MAD

NOVEMBER 2021

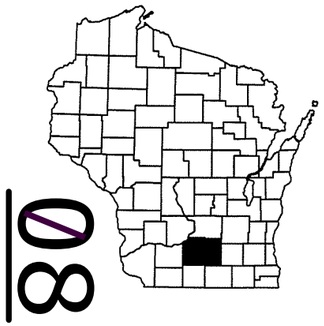
PROJECT ID: WITH: N/A

5601-00-60

COUNTY: DANE

ORDER OF SHEETS

TOTAL SHEETS = 112



N

DESIGN DESIGNATION

A.A.D.T.	2022	=	5,210
A.A.D.T.	2042	=	6,370
D.H.V.		=	695
D.D.		=	50/50
T.		=	16.1%
DESIGN SPEED		=	45-55 MPH
ESALS		=	1,800,000

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE (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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

BLACK EARTH - SAUK CITY

USH 14 TO USH 12

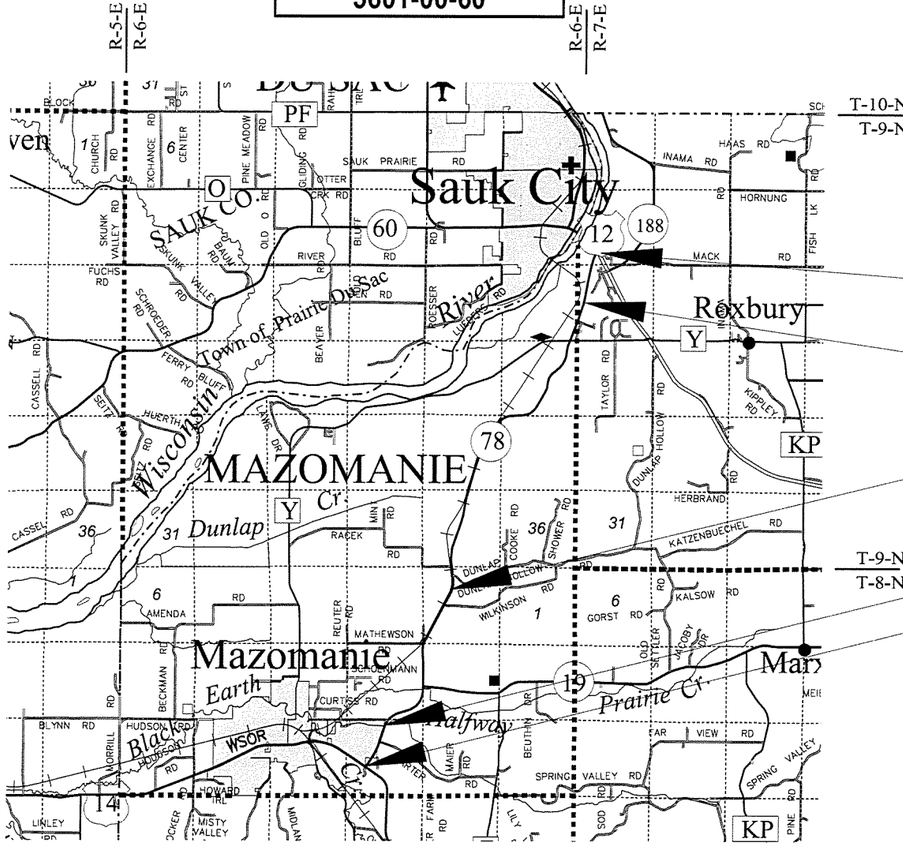
STH 78

DANE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5601-00-60	WISC 2022006	1

STATE PROJECT NUMBER

5601-00-60



LAYOUT

SCALE 0 2 MI

TOTAL NET LENGTH OF CENTERLINE = 7.840 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, DANE COUNTY, NAD83 (2011), IN U.S. SURVEY FEET.

VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCE MAY BE USED AS GROUND DISTANCES. ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD (2012).

emcs inc

1600 Aspen Commons, Suite 230
Middleton, WI 53562
608.827.8810 Fax 608.833.3198

WISCONSIN
MICHAEL C. McCARTHY
E-29197
MENOMONEE FALLS, WI
PROFESSIONAL ENGINEER

4/24/2020 Michael C. McCarthy
(Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	EMCS, INC.
Designer	EMCS, INC.
Project Manager	AMY COUGHLIN
Regional Examiner	SW REGION
Regional Supervisor	ALEX HAGEN

APPROVED FOR THE DEPARTMENT

DATE: 4/13/2020 Amy Coughlin
(Signature)

E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\010101-TI.DWG PLOT DATE : 3/27/2020 11:22 AM PLOT BY : CORY INMAN PLOT NAME :

ORDER OF SECTION 2 SHEETS

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.
- THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.
- PRIOR TO THE PLACEMENT OF STEEL PLATE BEAM GUARD OR MGS GUARDRAIL, THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED UNLESS SHOWN OTHERWISE.
- CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY HIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.
- THE QUANTITY OF THE ITEMS FOR EROSION PROTECTION INCLUDES AN UNDISTRIBUTED AMOUNT FOR PROTECTION, CONTROL AND ABATEMENT OF WATER POLLUTION RESULTING FROM SOIL EROSION. THE DISTRIBUTION AND LOCATION OF THESE MATERIALS ARE TO BE DETERMINED BY THE ENGINEER.
- DISTURBED AREAS WITHIN THE RIGHT OF WAY ARE TO BE TOPSOILED (SALVAGED), FERTILIZED, SEEDED, AND MATTED AS DIRECTED BY THE ENGINEER.
- SALVAGED TOPSOIL AND MAT HAS BEEN COMPUTED BY DIRECT MEASUREMENTS ON THE CROSS SECTIONS PLUS 5 FT BEYOND THE TOE OF SLOPE. SEEDING AND FERTILIZER HAS BEEN COMPUTED BY DIRECT MEASUREMENTS ON THE CROSS SECTIONS PLUS 10 FT.
- FERTILIZER SHALL NOT BE USED WITHIN 20' OF NAVIGABLE WATERWAYS OR WETLANDS.
- A CONVERSION FACTOR OF 2.10 TONS/CY IS USED TO ESTIMATE QUANTITIES FOR BASE AGGREGATE DENSE 3/4-INCH.
- A CONVERSION FACTOR OF 2.00 TONS/CY IS USED TO ESTIMATE QUANTITIES FOR BASE AGGREGATE DENSE 1 1/4-INCH.
- A CONVERSION FACTOR OF 112 LB/SY/IN IS USED TO ESTIMATE QUANTITIES FOR HMA PAVEMENT.
- ASPHALTIC PAVEMENT SHALL BE CONSTRUCTED WITH THE FOLLOWING LAYERS AND GRADATIONS:

TOTAL LAYER PAVEMENT THICKNESS	LAYERS	HMA PAVEMENT ITEM
2.00"	2.00"	4 MT 58-28 S
4.50"	2.00" UPPER 2.50" LOWER	4 MT 58-28 S 4 MT 58-28 S

UTILITY CONTACTS

AMERICAN TRANSMISSION COMPANY, LLC - ELECTRICITY-TRANSMISSION

DOUG VOSBERG
2489 RINDEN ROAD
COTTAGE GROVE, WI 53527
PHONE: (608) 887-7650
EMAIL: DVOSBERG@ATCLLC.COM

ALLIANT ENERGY - ELECTRIC

CHRIS WILHELM
520 COMMERCE AVE
BARABOO, WI 53913
PHONE: (608) 356-0630
CELL PHONE: (608) 963-3168
EMAIL: CHRISWILHELM@ALLIANTENERGY.COM

CENTURYLINK - TELECOMMUNICATIONS

STEVE BISHOP
130 4TH STREET
BARABOO, WI 53913
PHONE: (608) 355-7501
CELL PHONE: (608) 963-8594
EMAIL: STEVEN.BISHOP@CENTRUYLINK.COM

CHARTER COMMUNICATIONS - TELECOMMUNICATIONS

CHRISTOPHER STORDAHL
2701 DANIELS ST.
MADISON, WI 53718
PHONE: (608) 422-3295
CELL PHONE: (608) 800-2296
PRIMARY EMAIL: CHRISTOPHER.STORDAHL@CHARTER.COM

FRONTIER COMMUNICATIONS OF WI LLC - COMMUNICATION LINE

JERRY MOORE
2222 WEST WISCONSIN ST.
PORTAGE, WI 53901
PHONE: (608) 742-9507
CELL PHONE: (608) 346-0353
EMAIL: JERALD.R.MOORE@FTR.COM

MADISON GAS AND ELECTRIC - GAS

SHAUN ENDRES
133 S. BLAIR ST.
MADISON, WI 53788
PHONE: (608) 252-7224
CELL PHONE: (608) 213-6708
SENDRES@MGE.COM

TDS METROCOM LLC - TELECOMMUNICATIONS

BRANDON SUCHLA
327 PALISADE STREET
MERRIMAC, WI 53561
CELL PHONE: (608) 370-1608
EMAIL: BRANDON.SUCHLA@TDSTELECOM.COM

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

OTHER AGENCIES

WDNR LIASON

DNR SOUTH CENTRAL REGION HEADQUARTERS
ERIC HEGGELUND
3911 FISH HATCHERY RD
FITCHBURG, WI 53711
PHONE: (608) 275-3301
EMAIL: ERIC.HEGGELUND@WISCONSIN.GOV

WISDOT DESIGN

PROJECT MANAGER
WISDOT SW REGION
AMY COUGHLIN
2101 WRIGHT ST
MADISON, WI 53704
PHONE: (608) 245-5358
EMAIL: AMY.COUGHLIN@DOT.WI.GOV

RAILROAD COORDINATOR

WISDOT SW REGION
TERI BECKMAN
2101 WRIGHT ST
MADISON, WI 53704
PHONE: (608) 733-1923
EMAIL: TERI.BECKMAN@DOT.WI.GOV

CONSULTANT DESIGN

EMCS, INC.
MIKE MCCARTHY
1600 ASPEN COMMONS, SUITE 230
MIDDLETON, WI 53562
PHONE: (608) 827-8810
EMAIL: MMCCARTHY@EMCSINC.COM

STANDARD ABBREVIATIONS

AE,AEW	APRON ENDWALL
MGAL	1000 GALLONS
R.C.C.P.	REINFORCED CONCRETE CULVERT PIPE

2

2

2

N

VILLAGE OF MAZOMANIE

CTH Y

RACEK RD

DUNLAP CREEK

LOWER WISCONSIN STATE RIVERWAY

SAUK COUNTY

WISCONSIN RIVER

DANE COUNTY

VILLAGE OF SAUK CITY

ROXBURY CREEK

BLUMS CREEK

CTH Y

MAZOMANIE OAK BARRENS STATE NATURAL AREA

EXCEPTION TO NET CENTERLINE LENGTH
STRUCTURE B-13-428
STA 154+25.05 TO STA 154+73.53

E MATHEWSON RD

USH 14

UNNAMED WATERWAY

HUDSON RD

WISCONSIN & SOUTHERN RAILROAD

STH 78

20+00 40+00 60+00 80+00 100+00 120+00 140+00 160+00 180+00 200+00 220+00 240+00 260+00 280+00 300+00 320+00 340+00 360+00 380+00 400+00

STA BACK = 256+74.03
STA AHEAD = 256+78.94

OLD HWY 78

CARTER RD

BOX CULVERT C-13-116
TO REMAIN

BOLTON RD

USH 12

BEGIN PROJECT
STA 4+41.13
BEGIN MILL & OVERLAY

STH 19

DUNLAP HOLLOW RD

WILKINSON RD

TOWN OF MAZOMANIE

TOWN OF ROXBURY

EXCEPTION TO NET CENTERLINE LENGTH
STRUCTURE B-13-036
STA 388+31.05 TO STA 388+58.31

END PROJECT
STA 419+11.06
END MILL & OVERLAY

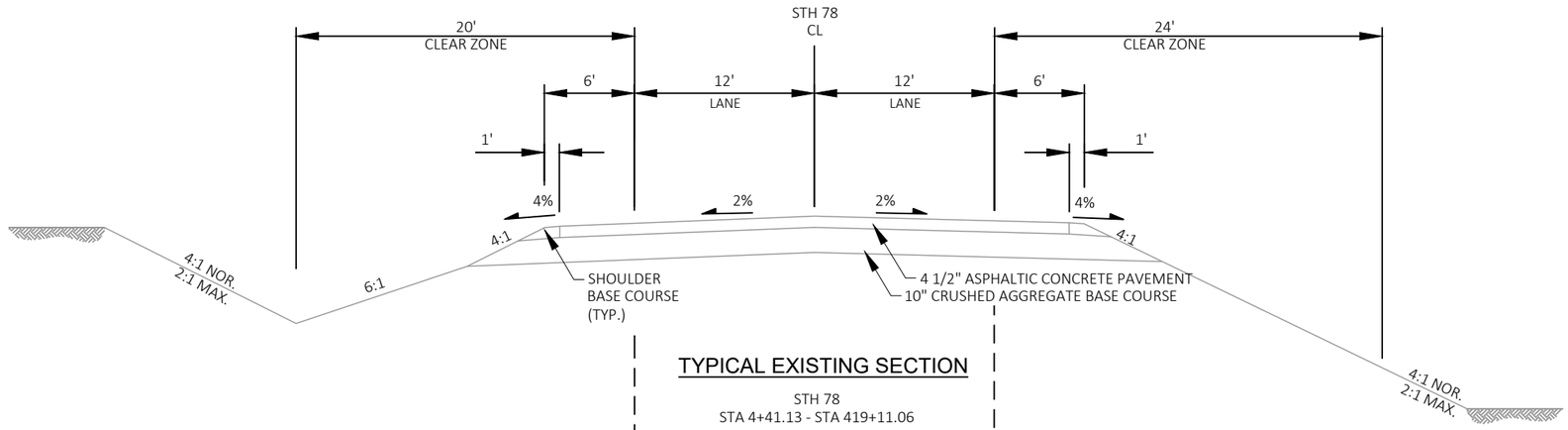
CTH F

WENDT CREEK

N DUNLAP HOLLOW RD

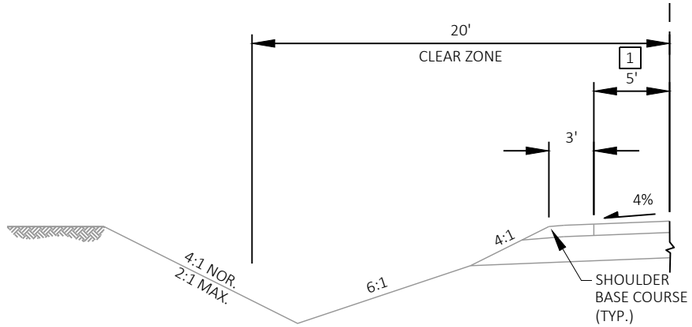
PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	PROJECT OVERVIEW	SHEET 3	E

FILE NAME : P:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\020201-PO.DWG
LAYOUT NAME - 020201-po
PLOT DATE : 2/4/2020 4:04 PM PLOT BY : CORY INMAN PLOT NAME : PLOT SCALE : 1 IN:0.5 MI
WISDOT/CADDS SHEET 42

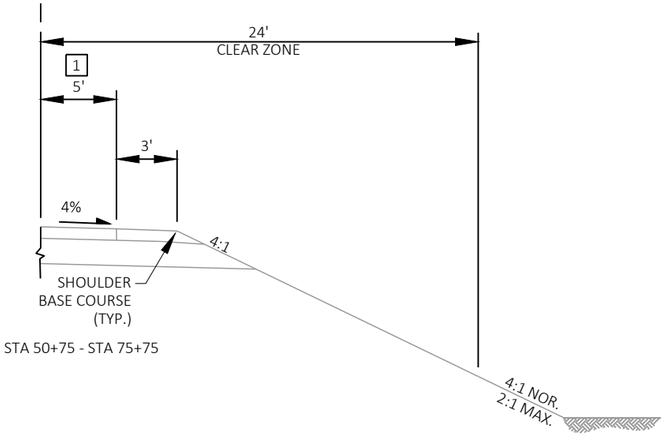


TYPICAL EXISTING SECTION

STH 78
STA 4+41.13 - STA 419+11.06



STA 50+75 - STA 75+75



STA 50+75 - STA 75+75

[1] WIDTH VARIES 5' - 10' STA 74+81.30 TO STA 78+82.41
WIDTH VARIES 5' - 12' STA 355+00 TO STA 360+00 AND STA 366+00 TO 380+00

PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	TYPICAL SECTIONS	SHEET 4	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - 020301-ts
PLOT DATE : 3/27/2020 11:53 AM
PLOT BY : CORY INMAN
PLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

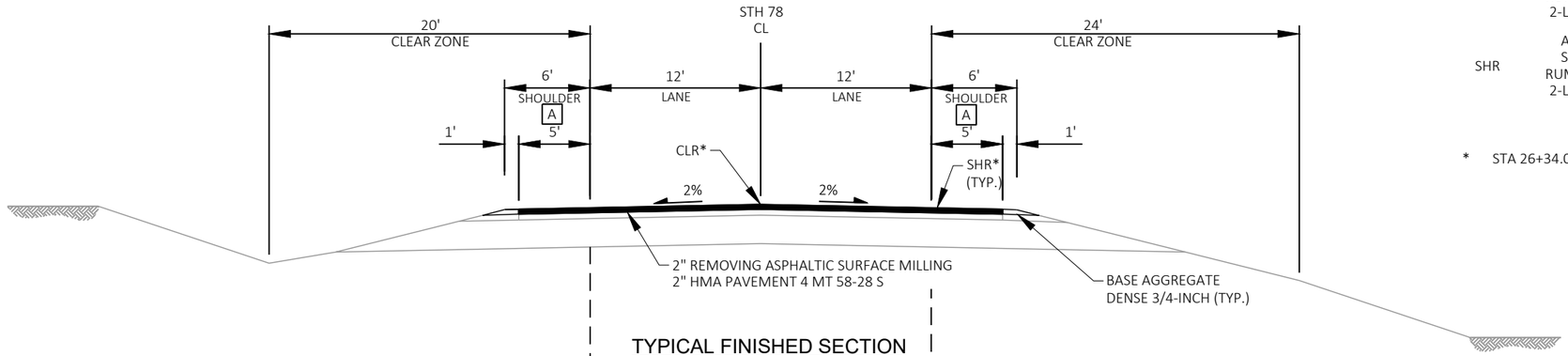
2

LEGEND

CLR — ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL

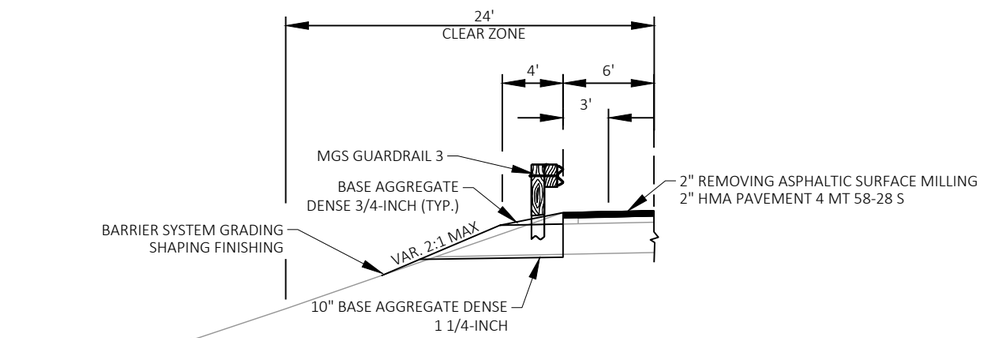
SHR — ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL

* STA 26+34.00 - STA 354+00.00



TYPICAL FINISHED SECTION

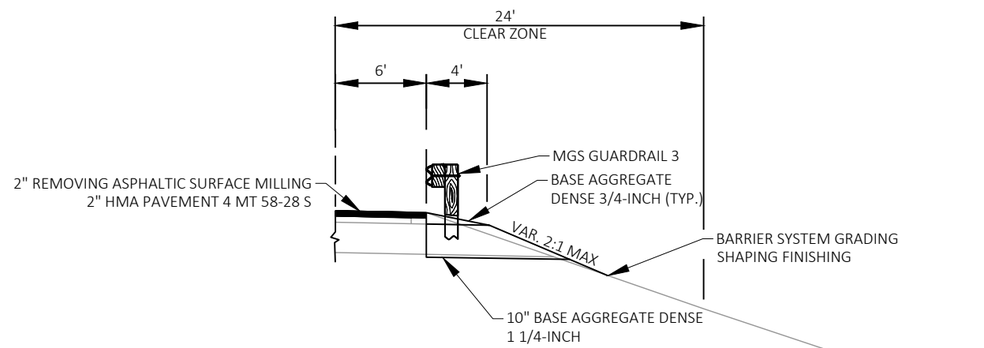
STH 78
STA 4+41.13 - STA 50+75.00
STA 75+75.00 - STA 419+11.06



TYPICAL FINISHED SECTION

STH 78
STA 153+33.90 - STA 154+25.37
STA 154+72.58 - STA 156+38.64
STA 205+62.51 - STA 209+91.78
STA 387+27.00 - STA 388+30.00
STA 388+58.97 - STA 390+17.48

[A] WIDTH VARIES 5' - 10' STA 75+75 TO STA 78+82.41
WIDTH VARIES 5' - 12' STA 355+00 TO STA 360+00 AND STA 366+00 TO STA 380+00



TYPICAL FINISHED SECTION

STH 78
STA 152+61.64 - STA 154+26.55
STA 154+72.55 - STA 155+75.26
STA 386+65.72 - STA 388+31.08
STA 388+59.00 - STA 389+62.00

PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	TYPICAL SECTIONS	SHEET 5	E

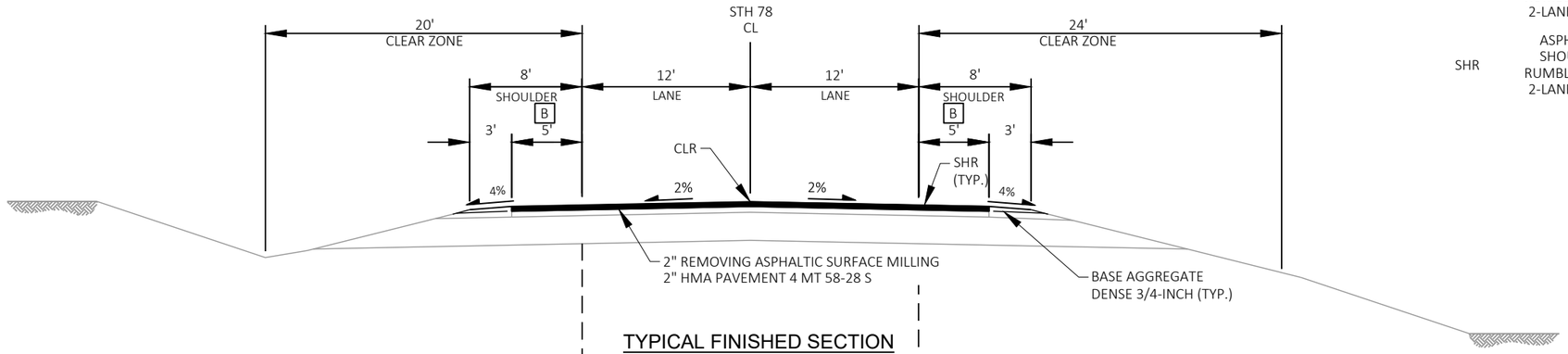
FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - 020302-ts
PLOT DATE : 3/27/2020 11:53 AM
PLOT BY : CORY INMAN
PLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

2

LEGEND

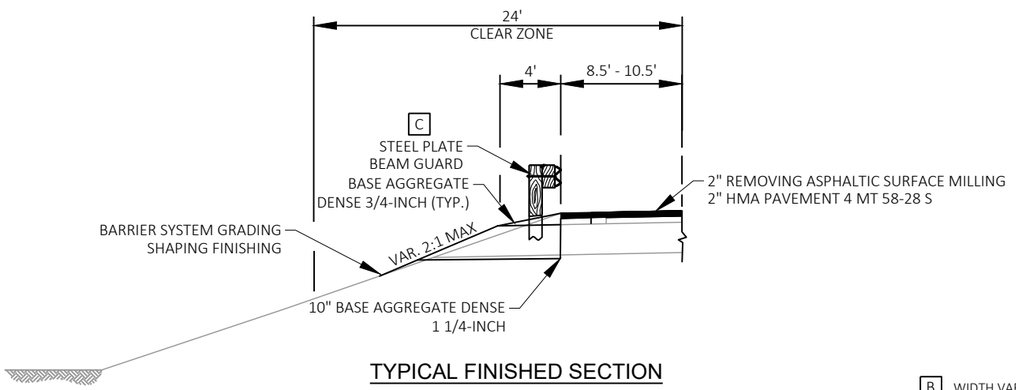
CLR — ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL

SHR — ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL



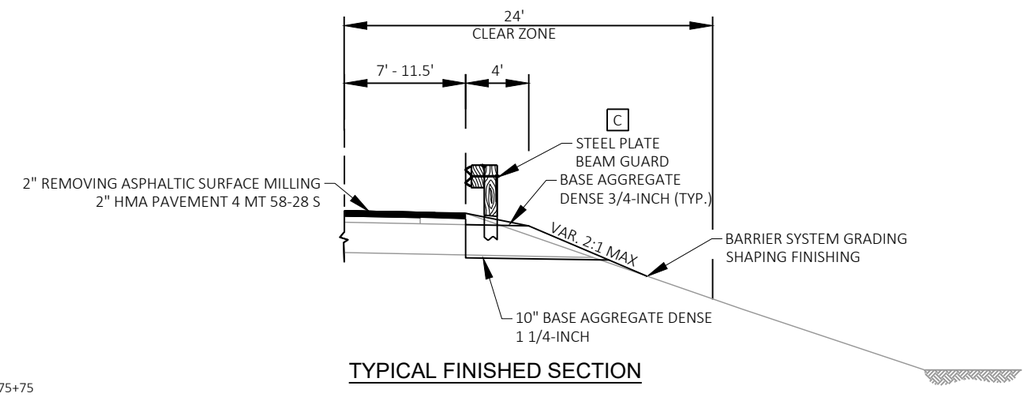
TYPICAL FINISHED SECTION

STH 78
STA 50+75.00 - STA 75+75.00



TYPICAL FINISHED SECTION

STH 78
STA 73+56.70 - STA 74+75



TYPICAL FINISHED SECTION

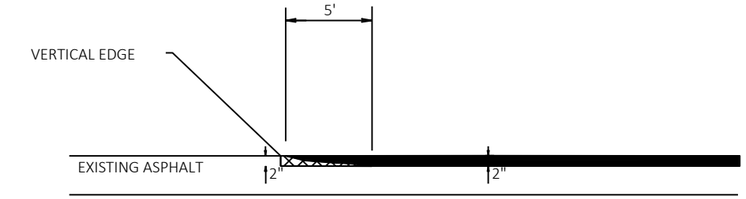
STH 78
STA 72+97.94 - STA 75+46.96

B — WIDTH VARIES 5' - 10' STA 74+81.30 TO STA 75+75

C — EXISTING STEEL PLATE BEAM GUARD TO REMAIN
STA 74+06.83 TO STA 74+75 LT
STA 73+97.19 TO STA 74+84.80 RT

PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	TYPICAL SECTIONS	SHEET 6	E

2

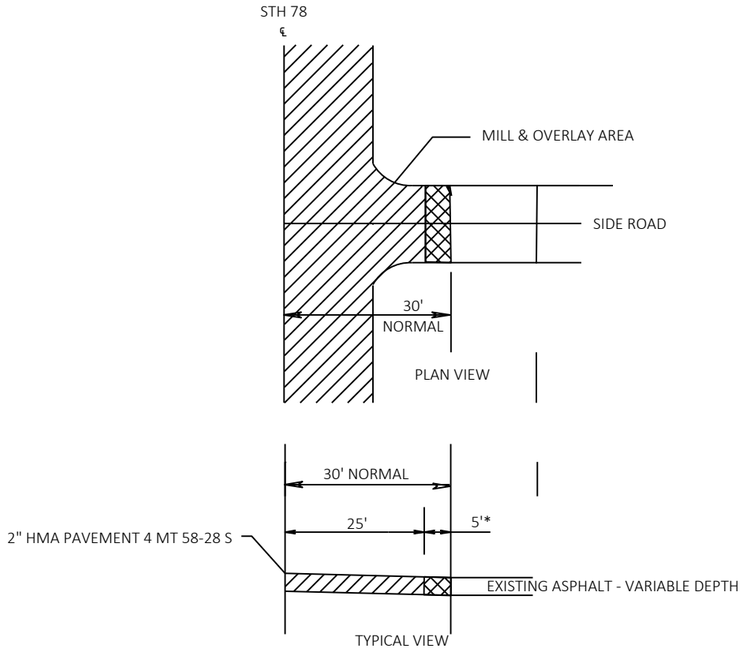


REQUIRED AT END
OF PAVING LOCATIONS

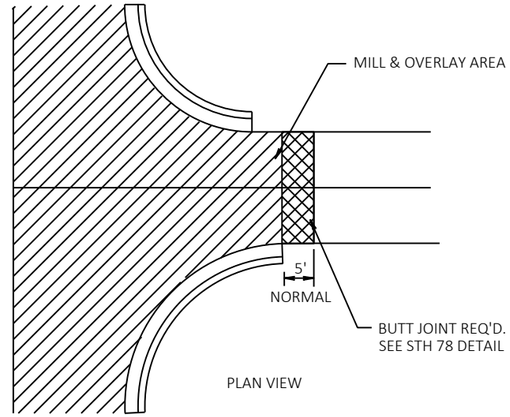
STH 78 DETAIL

REMOVE ASPHALTIC SURFACE WEDGE AT BUTT JOINT TO CREATE VERTICAL EDGE
PAID UNDER BID ITEM REMOVING ASPHALTIC SURFACE BUTT JOINTS

REMOVING ASPHALTIC
SURFACE MILLING



SIDE ROAD DETAIL - NO CURB & GUTTER



SIDE ROAD DETAIL - CURB & GUTTER TO REMAIN

REMOVE MATERIAL UNDER ITEM 'REMOVING ASPHALT SURFACE MILLING '

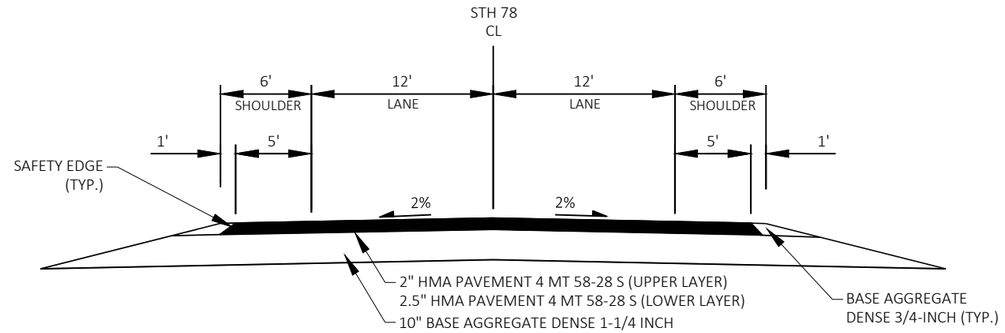
REMOVE MATERIAL UNDER ITEM 'REMOVING ASPHALT SURFACE BUTT JOINTS'
MATERIAL SHALL NOT BE REMOVED UNDER THIS ITEM UNTIL 24 HOURS BEFORE SIDE ROAD PAVING.

SIDE ROAD PAVEMENT DEPTH SHALL MATCH AT MAINLINE PAVEMENT EDGE AND BE TAPERED TO 2" MINIMUM AT JOINT

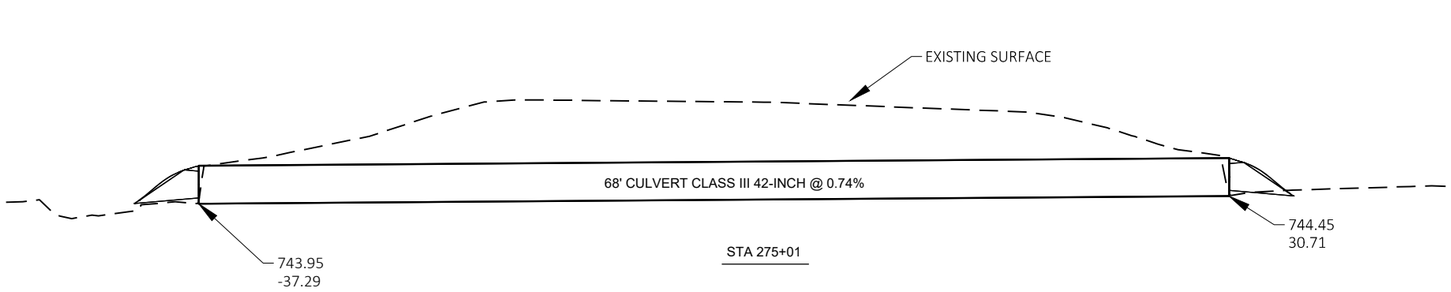
*REMOVING ASPHALTIC SURFACE BUTT JOINT LENGTH EQUALS 5-FEET ON SIDE ROADS

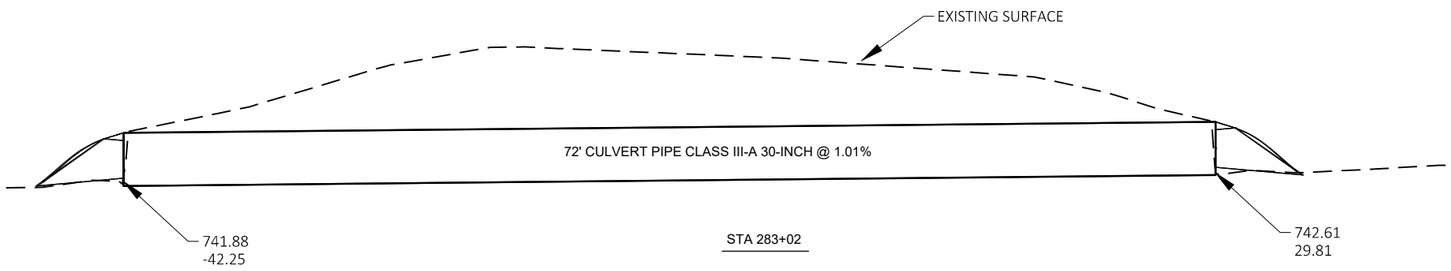
BUTT JOINT DETAILS

2



PAVEMENT STRUCTURE AT CULVERT REPLACEMENTS

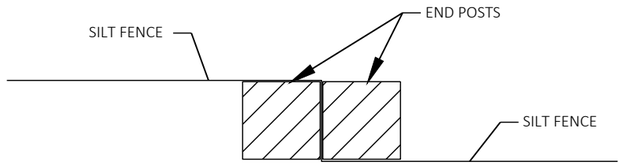




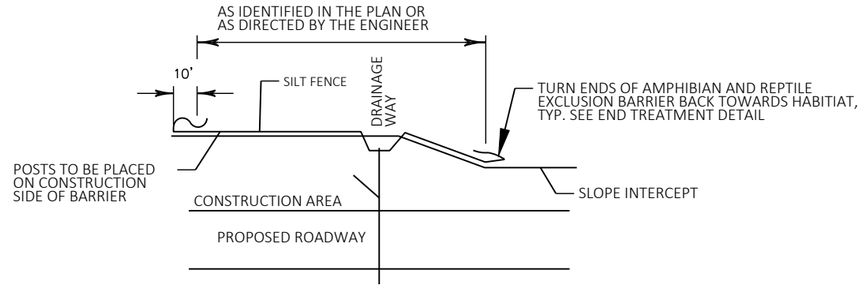
PROPOSED CULVERT PIPE DETAIL

PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CONSTRUCTION DETAILS	SHEET 8	E

2



CONTINUITY OF AMPHIBIAN AND REPTILE EXCLUSION BARRIER



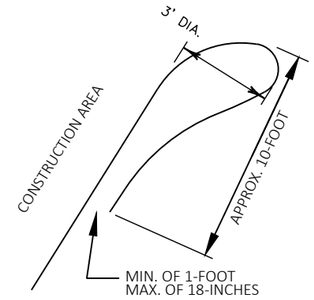
AMPHIBIAN AND REPTILE EXCLUSION BARRIER

NOTE:

AMPHIBIAN AND REPTILE EXCLUSION BARRIER IS SILT FENCE WITH POSTS INSTALLED ON CONSTRUCTION SIDE OF FENCE.

IF LENGTH OF AMPHIBIAN AND REPTILE FENCE IS LONGER THAN MANUFACTURED LENGTH OFINDIVIDUAL FENCING,JOIN END POSTS AS SHOWN IN CONTINUITY OF AMPHIBIAN AND REPTILE EXCLUSION BARRIER.

CONTRACTOR TO MAINTAIN AMPHIBIAN AND REPTILE EXCLUSION BARRIER UNDER THE ITEM SILT FENCE MAINTENANCE.



END TREATMENT DETAIL

PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CONSTRUTION DETAILS	SHEET 9	E

2

2

CENTURYLINK (TELECOMMUNICATIONS)
SI
REMOVING GUARDRAIL, STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
ALLIANT ENERGY (ELEC) CHARTER (FIBER OPTIC)
HALFWAY PRARIE CREEK
EXISTING CULVERT C-13-116 TO REMAIN
GUY
71+00
72+00
73+00
74+00
75+00
76+00
+56.65 27.47'LT
+81.70 25.80'LT
+06.70 24.47'LT
+50.96 20.00'LT
+22.20 16.78'LT
+56.70 20.00'LT
+06.70 20.47'LT
+91.83 20.00'RT
+67.07 17.00'RT
+97.94 20.00'RT
+22.58 25.13'RT
+97.94 27.00'RT
+47.25 20.00'RT
+47.26 24.00'RT
+97.19 19.02'RT
+97.20 23.02'RT
+84.80 19.49'RT
+84.69 21.82'RT
+97.24 25.09'RT
+46.95 21.56'RT
+75.75 24.69'RT
+75.57 29.85'RT
STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
REMOVING GUARDRAIL
STEEL PLATE BEAM GUARD
EXISTING R/W
MGE (GAS)
REMOVING GUARDRAIL, STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
SI
WETLAND BOUNDARY
CENTURYLINK (FIBER OPTIC)
N

WETLAND BOUNDARY
SI
MGS GUARDRAIL TERMINAL EAT
EXISTING STRUCTURE B-13-428 TO REMAIN EXCEPTION TO NET CENTERLINE LENGTH STA 154+25.05 TO STA 154+73.53
+34.05 25.90'LT
+59.27 23.33'LT
+14.59 18.00'LT
REMOVING GUARDRAIL, MGS THRIE BEAM TRANSITION
+84.48 21.94'LT
+24.23 17.00'LT
+34.05 18.00'LT
+84.48 18.00'LT
152+00
153+00
154+00
155+00
156+00
157+00
+44.29 18.00'RT
+61.64 18.00'RT
+51.73 17.00'RT
+61.64 25.90'RT
+86.43 23.33'RT
+11.22 18.00'RT
+11.22 21.94'RT
MGS GUARDRAIL 3
GUY
MGS GUARDRAIL TERMINAL EAT
EXISTING R/W
REMOVING GUARDRAIL, MGS THRIE BEAM TRANSITION
WETLAND BOUNDARY
DUNLAP CREEK
WETLAND BOUNDARY
MGS THRIE BEAM TRANSITION
REMOVING GUARDRAIL, MGS GUARDRAIL 3
EXISTING R/W
MGS GUARDRAIL TERMINAL EAT
SI
+88.21 21.94'LT
+88.21 18.00'LT
+13.43 23.33'LT
+38.64 25.89'LT
+58.10 18.00'LT
+48.73 17.00'LT
+38.64 18.00'LT
STH 78
+50.47 23.33'RT
+85.17 17.00'RT
+92.70 18.00'RT
+75.26 18.00'RT
+75.26 25.90'RT
REMOVING GUARDRAIL
MGS THRIE BEAM TRANSITION
+25.68 18.00'RT
+25.68 21.94'RT
SI
GUY
GUY
ALLIANT ENERGY (ELEC) CHARTER (FIBER OPTIC)
CENTURYLINK (TELECOMMUNIATIONS)
N

PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CONSTRUCTION DETAILS	SHEET 10	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\021001_CD.DWG
LAYOUT NAME - 03
PLOT DATE : 3/31/2020 12:13 PM
PLOT BY : CORY INMAN
PLOT NAME :
PLOT SCALE : 1 IN:40 FT

2

2

CENTURYLINK (TELECOMMUNICATIONS)
EXISTING R/W
ALLIANT ENERGY (ELEC)
CHARTER (FIBER OPTIC)
WETLAND BOUNDARY
S.I.
+43.85 18.00'LT
+62.57 25.90'LT
+52.54 17.00'LT
+62.57 18.00'LT
+87.63 23.33'LT
+12.75 22.00'LT
+12.68 18.00'LT
REMOVING GUARDRAIL
ENVIRONMENTALLY SENSITIVE AREA
GUY
MGS GUARDRAIL TERMINAL EAT
MGS GUARDRAIL 3
+42.99 22.00'LT
+41.82 18.00'LT
+66.79 23.29'LT
+91.77 18.00'LT
+91.77 25.90'LT
205+00
206+00
207+00
208+00
210+00
STH 78
OH
T
N

EXISTING STRUCTURE B-13-0306 TO REMAIN
NET EXCEPTION TO CENTERLINE LENGTH
STA 388+31.05 TO STA 388+58.31
FRONTIER (TELECOMMUNICATION)
MGS GUARDRAIL TERMINAL EAT
REMOVING GUARDRAIL, MGS THRIE BEAM TRANSITION
ROXBURY CREEK
EXISTING R/W
WETLAND BOUNDARY
SI
+08.38 18.00'LT
+26.97 25.90'LT
+27.00 18.00'LT
+52.05 23.39'LT
+77.10 21.94'LT
+17.00 16.95'LT
+77.08 18.00'LT
MGS TERMINAL EAT
+74.86 22.00'LT
+99.85 23.33'LT
+24.86 24.90'LT
MGE (GAS)
MGS GUARDRAIL 3
+74.86 18.00'LT
+24.86 18.00'LT
+34.88 17.00'LT
+43.44 18.00'LT
386+00
387+00
388+00
389+00
390+00
391+00
+47.46 18.00'RT
+65.72 18.00'RT
+55.73 17.00'RT
+15.64 18.00'RT
+12.08 18.00'RT
+62.00 18.00'RT
+71.99 17.00'RT
+80.26 18.00'RT
+65.72 25.90'RT
+90.68 23.33'RT
+15.64 22.10'RT
+12.08 21.94'RT
+37.04 23.35'RT
+62.00 25.93'RT
WETLAND BOUNDARY
FRONTIER (FIBER OPTIC)
ALLIANT ENERGY (ELEC)
CHARTER (FIBER OPTIC)
EXISTING R/W
REMOVING GUARDRAIL, MGS THRIE BEAM TRANSITION
FRONTIER (FIBER OPTIC)
FO
G
GV
T
OH

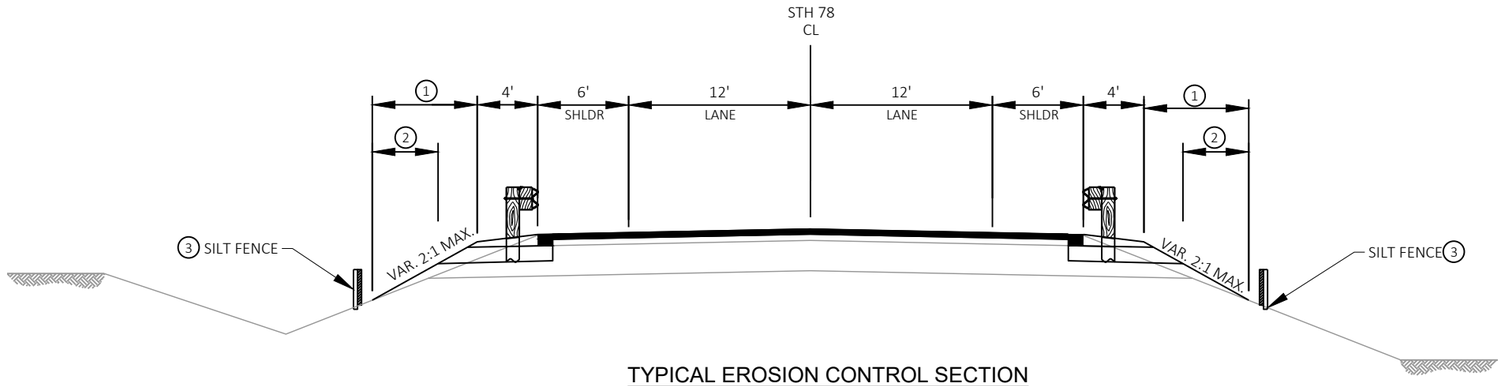
PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CONSTRUCTION DETAILS	SHEET 11	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\021001_CD.DWG
LAYOUT NAME - 04

PLOT DATE : 3/31/2020 12:13 PM PLOT BY : CORY INMAN PLOT NAME : PLOT SCALE : ##########

WISDOT/CADDS SHEET 42

2



TYPICAL EROSION CONTROL SECTION

STH 78 - GUARDRAIL SECTIONS

LEGEND

1. SEED & FERTILIZER
2. SALVAGED TOPSOIL & EROSION MAT URBAN CLASS I TYPE B
3. PLACE SILT FENCE WITHIN 3-FEET OF SLOPE INTERCEPT IN WETLAND AREAS

NOTE: SEED, FERTILIZER AND SALVAGED TOPSOIL ARE INCIDENTAL TO "BARRIER SYSTEM GRADING SHAPING FINISHING" ITEM.

LEGEND

- EROSION MAT CLASS I, TYPE B URBAN
- SILT FENCE
- SLOPE INTERCEPT
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- SURFACE WATER FLOW

N

72+00 73+00 74+00 75+00 76+00

WETLANDS

WETLAND IMPACTS

AMPHIBIAN AND REPTILE EXCLUSION FENCING
SEE CONSTRUCTION DETAILS

WETLANDS

N

152+00 153+00 154+00 155+00 156+00 157+00

AMPHIBIAN AND REPTILE EXCLUSION FENCING
SEE CONSTRUCTION DETAILS

AMPHIBIAN AND REPTILE EXCLUSION FENCING
SEE CONSTRUCTION DETAILS

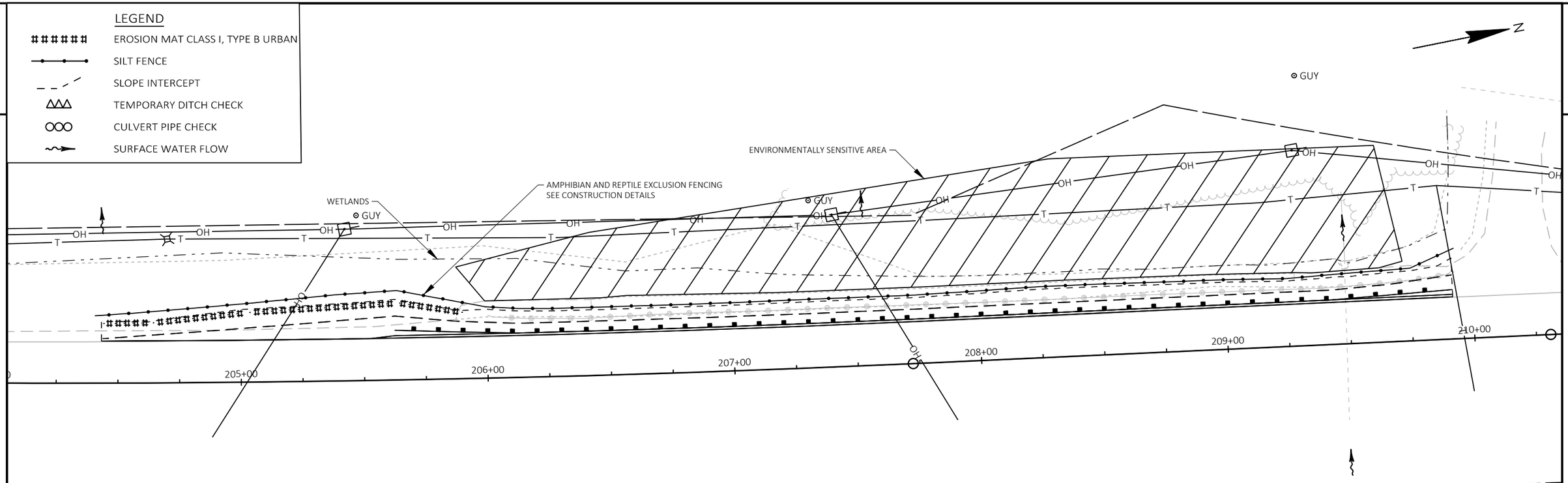
PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	EROSION CONTROL	SHEET 13	E

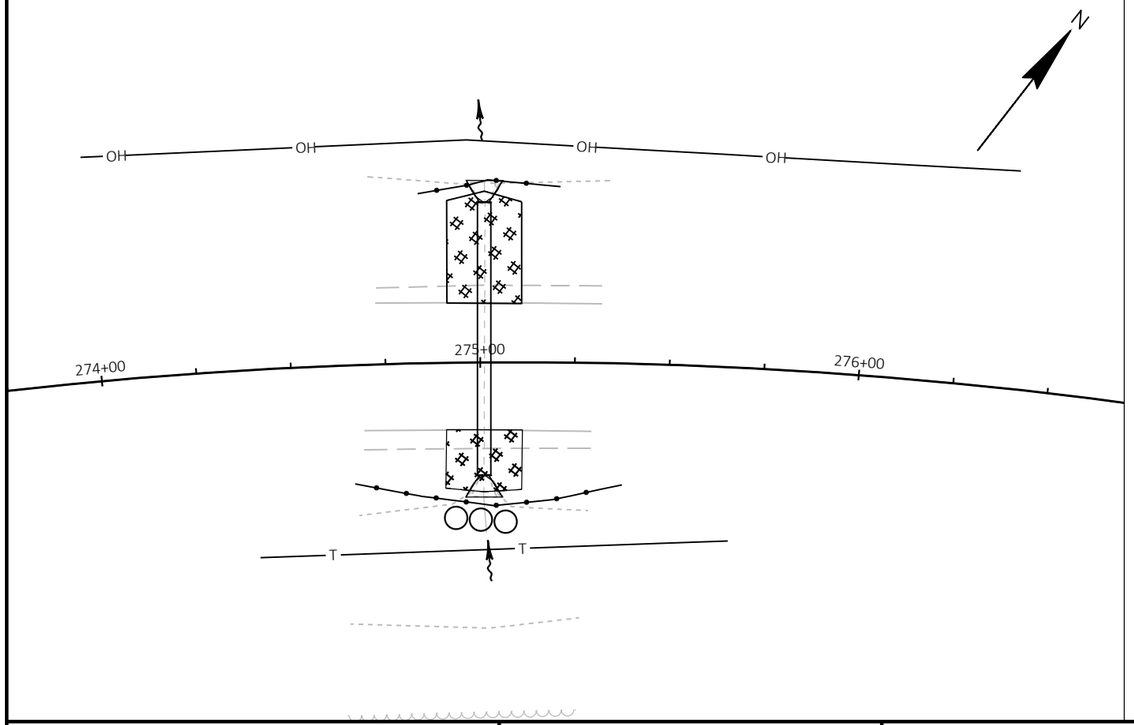
FILE NAME : Y:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022001-ec

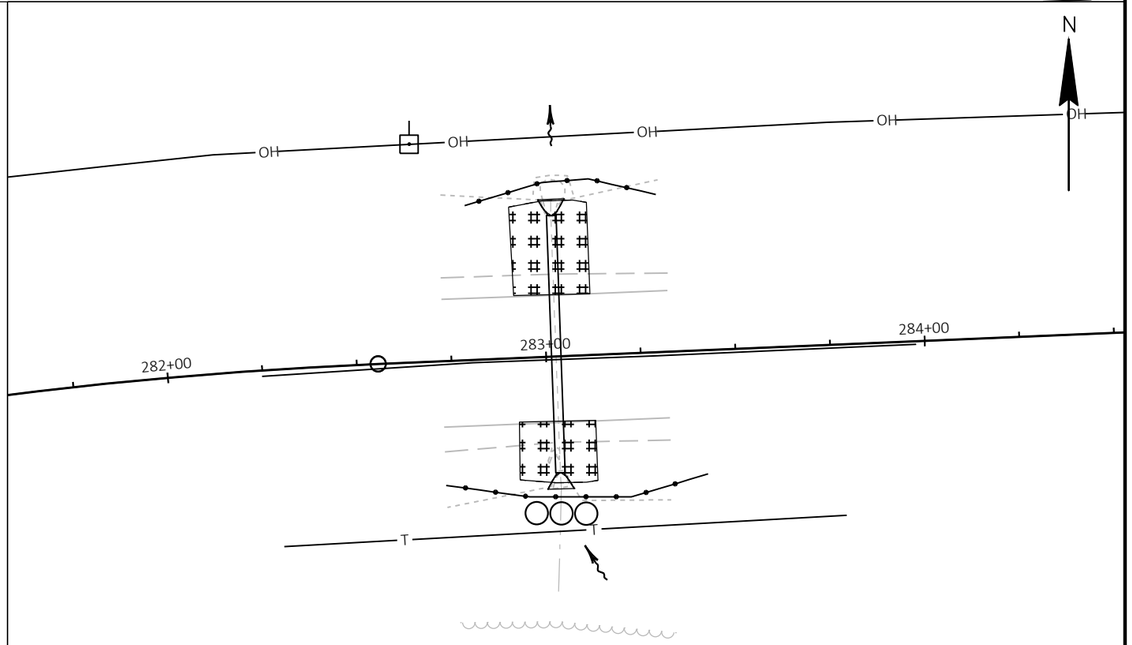
PLOT DATE : 8/3/2021 1:34 PM PLOT BY : CORY INMAN PLOT NAME : PLOT SCALE : 1 IN:40 FT

LEGEND

- EROSION MAT CLASS I, TYPE B URBAN
- SILT FENCE
- SLOPE INTERCEPT
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- SURFACE WATER FLOW

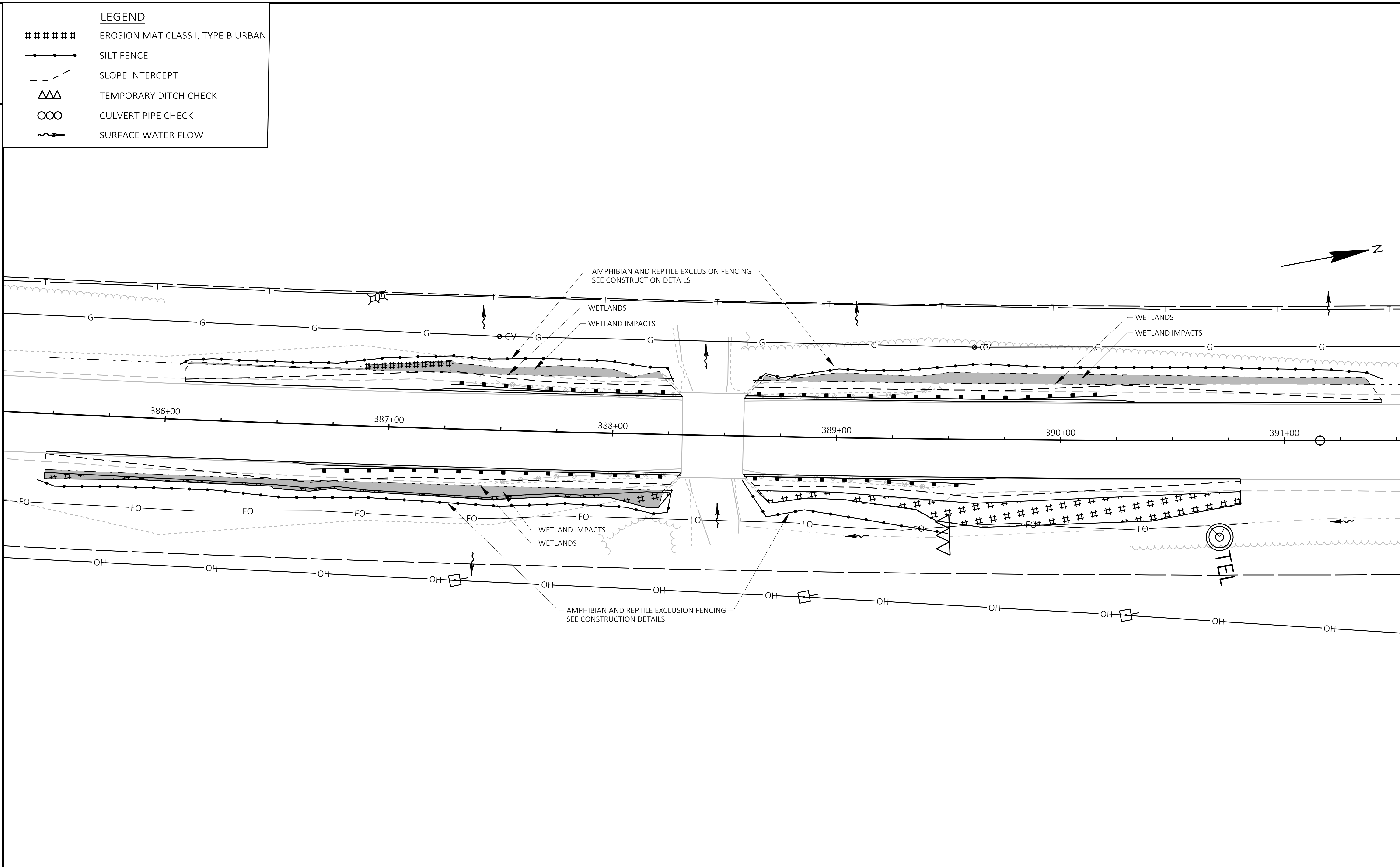






PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	EROSION CONTROL	SHEET 14	E

FILE NAME : Y:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022002-ec
PLOT DATE : 8/3/2021 1:34 PM
PLOT BY : CORY INMAN
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42



PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	EROSION CONTROL	SHEET 15	E

TRAFFIC CONTROL GENERAL NOTES

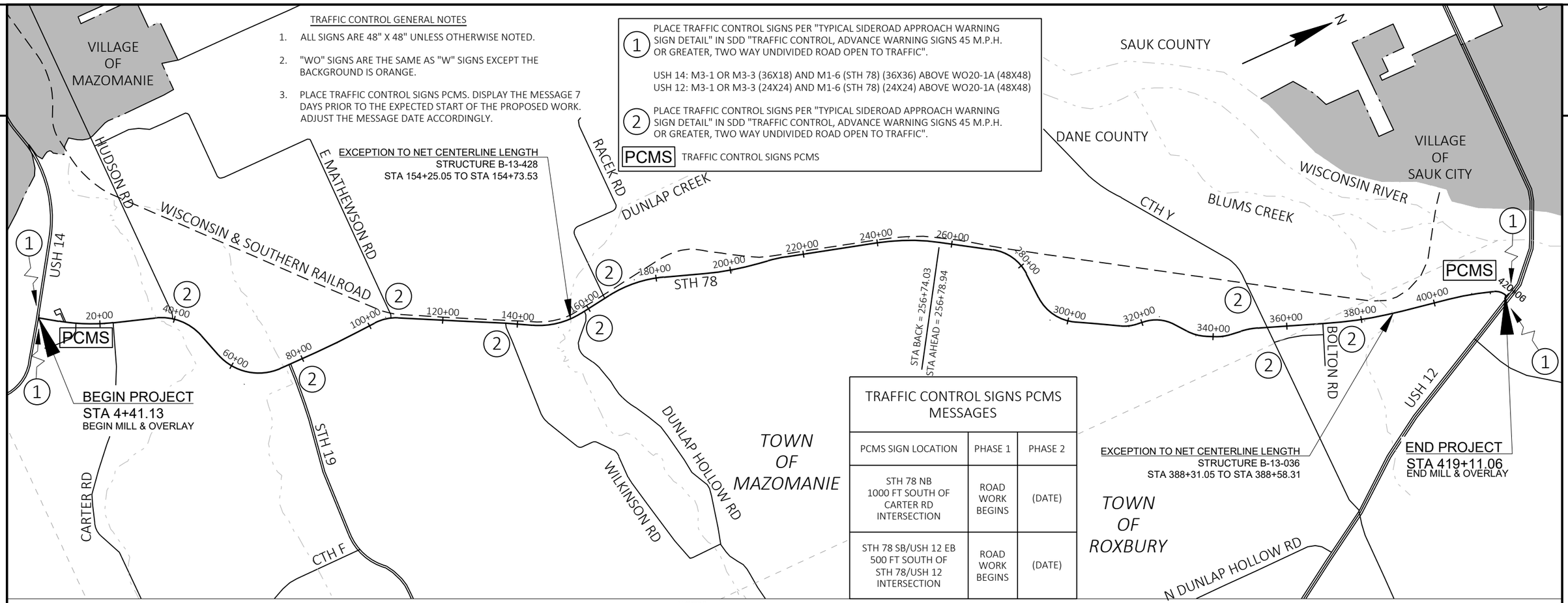
1. ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
2. "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
3. PLACE TRAFFIC CONTROL SIGNS PCMS. DISPLAY THE MESSAGE 7 DAYS PRIOR TO THE EXPECTED START OF THE PROPOSED WORK. ADJUST THE MESSAGE DATE ACCORDINGLY.

(1) PLACE TRAFFIC CONTROL SIGNS PER "TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL" IN SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC".

USH 14: M3-1 OR M3-3 (36X18) AND M1-6 (STH 78) (36X36) ABOVE WO20-1A (48X48)
USH 12: M3-1 OR M3-3 (24X24) AND M1-6 (STH 78) (24X24) ABOVE WO20-1A (48X48)

(2) PLACE TRAFFIC CONTROL SIGNS PER "TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL" IN SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC".

PCMS TRAFFIC CONTROL SIGNS PCMS



EXCEPTION TO NET CENTERLINE LENGTH
STRUCTURE B-13-428
STA 154+25.05 TO STA 154+73.53

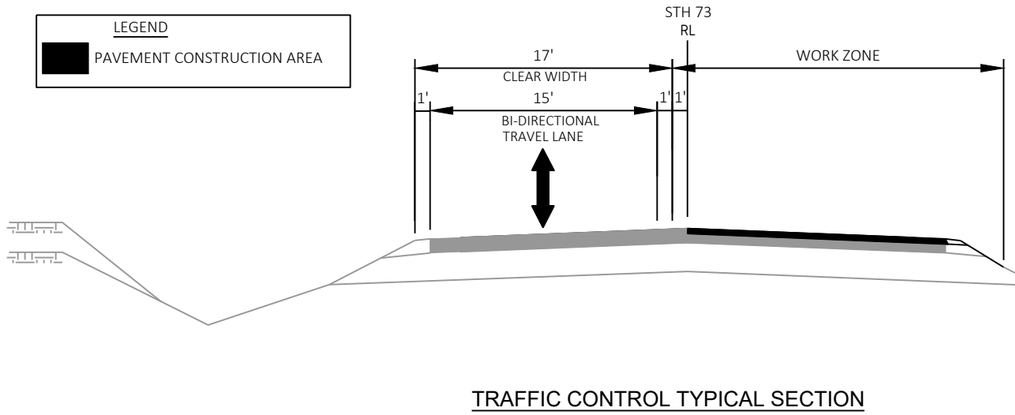
EXCEPTION TO NET CENTERLINE LENGTH
STRUCTURE B-13-036
STA 388+31.05 TO STA 388+58.31

TRAFFIC CONTROL SIGNS PCMS MESSAGES

PCMS SIGN LOCATION	PHASE 1	PHASE 2
STH 78 NB 1000 FT SOUTH OF CARTER RD INTERSECTION	ROAD WORK BEGINS	(DATE)
STH 78 SB/USH 12 EB 500 FT SOUTH OF STH 78/USH 12 INTERSECTION	ROAD WORK BEGINS	(DATE)

LEGEND

PAVEMENT CONSTRUCTION AREA



TRAFFIC CONTROL TYPICAL SECTION

STH 78
TYPICAL STAGING FOR MILL AND OVERLAY OPERATIONS
(WORK ZONE FOR STH 78 NB SHOWN, MIRROR TYPICAL SECTION FOR STH 78 SB WORK ZONE)

NOTES

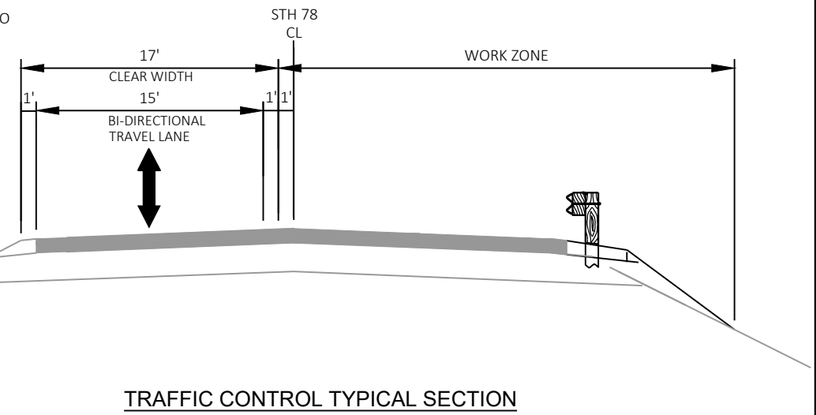
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION" TO REDUCE TRAFFIC TO ONE LANE BI-DIRECTIONAL TRAFFIC DURING WORKING HOURS.

WORK ZONE SHOWN INCLUDES WORKING ROOM AND BUFFER TO LIVE TRAFFIC.

SAME DAY PAVING IS REQUIRED ON ALL MILLED SURFACES.

GUARDRAIL OPERATIONS NOT COMPLETED IN A SINGLE DAY REQUIRE A SHOULDER CLOSURE FOR NON-WORKING HOURS. SEE SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED HIGHWAY."

SHOULDER CLOSURES SHALL NOT BE ALLOWED ON BOTH SIDES OF THE ROAD DIRECTLY ADJACENT TO ONE ANOTHER.



TRAFFIC CONTROL TYPICAL SECTION

STH 78
TYPICAL STAGING FOR GUARDRAIL OPERATIONS
(WORK ZONE FOR STH 78 NB SHOWN, MIRROR TYPICAL SECTION FOR STH 78 SB WORK ZONE)

Estimate Of Quantities

5601-00-60

Line	Item	Item Description	Unit	Total	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	2.000	2.000
0004	204.0115	Removing Asphaltic Surface Butt Joints	SY	340.000	340.000
0006	204.0120	Removing Asphaltic Surface Milling	SY	167,540.000	167,540.000
0008	204.0165	Removing Guardrail	LF	1,234.000	1,234.000
0010	204.0180	Removing Delineators and Markers	EACH	4.000	4.000
0012	209.1500	Backfill Granular Grade 1	TON	700.000	700.000
0014	213.0100	Finishing Roadway (project) 01. 5601-00-60	EACH	1.000	1.000
0016	305.0110	Base Aggregate Dense 3/4-Inch	TON	1,680.000	1,680.000
0018	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,700.000	1,700.000
0020	455.0605	Tack Coat	GAL	11,780.000	11,780.000
0022	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	1.000	1.000
0024	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	1.000	1.000
0026	460.6224	HMA Pavement 4 MT 58-28 S	TON	19,020.000	19,020.000
0028	465.0110	Asphaltic Surface Patching	TON	80.000	80.000
0030	465.0425	Asphaltic Shoulder Rumble Strips 2-Lane Rural	LF	61,120.000	61,120.000
0032	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	29,860.000	29,860.000
0034	520.1030	Apron Endwalls for Culvert Pipe 30-Inch	EACH	2.000	2.000
0036	520.1042	Apron Endwalls for Culvert Pipe 42-Inch	EACH	2.000	2.000
0038	520.3142	Culvert Pipe Class III 42-Inch	LF	68.000	68.000
0040	520.3330	Culvert Pipe Class III-A 30-Inch	LF	72.000	72.000
0042	614.0010	Barrier System Grading Shaping Finishing	EACH	12.000	12.000
0044	614.0305	Steel Plate Beam Guard Class A	LF	63.000	63.000
0046	614.0370	Steel Plate Beam Guard Energy Absorbing Terminal	EACH	3.000	3.000
0048	614.2300	MGS Guardrail 3	LF	663.000	663.000
0050	614.2500	MGS Thrie Beam Transition	LF	315.000	315.000
0052	614.2610	MGS Guardrail Terminal EAT	EACH	10.000	10.000
0054	618.0100	Maintenance And Repair of Haul Roads (project) 01. 5601-00-60	EACH	1.000	1.000
0056	619.1000	Mobilization	EACH	1.000	1.000
0058	621.0100	Landmark Reference Monuments	EACH	2.000	2.000
0060	624.0100	Water	MGAL	35.000	35.000
0062	625.0500	Salvaged Topsoil	SY	550.000	550.000
0064	628.1504	Silt Fence	LF	4,400.000	4,400.000
0066	628.1520	Silt Fence Maintenance	LF	13,200.000	13,200.000
0068	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0070	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0072	628.2008	Erosion Mat Urban Class I Type B	SY	4,250.000	4,250.000
0074	628.7504	Temporary Ditch Checks	LF	50.000	50.000
0076	628.7555	Culvert Pipe Checks	EACH	15.000	15.000
0078	629.0205	Fertilizer Type A	CWT	0.500	0.500
0080	630.0130	Seeding Mixture No. 30	LB	10.000	10.000
0082	630.0500	Seed Water	MGAL	90.000	90.000
0084	633.5200	Markers Culvert End	EACH	4.000	4.000
0086	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	11.000	11.000
0088	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	1.000	1.000
0090	638.2102	Moving Signs Type II	EACH	12.000	12.000
0092	638.3000	Removing Small Sign Supports	EACH	13.000	13.000
0094	642.5201	Field Office Type C	EACH	1.000	1.000
0096	643.0300	Traffic Control Drums	DAY	540.000	540.000
0098	643.0900	Traffic Control Signs	DAY	3,186.000	3,186.000

Estimate Of Quantities

5601-00-60

Line	Item	Item Description	Unit	Total	Qty
0100	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0102	643.5000	Traffic Control	EACH	1.000	1.000
0104	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	80,650.000	80,650.000
0106	646.1545	Marking Line Grooved Wet Ref Contrast Epoxy 4-Inch	LF	325.000	325.000
0108	646.3545	Marking Line Grooved Wet Ref Contrast Epoxy 8-Inch	LF	1,750.000	1,750.000
0110	646.4520	Marking Line Same Day Epoxy 4-Inch	LF	65,950.000	65,950.000
0112	646.5020	Marking Arrow Epoxy	EACH	4.000	4.000
0114	646.6120	Marking Stop Line Epoxy 18-Inch	LF	100.000	100.000
0116	648.0100	Locating No-Passing Zones	MI	7.850	7.850
0118	649.0120	Temporary Marking Line Epoxy 4-Inch	LF	65,650.000	65,650.000
0120	650.6000	Construction Staking Pipe Culverts	EACH	2.000	2.000
0122	650.8000	Construction Staking Resurfacing Reference	LF	41,390.000	41,390.000
0124	650.9910	Construction Staking Supplemental Control (project) 01. 5601-00-60	LS	1.000	1.000
0126	690.0150	Sawing Asphalt	LF	140.000	140.000
0128	740.0440	Incentive IRI Ride	DOL	31,420.000	31,420.000
0130	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	400.000	400.000
0132	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	300.000	300.000
0134	SPV.0055	Special 01. Incentive Density PWL HMA Pavement	DOL	12,390.000	12,390.000
0136	SPV.0055	Special 02. Incentive Air Voids HMA Pavement	DOL	19,020.000	19,020.000
0138	SPV.0055	Special 03. Incentive Density HMA Pavement Longitudinal Joints	DOL	16,558.000	16,558.000
0140	SPV.0060	Special 01. Verify Landmark Reference Monuments	EACH	2.000	2.000

3

REMOVING ASPHALTIC SURFACE ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	OFFSET	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS SY	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY	COMMENTS
0010	STH 78	4+41	-	154+25	LT/RT	50	60,620	DRIVING LANES & SHOLDERS
	STH 78	154+74	-	256+74	LT/RT	20	38,750	DRIVING LANES & SHOLDERS
	STH 78	256+79	-	419+11	LT/RT	70	61,680	DRIVING LANES & SHOLDERS
	STH 78	PROJECT LIMITS			LT/RT	200	6,490	INTERSECTIONS & TURN LANES
	TOTALS					340	167,540	

REMOVING GUARDRAIL

CATEGORY	LOCATION	STATION	TO	STATION	OFFSET	204.0165 REMOVING GUARDRAIL LF
0010	STH 78	73+58	-	73+97	RT	40
	STH 78	73+68	-	74+07	LT	40
	STH 78	74+85	-	75+74	RT	90
	STH 78	153+42	-	154+25	LT	84
	STH 78	153+44	-	154+27	RT	84
	STH 78	154+73	-	155+57	LT	84
	STH 78	154+73	-	155+55	RT	84
	STH 78	206+00	-	209+92	LT	392
	STH 78	387+47	-	388+30	LT	84
	STH 78	387+48	-	388+31	RT	84
	STH 78	388+59	-	389+42	LT	84
	STH 78	388+59	-	389+42	RT	84
	TOTAL					1,234

3

REMOVING SMALL PIPE CULVERTS

CATEGORY	LOCATION	STATION	OFFSET	203.0100 EACH	COMMENTS
0010	STH 78	275+01	LT/RT	1	42-INCH
	STH 78	283+02	LT/RT	1	30-INCH
	TOTAL			2	

REMOVING DELINEATORS AND MARKERS

CATEGORY	LOCATION	STATION	OFFSET	204.0180 EACH
0010	STH 78	275+01	LT/RT	2
	STH 78	283+02	LT/RT	2
	TOTAL			4

BASE AGGREGATE ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	OFFSET	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	COMMENTS
0010	STH 78	4+41	-	154+25	LT/RT	502	--	LT/RT SHOULDERS
	STH 78	154+74	-	256+74	LT/RT	334	--	LT/RT SHOULDERS
	STH 78	256+79	-	419+11	LT/RT	544	--	LT/RT SHOULDERS
	STH 78	71+92	-	73+98	RT	20	73	MGS WIDENING AREA
	STH 78	72+51	-	74+07	LT	15	55	MGS WIDENING AREA
	STH 78	74+85	-	75+76	RT	9	32	MGS WIDENING AREA
	STH 78	151+44	-	154+25	RT	27	100	MGS WIDENING AREA
	STH 78	152+15	-	154+25	LT	20	74	MGS WIDENING AREA
	STH 78	154+74	-	156+93	RT	21	77	MGS WIDENING AREA
	STH 78	154+74	-	157+58	LT	27	100	MGS WIDENING AREA
	STH 78	204+43	-	209+97	LT	53	194	MGS WIDENING AREA
	STH 78	274+42	-	275+60	LT/RT	8	309	CULVERT REPLACEMENT
	STH 78	282+36	-	283+68	LT/RT	9	345	CULVERT REPLACEMENT
	STH 78	386+00	-	388+31	RT	22	81	MGS WIDENING AREA
	STH 78	386+08	-	388+31	LT	21	80	MGS WIDENING AREA
	STH 78	388+58	-	390+80	RT	21	80	MGS WIDENING AREA
	STH 78	388+58	-	391+43	LT	27	100	MGS WIDENING AREA
	TOTALS					1,680	1,700	

3

PWL ITEMS

CATEGORY	LOCATION	460.0105.S HMA PERCENT WITHIN LIMITS (PWL) TEST STRIP VOLUMETRICS EACH	460.0110.S HMA PERCENT WITHIN LIMITS (PWL) TEST STRIP DENSITY EACH
0010	STH 78	1	1
	TOTALS	1	1

MISCELLANEOUS ASPHALTIC ITEMS

CATEGORY	LOCATION	213.0100.01 FINISHING ROADWAY (5601-00-60) EACH	465.0110 ASPHALTIC SURFACE PATCHING TON
0010	STH 78	1	80
	TOTALS	1	80

NOTE
UNDISTRIBUTED ASPHALTIC SURFACE PATCHING QUANTITY USED FOR ANY REPAIRS REQUIRED AFTER MILLING IS COMPLETE.

3

ASPHALTIC ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	OFFSET	455.0605 TACK COAT GAL	460.6224 HMA PAVEMENT 4 MT 58-28 S TON	COMMENTS
0010	STH 78	4+41	-	154+25	LT/RT	4,240	6,830	DRIVING LANES & SHOLDERS
	STH 78	154+74	-	256+74	LT/RT	2,770	4,480	DRIVING LANES & SHOLDERS
	STH 78	256+79	-	419+11	LT/RT	4,300	6,960	DRIVING LANES & SHOLDERS
	STH 78	PROJECT LIMITS			LT/RT	470	750	INTERSECTIONS & TURN LANES
	TOTALS					11,780	19,020	

ASPHALTIC RUMBLE STRIP ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	OFFSET	465.0425 ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL LF	465.0475 ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL LF
0010	STH 78	26+34	-	154+25	LT/RT	23,732	11,166
	STH 78	154+74	-	256+74	LT/RT	18,650	9,375
	STH 78	256+79	-	354+00	LT/RT	18,738	9,319
	TOTALS					61,120	29,860

HMA MIXTURE ACCEPTANCE

LOCATION	STA TO STA	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS	INCENTIVE DENSITY LENGTH	QUALITY MANAGEMENT PROGRAM TO BE USED FOR: LONGITUDINAL JOINTS	MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
12 FOOT DRIVING LANE (NB AND SB)	4+41 - 419+11	UPPER LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-28S	12,390	2"	82,940	INCENTIVE DENSITY HMA PAVEMENT LONGITUDINAL JOINTS SPV.0055.01	INCENTIVE AIR VOIDS HMA PAVEMENT SPV.0055.03	INCENTIVE DENSITY PWL HMA PAVEMENT SPV.0055.02
SHOULDERS, SIDEROADS, BEAMGUARD WIDENINGS, BYPASS LANES, TURN LANES	VARIOUS	UPPER LAYER	4 MT 58-28S	4 MT 58-28S	6,630	2"	0	NOT ELIGIBLE FOR INCENTIVE	INCENTIVE AIR VOIDS HMA PAVEMENT SPV.0055.03	ACCEPTANCE TESTING BY DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
VARIOUS	VARIOUS	REPAIRS AFTER MILLING	MILLED EXISTING HMA SURFACE	ASPHALTIC SURFACE PATCHING	80	VARIES	0	NOT ELIGIBLE FOR INCENTIVE	QMP AS PER SS 465	ACCEPTANCE BY ORDINARY COMPACTION

CULVERT PIPE ITEMS

CATEGORY	LOCATION	INLET STATION	OFFSET	TO	OUTLET STATION	OFFSET	INLET ELEVATION	DISCHARGE ELEVATION	SLOPE	520.3142 CULVERT PIPE CLASS III 42-INCH LF	520.3330 CULVERT PIPE CLASS III-A 30-INCH LF	209.1500 BACKFILL GRANULAR GRADE 1 TON
0010	STH 78	275+01	30.71 RT	-	275+01	37.29' LT	744.45	743.95	0.74%	68	--	400
	STH 78	283+02	29.81' RT	-	283+02	42.25' LT	742.61	741.88	1.01%	--	72	300
	TOTALS									68	72	700

ENDWALL ITEMS

CATEGORY	LOCATION	STATION	OFFSET	520.1030 APRON ENDWALLS FOR CULVERT PIPE 30-INCH EACH	520.1042 APRON ENDWALLS FOR CULVERT PIPE 42-INCH EACH	633.5200 MARKERS CULVERT END EACH
0010	STH 78	275+01	30.71 RT	--	1	1
	STH 78	275+01	37.29' LT	--	1	1
	STH 78	283+02	29.81' RT	1	--	1
	STH 78	283+02	42.25' LT	1	--	1
	TOTALS			2	2	4

NOTE
1) STATION OFFSETS SHOWN ARE TO THE END OF PIPE AT APRON ENDWALLS (NOT INCLUDING LENGTH OF ENDWALL).

EROSION CONTROL MOBILIZATION

CATEGORY	LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
0010	STH 78	4	2
	TOTALS	4	2

EROSION CONTROL AND RESTORATION ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	OFFSET	625.0500 SALVAGED TOPSOIL SY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EACH	629.0205 FERTILIZER TYPE A CWT	630.0130 SEEDING MIXTURE NO. 30 LB	COMMENTS
0010	STH 78	71+92	-	73+98	RT	--	250	750	310	--	--	--	--	MGS WIDENING AREA
	STH 78	72+51	-	74+07	LT	--	--	--	330	12.5	--	--	--	MGS WIDENING AREA
	STH 78	74+85	-	75+76	RT	--	110	330	100	--	--	--	--	MGS WIDENING AREA
	STH 78	151+44	-	154+25	RT	--	340	1,020	270	--	--	--	--	MGS WIDENING AREA
	STH 78	152+15	-	154+25	LT	--	240	720	330	--	--	--	--	MGS WIDENING AREA
	STH 78	154+74	-	156+93	RT	--	250	750	240	--	--	--	--	MGS WIDENING AREA
	STH 78	154+74	-	157+58	LT	--	310	930	390	--	--	--	--	MGS WIDENING AREA
	STH 78	204+43	-	209+97	LT	--	550	1,650	110	--	--	--	--	MGS WIDENING AREA
	STH 78	274+42	-	275+60	LT/RT	100	270	810	100	--	8	0.1	2	CULVERT REPLACEMENT
	STH 78	282+36	-	283+68	LT/RT	350	300	900	350	--	5	0.2	6	CULVERT REPLACEMENT
	STH 78	386+00	-	388+31	RT	--	290	870	230	--	--	--	--	MGS WIDENING AREA
	STH 78	386+08	-	388+31	LT	--	230	690	130	--	--	--	--	MGS WIDENING AREA
	STH 78	388+58	-	390+80	RT	--	100	300	290	--	--	--	--	MGS WIDENING AREA
	STH 78	388+58	-	391+43	LT	--	280	840	220	12.5	--	--	--	MGS WIDENING AREA
	STH 78	UNDISTRIBUTED				100	880	2,640	850	25	2	0.2	2	--
	TOTALS					550	4,400	13,200	4,250	50	15	0.5	10	

MOVING SIGNS

CATEGORY	LOCATION	STATION	OFFSET	SIGN CODE	634.0612 POSTS WOOD 4X6-INCH X 12-FT EACH	634.0616 POSTS WOOD 4X6-INCH X 16-FT EACH	638.2102 MOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
0010	STH 78	73+20	LT	J4-2	--	1	1	1
	STH 78	73+97	RT	W5-52R	1	--	1	1
	STH 78	74+07	LT	W5-52L	1	--	1	1
	STH 78	74+85	RT	W5-52L	1	--	1	1
	STH 78	154+10	LT	W5-52L	1	--	1	1
	STH 78	154+10	RT	W5-52R	1	--	1	1
	STH 78	154+85	LT	W5-52R	1	--	1	1
	STH 78	154+85	RT	W5-52L	1	--	1	1
	STH 78	209+55	LT	--	--	--	--	1
	STH 78	388+20	LT	W5-52L	1	--	1	1
	STH 78	388+20	RT	W5-52R	1	--	1	1
	STH 78	388+70	LT	W5-52R	1	--	1	1
	STH 78	388+70	RT	W5-52L	1	--	1	1
	TOTALS				11	1	12	13

NOTE: REINSTALL J4-2 ROUTE ASSEMBLY AND W5-52L/R BRIDGE MARKER SIGNS AT THEIR EXISTING LOCATIONS AFTER GUARDRAIL GRADING.

TRAFFIC CONTROL

CATEGORY	LOCATION	643.5000 TRAFFIC CONTROL EACH
0010	PROJECT	1
	TOTAL	1

LOCATING NO-PASSING ZONES

CATEGORY	LOCATION	STATION	TO	STATION	648.0100 LOCATING NO-PASSING ZONES MI
0010	STH 73	4+41	-	419+11	7.85
	TOTAL				7.85

TRAFFIC CONTROL ITEMS

CATEGORY	LOCATION	643.0300 TRAFFIC CONTROL DRUMS NO.	643.0300 TRAFFIC CONTROL DRUMS DAY	643.0900 TRAFFIC CONTROL SIGNS NO.	643.0900 TRAFFIC CONTROL SIGNS DAY	643.1050 TRAFFIC CONTROL SIGNS PCMS NO.	643.1050 TRAFFIC CONTROL SIGNS PCMS DAY	COMMENTS
0010	BEGIN / END PROJECT	--	--	12	1,320	2	14	--
	SIDEROADS	--	--	9	990	--	--	--
	"ROAD WORK NEXT X MILES"	--	--	6	660	--	--	--
	GUARDRAIL REPLACEMENTS	15	540	5	180	--	--	FOR NON-WORKING HOURS
	CULVERT PIPE REPLACEMENTS	--	--	4	4	--	--	BUMP SIGN
	PROJECT	--	--	16	32	--	--	SHOULDER DROP-OFF
	TOTALS		540		3,186		14	

PAVEMENT MARKING ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	OFFSET	646.1040 MARKING LINE GROOVED WET REF EPOXY 4-INCH 3' LINE 9' SKIP LF	646.1040 MARKING LINE GROOVED WET REF EPOXY 4-INCH SOLID (WHITE) LF	646.1545 MARKING LINE GROOVED WET REF CONTRAST EPOXY 4-INCH 12.5' LINE 37.5' SKIP (WHITE) LF	646.3545 MARKING LINE GROOVED WET REF CONTRAST EPOXY 8-INCH SOLID (WHITE) LF	646.4520 MARKING LINE SAME DAY EPOXY 4-INCH 12.5' LINE 37.5' SKIP (YELLOW) LF	646.4520 MARKING LINE SAME DAY EPOXY 4-INCH SOLID (YELLOW) LF	646.5020 MARKING ARROW EPOXY TYPE 2 (WHITE) EACH	646.6120 MARKING STOP LINE EPOXY 18-INCH LF	649.0120 TEMPORARY MARKING LINE EPOXY 4-INCH 12.5' LINE 37.5' SKIP (YELLOW) LF	649.0120 TEMPORARY MARKING LINE EPOXY 4-INCH SOLID (YELLOW) LF	COMMENTS
0010	STH 78	4+41	-	154+50	LT/RT	--	--	--	--	950	24,278	--	--	--	--	CENTER LINE, SAME DAY AS RUMBLE STRIPS
	STH 78	4+41	-	154+50	LT/RT	--	--	--	--	--	--	--	--	950	24,278	CENTER LINE, SAME DAY AS HMA
	STH 78	4+41	-	154+50	LT/RT	--	28,862	--	--	--	--	--	--	--	--	EDGE LINES
	STH 78	154+50	-	256+74	LT/RT	--	--	--	--	1,788	11,243	--	--	--	--	CENTER LINE, SAME DAY AS RUMBLE STRIPS
	STH 78	154+50	-	256+74	LT/RT	--	--	--	--	--	--	--	--	1,788	11,243	CENTER LINE, SAME DAY AS HMA
	STH 78	154+50	-	256+74	LT/RT	--	19,911	--	--	--	--	--	--	--	--	EDGE LINES
	STH 78	256+79	-	419+11	LT/RT	--	--	--	--	1,225	26,166	--	--	--	--	CENTER LINE, SAME DAY AS RUMBLE STRIPS
	STH 78	256+79	-	419+11	LT/RT	--	--	--	--	--	--	--	--	1,225	26,166	CENTER LINE, SAME DAY AS HMA
	STH 78	256+79	-	419+11	LT/RT	--	31,504	--	--	--	--	--	--	--	--	EDGE LINES
	STH 78	USH 14			LT	--	--	--	370	--	--	--	--	--	--	INTERSECTION MARKINGS
	STH 78	OLD HWY 78			RT	--	--	--	200	--	--	--	--	--	--	INTERSECTION MARKINGS
	STH 78	CARTER RD			RT	--	--	--	200	--	--	--	--	--	--	INTERSECTION MARKINGS
	STH 78	HUDSON RD			LT	63	--	--	--	--	--	--	--	--	--	INTERSECTION MARKINGS
	STH 78	STH 19			LT/RT	15	26	63	--	--	90	--	23	--	--	INTERSECTION MARKINGS
	STH 78	E MATHWESON RD			LT	72	--	--	--	--	--	--	--	--	--	INTERSECTION MARKINGS
	STH 78	WILKINSON RD			RT	27	--	--	--	--	--	--	--	--	--	INTERSECTION MARKINGS
	STH 78	DUNLAP HOLLOW RD			RT	24	--	--	--	--	--	--	--	--	--	INTERSECTION MARKINGS
	STH 78	RACEK RD			LT	33	--	--	--	--	--	--	--	--	--	INTERSECTION MARKINGS
	STH 78	CTH Y			LT/RT	33	53	--	300	--	210	--	77	--	--	INTERSECTION MARKINGS SAME DAY AS HMA
	STH 78	BOLTON RD			LT/RT	27	--	263	550	--	--	--	--	--	--	INTERSECTION / BYPASS LANE MARKINGS
	STH 78	USH 12			RT	--	--	--	130	--	--	4	--	--	--	INTERSECTION MARKINGS
	TOTALS					294	80,356	325	1,750	3,963	61,987	4	100	3,963	61,687	
						80,650				65,950				65,650		

NOTE
-INSTALL TEMPORARY MARKING LINE 4-INCH (YELLOW CENTERLINE) ON THE UPPER HMA PAVEMENT LAYER ON THE SAME DAY PAVEMENT IS PLACED. INSTALL MARKING LINE SAME DAY EPOXY 4-INCH (YELLOW CENTERLINE) ON THE SAME DAY THE CENTERLINE RUMBLE STRIPS ARE INSTALLED.
-SEE SDD "LONGITUDINAL MARKING (MAINLINE) FOR CENTERLINE AND EDGELINE MARKINGS
-SEE SDD "PAVEMENT MARKING ARROWS" FOR MARKING ARROWS
-SEE SDD "STOP LINE AND CROSSWALK PAVEMENT MARKING FOR MARKING STOP LINES
-SEE SDD "PAVEMENT MARKING (INTERSECTIONS) FOR INTERSECTION MARKINGS

3

GUARDRAIL ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	OFFSET	614.0305 STEEL PLATE BEAM GUARD CLASS A LF	614.0370 STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL EACH	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
0010	STH 78	72+98	-	73+97	RT	50	1	--	--	--
	STH 78	73+57	-	74+07	LT	--	1	--	--	--
	STH 78	74+85	-	75+47	RT	12.5	1	--	--	--
	STH 78	152+62	-	154+27	RT	--	--	75	39.4	1
	STH 78	153+34	-	154+25	LT	--	--	--	39.4	1
	STH 78	154+73	-	155+75	RT	--	--	12.5	39.4	1
	STH 78	154+73	-	156+39	LT	--	--	75	39.4	1
	STH 78	205+63	-	209+92	LT	--	--	325	--	2
	STH 78	386+66	-	388+31	RT	--	--	75	39.4	1
	STH 78	387+27	-	388+30	LT	--	--	12.5	39.4	1
	STH 78	388+59	-	389+62	RT	--	--	12.5	39.4	1
	STH 78	388+59	-	390+25	LT	--	--	75	39.4	1
	TOTALS					63	3	663	315	10

LANDMARK REFERENCE MONUMENTS ITEMS

CATEGORY	LOCATION	STATION	LOCATION	DESCRIPTION	621.0100 LANDMARK REFERENCE MONUMENTS EACH	SPV.0060.01 VERIFY LANDMARK REFERENCE MONUMENTS EACH	COMMENTS
0010	STH 78	79+88	LT	SEC 10 / 11, T8N, R6E	1	1	QUARTER CORNER
	STH 78	106+53	LT	SEC 3 / 2 / 10 / 11, T8N, R6E	1	1	SECTION CORNER
	TOTALS				2	2	

BARRIER SYSTEM GRADING SHAPING FINISHING

CATEGORY	LOCATION	STATION	TO	STATION	OFFSET	614.0010 BARRIER SYSTEM GRADING SHAPING FINISHING EACH	** EXCAVATION COMMON CY	** FILL CY	** BORROW CY	** SALVAGED TOPSOIL SY	** FERTILIZER TYPE A CWT	** SEEDING MIXTURE NO. 30 LB	** CONSTRUCTION STAKING SLOPE STAKES LF
0010	STH 78	71+92	-	73+98	RT	1	29	94	65	310	0.2	6	206
	STH 78	72+51	-	74+07	LT	1	11	173	162	330	0.2	6	156
	STH 78	74+85	-	75+76	RT	1	8	29	21	100	0.1	2	91
	STH 78	151+44	-	154+25	RT	1	45	15	--	270	0.2	5	281
	STH 78	152+15	-	154+25	LT	1	38	19	--	330	0.2	6	210
	STH 78	154+74	-	156+93	RT	1	29	19	--	240	0.2	4	219
	STH 78	154+74	-	157+58	LT	1	43	54	11	400	0.2	7	284
	STH 78	204+43	-	209+97	LT	1	131	8	--	350	0.2	6	552
	STH 78	386+00	-	388+31	RT	1	70	--	--	230	0.1	4	231
	STH 78	386+08	-	388+31	LT	1	32	--	--	130	0.1	2	223
	STH 78	388+58	-	390+80	RT	1	29	31	2	290	0.2	5	222
	STH 78	388+58	-	391+43	LT	1	57	--	--	220	0.1	4	285
	STH 78	UNDISTRIBUTED			LT/RT	--	--	--	--	800	0.5	18	--
	TOTALS					12	522	442	261	4,000	2.5	75	2,960

**NON-BID ITEM, ITEMS AND QUANTITIES LISTED FOR BID INFORMATION ONLY. ITEMS INCIDENTAL TO BARRIER SYSTEM GRADING SHAPING FINISHING.

SAWING

CATEGORY	LOCATION	STATION	TO	STATION	OFFSET	690.0150 SAWING ASPHALT LF	COMMENTS
0010	STH 78	275+01			LT/RT	70	CULVERT REPLACEMENT
	STH 78	283+02			LT/RT	70	CULVERT REPLACEMENT
	TOTAL					140	

CONSTRUCTION STAKING ITEMS

CATEGORY	LOCATION	STATION	650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH	650.8000 CONSTRUCTION STAKING RESURFACING REFERENCE LF	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (5601-00-60) LS
0010	STH 78	275+01	1	-	-
	STH 78	283+02	1	-	-
	PROJECT		-	41,390	1
	TOTALS		2	41,390	1

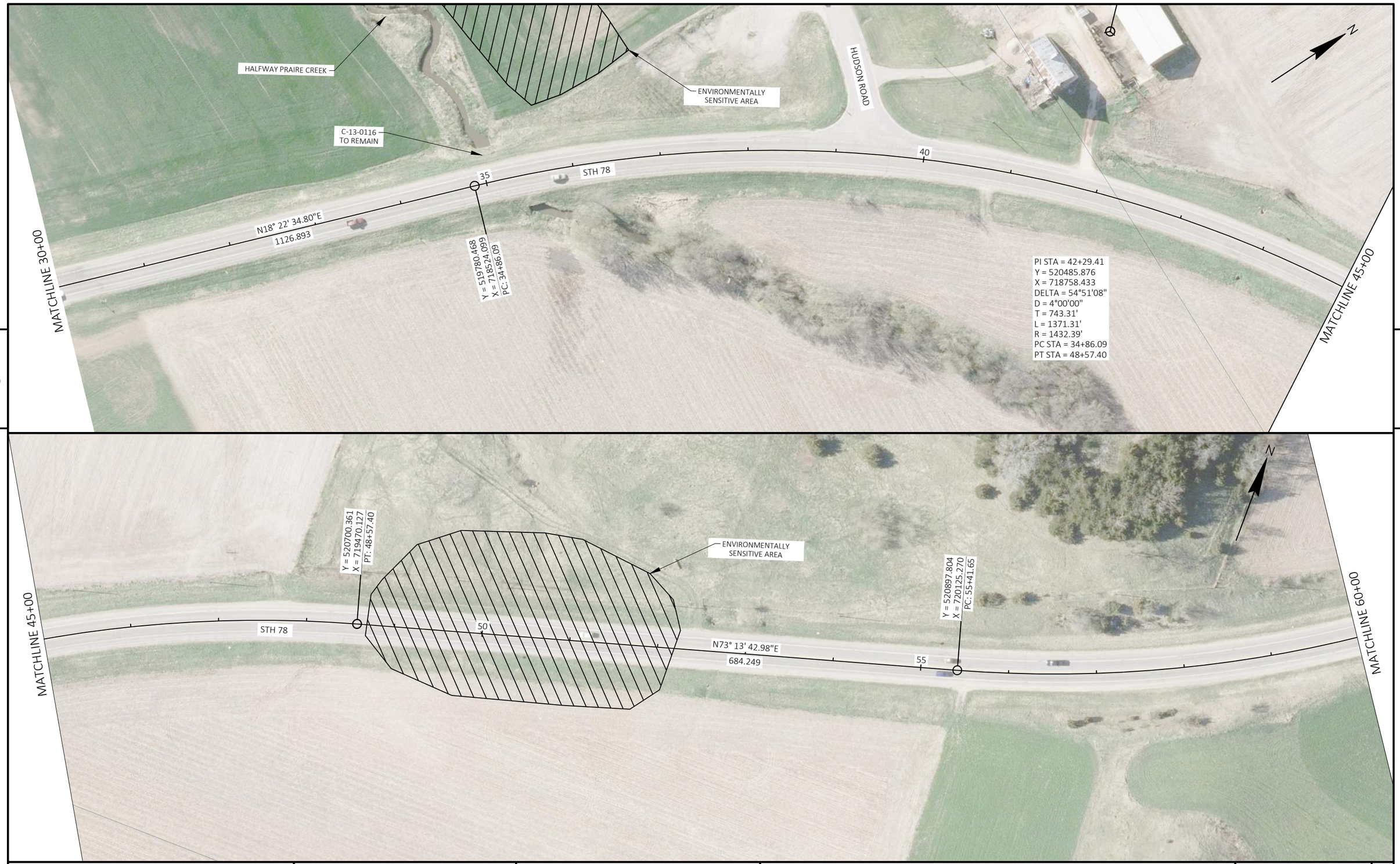
WATER ITEMS

CATEGORY	LOCATION	624.0100 WATER MGAL	630.0500 SEED WATER MGAL
0010	PROJECT-BASE COMPACTION	35	--
	PROJECT	--	90
	TOTALS	35	90

FIELD OFFICE

CATEGORY	LOCATION	642.5201 FIELD OFFICE TYPE C EACH
0010	PROJECT	1
	TOTAL	1

PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	PLAN	SHEET 24	E

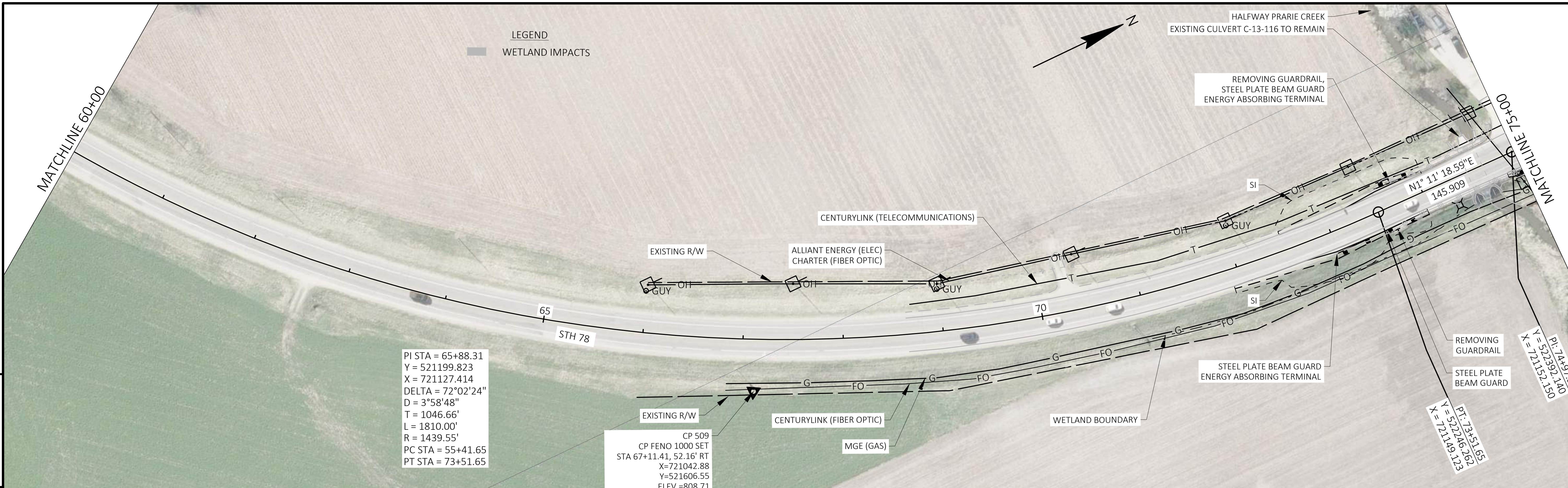


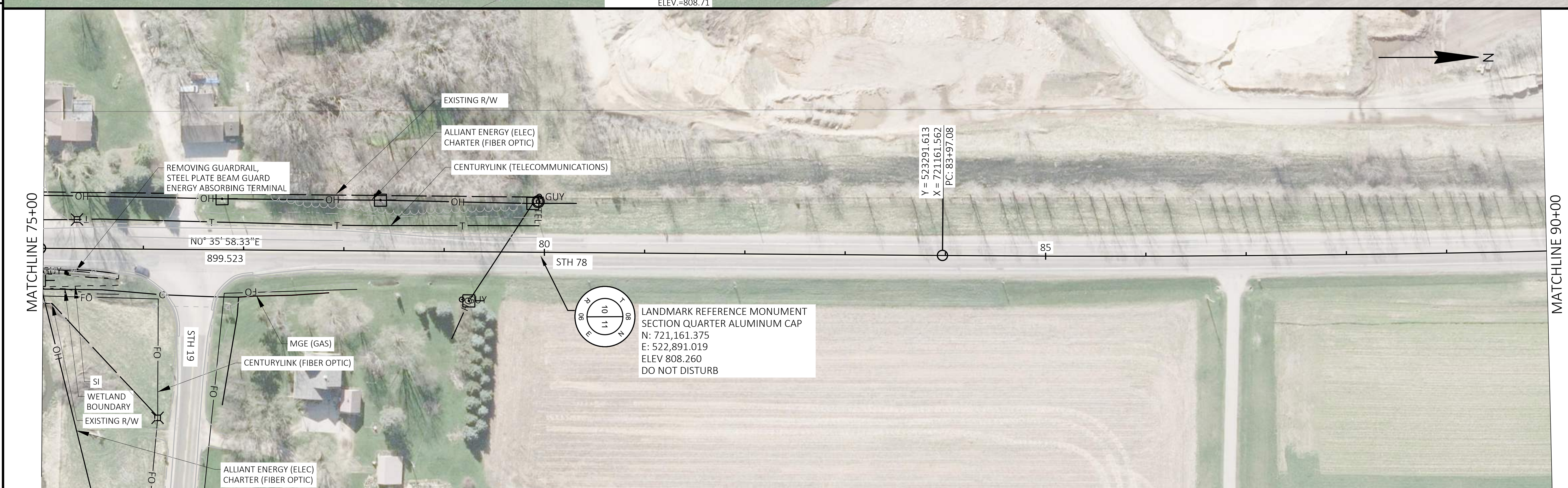
5 5

PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	PLAN	SHEET 25	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050202-pn

PLOT DATE : 4/3/2020 11:01 AM PLOT BY : CORY INMAN PLOT NAME : PLOT SCALE : 1 IN:100 FT





PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	PLAN	SHEET 26	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050203-pn
PLOT DATE : 4/3/2020 11:01 AM PLOT BY : CORY INMAN PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	PLAN	SHEET 27	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050204-pn

PLOT DATE : 4/3/2020 11:02 AM PLOT BY : CORY INMAN PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

MATCHLINE 120+00

MATCHLINE 135+00

LICHTE LANE

WISCONSIN & SOUTHERN RAILROAD

Y = 527132.869
X = 722011.215
PI: 124+51.30

125

130

STH 78

ENVIRONMENTALLY SENSITIVE AREA

CP 510
CP FENO 1000 SET
STA 125+18.63, 44.88' RT
X=722082.13
Y=527171.94
ELEV.=791.12

N

MATCHLINE 135+00

MATCHLINE 150+00

WISCONSIN & SOUTHERN RAILROAD

Y = 528224.068
X = 722578.807
PI: 136+81.29

Y = 528856.249
X = 722933.911
PC: 144+06.38

EXISTING R/W

135

140

145

STH 78

WILKINSON ROAD

GUY

CENTURYLINK (TELECOMMUNIATIONS)

EXISTING R/W

ALLIANT ENERGY (ELEC)
CHARTER (FIBER OPTIC)

CENTURYLINK (FIBER OPTIC)

N

5

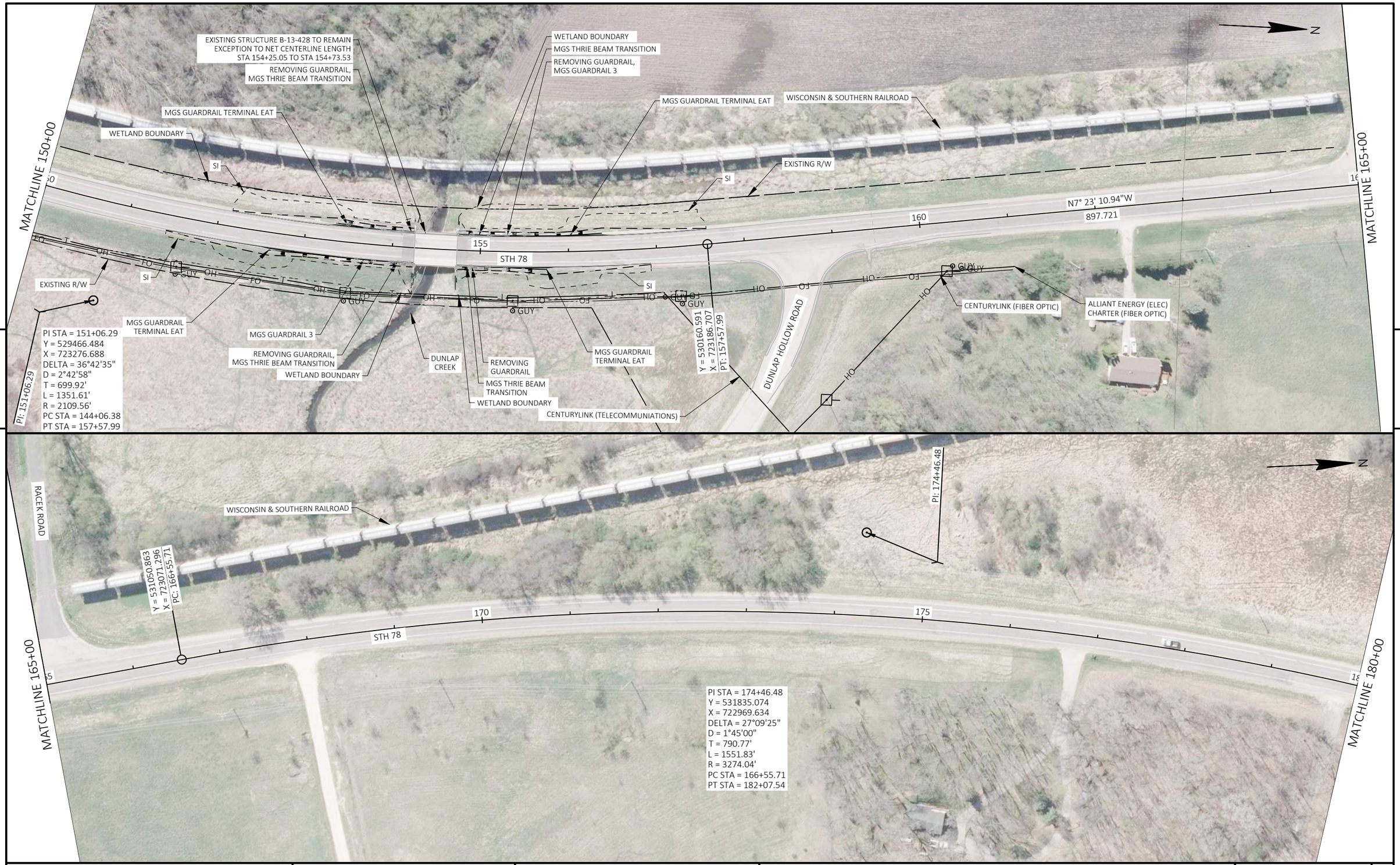
5

PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	PLAN	SHEET 28	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050205-pn

PLOT DATE : 4/3/2020 11:02 AM PLOT BY : CORY INMAN PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44



PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	PLAN	SHEET 29 E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050206-pn

PLOT DATE : 4/3/2020 11:02 AM PLOT BY : CORY INMAN PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

MATCHLINE 180+00

Y = 532579.234
X = 723237.117
PT: 182+07.54

CP 511
CP FENO 1000 SET
STA 185+59.90, 58.40' LT
X=723301.35
Y=532930.59
ELEV.=749.91

Y = 533608.727
X = 723607.160
PC: 193+01.52

185

N19° 46' 14.09"E

190

STH 78

1093.978

MATCHLINE 195+00

N

WISCONSIN & SOUTHERN RAILROAD

ENVIRONMENTALLY SENSITIVE AREA

EXISTING R/W

WETLAND BOUNDARY

ALLIANT ENERGY (ELEC)
CHARTER (FIBER OPTIC)

CENTURYLINK (TELECOMMUNICATIONS)

GUY

OH

T

S.I.

MATCHLINE 195+00

200

205

N8° 44' 23.16"E

258.495

STH 78

S RING ROAD

EXISTING R/W

PI: 200+39.18

PI STA = 200+39.18
Y = 534302.913
X = 723856.680
DELTA = 11°01'51"
D = 0°45'00"
T = 737.67'
L = 1470.78'
R = 7639.44'
PC STA = 193+01.52
PT STA = 207+72.29

Y = 535032.015
X = 723968.766
PT: 207+72.29

MATCHLINE 210+00

5

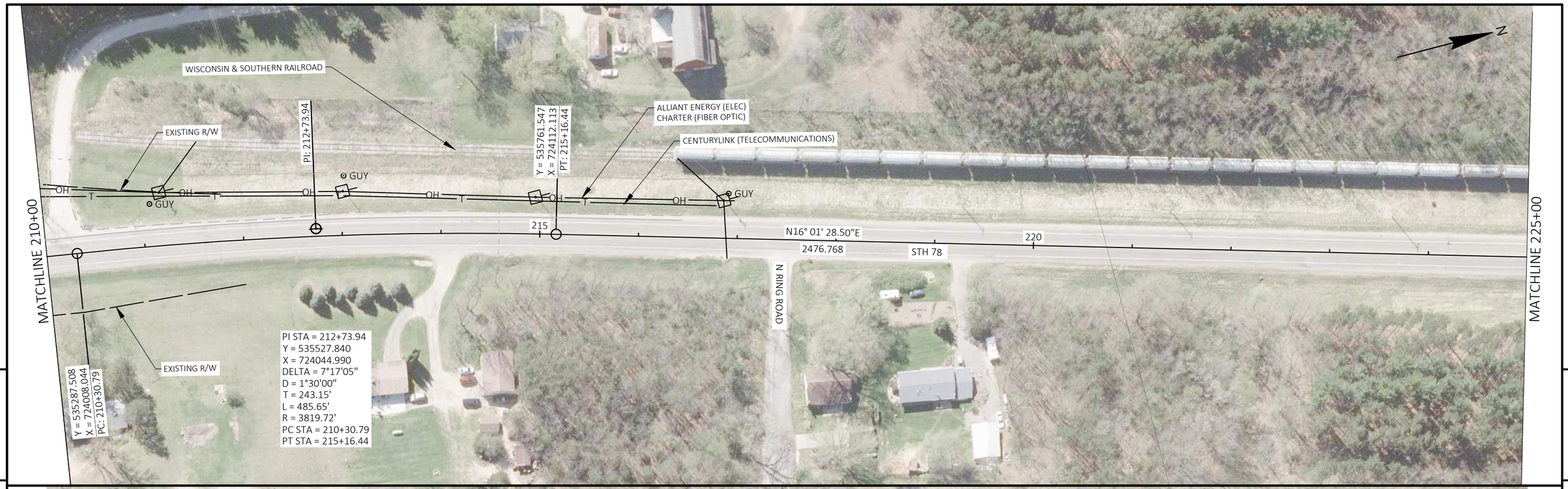
5

PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	PLAN	SHEET 30	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050207-pn

PLOT DATE : 4/3/2020 11:02 AM PLOT BY : CORY INMAN PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

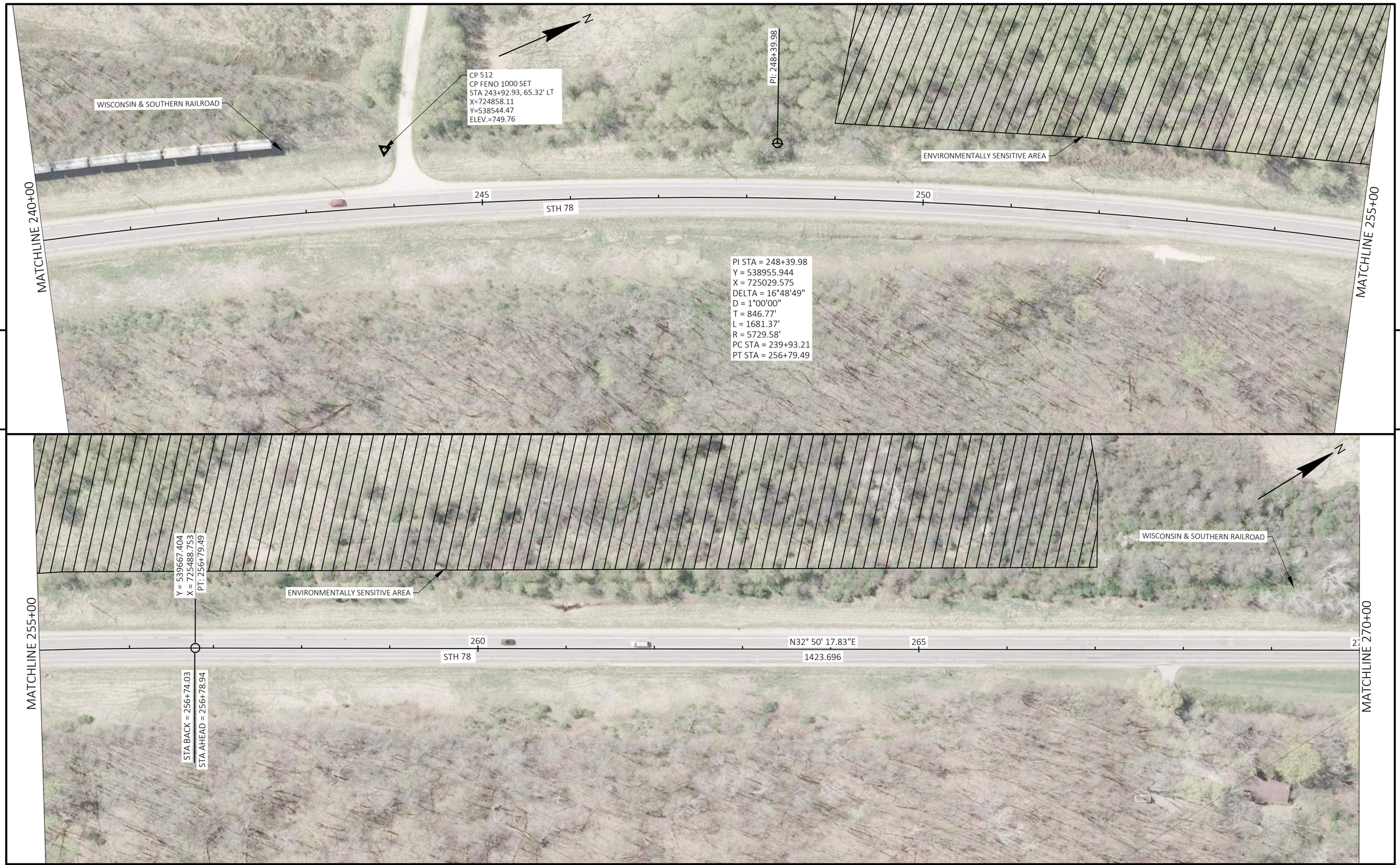


PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	PLAN	SHEET 31 E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050208-pn

PLOT DATE : 4/3/2020 11:03 AM PLOT BY : CORY INMAN PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44



PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	PLAN	SHEET 32	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050209-pn

PLOT DATE : 4/3/2020 11:03 AM PLOT BY : CORY INMAN PLOT NAME : PLOT SCALE : 1 IN:100 FT

STA 275+01
72'-CP CLASS III 42-INCH REQ.
0° SKEW
REMOVING SMALL PIPE CULVERTS

ALLIANT ENERGY (ELEC)
CHARTER (FIBER OPTIC)

WISCONSIN & SOUTHERN RAILROAD

OH

SI

275

STH 78

280

PC: 271+03.18
Y = 540863.599
X = 726160.781

CENTURYLINE (TELECOMMUNICATION)

PI STA = 277+27.63
Y = 541388.264
X = 726599.400
DELTA = 54°44'24"
D = 4°45'00"
T = 624.45'
L = 1152.42'
R = 1206.23'
PC STA = 271+03.18
PT STA = 282+55.61

ALLIANT ENERGY (ELEC)
CHARTER (FIBER OPTIC)

Y = 541414.649
X = 727223.290
PT: 282+55.61

OH

SI

CENTURYLINE (TELECOMMUNICATION)

STA 283+03
68'-CP CLASS III-A 30-INCH REQ.
0° SKEW
REMOVING SMALL PIPE CULVERTS

N

MATCHLINE 270+00

MATCHLINE 285+00

5

5

MATCHLINE 285+00

N87° 34 N87° 34' 42.01"E
715.801 715.801

STH 78

290

295

Y = 541444.894
X = 727938.452
PC: 289+71.41

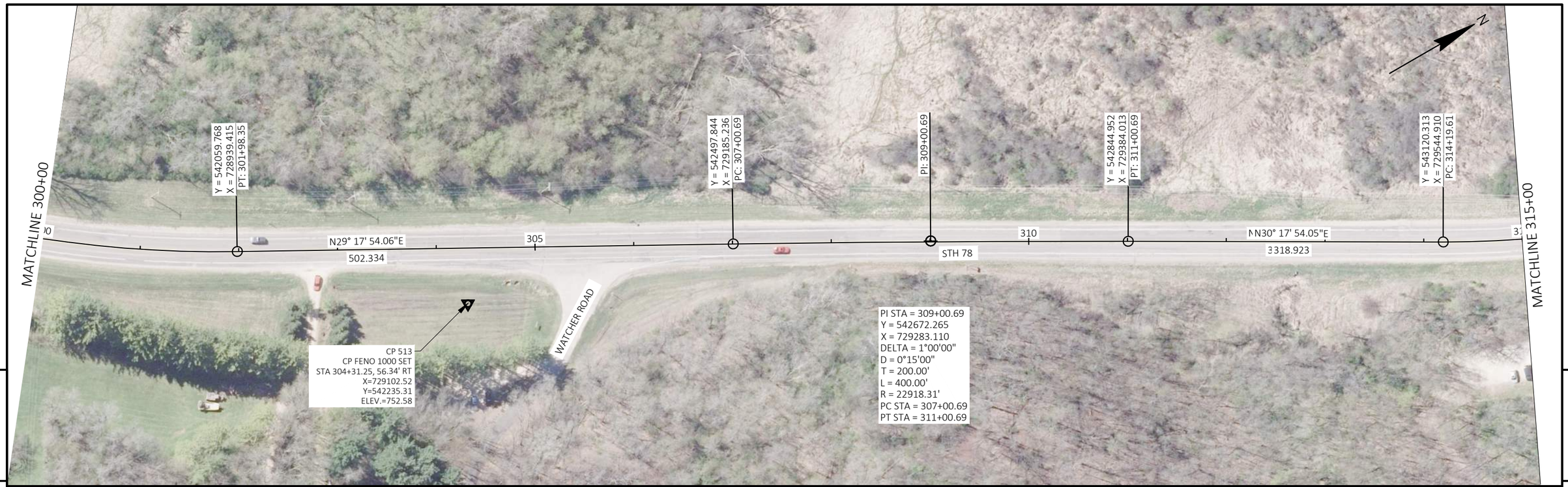
PI STA = 296+43.89
Y = 541473.308
X = 728610.332
DELTA = 58°16'48"
D = 4°45'00"
T = 672.48'
L = 1226.95'
R = 1206.23'
PC STA = 289+71.41
PT STA = 301+98.35

N

MATCHLINE 300+00

PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	PLAN	SHEET 33	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050210-pn
PLOT DATE : 4/3/2020 11:03 AM
PLOT BY : CORY INMAN
PLOT NAME :
PLOT SCALE : 1 IN:100 FT



PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	PLAN	SHEET 34	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050211-pn

PLOT DATE : 4/3/2020 11:03 AM PLOT BY : CORY INMAN PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

MATCHLINE 330+00

N52° N52° 34' 15.01"E
386.2386.260

Y = 544671.042
X = 730411.620
PC: 332+76.50

PI STA = 335+45.11
Y = 544834.299
X = 730624.927
DELTA = 25°06'31"
D = 4°45'00"
T = 268.61'
L = 528.60'
R = 1206.23'
PC STA = 332+76.50
PT STA = 338+05.10

335

Y = 545072.643
X = 730748.802
PT: 338+05.10

STH 78

N27° 27' 44.42"E
23239.993

340

Y = 545285.592
X = 730859.478
PC: 340+45.09

PI STA = 342+61.43
Y = 545477.557
X = 730959.249
DELTA = 20°20'11"
D = 4°45'00"
T = 216.34'
L = 428.14'
R = 1206.23'
PC STA = 340+45.09
PT STA = 344+73.23

PT: 344+73.23
Y = 545692.231
X = 730986.086

MATCHLINE 345+00

PI: 335+45.11

ENVIRONMENTALLY SENSITIVE AREA

PI: 342+61.43

N

5

5

Y = 545977.410
X = 731021.738
PC: 347+60.62

PI: 349+90.37

Y = 546420.094
X = 731131.990
PT: 352+17.92

350

STH 78

N7° 07' 32.96"E
287.399

N20° 50' 41.18"E
1829.057

355

MATCHLINE 345+00

MATCHLINE 360+00

PI STA = 349+90.37
Y = 546205.383
X = 731050.238
DELTA = 13°43'08"
D = 3°00'00"
T = 229.75'
L = 457.30'
R = 1909.86'
PC STA = 347+60.62
PT STA = 352+17.92

CP 514
CP FENO 1000 SET
STA 354+39.27, 82.80' RT
X=731288.13
Y=546597.50
ELEV.=756.42

CTH Y

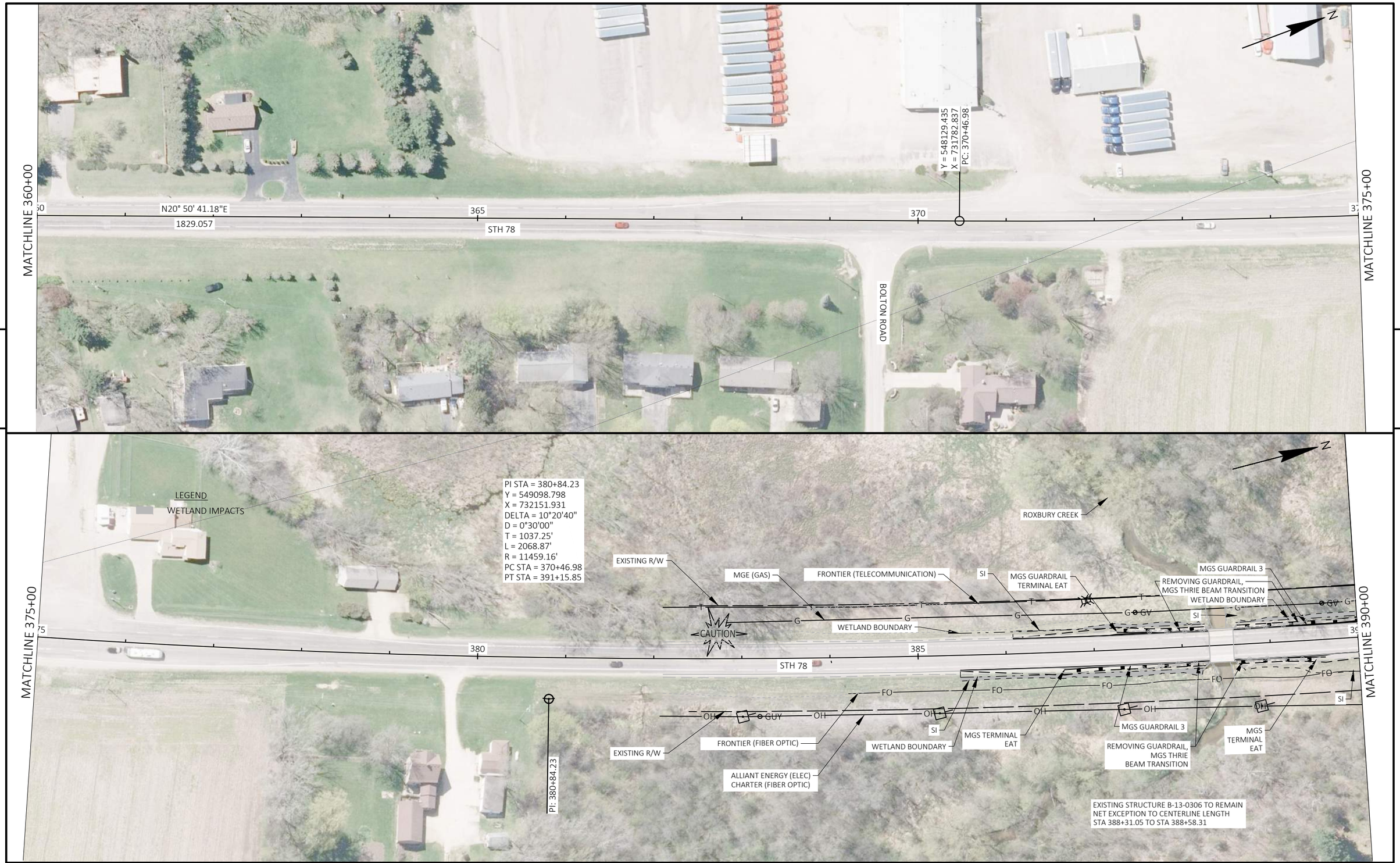
ENVIRONMENTALLY SENSITIVE AREA

N

PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	PLAN	SHEET 35	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050212-pn

PLOT DATE : 4/3/2020 11:04 AM PLOT BY : CORY INMAN PLOT NAME : PLOT SCALE : 1 IN:100 FT



5

5

PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	PLAN	SHEET 36	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050213-pn

PLOT DATE : 4/3/2020 11:04 AM PLOT BY : CORY INMAN PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

5

5

PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	PLAN	SHEET 37	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050214-pn

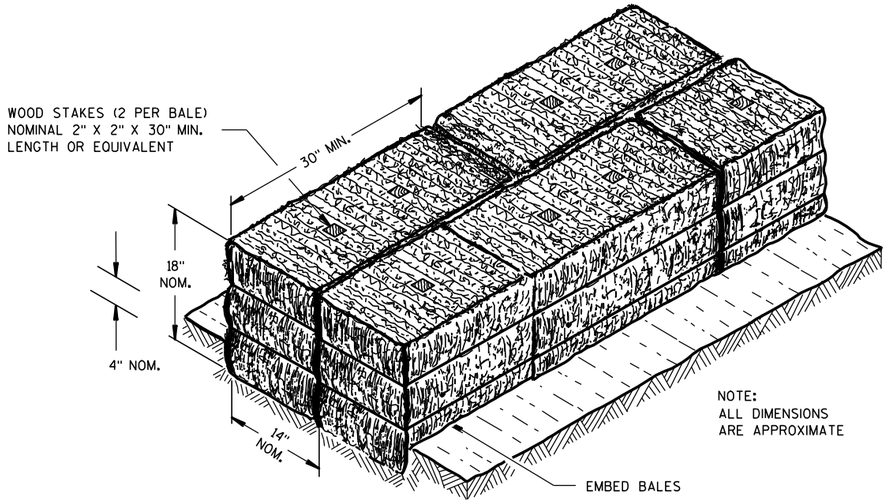
PLOT DATE : 4/3/2020 11:04 AM PLOT BY : CORY INMAN PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

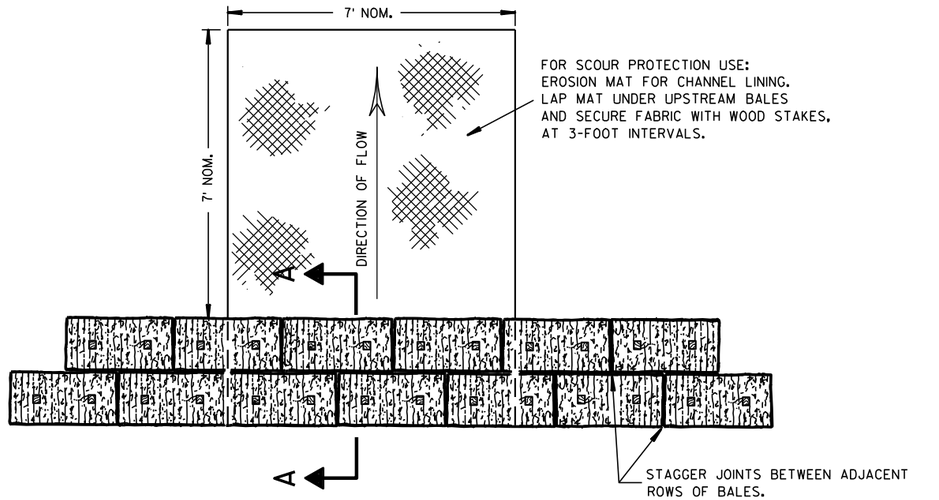
Standard Detail Drawing List

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
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
13A10-02A	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-02C	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-02D	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A11-03A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-03B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13C19-03	HMA LONGITUDINAL JOINTS
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B24-09A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B29-01	SAFETY EDGE
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)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C07-15C	PAVEMENT MARKING ARROWS
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C08-20C	PAVEMENT MARKING (TURN LANES)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-07	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-06A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-04A	PAVEMENT MARKING (INTERSECTIONS)
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
16A01-07	LANDMARK REFERENCE MONUMENTS AND COVERS

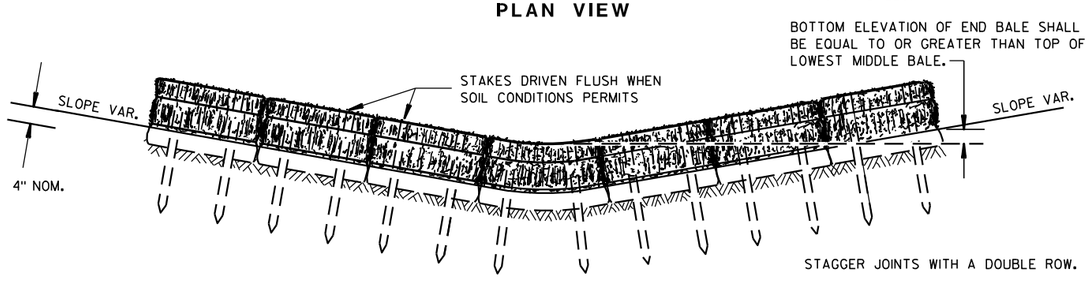
6



SECTION A-A



PLAN VIEW



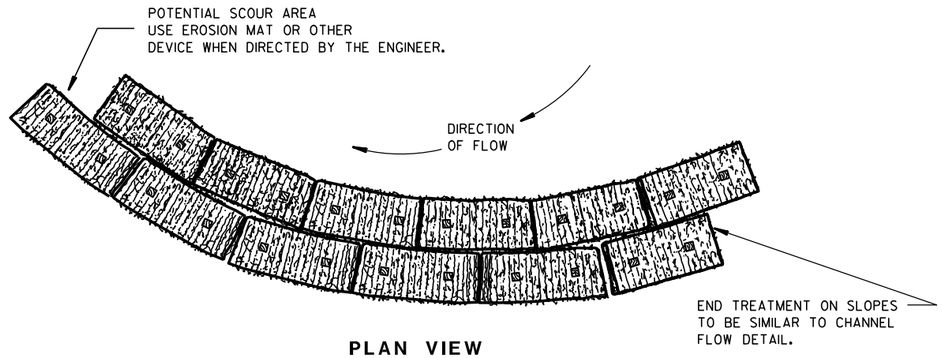
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

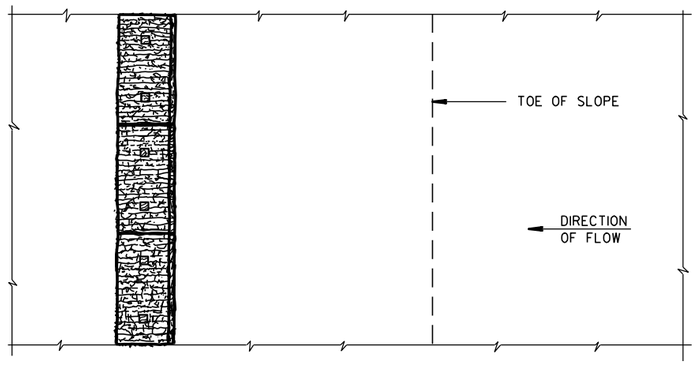
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(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.

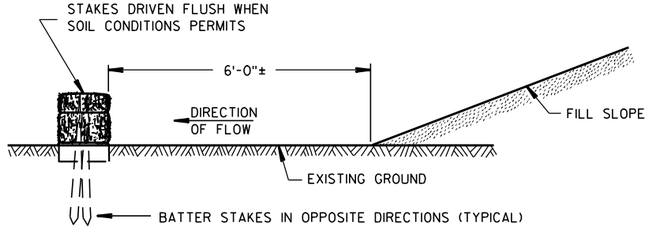


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

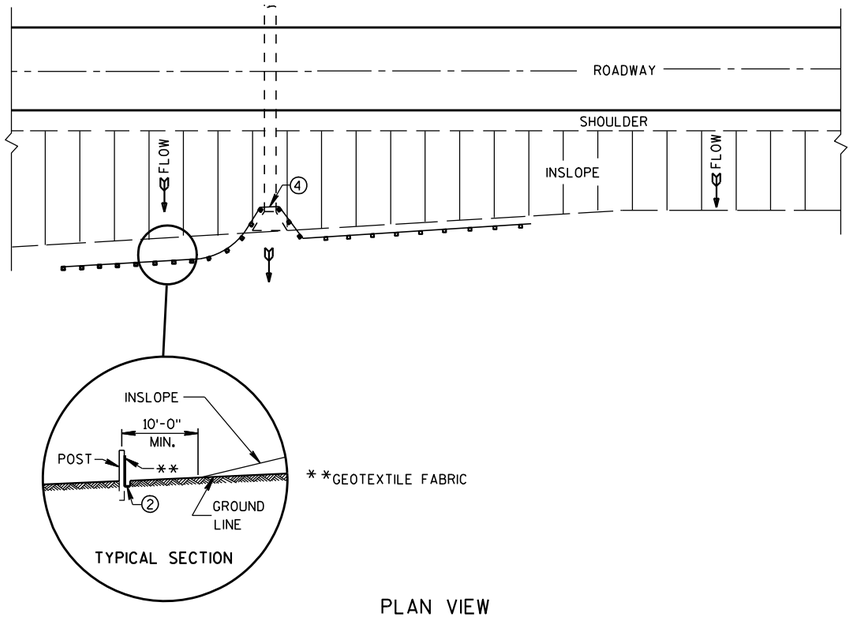
TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

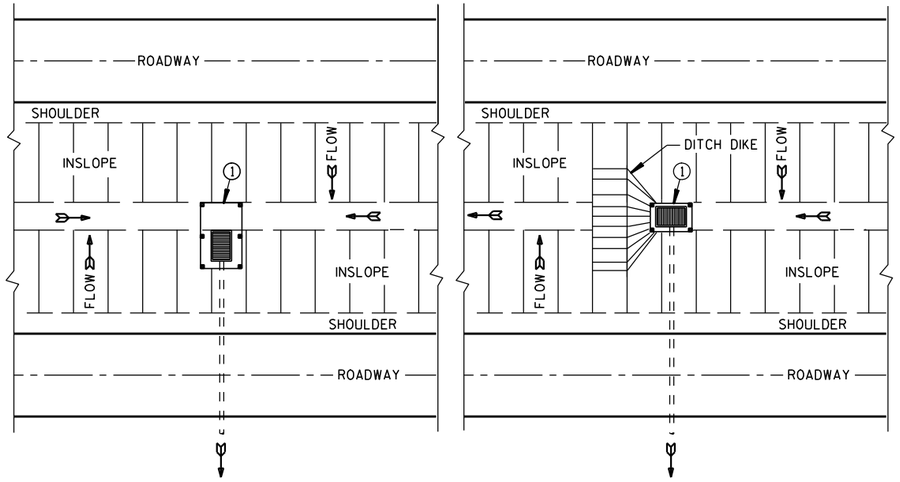
6/04/02 DATE — /S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA



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.

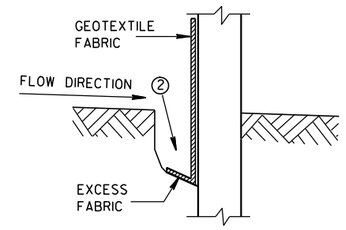
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

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.

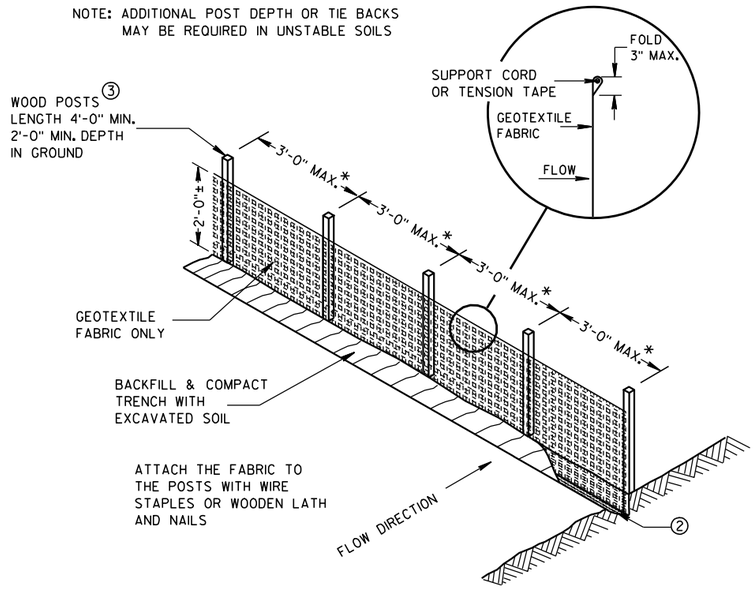
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

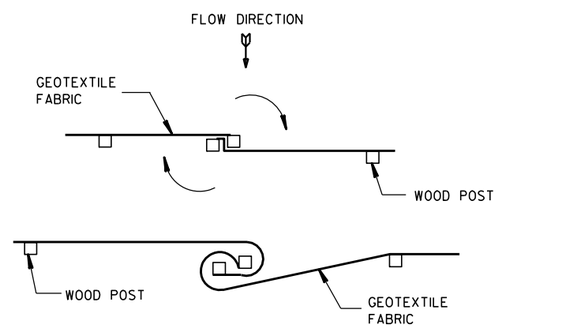
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



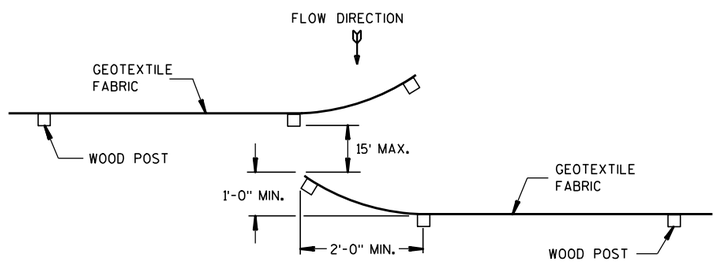
TRENCH DETAIL



SILT FENCE

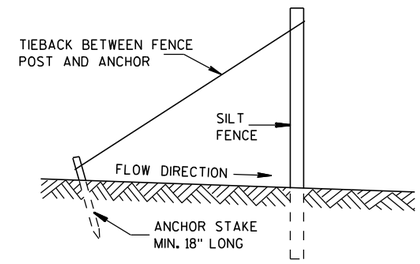


TWIST METHOD



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

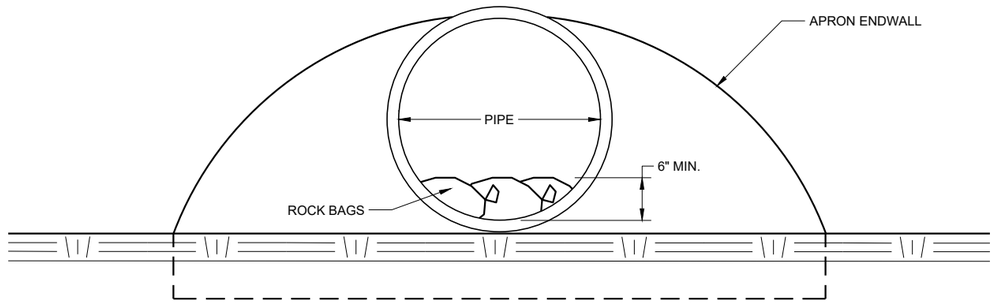
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

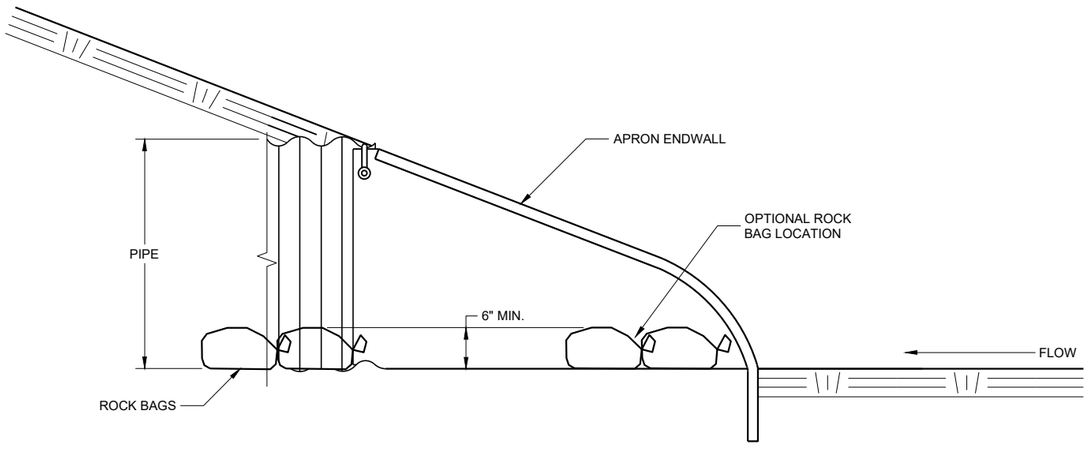
S.D.D. 8 E 9-6

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

METAL APRON ENDWALLS

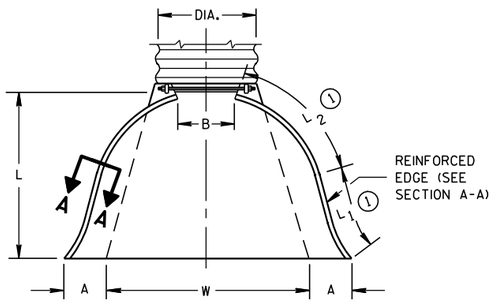
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 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

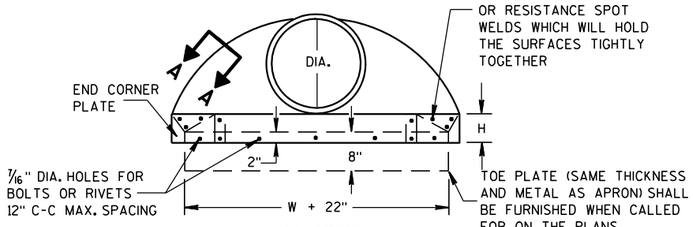
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
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

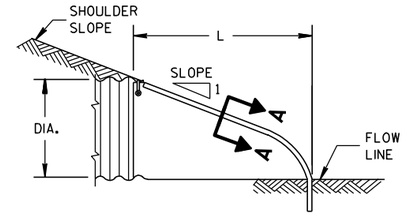
*MINIMUM
**MAXIMUM



PLAN VIEW

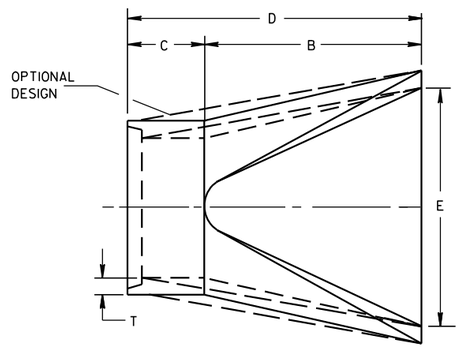


END VIEW

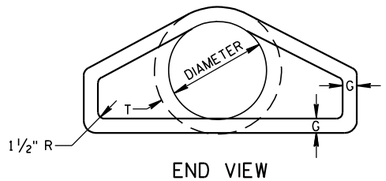


SIDE ELEVATION

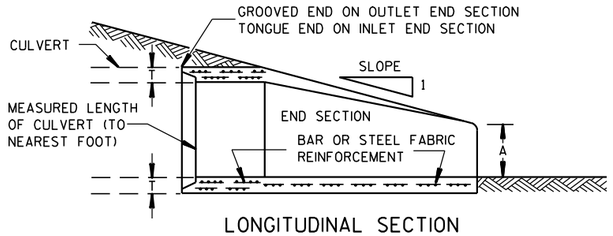
METAL ENDWALLS



PLAN

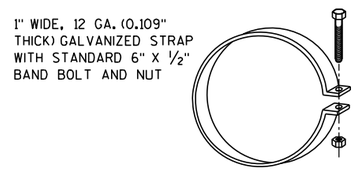


END VIEW



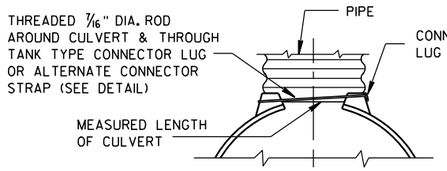
LONGITUDINAL SECTION

CONCRETE ENDWALLS

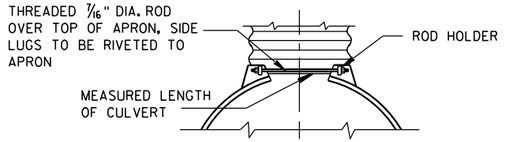


ALTERNATE FOR TYPE 1 CONNECTION

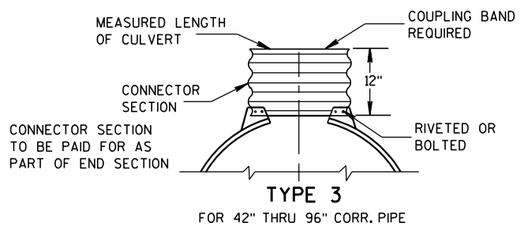
END SECTION CONNECTOR STRAP



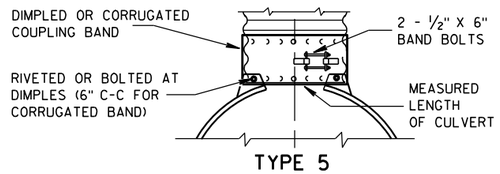
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

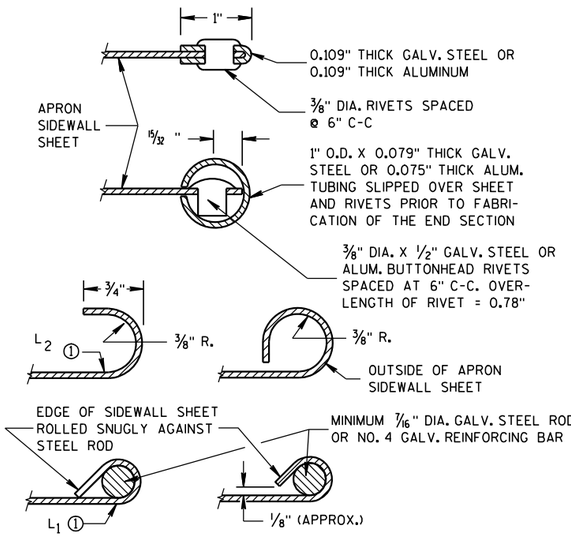
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

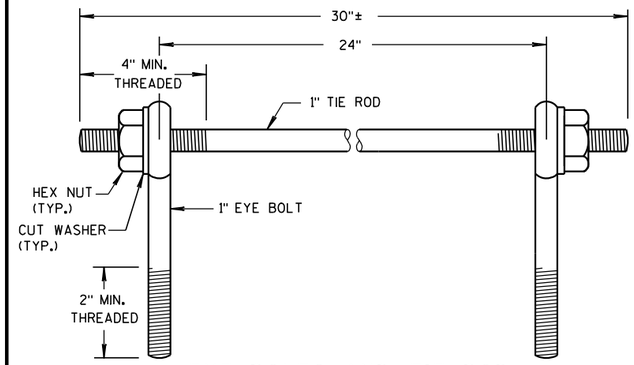
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

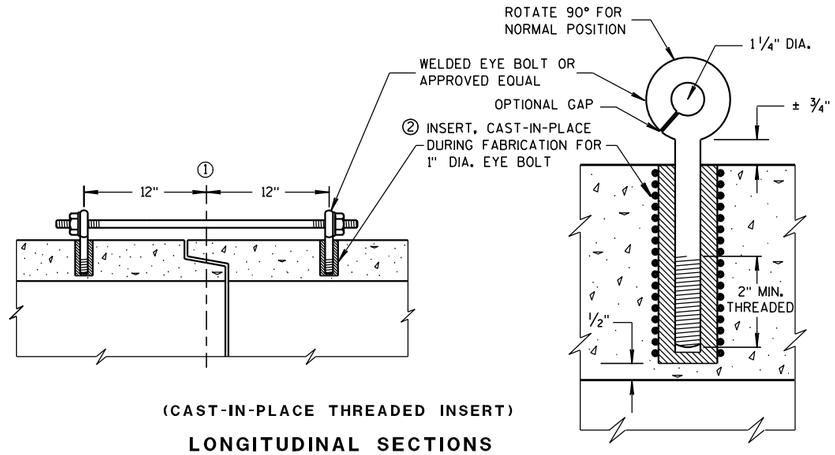
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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 ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

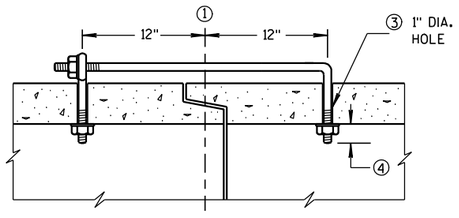
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

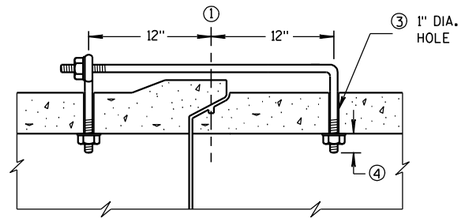
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)

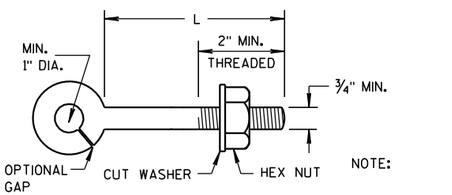


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

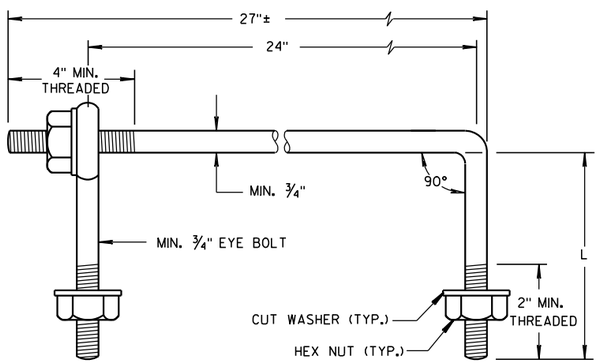
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

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



EYE BOLT AND TIE ROD

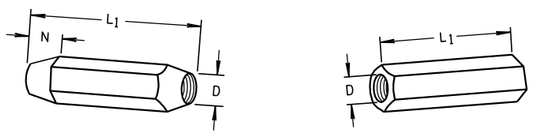
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

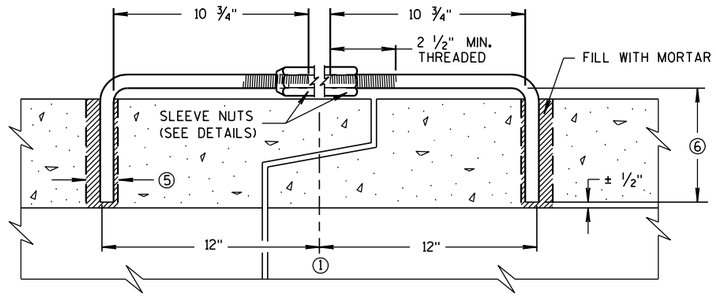
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

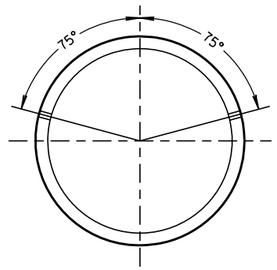
SLEEVE NUTS



LONGITUDINAL SECTION

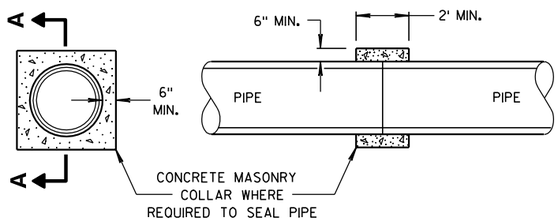
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

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
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 8 F 4-7

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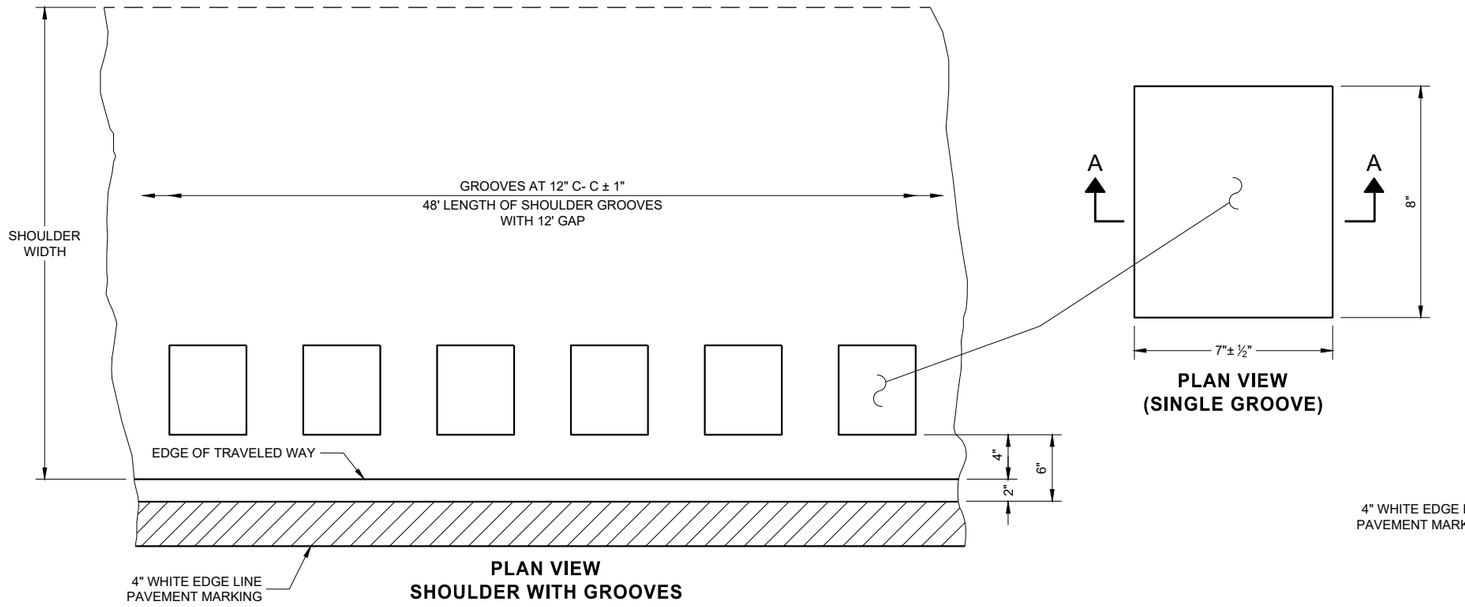
S.D.D. 8 F 4-7



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

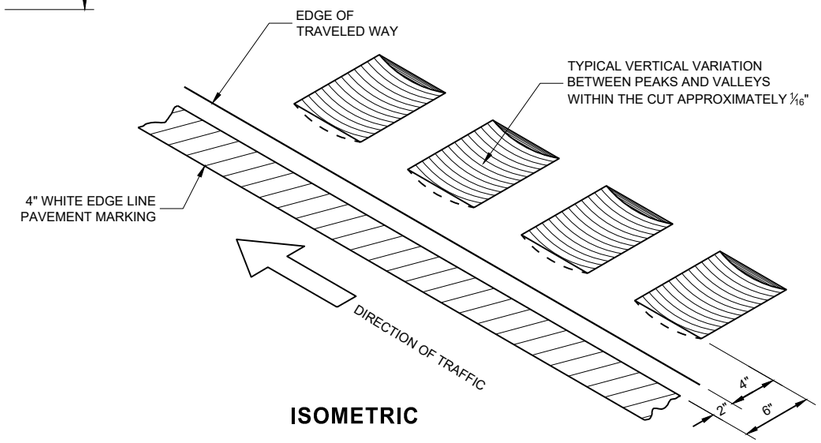
PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP

GENERAL NOTES

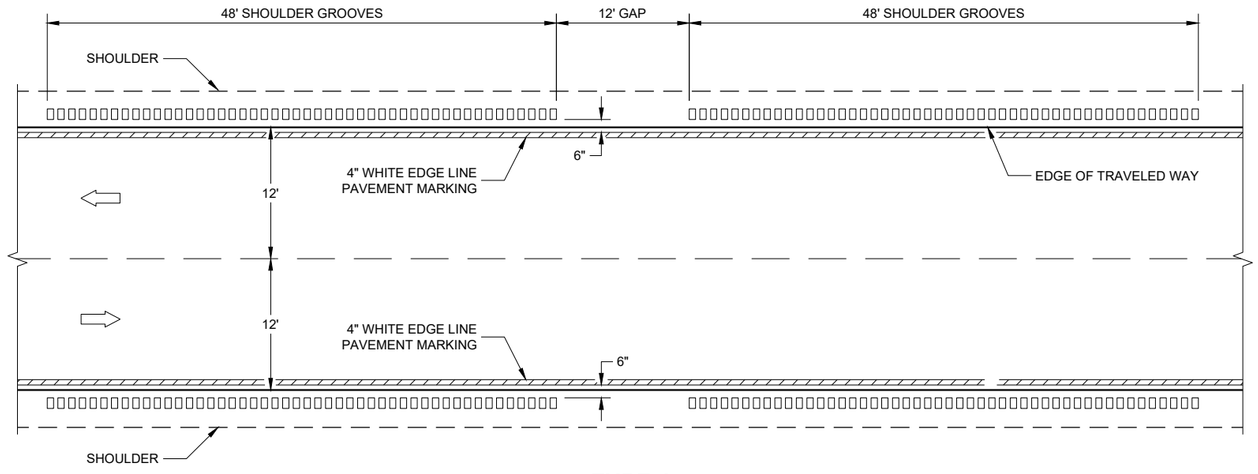
DETAILS OF CONSTRUCTION NO SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

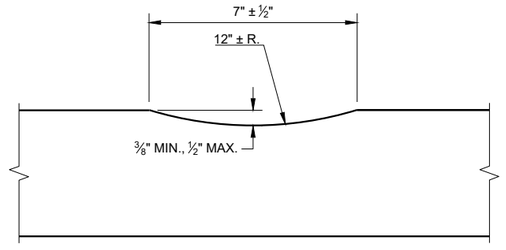
(1) SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



ISOMETRIC

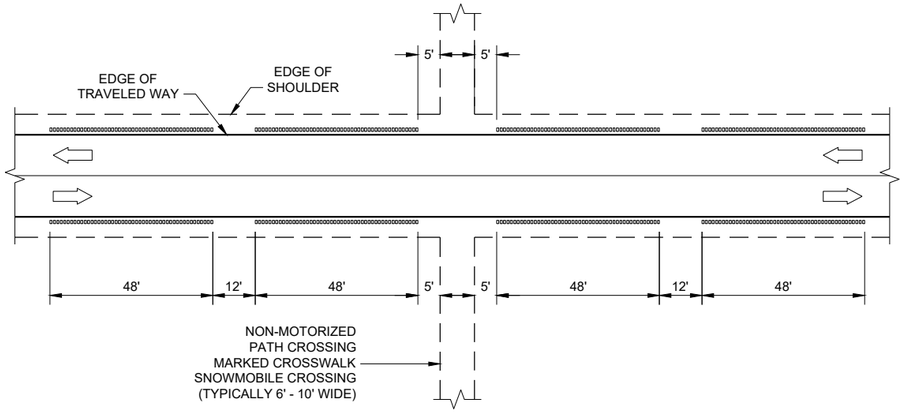


TYPE 1
2 - LANE SHOULDER RUMBLE STRIP

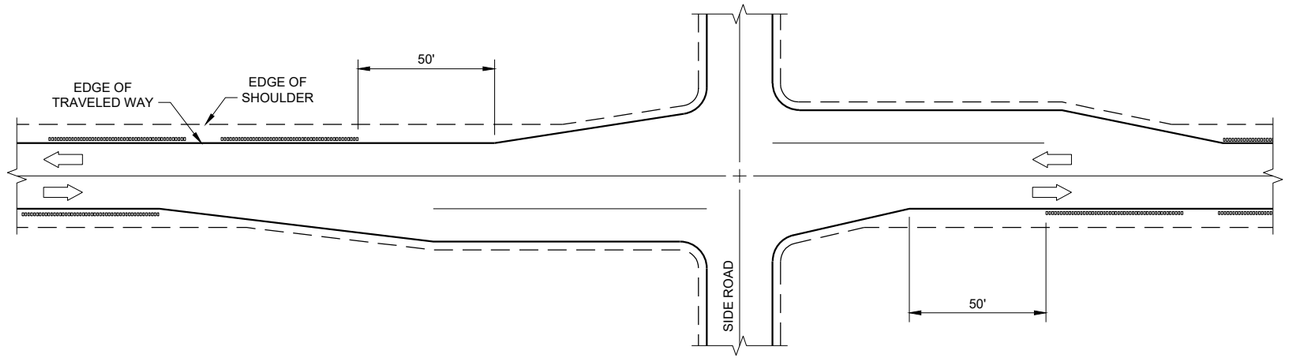


SECTION A - A

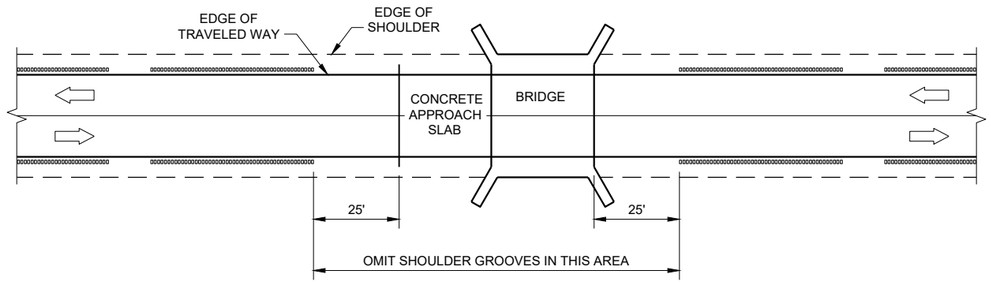
2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING



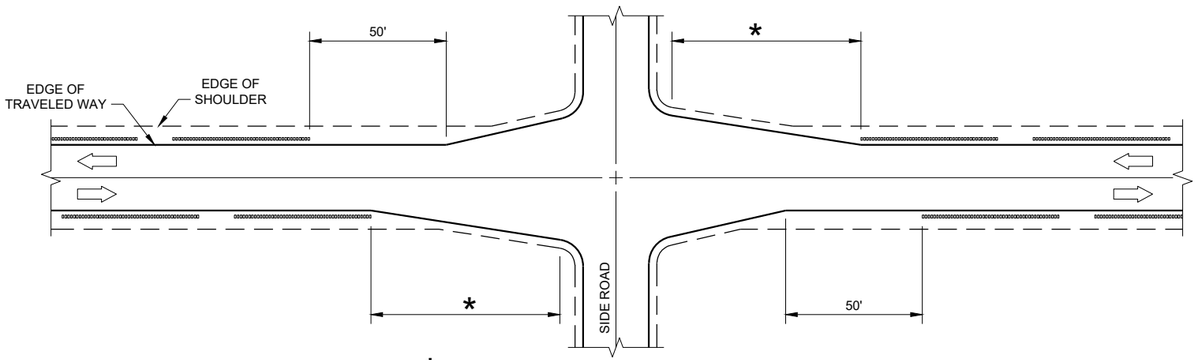
SHOULDER GROOVES AT MISCELLANEOUS CROSSINGS



SHOULDER GROOVES AT RIGHT TURN LANE

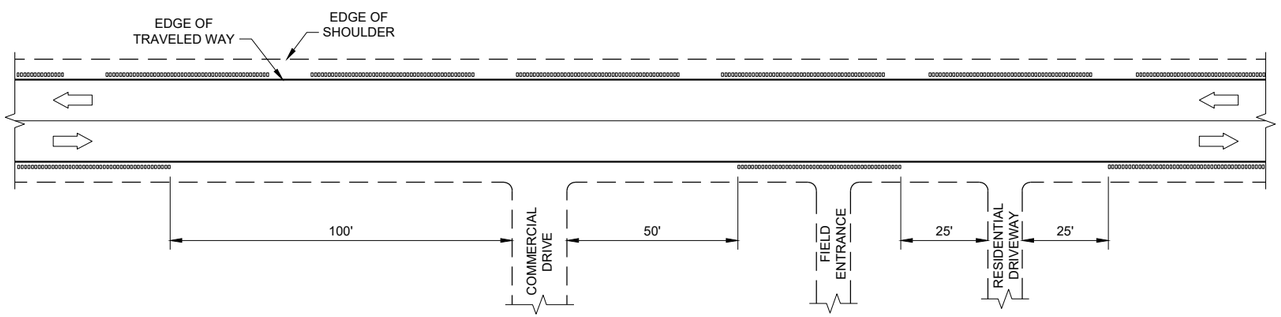


SHOULDER GROOVES AT BRIDGES



* GREATER OF 100' OR APPROACH TAPER LENGTH

SHOULDER GROOVES AT INTERSECTIONS WITH APPROACH TAPER



SHOULDER GROOVES AT DRIVEWAYS (1)

GENERAL NOTES

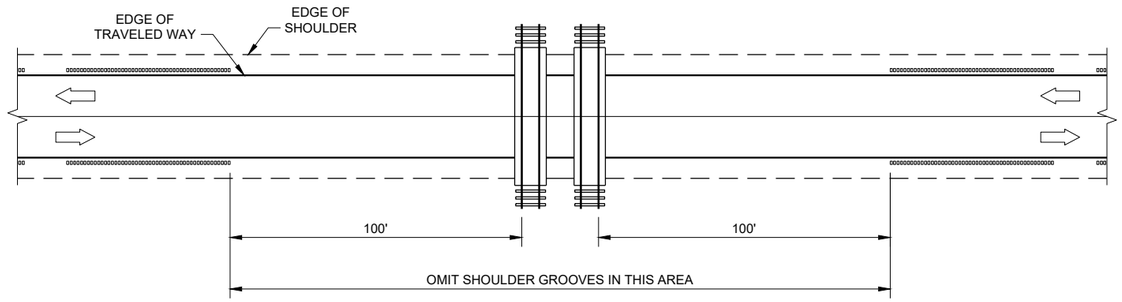
(1) SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.

2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING

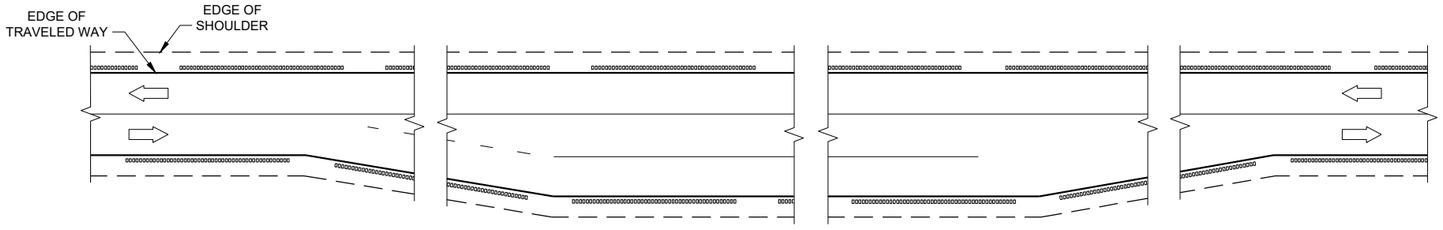
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

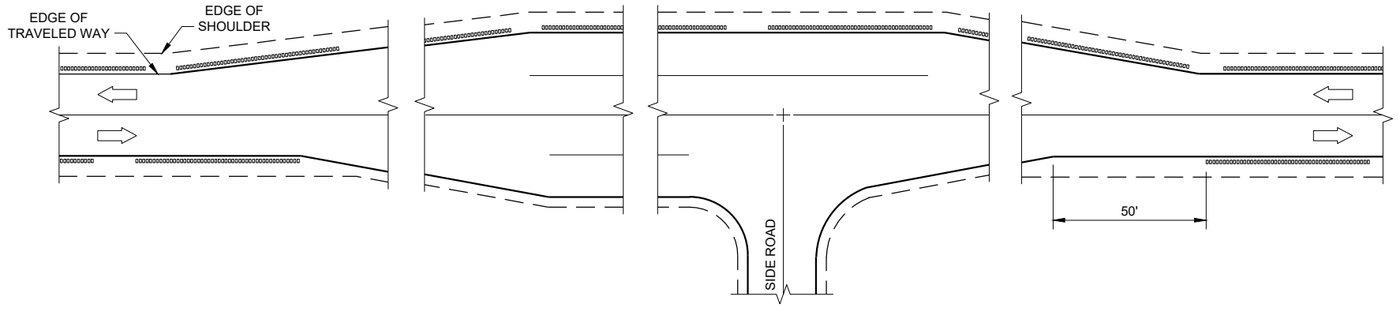
SDD 13A10 - 02c
SDD 13A10 - 02c



SHOULDER GROOVES AT RAILROADS



SHOULDER GROOVES AT PASSING AND CLIMBING LANES



SHOULDER GROOVES AT BYPASS LANES

6

6

SDD 13A10 - 02d

SDD13A10 - 02d

2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING

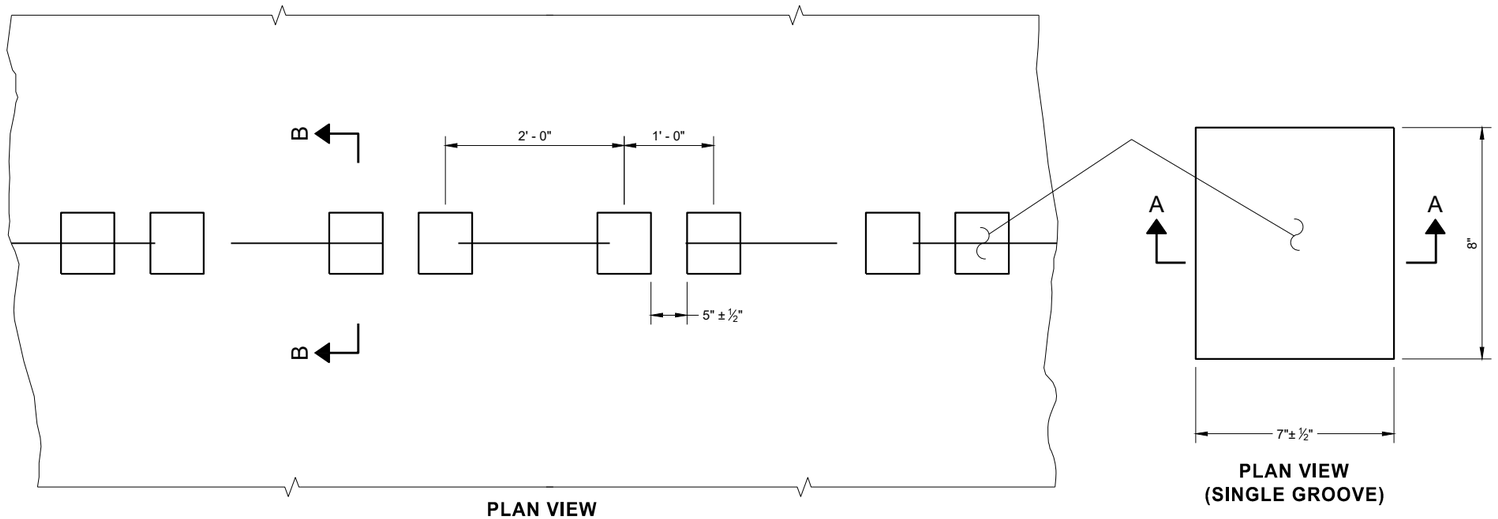
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

FHWA



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP

GENERAL NOTES

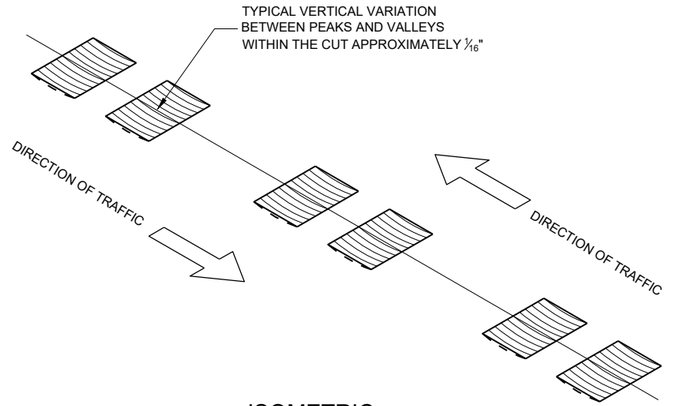
DETAILS OF CONSTRUCTION NO SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

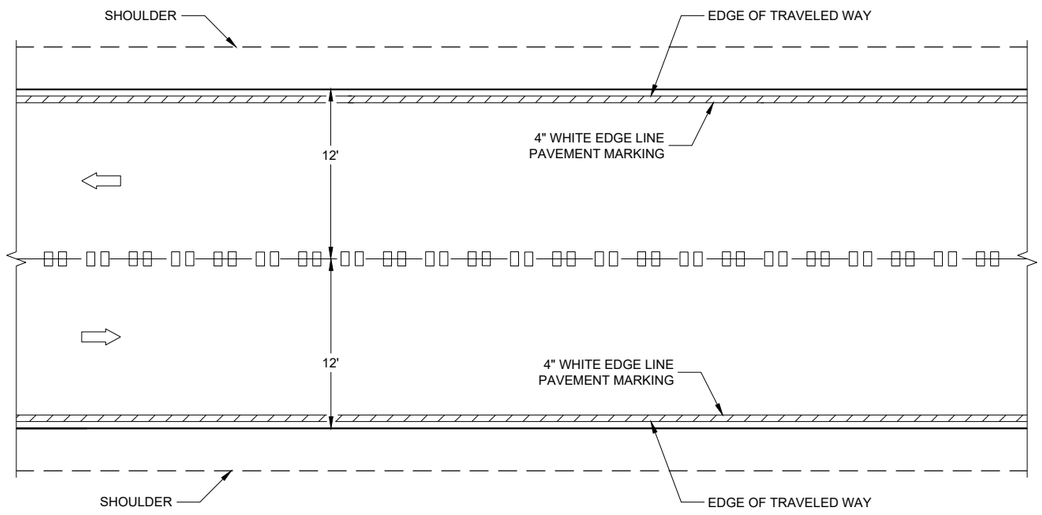
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

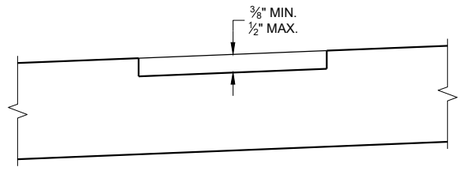
(1) CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



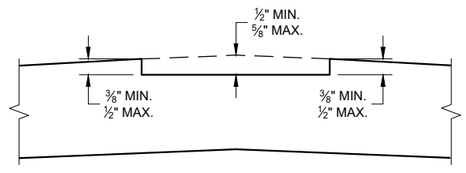
ISOMETRIC



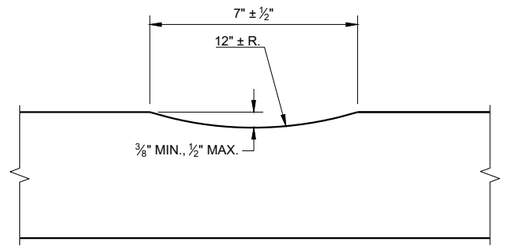
CENTERLINE GROOVES ON TWO-WAY ROADWAYS



SECTION B - B
SUPERELEVATED ROADWAY



SECTION B - B
CROWNED ROADWAY



SECTION A - A

2-LANE RURAL
CENTER LINE RUMBLE STRIP, MILLING

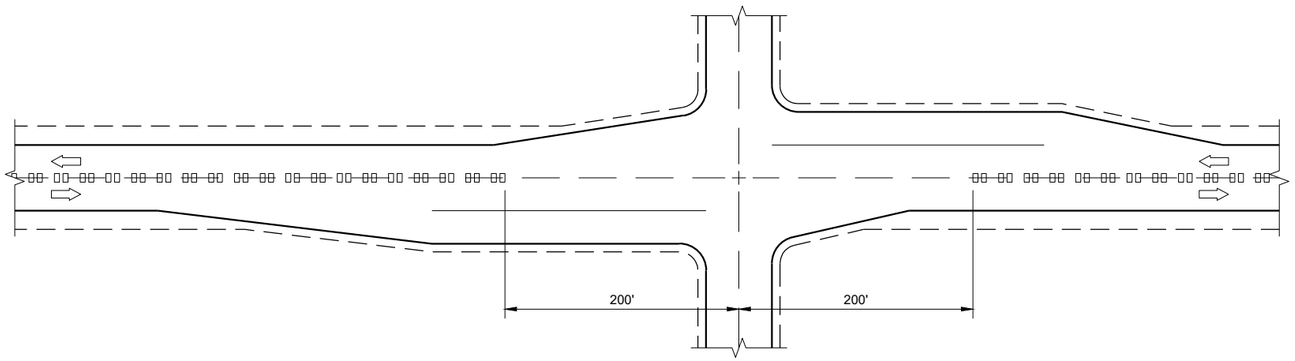
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

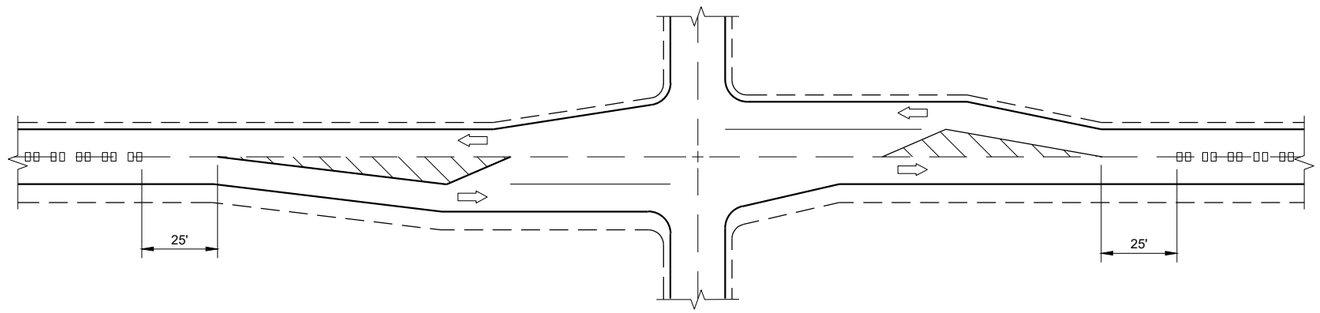
SDD 13A11 - 03a

6

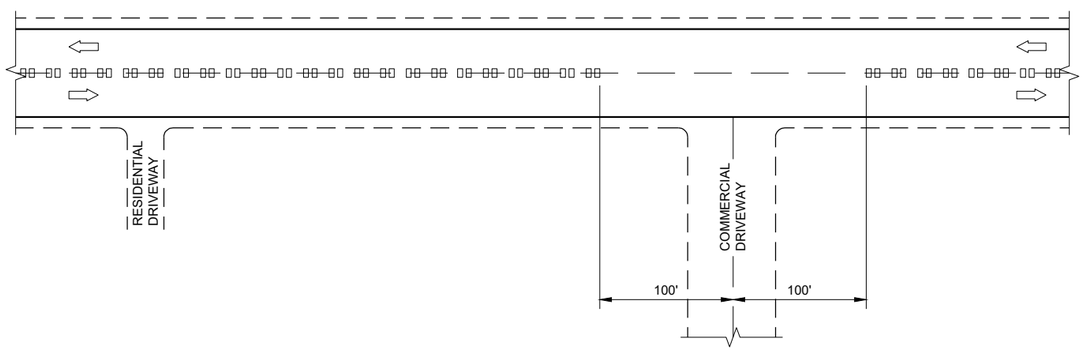
SDD 13A11 - 03a



CENTERLINE GROOVES AT INTERSECTIONS



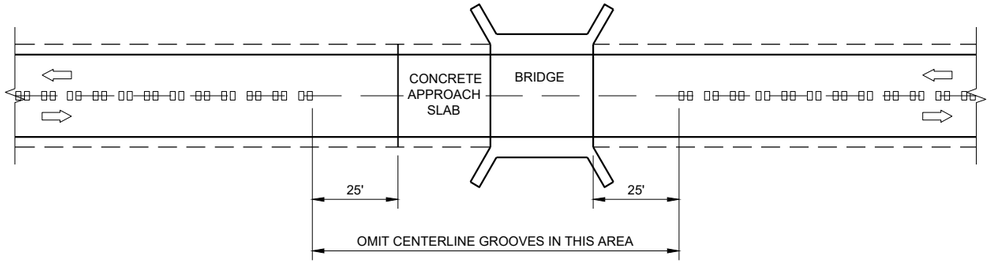
CENTERLINE GROOVES AT INTERSECTIONS (WITH LEFT TURN LANES)



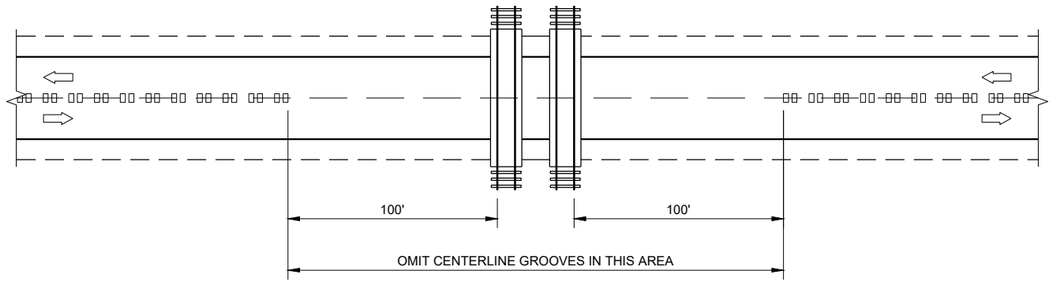
CENTERLINE GROOVES AT DRIVEWAYS (1)

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

2-LANE RURAL CENTERLINE RUMBLE STRIP, MILLING

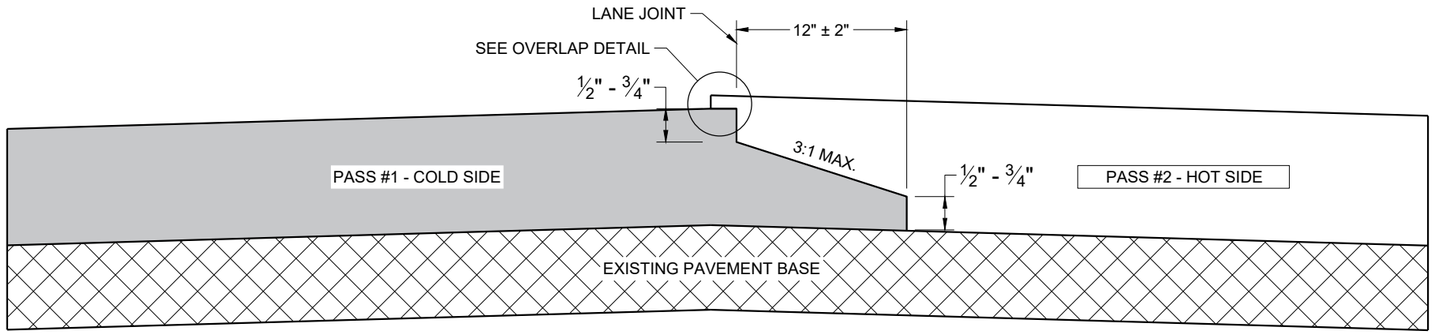
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE

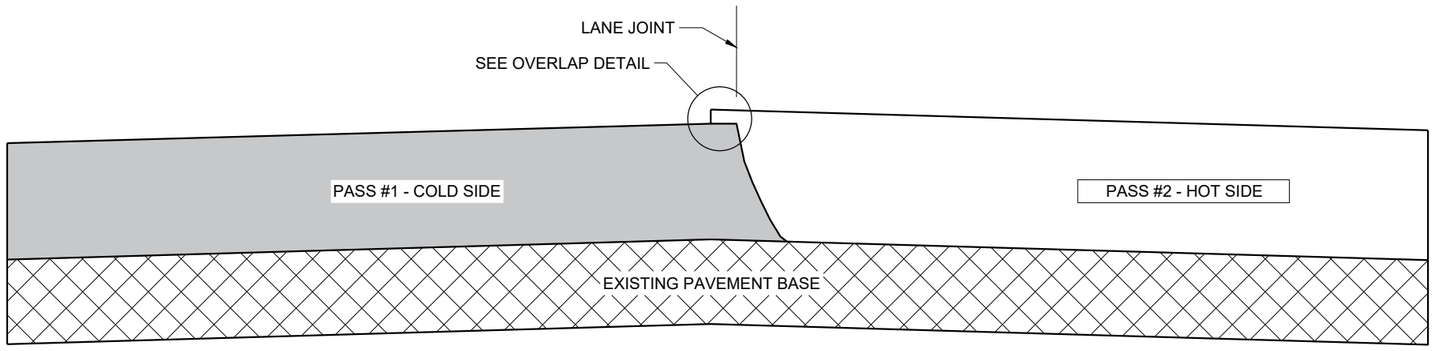
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

FHWA

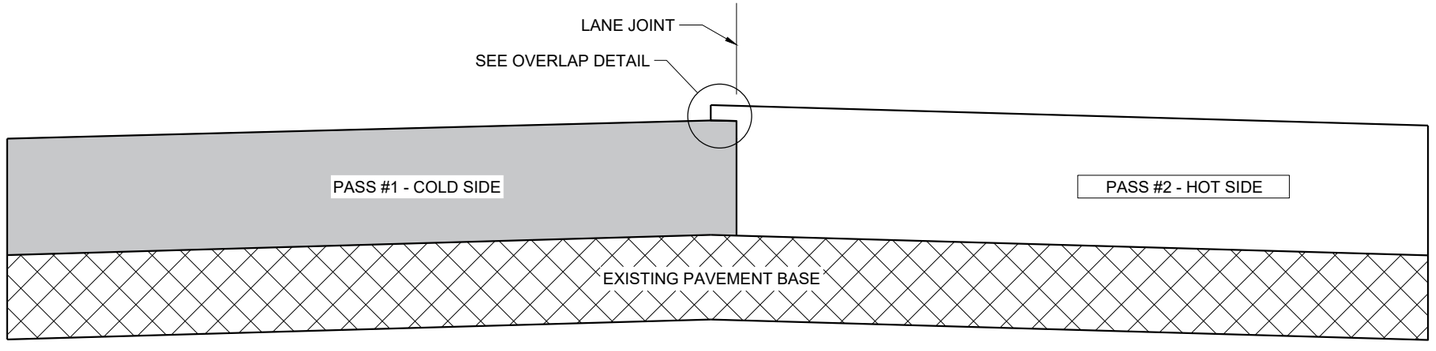
6
SDD 13A11 - 03b



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

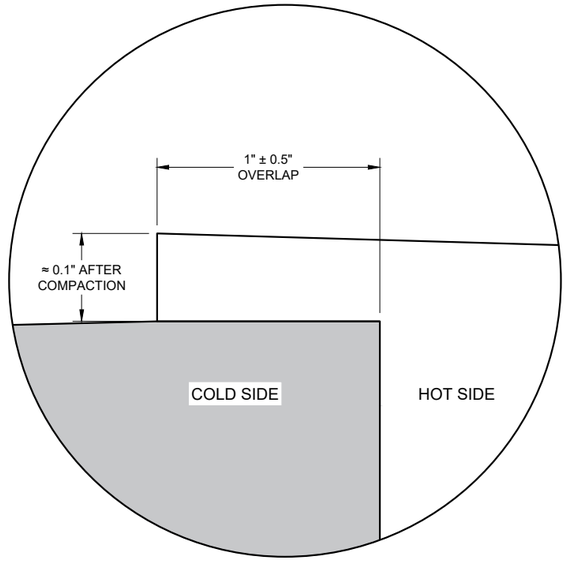
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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)

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020
DATE

/S/ Steven Hefel
HMA PAVEMENT ENGIN

FHWA

6

SDD 13C19 - 03

6

SDD 13C19 - 03

GENERAL NOTES

(1) W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS.

DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.

(2) USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.

(3) INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

(4) USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.

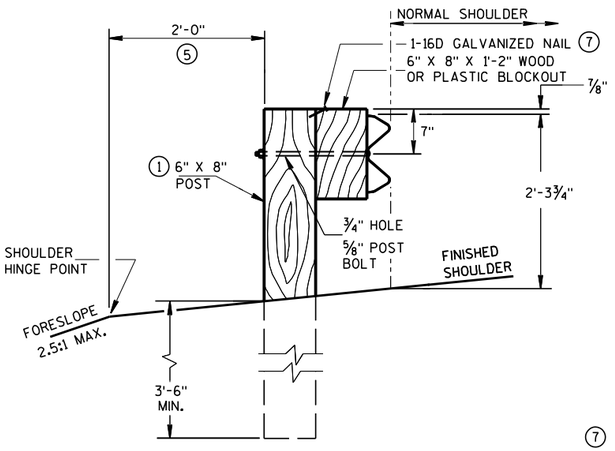
(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

(6) IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATEY.

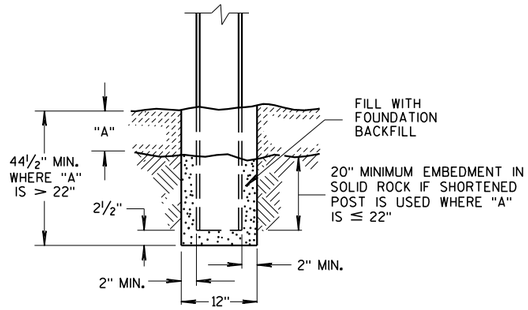
(7) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.

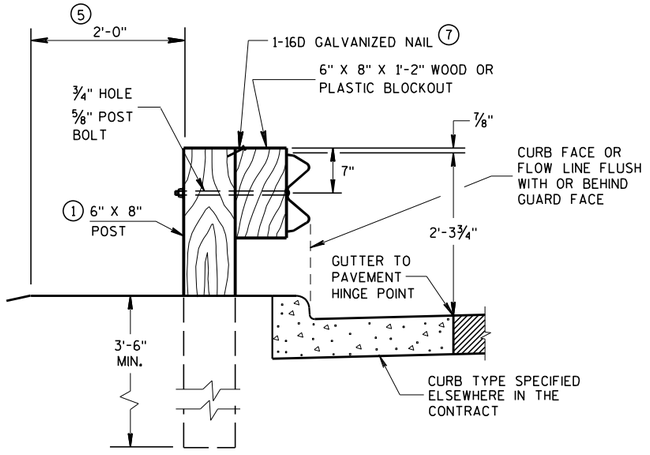
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



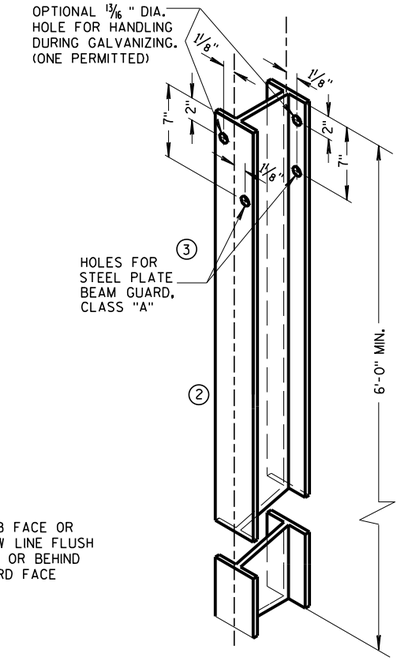
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)

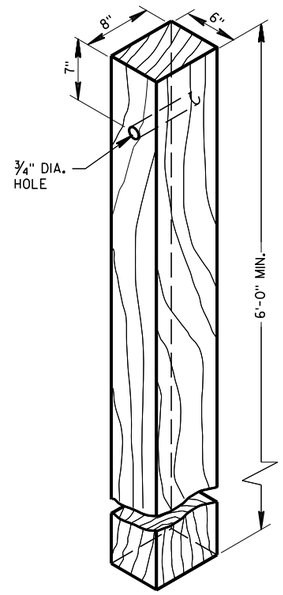


END VIEW
LOCATED ALONG A CURBED ROADWAY

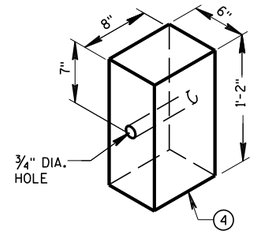


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

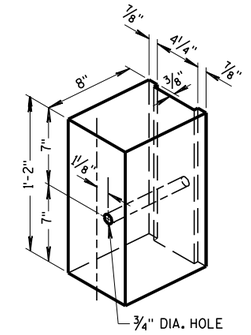
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



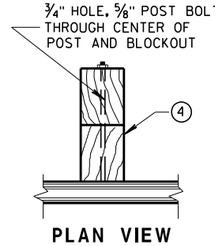
WOOD POST
(6"X8") NOMINAL



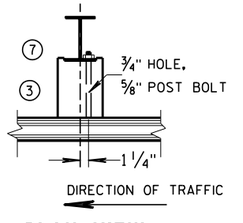
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



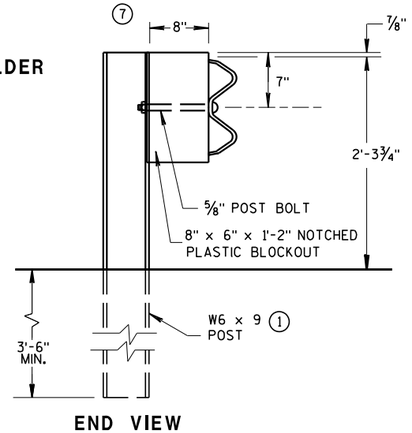
TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS (1)



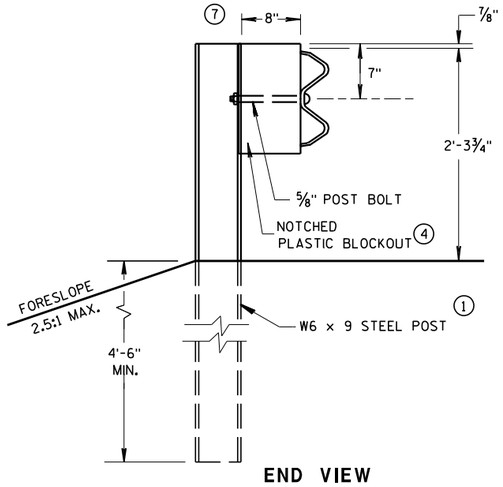
PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



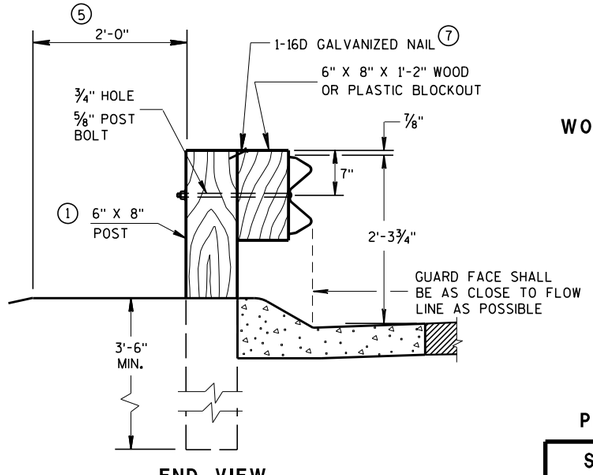
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)



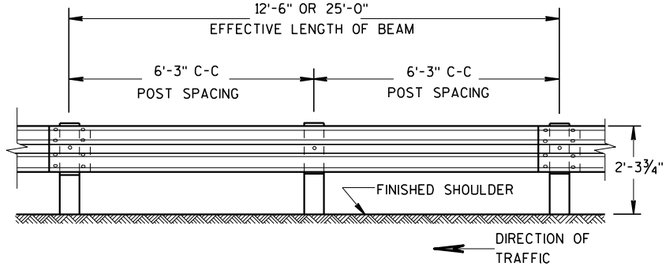
END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

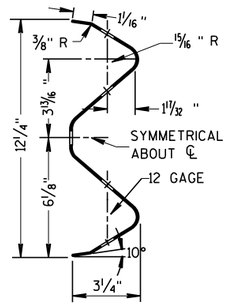
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 15-11a

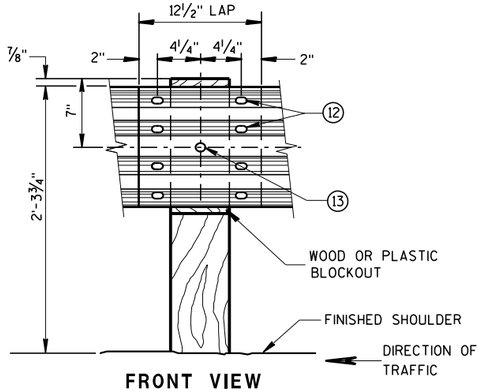


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM



FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

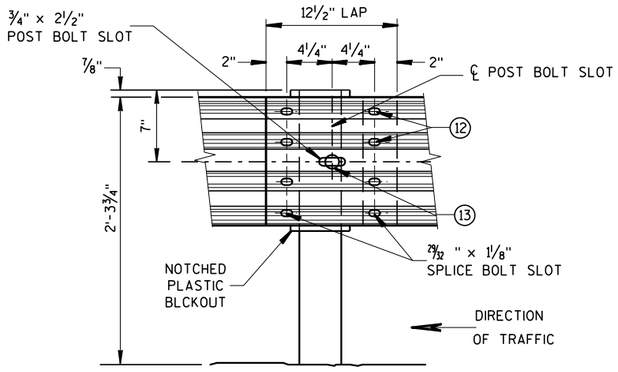
(9) DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.

(12) 8 -5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

(13) 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.

FRONT VIEW

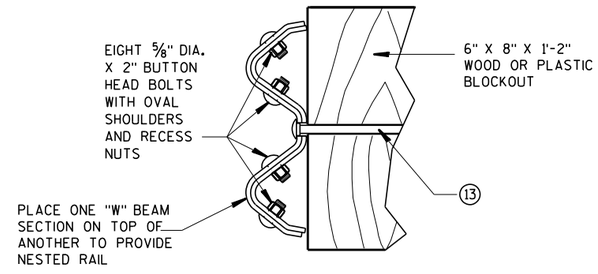
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

BEAM SPLICE AT STEEL POST

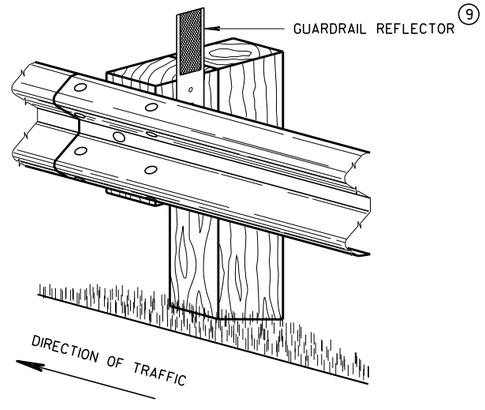
TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD



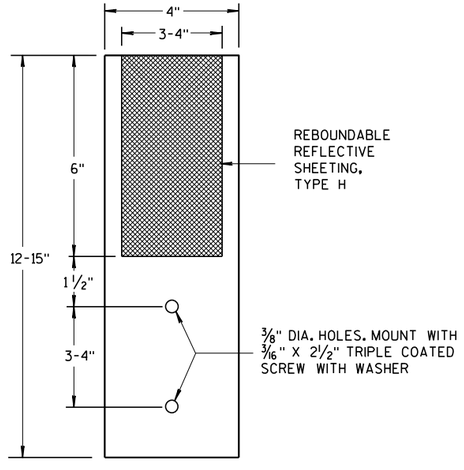
NESTED W BEAM (NW)

USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

* USE DOUBLE SIDED WHITE GUADRAIL REFLECTORS ON ROADWAYS WITH BI-DIRECTIONAL TRAFFIC (NO MEDIAN). USE SINGLE SIDED WHITE (RIGHT SIDE) AND SINGLE SIDED YELLOW (LEFT SIDE) ON ROADWAYS WITH MEDIAN SEPARATION.



4" X 12" GUARDRAIL REFLECTOR DETAIL AND TYPICAL INSTALLATION *



4"x 12" GUARDRAIL REFLECTOR

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

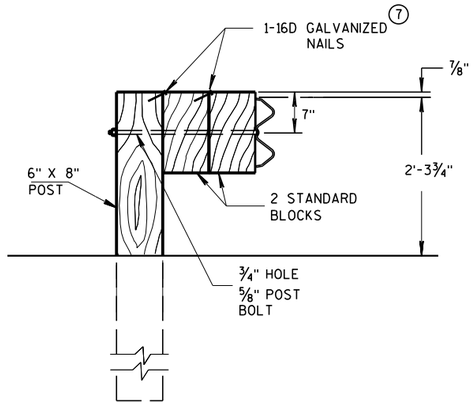
STATE OF WISCO 51
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 15-11b

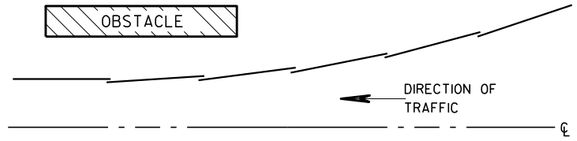
6

S.D.D. 14 B 15-11b

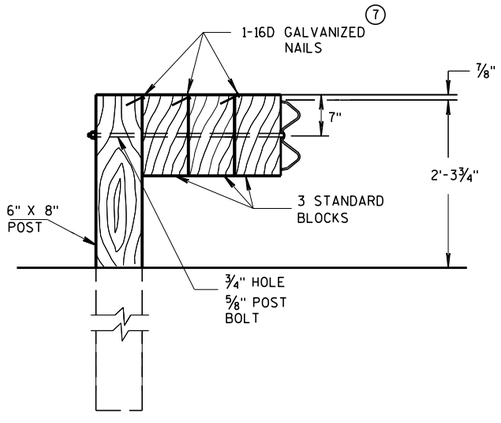


DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS WITHIN A BARRIER RUN IS UNLIMITED

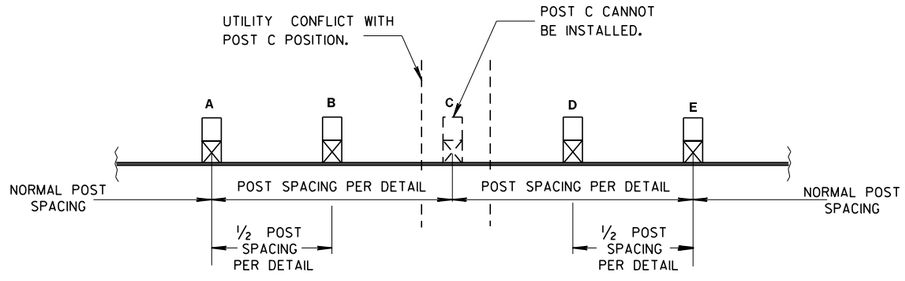


PLAN VIEW
BEAM LAPPING DETAIL



DETAIL FOR TRIPLE BLOCKS

TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA 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.

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR 52
FHWA

6

S.D.D. 14 B 15-11c

6

S.D.D. 14 B 15-11c

BILL OF MATERIALS

NOTE NO.	DESCRIPTION
①	WOOD BREAKAWAY TERMINAL POST: 5½" X 7½" X 3'-9"
②	STEEL TUBE TS 8" X 6" X 0.188", 6'-0"
④	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
⑤	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
⑥	PIPE SLEEVE: 2" X 5 ½" STANDARD PIPE
⑦	BEARING PLATE
⑧	BCT CABLE ASSEMBLY
⑨	CABLE ANCHOR BOX
⑩	STRUT & YOKE
⑪	STEEL PLATE BEAM, END PANEL 12 GA.
⑫	STEEL PLATE BEAM: 12 GA. 13'-6½"
⑬	IMPACT HEAD
⑭	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

(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.

(D) THE TOP OF THE STEEL TUBE ON POSTS 1 AND 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

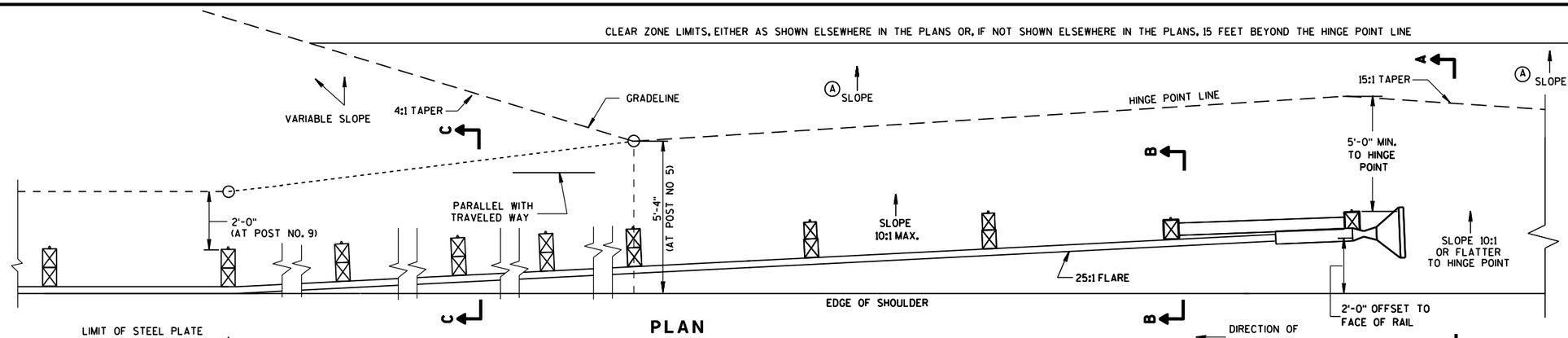
(E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 3 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.

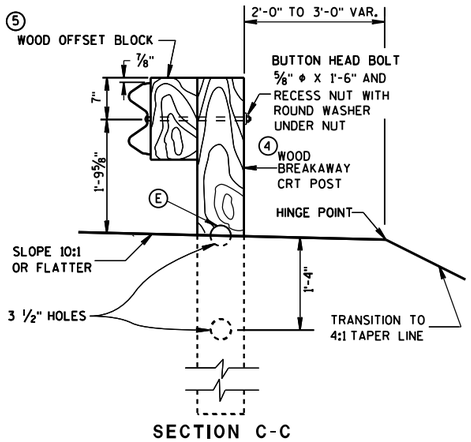
(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

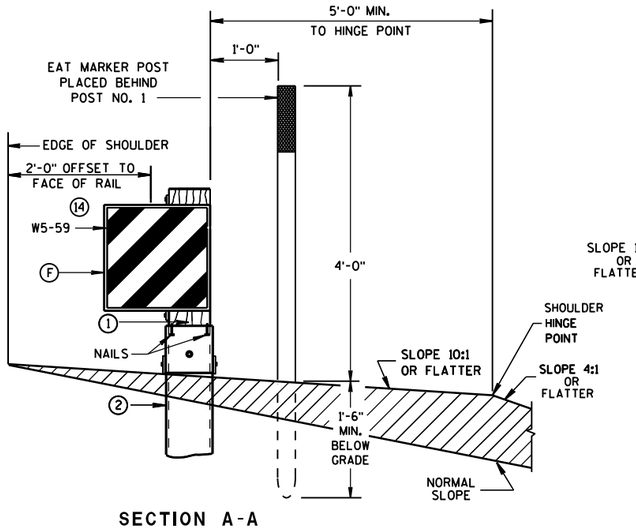
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

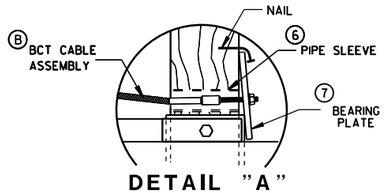
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

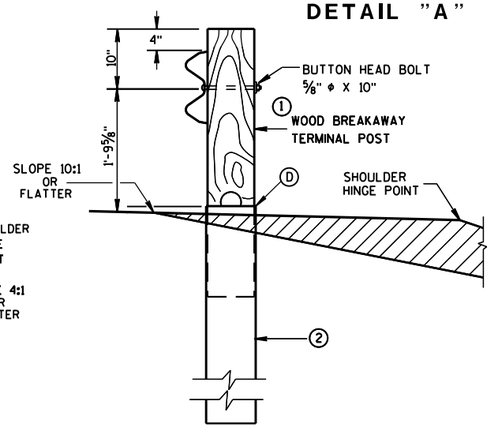
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

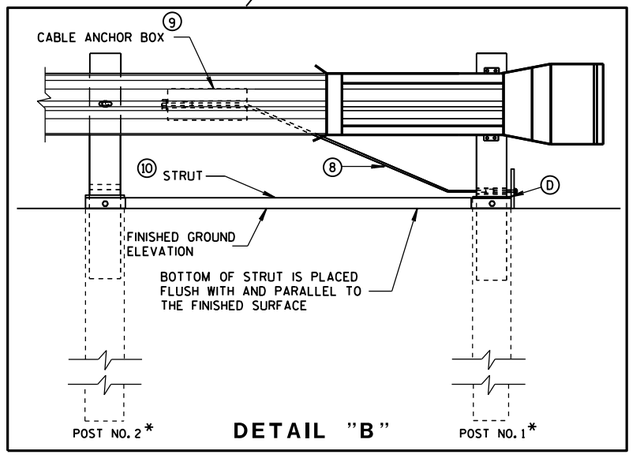










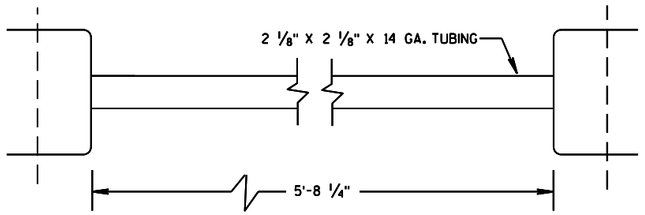


STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

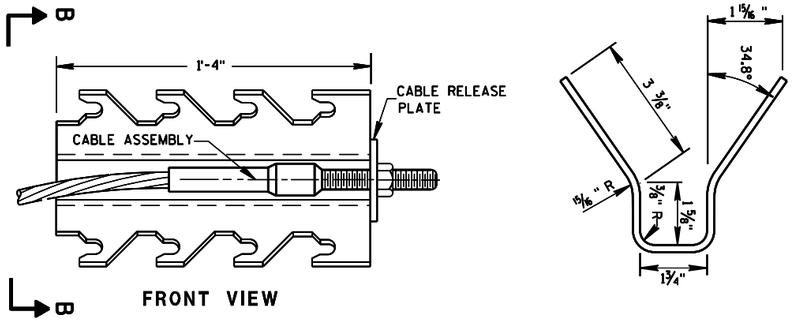
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

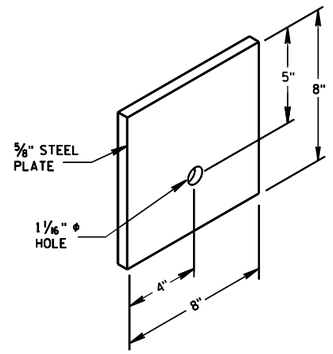
S.D.D. 14 B 24-9a



⑩ STRUT DETAIL



⑨ CABLE ANCHOR BOX



⑦ STEEL BEARING PLATE

6

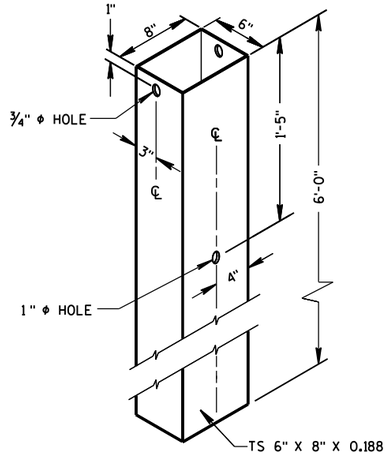
6

S.D.D. 14 B 24-9b

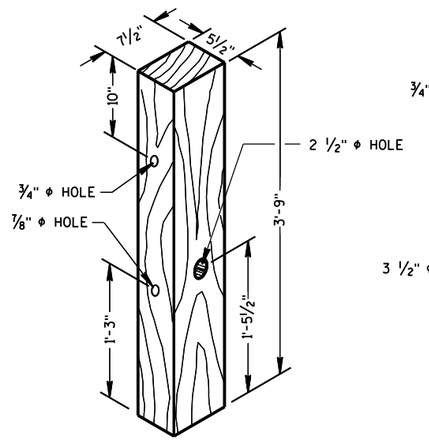
S.D.D. 14 B 24-9b

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

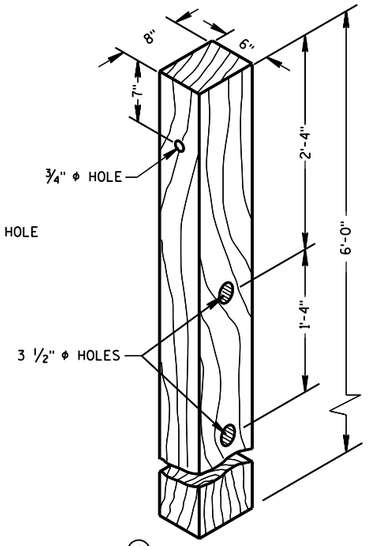
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



② 72" STEEL TUBE
(POSTS NO. 1-2



① TERMINAL POST

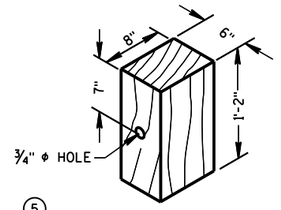


④ CRT POST
(POSTS NO'S 5-8

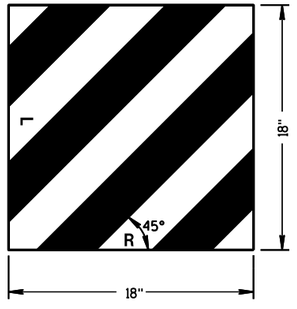
WOOD BREAKAWAY POSTS

GENERAL NOTES

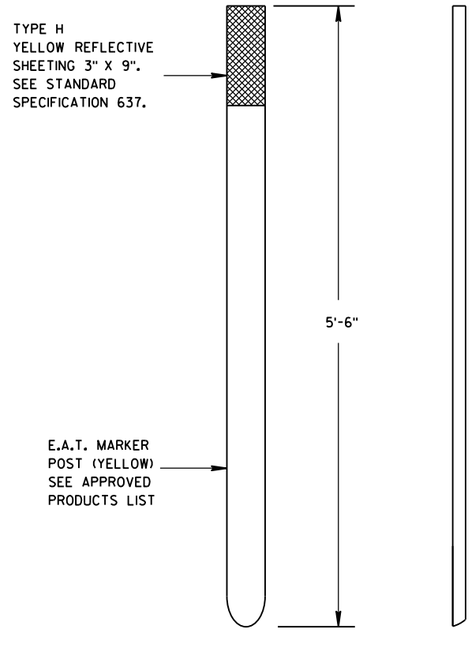
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.



⑤ WOOD OFFSET BLOCK
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



⑭ REFLECTIVE SHEETING DETAILS



E.A.T. MARKER POST

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
FHWA

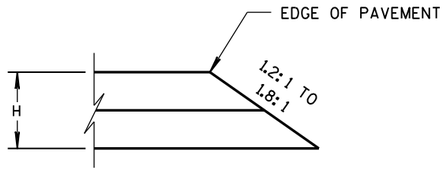
/S/ Rodney Taylor
ROADWAY STANDARDS 55 ENT
UNIT SUPERV...

6

S.D.D. 14 B 24-9c

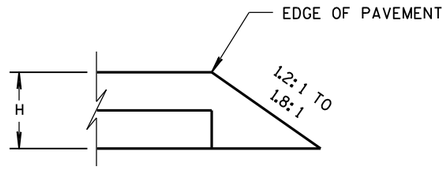
6

S.D.D. 14 B 24-9c



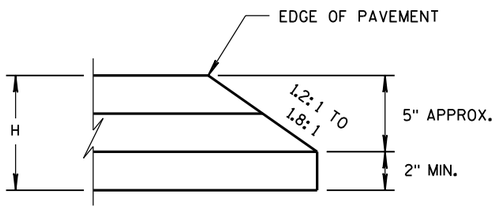
CONSTRUCTED WITH FINAL TWO LAYERS

FOR H 5" OR LESS



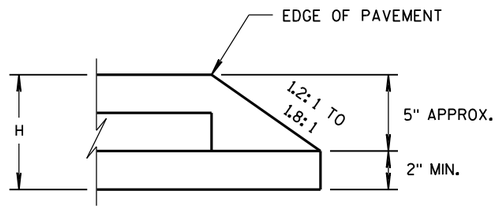
CONSTRUCTED WITH FINAL LAYER

FOR H 5" OR LESS



CONSTRUCTED WITH FINAL TWO LAYERS

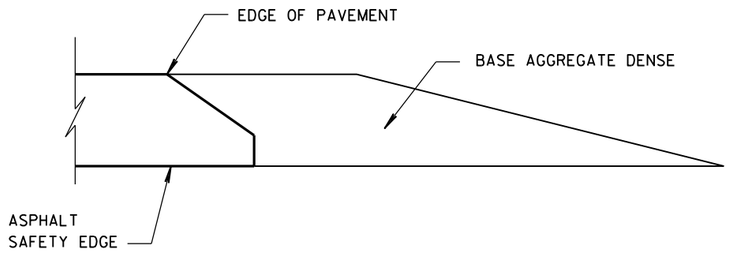
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER

FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

6

6

S.D.D. 14 B 29-1

S.D.D. 14 B 29-1

SAFETY EDGE SM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/2012
DATE

/S/ Jerry H. Zoda
ROADWAY STANDARDS DEVELOPMENT ENGINEER

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.

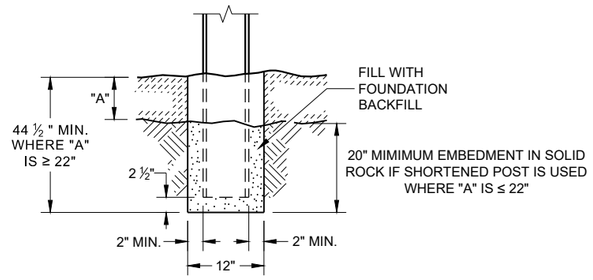
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL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

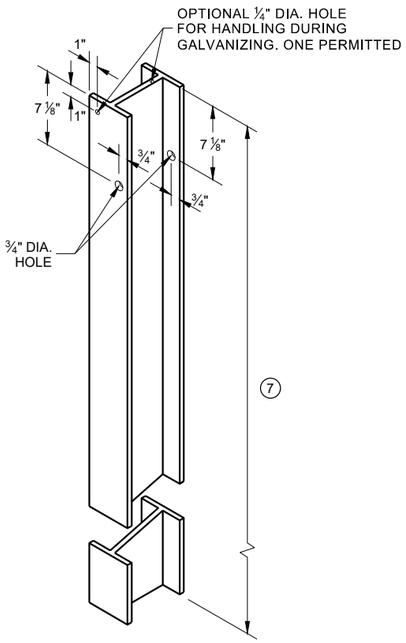
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(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.

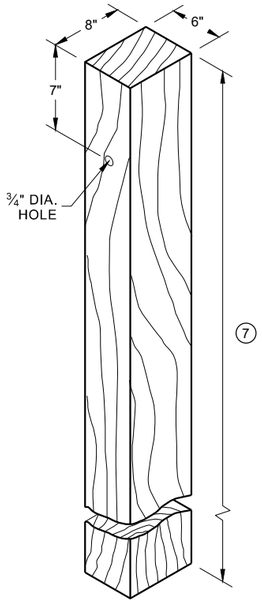
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



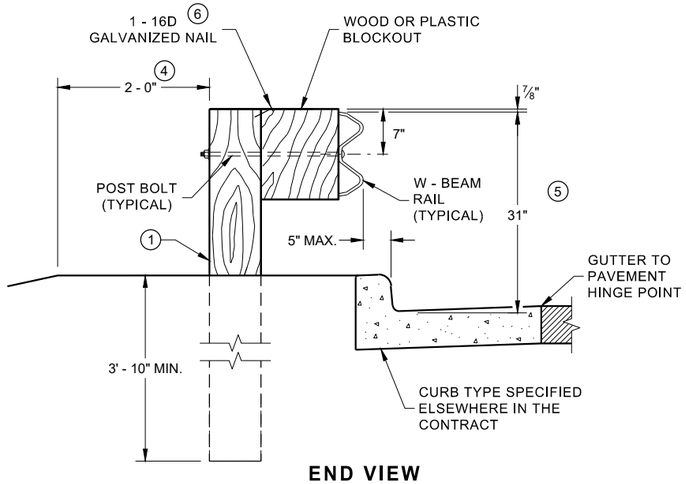
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



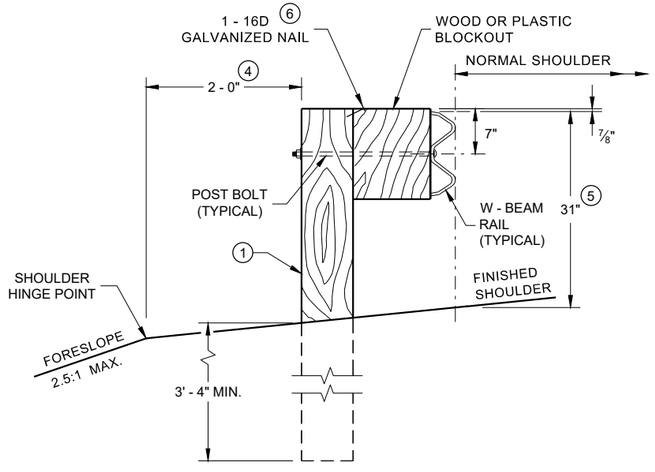
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



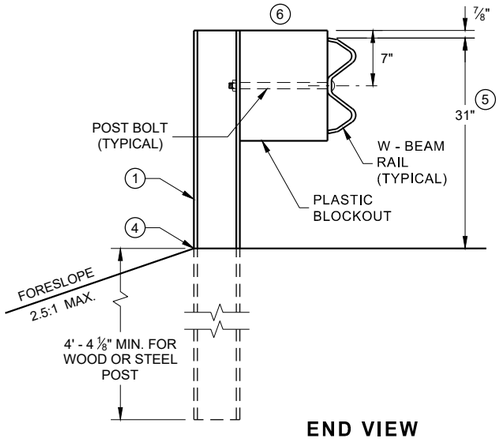
WOOD POST (6" X 8") NOMINAL (1)



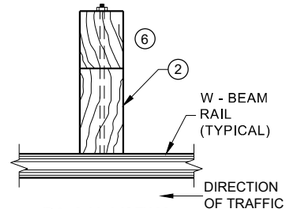
END VIEW
LOCATED ALONG A CURBED ROADWAY



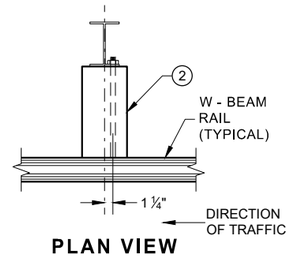
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



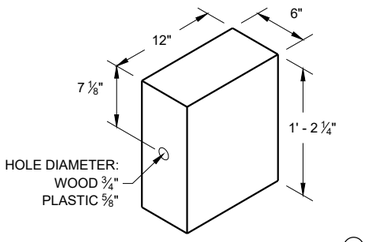
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



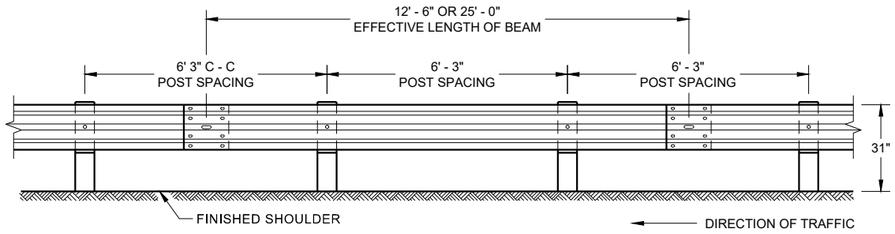
PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



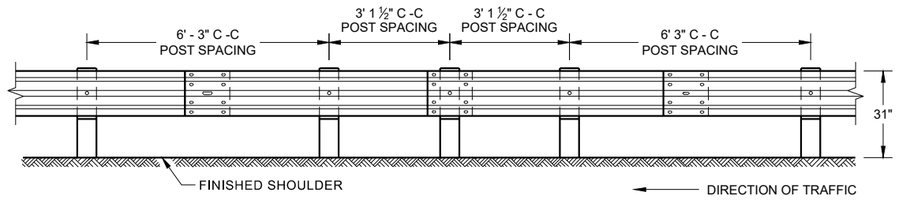
WOOD OR PLASTIC BLOCKOUT (2)

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

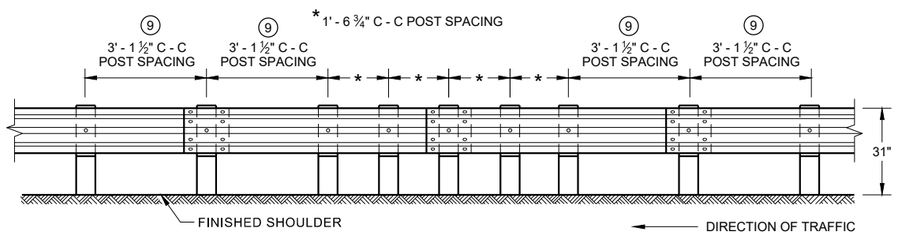
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



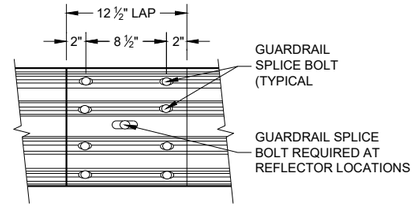
FRONT VIEW
POST SPACING STANDARD INSTALLATION



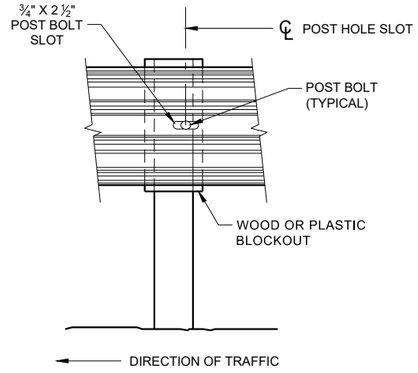
FRONT VIEW
HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)



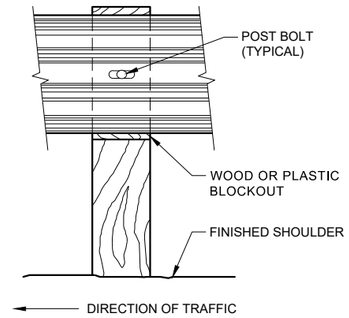
FRONT VIEW
QUARTER POST SPACING (QS)



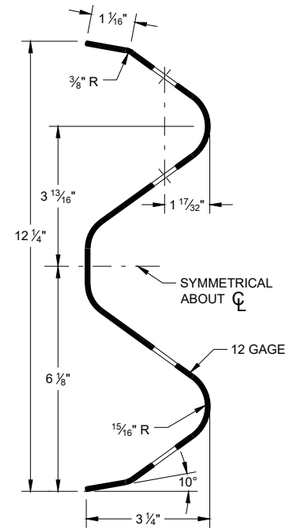
FRONT VIEW
MID-SPAN BEAM SPLICE



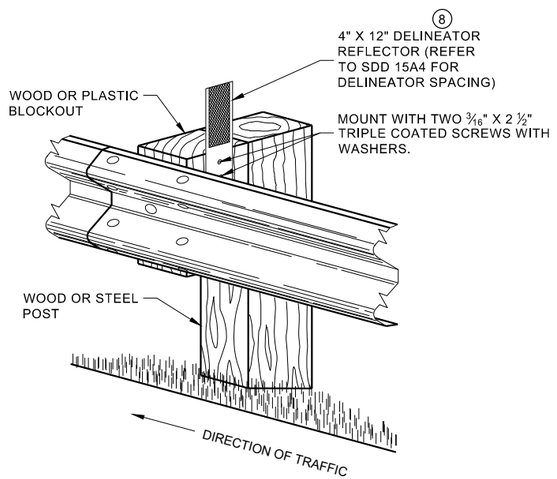
FRONT VIEW AT STEEL POST



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.

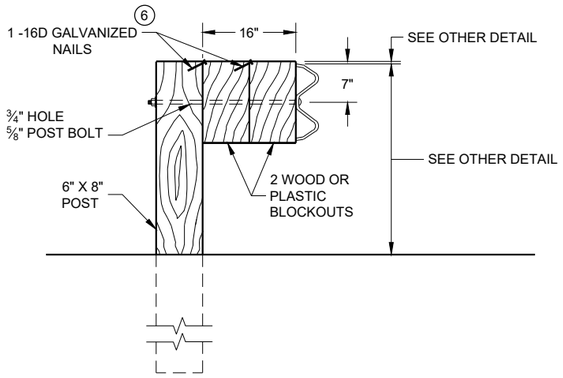
POST BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

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

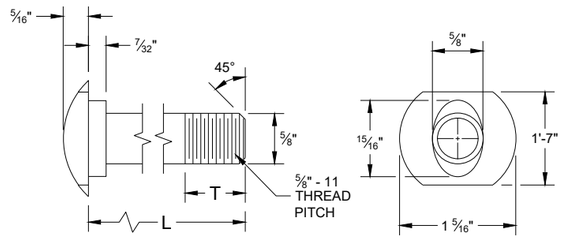


DETAIL FOR 16" BLOCKOUT DEPTH

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.

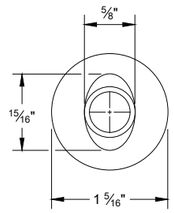
NOTE:

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.

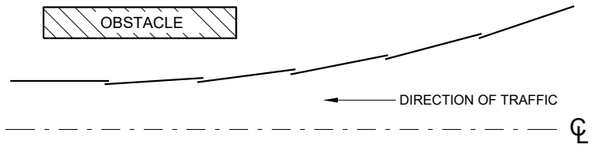


POST BOLT TABLE

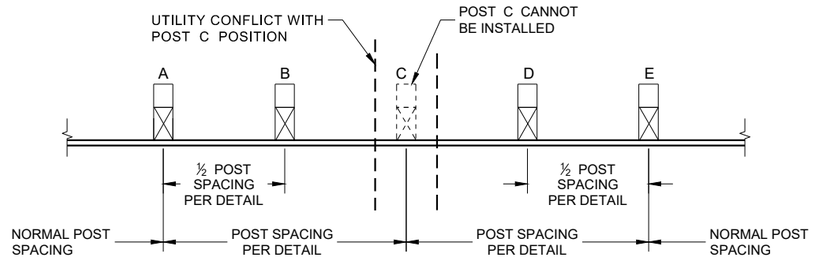
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



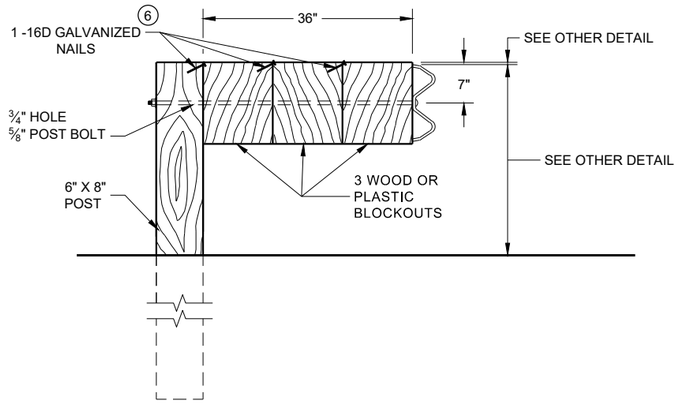
ALTERNATE BOLT HEAD



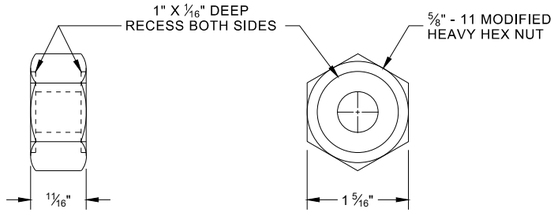
PLAN VIEW
BEAM LAPPING DETAIL



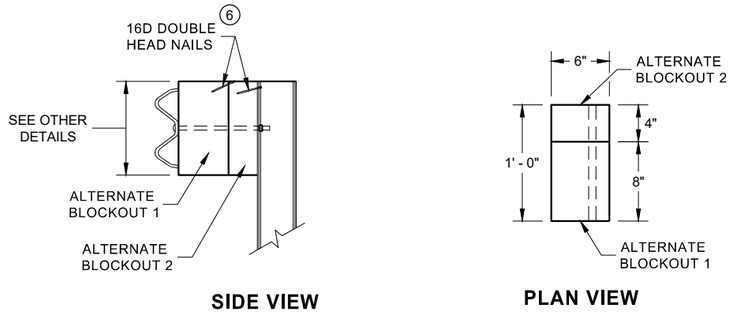
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW

PLAN VIEW

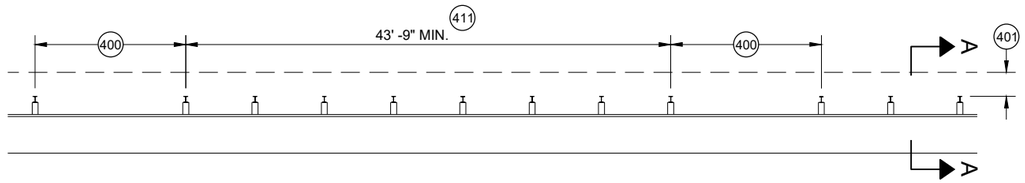
ALTERNATE WOOD BLOCKOUT DETAIL

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.

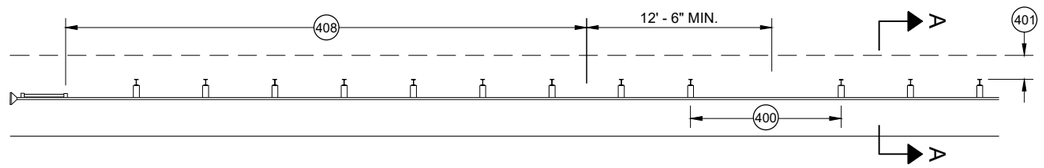
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

(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.

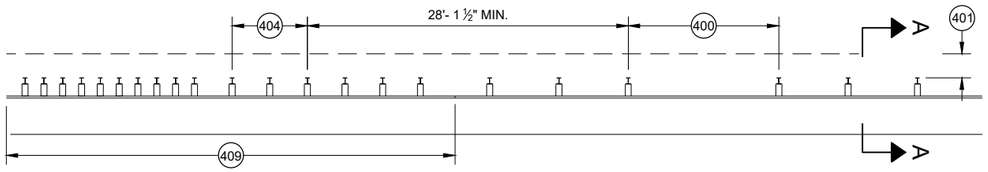
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL



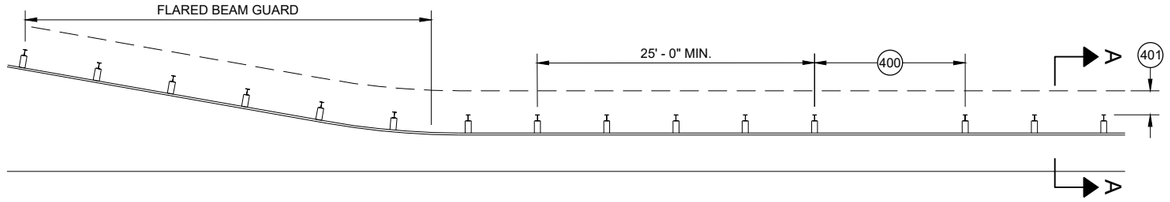
MISSING POST IN MGS GUARDRAIL



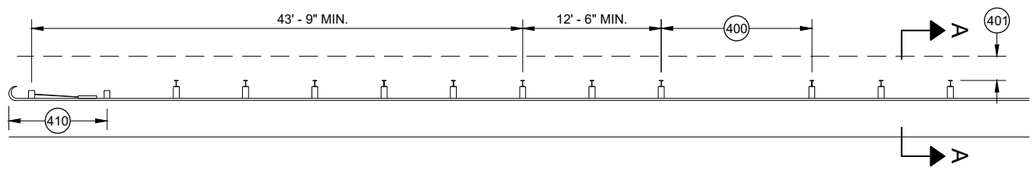
MISSING POST IN MGS GUARDRAIL NEAR EAT



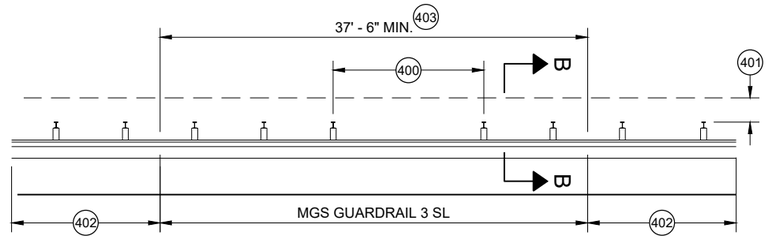
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

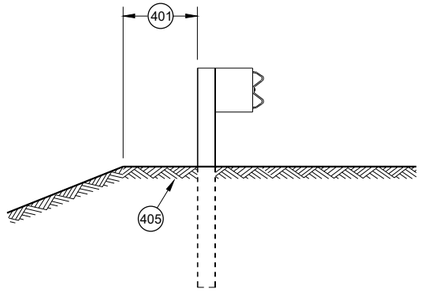


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

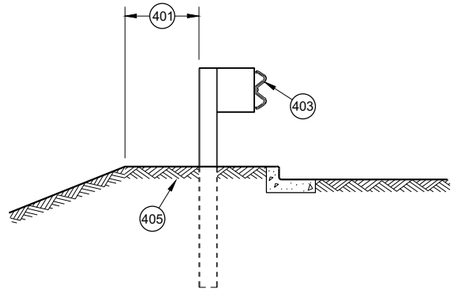


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL) 407

(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.

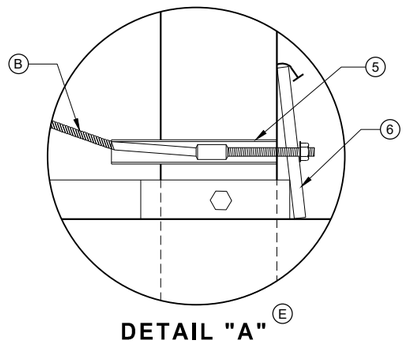
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

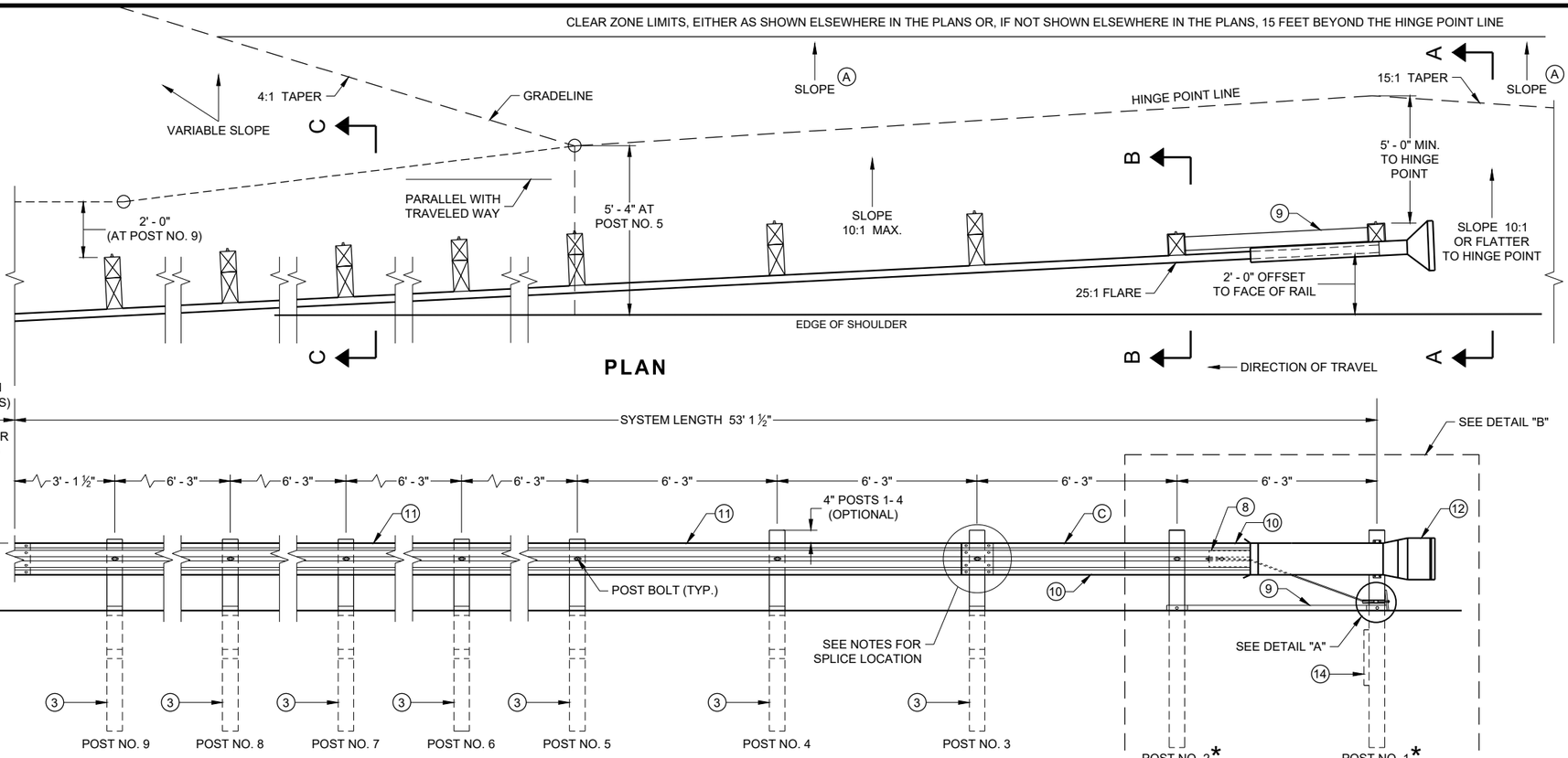
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

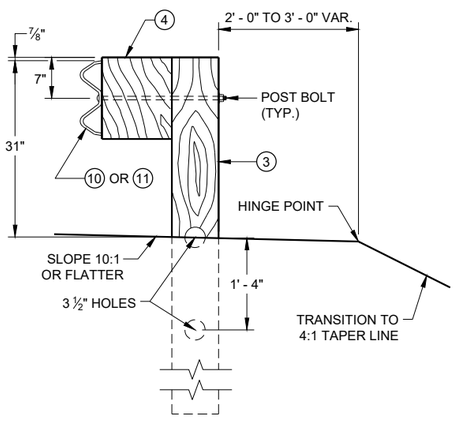
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

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.

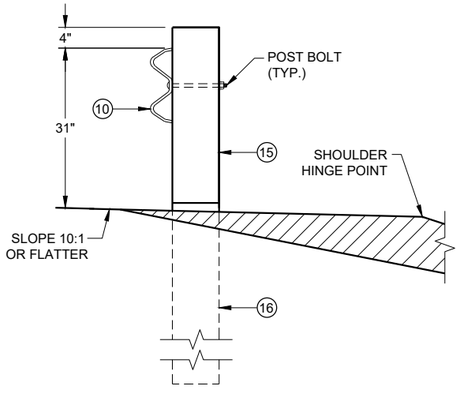


DETAIL "A" (E)

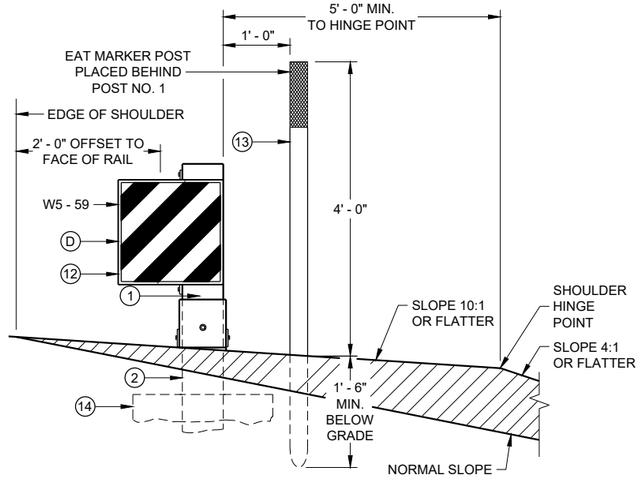




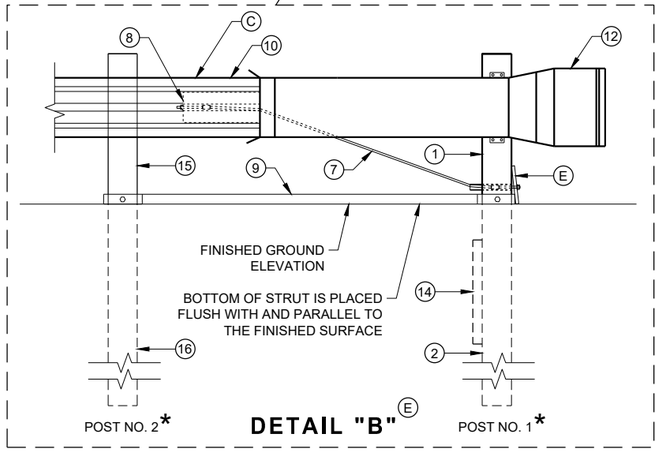
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



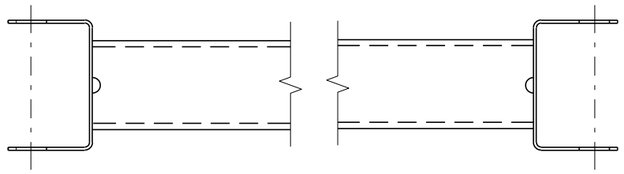
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

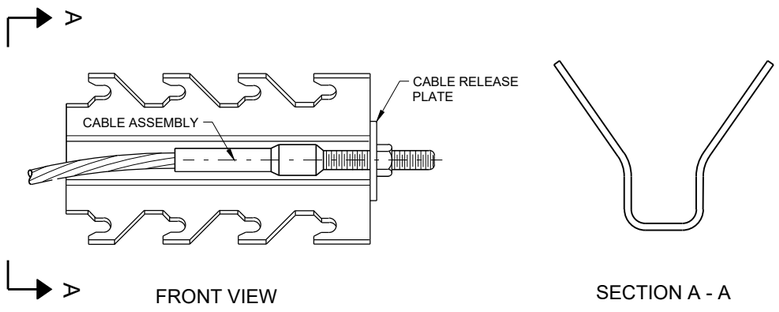
SDD 14B44 - 04a



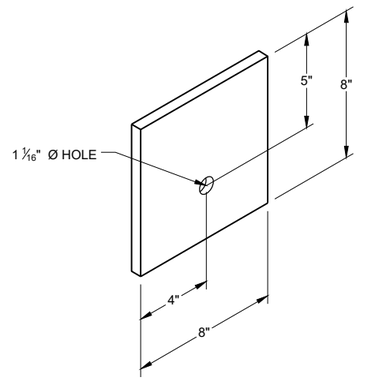
GENERIC GROUND STRUT ⑨ Ⓔ

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

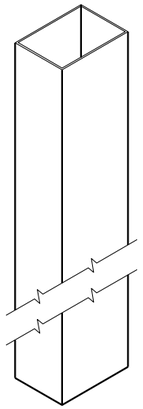
6

SDD 14B44 - 04b

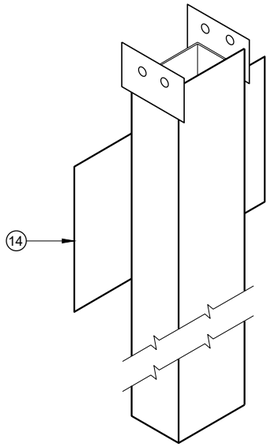
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

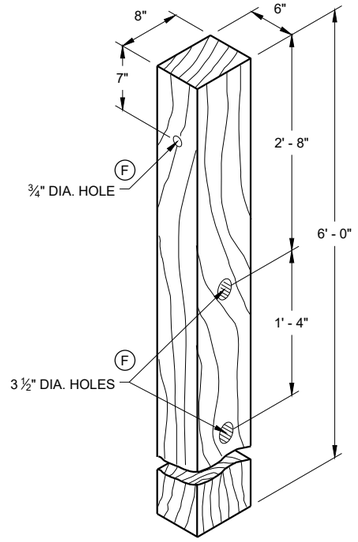
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



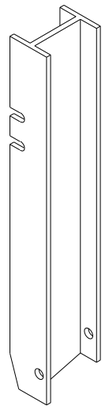
UPPER POST NO. 1 (1) (E)



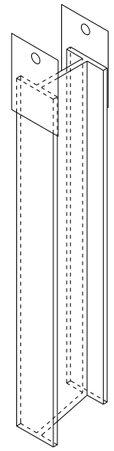
LOWER POST NO. 1 (2) (E)



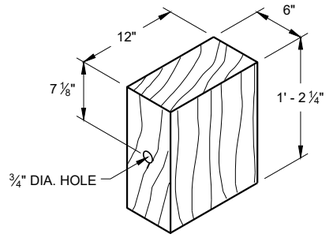
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



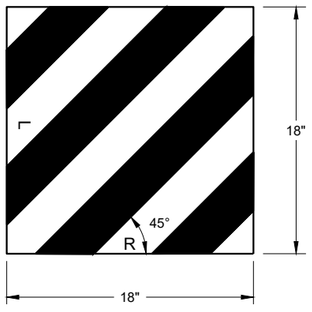
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

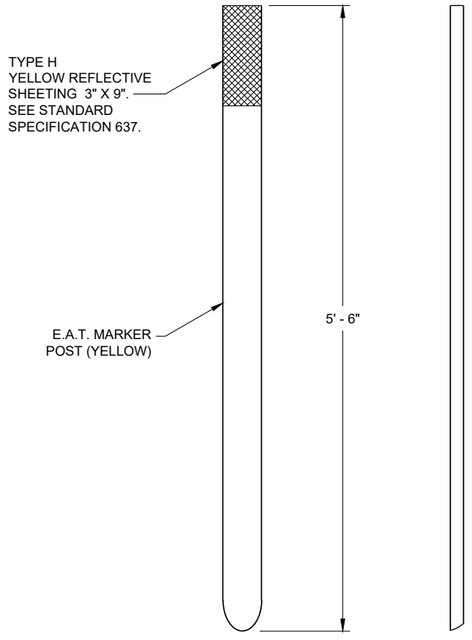


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



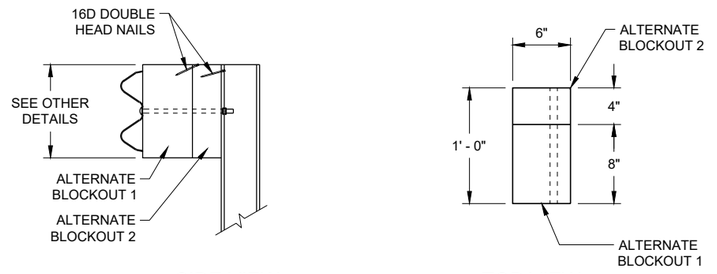
W5 - 59

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)

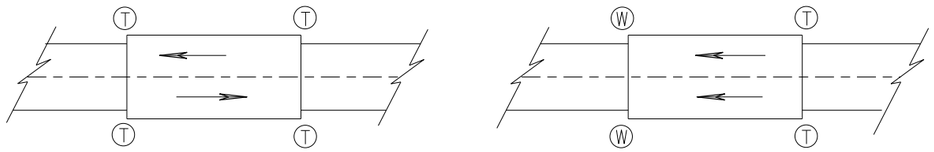
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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.

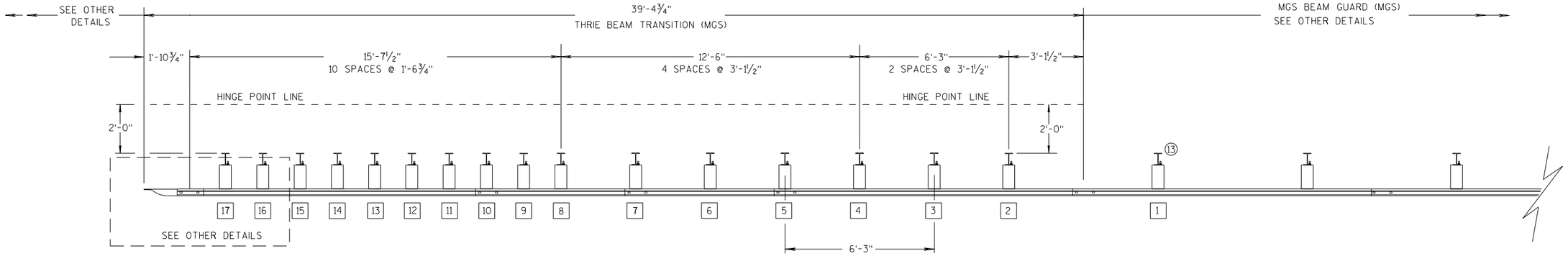
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

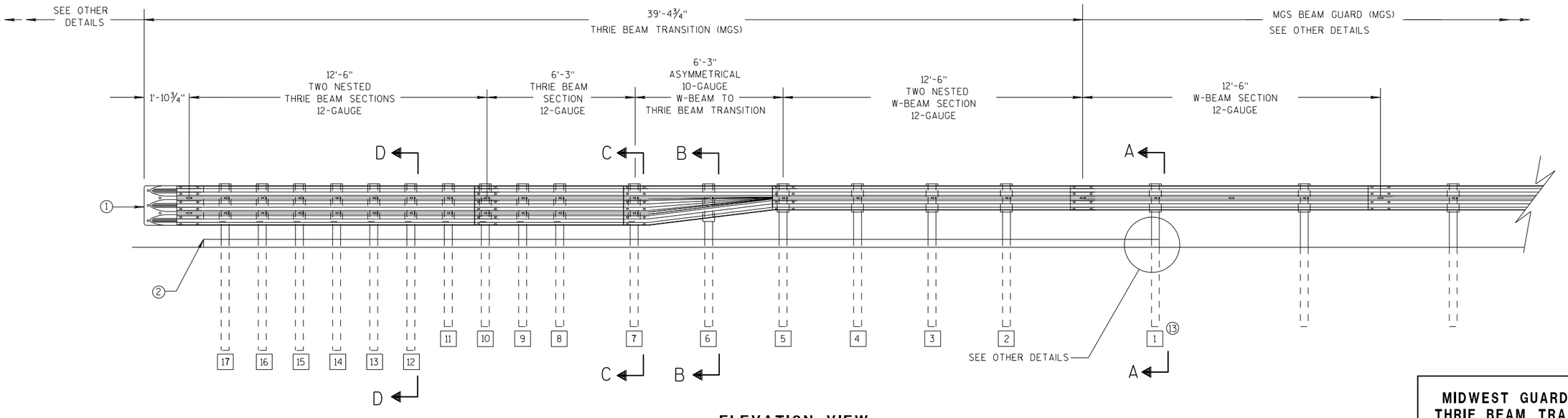
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

(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

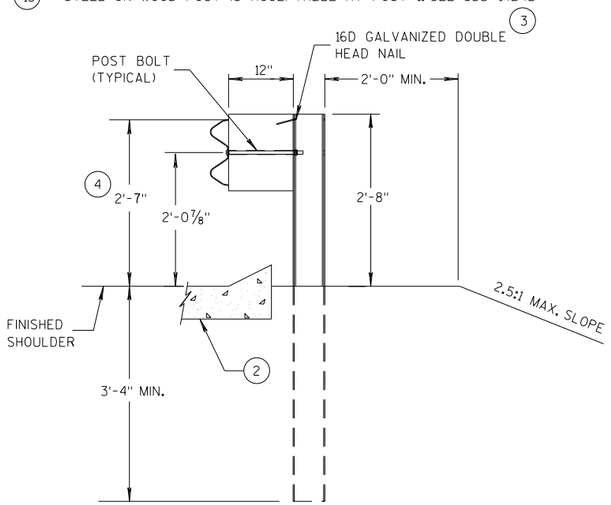
GENERAL NOTES

(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.

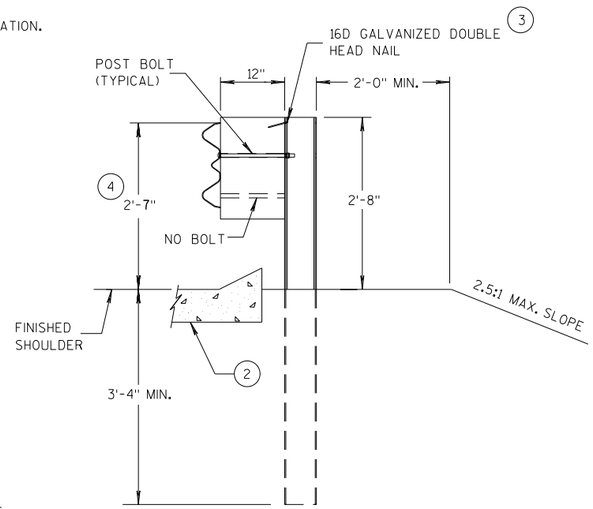
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

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



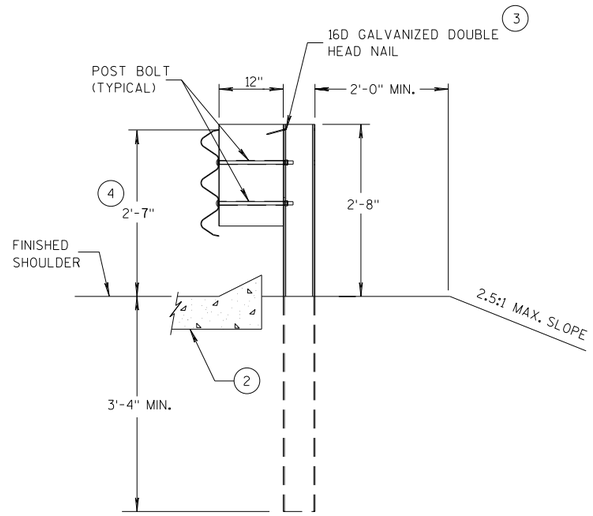
SECTION A-A (13)

POSTS 1-5



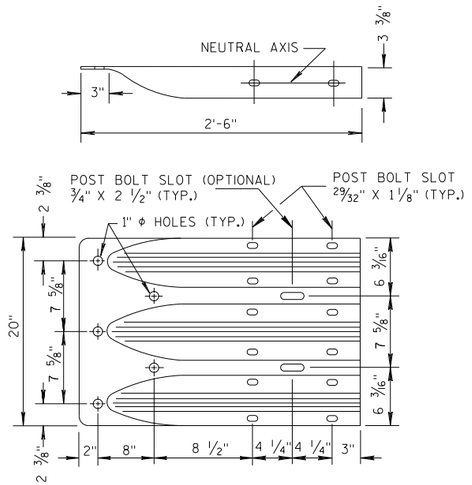
SECTION B-B

POST 6

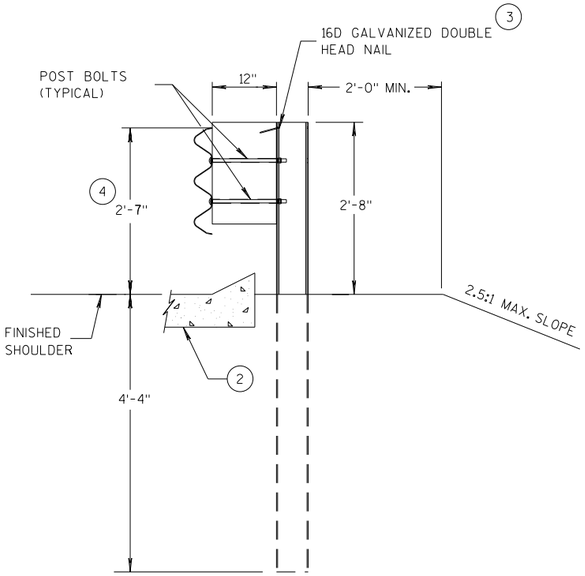


SECTION C-C

POSTS 7-11

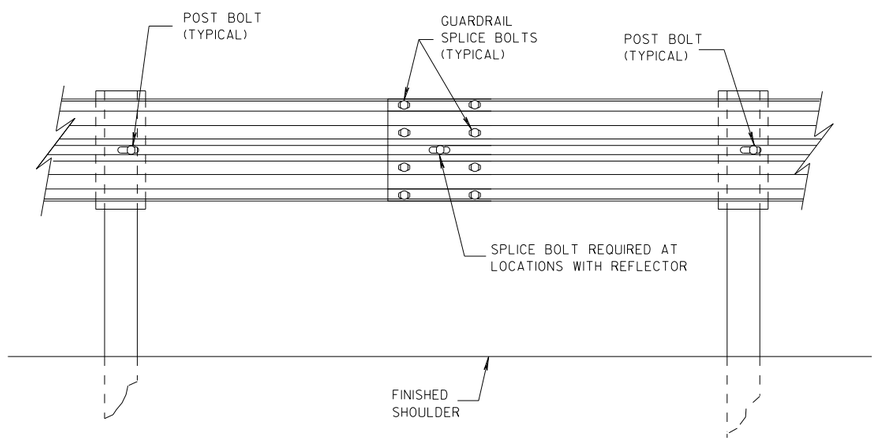


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

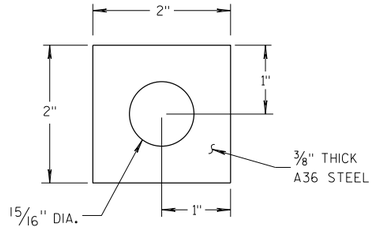
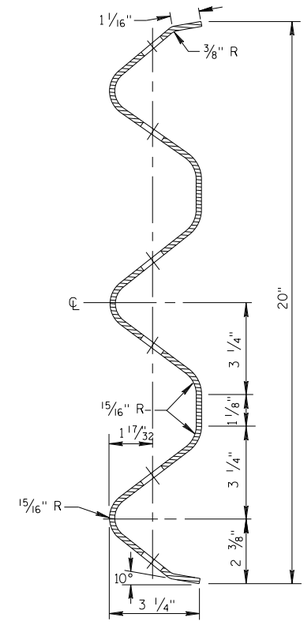


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

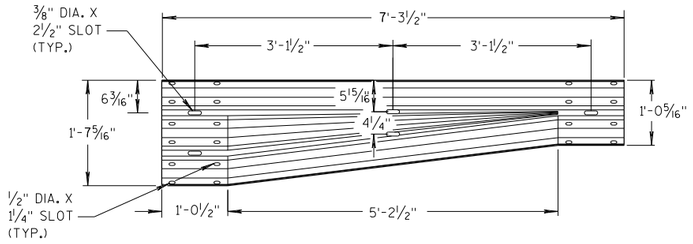
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 65

6

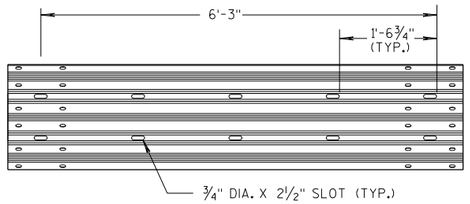
S.D.D. 14 B 45-5b

6

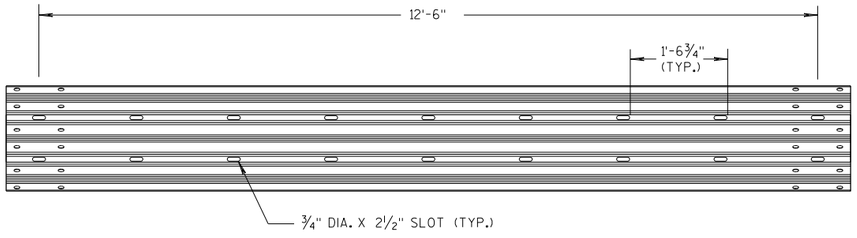
S.D.D. 14 B 45-5b



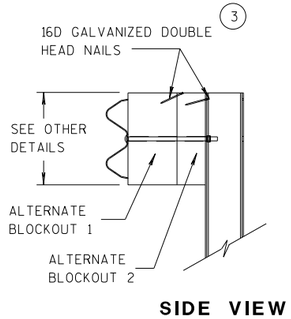
W-BEAM TO THRIE BEAM TRANSITION SECTION



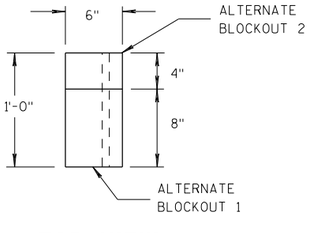
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

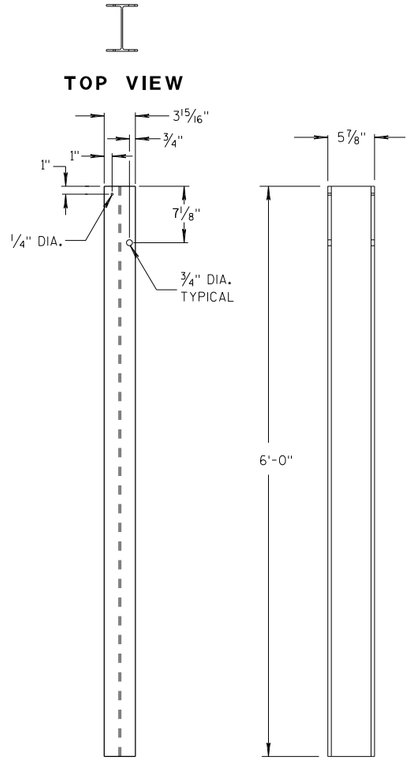


SIDE VIEW



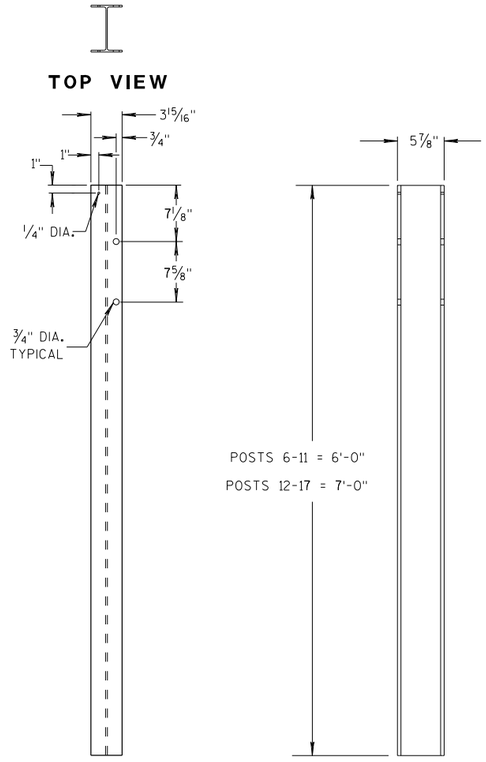
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



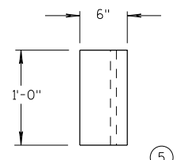
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

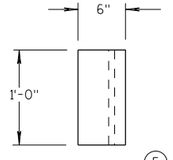


FRONT VIEW SIDE VIEW

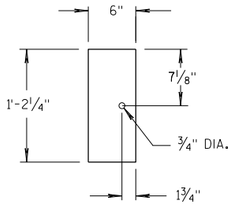
STEEL POSTS 6-17



TOP VIEW (5)

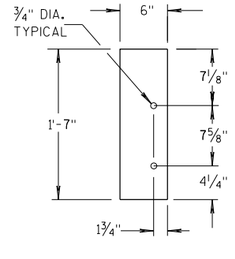


TOP VIEW (5)



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 TRANSPOF

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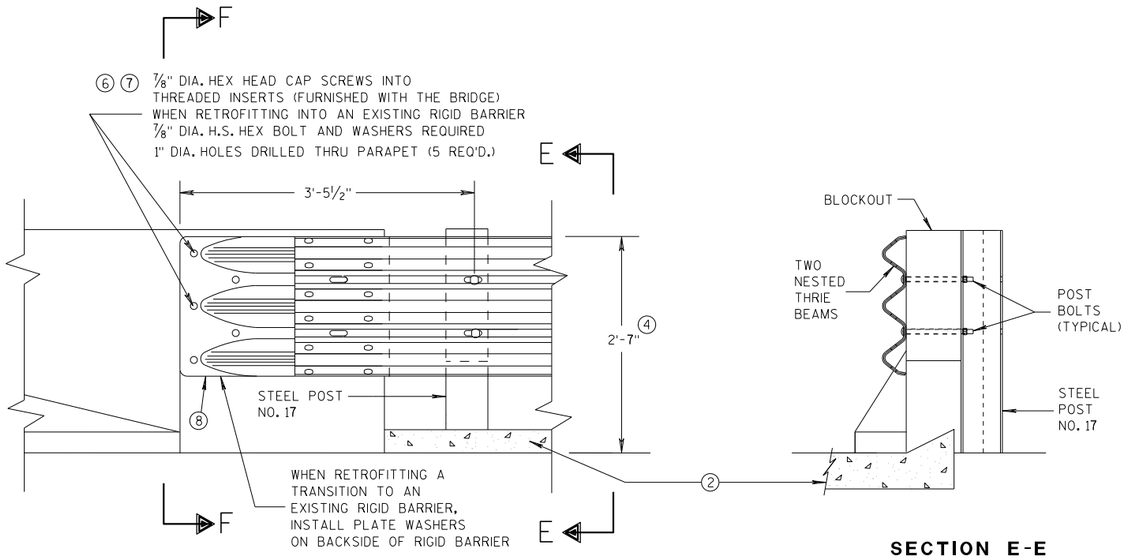


FRONT VIEW

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.

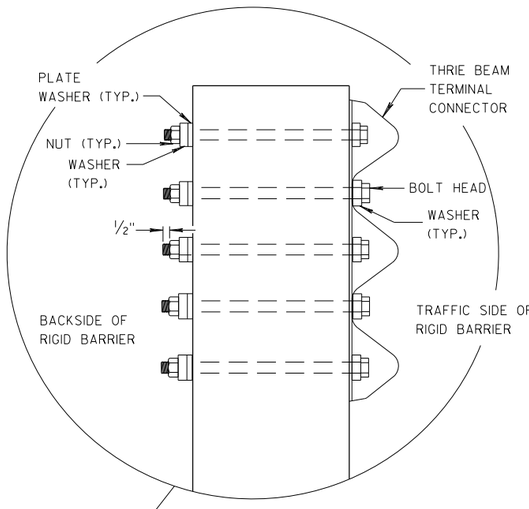
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

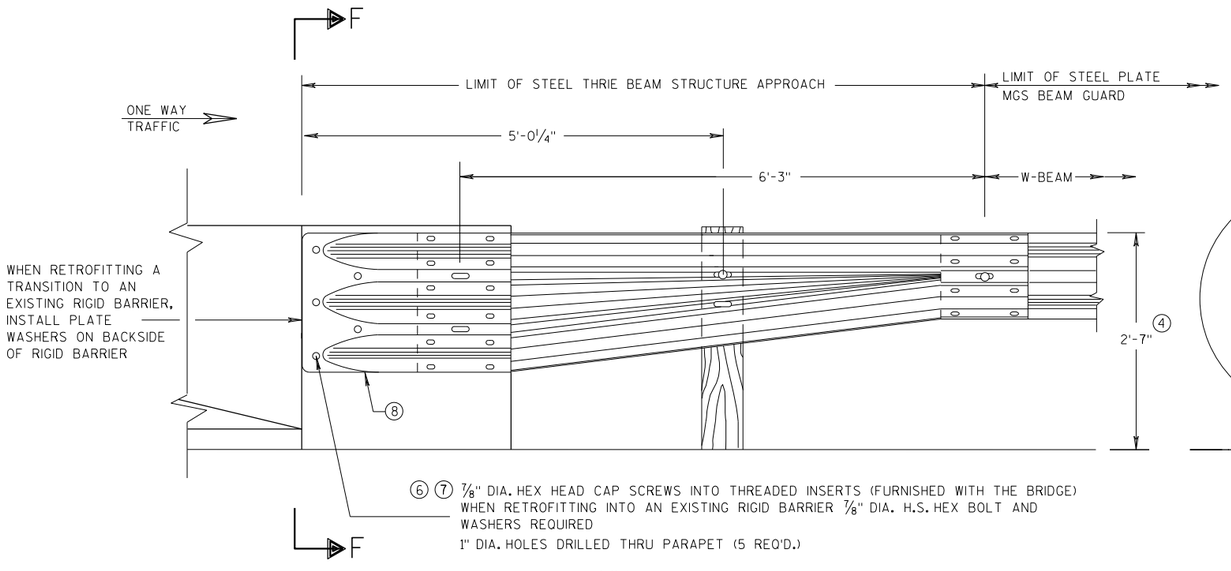
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

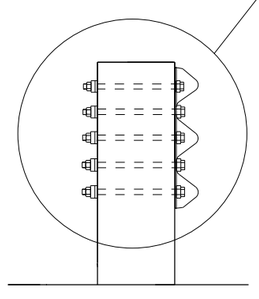
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. 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".

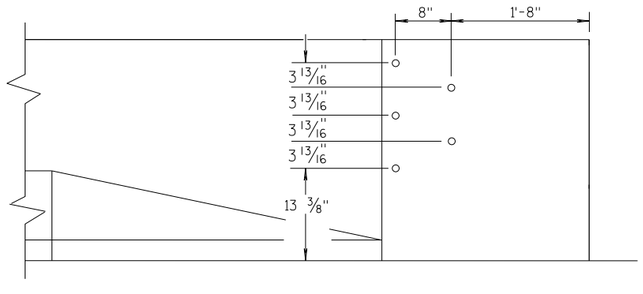




FRONT VIEW



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
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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.

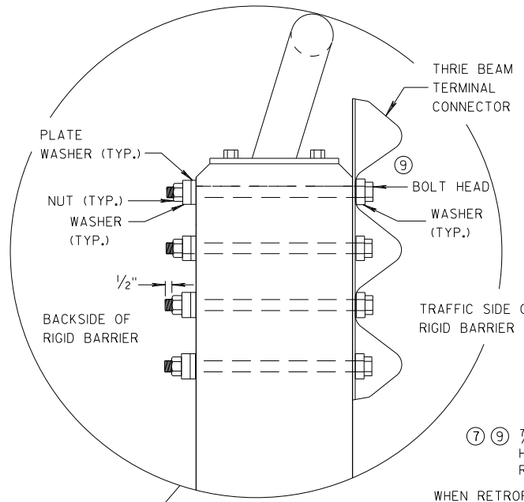
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

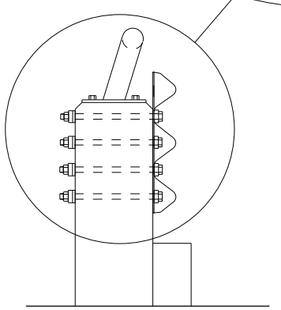
(6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(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.

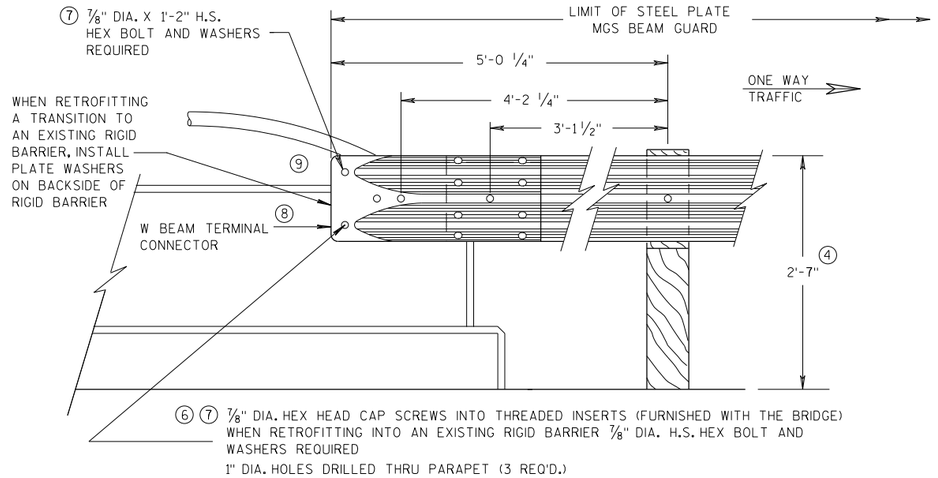
(8) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

(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.





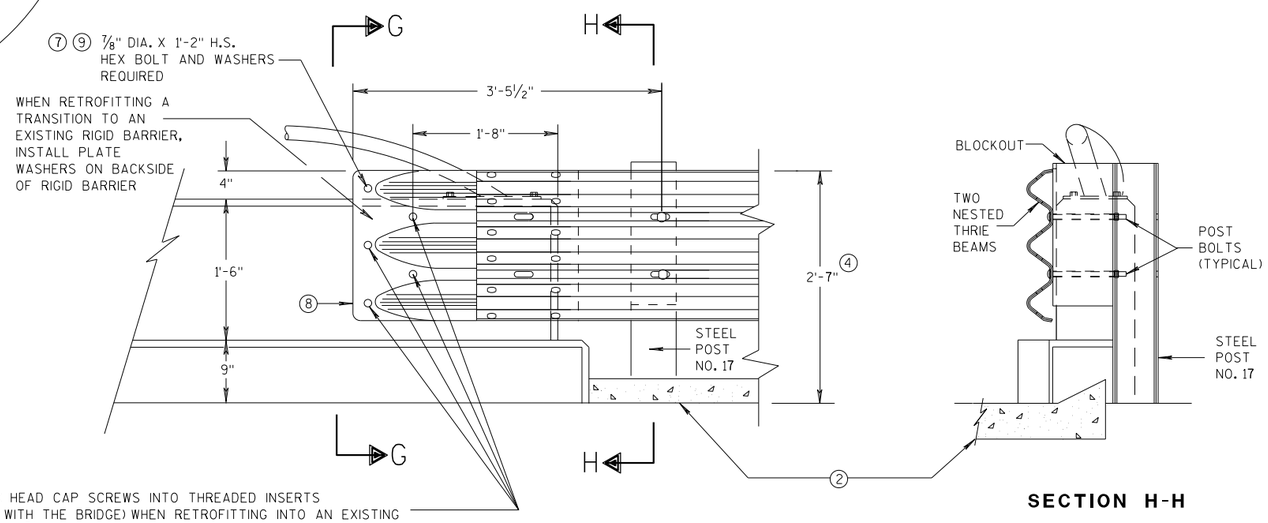
SECTION G-G



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

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



FRONT VIEW

SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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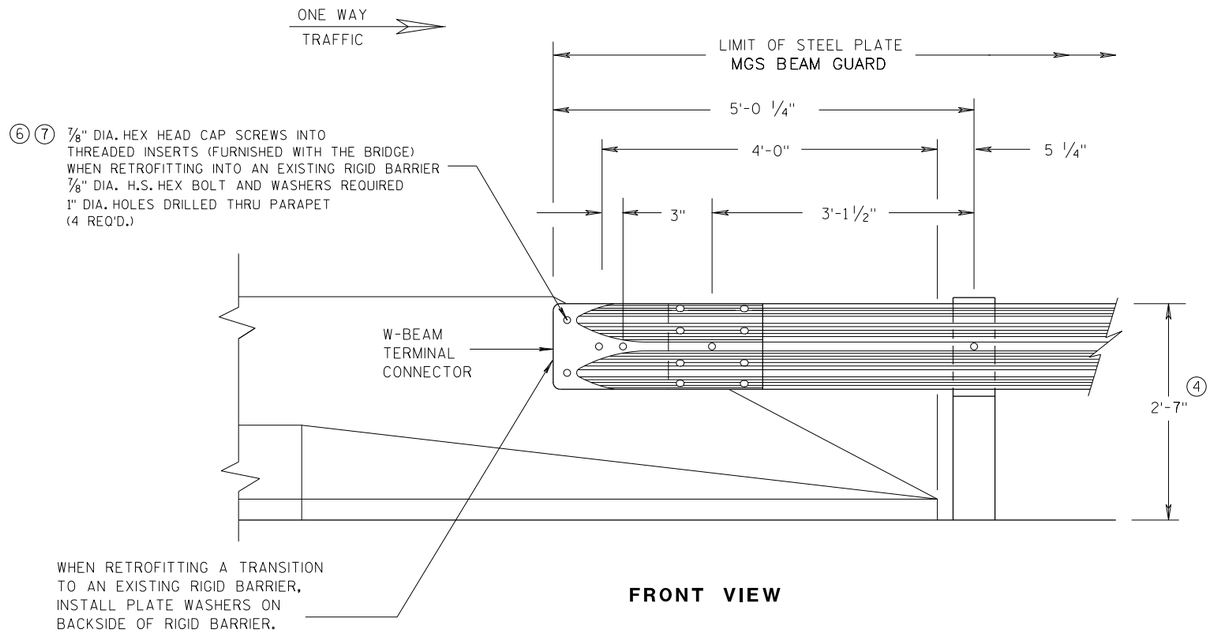


FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

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

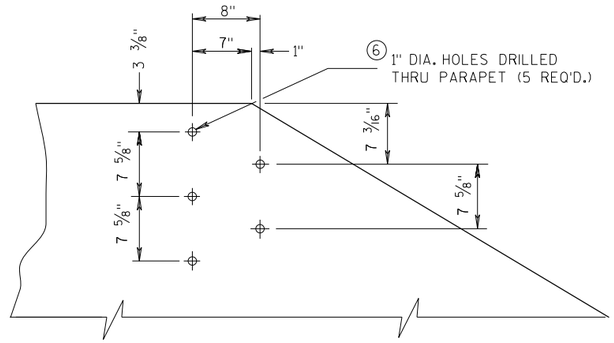
GENERAL NOTES

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

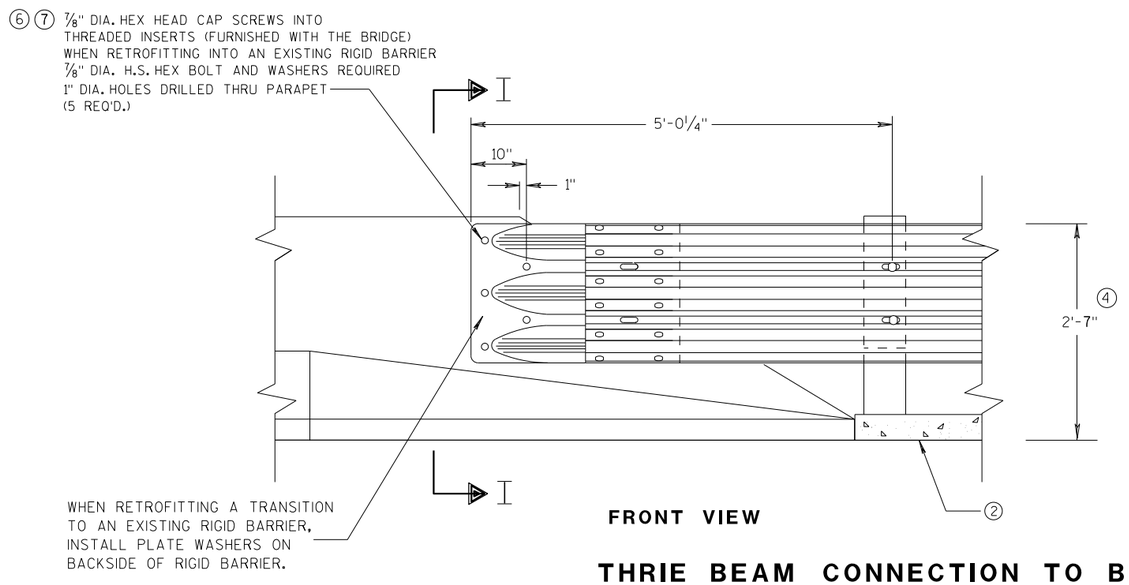
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

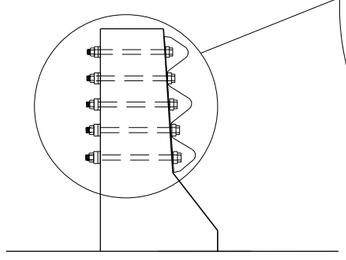
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. 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.



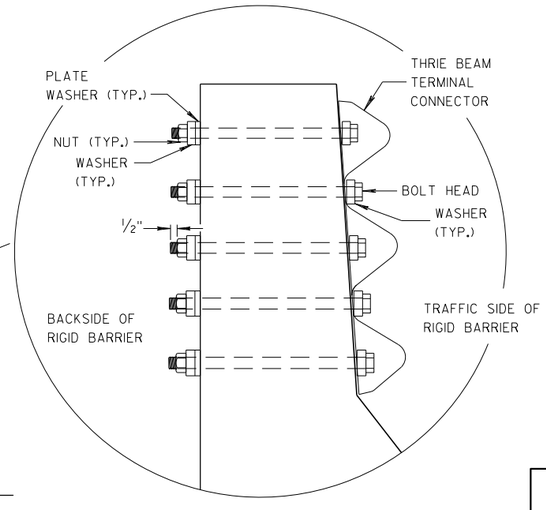
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



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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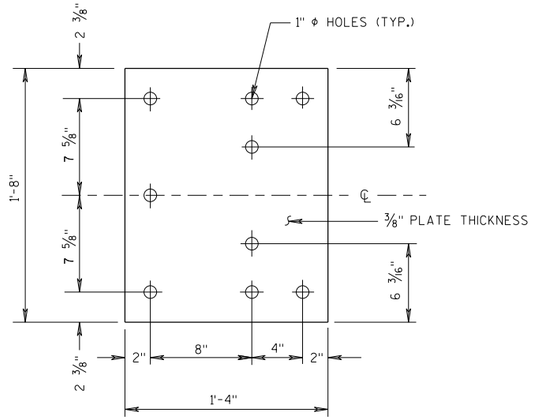
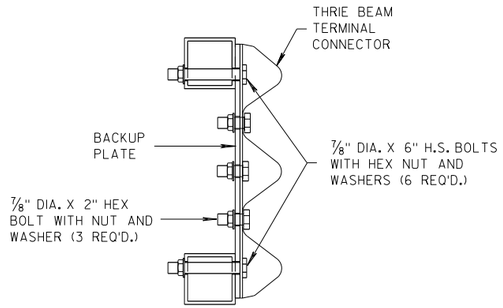
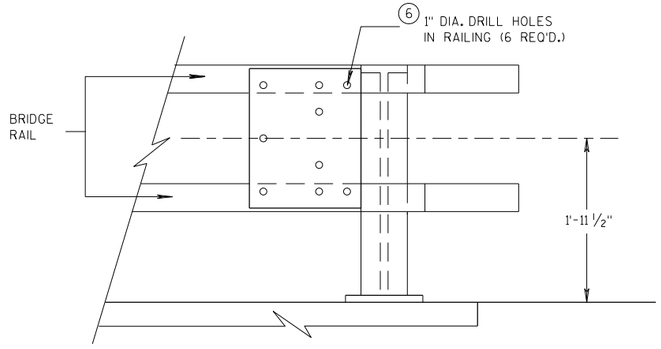


BACK-UP PLATE DETAIL



SECTION J-J

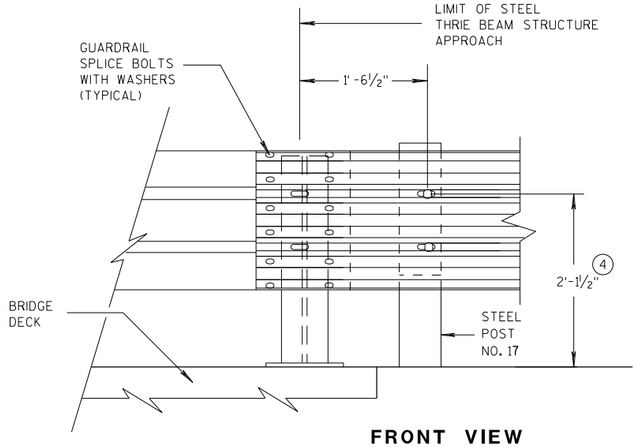


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

GENERAL NOTES

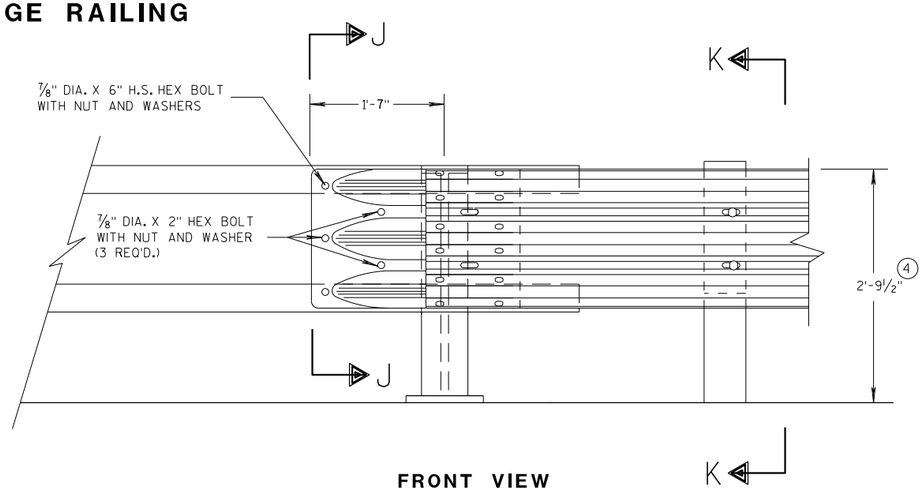
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

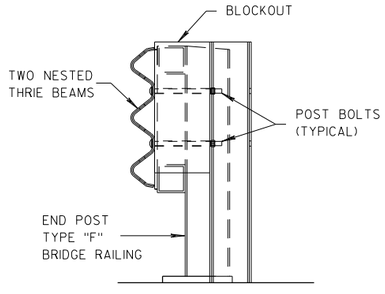


FRONT VIEW

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)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED 07/2018 — DATE — FHWA

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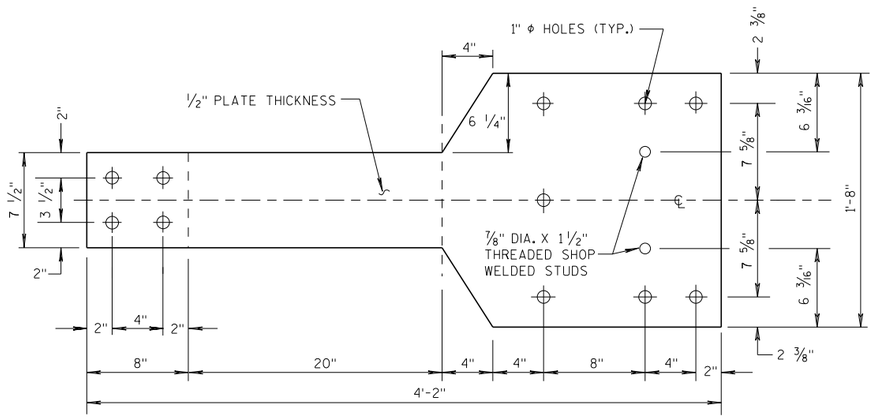
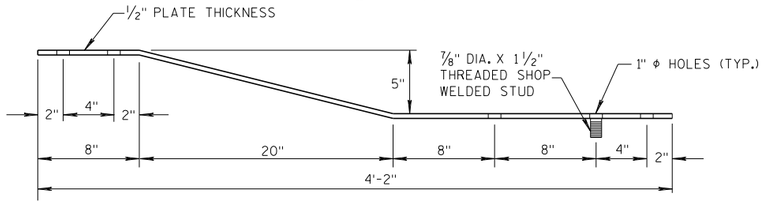
GENERAL NOTES

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

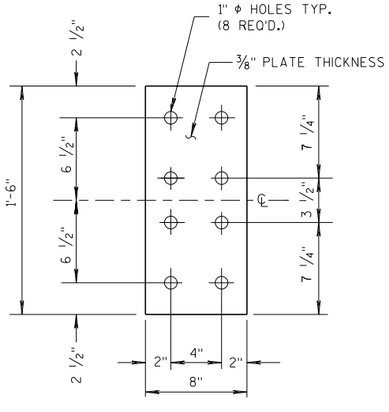


FRONT VIEW



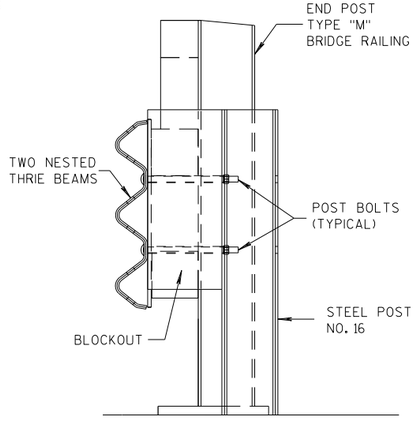
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

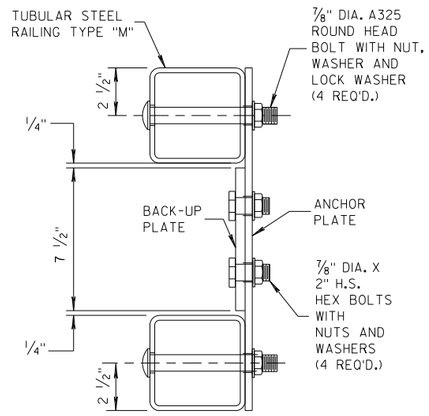


FRONT VIEW

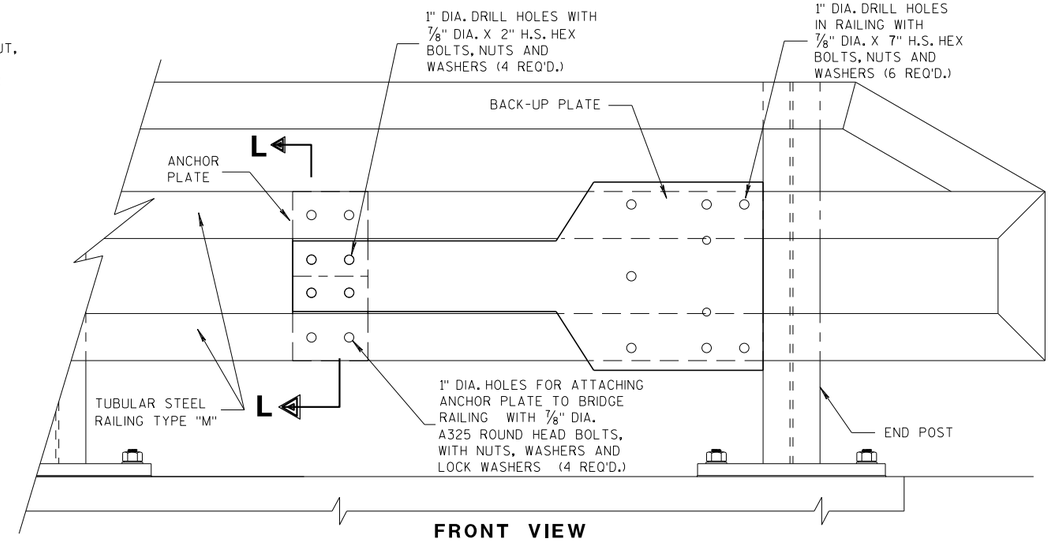
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

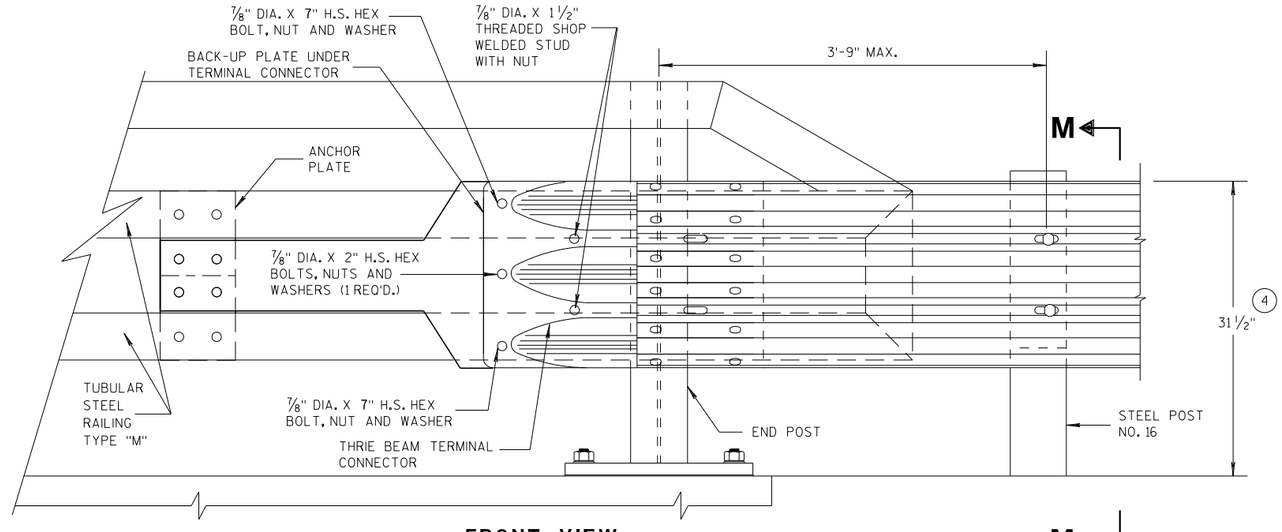


SECTION L-L

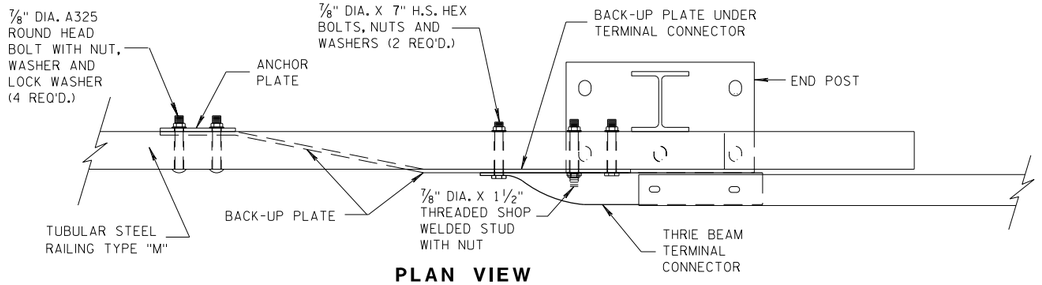


FRONT VIEW

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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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.

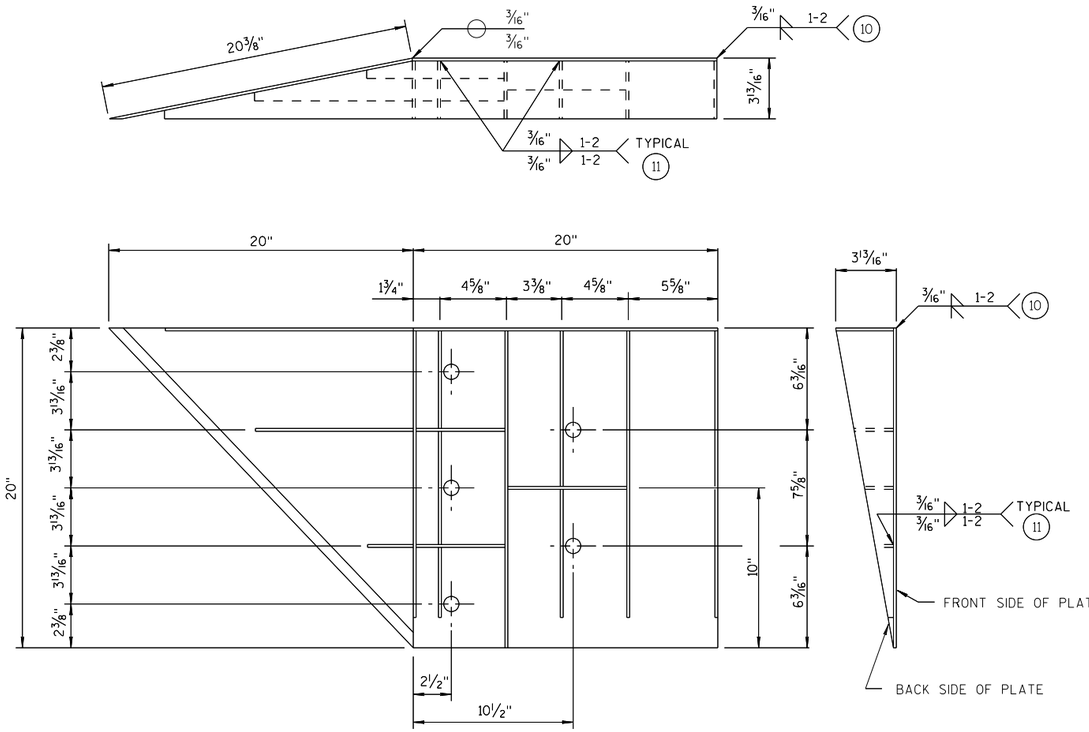
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

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)

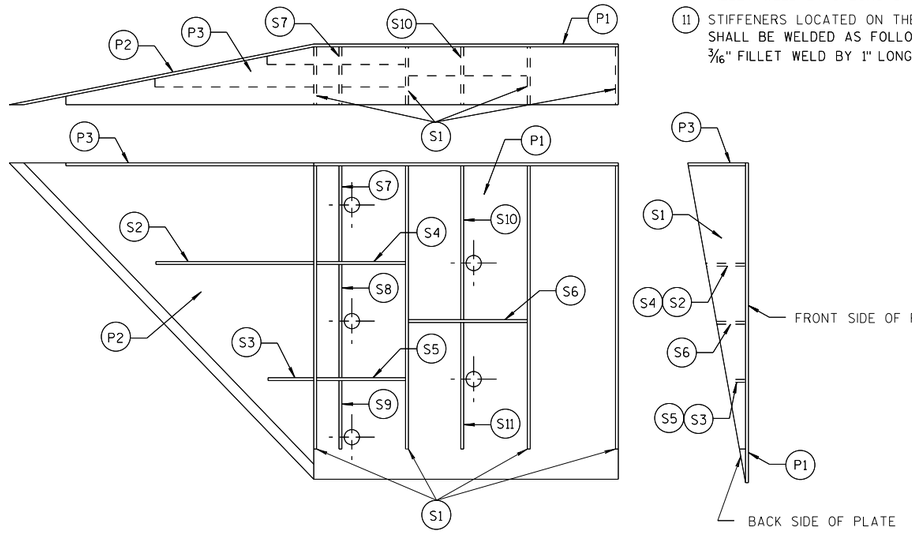


PLATE AND STIFFENER IDENTIFICATION

(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)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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7/2018
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FHWA

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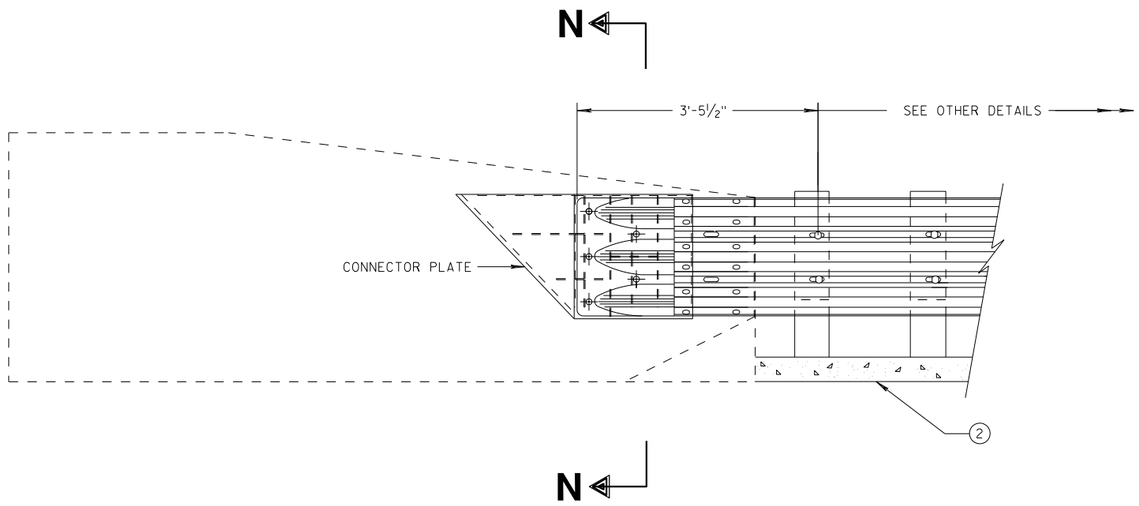
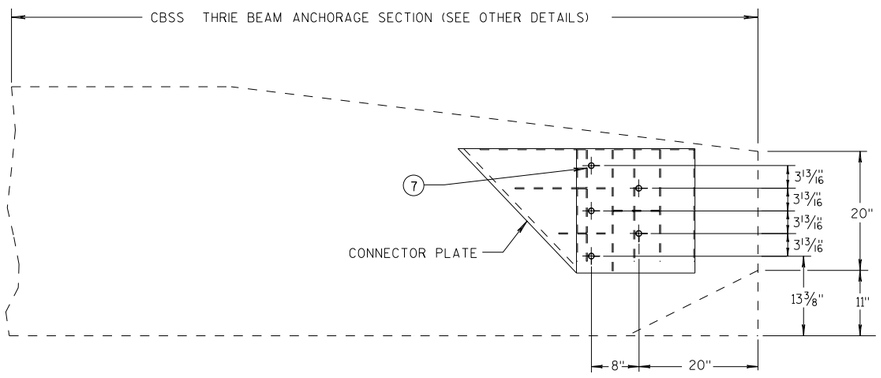


THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



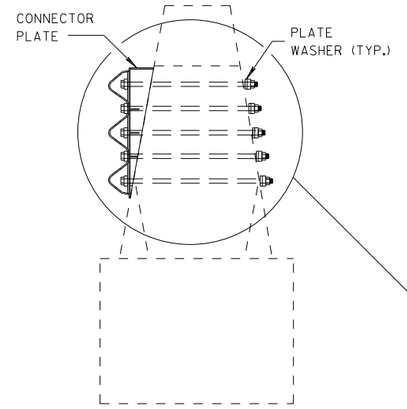
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

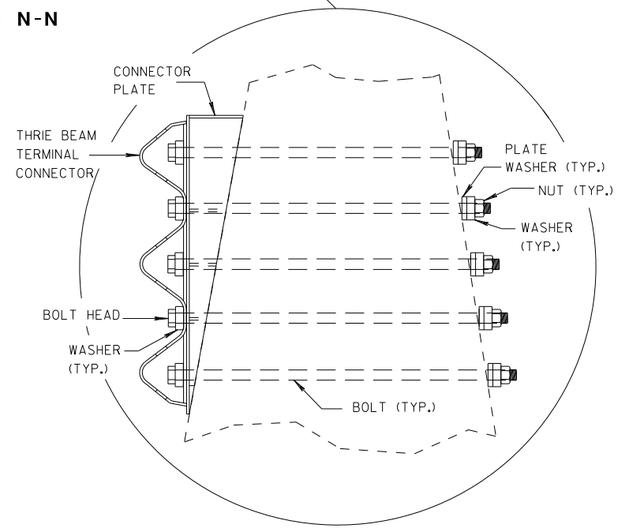
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

(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.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

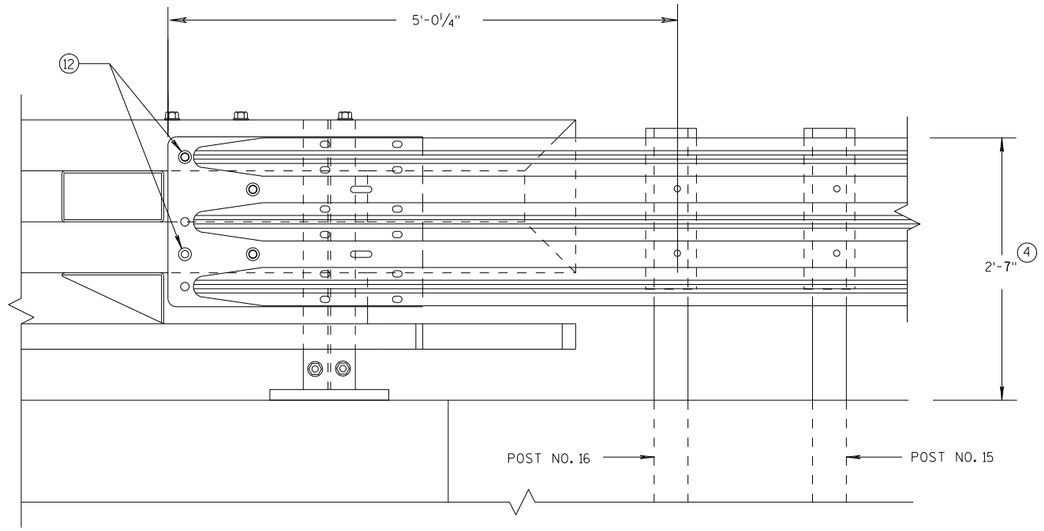
APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DI UNIT SUPERVIS
NT
FHWA

6

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

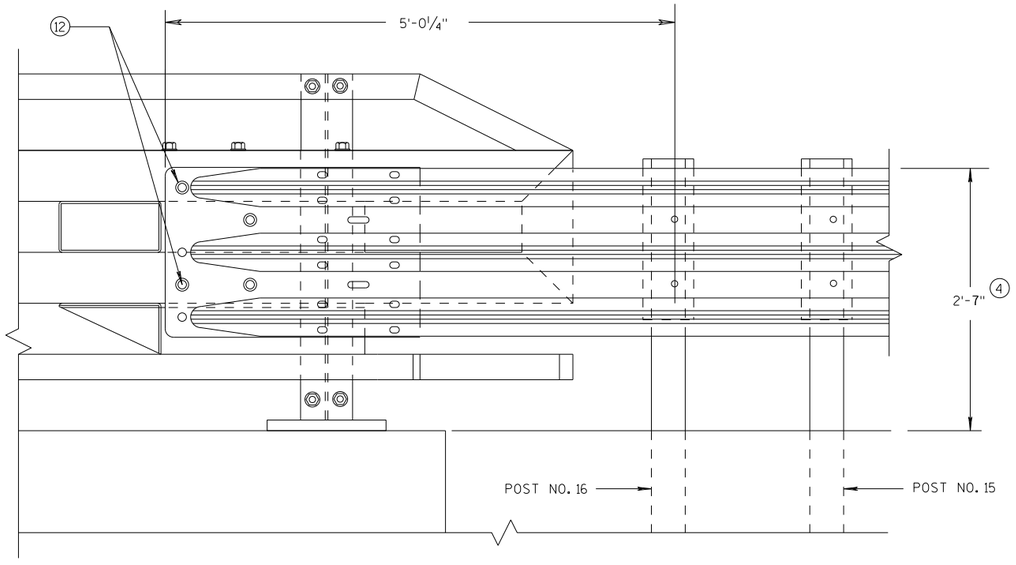
6

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



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)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS D 74 NT
UNIT SUPERVIS

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

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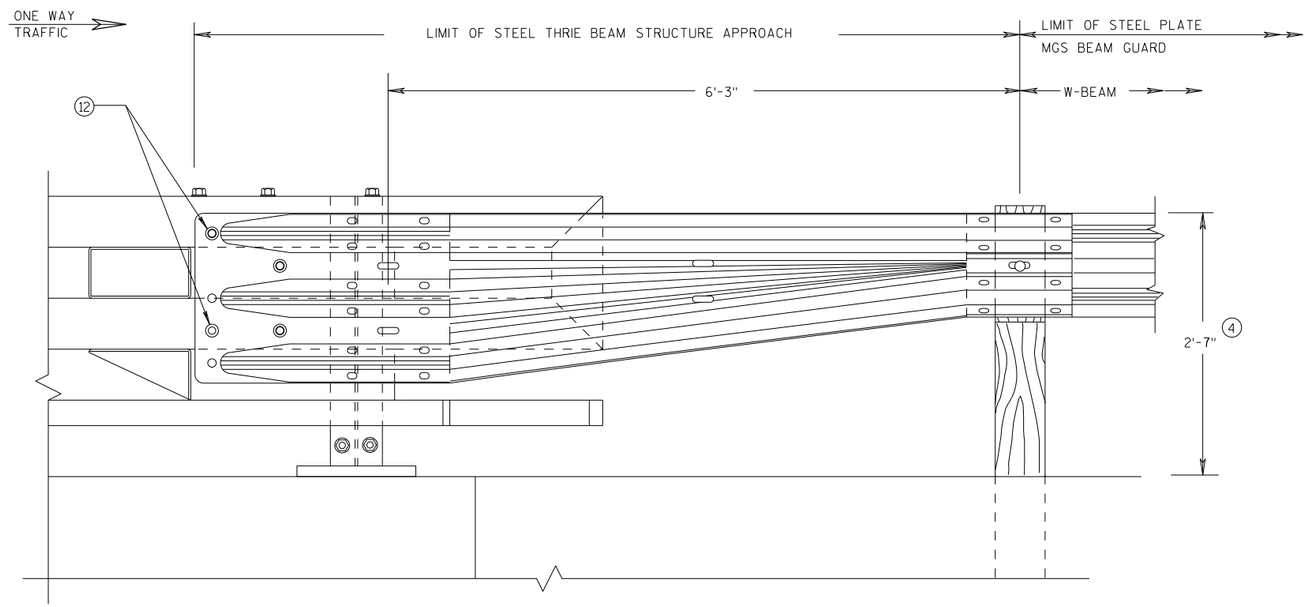
S.D.D. 14 B 45-5k



FRONT VIEW

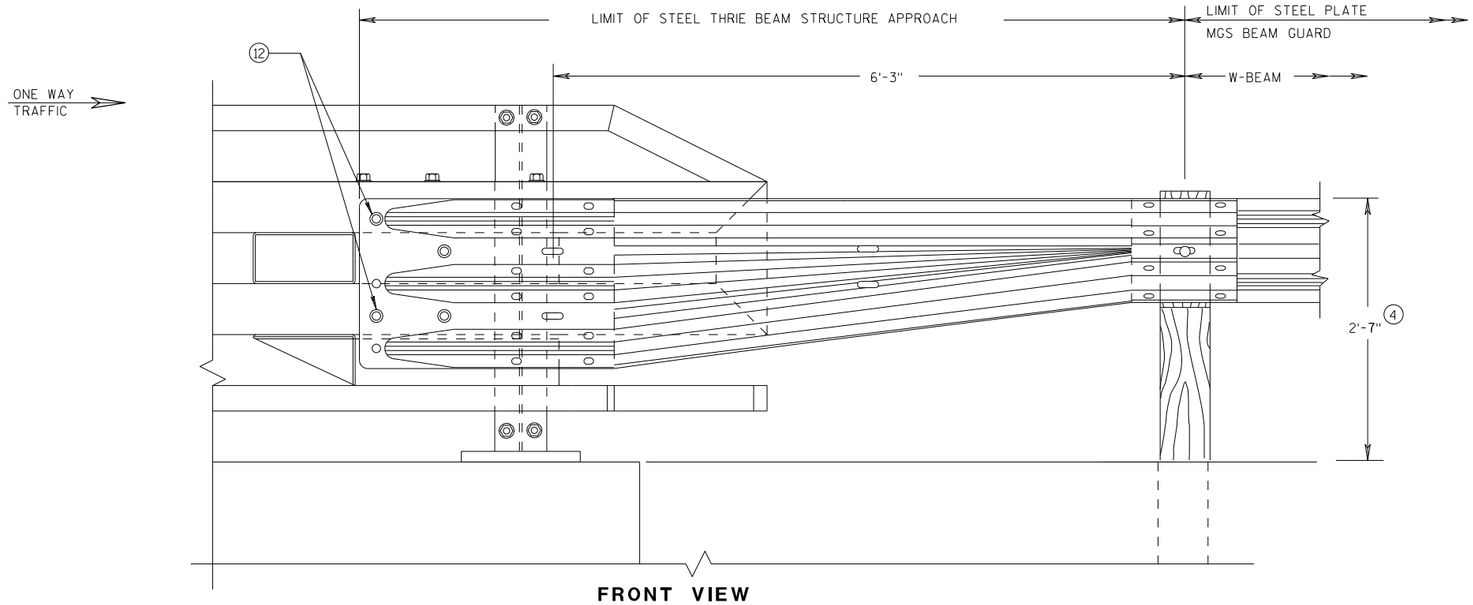
W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY3"

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

GENERAL NOTES

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

(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.



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
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D UNIT SUPERVIS
FHWA

NT

6

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

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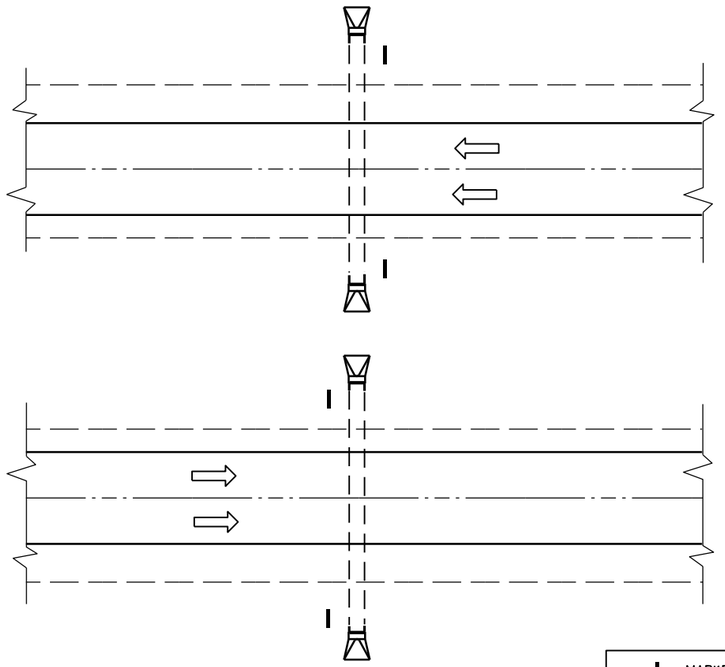
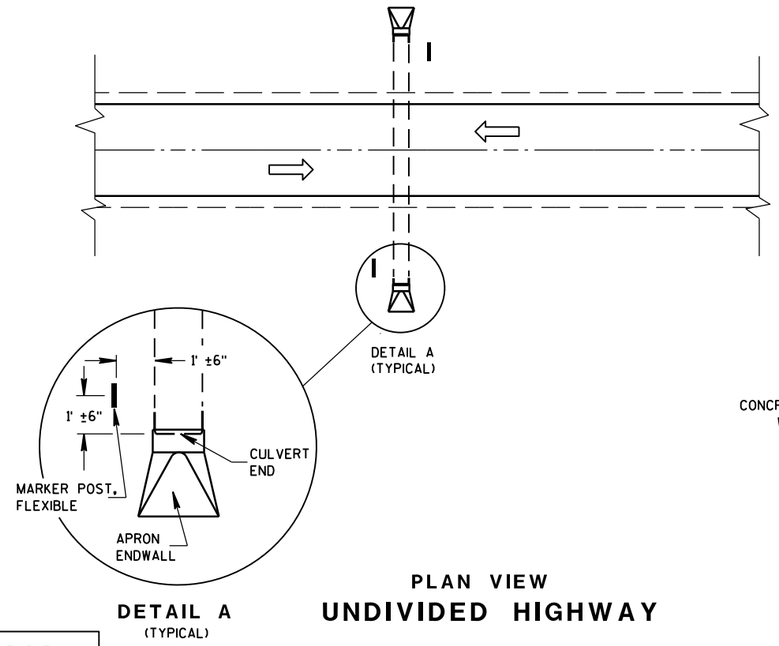
S.D.D. 14 B 45-5L



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

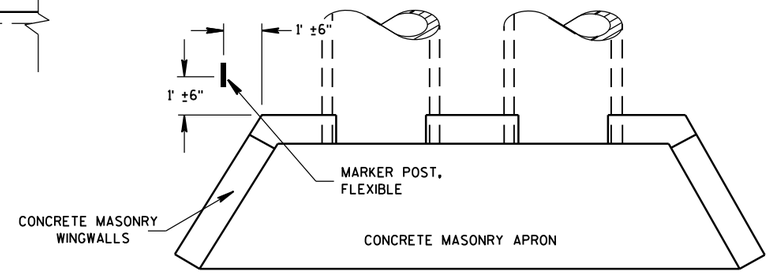
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

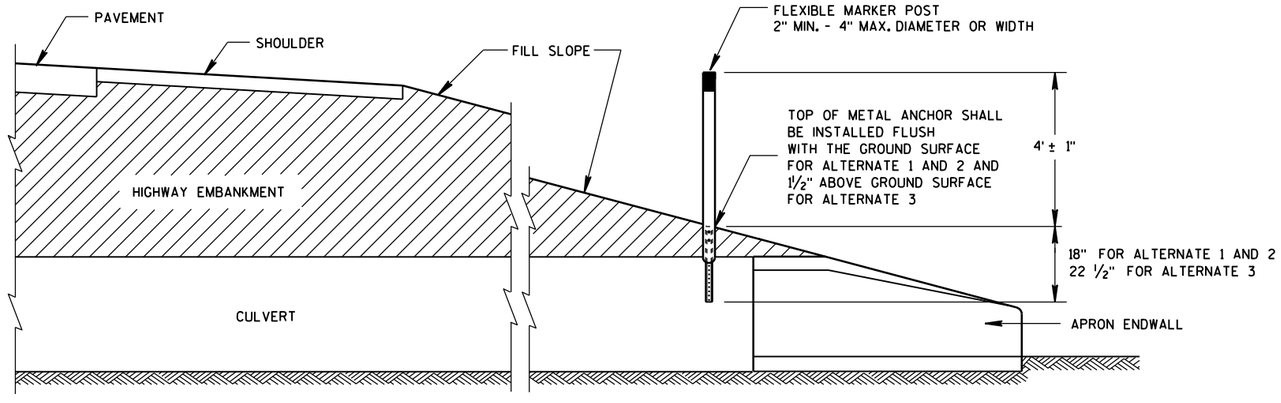
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



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

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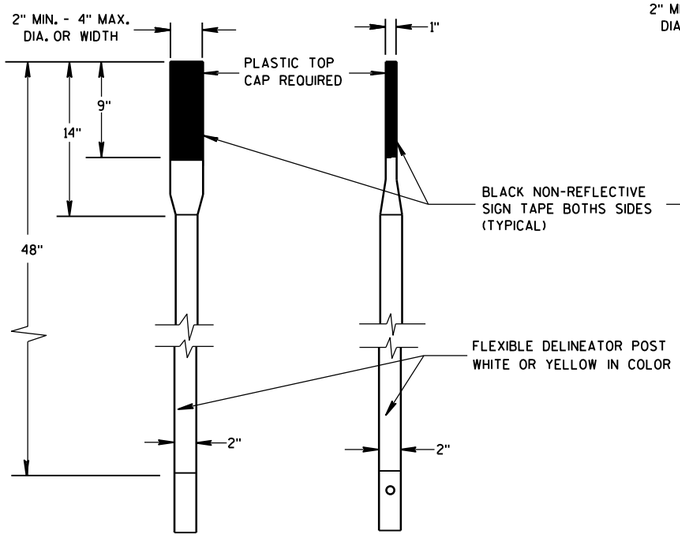
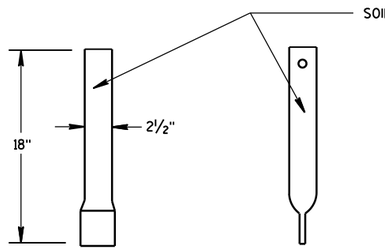
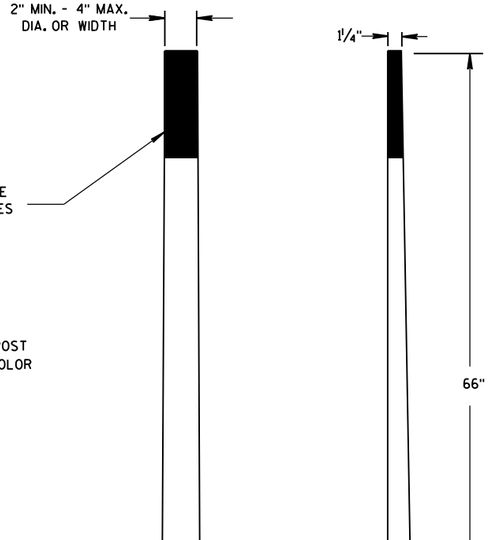
S.D.D. 15 A 3-2a





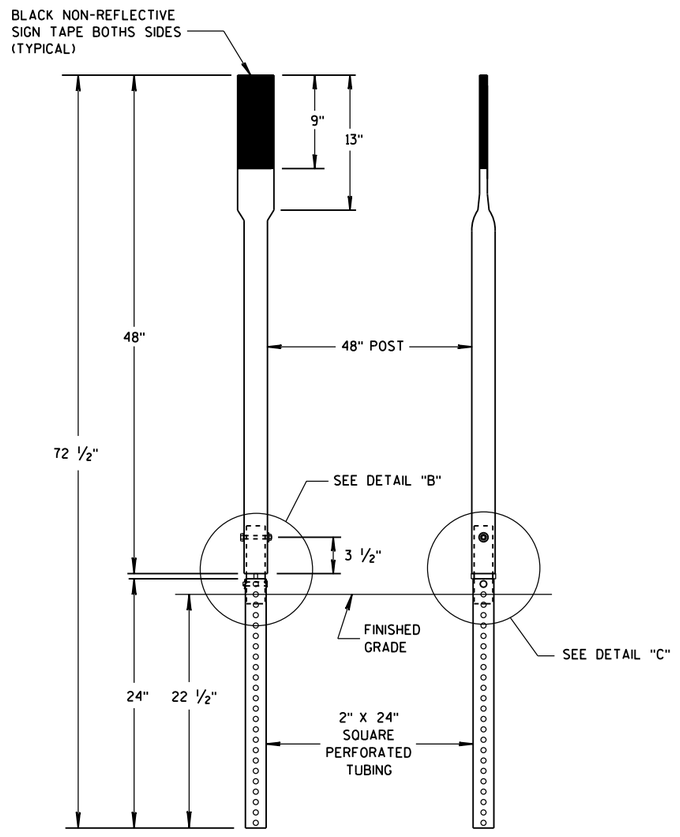
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

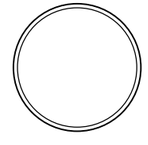
ALTERNATE 2



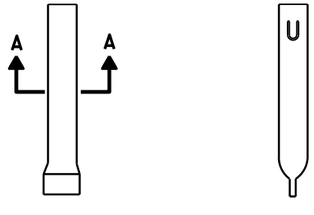
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POSTS

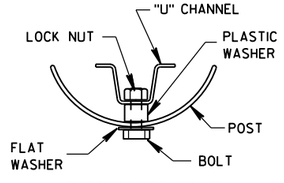


SECTION A-A

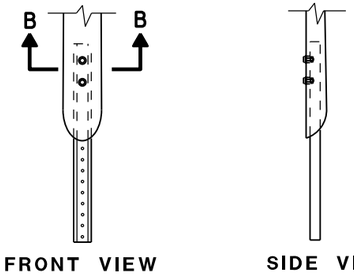


FRONT VIEW SIDE VIEW

ALTERNATE 1

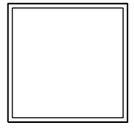


SECTION B-B

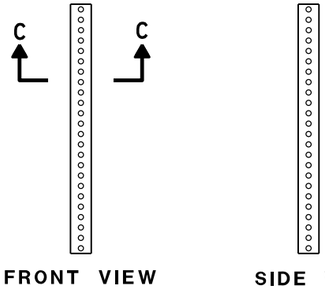


FRONT VIEW SIDE VIEW

ALTERNATE 2



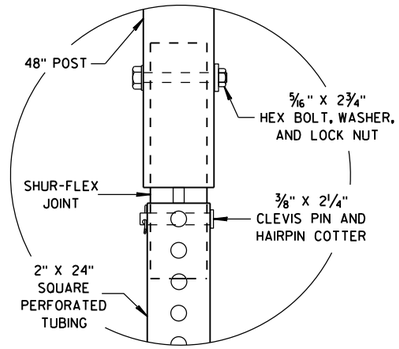
SECTION C-C



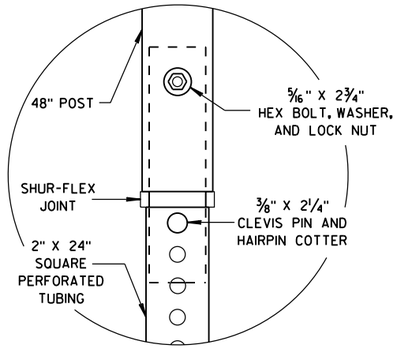
FRONT VIEW SIDE VIEW

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

6

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

6

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

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.

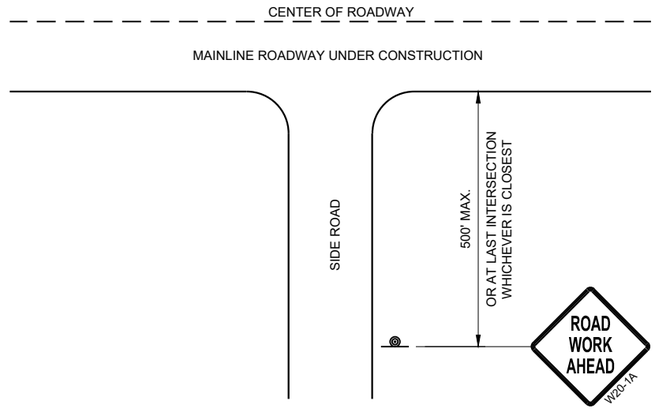
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

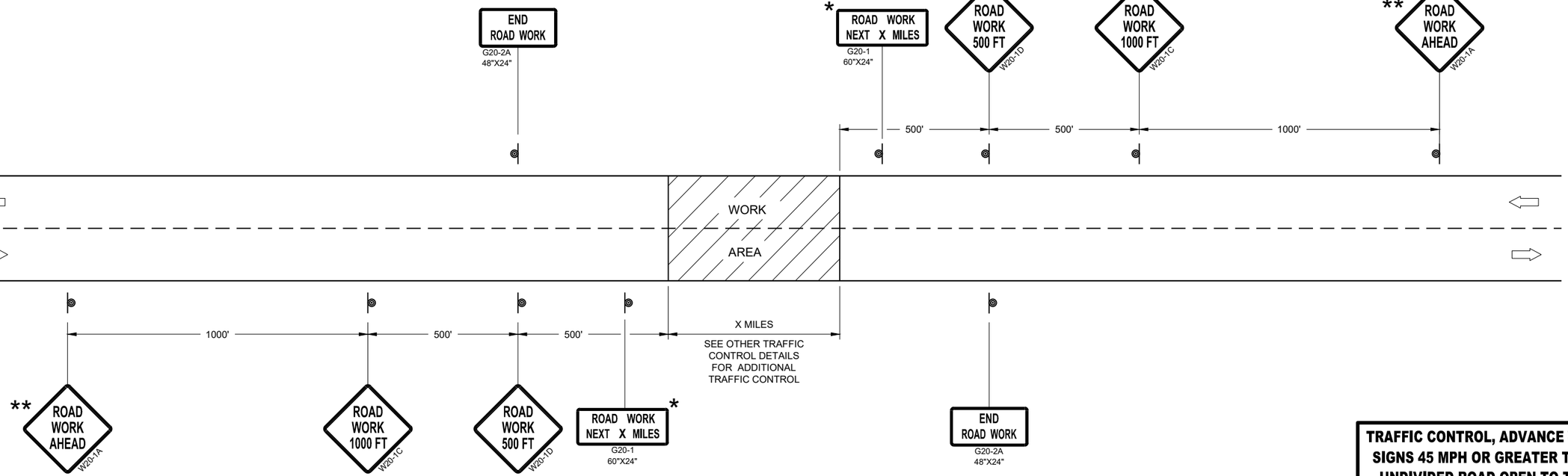
** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



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

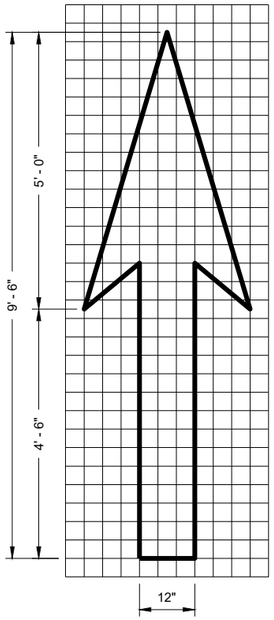
FHWA

6

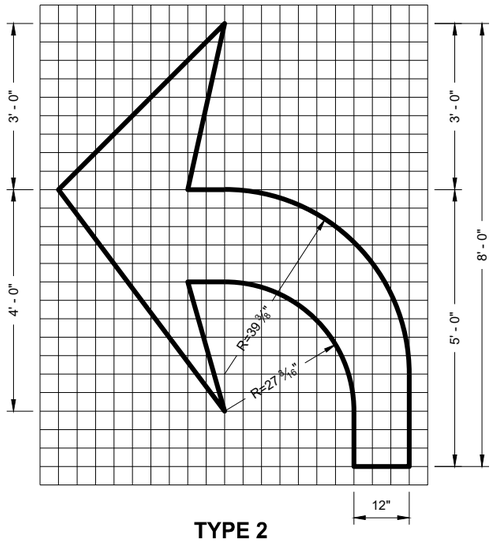
SDD 15C04 - 05

GENERAL NOTES

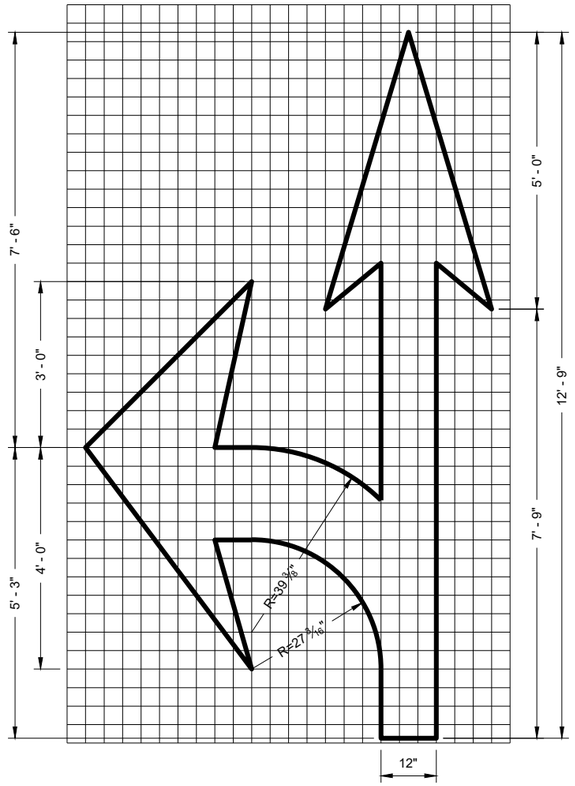
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



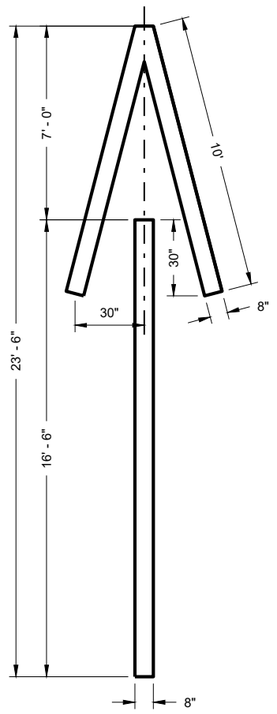
TYPE 1



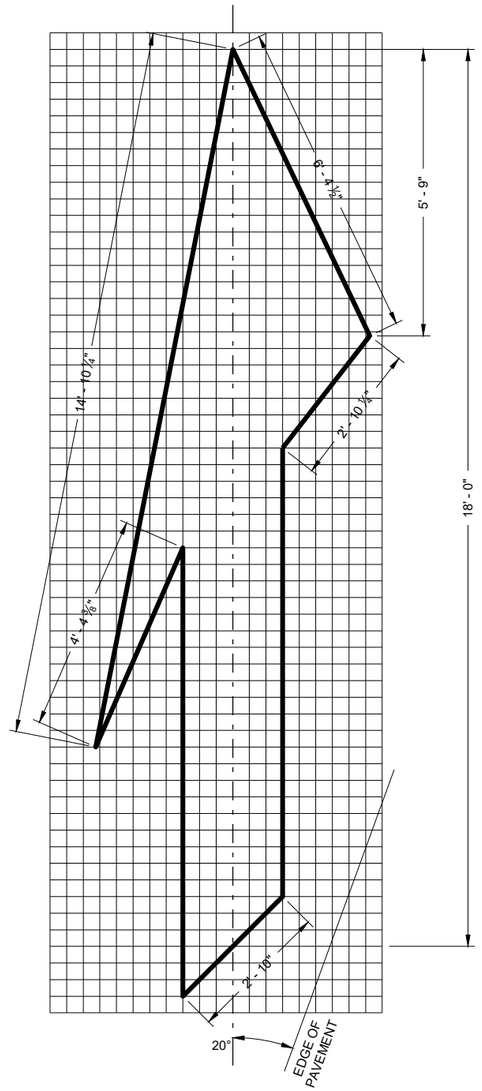
TYPE 2



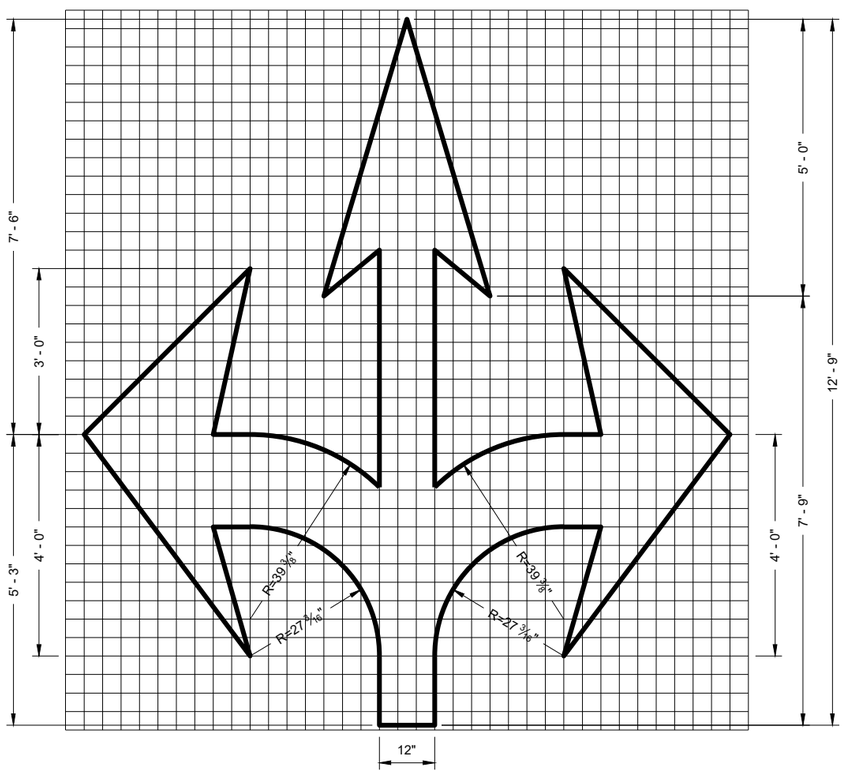
TYPE 3



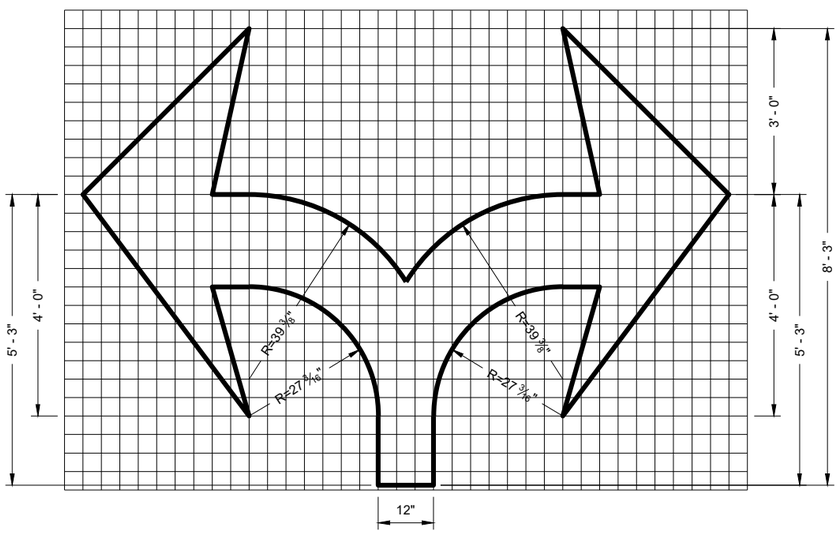
TYPE 4



TYPE 5 LANE DROP ARROW



TYPE 6



TYPE 7

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019
DATE

/S/ Matthew Rauch
STATE SIGNING AND MAF ENGINEER

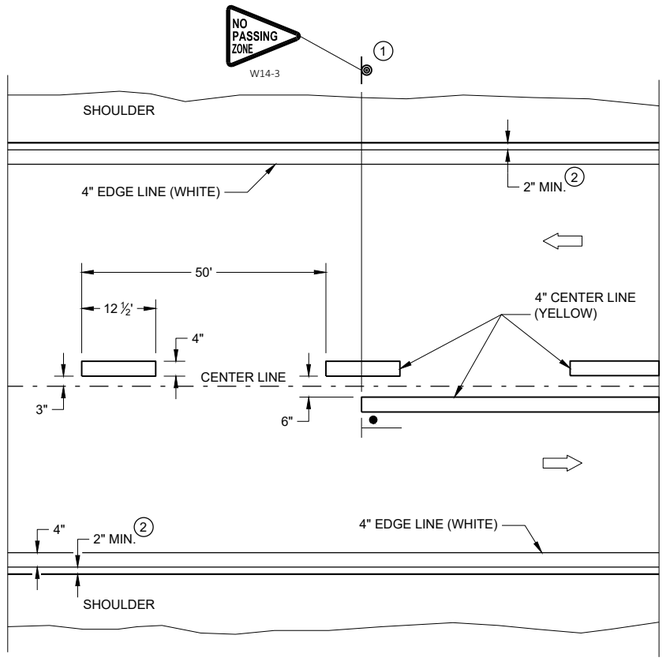
FHWA

6

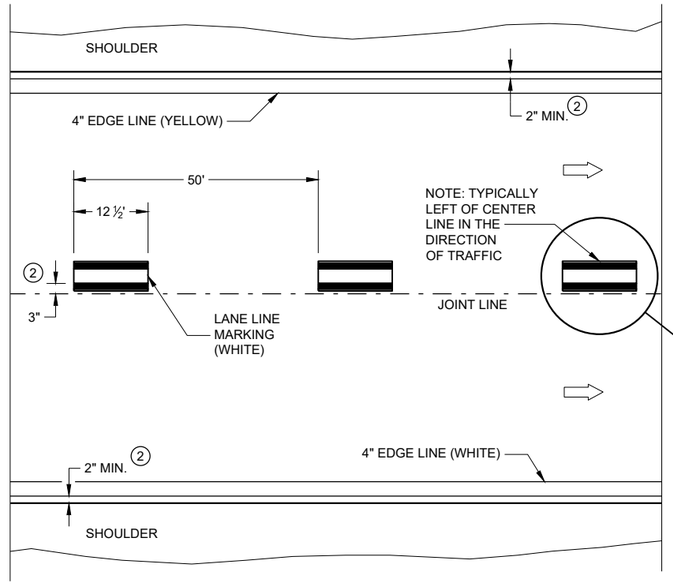
SDD 15C07 - 15c

6

SDD 15C07 - 15c

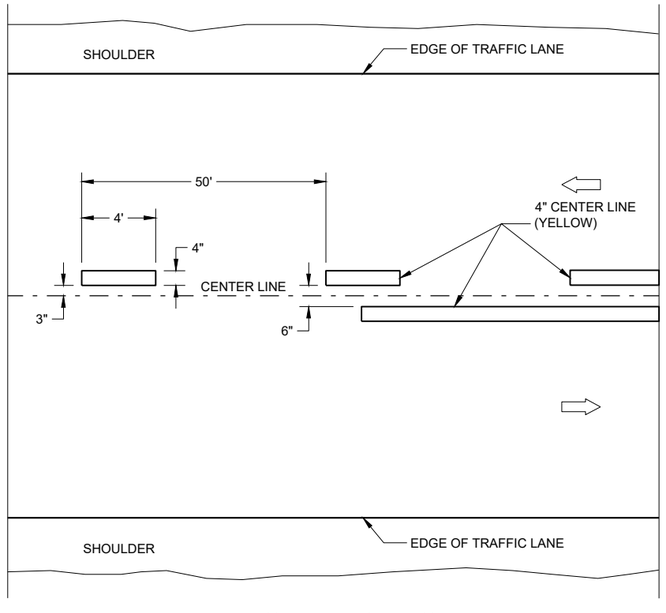


TWO WAY TRAFFIC

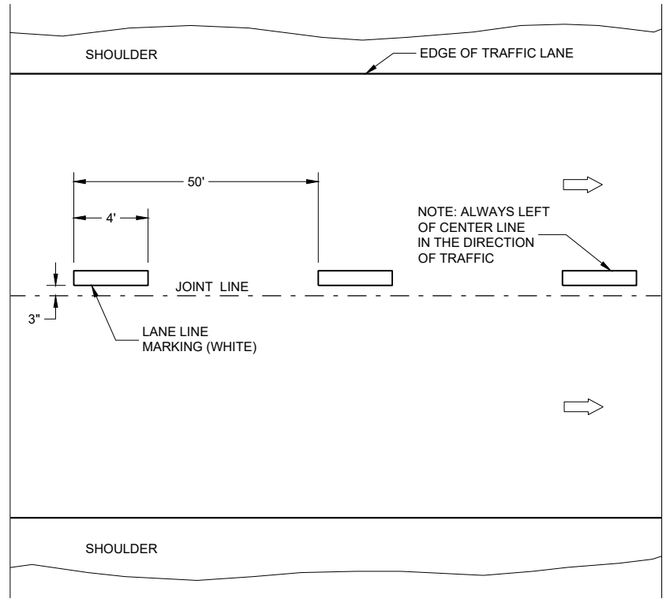


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

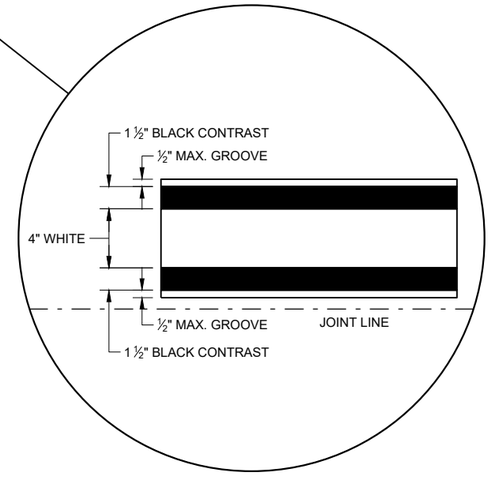
1. LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
2. MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

"T" MARKING

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC



LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

SDD 15C08 - 20a

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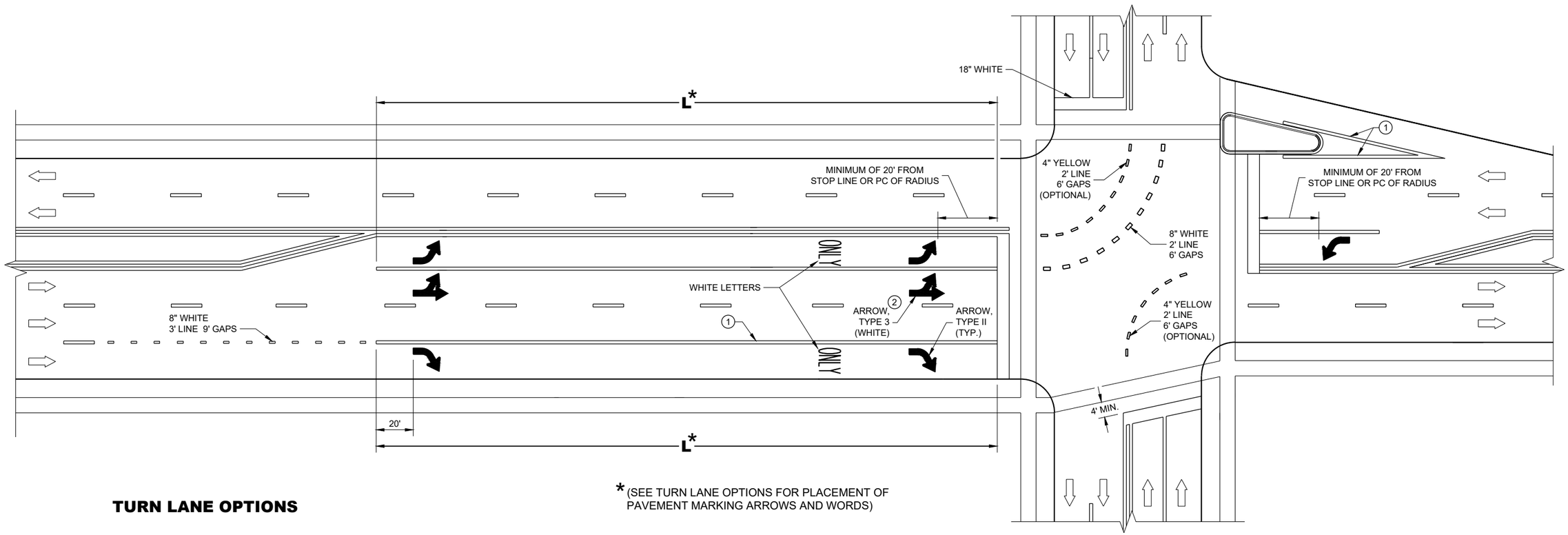
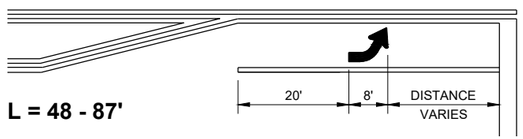


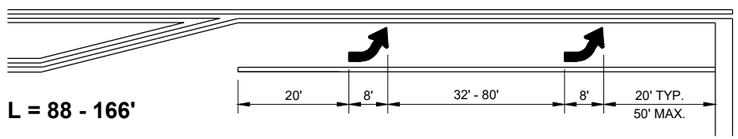
* (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

TURN LANE OPTIONS

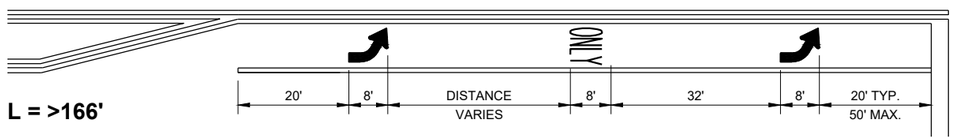
LENGTH OF TURN BAY (**L**) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



L = 48 - 87'



L = 88 - 166'



L = >166'

GENERAL NOTES

1. 8" WHITE
2. 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

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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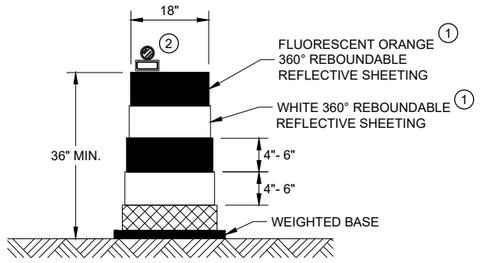
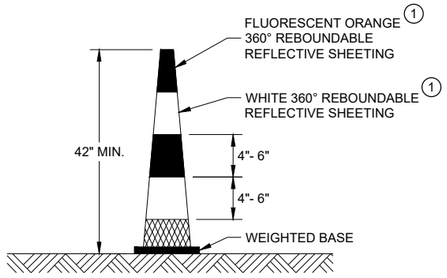
SDD 15C08 - 20c

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.

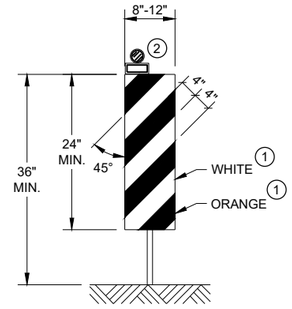


DRUM



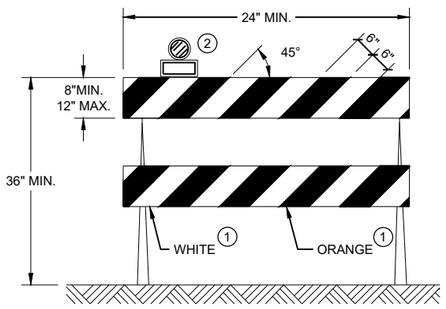
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



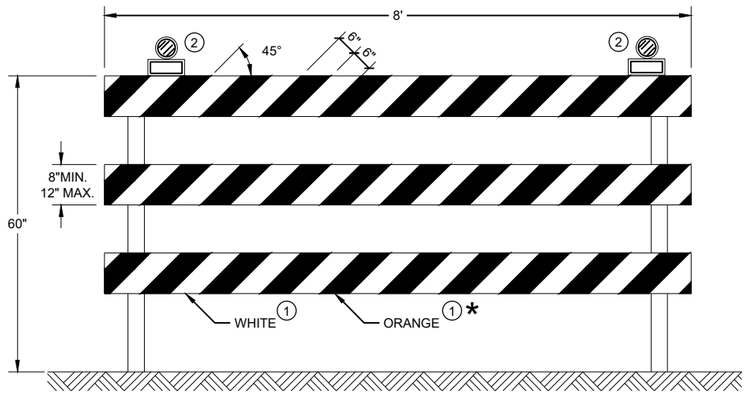
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEE
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LEGEND

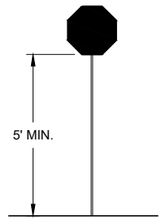
SIGN ON PORTABLE OR PERMANENT SUPPORT

TEMPORARY PORTABLE RUMBLE STRIP ARRAY

DIRECTION OF TRAFFIC

WORK AREA

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



STOP/SLOW PADDLE ON SUPPORT STAFF

GENERAL NOTES

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

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

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

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

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

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

FLAGGING

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

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

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

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

TEMPORARY PORTABLE RUMBLE STRIPS

UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

(3) EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

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

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

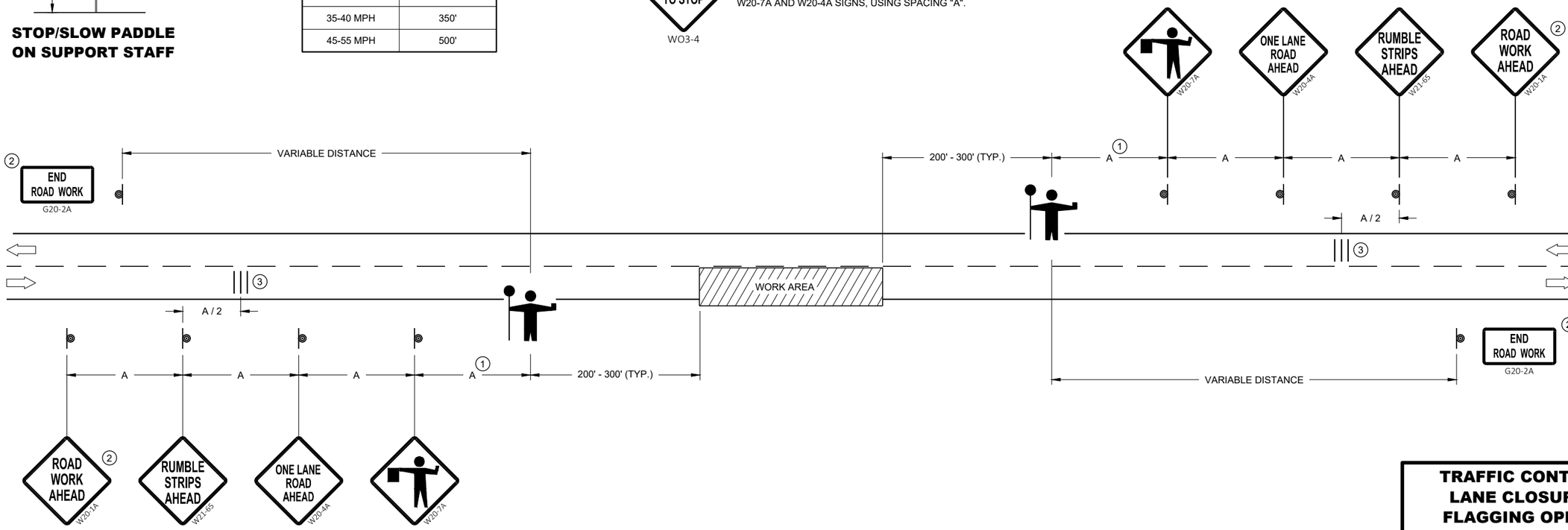
DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

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

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

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SDD 15C12 - 07

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.

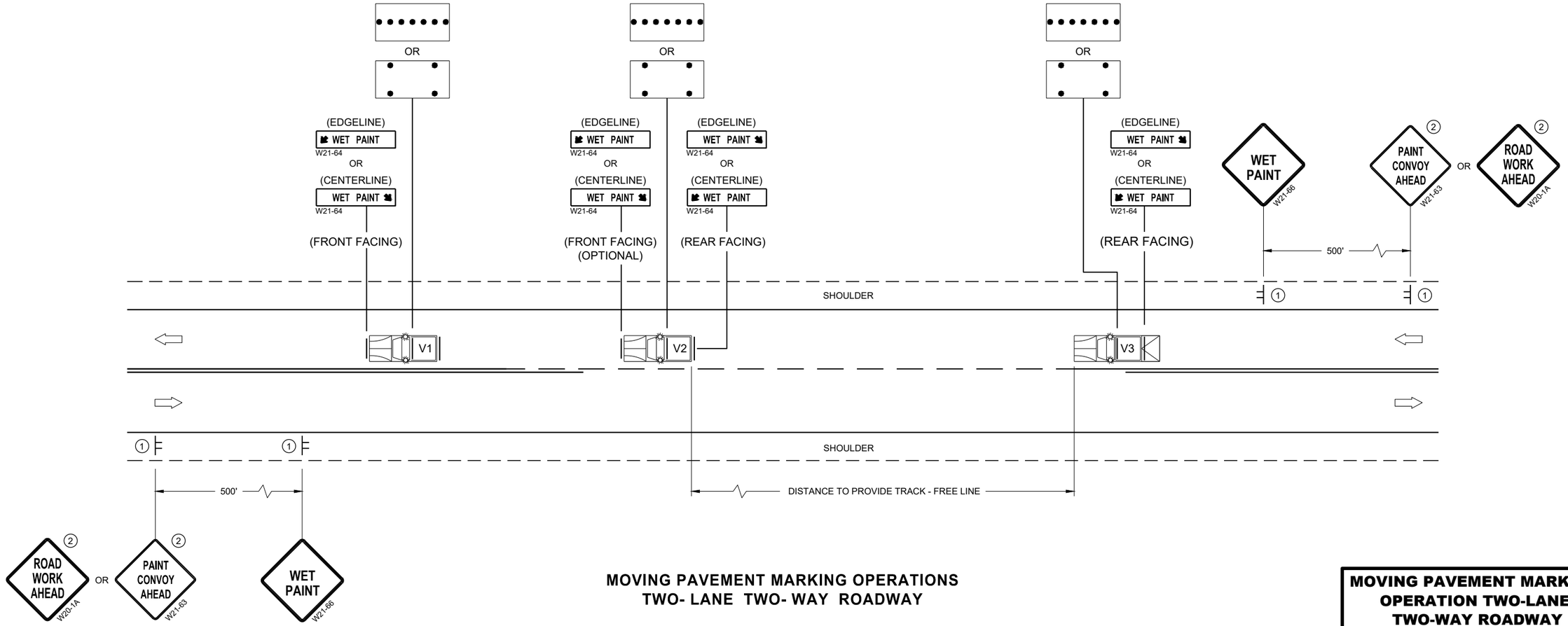
WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

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 18" 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.



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
November 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

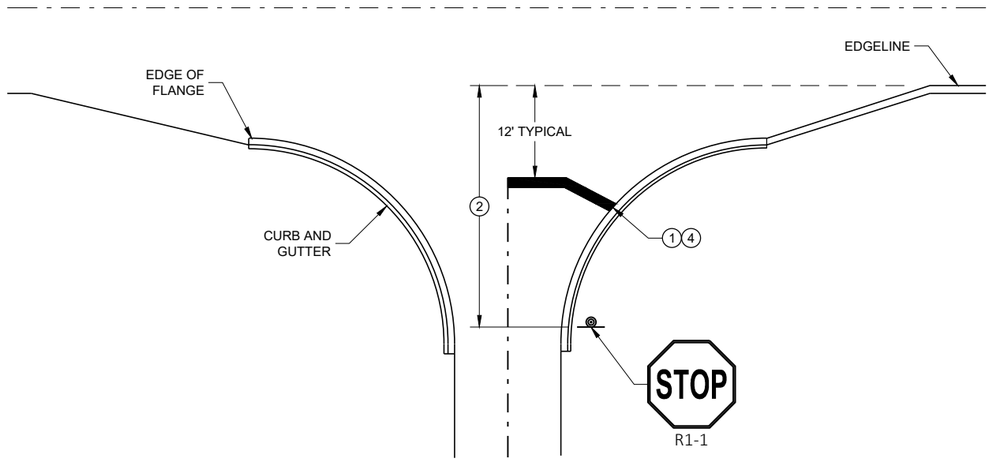
SDD 15C19 - 06a

SDD 15C19 - 06a

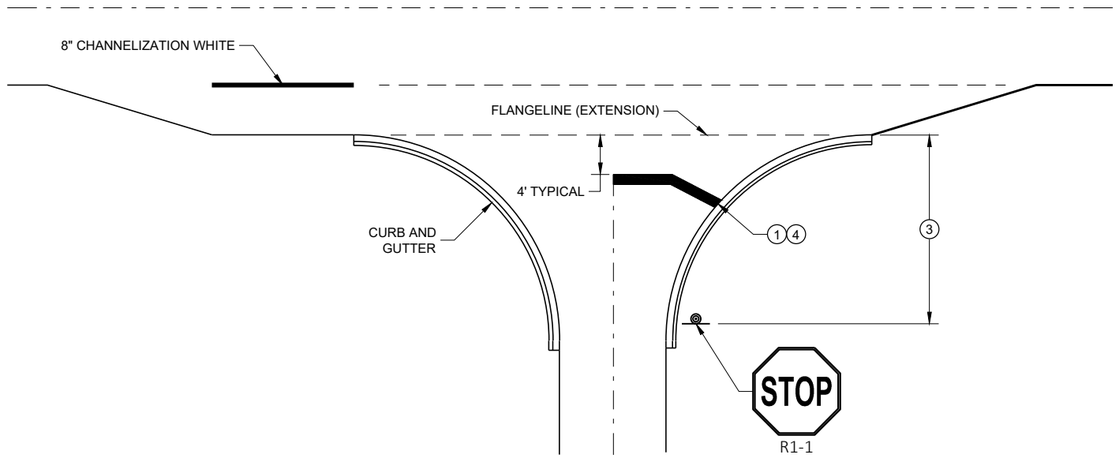
GENERAL NOTES

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

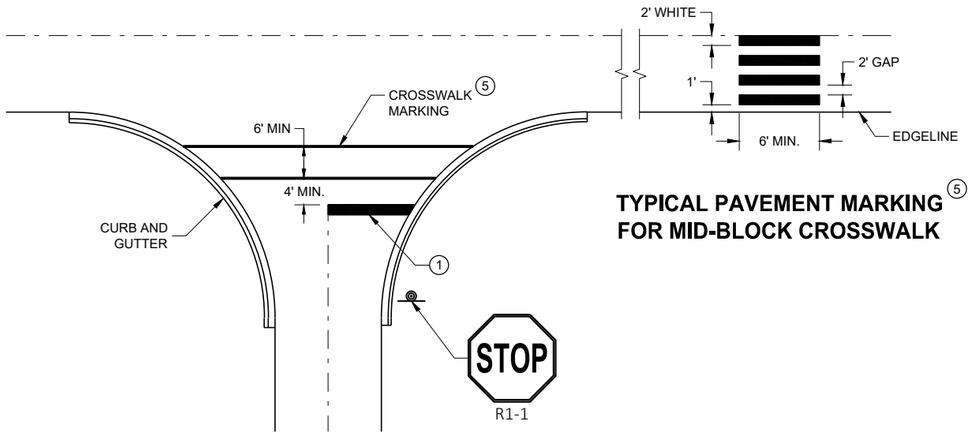
1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
3. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE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

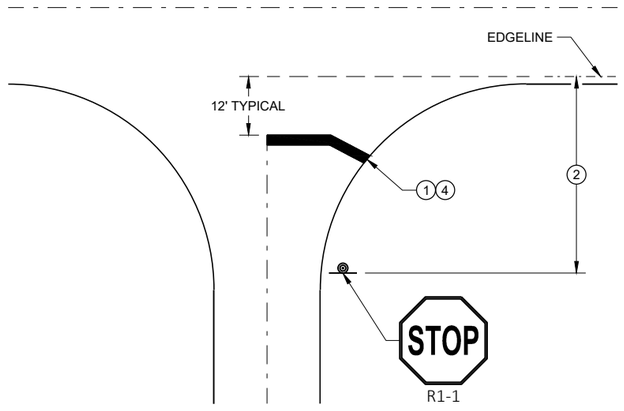


TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



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 MAF ENGINEER

FHWA

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SDD 15C33 - 04

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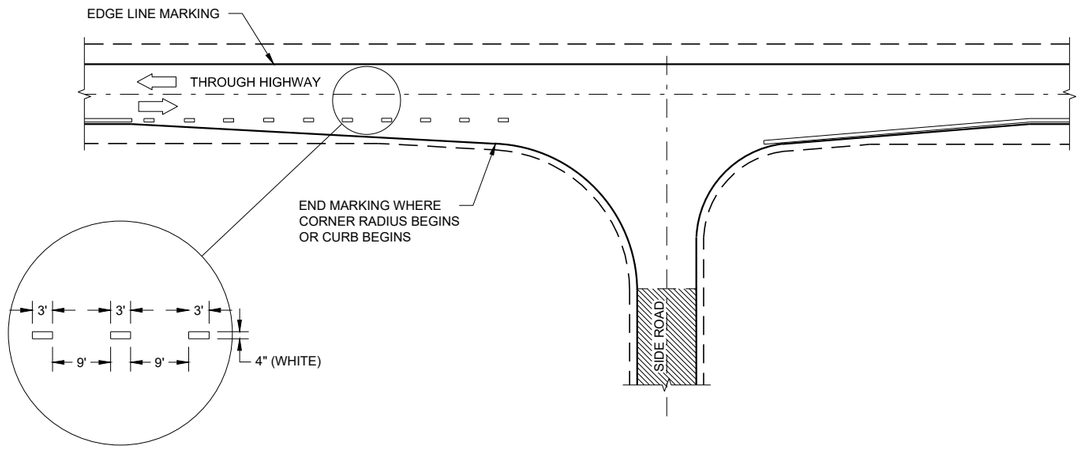
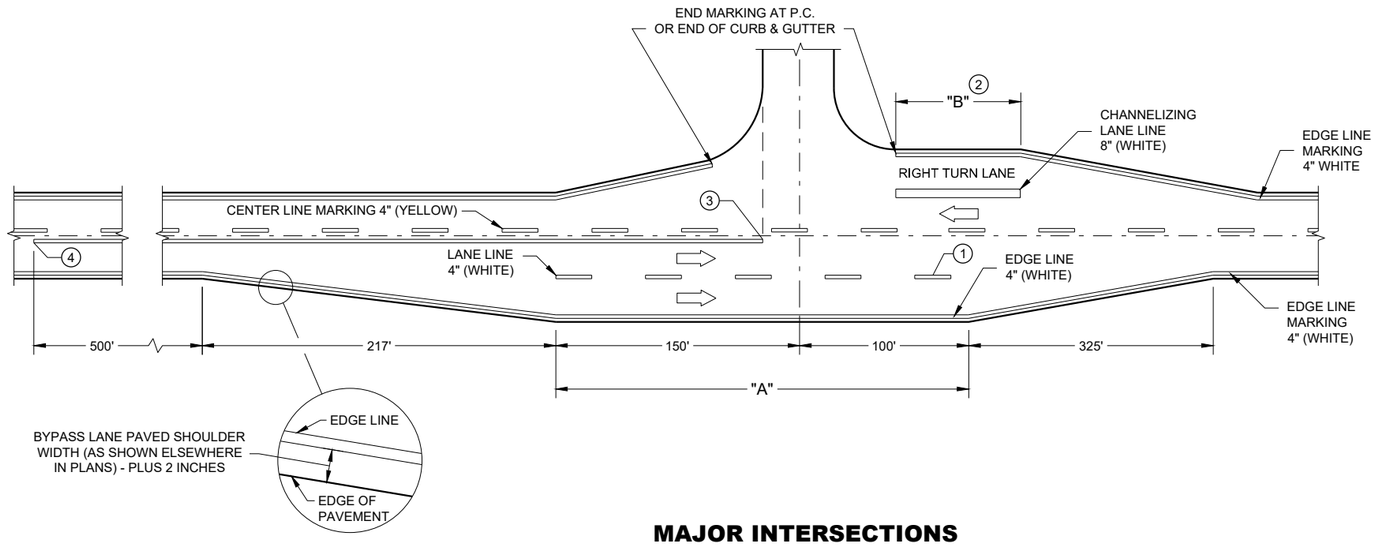


MINOR INTERSECTION



MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

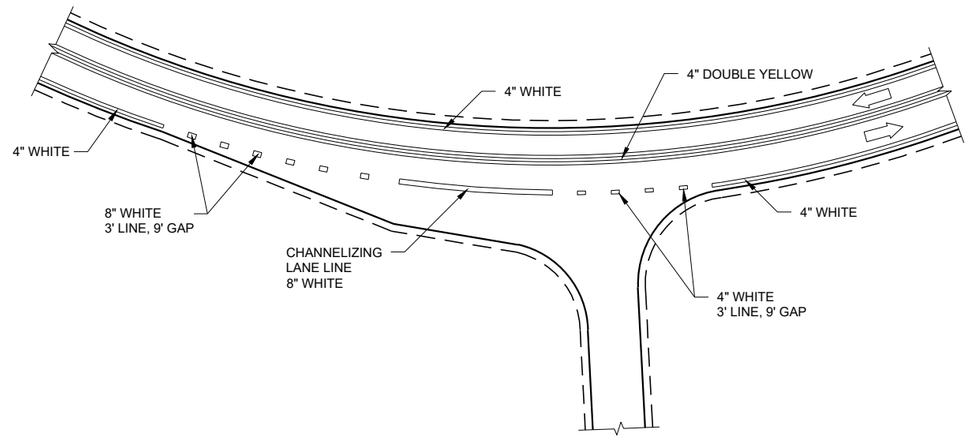
GENERAL NOTES

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

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

LEGEND

DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING (INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 15C35 - 04a

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SDD 15C35 - 04a

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.

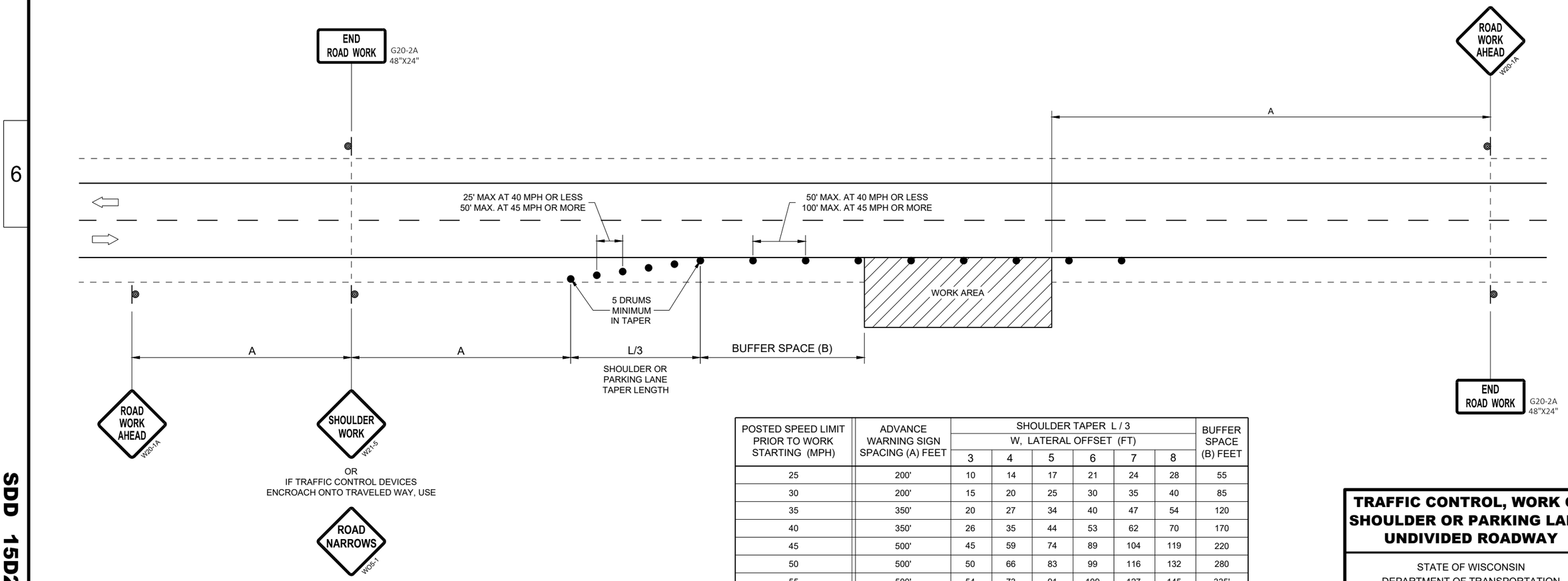
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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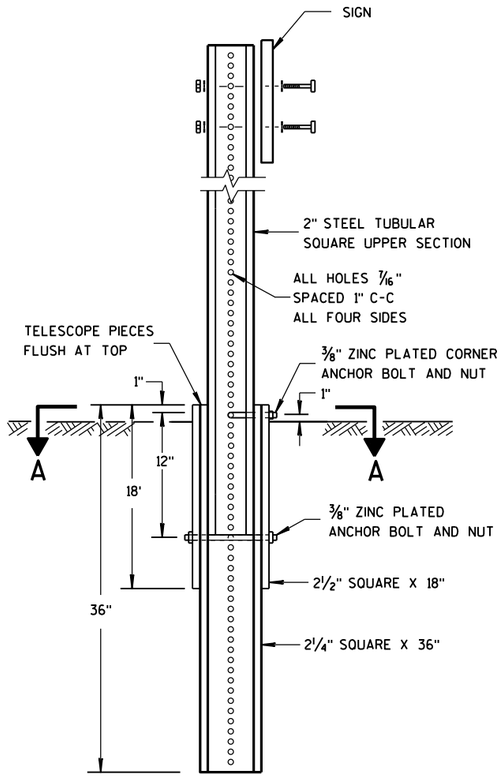
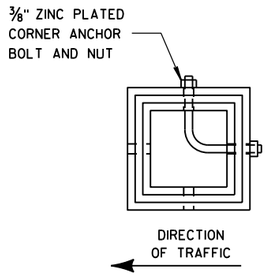
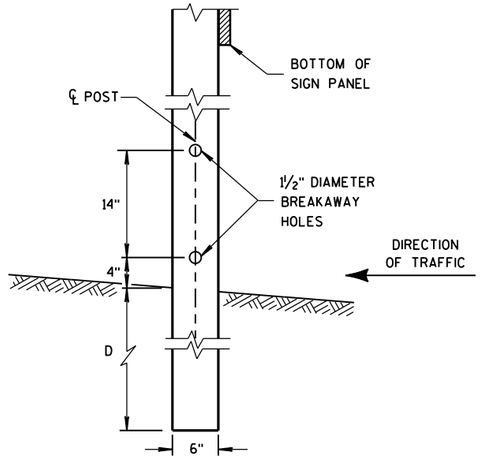


DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



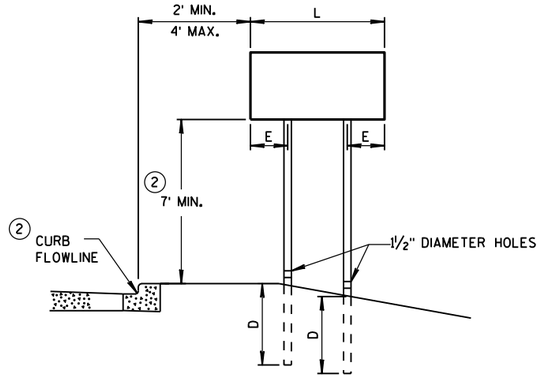
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

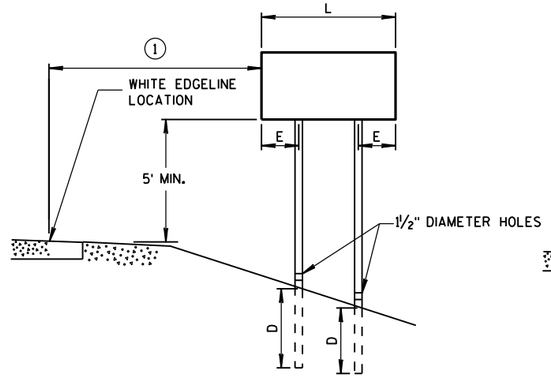
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

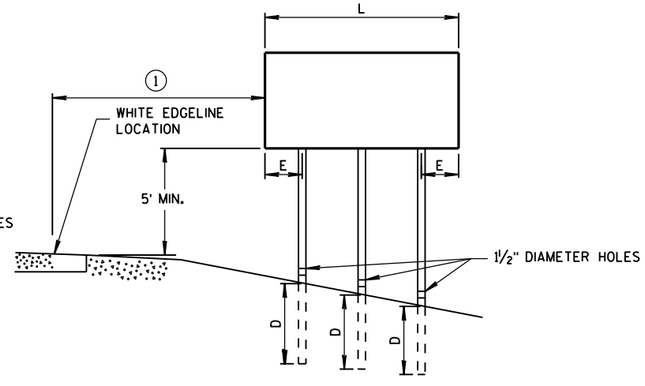
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.

(3) FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL 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).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

WOOD POST EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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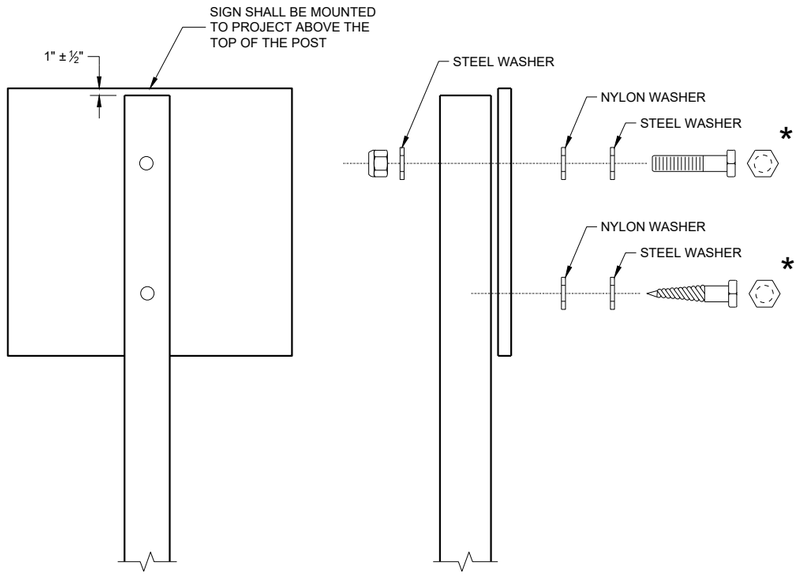
S.D.D. 15 D 38-2a



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.

WOOD POST (4" x 6")
LAG SCREWS - ⅜" x 3"
MACHINE BOLTS - 5/16" x 6 ½" OR 7" LENGTH W/NUTS

SQUARE STEEL POST (2" x 2")
MACHINE BOLTS - ⅜" x 3 ¼" LENGTH W/NUTS
RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH, GRIP RANGE 0.042 - 0.375 INCH

WASHERS (ALL POSTS) -
1 ¼" O.D. x ⅜" I.D. x 1/16" STEEL
1 ¼" O.D. x ⅜" I.D. x 0.080 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. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

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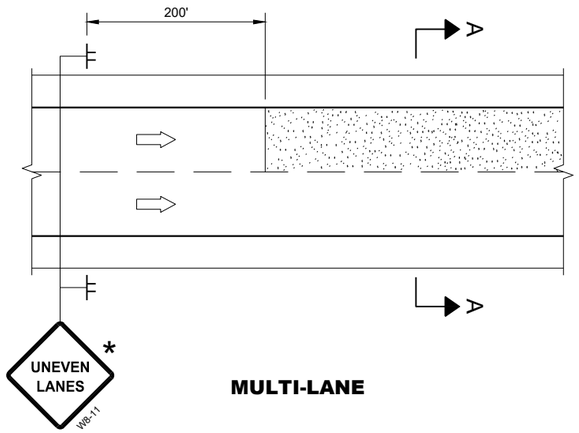
ATTACHMENT OF SIGNS TO POSTS

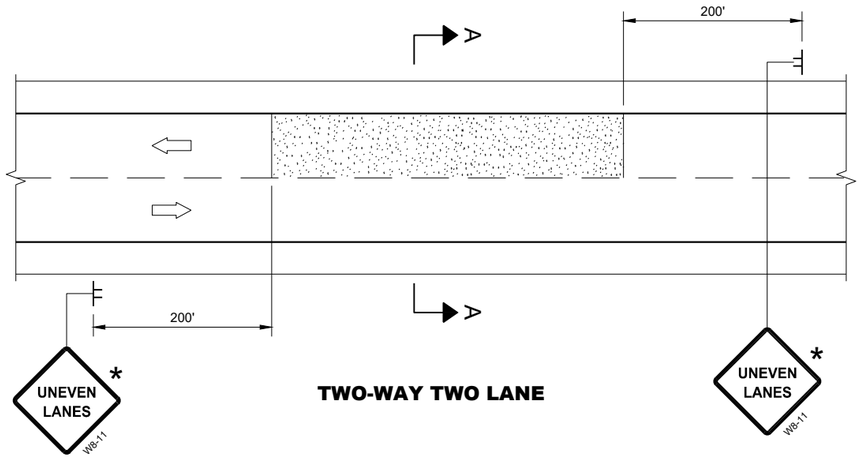
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE

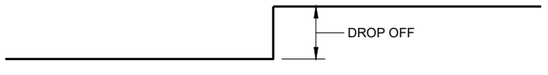
FHWA



MULTI-LANE

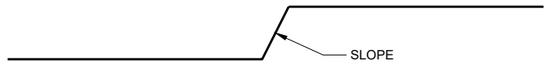


TWO-WAY TWO LANE

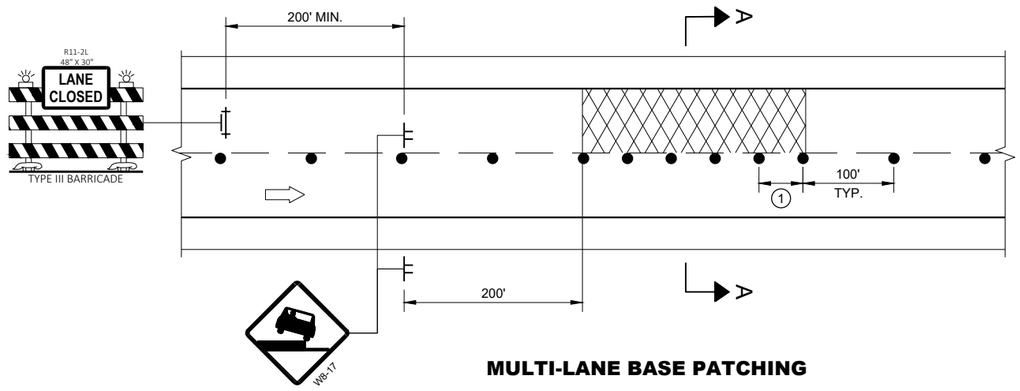


SECTION A - A

OR



SECTION A - A



MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS

GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

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

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

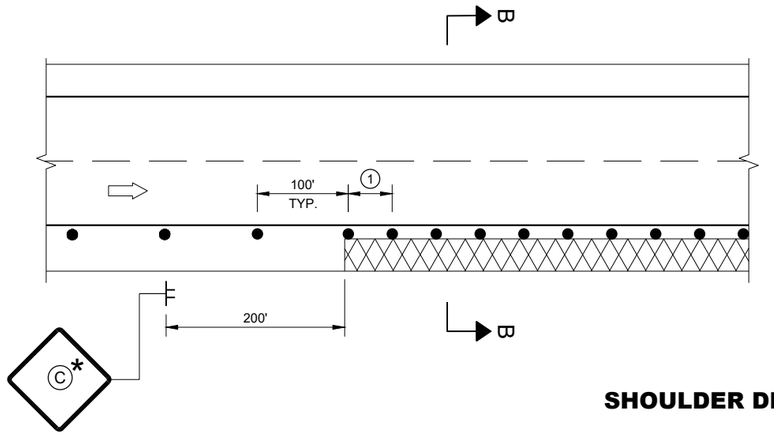
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

* IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EVERY ENTRANCE RAMP.

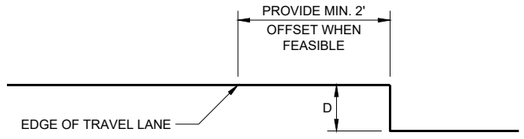
(1) USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

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



SHOULDER DROP-OFFS



SECTION B - B

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

TRAFFIC CONTROL, DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

SDD 15D39 - 02

6

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.

DETAILED DRAWINGS OF PROPOSED ALTERNATE DESIGNS FOR METAL MONUMENTS OR MONUMENT COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

PERMANENT MAGNETS SHALL BE INSERTED NEAR THE TOP AND BOTTOM OF ALL ALUMINUM MONUMENTS SO THE MONUMENT CAN EASILY BE DETECTED BY A METAL DETECTOR.

THE CAST IRON MONUMENT COVER SHALL BE A "NON-ROCKING" TYPE. ADJUSTMENT OF THE COVER TO GRADE MAY BE ACCOMPLISHED BY THE USE OF MORTAR AND BRICK, OR BY EITHER PRECAST OR CAST-IN-PLACE REINFORCED CONCRETE GRADE RINGS.

MONUMENTS SHALL BE LOCATED AND PLACED AT THE DIRECTION OF THE ENGINEER.

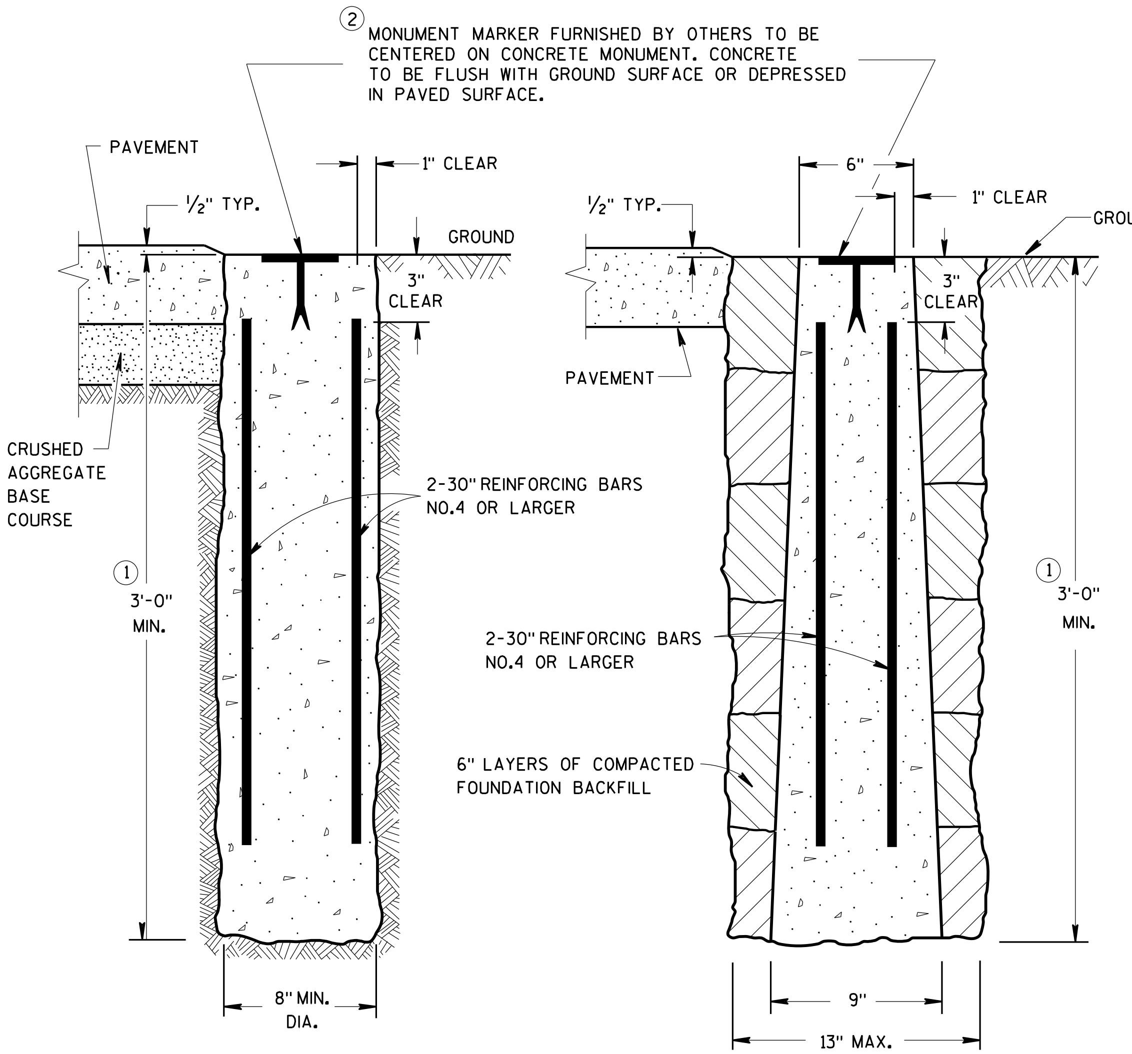
ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

THE MONUMENT COVERS DETAILED ON THIS DRAWING ARE NOT EQUAL ALTERNATES. MONUMENT COVERS SHALL BE CAST IRON UNLESS ALUMINUM IS SPECIFIED ELSEWHERE IN THE CONTRACT.

MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER

(1) MINIMUM LENGTH SHALL BE 4'-0" FOR MONUMENTS INSTALLED IN PAVED AREAS.

(2) AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WIS DOT MARKER.

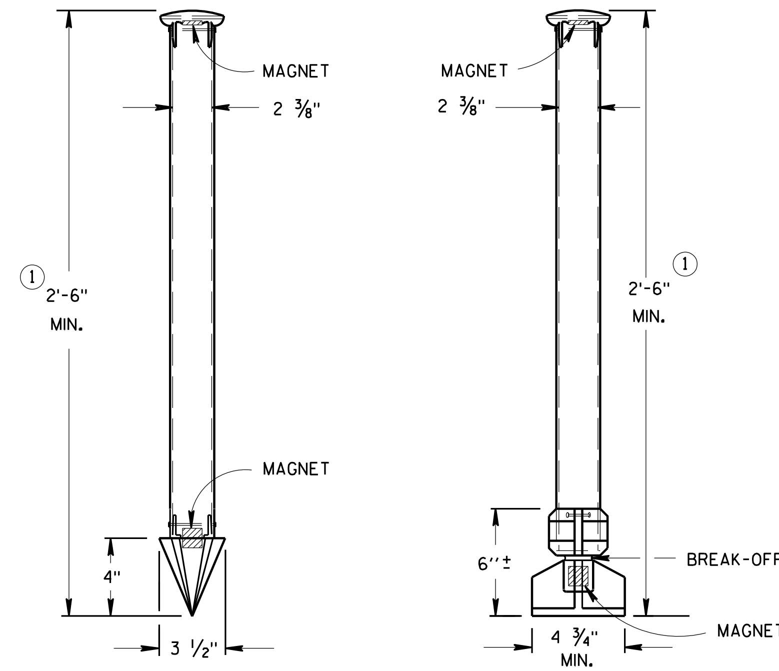


CAST-IN-PLACE

PRECAST

CONCRETE MONUMENTS

TYPE A



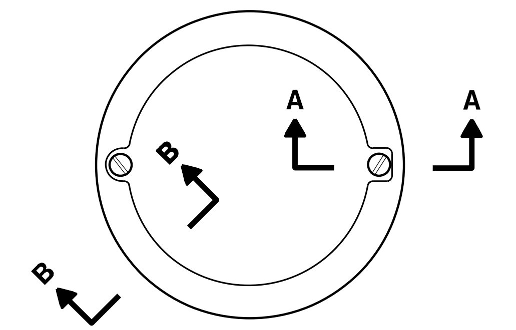
TYPE C

DRIVE-IN MONUMENT

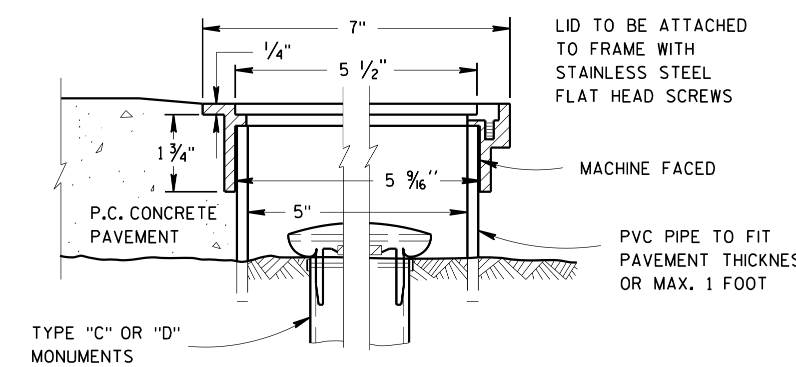
TYPE D
NON-DRIVEN
BREAK-OFF MONUMENT

ALUMINUM MONUMENTS

(INCLUDES MARKER)



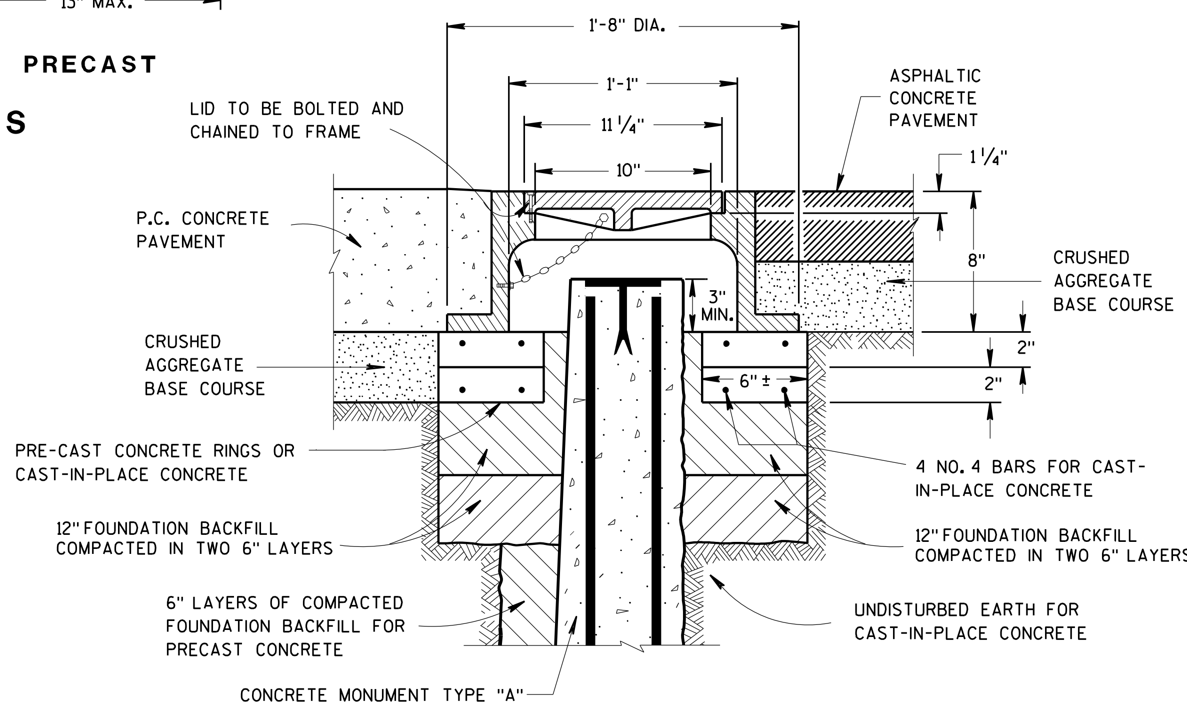
TOP VIEW



SECTION B-B SECTION A-A

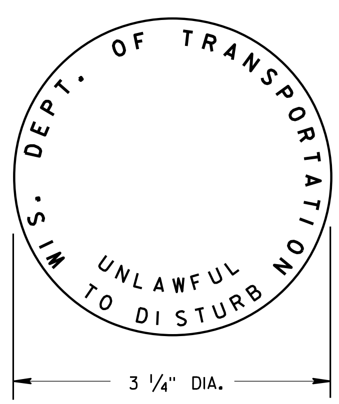
ALUMINUM MONUMENT COVER

(APPROXIMATE WEIGHT 2 LBS)
(FOR CONCRETE PAVEMENT ONLY)



CAST IRON MONUMENT COVER

(APPROXIMATE WEIGHT 95 LBS)



(2) WIS DOT MONUMENT MARKER LOGO

FOR TYPES "A", "C", & "D"

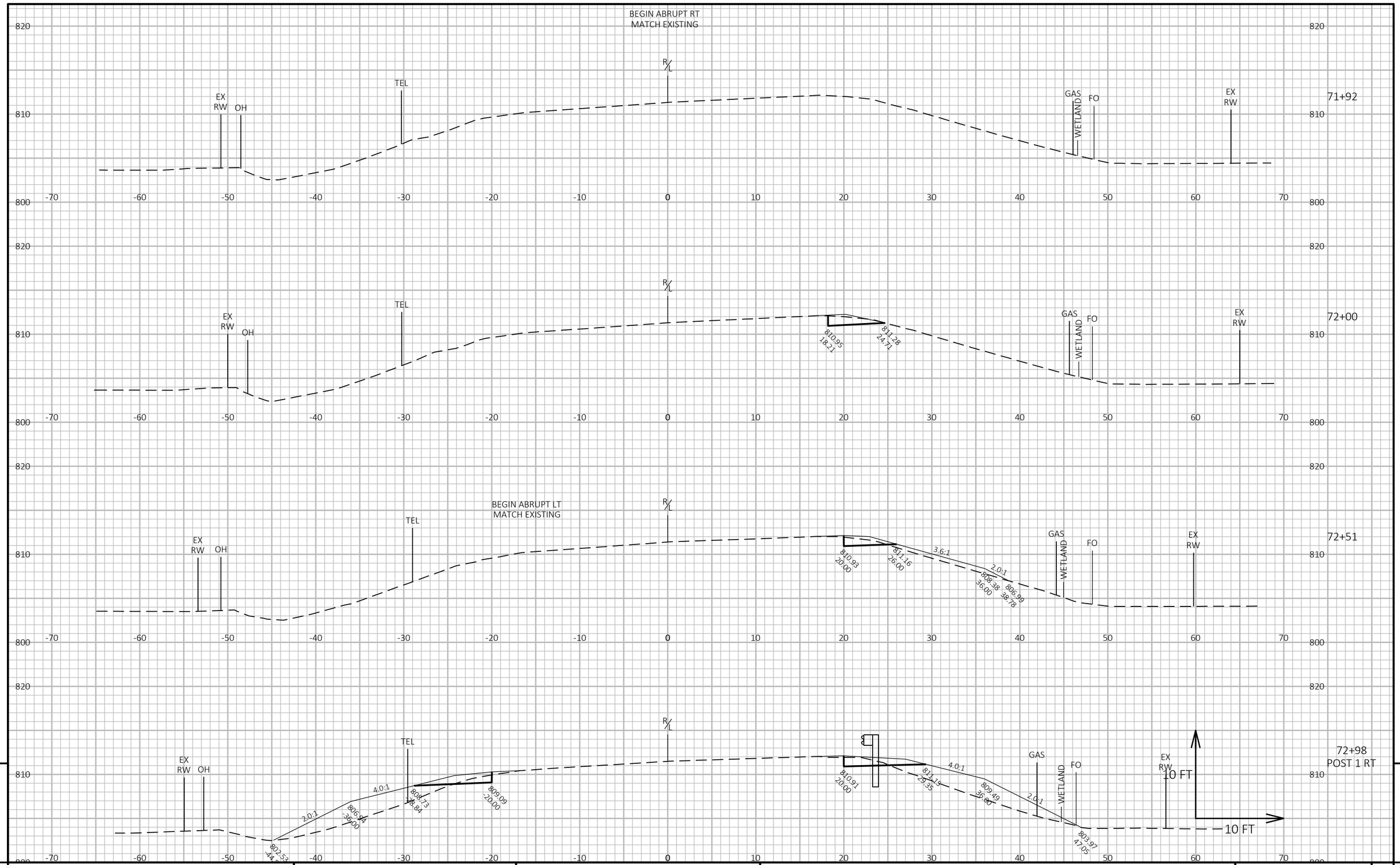
LANDMARK REFERENCE MONUMENTS AND COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 — DATE
/S/ Raymond A. Kumapayi — CHIEF SURVEYING AND M[APPING EN]GINEER
FHWA

S.D.D. 16 A 1-7

6



9

9

PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CROSS SECTIONS: STH 78	SHEET 92	E

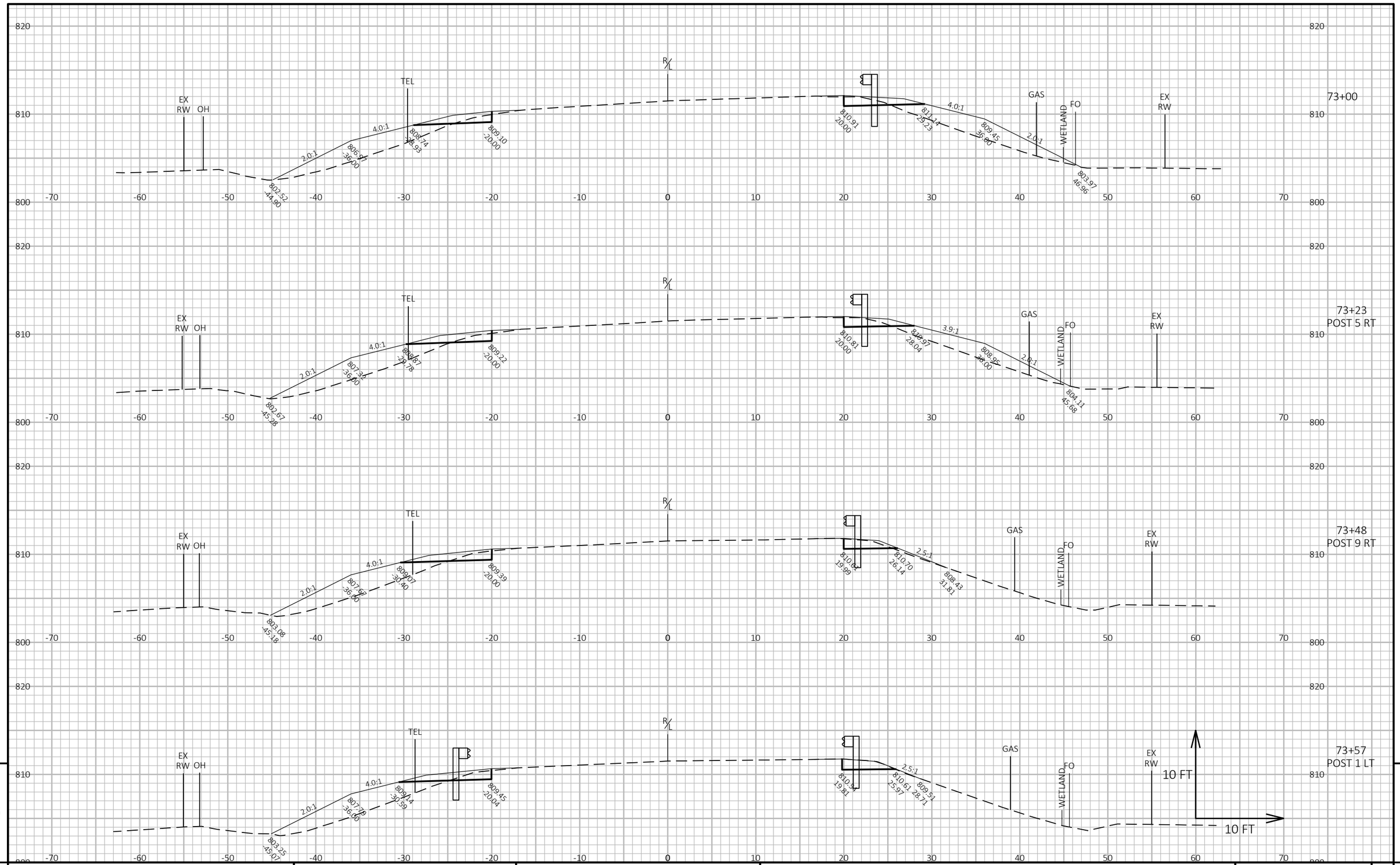
FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 1

PLOT DATE : 3/31/2020 12:15 AM

PLOT BY : CORY INMAN

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



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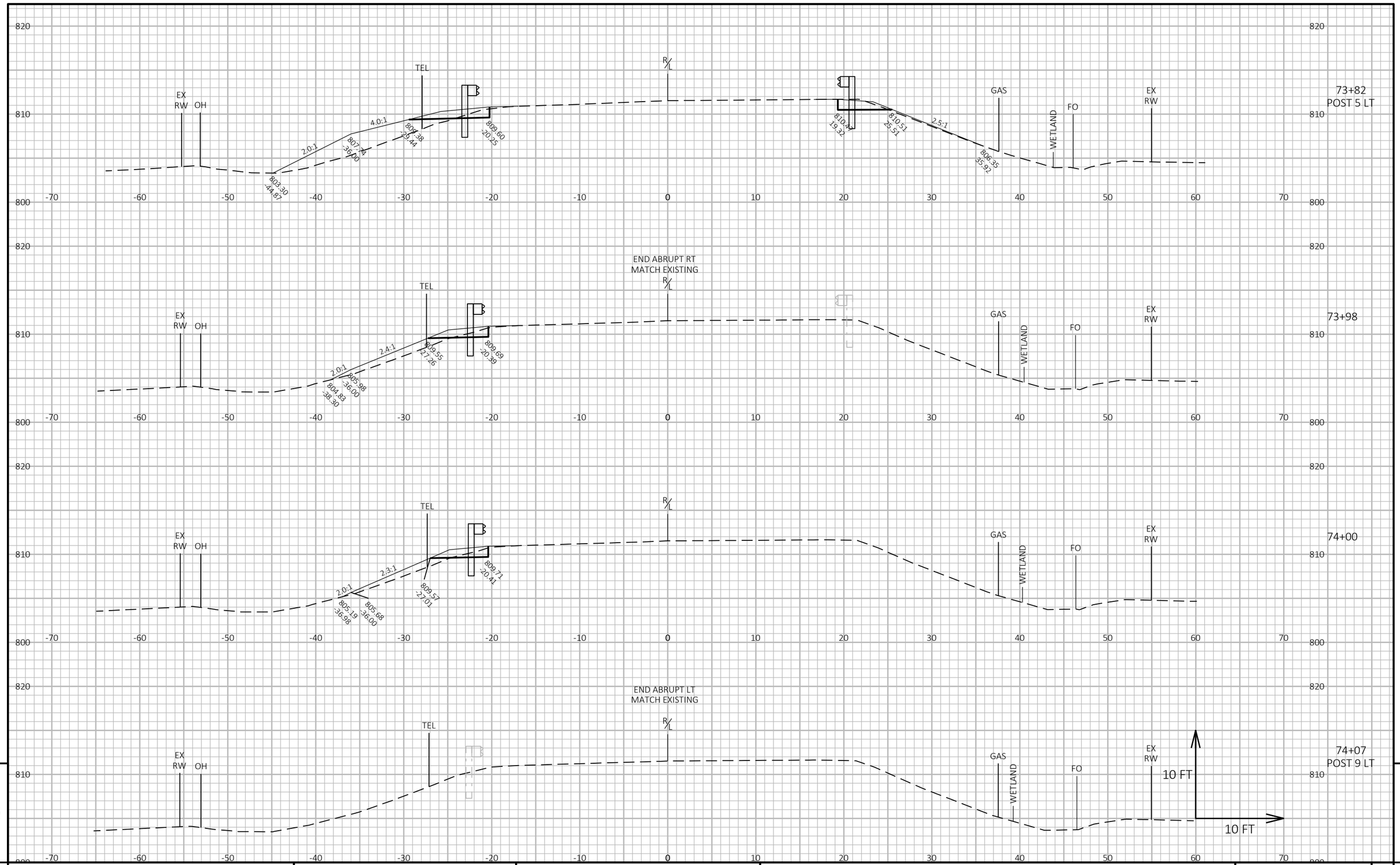
9

PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CROSS SECTIONS: STH 78	SHEET 93	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 2

PLOT DATE : 3/31/2020 12:15 AM PLOT BY : CORY INMAN PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



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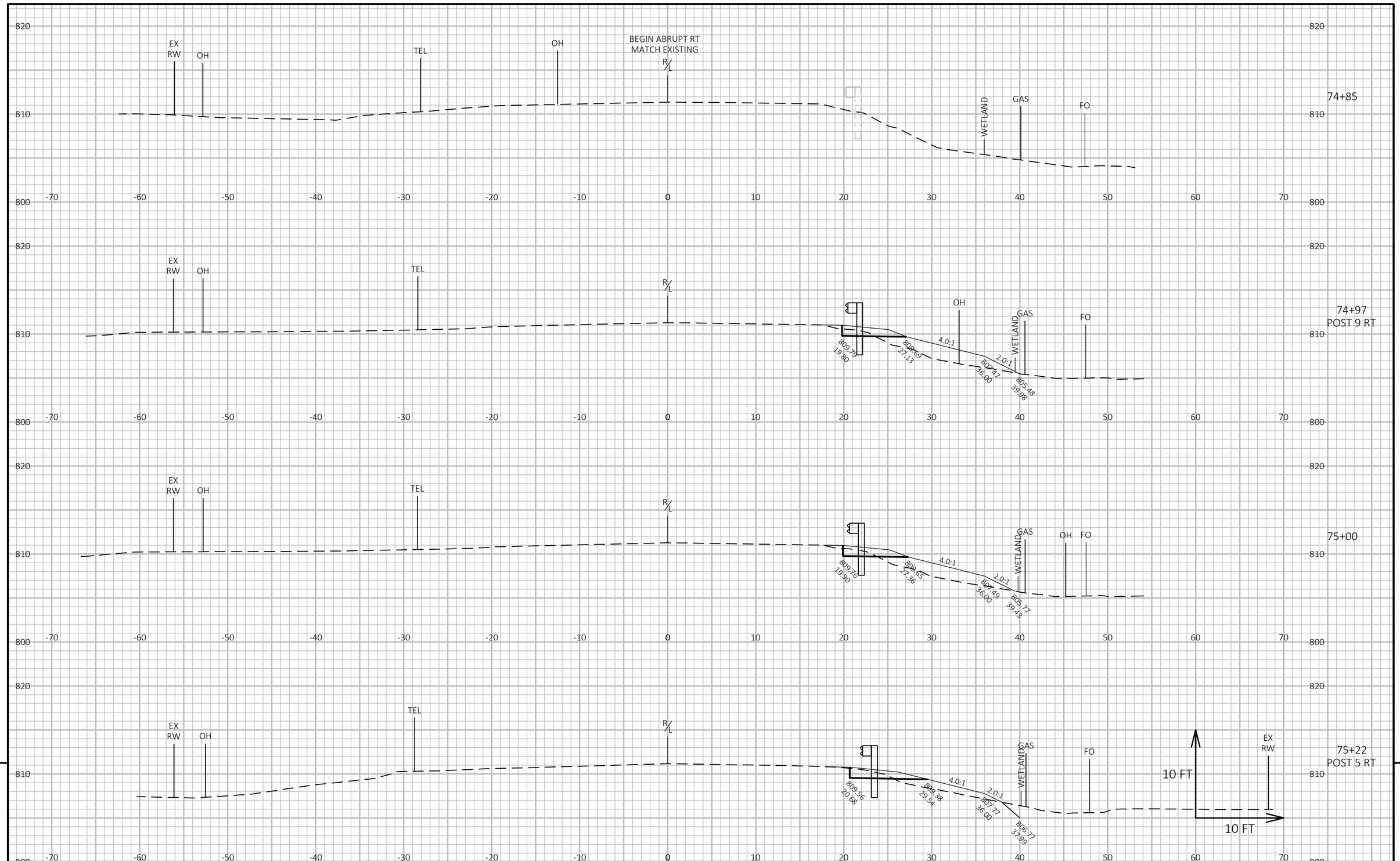
PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CROSS SECTIONS: STH 78	SHEET 94	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 3

PLOT DATE : 3/31/2020 12:15 AM PLOT BY : CORY INMAN PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



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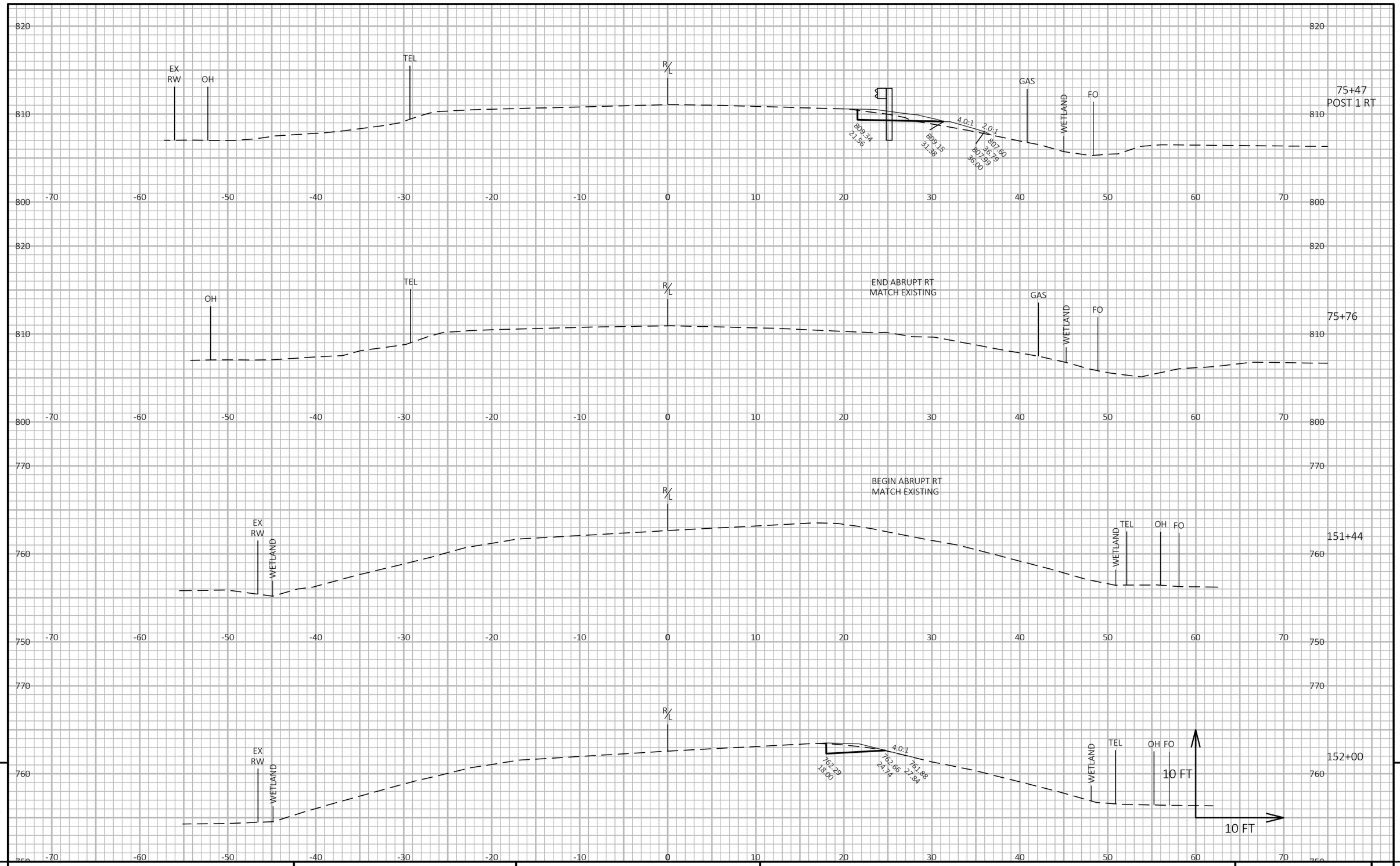
PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CROSS SECTIONS: STH 78	SHEET 95	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 4

PLOT DATE : 3/31/2020 12:15 AM PLOT BY : CORY INMAN PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

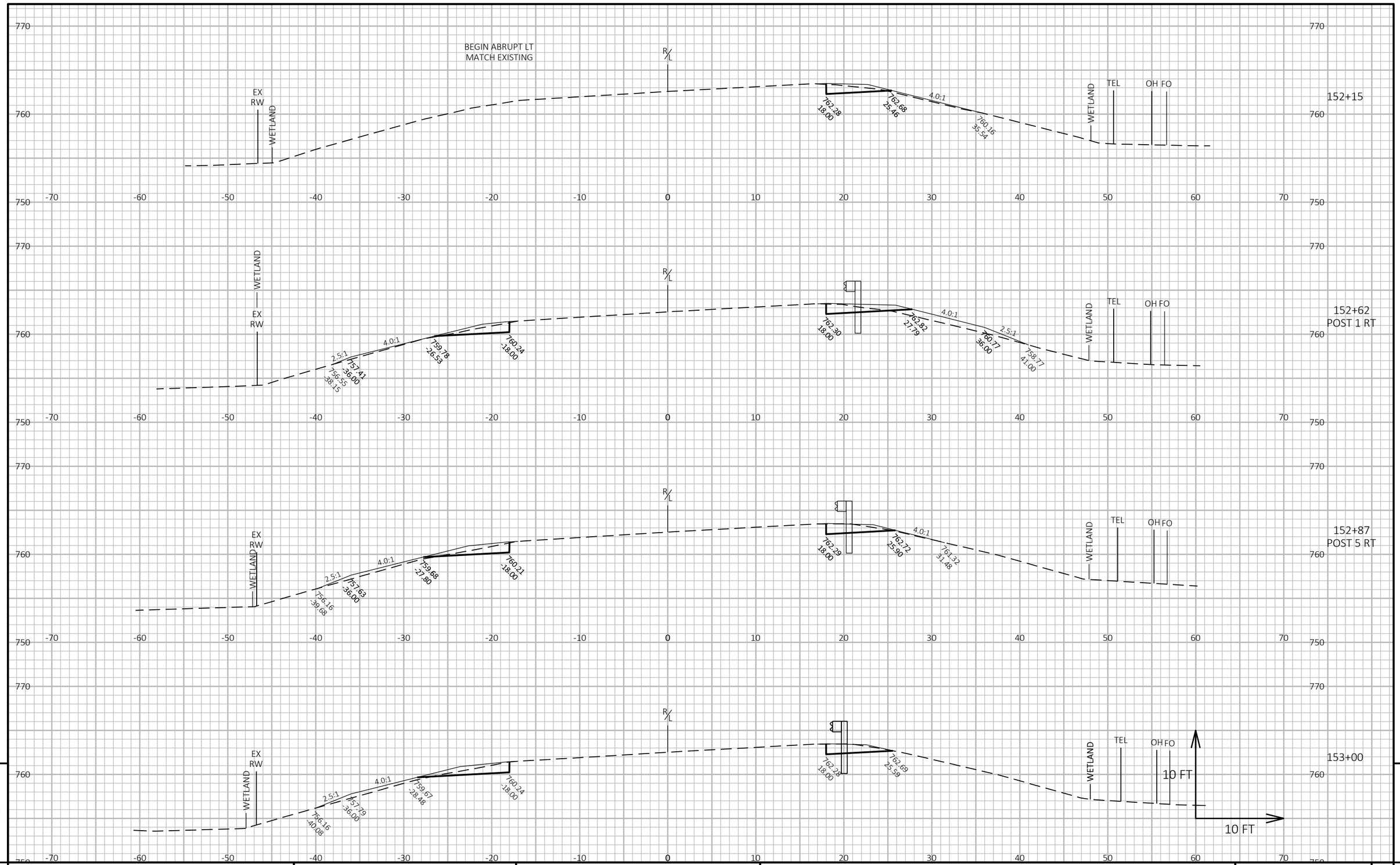


PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CROSS SECTIONS: STH 78	SHEET 96	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 5

PLOT DATE : 3/31/2020 12:16 AM PLOT BY : CORY INMAN PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

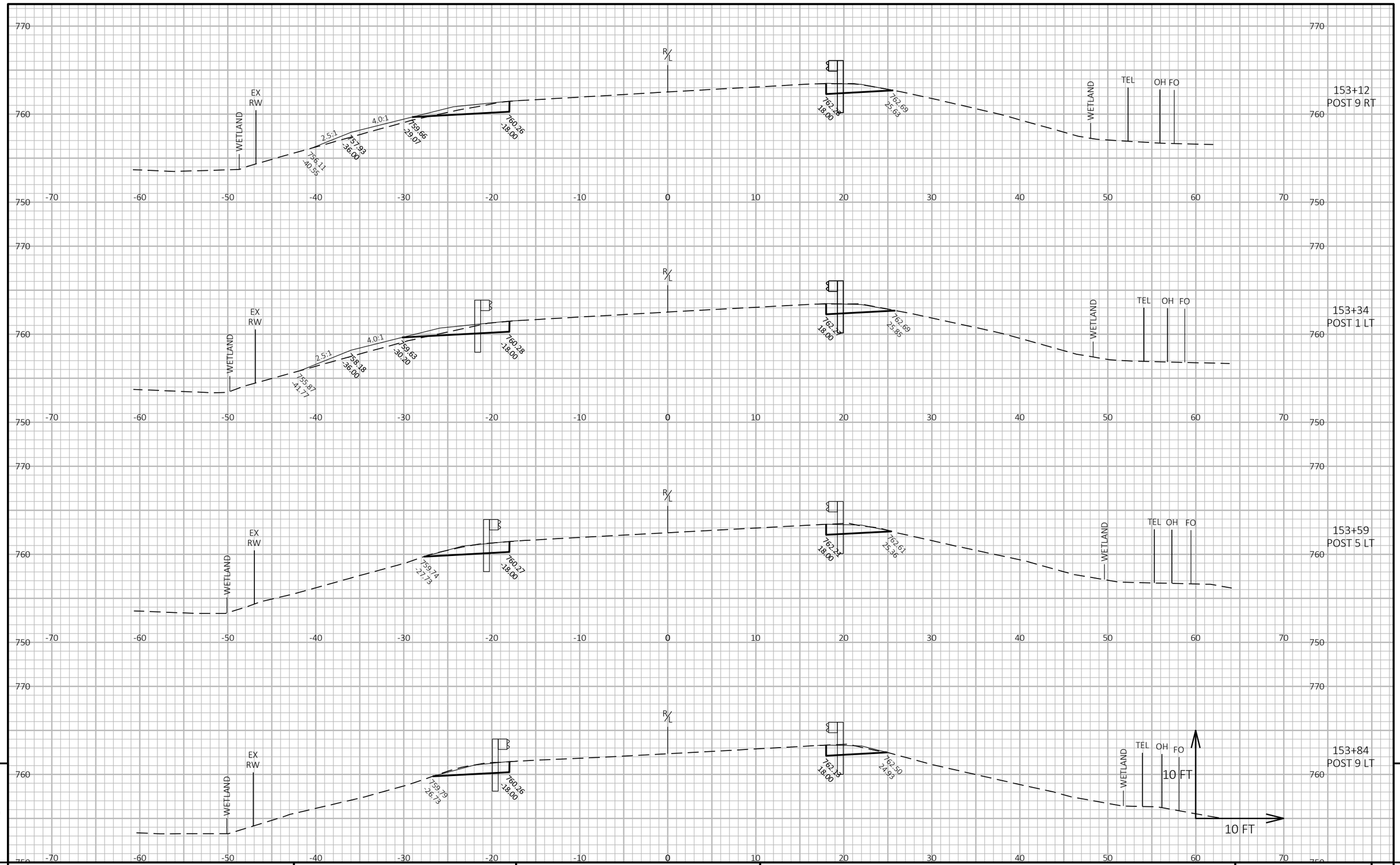


PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CROSS SECTIONS: STH 78	SHEET 97	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 6

PLOT DATE : 3/31/2020 12:16 AM PLOT BY : CORY INMAN PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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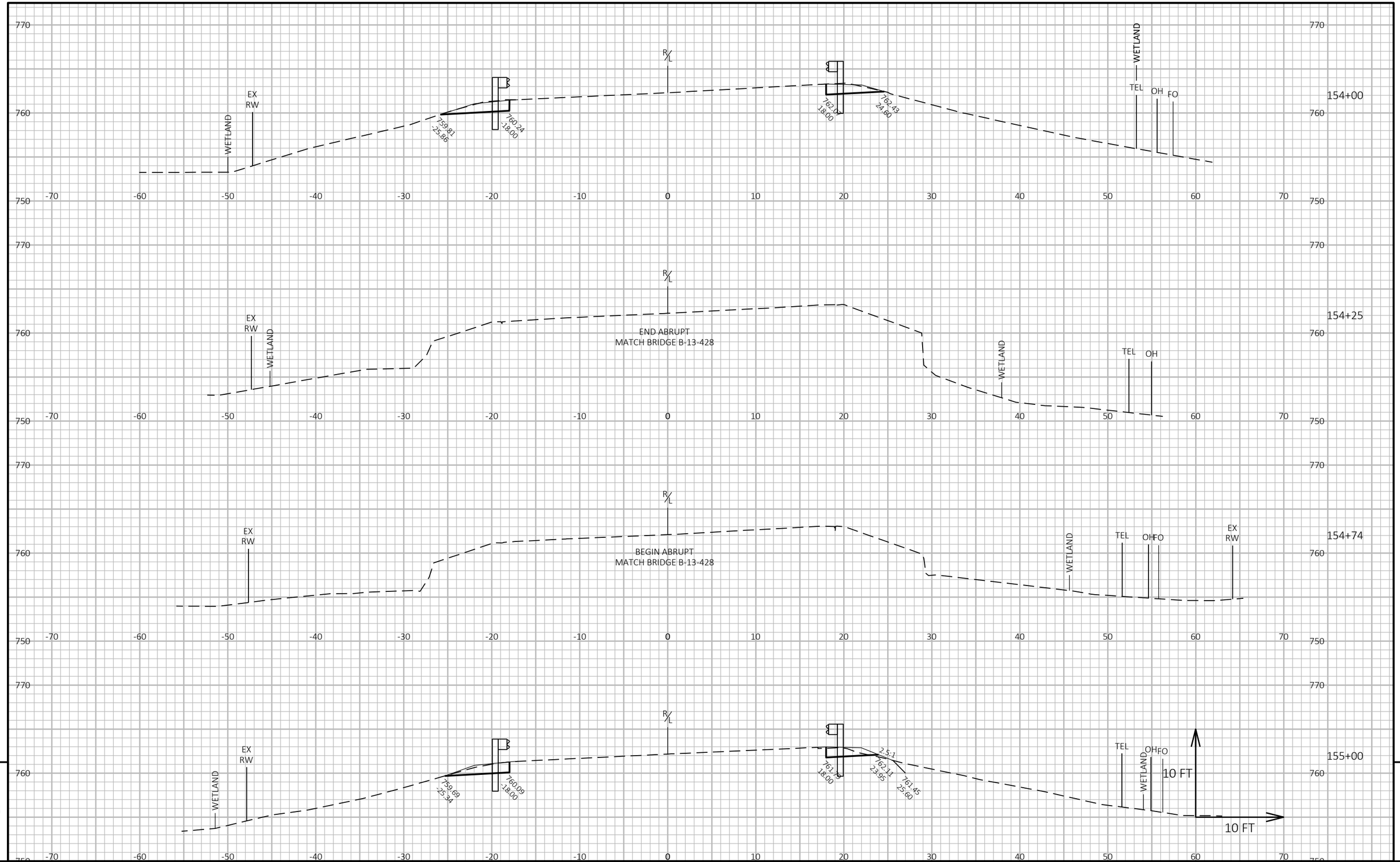
PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CROSS SECTIONS: STH 78	SHEET 98	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 7

PLOT DATE : 3/31/2020 12:16 AM PLOT BY : CORY INMAN PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



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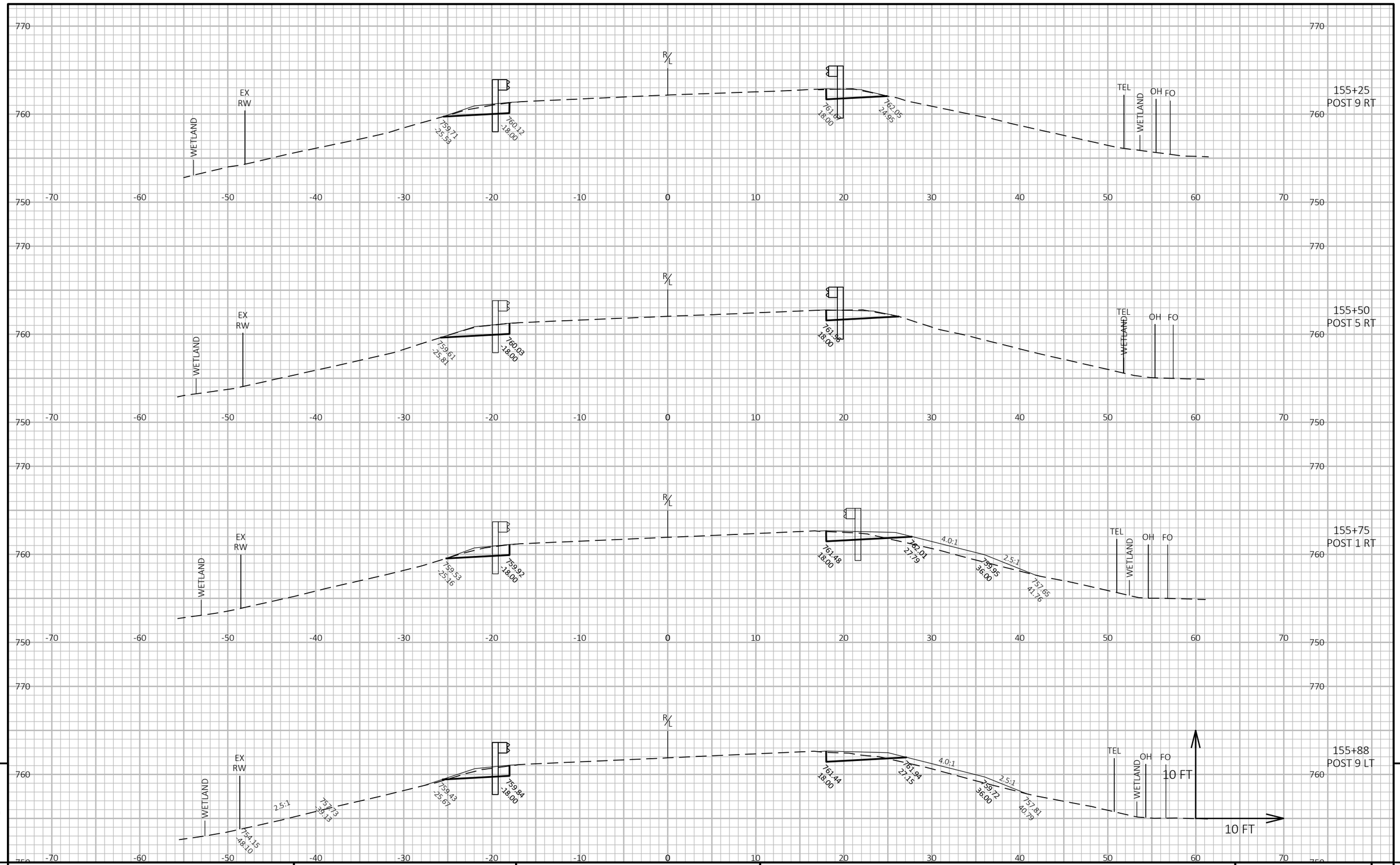
PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CROSS SECTIONS: STH 78	SHEET 99	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 8

PLOT DATE : 3/31/2020 12:16 AM PLOT BY : CORY INMAN PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



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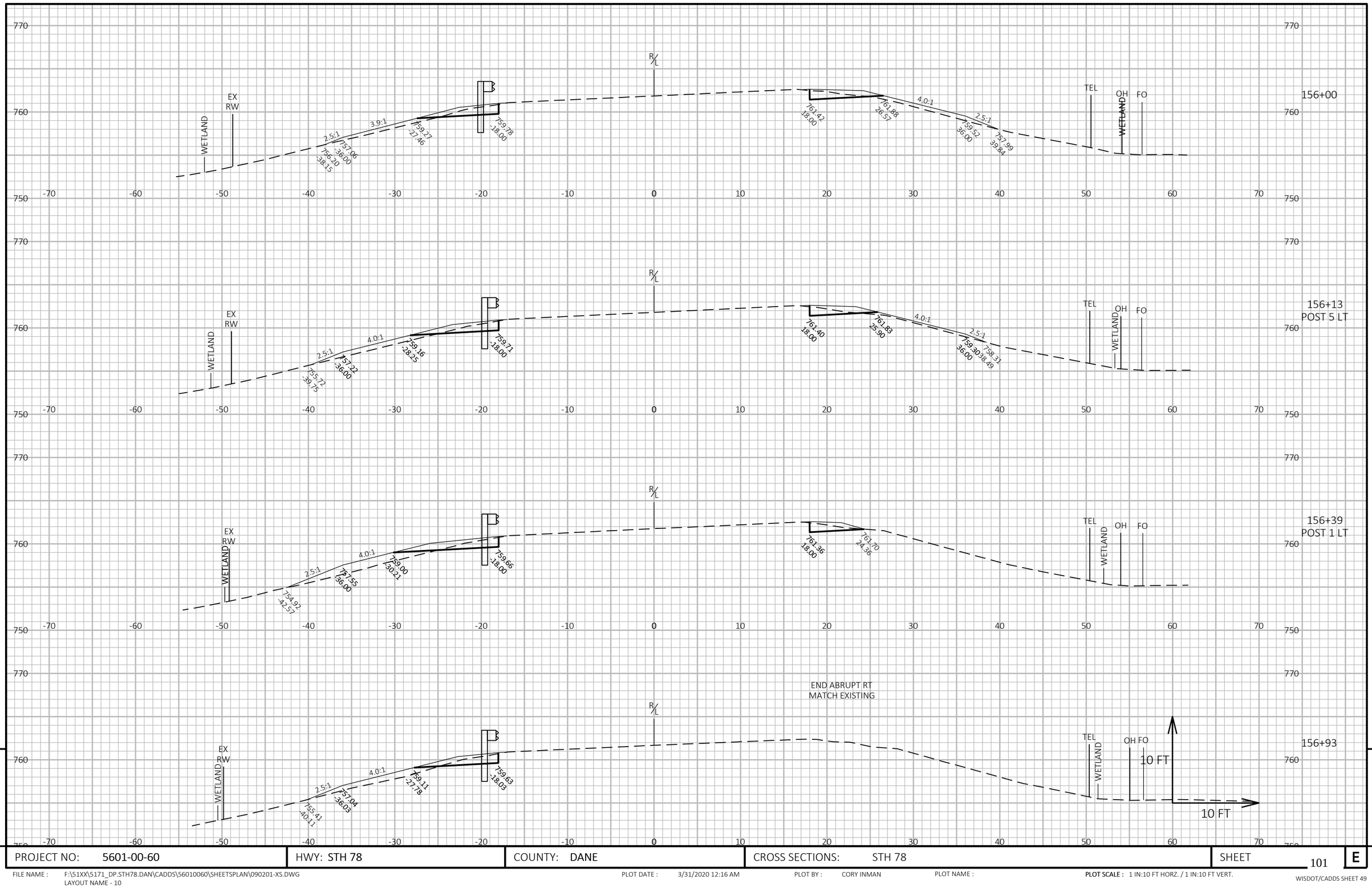
PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CROSS SECTIONS: STH 78	SHEET 100	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 9

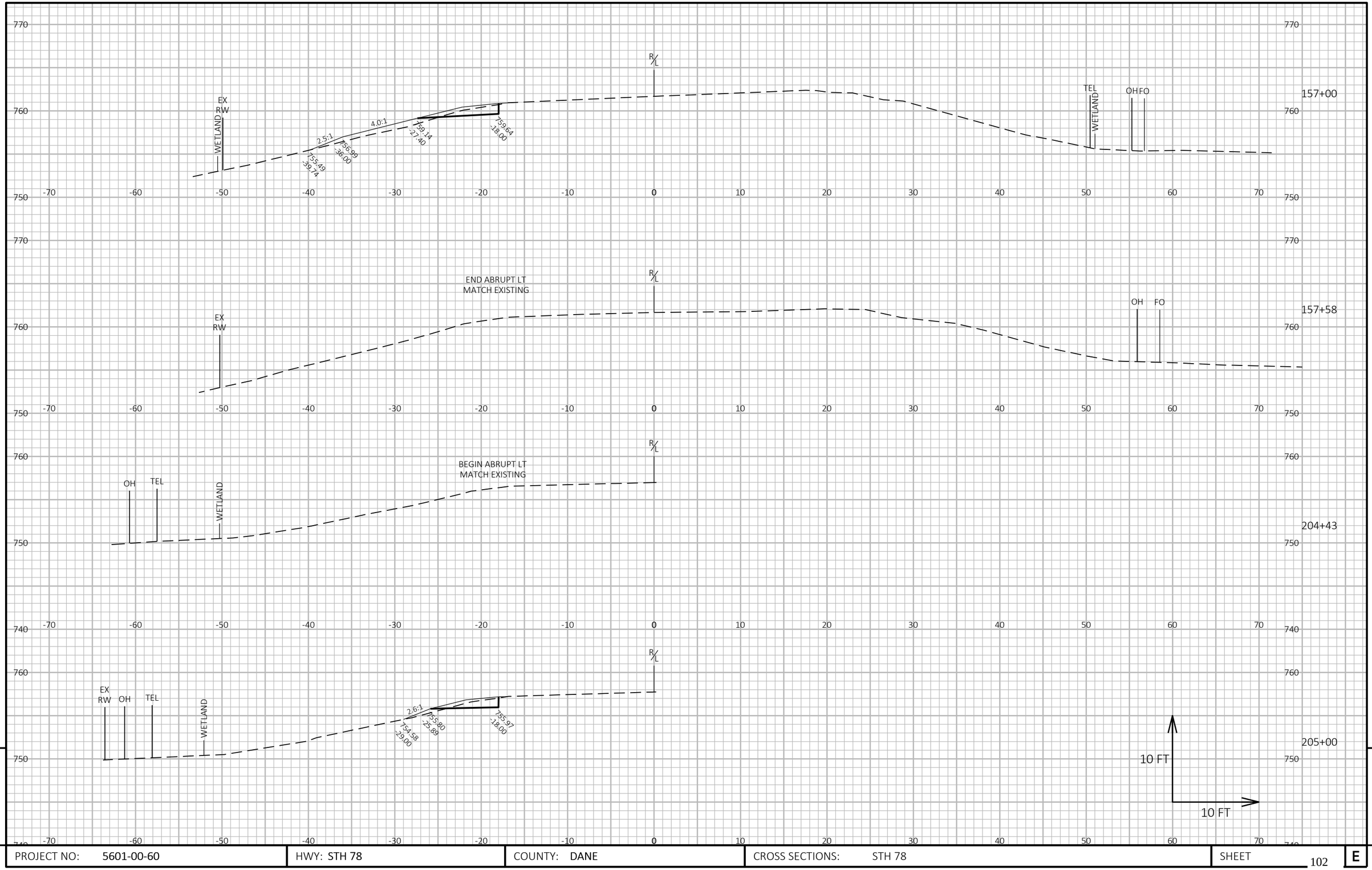
PLOT DATE : 3/31/2020 12:16 AM PLOT BY : CORY INMAN PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CROSS SECTIONS: STH 78	SHEET 101	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 10
PLOT DATE : 3/31/2020 12:16 AM
PLOT BY : CORY INMAN
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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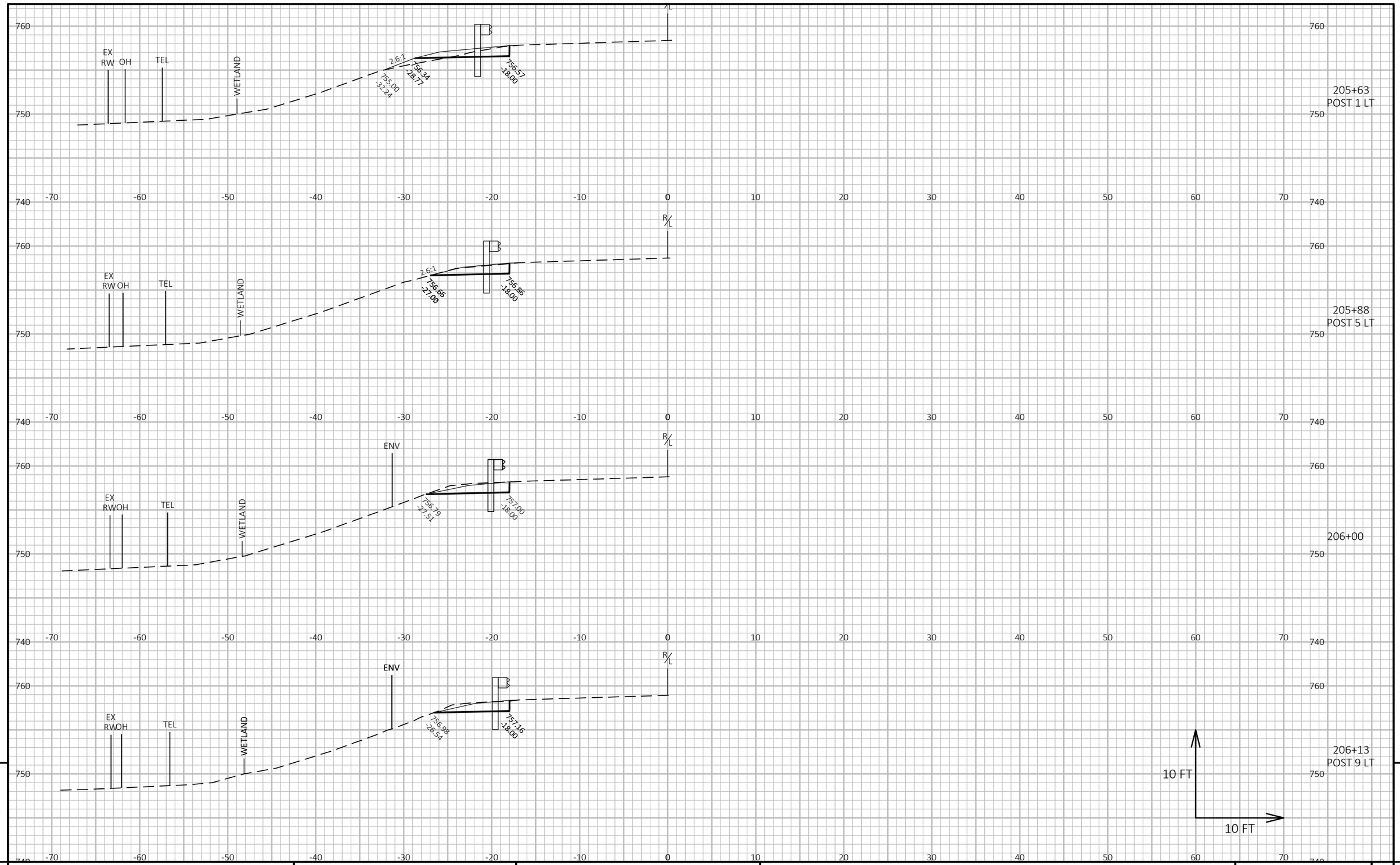
PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CROSS SECTIONS: STH 78	SHEET 102	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 11

PLOT DATE : 3/31/2020 12:16 AM PLOT BY : CORY INMAN PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

9



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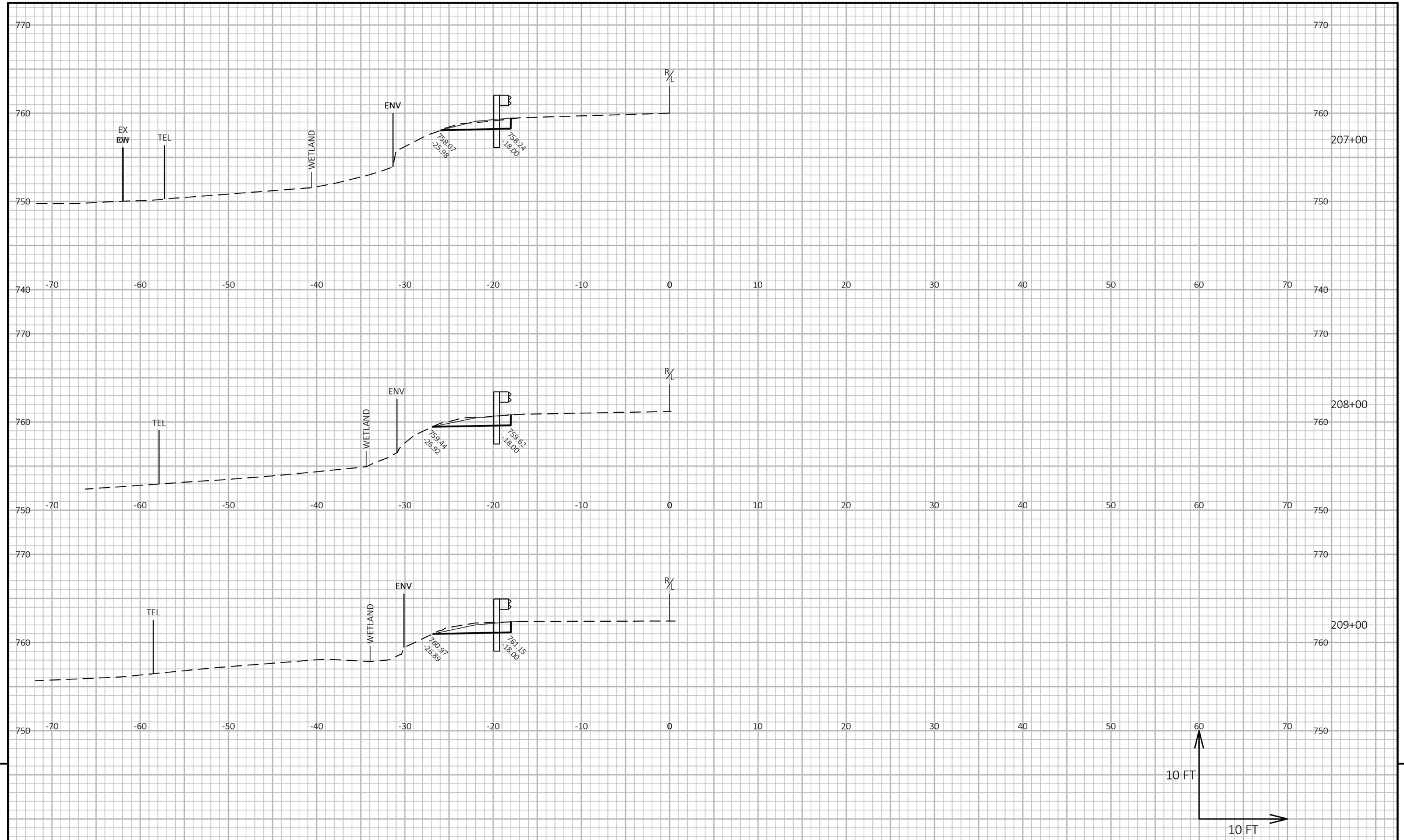
PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CROSS SECTIONS: STH 78	SHEET 103	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 12

PLOT DATE : 3/31/2020 12:16 AM PLOT BY : CORY INMAN PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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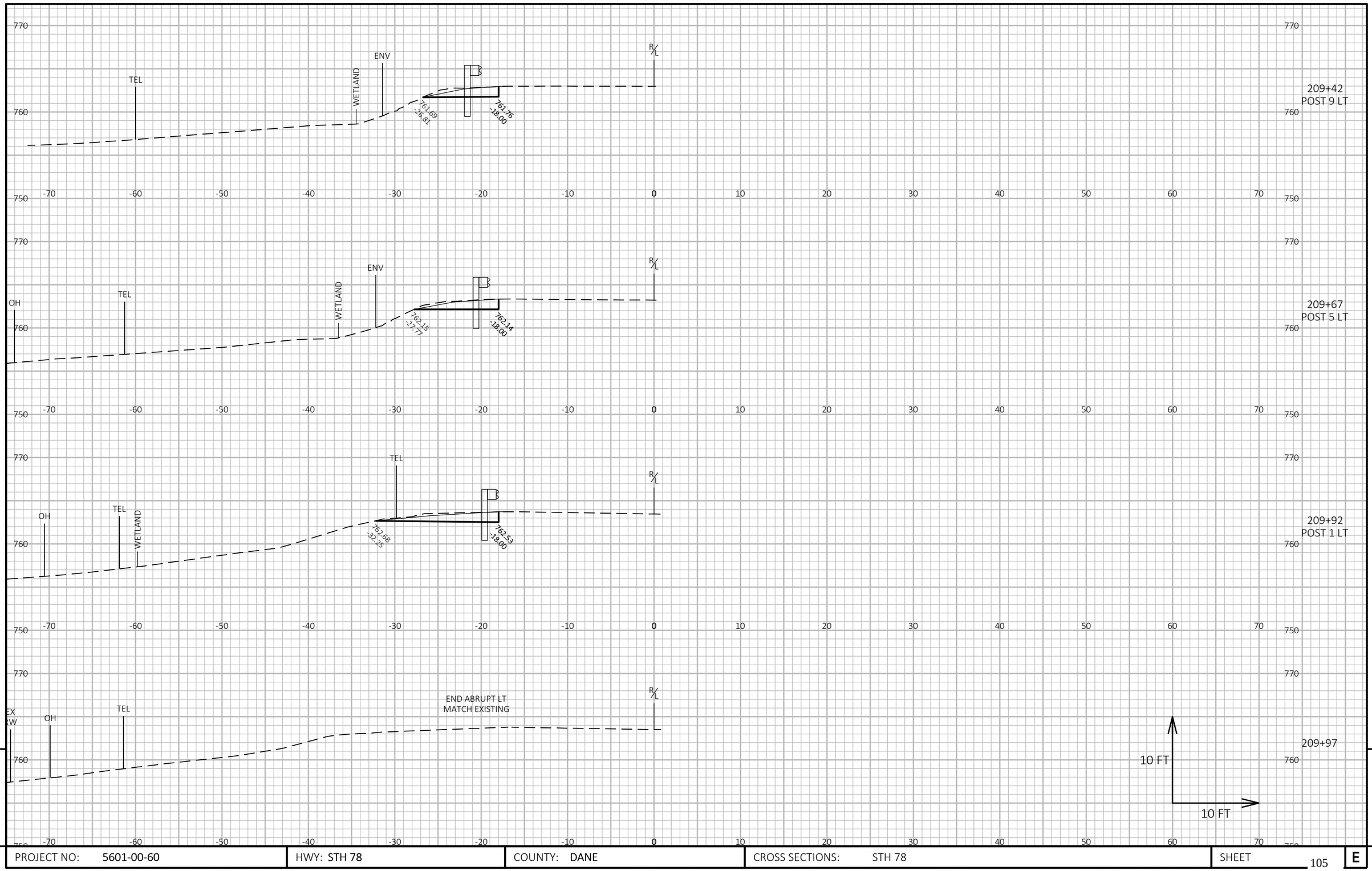
PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CROSS SECTIONS: STH 78	SHEET 104	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 13

PLOT DATE : 3/31/2020 12:16 AM PLOT BY : CORY INMAN PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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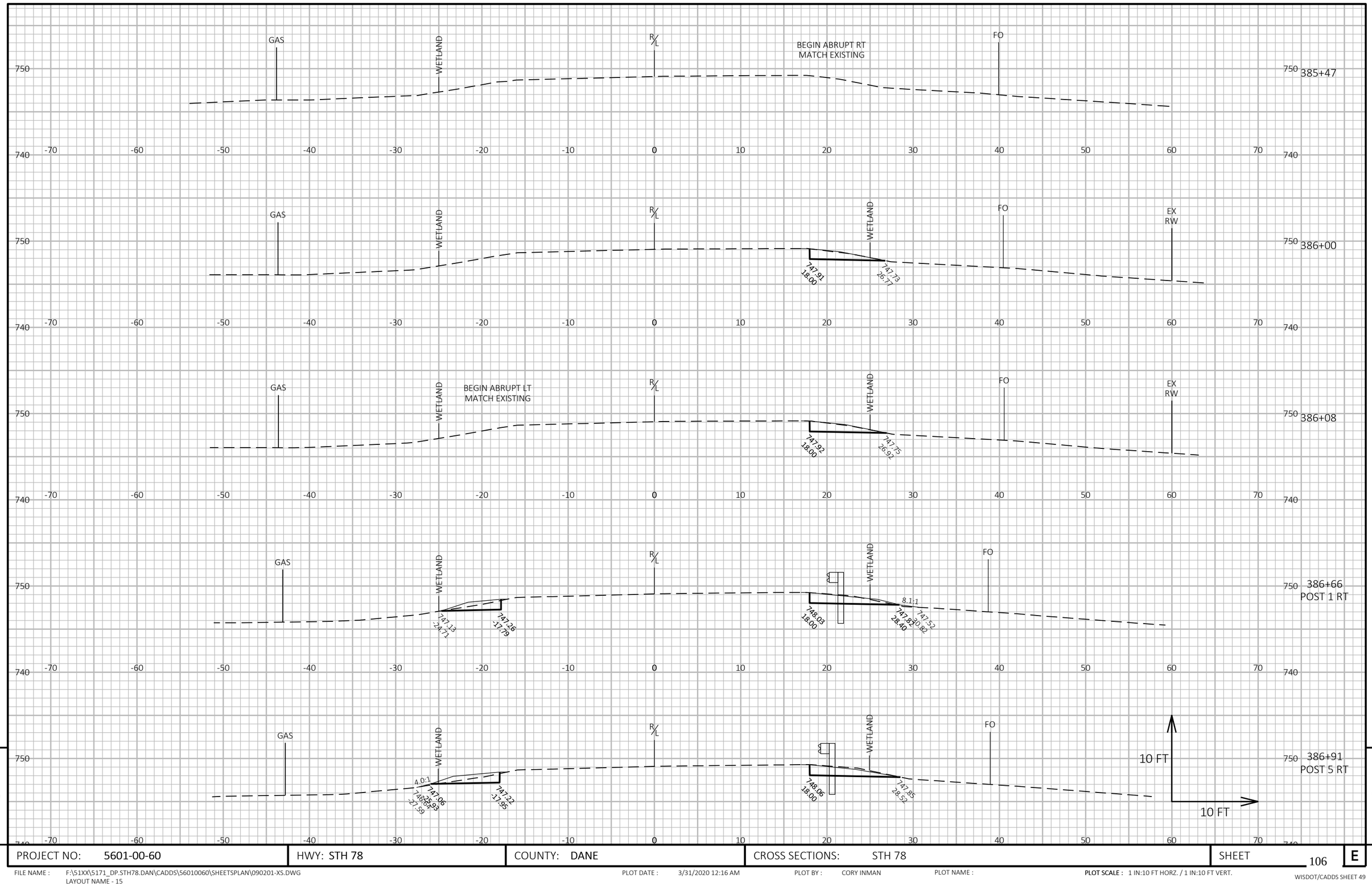
PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CROSS SECTIONS: STH 78	SHEET 105	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 14

PLOT DATE : 3/31/2020 12:16 AM PLOT BY : CORY INMAN PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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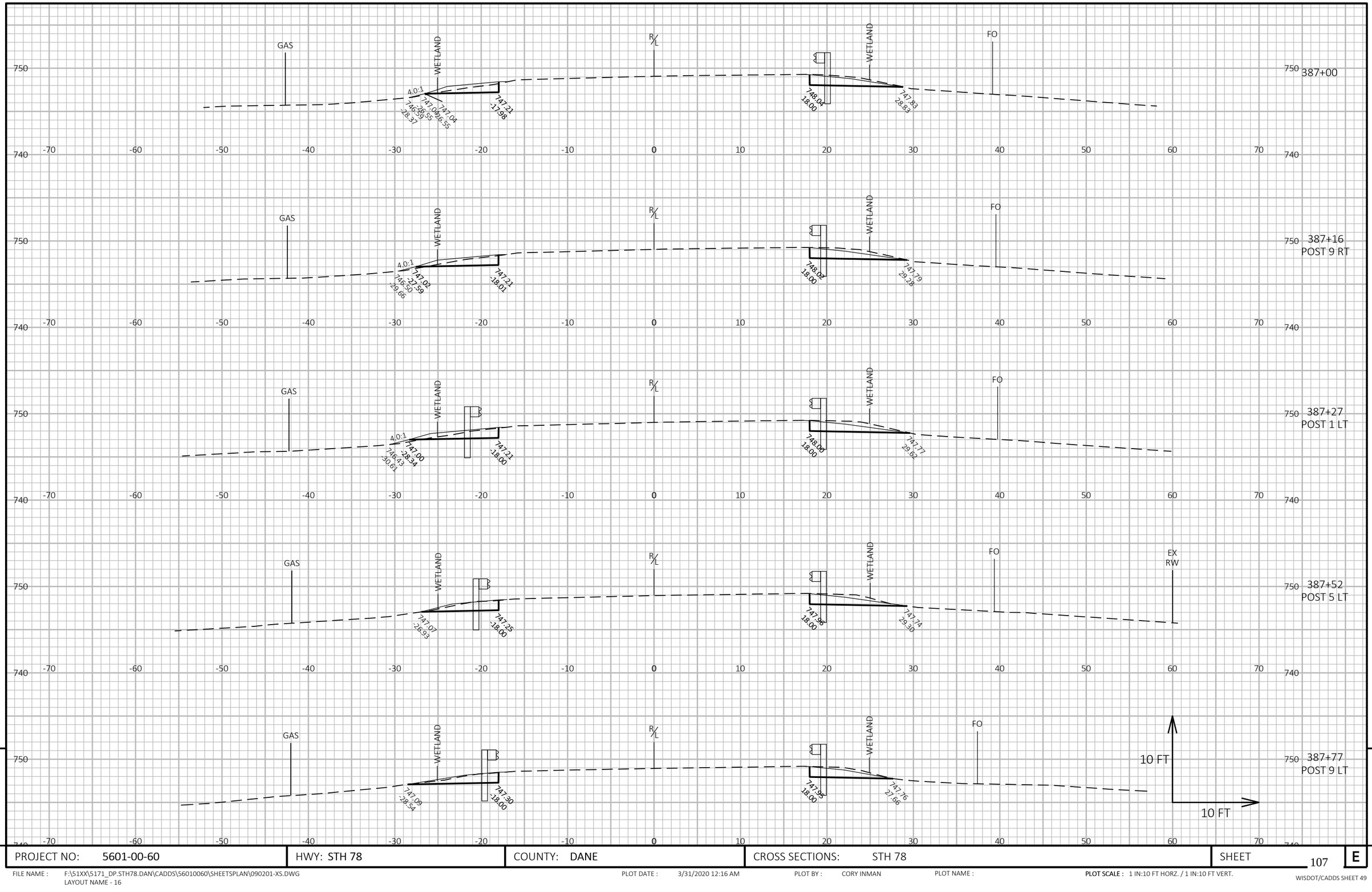
PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CROSS SECTIONS: STH 78	SHEET 106	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 15

PLOT DATE : 3/31/2020 12:16 AM PLOT BY : CORY INMAN PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

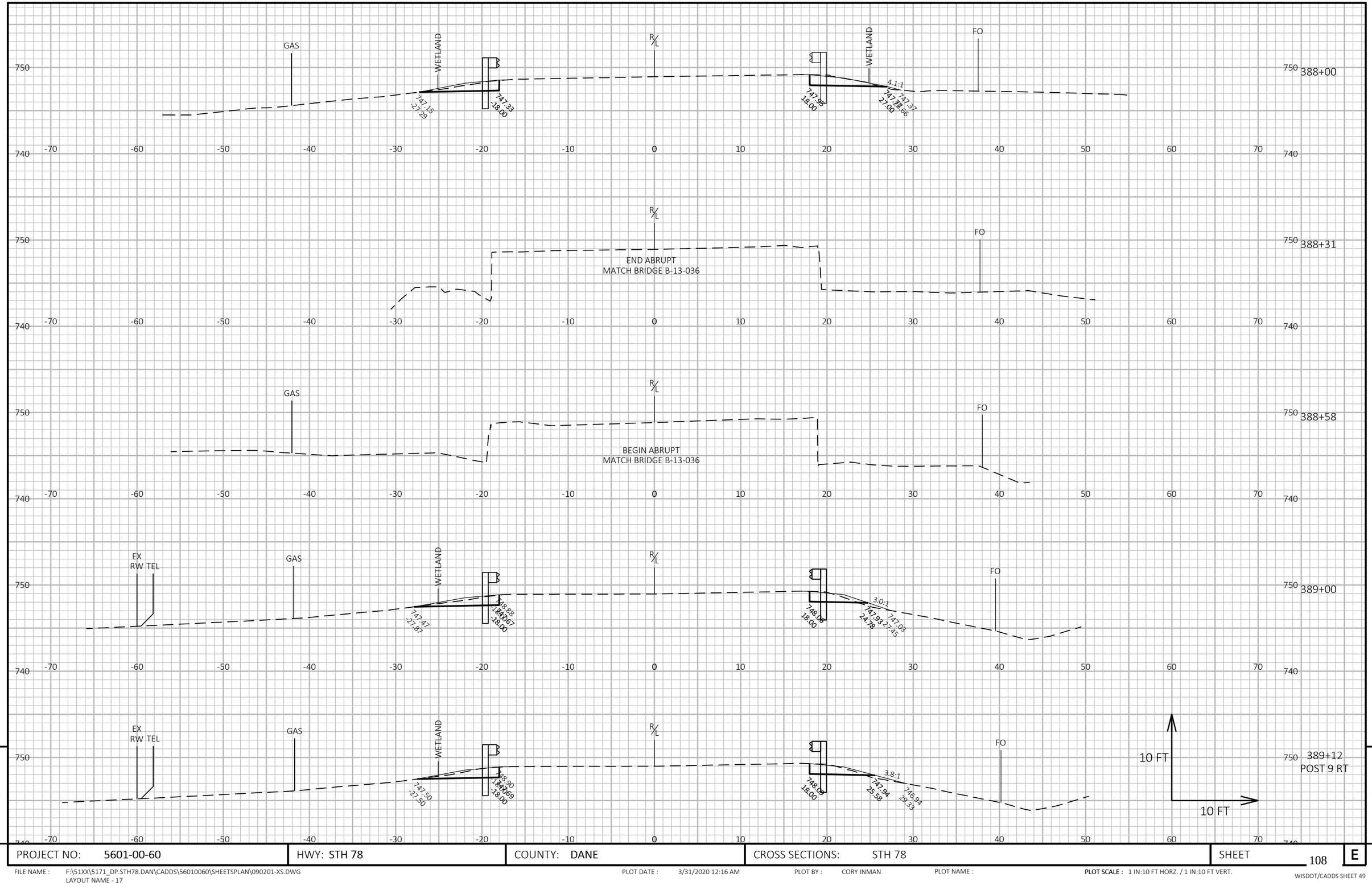


PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CROSS SECTIONS: STH 78	SHEET 107	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 16

PLOT DATE : 3/31/2020 12:16 AM PLOT BY : CORY INMAN PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

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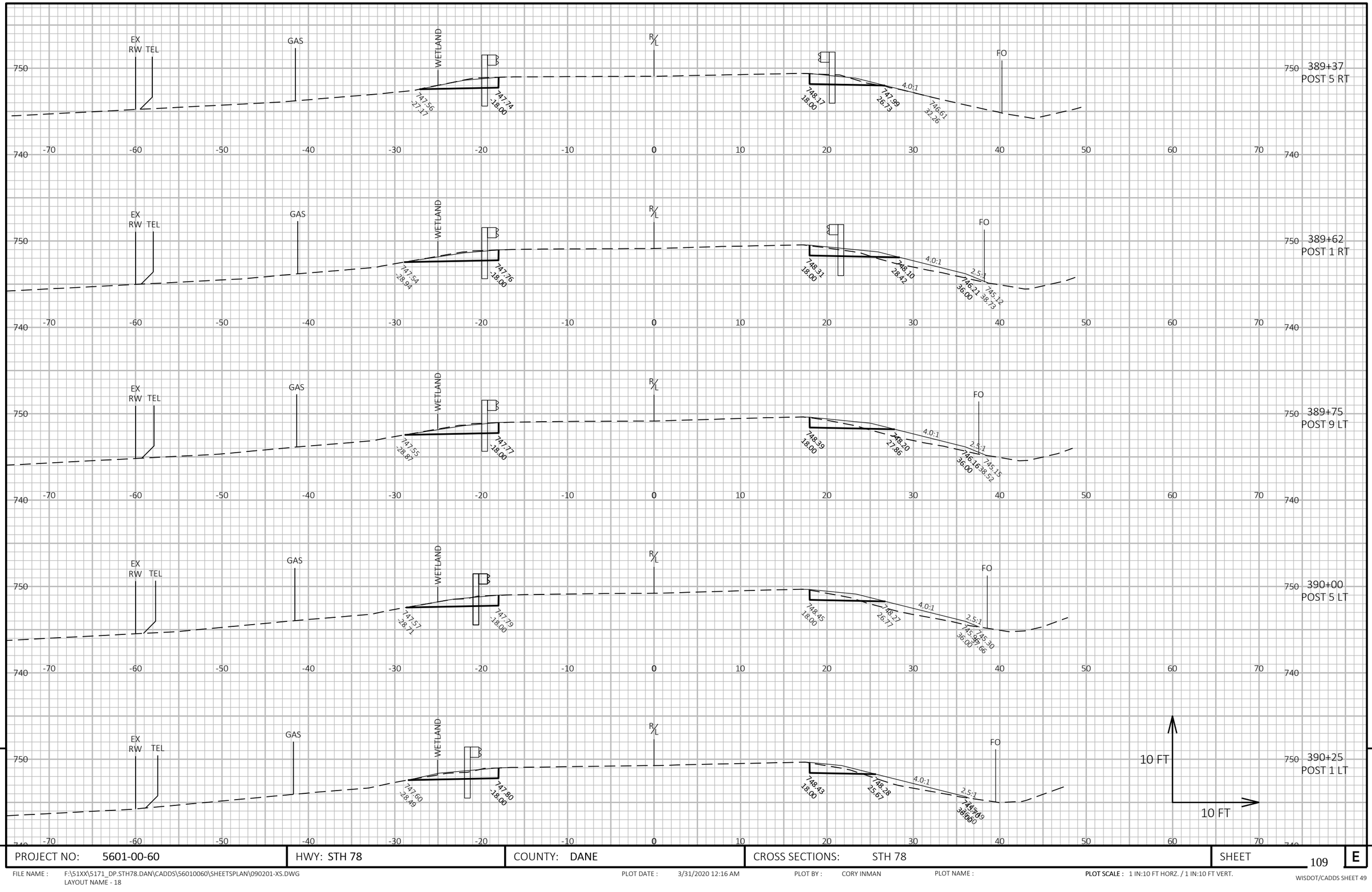
PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CROSS SECTIONS: STH 78	SHEET 108	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 17

PLOT DATE : 3/31/2020 12:16 AM PLOT BY : CORY INMAN PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

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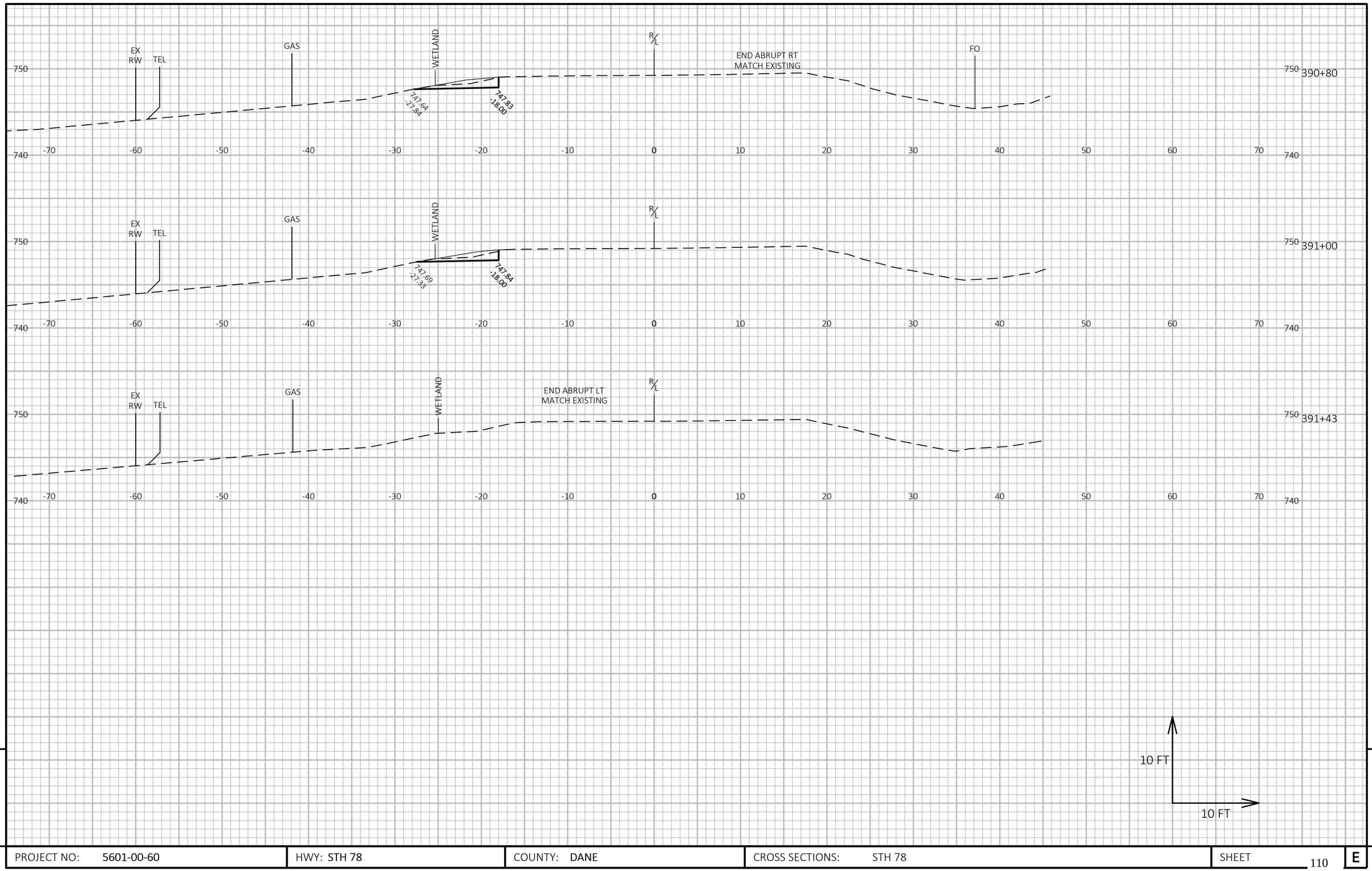
PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CROSS SECTIONS: STH 78	SHEET 109	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 18

PLOT DATE : 3/31/2020 12:16 AM PLOT BY : CORY INMAN PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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PROJECT NO: 5601-00-60	HWY: STH 78	COUNTY: DANE	CROSS SECTIONS: STH 78	SHEET 110	E

FILE NAME : F:\51XX\5171_DP.STH78.DAN\CADDS\56010060\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 19

PLOT DATE : 3/31/2020 12:16 AM PLOT BY : CORY INMAN PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

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Notes

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