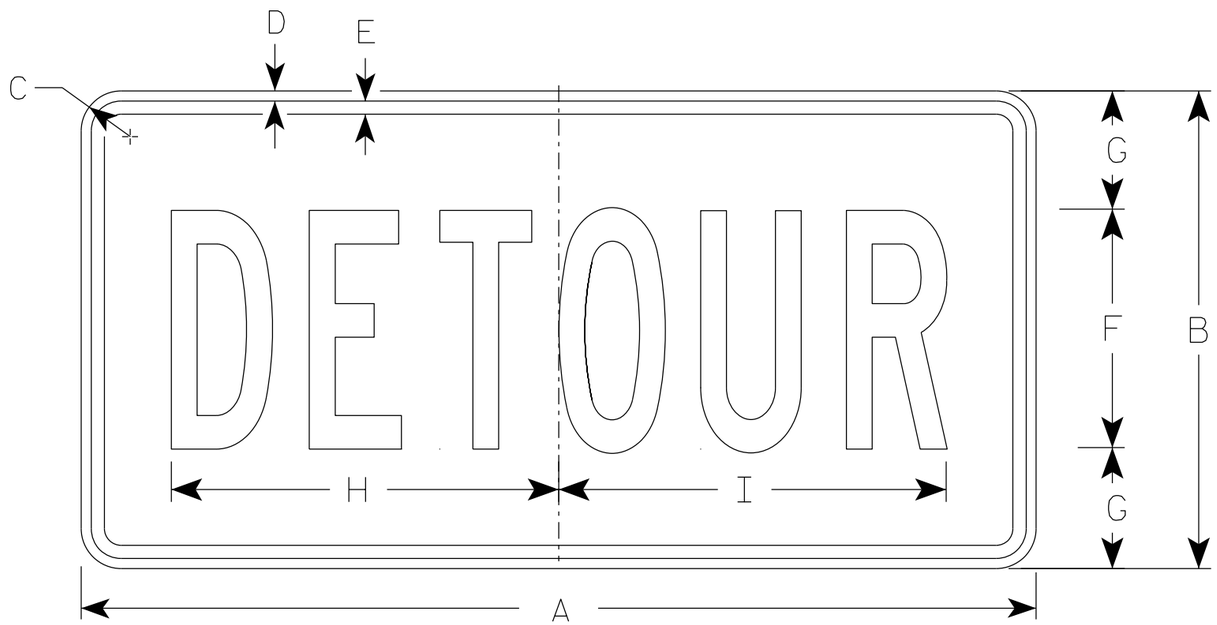
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 2/8/2023 PLATE NO. M3-1.15

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 196 | E

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.



M4-8

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 sq. ft.
1																											
2	24	12	1 1/2	3/8	3/8	6	3	10	10 1/4																		2.0
2M	24	12	1 1/2	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/2	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4	36	18	1 1/2	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
5	36	18	1 1/2	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5

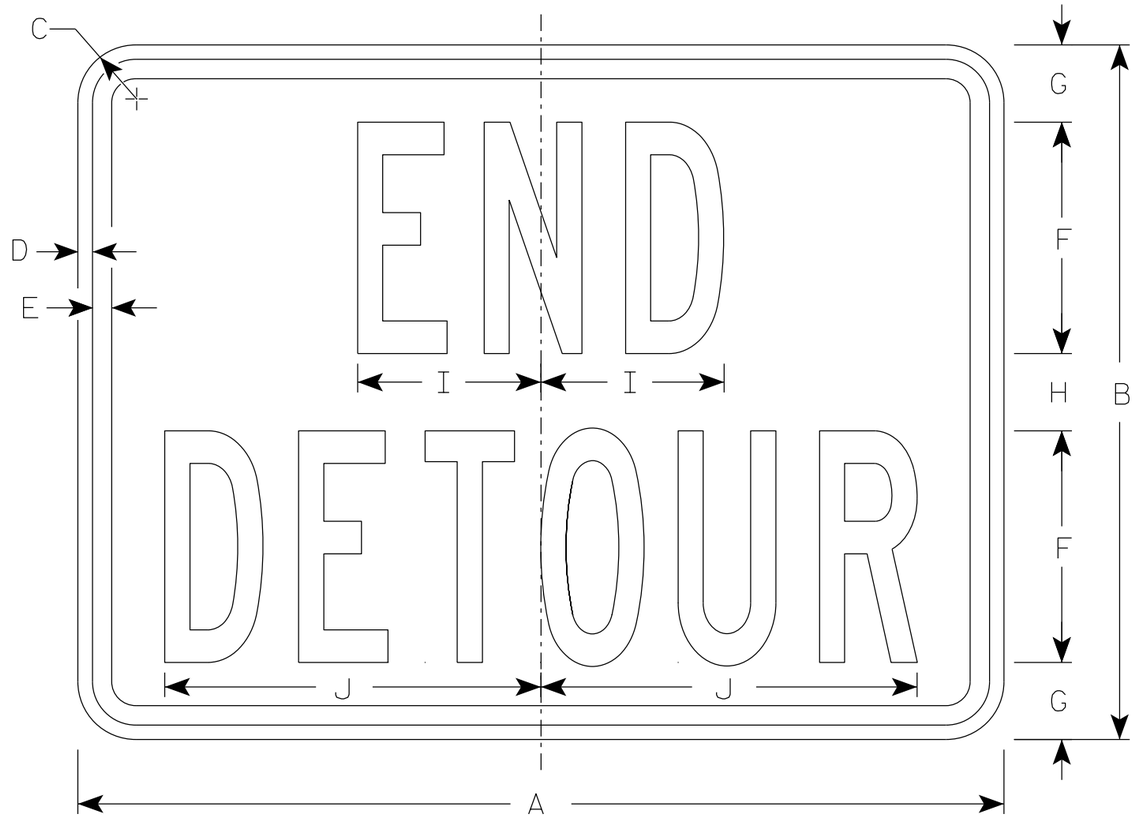
STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-8.4

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 197	E



M4-8A

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.

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 sq. ft.
1																											
2	24	18	1 ½	⅜	½	6	2	2	4 ¾	9 ¾																	3.0
2M	24	18	1 ½	⅜	½	6	2	2	4 ¾	9 ¾																	3.0
3	30	24	1 ½	⅜	½	8	2 ½	3	6 ¾	13																	5.0
4	30	24	1 ½	⅜	½	8	2 ½	3	6 ¾	13																	5.0
5	30	24	1 ½	⅜	½	8	2 ½	3	6 ¾	13																	5.0

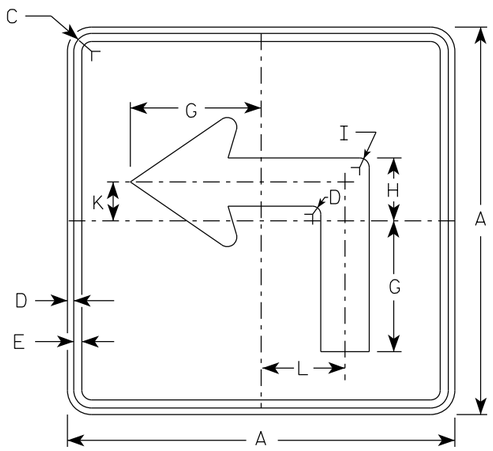
STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

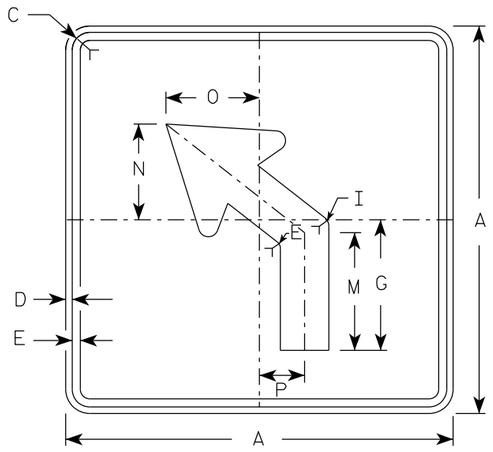
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-8A.4

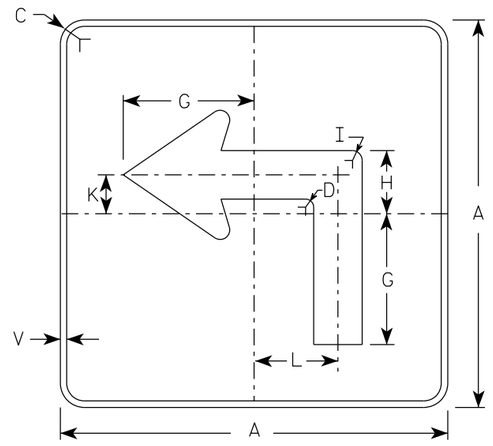
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 198 | E



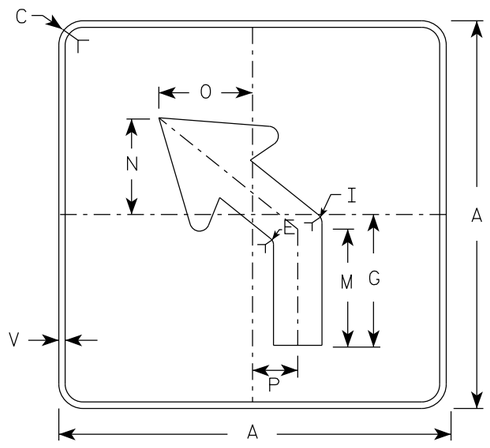
M5-1L
MM5-1L
MO5-1L
MP5-1L



M5-2L
MM5-2L
MO5-2L
MP5-2L



MB5-1L
MK5-1L
MN5-1L
MR5-1L

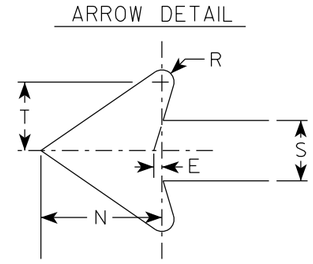


MB5-2L
MK5-2L
MN5-2L
MR5-2L

NOTES

1. Signs are Type II - Type H reflective except as shown
2. Color:
   Background - See note 4
   Message - See note 4
3. 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. M5-1 and M5-2 Background - White
   Message - Black
   MB5-1 and MB5-2 Background - Blue
   Message - White
   MK5-1 and MK5-2 Background - Green
   Message - White
   MM5-1 and MM5-2 Background - White
   Message - Green
   MN5-1 and MN5-2 Background - Brown
   Message - White
   MO5-1 and MO5-2 Background - Orange - Type F Reflective
   Message - Black
   MP5-1 and MP5-2 Background - White
   Message - Blue
   MR5-1 and MR5-2 Background - Brown
   Message - Yellow
5. M5-1R same as M5-1L except arrow points right.
6. M5-2R same as M5-2L except arrow tilts right.

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 sq. ft.
1																											
2S	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
2M	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
3	30		1 7/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4		1/2					6.25
4	30		1 7/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4		1/2					6.25
5	30		1 7/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4		1/2					6.25

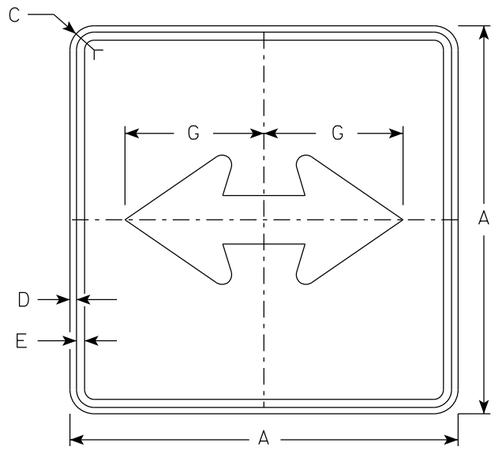
STANDARD SIGN
M5-1 & M5-2

WISCONSIN DEPT OF TRANSPORTATION

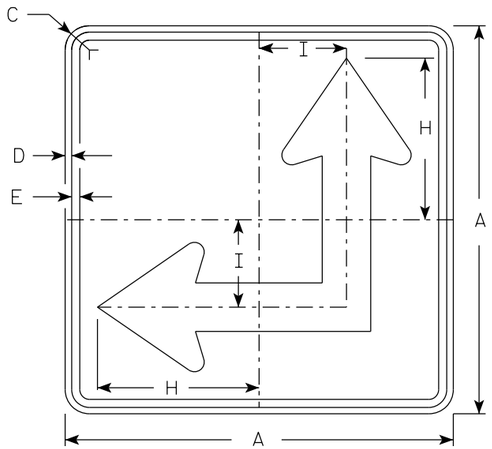
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/13/2023 PLATE NO. M5-1.15

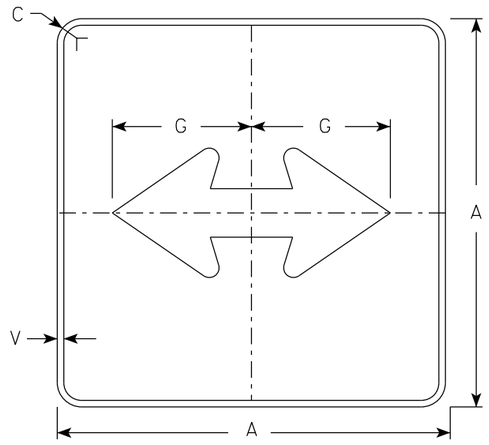
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 199 | E



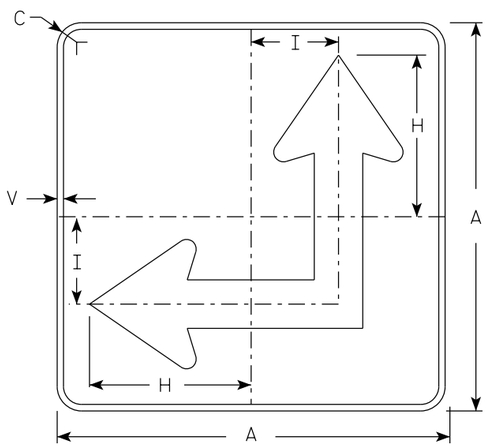
M6-4
MM6-4
MO6-4
MP6-4



M6-6
MM6-6
MO6-6
MP6-6



MB6-4
MK6-4
MN6-4
MR6-4

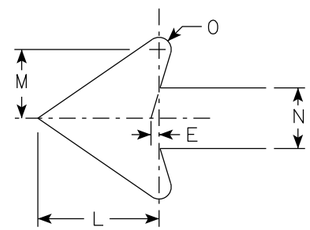


MB6-6
MK6-6
MN6-6
MR6-6

NOTES

1. Signs are Type II - Type H Reflective except as Shown
2. Color:
   Background - See Note 4
   Message - See Note 4
3. 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. M6-4 and M6-6 Background - White
   Message - Black
   MB6-4 and MB6-6 Background - Blue
   Message - White
   MK6-4 and MK6-6 Background - Green
   Message - White
   MM6-4 and MM6-6 Background - White
   Message - Green
   MN6-4 and MN6-6 Background - Brown
   Message - White
   MO6-4 and MO6-6 Background - Orange - Type F Reflective
   Message - Black
   MP6-4 and MP6-6 Background - White
   Message - Blue
   MR6-4 and MR6-6 Background - Brown
   Message - Yellow
5. M6-6R same as M6-6L except arrow points ahead and right.

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 sq. ft.
1																											
2S	21		1 1/2	3/8	3/8		7 1/2	8 3/4	4 1/4			5 1/4	3	2 5/8	1/2							1/2					3.06
2M	21		1 1/2	3/8	3/8		7 1/2	8 3/4	4 1/4			5 1/4	3	2 5/8	1/2							1/2					3.06
3	30		1 7/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4							1/2					6.25
4	30		1 7/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4							1/2					6.25
5	30		1 7/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4							1/2					6.25

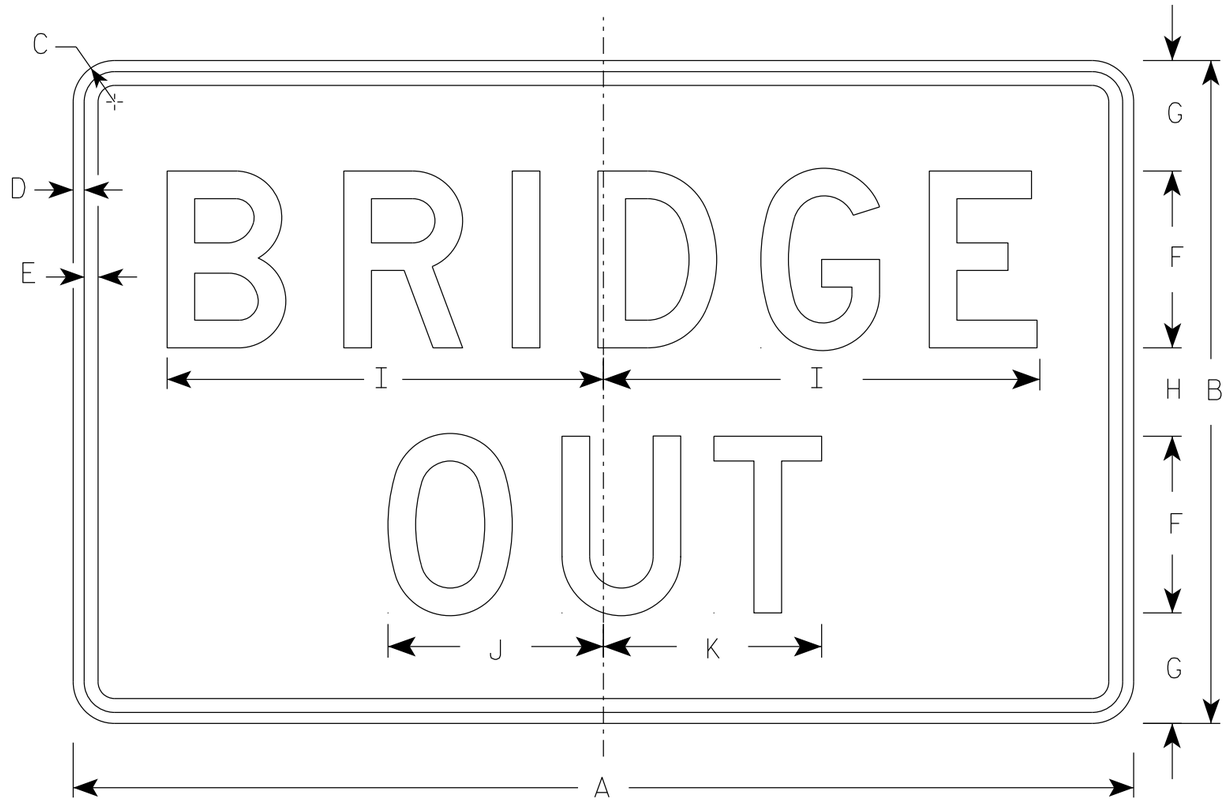
STANDARD SIGN
M6-4 & M6-6
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/13/2023 PLATE NO. M6-4.11

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 200 | 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 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

STANDARD SIGN
R11-2B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

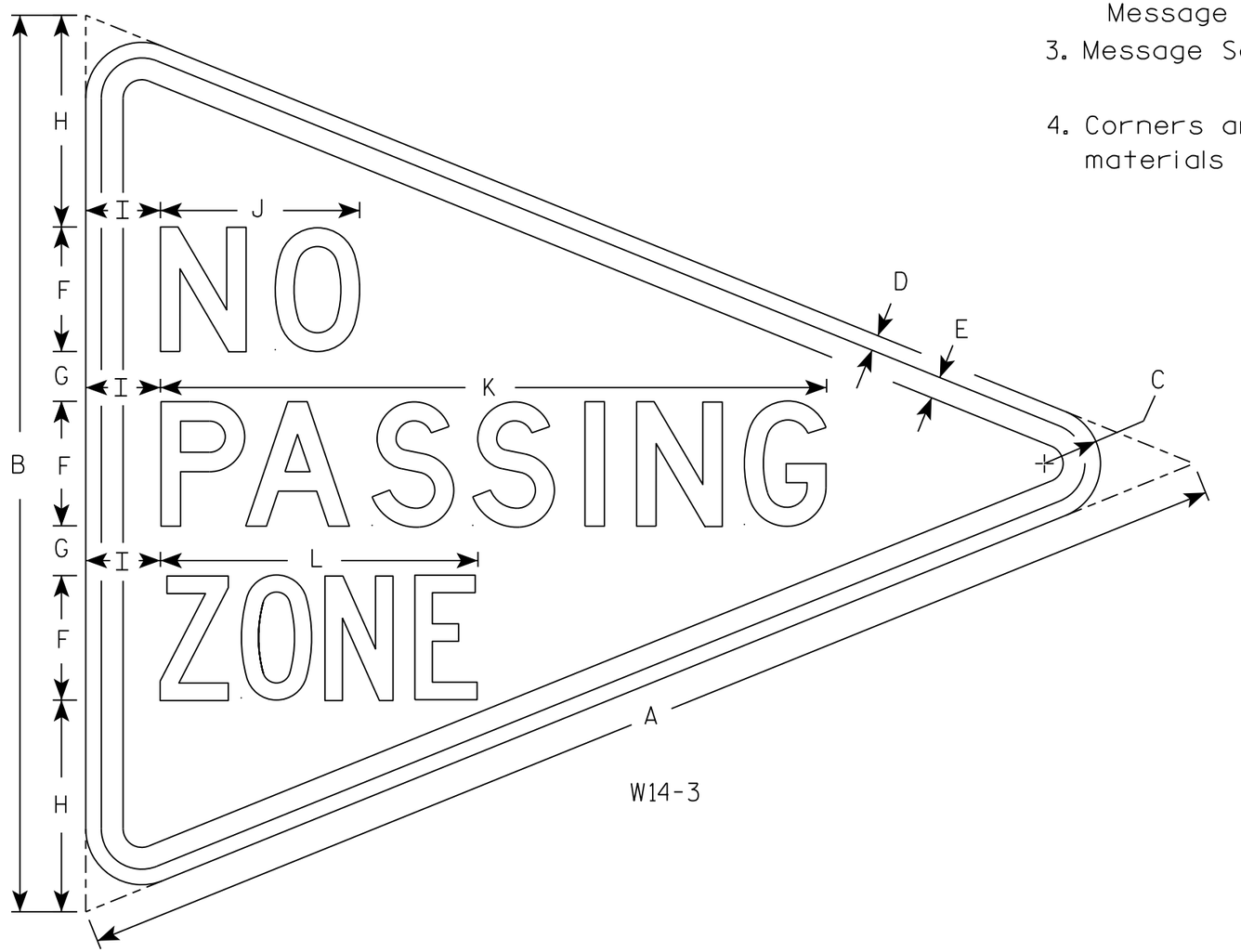
DATE 2/5/24 PLATE NO. R11-2B.3

PROJECT NO:

SHEET NO: 201 E

NOTES

1. Sign is Type II- Type F Reflective
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - Lines 1 and 2 are Series D.
   Line 3 is series C.
4. Corners and borders shall be rounded on all base materials for this sign.



W14-3

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 sq. ft.
1																											
2S	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															5.56
2M																											
3																											
4																											
5																											

STANDARD SIGN
W14-3

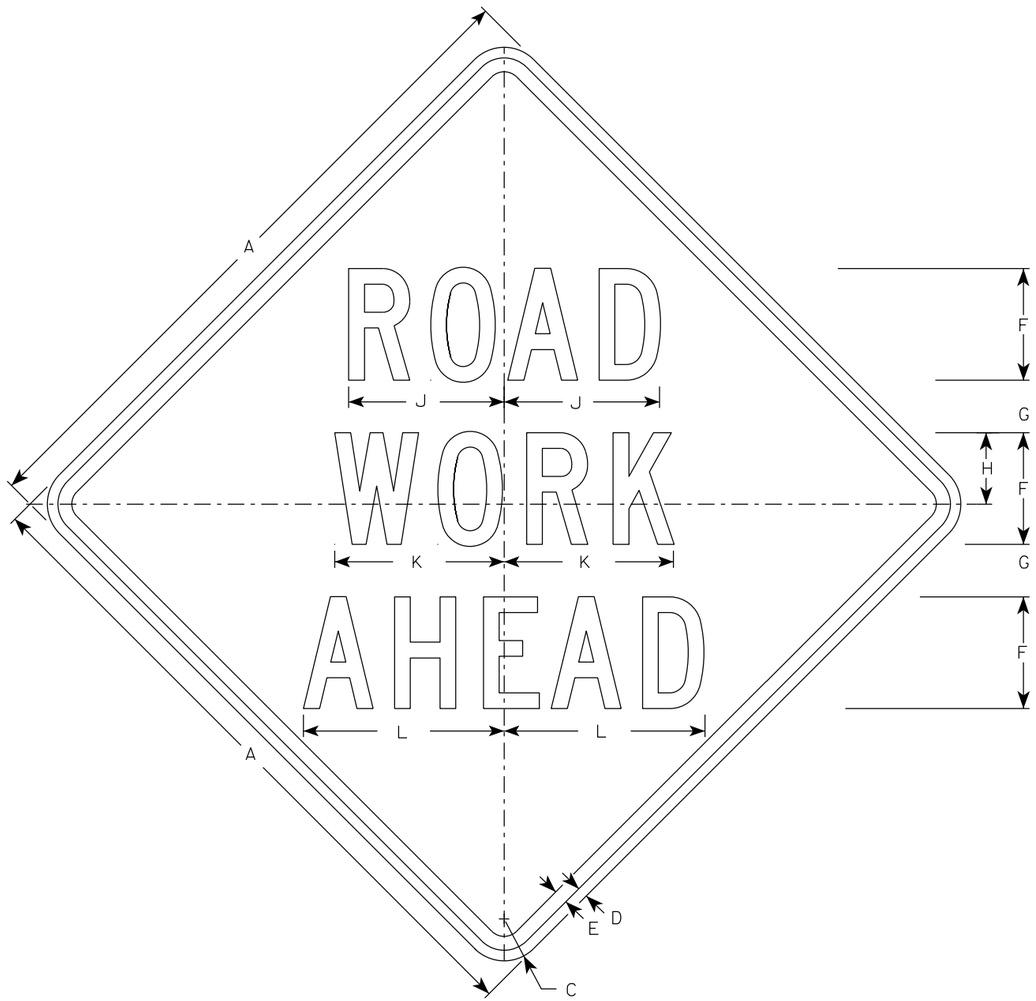
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

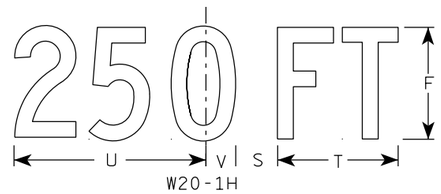
DATE 3/21/17 PLATE NO. W14-3.10

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 202 | E

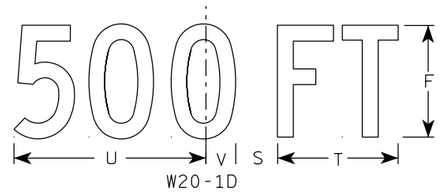
7



W20-1A



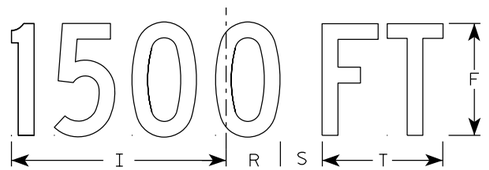
W20-1H



W20-1D



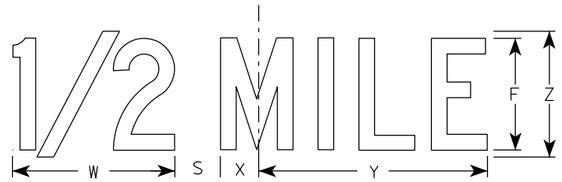
W20-1C



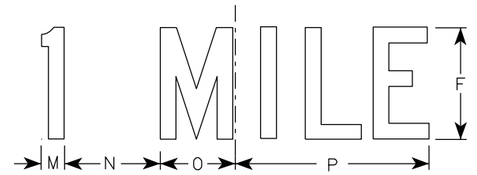
W20-1B

NOTES

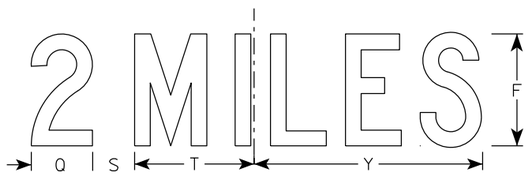
1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1G



W20-1F



W20-1E

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 sq. ft.
1	36		2 1/4	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN
W20-1A, B, C, D, E, F, G & H

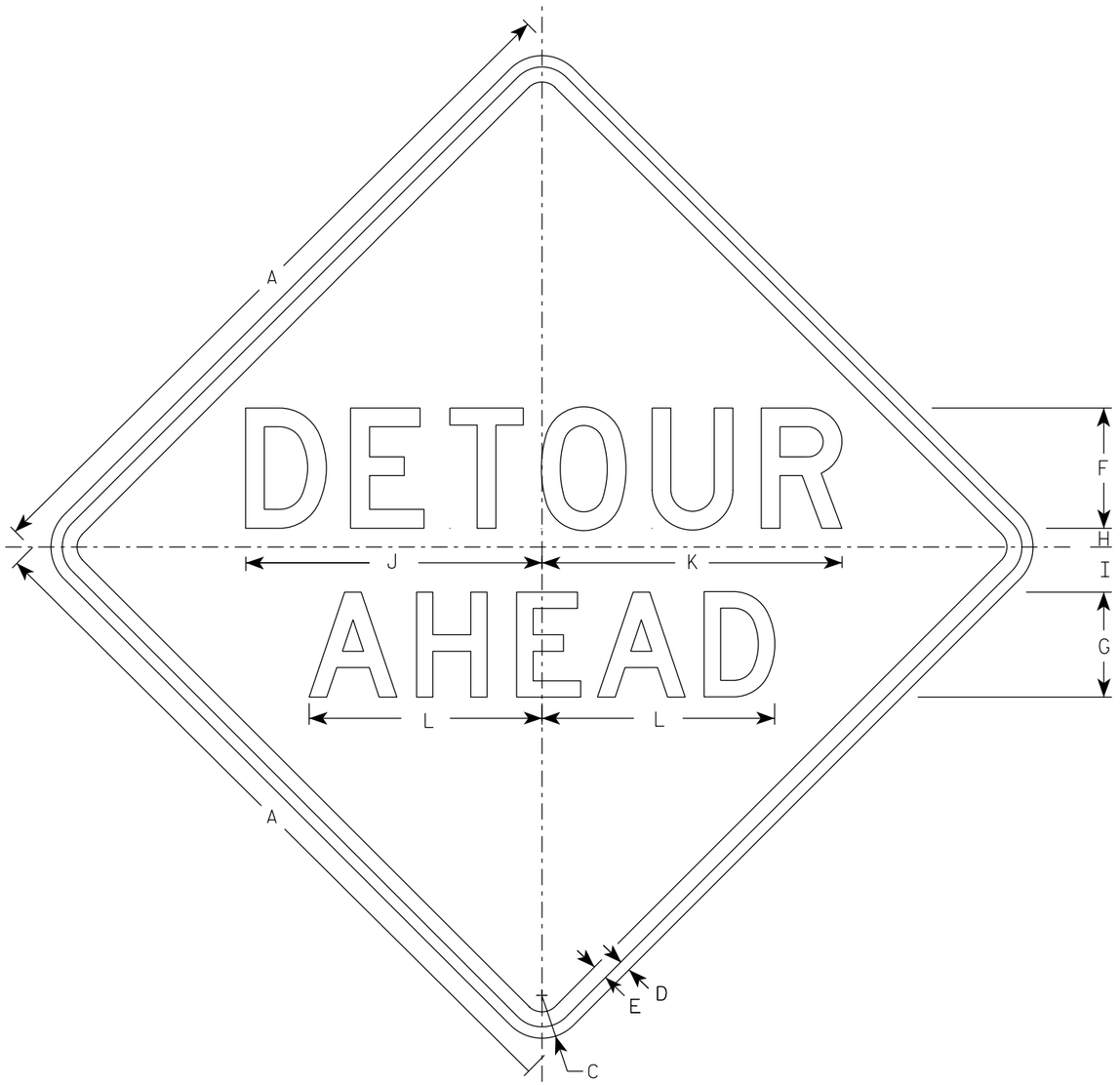
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

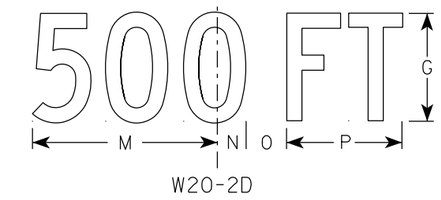
DATE 1/10/2024 PLATE NO. W20-1.12

PROJECT NO:

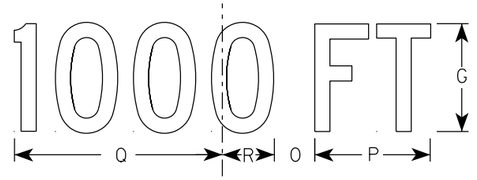
SHEET NO: 203 E



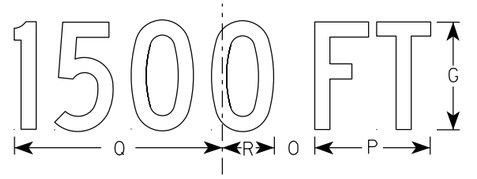
W20-2A



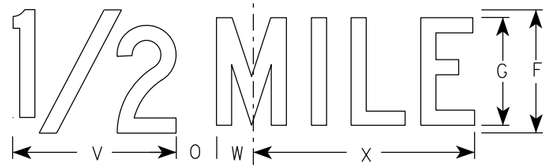
W20-2D



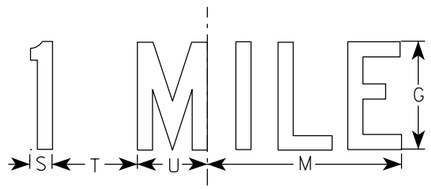
W20-2C



W20-2B



W20-2G



W20-2F

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - See note 5
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. 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 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

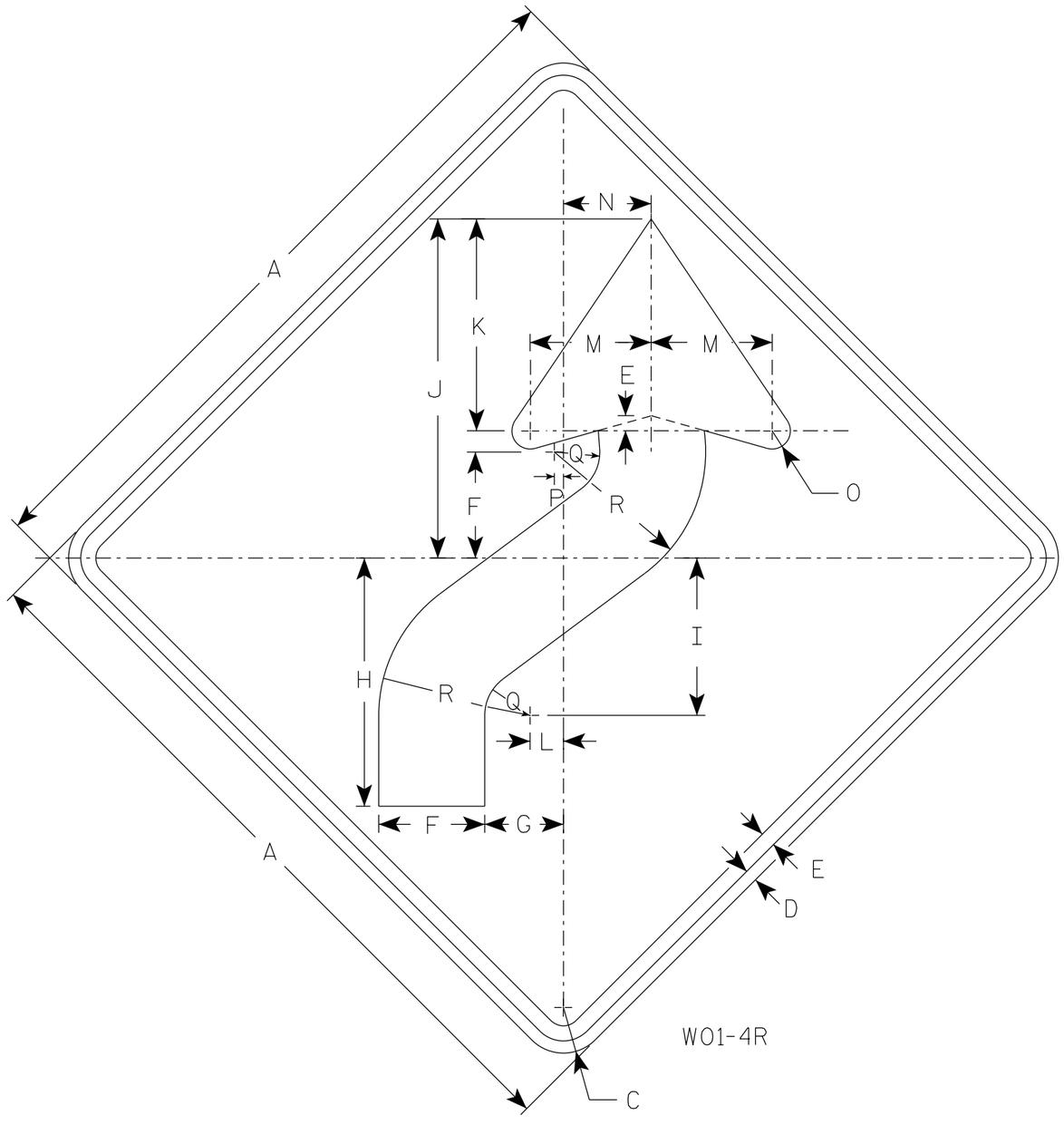
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-2.7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W202.DGN PLOT DATE : 10-JAN 2024 11:36 PLOT BY : dotc4c PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42



W01-4R

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. 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. W01-4L is the same as W01-4R except the arrow is reversed along the vertical centerline.

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 sq. ft.
1	36		2 1/4	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
2S	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
2M	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
3	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
4	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
5	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

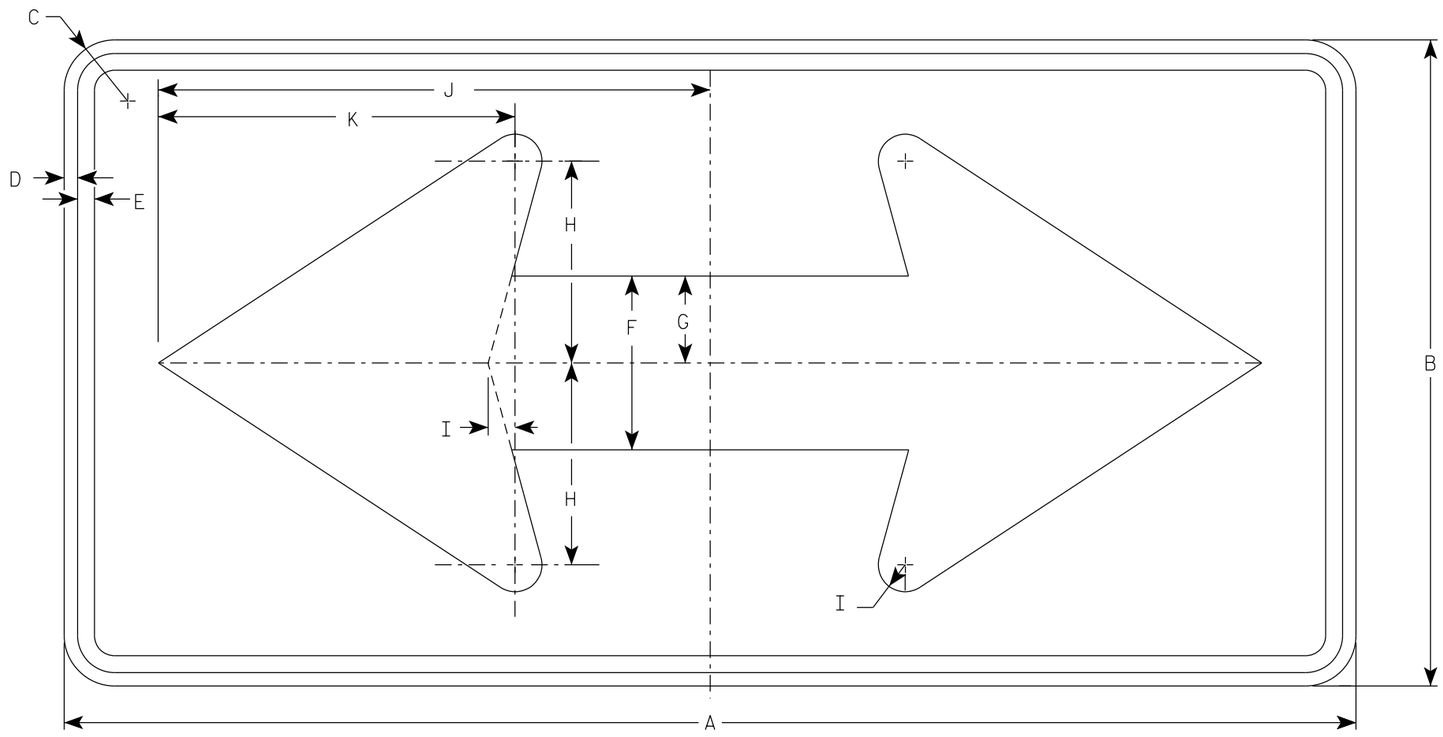
STANDARD SIGN
W01-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 1/24/2024 PLATE NO. W01-4.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 205 E



W01-7

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. 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 sq. ft.
1																											
2S	48	24	1 7/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
2M	48	24	1 7/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
3	60	30	1 7/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
4	60	30	1 7/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
5	60	30	1 7/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5

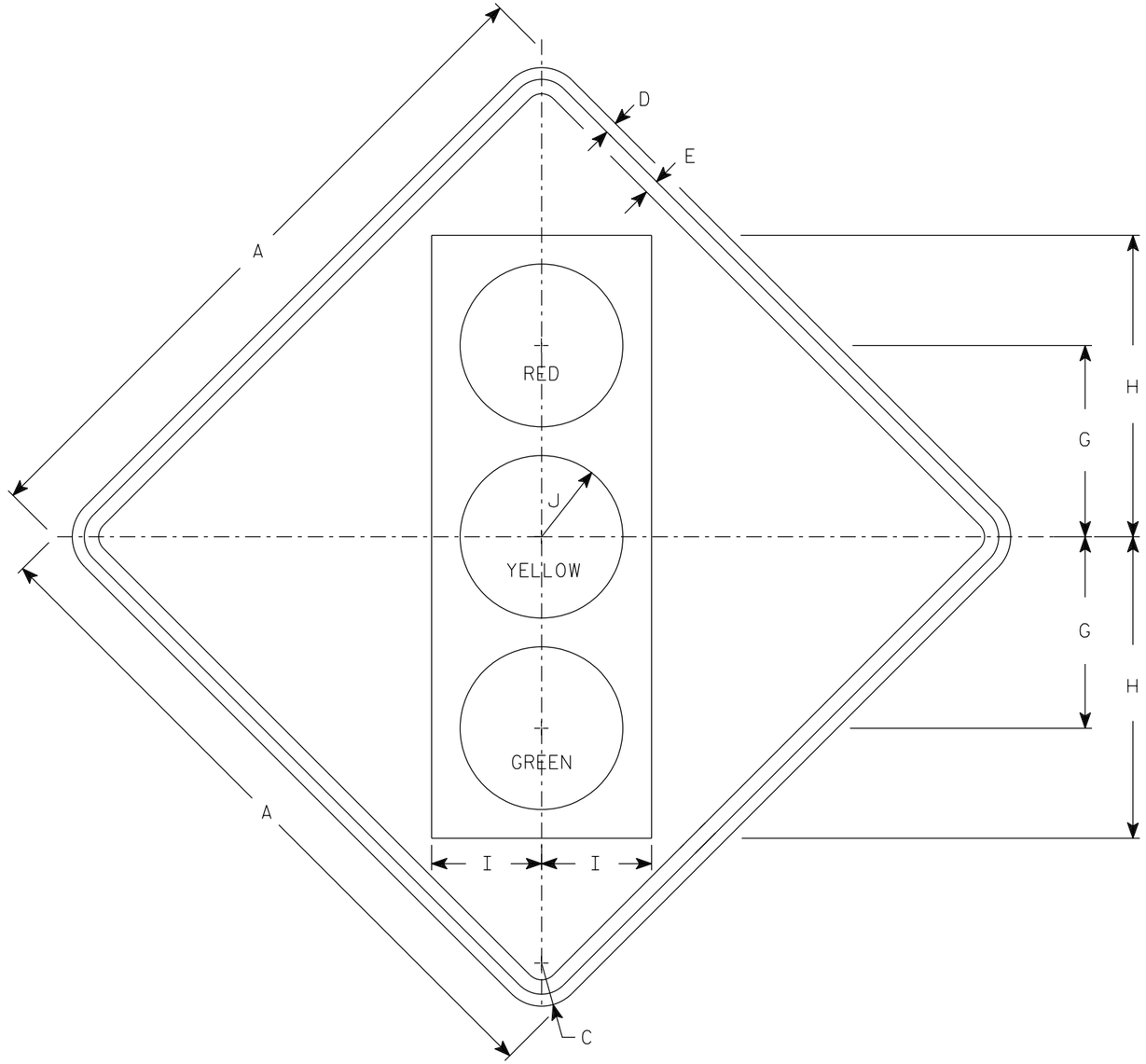
STANDARD SIGN
W01-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 1/24/2024 PLATE NO. W01-7.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 206 | E



W03-3

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - See Note 4
3. 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. Symbol and border are non-reflective black.
   Top circle - Type H Reflectorized Red
   Center circle - Same as background
   Bottom circle - Type H Reflectorized Green

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 sq. ft.
1	36		2 1/4	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
2S	48		3	3/4	1		12 1/2	20	7 1/2	5																	16.0
2M	48		3	3/4	1		12 1/2	20	7 1/2	5																	16.0
3	48		3	3/4	1		12 1/2	20	7 1/2	5																	16.0
4	48		3	3/4	1		12 1/2	20	7 1/2	5																	16.0
5	48		3	3/4	1		12 1/2	20	7 1/2	5																	16.0

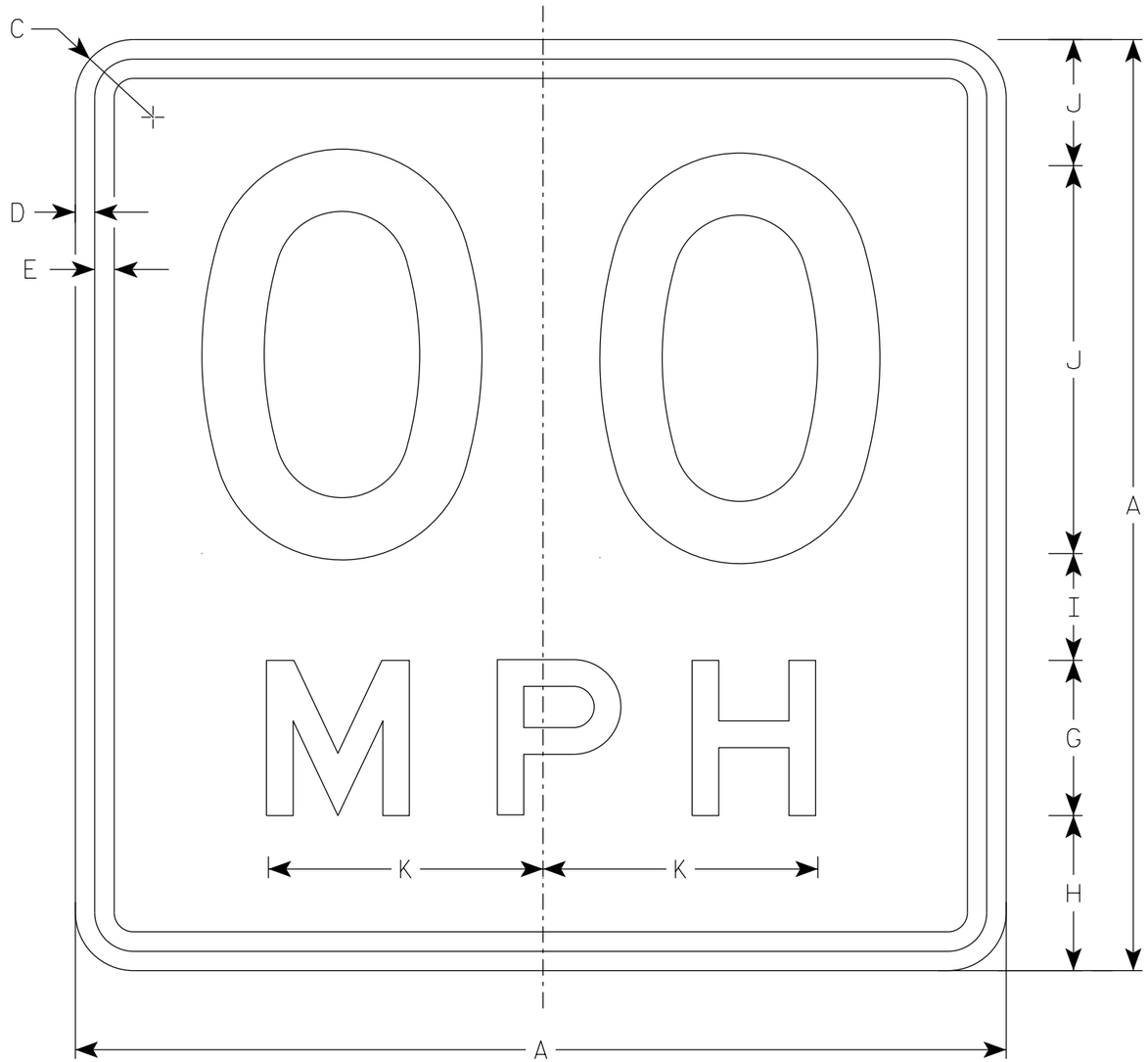
STANDARD SIGN
W03-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 1/24/2024 PLATE NO. W03-3.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



W013-1

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - See Note 6
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 and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
   Line 2 is Series E

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 sq. ft.
1	24		1 1/2	3/8	1/2	10	4	4	2 3/4	3 1/4	7 1/8																4.0
2S	36		2 1/4	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.0
2M	36		2 1/4	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.0
3	36		2 1/4	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.0
4	36		2 1/4	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.0
5	36		2 1/4	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.0

STANDARD SIGN

W013-1

WISCONSIN DEPT OF TRANSPORTATION

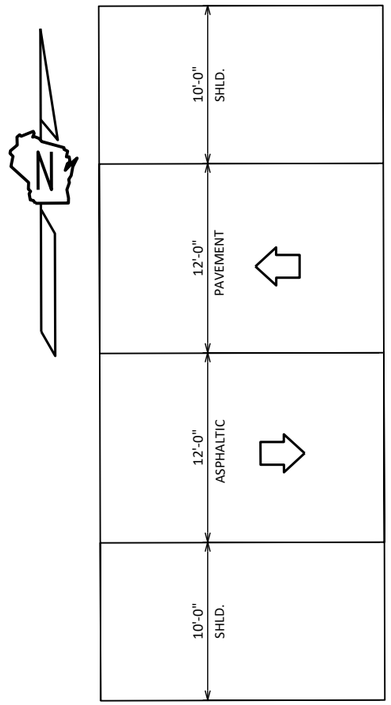
APPROVED Matthew R Rauch
for State Traffic Engineer

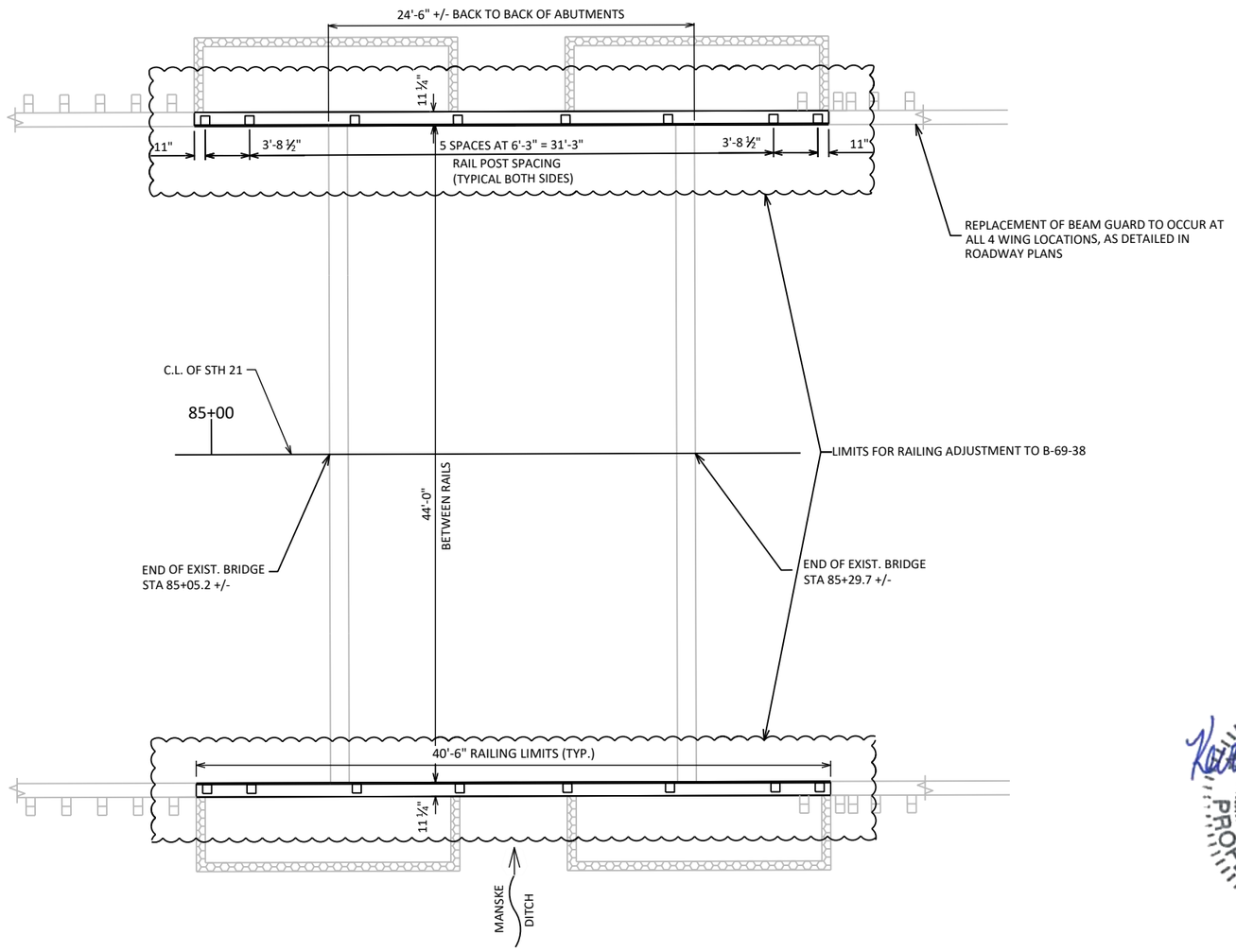
DATE 2/1/2024 PLATE NO. W013-1.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: E

STATE PROJECT NUMBER

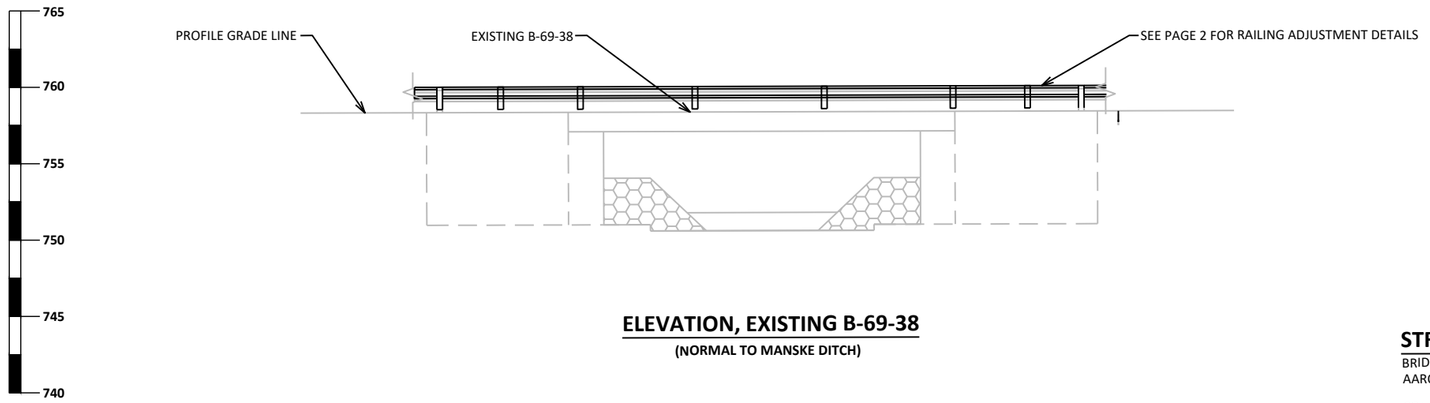
6180-00-71





PLAN, EXISTING B-69-38

SINGLE SPAN - FLAT SLAB



ELEVATION, EXISTING B-69-38

(NORMAL TO MANSKE DITCH)

DESIGN DATA

MATERIAL PROPERTIES

GRADE 36 STEEL (ASTM A709) _____fy = 36,000 PSI

TRAFFIC VOLUME:
STH 21

A.D.T. (2025) = 5,340
A.D.T.(2045) = 5,860

NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS AND SURVEY DATA.

EXISTING STRUCTURE, B-69-38 IS A SINGLE-SPAN CONCRETE FLAT-SLAB BRIDGE, CONSTRUCTED IN 1998.

RAILING ADJUSTMENT TO BE COMPLETED UNDER A FULL ROADWAY CLOSURE. NO CONSTRUCTION STAGING REQUIRED. SEE ROADWAY PLANS FOR DETAILS.

LIST OF DRAWINGS:

1 GENERAL PLAN & ELEVATION
2 RAILING DETAILS & QUANTITIES



STRUCTURE DESIGN CONTACTS:

BRIDGE OFFICE:
AARON BONK (608) 261-0261

CONSULTANT:
KEVIN HAGEN (715) 342-3053

NO.	DATE	REVISION	BY

AECOM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORATION

ACCEPTED _____ SDR 05/08/24
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-69-38

STH 21 OVER MANSKE DITCH

COUNTY	TOWN
WAUSHARA	AURORA

DESIGN SPEC.
REHABILITATION N/A

DESIGNED BY	DESIGNED CK'D	DRAWN BY	PLANS CK'D
IGG	KRH	MES	KRH

GENERAL PLAN & ELEVATION

SHEET 1 OF 2
209

SCALE =

I.D. 6180-00-01

DATE: FEB 2024

8

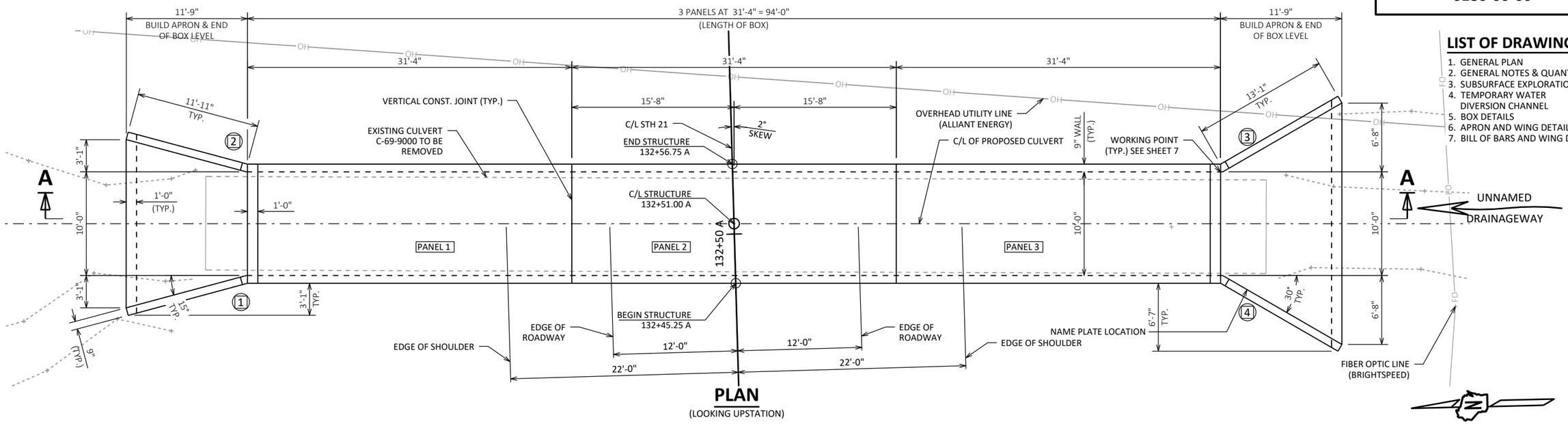
8

STATE PROJECT NUMBER

6180-00-60

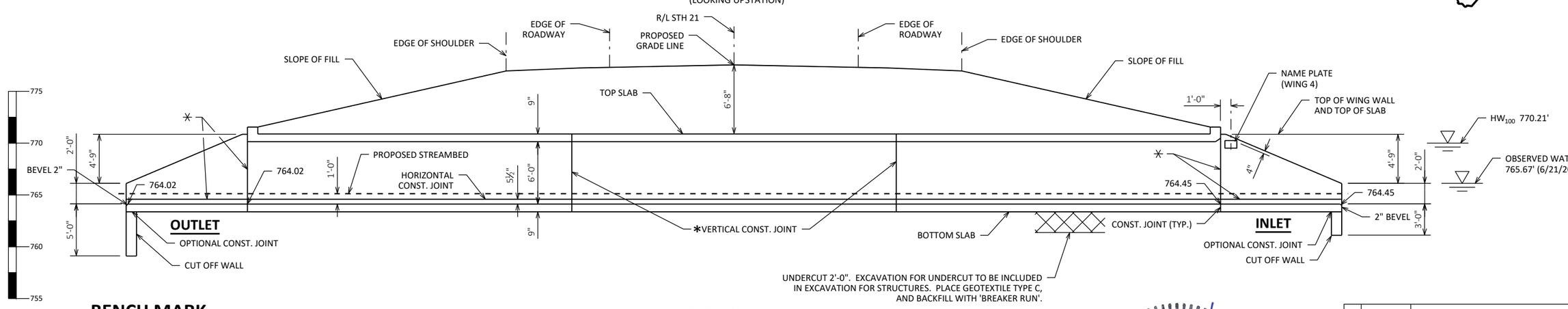
LIST OF DRAWINGS

1. GENERAL PLAN
2. GENERAL NOTES & QUANTITIES
3. SUBSURFACE EXPLORATION
4. TEMPORARY WATER DIVERSION CHANNEL
5. BOX DETAILS
6. APRON AND WING DETAILS
7. BILL OF BARS AND WING DETAILS



PLAN

(LOOKING UPSTATION)



SECTION A-A

BENCH MARK

NO.	STATION	OFFSET	DESCRIPTION	ELEV.
2	132+73.69 A	78.43LT	SPIKE IN PP 18-12-15 36/40	770.89

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING: RF = 1.52
OPERATING RATING: RF = 1.97
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 250 (KIPS)

EARTHLOAD:

DESIGNED FOR RANGE OF 6.0 TO 7.0 FT. OF FILL.

MATERIAL PROPERTIES:

CONCRETE MASONRY ——— f'_c = 3,500 PSI
BAR STEEL REINFORCEMENT ——— f_y = 60,000 PSI

HYDRAULIC DATA

100-YEAR FREQUENCY:

Q_{100}= 185 C.F.S.
VELOCITY= 4.18 F.P.S.
HIGH WATER ELEVATION = EL. 770.21'
DRAINAGE AREA = 2.31 SQ. MI.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 8

2-YEAR FREQUENCY:

Q_2= 60 C.F.S.
VELOCITY= 2.71 F.P.S.
HIGH WATER ELEVATION = EL. 767.84'

5-YEAR FREQUENCY (TEMPORARY STRUCTURE):

Q_5= 90 C.F.S.
HIGH WATER ELEVATION = EL. 768.50'

TRAFFIC DATA

STH 21

AADT (2025) = 5240
AADT (2045) = 5950
DESIGN SPEED = 60 MPH

LEGEND

(X) INDICATES WING NUMBER

* 18" MIN. WIDTH RUBBERIZED MEMBRANE WATERPROOFING UP WALLS AND ACROSS TOP SLAB FOR BOX VERTICAL CONST. JOINTS. 18" MIN. WIDTH RUBBERIZED MEMBRANE WATERPROOFING AT ALL VERTICAL AND HORIZONTAL CONSTRUCTION JOINTS FOR WINGWALLS.

WISCONSIN
KEVIN R. HAGEN
E-38866
STEVENS POINT
WI
3/4/2024
PROFESSIONAL ENGINEER

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK (608) 261-0261

CONSULTANT:
KEVIN HAGEN (715) 342-3053

NO.	DATE	REVISION	BY

AECOM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORATION

ACCEPTED SDR 05/03/24
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE C-69-19

STH 21 OVER UNNAMED DRAINAGEWAY

COUNTY	TOWN
WAUSHARA	WARREN

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATION

DESIGNED BY	DESIGNED CK'D	DRAWN BY	PLANS CK'D
ARB	MSK	JAC	KRH

GENERAL PLAN

SHEET 1 OF 7
210

SCALE = 1" = 10'-0"

I.D. 6180-00-30 DATE: MAR 2024

8

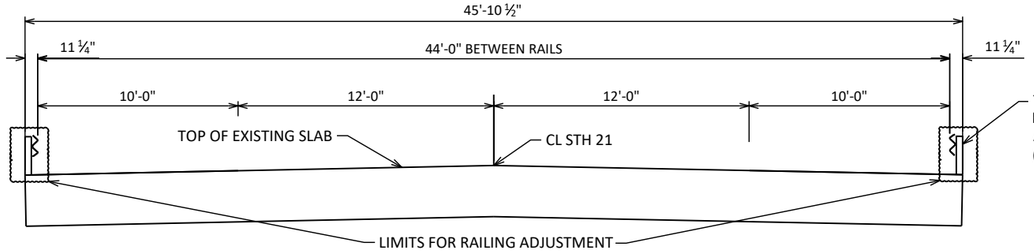
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STATE PROJECT NUMBER

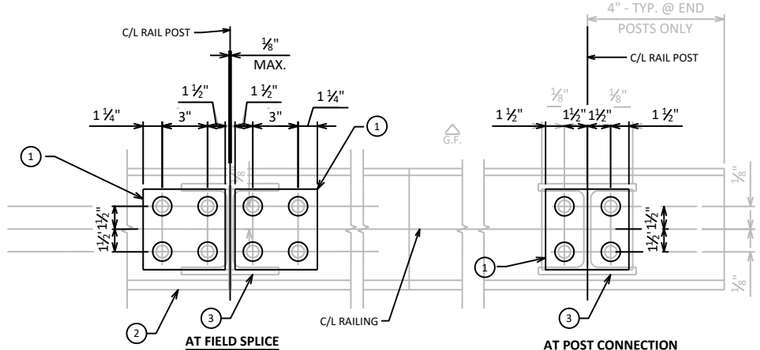
6180-00-71

TOTAL ESTIMATED QUANTITIES

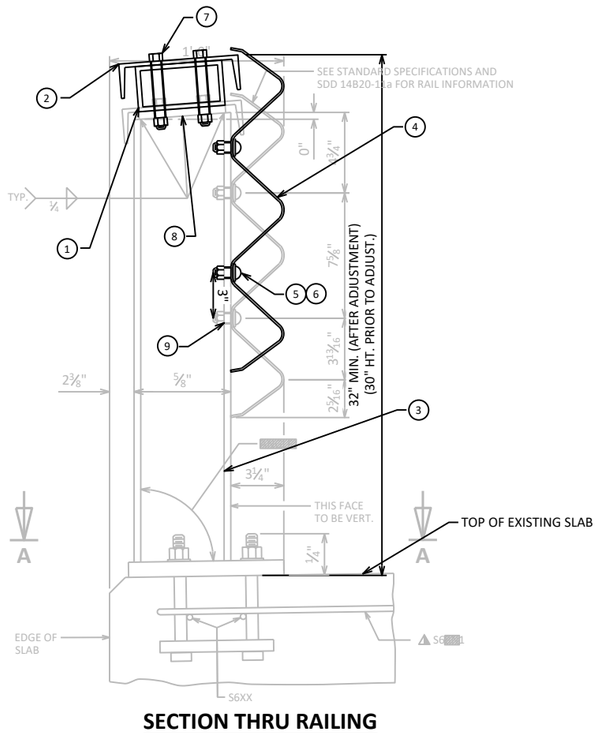
BID ITEM NUMBER	BID ITEMS	UNIT	TOTAL
SPV.0090.001	RAILING ADJUSTMENT STRUCTURE B-69-0038	LF	81



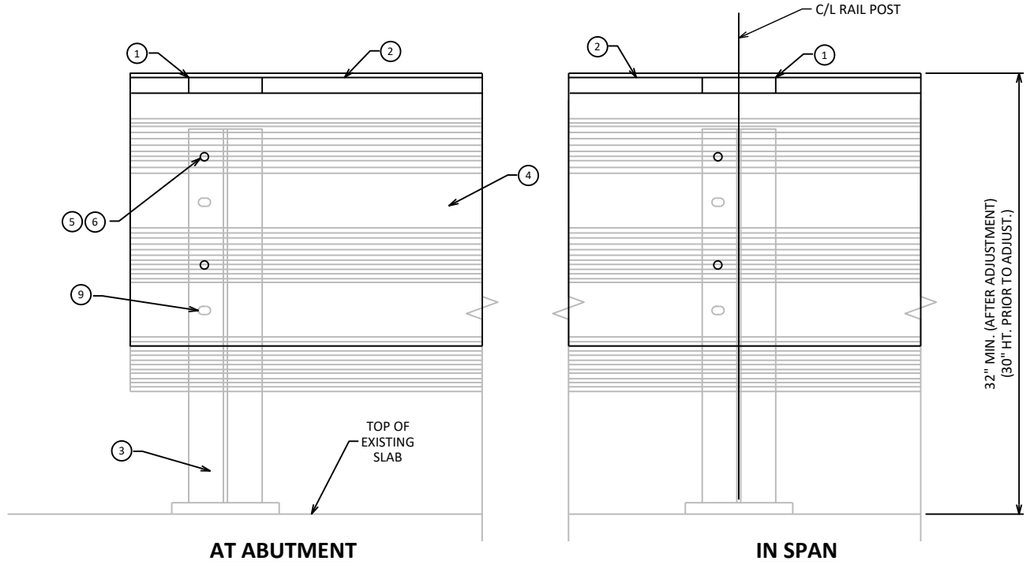
CROSS SECTION THRU ROADWAY
(LOOKING EAST)



STRUCTURAL TUBE DETAILS



SECTION THRU RAILING



AT ABUTMENT **IN SPAN**

RAILING ADJUSTMENT ELEVATION

NOTES

BID ITEM SHALL BE "RAILING ADJUSTMENT STRUCTURE B-69-0038" WHICH SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY TO RAISE ITEMS NO. 2 & NO. 4 BETWEEN THE LIMITS OF RAILING AS SHOWN ON SHEET 1.

ALL RAILING MATERIALS AND CONSTRUCTION TO BE USED FOR RAILING ADJUSTMENT SHALL MEET THE MATERIAL REQUIREMENTS OF WISDOT STANDARD SPECIFICATION 513 UNLESS SUPERCEDED BY SPECIAL PROVISION "RAILING ADJUSTMENT STRUCTURE B-69-0038".

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO ASTM DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

SHIM PLATES 6" X 1⁄16" X 6" MAY BE USED BETWEEN TOP OF STRUCTURAL TUBE AND CHANNEL MEMBER TO ACHIEVE VERTICAL ALIGNMENT.

ALL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION.

PRIOR TO GALVANIZING, ALL STEEL STRUCTURAL TUBE SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.

RAIL MEMBERS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC AND THE UPPER RAIL SHALL LAP THE LOWER RAIL.

NEW BOLTS AND REFLECTORS SHALL BE FURNISHED AND USED TO RESET THE STRUCTURAL TUBES AND W-RAIL.

LEGEND

(1) STRUCTURAL TUBE 6" X 3" X ⅜" WITH 13⁄16" DIA. HOLES, 6" LONG.

(2) REUSE EXISTING TOP CHANNEL MEMBER.

(3) EXISTING RAILING POST, FIELD DRILL NEW HOLES PER NO. 6.

(4) REUSE EXISTING 'THRIE' BEAM.

(5) REMOVE AND REPLACE EXISTING ⅝" DIA. BUTTON HEAD RAILING MOUNTING BOLT WITH ROUND WASHER AND NUT AND 1 ¾" X 3" MOUNTING BOLT WASHER (GALVANIZED) WITH EQUIVALENT NEW FASTENER AND WASHER ASSEMBLY.

(6) FIELD-DRILL ⅞" OVERSIZED HOLES. APPLY ZINC COATING TO INTERIOR OF HOLE PER ASTM A780.

(7) REMOVE EXISTING HEX BOLTS AND REPLACE WITH ⅝" DIA. X 5" LG. HEX BOLTS WITH NUT AND TWO WASHERS EACH. 4 REQ'D PER POST CONNECTION 8 REQ'D PER SPLICE.

(8) EXISTING RAILING POST TOP PLATE, TO REMAIN AS-IS.

(9) CLEAN INTERIOR OF EXISTING HOLE AND APPLY ZINC COATING TO INTERIOR SURFACE OF HOLE PER ASTM A780.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-69-38

DRAWN BY MES | PLANS CK'D KRH

RAILING DETAILS & QUANTITIES

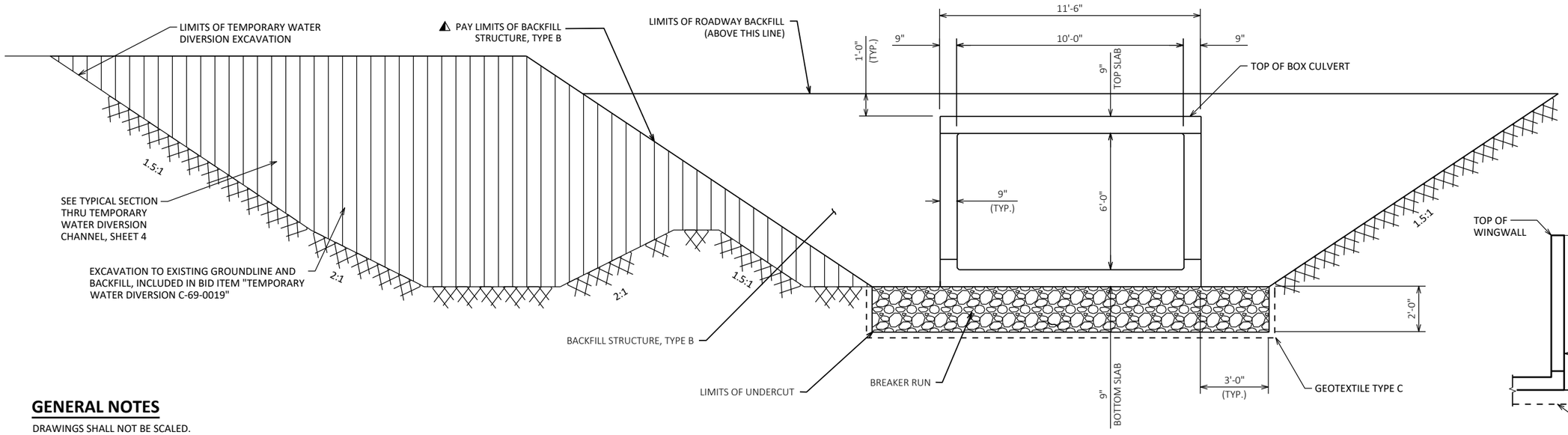
SHEET 2 OF 2
211

SCALE = 1:8

8

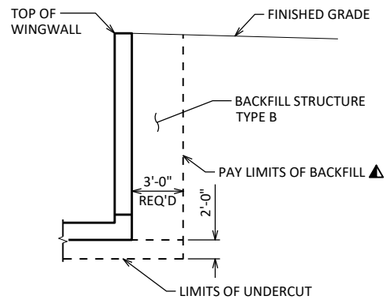
8

STATE PROJECT NUMBER
6180-00-60



TYPICAL SECTION THROUGH BOX CULVERT

(LOOKING DOWNSTREAM)



TYPICAL SECTION THRU BOX CULVERT WINGWALL

GENERAL NOTES

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 3/4" UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES CULVERTS C-69-0019" SHALL BE THE EXISTING GROUNDLINE. EXCAVATION FOR TEMPORARY WATER DIVERSIONS IS INCLUDED IN THE BID ITEM "TEMPORARY WATER DIVERSION C-69-0019".

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE B" REQUIRED ON THE BOX CULVERT SIDES AND BEHIND APRON WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.

UNDER CUT 2'-0". EXCAVATION FOR UNDER CUT TO BE INCLUDED IN EXCAVATION FOR STRUCTURES. PLACE "GEOTEXTILE TYPE C" AND BACKFILL WITH "BREAKER RUN".

THE CONCRETE IN THE CUTOFF WALLS MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.

THE CONTRACTOR MAY FURNISH A PRECAST CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE BOX CULVERT WITH THE ACCEPTANCE OF THE SHOP DRAWINGS BY THE STRUCTURES MAINTENANCE SECTION. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO PRECAST DETAILS IN CHAPTER 36 STANDARDS OF THE CURRENT WISC. DOT BRIDGE MANUAL. PAYMENT FOR THE PRECAST CULVERT SHALL BE BASED ON THE QUANTITIES AND PRICES BID FOR THE ITEMS LISTED IN THE "TOTAL ESTIMATED QUANTITIES".

FILLER SHALL CONFORM TO THE REQUIREMENTS OF AASHTO DESIGNATION M153, TYPES I, II, III, OR M213.

UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.

THE EXISTING STRUCTURE, C-69-9000 IS A 6.5' HIGH, 9.5' WIDE, 84.0' LONG STEEL CULVERT, TO BE REMOVED.

CONSTRUCT CULVERT APRON AND HEADERS SQUARED (PERPENDICULAR TO CULVERT C/L RATHER THAN PARALLEL TO ROADWAY ALIGNMENT, ALONG SKEW.

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

CONSTRUCTION STAGING NOTES

CULVERT TO BE CONSTRUCTED WITH TRAFFIC DIVERTED TO TEMPORARY BYPASS. SEE ROADWAY PLANS FOR TEMPORARY BYPASS ROAD DETAILS.



PROFILE GRADE LINE - STH 21

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
203.0220	REMOVING STRUCTURE C-69-9000	EACH	1
206.2001	EXCAVATION FOR STRUCTURES CULVERTS C-69-0019	EACH	1
210.2500	BACKFILL STRUCTURE TYPE B	TON	1280
311.0110	BREAKER RUN	TON	290
504.0100	CONCRETE MASONRY CULVERTS	CY	115
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	13730
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1490
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	25
645.0105	GEOTEXTILE TYPE C	SY	340
SPV.0060.01	TEMPORARY WATER DIVERSION - C-69-0019	EACH	1
	NON-BID ITEMS		
	FILLER	SIZE	¾"

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-69-19

DRAWN BY JAC | PLANS CK'D KRH

GENERAL NOTES & QUANTITIES

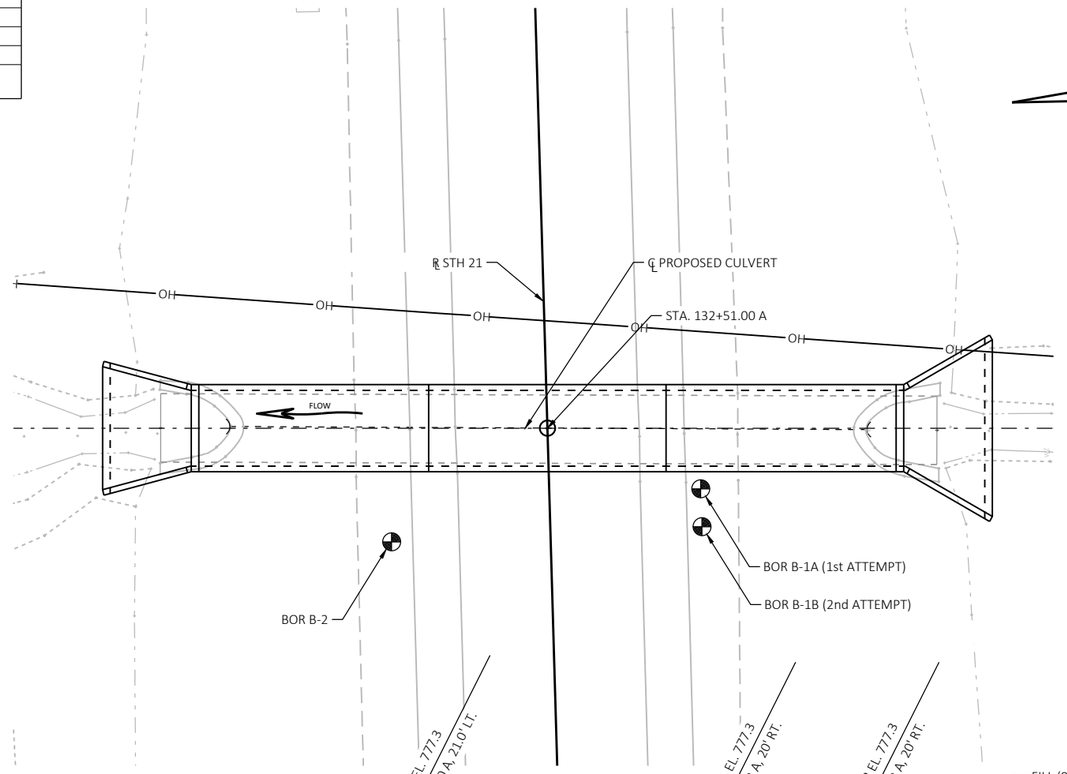
SHEET 2 OF 7
212

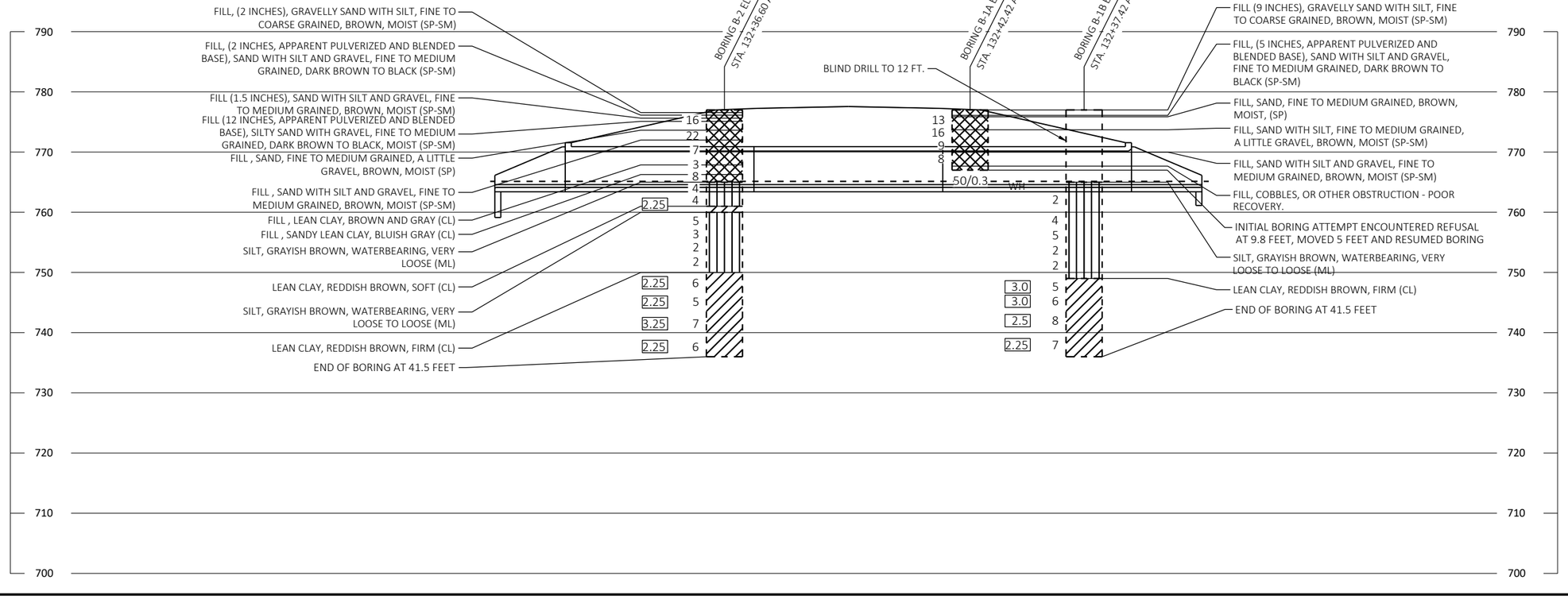
SCALE = 1" = 5'-0"

8

8

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
B-1A	10/6/2021	120060.00	443679.58
B-1B	10/6/2021	120060.00	443674.58
B-2	10/7/2021	120100.99	443673.29
BORINGS COMPLETED BY: AMERICAN ENGINEERING TESTING, INC.			
REPORT COMPLETED BY: AMERICAN ENGINEERING TESTING, INC.			
ALL COORDINATES REFERENCED TO WISCRS NAD 83 (2011), NAVD 88 (2012) WAUSHARA COUNTY			





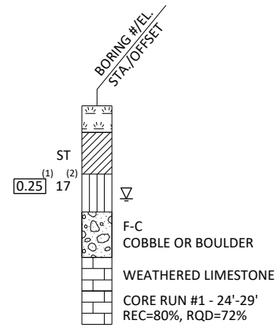
STATE PROJECT NUMBER

6180-00-60

MATERIAL SYMBOLS

ASPHALT · TOPSOIL · PEAT
CONCRETE · FILL · GRAVEL
SAND · CLAY · SILT
BOULDERS OR COBBLES · LIMESTONE · BEDROCK (UNKNOWN)
SHALE · SANDSTONE · IGNEOUS/ META

LEGEND OF BORING



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

(2) 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

F-FINE · M-MEDIUM · C-COARSE · ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED 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 BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-69-19

DRAWN BY	JAC	PLANS CK'D	KRH

SUBSURFACE EXPLORATION

SHEET 3 OF 7
213

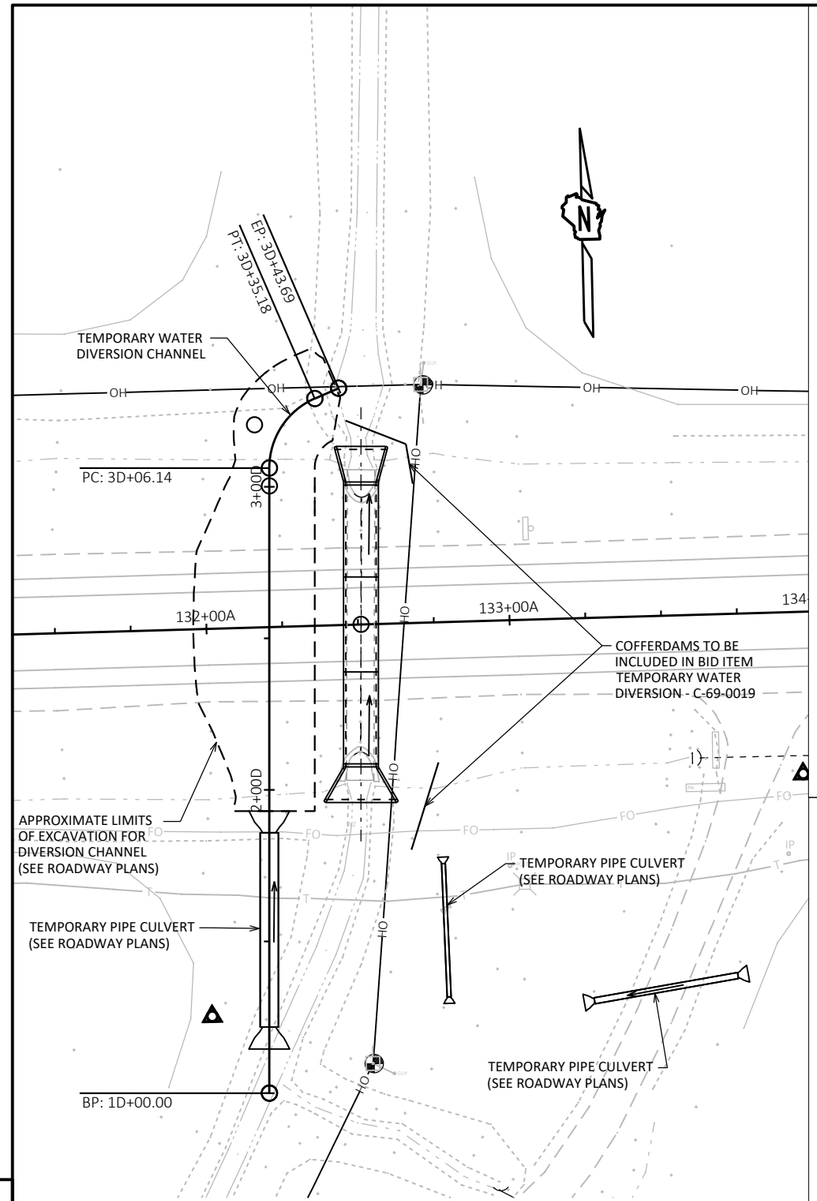
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STATE PROJECT NUMBER

6180-00-60



NOTES

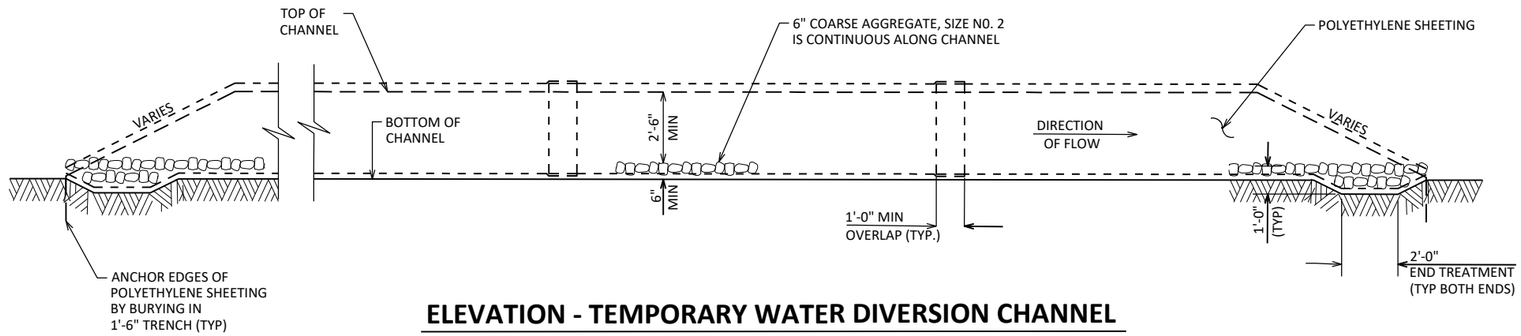
AFTER CULVERT CONSTRUCTION ALL COMPONENTS OF THE TEMPORARY WATER DIVERSION CHANNEL SHALL BE REMOVED AND THE CHANNEL BACKFILLED.

EXCAVATION SHALL BE INCLUDED IN THE BID ITEM "EXCAVATION FOR STRUCTURES CULVERT,C-69-0019"

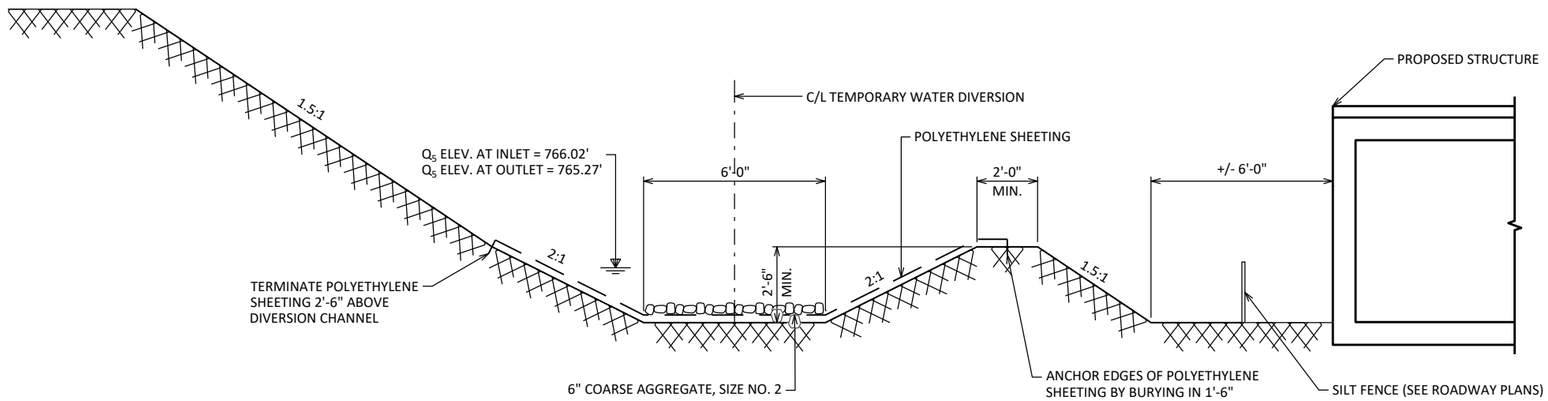
ESTIMATED QUANTITIES

(FOR INFORMATIONAL PURPOSES ONLY)

ITEMS	UNIT	TOTAL
COARSE AGGREGATE, SIZE NO.2	CY	20
POLYETHYLENE SHEETING	SY	380
EXCAVATION	CY	1609
BACKFILL	CY	1519



ELEVATION - TEMPORARY WATER DIVERSION CHANNEL



TYPICAL SECTION THRU TEMPORARY WATER DIVERSION CHANNEL

(LOOKING DOWNSTREAM)

SEE ROADWAY PLAN FOR TEMPORARY WATER DIVERSION GRADING DETAILS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-69-19

DRAWN BY JAC | PLANS CK'D KRH

TEMPORARY WATER DIVERSION CHANNEL

SHEET 4 OF 7

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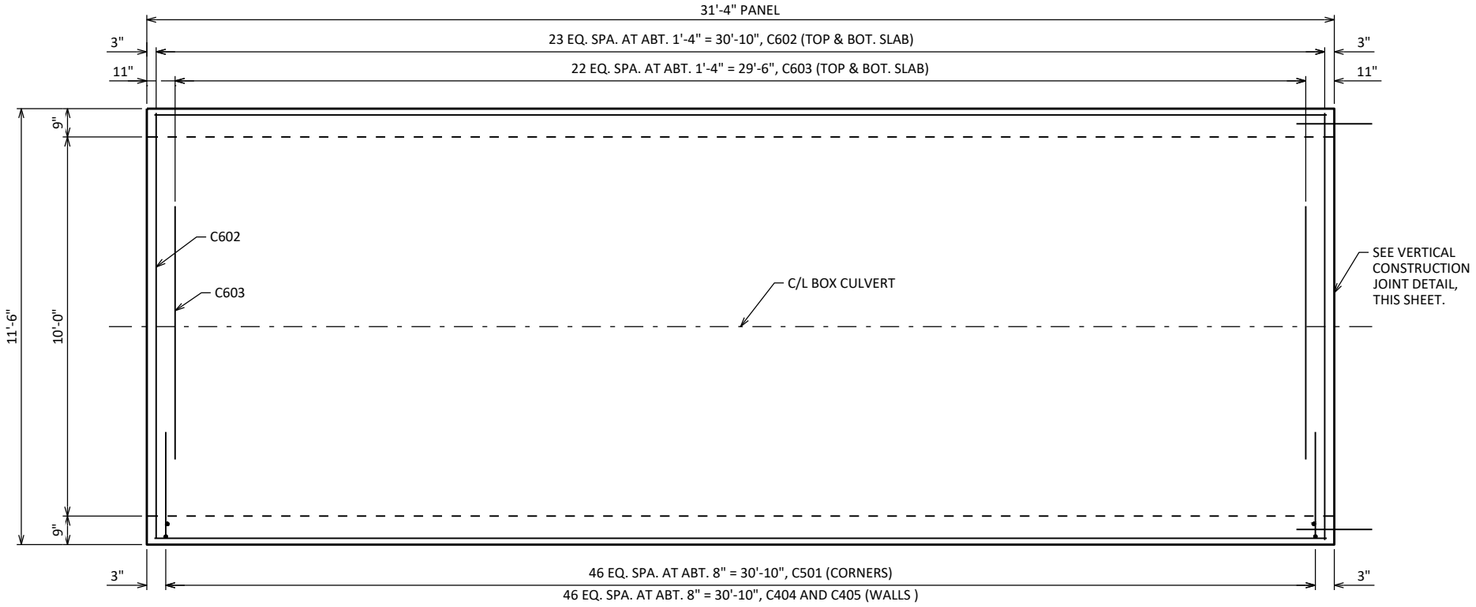
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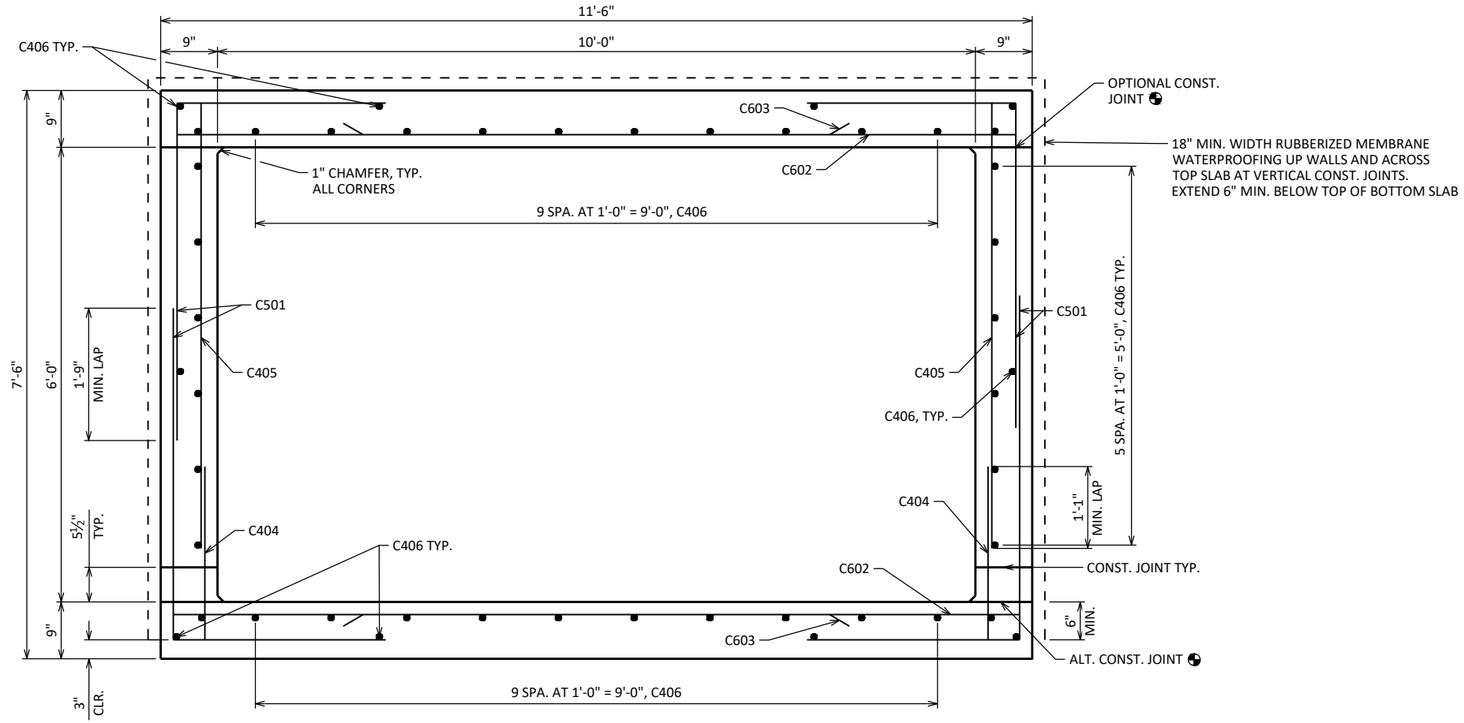
STATE PROJECT NUMBER

6180-00-60



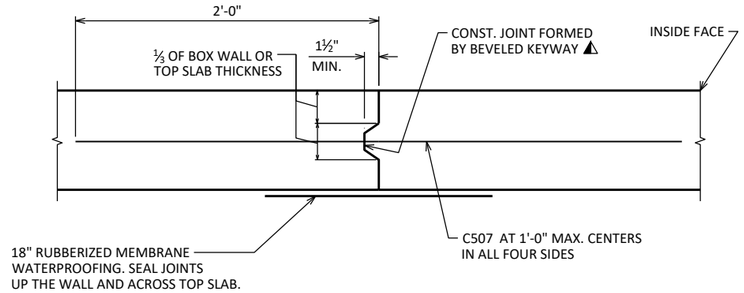
PLAN

PANEL 1 SHOWN, OTHER PANELS SIMILAR
APRON AND HEADER NOT SHOWN FOR CLARITY



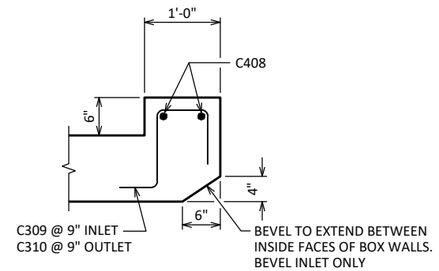
TYPICAL SECTION THRU BOX

◔ OMIT 1" FILLET IF JOINTS USED



VERTICAL CONSTRUCTION JOINT

⚠ IN LIEU OF CONSTRUCTION JOINTS IN THE BOTTOM SLAB, THE CONTRACTOR MAY USE 2" DEEP SAW CUTS WITHIN 12 HOURS AFTER POURING. #5 BARS 4'-0" AT 1'-0" CENTERS REQUIRED.



SECTION THRU HEADER

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-69-19

DRAWN BY JAC | PLANS CK'D KRH

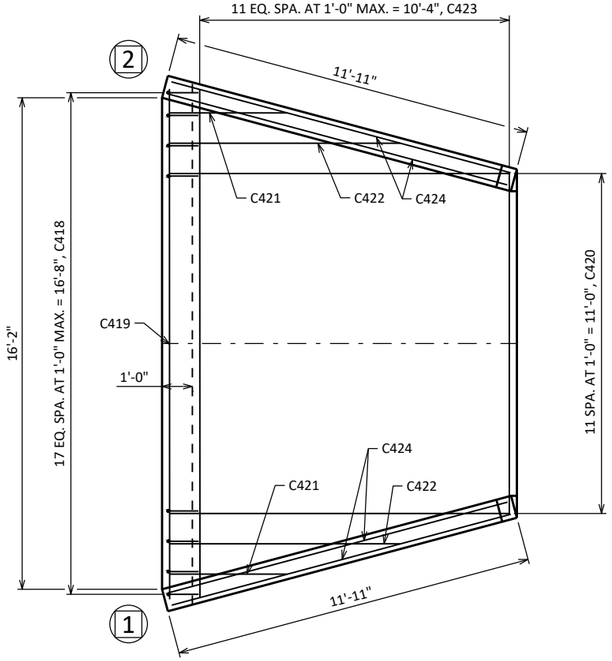
BOX DETAILS

SHEET 5 OF 7
215

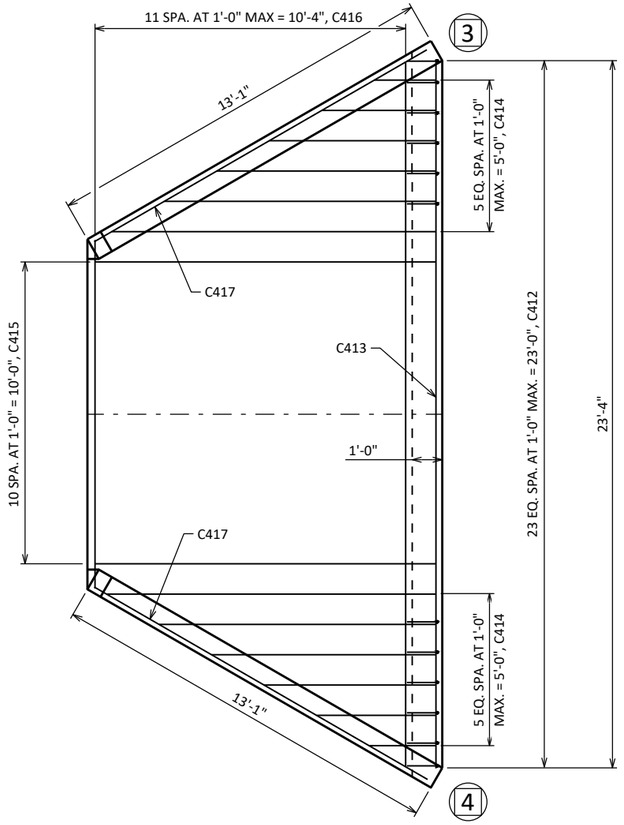
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STATE PROJECT NUMBER

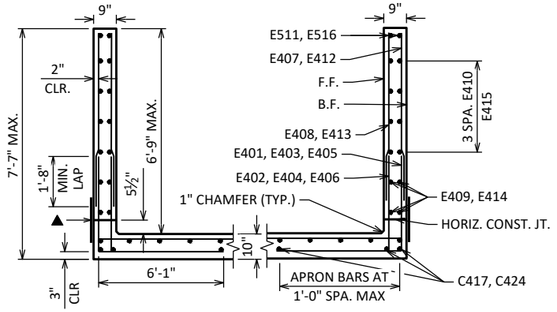
6180-00-60



OUTLET

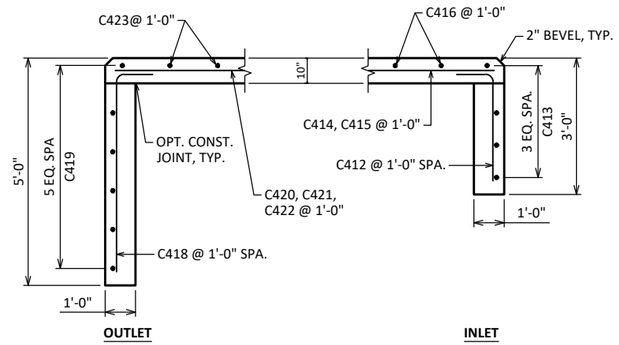


INLET

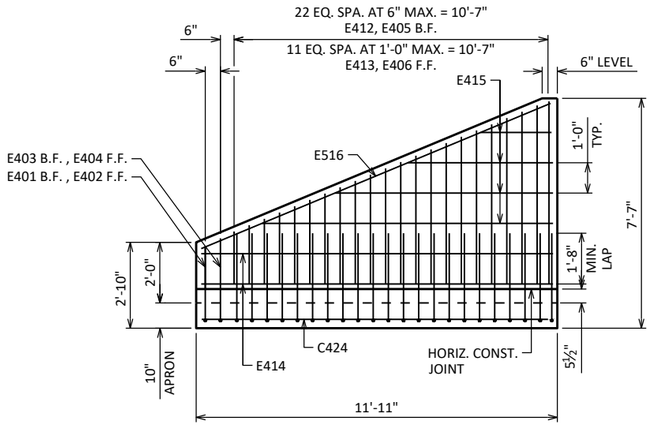


SECTION THRU WINGS

▲ 18" RUBBERIZED MEMBRANE WATERPROOFING, PLACE ALONG HORIZ. CONST. JT. FOR ENTIRE LENGTH OF WING, TYP.

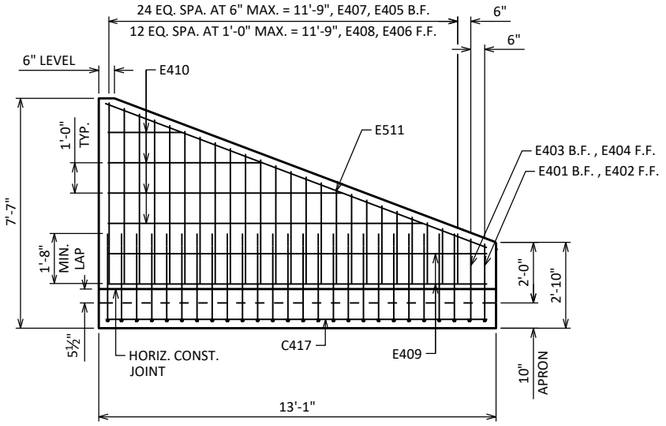


CUT-OFF WALLS



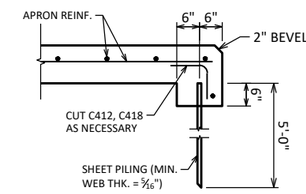
WING 1

WING 2 SIMILAR



WING 4

WING 3 SIMILAR



ALTERNATE CUT-OFF WALLS

THE ABOVE ALTERNATIVE MAY BE USED IN LIEU OF CAST-IN-PLACE CONCRETE CUT-OFF WALLS. PAYMENT WILL BE BASED ON THE CONCRETE CUT-OFF WALLS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-69-19

DRAWN BY JAC | PLANS CK'D KRH

APRON AND WING DETAILS

SHEET 6 OF 7
216

SCALE =

8

8

STATE PROJECT NUMBER

6180-00-60

BILL OF BARS

MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION	
NON-COATED BARS					TOTAL WEIGHT =	13,730 LBS
C501	564	7 - 2	X		BOX - TOP & BOTTOM CORNERS	CORNER
C602	144	11 - 2			BOX - TOP & BOTTOM SLAB	TRANSVERSE
C603	138	6 - 8			BOX - TOP & BOTTOM SLAB	TRANSVERSE
C404	282	2 - 3			BOX - WALL DOWEL BARS	VERTICAL
C405	282	6 - 0			BOX - WALLS	VERTICAL
C406	138	31 - 0			BOX- WALLS, TOP & BOTTOM SLAB	LONGITUDINAL
C507	72	4 - 0			BOX - DOWELS AT VERTICAL CONST. JOINT	HORIZONTAL
C408	4	11 - 2			BOX - HEADERS	TRANSVERSE
C309	16	2 - 6	X		BOX - HEADER INLET	STIRRUP
C310	16	2 - 9	X		BOX - HEADER OUTLET	STIRRUP
C511	24	4 - 0			INLET & OUTLET APRON CONNECTION	HORIZONTAL
C412	24	3 - 6	X		INLET CUTOFF WALL	VERTICAL
C413	4	23 - 4			INLET CUTOFF WALL	HORIZONTAL
⚠ C414	12	6 - 4		X	INLET APRON - LONGITUDINAL	HORIZONTAL
C415	11	11 - 5			INLET APRON - LONGITUDINAL	HORIZONTAL
⚠ C416	12	17 - 5		X	INLET APRON - TRANSVERSE	HORIZONTAL
C417	6	12 - 9			INLET APRON - DIAGONAL	HORIZONTAL
C418	18	5 - 6	X		OUTLET CUTOFF WALL	VERTICAL
C419	6	16 - 8			OUTLET CUTOFF WALL	HORIZONTAL
C420	12	11 - 5			OUTLET APRON - LONGITUDINAL	HORIZONTAL
C421	2	3 - 11			OUTLET APRON - LONGITUDINAL	HORIZONTAL
C422	2	7 - 7			OUTLET APRON - LONGITUDINAL	HORIZONTAL
⚠ C423	12	14 - 0		X	OUTLET APRON - TRANSVERSE	HORIZONTAL
C424	6	11 - 7			OUTLET APRON - DIAGONAL	HORIZONTAL

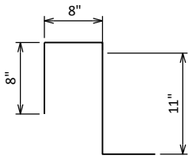
BILL OF BARS

MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION	
COATED BARS					TOTAL WEIGHT =	1,490 LBS
E401	4	8 - 5	X		INLET APRON - WINGWALL DOWEL BF	VERTICAL
E402	4	2 - 5			INLET APRON - WINGWALL DOWEL FF	VERTICAL
E403	4	8 - 8	X		INLET APRON - WINGWALL DOWEL BF	VERTICAL
E404	4	2 - 8			INLET APRON - WINGWALL DOWEL FF	VERTICAL
E405	96	9 - 0	X		INLET & OUTLET APRON - WINGWALL DOWEL BF	VERTICAL
E406	50	3 - 0			INLET & OUTLET APRON - WINGWALL DOWEL FF	VERTICAL
⚠ E407	50	3 - 10		X	WING 3 & 4 - BF	VERTICAL
⚠ E408	26	3 - 10		X	WING 3 & 4 - FF	VERTICAL
E409	8	12 - 9			WING 3 & 4	HORIZONTAL
⚠ E410	16	6 - 5		X	WING 3 & 4	HORIZONTAL
E511	4	13 - 6			WING 3 & 4	HORIZONTAL
⚠ E412	46	3 - 11		X	WING 1 & 2 - BF	VERTICAL
⚠ E413	24	3 - 11		X	WING 1 & 2 - FF	VERTICAL
E414	8	11 - 7			WING 1 & 2	HORIZONTAL
⚠ E415	16	6 - 0		X	WING 1 & 2	HORIZONTAL
E516	4	12 - 6			WING 1 & 2	HORIZONTAL

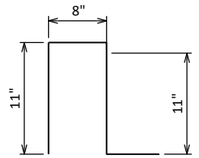
⚠ LENGTH SHOWN IS AN AVERAGE LENGTH FOR USE OF CALCULATING BAR WEIGHT ONLY, SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.



C501



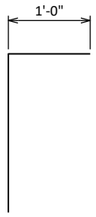
C309



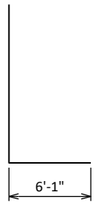
C310



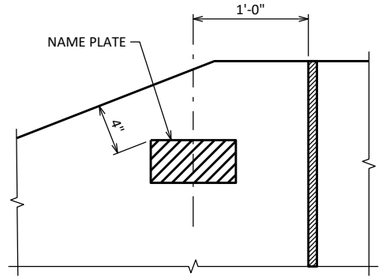
C412



C418



E401, E403, E405



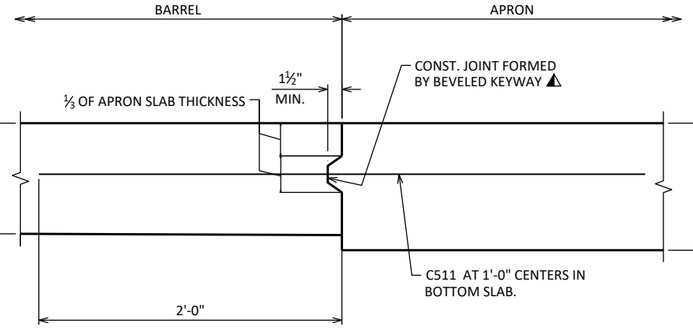
NAME PLATE DETAIL

WING 4

⚠ BAR SERIES TABLE

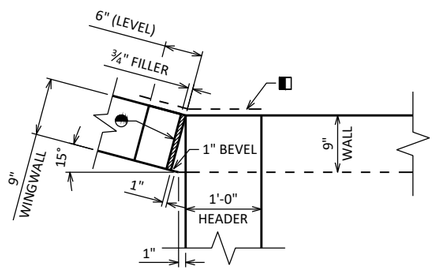
MARK	NO. REQ'D	LENGTH
C414	2 SETS OF 6	2'-0" TO 10'-8"
C416	1 SET OF 12	11'-6" TO 23'-4"
C423	1 SET OF 12	11'-3" TO 16'-9"
E407	2 SETS OF 25	1'-8" TO 6'-0"
E408	2 SETS OF 13	1'-8" TO 6'-0"
E410	4 SETS OF 4	2'-5" TO 10'-5"
E412	2 SETS OF 23	1'-9" TO 6'-0"
E413	2 SETS OF 12	1'-9" TO 6'-0"
E415	4 SETS OF 4	2'-4" TO 9'-7"

TAG AND BUNDLE EACH SERIES SEPARATELY.



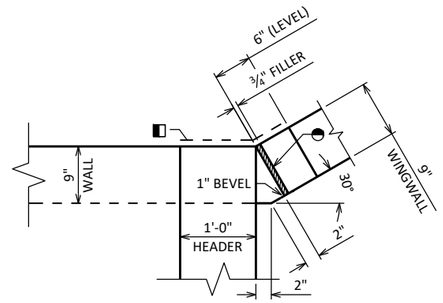
APRON CONNECTION DETAIL

⚠ IN LIEU OF CONSTRUCTION JOINTS IN THE BOTTOM SLAB, THE CONTRACTOR MAY USE 2" DEEP SAW CUTS WITHIN 12 HOURS AFTER POURING. #5 BARS 4'-0" AT 1'-0" CENTERS REQUIRED.



CORNER LAYOUT WING 2 SHOWN

(WING 1 SIMILAR)



CORNER LAYOUT WING 3 SHOWN

(WING 4 SIMILAR)

◧ 18" MINIMUM WIDTH RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM HORIZONTAL CONSTRUCTION JOINT TO TOP OF WING. (FLUSH WITH FACE OF CONCRETE)

◓ ¾" FILLER TO EXTEND FROM HORIZONTAL CONSTRUCTION JOINT TO TOP OF WING.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-69-19

DRAWN BY JAC | PLANS CK'D KRH

BILL OF BARS AND WING DETAILS

SHEET 7 OF 7

217

SCALE =

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STH 21 TEMPORARY BYPASS LANE CONSTRUCTION

STATION	Distance	AREA (SF)			Incremental Vol (CY)			Cumulative Vol (CY)		Mass Ordinate Note 3
		Cut	Salvaged/Unusable Pavement Material	Fill	Cut Note 1	Salvaged/Unusable Pavement Material Note 2	Fill	Cut 1.00	Fill 1.3	
126+00 AT	0	2.00	0	0.00	0	0	0	0	0	0
126+50 AT	50	2.01	0	0.00	4	0	0	4	0	4
127+00 AT	50	2.05	0	0.00	4	0	0	7	0	7
127+50 AT	50	14.43	0	1.21	15	0	1	23	1	21
128+00 AT	50	15.95	0	16.16	28	0	16	51	22	29
128+50 AT	50	20.38	0	62.67	34	0	73	85	117	-33
129+00 AT	50	37.30	0	10.19	53	0	67	138	205	-67
129+50 AT	50	17.66	0	134.22	51	0	134	189	379	-190
130+00 AT	50	11.91	0	149.72	27	0	263	216	721	-504
130+50 AT	50	10.25	0	130.94	21	0	260	237	1058	-822
131+00 AT	50	10.44	0	90.43	19	0	205	256	1325	-1069
131+50 AT	50	11.66	0	72.15	20	0	151	276	1521	-1244
132+00 AT	50	18.34	0	59.65	28	0	122	304	1679	-1375
132+28 AT	28	1.04	0	105.78	10	0	86	314	1791	-1476
132+50 AT	22	3.22	0	306.43	2	0	168	316	2009	-1693
132+86 AT	36	27.45	0	80.28	20	0	256	336	2343	-2006
133+00 AT	14	26.16	0	67.04	14	0	39	350	2393	-2043
133+50 AT	50	42.83	0	32.29	64	0	92	414	2512	-2098
134+00 AT	50	26.16	0	13.21	64	0	42	478	2567	-2089
134+50 AT	50	26.37	0	9.18	49	0	21	527	2594	-2067
135+00 AT	50	23.55	0	10.82	46	0	19	573	2618	-2045
135+50 AT	50	15.60	0	42.71	36	0	50	609	2683	-2074
136+00 AT	50	14.30	0	55.18	28	0	91	637	2801	-2164
136+50 AT	50	19.16	0	41.95	31	0	90	668	2917	-2250
137+00 AT	50	22.07	0	22.99	38	0	60	706	2996	-2290
137+50 AT	50	16.33	0	3.15	36	0	24	742	3027	-2286
138+00 AT	50	2.31	0	0.00	17	0	3	759	3031	-2272
138+50 AT	50	2.01	0	0.00	4	0	0	763	3031	-2268
139+00 AT	50	2.03	0	0.00	4	0	0	767	3031	-2264
139+50 AT	50	2.06	0	0.00	4	0	0	770	3031	-2261
139+70 AT	20	2.06	0	0.00	2	0	0	772	3031	-2259
					772	0	2331			

Notes: 1 - Cut includes Salvaged/Unusable Pavement Material and Topsoil
2 - Salvaged/Unusable Pavement Material does not show in cross sections
3 - Mass Ordinate = (Cut - Salvaged/Unusable Pavement Material) - (Fill * Fill Factor)

STH 21 RECONSTRUCTION OVER C-69-0019

STATION	Distance	AREA (SF)			Incremental Vol (CY)			Cumulative Vol (CY)		Mass Ordinate Note 3
		Cut	Salvaged/Unusable Pavement Material	Fill	Cut Note 1	Salvaged/Unusable Pavement Material Note 2	Fill	Cut 1.00	Fill 1.3	
131+91 A	0	103.94	29.00	28.12	0	0	0	0	0	0
132+00 A	9	103.60	29.00	30.59	35	10	10	35	13	12
132+25 A	25	103.21	29.00	30.90	96	27	28	130	50	43
132+50 A	25	102.72	29.00	97.86	95	27	60	226	128	34
132+75 A	25	102.80	29.00	7.21	95	27	49	321	191	40
133+00 A	25	102.73	29.00	9.80	95	27	8	416	201	98
133+09 A	9	103.13	29.00	9.49	34	10	3	450	205	118
					450	127	158			

Notes: 1 - Cut includes Salvaged/Unusable Pavement Material and Topsoil
2 - Salvaged/Unusable Pavement Material does not show in cross sections
3 - Mass Ordinate = (Cut - Salvaged/Unusable Pavement Material) - (Fill * Fill Factor)

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STH 21 TEMPORARY BYPASS LANE REMOVAL

STATION	Distance	AREA (SF)			Incremental Vol (CY)			Cumulative Vol (CY)		Mass Ordinate Note 3
		Cut	Salvaged/Unusable Pavement Material	Fill	Cut Note 1	Salvaged/Unusable Pavement Material Note 2	Fill	Cut 1.00	Fill 1.3	
126+00 A	0	1.96	0.00	0.36	0	0	0	0	0	0
126+50 A	50	0.66	0.00	3.24	1	0	6	1	8	-7
127+00 A	50	2.73	0.04	0.00	3	0	3	4	12	-7
127+50 A	50	11.03	0.91	0.00	13	1	0	17	12	4
128+00 A	50	31.61	2.97	0.24	39	4	0	57	12	40
128+50 A	50	87.93	5.00	21.84	111	7	20	167	39	117
129+00 A	50	145.51	5.00	29.93	216	9	48	383	101	261
129+50 A	50	167.52	5.00	15.56	290	9	42	673	156	487
130+00 A	50	180.00	5.00	17.09	322	9	30	995	195	760
130+50 A	50	158.87	5.00	26.02	314	9	40	1309	247	1013
131+00 A	50	118.53	5.00	32.69	257	9	54	1566	318	1190
131+50 A	50	90.48	5.00	33.01	194	9	61	1759	397	1295
132+00 A	50	101.09	5.00	10.07	177	9	40	1937	448	1411
132+50 A	50	285.54	5.00	59.26	358	9	64	2295	532	1677
133+00 A	50	119.72	5.00	29.31	375	9	82	2670	639	1936
133+50 A	50	46.69	5.00	46.65	154	9	70	2824	730	1989
134+00 A	50	116.69	5.00	31.22	151	9	72	2975	824	2038
134+50 A	50	46.27	5.00	29.27	151	9	56	3126	896	2107
135+00 A	50	49.37	5.00	24.18	89	9	49	3215	961	2122
135+50 A	50	76.97	5.00	17.39	117	9	38	3332	1011	2179
136+00 A	50	81.53	5.00	15.92	147	9	31	3478	1051	2277
136+50 A	50	59.54	5.00	15.09	131	9	29	3609	1088	2361
137+00 A	50	27.66	5.00	6.61	81	9	20	3690	1114	2406
137+50 A	50	3.93	5.00	2.62	29	9	9	3719	1126	2415
137+73 A	23	8.12	4.16	8.20	5	4	5	3724	1132	2410
					3724	182	870			

Notes: 1 - Cut includes Salvaged/Unusable Pavement Material and Topsoil
2 - Salvaged/Unusable Pavement Material does not show in cross sections
3 - Mass Ordinate = (Cut - Salvaged/Unusable Pavement Material) - (Fill * Fill Factor)

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STH 21 RECONSTRUCTION

STATION		Distance	AREA (SF)			Incremental Vol (CY)			Cumulative Vol (CY)		Mass Ordinate Note 3
			Cut	Salvaged/Unusable Pavement Material	Fill	Cut Note 1	Salvaged/Unusable Pavement Material Note 2	Fill	Cut 1.00	Fill 1.3	
66+50	AT	0	156.08	43.92	0.40	0	0	0	0	0	0
67+00	AT	50	151.24	43.92	1.36	280	81	3	280	3	195
67+50	AT	50	148.50	43.92	1.43	278	81	3	558	7	388
68+00	AT	50	145.35	43.92	1.67	272	81	3	830	10	575
68+50	AT	50	148.69	43.92	1.36	272	81	3	1102	14	763
69+00	AT	50	152.41	43.92	1.15	282	81	2	1384	17	961
69+50	AT	50	154.80	43.92	0.67	284	81	2	1669	19	1162
70+00	AT	50	157.25	43.92	0.42	291	81	1	1960	20	1371
70+50	AT	50	155.09	43.92	0.46	289	81	1	2249	21	1577
71+00	AT	50	151.38	43.92	0.67	284	81	1	2533	22	1778
71+50	AT	50	153.86	43.92	0.88	283	81	1	2815	24	1978
72+00	AT	50	157.49	43.92	1.14	292	81	2	3107	27	2185
72+50	AT	50	159.88	43.92	1.11	294	81	2	3401	30	2395
73+00	AT	50	163.26	43.92	1.47	302	81	3	3703	33	2613
73+50	AT	50	161.84	43.92	1.86	301	81	3	4004	37	2828
74+00	AT	50	160.95	43.92	2.18	299	81	4	4303	42	3041
74+33	AT	33	164.46	43.92	6.06	200	54	5	4503	49	3181
74+50	AT	17	162.23	43.92	1.87	101	27	1	4604	50	3253
75+00	AT	50	160.56	43.92	4.59	299	81	6	4903	58	3463
75+50	AT	50	159.74	43.92	5.77	296	81	11	5199	72	3663
76+00	AT	50	159.65	43.92	6.98	296	81	12	5495	87	3862
76+50	AT	50	162.83	43.92	5.15	299	81	11	5793	102	4065
77+00	AT	50	165.97	43.92	3.40	304	81	8	6098	112	4278
77+50	AT	50	162.20	43.92	4.32	300	81	8	6398	123	4486
78+00	AT	50	157.58	43.92	5.40	296	81	9	6694	134	4689
78+50	AT	50	157.52	43.92	5.93	292	81	11	6986	149	4885
79+00	AT	50	157.33	43.92	6.86	292	81	12	7277	164	5080
79+50	AT	50	151.68	43.92	6.66	286	81	13	7563	180	5269
80+00	AT	50	146.80	43.92	5.62	276	81	11	7840	195	5449
80+50	AT	50	154.11	43.92	9.71	285	81	18	8125	218	5630
81+00	AT	50	152.56	43.92	11.68	284	81	20	8409	244	5807
81+50	AT	50	154.70	43.92	12.20	286	81	23	8696	273	5982
82+00	AT	50	147.73	16.25	16.60	280	56	27	8976	308	6172
82+50	AT	50	150.77	16.25	14.44	276	30	29	9252	345	6381
83+00	AT	50	158.13	16.25	28.45	286	30	40	9538	397	6585
83+08	AT	8	159.69	16.25	28.46	49	5	9	9587	409	6618
83+33	AT	25	161.81	16.25	18.17	149	15	22	9736	437	6724
83+50	AT	17	161.67	16.25	15.88	100	10	10	9836	449	6801
83+58	AT	8	161.74	16.25	15.33	50	5	5	9886	456	6840
83+83	AT	25	165.70	16.25	8.05	152	15	11	10038	470	6962
84+00	AT	17	170.17	16.25	5.85	104	10	4	10141	475	7050
84+08	AT	8	171.90	16.25	3.00	53	5	1	10194	476	7097
84+50	AT	42	164.12	16.25	2.31	259	25	4	10454	482	7326
84+91	AT	41	161.26	34.83	2.12	243	52	3	10696	486	7512
85+00	AT	9	144.89	34.83	0.00	53	12	0	10749	486	7552
85+06	AT	6	144.74	34.83	0.00	29	7	0	10779	486	7575
85+29	AT	0	145.23	34.83	0.00	0	0	0	10779	486	7575

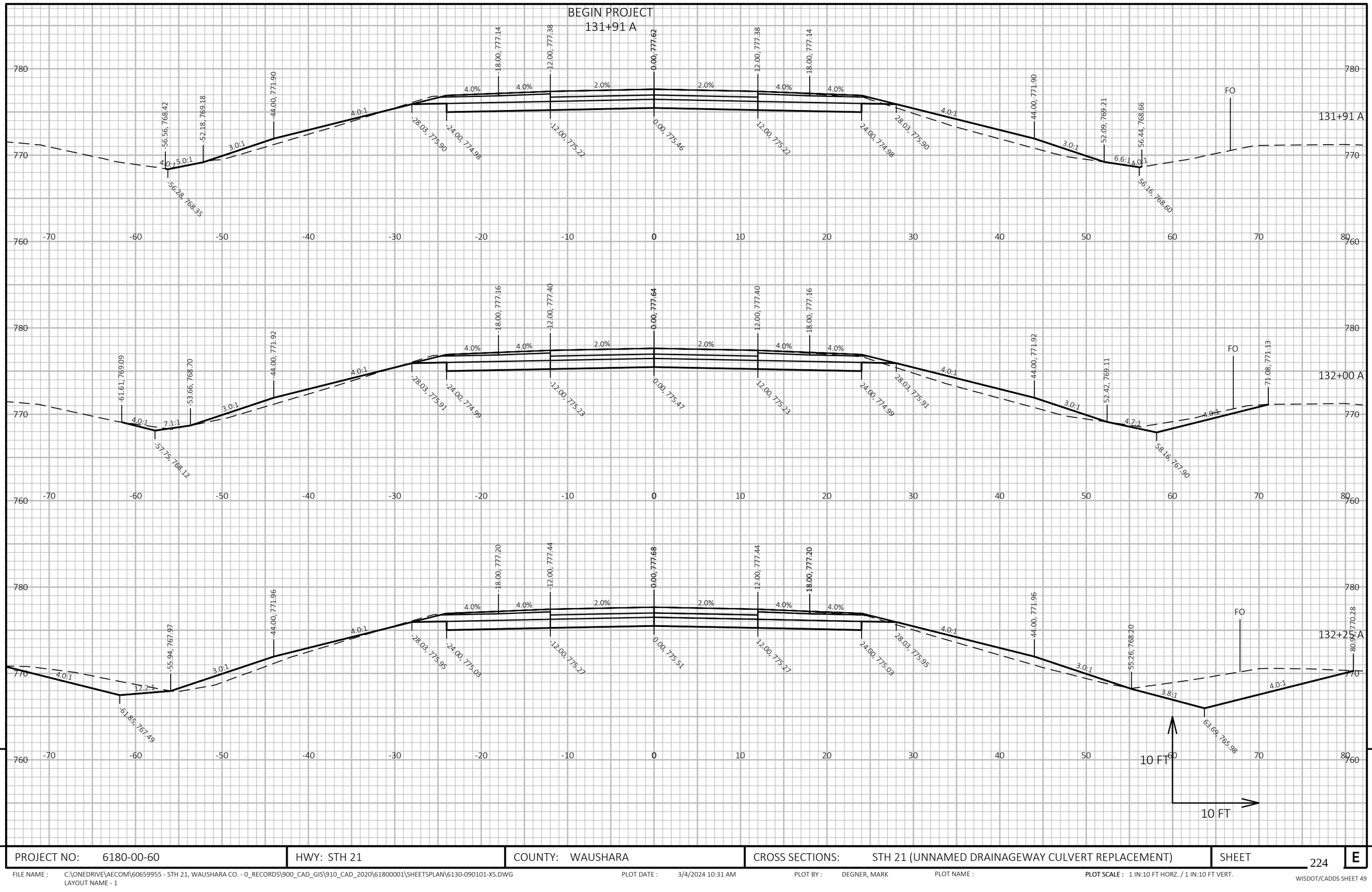
STH 21 RECONSTRUCTION (CONTINUED)

STATION		Distance	AREA (SF)			Incremental Vol (CY)			Cumulative Vol (CY)		Mass Ordinate Note 3
			Cut	Salvaged/Unusable Pavement Material	Fill	Cut Note 1	Salvaged/Unusable Pavement Material Note 2	Fill	Cut 1.00	Fill 1.3	
85+44	AT	15	159.94	34.83	2.87	88	19	2	10866	488	7641
85+50	AT	6	160.73	16.25	1.30	35	6	0	10902	489	7670
86+00	AT	50	172.74	16.25	0.08	320	30	0	11222	489	7960
86+17	AT	17	194.92	16.25	0.03	114	10	0	11335	489	8064
86+50	AT	33	170.33	16.25	1.84	225	20	1	11561	491	8267
86+77	AT	27	162.17	16.25	4.32	163	16	3	11724	495	8411
87+00	AT	23	162.67	16.25	9.30	141	14	8	11865	505	8528
87+02	AT	2	162.76	16.25	9.61	9	1	1	11875	506	8535
87+27	AT	25	163.51	16.25	17.87	151	15	17	12026	527	8650
87+50	AT	23	163.44	16.25	16.01	142	14	15	12168	547	8759
87+77	AT	27	163.57	16.25	12.33	161	16	14	12329	565	8885
88+00	AT	23	161.79	16.25	8.94	141	14	9	12470	577	9001
88+50	AT	50	155.47	16.25	4.57	288	30	8	12758	588	9247
89+00	AT	50	149.83	16.25	8.02	283	30	12	13041	603	9485
89+50	AT	50	148.14	43.92	12.14	274	81	22	13315	632	9649
90+00	AT	50	147.77	43.92	6.39	274	81	17	13589	654	9819
90+50	AT	50	157.25	43.92	0.00	282	81	6	13871	662	10012
91+00	AT	50	154.36	43.92	4.93	289	81	5	14160	668	10214
91+50	AT	50	154.60	43.92	4.80	286	81	9	14446	680	10407
92+00	AT	50	156.48	43.92	5.20	288	81	9	14734	692	10602
92+50	AT	50	156.91	43.92	9.10	291	81	17	15025	714	10789
93+00	AT	50	153.91	43.92	13.99	288	81	21	15313	741	10968
93+50	AT	50	148.98	43.92	17.56	280	81	29	15593	779	11129
94+00	AT	50	146.07	43.92	20.69	273	81	35	15866	825	11275
94+50	AT	50	146.32	43.92	20.82	271	81	39	16137	875	11414
95+00	AT	50	148.43	43.92	15.45	273	81	34	16410	919	11562
95+50	AT	50	149.80	43.92	12.77	277	81	24	16688	950	11728
96+00	AT	50	151.39	16.25	14.74	279	56	25	16966	983	11918
96+50	AT	50	162.44	16.25	1.83	291	30	15	17257	1003	12158
97+00	AT	50	175.37	16.25	0.00	325	30	0	17582	1003	12453
97+50	AT	50	155.44	16.25	7.13	306	30	7	17888	1011	12720
98+00	AT	50	152.89	43.92	12.40	285	56	18	18174	1035	12927
98+50	AT	50	153.09	43.92	11.37	283	81	22	18457	1064	13100
99+00	AT	50	152.20	43.92	16.70	282	81	31	18739	1104	13260
99+50	AT	50	151.57	43.92	20.65	281	81	35	19020	1149	13415
100+00	AT	50	148.55	43.92	18.78	275	81	35	19295	1194	13564
100+50	AT	50	150.89	43.92	14.78	277	81	31	19572	1234	13720
101+00	AT	50	151.10	43.92	3.95	280	81	17	19852	1257	13895
101+50	AT	50	147.15	43.92	5.79	276	81	9	20128	1269	14078
102+00	AT	50	145.45	43.92	5.53	269	81	10	20398	1282	14253
102+50	AT	50	149.39	43.92	3.62	273	81	8	20671	1293	14434
103+00	AT	50	153.52	43.92	0.66	284	81	1	20955	1295	14635
103+50	AT	50	154.21	43.92	0.72	285	81	1	21240	1296	14837
104+00	AT	50	156.65	43.92	0.74	288	81	1	21528	1298	15042
104+50	AT	50	155.38	43.92	0.79	289	81	1	21817	1300	15248
105+00	AT	50	155.26	43.92	0.39	288	81	1	22104	1301	15453
105+50	AT	50	157.20	43.92	1.13	289	81	1	22393	1303	15659

STH 21 RECONSTRUCTION (CONTINUED)

STATION	Distance	AREA (SF)			Incremental Vol (CY)			Cumulative Vol (CY)		Mass Ordinate Note 3
		Cut	Salvaged/Unusable Pavement Material	Fill	Cut Note 1	Salvaged/Unusable Pavement Material Note 2	Fill	Cut 1.00	Fill 1.3	
106+00 AT	50	159.77	43.92	0.87	296	81	2	22689	1305	15871
106+50 AT	50	156.37	43.92	0.30	293	81	1	22982	1306	16081
107+00 AT	50	152.06	43.92	0.23	286	81	0	23268	1307	16285
107+50 AT	50	150.13	43.92	0.38	280	81	1	23547	1307	16483
108+00 AT	50	148.84	43.92	0.29	276	81	1	23823	1308	16676
108+50 AT	50	157.01	43.92	0.00	283	81	0	24106	1309	16878
109+00 AT	50	165.73	43.92	0.00	307	81	0	24413	1309	17103
109+50 AT	50	162.80	43.92	0.00	304	81	0	24717	1309	17326
110+00 AT	50	158.43	43.92	0.00	297	81	0	25015	1309	17542
110+25 AT	25	169.86	43.92	0.00	150	40	0	25165	1309	17652
110+50 AT	25	167.33	43.92	0.00	157	41	0	25322	1309	17768
111+00 AT	50	157.17	43.92	13.11	300	81	12	25622	1324	17971
111+50 AT	50	156.88	43.92	9.50	291	81	18	25913	1347	18158
112+00 AT	50	183.68	43.92	2.79	315	81	11	26228	1362	18377
					26228	6489	1048			

Notes: 1 - Cut includes Salvaged/Unusable Pavement Material and Topsoil
2 - Salvaged/Unusable Pavement Material does not show in cross sections
3 - Mass Ordinate = (Cut - Salvaged/Unusable Pavement Material) - (Fill * Fill Factor)



9

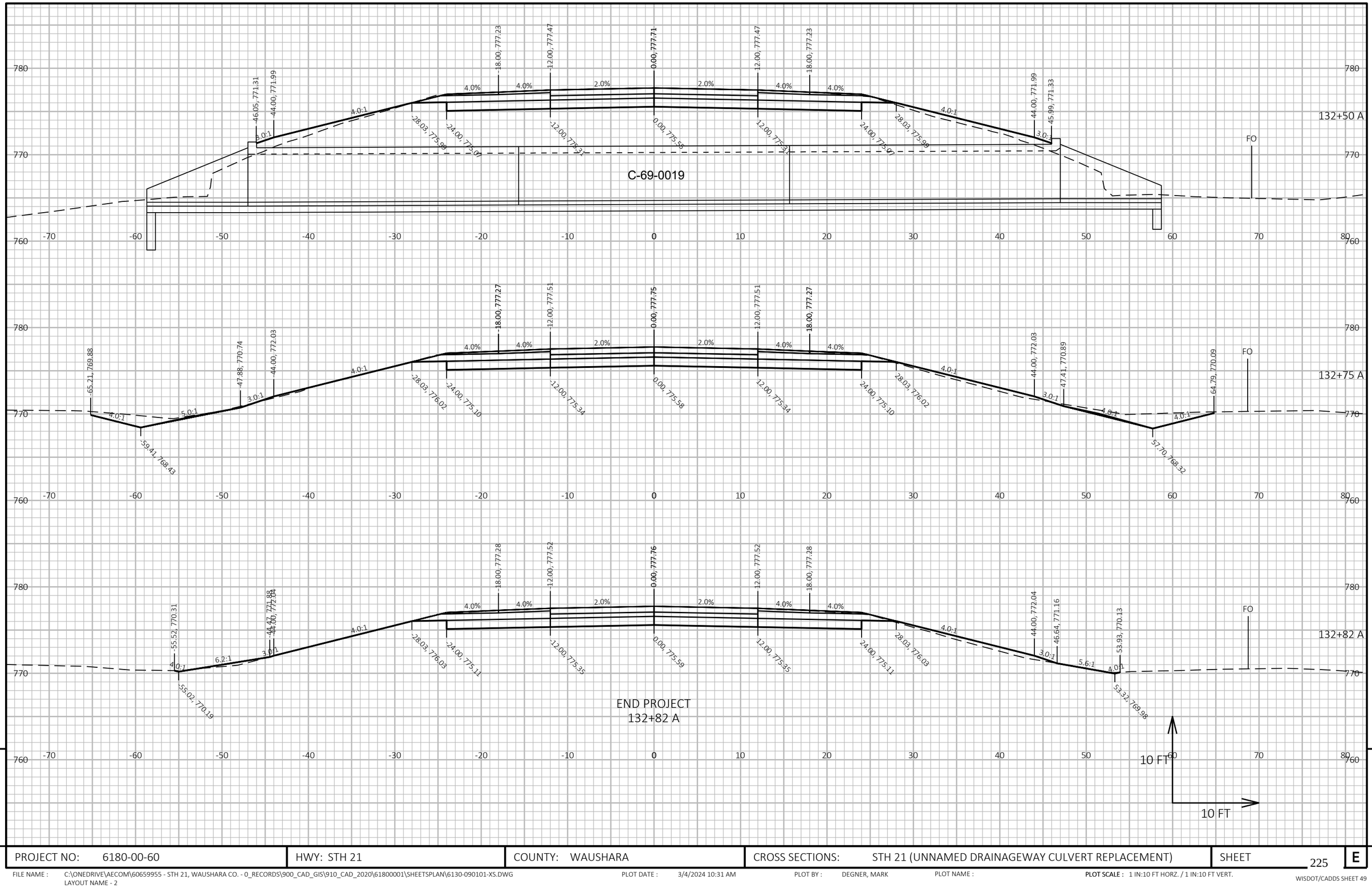
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PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 (UNNAMED DRAINAGEWAY CULVERT REPLACEMENT)	SHEET 224	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-090101-XS.DWG
LAYOUT NAME - 1

PLOT DATE : 3/4/2024 10:31 AM PLOT BY : DEGNER, MARK PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

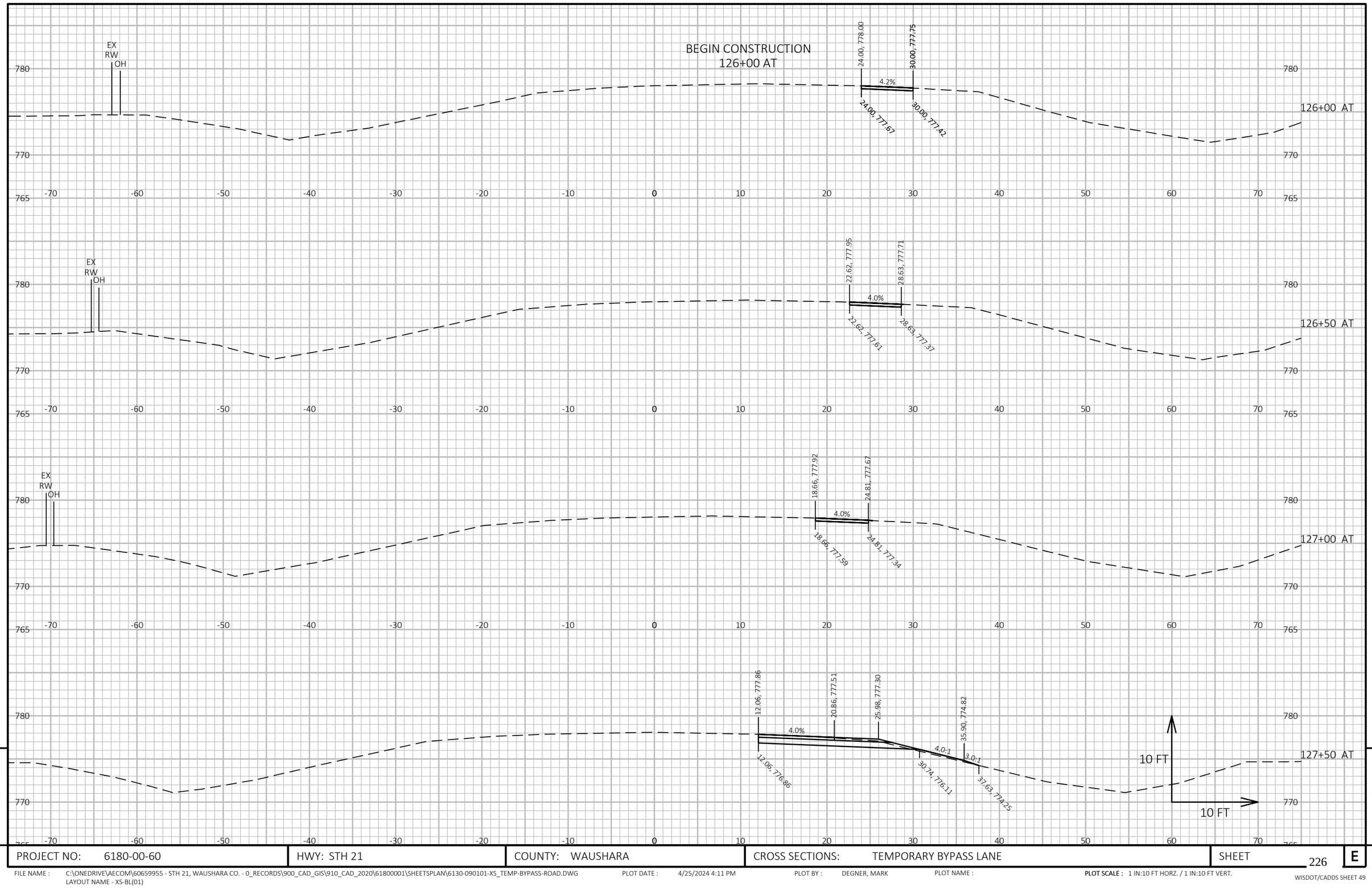


PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 (UNNAMED DRAINAGEWAY CULVERT REPLACEMENT)	SHEET 225	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-090101-XS.DWG
LAYOUT NAME - 2

PLOT DATE : 3/4/2024 10:31 AM PLOT BY : DEGNER, MARK PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: TEMPORARY BYPASS LANE	SHEET 226	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-090101-XS_TEMP-BYPASS-ROAD.DWG
LAYOUT NAME - XS-BL(01)

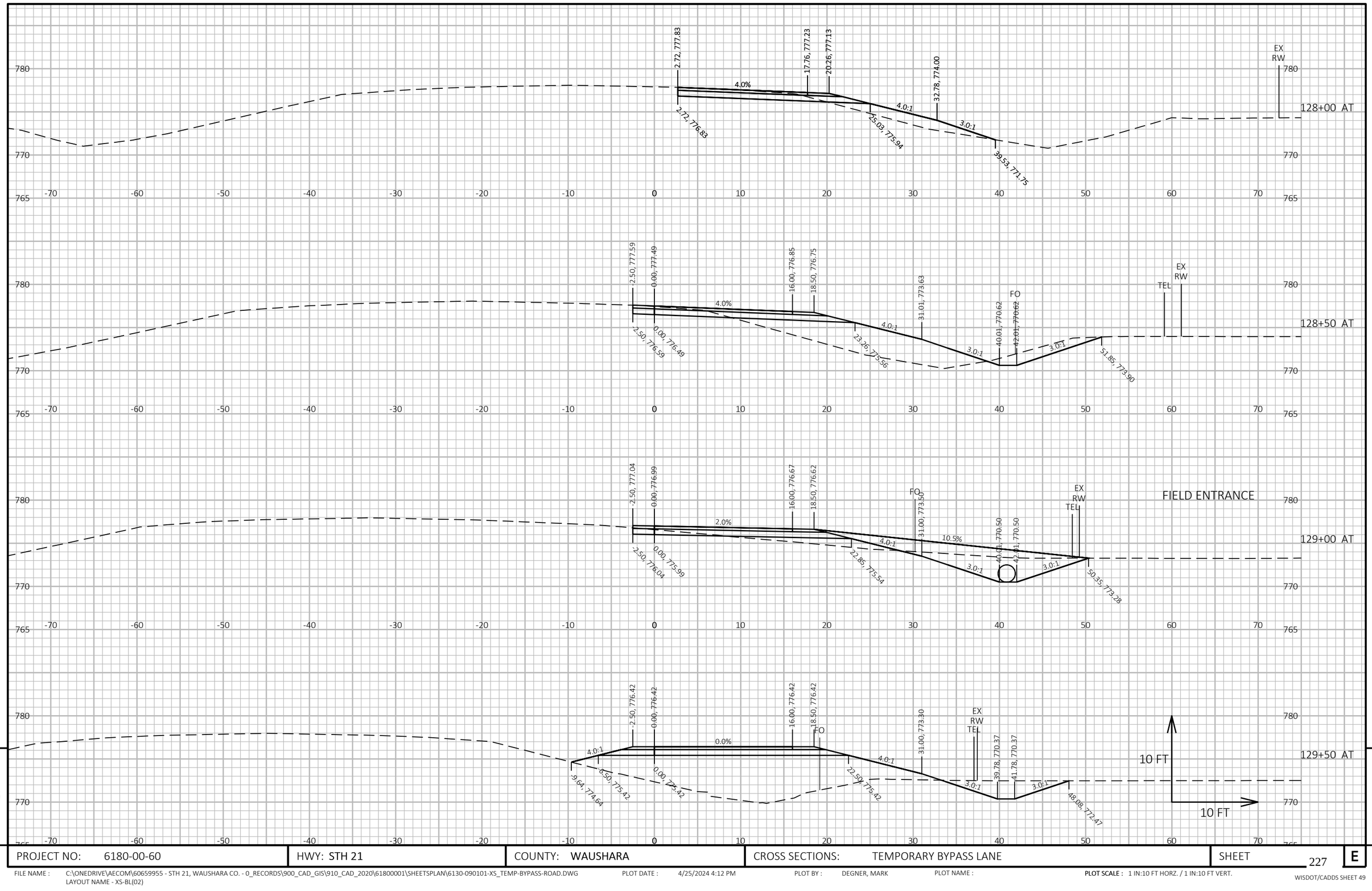
PLOT DATE : 4/25/2024 4:11 PM

PLOT BY : DEGNER, MARK

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



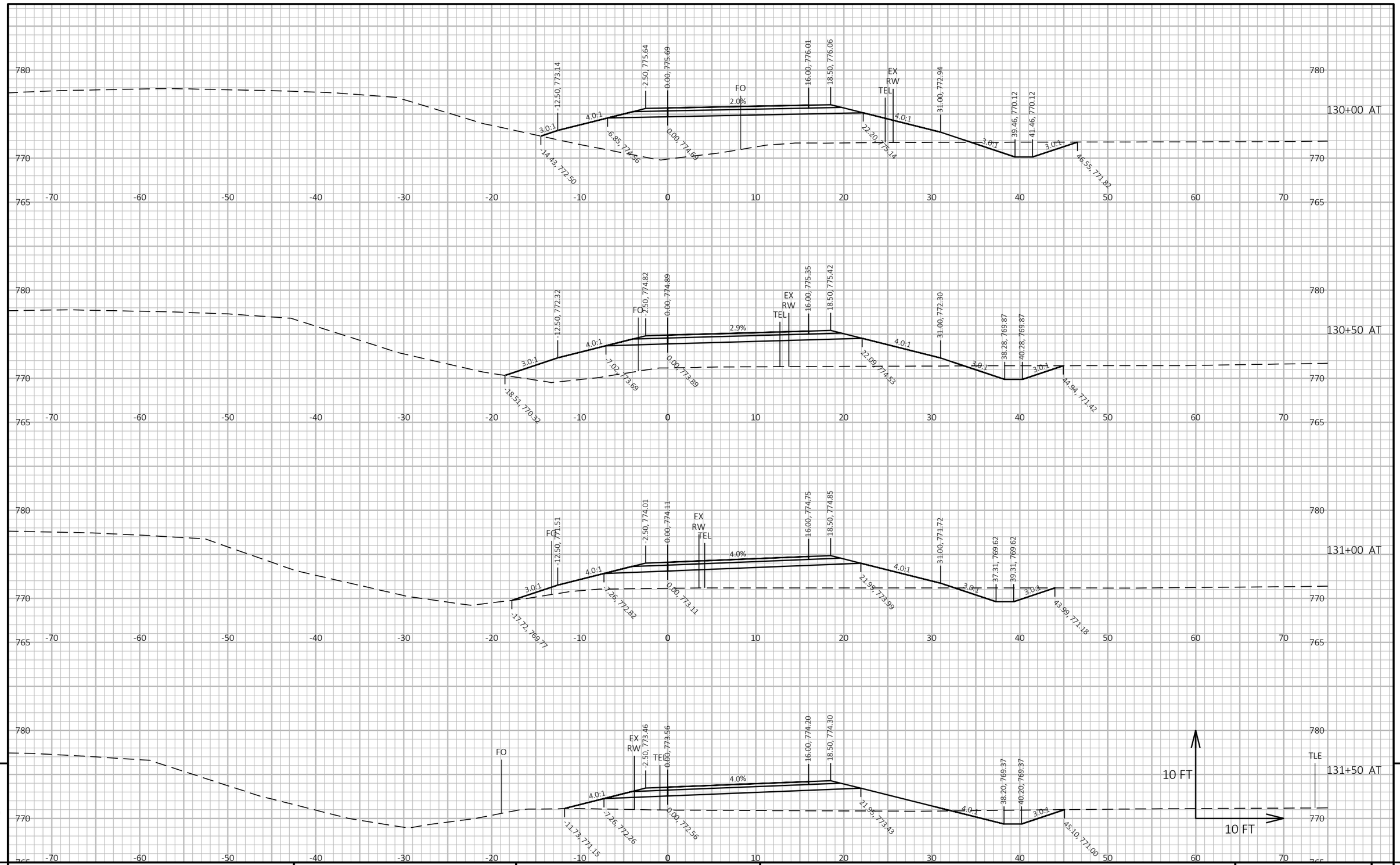
PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: TEMPORARY BYPASS LANE	SHEET 227	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-090101-XS_TEMP-BYPASS-ROAD.DWG
LAYOUT NAME - XS-BL(02)

PLOT DATE : 4/25/2024 4:12 PM PLOT BY : DEGNER, MARK PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

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PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: TEMPORARY BYPASS LANE	SHEET 228	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-090101-XS_TEMP-BYPASS-ROAD.DWG
LAYOUT NAME - XS-BL(03)

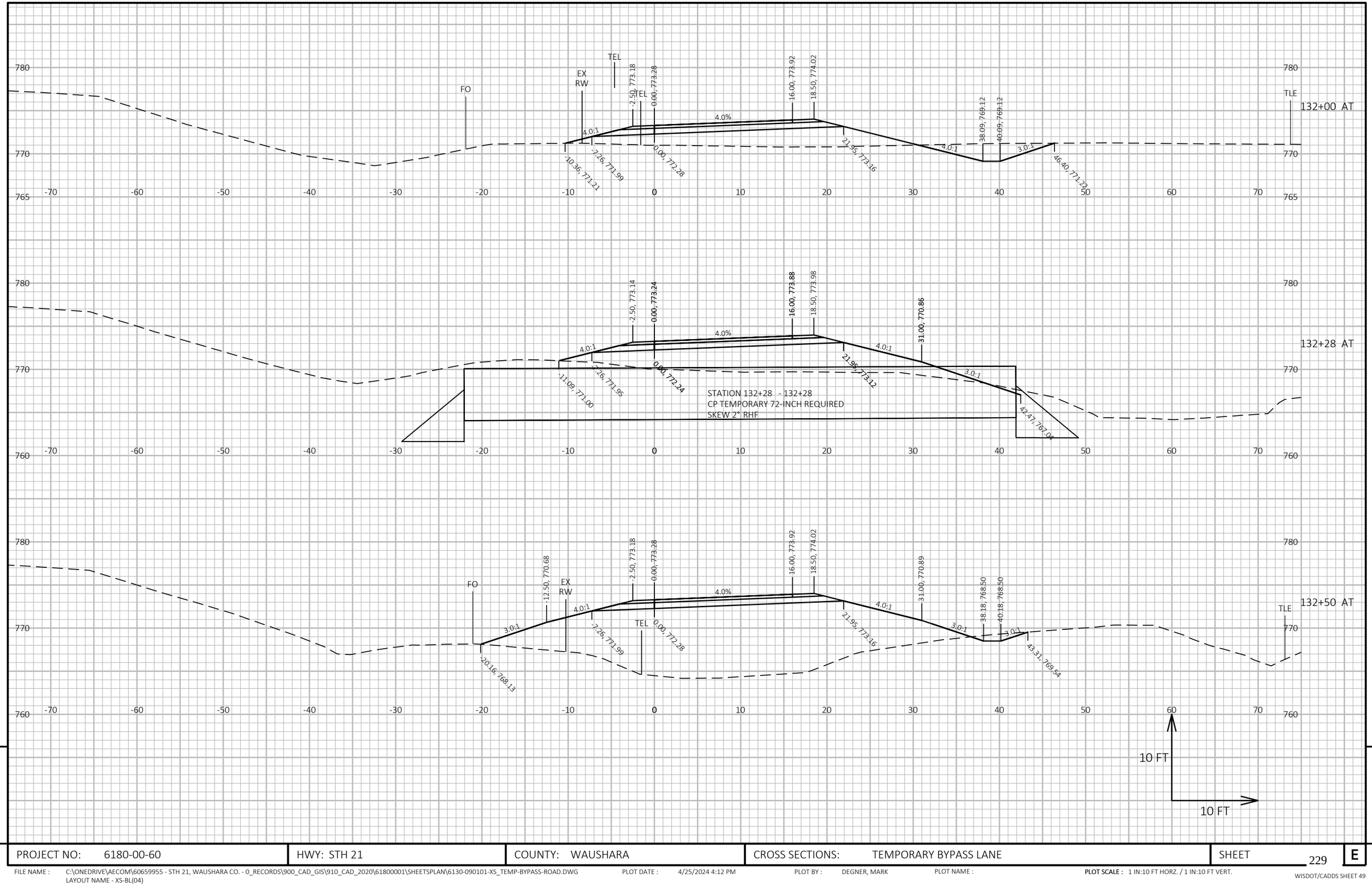
PLOT DATE : 4/25/2024 4:12 PM

PLOT BY : DEGNER, MARK

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

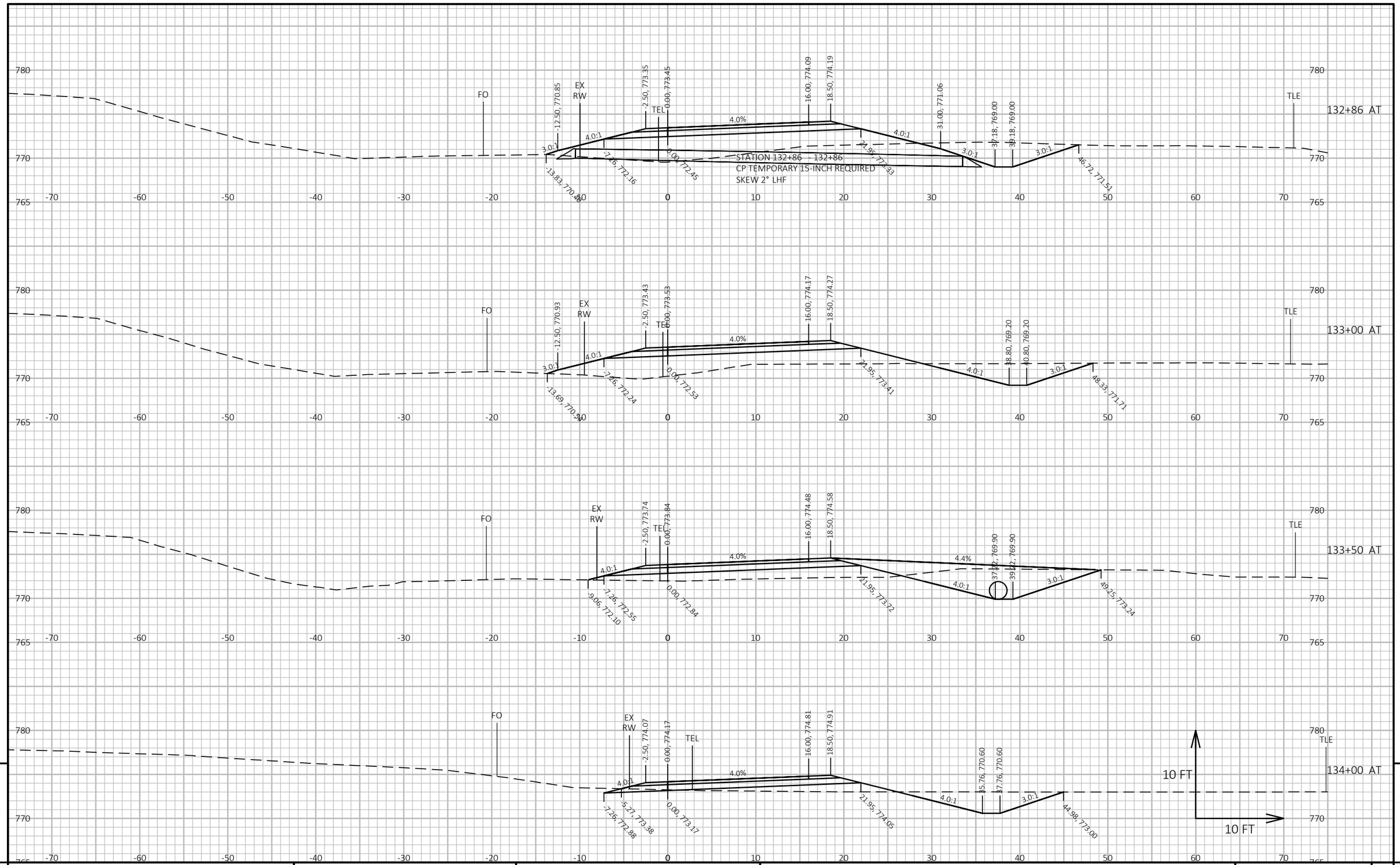


PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: TEMPORARY BYPASS LANE	SHEET 229	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-090101-XS_TEMP-BYPASS-ROAD.DWG
LAYOUT NAME - XS-BL(04)

PLOT DATE : 4/25/2024 4:12 PM PLOT BY : DEGNER, MARK PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: TEMPORARY BYPASS LANE	SHEET 230	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-090101-XS_TEMP-BYPASS-ROAD.DWG
LAYOUT NAME - XS-BL(05)

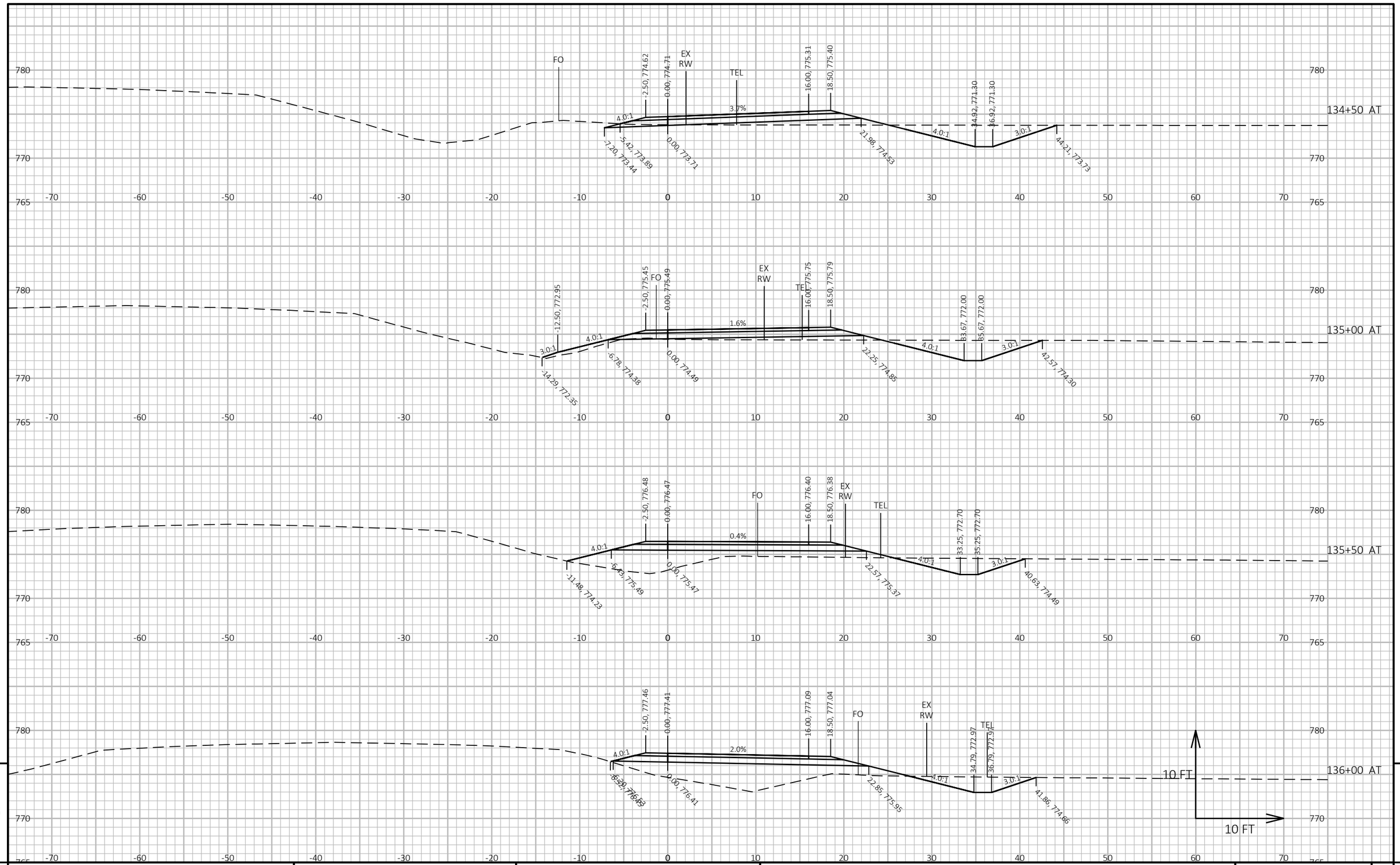
PLOT DATE : 4/25/2024 4:12 PM

PLOT BY : DEGNER, MARK

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: TEMPORARY BYPASS LANE	SHEET 231	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-090101-XS_TEMP-BYPASS-ROAD.DWG
LAYOUT NAME - XS-BL(06)

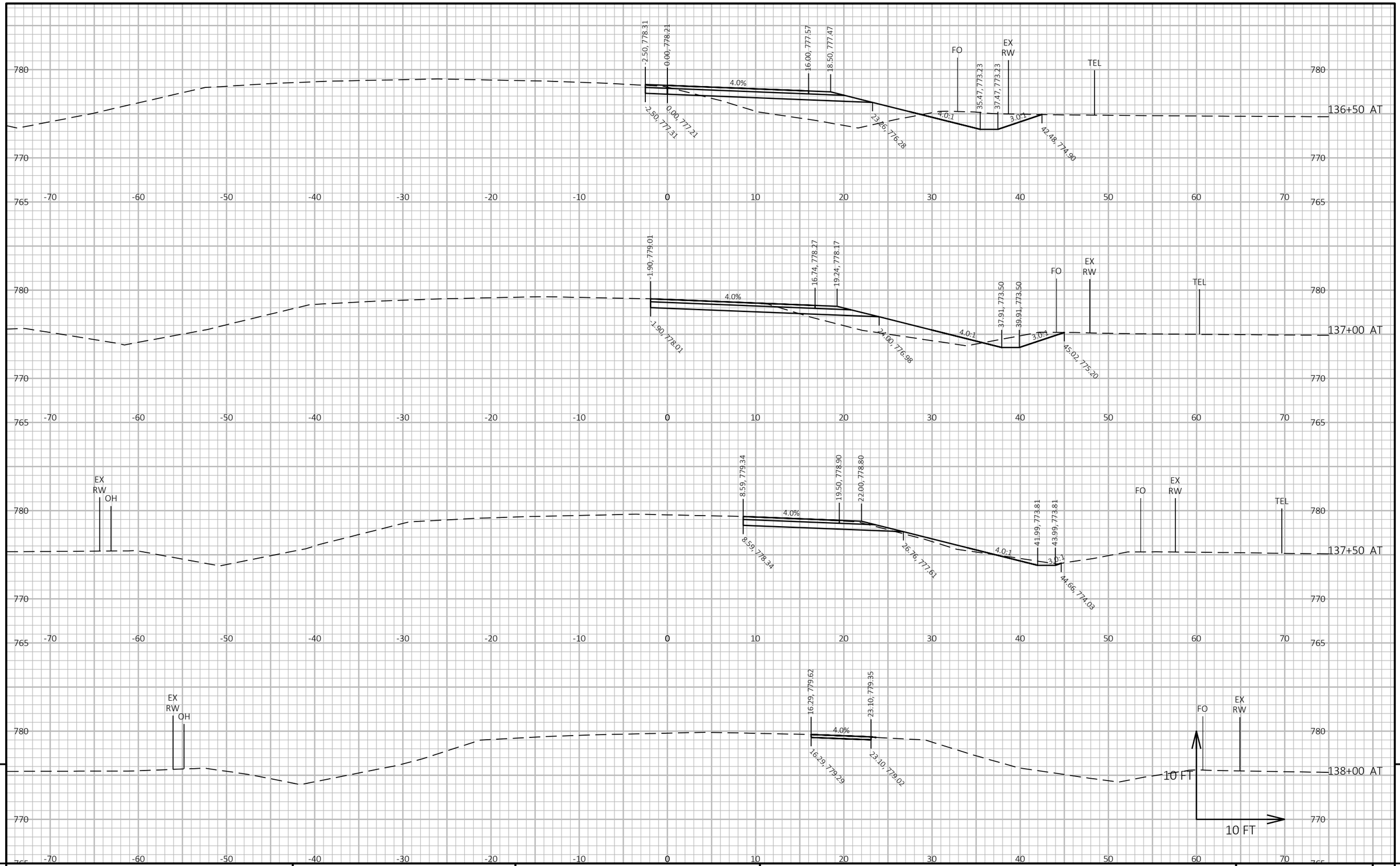
PLOT DATE : 4/25/2024 4:12 PM

PLOT BY : DEGNER, MARK

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: TEMPORARY BYPASS LANE	SHEET 232	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-090101-XS_TEMP-BYPASS-ROAD.DWG
LAYOUT NAME - XS-BL(07)

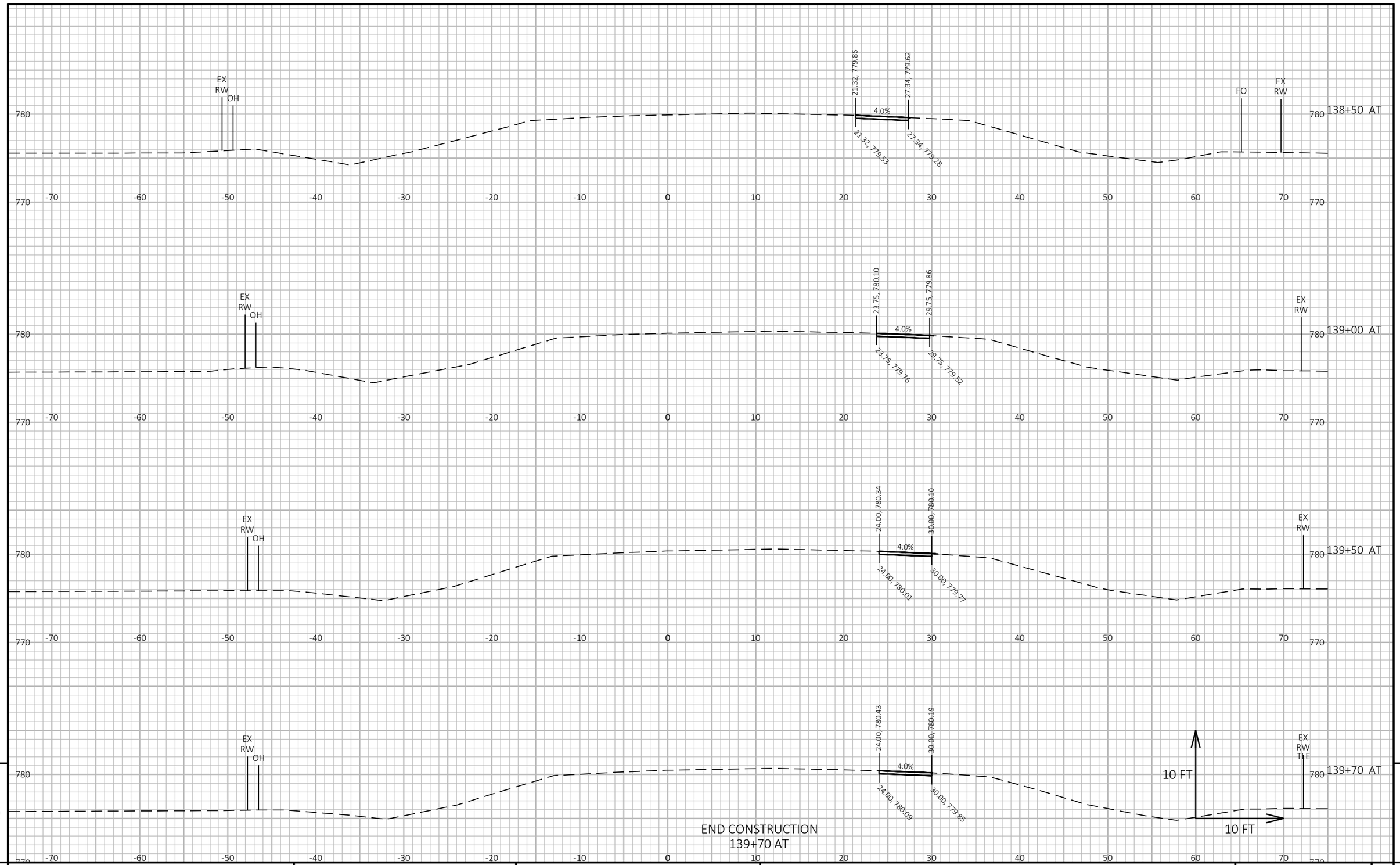
PLOT DATE : 4/25/2024 4:12 PM

PLOT BY : DEGNER, MARK

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

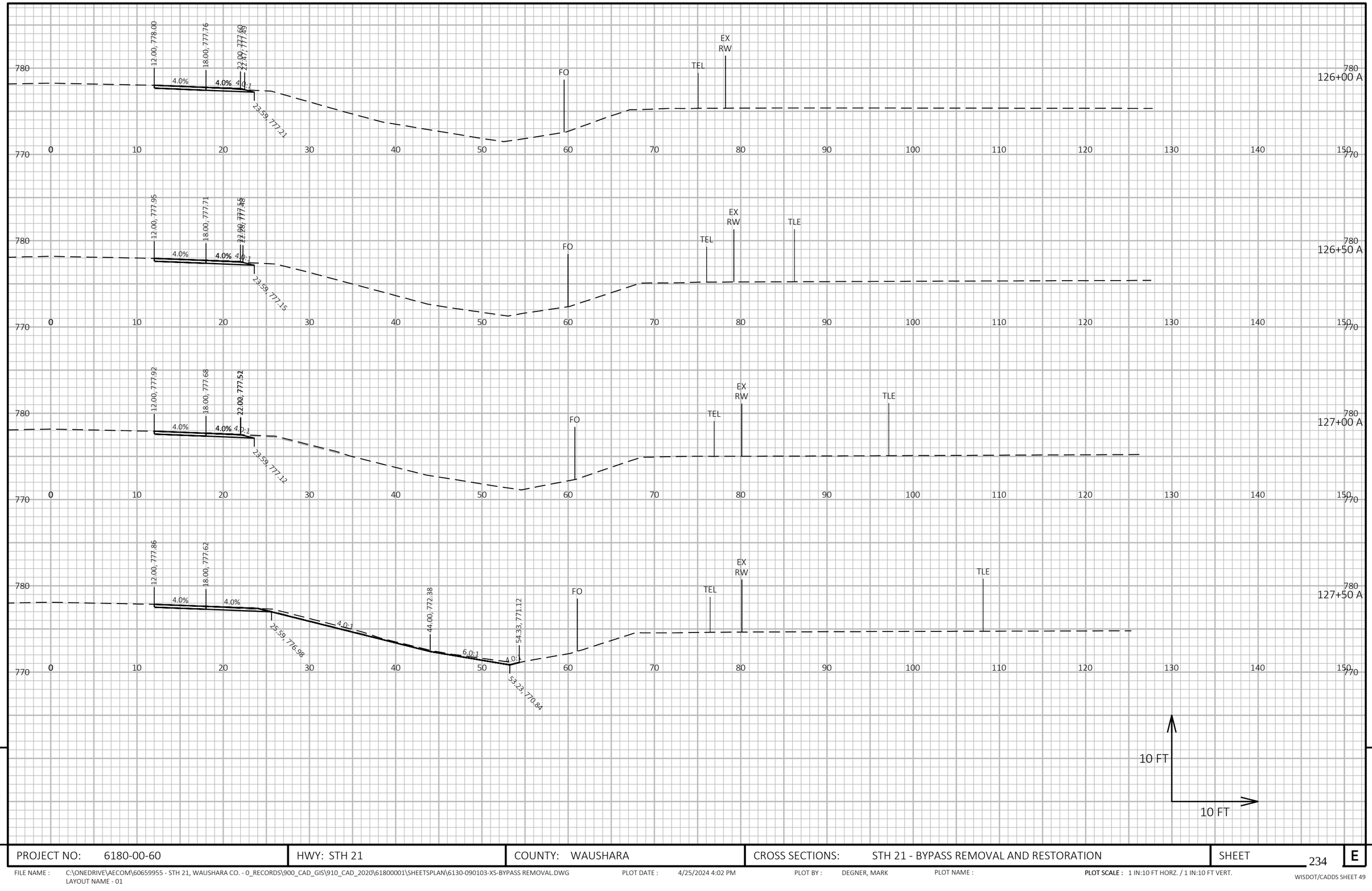
WISDOT/CADDS SHEET 49



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PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: TEMPORARY BYPASS LANE	SHEET 233	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-090101-XS_TEMP-BYPASS-ROAD.DWG
LAYOUT NAME - XS-BL(08)
PLOT DATE : 4/25/2024 4:12 PM
PLOT BY : DEGNER, MARK
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49

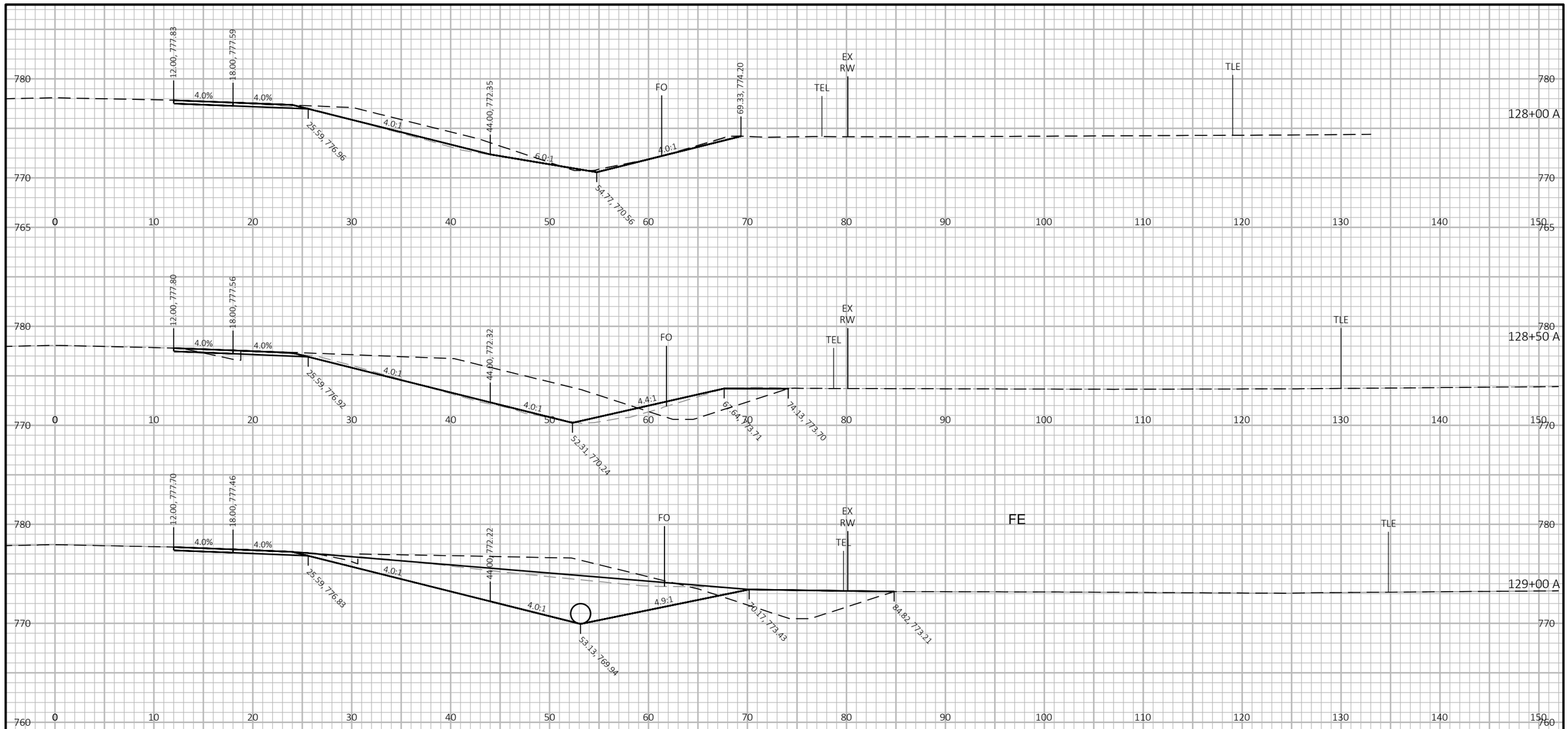


PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 - BYPASS REMOVAL AND RESTORATION	SHEET 234	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-090103-XS-BYPASS REMOVAL.DWG
LAYOUT NAME - 01

PLOT DATE : 4/25/2024 4:02 PM PLOT BY : DEGNER, MARK PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

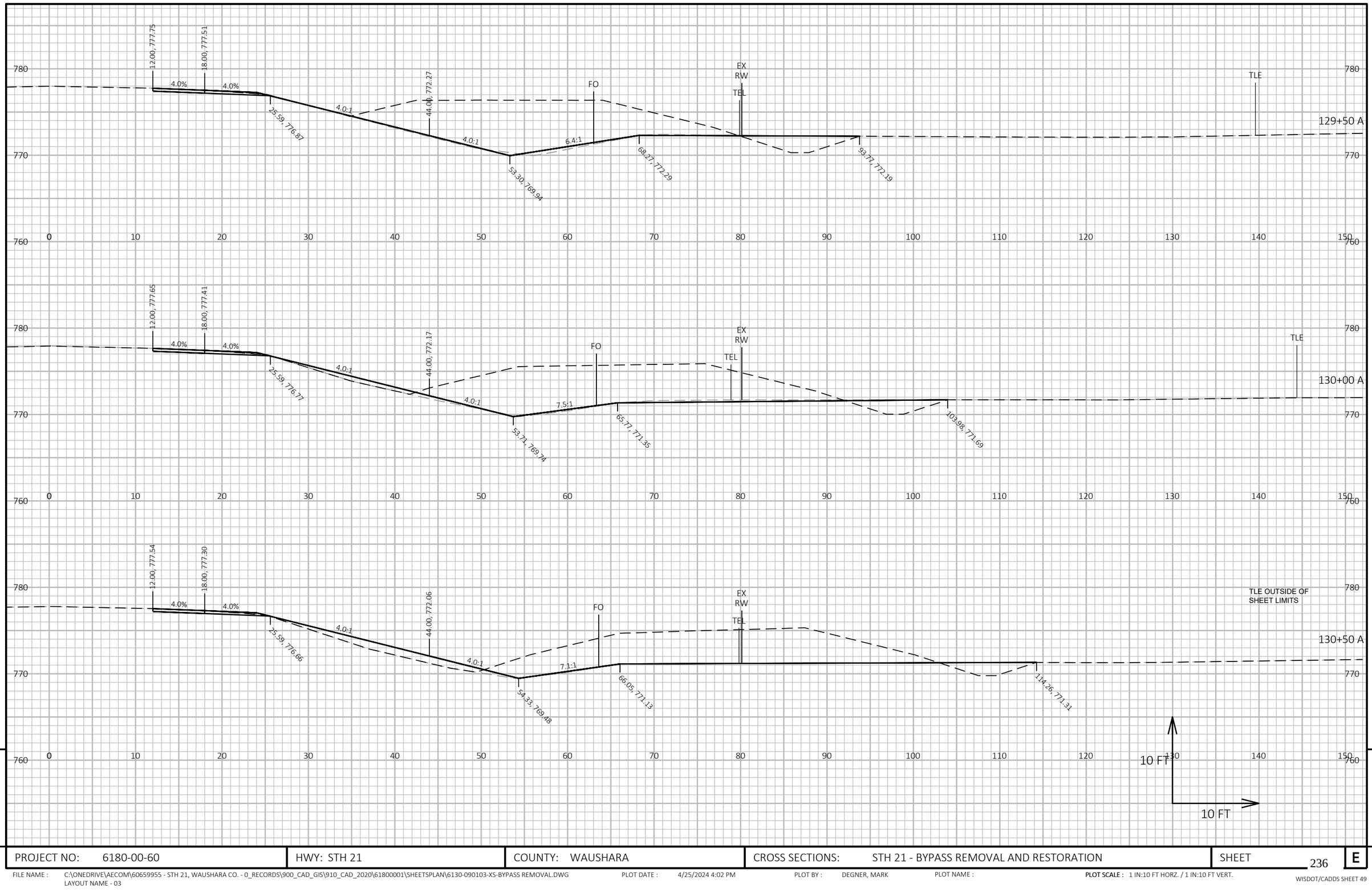


PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 - BYPASS REMOVAL AND RESTORATION	SHEET 235	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-090103-XS-BYPASS REMOVAL.DWG
LAYOUT NAME - 02

PLOT DATE : 4/25/2024 4:02 PM PLOT BY : DEGNER, MARK PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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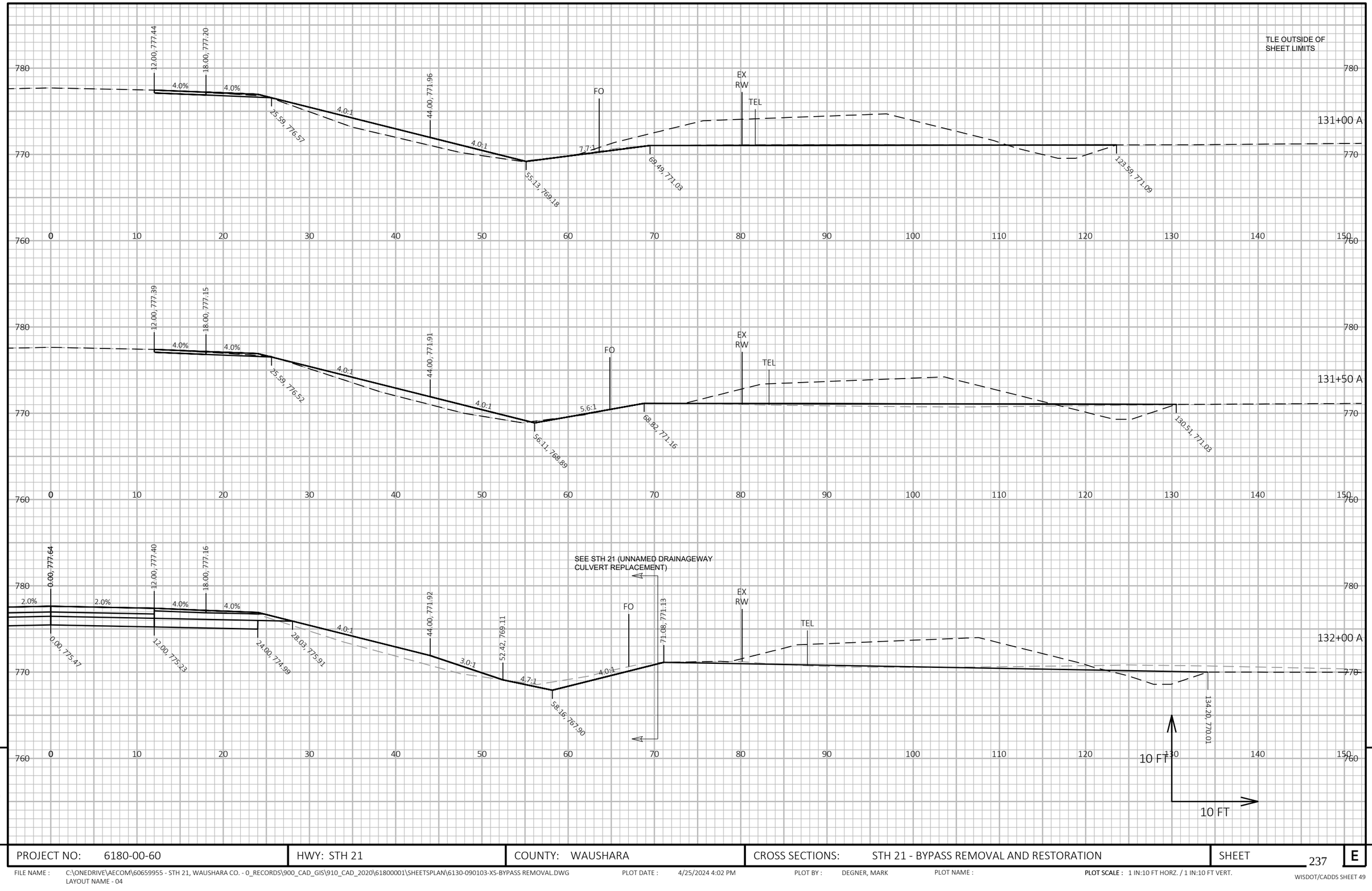
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PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 - BYPASS REMOVAL AND RESTORATION	SHEET 236	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-090103-XS-BYPASS REMOVAL.DWG
LAYOUT NAME - 03

PLOT DATE : 4/25/2024 4:02 PM PLOT BY : DEGNER, MARK PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 - BYPASS REMOVAL AND RESTORATION	SHEET 237	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-090103-XS-BYPASS REMOVAL.DWG
LAYOUT NAME - 04

PLOT DATE : 4/25/2024 4:02 PM PLOT BY : DEGNER, MARK PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

TLE OUTSIDE OF SHEET LIMITS

SEE STH 21 (UNNAMED DRAINAGEWAY CULVERT REPLACEMENT)

C-69-0019

132+50 A

0.00, 777.71 | 12.00, 777.47 | 18.00, 777.23 | 44.00, 771.99 | 45.99, 771.33
2.0% | 2.0% | 4.0% | 4.0% | 4.0:1 | 3.0:1
0.00, 775.55 | 12.00, 775.31 | 24.00, 775.07 | 28.03, 775.99
FO | EX RW | TEL
70.58, 765.35 | 83.83, 765.63 | 137.62, 771.06

12.00, 777.10 | 18.00, 777.26
4.0% | 4.0% | 4.0:1 | 4.0:1
25.59, 776.62 | 44.00, 772.02 | 50.23, 770.46
FO | EX RW | TEL
354.1:1 | 82.12, 770.37

133+00 A

137.29, 771.83

12.00, 777.61 | 18.00, 777.37
4.0% | 4.0% | 4.0:1 | 4.0:1 | 13.0:1
25.59, 776.73 | 44.00, 772.13 | 47.99, 771.13
FO | EX RW | TEL
65.88, 772.51

133+50 A

134.22, 773.24

12.00, 777.71 | 18.00, 777.47
4.0% | 4.0% | 4.0:1 | 4.0:1 | 7.1:1
25.59, 776.84 | 44.00, 772.23 | 47.89, 771.26
FO | EX RW | TEL
66.87, 772.93

PE

134+00 A

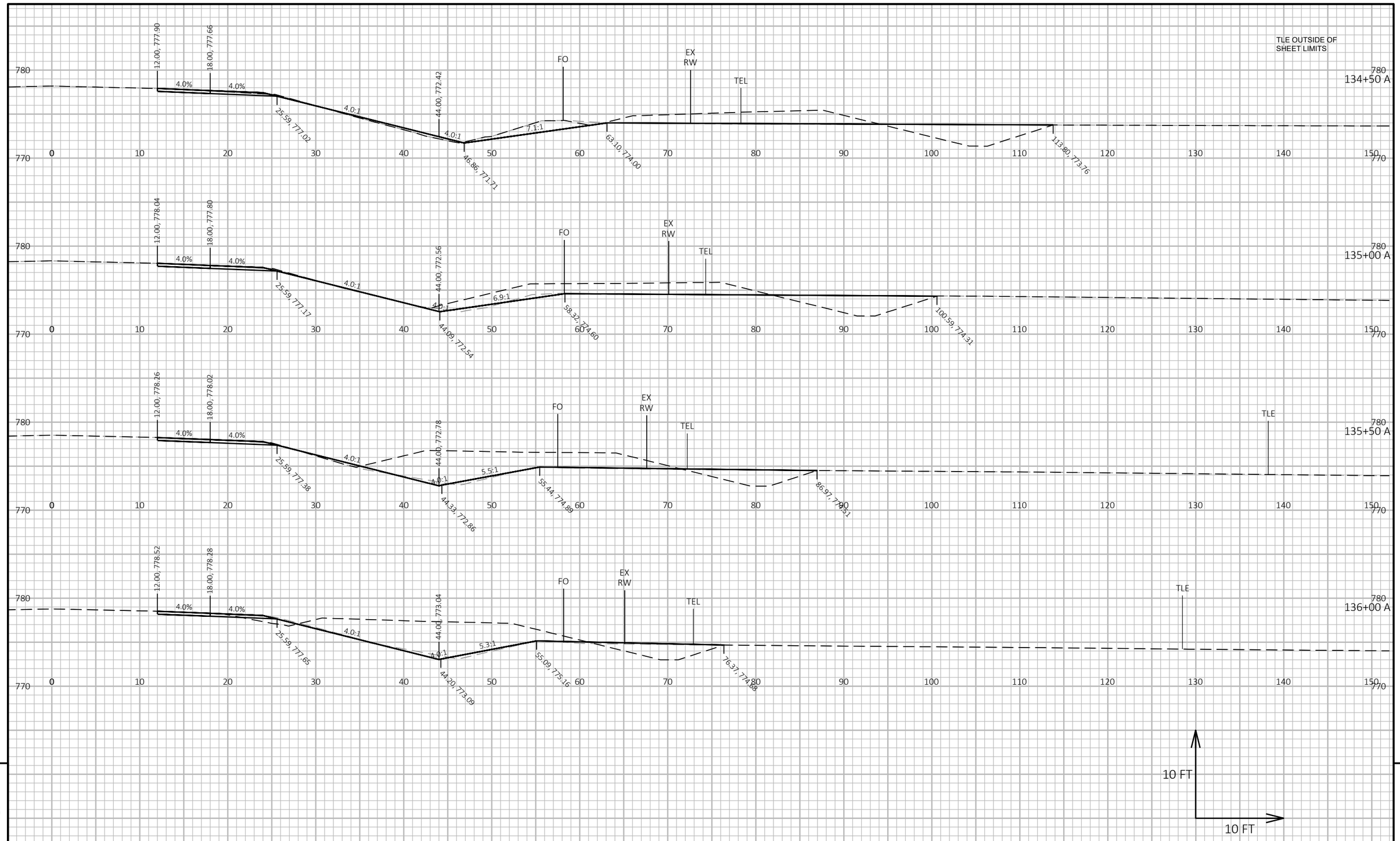
123.75, 773.06

10 FT
10 FT

9 | 9

PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 - BYPASS REMOVAL AND RESTORATION	SHEET 238	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-090103-XS-BYPASS REMOVAL.DWG
LAYOUT NAME - 05
PLOT DATE : 4/25/2024 4:03 PM
PLOT BY : DEGNER, MARK
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



9

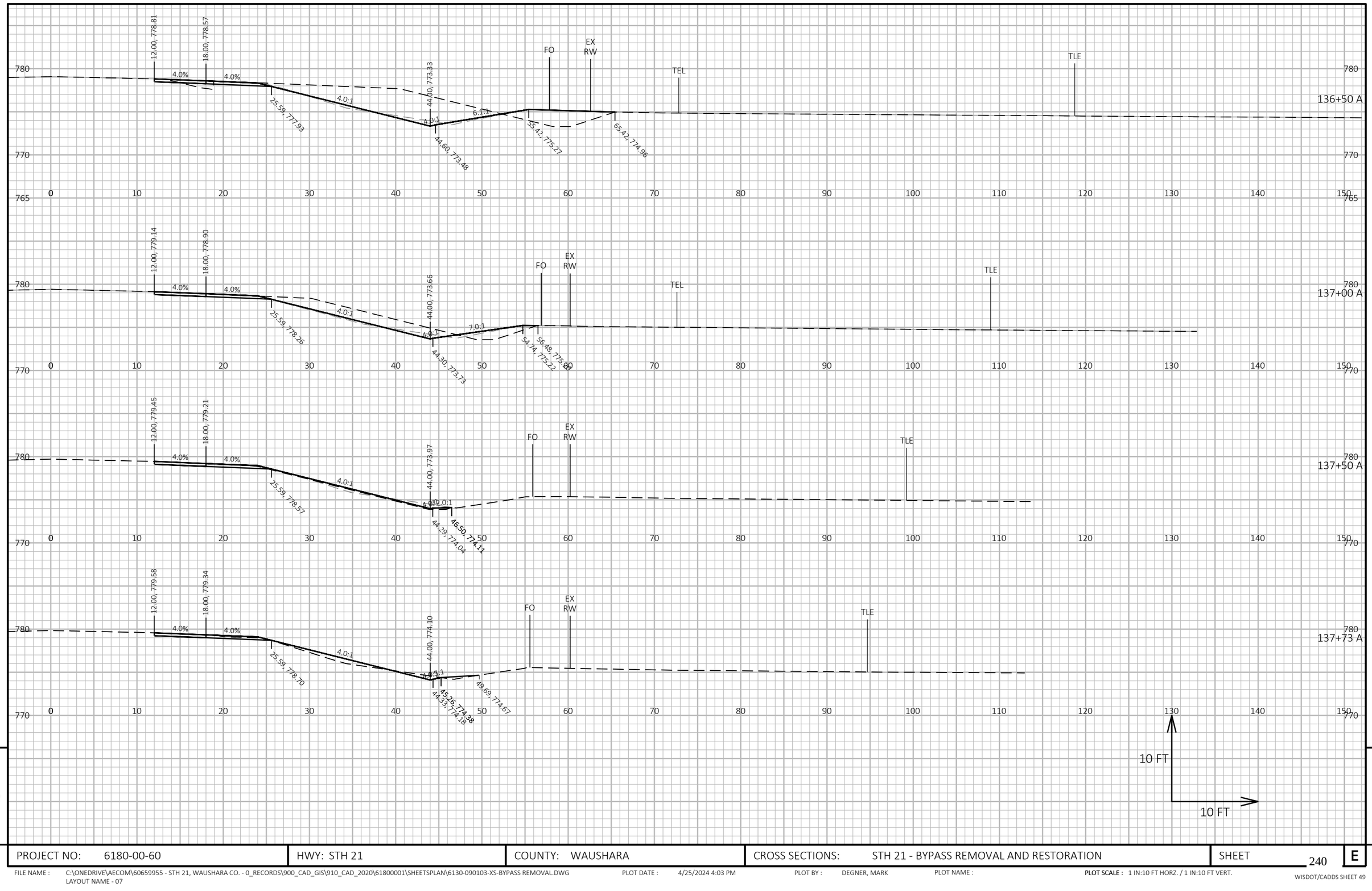
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PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 - BYPASS REMOVAL AND RESTORATION	SHEET 239	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-090103-XS-BYPASS REMOVAL.DWG
LAYOUT NAME - 06

PLOT DATE : 4/25/2024 4:03 PM PLOT BY : DEGNER, MARK PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



PROJECT NO: 6180-00-60	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 - BYPASS REMOVAL AND RESTORATION	SHEET 240	E

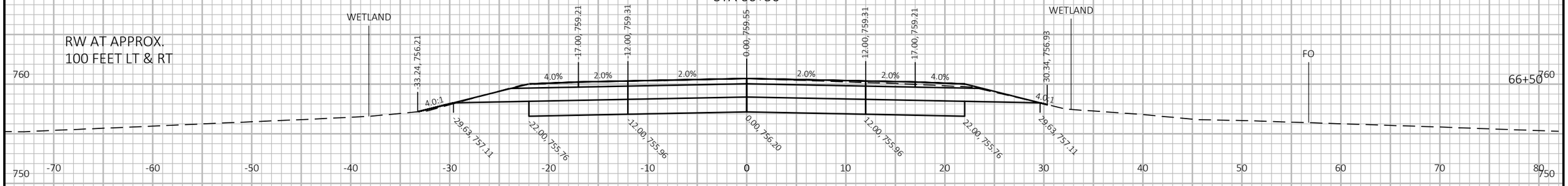
FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\6130-090103-XS-BYPASS REMOVAL.DWG
LAYOUT NAME - 07

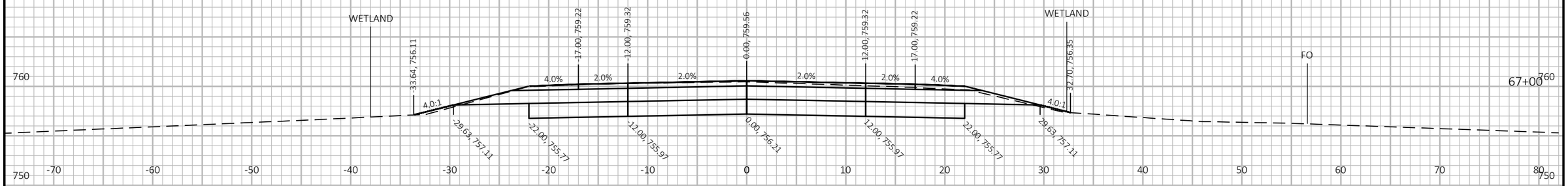
PLOT DATE : 4/25/2024 4:03 PM PLOT BY : DEGNER, MARK PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

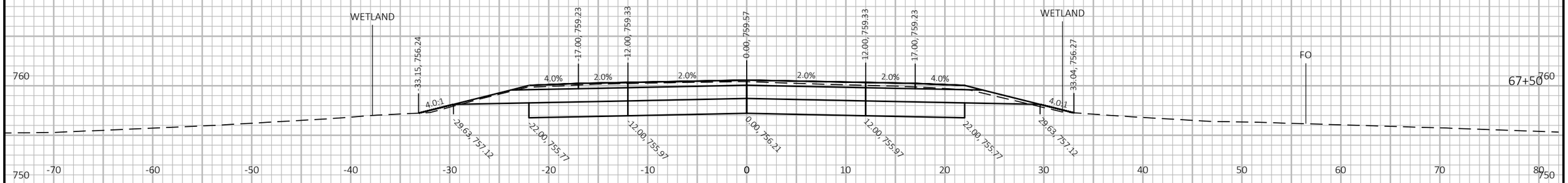
WISDOT/CADDS SHEET 49

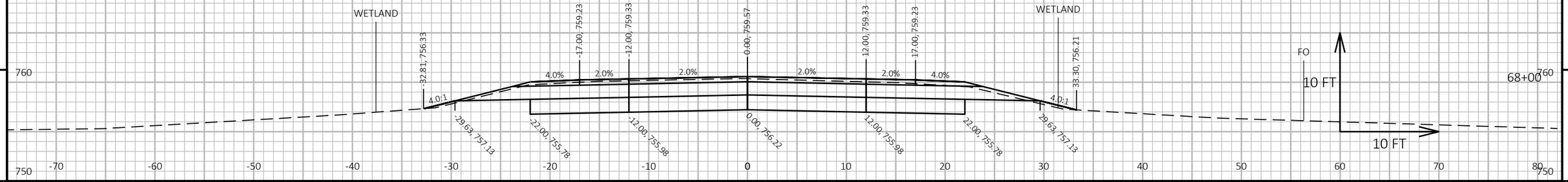
BEGIN RECONSTRUCTION
STA 66+50

RW AT APPROX.
100 FEET LT & RT









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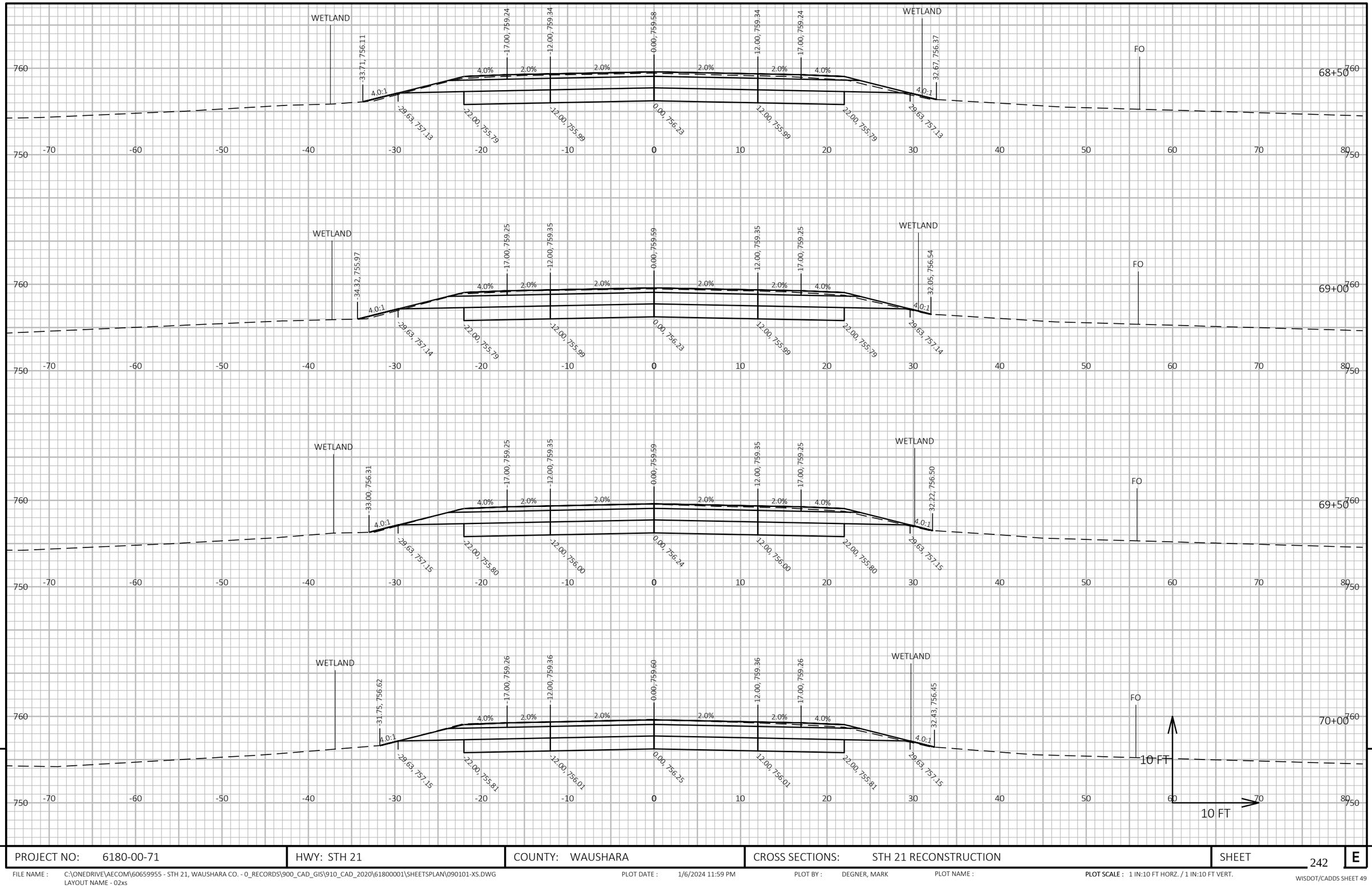
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PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 241	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 01xs

PLOT DATE : 1/6/2024 11:59 PM PLOT BY : DEGNER, MARK PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

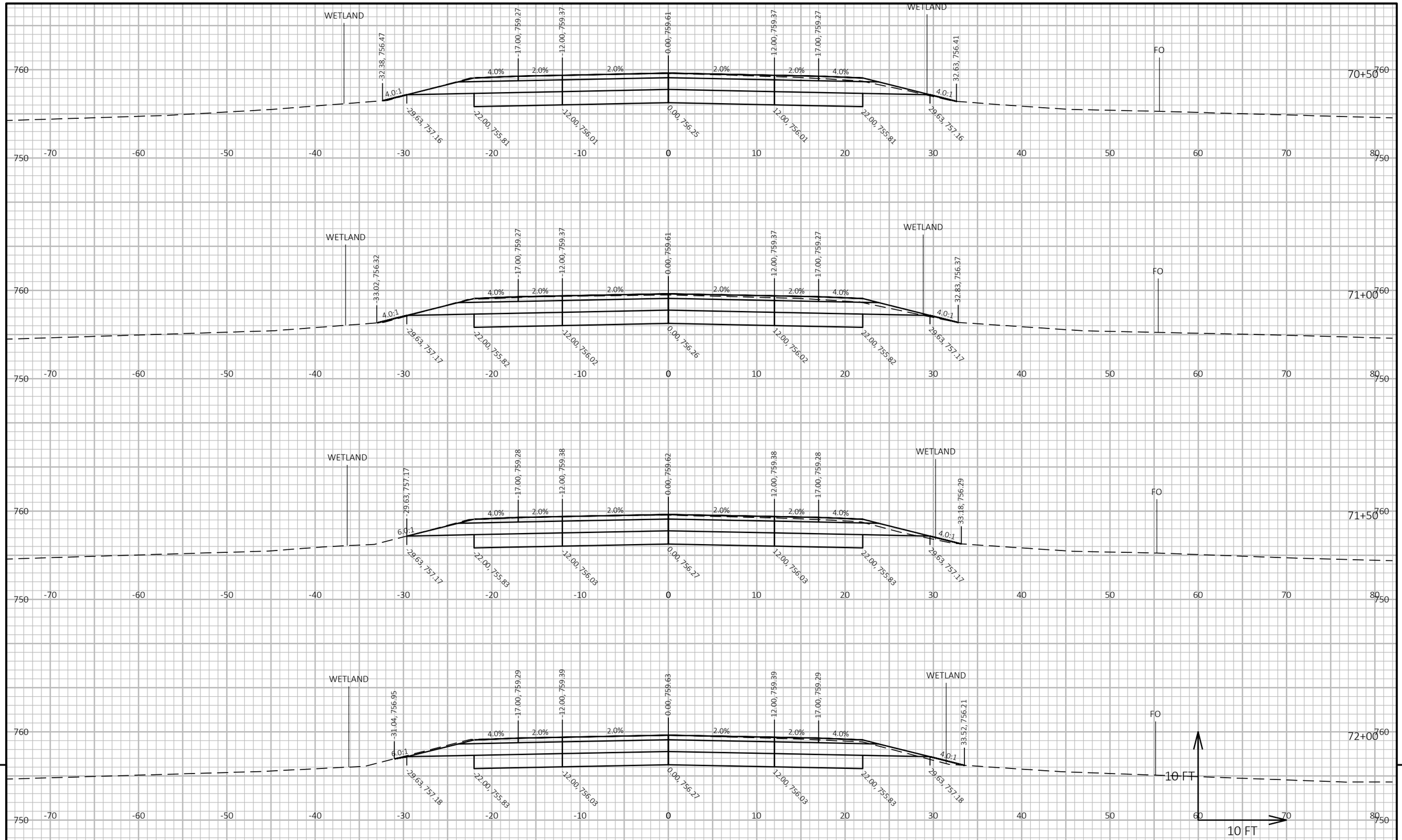
9

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 242	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 02xs

PLOT DATE : 1/6/2024 11:59 PM PLOT BY : DEGNER, MARK PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

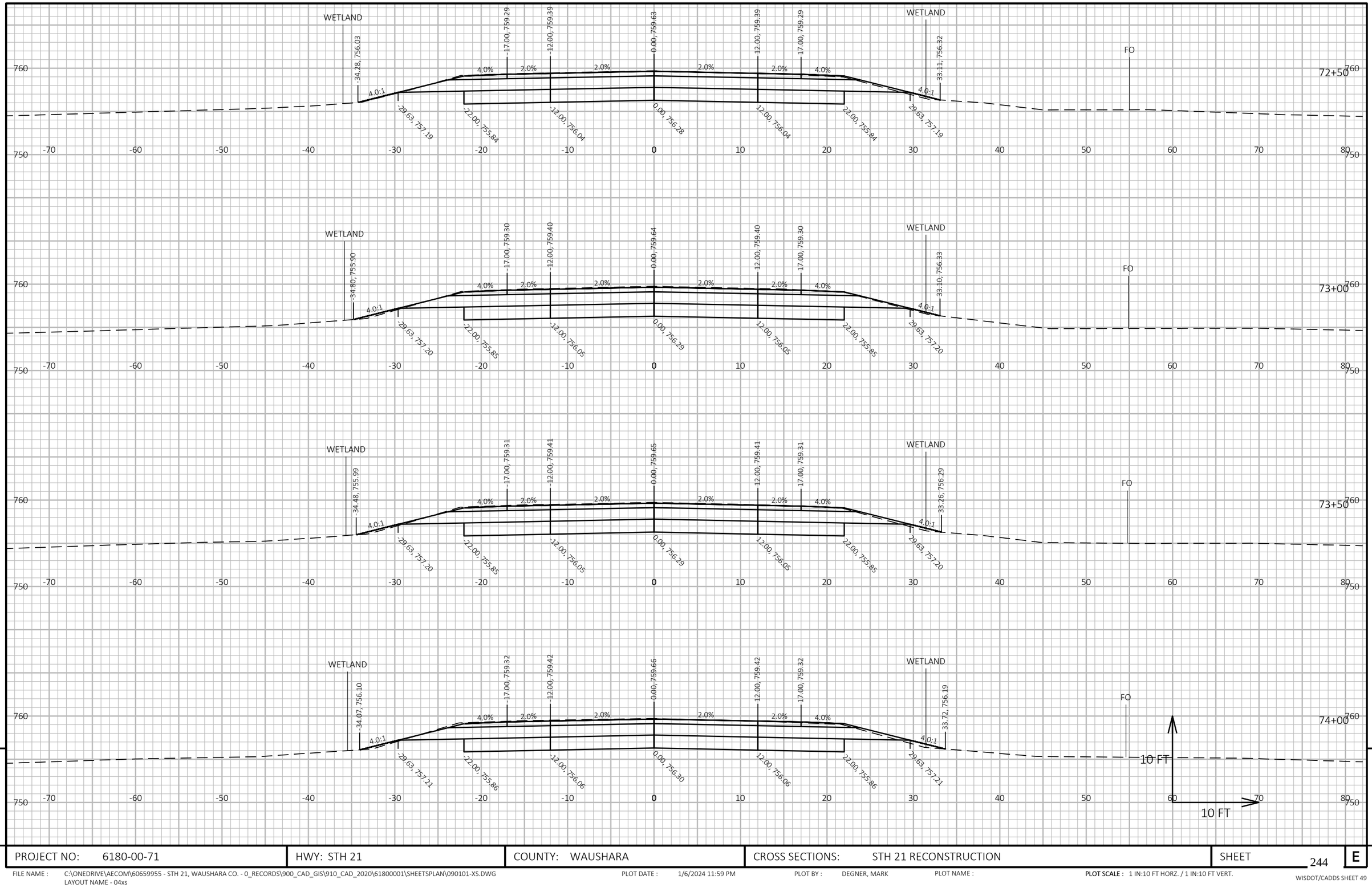
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PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 243	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 03xs

PLOT DATE : 1/6/2024 11:59 PM PLOT BY : DEGNER, MARK PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

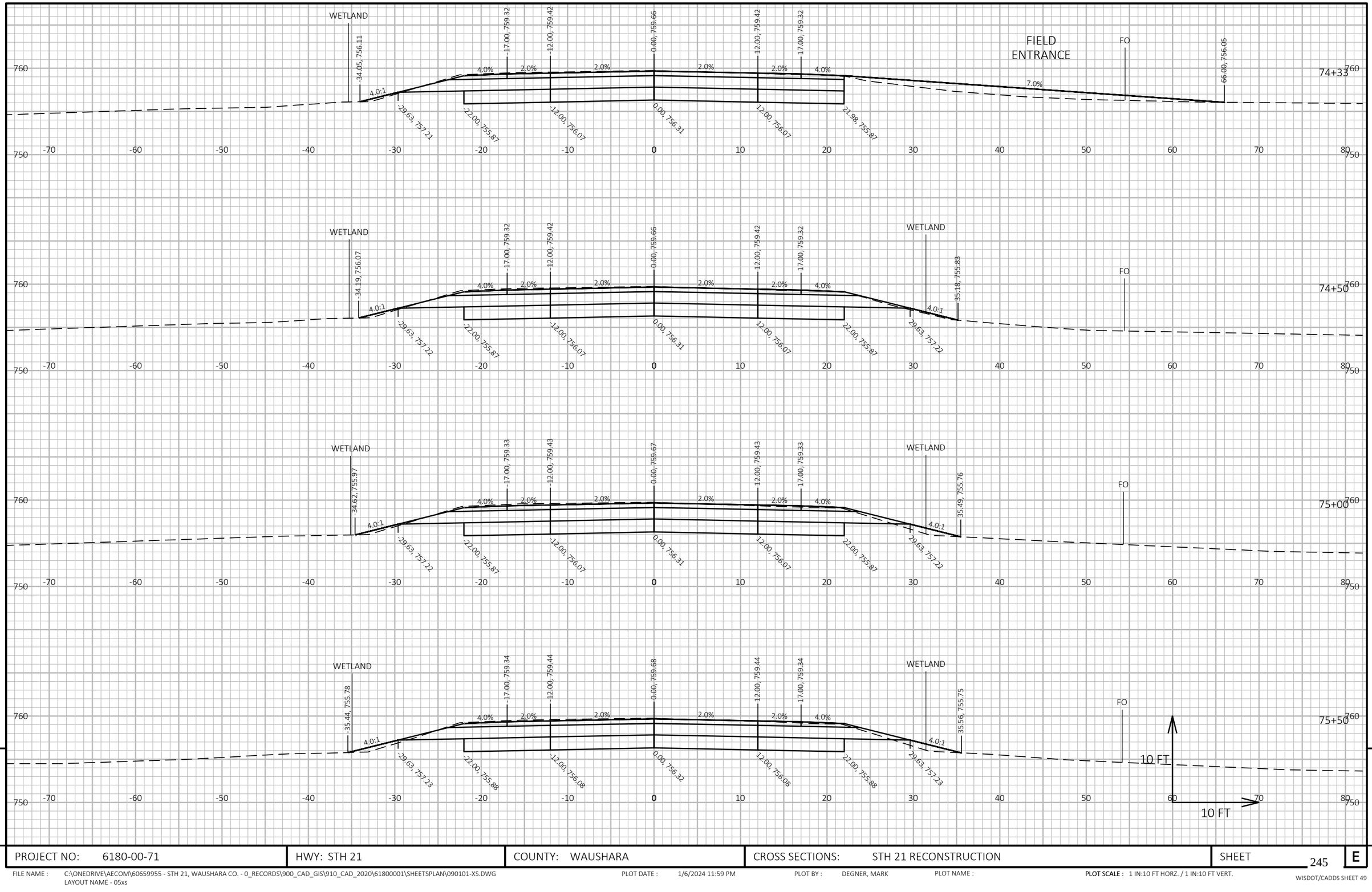
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PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 244	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 04xs

PLOT DATE : 1/6/2024 11:59 PM PLOT BY : DEGNER, MARK PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



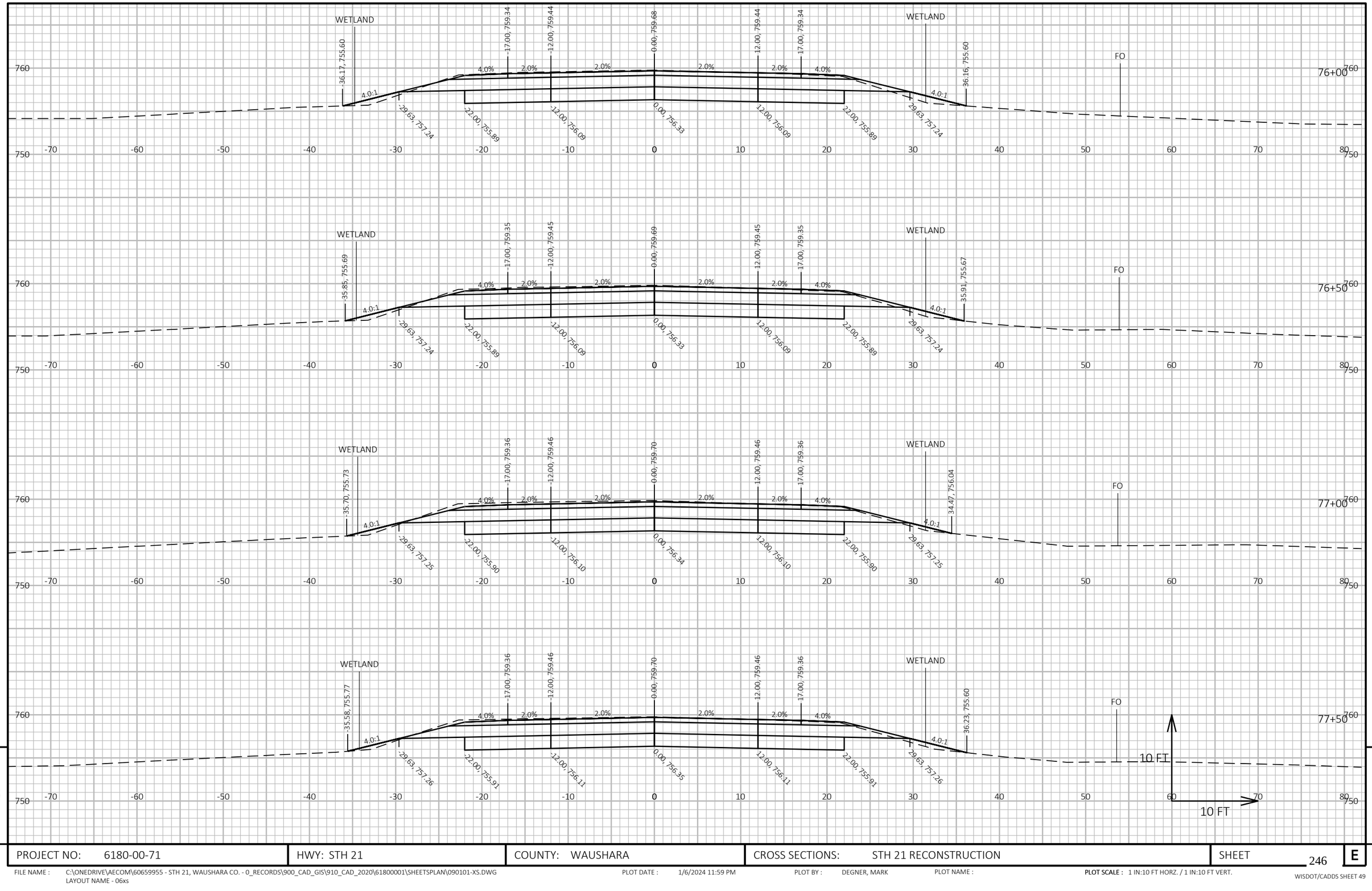
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PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 245	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 05xs

PLOT DATE : 1/6/2024 11:59 PM PLOT BY : DEGNER, MARK PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

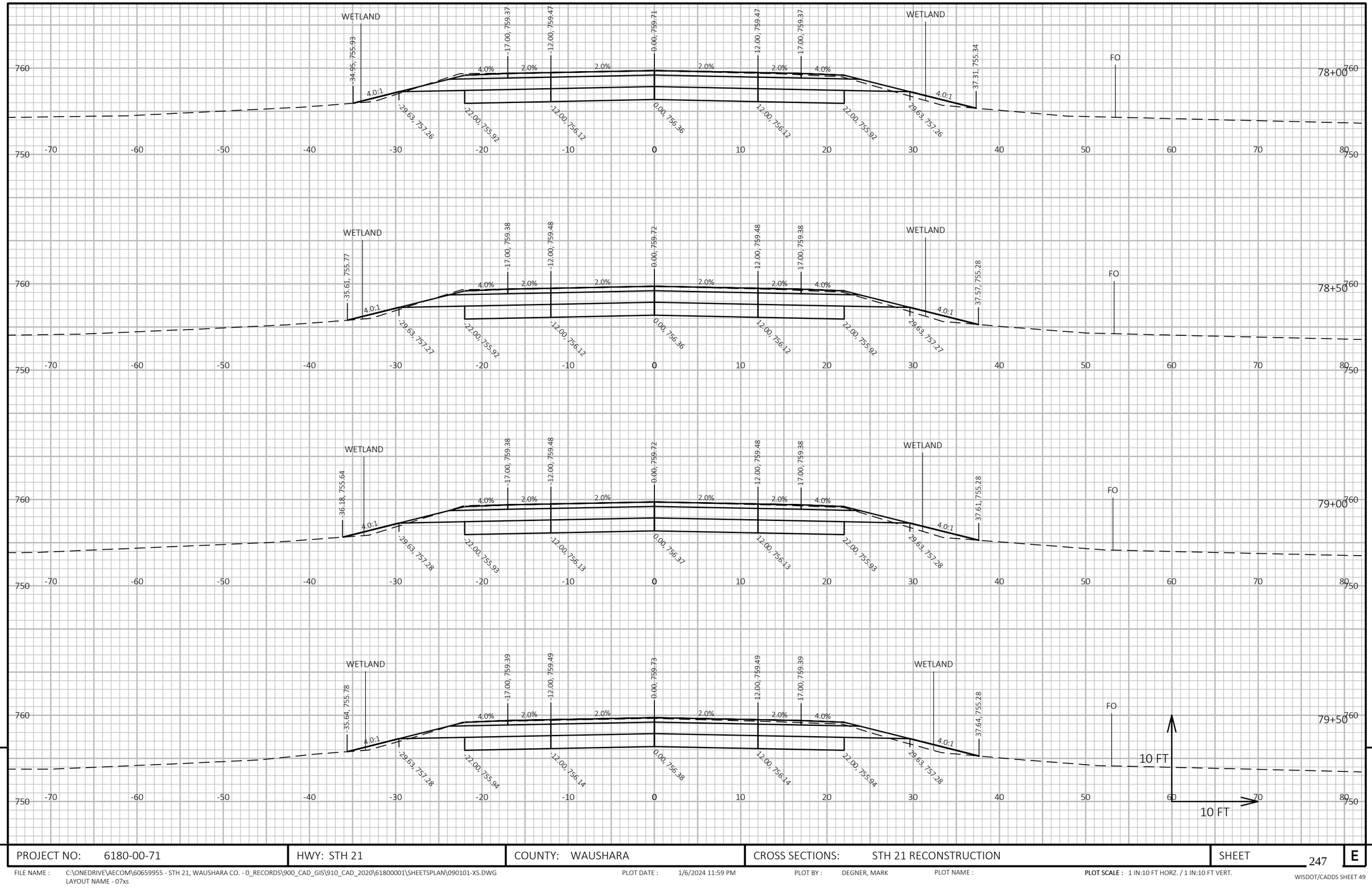
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PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 246	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 06xs

PLOT DATE : 1/6/2024 11:59 PM PLOT BY : DEGNER, MARK PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 247	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 07xs

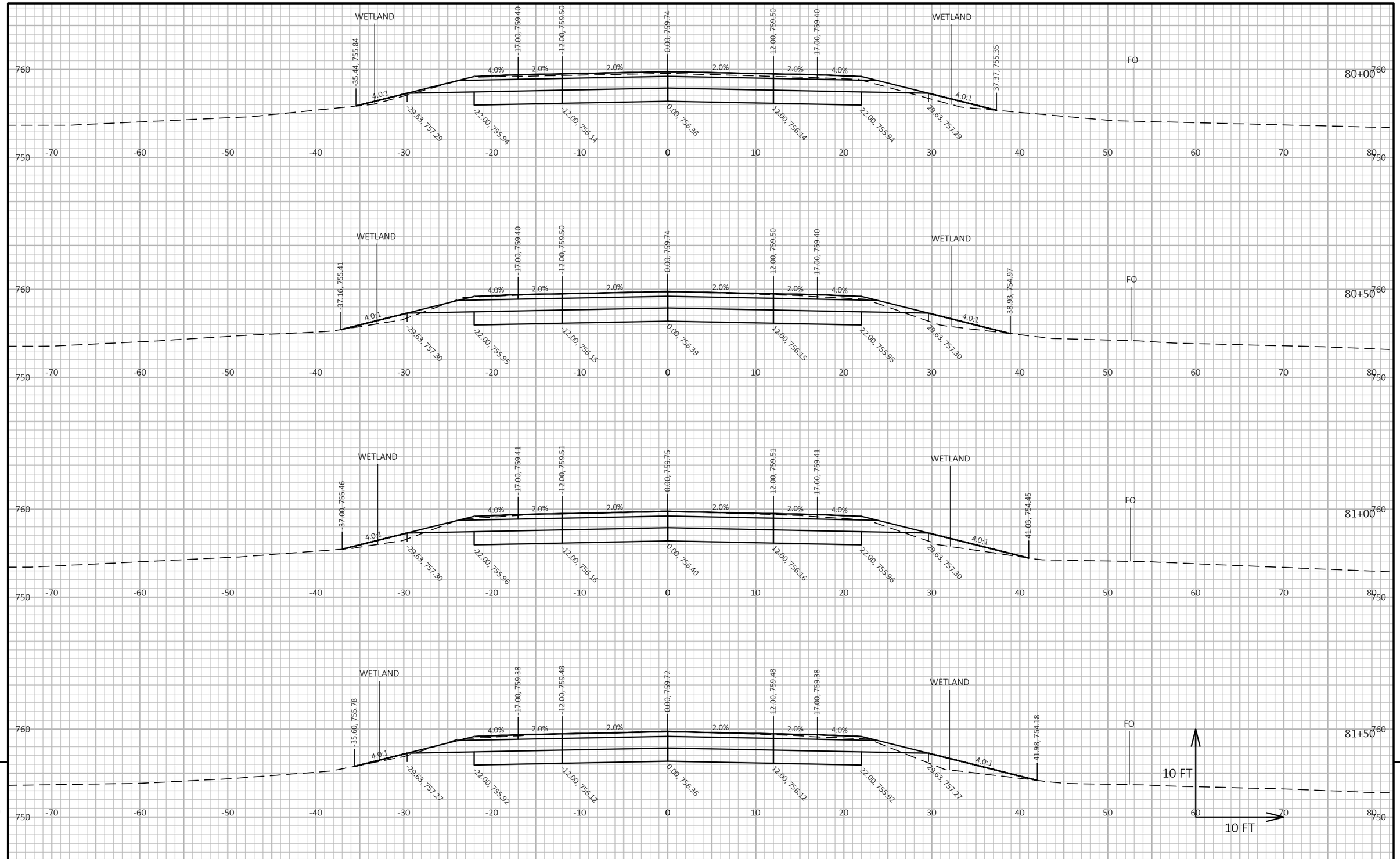
PLOT DATE : 1/6/2024 11:59 PM

PLOT BY : DEGNER, MARK

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

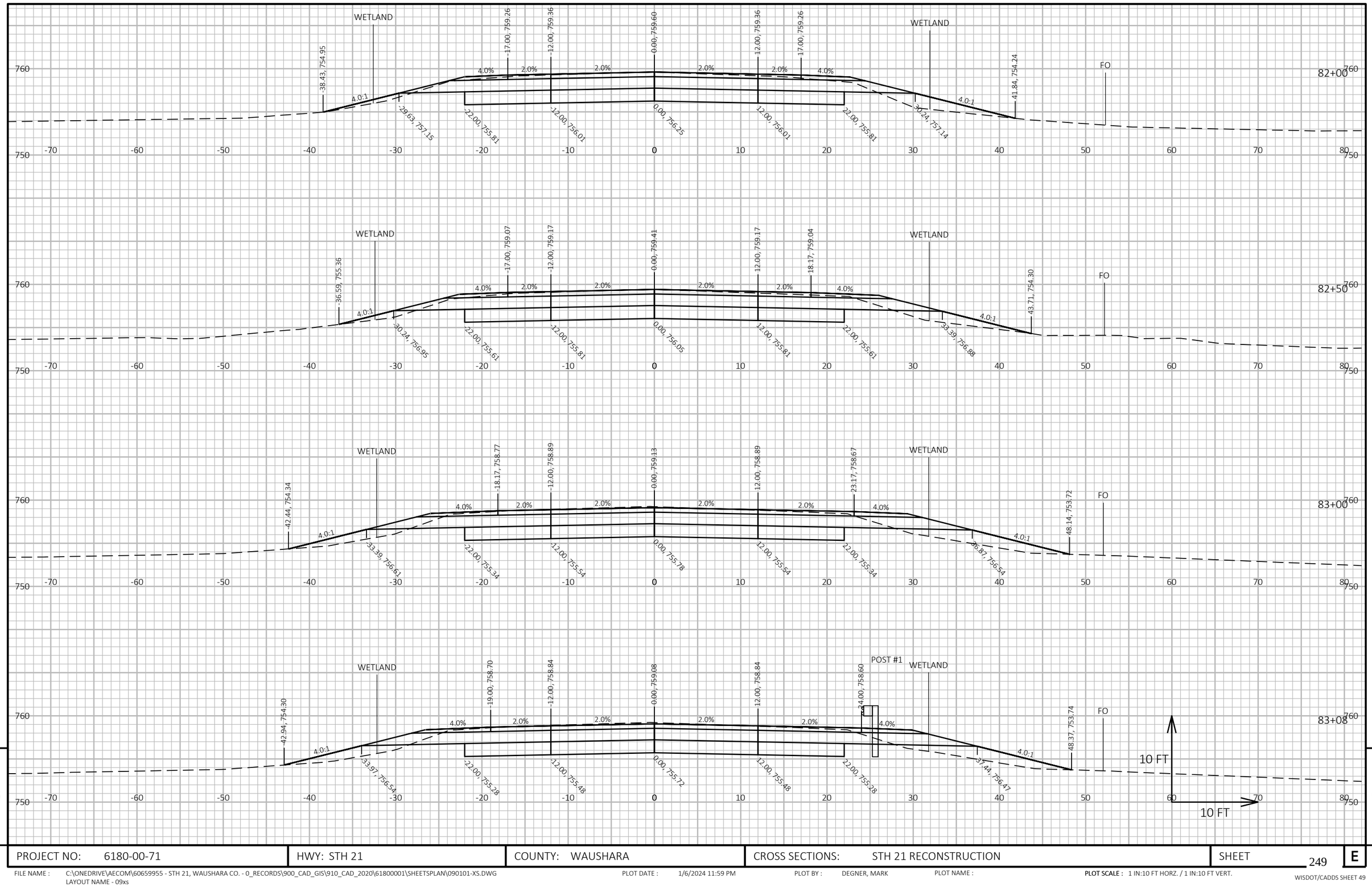
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PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 248	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 08xs

PLOT DATE : 1/6/2024 11:59 PM PLOT BY : DEGNER, MARK PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

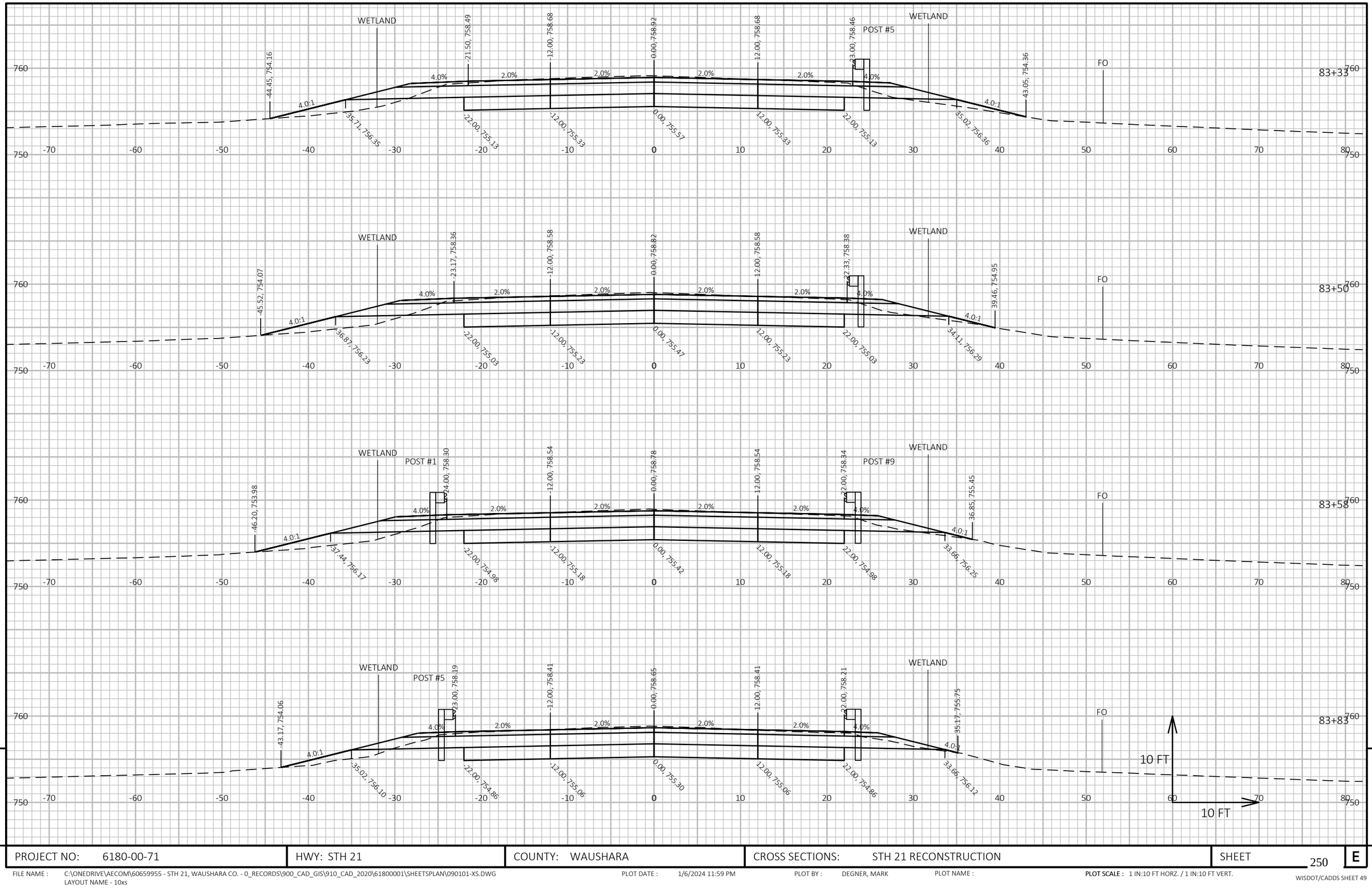
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PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 249	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 09xs

PLOT DATE : 1/6/2024 11:59 PM PLOT BY : DEGNER, MARK PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

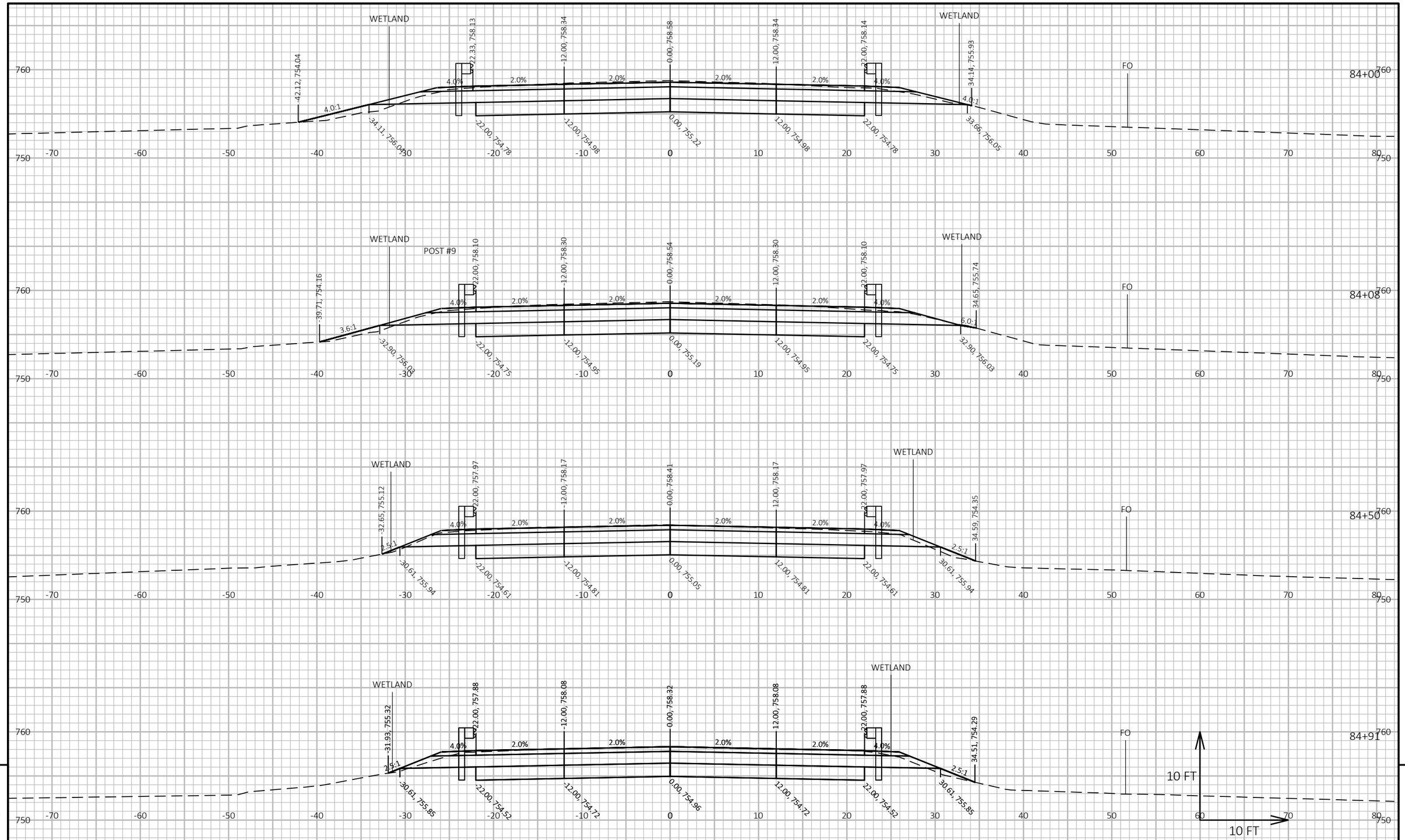
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PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 250	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 10xs

PLOT DATE : 1/6/2024 11:59 PM PLOT BY : DEGNER, MARK PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

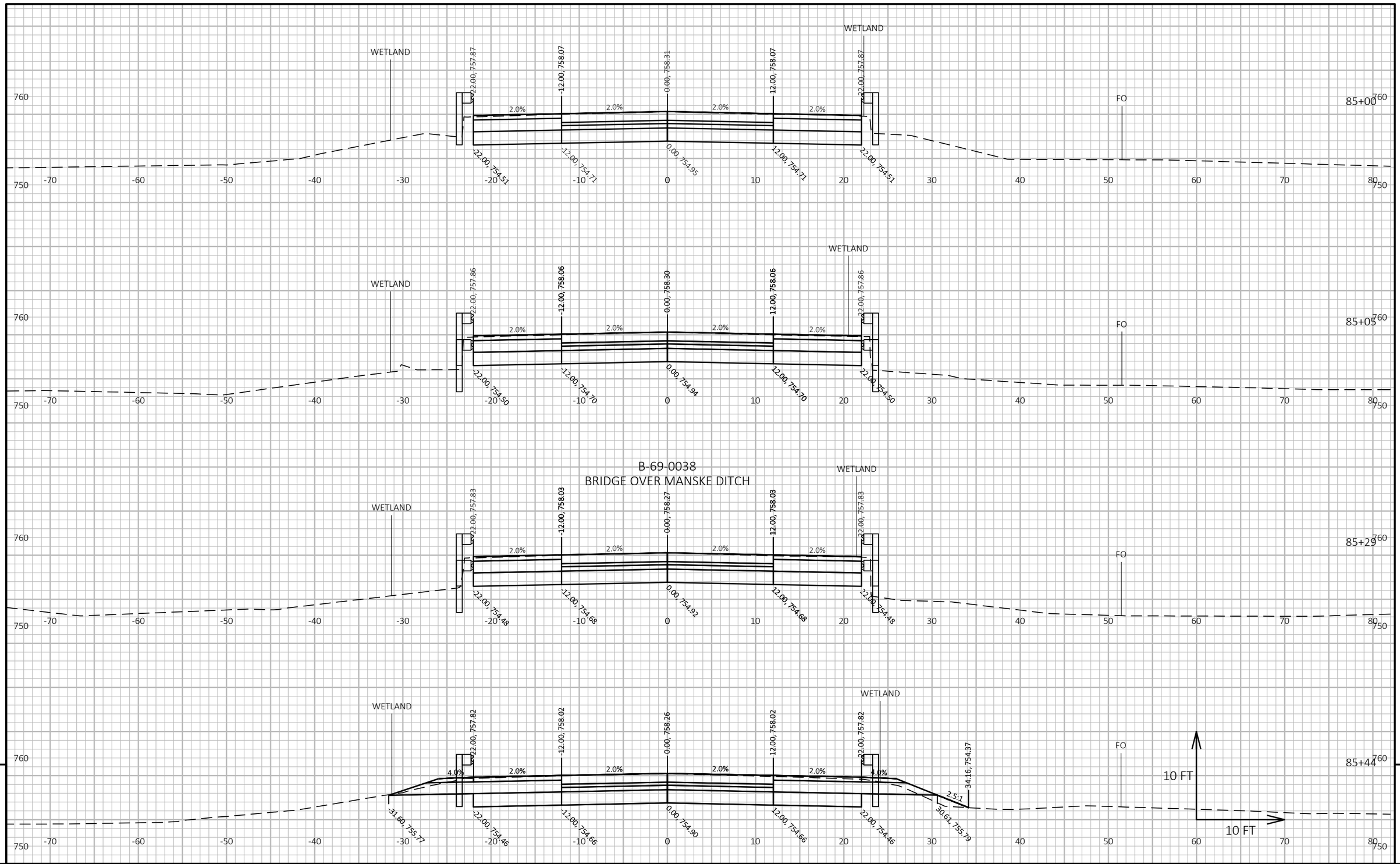
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PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 251	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 11xs

PLOT DATE : 1/6/2024 11:59 PM PLOT BY : DEGNER, MARK PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

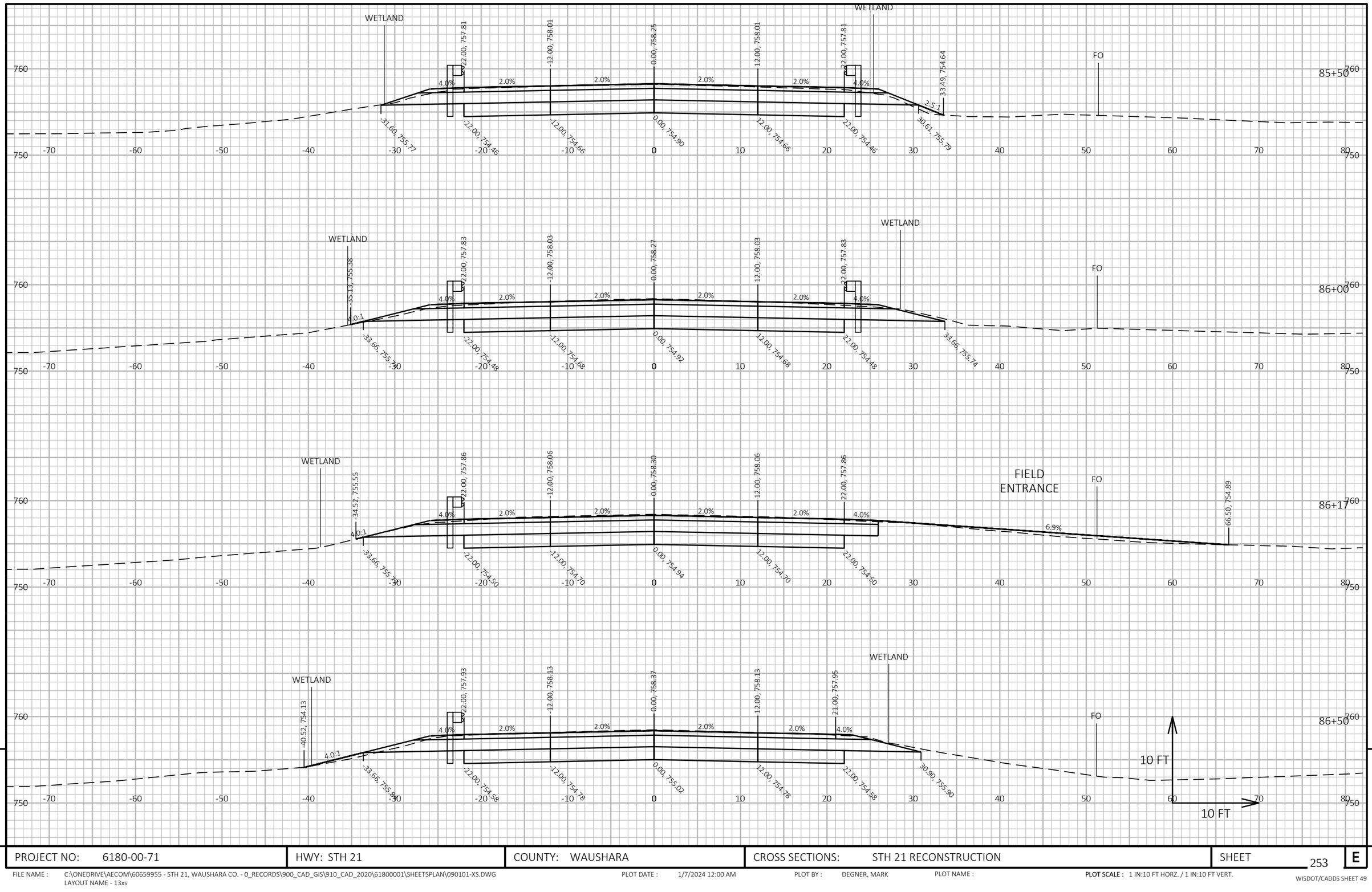
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PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 252	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 12xs

PLOT DATE : 1/6/2024 11:59 PM PLOT BY : DEGNER, MARK PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 253	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 13xs

PLOT DATE : 1/7/2024 12:00 AM PLOT BY : DEGNER, MARK PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

9

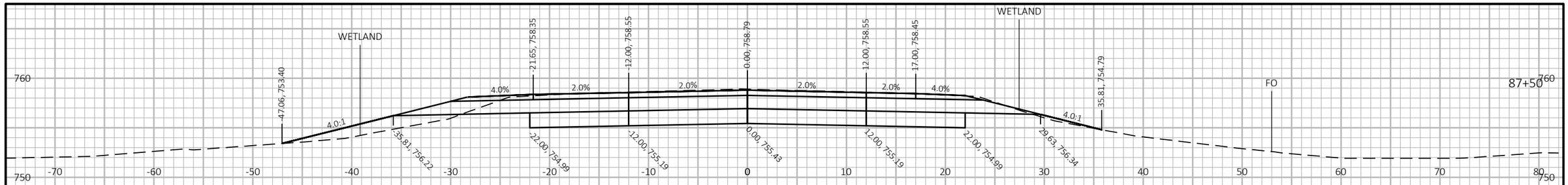
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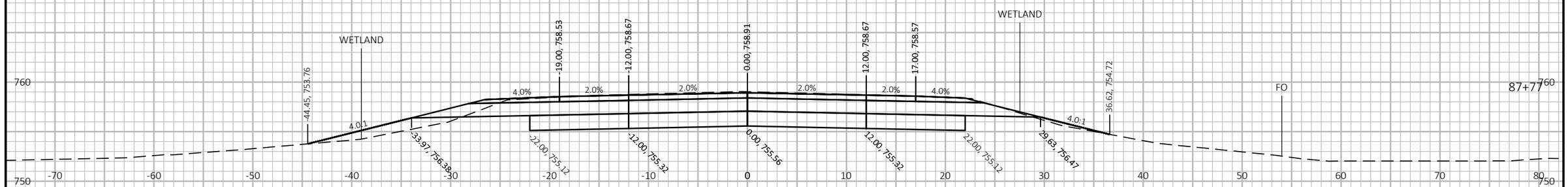
PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 254	E

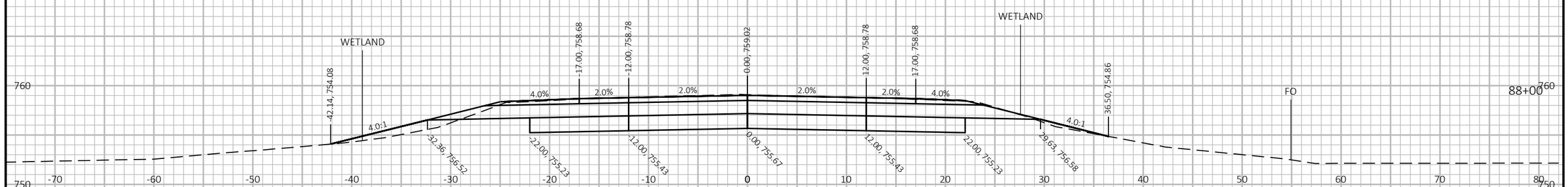
FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 14xs

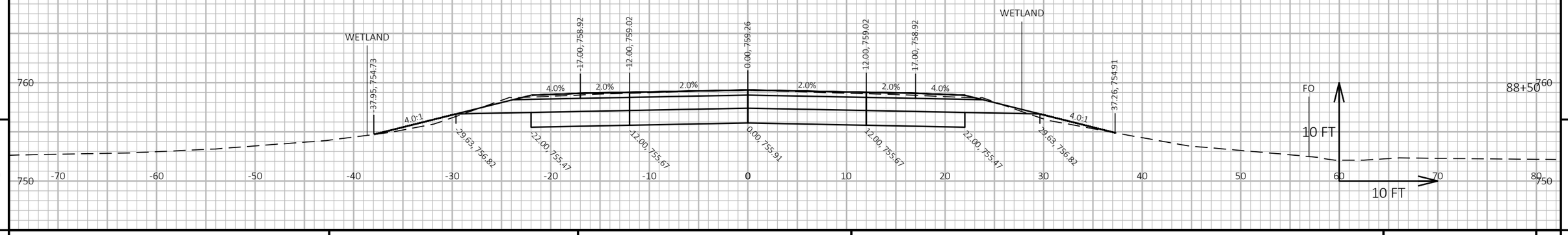
PLOT DATE : 1/7/2024 12:00 AM PLOT BY : DEGNER, MARK PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49









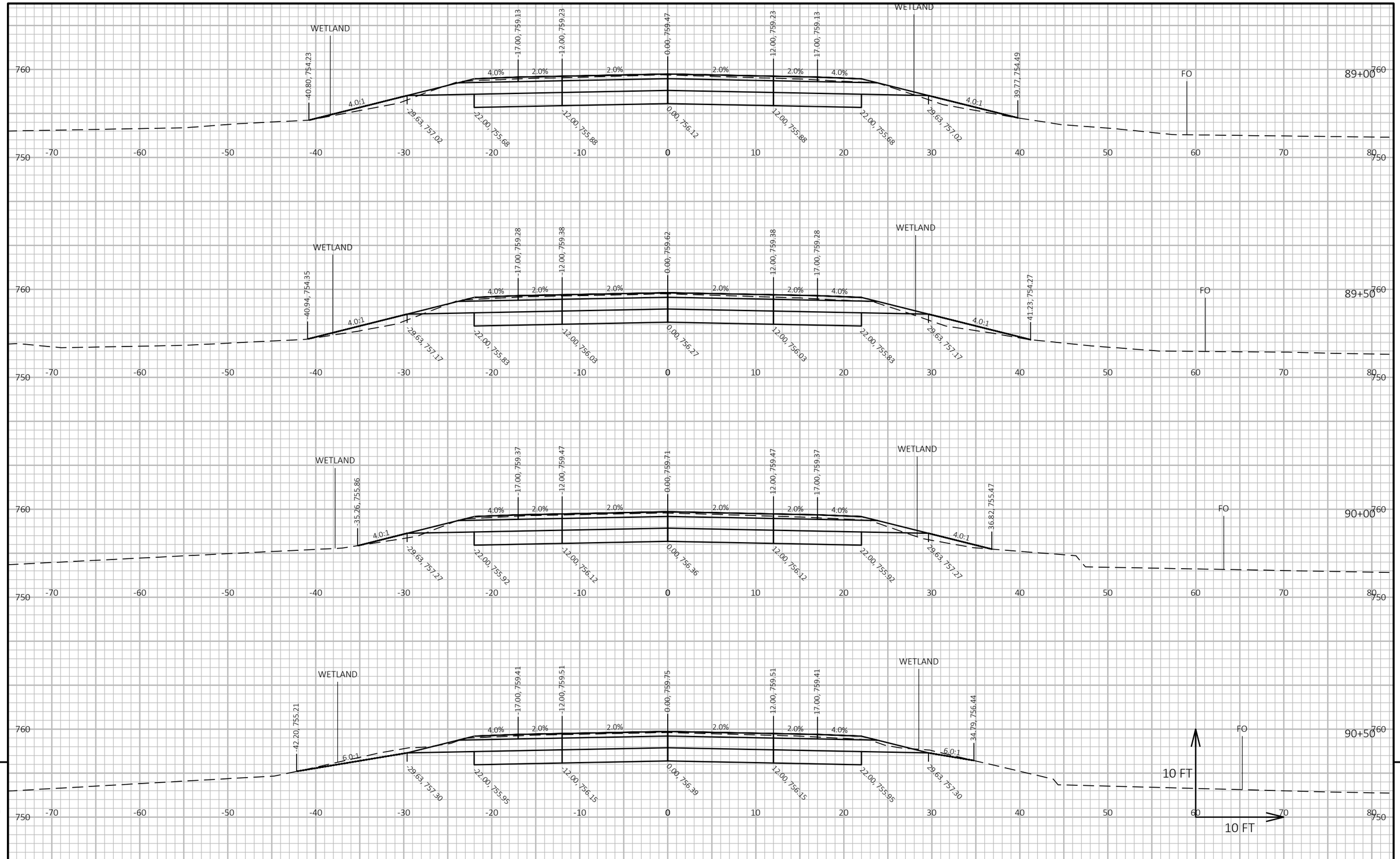
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PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 255	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 15xs

PLOT DATE : 1/7/2024 12:00 AM PLOT BY : DEGNER, MARK PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



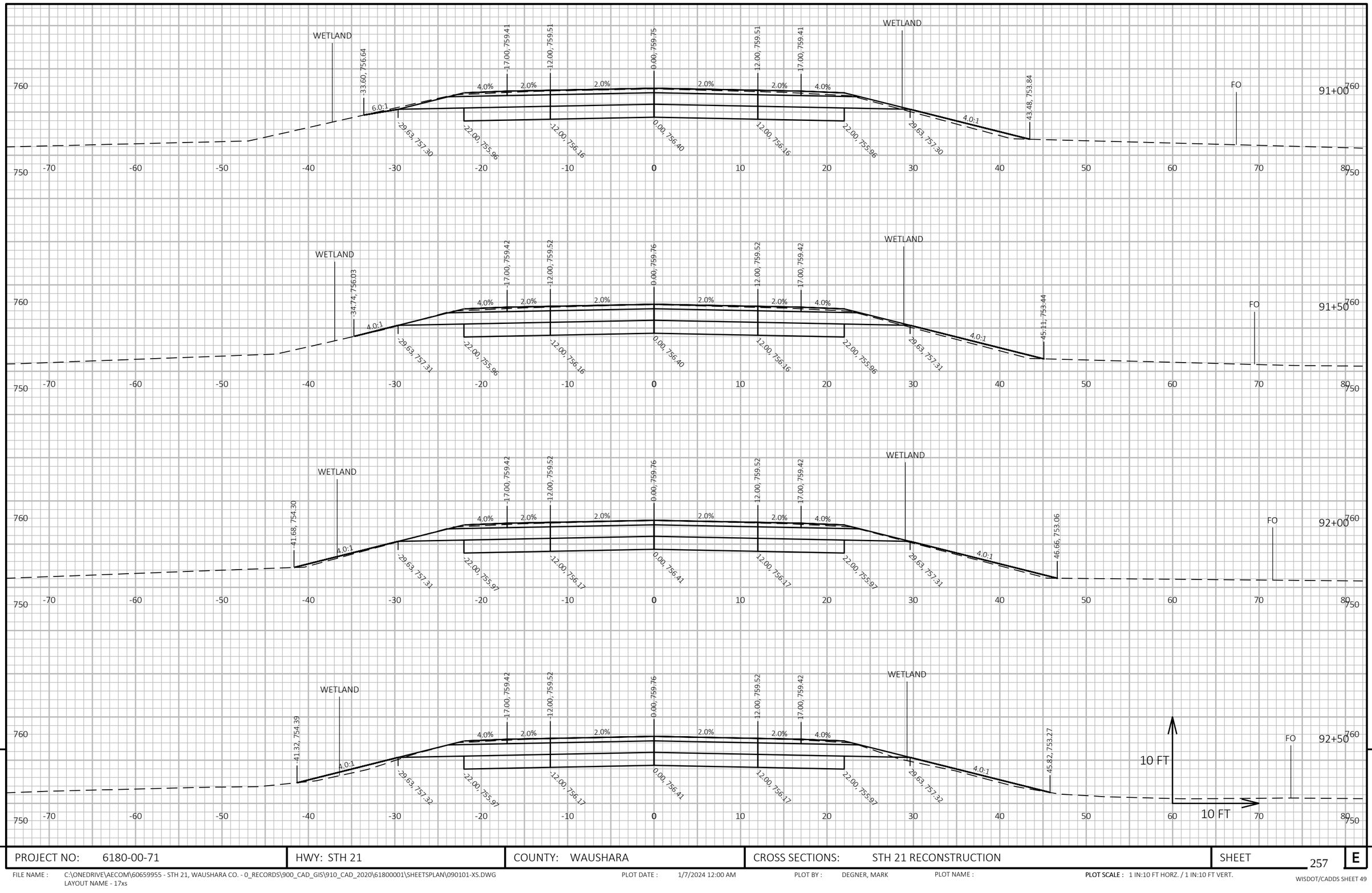
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PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 256	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 16xs

PLOT DATE : 1/7/2024 12:00 AM PLOT BY : DEGNER, MARK PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

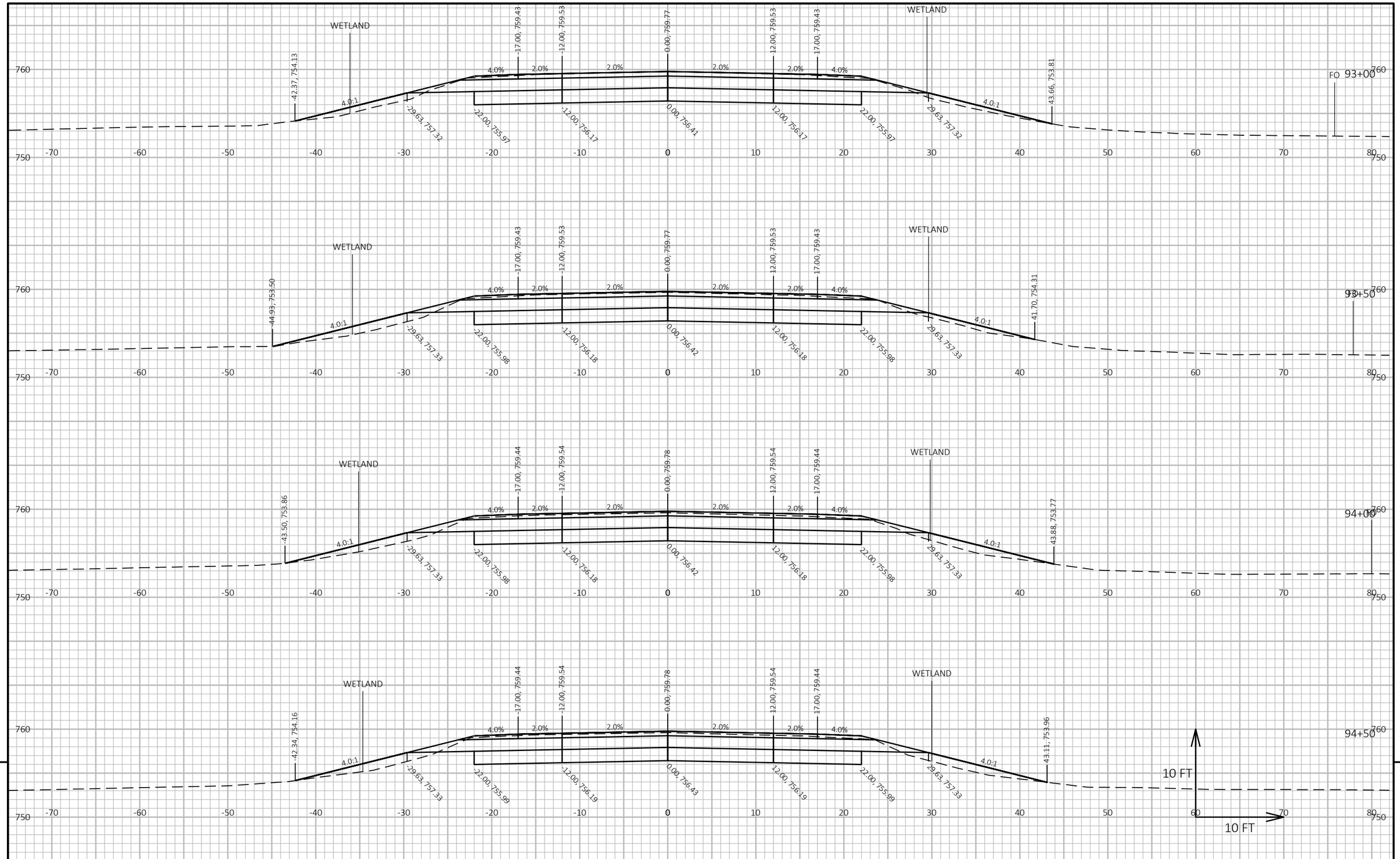


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PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 257	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 17xs

PLOT DATE : 1/7/2024 12:00 AM PLOT BY : DEGNER, MARK PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



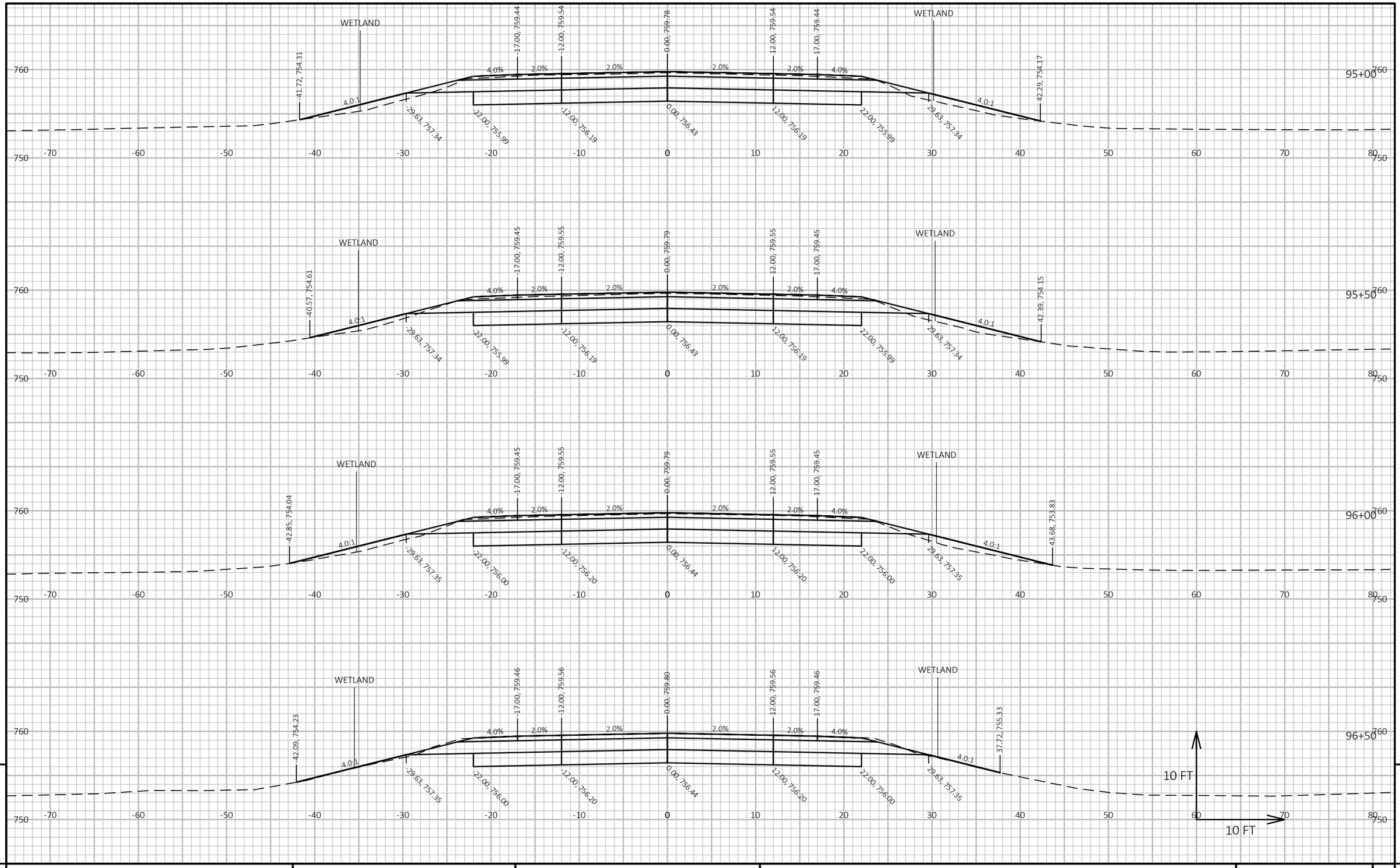
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PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 258	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 18xs

PLOT DATE : 1/7/2024 12:00 AM PLOT BY : DEGNER, MARK PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



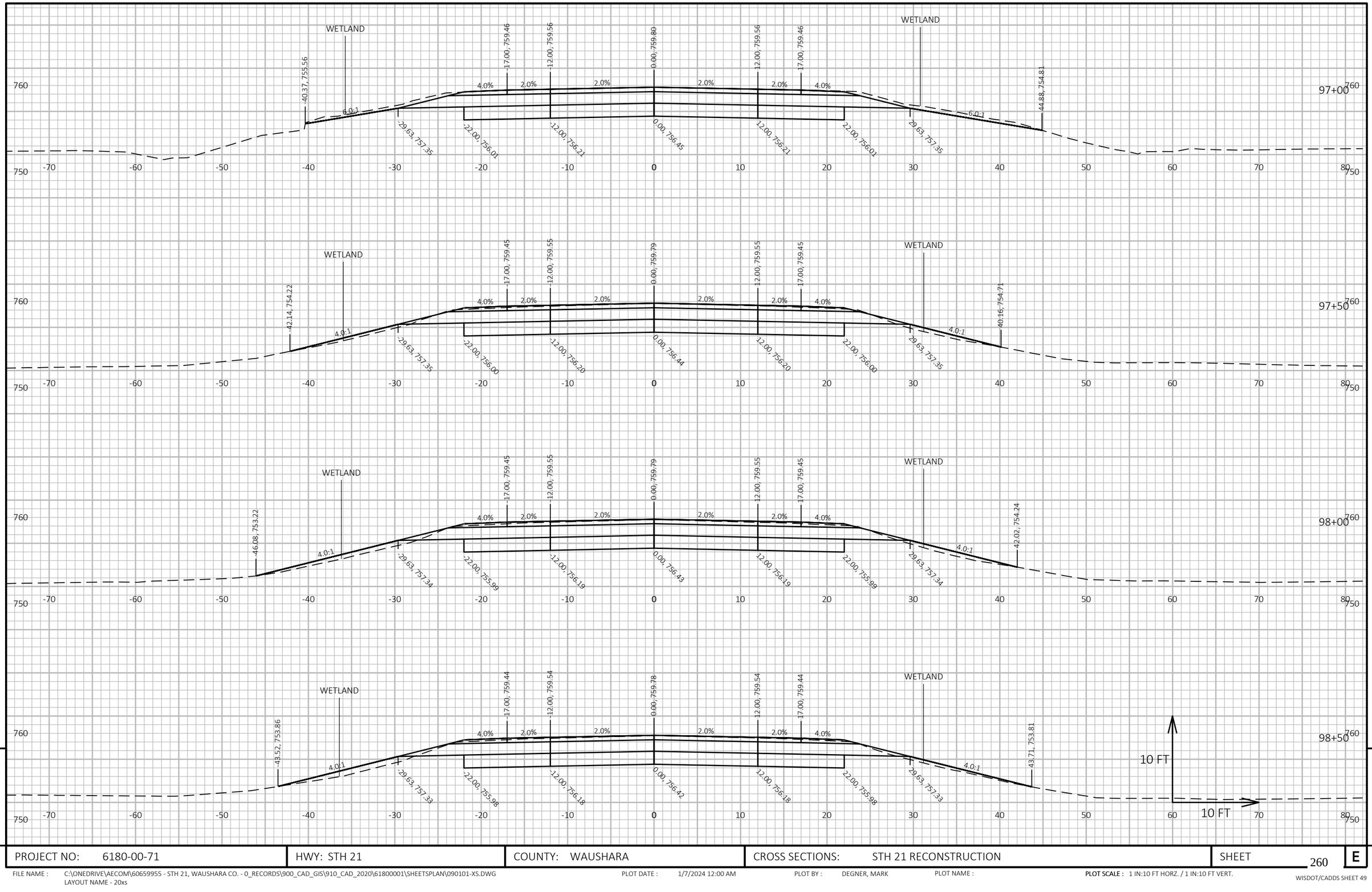
9 9

PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 259	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 19xs

PLOT DATE : 1/7/2024 12:00 AM PLOT BY : DEGNER, MARK PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

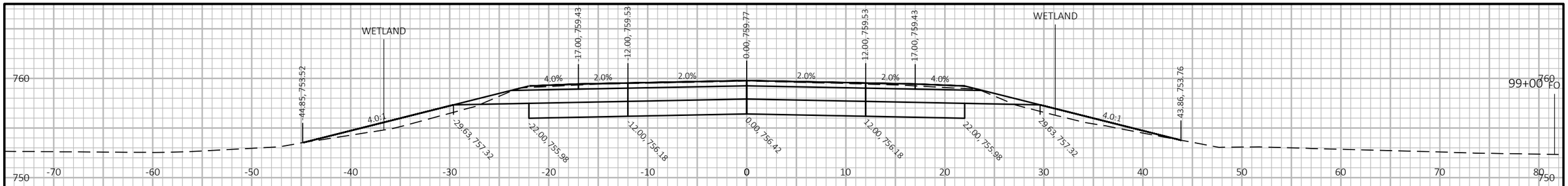
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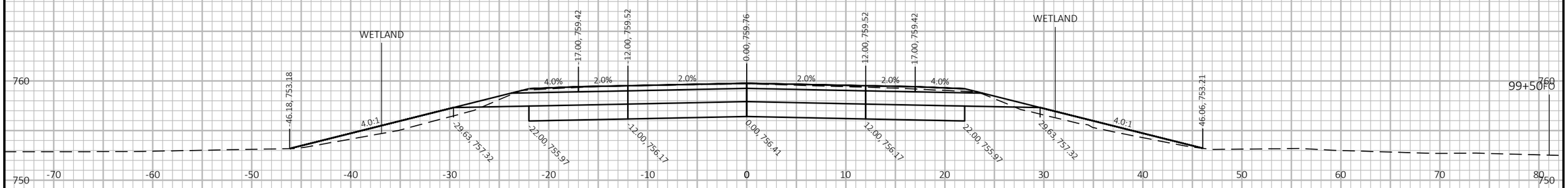
PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 260	E

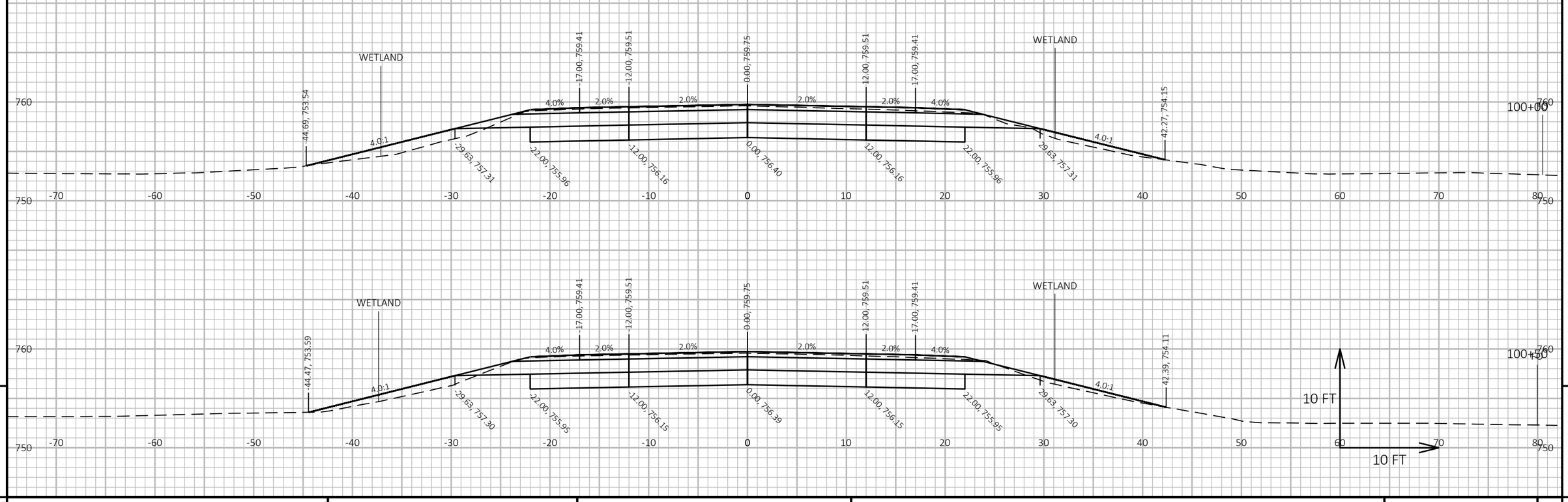
FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 20xs

PLOT DATE : 1/7/2024 12:00 AM PLOT BY : DEGNER, MARK PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49







9

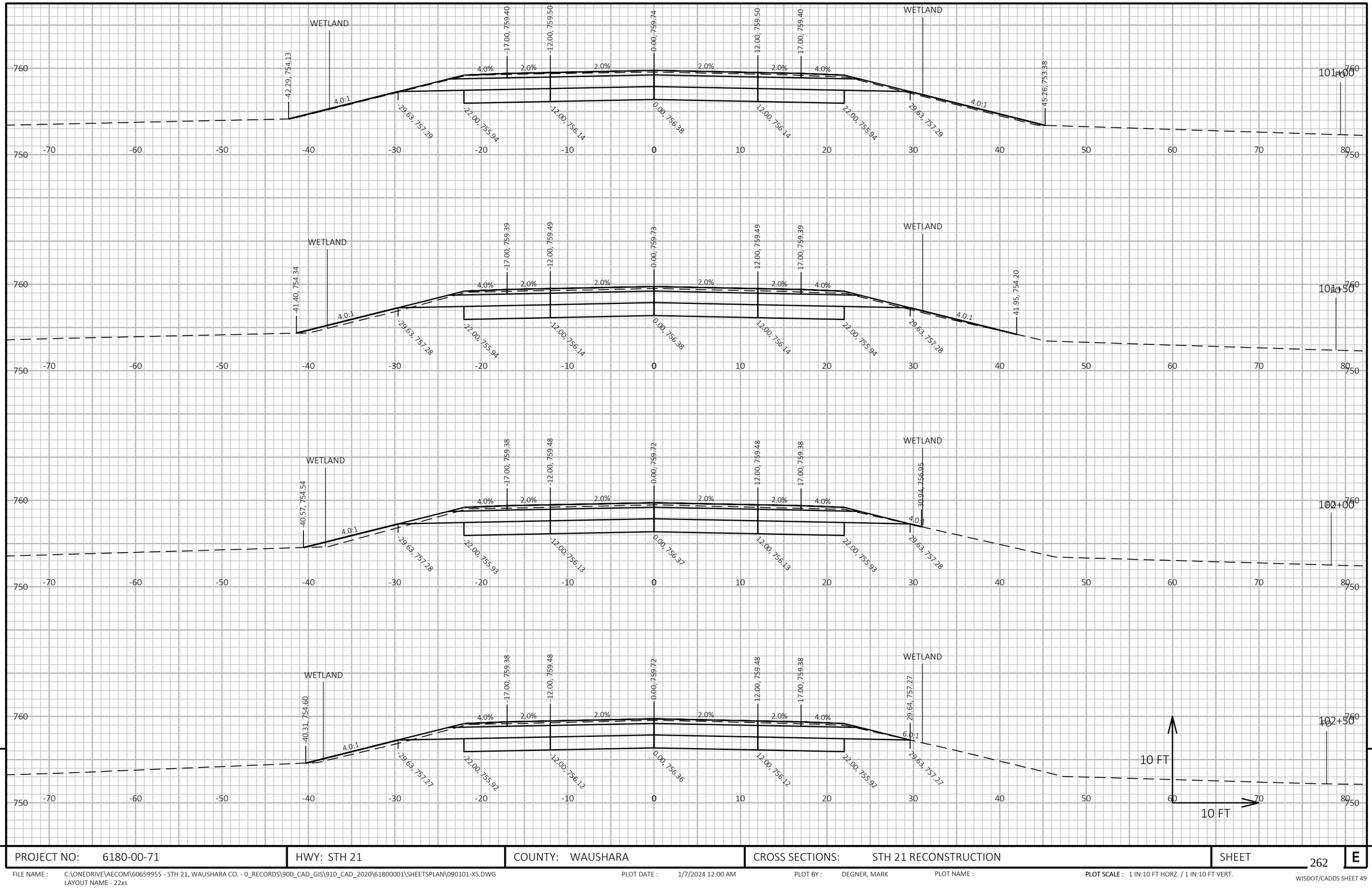
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PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 261	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 21xs

PLOT DATE : 1/7/2024 12:00 AM PLOT BY : DEGNER, MARK PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

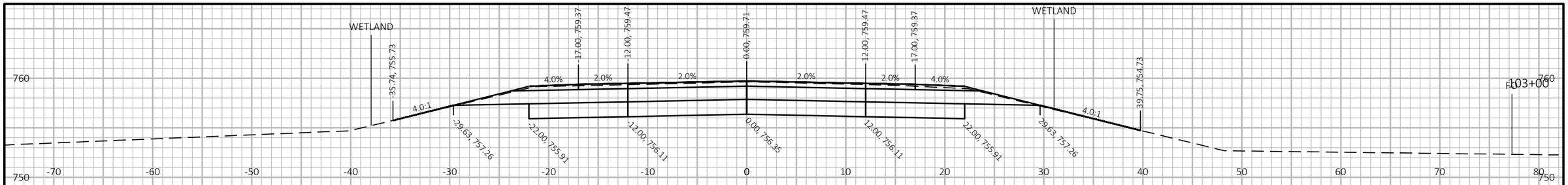
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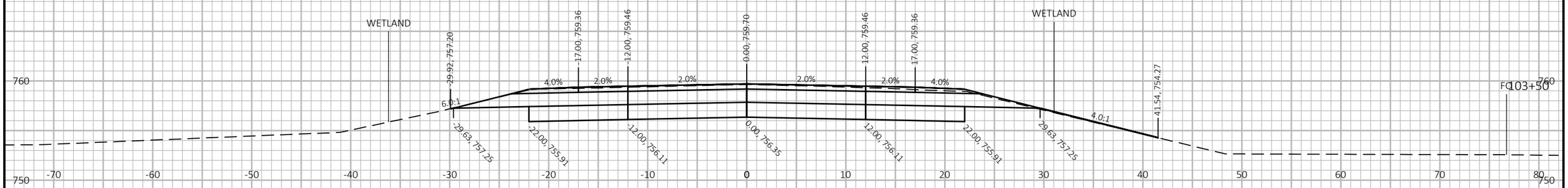
PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 262	E

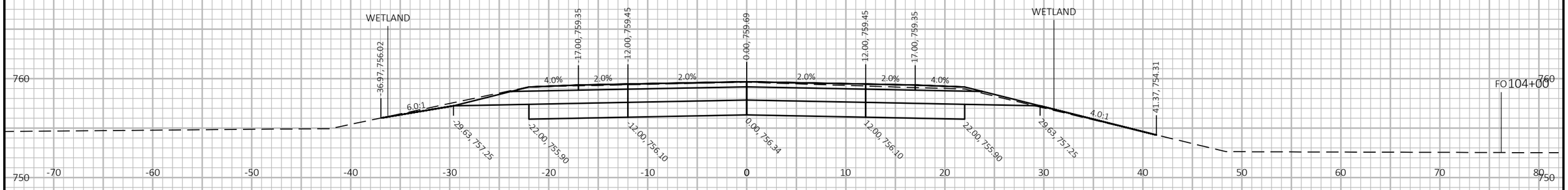
FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 22xs

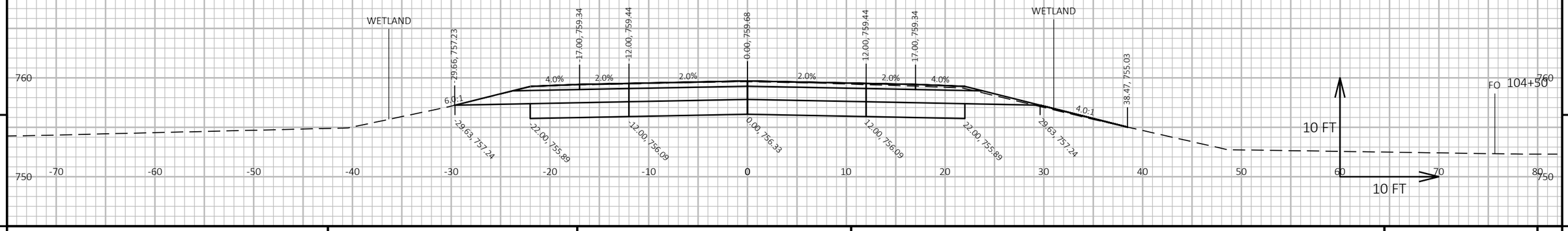
PLOT DATE : 1/7/2024 12:00 AM PLOT BY : DEGNER, MARK PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49









9

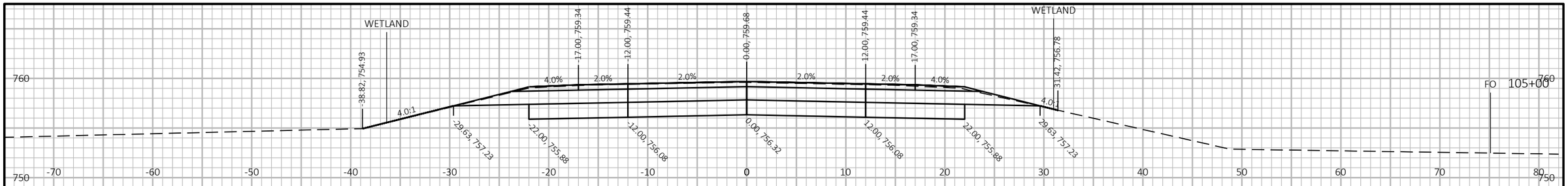
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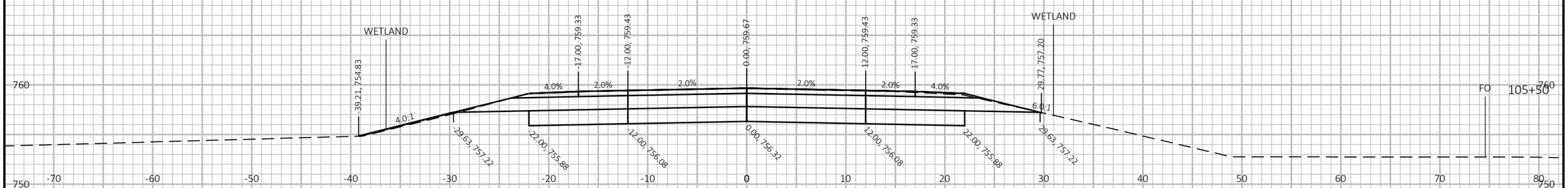
PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 263	E

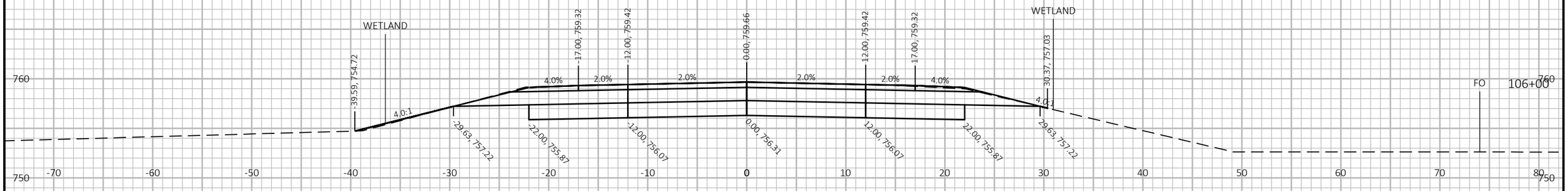
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LAYOUT NAME - 23xs

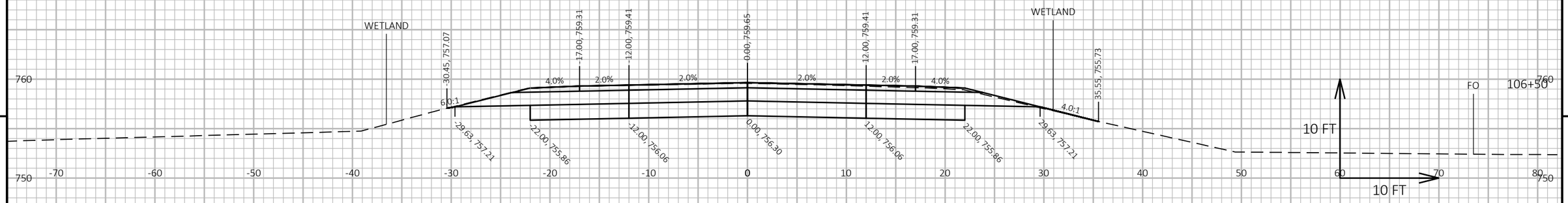
PLOT DATE : 1/7/2024 12:00 AM PLOT BY : DEGNER, MARK PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49









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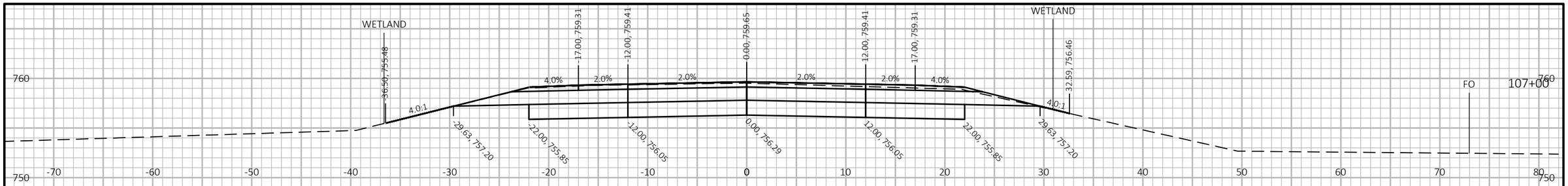
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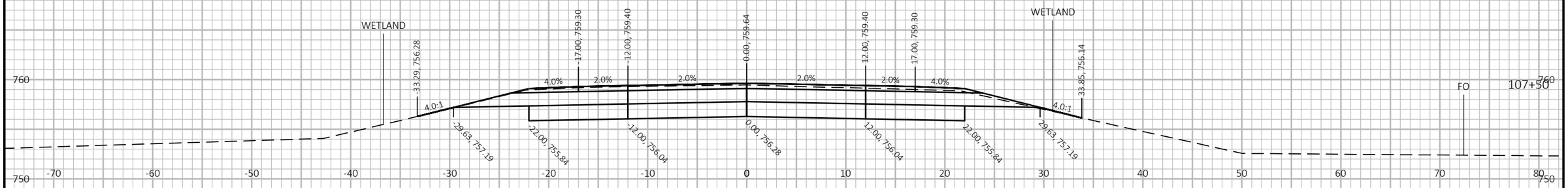
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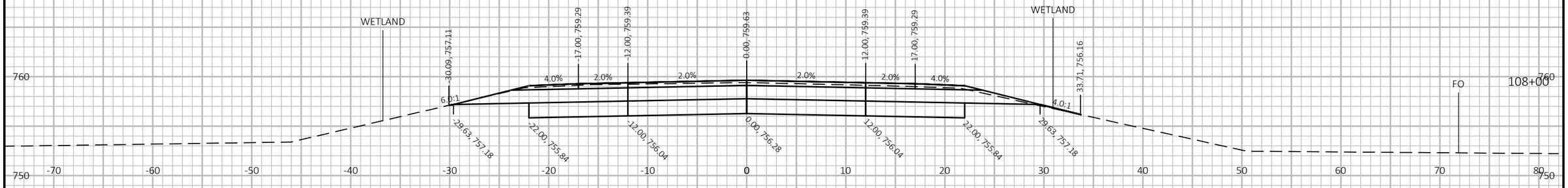
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LAYOUT NAME - 24xs

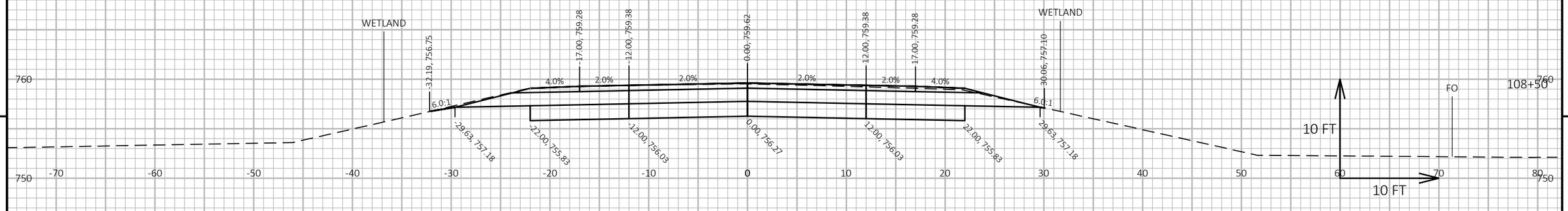
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WISDOT/CADDS SHEET 49









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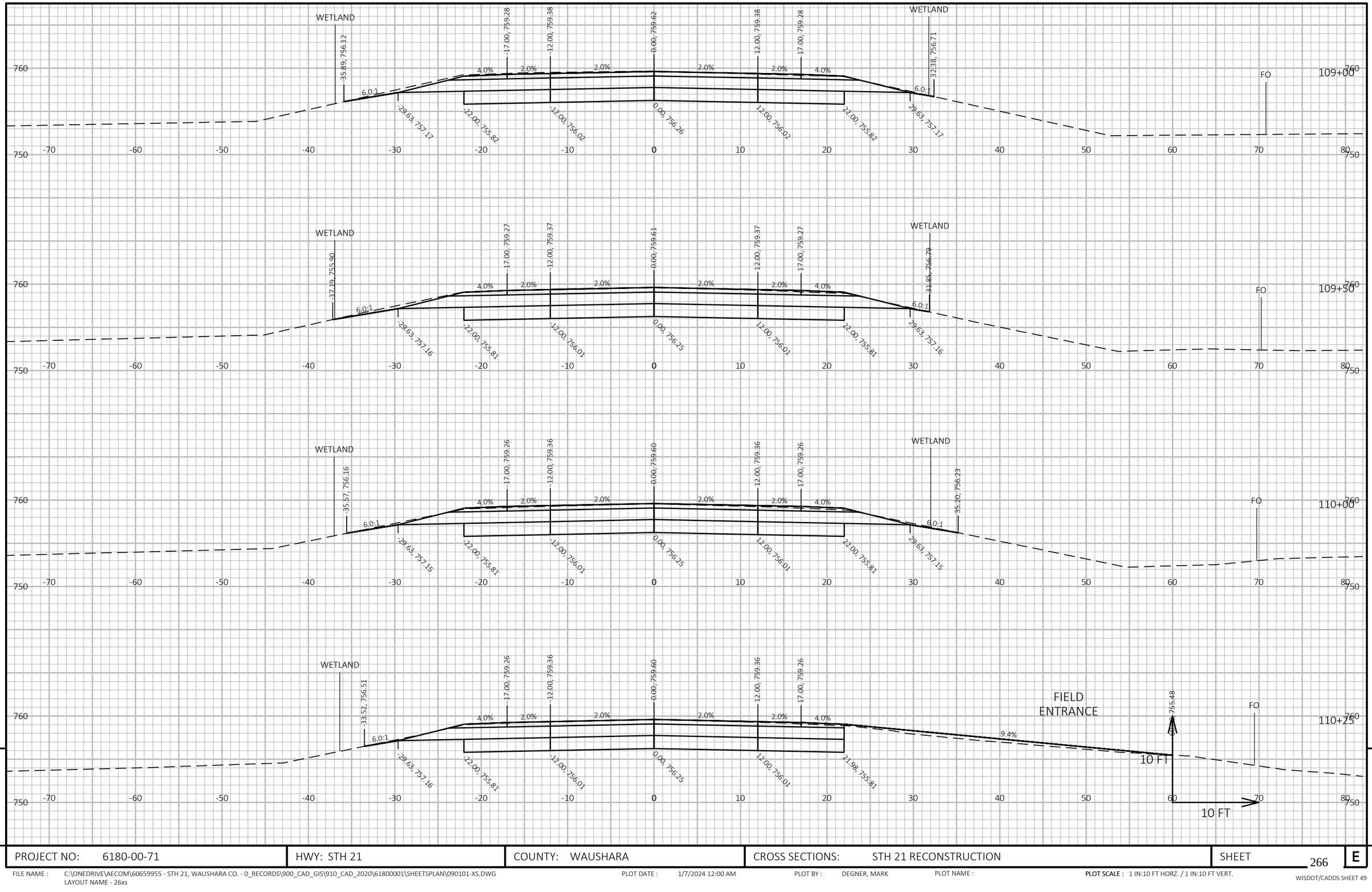
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PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 265	E

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LAYOUT NAME - 25xs

PLOT DATE : 1/7/2024 12:00 AM PLOT BY : DEGNER, MARK PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



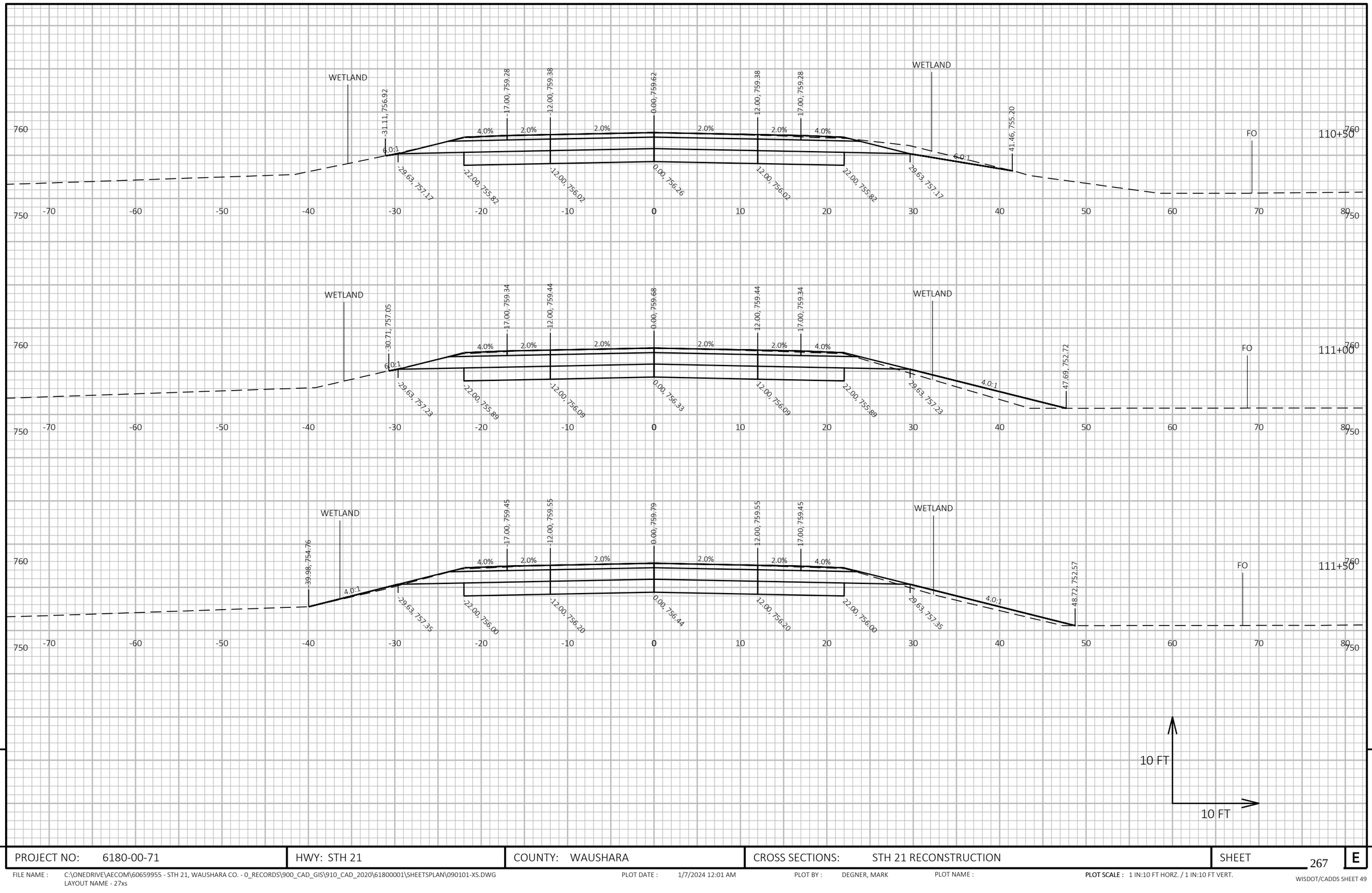
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PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 266	E

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LAYOUT NAME - 26xs

PLOT DATE : 1/7/2024 12:00 AM PLOT BY : DEGNER, MARK PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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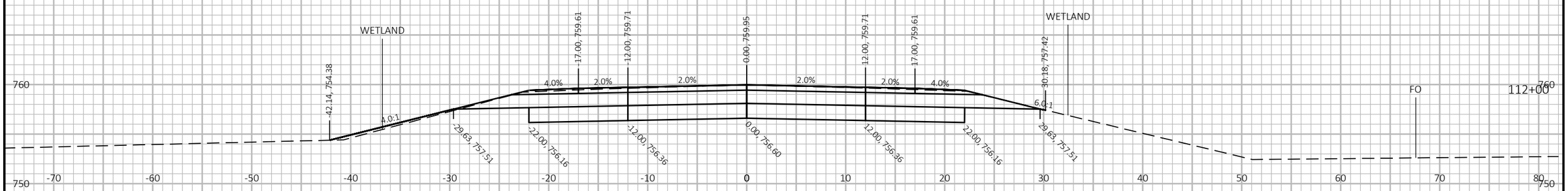
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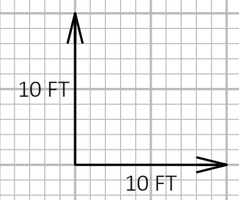
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LAYOUT NAME - 27xs

PLOT DATE : 1/7/2024 12:01 AM PLOT BY : DEGNER, MARK PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

END RECONSTRUCTION
STA 112+00





PROJECT NO: 6180-00-71	HWY: STH 21	COUNTY: WAUSHARA	CROSS SECTIONS: STH 21 RECONSTRUCTION	SHEET 268	E

FILE NAME : C:\ONEDRIVE\AECOM\60659955 - STH 21, WAUSHARA CO. - 0_RECORDS\900_CAD_GIS\910_CAD_2020\61800001\SHEETSPLAN\090101-XS.DWG
LAYOUT NAME - 28xs
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WISDOT/CADDS SHEET 49

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov