SUP

JANUARY 2020

PROJECT ID: 8798-00-72
WITH: N/A

COUNTY: RUSK

33

ORDER OF SHEETS

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

TOTAL SHEETS = 72

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CTH E - STH 27

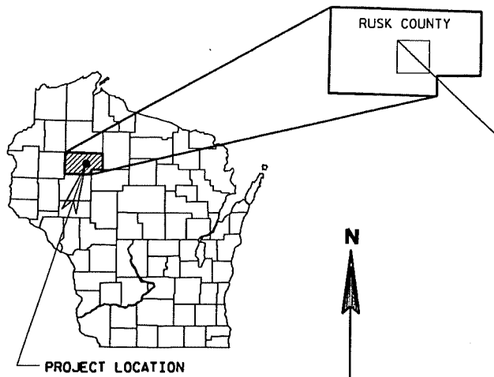
DEER TAIL CREEK BRIDGE B540130

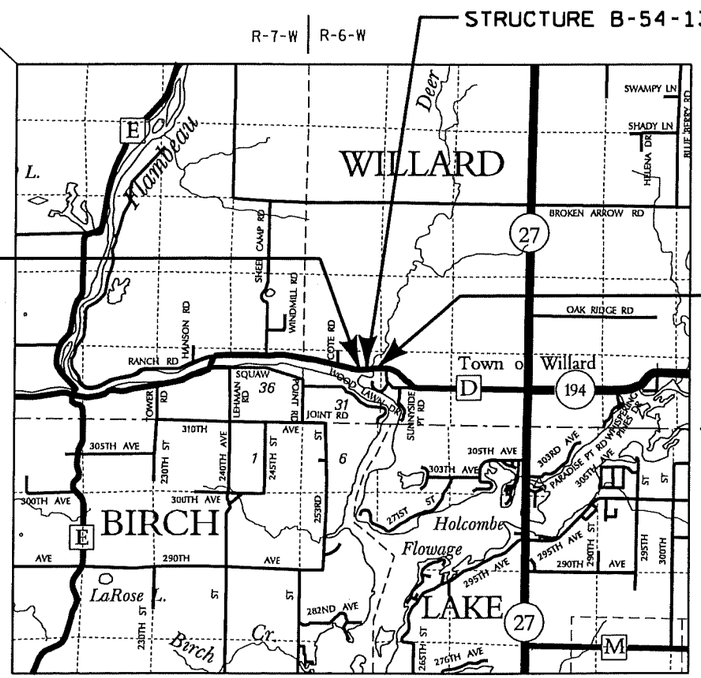
CTH D

RUSK COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8798-00-72	WISC 2019821	1

STATE PROJECT NUMBER
8798-00-72





BEGIN PROJECT
STA. 8+78.75
Y = 504391.09
X = 799145.51

END PROJECT
STA. 11+23.25
Y = 504415.77
X = 799388.76

T-33-N
T-32-N

LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.046 MI.

SURVEY PERFORMED IN 2017.
COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), RUSK COUNTY.

DESIGN DESIGNATION

A.A.D.T. (2020)	=	640
A.A.D.T. (2040)	=	860
D.H.V.	=	60
D.	=	50/50
T.	=	5%
DESIGN SPEED	=	45 MPH
ESALS	=	73,000

CONVENTIONAL SYMBOLS

PLAN
- CORPORATE LIMITS
- PROPERTY LINE (PL + 58.1)
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- HIGH VOLTAGE (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
- OVERHEAD ELECTRIC (OH)
- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

ACCEPTED FOR
County of Rusk
7/15/19 Date
Highway Commissioner

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

WISCONSIN
DANIEL N. SYDOW
E-38363
WI
PROFESSIONAL ENGINEER

DATE 7/2/2019

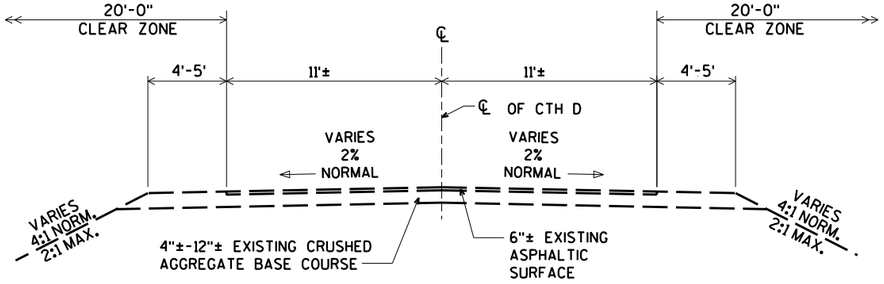
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	AYRES ASSOCIATES INC
Designer	AYRES ASSOCIATES INC
Project Manager	MATTHEW VAN NATTA
Regional Examiner	NORTHWEST REGION
Regional Supervisor	ANDREW STENSLAND

APPROVED FOR THE DEPARTMENT
DATE: 7/29/19 (Signature)

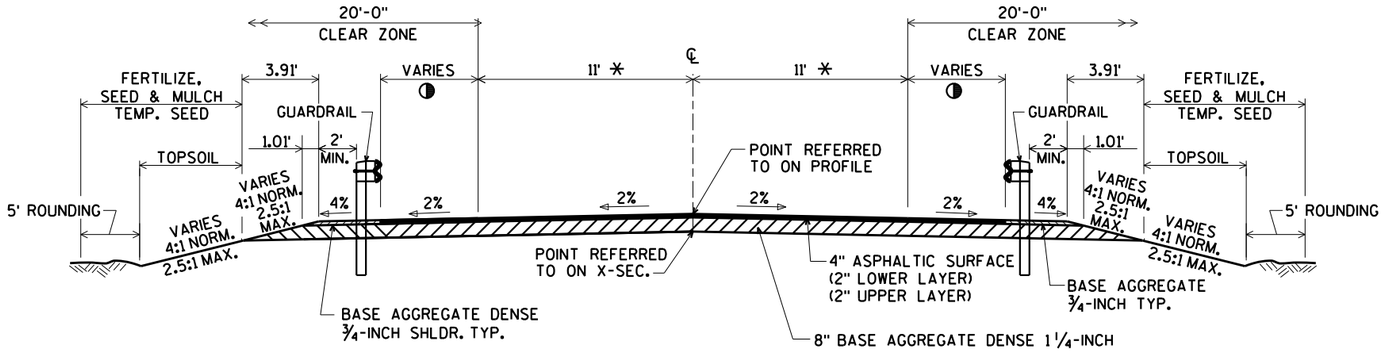
E



TYPICAL EXISTING SECTION

STA 8+78.75 - STA 11+23.25

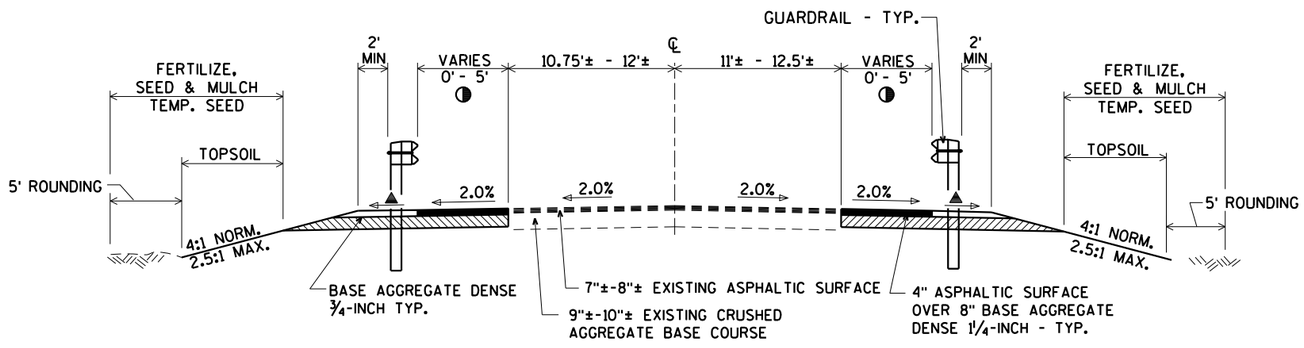
✳ THE ASPHALTIC SURFACE SHALL BE PLACED 28 FEET WIDE AT THE ENDS OF THE BRIDGE AND FOLLOW THE FACE OF THE GUARDRAIL AND TAPER TO MATCH EXISTING AT THE ENDS OF THE PROJECT.



TYPICAL FINISHED SECTION

STA 8+78.75 - 9+28.75
STA. 10+73.25 - STA. 11+23.25

◑ 3' NORMAL
3' MIN. (AT END OF BRIDGE)
5' MAX. (AT END TERMINAL)



TYPICAL FINISHED SECTION - SHOULDER WIDENING

▲4.0%
STA. 8+00.00 - STA. 8+78.75 LT; STA. 7+67.56 - STA. 8+78.75 RT
STA. 11+23.25 - STA. 12+34.44 LT; STA. 11+23.25 - STA. 12+00.00 RT

GENERAL NOTES

EROSION CONTROL ITEMS TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

NO TREES (AND/OR SHRUBS) ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

EXCAVATION FOR STRUCTURES SHALL INCLUDE FURNISHING, PLACEMENT AND COMPACTION OF ANY FILL MATERIAL REQUIRED TO PROVIDE A SUITABLE FOUNDATION FOR SUBSTRUCTURE UNITS.

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

THE DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR WITH A MONUMENT TO BE INSTALLED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88).

WETLANDS EXIST IN THE PROJECT AREA. NO DISTURBANCE IS ALLOWED OUTSIDE THE SLOPE INTERCEPT.

ASPHALTIC SURFACE SHALL USE 12.5mm (1/2 INCH) NOMINAL AGGREGATE SIZE.

UTILITIES

CENTURYLINK
425 ELLINGSON AVENUE
P.O. BOX 78
HAWKINS, WI 54530
ATTN: BRIAN HUHN
715-532-0023
brian.huhn@centurylink.com

✳ ✳ DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS

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

WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONTACT:

LEAH NICOL
1300 CLAIREMONT AVENUE
EAU CLAIRE, WI 54701
715-934-9014
leah.nicol@wisconsin.gov

RUSK COUNTY

RUSK COUNTY, COMMISSIONER
N4711 HIGHWAY 27
LADYSMITH, WI 54848
ATTN: SCOTT EMCH
715-532-2633
semch@ruskcountywi.us

DESIGNER

AYRES ASSOCIATES
3433 OAKWOOD HILLS PARKWAY
EAU CLAIRE, WI 54701
ATTN: DANIEL SYDOW, PE
715-834-3161
sydowd@ayresassociates.com

PROJECT NO: 8798-00-72	HWY: CTH D	COUNTY: RUSK	TYPICAL SECTIONS	SHEET E

2

N

BM#1 (RR SPK IN PPOL)
Y = 504393.81
X = 798814.96

BM 1058.56
SPIKE IN PPOL

BEGIN CONSTRUCTION
STA. 7+67.56
Y = 504379.86
X = 799034.89

CP#4 (12" NAIL)
STA 7+52.9, 15.1' LT
Y = 504393.43
X = 799018.75

CP#3 (7" NAIL)
STA 9+12.8, 16.7' LT
Y = 504411.14
X = 799177.66

EXISTING STRUCTURE
(B-54-4) TO BE REMOVED

BM#2 (CHIS. SQ.
TOP OF NE WING)
Y = 504429.89
X = 799343.95

CHISEL SQUARE 1058.24

END CONSTRUCTION
STA. 12+34.44
Y = 504426.99
X = 799499.38

CP#1 (12" NAIL)
STA 13+00, 13.5' LT
Y = 504447.08
X = 799563.20

SHED

CTH D
(ASPHALT)

37.1'
25.4'
30.7'

8+00 9+00 10+00 11+00 12+00 13+00

N84°12'24"E

RTIE CL 75.3'
55.4'
29.3'

PK NAIL
Y = 504365.39
X = 798994.51

PK NAIL
Y = 504368.05
X = 799018.41

PK NAIL
Y = 504369.91
X = 799038.52

PI 7+50.23
Y = 504378.11
X = 799017.65

PK NAIL
Y = 504416.53
X = 799494.34

PK NAIL
Y = 504418.73
X = 799515.64

PK NAIL
Y = 504421.96
X = 799548.21

PI 13+00.00
Y = 504433.61
X = 799564.61

CP#2 (7" NAIL)
STA 10+84.7, 17.1' RT
Y = 504394.83
X = 799352.16

℄ OF CTH D

STRUCTURE
B-54-130

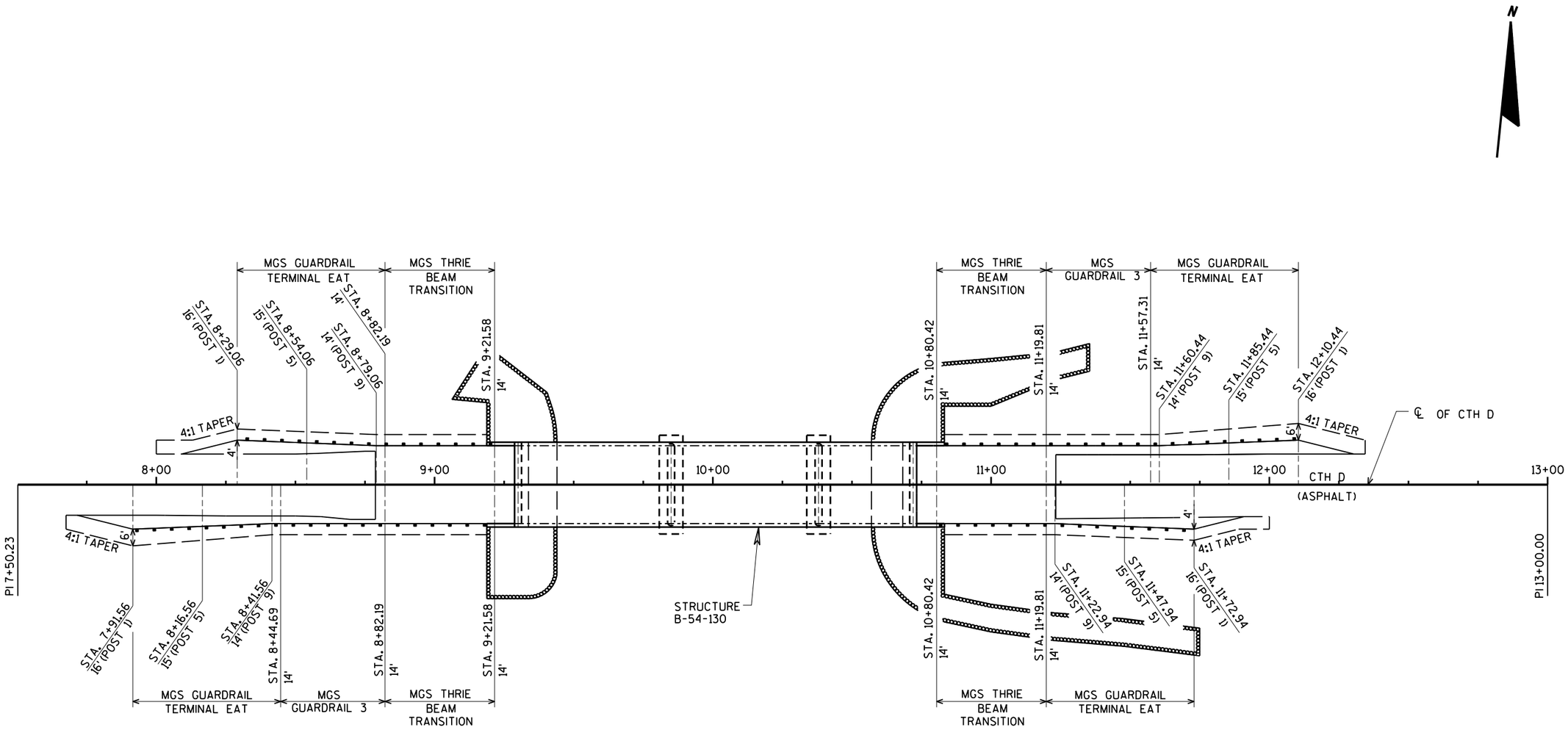
DEER TAIL CREEK

BEGIN PROJECT
STA. 8+78.75
Y = 504391.09
X = 799145.51

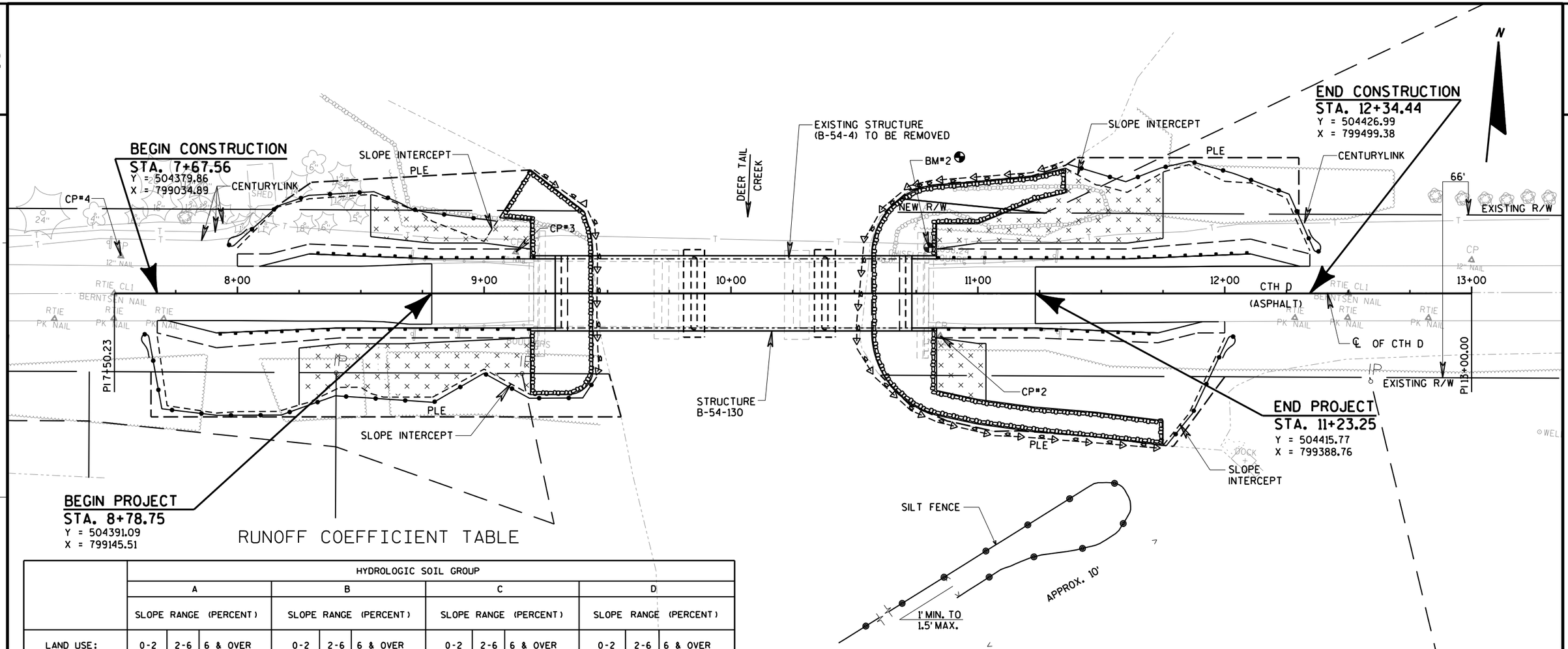
END PROJECT
STA. 11+23.25
Y = 504415.77
X = 799388.76

PROJECT NO: 8798-00-72	HWY: CTH D	COUNTY: RUSK	ALIGNMENT CONTROLS & TIES	SCALE, FEET 0 25 50	SHEET 3	E

2



PROJECT NO: 8798-00-72	HWY: CTH D	COUNTY: RUSK	GUARDRAIL LAYOUT	SHEET 4	E



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 = 0.900 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.609 ACRES

SILT FENCE END DETAIL

(TURNAROUNDS - TO REDIRECT AMPHIBIANS AND REPTILES AWAY FROM CONSTRUCTION ZONE)

HIGH WATER $_2$ EL. 1044.3

NOTE:
COFFERDAM AT PIER SEAL

NOTE:
NO DISTURBANCE OR TOPSOIL STOCKPILING IS ALLOWED OUTSIDE OF THE SLOPE INTERCEPTS. WETLANDS EXIST IN THE PROJECT AREA.

LEGEND

- EROSION MAT CLASS II TYPE C
- SILT FENCE
- TURBIDITY BARRIER
- RIPRAP HEAVY SPECIAL
- DRAINAGE ARROW

PROJECT NO: 8798-00-72	HWY: CTH D	COUNTY: RUSK	EROSION CONTROL	SCALE, FEET 0 20 40	SHEET 5	E

Estimate Of Quantities

8798-00-72

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	4.000	4.000
0004	201.0205	Grubbing	STA	4.000	4.000
0006	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 10+00	LS	1.000	1.000
0008	204.0165	Removing Guardrail	LF	204.000	204.000
0010	205.0100	Excavation Common	CY	194.000	194.000
0012	206.1000	Excavation for Structures Bridges (structure) 01. B-54-130	LS	1.000	1.000
0014	206.5000	Cofferdams (structure) 01. B-54-130	LS	1.000	1.000
0016	208.0100	Borrow	CY	413.000	413.000
0018	210.1500	Backfill Structure Type A	TON	280.000	280.000
0020	213.0100	Finishing Roadway (project) 01. 8798-00-72	EACH	1.000	1.000
0022	305.0110	Base Aggregate Dense 3/4-Inch	TON	75.000	75.000
0024	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	400.000	400.000
0026	455.0605	Tack Coat	GAL	30.000	30.000
0028	465.0105	Asphaltic Surface	TON	105.000	105.000
0030	502.0100	Concrete Masonry Bridges	CY	327.000	327.000
0032	502.1100	Concrete Masonry Seal	CY	109.000	109.000
0034	502.3200	Protective Surface Treatment	SY	550.000	550.000
0036	503.0128	Prestressed Girder Type I 28-Inch	LF	713.000	713.000
0038	505.0400	Bar Steel Reinforcement HS Structures	LB	9,110.000	9,110.000
0040	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	32,100.000	32,100.000
0042	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	30.000	30.000
0044	506.4000	Steel Diaphragms (structure) 01. B-54-130	EACH	12.000	12.000
0046	513.4061	Railing Tubular Type M	LF	343.000	343.000
0048	516.0500	Rubberized Membrane Waterproofing	SY	20.000	20.000
0050	550.0020	Pre-Boring Rock or Consolidated Materials	LF	350.000	350.000
0052	550.0500	Pile Points	EACH	29.000	29.000
0054	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	1,400.000	1,400.000
0056	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	160.000	160.000
0058	614.2300	MGS Guardrail 3	LF	75.000	75.000
0060	614.2500	MGS Thrie Beam Transition	LF	160.000	160.000
0062	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0064	618.0100	Maintenance And Repair of Haul Roads (project) 01. 8798-00-72	EACH	1.000	1.000
0066	619.1000	Mobilization	EACH	1.000	1.000
0068	624.0100	Water	MGAL	24.000	24.000
0070	625.0100	Topsoil	SY	1,415.000	1,415.000
0072	627.0200	Mulching	SY	1,135.000	1,135.000
0074	628.1504	Silt Fence	LF	705.000	705.000

8798-00-72

Line	Item	Item Description	Unit	Total	Qty
0076	628.1520	Silt Fence Maintenance	LF	2,115.000	2,115.000
0078	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0080	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0082	628.2027	Erosion Mat Class II Type C	SY	675.000	675.000
0084	628.6005	Turbidity Barriers	SY	275.000	275.000
0086	628.7504	Temporary Ditch Checks	LF	50.000	50.000
0088	629.0210	Fertilizer Type B	CWT	1.300	1.300
0090	630.0120	Seeding Mixture No. 20	LB	56.000	56.000
0092	630.0200	Seeding Temporary	LB	56.000	56.000
0094	630.0300	Seeding Borrow Pit	LB	2.000	2.000
0096	630.0500	Seed Water	MGAL	46.000	46.000
0098	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	10.000	10.000
0100	637.2210	Signs Type II Reflective H	SF	18.000	18.000
0102	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0104	638.2602	Removing Signs Type II	EACH	10.000	10.000
0106	638.3000	Removing Small Sign Supports	EACH	10.000	10.000
0108	642.5001	Field Office Type B	EACH	1.000	1.000
0110	643.0420	Traffic Control Barricades Type III	DAY	1,800.000	1,800.000
0112	643.0705	Traffic Control Warning Lights Type A	DAY	2,800.000	2,800.000
0114	643.0900	Traffic Control Signs	DAY	1,400.000	1,400.000
0116	643.5000	Traffic Control	EACH	1.000	1.000
0118	645.0111	Geotextile Type DF Schedule A	SY	60.000	60.000
0120	645.0120	Geotextile Type HR	SY	945.000	945.000
0122	646.1020	Marking Line Epoxy 4-Inch	LF	1,030.000	1,030.000
0124	650.4500	Construction Staking Subgrade	LF	331.000	331.000
0126	650.5000	Construction Staking Base	LF	331.000	331.000
0128	650.6500	Construction Staking Structure Layout (structure) 01. B-54-130	LS	1.000	1.000
0130	650.9910	Construction Staking Supplemental Control (project) 01. 8798-00-72	LS	1.000	1.000
0132	650.9920	Construction Staking Slope Stakes	LF	331.000	331.000
0134	690.0150	Sawing Asphalt	LF	48.000	48.000
0136	715.0502	Incentive Strength Concrete Structures	DOL	2,616.000	2,616.000
0138	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	400.000	400.000
0140	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	300.000	300.000
0142	SPV.0035	Special 01. Riprap Heavy	CY	500.000	500.000

3

3

CLEARING AND GRUBBING

STATION	TO	STATION	OFFSET	201.0105 CLEARING STA	201.0205 GRUBBING STA
7+50	-	9+50	LT & RT	2	2
10+50	-	12+50	LT & RT	2	2
TOTALS				4	4

CTH D EARTHWORK SUMMARY

From/To Station	Location	Excavation Common (1) (item # 205.0100) Cut	Salvaged / Unuseable Pavement Material (5)	Unexpanded Fill	Expanded Fill (2) Factor 1.30	Mass Ordinate +/- (3)	Waste	Borrow (item #208.0100)	Comment:
7+67.56 - 12+34.44	CTH D	194	44	433	563	-413		413	

1) Excavation Common is the Cut. Item number 205.0100.
2) Expanded Fill. Factor = 1.30; Expanded Fill = Unexpanded Fill * Fill Factor
3) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material on the project.
4) All quantities shown in CY.
5) Existing existing salvaged/unuseable asphalt pavement.

PAVING AND BASE QUANTITIES

STA	TO	STA	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
7+67.56	--	9+28.75	35	190	15	50
10+73.25	--	12+34.44	35	190	15	50
UNDISTRIBUTED			5	20	0	5
TOTALS			75	400	30	105

RIPRAP AND GEOTEXTILE

STA	TO	STA	LOCATION	SPV.0035.01 RIPRAP HEAVY SPECIAL CY	645.0120 GEOTEXTILE TYPE HR SY
10+85.25	--	11+75	LT	75	155
UNDISTRIBUTED				5	10
TOTALS				80	165

NOTE: FILL VOIDS IN RIPRAP HEAVY SPECIAL. SEE BRIDGE PLAN FOR INFORMATION.

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

3

MGS GUARDRAIL

STA	TO	STA	LOCATION	204.0165 REMOVING GUARDRAIL LF	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
7+91.56	--	8+44.69	RT	--	--	--	1
8+29.06	--	8+82.19	LT	--	--	--	1
8+44.69	--	8+82.19	RT	--	37.5	--	--
8+82.19	--	9+21.58	RT	--	--	40	--
8+82.19	--	9+21.58	LT	--	--	40	--
8+70	--	9+20	RT	51	--	--	--
8+70	--	9+20	LT	51	--	--	--
10+80	--	11+31	LT	51	--	--	--
10+80	--	11+31	RT	51	--	--	--
10+80.42	--	11+19.81	RT	--	--	40	--
10+80.42	--	11+19.81	LT	--	--	40	--
11+19.81	--	11+57.31	LT	--	37.5	--	--
11+57.31	--	12+10.44	LT	--	--	--	1
11+19.81	--	11+72.94	RT	--	--	--	1
TOTALS				204	75.0	160	4

WATER

PURPOSE	624.0100 WATER MGAL
COMPACTION	8
DUST CONTROL	16
TOTAL	24

EROSION CONTROL ITEMS

STA	TO	STA	LOCATION	625.0100 TOPSOIL SY	627.0200 MULCHING SY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2027 EROSION MAT CLASS II TYPE C SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB	630.0300 SEEDING BORROW PIT LB	630.0500 SEED WATER MGAL
7+67.56	--	9+28.75	RT	345	315	235	705	215	0.3	14	14	1	12
8+00	--	9+28.75	LT	145	200	130	390	75	0.2	7	7		6
10+73.25	--	12+00	RT	325	355	65	195	55	0.3	11	11	1	9
10+73.25	--	12+34.44	LT	315	265	135	405	195	0.3	12	12		10
UNDISTRIBUTED				285	--	140	420	135	0.3	11	11	0	9
TOTALS				1,415	1,135	705	2,115	675	1.3	56	56	2	46

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

3

3

EROSION CONTROL MOBILIZATION ITEMS

LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
ID 8798-00-72	4	4
TOTALS	4	4

TURBIDITY BARRIERS

LOCATION	628.6005 SY
WEST ABUTMENT	60
EAST ABUTMENT	160
UNDISTRIBUTED	55
TOTAL	275

TEMPORARY DITCH CHECKS

LOCATION	628.7504 LF
UNDISTRIBUTED	50
TOTAL	50

SIGNAGE

EXISTING STATION	PROPOSED STATION	LOCATION	634.0612 POSTS WOOD 4X6-INCH X 12-FT EACH	637.2230 SIGNS TYPE II REFLECTIVE F SF	637.2230 SIGNS TYPE II REFLECTIVE H SF	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	SIGNAGE TYPE
8+70	7+95	LT	1	--	3	1	1	(NO PARKING BETWEEN SIGNS) R7-52R
8+70	7+95	RT	1	--	3	1	1	(NO PARKING BETWEEN SIGNS) R7-52L
8+89	--	RT	--	--	--	1	1	(NO FISHING FROM BRIDGE) R9-55
--	8+20	RT	1	--	3	--	--	(NO FISHING OR DIVING FROM BRIDGE) R9-56
9+20	9+18	LT	1	3	--	1	1	(BRIDGE HASH MARKS) W5-52L
9+20	9+18	RT	1	3	--	1	1	(BRIDGE HASH MARKS) W5-52R
10+80	10+84	LT	1	3	--	1	1	(BRIDGE HASH MARKS) W5-52R
10+80	10+84	RT	1	3	--	1	1	(BRIDGE HASH MARKS) W5-52L
11+02	11+85	LT	1	--	3	1	1	(NO FISHING OR DIVING FROM BRIDGE) R9-56
11+32	12+10	LT	1	--	3	1	1	(NO PARKING BETWEEN SIGNS) R7-52L
11+32	12+10	RT	1	--	3	1	1	(NO PARKING BETWEEN SIGNS) R7-52R
TOTALS			10	12	18	10	10	

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

3

3

TRAFFIC CONTROL ITEMS

LOCATION	DURATION DAYS	643.0420 BARRICADES TYPE III NO.	643.0420 BARRICADES TYPE III DAY	643.0705 WARNING LIGHTS TYPE A NO.	643.0705 WARNING LIGHTS TYPE A DAY	643.0900 SIGNS NO.	643.0900 SIGNS DAY	643.5000 TRAFFIC CONTROL EACH
PER SDD 15C2	100	18	1,800	28	2,800	14	1,400	--
CTH D	--	--	--	--	--	--	--	1
TOTALS			1,800		2,800		1,400	1

TRAFFIC CONTROL PLACEMENT SUBJECT TO ENGINEER APPROVAL

MARKING LINE EPOXY 4-INCH

STA	TO	STA	LOCATION	DESCRIPTION	646.1020 YELLOW LF	646.1020 WHITE LF
8+78.75	-	11+23.25	LT	EDGE LINE	--	245
8+78.75	-	11+23.25	RT	EDGE LINE	--	245
8+78.75	-	11+23.25		SOLID CENTER LINES	490	--
UNDISTRIBUTED					25	25
SUBTOTALS					515	515
TOTAL					1,030	

LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
7+67.56 - 12+34.44	331	331	331
TOTALS	331	331	331

SAWING ASPHALT

STATION	LOCATION	690.0150 LF
8+78.75	LT & RT	25
11+23.25	LT & RT	23
TOTAL		48

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

CONVENTIONAL SYMBOLS

SECTION LINE
QUARTER LINE
SIXTEENTH LINE
NEW REFERENCE LINE
NEW R/W LINE
EXISTING R/W LINE
PROPERTY LINE
LOT, TIE, AND OTHER MINOR LINES
SLOPE INTERCEPT
CORPORATE LIMITS
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC)
FEE ACQUISITION AREA (HATCHING VARIES BY OWNER)
TEMP. LIMITED EASEMENT AREA
EASEMENT AREA (HIGHWAY, PERMANENT LIMITED, OR RESTRICTED DEVELOPMENT)
TRANSMISSION STRUCTURES
BUILDING
BUILDING (TO BE REMOVED)
BRIDGE

PARCEL NUMBER
SECTION CORNER
NOTATION FOR COMBUSTABLE FLUIDS
NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES
ACCESS CONTROLLED BY ACQUISITION
NO ACCESS (BY STATUTORY AUTHORITY)
ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)
NO ACCESS (NEW HIGHWAY)
NATIONAL GEODETIC SURVEY MONUMENT
SIXTEENTH CORNER MONUMENT
PARALLEL OFFSETS

UTILITY NUMBER
R/W MONUMENT
NON-MONUMENTED R/W POINT
FOUND IRON PIN
VALVE (GAS, WATER, ETC.)
SIGN
OFF-PREMISE SIGN

CONVENTIONAL ABBREVIATIONS

ACCESS RIGHTS	AR	OUTLOT	OL
ACRES	AC	PAGE	P
AHEAD	AH	POINT OF TANGENCY	PT
ALUMINUM	ALUM	PROPERTY LINE	PL
AND OTHERS	ET AL	RECORDED AS	(100')
BACK	BK	REEL / IMAGE	R/I
BLOCK	BLK	REFERENCE LINE	R/L
CENTERLINE	C/L	PERMANENT LIMITED EASEMENT	PLE
CERTIFIED SURVEY MAP	CSM	POINT OF BEGINNING	POB
CONCRETE	CONC	POINT OF CURVATURE	PC
COUNTY	CO	POINT OF COMPOUND CURVE	PCC
COUNTY TRUNK HIGHWAY	CTH	POINT OF INTERSECTION	PI
DISTANCE	DIST	REMAINING	REM
CORNER	COR	RESTRICTIVE DEVELOPMENT EASEMENT	RDE
DOCUMENT NUMBER	DOC	RIGHT	RT
EASEMENT	EASE	RIGHT OF WAY	R/W
EXISTING	EX	SECTION	SEC
GAS VALVE	GV	SEPTIC VENT	SEPV
GRID NORTH	GN	SQUARE FEET	SF
HIGHWAY EASEMENT	HE	STATE TRUNK HIGHWAY	STH
IDENTIFICATION	ID	STATION	STA
LAND CONTRACT	LC	TELEPHONE PEDESTAL	TP
LEFT	LT	TEMPORARY LIMITED EASEMENT	TLE
MONUMENT	MON	TRANSPORTATION PROJECT PLAT	TPP
NATIONAL GEODETIC SURVEY	NGS	UNITED STATES HIGHWAY	USH
NUMBER	NO	VOLUME	V

CURVE DATA ABBREVIATIONS

LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE	Δ/DELTA
LENGTH OF CURVE	L
TANGENT	T
DIRECTION AHEAD	DA
DIRECTION BACK	DB

SCHEDULE OF LANDS AND INTERESTS REQUIRED

PARCEL NO.	OWNER(S)	INTEREST REQUIRED	R/W (ACRES) FEE	EXISTING	TOTAL	PLE
1	KENNETH J. SANDEL AND JANET M. SANDEL	PLE	----	----	----	0.034
2	JOHN F. STANSBURY AND JOAN M. STANSBURY	FEE	0.004	0.264	0.268	----
3	STEVEN JAENKE AND TAMMY JAENKE	PLE	----	----	----	0.065
4	SALLY E. PATROW AND CONNIE M. PEDERSEN	PLE	----	----	----	0.063
5	ROLLAND D. BROWN AND KATHERINE BROWN	PLE	----	----	----	0.046
6	HECTOR R. AND LORETTA LAREAU	PLE	----	----	----	0.031
101	CHIPPEWA VALLEY ELECTRIC COOP	RELEASE OF RIGHTS				
102	JUMP RIVER ELECTRIC COOP	RELEASE OF RIGHTS				

OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE COUNTY.

CONVENTIONAL UTILITY SYMBOLS

WATER
GAS
TELEPHONE
OVERHEAD TRANSMISSION LINES
ELECTRIC
CABLE TELEVISION
FIBER OPTIC
SANITARY SEWER
STORM SEWER
ELECTRIC TOWER

	NON-COMPENSABLE	COMPENSABLE
POWER POLE		
TELEPHONE POLE		
TELEPHONE PEDESTAL		

POINT TABLE

POINT NAME	NORTHING	EASTING
100	504392.805	799498.391
101	504389.912	799468.531
102	504359.732	799450.707
103	504349.085	799226.887
104	504329.859	799037.391
105	504347.970	799035.553
106	504413.633	799028.891
107	504418.353	799077.663
108	504430.935	799092.469
109	504444.868	799180.261
110	504472.188	799400.000
111	504481.260	799489.417
112	504458.469	799491.729

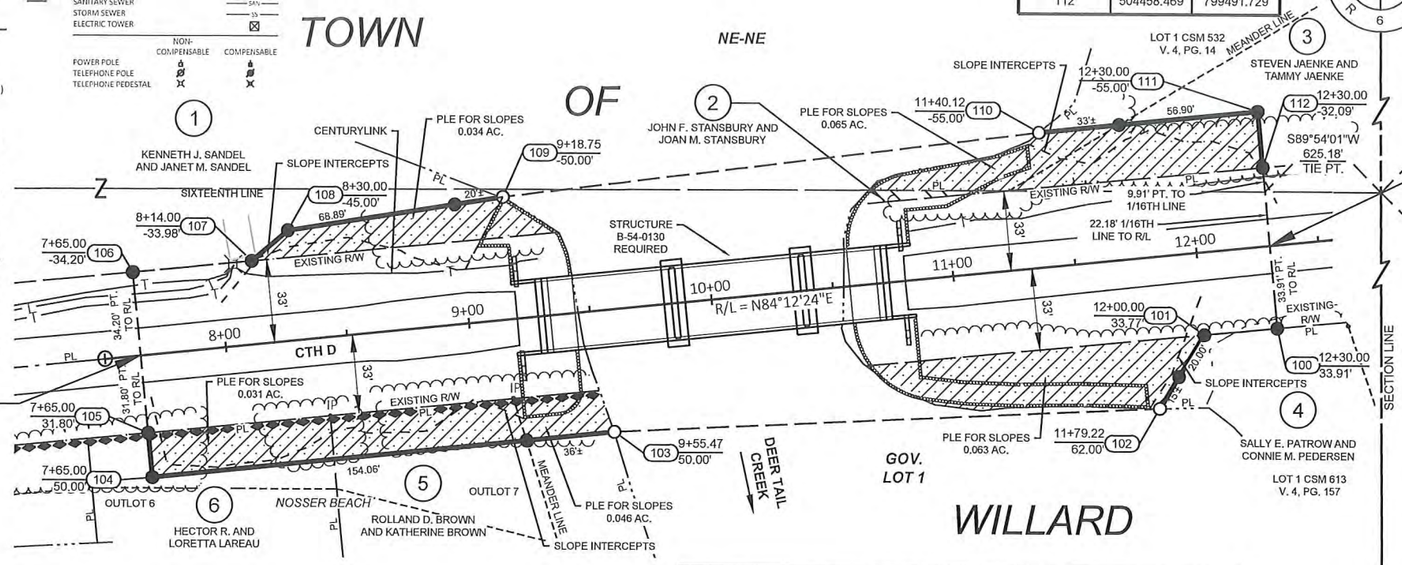
R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
8798-00-02		
CONSTRUCTION PROJECT NUMBER	4.01	1

PLAT OF RIGHT OF WAY REQUIRED FOR

CTH E - STH 27

DEER TAIL CREEK BRIDGE B-54-0130

CTH D — RUSK COUNTY



0 30 60 SCALE, FEET

NORTHEAST CORNER SECTION 31
FOUND 1.5" IRON PIPE
Y = 505768.060
X = 800103.080

EAST ¼ CORNER SECTION 31
FOUND 1.5" IRON PIPE
Y = 503131.335
X = 800132.747

END RELOCATION ORDER

STA. 12+30.00
Y = 504426.541
X = 799494.968
LOCATED 1295.21 FEET NORTH AND 637.78 FEET WEST OF THE EAST ¼ CORNER OF SECTION 31, TOWNSHIP 33 NORTH, RANGE 06 WEST.

BEGIN RELOCATION ORDER

STA. 7+65.00
Y = 504379.603
X = 799032.343
LOCATED 1248.27 FEET NORTH AND 1100.40 FEET WEST OF THE EAST ¼ CORNER OF SECTION 31, TOWNSHIP 33 NORTH, RANGE 06 WEST.

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.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 (¾"x24" CAPPED IRON REBAR WEIGHING 1.50 LBS.LIN. FT.) AND ARE PLACED PRIOR TO OR AT THE TIME OF LAND TITLE TRANSFER.

A PERMANENT LIMITED EASEMENT (PLE) IS A RIGHT FOR CONSTRUCTION AND MAINTENANCE PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE THE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE, BUT WITHOUT PREJUDICE TO THE OWNER'S RIGHT TO MAKE OR CONSTRUCT IMPROVEMENTS ON SAID LANDS OR TO FLATTEN THE SLOPES, PROVIDING SAID ACTIVITIES WILL NOT IMPAIR OR OTHERWISE ADVERSELY AFFECT THE HIGHWAY FACILITIES.

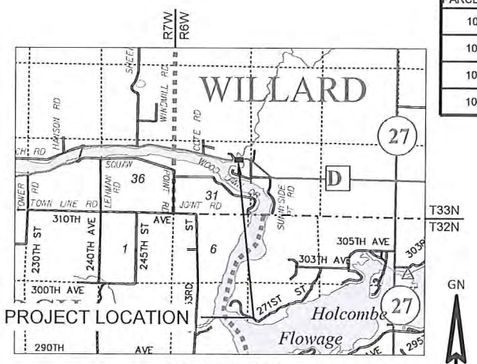
RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS" OF PUBLIC RECORD.

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINES.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

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

EXISTING HIGHWAY RIGHT-OF-WAY FOR CTH D ROAD SHOWN HEREIN IS BASED ON NOSSER BEACH, CSMs 532 AND 613 AND IS PRESUMED TO BE 66 FEET IN WIDTH CENTERED ON THE EXISTING CENTERLINE OF THE TRAVELED WAY PER STATE STATUTE 82.31(2)



LOCATION SKETCH

TOTAL NET LENGTH OF CENTERLINE = 0.088 MI.

UTILITY EASEMENT INFORMATION

PARCEL NO.	UTILITY	RECORDING INFORMATION	PARCEL(S)
101	CHIPPEWA VALLEY ELECTRIC COOP	V. 525, P. 603, DOC. NO. 219531 - BLANKET EASEMENT	2
102	JUMP RIVER ELECTRIC COOP	V. 13, P. 473, DOC. NO. 133809 - BLANKET EASEMENT	2 & 4
102	JUMP RIVER ELECTRIC COOP	V. 183, P. 584, DOC. NO. 182860 - BLANKET EASEMENT	1 & 3
102	JUMP RIVER ELECTRIC COOP	V. 254, P. 427, DOC. NO. 220225 - BLANKET EASEMENT	2 & 4

COURSE TABLE

COURSE	BEARING	DISTANCE	COURSE	BEARING	DISTANCE
TIE - 100	S05°47'36"E	56.09'	106 - 107	N84°28'20"E	49.00'
100 - 101	S84°28'01"W	30.00'	107 - 108	N49°38'34"E	19.43'
101 - 102	S30°33'53"W	35.05'	108 - 109	N80°58'55"E	88.89'
102 - 103	S87°16'35"W	224.07'	109 - 110	N82°54'46"E	221.43'
103 - 104	S84°12'24"W	190.47'	110 - 111	N84°12'24"E	89.88'
104 - 105	N05°47'36"W	18.20'	111 - 112	S05°47'36"E	22.91'
105 - 106	N05°47'36"W	66.00'	112 - TIE	S05°47'36"E	9.91'

REVISION DATE
04-11-2019

APPROVED FOR COUNTY OF RUSK

5/11/19 DATE — HIGHWAY COMMISSIONER

PLAT PREPARED BY
AYRES ASSOCIATES

THE SURVEY IS PREPARED AT THE REQUEST OF THE COUNTY OF RUSK.

THE FIELD SURVEY WAS PERFORMED IN JULY 2017.

THIS SURVEY IS ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

WISCONSIN James R. Cappeart S-3044 Green Bay Wis. LAND SURVEYOR

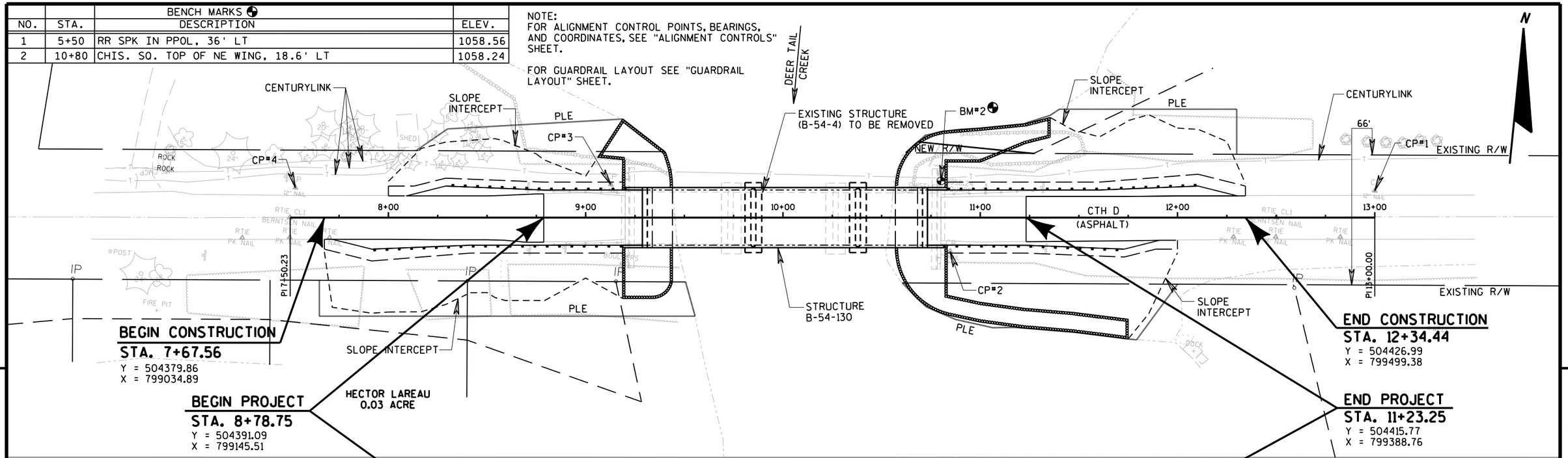
12-21-2018 DATE

JAMES C. CAPPEART, P.L.S.
S-3044

NO.	STA.	BENCH MARKS DESCRIPTION	ELEV.
1	5+50	RR SPK IN PPOL, 36' LT	1058.56
2	10+80	CHIS. SQ. TOP OF NE WING, 18.6' LT	1058.24

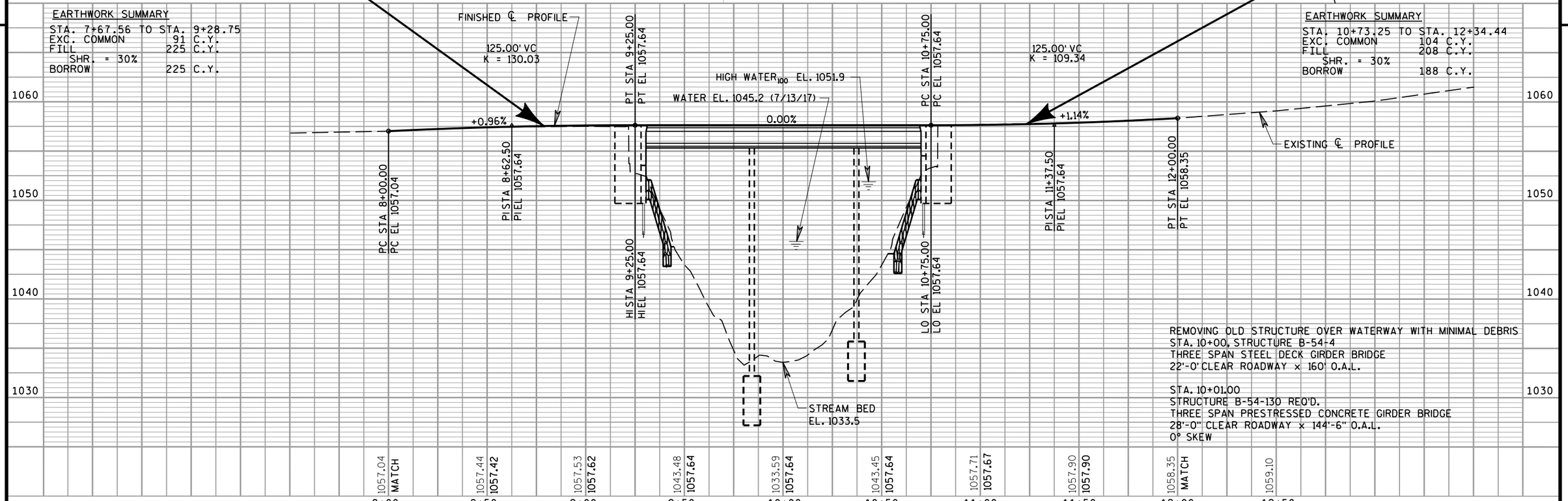
NOTE:
FOR ALIGNMENT CONTROL POINTS, BEARINGS, AND COORDINATES, SEE "ALIGNMENT CONTROLS" SHEET.

FOR GUARDRAIL LAYOUT SEE "GUARDRAIL LAYOUT" SHEET.



EARTHWORK SUMMARY
STA. 7+67.56 TO STA. 9+28.75
EXC. COMMON 91 C.Y.
FILL 225 C.Y.
SHR. = 30%
BORROW 225 C.Y.

EARTHWORK SUMMARY
STA. 10+73.25 TO STA. 12+34.44
EXC. COMMON 104 C.Y.
FILL 208 C.Y.
SHR. = 30%
BORROW 188 C.Y.



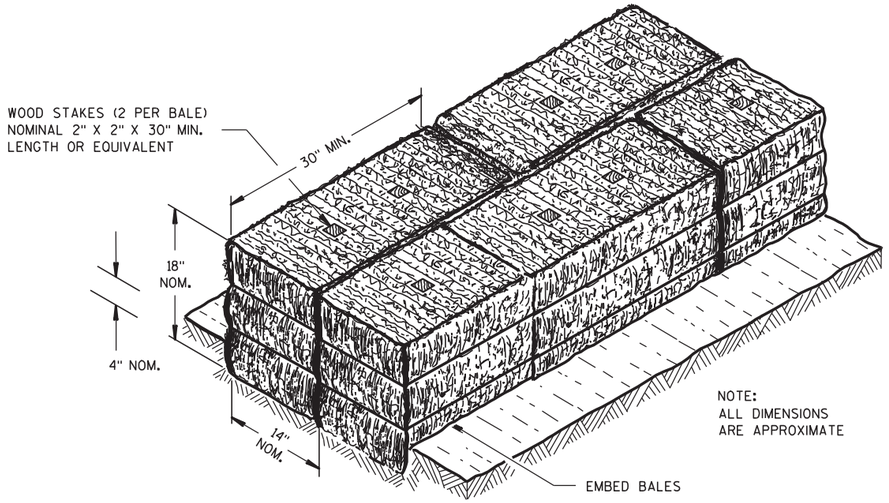
REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS
STA. 10+00, STRUCTURE B-54-4
THREE SPAN STEEL DECK GIRDER BRIDGE
22'-0" CLEAR ROADWAY x 160' O.A.L.

STA. 10+01.00
STRUCTURE B-54-130 REO'D.
THREE SPAN PRESTRESSED CONCRETE GIRDER BRIDGE
28'-0" CLEAR ROADWAY x 144'-6" O.A.L.
0° SKEW

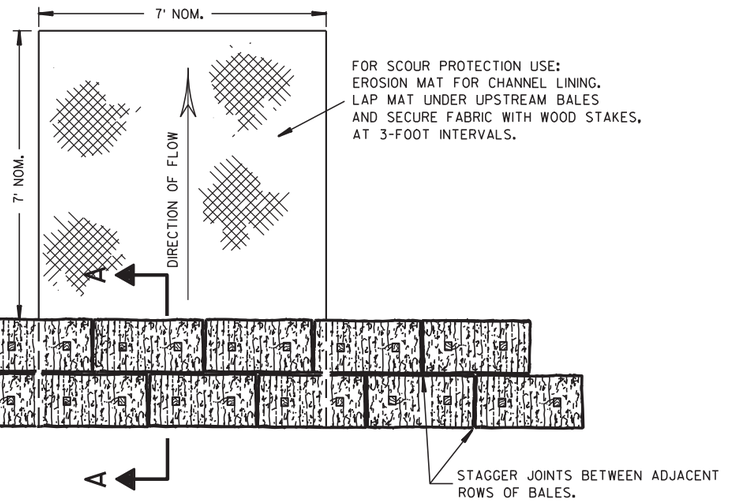
PROJECT NO: 8798-00-72	HWY: CTH D	COUNTY: RUSK	PLAN AND PROFILE	SCALE, FEET 0 25 50	SHEET 13 E

Standard Detail Drawing List

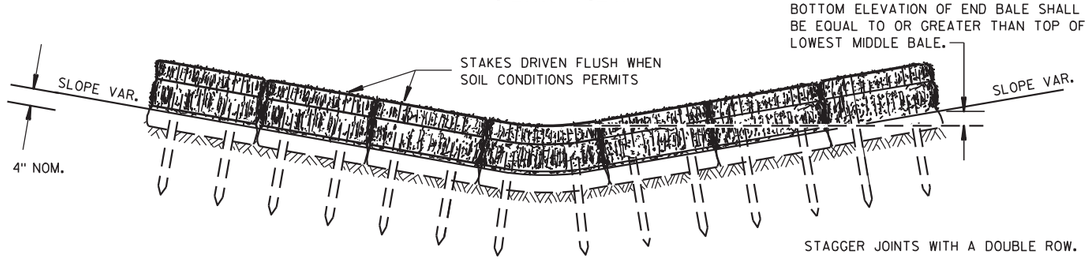
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	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)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-07A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-07B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



SECTION A-A



PLAN VIEW



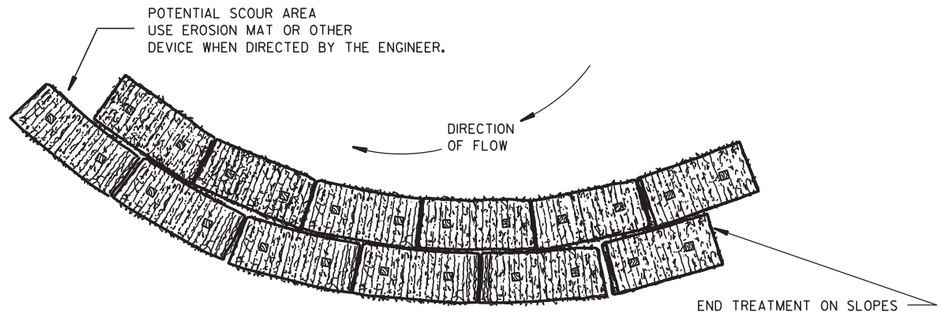
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

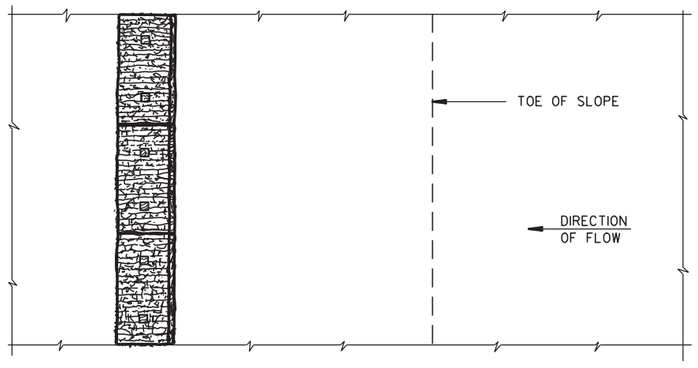
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

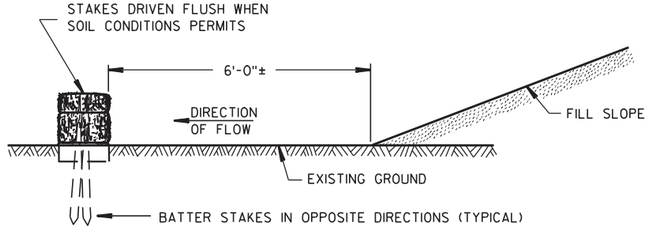


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

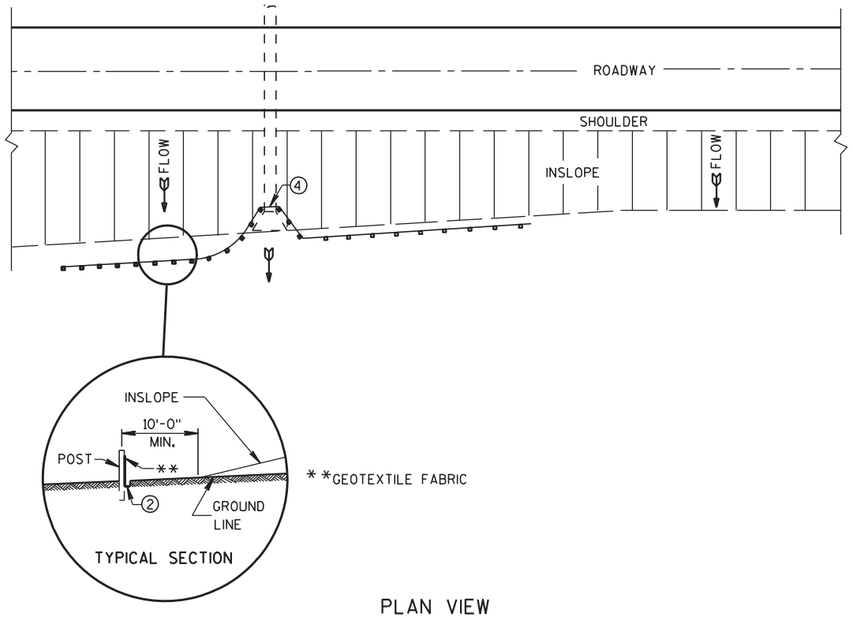
APPROVED
6/04/02 DATE
/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 8-3

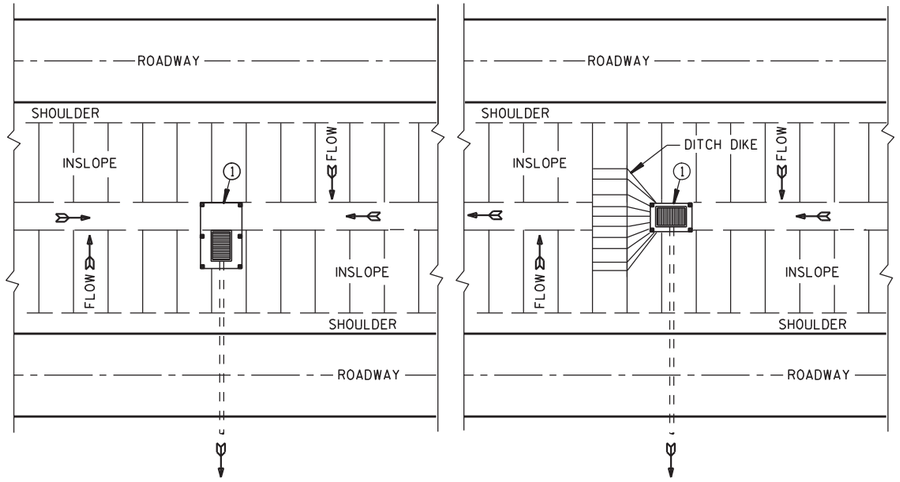
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



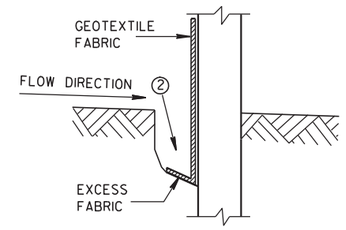
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

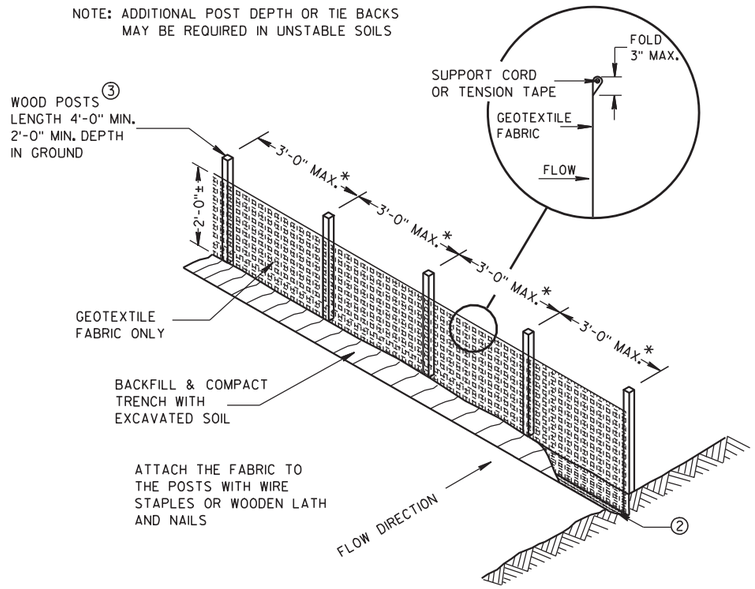
GENERAL NOTES

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

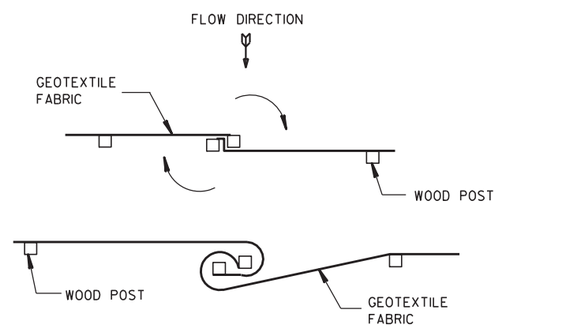
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



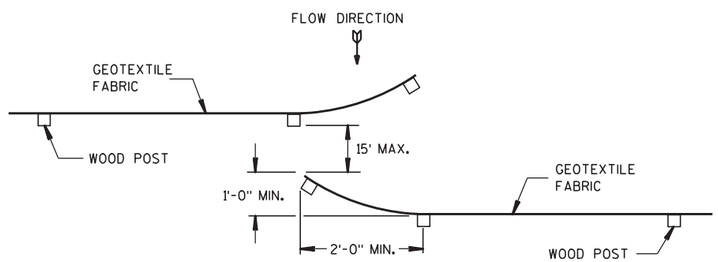
TRENCH DETAIL



SILT FENCE

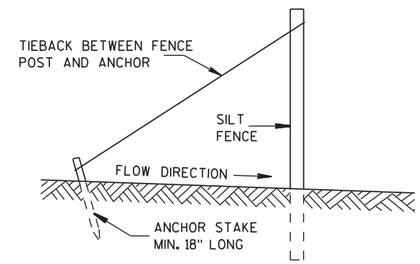


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

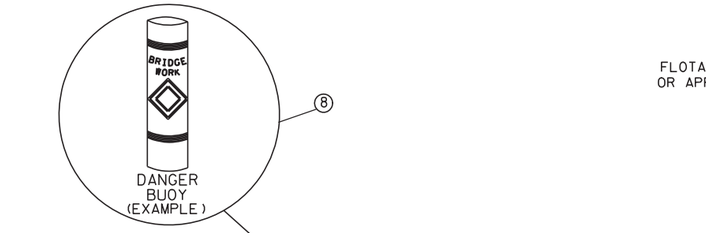
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

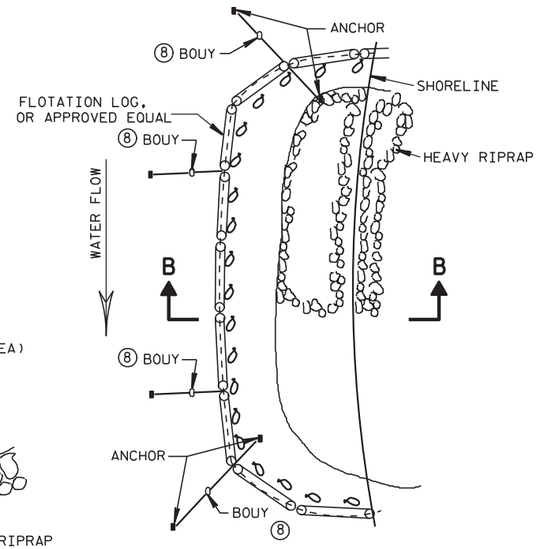
S.D.D. 8 E 9-6

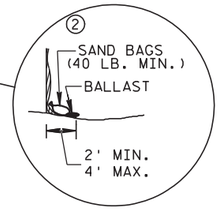
6

S.D.D. 8 E 9-6

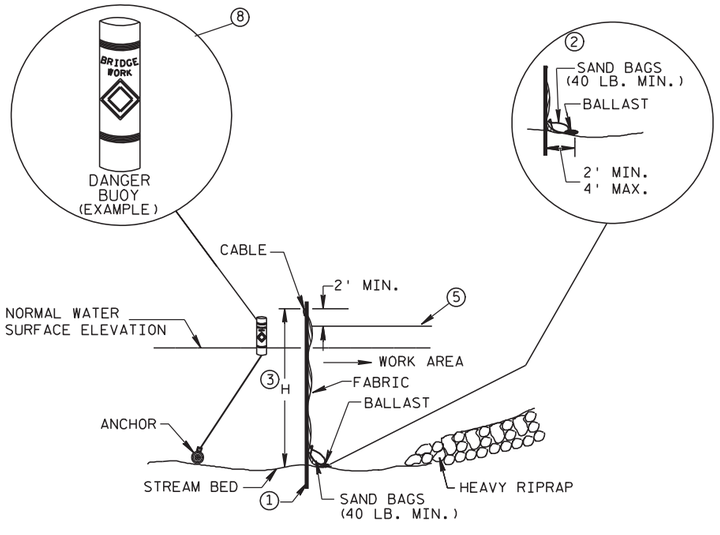


SECTION B-B

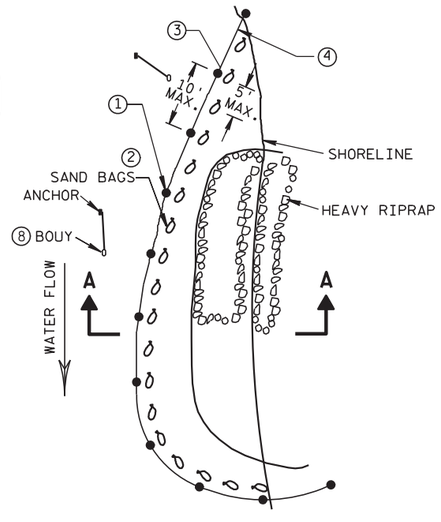




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT 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.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.

② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.

③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.

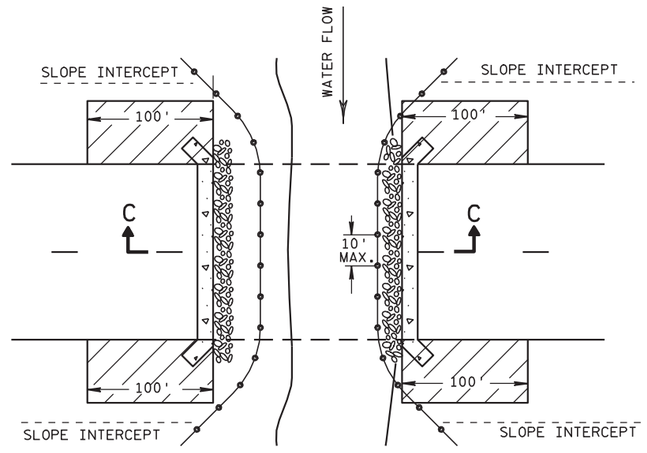
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE O2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

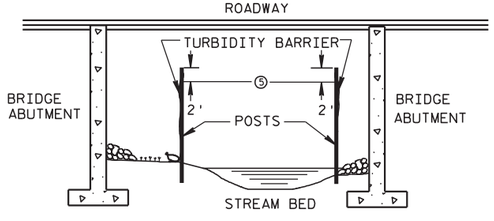
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.

⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

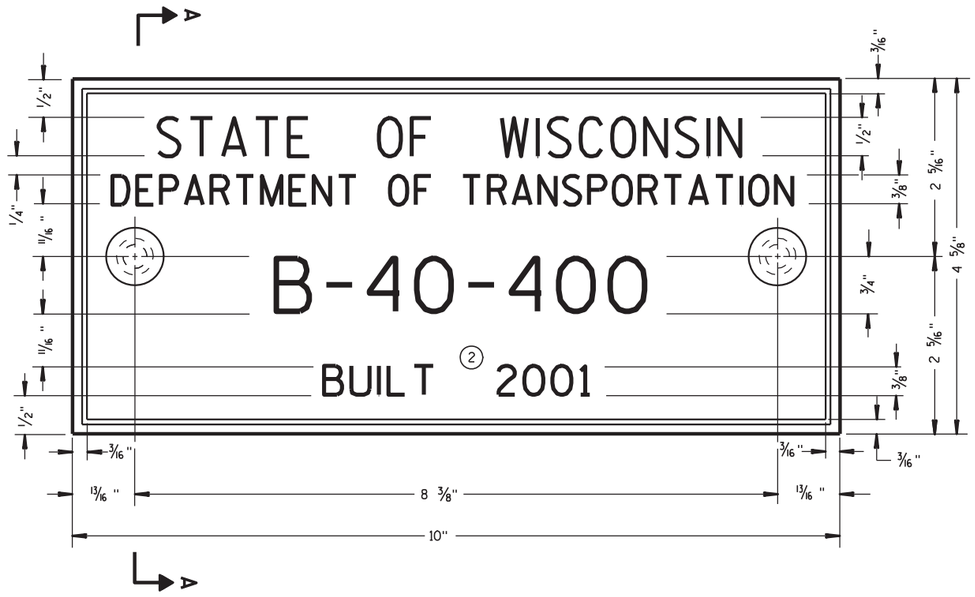
APPROVED
6/04/02 DATE
/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 11-2

6

S.D.D. 8 E 11-2



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)

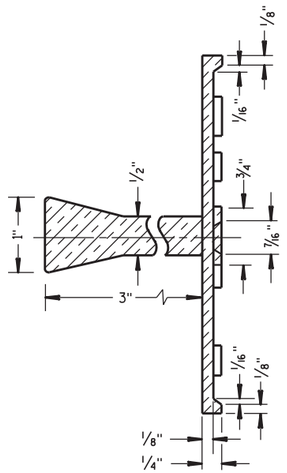
GENERAL NOTES

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

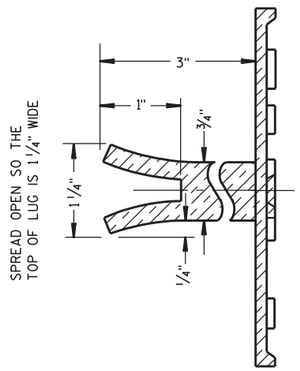
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

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



SECTION A-A



ALTERNATE LUG

FOR MULTI-UNIT STRUCTURES LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

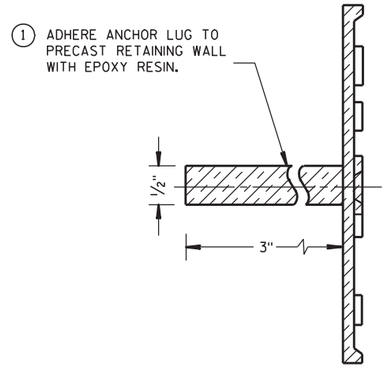
COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION MULTI-UNIT STRUCTURES



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck-- CHIEF STRUCTURAL DEVELOP ENGINEER

FHWA

6

S.D.D. 12 A 3-10

6

S.D.D. 12 A 3-10

(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.

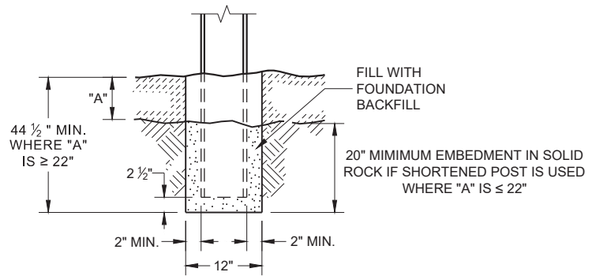
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL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

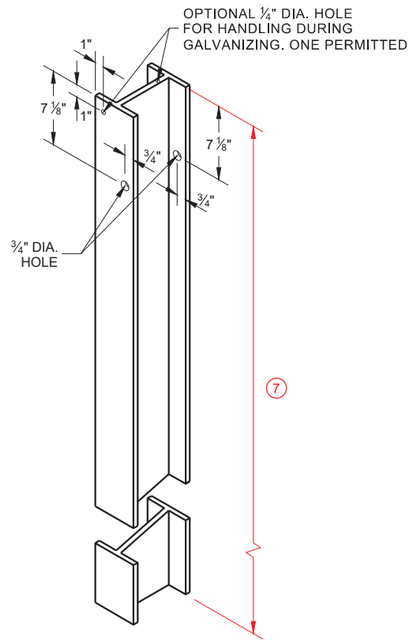
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(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.

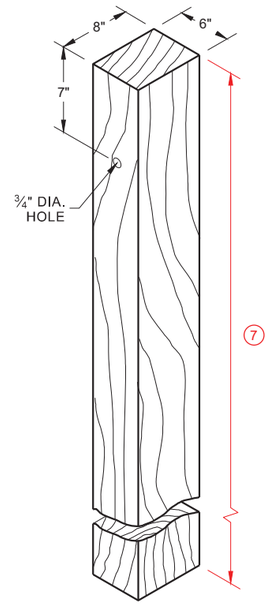
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



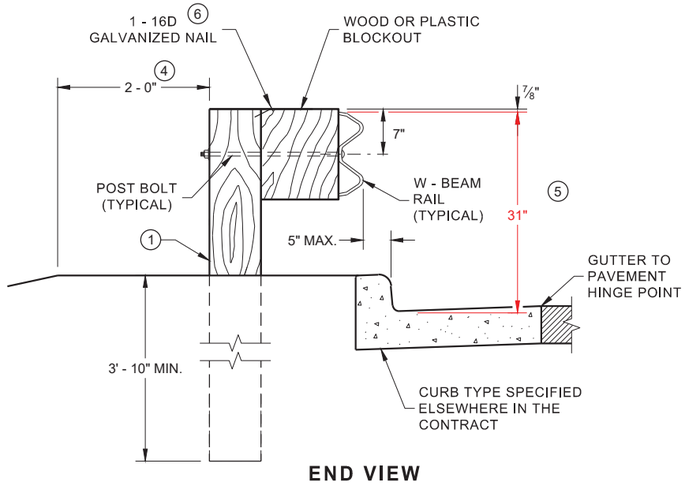
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



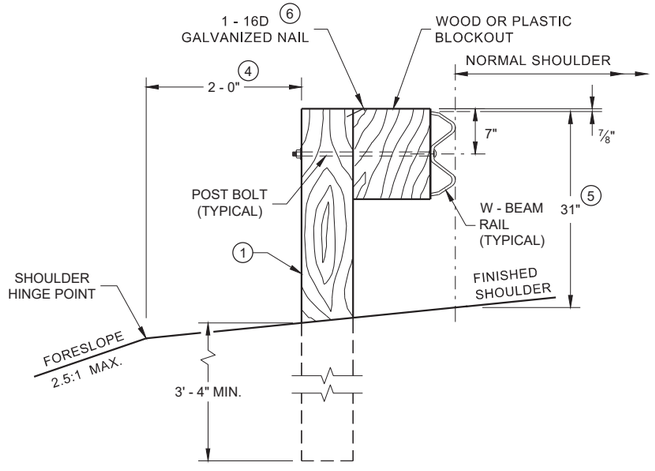
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



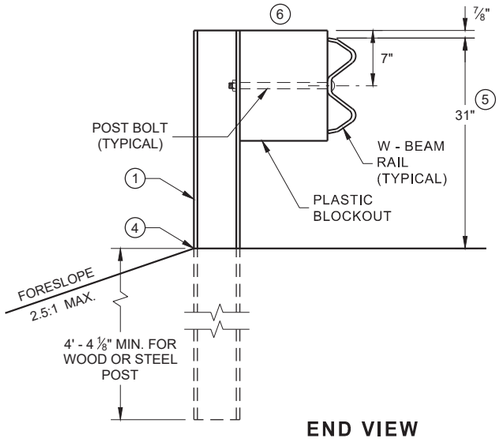
WOOD POST (6" X 8") NOMINAL (1)



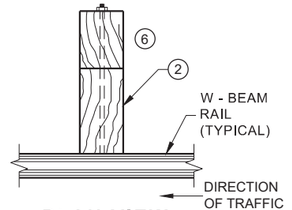
END VIEW
LOCATED ALONG A CURBED ROADWAY



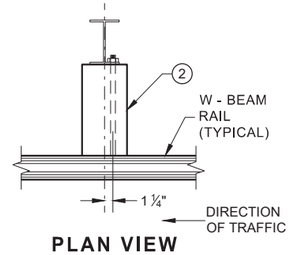
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



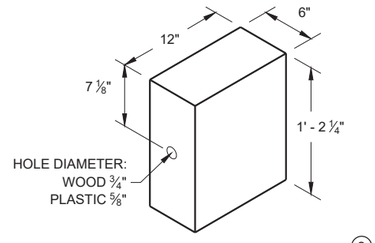
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



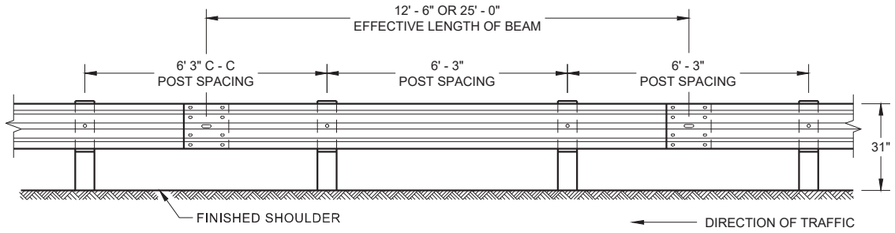
WOOD OR PLASTIC BLOCKOUT (2)

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

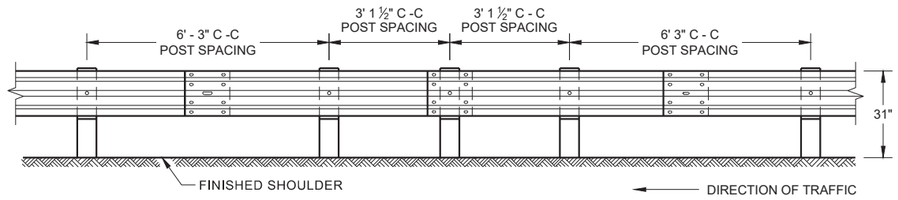
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B42 - 06a

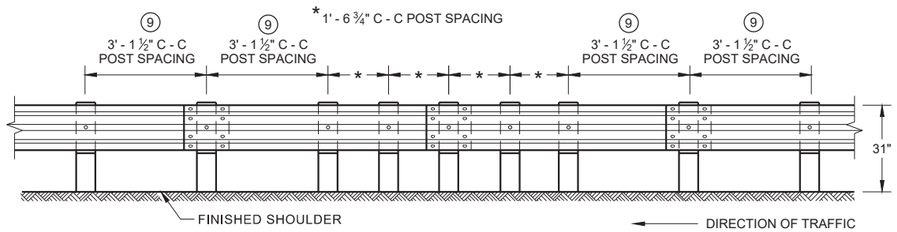
6
SDD 14B42 - 06a



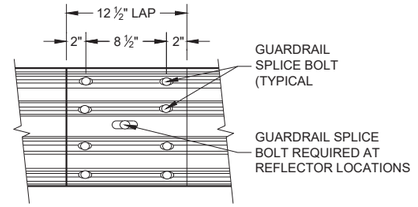
FRONT VIEW
POST SPACING STANDARD INSTALLATION



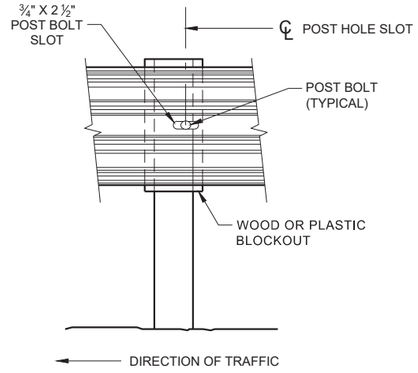
FRONT VIEW
HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)



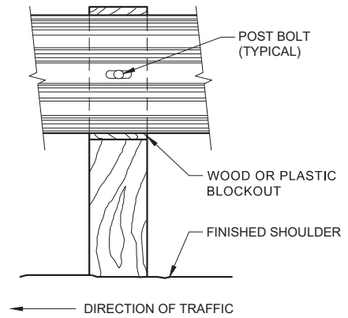
FRONT VIEW
QUARTER POST SPACING (QS)



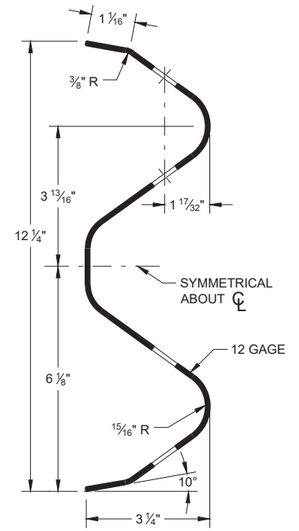
FRONT VIEW
MID-SPAN BEAM SPLICE



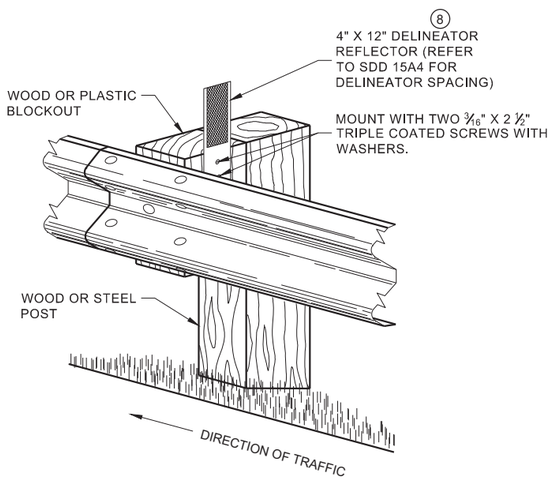
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.

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

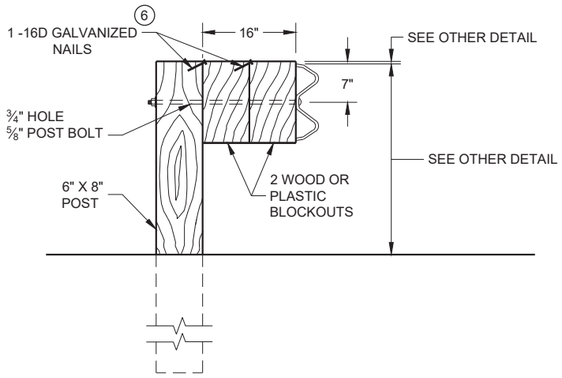
POST BOLTS ARE A ¾" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

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

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 14B42 - 06b

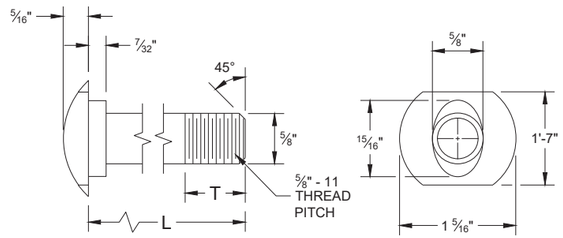


DETAIL FOR 16" BLOCKOUT DEPTH

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

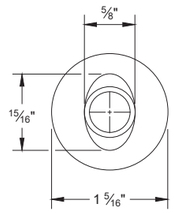
NOTE:

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

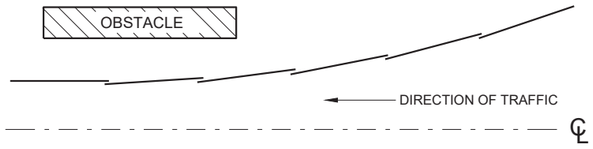


POST BOLT TABLE

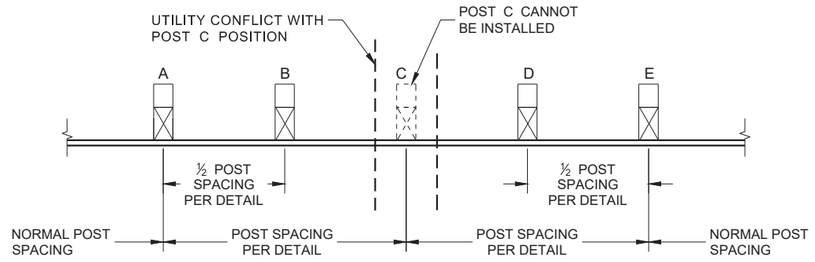
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



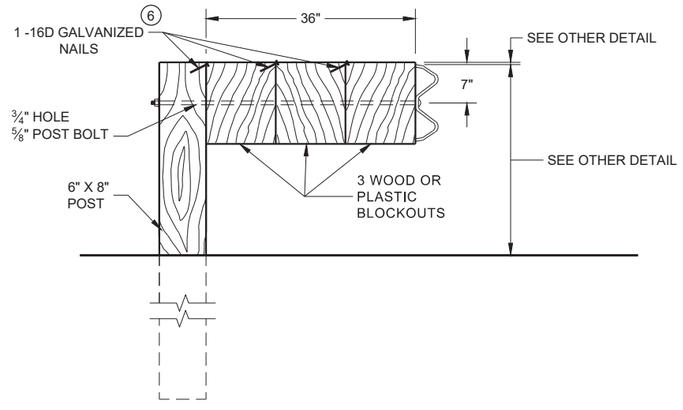
ALTERNATE BOLT HEAD



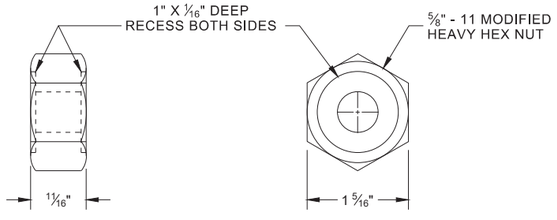
PLAN VIEW
BEAM LAPPING DETAIL



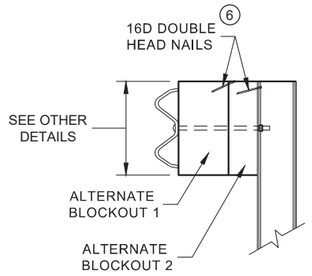
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



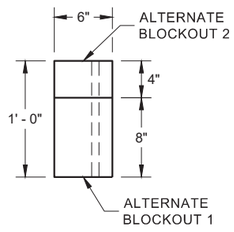
DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW



PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

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

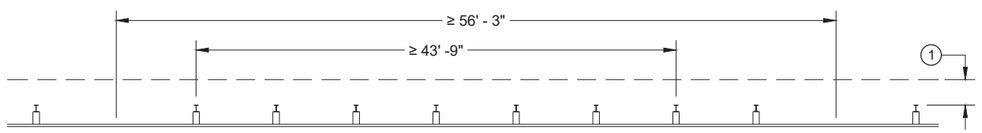
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

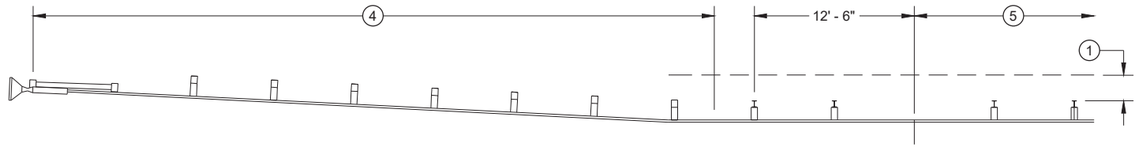
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

6

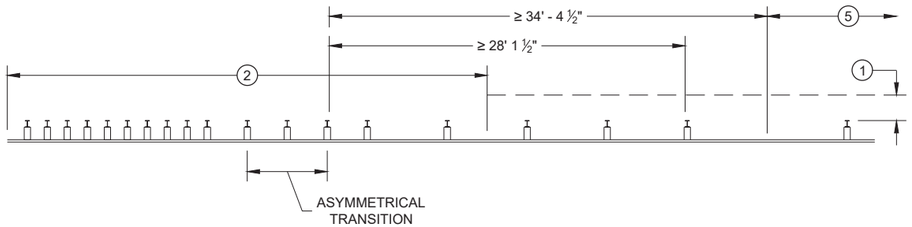
SDD 14B42 - 06c



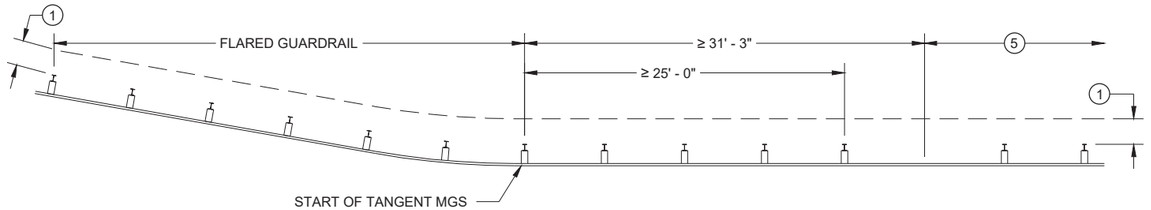
MISSING POST IN NORMAL BEAM GUARD RUN



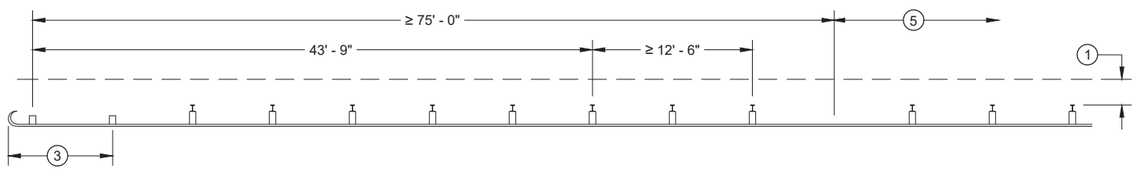
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



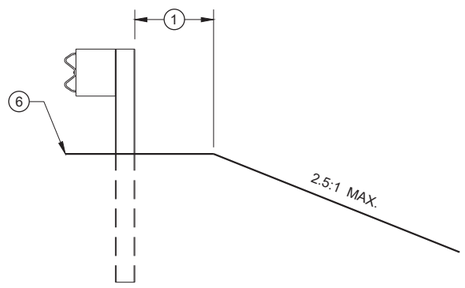
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



MISSING POST IN NORMAL BEAM GUARD RUN NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

(1) MINIMUM OF 2 FEET OF GRADING BEHIND POST.

(2) SEE SDD 14B45 FOR MORE DETAILS.

(3) SEE SDD 14B47 FOR MORE DETAILS.

(4) SEE SDD 14B44 FOR MORE DETAILS.

(5) SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.

(6) SEE PLAN FOR SHOULDER DESIGN.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE
UNIT SUPERVISOR

FHWA

6

SDD 14B42 - 06d

GENERAL NOTES

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

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

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

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

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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

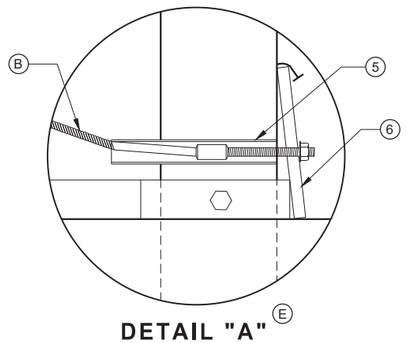
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

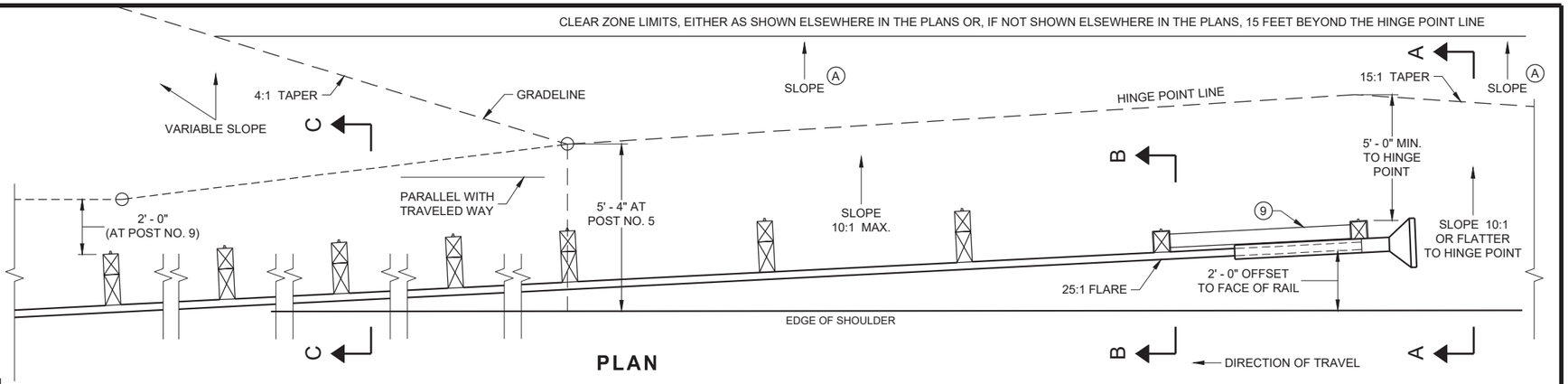
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

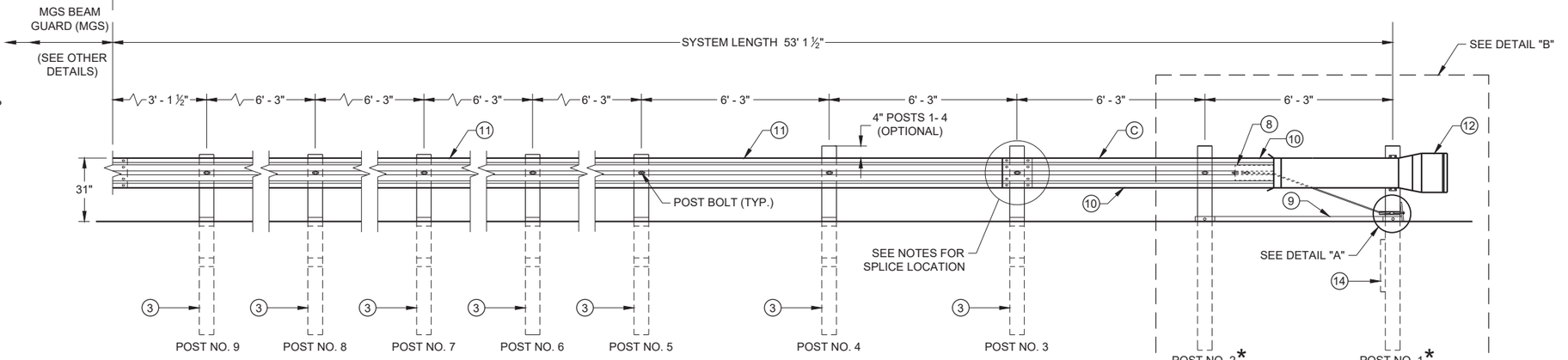
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



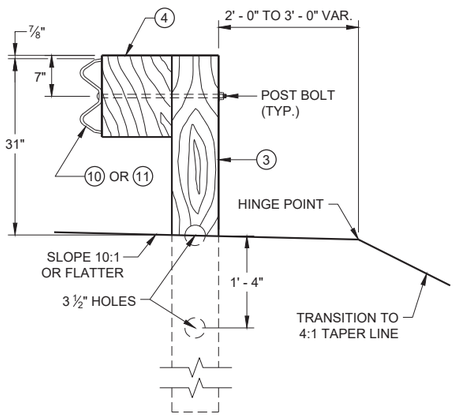
DETAIL "A" (E)



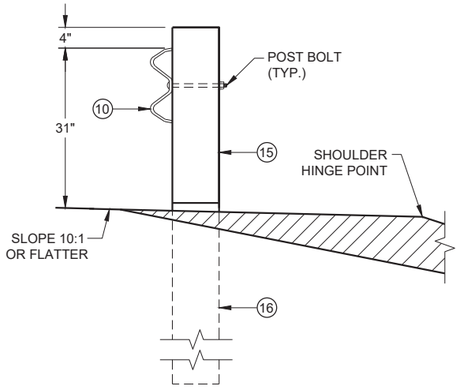
PLAN



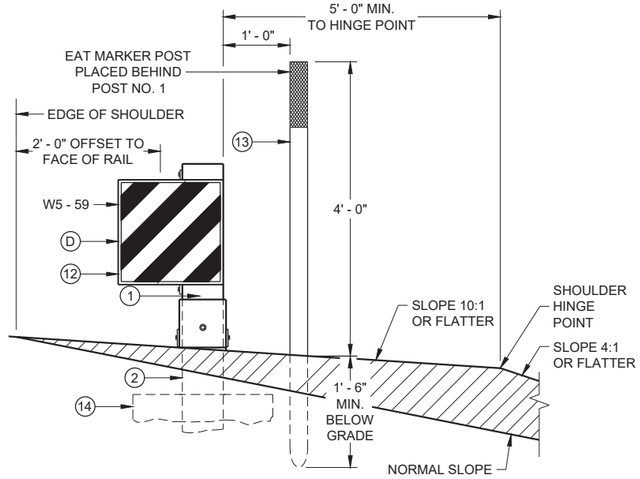
ELEVATION



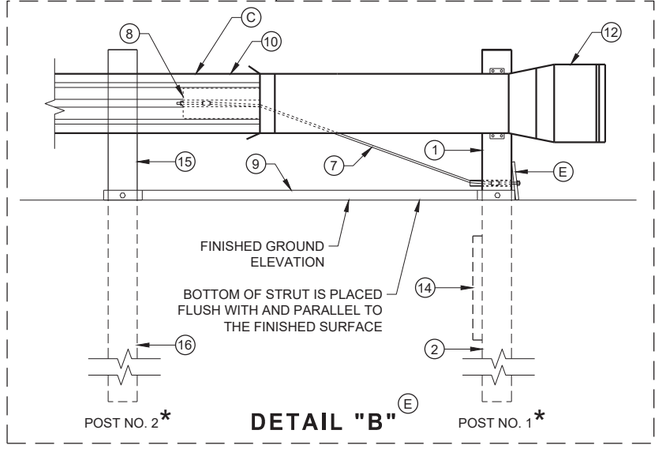
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



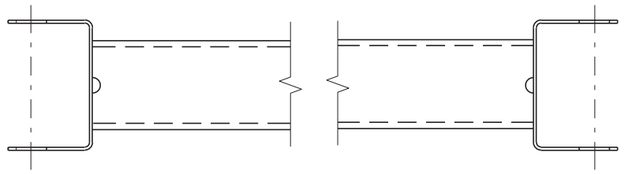
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

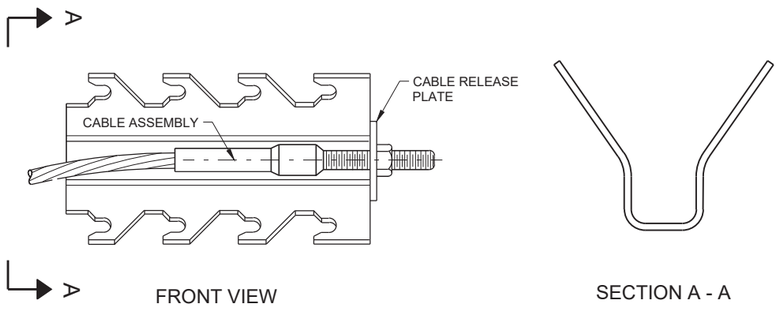
SDD 14B44 - 04a



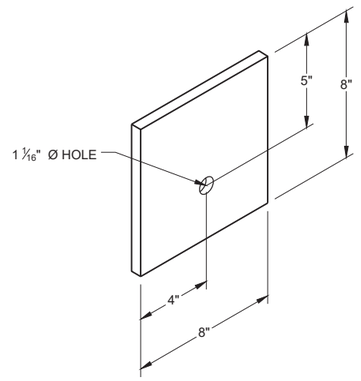
GENERIC GROUND STRUT ⑨ Ⓔ

BILL OF MATERIALS

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



GENERIC ANCHOR CABLE BOX ⑨ Ⓔ



BEARING PLATE ⑥ Ⓔ

6

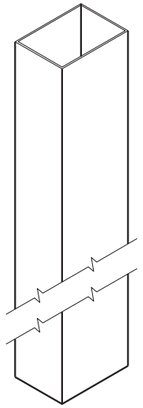
6

SDD 14B44 - 04b

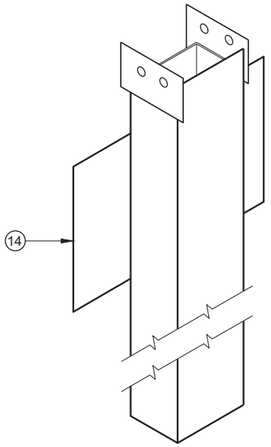
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

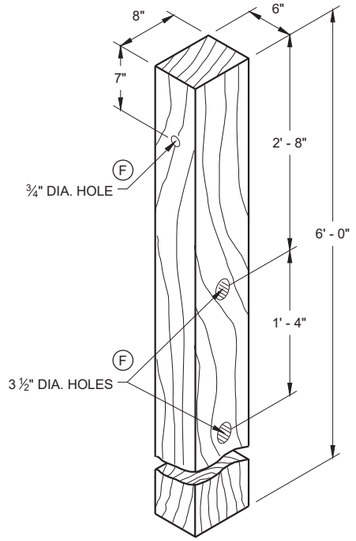
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



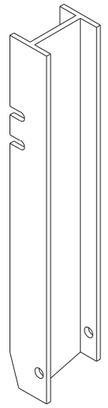
UPPER POST NO. 1 (1) (E)



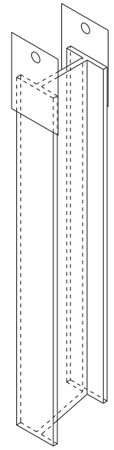
LOWER POST NO. 1 (2) (E)



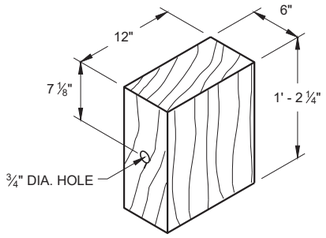
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



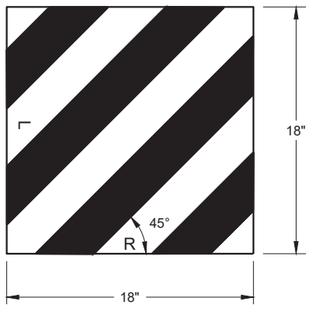
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

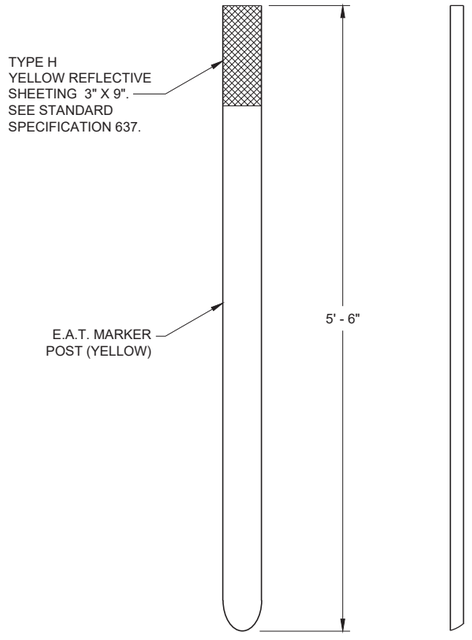


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



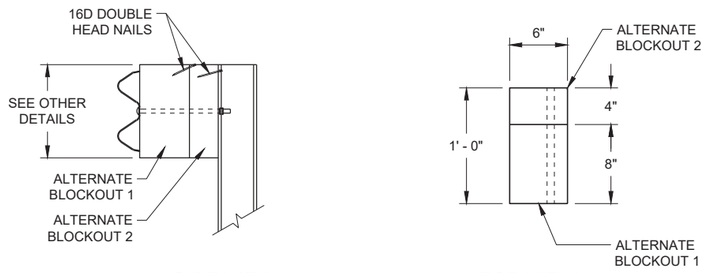
W5 - 59

REFLECTIVE SHEETING DETAIL (E)



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

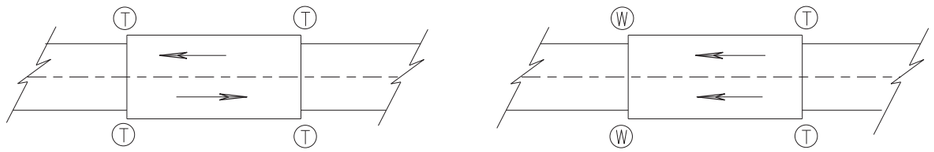
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

SDD 14B44 - 04c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

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

TRANSITION USES STEEL POSTS ONLY.

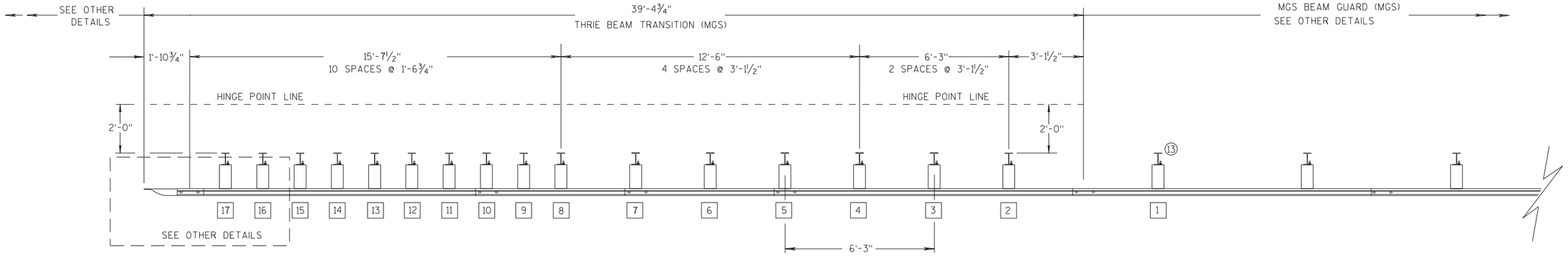
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

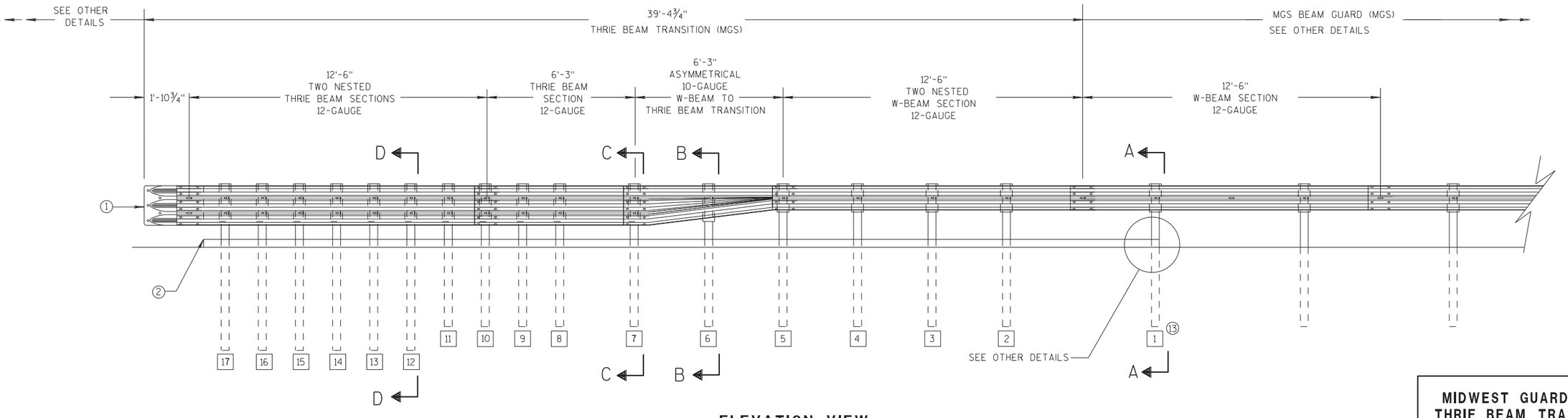
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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

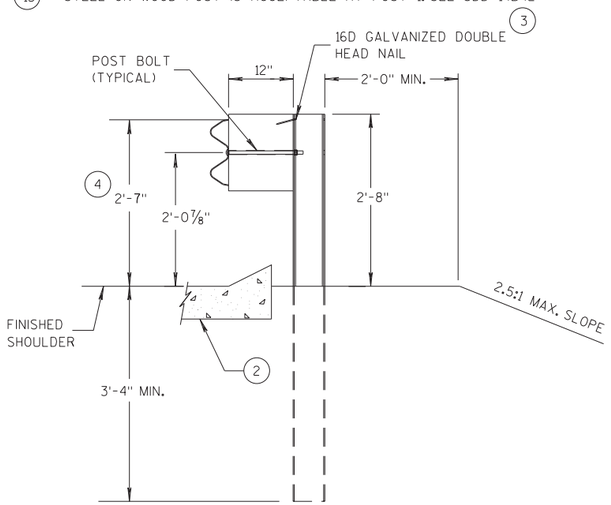
GENERAL NOTES

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

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

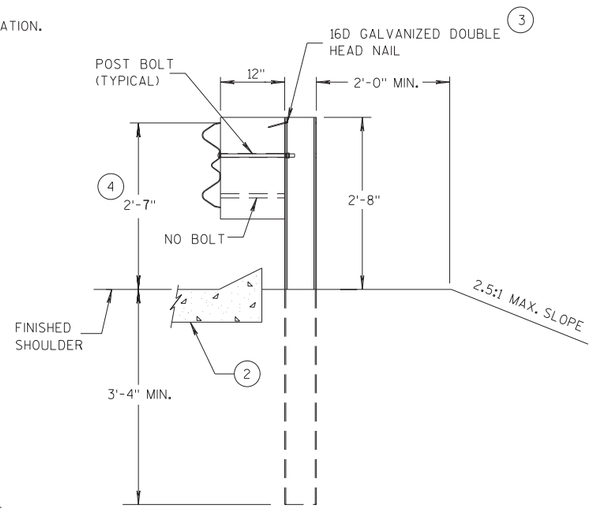
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

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



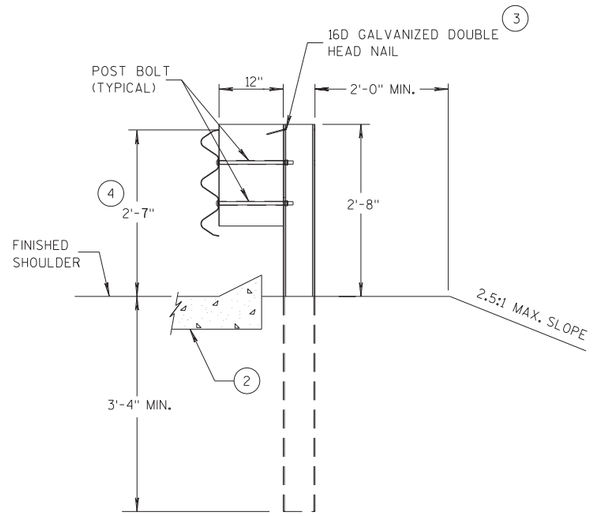
SECTION A-A (13)

POSTS 1-5



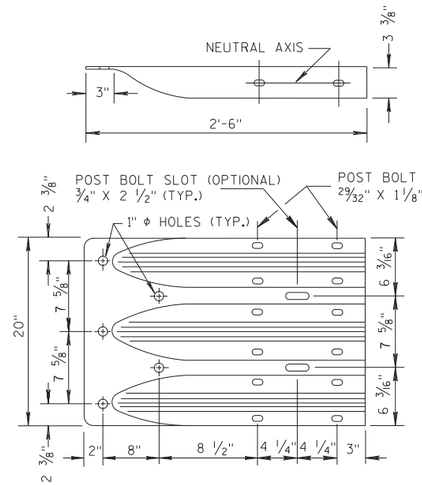
SECTION B-B

POST 6

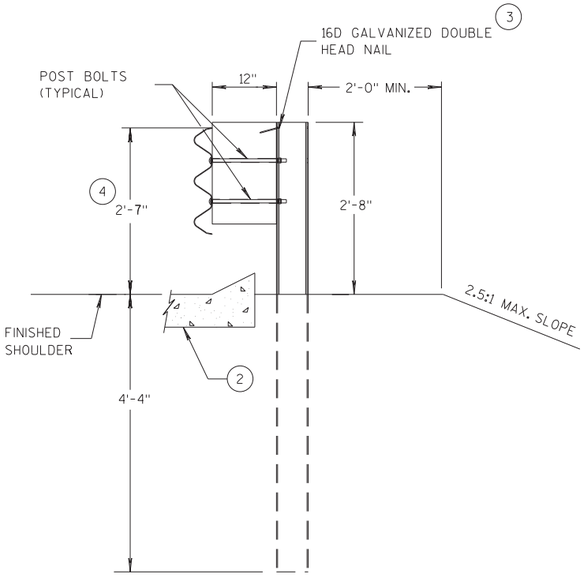


SECTION C-C

POSTS 7-11

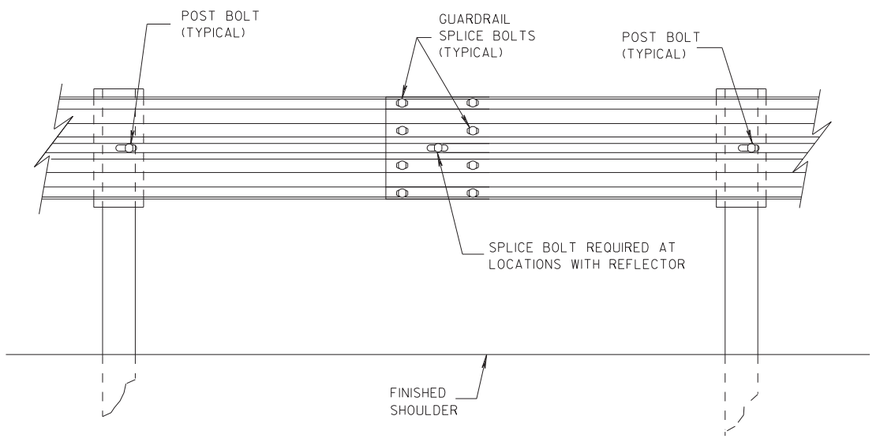


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

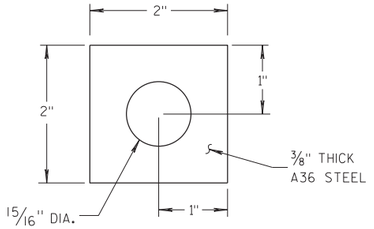
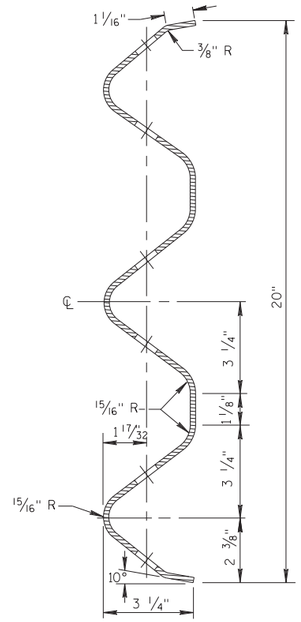


PLATE WASHER DETAIL



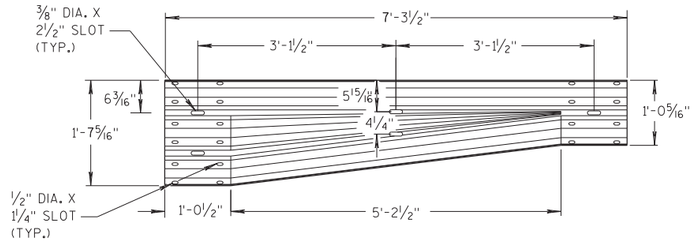
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

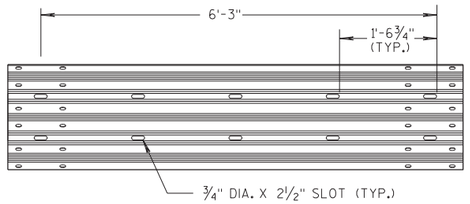
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

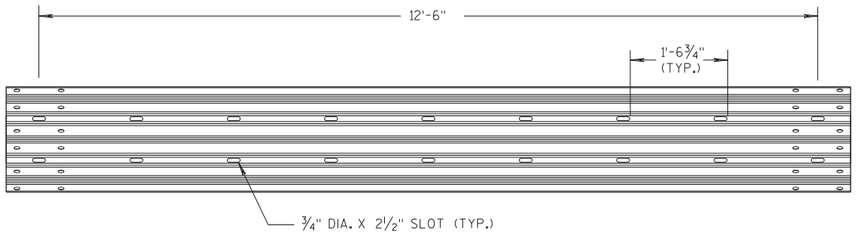
S.D.D. 14 B 45-5b



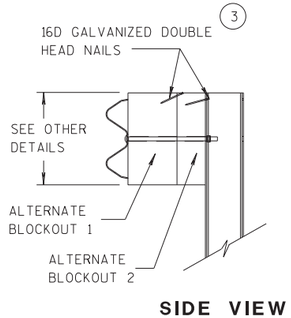
W-BEAM TO THRIE BEAM TRANSITION SECTION



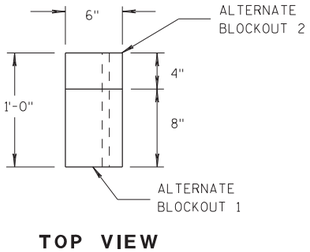
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION



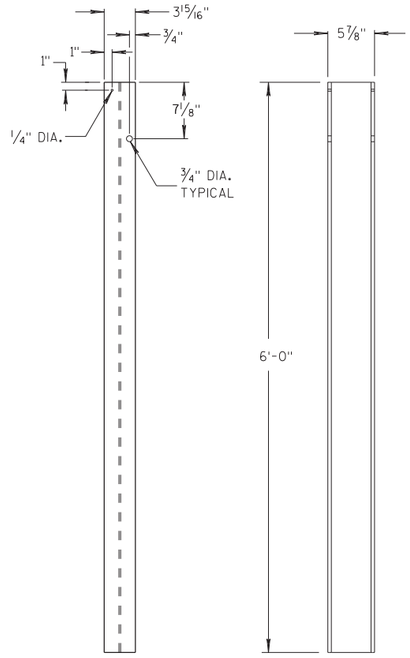
SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

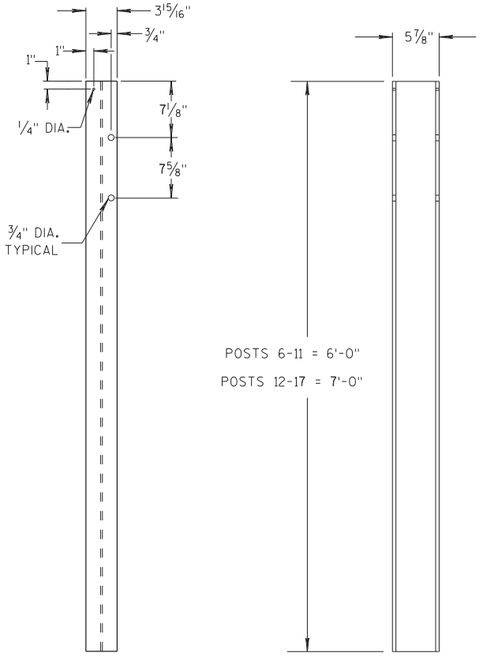
TOP VIEW



FRONT VIEW SIDE VIEW

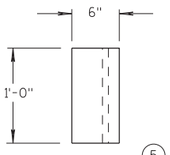
STEEL POSTS 1-5 (13)

TOP VIEW

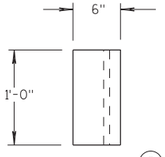


FRONT VIEW SIDE VIEW

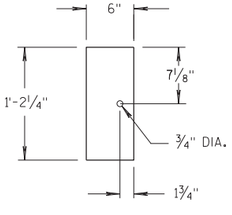
STEEL POSTS 6-17



TOP VIEW (5)

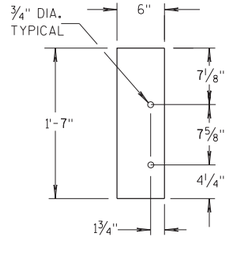


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

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

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

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

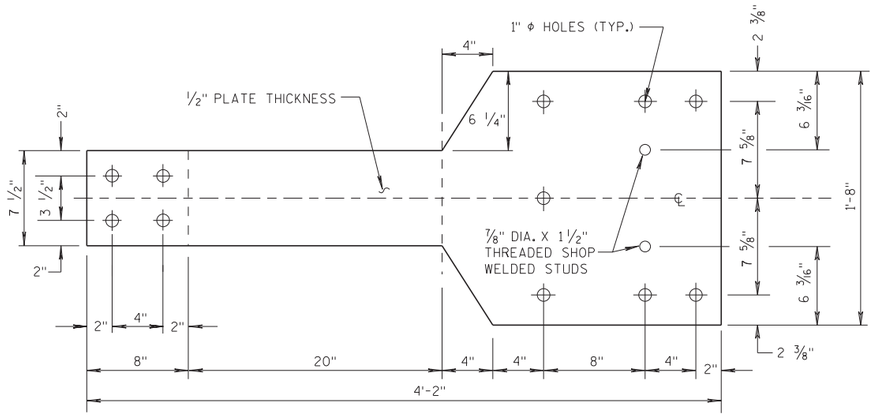
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

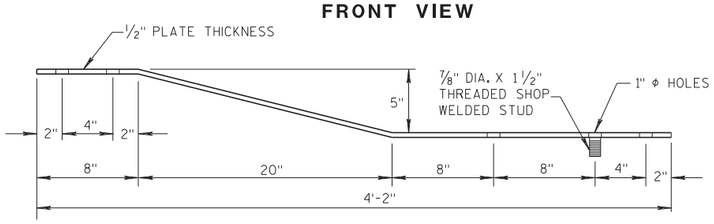
S.D.D. 14 B 45-5c

GENERAL NOTES

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

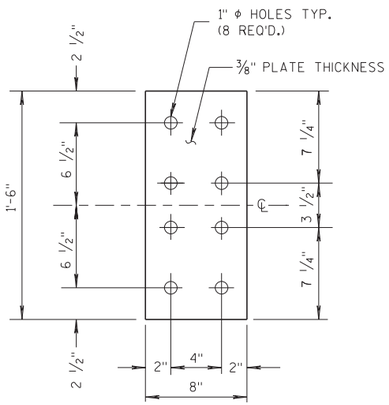


FRONT VIEW

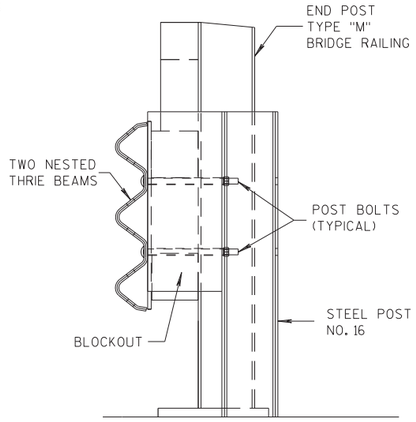


PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

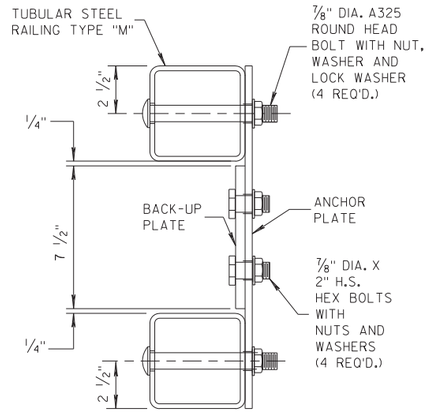


FRONT VIEW

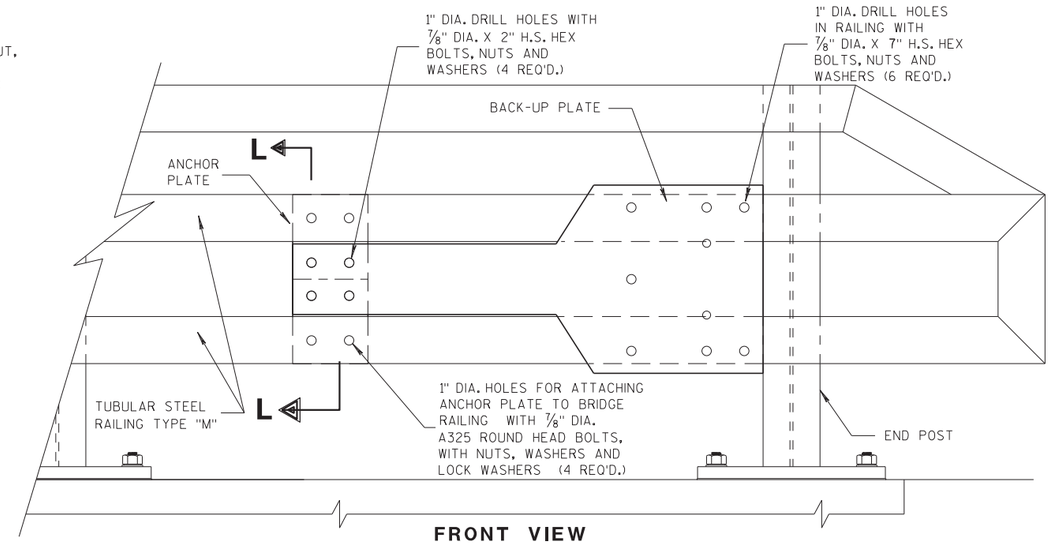


SECTION M-M

ANCHOR PLATE DETAIL, TYPE "M"

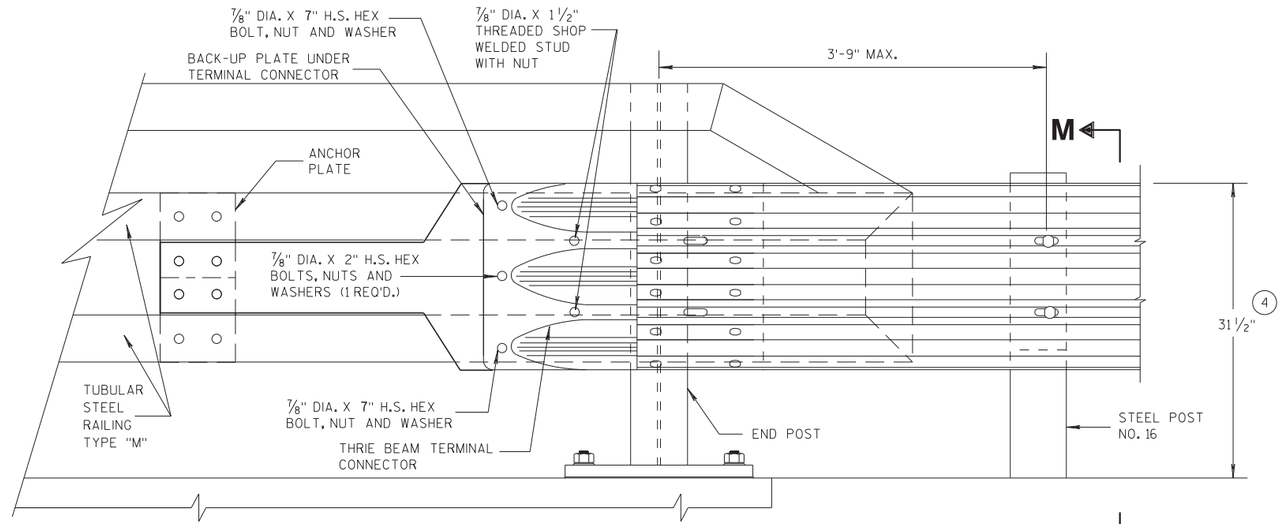


SECTION L-L

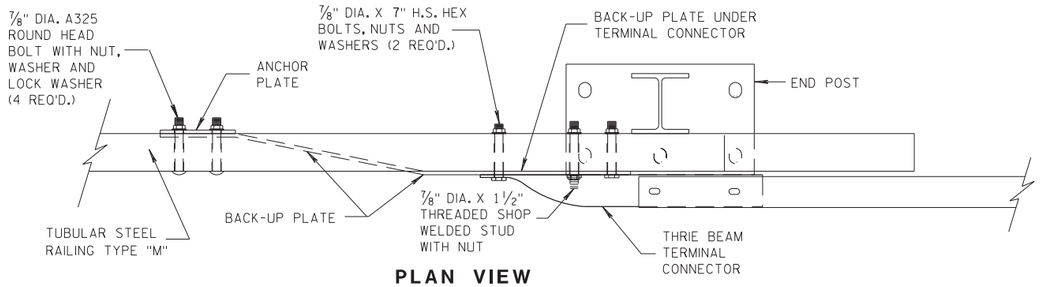


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

07/2018 — DATE

/S/ Rodney Taylor — ROADWAY STANDARDS I UNIT SUPERVI ENT

FHWA

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

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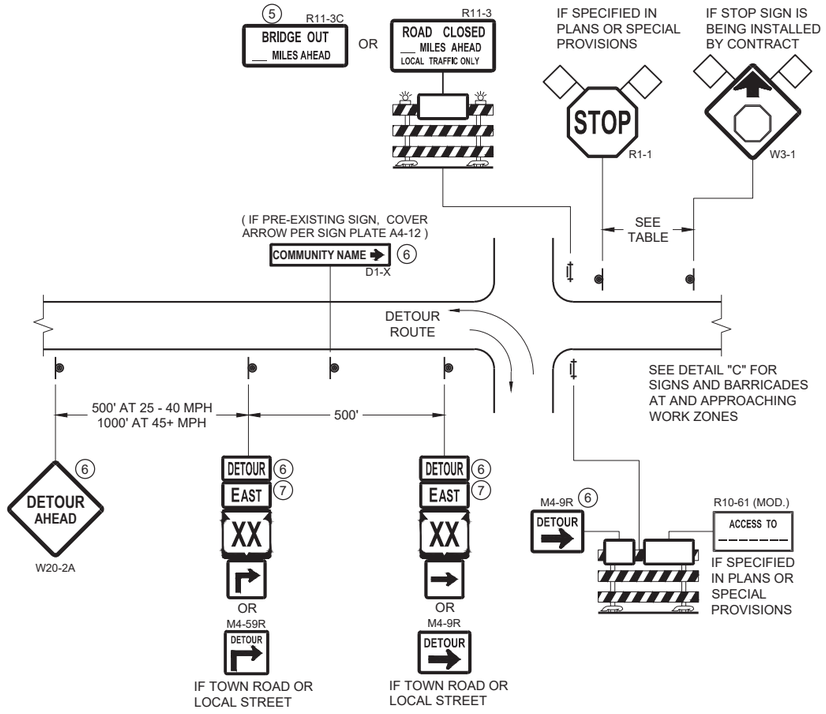
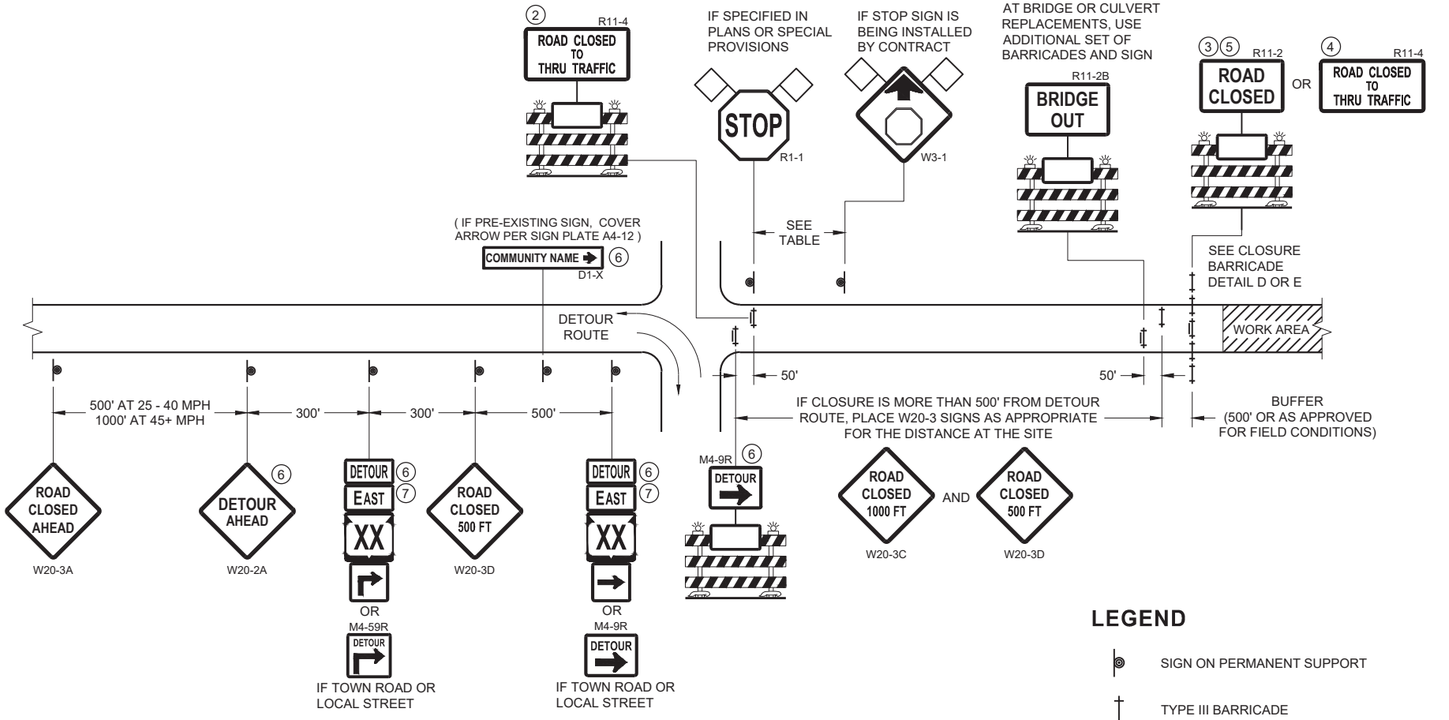
S.D.D. 14 B 45-5h



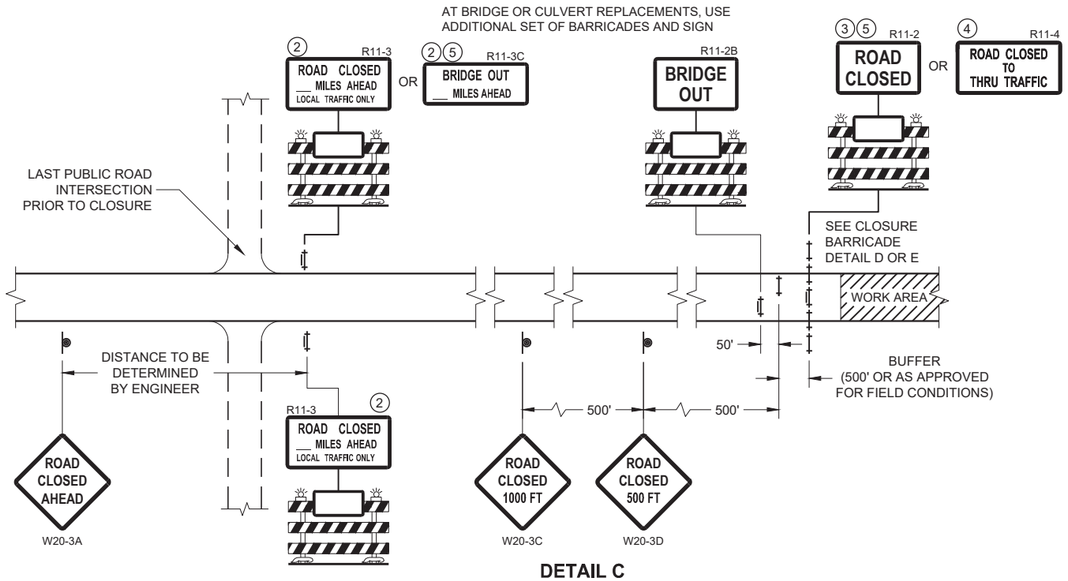
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

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

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

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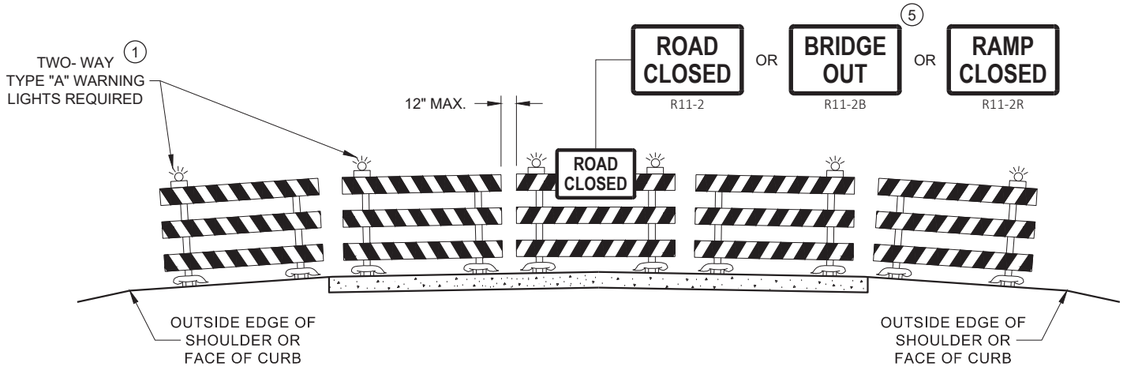
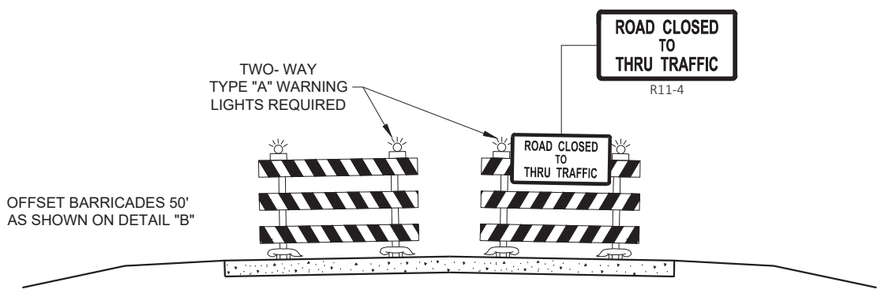
SDD 15C02 - 07a

SDD 15C02 - 07a



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER
FHWA

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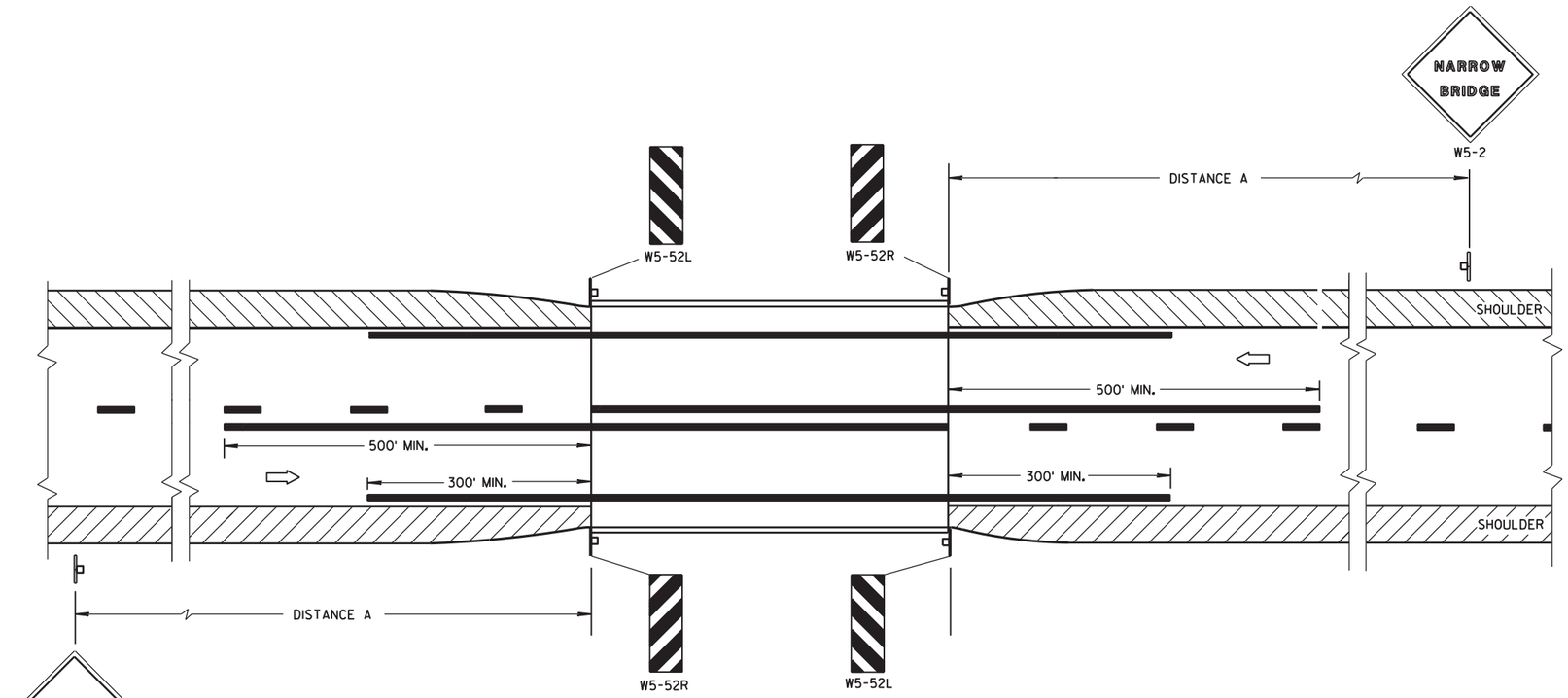
SDD 15C02 - 07b



SITUATION 1

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

DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	750'

GENERAL NOTES

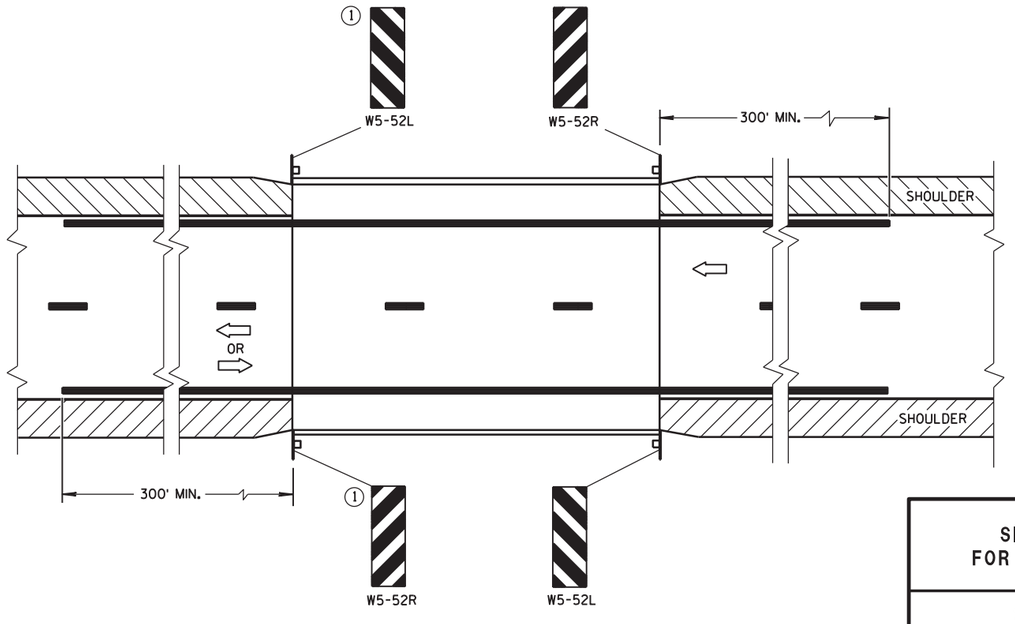
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

(1) OMIT ON ONE-WAY TRAVELLED WAYS.

⇨ DIRECTION OF TRAFFIC



SITUATION 2

WARRANTING CRITERIA:

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

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER
FHWA

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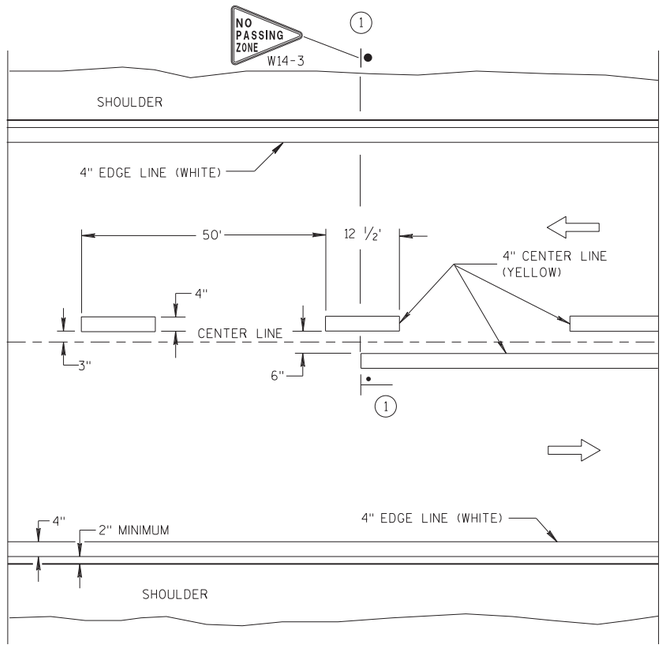
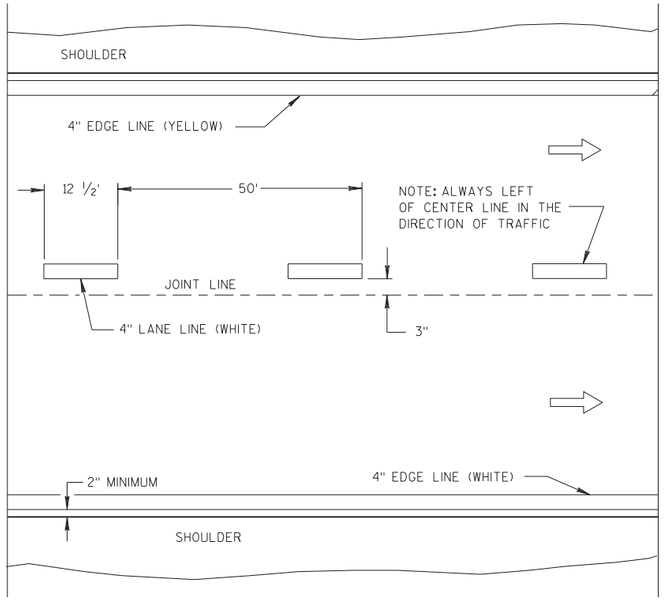
S.D.D. 15 C 6-9



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

GENERAL NOTES

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

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

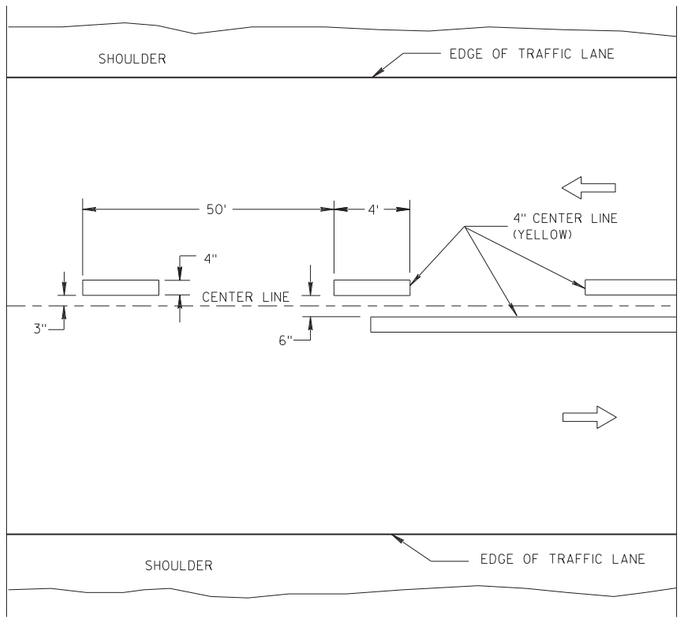
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

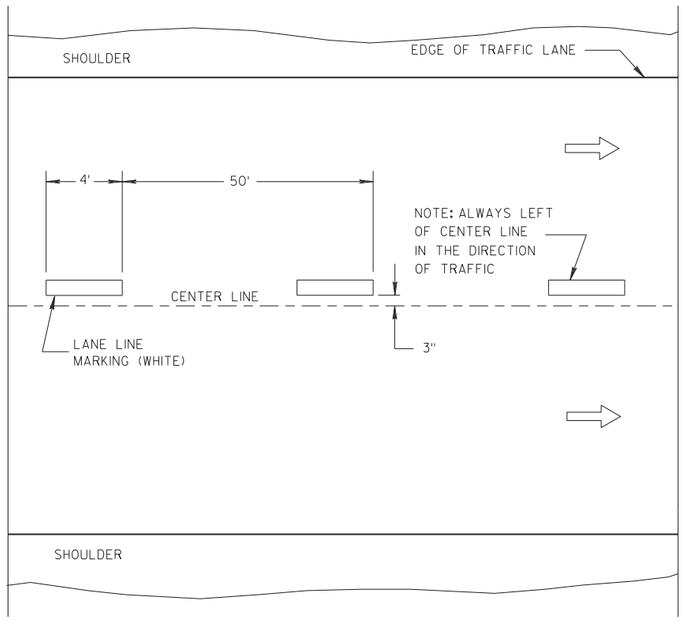
LEGEND

"T" MARKING

POST MOUNTED SIGN



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018 — DATE

/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER

FHWA

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S.D.D. 15 C 8-19a

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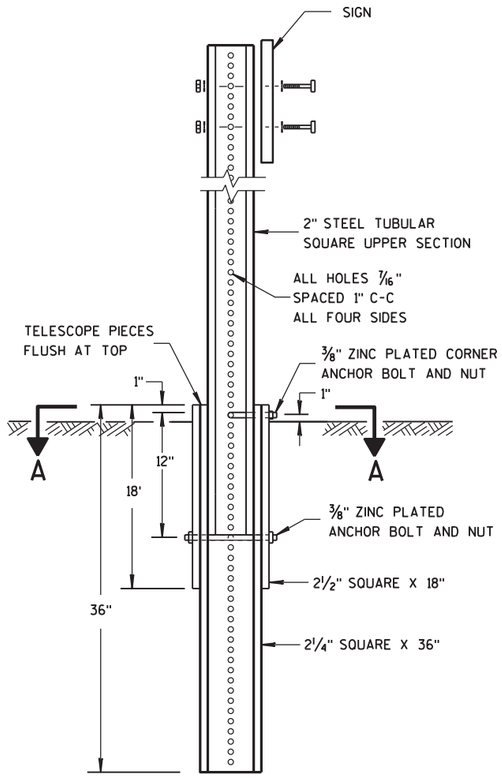
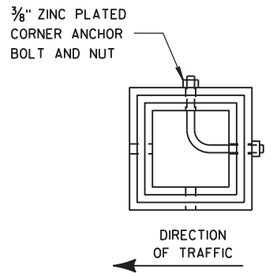
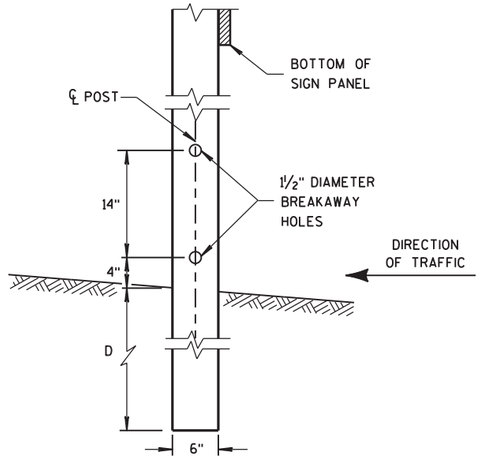
S.D.D. 15 C 8-19a



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



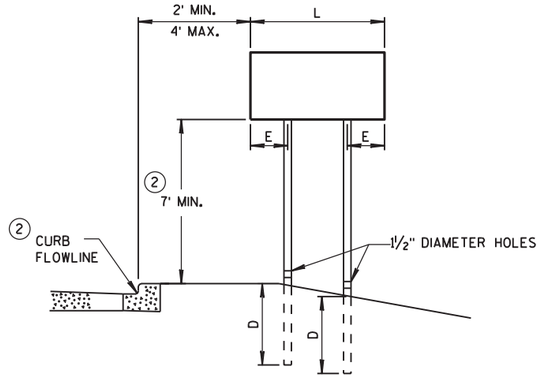
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

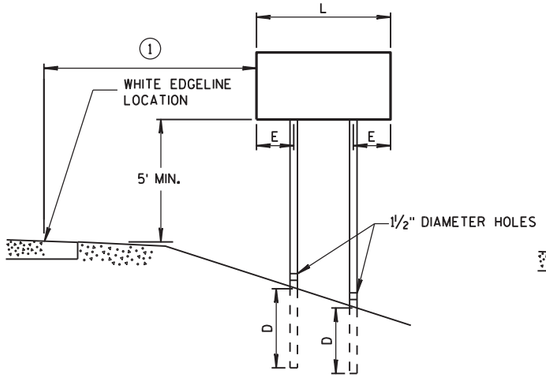
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

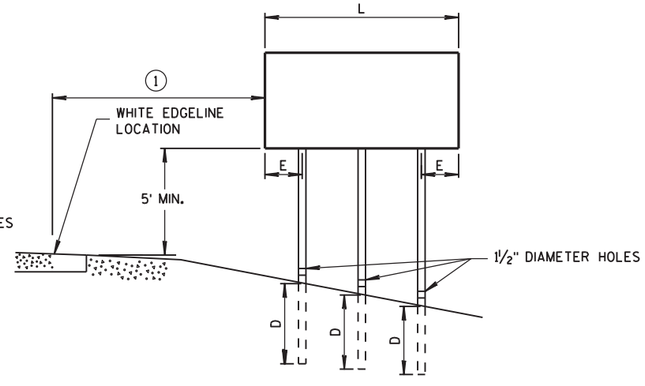
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK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

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



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

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

WOOD POST EMBEDMENT DEPTH

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

4" X 6" WOOD POST

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

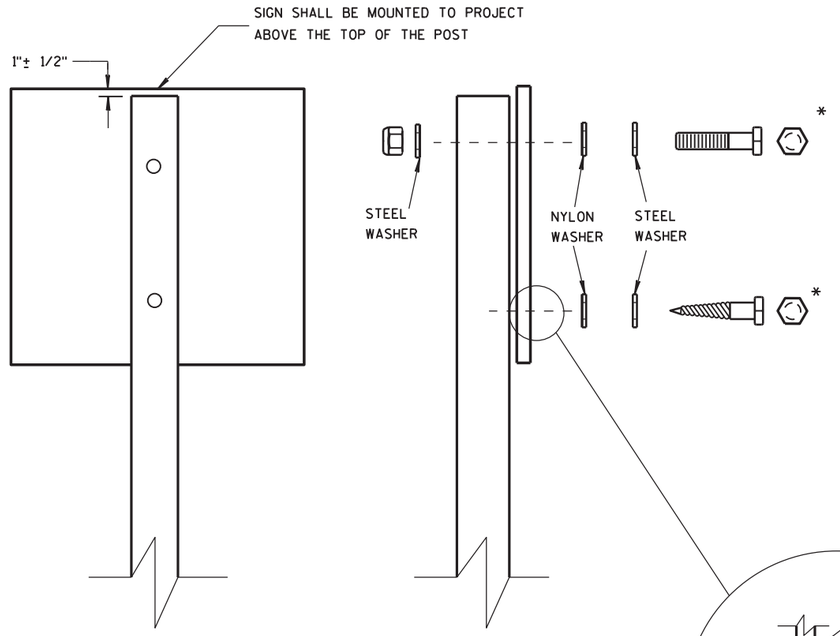
SEE NOTE (3)

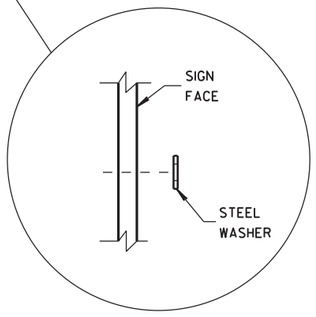
TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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





WASHER PLACEMENT WHEN SIGN HAS OTHER THAN TYPE H OR TYPE F FACE

NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3

B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3"

MACHINE BOLTS - 5/16" X 6-1/2" OR 7" LENGTH W/ NUTS

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" LENGTH W/ NUTS

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

WASHERS (ALL POSTS) -

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

1-1/4" O.D. X 3/8" I.D. X .080 NYLON FOR ALL TYPE H SIGNS

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

6

6

S.D.D. 15 D 38-2b

S.D.D. 15 D 38-2b

ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

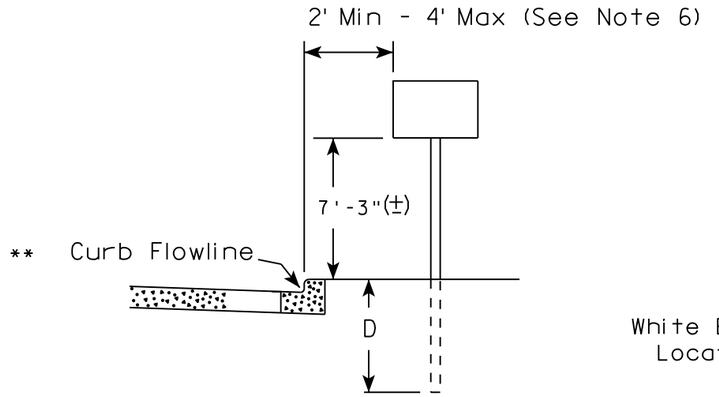
APPROVED

June 2017
DATE

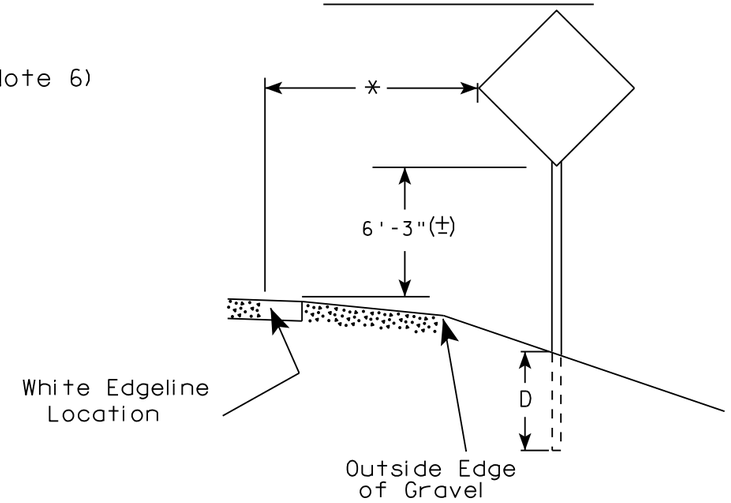
/S/ Andrew Heldtke
WORK ZONE ENG

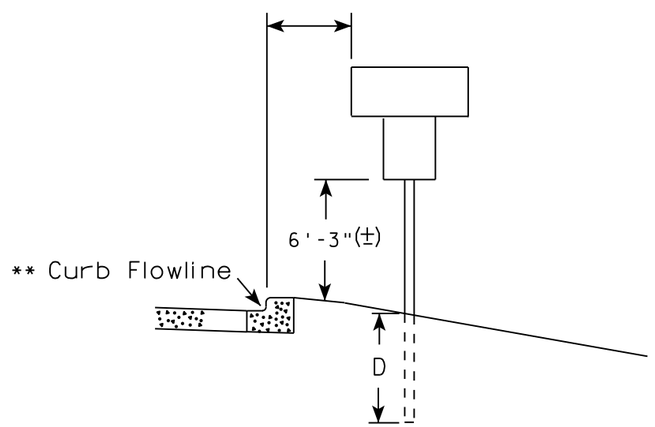
FHWA

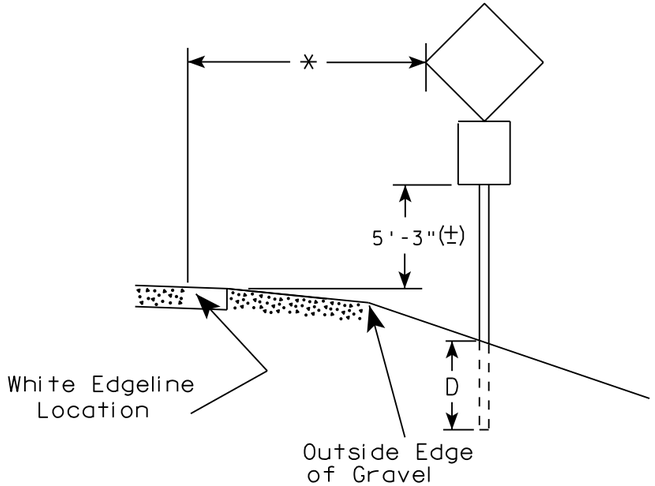
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

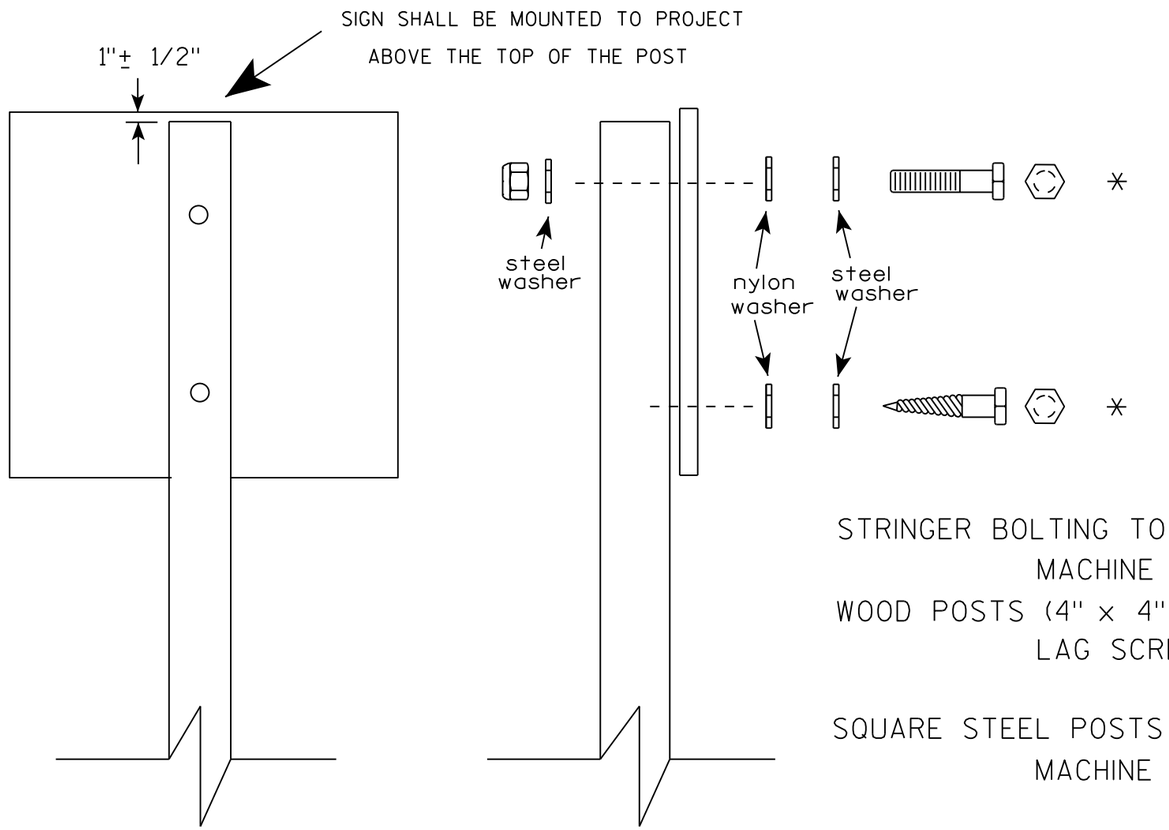
1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-3.21



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

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

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

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

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

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

WOOD POSTS (4" x 4" or 4" x 6")

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

3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

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

3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

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

WASHERS (ALL POSTS) -

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

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

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

ATTACHMENT OF SIGNS TO POSTS

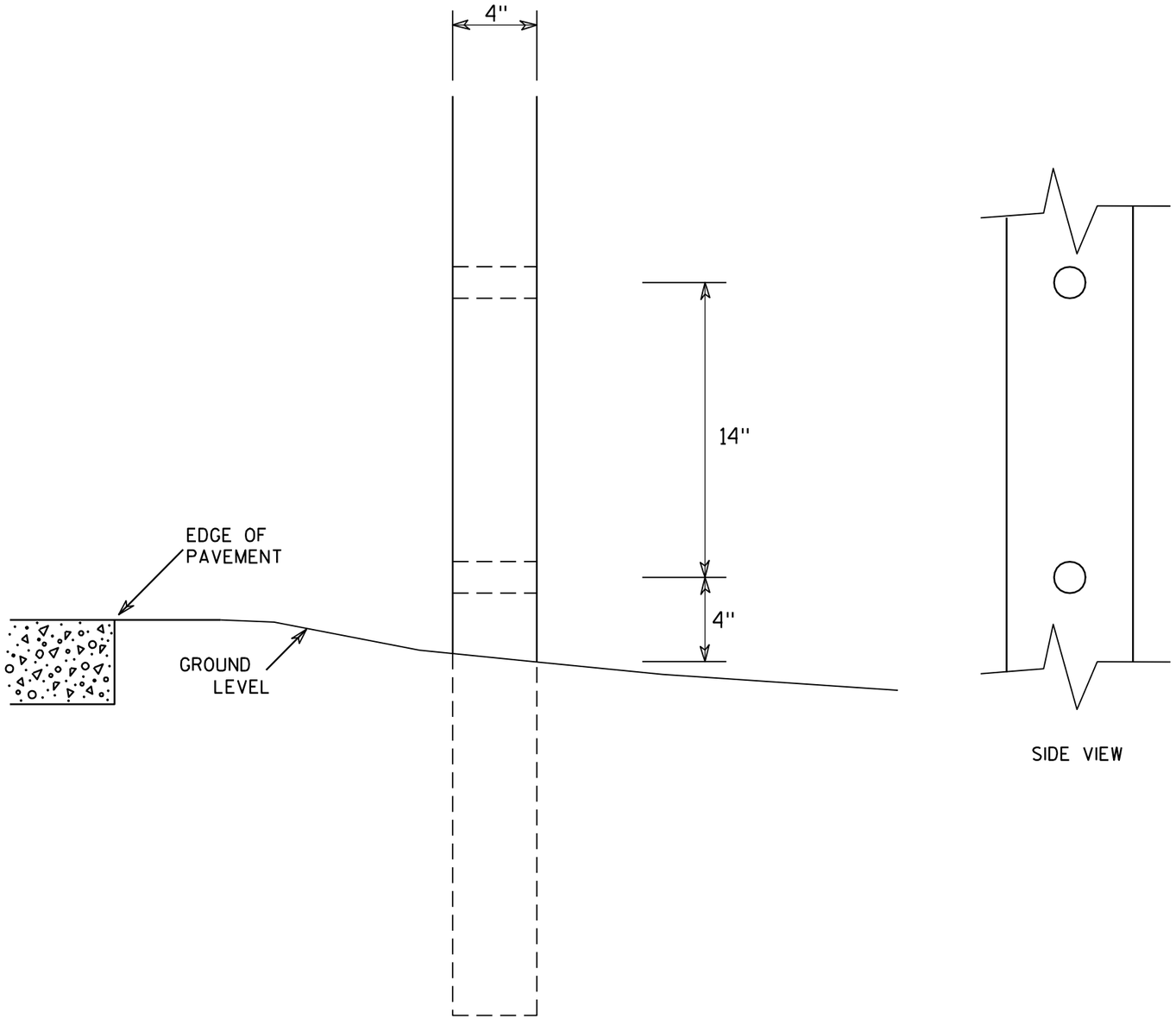
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 8/11/16 PLATE NO. A4-8.8

PROJECT NO: 8798-00-72	HWY: CTH D	COUNTY: RUSK		SHEET NO:	E

FILE NAME : C:\CADfiles\Projects\tr_stdplate\A48.DGN PLOT DATE : 11-AUG-2016 11:35 PLOT BY : $$ plotuser $$



SIDE VIEW

GENERAL NOTES

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

7

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

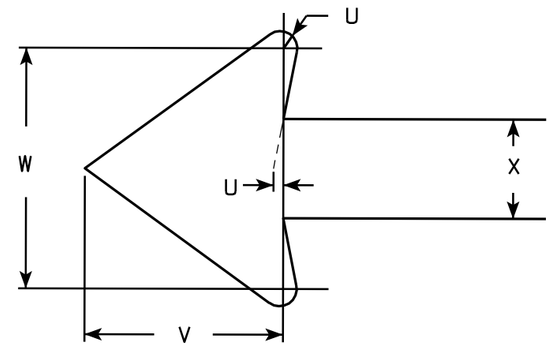
DATE 3/27/97 PLATE NO. A4-11.2

PROJECT NO: 8798-00-72	HWY: CTH D	COUNTY: RUSK		SHEET NO: 38	E

R7-52

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Red
3. Message Series - See Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1, 3 and 4 are series C, line 2 is series B.
6. R7-52D (double arrow)
   R7-52L (left arrow)
   R7-52R (right arrow)



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	12	18	1 1/8	3/8	3/8	3	1 7/8	1 1/2	7/8	7/8	2	2 1/2	2	2	4 7/8	4 7/8	5 1/8	5	3 1/8	3 7/8	1/8	1 1/2	1 3/4	3/4			1.5
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	6 3/8	6 1/4	3 7/8	5 7/8	1/4	2 1/4	2 5/8	1 1/8			3.0
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	7 5/8	7 5/8	4 3/4	7 3/4	1/4	3	3 1/2	1 1/2			5.0
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	7 5/8	7 5/8	4 3/4	7 3/4	1/4	3	3 1/2	1 1/2			5.0
4																											
5																											

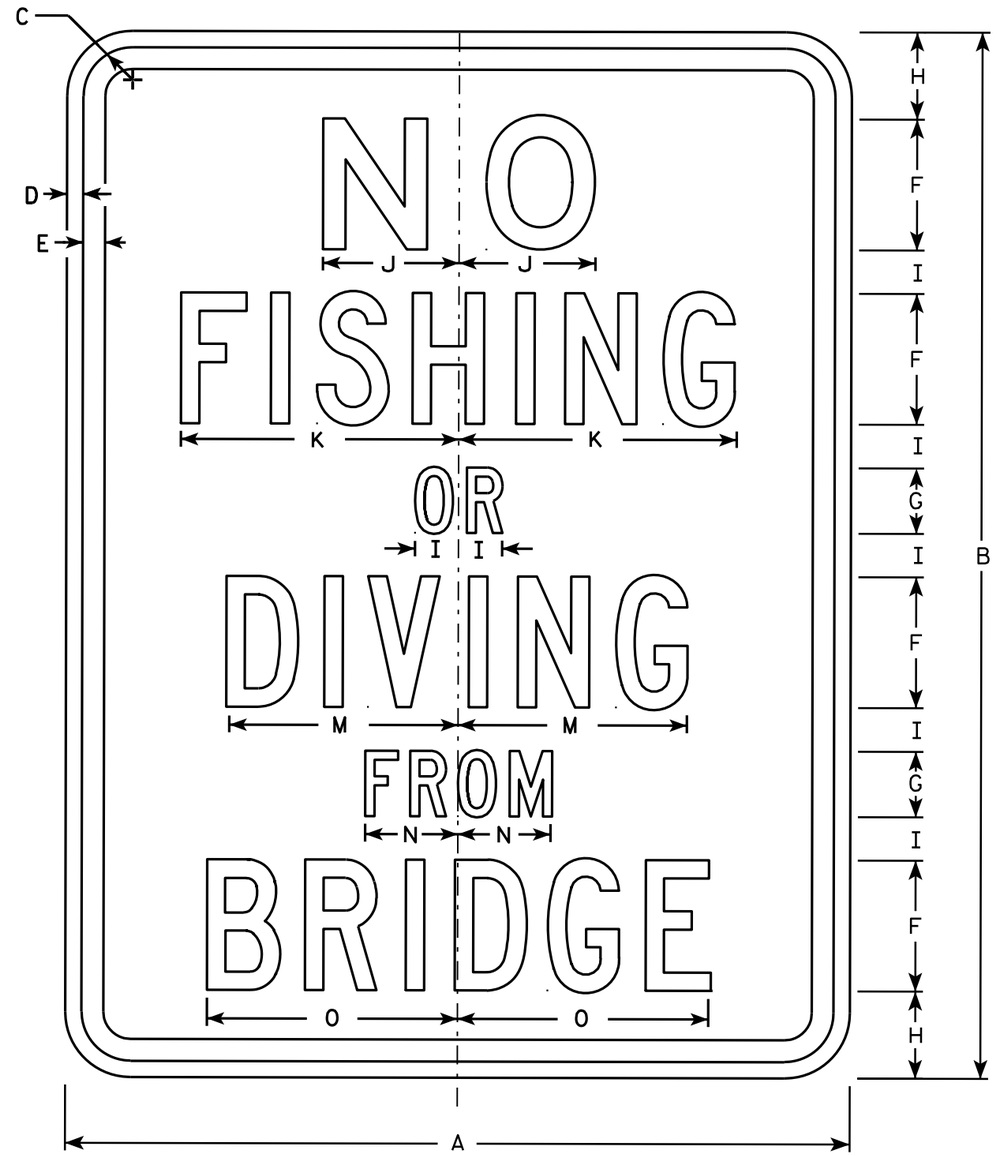
STANDARD SIGN
R7-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-52.6

PROJECT NO: 8798-00-72 | HWY: CTH D | COUNTY: RUSK | SHEET NO: 39 | E



R9-56

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - See Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1 is Series E.
   Lines 2, 3, 4, 5 and 6 are Series C.

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

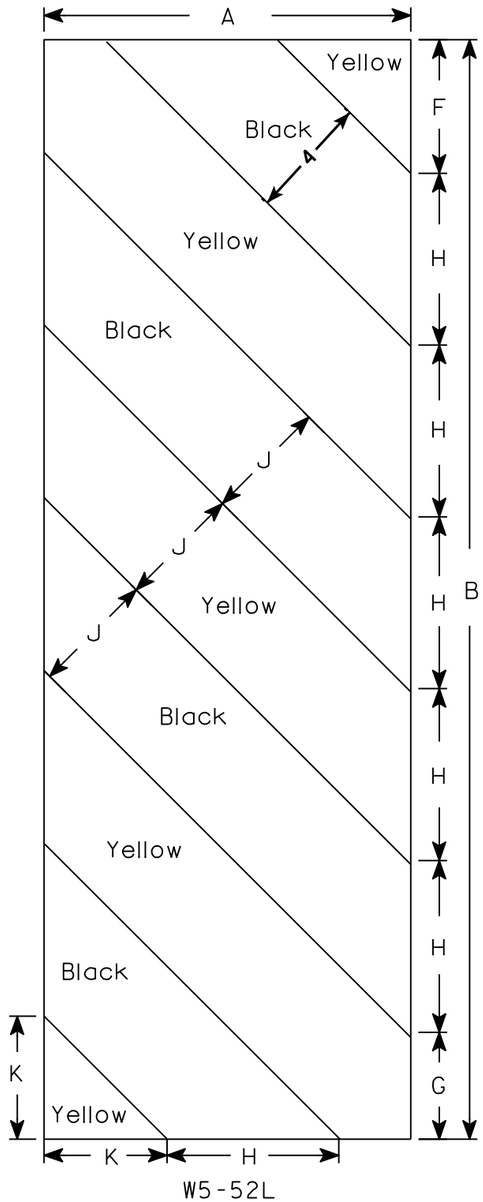
STANDARD SIGN
R9-56

WISCONSIN DEPT OF TRANSPORTATION

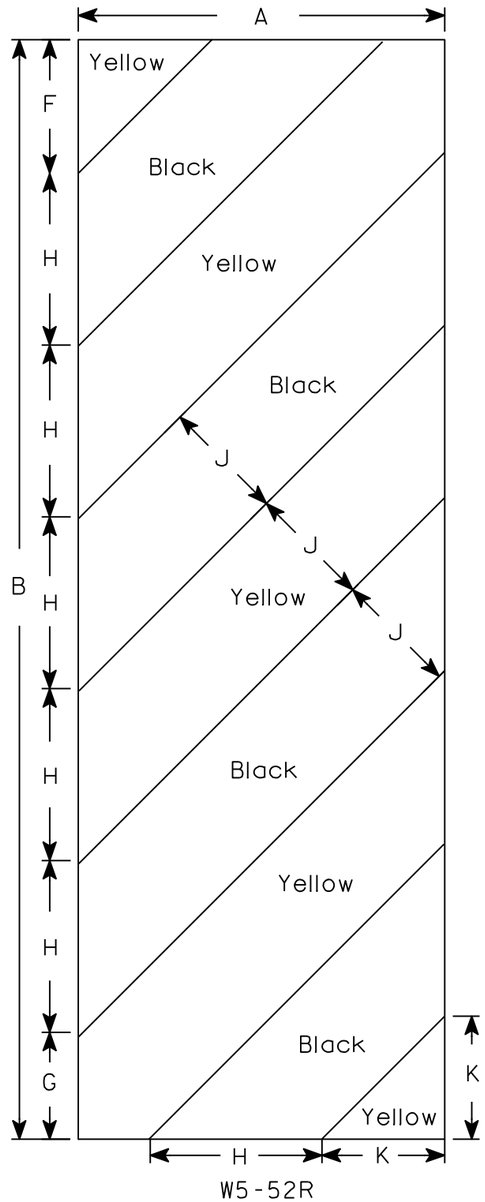
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/4/2011 PLATE NO. R9-56.5

PROJECT NO: 8798-00-72 | HWY: CTH D | COUNTY: RUSK | SHEET NO: 40 | E



W5-52L



W5-52R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Alternate colors of stripes as shown.

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

STANDARD SIGN

W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO: 8798-00-72 | HWY: CTH D | COUNTY: RUSK | SHEET NO: 41 | E

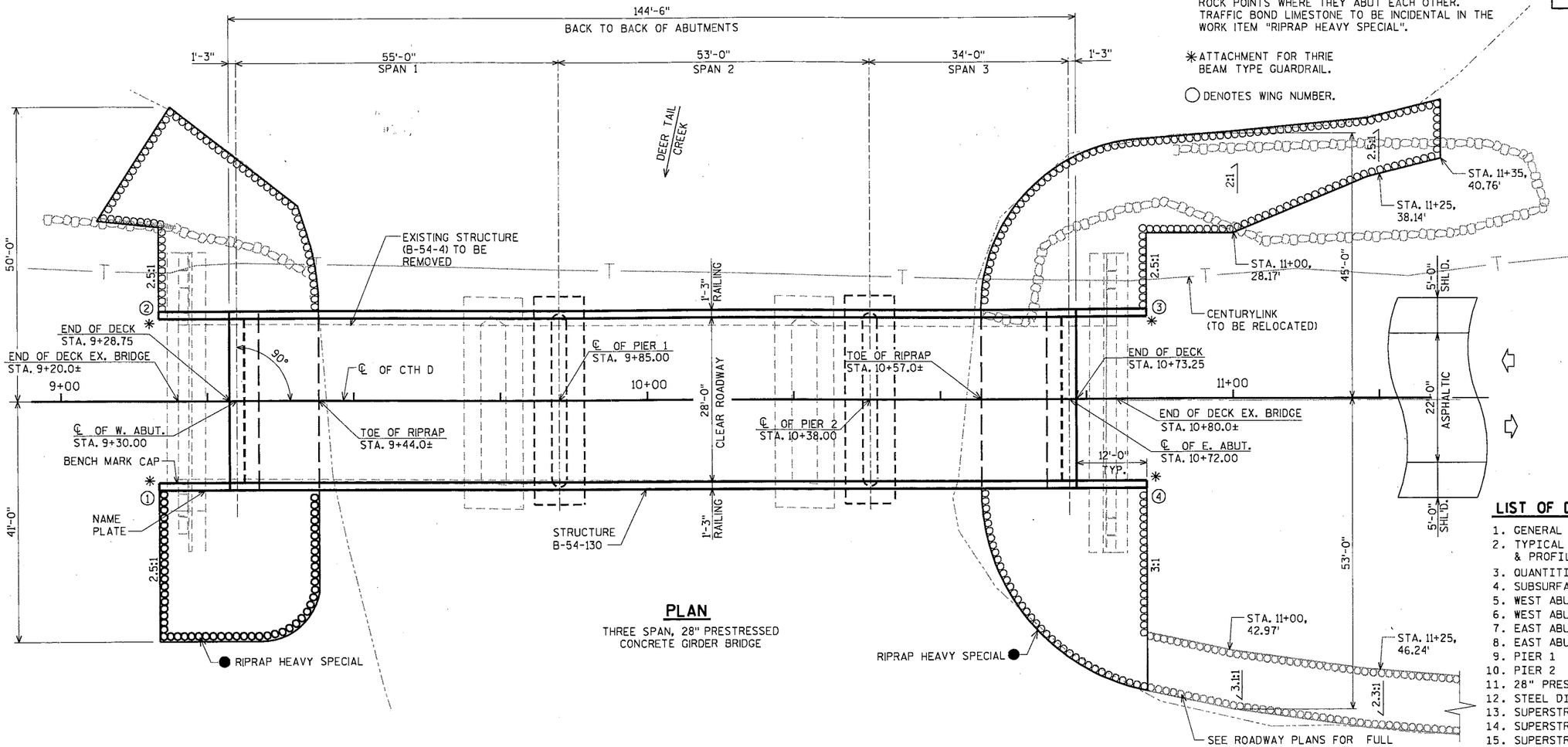
STATE PROJECT NUMBER

8798-00-72

● FILL VOIDS IN RIPRAP HEAVY SPECIAL WITH TRAFFIC BOND LIMESTONE SCREENINGS 3/8-INCH TO FULLY FILL ALL VOIDS AND LEAVE, ON AVERAGE, TWO INCHES ABOVE THE LOWEST ROCK POINTS WHERE THEY ABUT EACH OTHER. TRAFFIC BOND LIMESTONE TO BE INCIDENTAL IN THE WORK ITEM "RIPRAP HEAVY SPECIAL".

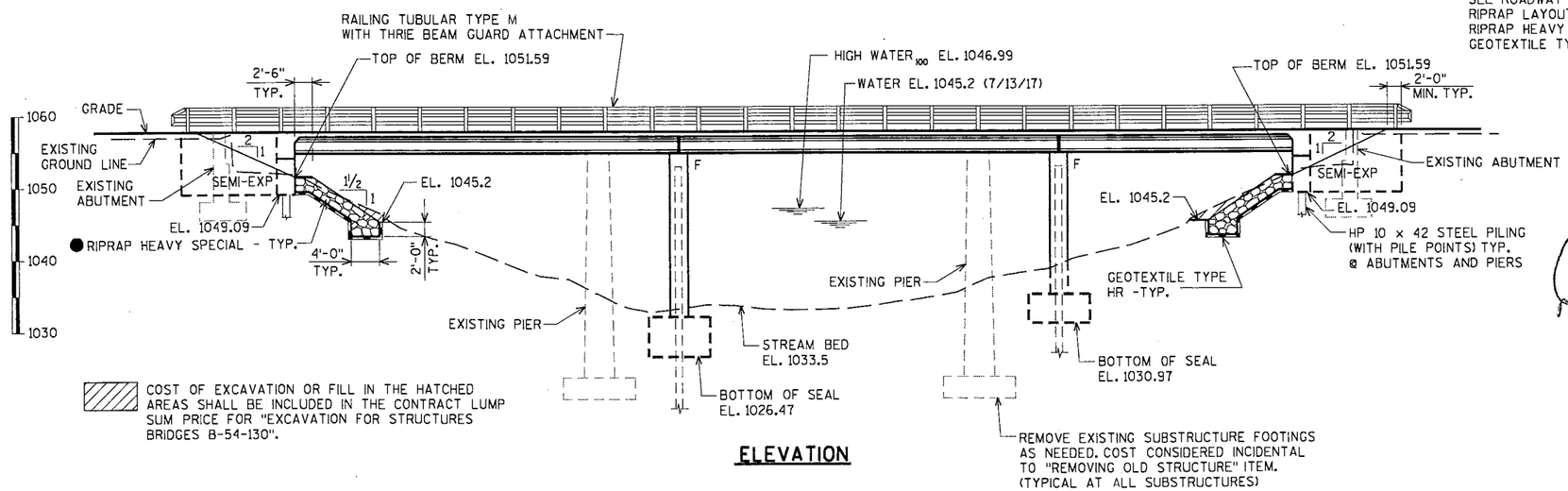
✳ ATTACHMENT FOR THRIE BEAM TYPE GUARDRAIL.

◯ DENOTES WING NUMBER.



PLAN

THREE SPAN, 28" PRESTRESSED CONCRETE GIRDER BRIDGE



COST OF EXCAVATION OR FILL IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-54-130".

ELEVATION

LIST OF DRAWINGS

1. GENERAL PLAN
2. TYPICAL SECTION, DESIGN DATA, & PROFILE GRADE LINE
3. QUANTITIES AND NOTES
4. SUBSURFACE EXPLORATION
5. WEST ABUTMENT
6. WEST ABUTMENT WING DETAILS & BILL OF BARS
7. EAST ABUTMENT
8. EAST ABUTMENT WING DETAILS & BILL OF BARS
9. PIER 1
10. PIER 2
11. 28" PRESTRESSED GIRDER DETAILS
12. STEEL DIAPHRAGM
13. SUPERSTRUCTURE
14. SUPERSTRUCTURE PLAN
15. SUPERSTRUCTURE DETAILS
16. SUPERSTRUCTURE DETAILS
17. RAILING TUBULAR TYPE M

WISCONSIN
DANIEL N. SYDOW
E-38363
WI
PROFESSIONAL ENGINEER
11/13/19

BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489

CONSULTANT CONTACT:
DAN SYDOW
(715)-834-3161

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY

AYRES ASSOCIATES

3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 11/14/19
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-54-130

CTH D OVER DEER TAIL CREEK

COUNTY	TOWN/~~CITY/VILLAGE~~
RUSK	WILLARD

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
ZSS	CJM	ZSS	DNS

GENERAL PLAN

SHEET 42 OF 17

I.D.

DATE:

DATE:
CHECKED BY:
BACK CHECKED BY:
CORRECTED BY:

$PRFNAME$
U:\42-1095.00 - Rusk Co, CTH D over Deer Tail Creek\Structures\421095 gp.dgn

11/13/2019

PENTABLE:BRequ_shd_util.tbl

8

8

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.08
OPERATING RATING FACTOR: 1.40
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 220 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 #/S.F.

MATERIAL PROPERTIES:

CONCRETE MASONRY { SUPERSTRUCTURE ____ f'_c = 4,000 p.s.i.
CONCRETE MASONRY { ALL OTHER ____ f'_c = 3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) ____ f_y = 60,000 p.s.i.

28" PRESTRESSED GIRDER
CONCRETE MASONRY ____ f'_c = 8,000 p.s.i.
STRANDS - 0.5" DIA. WITH ULTIMATE TENSILE STRENGTH OF = 270,000 p.s.i.

HYDRAULIC DATA:

100 YEAR FREQUENCY	2 YEAR FREQUENCY
Q_{100} = 6,830 c.f.s.	Q_2 = 1,965 c.f.s.
VEL.= 9.05 f.p.s.	VEL.= 2.77 f.p.s.
HW_{100} = EL. 1046.99	HW_2 = EL. 1045.28

WATERWAY AREA = 754 sq. ft.
DRAINAGE AREA = 65.5 sq. mi.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 5
DATUM = NAVD88 (2012)

FOUNDATION DATA:

WEST ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS ǂ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 40'-0".

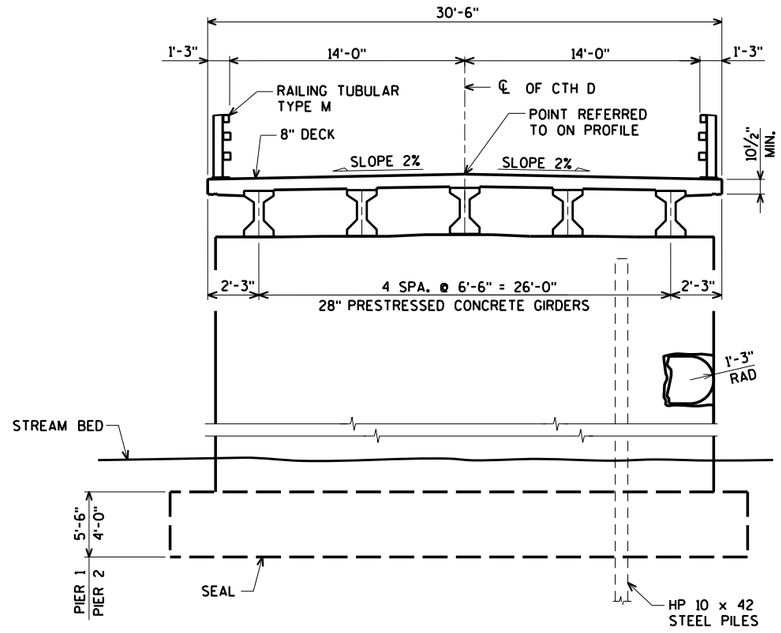
PIERS TO BE SUPPORTED ON HP 10 X 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS ǂ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 50'-0".

EAST ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS ǂ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 50'-0".

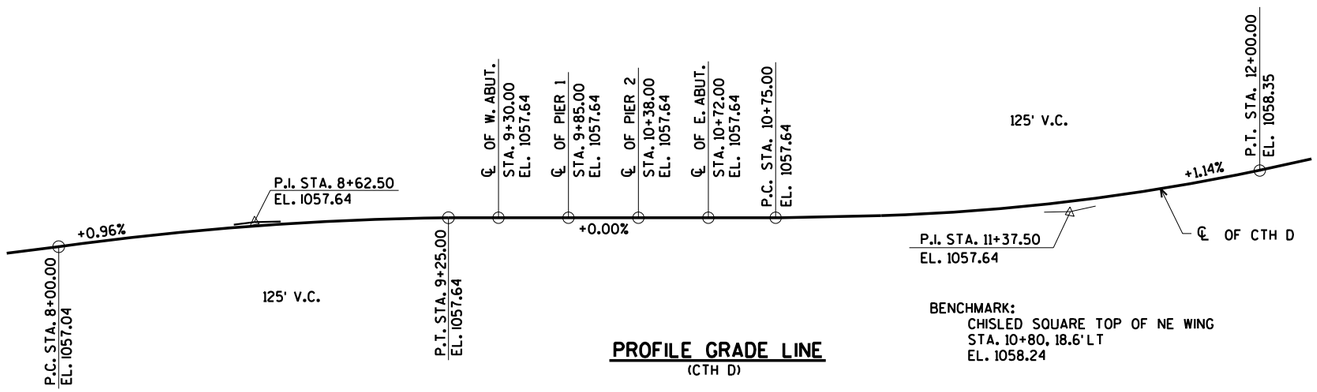
ǂ THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

TRAFFIC DATA:

A.A.D.T. = 640 (2020)
A.A.D.T. = 860 (2040)
R.D.S. = 45 M.P.H.



TYPICAL SECTION THRU BRIDGE



PROFILE GRADE LINE
(CTH D)

BENCHMARK:
CHISLED SQUARE TOP OF NE WING
STA. 10+80, 18.6' LT
EL. 1058.24

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-130

DRAWN BY ZSS | PLANS CK'D. JLB

TYPICAL SECTION, DESIGN DATA, & PROFILE GRADE LINE

SHEET 2 OF 17
43

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

STATE PROJECT NUMBER

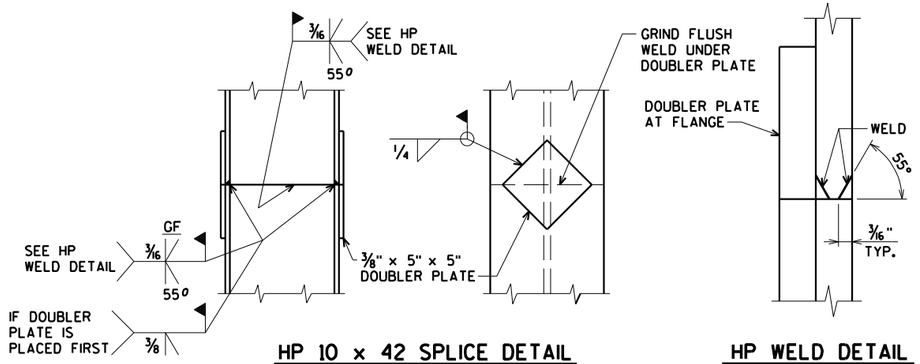
8798-00-72

TOTAL ESTIMATED QUANTITIES

	BID ITEM NUMBER	BID ITEMS		W. ABUT.	PIER 1	PIER 2	E. ABUT.	SUPER.	TOTAL
*	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 10+00	LS	-----	-----	-----	-----	-----	1
	206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-54-130	LS	-----	-----	-----	-----	-----	1
	206.5000	COFFERDAMS B-54-130	LS	-----	-----	-----	-----	-----	1
	210.1500	BACKFILL STRUCTURE TYPE A	TON	140	-----	-----	140	-----	280
	502.0100	CONCRETE MASONRY BRIDGES	CY	33	61	53	33	147	327
	502.1100	CONCRETE MASONRY SEAL	CY	-----	63	46	-----	-----	109
	502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	-----	-----	550	550
	503.0128	PRESTRESSED GIRDER TYPE I 28-INCH	LF	-----	-----	-----	-----	713	713
	505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1,840	2,930	2,500	1,840	-----	9,110
	505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,700	40	40	1,700	28,620	32,100
	506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	-----	-----	-----	-----	30	30
	506.4000	STEEL DIAPHRAGMS B-54-130	EACH	-----	-----	-----	-----	12	12
	513.4061	RAILING TUBULAR TYPE M	LF	27	-----	-----	27	289	343
	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	10	-----	-----	10	-----	20
**	550.0020	PRE-BORING ROCK OR CONSOLIDATED MATERIALS	LF	50	125	113	62	-----	350
	550.0500	PILE POINTS	EACH	5	10	9	5	-----	29
	550.1100	PILING STEEL HP 10-INCH x 42 LB	LF	200	500	450	250	-----	1,400
	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	-----	80	80	-----	-----	160
	645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	30	-----	-----	30	-----	60
	645.0120	GEOTEXTILE TYPE HR	SY	320	-----	-----	460	-----	780
	SPV.0035.01	RIPRAP HEAVY SPECIAL	CY	180	-----	-----	240		420
		NON-BID ITEMS							
		FILLER	SIZE	-----	-----	-----	-----	-----	½" & ¾"

* SALVAGE EXISTING STEEL BEAMS TO RUSK COUNTY.

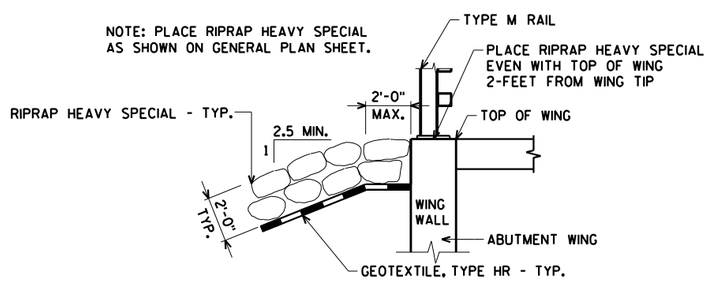
** NOMINAL AMOUNT OF PRE-BORING INCLUDED TO ACCOUNT FOR POSSIBLE UNDERGROUND OBSTRUCTIONS.



HP 10 x 42 SPLICE DETAIL

HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR



TYPICAL FILL SECTION AT WING TIPS

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY SPECIAL AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-54-130" SHALL BE THE EXISTING GROUNDLINE.

EXISTING STRUCTURE, B-54-4, TO BE REMOVED, IS A THREE-SPAN STEEL GIRDER BRIDGE ON CONCRETE ABUTMENTS AND PIERS WITH AN OVERALL LENGTH OF 160' AND A CLEAR ROADWAY WIDTH OF 22'.

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.

PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.

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

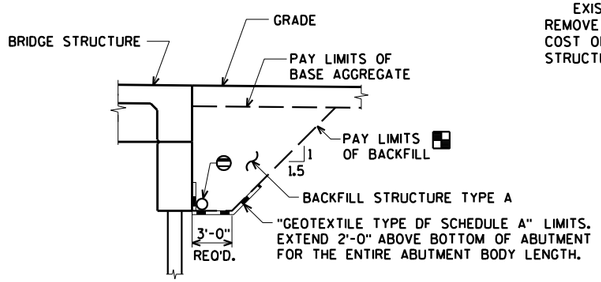
BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

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

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

THE HAUNCH CONCRETE QUANTITY IS BASED ON AN AVERAGE HAUNCH DEPTH SHOWN ON THE PRESTRESSED GIRDER DETAILS SHEETS, WHICH IS THE MAXIMUM HAUNCH QUANTITY FOR WHICH THE CONTRACTOR WILL BE PAID.

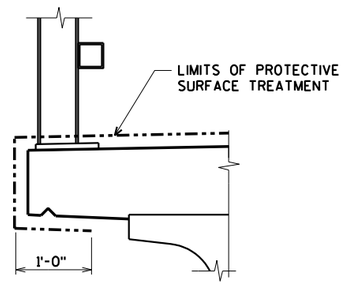
EXISTING SUBSTRUCTURE LOCATIONS ARE BASED ON ASBUILT PLANS. REMOVE EXISTING SUBSTRUCTURES AS NEEDED TO BUILD NEW SUBSTRUCTURES. COST OF REMOVAL IS CONSIDERED INCIDENTAL TO THE "REMOVING OLD STRUCTURES" BID ITEM.



BACKFILL STRUCTURE LIMITS

▪ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCLUDED WITH EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 6.



PROTECTIVE SURFACE TREATMENT DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-130

DRAWN BY ZSS | PLANS CK'D. JLB

QUANTITIES AND NOTES

SHEET 3 OF 17
44

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

$PRFNAME$
U:\42-1095.00 - Rusk Co, CTH D over Deer Tail Creek\Structures\421095 gp.dgn

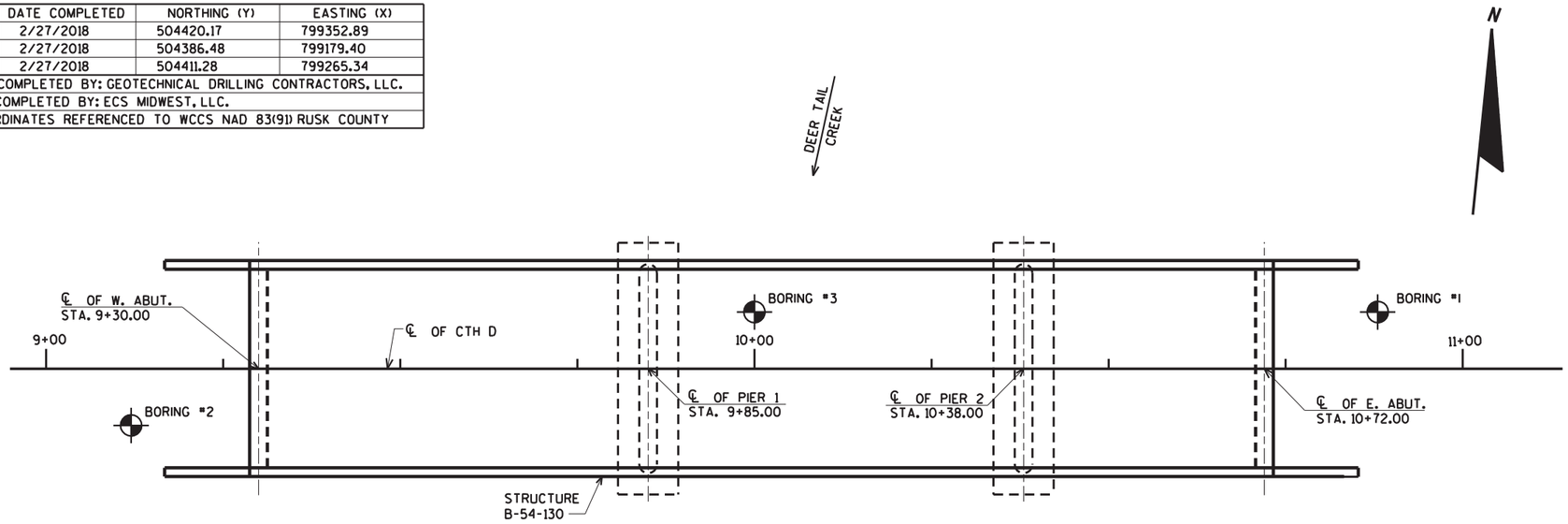
8

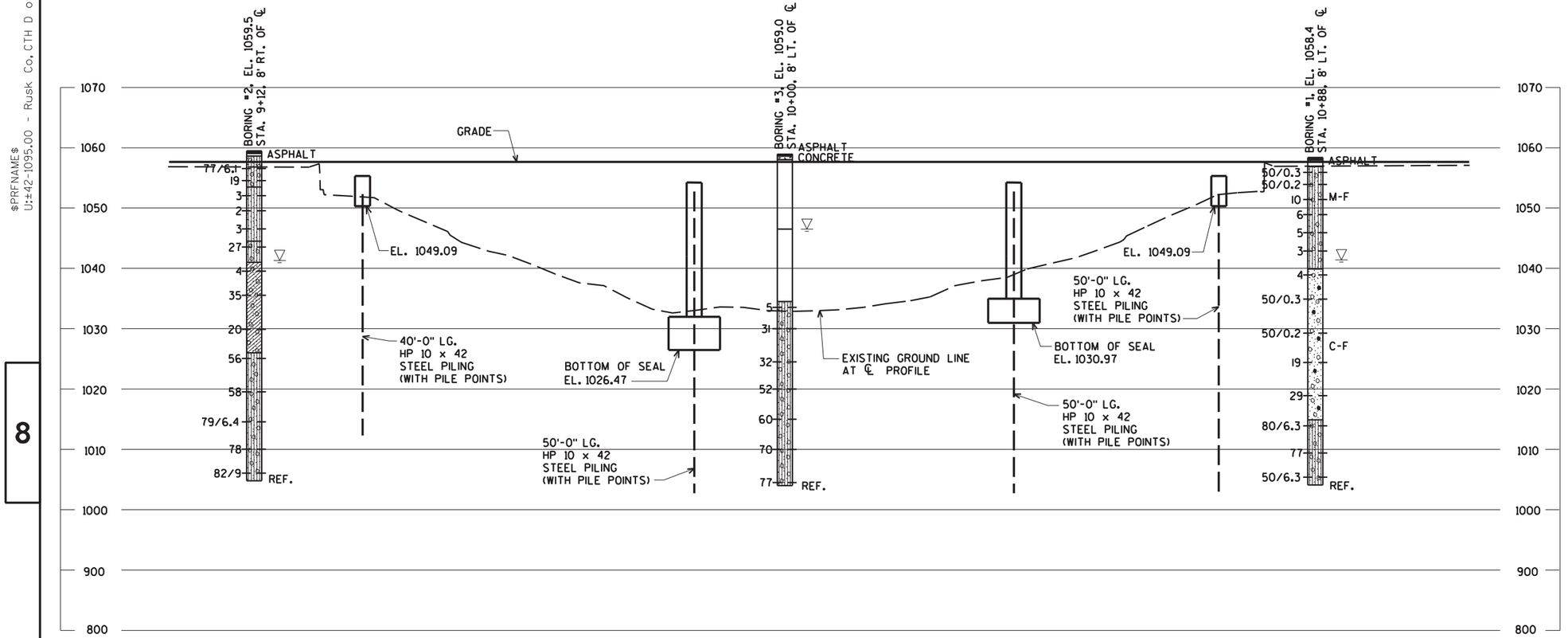
8

11/13/2019

PENTABLE:BReau_shd_util.tbl

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	2/27/2018	504420.17	799352.89
2	2/27/2018	504386.48	799179.40
3	2/27/2018	504411.28	799265.34
BORINGS COMPLETED BY: GEOTECHNICAL DRILLING CONTRACTORS, LLC.			
REPORT COMPLETED BY: ECS MIDWEST, LLC.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) RUSK COUNTY			





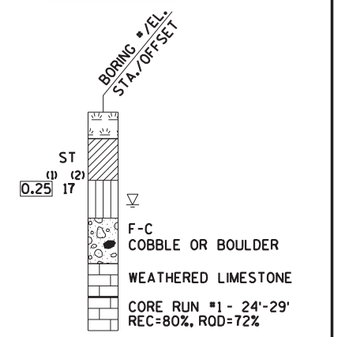
STATE PROJECT NUMBER

8798-00-72

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▼ AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-130

DRAWN BY ZSS | PLANS CK'D. JLB

SUBSURFACE EXPLORATION

SHEET 4 OF 17
45

8

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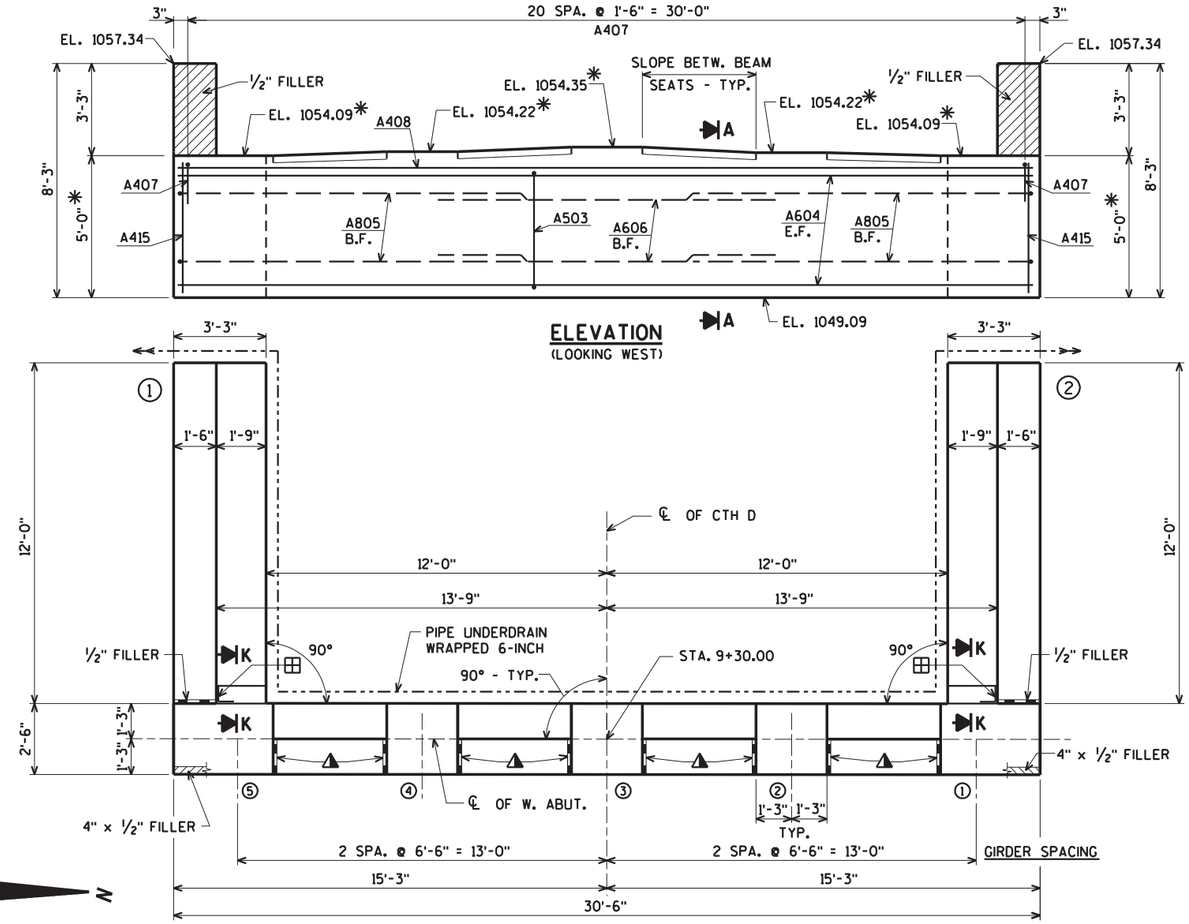
5/23/2019

PENTABLE:BReau_shd_util.tbl

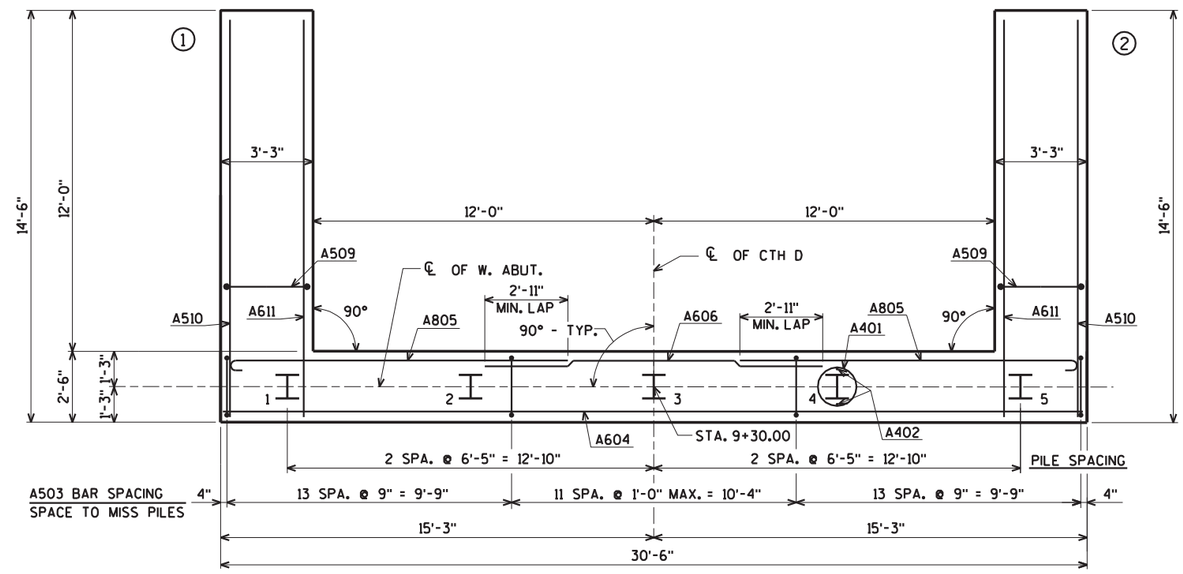
STATE PROJECT NUMBER

8798-00-72



ELEVATION
(LOOKING WEST)

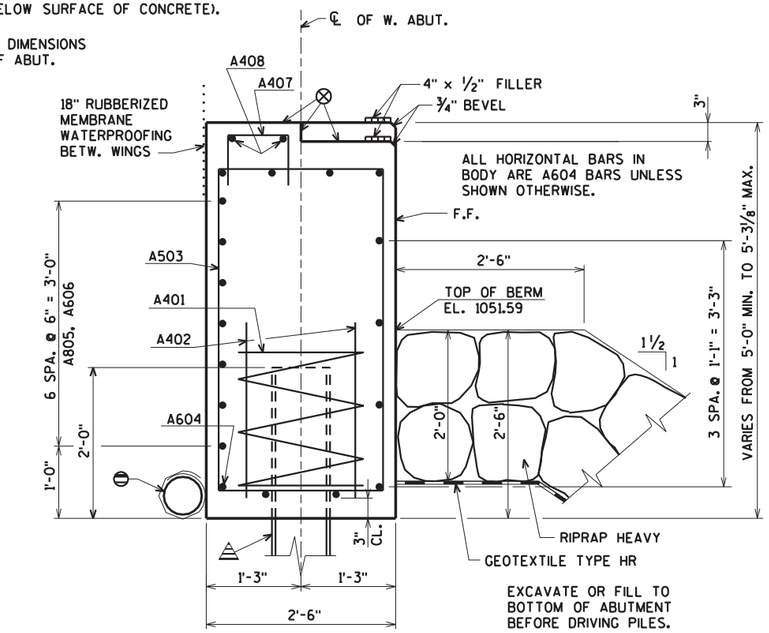
PLAN



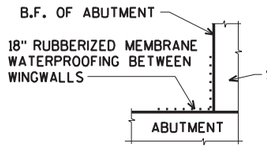
PILE LAYOUT

NOTE:
SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

* ELEVATIONS AND DIMENSIONS TAKEN AT ℄ OF ABUT.



SECTION A



SECTION K

△ ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REO'D. DRIVING RESISTANCE OF 150 TONS PER PILE. ESTIMATED LENGTH 40'-0".

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL ON SHEET 6.

⊗ STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS AND SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

△ ¾" CORK FILLER ON VERTICAL FACE ONLY.

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

B.F. DENOTES BACK FACE
F.F. DENOTES FRONT FACE
E.F. DENOTES EACH FACE

FOR PILE SPLICE DETAIL SEE SHEET 3.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-130

DRAWN BY CLS | PLANS CK'D. JLB

WEST ABUTMENT

SHEET 5 OF 17
46

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

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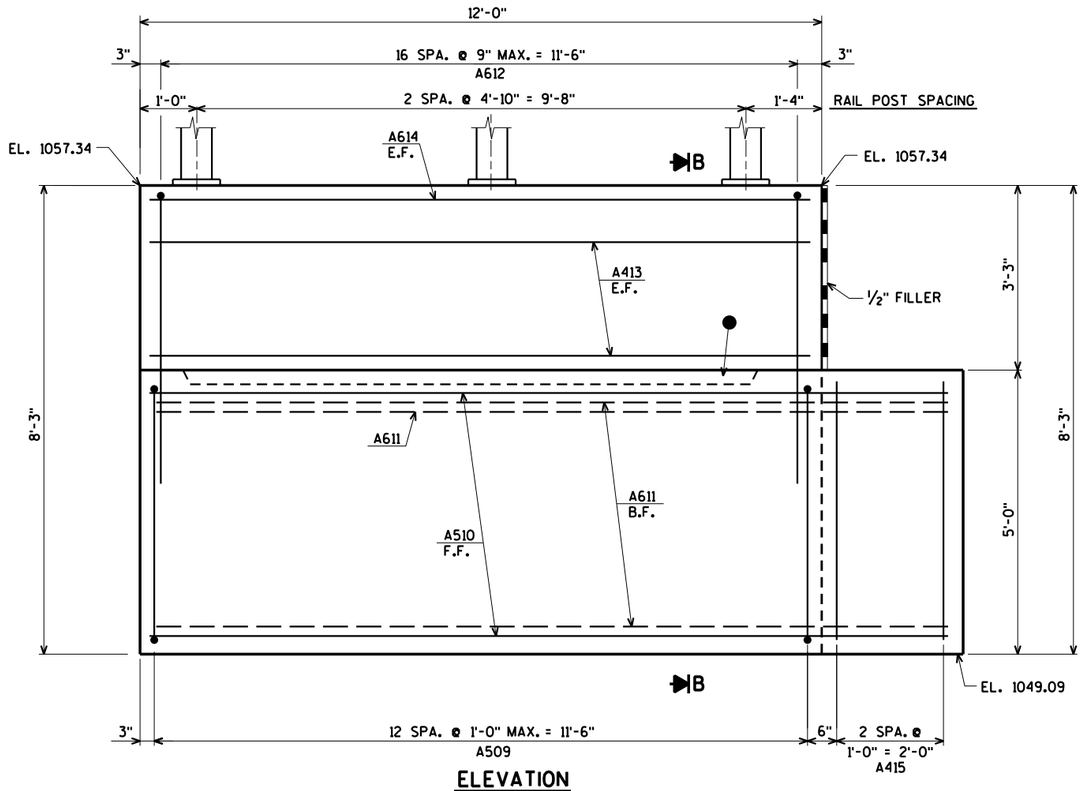
5/23/2019
PENTABLE:BReou_shd_util.tbl

U:±42-1095.00 - Rusk Co, CTH D over Deer Tail Creek±Structures±421095 wa.dgn

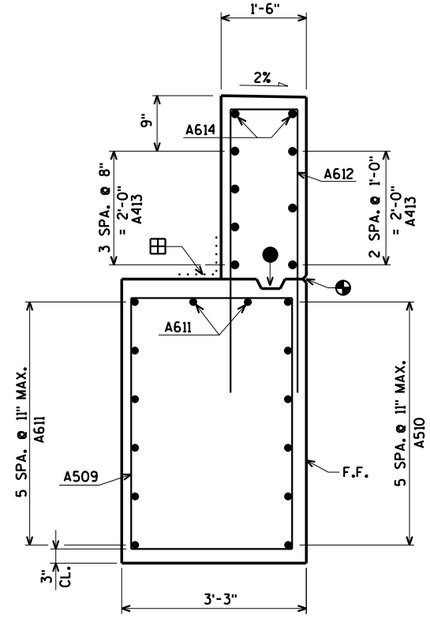
STATE PROJECT NUMBER

8798-00-72



ELEVATION

(WING 1 SHOWN, WING 2 SIMILAR)

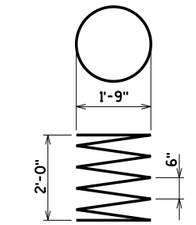


SECTION B

BILL OF BARS - WEST ABUTMENT

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR	SERIES	1,840# UNCOATED 1,700# COATED LOCATION
A401		5	28-0	X			BODY @ PILES
A402		10	2-3				BODY @ PILES
A503		38	13-5	X			BODY VERT.
A604		11	30-2				BODY HORIZ.
A805		14	12-11	X			BODY HORIZ. B.F.
A606		7	12-0				BODY HORIZ. B.F.
A407		21	3-3	X			BODY VERT. TOP
A408		2	30-2				BODY HORIZ. TOP
A509	X	26	15-7	X			WING 1 & 2 VERT.
A510	X	12	14-2				WING 1 & 2 HORIZ. F.F.
A611	X	16	14-2				WING 1 & 2 HORIZ. B.F. & BODY TOP
A612	X	34	11-0	X			WING 1 & 2 VERT.
A413	X	14	11-8				WING 1 & 2 HORIZ. E.F.
A614	X	4	11-8				WING 1 & 2 HORIZ. TOP
A415	X	6	4-7				BODY VERT. @ ENDS

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



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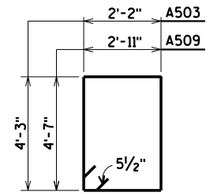
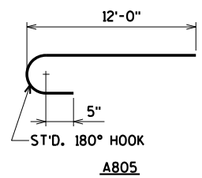
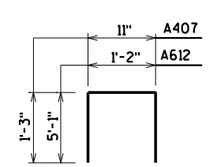
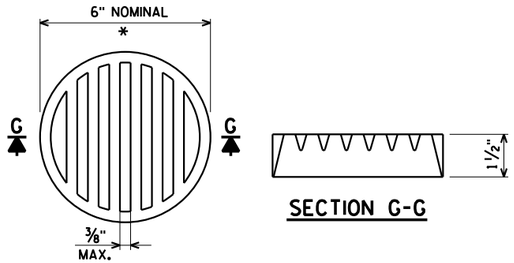




A805





SECTION G-G

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

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

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

RODENT SHIELD DETAIL

◔ ¾" "V" GROOVE ON FRONT FACE OF WINGWALL.

● OPTIONAL CONST. JOINT FORMED BY BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

FOR PILE SPLICE DETAIL SEE SHEET 3.

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-130

DRAWN BY CLS | PLANS CK'D. JLB

WEST ABUTMENT WING DETAILS & BILL OF BARS

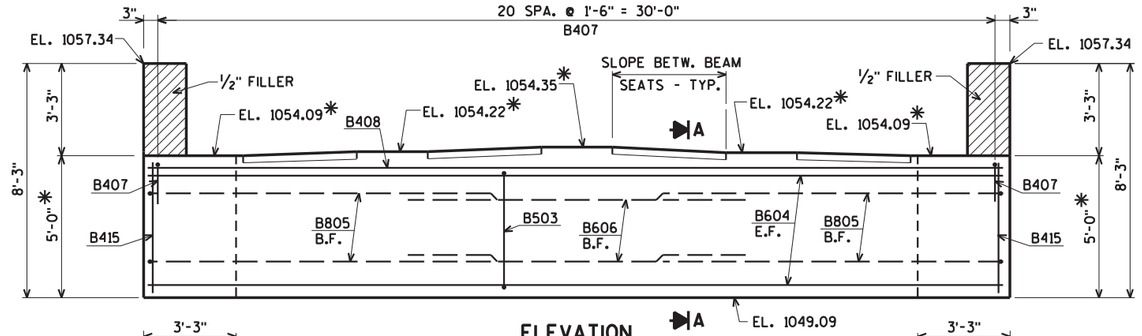
SHEET 6 OF 17
47

7/23/2019
PENTABLE:BReau_shd_util.tbl

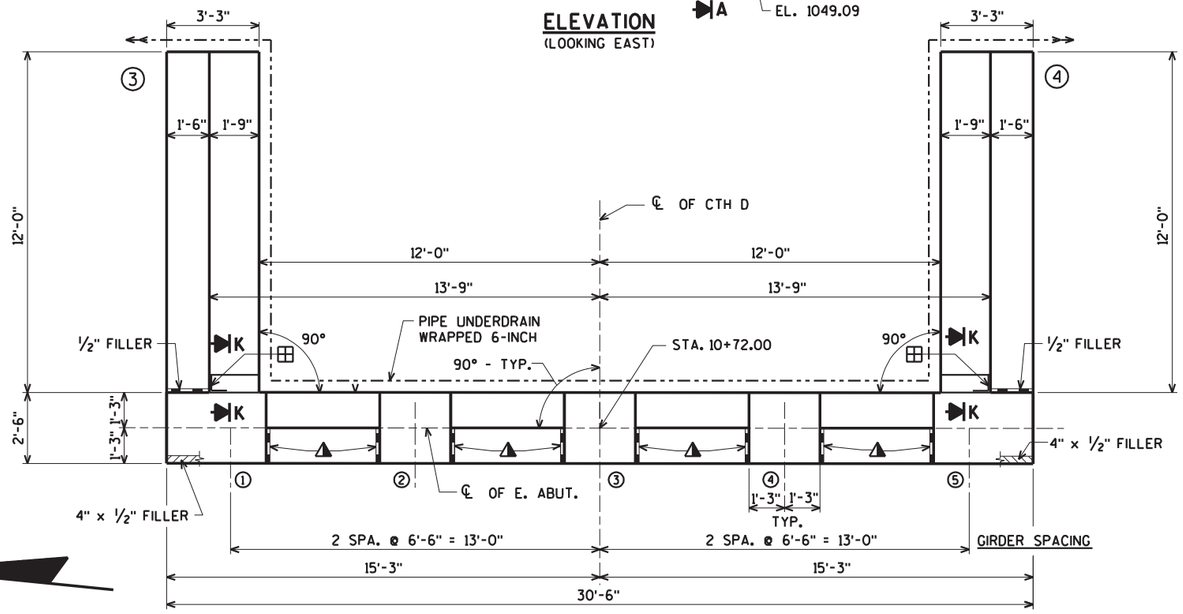
V:±Structures-EC±42-1095.00 - Rusk Co, CTH D over Deer Tail Creek±Structures±421095 wa.dgn

STATE PROJECT NUMBER

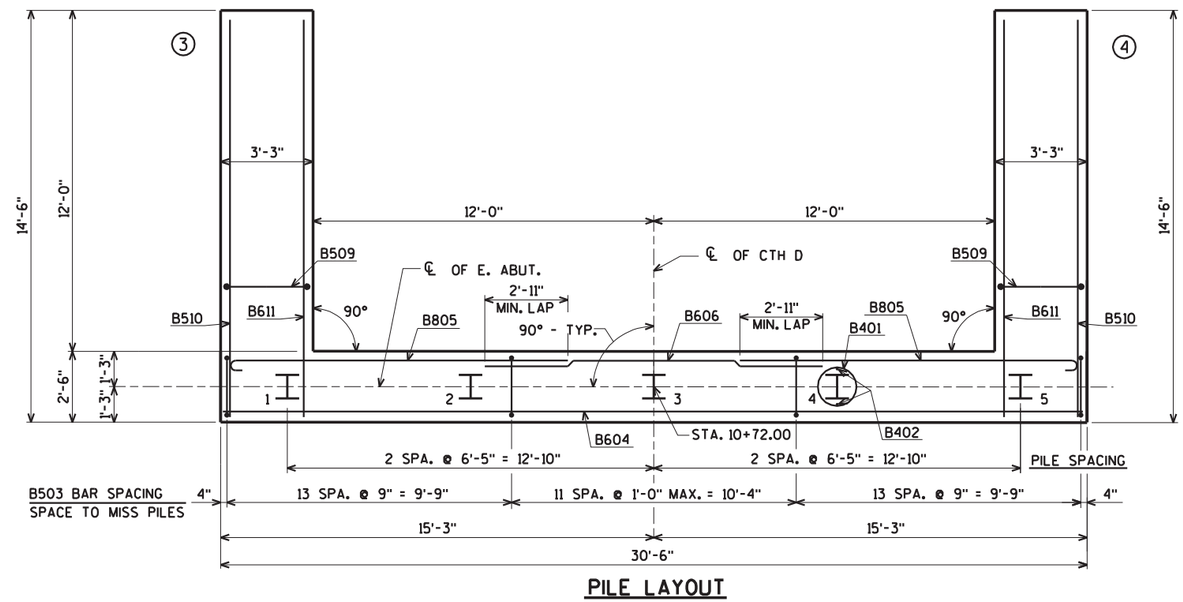
8798-00-72



ELEVATION
(LOOKING EAST)



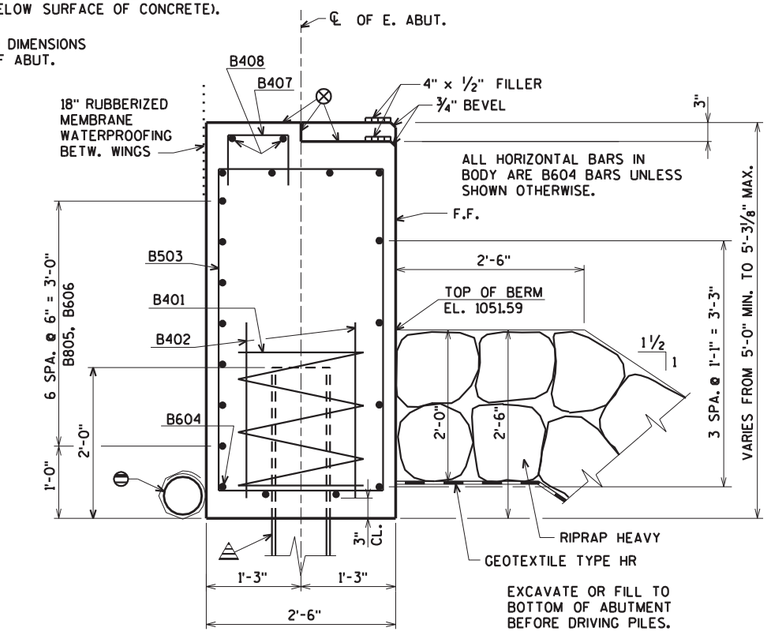
PLAN



PILE LAYOUT

NOTE:
SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

* ELEVATIONS AND DIMENSIONS TAKEN AT ℄ OF ABUT.



SECTION A

△ ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REO'D. DRIVING RESISTANCE OF 120 TONS PER PILE. ESTIMATED LENGTH 50'-0".

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL ON SHEET 6.

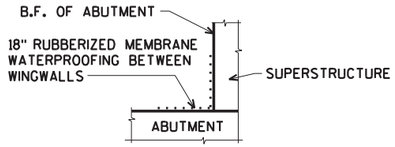
⊗ STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS AND SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

△ ¾" CORK FILLER ON VERTICAL FACE ONLY.

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

B.F. DENOTES BACK FACE
F.F. DENOTES FRONT FACE
E.F. DENOTES EACH FACE

FOR PILE SPLICE DETAIL SEE SHEET 3.



SECTION K

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-130

DRAWN BY CLS | PLANS CK'D. JLB

EAST ABUTMENT

SHEET 7 OF 17
48

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

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5/23/2019
PENTABLE:BReau_shd_util.tbl

U:±42-1095.00 - Rusk Co, CTH D over Deer Tail Creek±Structures±421095 ea.dgn

STATE PROJECT NUMBER

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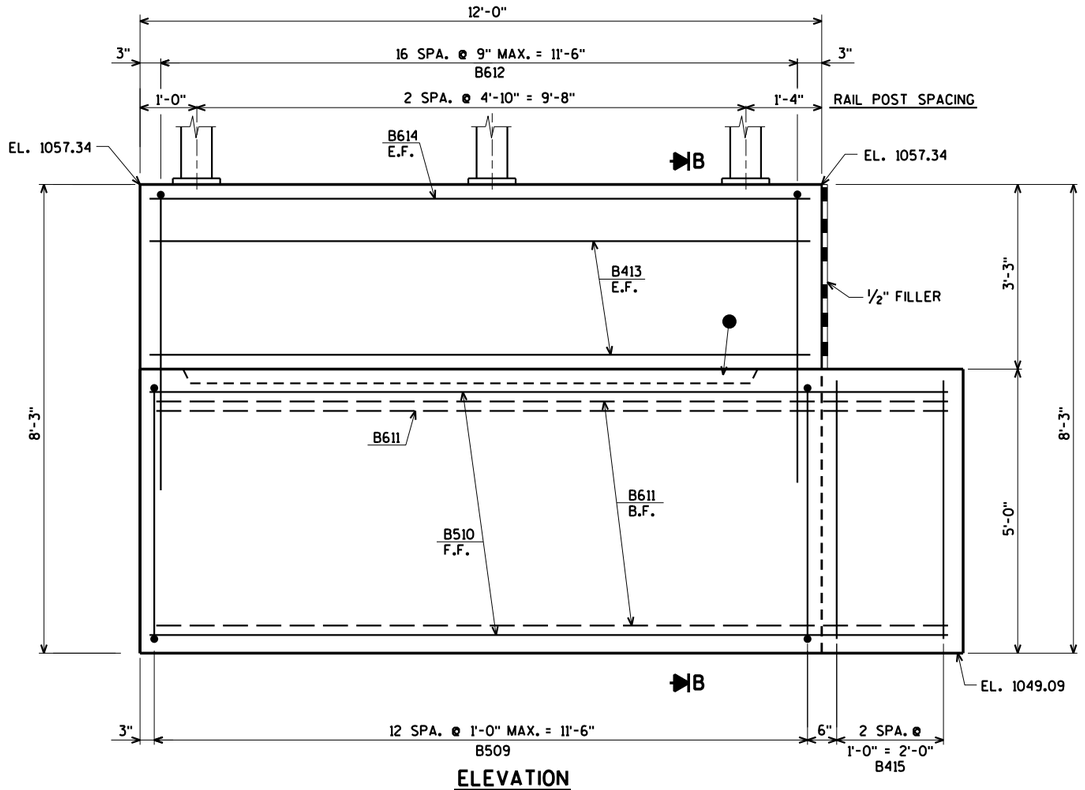
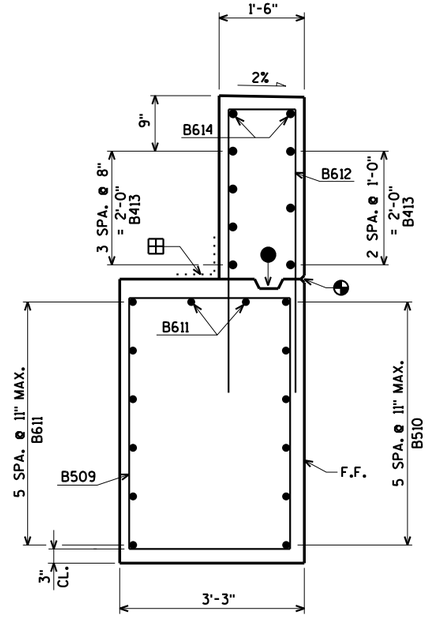


ELEVATION

(WING 3 SHOWN, WING 4 SIMILAR)

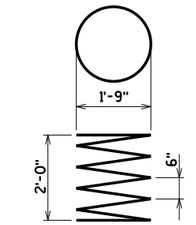


SECTION B

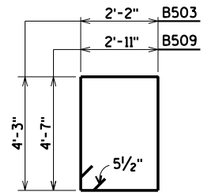
BILL OF BARS - EAST ABUTMENT

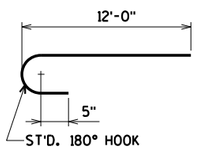
BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR	SERIES	1,840# UNCOATED 1,700# COATED LOCATION
B401		5	28-0	X			BODY @ PILES
B402		10	2-3				BODY @ PILES
B503		38	13-5	X			BODY VERT.
B604		11	30-2				BODY HORIZ.
B805		14	12-11	X			BODY HORIZ. B.F.
B606		7	12-0				BODY HORIZ. B.F.
B407		21	3-3	X			BODY VERT. TOP
B408		2	30-2				BODY HORIZ. TOP
B509	X	26	15-7	X			WING 3 & 4 VERT.
B510	X	12	14-2				WING 3 & 4 HORIZ. F.F.
B611	X	16	14-2				WING 3 & 4 HORIZ. B.F. & BODY TOP
B612	X	34	11-0	X			WING 3 & 4 VERT.
B413	X	14	11-8				WING 3 & 4 HORIZ. E.F.
B614	X	4	11-8				WING 3 & 4 HORIZ. TOP
B415	X	6	4-7				BODY VERT. @ ENDS

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



B401





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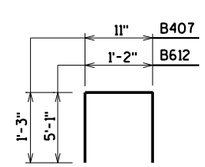

- ¾" "V" GROOVE ON FRONT FACE OF WINGWALL.
- OPTIONAL CONST. JOINT FORMED BY BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.
- 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

FOR PILE SPLICE DETAIL SEE SHEET 3.

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.

ORIGINAL PLANS PREPARED BY
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-130

DRAWN BY CLS | PLANS CK'D. JLB

EAST ABUTMENT WING DETAILS & BILL OF BARS

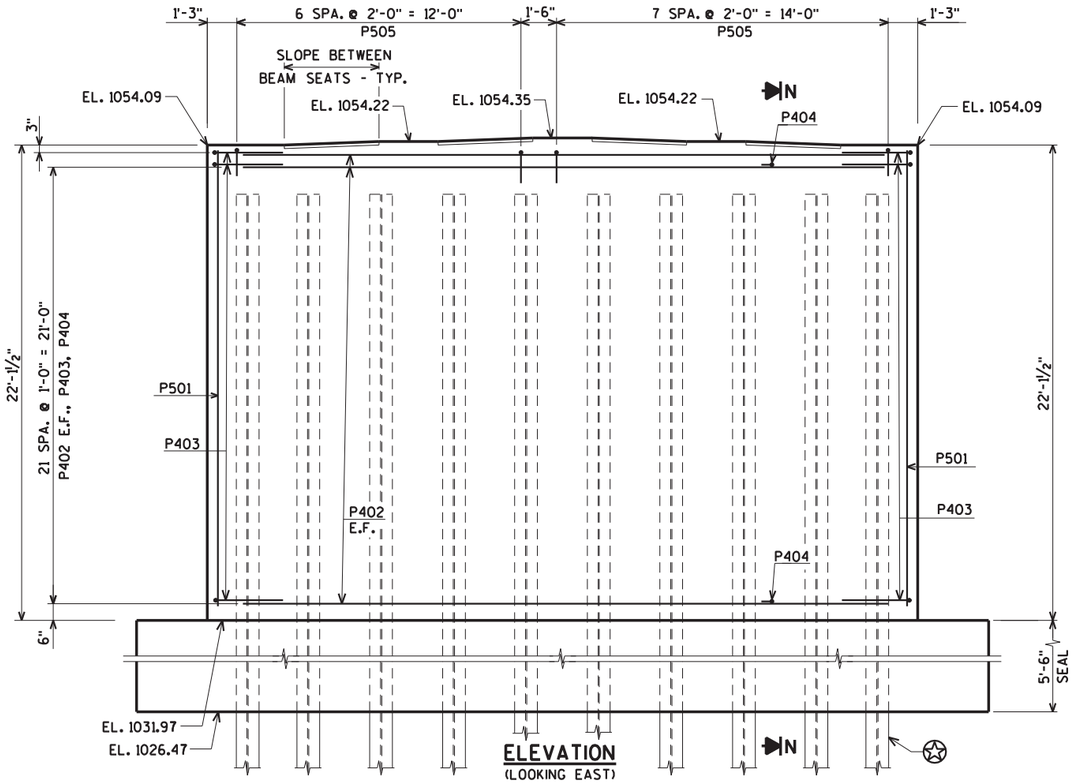
SHEET 8 OF 17
49

8

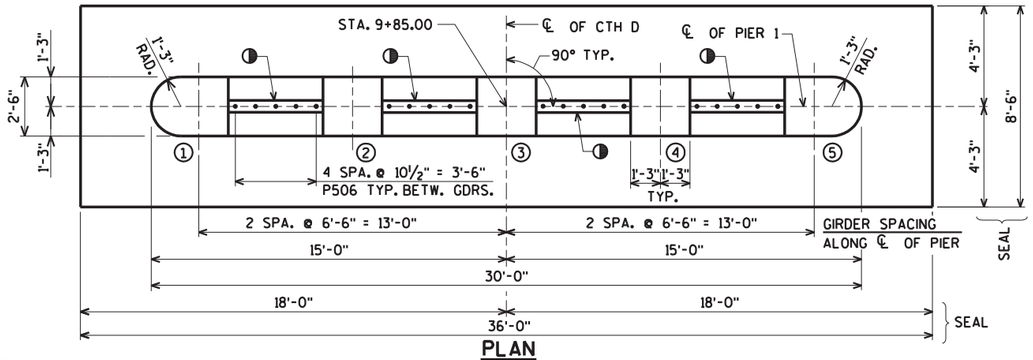
8

7/23/2019
PENTABLE:BReau_shd_util.tbl

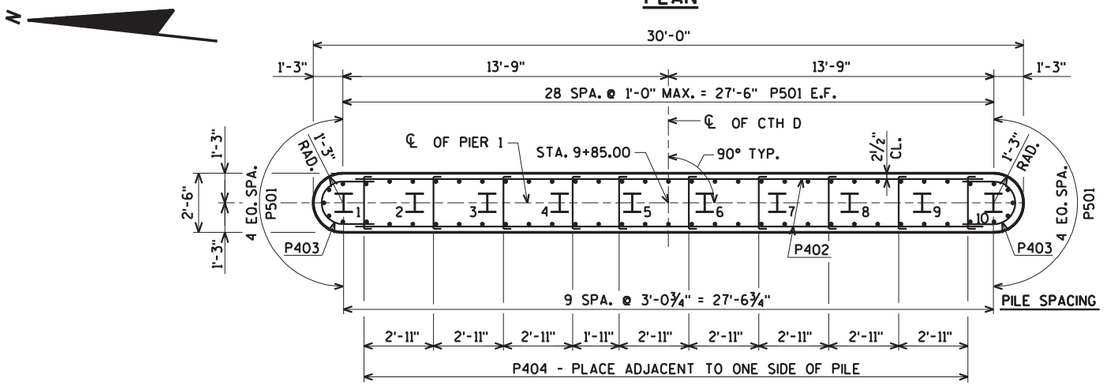
V:±Structures-EC±42-1095.00 - Rusk Co, CTH D over Deer Tail Creek±Structures±421095 ea.dgn



ELEVATION
(LOOKING EAST)

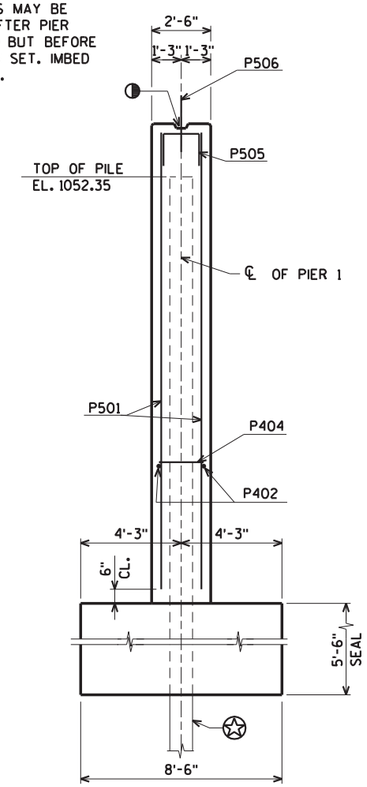


PLAN

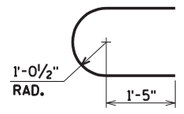


PILE LAYOUT

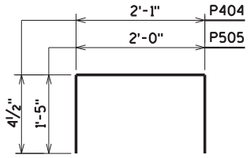
P506 BARS MAY BE PLACED AFTER PIER IS POURED BUT BEFORE CONC. HAS SET. IMBED BARS 1'-0".



SECTION N



P403



STATE PROJECT NUMBER

8798-00-72

BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	40# COATED 2,930# UNCOATED LOCATION
P501		64	21-5			COLUMN VERT.
P402		46	27-6			COLUMN HORIZ.
P403		46	6-1	X		COLUMN HORIZ. @ ENDS
P404		220	2-8	X		COLUMN TIES
P505		15	4-7	X		COLUMN TOP VERT.
P506	X	20	2-0			COLUMN DOWELS

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

PIER TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE. ESTIMATED LENGTH 50'-0".

KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6".

FOR PILE SPLICE DETAIL SEE SHEET 3.

E.F. DENOTES EACH FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-130

DRAWN BY CLS | PLANS CK'D. JLB

PIER 1

SHEET 9 OF 17
50

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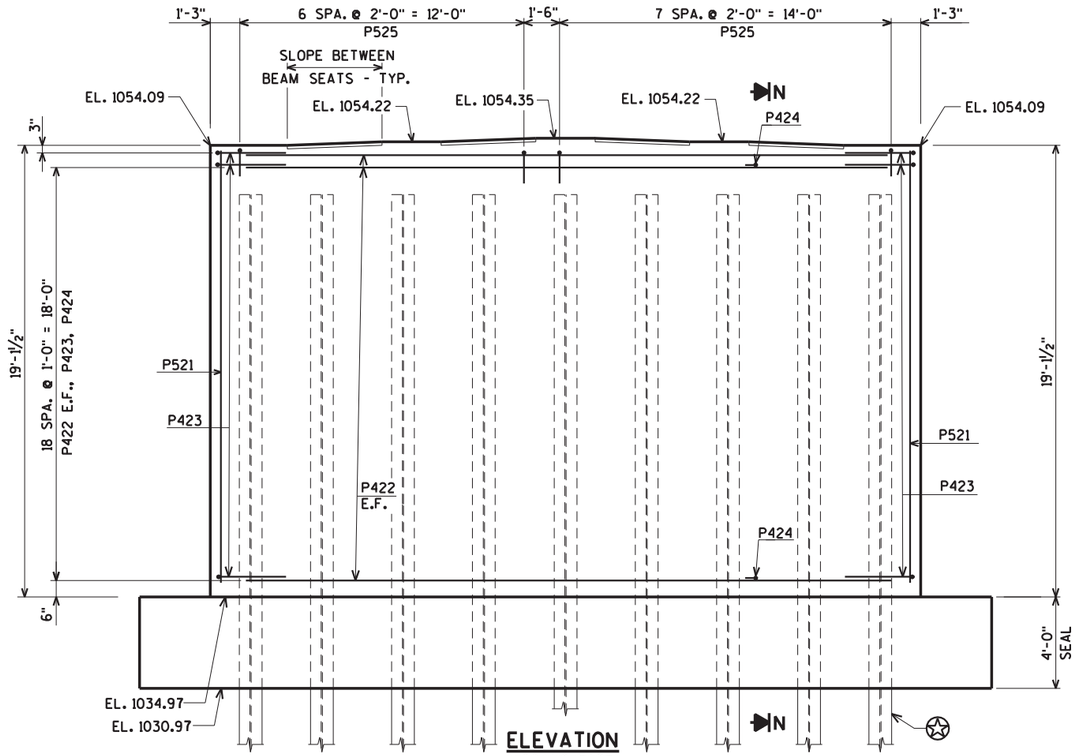
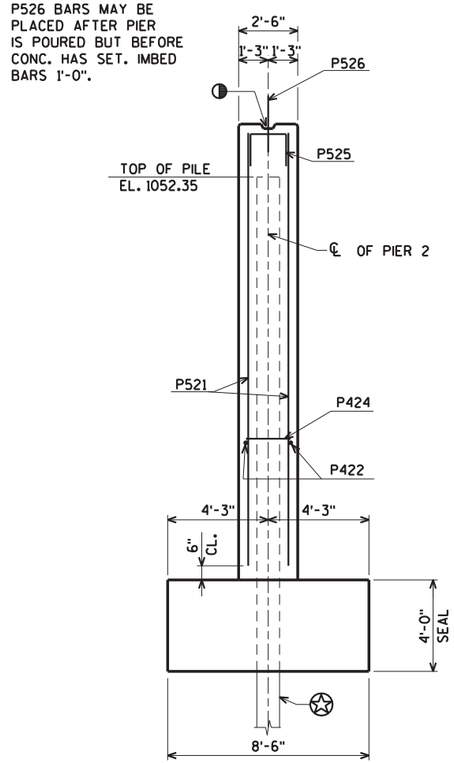


ELEVATION
(LOOKING EAST)

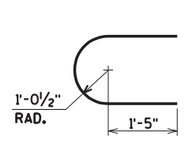


SECTION N

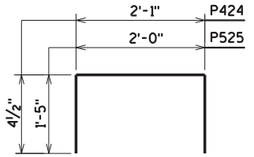
BILL OF BARS

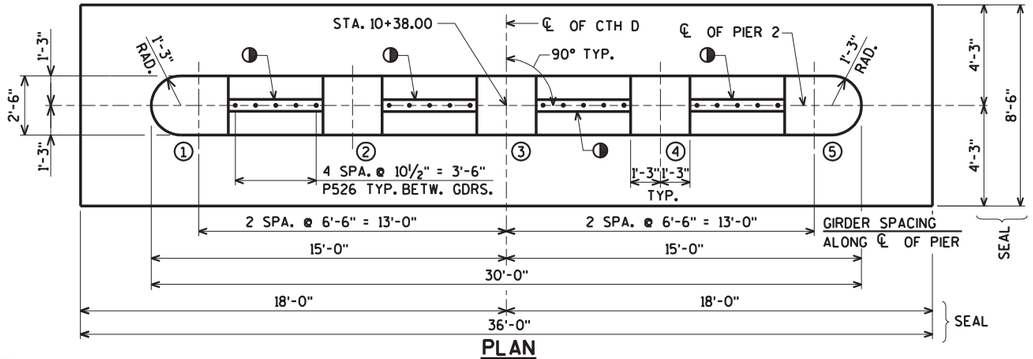
BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	40" COATED 2,500" UNCOATED LOCATION
P521		64	18-5			COLUMN VERT.
P422		40	27-6			COLUMN HORIZ.
P423		40	6-1	X		COLUMN HORIZ. @ ENDS
P424		171	2-8	X		COLUMN TIES
P525		15	4-7	X		COLUMN TOP VERT.
P526	X	20	2-0			COLUMN DOWELS

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

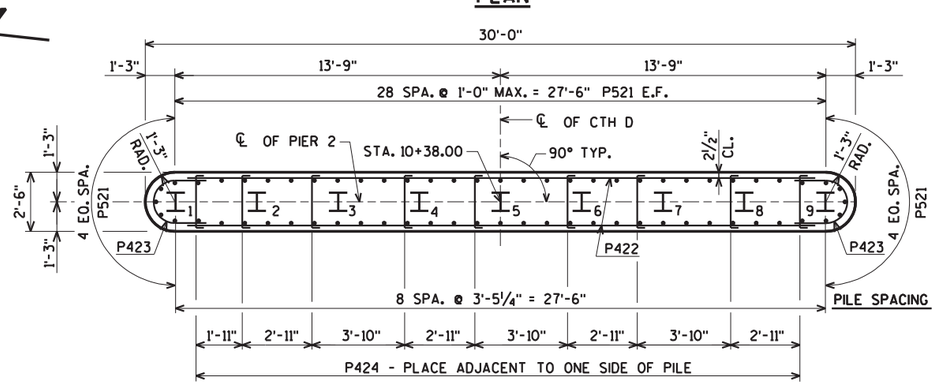


P423





PLAN



PILE LAYOUT

PIER TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE. ESTIMATED LENGTH 50'-0".

KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6".

FOR PILE SPLICE DETAIL SEE SHEET 3.

E.F. DENOTES EACH FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-130

DRAWN BY CLS | PLANS CK'D. JLB

PIER 2

SHEET 10 OF 17
51

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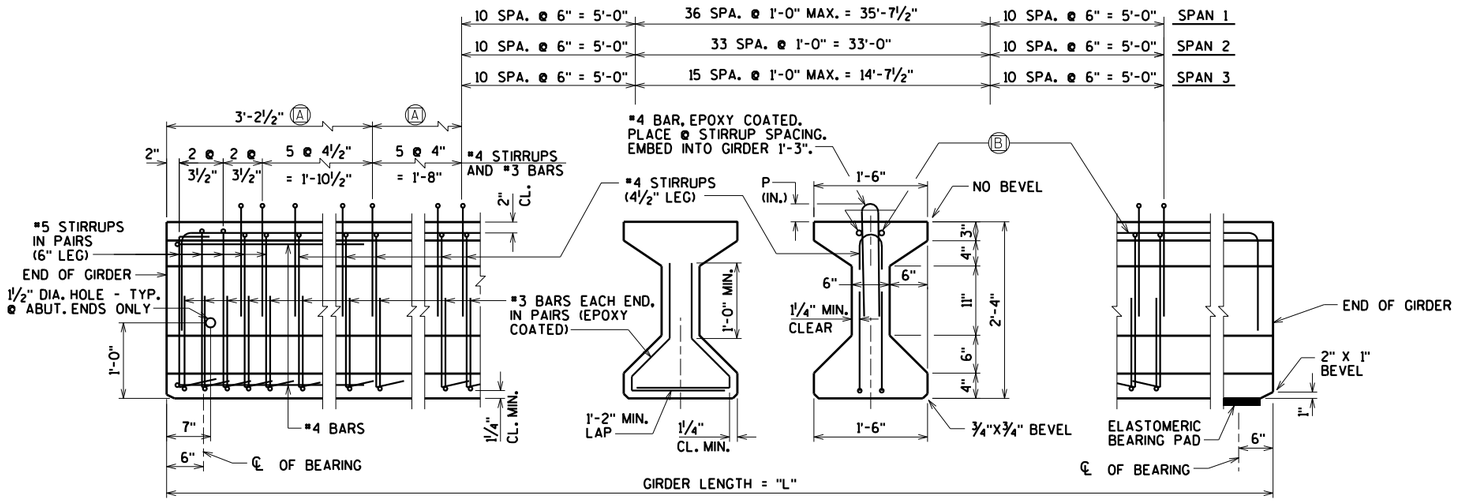
STATE PROJECT NUMBER
8798-00-72

STATE PROJECT NUMBER

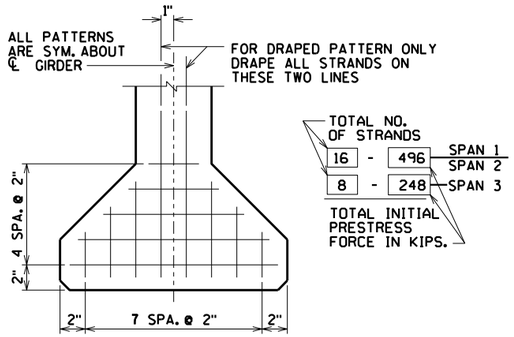
8798-00-72



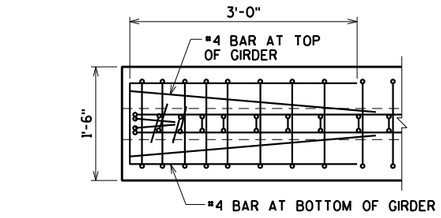
SIDE VIEW & TYPICAL SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

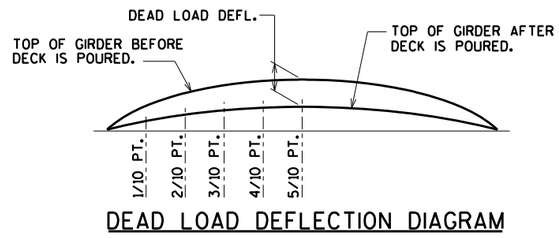
Ⓑ 2-#4 BARS, BEND DOWN 16 BAR DIA. AT ENDS



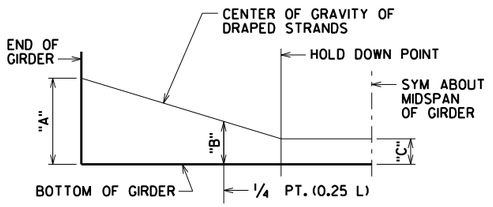
TYP. STRAND PATTERN



TOP VIEW OF GIRDER ENDS



DEAD LOAD DEFLECTION DIAGRAM



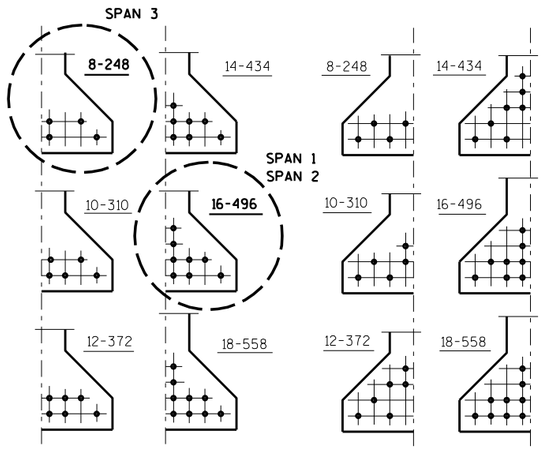
DRAPED STRAND PROFILE

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

SPAN	CAMBER (IN.) *
1	1.3
2	1.3
3	0.4

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

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.



DRAPED PATTERN

0.5"ϕ STRANDS

UNDRAPED PATTERN

0.5"ϕ STRANDS

NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 2" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 2" OF THE TOP FLANGE.

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

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS. SEE SECT. 503.3.3 OF STANDARD SPECIFICATIONS FOR GUIDANCE.

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

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

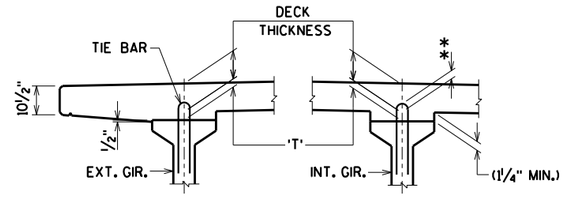
SPACING SHOWN FOR #5 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION.

PRESTRESSING STRANDS SHALL BE (0.5" DIA.)-7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI.

BEND EACH END OF #4 STIRRUPS 4½" AND #5 STIRRUPS 6".

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



DECK HAUNCH DETAIL

IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

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

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

NOTE: AN AVERAGE HAUNCH ('T') OF 2⅝" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

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

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.) 1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CONC. STRGTH. f'c (p.s.i.)	"P" 1ST ⅓ OF GIRDER	"P" MID ⅓ OF GIRDER	"P" END ⅓ OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) *	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) *
1	1 & 5	55'-4½"	0.2	0.4	0.6	0.7	0.7	0.7	0.6	0.4	0.2	8,000	7"	7"	7"	0.5	16	6,400	23	9.5	12.5	5		
1	2-4	55'-4½"	0.2	0.5	0.6	0.7	0.8	0.7	0.6	0.5	0.2	8,000	7"	7"	7"	0.5	16	6,400	23	9.5	12.5	5		
2	1 & 5	52'-9"	0.2	0.4	0.5	0.6	0.6	0.6	0.5	0.4	0.2	8,000	7"	7"	7"	0.5	16	6,400	23	9.5	12.5	5		
2	2-4	52'-9"	0.2	0.4	0.5	0.6	0.6	0.6	0.5	0.4	0.2	8,000	7"	7"	7"	0.5	16	6,400	23	9.5	12.5	5		
3	1-5	34'-4½"	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	8,000	7"	7"	7"	0.5	8	6,400	19	7	10	3		

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-130

DRAWN BY CLS | PLANS CK'D. JLB

28" PRESTRESSED GIRDER DETAILS

SHEET 11 OF 17
52

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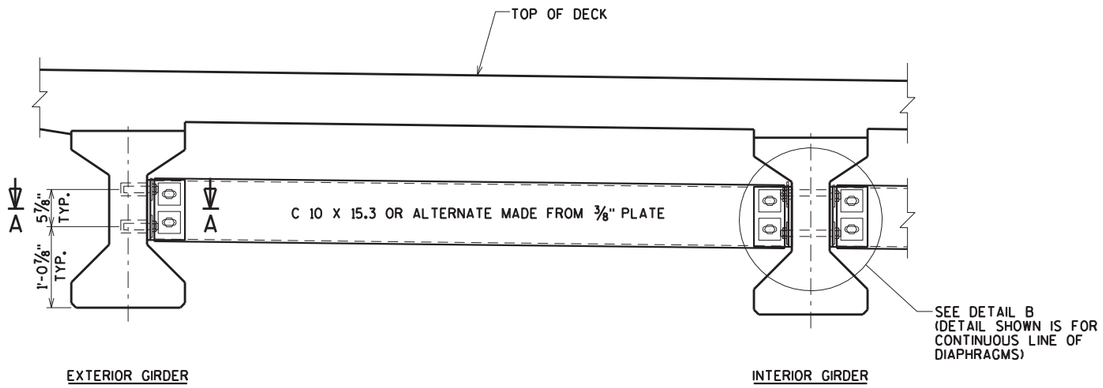
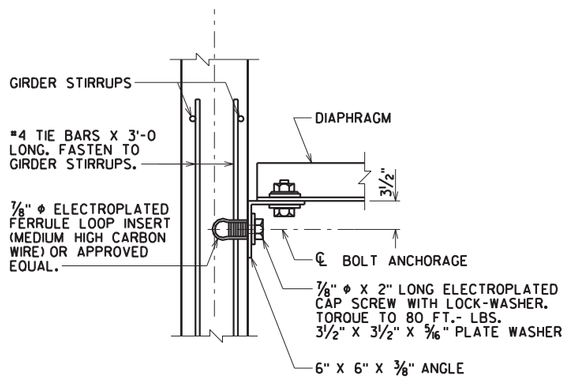


PART TRANSVERSE SECTION AT DIAPHRAGM



SECTION A-A

(FOR EXTERIOR ATTACHMENT)

NOTES

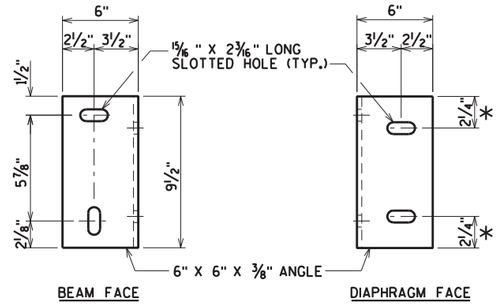
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-54-130", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

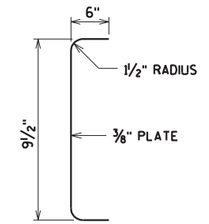
ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

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

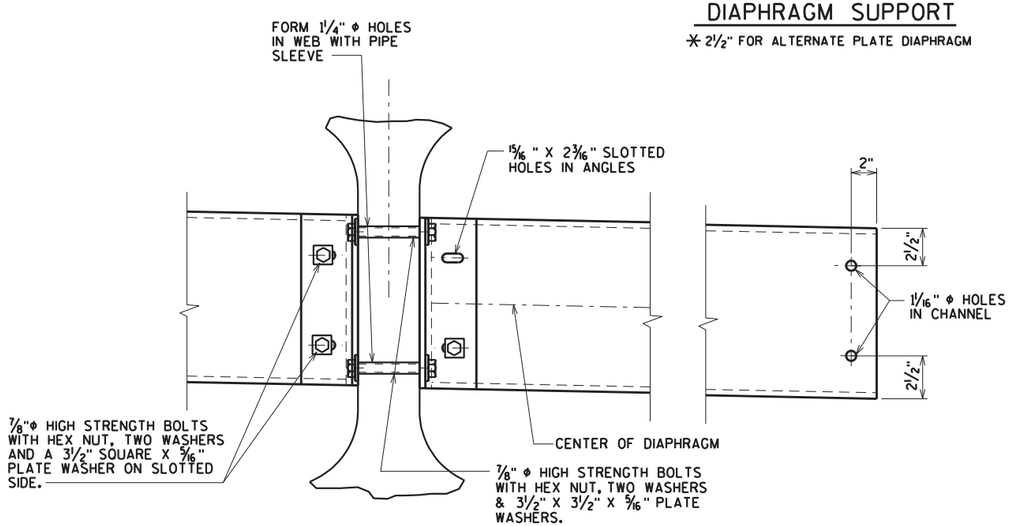


DIAPHRAGM SUPPORT

* 2½" FOR ALTERNATE PLATE DIAPHRAGM



SECTION THRU ALTERNATE DIAPHRAGM



(FOR CONTINUOUS LINE OF DIAPHRAGMS)

DETAIL B

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-130

DRAWN BY CLS | PLANS CK'D. JLB

STEEL DIAPHRAGM

SHEET 12 OF 17
53

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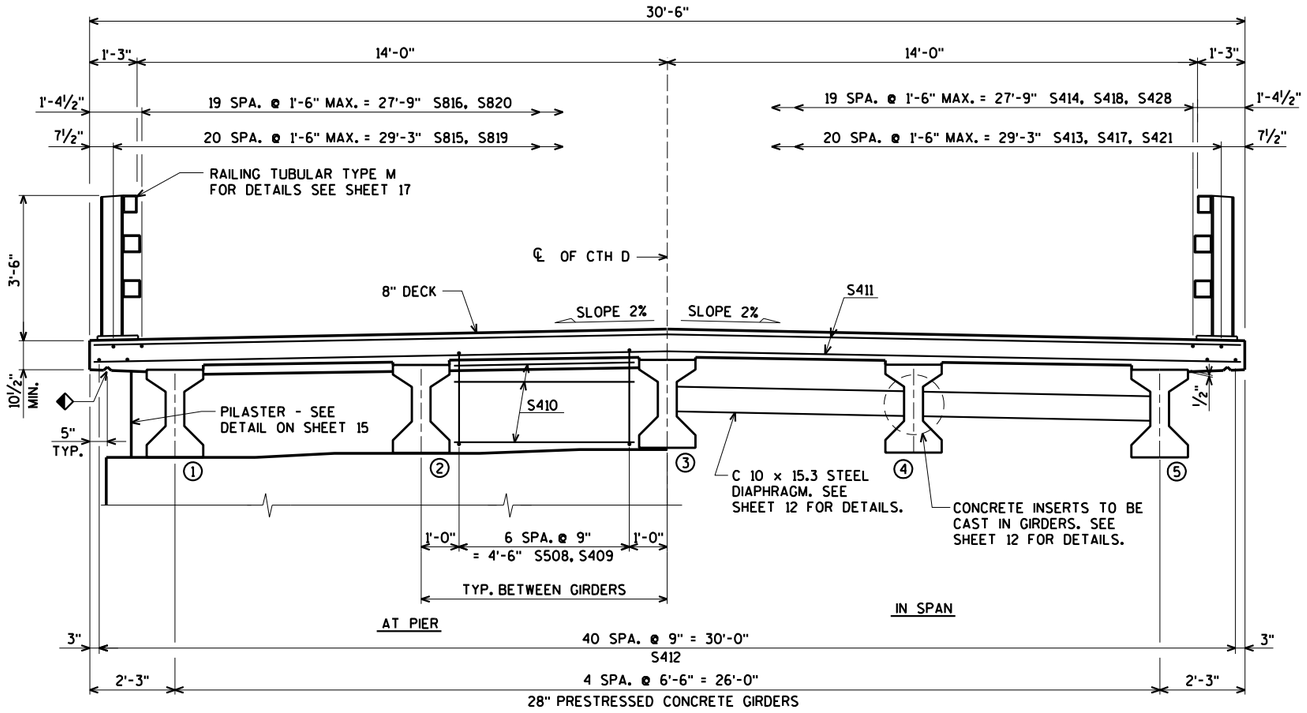


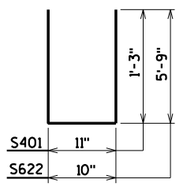
◆ ¾" V - GROOVE. EXTEND V - GROOVE TO 6" FROM FRONT FACE OF ABUTMENT DIAPHRAGMS - TYP.

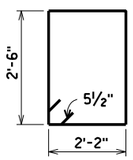
CROSS SECTION THRU BRIDGE
(LOOKING EAST)

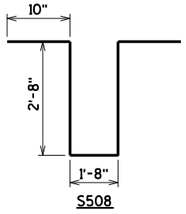
BILL OF BARS

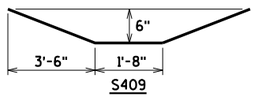
BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	28,620# COATED LOCATION
S401	X	32	3-3	X		DIAPH. @ ABUT. VERT. @ NOTCH
S402	X	16	3-4			DIAPH. @ ABUT. HORIZ. @ NOTCH
S503	X	68	9-10	X		DIAPH. @ ABUT. VERT.
S604	X	10	30-2			DIAPH. @ ABUT. HORIZ.
S605	X	12	1-2			DIAPH. @ ABUT. HORIZ. @ EXT. GDRS.
S606	X	24	4-8			DIAPH. @ ABUT. HORIZ. BETW. GDRS.
S507	X	20	6-0			DIAPH. @ ABUT. HORIZ. THRU GDRS.
S508	X	56	8-2	X		DIAPH. @ PIER VERT.
S409	X	56	8-7	X		DIAPH. @ PIER VERT.
S410	X	80	4-8			DIAPH. @ PIER HORIZ.
S411	X	533	30-2			DECK TRANS. TOP & BOT.
S412	X	164	37-4			DECK LONG. BOT.
S413	X	42	22-2			DECK LONG. TOP SPAN 1
S414	X	40	26-1			DECK LONG. TOP SPAN 1
S815	X	21	24-2			DECK LONG. TOP @ PIER 1
S816	X	20	26-1			DECK LONG. TOP @ PIER 1
S417	X	21	34-10			DECK LONG. TOP SPAN 2
S418	X	20	32-0			DECK LONG. TOP SPAN 2
S819	X	21	19-0			DECK LONG. TOP @ PIER 2
S820	X	20	19-6			DECK LONG. TOP @ PIER 2
S421	X	21	30-2			DECK LONG. TOP SPAN 3
S622	X	92	12-0	X		DECK @ RAIL POSTS
S623	X	168	6-0			DECK @ INT. RAIL POSTS
S624	X	16	6-0	X		DECK @ END RAIL POSTS
S425	X	8	3-3	X		PILASTER
S426	X	8	2-5	X		PILASTER
S327	X	8	3-3	X		PILASTER
S428	X	20	22-9			DECK LONG. TOP SPAN 3

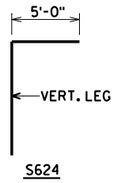
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

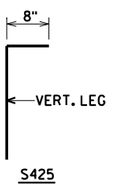


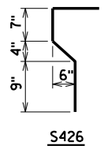


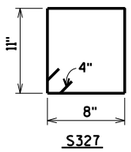












NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-130

DRAWN BY CLS | PLANS CK'D. JLB

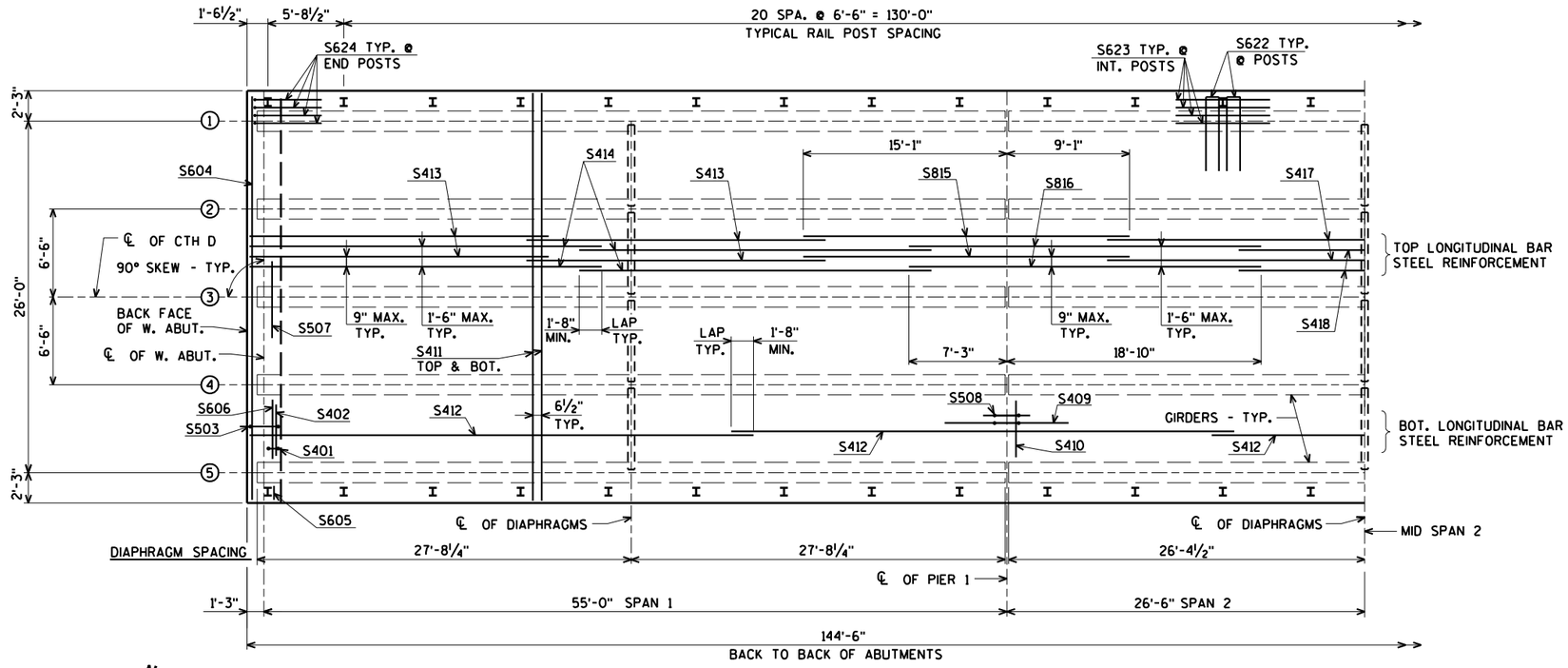
SUPERSTRUCTURE

SHEET 13 OF 17
54

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

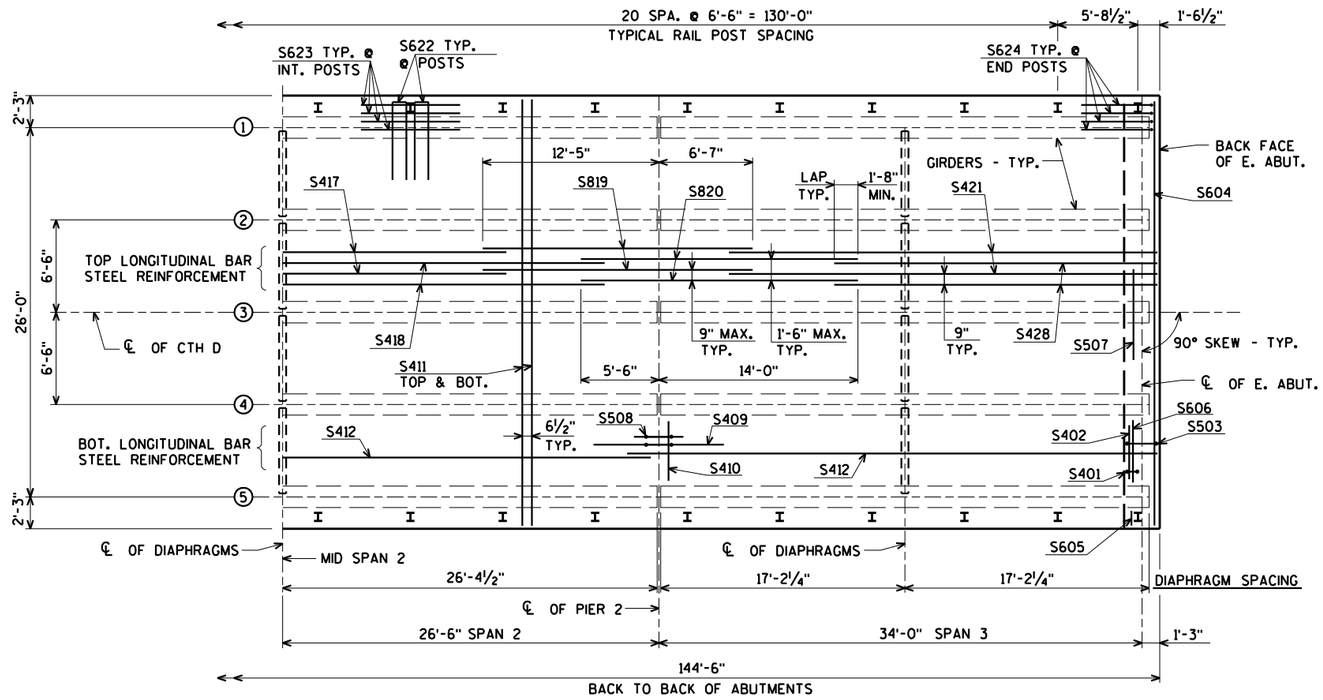
STATE PROJECT NUMBER

8798-00-72



PARTIAL PLAN

N



PARTIAL PLAN

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-130

DRAWN BY CLS | PLANS CK'D. JLB

SUPERSTRUCTURE PLAN

SHEET 14 OF 17
55

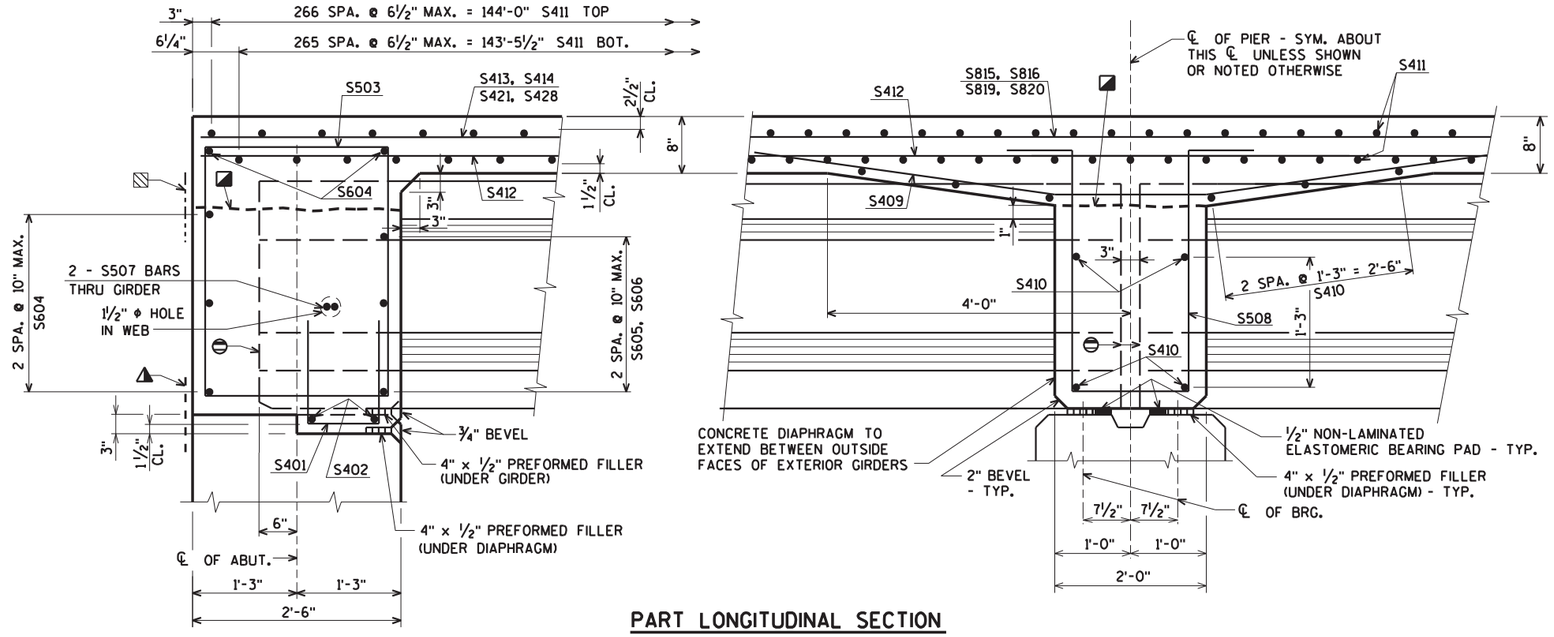
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

5/23/2019

PENTABLE:BReau_shd_util.tbl

STATE PROJECT NUMBER

8798-00-72



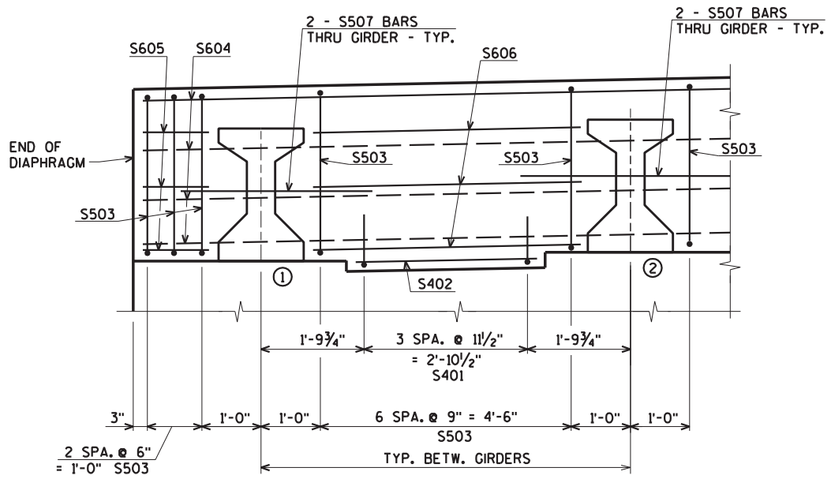
PART LONGITUDINAL SECTION

END OF GIRDER

18" RUBBERIZED MEMBRANE WATERPROOFING

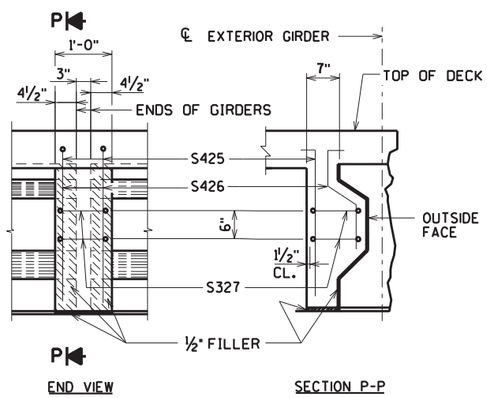
OPTIONAL CONSTRUCTION JOINT. IF USED, DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR.

18" RUBBERIZED MEMBRANE WATERPROOFING IF CONST. JT. IS USED. COST INCLUDED WITH BID ITEM "HPC MASONRY STRUCTURES"



PART SECTION AT ABUTMENT

(GIRDERS 1 AND 2 SHOWN, REST ARE SIMILAR)



PILASTER DETAILS AT PIERS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-130

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SUPERSTRUCTURE DETAILS

SHEET 15 OF 17
56

ORIGINAL PLANS PREPARED BY
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$PRFNAME$
U:\42-1095.00 - Rusk Co, CTH D over Deer Tail Creek\Structures\421095 sup.dgn

8

8

5/23/2019

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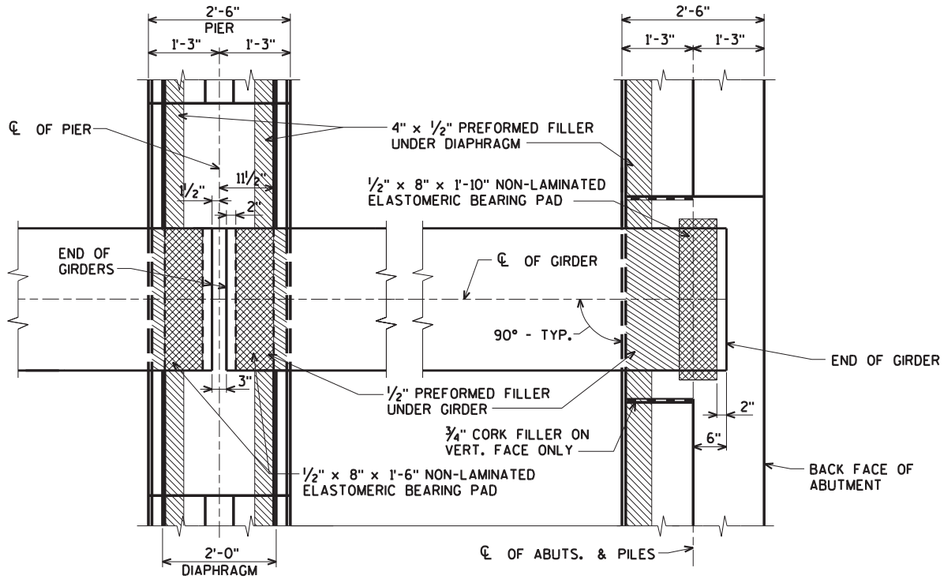

AT PIERS

AT ABUTMENTS

BEARING PAD DETAILS

TOP OF DECK ELEVATIONS

	℄ OF W. ABUT.	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	℄ PIER 1	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	℄ PIER 2
N. EDGE OF DECK	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34
GIRDER 1	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38
GIRDER 2	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51
GIRDER 3 & ℄ OF CTH D	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64
GIRDER 4	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51
GIRDER 5	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38
S. EDGE OF DECK	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34

	℄ PIER 2	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	℄ OF E. ABUT.
N. EDGE OF DECK	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34
GIRDER 1	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38
GIRDER 2	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51
GIRDER 3 & ℄ OF CTH D	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64	1057.64
GIRDER 4	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51	1057.51
GIRDER 5	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38	1057.38
S. EDGE OF DECK	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34	1057.34

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-130

DRAWN BY CLS | PLANS CK'D. JLB

SUPERSTRUCTURE DETAILS

SHEET 16 OF 17
57

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
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Eau Claire, WI 54701
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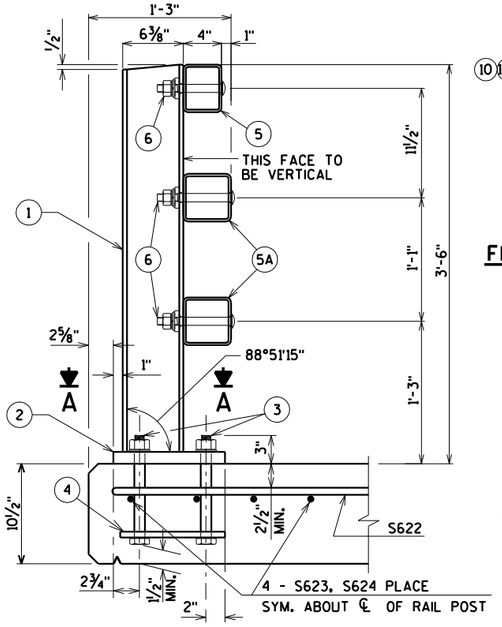
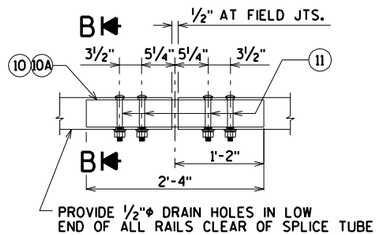
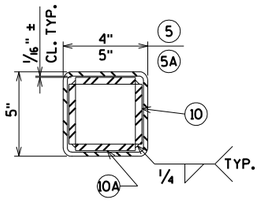


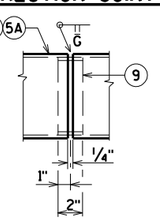
SECTION THRU RAILING ON DECK



FIELD ERECTION JOINT DETAIL

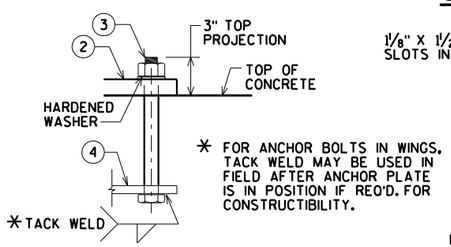


SECTION B

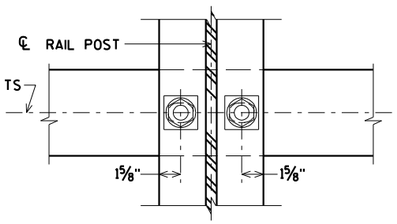


SHOP RAIL SPLICE DETAIL

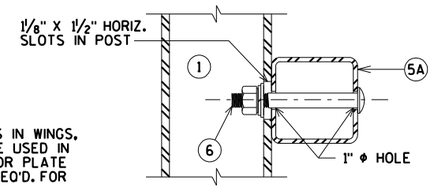
(LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS)



ANCHOR BOLTS

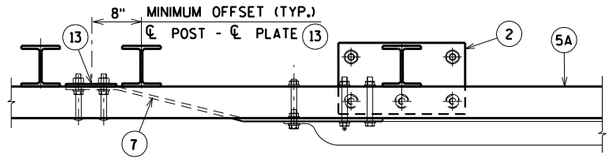


SECTION THRU POST WEB



SECTION THRU RAIL

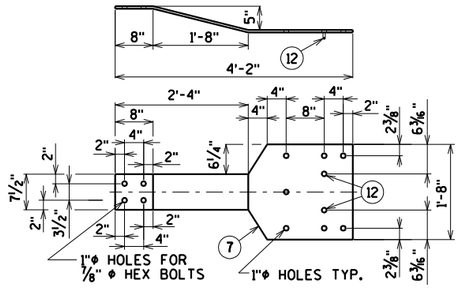
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.



TOP VIEW AT END POST

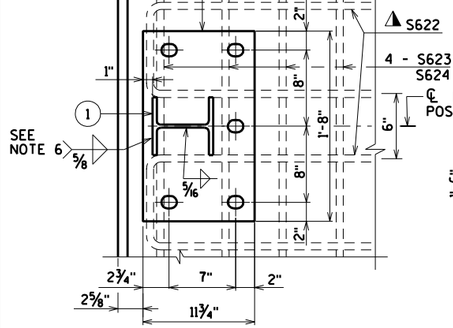
(THRIE BEAM RAIL ATTACHMENT)

TYPICAL RAIL TO POST CONNECTIONS

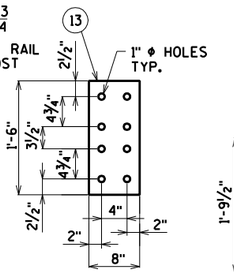


BACK-UP PLATE DETAIL

(AT BEAM GUARD ATTACHMENT)

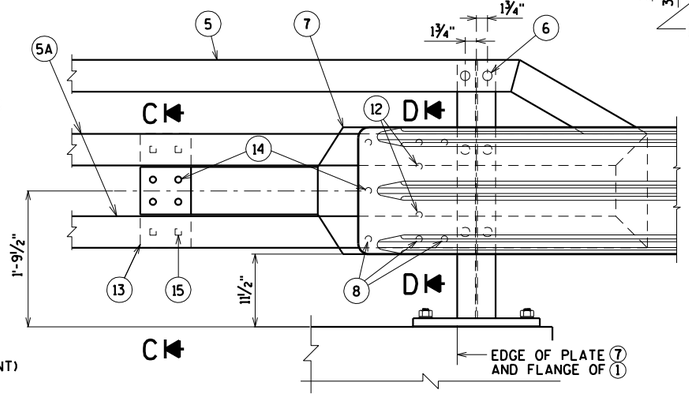


SECTION A



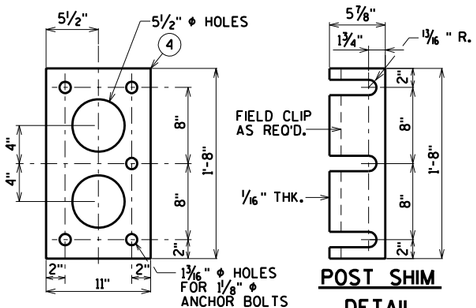
ANCHOR PLATE

(AT BEAM GUARD ATTACHMENT)



DETAIL AT END POST

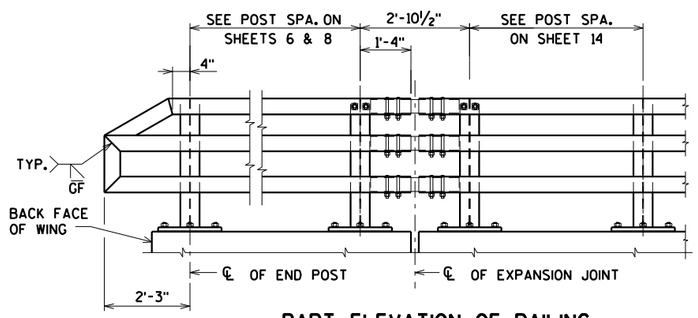
(THRIE BEAM RAIL ATTACHMENT)



ANCHOR PLATE

(AT RAIL TO DECK CONNECTION)

POST SHIM DETAIL



PART ELEVATION OF RAILING

LEGEND

① W6 x 25 WITH 1⅛" X 1½" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.

② PLATE 1¼" x 11¾" x 1'-8" WITH 1⅝" X 1⅝" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.

③ ASTM A449 - 1⅛" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. ~~AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG,~~ USE 10¾" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)

④ ⅝" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1¾6" DIA. HOLES FOR ANCHOR BOLTS NO. 3

⑤ TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

⑤A TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

⑥ ⅞" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3⁄16" X 1⅝" X 1⅝" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)

⑦ ½" THK. BACK-UP PLATE WITH 2 - ⅞" X 1½" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.

⑧ 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR ⅞" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.

⑨ SPLICE SLEEVE FABRICATED FROM ¼" PLATE. PROVIDE "SLIDING FIT".

⑩ ⅜" X 3⅝" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.

⑩A ⅜" X 2⅝" X 2'-4" PLATE USED IN NO. 5, ⅜" X 3⅝" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.

⑪ ⅞" ϕ A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1⅝6 " X 1¼" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 1⅝6 " X 2¼" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.

⑫ ⅞" DIA. X 1½" LONG THREADED SHOP WELDED STUDS (2 REQ'D).

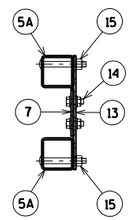
⑬ ⅜" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.

⑭ ⅞" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).

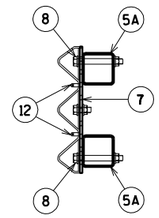
⑮ 1" ϕ HOLES IN TUBES NO. 5A FOR ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ⅛ TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. ~~RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.~~
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.
10. ~~WHEN PAINTING IS REQUIRED, ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 3 & 4) SHALL BE PAINTED OVER GALVANIZING WITH APPROVED TIE COAT AND TOP COAT.~~



SECTION C



SECTION D

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-130

DRAWN BY CLS | PLANS CK'D. JLB

RAILING TUBULAR TYPE M

SHEET 17 OF 17
58

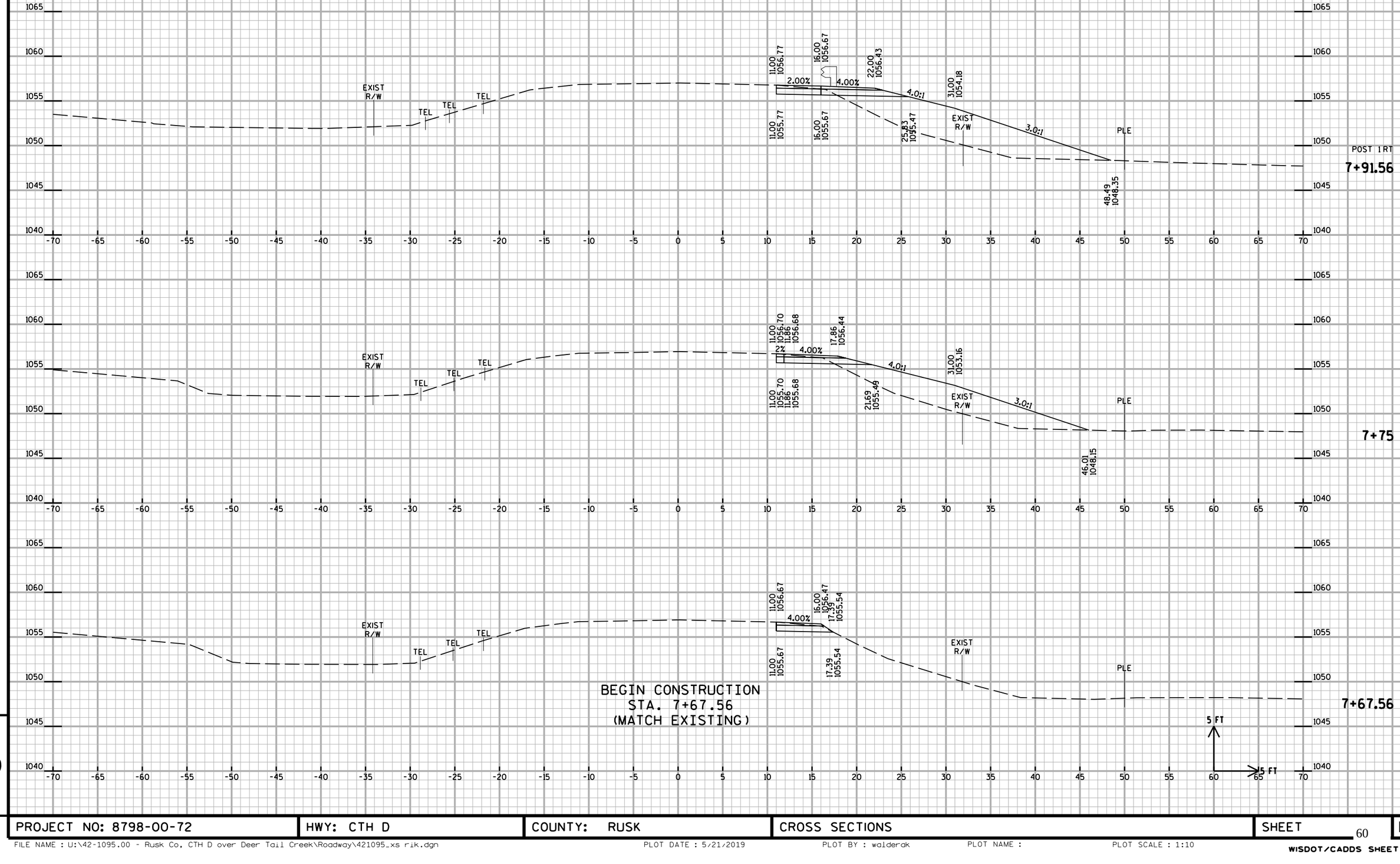
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

CTH D COMPUTER EARTHWORK

Station	Distance	Area (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
		Cut	Unuseable Pavement Material	Fill	Cut	Salvaged / Unuseable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.30	
					Note 1	Note 4	Note 2	Note 5		Note 3
7+67.56	--	4.6	0.0	0.0						
7+75	7.44	4.7	0.0	57.8	1	0	8	1	10	-9
7+91.56	16.56	4.9	0.0	77.5	3	0	42	4	64	-60
8+00	8.44	9.7	0.0	71.0	2	0	23	6	94	-88
8+16.56	16.56	9.5	0.0	77.1	6	0	45	12	154	-141
8+25	8.44	9.2	0.0	68.0	3	0	23	15	183	-168
8+29.06	4.06	9.0	0.0	63.9	1	0	10	17	196	-179
8+41.56	12.50	8.3	0.0	39.6	4	0	24	21	227	-206
8+50	8.44	7.7	0.0	39.9	3	0	12	23	243	-220
8+54.06	4.06	7.9	0.0	43.1	1	0	6	24	251	-227
8+75	20.94	9.7	0.0	18.8	7	0	24	31	282	-251
8+78.75	3.75	10.2	0.0	12.9	1	0	2	33	285	-253
8+78.75	--	34.6	12.3	12.9						
8+79.06	0.31	34.0	12.3	13.3	0	0	0	33	286	-253
9+00	20.94	30.6	12.4	0.3	25	10	5	48	292	-244
9+28.75	28.75	30.6	12.4	0.3	33	13	0	68	293	-225
B-54-130	--	--	--	--	--		--	--	--	--
10+73.25	--	36.2	11.6	7.2	--		--	--	--	--
11+00	26.75	36.2	11.6	7.2	36	12	7	92	302	-210
11+22.94	22.94	42.0	11.5	22.0	33	10	12	115	318	-203
11+23.25	0.31	39.2	11.5	25.3	0	0	0	116	319	-203
11+23.25	--	15.5	0.0	25.3						
11+25	1.75	15.6	0.0	24.3	1	0	2	117	321	-204
11+47.94	22.94	9.7	0.0	47.3	11	0	30	127	360	-233
11+50	2.06	9.4	0.0	46.9	1	0	4	128	365	-237
11+60.44	10.44	9.3	0.0	36.7	4	0	16	132	386	-254
11+72.94	12.50	9.5	0.0	71.2	4	0	25	136	418	-282
11+75	2.06	10.1	0.0	75.9	1	0	6	137	426	-289
11+85.44	10.44	8.2	0.0	89.8	4	0	32	140	467	-327
12+00	14.56	7.3	0.0	45.9	4	0	37	145	515	-370
12+10.44	10.44	3.6	0.0	41.7	2	0	17	147	537	-390
12+25	14.56	3.6	0.0	19.4	2	0	16	149	558	-410
12+34.44	9.44	3.6	0.0	0.0	1	0	3	150	563	-413
					194	44	433			

Note 1 - Cut	Cut includes existing asphalt pavement.
Note 2 - Fill	Volume needed to be filled.
Note 3 - Mass Ordinate	(Cut) - (Fill * 1.30)
Note 4 - Salvaged / Unuseable Pavement Material	Existing existing asphalt pavement to be removed from Cut.
Note 5 - Cut	Cut reduced by salvaged/unuseable asphaltic pavement

STA. 7+67.56 TO 7+91.56

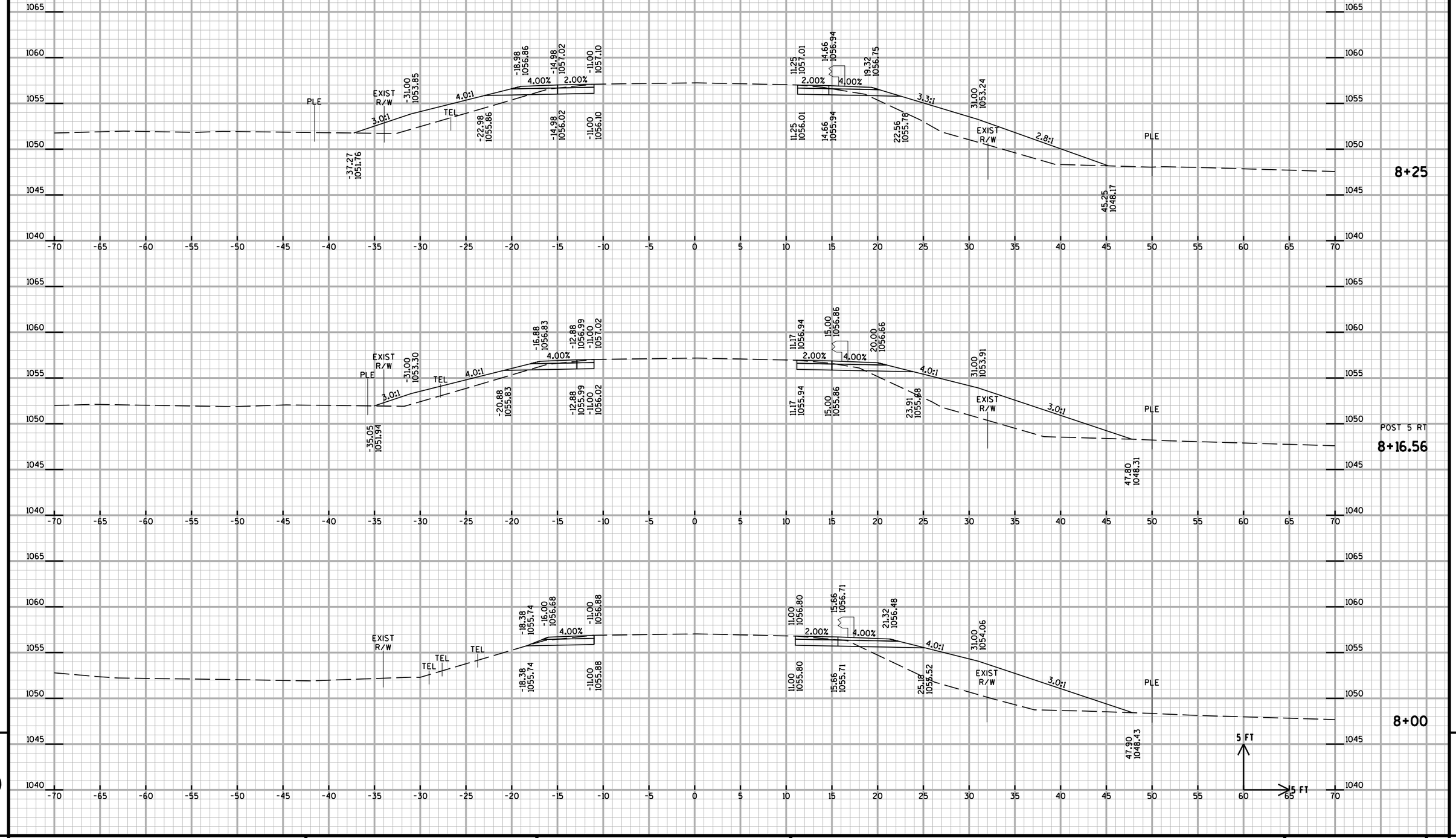


PROJECT NO: 8798-00-72	HWY: CTH D	COUNTY: RUSK	CROSS SECTIONS	SHEET	E

FILE NAME : U:\42-1095.00 - Rusk Co, CTH D over Deer Tail Creek\Roadway\421095_xs rik.dgn PLOT DATE : 5/21/2019 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 8+00 TO 8+25



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PROJECT NO: 8798-00-72	HWY: CTH D	COUNTY: RUSK	CROSS SECTIONS	SHEET E

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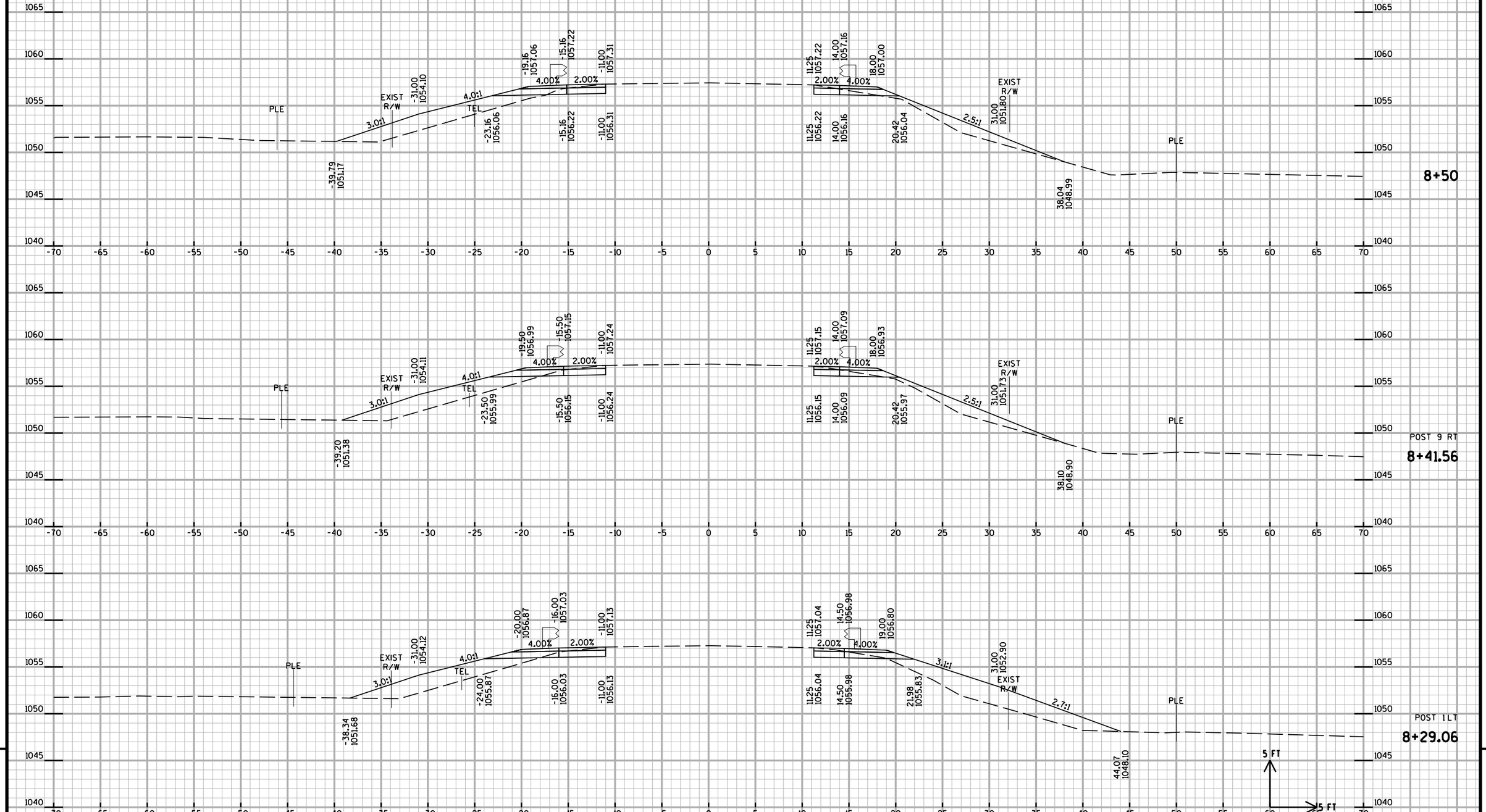
WISDOT/CADDS SHEET 21

STA. 8+29.06 TO 8+50



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PROJECT NO: 8798-00-72	HWY: CTH D	COUNTY: RUSK	CROSS SECTIONS	SHEET	E

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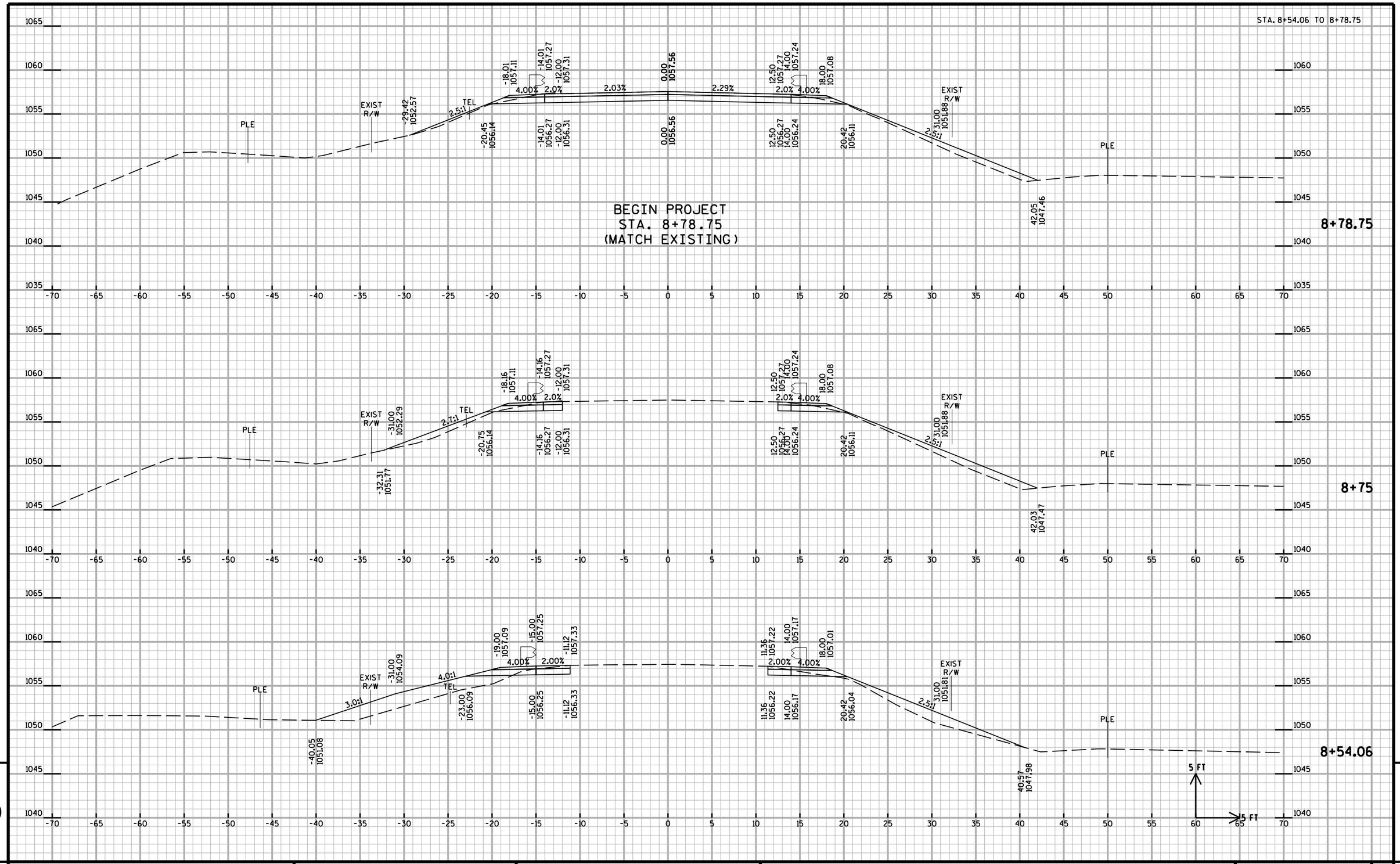
WISDOT/CADDS SHEET 21

STA. 8+54.06 TO 8+78.75



PROJECT NO: 8798-00-72	HWY: CTH D	COUNTY: RUSK	CROSS SECTIONS	SHEET E

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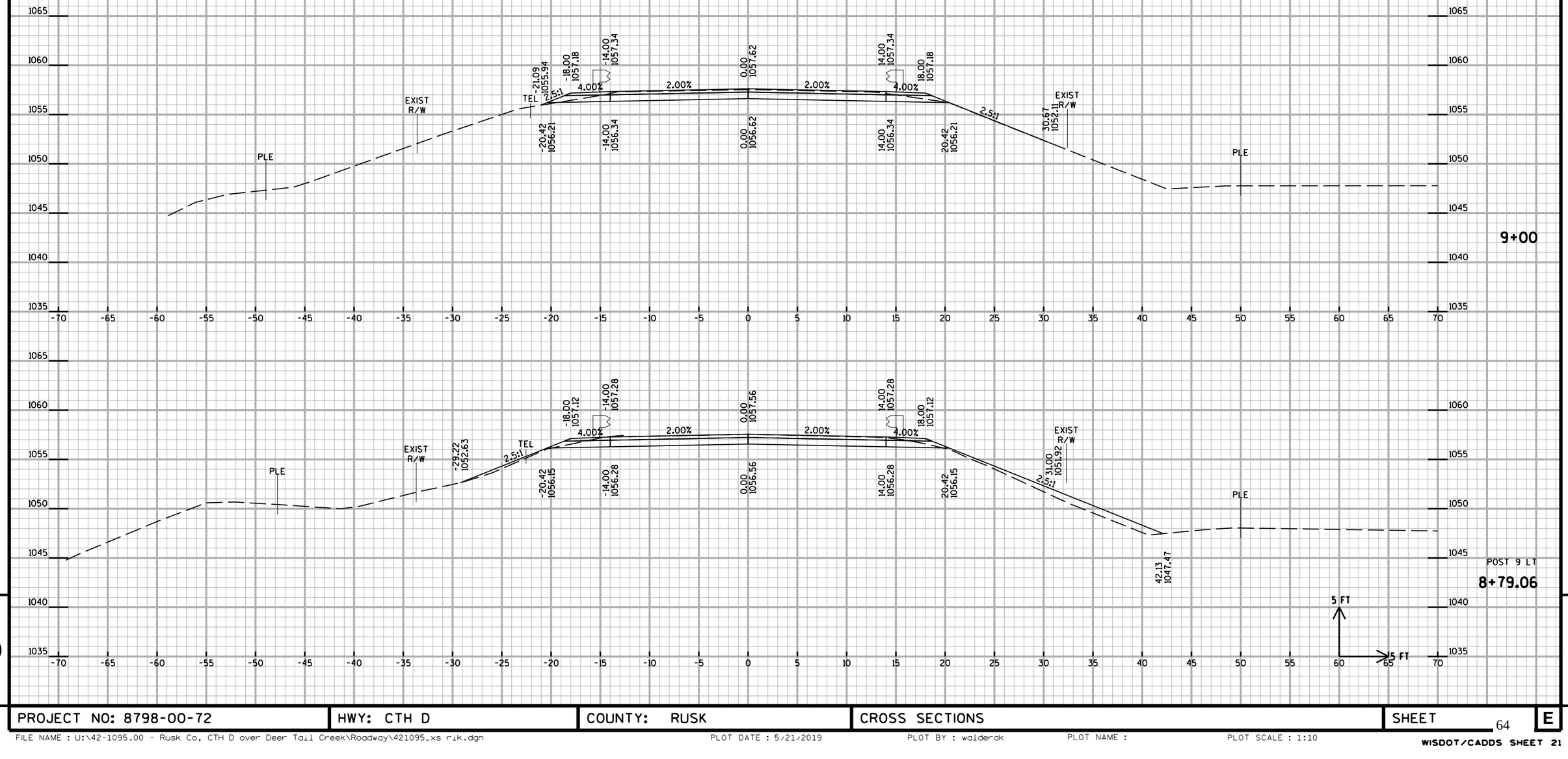
WISDOT/CADDS SHEET 21

STA. 8.79.06 TO 9+00

STRUCTURE B-54-130



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PROJECT NO: 8798-00-72	HWY: CTH D	COUNTY: RUSK	CROSS SECTIONS	SHEET	E

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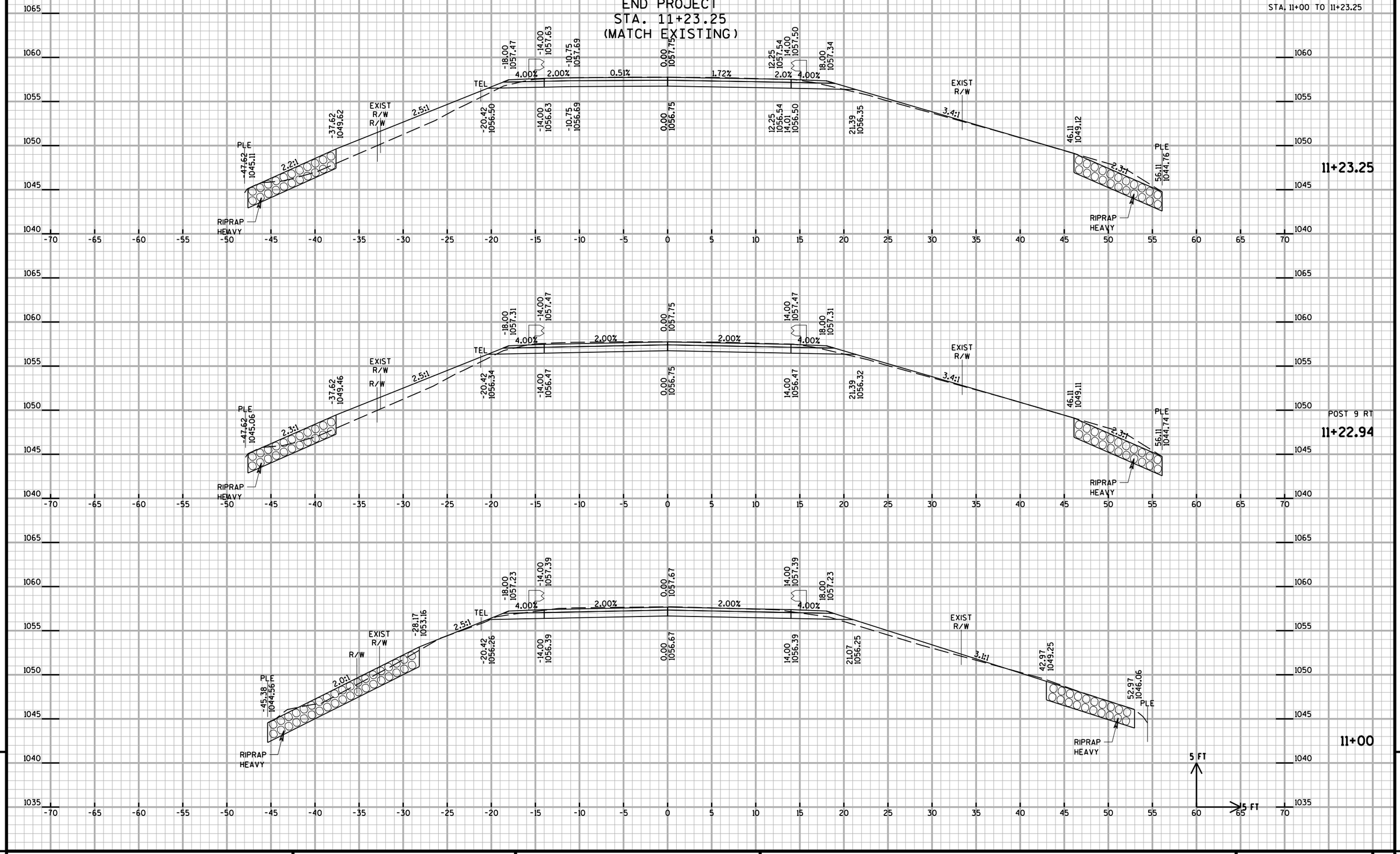
WISDOT/CADDS SHEET 21

END PROJECT
STA. 11+23.25
(MATCH EXISTING)

STA. 11+00 TO 11+23.25



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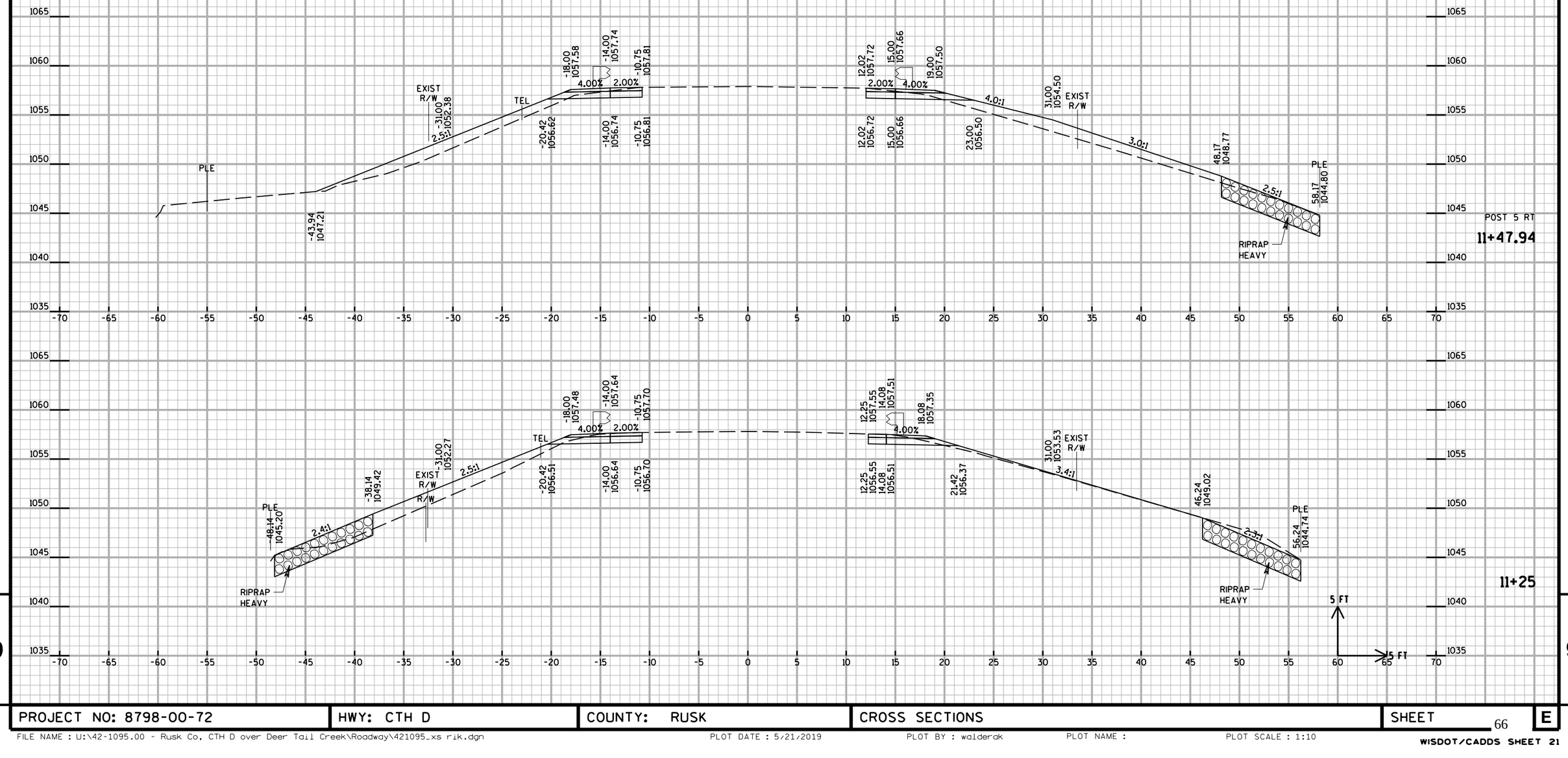
WISDOT/CADDS SHEET 21

STA. 11+25 TO 11+47.94



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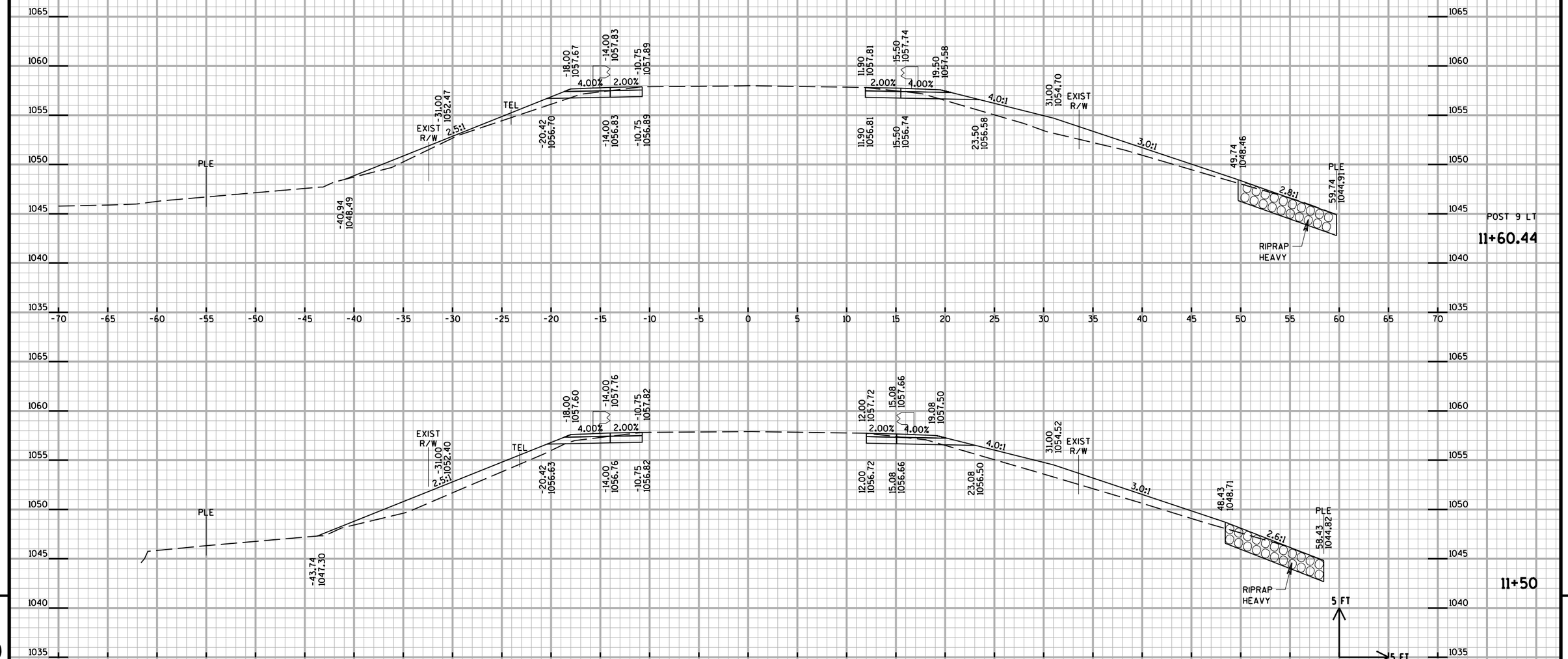
PROJECT NO: 8798-00-72	HWY: CTH D	COUNTY: RUSK	CROSS SECTIONS	SHEET	E

9

FILE NAME : U:\42-1095.00 - Rusk Co, CTH D over Deer Tail Creek\Roadway\421095_xs rik.dgn PLOT DATE : 5/21/2019 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 11+50 TO 11+60.44



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PROJECT NO: 8798-00-72	HWY: CTH D	COUNTY: RUSK	CROSS SECTIONS	SHEET	E

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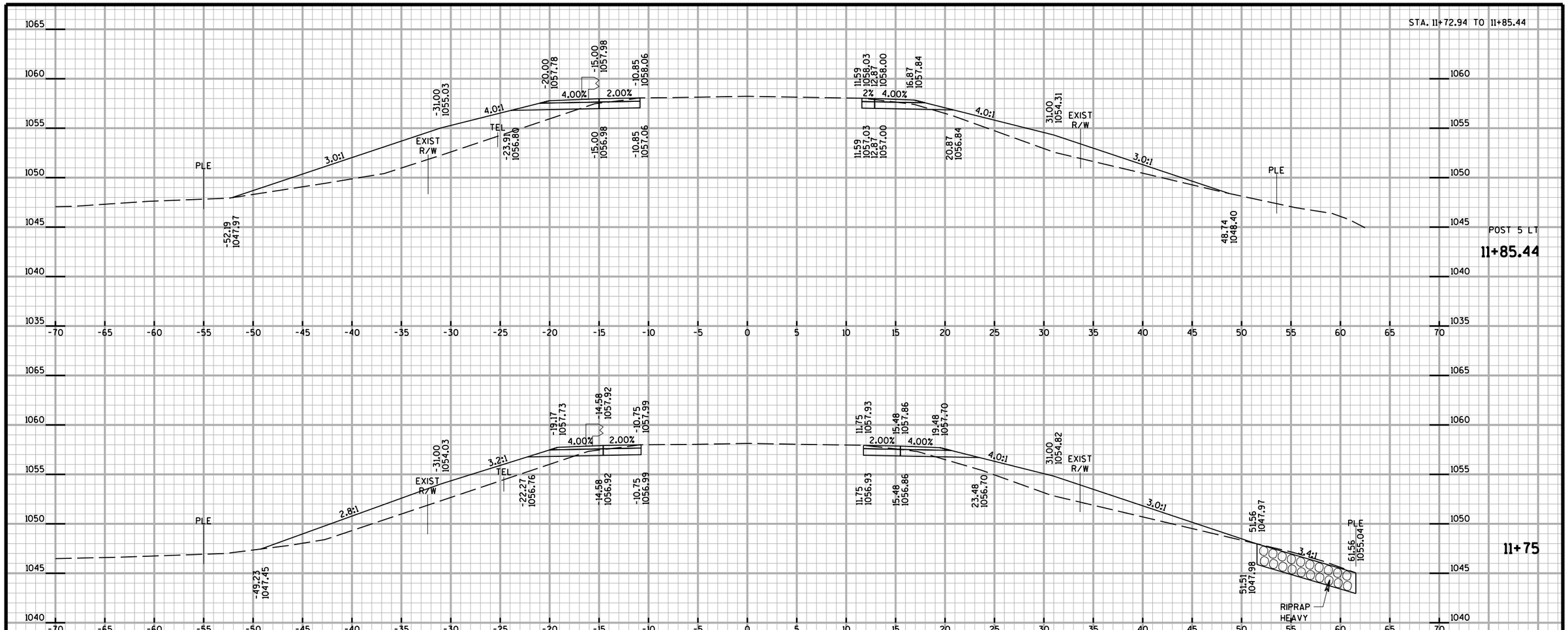
WISDOT/CADDS SHEET 21

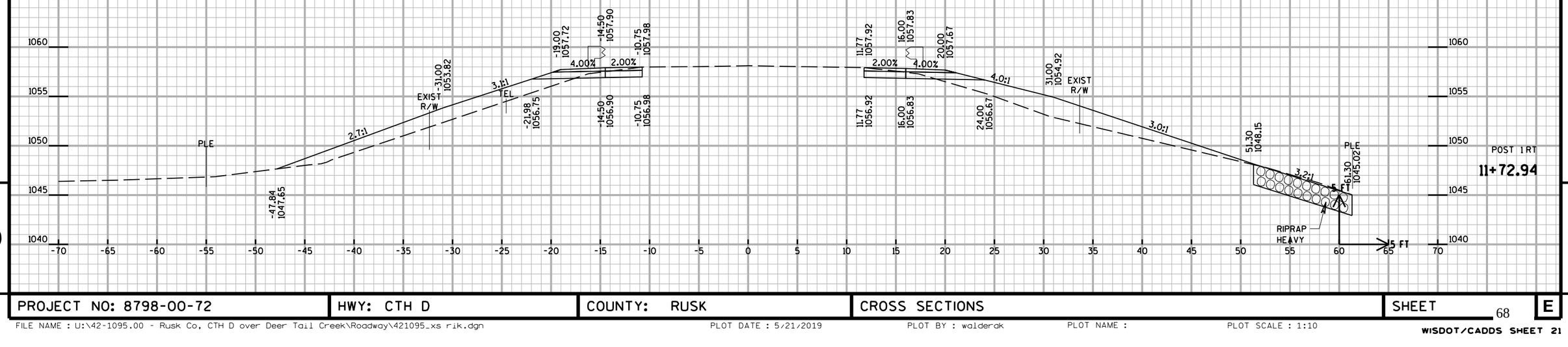
STA. 11+72.94 TO 11+85.44



POST 5 LT

11+85.44

11+75



POST 1 RT

11+72.94

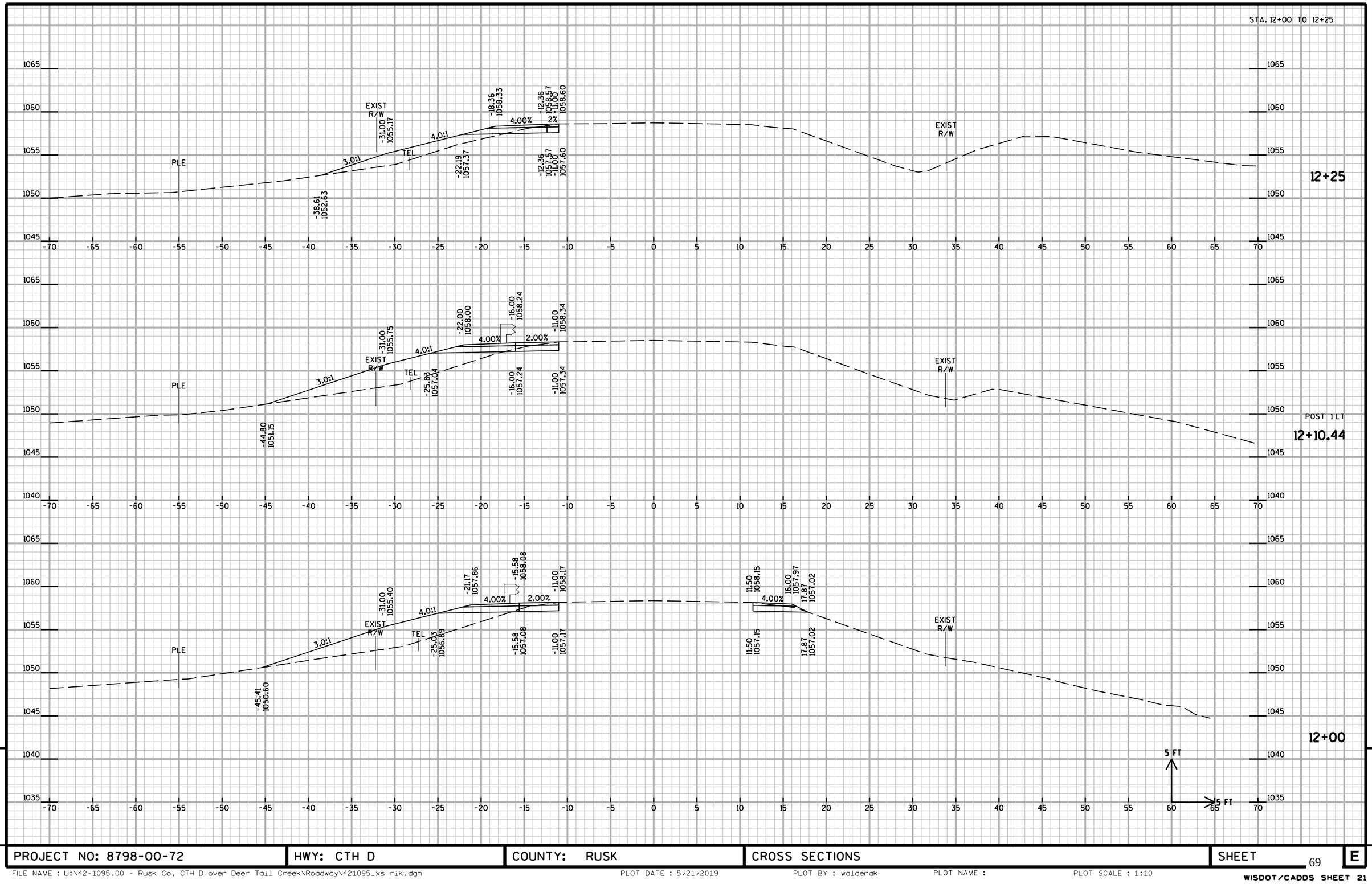
9 9

PROJECT NO: 8798-00-72	HWY: CTH D	COUNTY: RUSK	CROSS SECTIONS	SHEET	E

FILE NAME : U:\42-1095.00 - Rusk Co, CTH D over Deer Tail Creek\Roadway\421095_xs rik.dgn PLOT DATE : 5/21/2019 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 12+00 TO 12+25



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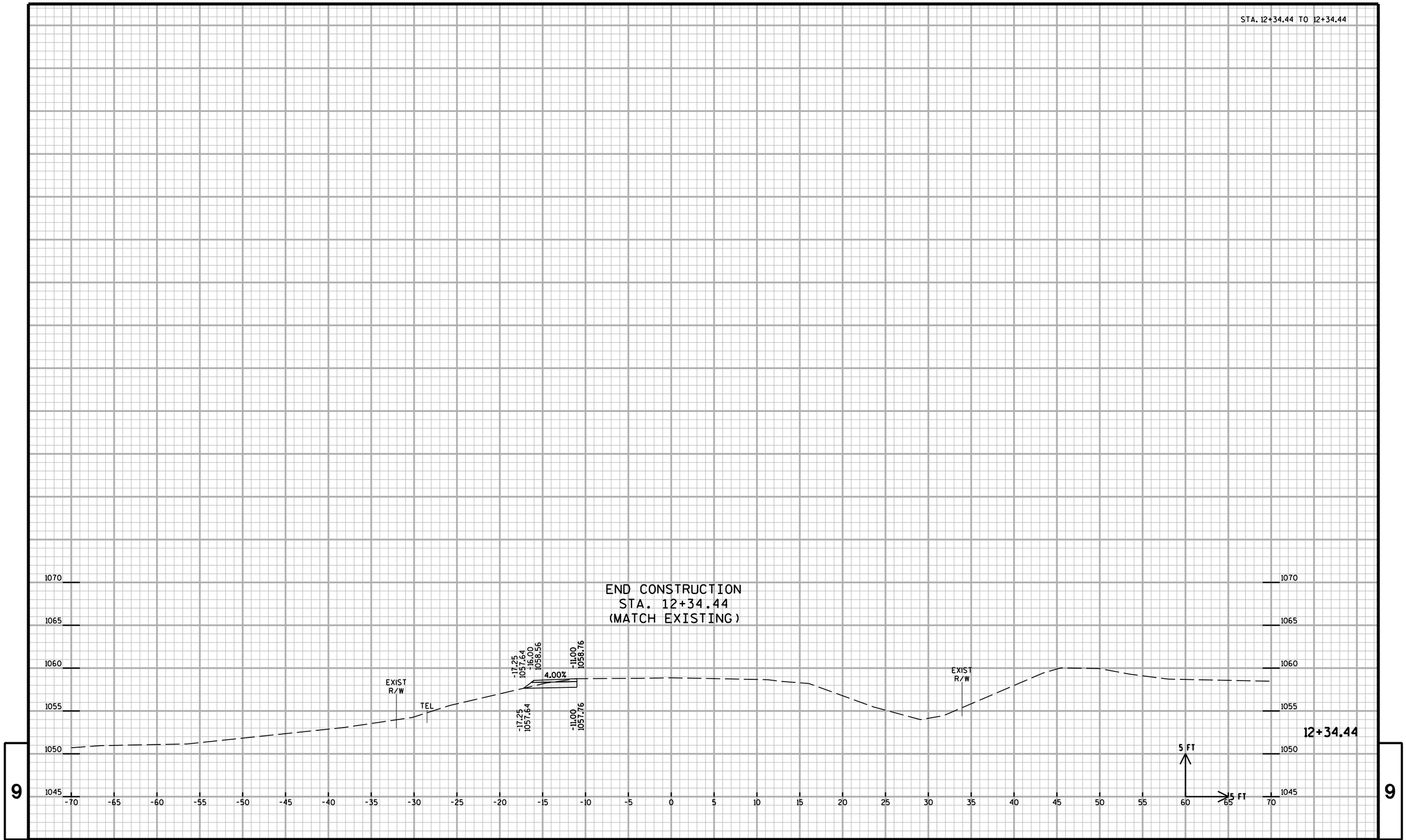
WISDOT/CADDS SHEET 21

STA. 12+34.44 TO 12+34.44



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PROJECT NO: 8798-00-72	HWY: CTH D	COUNTY: RUSK	CROSS SECTIONS	SHEET 70	E

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WISDOT/CADDS SHEET 21

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
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