SUP

JUNE 2018

PROJECT ID: 8758-00-71

WITH: N/A

COUNTY: DOUGLAS

ORDER OF SHEETS

TOTAL SHEETS = 44

22

PROJECT LOCATION

N

DESIGN DESIGNATION

A.A.D.T.	2018	=	780
A.A.D.T.	2038	=	1050
D.H.V.		=	--
D.D.		=	50/50
T.		=	10.0%
DESIGN SPEED		=	45 MPH
ESALS		=	140,000

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

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

UTILITIES

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CTH W - STH 35

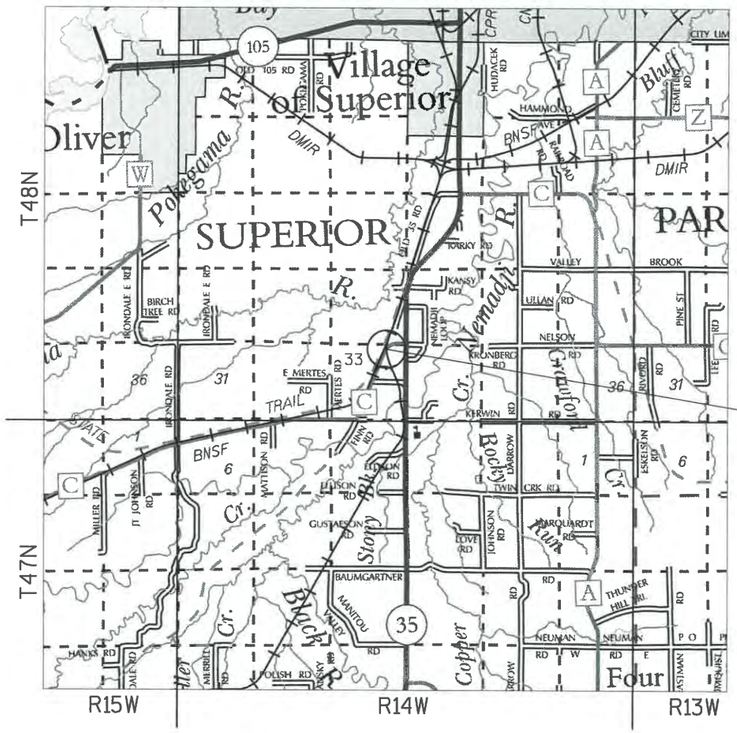
ABANDONED SOO LINE GRADE BR

CTH C

DOUGLAS COUNTY

STATE PROJECT NUMBER
8758-00-71

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8758-00-71	———	———



BEGIN PROJECT
STA 8+75.00
Y - 263118.965
X - 142091.893

END PROJECT
STA 12+10.00

LAYOUT
SCALE 0 1 MILE

TOTAL NET LENGTH OF CENTERLINE = 0.063 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, DOUGLAS COUNTY, NAD83 (1991), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ACCEPTED FOR DOUGLAS COUNTY
12/06/17 DATE
Jason J Jackman

ORIGINAL PLANS PREPARED BY

Cedar corporation
MENOMONIE - MADISON - GREEN BAY - CEDARBURG
www.cedarcorp.com
800-472-7372

WISCONSIN JOSHUA A. WEISS 37150 OREGON WI PROFESSIONAL ENGINEER
12.5.2017

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	CEDAR CORPORATION
Designer	CEDAR CORPORATION
Management Consultant	KNIGHT E/A, INC.

APPROVED FOR THE DEPARTMENT
DATE: 12/11/17 Ryan B McKay
(Management Consultant Signature)

E

FILE NAME : I:\CLIENTS-MENO\W\W3916 WDOT NW REGION - KNIGHT\005 8758-00-00 CTH C ABANDONED SOO LINE GRADE BRIDGE DOUGLAS COUNTY\87580000\SHEETSPLAN\010101-TI.DWG
LAYOUT NAME - TITLE SHEET

PLOT DATE : 12/5/2017 2:10 PM BY : JOSH WEISS

PLOT NAME :

2

GENERAL NOTES

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

SILT FENCE TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER. SILT FENCE TO BE PLACED PRIOR TO CONSTRUCTION AND IN PLACE PRIOR TO BRIDGE REMOVAL.

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE FIRST BEEN INDICATED FOR REMOVAL BY THE ENGINEER IN THE FIELD.

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE AND IS NOT SHOWN ON THE CROSS SECTIONS, BUT IS MEASURED AND PAID FOR AS EXCAVATION COMMON. THE LOCATION OF EBS WILL BE DETERMINED BY THE ENGINEER.

SHRINKAGE IS ESTIMATED AT 25%.

THE 4.5" ASPHALTIC SURFACE SHALL BE CONSTRUCTED WITH A 2.5" LOWER LAYER AND A 2" UPPER LAYER.

BEARINGS REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), DOUGLAS COUNTY.

DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE FERTILIZED AND SEEDED AS DIRECTED BY THE ENGINEER. USE SEED MIX NO. 10.

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

THE BENCHMARK IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD88.

WETLANDS ARE PRESENT WITHIN THE PROJECT LIMITS. DO NOT OPERATE EQUIPMENT OUTSIDE THE SLOPE INTERCEPTS.

DNR LIAISON

DNR NORTHERN REGION HQ
810 WEST MAPLE STREET
SPOONER, WI 54801
(715) 635-4229
AMY CRONK
amy.cronk@wisconsin.gov

DESIGN CONSULTANT

CEDAR CORPORATION
604 WILSON AVENUE
MENOMONIE, WI 54751
(715) 235-9081
TROY L. PETERSON, P.E.
troy.peterson@cedarcorp.com

DOUGLAS COUNTY

DOUGLAS CO. HIGHWAY DEPART.
7417 COUNTY ROAD E
P.O. BOX 174
HAWTHORNE, WI 54842
(715) 374-2575 ext. 612
JASON J JACKSON
jason.jackson@douglascountywi.org

TOWN OF SUPERIOR

SUPERIOR TOWN HALL
4917 SOUTH STATE ROAD 35
SUPERIOR, WI 54880
(218) 591-1297
SHEILA KEUP - CHAIRMAN
townofsuperior@centurylink.net

UTILITIES

EAST CENTRAL ENERGY
3617 EAST BAUMGARTNER ROAD
SUPERIOR, WI 54880
(715) 399-6169
JEROD STAMPER
jerod.stamper@ecemn.com

2

STANDARD ABBREVIATIONS

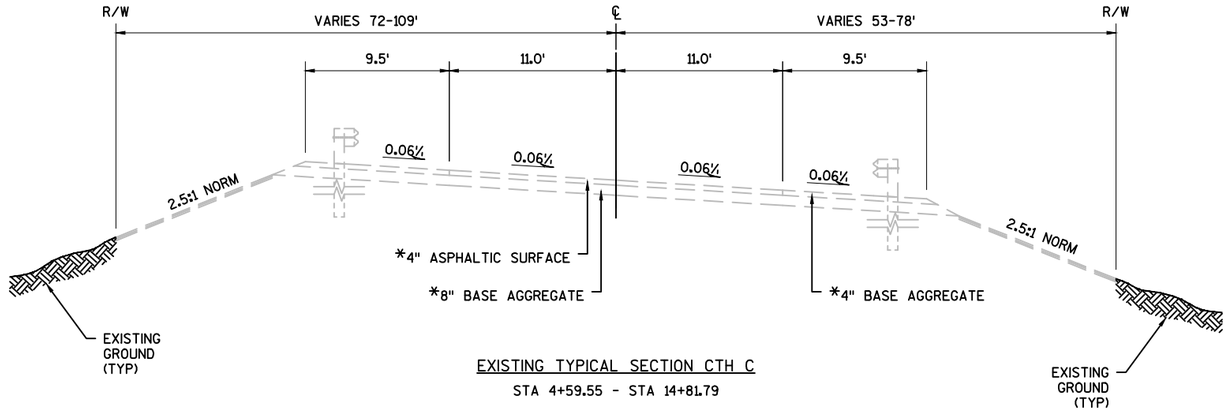
ABUT	ABUTMENT	OFF	OFFSET
AGG	AGGREGATE	PC	POINT OF CURVATURE
ET AL	AND OTHERS	PI	POINT OF INTERSECTION
AADT	ANNUAL AVERAGE DAILY TRAFFIC	PT	POINT OF TANGENCY
BF	BACK FACE	POL	POINT ON LINE
BM	BENCHMARK	PE	PRIVATE ENTRANCE
C/L OR ℄	CENTERLINE	PL	PROPERTY LINE
Δ	CENTRAL ANGLE OR DELTA	PSI	POUNDS/SQUARE INCH
CLR	CLEAR	PROP	PROPOSED
CONC	CONCRETE	R	RADIUS
CONST	CONSTRUCTION	RR	RAILROAD
COR	CORNER	REBAR	REINFORCEMENT BAR
CMP	CORRUGATED METAL PIPE	REQ'D	REQUIRED
CTH	COUNTY TRUNK HIGHWAY	RT	RIGHT
CR	CREEK	RHF	RIGHT-HAND FORWARD
CFS	CUBIC FEET/SECOND	R/W	RIGHT-OF-WAY
CULV	CULVERT	RD	ROAD
D	DEGREE OF CURVE	SEC	SECTION
DHV	DESIGN HOUR VOLUME	S	SOUTH
DIA	DIAMETER	SE	SOUTHEAST
E	EAST	SW	SOUTHWEST
EL	ELEVATION	STH	STATE TRUNK HIGHWAY
EST	ESTIMATED	STA	STATION
FPS	FEET PER SECOND	SE	SUPER ELEVATION
FE	FIELD ENTRANCE	T	TANGENT
FT	FOOT (FEET)	TEL	TELEPHONE
FTG	FOOTING	TEMP	TEMPORARY
FDN	FOUNDATION	TI	TEMPORARY INTEREST
FF	FRONT FACE	TLE	TEMPORARY LIMITED EASEMENT
IP	IRON PIN	TL OR T/L	TRANSIT LINE
LT	LEFT	T	TRUCKS
LHF	LEFT-HAND FORWARD	TYP	TYPICAL
L	LENGTH OF CURVE	U/G	UNDERGROUND
LF	LINEAR FOOT	USH	UNITED STATES HIGHWAY
MAX	MAXUMUM	VAR	VARIABLE
MI	MILE	V	VELOCITY
MIN	MINIMUM	VPC	VERTICAL POINT OF CURVATURE
NC	NORMAL CROWN	VPI	VERTICAL POINT OF INTERSECTION
N	NORTH	VPT	VERTICAL POINT OF TANGENCY
NE	NORTHEAST	W	WEST
NW	NORTHWEST	YD	YARD
NO	NUMBER		

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 = 2.31 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 2.04 ACRES

2

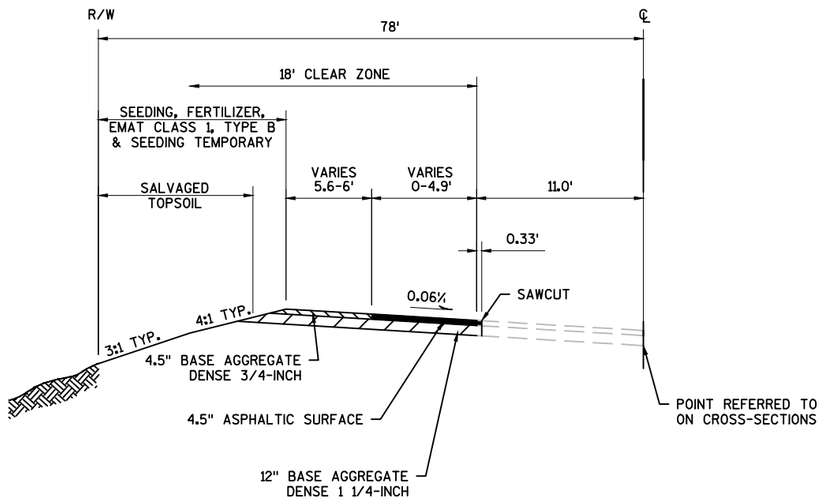


EXISTING TYPICAL SECTION CTH C

STA 4+59.55 - STA 14+81.79

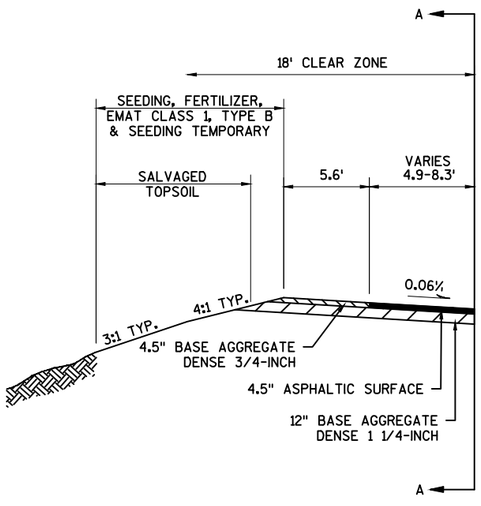
*EXISTING ASPHALT AND BASE DEPTHS WERE ASSUMED.

PROJECT NO: 8758-00-71	HWY: CTH C	COUNTY: DOUGLAS	TYPICAL SECTIONS	SHEET 3	E



TYPICAL FINISHED SECTION CTH C

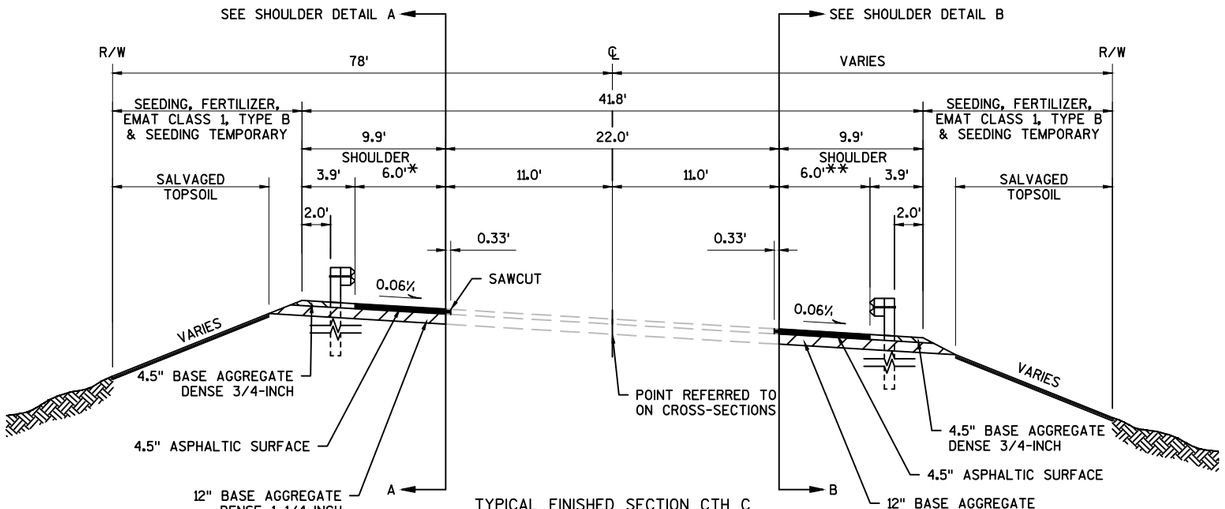
STA 4+59.55 - STA 5+27.65



TYPICAL FINISHED SECTION CTH C

SHOULDER DETAIL

STA 5+27.65 - STA 5+55.44

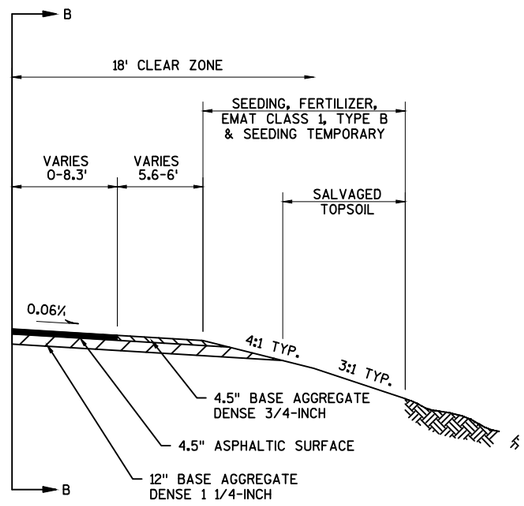


TYPICAL FINISHED SECTION CTH C

STA 5+27.65 - STA 8+75.00

*VARIES 6-8' STA 5+55.44 - STA 6+04.42

**VARIES 6-8' STA 5+90.12 - STA 6+41.20



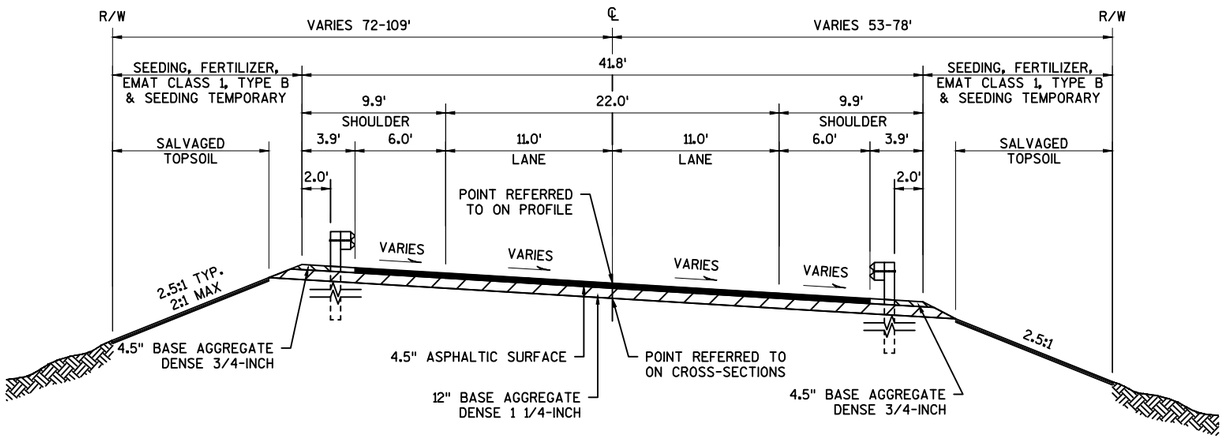
TYPICAL FINISHED SECTION CTH C

SHOULDER DETAIL

STA 5+27.65 - STA 5+90.12

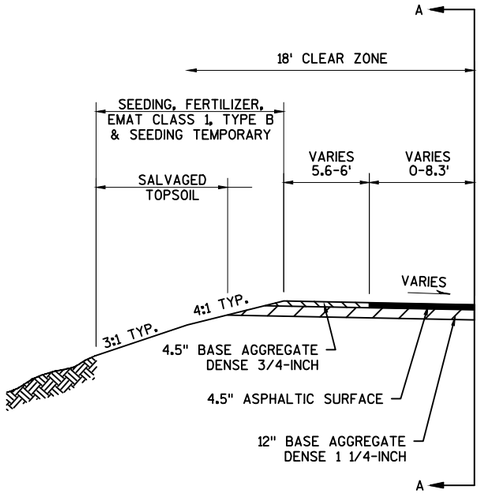
PROJECT NO: 8758-00-71	HWY: CTH C	COUNTY: DOUGLAS	TYPICAL SECTIONS	SHEET 4	E

SUPERELEVATION TABLE		
STATION	CROSS SLOPE	
	LT ('/')	RT ('/')
8+75.00	0.06	-0.06
11+81.07	0.06	-0.06
12+10	0.05	-0.05



TYPICAL FINISHED SECTION CTH C

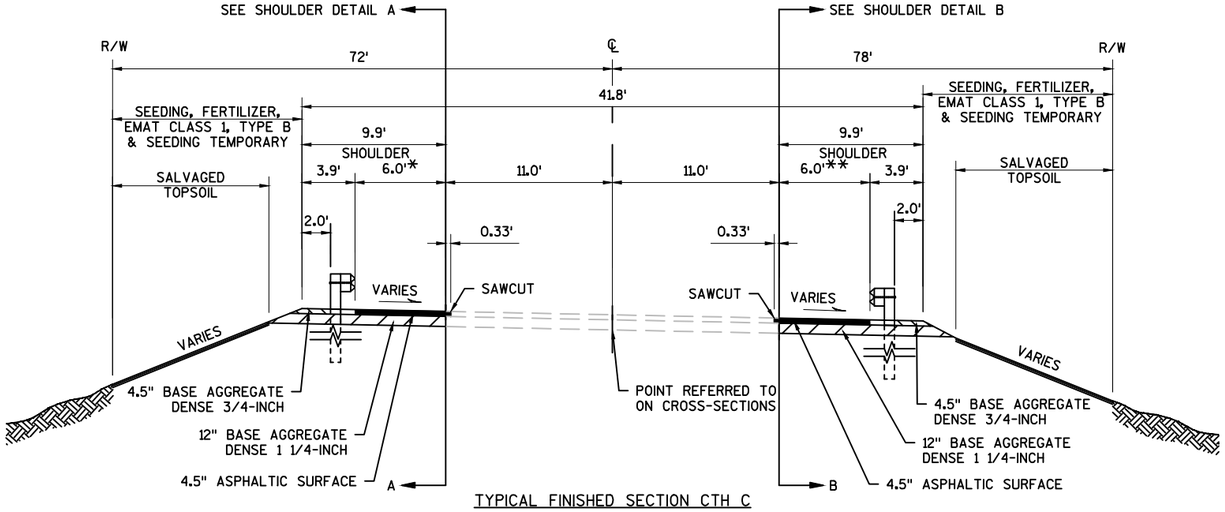
STA 8+75.00 - STA 12+10.00



TYPICAL FINISHED SECTION CTH C

SHOULDER DETAIL

STA 13+47.89 - STA 14+71.94

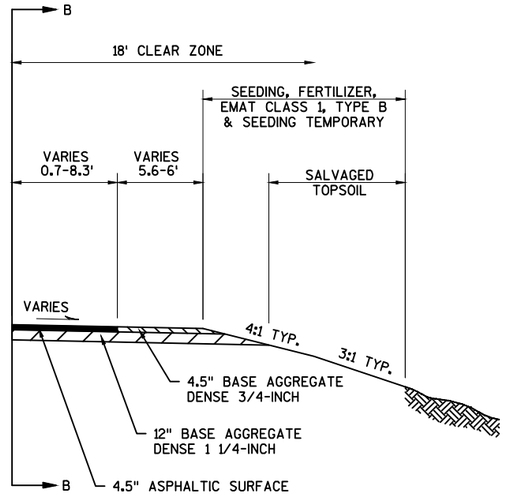


TYPICAL FINISHED SECTION CTH C

STA 12+10.00 - STA 14+71.94

*VARIES 6-8' STA 13+00.00 - STA 13+47.89

**VARIES 6-8' STA 13+07.76 - STA 13+57.74



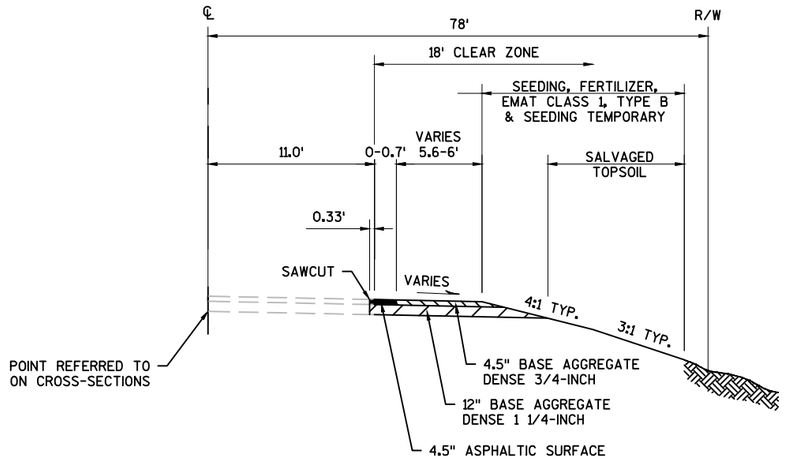
TYPICAL FINISHED SECTION CTH C

SHOULDER DETAIL

STA 13+57.74 - STA 14+71.94

PROJECT NO: 8758-00-71	HWY: CTH C	COUNTY: DOUGLAS	TYPICAL SECTIONS	SHEET 5	E

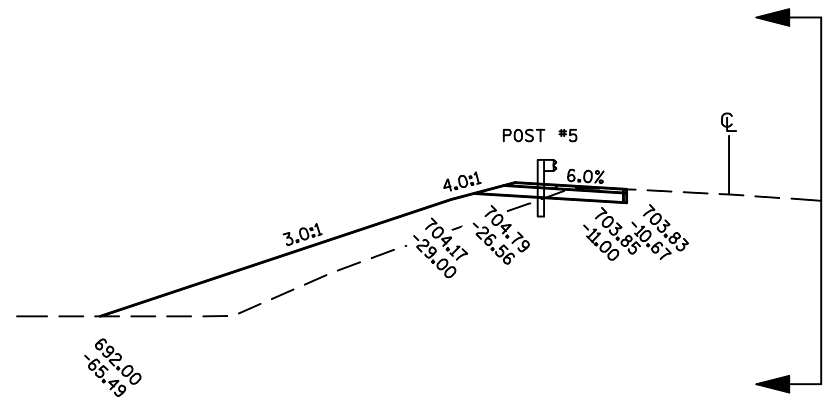
2



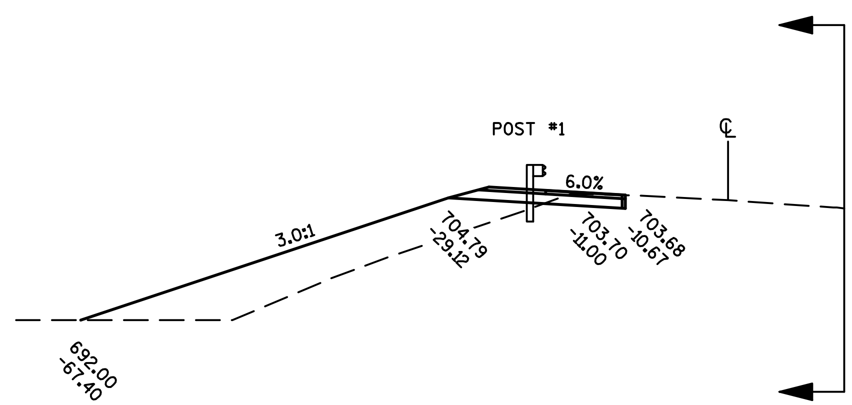
TYPICAL FINISHED SECTION CTH C

STA 14+71.94 - STA 14+81.79

PROJECT NO: 8758-00-71	HWY: CTH C	COUNTY: DOUGLAS	TYPICAL SECTIONS	SHEET 6	E



POST #5 - STA 5+79.91, 17.7' LT



POST #1 - STA 5+55.44, 19.0' LT

BEAMGUARD POST DETAIL

8758-00-71

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	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0008	203.0200	Removing Old Structure (station) 01. 10+00	LS	1.000	1.000
0010	204.0165	Removing Guardrail	LF	1,307.000	1,307.000
0012	205.0100	Excavation Common	CY	954.000	954.000
0014	213.0100	Finishing Roadway (project) 01. 8758-00-71	EACH	1.000	1.000
0016	305.0110	Base Aggregate Dense 3/4-Inch	TON	276.000	276.000
0018	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	2,199.000	2,199.000
0020	455.0605	Tack Coat	GAL	102.000	102.000
0022	465.0105	Asphaltic Surface	TON	503.000	503.000
0024	522.0524	Culvert Pipe Reinforced Concrete Class V 24-Inch	LF	459.000	459.000
0026	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	6.000	6.000
0028	614.2300	MGS Guardrail 3	LF	1,349.000	1,349.000
0030	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0032	618.0100	Maintenance And Repair of Haul Roads (project) 01. 8758-00-71	EACH	1.000	1.000
0034	619.1000	Mobilization	EACH	1.000	1.000
0036	624.0100	Water	MGAL	40.000	40.000
0038	625.0100	Topsoil **P**	SY	1,485.000	1,485.000
0040	625.0500	Salvaged Topsoil **P**	SY	5,107.000	5,107.000
0042	628.1504	Silt Fence	LF	2,068.000	2,068.000
0044	628.1520	Silt Fence Maintenance	LF	2,175.000	2,175.000
0046	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0048	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0050	628.2004	Erosion Mat Class I Type B	SY	5,962.000	5,962.000
0052	629.0210	Fertilizer Type B **P**	CWT	4.700	4.700
0054	630.0110	Seeding Mixture No. 10 **P**	LB	99.000	99.000
0056	630.0200	Seeding Temporary **P**	LB	198.000	198.000
0058	638.2602	Removing Signs Type II	EACH	4.000	4.000
0060	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0062	642.5001	Field Office Type B	EACH	1.000	1.000
0064	643.0420	Traffic Control Barricades Type III	DAY	1,476.000	1,476.000
0066	643.0705	Traffic Control Warning Lights Type A	DAY	1,968.000	1,968.000
0068	643.0900	Traffic Control Signs	DAY	1,148.000	1,148.000
0070	643.5000	Traffic Control	EACH	1.000	1.000
0072	646.1020	Marking Line Epoxy 4-Inch	LF	670.000	670.000
0074	650.4500	Construction Staking Subgrade	LF	335.000	335.000
0076	650.5000	Construction Staking Base	LF	335.000	335.000

8758-00-71

Line	Item	Item Description	Unit	Total	Qty
0078	650.9910	Construction Staking Supplemental Control (project) 01. 8758-00-71	LS	1.000	1.000
0080	650.9920	Construction Staking Slope Stakes	LF	1,020.000	1,020.000
0082	690.0150	Sawing Asphalt	LF	1,342.000	1,342.000
0084	SPV.0035	Special 01. Special Borrow	CY	12,896.000	12,896.000
0086	SPV.0090	Special 01. Heavy Duty Silt Fence	LF	107.000	107.000

3

DIVISION	STATIONING	LOCATION	205.0100 COMMON EXCAVATION (CY)	SALVAGED / UNUSABLE PAVEMENT MATERIAL (1)	AVAILABLE MATERIAL (CY) (2)	UNEXPANDED FILL	EXPANDED FILL	MASS ORDINATE +/- (3)	SPV.0035.01 SPECIAL BORROW (CY)
			CUT				FACTOR 1.30		
1	4+59 - 14+81	CTH C	954	107	847	10572	13743	-12896	12896
DIVISION 1 SUBTOTAL			954	107	847	10572	13743	-12896	12896
GRAND TOTAL			954	107	847	10572	13743	-12896	
		TOTAL COMMON EXCAVATION =	954						12896

1) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
2) AVAILABLE MATERIAL = CUT MINUS THE SALVAGED/UNUSABLE PAVEMENT MATERIAL
3) THE MASS ORDINATE = A + OR - QUANTITY CALCULATED FOR THE DIVISON. A POSITIVE QUANTITY INDICATES AN EXCESS OF MATERIAL.

3

CLEARING & GRUBBING

STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
8+50 - 10+50	LT	2	2
9+50 - 10+50	RT	1	1
11+25 - 12+25	RT	1	1
ITEM TOTALS		4	4

REMOVING SMALL PIPE CULVERTS

STATION - STATION	LOCATION	203.0100 EACH	DESCRIPTION
11+92		1	18" CORRUGATED ALUMINIUM
ITEM TOTAL		1	

REMOVING GUARDRAIL

STATION - STATION	LOCATION	204.0165 LF
5+55 - 9+37	LT	388
5+90 - 9+36	RT	340
10+63 - 13+48	LT	288
10+64 - 13+58	RT	291
ITEM TOTAL		1307

FINISHING ROADWAY

PROJECT	LOCATION	213.0100 EACH
8758-00-71	CTH C	1
ITEM TOTAL		1

NOTE: TABLE QUANTITIES ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

3

BASE AGGREGATE DENSE

STATION - STATION	LOCATION	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON
4+59 - 14+81		276	2199
ITEM TOTAL		276	2199

CULVERT PIPE REINFORCED CONCRETE

STATION - STATION	LOCATION	522.0524 CLASS V 24-INCH LF	522.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH EACH
9+81		170	2
10+71		170	2
11+92		119	2
ITEM TOTAL		459	6

WATER

STATION -STATION	LOCATION	624.0100 MGAL	REMARKS
8+75 - 12+10	CTH C	40	BASE COMPACTION DUST CONTROL
ITEM TOTALS		40	

MOBILIZATIONS

PROJECT	619.1000 MOBILIZATION EACH	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
8758-00-71	1	3	2
ITEM TOTALS	1	3	2

ASPHALTIC SURFACE

STATION	LOCATION	455.0605* TACK COAT GAL	465.0105 TON
4+59 - 14+81		102	503
ITEM TOTAL		102	503

*APPLICATION RATE = 0.050 GAL/SY

MAINTENANCE AND REPAIR OF HAUL ROADS

STATION -STATION	LOCATION	618.0100 EACH
CATEGORY 0030 8758-00-71	CTH C	1
ITEM TOTALS		1

3

MGS GUARDRAIL

STATION - STATION	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
6+08 - 12+95	LT	688	2
6+44 - 13+05	RT	661	2
ITEM TOTALS		1349	4

TOPSOIL, SALVAGED TOPSOIL, FERTILIZER, AND SEEDING

STATION - STATION	LOCATION	625.0100 TOPSOIL SY **P**	625.0500 SALVAGED TOPSOIL SY **P**	629.0210 FERTILIZER TYPE B CWT **P**	630.0110 SEEDING MIXTURE NO. 10 LB **P**	630.0200 SEEDING TEMPORARY LB **P**	REMARKS
4+59 - 14+72	LT	845	3224	2.6	55	110	TOPSOIL AT STA 9+36 TO 10+64
5+28 - 14+82	RT	640	1883	1.6	34	68	TOPSOIL AT STA 9+36 TO 10+64
UNDISTRIBUTED		--	--	0.5	10	20	
ITEM TOTAL		1485	5107	4.7	99	198	

P Pay Plan Quantity

NOTE: TABLE QUANTITIES ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

3

EROSION CONTROL ITEMS

STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2004 EROSION MAT CLASS 1 TYPE B SY	SPV.0090.01 HEAVY DUTY SILT FENCE LF	REMARKS
4+60 - 14+72	LT	1071	1125	3726	--	
5+28 - 9+80	RT	--	--	--	27	
9+74 - 10+02	LT	--	--	--	33	
9+94 - 10+20	RT	--	--	--	21	
10+16 - 10+33	LT	--	--	--	26	
5+28 - 14+82	RT	997	1050	2236	--	
ITEM TOTALS		2068	2175	5962	107	

REMOVING SIGNS

LOCATION	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
NW BRIDGE CORNER	1	1
SW BRIDGE CORNER	1	1
NE BRIDGE CORNER	1	1
SE BRIDGE CORNER	1	1
ITEM TOTAL	4	4

3

FIELD OFFICE

PROJECT	642.5001 TYPE B EACH
8758-00-71	1
ITEM TOTAL	1

TRAFFIC CONTROL

STATION - STATION	643.5000 TRAFFIC CONTROL EACH	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	643.0900 SIGNS DAYS
CTH C	1	1476	1968	1148
ITEM TOTAL	1	1476	1968	1148

SAWING

STATION	LOCATION	690.0150 ASPHALT LF
4+60 - 8+75	LT	420
5+28 - 8+75	RT	344
8+75		22
12+10		22
12+10 - 14+72	LT	262
12+10 - 14+82	RT	272
ITEM TOTAL		1342

MARKING LINE

STATION - STATION	LOCATION	646.1020 EPOXY 4-INCH LF	REMARKS
8+75 - 12+10	CENTERLINE	670	DOUBLE YELLOW
ITEM TOTALS		670	

CONSTRUCTION STAKING

STATION - STATION	650.4500 SUBGRADE LF	650.5000 BASE LF	650.9910 SUPPLEMENTAL CONTROL (8758-00-71) LS	650.9920 SLOPE STAKES LF
4+60 - 14+80	335	335	1	1020
ITEM TOTAL	335	335	1	1020

NOTE: TABLE QUANTITIES ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

CONVENTIONAL SYMBOLS

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

SECTION CORNER SYMBOL (10 11 23 24 16 15 9)
SECTION CORNER MONUMENT
GEODETIC SURVEY MONUMENT
SIXTEENTH CORNER MONUMENT
SIGN — SIGN
OFF-PREMISE SIGN — 21-25 — SIGN

R/W MONUMENT (TO BE SET)
NON-MONUMENTED R/W POINT
FOUND REBAR — RB

	COMPENSABLE	NON-COMPENSABLE
ELECTRIC POLE		
TELEPHONE POLE		
PEDESTAL (LABEL TYPE) (TV, TEL, ELEC, ETC.)		

ACCESS RESTRICTED BY ACQUISITION
NO ACCESS (BY STATUTORY AUTHORITY)
ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)
NO ACCESS (NEW HIGHWAY)
PARCEL NUMBER (25) UTILITY NUMBER (40)
PARALLEL OFFSETS

CONVENTIONAL UTILITY SYMBOLS

WATER — W
GAS — G
TELEPHONE — T
OVERHEAD TRANSMISSION LINES — OH
ELECTRIC — E
CABLE TELEVISION — TV
FIBER OPTIC — FO
SANITARY SEWER — SAN
STORM SEWER — SS

CONVENTIONAL ABBREVIATIONS

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

CURVE DATA

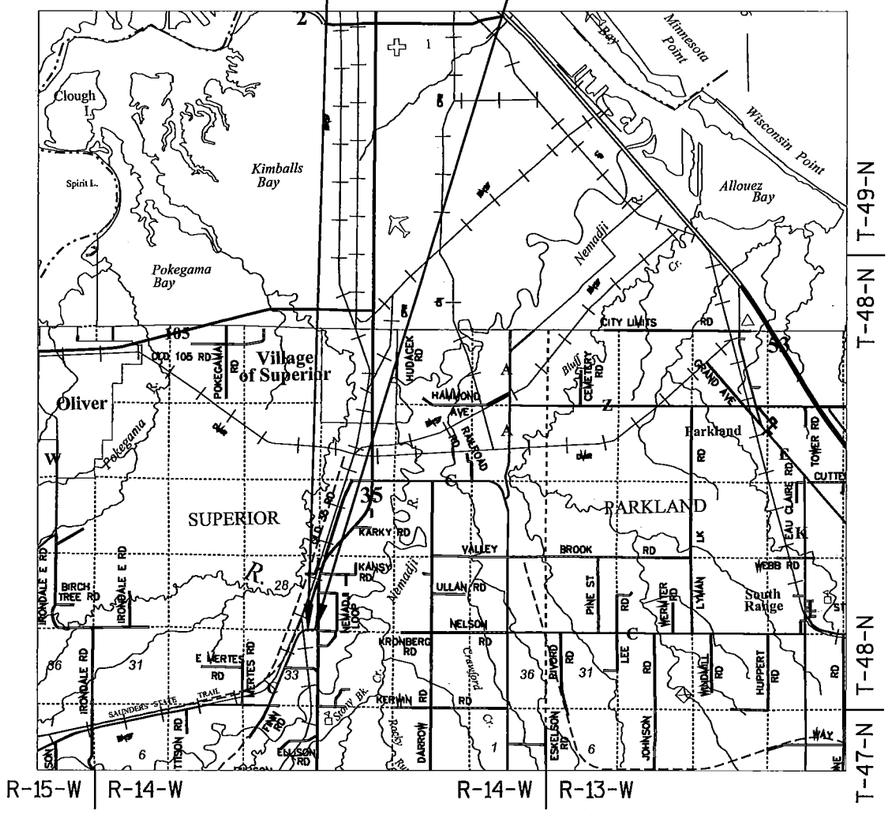
LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE	Δ/DELTA
LENGTH OF CURVE	L
TANGENT	T
DIRECTION AHEAD	DA
DIRECTION BACK	DB

CAUTION
THIS PLAT IS FOR ILLUSTRATIVE PURPOSES ONLY. DEEDS MUST BE CHECKED TO DETERMINE PROPERTY BOUNDARIES.

N

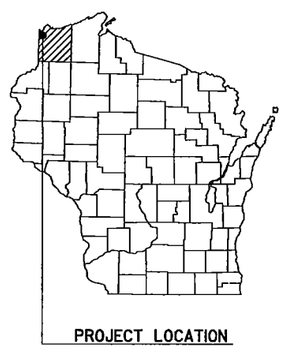
BEGIN RELOCATION ORDER
STA 5+50.00
Y = 262954.7476
X = 141813.1529
141.63 FEET SOUTH AND 1249.23 FEET WEST OF THE SOUTHEAST SECTION CORNER OF SEC. 28, T48N, R14W

END RELOCATION ORDER
STA 10+69.42
Y = 263169.4685
X = 142279.2992
73.09 FEET NORTH AND 783.09 FEET WEST OF THE SOUTHEAST SECTION CORNER OF SEC. 28, T48N, R14W



LAYOUT
SCALE 0 1MI 2MI

TOTAL NET LENGTH OF CENTERLINE = 0.029 MI



PROJECT LOCATION

R/W PROJECT NUMBER 8758-00-00	SHEET NUMBER	TOTAL SHEETS
FED PROJECT NUMBER	4.01	2

PLAT OF RIGHT OF WAY REQUIRED FOR
CTH W - STH 35
ABANDONED SOO LINE GRADE BRIDGE B-16-0047
CTH C — DOUGLAS COUNTY
CONSTRUCTION PROJECT NUMBER 8758-00-70

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), DOUGLAS COUNTY, NAD 83 (1991) IN US SURVEY FEET. VALUES SHDWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY ¾" X 24" IRON REBARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

ALL RIGHT-OF-WAY LINES DEPICTED IN THE NON-ACQUISITION AREAS ARE INTENDED TO RE-ESTABLISH EXISTING RIGHT-OF-WAY LINES AS DETERMINED FROM PREVIOUS PROJECTS, OTHER RECORDED DDCUMENTS, OR FROM CENTERLINE OF EXISTING PAVEMENTS.

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.

PARCEL IDENTIFICATION NUMBERS MAY NOT POINT TO ALL AREAS OF ACQUISITION, AS NOTED ON THE SCHEDULE OF LANDS & INTERESTS REQUIRED.

APPROVED FOR DOUGLAS COUNTY
DATE: 7/27/17 Jason J. Jachman (Signature)

ORIGINAL PLAT PREPARED BY
Cedar corporation
MENOMONIE - MADISON - GREEN BAY
www.cedarcorp.com 800-472-7372

WISCONSIN
DUSTIN J. LaBLONDE
S 3096
MENOMONIE
WI
LAND SURVEYOR
07/26/2017

REVISION DATE

FILE NAME : I:\CLIENTS-MENO\W\W3916 WDOT NW REGION - KNIGHT\005 8758-00-00 CTH C ABANDONED SOO LINE GRADE BRIDGE DOUGLAS COUNTY\87580000\RW\040101-RP.DWG PLOT DATE : 7/19/2017 3:46 PM PLOT BY : DUSTIN LABLONDE PLOT NAME :
LAYOUT NAME - ****

SCHEDULE OF LANDS & INTERESTS REQUIRED		OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO DOUGLAS COUNTY.				
PARCEL NUMBER	SHEET NUMBER	OWNER(S)	INTEREST REQUIRED	R/W AREA REQUIRED (ACRES)		
				NEW	EXISTING	TOTAL
1	4.02	BURLINGTON NORTHERN RAILROAD COMPANY	HE	0.15	--	0.15
2	4.02	DOUGLAS COUNTY	HE	0.09	--	0.09

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE: EXISTING HIGHWAY RIGHT-OF-WAY FOR CTH C ESTABLISHED FROM PREVIOUS PROJECT 8758-01-00 AND DEEDS: V.388 P.307, V.388 P.309, V.388 P.310, V.390 P.464

PI STA = 9+20.19
N = 263185.355
E = 142102.740
LCH = 642.45'
LCB = N71°01'03"E
R = 960.00'
D = 5°58'05.92"
Δ = 39°05'15" RT.
L = 655.09'
T = 340.87'
DA = S89° 26' 02"E
DB = N51° 28' 07"E
PC STA = 5+79.32
PT STA = 12+34.40

TOWN

BEGIN RELOCATION ORDER
STA. 5+50.00
Y = 262954.7476
X = 141813.1529

END RELOCATION ORDER
STA. 10+69.42
Y = 263169.4685
X = 142279.2992

CHRISTOPHER M. GROSS V.461 P.897

BURLINGTON NORTHERN RAILROAD COMPANY V.474 P.145

FRED R. THIEL V.390 P.464

SE - SE

EXISTING STRUCTURE B-16-0047 TO BE REMOVED

BURLINGTON NORTHERN RAILROAD COMPANY V.473 P.145

EAST CENTRAL ENERGY

SLOPE INTERCEPT

PT: 12+34.40

EP: 14+99.03

Y = 263179.3717
X = 142708.2093

Y = 263157.0560
X = 140441.2720
BRASS CAP FND

Y = 263096.3810
X = 143062.3870
COTTON GIN SPK FND

Y = 262952.0066
X = 141809.7110

SECTION LINE

N88° 40' 26"W 1650.77'

N88° 40' 26"W 774.28'

N88° 40' 26"W 196.77'

S88° 40' 26"E 20.03'

N78° 25' 19"E 100.47'

S09° 16' 49"E 44.10'

S23° 52' 05"E 10.00'

N18° 15' 26"W 41.95'

S80° 26' 30"W 135.74'

S38° 31' 53"E 46.45'

N38° 31' 53"W 20.01'

S48° 34' 11"W 61.60'

CURVE 2
R = 788.44'
L = 22.42'
LCH = 22.42'
LCB = N73° 04' 45"E

CURVE 3
R = 884.93'
L = 103.48'
LCH = 103.43'
LCB = S63° 14' 11"W

CURVE 4
R = 894.93'
L = 263.10'
LCH = 262.15'
LCB = N58° 09' 33"E

CURVE 5
R = 874.93'
L = 95.13'
LCH = 95.09'
LCB = S52° 48' 45"W

LINE TABLE	
L1	N18° 15' 26"W 16.79'
L2	N18° 15' 26"W 31.27'
L3	N09° 16' 49"W 55.90'
L4	S23° 52' 05"E 22.08'
L5	S23° 52' 05"E 47.26'
L6	S38° 31' 53"E 46.45'

HE COORDINATE TABLE		
POINT	Y	X
100	263114.2997	142288.3139
101	263070.7771	142295.4256
102	263048.2350	142161.5566
103	263088.0732	142148.4144
104	263094.5986	142169.8641
105	263114.7632	142268.2897
106	262918.4106	141842.0892
107	262902.7579	141854.5539
108	262960.2310	141930.3065
109	263000.9910	141976.4903
110	263047.5644	142068.8351
111	263056.7095	142064.7887

OF

NE - NE

SUPERIOR

1 BURLINGTON NORTHERN RAILROAD COMPANY V.474 P.145

2 DOUGLAS COUNTY V.471 P.899

DOUGLAS COUNTY V.388 P.307

RICHARD K. RUSSOM V.425 P.548

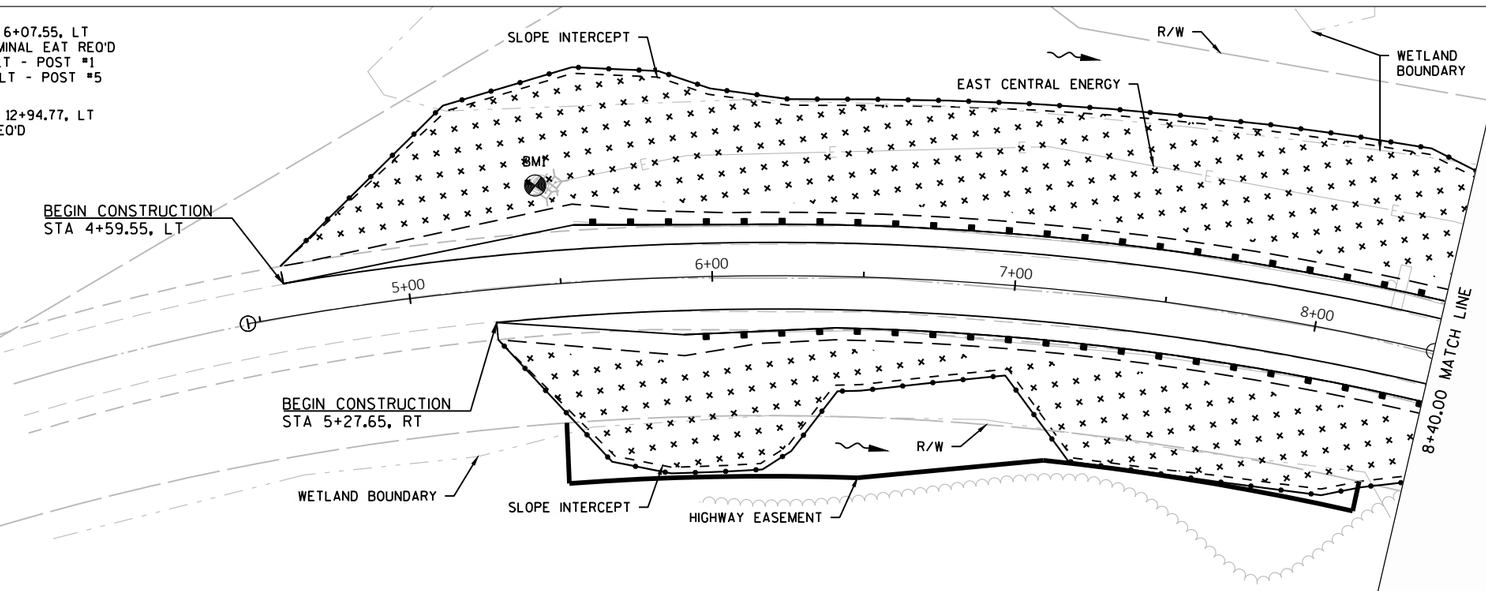
REVISION DATE	DATE	SCALE, FEET	HWY: CTH C	R/W PROJECT NUMBER 8758-00-00	PLAT SHEET 4.02	
	GRID FACTOR N/A	0 30 60	COUNTY: DOUGLAS	CONSTRUCTION PROJECT NUMBER 8758-00-70	SHEET 2 OF ?	E

FILE NAME : 040102-RP.DWG
LAYOUT NAME - ****
PLOT DATE : 7/20/2017 3:10 PM
PLOT BY : DUSTIN LABLONDE
PLOT NAME :
PLOT SCALE : 1 IN:60 FT

STA 5+55.44 - STA 6+07.55, LT
MGS GUARDRAIL TERMINAL EAT REQ'D
STA 5+55.44, 19.0' LT - POST #1
STA 5+79.91, 17.7 ' LT - POST #5

STA 6+07.55 - STA 12+94.77, LT
MGS GUARDRAIL 3 REQ'D

PI STA = 8+63.91
Y = 263186.117
X = 142025.588
DELTA = 47°03'41"
D = 5°58'06"
T = 418.03'
L = 788.52'
R = 960.00'
PC STA = 4+45.88
Y = 262882.913
X = 141737.808
PT STA = 12+34.40
Y = 263181.987
X = 142443.598
BK = N43°30'17.6"E
AH = S89°26'01.8"E



LEGEND

SILT FENCE

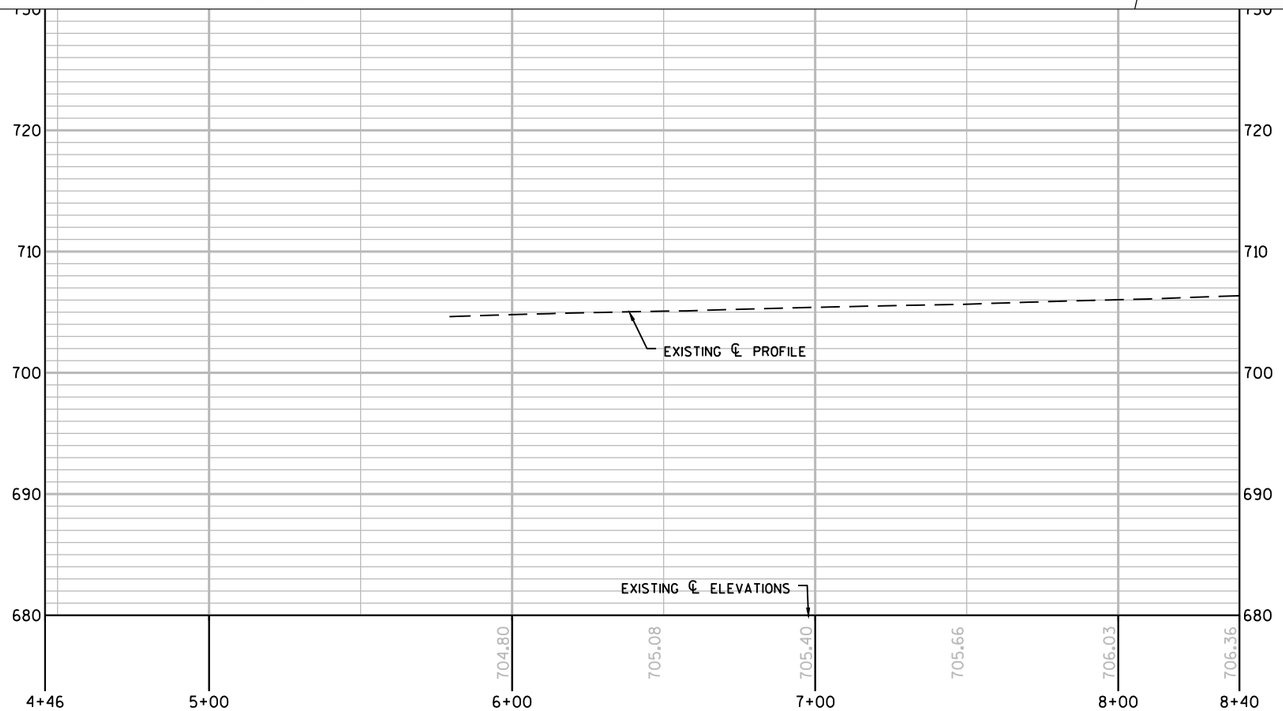
EROSION MAT CLASS 1, TYPE B

STA 5+90.12 - STA 6+44.38, RT
MGS GUARDRAIL TERMINAL EAT REQ'D
STA 5+90.19, 19.0' RT - POST #1

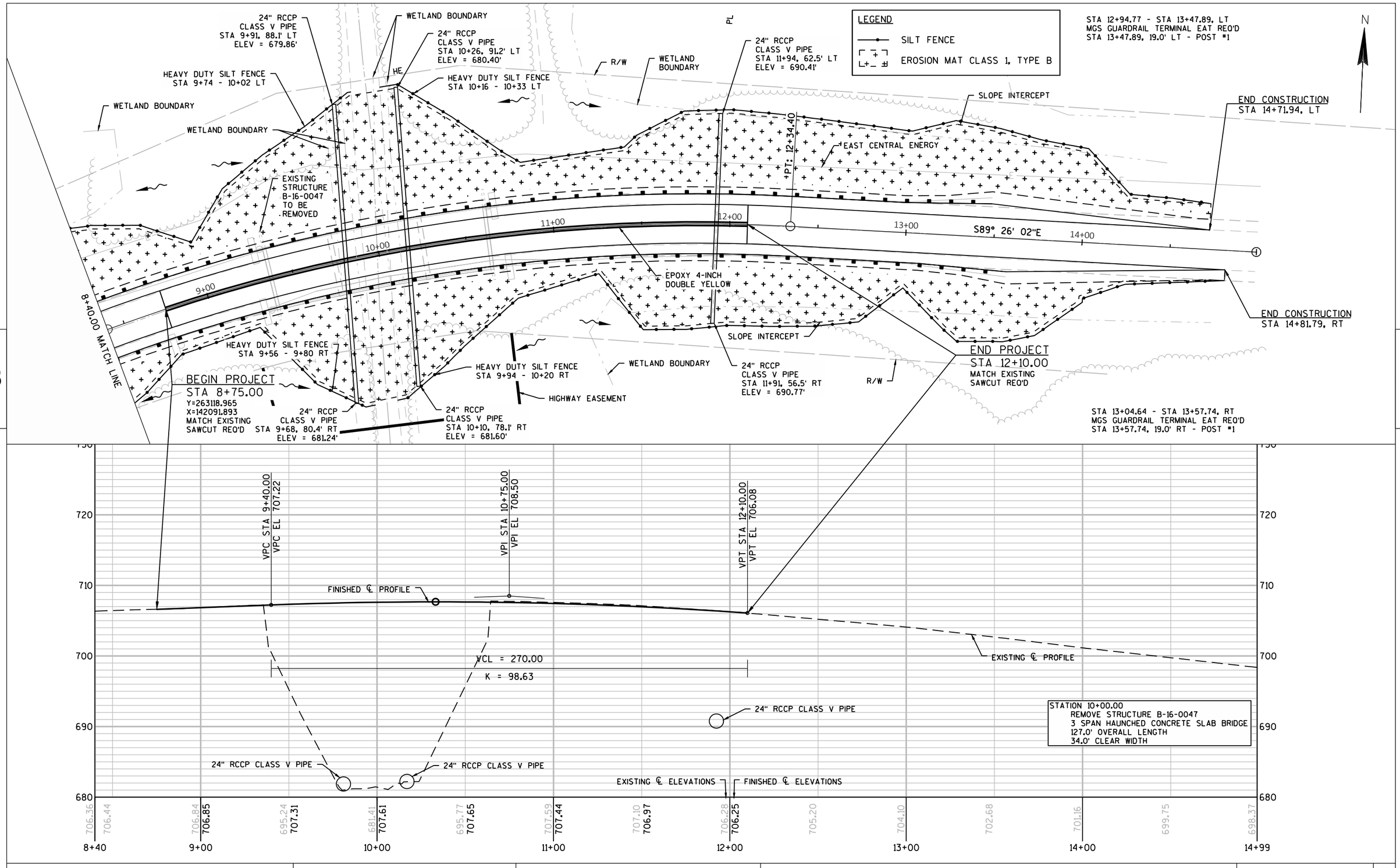
STA 6+44.38 - STA 13+04.64, RT
MGS GUARDRAIL 3 REQ'D

BENCHMARKS			
NO	STA	DESCRIPTION	ELEV
1	5+46	SET 5" NAIL IN POWER POLE (@ 33.3' LT)	691.39

NOTE: POSITIONS SHOWN ARE WISCONSIN COUNTY COORDINATES, DOUGLAS, NAD 88 (1991) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.



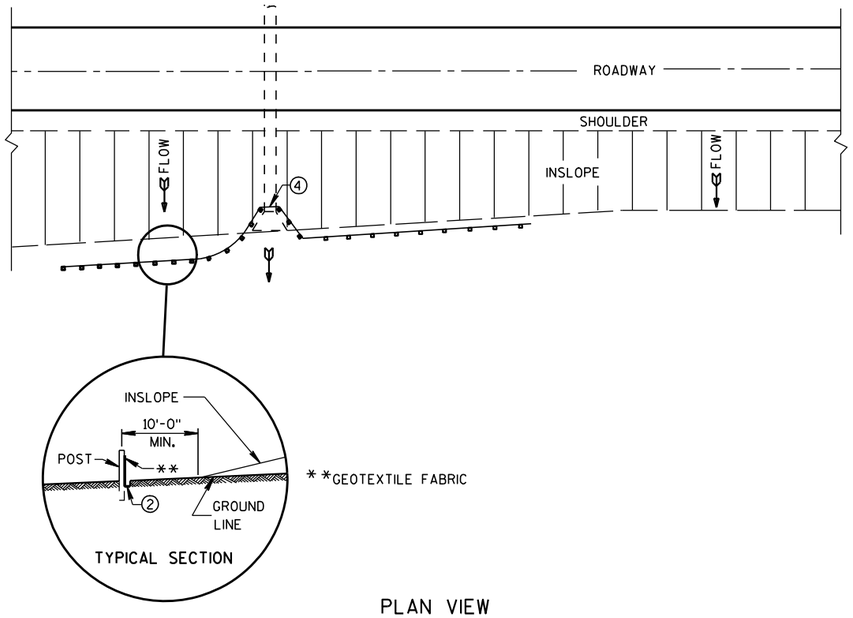
PROJECT NO:8758-00-71	HWY:CTH C	COUNTY:DOUGLAS	PLAN AND PROFILE: CTH C	SHEET 15	E



PROJECT NO:8758-00-71	HWY:CTH C	COUNTY:DOUGLAS	PLAN AND PROFILE: CTH C	SHEET 16	E

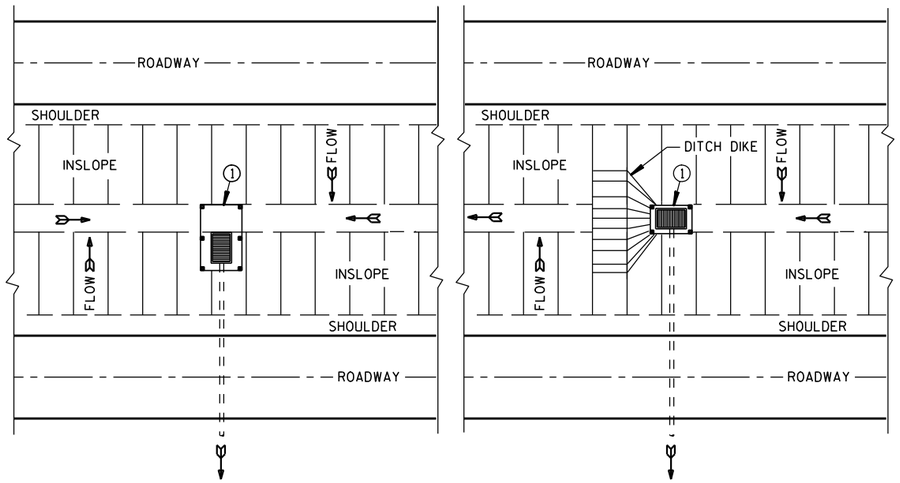
Standard Detail Drawing List

08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
14B42-05A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-03A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-03B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-03C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C08-18A	LONGITUDINAL MARKING (MAINLINE)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



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.

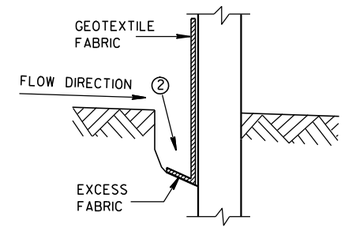
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

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.

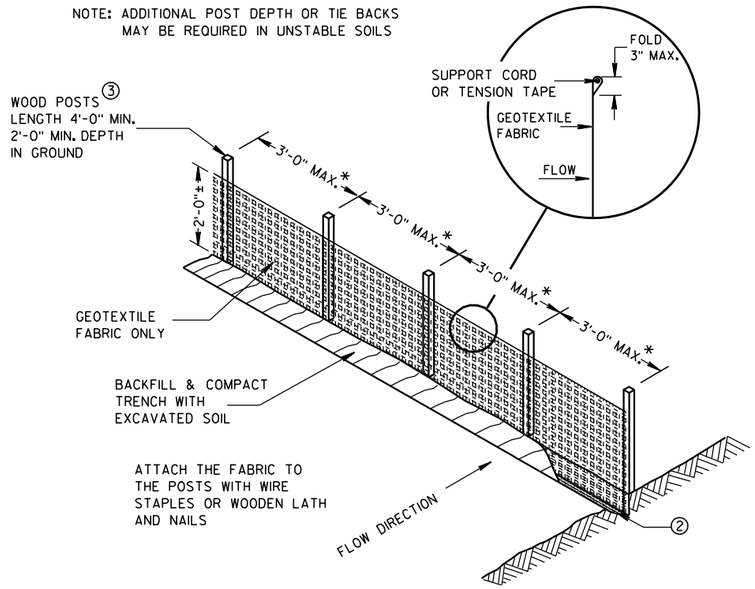
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

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

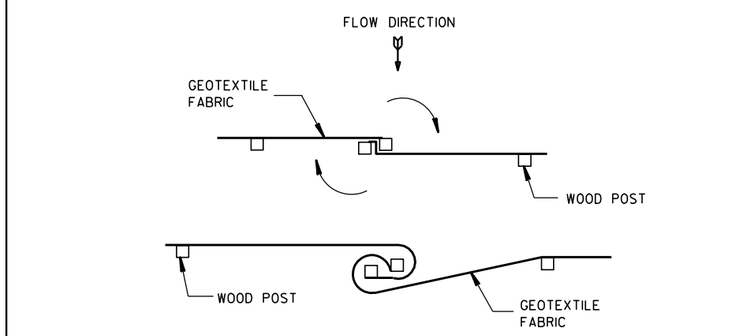
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



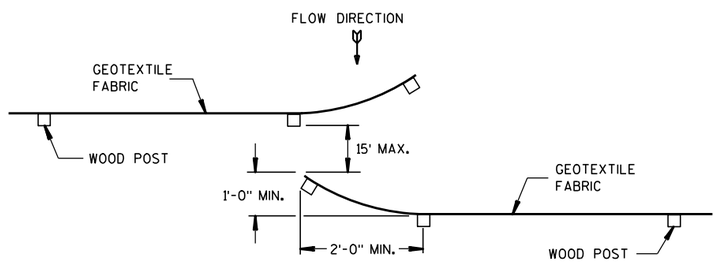
TRENCH DETAIL



SILT FENCE

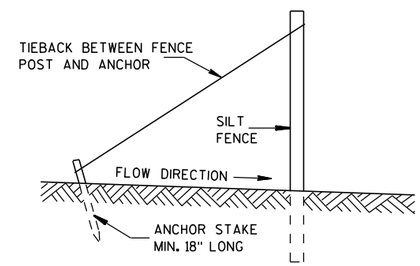


TWIST METHOD



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

METAL APRON ENDWALLS

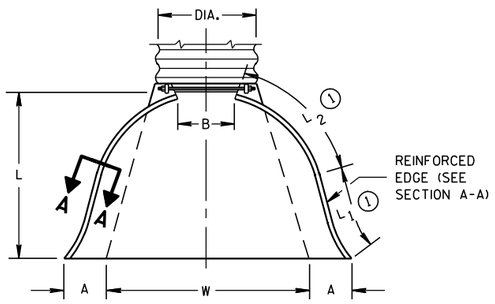
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

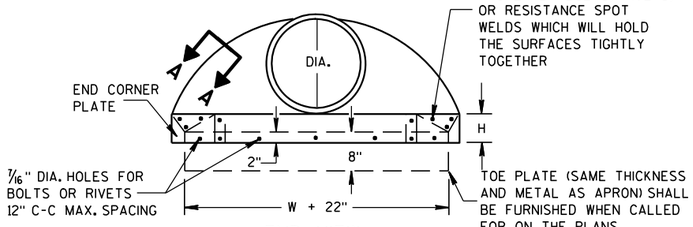
REINFORCED CONCRETE APRON ENDWALLS

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

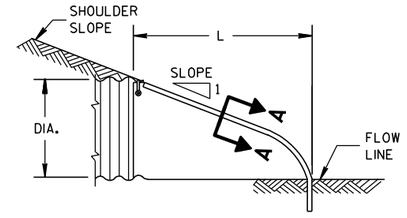
*MINIMUM
**MAXIMUM



PLAN VIEW

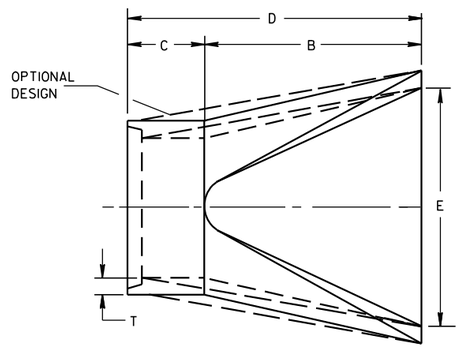


END VIEW

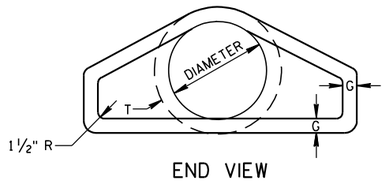


SIDE ELEVATION

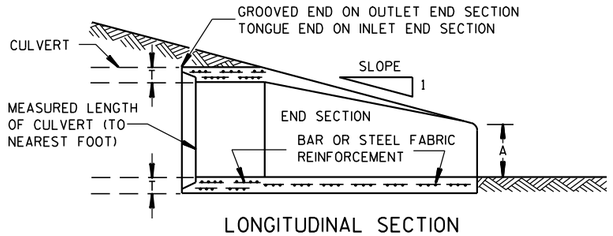
METAL ENDWALLS



PLAN

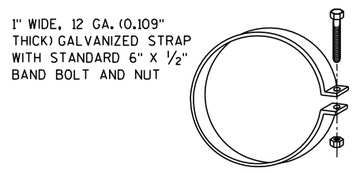


END VIEW



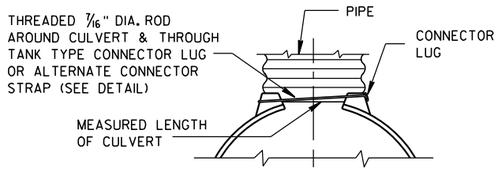
LONGITUDINAL SECTION

CONCRETE ENDWALLS

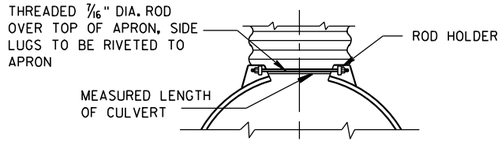


ALTERNATE FOR TYPE 1 CONNECTION

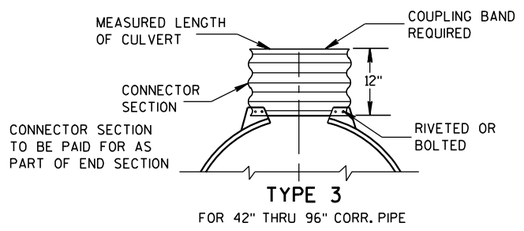
END SECTION CONNECTOR STRAP



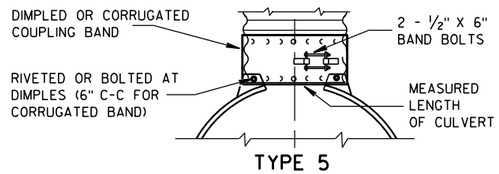
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

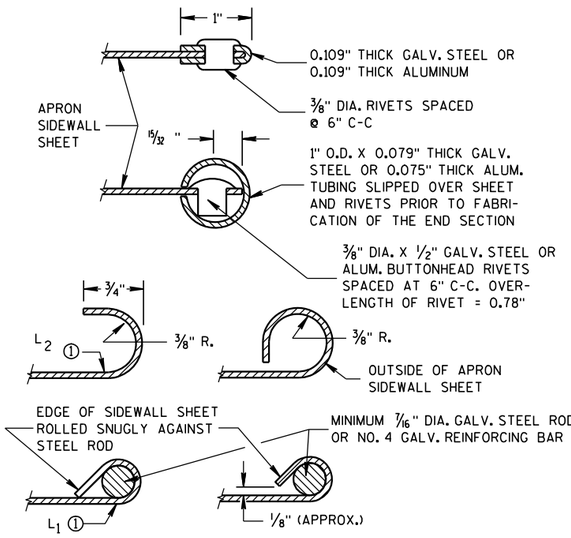
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

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

APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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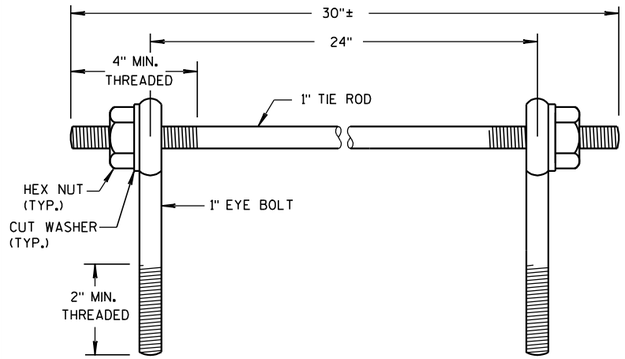
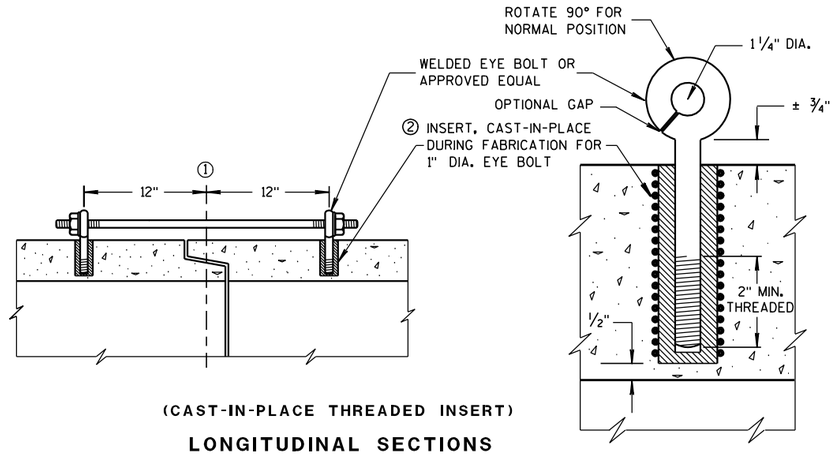
S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

GENERAL NOTES

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

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

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

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

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

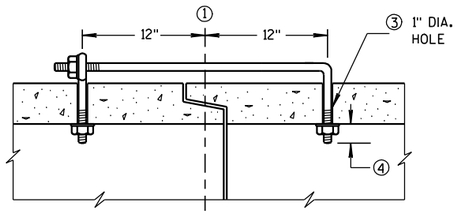
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

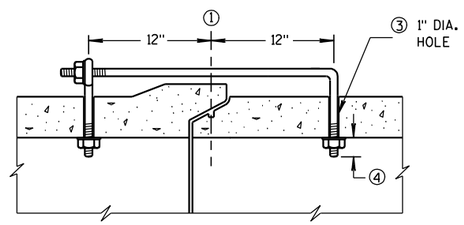
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

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



(TONGUE & GROOVE PIPE)

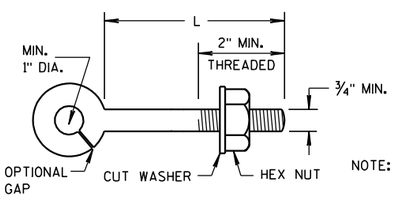


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

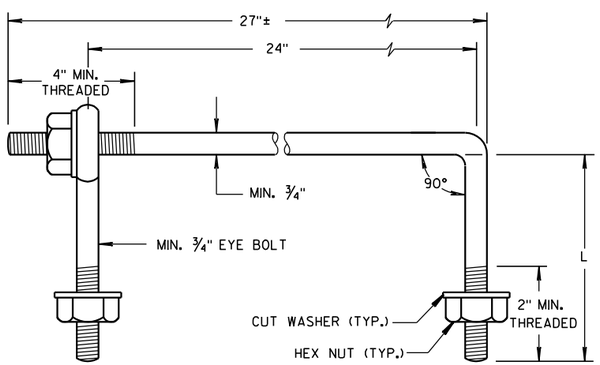
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

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



EYE BOLT AND TIE ROD

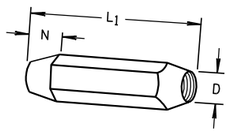
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

ADJUSTABLE TIE ROD TABLE

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

DIMENSIONS SHOWN ARE IN INCHES



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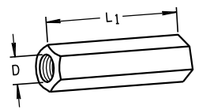
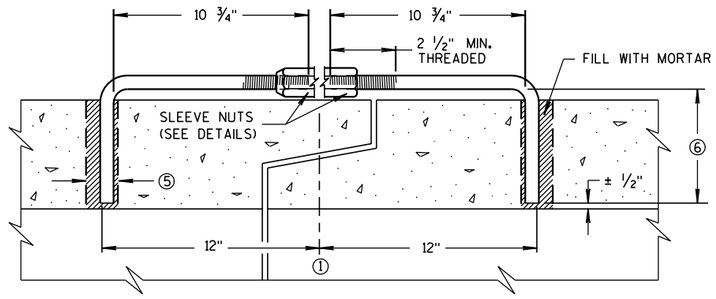


PLAIN

RIGHT AND LEFT THREADS

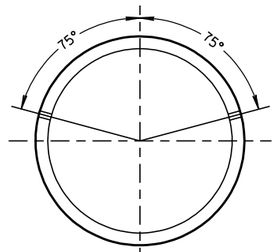
SLEEVE NUTS



LONGITUDINAL SECTION

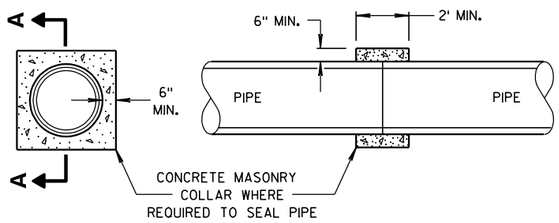
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 8 F 4-7

6

S.D.D. 8 F 4-7

(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.

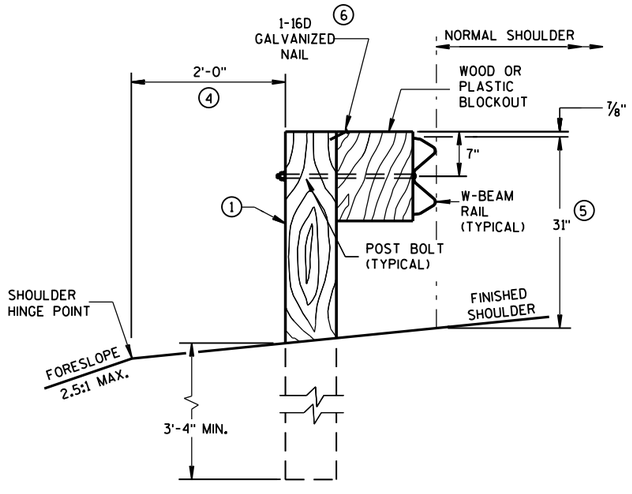
(2) USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½ 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).

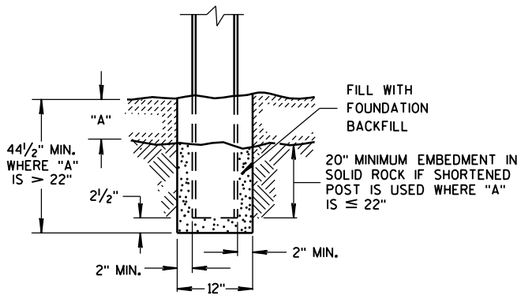
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

(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.



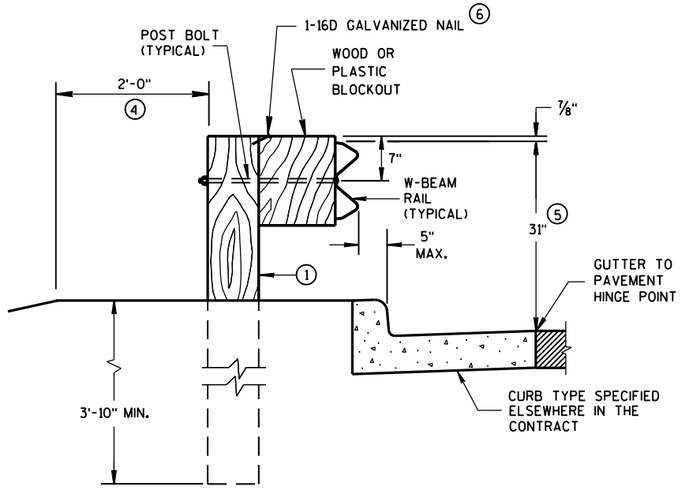
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



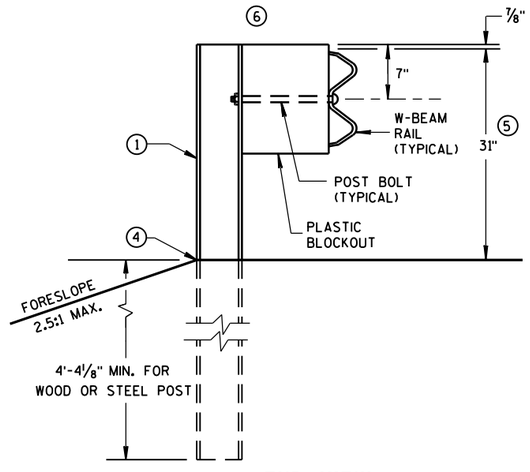
END VIEW

SETTING STEEL OR WOOD POST IN ROCK (3)



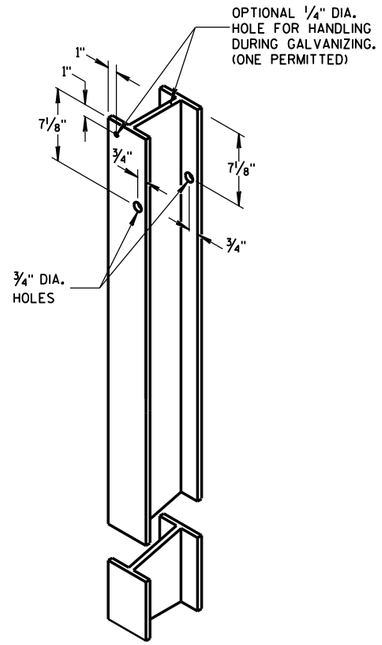
END VIEW

LOCATED ALONG A CURBED ROADWAY

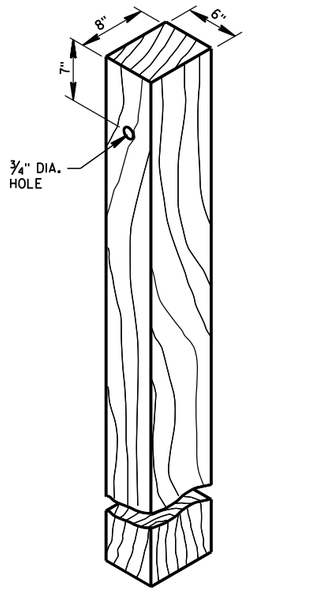


END VIEW

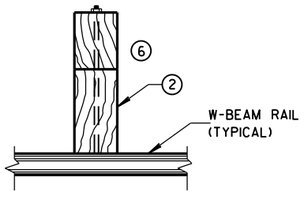
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



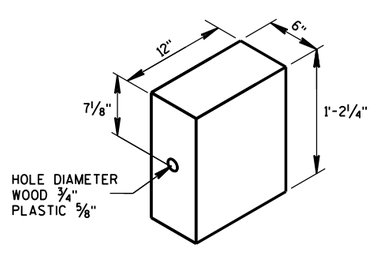
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) (1)



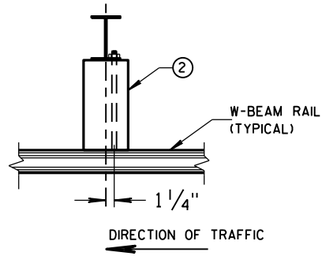
WOOD POST
(6" X 8") NOMINAL (1)



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT (2)



PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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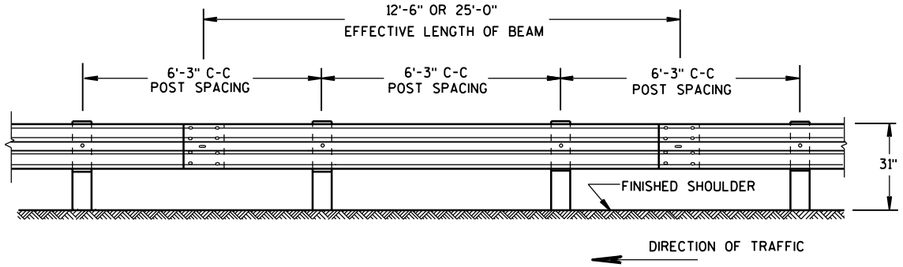
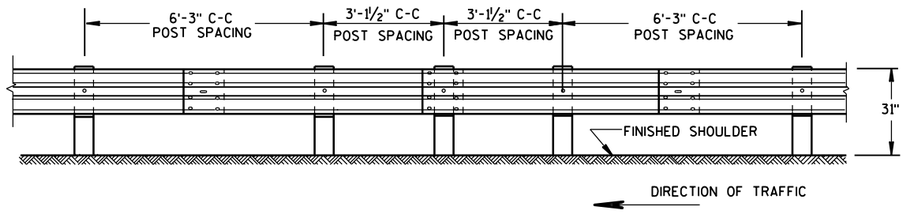
S.D.D. 14 B 42-5a



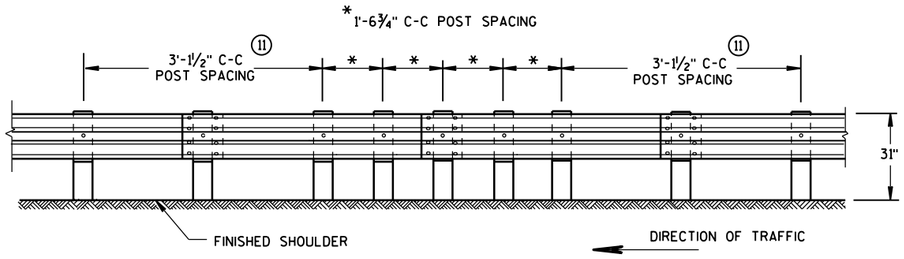
FRONT VIEW

POST SPACING STANDARD INSTALLATION



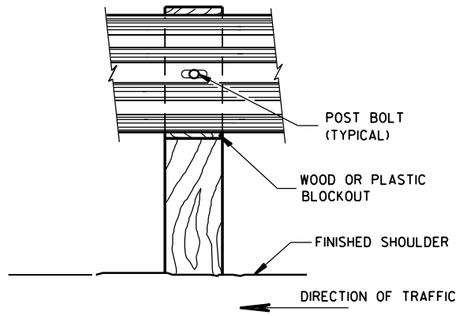
FRONT VIEW

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

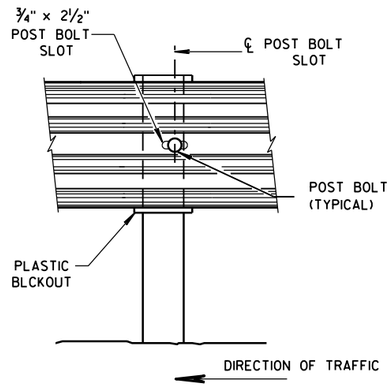


FRONT VIEW

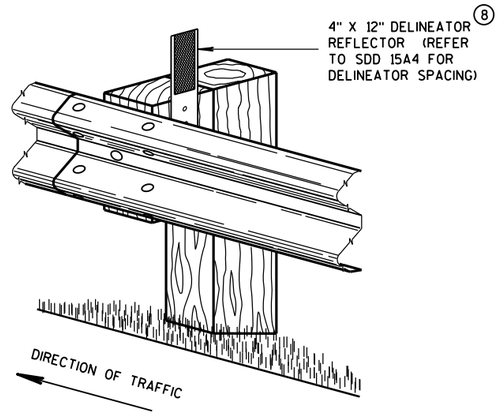
QUARTER POST SPACING (QS)



FRONT VIEW AT WOOD POST



FRONT VIEW AT STEEL POST



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

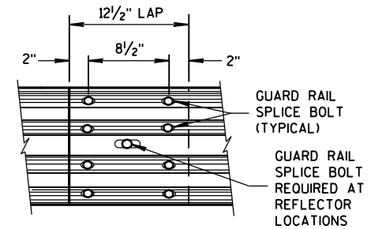
GENERAL NOTES

(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.

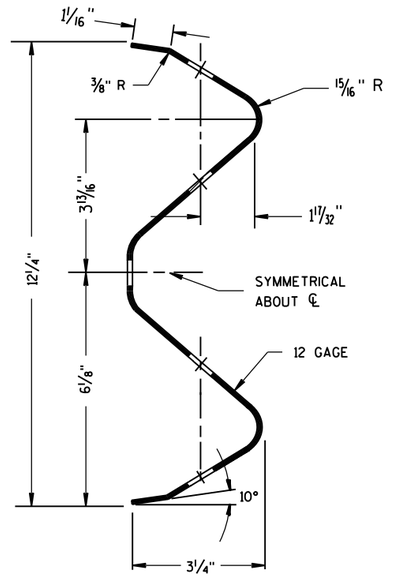
(11) 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

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

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



FRONT VIEW
MID-SPAN BEAM SPLICE



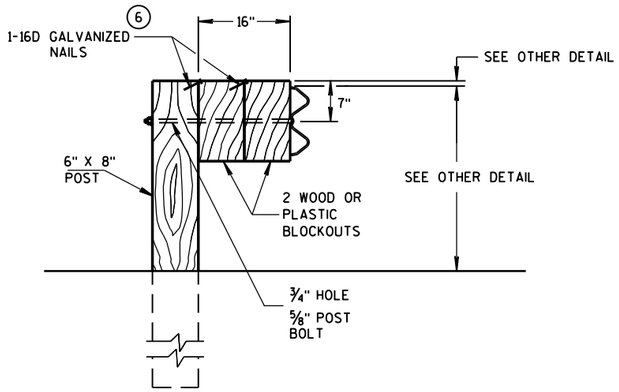
SECTION THRU W-BEAM RAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

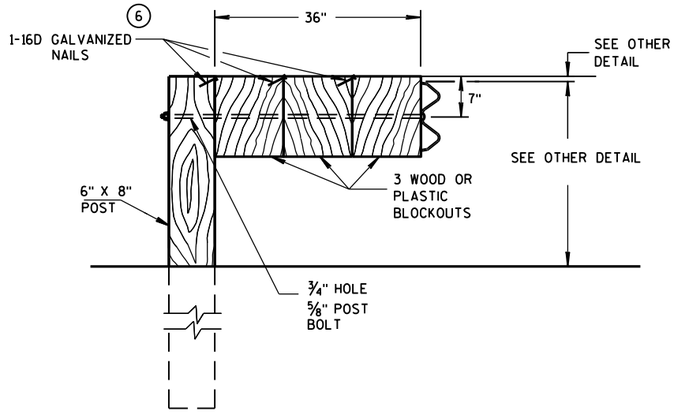
6

S.D.D. 14 B 42-5b



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.

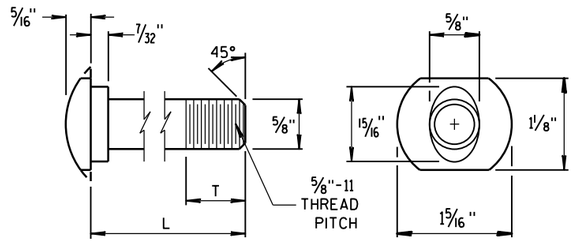


DETAIL FOR 36" BLOCKOUT DEPTH

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.

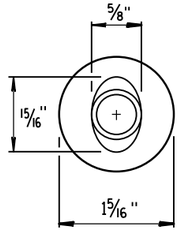
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

NOTE: 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 1/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

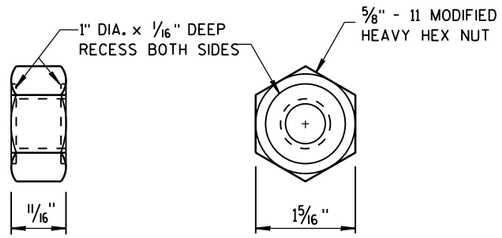


POST BOLT TABLE

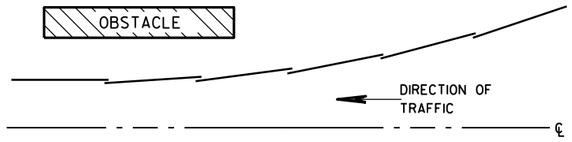
L	T (MIN.)
1¼"	1⅛"
2"	1¾"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

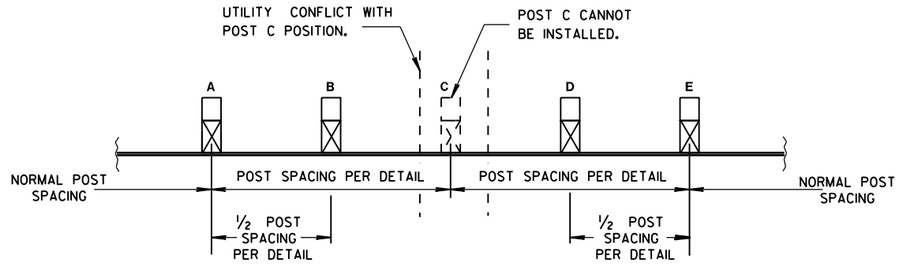


POST BOLT, SPLICE BOLT AND RECESS NUT

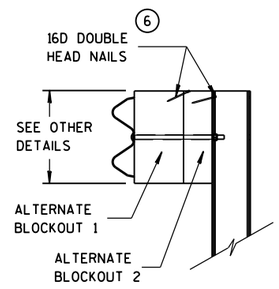


PLAN VIEW

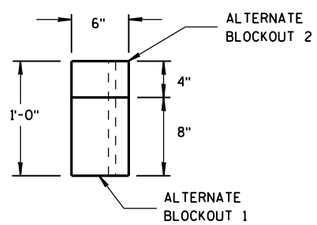
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

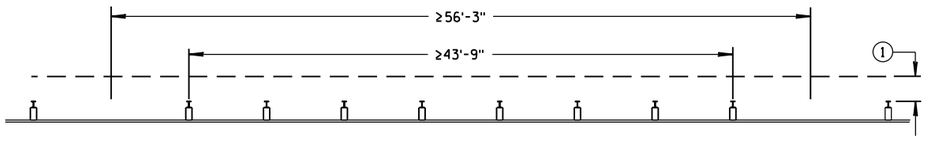
ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

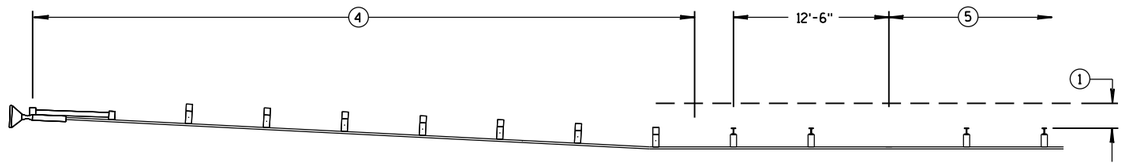
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

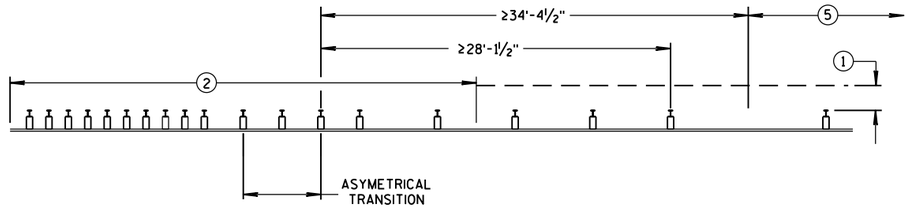
S.D.D. 14 B 42-5c



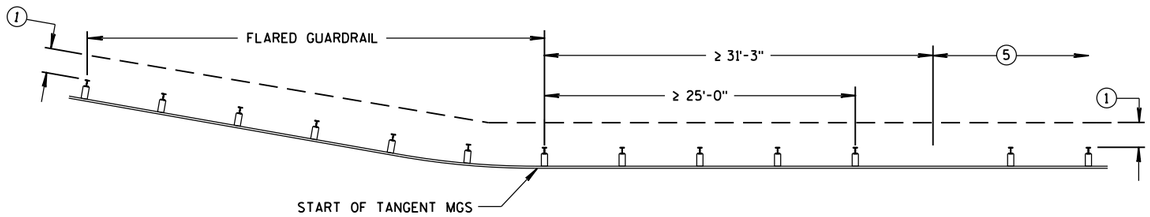
MISSING POST IN NORMAL BEAM GUARD RUN



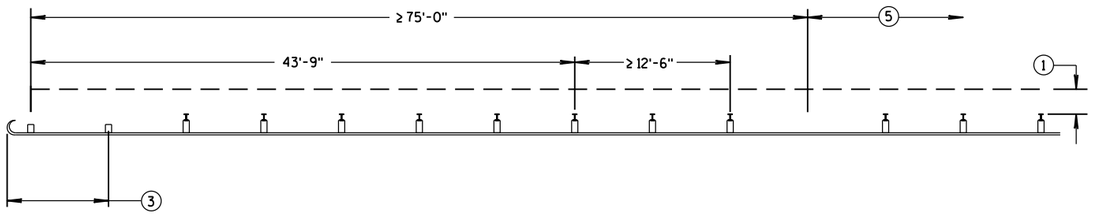
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



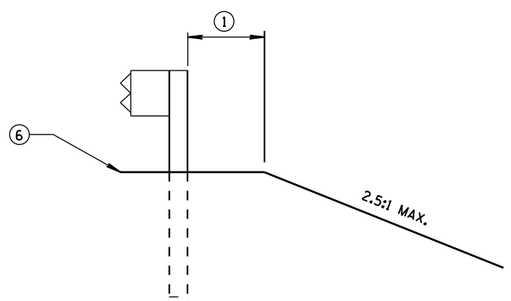
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



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
June 2017
DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

6

S.D.D. 14 B 42-5d

6

S.D.D. 14 B 42-5d

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 MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.

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

(H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.

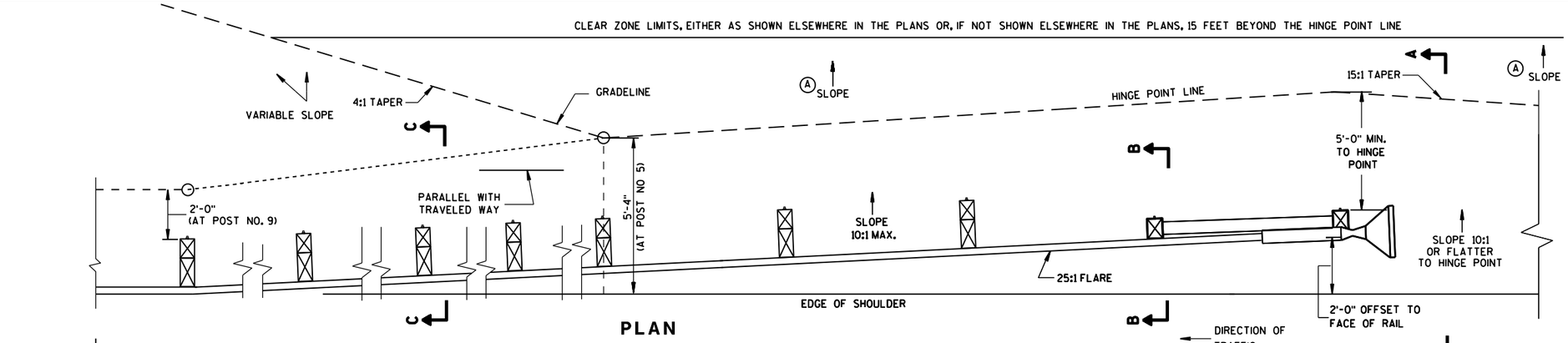
SEE SDD 14B42 FOR MORE INFORMATION.

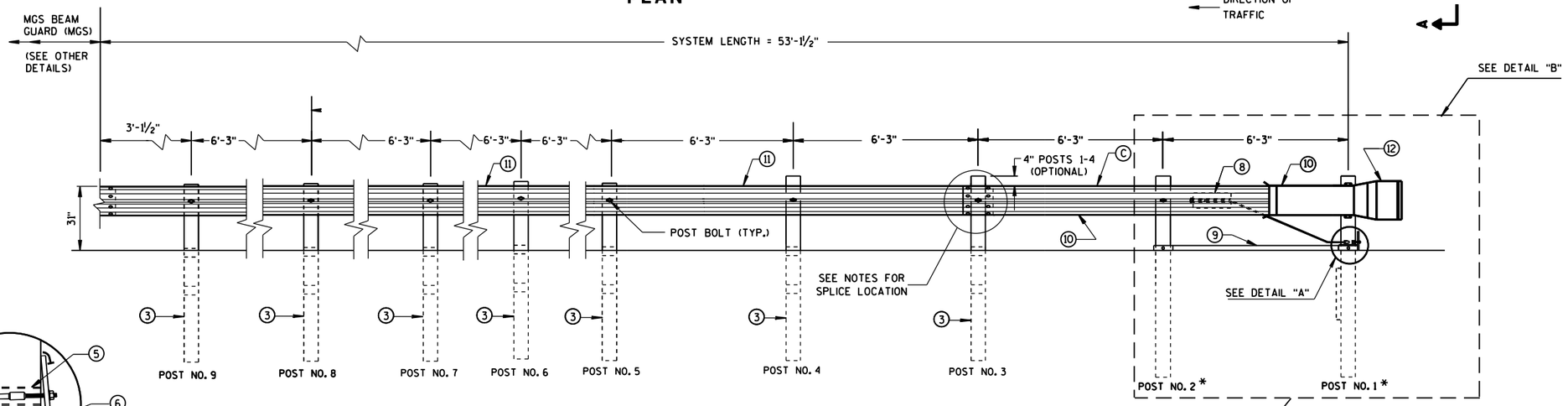
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

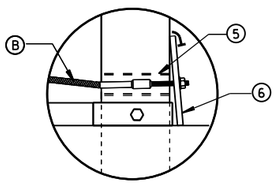
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

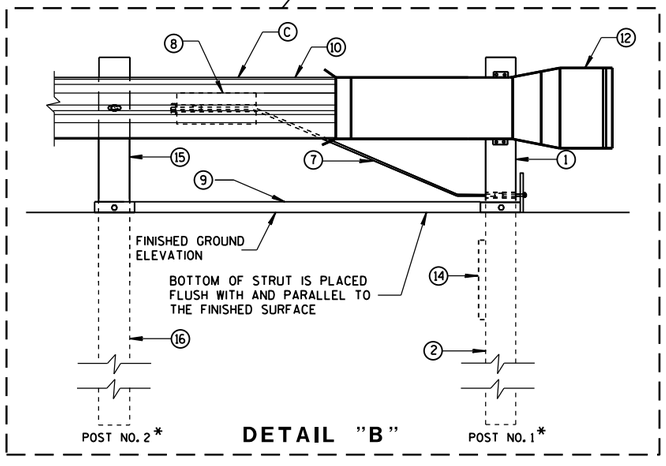
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

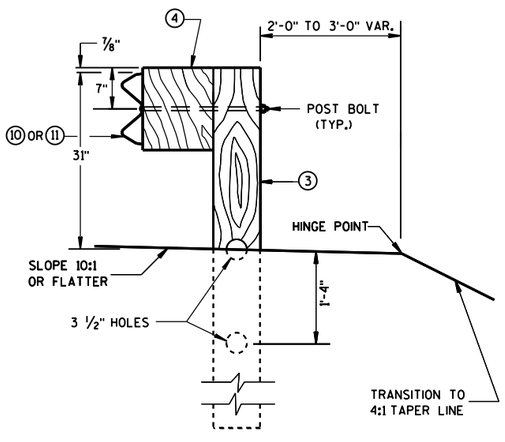
THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.

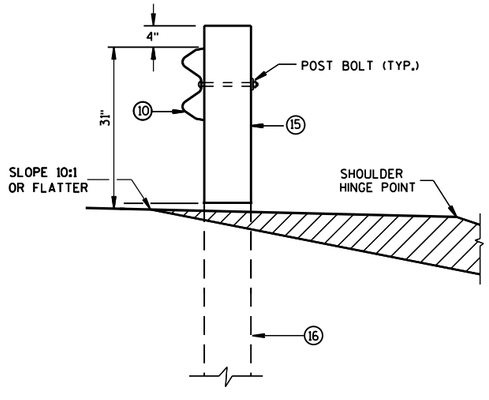


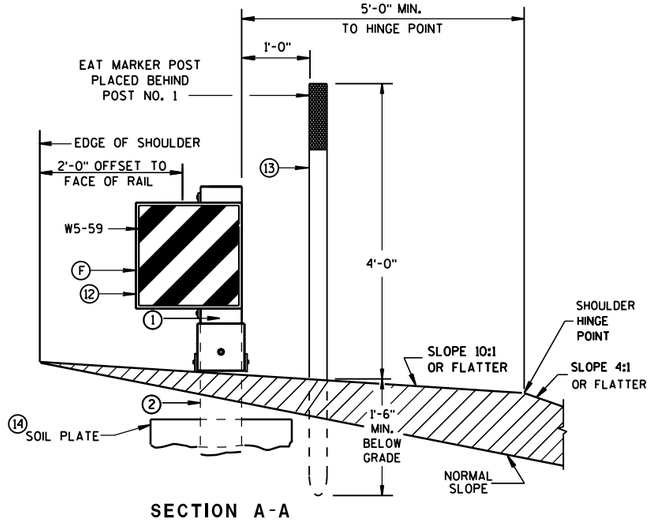












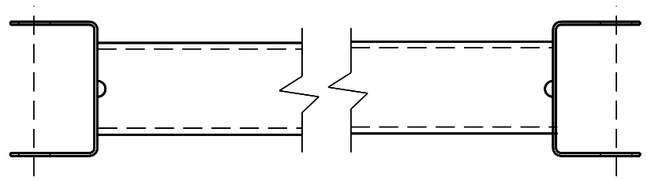
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPO	25

6

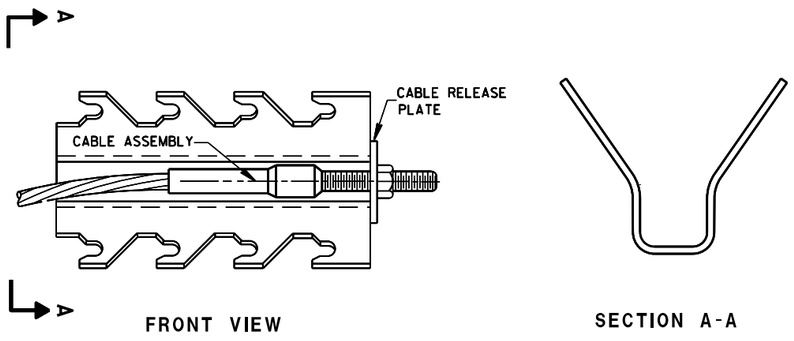
S.D.D. 14 B 44-3a

6

S.D.D. 14 B 44-3a



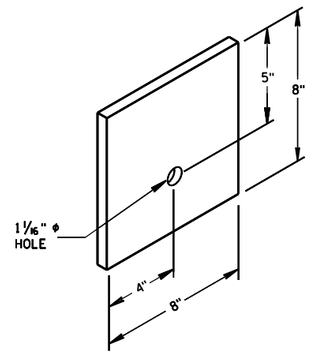
GENERIC GROUND STRUT (9) (H)



GENERIC ANCHOR CABLE BOX (8) (H)

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'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



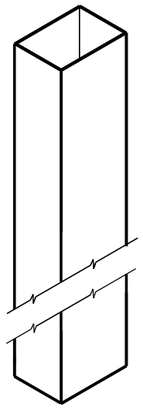
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

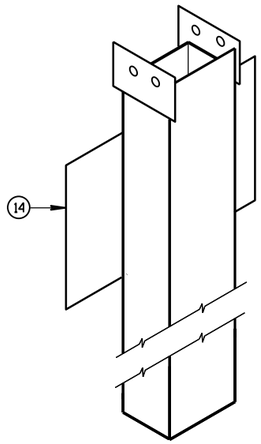
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

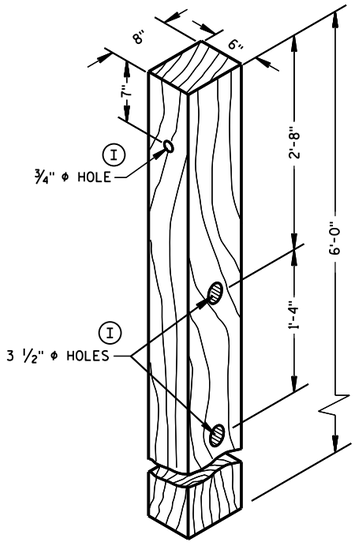
S.D.D. 14 B 44-3b



UPPER POST NO. 1 (1)

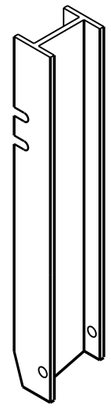


LOWER POST NO. 1 (2)

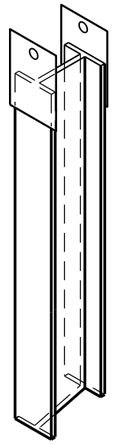


POSTS NUMBER 3-9

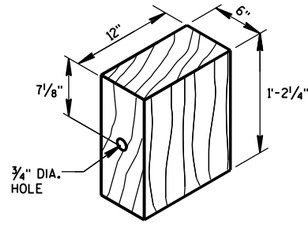
WOOD CRT POST (3)



UPPER POST NO. 2 (15)

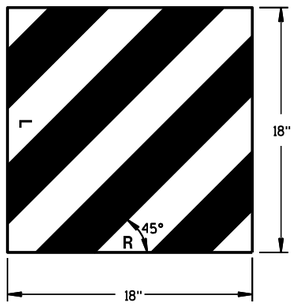


LOWER POST NO. 2 (16)



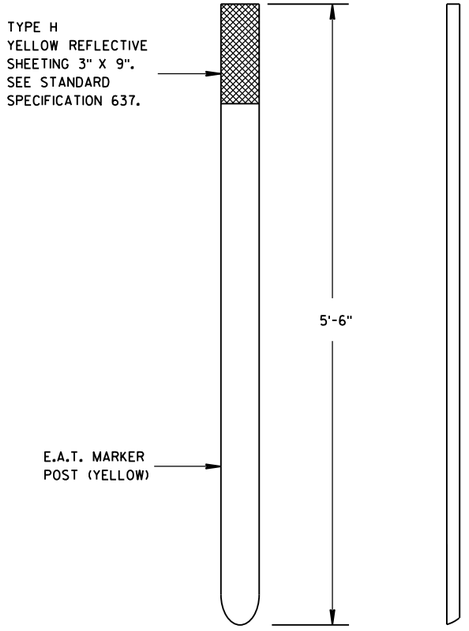
WOOD BLOCKOUT (4)

REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



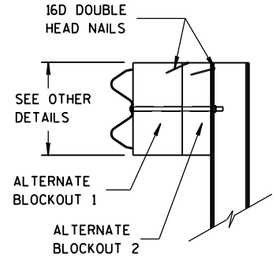
W5-59

REFLECTIVE SHEETING DETAIL (H)

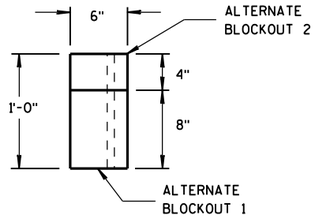


FRONT VIEW SIDE VIEW

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

June 2017
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS
UNIT SUPERVISOR

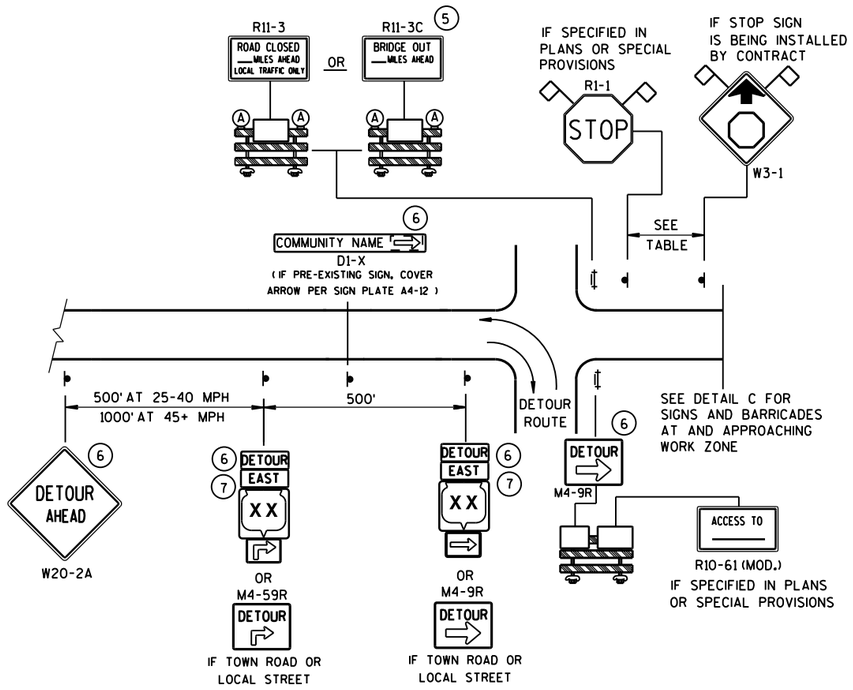
FHWA

6

S.D.D. 14 B 44-3c

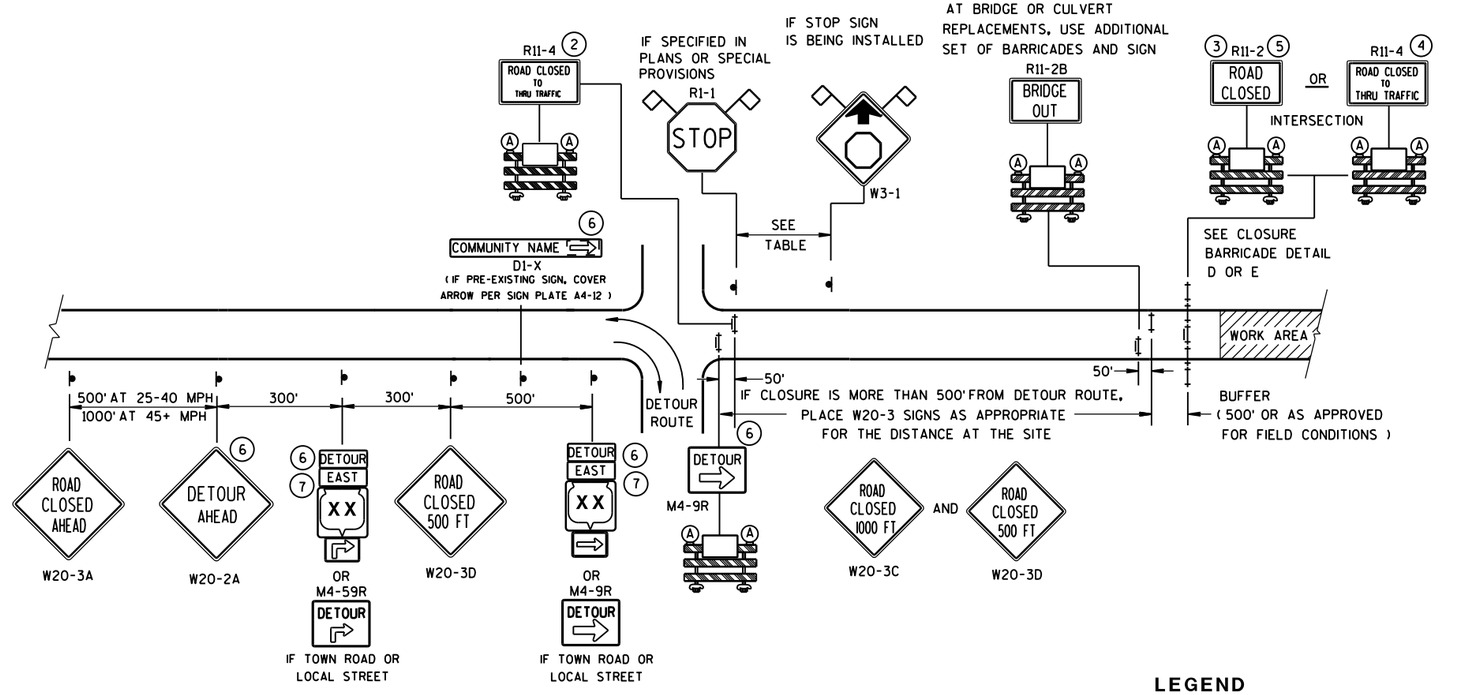
6

S.D.D. 14 B 44-3c



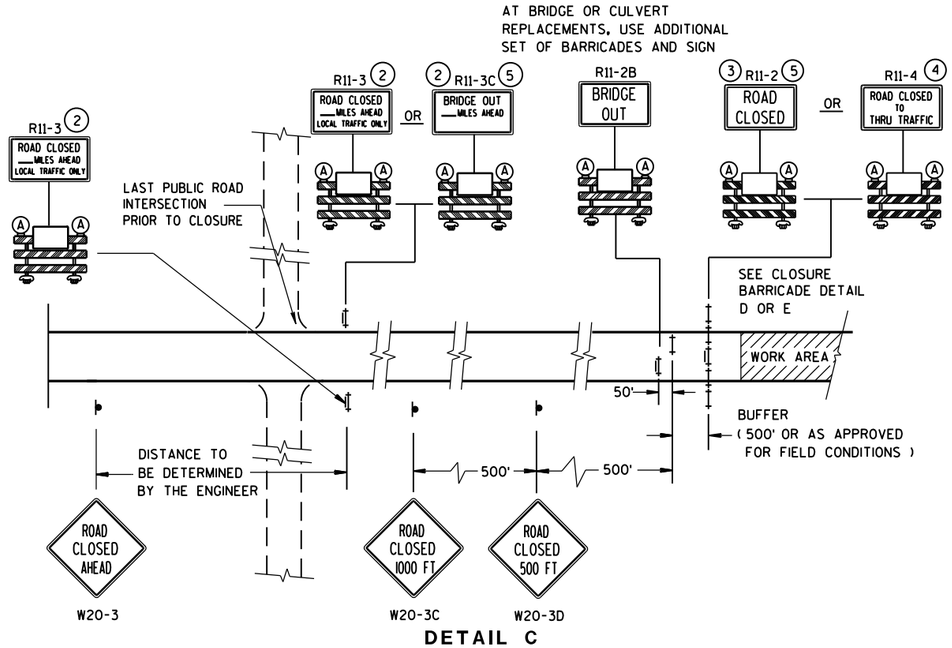
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN 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
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

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S.D.D. 15 C 2-6a

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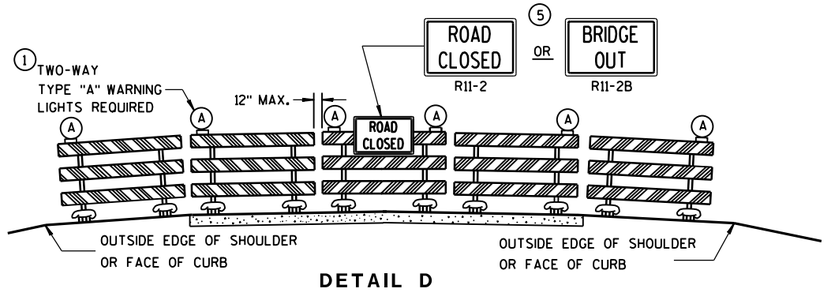
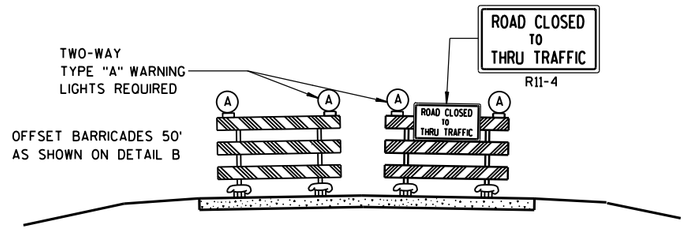
S.D.D. 15 C 2-6a



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 BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE 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, 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". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- 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 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 LANE 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 MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO... SAFETY ENGI... — FHWA — FIC

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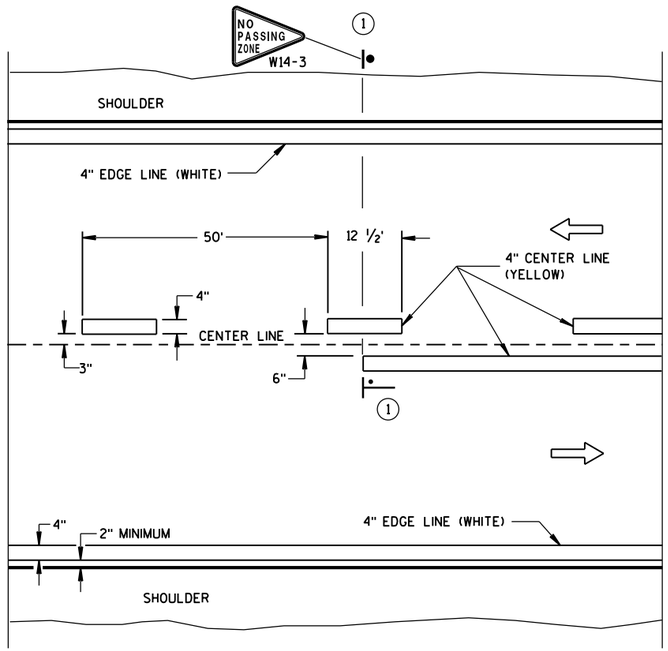
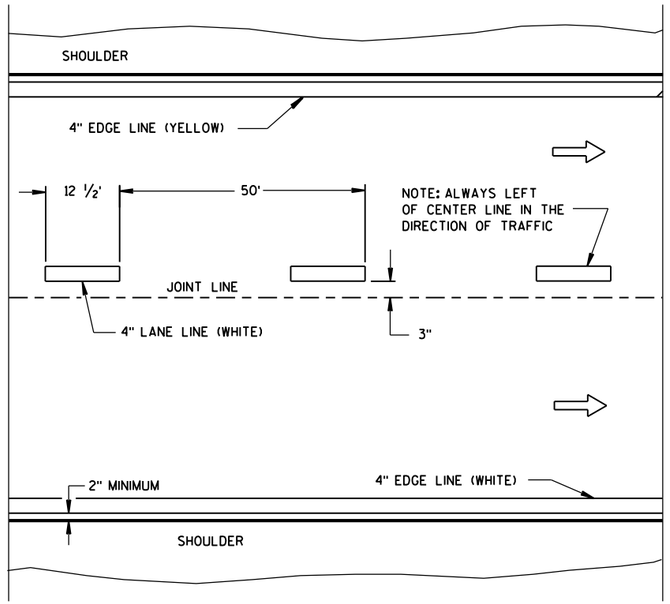
S.D.D. 15 C 2-6b



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.

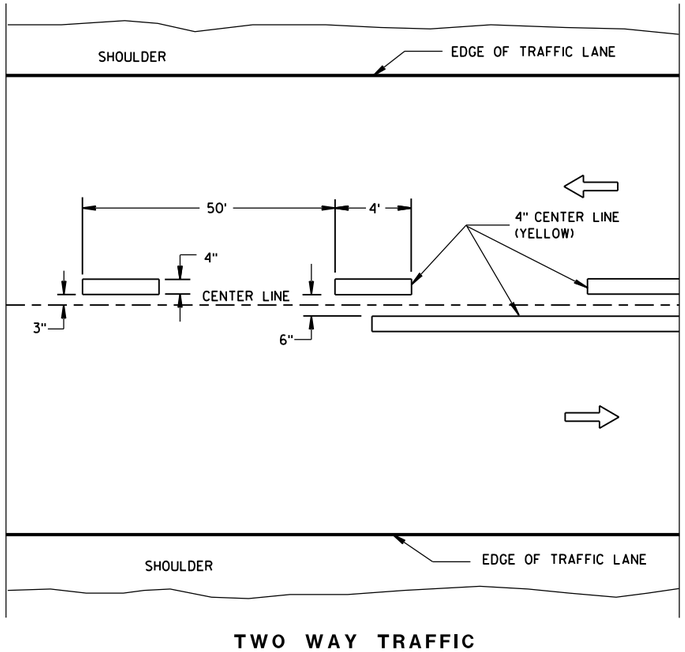
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

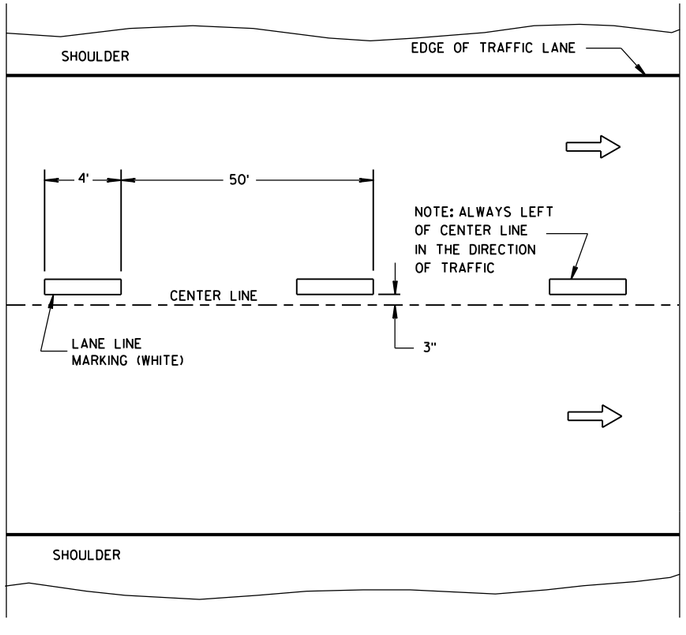
LEGEND

"T" MARKING

POST MOUNTED SIGN



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

LONGITUDINAL MARKING (MAINLINE)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
June 2017 (DATE)	/S/ Matthew R. Rauch (STATE SIGNING AND MARKING ENGINEER)
FHWA	

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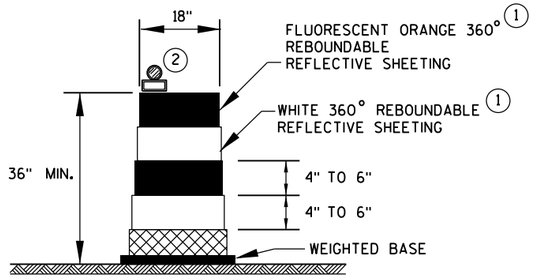
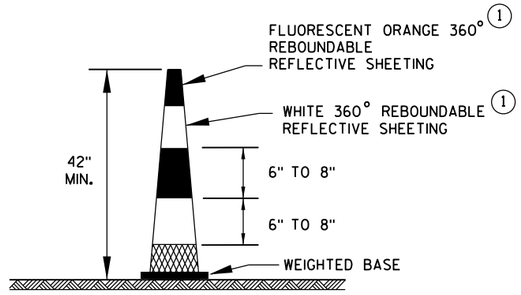
S.D.D. 15 C 8-18a



DRUM

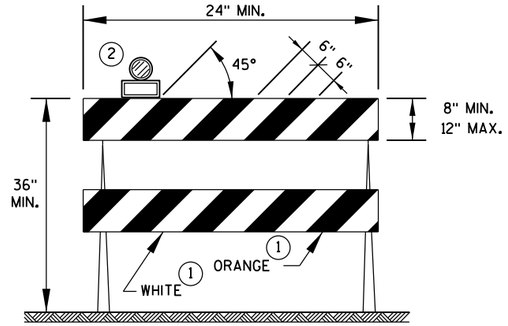


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

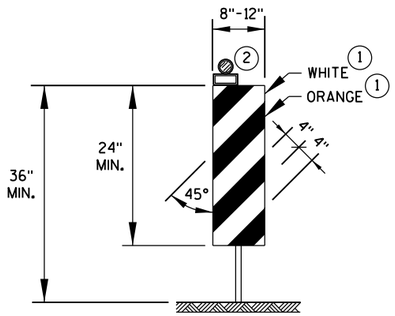
GENERAL NOTES

1. REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
2. LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.



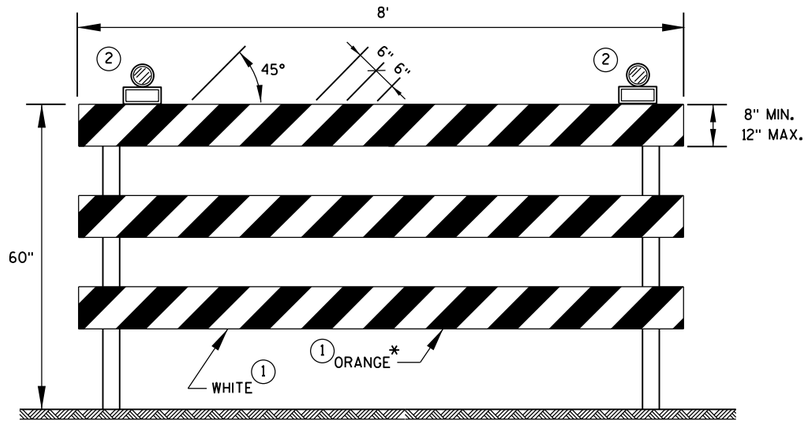
TYPE 2 BARRICADE

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



VERTICAL PANEL

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



TYPE 3 BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENG
FHWA	

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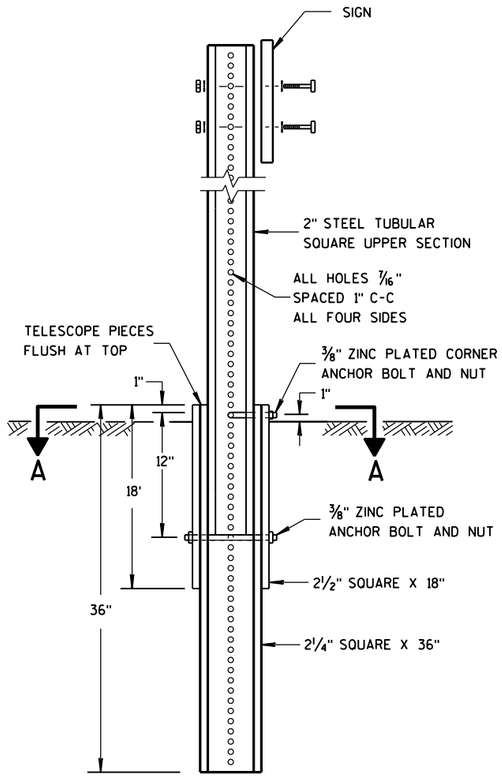
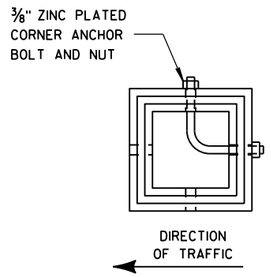
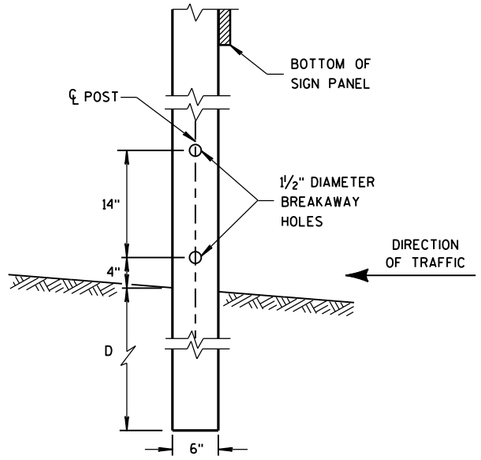
S.D.D. 15 C 11-7b



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



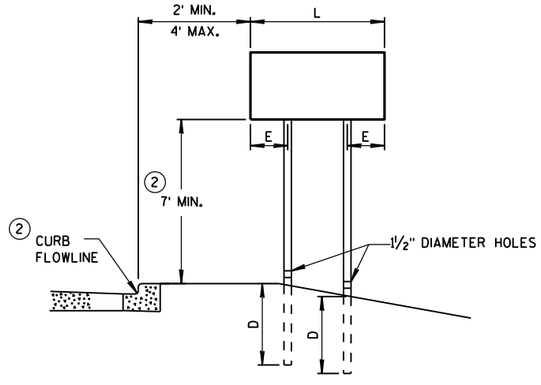
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

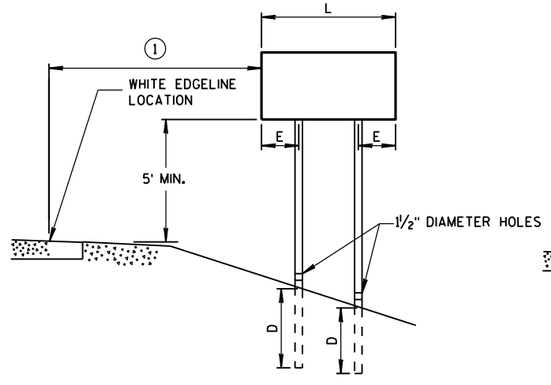
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

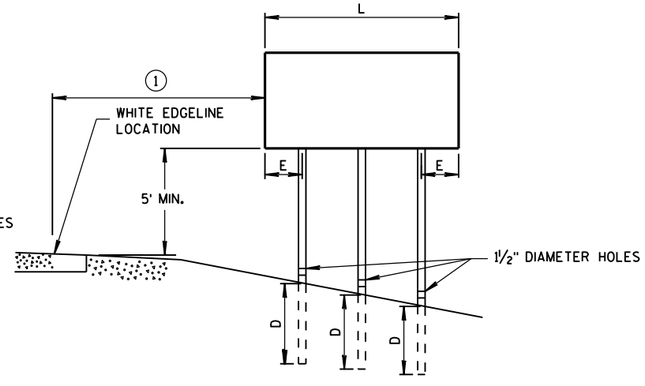
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK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

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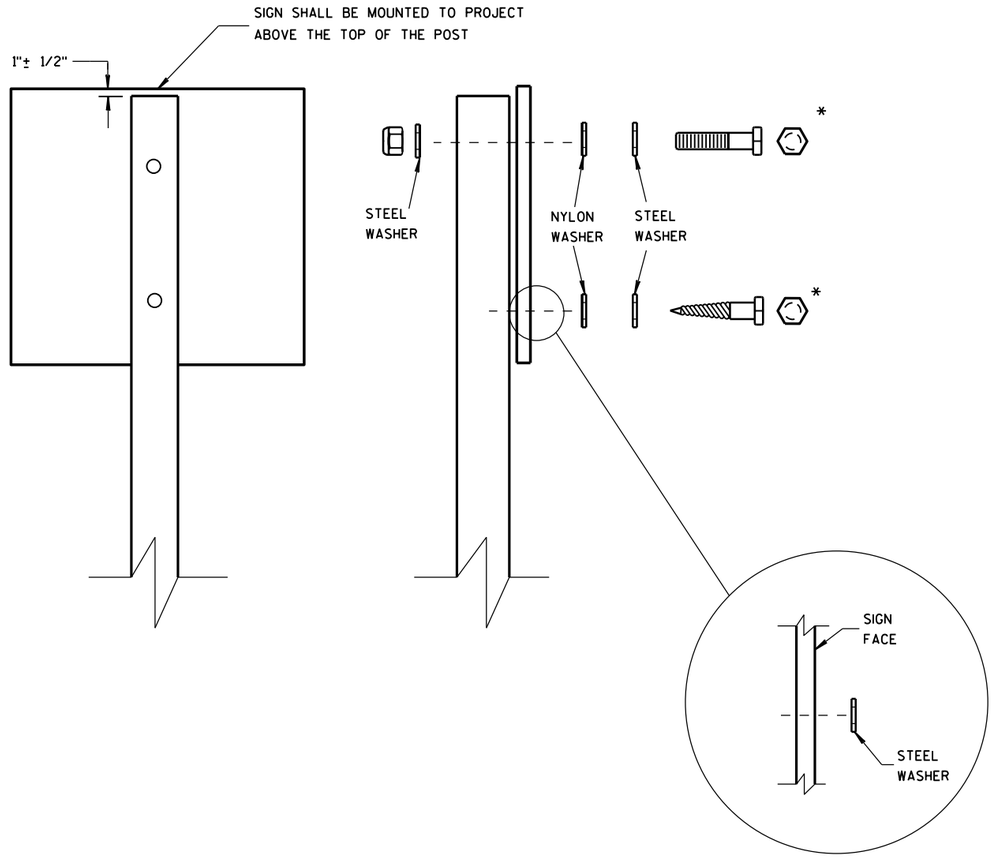
S.D.D. 15 D 38-2a



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.

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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

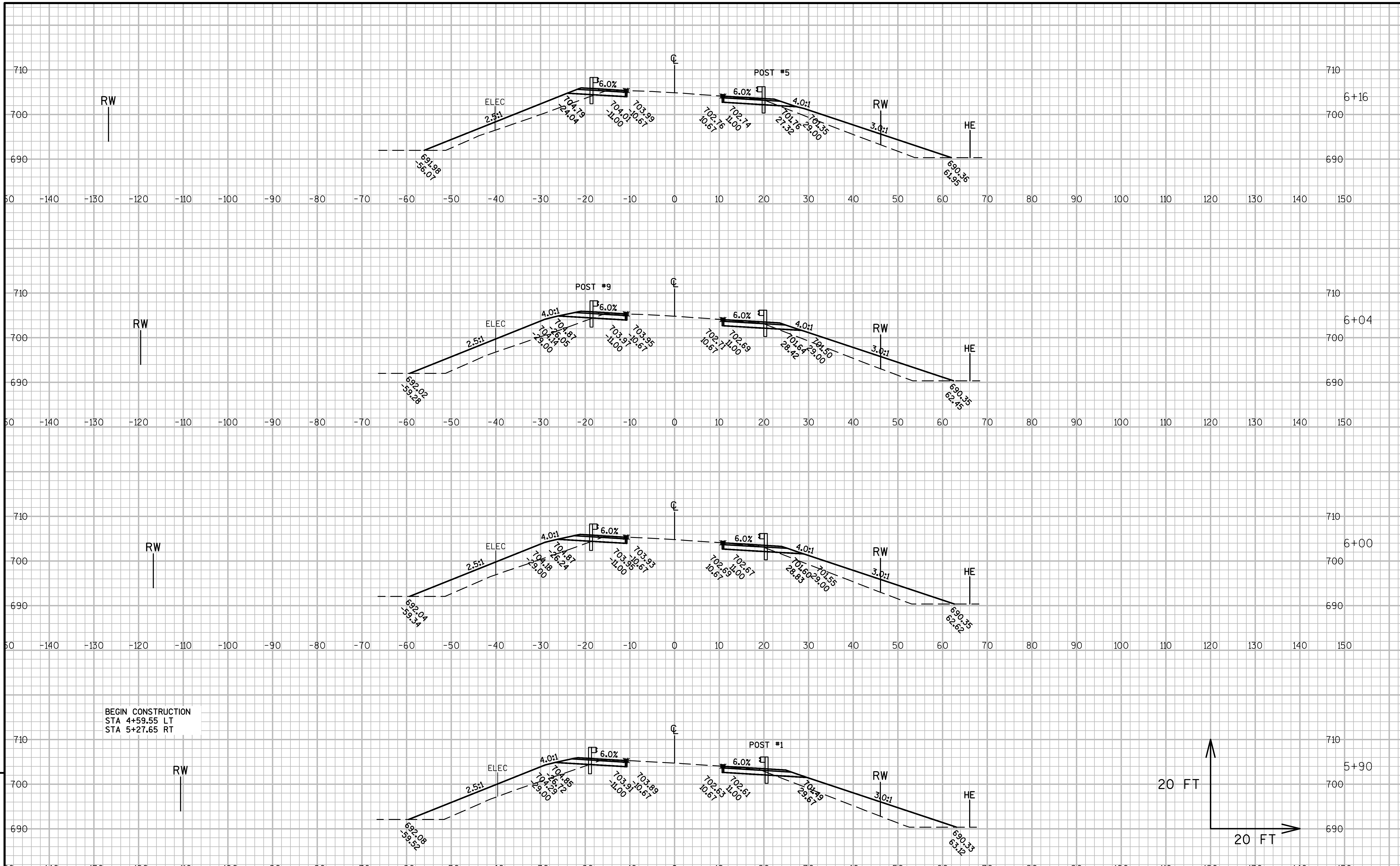
/S/ Andrew Heldtke
WORK ZONE ENG

FHWA

INCREMENTAL VOLUME

STATION	DISTANCE FT	END AREA COMMON SF	END AREA FILL SF	END AREA SALVAGED/UNUSABLE PAVEMENT MATERIAL SF (1)	COMMON RAW CY	COMMON 1.0 ADJ CY	SALVAGED/UNUSABLE PAVEMENT MATERIAL CY	AVAILABLE MATERIAL CY (2)	FILL RAW CY	FILL 1.3 ADJ CY	MASS HAUL CY (3)
4+59		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5+00	41	5.6	19.0	0.0	4.3	4.3	0.0	4.3	14.4	18.8	-14.5
5+50	50	20.1	92.0	0.0	23.8	23.8	0.0	23.8	102.8	133.6	-109.8
6+00	50	20.7	187.4	0.0	37.8	37.8	0.0	37.8	258.7	336.3	-298.5
6+50	50	20.3	82.9	0.0	38.0	38.0	0.0	38.0	250.3	325.4	-287.4
7+00	50	22.2	89.0	0.0	39.4	39.4	0.0	39.4	159.2	206.9	-167.6
7+50	50	23.8	101.2	0.0	42.6	42.6	0.0	42.6	176.1	228.9	-186.4
8+00	50	24.3	112.2	0.0	44.5	44.5	0.0	44.5	197.6	256.9	-212.3
8+50	50	18.4	90.1	0.0	39.5	39.5	0.0	39.5	187.3	243.5	-204.0
9+00	50	52.0	3.5	7.3	65.2	65.2	6.8	58.4	86.7	112.7	-54.3
9+50	50	0.0	973.7	7.3	48.1	48.1	13.6	34.6	904.8	1176.3	-1141.7
10+00	50	0.0	2780.3	0.0	0.0	0.0	22.9	-22.9	3475.9	4518.7	-4541.6
10+50	50	0.0	830.0	0.0	0.0	0.0	0.0	0.0	3342.9	4345.7	-4345.7
11+00	50	50.1	9.2	7.3	46.4	46.4	36.2	10.2	777.0	1010.1	-999.9
11+50	50	55.6	41.9	7.3	97.9	97.9	13.6	84.3	47.3	61.5	22.8
12+00	50	54.2	113.8	7.3	101.7	101.7	13.6	88.1	144.2	187.4	-99.3
12+50	50	27.1	59.6	0.0	75.3	75.3	0.0	75.3	160.6	208.7	-133.4
13+00	50	29.5	20.8	0.0	52.4	52.4	0.0	52.4	74.4	96.8	-44.4
13+50	50	31.1	96.6	0.0	56.1	56.1	0.0	56.1	108.7	141.3	-85.2
14+00	50	39.5	7.1	0.0	65.4	65.4	0.0	65.4	96.0	124.8	-59.5
14+50	50	26.1	0.0	0.0	60.7	60.7	0.0	60.7	6.6	8.5	52.2
14+81	31	0.0	0.0	0.0	15.0	15.0	0.0	15.0	0.0	0.0	15.0
				COLUMN TOTALS		954.0	106.6	847.3		13742.9	-12895.6

1) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN COMMON.
2) AVAILABLE MATERIAL = CUT MINUS THE SALVAGED/UNUSABLE PAVEMENT MATERIAL
3) THE MASS HAUL = A + OR - QUANTITY CALCULATED FOR THE DIVISON. A POSITIVE QUANTITY INDICATES AN EXCESS OF MATERIAL.



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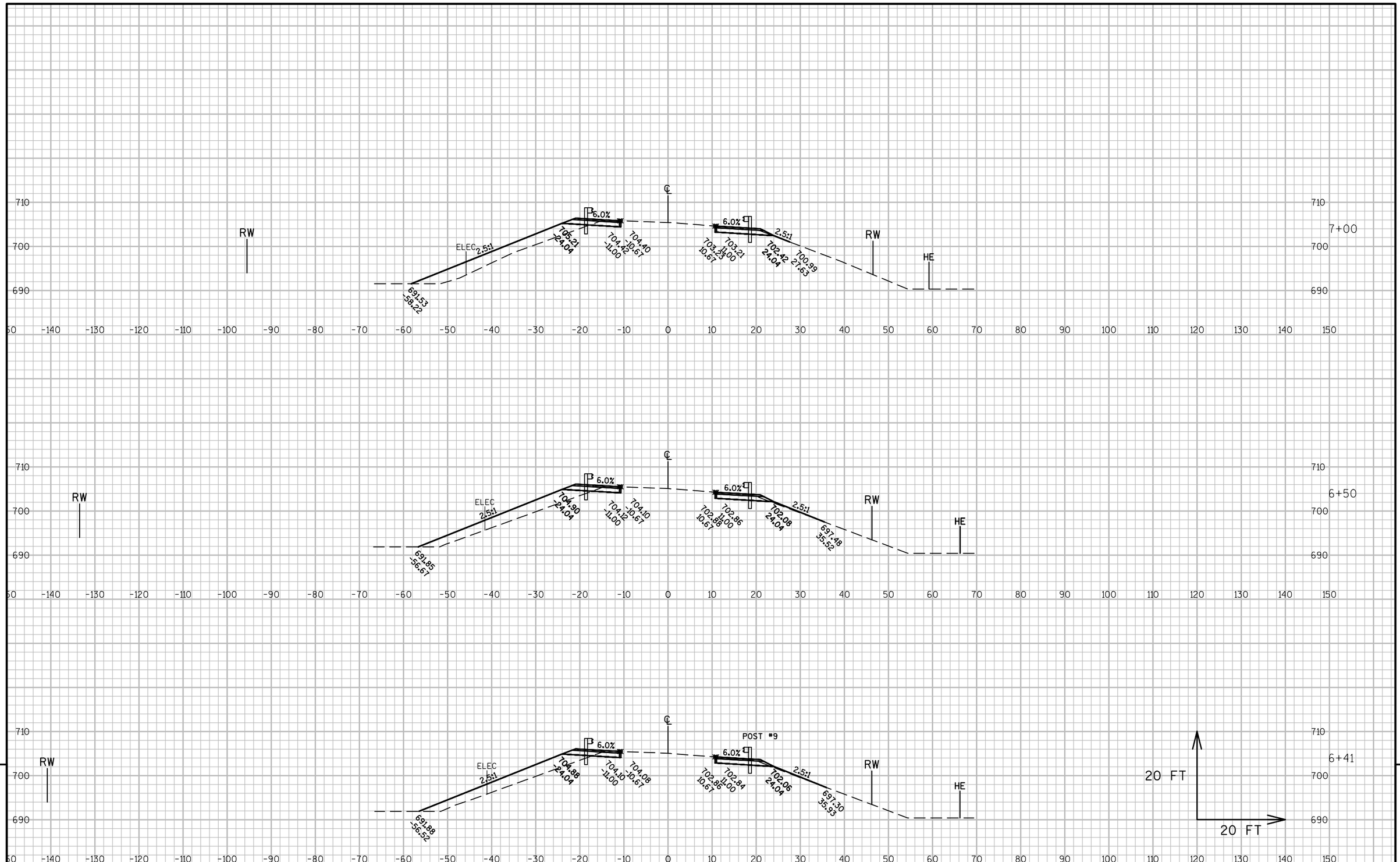
PROJECT NO:8758-00-71 | HWY:CTH C | COUNTY:DOUGLAS | CROSS SECTIONS: CTH C | SHEET 35 | E

FILE NAME : I:\CLIENTS-MENO\W\W3916 WDOT NW REGION - KNIGHT\005 8758-00-00 CTH C ABANDONED SOO LINE GRADE BRIDGE DOUGLAS COUNTY\87580PLOT\SHEETS PLAN\090217-XS.DWG
LAYOUT NAME - 01
PLOT DATE : 11/6/2017 2:35 PM
PLOT BY : BRIAN GENSKOW
PLOT NAME :
PLOT SCALE : 1 IN:20 FT



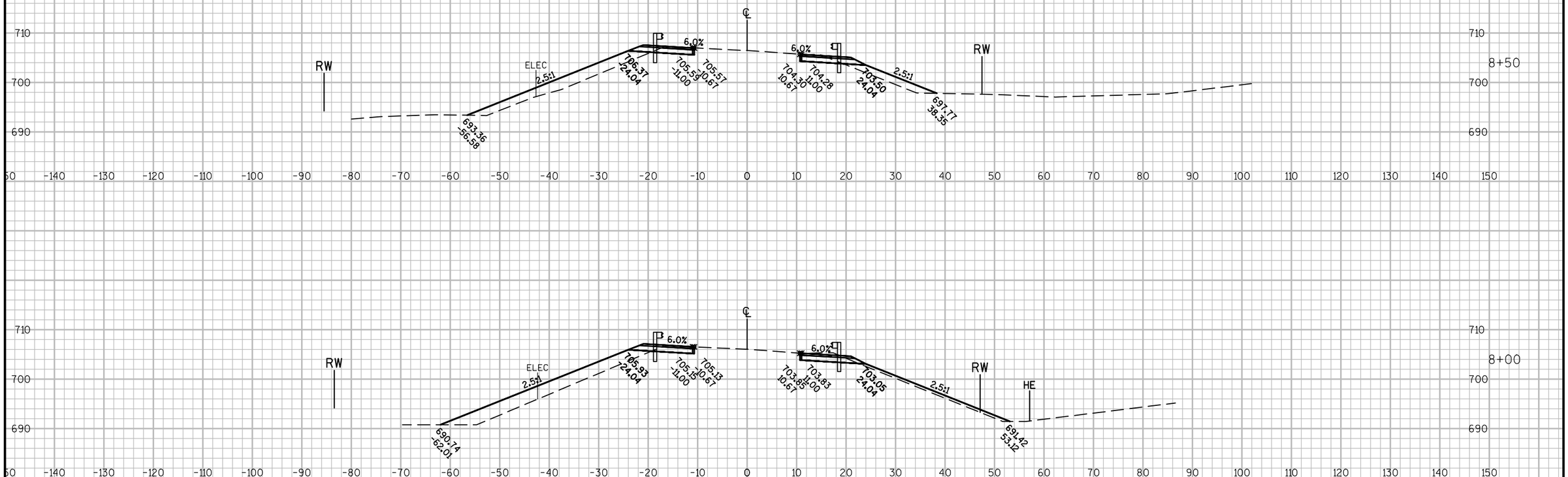
PROJECT NO: 8758-00-71	HWY: CTH C	COUNTY: DOUGLAS	CROSS SECTIONS: CTH C	SHEET 36	E

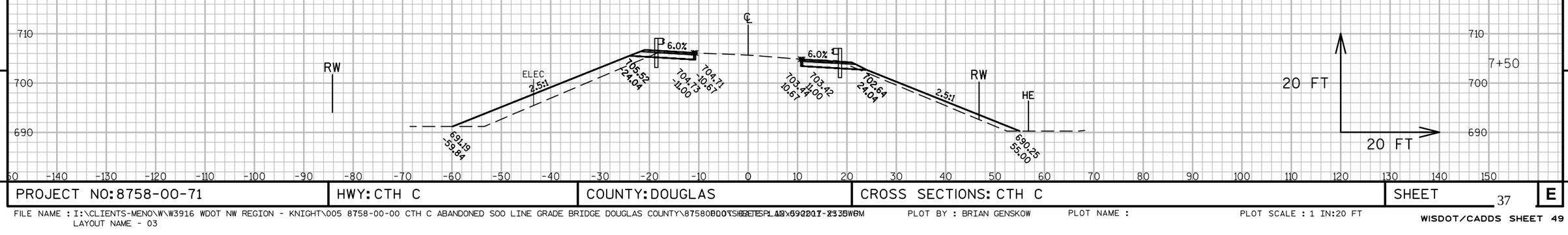
FILE NAME : I:\CLIENTS-MENO\W\W3916 WDOT NW REGION - KNIGHT\005 8758-00-00 CTH C ABANDONED SOO LINE GRADE BRIDGE DOUGLAS COUNTY\87580PLOTSHEETS.DGN
LAYOUT NAME - 02

PLOT BY : BRIAN GENSKOW PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

BEGIN PROJECT
STA 8+75.00





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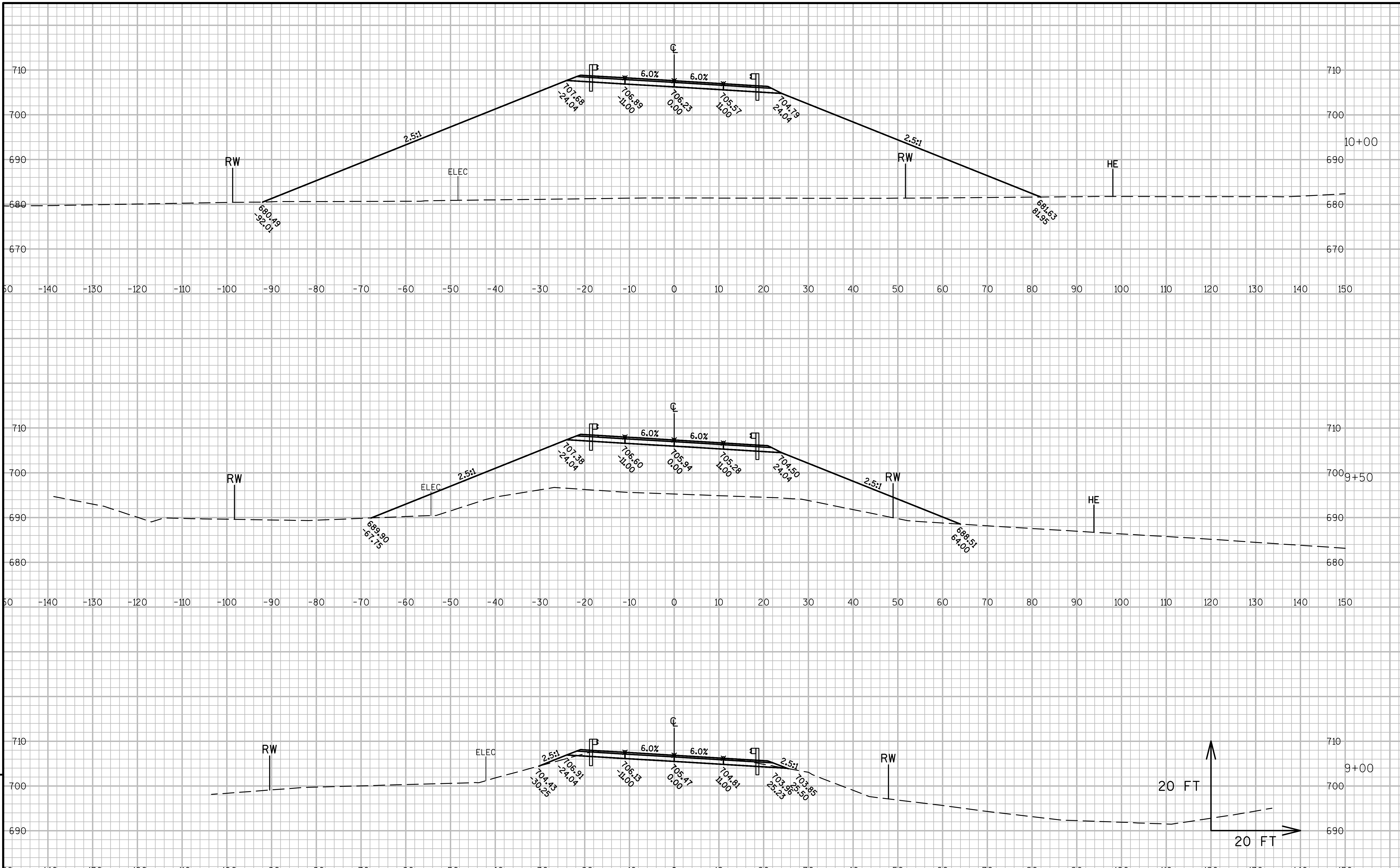
PROJECT NO: 8758-00-71	HWY: CTH C	COUNTY: DOUGLAS	CROSS SECTIONS: CTH C	SHEET 37	E

FILE NAME : I:\CLIENTS-MENO\W\W3916 WDOT NW REGION - KNIGHT\005 8758-00-00 CTH C ABANDONED SOO LINE GRADE BRIDGE DOUGLAS COUNTY\87580BOOTSHEETS.DGN
LAYOUT NAME - 03

PLOT BY : BRIAN GENSKOW PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



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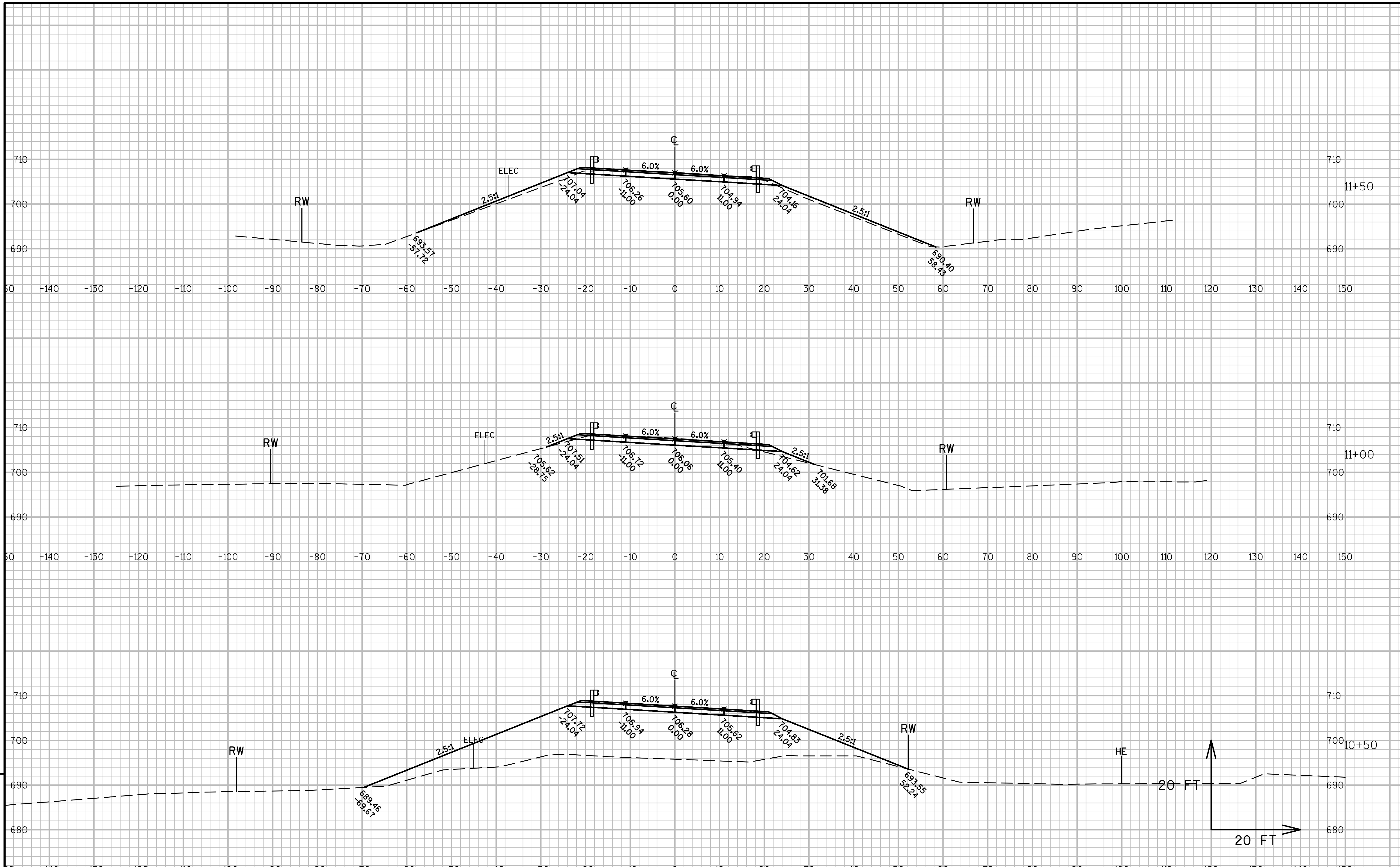
PROJECT NO:8758-00-71	HWY:CTH C	COUNTY:DOUGLAS	CROSS SECTIONS: CTH C	SHEET 38	E

FILE NAME : I:\CLIENTS-MENO\W\W3916 WDOT NW REGION - KNIGHT\005 8758-00-00 CTH C ABANDONED SOO LINE GRADE BRIDGE DOUGLAS COUNTY\87580PLOT\SHEETSPLAN\090201-XS.DWG PLOT DATE : 12/6/2017 2:35 PM   PLOT BY : BRIAN GENSKOW   PLOT NAME :   PLOT SCALE : 1 IN:20 FT
LAYOUT NAME - 04

WISDOT/CADDS SHEET 49



9

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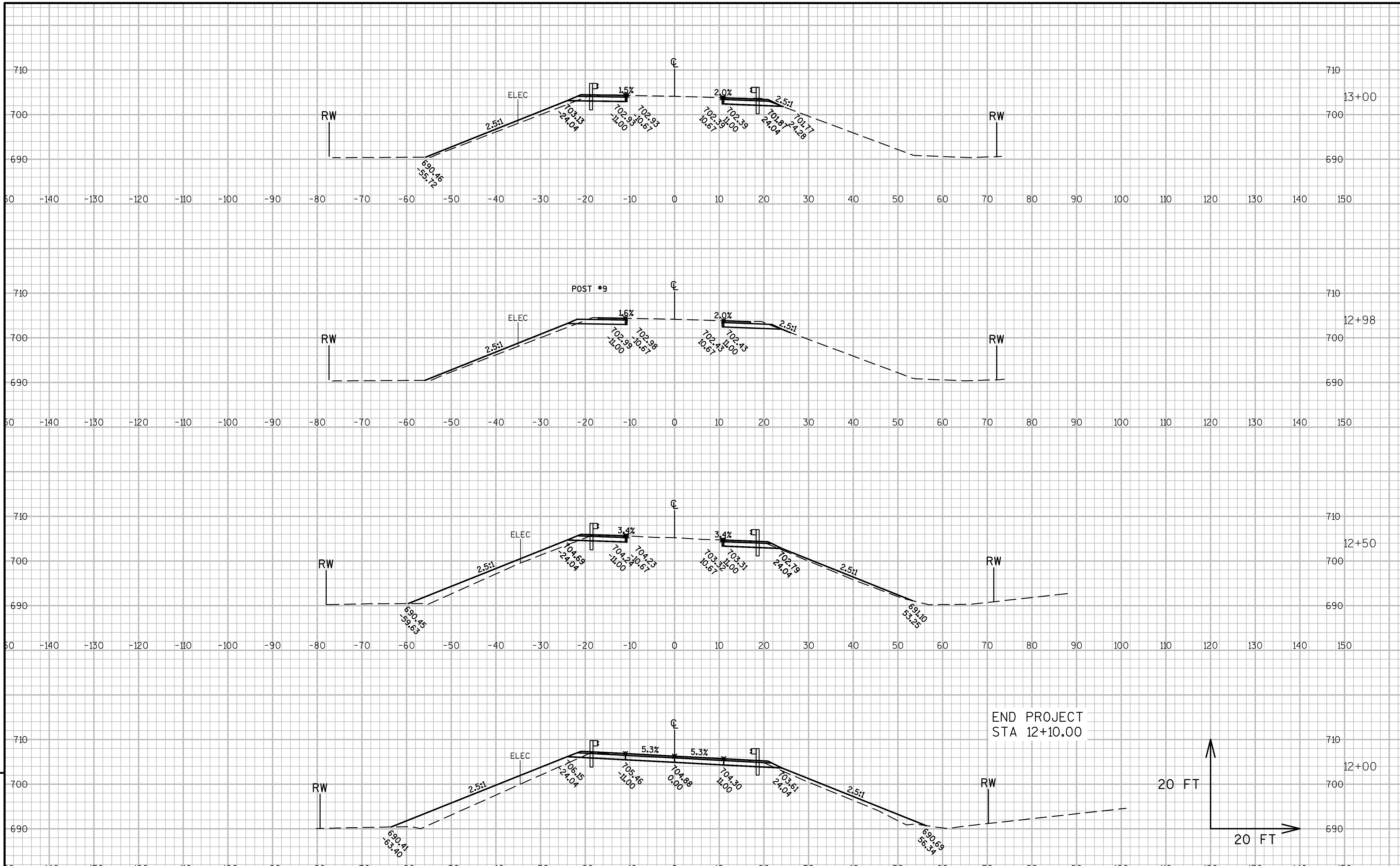
PROJECT NO:8758-00-71 | HWY:CTH C | COUNTY:DOUGLAS | CROSS SECTIONS: CTH C | SHEET 39 | E

FILE NAME : I:\CLIENTS-MENO\W\W3916 WDOT NW REGION - KNIGHT\005 8758-00-00 CTH C ABANDONED SOO LINE GRADE BRIDGE DOUGLAS COUNTY\87580PLOT\SHEETESPLAN\590201T-2335WGM PLOT BY : BRIAN GENSKOW PLOT NAME : PLOT SCALE : 1 IN:20 FT
LAYOUT NAME - 05

WISDOT/CADDS SHEET 49



13+00
RW
ELEC
2.5:1
1.5%
2.0%
2.5:1
703.13
-24.04
702.93
-11.00
702.93
-10.67
702.39
10.67
702.39
11.00
701.87
24.04
701.77
24.28
690.46
-55.72
RW
12+98
POST #9
RW
ELEC
2.5:1
1.6%
2.0%
2.5:1
702.99
-11.00
702.98
-10.67
702.43
10.67
702.43
11.00
RW
12+50
RW
ELEC
2.5:1
3.4%
3.4%
2.5:1
704.69
-24.04
704.24
-11.00
704.23
-10.67
703.32
10.67
703.31
11.00
702.79
24.04
690.45
-59.63
691.10
53.25
RW
12+00
END PROJECT
STA 12+10.00
RW
ELEC
2.5:1
5.3%
5.3%
2.5:1
706.15
-24.04
705.46
-11.00
704.88
0.00
704.30
11.00
703.61
24.04
690.41
-63.40
690.69
56.34
RW
20 FT
20 FT
710
700
690
-150 -140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

9

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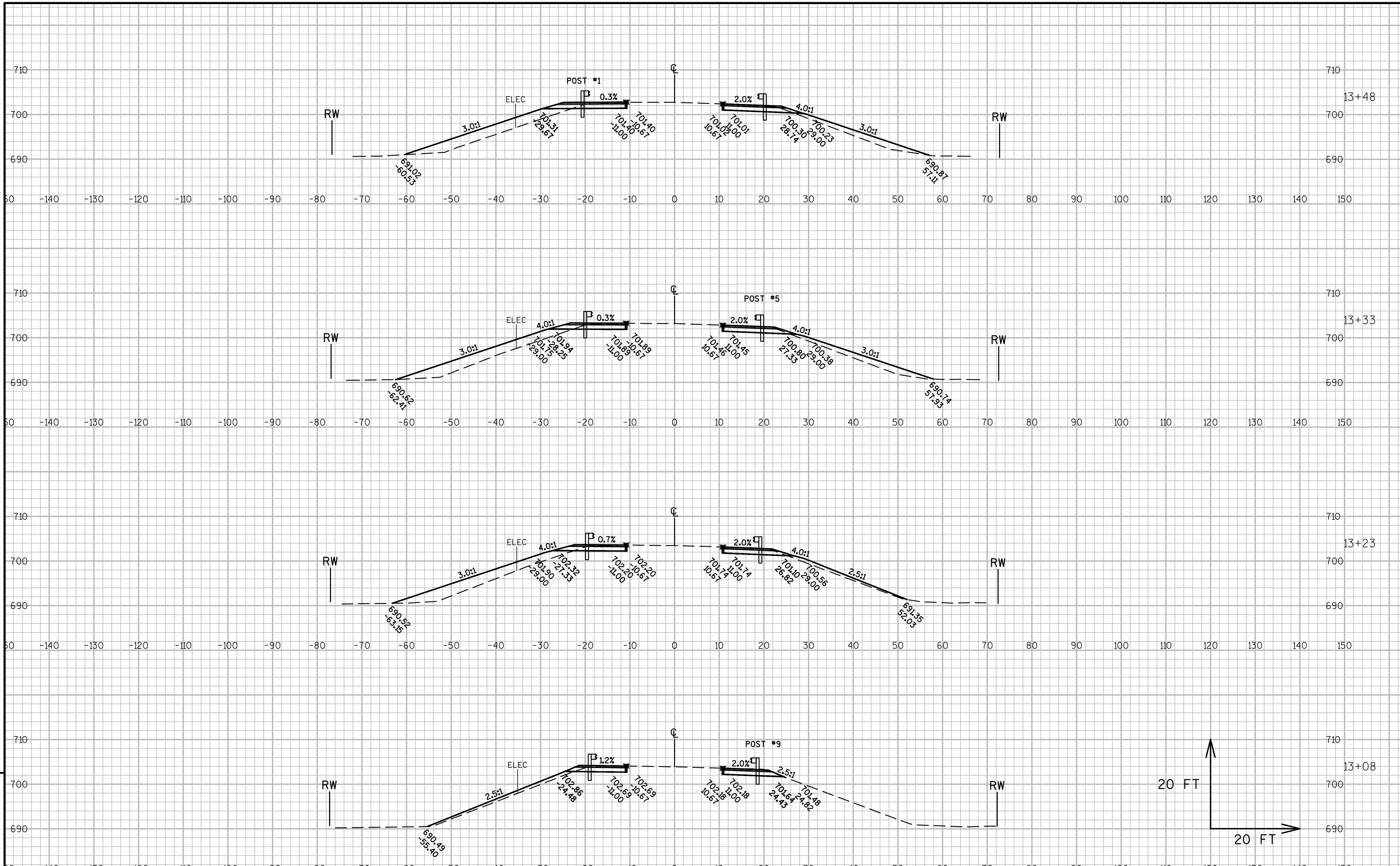
PROJECT NO:8758-00-71 | HWY:CTH C | COUNTY:DOUGLAS | CROSS SECTIONS: CTH C | SHEET 40 | E



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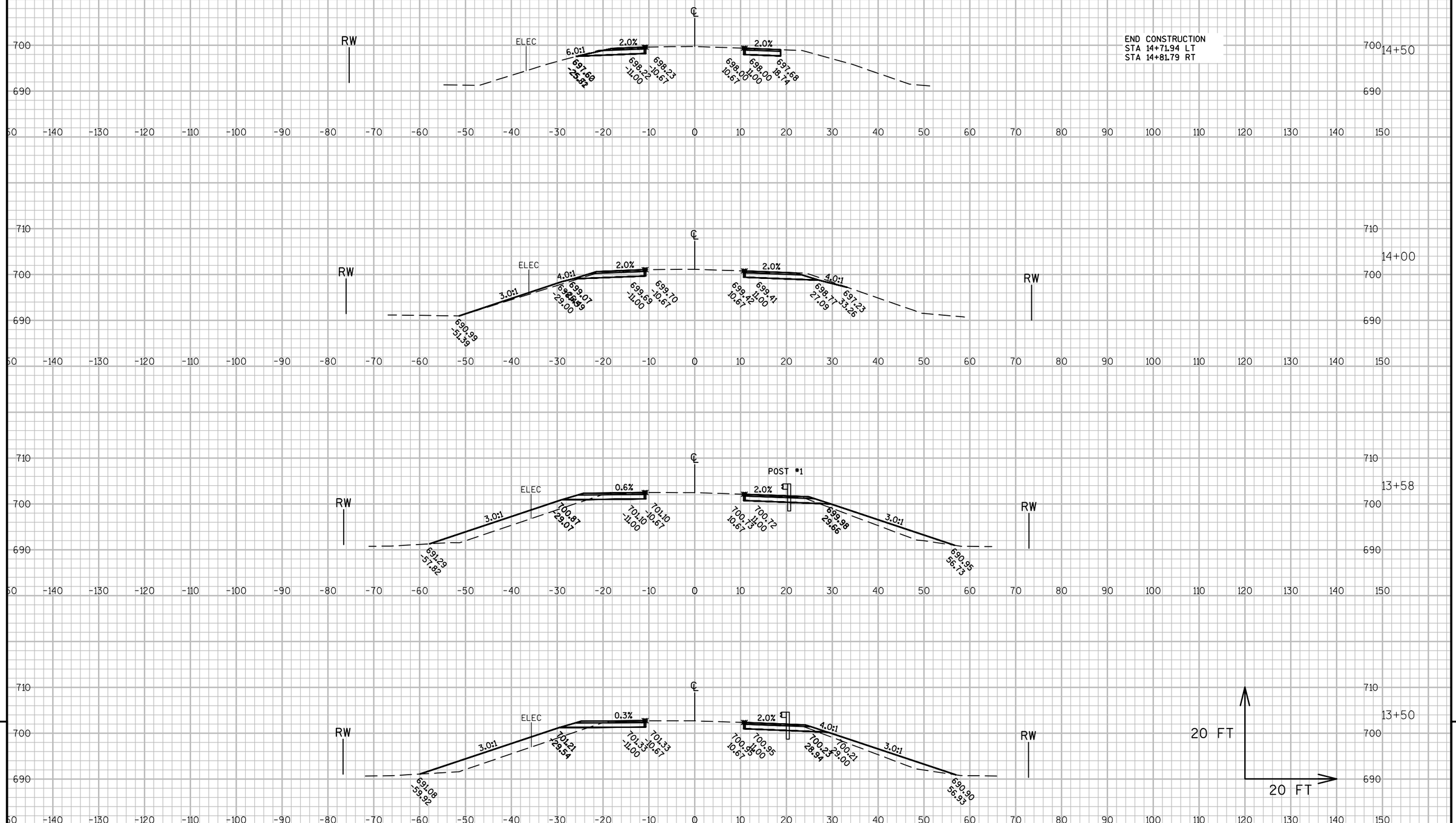
PROJECT NO: 8758-00-71	HWY: CTH C	COUNTY: DOUGLAS	CROSS SECTIONS: CTH C	SHEET 41	E

FILE NAME : I:\CLIENTS-MENO\W\W3916 WDOT NW REGION - KNIGHT\005 8758-00-00 CTH C ABANDONED SOO LINE GRADE BRIDGE DOUGLAS COUNTY\87580PLOTSHEETS\18x59201-2S35WGM PLOT BY : BRIAN GENSKOW PLOT NAME : PLOT SCALE : 1 IN:20 FT
LAYOUT NAME - 07

WISDOT/CADDS SHEET 49



PROJECT NO: 8758-00-71	HWY: CTH C	COUNTY: DOUGLAS	CROSS SECTIONS: CTH C	SHEET 42 E

FILE NAME : I:\CLIENTS-MENO\W\W3916 WDOT NW REGION - KNIGHT\005 8758-00-00 CTH C ABANDONED SOO LINE GRADE BRIDGE DOUGLAS COUNTY\87580[illegible]
LAYOUT NAME - 08

PLOT BY : BRIAN GENSKOW PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov