SUP

JANUARY 2023

PROJECT ID: 1580-04-74

WITH:

COUNTY: RUSK

ORDER OF SHEETS

TOTAL SHEETS = 138

DESIGN DESIGNATION 1580-04-04

A.A.D.T.	2017	=	2,100
A.A.D.T.		=	
D.H.V.		=	
D.D.		=	
T.		=	26.4%
DESIGN SPEED		=	60
ESALS		=	

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1580-04-74	WISC 2023168	1

LADYSMITH - PRENTICE

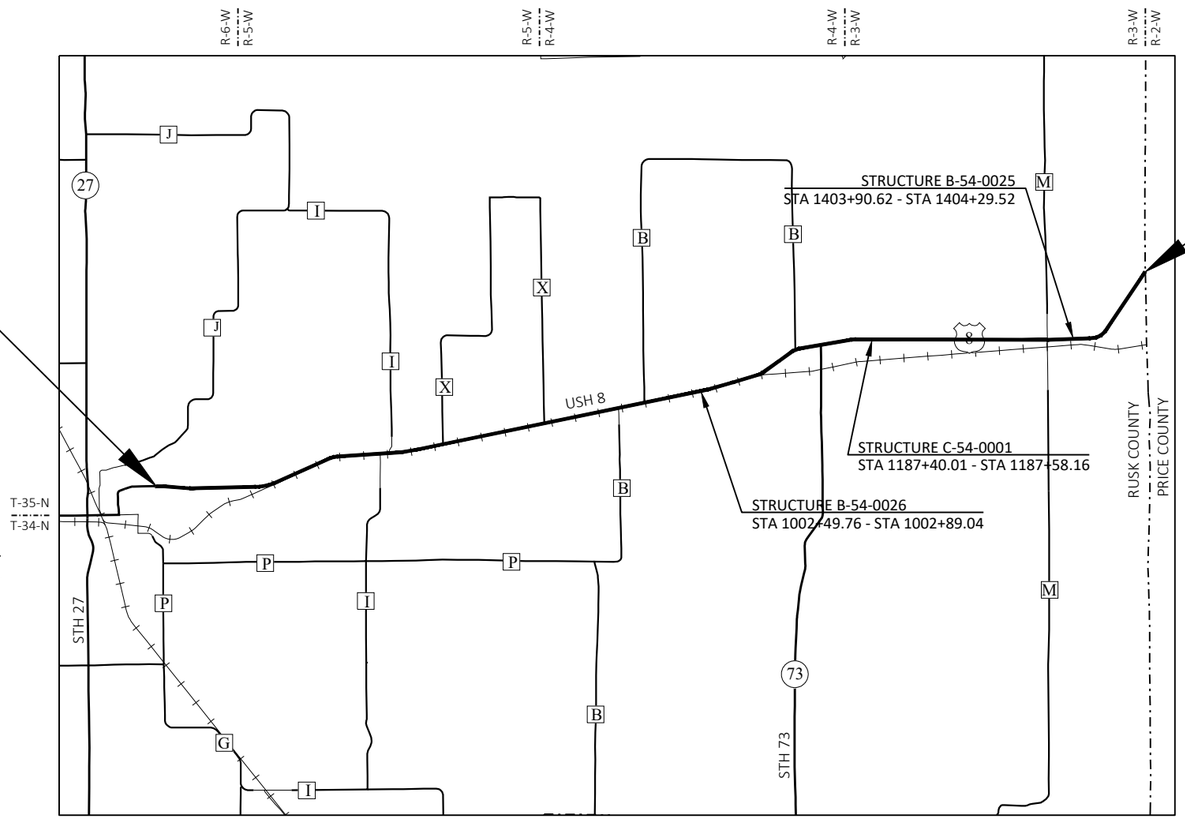
EAST 16TH STREET NORTH/OLD 8 ROAD TO PRICE COUNTY LINE

USH 8

RUSK

STATE PROJECT NUMBER

1580-04-74



BEGIN PROJECT
STA 416+40
Y: 566,577.048
X: 817,318.169

END PROJECT
STA 1514+90.76
Y: 588,987.369
X: 921,177.000

CONVENTIONAL SYMBOLS

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

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

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

LAYOUT

SCALE 0 3 MI

TOTAL NET LENGTH OF CENTERLINE = 20.805

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	EMCS AND GREMMER & ASSOCIATES
Designer	CAITLIN BUKOVITZ
Project Manager	MATTHEW DICKENSON
Regional Examiner	TOU YANG
Regional Supervisor	JEFFREY OLSON

APPROVED FOR THE DEPARTMENT

DATE: 10/10/2022 Matthew J Dickenson (Signature)

E

FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\010101_TI.DWG PLOT DATE : 10/10/2022 9:56 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME :

LIST OF STANDARD ABBREVIATIONS

ABUT.	ABUTMENT
AGG.	AGGREGATE
AH.	AHEAD
APPROX.	APPROXIMATE
A.E.W.	APRON ENDWALL
ASPH.	ASPHALTIC
A.D.T.	AVERAGE DAILY TRAFFIC
AZ.	AZIMUTH
BK.	BACK
BEG.	BEGIN
B.M.	BENCH MARK
C/L	CENTER LINE
CONC.	CONCRETE
CONST.	CONSTRUCTION
CO.	COUNTY
C.T.H.	COUNTY TRUNK HIGHWAY
X-SEC.	CROSS SECTION
CR.	CRUSHED
CFS	CUBIC FEET/SECOND
C.Y., CU. YD.	CUBIC YARD
CULV.	CULVERT
C.P.	CULVERT PIPE
D.O.T.	DEPARTMENT OF TRANSPORTATION
D.H.V.	DESIGN HOUR VOLUME
DIA.	DIAMETER
D.	DIRECTIONAL DISTRIBUTION
DISCH. OR DIS.	DISCHARGE
EA.	EACH
ELECT.	ELECTRIC
EL. OR ELEV.	ELEVATION
EMB.	EMBANKMENT
E.B.S.	EXCAVATION BELOW SUBGRADE
EXIST.	EXISTING
FERT.	FERTILIZE
F.E.	FIELD ENTRANCE
FIN.	FINISHED
FT.	FOOT
F.L.	FLOW LINE
GA.	GAUGE
HORIZ.	HORIZONTAL
CWT.	HUNDREDWEIGHT
INL.	INLET
LT.	LEFT
L.H.F.	LEFT-HAND FORWARD
LIN.	LINEAR
LIN. FT.	LINEAR FOOT
L.S.	LUMP SUM
MAX.	MAXIMUM
MI.	MILE
MISC.	MISCELLANEOUS
N.E.	NORTH EAST
N.W.	NORTH WEST
PAV'T	PAVEMENT
P.C.	POINT OF CURVATURE
P.I.	POINT OF INTERSECTION
P.T.	POINT OF TANGENCY
P.O.T.	POINT ON TANGENT
LB.	POUND
P.E.	PRIVATE ENTRANCE
PROJ.	PROJECT
R.	RANGE
REQ'D	REQUIRED
RT.	RIGHT
R.H.F.	RIGHT-HAND FORWARD
R/W	RIGHT OF WAY
RD.	ROAD
SHR.	SHRINKAGE
SL.	SLOPE
STD.	STANDARD
S.D.D.	STANDARD DETAIL DRAWINGS
S.T.H.	STATE TRUNK HIGHWAY
STA.	STATION
S.P.P.A.	STRUCTURAL PLATE PIPE ARCH
STRUCT.	STRUCTURE
SURF.	SURFACE
TEL.	TELEPHONE
TN.	TOWN
T.	TRUCKS (PERCENT OF)
UNCL.	UNCLASSIFIED
U.G.	UNDERGROUND
V.	VELOCITY OR DESIGN SPEED
V.C.	VERTICAL CURVE

GENERAL NOTES

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

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

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

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT FOR AREAS WITHIN FINISHED SHOULDER POINT, SHALL BE FERTILIZED, SEEDED, AND MULCHED.

THE LOCATION OF DRIVEWAYS WILL BE DETERMINED BY THE ENGINEER.

CURVE DATA IS BASED ON THE ARC DEFINITION.

THE EXACT LOCATION OF EROSION CONTROL DEVICES SHALL BE DETERMINED IN THE FIELD.

OTHER WETLANDS MAY EXIST IN LOCATIONS THAT ARE NOT SHOWN ON THE PLANS. NO EQUIPMENT OR MATERIALS SHALL BE STORED IN WETLAND AREAS.

PRIOR TO THE PLACEMENT OF GUARDRAIL, THE BASE AGGREGATE SHOULDERS SHALL BE CONSTRUCTED, SHAPED AND COMPACTED UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

PAVEMENT QUANTITIES ARE BASED ON 112 LBS/SY COMPACTED 1" THICK.

TRANSITIONAL EXCAVATION SHOWN IN THE DETAILS IS INCIDENTAL TO CULVERT PIPE REPLACEMENT

WISCONSIN DNR-LIASON

ATTN: LEAH NICOL
1300 WEST CLAIREMONT
EAU CLAIRE, WI 54701
PHONE: (715) 934-9014
EMAIL: leah.nicol@wisconsin.gov

RUSK COUNTY HIGHWAY COMMISSIONER

ATTN: SCOTT EMCH
N4711 HWY 27
LADYSMITH, WI 54848
PHONE: (715) 532-2641
EMAIL: SEMCH@RUSKCOUNTYWI.US

WISDOT NW REGION

ATTN: MATTHEW DICKENSON - PROJECT MANAGER
1701 N. 4TH ST
SUPERIOR, WI 54880
PHONE: (718) 395-3022
EMAIL: matthew.dickenson@dot.wi.gov

ATTN:CAITLIN BUKOVITZ - DESIGN PROJECT LEADER

1701 N. 4TH ST
SUPERIOR, WI 54880
PHONE: (715) 392-7975
EMAIL: caitlin.bukovitz@dot.wi.gov

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

CENTURYLINK - COMMUNICATION LINE

ATTN:BRIAN HUHN
425 ELLINGSON AVE
HAWKINS, WI 54530
PHONE: (715) 563-8294
EMAIL: BRIAN.HUHN@LUMEN.COM

DAIRYLAND POWER COOPERATIVE - ELECTRICITY

ATTN: MIKE LYDON
3200 EAST AVE S.
P.O. BOX 817
LA CROSSE, WI 54602
PHONE: (608) 787-1381
EMAIL: michael.lydon@dairylandpower.com

GLEN FLORA VILLAGE OF WATER UTILITY - WATER

ATTN: Ron Moser
W4364 HWY 8
P.O. BOX 163
GLEN FLORA, WI 54526
PHONE: (715) 894-7558
EMAIL: RCM0351@gmail.com

HAWKINS VILLAGE OF - WATER

ATTN: ALICIA VALENTINE
509 MAIN STREET
PO BOX 108
HAWKINS, WI 54530
PHONE: (715) 585-6322
CURBANDGUTTER@CENTURYTEL.NET

JUMP RIVER ELECTRIC COOPERATIVE - ELECTRICITY

ATTN: KURT HARRIS
1102 W 9TH ST NORTH
P.O. BOX 99
LADYSMITH, WI 54848-0099
PHONE: (715) 532-5524
EMAIL: kharris@jrec.com

LADYSMITH MUNICIPAL WATER UTILITY -WATER

ATTN: KURTIS GORSEGNER
120 MINOR AVENUE W.
P.O. BOX 431
LADYSMITH, WI 54848-0431
PHONE: (715) 234-2603
EMAIL: KGORSEGNER@CITYOFLADYSMITHWI.COM

PRICE ELECTRIC COOPERATIVE INC - ELECTRICITY

ATTN: BEN ORYSEN
P.O. BOX 110
PHILLIPS, WI 54555
PHONE: (715) 339-2155
EMAIL: borysen@price-electric.com

SPECTRUM - COMMUNICATION LINE

RYAN LUCKEN
1201 MCCANN DR
ALTOONA, WI 54720
PHONE: (715) 831-8940
EMAIL: ryan.lucken@charter.com

TONY MUNICIPAL WATER UTILITY - WATER

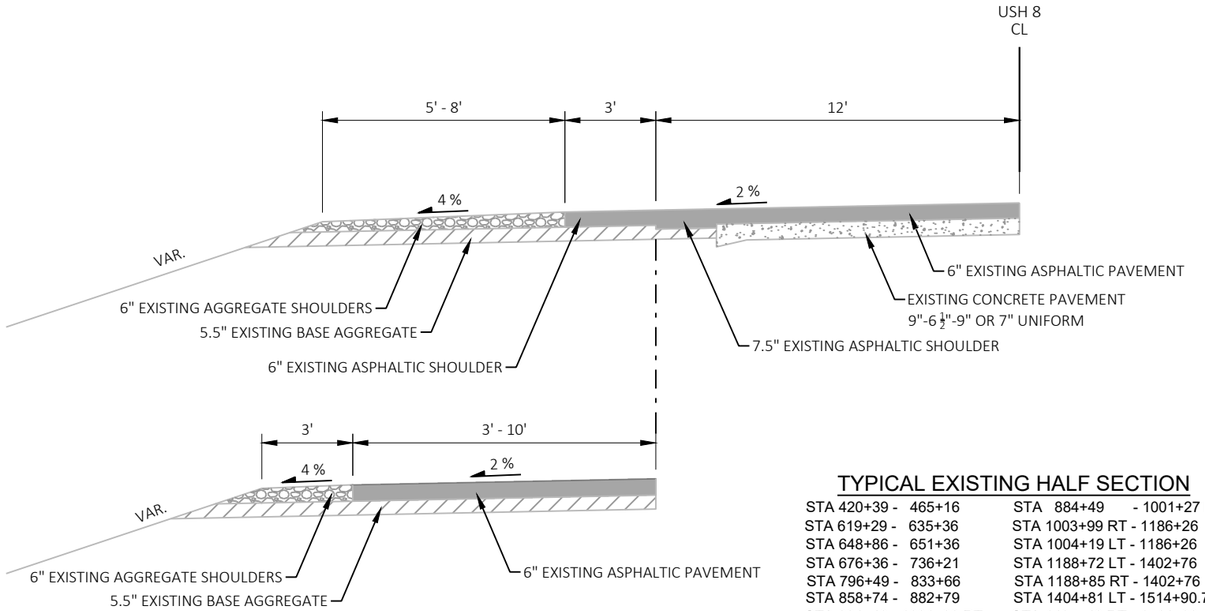
ATTN: KELLY SPORTS
N5399 WALNUT ST.
TONY, WI 54563
PHONE: (715) 642-1099
EMAIL: KELLYJO1099@GMAIL.COM

WE ENERGIES - GAS/PETROLEUM

STEVEN CHAVERS
104 W. SOUTH ST
RICE LAKE, WI 54868
PHONE: (715) 234-9605
EMAIL: STEVEN.CHAVERS@WE-ENERGIES.COM

XCEL ENERGY - ELECTRICTY AND ELECTRIC TRANSMISSION

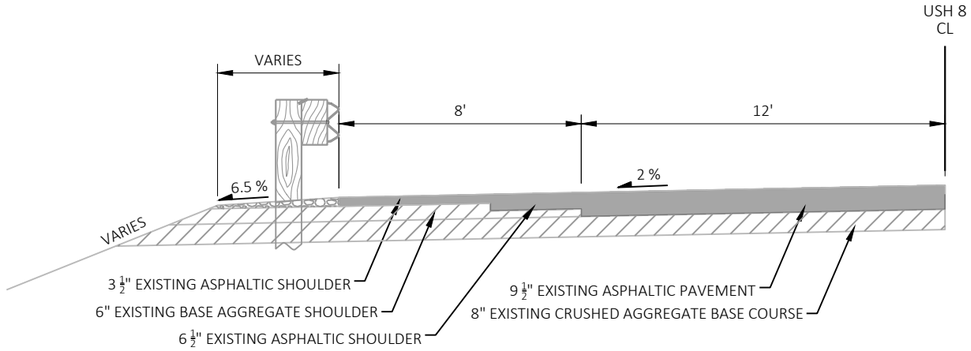
ATTN: CORISSA SEELY
1414 W HAMILTON AVENUE
P.O. BOX 8
EAU CLAIRE, WI 54702
PHONE: (715) 737-4097
EMAIL: corissa.e.seely@xcelenergy@com



STA 425+00 - 427+50 RT
STA 439+00 - 444+50 RT
STA 442+00 - 447+20 LT
STA 930+50 - 933+10 LT
STA 942+00 - 945+90 LT
STA 1134+50 - 1141+50 RT
STA 1127+50 - 1234+50 RT
STA 1364+80 - 1370+00 RT
STA 1374+20 - 1396+00 LT & RT

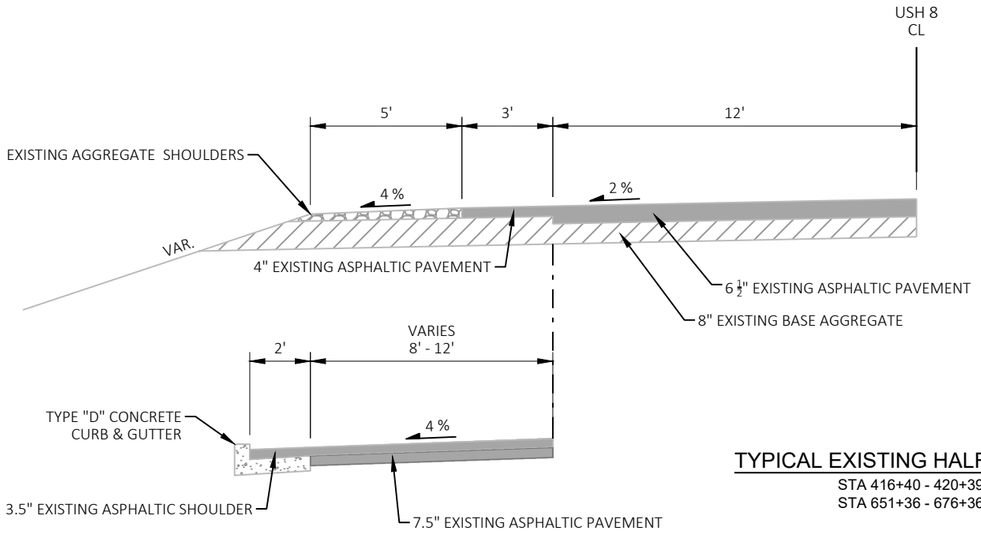
TYPICAL EXISTING HALF SECTION

STA 420+39 - 465+16
STA 619+29 - 635+36
STA 648+86 - 651+36
STA 676+36 - 736+21
STA 796+49 - 833+66
STA 858+74 - 882+79
STA 884+49 - 1001+20 RT
STA 884+49 - 1001+27 LT
STA 1003+99 RT - 1186+26
STA 1004+19 LT - 1186+26
STA 1188+72 LT - 1402+76
STA 1188+85 RT - 1402+76
STA 1404+81 LT - 1514+90.76
STA 1405+40 RT - 1514+90.76



TYPICAL EXISTING HALF SECTION

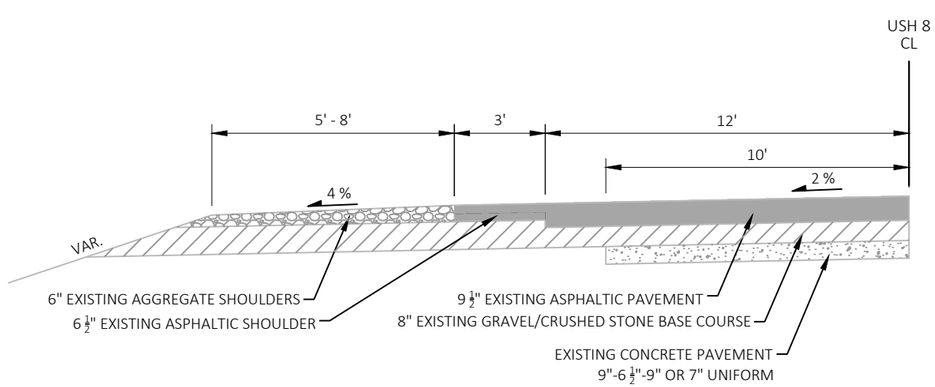
STA 1001+20 - 1002+46 RT
STA 1001+27 - 1002+53 LT
STA 1002+85 - 1003+99 RT
STA 1002+93 - 1004+19 LT
STA 1186+26 - 1187+70 LT & RT
STA 1187+58 - 1188+72 LT
STA 1187+58 - 1188+85 RT
STA 1402+76 - 1403+90 LT & RT
STA 1404+30 - 1404+81 LT
STA 1404+30 - 1405+40 RT



TYPICAL EXISTING HALF SECTION

STA 416+40 - 420+39
STA 651+36 - 676+36

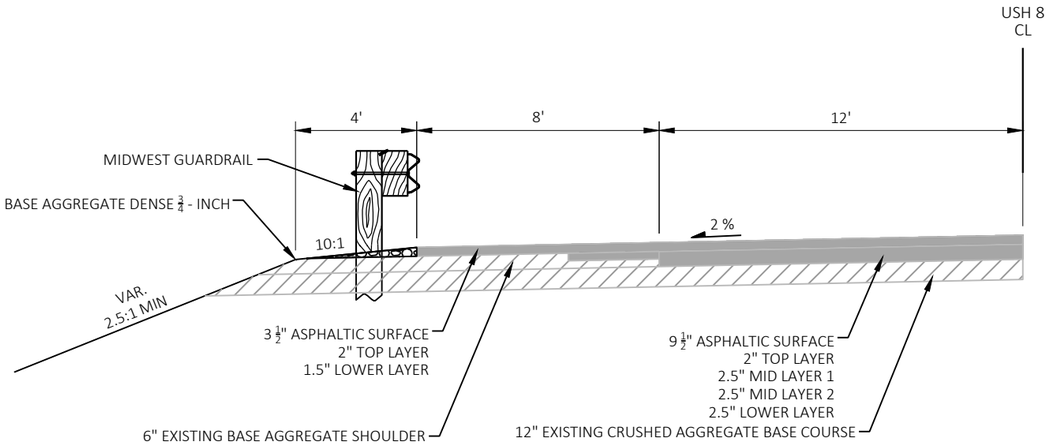
STA 658+20 - 664+90 LT



TYPICAL EXISTING HALF SECTION

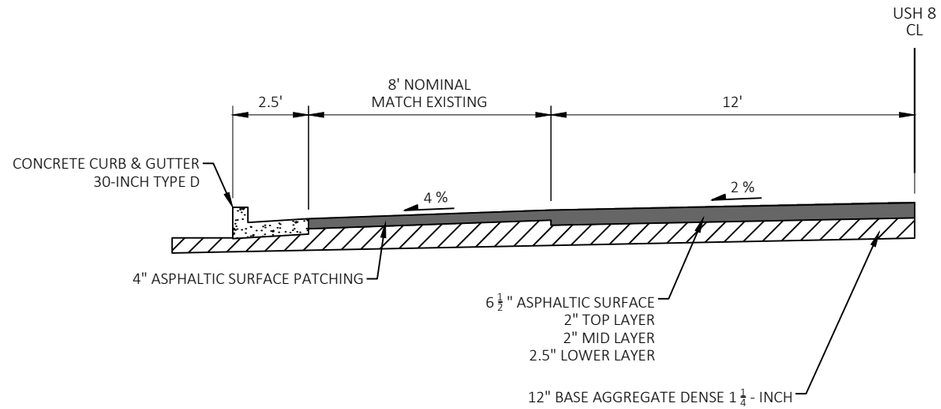
STA 465+16 - 619+29
STA 635+36 - 648+86
STA 736+21 - 796+49
STA 833+66 - 858+74
STA 882+79 - 884+49

PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	TYPICAL SECTIONS	SHEET 3	E



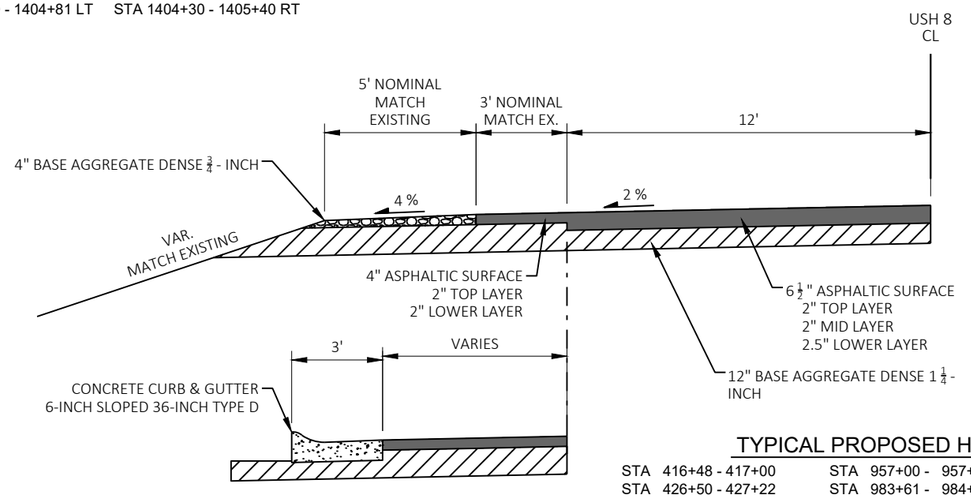
TYPICAL PROPOSED HALF SECTION

STA 1001+27 - 1002+53 LT STA 1001+20 - 1002+46 RT
STA 1002+93 - 1004+19 LT STA 1002+85 - 1003+99 RT
STA 1186+26 - 1187+70 LT & RT
STA 1187+58 - 1188+72 LT STA 1187+58 - 1188+85 RT
STA 1402+76 - 1403+90 LT & RT
STA 1404+30 - 1404+81 LT STA 1404+30 - 1405+40 RT



TYPICAL PROPOSED HALF SECTION

STA 661+20 - 661+55 LT

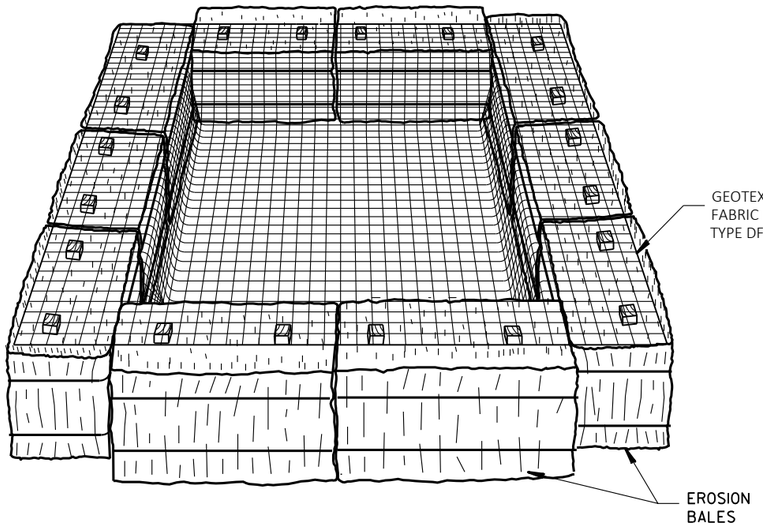


STA 1428+99 - 1429+45 LT

TYPICAL PROPOSED HALF SECTION

STA 416+48 - 417+00	STA 957+00 - 957+39	STA 1214+88 - 1215+50
STA 426+50 - 427+22	STA 983+61 - 984+03	STA 1218+89 - 1219+51
STA 440+09 - 440+65	STA 1019+65 - 1020+51	STA 1239+92 - 1240+46
STA 450+68 - 451+24	STA 1040+92 - 1041+48	STA 1300+41 - 1300+87
STA 519+89 - 520+40	STA 1057+20 - 1057+76	STA 1319+32 - 1319+88
STA 634+31 - 634+77	STA 1080+86 - 1081+32	STA 1328+72 - 1329+20
STA 661+20 - 661+52 RT	STA 1104+96 - 1105+35	STA 1347+41 - 1347+83
STA 707+61 - 708+05	STA 1129+19 - 1129+75	STA 1399+99 - 1400+33
STA 737+22 - 737+68	STA 1148+28 - 1148+90	STA 1426+71 - 1427+17
STA 794+03 - 794+47	STA 1151+64 - 1152+13	STA 1428+99 - 1429+45 RT
STA 932+62 - 933+10	STA 1198+71 - 1199+62	STA 1499+65 - 1500+21

2



TEMPORARY SETTLING BASIN

(SIZE TO BE DETERMINED IN FIELD AS INDICATED BELOW:)

STORAGE VOLUME (C.F.) = 16 X GPM (PUMP RATE)

EXAMPLE:
CONTRACTOR INDICATES PUMP CAPABLE OF 50 GPM
HEIGHT OF BALES = 1.5 FT.

SOLUTION:
SV (C.F.) = 16 X 50
SV = 800 C.F.

$\frac{800 \text{ C.F.}}{1.5 \text{ FT.}}$ = 533 S.F.

USE A 20 FT. X 27 FT. BASIN

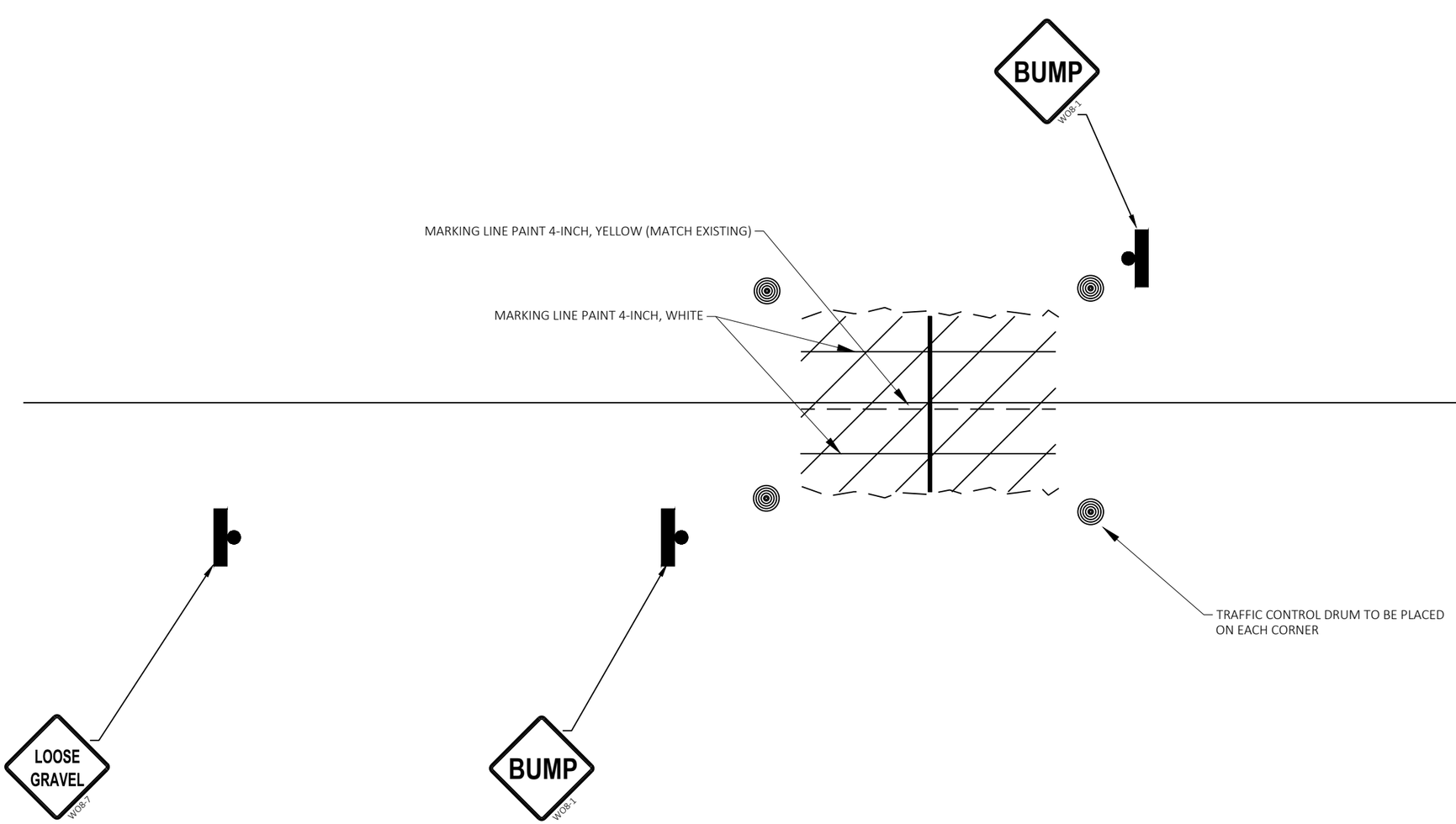
RUNOFF COEFFICIENT TABLE

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

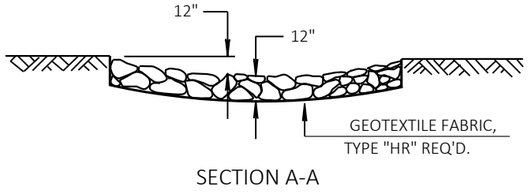
TOTAL PROJECT AREA = 16 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.5 ACRES

2

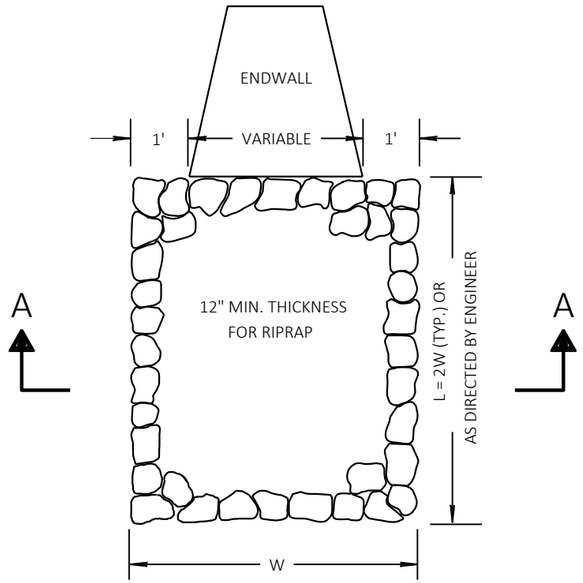
TEMPORARY SIGNING AND PERMANENT MARKING AT CULVERT PIPE REPLACEMENT



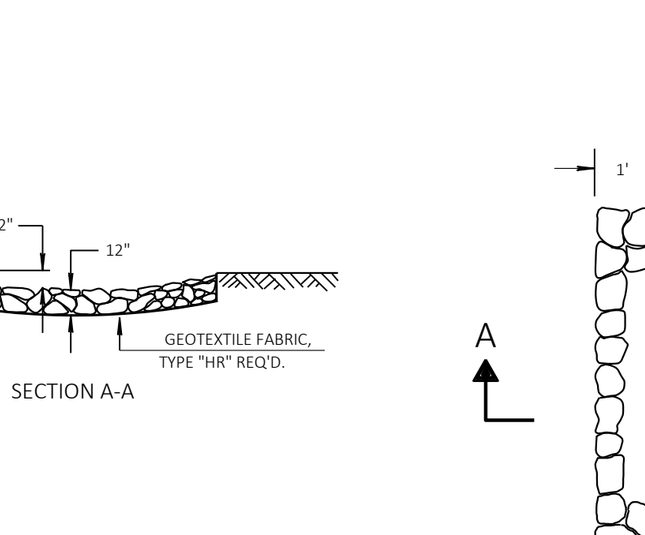
PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	CONSTRUCTION DETAILS	SHEET 6	E



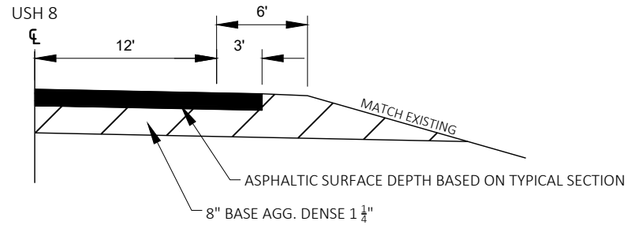
SECTION A-A



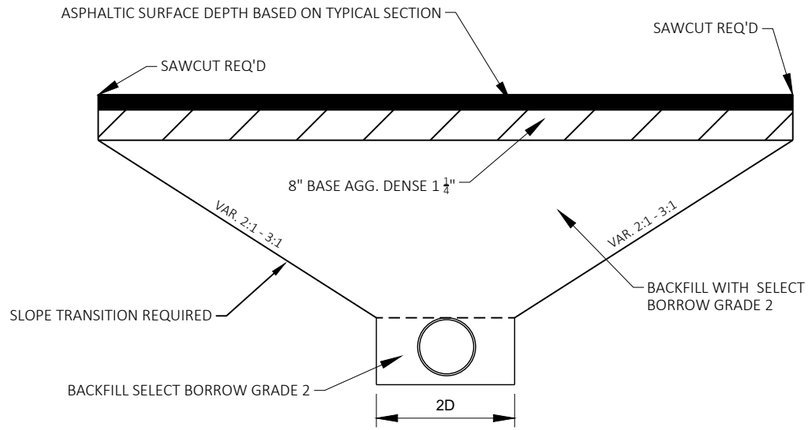
RIPRAP TREATMENT AT CULVERTS



EROSION MAT TREATMENT AT CULVERTS



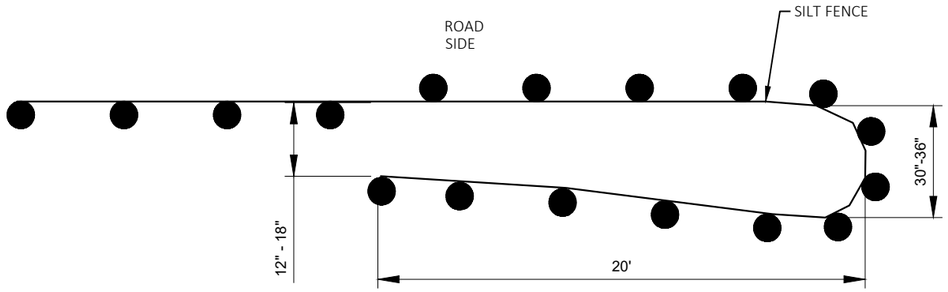
SECTION VIEW



PROFILE VIEW

CROSS DRAIN INSTALLATION DETAIL

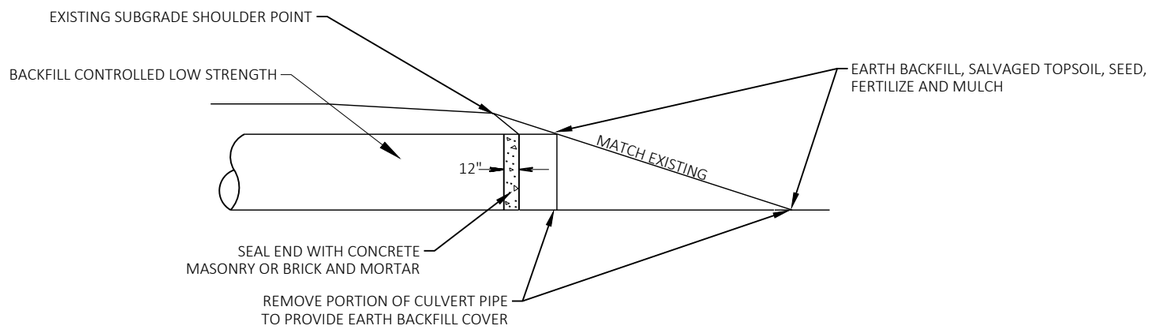
TRANSITIONAL EXCAVATION IS INCIDENTAL TO
REPLACING CULVERT PIPES
BACKFILL WITH SELECT BORROW GRADE 2



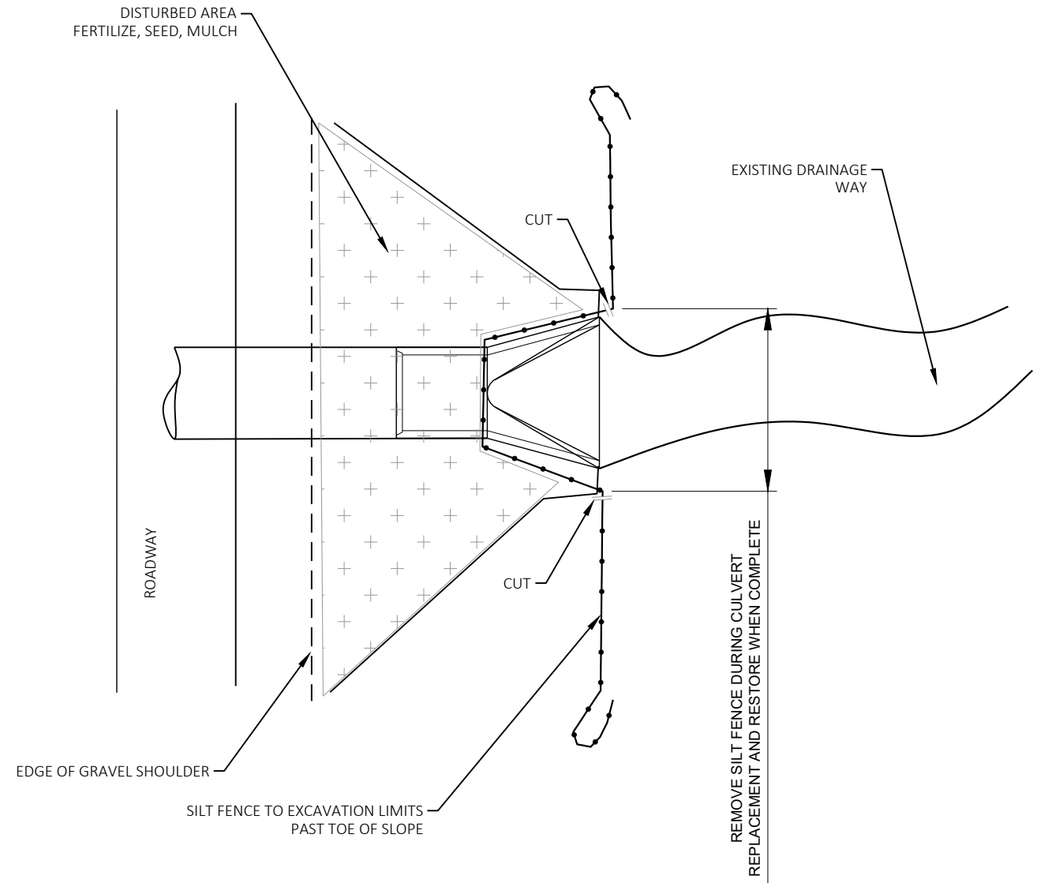
PLAN VIEW

NOTE:
SILT FENCE POST FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE TURN-AROUND AND TRENCHED IN ACCORDING TO SILT FENCE REQUIREMENTS. INSTALLATION IS INCIDENTAL TO THE ITEM OF SILT FENCE.

TEMPORARY SMALL ANIMAL TURN-AROUND DETAIL



ABANDONING CULVERT PIPE DETAIL



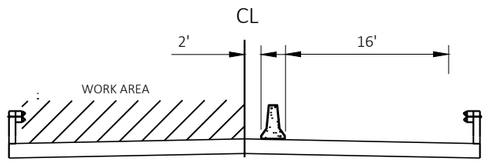
EROSION CONTROL AND TEMPORARY SMALL ANIMAL TURN-AROUND DETAIL

REFER TO MISC. QUANTITIES FOR ADDITIONAL DETAILS

PLAN VIEW

LEGEND

- TYPE II / III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TYPE A WARNING LIGHT (FLASHING)
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC



STAGE 1 TRAFFIC CONTROL SECTION

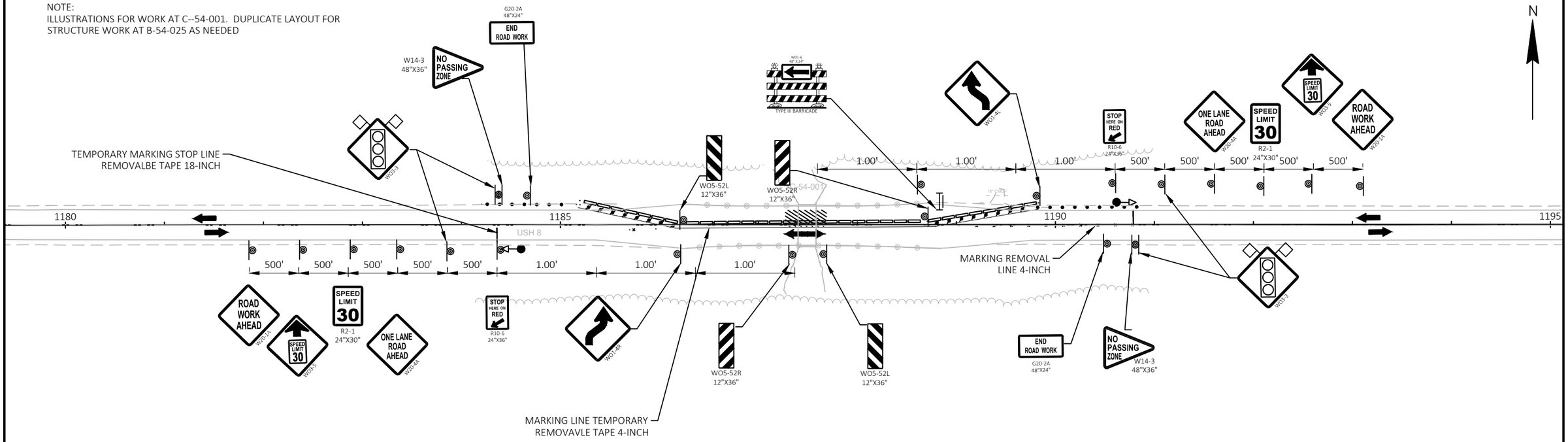
PROPOSED SIGNAL TIMINGS (SECONDS) FIXED INTERVAL, NO VEHICLE DETECTION				
	PHASE	TOTAL	PHASE 1 DIRECTION	PHASE 2 DIRECTION
INTERVAL	TIME	TIME	EAST	WEST
EACH	SECONDS	SECONDS		
1	8	8	GREEN	RED
2	4	12	YELLOW	RED
3	18	30	RED	RED
4	8	38	RED	GREEN
5	4	42	RED	YELLOW
6	18	60	RED	RED

THE CONTRACTOR SHALL REVIEW SIGNALS AFTER PROGRAMMING TO ASSURE THERE ARE NOT CONFLICTING MOVEMENTS. IF CONFLICTING MOVEMENTS EXIST OR IF MORE ALL-RED TIME IS NEEDED, THE CONTRACTOR SHALL MAKE THE NECESSARY CHANGES.

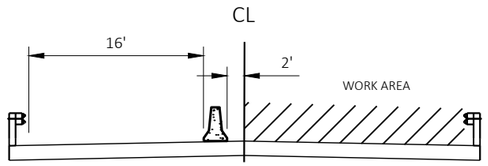
IF THERE ARE QUESTIONS REGARDING THE TIMINGS, PLEASE CONTACT THE TRAFFIC ENGINEER, AARON CHRIST 715 833-9816

PROPOSED SIGNAL TIMINGS (SECONDS) FOR TEMPORARY SIGNALS WITH VEHICLE DETECTION		
PHASE 1 MAINLINE EB	PHASE 2 MAINLINE WB	PROGRAM TYPE
8	8	MINIMUM GREEN TIME
5	5	MAXIMUM PASSAGE TIME DURING GREEN PHASE
3	3	MINIMUM PASSAGE TIME DURING GREEN PHASE
10	10	START OF REDUCTION OF PASSAGE FROM MAX. TO MIN. DURING GREEN PHASE
10	10	TIME TO PASSAGE FROM MAX. TO MIN. DURING GREEN PHASE
20	20	MAXIMUM GREEN TIME
4	4	YELLOW
18	18	ALL RED
MIN	MIN	RECALL MODE (USE NON IF STOP BAR DETECTION)

NOTE:
ILLUSTRATIONS FOR WORK AT C--54-001. DUPLICATE LAYOUT FOR STRUCTURE WORK AT B-54-025 AS NEEDED



PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	TRAFFIC CONTROL DETAILS, TEMPORARY TRAFFIC SIGNALS AT BRIDGES	SHEET 9	E



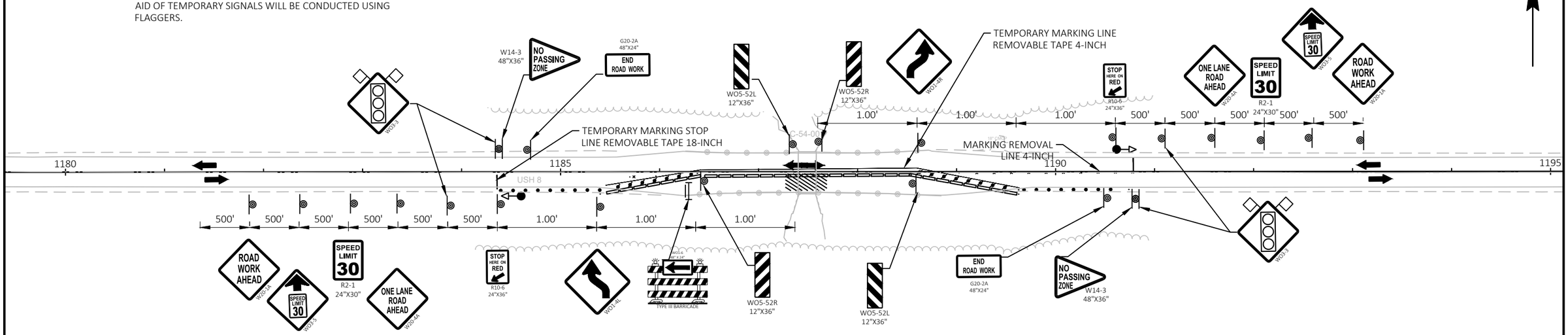
STAGE 2 TRAFFIC CONTROL SECTION

LEGEND

- TYPE II / III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TYPE A WARNING LIGHT (FLASHING)
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC

STAGE 2 NOTES:

- FINAL PAVING AFTER STRUCTURE CONSTRUCTION WITHOUT THE AID OF TEMPORARY SIGNALS WILL BE CONDUCTED USING FLAGGERS.



PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	TRAFFIC CONTROL DETAILS, TEMPORARY TRAFFIC SIGNALS AT BRIDGES	SHEET 10	E

1580-04-74

Line	Item	Item Description	Unit	Total	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	35.000	35.000
0004	203.0220	Removing Structure (structure) 01. C-54-0001	EACH	1.000	1.000
0006	203.0220	Removing Structure (structure) 02. B-54-0025	EACH	1.000	1.000
0008	204.0100	Removing Concrete Pavement	SY	2,660.000	2,660.000
0010	204.0150	Removing Curb & Gutter	LF	55.000	55.000
0012	204.0165	Removing Guardrail	LF	1,410.000	1,410.000
0014	204.0270	Abandoning Culvert Pipes	EACH	2.000	2.000
0016	206.1001	Excavation for Structures Bridges (structure) 01. B-54-0025	EACH	1.000	1.000
0018	206.2001	Excavation for Structures Culverts (structure) 01. C-54-0001	EACH	1.000	1.000
0020	206.5001	Cofferdams (structure) 01. C-54-0001	EACH	1.000	1.000
0022	206.5001	Cofferdams (structure) 02. B-54-0025	EACH	1.000	1.000
0024	208.1100	Select Borrow	CY	2,492.000	2,492.000
0026	209.0200.S	Backfill Controlled Low Strength	CY	14.000	14.000
0028	210.2500	Backfill Structure Type B	TON	375.000	375.000
0030	213.0100	Finishing Roadway (project) 01. 1580-04-74	EACH	1.000	1.000
0032	305.0110	Base Aggregate Dense 3/4-Inch	TON	209.000	209.000
0034	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	2,001.000	2,001.000
0036	311.0115	Breaker Run	CY	25.000	25.000
0038	455.0605	Tack Coat	GAL	468.000	468.000
0040	465.0105	Asphaltic Surface	TON	1,474.000	1,474.000
0042	504.0100	Concrete Masonry Culverts	CY	35.000	35.000
0044	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	6,390.000	6,390.000
0046	509.1500	Concrete Surface Repair	SF	125.000	125.000
0048	511.1200	Temporary Shoring (structure) 01. C-54-0001	SF	790.000	790.000
0050	511.1200	Temporary Shoring (structure) 02. B-54-0025	SF	80.000	80.000
0052	516.0500	Rubberized Membrane Waterproofing	SY	24.000	24.000
0054	520.1024	Apron Endwalls for Culvert Pipe 24-Inch	EACH	16.000	16.000
0056	520.1030	Apron Endwalls for Culvert Pipe 30-Inch	EACH	2.000	2.000
0058	520.1036	Apron Endwalls for Culvert Pipe 36-Inch	EACH	6.000	6.000
0060	520.3424	Culvert Pipe Class III-A Non-metal 24-Inch	LF	612.000	612.000
0062	520.3430	Culvert Pipe Class III-A Non-metal 30-Inch	LF	68.000	68.000
0064	520.3436	Culvert Pipe Class III-A Non-metal 36-Inch	LF	324.000	324.000
0066	522.0124	Culvert Pipe Reinforced Concrete Class III 24-Inch	LF	1,086.000	1,086.000
0068	522.0130	Culvert Pipe Reinforced Concrete Class III 30-Inch	LF	128.000	128.000
0070	522.0136	Culvert Pipe Reinforced Concrete Class III 36-Inch	LF	140.000	140.000
0072	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	30.000	30.000
0074	522.1030	Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	EACH	4.000	4.000
0076	522.1036	Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	EACH	4.000	4.000
0078	522.2324	Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 24x38-Inch	LF	132.000	132.000
0080	522.2624	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 24x38-Inch	EACH	4.000	4.000
0082	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	15.000	15.000
0084	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	40.000	40.000
0086	603.8000	Concrete Barrier Temporary Precast Delivered	LF	1,000.000	1,000.000
0088	603.8125	Concrete Barrier Temporary Precast Installed	LF	1,500.000	1,500.000
0090	606.0300	Riprap Heavy	CY	17.000	17.000
0092	611.0420	Reconstructing Manholes	EACH	1.000	1.000
0094	611.0430	Reconstructing Inlets	EACH	1.000	1.000
0096	614.2300	MGS Guardrail 3	LF	338.000	338.000
0098	614.2500	MGS Thrie Beam Transition	LF	473.000	473.000

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Line	Item	Item Description	Unit	Total	Qty
0100	614.2610	MGS Guardrail Terminal EAT	EACH	12.000	12.000
0102	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1580-04-74	EACH	1.000	1.000
0104	619.1000	Mobilization	EACH	1.000	1.000
0106	624.0100	Water	MGAL	33.000	33.000
0108	625.0500	Salvaged Topsoil	SY	1,730.000	1,730.000
0110	627.0200	Mulching	SY	187.000	187.000
0112	628.1104	Erosion Bales	EACH	20.000	20.000
0114	628.1504	Silt Fence	LF	4,500.000	4,500.000
0116	628.1520	Silt Fence Maintenance	LF	4,500.000	4,500.000
0118	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0120	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0122	628.2023	Erosion Mat Class II Type B	SY	1,730.000	1,730.000
0124	629.0210	Fertilizer Type B	CWT	3.400	3.400
0126	630.0110	Seeding Mixture No. 10	LB	49.000	49.000
0128	630.0200	Seeding Temporary	LB	49.000	49.000
0130	630.0500	Seed Water	MGAL	21.000	21.000
0132	633.5200	Markers Culvert End	EACH	70.000	70.000
0134	642.5201	Field Office Type C	EACH	1.000	1.000
0136	643.0300	Traffic Control Drums	DAY	3,600.000	3,600.000
0138	643.0420	Traffic Control Barricades Type III	DAY	85.000	85.000
0140	643.0705	Traffic Control Warning Lights Type A	DAY	170.000	170.000
0142	643.0715	Traffic Control Warning Lights Type C	DAY	490.000	490.000
0144	643.0900	Traffic Control Signs	DAY	8,235.000	8,235.000
0146	643.3150	Temporary Marking Line Removable Tape 4-Inch	LF	1,500.000	1,500.000
0148	643.3850	Temporary Marking Stop Line Removable Tape 18-Inch	LF	45.000	45.000
0150	643.5000	Traffic Control	EACH	1.000	1.000
0152	645.0111	Geotextile Type DF Schedule A	SY	20.000	20.000
0154	645.0120	Geotextile Type HR	SY	42.000	42.000
0156	646.1005	Marking Line Paint 4-Inch	LF	5,262.000	5,262.000
0158	646.3005	Marking Line Paint 8-Inch	LF	382.000	382.000
0160	646.9000	Marking Removal Line 4-Inch	LF	800.000	800.000
0162	650.4000	Construction Staking Storm Sewer	EACH	2.000	2.000
0164	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	40.000	40.000
0166	650.6000	Construction Staking Pipe Culverts	EACH	35.000	35.000
0168	650.6501	Construction Staking Structure Layout (structure) 01. C-54-0001	EACH	1.000	1.000
0170	650.6501	Construction Staking Structure Layout (structure) 02. B-54-0025	EACH	1.000	1.000
0172	650.9911	Construction Staking Supplemental Control (project) 01. 1580-04-74	EACH	1.000	1.000
0174	661.0101	Temporary Traffic Signals for Bridges (structure) 01. C-54-0001	EACH	1.000	1.000
0176	661.0101	Temporary Traffic Signals for Bridges (structure) 02. B-54-0025	EACH	1.000	1.000
0178	690.0150	Sawing Asphalt	LF	1,980.000	1,980.000
0180	690.0250	Sawing Concrete	LF	1,320.000	1,320.000
0182	715.0502	Incentive Strength Concrete Structures	DOL	500.000	500.000
0184	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	300.000	300.000
0186	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	300.000	300.000
0188	SPV.0035	Special 01. Excavation, Segregation, Hauling, and Disposal of Contaminated Soil	CY	50.000	50.000
0190	SPV.0060	Special 01. Strapping B-54-0026	EACH	4.000	4.000
0192	SPV.0060	Special 02. Strapping B-54-0025	EACH	3.000	3.000
0194	SPV.0090	Special 01. Concrete Curb and Gutter Cure and Seal Treatment	LF	40.000	40.000
0196	SPV.0090	Special 02. Ditch Cleaning	LF	276.000	276.000

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Line	Item	Item Description	Unit	Total	Qty
0198	SPV.0090	Special 03. Railing Steel Type "W" Modified B-54-0026	LF	80.000	80.000
0200	SPV.0090	Special 04. Railing Steel Type "W" Modified C-54-0001	LF	37.000	37.000
0202	SPV.0090	Special 05. Railing Steel Type "W" Modified B-54-0025	LF	78.000	78.000

REMOVING SMALL PIPE CULVERTS

CAT	STATION	TO	STATION	LOC	203.0100 REMOVING SMALL PIPE CULVERTS EACH	REMARKS
0010	416+74	-	416+74	ML	1	
0010	426+48	-	427+26	ML	1	
0010	440+13	-	440+61	ML	1	
0010	450+75	-	451+17	ML	1	
0010	519+94	-	520+36	ML	1	
0010	634+36	-	634+72	ML	1	
0010	661+36	-	661+36	ML	1	
0010	707+68	-	707+98	ML	1	
0010	737+30	-	737+60	ML	1	
0010	794+10	-	794+40	ML	1	
0010	932+71	-	933+01	ML	1	
0010	957+10	-	957+28	ML	1	
0010	983+70	-	983+94	ML	1	
0010	1019+66	-	1020+50	ML	1	
0010	1040+99	-	1041+41	ML	1	
0010	1057+30	-	1057+66	ML	1	
0010	1080+97	-	1081+21	ML	1	
0010	1105+03	-	1105+27	ML	1	
0010	1129+29	-	1129+65	ML	1	
0010	1148+35	-	1148+83	ML	1	
0010	1151+74	-	1152+04	ML	1	
0010	1198+78	-	1199+55	ML	2	
0010	1214+92	-	1215+46	ML	1	
0010	1218+96	-	1219+44	ML	1	
0010	1240+01	-	1240+37	ML	1	
0010	1300+49	-	1300+79	ML	1	
0010	1319+42	-	1319+78	ML	1	
0010	1328+78	-	1329+14	ML	1	
0010	1347+50	-	1347+74	ML	1	
0010	1400+04	-	1400+28	ML	1	
0010	1426+79	-	1427+09	ML	1	
0010	1429+04	-	1429+39	ML	2	
0010	1499+78	-	1500+08	ML	1	
				TOTAL 0010	35	

REMOVING CONCRETE PAVEMENT

CAT	STATION	TO	STATION	LOC	204.0100 REMOVING CONCRETE PAVEMENT SY	REMARKS
0010	416+74	-	416+74	ML	0	
0010	426+48	-	427+26	ML	174	
0010	440+13	-	440+61	ML	107	
0010	450+75	-	451+17	ML	94	
0010	519+94	-	520+36	ML	94	
0010	634+36	-	634+72	ML	80	
0010	661+36	-	661+36	ML	0	
0010	707+68	-	707+98	ML	67	
0010	737+30	-	737+60	ML	67	
0010	794+10	-	794+40	ML	67	
0010	932+71	-	933+01	ML	67	
0010	957+10	-	957+28	ML	40	
0010	983+70	-	983+94	ML	54	
0010	1019+66	-	1020+50	ML	187	
0010	1040+99	-	1041+41	ML	94	
0010	1057+30	-	1057+66	ML	80	
0010	1080+97	-	1081+21	ML	54	
0010	1105+03	-	1105+27	ML	54	
0010	1129+29	-	1129+65	ML	80	
0010	1148+35	-	1148+83	ML	107	
0010	1151+74	-	1152+04	ML	67	
0010	1198+78	-	1199+55	ML	172	
0010	1214+92	-	1215+46	ML	120	
0010	1218+96	-	1219+44	ML	107	
0010	1240+01	-	1240+37	ML	80	
0010	1300+49	-	1300+79	ML	67	
0010	1319+42	-	1319+78	ML	80	
0010	1328+78	-	1329+14	ML	80	
0010	1347+50	-	1347+74	ML	54	
0010	1400+04	-	1400+28	ML	54	
0010	1426+79	-	1427+09	ML	67	
0010	1429+04	-	1429+39	ML	78	
0010	1499+78	-	1500+08	ML	67	
				TOTAL 0010	2,660	

REMOVING GUARDRAIL

CAT	STATION	TO	STATION	LOC	204.0165 REMOVING GUARDRAIL LF	REMARKS
0010	1001+20	-	1002+46	B-54-0026 RT	126	
0010	1001+27	-	1002+53	B-54-0026 LT	126	
0010	1002+85	-	1003+99	B-54-0026 RT	114	
0010	1002+93	-	1004+19	B-54-0026 LT	126	
0010	1186+26	-	1187+70	C-54-0001 RT	144	
0010	1186+26	-	1187+70	C-54-0001 LT	144	
0010	1187+58	-	1188+85	C-54-0001 RT	127	
0010	1187+58	-	1188+72	C-54-0001 LT	114	
0010	1402+76	-	1403+90	B-54-0025 RT	114	
0010	1402+76	-	1403+90	B-54-0025 LT	114	
0010	1404+30	-	1405+40	B-54-0025 RT	110	
0010	1404+30	-	1404+81	B-54-0025 LT	51	
				TOTAL 0010	1,410	

REMOVING CURB & GUTTER

CAT	STATION	TO	STATION	LOC	204.0150 REMOVING CURB & GUTTER LF	REMARKS
0010	1428+99	-	1429+45	LT	40	HOLMSTEAD
0010	661+21	-	661+51	LT	15	TONY
				TOTAL 0010	55	

ABANDONING CULVERT PIPES

CAT	STATION	LOC	204.0270 ABANDONING CULVERT PIPES EACH	REMARKS
0010	854+70	CROSS PIPE	1	TURTLE FENCE REQ'D
0010	909+24	CROSS PIPE	1	TURTLE FENCE REQ,D
		TOTAL 0010	2	

ABANDONING CULVERT PIPES

CAT	STATION	LOC	204.0270 ABANDONING CULVERT PIPES EACH	REMARKS
0010	854+70	CROSS PIPE	1	TURTLE FENCE REQ'D
0010	909+24	CROSS PIPE	1	TURTLE FENCE REQ,D
		TOTAL 0010	2	

3

ROADWAY PATCHING SUMMARY

CAT	STATION	TO	STATION	LOC	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
0010	416+53	-	416+95	CROSS PIPE	6	66	16	48
0010	426+48	-	427+26	CROSS PIPE	12	123	29	88
0010	440+13	-	440+61	CROSS PIPE	8	75	18	54
0010	450+75	-	451+17	CROSS PIPE	6	66	16	48
0010	519+94	-	520+36	CROSS PIPE	6	66	16	48
0010	634+36	-	634+72	CROSS PIPE	6	57	13	41
0010	661+21	-	661+51	CROSS PIPE	3	48	11	34
0010	707+68	-	707+98	CROSS PIPE	6	48	11	34
0010	737+30	-	737+60	CROSS PIPE	6	48	11	34
0010	794+10	-	794+40	CROSS PIPE	6	48	11	49
0010	932+71	-	933+01	CROSS PIPE	6	48	11	34
0010	957+10	-	957+28	CROSS PIPE	4	29	7	30
0010	983+70	-	983+94	CROSS PIPE	4	38	9	27
0010	1019+66	-	1020+50	CROSS PIPE	12	132	31	95
0010	1040+99	-	1041+41	CROSS PIPE	6	66	16	48
0010	1057+30	-	1057+66	CROSS PIPE	6	57	13	41
0010	1080+97	-	1081+21	CROSS PIPE	4	38	9	27
0010	1105+03	-	1105+27	CROSS PIPE	4	38	9	27
0010	1129+29	-	1129+65	CROSS PIPE	6	57	13	41
0010	1148+35	-	1148+83	CROSS PIPE	8	75	18	54
0010	1151+74	-	1152+04	CROSS PIPE	6	48	11	34
0010	1198+78	-	1199+55	CROSS PIPE	12	122	28	87
0010	1214+92	-	1215+46	CROSS PIPE	8	86	20	61
0010	1218+96	-	1219+44	CROSS PIPE	8	75	18	54
0010	1240+01	-	1240+37	CROSS PIPE	6	57	13	41
0010	1300+49	-	1300+79	CROSS PIPE	6	48	11	34
0010	1319+42	-	1319+78	CROSS PIPE	6	57	13	41
0010	1328+78	-	1329+14	CROSS PIPE	6	57	13	41
0010	1347+50	-	1347+74	CROSS PIPE	4	38	9	27
0010	1400+04	-	1400+28	CROSS PIPE	4	38	9	27
0010	1426+79	-	1427+09	CROSS PIPE	6	48	11	34
0010	1429+04	-	1429+39	CROSS PIPE	6	56	13	57
0010	1499+78	-	1500+08	CROSS PIPE	6	48	11	34
				TOTAL 0010	209	2,001	468	1,474

SELECT BORROW

CAT	STATION	TO	STATION	LOC	208.1100 SELECT BORROW CY	REMARKS
0010	661+21	-	661+51	LT&RT	50	CONTAMINATED
0010	416+74	-	416+74	ML	74	FOR
0010	426+48	-	427+26	ML	74	CULVERT
0010	440+13	-	440+61	ML	74	BACKFILL
0010	450+75	-	451+17	ML	74	I
0010	519+94	-	520+36	ML	74	v
0010	634+36	-	634+72	ML	74	ESTIMATED
0010	661+36	-	661+36	ML	74	VOLUMES
0010	707+68	-	707+98	ML	74	I
0010	737+30	-	737+60	ML	74	I
0010	794+10	-	794+40	ML	74	I
0010	932+71	-	933+01	ML	74	I
0010	957+10	-	957+28	ML	74	I
0010	983+70	-	983+94	ML	74	V
0010	1019+66	-	1020+50	ML	74	ACTUAL
0010	1040+99	-	1041+41	ML	74	VOLUMES
0010	1057+30	-	1057+66	ML	74	WILL
0010	1080+97	-	1081+21	ML	74	VARY
0010	1105+03	-	1105+27	ML	74	I
0010	1129+29	-	1129+65	ML	74	I
0010	1148+35	-	1148+83	ML	74	I
0010	1151+74	-	1152+04	ML	74	V
0010	1198+78	-	1199+55	ML	74	I
0010	1214+92	-	1215+46	ML	74	I
0010	1218+96	-	1219+44	ML	74	I
0010	1240+01	-	1240+37	ML	74	I
0010	1300+49	-	1300+79	ML	74	I
0010	1319+42	-	1319+78	ML	74	I
0010	1328+78	-	1329+14	ML	74	I
0010	1347+50	-	1347+74	ML	74	I
0010	1400+04	-	1400+28	ML	74	V
0010	1426+79	-	1427+09	ML	74	I
0010	1429+04	-	1429+39	ML	74	I
0010	1499+78	-	1500+08	ML	74	V
			TOTAL 0010		2,492	

BACKFILL CONTROLLED LOW STRENGTH

CAT	STATION	LOC	209.0200.S BACKFILL CONTROLLED LOW STRENGTH CY	REMARKS
0010	854+70	CROSS PIPE	7	
0010	909+24	CROSS PIPE	7	
		TOTAL 0010	14	

WATER

CAT	STATION	TO	STATION	LOC	624.0100 WATER MGAL	REMARKS
0010	416+40	-	1514+90		33	BASE UNDIST.
				TOTAL 0010	33	

RECONSTRUCTING STRUCTURES

CAT	STATION	TO	STATION	LOC	611.0420 RECONSTRUCTING MANHOLES EACH	611.0430 RECONSTRUCTING INLETS EACH	REMARKS
0010	661+36	-	661+36	LT		1	
0010	661+36	-	661+36	RT	1		
				TOTAL 0010	1	1	

CURB AND GUTTER SUMMARY

CAT	STATION	TO	STATION	LOC	601.0411 CONCRETE CURB & GUTTER 30-INCH TYPE D LF	601.0557 CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE D LF	REMARKS
0010	1428+99	-	1429+45	LT		40	HOLMESTEAD RD
0010	661+21	-	661+51	LT	15		CTH I - TONY
				TOTAL 0010	15	40	

NON-METAL PIPE SUMMARY

CAT	STATION	LOC	520.1024 APRON ENDWALLS FOR CULVERT PIPE 24-INCH EACH	520.1030 APRON ENDWALLS FOR CULVERT PIPE 30-INCH EACH	520.1036 APRON ENDWALLS FOR CULVERT PIPE 36-INCH EACH	520.3424 CULVERT PIPE CLASS III-A NON-METAL 24-INCH LF	520.3430 CULVERT PIPE CLASS III-A NON-METAL 30-INCH LF	520.3436 CULVERT PIPE CLASS III-A NON-METAL 36-INCH LF	633.5200 MARKERS CULVERT END EACH *	REMARKS
0010	426+87	CROSS PIPE	2			106			2	
0010	440+37	CROSS PIPE	2			86			2	
0010	1041+20	CROSS PIPE	2			66			2	
0010	1057+48	CROSS PIPE		2			68		2	
0010	1129+47	CROSS PIPE			2			70	2	
0010	1148+59	CROSS PIPE	2			70			2	
0010	1151+89	CROSS PIPE	2			66			2	
0010	1199+14	CROSS PIPE			2			96	2	
0010	1199+19	CROSS PIPE			2			96	2	
0010	1215+19	CROSS PIPE	2			76			2	
0010	1219+20	CROSS PIPE	2			70			2	
0010	1319+60	CROSS PIPE	2			72			2	
0010	1499+93	CROSS PIPE						62	2	
		TOTAL 0010	16	2	6	612	68	324	26	*

* ADDITIONAL MARKERS CULVERT END IN OTHER LOCATIONS

RIPRAP SUMMARY

CAT	STATION	TO	STATION	LOC	606.0300 RIPRAP HEAVY CY	REMARKS
0010	416+40	-	1514+90		5	UNDIST
				TOTAL 0010	5	

CONCRETE PIPE SUMMARY

CAT	STATION	LOC	522.0124 CULVERT PIPE REINFORCED CONCRETE CLASS III 24-INCH LF	522.0130 CULVERT PIPE REINFORCED CONCRETE CLASS III 30-INCH LF	522.0136 CULVERT PIPE REINFORCED CONCRETE CLASS III 36-INCH LF	522.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH EACH	522.1030 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH EACH	522.1036 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 36-INCH EACH	522.2324 CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-III 24X38-INCH LF	522.2624 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 24X38-INCH EACH	633.5200 MARKERS CULVERT END EACH *	REMARKS
0010	416+74	CROSS PIPE	74			2					2	
0010	450+96	CROSS PIPE			70			2			2	
0010	520+15	CROSS PIPE	70			2					2	
0010	634+54	CROSS PIPE	82			2					2	
0010	661+36	CROSS PIPE	58								2	
0010	707+83	CROSS PIPE	66			2					2	
0010	737+45	CROSS PIPE	60			2					2	
0010	794+25	CROSS PIPE	68			2					2	
0010	932+86	CROSS PIPE	68			2					2	
0010	957+19	CROSS PIPE	62			2					2	
0010	983+82	CROSS PIPE	60			2					2	
0010	1020+08	CROSS PIPE	100			2					2	
0010	1081+09	CROSS PIPE		62			2				2	
0010	1105+15	CROSS PIPE	58			2					2	
0010	1240+19	CROSS PIPE			70			2			2	
0010	1300+64	CROSS PIPE	66			2					2	
0010	1328+96	CROSS PIPE	72			2					2	
0010	1347+62	CROSS PIPE	58			2					2	
0010	1400+16	CROSS PIPE	64			2					2	
0010	1426+94	CROSS PIPE		66			2				2	
0010	1429+19	CROSS PIPE							66	2	2	
0010	1429+24	CROSS PIPE							66	2	2	
		TOTAL 0010	1,086	128	140	30	4	4	132	4	44	*

* ADDITIONAL MARKERS CULVERT END IN OTHER LOCATIONS

CONCRETE BARRIER SUMMARY

CAT	STATION	TO	STATION	LOC	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF	REMARKS
0010	1185+50	-	1190+00		500	1,000	C-54-001
0010	1402+50	-	1407+00		500	500	B-54-025
				TOTAL 0010	1,000	1,500	

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GUARDRAIL SUMMARY

CAT	STATION	TO	STATION	LOC	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH	REMARKS
0010	1001+19	-	1002+49	B-54-0026 RT	37.5	39.4	1	
0010	1001+26	-	1002+56	B-54-0026 LT	37.5	39.4	1	
0010	1002+83	-	1004+01	B-54-0026 RT	25.0	39.4	1	
0010	1002+90	-	1004+20	B-54-0026 LT	37.5	39.4	1	
0010	1186+25	-	1187+43	C-54-0001 RT	25.0	39.4	1	
0010	1186+25	-	1187+43	C-54-0001 LT	25.0	39.4	1	
0010	1187+56	-	1188+86	C-54-0001 RT	37.5	39.4	1	
0010	1187+56	-	1188+73	C-54-0001 LT	25.0	39.4	1	
0010	1402+76	-	1403+93	B-54-0025 RT	25.0	39.4	1	
0010	1402+76	-	1403+93	B-54-0025 LT	25.0	39.4	1	
0010	1404+27	-	1405+56	B-54-0025 RT	37.5	39.4	1	
0010	1404+27	-	1404+98	B-54-0025 LT	0.0	39.4	1	
				TOTAL 0010	338	473	12	

MAINTENANCE AND REPAIR OF HAUL ROADS

CAT	STATION	TO	STATION	LOC	618.0100.01 MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) (01. TBD) EACH	REMARKS
0010	416+40	-	1514+90		1	
				TOTAL 0010	1	

EROSION MOBILIZATION SUMMARY

CAT	LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	REMARKS
0010	PROJECT	3	1	
	TOTAL 0010	3	1	

FIELD OFFICE TYPE C

CAT	STATION	TO	STATION	LOC	642.5201 FIELD OFFICE TYPE C EACH	REMARKS
0010	416+40	-	1514+90		1	
				TOTAL 0010	1	

SILT FENCE SUMMARY

CAT	STATION	TO	STATION	LOC	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	REMARKS
0010	416+53	-	416+95	LT & RT	100	100	
0010	426+48	-	427+26	LT & RT	100	100	
0010	440+13	-	440+61	LT & RT	100	100	
0010	450+75	-	451+17	LT & RT	100	100	
0010	519+94	-	520+36	LT & RT	100	100	
0010	634+36	-	634+72	LT & RT	100	100	
0010	661+21	-	661+51	LT & RT	100	100	
0010	707+68	-	707+98	LT & RT	100	100	
0010	737+30	-	737+60	LT & RT	100	100	
0010	794+10	-	794+40	LT & RT	100	100	
0010	854+70	-	854+70	LT & RT	300	300	INCLUDES TEMP.
0010	909+24	-	909+24	LT & RT	300	300	SMALL
0010	932+71	-	933+01	LT & RT	400	400	ANIMAL
0010	957+10	-	957+28	LT & RT	400	400	TURN AROUND
0010	983+70	-	983+94	LT & RT	100	100	
0010	1019+66	-	1020+50	LT & RT	100	100	
0010	1040+99	-	1041+41	LT & RT	100	100	
0010	1057+30	-	1057+66	LT & RT	100	100	
0010	1080+97	-	1081+21	LT & RT	100	100	
0010	1105+03	-	1105+27	LT & RT	100	100	
0010	1129+29	-	1129+65	LT & RT	100	100	
0010	1148+35	-	1148+83	LT & RT	100	100	
0010	1151+74	-	1152+04	LT & RT	100	100	
0010	1198+78	-	1199+55	LT & RT	100	100	
0010	1214+92	-	1215+46	LT & RT	100	100	
0010	1218+96	-	1219+44	LT & RT	100	100	
0010	1240+01	-	1240+37	LT & RT	100	100	
0010	1300+49	-	1300+79	LT & RT	100	100	
0010	1319+42	-	1319+78	LT & RT	100	100	
0010	1328+78	-	1329+14	LT & RT	100	100	
0010	1347+50	-	1347+74	LT & RT	100	100	
0010	1400+04	-	1400+28	LT & RT	100	100	
0010	1426+79	-	1427+09	LT & RT	100	100	
0010	1429+04	-	1429+39	LT & RT	100	100	
0010	1499+78	-	1500+08	LT & RT	100	100	
				TOTAL 0010	4,500	4,500	

TRAFFIC CONTROL

CAT	STATION	TO	STATION	643.5000 TRAFFIC CONTROL EACH	REMARKS
0010	416+40	-	1514+90	1	1580-04-74
			TOTAL 0010	1	

GARDENING SUMMARY

CAT	STATION	TO	STATION	LOC	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	628.2023 EROSION MAT CLASS II TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0110 SEEDING MIXTURE NO. 10 LB	630.0200 SEEDING TEMPORARY LB	630.0500 SEED WATER MGAL	REMARKS
0010	416+53	-	416+95	LT & RT	55	6	55	0.100	1.5	1.5	0.2	
0010	426+48	-	427+26	LT & RT	55	6	55	0.100	1.5	1.5	0.2	
0010	440+13	-	440+61	LT & RT	71	8	71	0.100	2.0	2.0	0.2	
0010	450+75	-	451+17	LT & RT	71	8	71	0.100	2.0	2.0	0.2	
0010	519+94	-	520+36	LT & RT	55	6	55	0.100	1.5	1.5	0.2	
0010	634+36	-	634+72	LT & RT	45	5	45	0.100	1.3	1.3	0.2	
0010	661+21	-	661+51	LT & RT	45	5	45	0.100	1.3	1.3	0.2	INLETS
0010	707+68	-	707+98	LT & RT	55	6	55	0.100	1.5	1.5	0.2	
0010	737+30	-	737+60	LT & RT	45	5	45	0.100	1.3	1.3	0.2	
0010	794+10	-	794+40	LT & RT	62	7	62	0.100	1.7	1.7	0.2	
0010	932+71	-	933+01	LT & RT	71	8	71	0.100	2.0	2.0	0.2	
0010	957+10	-	957+28	LT & RT	39	4	39	0.100	1.1	1.1	0.2	
0010	983+70	-	983+94	LT & RT	39	4	39	0.100	1.1	1.1	0.2	
0010	1019+66	-	1020+50	LT & RT	45	5	45	0.100	1.3	1.3	0.2	
0010	1040+99	-	1041+41	LT & RT	45	5	45	0.100	1.3	1.3	0.2	
0010	1057+30	-	1057+66	LT & RT	39	4	39	0.100	1.1	1.1	0.2	
0010	1080+97	-	1081+21	LT & RT	39	4	39	0.100	1.1	1.1	0.2	
0010	1105+03	-	1105+27	LT & RT	39	4	39	0.100	1.1	1.1	0.2	
0010	1129+29	-	1129+65	LT & RT	45	5	45	0.100	1.3	1.3	0.2	
0010	1148+35	-	1148+83	LT & RT	39	4	39	0.100	1.1	1.1	0.2	
0010	1151+74	-	1152+04	LT & RT	39	4	39	0.100	1.1	1.1	0.2	
0010	1198+78	-	1199+55	LT & RT	71	8	71	0.100	2.0	2.0	0.2	
0010	1214+92	-	1215+46	LT & RT	71	8	71	0.100	2.0	2.0	0.2	
0010	1218+96	-	1219+44	LT & RT	39	4	39	0.100	1.1	1.1	0.2	
0010	1240+01	-	1240+37	LT & RT	39	4	39	0.100	1.1	1.1	0.2	
0010	1300+49	-	1300+79	LT & RT	39	4	39	0.100	1.1	1.1	0.2	
0010	1319+42	-	1319+78	LT & RT	39	4	39	0.100	1.1	1.1	0.2	
0010	1328+78	-	1329+14	LT & RT	45	5	45	0.100	1.3	1.3	0.2	
0010	1347+50	-	1347+74	LT & RT	45	5	45	0.100	1.3	1.3	0.2	
0010	1400+04	-	1400+28	LT & RT	39	4	39	0.100	1.1	1.1	0.2	
0010	1426+79	-	1427+09	LT & RT	55	6	55	0.100	1.5	1.5	0.2	
0010	1429+04	-	1429+39	LT & RT	55	6	55	0.100	1.5	1.5	0.2	
0010	1499+78	-	1500+08	LT & RT	55	6	55	0.100	1.5	1.5	0.2	
0010	416+53		1514+90	LT & RT	100	10	100	0.100	2.7	2.7	0.3	UNDIST
				TOTAL 0010	1,730	187	1,730	3.4	49	49	21	

NOTE: AREA OF DISTURANCE BASED ON ESTIMATED PIPE DEPTH

EROSION BALES

CAT	STATION	TO	STATION	LOC	628.1104 EROSION BALES EACH	REMARKS
0010	416+40	-	1514+90		20	SEDIMENT
				TOTAL 0010	20	

TRAFFIC CONTROL SUMMARY

CATEGORY	STATION	TO	STATION	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	643.0900 TRAFFIC CONTROL SIGNS DAY	646.9000 MARKING REMOVAL LINE 4-INCH LF	649.0150 TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH LF	649.0850 TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH LF	REMARKS
0010	416+40	-	1514+90	BEGIN/END					900				
0010	416+40	-	1514+90	MID PROJECT					1,800				
0010	416+40	-	1514+90	SIDEROADS					4,500				
0010	416+40	-	1514+90	SITE	2,700								
0010	416+40		1514+90	ANY		40	80	40					
0010	1187+49				600	30	60	300	690	400	1000	30	C-54-001
0010	1404+10				300	15	30	150	345	400	500	15	B-54-025
				TOTAL 0010	3,600	85	170	490	8,235	800	1,500	45	

FABRIC SUMMARY

CAT	STATION	TO	STATION	LOC	645.0111 GEOTEXTILE TYPE DF SCHEDULE A SY	645.0120 GEOTEXTILE TYPE HR SY	REMARKS
0010	416+40	-	1514+90		20	9	UNDIST
				TOTAL 0010	20	9	

FIELD OFFICE TYPE C

CAT	STATION	TO	STATION	LOC	642.5201 FIELD OFFICE TYPE C EACH	REMARKS
0010	416+40	-	1514+90		1	
				TOTAL 0010	1	

TEMPORARY SIGNAL SUMMARY

CAT	STATION	LOC	661.0101.01 TEMPORARY TRAFFIC SIGNALS FOR BRIDGES (01. C-54-0001) EACH	661.0101.02 TEMPORARY TRAFFIC SIGNALS FOR BRIDGES (02. B-54-0025) EACH	REMARKS
0010	1187+49		1		
0010	1404+10			1	
		TOTAL 0010	1	1	

MARKING LINE SUMMARY

CAT	STATION	TO	STATION	646.1005 MARKING LINE PAINT 4-INCH YELLOW CTR LF	646.1005 MARKING LINE PAINT 4-INCH WHITE EDGE LF	646.3005 MARKING LINE PAINT 8-INCH TURN LANE LF	REMARKS
0010	416+48	-	417+00	65	104		
0010	426+50	-	427+22	25	144	149	
0010	440+09	-	440+65	112	112	16	
0010	450+68	-	451+24	112	112		
0010	519+89	-	520+40	102	102		
0010	634+31	-	634+77	25	92		
0010	661+18	-	661+55	74	74	217	
0010	707+61	-	708+05	55	88		
0010	737+22	-	737+68	25	92		
0010	794+03	-	794+47	25	88		
0010	932+62	-	933+10	25	96		
0010	957+00	-	957+39	25	78		
0010	983+61	-	984+03	53	84		
0010	1019+65	-	1020+51	25	172		
0010	1040+92	-	1041+48	70	112		
0010	1057+20	-	1057+76	70	112		
0010	1080+86	-	1081+32	58	92		
0010	1104+96	-	1105+35	49	78		
0010	1129+19	-	1129+75	70	112		
0010	1148+28	-	1148+90	78	124		
0010	1151+64	-	1152+13	62	98		
0010	1198+71	-	1199+62	114	182		
0010	1214+88	-	1215+50	78	124		
0010	1218+89	-	1219+51	78	124		
0010	1239+92	-	1240+46	68	108		
0010	1300+41	-	1300+87	25	92		
0010	1319+32	-	1319+88	25	112		
0010	1328+72	-	1329+20	25	96		
0010	1347+41	-	1347+83	25	84		
0010	1399+99	-	1400+33	25	68		
0010	1426+71	-	1427+17	25	92		
0010	1428+99	-	1429+45	92	92		
0010	1499+65	-	1500+21	25	112		
			TOTAL 0010	1,810	3,452	382	
			TOTAL 4-INCH 0010	5262			

CONSTRUCTION STAKING SUMMARY

CAT	STATION	TO	STATION	LOCATION	650.4000 CONSTRUCTION STAKING STORM SEWER EACH	650.5500 CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER LF	650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH	650.6501.01 CONSTRUCTION STAKING STRUCTURE LAYOUT (01. C-54-0001) EACH	650.6501.02 CONSTRUCTION STAKING STRUCTURE LAYOUT (02. B-54-0025) EACH	650.9911.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (1580-04-74) EACH	REMARKS
0010	416+40	-	1514+91	PROJECT			35	1	1	1	1
0010	661+36	-	661+36	CROSS PIPE	2						
0010	1429+00	-	1429+40	LT		40					
				TOTAL 0010	2	40	35	1	1	1	

SAWING SUMMARY

CAT	STATION	TO	STATION	LOC	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF	REMARKS
0010	416+74	-	416+74	ML	60	40	
0010	426+48	-	427+26	ML	60	40	
0010	440+13	-	440+61	ML	60	40	
0010	450+75	-	451+17	ML	60	40	
0010	519+94	-	520+36	ML	60	40	
0010	634+36	-	634+72	ML	60	40	
0010	661+36	-	661+36	ML	60	40	
0010	707+68	-	707+98	ML	60	40	
0010	737+30	-	737+60	ML	60	40	
0010	794+10	-	794+40	ML	60	40	
0010	932+71	-	933+01	ML	60	40	
0010	957+10	-	957+28	ML	60	40	
0010	983+70	-	983+94	ML	60	40	
0010	1019+66	-	1020+50	ML	60	40	
0010	1040+99	-	1041+41	ML	60	40	
0010	1057+30	-	1057+66	ML	60	40	
0010	1080+97	-	1081+21	ML	60	40	
0010	1105+03	-	1105+27	ML	60	40	
0010	1129+29	-	1129+65	ML	60	40	
0010	1148+35	-	1148+83	ML	60	40	
0010	1151+74	-	1152+04	ML	60	40	
0010	1198+78	-	1199+55	ML	60	40	
0010	1214+92	-	1215+46	ML	60	40	
0010	1218+96	-	1219+44	ML	60	40	
0010	1240+01	-	1240+37	ML	60	40	
0010	1300+49	-	1300+79	ML	60	40	
0010	1319+42	-	1319+78	ML	60	40	
0010	1328+78	-	1329+14	ML	60	40	
0010	1347+50	-	1347+74	ML	60	40	
0010	1400+04	-	1400+28	ML	60	40	
0010	1426+79	-	1427+09	ML	60	40	
0010	1429+04	-	1429+39	ML	60	40	
0010	1499+78	-	1500+08	ML	60	40	
				TOTAL 0010	1,980	1,320	

INCENTIVE STRENGTH CONCRETE STRUCTURES

CAT	STATION	LOC	715.0502 INCENTIVE STRENGTH CONCRETE STRUCTURES DOL	REMARKS
0010	PROJECT		210	
		TOTAL 0010	210	

CONCRETE CURB AND GUTTER CURE AND SEAL TREATMENT

CAT	STATION	TO	STATION	LOC	SPV.0090. SPECIAL (01. CONCRETE CURB AND GUTTER CURE AND SEAL TREATMENT) LF	REMARKS
0010	1428+99	-	1429+45	LT	40	
				TOTAL 0010	40	

DITCH CLEANING

CAT	STATION	TO	STATION	LOC	SPV.0090.01 SPECIAL (01. DITCH CLEANING) LF	REMARKS
0010	909+24	-	912+00	LT	276	
				TOTAL 0010	276	

SPECIAL (01. EXCAVATION, SEGREGATION, HAULING, AND DISPOSAL OF CONTAMINATED SOIL, ITEM SPV.0035.01

CATEGORY	STATION	TO	STATION	LOCATION	SPV.0035.01 SPECIAL (01. EXCAVATION, SEGREGATION, HAULING, AND DISPOSAL OF CONTAMINATED SOIL, ITEM SPV.0035.01) CY	REMARKS
0010	661+00	-	661+75	LT&RT	50	
				TOTAL 0010	50	

ASP PROVISIONS

CAT	STATION	TO	STATION	LOC	ASP.1T0A ON-THE-JOB TRAINING APPRENTICE AT $5.00/HR HRS	ASP.1T0G ON-THE-JOB TRAINING GRADUATE AT $5.00/HR HRS	REMARKS
0010	416+40	-	1514+90		300	300	
				TOTAL 0010	300	300	

TRANSPORTATION PROJECT PLAT NO: 1580-04-24 - 4.02 - AMENDMENT NO. 1

AMENDS PARCEL 1 AND ADDS PARCEL 2 OF TRANSPORTATION PROJECT PLAT 1580-04-24 - 4.02, RECORDED AS DOCUMENT NO. 360792

THAT PART OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 26, TOWN 35 NORTH RANGE 5 WEST, IN THE TOWN OF DEWEY, THAT PART OF THE SOUTHEAST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 20, TOWN 35 NORTH RANGE 4 WEST, IN THE VILLAGE OF GLEN FLORA, ALL IN RUSK COUNTY WISCONSIN.

RELOCATION ORDER USH 8 LADYSMITH - PRENTICE, E 16TH ST N/OLD 8 RD TO PRICE CO LN, RUSK COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.09, AND 84.30, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:
1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), RUSK COUNTY, NAD83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

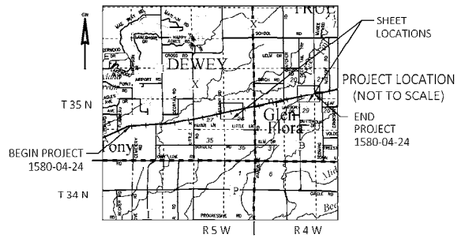
EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE:

EXISTING HIGHWAY RIGHT-OF-WAY FOR USH 8 ESTABLISHED FROM DIVISION JOBS 8610, 8713, AND 8372.

FOR THE LATEST ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN SPOONER.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4" X 24" IRON REBARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

REFER TO TITLE SHEET, RECORDED AS SHEET 2 OF 2 OF DOCUMENT NO. 360174 FOR ADDITIONAL INFORMATION.



SCHEDULE OF LANDS & INTERESTS REQUIRED

PARCEL NUMBER	OWNER (S)	INTEREST REQUIRED	HE R/W SF, REQUIRED		
			NEW	EXISTING	TOTAL
1	WISCONSIN CENTRAL LTD	HE	76	---	76
2	FOX VALLEY AND LAKE SUPERIOR RAIL	HE	118	---	118

NOTE: OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE WISCONSIN DEPARTMENT OF TRANSPORTATION

364396
MARY BERG
REGISTER OF DEEDS
RUSK COUNTY, WI
RECORDED ON
06/22/2022 10:58 AM
CABINET:1 ENV:19A

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER: 1580-04-24 - 4.02
AMENDMENT NO. 1

COURSE TABLE LEFT DETAIL		
COURSE	BEARING	DISTANCE
300-301	N11° 39' 20"W	37.39'
301-302	N11° 39' 20"W	62.61'
302-303	N78° 21' 18"E	100.00'
303-304	S11° 39' 20"E	62.59'
304-305	S11° 39' 20"E	37.41'
305-306	S78° 21' 18"W	50.00'
306-307	S11° 38' 42"E	7.60'
307-308	S78° 21' 18"W	10.00'
308-309	N11° 38' 42"W	7.60'
309-300	S78° 21' 18"W	40.00'

STATION & OFFSET TABLE LEFT DETAIL				
POINT	STATION	OFFSET	NORTHING	EASTING
300	737+00.00	37.39' RT	571115.198	848629.204
301	737+00.00	0.00'	571151.816	848621.650
302	737+00.00	62.61' LT	571213.136	848609.001
303	738+00.00	62.59' LT	571233.320	848706.943
304	738+00.00	0.00'	571172.018	848719.588
305	738+00.00	37.41' RT	571135.382	848727.146
306	737+50.00	37.40' RT	571125.290	848678.176
307	737+50.00	45.00' RT	571117.845	848679.711
308	737+40.00	45.00' RT	571115.825	848669.917
309	737+40.00	37.40' RT	571123.272	848668.382

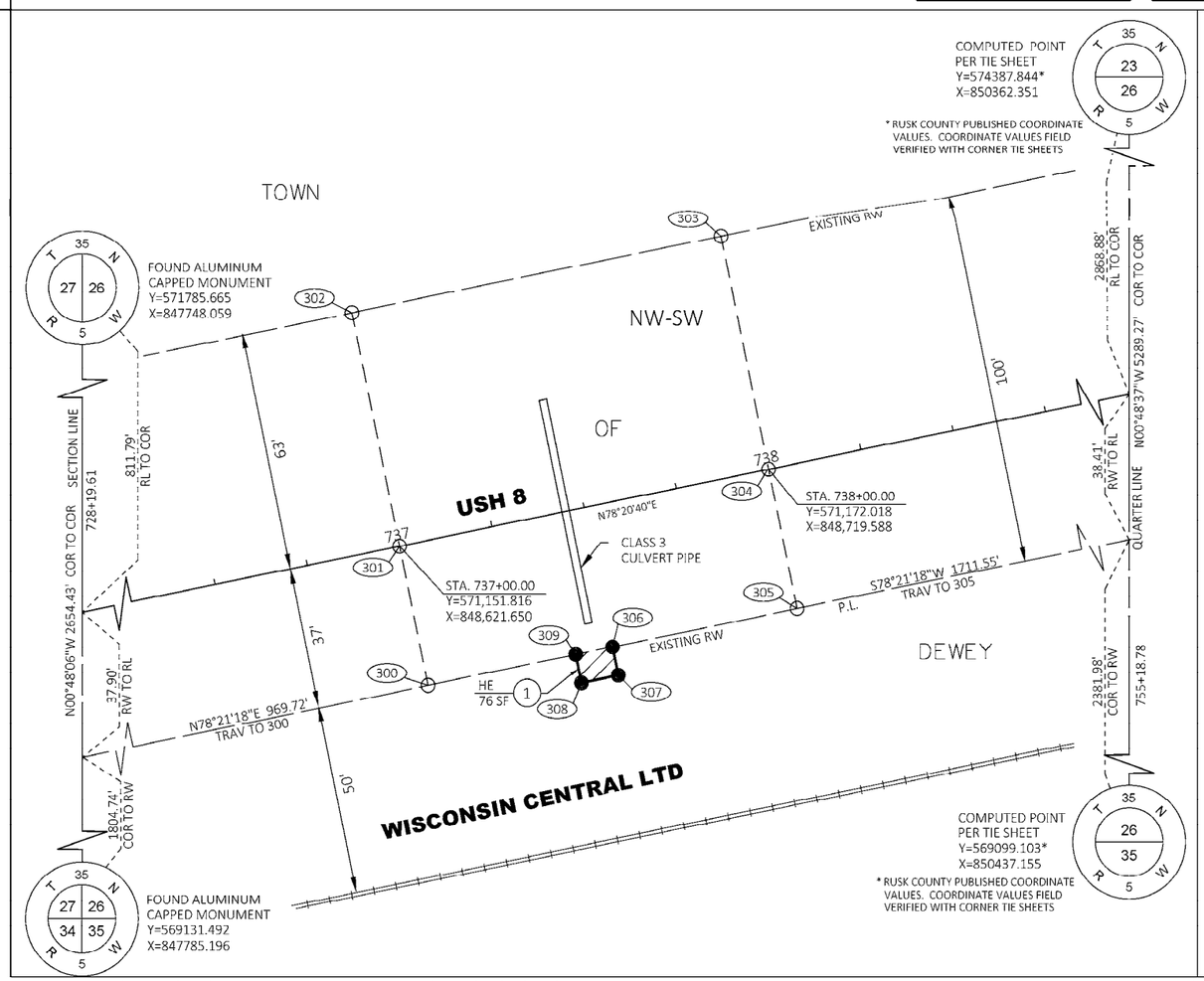
COURSE TABLE RIGHT DETAIL		
COURSE	BEARING	DISTANCE
400-401	N11° 41' 21"W	33.24'
401-402	N11° 41' 21"W	66.76'
402-403	N78° 19' 16"E	100.00'
403-404	S11° 41' 21"E	66.74'
404-405	S11° 41' 21"E	33.26'
405-406	S78° 19' 16"W	60.00'
406-407	S11° 40' 44"E	11.75'
407-408	S78° 19' 16"W	10.00'
408-409	N11° 40' 44"W	11.75'
409-400	S78° 19' 16"W	30.00'

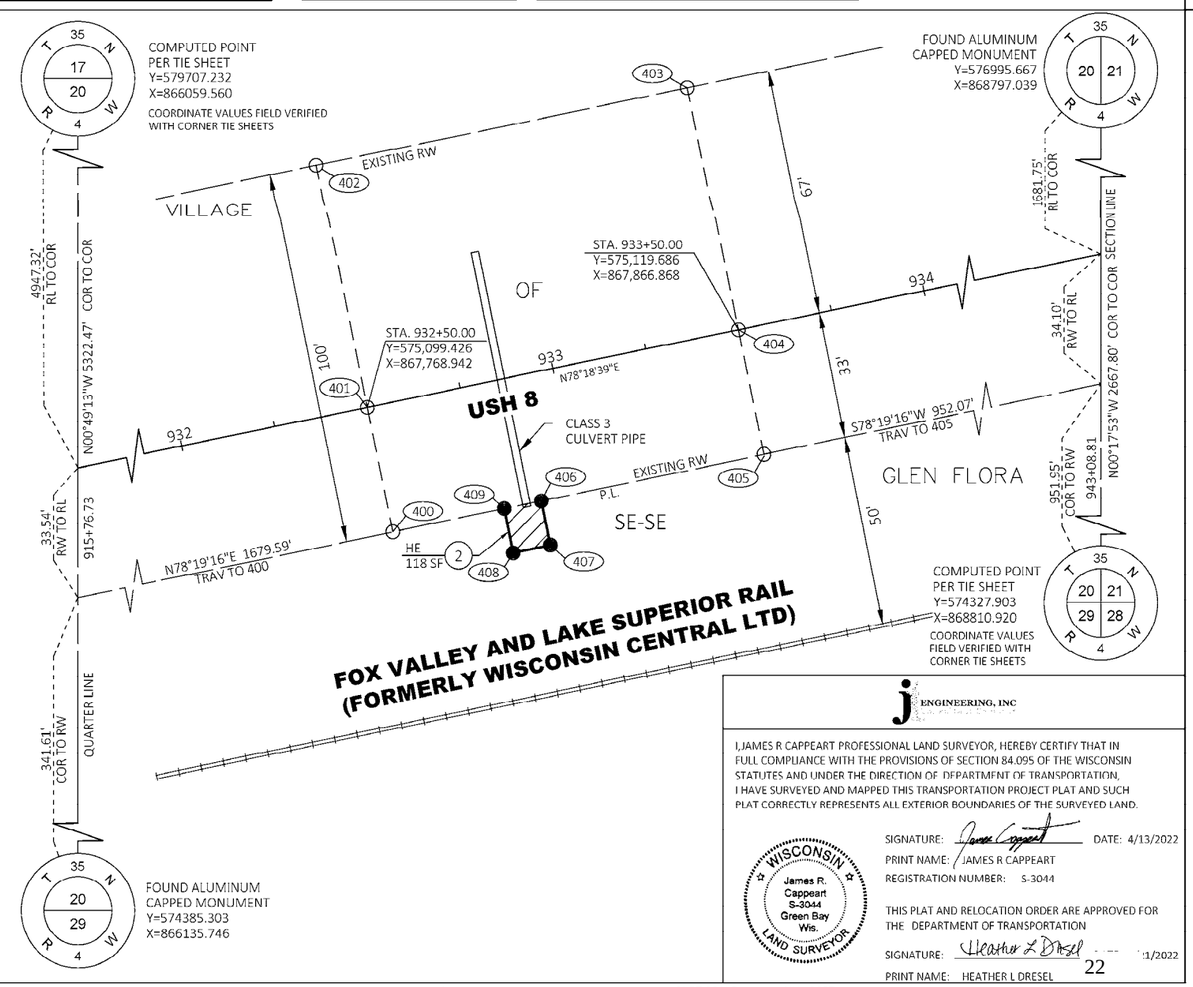
STATION & OFFSET TABLE RIGHT DETAIL				
POINT	STATION	OFFSET	NORTHING	EASTING
400	932+50.00	33.24' RT	575066.872	867775.677
401	932+50.00	0.00'	575099.426	867768.942
402	932+50.00	66.76' LT	575164.798	867755.417
403	933+50.00	66.76' LT	575185.058	867853.343
404	933+50.00	0.00'	575119.686	867866.868
405	933+50.00	33.26' RT	575087.115	867873.607
406	932+90.00	33.25' RT	575074.969	867814.851
407	932+90.00	45.00' RT	575063.461	867817.230
408	932+80.00	45.00' RT	575061.439	867807.437
409	932+80.00	33.25' RT	575072.945	867805.058

GN

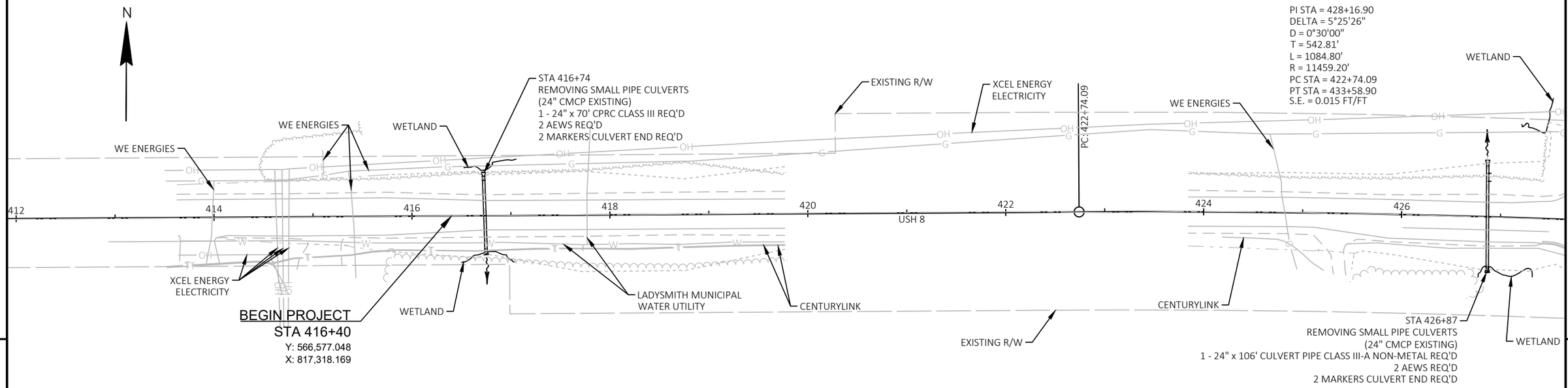
SCALE, FEET
0 20 40

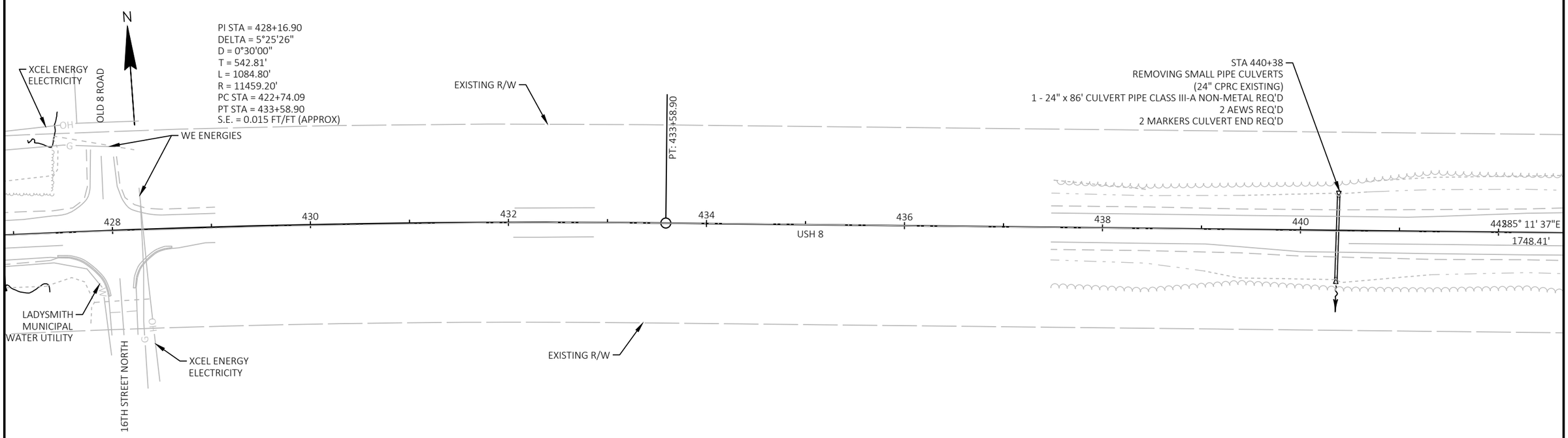
4



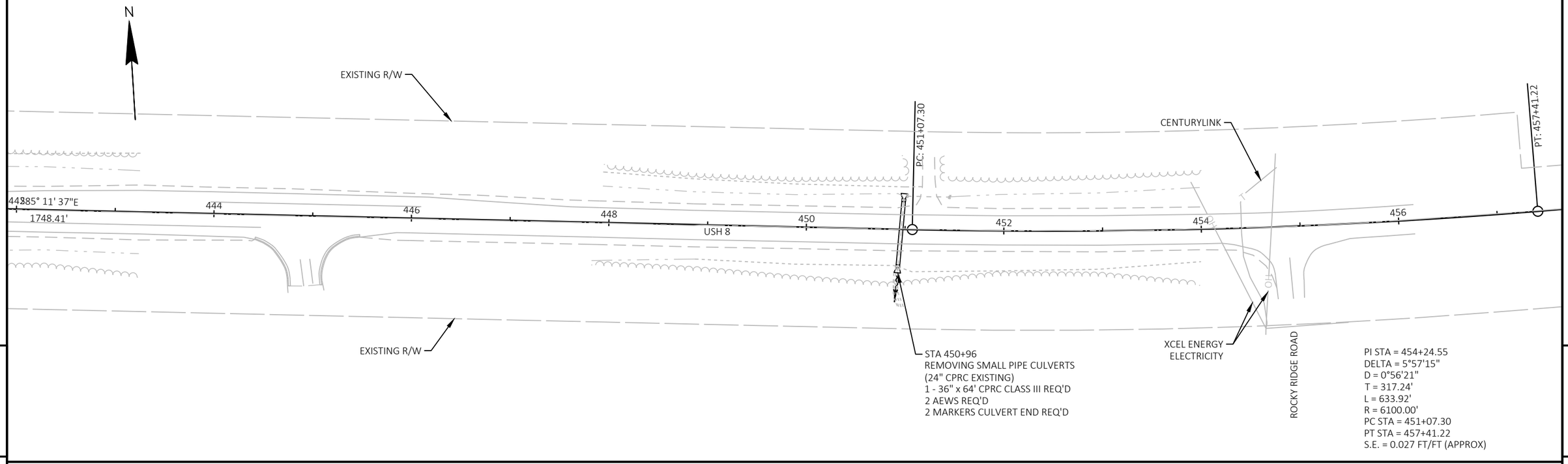


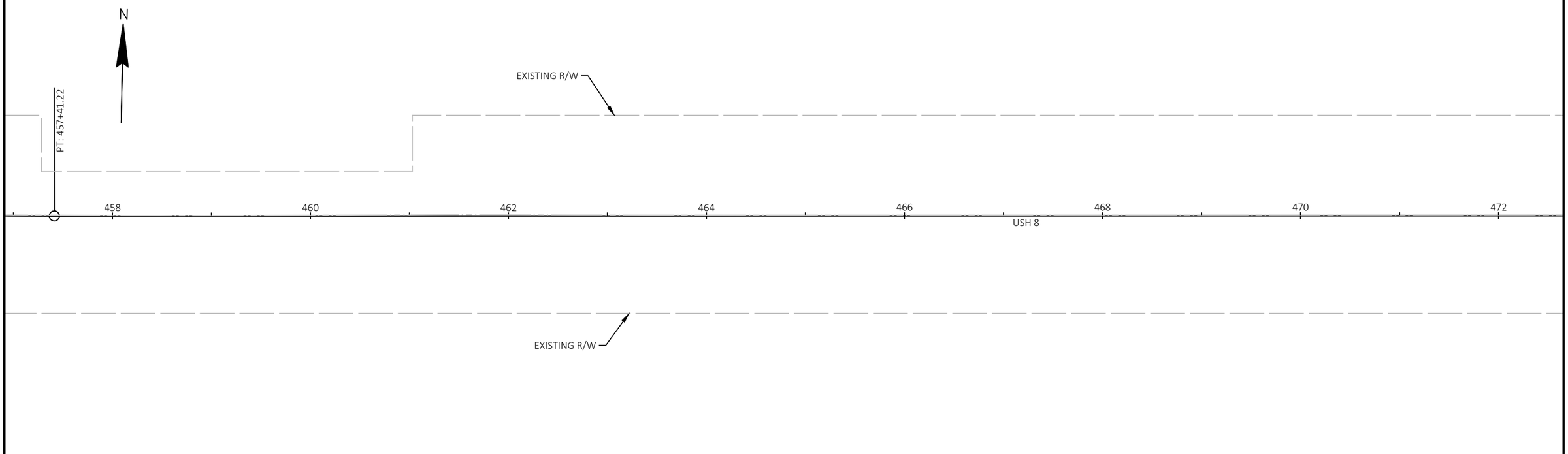
ENGINEERING, INC





PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 23	E



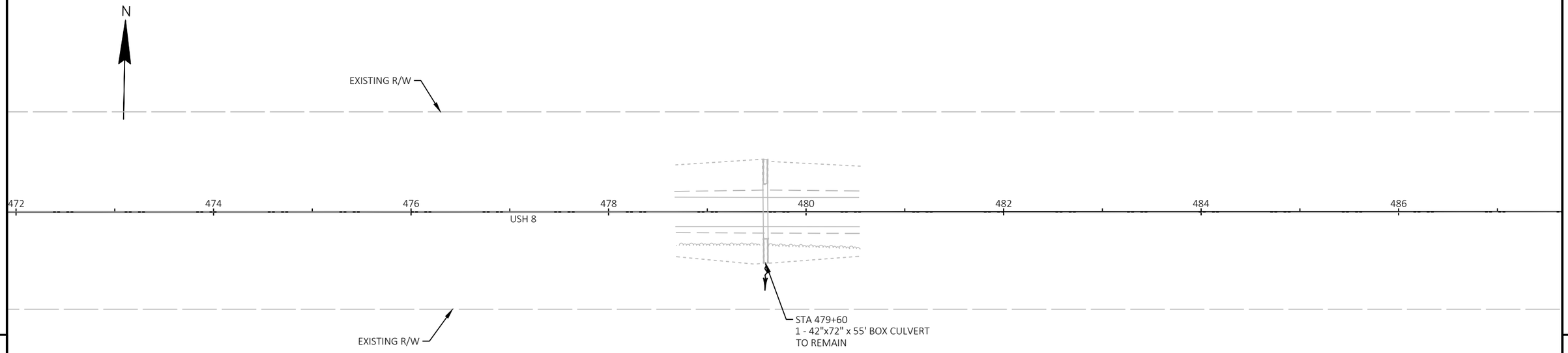


PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 24	E

FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 2

PLOT DATE : 10/25/2022 7:22 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44



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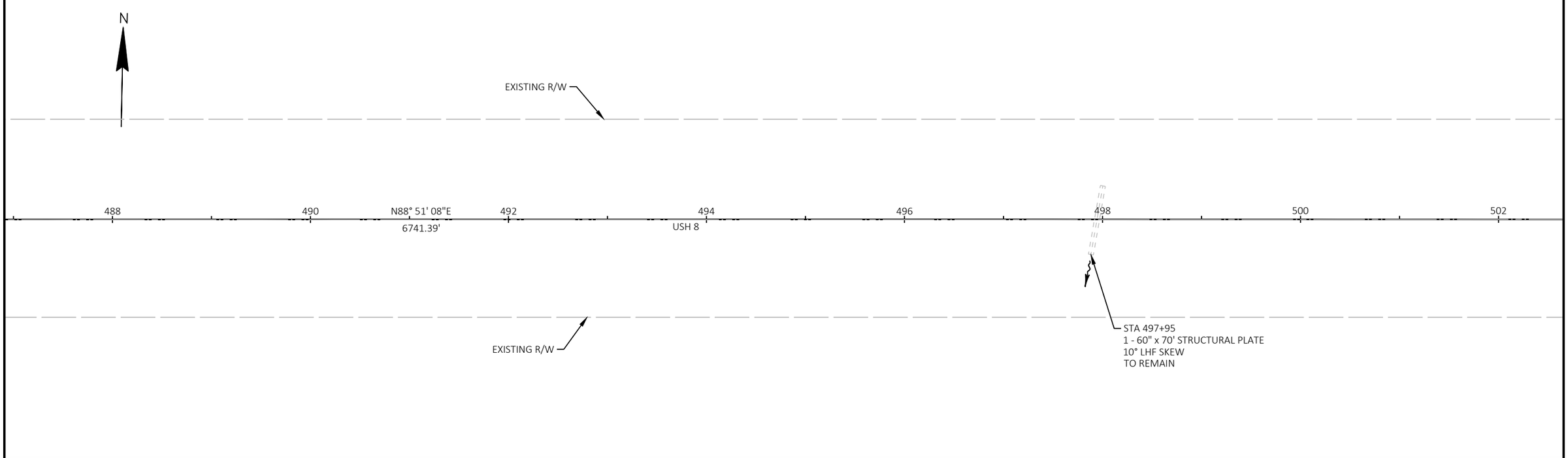
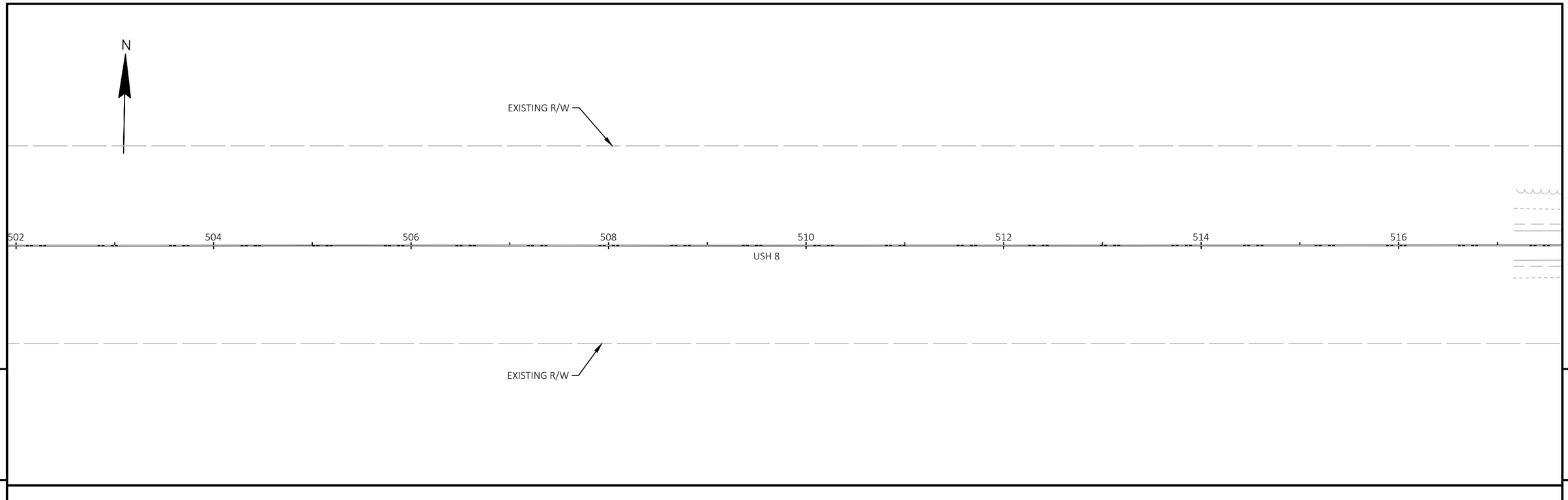


PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 25	E

FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 3
PLOT DATE : 10/25/2022 7:22 AM
PLOT BY : PEARSON, MICHAEL R
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44



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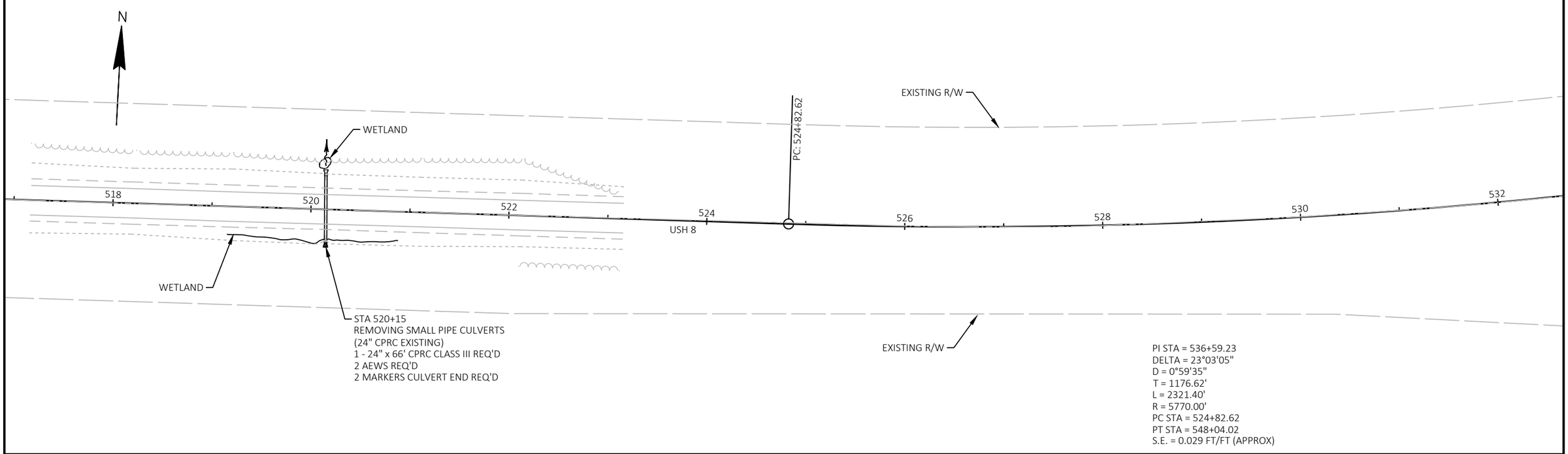
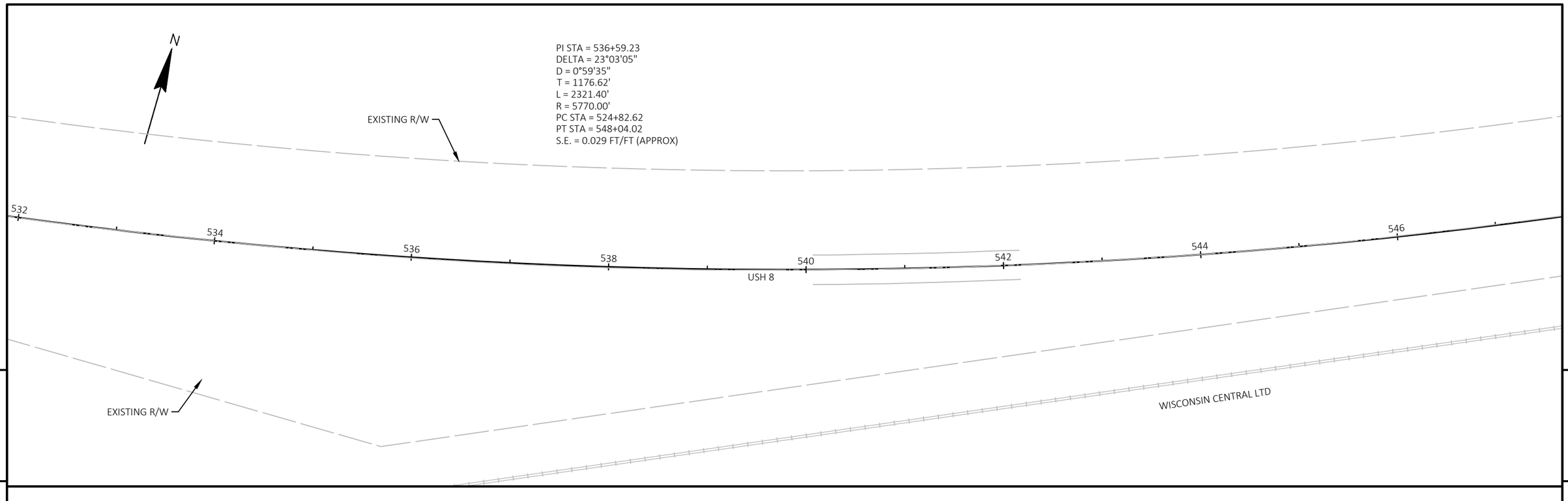


PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 26	E

FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 4

PLOT DATE : 10/25/2022 7:23 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT



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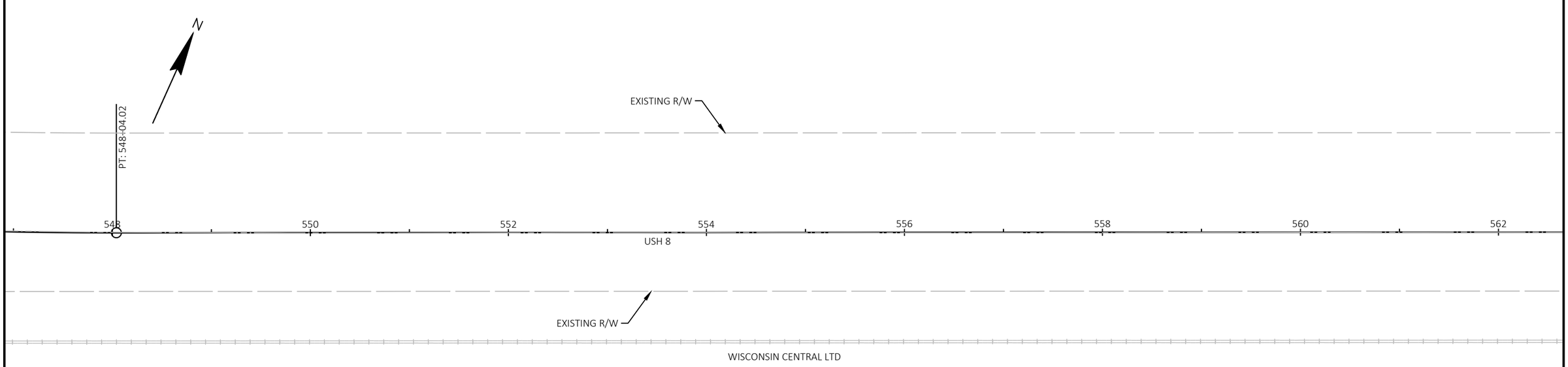
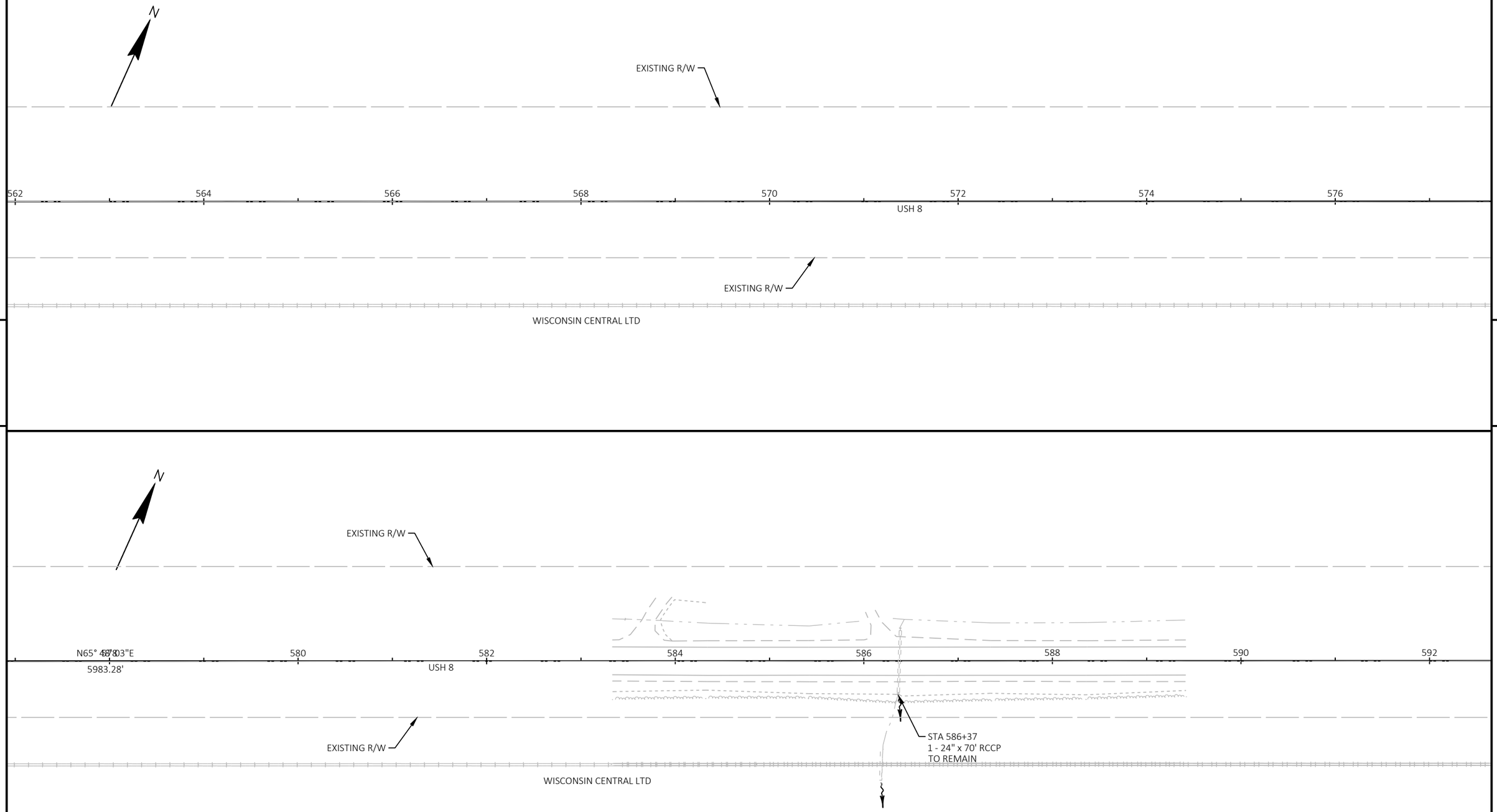


PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 27	E

FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 5

PLOT DATE : 10/25/2022 7:23 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT



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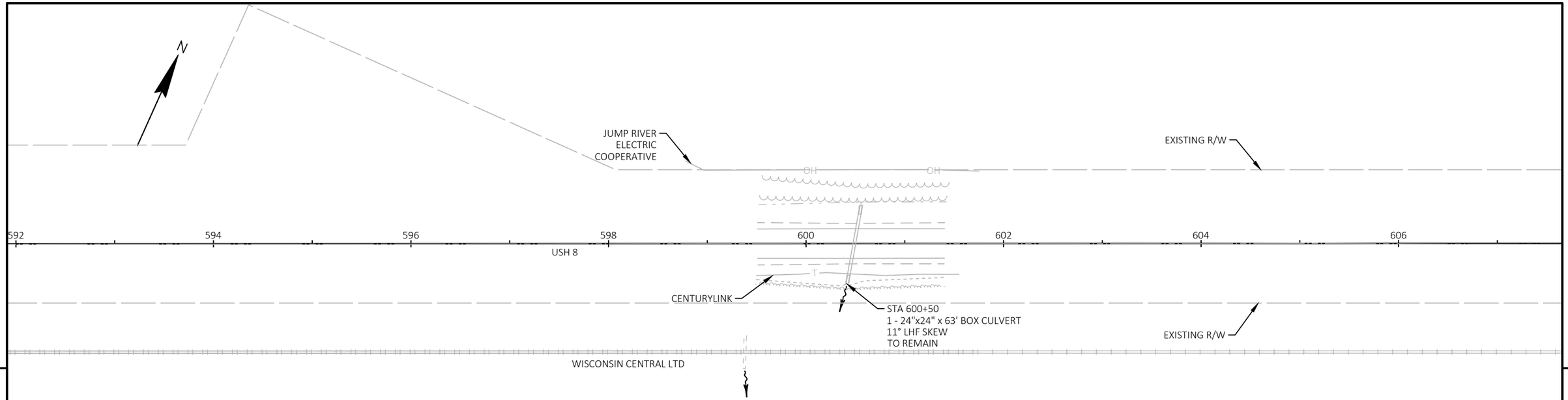
PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 28	E

FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 6

PLOT DATE : 10/25/2022 7:23 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT



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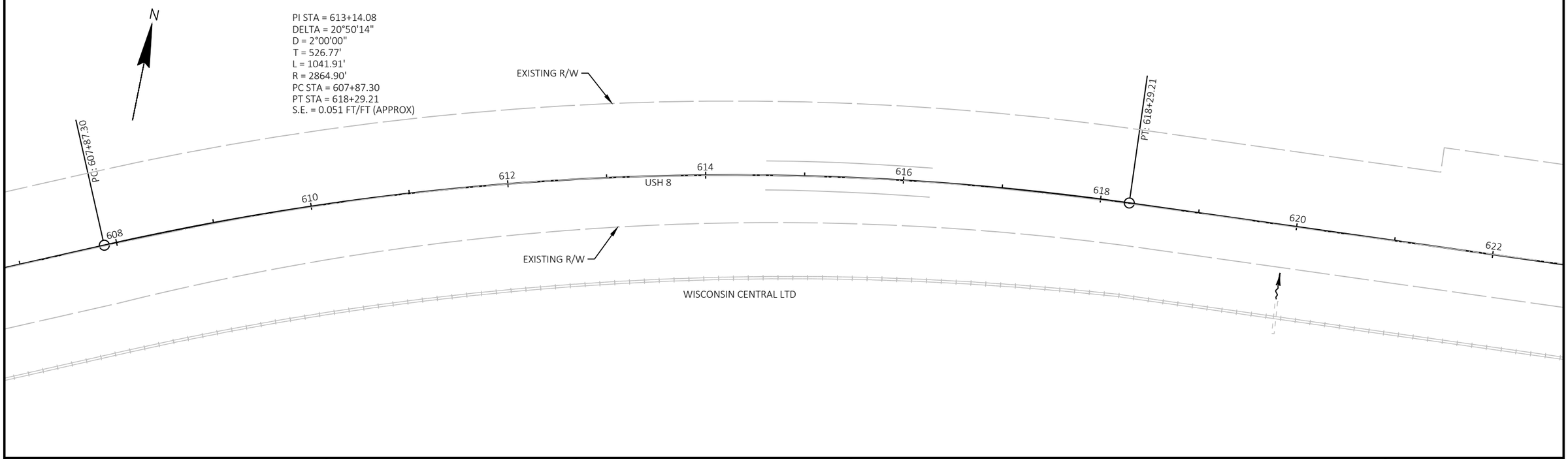
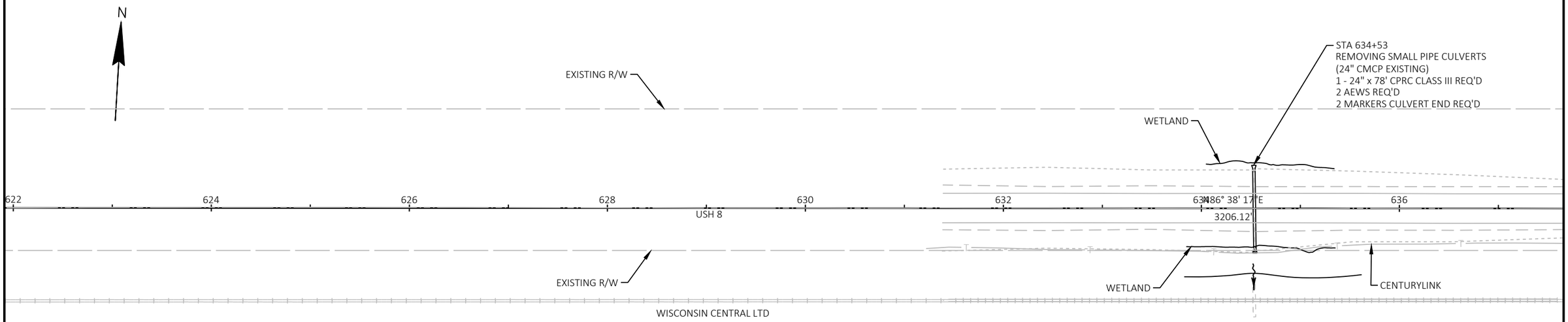


PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 29	E

FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 7

PLOT DATE : 10/25/2022 7:24 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT



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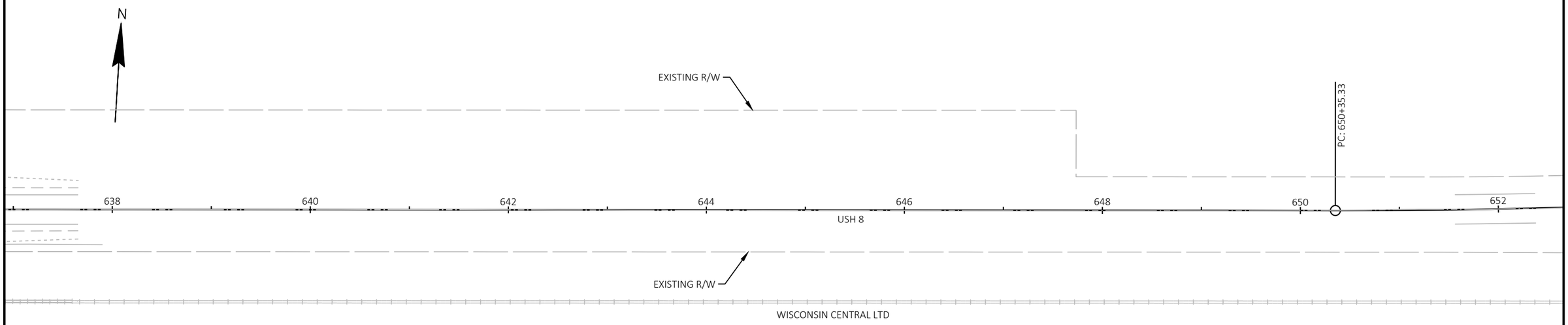
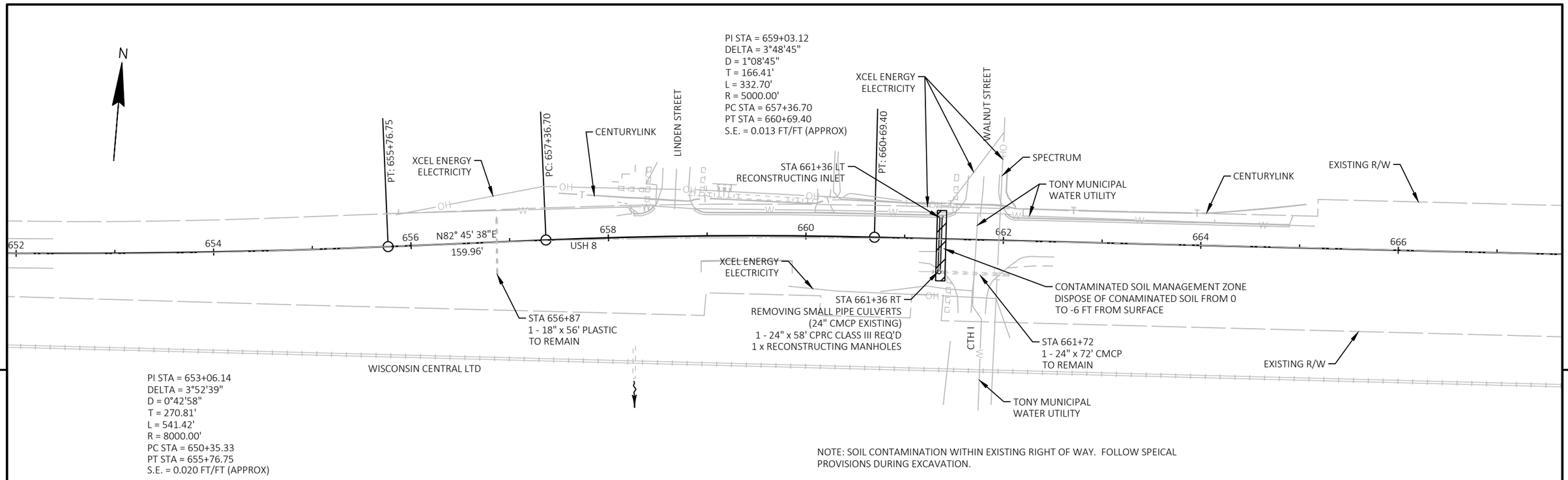
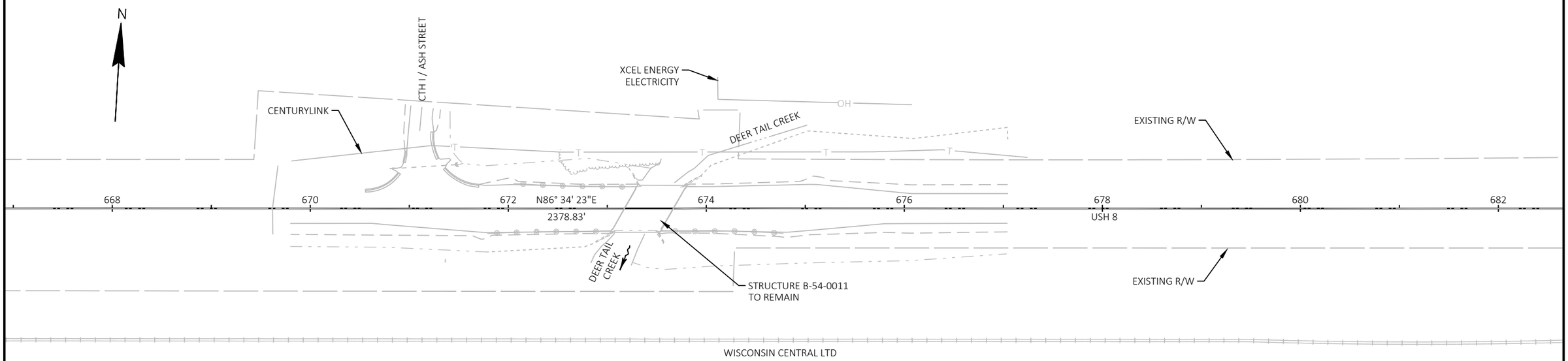


PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 30	E

FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 8

PLOT DATE : 10/25/2022 7:24 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT



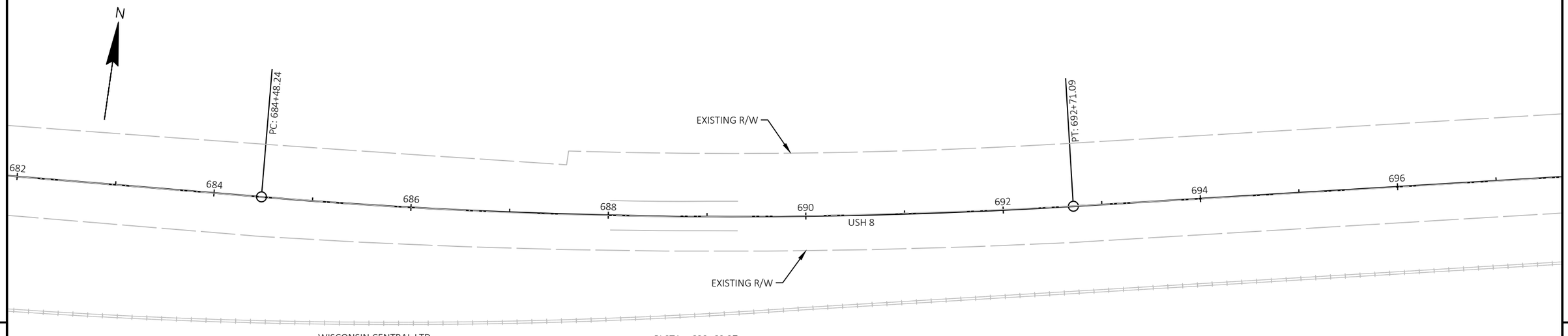


PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 31	E

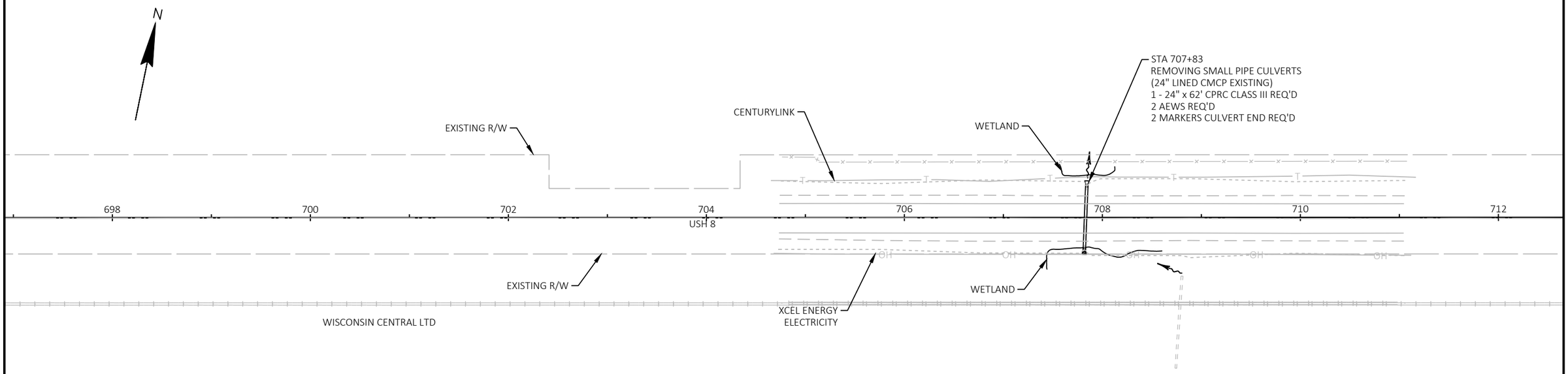
FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 9

PLOT DATE : 10/25/2022 7:24 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44



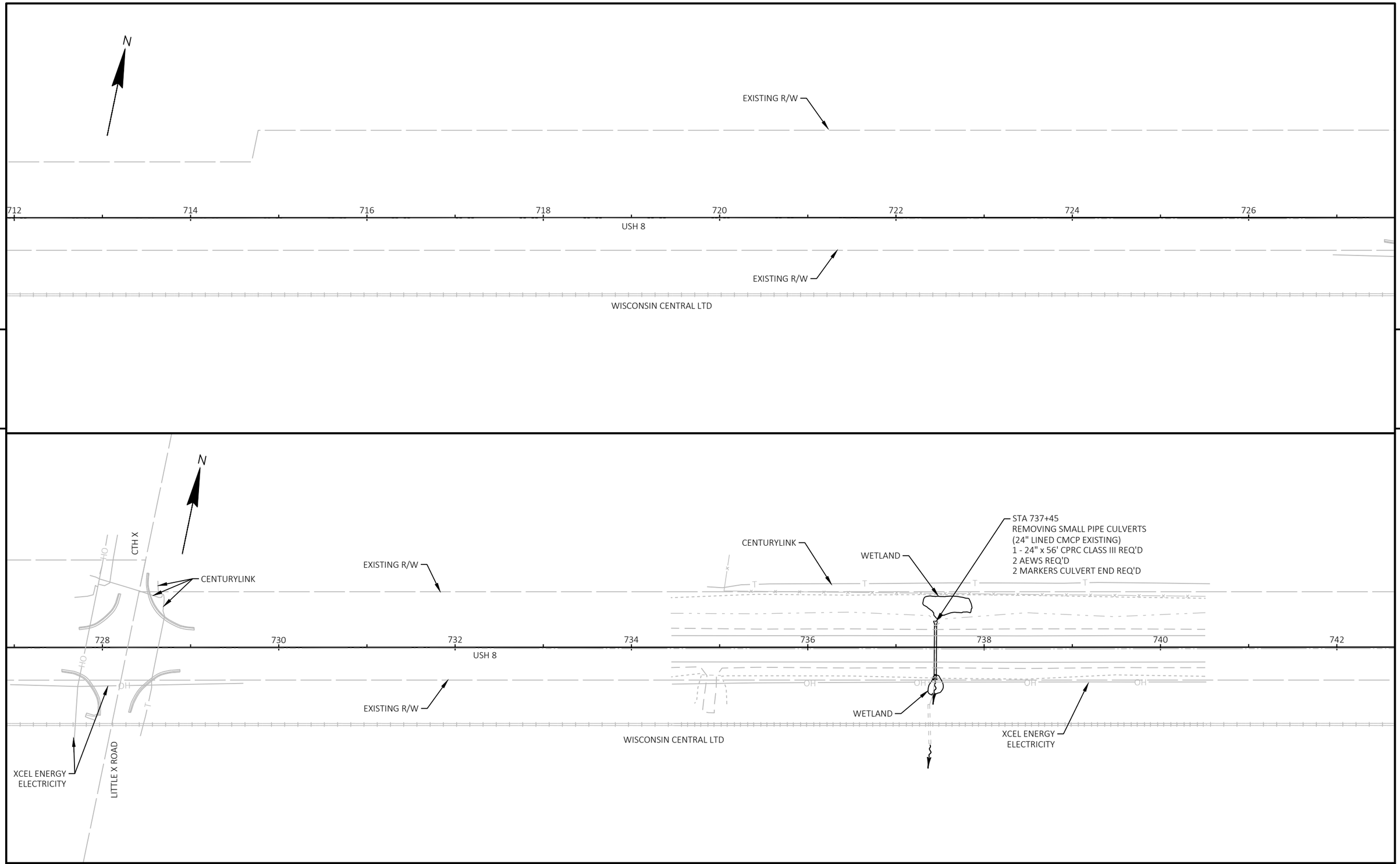
PI STA = 688+60.37
DELTA = 8°13'43"
D = 1°00'00"
T = 412.14'
L = 822.85'
R = 5729.60'
PC STA = 684+48.24
PT STA = 692+71.09
S.E. = 0.030 FT/FT (APPROX)



PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 32	E

FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 10

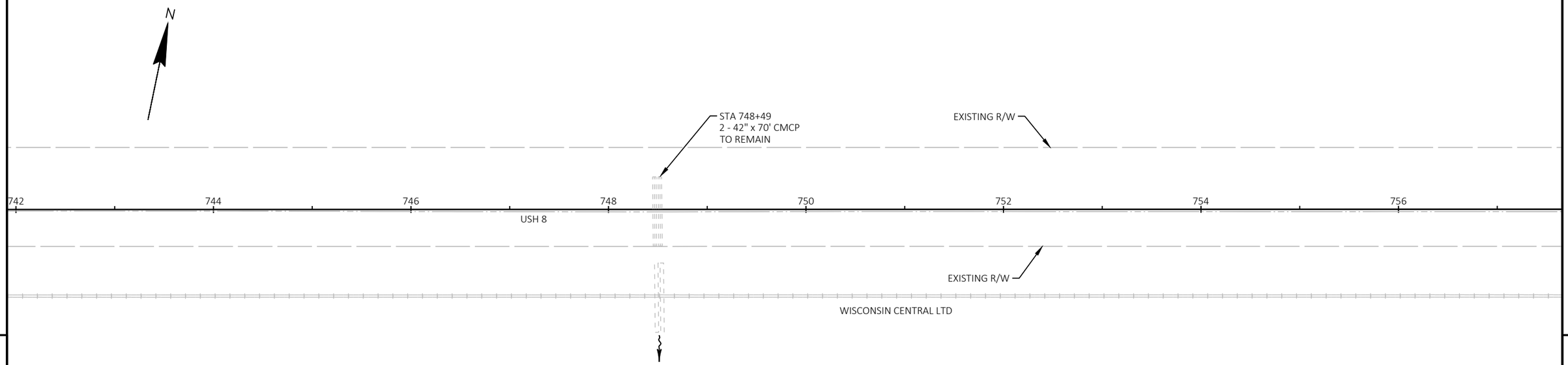
PLOT DATE : 10/25/2022 7:25 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT



PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 33	E

FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 11

PLOT DATE : 10/25/2022 7:25 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT



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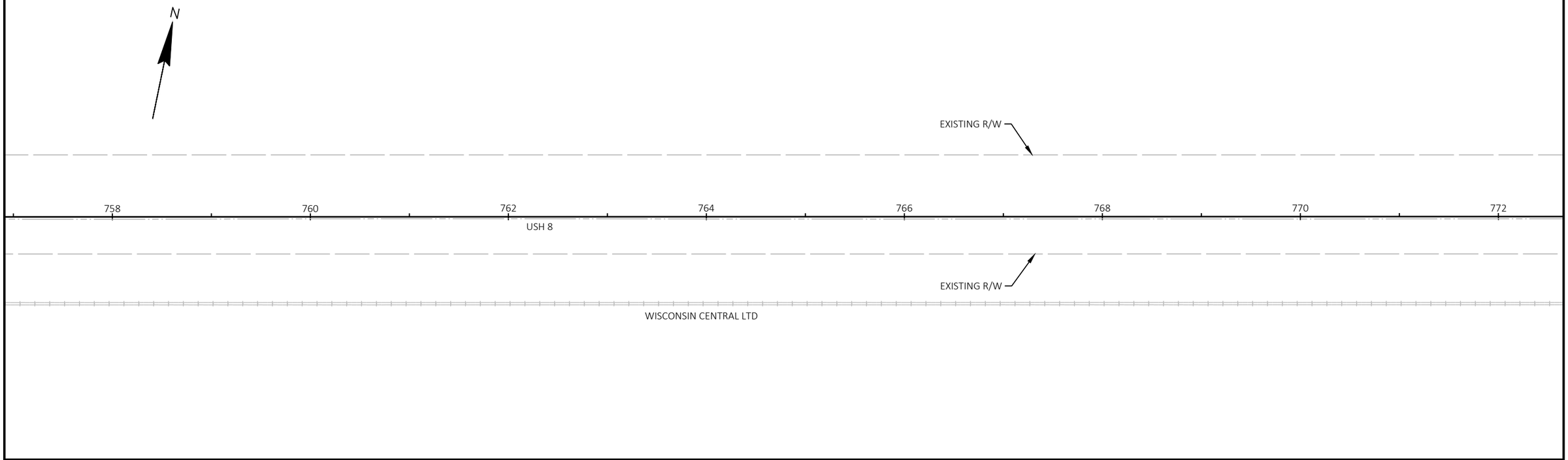


PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 34	E

FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 12

PLOT DATE : 10/25/2022 7:25 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT

N

EXISTING R/W

772 774 776 778 780 782 784 786

USH 8

EXISTING R/W

WISCONSIN CENTRAL LTD

5

5

N

CENTURYLINK

XCEL ENERGY
ELECTRICITY

EXISTING R/W

788 N78° 20' 40"E 790 792 794 796 798 800 802

19356.54'

USH 8

OH OH

WETLAND

EXISTING R/W

XCEL ENERGY
ELECTRICITY

STA 794+25
REMOVING SMALL PIPE CULVERTS
(24" CPRC EXISTING)
1 - 24" x 64' CPRC CLASS III REQ'D
2 AEWS REQ'D
2 MARKERS CULVERT END REQ'D

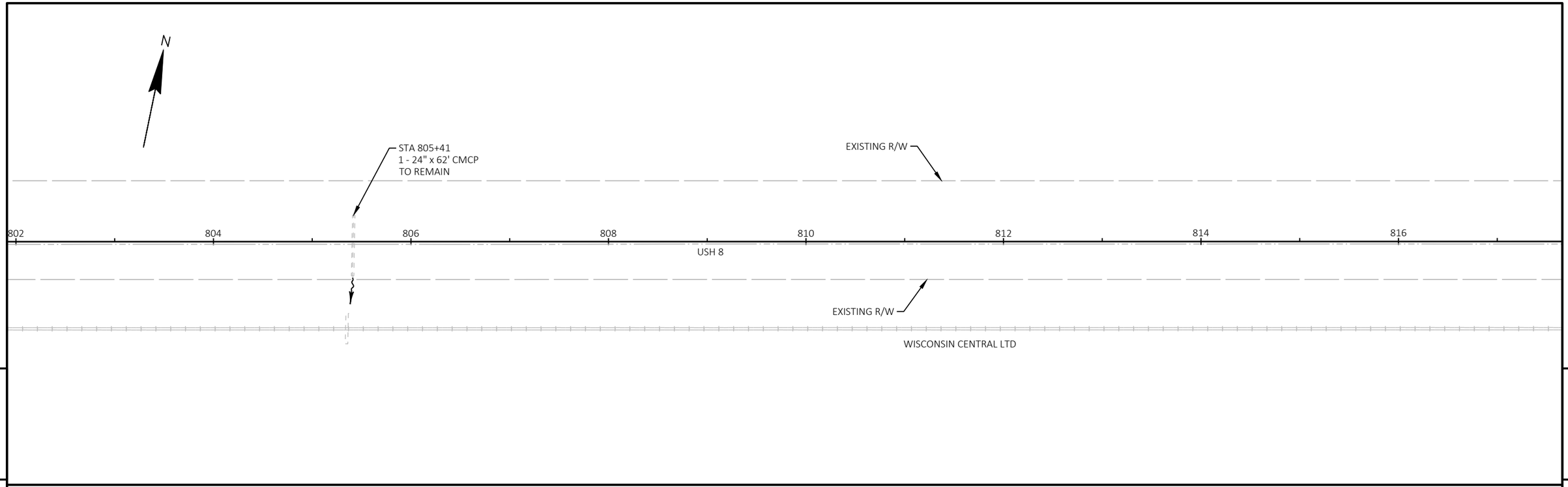
WISCONSIN CENTRAL LTD

PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 35	E

FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 13

PLOT DATE : 10/25/2022 7:26 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44



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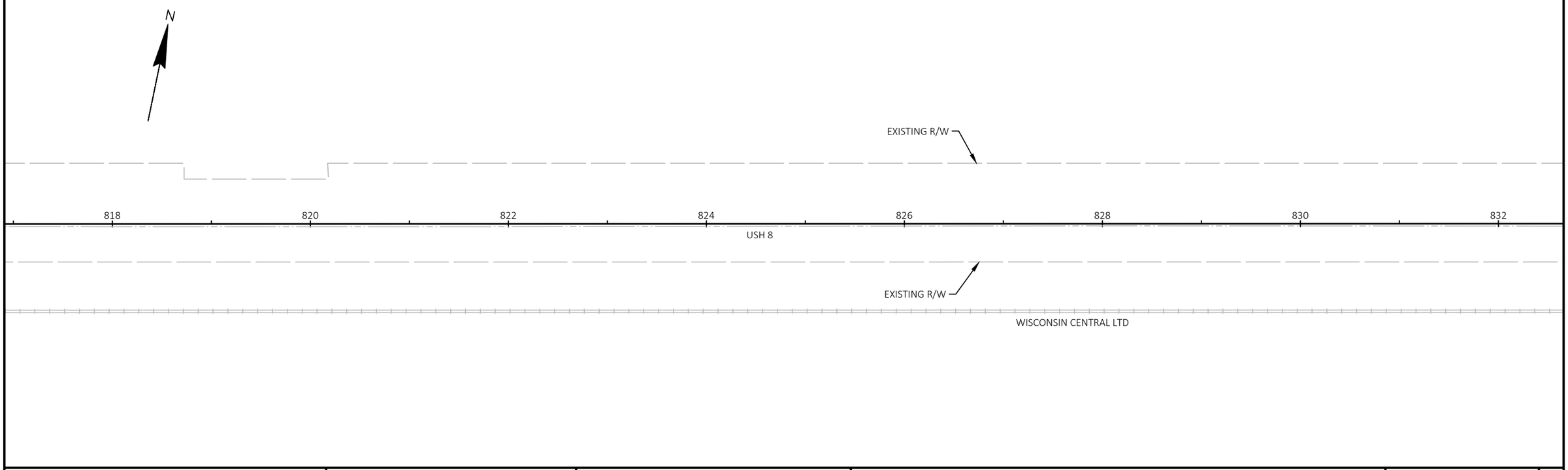
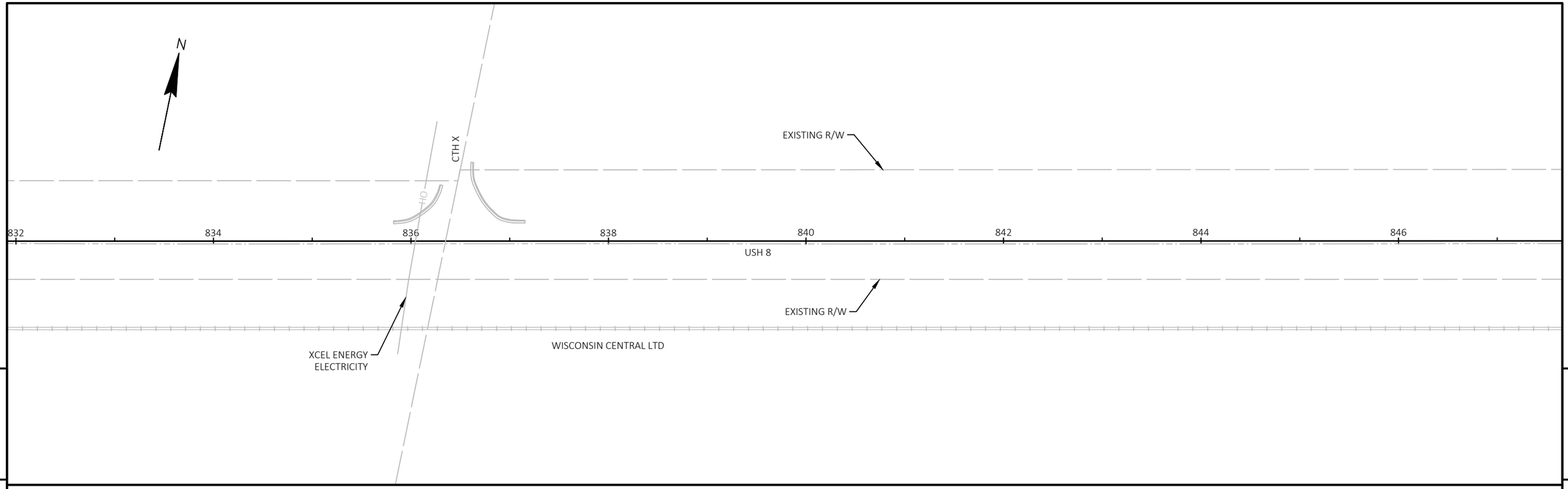


PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 36	E



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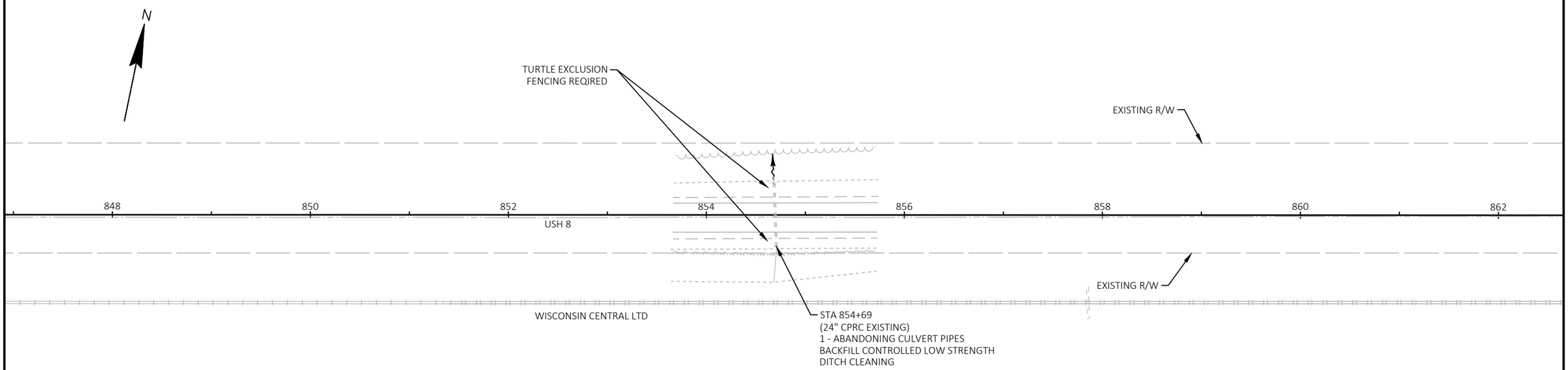
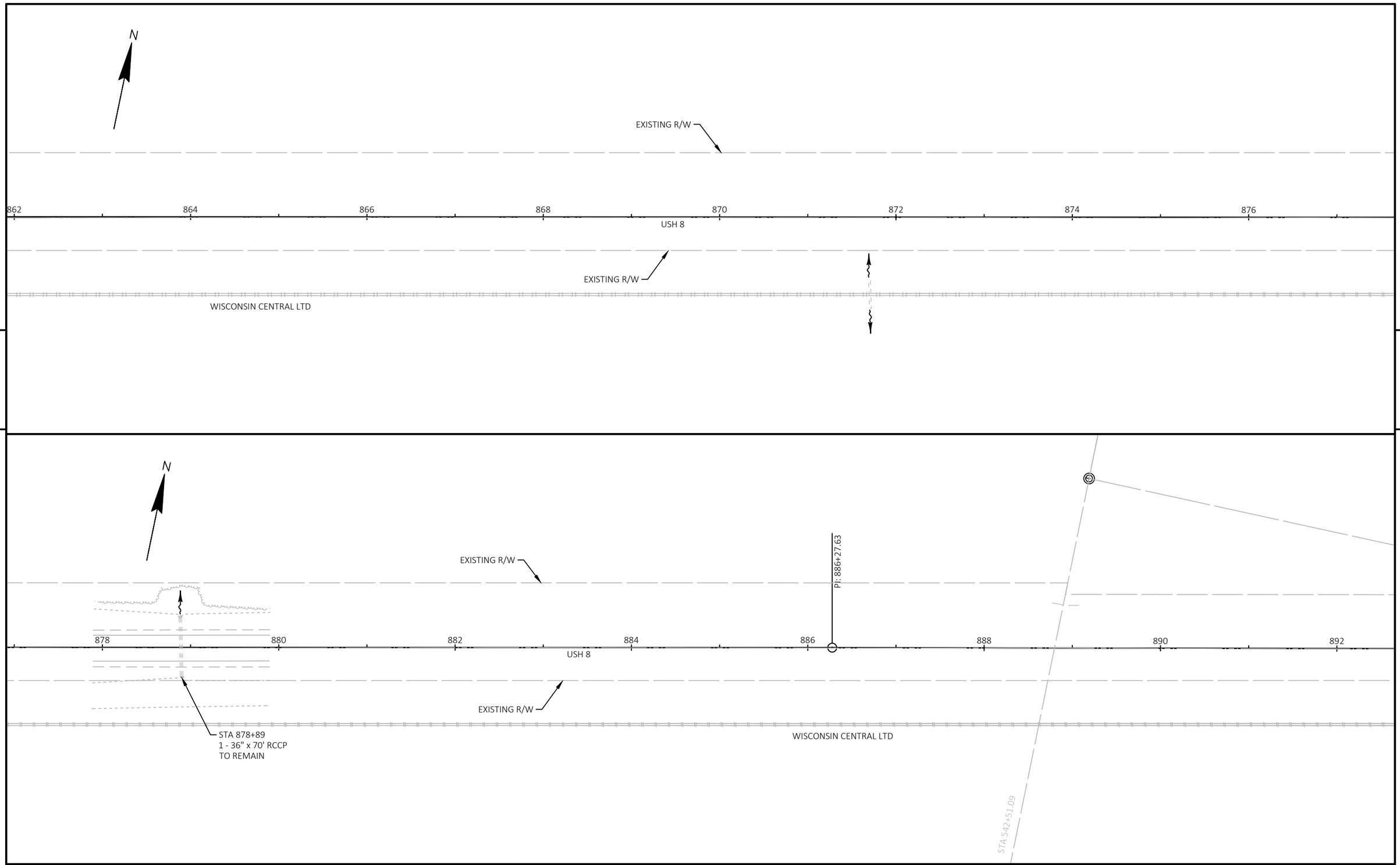


PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 37	E

FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 15

PLOT DATE : 10/25/2022 7:26 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT

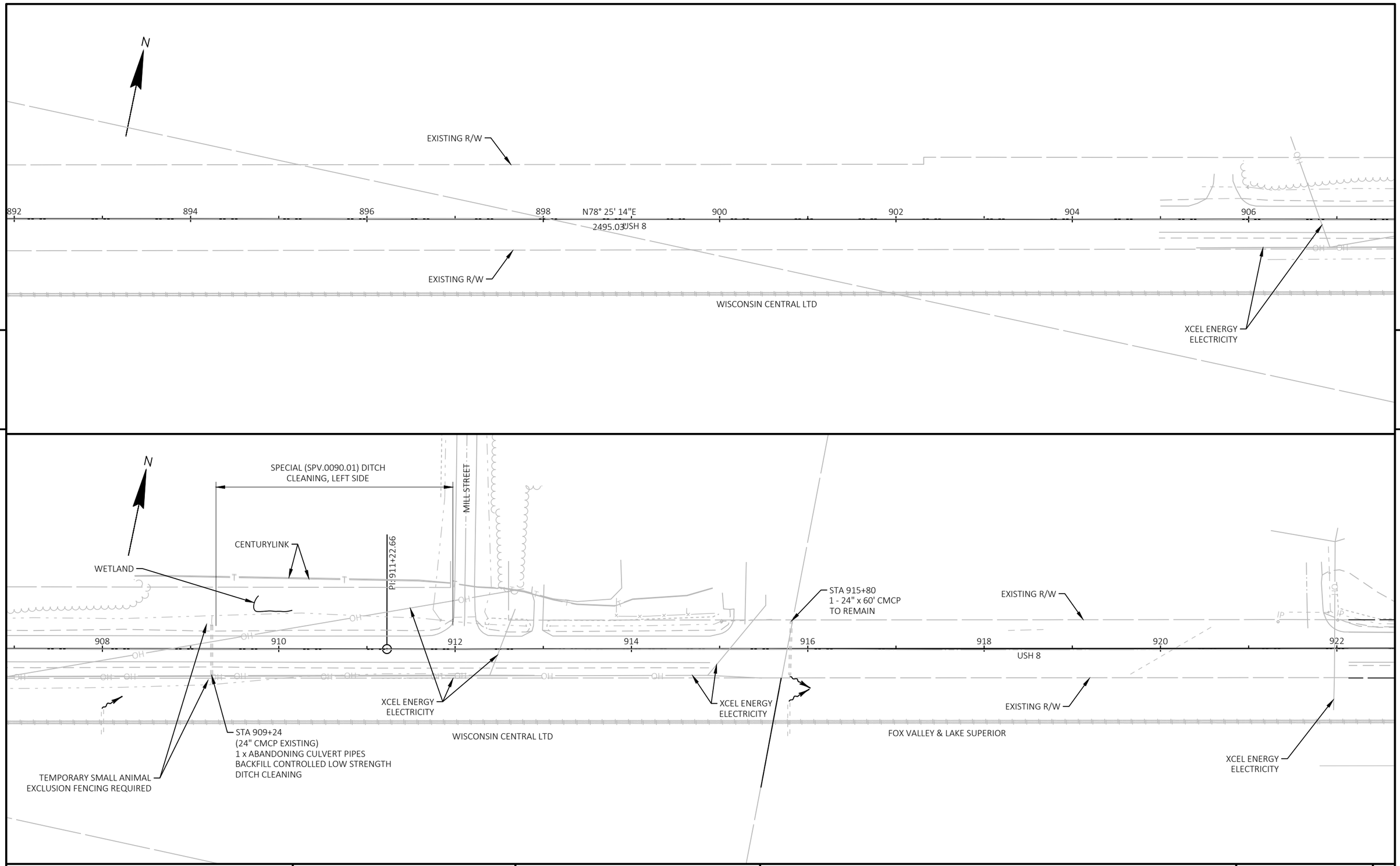


PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 38	E

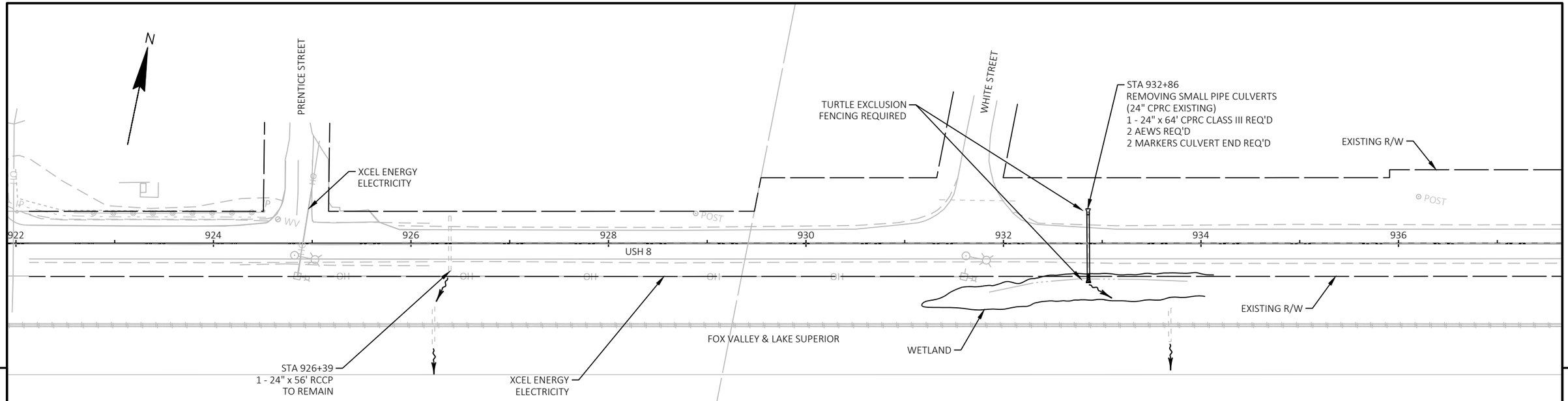
FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 16

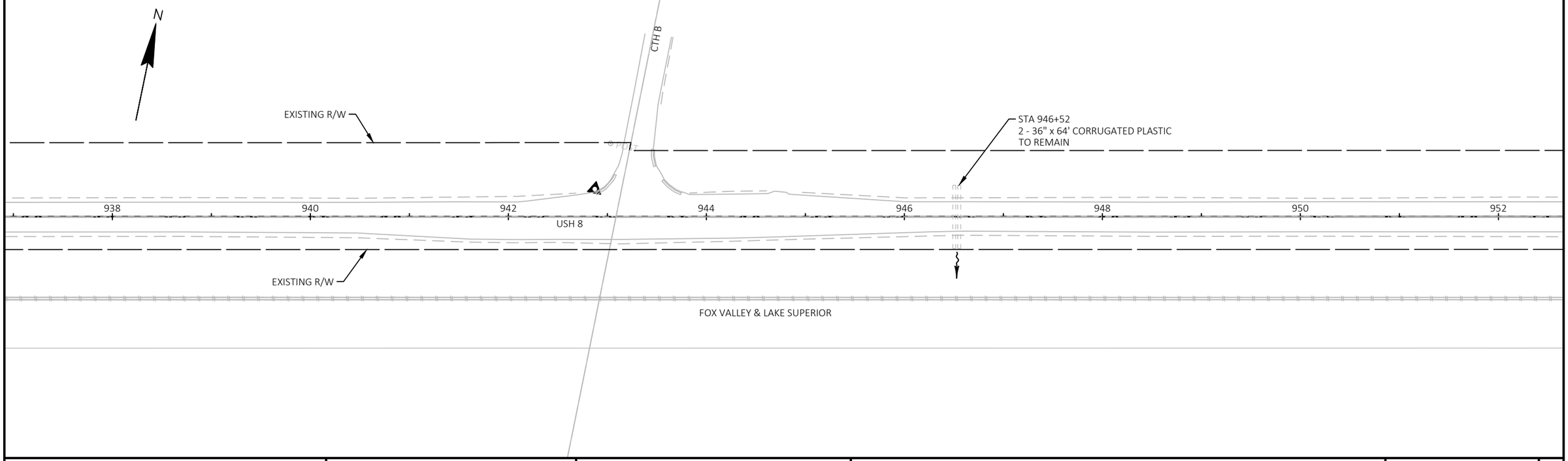
PLOT DATE : 10/25/2022 7:26 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44



PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 39	E



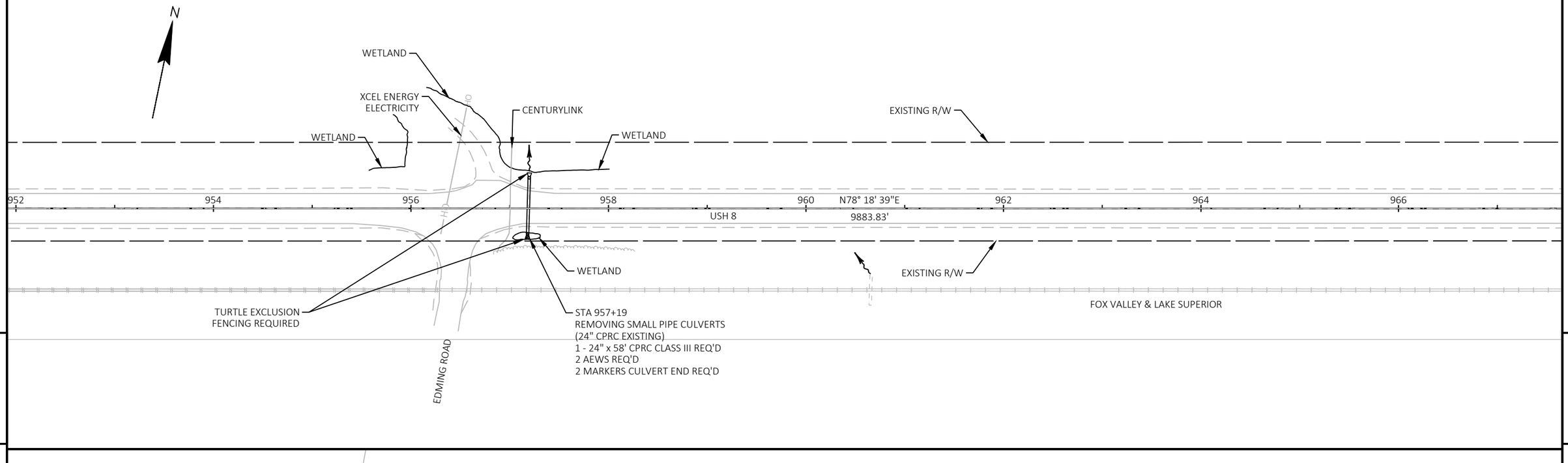


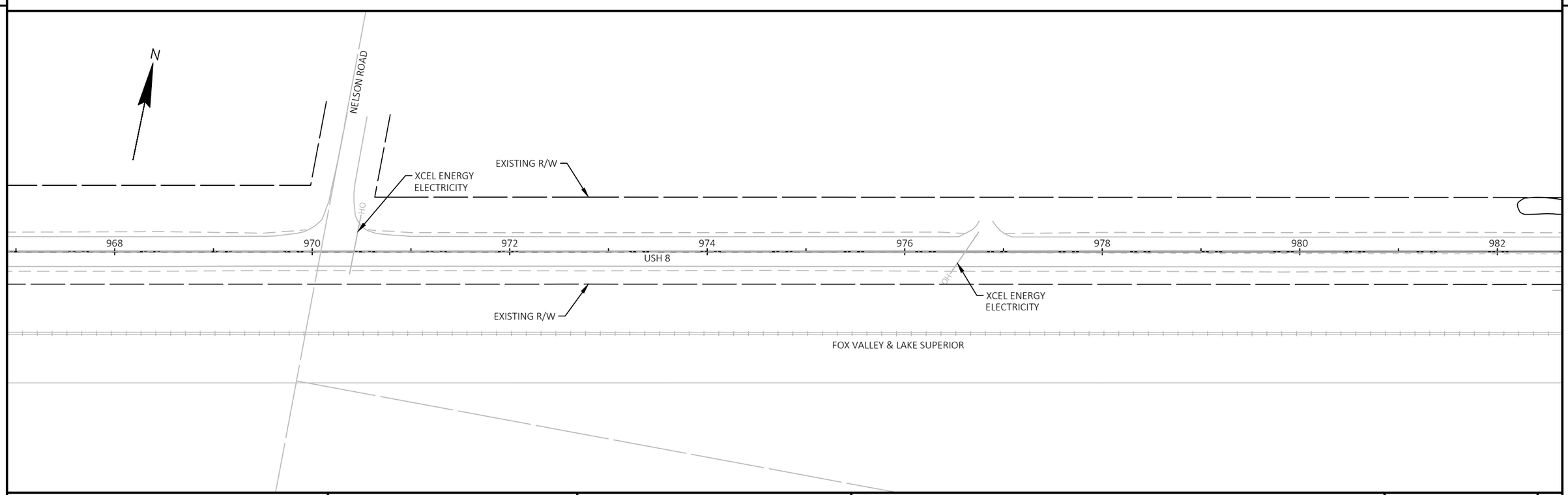
PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 40	E

FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 18

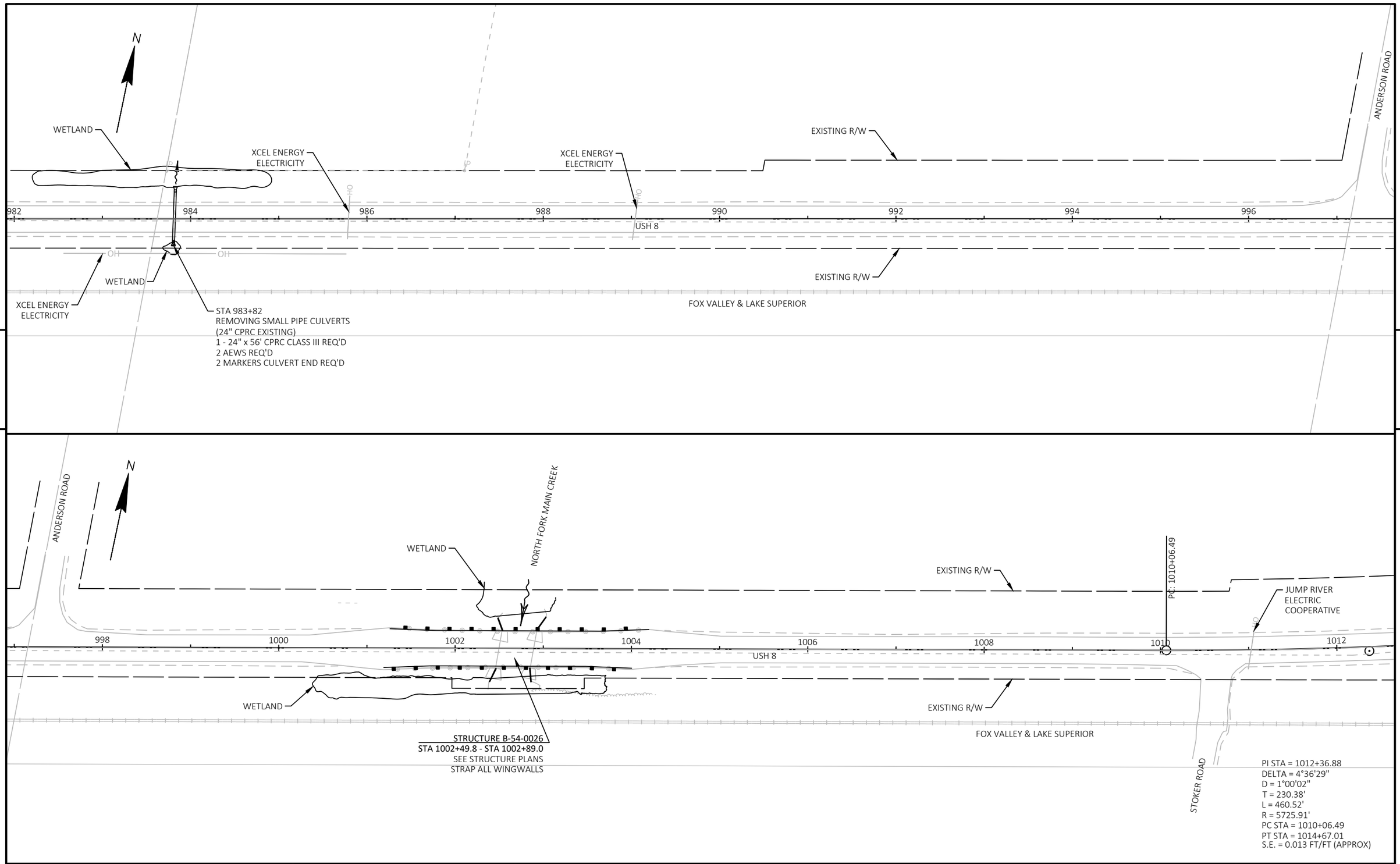
PLOT DATE : 7/25/2022 11:20 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44





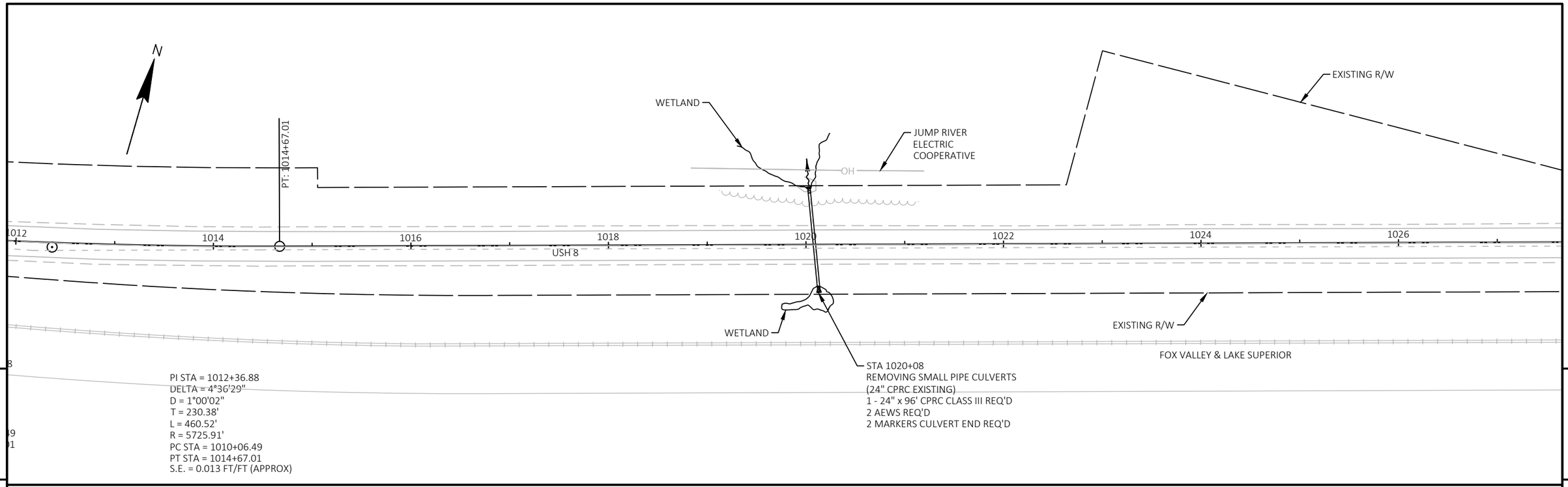
PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 41	E

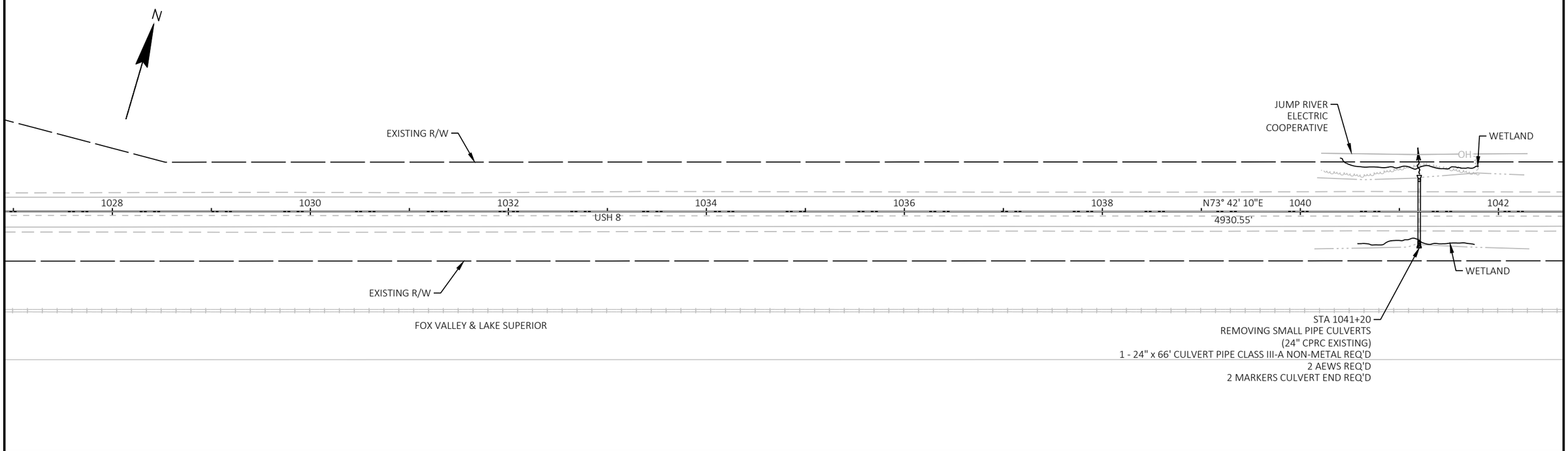


PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 42	E

FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 20

PLOT DATE : 7/25/2022 11:21 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT

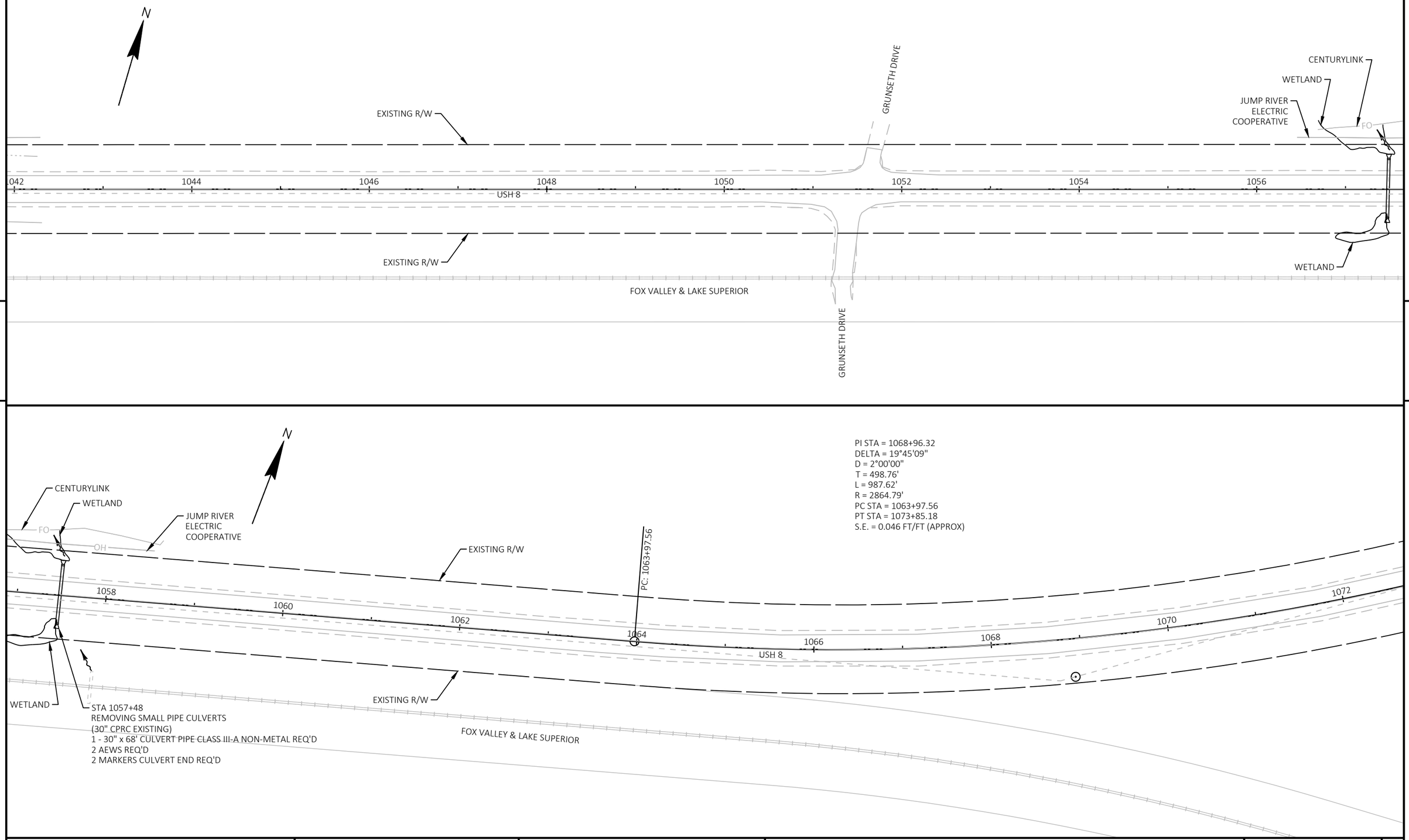




PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 43	E

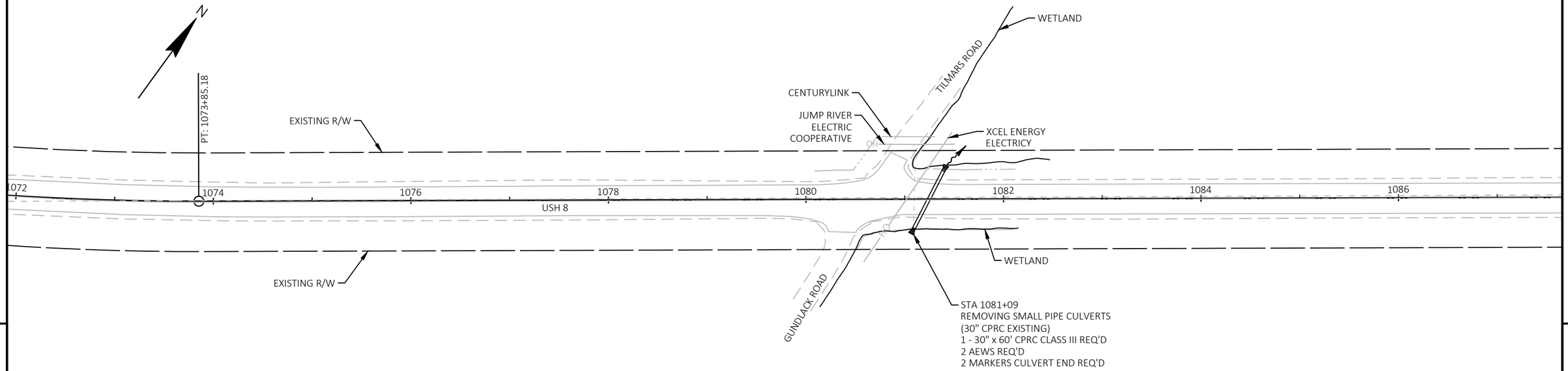
FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 21

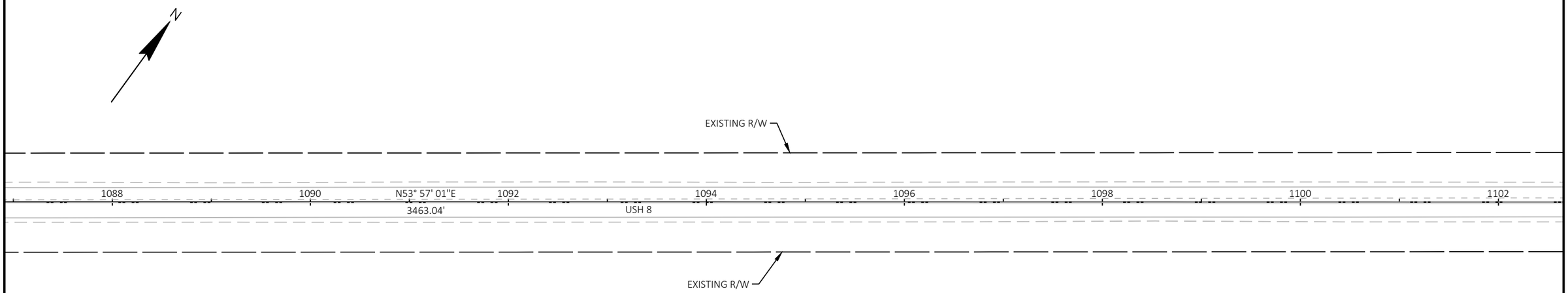
PLOT DATE : 7/25/2022 11:21 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT



PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 44	E

FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 22
PLOT DATE : 7/25/2022 11:21 AM
PLOT BY : PEARSON, MICHAEL R
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

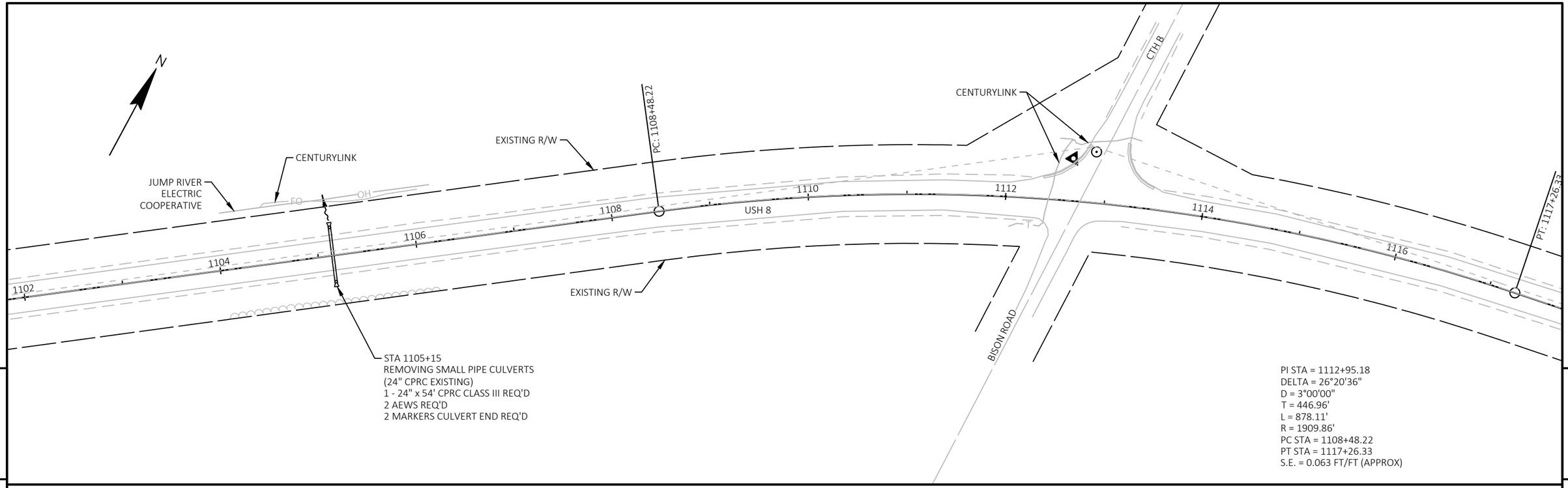


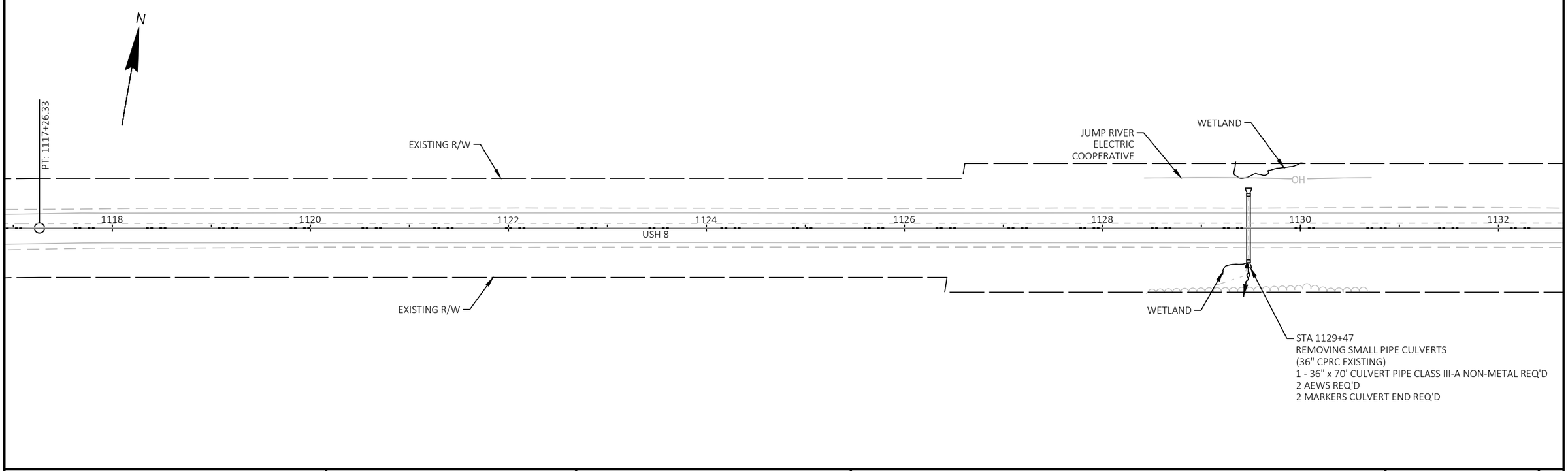


PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 45	E

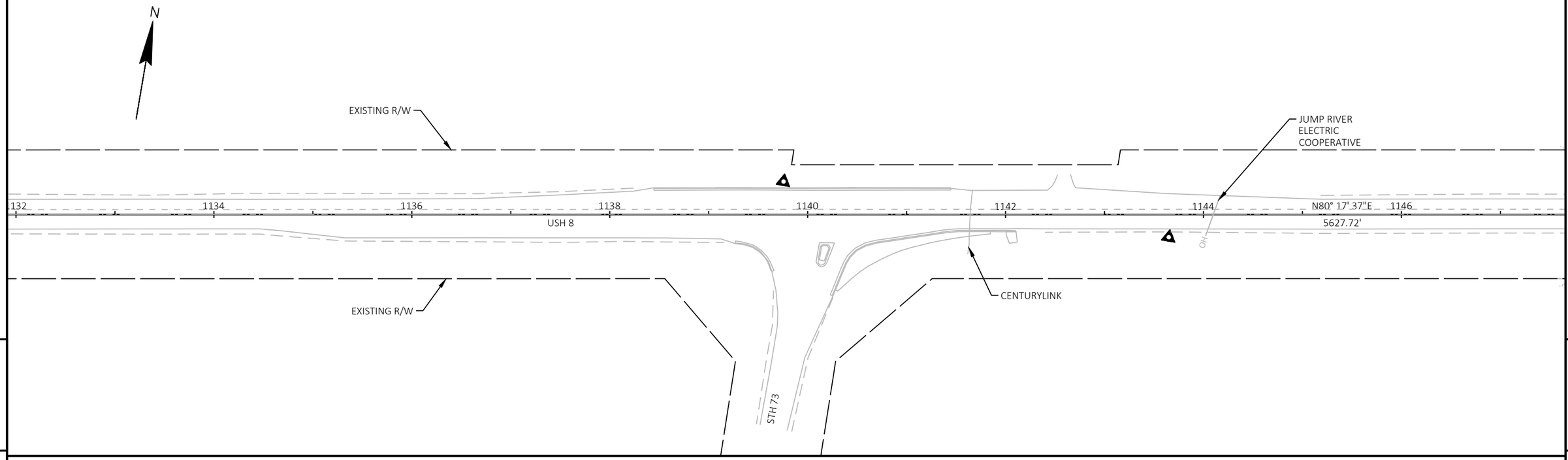
FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 23

PLOT DATE : 7/25/2022 11:21 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT





PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 46	E



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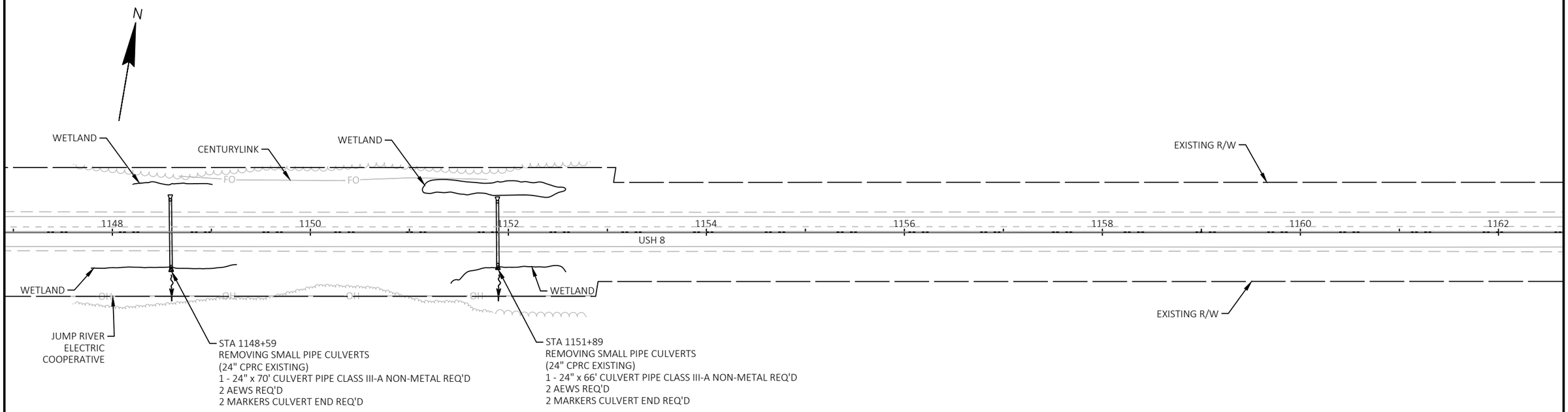
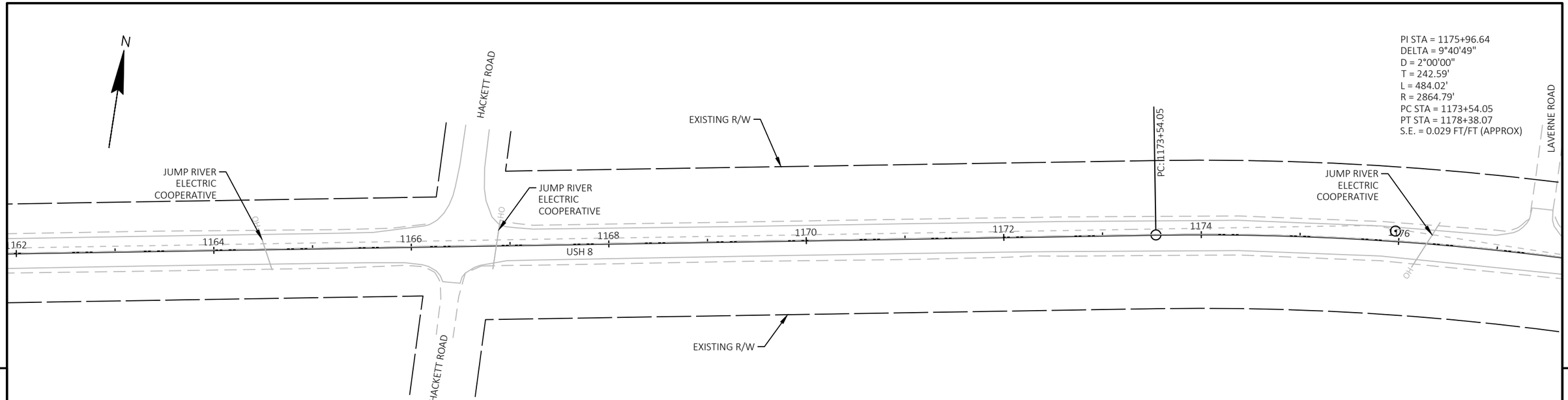
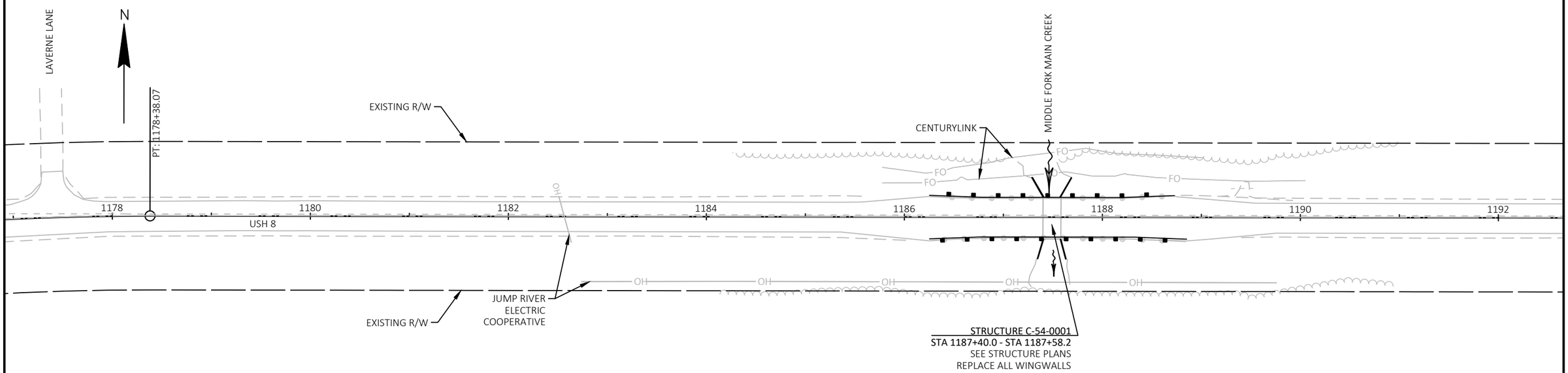


PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 47	E

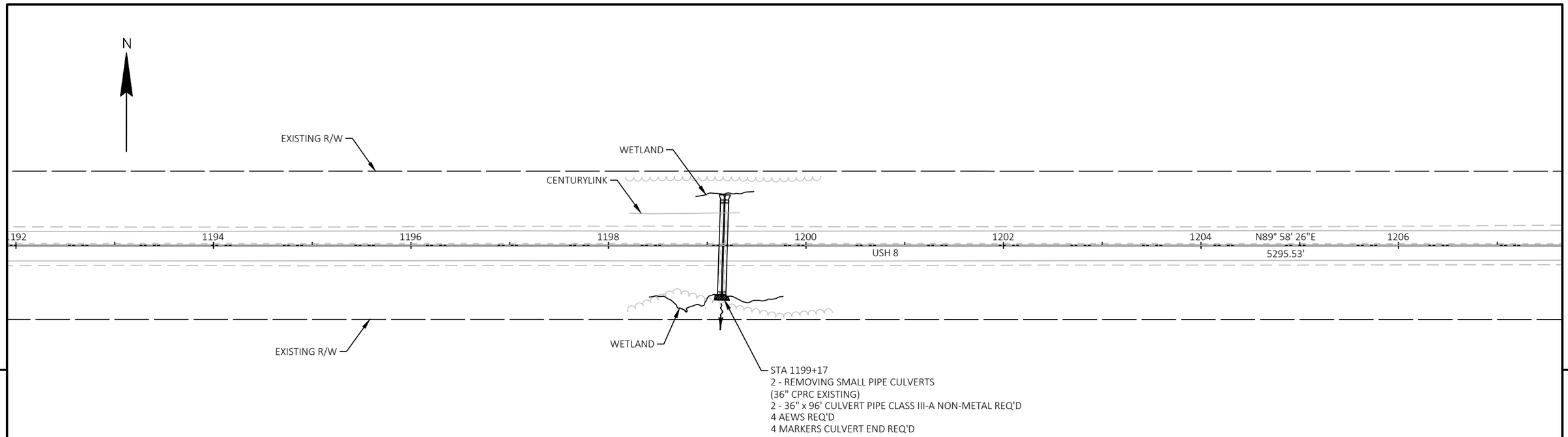




PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 48	E

FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 26

PLOT DATE : 7/25/2022 11:22 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT



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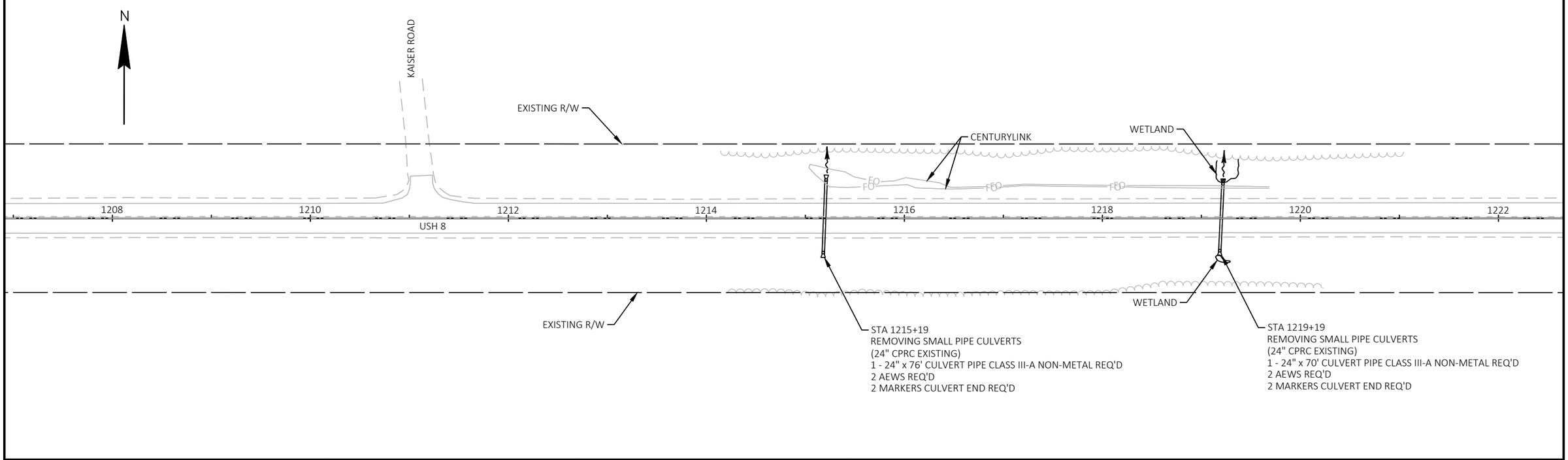
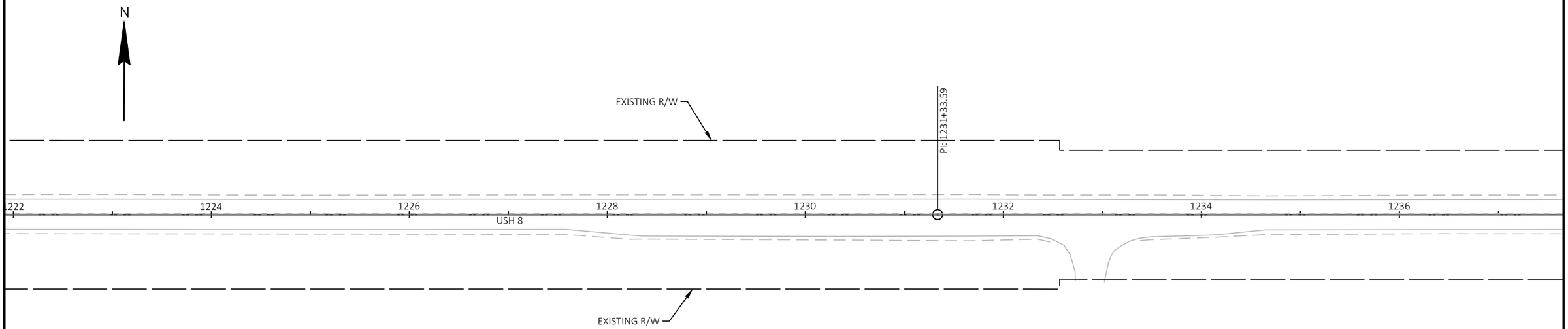


PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 49	E



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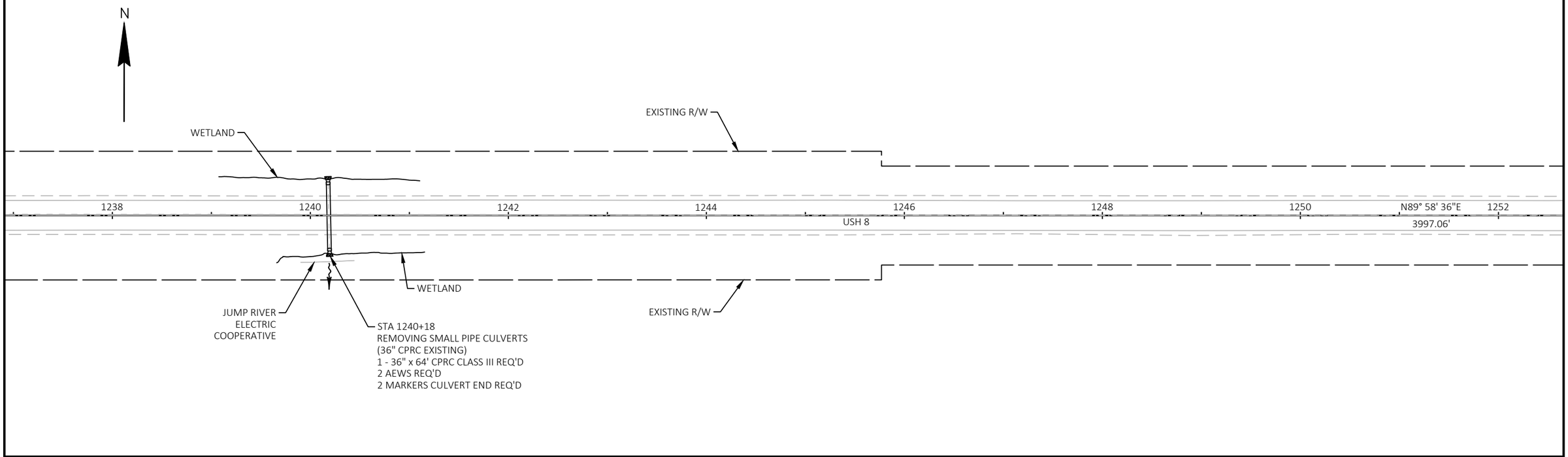


PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 50	E

FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 28

PLOT DATE : 7/25/2022 11:23 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT

N

EXISTING R/W

1252 1254 1256 1258 1260 1262 1264 1266

USH 8

EXISTING R/W

STA 1264+06
1 - 24" x 64' RCCP
TO REMAIN

5

5

N

HANSON ROAD

PI: 1271+30.65

EXISTING R/W

1268 1270 1272 1274 1276 1278 1280 1282

USH 8

JUMP RIVER
ELECTRIC
COOPERATIVE

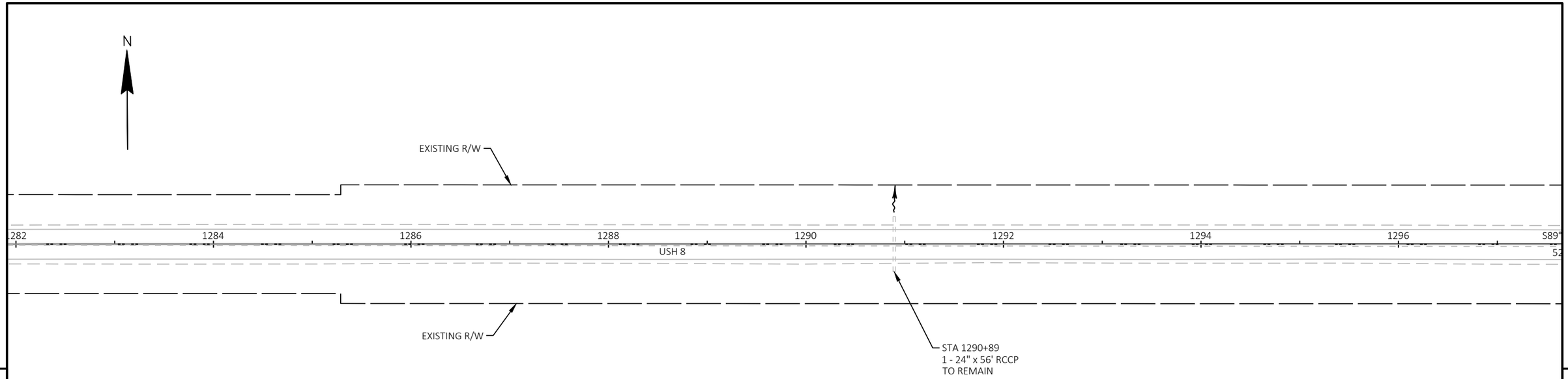
EXISTING R/W

HANSON ROAD

PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 51	E

FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 29

PLOT DATE : 7/25/2022 11:23 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT



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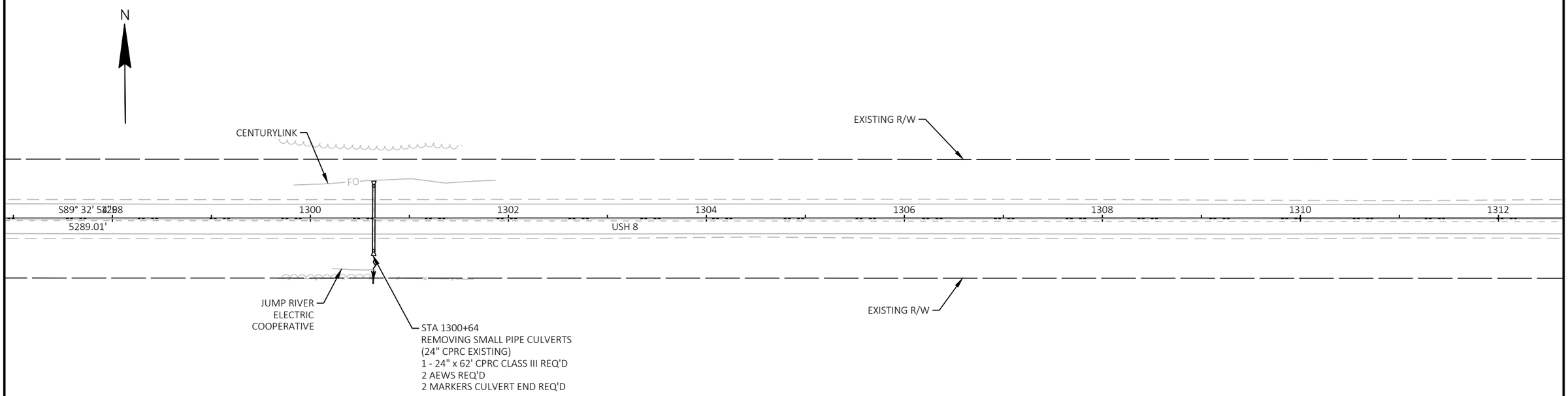
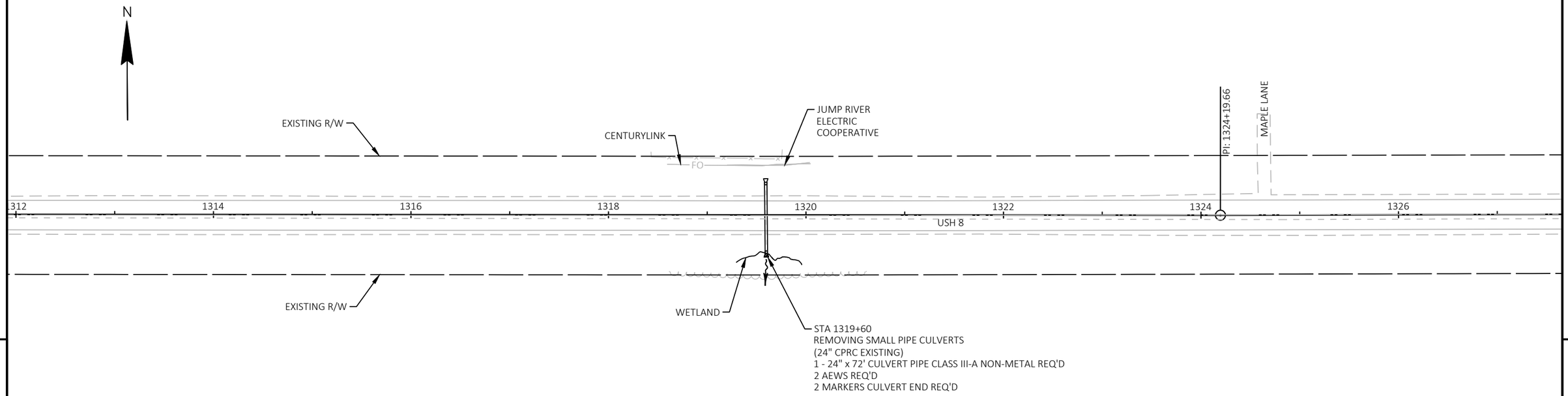


PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 52	E



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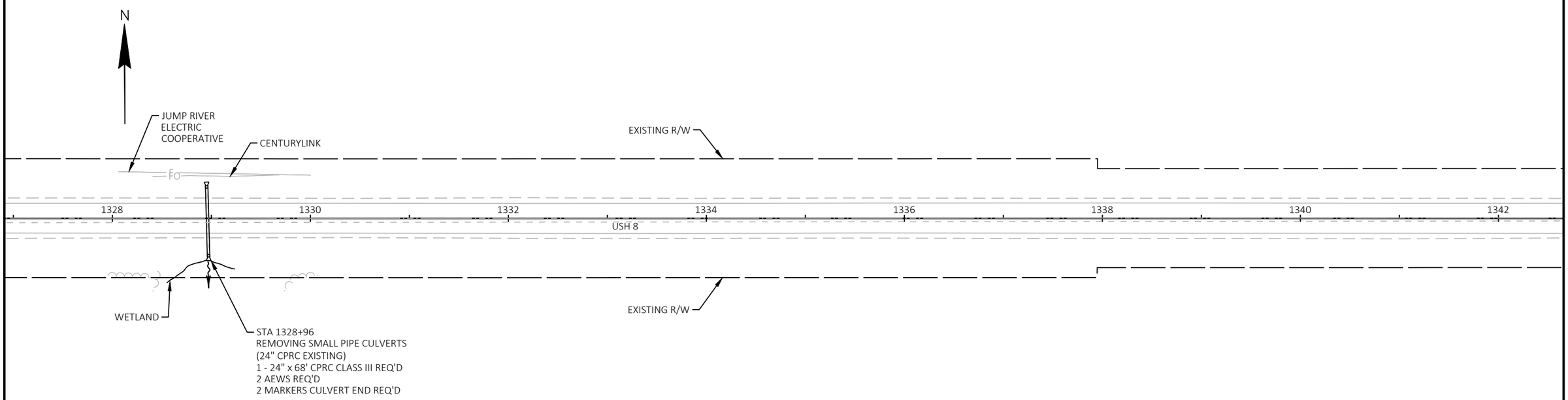
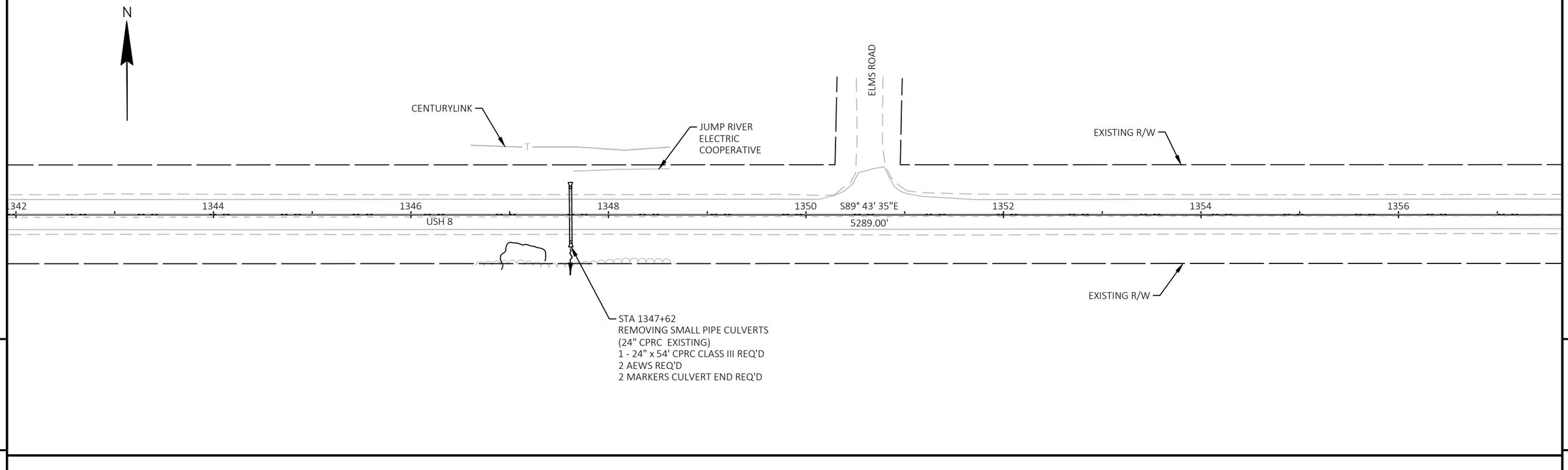
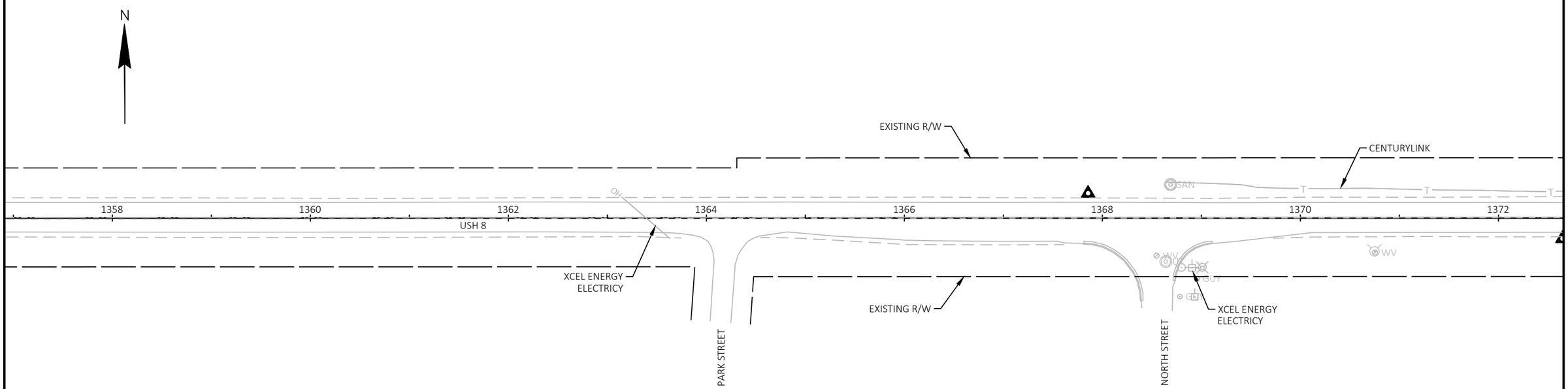


PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 53	E

FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 31

PLOT DATE : 7/25/2022 11:23 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT

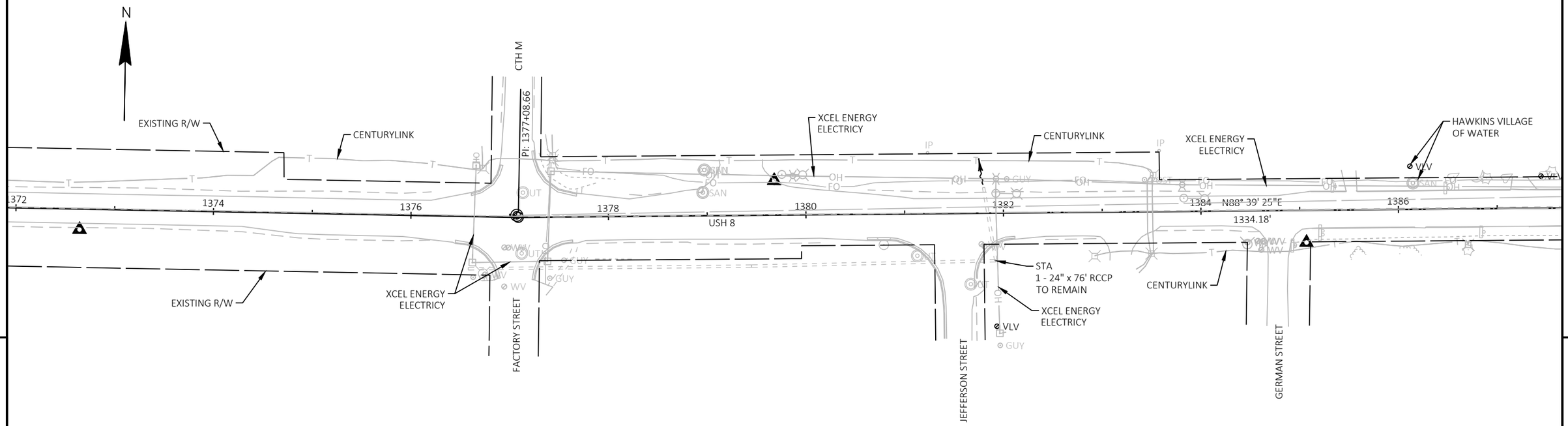


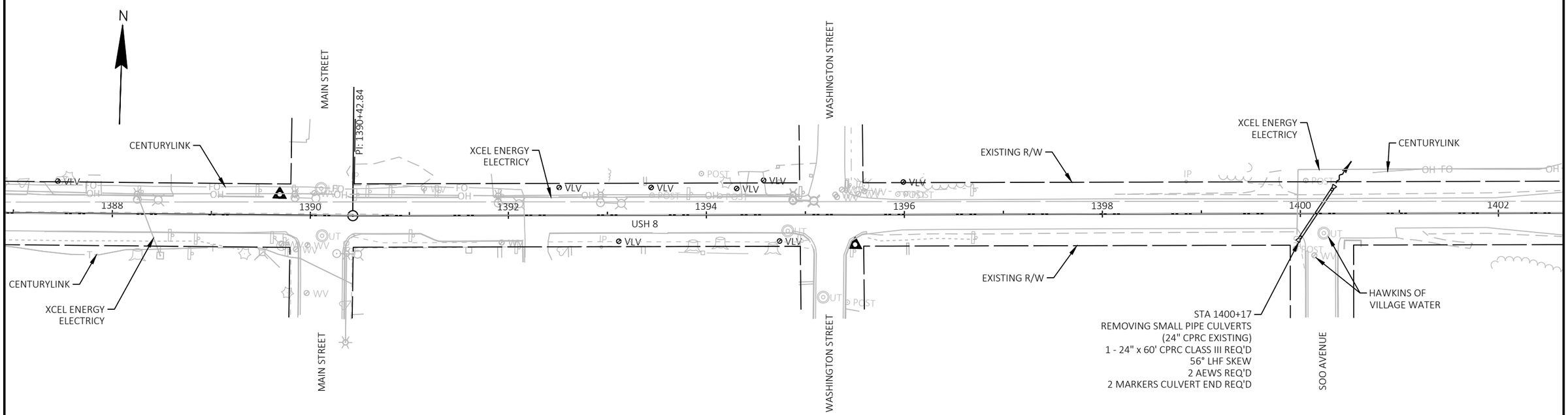


PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 54	E

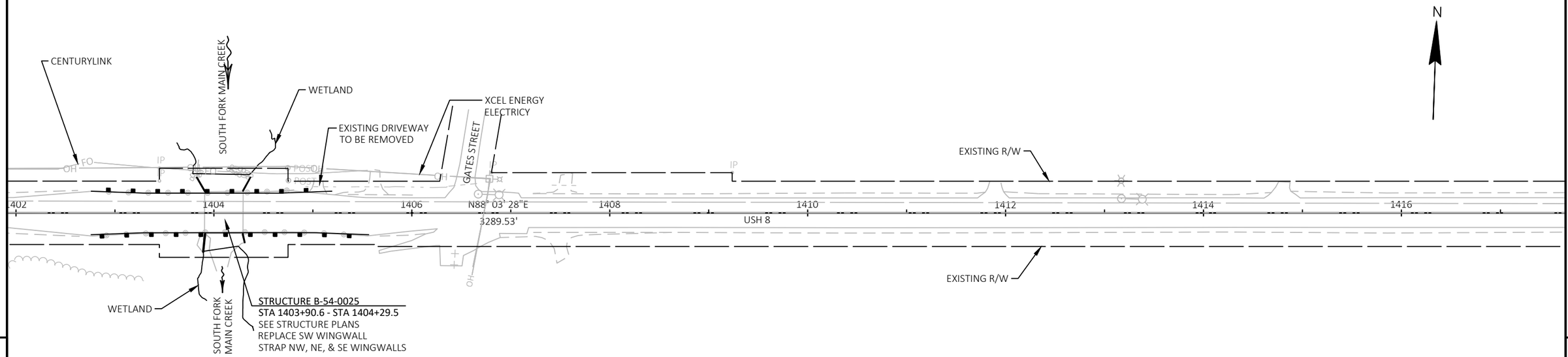
FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 32

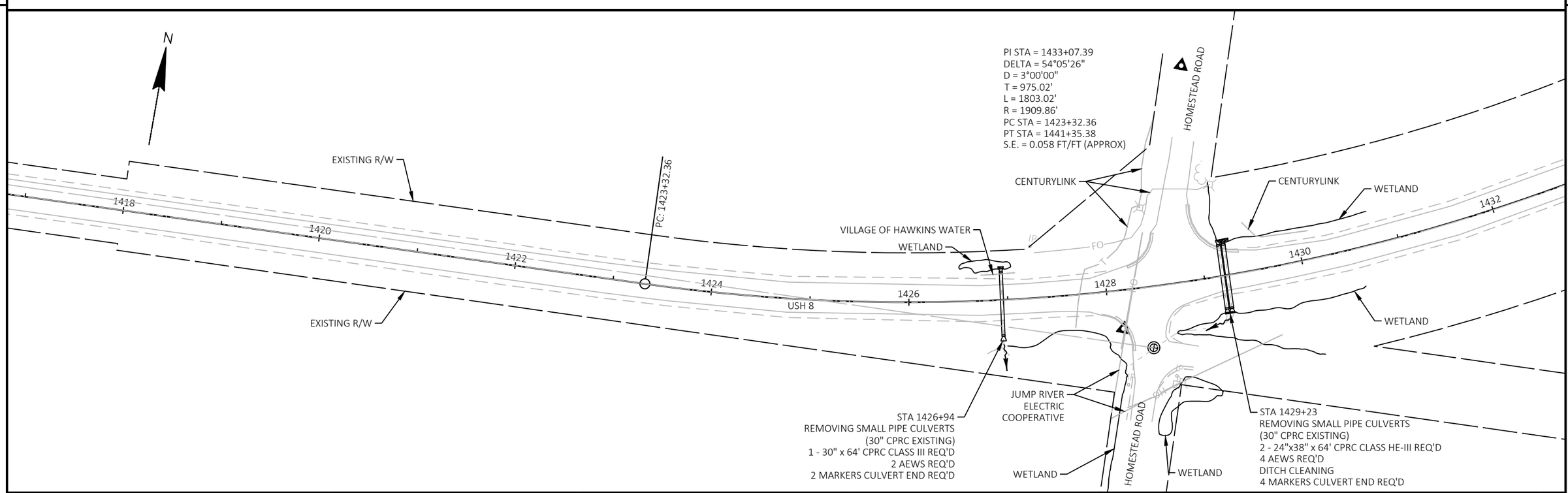
PLOT DATE : 7/25/2022 11:24 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT



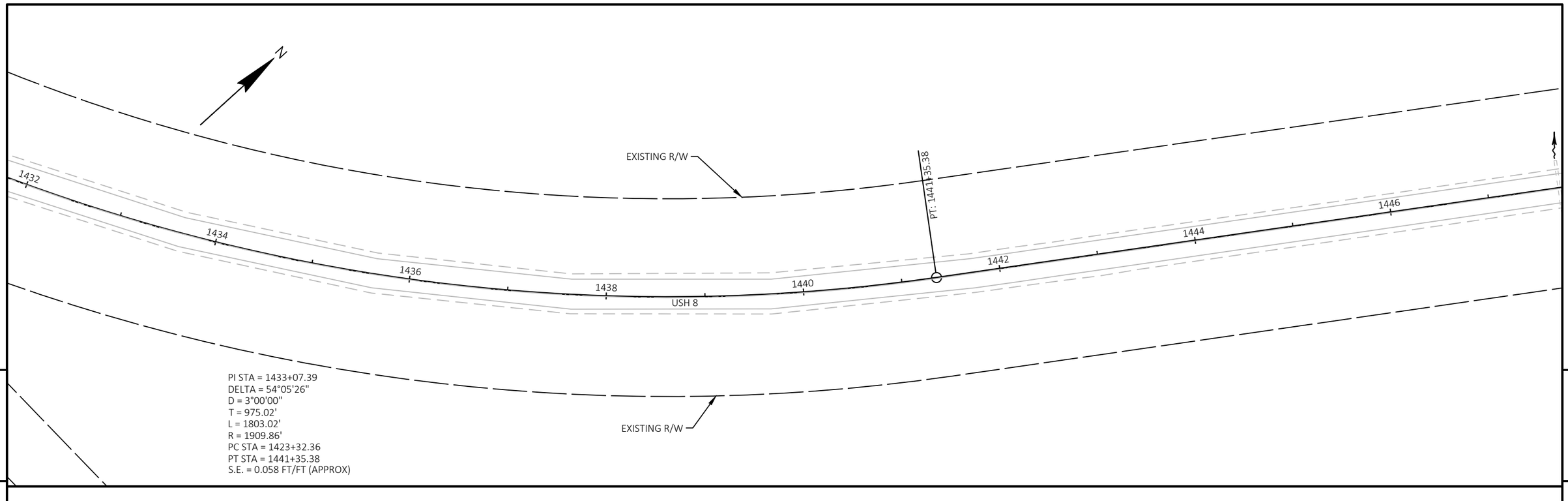


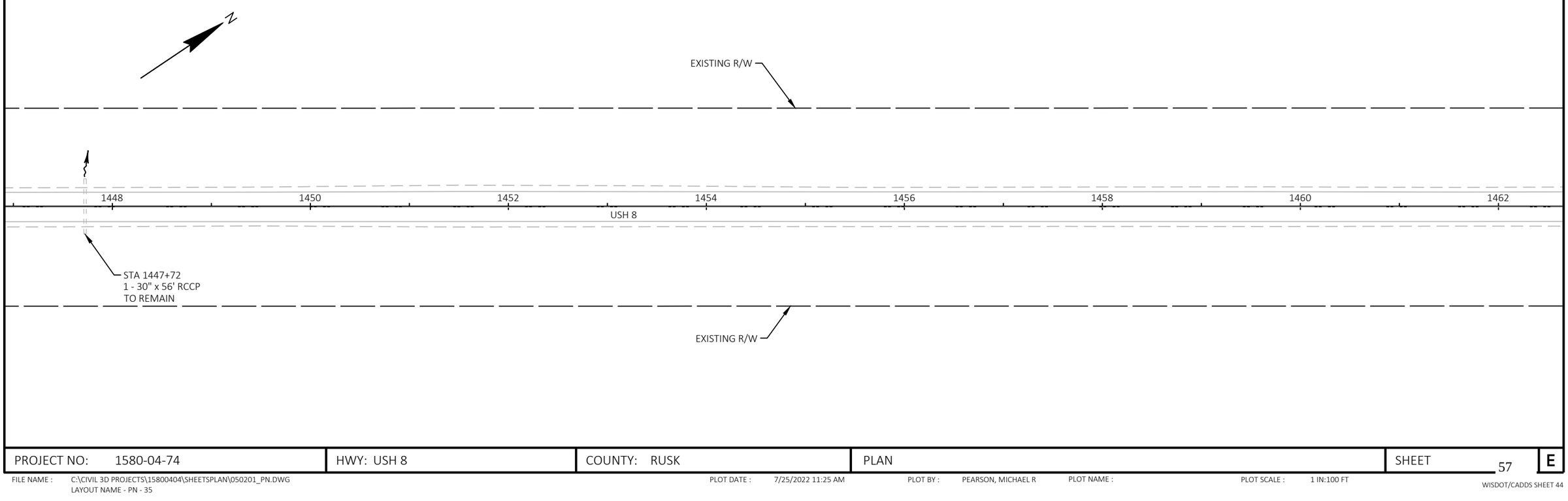
PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 55	E



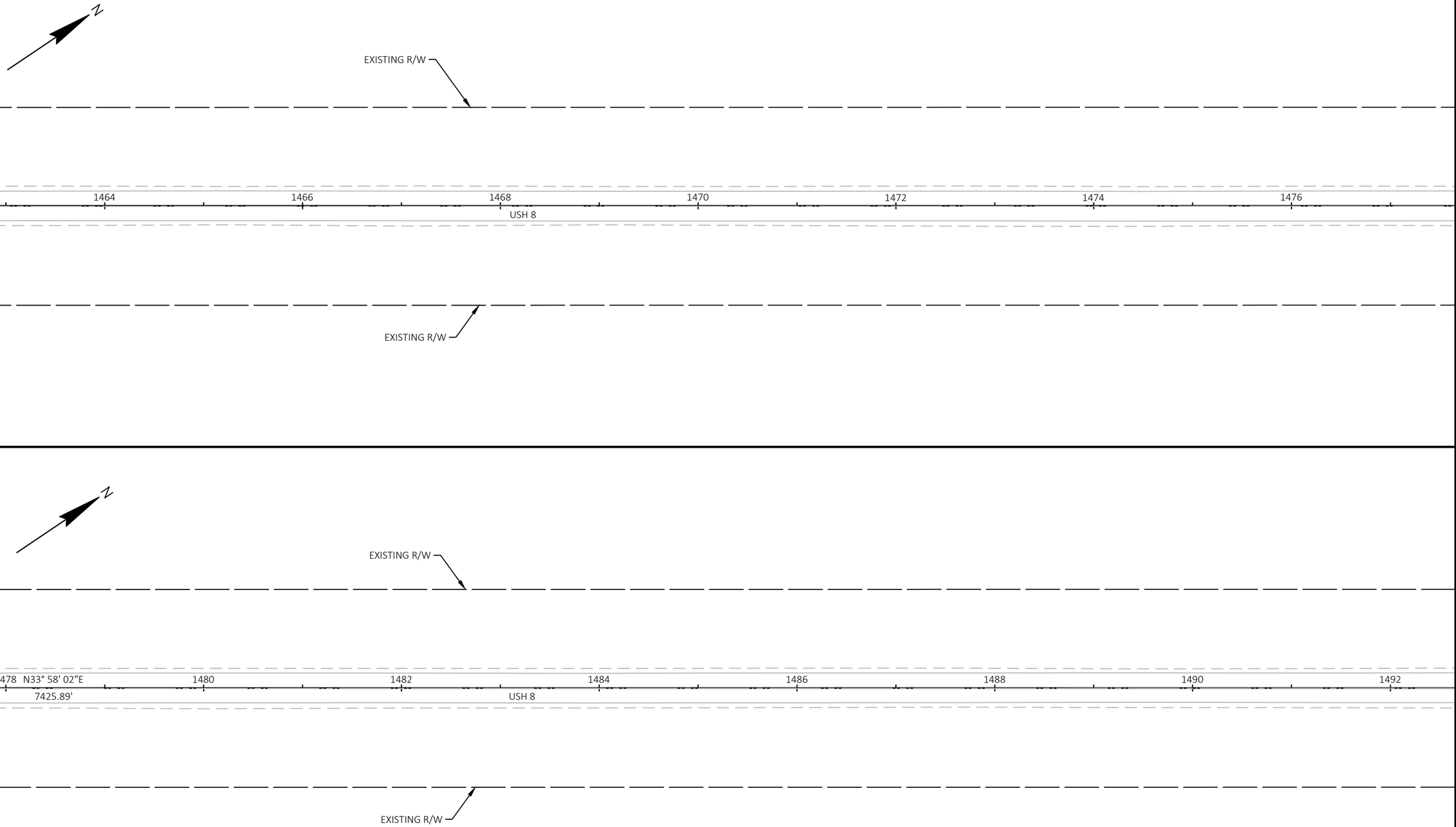


PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 56	E





PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 57	E



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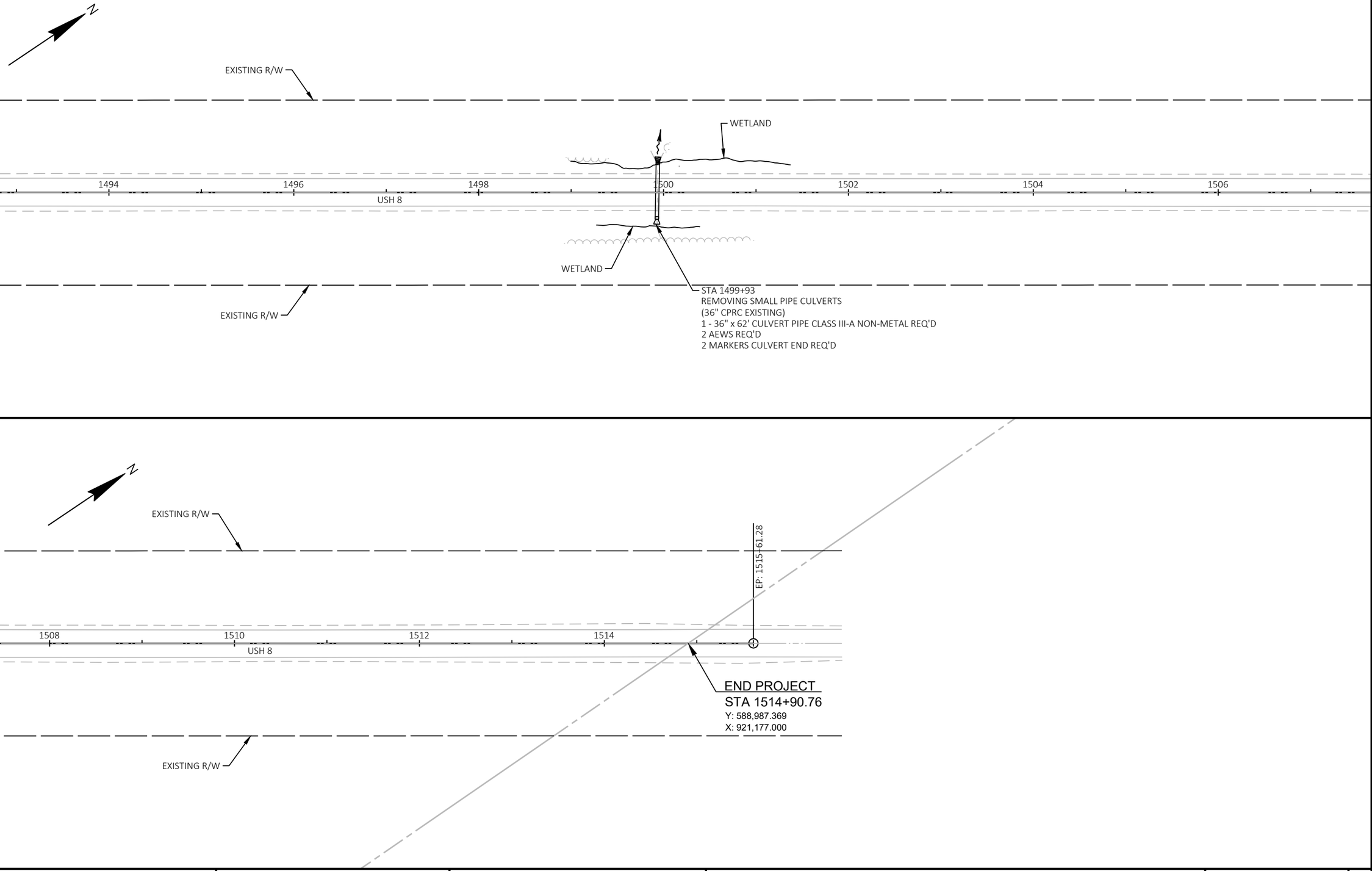
PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 58	E



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PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	PLAN	SHEET 59	E

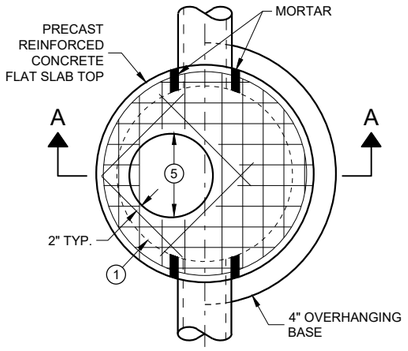
FILE NAME : C:\CIVIL 3D PROJECTS\15800404\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - PN - 37

PLOT DATE : 7/25/2022 11:25 AM PLOT BY : PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:100 FT

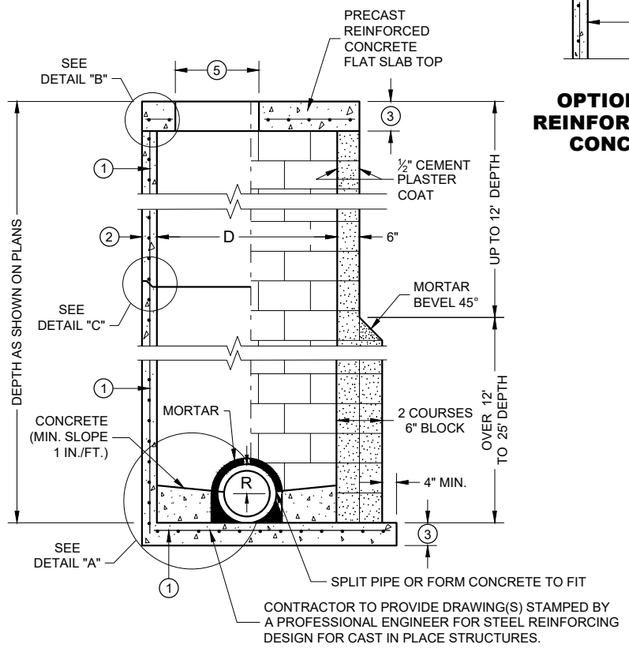
Standard Detail Drawing List

08B09-03	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT, 8-FT, 9-FT, 10-FT DIAMETER
08C06-02	INLETS 3-FT AND 4-FT DIAMETER
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-22A	CONCRETE CURB & GUTTER
08D01-22B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F08-02	STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED CROSS DRAINS
09G02-05A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-05B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-05C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B24-09A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-22A	LONGITUDINAL MARKING (MAINLINE)
15C08-22B	TEMPORARY LONGITUDINAL PAVEMENT MARKING
15C08-22C	PAVEMENT MARKING (TURN LANES)
15C08-22D	PAVEMENT MARKING (TURN LANES)
15C11-09A	CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-09A	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C12-09B	TRAFFIC CONTROL, LANE CLOSURE WITH AUTOMATED FLAGGER ASSISTANCE DEVICE
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D33-07	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
15D48-01	TRAFFIC CONTROL, LANE SHIFT IN FLAGGING OPERATION
15D51-01	TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY

6



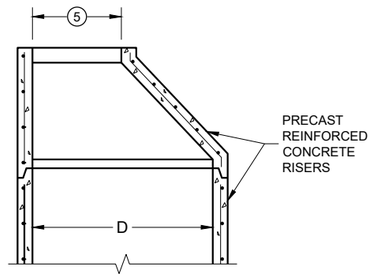
PLAN VIEW
CIRCULAR OPENING



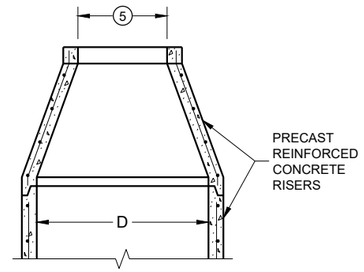
SECTION A - A

PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST IN PLACE OR PRECAST REINFORCED CONCRETE BASE (1)



OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP



OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

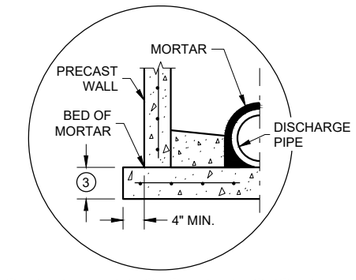
MANHOLE COVER OPENING MATRIX

OPENING SIZE (FT.) \ MANHOLE COVER TYPE	C	ALL J'S	K	L	M
2 DIA.	X	X		X	
3 DIA.			X		X

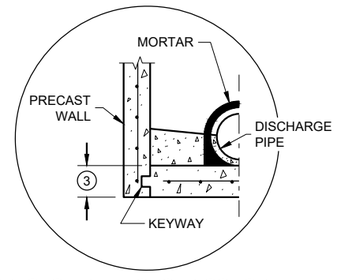
PIPE MATRIX

MANHOLE SIZE (DIA.)	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES		MINIMUM WALL THICKNESS (IN)	MINIMUM PRECAST FLAT SLAB TOP AND BASE THICKNESS
	180° SEPARATION (IN)	90° SEPARATION (IN)		
3-FT	15	12	4	6
4-FT	24	18	4	6
5-FT	36	24	5	8
6-FT	42	36	6	8
7-FT	48	36/42*	7	8
8-FT	60	42	8	8
9-FT	66	54	9	10
10-FT	72	60	10	10

*A 36" PIPE AND A 42" PIPE CAN BE PLACED WITHIN 90 DEGREES.
SEE MINIMUM HORIZONTAL PIPE SEPARATION DETAIL.

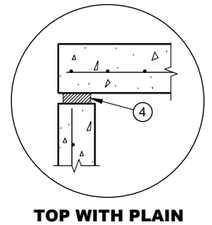


SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

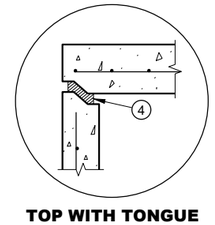


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

DETAIL "A"

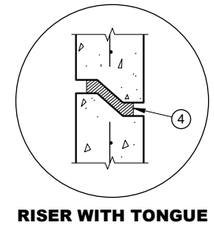


TOP WITH PLAIN END JOINT



TOP WITH TONGUE AND GROOVE JOINT

DETAIL "B"



RISER WITH TONGUE AND GROOVE JOINT

DETAIL "C"

GENERAL NOTES

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

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

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

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

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

PRECAST REINFORCED CONCRETE CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED CONCRETE FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES. CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF ½ INCH AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

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

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

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

CONCRETE BLOCK WILL NOT BE PERMITTED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "D".

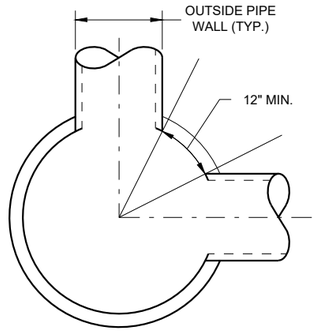
(1) FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

(2) SEE PIPE MATRIX TABLE FOR MINIMUM WALL THICKNESS FOR PRECAST MANHOLES

(3) SEE PIPE MATRIX TABLE FOR MINIMUM THICKNESS OF PRECAST FLAT SLAB TOPS AND BASES.

(4) JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP.).

(5) SEE MANHOLE COVER OPENING MATRIX.



MINIMUM HORIZONTAL PIPE SEPARATION

MANHOLES, 3-FT, 4-FT 5-FT, 6-FT, 7-FT, 8-FT, 9-FT AND 10-FT DIAMETER

STATE OF WISCONSIN
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November 2021 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER
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MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT, 8-FT, 9-FT AND 10-FT DIAMETER

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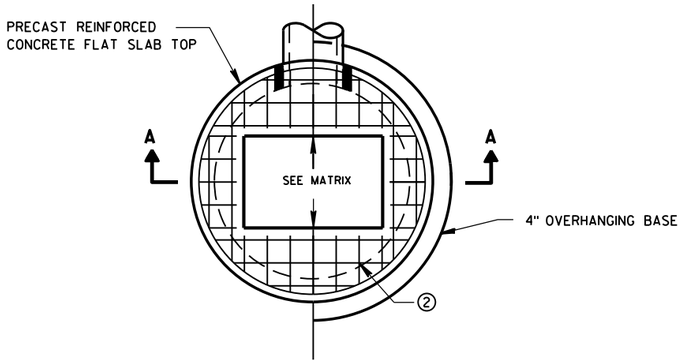
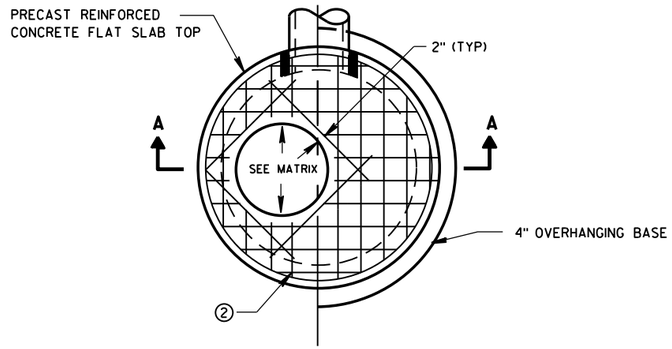
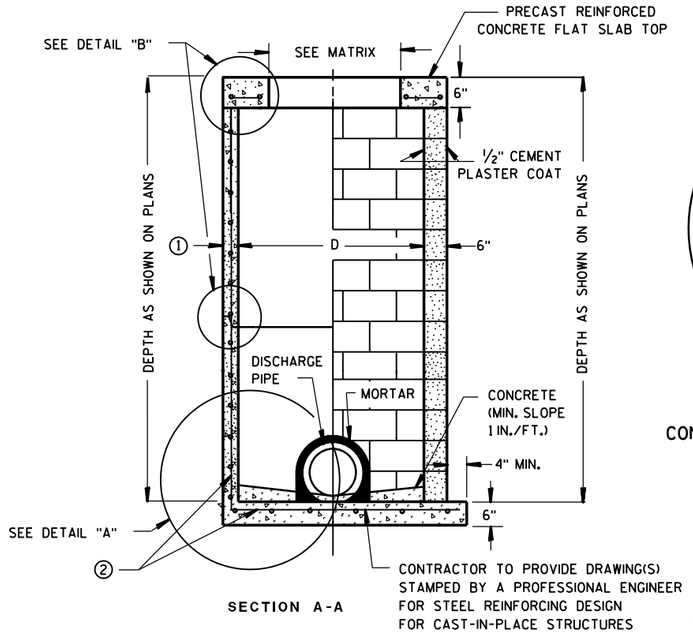


PLAN VIEW RECTANGULAR OPENING



PLAN VIEW CIRCULAR OPENING

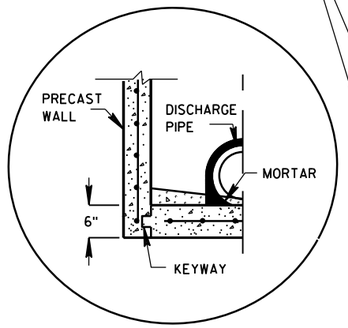


SECTION A-A

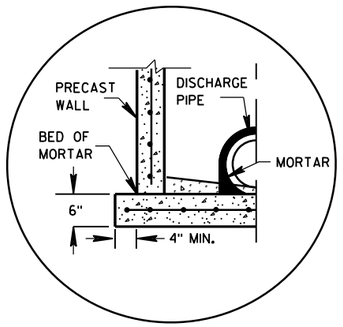
PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

CIRCULAR INLETS W/ FLAT TOP

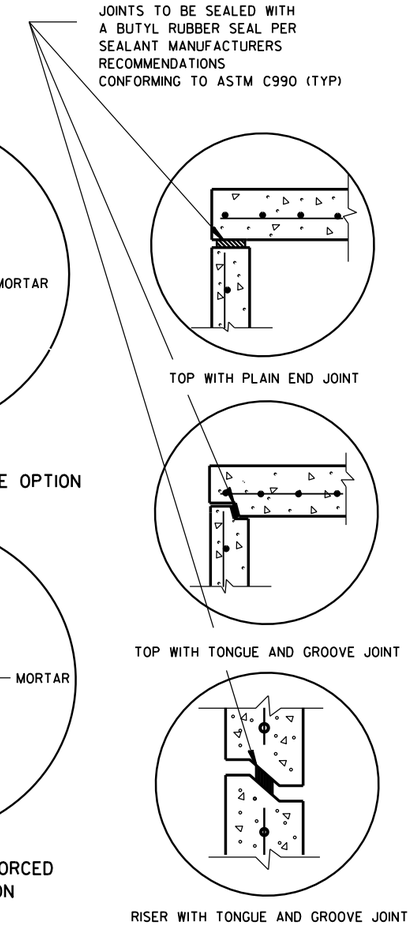


PRECAST REINFORCED
CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED
CONCRETE BASE OPTION

DETAIL "A"



DETAIL "B"

GENERAL NOTES

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

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

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

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

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

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

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

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

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

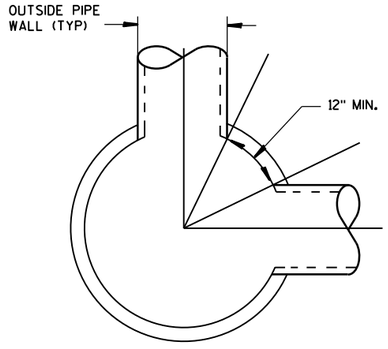
FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4-IN FOR 3-FT DIAMETER AND 5-IN FOR 4-FT DIAMETER PRECAST INLETS.

② FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

INLET COVER OPENING MATRIX

	INLET COVER TYPE	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V	WM	Z
INLET SIZE	OPENING SIZE (FT)											
3-FT	2 DIA.				X							X
	2X2	X	X					X		X		
4-FT	2 DIA.				X							X
	2X2	X	X					X		X		
	2X2.5			X				X	X	X	X	
	2X3						X					
	2.5X3					X						



DETAIL "C"

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18

INLETS 3-FT AND 4-FT DIAMETER

INLETS 3-FT
AND 4-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 — /S/ Rodney Taylor
DATE — ROADWAY STANDARDS | ENT UNIT SUPERVI
FHWA

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S.D.D. 8 C 6-2

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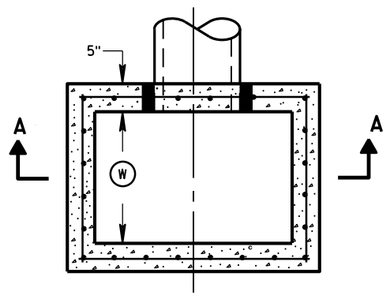
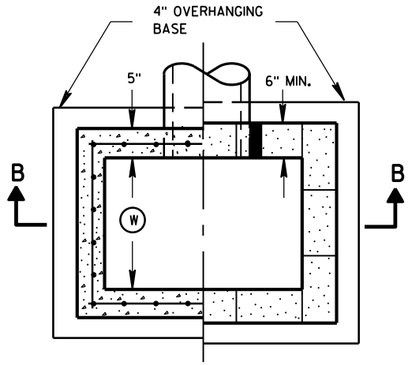
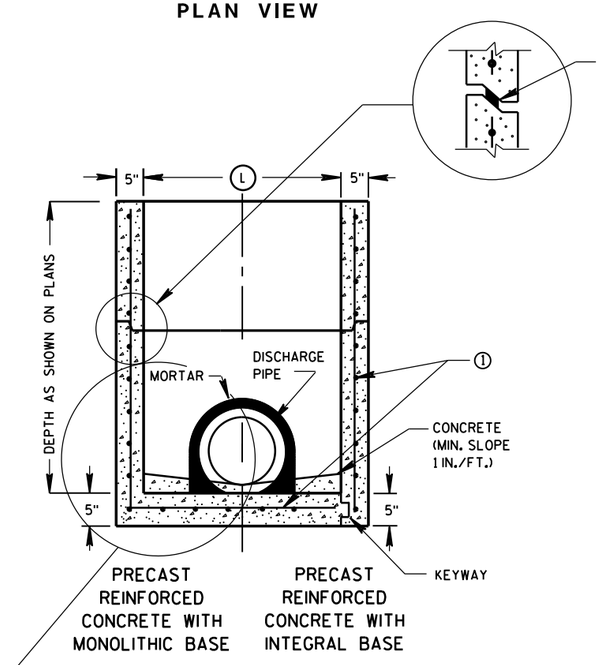
S.D.D. 8 C 6-2



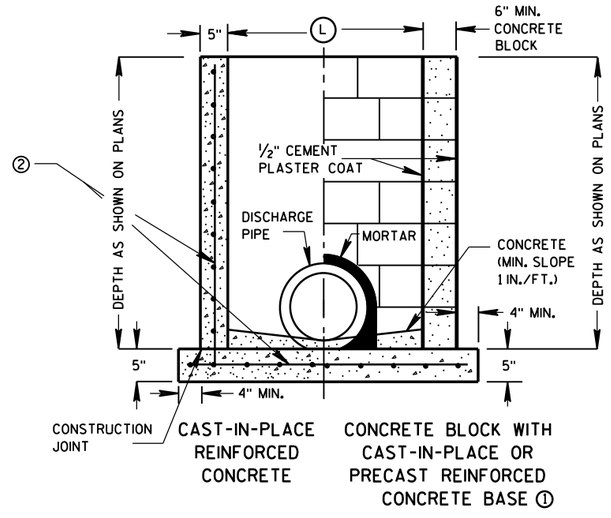
PLAN VIEW



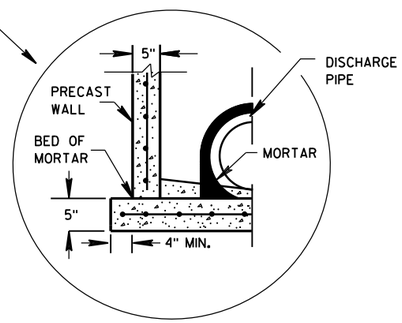
PLAN VIEW



SECTION A-A



SECTION B-B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

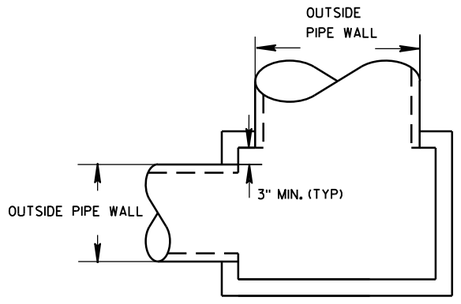
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

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

PIPE MATRIX

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



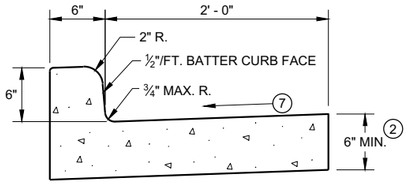
DETAIL "A"

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

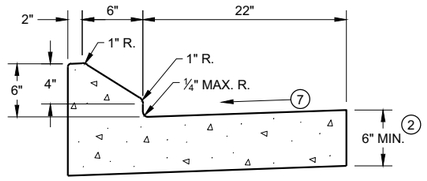
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

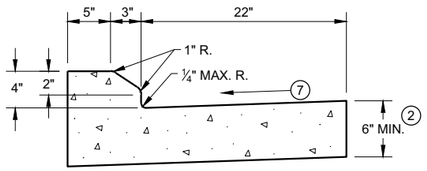
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT



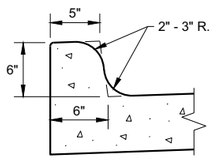
TYPES A (1) & D



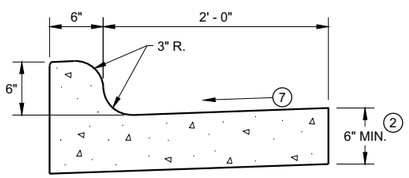
6" SLOPED CURB TYPES G (1) & J



4" SLOPED CURB TYPES G (1) & J

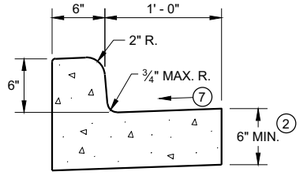


TYPES K (1) & L
(OPTIONAL CURB SHAPE)



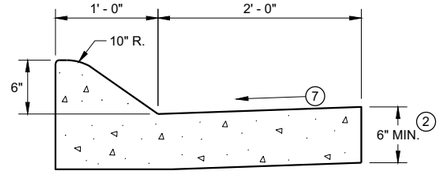
TYPES K (1) & L

CONCRETE CURB AND GUTTER 30"

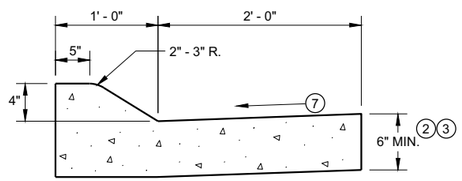


TYPES A (1) & D

CONCRETE CURB AND GUTTER 18"

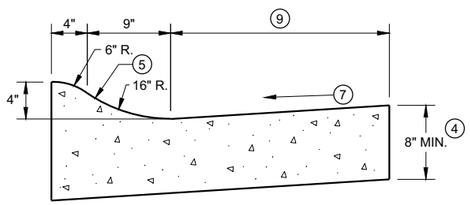


6" SLOPED CURB TYPES A (1) & D



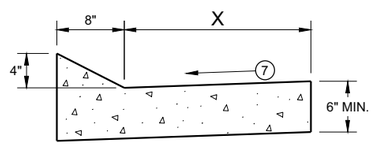
4" SLOPED CURB TYPES A (1) & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R (1) & T

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

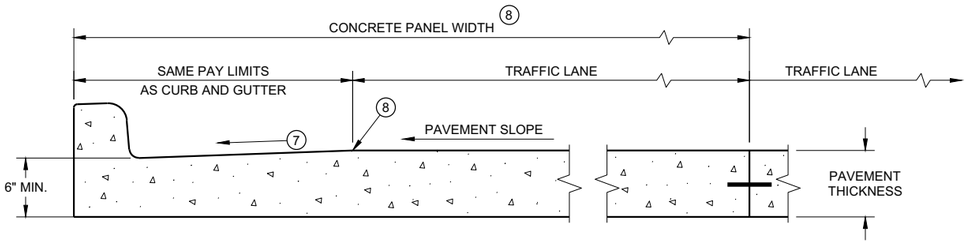


TYPES TBT & TBTT (1)

CONCRETE CURB AND GUTTER

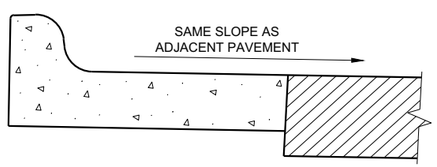
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT *
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER (6)
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

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

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

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

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

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

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

(3) USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.

(4) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(5) UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

(6) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

(7) USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.

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

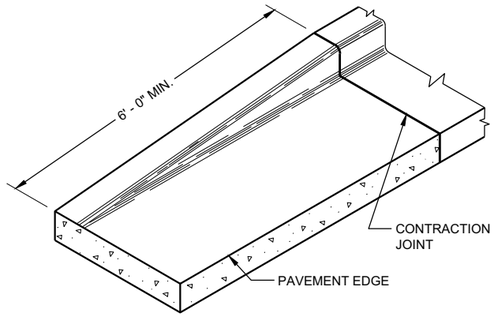
(9) CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

CONCRETE CURB AND GUTTER

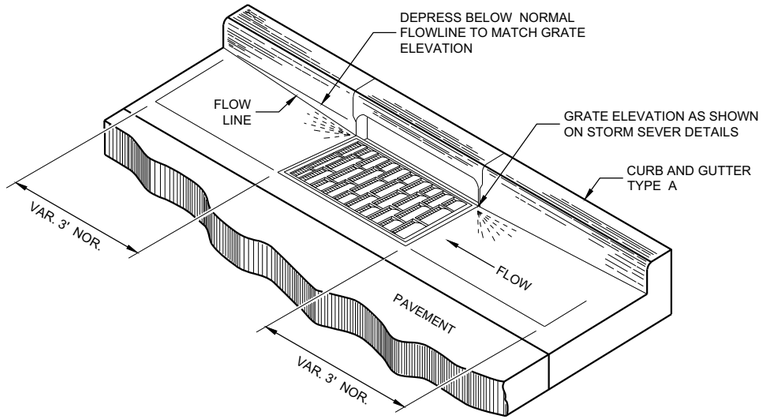
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 08D01 - 22a
SDD 08D01 - 22a



END SECTIONCURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS

(TYPICAL H INLET COVER SHOWN)

GENERAL NOTES

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

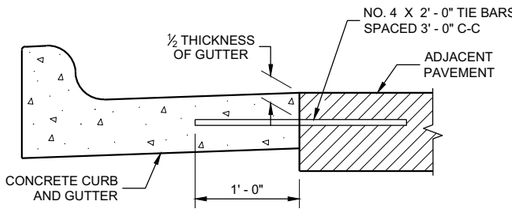
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

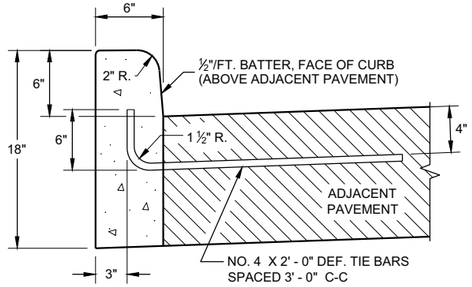
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

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

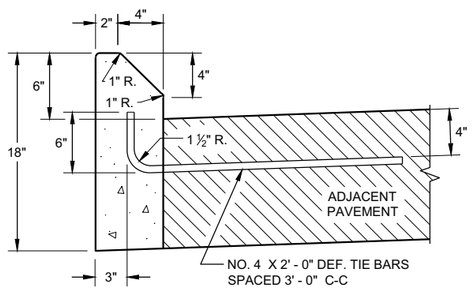
(9) REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION (1)

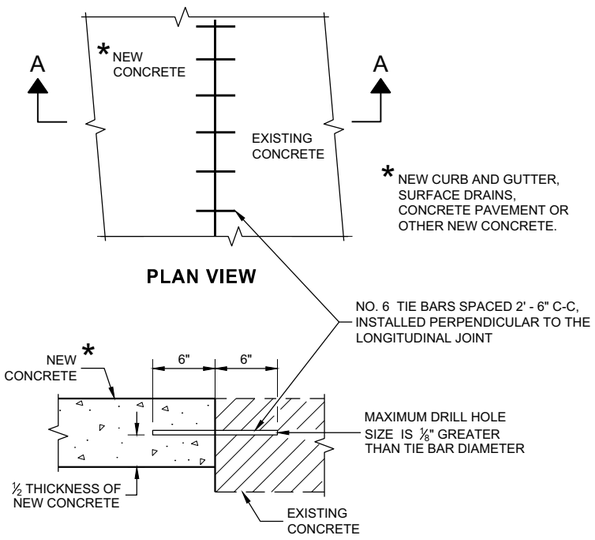


TYPES A (1) & D



TYPES G (1) & J

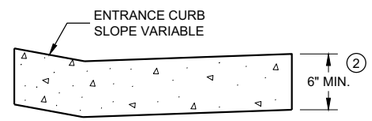
CONCRETE CURB



PLAN VIEW

SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



DRIVEWAY ENTRANCE CURB (9)

(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 — DATE
/S/ Rodnery Taylor — ROADWAY STANDARDS DEVE ENGINEER

FHWA

6

SDD08D01 - 22b

6

SDD08D01 - 22b

METAL APRON ENDWALLS

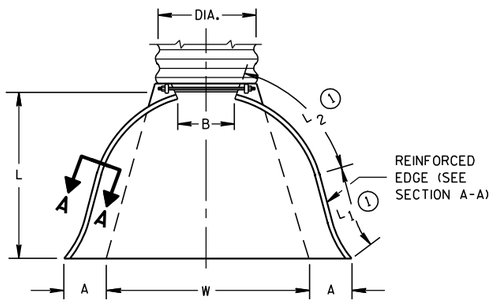
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

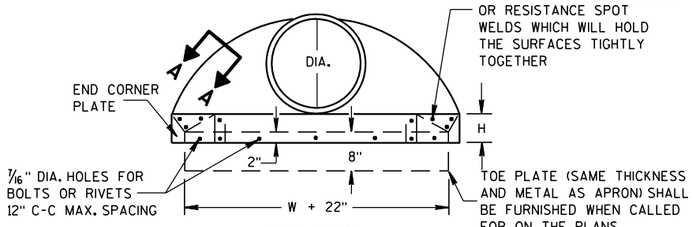
REINFORCED CONCRETE APRON ENDWALLS

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

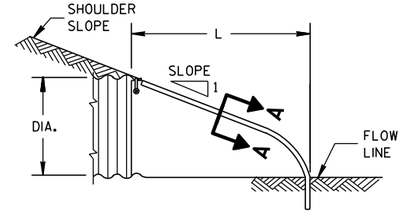
*MINIMUM
**MAXIMUM



PLAN VIEW

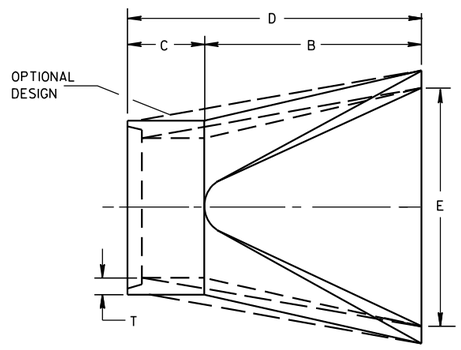


END VIEW

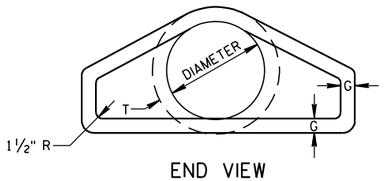


SIDE ELEVATION

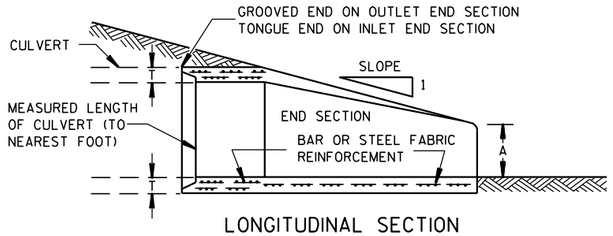
METAL ENDWALLS



PLAN

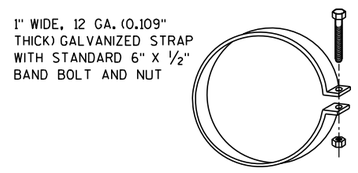


END VIEW



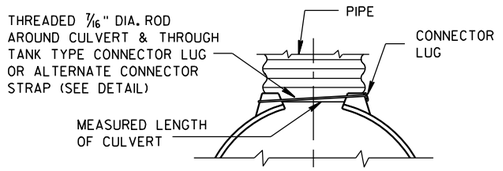
LONGITUDINAL SECTION

CONCRETE ENDWALLS

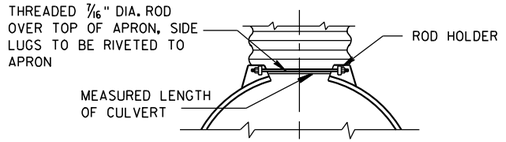


ALTERNATE FOR TYPE 1 CONNECTION

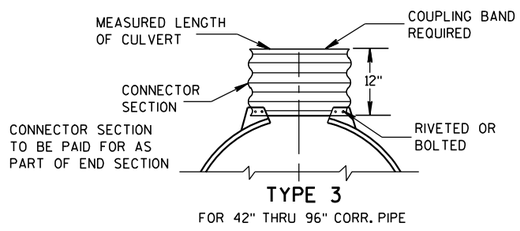
END SECTION CONNECTOR STRAP



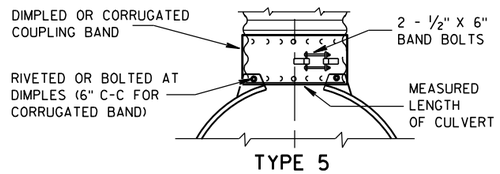
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

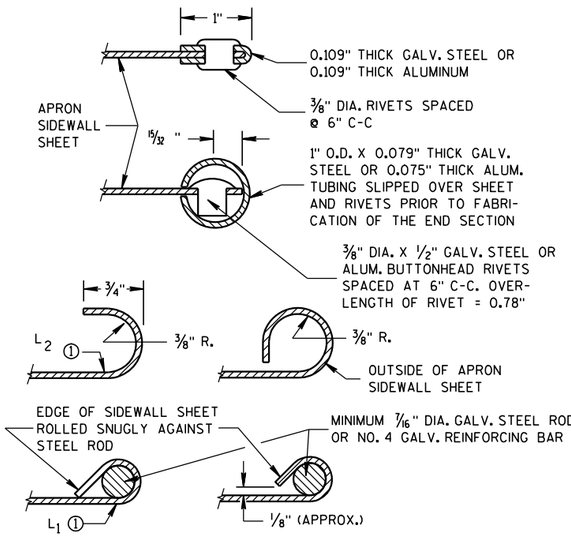
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

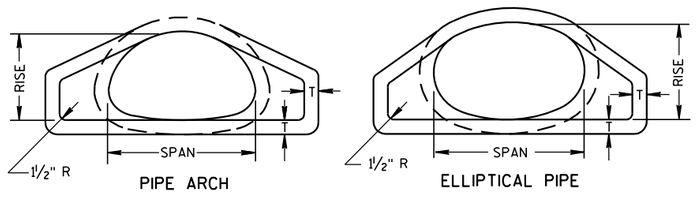
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

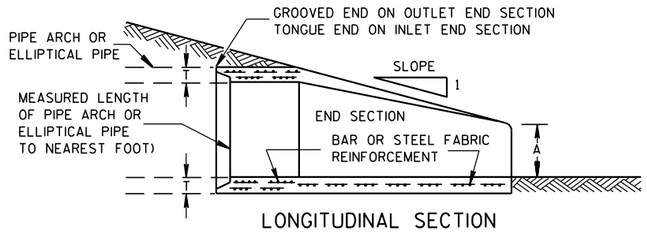
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

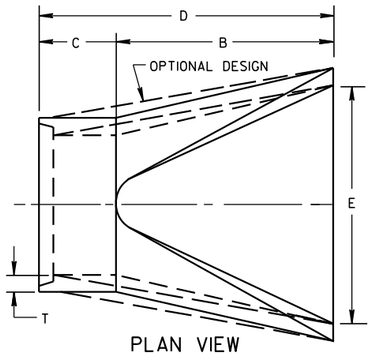
6
S.D.D. 8 F 1-11



END VIEW

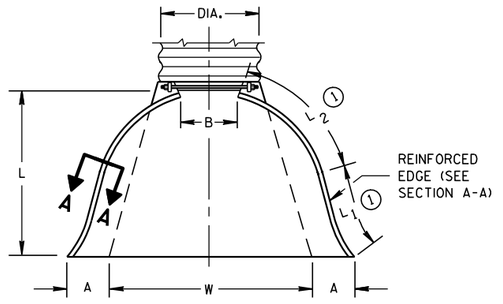


LONGITUDINAL SECTION

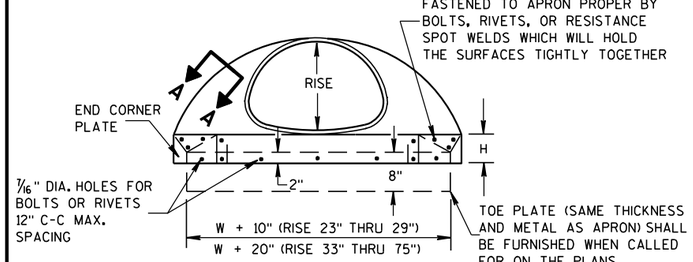


PLAN VIEW

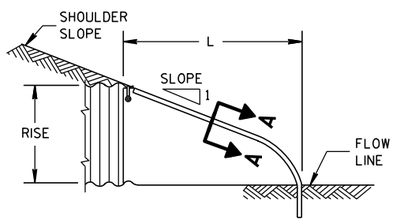
CONCRETE ENDWALLS



PLAN VIEW

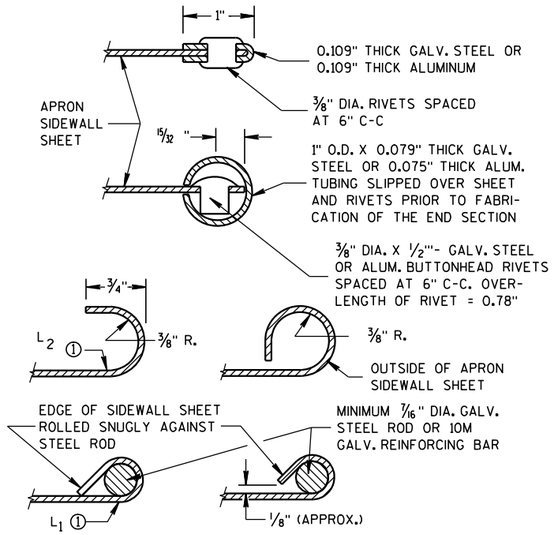


END VIEW



SIDE ELEVATION

METAL ENDWALLS



SECTION A-A

2- 2/3" X 1/2" CORRUGATIONS

EQUIV. DIA. (Inches)	(Inches) SPAN	(Inches) RISE	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
15	17	13	.064	.060	7	9	6	19	14	16	30	2½ to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19⅜	36	2½ to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21¾	42	2½ to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27½	48	2½ to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37⅝	60	2½ to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45⅜	75	2½ to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54¾	85	2½ to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2½ to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72¾	102	2¼ to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82¼	114	2¼ to 1	3 Pc.
66	77	52	.109*	.105*	18	36	12	77	—	—	126	2 to 1	3 Pc.
72	83	57	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.

3" X 1" CORRUGATIONS

EQUIV. DIA. (Inches)	(Inches) SPAN	(Inches) RISE	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
48	53	41	.109	.105	18	26	12	63	24	72¾	90	2½ to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82¼	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1½ to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1½ to 1	3 Pc.
72	81	59	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.
78	87	63	.109*	.105*	22	38	12	77	—	—	148	1½ to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1½ to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1½ to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1½ to 1	3 Pc.

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL SEE GENERAL NOTES

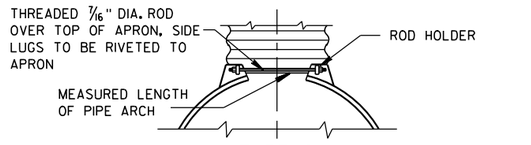
REINFORCED CONCRETE PIPE ARCH

EQUIV. DIA. (Inches)	DIMENSIONS (Inches) ** SPAN	** RISE	T	A	B	C	D	E	APPROX. SLOPE
24	29	18	3	8½	39	33	72	48	3 to 1
30	36	22	3½	9½	50	46	96	60	3 to 1
36	44	27	4	11⅛	60	36	96	72	3 to 1
42	51	31	4½	15 13/16	60	36	96	78	3 to 1
48	58	36	5	21	60	36	96	84	3 to 1
54	65	40	5½	25½	60	36	96	90	3 to 1
60	73	45	6	31	60	36	96	96	3 to 1
72	88	54	7	31	60	39	99	120	2 to 1
84	102	62	8	28½	83	19	102	144	2 to 1

REINFORCED CONCRETE ELLIPTICAL PIPE

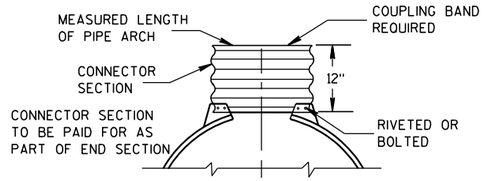
EQUIV. DIA. (Inches)	DIMENSIONS (Inches) ** SPAN	** RISE	T	A	B	C	D	E	APPROX. SLOPE
24	30	19	3¼	8½	39	33	72	48	3 to 1
30	38	24	3¾	9½	54	18	72	60	3 to 1
36	45	29	4½	11⅛	60	24	84	72	2½ to 1
42	53	34	5	15¾	60	36	96	78	2½ to 1
48	60	38	5½	21	60	36	96	84	2½ to 1
54	68	43	6	25½	60	36	96	90	2½ to 1
60	76	48	6½	30	60	36	96	96	2½ to 1

**NOMINAL SIZE



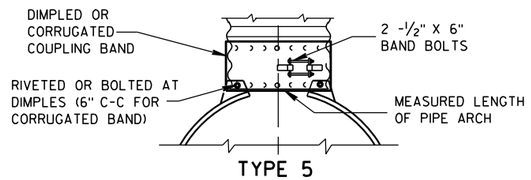
TYPE 2

FOR 17" X 13" THRU 112" X 75" PIPE ARCH



TYPE 3

FOR 64" X 43" THRU 112" X 75" PIPE ARCH



TYPE 5

ALTERNATE FOR:

ALL SIZES CORRUGATED PIPE ARCHES

NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

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

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH 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 ARCH 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 77" X 52" THROUGH 112" X 75" 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 ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/94 — DATE

/S/ Rory L. Rhinesmith — CHIEF ROADWAY DEVELOPMENT ENGINEER

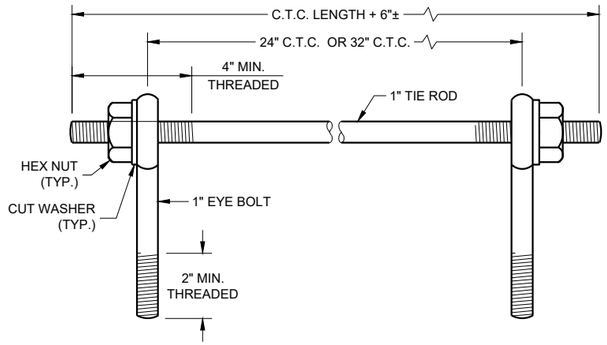
FHWA

6

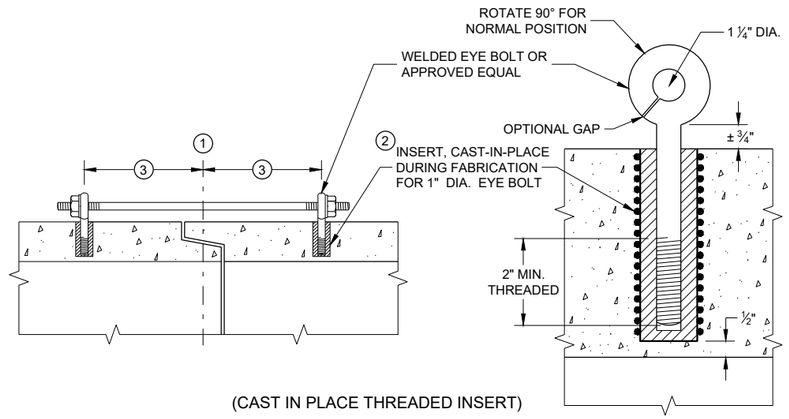
S.D.D. 8 F 2-1

6

S.D.D. 8 F 2-1



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.

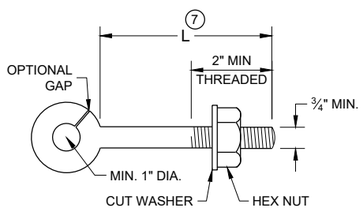
(3) HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.

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

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

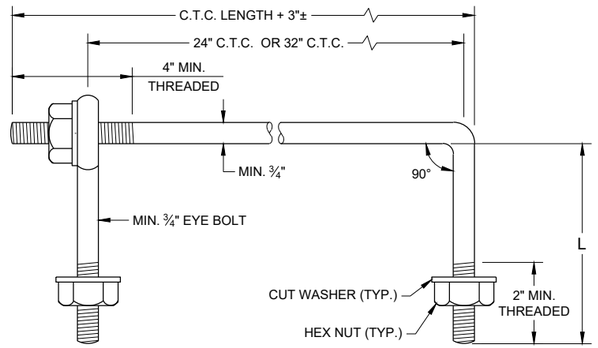
(6) LENGTH ADEQUATE TO EXTEND TO WITHIN ½ INCH OF THE INNER SURFACE OF THE PIPE.

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

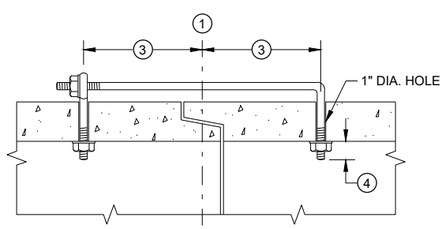


EYE BOLT (7)

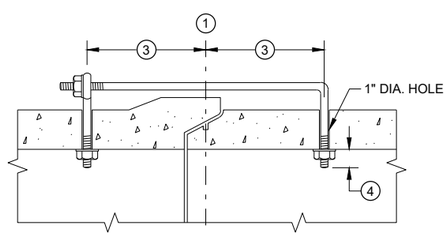
NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD



(TONGUE AND GROOVE PIPE)



(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

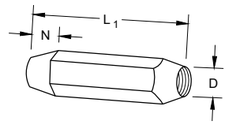
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

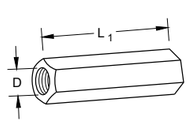
EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

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

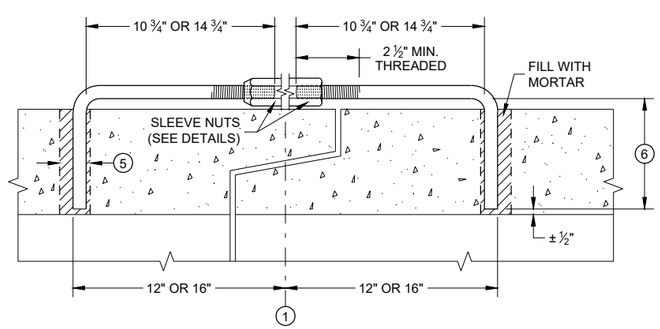
DIMENSIONS SHOWN ARE IN INCHES





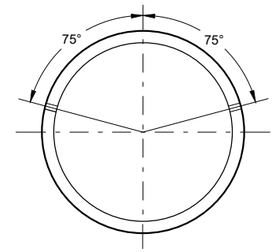
RIGHT AND LEFT THREADS

SLEEVE NUTS



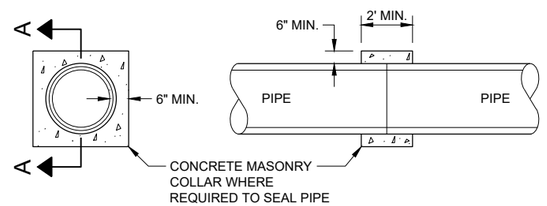
LONGITUDINAL SECTION

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

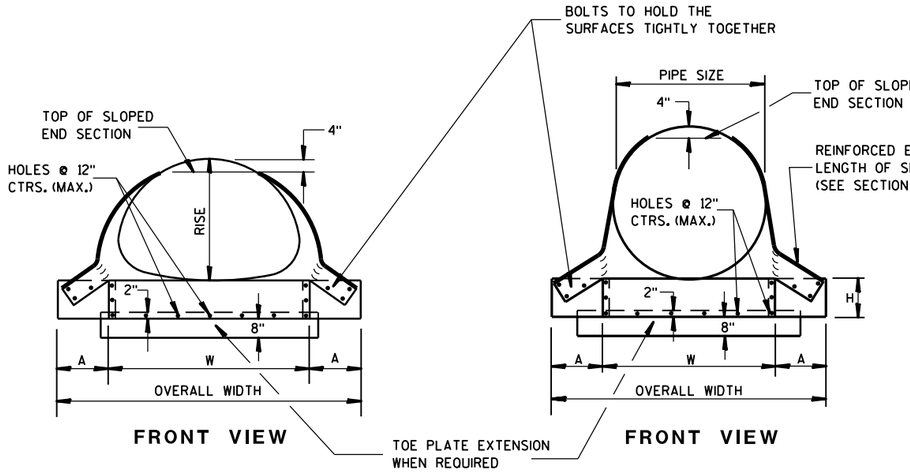
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

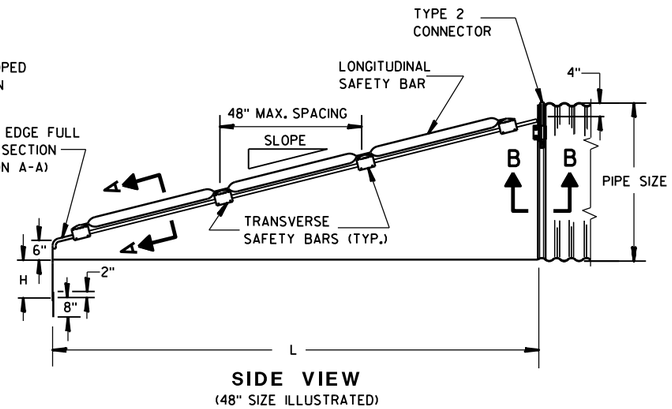
SDD 08F04 - 08

SDD 08F04 - 08



FRONT VIEW

FRONT VIEW



SIDE VIEW
(48" SIZE ILLUSTRATED)

GENERAL NOTES

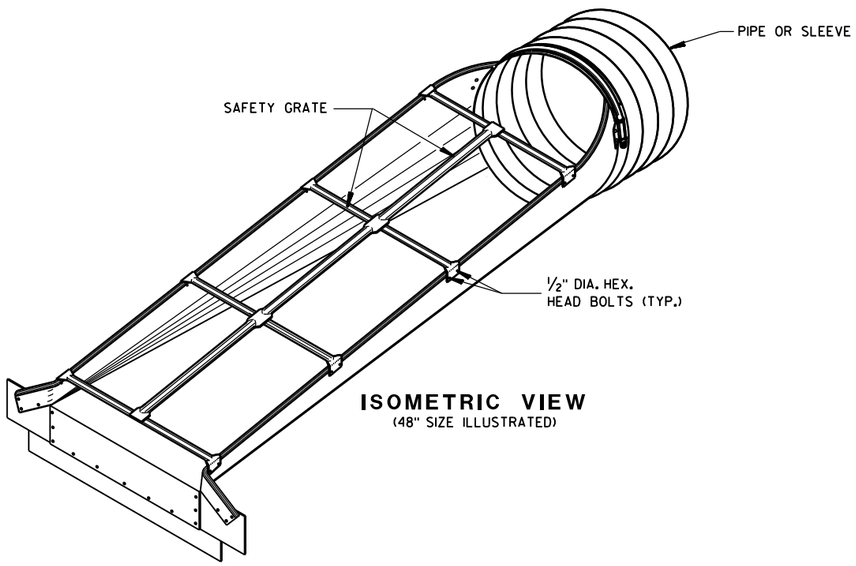
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

SAFETY GRATES SHALL BE FABRICATED FROM 3-INCH DIAMETER GALVANIZED PIPE MEETING THE REQUIREMENTS OF ASTM A-53, GRADE B, SCHEDULE 40 OR APPROVED EQUAL. THE LONGITUDINAL BAR SHALL BE WELDED TO THE TRANSVERSE BARS WHERE THE BARS CROSS. THE NUMBER OF TRANSVERSE BARS REQUIRED WILL VARY DEPENDING ON THE LENGTH OF THE END SECTION.

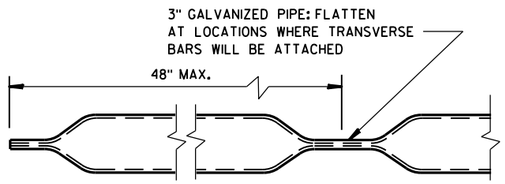
SLOPED STEEL ENDWALLS LOCATED AT THE ENDS OF CONCRETE CULVERT PIPE SHALL BE FURNISHED WITH STEEL ADAPTER SLEEVES.

STEEL APRON ENDWALLS FOR CULVERT PIPE CROSS DRAINS

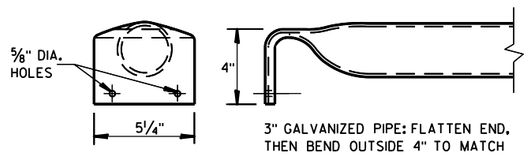
PIPE DIA. (IN.)	MIN. THICK.		DIMENSIONS (Inches)				L DIMENSIONS			
	IN.	GAGE	A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
36	.109	12	12	9	42	66	4:1	104	6:1	156
42	.109	12	16	12	48	80	4:1	128	6:1	192
48	.109	12	16	12	54	86	4:1	152	6:1	228
54	.109	12	16	12	60	92	4:1	176	6:1	264
60	.109	12	16	12	66	98	4:1	200	6:1	300



ISOMETRIC VIEW
(48" SIZE ILLUSTRATED)



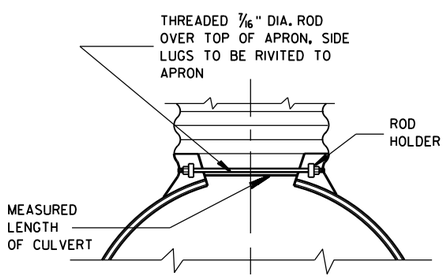
LONGITUDINAL SAFETY BAR



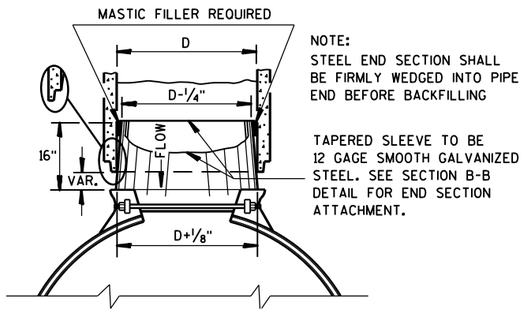
TRANSVERSE SAFETY BAR

STEEL APRON ENDWALLS FOR PIPE ARCH SLOPED CROSS DRAINS

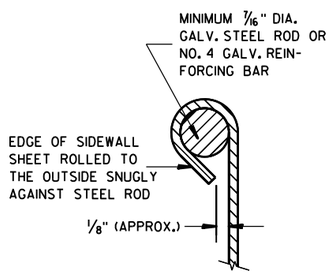
EQUIV. DIA. (IN.)	INCHES		MIN. THICK.		DIMENSIONS (Inches)				L DIMENSIONS			
	SPAN	RISE	IN.	GAGE	A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
30	35	24	.079	14	12	9	41	65	4:1	56	6:1	84
36	42	29	.109	12	12	9	48	72	4:1	76	6:1	114
42	49	33	.109	12	16	12	55	87	4:1	92	6:1	138
48	57	38	.109	12	16	12	63	95	4:1	112	6:1	168
54	64	43	.109	12	16	12	70	102	4:1	132	6:1	198
60	71	47	.109	12	16	12	77	109	4:1	148	6:1	222



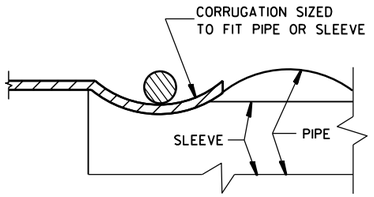
TYPE 2 CONNECTOR DETAIL



STEEL ADAPTER SLEEVE FOR CONCRETE PIPE



SECTION A-A



SECTION B-B

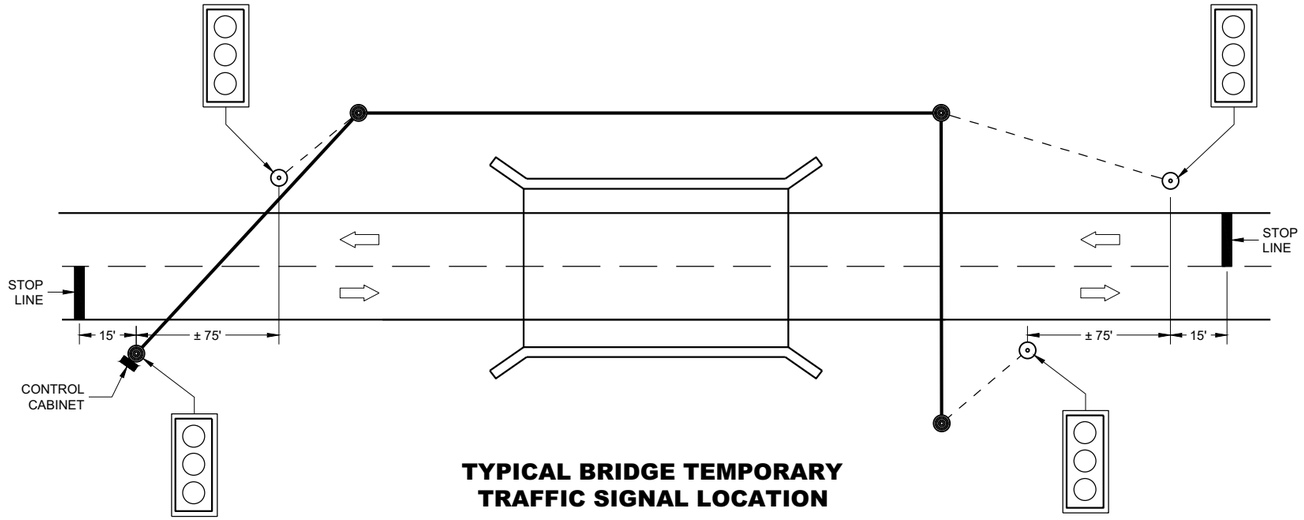
STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED CROSS DRAINS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 8 F 8-2



TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION

LEGEND

- WOOD POLE (NON-BREAKAWAY)
- WOOD POST (BREADAWAY)
- SIGNAL CABLE
- SIGNAL CABLE W/MESSENGER
- DIRECTION OF TRAFFIC
- LED TRAFFIC SIGNAL WITH BACKPLATE (3-12")

GENERAL NOTES

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

POLE MOUNTED TRAFFIC SIGNAL CONTROL CABINET MAY BE MOUNTED ON THE SERVICE POLE IF THE ELECTRICAL UTILITY ALLOWS THE INSTALLATION.

WHEN UTILITY POLES ARE USED TO SPAN THE TEMPORARY OVERHEAD CABLE, WRITTEN PERMISSION MUST BE OBTAINED FROM THE OWNER OF THE POLES AND GIVEN TO THE PROJECT MANAGER. ALL PERTINENT UTILITY AND CODE CLEARANCES SHALL BE MAINTAINED.

WOOD POLES (NON-BREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAM GUARD, ETC.).

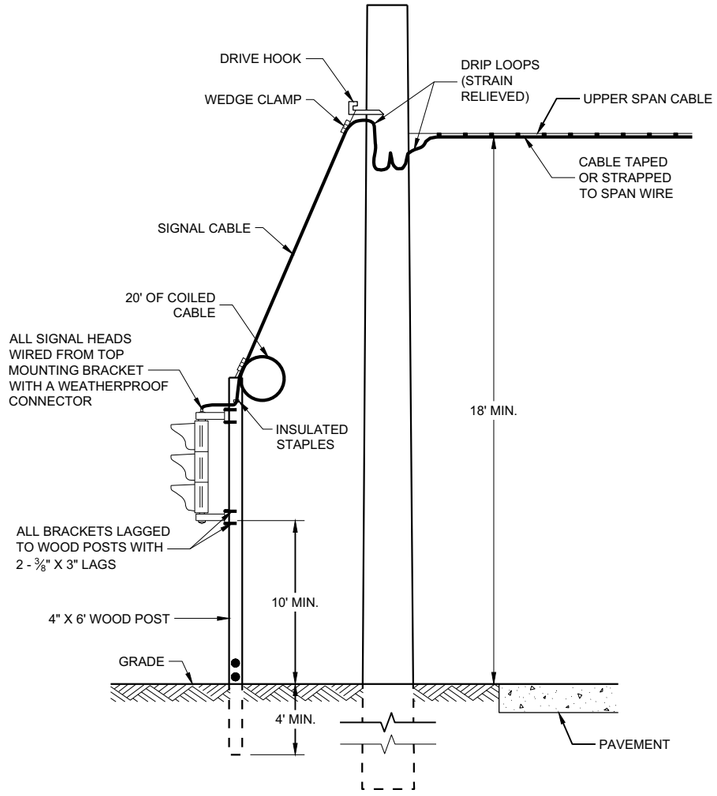
WOOD POSTS (BREAKAWAY) SHALL BE NO CLOSER THAN 2 FEET OUTSIDE OF SHOULDER.

VERTICAL CLEARANCE ETC. PER NEC.

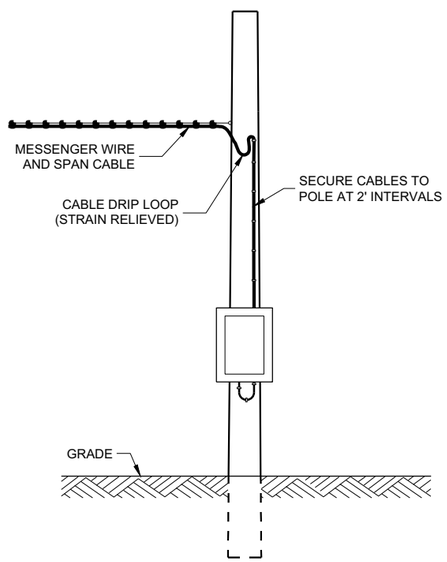
TRAFFIC SIGNAL FACES SHALL BE TYPICALLY PLACED 12 FEET FROM EDGE OF PAVEMENT.

EACH TRAFFIC SIGNAL SHALL HAVE A BACKPLATE.

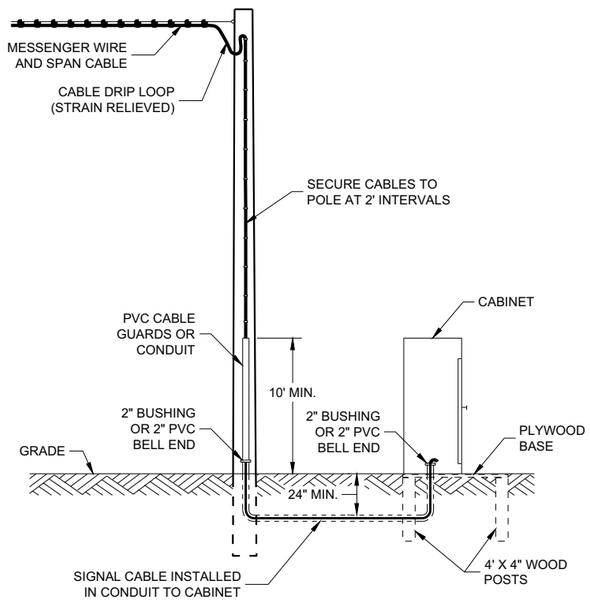
SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15D33.



TYPICAL DROP TO TRAFFIC SIGNAL FACE



POLE MOUNT CABINET INSTALLATION



GROUND MOUNT CABINET INSTALLATION

MINIMUM POLE LENGTHS	CLASS	POLE BURIAL DEPTHS
25'	V	5'
30'	V	6'
35'	IV	7'
40'	IV	8'
45'	IV	9'

OFFSET DISTANCES FOR TEMPORARY NON-BREAKAWAY POLES	
SPEED LIMIT	OFFSET DISTANCE*
GREATER THAN 45 MPH	18 FT
45 MPH OR LESS	12 FT
45 MPH OR LESS W/CURBS	2 FT

* NOTE: OFFSET MEASURED FROM OUTER EDGE OF OUTSIDE THRU LANE.

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 — DATE
/S/ Ahmet Demirbilek — ROADWAY STANDARDS DEVE ENGINEER

FHWA

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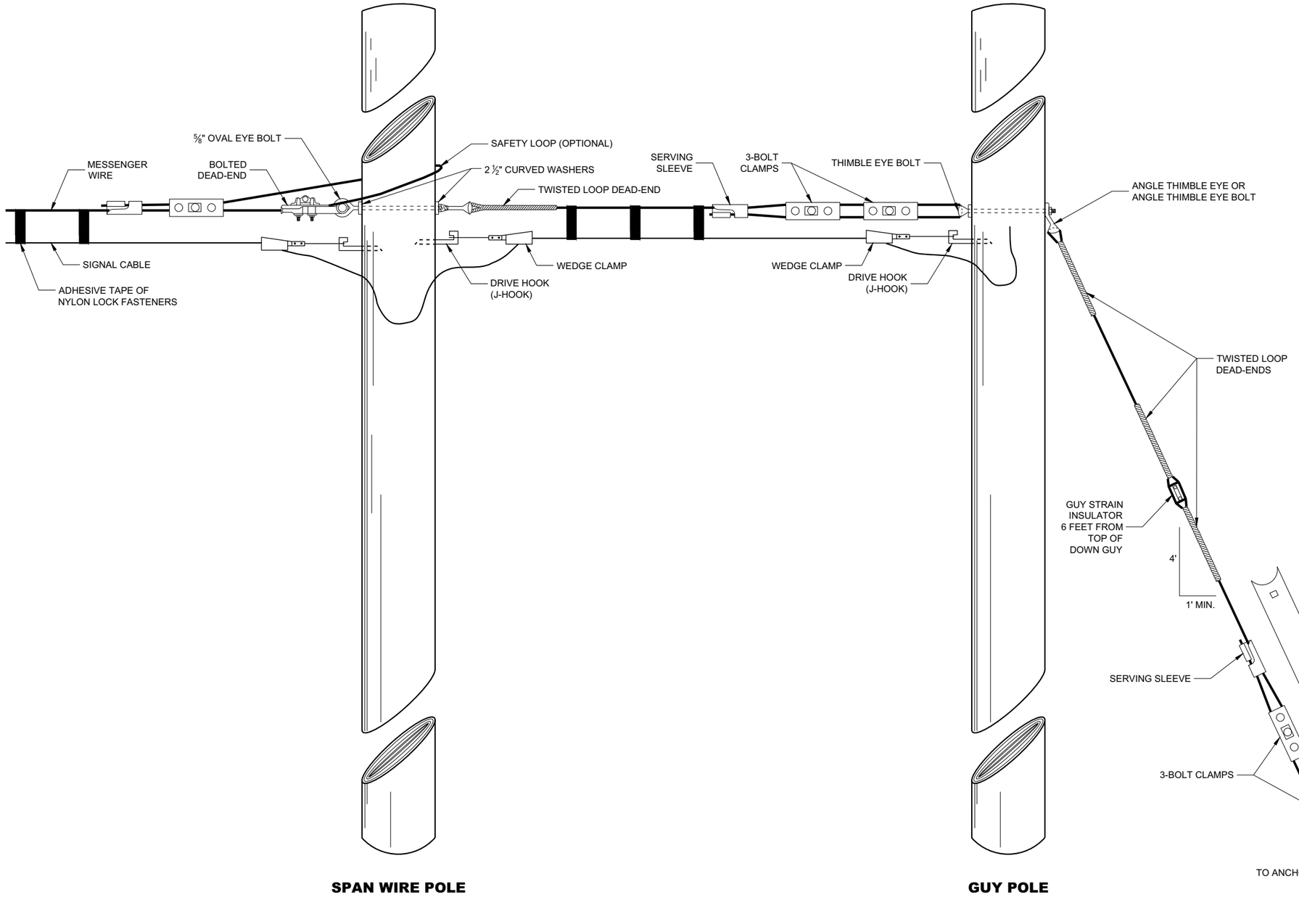
SDD09G02 - 05a

6

SDD09G02 - 05a

GENERAL NOTES

USE ¾" DRILL IN WOOD POLE TO PROVIDE FOR ⅝" BOLTS.



SPAN WIRE POLE

GUY POLE

TYPICAL DEAD-ENDINGS OR GUYING

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2015
DATE

/S/ Ahmet Demerbilek
ROADWAY STANDARDS DEVE ENGINEER

FHWA

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SDD09G02 - 05b

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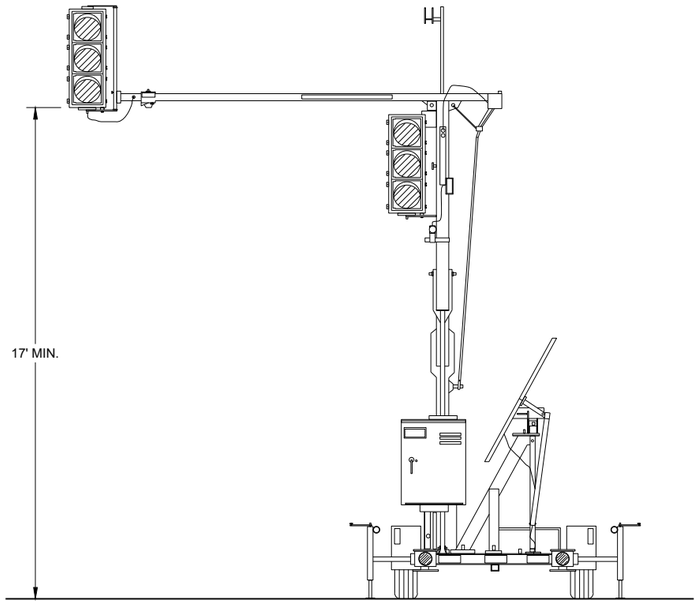
SDD09G02 - 05b

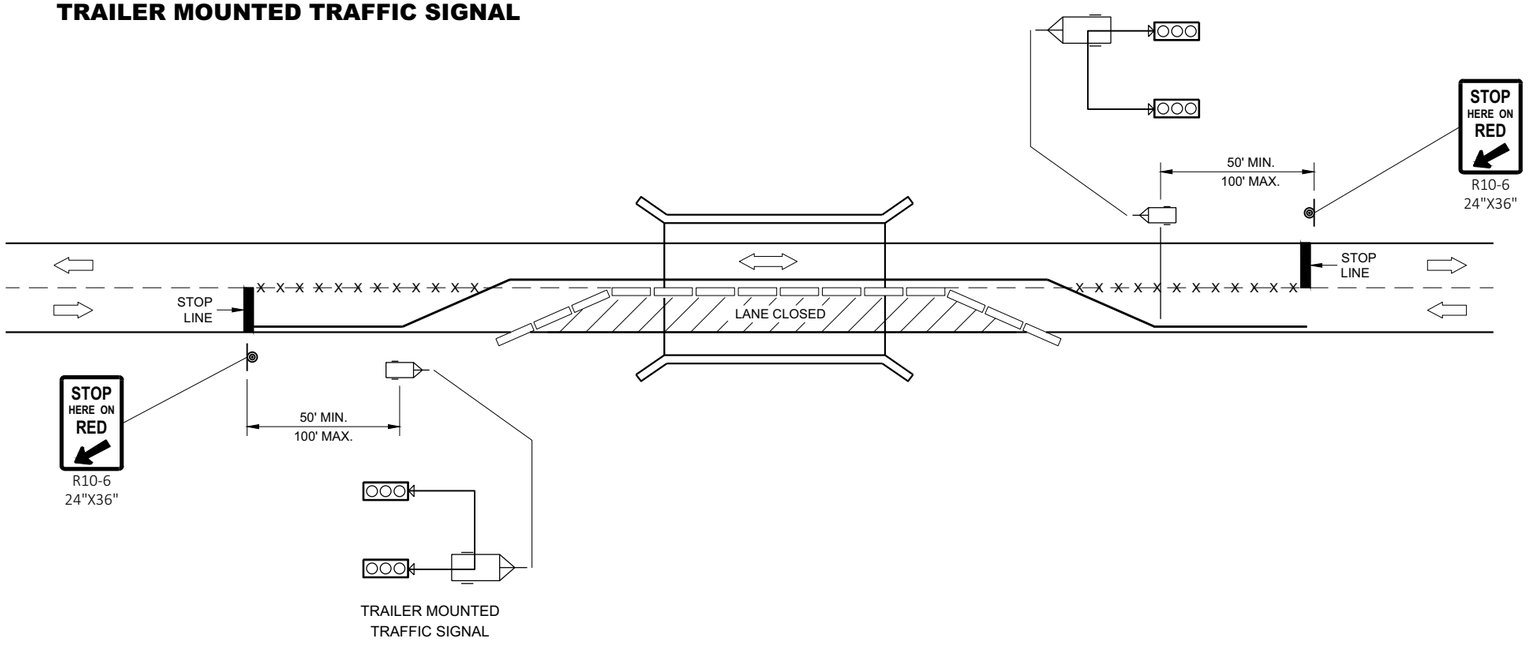


TRAILER MOUNTED TRAFFIC SIGNAL

GENERAL NOTES

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

SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15D33.



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

LEGEND

- POST MOUNTED SIGN
- TEMPORARY PRECAST CONCRETE BARRIER
- TRAILER MOUNTED TRAFFIC SIGNAL
- REMOVE PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2015
DATE

/S/ Ahmet Demerbilek
ROADWAY STANDARDS DEVE ENGINEER

FHWA

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SDD09G02 - 05c

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SDD09G02 - 05c

GENERAL NOTES

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

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

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

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

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

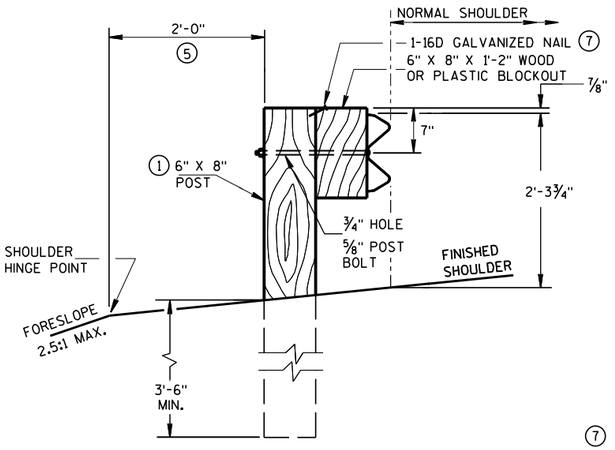
(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

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

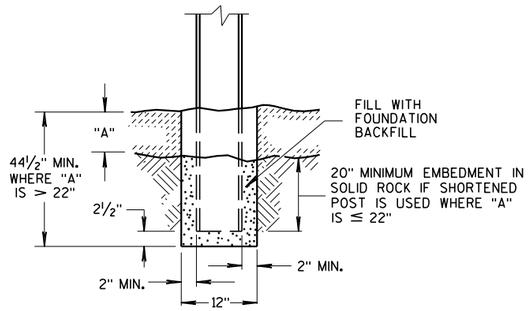
(7) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

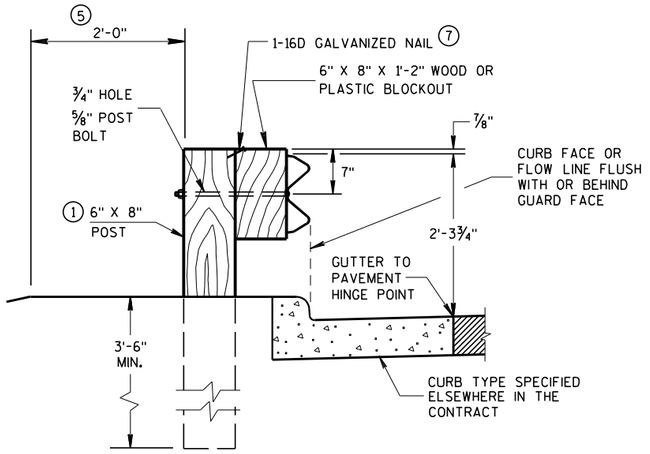
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



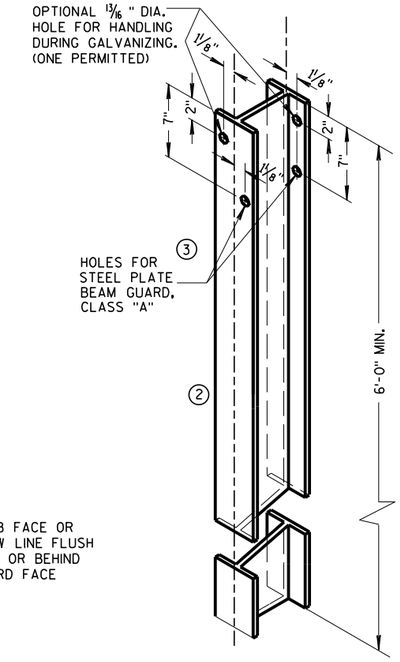
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



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

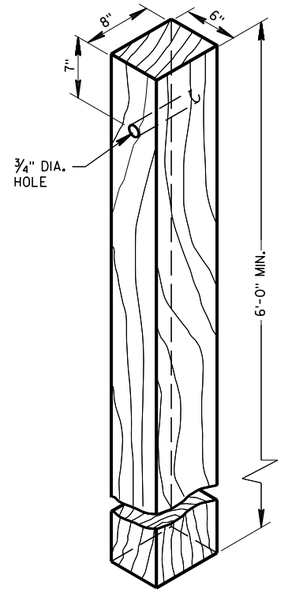


END VIEW
LOCATED ALONG A CURBED ROADWAY

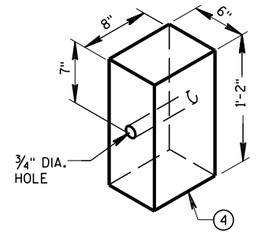


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

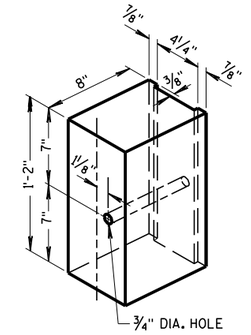
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



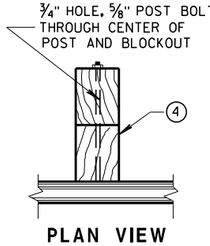
WOOD POST
(6"X8") NOMINAL



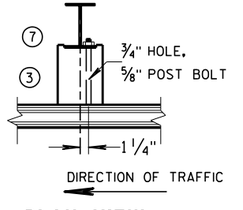
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



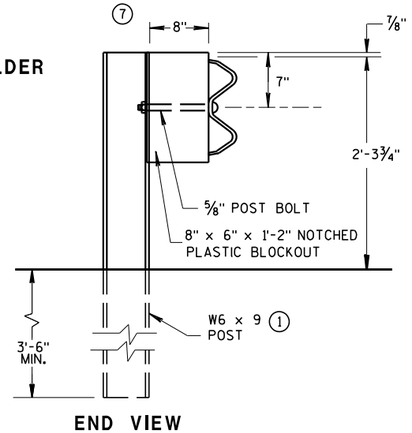
TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS (1)



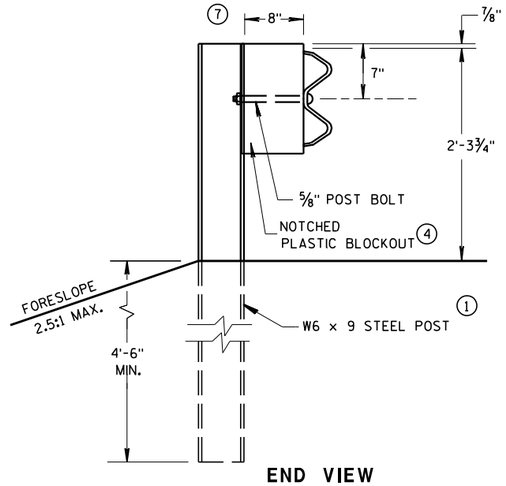
PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



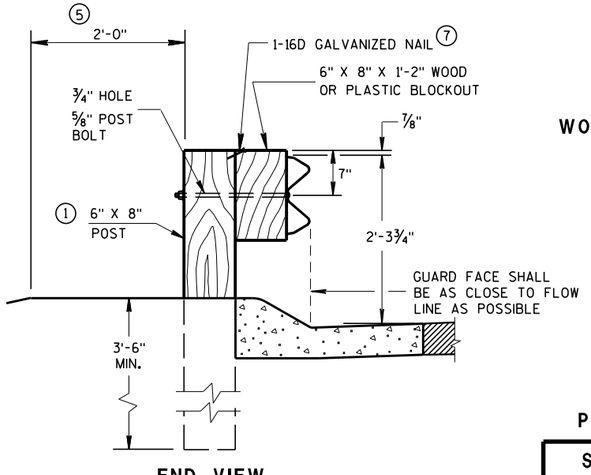
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



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



END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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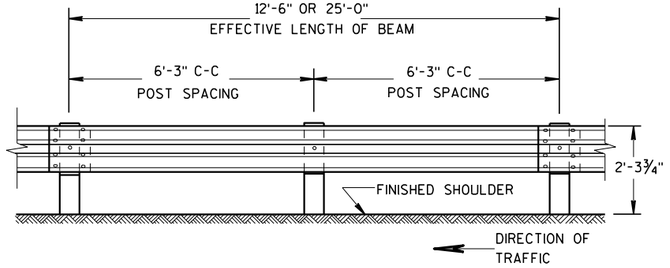
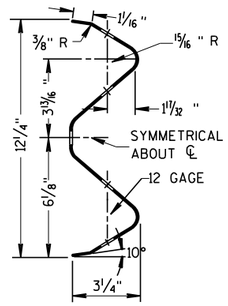
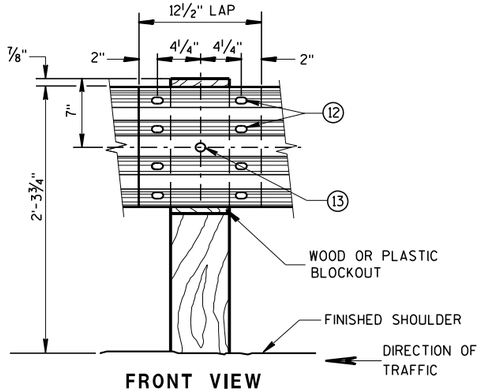


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM



FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

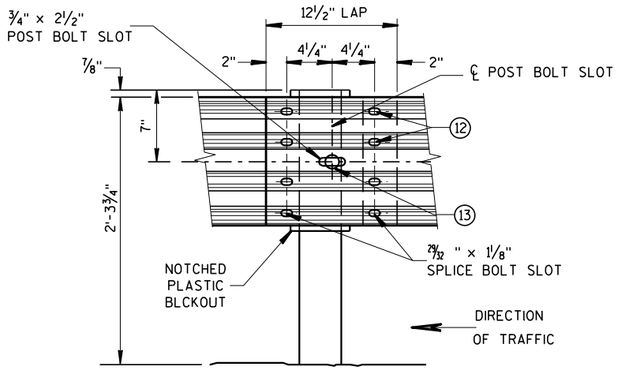
(9) DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.

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

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

FRONT VIEW

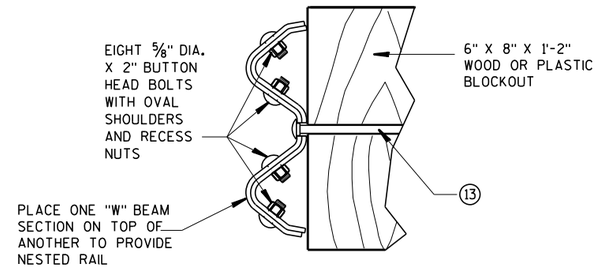
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

BEAM SPLICE AT STEEL POST

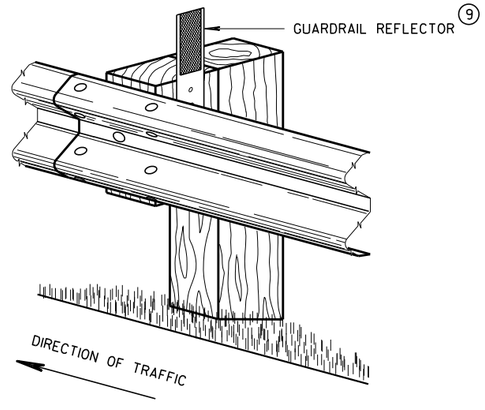
TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD



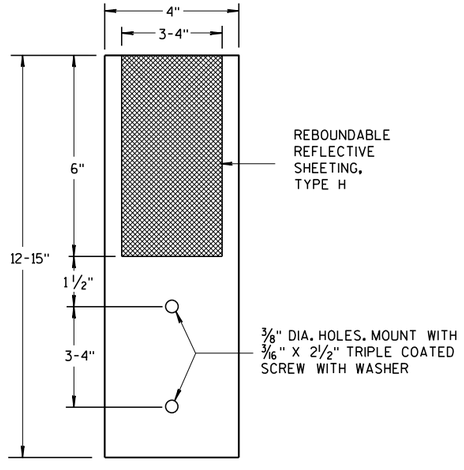
NESTED W BEAM (NW)

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

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



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



4"x 12" GUARDRAIL REFLECTOR

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

STATE OF WISCO 74
DEPARTMENT OF TRANSPORTATION

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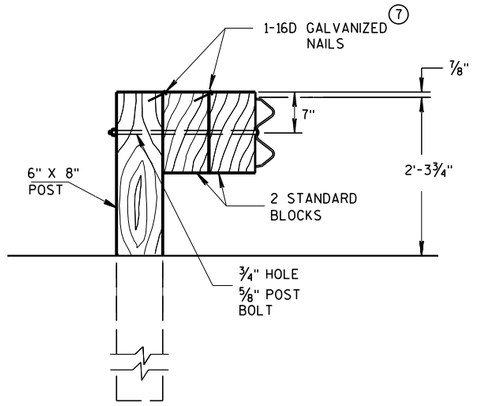
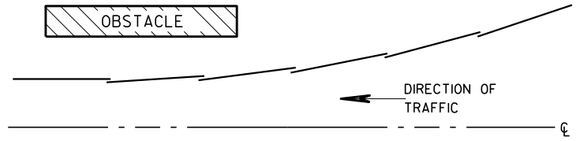
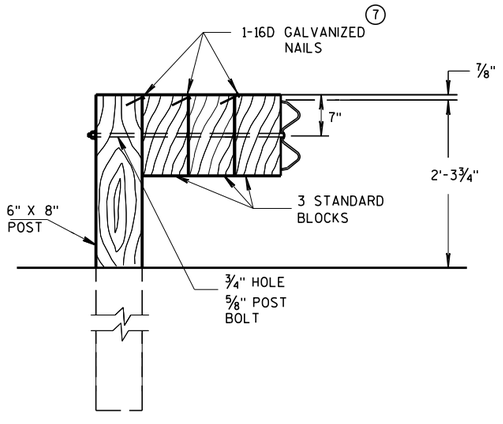


DETAIL FOR DOUBLE BLOCKS

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

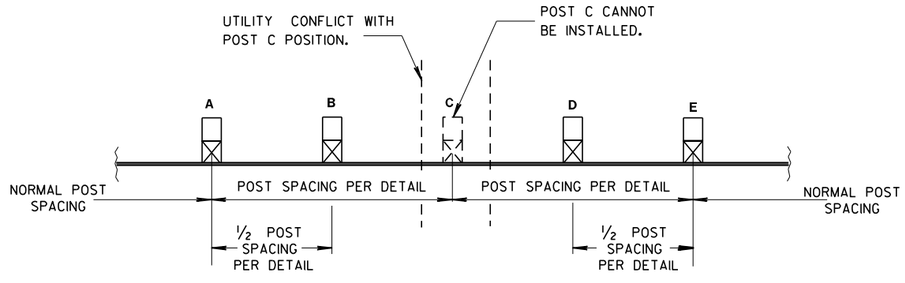


PLAN VIEW
BEAM LAPPING DETAIL



DETAIL FOR TRIPLE BLOCKS

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



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

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

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR

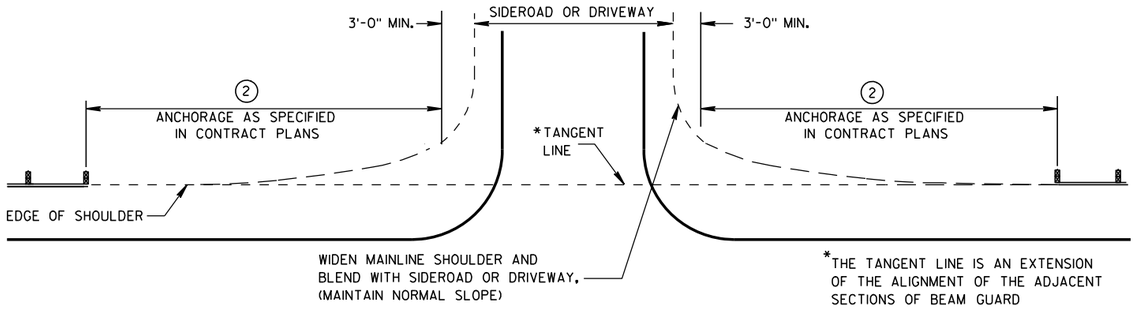
FHWA

6

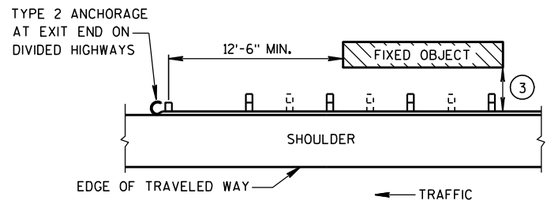
S.D.D. 14 B 15-11c

6

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



BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PERTINENT STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

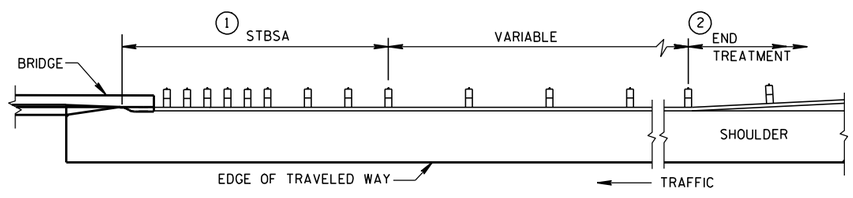
THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

(1) STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.

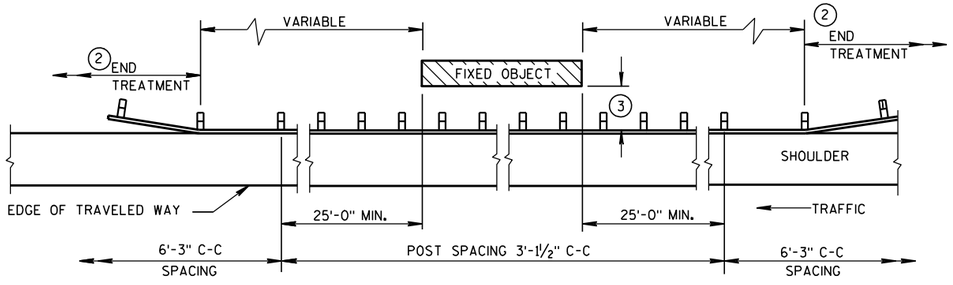
(2) USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

(3)

MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT	POST SPACING
3'-6"	3' - 1½"
4'-6"	6' - 3"

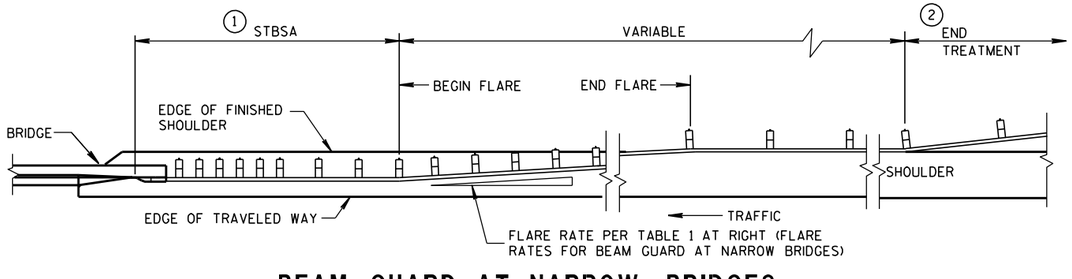


BEAM GUARD AT FULL WIDTH BRIDGES



BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

(RAIL TO OBSTACLE CLEARANCE 3'-6" TO 4'-6")



BEAM GUARD AT NARROW BRIDGES
(FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)

TABLE 1
FLARE RATES FOR BEAM GUARD AT NARROW BRIDGES

POSTED SPEED (MPH)	FLARE RATE
25	13:1
30	15:1
35	16:1
40	18:1
45	21:1
50	24:1
55	26:1
65	30:1

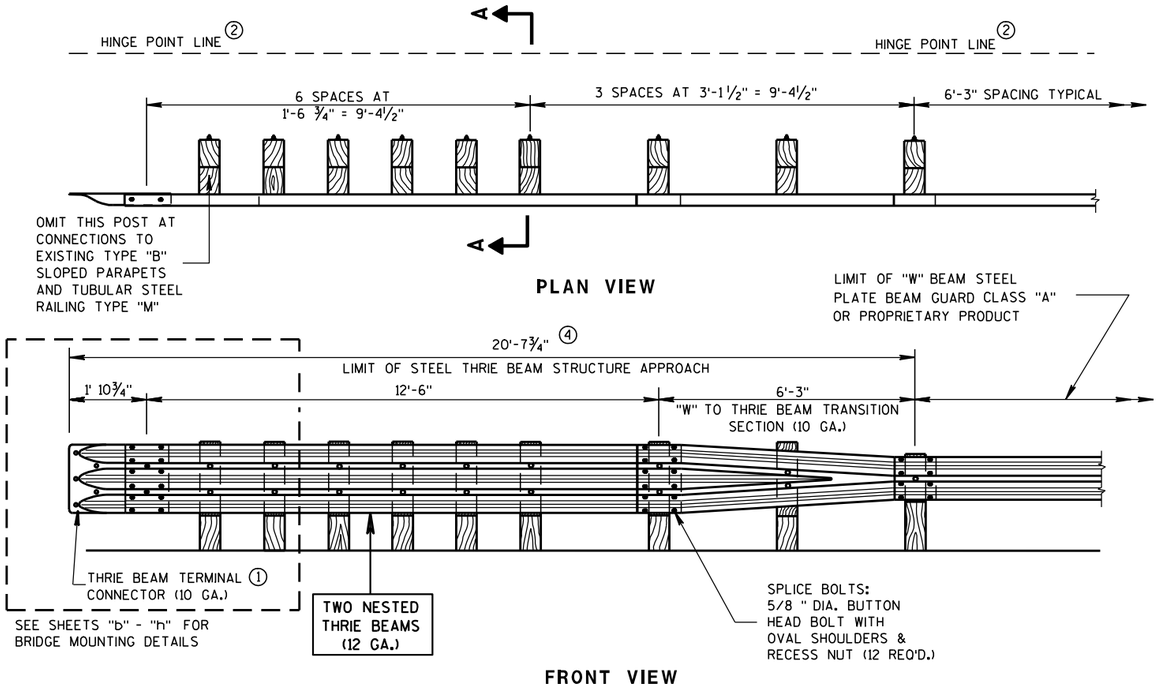
STEEL PLATE BEAM GUARD CLASS "A" AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-21-07 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 14 B 18-6a



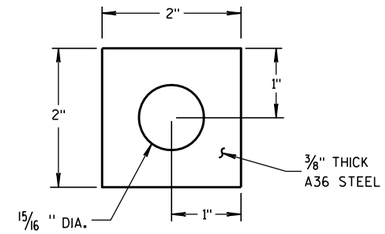


PLATE WASHER DETAIL

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.

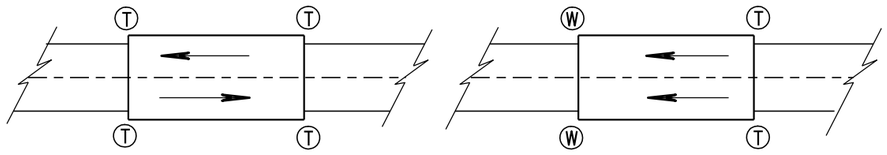
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2" , AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

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

② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.

③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" 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.



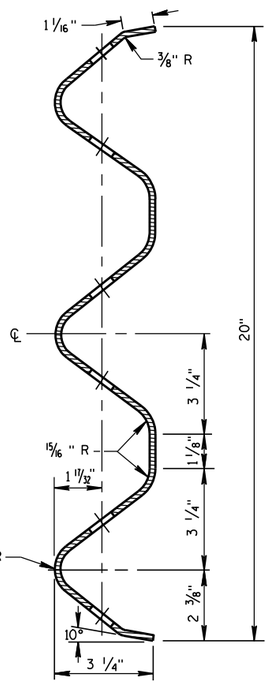
TWO WAY TRAFFIC

ONE WAY TRAFFIC

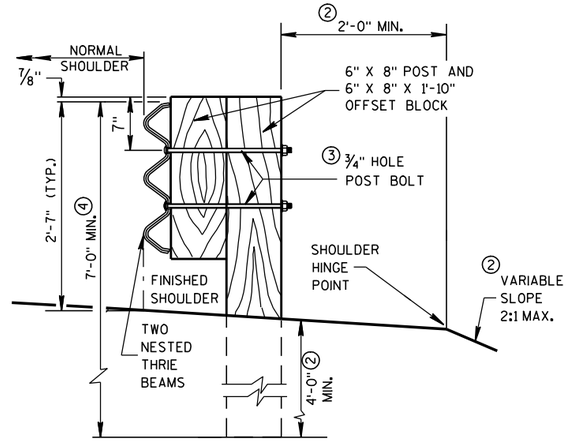
T THRIE BEAM CONNECTION

W W-BEAM CONNECTION WHEN REQUIRED

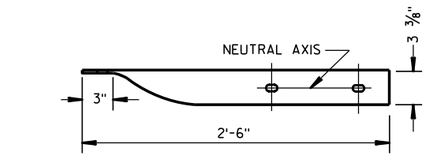
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

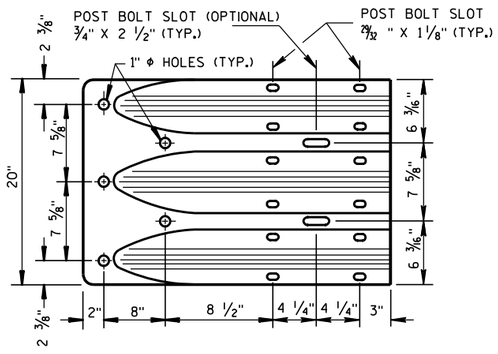


SECTION THRU THRIE BEAM RAIL ELEMENT

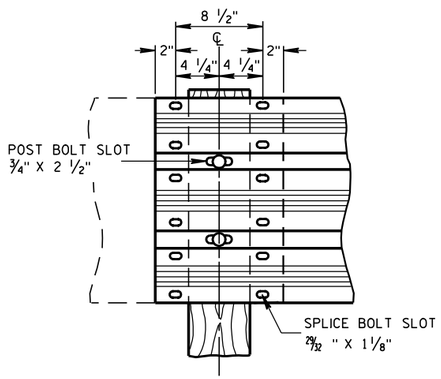


SECTION A-A





THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS 1177 ENGINEER

FHWA

6

S.D.D. 14 B 20-11a

6

S.D.D. 14 B 20-11a

BILL OF MATERIALS

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

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

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

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

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

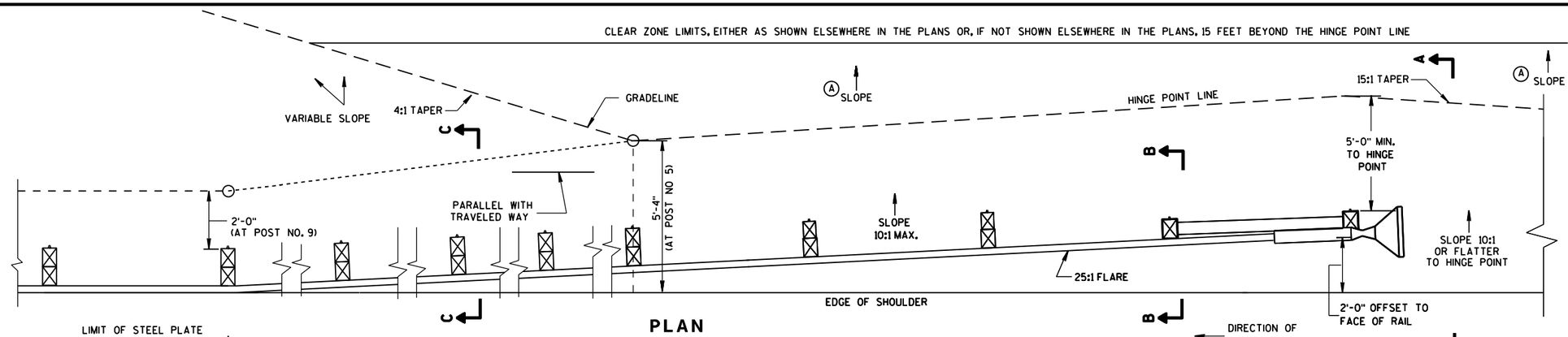
(E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 3 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.

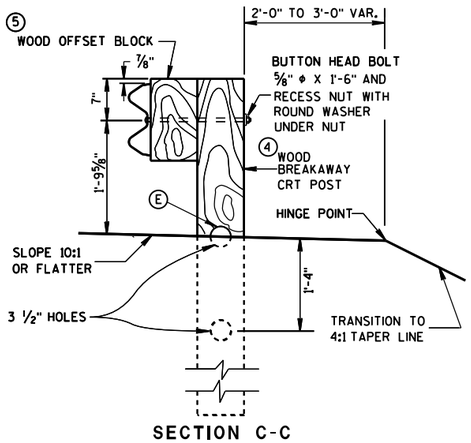
(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

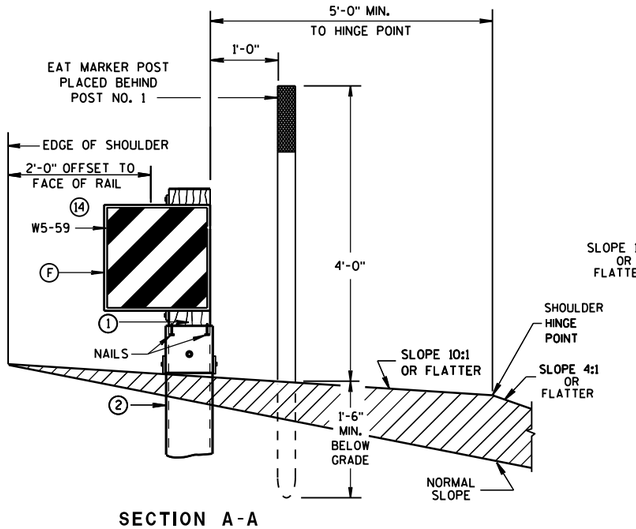
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

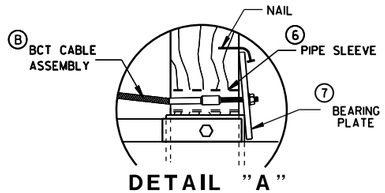
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

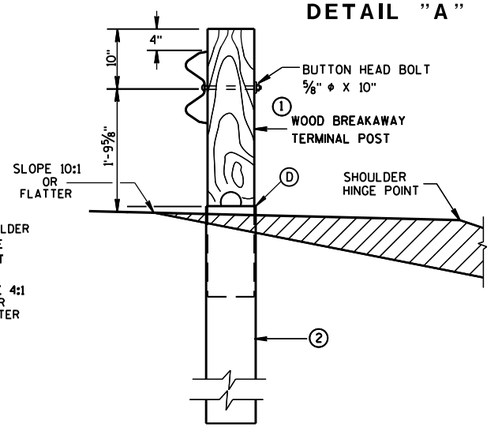
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

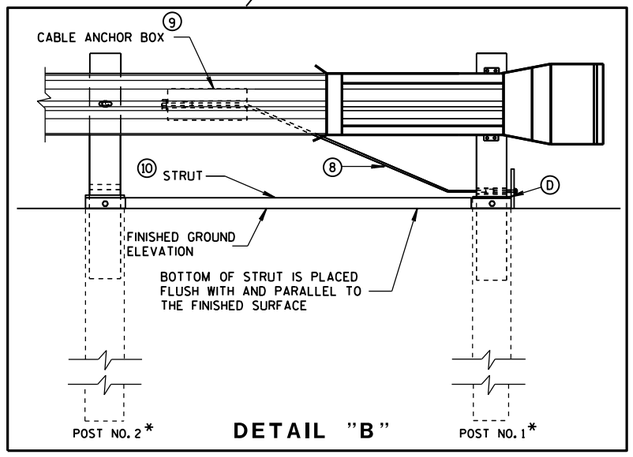










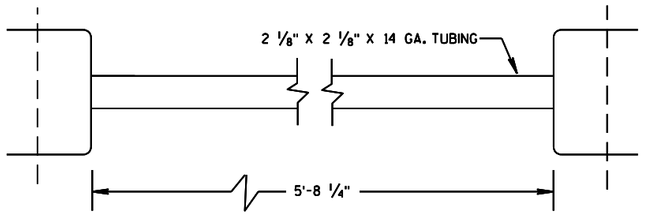


STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

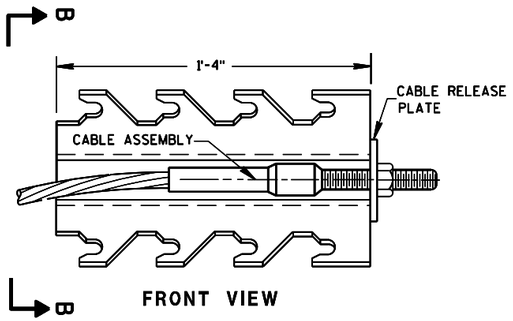
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

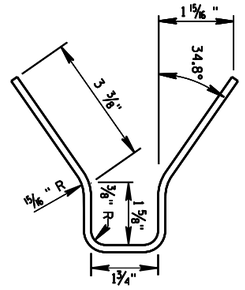
S.D.D. 14 B 24-9a



⑩ STRUT DETAIL

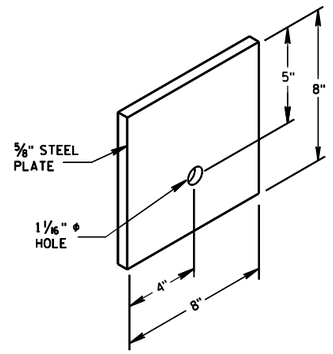


FRONT VIEW



SECTION B-B

⑨ CABLE ANCHOR BOX



⑦ STEEL BEARING PLATE

6

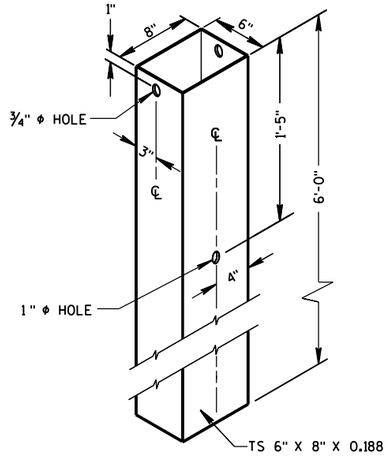
6

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

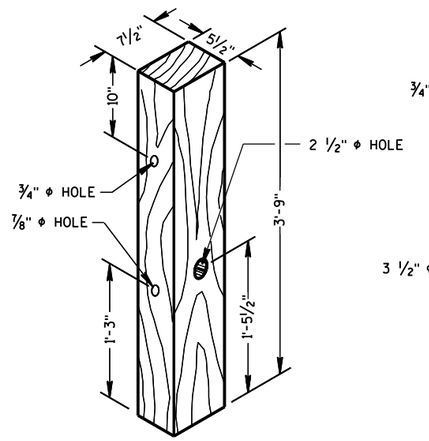
S.D.D. 14 B 24-9b

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

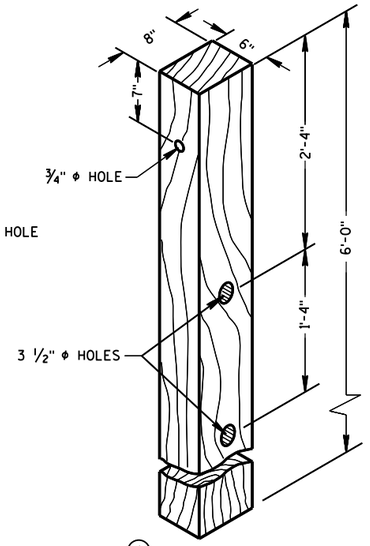
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



② 72" STEEL TUBE
(POSTS NO. 1-2



① TERMINAL POST

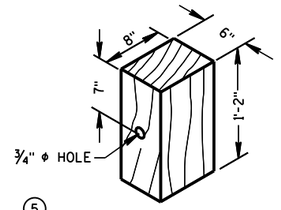


④ CRT POST
(POSTS NO'S 5-8

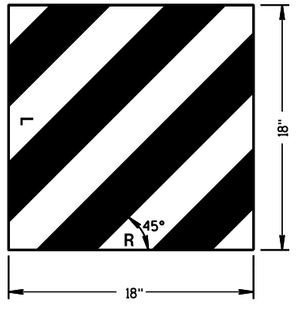
WOOD BREAKAWAY POSTS

GENERAL NOTES

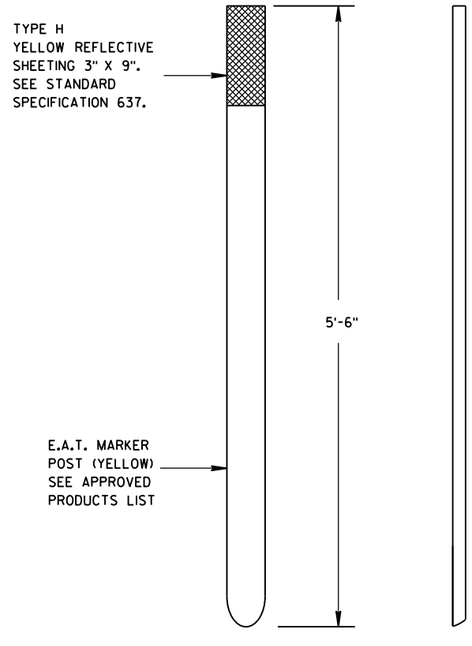
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 ½" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.



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



⑭ REFLECTIVE SHEETING DETAILS



E.A.T. MARKER POST

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS 80 ENT
UNIT SUPERV...

6

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

6

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

(1) WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

(2) USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

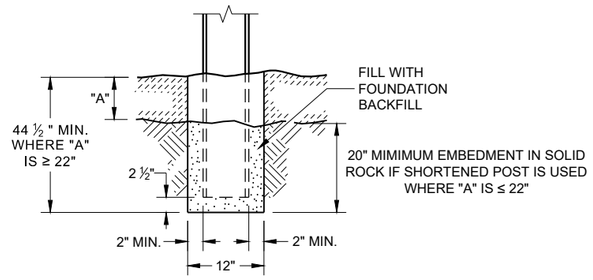
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL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

(4) WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

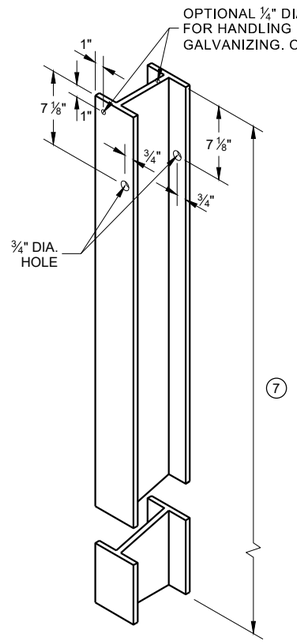
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

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

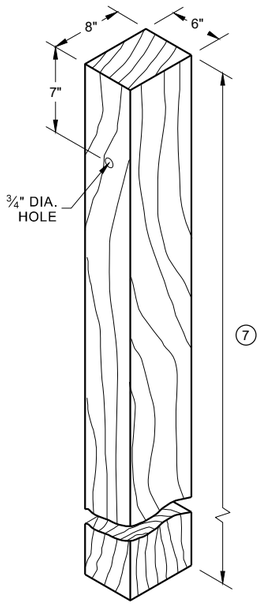
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



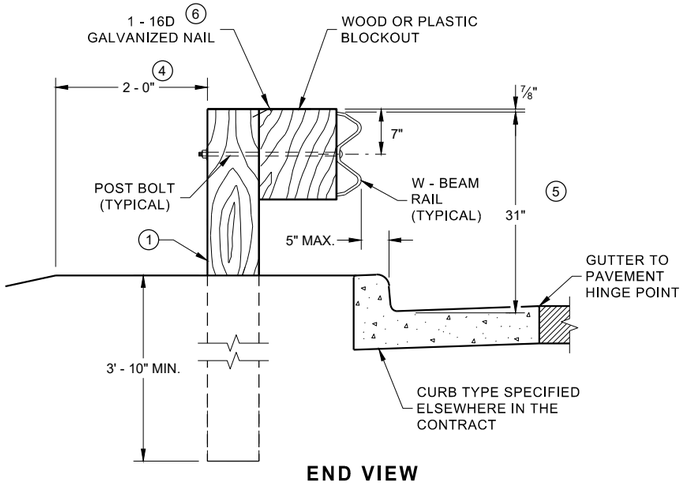
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



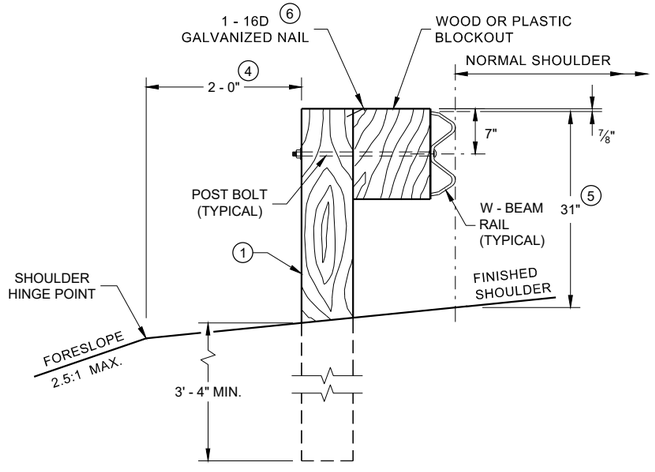
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



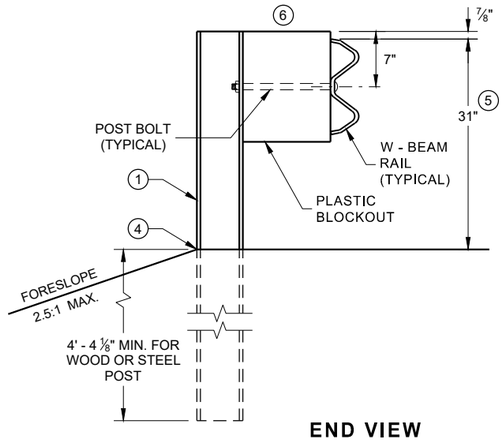
WOOD POST (6" X 8") NOMINAL (1)



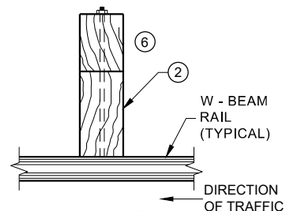
END VIEW
LOCATED ALONG A CURBED ROADWAY



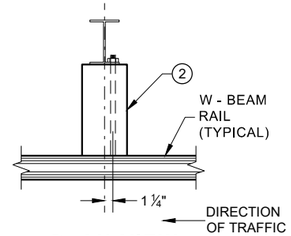
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



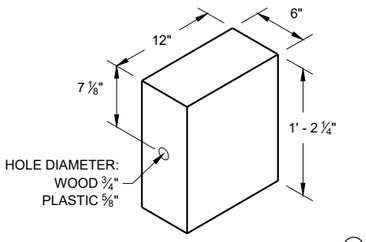
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM

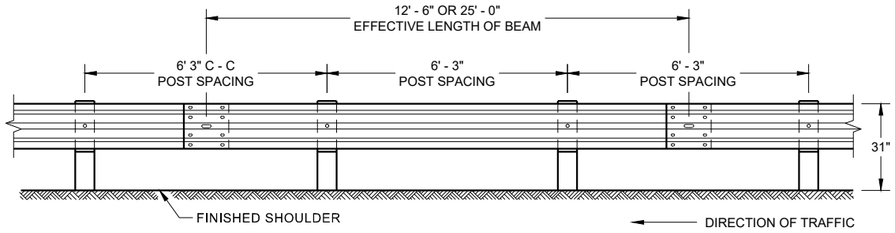


WOOD OR PLASTIC BLOCKOUT (2)

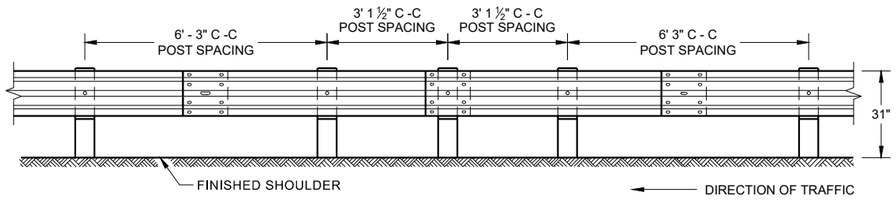
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

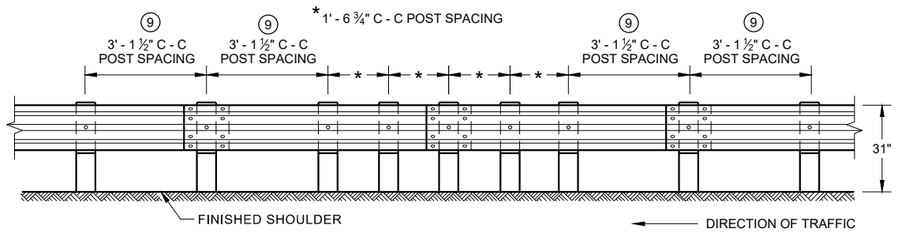
6
SDD 14B42 - 07a



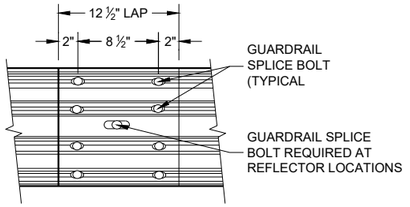
FRONT VIEW
POST SPACING STANDARD INSTALLATION



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

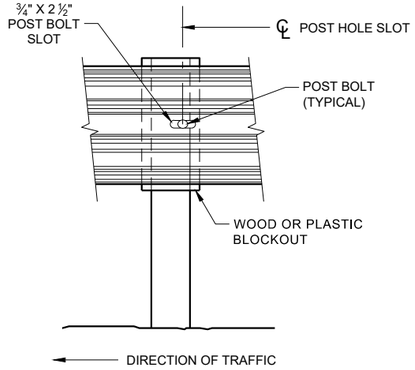
GENERAL NOTES

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

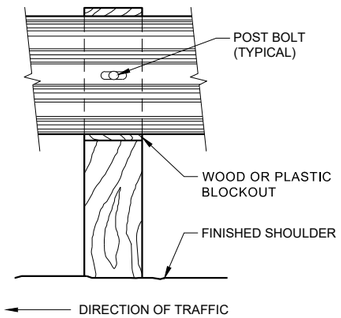
⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

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.

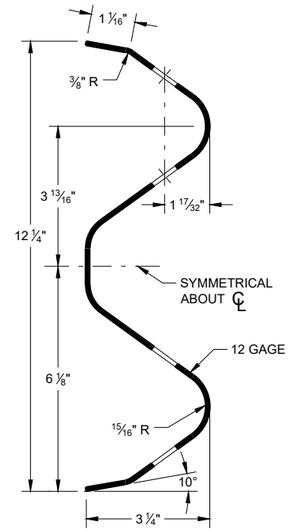
GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



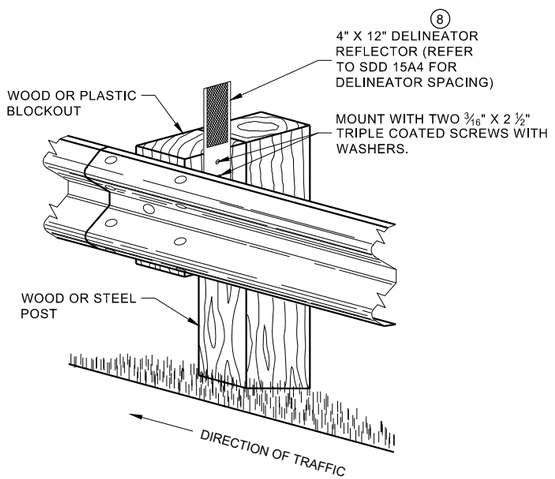
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



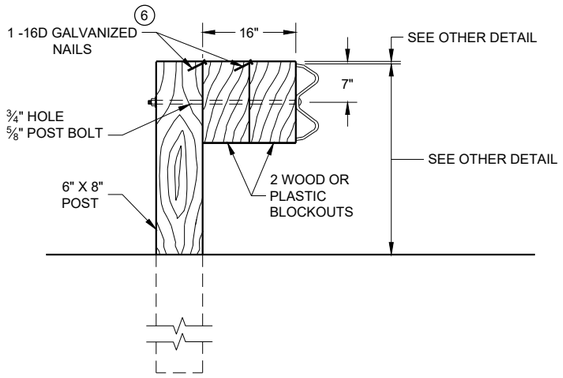
ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B42 - 07b

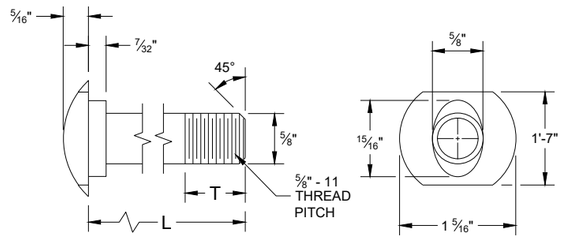


DETAIL FOR 16" BLOCKOUT DEPTH

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

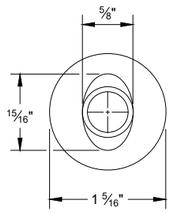
NOTE:

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

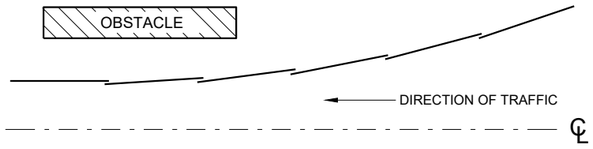


POST BOLT TABLE

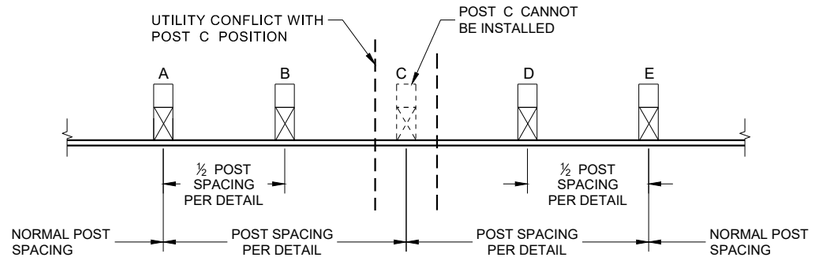
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



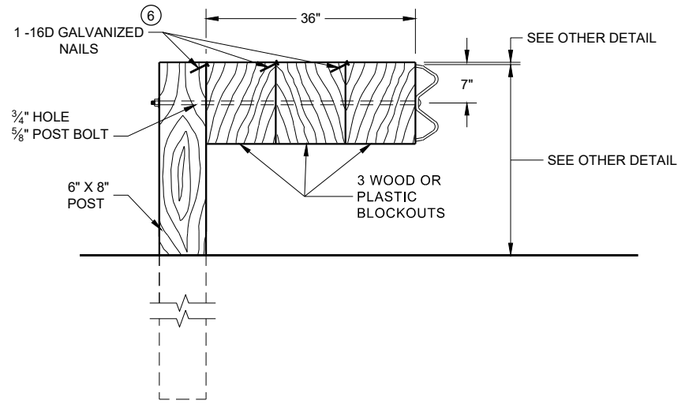
ALTERNATE BOLT HEAD



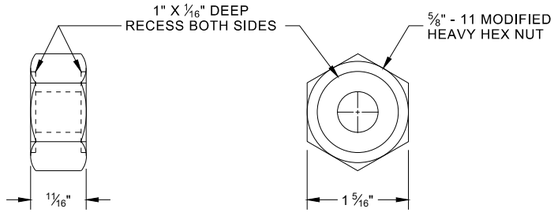
PLAN VIEW
BEAM LAPPING DETAIL



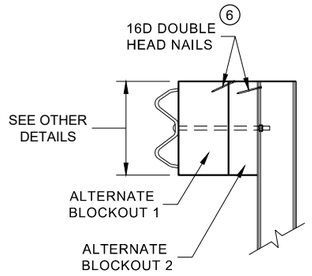
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



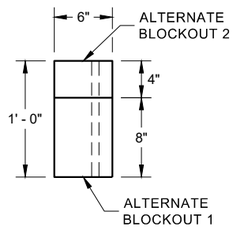
DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW



PLAN VIEW

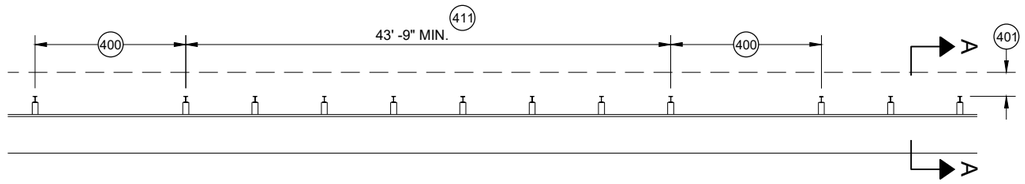
ALTERNATE WOOD BLOCKOUT DETAIL

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

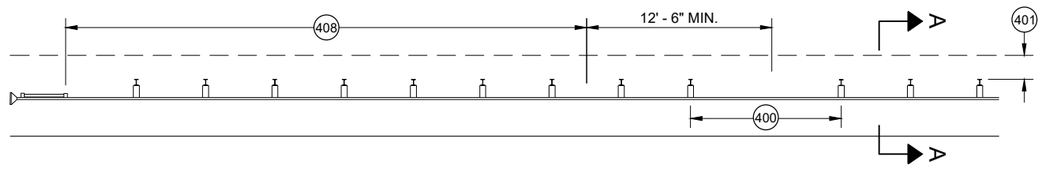
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

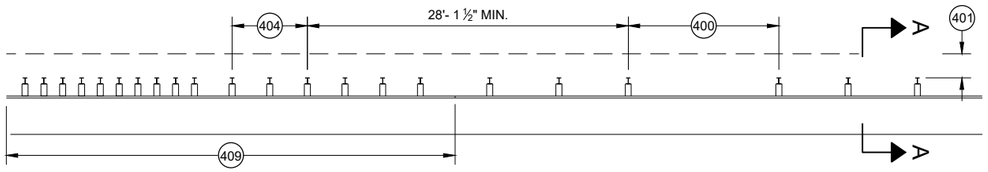
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL



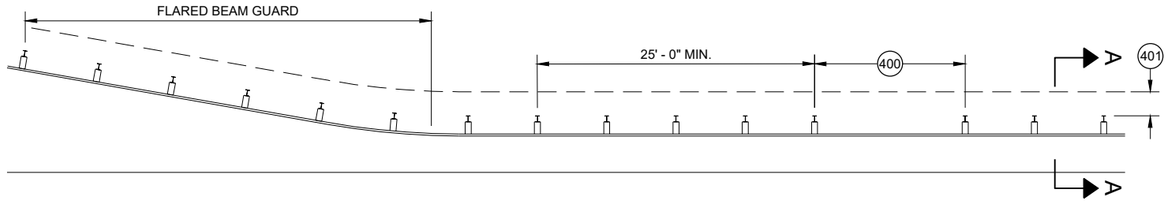
MISSING POST IN MGS GUARDRAIL



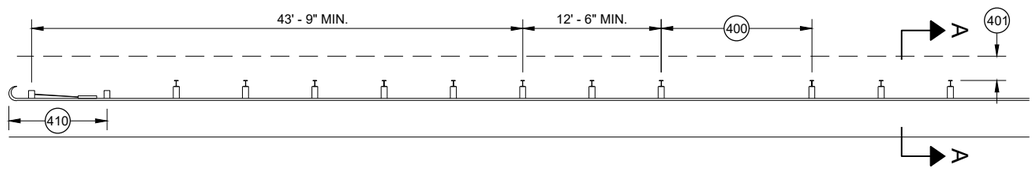
MISSING POST IN MGS GUARDRAIL NEAR EAT



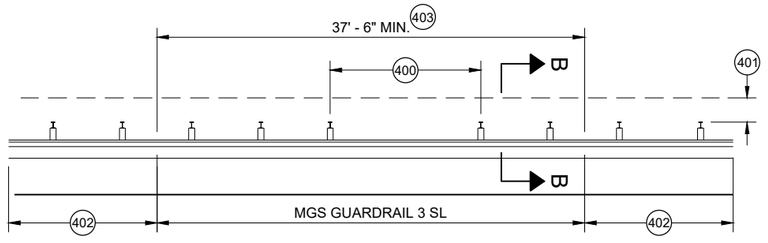
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

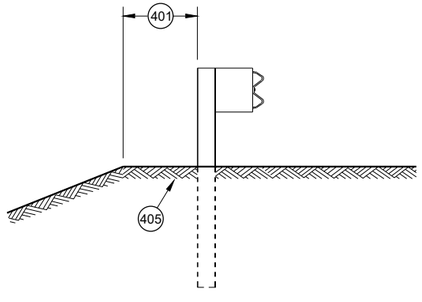


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

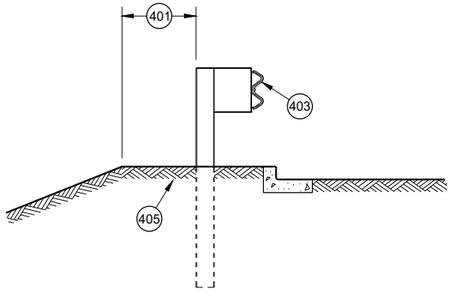


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL) 407

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



SECTION A - A 406



SECTION B - B 406

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

SDD 14B42 - 07d

GENERAL NOTES

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

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

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

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

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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

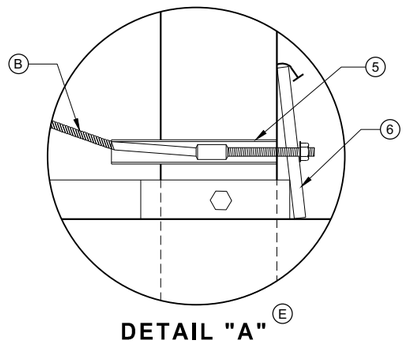
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

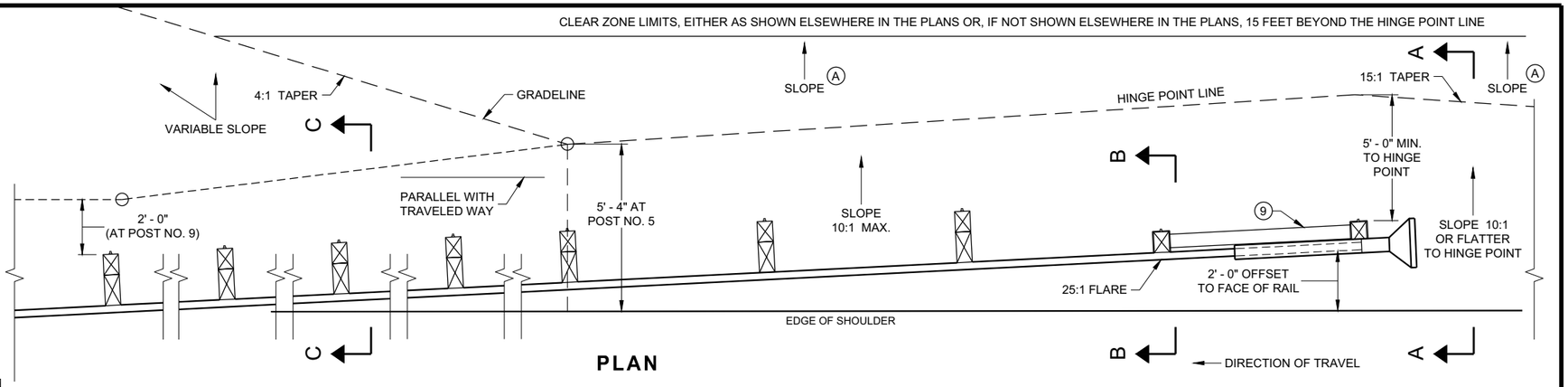
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

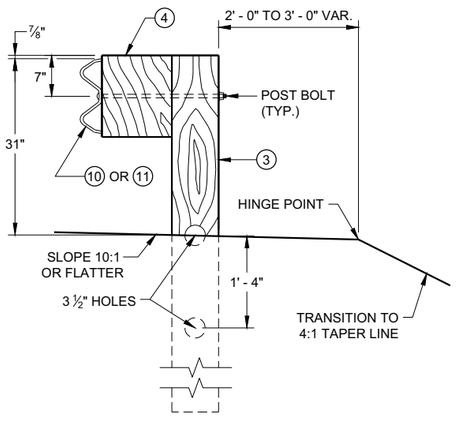
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

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

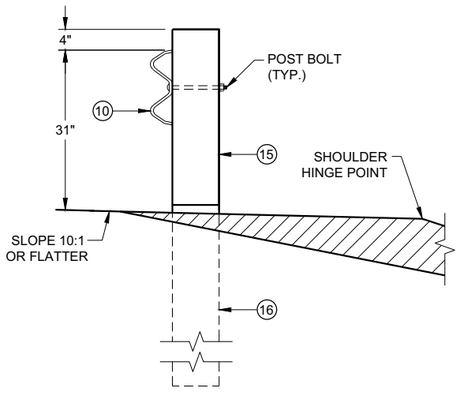


DETAIL "A" (E)

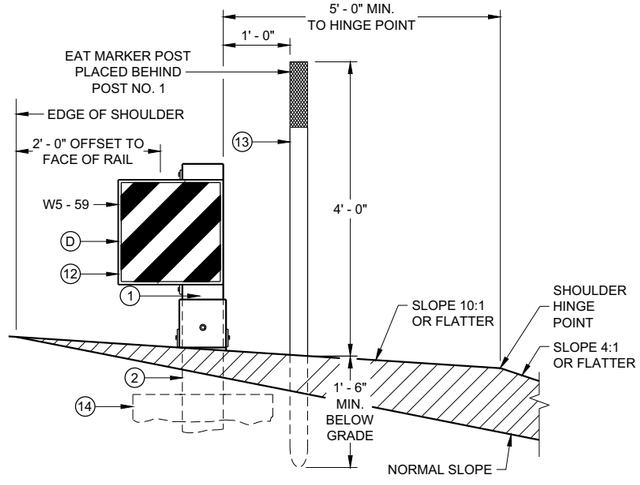




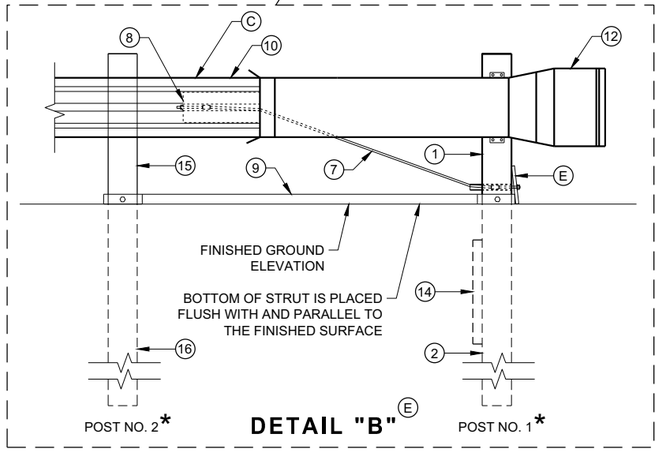
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



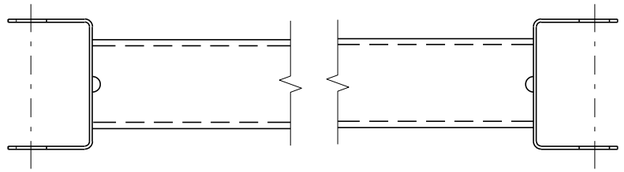
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

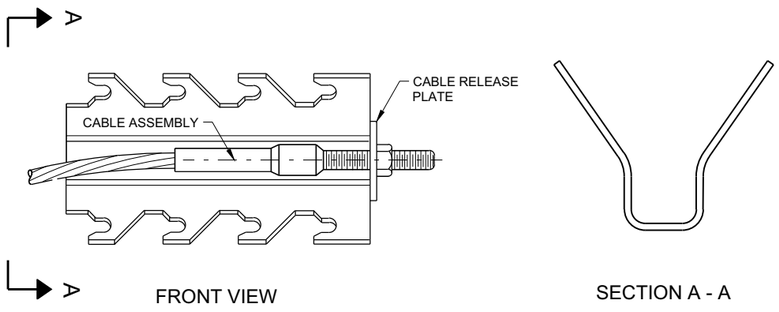
SDD 14B44 - 04a



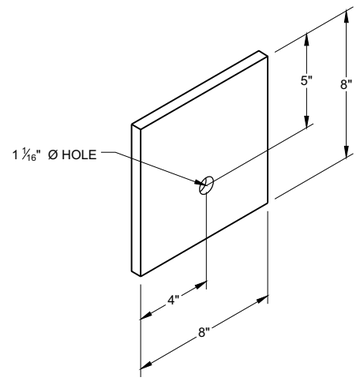
GENERIC GROUND STRUT (9) (E)

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 (9) (E)



BEARING PLATE (6) (E)

6

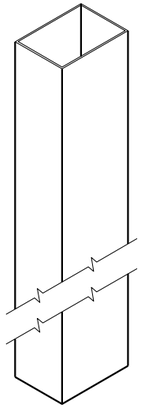
6

SDD 14B44 - 04b

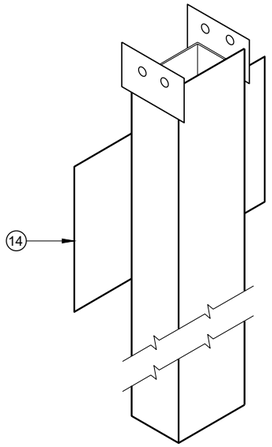
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

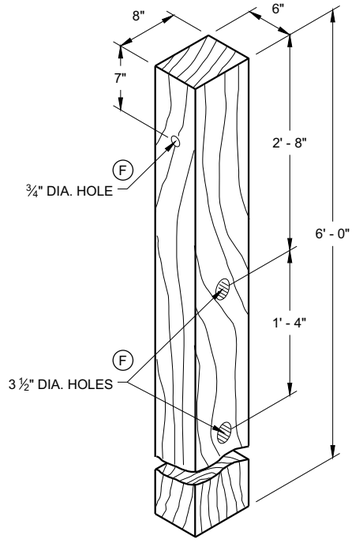
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



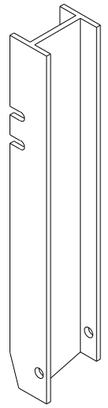
UPPER POST NO. 1 (1) (E)



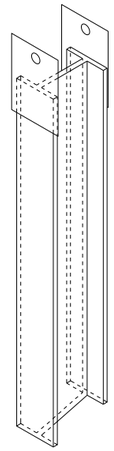
LOWER POST NO. 1 (2) (E)



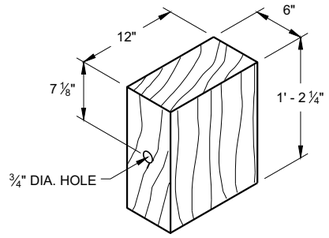
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



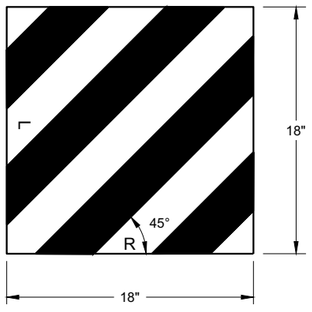
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

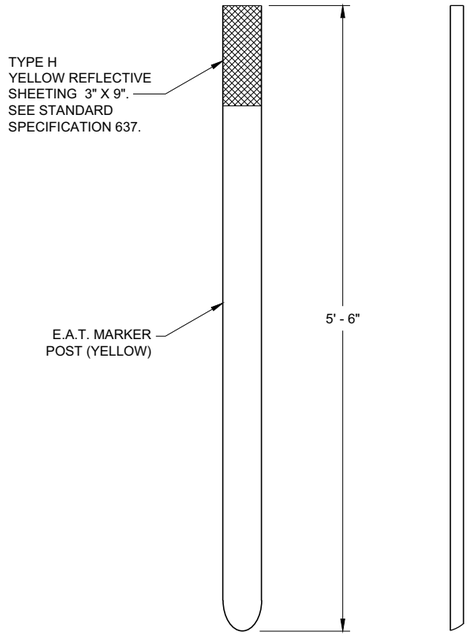


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



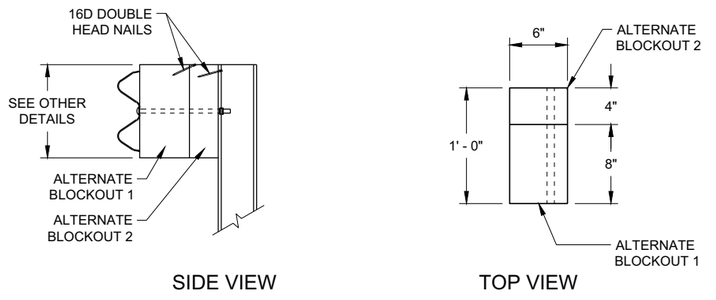
W5 - 59

REFLECTIVE SHEETING DETAIL (E)



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

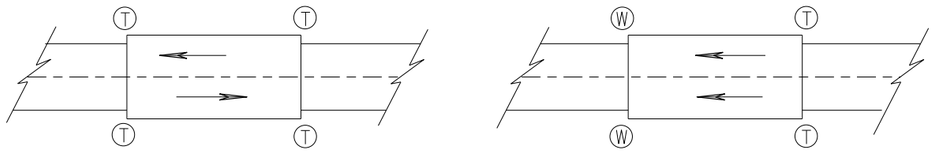
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

SDD 14B44 - 04c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

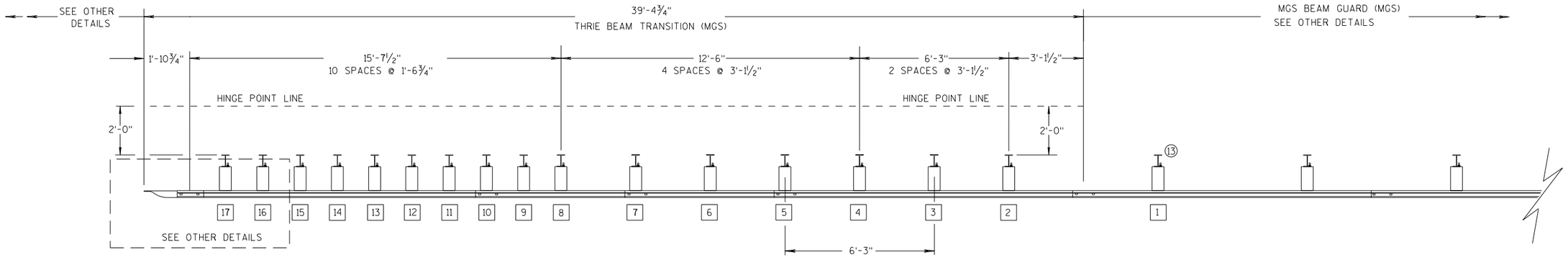
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

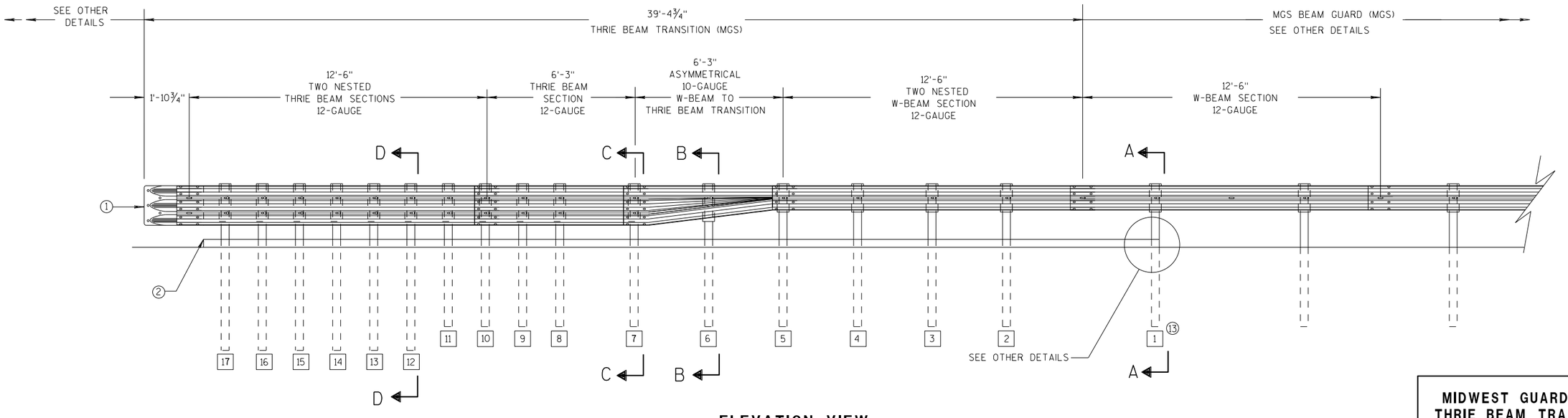
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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

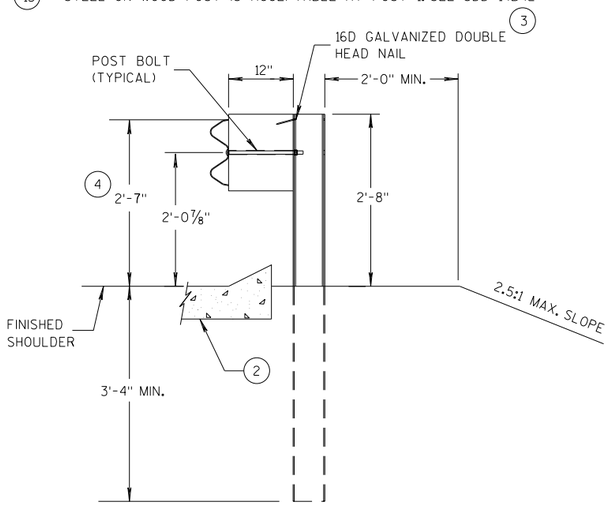
GENERAL NOTES

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

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

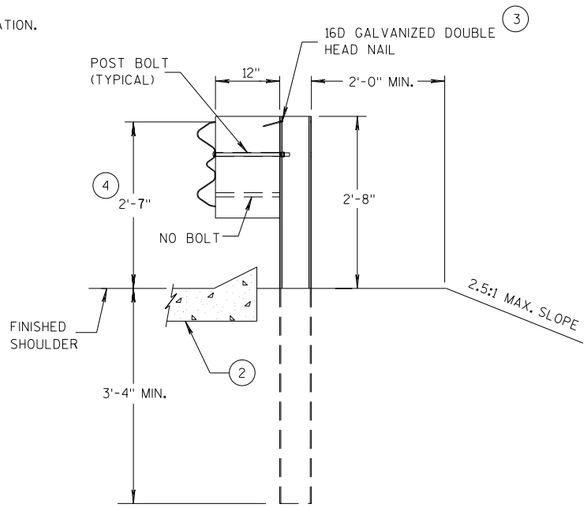
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

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



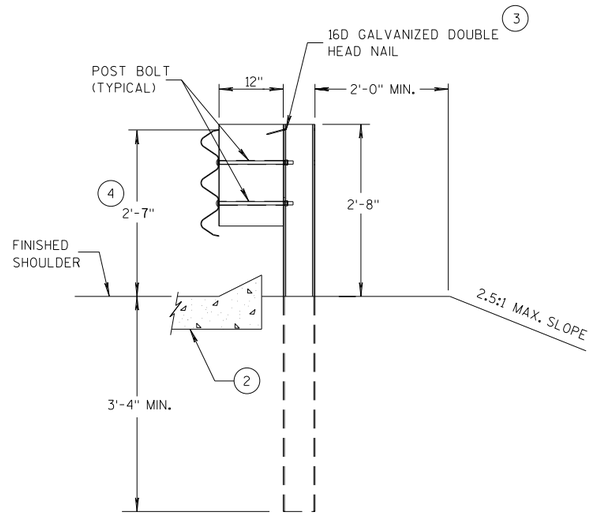
SECTION A-A (13)

POSTS 1-5



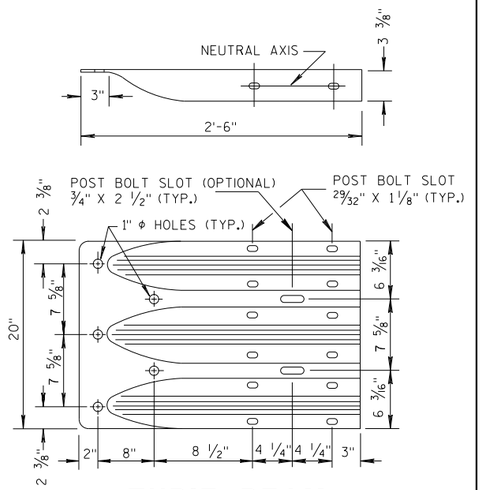
SECTION B-B

POST 6

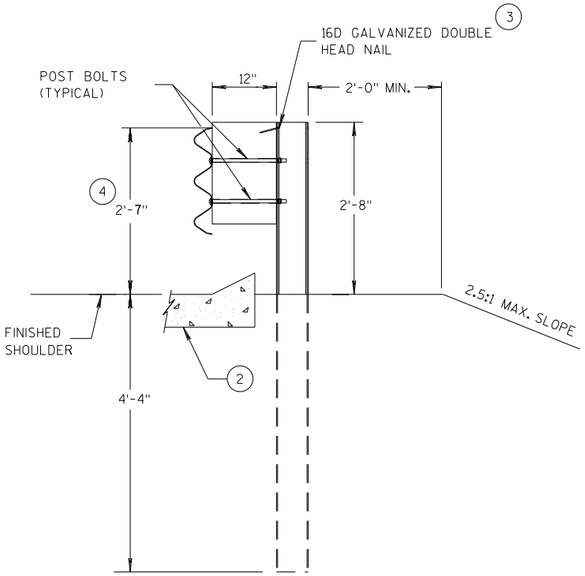


SECTION C-C

POSTS 7-11

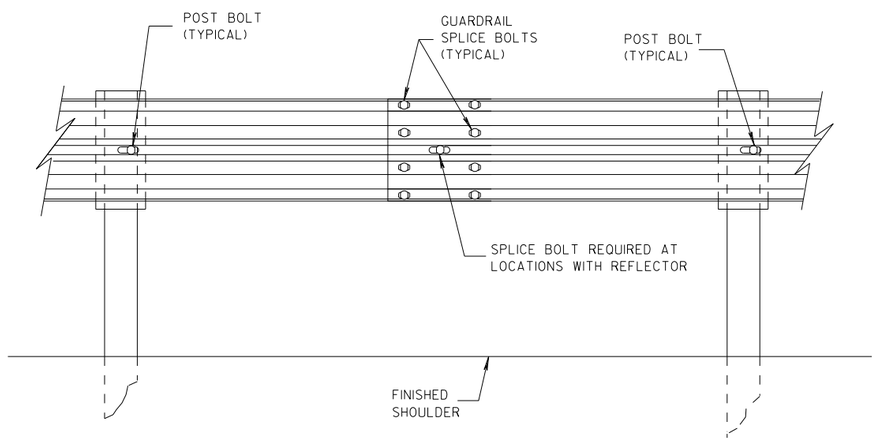


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

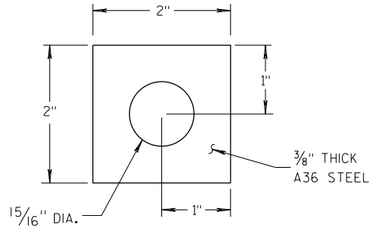
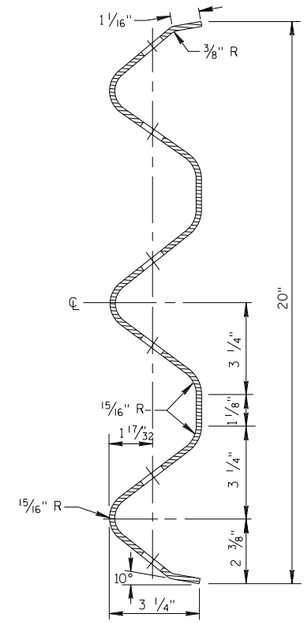


PLATE WASHER DETAIL



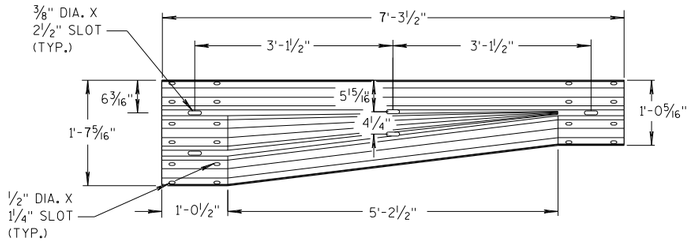
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

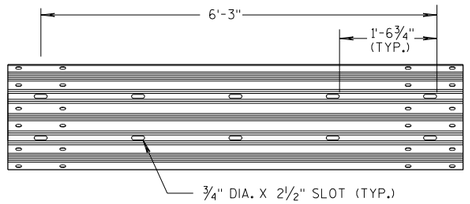
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

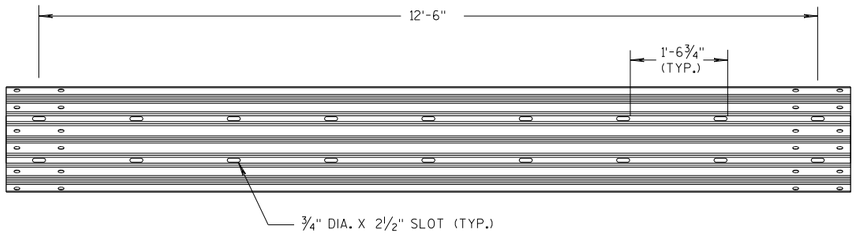
S.D.D. 14 B 45-5b



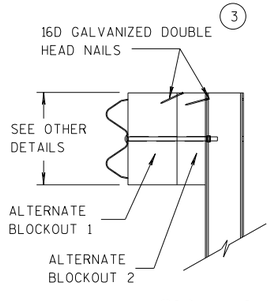
W-BEAM TO THRIE BEAM TRANSITION SECTION



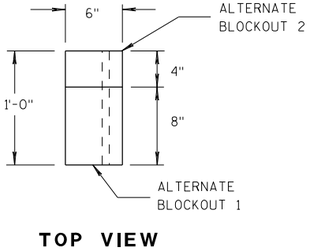
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

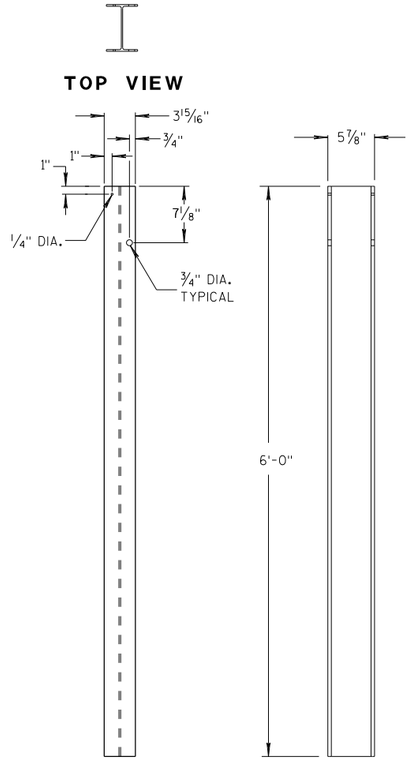


SIDE VIEW



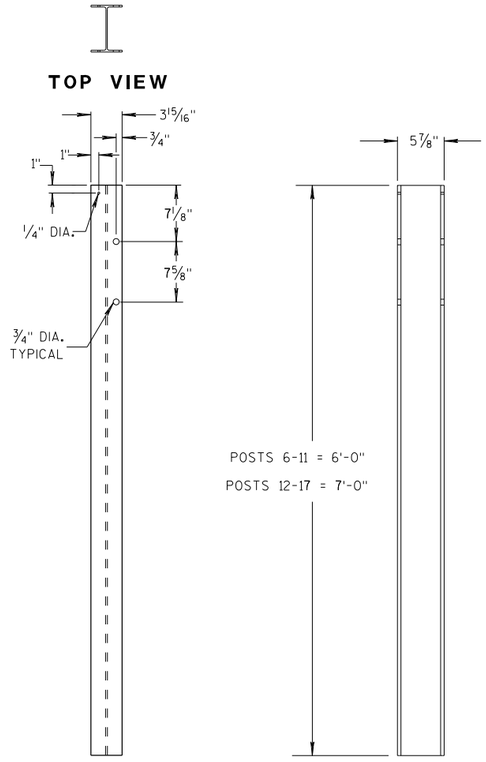
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



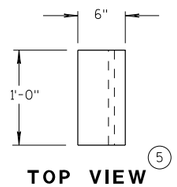
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

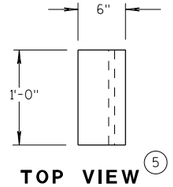


FRONT VIEW SIDE VIEW

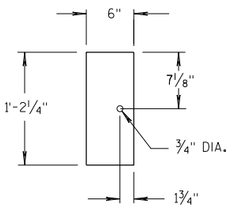
STEEL POSTS 6-17



TOP VIEW (5)

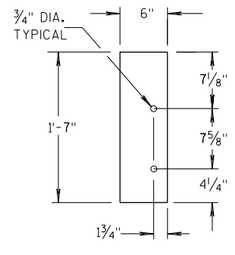


TOP VIEW (5)



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.

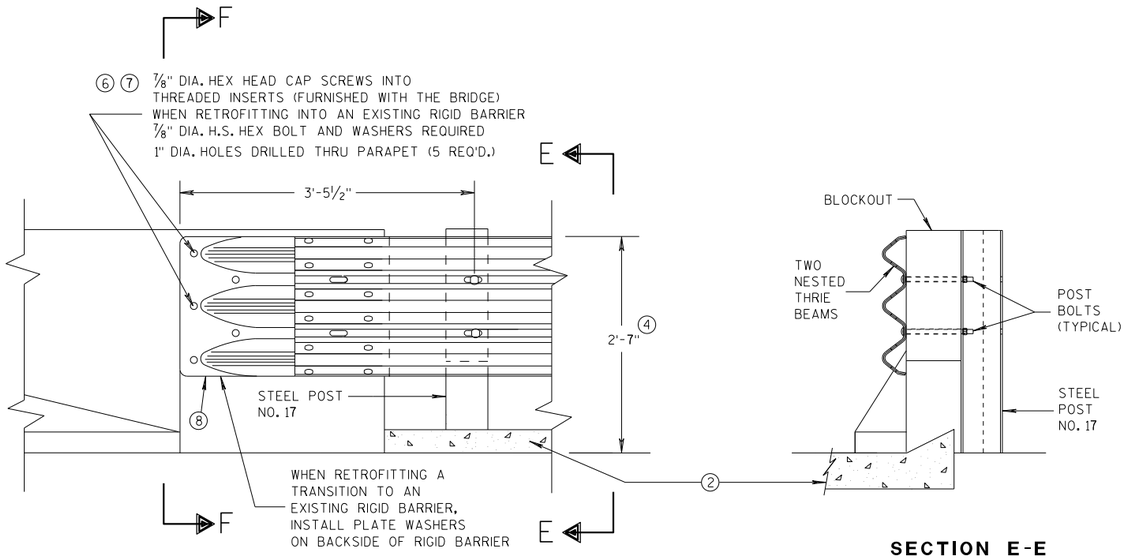
(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOF

6

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



FRONT VIEW

SECTION E-E

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

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

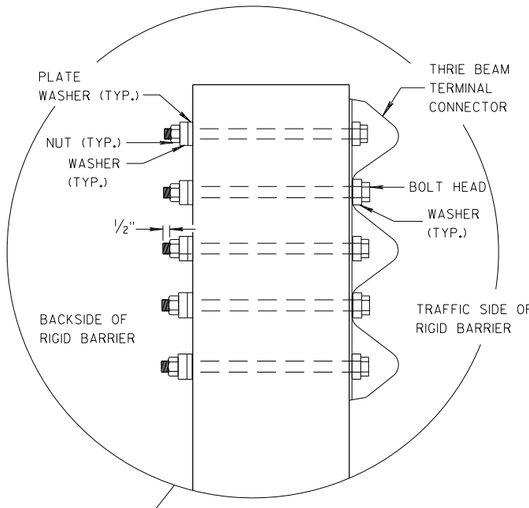
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

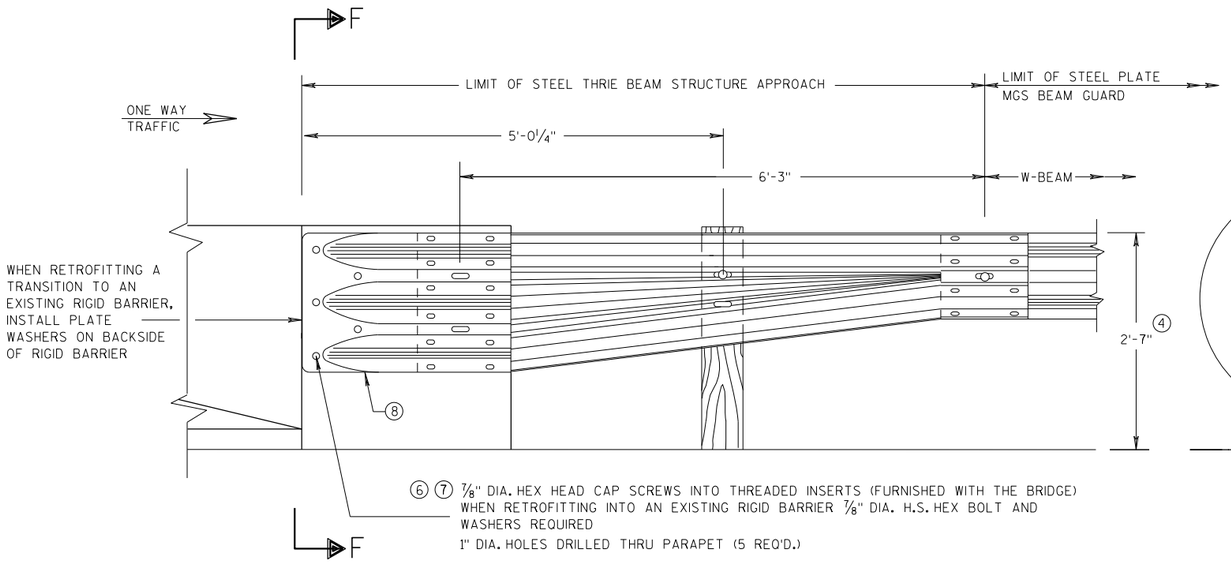
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

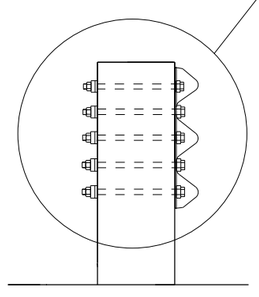
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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

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

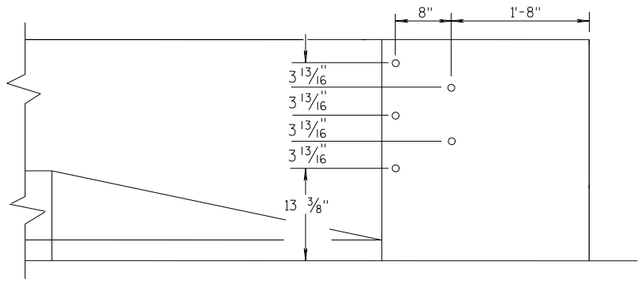




FRONT VIEW



SECTION F-F



DRILL HOLE LOCATION

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D UNIT SUPERVI
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FHWA

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

GENERAL NOTES

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

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

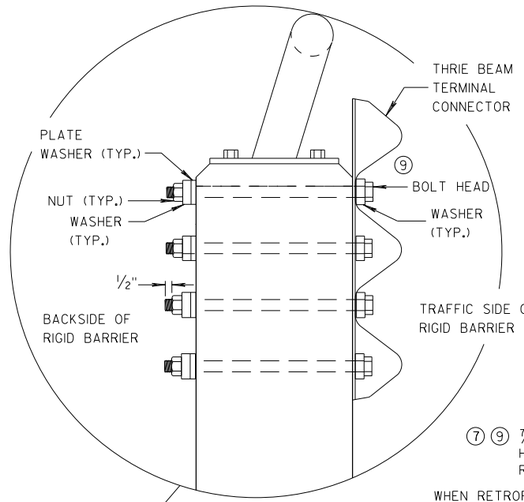
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

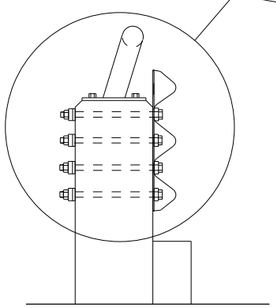
(6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

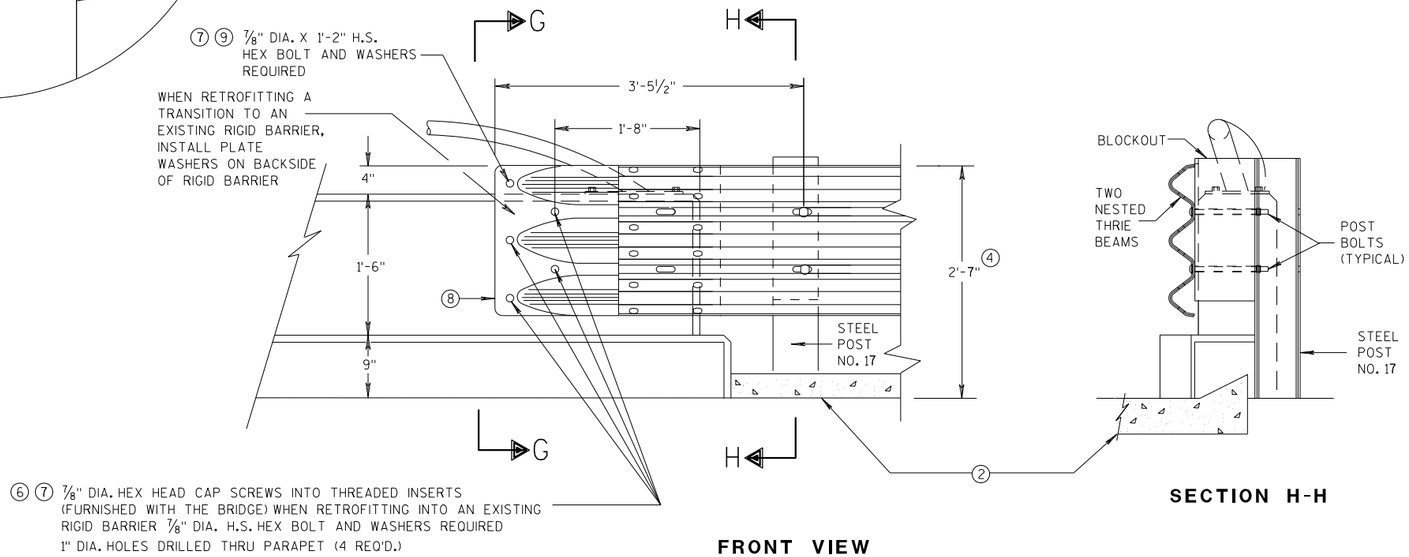
(8) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

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





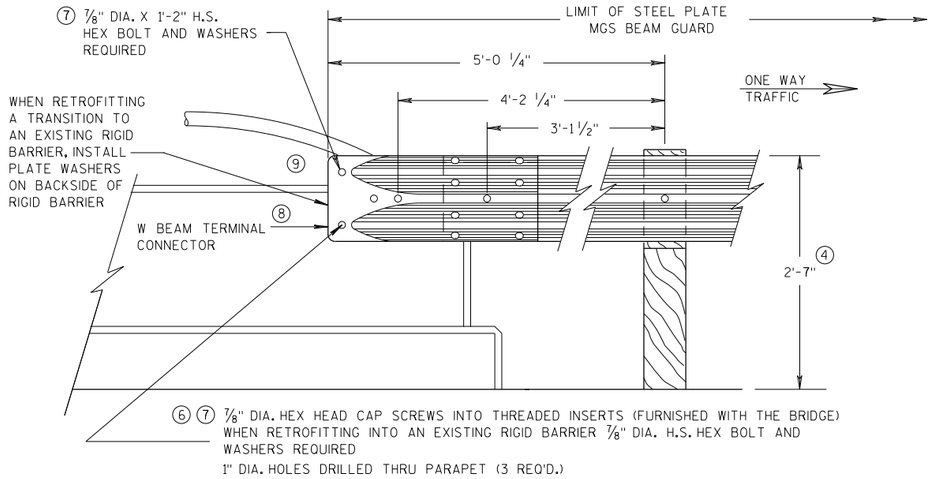
SECTION G-G



FRONT VIEW

SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 — DATE
/S/ Rodney Taylor
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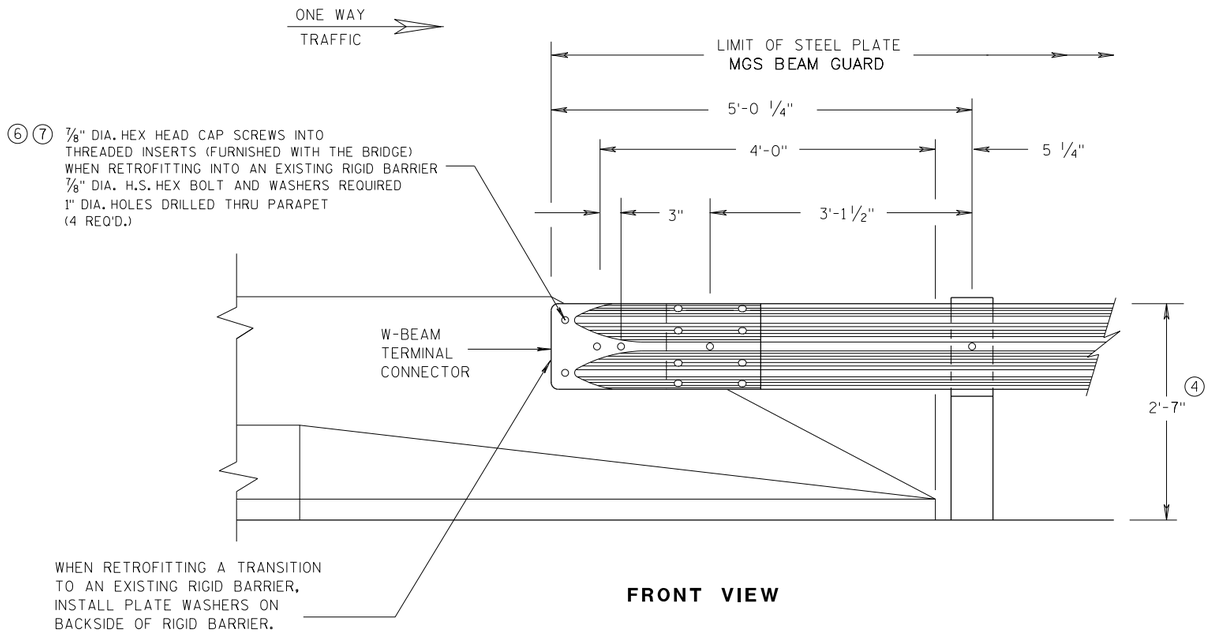


FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

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

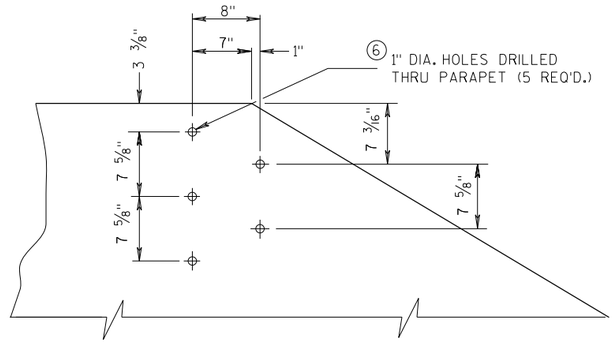
GENERAL NOTES

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

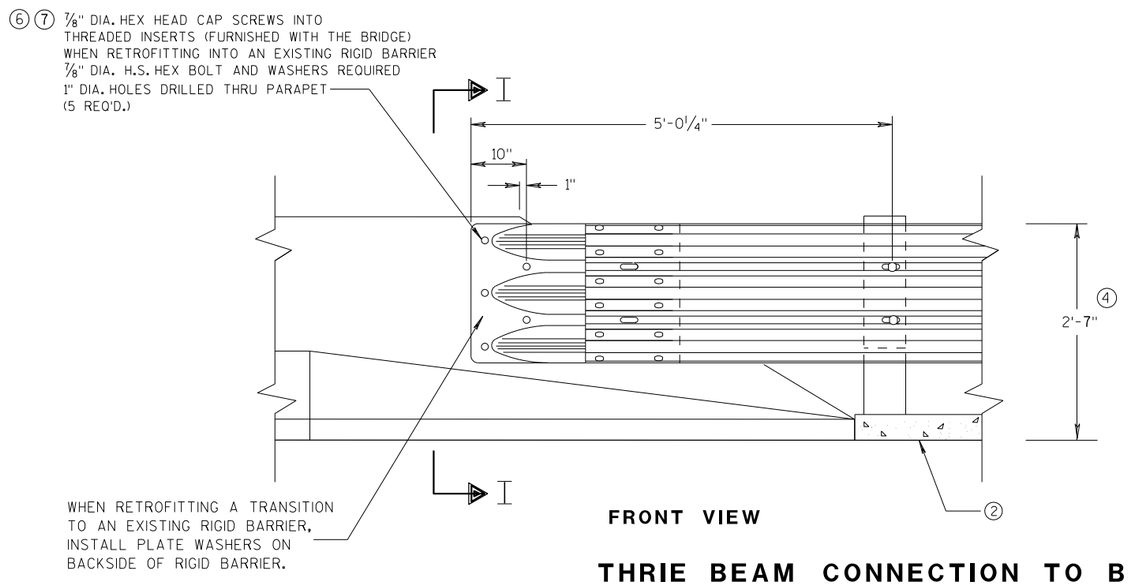
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

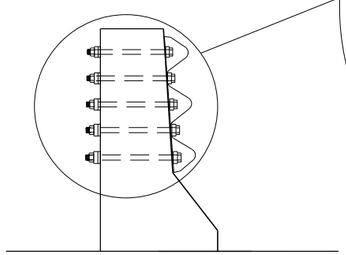
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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



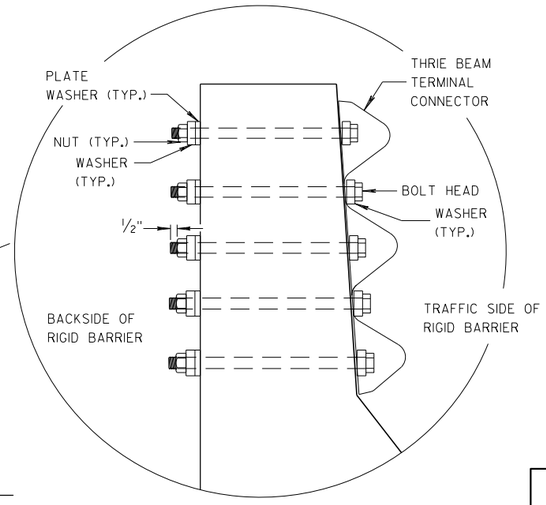
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018
DATE
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FHWA

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

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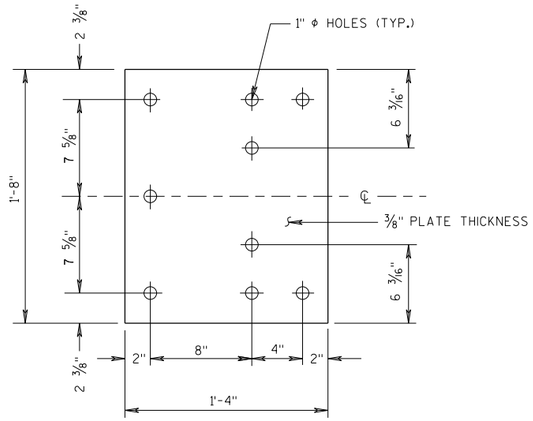
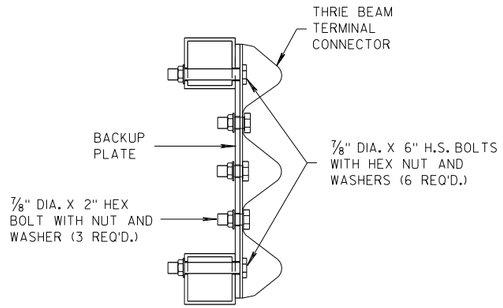
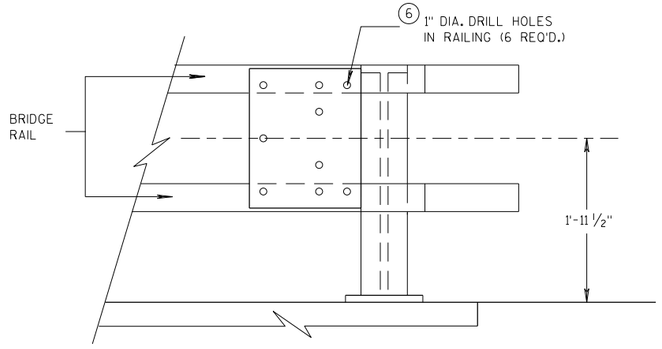
S.D.D. 14 B 45-5f



BACK-UP PLATE DETAIL



SECTION J-J

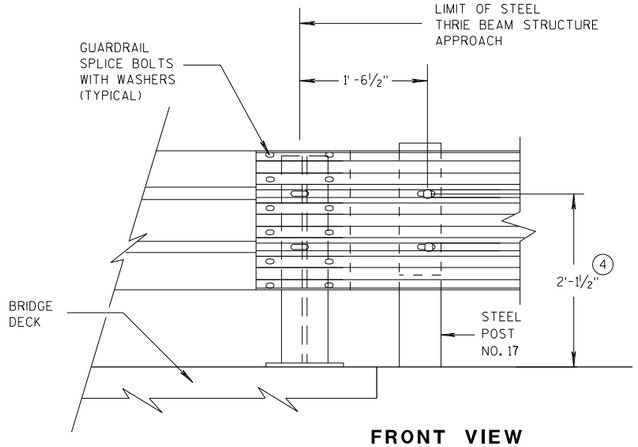


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

GENERAL NOTES

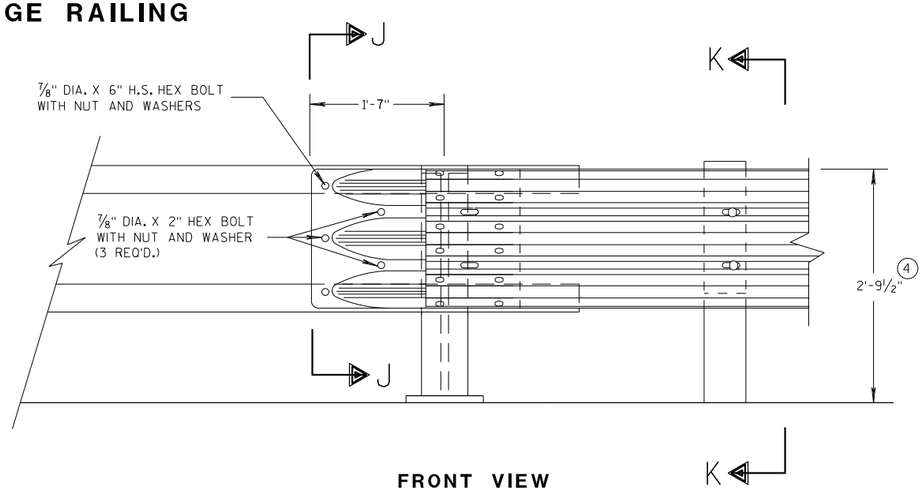
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

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

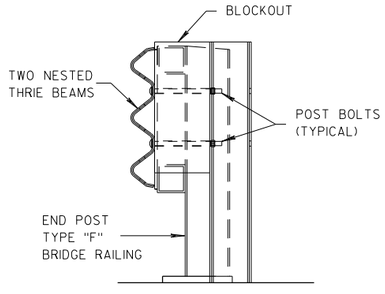


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED 07/2018 — DATE
FHWA

/S/ Rodney Taylor 94
ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

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

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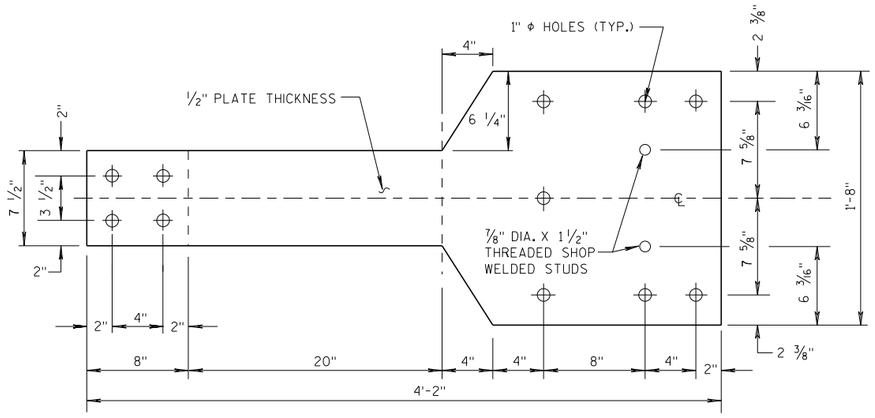
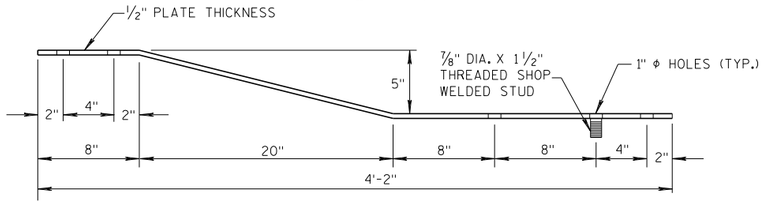
S.D.D. 14 B 45-5g

GENERAL NOTES

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

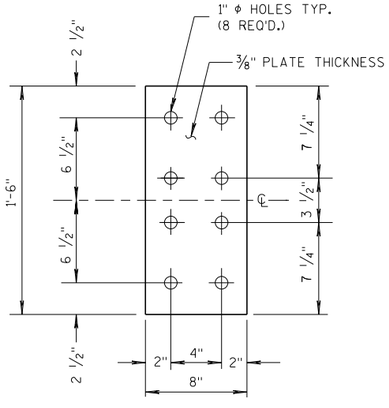


FRONT VIEW



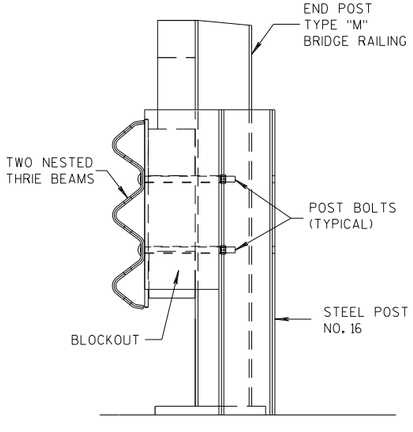
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

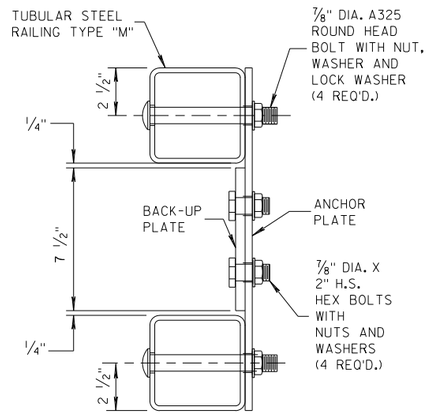


FRONT VIEW

ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M



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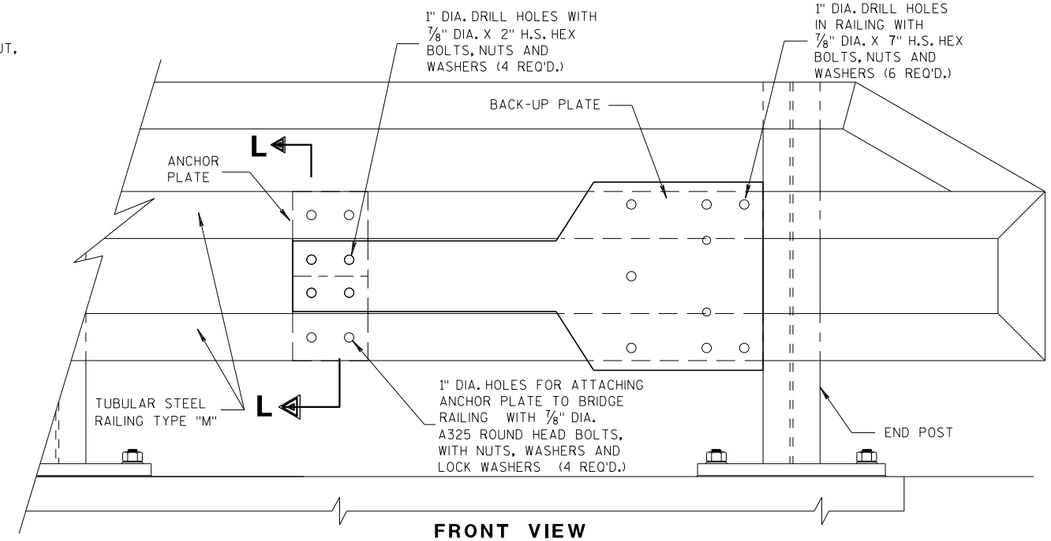
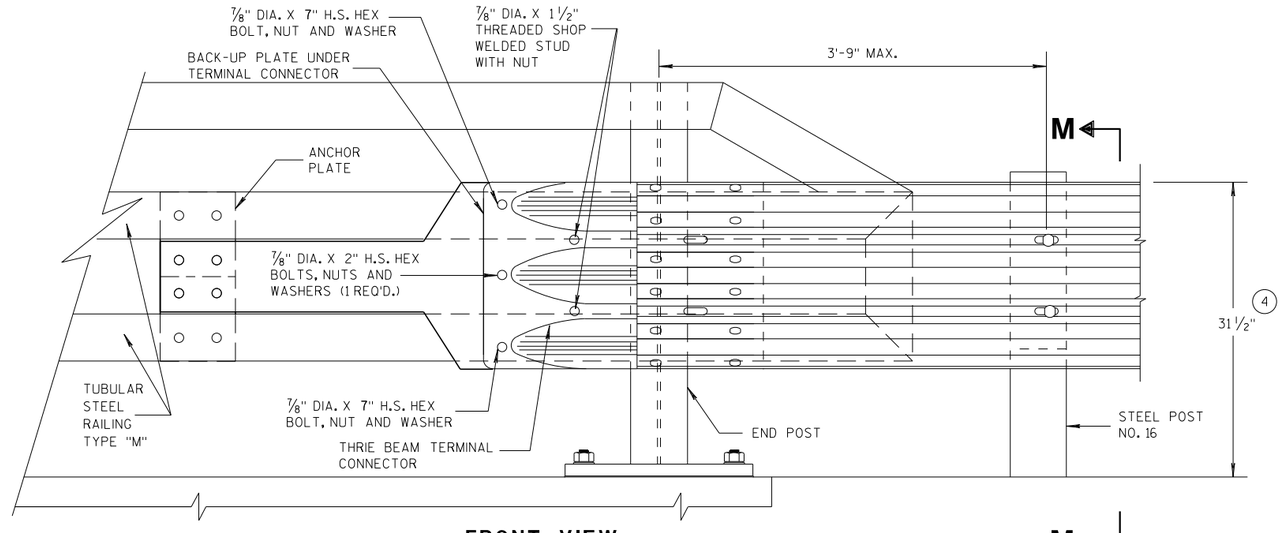
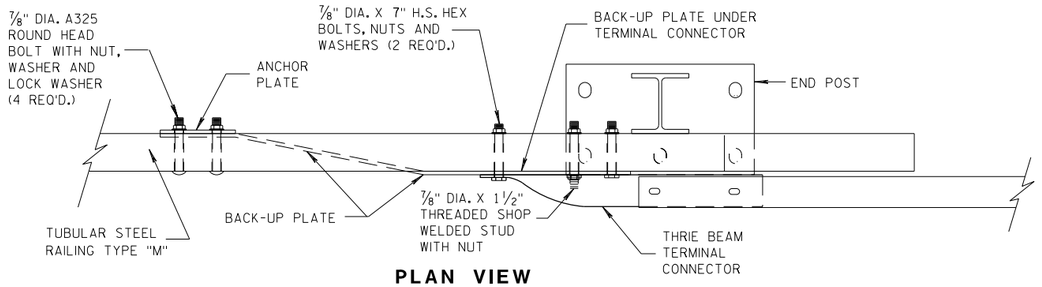


FRONT VIEW

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
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERVISOR
FHWA

6

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

6

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

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

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

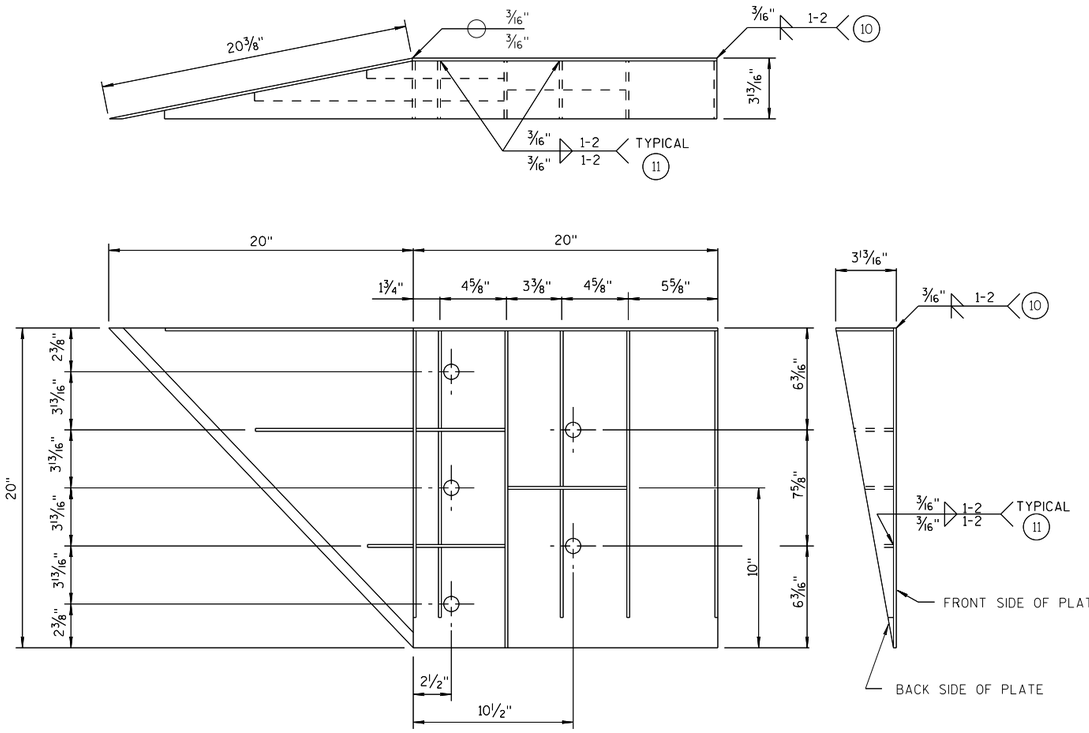
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

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

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



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

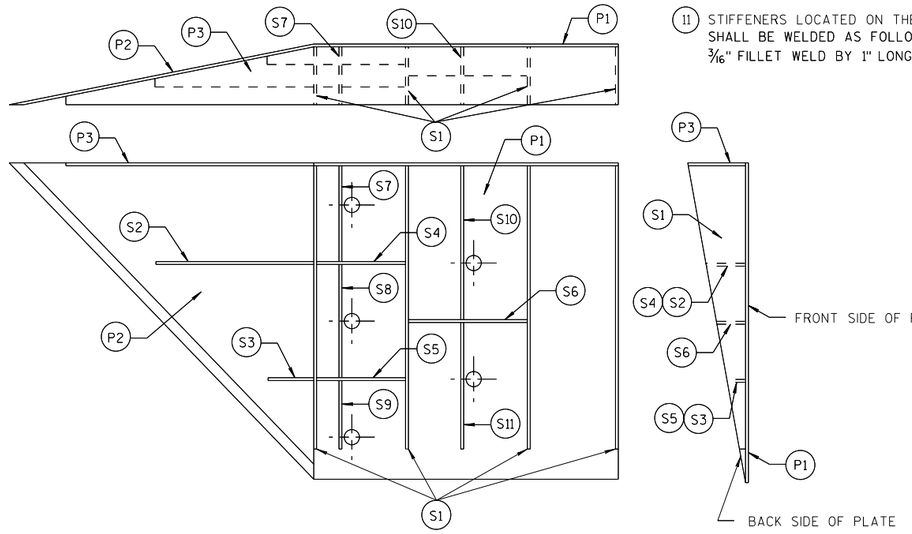


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

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

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

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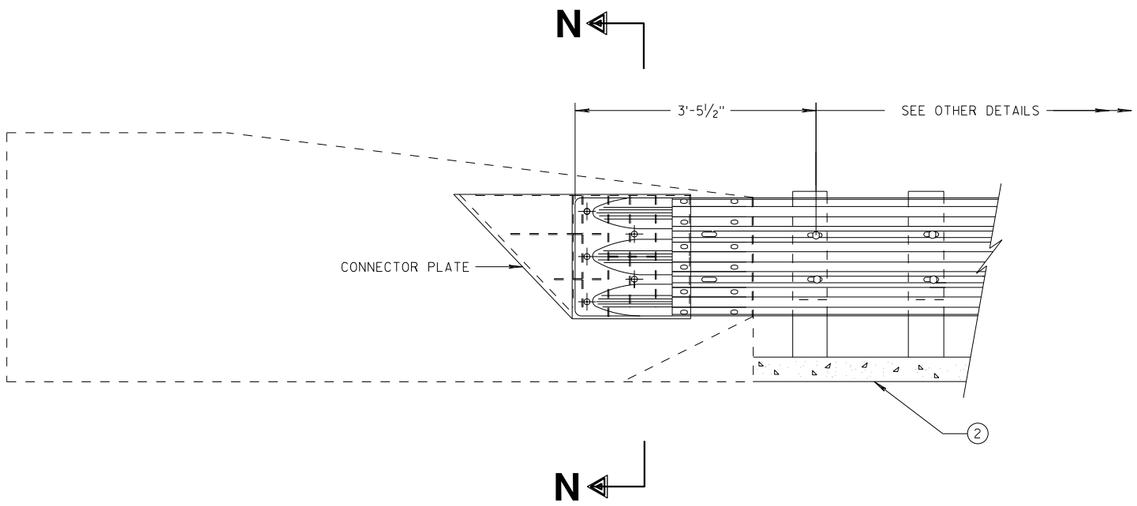
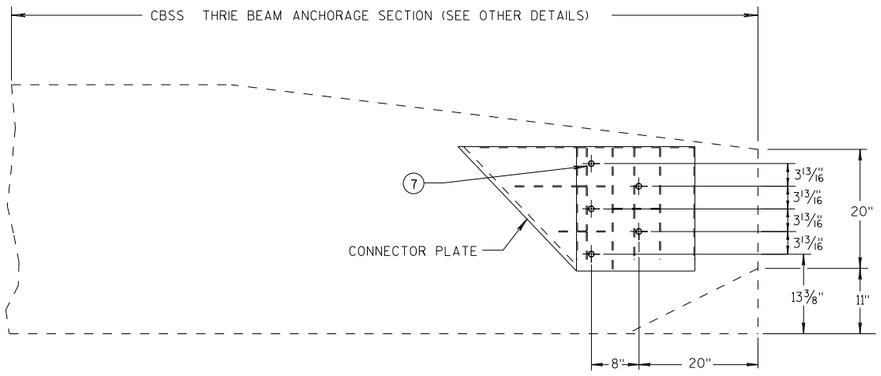
S.D.D. 14 B 45-5i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



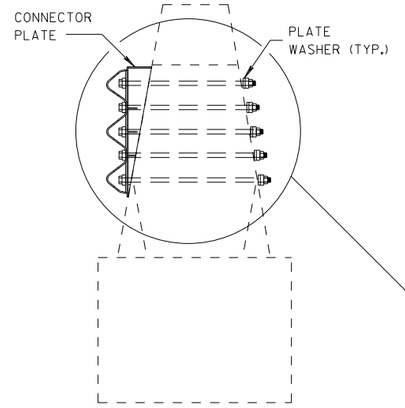
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

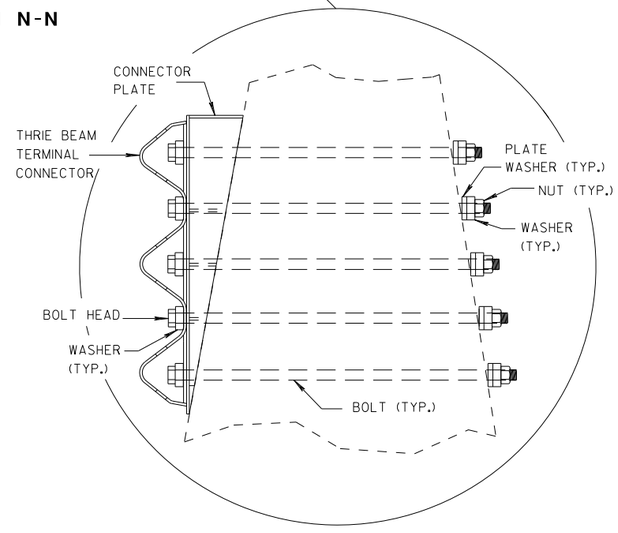
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

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



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

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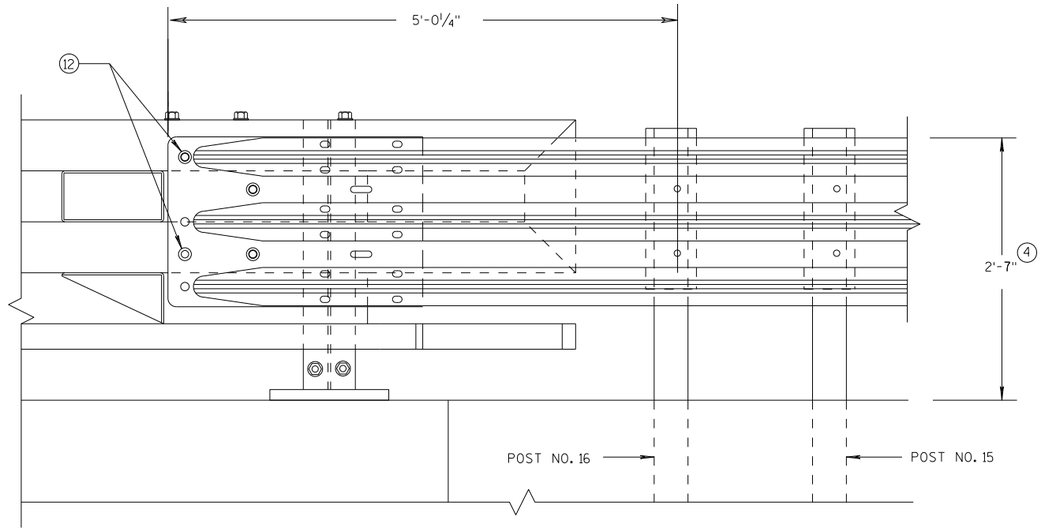
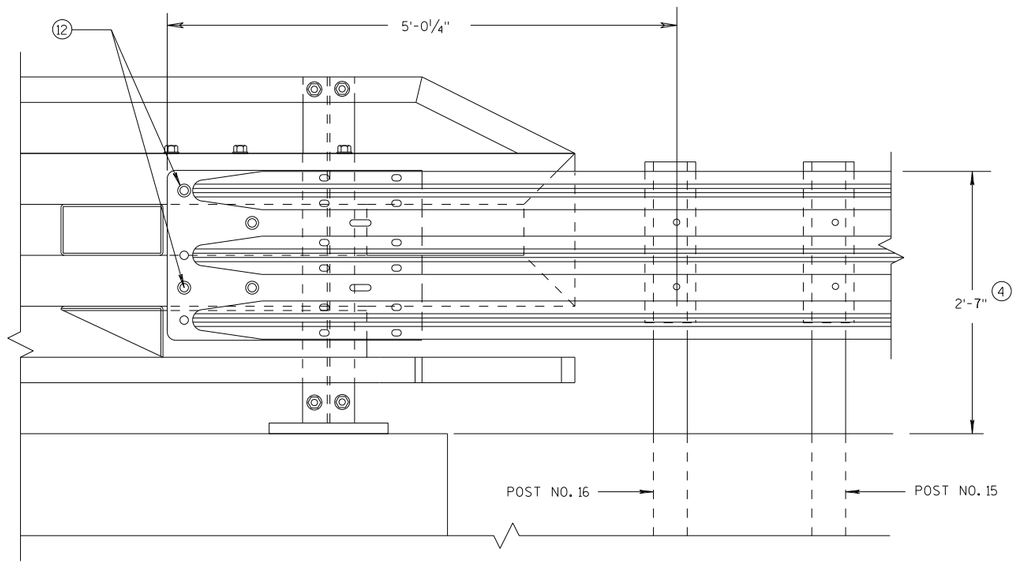
S.D.D. 14 B 45-5j



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

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

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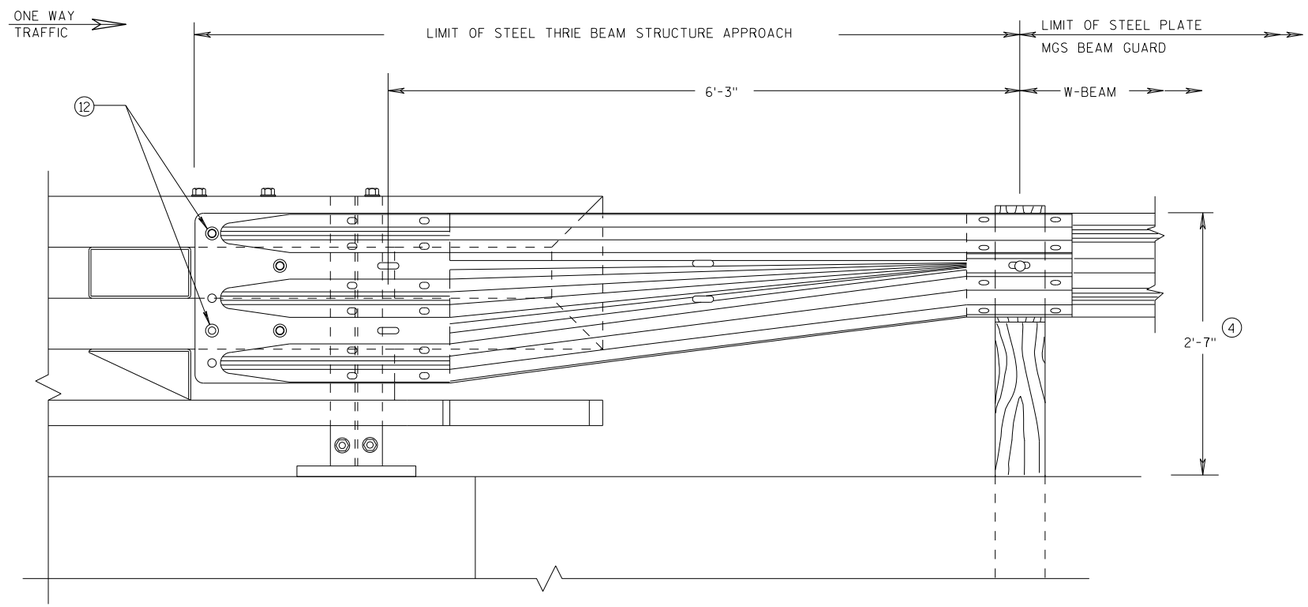
S.D.D. 14 B 45-5k



FRONT VIEW

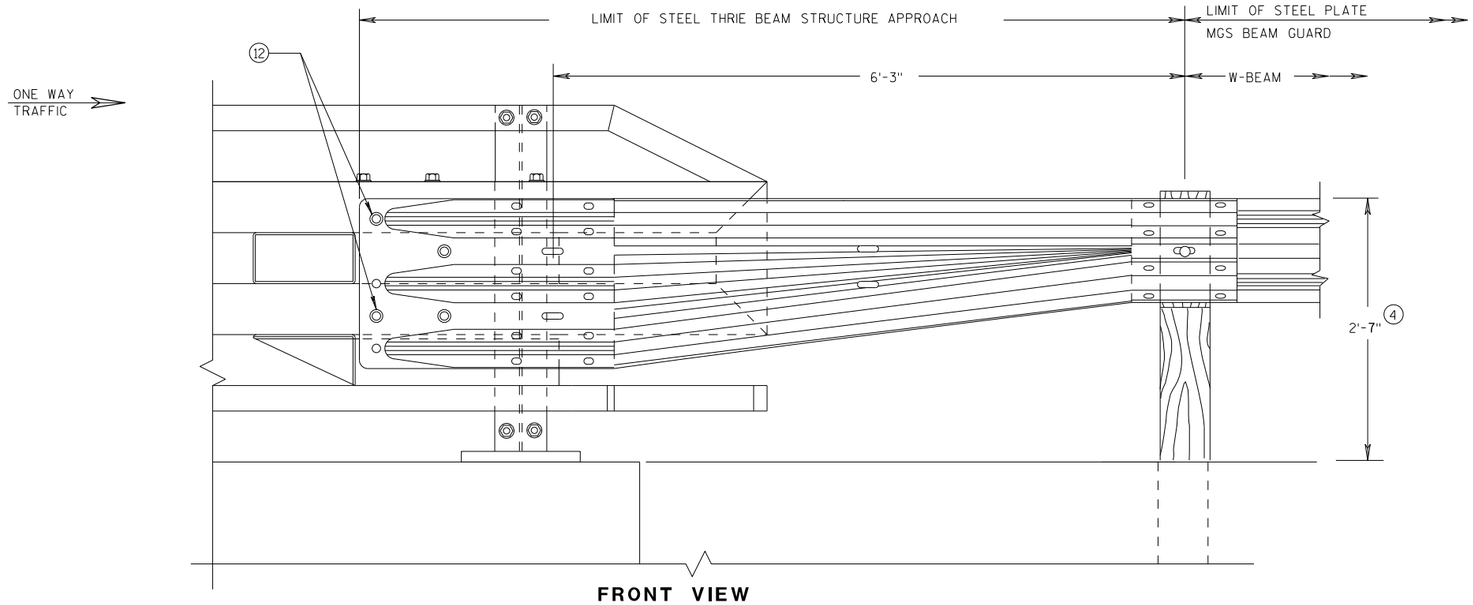
W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY3"

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

GENERAL NOTES

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

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



FRONT VIEW

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

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS D 99
UNIT SUPERVIS

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

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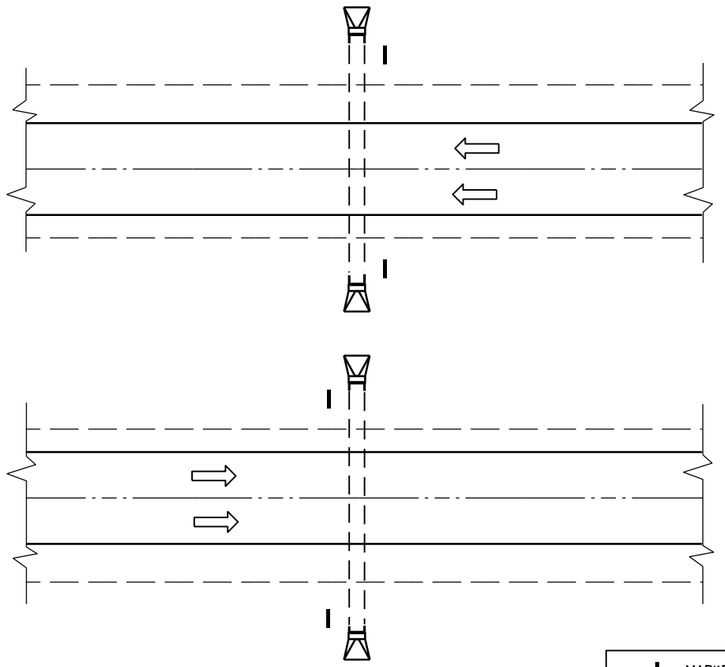
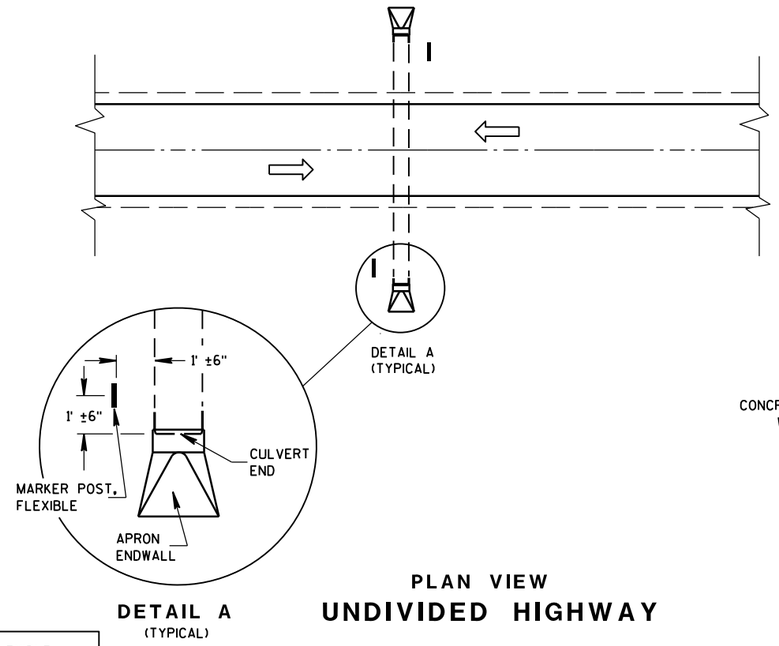
S.D.D. 14 B 45-5L



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

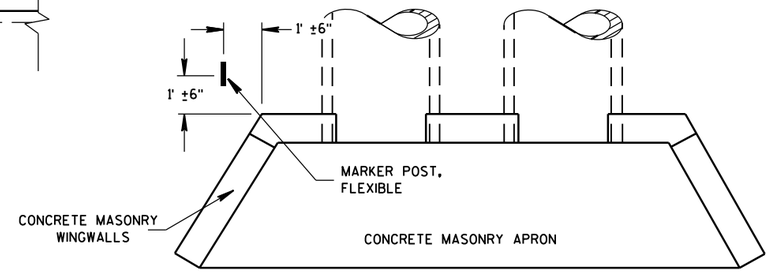
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

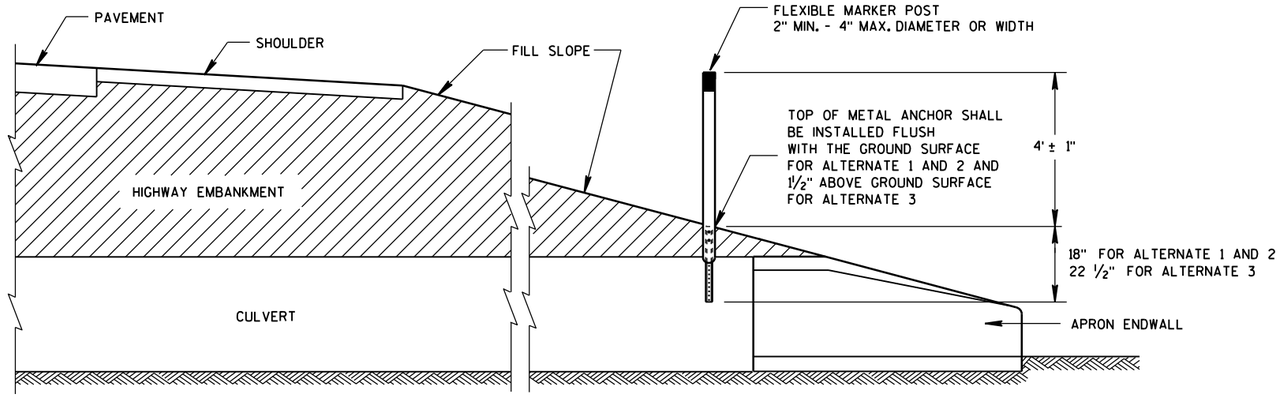
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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

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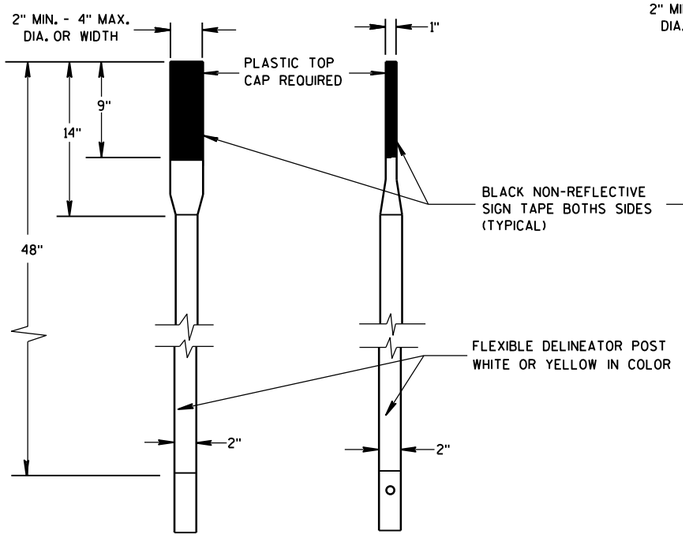
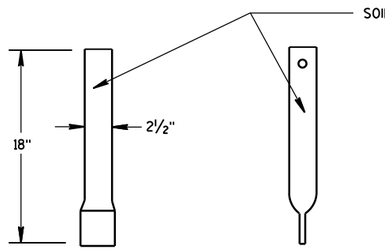
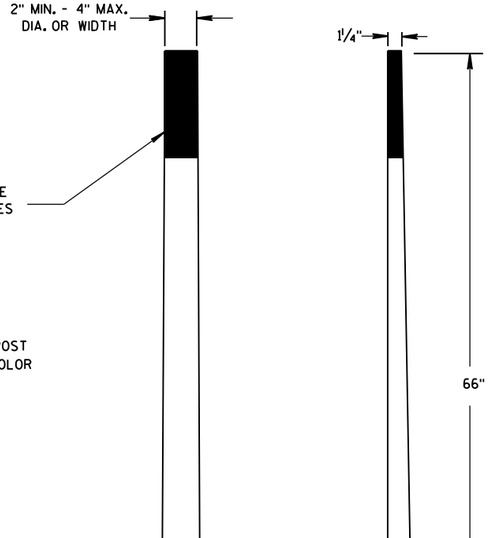
S.D.D. 15 A 3-2a





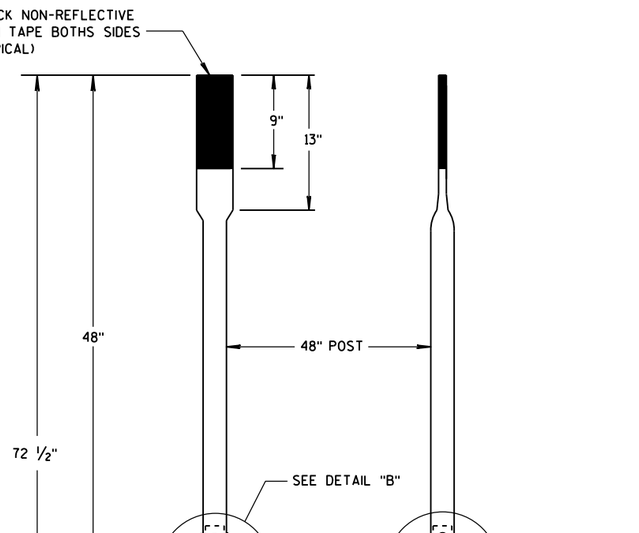
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

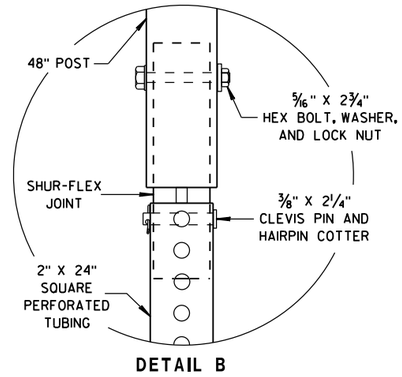
ALTERNATE 2



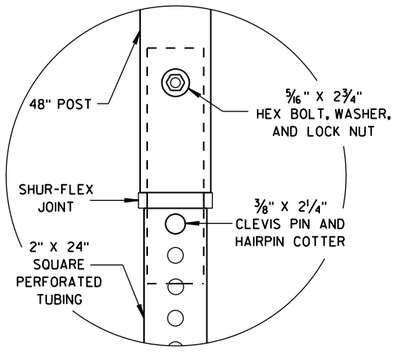
FRONT VIEW SIDE VIEW

ALTERNATE 3

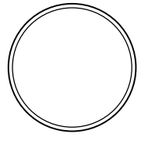
FLEXIBLE MARKER POSTS



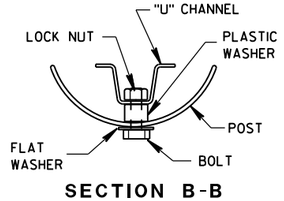
DETAIL B



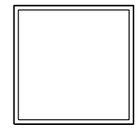
DETAIL C



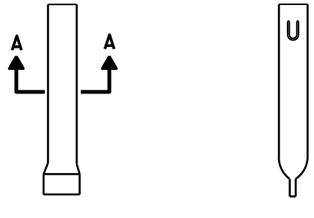
SECTION A-A



SECTION B-B

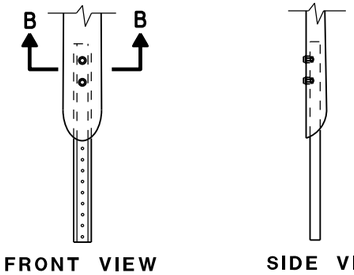


SECTION C-C



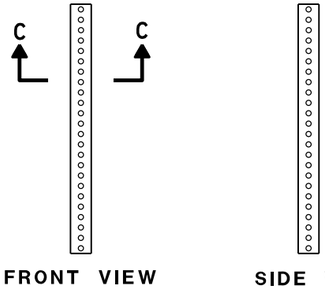
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

ALTERNATE 2



FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS

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

GENERAL NOTES

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

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

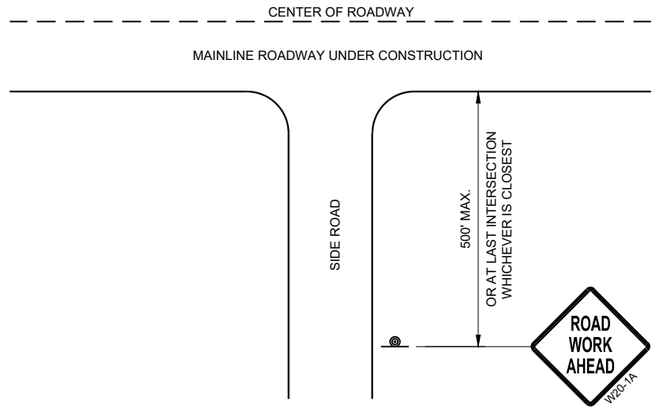
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

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

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

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



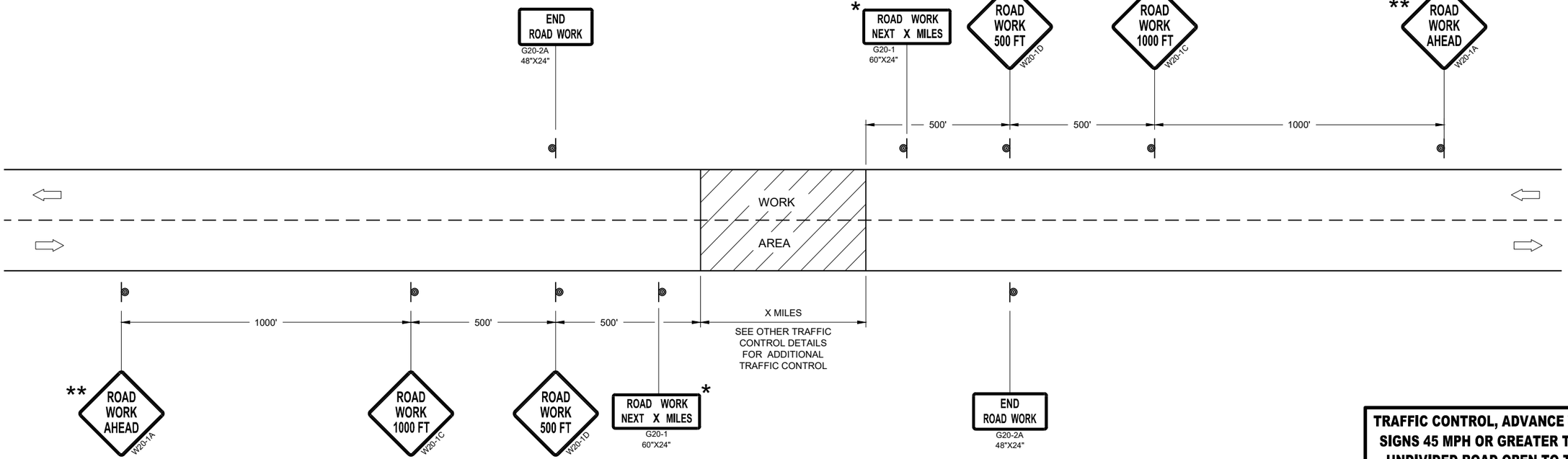
TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

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SDD 15C04 - 05

GENERAL NOTES

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

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

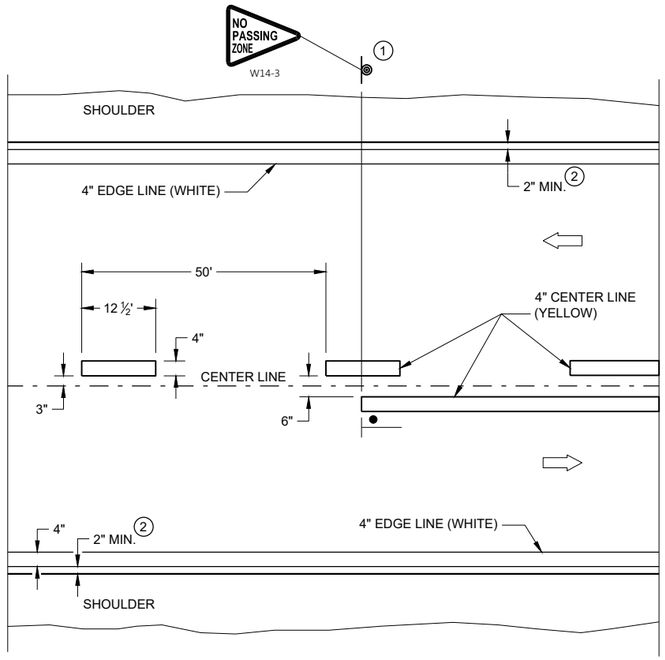
(2) MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

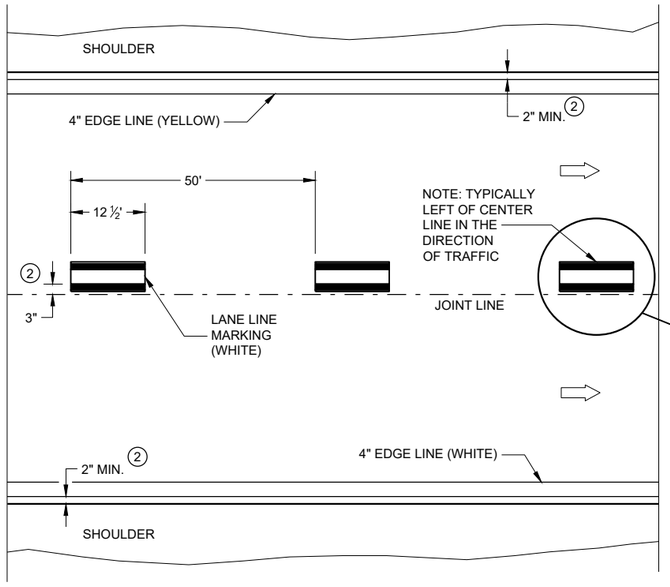
"T" MARKING

SIGN ON PERMANENT SUPPORT

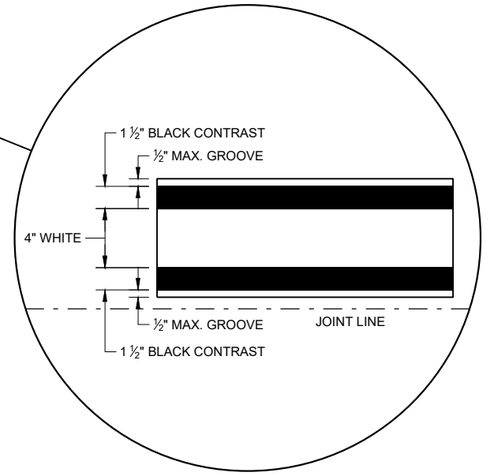
DIRECTION OF TRAFFIC



TWO WAY TRAFFIC



ONE WAY TRAFFIC



PERMANENT PAVEMENT MARKING

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022
DATE

/S/ Jeannie Silver
STATEWIDE SIGNING AND M
ENGINEER

FHWA

6

SDD 15C08 - 22a

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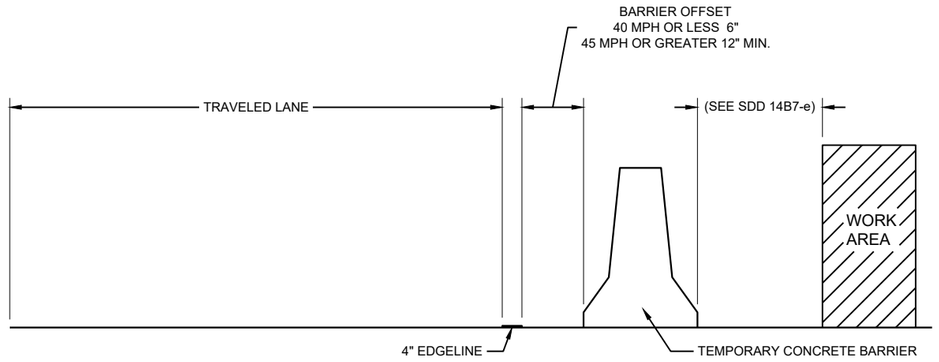
SDD 15C08 - 22a



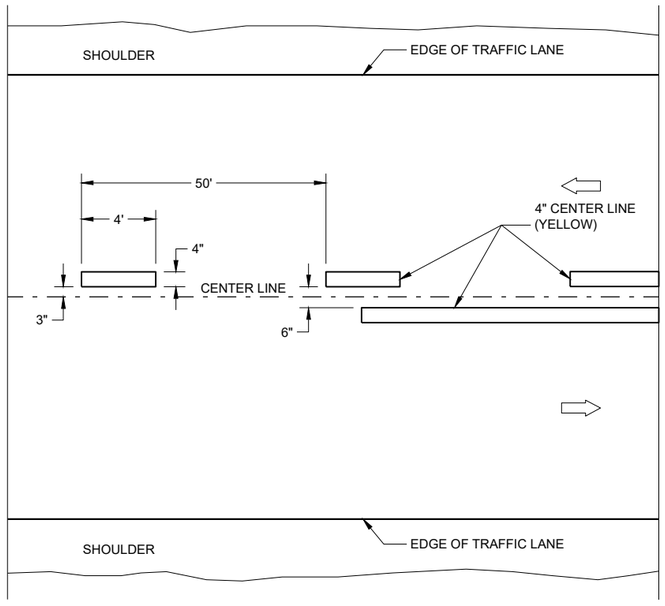
TEMPORARY BARRIER OFFSET FROM EDGELINE

GENERAL NOTES

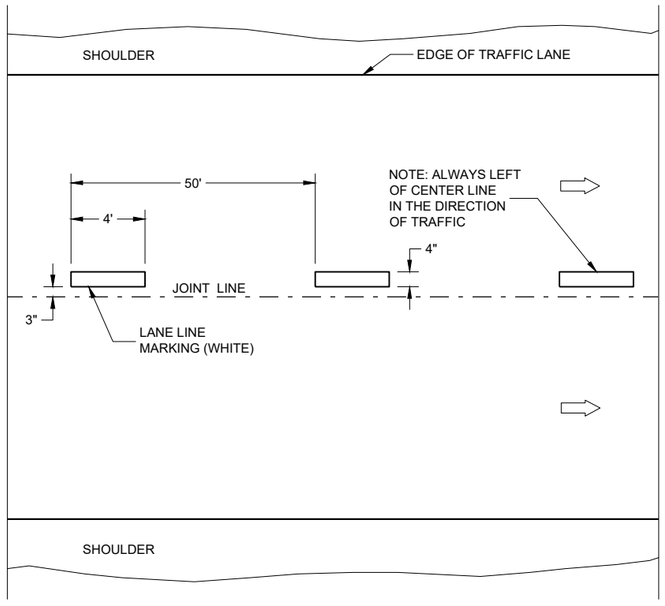
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

LEGEND

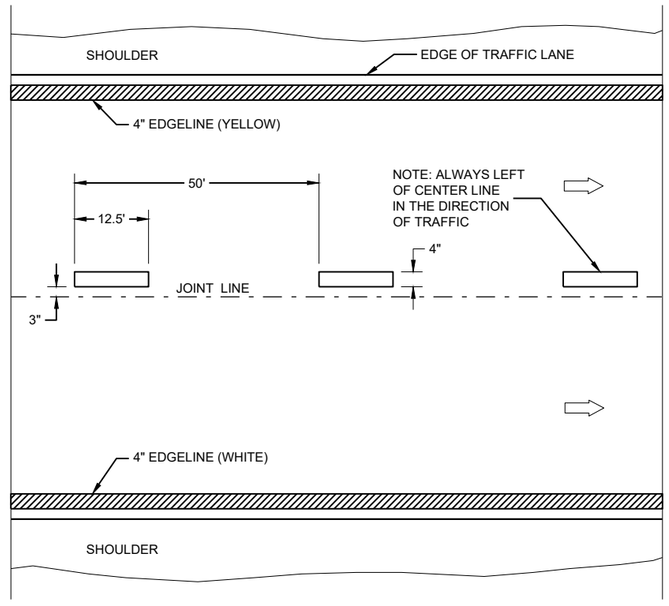
DIRECTION OF TRAFFIC



TWO WAY TRAFFIC



ONE WAY TRAFFIC



FREEWAYS AND EXPRESSWAYS

TEMPORARY PAVEMENT MARKING

TEMPORARY LONGITUDINAL PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

May 2022
DATE

/S/ Jeannie Silver
STATEWIDE SIGNING AND M
ENGINEER

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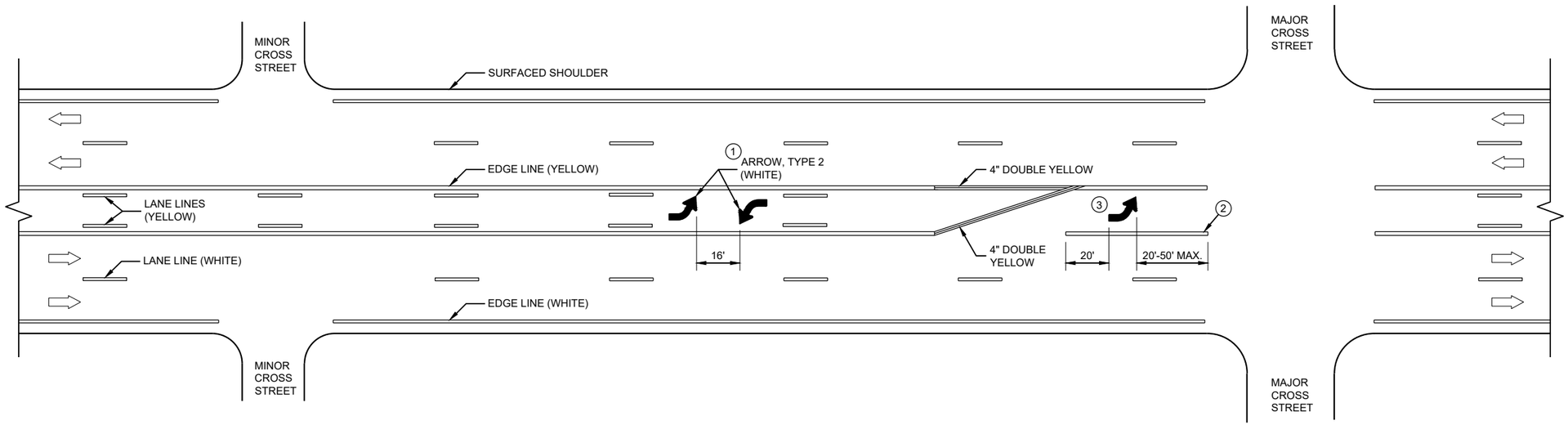
GENERAL NOTES

1. A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
2. 8" WHITE
3. TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT.

DIRECTION OF TRAFFIC



TWO WAY LEFT TURN LANE

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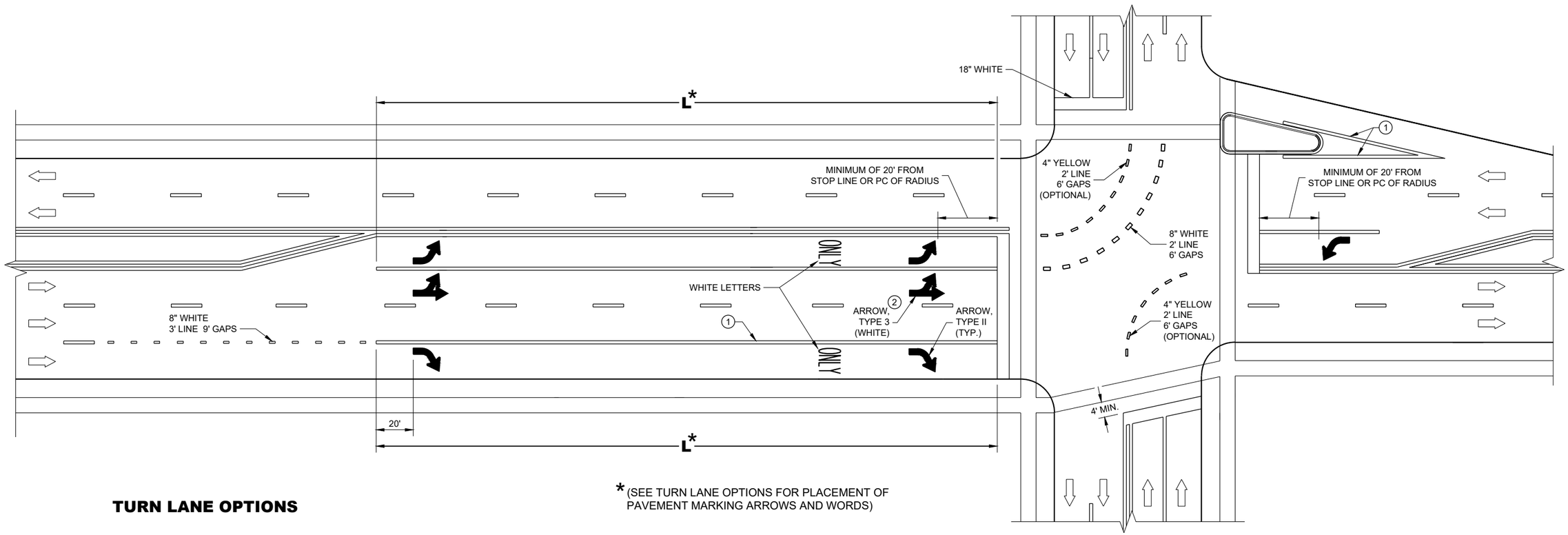
SDD 15C08 - 22c

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

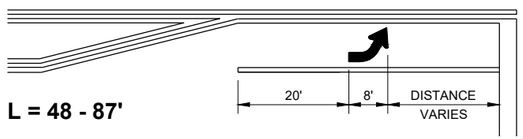
SDD 15C08 - 22c



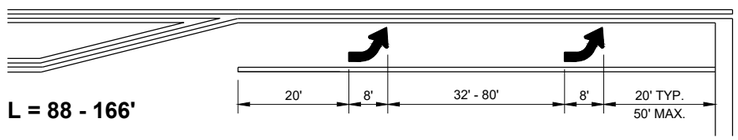
* (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

TURN LANE OPTIONS

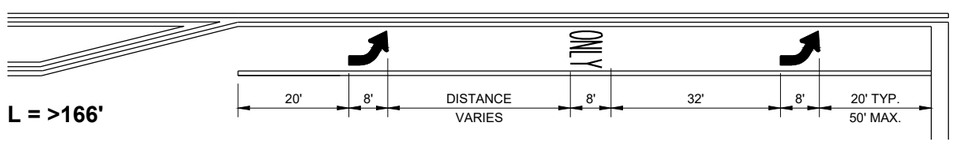
LENGTH OF TURN BAY (**L**) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



L = 48 - 87'



L = 88 - 166'



L = >166'

GENERAL NOTES

1. 8" WHITE
2. QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

DIRECTION OF TRAFFIC

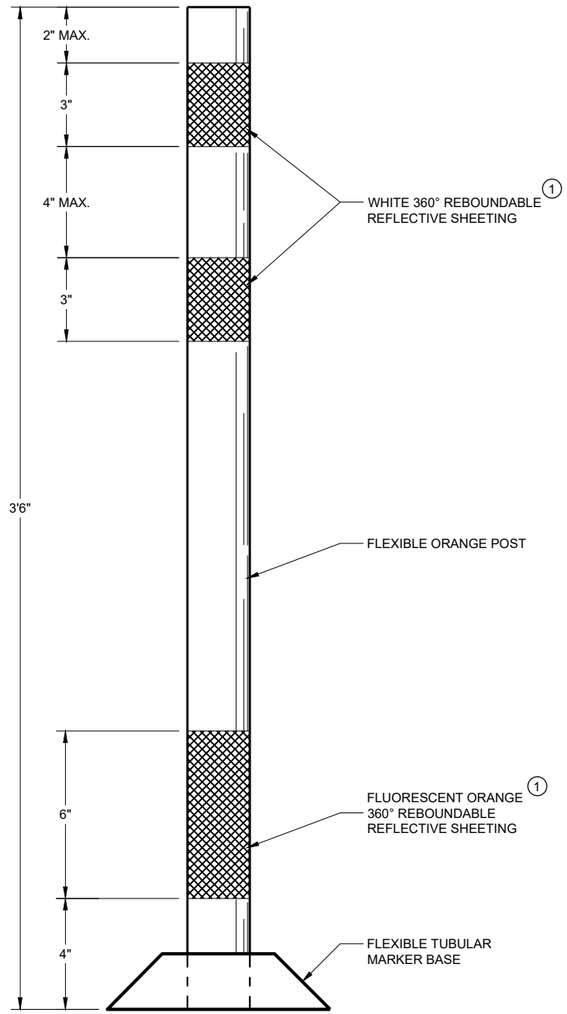
L = LENGTH OF TURN BAY

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 15C08 - 22d



FLEXIBLE TUBULAR MARKER POST WORK ZONE

GENERAL NOTES

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

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

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

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

CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA

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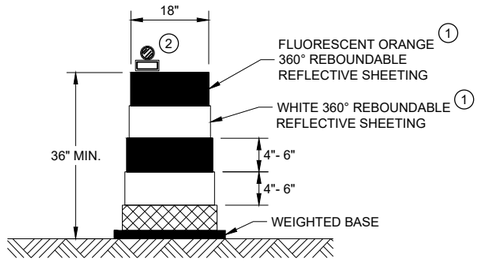
SDD 15C11 - 09a

SDD 15C11 - 09a

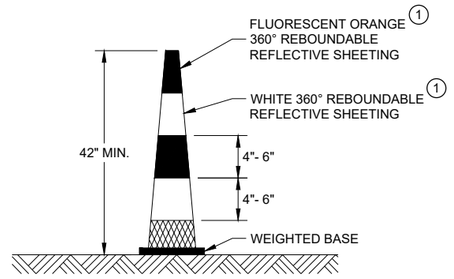
GENERAL NOTES

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

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

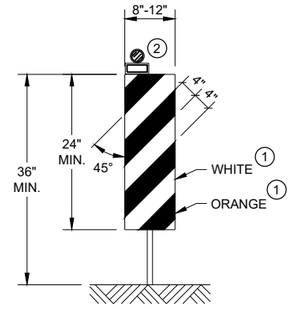


DRUM



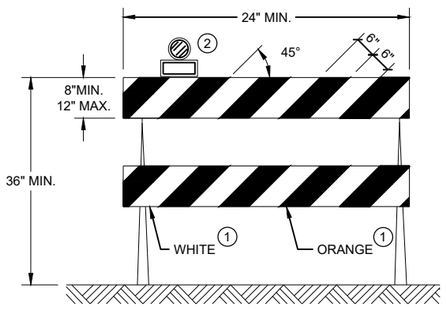
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



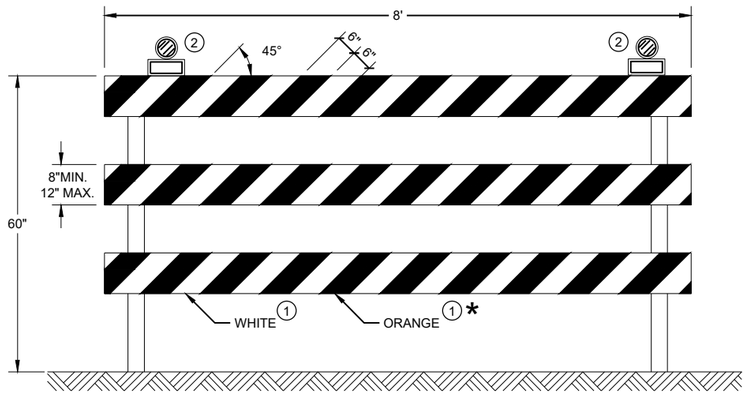
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

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SDD 15C11 - 09b

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SDD 15C11 - 09b

LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

TEMPORARY PORTABLE RUMBLE STRIP ARRAY

DIRECTION OF TRAFFIC

WORK AREA

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

GENERAL NOTES

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

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

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

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

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

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

FLAGGING

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

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

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

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

TEMPORARY PORTABLE RUMBLE STRIPS

UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

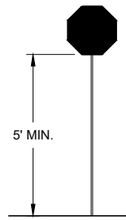
(3) EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER

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

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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



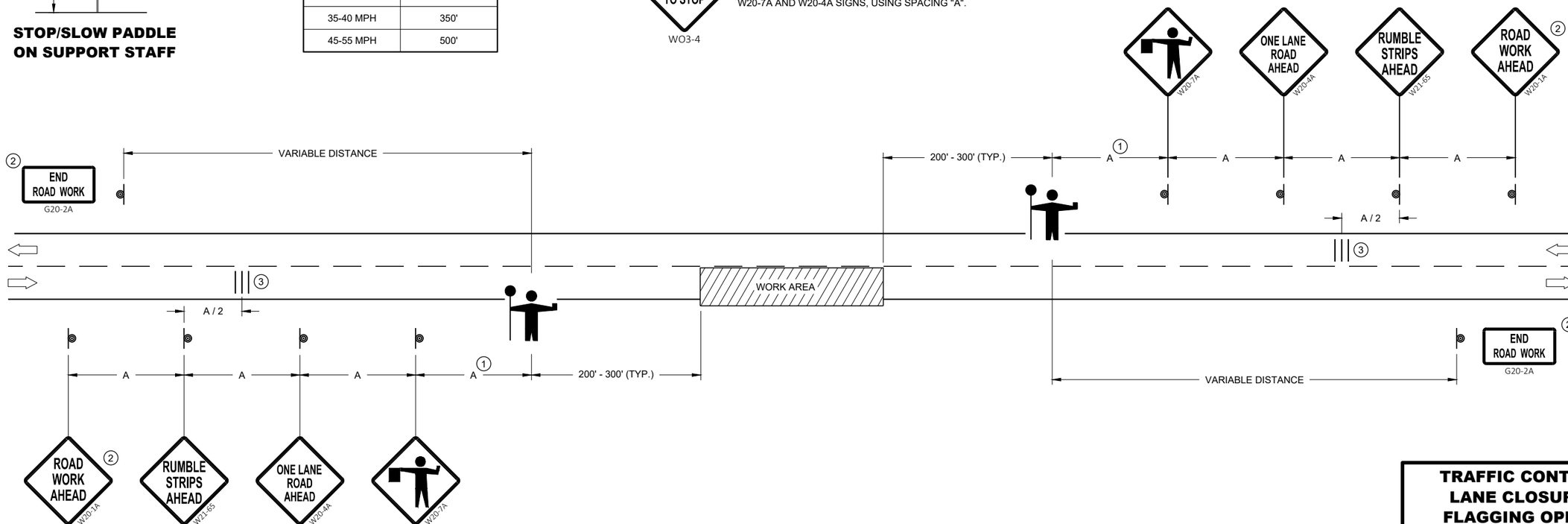
STOP/SLOW PADDLE ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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

WO3-4

USE OF WO3-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

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SDD 15C12 - 09a

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SDD 15C12 - 09a

GENERAL NOTES

SIGN ON PERMANENT SUPPORT

TRAFFIC CONTROL CONE 42-INCH

TRAFFIC CONTROL DRUM

TEMPORARY PORTABLE RUMBLE STRIP ARRAY

DIRECTION OF TRAFFIC

WORK AREA

AFAD — AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD)

GENERAL NOTES

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

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

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

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

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

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

FLAGGING

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

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

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

(2) IF FLAGGERS ARE PHYSICALLY NEEDED TO FLAG, REPLACE WO3-4 SIGNS WITH W20-7A SIGNS.

TEMPORARY PORTABLE RUMBLE STRIPS

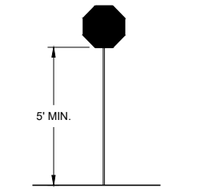
UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

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

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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

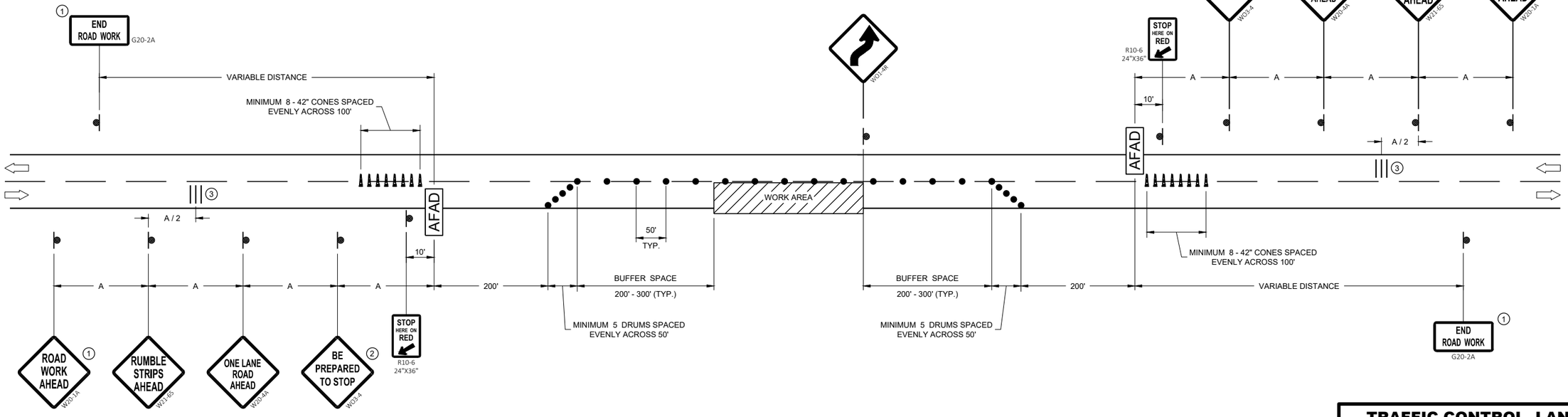
(3) EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSELY AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER.



STOP/SLOW PADDLE ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



TRAFFIC CONTROL, LANE CLOSURE WITH AUTOMATED FLAGGER ASSISTANCE DEVICE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

SDD 15D12 - 09b

SDD 15D12 - 09b

LEGEND

SIGN ON PERMANENT SUPPORT

TRAFFIC CONTROL DRUM

DIRECTION OF TRAFFIC

WORK ZONE

GENERAL NOTES

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

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

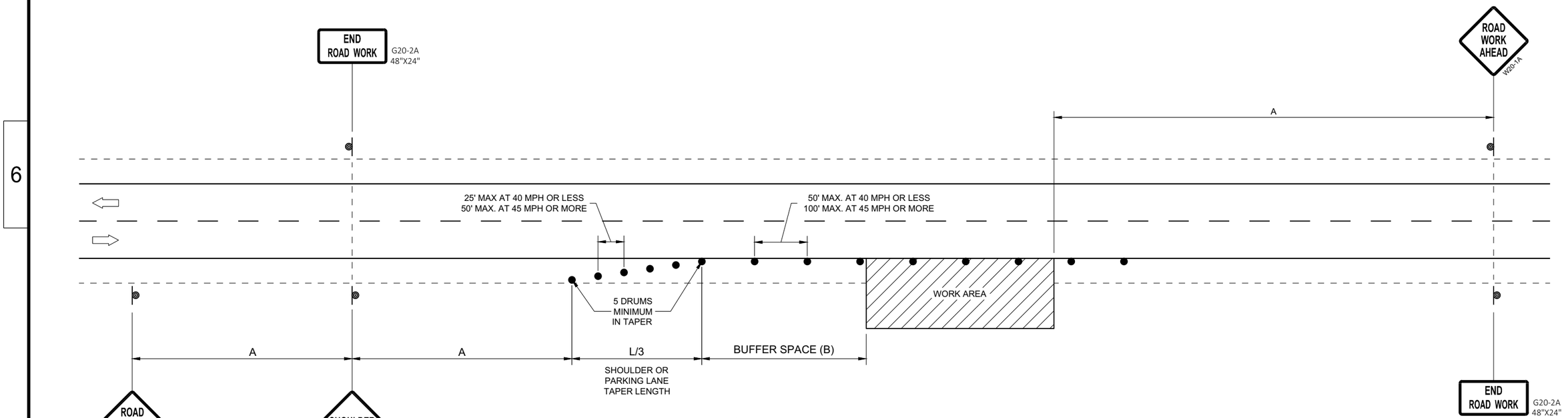
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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

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

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



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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020
DATE

/S/ Andrew Heidtke
STATEWIDE WORK ZONE T SAFETY ENGINEER

FHWA

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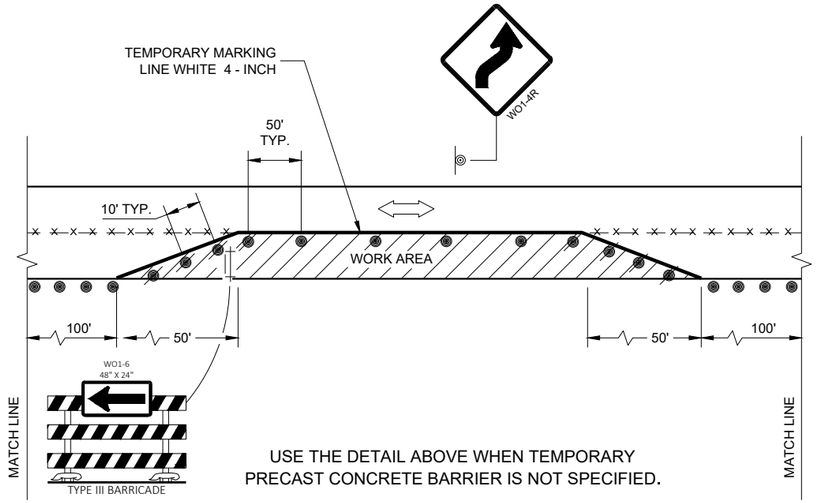
SDD 15D28 - 04

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLAGS, 16" X 16" MIN. (ORANGE)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- ASPHALTIC PAVEMENT WIDENING
- CONCRETE BARRIER TEMPORARY PRECAST
- TEMPORARY SIGNAL. SEE SDD 09G02 FOR EXACT PLACEMENT



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

GENERAL NOTES

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

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

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

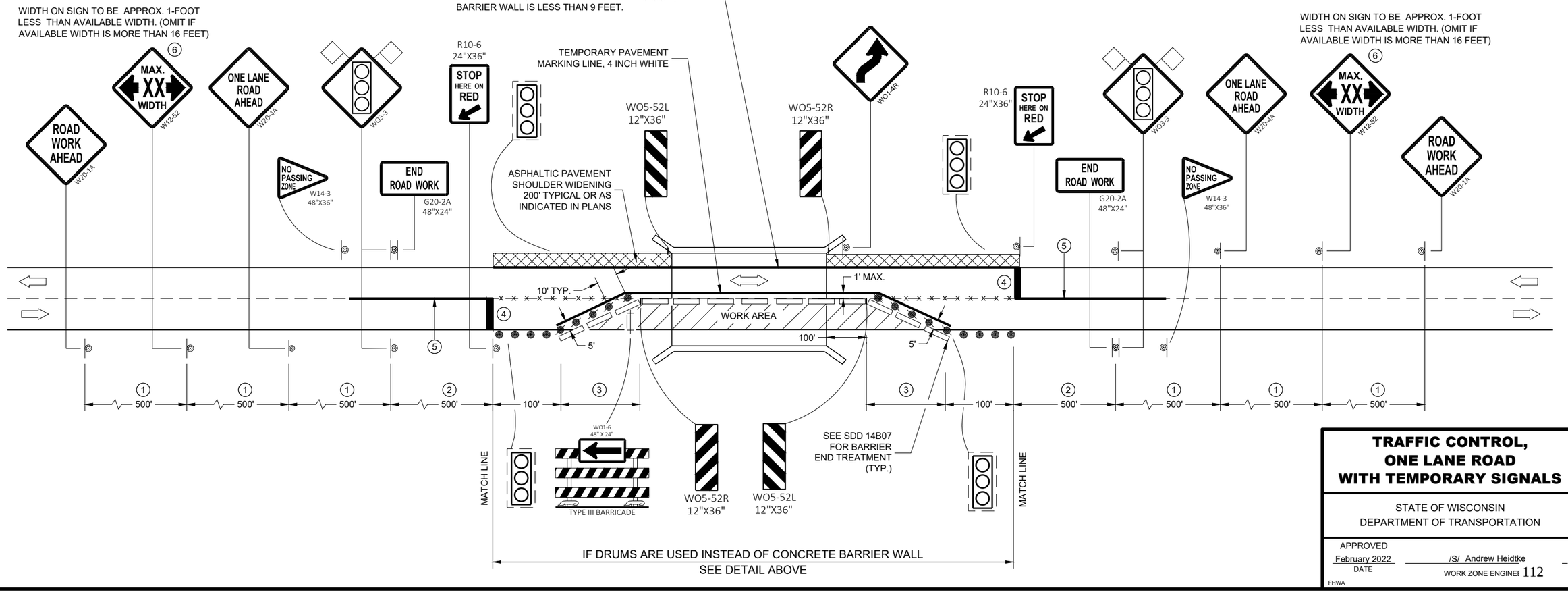
ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE NOTED.

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

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

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

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



TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

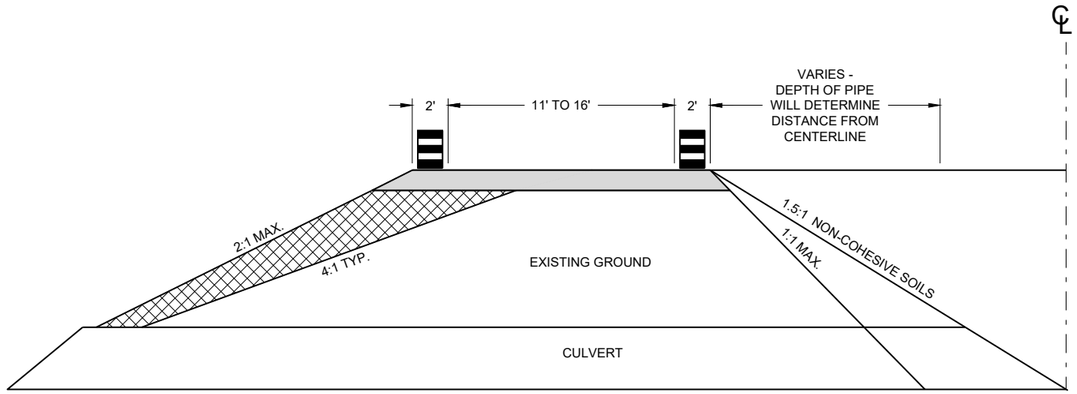
APPROVED
February 2022
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

SDD 15D33 - 07

SDD 15D33 - 07



CROSS SECTION

GENERAL NOTES

USE 1:1 FOR COHESIVE CLAYS AND SILTS, LOAMS, SANDY CLAYS AND ANGULAR GRAVEL SOILS.
USE 1.5:1 FOR NON-COHESIVE SOILS.

THE TAPER SHOULD EXTEND ACROSS THE SHOULDER UNLESS DOING SO WOULD GREATLY CONFLICT WITH THE WORK OPERATION.

ALL LANE CLOSURE SIGNS SHALL BE REMOVED OR COVERED AND ALL DEVICES REMOVED BEYOND THE SHOULDER WHEN WORK IS NOT IN PROGRESS AND THE LANE IS RESTORED TO A SAFE OPERATING CONDITION.

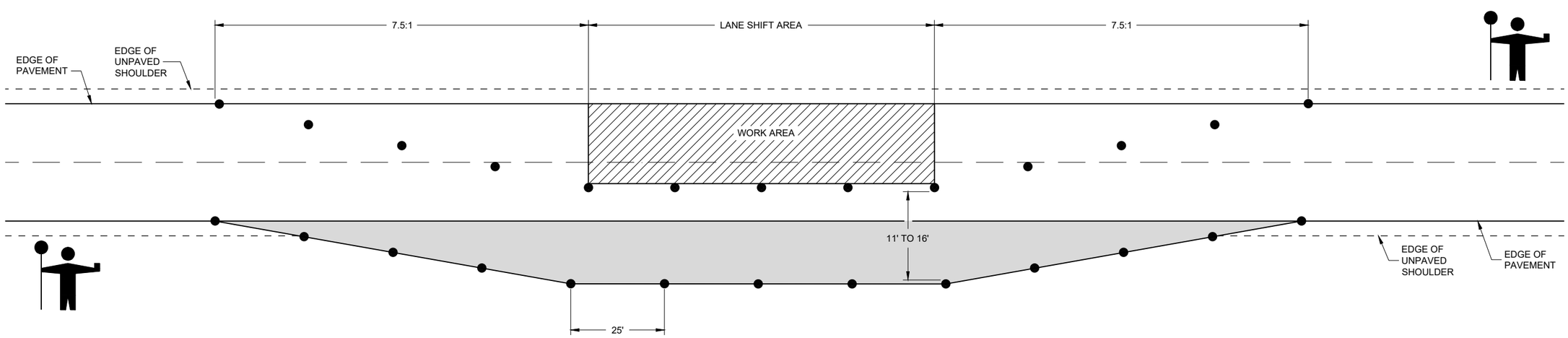
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

USE WITH SDD 15C12 "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATIONS"

USE WITH SDD 15D45 "SIGNING ON ROADWAYS WITH LOOSE GRAVEL"

LEGEND

- DRUM WITHOUT WARNING LIGHT
- 6" BASE AGGREGATE DENSE 1 ¼" -INCIDENTAL TO LANE SHIFT ITEM
- FILL - INCIDENTAL TO LANE SHIFT ITEM
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF



LANE SHIFT IN FLAGGING OPERATION

TRAFFIC CONTROL, TEMPORARY LANE SHIFT DURING CULVERT WORK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

6

SDD 15D48 - 01

6

SDD 15D48 - 01

LEGEND

V1 WORK VEHICLE

V2 SHADOW VEHICLE

TRUCK MOUNTED ATTENUATOR (TMA)

FLASHING ARROW PANEL (CAUTION)

WORK AREA

DIRECTION OF TRAFFIC

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

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

MOBILE IS WORK THAT MOVES CONTINUOUSLY OR MOVES AT LEAST THE DECISION SIGHT DISTANCE EVERY 15 MINUTES.

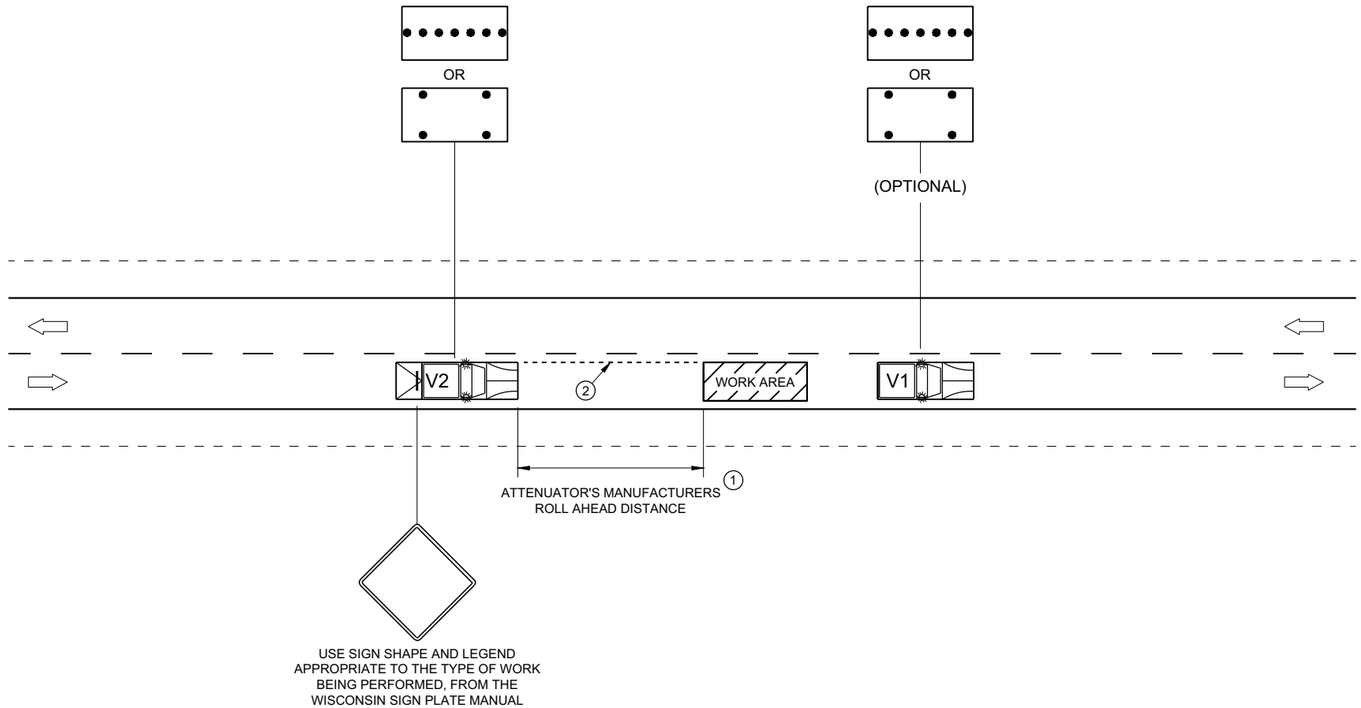
ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

ALL ARROW PANELS SHALL BE REAR FACING, TYPE "B" OR "C", AND DISPLAYING THE FLASHING CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

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

(2) ALIGN LEFT SIDE OF SHADOW VEHICLE WITH EDGE OF WORK AREA.



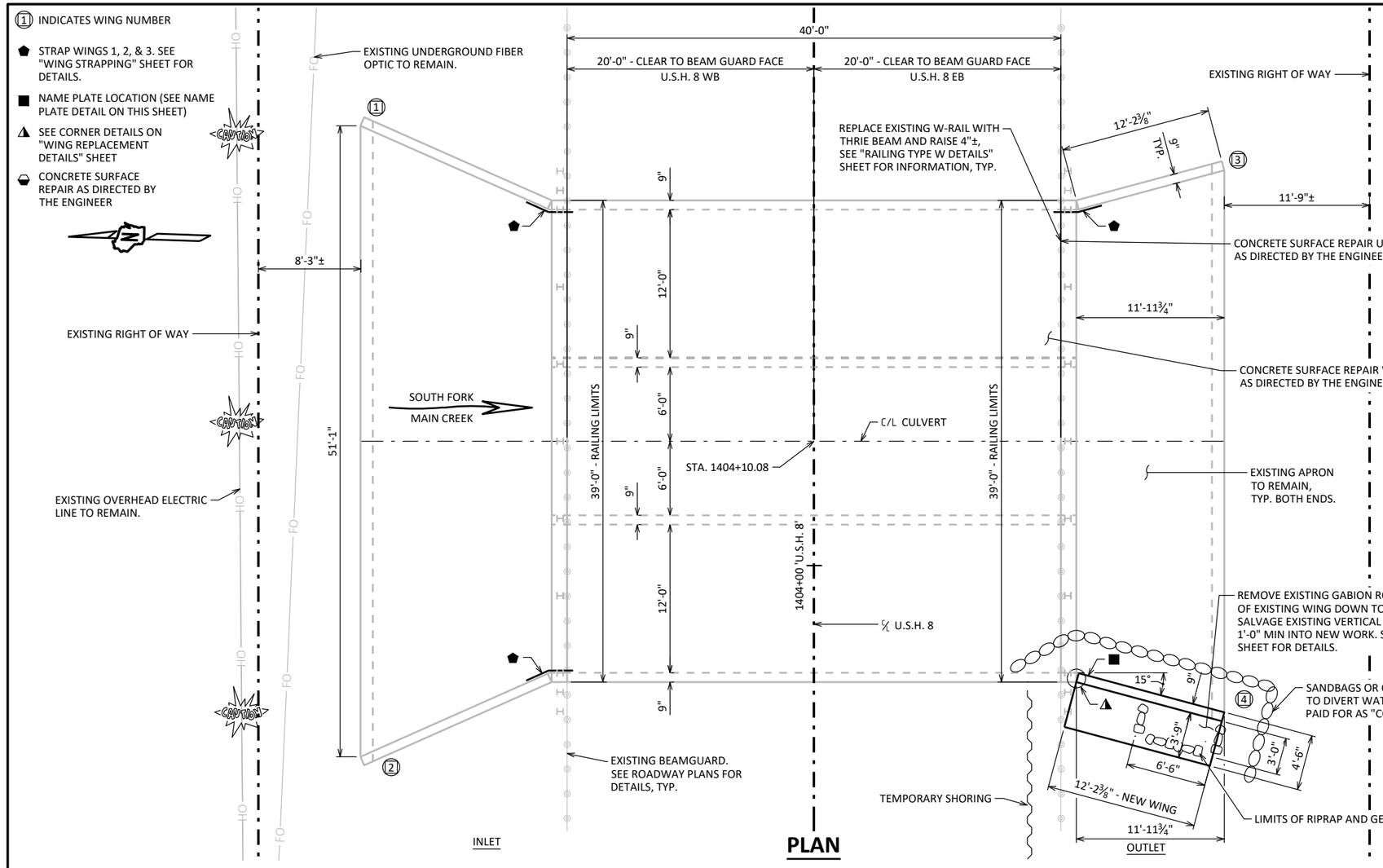
TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 — DATE
/S/ Andrew Heidtke — STATEWIDE WORK ZONE T SAFETY ENGINEER
FHWA

6

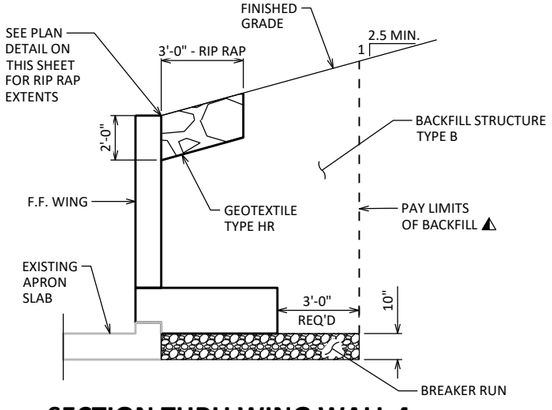
SDD 15D51 - 01



PLAN

NAME PLATE DETAIL

WING 4



SECTION THRU WING WALL 4

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

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTAL
203.0220	REMOVING STRUCTURE B-54-25	EACH	1
206.2001	EXCAVATION FOR STRUCTURES CULVERTS B-54-25	EACH	1
206.5001	COFFERDAMS B-54-25	EACH	1
210.2500	BACKFILL STRUCTURE TYPE B	TON	30
311.0115	BREAKER RUN	CY	3
504.0100	CONCRETE MASONRY CULVERTS	CY	6
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	390
509.1500	CONCRETE SURFACE REPAIR	SF	30
511.1200	TEMPORARY SHORING B-54-25	SF	80
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	3
606.0300	RIPRAP HEAVY	CY	2
645.0120	GEOTEXTILE TYPE HR	SY	5
SPV.0060	STRAPPING B-54-25	EACH	3
SPV.0090	RAILING STEEL TYPE "W" MODIFIED, B-54-25	LF	78
	NON-BID ITEMS		
	FILLER	Size	¾"
	NAME PLATE		
	NON-BITUMINOUS JOINT SEALER		

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE AS-BUILT STRUCTURE PLANS.

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 ¾" UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES CULVERTS B-54-25" SHALL BE THE EXISTING GROUNDLINE.

ALL VOLUME WHICH CANNOT BE PLACED BEFORE CULVERT WING AND FOOTING CONSTRUCTION AND NOT OCCUPIED BY THE NEW STRUCTURE ELEMENTS SHALL BE BACKFILLED WITH STRUCTURE BACKFILL WITHIN THE LENGTH OF THE CULVERT INCLUDING THE APRON WING WALLS..

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

PLACE 18" (MIN.) WIDE SHEET OF "RUBBERIZED MEMBRANE WATERPROOFING" ON VERTICAL AND HORIZONTAL WING CONSTRUCTION JOINTS.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 504.3.4 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1980. WORK SHALL BE INCLUDED IN THE BID ITEM "CONCRETE MASONRY CULVERTS".

DESIGN DATA

MATERIAL PROPERTIES:

CONCRETE MASONRY: ——— f'_c = 3,500 PSI
HIGH STRENGTH BAR STEEL REINFORCEMENT —— f_y = 60,000 PSI

LIST OF DRAWINGS:

STATE PROJECT NUMBER

1580-04-74

STRUCTURE DESIGN CONTACTS:
BRETT FOLLETT 608 266-7187
DOMINIQUE BECHLE 608-261-8205

NO.	DATE	REVISION	BY

BUREAU OF STRUCTURES

ACCEPTED DMB 08/18/22
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-54-25

U.S.H. 8 OVER SOUTH FORK MAIN CREEK

COUNTY: RUSK | VILLAGE: HAWKINS

DESIGN SPEC.
REHABILITATION N/A

DESIGNED BY	DESIGNED CK'D	DRAWN BY	PLANS CK'D
BAF	VS	BAF	VS

WING REPLACEMENT & REPAIRS

SHEET 1 OF 4
115

SCALE = 10

I.D. 1580-04-04A DATE: JULY 2022

8

8

STATE PROJECT NUMBER

1580-04-74

BILL OF BARS

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

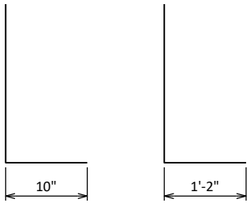
BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
A501	X	2	12'-6"			WING 4 - HORIZ. - BOTH FACES - TOP
A402	X	10	6'-4"		⚠	WING 4 - HORIZ. - BOTH FACES
A403	X	13	3'-9"		⚠	WING 4 - VERT. - FRONT FACE
A504	X	13	4'-5"	X	⚠	WING 4 - VERT. - BACK FACE
A605	X	13	5'-2"	X		WING 4 - FOOTING - TOP
A406	X	12	11'-8"			WING 4 - FOOTING - LOGIT.
A407	X	13	4'-2"			WING 4 - FOOTING - BOTTOM

⚠ LENGTH SHOWN FOR BAR IS AN AVERAGE AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

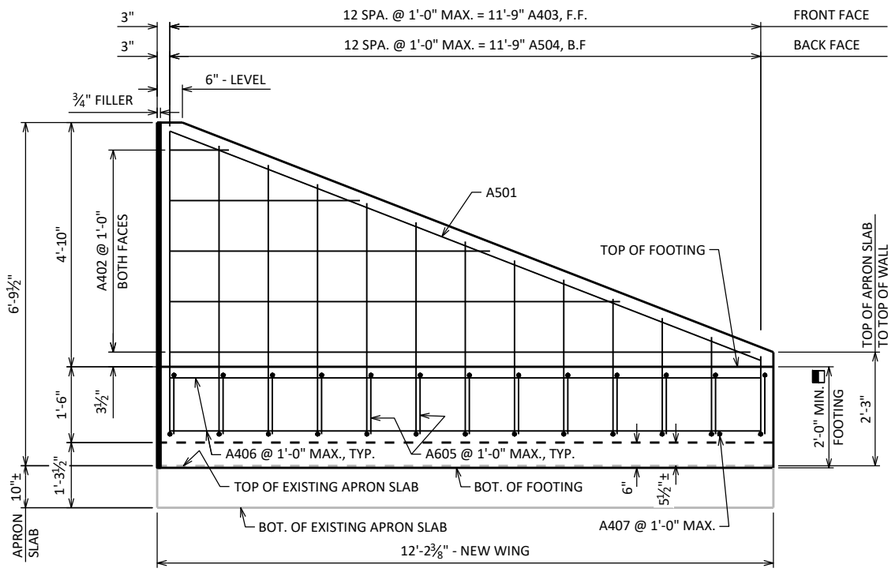
BAR SERIES TABLE

BUNDLE AND TAG EACH SERIES SEPARATELY.

BAR MARK	NO. REQ'D	LENGTH
A402	2 SERIES OF 5	1'-2" TO 11'-5"
A403	1 SERIES OF 13	1'-6" TO 6'-0"
A504	1 SERIES OF 13	2'-2" TO 6'-8"

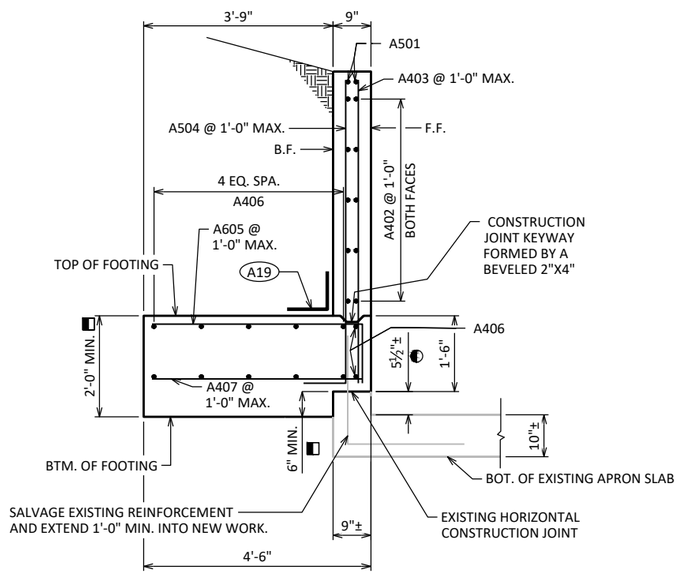


A504 **A605**



ELEVATION WING 4

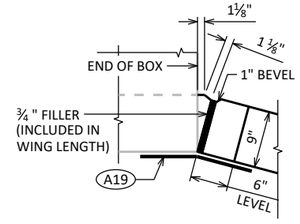
LOOKING EAST
SHOWING B.F. REINF.



SECTION THRU WING DETAIL

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

◧ EXTEND BOTTOM OF FOOTING DOWN, IF NECESSARY, IN ORDER TO SATISFY 6" MINIMUM FROM BOTTOM OF FOOTING TO EXISTING HORIZONTAL CONSTRUCTION JOINT.



WING 4 CORNER

CORNER DETAIL

◐ CONTRACTOR AND FIELD ENGINEER TO REVIEW EXISTING APRON CONFIGURATION AND CONDITION AND COORDINATE REPAIRS WITH BOS IF THEY VARY FROM THE DETAILS SHOWN ON THESE PLANS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-54-25

DRAWN BY BAF | PLANS CK'D VS

WING REPLACEMENT DETAILS

SHEET 2
116

SCALE = VARIES

8

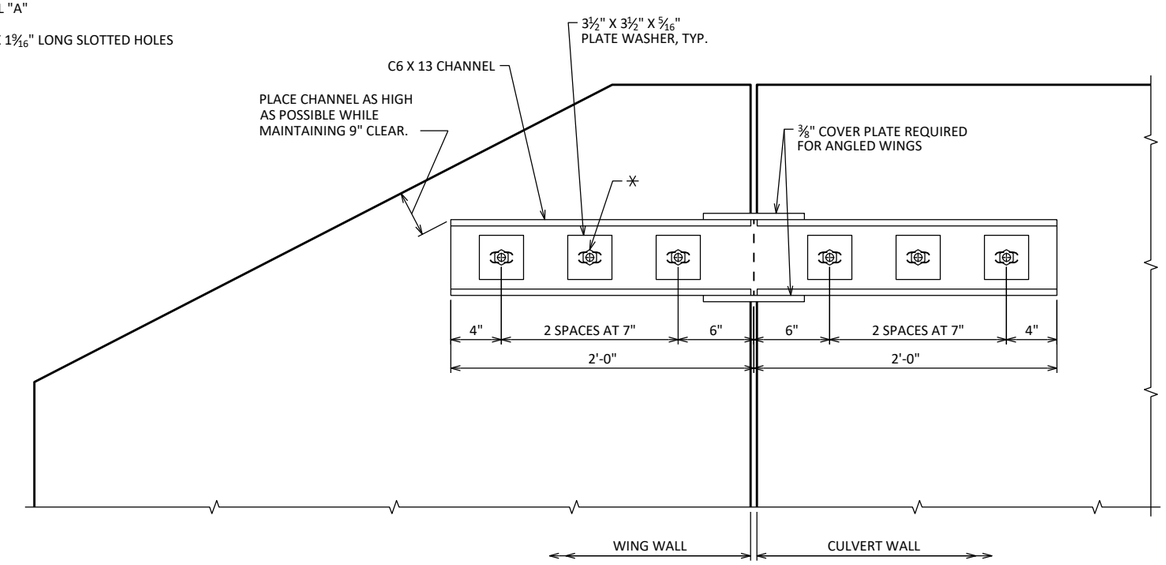
8

STATE PROJECT NUMBER

1580-04-74

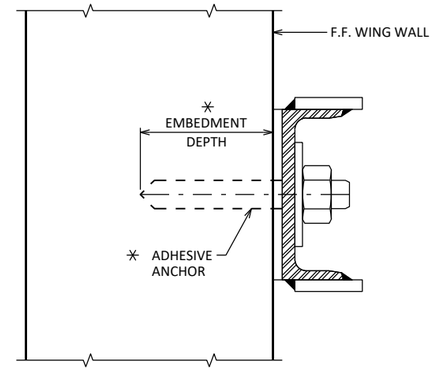
✳ ADHESIVE ANCHORS ⅝ - INCH.
EMBED 5" IN CONCRETE.
SEE DETAIL "A"

USE 1 1/16" X 1 3/16" LONG SLOTTED HOLES



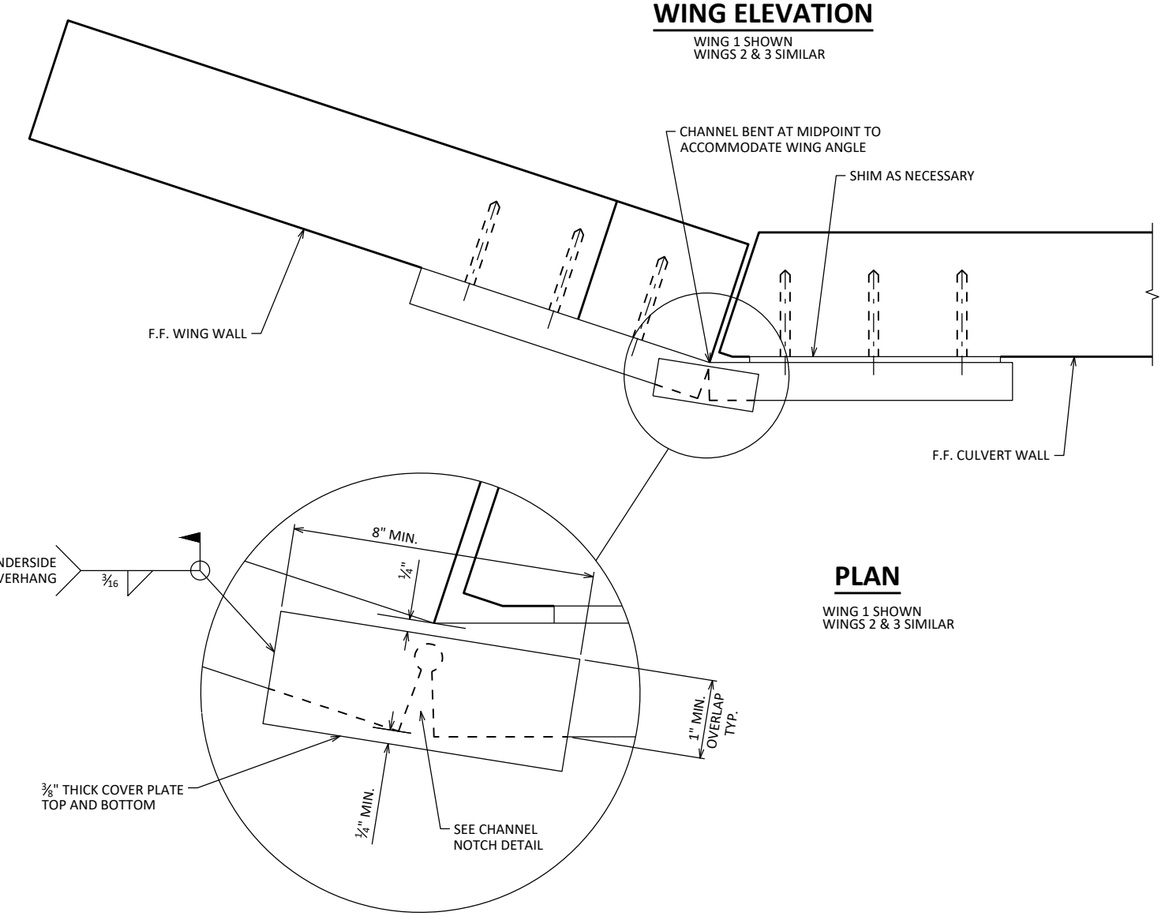
WING ELEVATION

WING 1 SHOWN
WINGS 2 & 3 SIMILAR



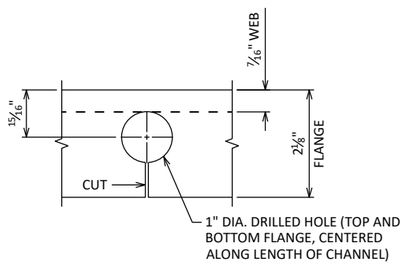
DETAIL A

SECTION THRU CHANNEL



PLAN

WING 1 SHOWN
WINGS 2 & 3 SIMILAR



CHANNEL NOTCH DETAIL

NOTES

BID ITEM SHALL BE "STRAPPING B-54-25" WHICH INCLUDES ALL ITEMS SHOWN.

WING WALL ANGLES, REQUIRED SHIMS, ANCHOR LOCATIONS, AND WELD CLEARANCES SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO FABRICATING WING WALL STRAPS.

ALL PROVIDED STEEL MATERIAL SHALL CONFORM TO ASTM A36.

ALL STRUCTURAL STEEL SHOWN SHALL BE GALVANIZED. THREADED RODS, MASONRY ANCHORS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C.

CUTTING AND DRILLING OF CHANNEL SHALL BE DONE IN FABRICATION SHOP, PRIOR TO GALVANIZING.

IF WELDING COVER PLATE IN FIELD, PRIOR TO WELDING, REMOVE GALVANIZING FROM AREA TO BE WELDED. TOUCH UP WITH PAINT ALL AREAS LACKING GALVANIZING WHEN COMPLETE.

CAULK AROUND PERIMETER OF CHANNEL AND FILL PORTION OF HOLE AROUND ANCHOR BOLT AND SHIM WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ADHESIVE ANCHORS SHALL CONFORM TO SECTION 502.2.12 OF THE STANDARD SPECIFICATIONS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-54-25

DRAWN BY BAF | PLANS CK'D VS

WING STRAPPING

SHEET 3
117

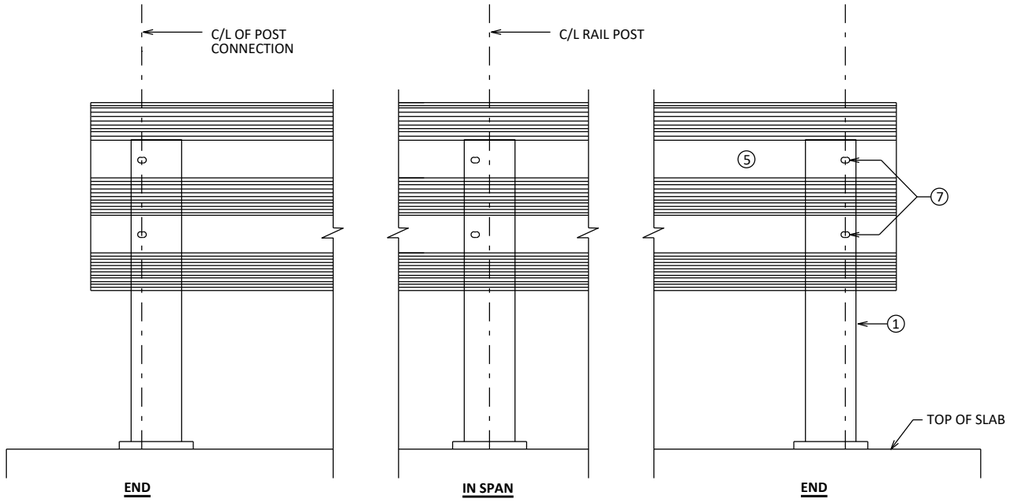
SCALE = 2.00

8

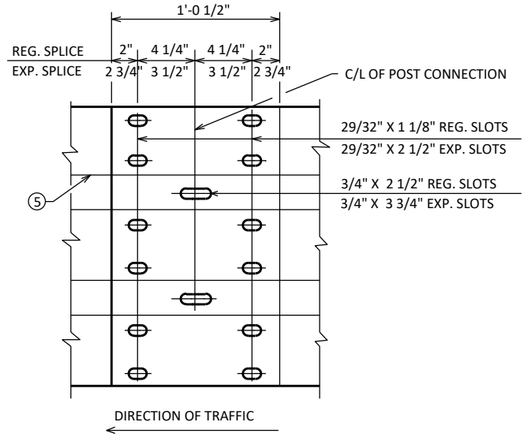
8

STATE PROJECT NUMBER

1580-04-74



ELEVATION



RAIL MEMBER SPLICE

5/8" DIA. BUTTON HEAD OVAL SHOULDER BOLTS WITH HEX NUTS AT ALL SLOTS.

LEGEND

1. EXISTING W6 X 25. DRILL (2) 3/4" DIA. HOLES FOR BOLT NO. 7
2. EXISTING C8 X 11.5. WITH 13/16" DIA. HOLES, ATTACH TO NO.4 WITH BOLTS NO. 8
3. EXISTING PLATE 1/2" X 5 3/4" X 6" WITH 1 1/4" DIA. HOLE FOR BOLTS NO. 8
4. STRUCTURAL TUBE 6" X 4" X 3/8" WITH 13/16" DIA. HOLES, 6" LONG, ATTACH TO NO. 3 WITH BOLTS NO. 8
5. NEW THRIE BEAM. ATTACH TO NO. 1 WITH BOLTS NO. 7
6. 1 3/4"X 3" MOUNTING BOLT WASHER, EIGHT GAGE GALVANIZED. 2 PER POST.
7. 5/8" DIA. BUTTON HEAD RAIL MOUNTING BOLT WITH ROUND WASHER AND NUT, 2 PER POST.
8. 5/8" DIA. X 6" LG. HEX. BOLTS WITH NUT AND TWO WASHERS EACH, 4 REQUIRED PER POST CONNECTION, 8 REQUIRED PER SPLICE CONNECTION.
9. EXISTING PLATE 1/2" X 5 3/4" X 11 1/2" WITH 1 1/4" DIA. HOLES FOR BOLTS NO. 8.

NOTES

BID ITEM SHALL BE "RAILING STEEL TYPE "W" MODIFIED, B-54-25" WHICH SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY TO RAISE ITEMS NO.2 & NO.5 BETWEEN THE LONGIT. LIMITS OF RAILING AS SHOWN IN ELEVATION.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

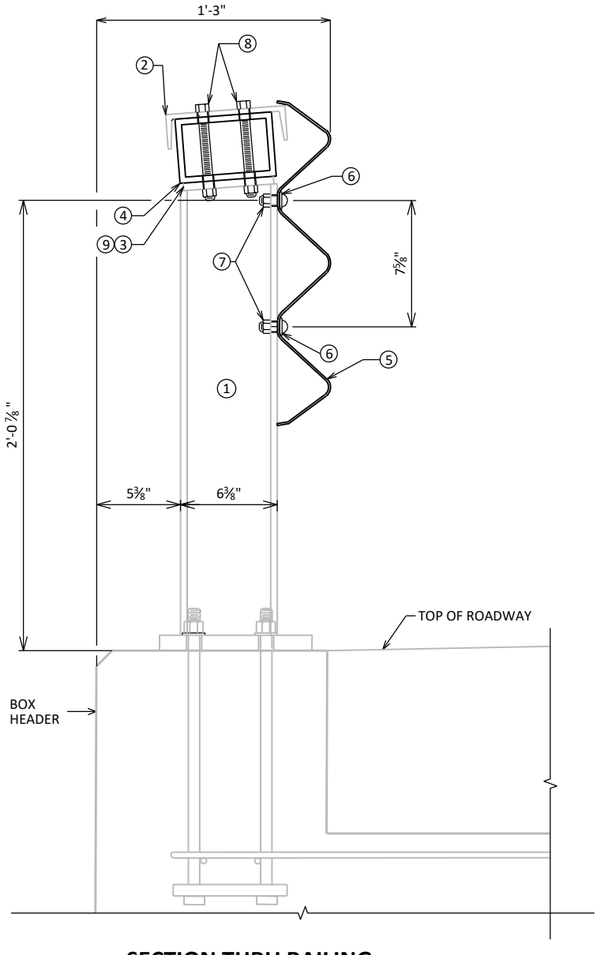
SHIM PLATES 6" X 1/16" X 6" MAY BE USED BETWEEN TOP OF POST AND CHANNEL MEMBER TO ACHIEVE VERTICAL ALIGNMENT.

ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION.

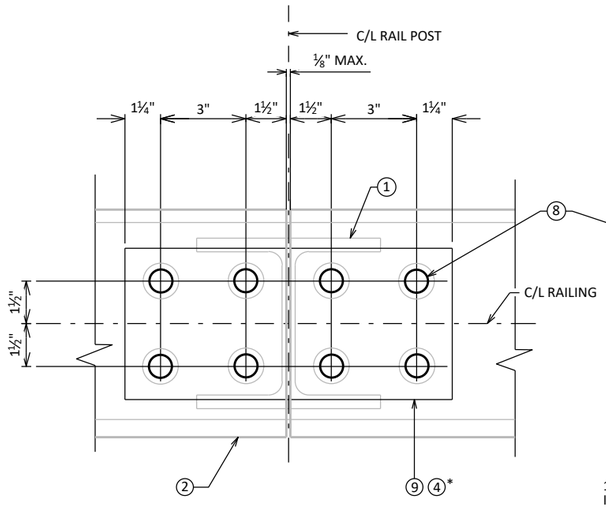
PRIOR TO GALVANIZING, ALL STEEL STRUCTURAL TUBE SHALL BE GIVEN A NO.6 BLAST CLEANING BY S.S.P.C SPECIFICATIONS.

RAIL MEMBERS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC AND THE UPPER RAIL SHALL LAP THE LOWER RAIL.

NEW BOLTS AND REFLECTORS SHALL BE FURNISHED AND USED TO RESET THE STRUCTURAL TUBES AND W-RAIL.

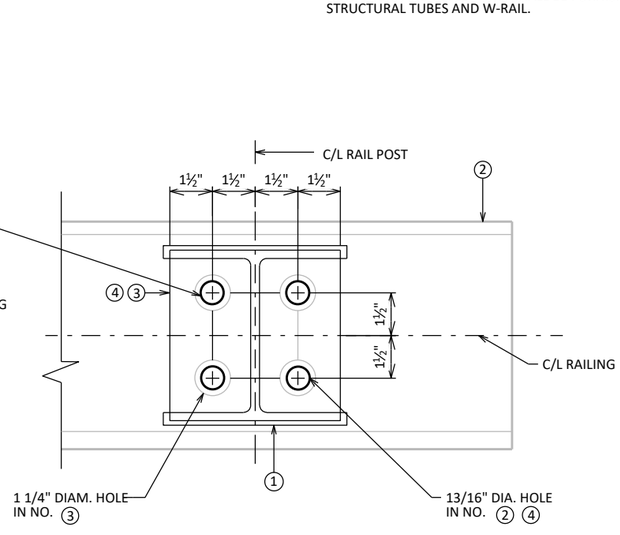


SECTION THRU RAILING



TYPICAL SPLICE

* INSTALL (2) NO.4 STRUCTURAL TUBES OR (1) MODIFIED NO.4, 11 1/2" LONG.



AT POST CONNECTION

CHANNEL MEMBER DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-54-25

DRAWN BY BAF | PLANS CK'D VS

RAILING TYPE W DETAILS

SHEET 4
118

SCALE = 0.333

8

8

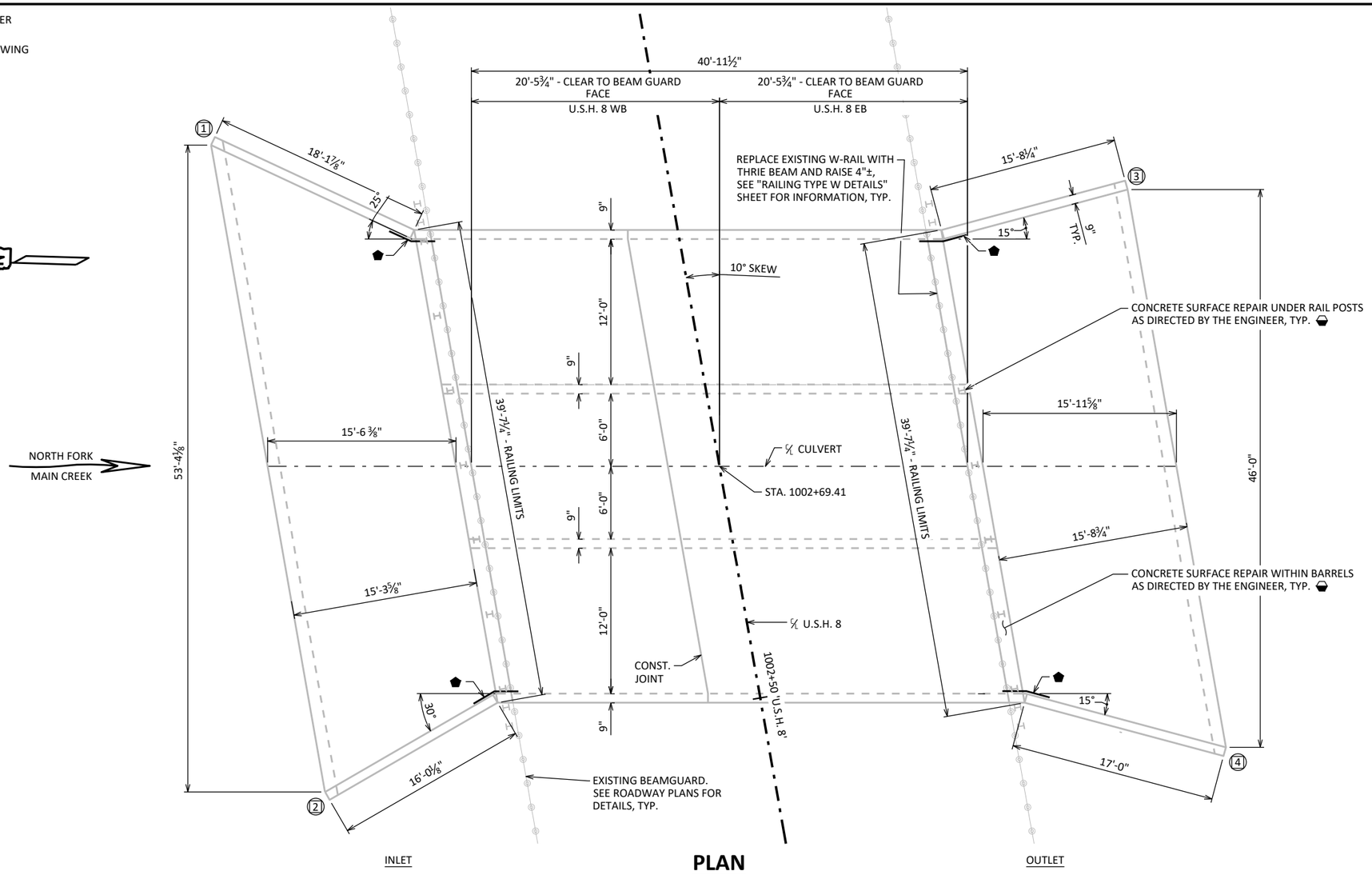
STATE PROJECT NUMBER

1580-04-74

(1) INDICATES WING NUMBER

STRAP ALL WINGS. SEE "WING STRAPPING" SHEET FOR DETAILS.

CONCRETE SURFACE REPAIR AS DIRECTED BY THE ENGINEER



INLET

PLAN

OUTLET

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE AS-BUILT STRUCTURE PLANS.

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTAL
509.1500	CONCRETE SURFACE REPAIR	SF	75
SPV.0060	STRAPPING B-54-26	EACH	4
SPV.0090	RAILING STEEL TYPE "W" MODIFIED, B-54-26	LF	80
	NON-BID ITEMS		
	NON-BITUMINOUS JOINT SEALER		

LIST OF DRAWINGS:

STRUCTURE DESIGN CONTACTS:

BRETT FOLLETT 608 266-7187

DOMINIQUE BECHLE 608-261-8205

NO.	DATE	REVISION	BY

BUREAU OF STRUCTURES

ACCEPTED DMB 08/18/22

CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-54-26

U.S.H. 8 OVER NORTH FORK MAIN CREEK

COUNTY: RUSK | VILLAGE: GLEN FLORA

DESIGN SPEC. REHABILITATION N/A

DESIGNED BY	DESIGNED CK'D	DRAWN BY	PLANS CK'D
BAF	VS	BAF	VS

WING & RAILING REPAIRS

SHEET 1 OF 3

119

SCALE = 10

I.D. 1580-04-04B

DATE: JULY 2022

8

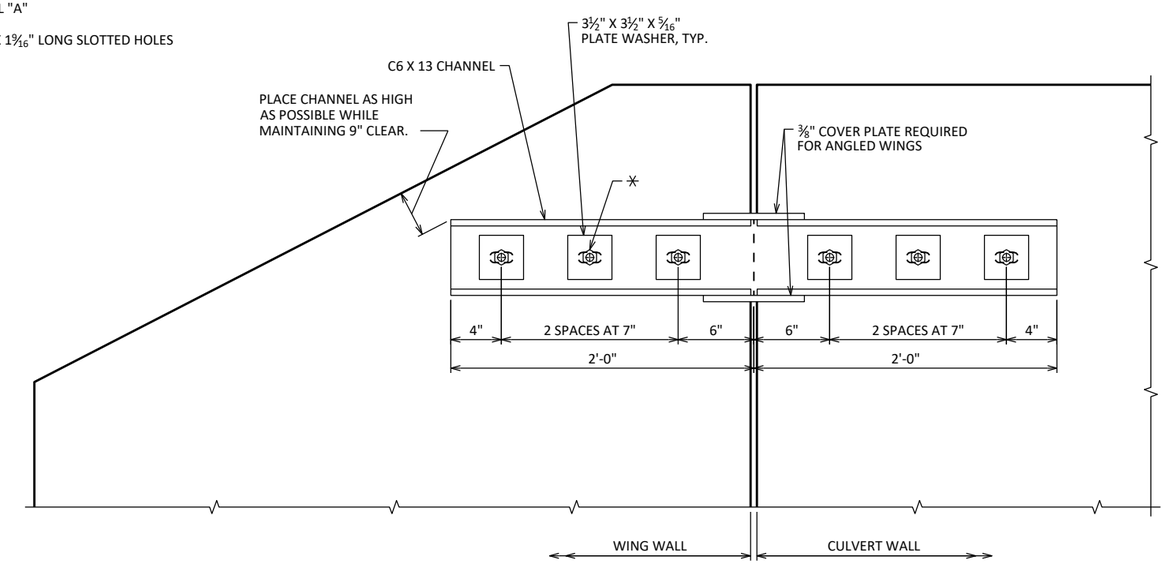
8

STATE PROJECT NUMBER

1580-04-74

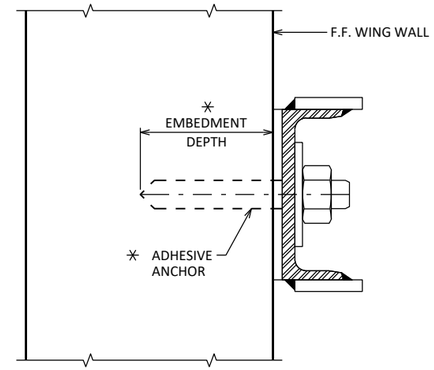
✳ ADHESIVE ANCHORS ⅝ - INCH.
EMBED 5" IN CONCRETE.
SEE DETAIL "A"

USE 1 1/16" X 1 3/16" LONG SLOTTED HOLES



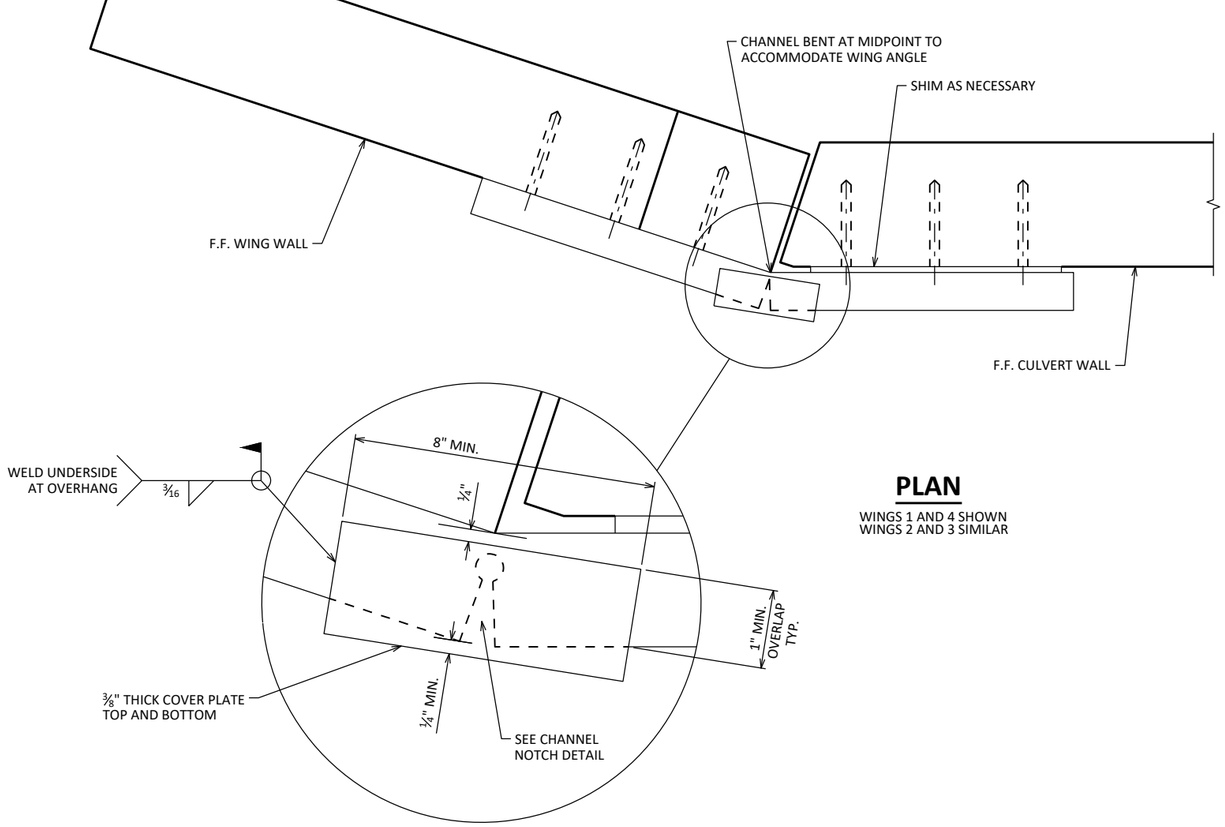
WING ELEVATION

WINGS 1 AND 4 SHOWN
WINGS 2 AND 3 SIMILAR



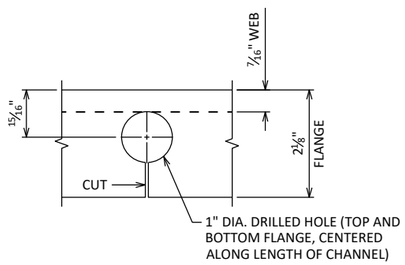
DETAIL A

SECTION THRU CHANNEL



PLAN

WINGS 1 AND 4 SHOWN
WINGS 2 AND 3 SIMILAR



CHANNEL NOTCH DETAIL

NOTES

BID ITEM SHALL BE "STRAPPING B-54-26" WHICH INCLUDES ALL ITEMS SHOWN.

WING WALL ANGLES, REQUIRED SHIMS, ANCHOR LOCATIONS, AND WELD CLEARANCES SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO FABRICATING WING WALL STRAPS.

ALL PROVIDED STEEL MATERIAL SHALL CONFORM TO ASTM A36.

ALL STRUCTURAL STEEL SHOWN SHALL BE GALVANIZED. THREADED RODS, MASONRY ANCHORS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C.

CUTTING AND DRILLING OF CHANNEL SHALL BE DONE IN FABRICATION SHOP, PRIOR TO GALVANIZING.

IF WELDING COVER PLATE IN FIELD, PRIOR TO WELDING, REMOVE GALVANIZING FROM AREA TO BE WELDED. TOUCH UP WITH PAINT ALL AREAS LACKING GALVANIZING WHEN COMPLETE.

CAULK AROUND PERIMETER OF CHANNEL AND FILL PORTION OF HOLE AROUND ANCHOR BOLT AND SHIM WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ADHESIVE ANCHORS SHALL CONFORM TO SECTION 502.2.12 OF THE STANDARD SPECIFICATIONS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-54-26

DRAWN BY BAF | PLANS CK'D VS

WING STRAPPING

SHEET 2
120

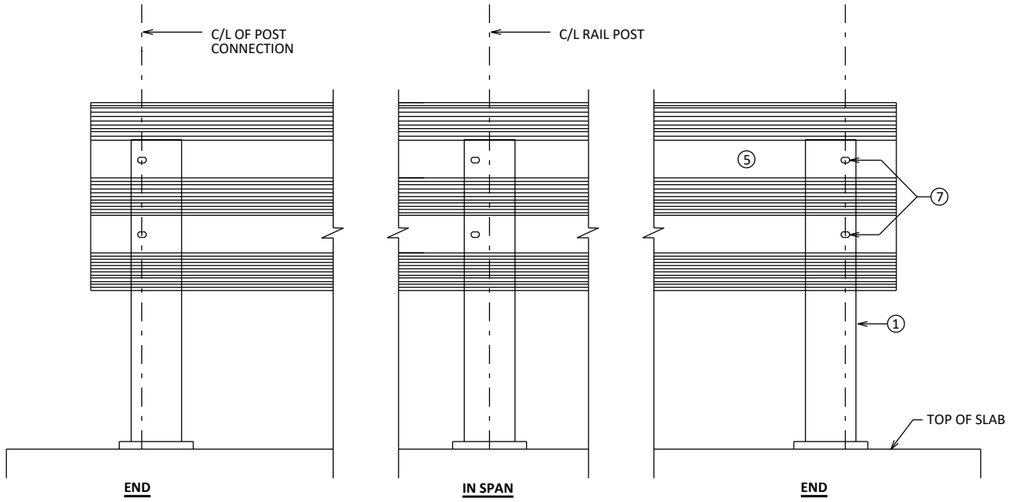
SCALE = 2.00

8

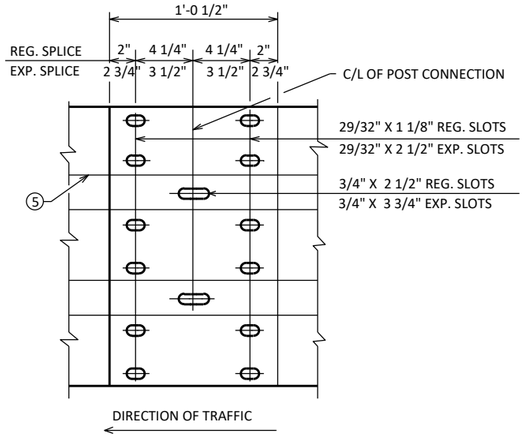
8

STATE PROJECT NUMBER

1580-04-74



ELEVATION



RAIL MEMBER SPLICE

5/8" DIA. BUTTON HEAD OVAL SHOULDER BOLTS WITH HEX NUTS AT ALL SLOTS.

LEGEND

1. EXISTING W6 X 25. DRILL (2) 3/4" DIA. HOLES FOR BOLT NO. 7
2. EXISTING C8 X 11.5. WITH 13/16" DIA. HOLES, ATTACH TO NO.4 WITH BOLTS NO. 8
3. EXISTING PLATE 1/2" X 5 3/4" X 6" WITH 1 1/4" DIA. HOLE FOR BOLTS NO. 8
4. STRUCTURAL TUBE 6" X 4" X 3/8" WITH 13/16" DIA. HOLES, 6" LONG, ATTACH TO NO. 3 WITH BOLTS NO. 8
5. NEW THRIE BEAM. ATTACH TO NO. 1 WITH BOLTS NO. 7
6. 1 3/4"X 3" MOUNTING BOLT WASHER, EIGHT GAGE GALVANIZED. 2 PER POST.
7. 5/8" DIA. BUTTON HEAD RAIL MOUNTING BOLT WITH ROUND WASHER AND NUT, 2 PER POST.
8. 5/8" DIA. X 6" LG. HEX. BOLTS WITH NUT AND TWO WASHERS EACH, 4 REQUIRED PER POST CONNECTION, 8 REQUIRED PER SPLICE CONNECTION.
9. EXISTING PLATE 1/2" X 5 3/4" X 11 1/2" WITH 1 1/4" DIA. HOLES FOR BOLTS NO. 8.

NOTES

BID ITEM SHALL BE "RAILING STEEL TYPE "W" MODIFIED, B-54-26" WHICH SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY TO RAISE ITEMS NO.2 & NO.5 BETWEEN THE LONGIT. LIMITS OF RAILING AS SHOWN IN ELEVATION.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

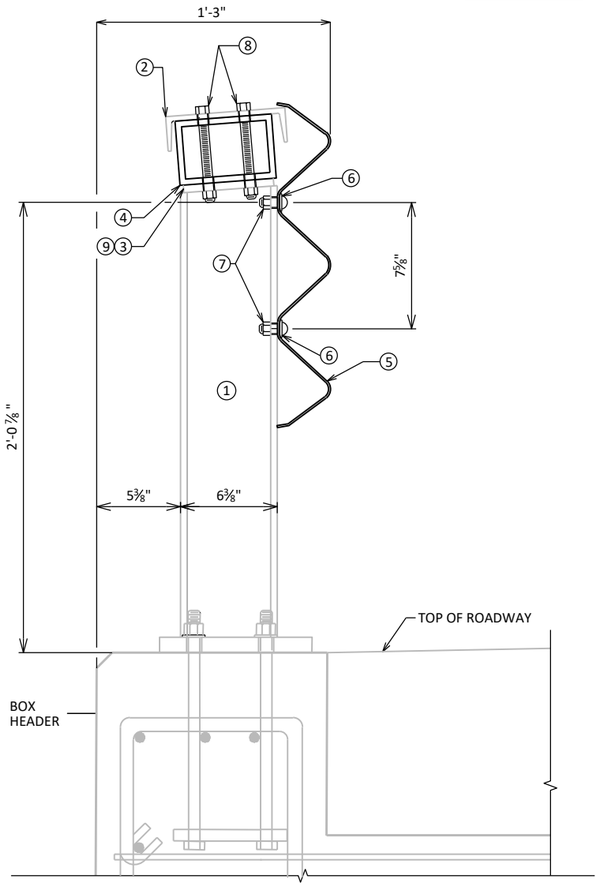
SHIM PLATES 6" X 1/16" X 6" MAY BE USED BETWEEN TOP OF POST AND CHANNEL MEMBER TO ACHIEVE VERTICAL ALIGNMENT.

ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION.

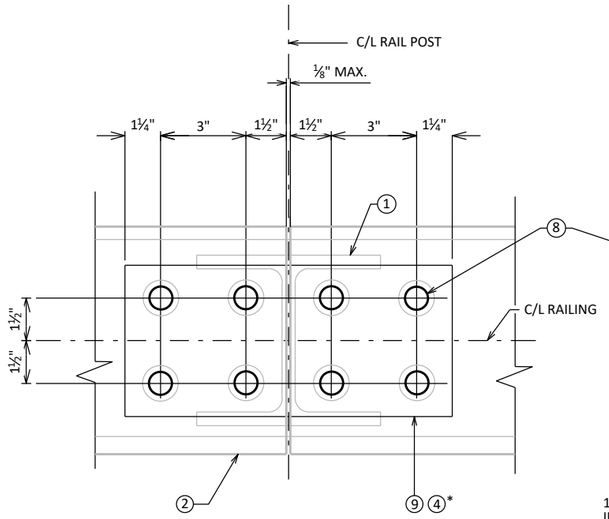
PRIOR TO GALVANIZING, ALL STEEL STRUCTURAL TUBE SHALL BE GIVEN A NO.6 BLAST CLEANING BY S.S.P.C SPECIFICATIONS.

RAIL MEMBERS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC AND THE UPPER RAIL SHALL LAP THE LOWER RAIL.

NEW BOLTS AND REFLECTORS SHALL BE FURNISHED AND USED TO RESET THE STRUCTURAL TUBES AND W-RAIL.

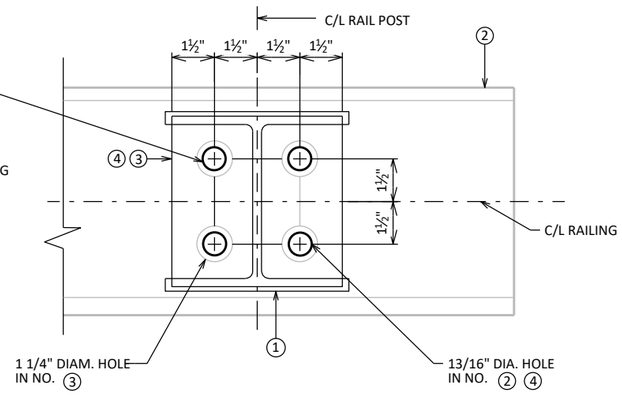


SECTION THRU RAILING



TYPICAL SPLICE

* INSTALL (2) NO.4 STRUCTURAL TUBES OR (1) MODIFIED NO.4, 11 1/2" LONG.



AT POST CONNECTION

CHANNEL MEMBER DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-54-26

DRAWN BY BAF | PLANS CK'D VS

RAILING TYPE W DETAILS

SHEET 3
121

SCALE = 0.333

8

8

STATE PROJECT NUMBER

1580-04-74

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE AS-BUILT STRUCTURE PLANS.

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 ¾" UNLESS OTHERWISE NOTED.

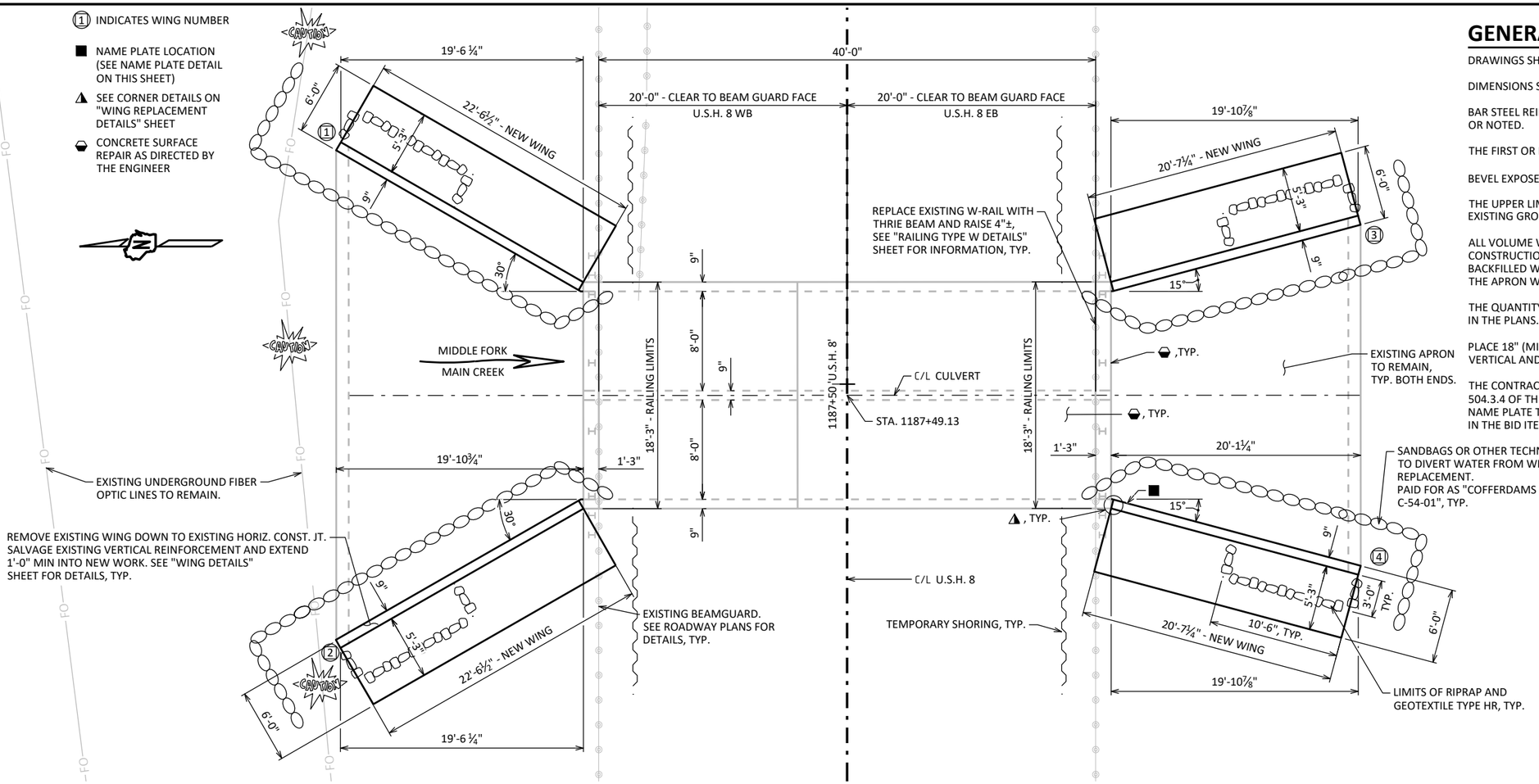
THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES CULVERTS C-54-01" SHALL BE THE EXISTING GROUNDLINE.

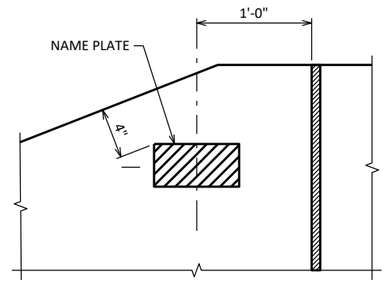
ALL VOLUME WHICH CANNOT BE PLACED BEFORE CULVERT WING AND FOOTING CONSTRUCTION AND NOT OCCUPIED BY THE NEW STRUCTURE ELEMENTS SHALL BE BACKFILLED WITH STRUCTURE BACKFILL WITHIN THE LENGTH OF THE CULVERT INCLUDING THE APRON WING WALLS..

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

PLACE 18" (MIN.) WIDE SHEET OF "RUBBERIZED MEMBRANE WATERPROOFING" ON VERTICAL AND HORIZONTAL WING CONSTRUCTION JOINTS.

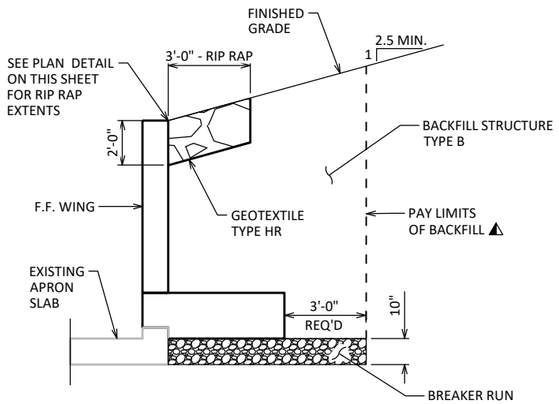
THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 504.3.4 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1980. WORK SHALL BE INCLUDED IN THE BID ITEM "CONCRETE MASONRY CULVERTS".





NAME PLATE DETAIL

WING 4



TYPICAL SECTION THRU WING WALL

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

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTAL
203.0220	REMOVING STRUCTURE C-54-01	EACH	1
206.2001	EXCAVATION FOR STRUCTURES CULVERTS C-54-01	EACH	1
206.5001	COFFERDAMS C-54-01	EACH	1
210.2500	BACKFILL STRUCTURE TYPE B	TON	345
311.0115	BREAKER RUN	CY	22
504.0100	CONCRETE MASONRY CULVERTS	CY	29
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	6,000
509.1500	CONCRETE SURFACE REPAIR	SF	20
511.1200	TEMPORARY SHORING C-54-01	SF	790
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	21
606.0300	RIPRAP HEAVY	CY	10
645.0120	GEOTEXTILE TYPE HR	SY	28
SPV.0090	RAILING STEEL TYPE "W" MODIFIED, C-54-01	LF	37
	NON-BID ITEMS		
	FILLER	Size	¾"
	NAME PLATE		

DESIGN DATA

MATERIAL PROPERTIES:

CONCRETE MASONRY: —— f'_c = 3,500 PSI

HIGH STRENGTH BAR STEEL REINFORCEMENT —— f_y = 60,000 PSI

LIST OF DRAWINGS:

STRUCTURE DESIGN CONTACTS:

BRETT FOLLETT 608 266-7187

DOMINIQUE BECHLE 608-261-8205

NO.	DATE	REVISION	BY

BUREAU OF STRUCTURES

ACCEPTED DMB 08/18/22

CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE C-54-01

U.S.H. 8 OVER MIDDLE FORK MAIN CREEK

COUNTY: RUSK | VILLAGE: INGRAM

DESIGN SPEC. REHABILITATION N/A

DESIGNED BY	DESIGNED CK'D	DRAWN BY	PLANS CK'D
BAF	VS	BAF	VS

WING REPLACEMENT & REPAIRS

SHEET 1 OF 3

122

SCALE = 10

I.D. 1580-04-04C

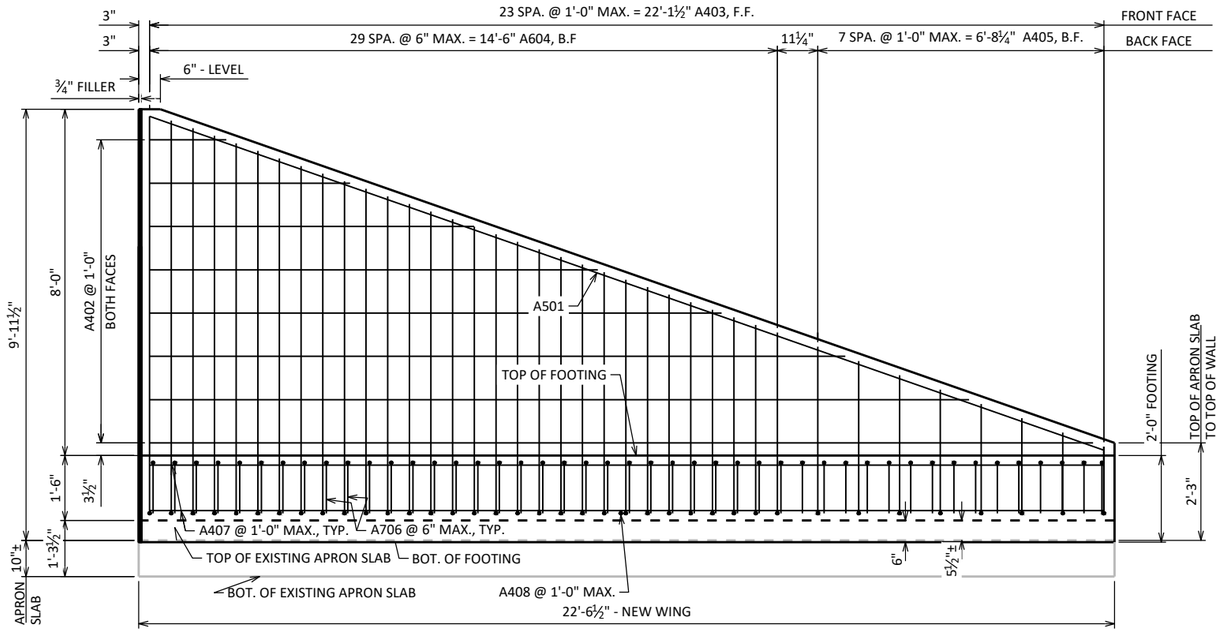
DATE: JULY 2022

8

8

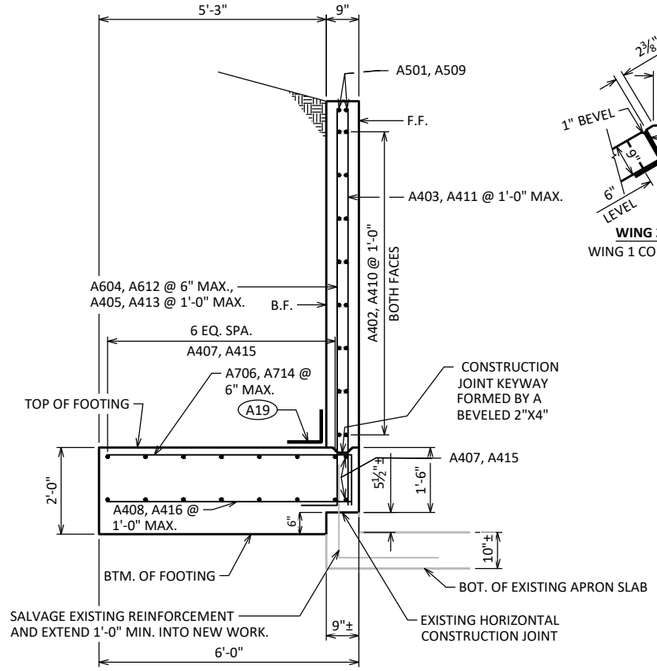
STATE PROJECT NUMBER

1580-04-74



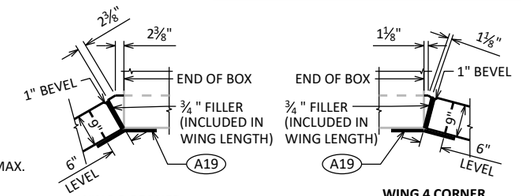
ELEVATION WINGS 1 & 2

LOOKING WEST
SHOWING WING 2 B.F. REINF.
WING 1 SIMILAR



SECTION THRU WING DETAIL

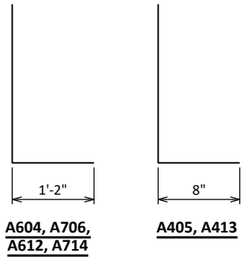
(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.



WING 2 CORNER
WING 1 CORNER SIMILAR

WING 4 CORNER
WING 3 CORNER SIMILAR

CORNER DETAILS



A604, A706, A612, A714

A405, A413

BAR SERIES TABLE

BUNDLE AND TAG EACH SERIES SEPARATELY.

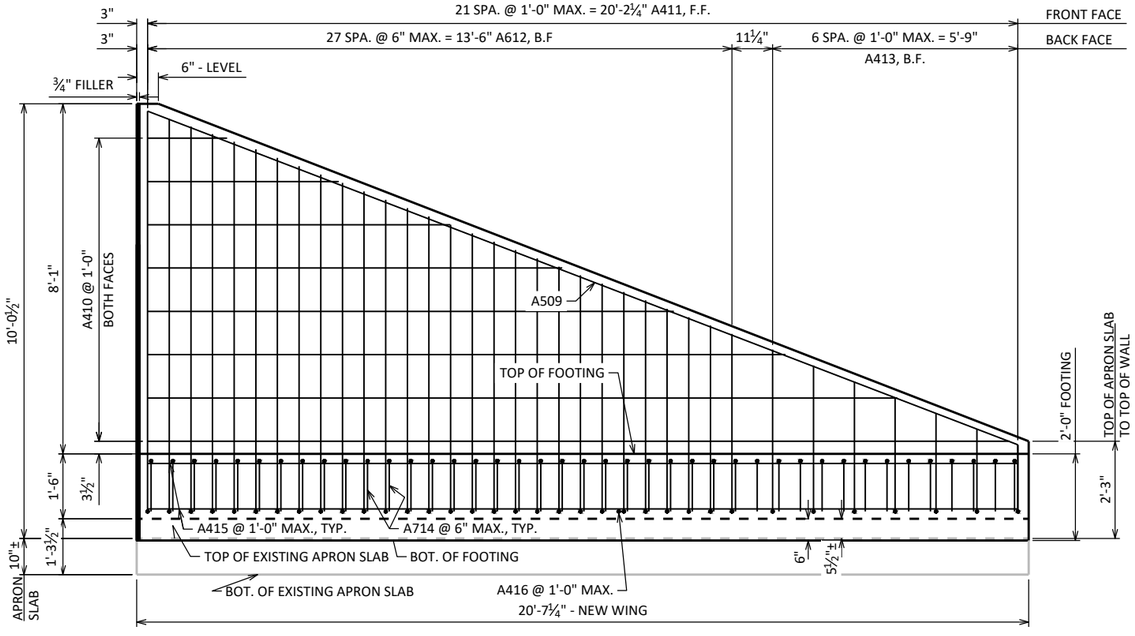
BAR MARK	NO. REQ'D	LENGTH
A402	4 SERIES OF 8	1'-9" TO 21'-9"
A403	2 SERIES OF 24	1'-6" TO 9'-2"
A604	2 SERIES OF 30	5'-2" TO 10'-2"
A405	2 SERIES OF 8	2'-1" TO 4'-5"
A410	4 SERIES OF 8	1'-10" TO 19'-11"
A411	2 SERIES OF 22	1'-6" TO 9'-3"
A612	2 SERIES OF 28	5'-1" TO 10'-3"
A413	2 SERIES OF 7	2'-1" TO 4'-4"

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	X	4	23'-4"			WINGS 1&2 - HORIZ. - BOTH FACES - TOP
A402	X	32	11'-9"		⚠	WINGS 1&2 - HORIZ. - BOTH FACES
A403	X	48	5'-4"		⚠	WINGS 1&2 - VERT. - FRONT FACE
A604	X	60	7'-8"	X	⚠	WINGS 1&2 - VERT. - BACK FACE
A405	X	16	3'-3"	X	⚠	WINGS 1&2 - VERT. - BACK FACE
A706	X	90	6'-8"	X		WINGS 1&2 - FOOTING - TOP
A407	X	32	22'-0"			WINGS 1&2 - FOOTING - LOGIT.
A408	X	48	5'-8"			WINGS 1&2 - FOOTING - BOTTOM
A509	X	4	21'-6"			WINGS 3&4 - HORIZ. - BOTH FACES - TOP
A410	X	32	10'-11"		⚠	WINGS 3&4 - HORIZ. - BOTH FACES
A411	X	44	5'-5"		⚠	WINGS 3&4 - VERT. - FRONT FACE
A612	X	56	7'-8"	X	⚠	WINGS 3&4 - VERT. - BACK FACE
A413	X	14	3'-3"	X	⚠	WINGS 3&4 - VERT. - BACK FACE
A714	X	82	6'-8"	X		WINGS 3&4 - FOOTING - TOP
A415	X	32	20'-1"			WINGS 3&4 - FOOTING - LOGIT.
A416	X	44	5'-8"			WINGS 3&4 - FOOTING - BOTTOM

⚠ LENGTH SHOWN FOR BAR IS AN AVERAGE AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.



ELEVATION WINGS 3 & 4

LOOKING EAST
SHOWING WING 4 B.F. REINF.
WING 3 SIMILAR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-54-01

DRAWN BY BAF | PLANS CK'D VS

WING DETAILS

SHEET 2
123

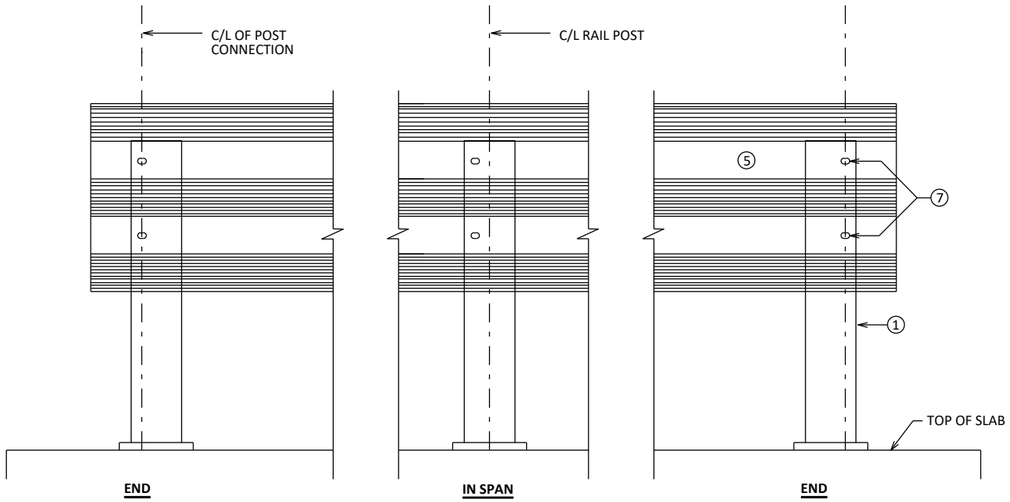
SCALE = VARIES

8

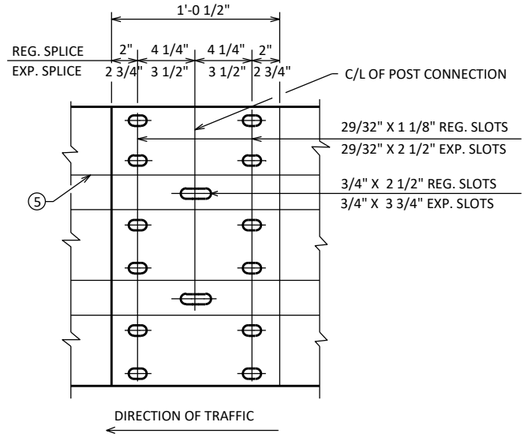
8

STATE PROJECT NUMBER

1580-04-74



ELEVATION



RAIL MEMBER SPLICE

5/8" DIA. BUTTON HEAD OVAL SHOULDER BOLTS WITH HEX NUTS AT ALL SLOTS.

LEGEND

1. EXISTING W6 X 25. DRILL (2) 3/4" DIA. HOLES FOR BOLT NO. 7
2. EXISTING C8 X 11.5. WITH 13/16" DIA. HOLES, ATTACH TO NO.4 WITH BOLTS NO. 8
3. EXISTING PLATE 1/2" X 5 3/4" X 6" WITH 1 1/4" DIA. HOLE FOR BOLTS NO. 8
4. STRUCTURAL TUBE 6" X 4" X 3/8" WITH 13/16" DIA. HOLES, 6" LONG, ATTACH TO NO. 3 WITH BOLTS NO. 8
5. NEW THRIE BEAM. ATTACH TO NO. 1 WITH BOLTS NO. 7
6. 1 3/4"X 3" MOUNTING BOLT WASHER, EIGHT GAGE GALVANIZED. 2 PER POST.
7. 5/8" DIA. BUTTON HEAD RAIL MOUNTING BOLT WITH ROUND WASHER AND NUT, 2 PER POST.
8. 5/8" DIA. X 6" LG. HEX. BOLTS WITH NUT AND TWO WASHERS EACH, 4 REQUIRED PER POST CONNECTION, 8 REQUIRED PER SPLICE CONNECTION.
9. EXISTING PLATE 1/2" X 5 3/4" X 11 1/2" WITH 1 1/4" DIA. HOLES FOR BOLTS NO. 8.

NOTES

BID ITEM SHALL BE "RAILING STEEL TYPE "W" MODIFIED, C-54-01" WHICH SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY TO RAISE ITEMS NO.2 & NO.5 BETWEEN THE LONGIT. LIMITS OF RAILING AS SHOWN IN ELEVATION.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

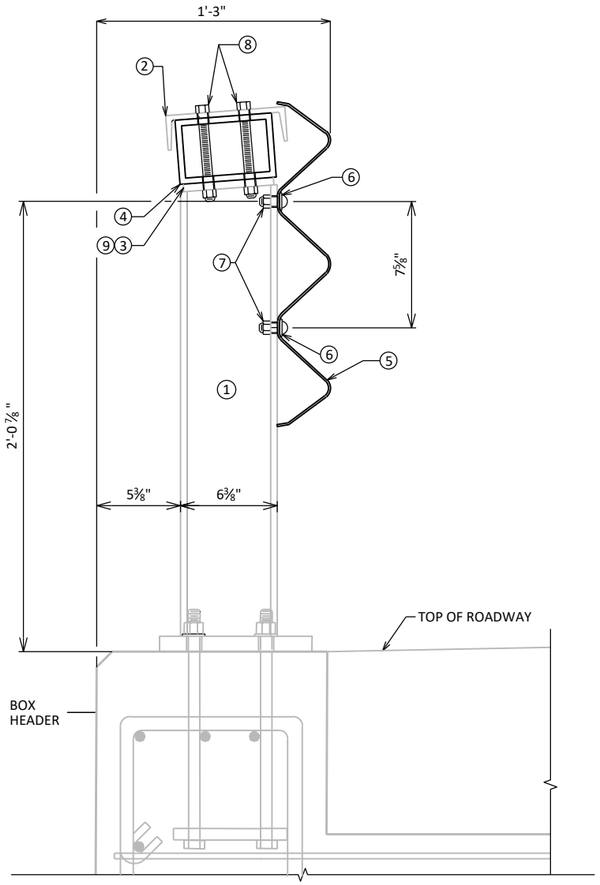
SHIM PLATES 6" X 1/16" X 6" MAY BE USED BETWEEN TOP OF POST AND CHANNEL MEMBER TO ACHIEVE VERTICAL ALIGNMENT.

ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION.

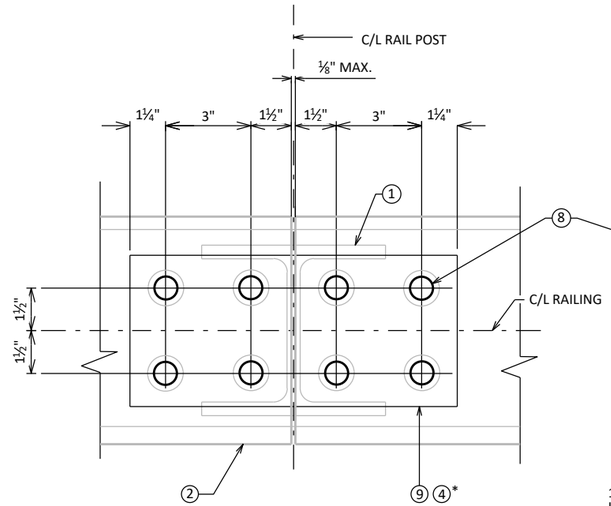
PRIOR TO GALVANIZING, ALL STEEL STRUCTURAL TUBE SHALL BE GIVEN A NO.6 BLAST CLEANING BY S.S.P.C SPECIFICATIONS.

RAIL MEMBERS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC AND THE UPPER RAIL SHALL LAP THE LOWER RAIL.

NEW BOLTS AND REFLECTORS SHALL BE FURNISHED AND USED TO RESET THE STRUCTURAL TUBES AND W-RAIL.

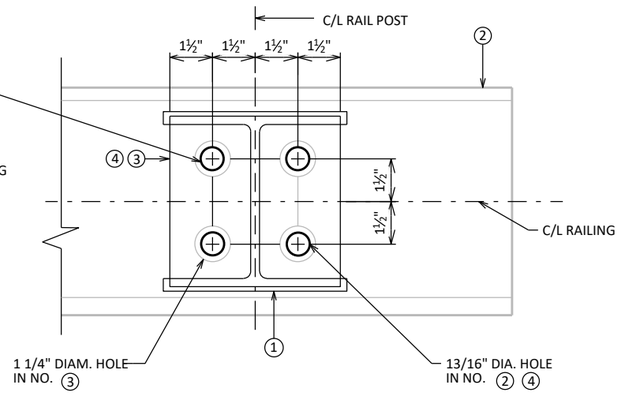


SECTION THRU RAILING



TYPICAL SPLICE

* INSTALL (2) NO.4 STRUCTURAL TUBES OR (1) MODIFIED NO.4, 11 1/2" LONG.



AT POST CONNECTION

CHANNEL MEMBER DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-54-01

DRAWN BY BAF | PLANS CK'D VS

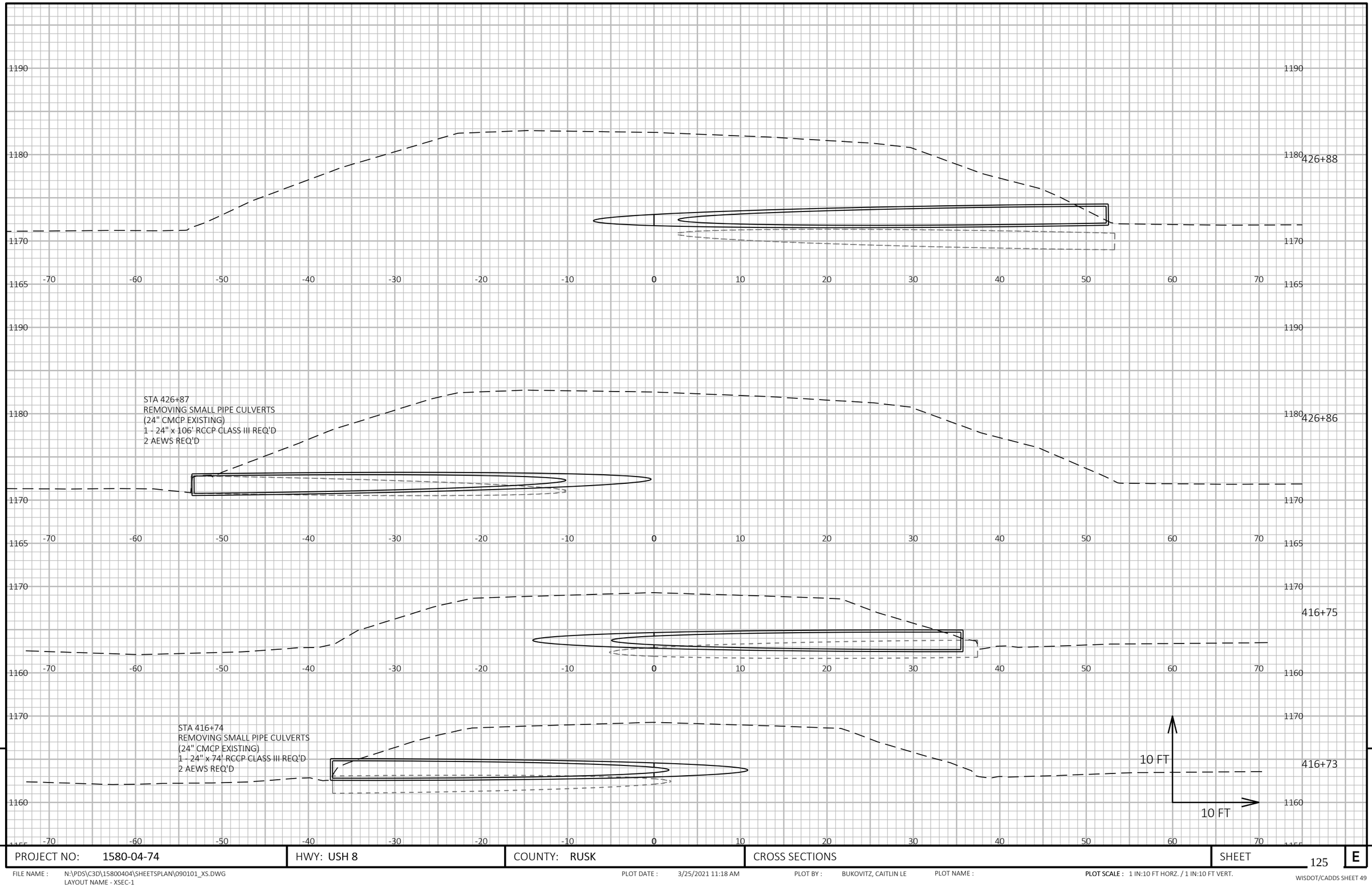
RAILING TYPE W DETAILS

SHEET 3
124

SCALE = 0.333

8

8



9

9

PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	CROSS SECTIONS	SHEET 125	E

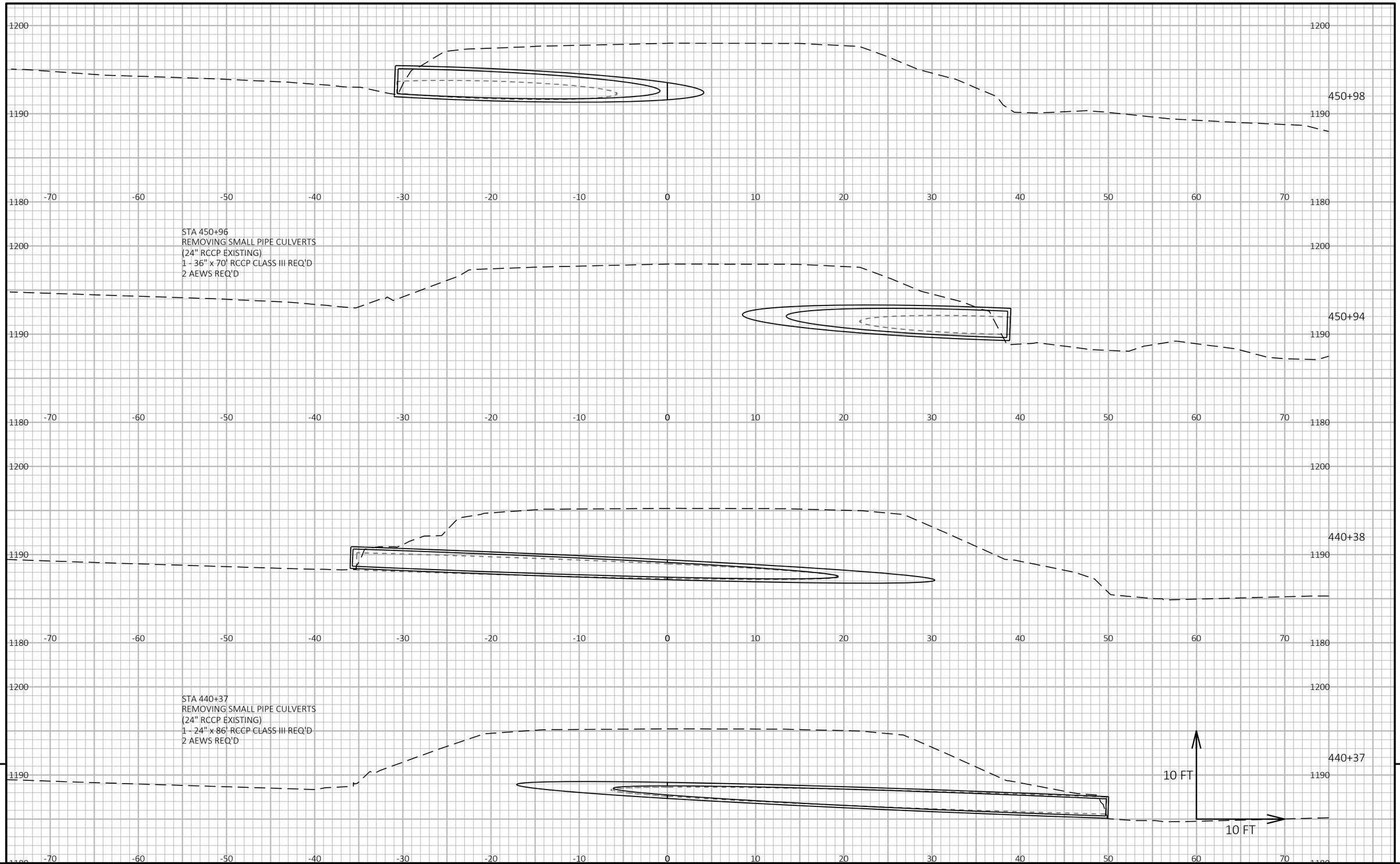
FILE NAME : N:\PDS\C3D\15800404\SHEETSPLAN\090101_XS.DWG
LAYOUT NAME - XSEC-1

PLOT DATE : 3/25/2021 11:18 AM

PLOT BY : BUKOVITZ, CAITLIN LE

PLOT NAME :

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



9

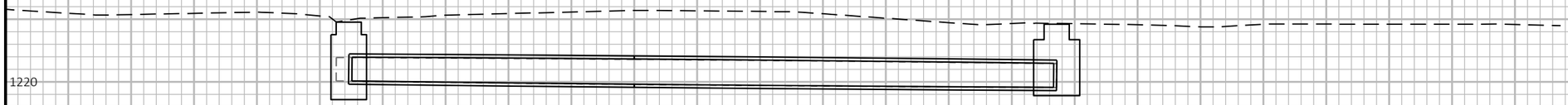
9

PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	CROSS SECTIONS	SHEET 126	E

FILE NAME : N:\PDS\C3D\15800404\SHEETSPLAN\090101_XS.DWG
LAYOUT NAME - XSEC-2

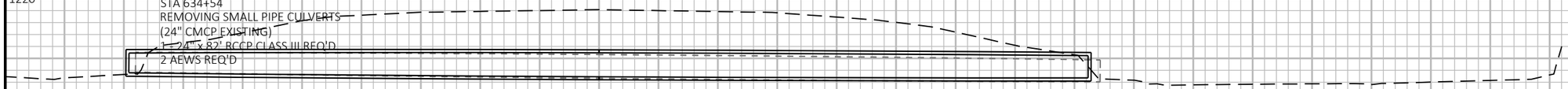
PLOT DATE : 3/25/2021 11:18 AM PLOT BY : BUKOVITZ, CAITLIN LE PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

STA 661+36
REMOVING SMALL PIPE CULVERTS
(24" CMCP EXISTING)
1 - 24" x 58' RCCP CLASS III REQ'D
1 x RECONSTRUCTING MANHOLES
1 x RECONSTRUCTING INLETS



661+36

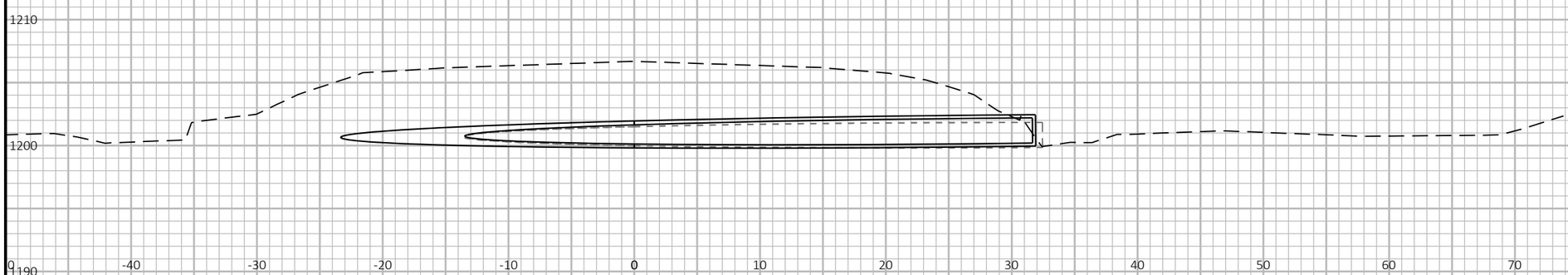
STA 634+54
REMOVING SMALL PIPE CULVERTS
(24" CMCP EXISTING)
1 - 24" x 82' RCCP CLASS III REQ'D
2 AEWS REQ'D



RR

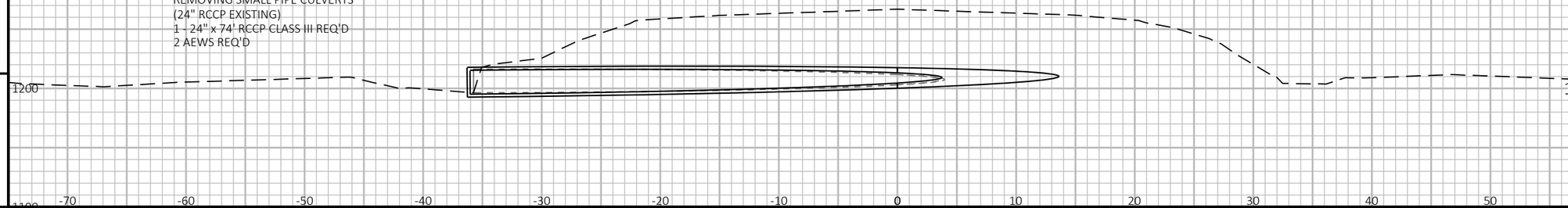
634+54

STA 520+16
REMOVING SMALL PIPE CULVERTS
(24" RCCP EXISTING)
1 - 24" x 74' RCCP CLASS III REQ'D
2 AEWS REQ'D



520+16

STA 520+15
REMOVING SMALL PIPE CULVERTS
(24" RCCP EXISTING)
1 - 24" x 74' RCCP CLASS III REQ'D
2 AEWS REQ'D



520+14

10 FT

10 FT

9

9

PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	CROSS SECTIONS	SHEET 127	E

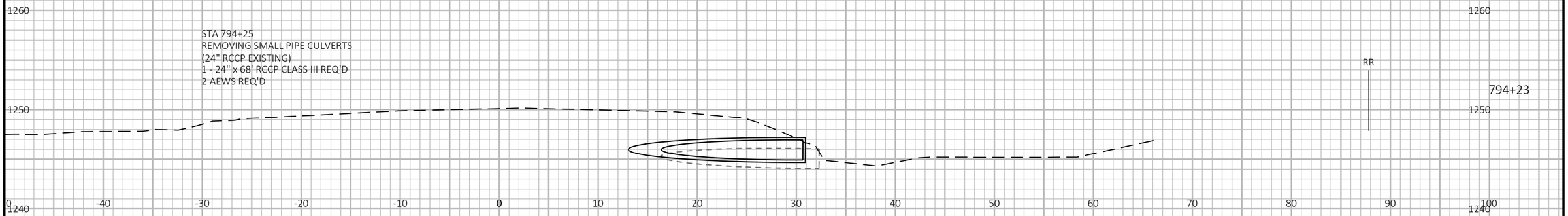
FILE NAME : N:\PDS\C3D\15800404\SHEETSPLAN\090101_XS.DWG
LAYOUT NAME - XSEC-3

PLOT DATE : 3/25/2021 11:19 AM PLOT BY : BUKOVITZ, CAITLIN LE PLOT NAME :

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

WISDOT/CADDS SHEET 49

STA 794+25
REMOVING SMALL PIPE CULVERTS
(24" RCCP EXISTING)
1 - 24" x 68' RCCP CLASS III REQ'D
2 AEWS REQ'D



STA 737+45
REMOVING SMALL PIPE CULVERTS
(24" LINED CMCP EXISTING)
1 - 24" x 60' RCCP CLASS III REQ'D
2 AEWS REQ'D

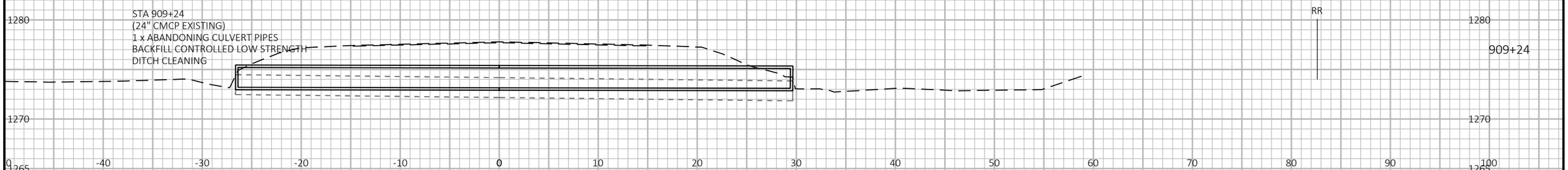
STA 707+83
REMOVING SMALL PIPE CULVERTS
(24" LINED CMCP EXISTING)
1 - 24" x 66' RCCP CLASS III REQ'D
2 AEWS REQ'D

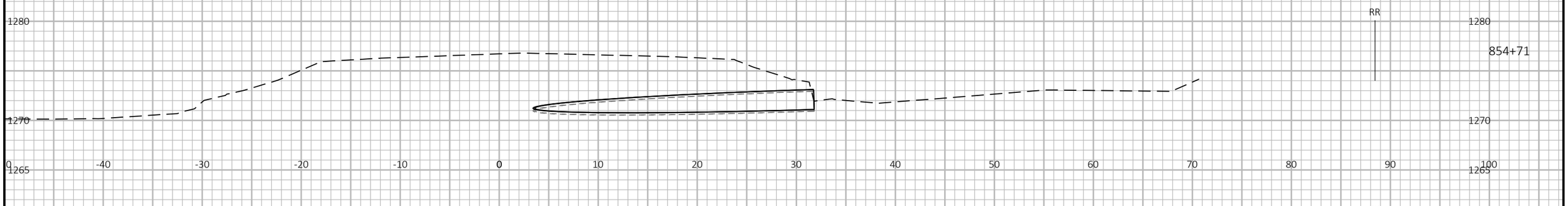
9 9

PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	CROSS SECTIONS	SHEET 128	E

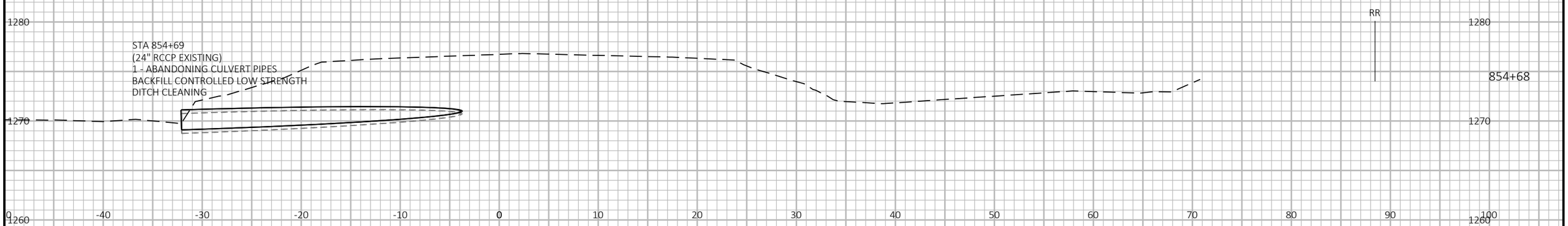
FILE NAME : N:\PDS\C3D\15800404\SHEETSPLAN\090101_XS.DWG
LAYOUT NAME - XSEC-4
PLOT DATE : 3/25/2021 11:19 AM
PLOT BY : BUKOVITZ, CAITLIN LE
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49

STA 909+24
(24" CMCP EXISTING)
1 x ABANDONING CULVERT PIPES
BACKFILL CONTROLLED LOW STRENGTH
DITCH CLEANING





STA 854+69
(24" RCCP EXISTING)
1 - ABANDONING CULVERT PIPES
BACKFILL CONTROLLED LOW STRENGTH
DITCH CLEANING



9

9

PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	CROSS SECTIONS	SHEET 129	E

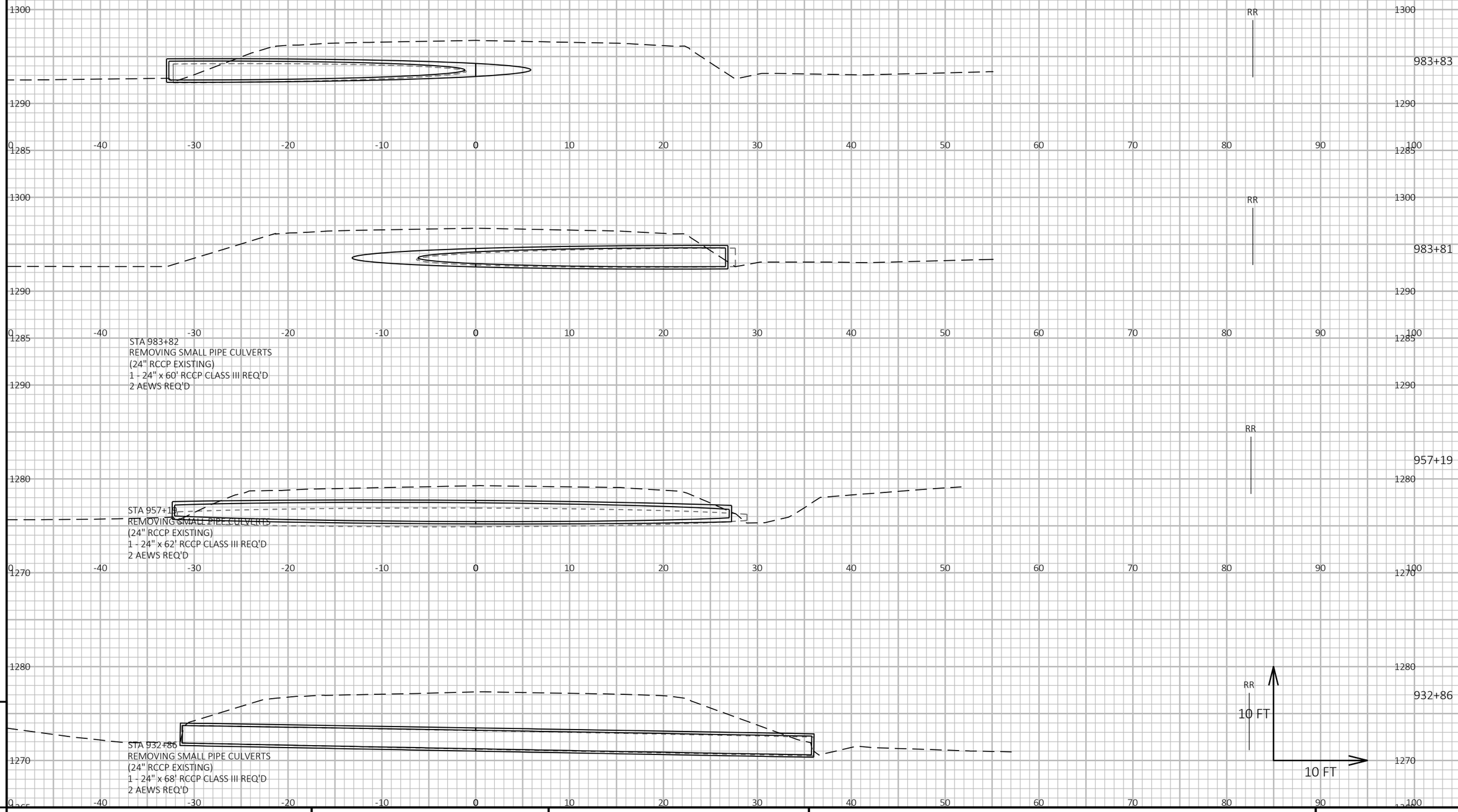
FILE NAME : N:\PDS\C3D\15800404\SHEETSPLAN\090101_XS.DWG
LAYOUT NAME - XSEC-5

PLOT DATE : 3/25/2021 11:19 AM

PLOT BY : BUKOVITZ, CAITLIN LE

PLOT NAME :

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



9

9

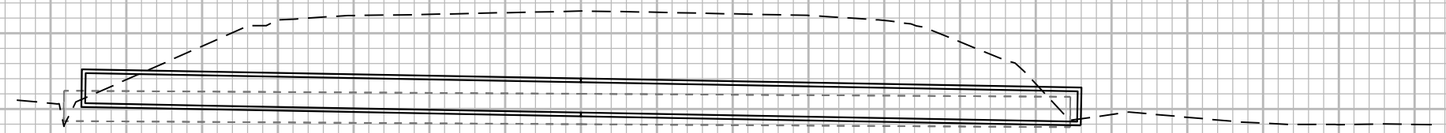
PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	CROSS SECTIONS	SHEET 130	E

FILE NAME : N:\PDS\C3D\15800404\SHEETSPLAN\090101_XS.DWG
LAYOUT NAME - XSEC-6

PLOT DATE : 3/25/2021 11:19 AM PLOT BY : BUKOVITZ, CAITLIN LE PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

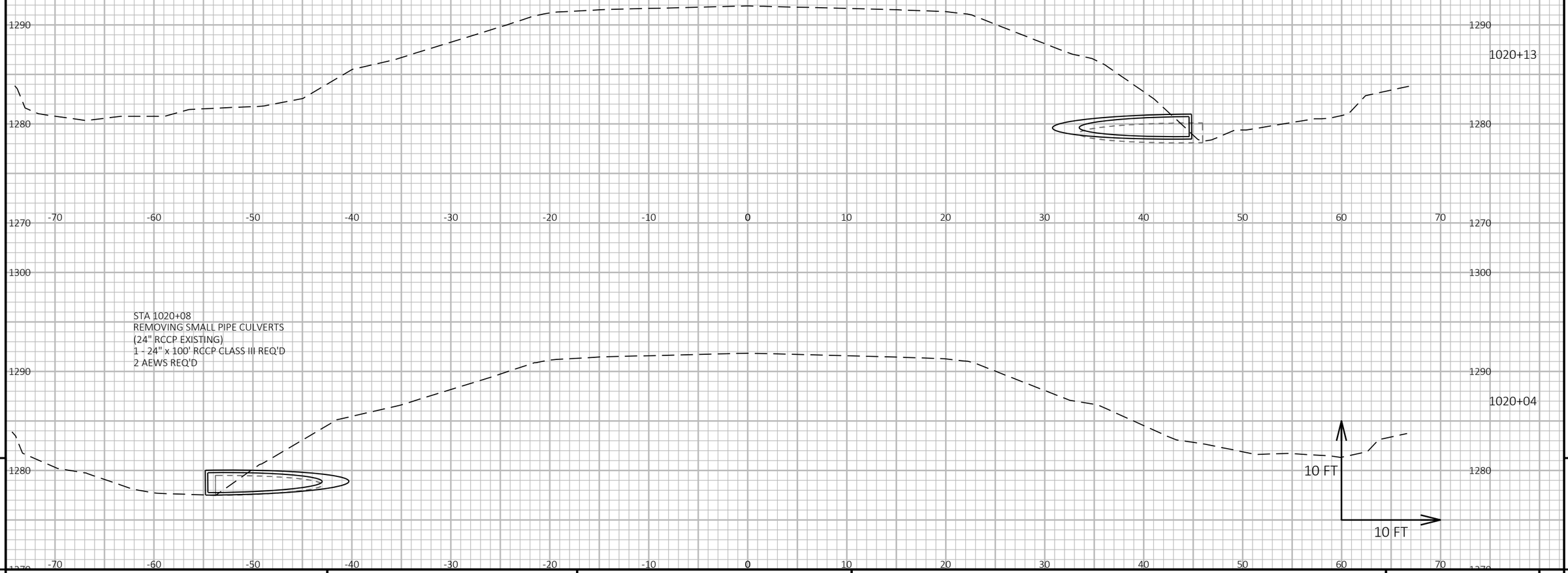
WISDOT/CADDS SHEET 49

STA 1041+20
REMOVING SMALL PIPE CULVERTS
(24" RCCP EXISTING)
1 - 24" x 66' RCCP CLASS III REQ'D
2 AEWS REQ'D



1041+20

STA 1020+08
REMOVING SMALL PIPE CULVERTS
(24" RCCP EXISTING)
1 - 24" x 100' RCCP CLASS III REQ'D
2 AEWS REQ'D



1020+13

1020+04

9

9

PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	CROSS SECTIONS	SHEET 131	E

FILE NAME : N:\PDS\C3D\15800404\SHEETSPLAN\090101_XS.DWG
LAYOUT NAME - XSEC-7

PLOT DATE : 3/25/2021 11:19 AM PLOT BY : BUKOVITZ, CAITLIN LE PLOT NAME :

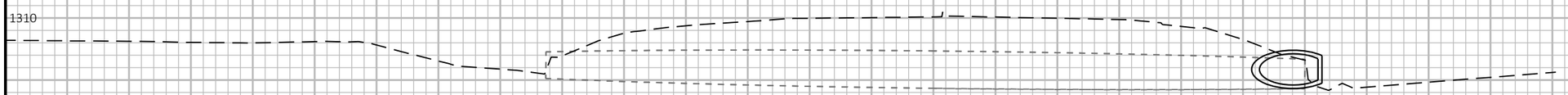
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

STA 1105+15
REMOVING SMALL PIPE CULVERTS
(24" RCCP EXISTING)
1 - 24" x 58' RCCP CLASS III REQ'D
2 AEWS REQ'D

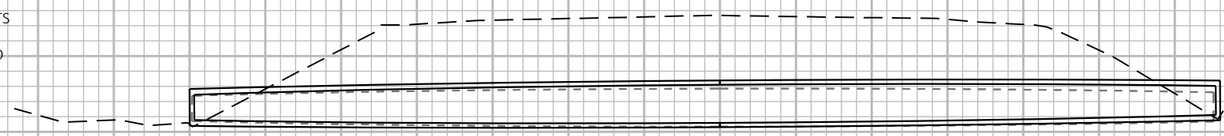
1105+15

STA 1081+09
REMOVING SMALL PIPE CULVERTS
(30" RCCP EXISTING)
1 - 30" x 62' RCCP CLASS III REQ'D
2 AEWS REQ'D



1081+09

STA 1057+48
REMOVING SMALL PIPE CULVERTS
(30" RCCP EXISTING)
1 - 30" x 68' RCCP CLASS III REQ'D
2 AEWS REQ'D



1057+48

10 FT

10 FT

9

9

PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	CROSS SECTIONS	SHEET 132	E

FILE NAME : N:\PDS\C3D\15800404\SHEETSPLAN\090101_XS.DWG
LAYOUT NAME - XSEC-8

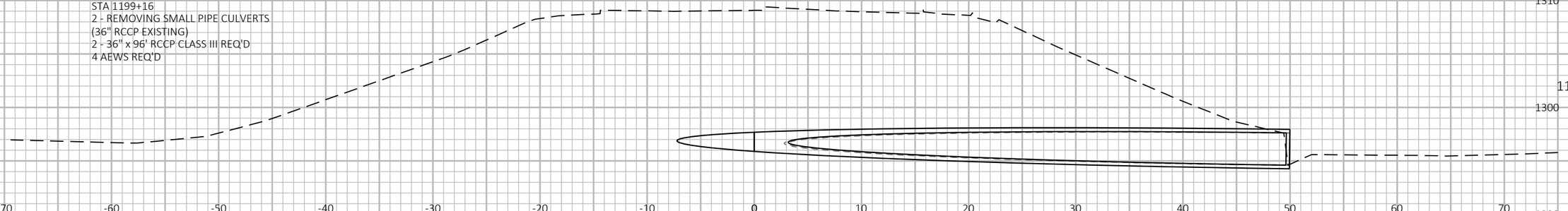
PLOT DATE : 3/25/2021 11:20 AM PLOT BY : BUKOVITZ, CAITLIN LE PLOT NAME :

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

WISDOT/CADDS SHEET 49

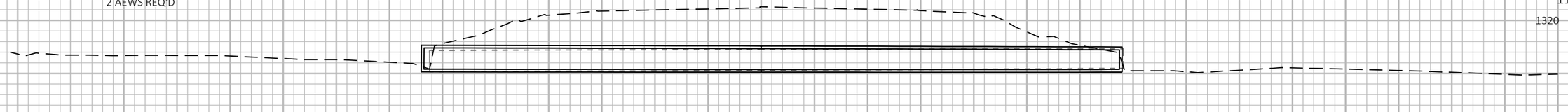
STA 1199+16
2 - REMOVING SMALL PIPE CULVERTS
(36" RCCP EXISTING)
2 - 36" x 96' RCCP CLASS III REQ'D
4 AEWS REQ'D

1199+12



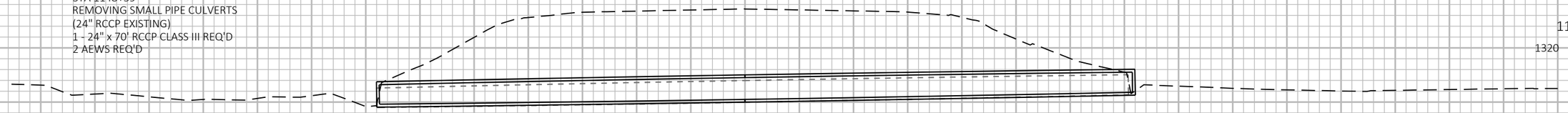
STA 1151+89
REMOVING SMALL PIPE CULVERTS
(24" RCCP EXISTING)
1 - 24" x 66' RCCP CLASS III REQ'D
2 AEWS REQ'D

1151+89



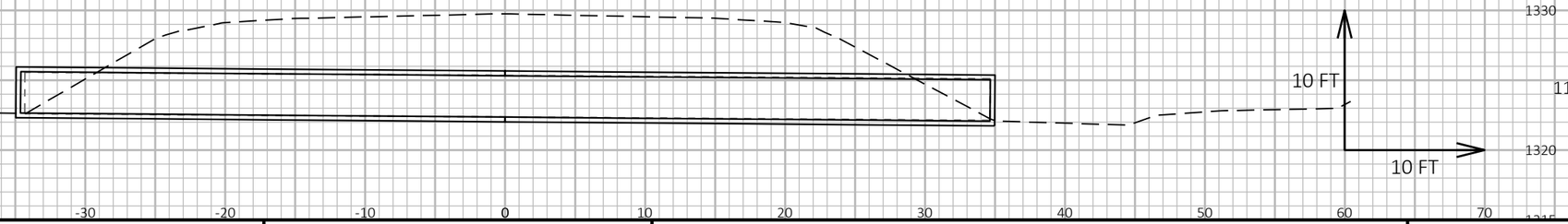
STA 1148+59
REMOVING SMALL PIPE CULVERTS
(24" RCCP EXISTING)
1 - 24" x 70' RCCP CLASS III REQ'D
2 AEWS REQ'D

1148+59



STA 1129+47
REMOVING SMALL PIPE CULVERTS
(36" RCCP EXISTING)
1 - 36" x 70' RCCP CLASS III REQ'D
2 AEWS REQ'D

1129+47



9

9

PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	CROSS SECTIONS	SHEET 133	E

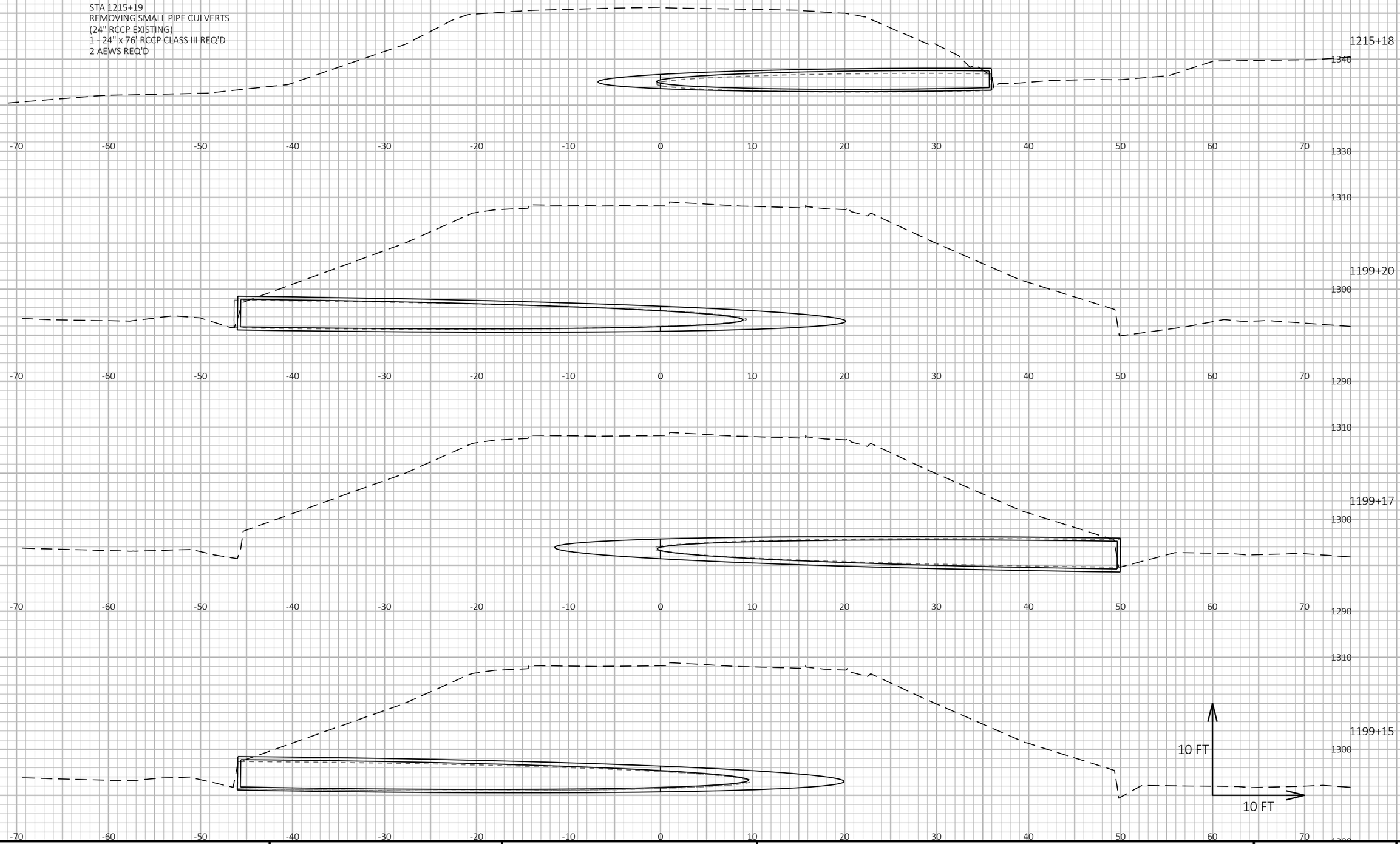
FILE NAME : N:\PDS\C3D\15800404\SHEETSPLAN\090101_XS.DWG
LAYOUT NAME - XSEC-9

PLOT DATE : 3/25/2021 11:20 AM PLOT BY : BUKOVITZ, CAITLIN LE PLOT NAME :

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

WISDOT/CADDS SHEET 49

STA 1215+19
REMOVING SMALL PIPE CULVERTS
(24" RCCP EXISTING)
1 - 24" x 76' RCCP CLASS III REQ'D
2 AEWS REQ'D



9

9

PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	CROSS SECTIONS	SHEET 134	E

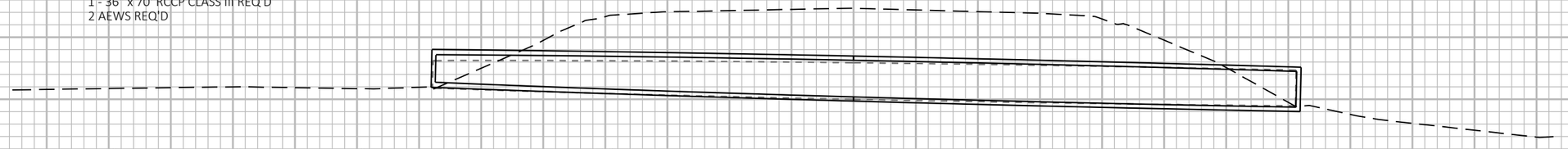
FILE NAME : N:\PDS\C3D\15800404\SHEETSPLAN\090101_XS.DWG
LAYOUT NAME - XSEC-10

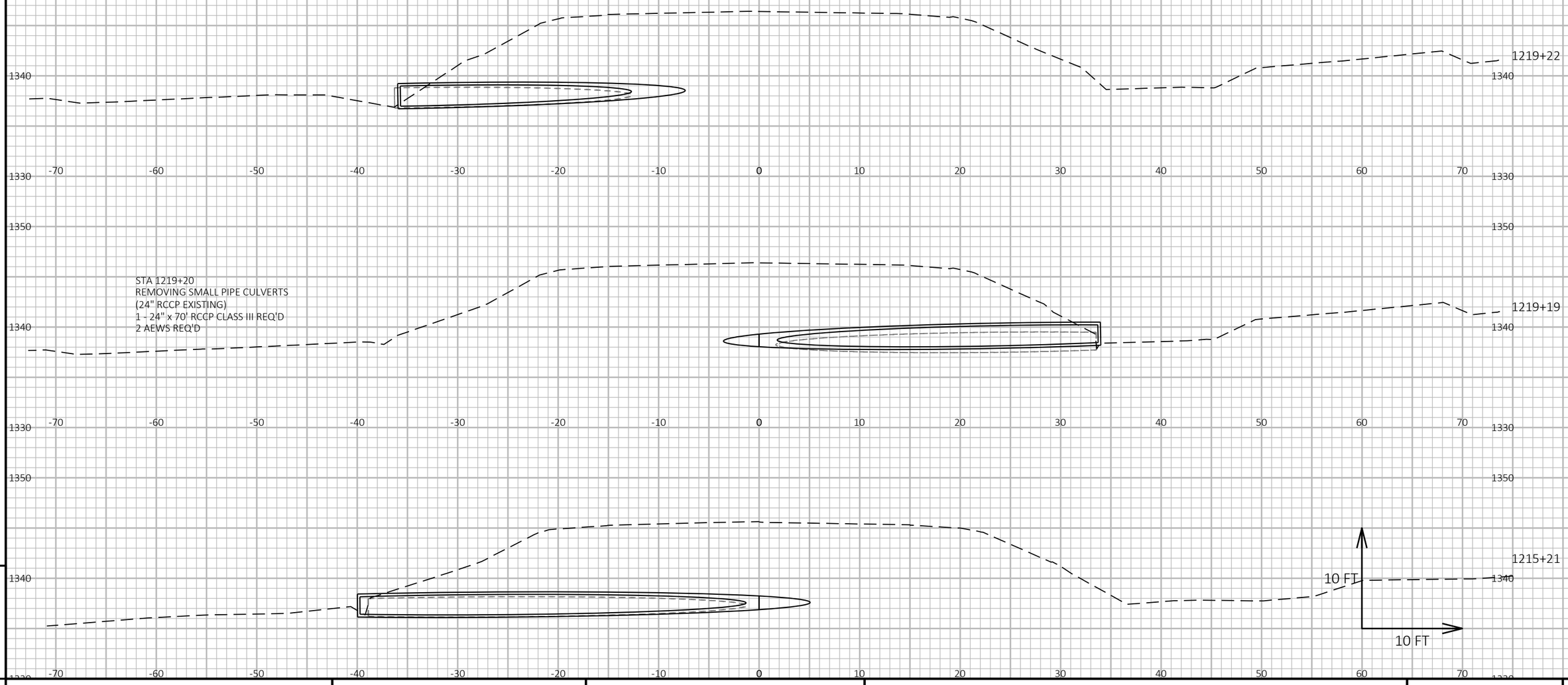
PLOT DATE : 3/25/2021 11:20 AM PLOT BY : BUKOVITZ, CAITLIN LE PLOT NAME :

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

WISDOT/CADDS SHEET 49

STA 1240+19
REMOVING SMALL PIPE CULVERTS
(36" RCCP EXISTING)
1 - 36" x 70' RCCP CLASS III REQ'D
2 AEWS REQ'D

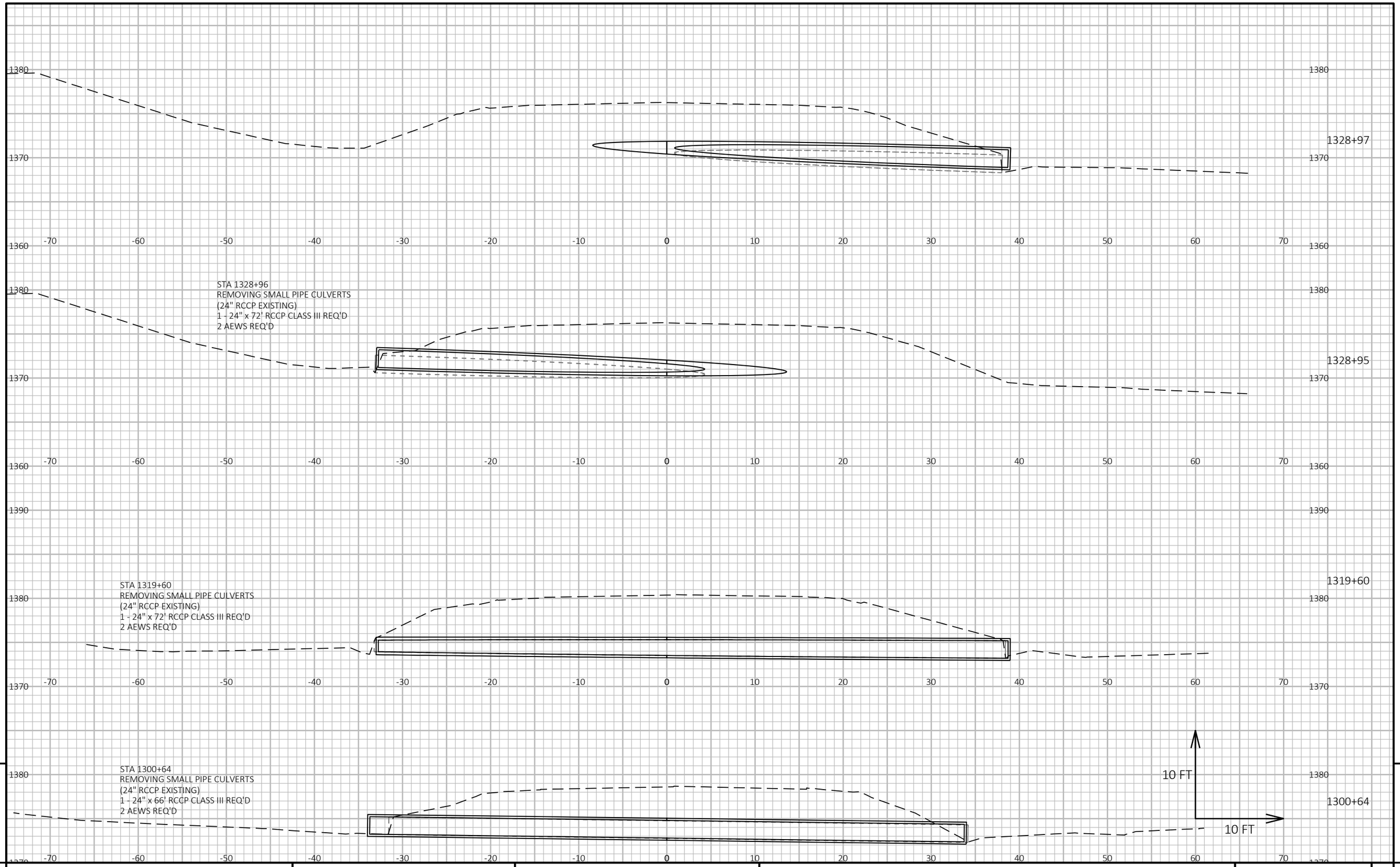




STA 1219+20
REMOVING SMALL PIPE CULVERTS
(24" RCCP EXISTING)
1 - 24" x 70' RCCP CLASS III REQ'D
2 AEWS REQ'D

9 9

PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	CROSS SECTIONS	SHEET 135	E



9

9

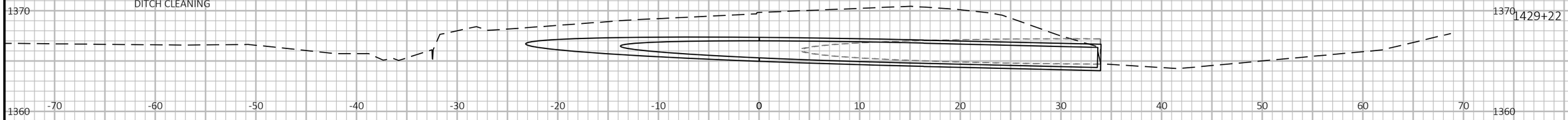
PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	CROSS SECTIONS	SHEET 136	E

FILE NAME : N:\PDS\C3D\15800404\SHEETSPLAN\090101_XS.DWG
LAYOUT NAME - XSEC-12

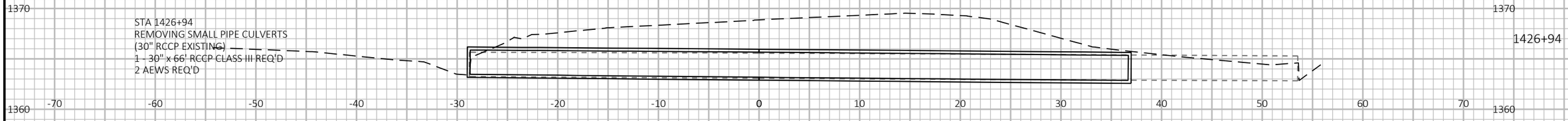
PLOT DATE : 3/25/2021 11:21 AM PLOT BY : BUKOVITZ, CAITLIN LE PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

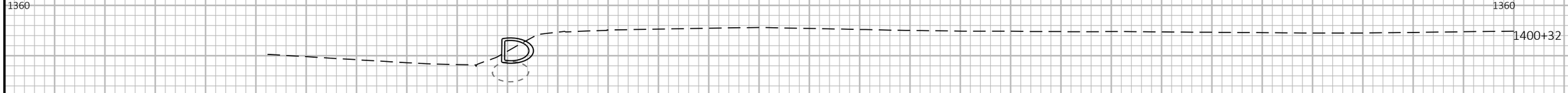
WISDOT/CADDS SHEET 49

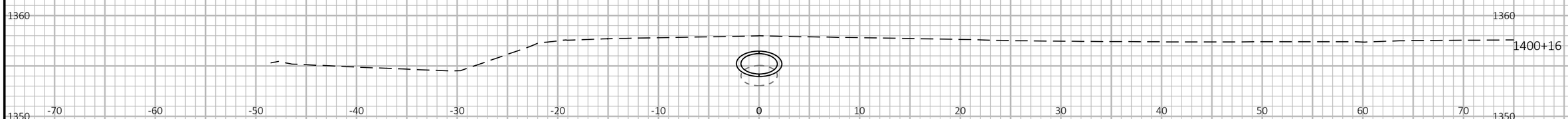
STA 1429+23
REMOVING SMALL PIPE CULVERTS
(30" RCCP EXISTING)
2 - 24"x38" x 66' RCCP CLASS HE-III REQ'D
4 AEWS REQ'D
DITCH CLEANING



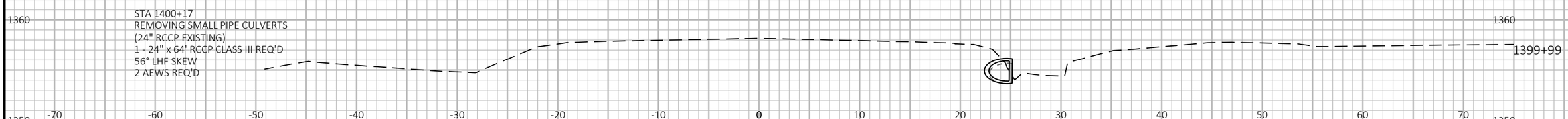
STA 1426+94
REMOVING SMALL PIPE CULVERTS
(30" RCCP EXISTING)
1 - 30" x 66' RCCP CLASS III REQ'D
2 AEWS REQ'D



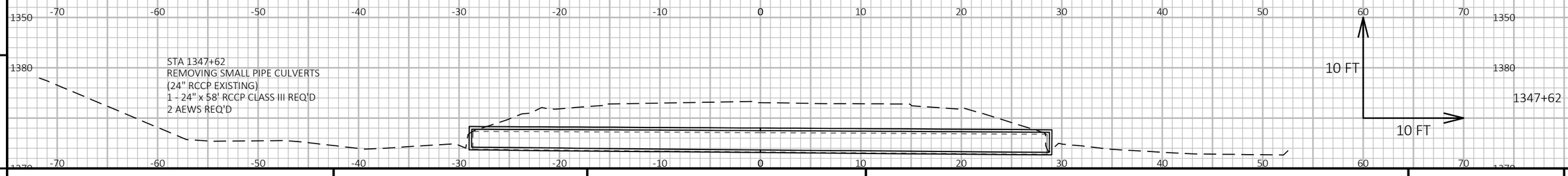




STA 1400+17
REMOVING SMALL PIPE CULVERTS
(24" RCCP EXISTING)
1 - 24" x 64' RCCP CLASS III REQ'D
56° LHF SKEW
2 AEWS REQ'D



STA 1347+62
REMOVING SMALL PIPE CULVERTS
(24" RCCP EXISTING)
1 - 24" x 58' RCCP CLASS III REQ'D
2 AEWS REQ'D



9

9

PROJECT NO: 1580-04-74	HWY: USH 8	COUNTY: RUSK	CROSS SECTIONS	SHEET 137	E

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