EAU

PROJECT ID: 1021-01-79

WITH: N/A

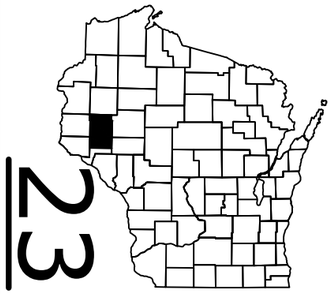
COUNTY: DUNN

OCTOBER 2026

ORDER OF SHEETS

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

TOTAL SHEETS = 216



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

BALDWIN - MENOMONIE

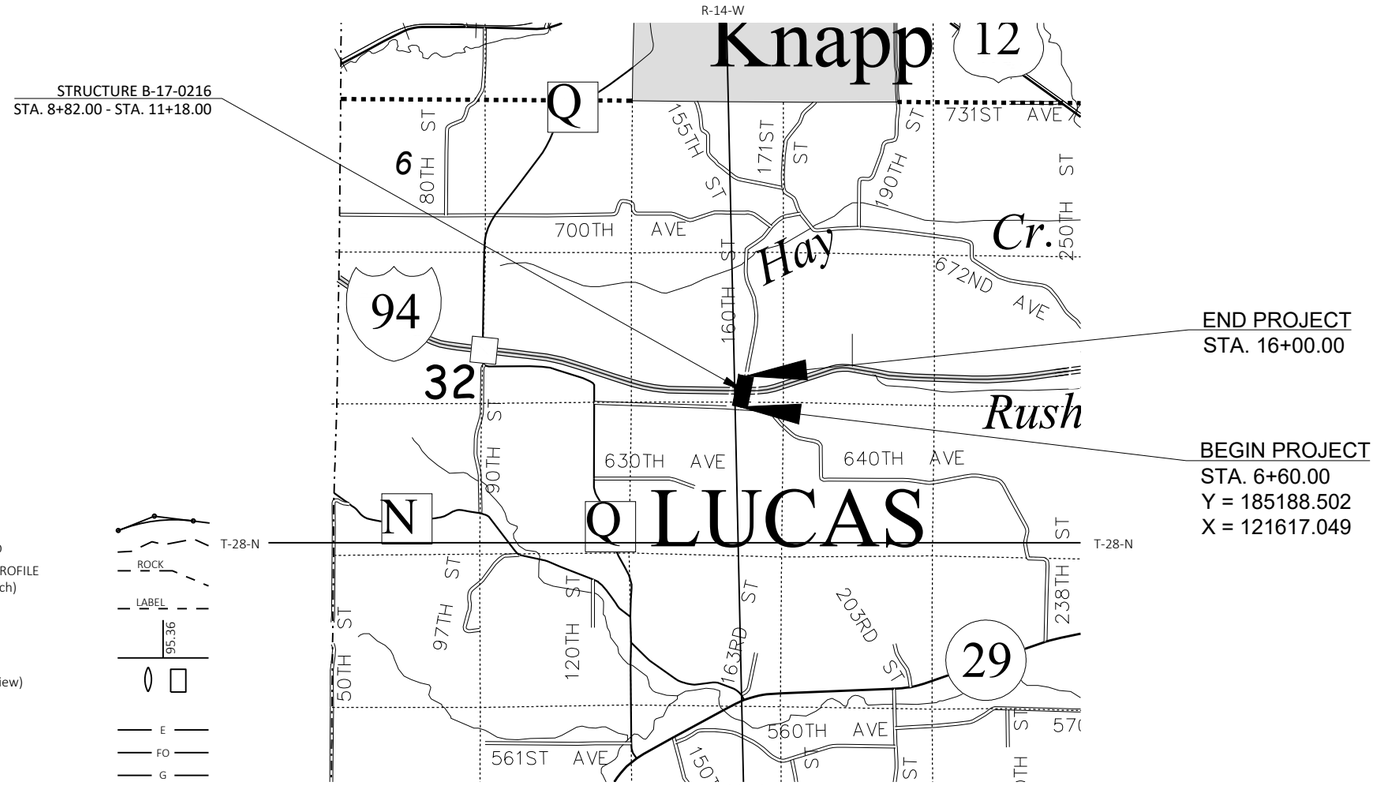
HALL ESTATE RD/160TH ST B-17-0216

IH 94

DUNN COUNTY

STATE PROJECT NUMBER
1021-01-79

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1021-01-79		



LAYOUT

SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.03 MILES

DESIGN DESIGNATION		IH 94	HALL ESTATE RD/160TH ST.
A.A.D.T.	(2027) =	36,000	30
A.A.D.T.	(2047) =	41,600	40
D.H.V.	=	11.9	N/A
D.D.	=	59/41	N/A
T.	=	6.8	N/A
DESIGN SPEED	=	70 MPH	55 MPH
ESALS	=	N/A	N/A

CONVENTIONAL SYMBOLS

PLAN

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

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	KL ENGINEERING, INC.
Designer	NW REGION - EAU CLAIRE
Project Manager	ZACH VANOSTRAND
Regional Examiner	RYAN MAREN
Regional Supervisor	NICOLE PASSUELLO

APPROVED FOR THE DEPARTMENT

DATE: 4/30/26 Nicole Passuello (Signature)

Digitally signed by Nicole Passuello
DN: CN=US, E=nicole.passuello@dot.wi.gov, O=WISCONSIN DOT, OU=NPD Supervisor NW Region, CN=Nicole Passuello
Date: 2026.04.30 14:05:04 -05'00'

E

FILE NAME : C:\CIVIL 3D PROJECTS\10210109\SHEETSPLAN\010101-TI.DWG PLOT DATE : 12/18/2025 9:51 AM PLOT BY : THAO, KOU PLOT NAME :

GENERAL NOTES

CONTACT DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO START OF WORK. 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. ANY LOCAL, MUNICIPAL OR OTHER UTILITY THAT IS NOT A MEMBER OF DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

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

RIGHT OF WAY LINES SHOWN ON THE CROSS SECTIONS ARE APPROXIMATE.

PROTECT INLETS WITH PROPER INLET PROTECTION AT LOCATIONS EXHIBITING RISK OF BEING IMPACTED BY CONSTRUCTION OPERATIONS AS SHOWN ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH WERE DISTURBED BY ANY OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS AT THE CONTRACTORS EXPENSE.

PLACE SALVAGED TOPSOIL IN ALL GRADED AREAS AS DESIGNATED BY THE ENGINEER IMMEDIATELY AFTER GRADING HAS BEEN COMPLETED. SEED, MULCH, EMAT AND FERTILIZE ALL AREAS 5 DAYS AFTER PLACING SALVAGED TOPSOIL.

TEMPORARY STORAGE OF ANY EXCAVATED MATERIAL WILL NOT BE PERMITTED IN WETLANDS, FLOODWAY OR FLOODPLAIN OR ANY WATERWAY.

CURB AND GUTTER GRADES AND LAYOUT DATA ARE GIVEN AT THE FLANGE OF CURB.

THE EROSION CONTROL FEATURES AS SHOWN ON THE PLANS ARE AT SUGGESTED LOCATIONS. EXACT LOCATION WILL BE DETERMINED BY THE ENGINEER.

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

SIGNS IN CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE COVERED AS DIRECTED BY THE ENGINEER AND PAID FOR UNDER THE ITEM "TRAFFIC CONTROL COVERING SIGNS TYPE II".

BENCHMARK LOCATIONS SHOWN ON THE PLAN ARE APPROXIMATE AND SHOULD BE VERIFIED.

A SHRINKAGE FACTOR OF 25% WAS USED IN BALANCING EARTHWORK. ACTUAL SHRINKAGE ENCOUNTERED IN THE FIELD MAY VARY.

EXCAVATION BELOW SUBGRADE (EBS) IS NOT SHOWN ON THE CROSS SECTIONS, BUT IS MEASURED AND PAID FOR AS EXCAVATION COMMON.

WHEN THE QUANTITY OF BASE AGGREGATE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

IF EXISTING PIPE UNDERDRAIN IS EXPOSED DURING EXCAVATION BELOW SUBGRADE IN THE INTERSTATE 94 MEDIAN, MAINTAIN THE FUNCTIONALITY AND REPAIR ANY DAMAGE TO THE EXISTING SYSTEM AS DIRECTED BY THE ENGINEER.

LOCATIONS FOR PERMANENT SIGNS SHOWN ON THE PLAN ARE APPROXIMATE. ACTUAL LOCATIONS OF PERMANENT SIGNS ARE TO BE COORDINATED IN THE FIELD BY THE ENGINEER.

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

TYPICAL FINISHED SECTION SHOWS THE GENERAL ROADWAY FEATURES THROUGHOUT THE PROJECT. PAVEMENT, SLOPES, BORDER SLOPES, ETC., MAY VARY WITHIN THE STATION LIMITS OF THE STATION SECTION.

PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL CONTACT THE COUNTY SURVEYOR CONCERNING MONUMENT AND PROPERTY CORNER PRESERVATION.

STANDARD ABBREVIATIONS

AP	ACCESS POINT
AC	ACRE
AGG	AGGREGATE
ASPH	ASPHALTIC
BL	BASELINE
BM	BENCHMARK
CB	CATCH BASIN
CL	CENTERLINE
CONC	CONCRETE
CO	COUNTY
CABC	CRUSHED AGGREGATE BASE COURSE
CY	CUBIC YARD
CULV	CULVERT
CP	CULVERT PIPE
C&G	CURB AND GUTTER
DIA	DIAMETER
DWY	DRIVEWAY
EB	EASTBOUND
ELEV	ELEVATION
EW	ENDWALL
ENT	ENTRANCE
EXC	EXCAVATION
FP	FENCE POST
FERT	FERTILIZE
F	FILL
FG	FINISHED GRADE
FL	FLOW LINE
FO	FIBER OPTIC
FT	FOOT
HYD	HYDRANT
INL	INLET
INTERS	INTERSECTION
INV	INVERT
JT	JOINT
LT	LEFT
LF	LINEAR FOOT
MH	MANHOLE
MP	MARKER POST
MB	MESSAGE BOARD
NOM	NOMINAL
NB	NORTHBOUND
PAVT	PAVEMENT
PERM	PERMANENT
PU	PIPE UNDERDRAIN
PCC	PORTLAND CEMENT CONCRETE
PE	PRIVATE ENTRANCE
PROJ	PROJECT
PL	PROPERTY LINE
R/L	REFERENCE LINE
RT	RIGHT
RW	RIGHT OF WAY
RDWY	ROADWAY
SHLDR	SHOULDER
SB	SOUTHBOUND
SS	STORM SEWER
TEB	TEMPORARY EASTBOUND
TEL	TELEPHONE
TEMP	TEMPORARY
TER	TERRACE
TV	TELEVISION
TWB	TEMPORARY WESTBOUND
UG	UNDERGROUND
VOL	VOLUME
W	WATER
WB	WESTBOUND
XEB	EXISTING EASTBOUND
XWB	EXISTING WESTBOUND

ORDER OF SECTION 2 SHEETS

GENERAL NOTES
TYPICAL SECTIONS
CONSTRUCTION DETAILS
PLAN DETAILS
EXISTING CONTOUR MAP
EROSION CONTROL
ADVANCE WARNING SIGNING
ALTERNATE IH 94 DETOUR ROUTE OVERVIEW
TRAFFIC CONTROL
ALIGNMENT DETAILS

UTILITIES

COMMUNICATIONS

AT&T LEGACY
KENNETH COLWELL
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EMAIL: RP4514@ATT.COM

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RICE LAKE, WI 54868
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EMAIL: KYLE.SCHLAMPP@LUME.COM

COMMUNICATIONS

LEVEL 3 COMMUNICATIONS, LLC.
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5480 FELTL ROAD
MINNETONKA, MN 55343
PHONE: (952) 351-2330
EMAIL: PAUL.POLK@LUMEN.COM

ELECTRICITY

DUNN ENERGY COOPERATIVE
MIKE ANDRASCHKO
N5725 600TH ST.
P.O. BOX 220
MENOMONIE, WI 54751-0220
PHONE: (715) 232-6240
EMAIL: MANDRA@DUNNENERGY.COM

COMMUNICATIONS

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ERIC BECKER
314 N. DANZ. AVE.
GREEN BAY, WI 54302-3256
PHONE: (920) 321-5007
EMAIL: ERIC.BECKER@WINDSTREAM.COM

COMMUNICATIONS

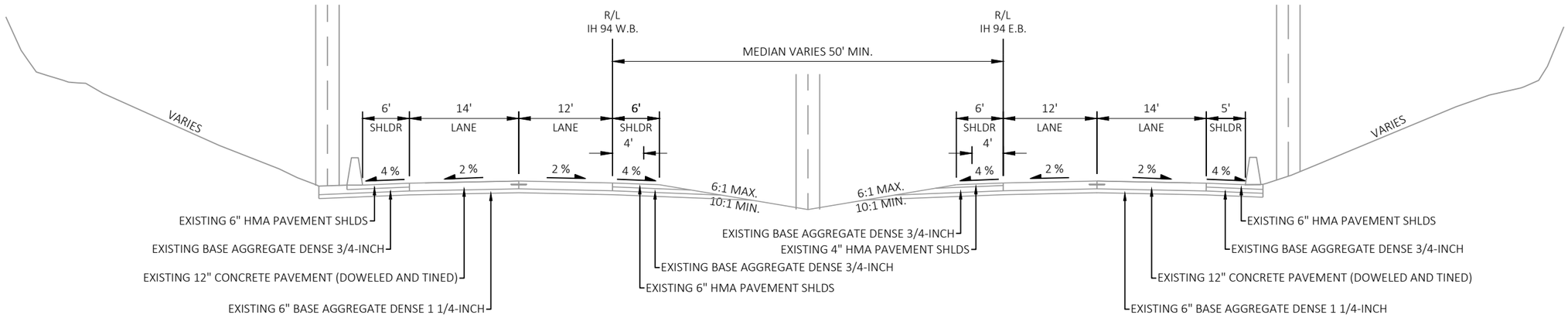
CENTURYLINK
PAUL POLK
5480 FELTL ROAD
MINNETONKA, MN 55343
PHONE: (952) 351-2330
EMAIL: PAUL.POLK@LUMEN.COM

PROJECT MANAGER

ZACH VANOSTRAND, P.E.
PE SERVICES
2930 WATERS ROAD, SUITE 230
EAGAN, MN 55121
PHONE: (612) 427-2838
EMAIL: ZACH.VANOSTRAND@PESERVICESMN.COM

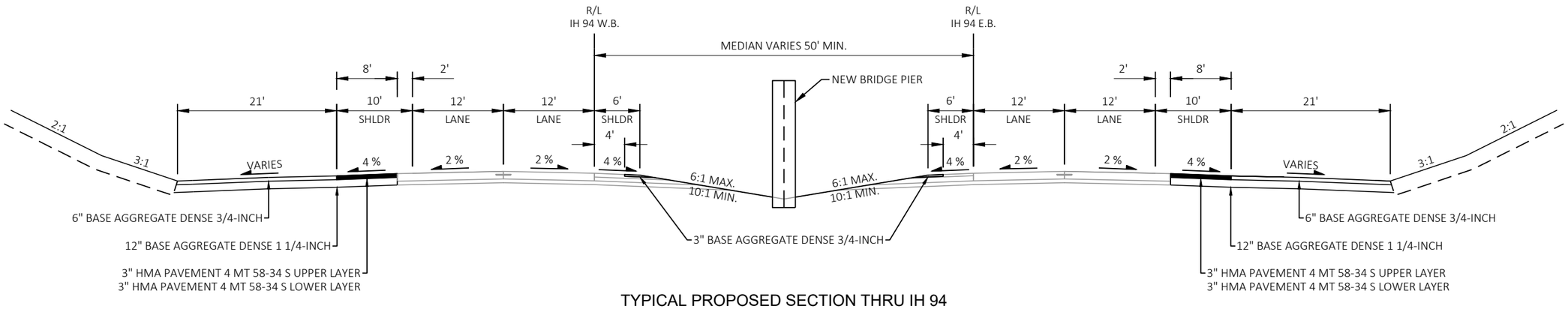
DNR LIAISON

LEAH NICOL
DNR WEST CENTRAL REGION HEADQUARTERS
1300 W. CLAIREMONT AVE.
EAU CLAIRE, WI 54701
PHONE: (715) 934-9014
EMAIL: LEAH.NICOL@WISCONSIN.GOV



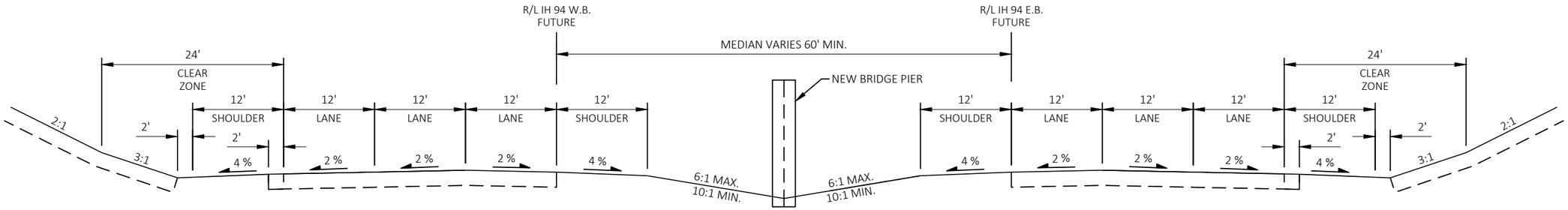
TYPICAL EXISTING SECTION THRU IH 94

(LOOKING EAST)



TYPICAL PROPOSED SECTION THRU IH 94

(LOOKING EAST)



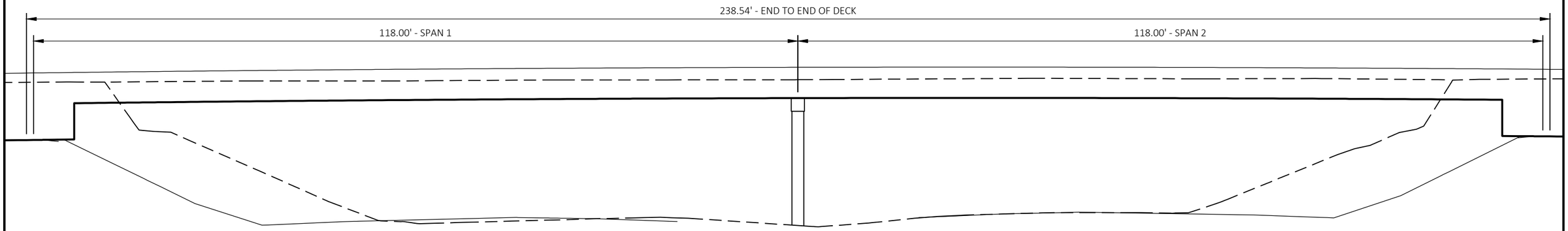
TYPICAL FUTURE SECTION THRU IH 94

(LOOKING EAST)

THIS CROSS SECTION WAS USED TO SIZE STRUCTURE

PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	TYPICAL SECTIONS	SHEET 3	E

2



SKEWED TYPICAL FUTURE SECTION THRU IH 94

(LOOKING EAST)

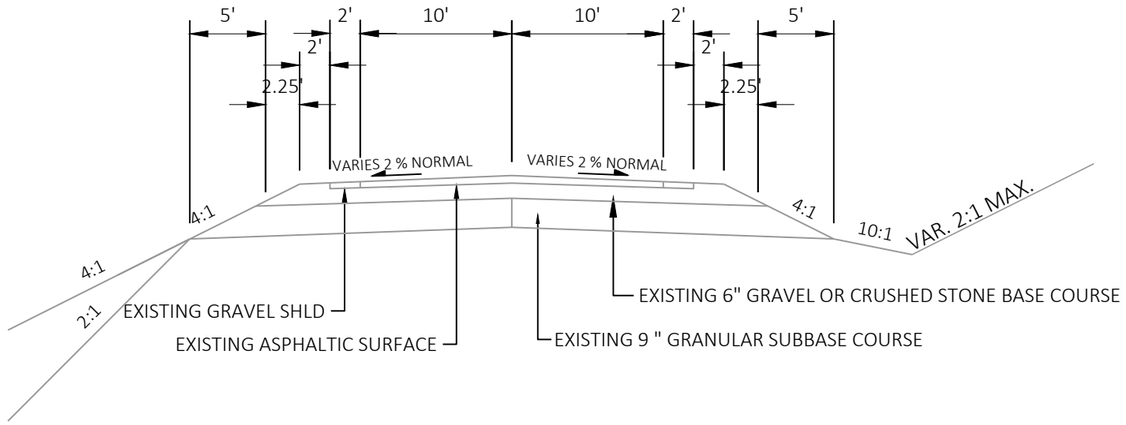
THIS CROSS SECTION WAS USED TO SIZE STRUCTURE

PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	TYPICAL SECTIONS	SHEET 4	E

RB 1 STA 8+00, 10' RT Roadway Boring
3.0" HMA
5.0" RAP
10.0" Crushed Stone

RB 2 STA 12+22, 10' LT Roadway Boring
4.0" HMA
3.0" RAP
5.0" Crushed Stone

RB 3 STA 14+00, 6' RT Roadway Boring
3.0" HMA
2.0" RAP
5.0" Crushed Stone



EXISTING TYPICAL SECTION HALL ESTATE ROAD / 160TH ST.

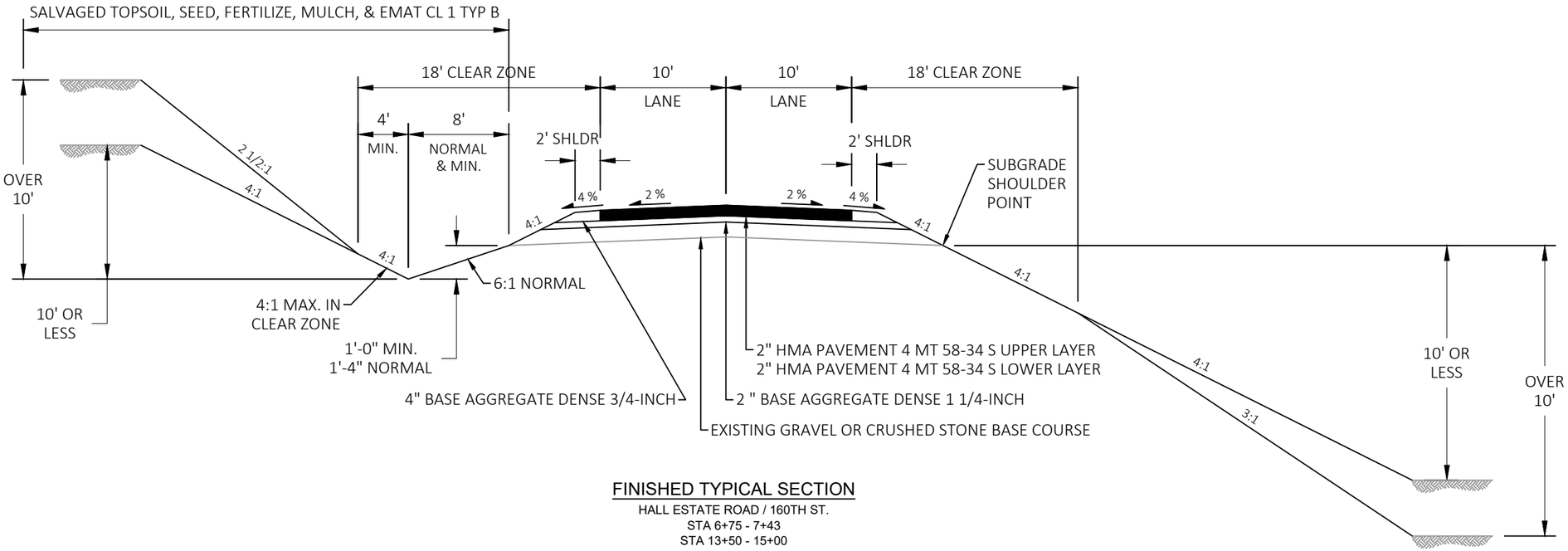
STA 6+75 - 15+00

PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	TYPICAL SECTIONS	SHEET 5	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - 03-15ft

PLOT DATE : 4/7/2026 1:03 PM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:10 FT

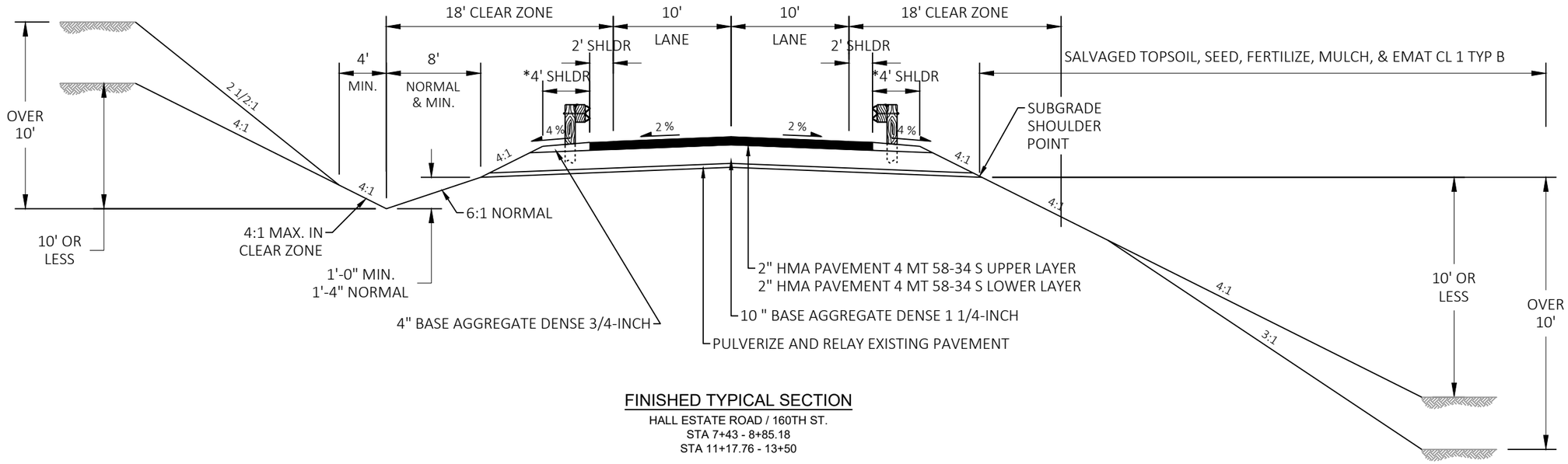
WISDOT/CADDS SHEET 42



FINISHED TYPICAL SECTION

HALL ESTATE ROAD / 160TH ST.
STA 6+75 - 7+43
STA 13+50 - 15+00

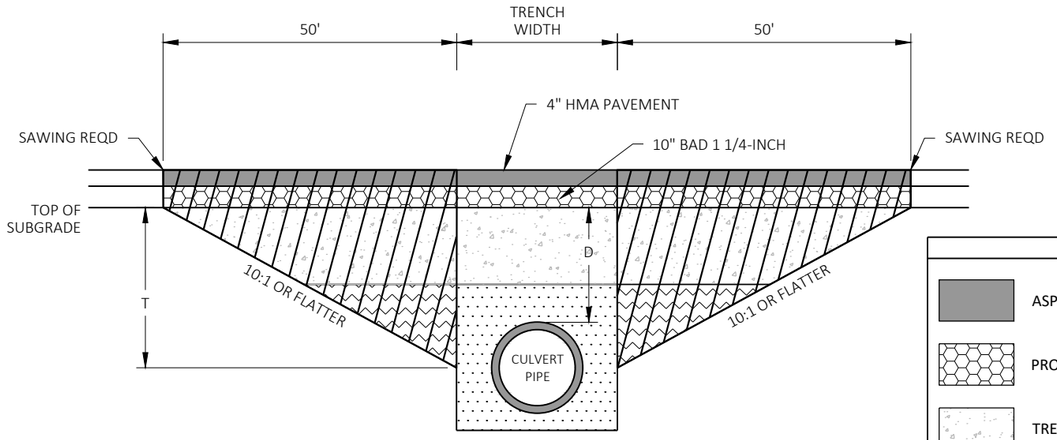
*SHOULDER WIDTH VARIES AT EAT LOCATIONS, SEE CROSS SECTIONS



FINISHED TYPICAL SECTION

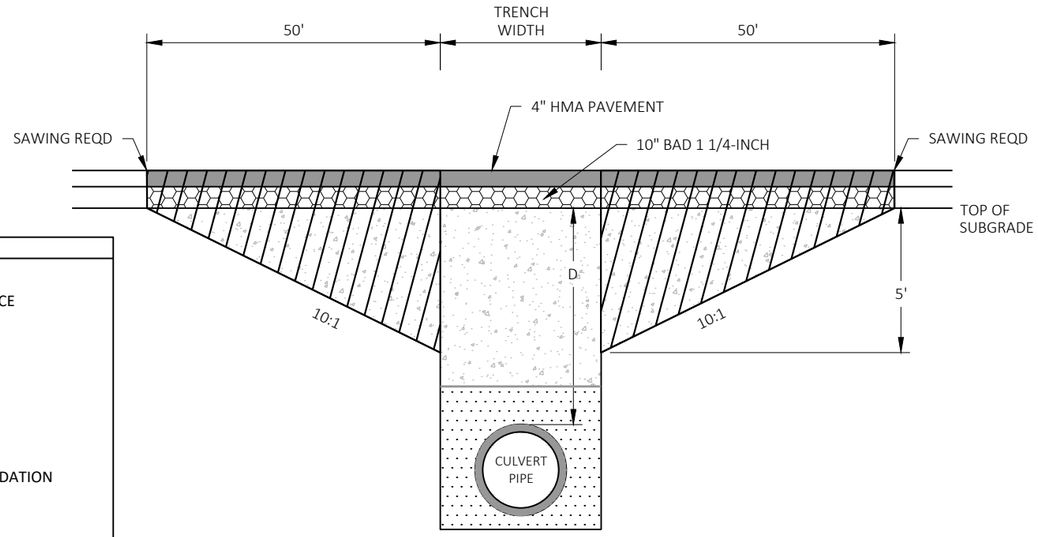
HALL ESTATE ROAD / 160TH ST.
STA 7+43 - 8+85.18
STA 11+17.76 - 13+50

PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	TYPICAL SECTIONS	SHEET 6	E



DEPTH D < 6 FT

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



DEPTH D ≥ 6 FT

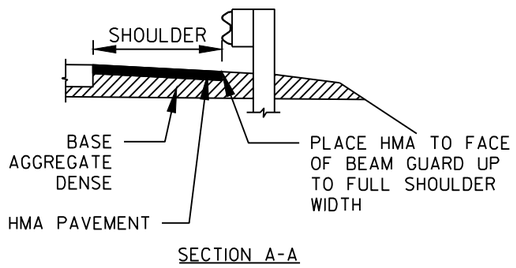
KEY

- ASPHALTIC SURFACE
- PROPOSED BASE
- TRENCH BACKFILL
- TRENCH OR FOUNDATION BACKFILL
- FOUNDATION BACKFILL
- TRANSITION CUT

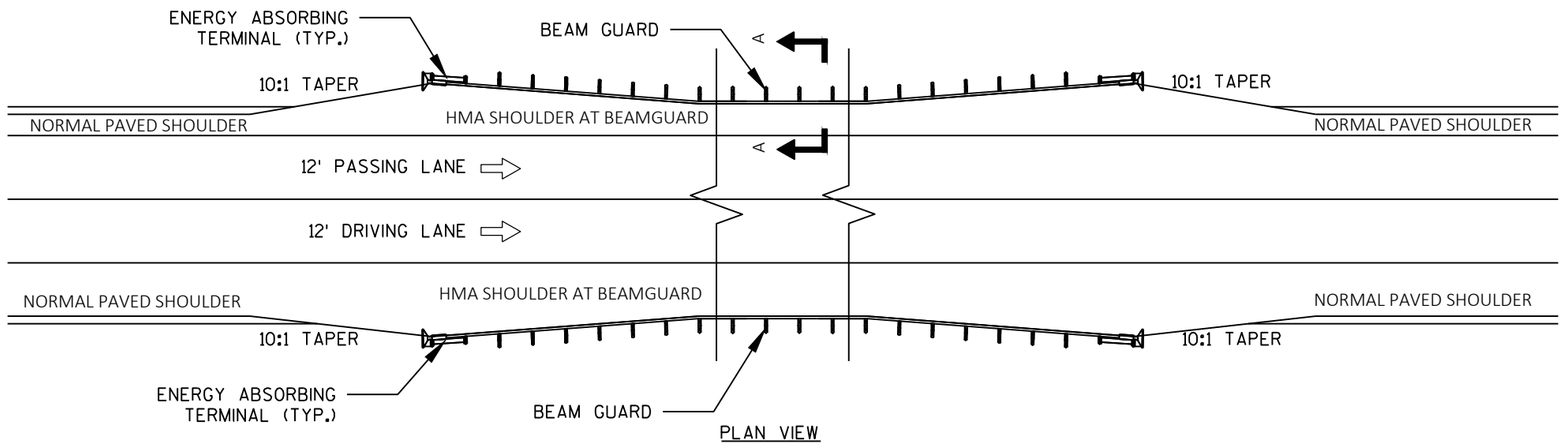
NOTES

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

CULVERT EXCAVATION DETAIL

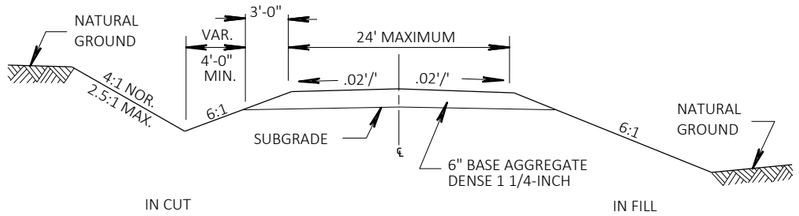


SECTION A-A

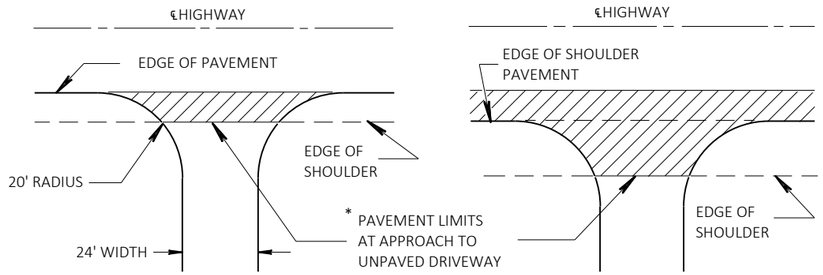


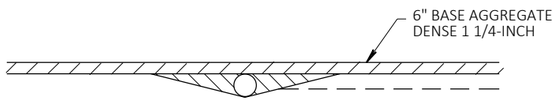
PLAN VIEW

HMA SHOULDER AT BEAM GUARD DETAIL

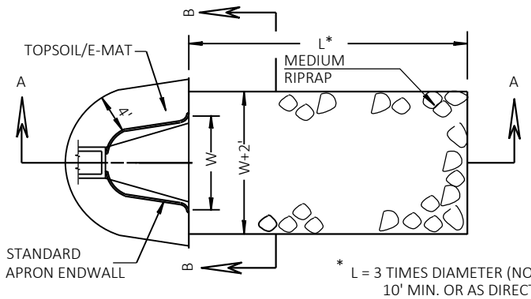


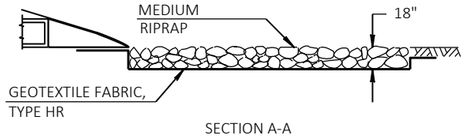
TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE

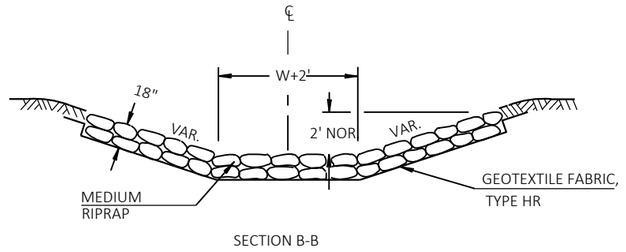




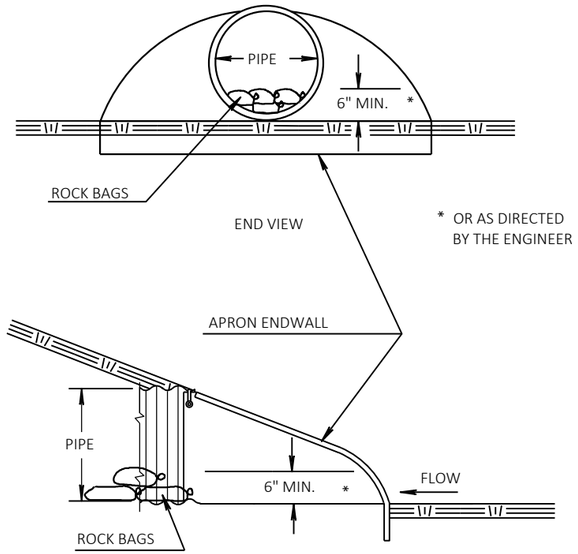
RURAL DRIVEWAY DETAIL







MEDIUM RIPRAP AND GEOTEXTILE FABRIC DETAIL AT ARPON ENDWALL



CULVERT PIPE DITCH CHECK

2

2

N

PI: 16+00.00

PI: 15+00.00

HALL ESTATE RD / 160TH ST

REMOVE EXISTING FIELD ENTRANCE

REMOVING FENCE
INSTALL FENCE WOVEN WIRE

REMOVE EXISTING GUARDRAIL
INSTALL MGS GUARDRAIL

CLEARING AND GRUBING
STA 11+00 - 13+00

BASE AGGREGATE RUN OUT

HMA PAVEMENT TO BE PLACED AT/NEAR BARRIER
WALL AND BEAM GUARD REMOVAL LOCATIONS TO
PROVIDE FULL WIDTH SHOULDER.

CLEARING AND GRUBING
STA 574'WB'+00 - 578'WB'+00

SALVAGED AND REINSTALL
HIGH TENSION CABLE BARRIER
573'EB'+00 - 579'EB'+93, LT

STRUCTURE B-17-0216

REMOVE EXISTING CONCRETE BARRIER

SALVAGE EXISTING GUARDRAIL

PC: 577+20.40 'WB'

R/L OF IH 94 WB

570'WB'

572'WB'

574'WB'

576'WB'

578'WB'

580'WB'

582'WB'

584'WB'

570'EB'

572'EB'

574'EB'

576'EB'

578'EB'

580'EB'

582'EB'

584'EB'

R/L OF IH 94 EB

REMOVE AND REINSTALL GUARDRAIL
573'EB'+17 - 576'EB'+12, RT
MGS GUARDRAIL TERMINAL TYPE 2
STA 576'EB'+12 - 576'EB'+24

SALVAGE EXISTING GUARDRAIL
STEEL THRIE BEAM
STEEL THRIE BEAM BULLNOSE TERMINAL
575'WB'+54 - 577'WB'+23, RT

REMOVE EXISTING CONCRETE BARRIER

PC: 578+64.66 'EB'

HMA PAVEMENT TO BE PLACED AT/NEAR BARRIER
WALL AND BEAM GUARD REMOVAL LOCATIONS TO
PROVIDE FULL WIDTH SHOULDER.

BASE AGGREGATE RUN OUT

CLEARING AND GRUBING
STA 574'EB'+00 - 578'EB'+00

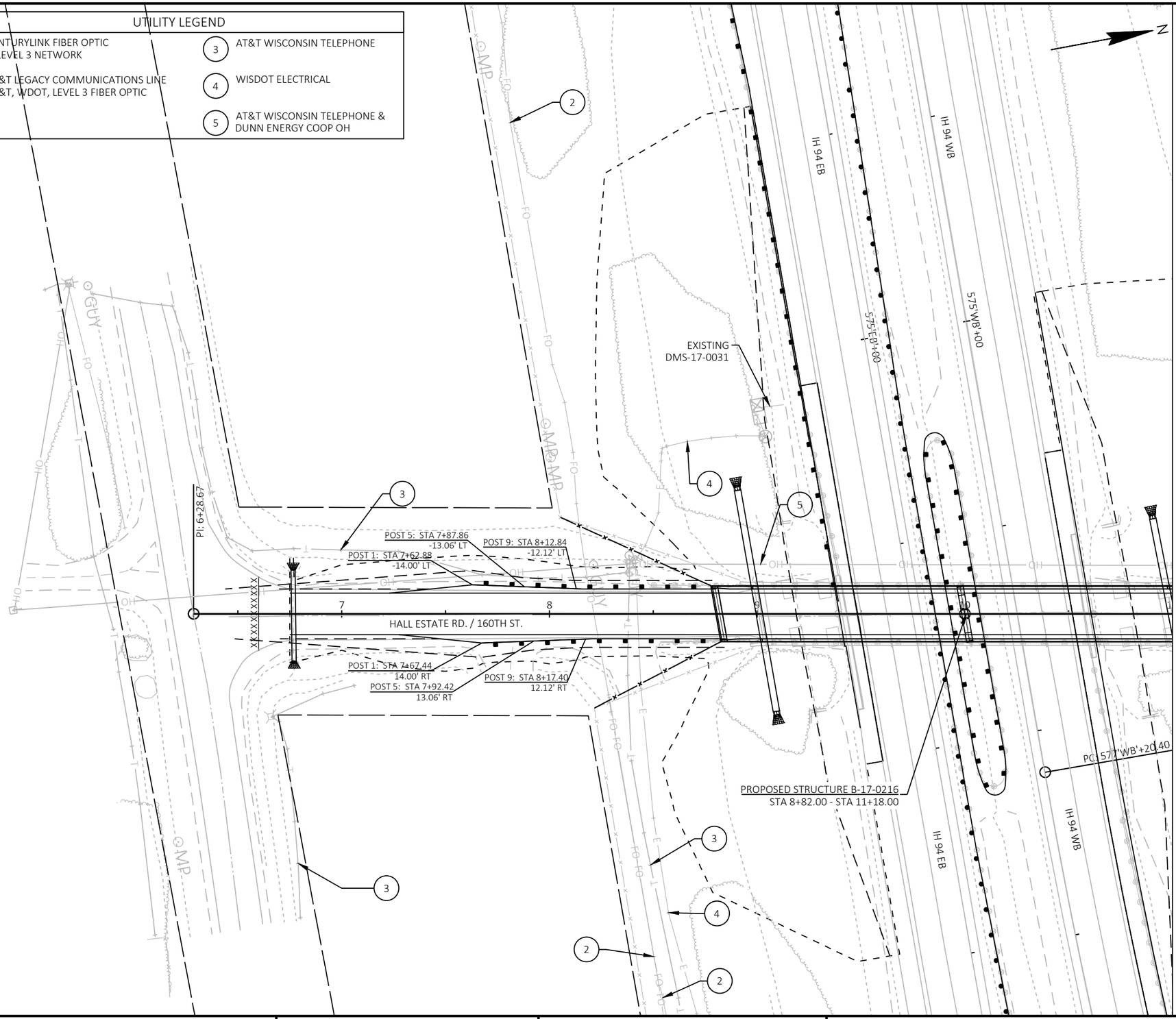
REMOVING FENCE
INSTALL FENCE WOVEN WIRE

REMOVE EXISTING GUARDRAIL
INSTALL MGS GUARDRAIL

PI: 6+28.67

PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CONSTRUCTION DETAILS	SHEET 9	E

UTILITY LEGEND	
1 CENTURYLINK FIBER OPTIC & LEVEL 3 NETWORK	3 AT&T WISCONSIN TELEPHONE
2 AT&T LEGACY COMMUNICATIONS LINE AT&T, WDOT, LEVEL 3 FIBER OPTIC	4 WISDOT ELECTRICAL
	5 AT&T WISCONSIN TELEPHONE & DUNN ENERGY COOP OH



PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	PLAN DETAILS	SHEET 10	E

2

2

UTILITY LEGEND	
1 CENTURYLINK FIBER OPTIC & LEVEL 3 NETWORK	3 AT&T WISCONSIN TELEPHONE
2 AT&T LEGACY COMMUNICATIONS LINE AT&T, WDOT, LEVEL 3 FIBER OPTIC	4 WISDOT ELECTRICAL
	5 AT&T WISCONSIN TELEPHONE & DUNN ENERGY COOP OH

N

MATCH LINE 11+00

BASS AGG DENSE 1 1/4-INCH
AT BARN ENTRANCE

N10°47'45"E
50.54'

57.91'
S87°37'02"E

PRC: 21+18.10

N10°37'22"E
91.24'

PROPOSED TLE
0.329 ACRES

84.38'
S79°22'38"E

PT: 21+88.21

POST 9: STA 11+82.60
12.12' LT

POST 1: STA 12+32.56
14.00' LT

POST 5: STA 12+07.58
13.06' LT

22

PI: 15+00.00

PI: 16+00.00

5

OH

12

13

14

15

16

EP: 22+43.71

HALL ESTATE RD. / 160TH ST.

POST 9: STA 11+87.16
12.12' RT

POST 1: STA 12+37.12
14.00' RT

POST 5: STA 12+12.14
13.06' RT

PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	PLAN DETAILS	SHEET 11	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 021202

PLOT DATE : 8/20/2026 2:29 PM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:50 FT

WISDOT/CADDS SHEET 42

2

UTILITY LEGEND

1. CENTURYLINK FIBER OPTIC & LEVEL 3 NETWORK
2. AT&T LEGACY COMMUNICATIONS LINE AT&T, WDOT, LEVEL 3 FIBER OPTIC
3. AT&T WISCONSIN TELEPHONE
4. WISDOT ELECTRICAL
5. AT&T WISCONSIN TELEPHONE & DUNN ENERGY COOP OH

N

HALL ESTATE ROAD / 160TH ST.

REMOVING FENCE
INSTALL FENCE WOVEN WIRE

REMOVING FENCE
INSTALL FENCE WOVEN WIRE

IH 94 WB

SLOPE
INTERCEPT

STEEL THRIE BEAM
BULLNOSE TERMINAL REQ'D.

STEEL THRIE BEAM REQ'D.
PAY LIMIT = 62.5'

STEEL THRIE BEAM
BULLNOSE TERMINAL REQ'D.

IH 94 WESTBOUND

CENTERLINE OF PIERS

BARRIER SYSTEM GRADING
SHAPING FINISHING REQ'D.

POST #5
STA 575'WB'+69.9

POST #12'S
STA 576'WB'+07.4 & 576'WB'+69.9

POST #5
STA 577'WB'+07.4

POST #5
STA 575'EB'+69.9

CENTERLINE OF PIERS

POST #5
STA 577'EB'+07.4

REMOVING
GUARDRAIL REQ'D.

IH 94 WB

SALVAGED AND REINSTALL
HIGH TENSION CABLE BARRIER

POST #12'S
STA 576'EB'+07.4 & 576'EB'+69.9

IH 94 EASTBOUND

SLOPE
INTERCEPT

REMOVING FENCE
INSTALL FENCE WOVEN WIRE

REMOVING FENCE
INSTALL FENCE WOVEN WIRE

HALL ESTATE ROAD / 160TH ST.

PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	PLAN DETAILS	SHEET 12	E

UTILITY LEGEND

1. CENTURYLINK FIBER OPTIC & LEVEL 3 NETWORK
2. AT&T LEGACY COMMUNICATIONS LINE AT&T, WDOT, LEVEL 3 FIBER OPTIC
3. AT&T WISCONSIN TELEPHONE
4. WISDOT ELECTRICAL
5. AT&T WISCONSIN TELEPHONE OH

N

IH 94 WB

575+00 WB

IH 94 EB

575+00 EB

HALL ESTATE RD. / 160TH ST.

PC: 577+20.40

EXPB02
DO NOT REMOVE

EX-DMS-17-0031
DISCONNECT POWER WIRES FROM BREAKER DISCONNECT BOX

STA 575+24.43
44' R

STA 575+38.08
55' R

REMOVE AND SALVAGE POWER WIRES FROM CONDUIT AND COIL IN EXPB01 FOR LATER RE-INSTALLATION. ABANDON CONDUIT.

STA 575+87.29
130' R

EXPB01
DO NOT REMOVE

EXMB01
DO NOT REMOVE

PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	FTMS REMOVAL PLAN	SHEET 13	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\021204-PD FTMS.DWG
LAYOUT NAME - 021204

PLOT DATE : 4/17/2026 11:53 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

UTILITY LEGEND

1. CENTURYLINK FIBER OPTIC & LEVEL 3 NETWORK
2. AT&T LEGACY COMMUNICATIONS LINE AT&T, WDOT, LEVEL 3 FIBER OPTIC
3. AT&T WISCONSIN TELEPHONE
4. WISDOT ELECTRICAL
5. AT&T WISCONSIN TELEPHONE OH

N

IH 94 WB

575+00 WB

IH 94 EB

575+00 EB

HALL ESTATE RD. / 160TH ST.

PC: 577+20.40

EXPB02
ADJUST EXISTING PULL BOX TO MATCH NEW ELEVATION
(1) INSTALL CONDUIT INTO EXISTING ITEM

EX-DMS-17-0031
RECONNECT POWER WIRES TO BREAKER DISCONNECT BOX

STA 575+24.43
44' R

STA 575+38.08
55' R

INSTALL SALVAGED POWER WIRES IN EXISTING CONDUIT

INSTALL (2) 2-INCH NONMETALLIC CONDUIT
(1) WITH SALVAGED POWER WIRES
(1) SPARE

STA 575+87.29
130' R

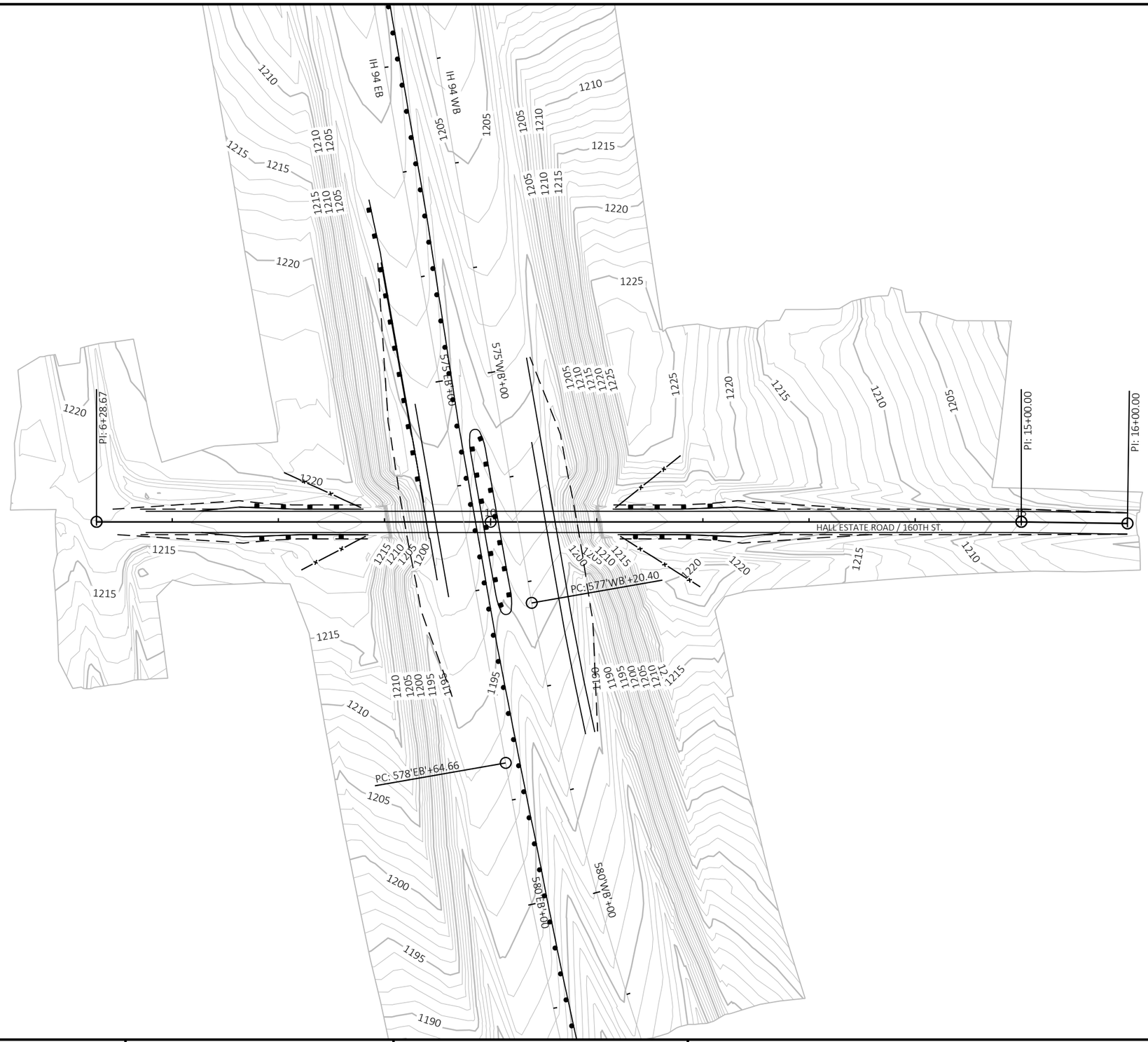
EXPB01
(1) INSTALL CONDUIT INTO EXISTING ITEM

EXMB01

2

PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	FTMS DESIGN PLAN	SHEET 14	E

2

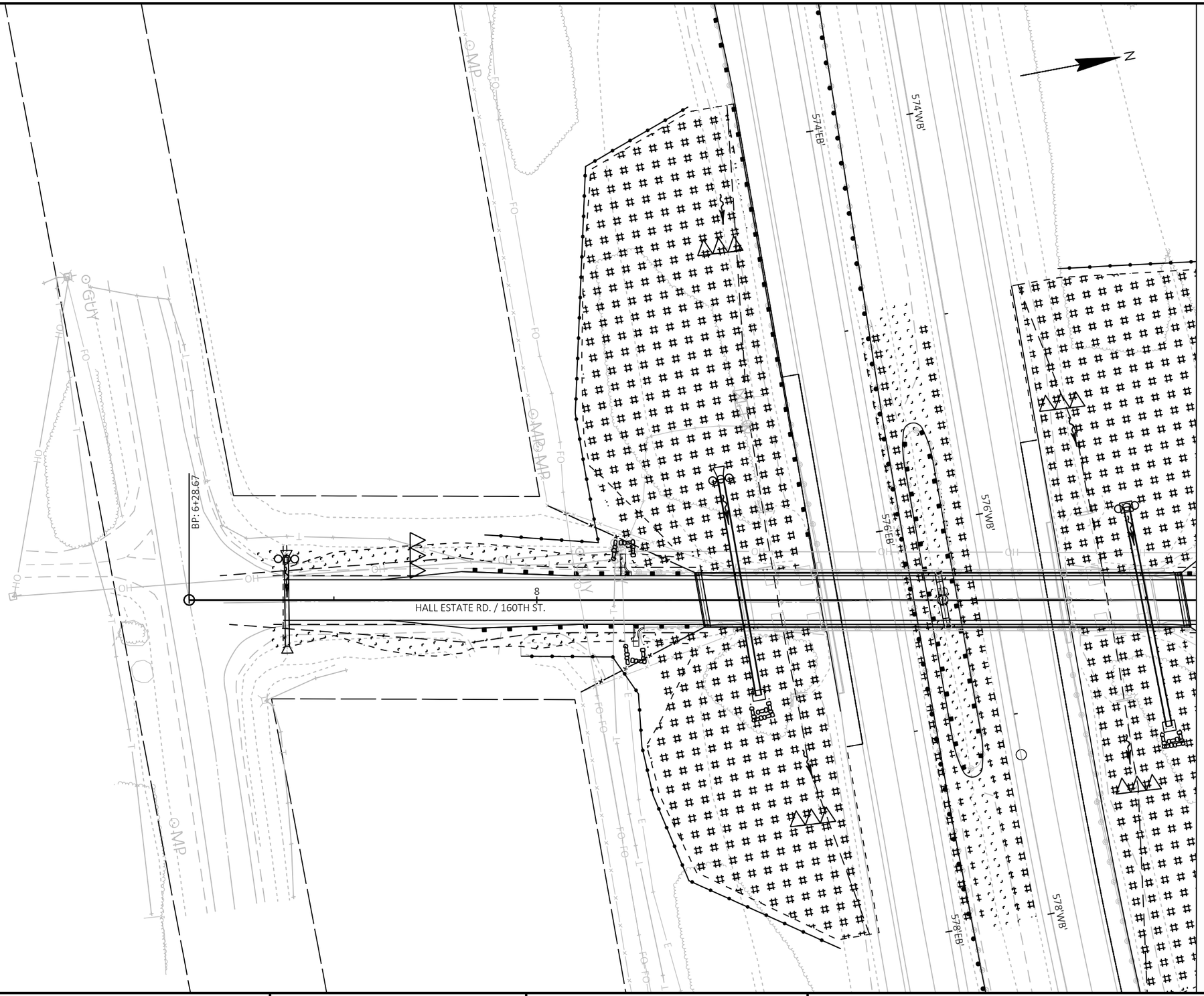


PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	EXISTING CONTOUR MAP	SHEET 15	E

FILE NAME : C:\C3D\10210109\SHEETSPLAN\021601-CM.DWG
LAYOUT NAME - 021601

PLOT DATE : 8/16/2022 9:40 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:100 FT

2



LEGEND

- EROSION MAT CLASS I, TYPE B
- SILT FENCE
- RIP RAP MEDIUM WITH GEOTEXTILE TYPE HR
- SLOPE INTERCEPT
- MULCH
- TEMPORARY DITCH CHECK
- CULVERT PIPE DITCH CHECK
- SURFACE WATER FLOW
- ASPHALTIC FLUMES

NOTE: SEE PLAN AND PROFILE SHEETS FOR CULVERT INFORMATION.

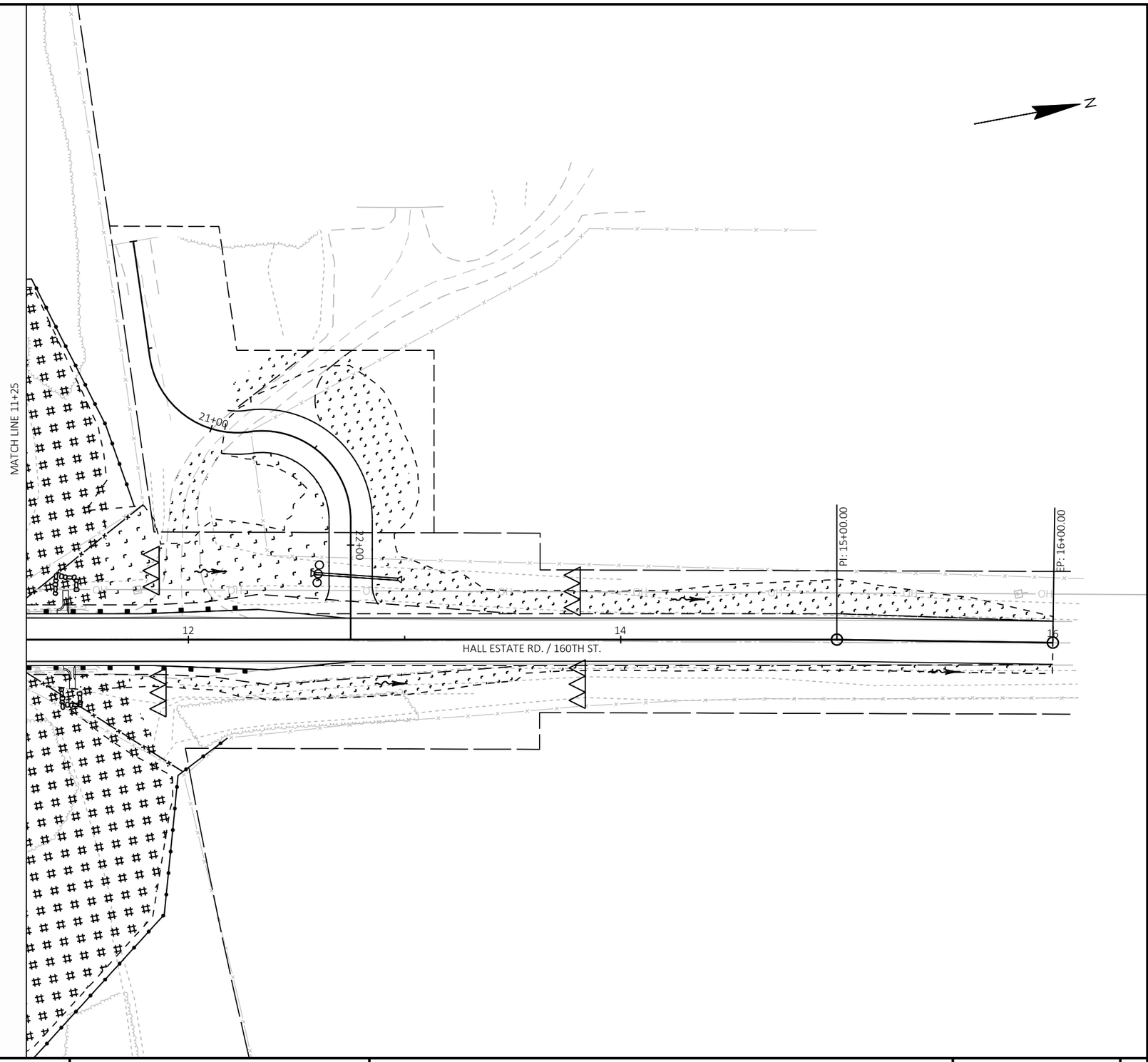
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	EROSION CONTROL	SHEET 16	E

2

LEGEND

- EROSION MAT CLASS I, TYPE B
- SILT FENCE
- RIP RAP MEDIUM WITH GEOTEXTILE TYPE HR
- SLOPE INTERCEPT
- MULCH
- TEMPORARY DITCH CHECK
- CULVERT PIPE DITCH CHECK
- SURFACE WATER FLOW
- ASPHALTIC FLUMES

NOTE: SEE PLAN AND PROFILE SHEETS FOR CULVERT INFORMATION.



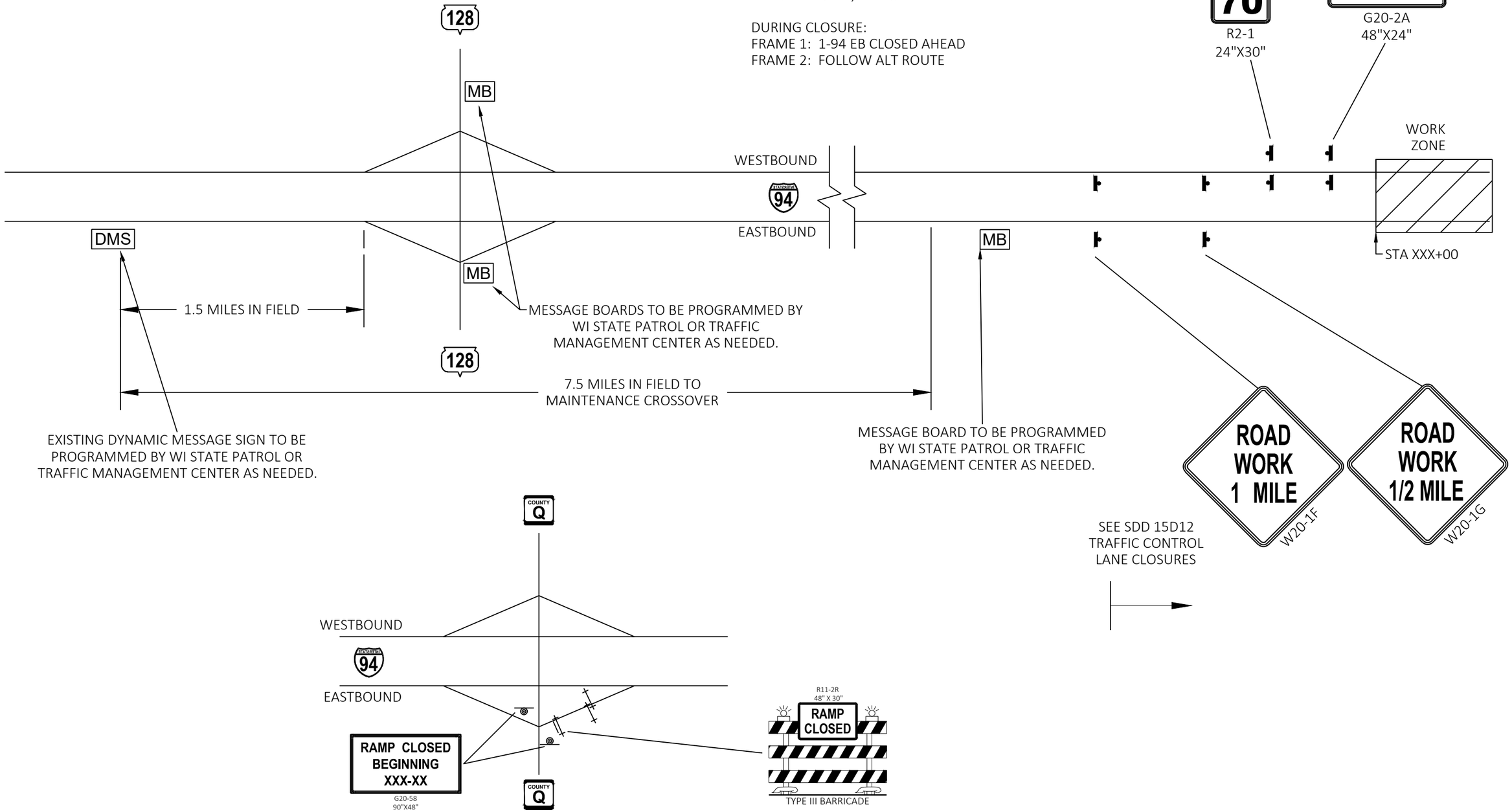
2

PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	EROSION CONTROL	SHEET 17	E

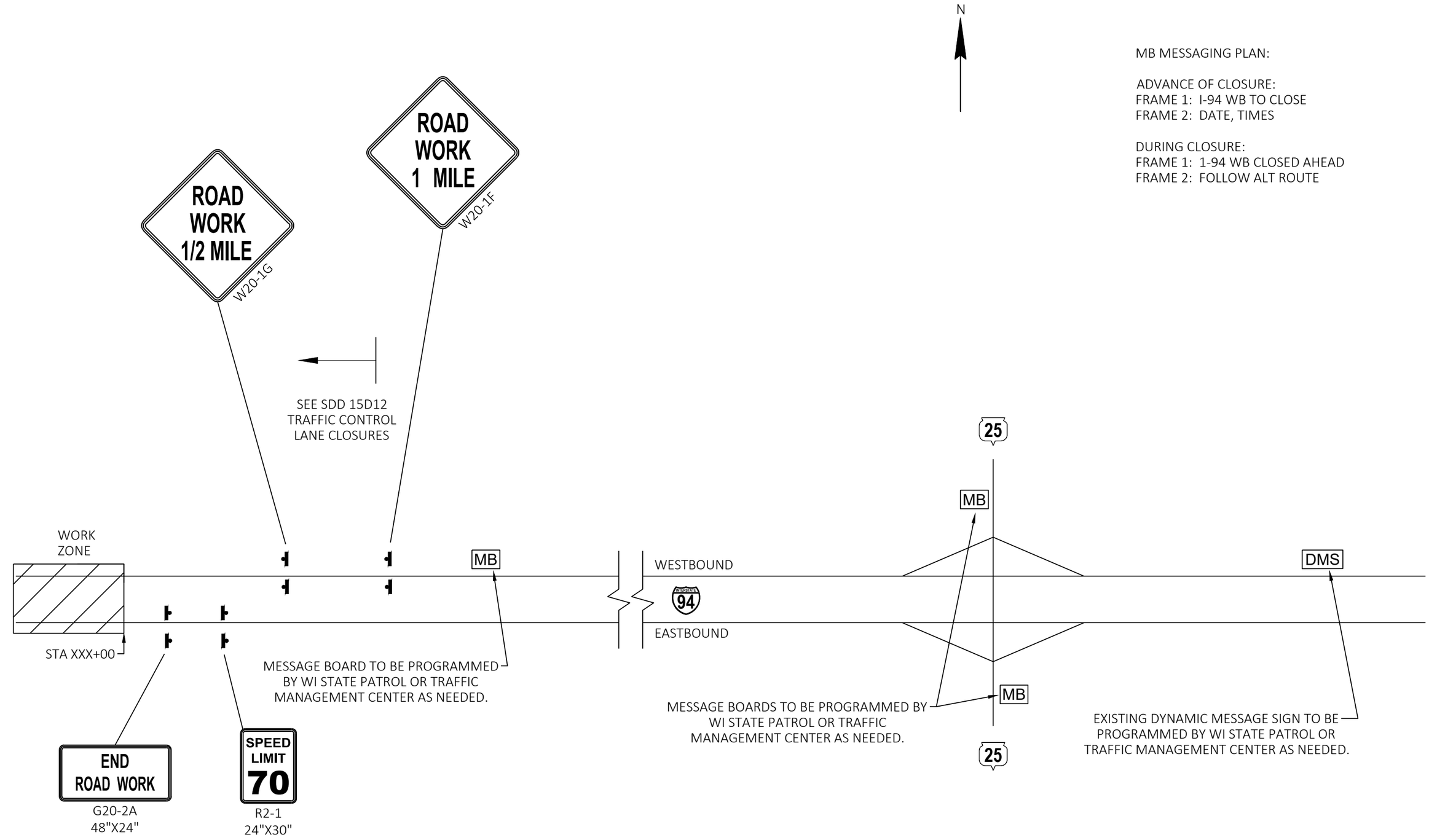
MB MESSAGING PLAN:

ADVANCE OF CLOSURE:
FRAME 1: I-94 EB TO CLOSE
FRAME 2: DATE, TIMES

DURING CLOSURE:
FRAME 1: 1-94 EB CLOSED AHEAD
FRAME 2: FOLLOW ALT ROUTE



2



MB MESSAGING PLAN:

ADVANCE OF CLOSURE:
FRAME 1: I-94 WB TO CLOSE
FRAME 2: DATE, TIMES

DURING CLOSURE:
FRAME 1: 1-94 WB CLOSED AHEAD
FRAME 2: FOLLOW ALT ROUTE

LEGEND

EXISTING ALTERNATE IH 94 DETOUR ROUTE

DMS — EXISTING DYNAMIC MESSAGE SIGN

MB — MESSAGE BOARD

DIRECTION OF TRAFFIC

WORK ZONE AREA

EAST INTERSTATE 94
J1-1
24"X39"

CLOSED
G20-62
48"X24"

TYPE III BARRICADE

PCMS/DMS MESSAGING PLAN:

ADVANCE OF CLOSURE:
FRAME 1: I-94 TO CLOSE
FRAME 2: DATE, TIMES

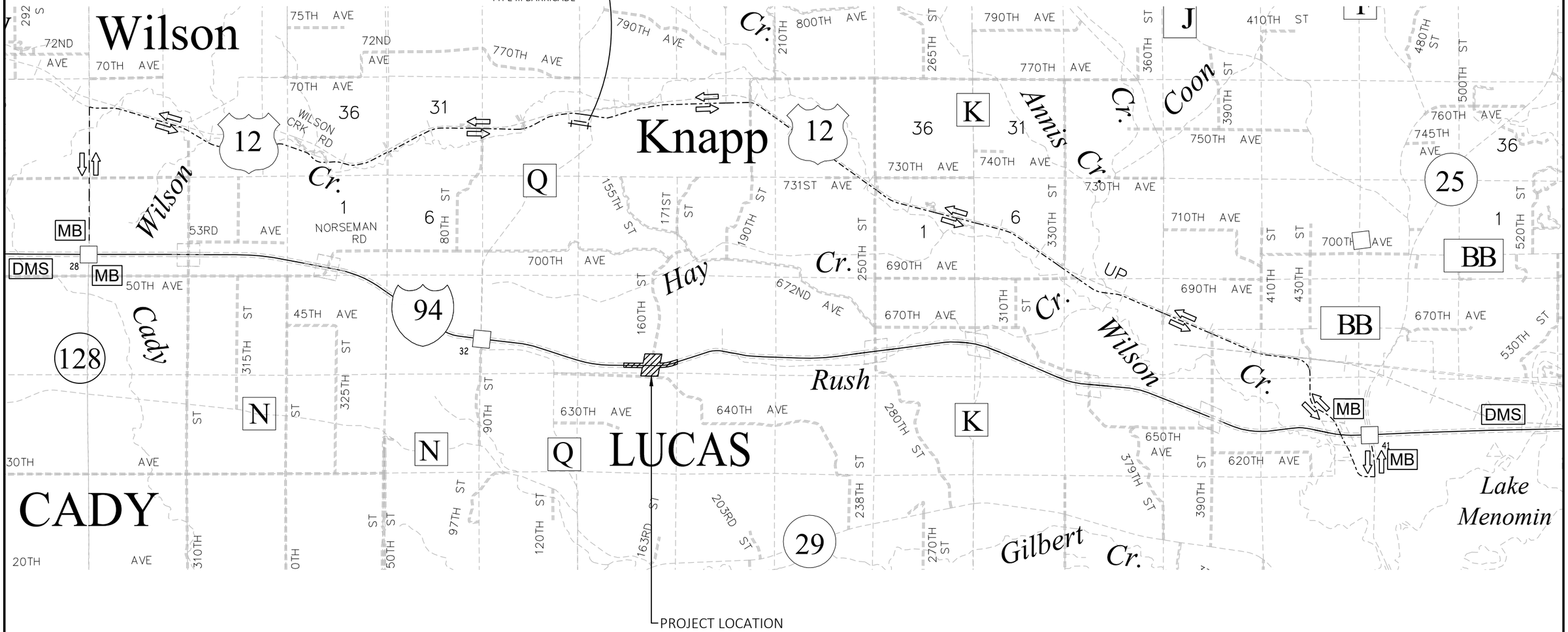
DURING CLOSURE:
FRAME 1: 1-94 CLOSED AHEAD
FRAME 2: FOLLOW ALT ROUTE

NOTES:

USE EXISTING ALTERNATE IH 94 ROUTE WHEN IH 94 IS CLOSED TO THRU TRAFFIC. SEE CONTRACT SPECIAL PROVISIONS.

FIELD VERIFY ALL EXISTING ALTERNATE ROUTE SIGNING IS IN PLACED PRIOR TO CLOSURE.

SEE STANDARD DETAIL DRAWING TRAFFIC CONTROL TWO LANE FULL FREEWAY CLOSURE.



PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	ALTERNATE IH 94 DETOUR ROUTE OVERVIEW	SHEET 20	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\025050-TC.DWG
LAYOUT NAME - Plan 1 IN 1000 FT

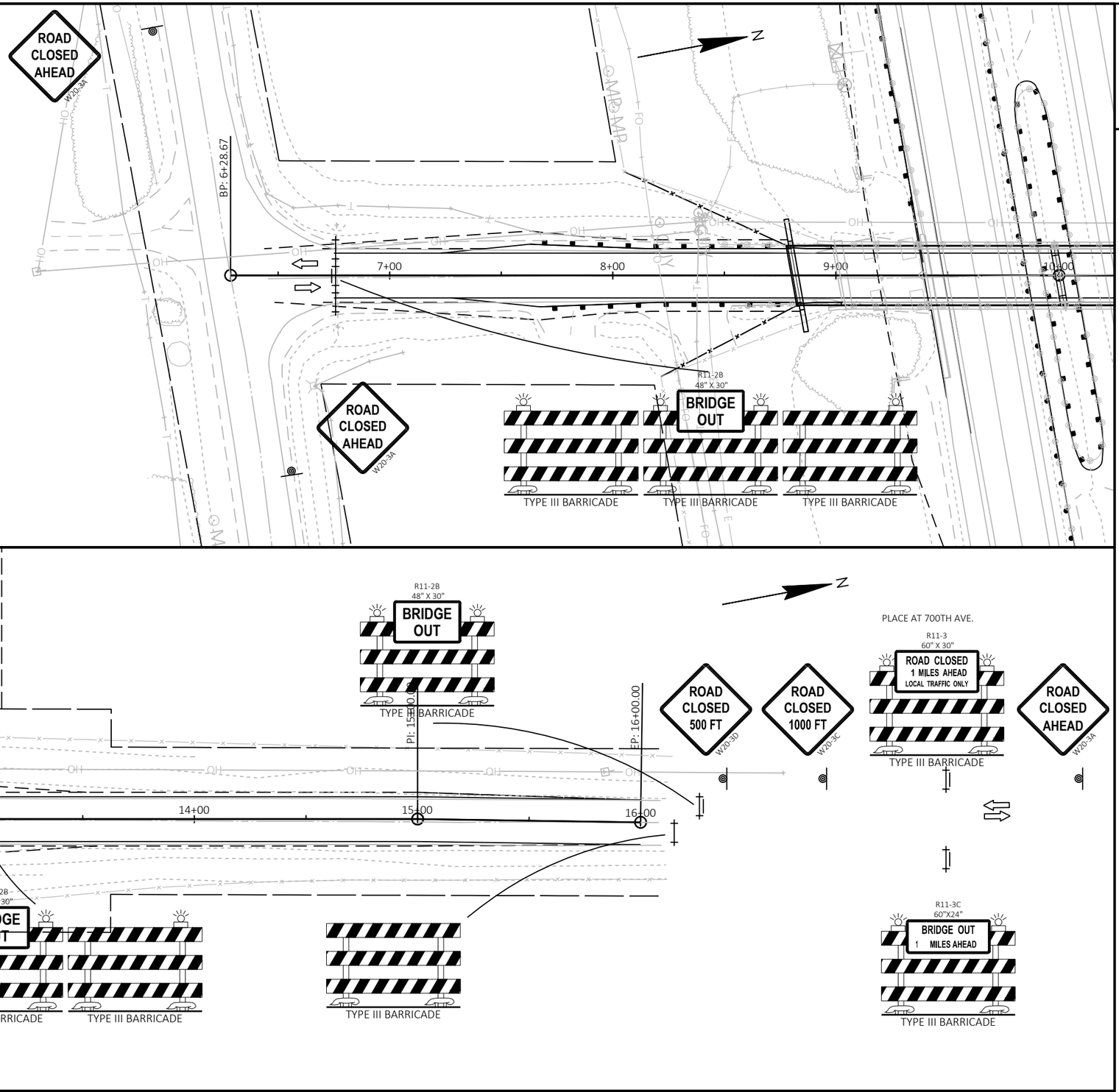
PLOT DATE : 4/14/2026 1:40 PM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:1 MI

WISDOT/CADDS SHEET 42

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- (A) TYPE A WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC

NOTE: ALL LIGHTS SHOWN ON BARRICADES ARE TYPE A



PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	TRAFFIC CONTROL	SHEET 21	E

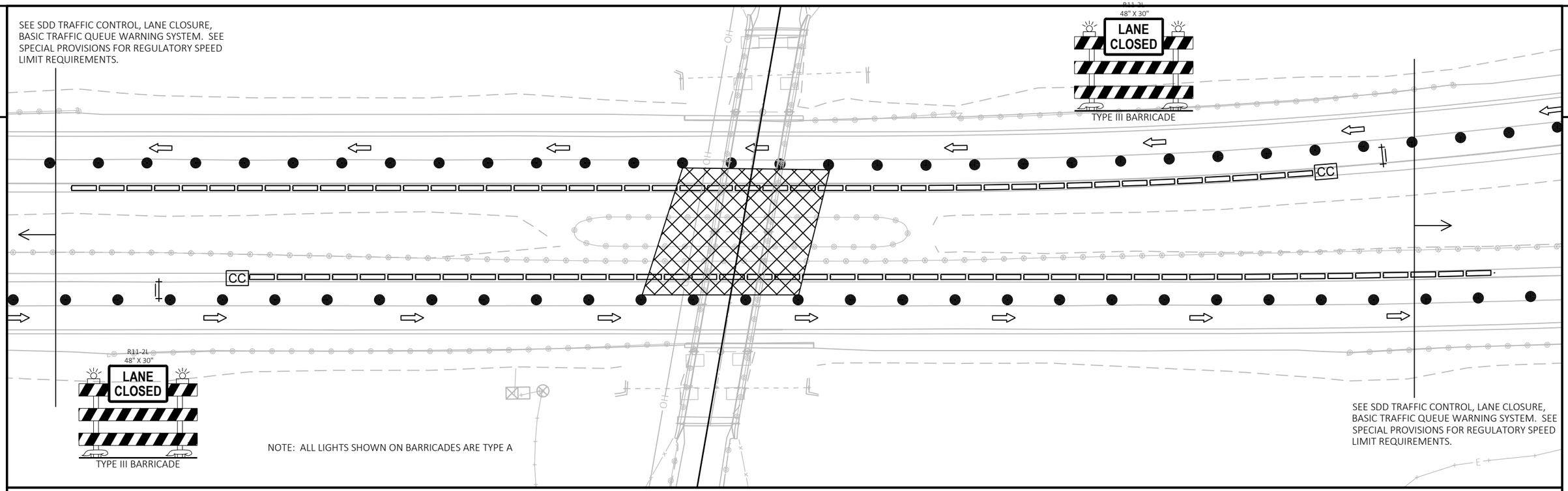
FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\025100-TC.DWG
LAYOUT NAME - 025100

PLOT DATE : 4/14/2026 2:03 PM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:50 FT

WISDOT/CADDS SHEET 44

2

SEE SDD TRAFFIC CONTROL, LANE CLOSURE, BASIC TRAFFIC QUEUE WARNING SYSTEM. SEE SPECIAL PROVISIONS FOR REGULATORY SPEED LIMIT REQUIREMENTS.



NOTE: ALL LIGHTS SHOWN ON BARRICADES ARE TYPE A

SEE SDD TRAFFIC CONTROL, LANE CLOSURE, BASIC TRAFFIC QUEUE WARNING SYSTEM. SEE SPECIAL PROVISIONS FOR REGULATORY SPEED LIMIT REQUIREMENTS.

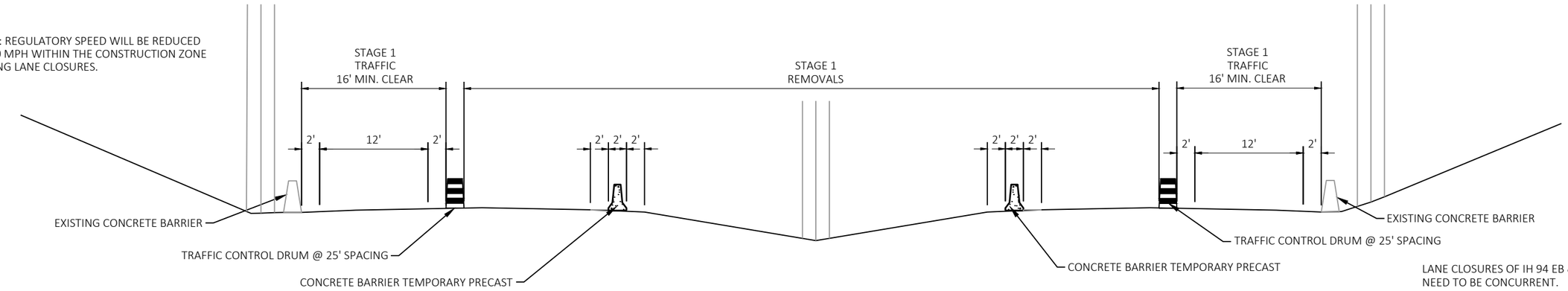
2

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- (A) TYPE A WARNING LIGHT (FLASHING)
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC
- CC CRASH CUSHIONS
- TRAFFIC CONTROL DRUM

STAGE 1 REMOVALS & AS NEEDED DURING THE CONSTRUCTION OF CENTER PIER.

NOTE: REGULATORY SPEED WILL BE REDUCED TO 60 MPH WITHIN THE CONSTRUCTION ZONE DURING LANE CLOSURES.

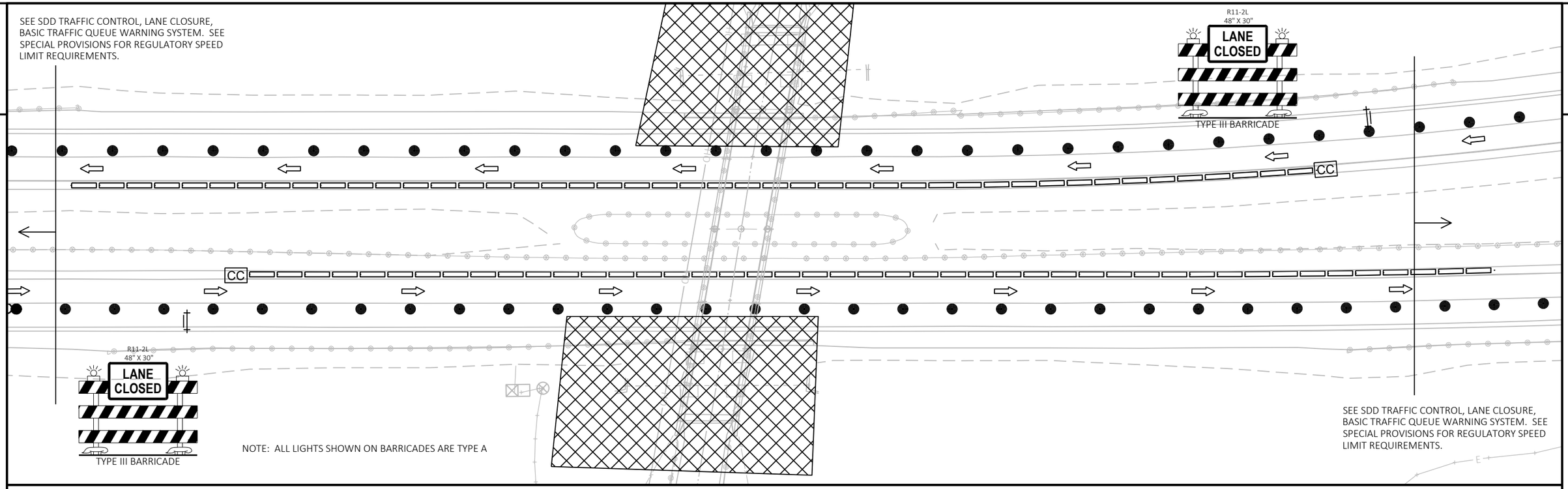


LANE CLOSURES OF IH 94 EB & WB DO NOT NEED TO BE CONCURRENT.

PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	TRAFFIC CONTROL	SHEET 22	E

2

SEE SDD TRAFFIC CONTROL, LANE CLOSURE, BASIC TRAFFIC QUEUE WARNING SYSTEM. SEE SPECIAL PROVISIONS FOR REGULATORY SPEED LIMIT REQUIREMENTS.



NOTE: ALL LIGHTS SHOWN ON BARRICADES ARE TYPE A

SEE SDD TRAFFIC CONTROL, LANE CLOSURE, BASIC TRAFFIC QUEUE WARNING SYSTEM. SEE SPECIAL PROVISIONS FOR REGULATORY SPEED LIMIT REQUIREMENTS.

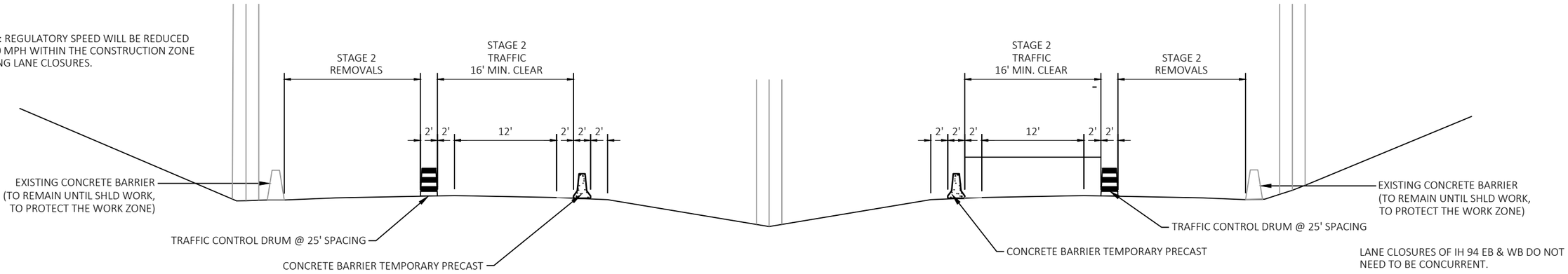
2

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- (A) TYPE A WARNING LIGHT (FLASHING)
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC
- CC CRASH CUSHIONS
- TRAFFIC CONTROL DRUM

STAGE 2 REMOVALS & AS NEEDED TO PROTECT CONSTRUCTION EQUIPMENT INSIDE CLEAR ZONE.

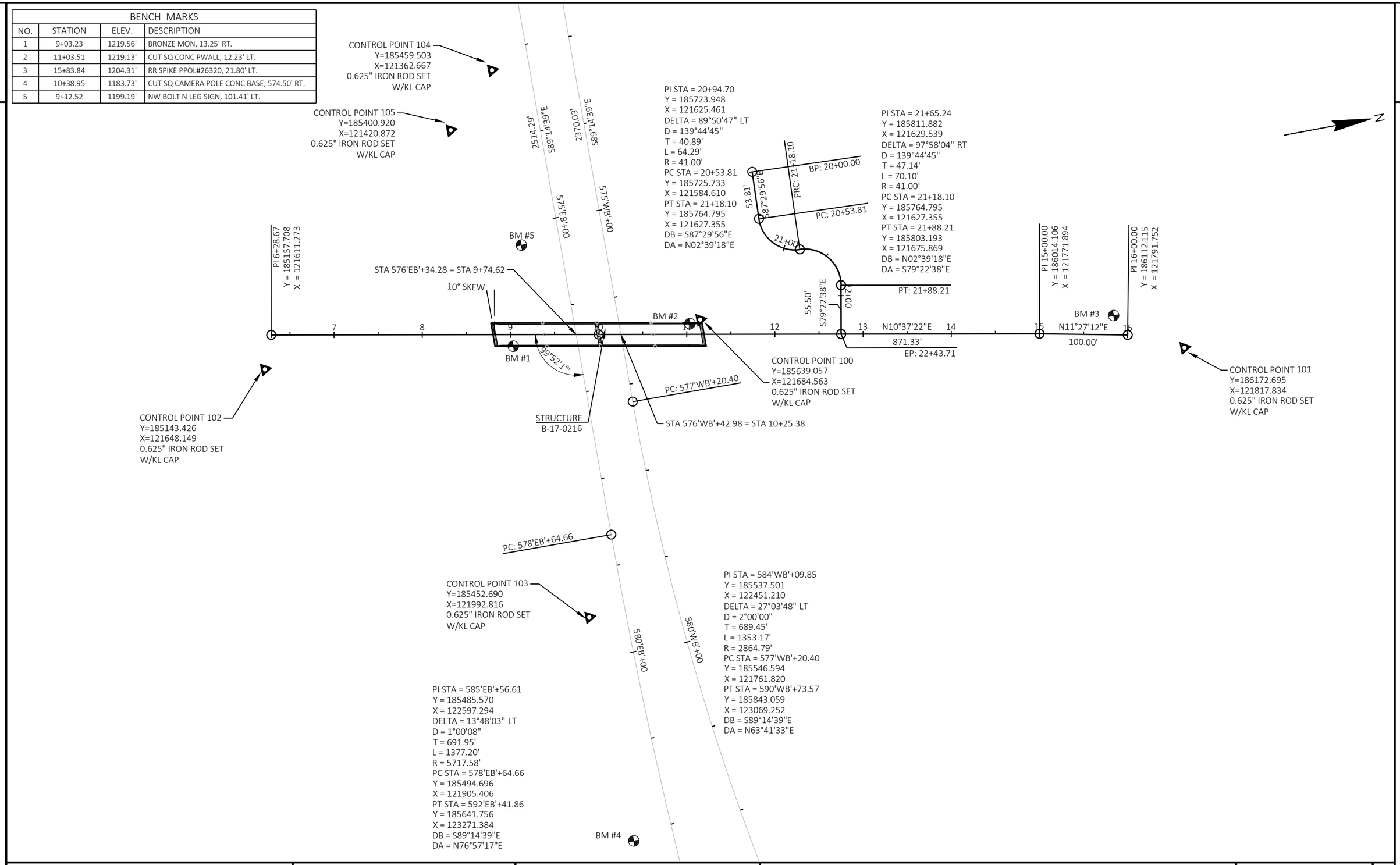
NOTE: REGULATORY SPEED WILL BE REDUCED TO 60 MPH WITHIN THE CONSTRUCTION ZONE DURING LANE CLOSURES.



LANE CLOSURES OF IH 94 EB & WB DO NOT NEED TO BE CONCURRENT.

PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	TRAFFIC CONTROL	SHEET 23	E

BENCH MARKS			
NO.	STATION	ELEV.	DESCRIPTION
1	9+03.23	1219.56'	BRONZE MON, 13.25' RT.
2	11+03.51	1219.13'	CUT SQ CONC PWALL, 12.23' LT.
3	15+83.84	1204.31'	RR SPIKE PPOL#26320, 21.80' LT.
4	10+38.95	1183.73'	CUT SQ CAMERA POLE CONC BASE, 574.50' RT.
5	9+12.52	1199.19'	NW BOLT N LEG SIGN, 101.41' LT.



Estimate Of Quantities

1021-01-79

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	10.000	10.000
0004	201.0205	Grubbing	STA	10.000	10.000
0006	203.0100	Removing Small Pipe Culverts	EACH	3.000	3.000
0008	203.0220	Removing Structure (structure) 01. B-17-0020	EACH	1.000	1.000
0010	204.0110	Removing Asphaltic Surface	SY	360.000	360.000
0012	204.0157	Removing Concrete Barrier	LF	130.000	130.000
0014	204.0165	Removing Guardrail	LF	180.000	180.000
0016	204.0170	Removing Fence	LF	360.000	360.000
0018	204.0180	Removing Delineators and Markers	EACH	7.000	7.000
0020	205.0100	Excavation Common	CY	14,780.000	14,780.000
0022	206.1001	Excavation for Structures Bridges (structure) 01. B-17-0216	EACH	1.000	1.000
0024	208.1100	Select Borrow	CY	139.000	139.000
0026	210.1500	Backfill Structure Type A	TON	456.000	456.000
0028	213.0100	Finishing Roadway (project) 01. 1021-01-79	EACH	1.000	1.000
0030	305.0110	Base Aggregate Dense 3/4-Inch	TON	595.000	595.000
0032	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,655.000	1,655.000
0034	305.0500	Shaping Shoulders	STA	8.000	8.000
0036	325.0100	Pulverize and Relay	SY	800.000	800.000
0038	455.0605	Tack Coat	GAL	110.000	110.000
0040	460.2000	Incentive Density HMA Pavement	DOL	310.000	310.000
0042	460.6244	HMA Pavement 4 MT 58-34 S	TON	484.000	484.000
0044	465.0110	Asphaltic Surface Patching	TON	50.000	50.000
0046	465.0310	Asphaltic Curb	LF	100.000	100.000
0048	465.0315	Asphaltic Flumes	SY	100.000	100.000
0050	502.0100	Concrete Masonry Bridges	CY	445.000	445.000
0052	502.3200	Protective Surface Treatment	SY	637.000	637.000
0054	502.3210	Pigmented Surface Sealer	SY	271.000	271.000
0056	503.0146	Prestressed Girder Type I 45W-Inch	LF	1,184.000	1,184.000
0058	505.0400	Bar Steel Reinforcement HS Structures	LB	7,960.000	7,960.000
0060	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	78,970.000	78,970.000
0062	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	20.000	20.000
0064	506.4000	Steel Diaphragms (structure) 01. B-17-0216	EACH	16.000	16.000
0066	516.0500	Rubberized Membrane Waterproofing	SY	16.000	16.000
0068	520.1012	Apron Endwalls for Culvert Pipe 12-Inch	EACH	2.000	2.000
0070	520.1024	Apron Endwalls for Culvert Pipe 24-Inch	EACH	2.000	2.000
0072	520.3412	Culvert Pipe Class III-A Non-metal 12-Inch	LF	35.000	35.000
0074	520.3424	Culvert Pipe Class III-A Non-metal 24-Inch	LF	44.000	44.000
0076	522.0130	Culvert Pipe Reinforced Concrete Class III 30-Inch	LF	256.000	256.000
0078	522.1030	Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	EACH	4.000	4.000
0080	550.0500	Pile Points	EACH	36.000	36.000
0082	550.1100	Piling Steel HP 10-Inch x 42 Lb	LF	1,125.000	1,125.000
0084	603.8000	Concrete Barrier Temporary Precast Delivered	LF	2,600.000	2,600.000
0086	603.8125	Concrete Barrier Temporary Precast Installed	LF	2,600.000	2,600.000
0088	604.0500	Slope Paving Crushed Aggregate	SY	262.000	262.000
0090	606.0200	Riprap Medium	CY	30.000	30.000
0092	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	130.000	130.000
0094	614.0010	Barrier System Grading Shaping Finishing	EACH	1.000	1.000
0096	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0098	614.0220	Steel Thrie Beam Bullnose Terminal	EACH	2.000	2.000

Estimate Of Quantities

1021-01-79

Line	Item	Item Description	Unit	Total	Qty
0100	614.0230	Steel Thrie Beam	LF	125.000	125.000
0102	614.0905	Crash Cushions Temporary	EACH	4.000	4.000
0104	614.0920	Salvaged Rail	LF	408.000	408.000
0106	614.0925	Salvaged Guardrail End Treatments	EACH	3.000	3.000
0108	614.2300	MGS Guardrail 3	LF	100.000	100.000
0110	614.2500	MGS Thrie Beam Transition	LF	160.000	160.000
0112	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0114	614.2620	MGS Guardrail Terminal Type 2	EACH	1.000	1.000
0116	616.0100	Fence Woven Wire (height) 01. 4-FT	LF	320.000	320.000
0118	618.0100	Maintenance and Repair of Haul Roads (project) 01. 1021-01-79	EACH	1.000	1.000
0120	619.1000	Mobilization	EACH	1.000	1.000
0122	624.0100	Water	MGAL	100.000	100.000
0124	625.0500	Salvaged Topsoil	SY	8,250.000	8,250.000
0126	627.0200	Mulching	SY	1,530.000	1,530.000
0128	628.1504	Silt Fence	LF	1,000.000	1,000.000
0130	628.1520	Silt Fence Maintenance	LF	1,000.000	1,000.000
0132	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0134	628.1910	Mobilizations Emergency Erosion Control	EACH	5.000	5.000
0136	628.2004	Erosion Mat Class I Type B	SY	6,720.000	6,720.000
0138	628.7504	Temporary Ditch Checks	LF	144.000	144.000
0140	628.7555	Culvert Pipe Checks	EACH	13.000	13.000
0142	629.0210	Fertilizer Type B	CWT	5.200	5.200
0144	630.0120	Seeding Mixture No. 20	LB	230.000	230.000
0146	630.0200	Seeding Temporary	LB	230.000	230.000
0148	633.0100	Delineator Posts Steel	EACH	4.000	4.000
0150	633.0500	Delineator Reflectors	EACH	4.000	4.000
0152	633.5200	Markers Culvert End	EACH	6.000	6.000
0154	634.0612	Posts Wood 4x6-Inch x 12-FT	EACH	4.000	4.000
0156	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0158	638.2602	Removing Signs Type II	EACH	2.000	2.000
0160	638.3000	Removing Small Sign Supports	EACH	2.000	2.000
0162	642.5001	Field Office Type B	EACH	1.000	1.000
0164	643.0300	Traffic Control Drums	DAY	2,984.000	2,984.000
0166	643.0420	Traffic Control Barricades Type III	DAY	1,760.000	1,760.000
0168	643.0705	Traffic Control Warning Lights Type A	DAY	3,952.000	3,952.000
0170	643.0715	Traffic Control Warning Lights Type C	DAY	1,401.000	1,401.000
0172	643.0810	Traffic Control Connected Arrow Boards	DAY	136.000	136.000
0174	643.0900	Traffic Control Signs	DAY	7,915.000	7,915.000
0176	643.0920	Traffic Control Covering Signs Type II	EACH	2.000	2.000
0178	643.1050	Traffic Control Signs PCMS	DAY	321.000	321.000
0180	643.1051	Traffic Control Signs PCMS with TMC Communications	DAY	321.000	321.000
0182	643.1205.S	Basic Traffic Queue Warning System	DAY	214.000	214.000
0184	643.1220	Traffic Control Connected Work Zone Start and End Location Markers	DAY	214.000	214.000
0186	643.4100	Traffic Control Interim Lane Closure	EACH	32.000	32.000
0188	643.5000	Traffic Control	EACH	1.000	1.000
0190	645.0111	Geotextile Type DF Schedule A	SY	52.000	52.000
0192	645.0120	Geotextile Type HR	SY	60.000	60.000
0194	650.4500	Construction Staking Subgrade	LF	1,705.000	1,705.000
0196	650.5000	Construction Staking Base	LF	1,705.000	1,705.000

Estimate Of Quantities

1021-01-79

Line	Item	Item Description	Unit	Total	Qty
0198	650.6000	Construction Staking Pipe Culverts	EACH	4.000	4.000
0200	650.6501	Construction Staking Structure Layout (structure) 01. B-17-0216	EACH	1.000	1.000
0202	650.9911	Construction Staking Supplemental Control (project) 01. 1021-01-79	EACH	1.000	1.000
0204	650.9920	Construction Staking Slope Stakes	LF	1,705.000	1,705.000
0206	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	180.000	180.000
0208	652.0700.S	Install Conduit into Existing Item	EACH	2.000	2.000
0210	653.0900	Adjusting Pull Boxes	EACH	1.000	1.000
0212	674.0300	Remove Cable	LF	130.000	130.000
0214	674.0400	Reinstall Cable	LF	120.000	120.000
0216	690.0150	Sawing Asphalt	LF	100.000	100.000
0218	715.0502	Incentive Strength Concrete Structures	DOL	2,670.000	2,670.000
0220	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 01. 10+00	EACH	1.000	1.000
0222	SPV.0090	Special 01. Remove and Reinstall Existing Guardrail	LF	295.000	295.000
0224	SPV.0090	Special 02. Salvage and Reinstall High Tension Cable Barrier	LF	693.000	693.000
0226	SPV.0180	Special 01. Remove Existing Field Entrance	SY	60.000	60.000

3

CATEGORY	STATION	TO	STATION	ROADWAY	201.0105 CLEARING STA	201.0205 GRUBBING STA
0010	574'EB'+00	-	578'EB'+00	IH 94	4	4
0010	574'WB'+00	-	578'WB'+00	IH 94	4	4
0010	11+00	-	13+00	160 TH ST	2	2
				TOTAL 0010	10	10

REMOVING SMALL CULVERT PIPES

CATEGORY	STATION	LOCATION	203.0100 EACH	REMARKS
0010	6+75	160 TH ST	1	24" CPCS, APROX. FILL HT = 2'
0010	9+20	EB IH 94 RT	1	24" CPCS, APROX. FILL HT = 7'
0010	10+90	WB IH 94 LT	1	24" CPCS, APROX. FILL HT = 10'
		TOTAL 0010	3	

REMOVING ASPHALTIC SURFACE

CATEGORY	STATION	TO	STATION	LOCATION	204.0110 SY	REMARKS
0010	575'EB'+17	-	577'EB'+02	IH 94 EB OUTSIDE SHOULDER	130	NARROW SHOULDER REMOVAL
0010	575'WB'+71	-	578'WB'+52	IH 94 WB OUTSIDE SHOULDER	230	NARROW SHOULDER REMOVAL
				TOTAL 0010	360	

REMOVING GUARDRAIL

CATEGORY	STATION	TO	STATION	LOCATION	204.0165 LF
0010	8+47	-	8+89	160 TH ST, LT	45
0010	11+11	-	11+53	160 TH ST, LT	45
0010	8+53	-	8+94	160 TH ST, RT	45
0010	11+17	-	11+58	160 TH ST, RT	45
				TOTAL 0010	180

REMOVING CONCRETE BARRIER

CATEGORY	STATION	TO	STATION	LOCATION	204.0157 LF
0010	579'EB'+10	-	576'EB'+75	IH 94 EB, RT	68
0010	576'WB'+10	-	576'WB'+70	IH 94 WB, LT	62
				TOTAL 0010	130

REMOVING FENCE

CATEGORY	STATION	TO	STATION	LOCATION	204.0170 LF
0010	8+05	-	8+92	160 TH ST, LT	90
0010	8+22	-	8+97	160 TH ST, RT	90
0010	11+07	-	11+79	160 TH ST, LT	90
0010	11+13	-	11+97	160 TH ST, RT	90
				TOTAL 0010	360

REMOVING DELINEATORS AND MARKERS

CATEGORY	STATION	LOCATION	204.0180 EACH
0010	EXISTING CULVERTS	LT & RT	6
0010	IH 94	LT & RT	1
		TOTAL 0010	7

CATEGORY	STATION	LOCATION	213.0100.01 FINISHING ROADWAY (PROJECT) (01. 1021-01-79) EACH
0010	PROJECT	IH 94 & 160TH ST	1
		TOTAL 0010	1

DIVISION	FROM/TO STATION	205.0100 COMMON EXCAVATION (1) CUT (2)	205.0100 COMMON EXCAVATION (1) EBS EXCAVATION (3)	SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (13) FACTOR 1.25	MASS ORDINATE +/- (14)	WASTE	208.1100 SELECT BORROW	COMMENT
DIVISION 1											
CULVERT 6+76	6+60.00/6+75.00	74	0	0	74	0	0	0	74	0	
160TH-SOUTH	6+75.00/8+75.00	275	0	0	275	27	34	241	241	0	
IH94EB	573+06.42/578+00.00	6,668	0	0	6,668	6	8	6,661	6,661	0	
DIVISION 1 SUBTOTAL		7,017	0	0	7,017	33	42	6,902	6,976	0	
DIVISION 2											
DRIVEWAY 12+75	21+06.40/22+25.81	34	0	0	34	138	173	-139	0	139	
160TH-NORTH	11+25.00/16+00.00	677	0	0	677	140	175	502	502	0	
IH94WB	574+00.00/579+00.00	7,052	0	0	7,052	61	76	6,976	6,976	0	
DIVISION 2 SUBTOTAL		7,763	0	0	7,763	339	424	7,339	7,478	139	
GRAND TOTAL		14,780	0	0	14,780	372	465	14,241	14,453	139	
TOTAL COMMON EXC		14,780									

NOTES:

(1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100

(2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.

(3) EBS EXCAVATION TO BE BACKFILLED WITH SELECT BORROW MATERIAL. NOTE: THIS IS DESIGNERS CHOICE, CAN BE BACKFILLED WITH BORROW, OR CUT AS WELL.

(4) SALVAGED/UNUSABLE PAVEMENT MATERIAL

5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL

(13) EXPANDED FILL FACTOR = 1.25

DEPENDING ON SELECTIC **EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH - REDUCED EBS) * FILL FACTOR**

EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED EBS) * FILL FACTOR

EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH) * FILL FACTOR

EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK) * FILL FACTOR

(14) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

BASE AGGREGATE DENSE

CATEGORY	STATION	TO	STATION	LOCATION	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON	REMARKS
0010	6+60	-	8+85	160 TH ST	17	188	
0010	11+18	-	16+00	160 TH ST	36	204	
0010	573'EB'+80	-	577'EB'+95	IH 94 EB OUTSIDE SHOULDER	268	600	
0010	574'WB'+92	-	578'WB'+52	IH 94 WB OUTSIDE PAVED SHOULDER	244	532	
0010	573'WB'+00	-	579'WB'+33	IH 94	30		INSIDE SHOULDERS
0010	21+06	-	22+26	DRIVEWAY		106	24-FT PE
0010			21+30	DRIVEWAY, LT		25	BARN ENTRANCE
				TOTAL 0010	595	1,655	

SHAPING SHOULDERS

CATEGORY	STATION	TO	STATION	LOCATION	305.0500 STA
0010	6+60	-	8+85	160 TH ST	3
0010	11+18	-	16+00	160 TH ST	5
				TOTAL 0010	8

3

CULVERT PIPE ITEMS

CATEGORY	INLET STATION	INLET ELEVATION	OUTLET STATION	OUTLET ELEVATION	SLOPE %	LOCATION	520.1018 APRON ENDWALLS FOR CULVERT PIPE 12-INCH EACH	520.1024 APRON ENDWALLS FOR CULVERT PIPE 24-INCH EACH	520.3418 CULVERT PIPE CLASS III-A NON-METAL 12-INCH LF	520.3424 CULVERT PIPE CLASS III-A NON-METAL 24-INCH LF	522.0130 CULVERT PIPE REINFORCED CONCRETE CLASS III 30-INCH LF	522.1030 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH EACH	(INFO ONLY) JOINT TIES FOR CONCRETE PIPE EACH
0010	6+76.47, 21.0' LT	1214.32	6+77.03, 22.8' RT	1213.17	2.6	160 TH ST		2		44			
0010	8+88.61, 59.4' LT	1196.01	9+10.61, 46.9' RT	1194.02	1.8	EB IH 94 RT					128	2	15
0010	10+88.25, 45.7' LT	1194.56	11+13.06, 62.1' RT	1190.58	3.6	WB IH 94 LT					128	2	15
0010	12+58.45, 30.5' LT	1214.42	12+96.88, 27.9' LT	1213.45	2.5	DRIVEWAY	2		35				
						TOTAL 0010	2	2	35	44	256	4	30

PULVERIZE AND RELAY

CATEGORY	STATION	TO	STATION	LOCATION	325.0100 SY
0010	7+43	-	8+75	160 TH ST	300
0010	11+25	-	13+50	160 TH ST	500
				TOTAL 0010	800

CONCRETE BARRIER TEMPORARY

CATEGORY	STATION	LOCATION	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF	REMARKS
0010	PROJECT	IH 94	1,300	1,300	STAGE 1
0010	PROJECT	IH 94	1,300	1,300	STAGE 2
		TOTAL 0010	2,600	2,600	

ASPHALTIC ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL	460.6244 HMA PAVEMENT 4 MT 58-34 S TON	465.0110 ASPHALTIC SURFACE PATCHING TON	465.0310 ASPHALTIC CURB LF	465.0315 ASPHALTIC FLUMES SY
0010	575'EB'+17	-	577'EB'+02	IH 94 EB OUTSIDE SHOULDER	9	37			
0010	575'WB'+71	-	578'WB'+52	IH 94 WB OUTSIDE SHOULDER	13	56			
0010	6+60	-	8+58	160 TH ST	30	133			
0010	11+18	-	16+00	160 TH ST	58	258			
0010			PROJECT	IH 94 & 160 TH ST			50	100	100
				TOTAL 0010	110	484	50	100	100

RIPRAP AND GEOTEXTILE

CATEGORY	STATION	LOCATION	606.0200 RIPRAP MEDIUM CY	645.0120 GEOTEXTILE TYPE HR SY	REMARKS
0010	9+10.61	EB IH 94 RT	5	10	AEW
0010	11+13.06	WB IH 94 LT	5	10	AEW
0010	8+50	160TH LT & RT	10	20	FLUMES
0010	11+45	160TH LT & RT	10	20	FLUMES
		TOTAL 0010	30	60	

					614.0010	**	**	**	**	**	**	**	**	**
CATEGORY	STATION	TO	STATION	LOCATION	BARRIER SYSTEM GRADING SHAPING FINISHING EACH	EXCAVATION COMMON CY	FILL CY	SALVAGED TOPSOIL SY	MULCHING SY	EROSION MAT CLASS I TYPE B SY	FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 20 LB	SEED WATER MGAL	CONSTRUCTION STAKING SLOPE STAKES LF
0010	573'WB'+00	-	579'WB'+33	RT	1	14	0	1,120	540	580	0.70	30	10	635
				TOTAL 0010	1	14	0	1,120	540	580	0.70	30	10	635

** ITEMS AND QUANTITIES LISTED FOR BID INFORMATION ONLY. ITEMS INCIDENTAL TO BARRIER SYSTEM GRADIN SHAPING FINISHING

STEEL THRIE BEAM

					614.0220	614.0230	
CATEGORY	STATION	TO	STATION	LOCATION	STEEL THRIE BEAM BULLNOSE TERMINAL EACH	STEEL THRIE BEAM LF	REMARKS
0010	575'WB'+54	-	577'WB'+23	IH 94 MEDIAN	2	125	SEE S.D.D. 14B26
				TOTAL 0010	2	125	

CATEGORY	LOCATION	614.0905 CRASH CUSHIONS TEMPORARY EACH	BACK WIDTH FT	OBJECT MARKING PATTERN	CRASH TEST LEVEL	TRAFFIC DIRECTION	TRAFFIC LOCATION	CRASH CUSHION SHIELDS
0010	94 EB	1	2	OM-3L (WO-58L)	TL-3	UNIDIRECTIONAL	R	160 TH MEDIAN PIER
0010	94 EB	1	2	OM-3R (WO-58R)	TL-3	UNIDIRECTIONAL	L	160 TH PIER / ABUTMENT
0010	94 WB	1	2	OM-3L (WO-58L)	TL-3	UNIDIRECTIONAL	R	160 TH MEDIAN PIER
0010	94 WB	1	2	OM-3R (WO-58R)	TL-3	UNIDIRECTIONAL	L	160 TH PIER / ABUTMENT
	TOTAL 0010	4						

MGS GUARDRAIL

					614.2300	614.2500	614.2610	614.2620	
CATEGORY	STATION	TO	STATION	LOCATION	MGS GUARDRAIL 3 LF	MGS THRIE BEAM TRANSITION LF	MGS GUARDRAIL TERMINAL EAT EACH	MGS GUARDRAIL TERMINAL TYPE 2 EACH	REMARKS
0010	7+68	-	8+86	160 TH ST, LT	25	40	1		
0010	11+13	-	12+31	160 TH ST, LT	25	40	1		
0010	7+72	-	8+90	160 TH ST, RT	25	40	1		
0010	11+17	-	12+35	160 TH ST, RT	25	40	1		
0010	576'EB'+12	-	576'EB'+24	IH 94 EB				1	
				TOTAL 0010	100	160	4	1	

SALVAGE RAIL AND END TREATMENTS

					614.0920	614.0925 SALVAGED GUARDRAIL END TREATMENTS
CATEGORY	STATION	TO	STATION	LOCATION	SALVAGED RAIL LF	EACH
0010	576'WB'+67	-	579'WB'+50	LT	283	
0010	579'WB'+50	-	580'WB'+03	LT		1
0010	575'WB'+54	-	577'WB'+23	IH 94 MEDIAN	125	2
				TOTAL 0010	408	3

FENCE WOVEN WIRE (HEIGHT) (01. 4-FT)

					616.0100.01	
CATEGORY	STATION	TO	STATION	LOCATION	LF	REMARKS
0010	8+05	-	8+78	160TH ST, LT & RT	160	
0010	11+17	-	11+80	160TH ST, LT & RT	160	
				TOTAL 0010	320	

CATEGORY	STATION	LOCATION	618.0100.01 MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) (01. 1021-01-79) EACH
0010	PROJECT	IH 94 & 160TH ST	1
		TOTAL 0010	1

3

LANDSCAPING ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	628.2004 EROSION MAT CLASS I TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB
0010	6+60	-	9+03	160 TH ST	1,280	1,280		0.80	35	35
0010	11+03	-	16+00	160 TH ST	250	250		0.15	10	10
0010	573+80	-	577+95	IH 94 EB	3,290		3,290	2.10	90	90
0010	574+92	-	578+52	IH 94 WB	3,430		3,430	2.15	95	95
				TOTAL 0010	8,250	1,530	6,720	5.20	230	230

WATER

CATEGORY	LOCATION	624.0100 MGAL	REMARKS
0010	PROJECT	100	DUST CONTROL & RESTORATION
	TOTAL 0010	100	

SILT FENCE

CATEGORY	STATION	TO	STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF
0010	7+75	-	9+50	160 TH ST, LT & RT	600	600
0010	10+50	-	12+25	161 TH ST, LT & RT	400	400
				TOTAL 0010	1,000	1,000

EROSION CONTROL MOBILIZATIONS

CATEGORY	STATION	LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
0010	PROJECT	IH 94 & 160 TH ST	5	5
		TOTAL 0010	5	5

TEMPORARY DITCH CHECKS

CATEGORY	STATION	LOCATION	628.7504 LF
0010	7+75	160 TH ST, LT	16
0010	11+75	161 TH ST, LT & RT	32
0010	13+75	162 TH ST, LT & RT	32
0010	574+50	IH 94 EB	16
0010	575+50	IH 94 WB	16
0010	577+50	IH 94, LT & RT	32
		TOTAL 0010	144

CULVERT PIPE CHECKS

CATEGORY	STATION	LOCATION	628.7555 EACH	REMARKS
0010	6+76	160 TH ST, LT	2	18-INCH
0010	12+60	160 TH ST, LT	1	12-INCH
0010	8+88	EB IH 94, RT	5	30-INCH
0010	10+88	WB IH 94, LT	5	30-INCH
		TOTAL 0010	13	

MARKERS CULVERT END

CATEGORY	STATION	TO	STATION	LOCATION	633.5200 EACH
0010	6+76.47	-	6+77.03	160 TH ST, LT & RT	2
0010	8+88.61	-	9+10.61	EB IH 94, LT & RT	2
0010	10+88.25	-	11+13.06	WB IH 94, LT & RT	2
				TOTAL 0010	6

DELINEATOR ITEMS

CATEGORY	STATION	LOCATION	633.0100 DELINEATOR POSTS STEEL EACH	633.0500 DELINEATOR REFLECTORS EACH
0010	PROJECT	IH 94	4	4
		TOTAL 0010	4	4

PERMANENT SIGNING

CATEGORY	STATION	LOCATION	634.0612 POSTS WOOD 4X6-INCH X 12-FT EACH	637.2230 SIGNS TYPE II REFLECTIVE F SF	REMARKS
0010	8+75	160 TH ST, LT & RT	2	6	W5-52L & W5-52R
0010	11+25	161 TH ST, LT & RT	2	6	W5-52L & W5-52R
		TOTAL 0010	4	12	

SIGNING REMOVALS

CATEGORY	STATION	LOCATION	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
0010	576+00	IH 94 EB, RT	1	1	W5-52L
0010	576+70	IH 94 WB, LT	1	1	W5-52L
		TOTAL 0010	2	2	

CATEGORY	LOCATION	642.5001 FIELD OFFICE TYPE B EACH
0010	PROJECT	1
	TOTAL 0010	1

TRAFFIC CONTROL ITEMS

CATEGORY	LOCATION	643.0300 TRAFFIC CONTROL DRUMS DAY	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	643.0180 CONNECTED ARROW BOARDS DAY	643.0900 TRAFFIC CONTROL SIGNS DAY	643.1220 TRAFFIC CONTROL CONNECTED WORK ZONE START AND END LOCATION MARKERS DAY	643.1050 TRAFFIC CONTROL SIGNS PCMS DAY	643.1051 TRAFFIC CONTROL SIGNS PCMS WITH CELLULAR COMMUNICATIONS DAY	643.4100.S TRAFFIC CONTROL INTERIM LANE CLOSURE EACH	REMARKS
0010	IH 94 EB AT 160 TH ST	615	45	90	330	30	160					LEFT LANE CLOSURE
0010	IH 94 EB AT 160 TH ST	615	45	90	405	30	152					RIGHT LANE CLOSURE
0010	IH 94 WB AT 160 TH ST	615	30	60	225	30	128					LEFT LANE CLOSURE
0010	IH 94 WB AT 160 TH ST	615	30	60	225	30	128					RIGHT LANE CLOSURE
0010	IH 94 EB	332	64	336	108	8	684					FULL CLOSURE, COVER X SIGN FOR X CYCLES
0010	IH 94 WB	192	48	320	108	8	136					FULL CLOSURE, COVER X SIGN FOR X CYCLES
0010	IH 94 EB ALT ROUTE						1712		214	214		ALTERNATE ROUTE
0010	IH 94 WB ALT ROUTE						1177		107	107		ALTERNATE ROUTE
0010	IH 94 SHOULDERS						428					PROJECT DURATION (SPEED LIMIT 70 MPH)
0010	IH 94 SHOULDERS						428					PROJECT DURATION (END ROAD WORK)
0010	IH 94 SHOULDERS						428					PROJECT DURATION (ROAD WORK 1 MILE)
0010	IH 94 SHOULDERS						856					SHOULDER CLOSURES
0010	160TH ST		1498	2996			1498					BRIDGE AND ROADWAY CLOSURE
0010	IH 94							214			32	PROJECT DURATION
	TOTAL 0010	2,984	1,760	3,952	1,401	136	7,915	214	321	321	32	

TRAFFIC CONTROL

CATEGORY	STATION	LOCATION	643.5000 EACH
0010	PROJECT	IH 94 & 160 TH ST	1
		TOTAL 0010	1

TRAFFIC CONTROL COVERING SIGN

CATEGORY	STAGE	LOCATION	643.0920 EACH	# CYCLES	# SIGNS
0010	ALL	IH 94	2	1	2
		TOTAL 0010	2		

CATEGORY	STATION	LOCATION	FLASHING BEACON SIGNS (FBS)	PORTABLE TRAFFIC SENSORS (PTS	643.1205.S BASIC TRAFFIC QUEUE WARNING SYSTEM DAY
0010	PROJECT	IH 94 EB	3	3	107
0010	PROJECT	IH 94 WB	3	3	107
		TOTAL 0010			214

CONSTRUCTION STAKING ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
0010	6+60	-	7+25	160TH ST	65	65	1	65
0010	7+25	-	9+03	160TH ST	178	178		178
0010	11+03	-	13+50	160TH ST	247	247	1	247
0010	13+50	-	16+00	160TH ST	250	250		250
0010	573+80	-	577+95	IH 94 EB RT	415	415	1	415
0010	574+92	-	578+52	IH 94 WB LT	360	360	1	360
0010	3+98	-	5+88		190	190		190
				TOTAL 0010	1,705	1,705	4	1,705

SAWING ASPHALT

CATEGORY	STATION	TO	STATION	LOCATION	690.0150 SAWING ASPHALT LF
0010	6+60	-		160 TH ST	35
0010	16+00	-		161 TH ST	25
0010	575+17	-		IH 94 EB	10
0010	577+02	-		IH 94 EB	10
0010	575+71	-		IH 94 WB	10
0010	578+52	-		IH 94 WB	10
				TOTAL 0010	100

CATEGORY	STATION	LOCATION	999.2000.S INSTALLING AND MAINTAINING BIRD DETERRENT SYSTEM (STATION) 10+00 EACH	REMARKS
0010	10+00	160TH	1	EXISTING STRUCTURE
		TOTAL 0010	1	

CATEGORY	STATION	TO	STATION	LOCATION	SPV.0090.01 SPECIAL 01. REMOVE AND REINSTALL GUARDRAIL LF
0010	573'EB'+17	-	576'EB'+12	94 EB RT	295
				TOTAL 0010	295

CATEGORY	STATION	TO	STATION	LOCATION	SPV.0090.02 SPECIAL 02. SALVAGE AND REINSTALL HIGH TENSION CABLE BARRIER LF
0010	573'EB'+00	-	579'EB'+93	94 EB	693
				TOTAL 0010	693

CATEGORY	STATION	LOCATION	SPV.0180.01 SPECIAL 01. REMOVE EXISTING FIELD ENTRANCE SY
0010	12+00	160TH ST, LT	60
		TOTAL 0010	60

FTMS CABLE REMOVALS

CATEGORY	ROADWAY	ITEM ID	674.0300 REMOVE CABLE LF
0010	IH 94		
		EX-DMS-17-0031 - EXCB-DMS-17-0031	15
		EXCB-DMS-17-0031 - EXPB02	15
		EXPB02 - EXPB01	100
		TOTAL	130

FTMS PULL BOXES AND VAULTS

CATEGORY	ROADWAY	ITEM ID.	652.0700.S INSTALL CONDUIT INTO EXISTING ITEM EACH	653.0900 ADJUSTING PULL BOXES EACH
0010	IH 94			
		EXPB02	1	1
		EXPB01	1	--
		TOTALS	2	1

FTMS CONDUIT AND WIRE

CATEGORY	ROADWAY	ITEM ID	LINEAR DISTANCE	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	674.0400 REINSTALL CABLE LF
0010	IH 94				
		EXPB01 - EXPB02	90	180	90
		EXPB02 - EXCB-DMS-17-0031	15	--	15
		EXCB-DMS-17-0031 - EX-DMS-17-0031	15	--	15
		TOTALS		180	120

R/W PROJECT NUMBER: 1021-01-25	EXHIBIT NUMBER: 1

TLE ACQUISITION EXHIBIT
BALDWIN - MENOMONIE
IH-94 HALL ESTATE RD/160TH ST B-17-0216 DUNN COUNTY

PART OF THE SW 1/4 OF THE SE 1/4 OF SECTION 9, T28N, R14W TOWN OF LUCAS, DUNN COUNTY, WISCONSIN.

NOTES:

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

THE PURPOSE OF THIS TLE IS FOR SLOPES / DRIVEWAY RECONSTRUCTION.

4

4

TOWN

SW - SE
SEC. 9

SE - SE
SEC. 9

TLE
0.33 ACRES
1

OF

TAX PARCEL NUMBER:
17014228140943000002

INGRESS/EGRESS EASEMENT
DOC. 302947, DOC. 576740, AND
DOC. 577640

100 BLANKET EASEMENT
V 125, P 17
DOC 196020

TAX PARCEL NUMBER:
17014228140943000005

85'
91.57'
57.08'
51'
33'
130'
143'
100'
66'
15
PL
EXISTING R/W
160TH STREET
SIXTEENTH LINE
LUCAS
IH 94
IH 94

GN

SCALE, FEET
0 25 50

SCHEDULE OF LANDS & INTERESTS REQUIRED

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

PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	TLE ACRES
1	LAMOINE ZIELIEKE AND ETHEL M. ZIELIEKE	TLE	0.33

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	UTILITY OWNER(S)	INTEREST REQUIRED
100	DUNN ENERGY COOPERATIVE	RELEASE OF RIGHTS

FILE NAME : 040101-RP.DWG PLOT DATE : 8/10/2022 2:57 PM

FILE NAME : 040101-RP.DWG PLOT DATE : 8/10/2022 2:57 PM

R/W PROJECT: 1021-01-09

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
1	9+03.23	BRONZE MON, 13.25' RT.	1219.56'
2	11+03.51	CUT SQ CONC PWALL, 12.23' LT.	1219.13'
3	15+83.84	RR SPIKE PPOL#26320, 21.80' LT.	1204.31'
5	9+12.52	NW BOLT N LEG SIGN, 101.41' LT.	1199.19'

STA 6+77
REMOVE 1-24" CPCS

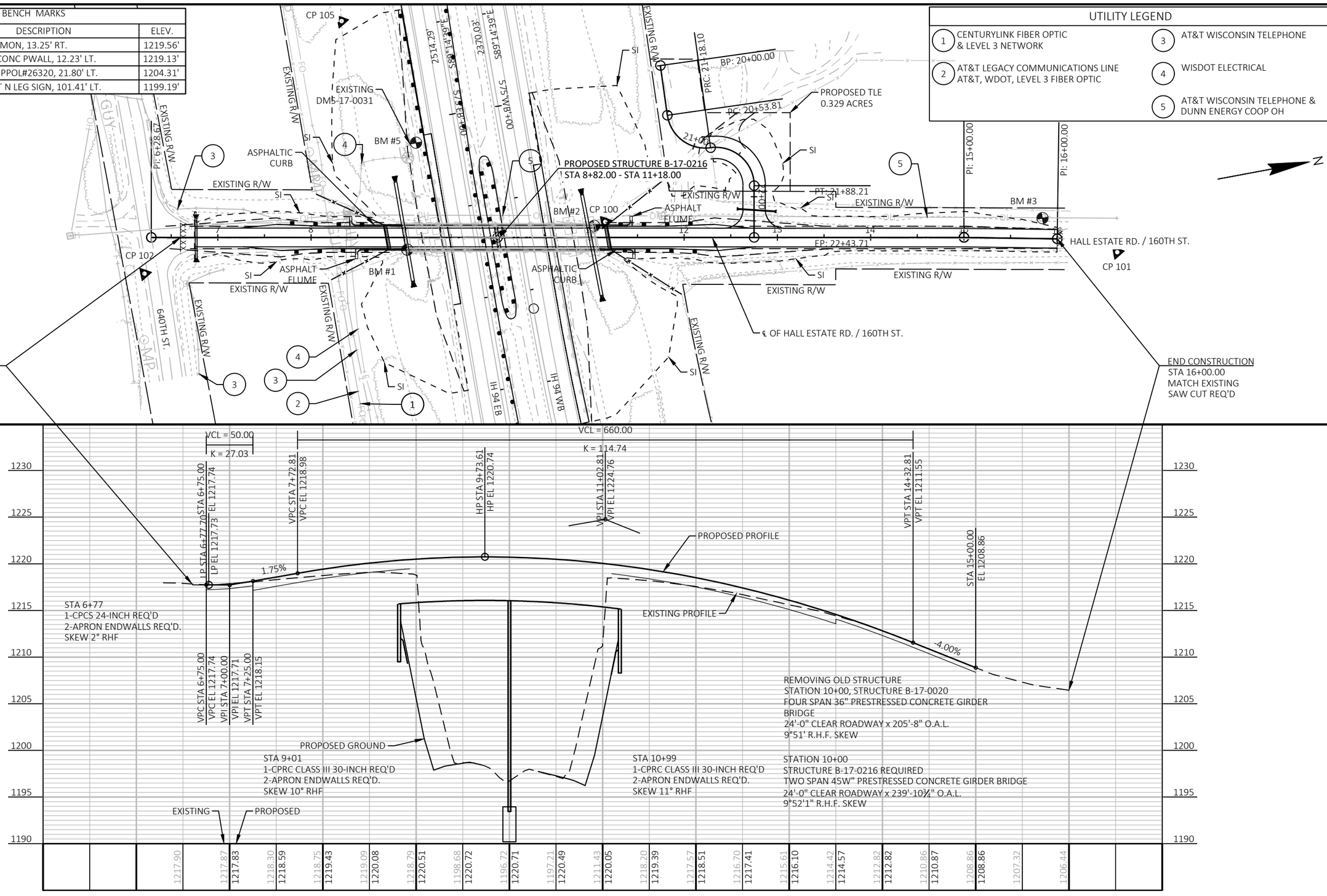
STA 9+20
REMOVE 1-24" CPCS

STA 10+81
REMOVE 1-24" CPCS

BEGIN CONSTRUCTION
STA. 6+60.00
Y = 185188.502
X = 121617.049
MATCH EXISTING
SAW CUT REQ'D

UTILITY LEGEND

1. CENTURYLINK FIBER OPTIC & LEVEL 3 NETWORK
2. AT&T LEGACY COMMUNICATIONS LINE AT&T, WDOT, LEVEL 3 FIBER OPTIC
3. AT&T WISCONSIN TELEPHONE
4. WISDOT ELECTRICAL
5. AT&T WISCONSIN TELEPHONE & DUNN ENERGY COOP OH

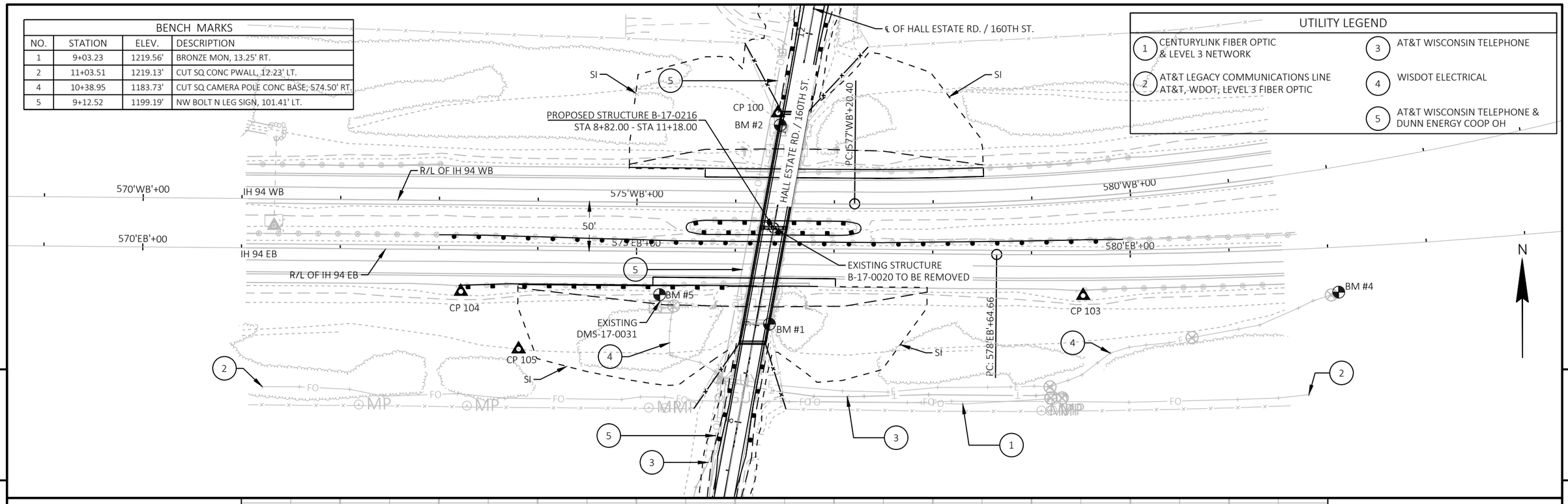


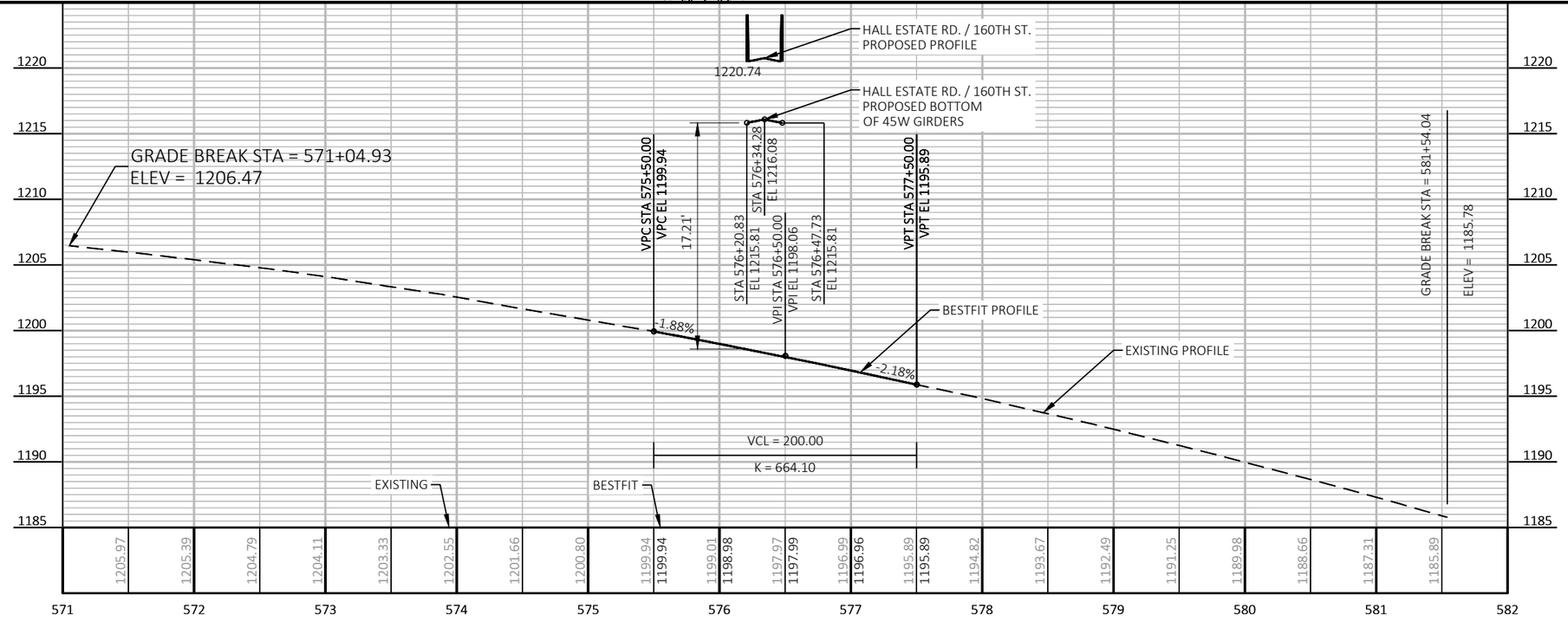
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	PLAN AND PROFILE: HALL ESTATE RD 160TH ST	SHEET 37	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\050101-PP.DWG
LAYOUT NAME - 050101
PLOT DATE : 8/20/2026 1:34 PM
PLOT BY : THAO, KOU
PLOT NAME :
PLOT SCALE : 1 IN:100 FT

BENCH MARKS			
NO.	STATION	ELEV.	DESCRIPTION
1	9+03.23	1219.56'	BRONZE MON, 13.25' RT.
2	11+03.51	1219.13'	CUT SQ CONC PWALL, 12.23' LT.
4	10+38.95	1183.73'	CUT SQ CAMERA POLE CONC BASE, 574.50' RT.
5	9+12.52	1199.19'	NW BOLT N LEG SIGN, 101.41' LT.

UTILITY LEGEND	
1 CENTURYLINK FIBER OPTIC & LEVEL 3 NETWORK	3 AT&T WISCONSIN TELEPHONE
2 AT&T LEGACY COMMUNICATIONS LINE AT&T, WDOT, LEVEL 3 FIBER OPTIC	4 WISDOT ELECTRICAL
	5 AT&T WISCONSIN TELEPHONE & DUNN ENERGY COOP OH





PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	PLAN AND PROFILE: IH 94 EB	SHEET 38	E

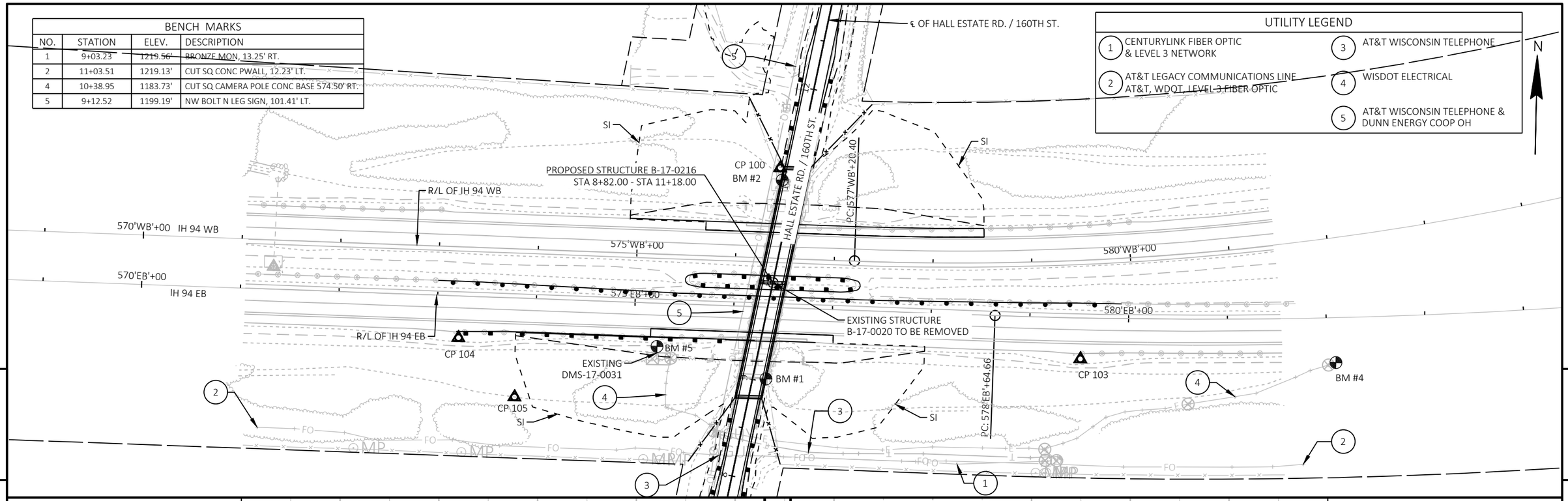
FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\050201-PP.DWG
LAYOUT NAME - 050201

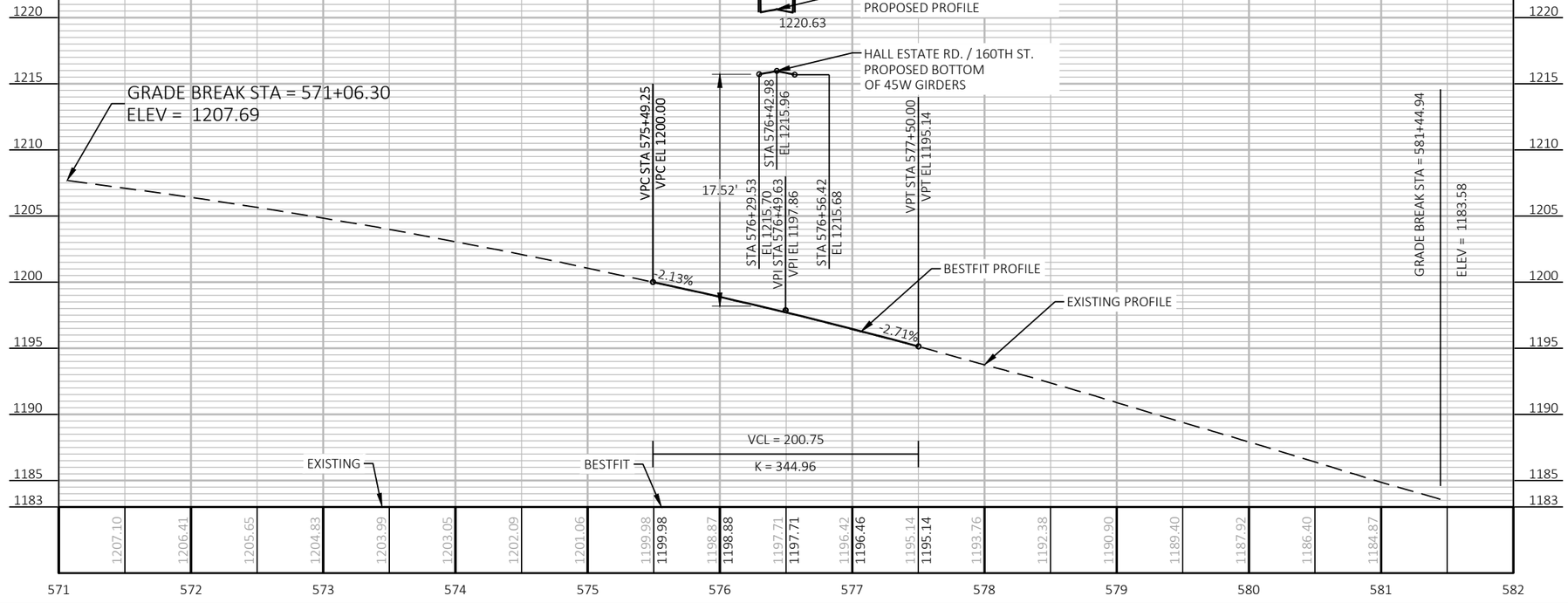
PLOT DATE : 4/17/2026 12:08 PM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

BENCH MARKS			
NO.	STATION	ELEV.	DESCRIPTION
1	9+03.23	1219.56'	BRONZE MON, 13.25' RT.
2	11+03.51	1219.13'	CUT SQ CONC PWALL, 12.23' LT.
4	10+38.95	1183.73'	CUT SQ CAMERA POLE CONC BASE 574.50' RT.
5	9+12.52	1199.19'	NW BOLT N LEG SIGN, 101.41' LT.

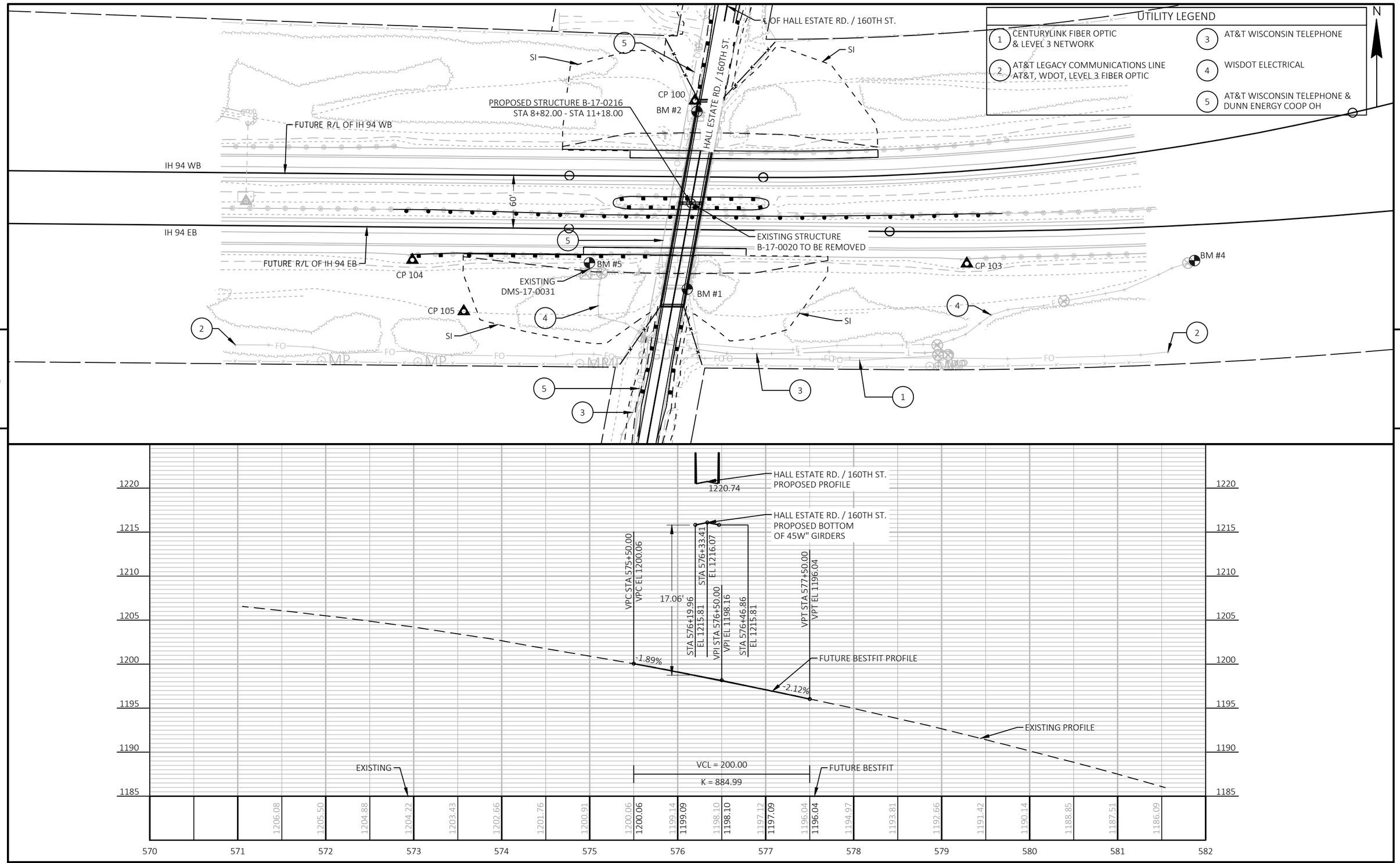
UTILITY LEGEND	
1 CENTURYLINK FIBER OPTIC & LEVEL 3 NETWORK	3 AT&T WISCONSIN TELEPHONE
2 AT&T LEGACY COMMUNICATIONS LINE AT&T, WDOT, LEVEL 3 FIBER OPTIC	4 WISDOT ELECTRICAL
	5 AT&T WISCONSIN TELEPHONE & DUNN ENERGY COOP OH





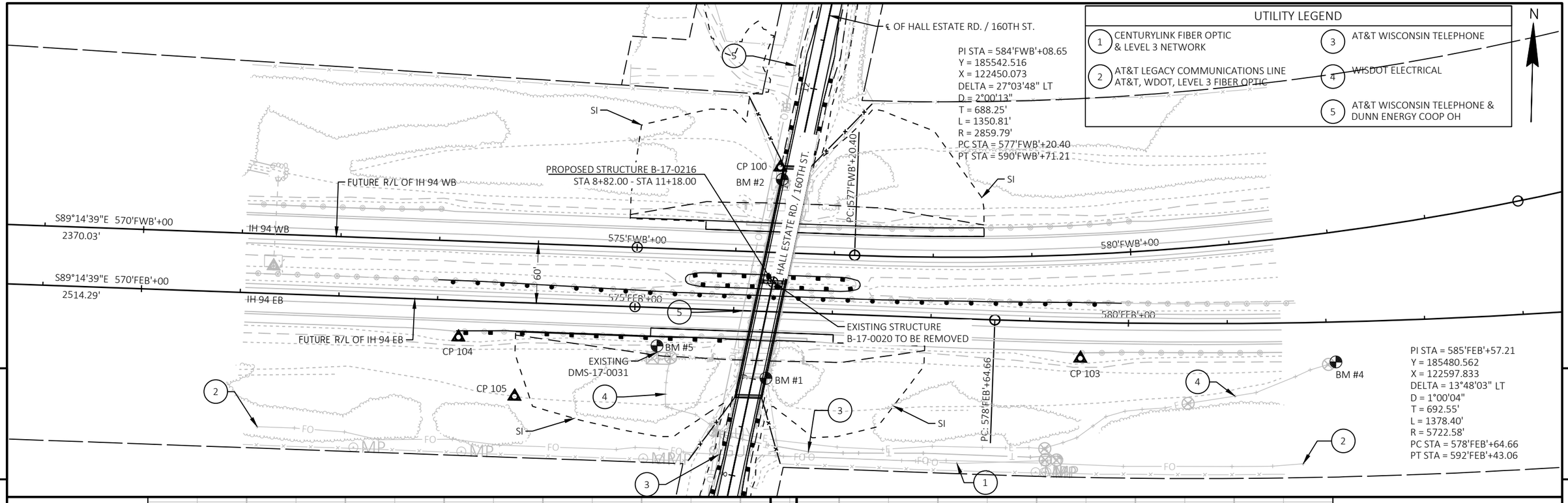
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	PLAN AND PROFILE: IH 94 WB	SHEET 39	E

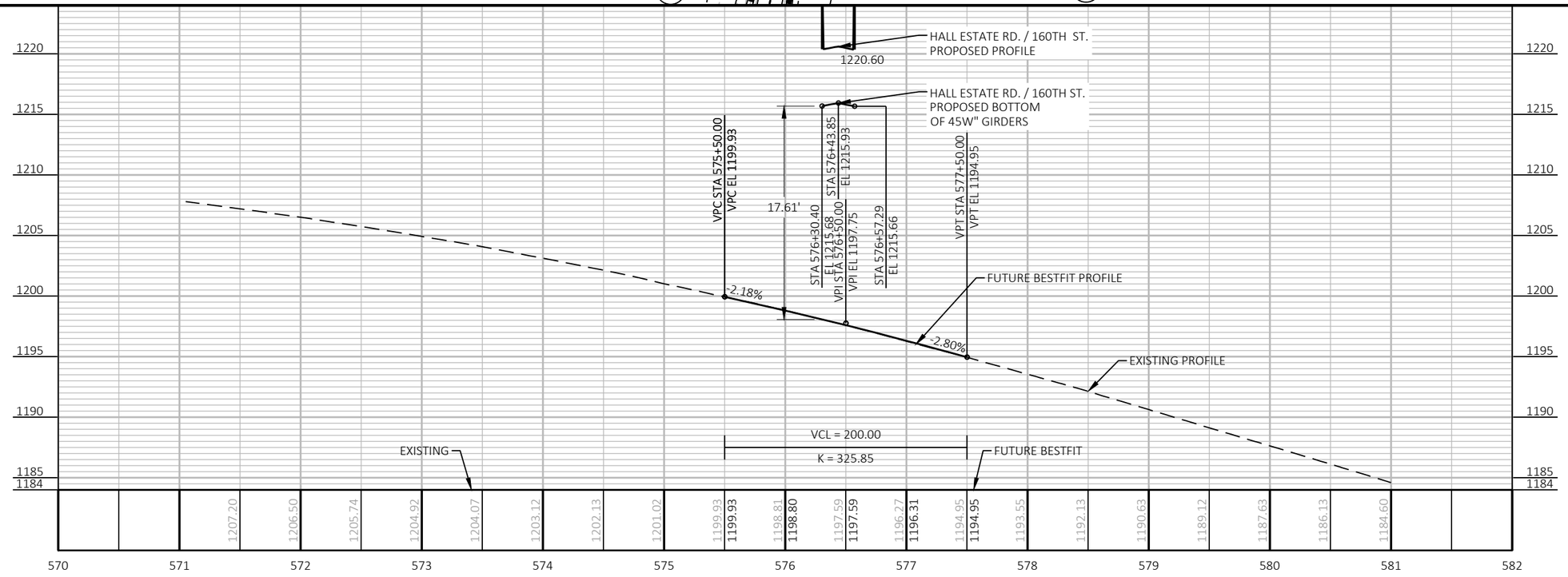
FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\050301-PP.DWG
LAYOUT NAME - 050301
PLOT DATE : 4/17/2026 12:11 PM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44



PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	PLAN AND PROFILE: IH 94 EB FUTURE RL	SHEET 40	E

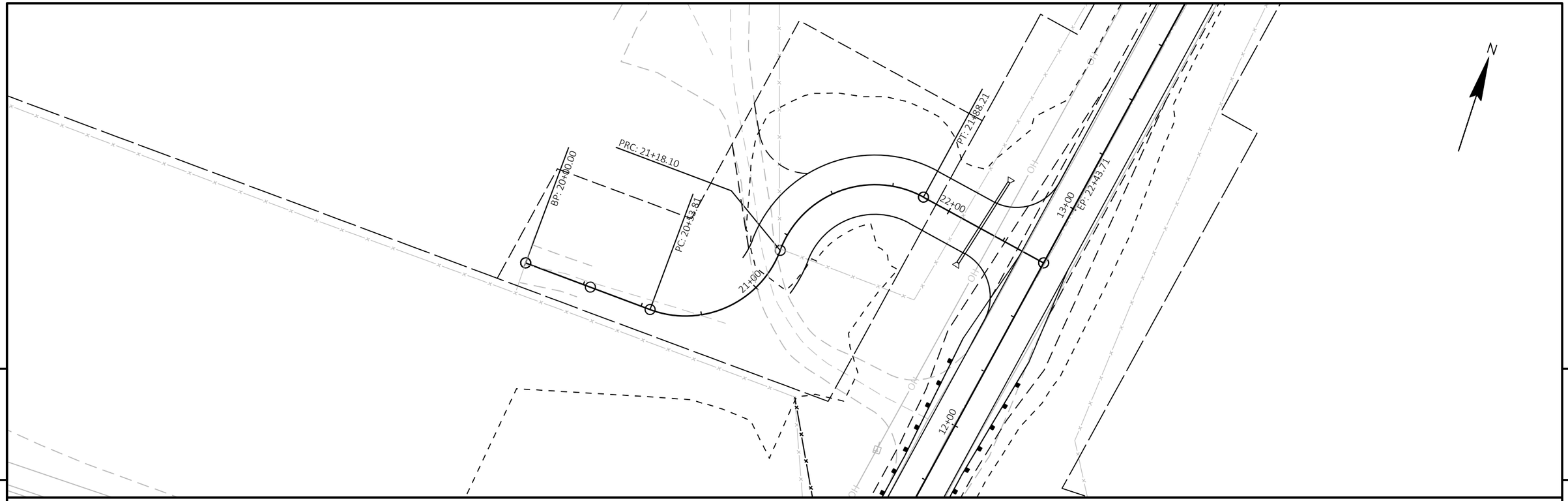
FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\050401-PP.DWG
LAYOUT NAME - 050401
PLOT DATE : 4/17/2026 12:16 PM
PLOT BY : THAO, KOU
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

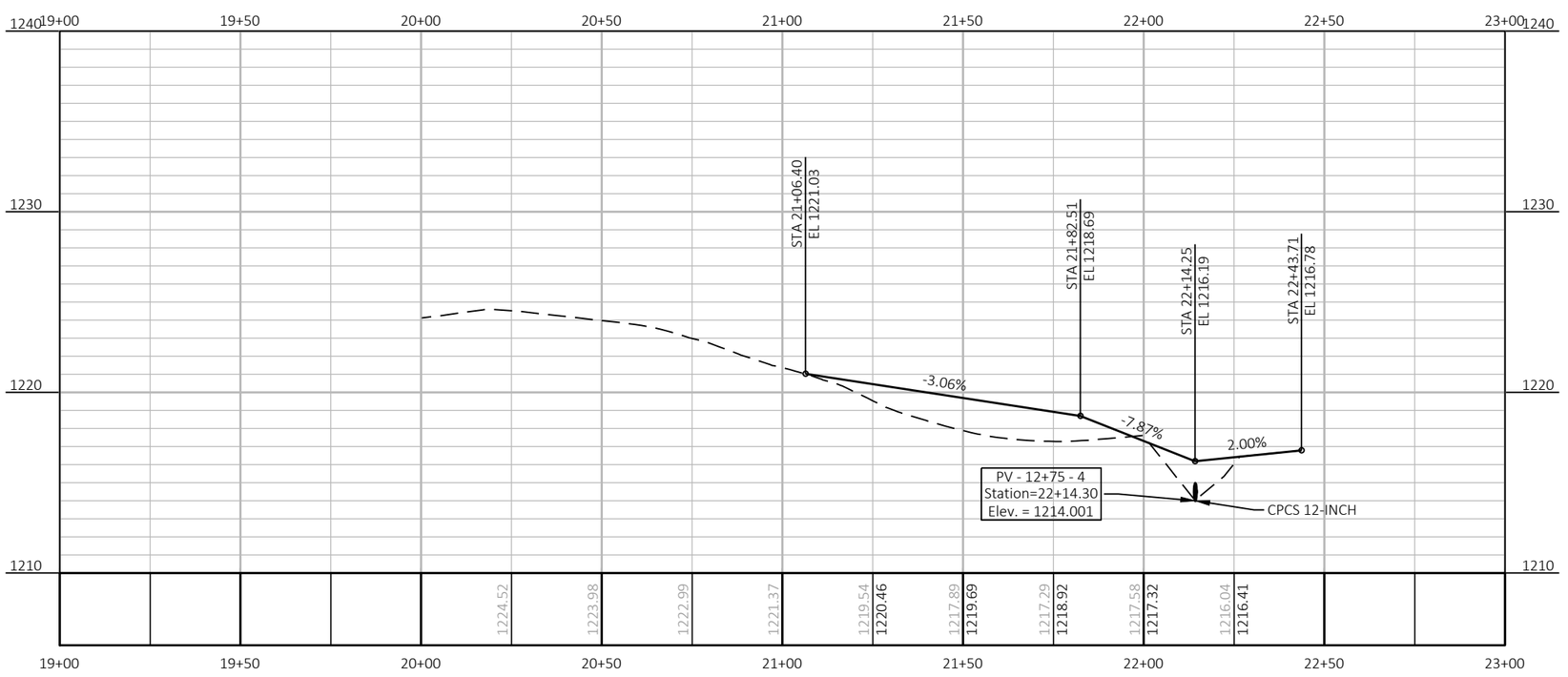




PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	PLAN AND PROFILE: IH 94 WB FUTURE RL	SHEET 41	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\050501-PP.DWG
LAYOUT NAME - 050501
PLOT DATE : 4/17/2026 12:18 PM
PLOT BY : THAO, KOU
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44





PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	PLAN AND PROFILE: DRIVEWAY	SHEET 42	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\050601-PP.DWG
LAYOUT NAME - 050601

PLOT DATE : 8/20/2026 1:46 PM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:40 FT

Standard Detail Drawing List

08D04-07	CONCRETE SURFACE DRAINS AND ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F06-04	REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN
12A03-10	NAME PLATE (STRUCTURES)
14B07-16A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16I	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16J	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16K	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16L	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16M	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16N	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-02A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B20-12A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-12B	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS
14B20-12C	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO VERTICAL FACED PARAPETS
14B20-12D	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SLOPED END PARAPETS
14B20-12E	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPES "F" AND "W"
14B20-12F	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPE "M"
14B20-12G	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL
14B20-12H	STEEL THRIE BEAM STRUCTURE APPROACH, SINGLE SLOPE ATTACHMENT
14B26-05A	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-05B	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-05C	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-05D	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-05E	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-05F	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-05G	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-05H	STEEL THRIE BEAM BULLNOSE TERMINAL
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)
14B47-06A	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-06B	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-06C	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-06D	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

6

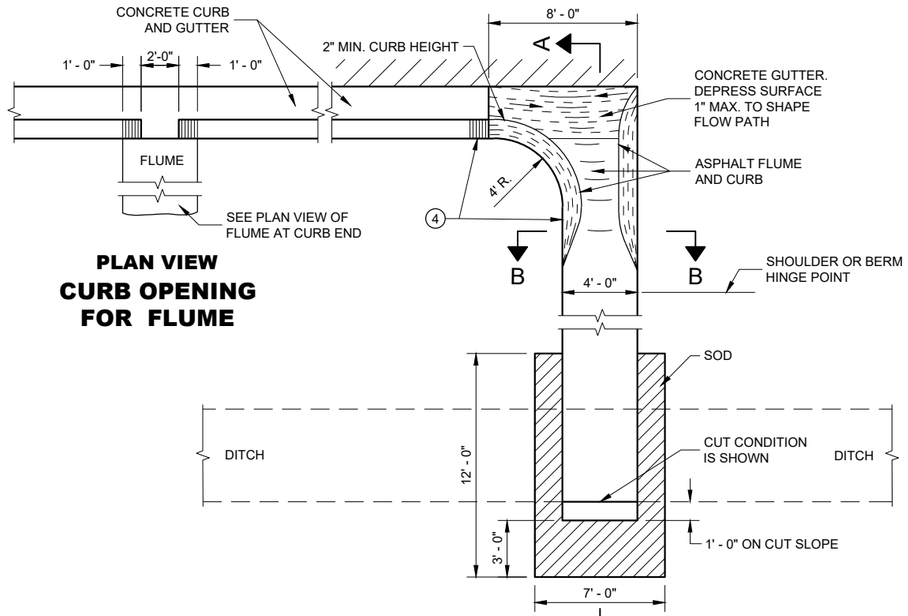
Standard Detail Drawing List

14B47-06E	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-06F	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-06G	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B52-03A	CABLE BARRIER TYPE 1 LAYOUT
14B52-03B	CABLE BARRIER TYPE 1 LAYOUT
14B52-03C	CABLE BARRIER TYPE 1 LAYOUT
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15A04-08A	FLEXIBLE DELINEATOR POST
15B01-08A	FENCE WOVEN WIRE
15B01-08B	FENCE WOVEN WIRE
15C02-10A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-10B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-10C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C02-10D	ON RAMP LANE CLOSURE
15C02-10E	OFF RAMP LANE CLOSURE
15C02-10F	ADVANCED WIDTH RESTRICTION SIGNING
15C06-12	SIGNING & MARKING FOR TWO LANE BRIDGES
15C11-11A	CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST
15C11-11B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D12-16D	TRAFFIC CONTROL, LANE CLOSURE, BASIC TRAFFIC QUEUE WARNING SYSTEM
15D27-05	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D42-04	TRAFFIC CONTROL, TWO LANE FULL FREEWAY CLOSURE

6

NOTE: TAPER CURB ENDS TO GUTTER IN 1' - 0"

ASPHALTIC FLUME

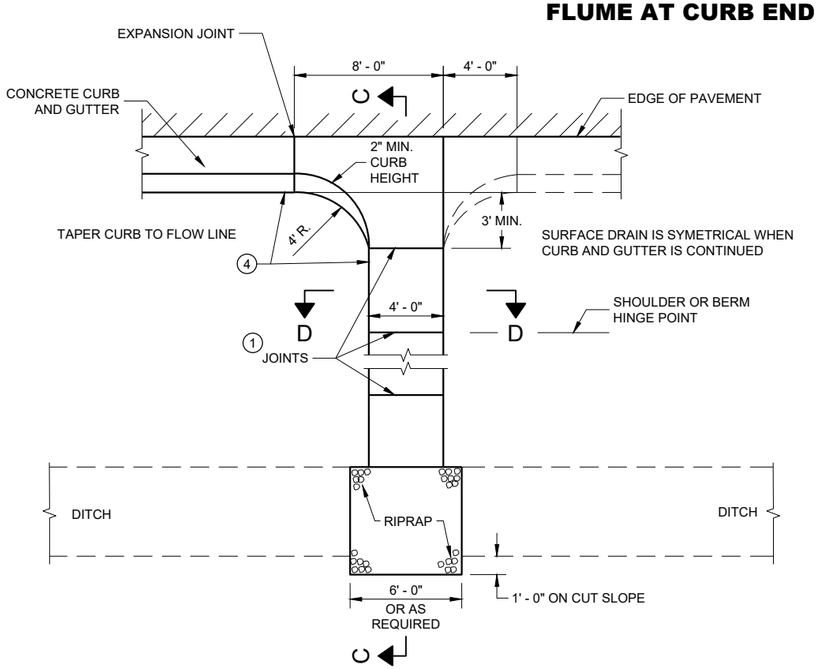


PLAN VIEW

CURB OPENING FOR FLUME

PLAN VIEW

FLUME AT CURB END



PLAN VIEW

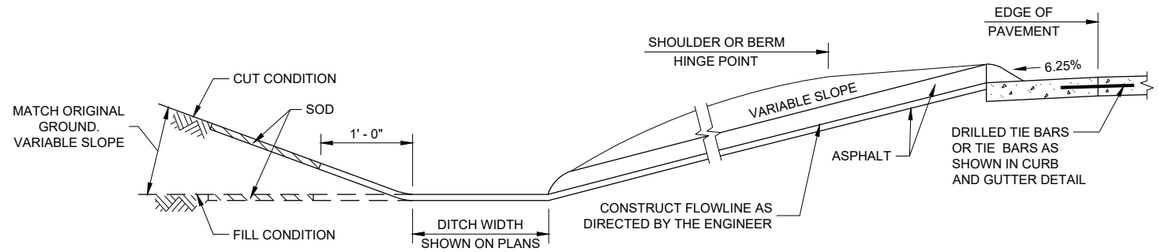
CONCRETE SURFACE DRAIN

GENERAL NOTES

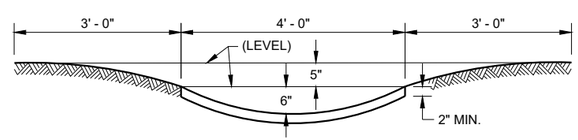
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

4" X 4" - W3.0 X W3.0 CONCRETE REINFORCEMENT SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

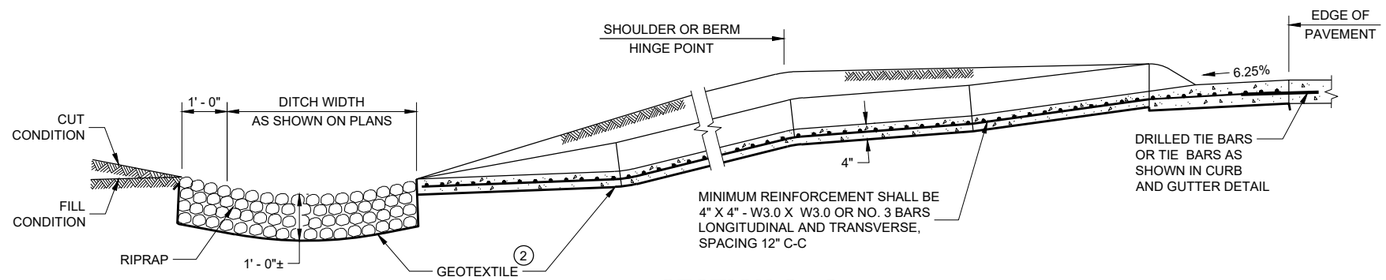
1. JOINTS SHALL BE ⅛" TO ¼" WIDE BY 1½" DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
2. GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
3. CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.
4. ANGLE OF FLUME IN RELATION TO BACK OF CURB TO BE CONSTRUCTED PER THE PLAN DETAILS OR AS DIRECTED BY THE ENGINEER. ANGLE OF FLUME MAY BE OTHER THAN 90 DEGREES AS SHOWN.



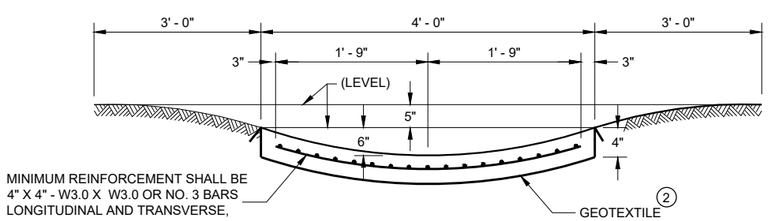
SECTION A - A



SECTION B - B



SECTION C - C



SECTION D - D

CONCRETE SURFACE DRAINS AND ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

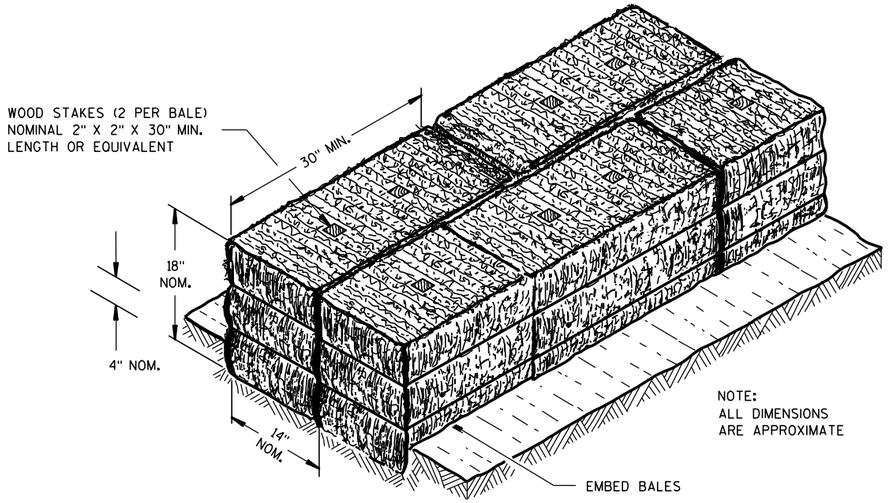
APPROVED
May 2023
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

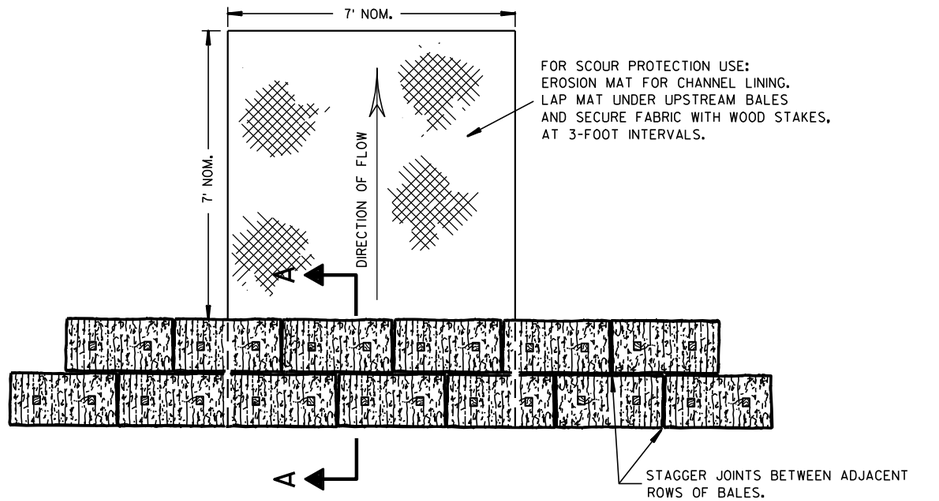
FHWA

6

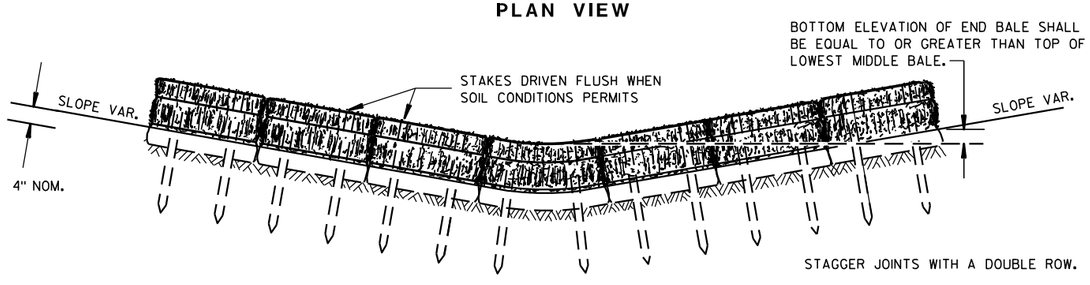
SDD 08D04 - 07



SECTION A-A



PLAN VIEW



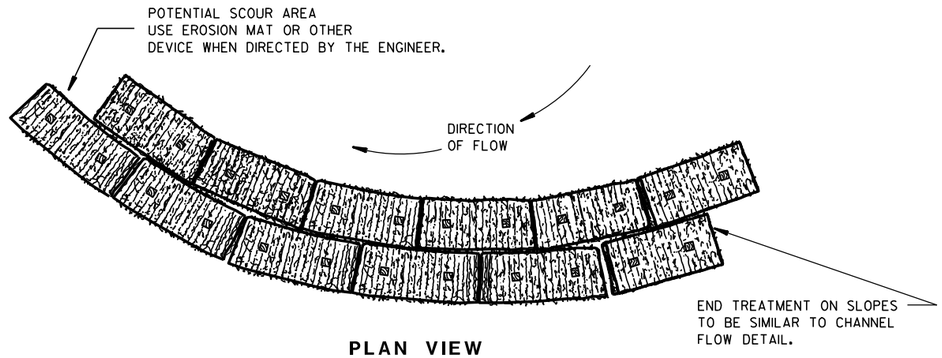
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

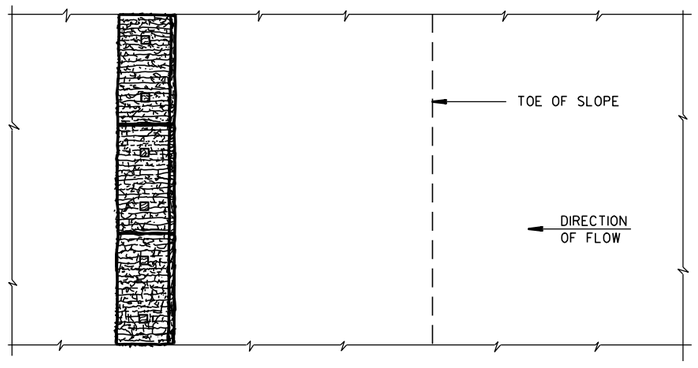
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

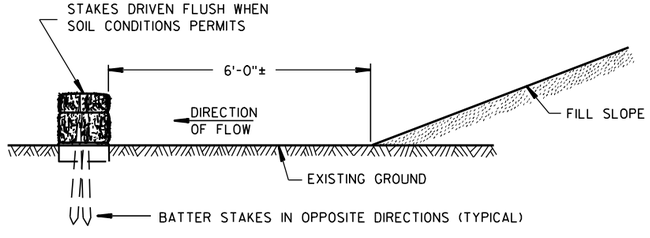


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

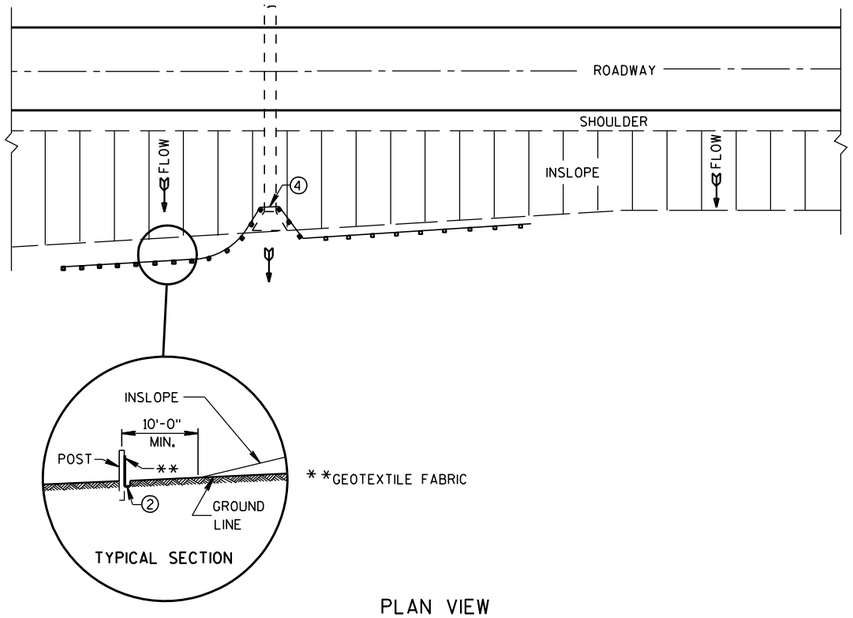
6/04/02 — DATE

/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

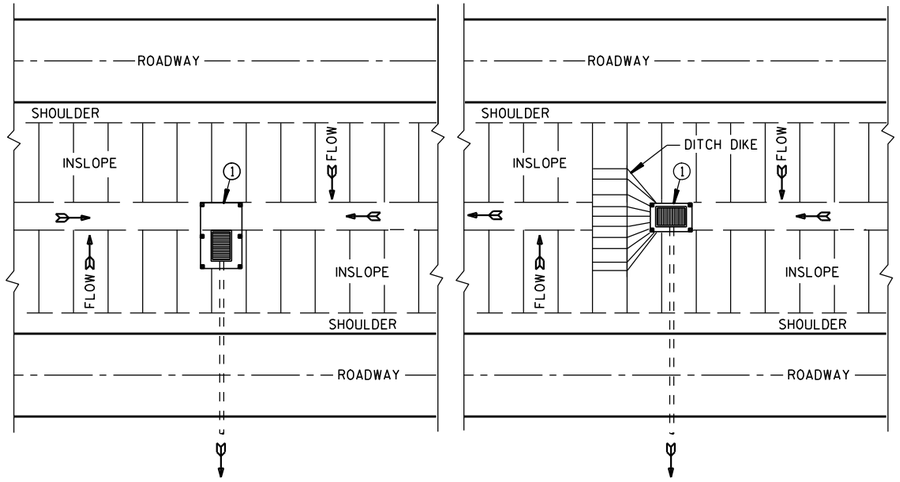
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



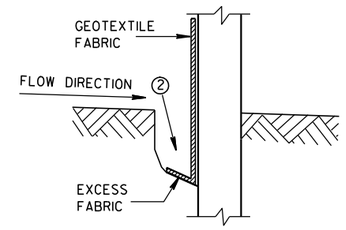
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

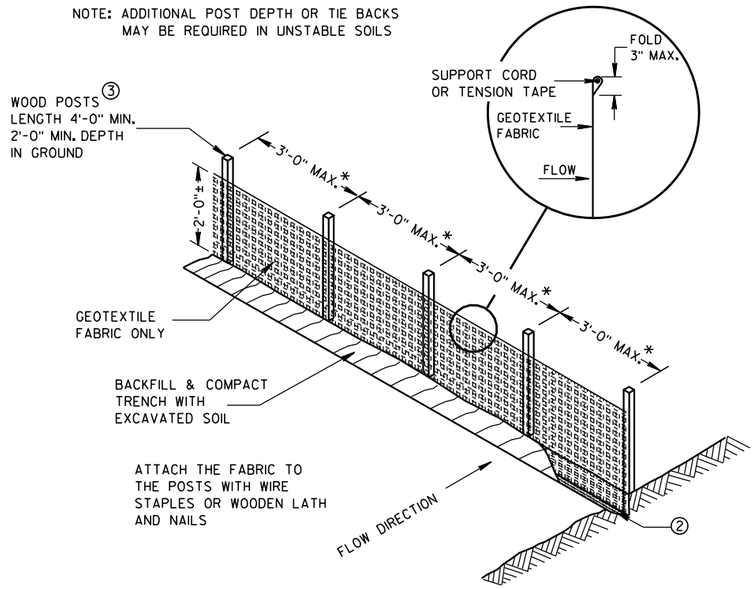
GENERAL NOTES

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

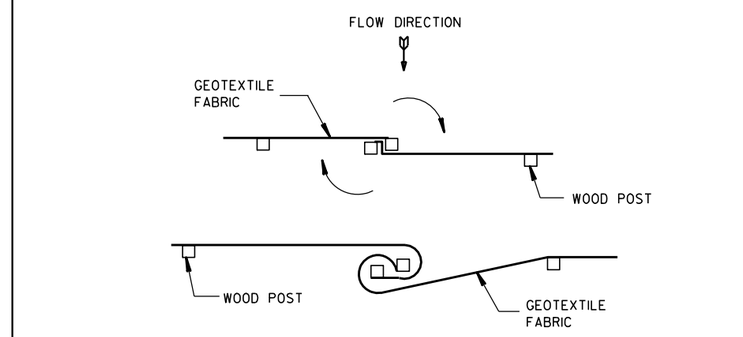
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL 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.



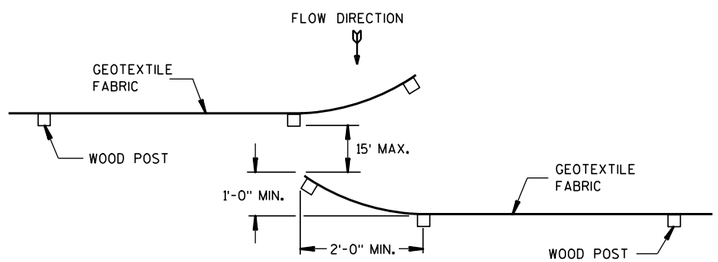
TRENCH DETAIL



SILT FENCE

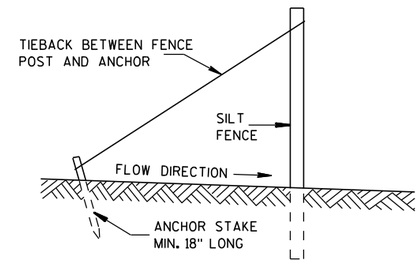


TWIST METHOD



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

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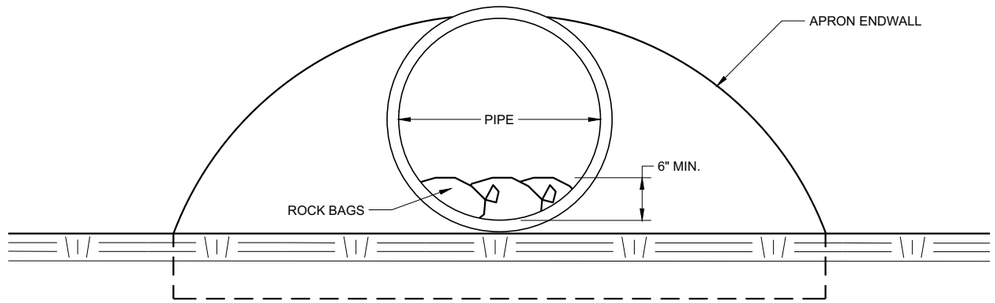
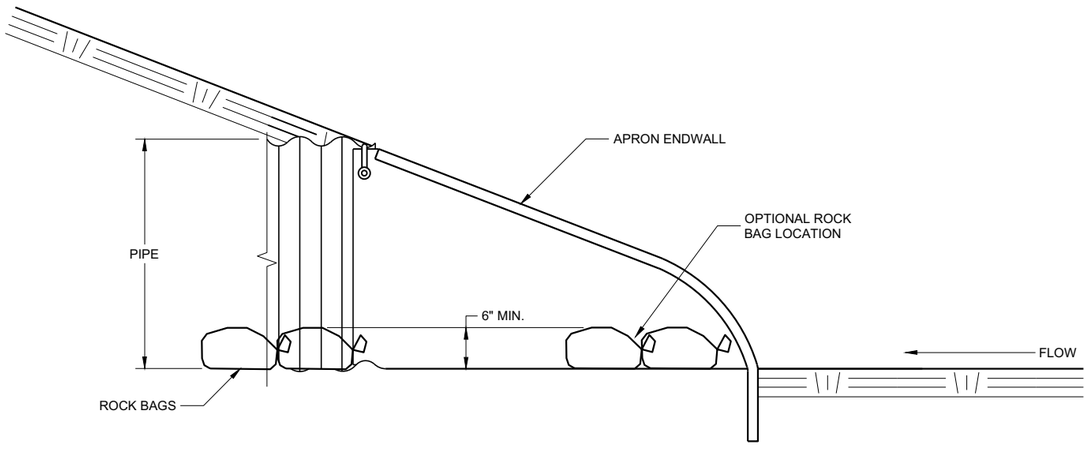
S.D.D. 8 E 9-6



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	

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SDD 08E15 - 01

METAL APRON ENDWALLS

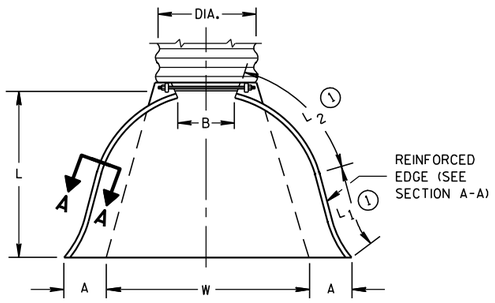
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

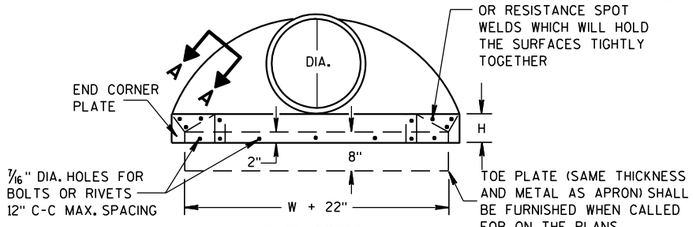
REINFORCED CONCRETE APRON ENDWALLS

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

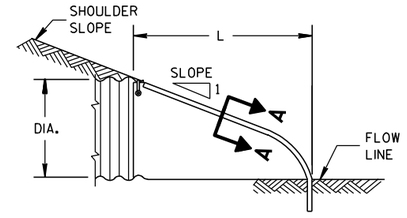
*MINIMUM
**MAXIMUM



PLAN VIEW

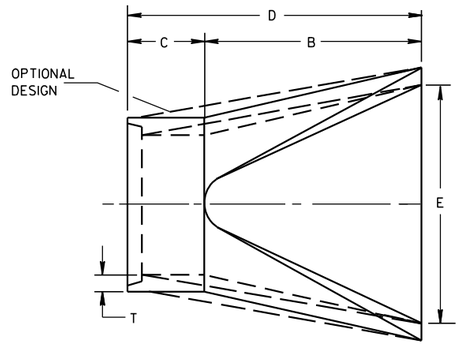


END VIEW

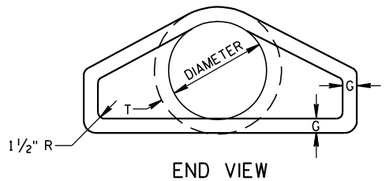


SIDE ELEVATION

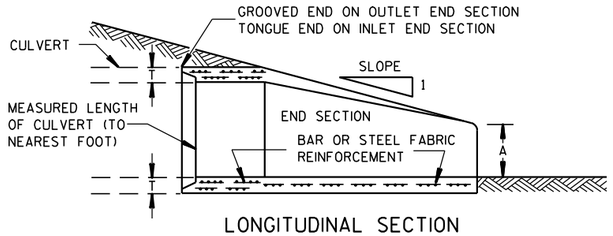
METAL ENDWALLS



PLAN

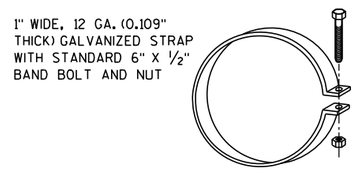


END VIEW



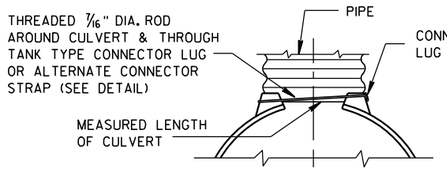
LONGITUDINAL SECTION

CONCRETE ENDWALLS

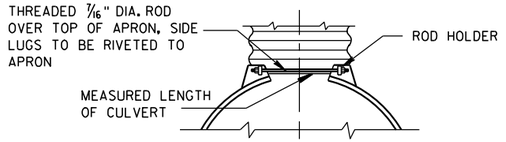


ALTERNATE FOR TYPE 1 CONNECTION

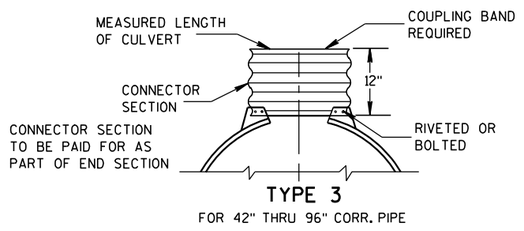
END SECTION CONNECTOR STRAP



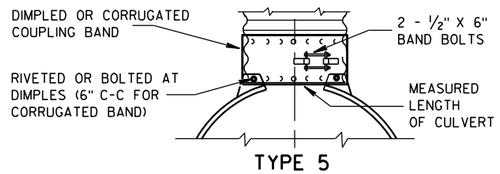
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

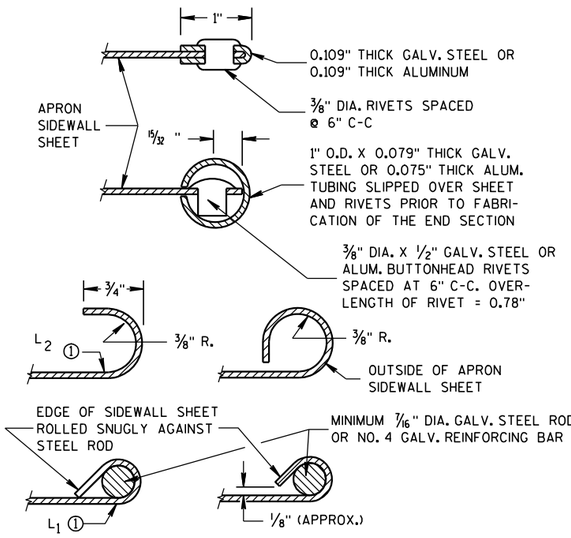
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

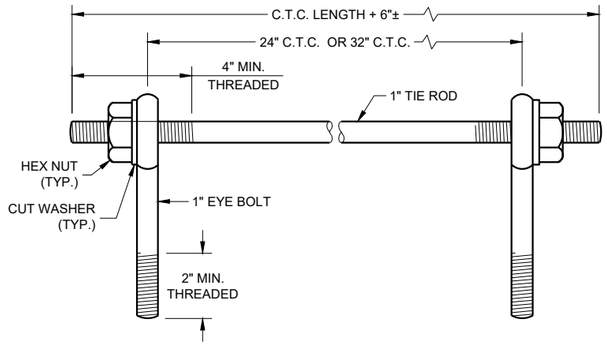
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

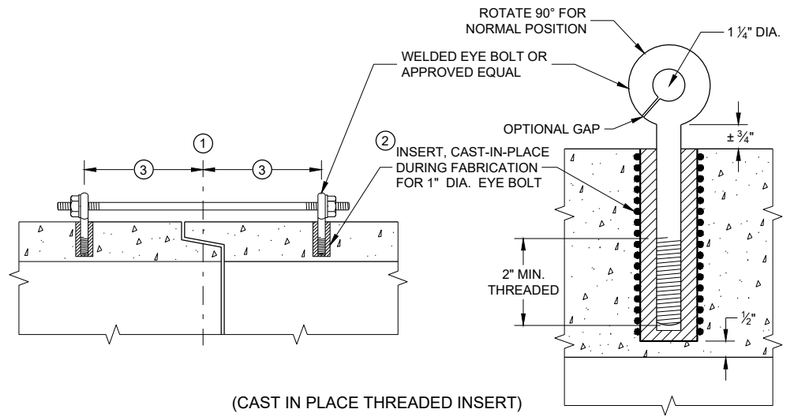
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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



EYE BOLTS AND TIE ROD



(CAST IN PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

GENERAL NOTES

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

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

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

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

(1) CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

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

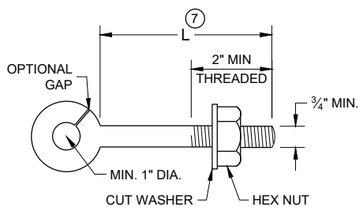
(3) HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.

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

(5) OPENING TO BE ROD DIAMETER PLUS 1 INCH.

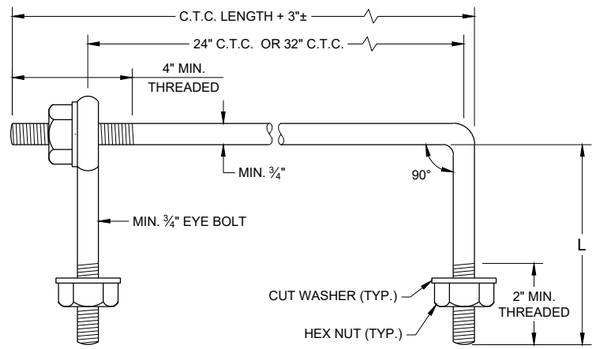
(6) LENGTH ADEQUATE TO EXTEND TO WITHIN ½ INCH OF THE INNER SURFACE OF THE PIPE.

(7) EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.

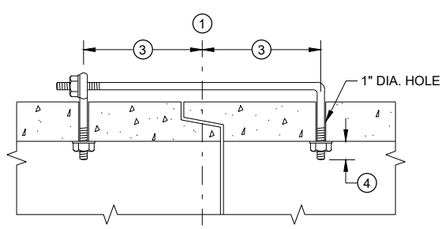


EYE BOLT (7)

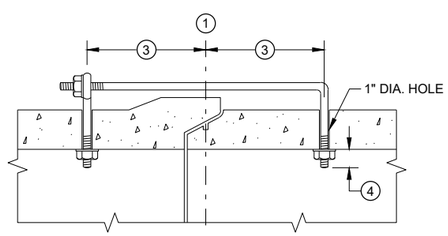
NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD



(TONGUE AND GROOVE PIPE)



(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

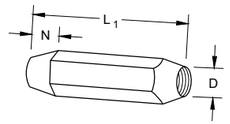
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

ADJUSTABLE TIE ROD TABLE

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

DIMENSIONS SHOWN ARE IN INCHES



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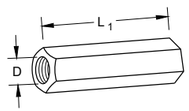
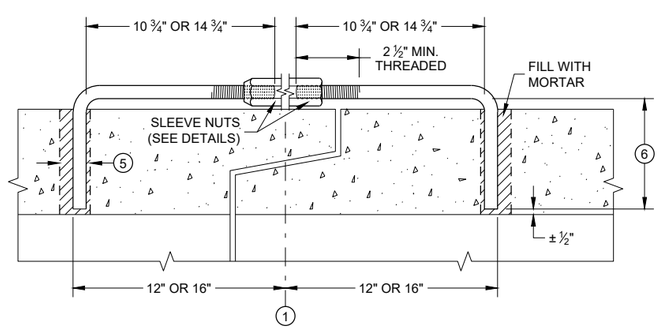


PLAIN

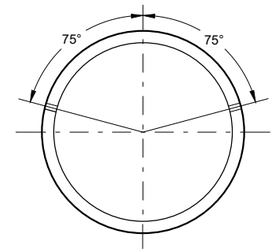
RIGHT AND LEFT THREADS

SLEEVE NUTS



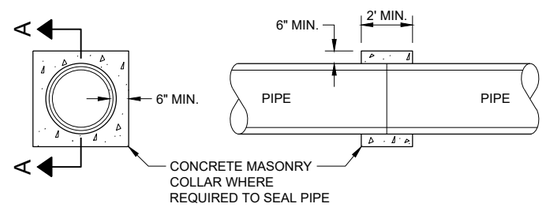
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A - A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

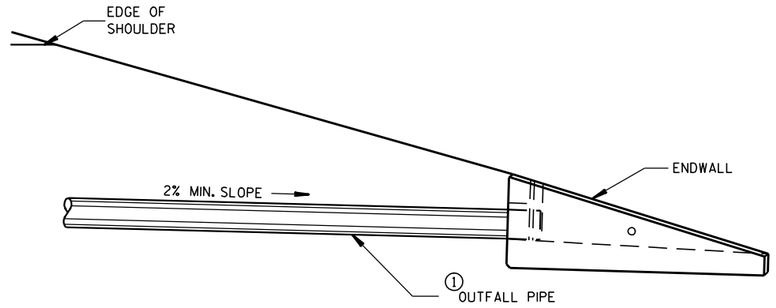
FHWA

SDD 08F04 - 08

SDD 08F04 - 08

DIMENSIONS IN INCHES											
PIPE DIA.	A	B	C	D	E	F	G	H	J	L	Z
**4	6	12	5 1/4	9	8	32	36	11	2 3/8	6 1/2	4
6	8	14	7 1/4	11	10	42	44	13	3 5/8	8 1/2	6

**APRON ENDWALL FOR 6 INCH DIAMETER PIPE MAY BE SUBSTITUTED FOR THIS SIZE PROVIDED THE HOLE IN THE HEADWALL IS SIZED AND LOCATED TO CONFORM TO THE 4 INCH DIAMETER PIPE DIMENSIONS (C & J)



INSTALLATION DETAIL

GENERAL NOTES

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

ALTERNATIVE DESIGNS WHICH PROVIDE EQUIVALENT CAPACITY AND STRENGTH MAY BE USED WHEN APPROVED BY THE ENGINEER. ENDWALL MAY BE EITHER PRECAST OR CAST-IN-PLACE CONCRETE.

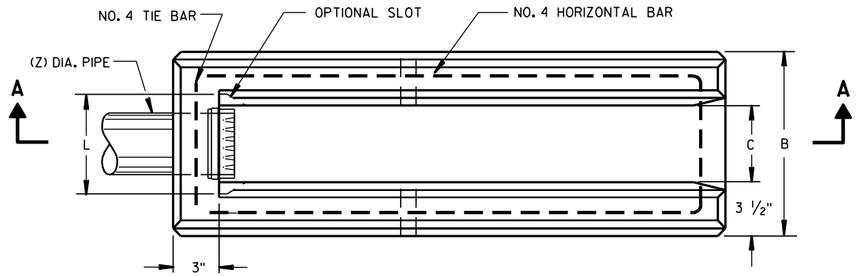
THE UNDERDRAIN PIPE SHALL BE FULLY INSERTED AND SEALED INTO THE ENDWALL WITH CEMENT MORTAR PRIOR TO BACKFILLING AROUND THE STRUCTURE.

THE UPPERMOST POINT OF THE ENDWALL SHALL BE PLACED FLUSH WITH THE ROADWAY SLOPE. ADJACENT EMBANKMENT SLOPES SHALL BE SHAPED TO FIT THE SIDES AND TOE OF THE ENDWALL. EXACT PLACEMENT OF THE OUTFALL PIPE AND ENDWALL SHALL BE DETERMINED BY THE ENGINEER TO MATCH THE ELEVATIONS AND FLOW DIRECTION OF THE ROADSIDE DITCH.

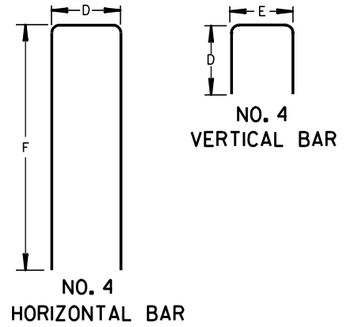
① THE OUTFALL PIPE UNDERDRAIN AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATION FOR POLY (VINYL CHORIDE) (PVC) PLASTIC DRAIN, WASTE AND VENT PIPE AND FITTINGS, ASTM DESIGNATION: D 2665, SCHEDULE 40 PVC OR THE STANDARD SPECIFICATION FOR TYPE PSM POLY (VINYL CHORIDE) (PVC) SEWER PIPE AND FITTINGS, ASTM DESIGNATION: D 3034, TYPE PSM SDR 23.5 PVC SEWER PIPE, ALL JOINTS SHALL BE SOLVENT WELDED.

THE OUTFALL PIPE INCLUDING ALL FITTINGS AND THE RODENT SHIELD SHALL BE MEASURED AND PAID FOR AS PIPE UNDERDRAIN UNPERFORATED.

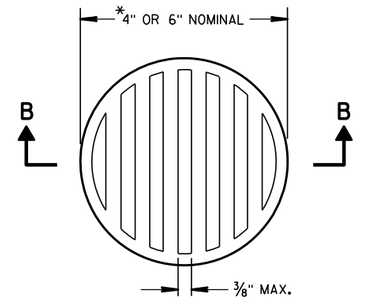
② THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

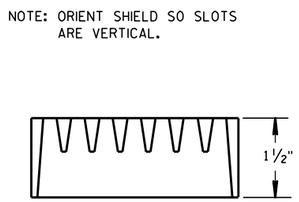


PLAN VIEW



BAR STEEL REINFORCEMENT DETAILS

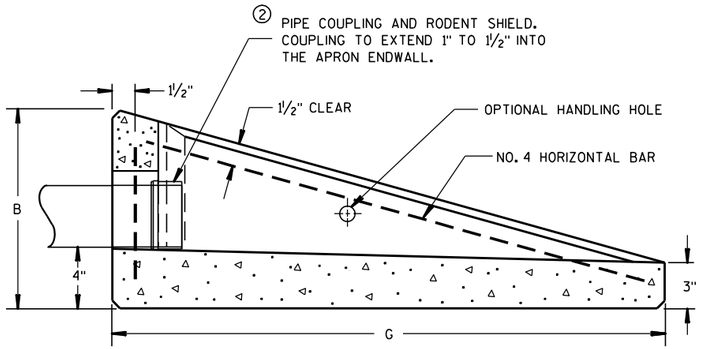




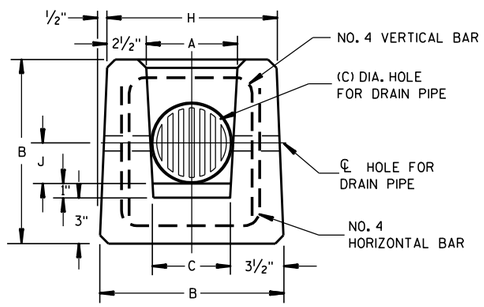
SECTION B-B

② RODENT SHIELD

*NOTE: DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.



SECTION A-A



END VIEW

CONCRETE APRON ENDWALL FOR UNDERDRAIN

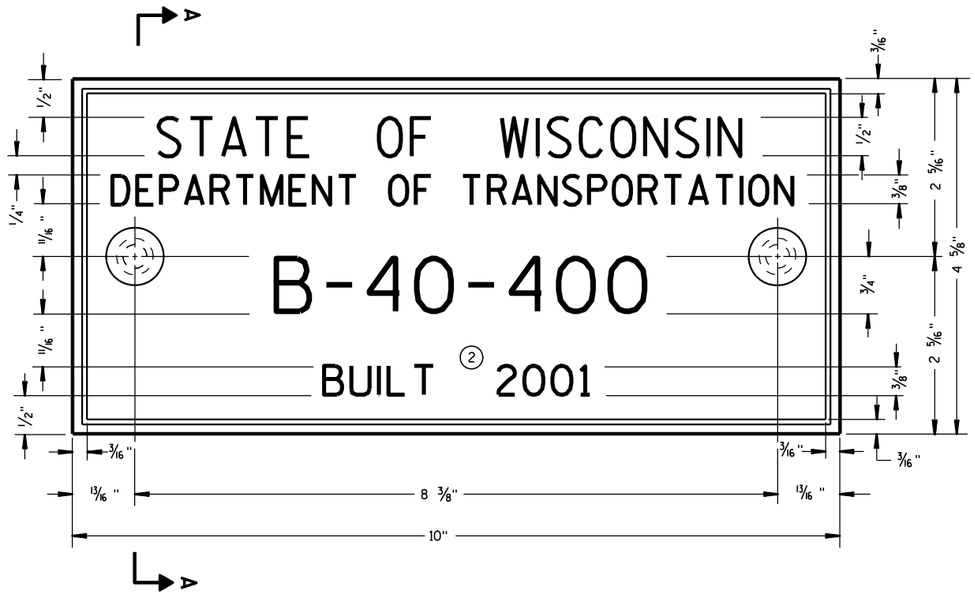
REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/10/98 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

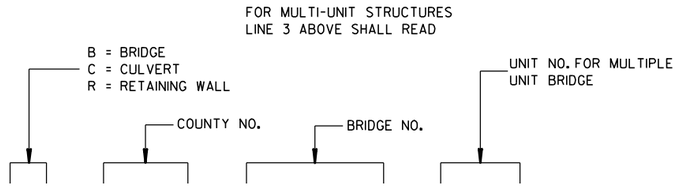
6

S.D.D. 8 F 6-4



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



NUMBERING DESIGNATION MULTI-UNIT STRUCTURES

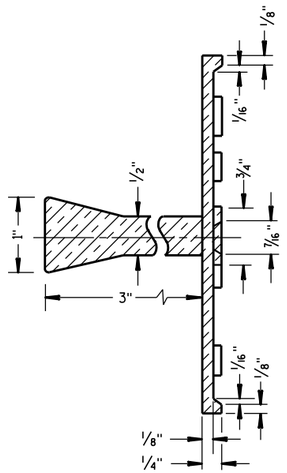
GENERAL NOTES

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

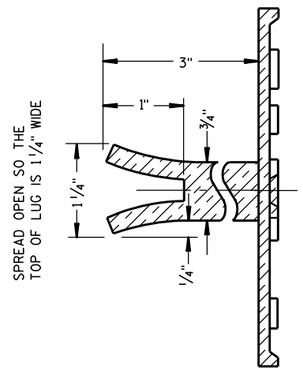
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

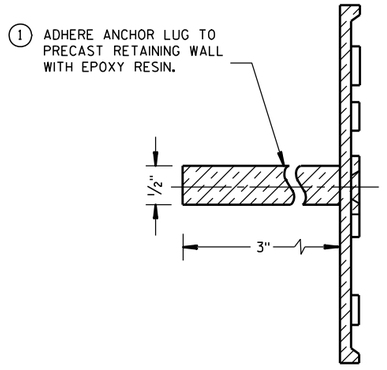
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

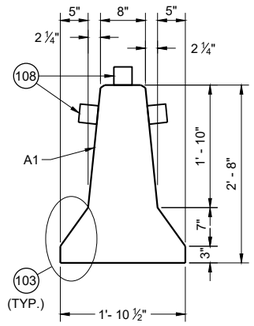
APPROVED

3/26/10 DATE — /S/ Scot Beck-- CHIEF STRUCTURAL DEVELOP ENGINEER

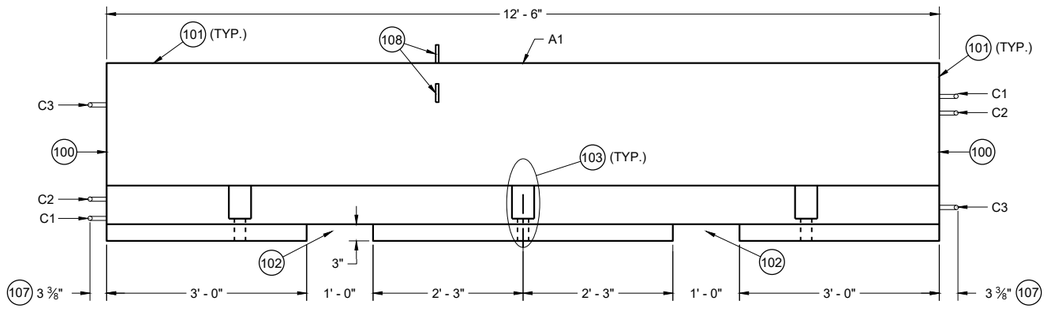
FHWA

6

S.D.D. 12 A 3-10



CROSS SECTION



PROFILE VIEW

GENERAL NOTES

PLACE BARRIER ON PAVED SURFACE. BEFORE PLACEMENT OF TEMPORARY BARRIER, REMOVE ALL LOOSE MATERIAL FROM PAVED SURFACE.

LOOP BARS C1, C2 AND C3 ARE NOT FOR PLACEMENT OR MOVEMENT OF BARRIER.

(100) PERMANENTLY FORM INTO ONE END OF BARRIER THE FOLLOWING INFORMATION:
- A. TYPE OF BARRIER: WI-CBTP
- B. MANUFACTURER
- C. DATE OF MANUFACTURE (MONTH AND YEAR)

(101) 1" OPTIONAL CHAMFER

(102) SEE LIFTING SLOT DETAIL

(103) SEE ANCHOR BLOCK DETAIL

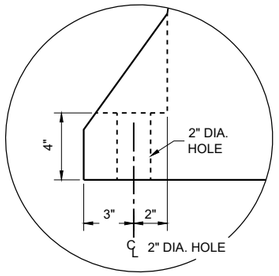
(104) 1 ¾" MIN. CLEAR COVER

(105) 2" MIN. CLEAR COVER

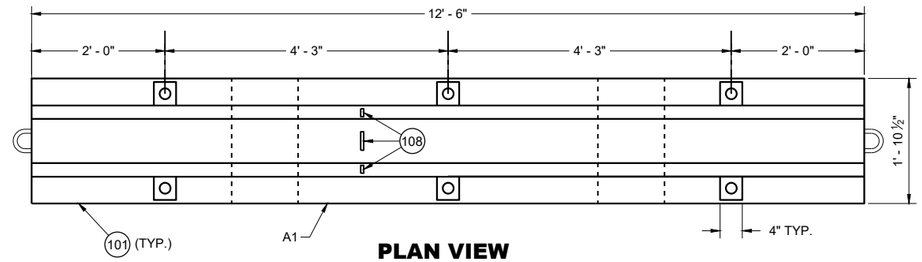
(106) 1" MIN. CLEAR COVER

(107) ± ⅛" MEASURED FROM FACE OF CONCRETE BARRIER TO OUTSIDE OF LOOP BAR (TYP.)

(108) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURERS INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED LEFT OF TRAFFIC AND WHITE WHEN BARRIER IS LOCATED RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART, PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO SIDE MOUNTED DELINEATORS ON BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAT 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.

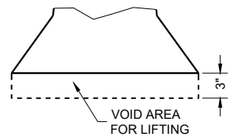


ANCHOR BLOCK DETAIL

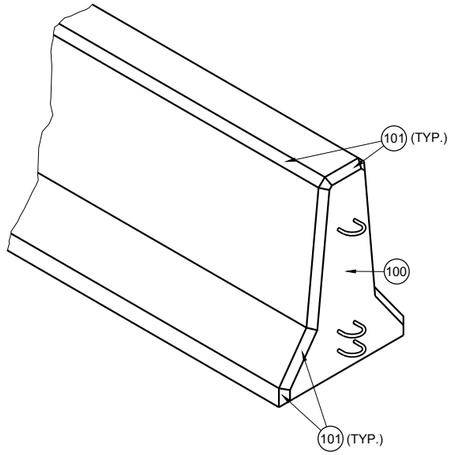


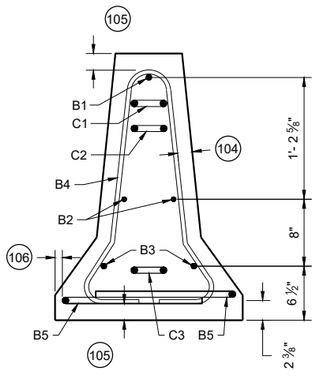
PLAN VIEW

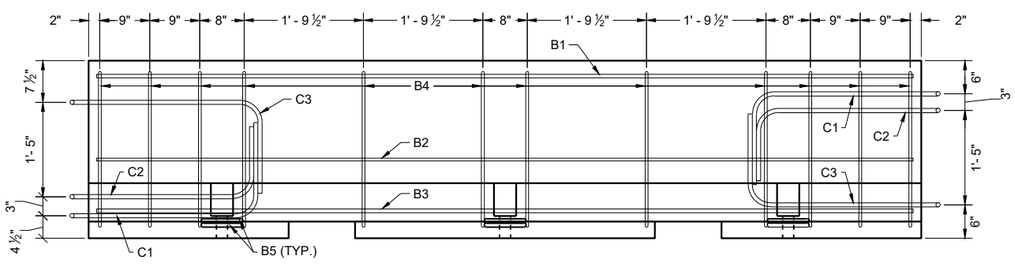
TEMPORARY BARRIER



LIFTING SLOT DETAIL (TYP.)







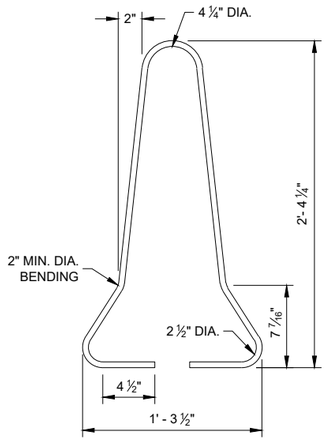
PROFILE VIEW

TEMPORARY BARRIER REINFORCEMENT

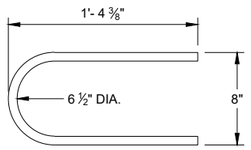
CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

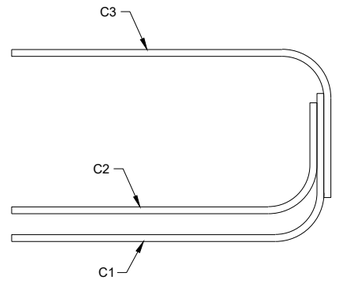
6
SDD 14B07-16a



B4 BAR DETAIL

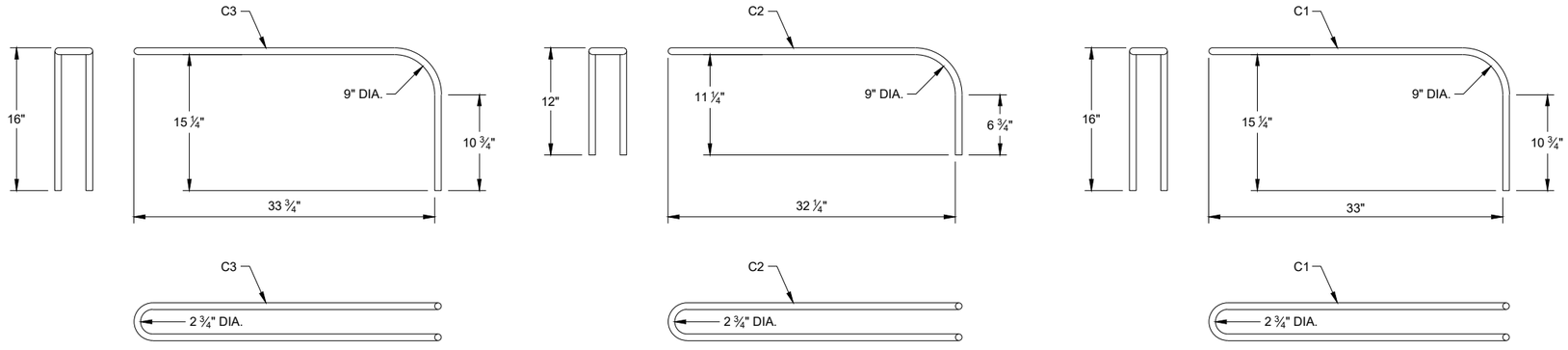


B5 BAR DETAIL



PROFILE VIEW

LOOP BAR ASSEMBLY



C BAR DETAILS

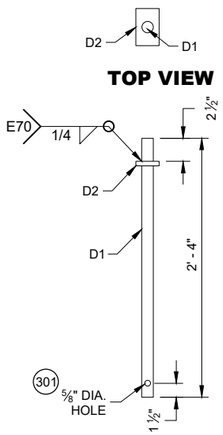
6

SDD 14B07-16b

6

SDD 14B07-16b

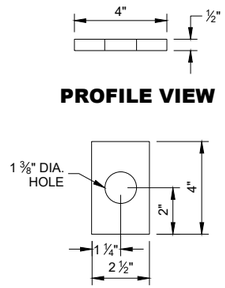
CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"



TOP VIEW

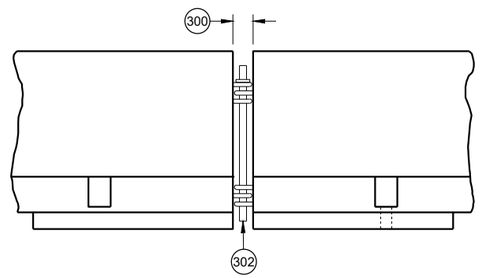
PROFILE VIEW

CONNECTOR PIN ASSEMBLY



PROFILE VIEW

TOP VIEW D2



CONNECTING TEMPORARY BARRIER SECTIONS

GENERAL NOTES

300 SET WITH 3 ⅝" WOOD BLOCK.

301 HOLE IS OPTIONAL.

302 CONNECTOR PIN ASSEMBLY.

303 CONCRETE PAVEMENT, APPROACH SLAB, OR DECK.

304 CONCRETE DECK.

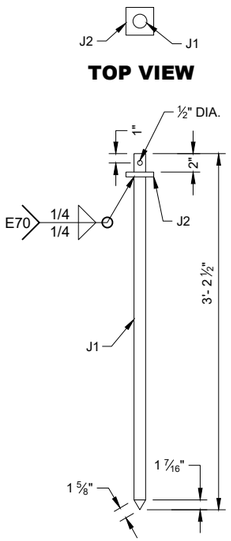
305 DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY OR CONCRETE PAVEMENT WITH ASPHALT OVERLAY.

306 MINIMUM OF 2" OF ASPHALT.

307 ASPHALT ANCHOR PIN ASSEMBLY

308 IF DRILLING A PILOT HOLE, THE MAX, DIA. OF THE HOLE IS 3/4"

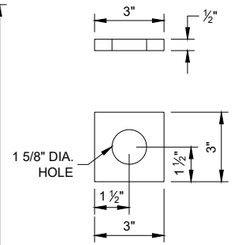
309 WHEN THERE IS ASPHALT OVERLAYING CONCRETE PAVEMENT, A 1 5/8" DIA. PILOT HOLE CAN BE DRILLED INTO THE OVERLAY AND CONCRETE. IF NEEDED DRILL A 3/4" PILOT HOLE IN BASE COURSE.



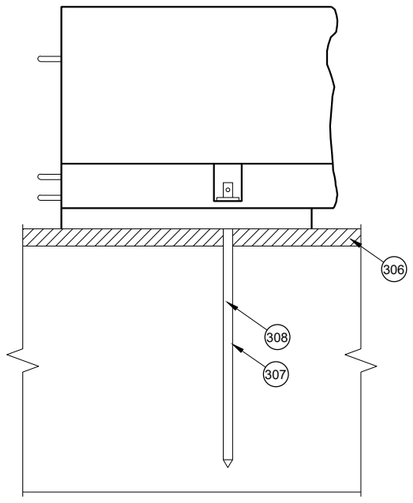
TOP VIEW

PROFILE VIEW

ASPHALT ANCHOR PIN ASSEMBLY

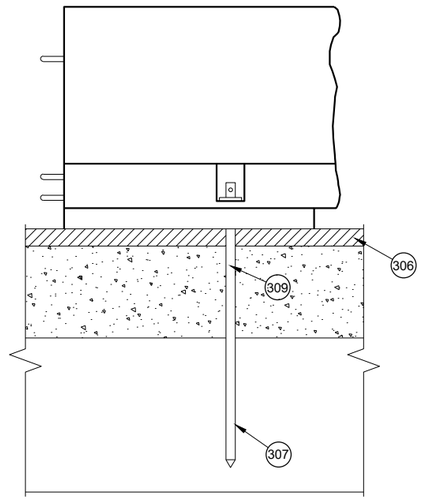


TOP VIEW J2



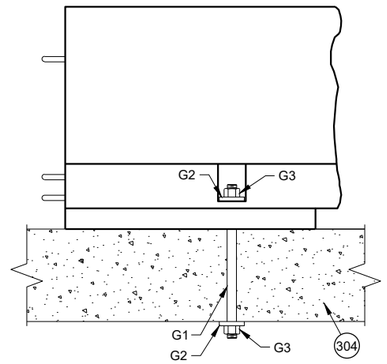
SIDE VIEW

ASPHALT ANCHOR INSTALLATION THROUGH ASPHALT PAVEMENT



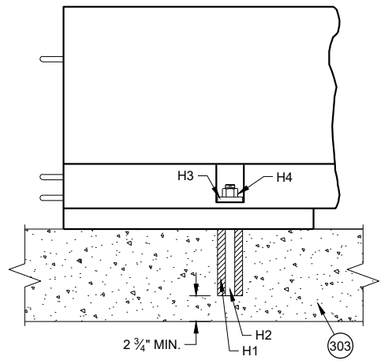
SIDE VIEW

ASPHALT ANCHOR INSTALLATION THROUGH ASPHALT OVERLAY ON TOP OF CONCRETE PAVEMENT



SIDE VIEW

THROUGH BOLT ANCHOR INSTALLATION (305)



SIDE VIEW

ADHESIVE ANCHOR INSTALLATION (305)

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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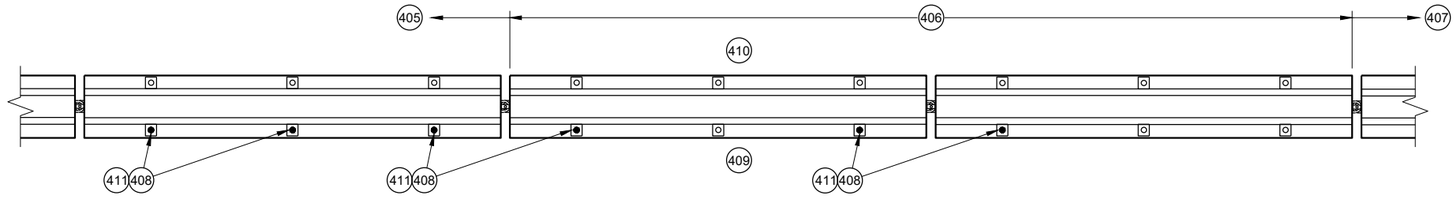
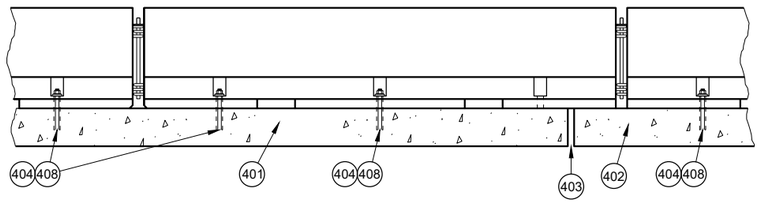


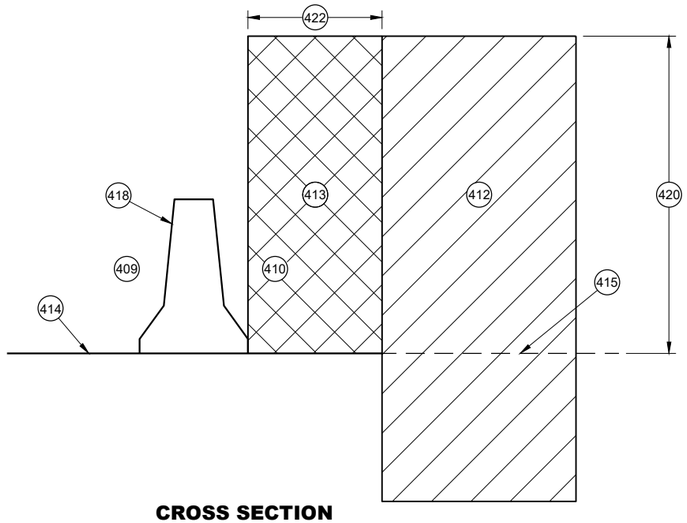
PLAN VIEW

TRANSITION FROM FREE STANDING TO ANCHORED BARRIER



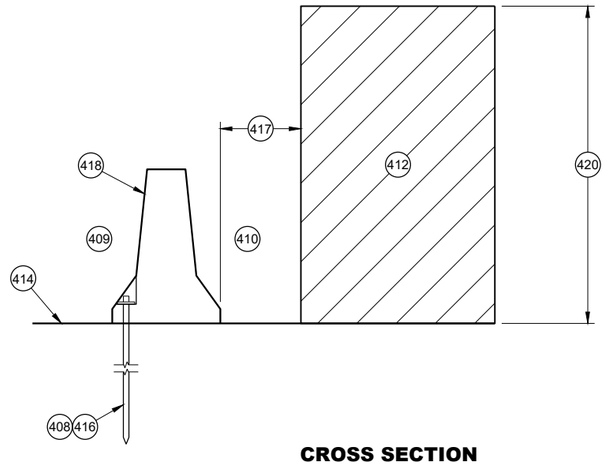
PROFILE VIEW

ANCHORED BARRIER NEAR EXPANSION JOINT (400)



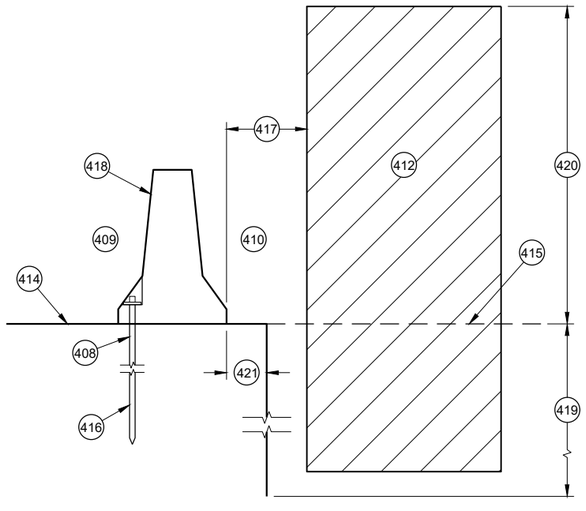
CROSS SECTION

FREE STANDING BARRIER



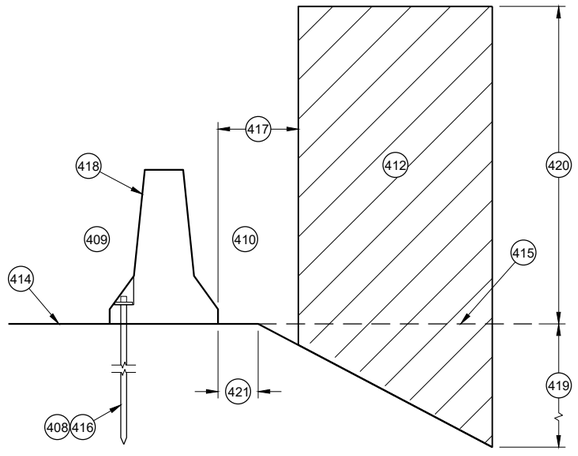
CROSS SECTION

ANCHORED BARRIER FOR OBJECTS ABOVE THE GRADE LINE AND NEAR THE BARRIER



CROSS SECTION

ANCHORED BARRIER NEAR VERTICAL DROP OFF



CROSS SECTION

ANCHORED BARRIER NEAR A SLOPE

GENERAL NOTES

(400) NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.

(401) CONCRETE DECK

(402) CONCRETE DECK OR APPROACH SLAB.

(403) EXPANSION JOINT

(404) ADHESIVE ANCHOR SHOWN. SEE ANCHOR DETAILS.

(405) ANCHORED TEMPORARY BARRIER

(406) TRANSITION FROM ANCHORED TEMPORARY BARRIER TO FREE STANDING

(407) FREE STANDING BARRIER

(408) REMOVE ALL ANCHORS WHEN NO LONGER NEEDED. FILL CONCRETE PAVEMENTS, DECKS AND APPROACH SLABS WITH NON-SHRINK COMMERCIAL GROUT FROM THE APPROVED PRODUCT LIST. FILL ASPHALT PAVEMENTS WITH ASTM D6690 TYPE II RUBBERIZED CRACK FILLER.

(409) TRAFFIC SIDE

(410) NON-TRAFFIC SIDE

(411) ANCHOR LOCATION. SEE ANCHORING DETAILS.

(412) WORK AREA

(413) AREA FREE OF OBJECTS AND WORKERS

(414) GRADE LINE

(415) EXTENDED GRADE LINE

(416) ANCHORED TEMPORARY BARRIER. SEE BOLT THROUGH DECK, REMOVABLE ADHESIVE ANCHOR, OR AN ASPHALT ANCHOR ROD DETAILS FOR MORE INFORMATION. ASPHALT ANCHOR ROD SHOWN.

(417) WHEN OBJECTS EXTEND ABOVE THE GRADE. A MINIMUM OF 1 FOOT IS REQUIRED FROM BACK OF BARRIER TO OBJECT.

(418) OBJECTS ARE NOT TO BE PLACED ON, MOUNTED TO, OR ALLOWED TO LEAN AGAINST THE BARRIER WITHOUT WRITTEN PERMISSION OF THE PROJECT ENGINEER.

(419) DEPTHS OF 3 FEET OR MORE.

(420) Y = 6.5'

(421) OFFSET FROM BACK OF BARRIER EDGE:

CONCRETE PAVEMENT	0.5'
ASPHALT	0.5'

(422) POSTED SPEED (MPH):

45 OR GREATER	4.0'
40 OR LOWER	2.0'

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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GENERAL NOTES

(500) EXISTING RIGID BARRIERS (VARIES)

(501) TEMPORARY BARRIER

(502) SEE OTHER DETAIL ON HOW TO ANCHOR TEMPORARY BARRIER (BARRIER ASPHALT ANCHOR SHOWN).

(503) ANCHORS ARE REQUIRED ON BOTH SIDE OF THE TEMPORARY BARRIER.

(504) NESTED RAILS ARE REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS.

(505) TRAFFIC TRAVELS FROM PERMANENT BARRIER TO TEMPORARY BARRIER.

(506) TRAFFIC TRAVELS FROM TEMPORARY BARRIER TO PERMANENT BARRIER.

(507) VERTICAL BARRIER

(508) SAFETY SHAPE BARRIER

(509) SINGLE SLOPE BARRIER

(510) CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF RIGID BARRIER.

(511) BENT THRIE BEAM TO FIT.

(512) THRIE BEAM PIECES ARE OFFSET 15 ¼" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.

(513) TWO (2) P1, P2 AND P3 ARE REQUIRED

(514) FIVE (5) N1, N2 AND N3 ARE REQUIRED

(515) TWO (2) R1, R2 AND R3 ARE REQUIRED

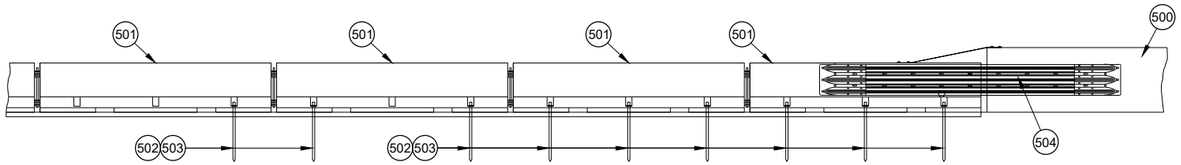
(516) CUT WOOD BLOCK TO FIT.

(517) SEE THRIE BEAM RAIL TERMINAL CONNECTOR DETAIL ASSEMBLY.

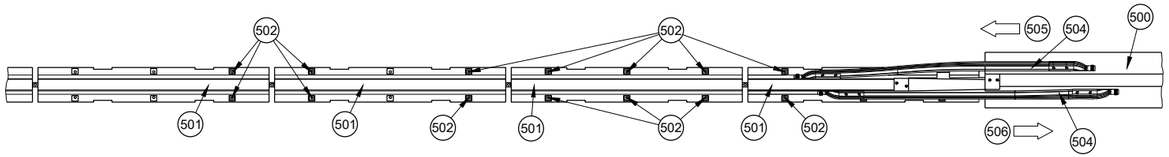
(518) CAP ASSEMBLY

(519) 4" MAX. GAP BETWEEN TEMPORARY BARRIER AND RIGID BARRIER.

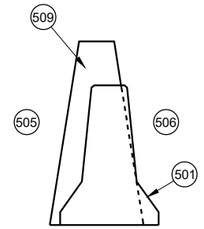
(520) ALL TWELVE SPLICE HOLES REQUIRE M1 AND M2



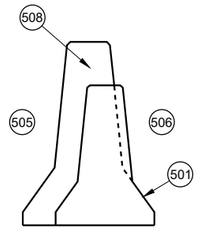
PROFILE VIEW



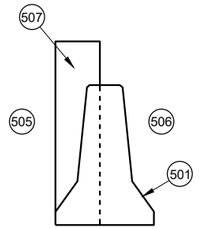
PLAN VIEW



CROSS SECTION TEMPORARY BARRIER PLACEMENT SINGLE SLOPE

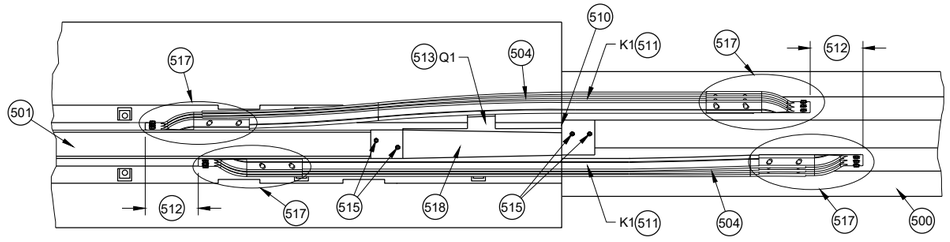


CROSS SECTION TEMPORARY BARRIER PLACEMENT SAFETY SHAPE

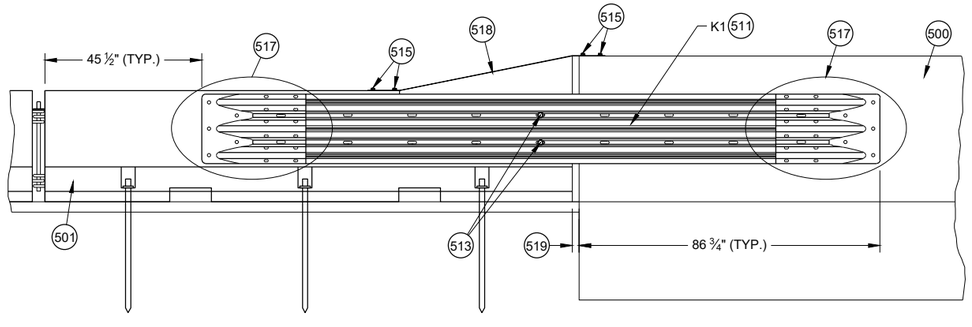


CROSS SECTION TEMPORARY BARRIER PLACEMENT VERTICAL

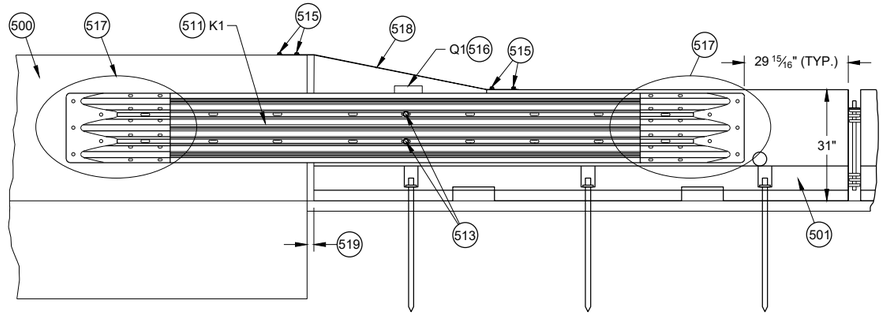
PLAN VIEW
TRANSITION TO RIGID BARRIER



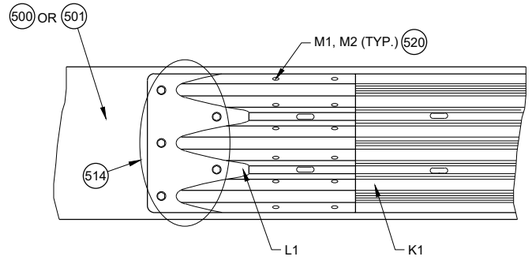
PLAN DETAIL VIEW
TRANSITION TO RIGID BARRIER



FRONT DETAIL VIEW
TRANSITION TO RIGID BARRIER



BACK DETAIL VIEW
TRANSITION TO RIGID BARRIER



(517) DETAIL PLAN VIEW
THRIE BEAM RAIL TERMINAL CONNECTOR ASSEMBLY

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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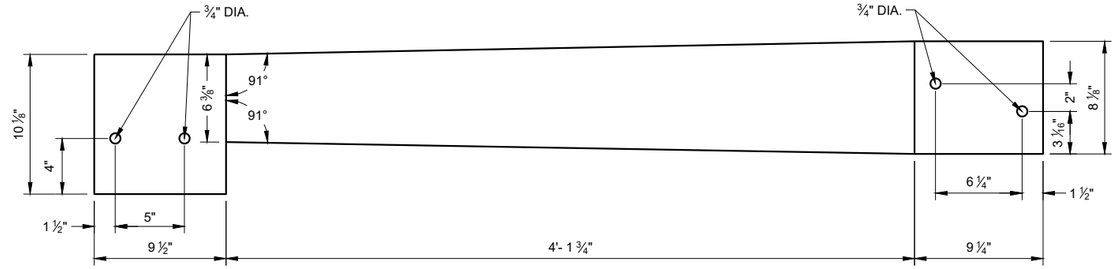
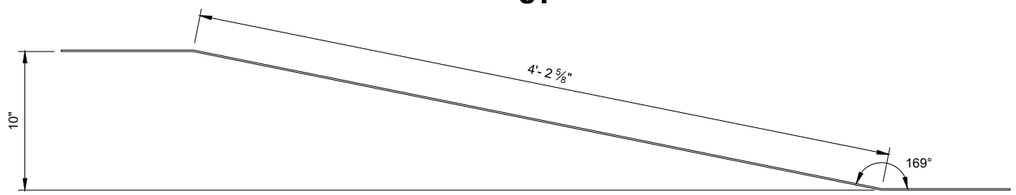


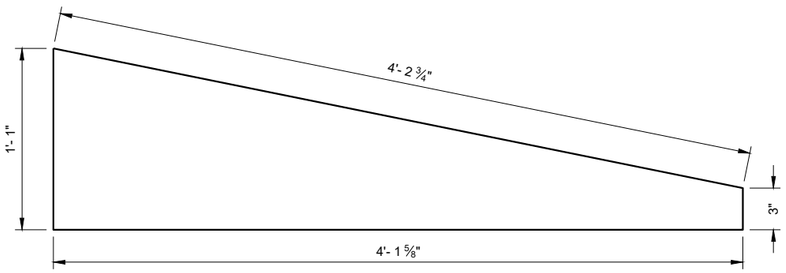
TOP VIEW

S1



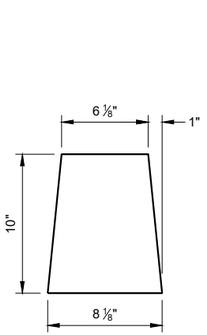
ELEVATION VIEW

S1

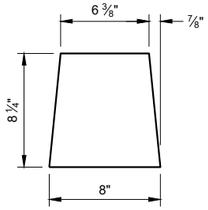


SIDE VIEW

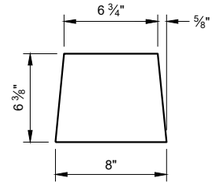
S3



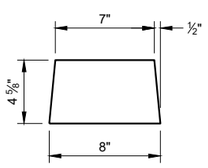
S2



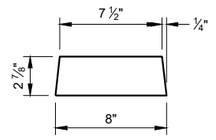
S4



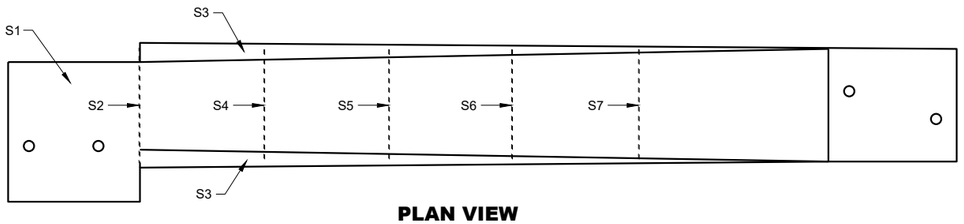
S5



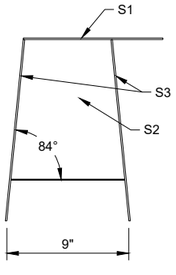
S6



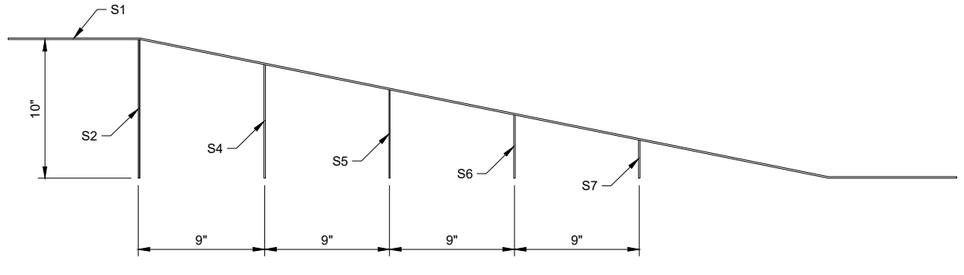
S7



PLAN VIEW



BACK VIEW



SIDE VIEW (600)

42" TOP CAP ASSEMBLY

GENERAL NOTES

STITCH WELD GUSSET PLATES AND END PLATES ON THREE SIDES

STITCH WELD TWO SIDE PLATES TO TOP PLATE, END PLATE AND GUSSETS.

(600) SIDE PLATES (S3) NOT SHOWN FOR CLARITY.

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA

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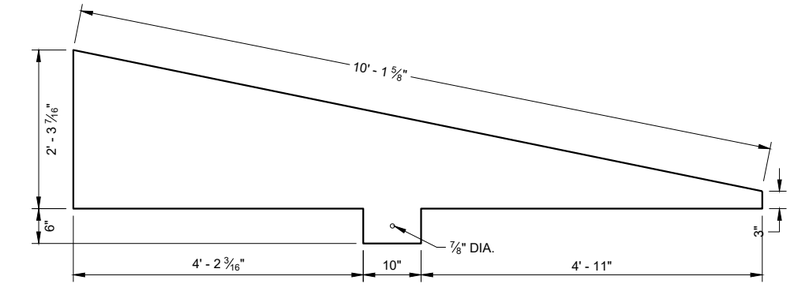
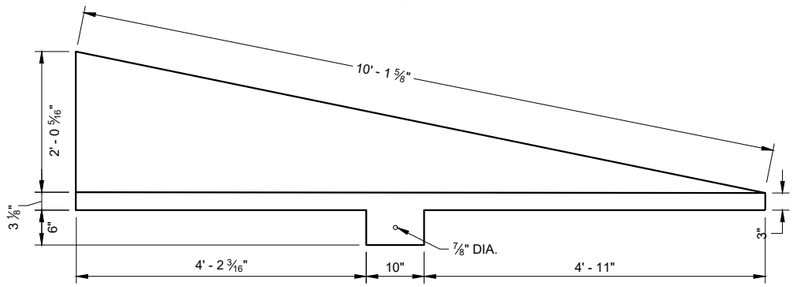
SDD 14B07-16f



SIDE VIEW
T4

END VIEW



SIDE VIEW
T3

END VIEW

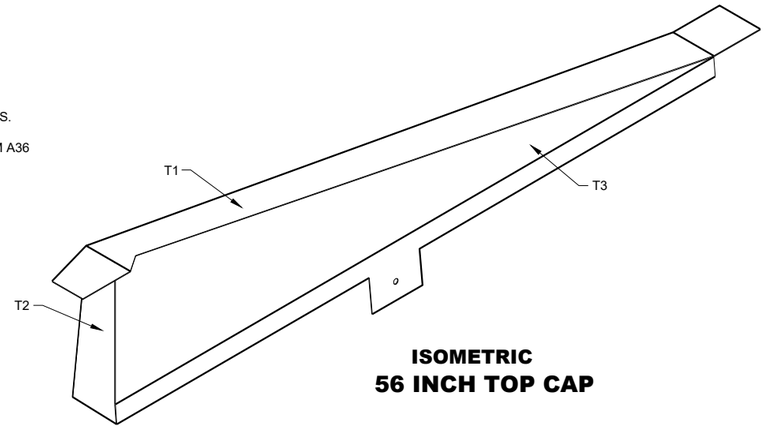
GENERAL NOTES

STITCH WELD GUSSET PLATES AND END PLATES ON THRIE SIDES

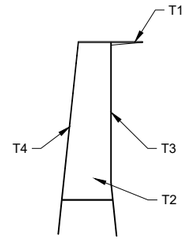
STITCH WELD TWO SIDE PLATES TO TOP PLATE, END PLATE AND GUSSETS.

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.

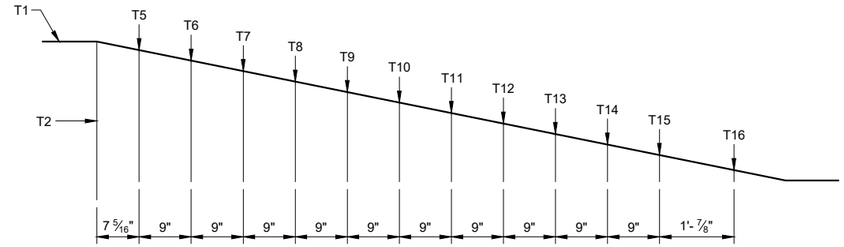
(700) SIDE PLATES (T3 AND T4) NOT SHOWN FOR CLARITY.



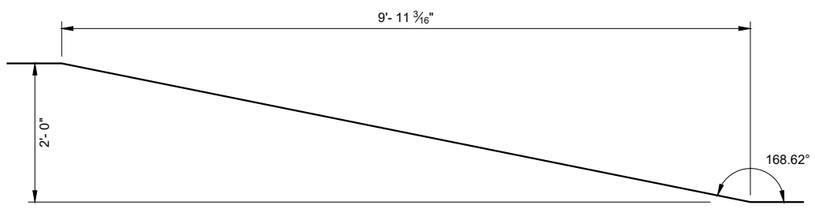
ISOMETRIC
56 INCH TOP CAP



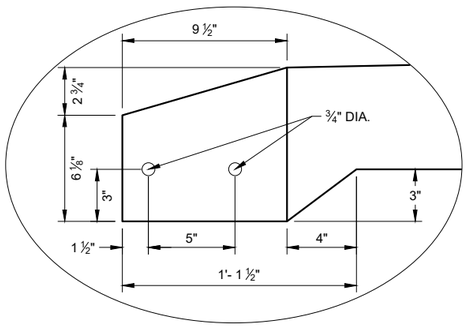
END VIEW
56 INCH TOP CAP



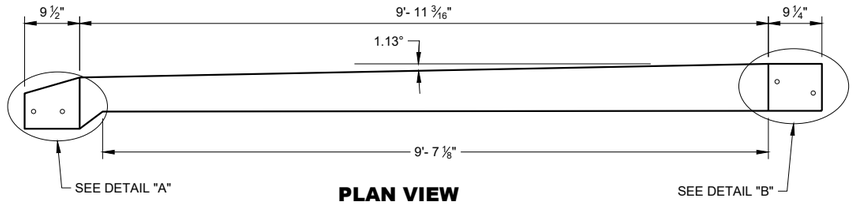
SIDE VIEW (700)
56 INCH TOP CAP



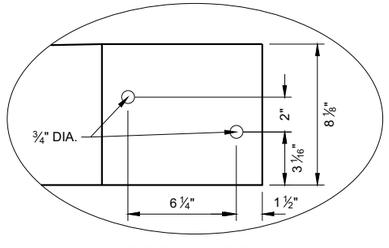
SIDE VIEW
TOP PLATE T1



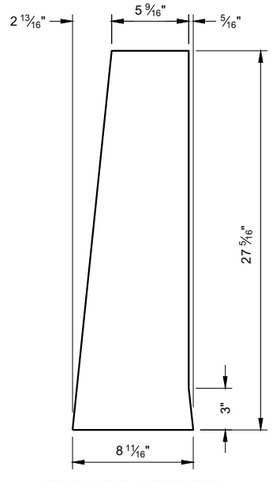
DETAIL "A"



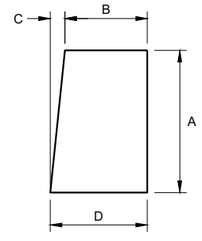
PLAN VIEW
TOP PLATE T1



DETAIL "B"



END PLATE T2



GUSSET PLATES
T5 - T16

GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
T5	22 13/16"	5 1/16"	2 5/16"	8 1/16"
T6	21"	5 7/8"	2 3/16"	8 1/16"
T7	19 3/16"	6 1/16"	1 15/16"	8 1/16"
T8	17 3/8"	6 1/4"	1 13/16"	8 1/16"
T9	15 5/16"	6 7/16"	1 9/16"	8 1/16"
T10	13 3/4"	6 5/8"	1 7/16"	8 1/16"
T11	11 15/16"	6 13/16"	1 1/4"	8 1/16"
T12	10 1/8"	7"	1 1/16"	8 1/16"
T13	8 5/16"	7 3/16"	7/8"	8 1/16"
T14	6 1/2"	7 3/8"	1 1/16"	8 1/16"
T15	4 11/16"	7 9/16"	1/2"	8"
T16	2 7/8"	7 3/4"	1/4"	8"

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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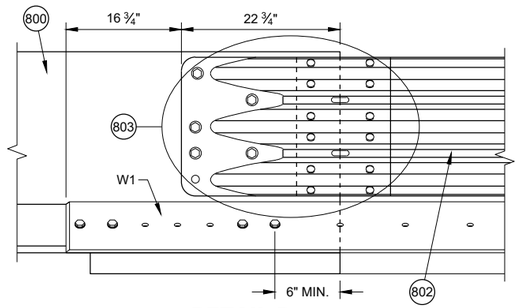
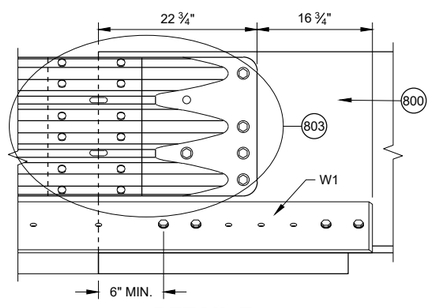
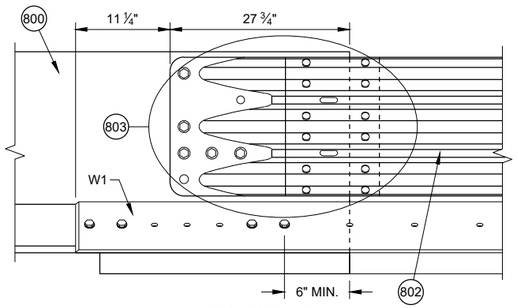
SDD 14B07-16g



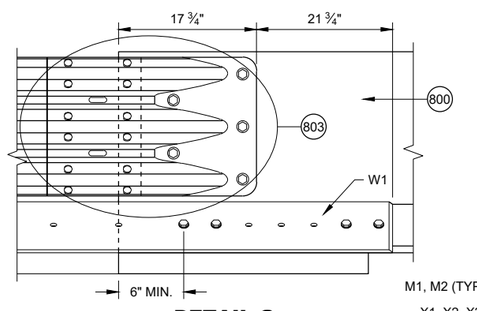
DETAIL D



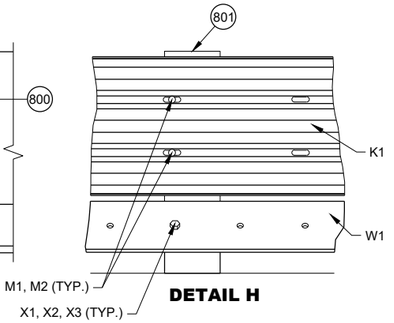
DETAIL E



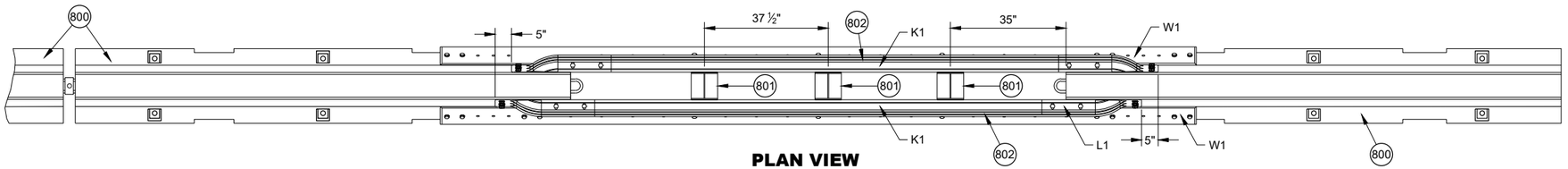
DETAIL F



DETAIL G



DETAIL H



PLAN VIEW

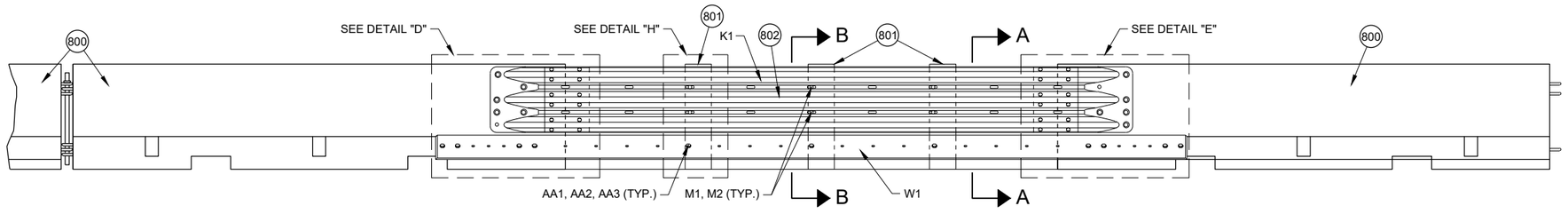
GENERAL NOTES

(800) FREE STANDING TEMPORARY BARRIER

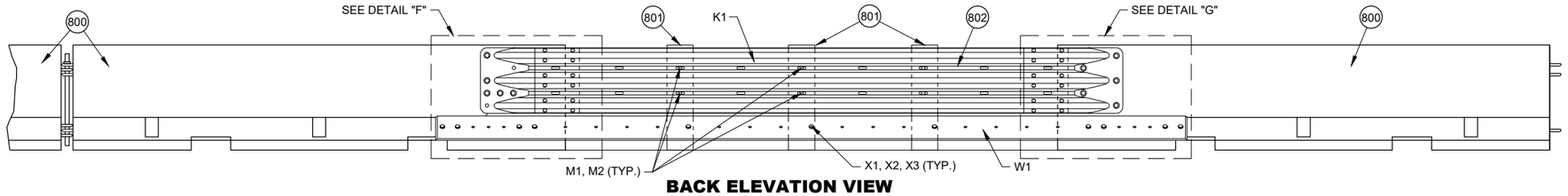
(801) GAP STIFFENER ASSEMBLY

(802) THRIE BEAMS ARE NESTED ON BOTH SIDES OF THE TEMPORARY BARRIER.

(803) SEE THRIE BEAM RAIL TERMINAL CONNECTOR DETAIL



FRONT ELEVATION VIEW



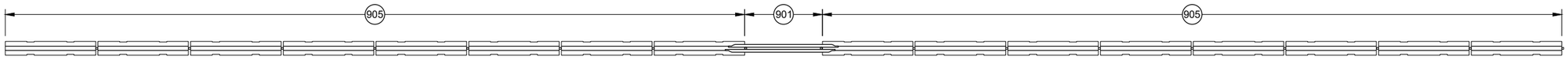
BACK ELEVATION VIEW

PORTABLE CONCRETE BARRIER GAP THRIE BEAM COVER

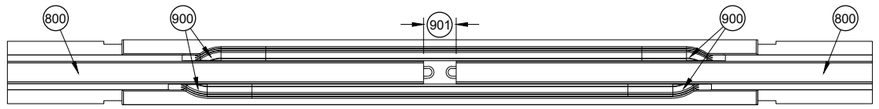
CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 14B07-16h



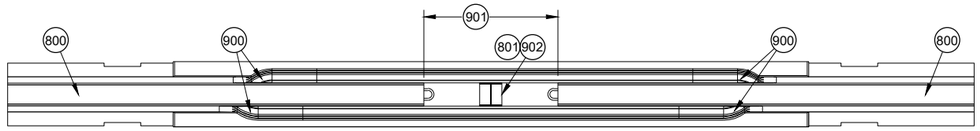
PLAN VIEW
GAP WITHIN SPACING



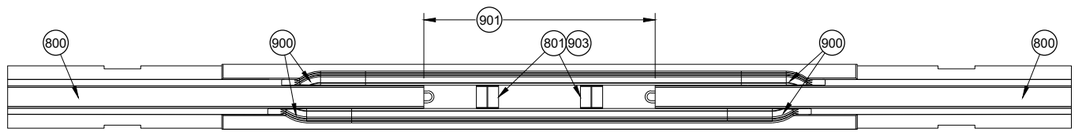
PLAN VIEW
TEMPORARY BARRIER GAP OVER 4" TO 1' MAX. (904)

GENERAL NOTES

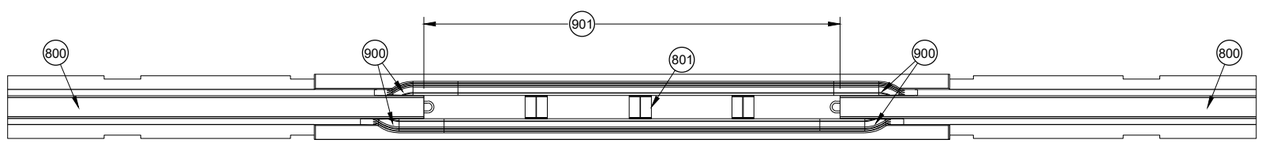
(900) SEE OTHER DETAILS FOR TEMPORARY GAP HARDWARE (TYP.)
(901) TEMPORARY BARRIER GAP
(902) GAP STIFFENER ASSEMBLY CENTERED IN THE GAP.
(903) GAP STIFFENER ASSEMBLY IS OFFSET 18 ¾" FROM CENTER
(904) MINIMUM NUMBER OF GAP STIFFENERS SHOWN FOR THE GAP RANGE SHOWN.
(905) MINIMUM OF 8 CONTINUOUS FREE STANDING TEMPORARY BARRIERS



PLAN VIEW
TEMPORARY BARRIER GAP OVER 1' TO 4' MAX. (904)



PLAN VIEW
TEMPORARY BARRIER GAP OVER 4' TO 7' MAX. (904)



PLAN VIEW
TEMPORARY BARRIER GAP OVER 7' TO 12.5' MAX. (904)

6

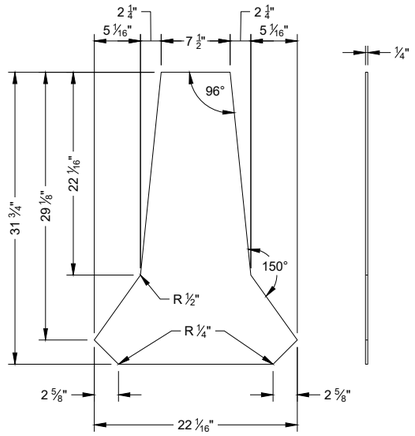
SDD 14B07-16i

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

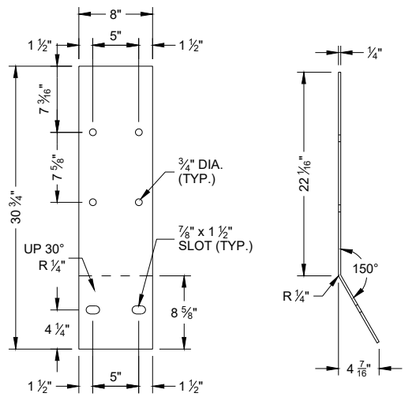
6

SDD 14B07-16i



PROFILE VIEW SIDE VIEW

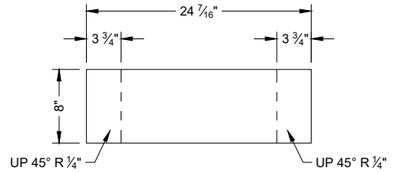
STIFFENER ASSEMBLY CENTER PANEL U1



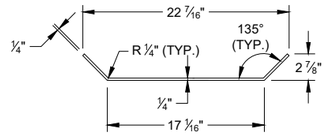
FLAT PATTERN

SIDE VIEW

STIFFENER ASSEMBLY SIDE PANEL U2

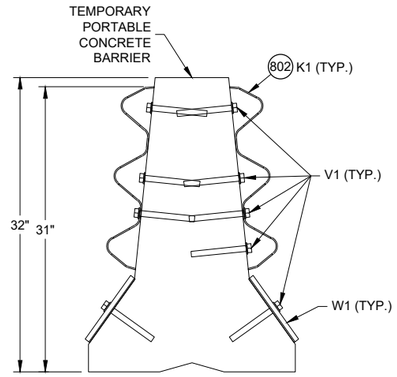


FLAT PATTERN

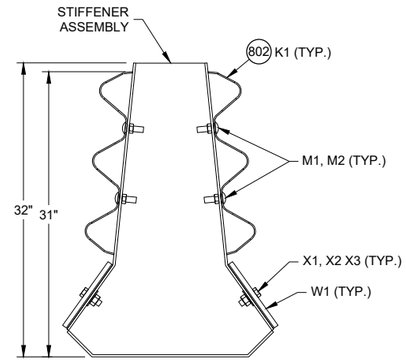


PROFILE VIEW

STIFFENER ASSEMBLY BOTTOM PANEL U3

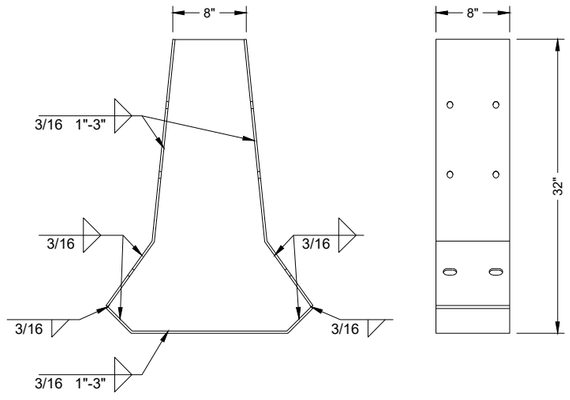


SECTION A - A



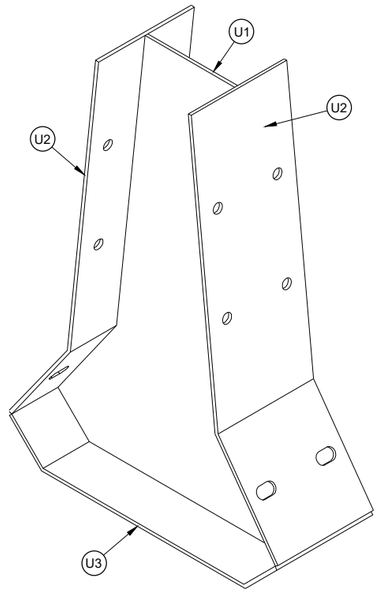
SECTION B - B

PLAN VIEW



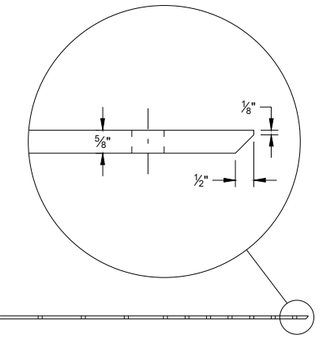
PROFILE VIEW

SIDE VIEW

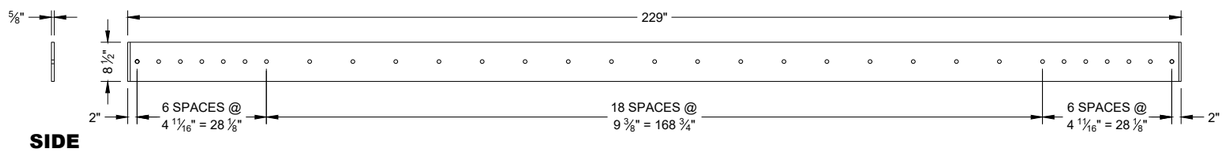


ISOMETRIC

GAP STIFFENER ASSEMBLY



PLAN VIEW



SIDE VIEW

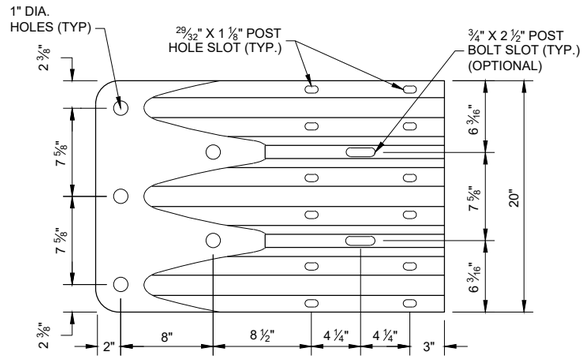
ELEVATION VIEW

W1 TOE PLATE

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

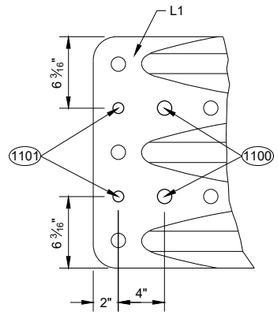
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 14B07-16j



ELEVATION VIEW

THRIE BEAM TERMINAL CONNECTOR



ELEVATION VIEW

ADDITIONAL THRIE BEAM (1102) TERMINAL CONNECTOR HOLE DETAIL

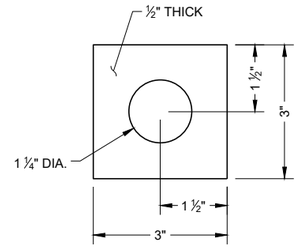


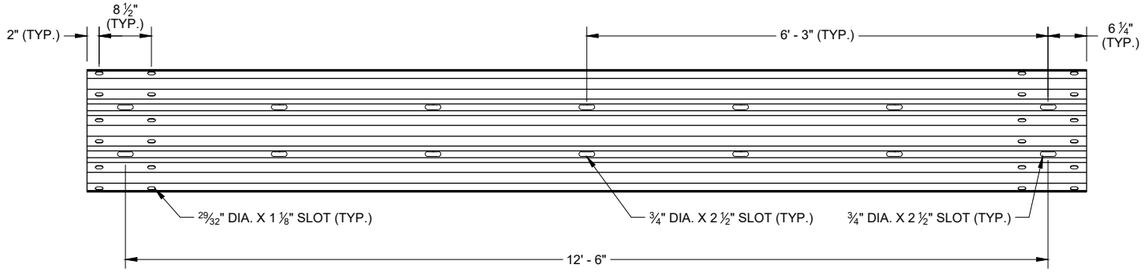
PLATE WASHER DETAIL G2, H3

GENERAL NOTES

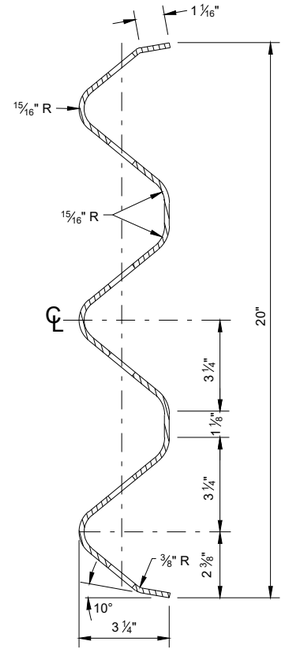
(1100) 1" DIA. HOLE

(1101) 3/4" DIA. HOLE

(1102) PROVIDE HOLES IN THRIE BEAM TERMINAL CONNECTOR TO LIMIT STEEL REINFORCEMENT OR LOOP BAR CONFLICT. CONTRACTOR MAY FIELD DRILL ADDITIONAL HOLE OR PROVIDE THRIE BEAM TERMINAL CONNECTOR WITH ADDITIONAL HOLES FROM SUPPLIER.



SLOTTED THRIE BEAM RAIL K1



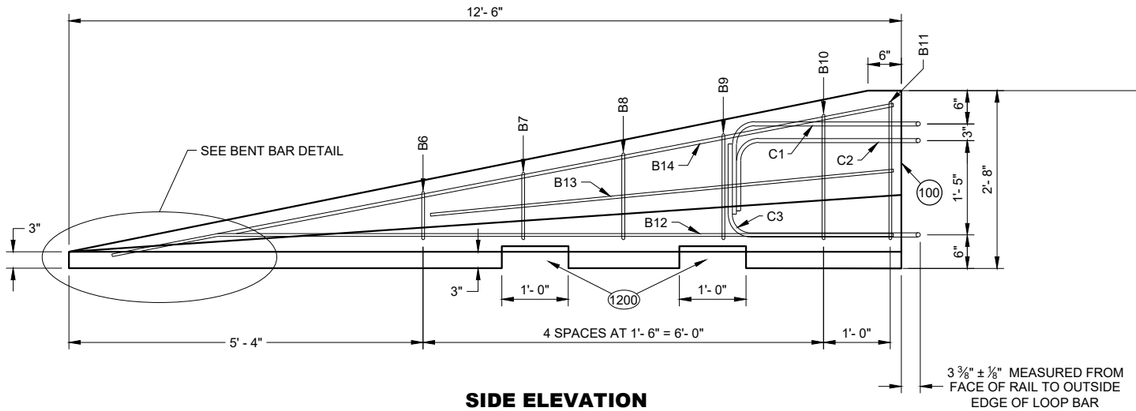
SECTION THROUGH BEAM K1

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

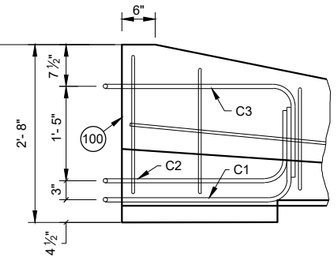
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B07-16k



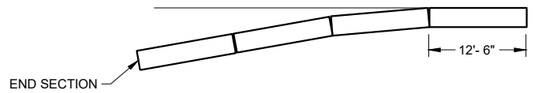
SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED FOR OPPOSITE END
(FOR CONNECTION TO RIGHT END OF BARRIER)

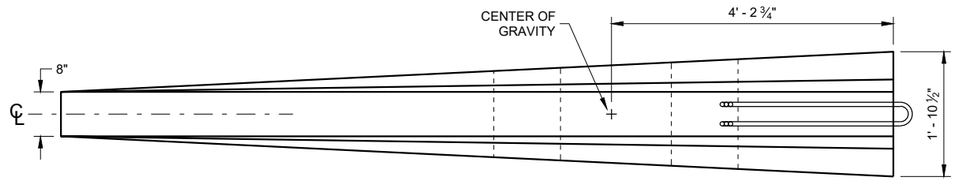
GENERAL NOTES

(1200) SEE LIFTING SLOT DETAIL. LOCATION OF LIFTING SLOTS DETERMINED BY CONTRACTOR.

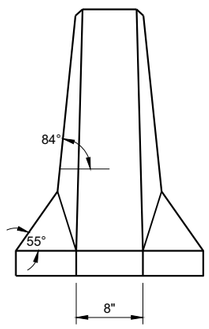


FLARE AT BARRIER END

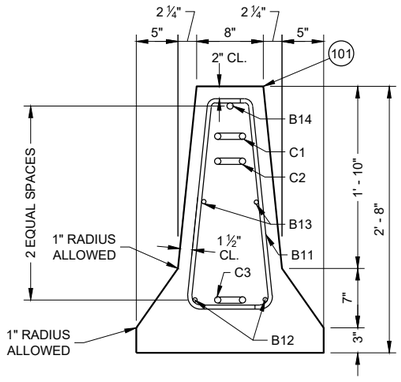
POSTED SPEED, (MPH)	FLARE RATE
40 OR LESS	6:1
45 OR GREATER	8:1



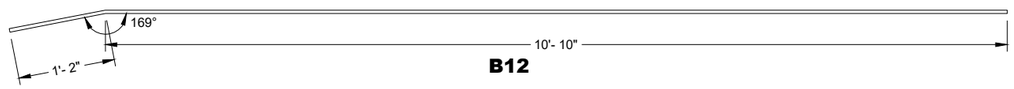
PLAN VIEW



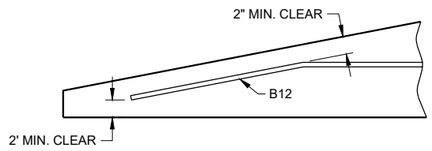
FRONT ELEVATION



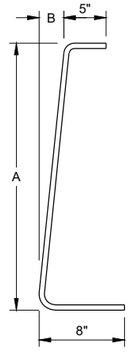
END SECTION



B12



BENT BAR DETAIL



BAR	A	B
B6	10"	1"
B7	1'- 1"	1 ¼"
B8	1'- 5"	1 ⅝"
B9	1'- 8"	1 ⅞"
B10	2'- 0 ½"	2 ⅜"
B11	2'- 3"	2 ¾"

B BARS
2 OF EACH SIZE REQUIRED FOR STIRRUP ASSEMBLY

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 14B07-16I

BILL OF MATERIALS - CONCRETE BARRIER PRECAST

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	PRECAST TEMPORARY BARRIER - CONCRETE	MIN. = f'c 5000 PSI	
B1	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#5 REBAR, LENGTH 12'-2"
B2	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 12'-2"
B3	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#5 REBAR, LENGTH 12'-2"
B4	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 6'-0"
B5	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#6 REBAR, LENGTH 2'-11"
B6	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 1'-11"
B7	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 2'-2"
B8	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 2'-6"
B9	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 2'-9"
B10	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 3'-2"
B11	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 3'-4"
B12	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 12'-0"
B13	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 7'-9"
B14	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#5 REBAR, LENGTH 11'-9"
C1	LOOP BAR	ASTM A709 GRADE 70 SMOOTH BAR OR ASTM A706 GRADE 60 REBAR UNCOATED	¾" DIA.
C2	LOOP BAR	ASTM A709 GRADE 70 SMOOTH BAR OR ASTM A706 GRADE 60 REBAR UNCOATED	¾" DIA.
C3	LOOP BAR	ASTM A709 GRADE 70 SMOOTH BAR OR ASTM A706 GRADE 60 REBAR UNCOATED	¾" DIA.
D1	CONNECTION PIN - ROD	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	1 ¼" DIA.
D2	CONNECTION PIN - TOP PLATE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
G1	BOLT THROUGH ANCHOR - THREADED ROD	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 A307 GRADE A OR SAE J429 GRADE 2 UNC	1 ⅛" DIA.
G2	BOLT THROUGH ANCHOR - WASHER, SQUARE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
G3	BOLT THROUGH ANCHOR - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
H1	ADHESIVE ANCHOR - ADHESIVE	ICC-ES-AC308 5 ¼" EMBEDMENT WITH A MIN. BOND STRENGTH OF 1,650 PSI. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	
H2	ADHESIVE ANCHOR - THREADED ROD	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 A307 GRADE A / SAE J429 GRADE 2 UNC	1 ⅛" DIA.
H3	ADHESIVE ANCHOR - WASHER, SQUARE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
H4	ADHESIVE ANCHOR - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
J1	ASPHALT ANCHOR PIN - ROD	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	1 ½" DIA.
J2	ASPHALT ANCHOR PIN - STOP PLATE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
K1	THRIE BEAM RAIL	AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER	12 GAUGE
L1	THRIE BEAM RAIL - TERMINAL	AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER	12 GAUGE

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
M1	SPLICE BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	⅝" DIA.
M2	SPLICE BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
N1	THRIE BEAM RAIL TERMINAL - MECHANICAL ANCHOR	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	¾" DIA. LENGTH 6"
N2	THRIE BEAM RAIL TERMINAL - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1	
N3	THRIE BEAM RAIL TERMINAL MECHANICAL OR ADHESIVE ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	
P1	THRIE BEAM RAIL CONNECTION 1-BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	¾" DIA.
P2	THRIE BEAM RAIL CONNECTION 1-WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1	
P3	THRIE BEAM RAIL CONNETION 1- MECHANICAL OR ADHESIVE ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	
Q1	BLOCK WOOD	SEE STANDARD SPEC. 614	
R1	CAP - BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	⅝" DIA.
R2	CAP- BOLT - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1	
R3	CAP - BOLT - MECHANICAL ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	12 GAUGE
S1	CAP 42-INCH TOP PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S2	CAP 42-INCH END PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S3	CAP 42-INCH SIDE PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S4	CAP 42-INCH GUSSET 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S5	CAP 42-INCH GUSSET 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S6	CAP 42-INCH GUSSET 3	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S7	CAP 42-INCH GUSSET 4	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE

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SDD 14B07-16m

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

6

SDD 14B07-16m

BILL OF MATERIALS - CONCRETE BARRIER PRECAST

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
T1	CAP 56-INCH TOP PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T2	CAP 56-INCH END PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T3	CAP 56-INCH SIDE PLATE 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T4	CAP 56-INCH SIDE PLATE 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T5	CAP 56-INCH GUSSET 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T6	CAP 56-INCH GUSSET 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T7	CAP 56-INCH GUSSET 3	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T8	CAP 42-INCH GUSSET 4	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T9	CAP 42-INCH GUSSET 5	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T10	CAP 42-INCH GUSSET 6	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T11	CAP 42-INCH GUSSET 7	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T12	CAP 42-INCH GUSSET 8	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T13	CAP 42-INCH GUSSET 9	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T14	CAP 42-INCH GUSSET 10	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T15	CAP 42-INCH GUSSET 11	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T16	CAP 42-INCH GUSSET 12	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
U1	GAP STIFFENER	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	
U2	GAP STIFFENER - CONNECTOR PLATE 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	
U3	GAP STIFFENER - CONNECTOR PLATE 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
V1	THRIE BEAM RAIL TERMINAL MECHANICAL OR ADHESIVE ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS ULTIMATE TENSILE LOAD 24.0 KIPS AND ULTIMATE SHEAR LOAD 21.5 KIPS. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	¾" DIA.
V2	GAP STIFFENER - BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C O R MECHANICAL GALVANIZE TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
W1	TOE PLATE	AASHTO M111/ASTM A123 ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	
X1	TOE PLATE - CONNECTION BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 UNC HEAVY HEX HEAD OR AASTHO M180 HEAD, ASTM F3125 GRADE A325 TYPE 1 HEAVY HEX HEAD OR SAE J429 GRADE 5 HEAVY HEX HEAD / ASTM A449 TYPE 1 HEAVY HEX HEAD. BOLTS MAY BE FULLY THREADED. PROVIDE ENOUGH THREADING FOR PROPER TIGHTENING OF BOLT.	¾" DIA.
X2	TOE PLATE - CONNECTION BOLT - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1 (HARDEN WASHER ONLY)	
X3	TOE PLATE - CONNECTION BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	

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SDD 14B07-16n

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

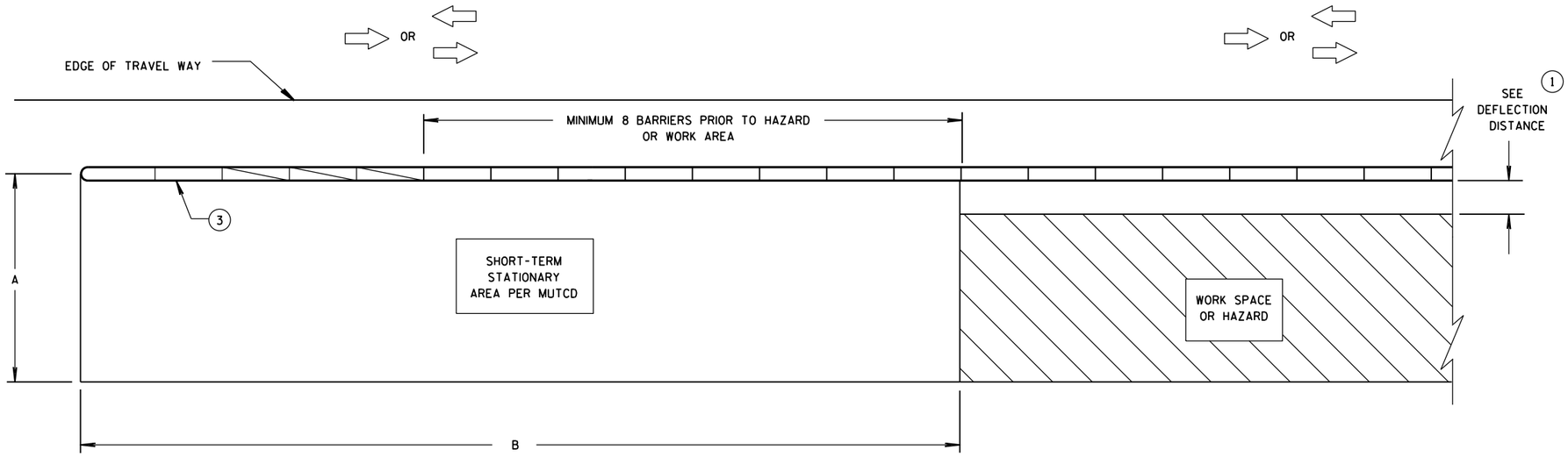
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2023
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

FHWA

6

SDD 14B07-16n



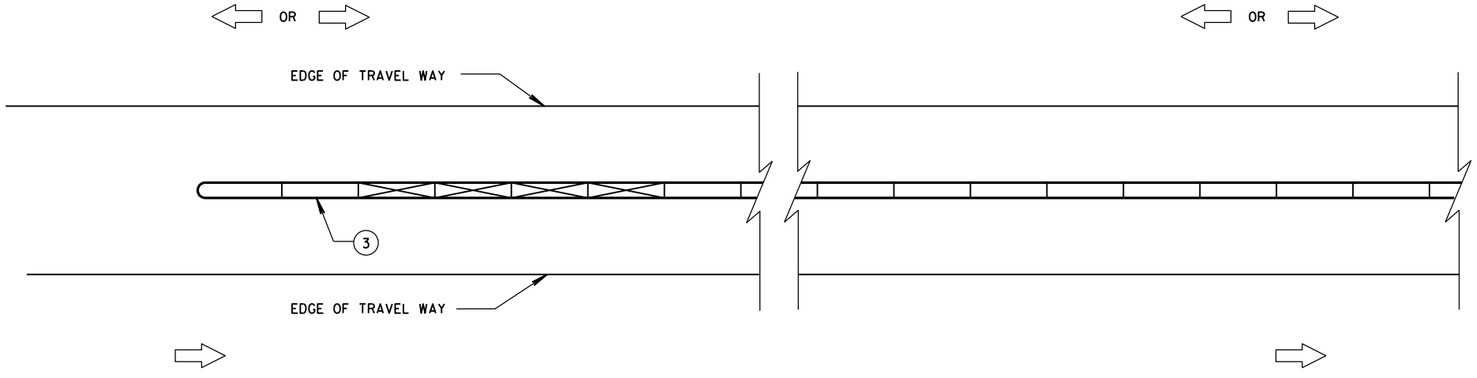
CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

DIMENSION A TABLE (2)

FACILITY	POSTED SPEED MPH	DIMENSION A	
		MIN. FT	MAX. FT
FREEWAY/EXPRESSWAY	ALL	15	20
NON-FREEWAY/EXPRESSWAY	GREATER THAN OR EQUAL TO 45	10	15
NON-FREEWAY/EXPRESSWAY	LESS THAN 45	8	10
AADT LESS THAN 1,500	ALL	8	10

DIMENSION B TABLE (2)

POSTED SPEEDS MPH	DIMENSION B FT
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON BOTH SIDES OF BARRIER

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

DETAILS PROVIDE A GENERAL LAYOUT OF TEMPORARY CONCRETE BARRIER, CRASH CUSHIONS, SAND BARREL ARRAYS AND TIE DOWN TRANSITIONS. DETAILS PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

ADDITIONAL TEMPORARY BARRIER MAY BE REQUIRED TO PROTECT TRAVELING PUBLIC FROM HAZARDS, CONTRACTOR'S OPERATIONS OR TO CONTROL TRAFFIC.

TEMPORARY BARRIER MAY BE REQUIRED TO BE ANCHORED TO PAVEMENT OR BRIDGE DECK.

FOR DETAILS ON CRASH CUSHION OR SAND BARREL ARRAYS SEE OTHER SECTIONS OF THE PLAN AND MANUFACTURE'S DETAILS.

SLOPES LEADING TO TEMPORARY BARRIER, CRASH CUSHION OR SAND BARREL ARRAY ARE 10:1 OR LESS.

(1) FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.

(2) VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

(3) ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS. IF MANUFACTURER'S RECOMMENDATIONS ARE NOT PROVIDED, ANCHOR 3 PINS ON TRAFFIC SIDE.

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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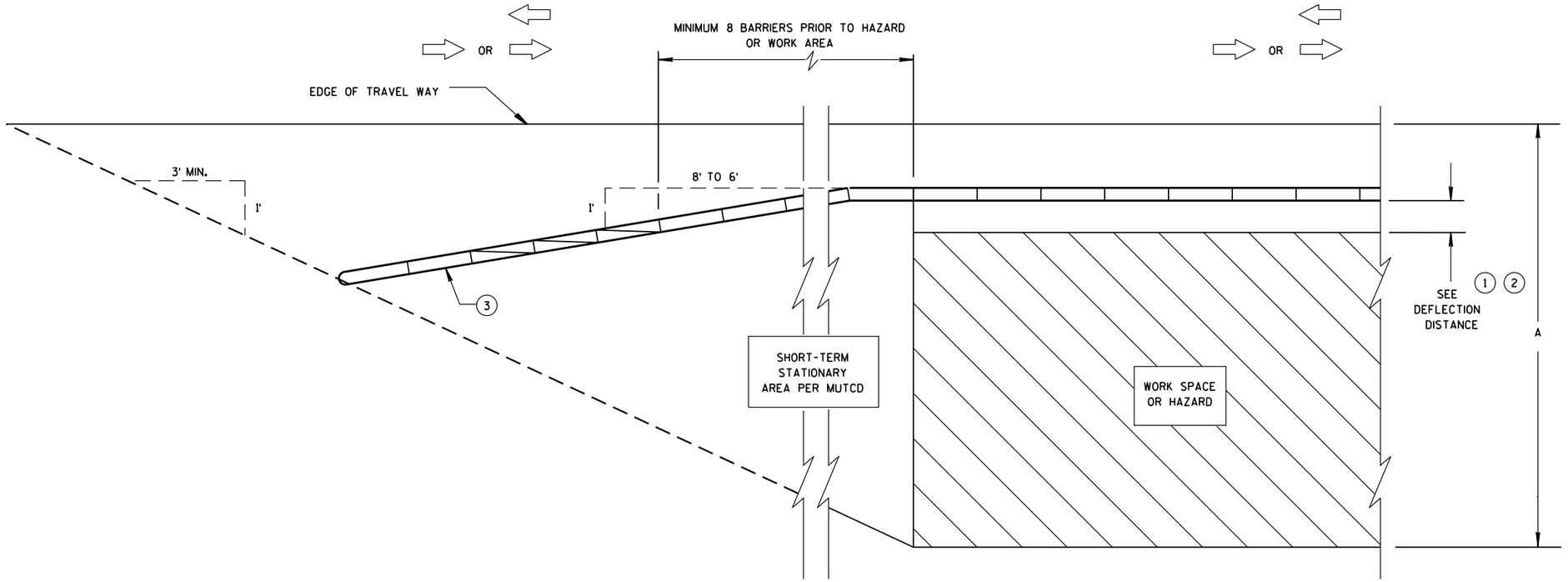
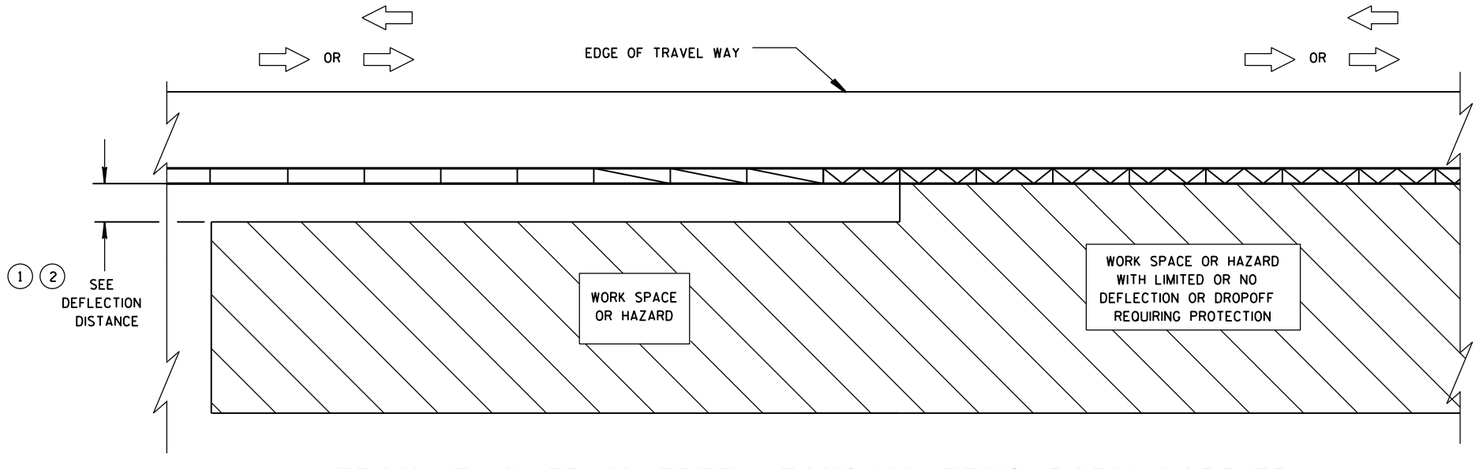
S.D.D. 14 B 8-2a
S.D.D. 14 B 8-2a



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE - FLARED INSTALLATION



TRANSITION FROM FREE STANDING TEMPORARY BARRIER TO ANCHORED BARRIER

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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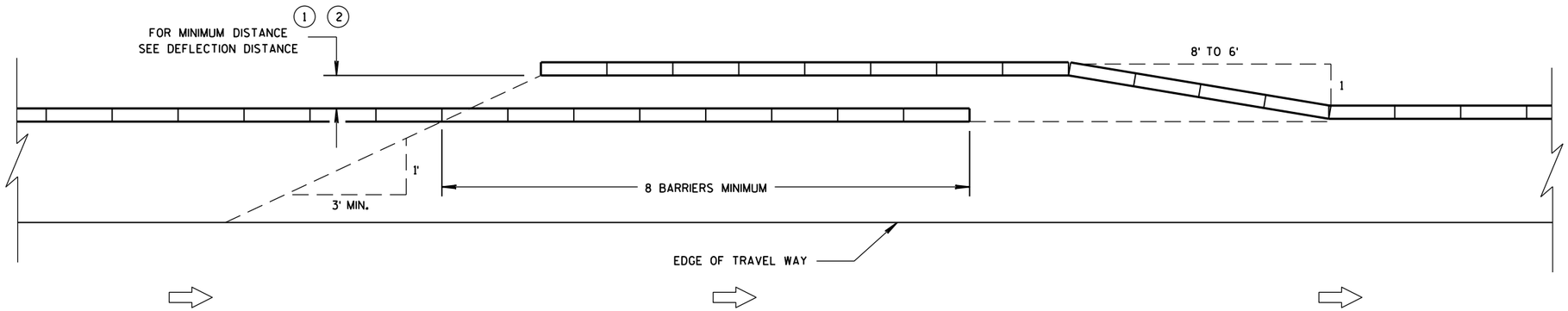
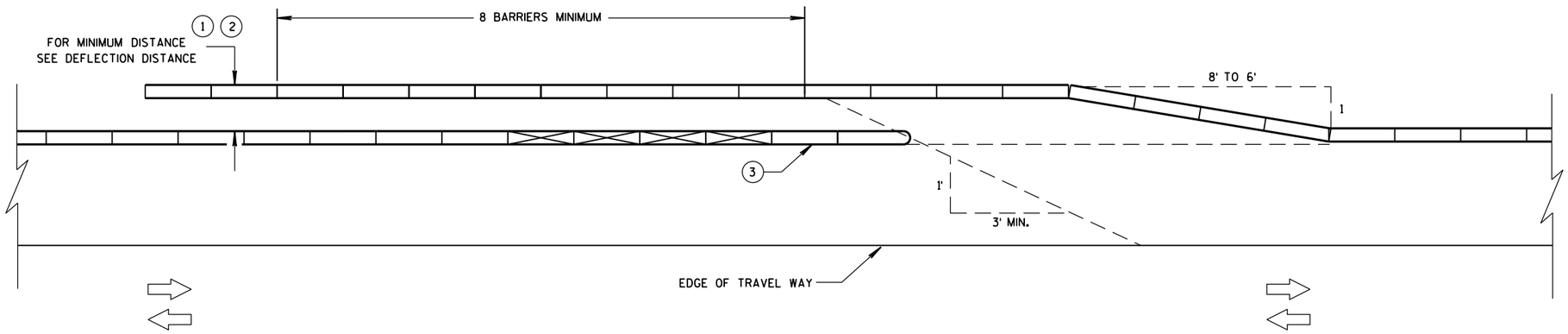
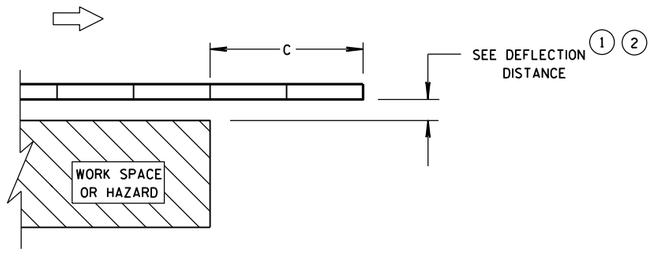
S.D.D. 14 B 8-2b



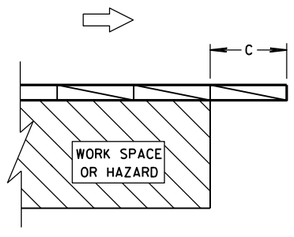
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



ENDING TEMPORARY BARRIER DOWNSTREAM - UNANCHORED



ENDING TEMPORARY BARRIER DOWNSTREAM - ANCHORED

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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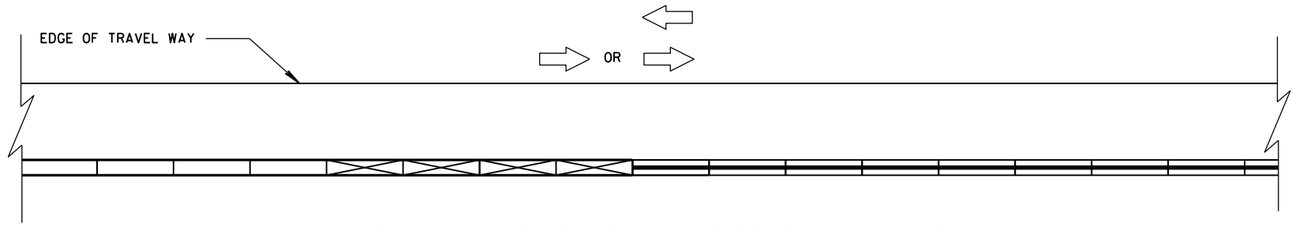
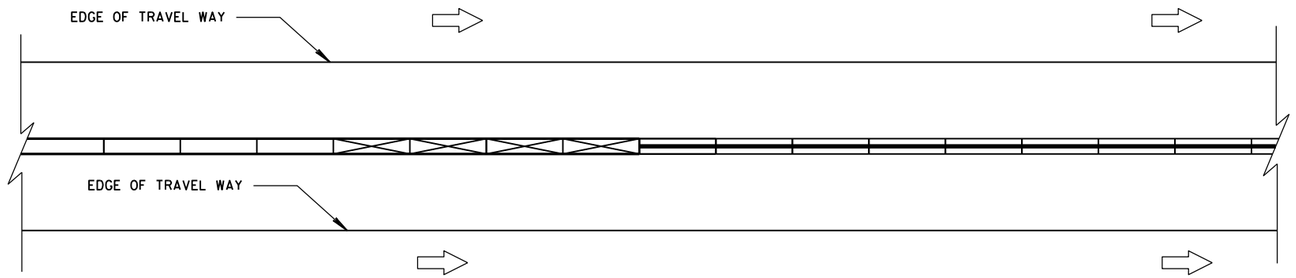
S.D.D. 14 B 8-2c



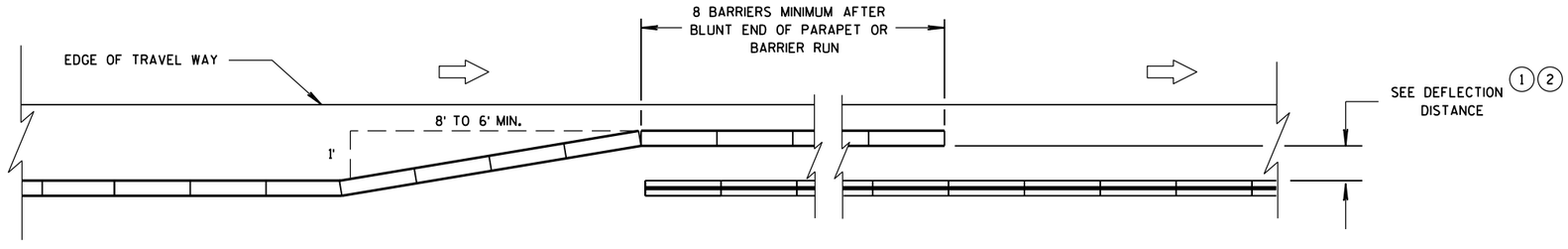
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE



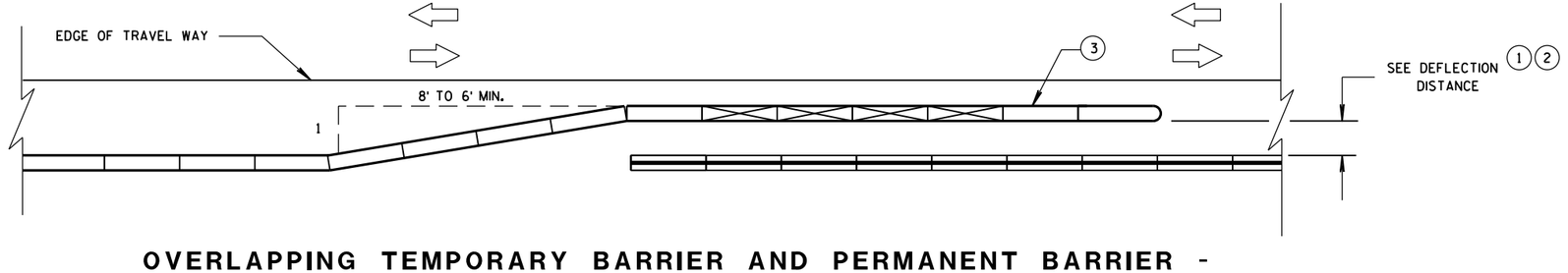
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 8-2d

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

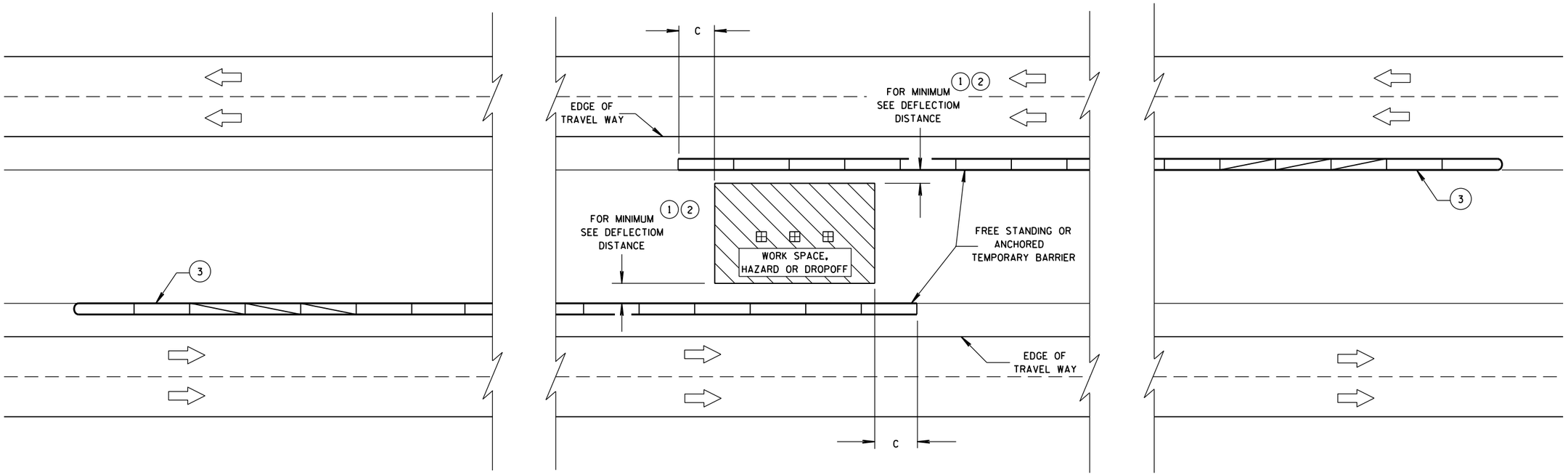
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

DIMENSION C TABLE (2)

AVAILABLE DEFLECTION DISTANCE	MINIMUM LENGTH OF BARRIER BEYOND HAZARD FT
GREATER THAN 8'	12.5
LESS THAN OR EQUAL TO 8' BUT GREATER THAN 4'	50
LESS THAN OR EQUAL TO 4'	100



CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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June, 2015 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINNER
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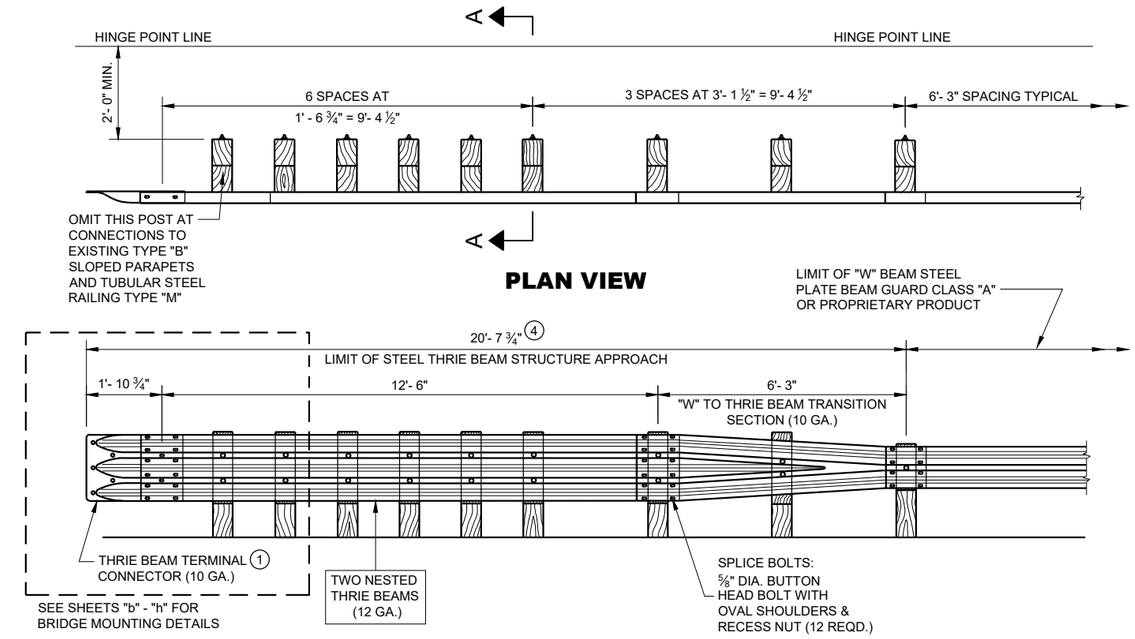
S.D.D. 14 B 8-2e



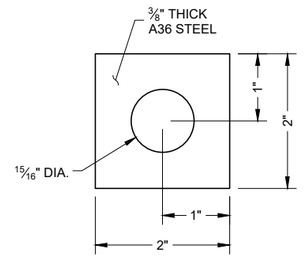


PLATE WASHER DETAIL

GENERAL NOTES

BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

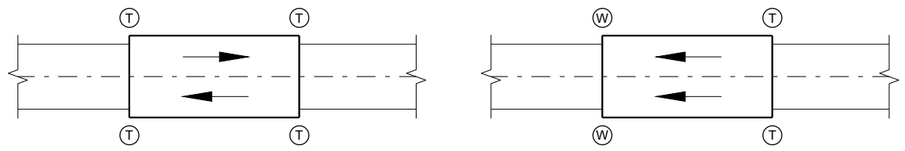
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 ½" , AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

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

(2) MINIMUM EMBEDMENT SHALL BE 4'- 0".

(3) POST BOLTS ARE ⅝" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A ⅝" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.

(4) ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



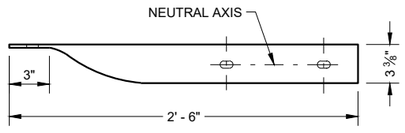
TWO WAY TRAFFIC

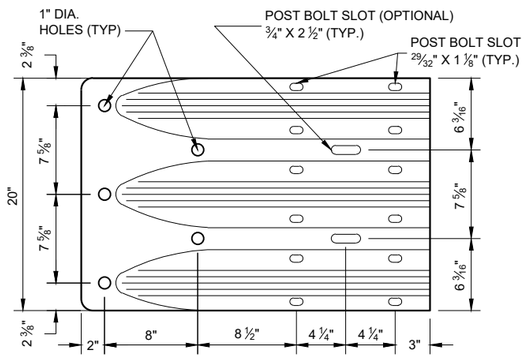
ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

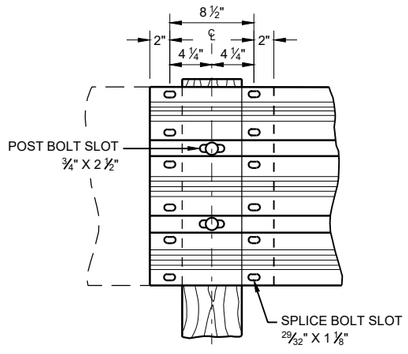
(W) W-BEAM CONNECTION WHEN REQUIRED

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

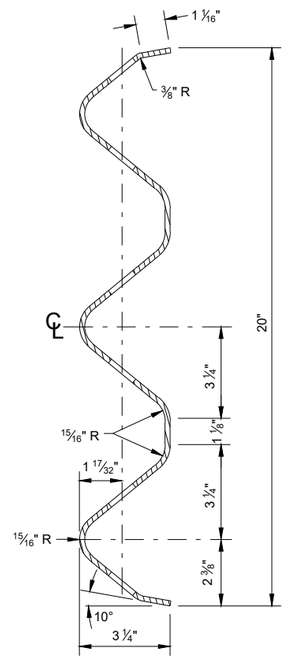




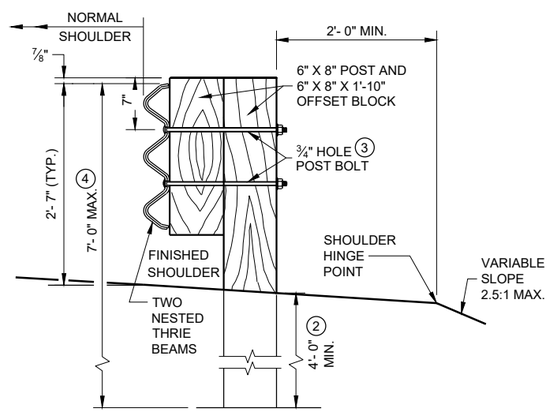
THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE



SECTION THRU BEAM RAIL ELEMENT



SECTION A-A

STEEL THRIE BEAM STRUCTURE APPROACH

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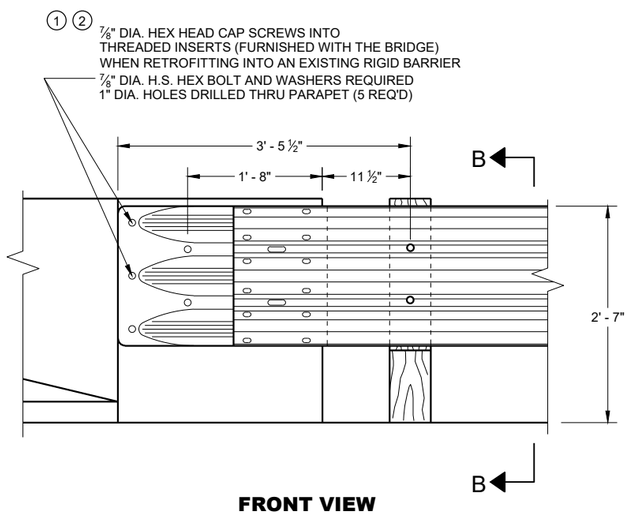
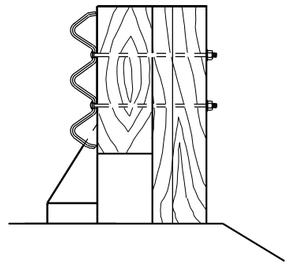


FRONT VIEW



SECTION B - B

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

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

BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

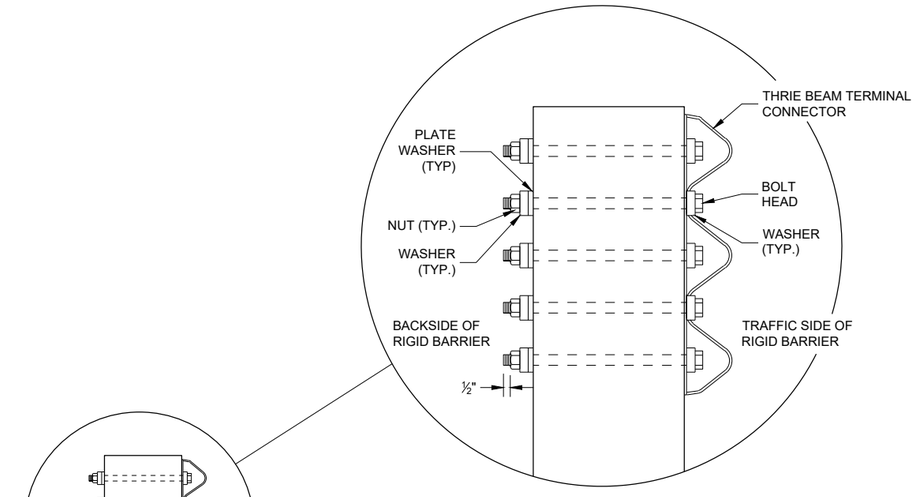
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

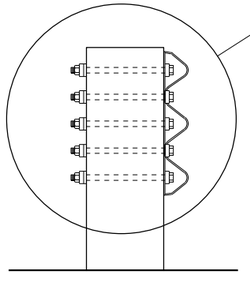
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

③ 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".

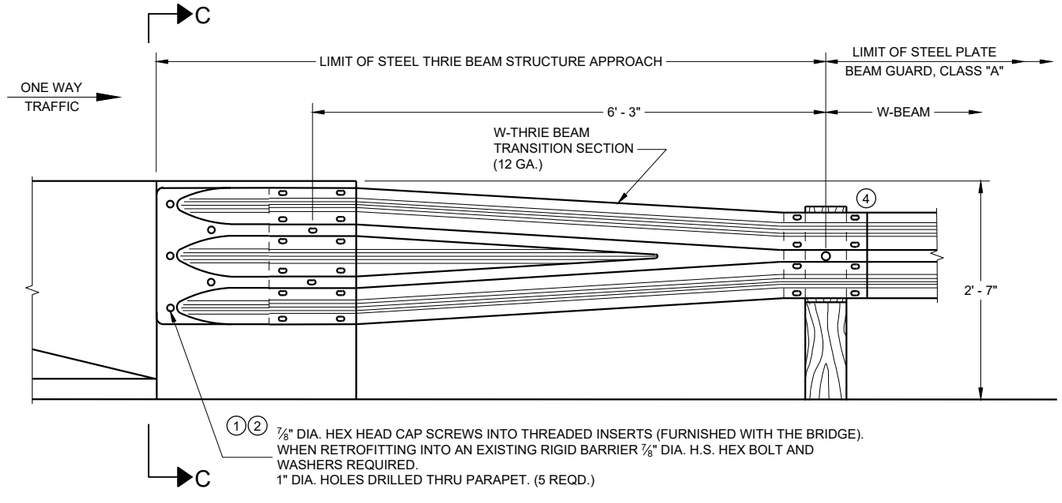
④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.





SECTION C - C



FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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GENERAL NOTES

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

BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

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

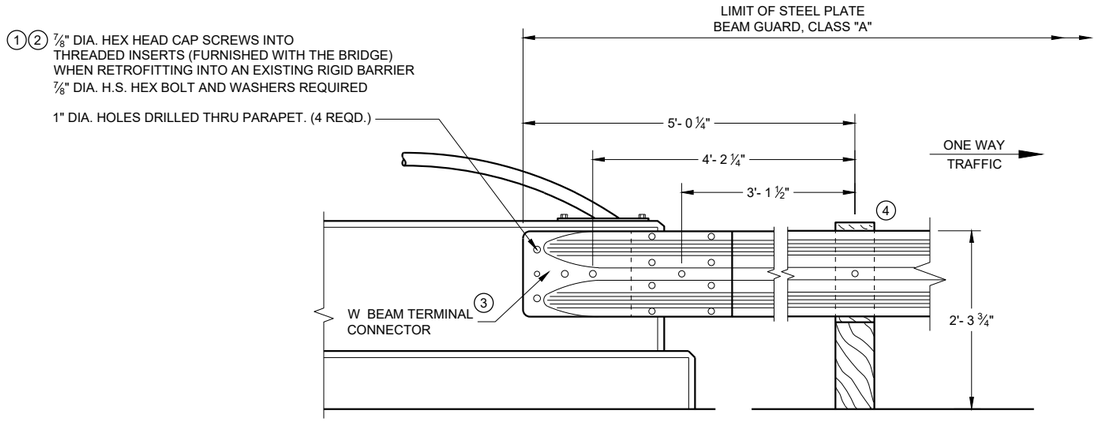
(2) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

(3) 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".

(4) W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

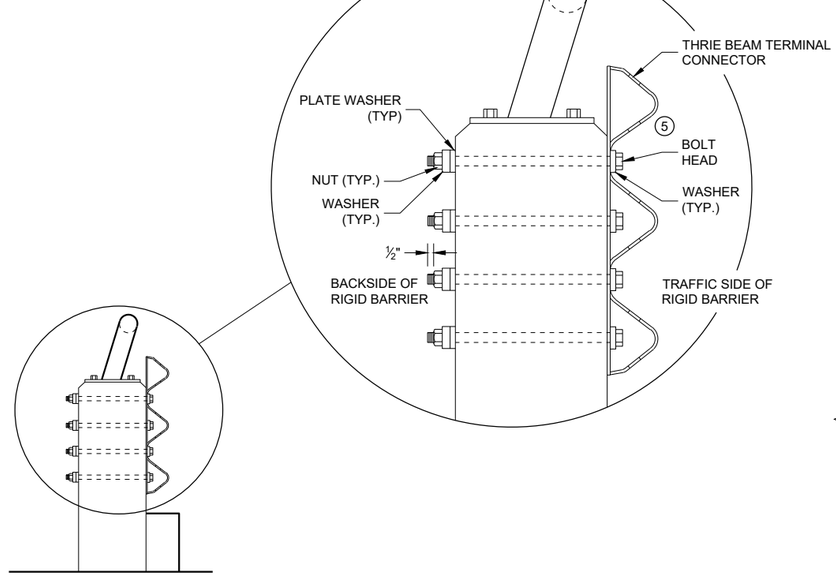
(5) BOLT, NUT AND WASHERS NO REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PARAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE THE EDGE OF PARAPET.

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

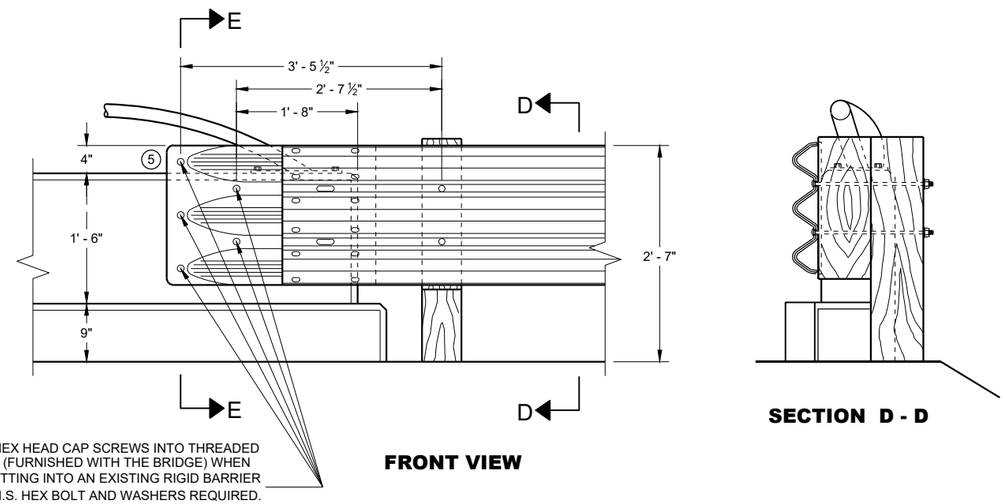


FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



SECTION E - E



(1)(2) ⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER
⅞" DIA. H.S. HEX BOLT AND WASHERS REQUIRED.

1" DIA. HOLES DRILLED THRU PARAPET. (4 REQD.)

FRONT VIEW

SECTION D - D

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO VERTICAL FACED PARAPETS

STATE OF WISCONSIN
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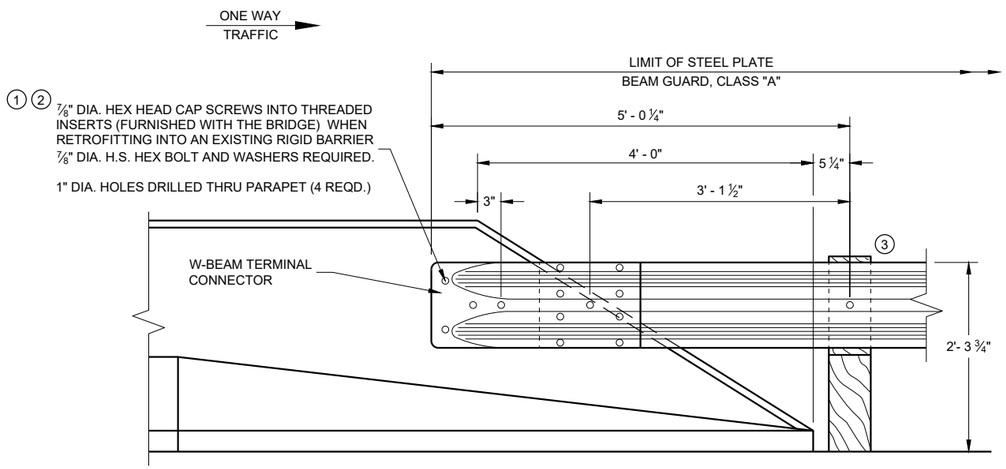


FRONT VIEW

W BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

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

GENERAL NOTES

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

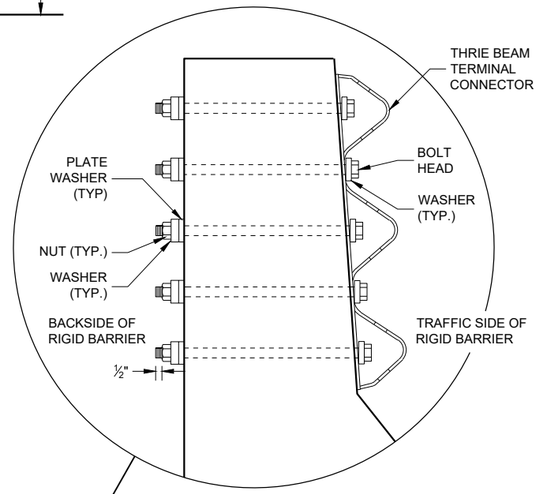
BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

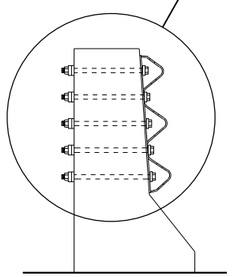
1. DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

2. 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 TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

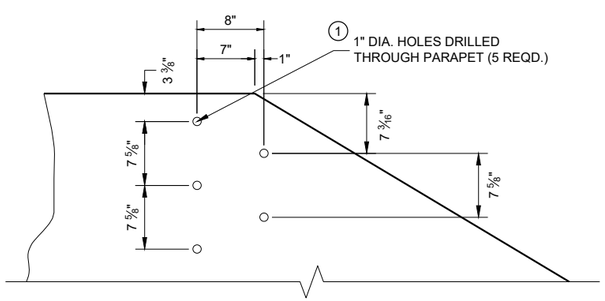
3. W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

   DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

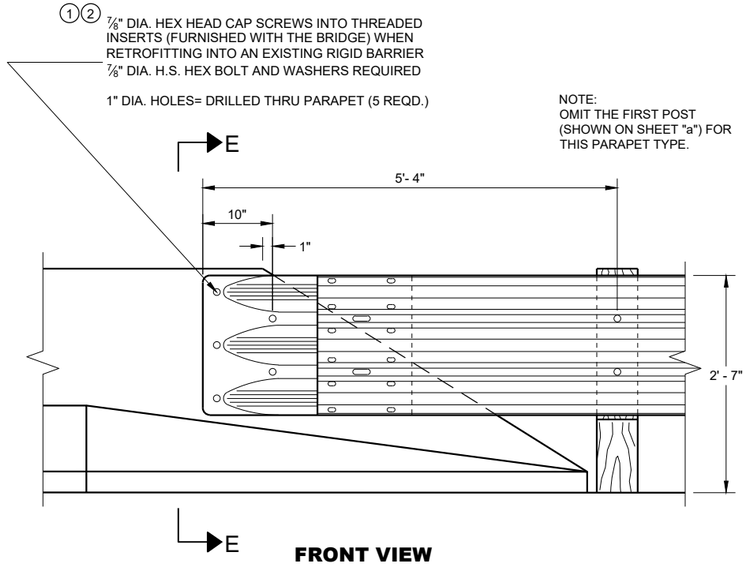




SECTION E - E



DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW

THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SLOPED END PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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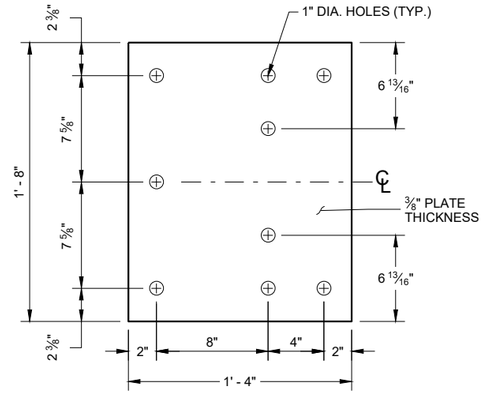
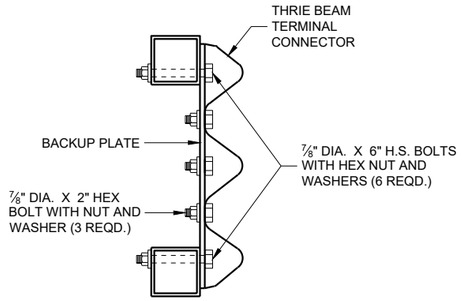
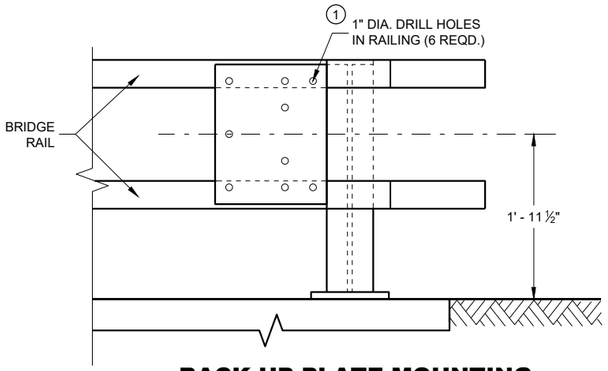


BACK-UP PLATE DETAIL



SECTION G - G



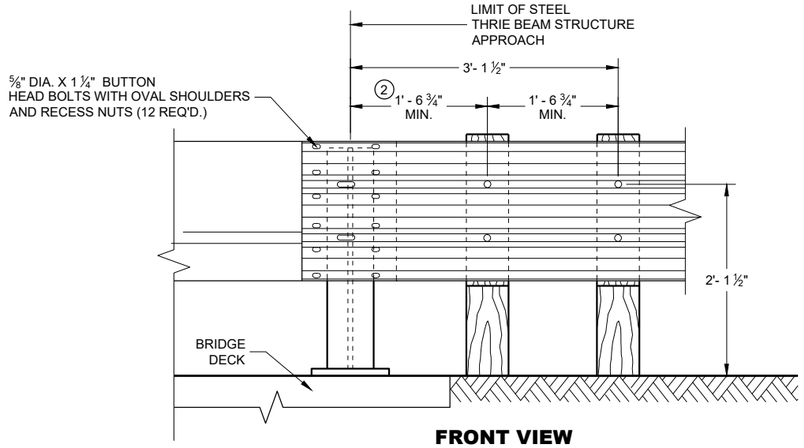
BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

GENERAL NOTES

BOLTS, PLATES, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 325 AND BE GALVANIZED IN ACCORDANCE WITH ASTM A 153.

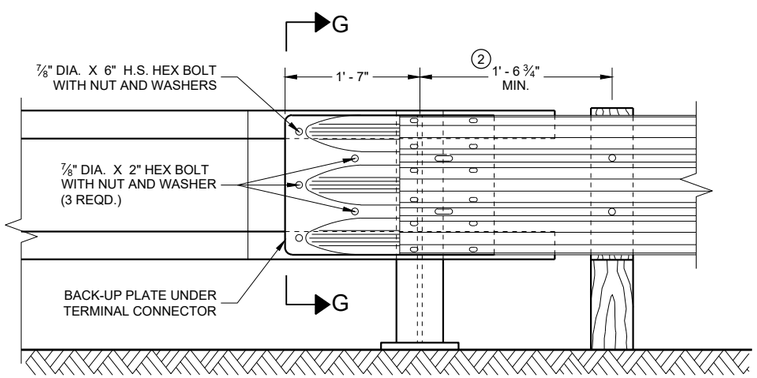
(1) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(2) VARY THIS DIMENSION DEPENDING ON ABUTMENT TYPE, WINGWALL DETAILS, AND ANGLE OF SKEW. PLACE THE FIRST WOOD POST OFF THE BRIDGE SHALL AS CLOSE AS FEASIBLE TO THE STEEL END POST.

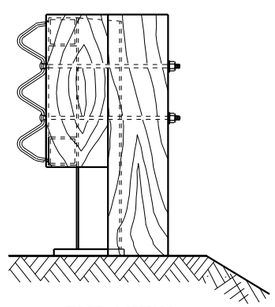


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



END VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPES "F" & "W"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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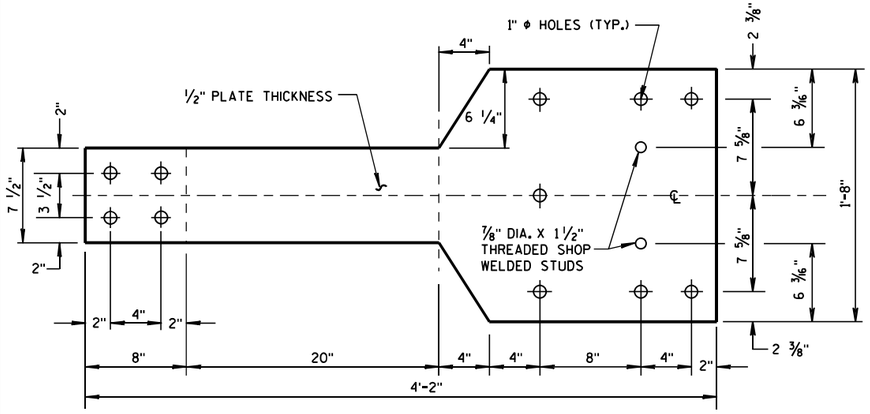
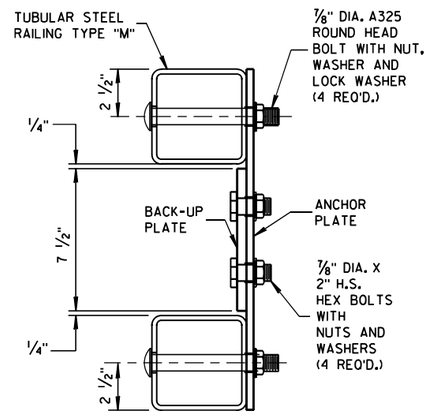
GENERAL NOTES

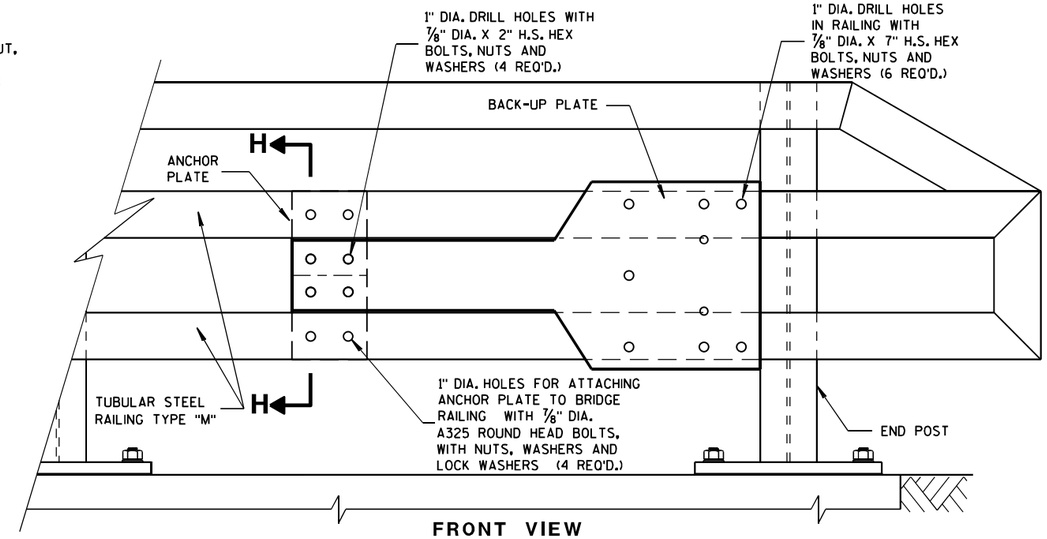
① VARY THIS DIMENSION DEPENDING ON ABUTMENT TYPE, WINGWALL DETAILS, AND ANGLE OF SKEW. PLACE THE FIRST WOOD POST OFF THE BRIDGE SHALL BE AS CLOSE AS FEASIBLE TO THE STEEL END POST.



FRONT VIEW

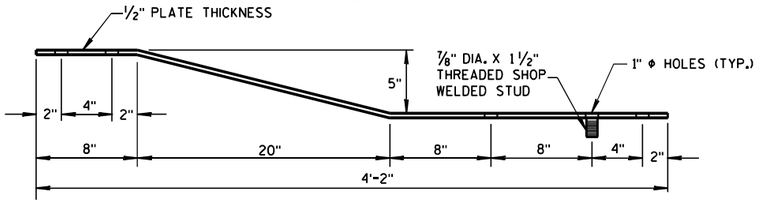


SECTION H-H



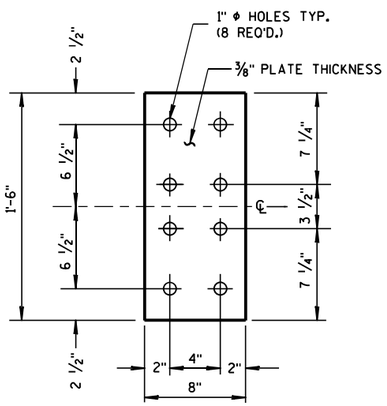
FRONT VIEW

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



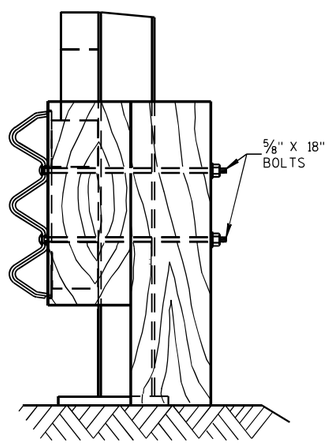
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

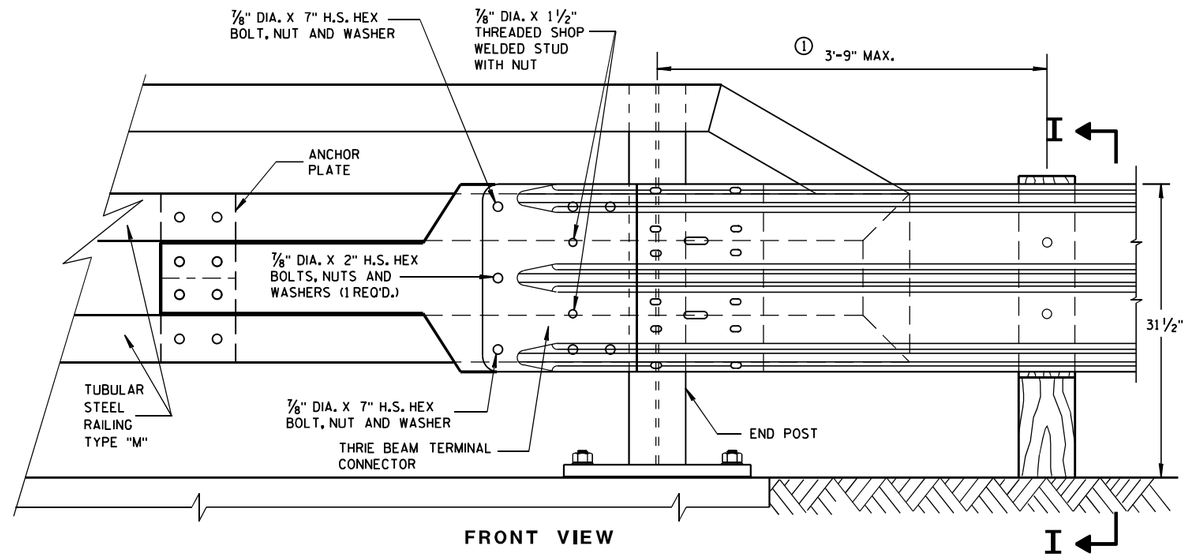


FRONT VIEW

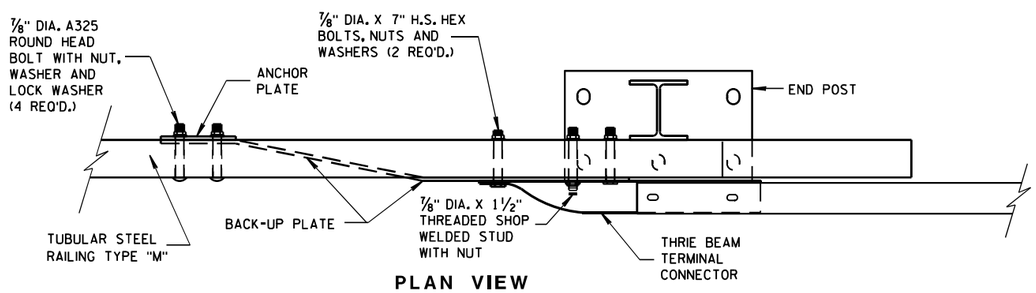
ANCHOR PLATE DETAIL, TYPE "M"



SECTION I-I



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPE "M"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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November 2022 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER
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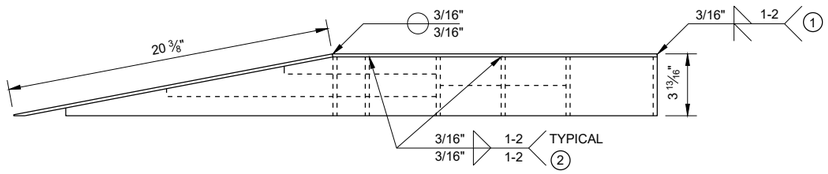
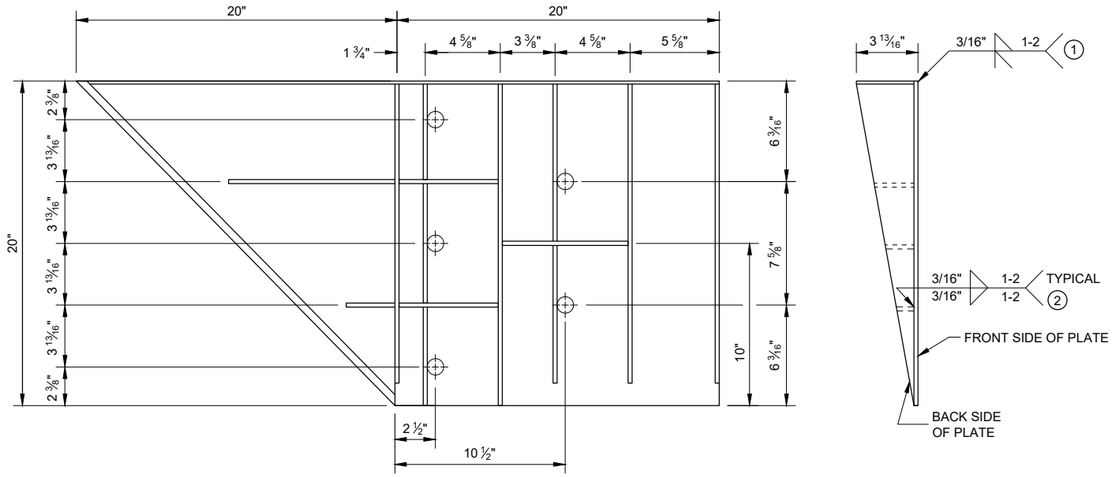
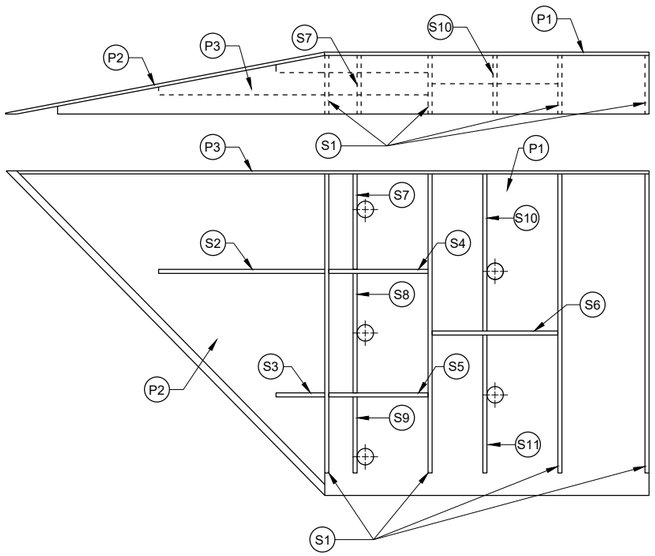




WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)



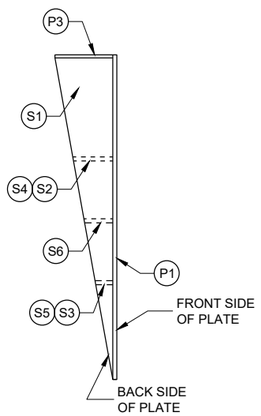


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

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.

(1) 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.

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

CONNECTOR PLATED 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 1/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 13/16"	1/4"

STEEL THRIE BEAM STRUCTURE APPROACH

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL

STATE OF WISCONSIN
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/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER
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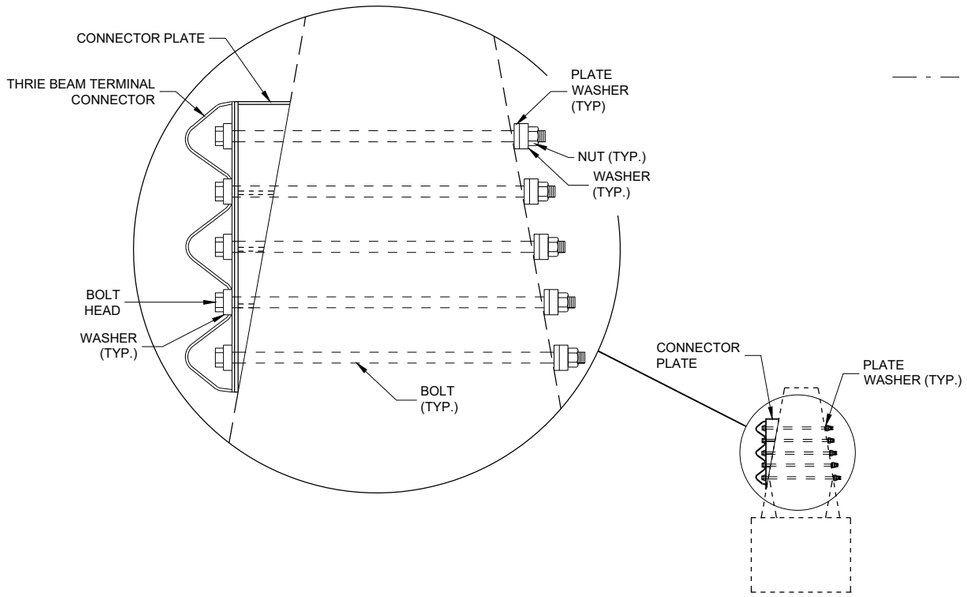
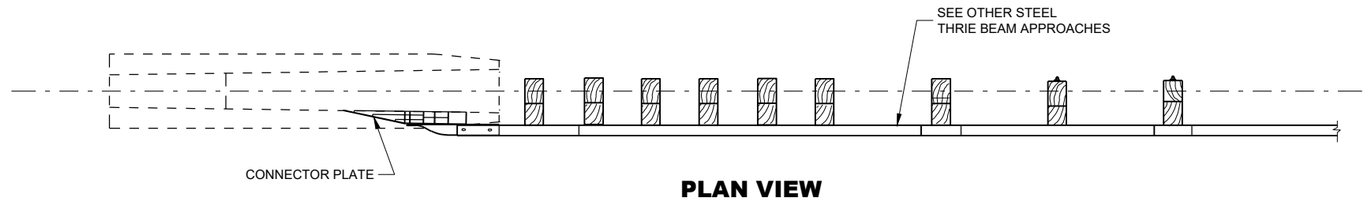
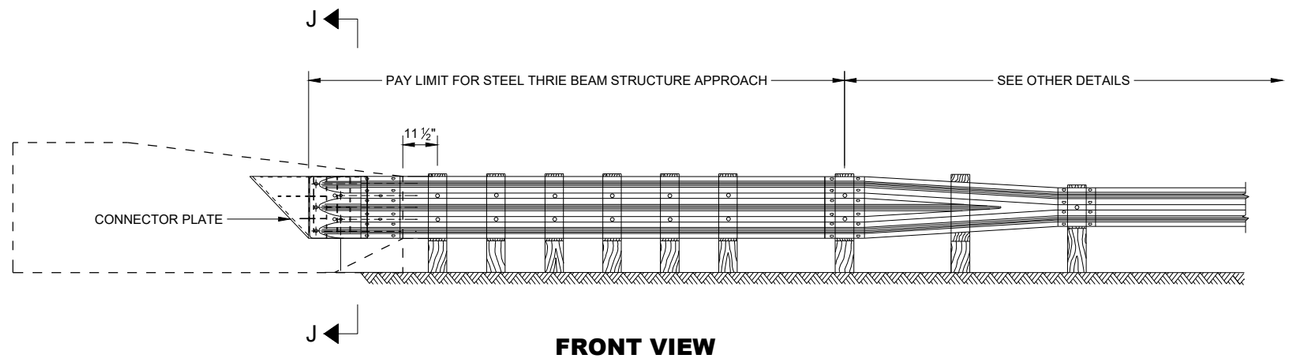


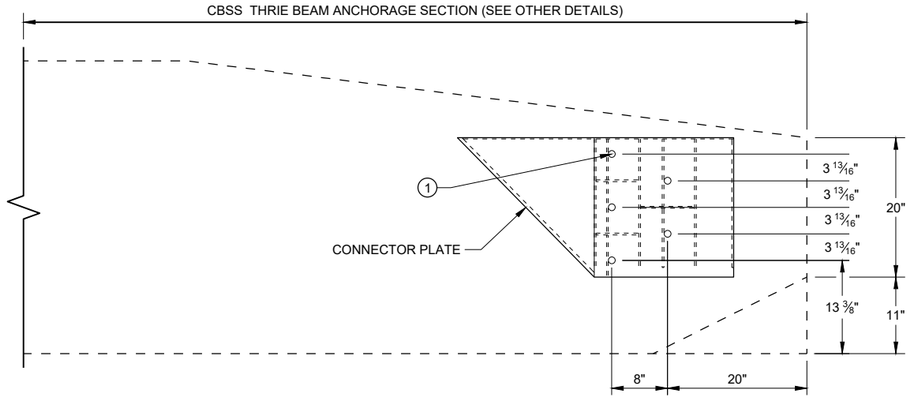
SECTION J - J



PLAN VIEW



FRONT VIEW



CONNECTOR PLATE PLACEMENT

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 614.

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

(1) 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 TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X ⅝" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

STEEL THRIE BEAM STRUCTURE APPROACH

MIDWEST GUARDRAIL SYSTEM (MGS) THRIE BEAM TRANSITION

STATE OF WISCONSIN
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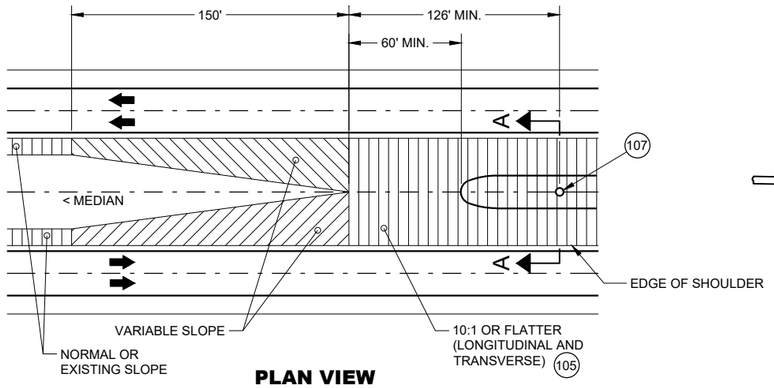
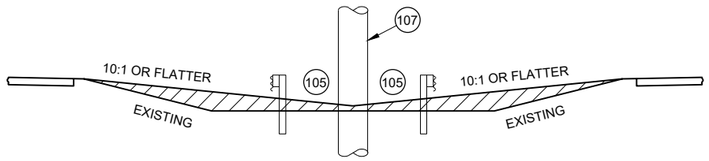


PLAN VIEW
GRADING AT BULLNOSE
(ALL INSTALLATIONS)



SECTION A -A
MEDIAN GRADING
(ALL INSTALLATIONS)

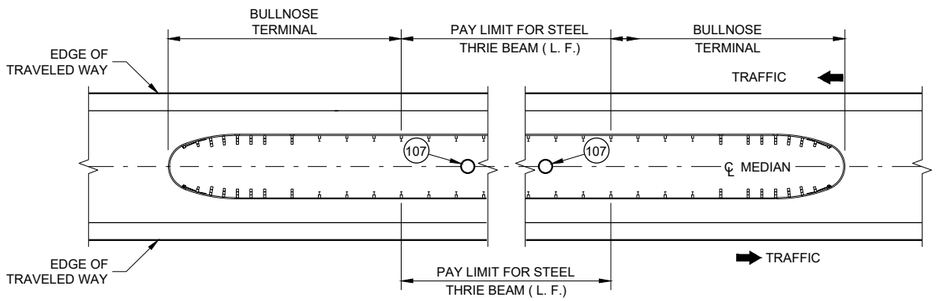
GENERAL NOTES

THRIE BEAM RAILS MAY NEED TO BE FIELD BENT TO FIT THE LOCATION.

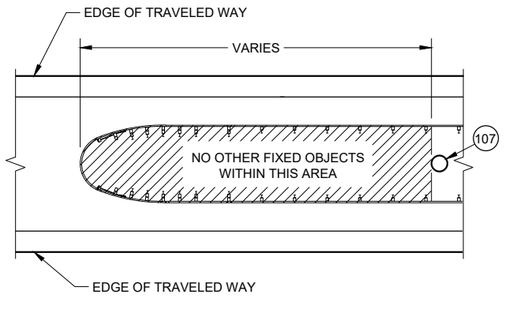
SEE STANDARD DETAIL DRAWINGS 14B26 SHEETS a-h.

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 ½". MINIMUM DIAMETER OF THE ROCK REMOVAL IS 12" DIAMETER

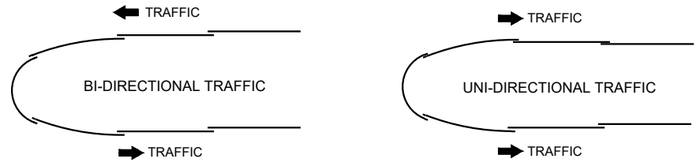
- E1 UNBENT STANDARD THRIE BEAM RAIL B1 (POST 8 TO POST 10 AND POST 10 TO POST 12)
- E2 SLOTTED THRIE BEAM RAIL E1 (POST 1 TO POST 1)
- E3 SLOTTED THRIE BEAM RAIL B3 (POST 5 TO POST 8)
- E4 SLOTTED THRIE BEAM RAIL E4 (POST 1 TO POST 5)
- 5 BEYOND POST 12: CONSTRUCT STEEL THRIE BEAM - USE UNBENT STANDARD THRIE BEAM RAIL NO. 5.
- (100) DIMENSIONS ARE FROM BACK OF RAIL TO BACK OF RAIL WHERE RAIL IS BOLTED TO POST OR BLOCK.
- (101) U-BOLT CABLE CLIPS (3 PER CABLE) SPACED OUT ON NOSE, TO HOLD CABLE TO BACKSIDE OF THE RAIL.
- (102) NOSE CABLE WITH SWAGGED END BUTTONS.
- (103) NOSE CABLE ANCHOR PLATE (BACKSIDE OF SPLICE).
- (104) THE SLACK IN THE NOSE CABLES SHALL BE EVENLY DISTRIBUTED BETWEEN THE CABLE CLIP FASTENERS AND POST NO. 1 ON EITHER SIDE OF THE NOSE.
- (105) MINIMUM WORKING WIDTH 4' - 2".
- (106) MAX. WIDTH OF SYSTEM IS 14' - 2 ½" MEASURED FROM THE BACK OF RAIL TO BACK OF RAIL WHERE RAIL IS BOLTED TO A POST OR BLOCK.
- (107) FIXED OBJECT OR OTHER HAZARD.
- (108) PLAN IS TO PROVIDE STATION OFFSET TO CENTER OF POST 5 IN PLANS.



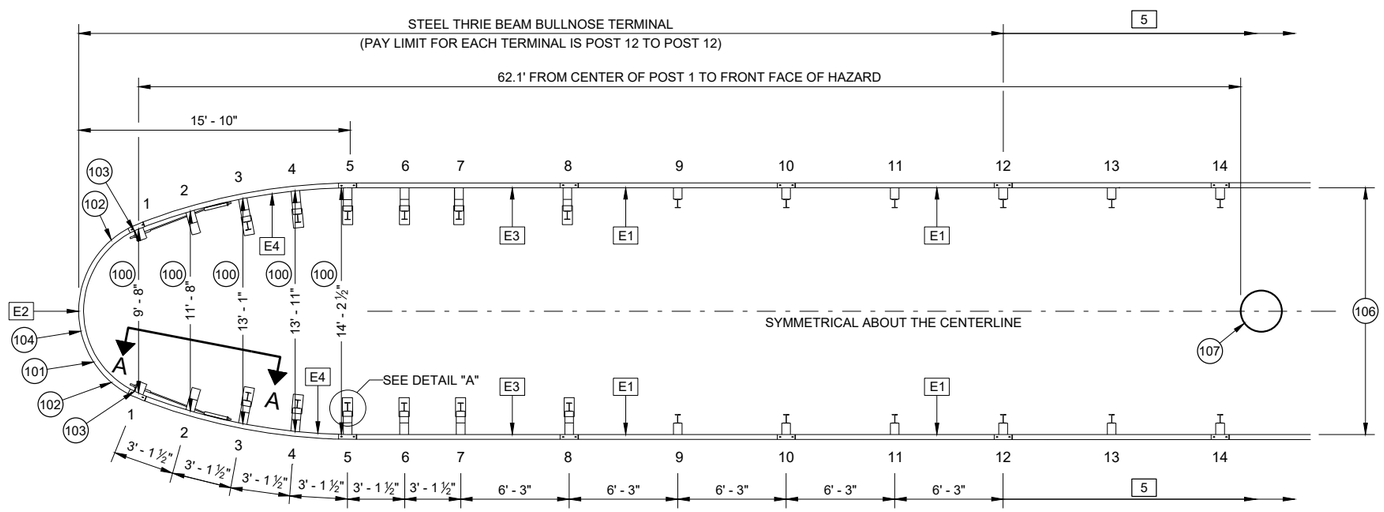
MEDIAN HAZARD PROTECTION PAY LIMITS



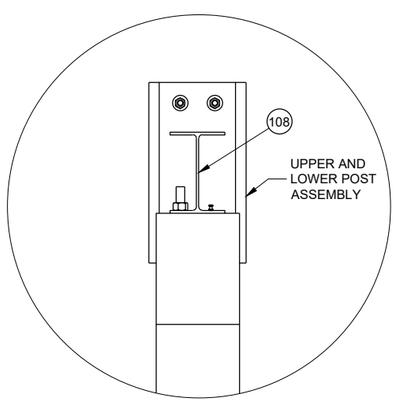
HAZARD FREE AREA
INSIDE BULLNOSE



LAPPING DETAIL



PLAN VIEW
TYPICAL BULLNOSE LAYOUT



DETAIL "A"

STEEL THRIE BEAM
BULLNOSE TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B26 - 05a

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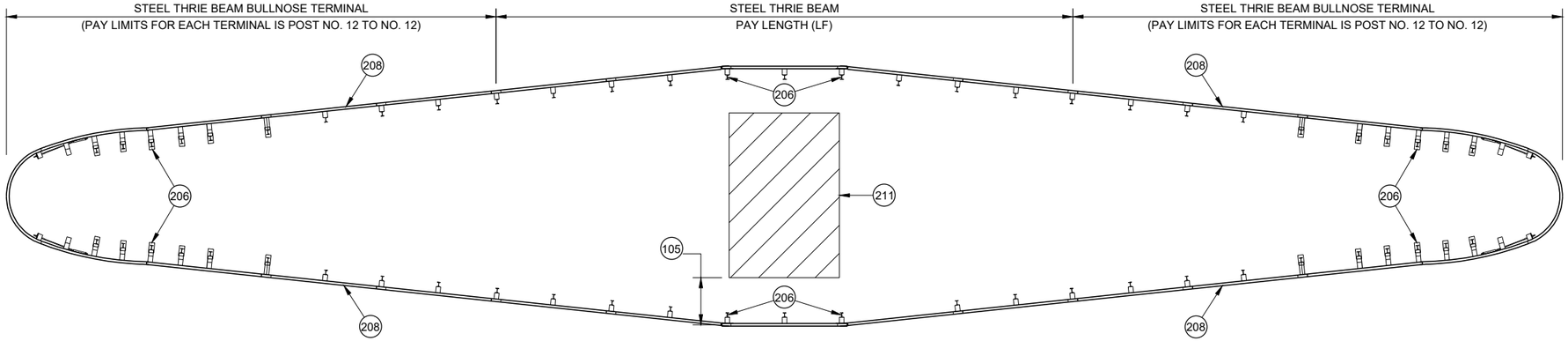


VARIABLE WIDTH BULLNOSE

GENERAL NOTES

200 6' - 3" ASYMMETRICAL 10-GAUGE W-BEAM TO THRIE BEAM GUARD TRANSITION. SEE SDD 14B45 FOR MORE INFORMATION.

201 W-BEAM RAIL. SEE SDD 14B42 FOR MORE INFORMATION.

202 SEE POST NO. 9 AND ALL STEEL THRIE BEAM POST BEYOND DETAIL.

203 SEE SDD 14B42 FOR INSTALLATION INFORMATION.

204 SEE SDD 14B45 FOR INSTALLATION DETAILS. REPLACE ASYMMETRICAL W-BEAM TO THRIE BEAM TRANSITION AND W-BEAM RAIL WITH E1. PAY FOR MODIFIED THRIE BEAM TRANSITION.

205 CONCRETE BARRIER OR BRIDGE RAIL.

206 SEE PLAN FOR STATION AND OFFSET TO CENTER OF POST.

207 SEE PLAN FOR STATION AND OFFSET TO CENTER OF SPLICE.

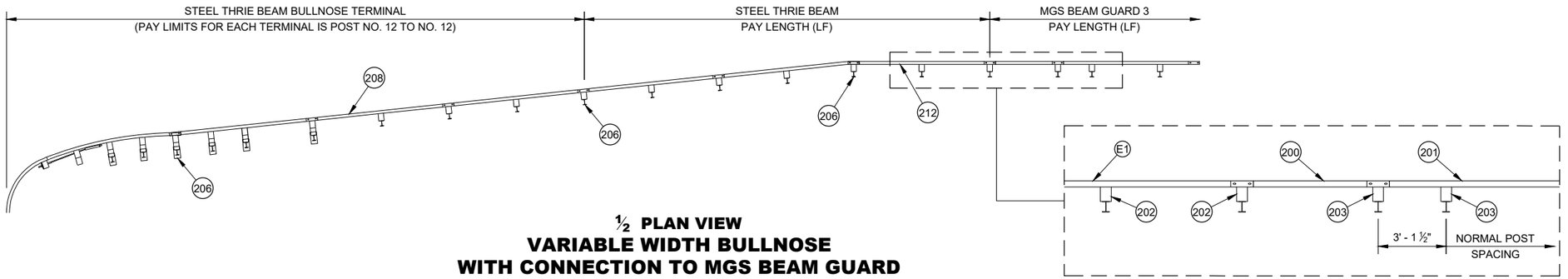
208 SEE PLAN FOR FLARE RATE.

209 A MINIMUM OF 25 FT OF THRIE BEAM TANGENT BEFORE TRANSITIONING TO BEAM GUARD OR THRIE BEAM TRANSITION.

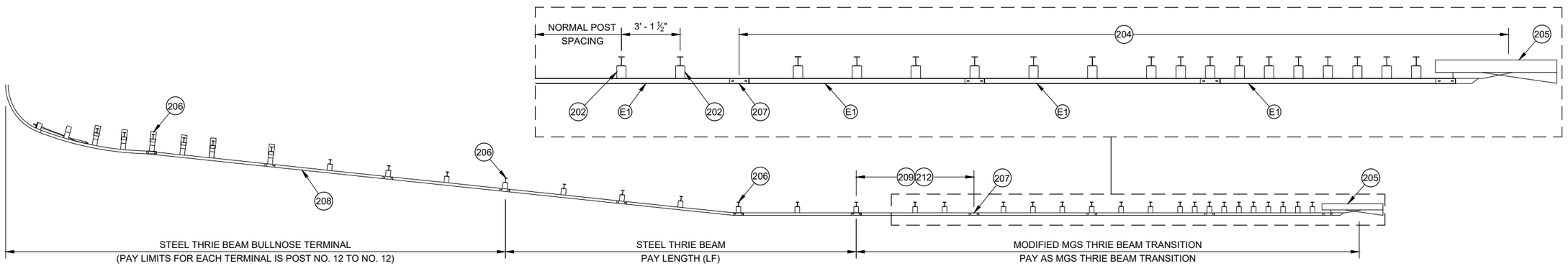
210 NOT ALL BULLNOSE HARDWARE SHOWN. SEE OTHER SHEETS IN 14B26.

211 WIDER HAZARD TO BE SHIELDED.

212 TRANSITION RAIL HEIGHT TO 31" OVER THE LENGTH OF A 12' - 6" BEAM SECTION.



½ PLAN VIEW
VARIABLE WIDTH BULLNOSE
WITH CONNECTION TO MGS BEAM GUARD



½ PLAN VIEW
VARIABLE WIDTH BULLNOSE
WITH CONNECTION TO RIGID BARRIER

STEEL THRIE BEAM BULLNOSE TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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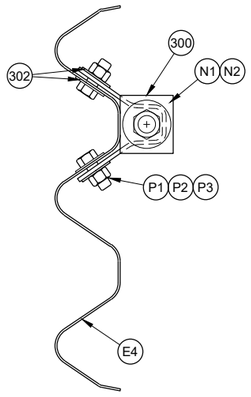
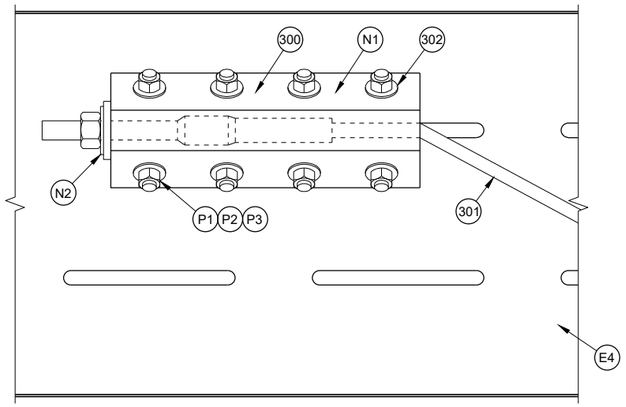
SDD 14B26 - 05b

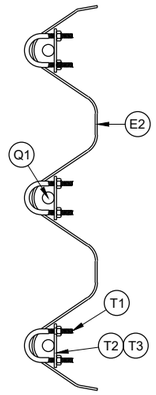


PROFILE VIEW

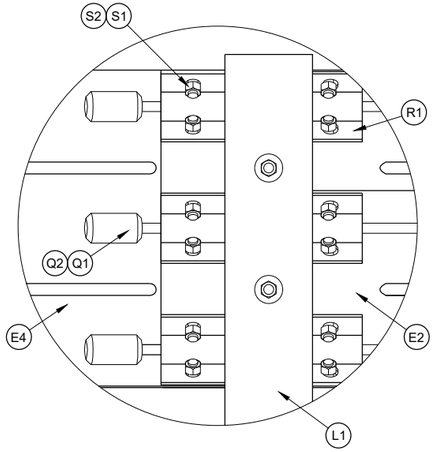
CABLE ANCHOR ASSEMBLY CONNECTION



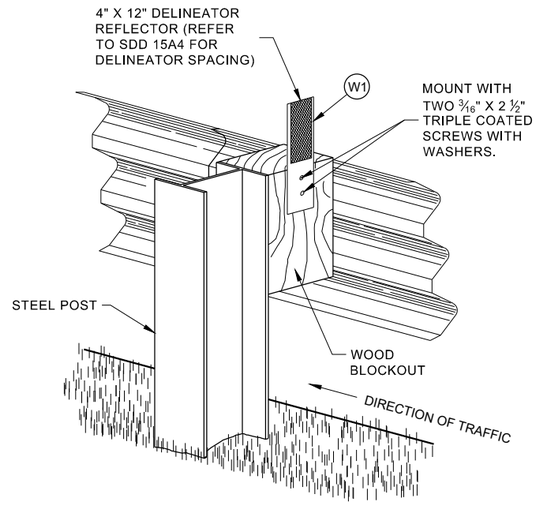
CABLE ANCHOR ASSEMBLY



NOSE CABLE RETAINING CLIP

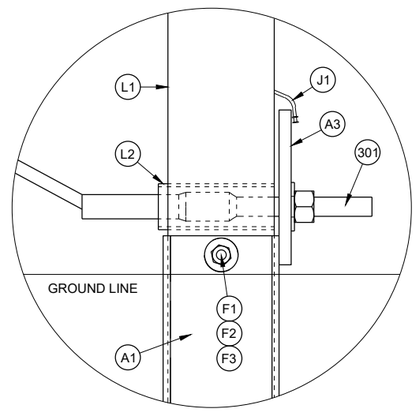


DETAIL "A"

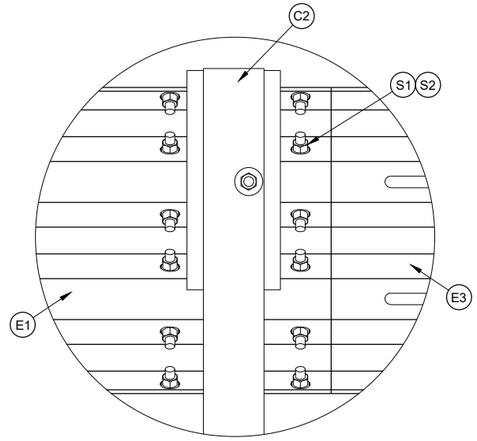


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

CROSS SECTION A - A



DETAIL "B"



DETAIL "C"
THRIE BEAM SPLICE

GENERAL NOTES

(300) SEE ANCHOR BRACKET ASSEMBLY DETAIL.

(301) SEE ANCHOR CABLE ASSEMBLY DETAIL

(302) ONE WASHER BETWEEN BOLT HEAD AND RAIL AND BETWEEN NUT AND ANCHOR BRACKET ASSEMBLY.

(303) ONE WASHER BETWEEN BOLD HEAD AND FOUNDATION TUBE AND BETWEEN NUT AND FOUNDATION TUBE.

STEEL THRIE BEAM BULLNOSE TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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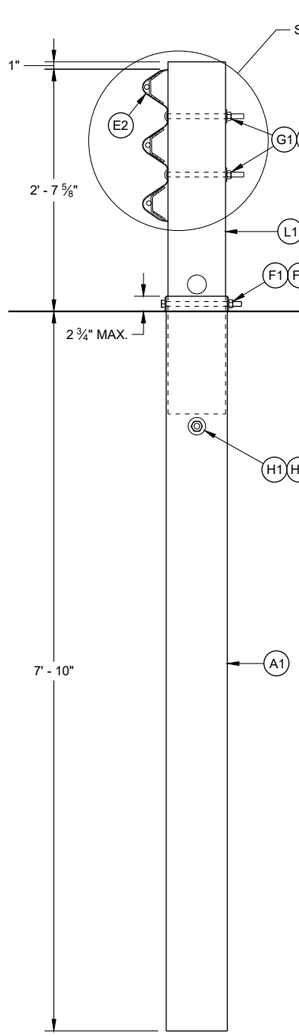
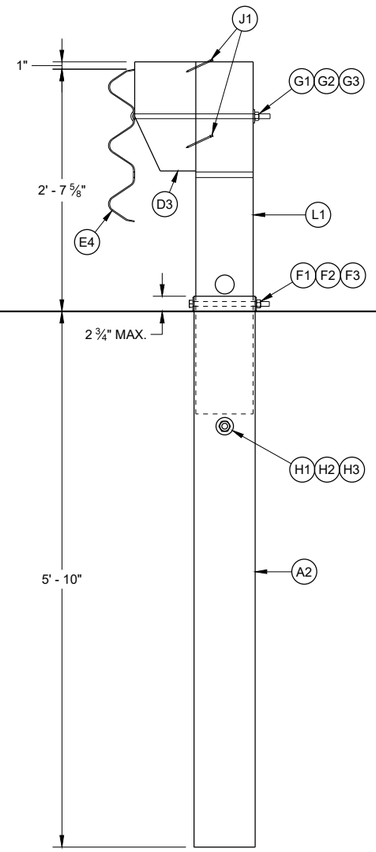
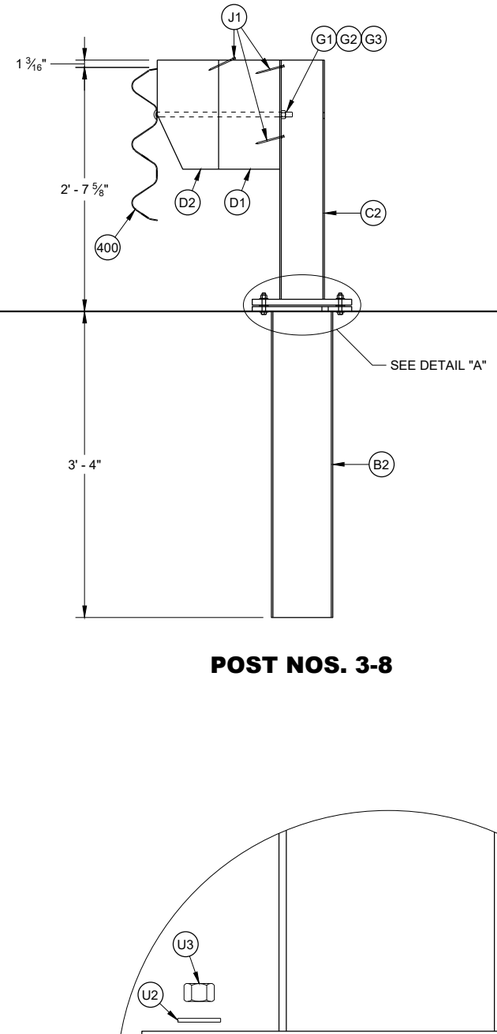


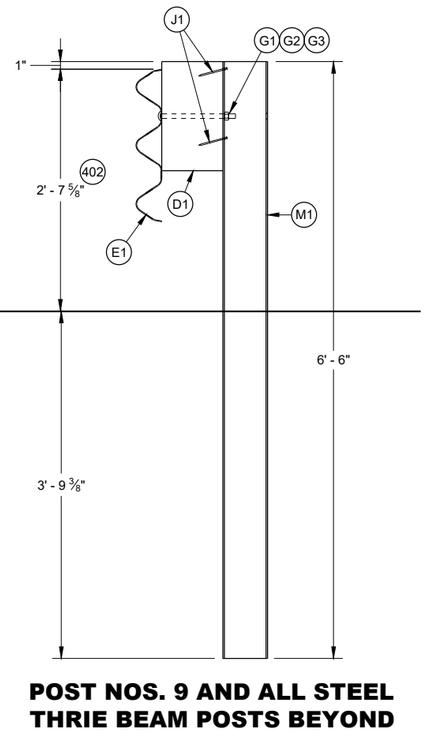
POST NO. 1



POST NO. 2



POST NOS. 3-8



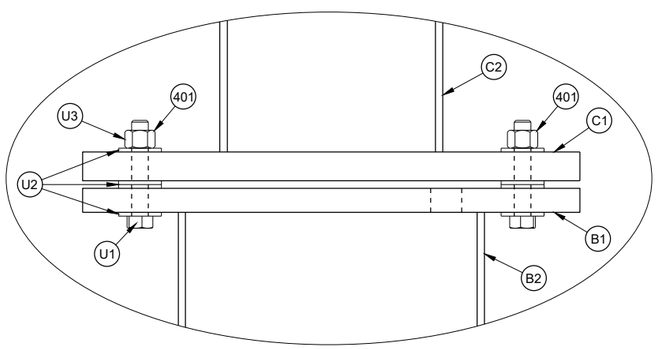
POST NOS. 9 AND ALL STEEL THRIE BEAM POSTS BEYOND

GENERAL NOTES

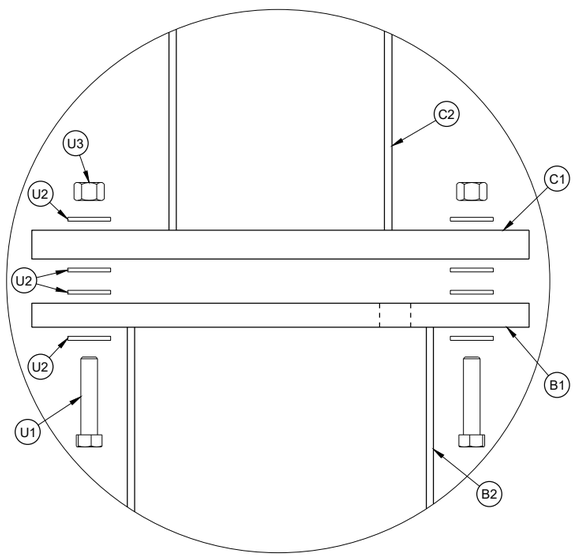
400 RAIL CAN BE E3 OR E4 DEPENDING ON POST LOCATION.

401 TORQUE BOLD BETWEEN 60-75 FT-LB

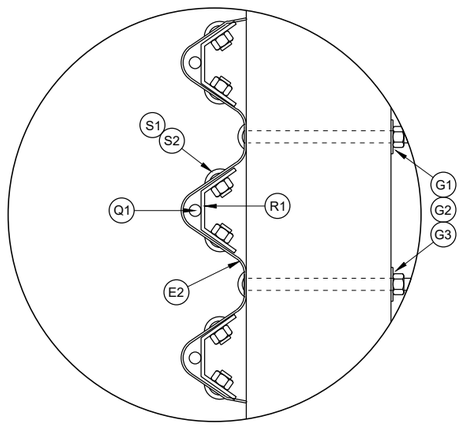
402 HEIGHT WILL VARY WITHIN HEIGHT TRANSITION TO OTHER HARDWARE. SEE NOTE 213, SHEET "b".



DETAIL "A"



EXPLODED VIEW
DETAIL "A"



DETAIL "B"

STEEL THRIE BEAM BULLNOSE TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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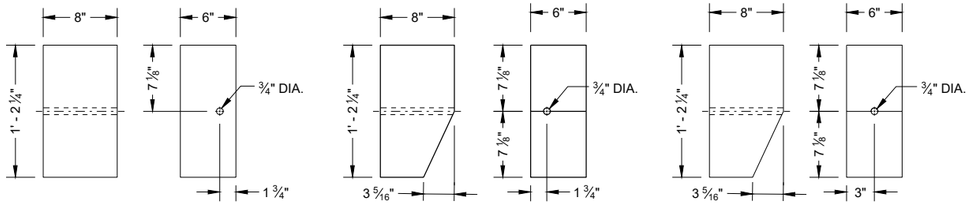
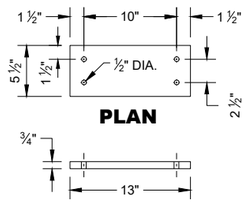


ELEVATION PROFILE
BLOCKOUT (D1)

ELEVATION PROFILE
BLOCKOUT (D2)

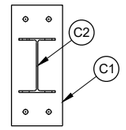
ELEVATION PROFILE
BLOCKOUT (D3)



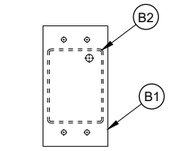
PLAN

PROFILE

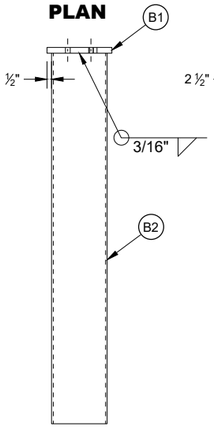
UPPER SHEAR PLATE (C1)



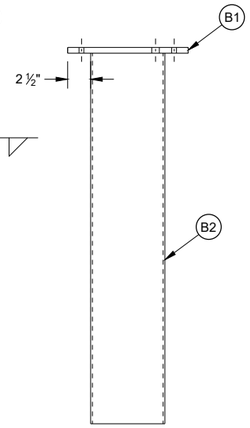
PLAN



PLAN

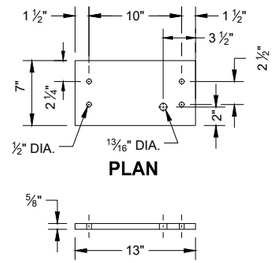


ELEVATION



PROFILE

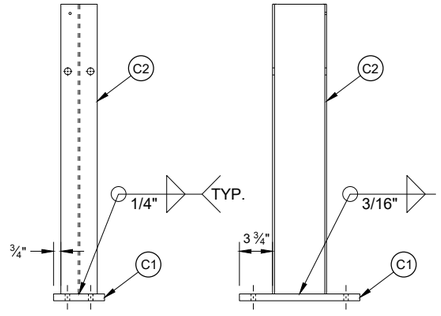
LOWER POST ASSEMBLY



PLAN

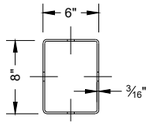
PROFILE

LOWER SHEAR PLATE (B1)



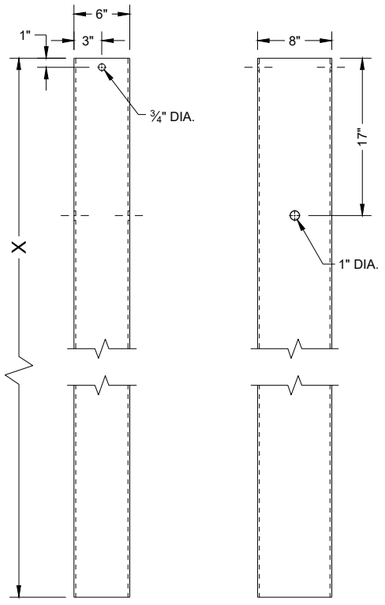
ELEVATION PROFILE

UPPER POST ASSEMBLY



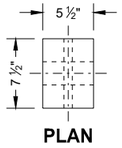
PLAN

PART	LENGTH "X"
A1	8' - 0"
A2	6' - 0"
B2	3' - 4"

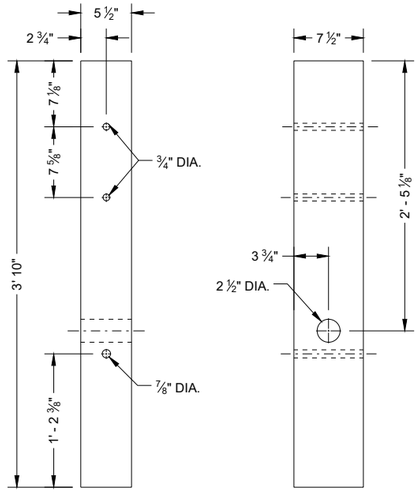


ELEVATION PROFILE

FOUNDATION TUBE

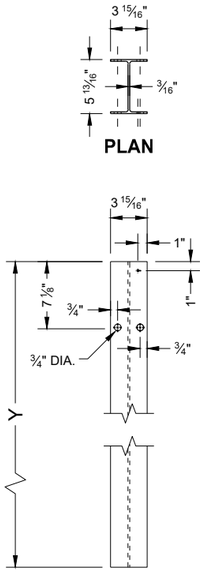


PLAN



ELEVATION PROFILE

BCT POST (L1)



ELEVATION

POST

PART	LENGTH "Y"
M1	6' - 6"
M2	5' - 8 5/8"
C2	2' - 7 5/8"

STEEL THRIE BEAM BULLNOSE TERMINAL

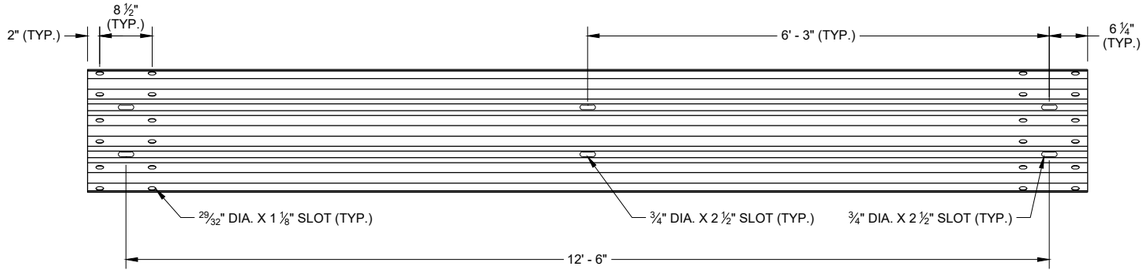
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

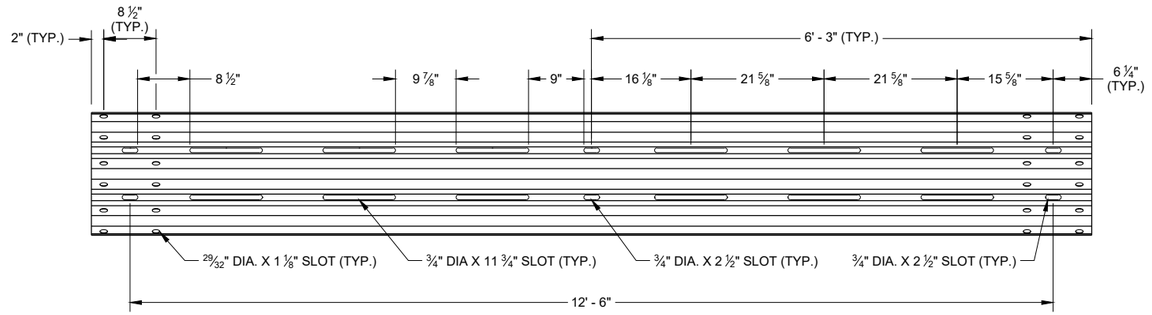
SDD 14B26 - 05e

6

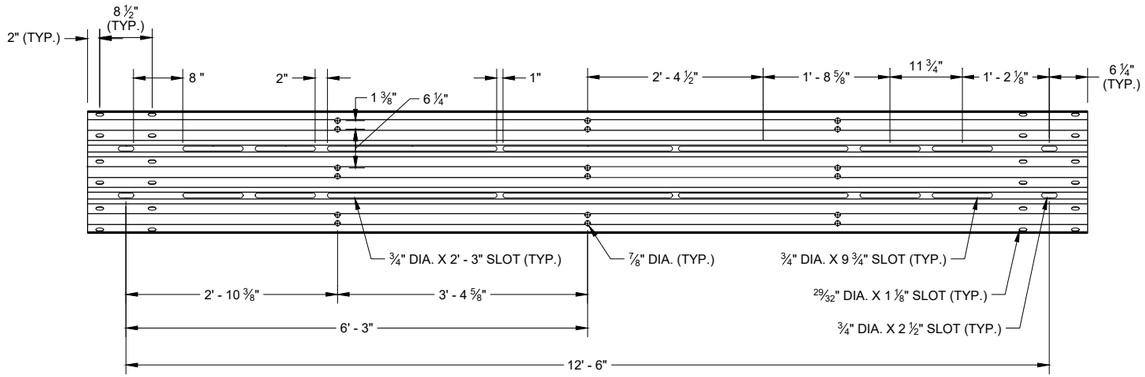
SDD 14B26 - 05e



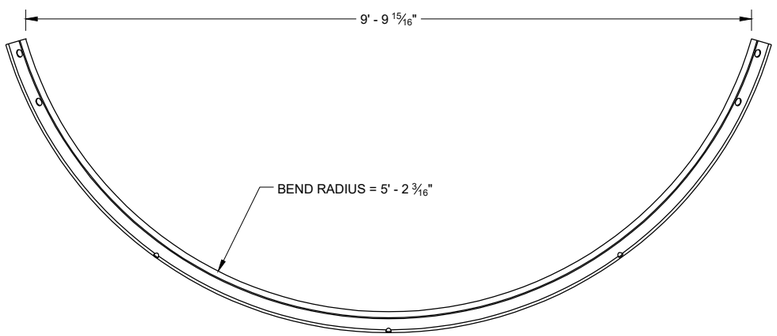
SLOTTED THRIE BEAM RAIL E1



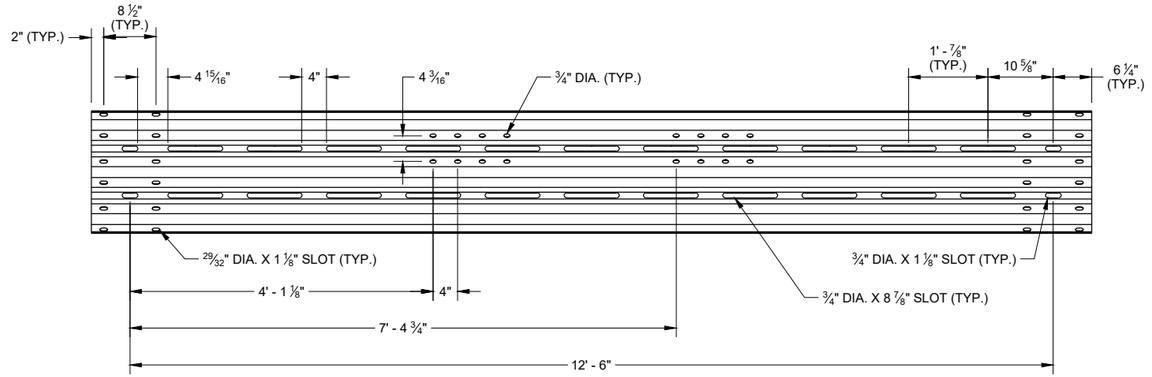
SLOTTED THRIE BEAM RAIL E3



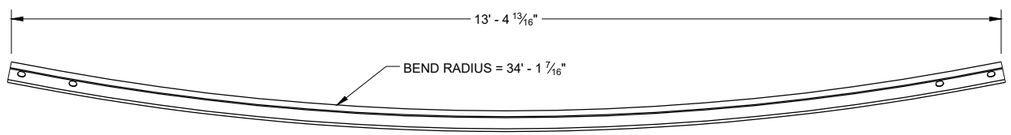
ELEVATION VIEW NON - RADIUSED
SLOTTED THRIE BEAM RAIL E2



PLAN VIEW
SLOTTED THRIE BEAM RAIL E2



ELEVATION VIEW NON - RADIUSED
SLOTTED THRIE BEAM RAIL E4



PLAN VIEW
SLOTTED THRIE BEAM RAIL E4

6

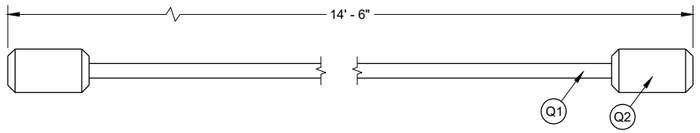
SDD 14B26 - 05f

STEEL THRIE BEAM BULLNOSE TERMINAL

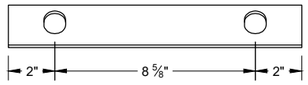
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

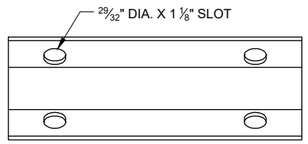
SDD 14B26 - 05f



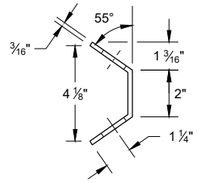
NOSE CABLE AND SWAGE BUTTON



PLAN VIEW

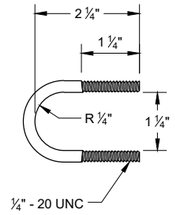


ELEVATION VIEW

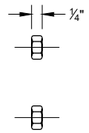


PROFILE VIEW

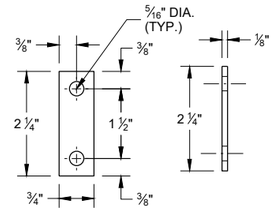
NOSE CABLE ANCHOR (R1)



U - BOLT (T1)

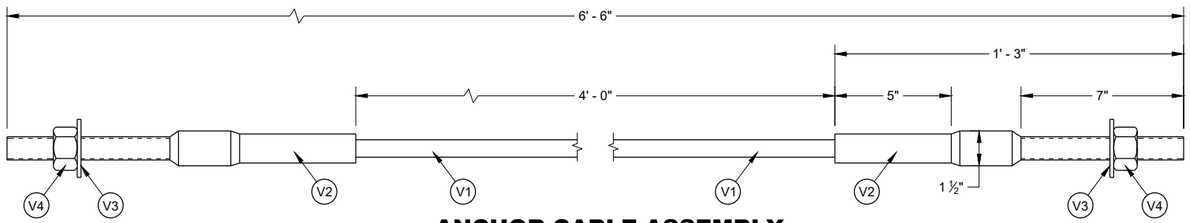


U - BOLT NUT (T3)

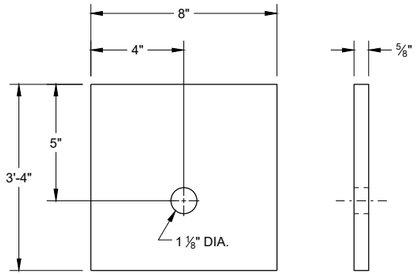


ELEVATION VIEW **PROFILE VIEW**

U - BOLT PLATE WASHER (T2)

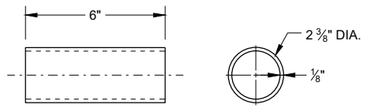


ANCHOR CABLE ASSEMBLY



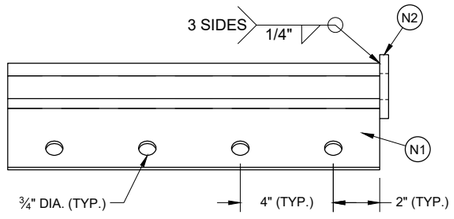
ELEVATION VIEW **PROFILE VIEW**

BCT BEARING PLATE (A3)

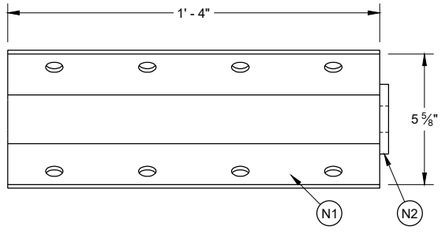


ELEVATION VIEW **PROFILE VIEW**

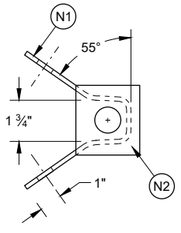
BCT POST SLEEVE (L2)



PLAN VIEW

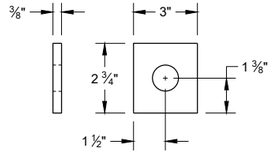


ELEVATION VIEW



PROFILE VIEW

ANCHOR BRACKET ASSEMBLY (N1)



ANCHOR BRACKET END PLATE (N2)

STEEL THRIE BEAM BULLNOSE TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B26 - 05g

BILL OF MATERIALS LIST

PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION
A1	LONG FOUNDATION TUBE	AASHTO M111/ASTM A123 ASTM A500 GRADE B OR ASTM A-501
A2	FOUNDATION TUBE	AASHTO M111/ASTM A123 ASTM A500 GRADE B OR ASTM A-501
A3	BEARING PLATE AT POST	AASHTO M111/ASTM A123 ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
B1	LOWER SLIP POST ASSEMBLY - PLATE	AASHTO M111/ASTM A123 ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
B2	LOWER SLIP POST ASSEMBLY - TUBE	AASHTO M111/ASTM A123 ASTM A500 GRADE B OR ASTM A-501
C1	UPPER SLIP POST ASSEMBLY - PLATE	AASHTO M111/ASTM A123 ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
C2	UPPER SLIP POST ASSEMBLY - POST	AASHTO M111/ASTM A123 ASTM A6 W6X9 OR W6X8.5 ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
D1	BLOCK FOR STEEL POST - WOOD	WISDOT SPEC. 614
D2	TAPERED BLOCK FOR STEEL POST - WOOD	WISDOT SPEC. 614
D3	TAPERED BLOCK FOR BCT POST - WOOD	WISDOT SPEC. 614
E1	THRIE BEAM RAIL	AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER
E2	THRIE BEAM RAIL - SHOP BENT AND PUNCHED	AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER. INDICATE RADIUS BEAM GUARD IS BENT TO ON THE BACKSIDE OF RAIL. FOLLOW AASHTO M180. MARK RADIUS.
E3	THRIE BEAM RAIL - PUNCHED	AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER
E4	THRIE BEAM RAIL - SHOP BENT AND PUNCHED	AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER. INDICATE RADIUS BEAM GUARD IS BENT TO ON THE BACKSIDE OF RAIL. FOLLOW AASHTO M180. MARK RADIUS.
F1	5/8" DIA. HEX HEAD GROUND STRUT AND YOKE BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36
F2	5/8" DIA. GROUND STRUT AND YOKE BOLT - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)
F3	GROUND STRUT AND YOKE BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5
G1	5/8 " DIA. POST BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER TYPICALLY USED WITH STEEL POSTS) OR ASTM F844 (UNHARDENED WASHER TYPICALLY USED WITH WOOD)
G2	POST BOLT - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER TYPICALLY USED WITH STEEL POSTS) OR ASTM F844 (UNHARDENED WASHER TYPICALLY USED WITH WOOD)
G3	POST BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5
H1	7/8" DIA. SOIL TUBE BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
H2	SOIL TUBE BOLT - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 7/8" ASTM F844 TYPE 1 (HARDEN WASHER ONLY)
H3	SOIL TUBE BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
J1	16D DOUBLE HEAD NAIL	ASTM A153 HOT DIPPED CLASS D DOUBLE HEAD ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEADED)
L1	BCT TIMBER POST	WISDOT SPEC. 614 S4S FINISH ON 4 SIDE
L2	BCT POST SLEEVE	AASHTO M111/ASTM A123 2 3/8" OD ASTM 53 GRADE B
M1	W6X8.5 OR W6X9 STEEL POST	AASHTO M111/ASTM A123 ASTM A6 W6X9 OR W6X8.5 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
M2	W6X8.5 OR W6X9 STEEL POST	AASHTO M111/ASTM A123 ASTM A6 W6X9 OR W6X8.5 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
N1	ANCHOR BRACKET	AASHTO M111/ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
N2	ANCHOR BRACKET - BEARING PLATE	AASHTO M111/ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI

PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION
P1	5/8" DIA. ANCHOR BRACKET BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD 5/8" ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36
P2	ANCHOR BRACKET BOLT - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)
P3	SOIL TUBE BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5
Q1	5/8" DIA. NOSE CABLE	6X19 AASTHO M30 / ASTM A741 XIPS INDEPENDENT WIRE CORE (IWRC) PR 6X25 XIPS, IWRC NOMINAL BREAKING STRENGTH OF 41.2 KIPS.
Q2	NOSE CABLE-SWAGE BUTTON	COLD TUFF BUTTON, S-409 SIZE NO. 12 STOCK NUMBER 1040395 OR ANY OTHER SIMILAR SIZED WAGED-GRIP-BUTTON FERRULES. ASTM A576 GRADE 1035 SWAGE FITTING ARE TO BE FIELD SWAGED PER MANUFACTURERS RECOMMENDATION. NOMINAL BREAKING STRENGTH OF 41.2 KIPS.
R1	NOSE CABLE ANCHOR BRACKET	AASHTO M111/ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
S1	5/8" DIA. SPLICE BOLT - BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36
S2	SPLICE - BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD 5/8" ASTM A563DH OR SAE J995 GRADE 5
T1	1/4" DIA. NOSE CABLE - U BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36
T2	U-BOLT - PLATE WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)
T3	U-BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5
U1	7/16" DIA. SLIP POST ASSEMBLY - BREAKAWAY BOLT	ASTM A153 OR B695 CLASS 55 OR F2329 UNC FULLY THREADED HEX HEAD TAP BOLT ASTM A449 OR SAE J429 GRADE 5
U2	7/16" DIA. SLIP POST ASSEBLY - BREAKAWAY BOLT - WASHER	ASTM F436 TYPE I (HARDEN TYPICALLY USED WITH STEEL) GALV. AASHTO M111/ASTM A 123 OR GALV. HOT DIP. TO POST BOLT CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 55, F2329
U3	SLIP POST ASSEBLY - BREAKAWAY BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / STM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5
V1	¾" DIA. BCT CABLE	AASHTO M30 / ASTM A741 6X19 INDEPENDENT WIRE CORE (IWRC) IMPROVED PLOW STEEL (IPS), 6X19 INDEPENDENT WIRE CORE (IWRC) IMPROVED PLOW STEEL (IPS) TYPE II OR IIC, CLASS C ZINC COATED MIN BREAKING STRENGTH OF 42.7 KIPS
V2	ANCHOR CABLE-SWAGE FITTING	UNC ASTM A576 GRADE 1035 SWAGE FITTING ARE TO BE FACTORY SWAGED. MIN. BREAKING STRENGTH OF 42.7 KIPS. ASME B30.26 "FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING IN TO CONNECTION: NAME OF MANUFACTURE OR TRADEMARK OF CONNECTION'S MANUFACTURER, SIZE OR RATED LOAD, GRADE FOR ALLOY EYEBOLTS."
V3	1" DIA. ANCHOR CABLE-WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)
V4	1" DIA. ANCHOR CABLE-NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5
W1	REFLECTOR	SEE SDD 15A4

STEEL THRIE BEAM BULLNOSE TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

SDD 14B26 - 05h

(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.

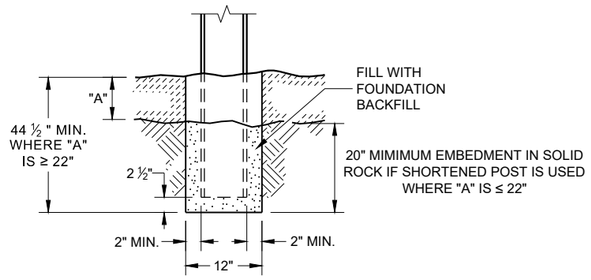
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL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

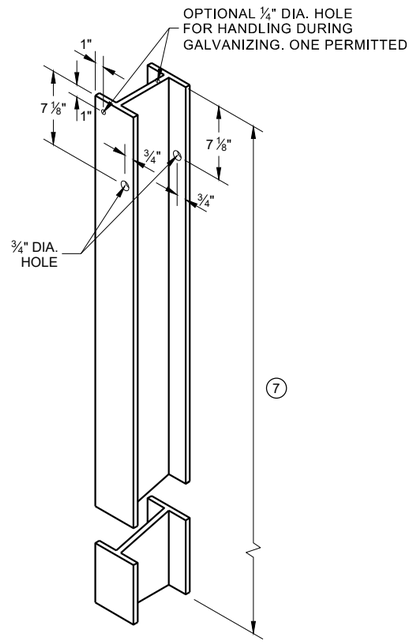
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(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.

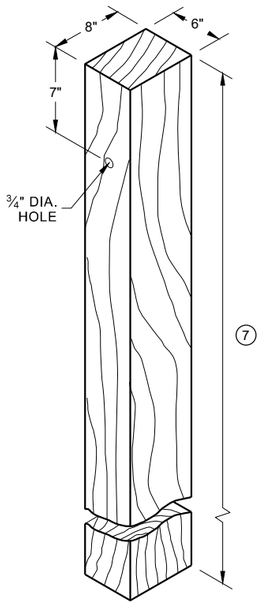
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



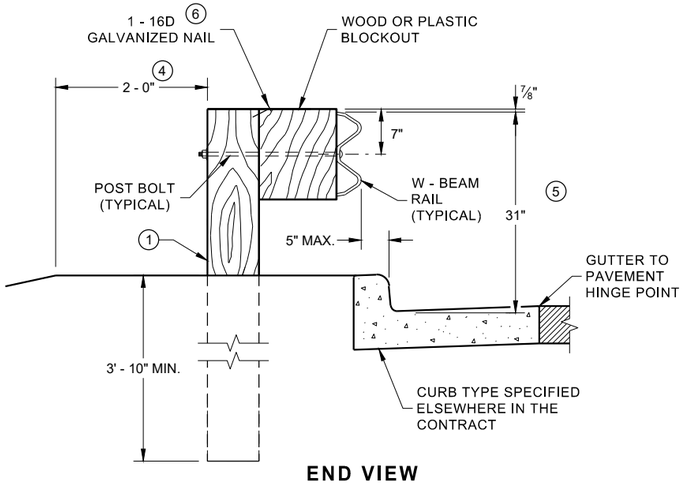
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



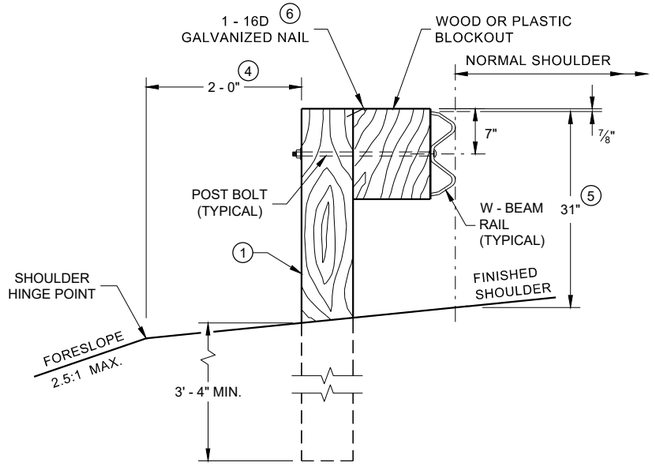
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



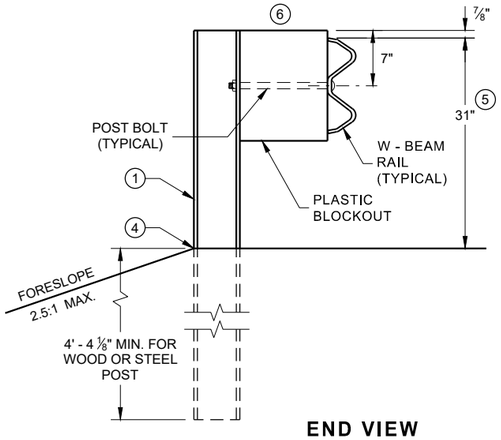
WOOD POST (6" X 8") NOMINAL (1)



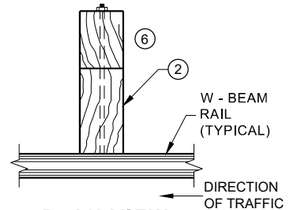
END VIEW
LOCATED ALONG A CURBED ROADWAY



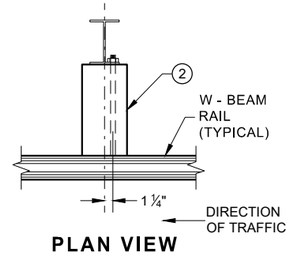
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



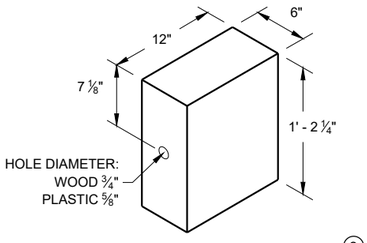
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



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

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SDD 14B42 - 07a

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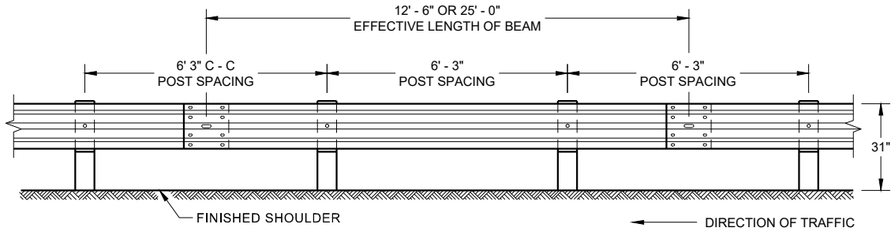
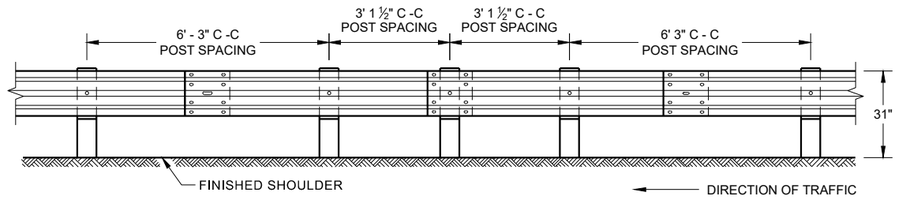
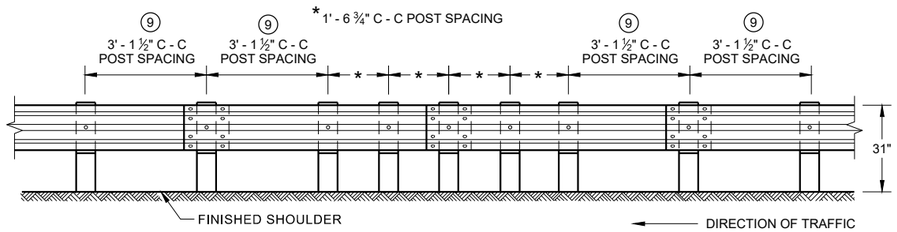
SDD 14B42 - 07a



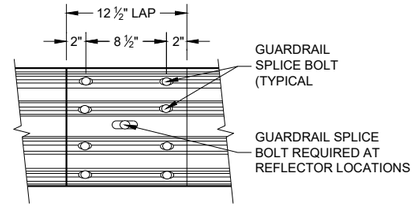
FRONT VIEW
POST SPACING STANDARD INSTALLATION



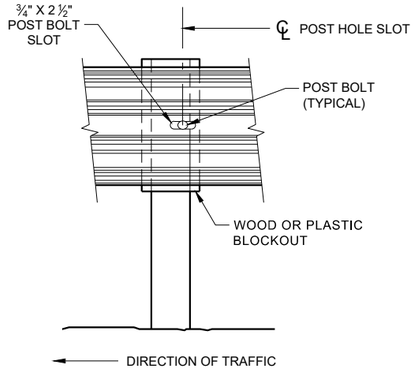
FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)



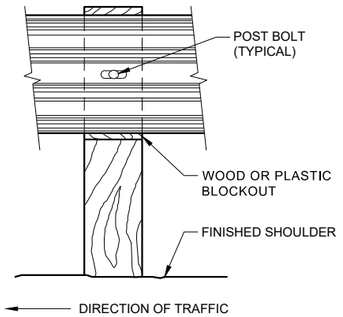
FRONT VIEW
QUARTER POST SPACING (QS)



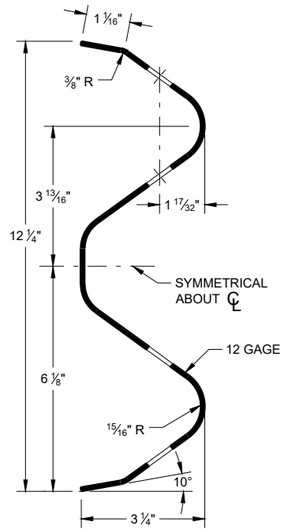
FRONT VIEW
MID-SPAN BEAM SPLICE



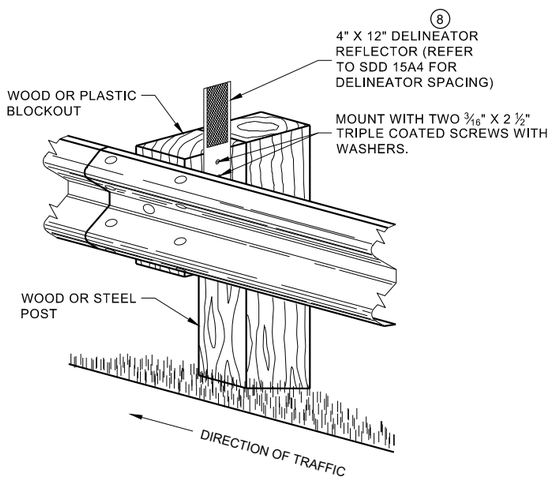
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION

GENERAL NOTES

⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

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

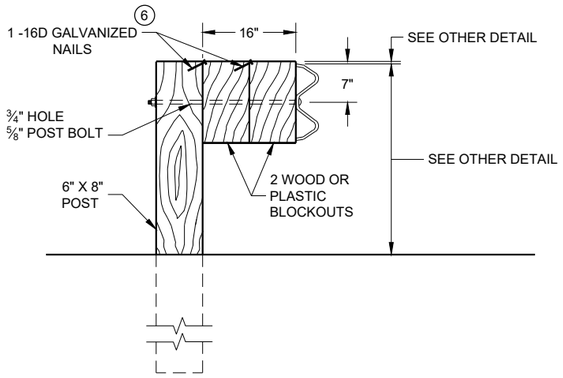
GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B42 - 07b
SDD 14B42 - 07b

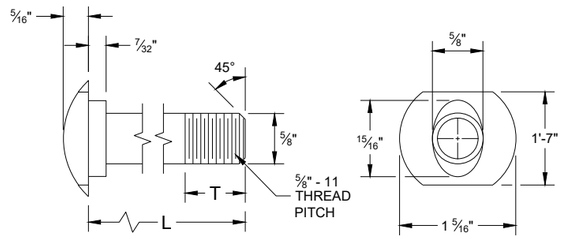


DETAIL FOR 16" BLOCKOUT DEPTH

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

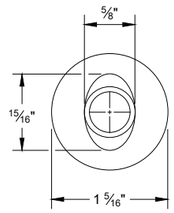
NOTE:

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

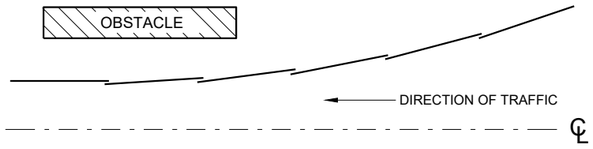


POST BOLT TABLE

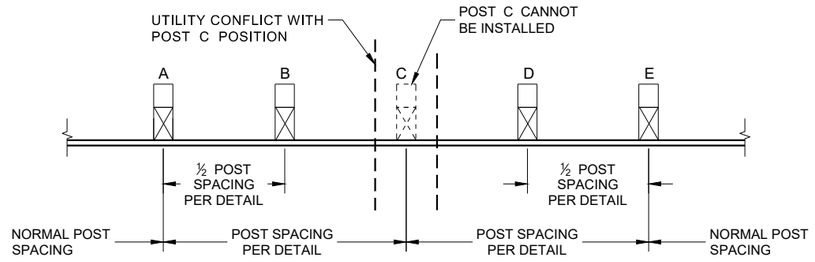
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



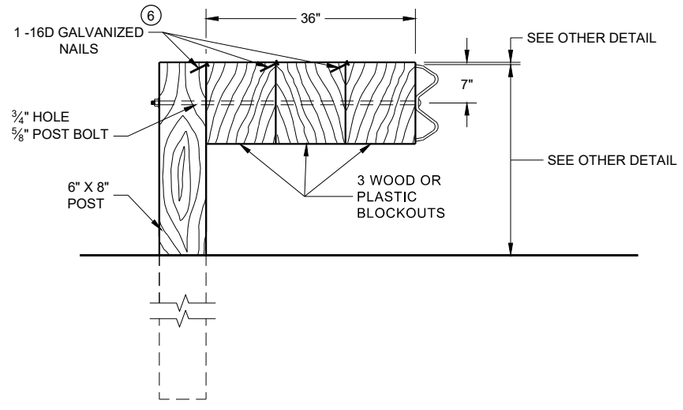
ALTERNATE BOLT HEAD



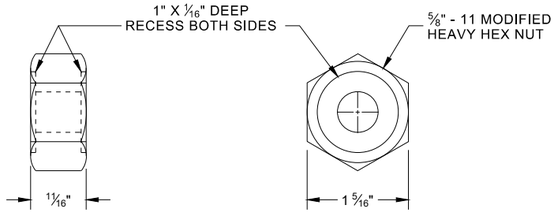
PLAN VIEW
BEAM LAPPING DETAIL



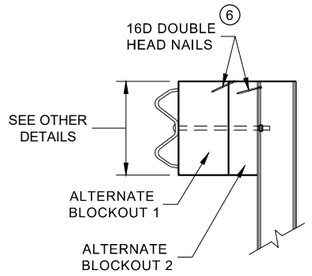
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



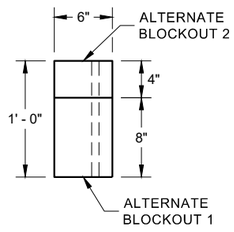
DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW



PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

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

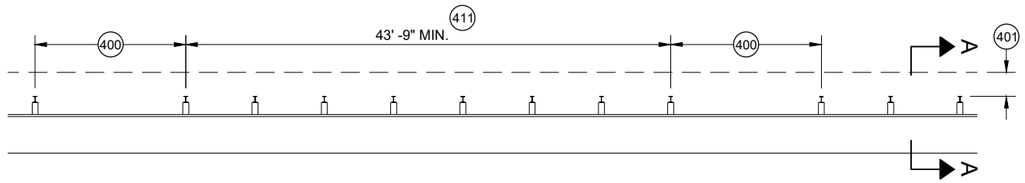
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

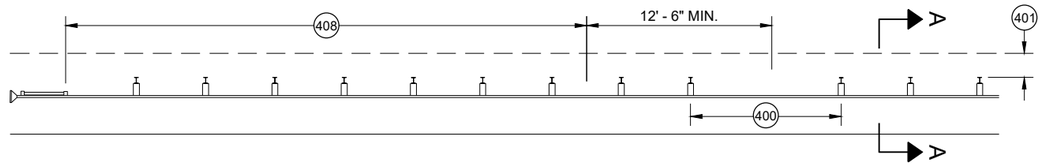
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

6

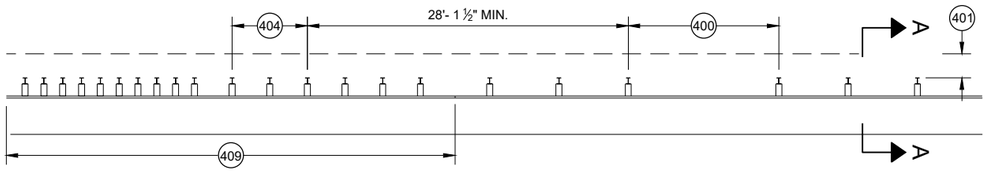
SDD 14B42 - 07c



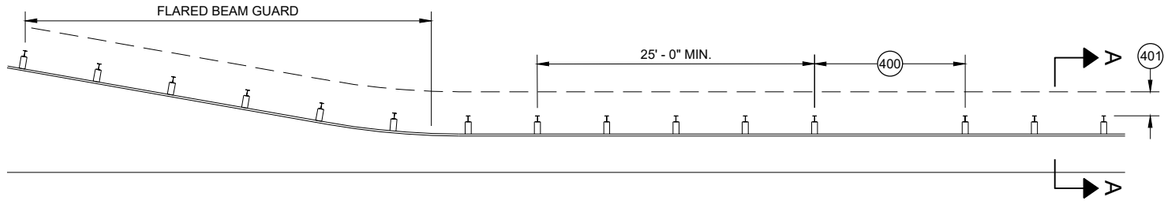
MISSING POST IN MGS GUARDRAIL



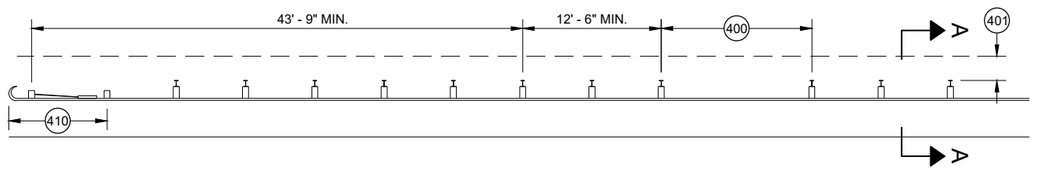
MISSING POST IN MGS GUARDRAIL NEAR EAT



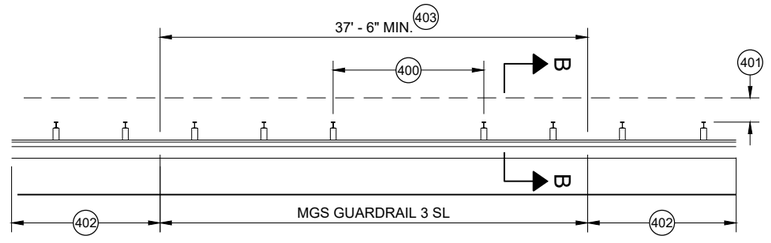
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

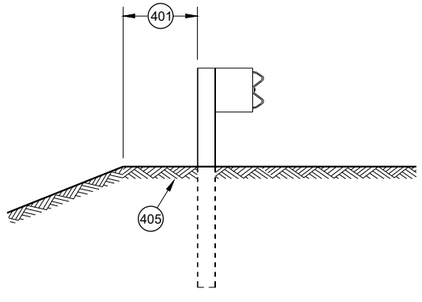


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

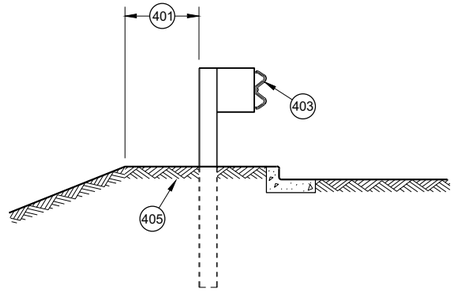


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL) 407

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



SECTION A - A 406



SECTION B - B 406

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

SDD 14B42 - 07d

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED

(C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.

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

(E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

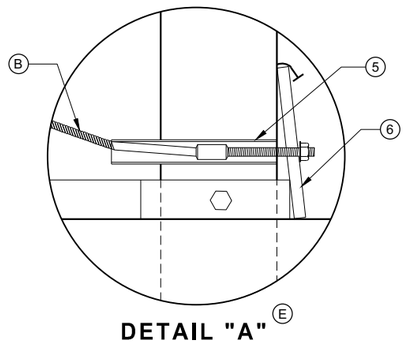
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

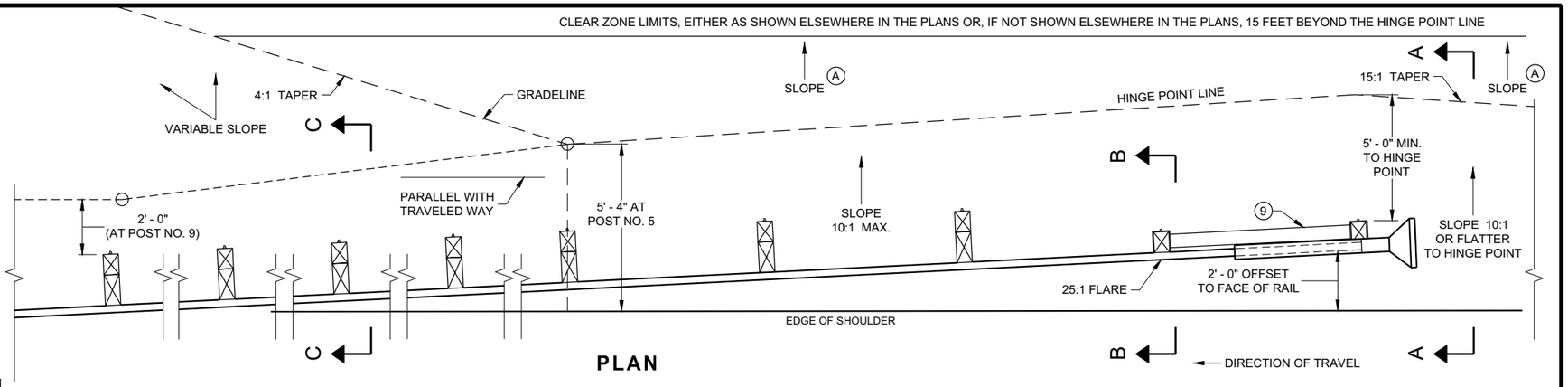
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

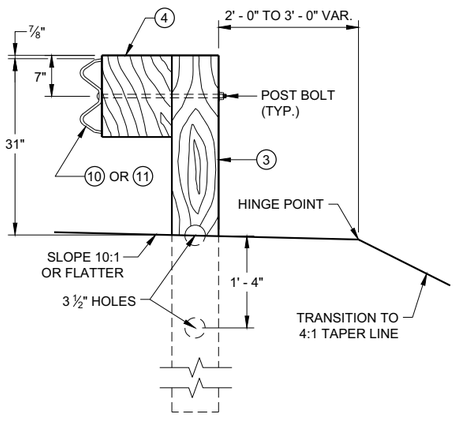
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

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

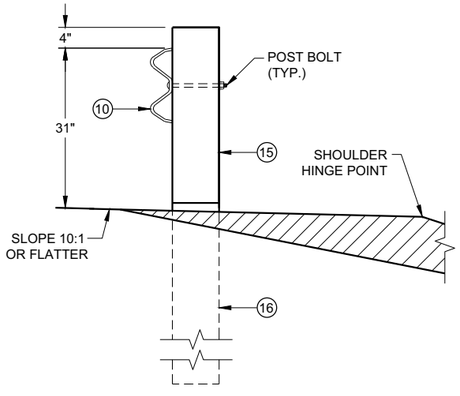


DETAIL "A" (E)

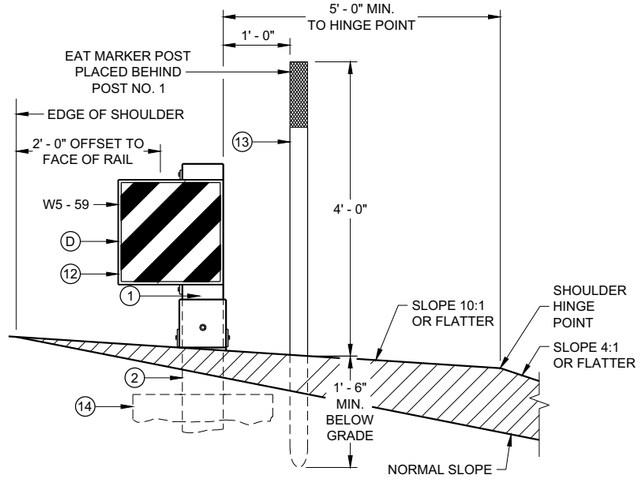




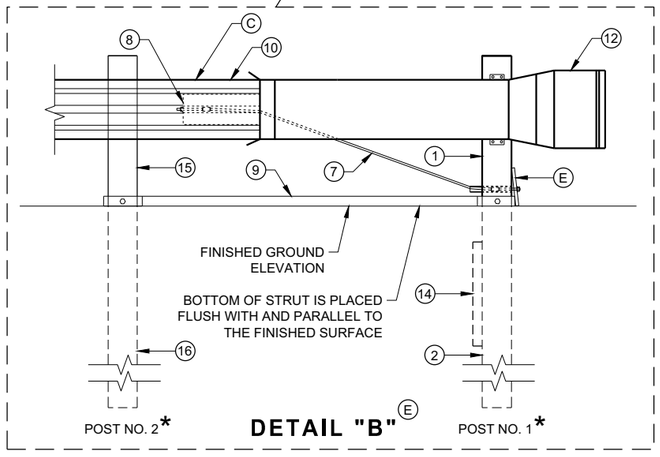
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*

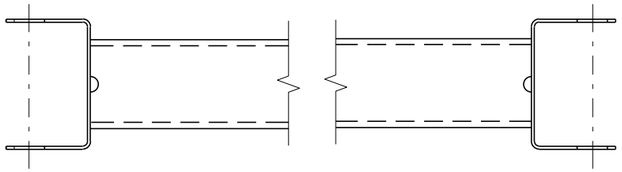


MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

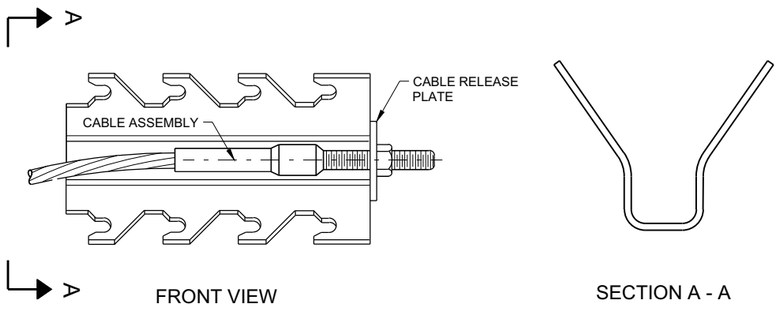
SDD 14B44 - 04a



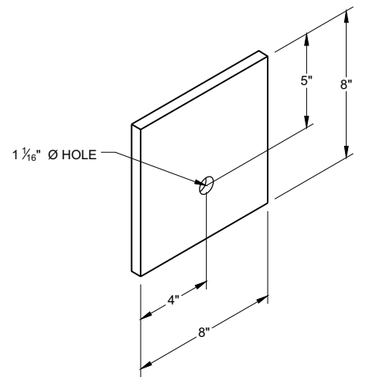
GENERIC GROUND STRUT ⑨ Ⓔ

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

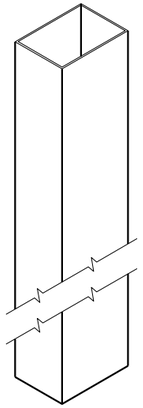
6

SDD 14B44 - 04b

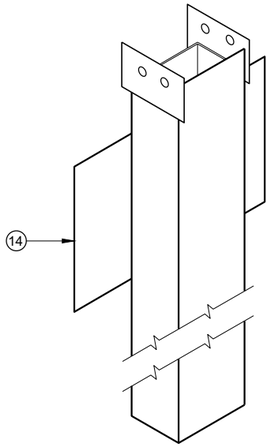
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

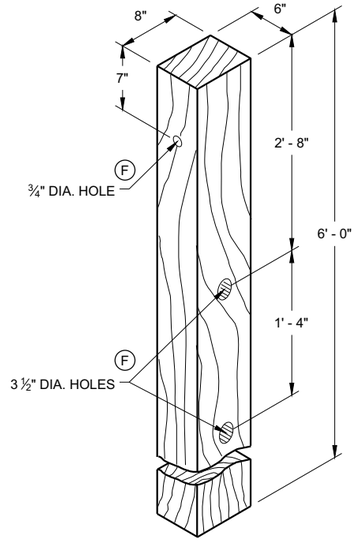
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



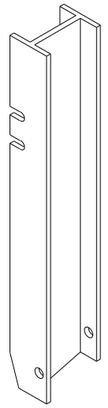
UPPER POST NO. 1 (1) (E)



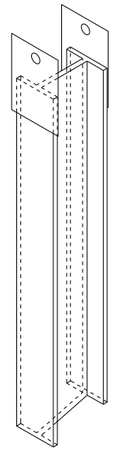
LOWER POST NO. 1 (2) (E)



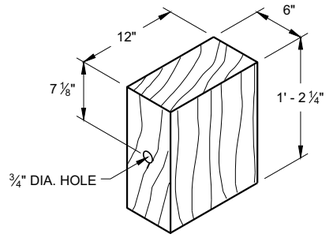
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



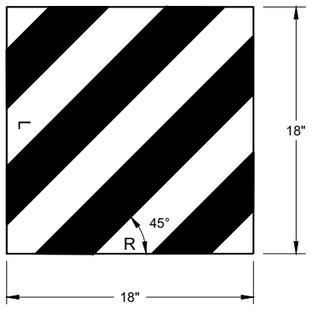
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

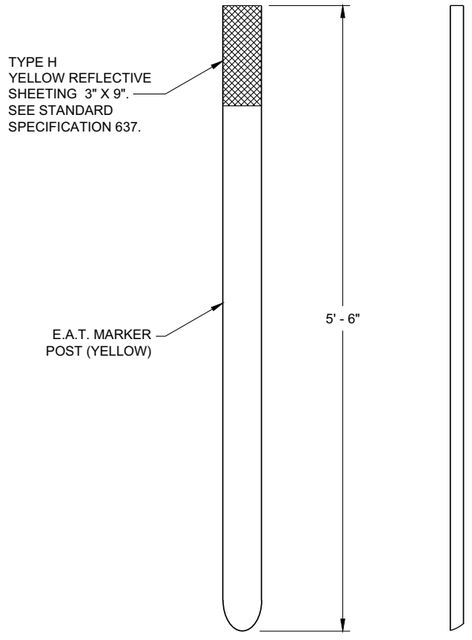


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



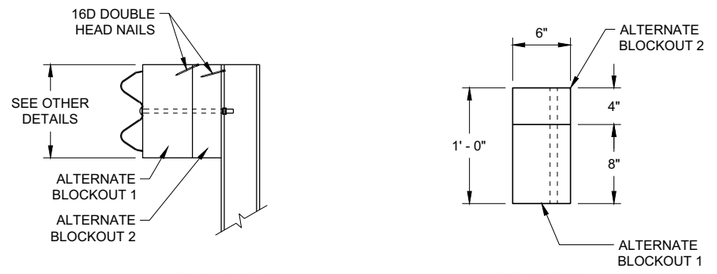
W5 - 59

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)

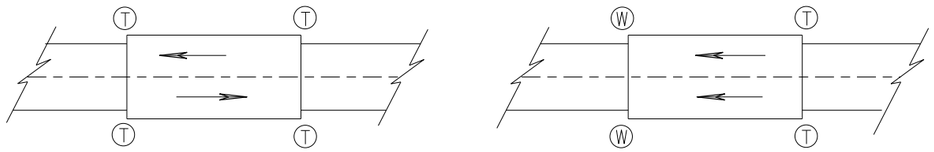
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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.

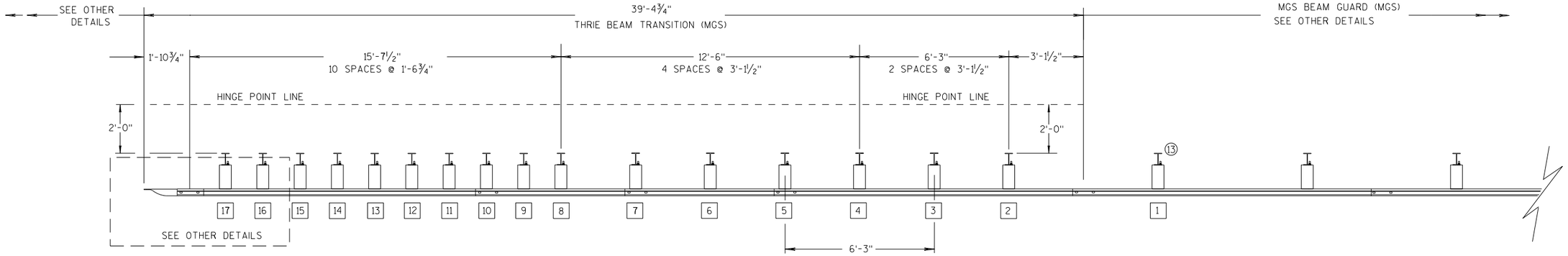
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

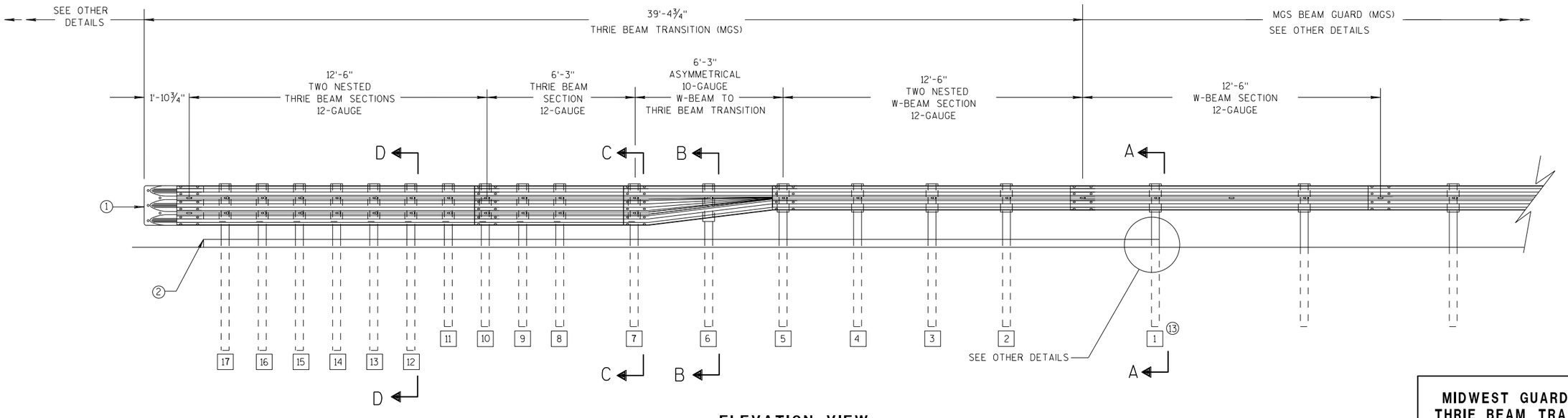
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

(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 TRANSPOF 95

6

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

6

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

GENERAL NOTES

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

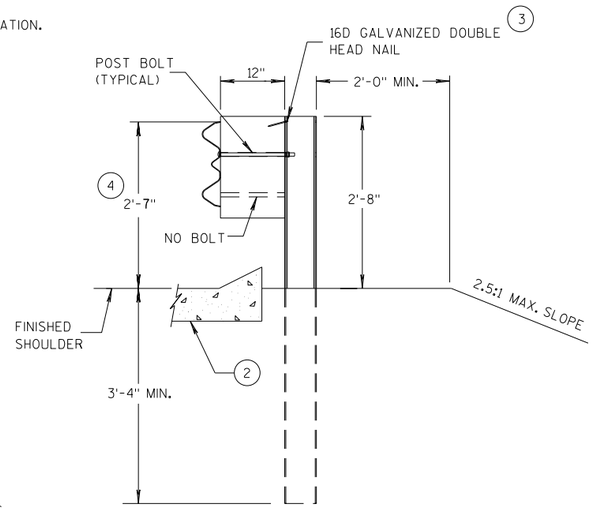
(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

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

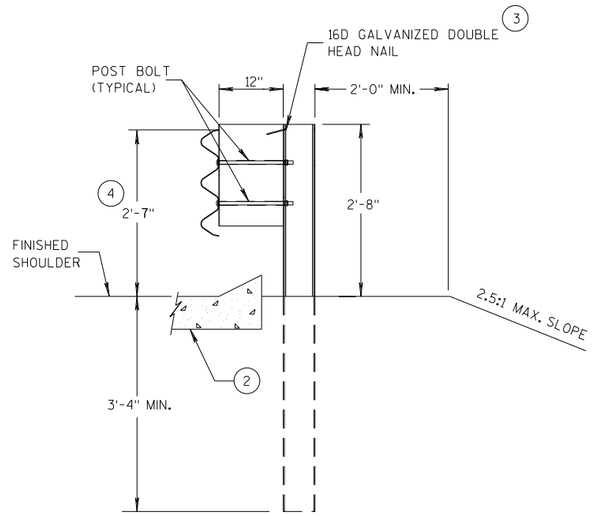
SECTION A-A (13)

POSTS 1-5



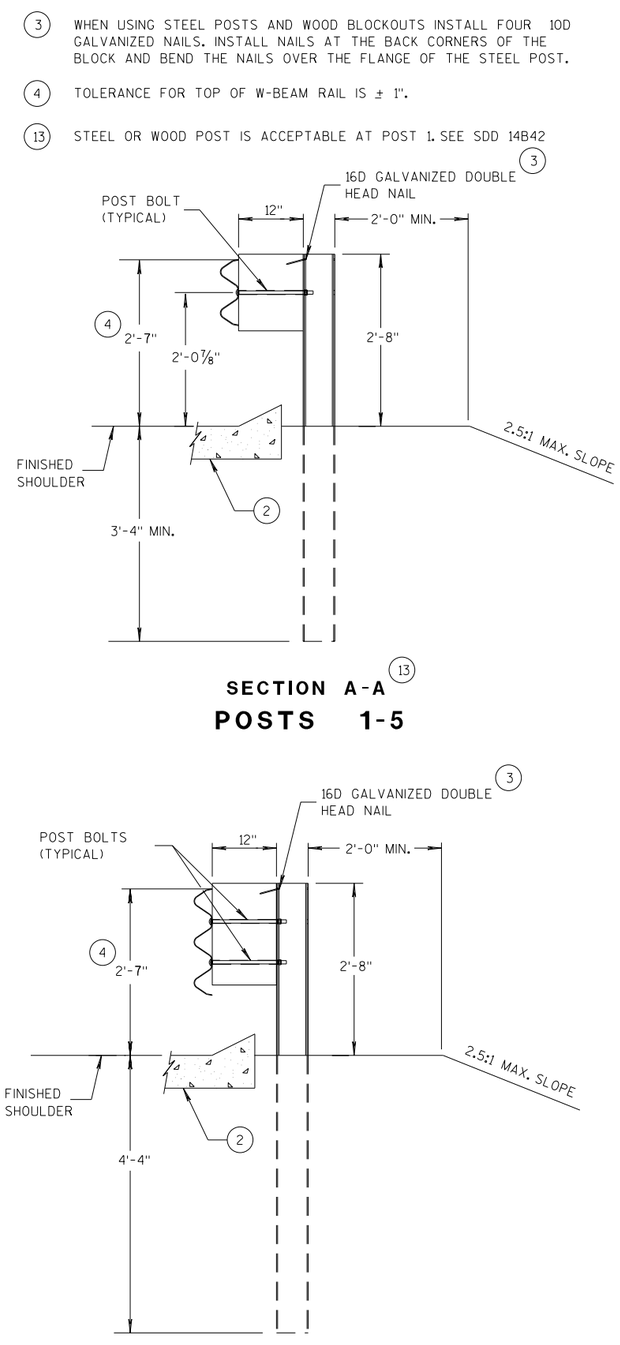
SECTION B-B

POST 6



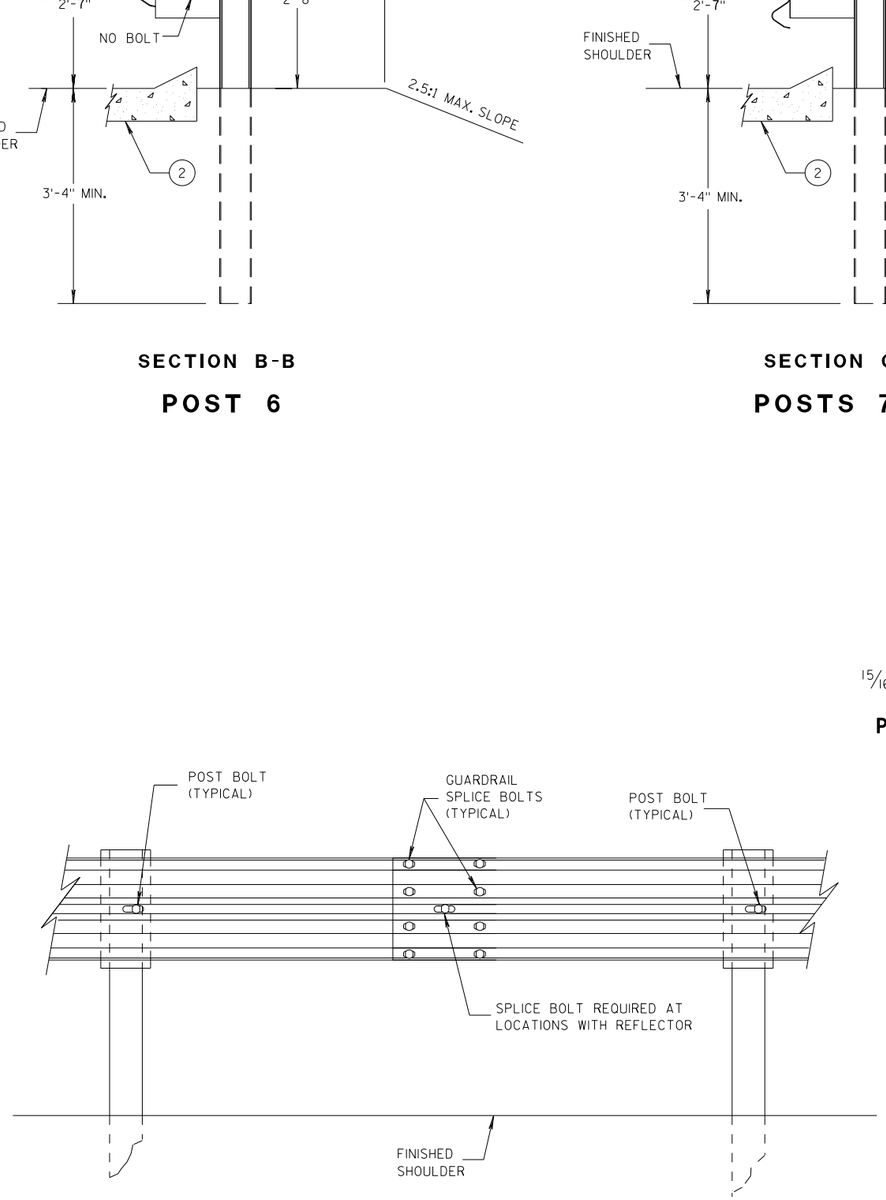
SECTION C-C

POSTS 7-11



SECTION D-D

POSTS 12-17



SPLICE DETAIL

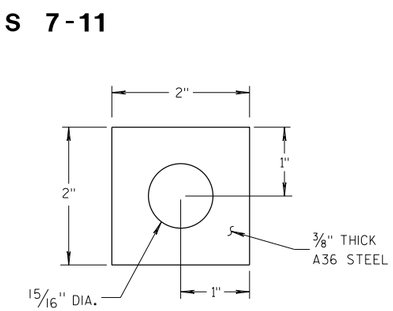
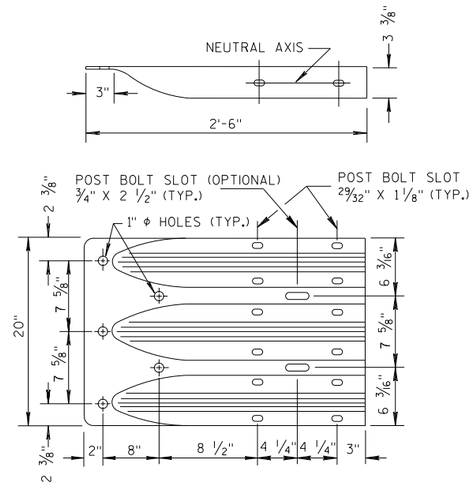
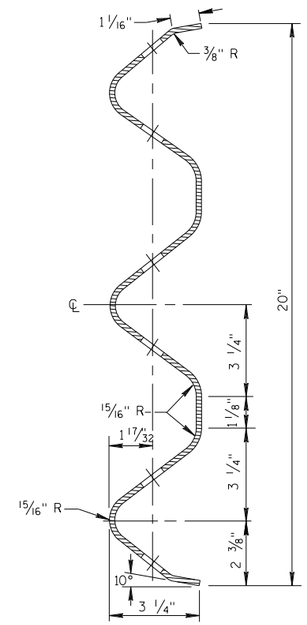


PLATE WASHER DETAIL



THRIE BEAM TERMINAL CONNECTOR



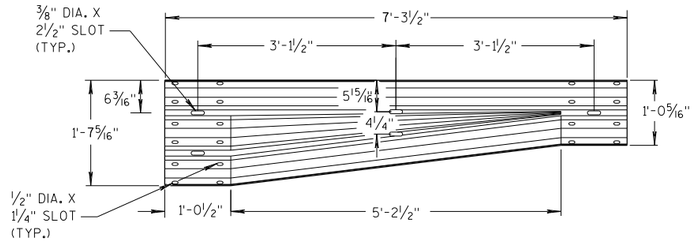
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

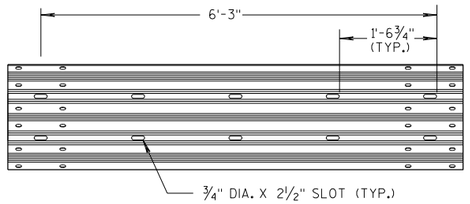
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORT

6

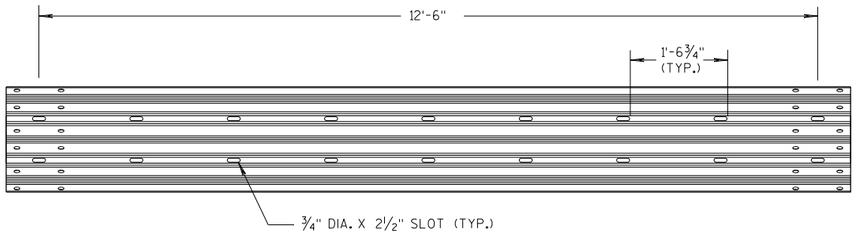
S.D.D. 14 B 45-5b



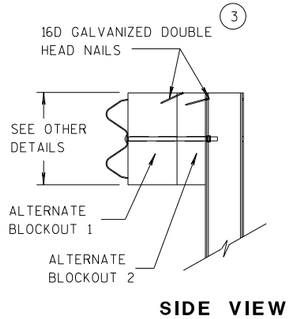
W-BEAM TO THRIE BEAM TRANSITION SECTION



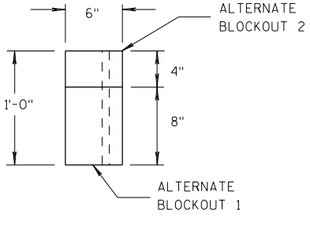
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

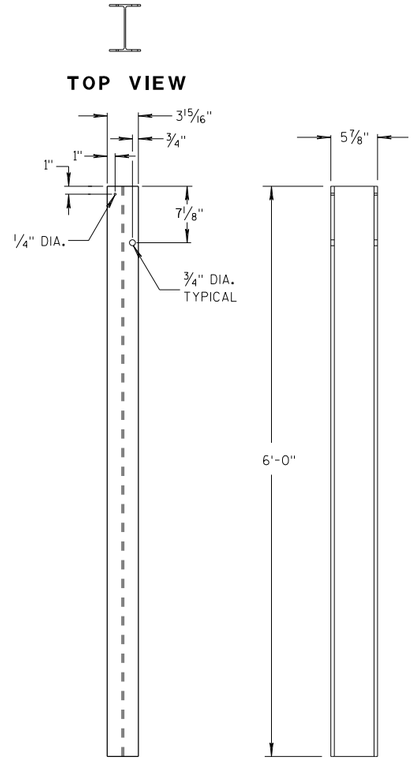


SIDE VIEW



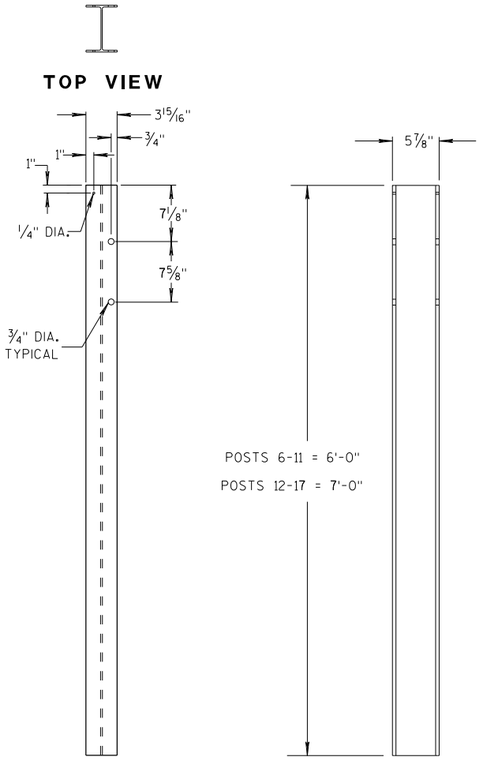
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



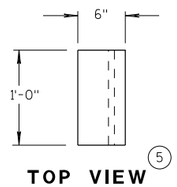
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

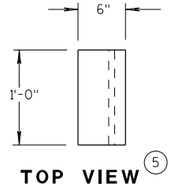


FRONT VIEW SIDE VIEW

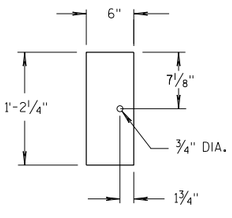
STEEL POSTS 6-17



TOP VIEW (5)

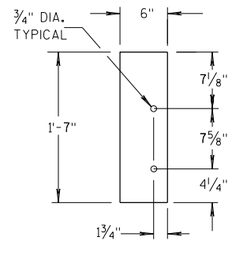


TOP VIEW (5)



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.

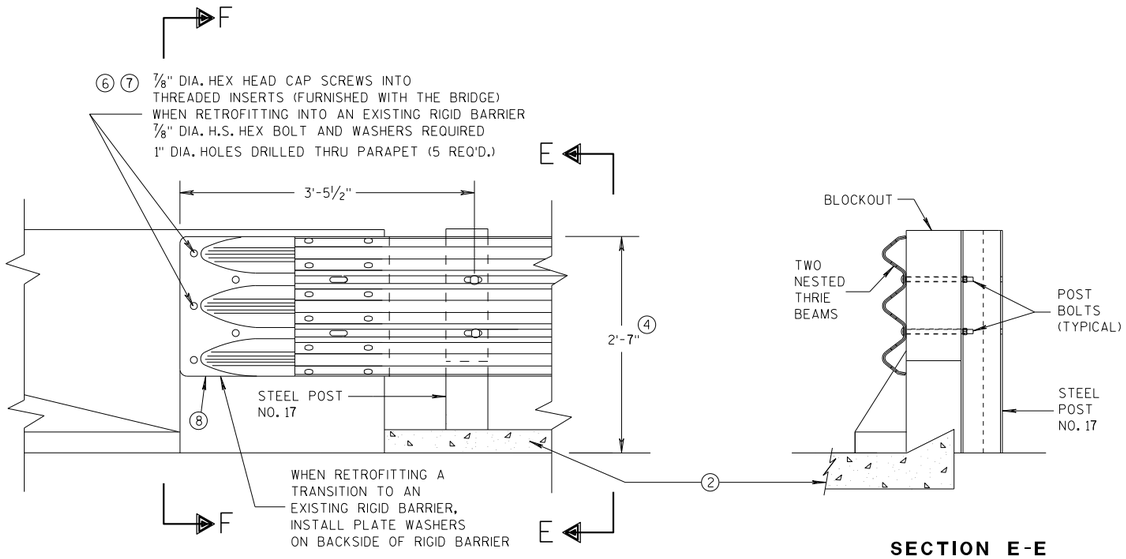
(5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

(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 97

6
S.D.D. 14 B 45-5c



FRONT VIEW

SECTION E-E

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

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

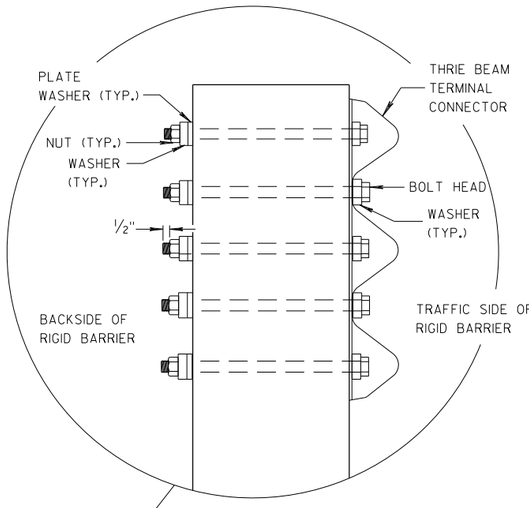
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

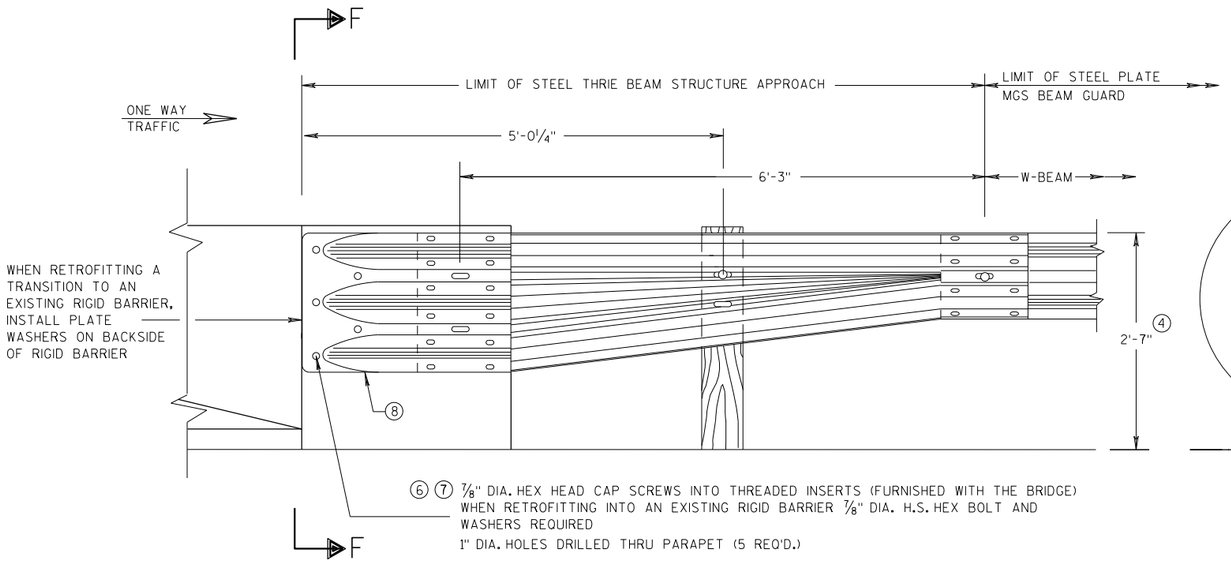
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

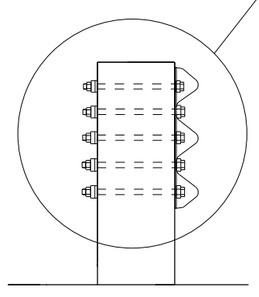
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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

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

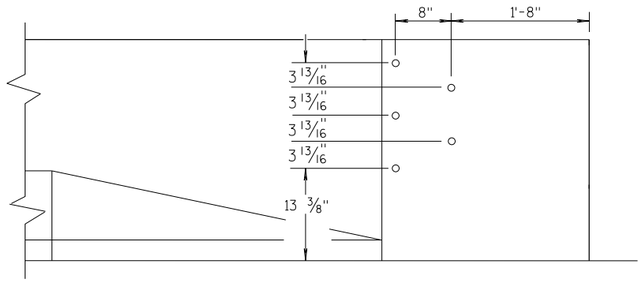




FRONT VIEW



SECTION F-F



DRILL HOLE LOCATION

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS D[UNIT SUPERVI[— NT
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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.

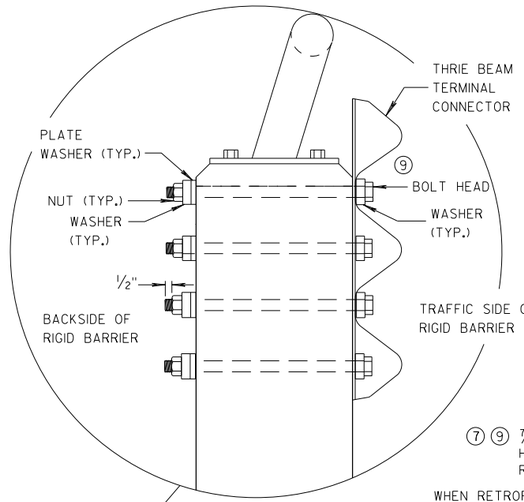
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

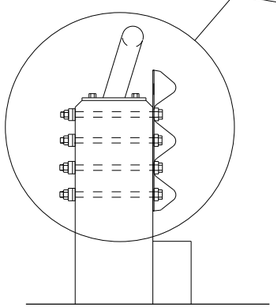
(6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(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.

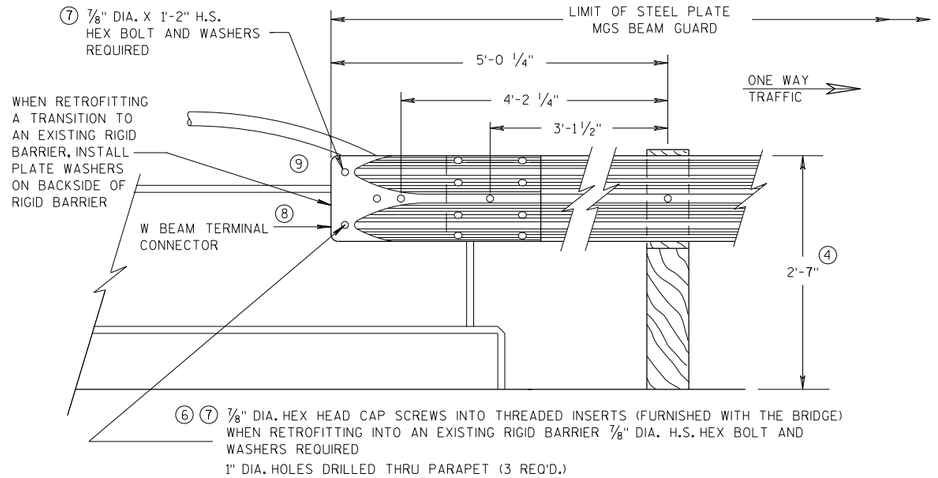
(8) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

(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.





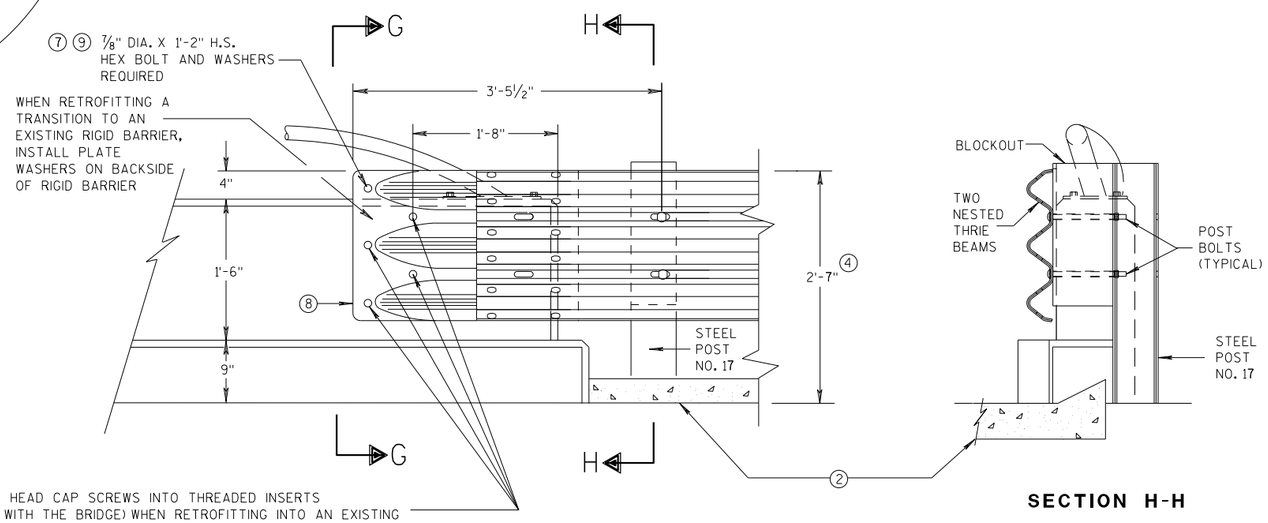
SECTION G-G



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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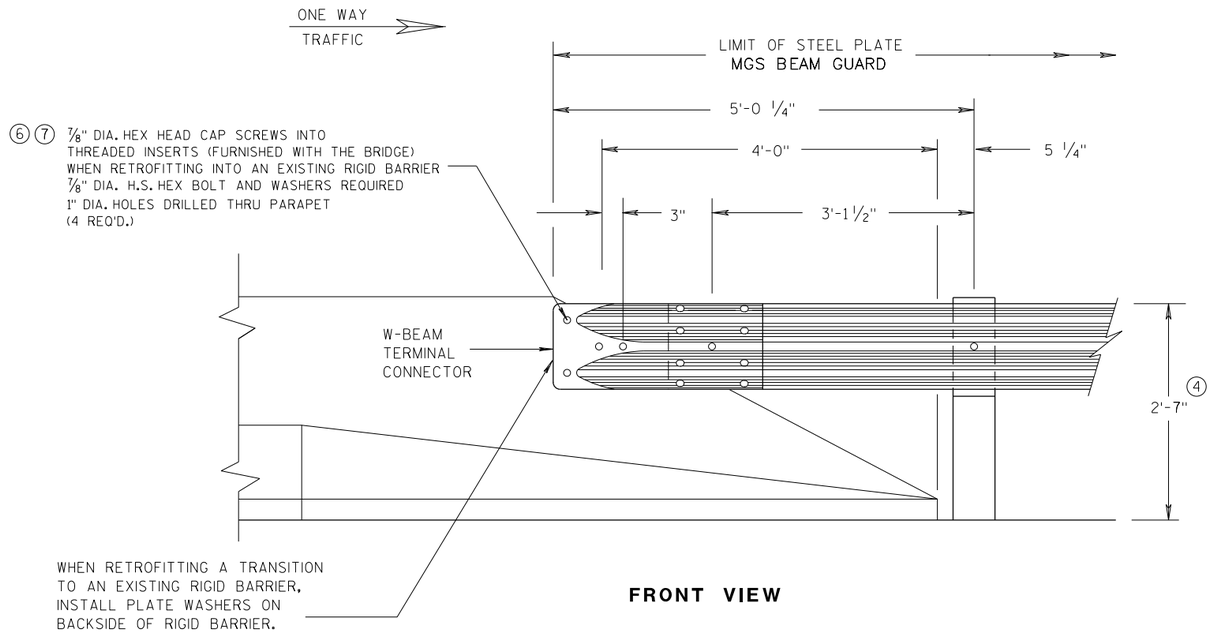

FRONT VIEW

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.

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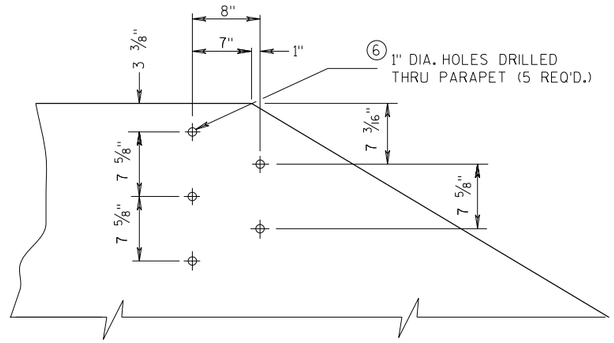
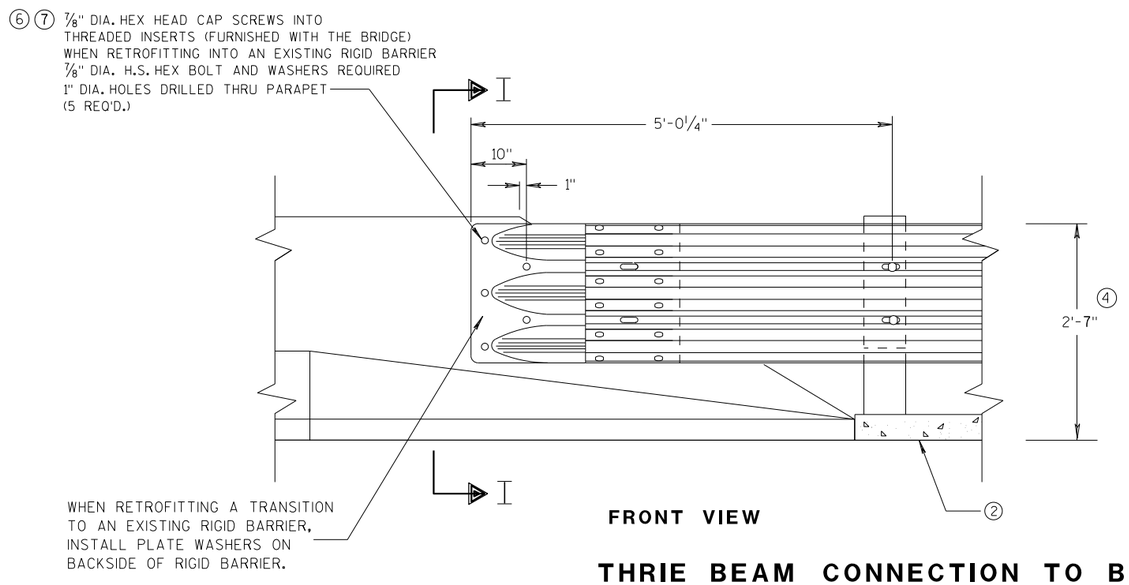
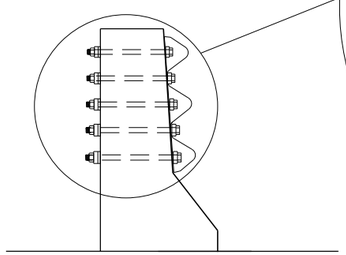


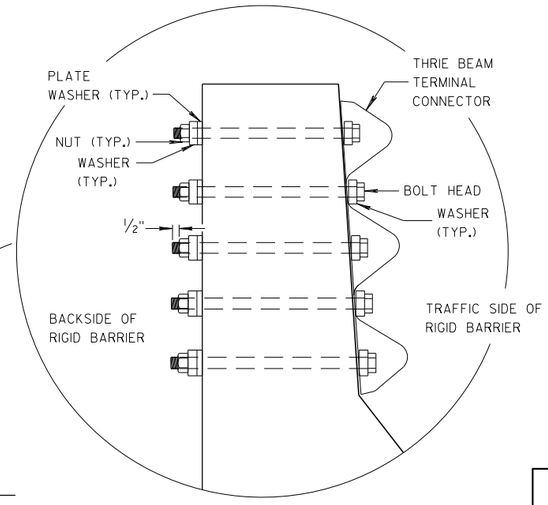
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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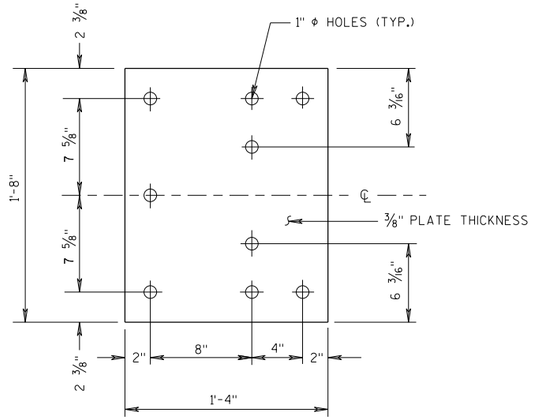
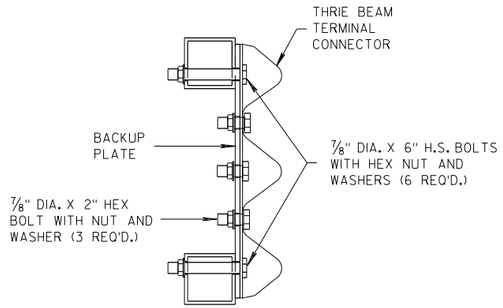


BACK-UP PLATE DETAIL

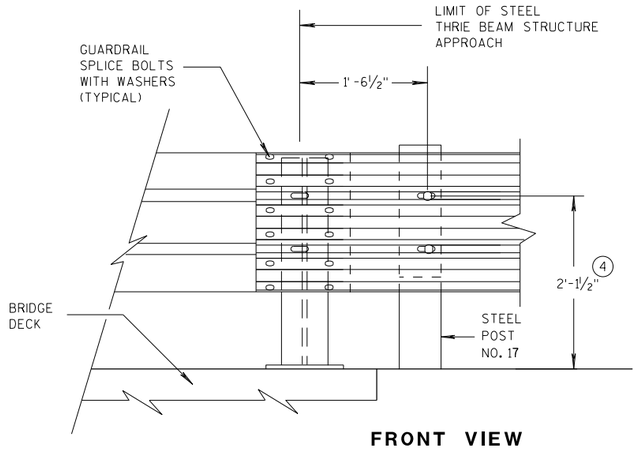


SECTION J-J

GENERAL NOTES

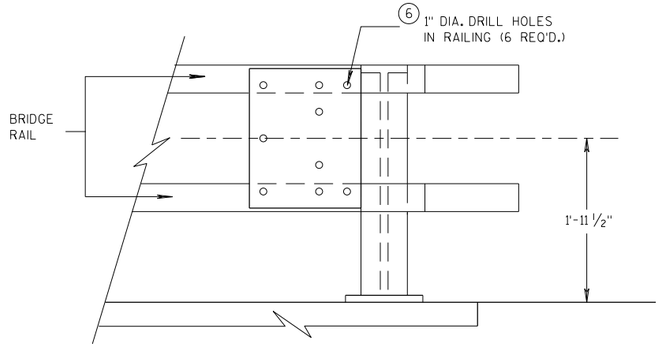
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

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

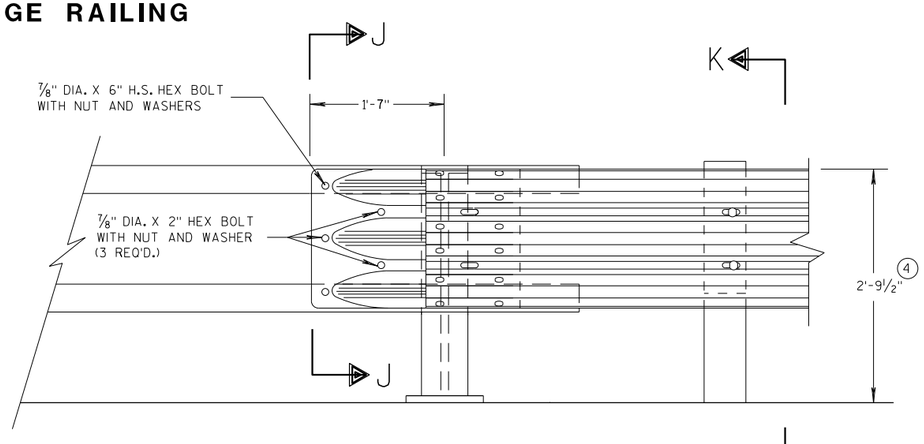


FRONT VIEW

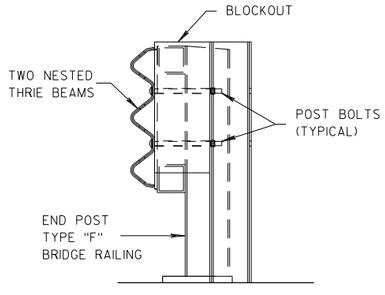
THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



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

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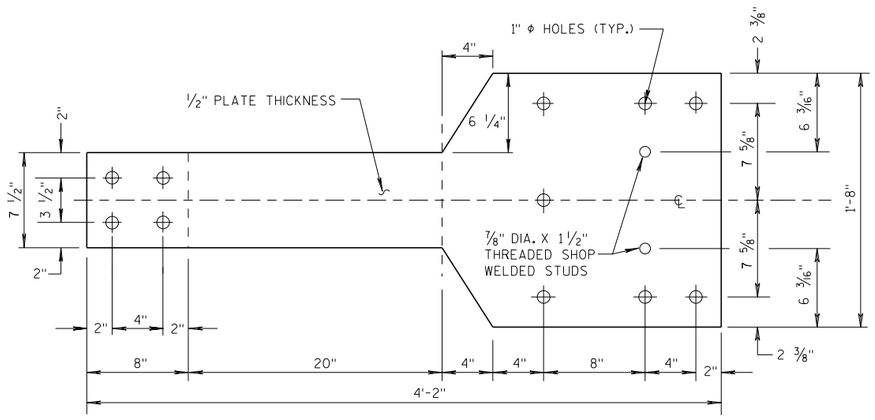
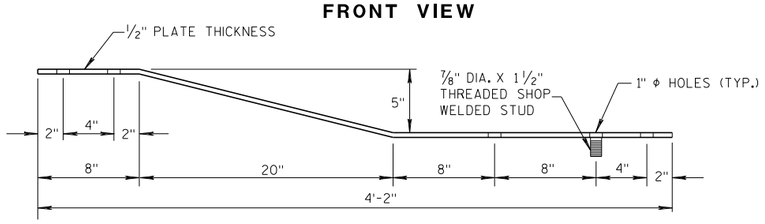
GENERAL NOTES

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

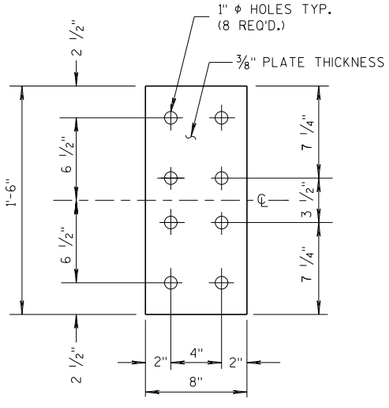


FRONT VIEW



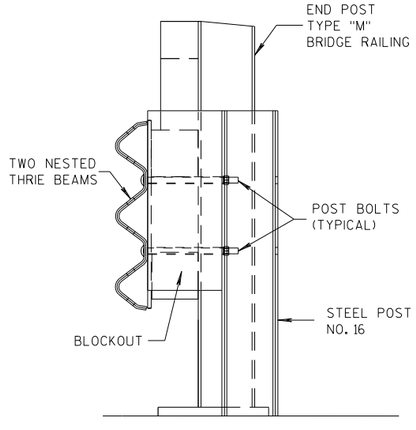
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

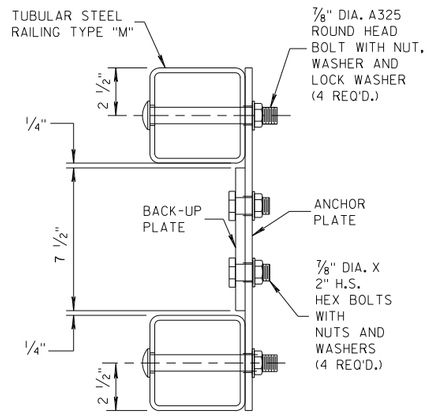


FRONT VIEW

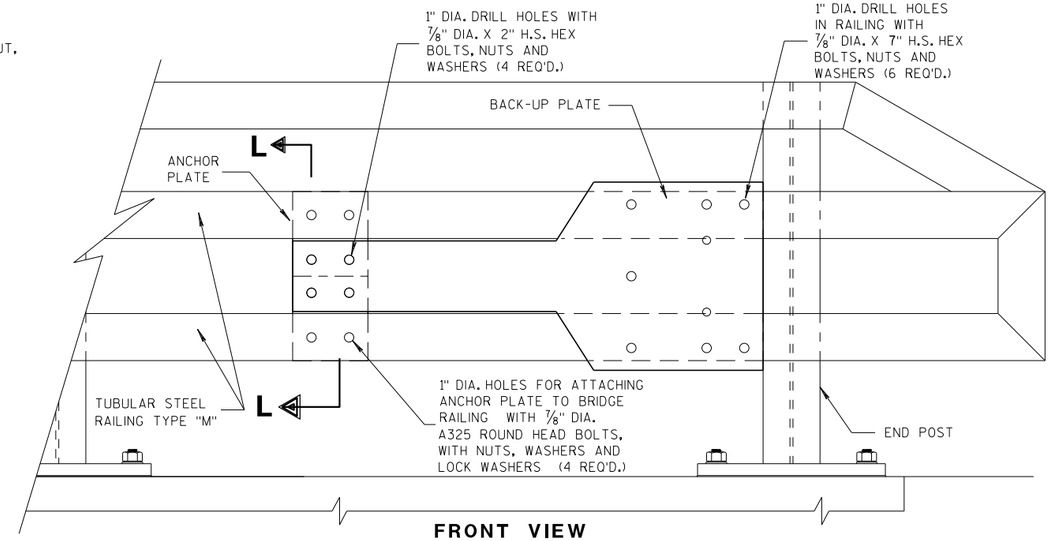
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

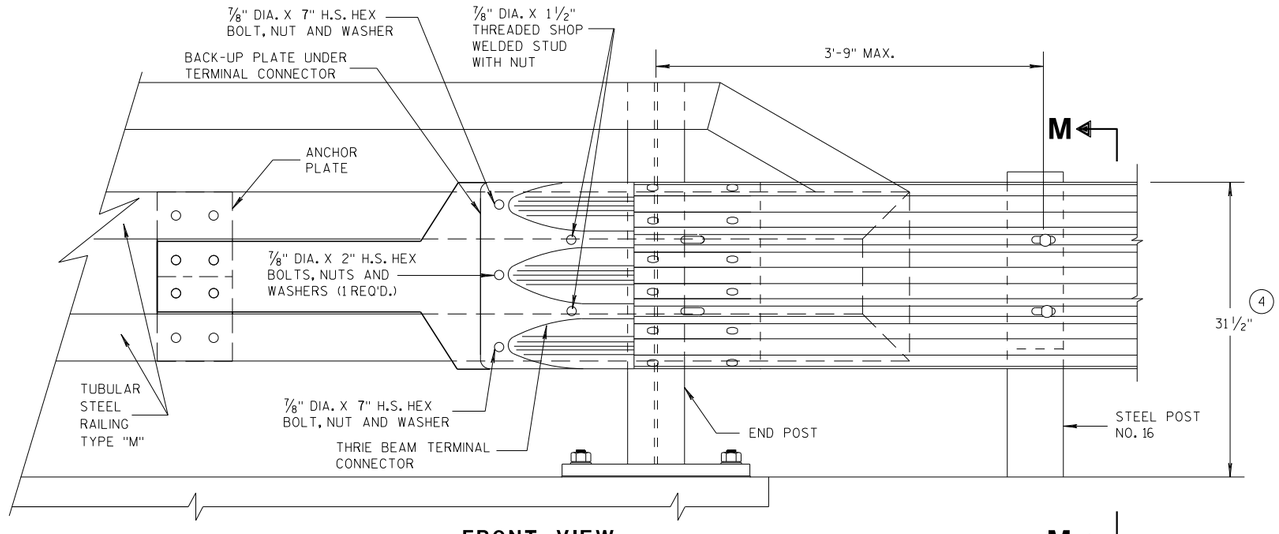


SECTION L-L

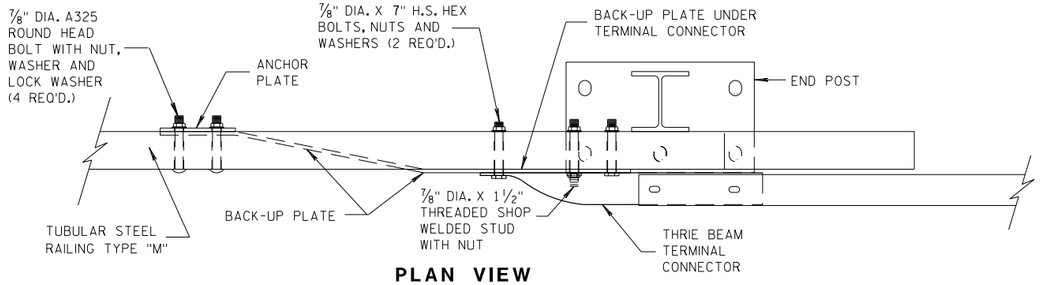


FRONT VIEW

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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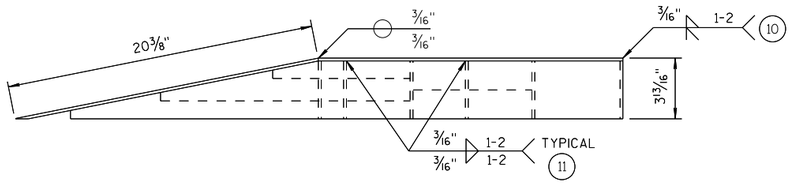

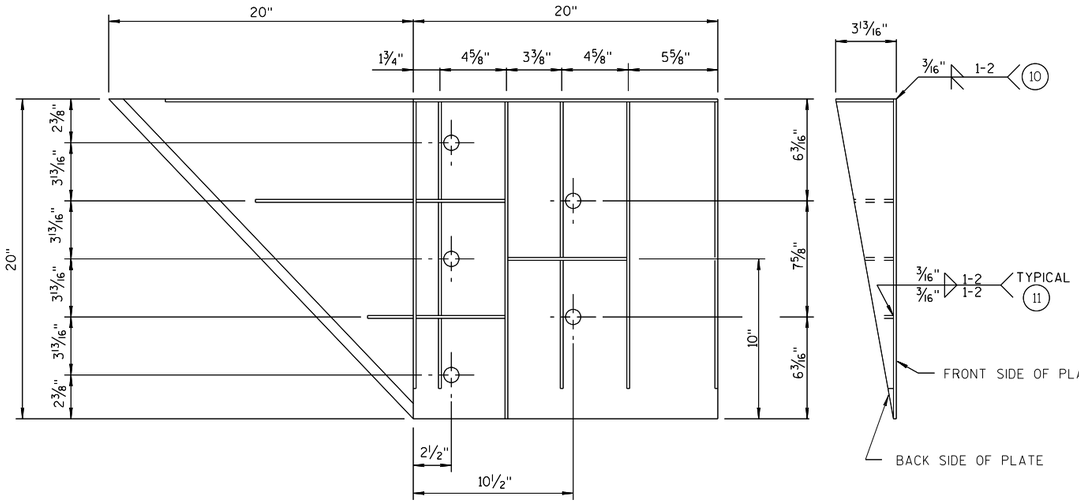

WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

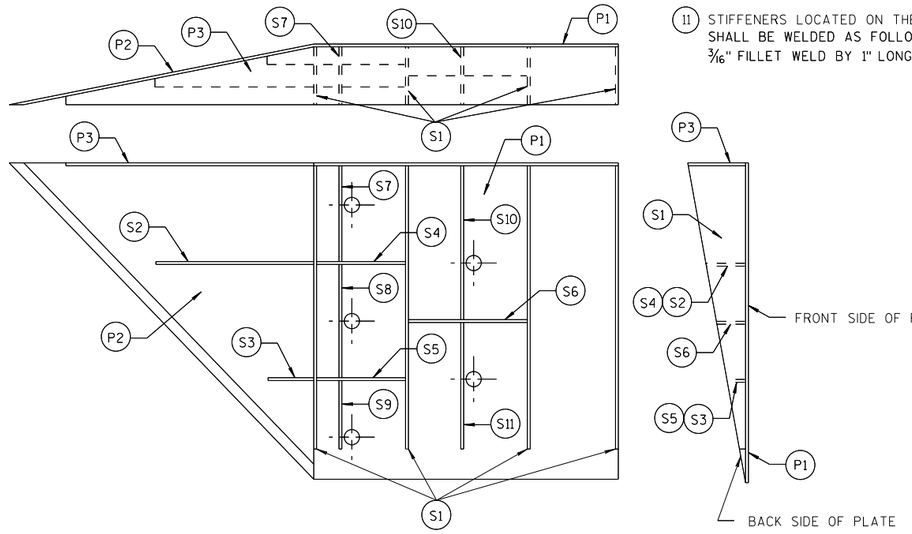

PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

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".

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
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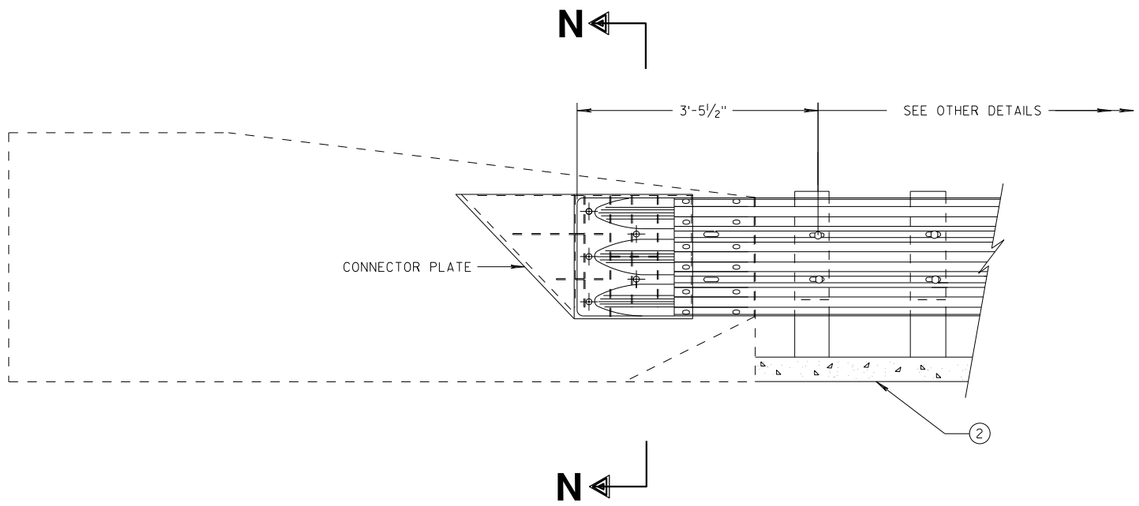
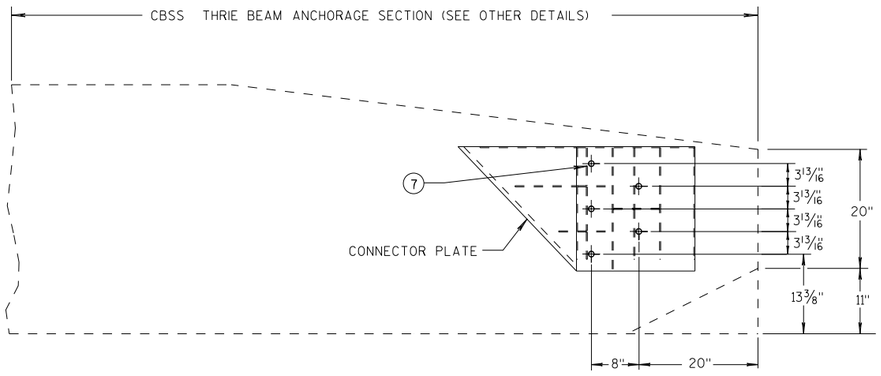


THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



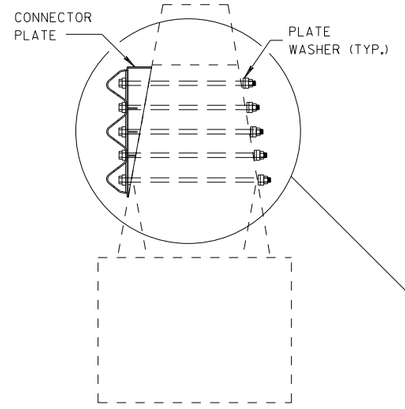
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

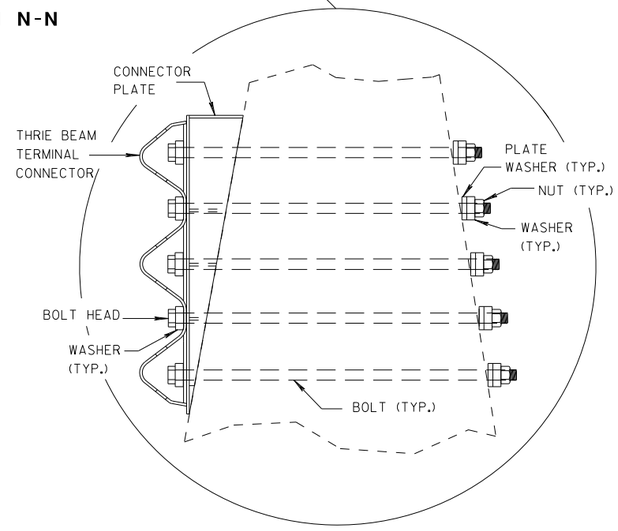
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(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)

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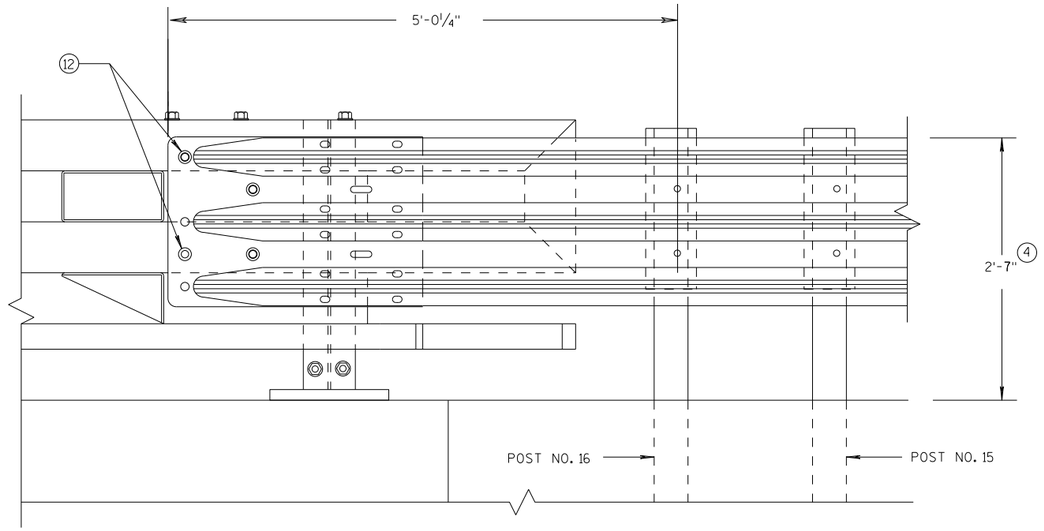
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS DI[illegible]NT
UNIT SUPERVIS

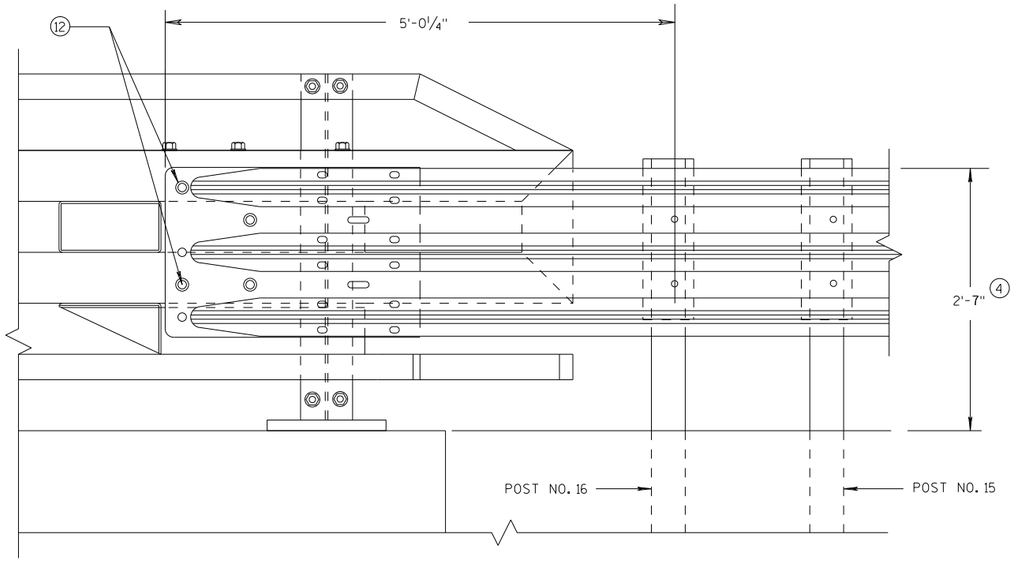
6

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
UNIT SUPERVIS

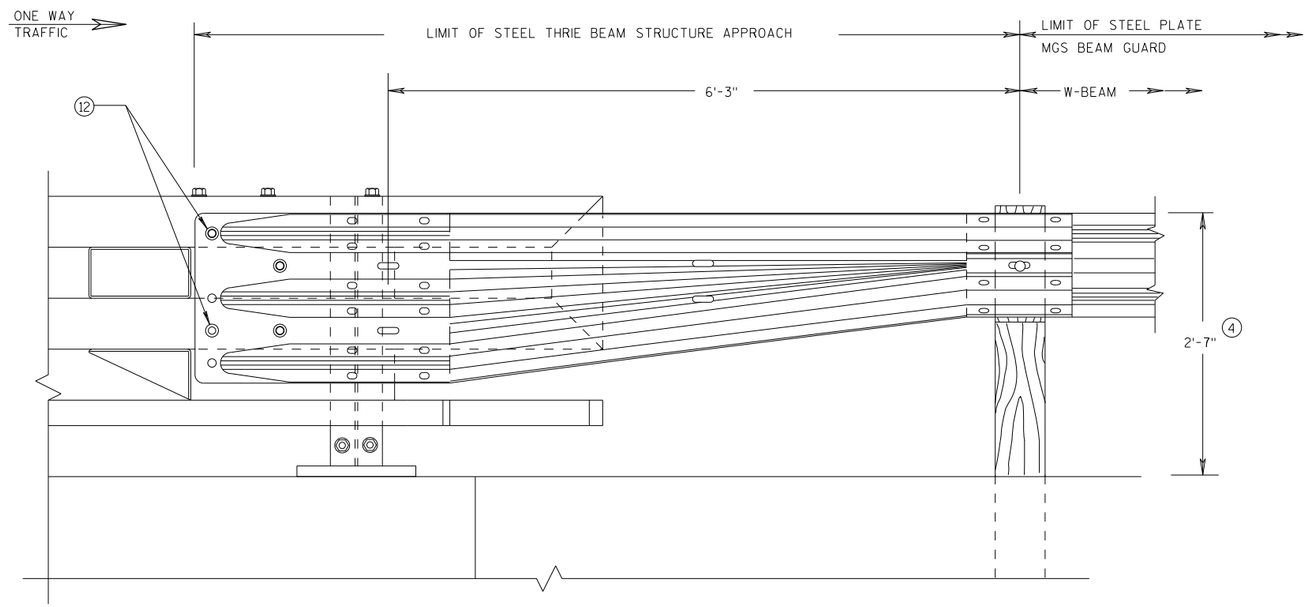
NT

6

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

6

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



FRONT VIEW

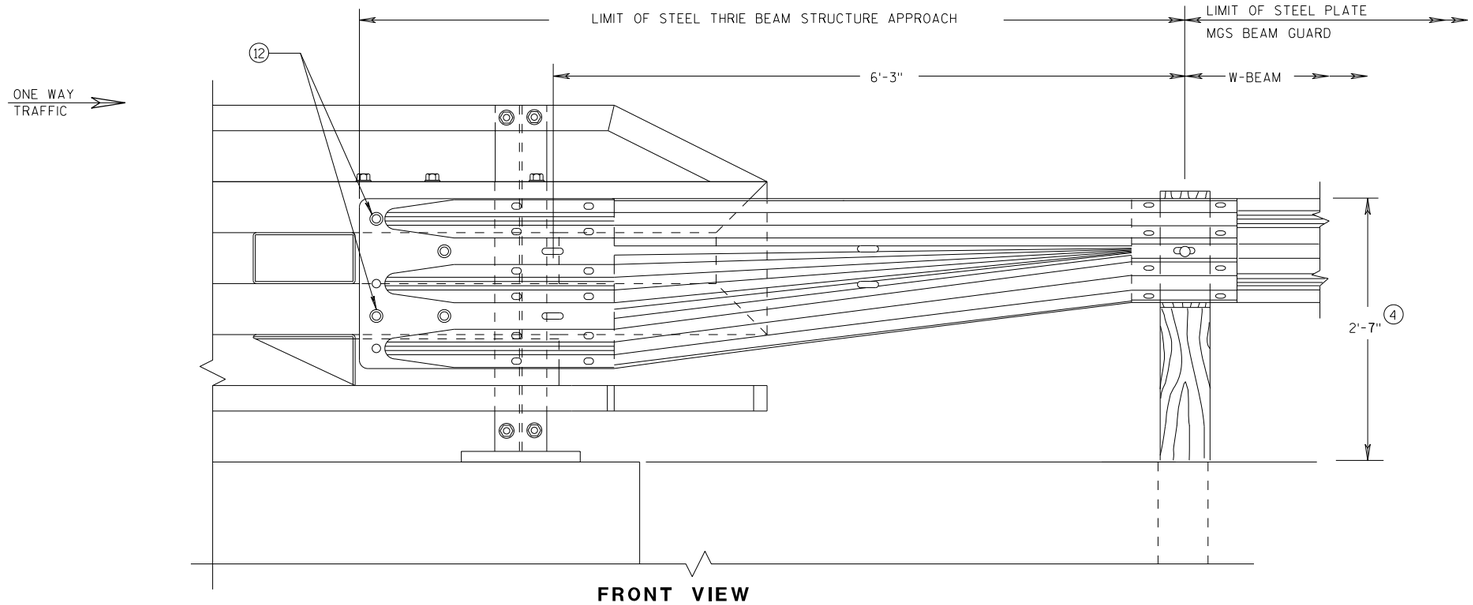
W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY3"

(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

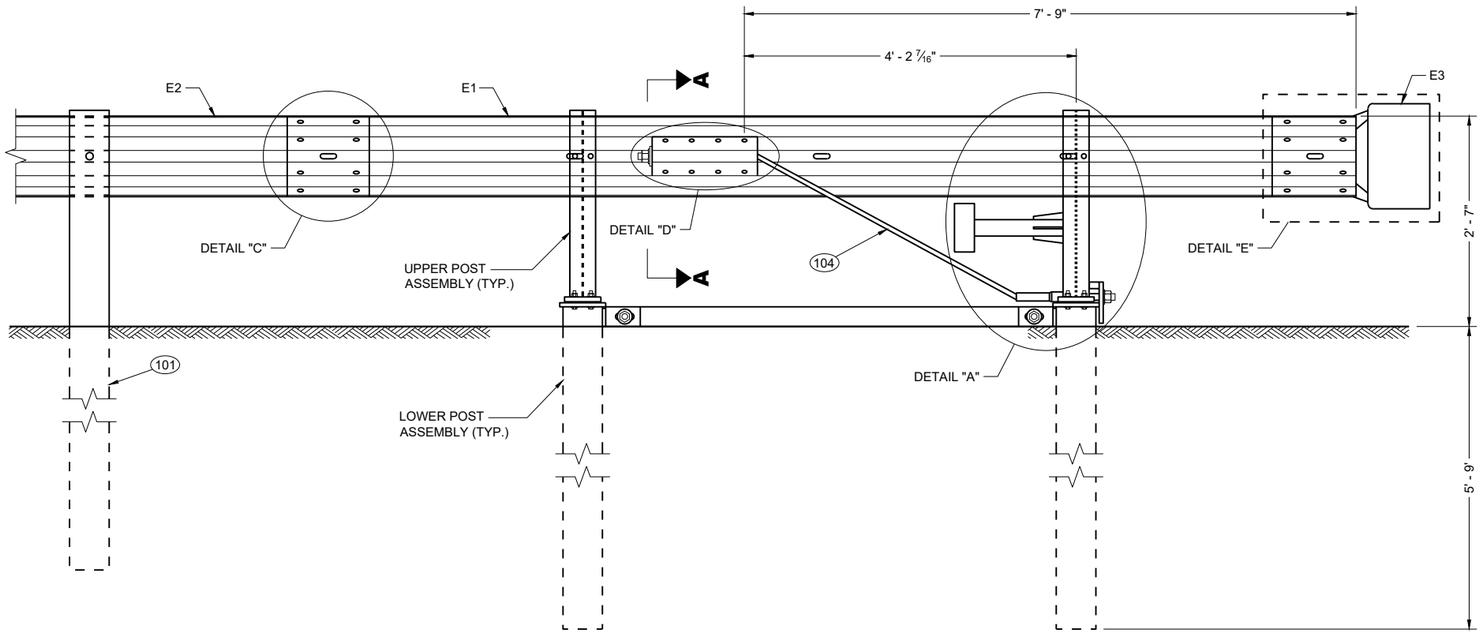
APPROVED
7/2018 DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D UNIT SUPERVIS
NT
FHWA

6

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

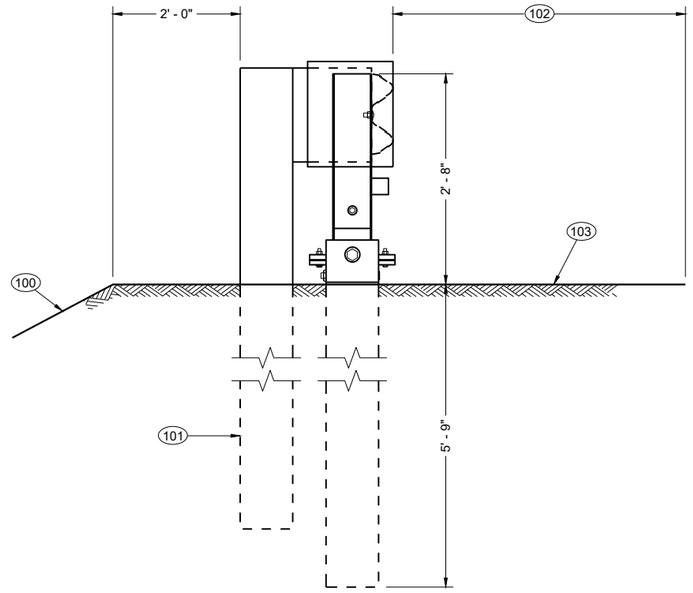
6

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



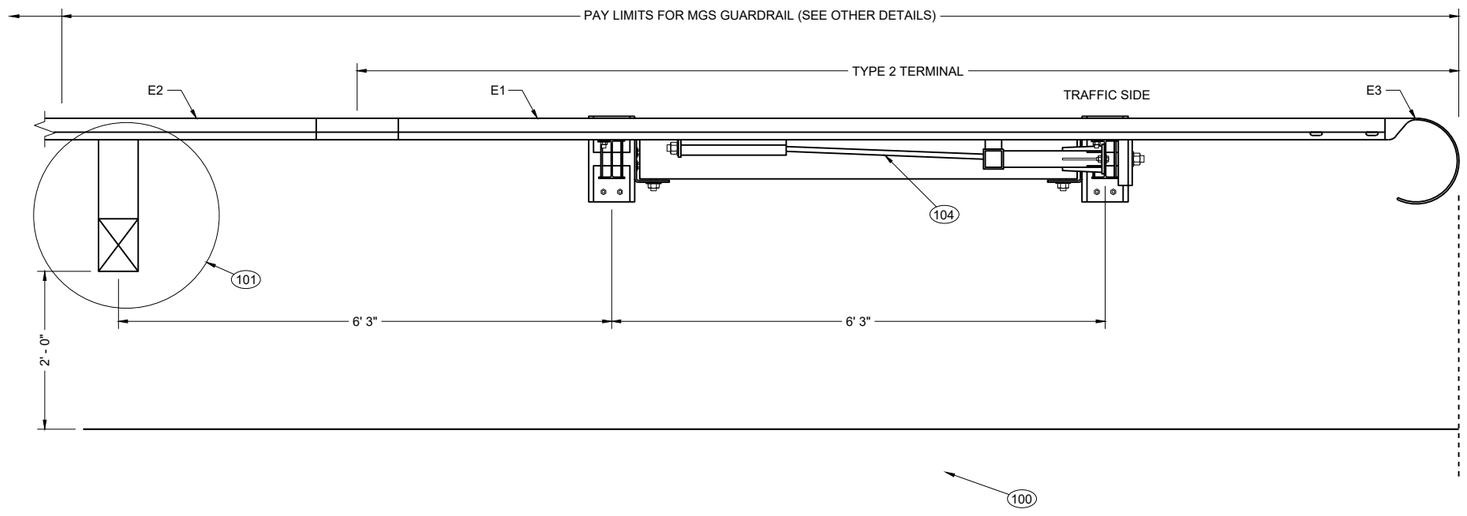
BACK VIEW

TYPE 2 TERMINAL



SIDE VIEW

TYPE 2 TERMINAL



TOP VIEW

TYPE 2 TERMINAL

GENERAL NOTES

SEE SDD 14B42 FOR MORE INFORMATION

(100) MAXIMUM SLOPE IS 2.5:1.

(101) SEE SDD 14B42 FOR MORE INFORMATION.

(102) SHOULDER

(103) MAXIMUM SLOPE IS 10:1.

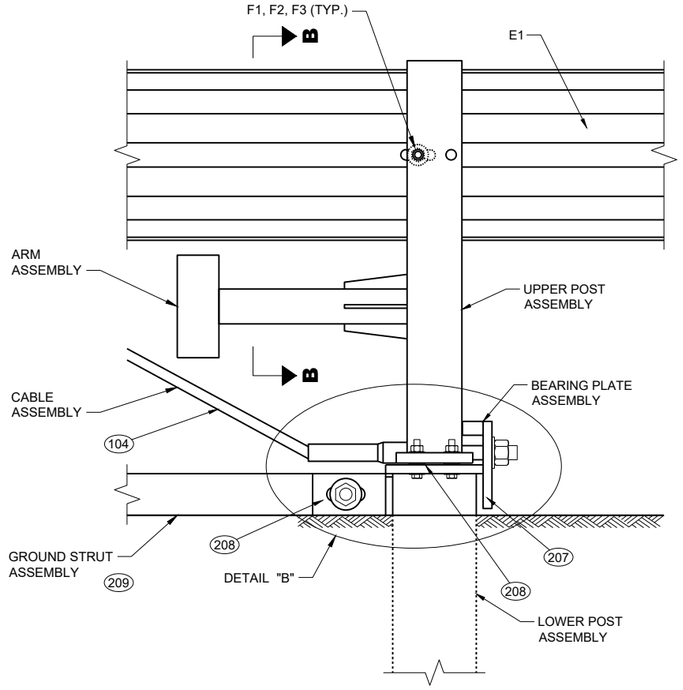
(104) AFTER ASSEMBLY, CABLE IS TO BE TIGHTENED WITHOUT TWISTING THE CABLE.

MIDWEST GUARDRAIL SYSTEM (MGS)
TYPE 2 TERMINAL

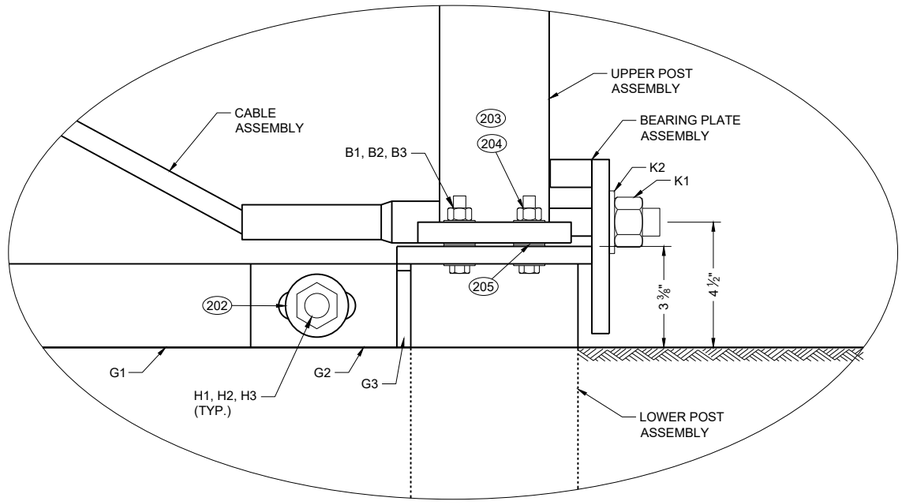
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

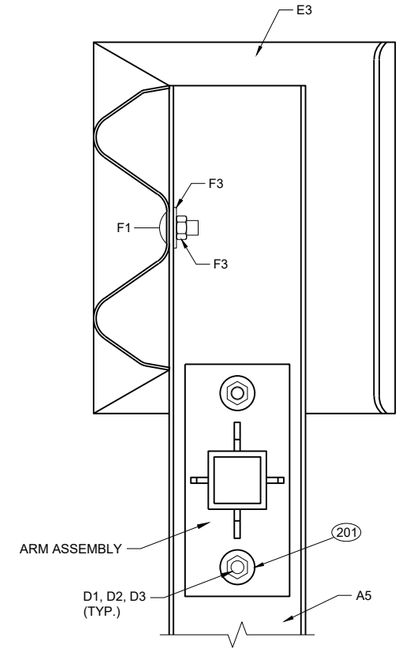
SDD 14B47-07a



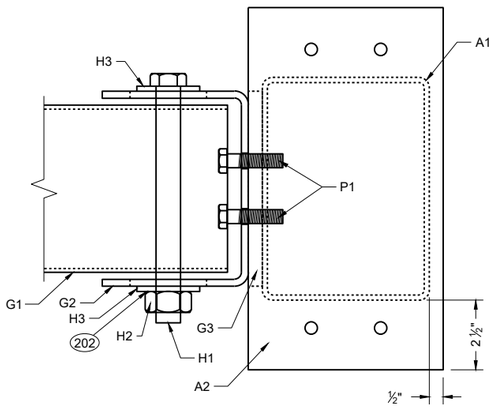
DETAIL "A"



DETAIL "B"

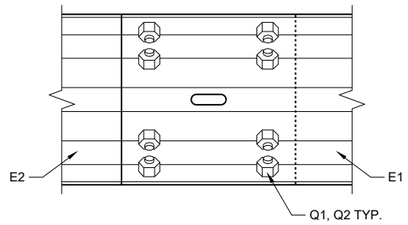


SECTION B - B



TOP VIEW

GROUND STRUT CONNECTION DETAIL



DETAIL "C"

GENERAL NOTES

200 INSTALL ONE WASHER UNDER BOLT HEAD AND RAIL AND ON WASHER BETWEEN NUT AND ANCHOR BRACKET ASSEMBLY.

201 INSTALL ONE WASHER UNDER BOLT HEAD AND UPPER POST ASSEMBLY AND ONE WASHER BETWEEN NUT AND ARM PLATE.

202 INSTALL ONE WASHER UNDER BOLT HEAD AND GROUND STRUT CONNECTOR AND ONE WASHER BETWEEN NUT AND GROUND STRUT CONNECTOR.

203 INSTALL ONE WASHER UNDER BOLT HEAD AND LOWER POST ASSEMBLY AND ONE WASHER BETWEEN NUT AND UPPER POST ASSEMBLY.

204 TORQUE VALUE IS BETWEEN 60 - 75 FT-LB.

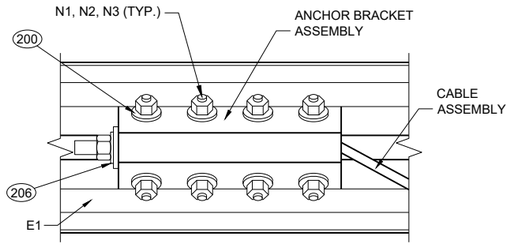
205 TWO WASHERS BETWEEN UPPER AND LOWER POST ASSEMBLY.

206 INSTALL ONE WASHER BETWEEN NUT AND ANCHOR BRACKET ASSEMBLY.

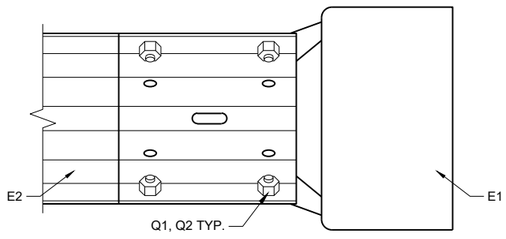
207 NO MATERIAL IS TO BE PLACED AGAINST THE VERTICAL FACES OF BEARING PLATE.

208 PREVENT OR REMOVE MATERIALS THAT BLOCK ACCESS TO BOLTS FOR POST ASSEMBLIES AND GROUND STRUT.

209 PREVENT OR REMOVE MATERIALS THAT IMPEDE REMOVAL OF GROUND STRUT.



DETAIL "D"



DETAIL "E"

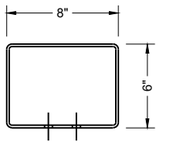
MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

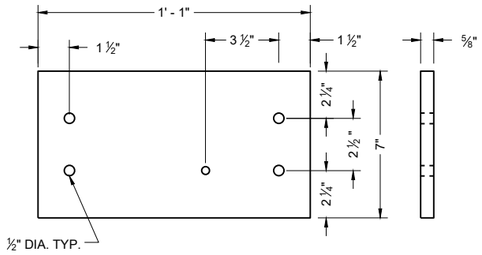
6
SDD 14B47-07b

GENERAL NOTES

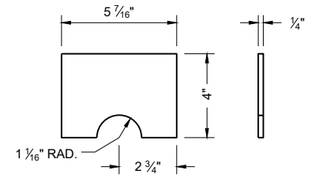
(300) TAP FOR 1/2" AFTER GALVANIZATION



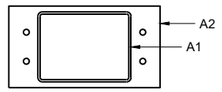
TOP VIEW



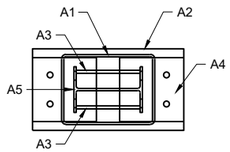
LOWER PLATE (A2)

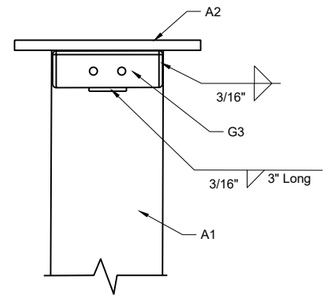


POST GUSSET (A3)

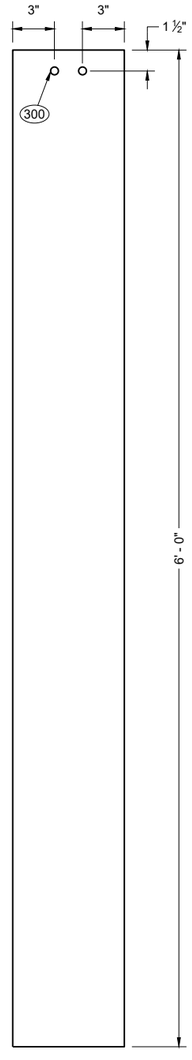


PLAN VIEW



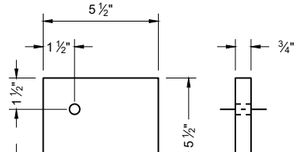


WELDING DETAIL
G3 AND A1

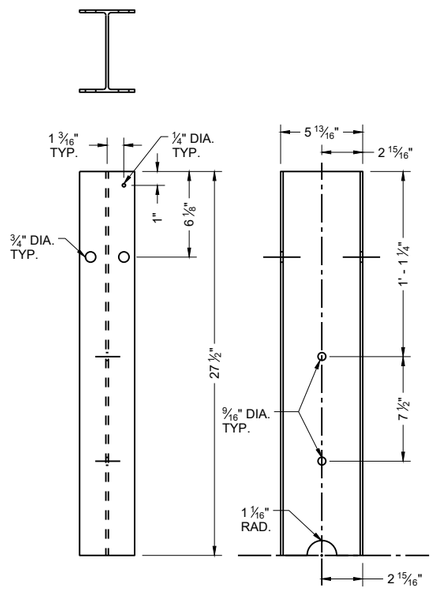


SIDE VIEW

FOUNDATION
TUBE (A1)

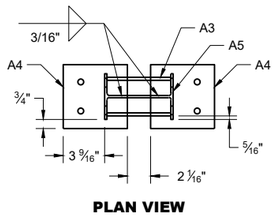


UPPER PLATE (A4)

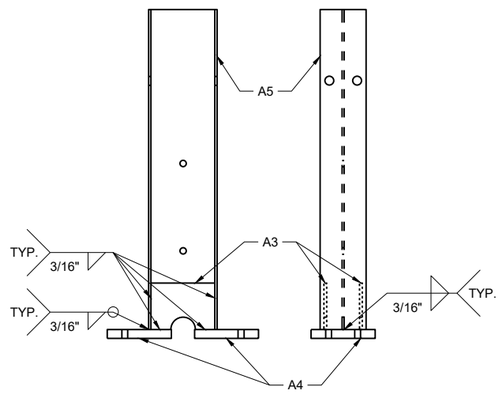


FRONT VIEW SIDE VIEW

TYPE 2 POST (A5)

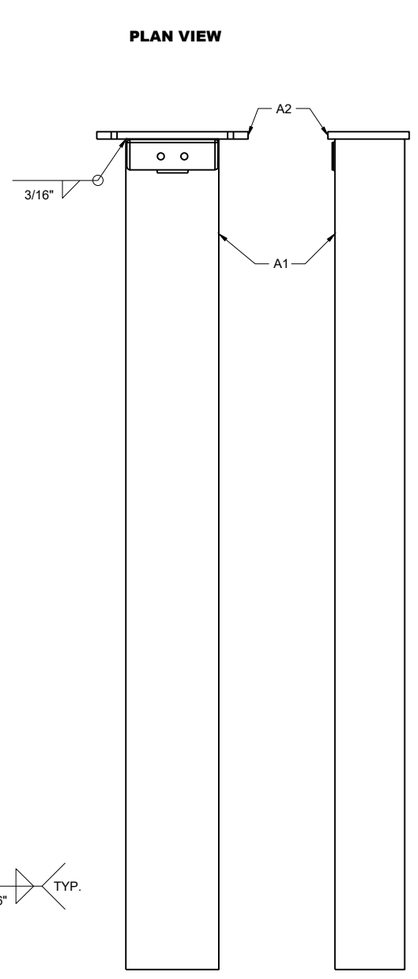


PLAN VIEW



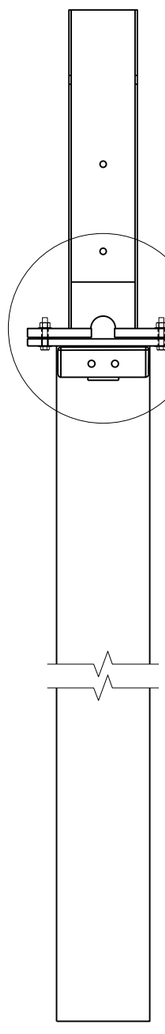
SIDE VIEW FRONT VIEW

UPPER POST ASSEMBLY

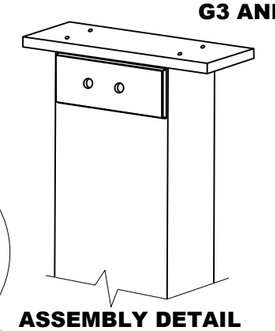


FRONT VIEW SIDE VIEW

LOWER POST ASSEMBLY

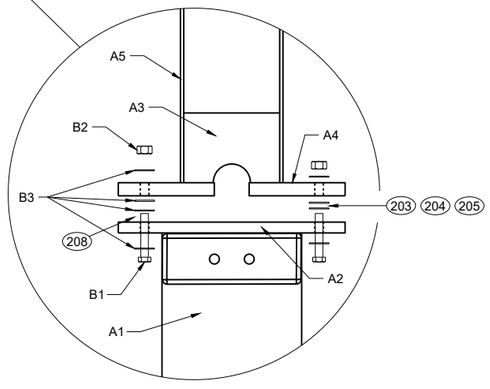


ASSEMBLED POST



ASSEMBLY DETAIL
ISOMETRIC

A1



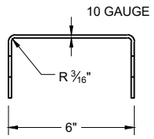
POST CONNECTION DETAIL

MIDWEST GUARDRAIL
SYSTEM (MGS)
TYPE 2 TERMINAL

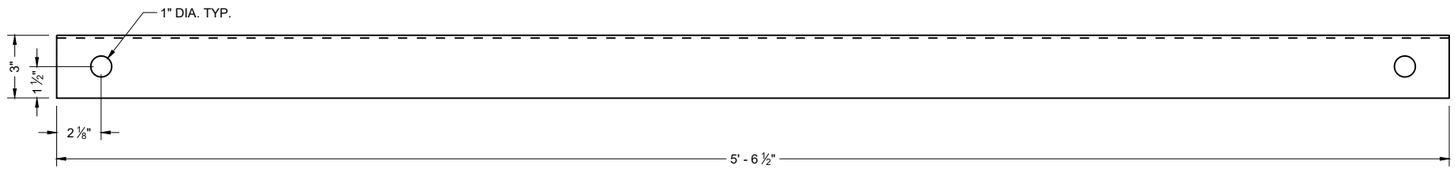
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B47-07c

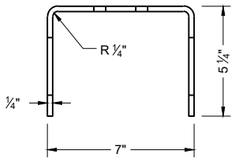


SIDE VIEW

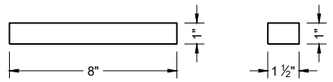


FRONT VIEW

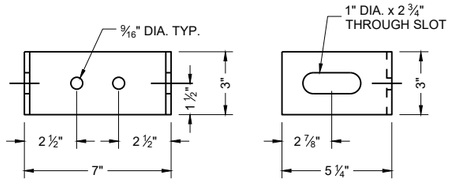
GROUND STRUT CHANNEL (G1)



TOP VIEW



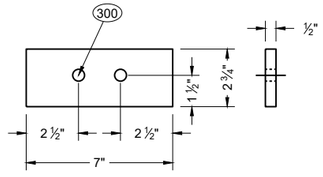
BEARING PLATE FLANGE (L2)



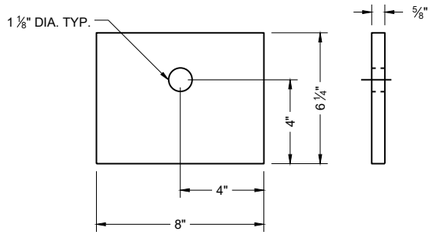
FRONT VIEW

SIDE VIEW

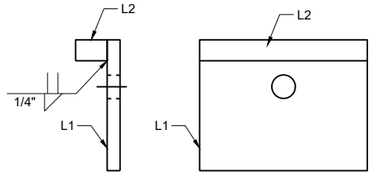
GROUND STRUT CONNECTOR (G2)



GROUND STRUT PLATE (G3)



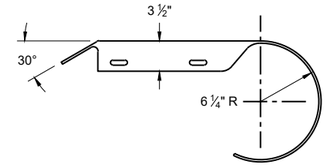
BEARING PLATE (L1)



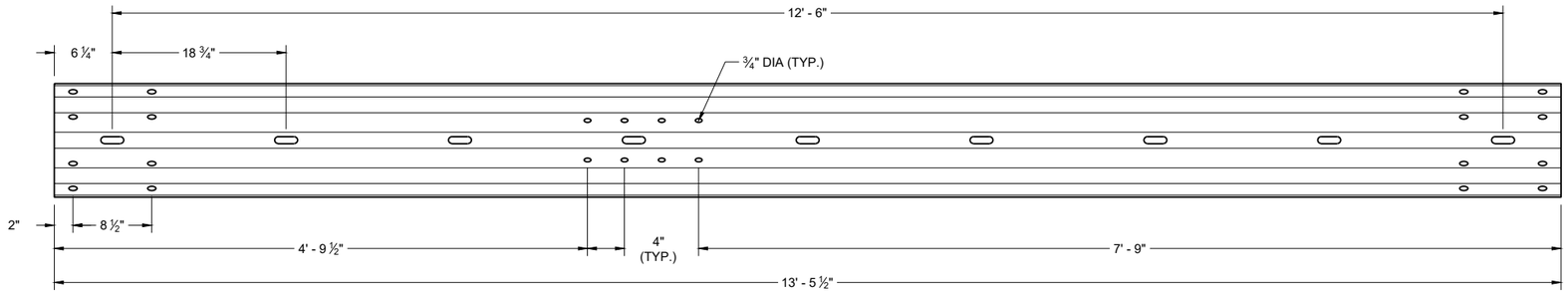
SIDE VIEW

FRONT VIEW

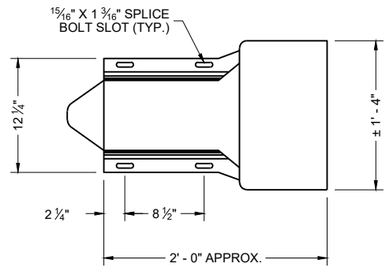
BEARING PLATE ASSEMBLY



PLAN VIEW

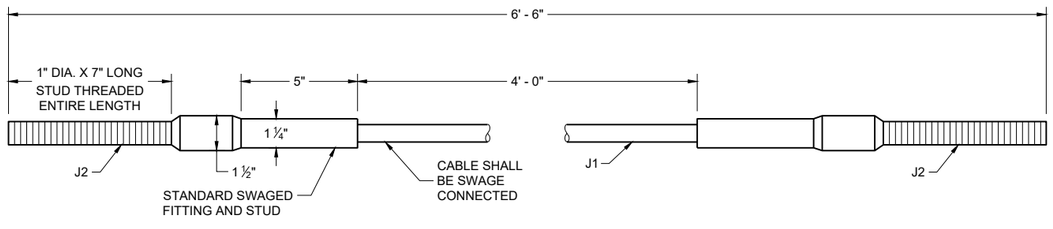


TYPE 2 GUARDRAIL (E1)



ELEVATION VIEW

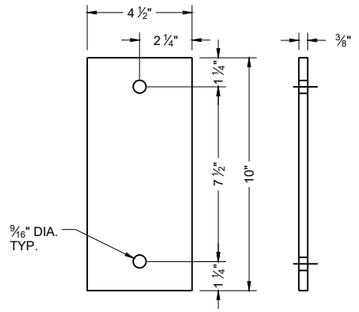
ROUNDED BUFFER END (E3)



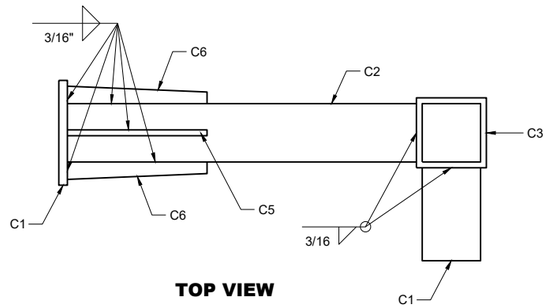
CABLE ASSEMBLY

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

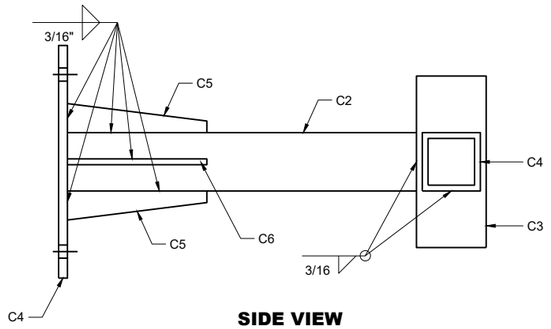
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



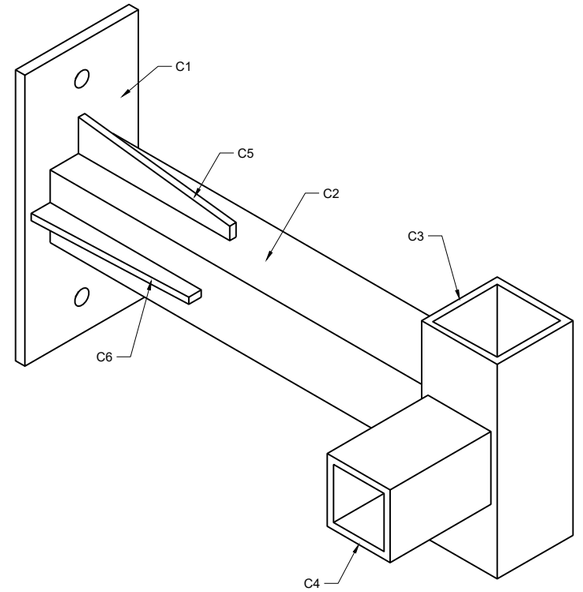
ARM PLATE (C1)



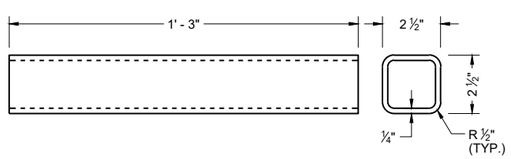
TOP VIEW
ARM ASSEMBLY



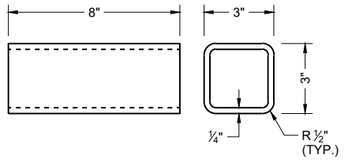
SIDE VIEW
ARM ASSEMBLY



ISOMETRIC VIEW
ARM ASSEMBLY



ARM TUBE 1 (C2)



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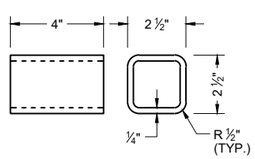

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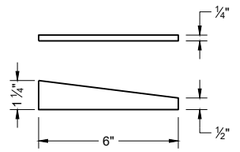

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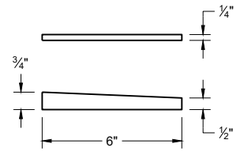

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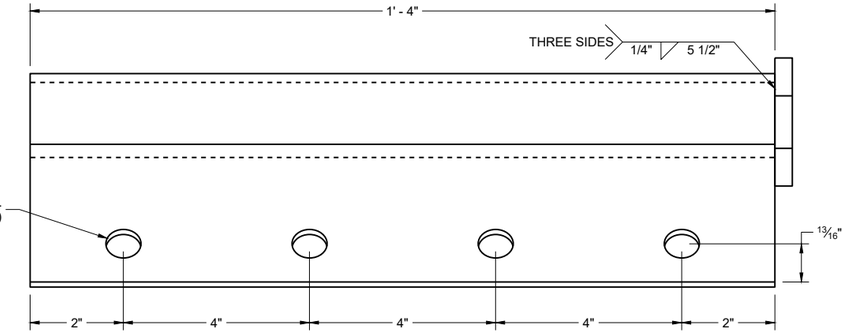
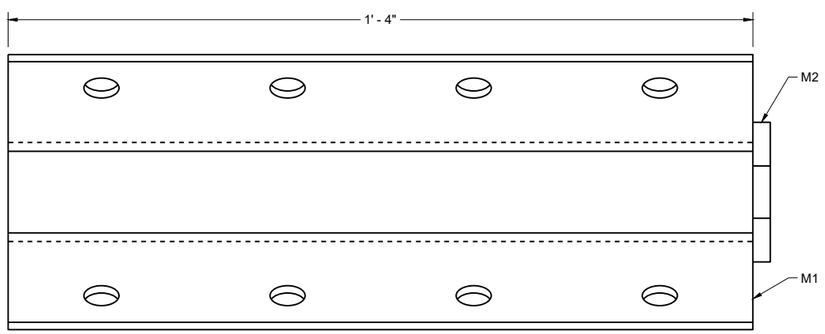
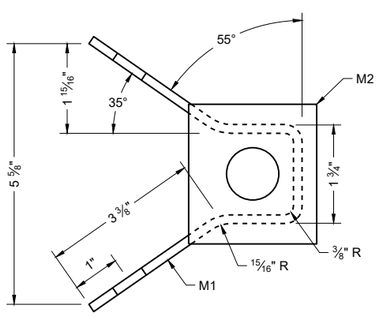
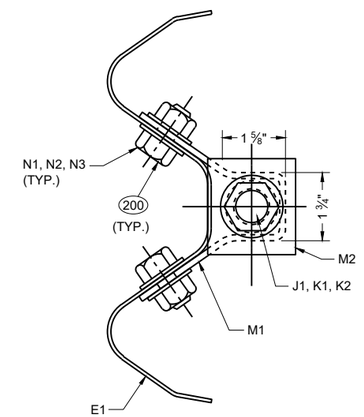
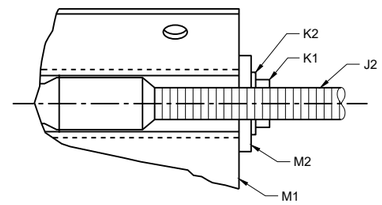




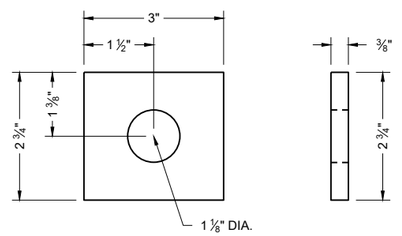
ANCHOR BRACKET (M1, M2)







SECTION A - A



ANCHOR BRACKET BEARING PLATE (M2)

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIALS - TYPE 2 TERMINAL (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	TYPE 2 FOUNDATION TUBE	AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501	TS 8" x 6" x 3/16"
A2	LOWER PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	5/8" THICKNESS
A3	POST GUSSET	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1/4" THICKNESS
A4	UPPER PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	3/4" THICKNESS
A5	TYPE 2 POST	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI, w6x9 or w6x8.5	
B1	BREAKAWAY BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM F3125 GRADE A325 TYPE 1 HEAVY HEX HEAD OR SAE J429 GRADE 5 HEAVY HEX HEAD / ASTM A449 TYPE 1 HEAVY HEX HEAD. BOLTS MAY BE FULLY THREADED . PROVIDE ENOUGH THREADING FOR PROPER TIGHTENING OF BOLT.	7/16" DIA.
B2	BREAKAWAY BOLT WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	7/16" DIA.
B3	BREAKAWAY BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
C1	ARM ASSEMBLY PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	3/8" THICKNESS
C2	ARM ASSEMBLY TUBE 1	AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501	TS 8" x 6" x 3/16"
C3	ARM ASSEMBLY TUBE 2	AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501	TS 3" x 3" x 1/4"
C4	ARM ASSEMBLY TUBE 3	AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501	TS 2 1/2" x 2 1/2" X 1/4"
C5	ARM ASSEMBLY GUSSET PLATE 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1/4" THICKNESS
C6	ARM ASSEMBLY GUSSET PLATE 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1/4" THICKNESS
D1	ARM ASSEMBLY BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	1/2" DIA.
D2	ARM ASSEMBLY WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	1/2" DIA.
D3	ARM ASSEMBLY NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	1/2" DIA.
E1	TYPE 2 GUARD RAIL	AASHTO M180 CLASS A TYPE 2 12 GAUGE APPROVED PRODUCER	
E2	BEAM GUARD RAIL	AASHTO M180 CLASS A TYPE 2 12 GAUGE APPROVED PRODUCER	
E3	BEAM GUARD ROUNDED BUFFER END	AASHTO M180 CLASS A TYPE 2 12 GAUGE APPROVED PRODUCER	
F1	POST BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	5/8" DIA.
F2	POST BOLT WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	5/8" DIA.
F3	POST BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
G1	GROUND STRUT CHANNEL	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1/2" x 11 3/4" x 10 GAUGE
G2	GROUND STRUT CONNECTOR	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1/4" THICKNESS
G3	GROUND STRUT PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1/2" THICKNESS

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 14B47-07f

BILL OF MATERIALS - TYPE 2 TERMINAL (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
H1	GROUND STRUT BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	7/8" DIA.
H2	GROUND STRUT BOLT WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	7/8" DIA.
H3	GROUND STRUT BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD 5/8" ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	
J1	BCT CABLE	AASHTO M30 / ASTM A741 6 x 19 INDEPENDENT WIRE CORE (IWRC) IMPROVED PLOW STEEL (IPS), 6 x 19 INDEPENDENT WIRE CORE (IWRC) IMPROVED PLOW STEEL (IPS) TYPE II OR IIC, CLASS C ZINC COATED MIN. BREAKING STRENGTH OF 42.7 KIPS	3/4" DIA.
J2	BCT CABLE	UNC 1" ASTM A576 GRADE 1035 SWAGE FITTINGS ARE TO BE FACTORY SWEDGED. MIN BREAKING STRENGTH OF 42.7 KIPS ASME B30.26 "FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING IN TO CONNECTION: NAME OF MANUFACTURE OR TRADEMARK OF CONNECTION'S MANUFACTURER, SIZE OR RATED LOAD, GRADE FOR ALLOY EYEBOLTS."	
K1	CABLE ASSEMBLY NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	1" DIA.
K2	CABLE ASSEMBLY WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1	1" DIA.
L1	BEARING PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	5/8" THICKNESS
L2	BEARING PLATE FLANGE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1" THICKNESS
M1	BEAM GUARD ANCHOR BRACKET	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	
M2	BEAM GUARD ANCHOR END PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	3/8" THICKNESS
N1	ANCHOR BRACKET BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	5/8" DIA.
N2	ANCHOR BRACKET BOLT WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	5/8" DIA.
N3	ANCHOR BRACKET BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 /ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
P1	FOUNDATION TUBE BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	1/2" DIA.
Q1	SPLICE BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	
Q2	SPLICE NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	5/8" DIA.

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2025 — DATE
/S/ Rodney Taylor — <position>
FHWA

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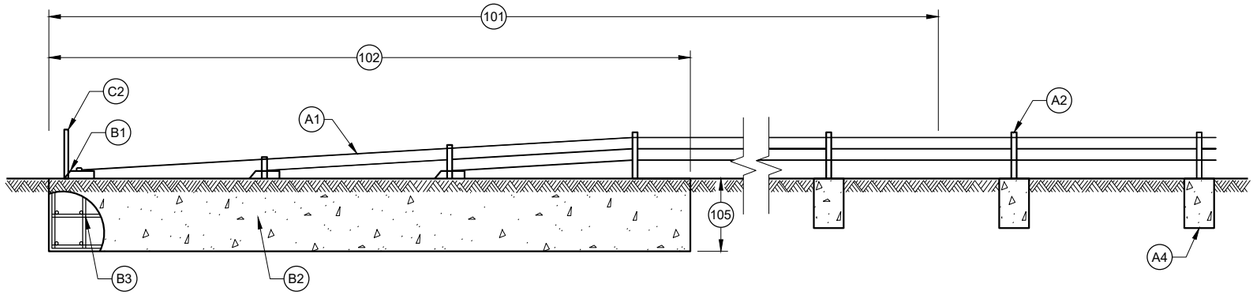
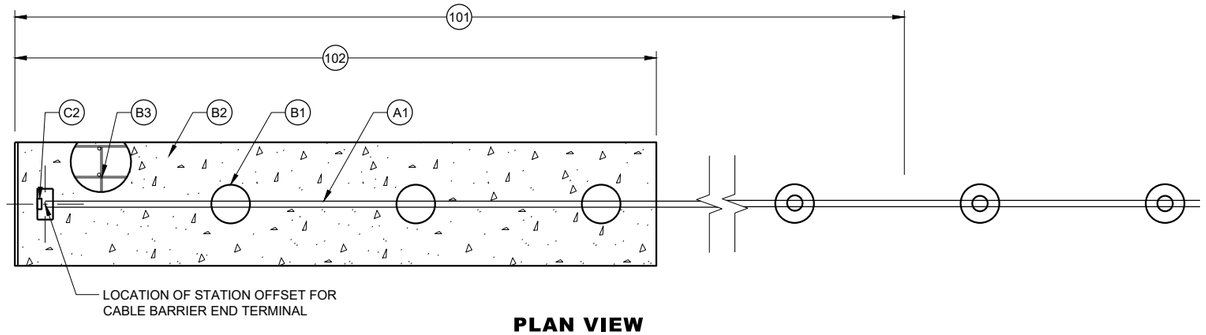
SDD 14B47-07g

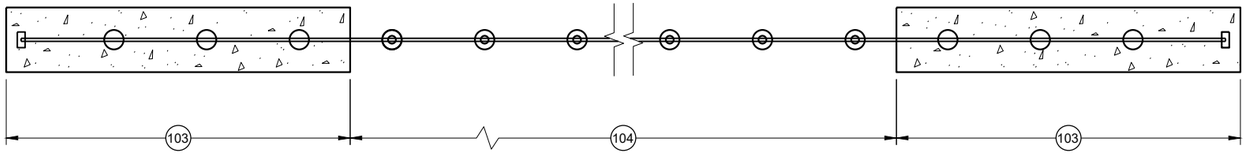


PROFILE VIEW

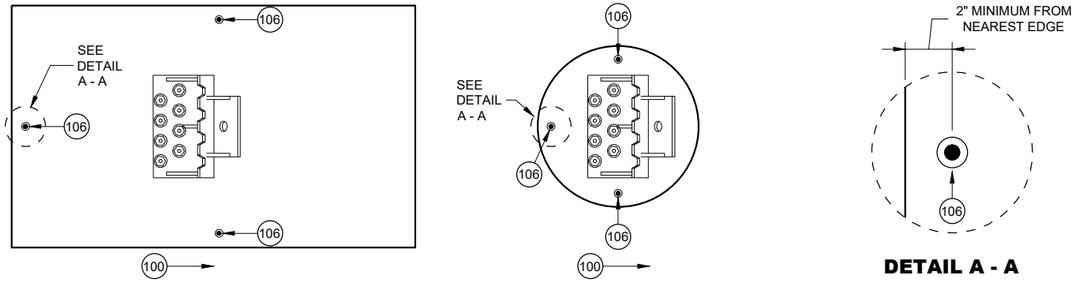


PLAN VIEW

TRANSITION FROM CABLE BARRIER TERMINAL TO CABLE BARRIER LINE POSTS



TYPICAL PLAN VIEW



DETAIL A - A

ANCHOR MONITOR POINTS FOR CABLE BARRIER END TERMINAL ANCHORS

GENERAL NOTES

DRAWINGS ARE GENERAL IN NATURE. SEE MANUFACTURER'S INFORMATION FOR MORE DETAIL.

PROVIDE 2 INCH CLEAR COVER FROM OUTER EDGE OF CONCRETE FOOTINGS TO REINFORCEMENT.

INSTALL LINE POSTS PLUMB. LINE POSTS ARE TO BE EASILY REMOVED BY HAND AND HOLD CABLES AT THE PROPER ELEVATION.

PROVIDE CABLE BARRIER SYSTEM FROM APPROVED PRODUCT LIST.

PROVIDE A SYSTEM TO HAVE THE WORKING WIDTH INDICATED IN PLAN.

PROVIDE DOCUMENTATION HOW POST SPACING, RADIUS OF CURVE AND ANCHOR SPACING INFLUENCES WORKING WIDTH TO CONSTRUCTION STAFF.

CONSTRUCT SHAFTS VERTICALLY. VERTICAL TOLERANCE OF SHAFT IS $\frac{1}{8}$" PER FOOT OF DEPTH. SHAFTS ARE TO MINIMIZE DISTURBANCE TO ADJACENT SOILS.

SECURE STEEL REINFORCEMENT AND STEEL SLEEVE PRIOR TO PLACEMENT OF CONCRETE. MAINTAIN CLEAR DISTANCE BETWEEN SOIL AND REINFORCEMENT CAGE.

PLACE CONCRETE IN ONE CONTINUOUS POUR FOR EACH FOOTING. USE VIBRATION TO CONSOLIDATE CONCRETE.

PROVIDE CASING AS NECESSARY TO PREVENT INTRUSION OF UNCONSOLIDATED MATERIALS OR WATER. USE CASINGS WHEN THERE IS 3 OR MORE INCHES OF WATER IN EXCAVATION.

PROVIDE WISCONSIN PROFESSIONAL ENGINEER SIGNED AND APPROVED FOOTING DESIGN USING A CASING AND CONSTRUCTION SEQUENCE. PROJECT ENGINEER WILL REVIEW AND APPROVED CASING DESIGN AND CONSTRUCTION SEQUENCE. CASING IS TO HAVE INTIMATE CONTACT WITH SHAFT SIDEWALL. CASING IT TO WITHSTAND INSERTION STRESS, REMOVAL STRESS, CONCRETE PRESSURE AND SOIL PRESSURE. REMOVE CASING DURING CONCRETE PLACEMENT OR IMMEDIATELY AFTER CONCRETE PLACEMENT. NO TEMPORARY CASING MAY REMAIN IN-PLACE.

PROVIDE WISCONSIN PROFESSIONAL ENGINEER SIGNED AND APPROVED FOOTING DESIGN AND CONSTRUCTION SEQUENCE WHEN OVER EXCAVATION IS REQUIRED NEAR A FOOTING. PROJECT ENGINEER WILL REVIEW AND APPROVED DESIGN AND CONSTRUCTION SEQUENCE.

FINISH TOP OF FOOTINGS TO THE DIMENSIONS INDICATED IN PLAN. REMOVE EXCESS CONCRETE.

DESIGN POST FOOTINGS SO THAT LINE POST FOOTING MOVE LESS THAN 1 INCH WHEN LINE POST IS IMPACTED BY A NCHRP 350 TL-3 SMALL CAR.

USE MARINE GRADE ANTI-SEIZE LUBRICANT FOR THREADING FITTINGS THAT IS ACCEPTABLE FOR USE ON GALVANIZED STEEL.

(100) DIRECTION THAT THE CABLE PULLS THE END ANCHOR FOOTING

(101) LOCATION OF LENGTH OF NEED POINT FOR CABLE BARRIER END TERMINAL VARIES. (SEE MANUFACTURER'S INFORMATION)

(102) PAY LIMIT FOR CABLE BARRIER END TERMINAL. LENGTH OF CABLE BARRIER END TERMINAL VARIES. (SEE MANUFACTURER'S INFORMATION)

(103) CABLE BARRIER END TERMINAL

(104) CABLE BARRIER AND LINE POSTS

(105) IN SOIL MINIMUM DEPTH OF CABLE BARRIER END TERMINAL FOOTING IS 60 INCHES. DEEPER FOOTINGS PER MANUFACTURER'S RECOMMENDATION ARE ACCEPTABLE.

(106) ANCHOR MONITOR POINTS ARE GALVANIZED SURVEY NAIL, OR MASONRY NAIL, PLACED INTO CONCRETE FOOTING BEFORE HARDENING. IF THERE ARE MULTIPLE ANCHOR POINTS WITHIN A PAY LIMIT FOR A CABLE BARRIER END TERMINAL, EACH ANCHOR POINT NEEDS THREE ANCHOR MONITOR POINTS.

CABLE BARRIER TYPE 1 LAYOUT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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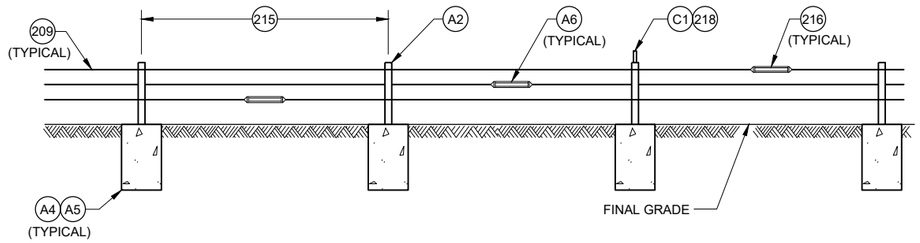
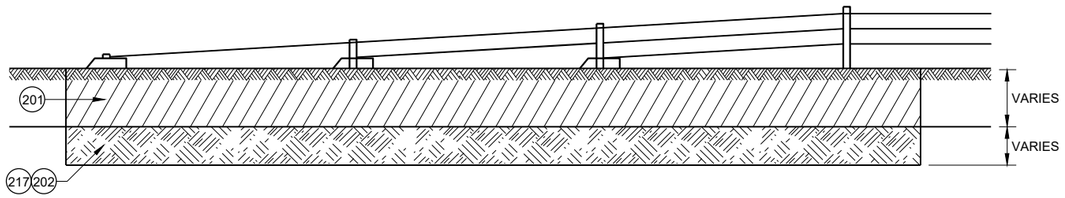


PROFILE VIEW
LINE POST INSTALLATION



CABLE BARRIER END TERMINAL
ROCK EXCAVATION DETAIL

GENERAL NOTES

201 SOIL TO BE EXCAVATED FOR CABLE BARRIER END TERMINAL (VARIES)

202 ROCK TO BE EXCAVATED FOR CABLE BARRIER END TERMINAL (VARIES)

203 SOIL TO BE EXCAVATED FOR LINE POST (VARIES)

204 ROCK TO BE EXCAVATED FOR LINE POST (VARIES)

205 EXCAVATE AND GRADE LINE FOR LINE POST FOOTINGS. INSTALL LINE POST FOOTING TO MINIMIZE 4 INCH TALL OBJECT ON 5 FOOT CHORD.

206 2 INCHES OF CLEAR COVER FROM EDGE OF CONCRETE TO REINFORCEMENT.

207 DIAMETER OF LINE POST FOOTING VARIES. SEE MANUFACTURERS' INFORMATION.

208 MINIMUM DEPTH OF LINE POST FOOTING IS 4' - 0" IN SOIL. DEEPER FOOTINGS PER MANUFACTURER'S RECOMMENDATION ARE ACCEPTABLE.

209 NUMBER AND LOCATION OF CABLES VARY. SEE MANUFACTURERS' INFORMATION.

210 LINE POST DIMENSIONS AND CONNECTION HARDWARE VARY. SEE MANUFACTURERS' INFORMATION.

211 LANE OF ROADWAY (VARIES). SEE PLAN FOR MORE INFORMATION.

212 PAVED SHOULDER (VARIES). SEE PLAN FOR MORE INFORMATION.

213 GRAVEL SHOULDER (VARIES). SEE PLAN FOR MORE INFORMATION.

214 CABLE BARRIER OFFSET FROM CENTERLINE OF MEDIAN DITCH (8 FOOT MINIMUM). SEE PLAN FOR MORE INFORMATION.

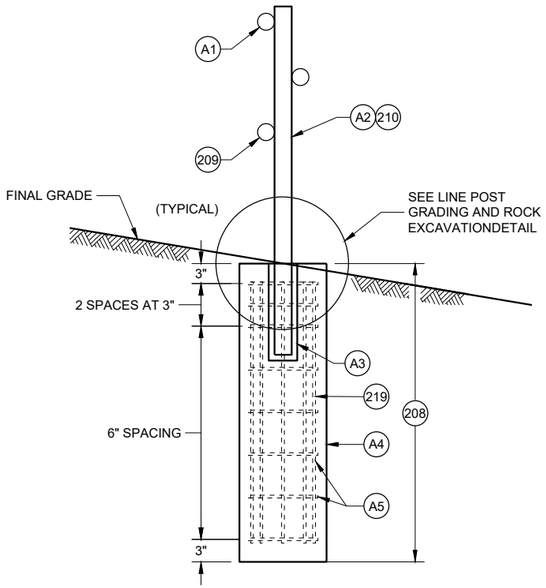
215 MAXIMUM POST SPACING IS 15 FEET.

216 STAGGER TURNBUCKLES (TYPICAL).

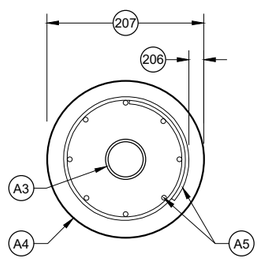
217 SEE MANUFACTURER'S DESIGN WHEN ROCK IS ENCOUNTERED.

218 LINE POST DELINEATOR SPACING IS 100 FEET.

219 MINIMUM LINE POST FOOTING REINFORCEMENT SHOWN. MANUFACTURER IS TO INDICATE REINFORCEMENT IS ADEQUATE FOR THEIR SYSTEM. IF REINFORCEMENT IS NOT ADEQUATE, PROVIDE FOOTING DESIGN WITH A ADEQUATE REINFORCEMENT.

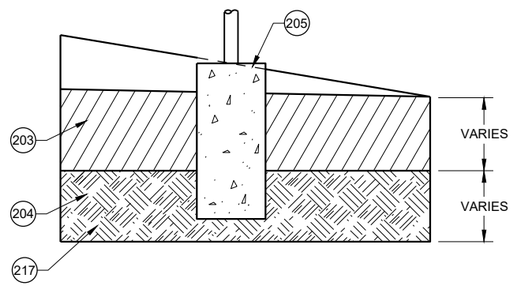


CROSS SECTION

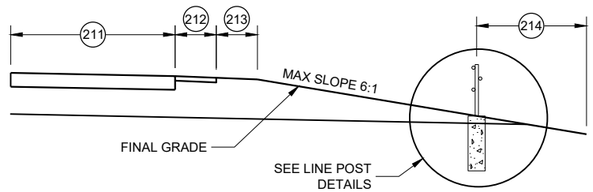


PROFILE VIEW
(LINE POSTS AND CABLES NOT SHOWN)

LINE POST DETAILS



LINE POST GRADING
AND ROCK EXCAVATION DETAIL



CABLE BARRIER OFFSET FROM DITCH LINE

CABLE BARRIER
TYPE 1 LAYOUT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B52 - 03b

6

SDD 14B52 - 03b

BILL OF MATERIALS

PART NUMBER	QTY.	DESCRIPTION	MATERIALS SPECIFICATIONS
A1	3 OR 4	¾" 3x7 PRESTRECHED GALVANIZED STEEL WIRE ROPE	AASHTO M30 TYPE 1 CLASS A OR ASTM A741 TYPE 1 CLASS A WITH MINIMUM BREAKING STRENGTH = 39 KIPS (173.5 KN)
A2	1 PER LINE POST	GALVANIZED REMOVABLE STEEL LINE POST	SEE MANUFACTURER'S INFORMATION ON DIMENSIONS AND MATERIAL REQUIREMENTS.
			ASTM A123 (GALVANIZATION).
A3	1 PER LINE POST	GALVANIZED STEEL SLEEVE	SEE MANUFACTURER'S INFORMATION ON DIMENSIONS AND MATERIAL REQUIREMENTS.
			ASTM A123 (GALVANIZATION).
A4	VARIES	CONCRETE FOR LINE POST FOOTING	A, A-FA.A-T, OR A-IP OF STANDARD SPECIFICATION 501.2 OR AS MANUFACTURER SPECIFIES.
			STANDARD SPECIFICATION 716 QMP FOR CLASS II ANCILLARY CONCRETE
			SEE MANUFACTURER'S INFORMATION ON DIMENSIONS.
A5	MINIMUM REINFORCEMENT: 8 HORIZONTAL LOOP BARS 8 VERTICAL BARS	EPOXY COATED STEEL REINFORCEMENT	STANDARD SPECIFICATION 505.
			ALL BARS ARE NO. 4 BARS
A6	VARIES	TURNBUCKLES AND OTHER CABLE CONNECTING HARDWARE	SEE MANUFACTURER'S INFORMATION ON DIMENSIONS.
			MINIMUM BREAKING STRENGTH OF TURNBUCKLES AND CONNECTION HARDWARE IS EQUAL TO CABLE.
			TURNBUCKLES AND OTHER CABLE CONNECTION HARDWARE IS FIELD SWAGED PER MANUFACTURER'S RECOMMENDATION AND DETAILS.
			PROVIDE DOCUMENTATION THAT THE FITTINGS ARE STRONGER THAN THE CABLE BARRIER. DOCUMENTATION IS TO INCLUDE: MANUFACTURER NAME, TESTING RESULTS, AND DATE OF TESTING.
B1	VARIES	CABLE CONNECTION TO CABLE BARRIER END TERMINAL	SEE MANUFACTURER'S INFORMATION ON DIMENSIONS AND MATERIAL REQUIREMENTS.
B2	VARIES	CONCRETE FOR CABLE BARRIER END TERMINAL	A, A-FA.A-T, OR A-IP OF STANDARD SPECIFICATION 501.2.
			STANDARD SPECIFICATION 716 QMP FOR CLASS II ANCILLARY CONCRETE
B3	VARIES	EPOXY COATED STEEL REINFORCEMENT	STANDARD SPECIFICATION 505.
C1	VARIES	LINE POST DELINEATOR	REFLECTIVE SHEETING TYPE SH. SEE APPROVED PRODUCT LIST YELLOW.
C2	VARIES	CABLE BARRIER END TERMINAL DELINEATOR	REFLECTIVE SHEETING TYPE SH. SEE APPROVED PRODUCT LIST OBJECT MARKER TYPE 3 PATTERN

6

CABLE BARRIER TYPE 1 LAYOUT

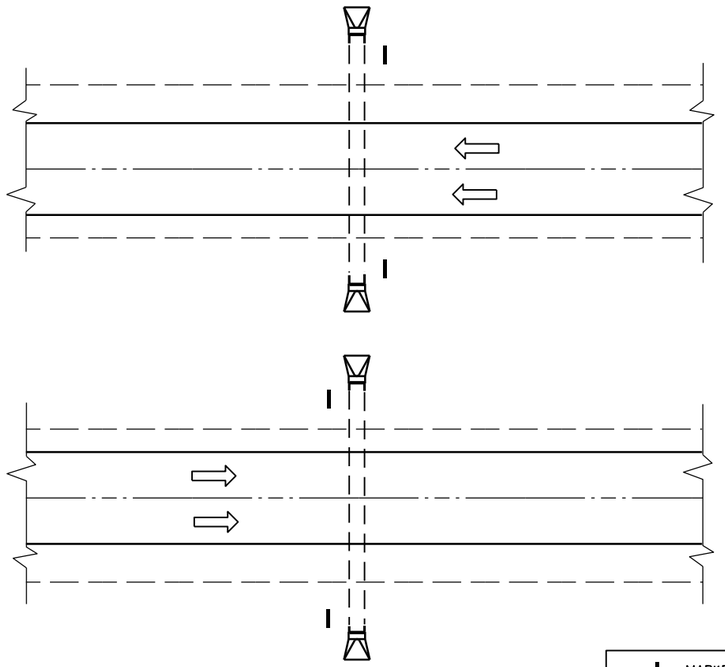
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

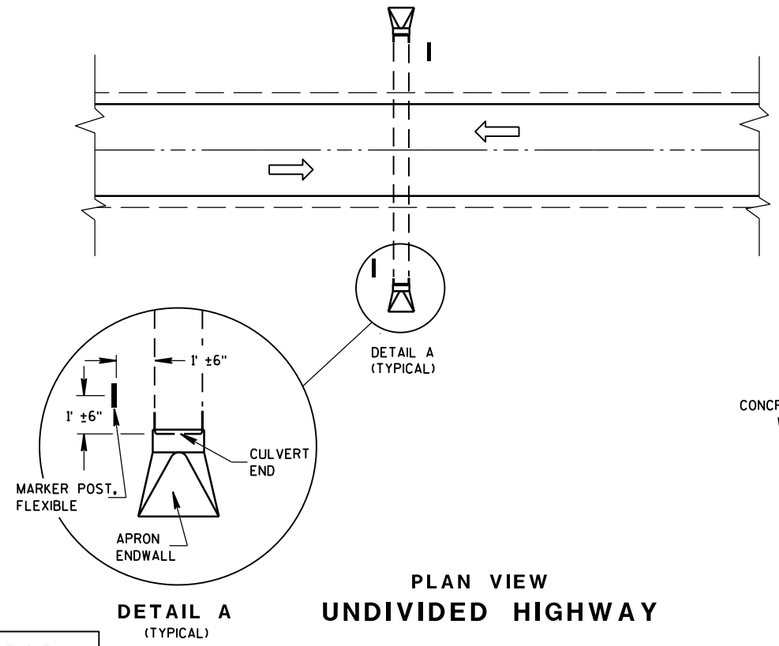
FHWA

SDD 14B52 - 03c



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

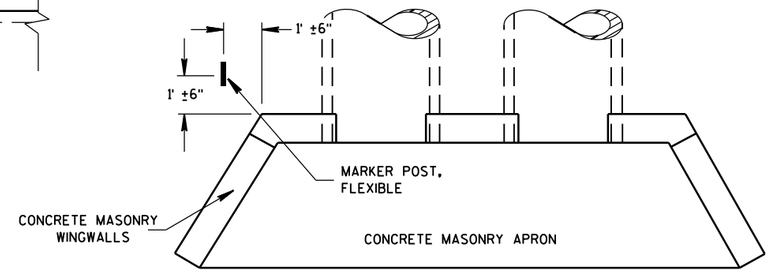
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

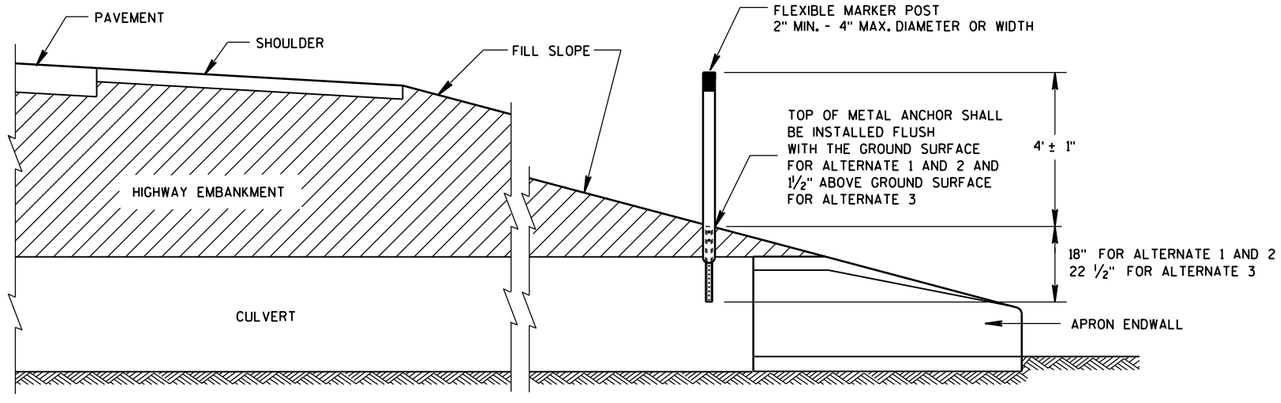
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

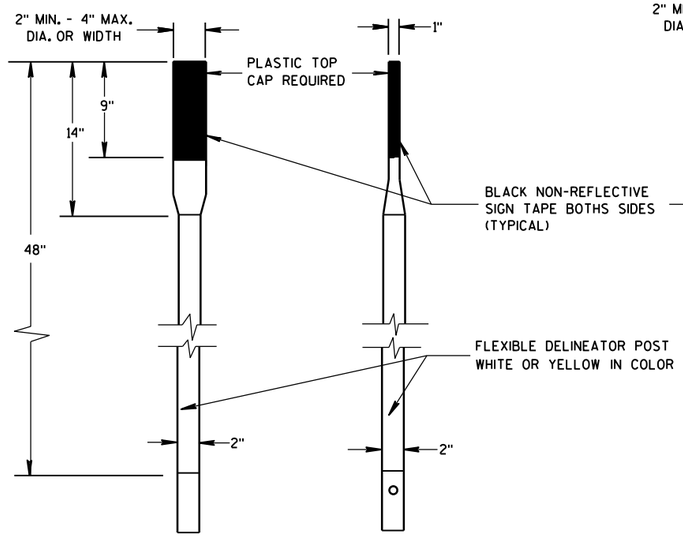
FLEXIBLE MARKER POST

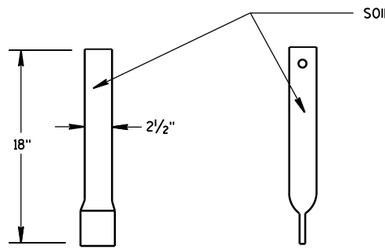
FLEXIBLE MARKER POST FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

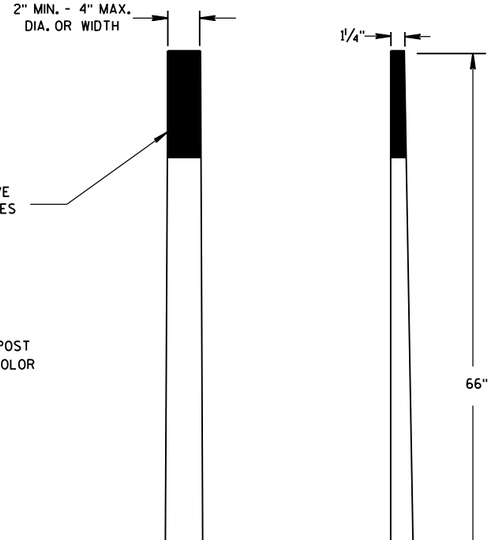
S.D.D. 15 A 3-2a





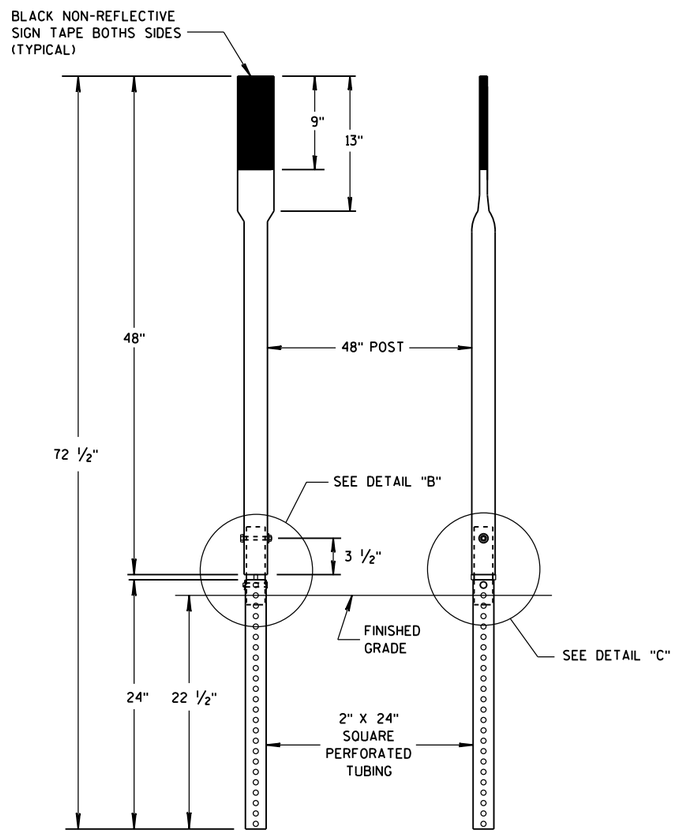
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

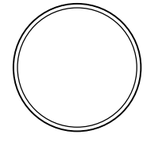
ALTERNATE 2



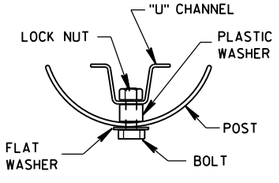
FRONT VIEW SIDE VIEW

ALTERNATE 3

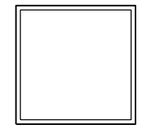
FLEXIBLE MARKER POSTS



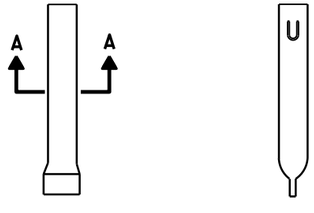
SECTION A-A



SECTION B-B

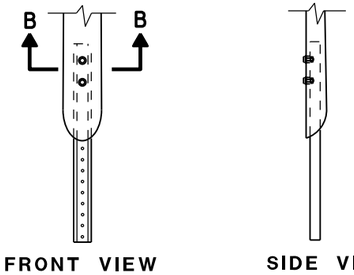


SECTION C-C



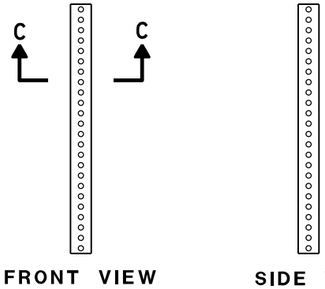
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

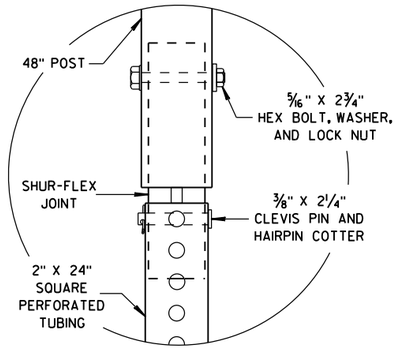
ALTERNATE 2



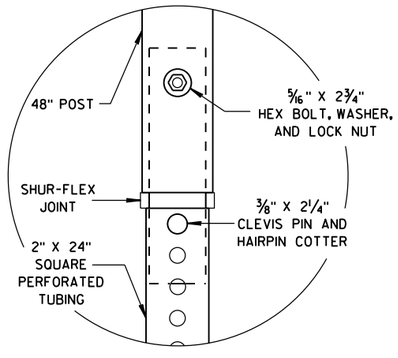
FRONT VIEW SIDE VIEW

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

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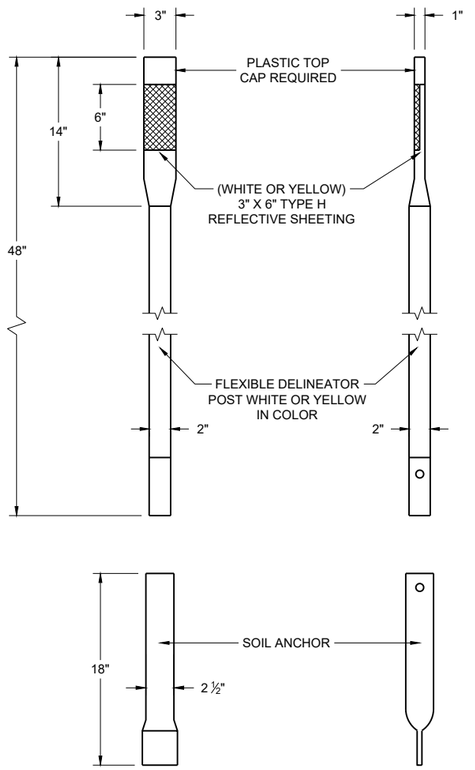
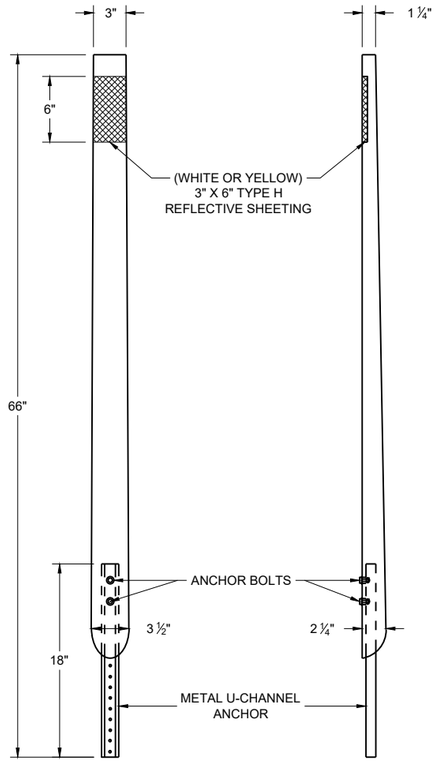
S.D.D. 15 A 3-2b



FRONT VIEW SIDE VIEW

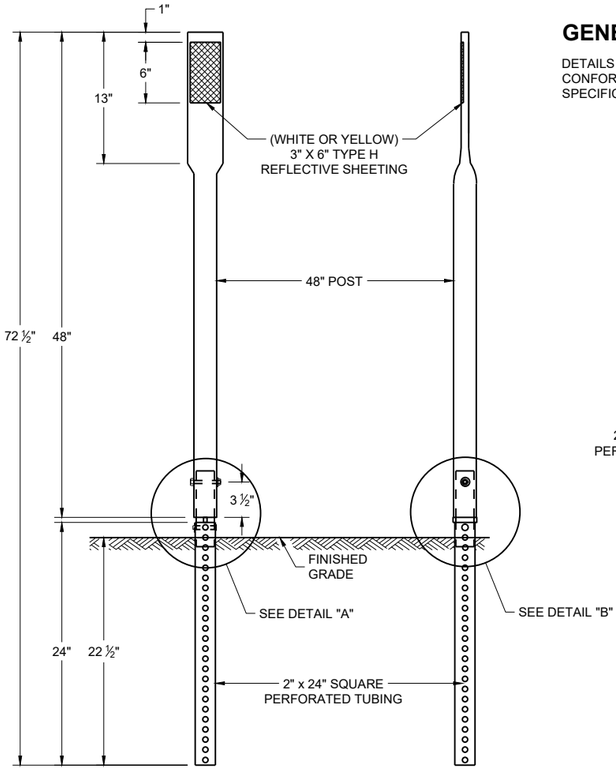
ALTERNATE 1



FRONT VIEW SIDE VIEW

ALTERNATE 2

FLEXIBLE DELINEATOR POSTS

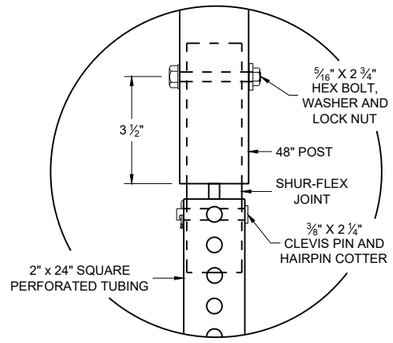


FRONT VIEW SIDE VIEW

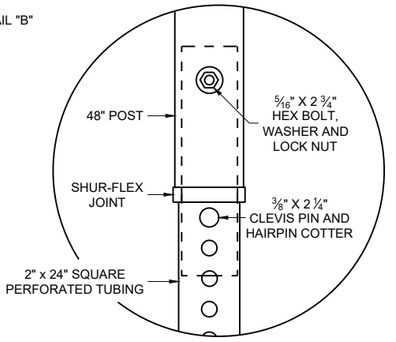
ALTERNATE 3

GENERAL NOTES

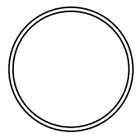
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



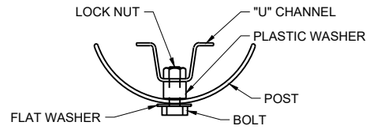
DETAIL A



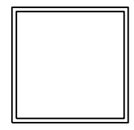
DETAIL B



SECTION A - A



SECTION B - B

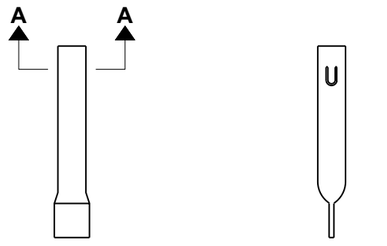


SECTION C - C

REFLECTOR SPACING TABLE

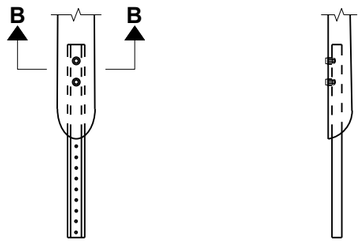
REFLECTOR SPACING	LOCATION
* 100' C-C	RAMPS
400' C-C	MAINLINE

* START AT BEGINNING OF RAMP TAPER AND END AT END OF RAMP TAPER



FRONT VIEW SIDE VIEW

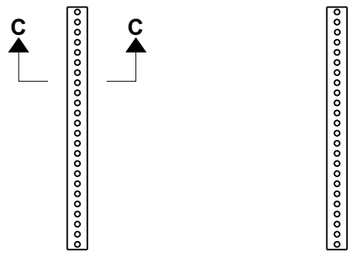
ALTERNATE 1



FRONT VIEW SIDE VIEW

ALTERNATE 2

FLEXIBLE MARKER POST ANCHORS



FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE DELINEATOR POST

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2024
DATE

/S/ Jeannie Silver
Statewide Pavement Marking Engineer

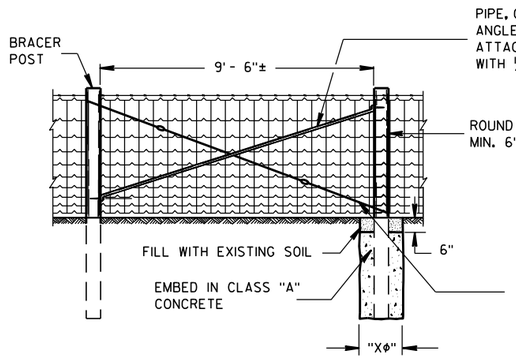
FHWA

6

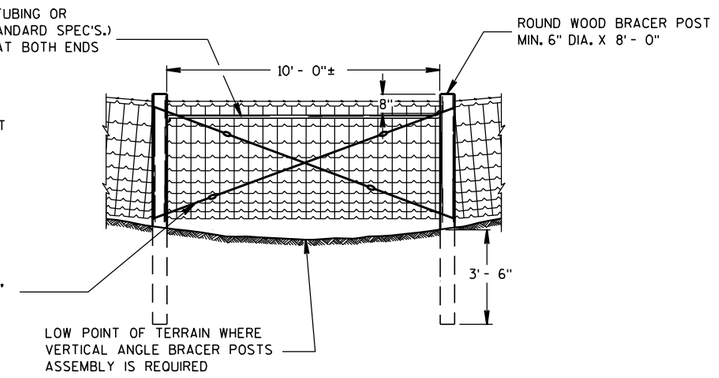
SDD 15A04-08a

NOTE: PULL OR STRETCHER POST ASSEMBLIES SHALL BE PLACED MIDWAY BETWEEN END POSTS AND CORNER POSTS WHERE A RUN OF FENCE EXCEEDS 660' BUT IS LESS THAN 1,320'. FOR RUNS OF FENCE IN EXCESS OF 1,320' MAXIMUM SPACING OF PULL OR STRETCHER POST ASSEMBLIES SHALL BE 660'± C-C.

ILLUSTRATION SHOWS POSITION OF STANDARD STEEL BRACE, DOUBLE STRAND GALVANIZED WIRE, AND THE POST TO BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM LEFT TO RIGHT. THE BRACES SHALL BE POSITIONED ON THE OPPOSITE DIAGONALS AND THE OPPOSITE POST SHALL BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM RIGHT TO LEFT.



PULL OR STRETCHER POSTS ASSEMBLY



VERTICAL ANGLE BRACER POSTS ASSEMBLY

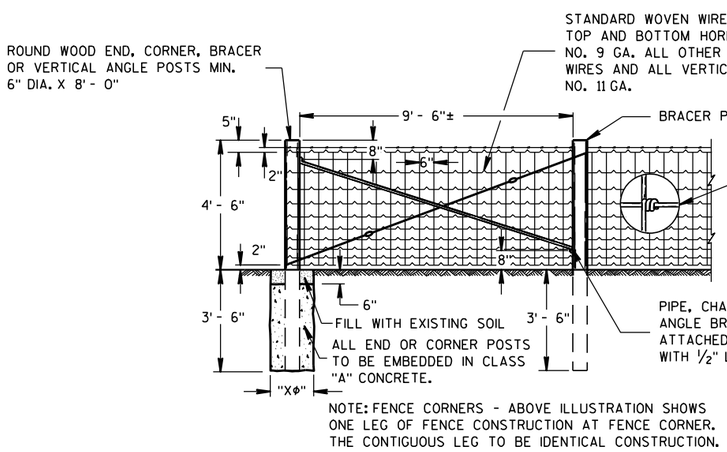
GENERAL NOTES

"XΦ" = DIAMETER OF THE POST PLUS 12".

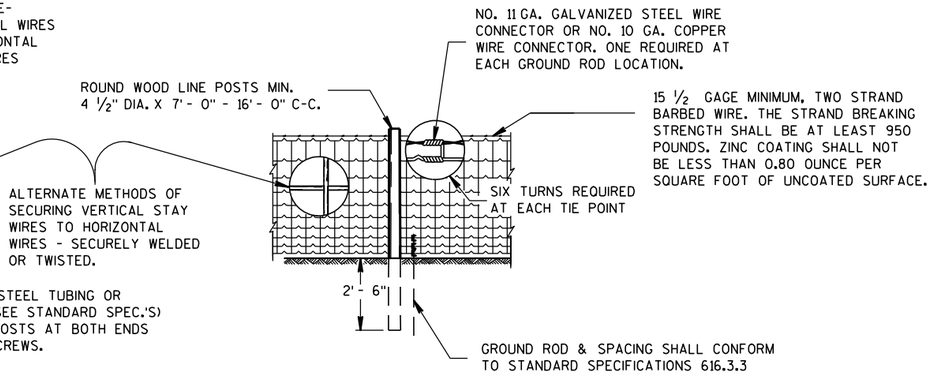
FENCE STAPLES SHOULD NEVER BE DRIVEN VERTICALLY INTO WOOD POSTS (WITH BOTH LEGS PARALLEL WITH THE WOOD GRAIN). DOING SO CAN SEPARATE THE GRAIN AND SIGNIFICANTLY REDUCE THE HOLDING POWER. ROTATING THE STAPLES SLIGHTLY OFF VERTICAL STRADDLES THE GRAIN AND PROVIDES MORE RESISTANCE TO PULL-OUT.

DO NOT STAPLE WIRE TIGHT TO THE LINE POSTS. ALLOW MOVEMENT OF WIRE FOR EXPANSION AND CONTRACTION. STAPLE ARRANGEMENT SHALL BE THE SAME FOR ALL OTHER POSTS EXCEPT THAT THEY SHALL BE DRIVEN TIGHT TO POSTS. ALL STAPLES SHALL BE 2" X 9 GAGE AND SHALL BE MANUFACTURED FROM GALVANIZED WIRE OR HOT DIP GALVANIZED AFTER FORMING. STAPLES SHALL HAVE SLASH-CUT POINTS.

FENCE SHALL BE LOCATED 3'-0" INSIDE THE RIGHT OF WAY LINE UNLESS OTHERWISE INDICATED ON THE PLANS.

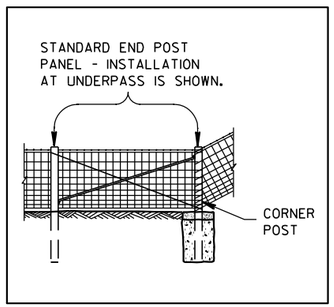


END OR CORNER POSTS ASSEMBLY

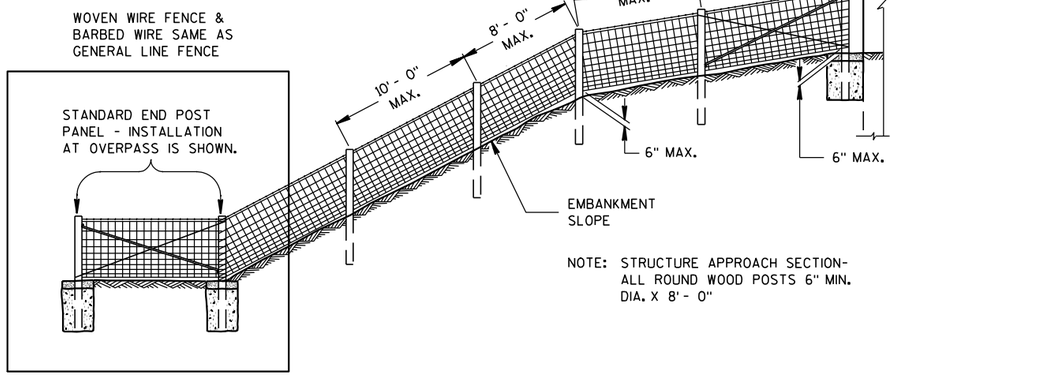


LINE FENCE CONSTRUCTION

GENERAL ROADSIDE VIEW OF WOVEN WIRE FENCE



ALTERNATE FENCE DESIGN AT STRUCTURE



FENCE DESIGN AT STRUCTURE APPROACH

FENCE WOVEN WIRE

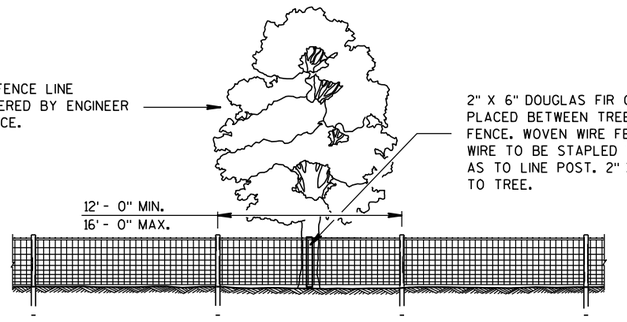
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

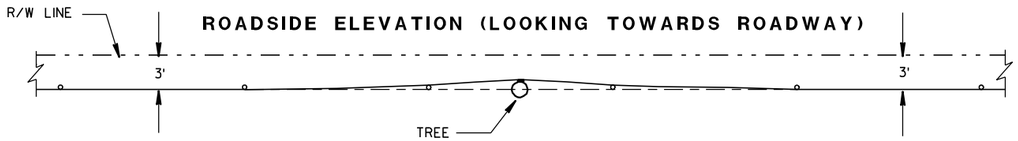
S.D.D. 15 B 1-8a

NOTE: TREE IN NORMAL FENCE LINE SPECIFICALLY ORDERED BY ENGINEER TO REMAIN IN PLACE.

2" X 6" DOUGLAS FIR OR SO. YELLOW PINE PLACED BETWEEN TREE AND WOVEN WIRE FENCE. WOVEN WIRE FENCE AND BARBED WIRE TO BE STAPLED TO 2" X 6" LIKE AS TO LINE POST. 2" X 6" NOT FASTENED TO TREE.

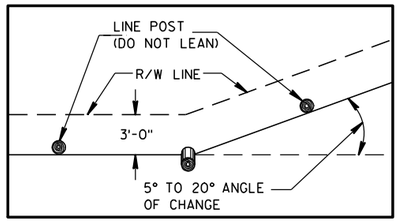


ROADSIDE ELEVATION (LOOKING TOWARDS ROADWAY)

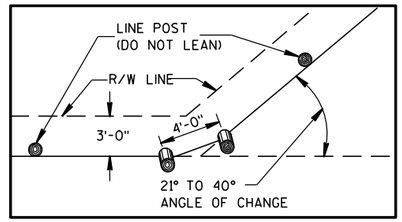


PLAN VIEW

FENCE DESIGN AT TREES REMAINING IN NORMAL FENCE LINE



PLAN VIEW
SINGLE POST CORNER

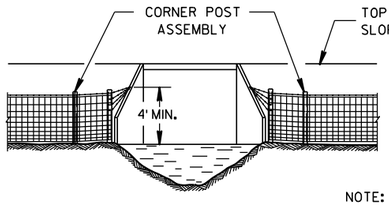


PLAN VIEW
DOUBLE POST CORNER

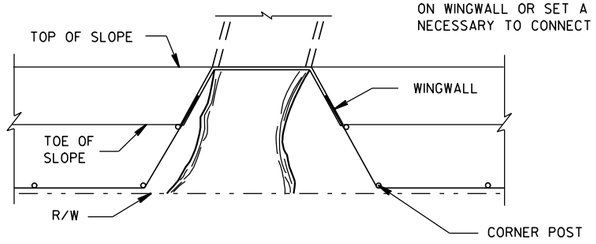
RIGHT OF WAY LINE CHANGE 40° AND LESS

NOTE: SINGLE AND DOUBLE POSTS SHALL BE A MIN. 6" DIA. X 8'-0" WITH A LEAN OF 4" TOWARD THE OUTSIDE OF THE CURVE.

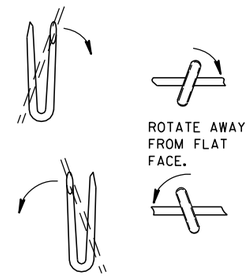
WHEN THE RIGHT OF WAY LINE CHANGE IS MORE THAN 40° USE THE CORNER OR STRETCHER POSTS ASSEMBLY.



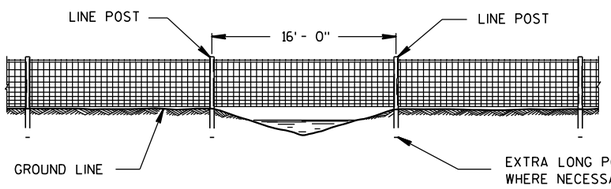
NOTE: PLACE A MINIMUM OF 4 STRANDS OF BARBED WIRE, 6" MAXIMUM CENTERS IN FAN SHAPE CONNECTED TO AN EYE BOLT ON WINGWALL OR SET A LONE POST WHEN NECESSARY TO CONNECT BARBED WIRE.



FENCE INSTALLATION TO WINGWALLS

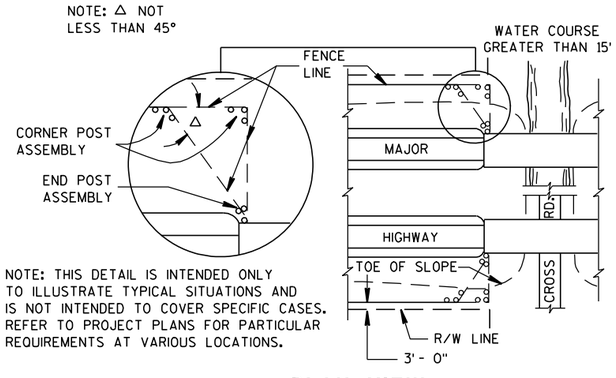


LINE POST



FENCE CONSTRUCTION OVER STREAM COURSES OF 15 FT. OR LESS IN WIDTH

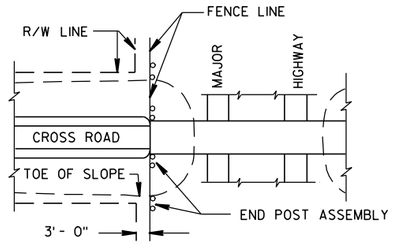
NOTE: △ NOT LESS THAN 45°



NOTE: THIS DETAIL IS INTENDED ONLY TO ILLUSTRATE TYPICAL SITUATIONS AND IS NOT INTENDED TO COVER SPECIFIC CASES. REFER TO PROJECT PLANS FOR PARTICULAR REQUIREMENTS AT VARIOUS LOCATIONS.

PLAN VIEW

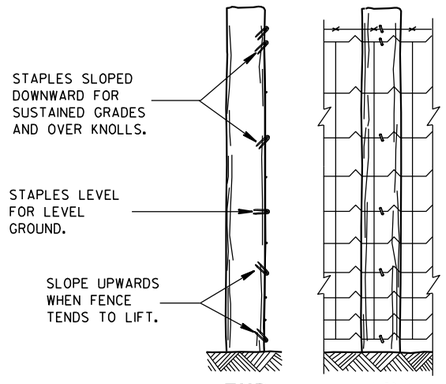
MAJOR HIGHWAY OVERPASS OR STREAM COURSE CROSSING OF GREATER THAN 15 FT. IN WIDTH



PLAN VIEW

MAJOR HIGHWAY UNDERPASS

NOTE: WHEN POSTS ARE DRIVEN THE SMALL END SHALL BE DOWN.



END ELEVATION

FARM SIDE ELEVATION

FENCE MOUNTING DETAIL

FENCE LOCATION AT STRUCTURES

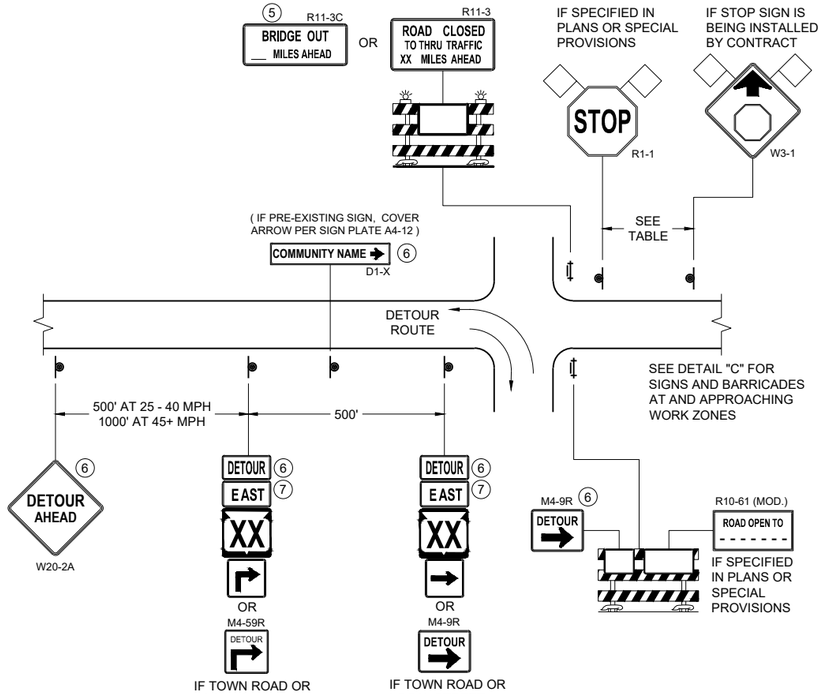
FENCE WOVEN WIRE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/4/2008
DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS [illegible]
ENGINEER
FHWA

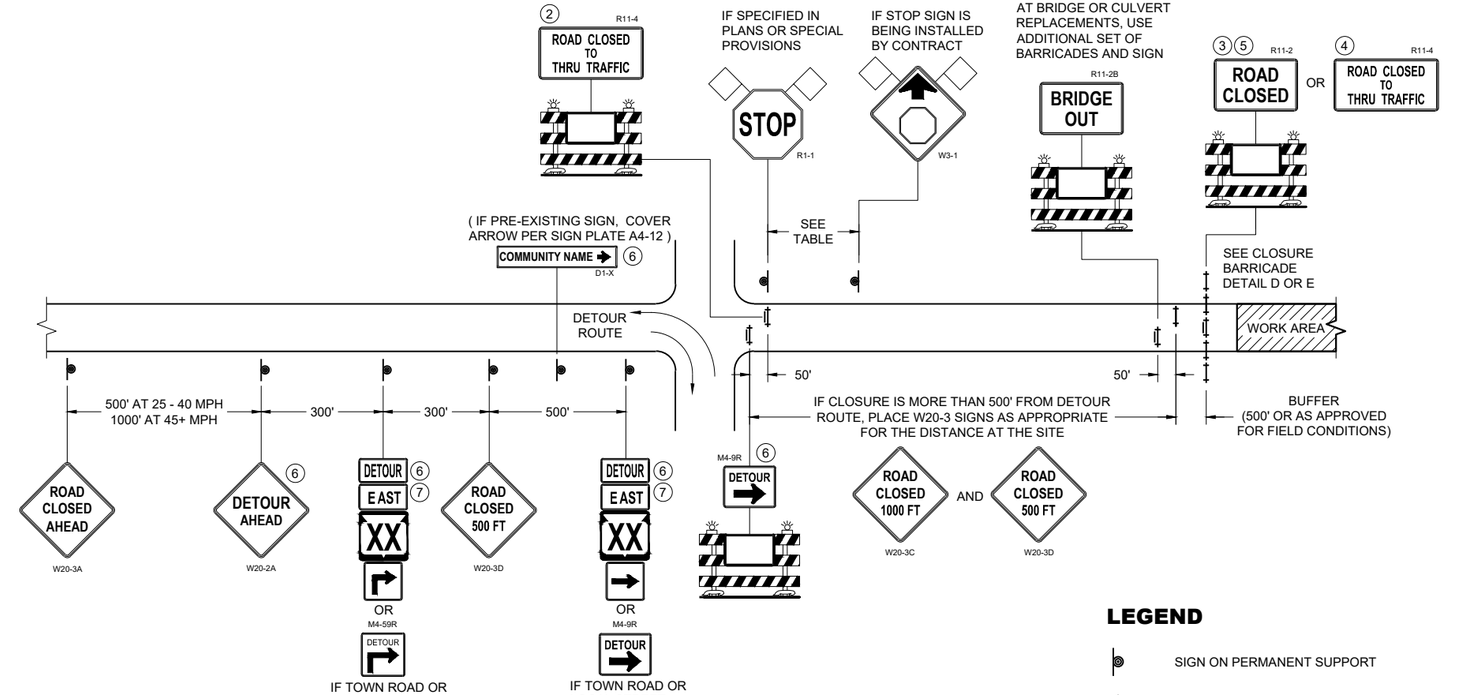
6

S.D.D. 15 B 1-8b



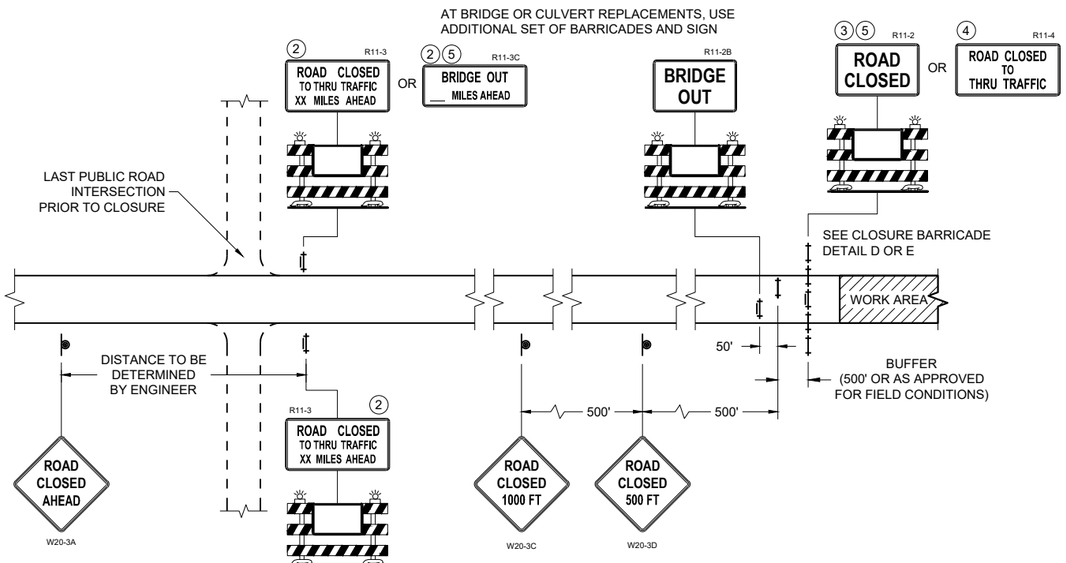
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

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

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA

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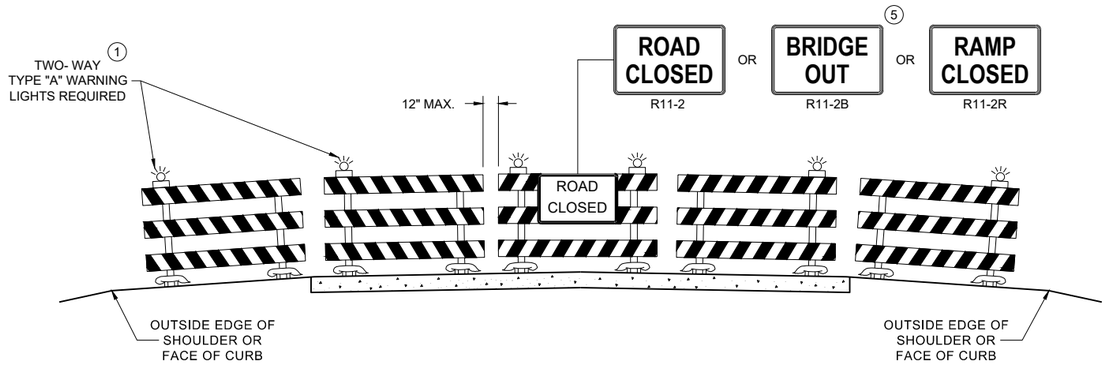
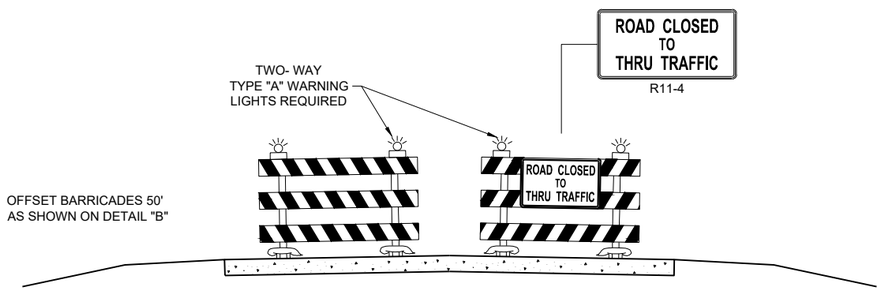
SDD 15C02-10a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

PARTIAL NUMBERS ON SIGNS SHALL BE DISPLAYED AS A WHOLE NUMBER(AS NEEDED) FOLLOWED BY A FRACTION. SIGNS SHALL NOT DISPLAY NUMBERS IN DECIMAL FORM.

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

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

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

SIGNS PLACED ON TYPE III BARRICADES THAT ARE SIZES OTHER THAN 48"X30" SHALL HAVE A CORRUGATED POLYPROPYLENE OR POLYETHYLENE PLASTIC SIGN BASE.

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING.

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

November 2025 — DATE

/S/ Andrew Heidtke — WORK ZONE ENGINEER

FHWA

6

SDD 15C02-10b

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

LEGEND

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

GENERAL NOTES

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

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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

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

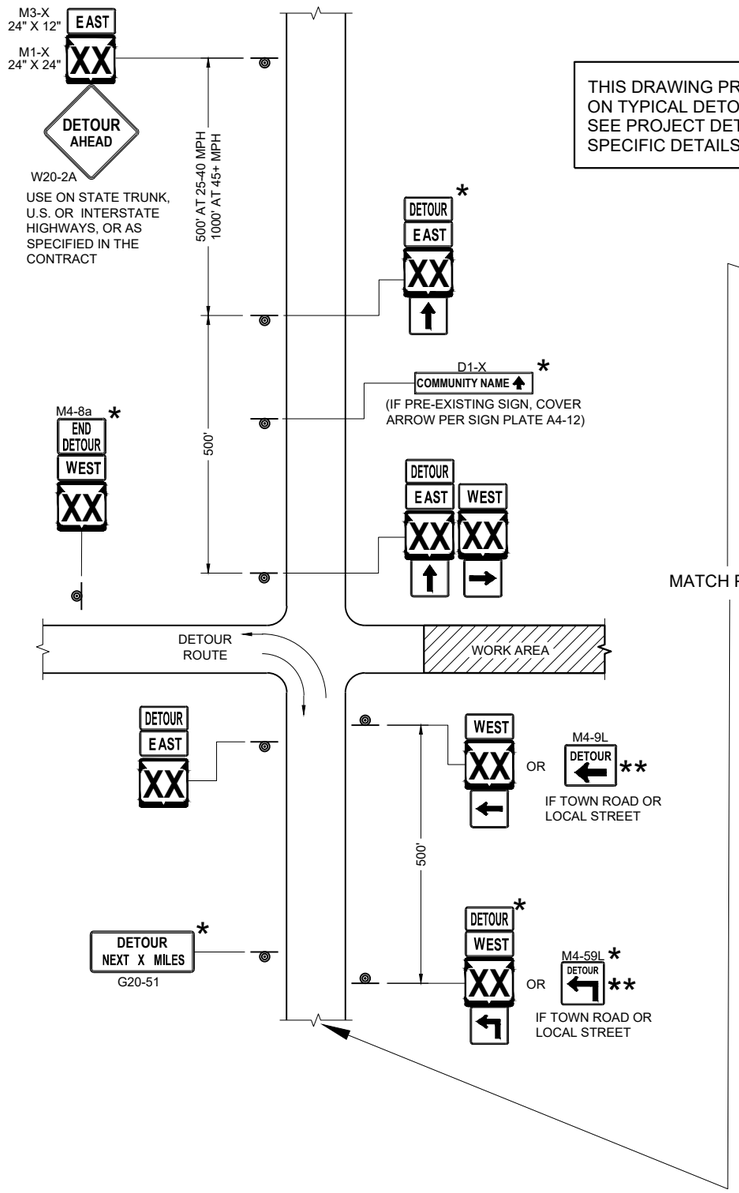
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

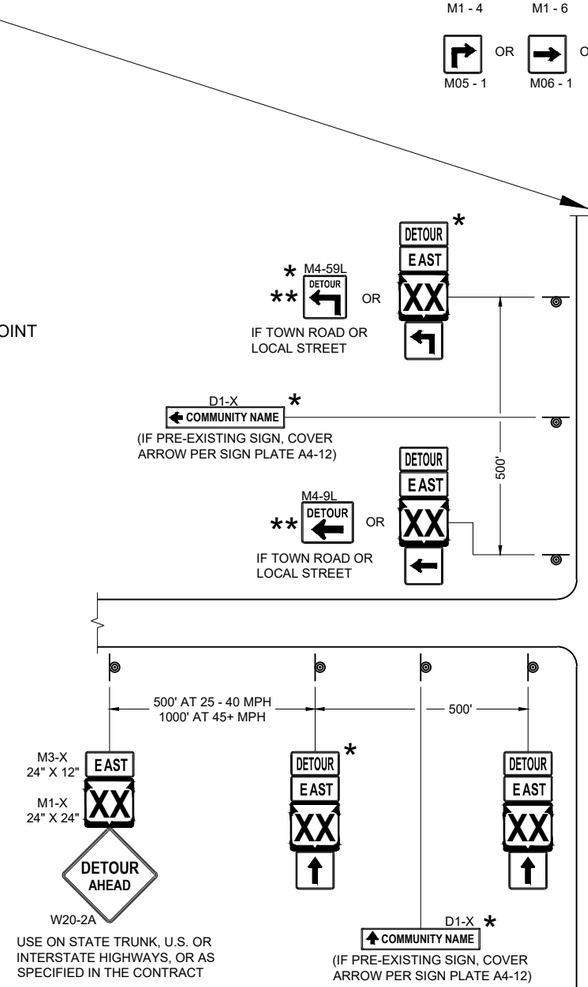
SIGN SIZES SHALL BE AS FOLLOWS:

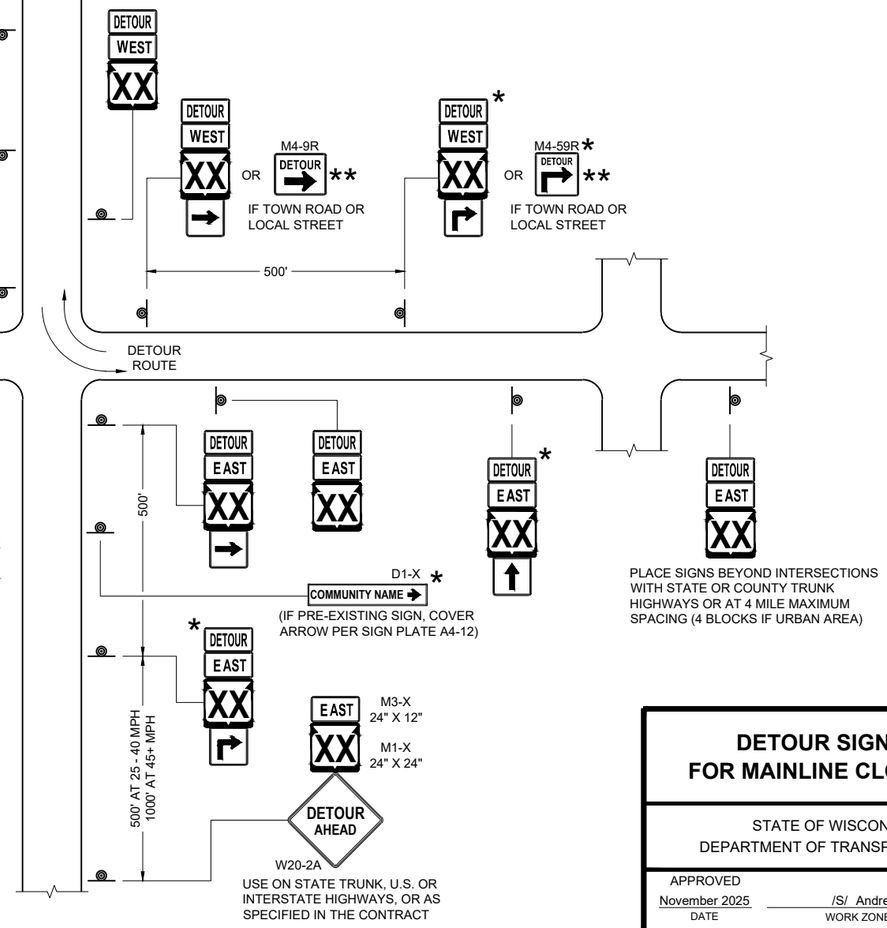
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

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

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







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

DETAIL F
DETOUR SIGNING

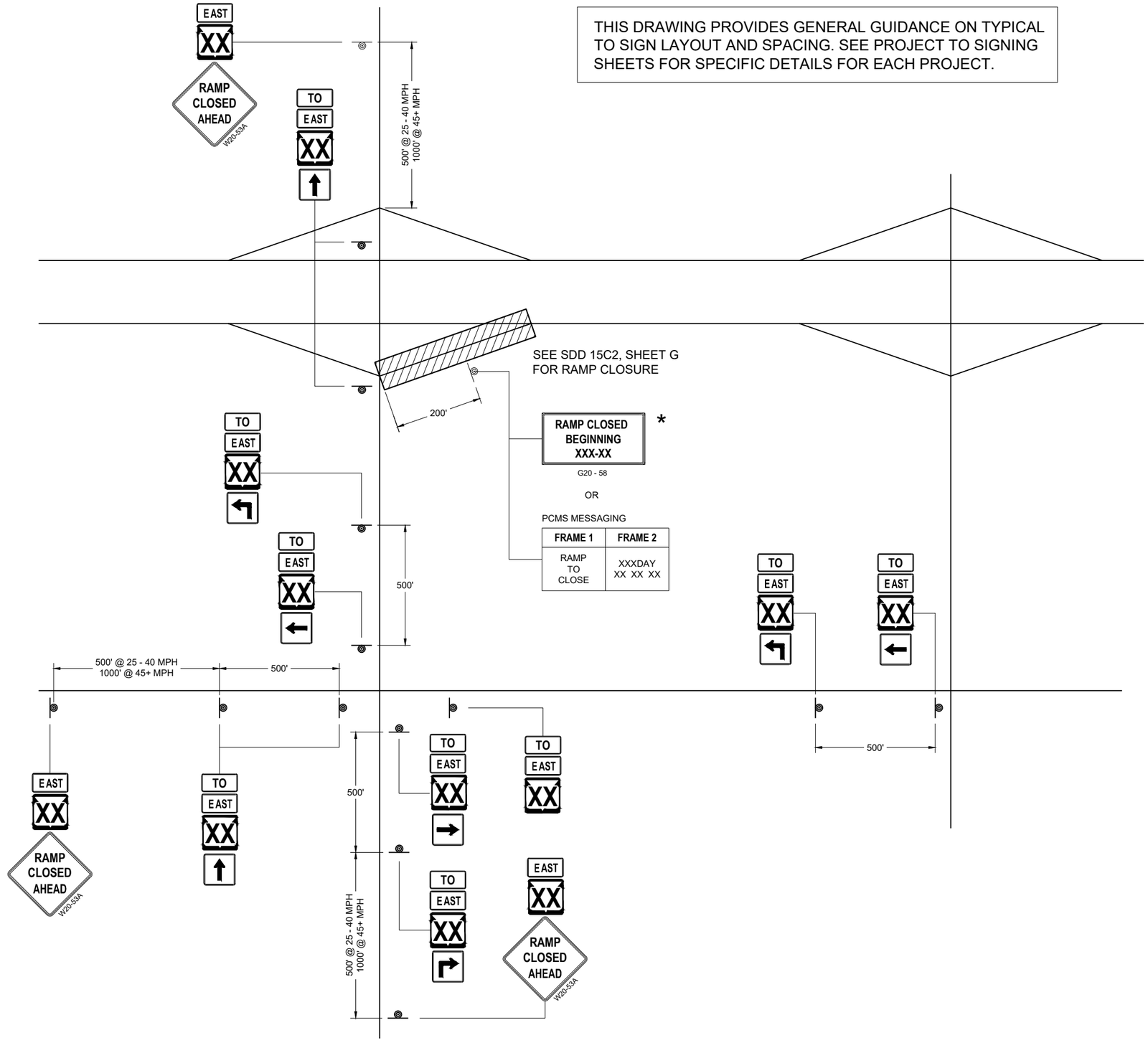
DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER

FHWA

6
SDD 15C02-10c



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

LEGEND

SIGN ON PERMANENT SUPPORT

TO / EAST — MO4 - 5; M3 - X

XX M1 - 6 OR XX M1 - 4 OR INTERSTATE XX M1 - 1

M05 - 1 OR M06 - 1 OR M06 - 1

GENERAL NOTES

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

IF THERE ARE ANY ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE TO ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT TO SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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

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

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

SIGN SIZES SHALL BE AS FOLLOW:
- M3 - X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS).
- MO4 - 5 SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS).
- M1 - 1, M1 - 4, AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS).
- MO5 - 1, MO5 - 2, AND MO6 - 1, SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS).
- W20 - 53A SHALL BE 48" X 48"

* PLACE "RAMP CLOSED BEGINNING" SIGN 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR LAYOUT.

ON RAMP LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER

FHWA

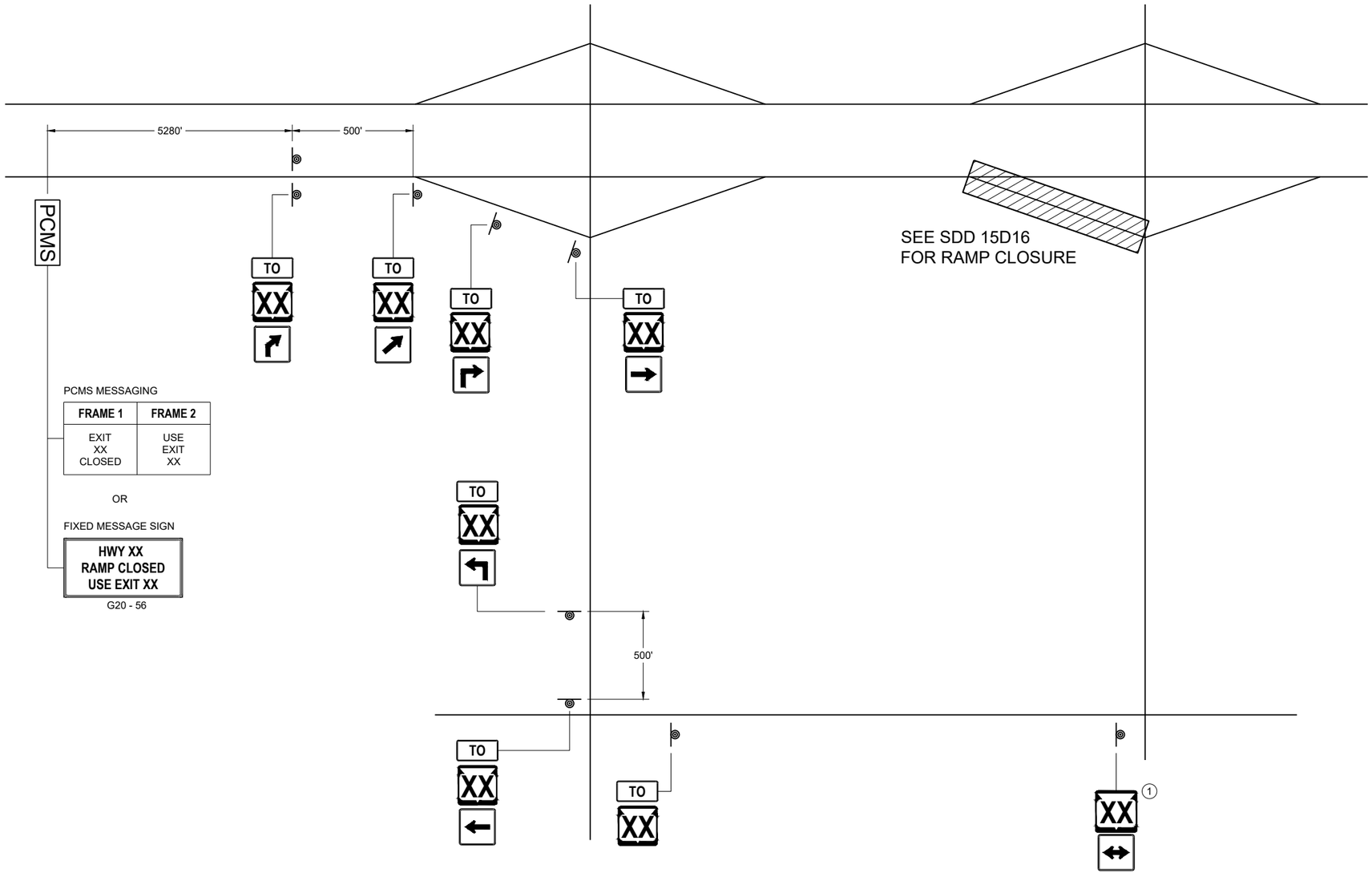
6

SDD 15C02-10d

6

SDD 15C02-10d

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL "TO" MO-4 SIGN LAYOUT AND SPACING. SEE PROJECT TO SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.



PCMS MESSAGING

FRAME 1	FRAME 2
EXIT XX CLOSED	USE EXIT XX

OR

FIXED MESSAGE SIGN

HWY XX
RAMP CLOSED
USE EXIT XX

G20 - 56

LEGEND

- SIGN ON PERMANENT SUPPORT
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN
- TO — MO4 - 5
- XX — M1 - 4 OR XX — M1 - 6 OR COUNTY X — M1 - 5A
- M05 - 1 OR M05 - 2 OR M06 - 1 OR M06 - 2 OR M06 - 4

GENERAL NOTES

SEE SDD 15D16 "TRAFFIC CONTROL, EXIT RAMP CLOSURE" DETAIL FOR TRAFFIC CONTROL AT EXIT RAMP CLOSURE.

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

IF THERE ARE ANY ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE "TO" MO-4 ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT TO SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

THE SPACING BETWEEN TRAFFIC CONTROL AND "TO" MO-4 SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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

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

SIGN SIZES SHALL BE AS FOLLOW:
- MO4 - 5 SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS).
- M1 - 4, M1 - 5A, AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS).
- MO5 - 1, MO5 - 2, AND MO6 - 1, SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS).

(1) ONLY ADD IF THERE ARE NO EXISTING ROUTE MARKERS FOR THE INTERSECTING ROADWAY.

OFF RAMP LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER

FHWA

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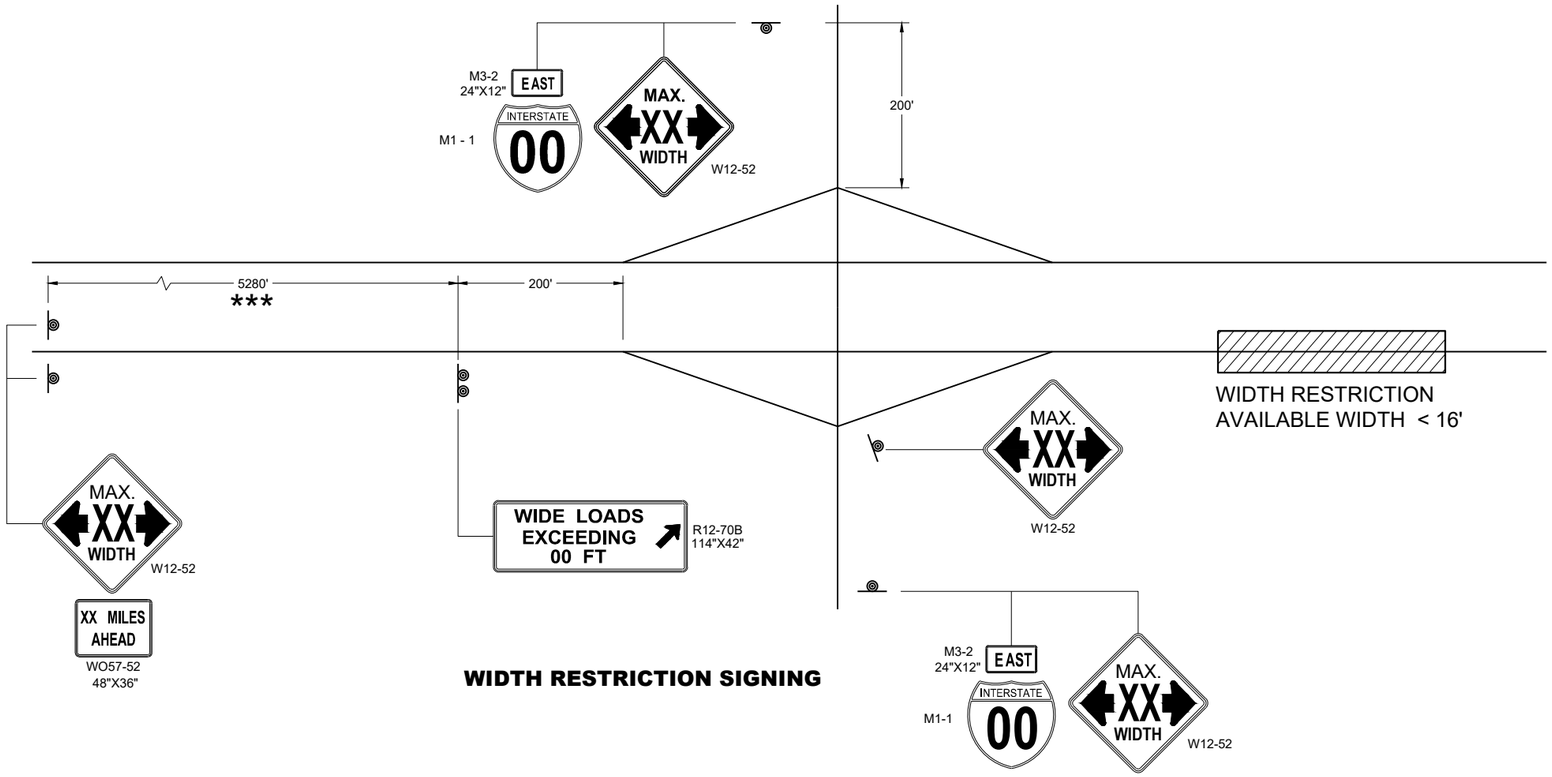
SDD 15C02-10e



WIDTH RESTRICTION SIGNING

LEGEND

SIGN ON PERMANENT SUPPORT

GENERAL NOTES

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

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

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

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

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

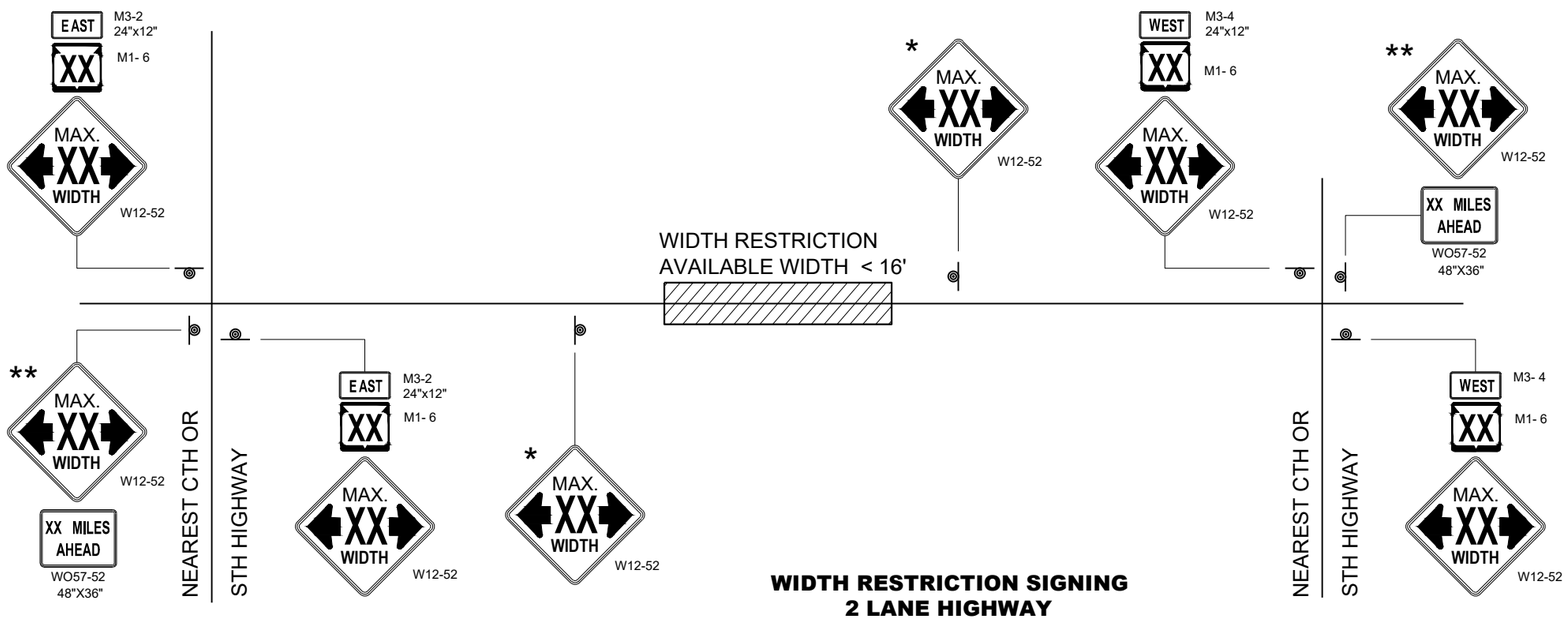
WIDTH ON SIGN TO BE APPROXIMATELY ONE FOOT LESS THAN AVAILABLE WIDTH.

* PLACE 500 FEET AFTER THE W20 - 1A AND 500 FEET BEFORE ADDITIONAL SIGNS FOR ROADWAYS WITH A PRE - CONSTRUCTION SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350 FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200 FOOT TYPICAL SPACING.

** SIGN SHALL BE VISIBLE FROM ROADWAY.

*** ADDITIONAL SIGNS NEEDED IF THERE IS AN ON RAMP BETWEEN SIGNS.

WIDTH ON SIGN TO BE APPROX. 1 - FOOT LESS THAN AVAILABLE WIDTH



WIDTH RESTRICTION SIGNING
2 LANE HIGHWAY

ADVANCED WIDTH RESTRICTION SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

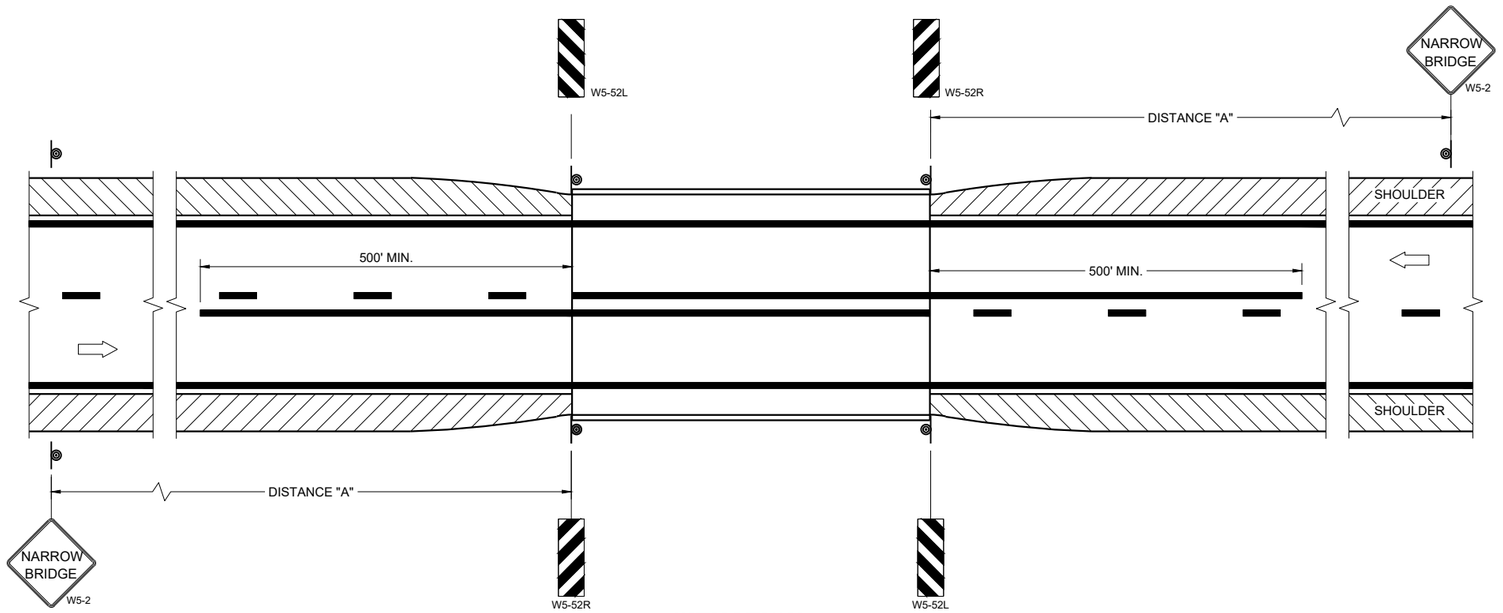
APPROVED
November 2025 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER

FHWA

6

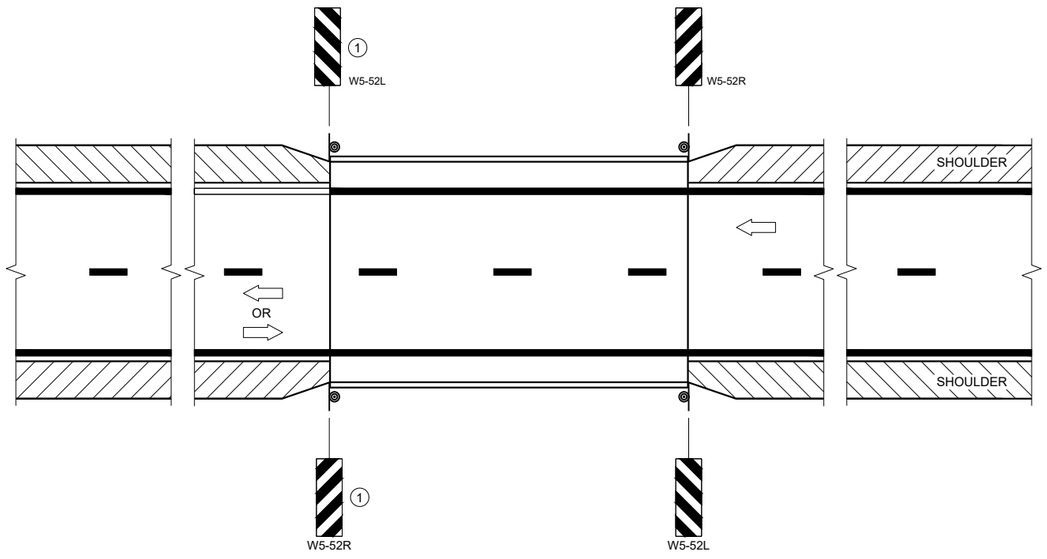
SDD 15C02-10f

SDD 15C02-10f



SITUATION 1

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



SITUATION 2

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

GENERAL NOTES

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

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

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

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

(1) OMIT ON ONE-WAY TRAVELED WAYS.

LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC

DISTANCE TABLE

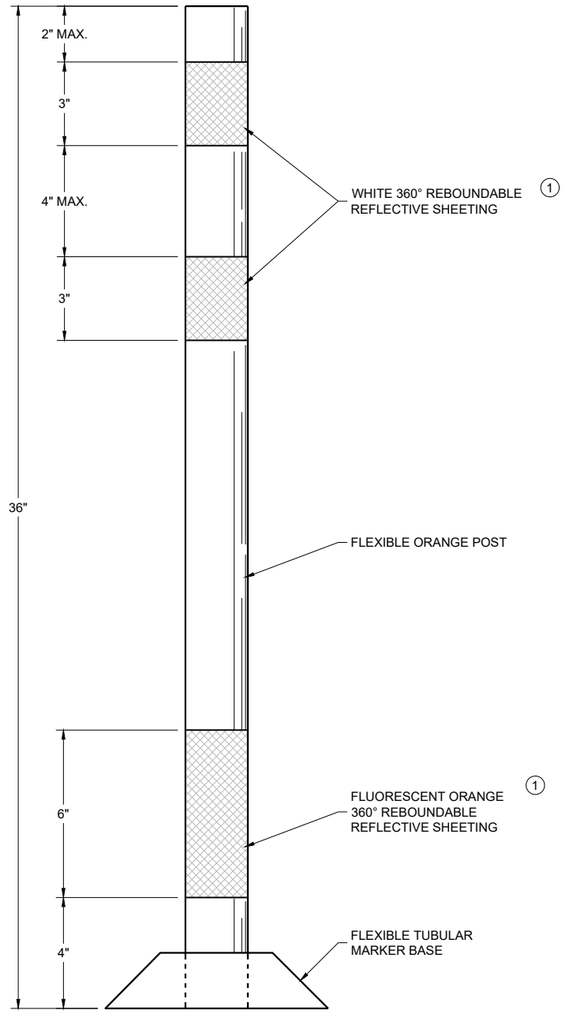
POSTED OR 85TH PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	700'

SIGNING AND MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6
SDD 15C06-12



FLEXIBLE TUBULAR MARKER POST WORK ZONE

GENERAL NOTES

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

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

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

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

6

CHANNELIZING DEVICES
FLEXIBLE TUBULAR
MARKER POST

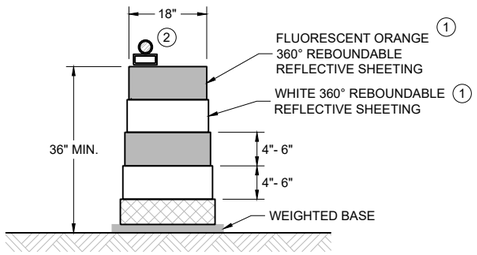
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 15C11-11a

GENERAL NOTES

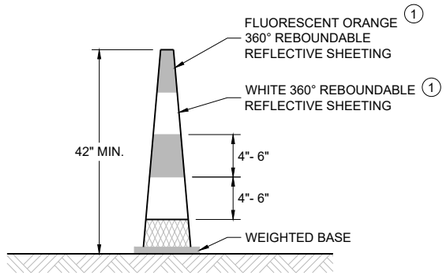
(1) REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

(2) LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.



DRUM

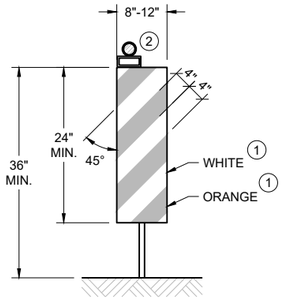
BALLAST WIDTHS
RANGE FROM 24"-36"



42" CONE

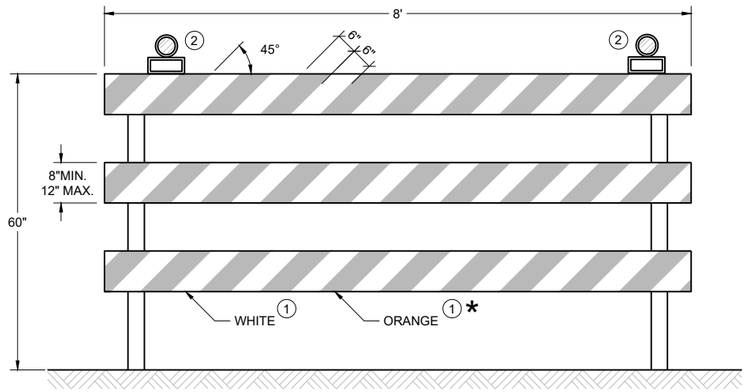
DO NOT USE IN TAPERS
½ SPACING OF DRUMS

BALLAST WIDTHS
RANGE FROM 14"-20"



VERTICAL PANEL

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



TYPE 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
February 2026 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER

FHWA

6
SDD 15C11-11b

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- (S) WZ START LOCATION MARKER
- (E) WZ END LOCATION MARKER
- CONNECTED ARROW BOARD
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN
- (S) — PORTABLE TRAFFIC SENSOR (PTS)
- FBS — FLASHING BEACON SIGNS
- STOPPED OR SLOW TRAFFIC WHEN FLASHING — WO8-76, 96" x 48"

GENERAL NOTES

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

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

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

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

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED OR AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED SIGNS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS. WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

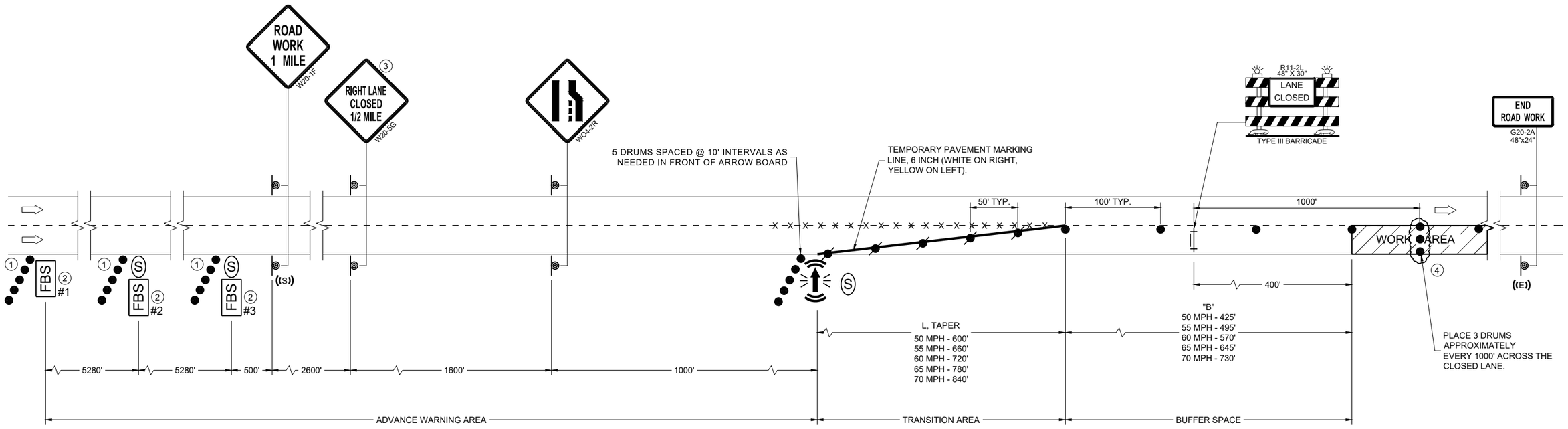
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

PORTABLE TRAFFIC SENSOR (PTS) MAY BE MOUNTED ON THE FBS, ARROW BOARD OR OTHER TRAILER DEVICES.

1. 5 DRUMS SPACED AT 10 FOOT INTERVALS AS NEEDED.
2. IF THERE ARE MORE THAN TWO LANES OR IF SPECIFIED IN THE PLANS, PLACE FBS ON BOTH SIDES OF THE ROADWAY.
3. IF THERE IS AN APPROVED TEMPORARY SPEED DECLARATION, ADD WO-3-5 SIGNS 400 FEET AFTER THE W20-5G SIGNS AND ADD R2-1 SIGNS (48"x60") 700 FEET AFTER THE WO3-5 SIGNS. A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES. INCLUDE A "RESUME SPEED LIMIT" SIGN 200 FEET MINIMUM (800 FEET DESIRABLE) BEYOND THE G30-3A "END ROAD WORK" SIGN
4. DRUMS IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.



TRAFFIC CONTROL, LANE CLOSURE, BASIC TRAFFIC QUEUE WARNING SYSTEM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 — DATE
/S/ Erin Schwark — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

6

SDD 15D12-16d

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- DIRECTION OF TRAFFIC
- CONNECTED ARROW BOARD
- WORK AREA
- (S) WZ START LOCATION MARKER
- (E) WZ END LOCATION MARKER

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT SHOULDER. FOR CLOSING THE LEFT SHOULDER, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR DIVIDED ROADWAYS WITH ANY NUMBER OF TRAVEL LANES.

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

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.

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

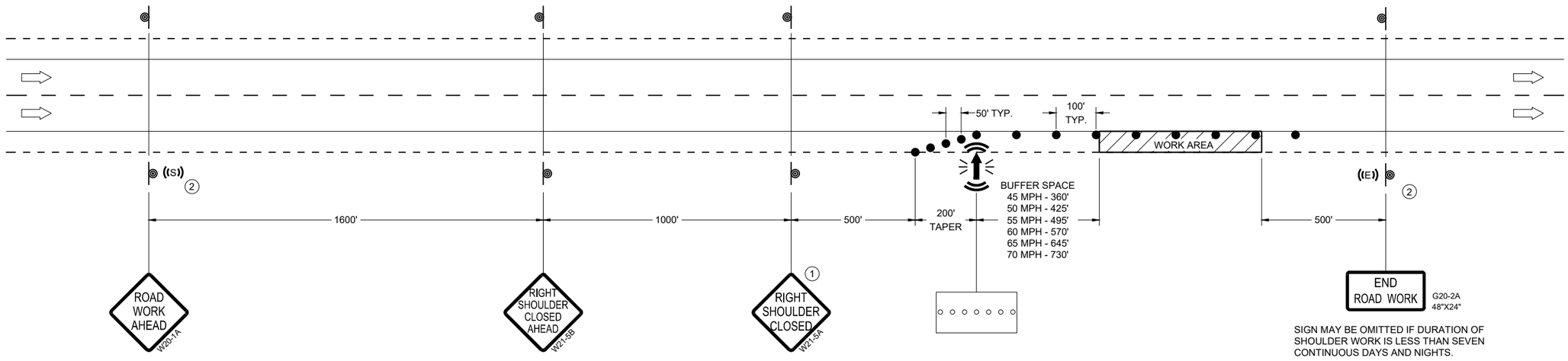
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

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

(1) FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR THE W21-5A SIGN MAY BE OMITTED.

(2) IF ALREADY PRESENT WITHIN PROJECT , DO NOT INCLUDE ADDITIONAL DEVICE.



SIGN MAY BE OMITTED IF DURATION OF SHOULDER WORK IS LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS.

TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Noveber 2025
DATE

/S/ Andrew Heidtke
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER

FHWA

6
SDD 15D27-05

LEGEND

- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- CONNECTED ARROW BOARD
- WZ START LOCATION MARKER
- WZ END LOCATION MARKER

GENERAL NOTES

RIGHT CLOSURE SHOWN (LEFT LANE CLOSURE SIMILAR)

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

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

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

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

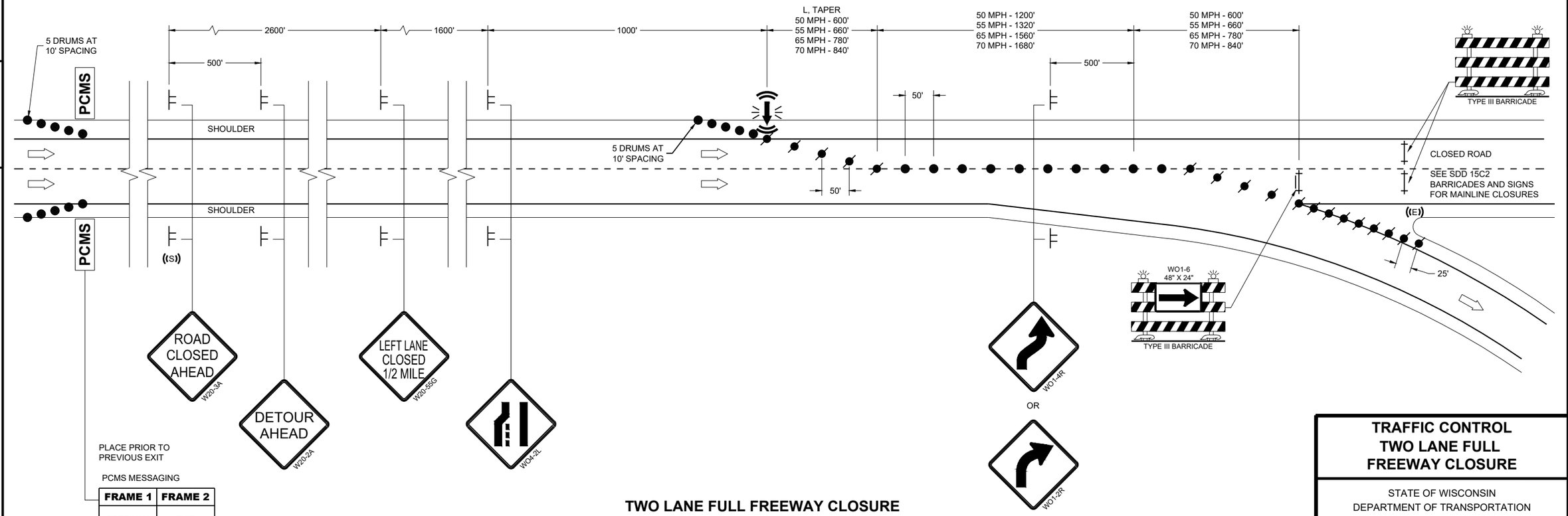
WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROL SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND / OR THE SPECIAL PROVISIONS OR AS DIRECTED BY THE ENGINEER.

PLACE A TYPE III BARRICADE APPROXIMATELY EVERY 1000' ACROSS EACH CLOSED LANE TO HELP REINFORCE THE DRUM LINE.

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

REFER TO DETOUR ROUTES FOR TRAFFIC GUIDANCE SIGNING.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED OR AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.



PLACE PRIOR TO PREVIOUS EXIT

PCMS MESSAGING

FRAME 1	FRAME 2
FREEWAY CLOSED	EXIT AHEAD

TWO LANE FULL FREEWAY CLOSURE

TRAFFIC CONTROL
TWO LANE FULL
FREEWAY CLOSURE

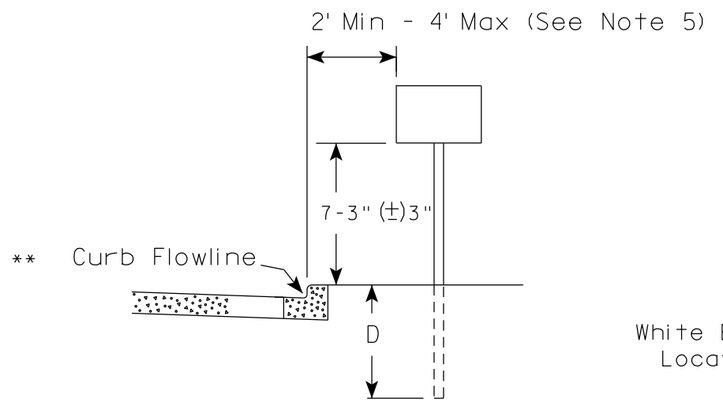
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2025 — DATE
/S/ Andrew Heidtke

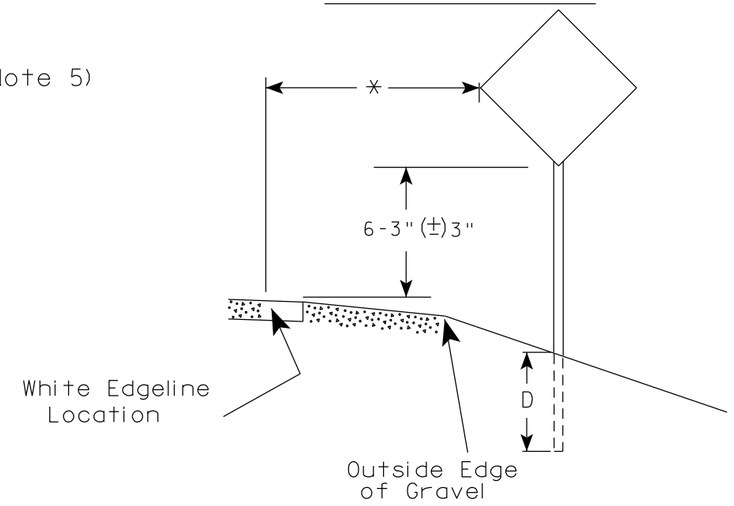
FHWA

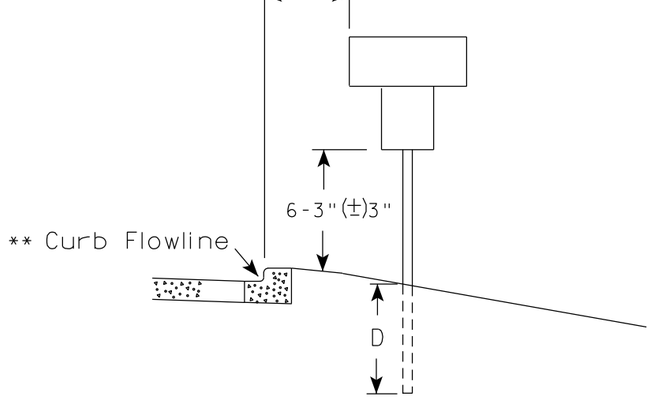
6
SDD 15D42-04

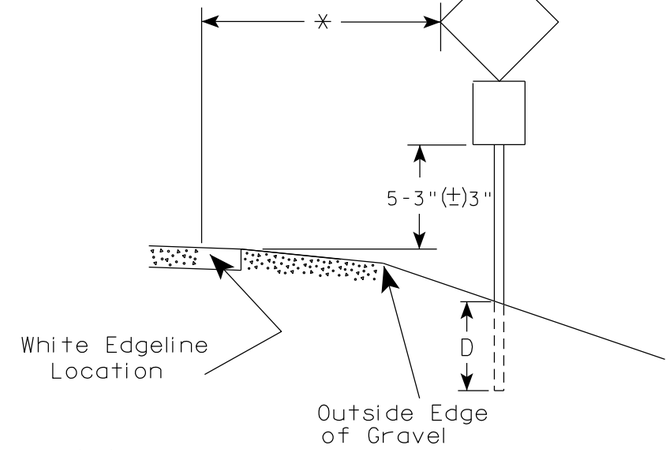
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

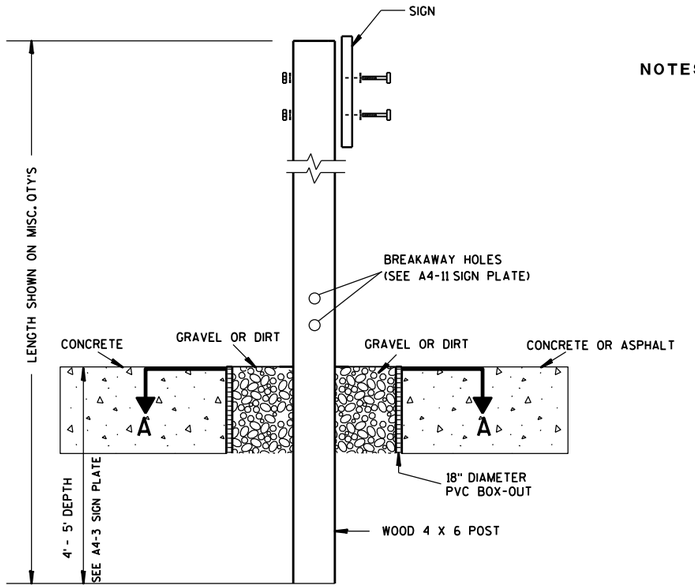
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

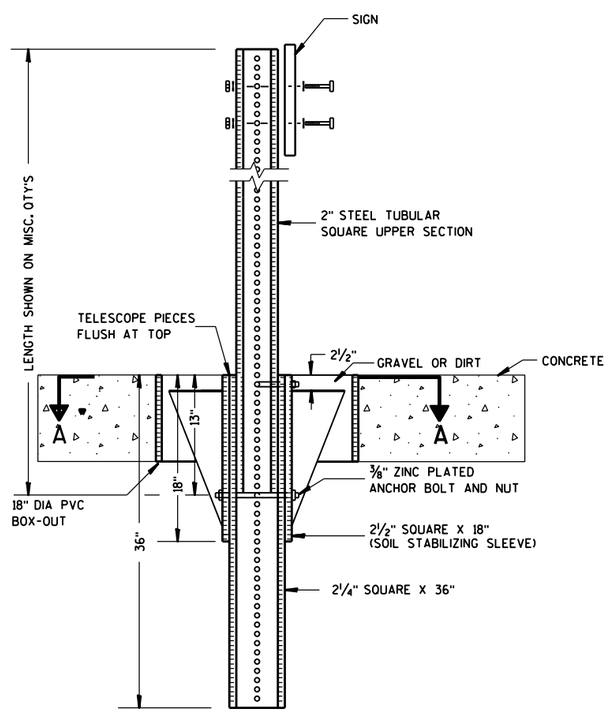
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 134	E



ELEVATION VIEW

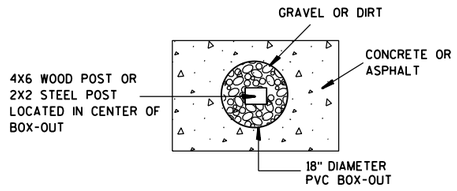
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

NOTES:
1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

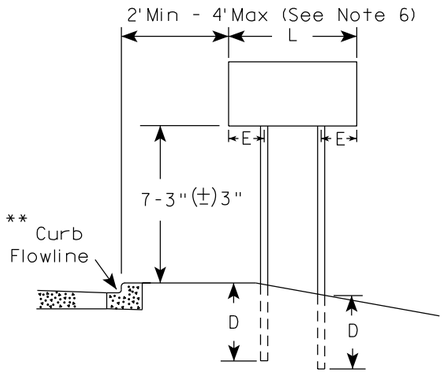
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

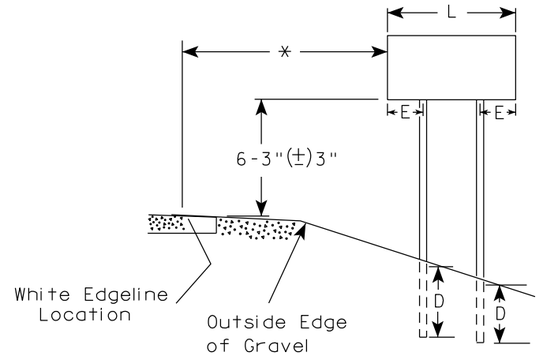
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

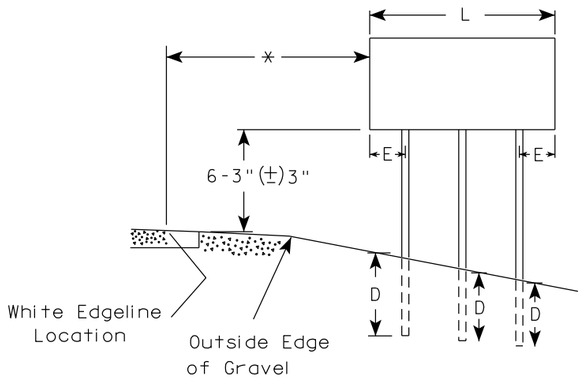
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

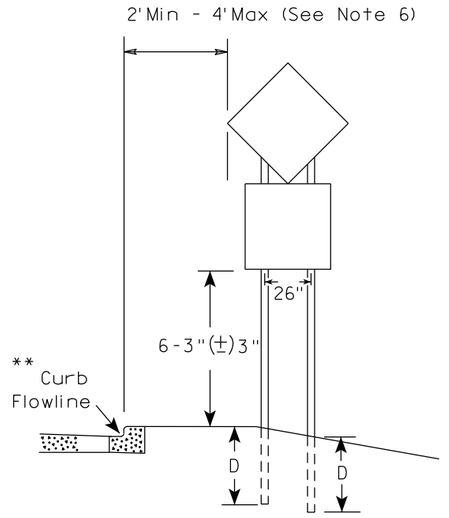
URBAN AREA



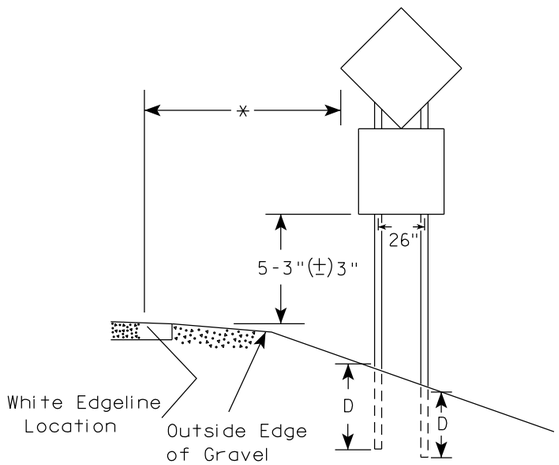
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

***	SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
	L	E
	Greater than 48" Less than 60"	12"
	60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

GENERAL NOTES

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

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

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

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

POST EMBEDMENT DEPTH

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

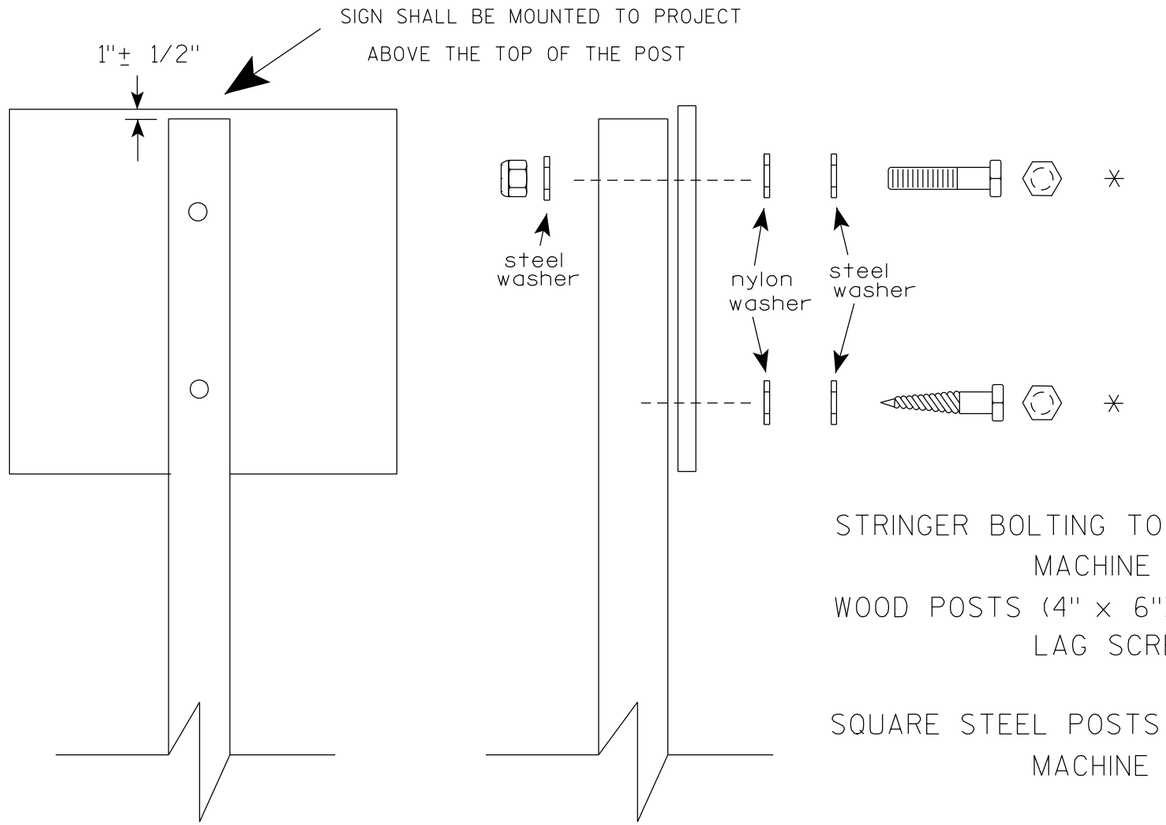
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 136	E



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

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL

1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS

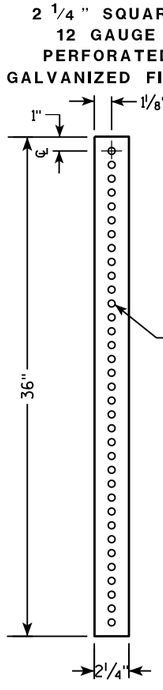
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

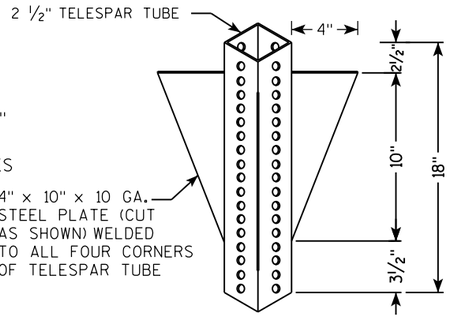
DATE 4/1/2020 PLATE NO. A4-8.9

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

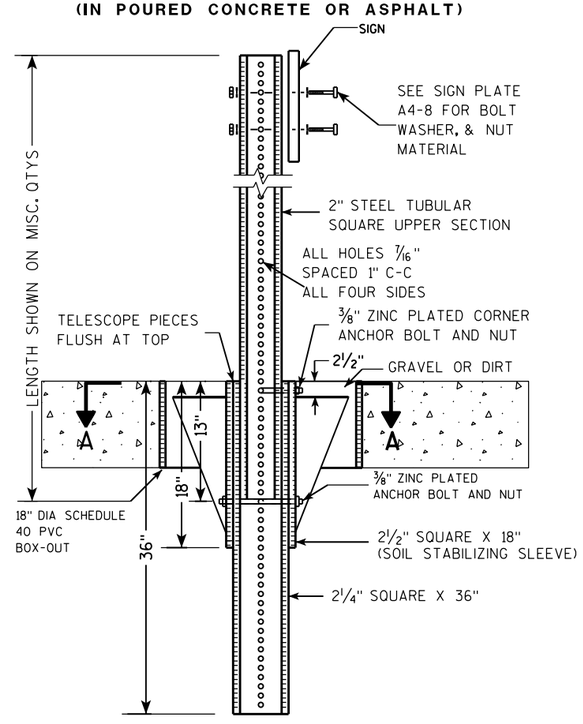
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



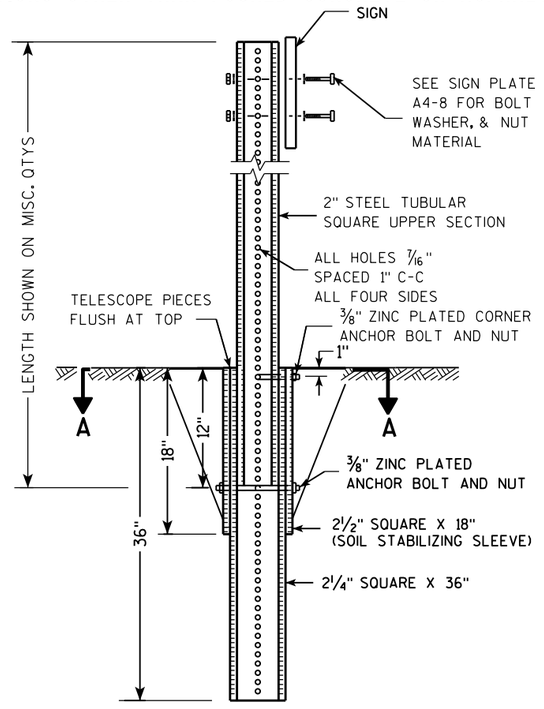
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

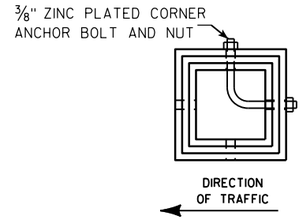


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

TUBULAR STEEL
SIGN POST
A4-9

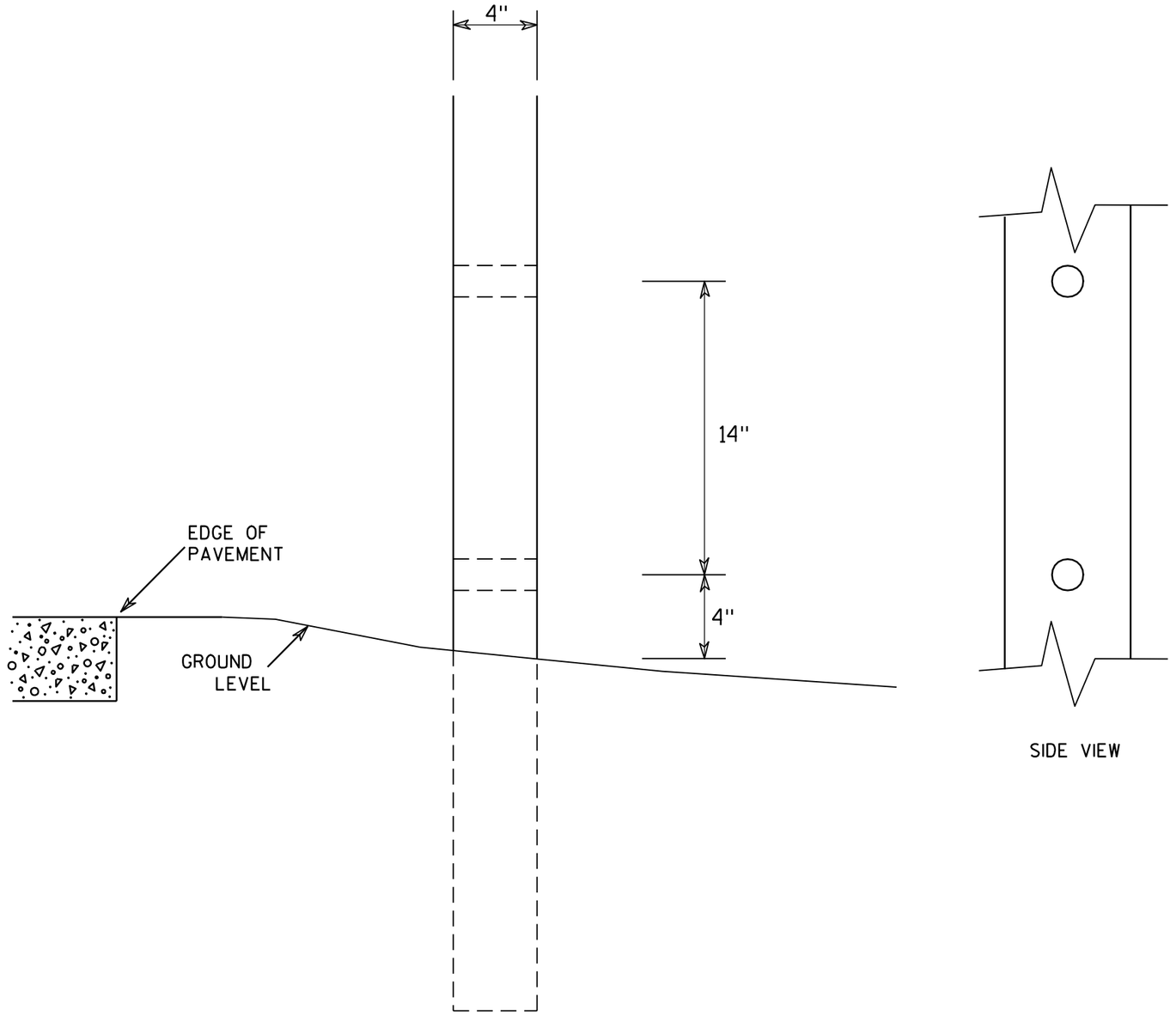
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE : 05-FEB-2015 17:09 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000
WISDOT/CADDS SHEET 42



SIDE VIEW

GENERAL NOTES

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

7

7

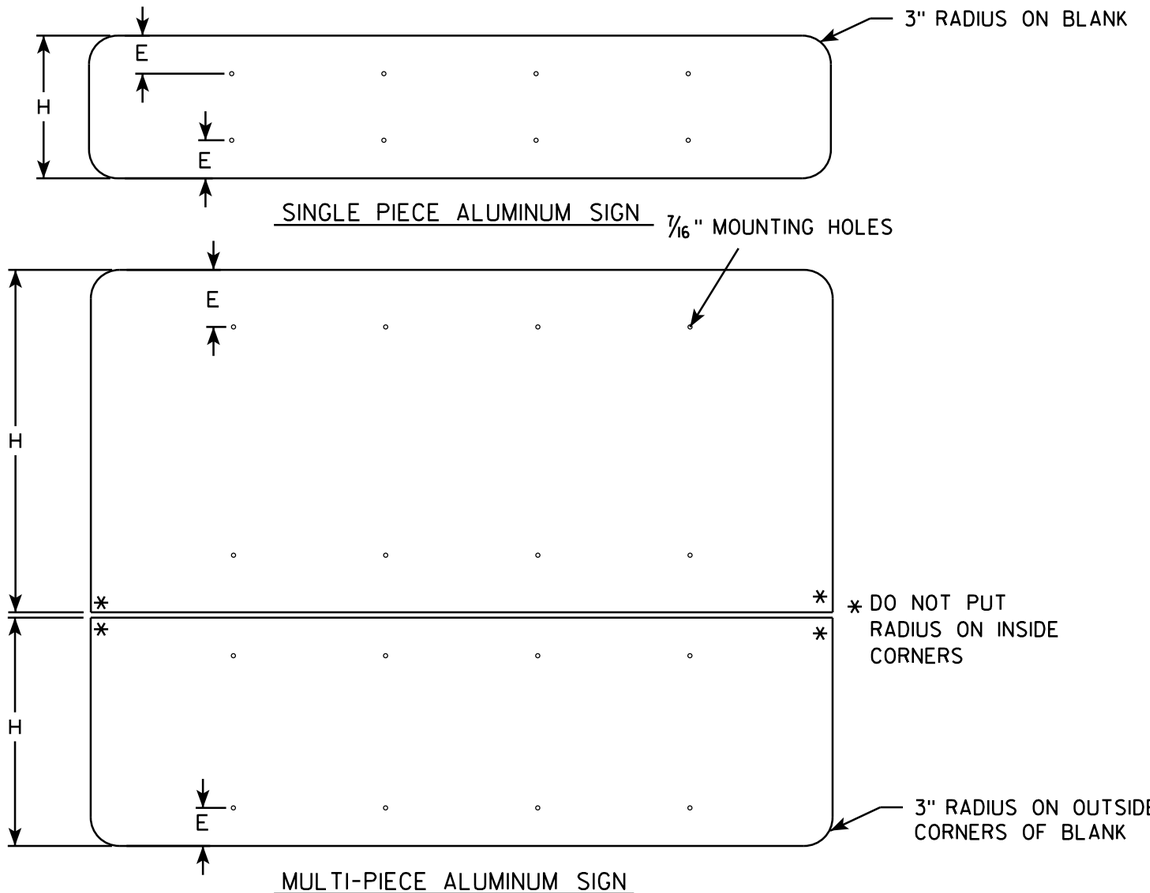
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

DATE 3/27/97 PLATE NO. A4-11.2

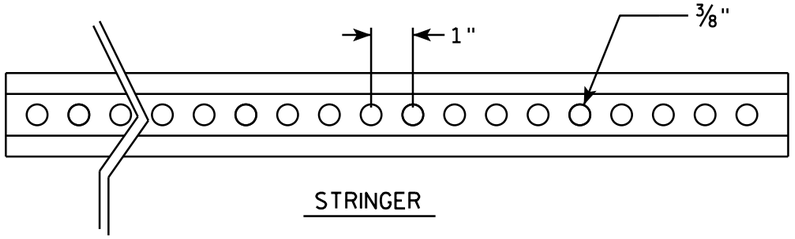
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 139	E



GENERAL NOTES

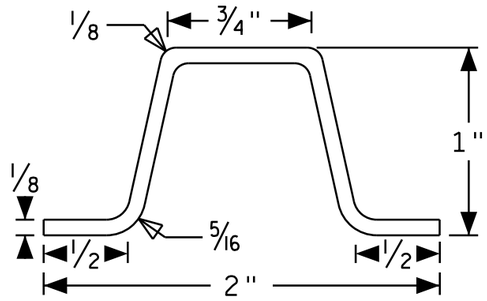
- ALL SIGNS OVER 60" IN WIDTH SHALL HAVE A 3" RADIUS ON THE OUTSIDE CORNERS OF THE ALUMINUM BLANK.
- MOUNTING HOLES SHALL BE 7/16" DIAMETER.
- SEE CHART FOR HOLE SPACING REQUIREMENTS
- FOR SIGN PANELS WITH DIMENSION (H) 36" AND OVER, DIMENSION E SHALL BE 6"
- FOR SIGN PANELS WITH DIMENSION (H) UNDER 36", DIMENSION E SHALL BE 4"
- SIGN STRINGER MATERIAL SHALL CONSIST OF STEEL CHANNEL POST SECTIONS, WEIGHING 1.12 LBS/FT IN ACCORDANCE WITH SECTION 633.2.1 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
- SEE SIGN PLATE A4-8 FOR SIGN STRINGER BOLTING REQUIREMENTS.

SIGN WIDTH	STRINGER WIDTH	POSTS	HOLE SPACING	MOUNTING HOLES
78"	72"	2	16"	15" 31" 47" 63"
84"	72"	2	17"	16½" 33½" 50½" 67½"
90"	72"	2	18"	18" 36" 54" 72"
96"	90"	2	19"	19½" 38½" 57½" 76½"
102"	90"	2	20"	21" 41" 61" 81"
108"	90"	2	21"	22½" 43½" 64½" 85½"
114"	108"	3	15"	12" 27" 42" 57" 72" 87" 102"
120"	108"	3	16"	12" 28" 44" 60" 76" 92" 108"
126"	108"	3	17"	12" 29" 46" 63" 80" 97" 114"
132"	126"	3	18"	12" 30" 48" 66" 84" 102" 120"
138"	126"	3	19"	12" 31" 50" 69" 88" 107" 126"
144"	126"	3	20"	12" 32" 52" 72" 92" 112" 132"

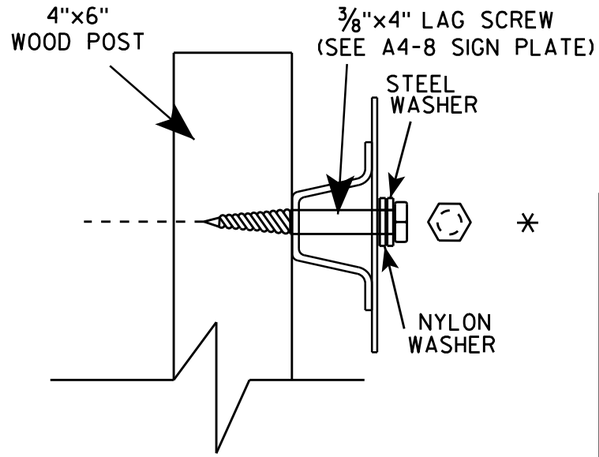


STRINGER

CROSS SECTION VIEW OF CHANNEL



POST MOUNTING



SIGN STRINGER MOUNTING REQUIREMENTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch

for State Traffic Engineer

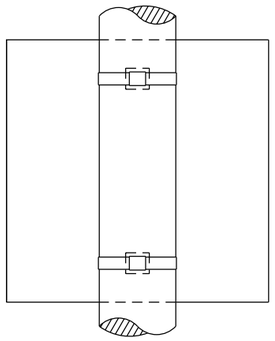
DATE 4/26/16 PLATE NO A4-18.1

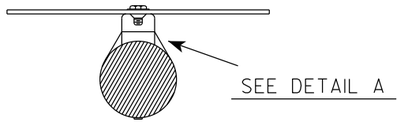
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

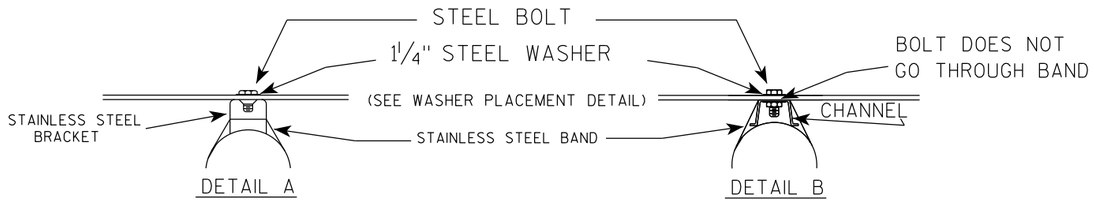
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A418.dgn PLOT DATE : 27-APR-2016 13:56 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 41.805205:1.000000 WISDOT/CADDS SHEET 42

BANDING

SINGLE SIGN



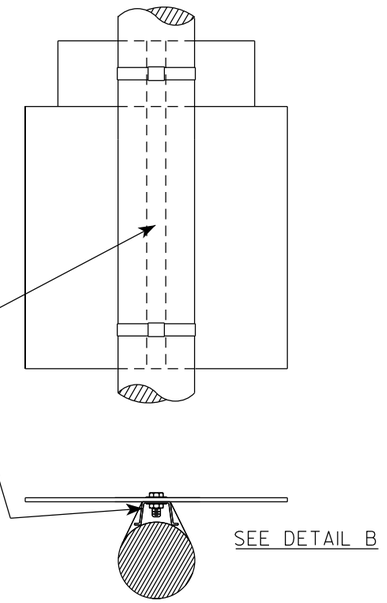




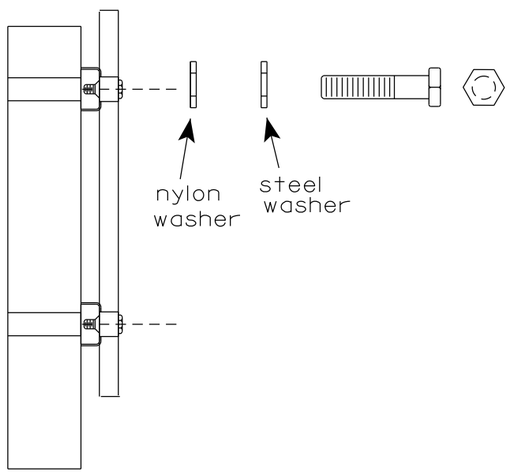
GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be ¾" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
   b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY



WASHER PLACEMENT



WASHERS (ALL POSTS) -
1-1/4" O.D. X ⅜" I.D. X 1/16" STEEL
1-1/4" O.D. X ⅜" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

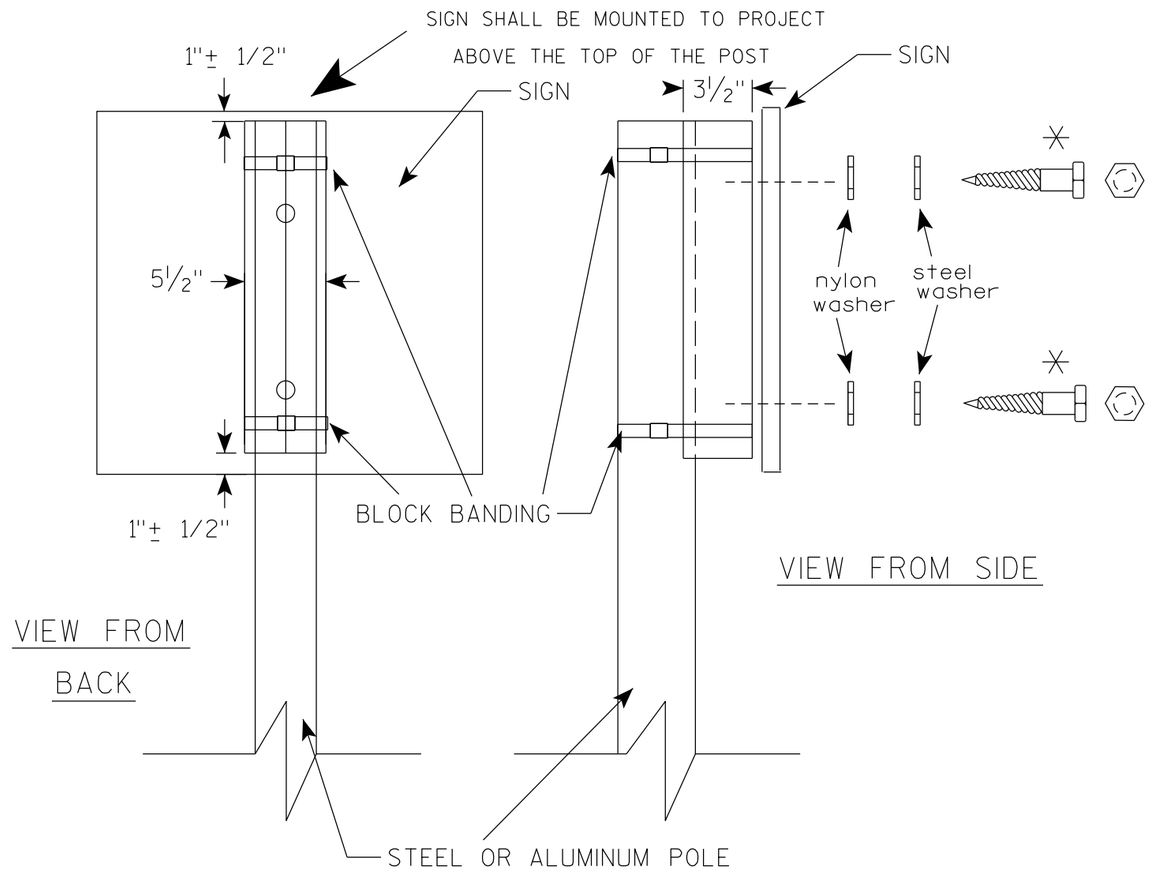
DATE 6/10/19 PLATE NO. A5-9.4

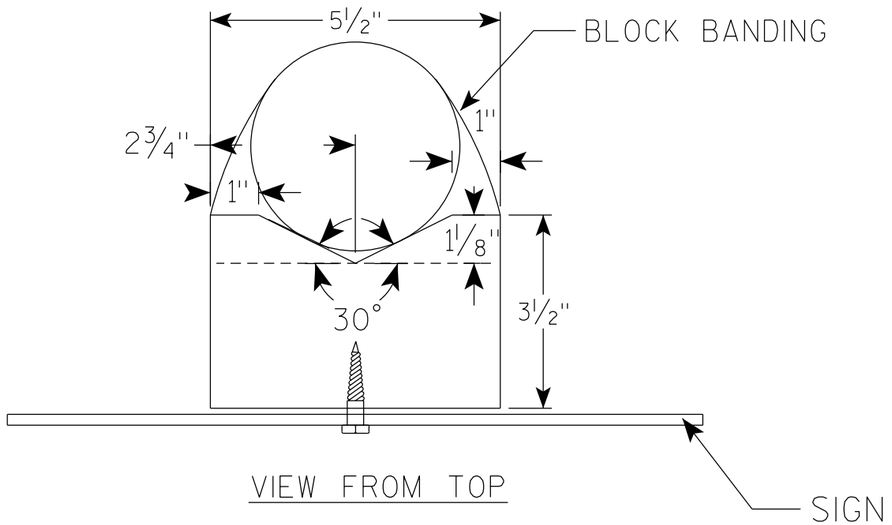
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 141	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A59.dgn PLOT DATE : 10-JUN 2019 4:10 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

7

7





GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, ¾" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORNALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
   b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✳ LAG BOLTS SHALL BE ⅜" X 2½"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

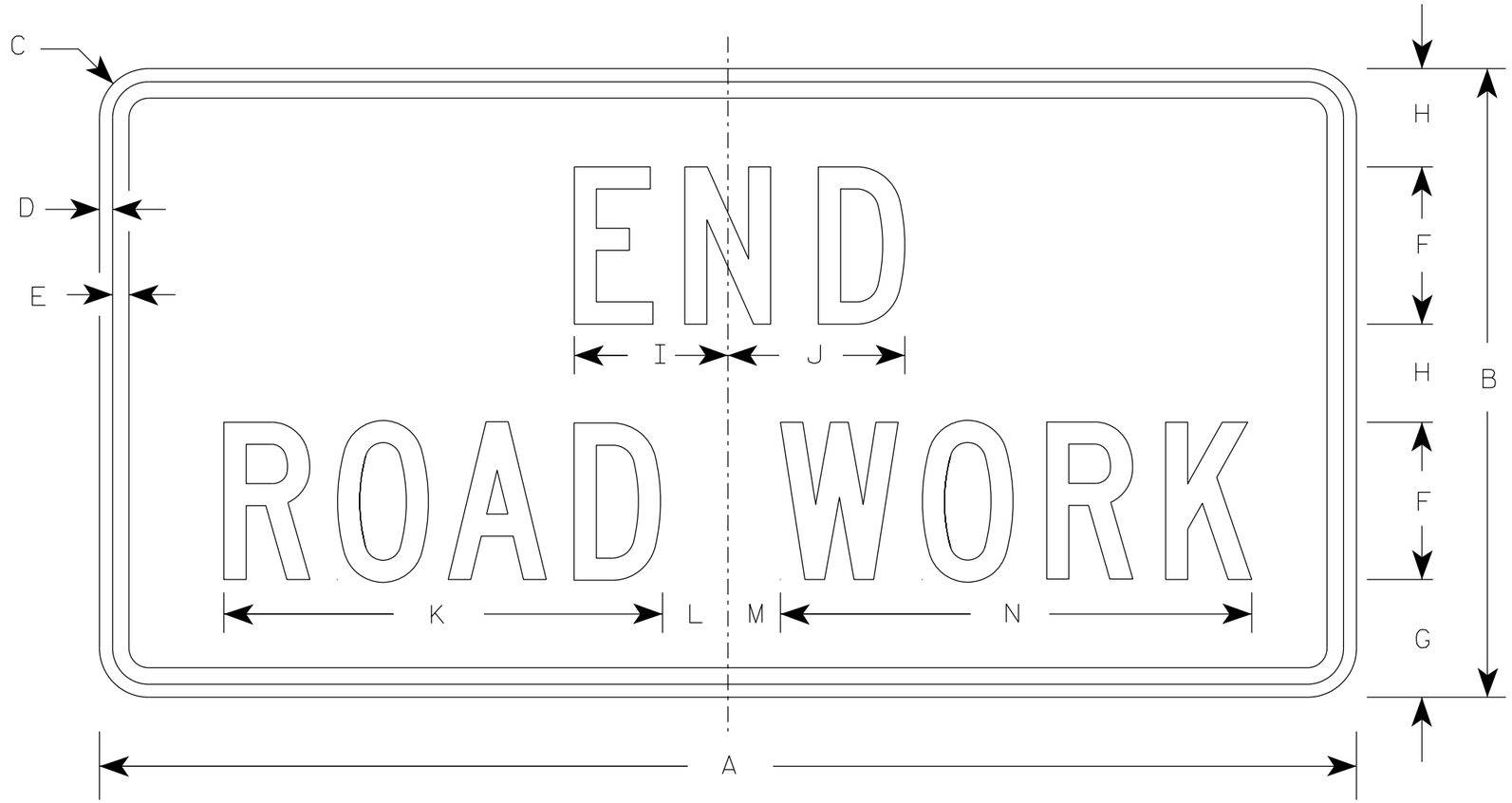
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:

SHEET NO: 142 E



G20-2A

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/2	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5
2	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
2M	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
3	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
4	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
5	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0

STANDARD SIGN

G20-2A

WISCONSIN DEPT OF TRANSPORTATION

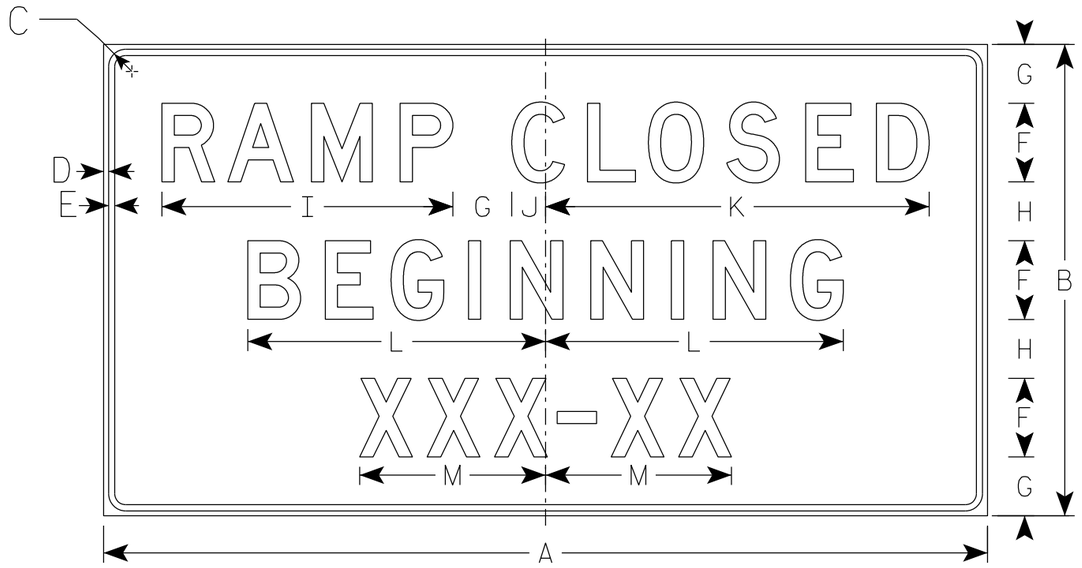
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 1/26/2023 PLATE NO. G20-2A.10

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

NOTES

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



G20-58

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	72	36	1 5/8	5/8	3/4	6	5	4	22 1/4	2 3/8	29 1/2	22 3/4	14 1/4														18.0
3	90	48	1 5/8	5/8	3/4	8	6	6	29 5/8	3 3/8	39	30 3/8	19														30.0
4																											
5																											

STANDARD SIGN
G20-58

WISCONSIN DEPT OF TRANSPORTATION

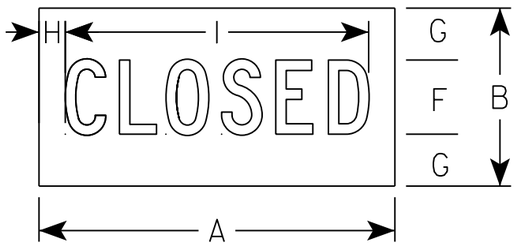
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/19/2020 PLATE NO. G20-58.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 144 | E

NOTES

1. Sign is Type II- Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Material shall be .040 aluminmum



G20-62

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2																											
3																											
4	48	24				10	7	3 1/2	40 7/8																		8.0
5																											

STANDARD SIGN
G20-62

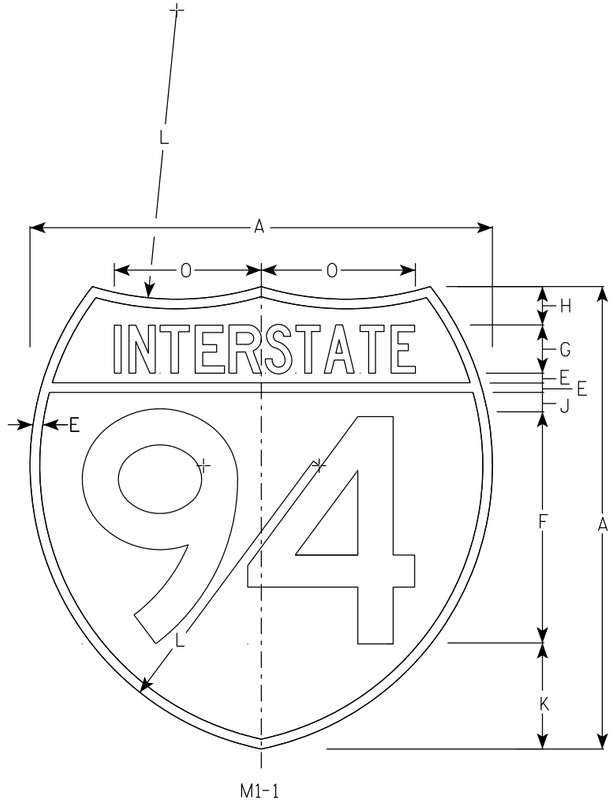
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

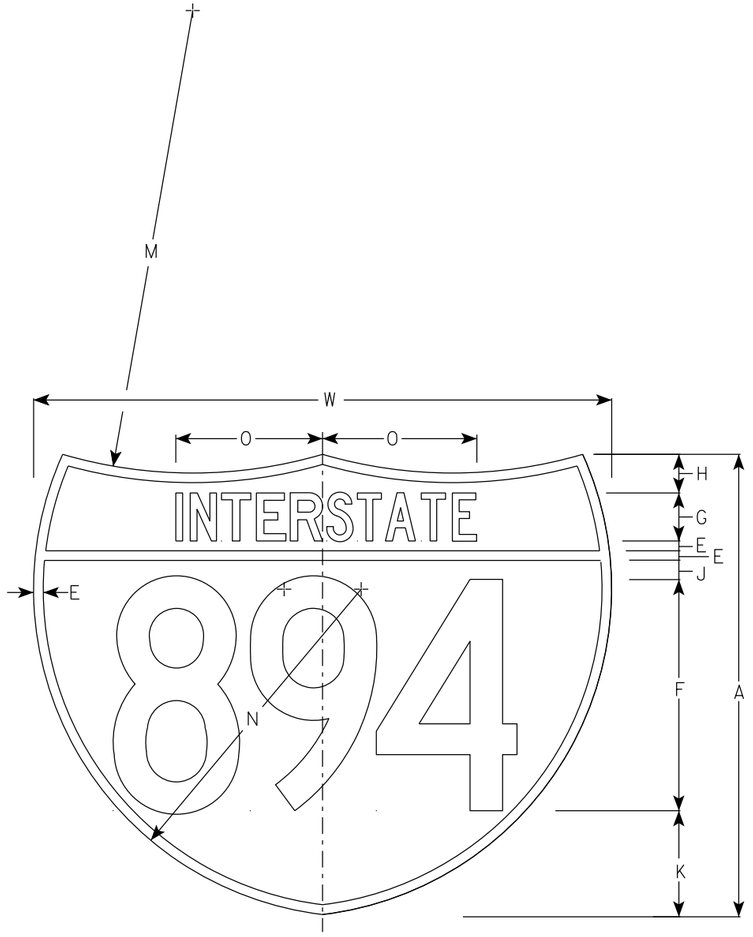
DATE 9/24/15 PLATE NO G20-62.1

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

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\G2062.DGN PLOT DATE : 01-DEC-2015 17:53 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 20.431338:1.000000



M1-1



M1-1A

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - Top Red - Bottom Blue
   Message - White
3. Message Series - See note 5
4. Substitute appropriate numerals & ajust spacing as per plate A10-1.
5. M1-1 - Numerals - D
   Interstate - C
   M1-1A - All copy - C

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	M1-1 Area sq. ft.	M1-1A Area sq. ft.
1																											
2	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91
2M	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91
3	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79
4	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79
5	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79

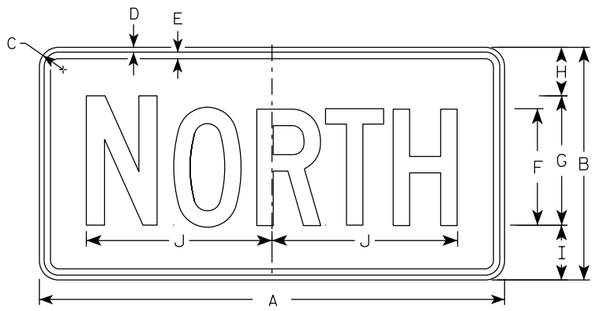
INTERSTATE ROUTE MARKER M1-1 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

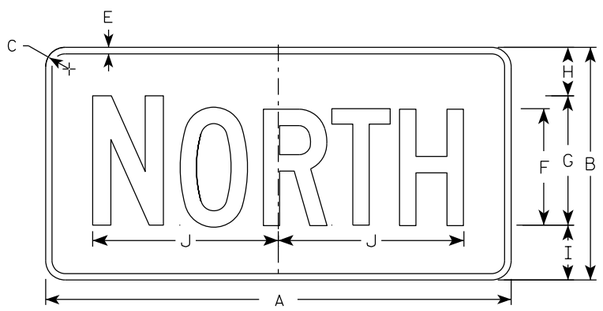
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 11/7/2022 PLATE NO. M1-1.9

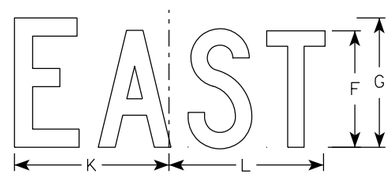
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 146 | E



M3-1
MM3-1
MP3-1

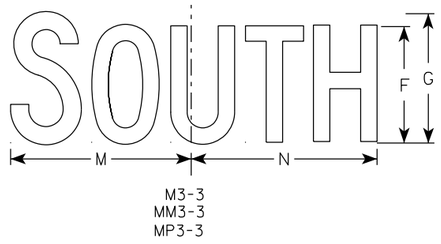


MB3-1
MK3-1
MN3-1

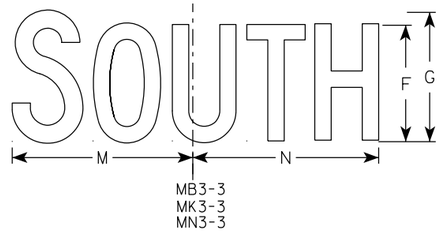


M3-2
MM3-2
MP3-2

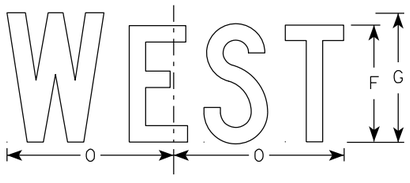
MB3-2
MK3-2
MN3-2



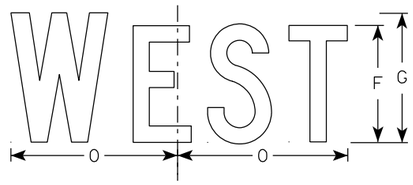
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H Reflective
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White
   MK3-1 thru MK3-4 Background - Green
   Message - White
   MM3-1 thru MM3-4 Background - White
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White
   MP3-1 thru MP3-4 Background - White
   Message - Blue
6. Note the first letter of each direction is larger than the remainder of the message.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/2	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4												2.00
2M	24	12	1 1/2	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4												2.00
3	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
4	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
5	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5

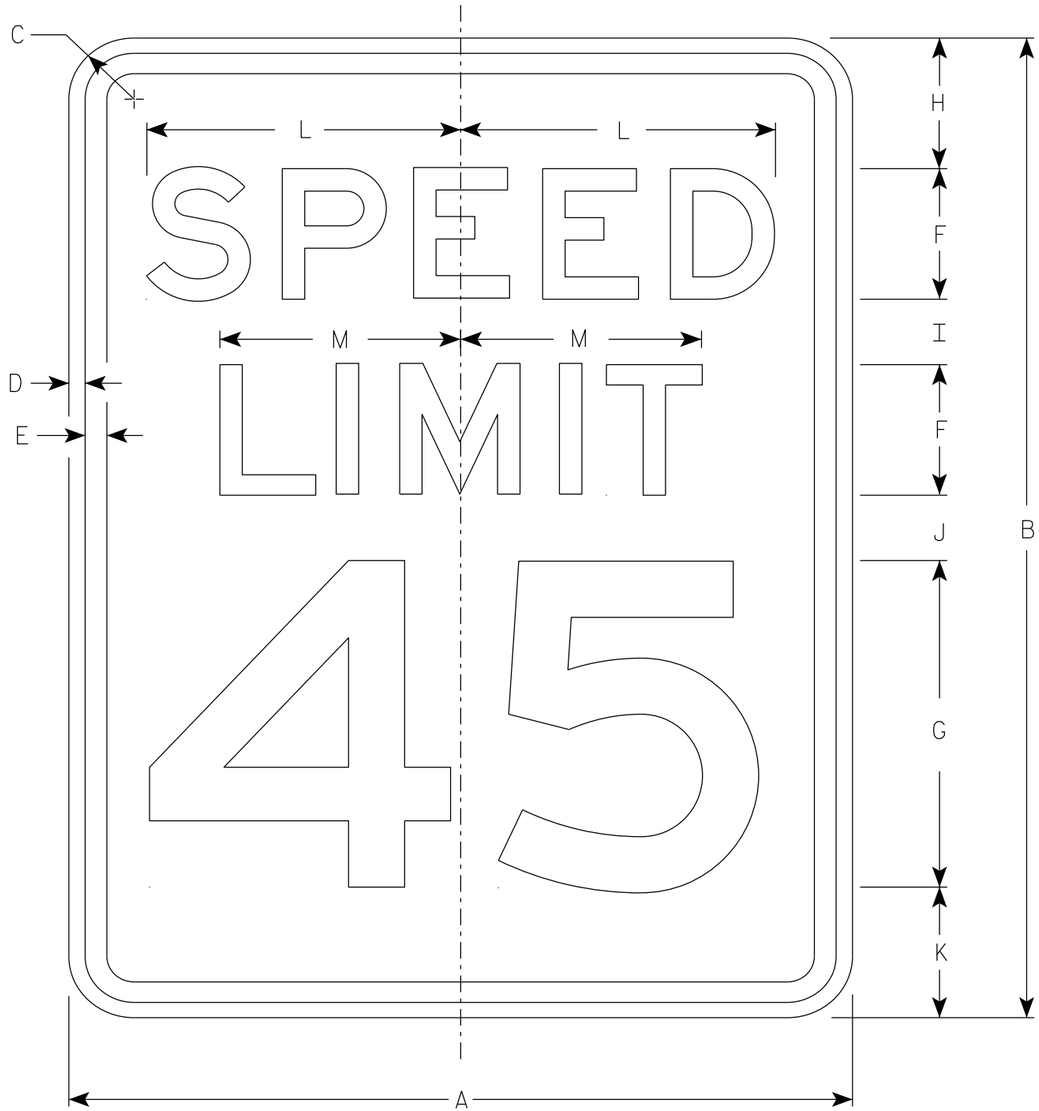
STANDARD SIGNS
M3-1 THRU M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 2/8/2023 PLATE NO. M3-1.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 147	E



R2-1

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - E
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/2	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/2	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 7/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 7/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 7/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	3	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

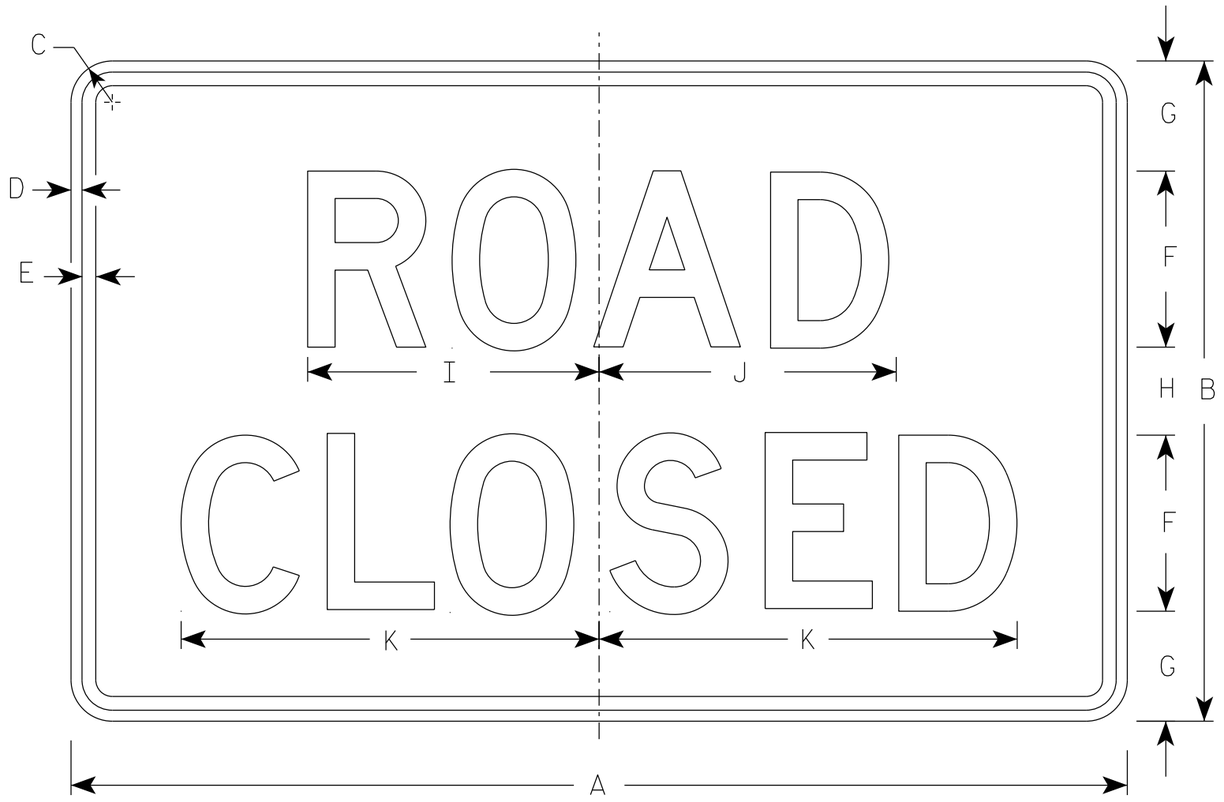
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/1/23 PLATE NO. R2-1.14

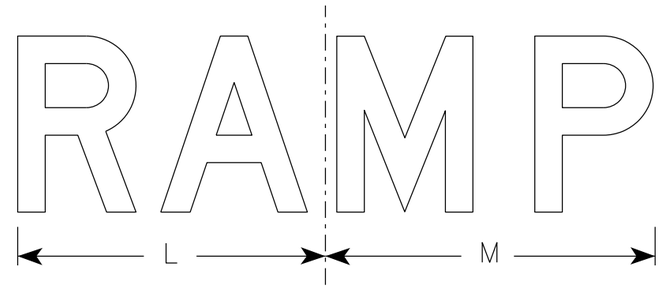
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 148 | E



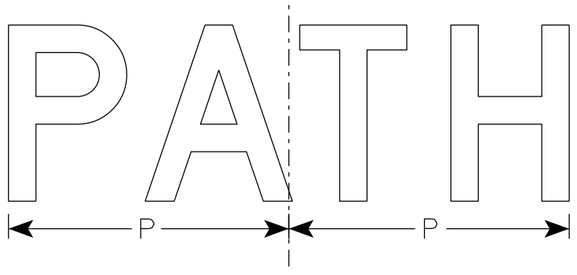
R11-2

NOTES

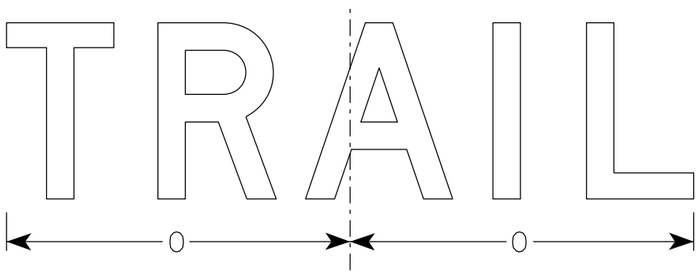
1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Modify the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



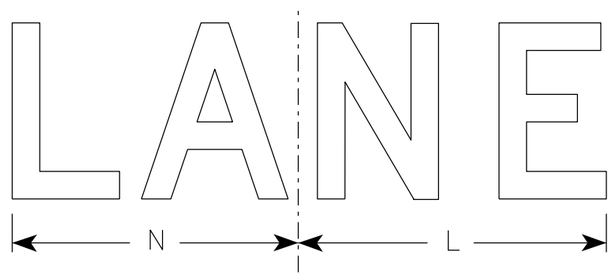
R11-2R



R11-2C



R11-2T



R11-2L

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8	12 3/4											10.0
2M	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8	12 3/4											10.0
3	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8	12 3/4											10.0
4	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8	12 3/4											10.0
5	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8	12 3/4											10.0

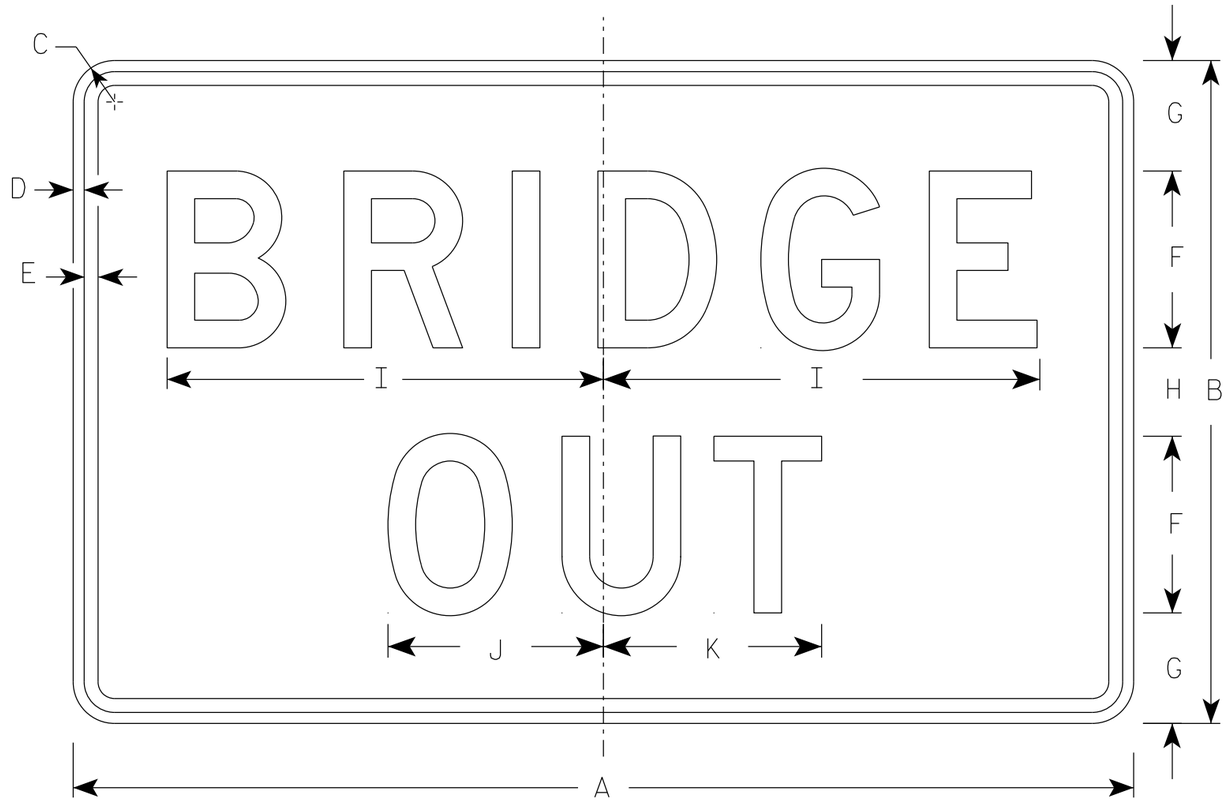
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/3/26 PLATE NO. R11-2.13

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



R11-2B

NOTES

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

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

STANDARD SIGN
R11-2B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

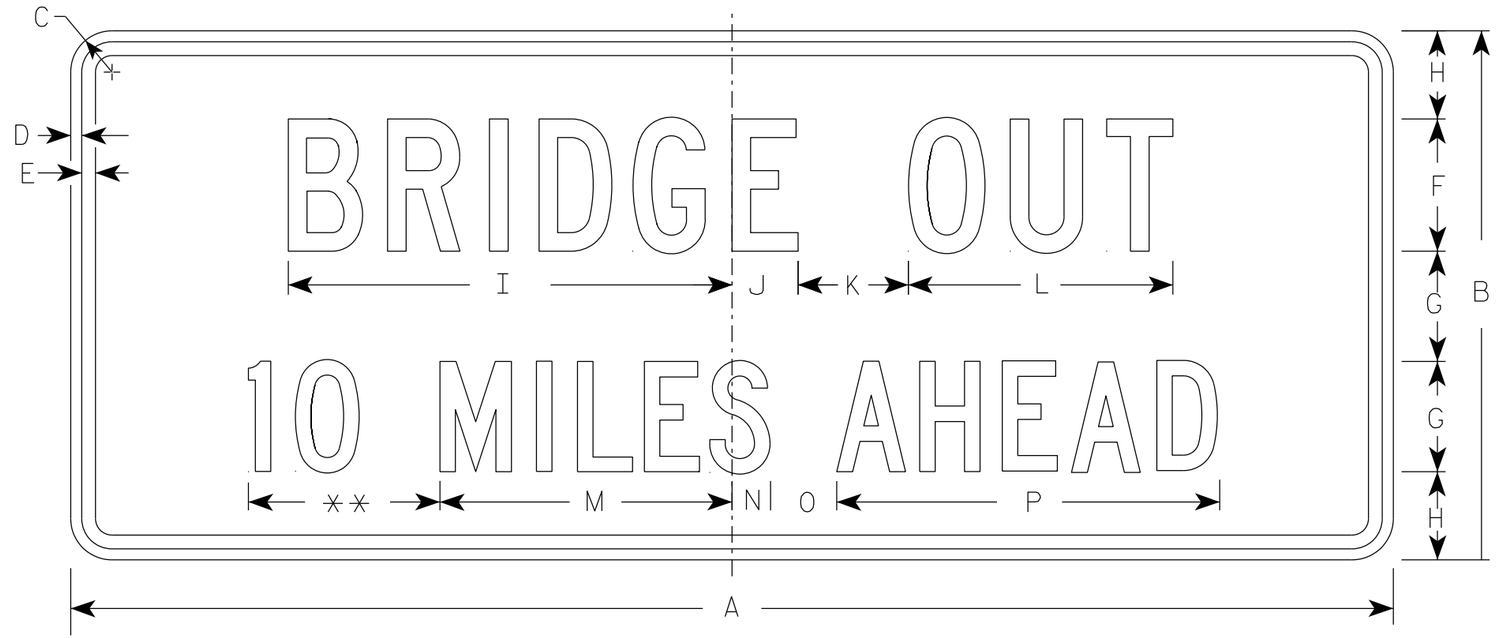
DATE 2/5/24 PLATE NO. R11-2B.3

PROJECT NO:

SHEET NO: 150 E

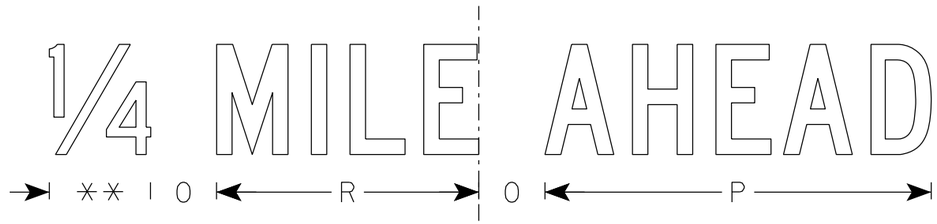
NOTES

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



R11-3C

** See Note 5



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

STANDARD SIGN
R11-3C

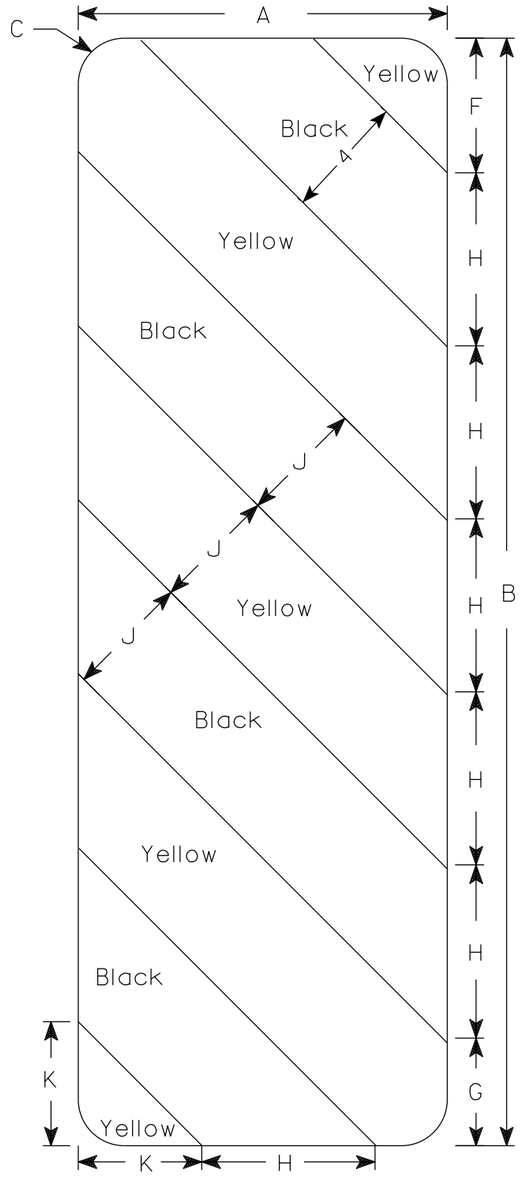
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

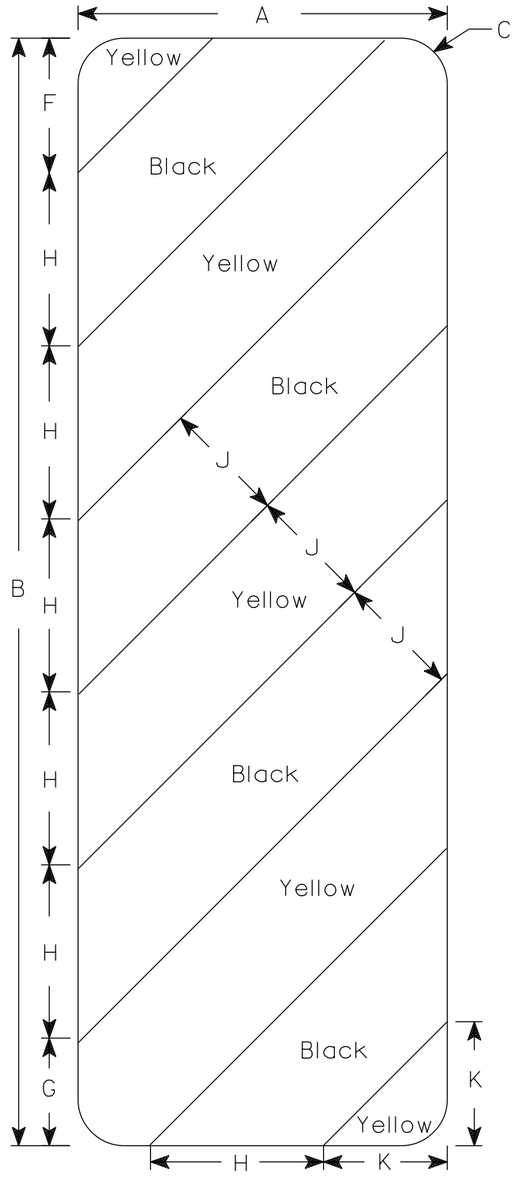
DATE 2/5/24 PLATE NO. R11-3C.4

PROJECT NO:

SHEET NO: 151 E



W5-52L



W5-52R

NOTES

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

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

STANDARD SIGN

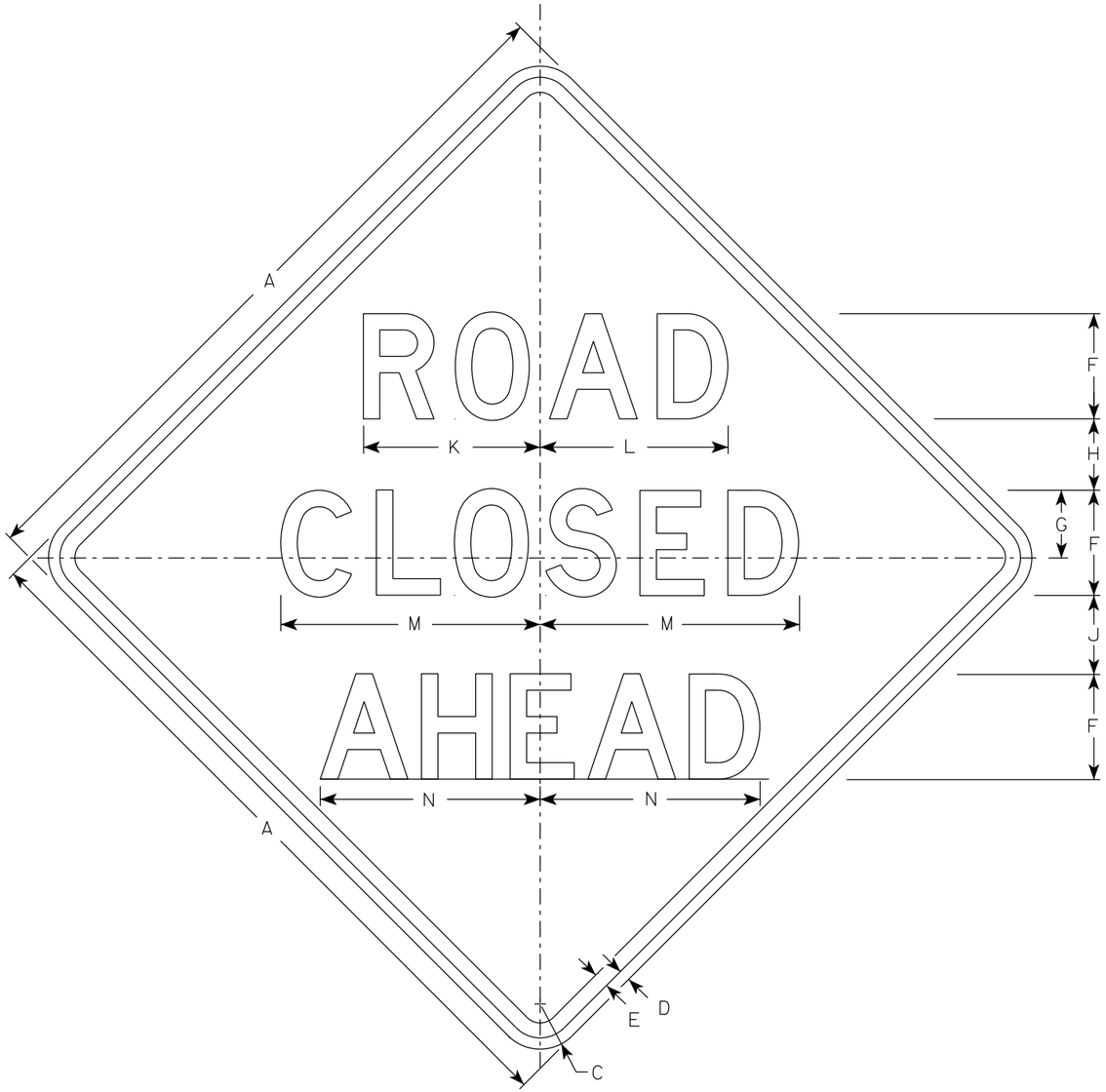
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

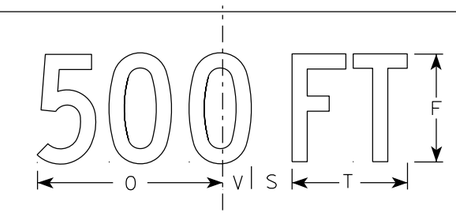
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 3/4/2024 PLATE NO. W5-52.10

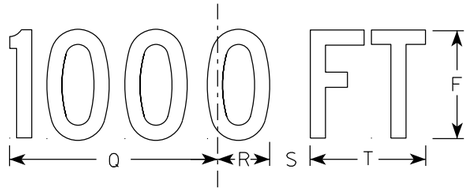
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 152 E



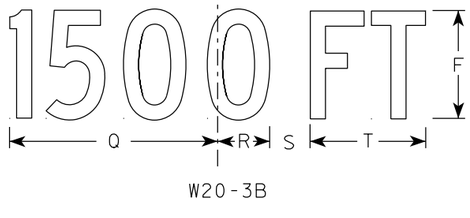
W20-3A



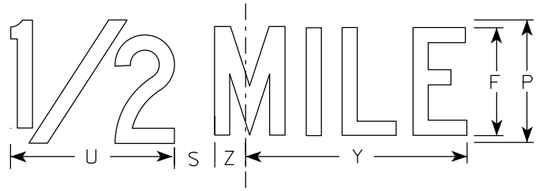
W20-3D



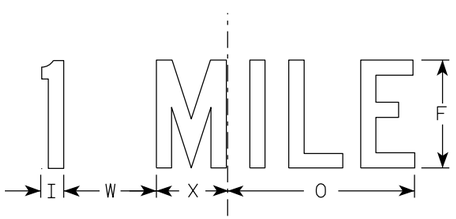
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1 and 2 are Series D.
   Line 3 is Series D for AHEAD and Series C for all other distances.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

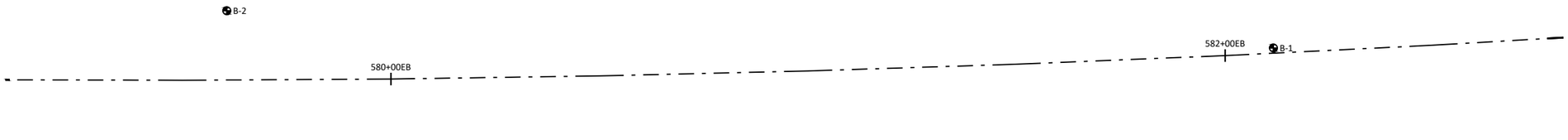
DATE 1/10/2024 PLATE NO. W20-3.8

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

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W203.DGN PLOT DATE : 10-JAN 2024 12:02 PLOT BY : dotc4c PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

7

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	4/07/2026	185501.9	122252.2
2	4/07/2026	185510.8	122001.4
BORINGS COMPLETED BY: WISDOT			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91)		DUNN COUNTY	
COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT			



STATE PROJECT NUMBER

1021-01-09

MATERIAL SYMBOLS

ASPHALT, TOPSOIL, PEAT, CONCRETE, FILL, GRAVEL, SAND, CLAY, SILT, BOULDERS OR COBBLES, LIMESTONE, BEDROCK (UNKNOWN), SHALE, SANDSTONE, IGNEOUS/ META

LEGEND OF BORING

BORING #, ELEV.
STATION, OFFSET

ST
0.25 [1] 17 [2]

F-C
COBBLE OR BOULDER
WEATHERED LIMESTONE
CORE RUN #1 - 24'-29'
REC=80%, RQD=72%

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

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

GROUND WATER ELEVATION

AT TIME OF DRILLING
END OF DRILLING
AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE Cable Barrier

DRAWN BY EBP | PLANS CK'D

SUBSURFACE EXPLORATION

SHEET ---- 154

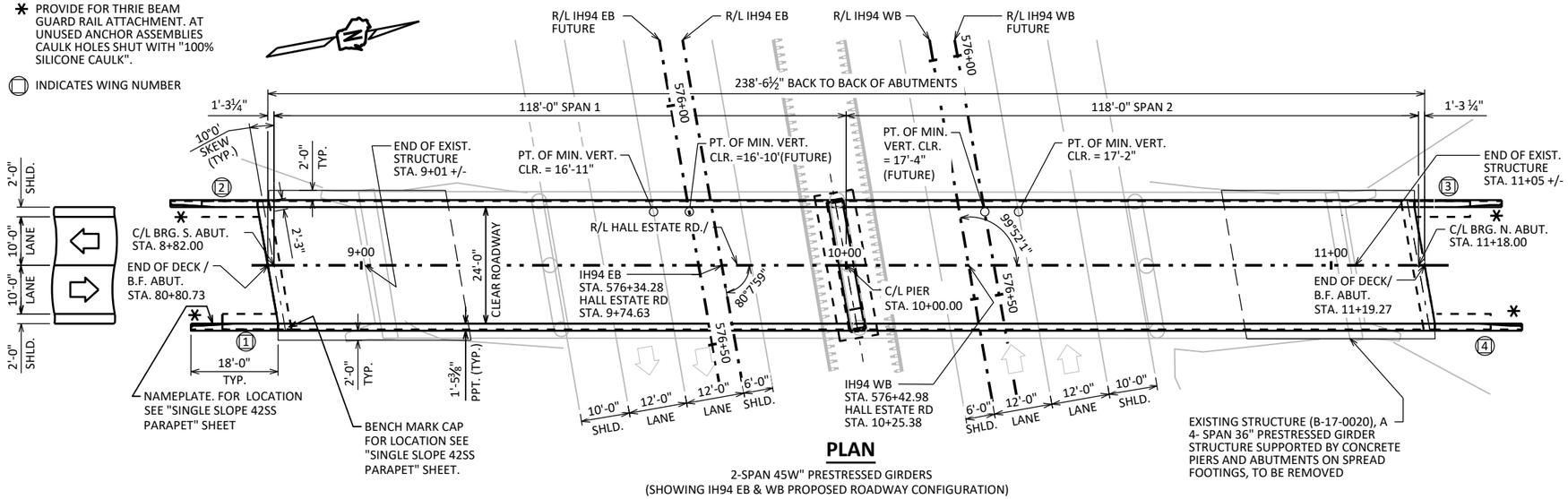
8

8

STATE PROJECT NUMBER
1021-01-79

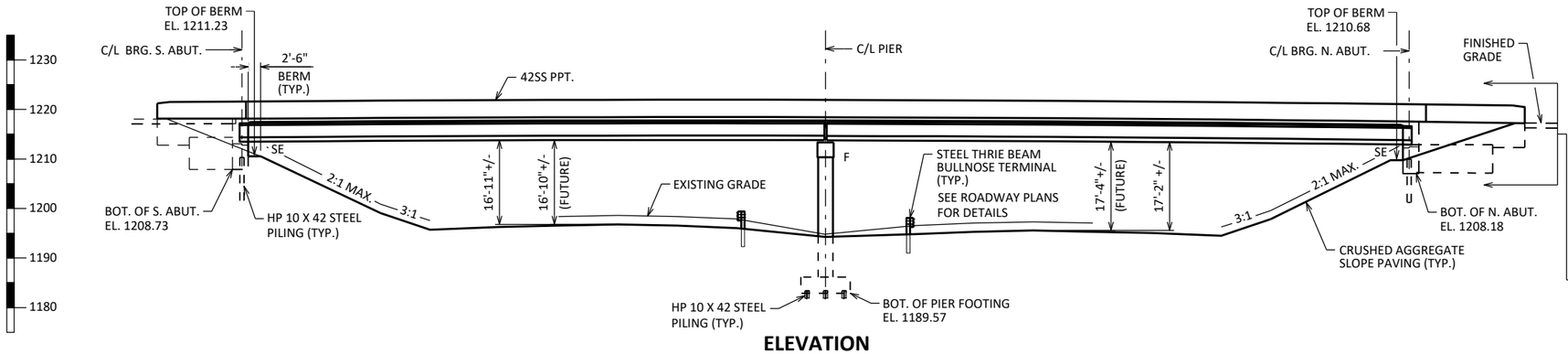
* PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT. AT UNUSED ANCHOR ASSEMBLIES CAULK HOLES SHUT WITH "100% SILICONE CAULK".

(2) INDICATES WING NUMBER



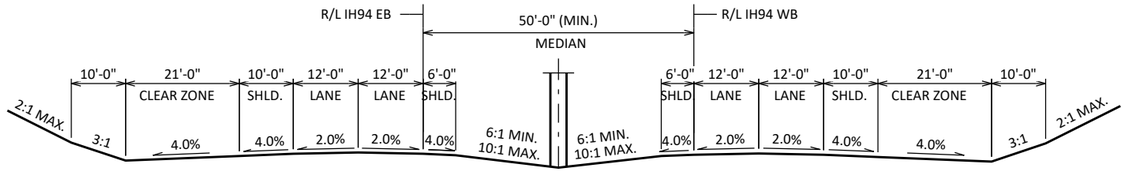
PLAN

2-SPAN 45W" PRESTRESSED GIRDERS
(SHOWING IH94 EB & WB PROPOSED ROADWAY CONFIGURATION)



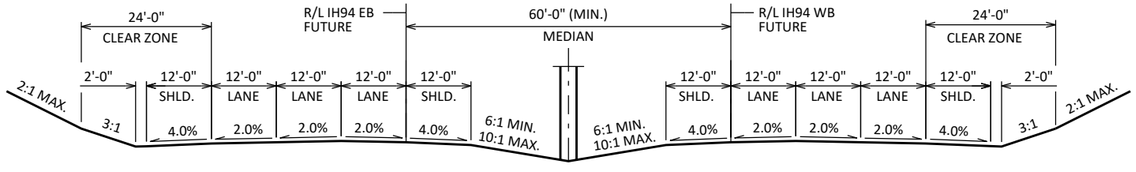
ELEVATION

NORMAL TO HALL ESTATE RD.
(FUTURE SECTION THRU IH94 SHOWN)



SECTION THRU IH 94

(LOOKING WEST)



FUTURE SECTION THRU IH 94

(LOOKING WEST)

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.07
OPERATING RATING FACTOR: RF = 1.51
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250 (KIPS)

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

MATERIAL PROPERTIES:

CONCRETE MASONRY:
SUPERSTRUCTURE — F'C = 4,000 P.S.I.
ALL OTHER — F'C = 3,500 P.S.I.

BAR STEEL REINFORCEMENT:
GRADE 60 — FY = 60,000 P.S.I.

45W" PRESTRESSED GIRDERS:
CONCRETE MASONRY — F'C = 8,000 P.S.I.
STRANDS: 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

FOUNDATION DATA

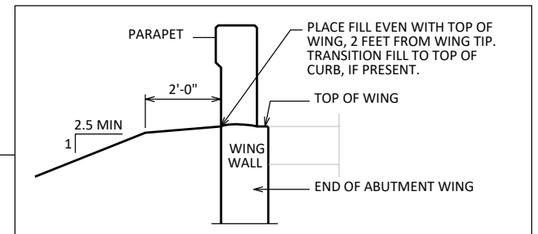
ABUTMENTS TO BE SUPPORTED ON HP 10x42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED 30'-0" LONG AT SOUTH ABUTMENT. PILE TIPS REQUIRED.
ESTIMATED 35'-0" LONG AT NORTH ABUTMENT. PILE TIPS REQUIRED.

PIER TO BE SUPPORTED ON HP 10X42 STEEL PIILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED 30'-0" LONG. PILE TIPS REQURIED.

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

TRAFFIC VOLUME

HALL ESTATE RD.	IH94
ADT = 40 (2047)	ADT = 41,600 (2047)
R.D.S. = 55 M.P.H.	R.D.S. = 70 M.P.H.



TYPICAL FILL SECTION AT WING TIPS

STRUCTURE DESIGN CONTACTS:

CARLA PRINCIPE	608-261-6110
DOMINIQUE BECHLE	608-261-8205

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & PROFILES
3. QUANTITIES
4. SUBSURFACE EXPLORATION
5. SOUTH ABUTMENT
6. SOUTH ABUTMENT DETAILS
7. NORTH ABUTMENT
8. NORTH BUTMENT DETAILS
9. PIER
10. PIER DETAILS
11. 45W" PRESTRESSED GIRDER DETAILS 1
12. 45W" PRESTRESSED GIRDER DETAILS 2
13. STEEL DIAPHRAGM
14. SUPERSTRUCTURE
15. SUPERSTRUCTURE DETAILS 1
16. SUPERSTRUCTURE DETAILS 2
17. SINGLE SLOPE PARAPET 42SS
18. SLOPE PAVING CRUSHED AGGREGATE

NO.	DATE	REVISION	BY

WISCONSIN DEPARTMENT OF TRANSPORTATION — BUREAU OF STRUCTURES

ACCEPTED DMB 05/01/26
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-17-216

HALL ESTATE RD. OVER IH 94

COUNTY	TOWN
DUNN	LUCAS

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATION

DESIGNED BY	DESIGNED CK'D	DRAWN BY	PLANS CK'D
CSP	DLM	DDS/IFC	DLM

GENERAL PLAN

SHEET 1 OF 18
155

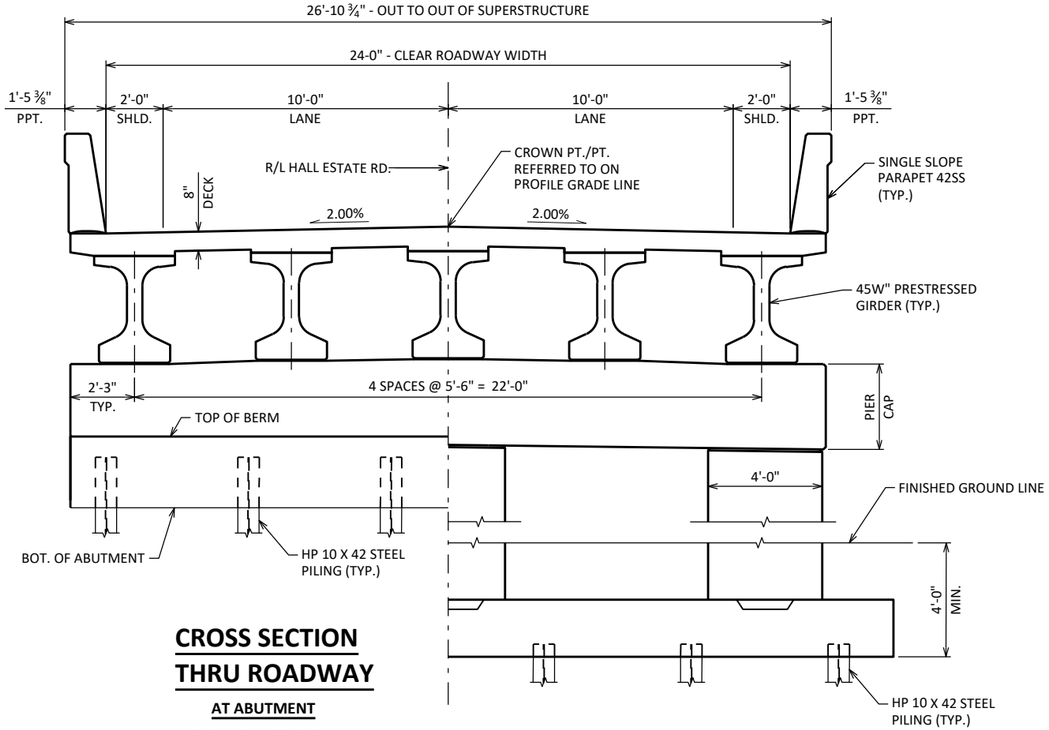
SCALE = 28.00

I.D. 1021-01-09A DATE: FEB. 2023

8 8

STATE PROJECT NUMBER

1021-01-79



CROSS SECTION THRU ROADWAY

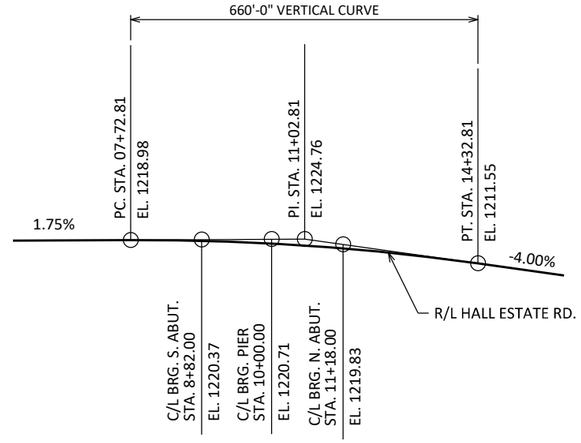
AT ABUTMENT

(LOOKING UPSTATION)

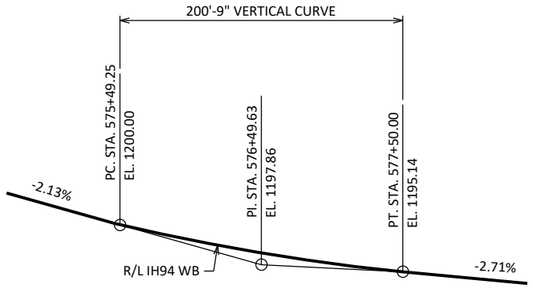
CROSS SECTION THRU ROADWAY

AT PIER

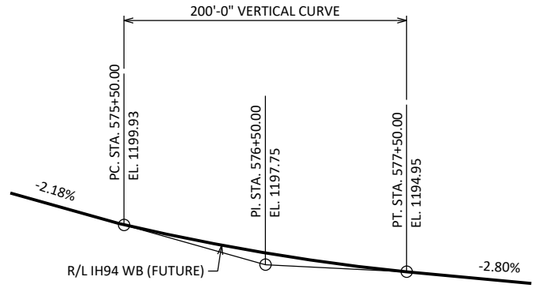
(LOOKING UPSTATION)



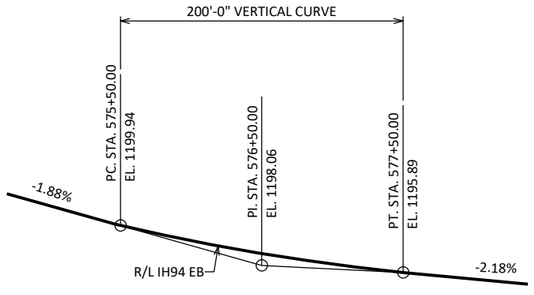
PROFILE GRADE LINE - HALL ESTATE RD.



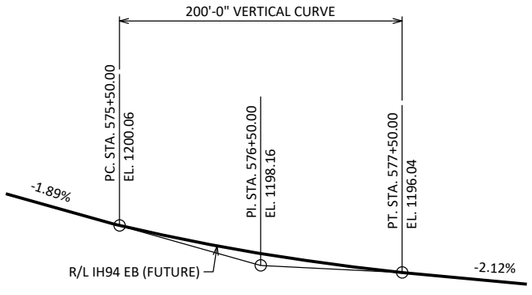
PROFILE GRADE LINE - IH94 WB



PROFILE GRADE LINE - IH94 WB (FUTURE)



PROFILE GRADE LINE - IH94 EB



PROFILE GRADE LINE - IH94 EB - FUTURE

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-17-216

DRAWN BY DDS/IFC | PLANS CK'D DLM

CROSS SECTION & PROFILES

SHEET 2
156

SCALE = 6.00

STATE PROJECT NUMBER

1021-01-79

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER	SOUTH ABUT.	PIER	NORTH ABUT.	TOTALS
203.0220	REMOVING STRUCTURE B-17-0020	EACH	-	-	-	-	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-17-216	EACH	-	-	-	-	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	-	228	-	228	456
502.0100	CONCRETE MASONRY BRIDGES	CY	272.9	49.1	74.0	49.1	445
502.3200	PROTECTIVE SURFACE TREATMENT	SY	637	-	-	-	637
502.3210	PIGMENTED SURFACE SEALER	SY	235	18	-	18	271
503.0146	PRESTRESSED GIRDER TYPE I 45W-INCH	LF	1,184	-	-	-	1,184
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	-	2,065	3,830	2,065	7,960
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	60,450	3,675	11,170	3,675	78,970
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	-	5	10	5	20
506.4000	STEEL DIAPHRAGMS B-17-216	EACH	16	-	-	-	16
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	-	8	-	8	16
550.0500	PILE POINTS	EACH	-	9	18	9	36
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	-	270	540	315	1,125
604.0500	SLOPE PAVING CRUSHED AGGREGATE	SY	-	131	-	131	262
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	--	65	-	65	130
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	-	2	-	2	4
645.0111	GEOTEXTILE TYPE OF SCHEDULE A	SY	-	26	-	26	52
	NON-BID ITEMS						
	FILLER	SIZE					½", ¾"

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-17-216" SHALL BE THE EXISTING GROUNDLINE.

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

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

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

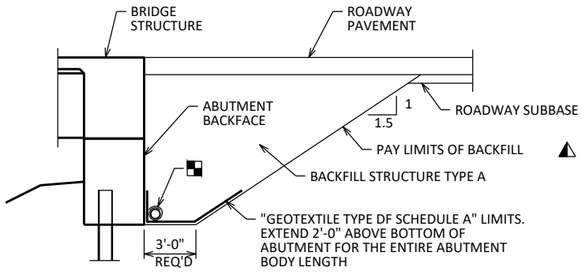
ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK.

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

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH SLOPE PAVING MATERIAL TO THE EXTENT SHOWN ON SHEET 1 AND THE ABUTMENT DETAILS.

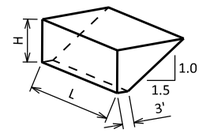
THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE "45W PRESTRESSED GIRDER DETAILS 2" SHEET.



TYPICAL SECTION THRU ABUTMENT

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

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



ABUTMENT BACKFILL DIAGRAM

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

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-17-216

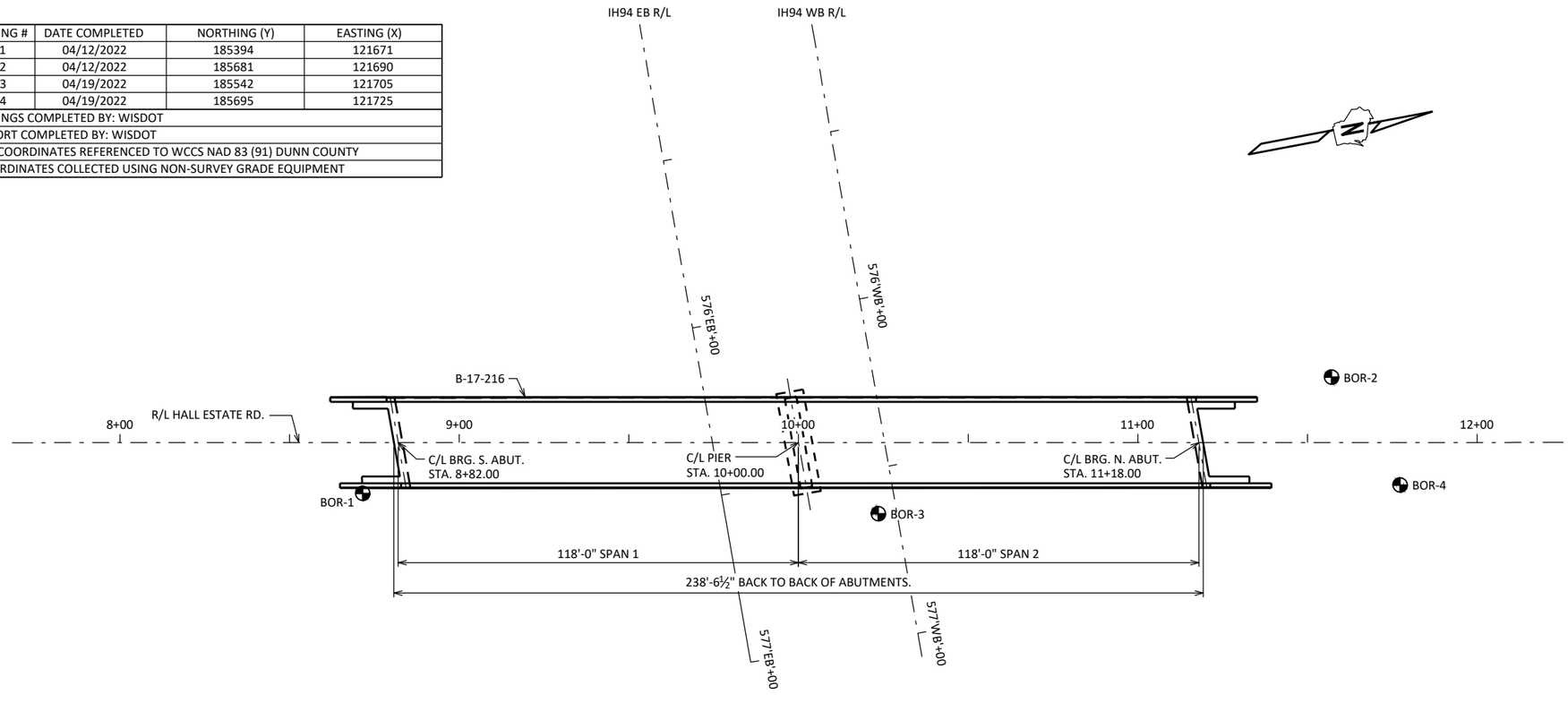
DRAWN BY DDS/IFC | PLANS CK'D DLM

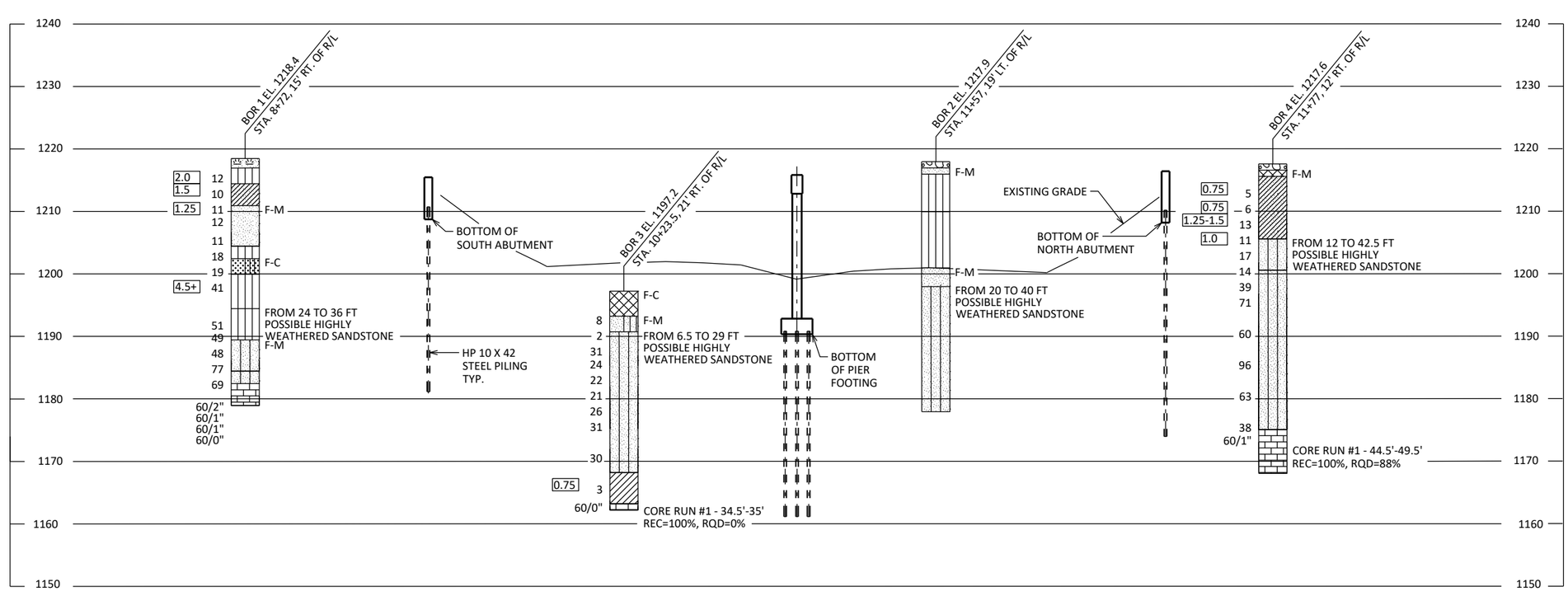
QUANTITIES

SHEET 3
157

SCALE = 6.00

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	04/12/2022	185394	121671
2	04/12/2022	185681	121690
3	04/19/2022	185542	121705
4	04/19/2022	185695	121725
BORINGS COMPLETED BY: WISDOT			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83 (91) DUNN COUNTY			
COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT			





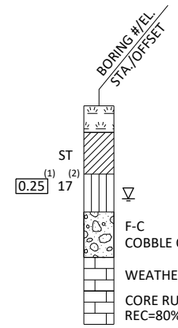
STATE PROJECT NUMBER

1021-01-79

MATERIAL SYMBOLS

ASPHALT · TOPSOIL · PEAT
CONCRETE · FILL · GRAVEL
SAND · CLAY · SILT
BOULDERS OR COBBLES · LIMESTONE · BEDROCK (UNKNOWN)
SHALE · SANDSTONE · IGNEOUS/ META

LEGEND OF BORING



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GROUND WATER ELEVATION

AT TIME OF DRILLING
END OF DRILLING
AFTER DRILLING

ABBREVIATIONS

F-FINE · M-MEDIUM · C-COARSE · ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-17-216

DRAWN BY JJ/DDS · PLANS CK'D DLM

SUBSURFACE EXPLORATION

SHEET 4
158

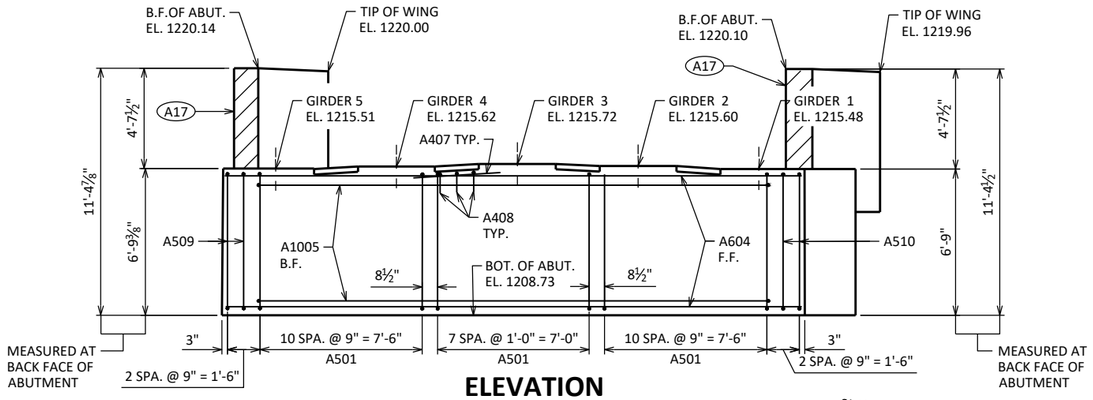
SCALE = 40.00

8

8

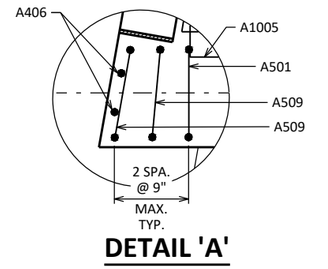
STATE PROJECT NUMBER

1021-01-79

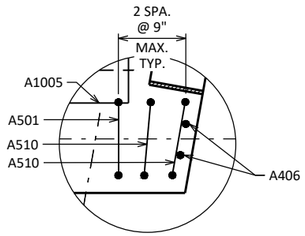


ELEVATION

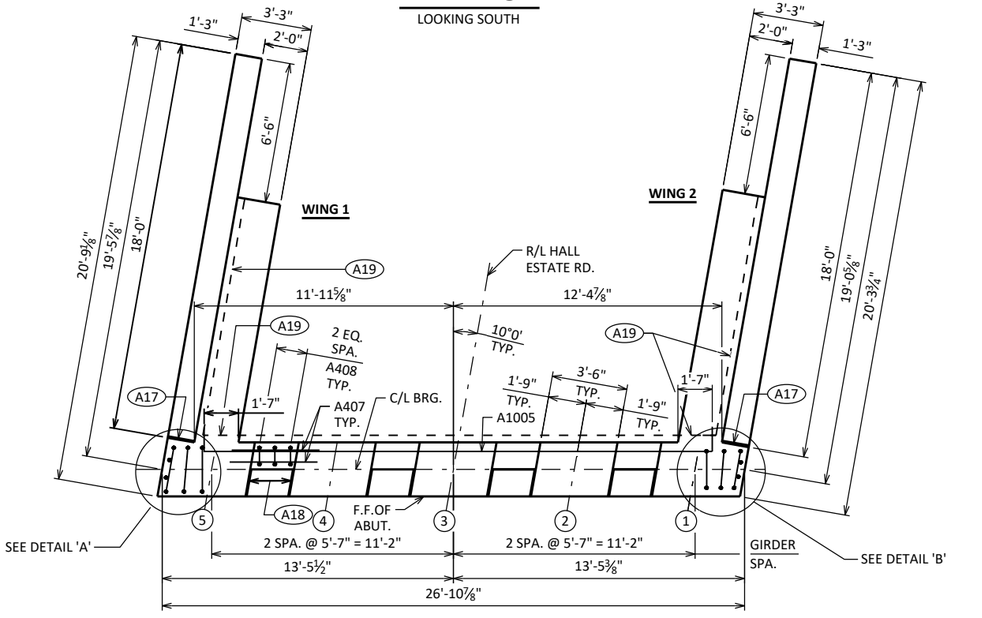
LOOKING SOUTH



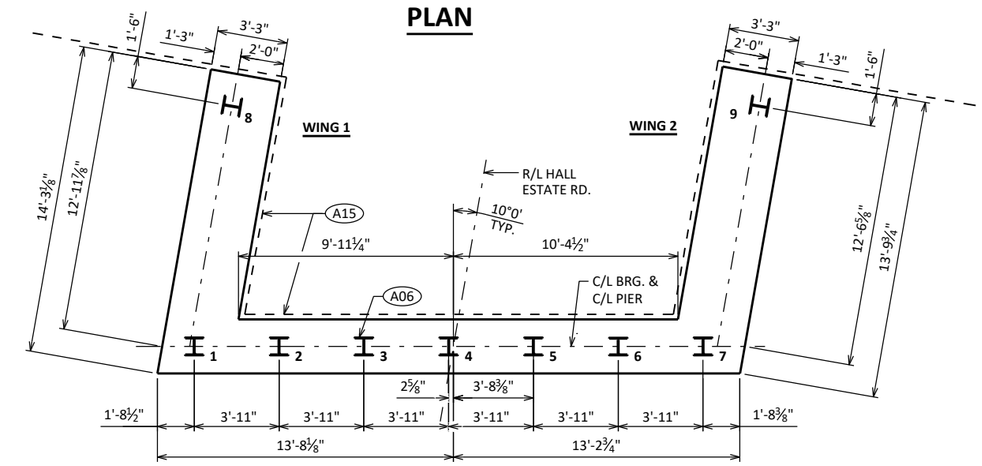
DETAIL 'A'



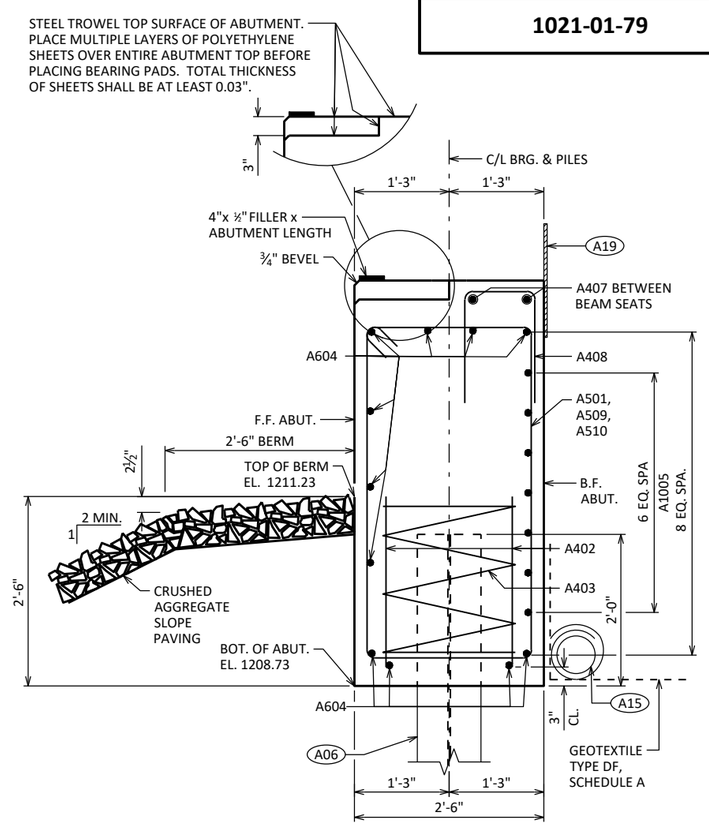
DETAIL 'B'



PLAN



PILE PLAN



SECTION THRU BODY

LEGEND

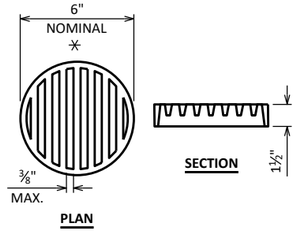
(A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 30'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. PILE TIPS REQUIRED.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

(A17) ½" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A18) ¾" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.



RODENT SHIELD DETAIL

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

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

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-17-216

DRAWN BY DDS/IFC | PLANS CK'D DLM

SOUTH ABUTMENT

SHEET 5
159

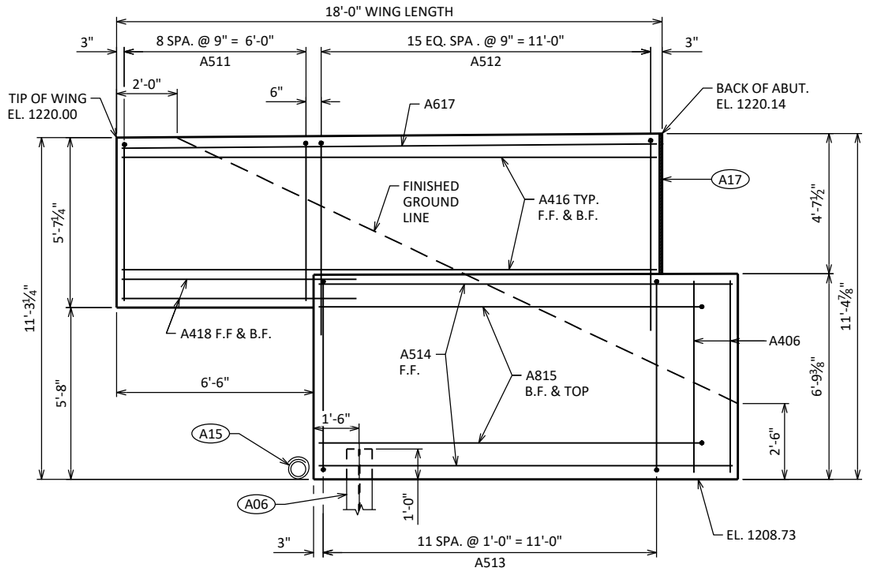
SCALE = 7.00

8

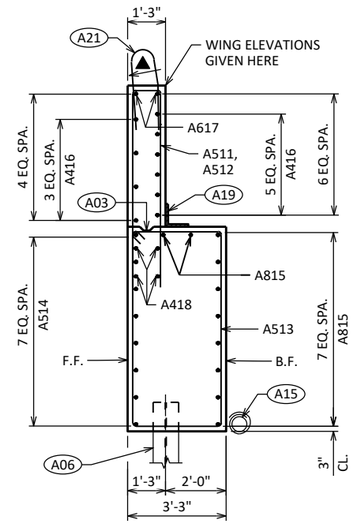
8

STATE PROJECT NUMBER

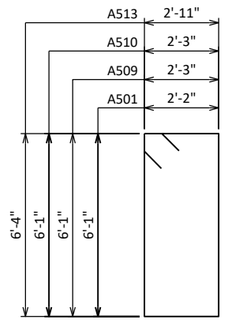
1021-01-79



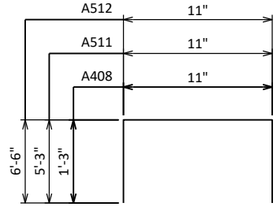
ELEVATION - WING 1



SECTION THRU WING 1



A501, A509, A510, A513

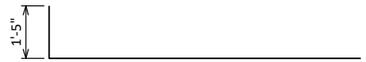


A408, A511, A512

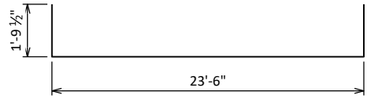
BILL OF BARS

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

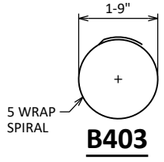
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		30	17'-2"	X		BODY - STIRRUP
A402		14	2'-3"			BODY PILE - VERT. 2 PER BODY PILE
A403		7	28'-0"	X		BODY PILE - VERT. - 1 PER BODY PILE
A604		11	26'-7"			BODY - HORIZ. F.F., TOP & BOT.
A1005		7	26'-6"	X		BODY - HORIZ. - B.F.
A406		4	6'-5"			BODY - VERT. ENDS
A407		8	4'-0"			BODY - HORIZ. - BTWN. GIRDERS
A408		12	3'-3"	X		BODY - VERT. - BTWN. GIRDERS
A509		2	17'-4"	X		BODY - STIRRUPS - END
A510		2	17'-4"	X		BODY - STIRRUPS - END
A511	X	18	11'-2"	X		WINGS 1 & 2 - VERT. - UPPER WINGS
A512	X	32	13'-8"	X		WINGS 1 & 2 - VERT. - UPPER WINGS
A513	X	24	19'-2"	X		WINGS 1 & 2 - STIRRUPS
A514	X	16	13'-6"			WINGS 1 & 2 - HORIZ. - F.F. - LOWER WINGS
A815	X	20	14'-6"	X		WINGS 1 & 2 - HORIZ. - B.F., TOP
A416	X	20	17'-7"			WINGS 1 & 2 - HORIZ. - UPPER WINGS
A617	X	4	17'-7"			WINGS 1 & 2 - HORIZ. - UPPER WINGS - TOP
A418	X	8	7'-9"			WINGS 1 & 2 - HORIZ. - UPPER WINGS



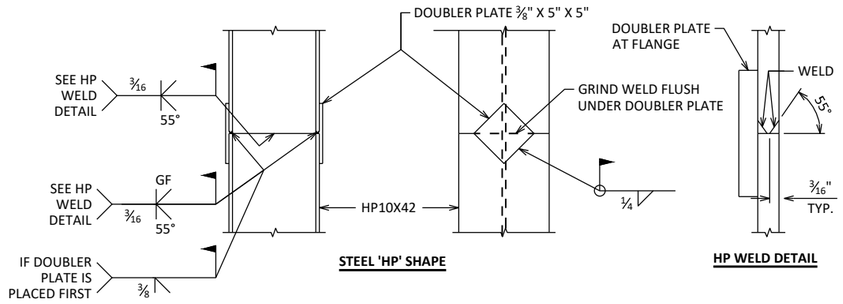
A815



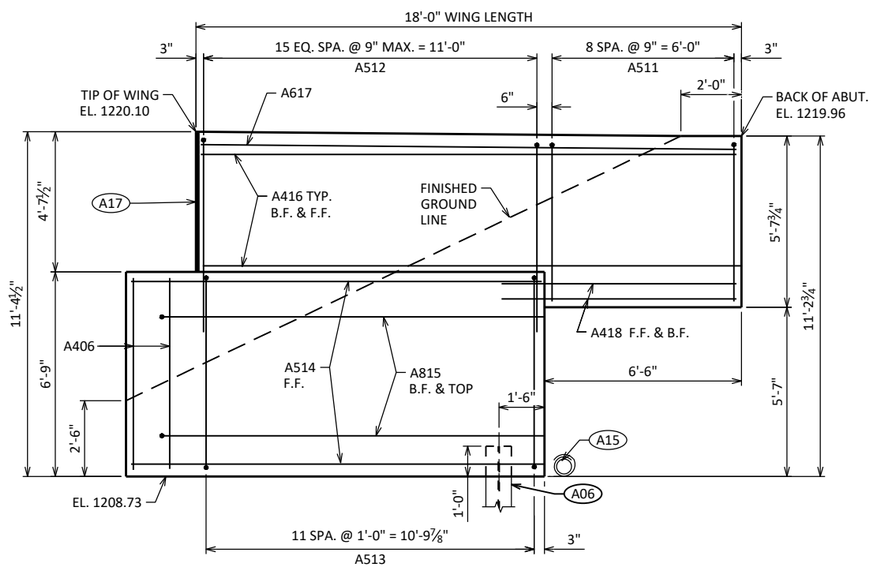
A1005



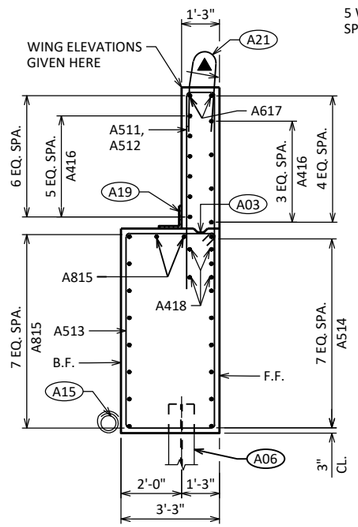
B403



'HP' PILE DETAILS



ELEVATION - WING 2



SECTION THRU WING 2

LEGEND

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & ¾" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 30'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. PILE TIPS REQUIRED.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) ½" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A21) FOR PPT. BARS & DIMENSIONS SEE PARAPET SHEET.
- ▲ SLOPE TOP OF WING TO DRAIN.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-17-216

DRAWN BY DDS/IFC | PLANS CK'D DLM

SOUTH ABUTMENT DETAILS

SHEET 6
160

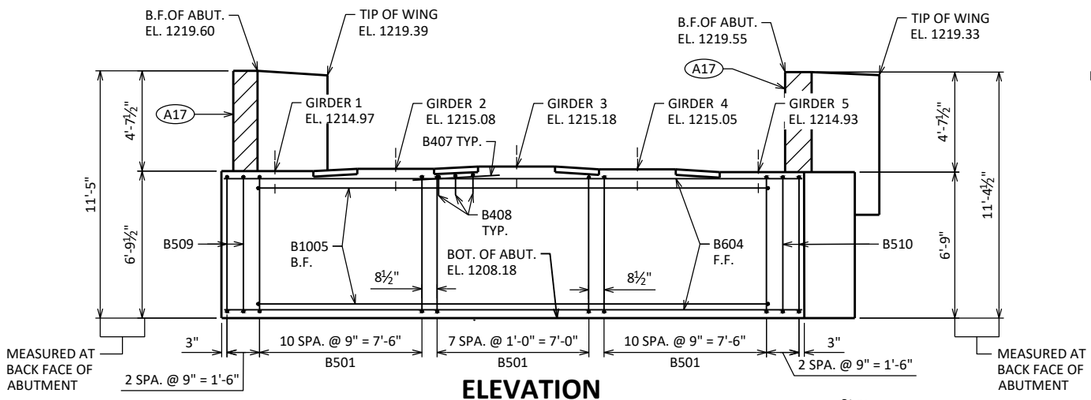
SCALE = 5.00

8

8

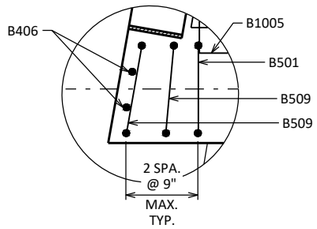
STATE PROJECT NUMBER

1021-01-79

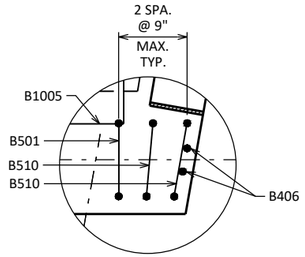


ELEVATION

LOOKING NORTH



DETAIL 'A'



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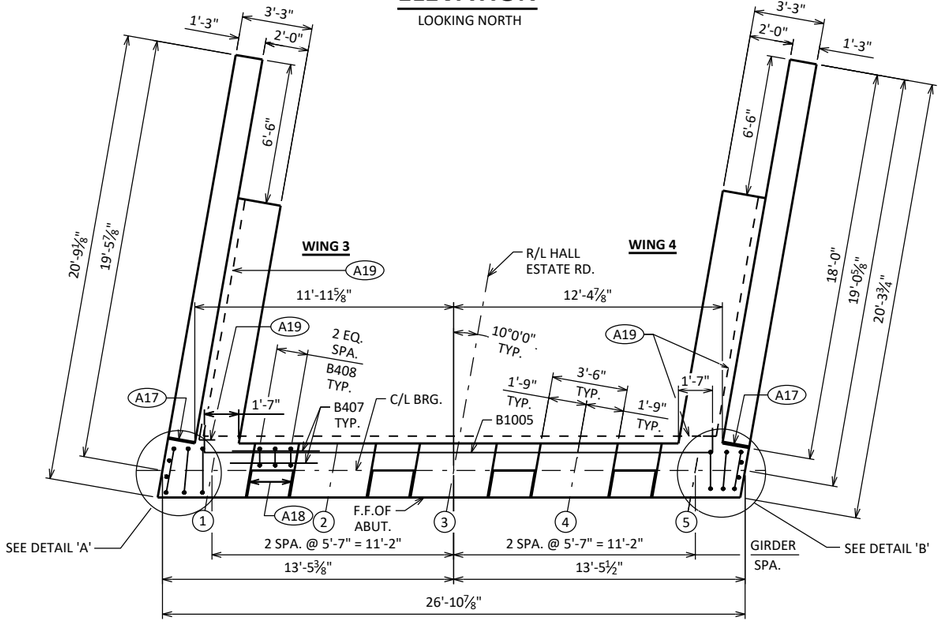
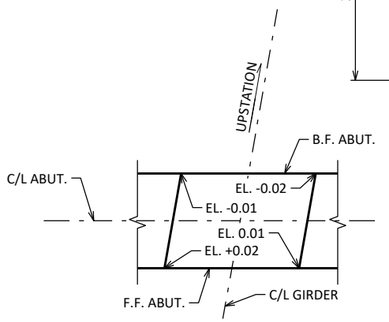


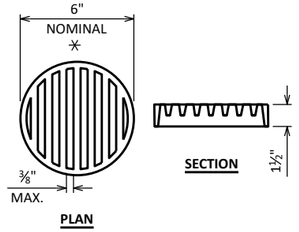
PLAN

PILE PLAN



SLOPED BEAM SEATS

NORTH ABUTMENT ONLY

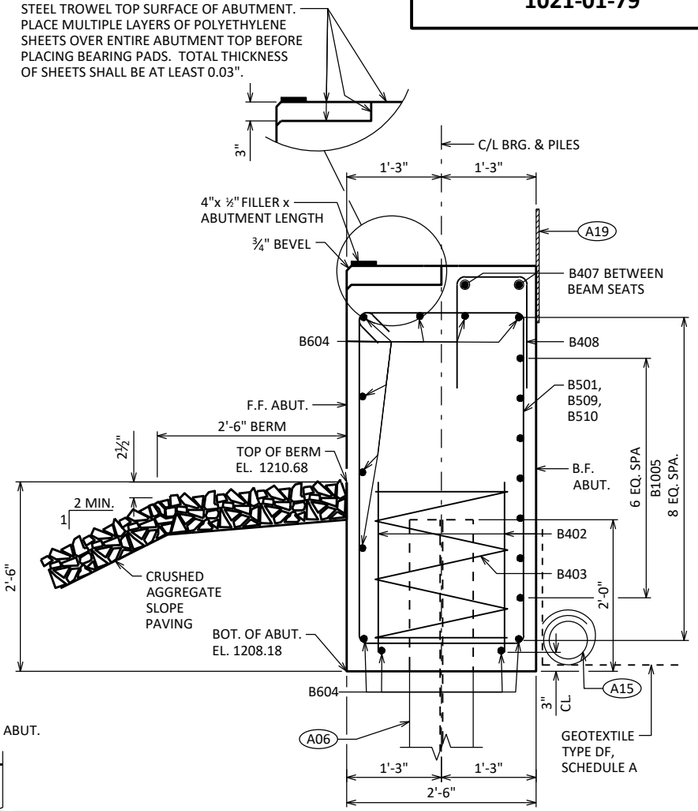


RODENT SHIELD DETAIL

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

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

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



SECTION THRU BODY

LEGEND

(A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 30'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. PILE TIPS REQUIRED.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

(A17) ½" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A18) ¾" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-17-216

DRAWN BY DDS/IFC | PLANS CK'D DLM

NORTH ABUTMENT

SHEET 7
161

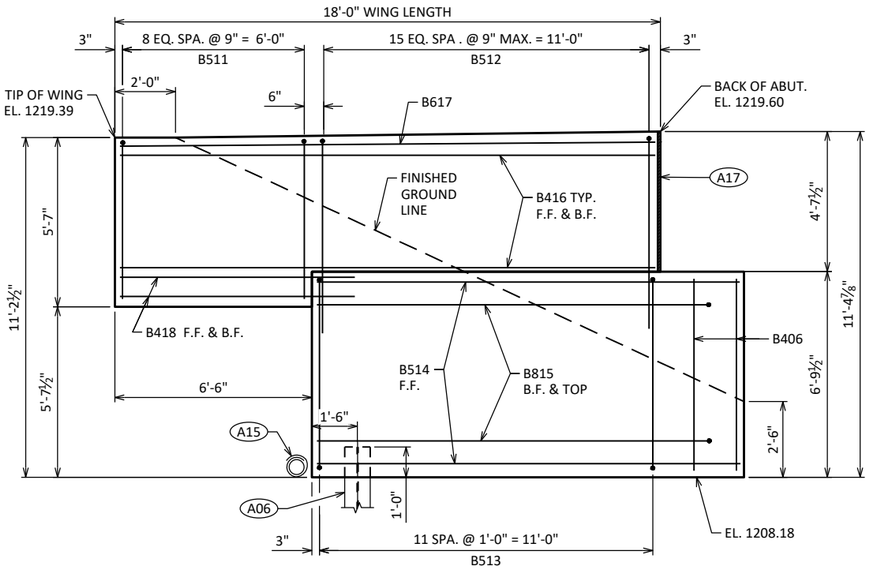
SCALE = 7.00

8

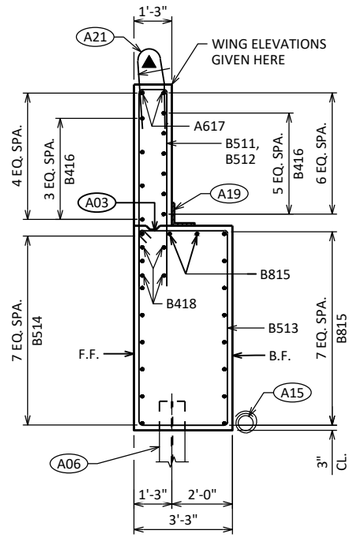
8

STATE PROJECT NUMBER

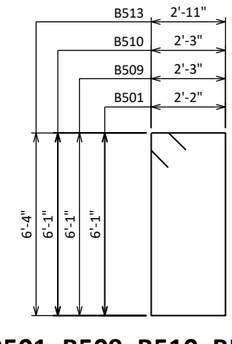
1021-01-79



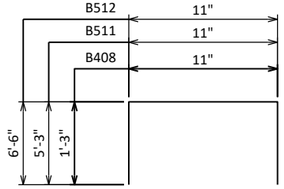
ELEVATION - WING 3



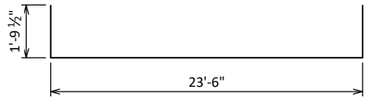
SECTION THRU WING 3



B501, B509, B510, B513



B408, B511, B512

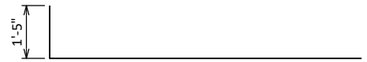


B1005

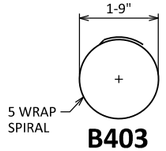
BILL OF BARS

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

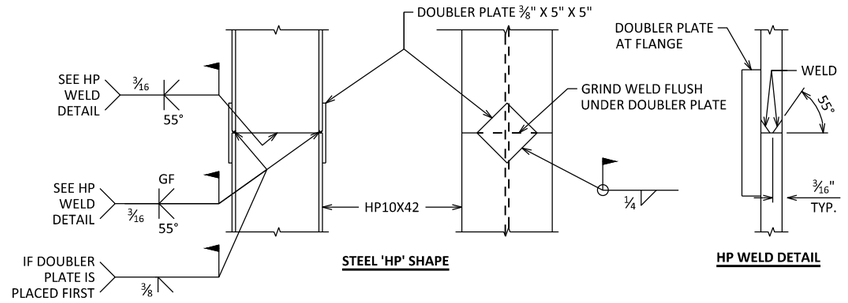
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	
B501		30	17'-2"	X		BODY - STIRRUP
B402		14	2'-3"			BODY PILE - VERT. 2 PER BODY PILE
B403		7	28'-0"	X		BODY PILE - VERT. - 1 PER BODY PILE
B604		11	26'-7"			BODY - HORIZ. F.F., TOP & BOT.
B1005		7	26'-6"	X		BODY - HORIZ. - B.F.
B406		4	6'-5"			BODY - VERT. ENDS
B407		8	4'-0"			BODY - HORIZ. - BTWN. GIRDERS
B408		12	3'-3"	X		BODY - VERT. - BTWN. GIRDERS
B509		2	17'-4"	X		BODY - STIRRUPS - END
B510		2	17'-4"	X		BODY - STIRRUPS - END
B511	X	18	11'-2"	X		WINGS 3 & 4 - VERT. - UPPER WINGS
B512	X	32	13'-8"	X		WINGS 3 & 4 - VERT. - UPPER WINGS
B513	X	24	19'-2"	X		WINGS 3 & 4 - STIRRUPS
B514	X	16	13'-6"			WINGS 3 & 4 - HORIZ. - F.F. - LOWER WINGS
B815	X	20	14'-6"	X		WINGS 3 & 4 - HORIZ. - B.F., TOP
B416	X	20	17'-7"			WINGS 3 & 4 - HORIZ. - UPPER WINGS
B617	X	4	17'-7"			WINGS 3 & 4 - HORIZ. - UPPER WINGS - TOP
B418	X	8	7'-9"			WINGS 3 & 4 - HORIZ. - UPPER WINGS



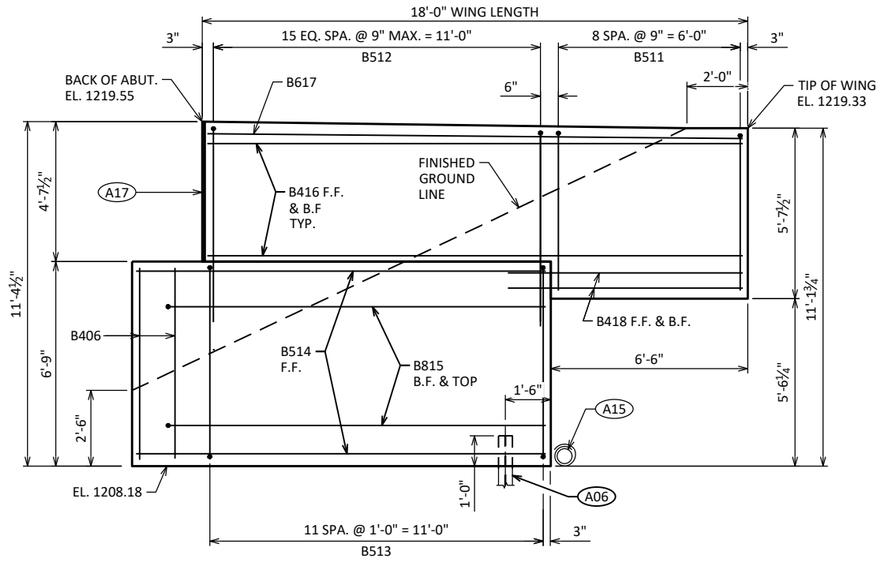
B815



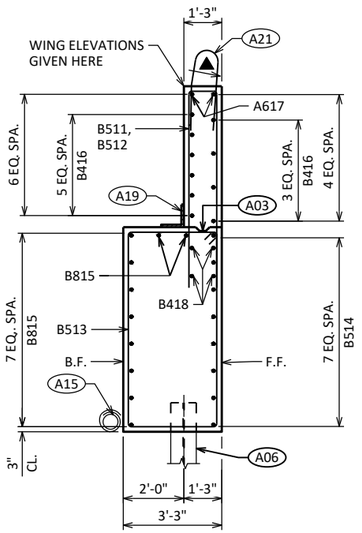
B403



'HP' PILE DETAILS



ELEVATION - WING 4



SECTION THRU WING 4

LEGEND

A03	OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & ¾" "V" GROOVE @ F.F. IF JOINT IS USED).
A06	SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 35'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. PILE TIPS REQUIRED.
A15	PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
A17	½" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
A19	18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
A21	FOR PPT. BARS & DIMENSIONS SEE PARAPET SHEET.
▲	SLOPE TOP OF WING TO DRAIN.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-17-216

DRAWN BY DDS/IFC | PLANS CK'D DLM

NORTH ABUTMENT DETAILS

SHEET 8
162

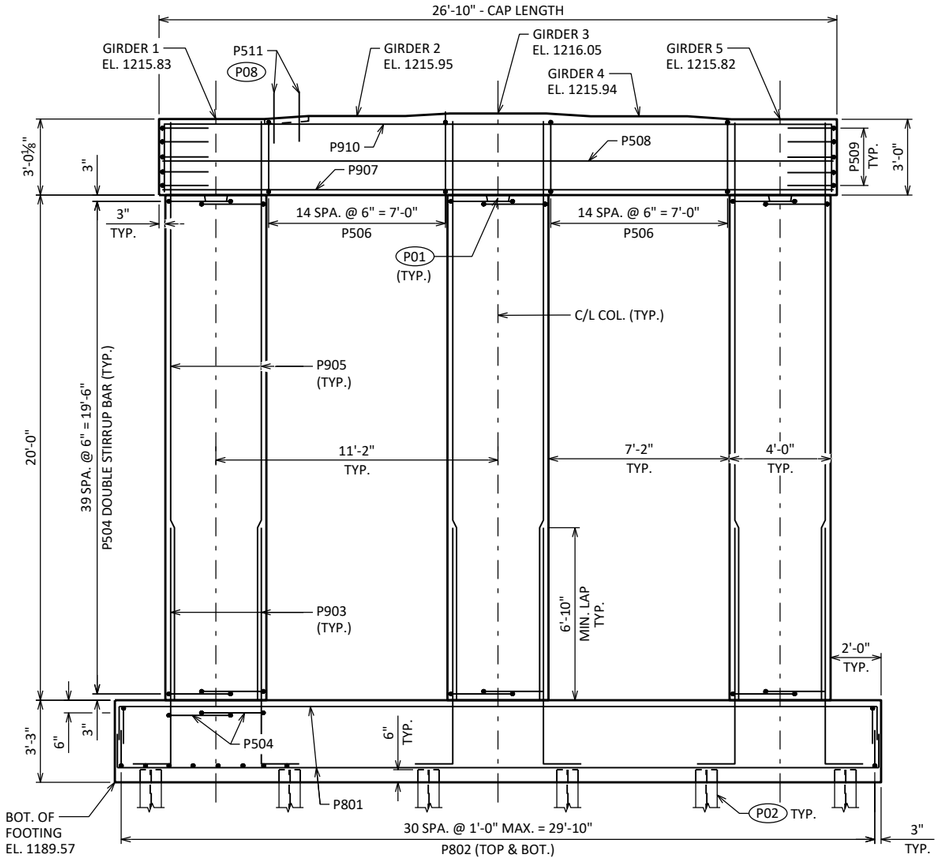
SCALE = 5.00

8

8

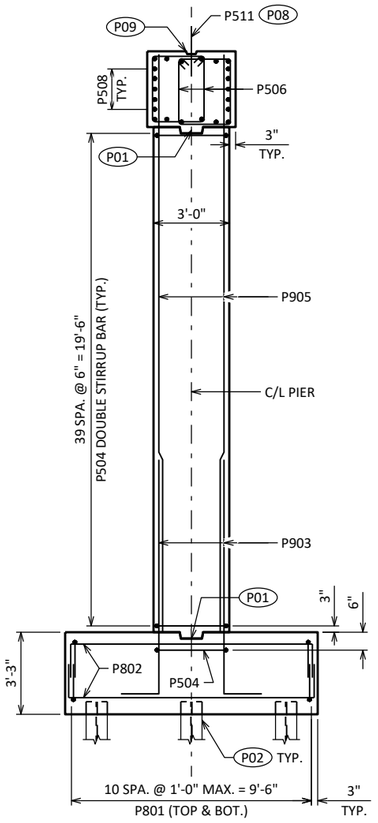
STATE PROJECT NUMBER

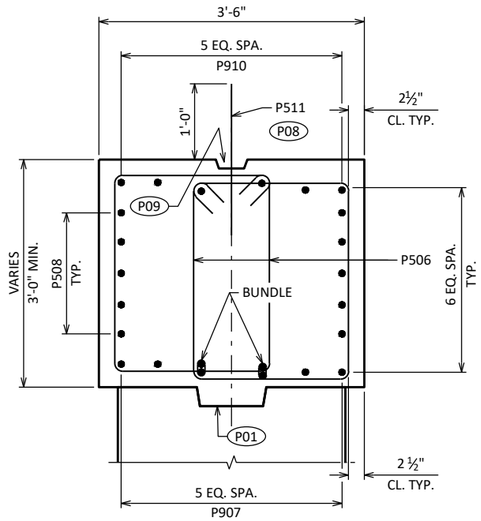
1021-01-79



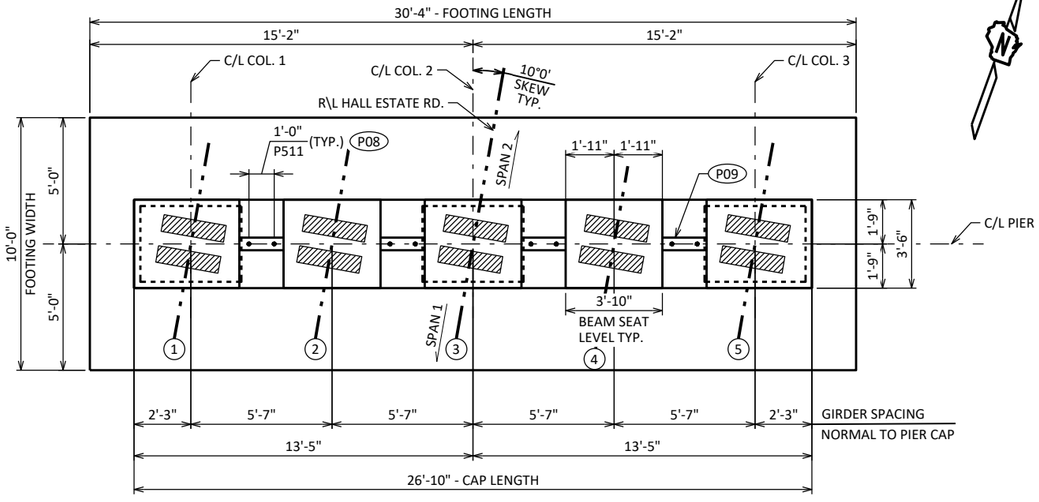
ELEVATION

LOOKING NORTH

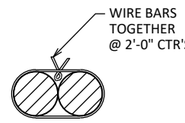




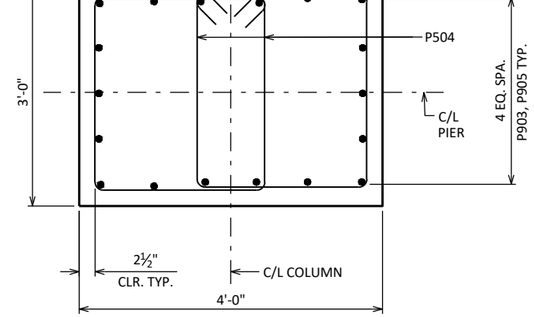
SECTION THRU CAP



PLAN



BUNDLING DETAIL



SECTION THRU COLUMN

LEGEND

- (P01) 1'-3" x 2'-0" x 4" CONST. JOINT FORMED BY BEVELED KEYWAY.
- (P02) SUPPORT PIER ON HP 10 x 42 STEEL PILING, ESTIMATED 30'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. PILE TIPS REQUIRED.
- (P08) P511 BARS @ 1'-0" CTRS. BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
- (P09) KEYED CONST. JOINT-FORMED BY BEVELED 2 x 6 BETWEEN BEAM SEATS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-17-216

DRAWN BY DDS/IFC | PLANS CK'D DLM

PIER

SHEET 9
163

SCALE = 6.00

8

8

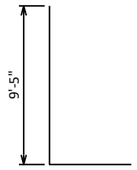
STATE PROJECT NUMBER

1021-01-79

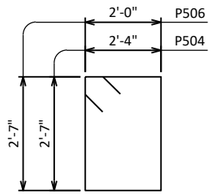
BILL OF BARS

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

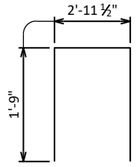
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
P801		22	32'-1"	X		FOOTING - LONGIT. - TOP & BOT.
P802		62	11'-9"	X		FOOTING - TRANS. - TOP & BOT.
P903	X	54	10'-9"	X		FOOTING/COLUMN - VERT.
P504	X	246	10'-6"	X		COLUMN & FOOTING STIRRUPS
P905	X	54	22'-9"			COLUMN - VERT.
P506	X	60	9'-10"	X		CAP STIRRUPS BTWN. COLUMN
P907	X	8	26'-5"			CAP - BOTTOM - HORIZ.
P508	X	10	26'-5"			CAP - MIDDLE - HORIZ.
P509	X	10	6'-3"	X		CAP - ENDS - U-BARS - HORIZ.
P910	X	6	31'-1"	X		CAP - TOP - HORIZ.
P511	X	8	2'-0"			CAP - TOP - DOWEL - VERT.



P903



P504, P506



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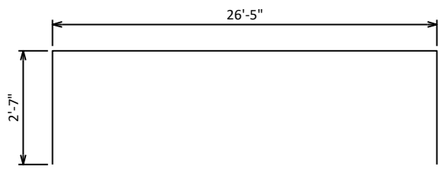

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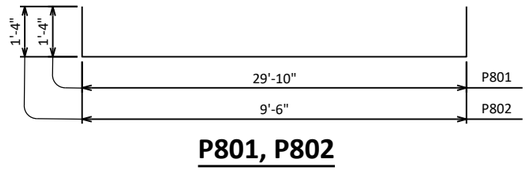
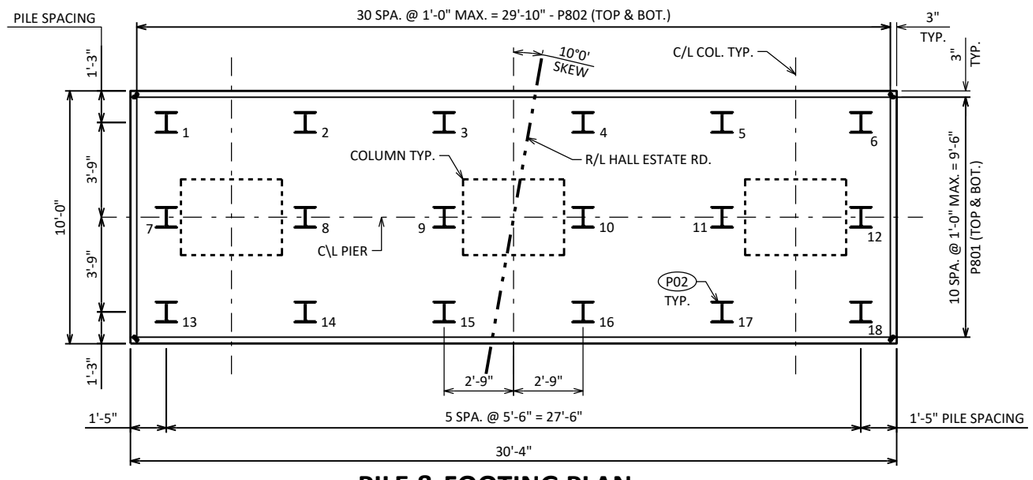
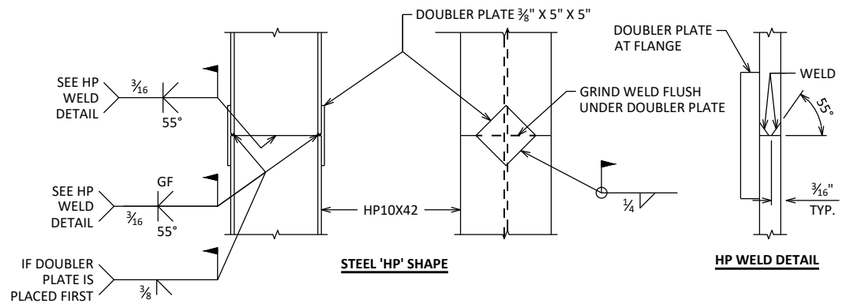


P801, P802



PILE & FOOTING PLAN



'HP' PILE DETAILS

LEGEND

(P02) SUPPORT PIER ON HP 10 x 42 STEEL PILING, ESTIMATED 30'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. PILE TIPS REQUIRED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-17-216

DRAWN BY DDS/IFC | PLANS CK'D DLM

PIER DETAILS

SHEET 10
164

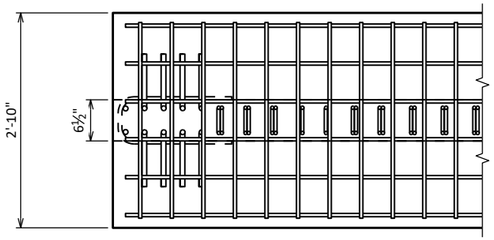
SCALE = 4.00

8

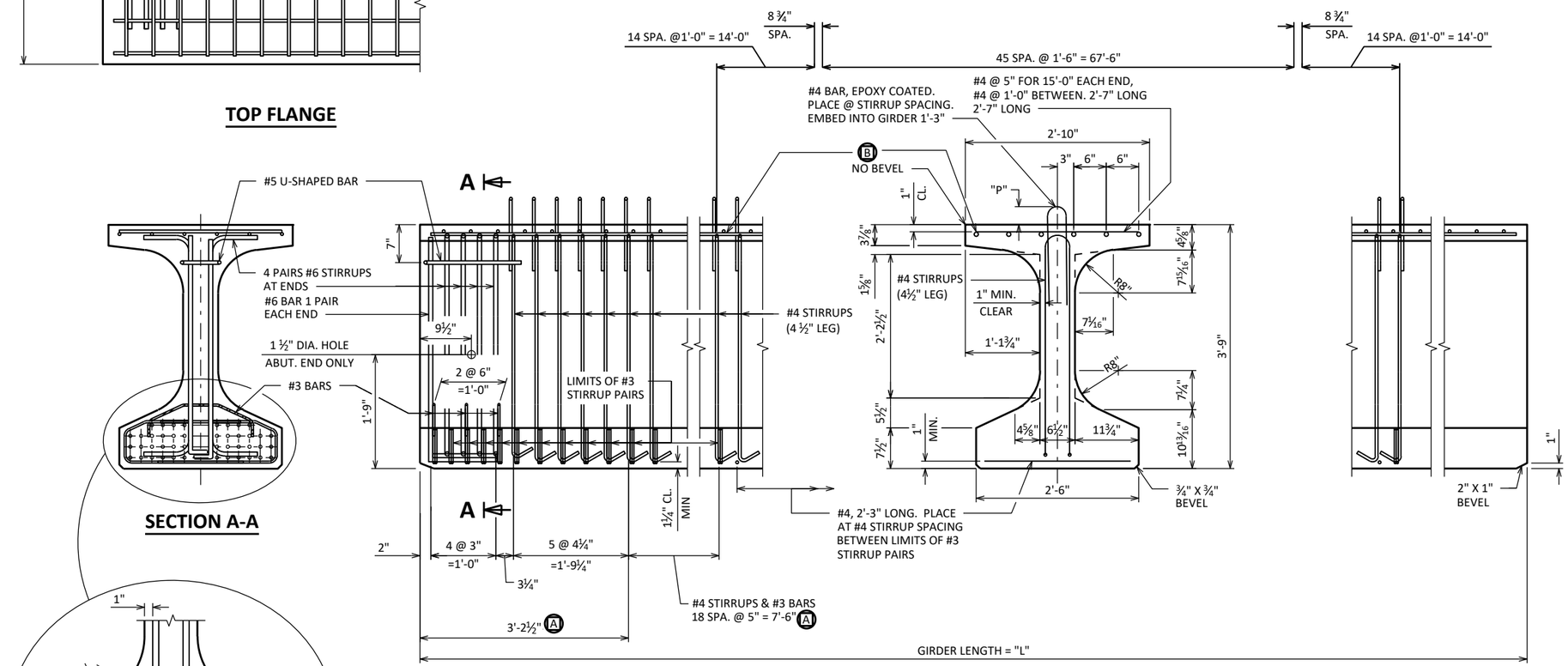
8

STATE PROJECT NUMBER

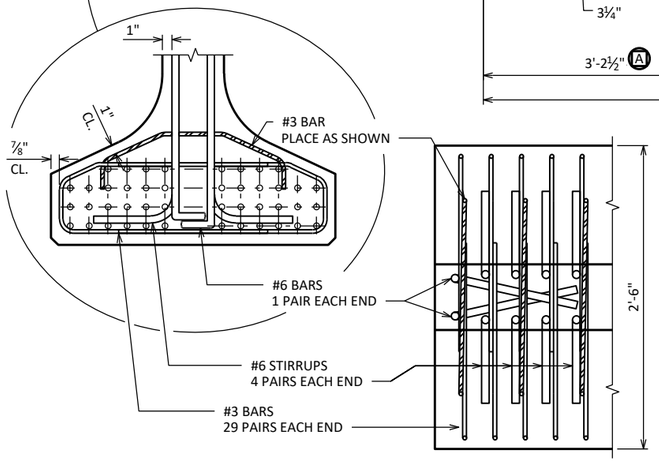
1021-01-79



TOP FLANGE



SECTION A-A



BOTTOM FLANGE

SIDE VIEW & TYPICAL SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

Ⓑ 6 #4 BARS, FULL LENGTH, MIN. LAP = 1'-8"

NOTES

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

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

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

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

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

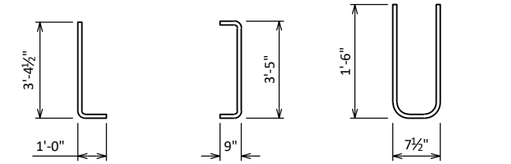
SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

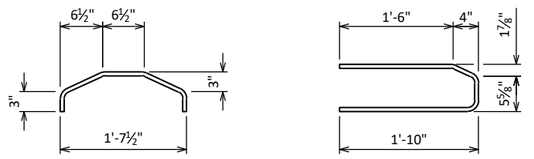
AN EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON ACCEPTANCE OF THE STRUCTURES MAINTENANCE SECTION. IF USED, WWF SUBSTITUTION DETAILS SHALL BE SUBMITTED ELECTRONICALLY TO THE WISDOT FABRICATION LIBRARY AND ACCEPTED PRIOR TO SHOP DRAWING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

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

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

FOR DIAPHRAGM SPACING INFORMATION SEE "45W" PRESTRESSED GIRDER DETAILS 2" SHEET.





⚹ MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L" (FEET)	DEAD LOAD DEFL. (IN.)									CONC. STRGTH. f'_c (P.S.I.)	"P" (IN.)			DIA. OF STRAND (IN.)	DRAPED PATTERN						UNDRAPED PATTERN	
			1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10		1ST ⅓ OF GIRDER	MID ⅓ OF GIRDER	END ⅓ OF GIRDER		TOTAL NO. OF STRANDS	f'_{ci} (P.S.I.) ⚹	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	TOTAL NO. OF STRANDS	f'_{ci} (P.S.I.) ⚹
1	1,5	118.375	0.8	1.5	2.1	2.4	2.5	2.4	2.0	1.4	0.8	8,000	7	7	7	0.6	34	6,800	40	13.75	16.75	5		
1	2,3,4	118.375	0.8	1.6	2.2	2.5	2.7	2.5	2.1	1.5	0.8	8,000	7	7	7	0.6	34	6,800	40	13.75	16.75	5		
2	1,5	118.375	0.8	1.4	2.0	2.4	2.5	2.4	2.1	1.5	0.8	8,000	7	7	7	0.6	34	6,800	40	13.75	16.75	5		
2	2,3,4	118.375	0.8	1.5	2.1	2.5	2.7	2.5	2.2	1.6	0.8	8,000	7	7	7	0.6	34	6,800	40	13.75	16.75	5		

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-17-216

DRAWN BY DDS/IFC | PLANS CK'D DLM

45W" PRESTRESSED GIRDER DETAILS 1

SHEET 11
165

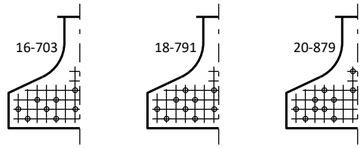
SCALE = 2.00

8

8

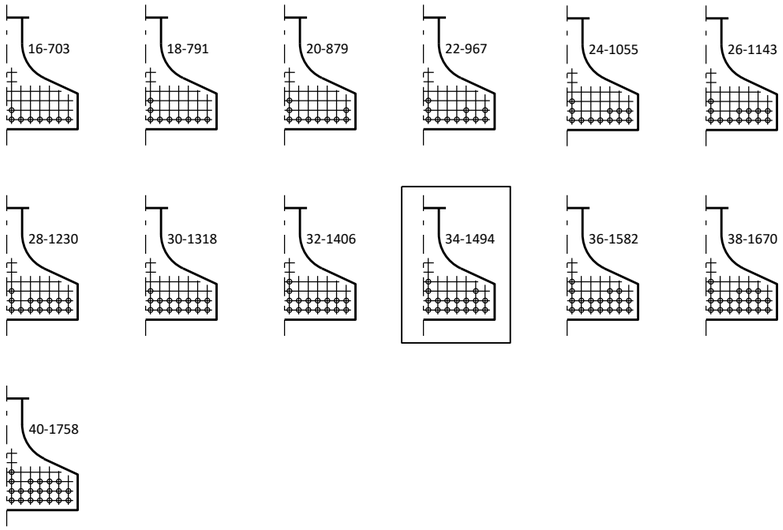
STATE PROJECT NUMBER

1021-01-79



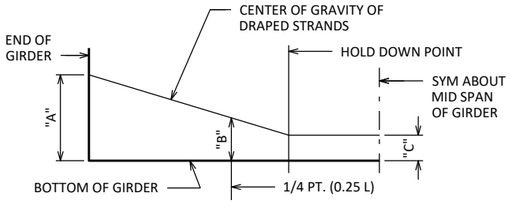
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS

0.6" DIA. STRANDS

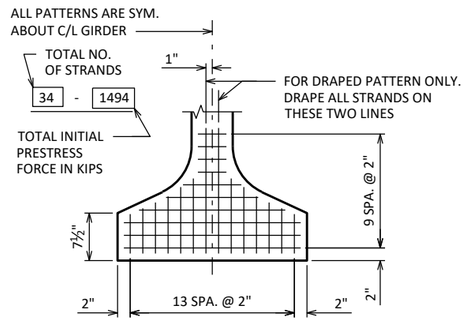


ARRANGEMENT AT C/L SPAN - FOR GIRDERS WITH DRAPED STRANDS

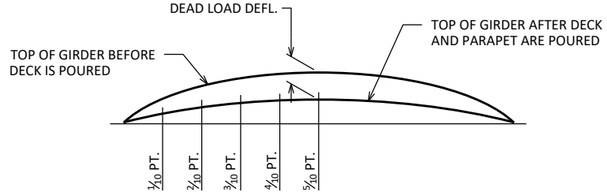
0.6" DIA. STRANDS



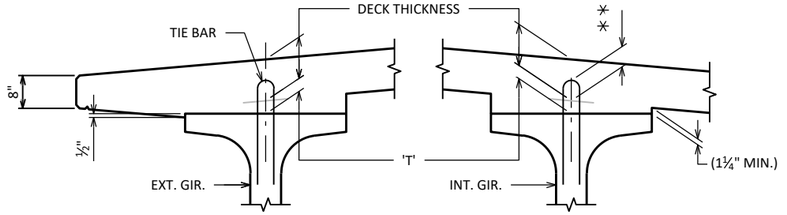
DRAPED STRAND PROFILE



TYP. STRAND PATTERN



DEAD LOAD DEFLECTION DIAGRAM



DECK HAUNCH DETAIL

IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE

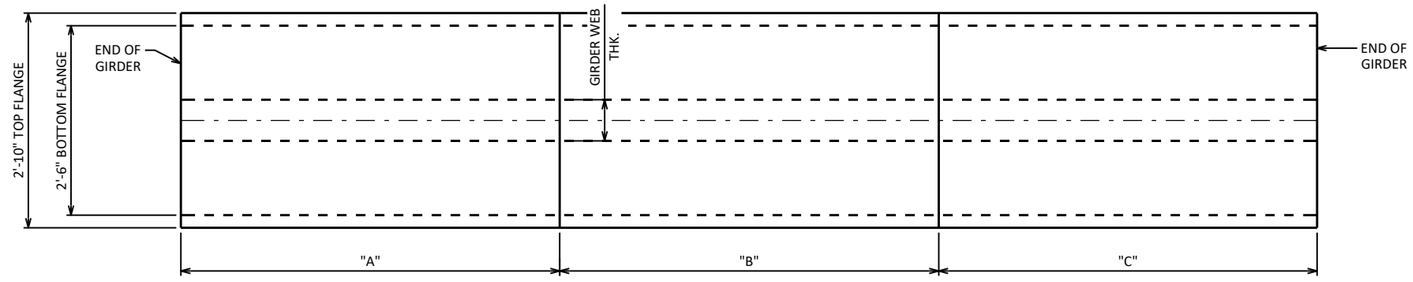
* GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

** IF 3" MINIMUM DEEDMENT OF TIE BAR CANNOT BE OBTAINED.

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

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

NOTE: AN AVERAGE HAUNCH ('T') OF 2 5/8" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



DIAPHRAGM SPACING PLAN

DIMENSIONS MEASURED FROM ENDS OF GIRDER TO STEEL DIAPHRAGMS. INSERT HOLES FOR DIAPHRAGM CONNECTIONS TO BE DETERMINED BY GIRDER FABRICATOR BASED ON "DIAPHRAGM SPACING PLAN", AND "DIAPHRAGM SPACING TABLE" ON THIS SHEET, AS WELL AS ON THE "STEEL DIAPHRAGM " SHEET.

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

SPAN	CAMBER (IN.) ⚹
1	3.6
2	3.6

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

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

DIAPHRAGM SPACING TABLE

GIRDER ID	A	B	C
G1	41'-4 ¾"	39'-5 ½"	37'-6 ¼"
G2	40'-5"	39'-5 ½"	38'-6"
G3	39'-5 ½"	39'-5 ½"	39'-5 ½"
G4	38'-6"	39'-5 ½"	40'-5"
G5	37'-6 ¼"	39'-5 ½"	41'-4 ¾"

TYPICAL BOTH SPANS

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-17-216

DRAWN BY DDS/IFC | PLANS CK'D DLM

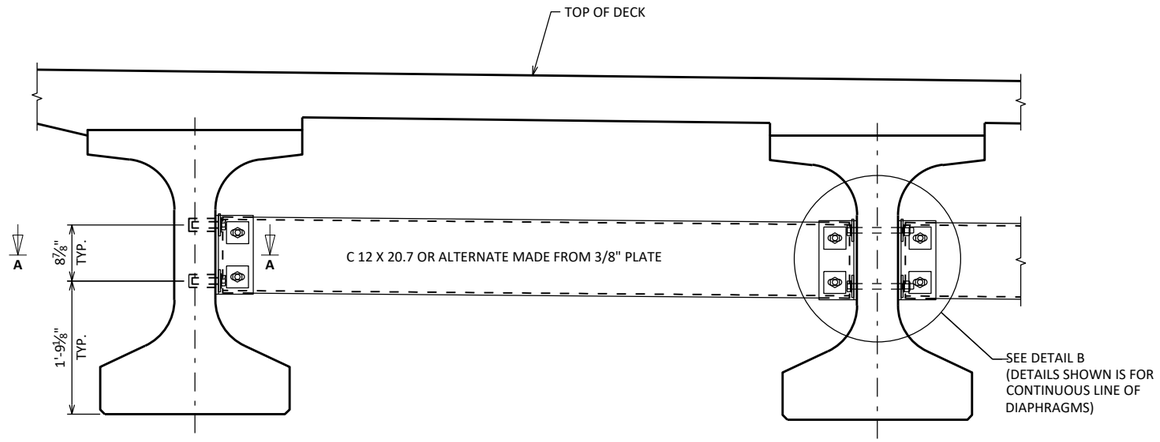
45W" PRESTRESSED GIRDER DETAILS 2

SHEET 12
166

SCALE = 2.00

STATE PROJECT NUMBER

1021-01-79



EXTERIOR GIRDER **INTERIOR GIRDER**

PART TRANSVERSE SECTION AT DIAPHRAGM

NOTES

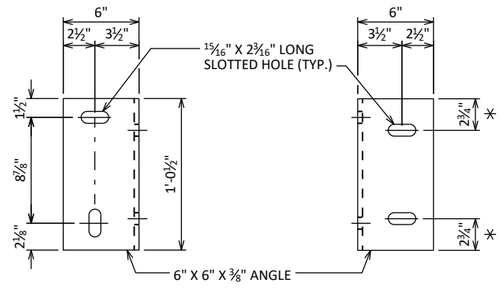
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-17-216", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

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

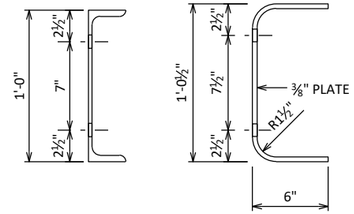
STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS 1/4 TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.



BEAM FACE **DIAPHRAGM FACE**

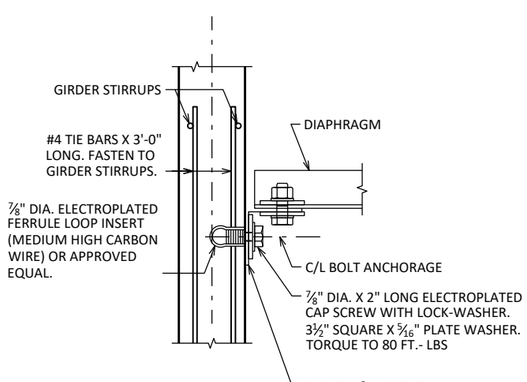
DIAPHRAGM SUPPORT

* 2½" FOR ALTERNATE PLATE DIAPHRAGM



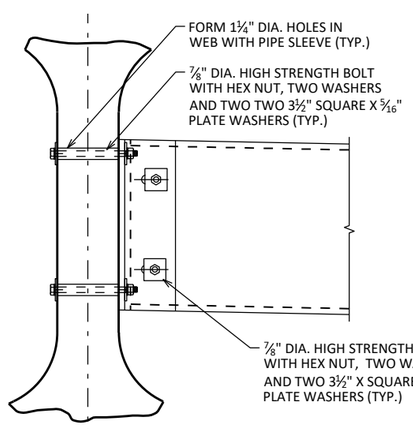
C12X20.7 **ALTERNATE DIAPHRAGM**

SECTION THRU DIAPHRAGM

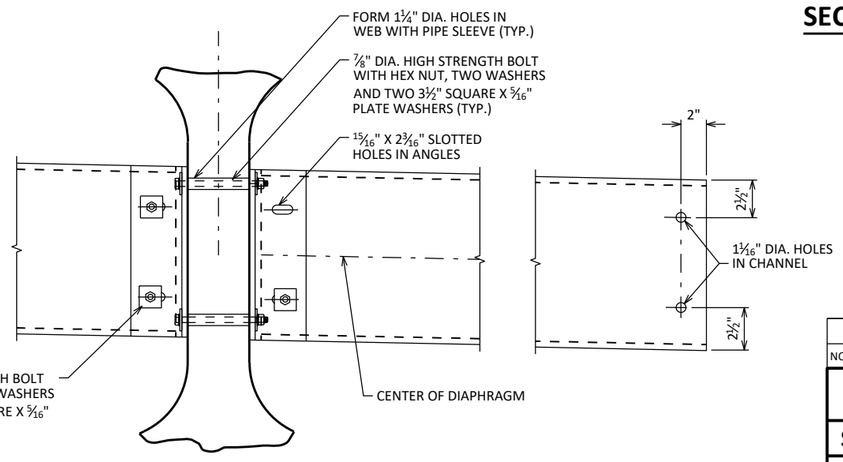


SECTION A-A

(FOR EXTERIOR ATTACHMENT)



(FOR STAGGERED DIAPHRAGM)



(FOR CONTINUOUS LINE OF DIAPHRAGMS)

DETAIL B

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-17-216

DRAWN BY DDS | PLANS CK'D DLM

STEEL DIAPHRAGM

SHEET 13
167

SCALE = 2.00

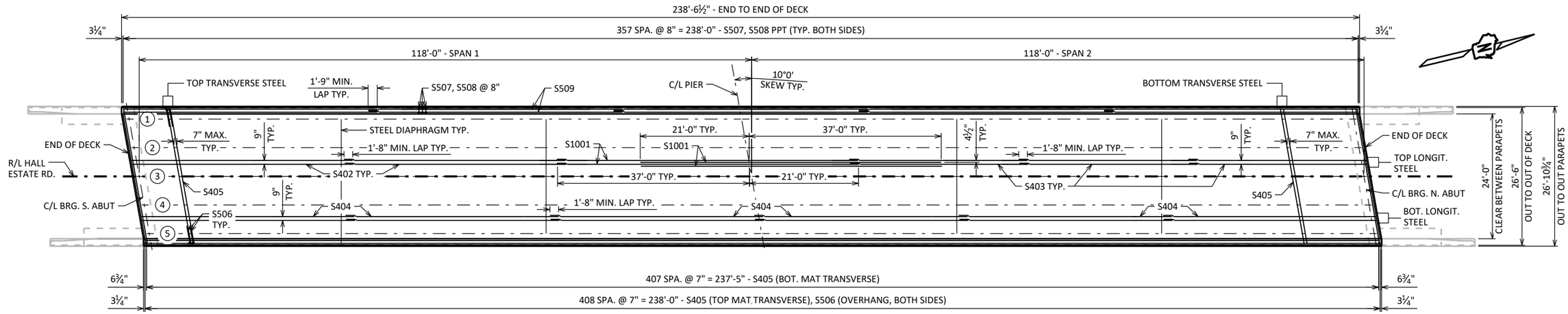
8

8

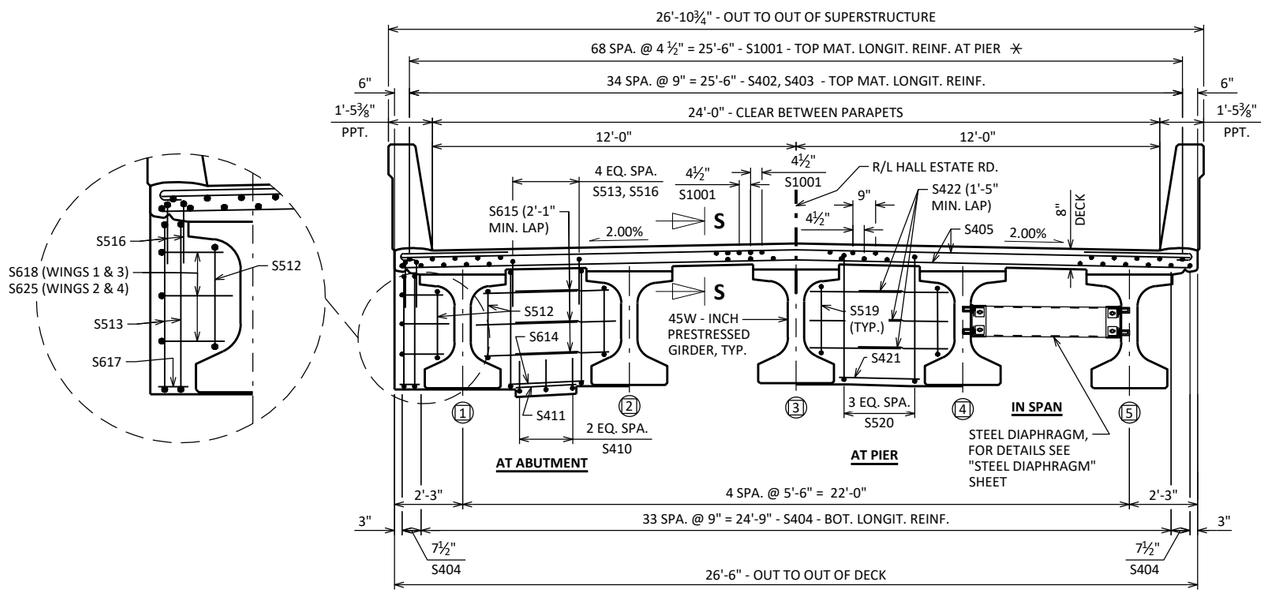
STATE PROJECT NUMBER

1021-01-79

◯ INDICATES GIRDER NUMBER



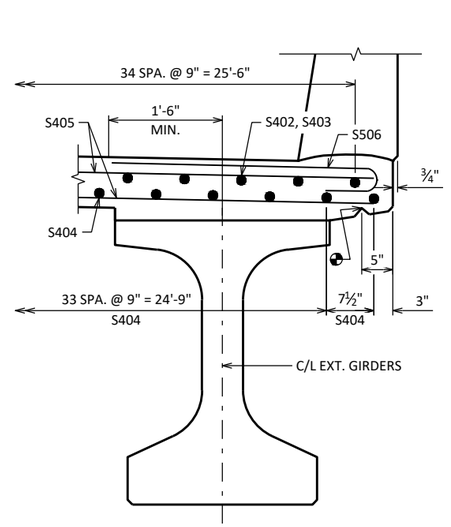
PLAN



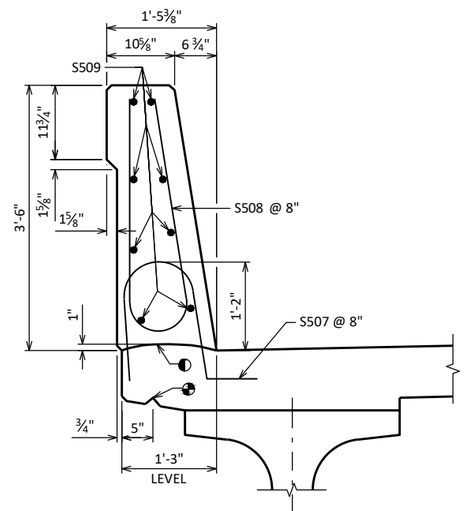
CROSS SECTION THRU ROADWAY

LOOKING NORTH

⚹ ALTERNATE EVERY OTHER S1001 BAR AS SHOWN IN PLAN VIEW



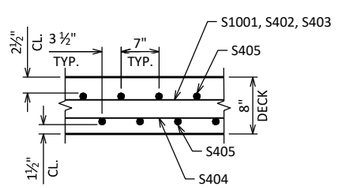
SECTION THRU EDGE OF DECK



SECTION THRU PARAPET

◓ ¾" V-GROVE REQ'D. EXTEND TO 6" FROM F.F. OF ABUT. DIAPH.

◐ CONSTR. JT. - STRIKE OFF AS SHOWN



SECTION S-S

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-17-216

DRAWN BY DDS/IFC | PLANS CK'D DLM

SUPERSTRUCTURE

SHEET 14
168

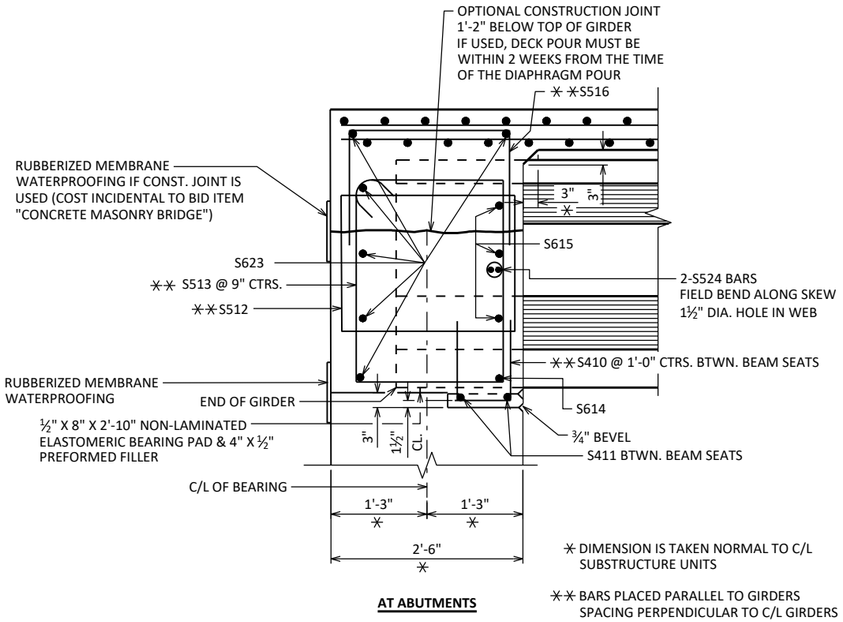
SCALE = 20.00

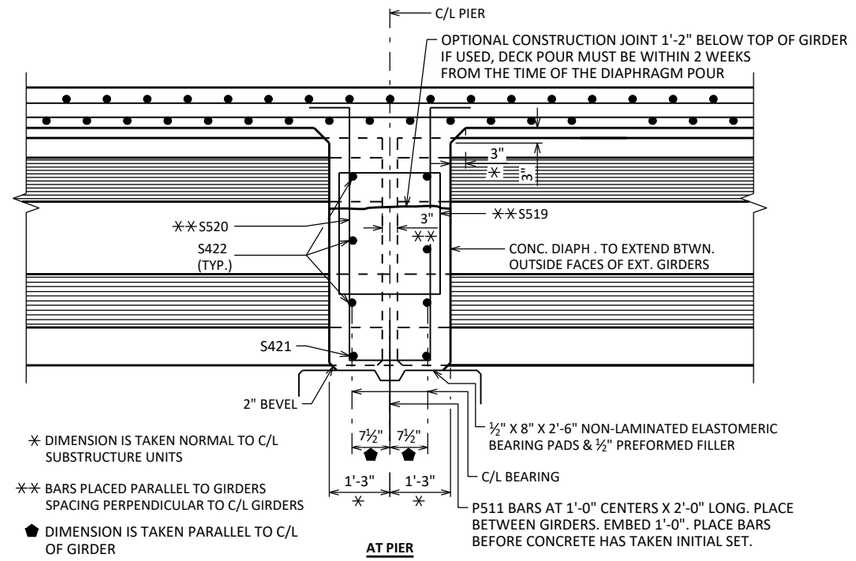
8

8

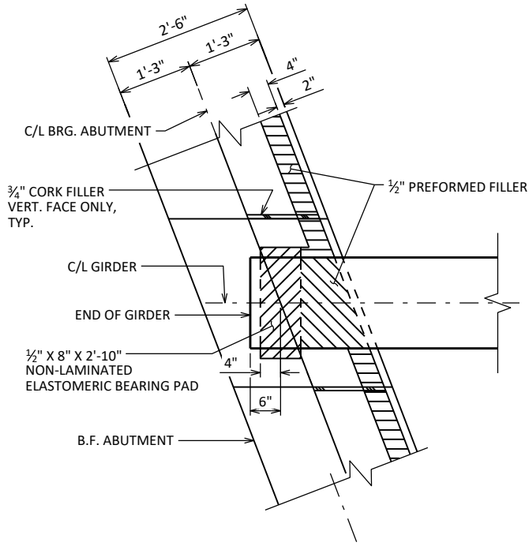
STATE PROJECT NUMBER

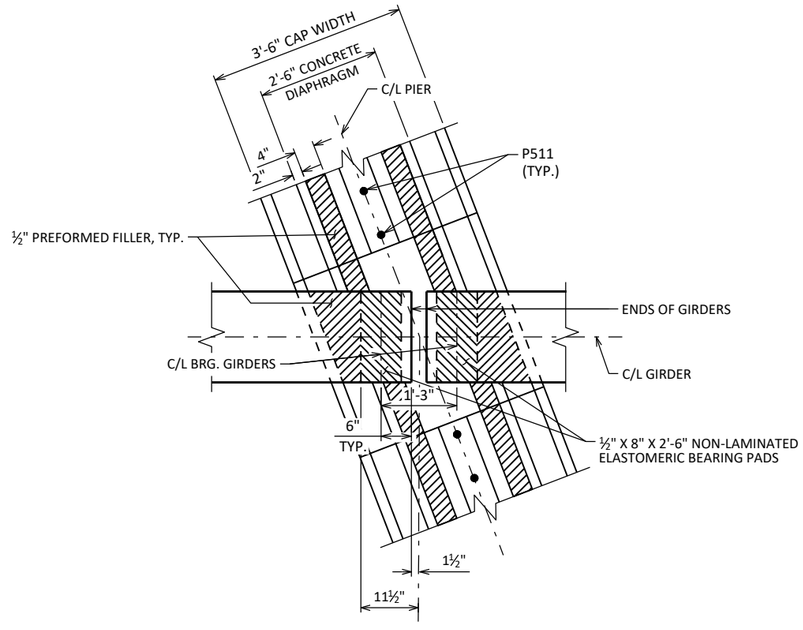
1021-01-79





PART. LONGIT. SECTION





BEARING PAD DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-17-216

DRAWN BY DDS/IFC | PLANS CK'D DLM

SUPERSTRUCTURE DETAILS 1

SHEET 15
169

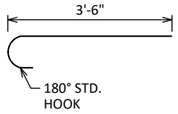
SCALE = 1:30

8

8

STATE PROJECT NUMBER

1021-01-79



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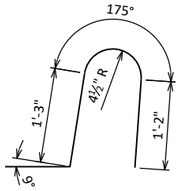

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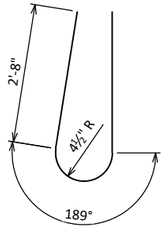

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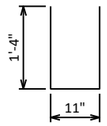

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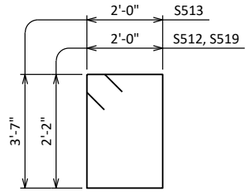
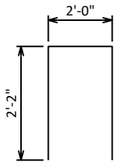


S512, S513, S519



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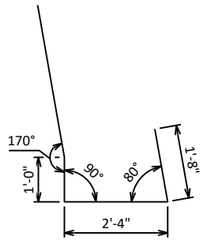

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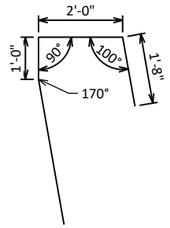

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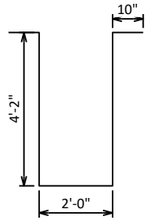


S520

BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S1001	X	69	58'-0"			DECK - TOP LONGIT. - CONTINUITY OVER PIER
S402	X	70	42'-9"			DECK - TOP LONGIT. - SPAN 1
S403	X	105	34'-5"			DECK - TOP LONGIT. - SPAN 2
S404	X	216	41'-1"			DECK - BOT. LONGIT. - SPAN 1 & 2
S405	X	817	26'-5"			DECK - TOP & BOT. - TRANS.
S506	X	818	4'-1"	X		DECK - TOP TRANS, (EDGES) OVERHANG
S507	X	716	4'-5"	X		DECK/PARAPET - VERT.
S508	X	716	6'-8"	X		PARAPET - VERT.
S509	X	80	49'-1"			PARAPET - HORIZ.
S410	X	24	3'-5"	X		ABUT. DIAPH. - VERT. BOT. U-BAR
S411	X	16	1'-9"			ABUT. DIAPH. - HORIZ. BOT.
S512	X	20	9'-0"	X		ABUT. DIAPH. - STIRRUP @ FLANGES
S513	X	48	11'-10"	X		ABUT. DIAPH. - STIRRUP
S614	X	8	2'-8"			ABUT. DIAPH - HORIZ. BOT. - F.F. ABUT. - BTWN. GIRDERS
S615	X	48	3'-4"			ABUT. DIAPH - HORIZ. - F.F. ABUT. - BTWN. GIRDERS
S516	X	48	6'-1"	X		ABUT. DIAPH. - DECK - VERT.
S617	X	4	0'-7"			ABUT. DIAPH. ENDS - HORIZ. - BOT. F.F.
S618	X	6	8'-0"	X		ABUT. DIAPH. ENDS - HORIZ. - WINGS 2 & 4
S519	X	8	9'-0"	X		PIER DIAPH. - STIRRUP @ FLANGES
S520	X	20	11'-7"	X		PIER DIAPH. - VERT. BTWN. GIRDERS
S421	X	8	2'-8"			PIER DIAPH. - HORIZ. BOT.
S422	X	48	3'-0"			PIER DIAPH. - HORIZ. - BTWN. GIRDERS
S623	X	12	26'-6"			ABUT. DIAPH. - HORIZ. - B.F. ABUT.
S524	X	20	6'-0"			ABUT. DIAPH. - HORIZ. - THRU GIRDERS
S625	X	6	8'-4"	X		ABUT. DIAPH. ENDS - HORIZ. - WINGS 1 & 3

TOP OF DECK ELEVATIONS

SPAN 1	C/L BRG. S. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	C/L PIER
W. EOD	1220.12	1220.21	1220.29	1220.35	1220.41	1220.45	1220.48	1220.50	1220.50	1220.50	1220.48
W. GUTTERLINE	1220.12	1220.21	1220.29	1220.35	1220.41	1220.45	1220.48	1220.50	1220.50	1220.50	1220.48
GIRDER 1	1220.14	1220.23	1220.31	1220.38	1220.43	1220.47	1220.50	1220.52	1220.52	1220.52	1220.50
GIRDER 2	1220.26	1220.35	1220.42	1220.49	1220.54	1220.58	1220.61	1220.63	1220.63	1220.62	1220.60
GIRDER 3/PGL	1220.38	1220.46	1220.54	1220.60	1220.66	1220.70	1220.72	1220.74	1220.74	1220.73	1220.71
GIRDER 4	1220.27	1220.36	1220.44	1220.50	1220.55	1220.59	1220.62	1220.63	1220.63	1220.62	1220.60
GIRDER 5	1220.17	1220.26	1220.33	1220.39	1220.44	1220.48	1220.51	1220.52	1220.52	1220.51	1220.49
E. GUTTERLINE	1220.15	1220.24	1220.31	1220.37	1220.42	1220.46	1220.49	1220.50	1220.50	1220.49	1220.47
E. EOD	1220.15	1220.24	1220.31	1220.38	1220.43	1220.46	1220.49	1220.50	1220.50	1220.49	1220.47

SPAN 2	C/L PIER	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	C/L BRG. N. ABUT.
W. EOD	1220.48	1220.45	1220.40	1220.35	1220.28	1220.20	1220.11	1220.01	1219.89	1219.76	1219.62
W. GUTTERLINE	1220.48	1220.45	1220.40	1220.35	1220.28	1220.20	1220.11	1220.01	1219.89	1219.76	1219.62
GIRDER 1	1220.50	1220.47	1220.42	1220.37	1220.30	1220.22	1220.13	1220.02	1219.91	1219.78	1219.64
GIRDER 2	1220.60	1220.57	1220.53	1220.47	1220.40	1220.32	1220.23	1220.13	1220.01	1219.88	1219.74
GIRDER 3/PGL	1220.71	1220.68	1220.63	1220.58	1220.51	1220.43	1220.33	1220.23	1220.11	1219.98	1219.84
GIRDER 4	1220.60	1220.57	1220.52	1220.46	1220.39	1220.31	1220.21	1220.11	1219.99	1219.86	1219.71
GIRDER 5	1220.49	1220.45	1220.41	1220.35	1220.27	1220.19	1220.10	1219.99	1219.87	1219.74	1219.59
E. GUTTERLINE	1220.47	1220.43	1220.38	1220.33	1220.25	1220.17	1220.07	1219.97	1219.85	1219.71	1219.57
E. EOD	1220.47	1220.43	1220.38	1220.32	1220.25	1220.17	1220.07	1219.96	1219.84	1219.71	1219.57

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

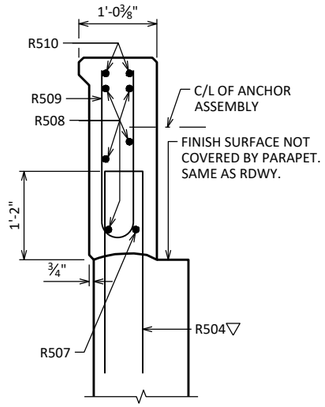
STRUCTURE B-17-216

DRAWN BY DDS/IFC | PLANS CK'D DLM

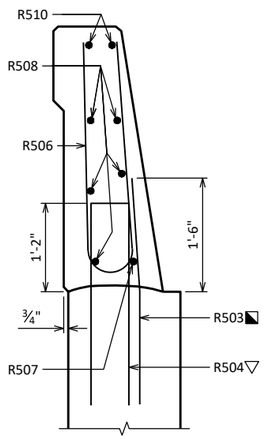
SUPERSTRUCTURE DETAILS 2

SHEET 16
170

SCALE = 2.00



SECTION A-A



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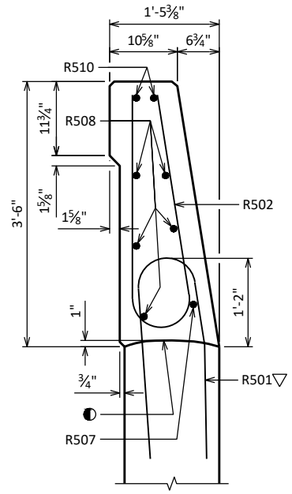

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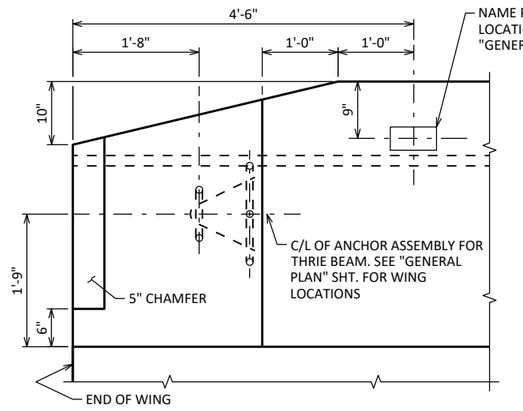


PARAPET END TREATMENT DETAIL

LOOKING AT INSIDE FACE OF PARAPET

STATE PROJECT NUMBER

1021-01-79

BILL OF BARS

FOR WING PARAPETS

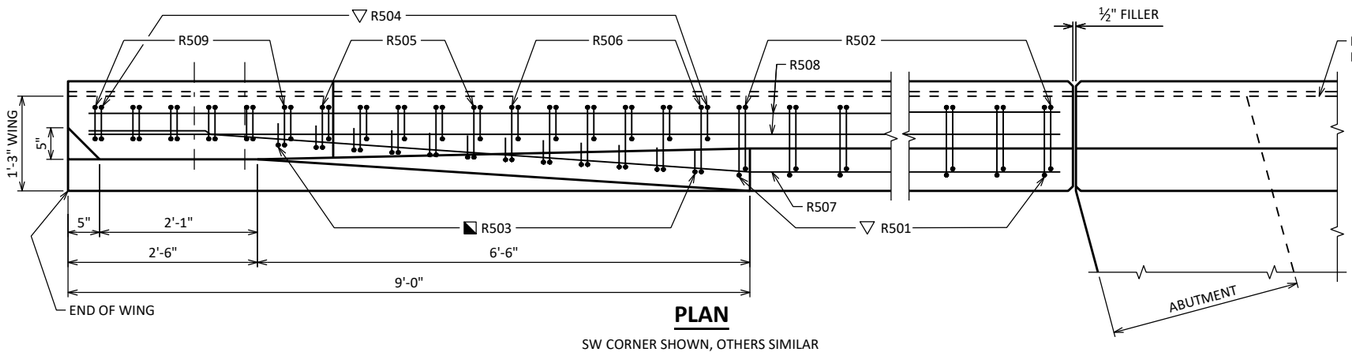
BAR MARK	COAT	S. ABUT.	N. ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	28	28	5'-10"	X		PARAPET VERT.
R502	X	28	28	6'-8"	X		PARAPET VERT.
R503	X	24	24	3'-0"	X		PARAPET VERT.
R504	X	34	34	5'-7"	X		PARAPET VERT.
R505	X	10	10	6'-5"	X		PARAPET VERT.
R506	X	12	12	6'-6"	X		PARAPET VERT.
R507	X	2	2	17'-7"	X		PARAPET HORIZ.
R508	X	10	10	17'-7"			PARAPET HORIZ.
R509	X	12	12	5'-5"	X	⚠	PARAPET VERT.
R510	X	4	4	17'-7"	X		PARAPET HORIZ.

⚠ LENGTH SHOWN FOR BAR IS AN AVERAGE AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR SERIES TABLE

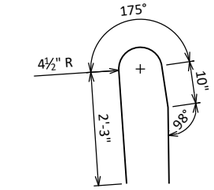
BUNDLE AND TAG EACH SERIES SEPARATELY.

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



PLAN

SW CORNER SHOWN, OTHERS SIMILAR



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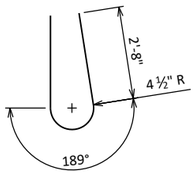

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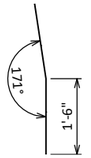
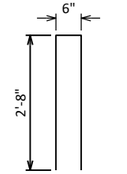


R503



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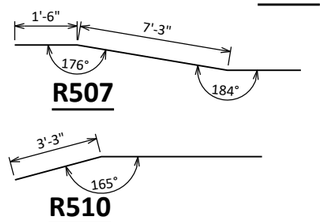
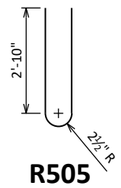


R507

R510



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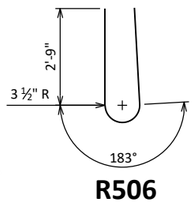

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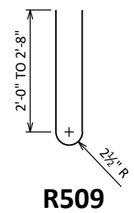

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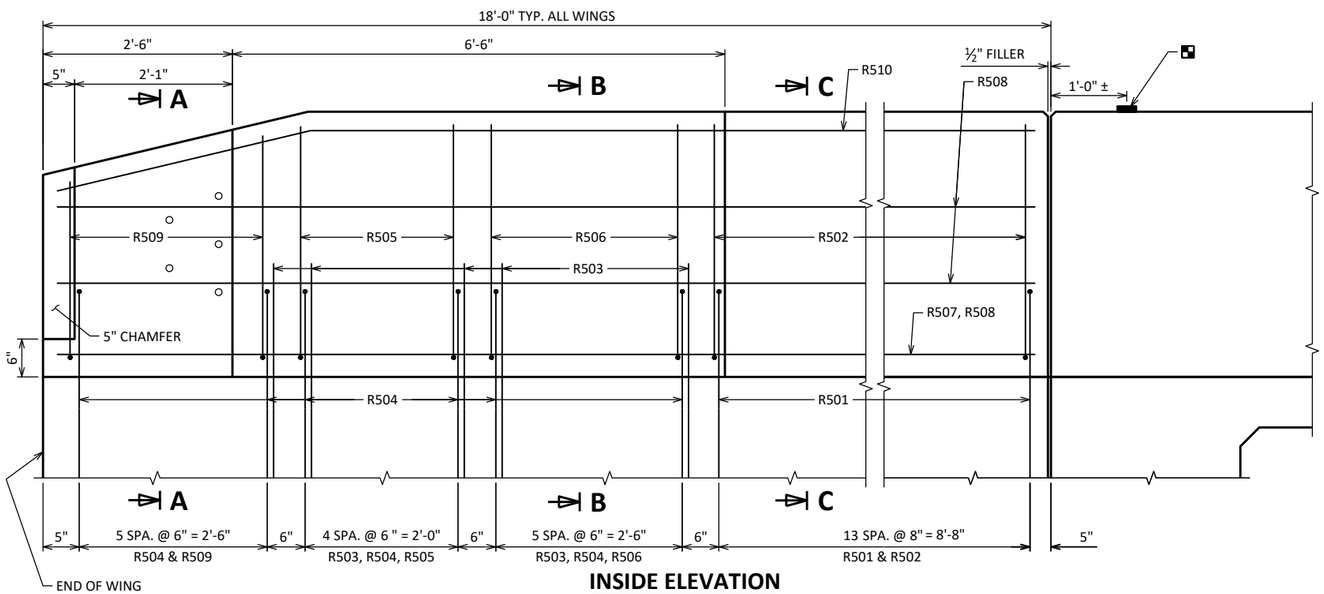
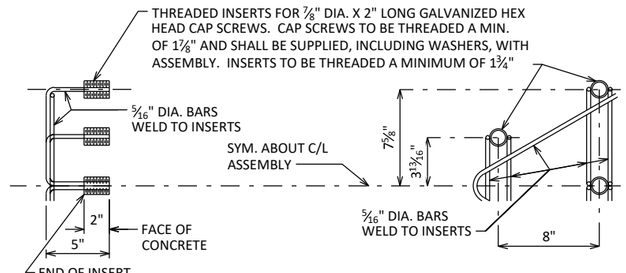


INSIDE ELEVATION

SW CORNER SHOWN, OTHERS SIMILAR

BENCH MARK CAP



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

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

◐ CONST. JOINT - STRIKE OFF AS SHOWN

◪ R503 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R503 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-17-216

DRAWN BY DDS | PLANS CK'D DLM

SINGLE SLOPE PARAPET 42SS

SHEET 17
171

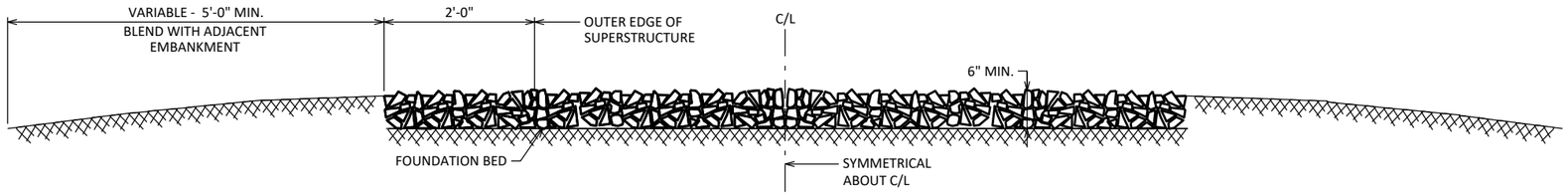
SCALE = 2.00

8

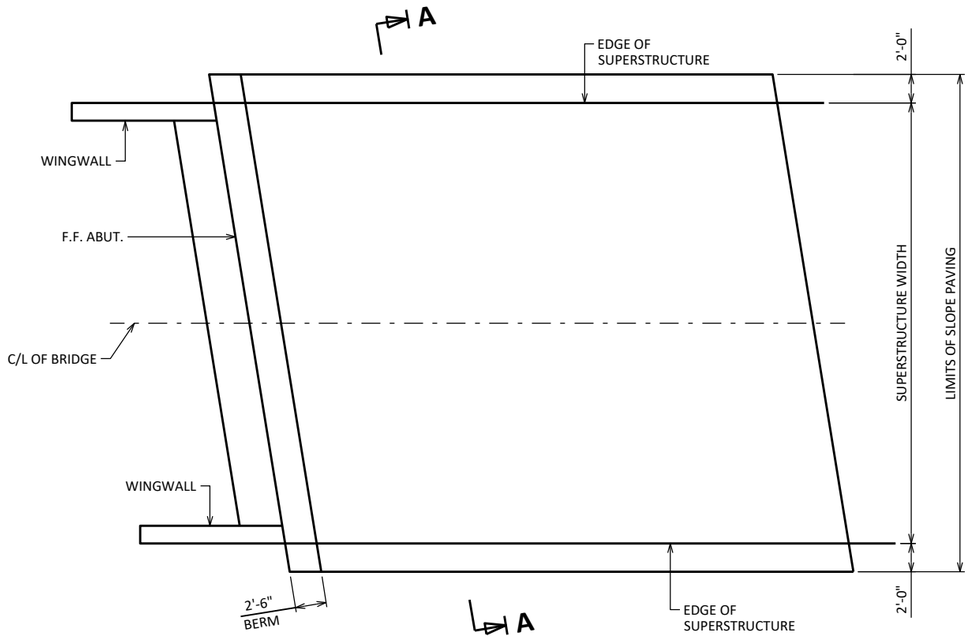
8

STATE PROJECT NUMBER

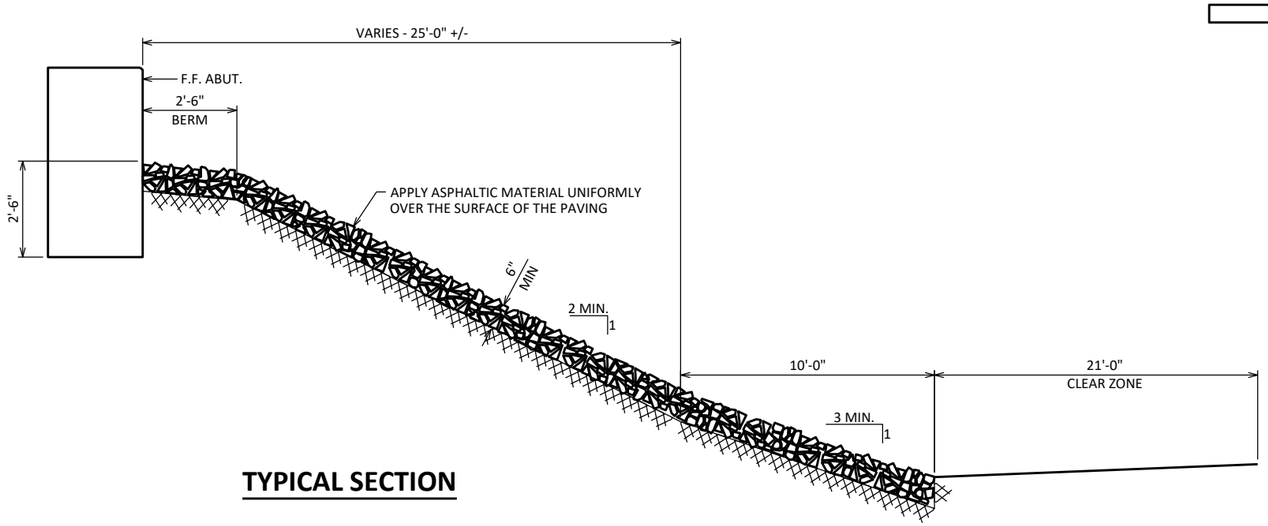
1021-01-79



SECTION A-A



PLAN



TYPICAL SECTION

NOTES

BID ITEM SHALL BE "SLOPE PAVING CRUSHED AGGREGATE".

WOOD FORMS MAY BE LEFT IN PLACE WHEN OF A QUALITY ACCEPTABLE TO THE ENGINEER.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-17-216

DRAWN BY DDS/IFC | PLANS CK'D DLM

SLOPE PAVING CRUSHED AGGREGATE

SHEET 18
172

SCALE = 2.00

8

8

DIVISION 1 - 160TH SOUTH

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT 1.00	EXPANDED FILL 1.25	MASS ORDINATE
						NOTE 1	NOTE 2	NOTE 3	NOTE 1		NOTE 8
6+75.00	675.00	0.00	18.43	0.00	4.52	0	0	0	0	0	0
6+76.73	676.73	1.73	17.55	0.00	5.81	1	0	0	1	0	1
7+00.00	700.00	23.27	16.46	0.00	1.53	15	0	3	16	4	12
7+22.88	722.88	22.88	11.87	0.00	4.51	12	0	3	28	8	21
7+27.44	727.44	4.56	10.77	0.00	5.82	2	0	1	30	9	21
7+42.88	742.88	15.44	7.27	0.00	11.40	5	0	5	35	15	20
7+47.44	747.44	4.56	22.93	0.00	7.91	3	0	2	38	18	21
7+50.00	750.00	2.56	22.36	0.00	8.21	2	0	1	40	19	21
7+62.88	762.88	12.88	20.89	0.00	6.83	10	0	4	50	24	26
7+67.44	767.44	4.56	20.61	0.00	5.60	4	0	1	54	25	29
7+87.86	787.86	20.42	13.56	0.00	3.18	13	0	3	67	29	38
7+92.42	792.42	4.56	12.48	0.00	2.96	2	0	1	69	30	39
8+00.00	800.00	7.58	10.82	0.00	3.10	3	0	1	72	31	41
8+12.84	812.84	12.84	9.17	0.00	1.50	5	0	1	77	33	45
8+15.97	815.97	3.13	8.60	0.00	1.13	1	0	0	78	33	46
8+17.40	817.40	1.43	8.25	0.00	1.00	0	0	0	78	33	46
8+20.53	820.53	3.13	7.47	0.00	0.93	1	0	0	79	33	47
8+50.00	850.00	29.47	190.56	0.00	0.96	108	0	1	187	34	153
8+75.00	875.00	25.00	0.00	0.00	0.00	88	0	0	275	34	241

9

9

PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	EARTHWORK DATA	SHEET 173	E

DIVISION 1 - IH 94 EB

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT 1.00	EXPANDED FILL 1.25	MASS ORDINATE
						NOTE 1	NOTE 2	NOTE 3	NOTE 1		NOTE 8
573+06.42	57282.63	0.00	0.00	0.00	0.00	0	0	0	0	0	0
573+20.00	57296.21	13.58	0.00	0.00	0.00	0	0	0	0	0	0
573+45.00	57321.21	25.00	0.00	0.00	0.00	0	0	0	0	0	0
573+50.00	57326.21	5.00	0.00	0.00	0.00	0	0	0	0	0	0
573+70.00	57346.21	20.00	0.00	0.00	0.00	0	0	0	0	0	0
573+80.25	57356.47	10.26	13.66	0.00	0.78	3	0	0	3	0	3
574+00.00	57376.21	19.74	153.12	0.00	1.28	61	0	1	64	1	63
574+50.00	57426.21	50.00	377.13	0.00	0.85	491	0	2	555	4	551
574+93.08	57469.30	43.09	557.27	0.00	0.11	746	0	1	1,301	5	1,296
575+00.00	57476.21	6.91	587.67	0.00	0.01	147	0	0	1,448	5	1,443
575+16.87	57493.08	16.87	660.28	0.00	0.00	390	0	0	1,838	5	1,833
575+16.88	57493.10	0.02	672.40	0.00	0.00	0	0	0	1,838	5	1,833
575+30.00	57506.21	13.11	724.49	0.00	0.00	339	0	0	2,177	5	2,172
575+43.87	57520.09	13.88	727.30	0.00	0.00	373	0	0	2,550	5	2,545
575+92.83	57569.04	48.95	348.67	0.00	0.00	975	0	0	3,525	5	3,520
576+44.06	57620.27	51.23	510.17	0.00	0.00	815	0	0	4,340	5	4,335
576+84.12	57660.34	40.07	611.71	0.00	0.11	832	0	0	5,172	5	5,167
577+00.00	57676.21	15.87	583.21	0.00	0.00	351	0	0	5,523	5	5,518
577+01.70	57677.92	1.71	580.69	0.00	0.00	37	0	0	5,560	5	5,555
577+01.71	57677.92	0.00	568.67	0.00	0.00	0	0	0	5,560	5	5,555
577+09.12	57685.33	7.41	556.21	0.00	0.00	154	0	0	5,714	5	5,709
577+50.01	57726.22	40.89	328.54	0.00	0.75	670	0	1	6,384	6	6,378
577+94.66	57770.88	44.66	13.81	0.00	0.15	283	0	1	6,667	8	6,660
578+00.00	57776.21	5.33	0.00	0.00	0.00	1	0	0	6,668	8	6,661

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PROJECT NO: 1021-01-79 | HWY: IH 94 | COUNTY: DUNN | EARTHWORK DATA | SHEET 174 | E

FILE NAME : N:\PDS\C3D\10210109\DESIGN\QUANTITIES\090300-EW-TABS.DWG
LAYOUT NAME - 02

PLOT DATE : 4/17/2026 12:25 PM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1" = 1'

WISDOT/CADDS SHEET 49

DIVISION 2 - DRIVEWAY 12+75

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT 1.00	EXPANDED FILL 1.25	MASS ORDINATE
						NOTE 1	NOTE 2	NOTE 3	NOTE 1		NOTE 8
21+06.40	2106.40	0.00	0.00	0.00	0.00	0	0	0	0	0	0
21+25.00	2125.00	18.60	0.00	0.00	8.87	0	0	3	0	4	-4
21+50.00	2150.00	25.00	0.00	0.00	61.47	0	0	33	0	45	-45
21+75.00	2175.00	25.00	6.62	0.00	48.59	3	0	51	3	109	-106
22+00.00	2200.00	25.00	36.30	0.00	0.00	20	0	22	23	136	-113
22+14.30	2214.30	14.30	0.00	0.00	62.07	10	0	16	33	156	-123
22+25.00	2225.00	10.70	6.29	0.00	2.21	1	0	13	34	173	-139
22+25.81	2225.81	0.81	0.00	0.00	0.00	0	0	0	34	173	-139

DIVISION 2 - 160TH NORTH

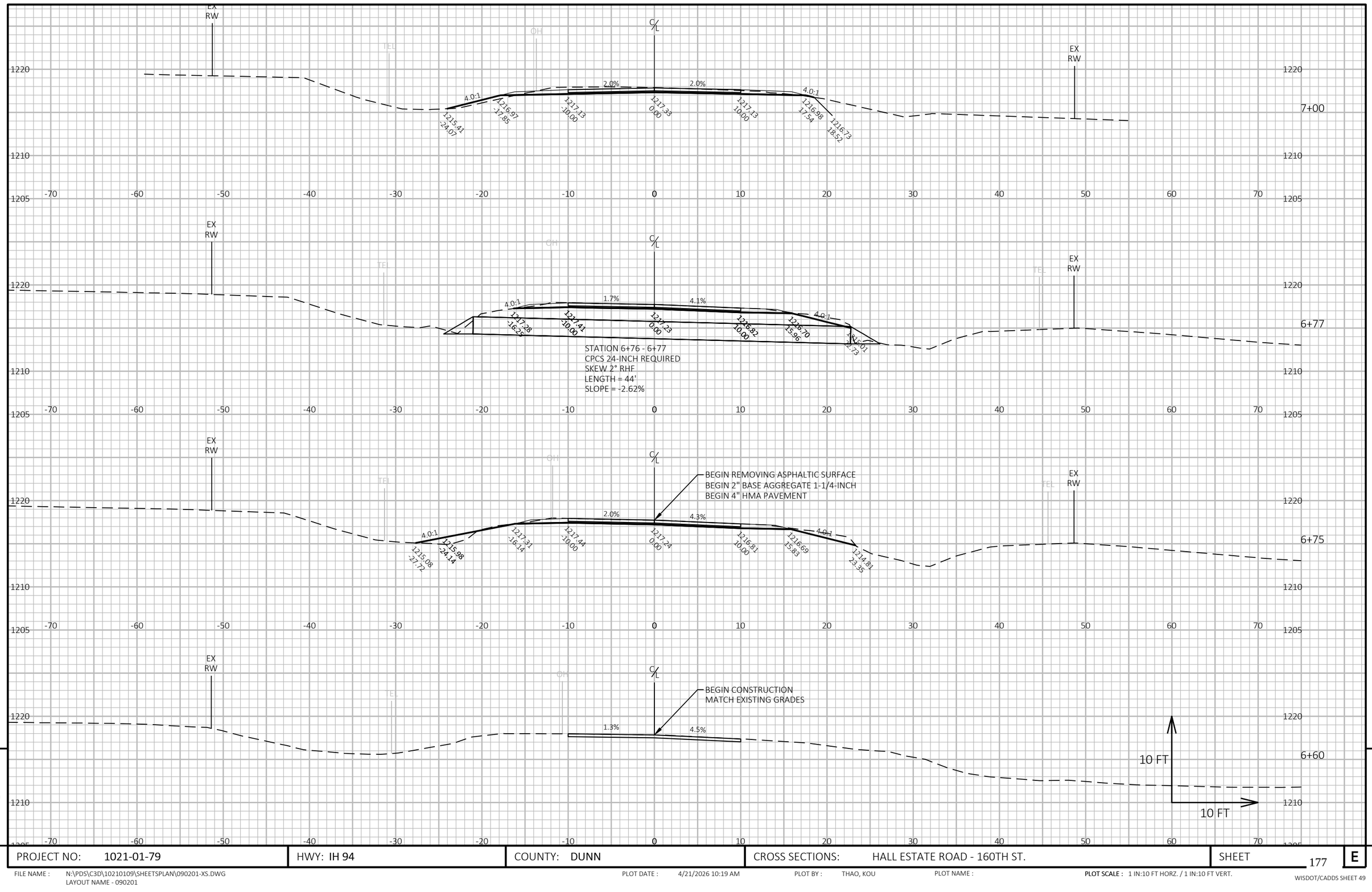
STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT 1.00	EXPANDED FILL 1.25	MASS ORDINATE
						NOTE 1	NOTE 2	NOTE 3	NOTE 1		NOTE 8
11+25.00	1125.00	0.00	659.29	0.00	11.78	0	0	0	0	0	0
11+50.00	1150.00	25.00	26.45	0.00	8.13	317	0	9	317	11	306
11+79.47	1179.47	29.47	54.47	0.00	4.07	44	0	7	361	20	341
11+82.60	1182.60	3.13	57.30	0.00	3.67	6	0	0	367	20	347
11+84.03	1184.03	1.43	51.70	0.00	3.50	3	0	0	370	20	350
11+87.16	1187.16	3.13	32.70	0.00	3.15	5	0	0	375	20	355
12+00.00	1200.00	12.84	32.31	0.00	2.58	15	0	1	390	21	369
12+07.58	1207.58	7.58	44.30	0.00	2.75	11	0	1	401	23	379
12+12.14	1212.14	4.56	61.55	0.00	2.81	9	0	0	410	23	388
12+32.56	1232.56	20.42	55.53	0.00	12.78	44	0	6	454	30	424
12+37.12	1237.12	4.56	51.67	0.00	14.50	9	0	2	463	33	431
12+50.00	1250.00	12.88	42.40	0.00	15.35	22	0	7	485	41	444
12+52.56	1252.56	2.56	40.77	0.00	15.33	4	0	1	489	43	447
12+57.12	1257.12	4.56	38.06	0.00	15.25	7	0	3	496	46	450
12+72.56	1272.56	15.44	30.86	0.00	14.60	20	0	9	516	58	459
12+77.12	1277.12	4.56	29.30	0.00	14.21	5	0	2	521	60	461
13+00.00	1300.00	22.88	19.63	0.00	10.66	21	0	11	542	74	468
13+02.27	1302.27	2.27	18.92	0.00	10.35	2	0	1	544	75	469
13+19.79	1319.79	17.52	16.86	0.00	8.01	12	0	6	556	83	474
13+37.31	1337.31	17.52	19.87	0.00	3.74	12	0	4	568	88	481
13+50.00	1350.00	12.69	21.18	0.00	2.36	10	0	1	578	89	489
13+51.63	1351.63	1.63	7.27	0.00	3.41	1	0	0	579	89	490
13+56.19	1356.19	4.56	7.77	0.00	3.19	1	0	1	580	90	490
14+00.00	1400.00	43.81	11.20	0.00	4.50	15	0	6	595	98	498
14+50.00	1450.00	50.00	11.03	0.00	9.49	21	0	13	616	114	502
15+00.00	1500.00	50.00	10.34	0.00	16.02	20	0	24	636	144	492
15+50.00	1550.00	50.00	11.21	0.00	5.84	20	0	20	656	169	487
16+00.00	1600.00	50.00	11.60	0.00	0.00	21	0	5	677	175	502

DIVISION 2 - IH 94 WB

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
						NOTE 1	NOTE 2	NOTE 3	1.00 NOTE 1	1.25	NOTE 8
574+00.00	57394.81	0.00	0.00	0.00	0.00	0	0	0	0	0	0
574+92.00	57486.81	92.00	12.29	0.00	0.70	21	0	1	21	1	20
575+00.00	57494.81	8.00	265.39	0.00	2.10	41	0	0	62	1	61
575+50.00	57544.81	50.00	653.49	0.00	5.94	851	0	7	913	10	903
575+68.87	57563.68	18.87	799.85	0.00	7.74	508	0	5	1,421	16	1,405
575+68.88	57563.69	0.01	811.92	0.00	7.74	0	0	0	1,421	16	1,405
575+68.88	57563.69	0.00	811.92	0.00	7.74	0	0	0	1,421	16	1,405
575+93.88	57588.69	25.00	789.56	0.00	6.17	741	0	6	2,162	24	2,138
576+33.19	57628.00	39.31	467.45	0.00	0.00	915	0	4	3,077	29	3,048
576+84.42	57679.23	51.23	396.77	0.00	0.00	820	0	0	3,897	29	3,868
577+34.46	57729.27	50.04	829.49	0.00	10.77	1,136	0	10	5,033	41	4,992
577+46.04	57740.85	11.58	800.73	0.00	10.98	350	0	5	5,383	48	5,336
577+50.00	57744.81	3.96	767.39	0.00	10.56	115	0	2	5,498	50	5,448
577+86.20	57781.01	36.20	510.54	0.00	7.38	857	0	12	6,355	65	6,290
578+00.00	57794.81	13.80	433.68	0.00	6.13	241	0	3	6,596	69	6,527
578+50.00	57844.81	50.00	29.82	0.00	0.41	429	0	6	7,025	76	6,949
578+52.00	57846.81	2.00	27.85	0.00	0.10	2	0	0	7,027	76	6,951
579+00.00	57894.81	48.00	0.00	0.00	0.00	25	0	0	7,052	76	6,976

DIVISION 3 - IH 94 MEDIAN

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
						NOTE 1	NOTE 2	NOTE 3	1.00 NOTE 1	1.25	NOTE 8
573+00.00	57294.81	0.00	0.56	0.00	0.00	0	0	0	0	0	0
573+40.15	57334.96	40.15	0.54	0.00	0.00	1	0	0	1	0	1
574+00.00	57394.81	59.85	0.56	0.00	0.01	1	0	0	2	0	2
574+90.15	57484.96	90.15	0.74	0.00	0.01	2	0	0	4	0	4
575+00.00	57494.81	9.85	0.78	0.00	0.00	0	0	0	4	0	4
575+54.04	57548.85	54.04	0.72	0.00	0.00	2	0	0	6	0	6
575+69.86	57564.67	15.82	0.58	0.00	0.01	0	0	0	6	0	6
576+00.00	57594.81	30.14	0.60	0.00	0.01	1	0	0	7	0	7
577+00.00	57694.81	100.00	0.61	0.00	0.01	2	0	0	9	0	9
577+07.36	57702.17	7.36	0.59	0.00	0.01	0	0	0	9	0	9
577+23.18	57717.99	15.82	0.54	0.00	0.02	0	0	0	9	0	9
577+86.53	57781.34	63.35	0.41	0.00	0.13	1	0	0	10	0	10
578+00.00	57794.81	13.47	0.46	0.00	0.09	0	0	0	10	0	10
579+00.00	57894.81	100.00	0.48	0.00	0.05	2	0	0	12	0	12
579+34.89	57929.70	34.89	0.54	0.00	0.02	1	0	0	13	0	13
579+93.10	57987.91	58.21	0.53	0.00	0.01	1	0	0	14	0	14

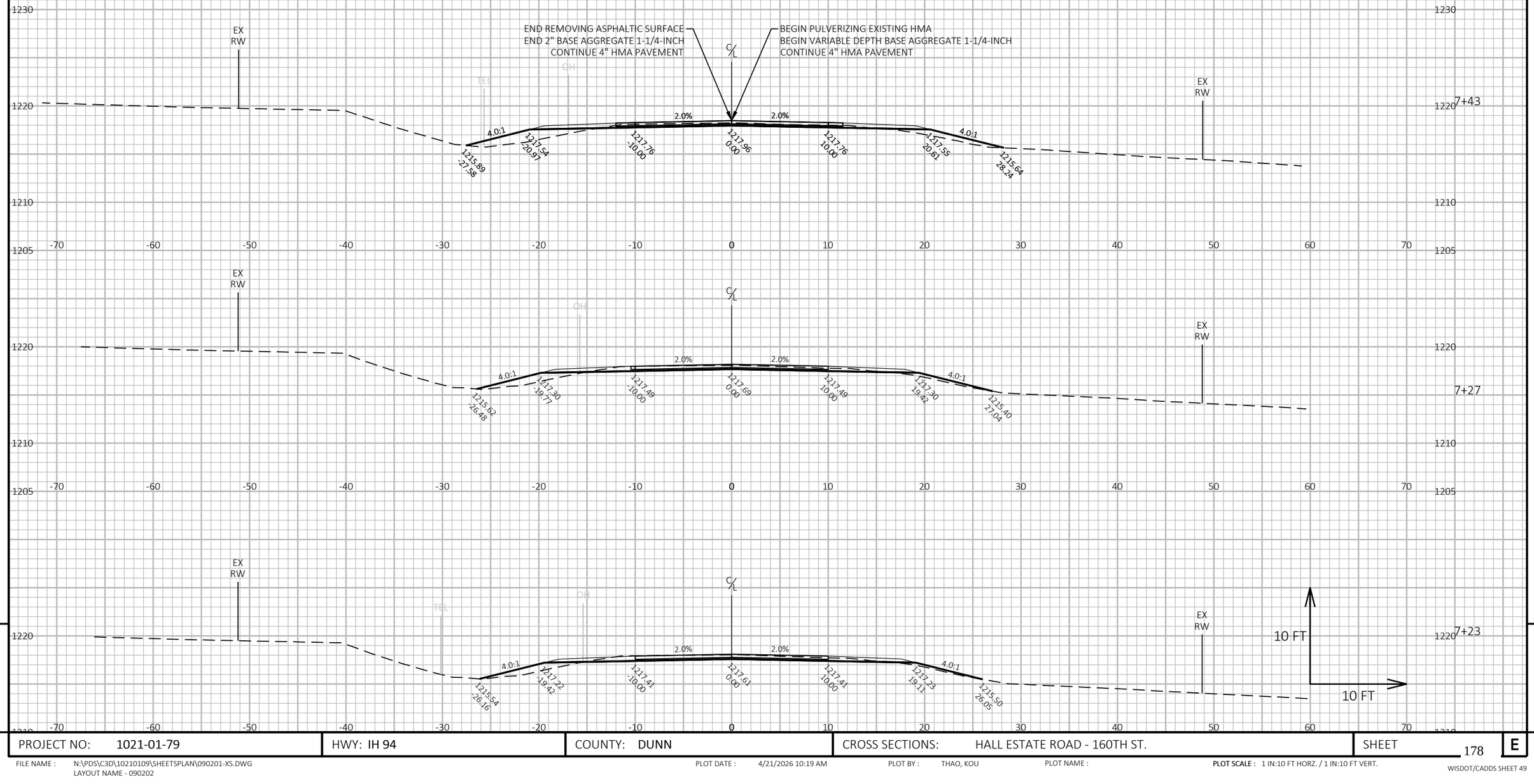


PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: HALL ESTATE ROAD - 160TH ST.	SHEET 177	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090201

PLOT DATE : 4/21/2026 10:19 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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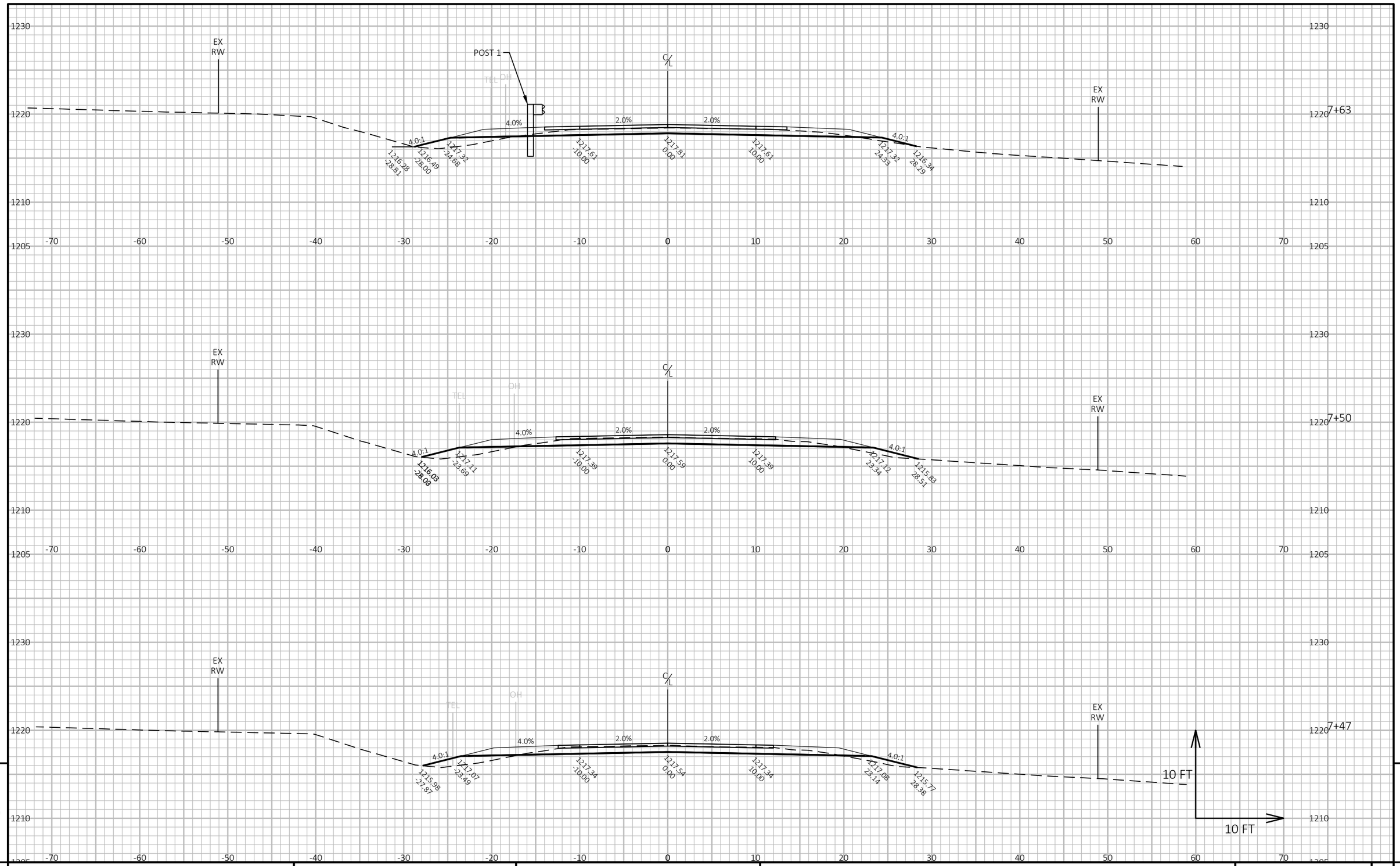
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: HALL ESTATE ROAD - 160TH ST.	SHEET 178	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090202

PLOT DATE : 4/21/2026 10:19 AM PLOT BY : THAO, KOU PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



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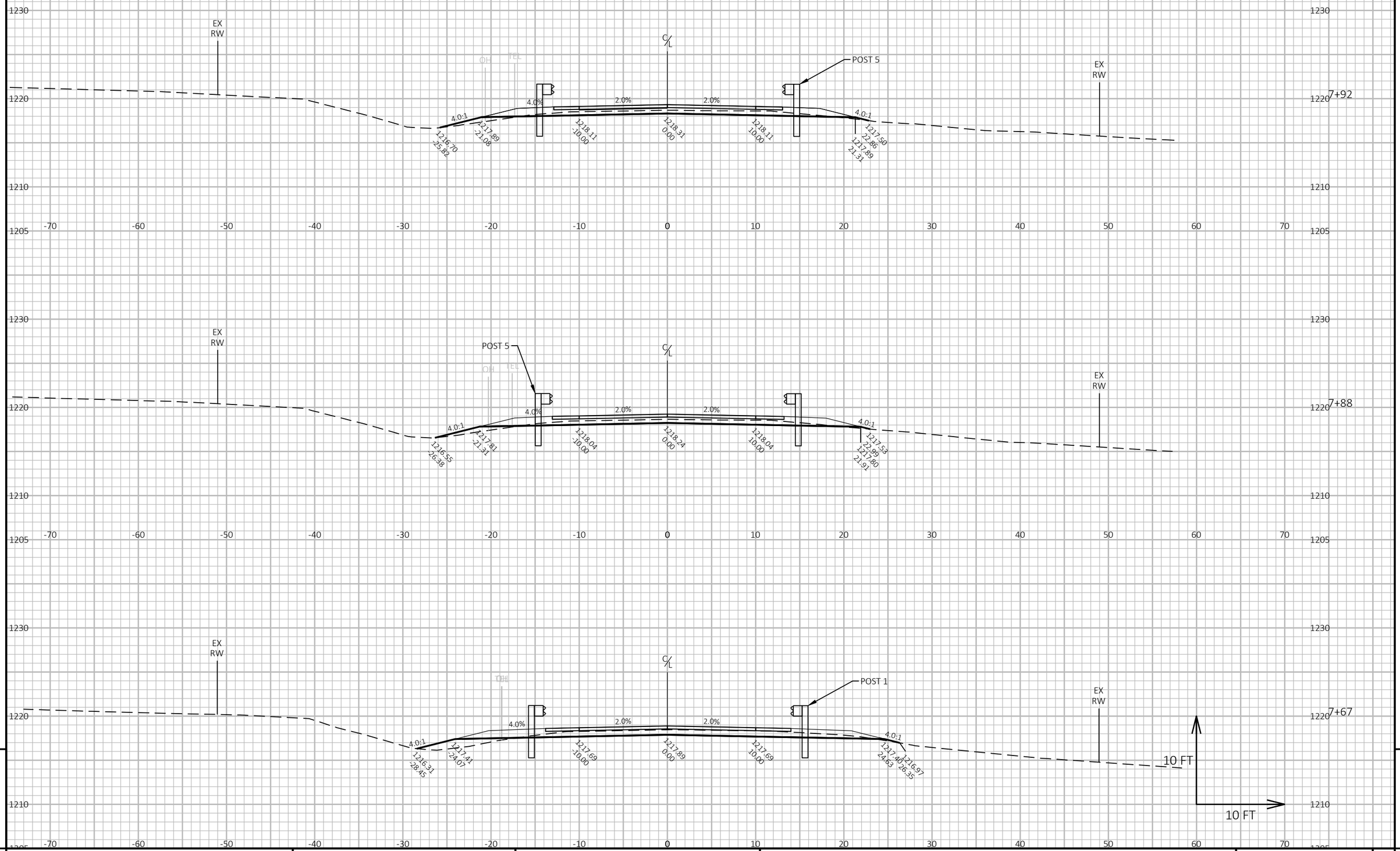
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: HALL ESTATE ROAD - 160TH ST.	SHEET 179	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090203

PLOT DATE : 4/21/2026 10:19 AM PLOT BY : THAO, KOU PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

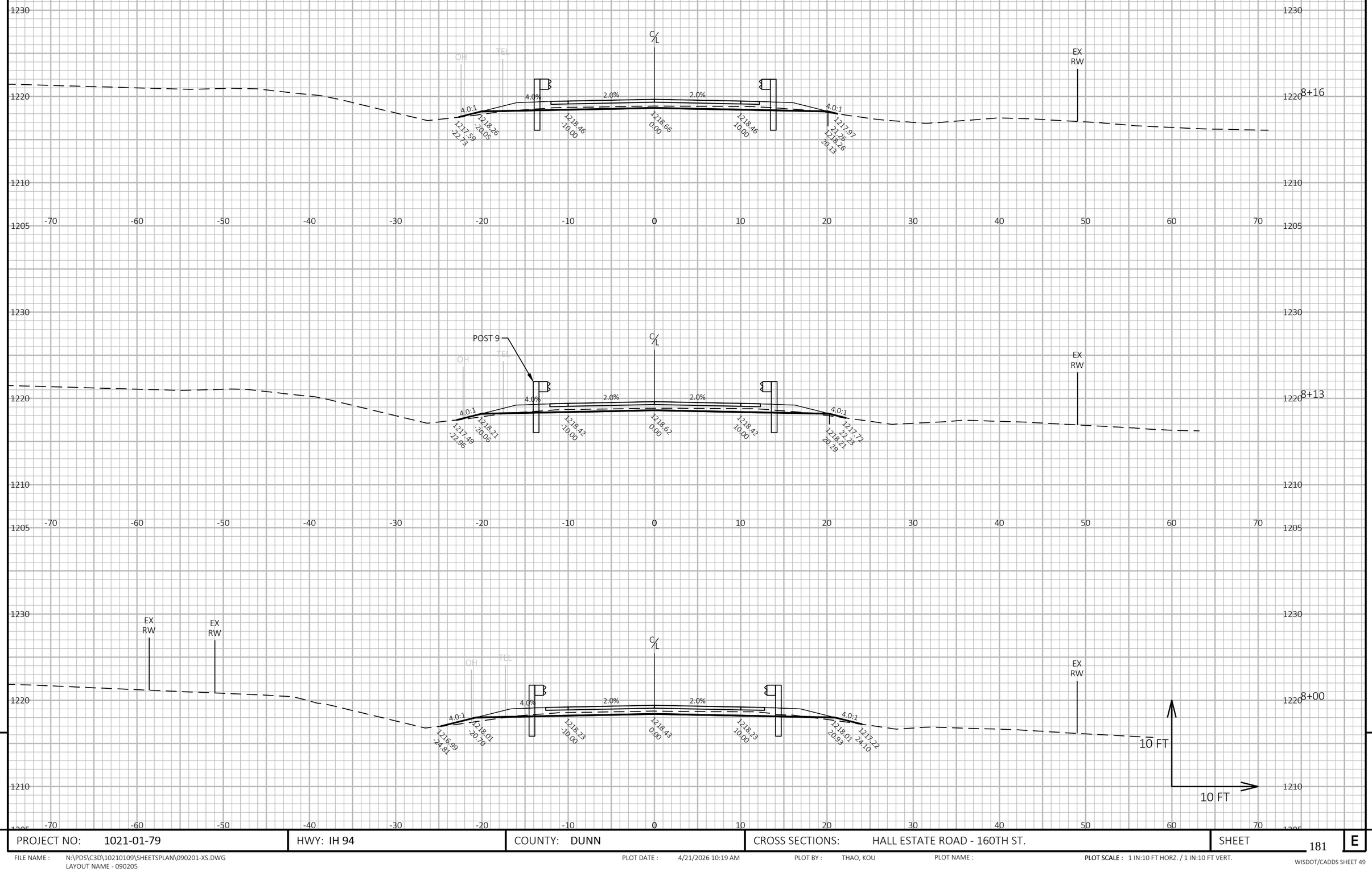


PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: HALL ESTATE ROAD - 160TH ST.	SHEET 180 E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090204

PLOT DATE : 4/21/2026 10:19 AM PLOT BY : THAO, KOU PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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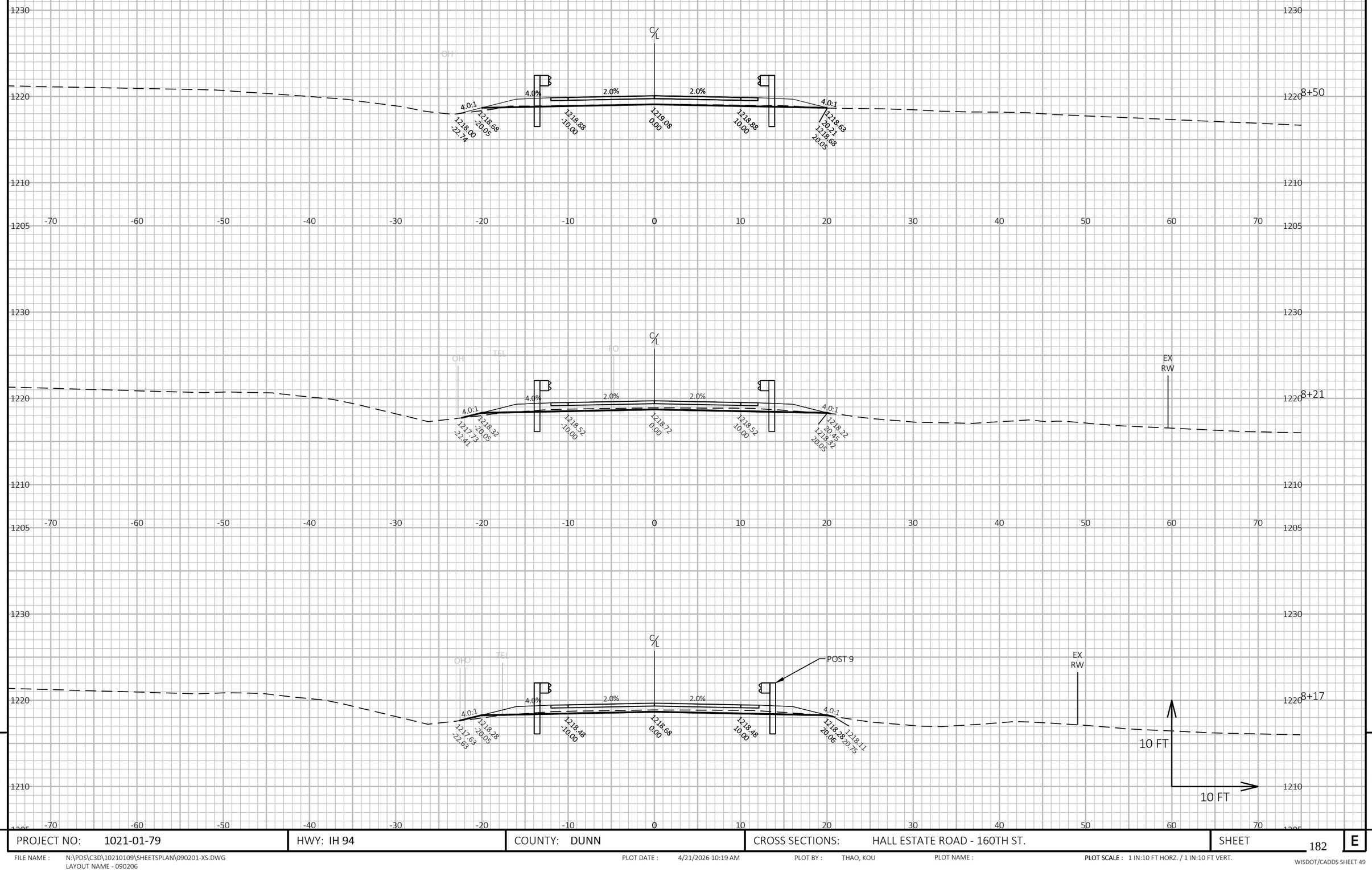
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: HALL ESTATE ROAD - 160TH ST.	SHEET 181	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090205

PLOT DATE : 4/21/2026 10:19 AM PLOT BY : THAO, KOU PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



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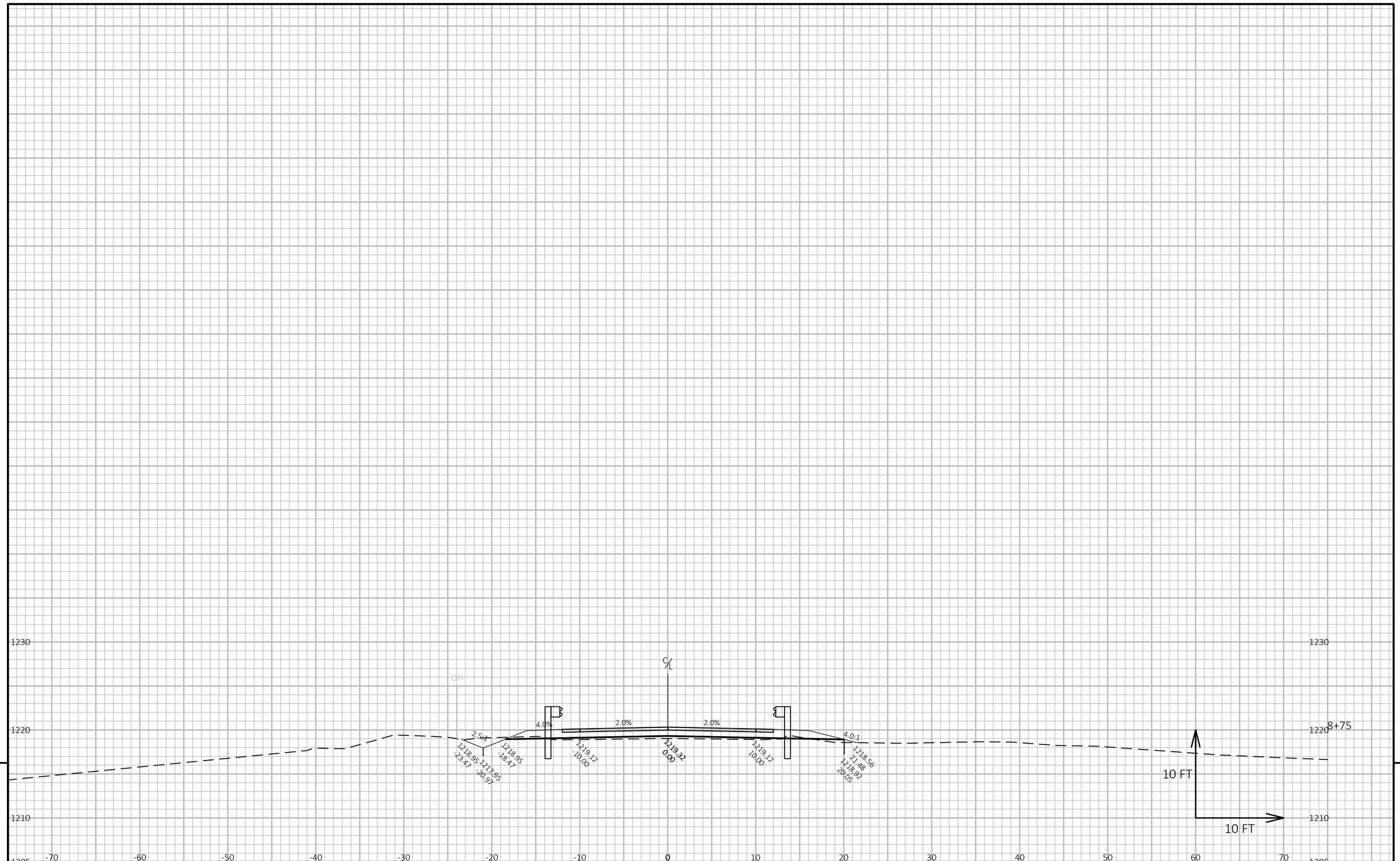
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: HALL ESTATE ROAD - 160TH ST.	SHEET 182	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090206

PLOT DATE : 4/21/2026 10:19 AM PLOT BY : THAO, KOU PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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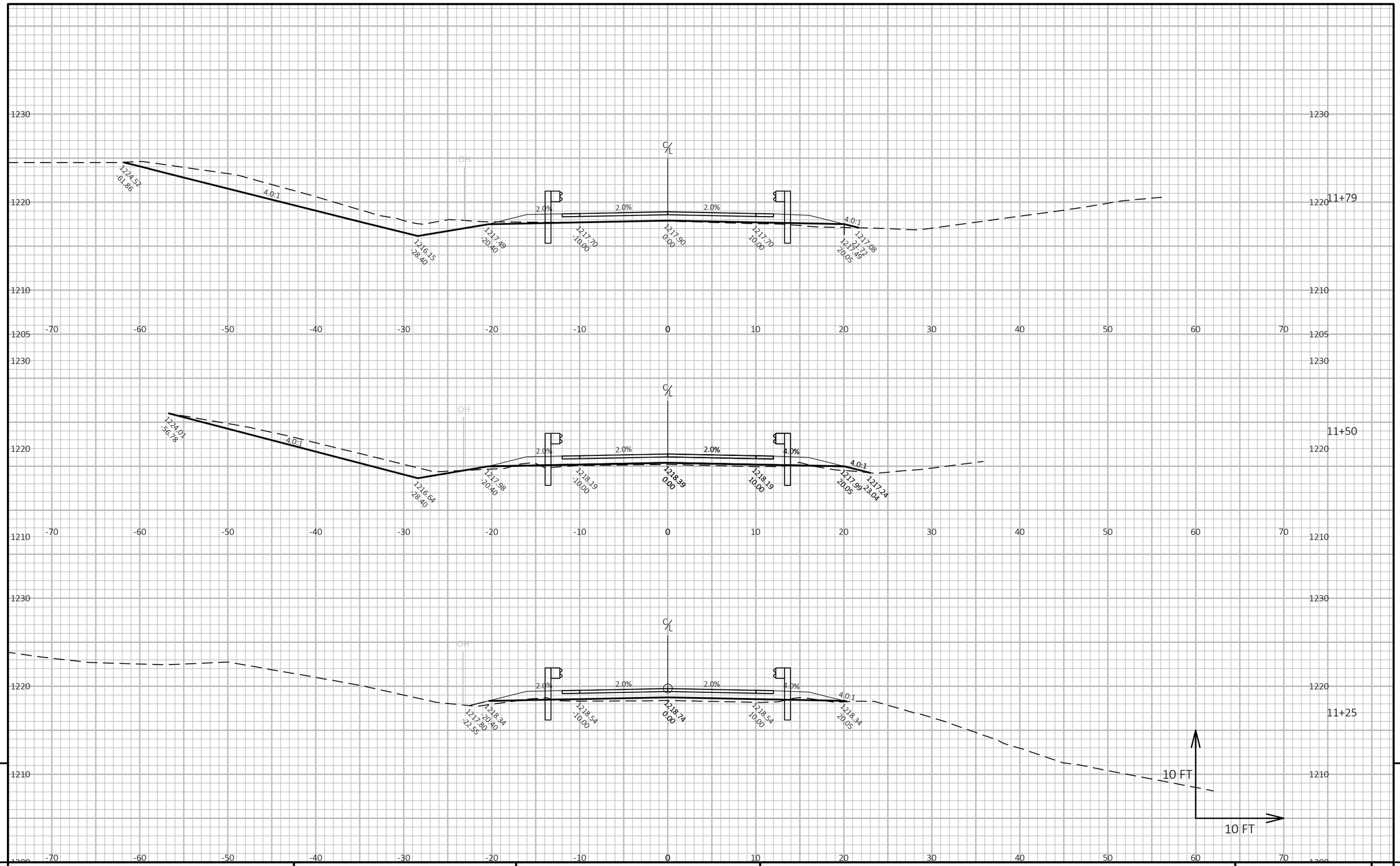
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: HALL ESTATE ROAD - 160TH ST.	SHEET 183	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090207

PLOT DATE : 4/21/2026 10:19 AM PLOT BY : THAO, KOU PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

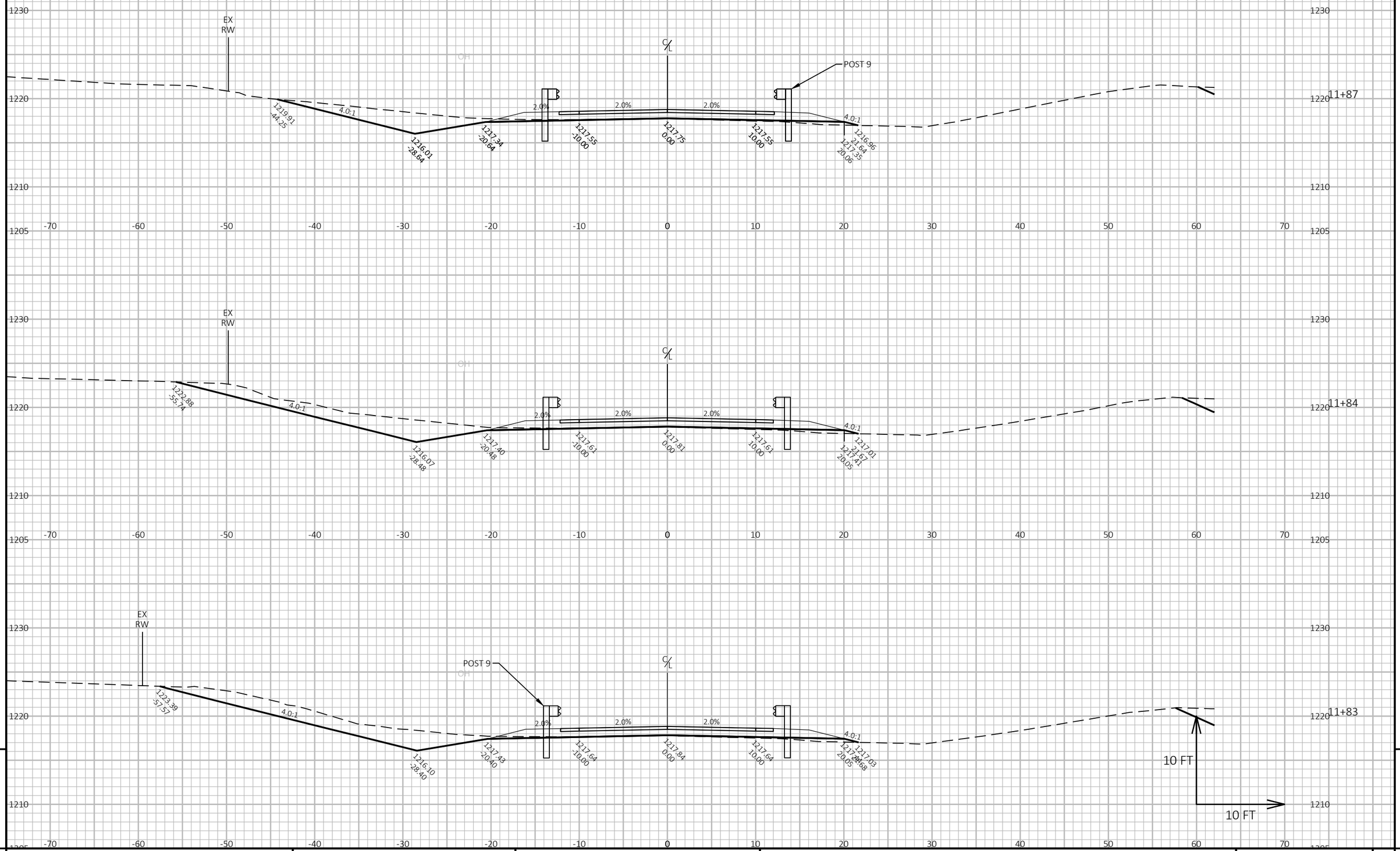


PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: HALL ESTATE ROAD - 160TH ST.	SHEET 184	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090210

PLOT DATE : 4/21/2026 10:19 AM PLOT BY : THAO, KOU PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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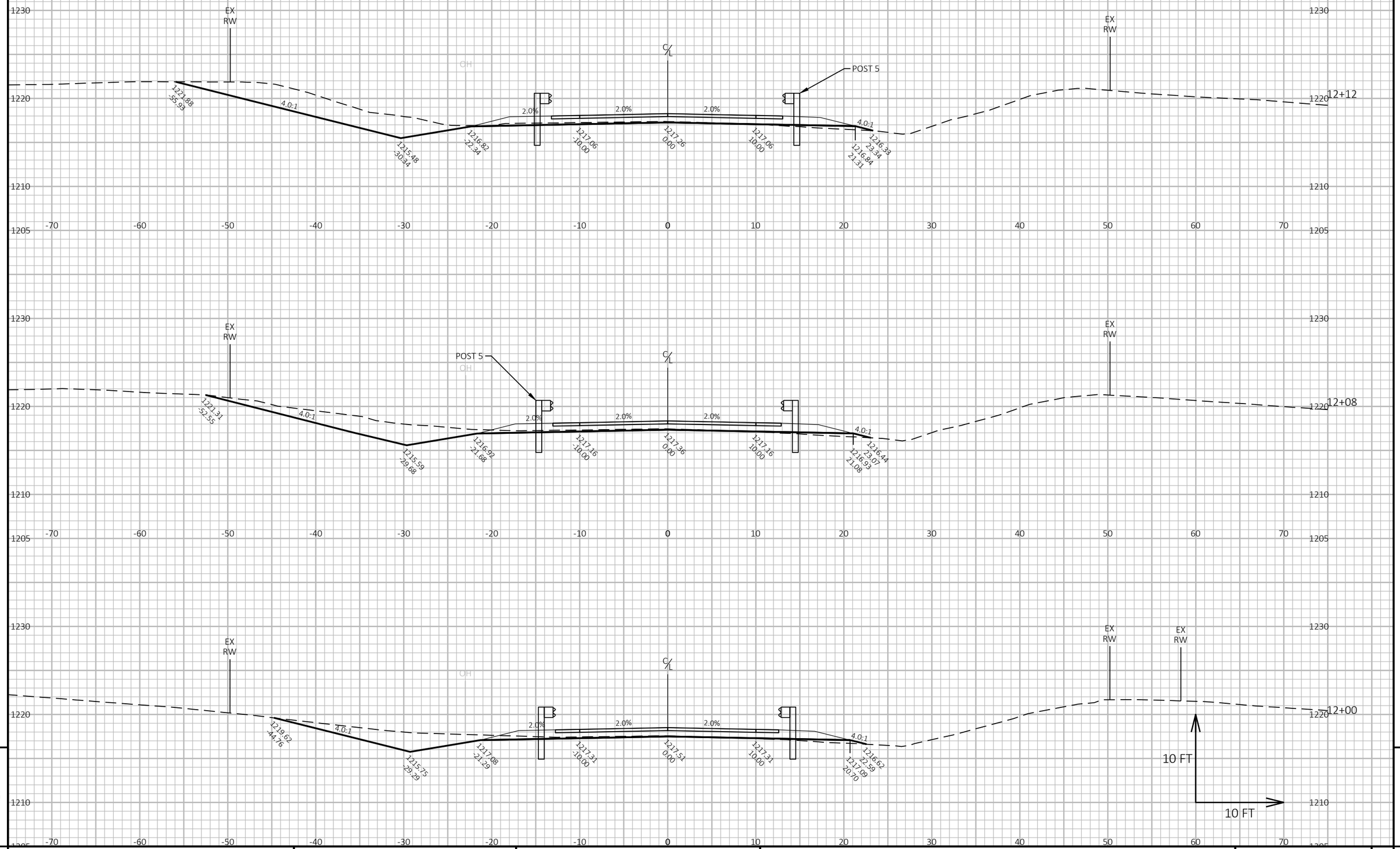
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: HALL ESTATE ROAD - 160TH ST.	SHEET 185	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090211

PLOT DATE : 4/21/2026 10:19 AM PLOT BY : THAO, KOU PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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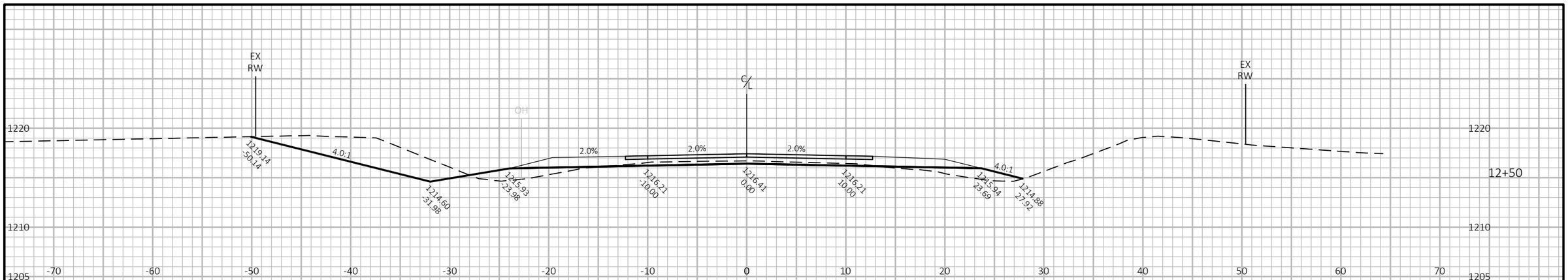
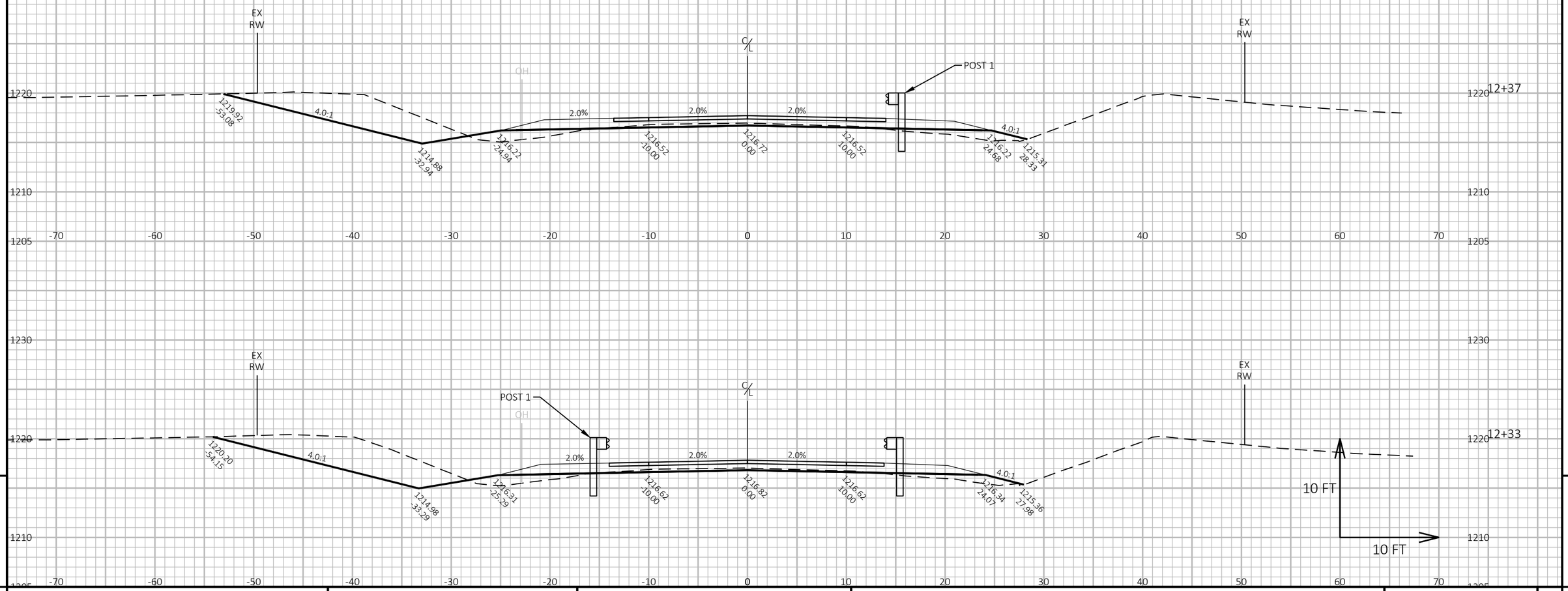
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: HALL ESTATE ROAD - 160TH ST.	SHEET 186	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090212

PLOT DATE : 4/21/2026 10:19 AM PLOT BY : THAO, KOU PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49





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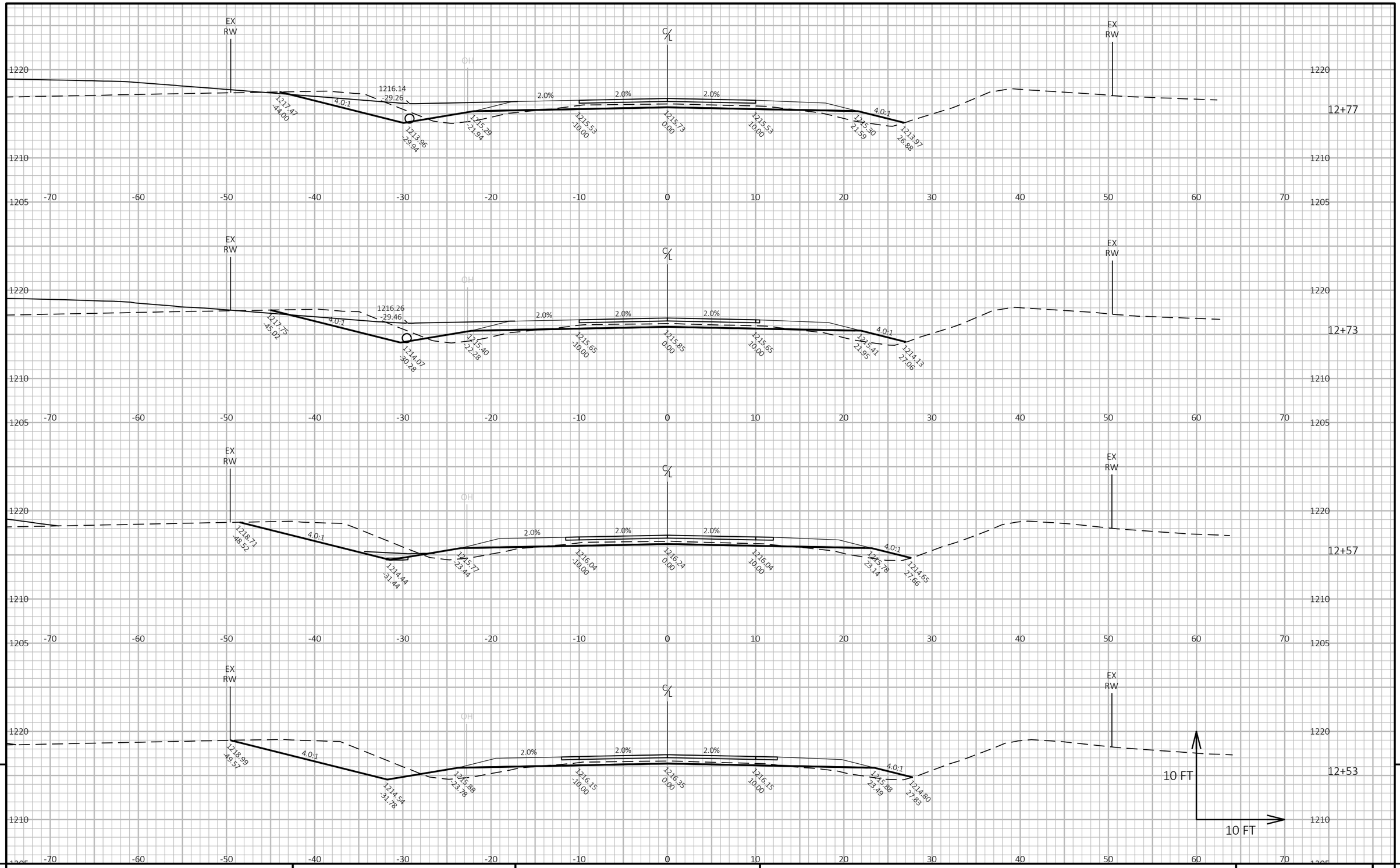
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: HALL ESTATE ROAD - 160TH ST.	SHEET 187	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090213

PLOT DATE : 4/21/2026 10:19 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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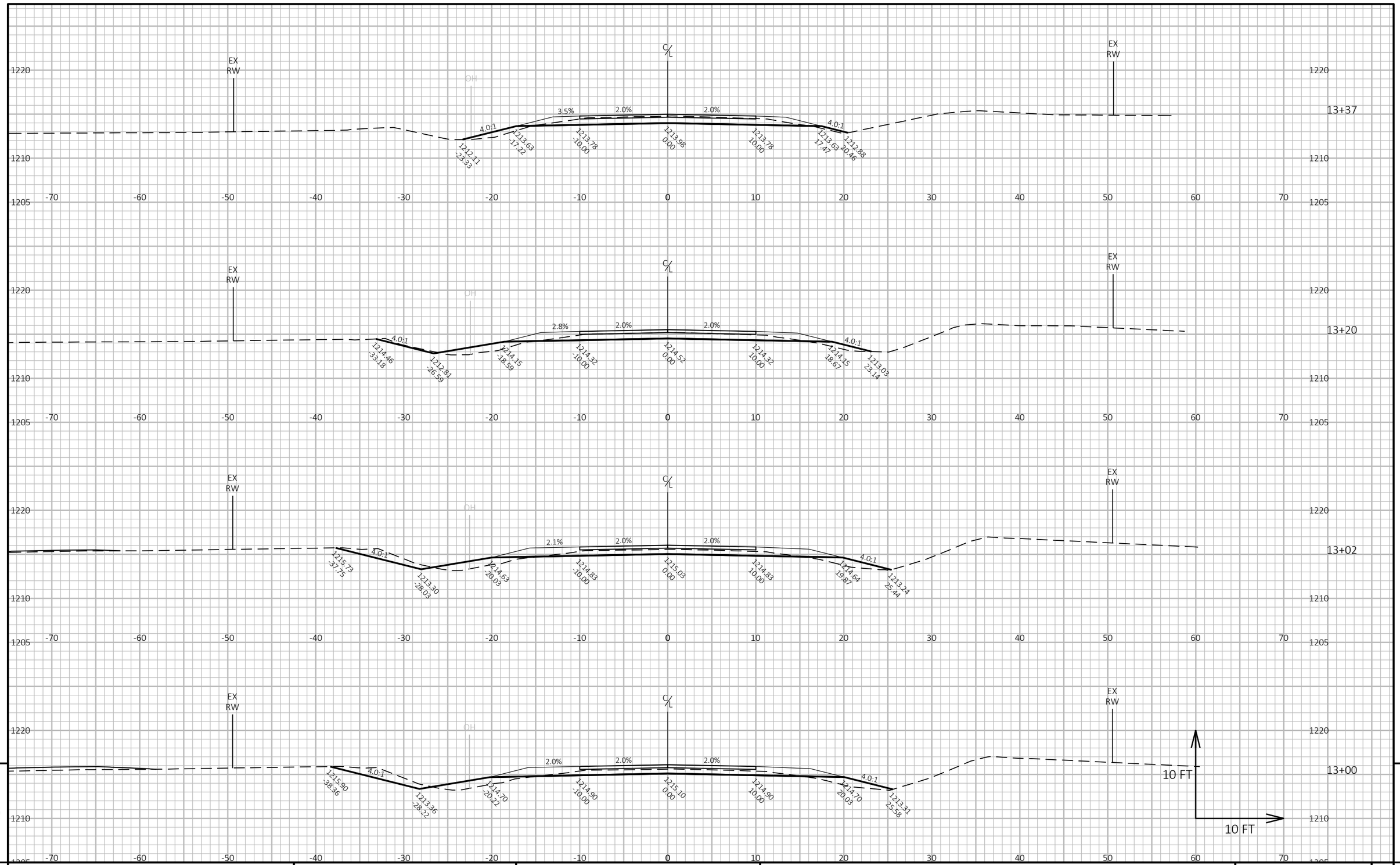
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: HALL ESTATE ROAD - 160TH ST.	SHEET 188	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090214

PLOT DATE : 4/21/2026 10:19 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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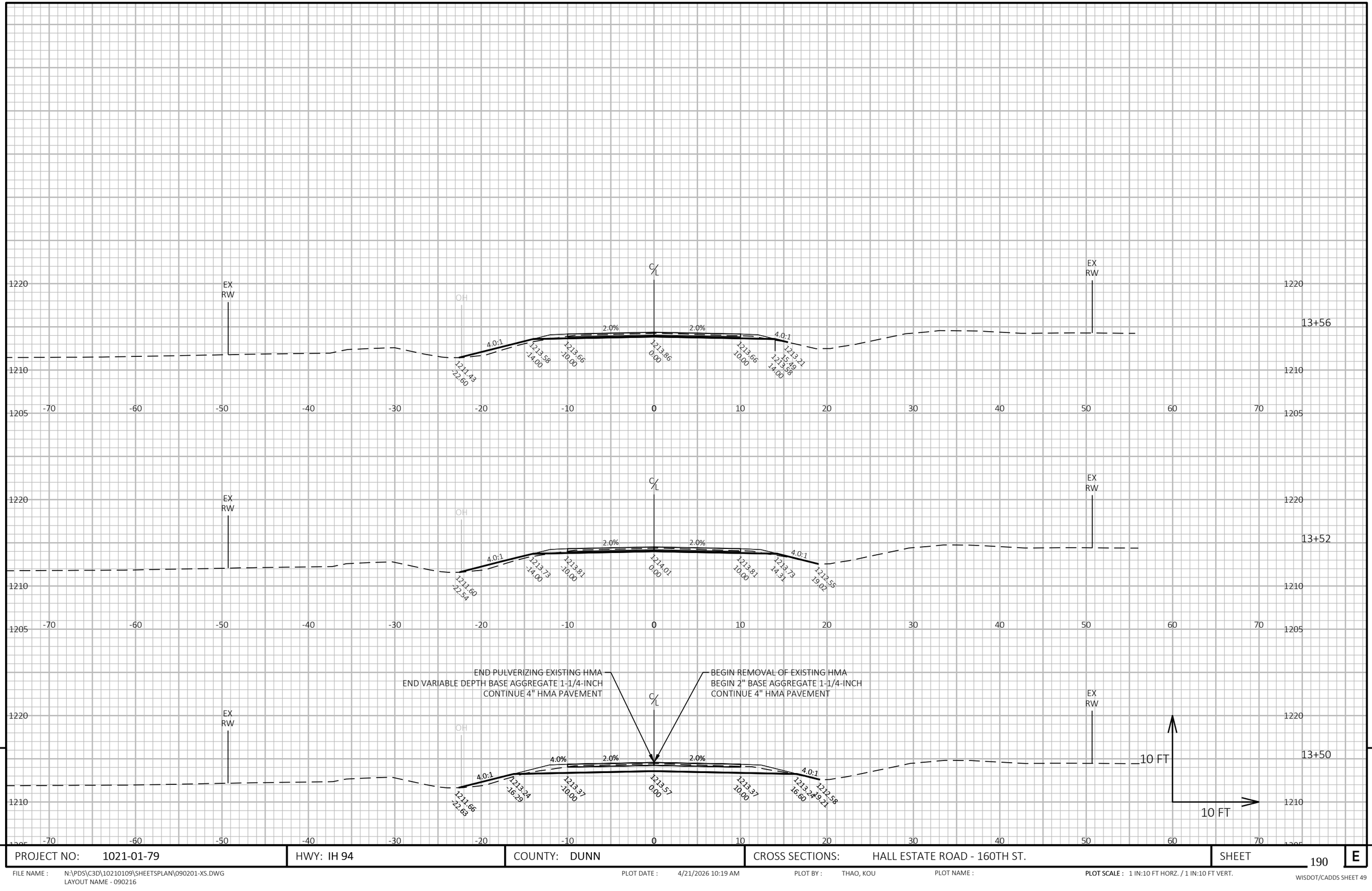
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: HALL ESTATE ROAD - 160TH ST.	SHEET 189	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090215

PLOT DATE : 4/21/2026 10:19 AM PLOT BY : THAO, KOU PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

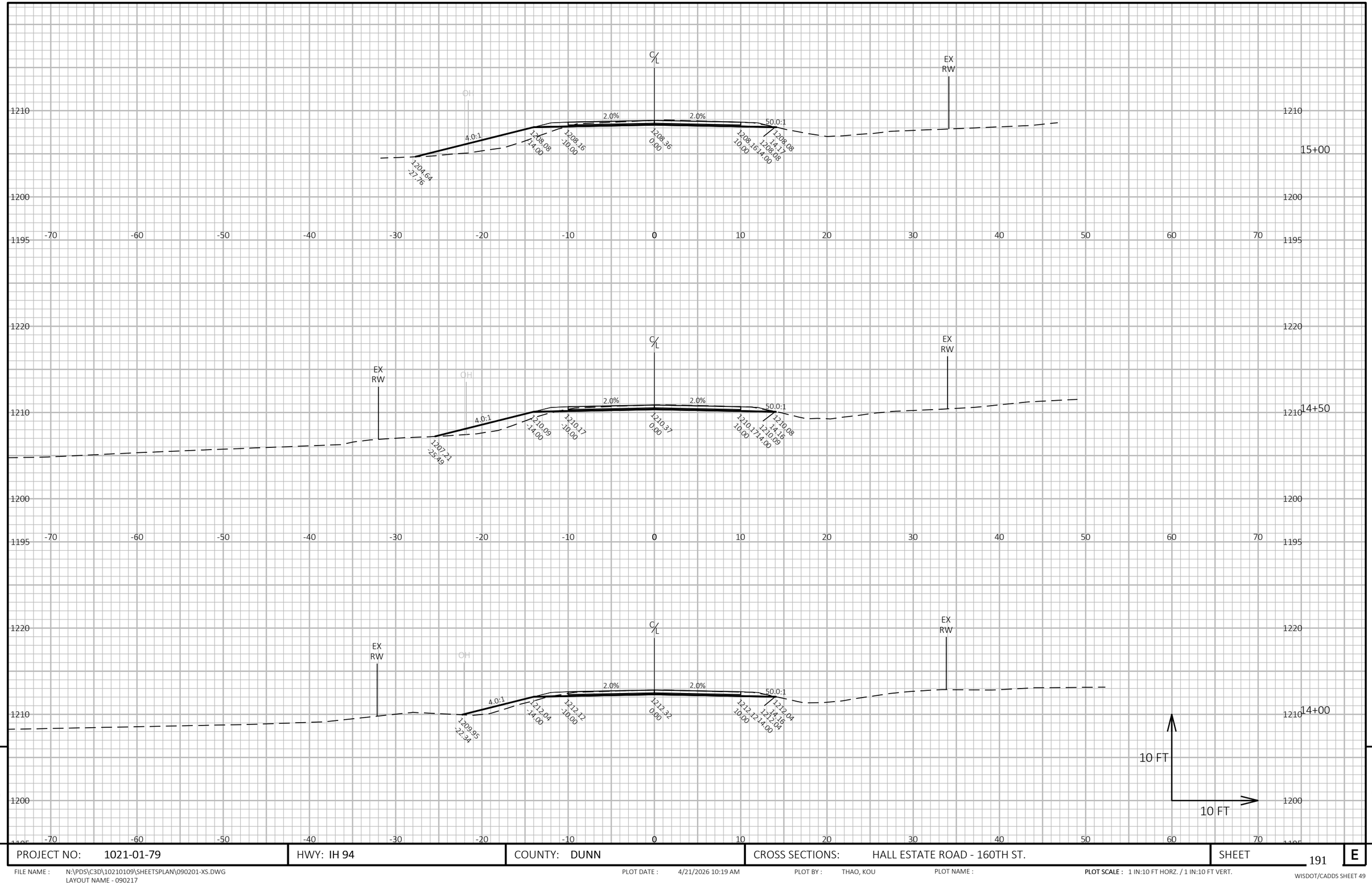


PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: HALL ESTATE ROAD - 160TH ST.	SHEET 190	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090216

PLOT DATE : 4/21/2026 10:19 AM PLOT BY : THAO, KOU PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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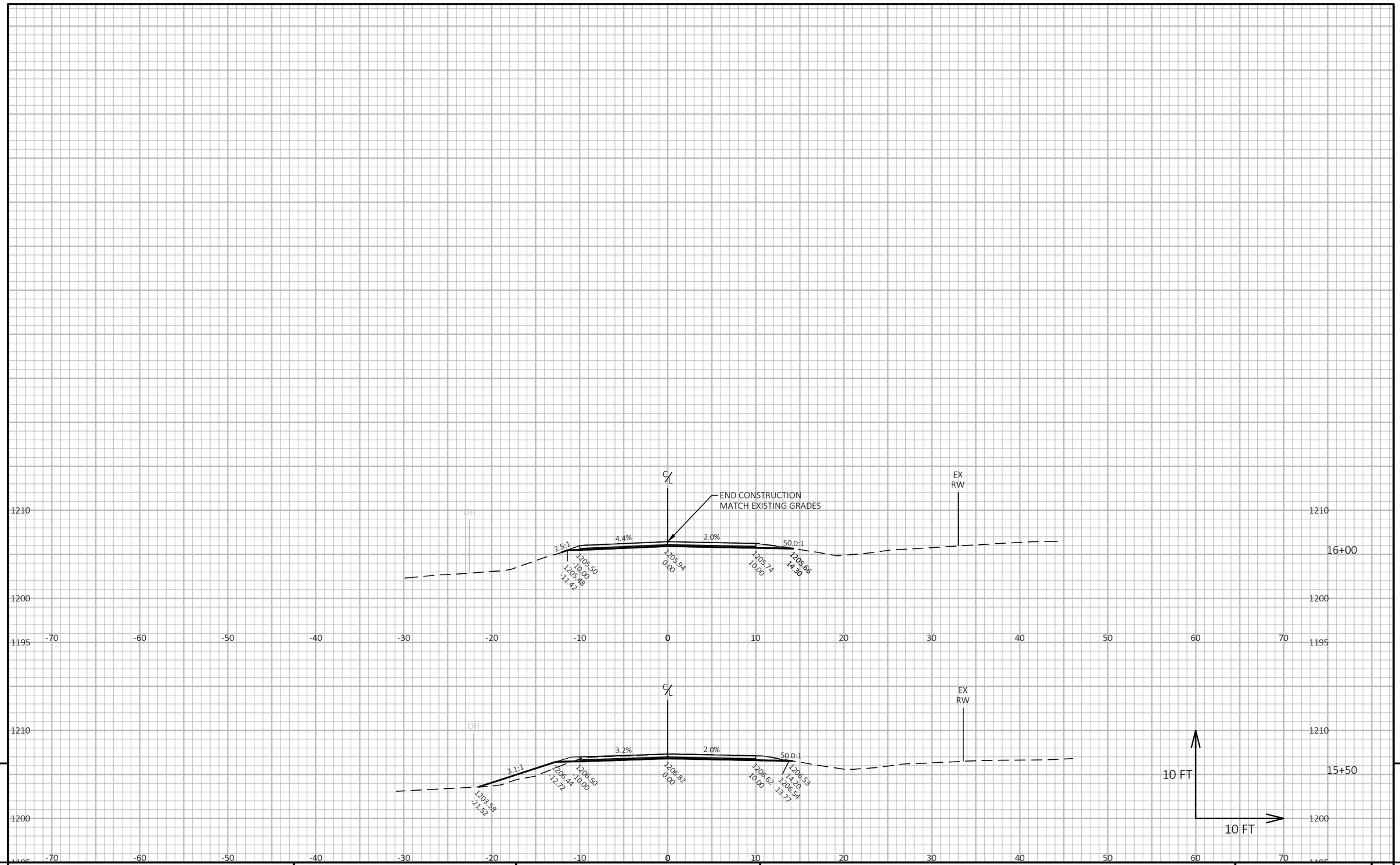
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: HALL ESTATE ROAD - 160TH ST.	SHEET 191	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090217

PLOT DATE : 4/21/2026 10:19 AM PLOT BY : THAO, KOU PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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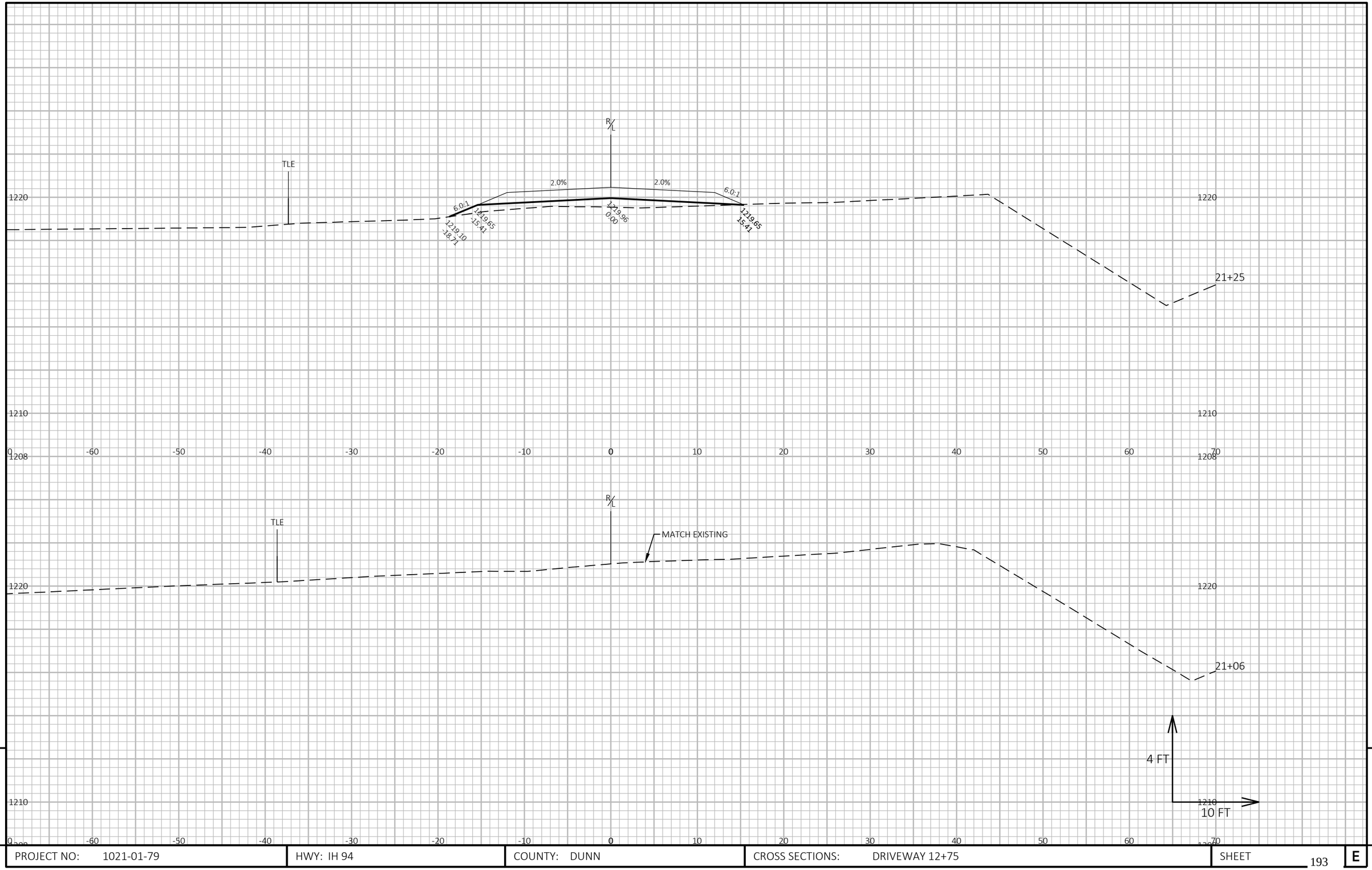
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: HALL ESTATE ROAD - 160TH ST.	SHEET 192	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090218

PLOT DATE : 4/21/2026 10:19 AM PLOT BY : THAO, KOU PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



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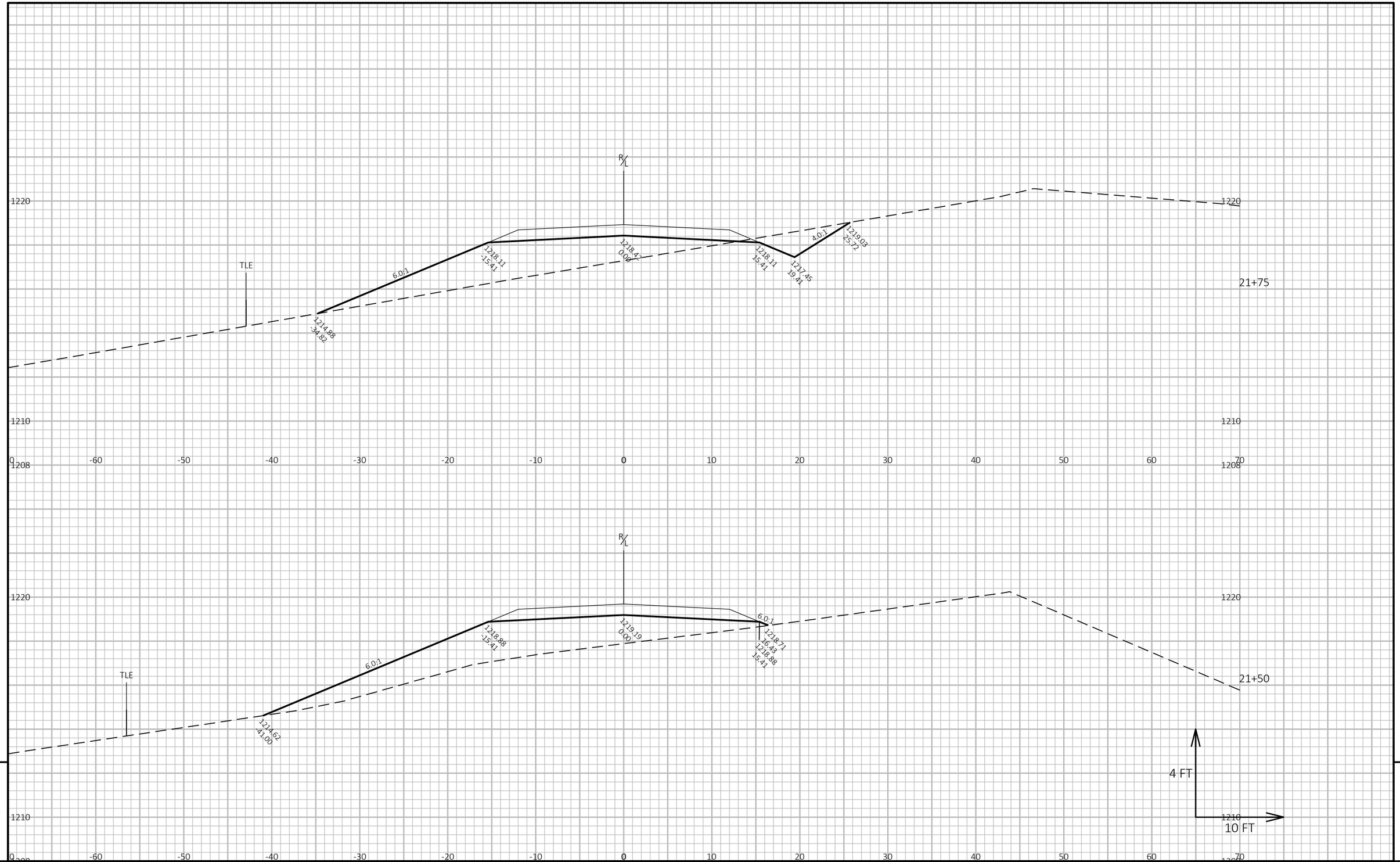
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: DRIVEWAY 12+75	SHEET 193	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 44

PLOT DATE : 4/21/2026 10:19 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:4 FT VERT.

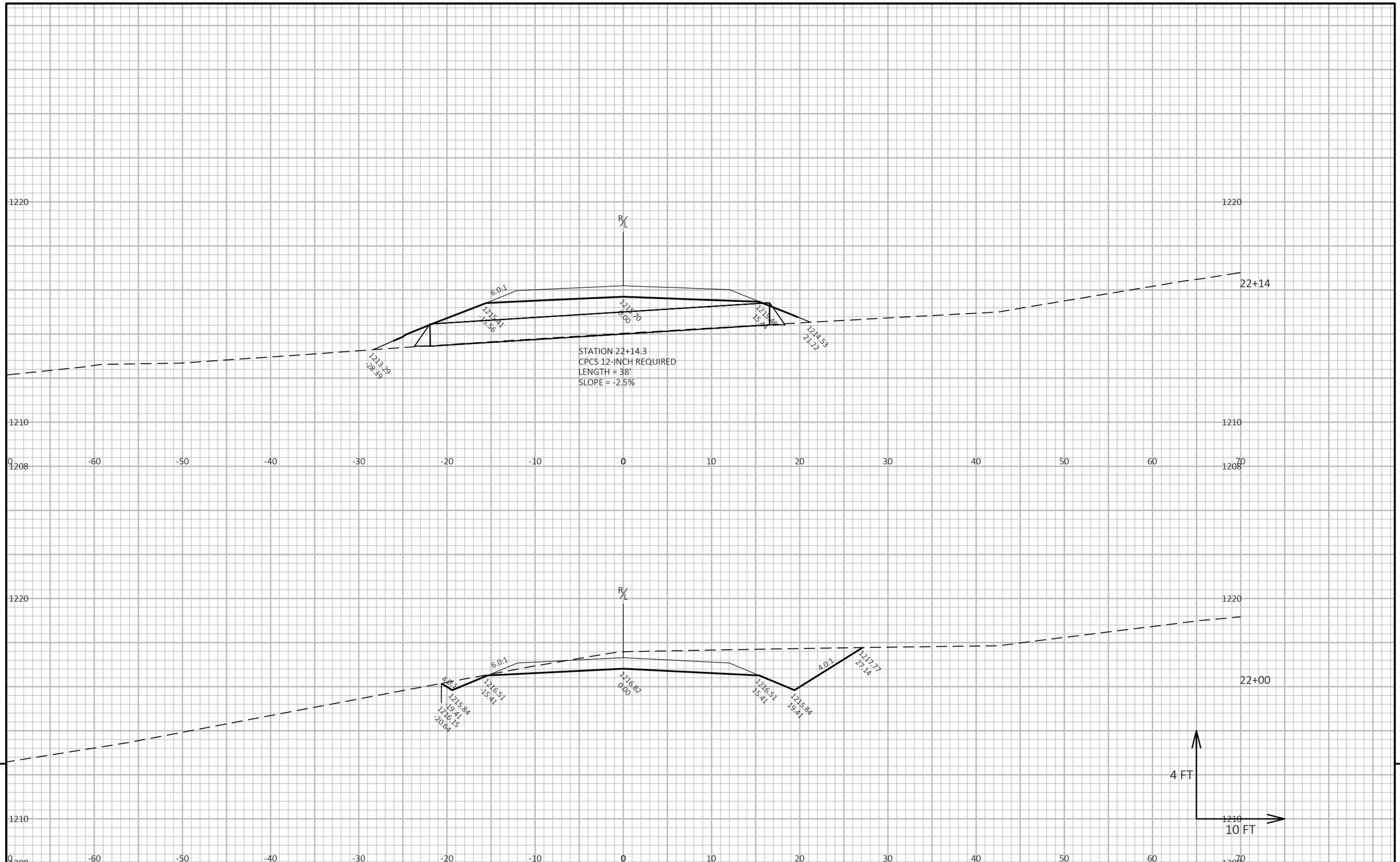


PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: DRIVEWAY 12+75	SHEET 194 E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 45

PLOT DATE : 4/21/2026 10:19 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:4 FT VERT.

WISDOT/CADDS SHEET 49



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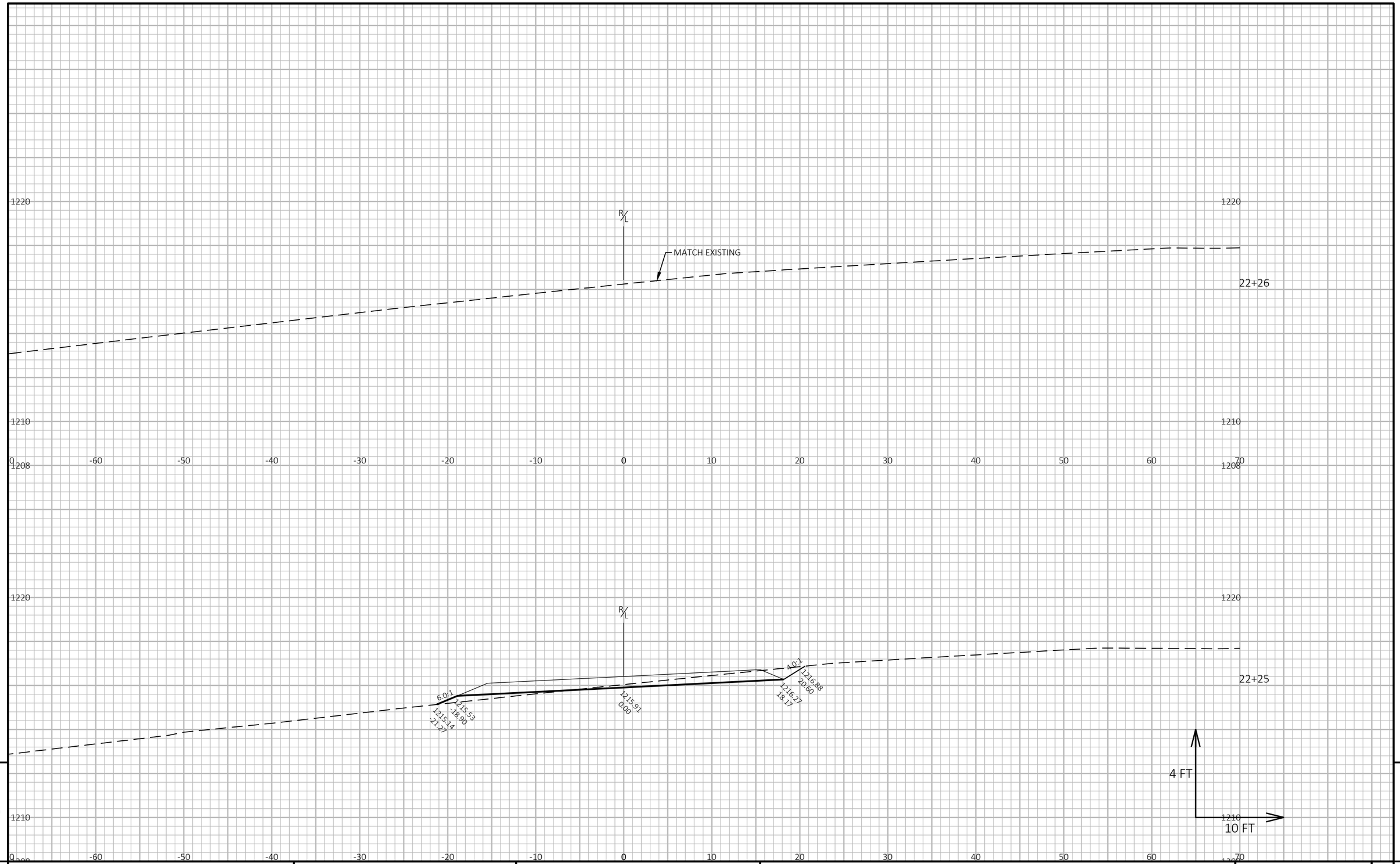
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: DRIVEWAY 12+75	SHEET 195	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 46

PLOT DATE : 4/21/2026 10:19 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:4 FT VERT.



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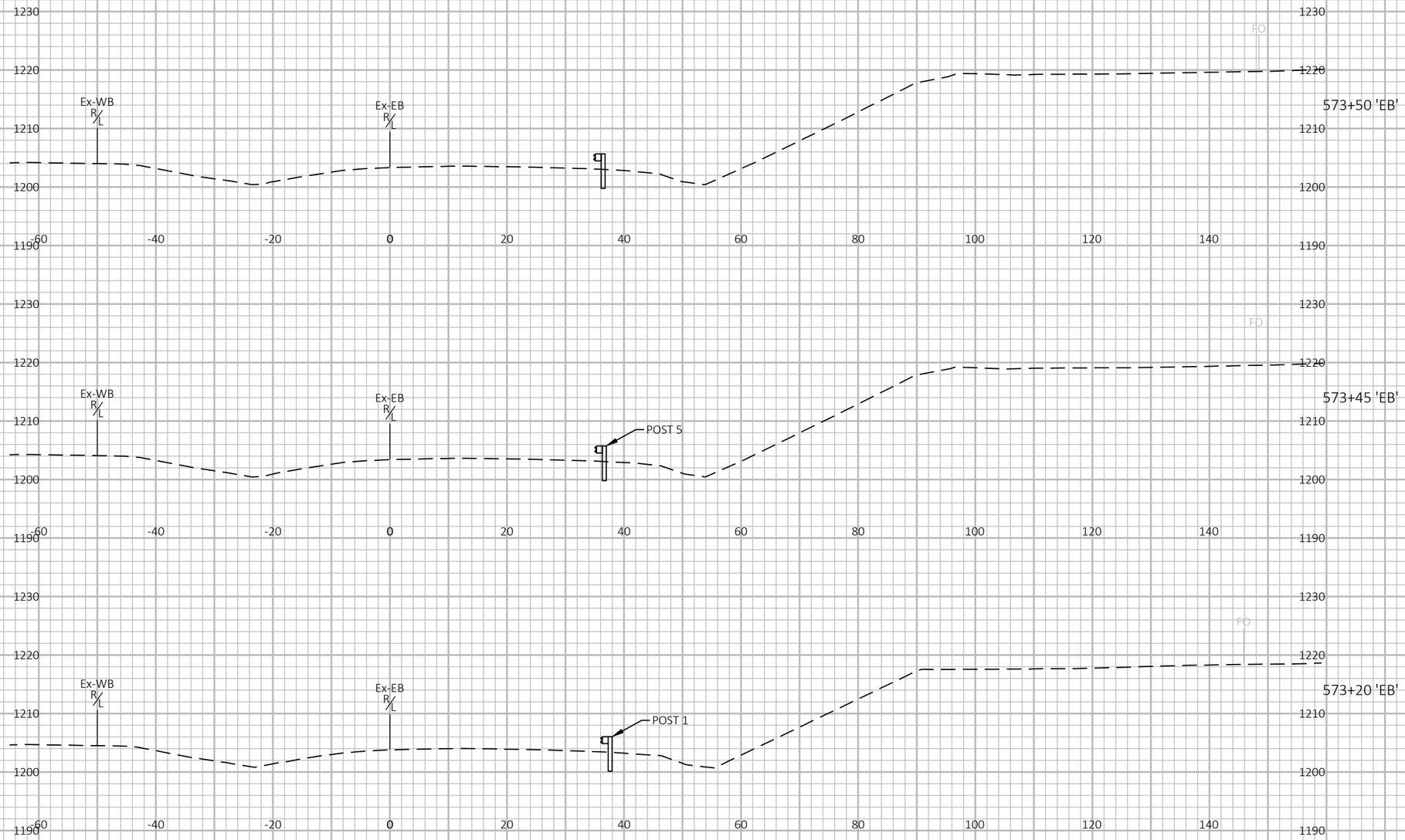
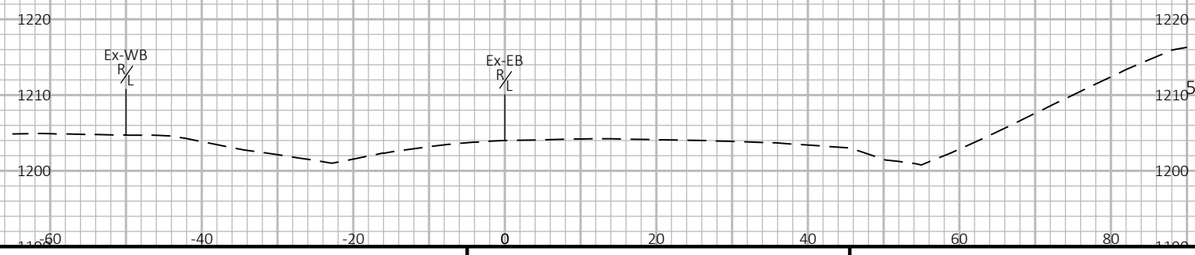
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: DRIVEWAY 12+75	SHEET 196	E

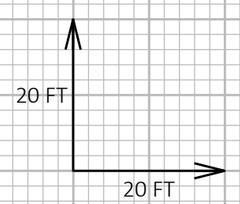
FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 47

PLOT DATE : 4/21/2026 10:19 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:4 FT VERT.

WISDOT/CADDS SHEET 49







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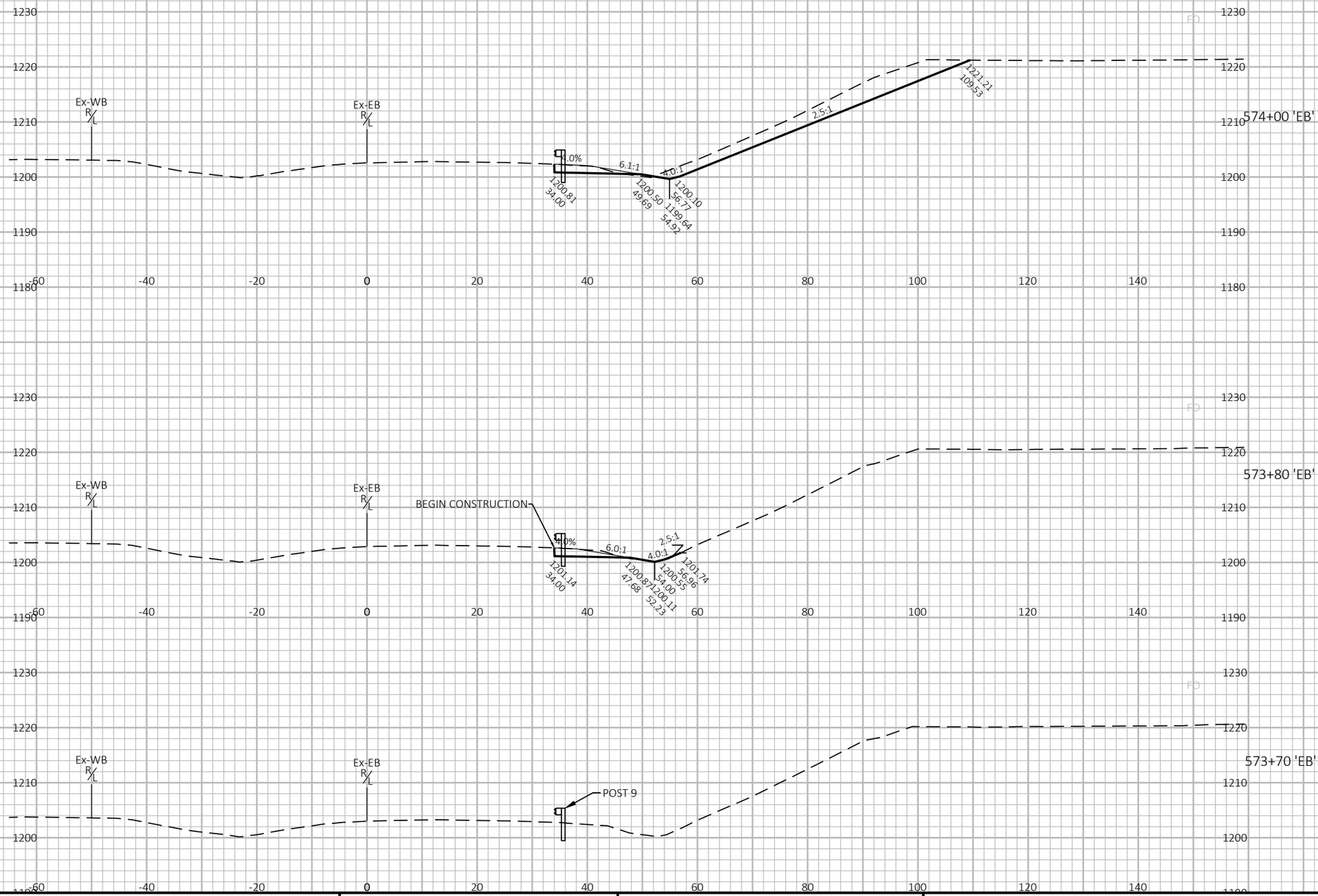
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: IH 94 EB	SHEET 197	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090250-XS.DWG
LAYOUT NAME - 090251

PLOT DATE : 4/21/2026 10:50 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

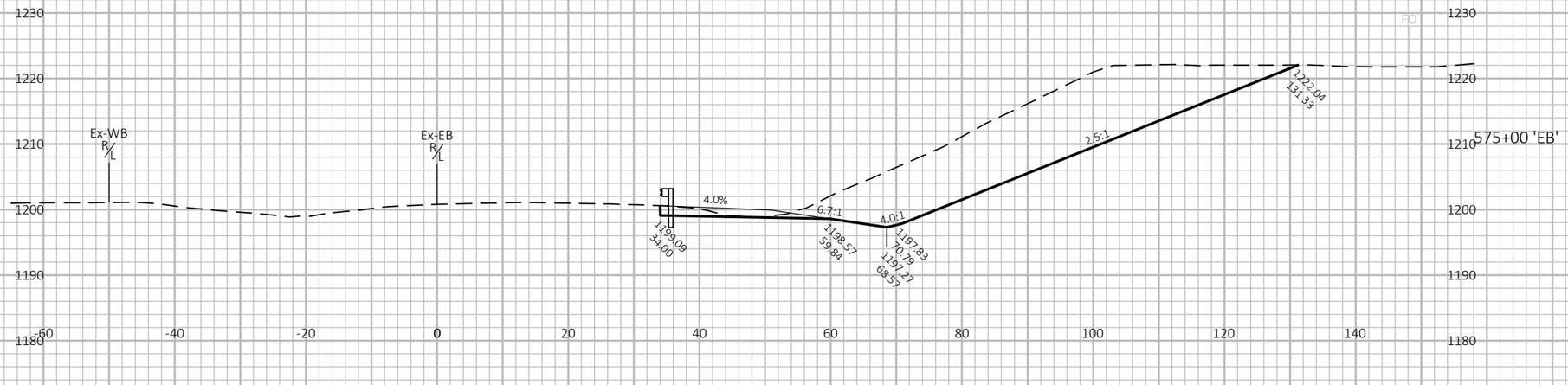


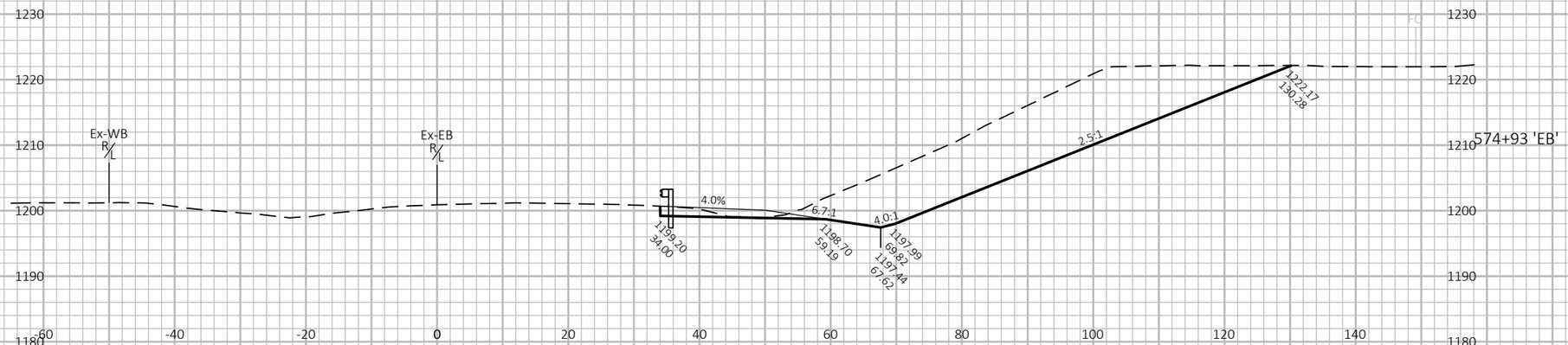
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: IH 94 EB	SHEET 198	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090250-XS.DWG
LAYOUT NAME - 090252

PLOT DATE : 4/21/2026 10:50 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49





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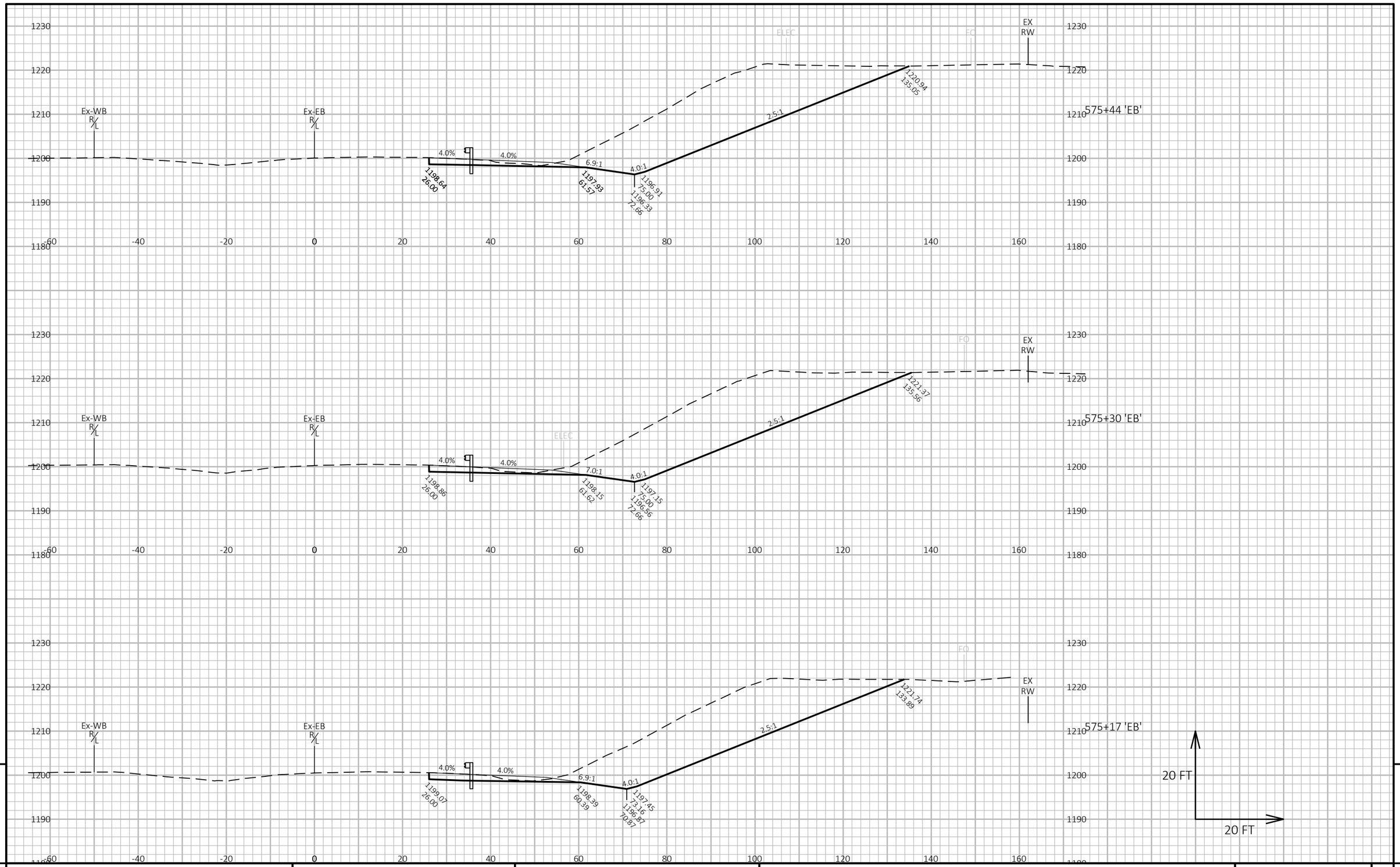
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: IH 94 EB	SHEET 199	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090250-XS.DWG
LAYOUT NAME - 090253

PLOT DATE : 4/21/2026 10:50 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

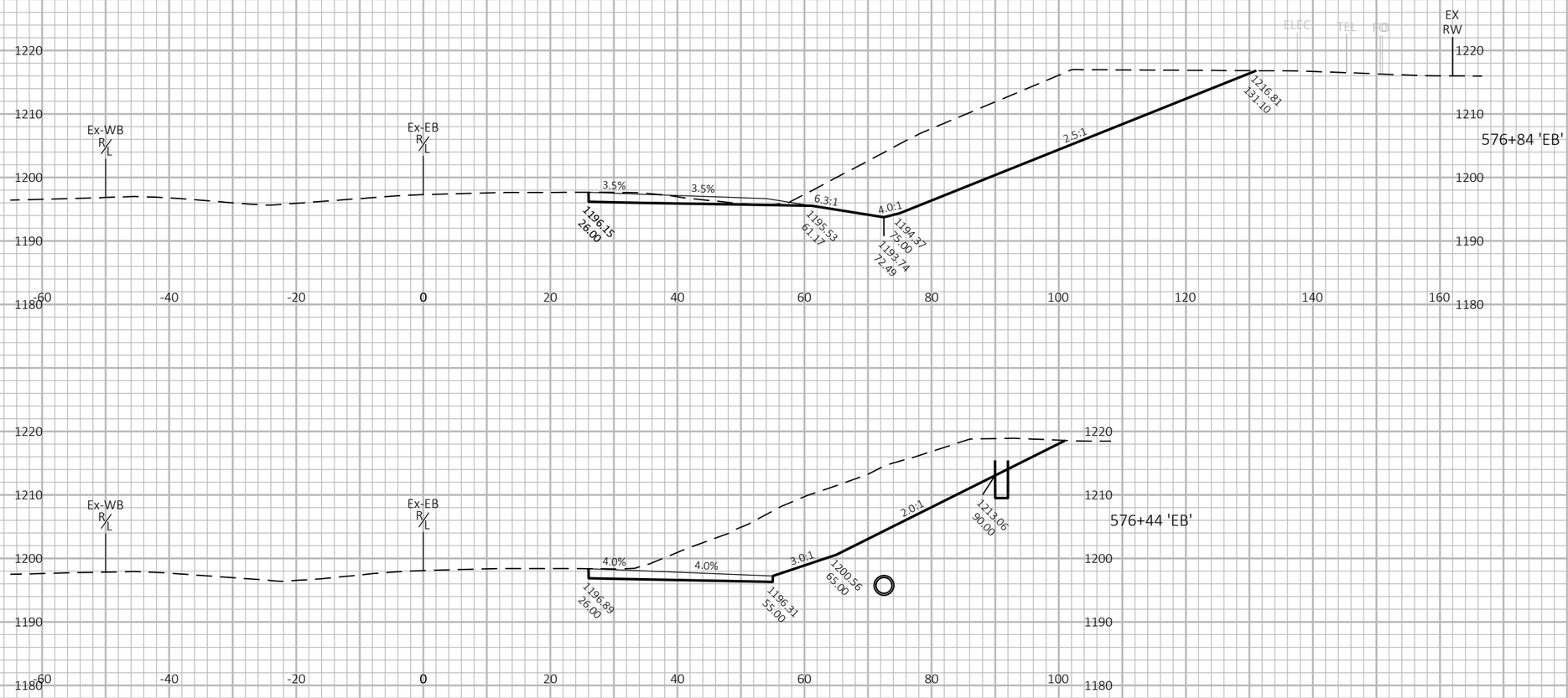


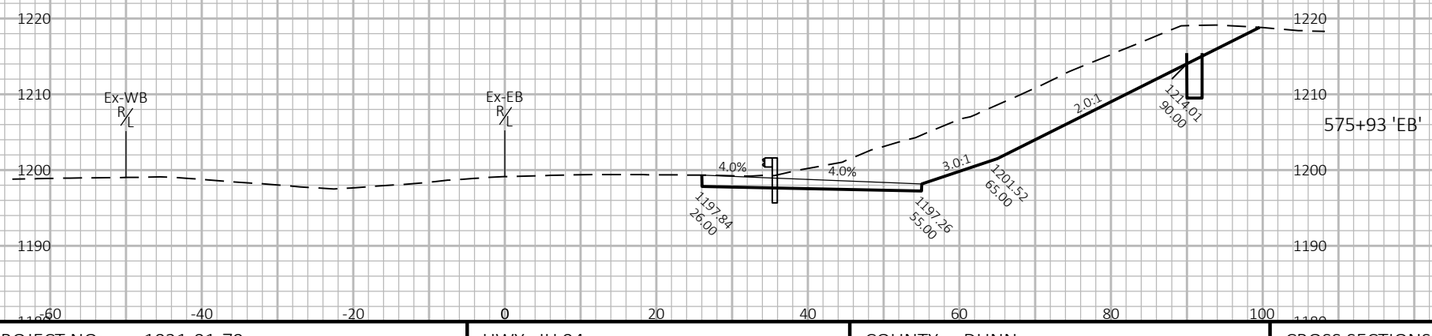
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: IH 94 EB	SHEET 200	E

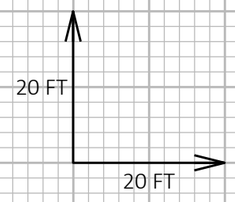
FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090250-XS.DWG
LAYOUT NAME - 090254

PLOT DATE : 4/21/2026 10:50 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49







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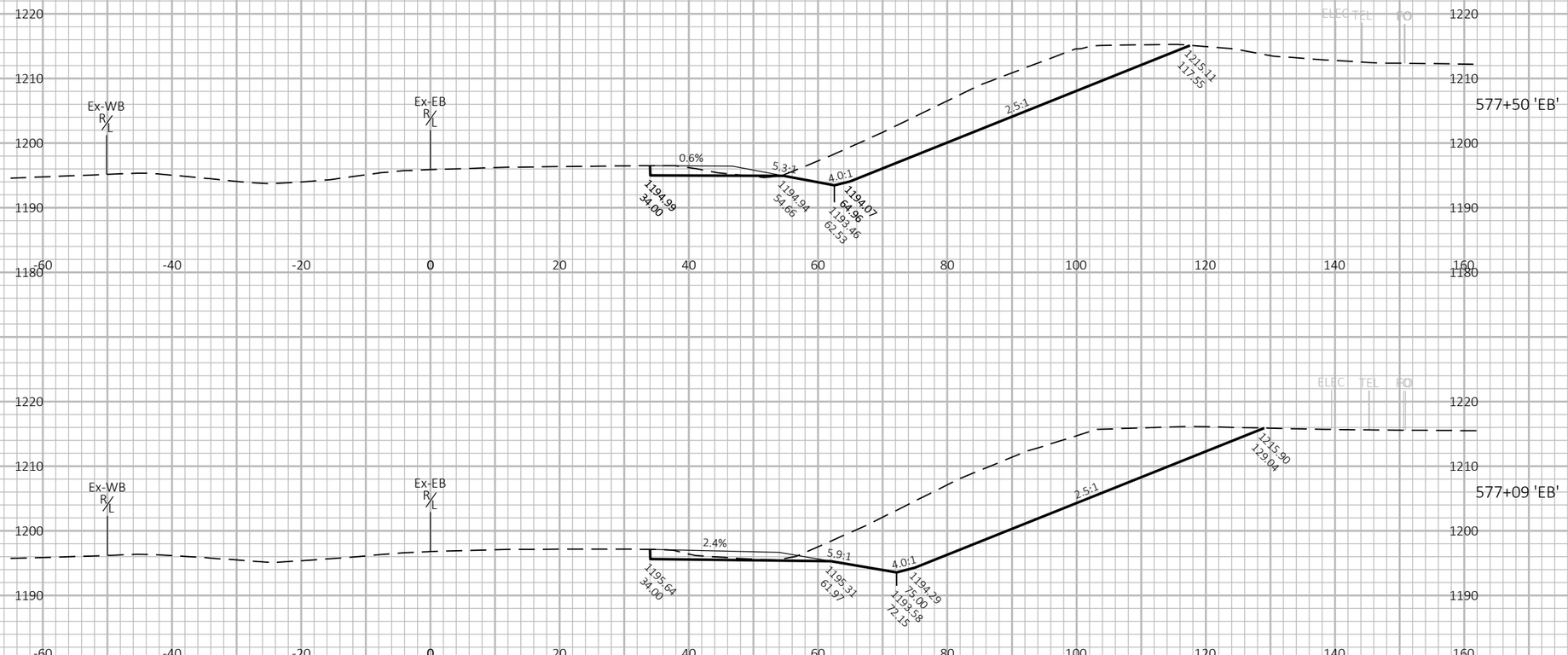
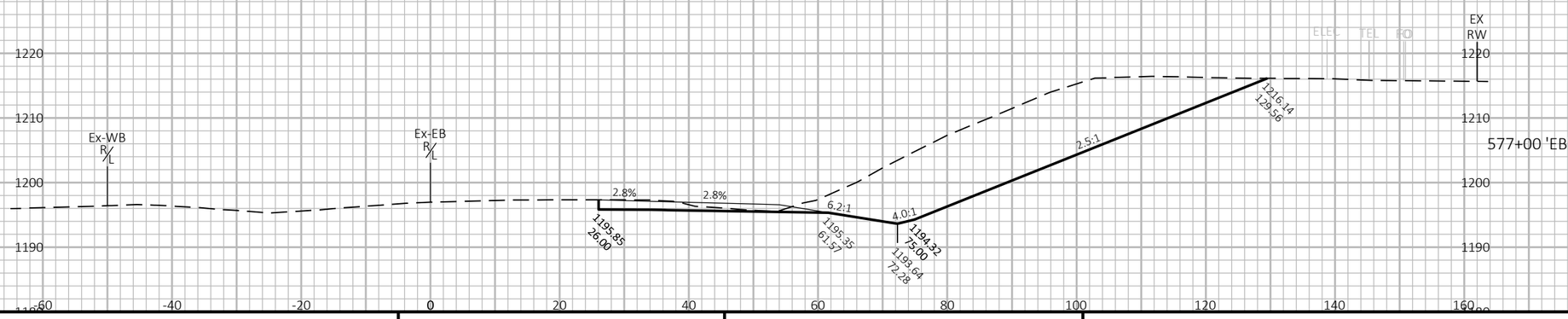
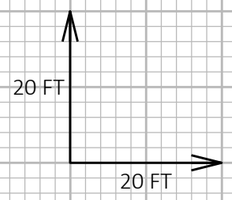
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: IH 94 EB	SHEET 201	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090250-XS.DWG
LAYOUT NAME - 090255

PLOT DATE : 4/21/2026 10:50 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.







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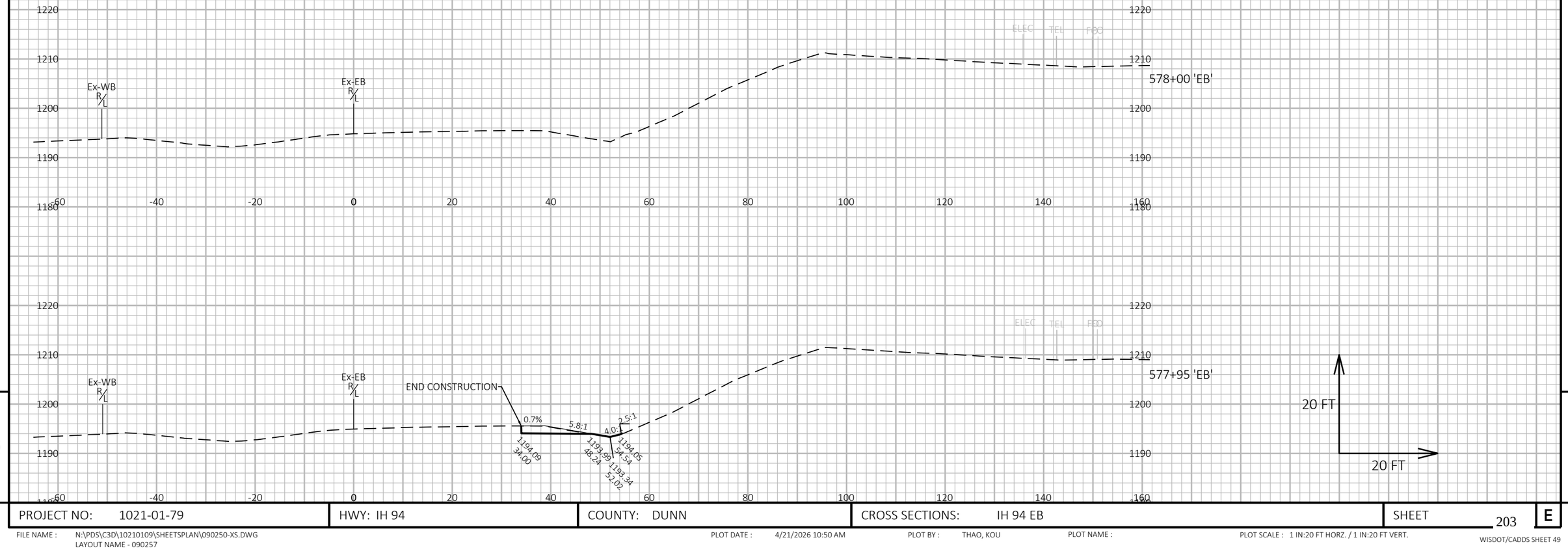
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: IH 94 EB	SHEET 202	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090250-XS.DWG
LAYOUT NAME - 090256

PLOT DATE : 4/21/2026 10:50 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49



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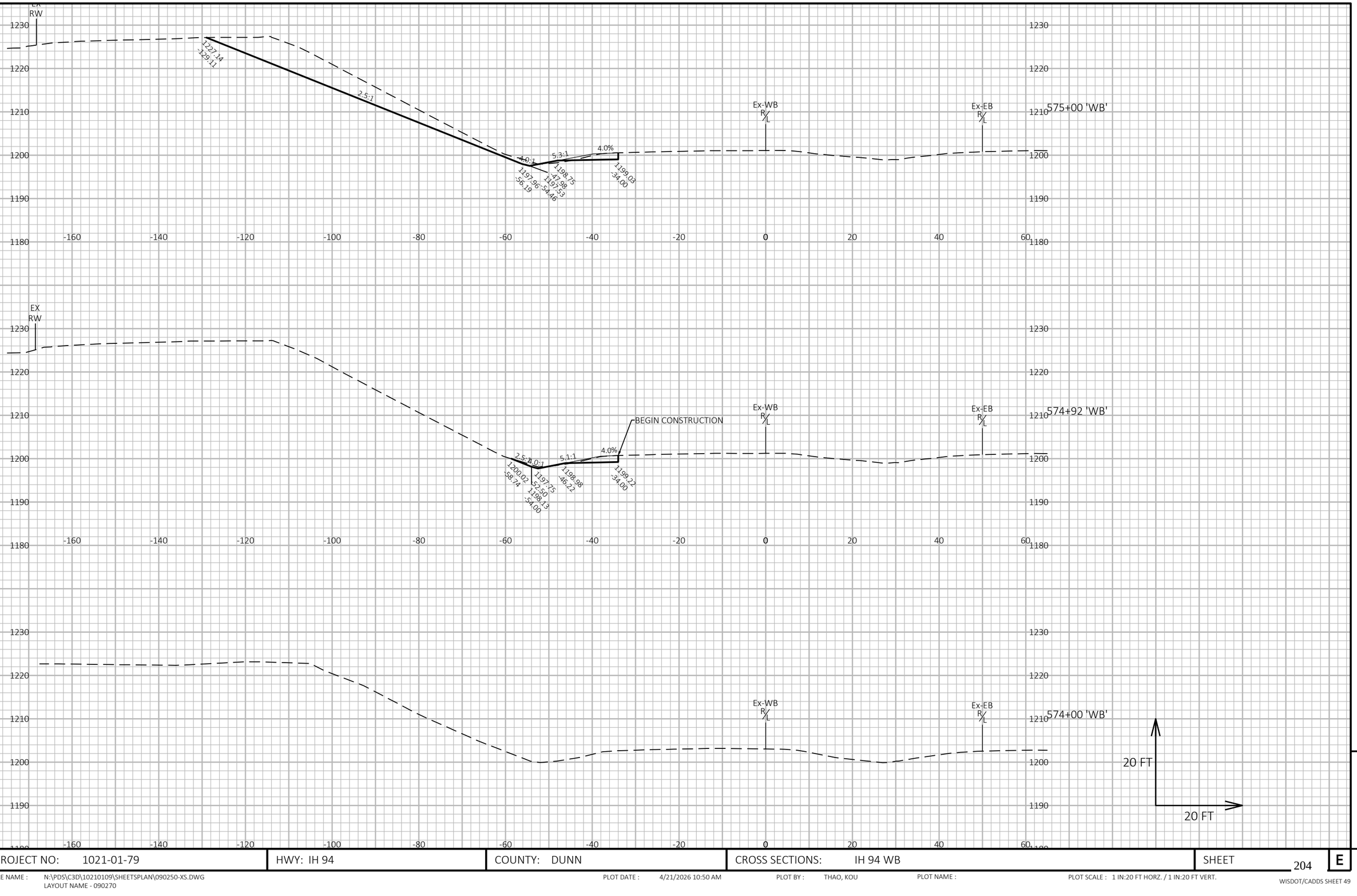
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: IH 94 EB	SHEET 203	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090250-XS.DWG
LAYOUT NAME - 090257

PLOT DATE : 4/21/2026 10:50 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

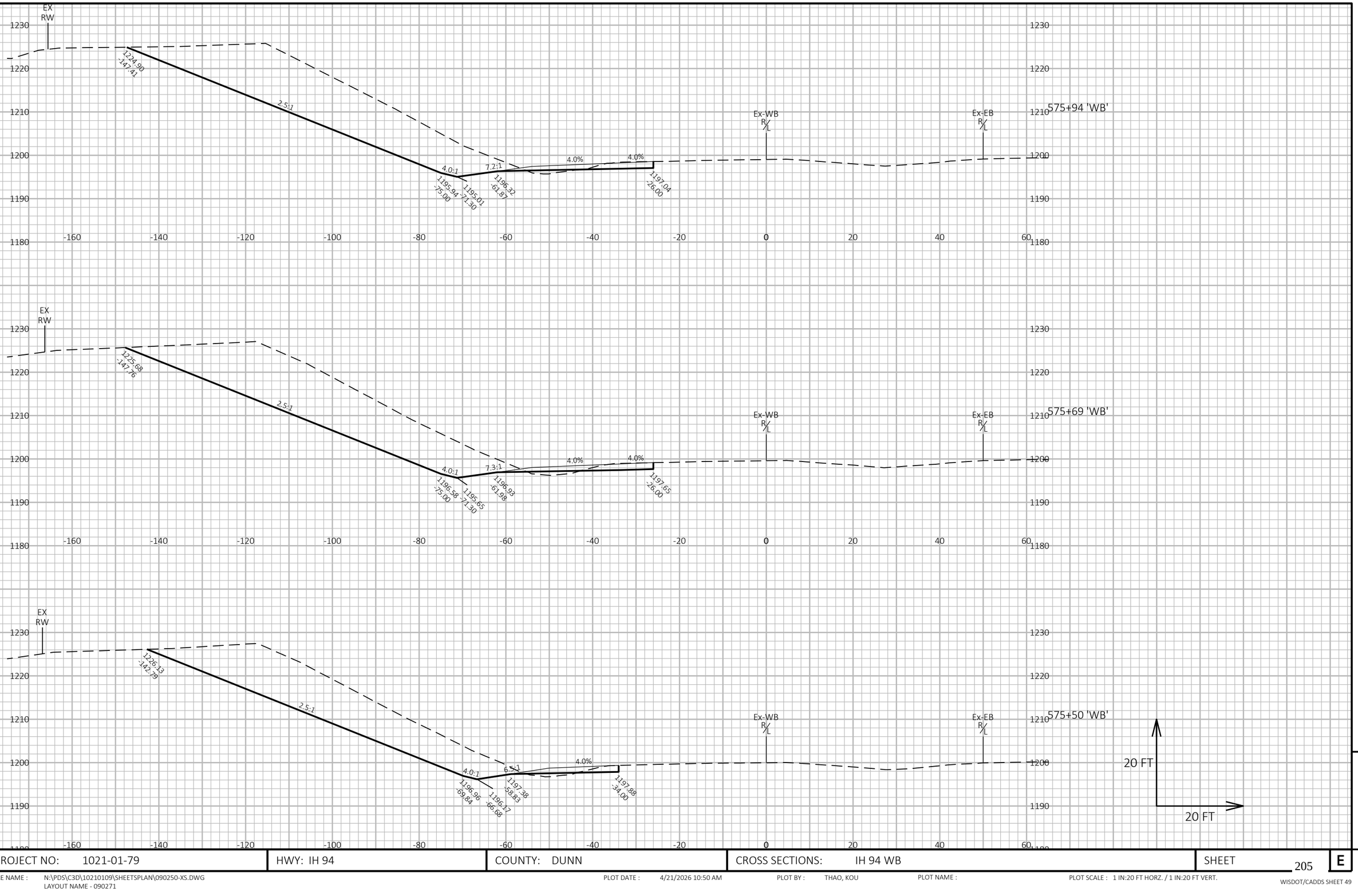


PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: IH 94 WB	SHEET 204	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090250-XS.DWG
LAYOUT NAME - 090270

PLOT DATE : 4/21/2026 10:50 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49



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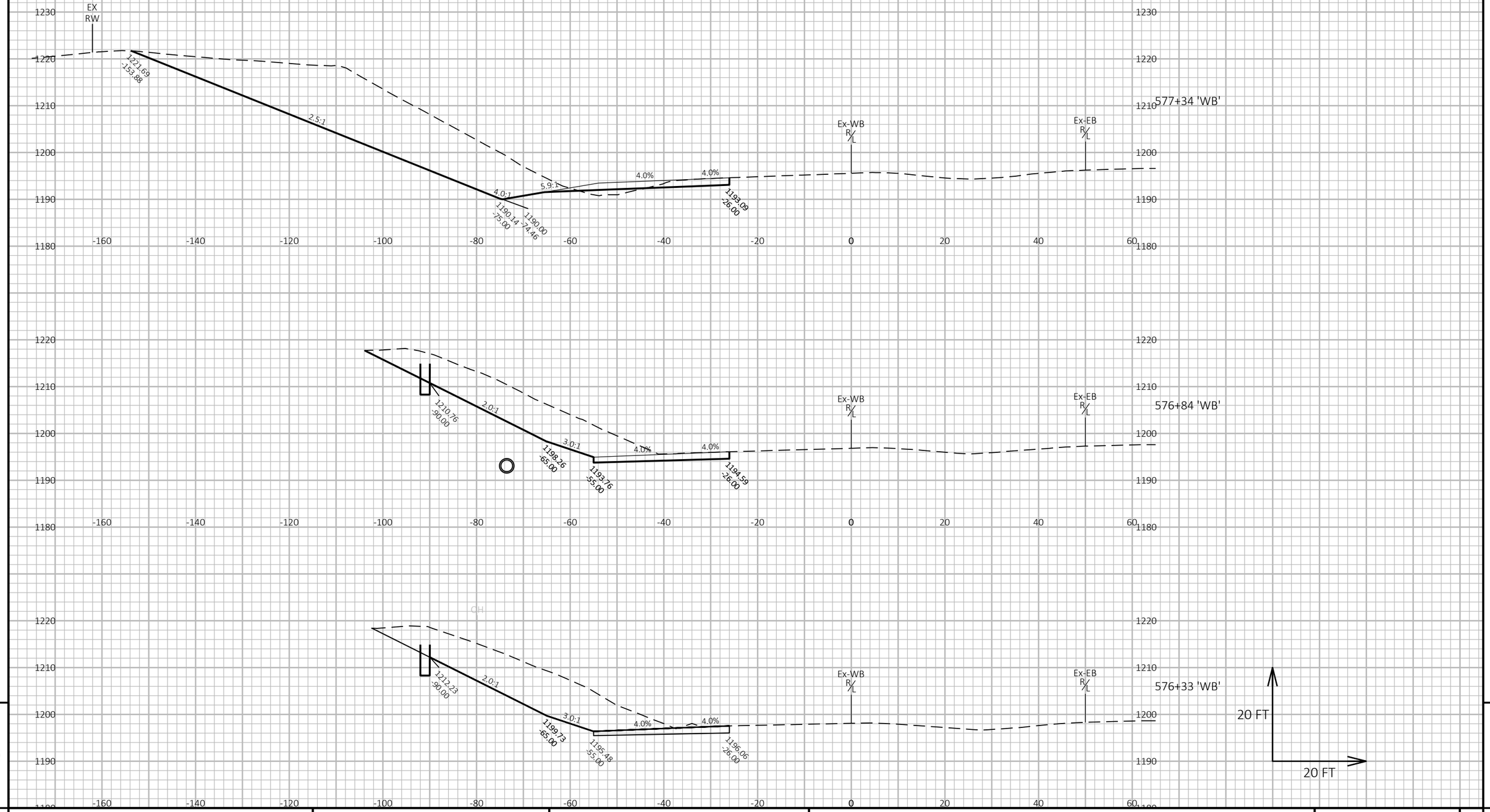
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: IH 94 WB	SHEET 205	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090250-XS.DWG
LAYOUT NAME - 090271

PLOT DATE : 4/21/2026 10:50 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49



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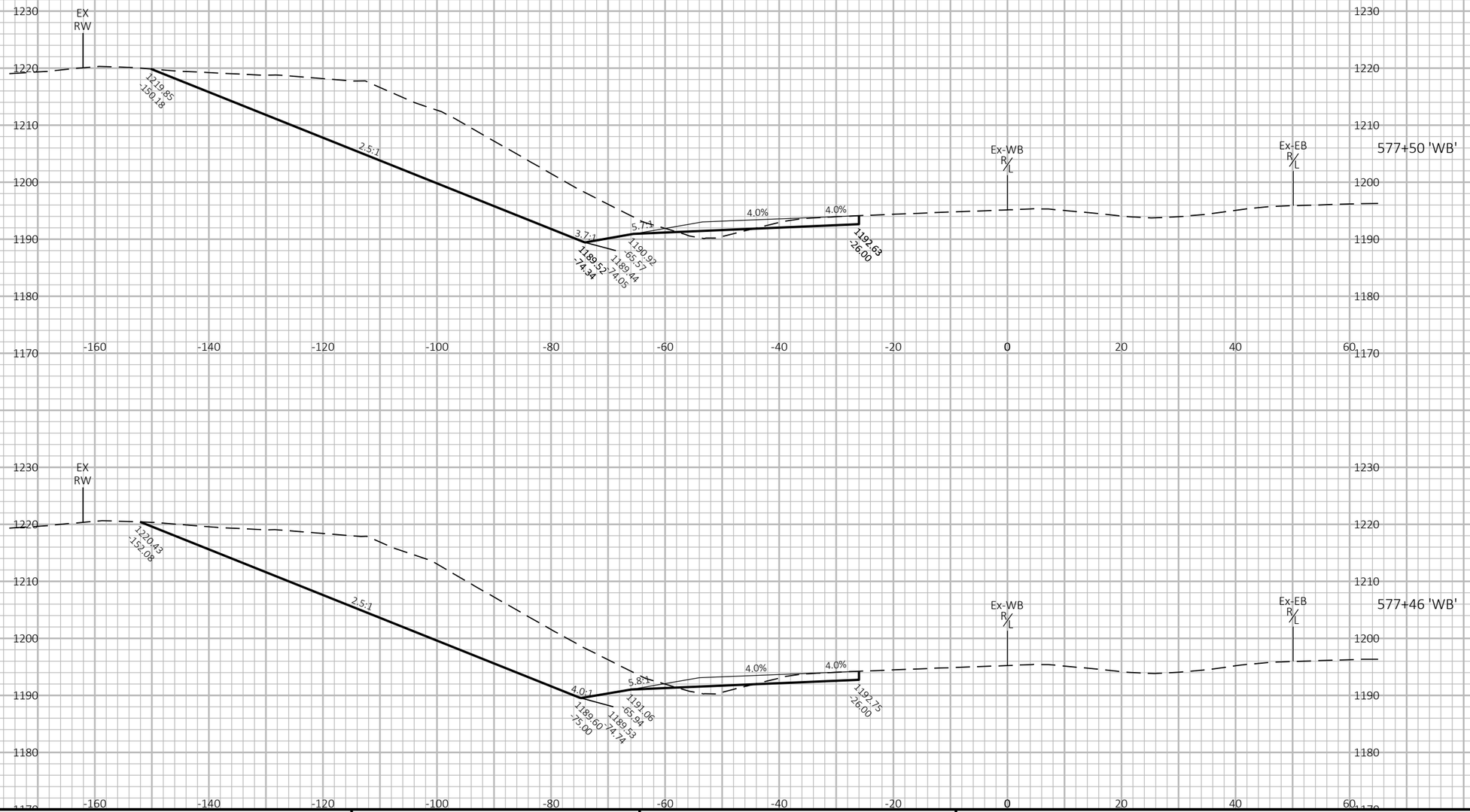
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: IH 94 WB	SHEET 206	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090250-XS.DWG
LAYOUT NAME - 090272

PLOT DATE : 4/21/2026 10:50 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49



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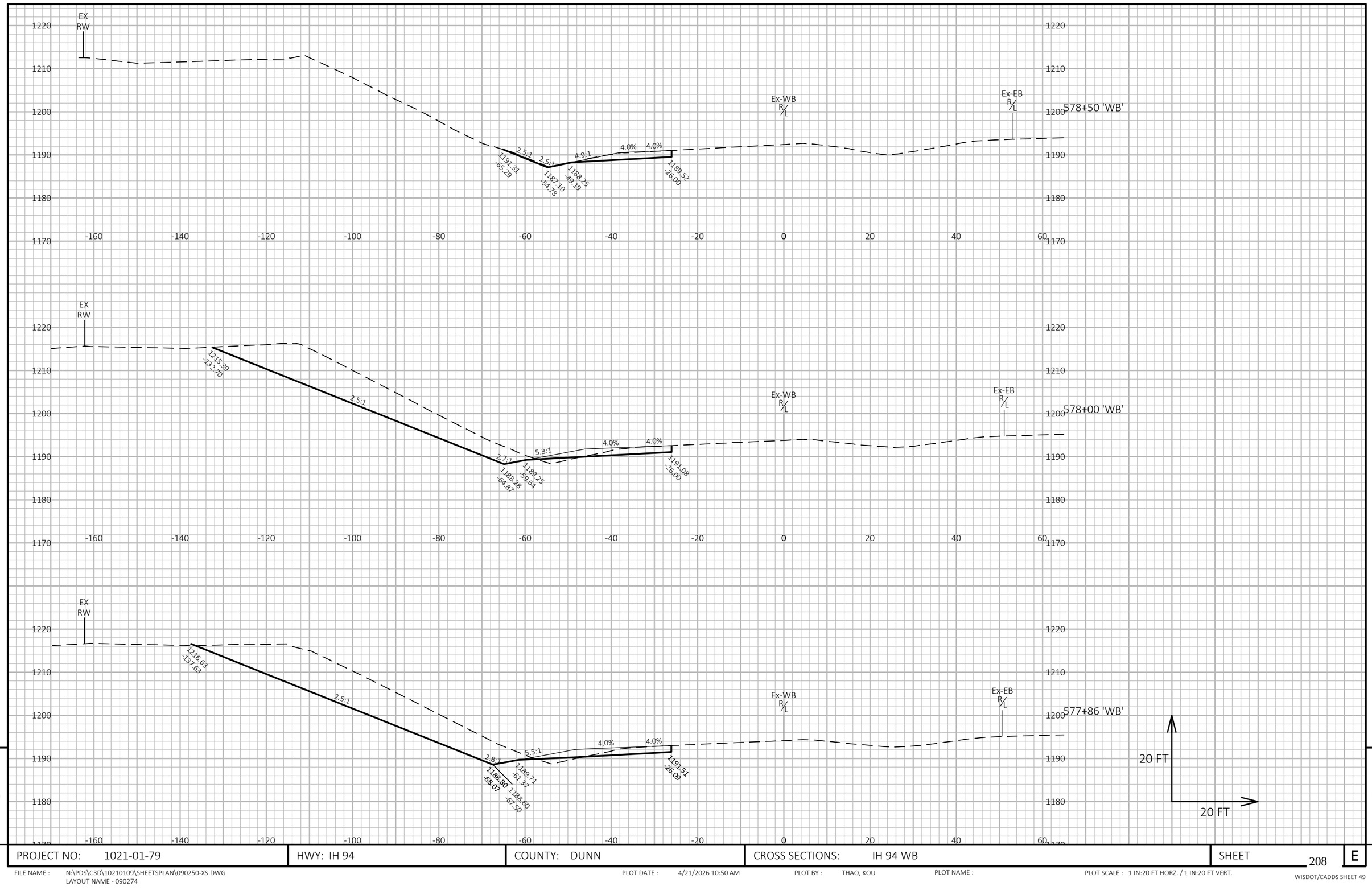
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: IH 94 WB	SHEET 207	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090250-XS.DWG
LAYOUT NAME - 090273

PLOT DATE : 4/21/2026 10:50 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49



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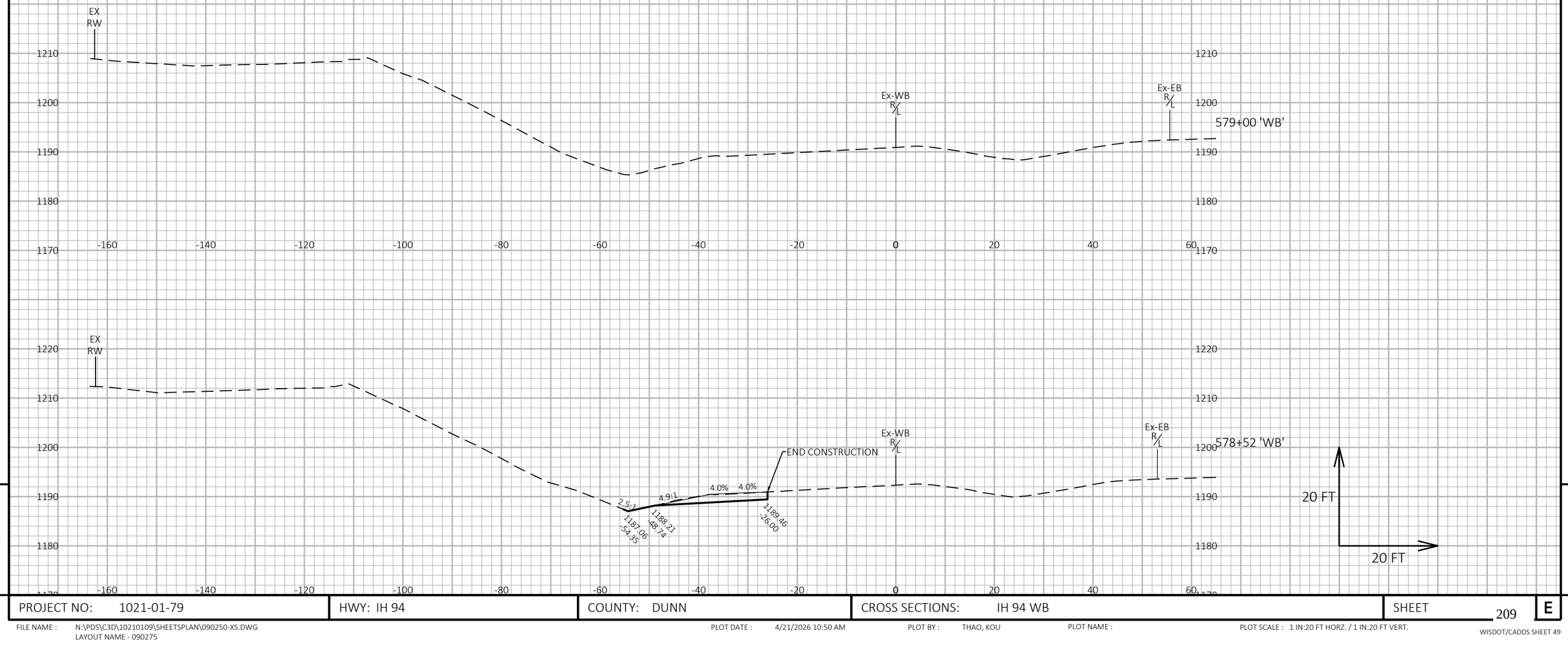
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: IH 94 WB	SHEET 208	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090250-XS.DWG
LAYOUT NAME - 090274

PLOT DATE : 4/21/2026 10:50 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49



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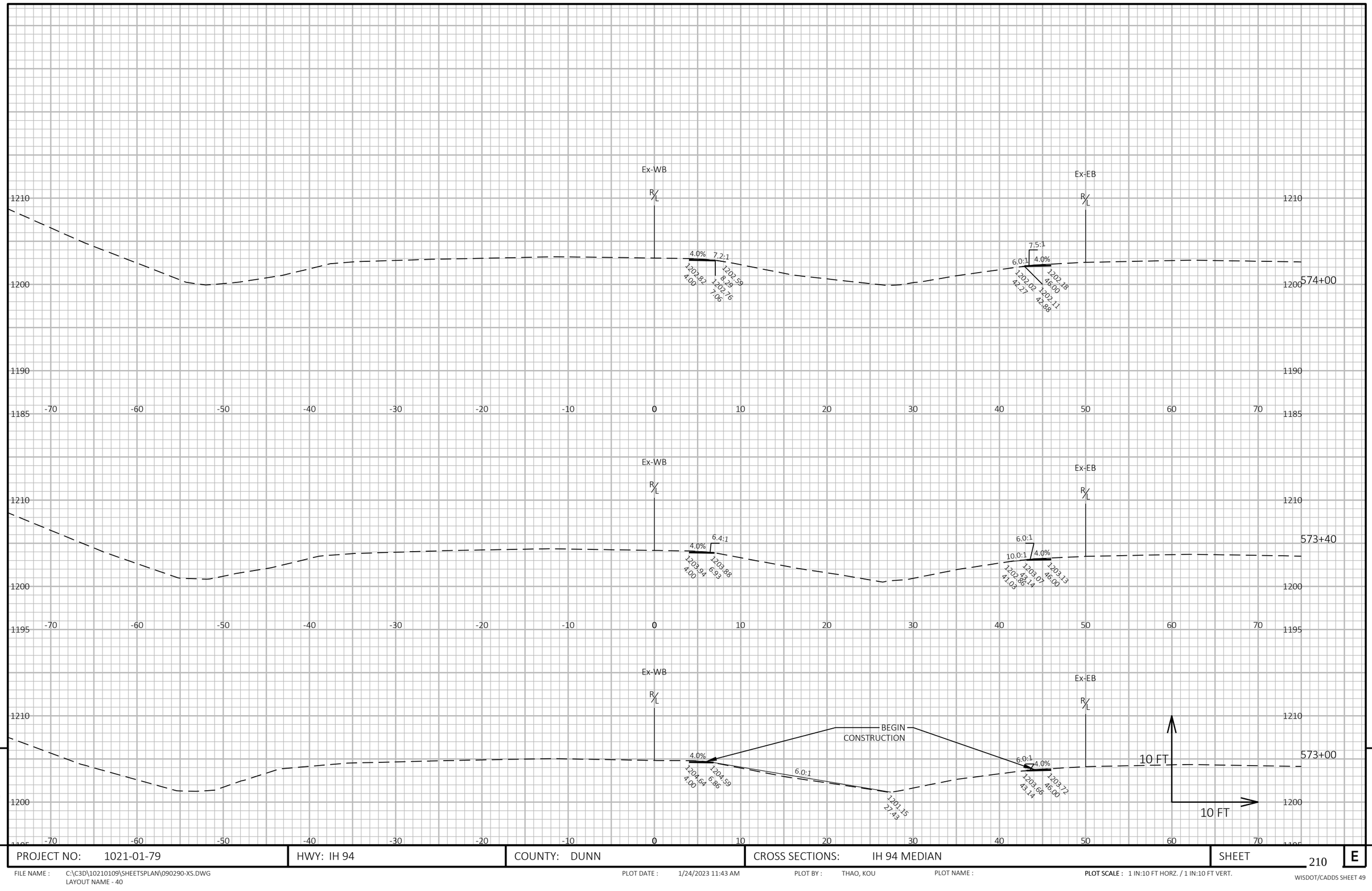
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: IH 94 WB	SHEET 209	E

FILE NAME : N:\PDS\C3D\10210109\SHEETSPLAN\090250-XS.DWG
LAYOUT NAME - 090275

PLOT DATE : 4/21/2026 10:50 AM PLOT BY : THAO, KOU PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

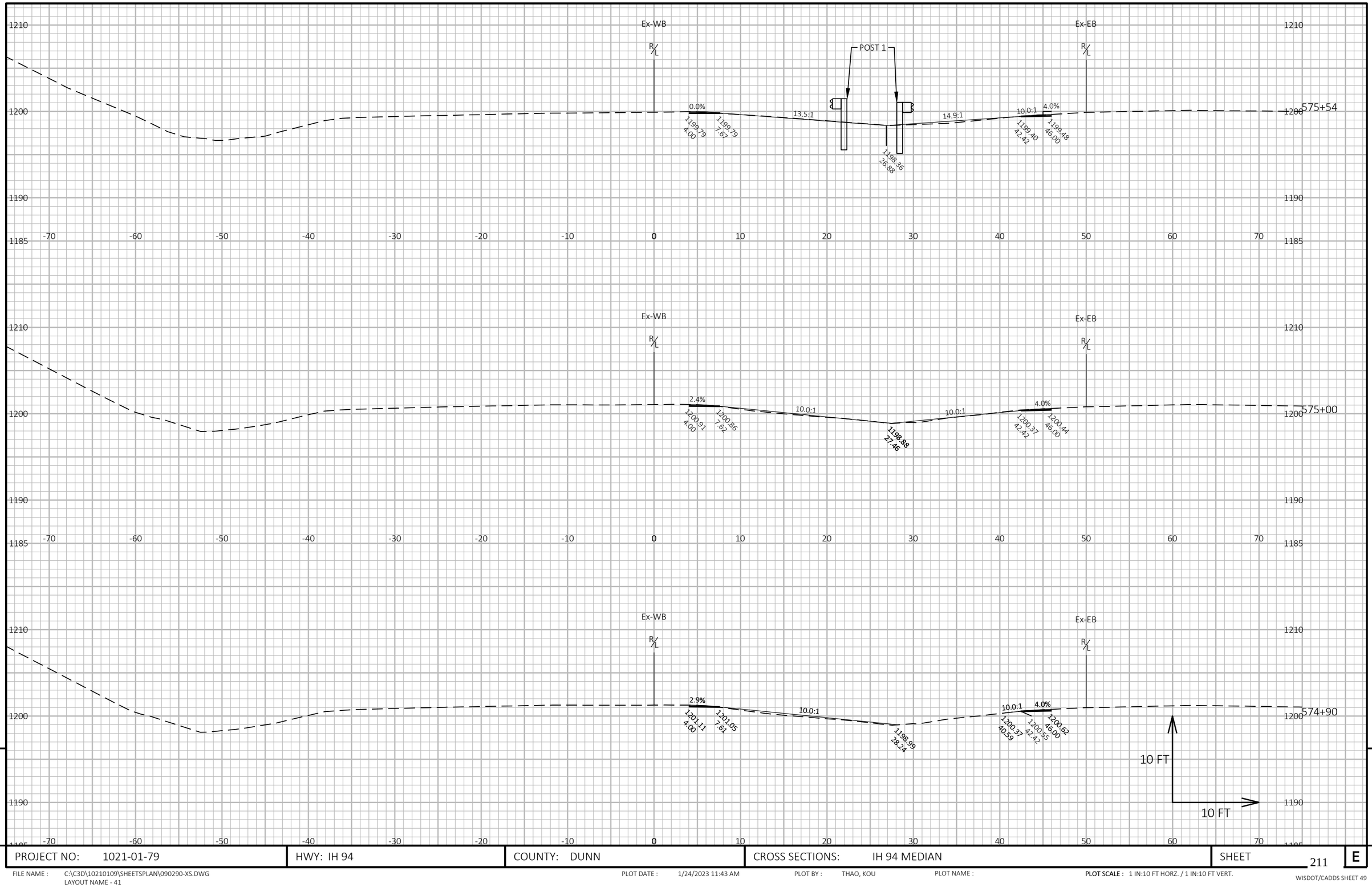


PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: IH 94 MEDIAN	SHEET 210	E

FILE NAME : C:\C3D\10210109\SHEETSPLAN\090290-XS.DWG
LAYOUT NAME - 40

PLOT DATE : 1/24/2023 11:43 AM PLOT BY : THAO, KOU PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: IH 94 MEDIAN	SHEET 211	E

FILE NAME : C:\C3D\10210109\SHEETSPLAN\090290-XS.DWG
LAYOUT NAME - 41

PLOT DATE : 1/24/2023 11:43 AM

PLOT BY : THAO, KOU

PLOT NAME :

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

WISDOT/CADDS SHEET 49

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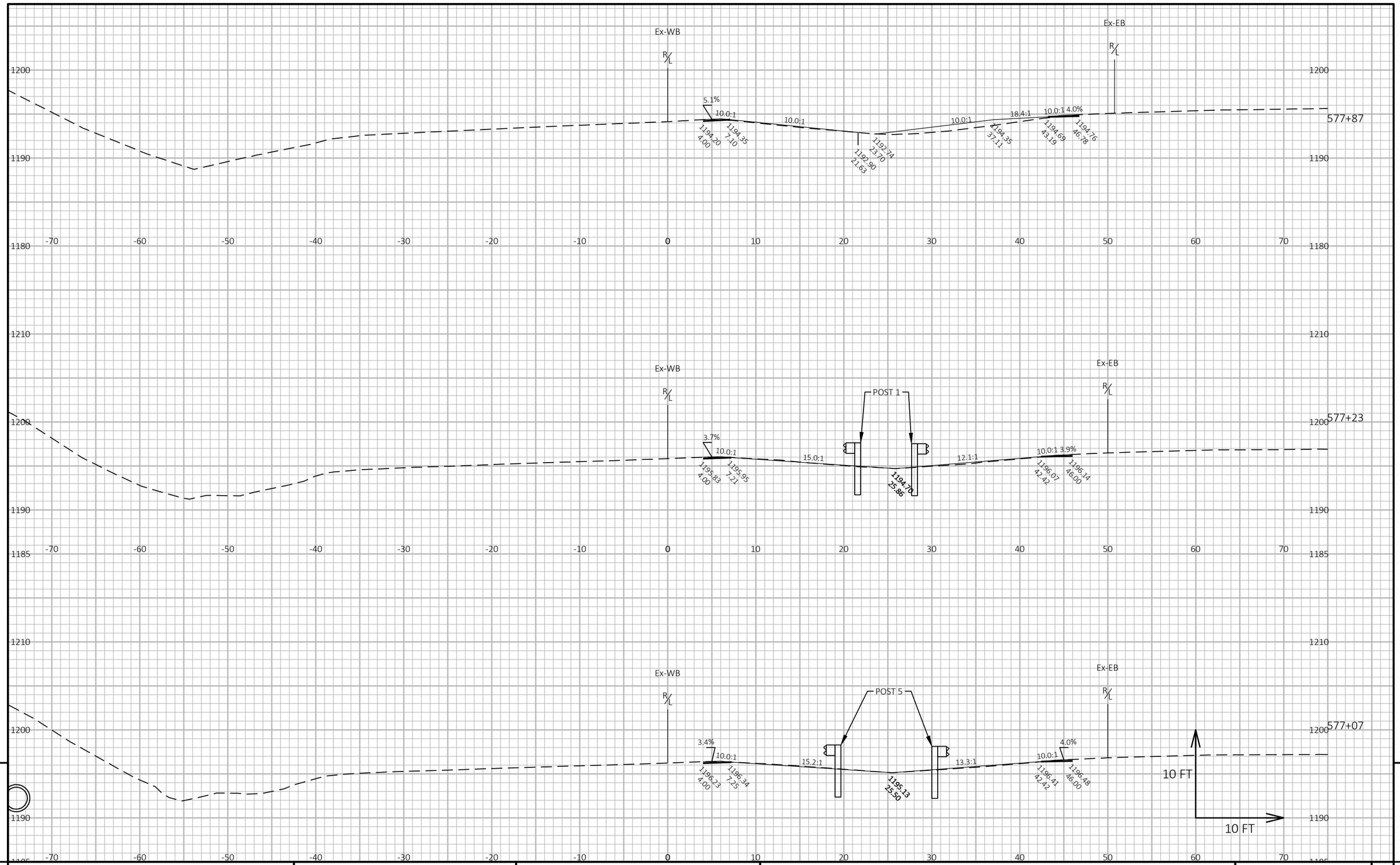
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: IH 94 MEDIAN	SHEET 212	E

FILE NAME : C:\C3D\10210109\SHEETSPLAN\090290-XS.DWG
LAYOUT NAME - 42

PLOT DATE : 1/24/2023 11:43 AM PLOT BY : THAO, KOU PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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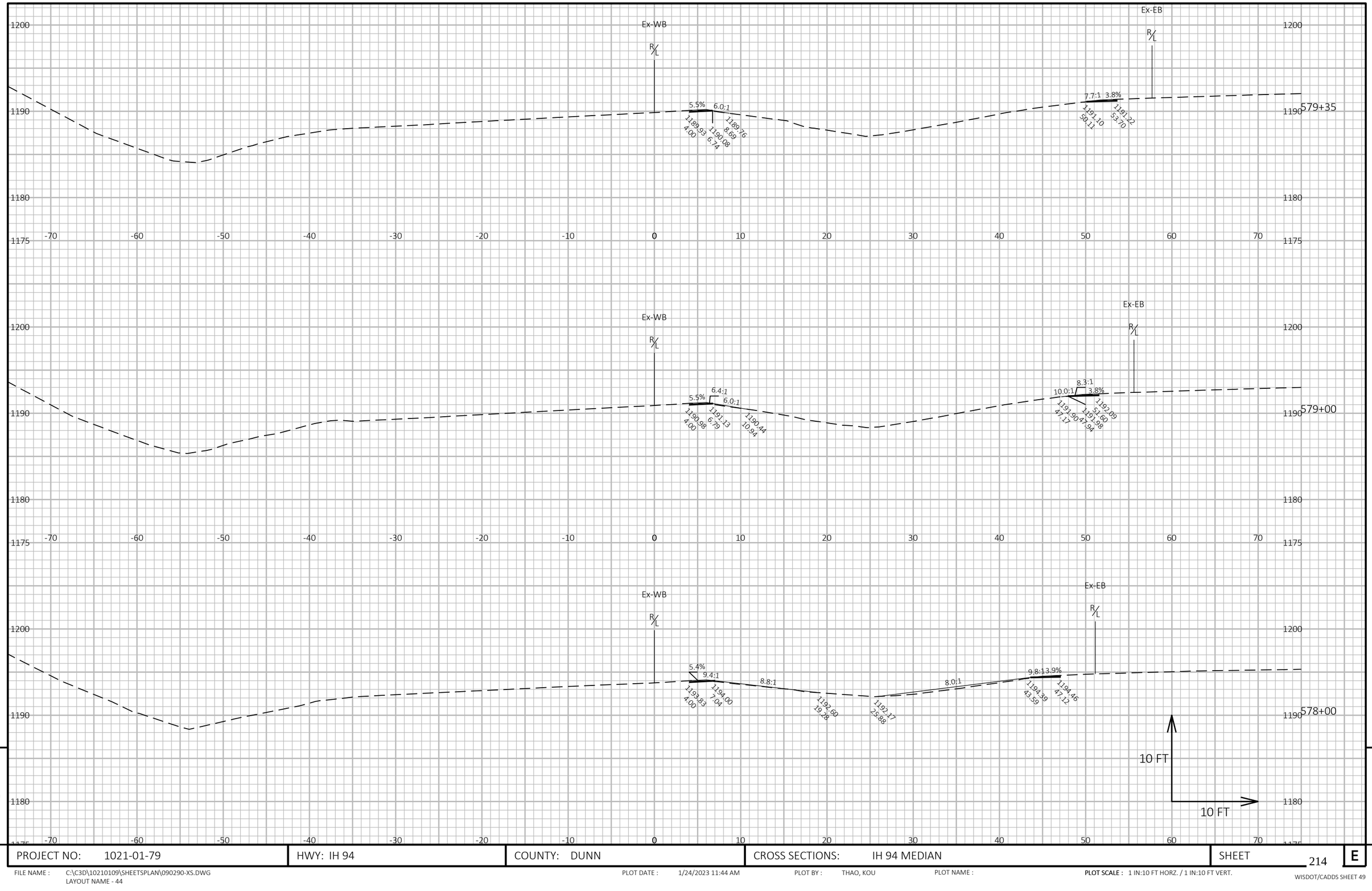
PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: IH 94 MEDIAN	SHEET 213	E

FILE NAME : C:\C3D\10210109\SHEETSPLAN\090290-XS.DWG
LAYOUT NAME - 43

PLOT DATE : 1/24/2023 11:44 AM PLOT BY : THAO, KOU PLOT NAME :

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

WISDOT/CADDS SHEET 49



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9

PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: IH 94 MEDIAN	SHEET 214	E

FILE NAME : C:\C3D\10210109\SHEETSPLAN\090290-XS.DWG
LAYOUT NAME - 44

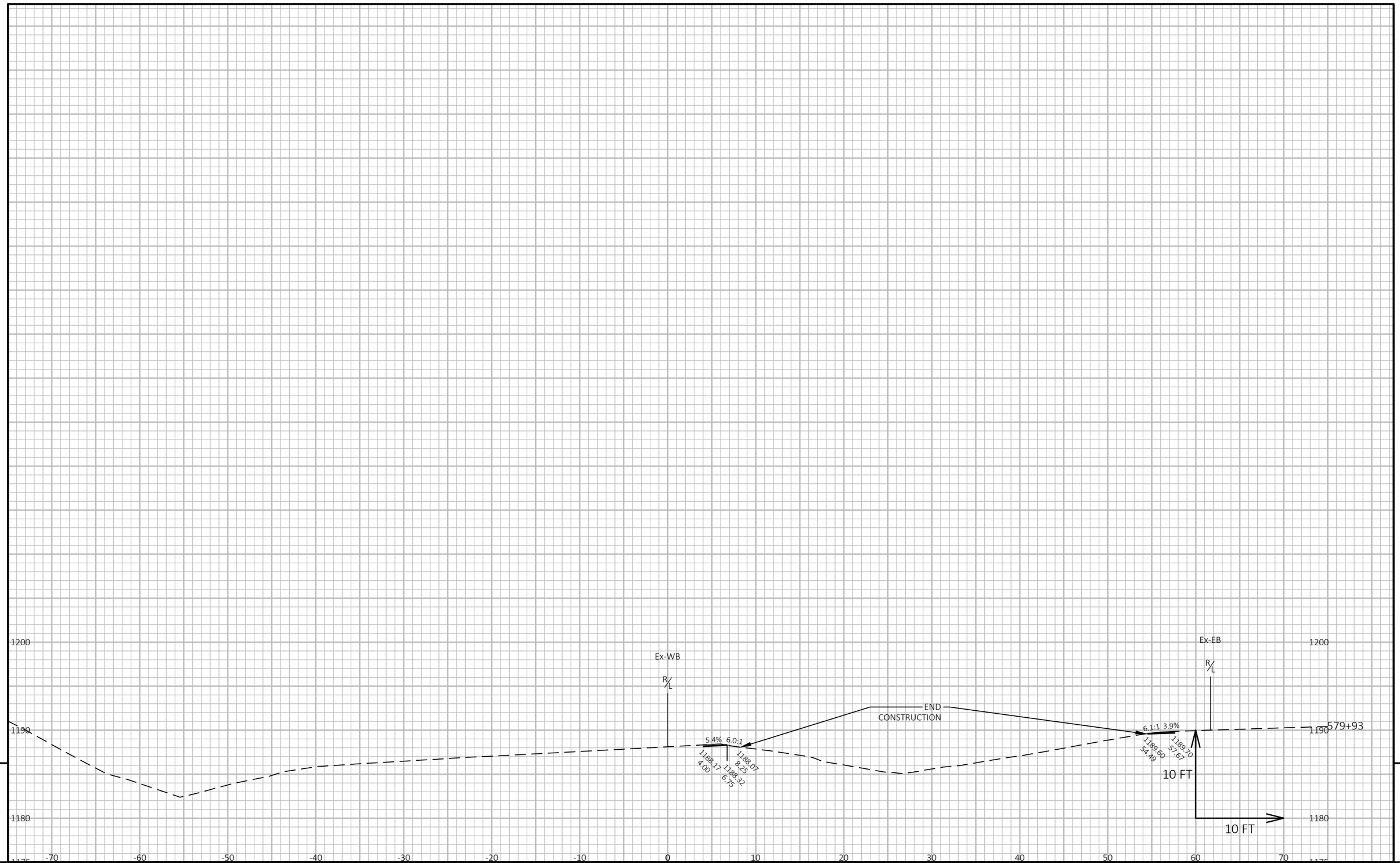
PLOT DATE : 1/24/2023 11:44 AM

PLOT BY : THAO, KOU

PLOT NAME :

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

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 1021-01-79	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: IH 94 MEDIAN	SHEET 215	E

FILE NAME : C:\C3D\10210109\SHEETSPLAN\090290-XS.DWG
LAYOUT NAME - 45

PLOT DATE : 1/24/2023 11:44 AM PLOT BY : THAO, KOU PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

Wisconsin Department of Transportation

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