NEL DEC 11

PROJECT ID: 6098-04-71
WITH: N/A

COUNTY: OUTAGAMIE

ORDER OF SHEETS

TOTAL SHEETS = 92

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

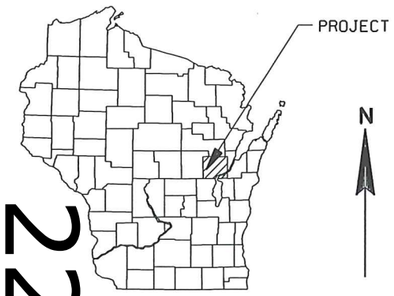
T ELLINGTON, CTH S

WOLF RIVER BRIDGE
CTH S
OUTAGAMIE COUNTY

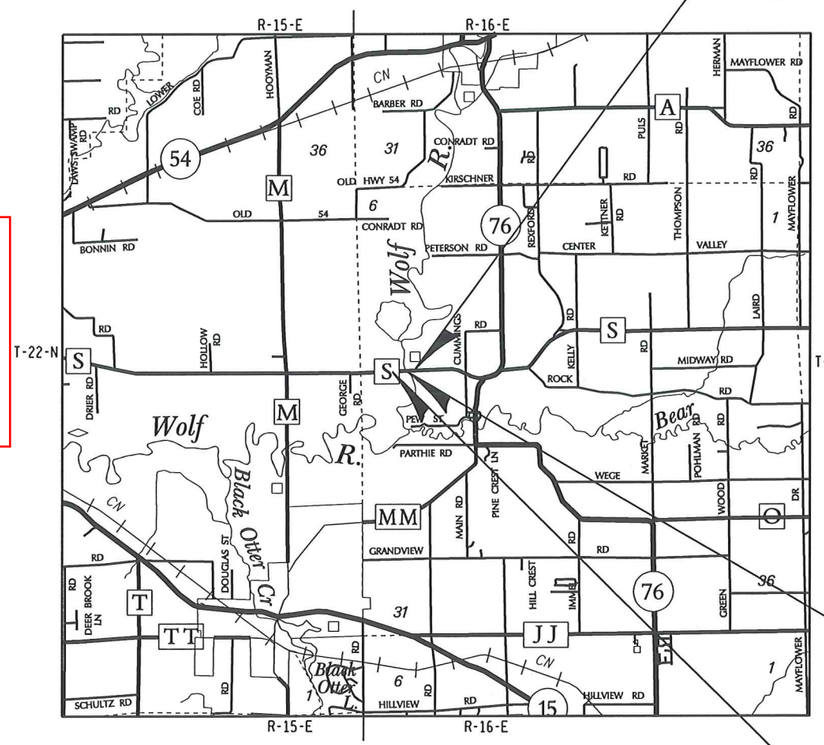
STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6098-04-71	WISC 2011837	1

AS-BUILT PLAN

SUPERVISOR: Brian Edwards NEL
PROJECT MANAGER: Mitch Bourin (Toki)
PROJECT LEADER: Ronald Hardy (Bloom Co)
CONTRACTOR: Pheifer Brothers Construction
WORK STARTED: 01/05/12
WORK COMPLETED: 07/26/12



STATE PROJECT NUMBER
6098-04-71



LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.286 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, OUTAGAMIE COUNTY.

SUBCONTRACTOR LIST
Appleton Landscaping & Excavating
Arbor Green, Inc.
Brickline, Inc.
Double D Landscape, LLC.
Mach IV Engineering & Surveying, LLC
MCC, INC.
Sommers Construction Co, Inc.
Warning Lites of Appleton, Inc.

DESIGN DESIGNATION

A.A.D.T.	2012	=	2650
A.A.D.T.	2032	=	3650
D.H.V.		=	425
D.D.		=	60-40
T.		=	5.9%
DESIGN SPEED		=	60 MPH
ESALS		=	569,400

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)
- MARSH AREA
- WOODED OR SHRUB AREA

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

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

ACCEPTED FOR
OUTAGAMIE COUNTY
BY
7-21-11 (DATE) (HIGHWAY COMMISSIONER)

ORIGINAL PLANS PREPARED BY
AECOM

WISCONSIN
KEVIN R. HAGEN
E-38966
STEVENS POINT
WI
PROFESSIONAL ENGINEER

7/19/2011 (Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor: AECOM
Designer: AECOM
Management Consultant: SHORT ELLIOTT HENDRICKSON INC.
C.O. Examiner: Cyle Haag

APPROVED FOR THE DEPARTMENT
DATE: 7/22/11 (Management Consultant Signature)

E

UTILITIES

AT&T (TELEPHONE)
ATTN: VINCENT LEBRUN
221 WEST WASHINGTON STREET FLOOR 4
APPLETON, WI 54911
920-735-3076 OFFICE
vl1253@att.com

CHARTER COMMUNICATIONS (TV)
ATTN: RUDI RUDIGER
5024 HEFFRON STREET
STEVENS POINT, WI 54481
715-302-1550 MOBILE
rudi.rudiger@chartercom.com

WE ENERGIES (ELECTRIC)
ATTN: JIM QUINN
PO BOX 1699
APPLETON, WI 54912
920-380-3401 OFFICE
920-450-9430 MOBILE
jim.quinn@we-energies.com

WDNR CONTACT

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
ATTN: JIM DOPERALSKI JR.
2984 SHAWANO AVENUE
GREEN BAY, WI 54313
920-662-5119
james.doperalski@wisconsin.gov

DIGGERS HOTLINE

Toll Free (800) 242-8511
Milwaukee Area (414) 259-1181
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

** DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS

GENERAL NOTES

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

SEED MIXTURE SHALL BE AS SHOWN ON THE TYPICAL SECTIONS.

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

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

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

SECTIONS SHOWN ON THE CROSS SECTION SHEETS INCLUDE THE THICKNESS OF TOPSOIL.

DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREA WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED AND TEMPORARY SEEDED AS DIRECTED BY THE ENGINEER.

MULCH ALL SLOPES AS DIRECTED BY THE ENGINEER.

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

SILT FENCE AS SHOWN ON THE PLANS SHALL BE FIELD ADJUSTED TO FIT EXISTING CONDITIONS.

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

COORDINATES ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1983, 2007 ADJUSTMENT (NAD83(2007)).

DISTANCES SHOWN ON THIS PLAN ARE GROUND DISTANCES.

FILL AS SHOWN ON THE PLAN SHEETS PERTAINS TO EMBANKMENTS CONSTRUCTED FROM EXCAVATION COMMON OR BORROW. THE SHRINKAGE ALLOWANCE USED TO COMPUTE THE VOLUME OF MATERIAL NECESSARY TO COMPLETE THE FILL IS 25 PERCENT.

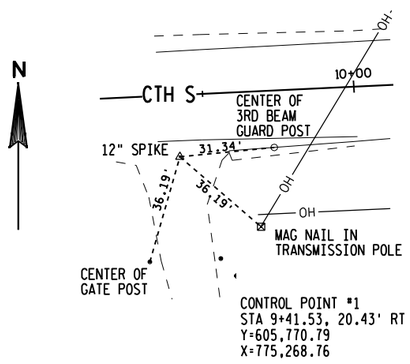
THE WISCONSIN DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR AN ALUMINUM MONUMENT WHICH SHALL BE SET IN THE STRUCTURE AS DESIGNATED BY THE ENGINEER.

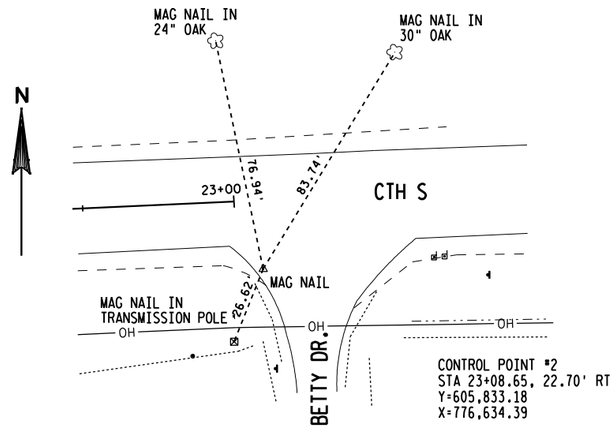
THE 5-INCH HMA PAVEMENT TYPE E-3 SHALL CONSIST OF A 2-INCH UPPER LAYER & A 3-INCH LOWER LAYER.

THE RUNOFF COEFFICIENTS OF SURFACE DRAINAGE AT THE PROJECT SITE WILL NOT BE CHANGED FROM BEFORE TO AFTER CONSTRUCTION. THE TOTAL AREA OF THE PROJECT IS 4.01 ACRES. THE TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES IS 3.04 ACRES.

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

CONTRUCTION TIES





PROJECT NUMBER: 6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	CONSTRUCTION TIES, GENERAL NOTES & PROJECT CONTACTS	SHEET 2	E

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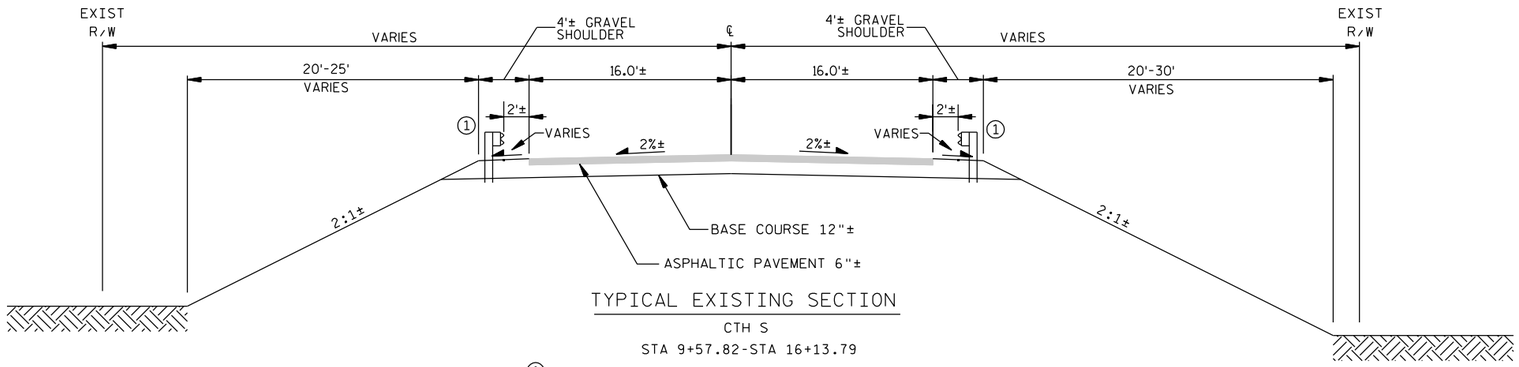
WISDOT/CADDS SHEET 42

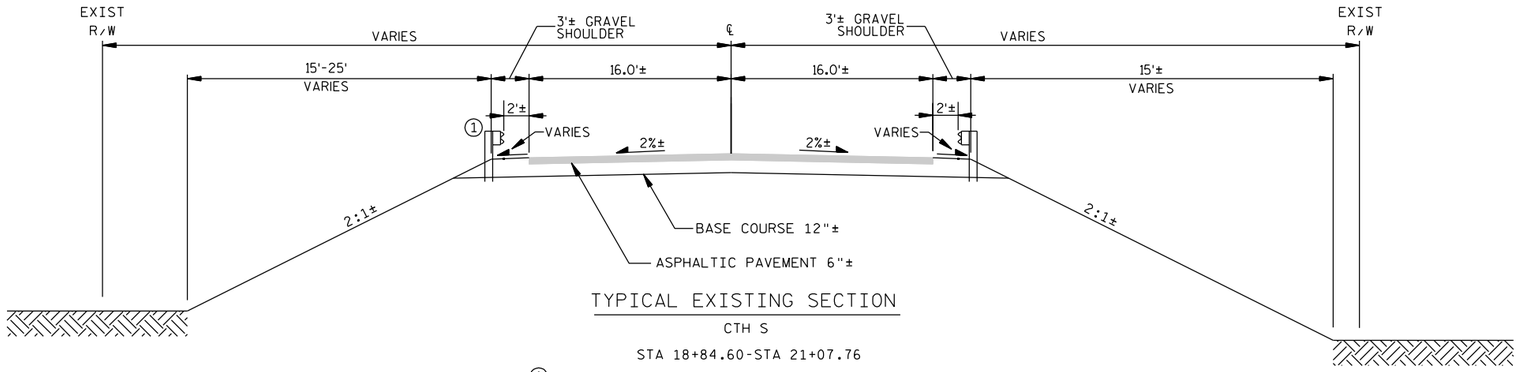


TYPICAL EXISTING SECTION

CTH S

STA 9+57.82-STA 16+13.79

① GUARDRAIL STA 10+09.69 LT - STA 16+00.39 LT
GUARDRAIL STA 9+57.82 RT - STA 12+86.43 RT
GUARDRAIL STA 13+28.45 RT - STA 16+13.79 RT

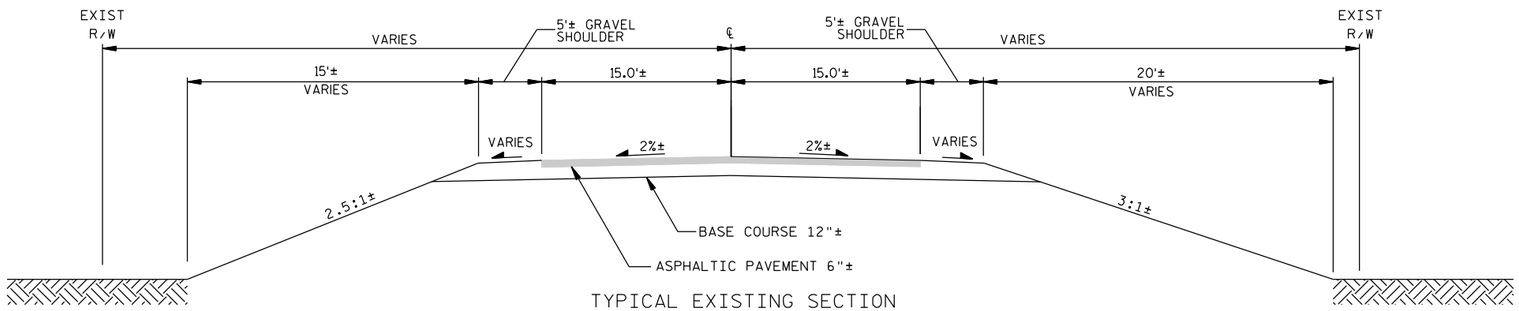


TYPICAL EXISTING SECTION

CTH S

STA 18+84.60-STA 21+07.76

① GUARDRAIL STA 18+84.60 LT - STA 21+07.76 LT
GUARDRAIL STA 18+99.10 RT - STA 21+06.87 RT



TYPICAL EXISTING SECTION

CTH S

STA 7+90.47 - STA 9+57.82
STA 21+07.76 - STA 23+00.00

PROJECT NUMBER: 6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	TYPICAL SECTIONS	SHEET 3	E

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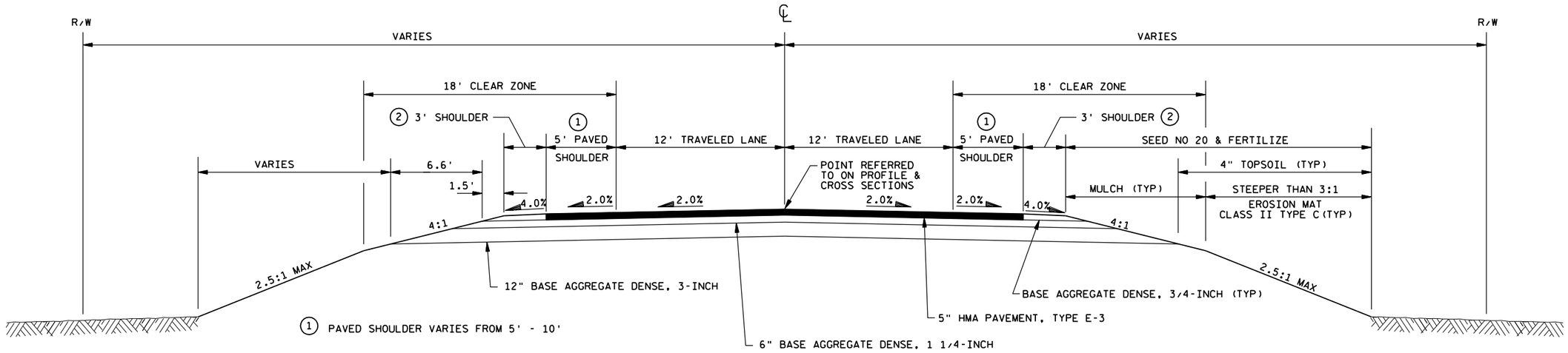


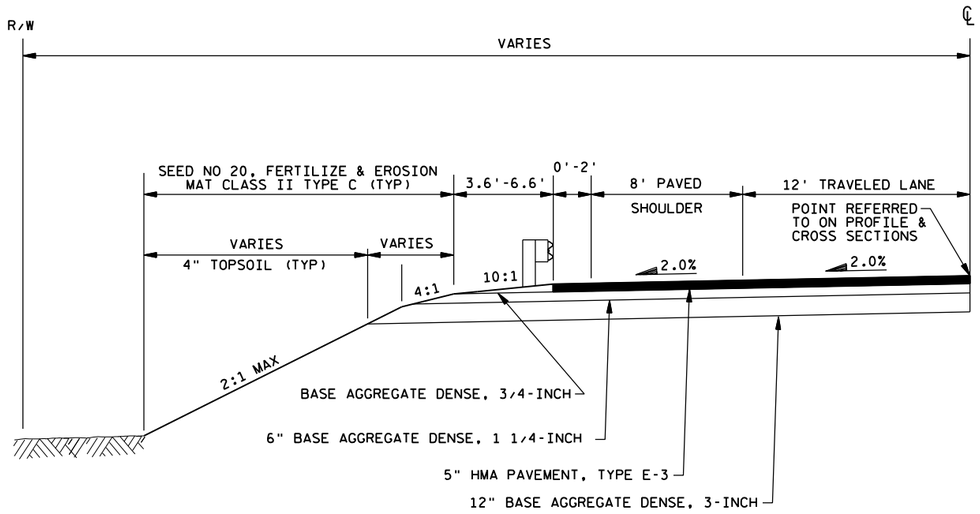
1 PAVED SHOULDER VARIES FROM 5' - 10'

2 SHOULDER VARIES FROM 3' - 6.6'

TYPICAL FINISHED SECTION

CTH S

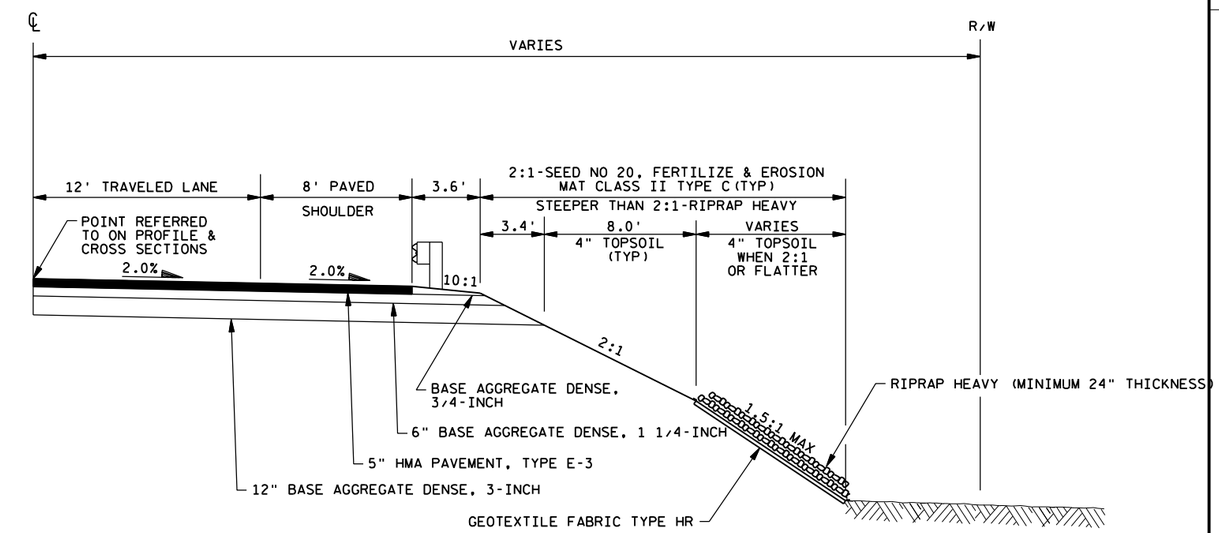
STA 7+89.22-STA 9+63.72 RT
STA 7+89.22-STA 9+32.42 LT
STA 21+28.56-STA 23+00.00 RT
STA 21+09.32-STA 23+00.00 LT



TYPICAL FINISHED SECTION W/ENERGY ABSORBING TERMINAL

CTH S

STA 9+63.72-STA 10+13.68 RT
STA 9+32.42-STA 9+82.38 LT
STA 12+38.63-STA 12+88.63 RT
STA 13+26.66-STA 13+76.66 RT
STA 20+78.59-STA 21+28.56 RT
STA 20+59.36-STA 21+09.36 LT



TYPICAL FINISHED SECTION W/ THRIE BEAM OR CLASS A BEAM GUARD

CTH S

STA 10+13.68-STA 12+38.63 RT
STA 9+82.38-STA 15+75.53 LT
STA 13+76.62-STA 15+94.76 RT
STA 19+22.95-STA 20+78.59 RT
STA 19+03.71-STA 20+59.36 LT

PROJECT NUMBER: 6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	TYPICAL SECTIONS	SHEET 4	E

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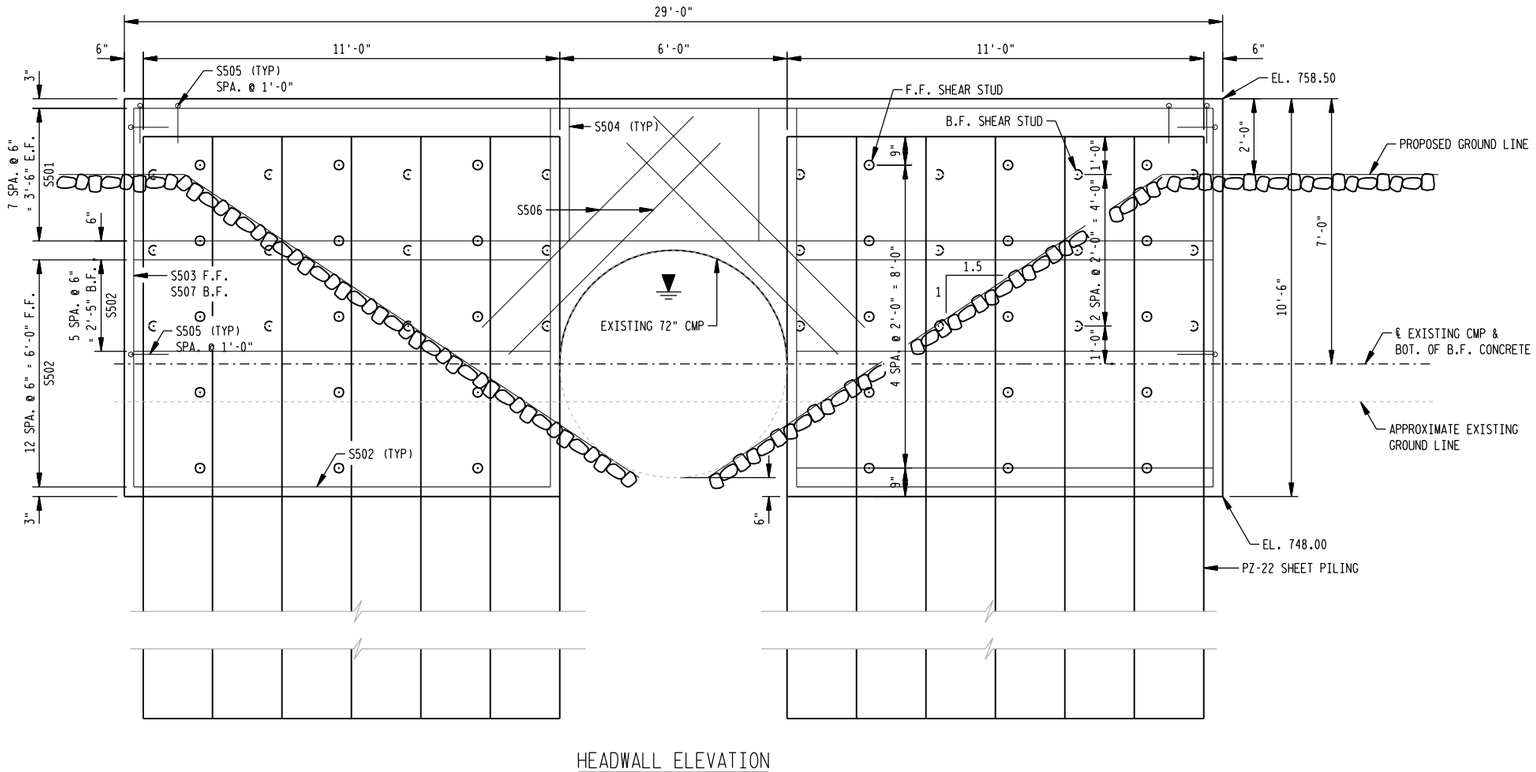
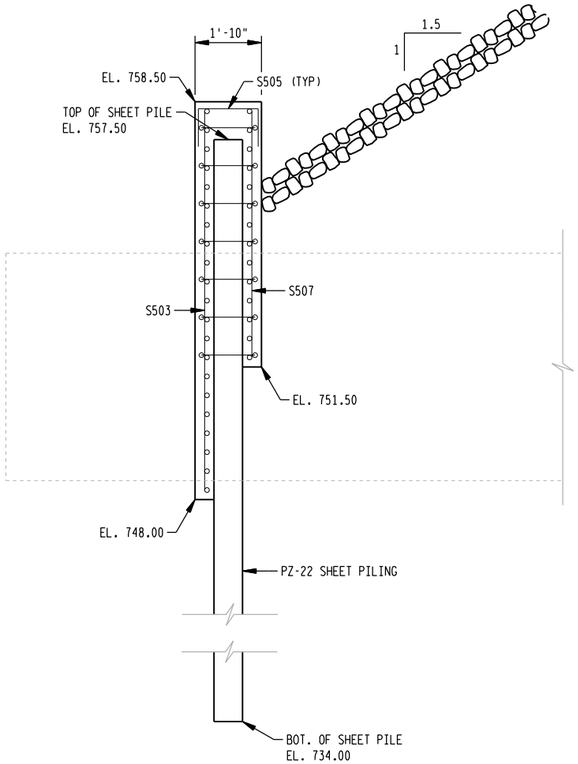
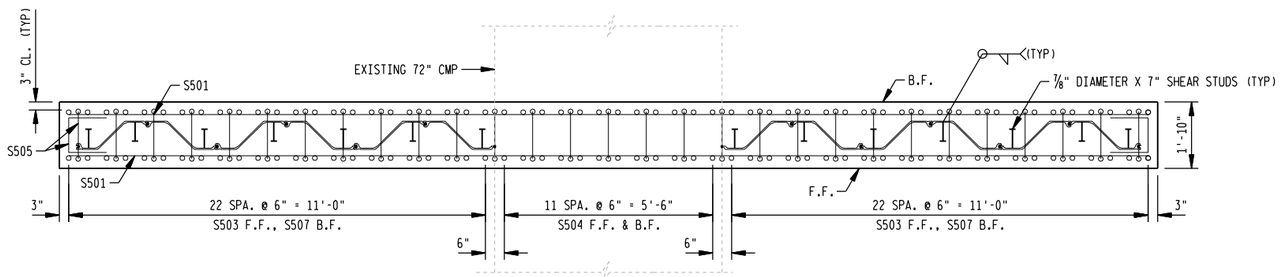


HEADWALL ELEVATION
(NORTH WALL SHOWN, SOUTH WALL SIMILAR)



HEADWALL SECTION
(NORTH WALL SHOWN, SOUTH WALL SIMILAR)

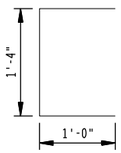


HEADWALL PLAN

BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
ALL BAR STEEL REINFORCEMENT SHOWN IN THIS BILL SHALL BE EPOXY COATED.

MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION	TOTAL WEIGHT = 4,000 LBS
S501	32	28 - 6			HEADWALLS - E.F.	HORIZ.
S502	76	11 - 0			HEADWALLS - E.F.	HORIZ.
S503	92	10 - 0			HEADWALLS - F.F.	VERT.
S504	48	3 - 6			HEADWALLS - E.F.	VERT.
S505	86	3 - 1	X		HEADWALLS - ENDS	HORIZ.
S506	16	8 - 0			HEADWALLS - TOP OF PIPE - E.F.	DIAG.
S507	92	6 - 6			HEADWALLS - B.F.	VERT.



S505

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.

BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.

USE 3" CLEAR FOR ALL REINFORCMENT UNLESS OTHERWISE NOTED.

CONCRETE MASONRY----------fc = 3,500 PSI
HIGH STRENGTH BAR REINFORCEMENT, GRADE 60----------fy = 60,000 PSI

QUANTITIES

(BOTH WALLS INCLUDED)

PILING STEEL SHEET PERMANENT DELIVERED & DRIVEN - 1034 SF
CONCRETE MASONRY - 30 CY
HS REINFORCEMENT COATED - 3910 LBS
WELDED STUD SHEAR CONNECTORS 7/8X 7-INCH - 108 EACH

PROJECT NUMBER: 6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	CONSTRUCTION DETAILS - CULVERT HEADWALL (STA 11+28)	SHEET 5	E

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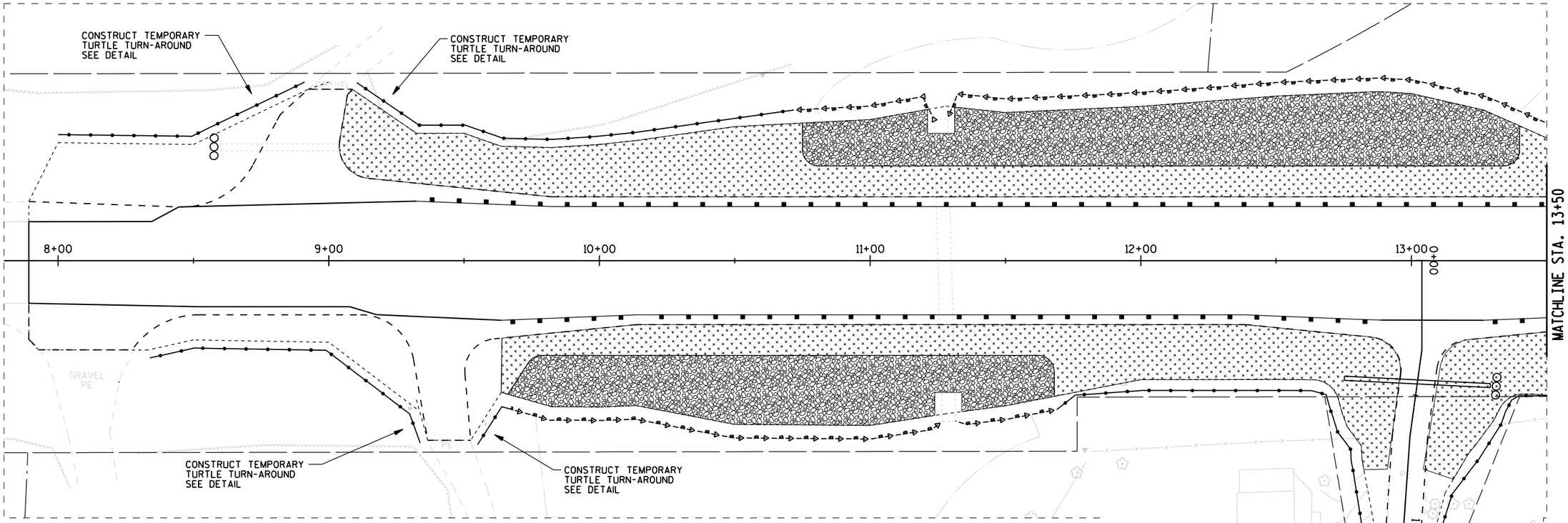
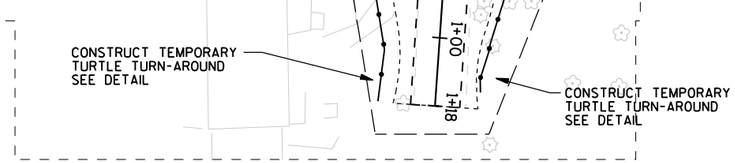
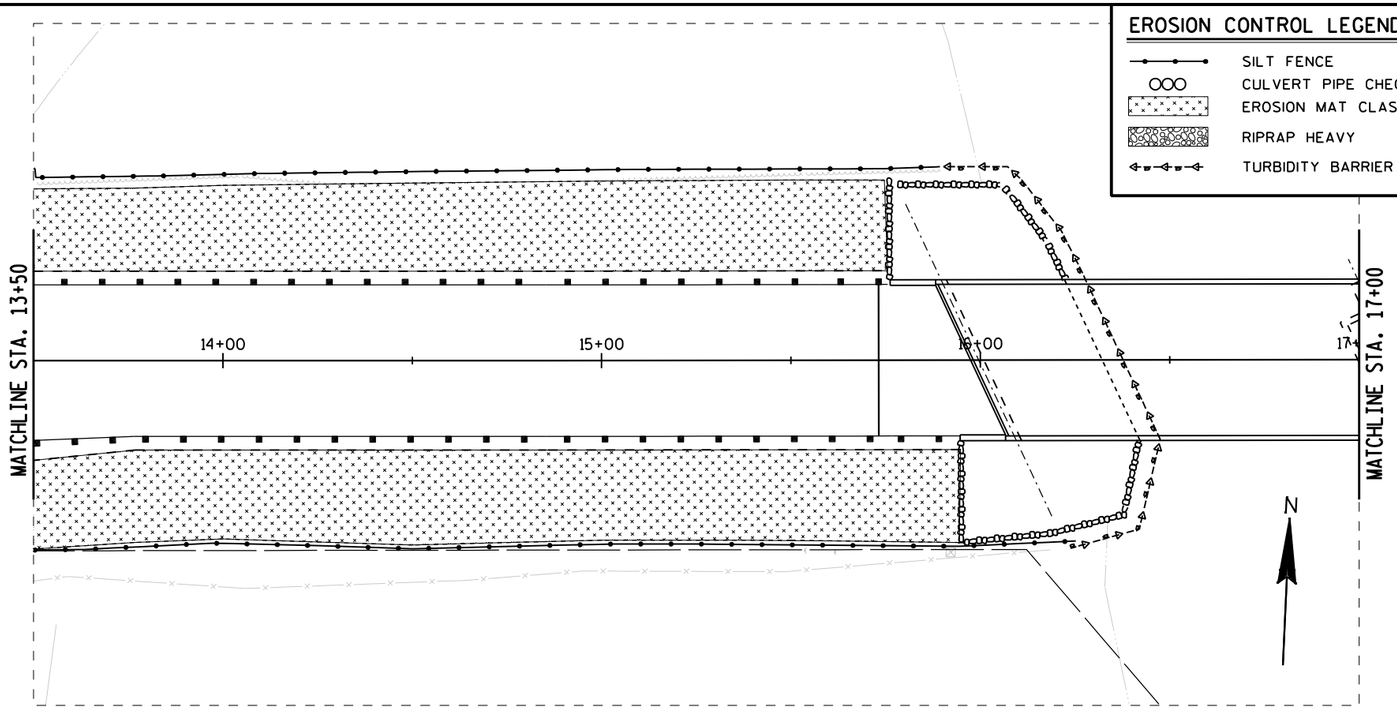
WISDOT/CADDS SHEET 42

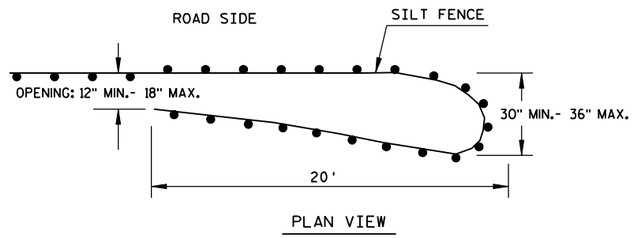






EROSION CONTROL LEGEND

- SILT FENCE
- CULVERT PIPE CHECKS
- EROSION MAT CLASS II, TYPE C
- RIPRAP HEAVY
- TURBIDITY BARRIER



PLAN VIEW

GENERAL NOTES

THE PURPOSE OF THE TURTLE TURN-AROUNDS ARE TO REDIRECT THE TURTLES AWAY FROM THE CONSTRUCTION ZONE. DESIGN SHOULD ALSO INCLUDE TRENCHED-IN SEDIMENT FENCING AND FENCING SUPPORTS ON UPSLOPE SIDE OF FENCE. SILT FENCE POSTS FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE TURN-AROUND.

TEMPORARY TURTLE TURN-AROUND DETAIL

PROJECT NUMBER: 6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	EROSION CONTROL	SHEET 6	E

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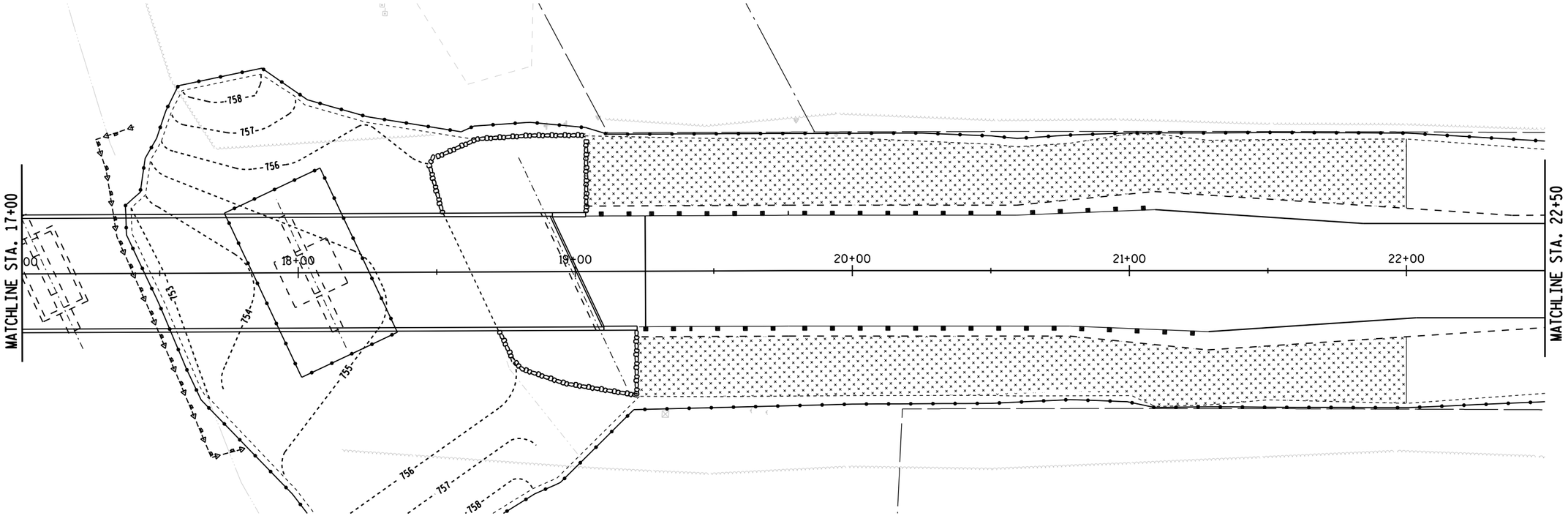
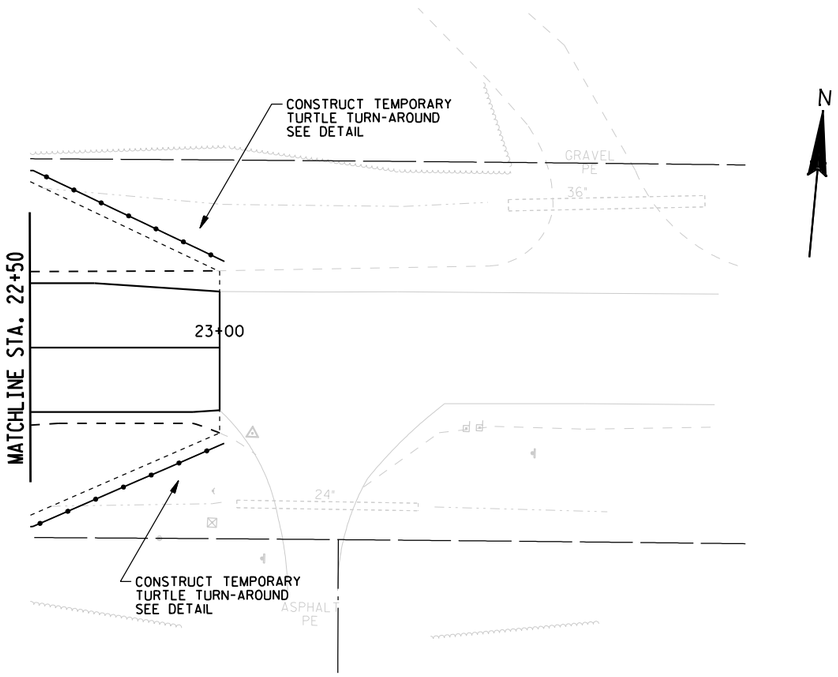
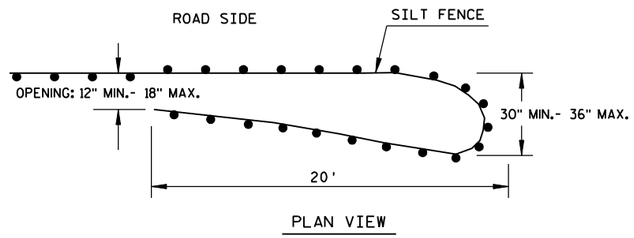
WISDOT/CADDS SHEET 42





EROSION CONTROL LEGEND

- SILT FENCE
- CULVERT PIPE CHECKS
- EROSION MAT CLASS II, TYPE C
- TURBIDITY BARRIER



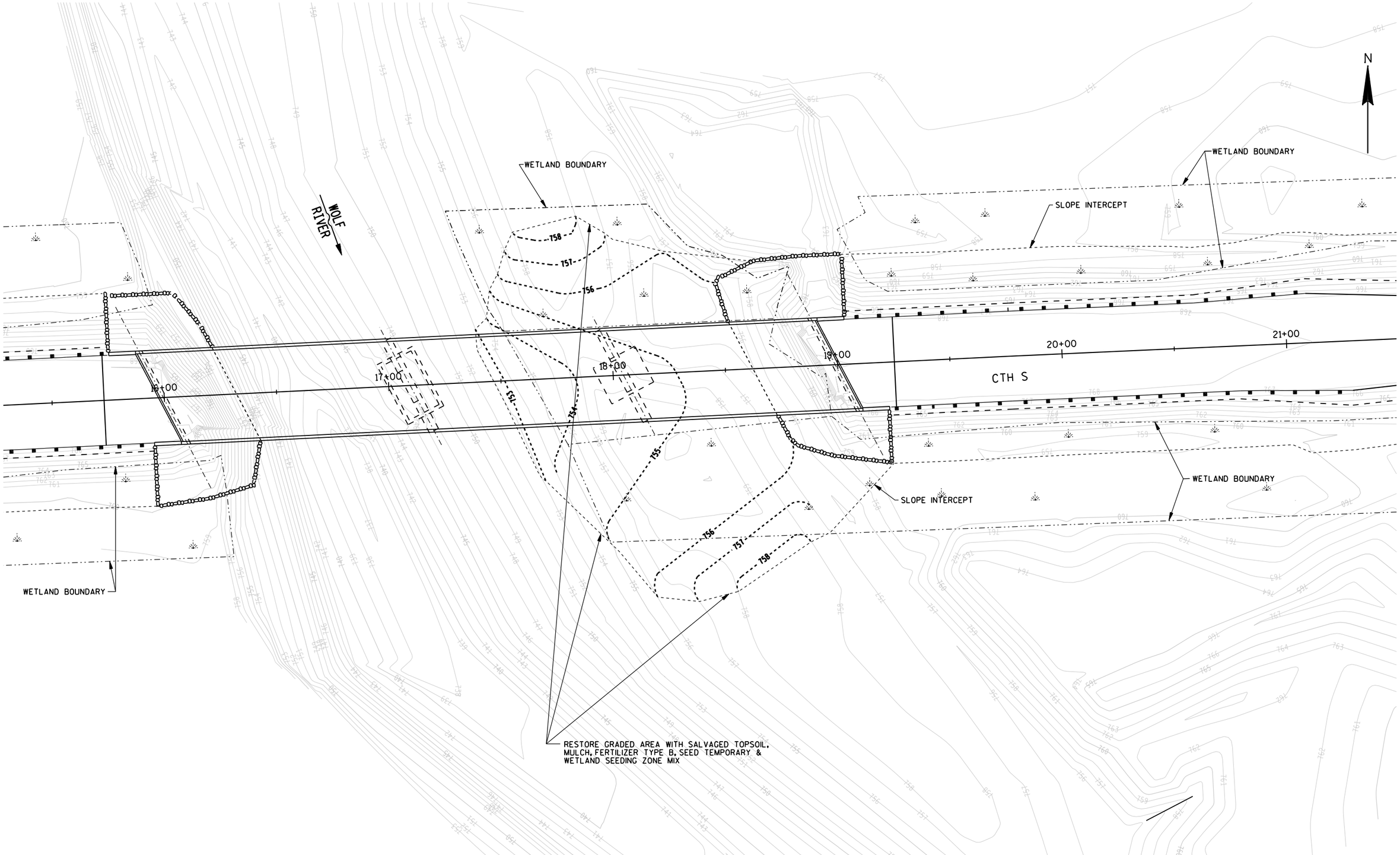
PLAN VIEW

GENERAL NOTES

THE PURPOSE OF THE TURTLE TURN-AROUNDS ARE TO REDIRECT THE TURTLES AWAY FROM THE CONSTRUCTION ZONE. DESIGN SHOULD ALSO INCLUDE TRENCHED-IN SEDIMENT FENCING AND FENCING SUPPORTS ON UPSLOPE SIDE OF FENCE.SILT FENCE POSTS FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE TURN-AROUND.

TEMPORARY TURTLE TURN-AROUND DETAIL

2



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PLOT TIME: 10:53:31 AM
PLOT SCALE: 1:39.9999
WISDOT/CADDS SHEET 42

DATE 18OCT11 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	6098-04-71 QUANTITY
0010	201.0110	CLEARING	SY	325.000	325.000
0020	201.0210	GRUBBING	SY	325.000	325.000
0030	203.0100	REMOVING SMALL PIPE CULVERTS	EACH	2.000	2.000
0040	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 01. 17+49.24	LS	1.000	1.000
0050	204.0185	REMOVING MASONRY	CY	5.000	5.000
0060	204.9180.S	REMOVING (ITEM DESCRIPTION) 01. RIPRAP	SY	820.000	820.000
0070	205.0100	EXCAVATION COMMON	CY	2,125.000	2,125.000
0080	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-44-282	LS	1.000	1.000
0090	206.5000	COFFERDAMS (STRUCTURE) 01. B-44-282	LS	1.000	1.000
0100	208.0100	BORROW	CY	12,300.000	12,300.000
0110	210.0100	BACKFILL STRUCTURE	CY	370.000	370.000
0120	213.0100	FINISHING ROADWAY (PROJECT) 01. 6098-04-71	EACH	1.000	1.000
0130	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	350.000	350.000
0140	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	2,495.000	2,495.000
0150	305.0130	BASE AGGREGATE DENSE 3-INCH	TON	5,095.000	5,095.000
0160	415.0410	CONCRETE PAVEMENT APPROACH SLAB	SY	220.000	220.000
0170	455.0105	ASPHALTIC MATERIAL PG58-28	TON	89.000	89.000
0180	455.0605	TACK COAT	GAL	130.000	130.000
0190	460.1103	HMA PAVEMENT TYPE E-3	TON	1,460.000	1,460.000
0200	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	945.000	945.000
0210	490.0105	SALVAGED ASPHALTIC PAVEMENT	TON	1,500.000	1,500.000
0220	502.0100	CONCRETE MASONRY BRIDGES	CY	805.000	805.000
0230	502.1100	CONCRETE MASONRY SEAL	CY	90.000	90.000
0240	502.3200	PROTECTIVE SURFACE TREATMENT	SY	1,440.000	1,440.000
0250	503.0146	PRESTRESSED GIRDER TYPE I 45W-INCH	LF	1,800.000	1,800.000
0260	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	50,710.000	50,710.000
0270	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	110,670.000	110,670.000
0280	506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	36.000	36.000
0290	506.4000	STEEL DIAPHRAGMS (STRUCTURE) 01. B-44-282	EACH	30.000	30.000
0300	513.4060	RAILING TUBULAR TYPE M (STRUCTURE) 01. B-44-282	LS	1.000	1.000
0310	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	22.000	22.000
0320	521.0118	CULVERT PIPE CORRUGATED STEEL 18-INCH	LF	54.000	54.000
0330	521.1018	APRON ENDWALLS FOR CULVERT PIPE STEEL 18-INCH	EACH	2.000	2.000
0340	550.0600.S	PILE REDRIVING	EACH	15.000	15.000
0350	550.2126.S	PILING CIP CONCRETE 12 3/4 X 0.375-INCH	LF	8,880.000	8,880.000
0360	606.0300	RIPRAP HEAVY	CY	1,400.000	1,400.000
0370	612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	30.000	30.000
0380	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	110.000	110.000
0390	614.0200	STEEL THRIE BEAM STRUCTURE APPROACH	LF	84.000	84.000
0400	614.0305	STEEL PLATE BEAM GUARD CLASS A	LF	1,275.000	1,275.000
0410	614.0370	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL	EACH	6.000	6.000
0420	614.0920	SALVAGED RAIL	LF	1,560.000	1,560.000
0430	614.0925	SALVAGED GUARDRAIL END TREATMENTS	EACH	4.000	4.000
0440	616.0404	FENCE CHAIN LINK SALVAGED 4-FT	LF	65.000	65.000
0450	619.1000	MOBILIZATION	EACH	1.000	1.000
0460	624.0100	WATER	MGAL	400.000	400.000

3

DATE 18OCT11 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	6098-04-71 QUANTITY
0470	625.0100	TOPSOIL	SY	4,940.000	4,940.000
0480	625.0500	SALVAGED TOPSOIL	SY	1,800.000	1,800.000
0490	627.0200	MULCHING	SY	2,570.000	2,570.000
0500	628.1504	SILT FENCE	LF	2,390.000	2,390.000
0510	628.1520	SILT FENCE MAINTENANCE	LF	4,780.000	4,780.000
0520	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	7.000	7.000
0530	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	4.000	4.000
0540	628.2027	EROSION MAT CLASS II TYPE C	SY	5,000.000	5,000.000
0550	628.6005	TURBIDITY BARRIERS	SY	1,000.000	1,000.000
0560	628.7555	CULVERT PIPE CHECKS	EACH	12.000	12.000
0570	628.7570	ROCK BAGS	EACH	50.000	50.000
0580	629.0210	FERTILIZER TYPE B	CWT	6.000	6.000
0590	630.0120	SEEDING MIXTURE NO. 20	LB	135.000	135.000
0600	630.0200	SEEDING TEMPORARY	LB	183.000	183.000
0610	634.0614	POSTS WOOD 4X6-INCH X 14-FT	EACH	2.000	2.000
0620	634.0618	POSTS WOOD 4X6-INCH X 18-FT	EACH	4.000	4.000
0630	637.0202	SIGNS REFLECTIVE TYPE II	SF	12.000	12.000
0640	638.2102	MOVING SIGNS TYPE II	EACH	4.000	4.000
0650	638.2602	REMOVING SIGNS TYPE II	EACH	4.000	4.000
0660	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	6.000	6.000
0670	642.5201	FIELD OFFICE TYPE C	EACH	1.000	1.000
0680	643.0100	TRAFFIC CONTROL (PROJECT) 01. 6098-04-71	EACH	1.000	1.000
0690	643.0300	TRAFFIC CONTROL DRUMS	DAY	2,140.000	2,140.000
0700	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	2,140.000	2,140.000
0710	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	2,568.000	2,568.000
0720	643.0900	TRAFFIC CONTROL SIGNS	DAY	428.000	428.000
0730	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	2,175.000	2,175.000
0740	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	5,245.000	5,245.000
0750	648.0100	LOCATING NO-PASSING ZONES	MI	0.300	0.300
0760	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	1,210.000	1,210.000
0770	650.5000	CONSTRUCTION STAKING BASE	LF	2,420.000	2,420.000
0780	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-44-282	LS	1.000	1.000
0790	650.7000	CONSTRUCTION STAKING CONCRETE PAVEMENT	LF	50.000	50.000
0800	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 6098-04-71	LS	1.000	1.000
0810	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	1,210.000	1,210.000
0820	690.0150	SAWING ASPHALT	LF	60.000	60.000
0830	715.0415	INCENTIVE STRENGTH CONCRETE PAVEMENT	DOL	500.000	500.000
0840	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	4,830.000	4,830.000
0850	ASP.1T0A	ON-THE-JOB TRAINING APPRENTICE AT $5. 00/HR	HRS	2,000.000	2,000.000
0860	ASP.1T0G	ON-THE-JOB TRAINING GRADUATE AT $5.00/HR	HRS	1,320.000	1,320.000
0870	SPV.0005	SPECIAL 01. WETLAND SEEDING ZONE MIX	ACRE	0.400	0.400
0880	SPV.0060	SPECIAL 01. CULVERT HEADWALLS	EACH	2.000	2.000
0890	SPV.0105	SPECIAL 01. CONSTRUCTION STAKING SITE GRADING	LS	1.000	1.000

3

CLEARING & GRUBBING

BEGIN STATION	END STATION	LOCATION	201.0110 CLEARING SY	201.0210 GRUBBING SY
9+18	9+60	LT	25	25
14+22	15+00	LT	10	10
17+58	18+32	LT	105	105
18+15	18+93	RT	185	185
	TOTALS		325	325

REMOVING CULVERT PIPES

STATION	LOCATION	203.0100 REMOVING SMALL PIPE CULVERTS EACH	DESCRIPTION
13+00	DWAY, RT	1	1 - 18" X 50' PIPE CULVERT
19+00	LT	1	1 - 36" X 26' PIPE CULVERT
TOTALS		2	

SALVAGED RAIL

BEGIN STATION	END STATION	LOCATION	614.0920 SALVAGED RAIL LF	614.0925 SALVAGED GUARDRAIL END TREATMENTS LF
9+58	12+86	RT	280	1
10+10	16+00	LT	590	---
13+28	16+14	RT	275	1
18+85	21+08	LT	215	1
19+00	21+07	RT	200	1
		TOTALS	1,560	4

REMOVING MASONRY

STATION	LOCATION	204.0185 REMOVING MASONRY CY	DESCRIPTION
19+00	LT	5	CONCRETE HEADWALLS OF CULVERT PIPE
TOTALS		5	

REMOVING RIPRAP

STATION	STATION	LOCATION	204.9180.S.01 REMOVING RIPRAP SY	DESCRIPTION
10+15	13+22	LT	450	EXISTING RIPRAP
10+44	12+15	RT	370	EXISTING RIPRAP
TOTALS			820	

ALL QUANTITIES CATEGORY 0010
UNLESS OTHERWISE NOTED

EARTHWORK

From/To Station	Location	Excavation Common (1) (item # 205.0100)		Salvaged/Unusable Pavement Material (4)	Available Material (5)	Unexpanded Fill	Expanded Fill (6)	Mass Ordinate +/- (7)	Waste	Borrow	Comment:
		Cut (2)	EBS Excavation (3)				Factor 1.25			(item #208.0100)	
10+15 - 13+22	LT	0	0	0	0	300	400	-400	0	400	Fill for replacement of existing riprap
10+44 - 12+15	RT	0	0	0	0	250	350	-350	0	350	Fill for replacement of existing riprap
0+00 - 1+18	DWAY RT	2	0	0	2	245	310	-310	0	310	
7+90 - 15+88	West End	695	0	525	170	7,260	9,080	-8,910	0	8,910	
17+45 - 18+90	Wolf River	1100	0	0	0	0	0	0	1,100	0	Excavation for Clearance
19+10 - 23+00	East End	330	0	220	110	1,940	2,430	-2,320	0	2,320	
Grand Total		2,125	0	745	280	9,200	11,510		1,100	12,290	
		Total Exc Common	2,125						Total Borrow	12,300	

1) Excavation Common is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation to be backfilled with Subbase Material
4) Salvaged/Unusable Pavement Material = Existing Asphalt
5) Available Material = Cut - Salvaged/Unusuable Pavement Material
6) Expanded Fill. Factor = 1.25 **Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor**
Depending on selections: Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced EBS) * Fill Factor
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh) * Fill Factor
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * Fill Factor

7) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division.
Minus indicates a shortage of material within the Division.

SALVAGED ASPHALT

BEGIN STATION	END STATION	LOCATION	THICK INCHES	490.0105 SALVAGED ASPHALTIC PAVEMENT TONS
7+90	16+14	WEST OF BRIDGE	6	1,000
18+85	23+00	EAST OF BRIDGE	6	500
		TOTALS		1,500

ALL QUANTITIES CATEGORY 0010
UNLESS OTHERWISE NOTED

3

BASES

BEGIN STATION	END STATION	LOCATION	THICKNESS INCHES	305.0110 BASE AGGREGATE DENSE 3/4-INCH (SHOULDER) TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH (BASE) TON	305.0130 BASE AGGREGATE DENSE 3-INCH (SUBBASE) TON
7+90	16+00	WEST OF BRIDGE	6&12	---	1,575	3,360
19+00	23+00	EAST OF BRIDGE	6&12	---	790	1,735
7+90	16+00	WEST OF BRIDGE, SHOULDER	5	220	---	---
19+00	23+00	EAST OF BRIDGE, SHOULDER	5	130	---	---
PROJECT		DRIVEWAYS	6	---	130	---
			TOTALS	350	2,495	5,095

CONCRETE

BEGIN STATION	END STATION	LOCATION	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY	715.0415 INCENTIVE STRENGTH CONCRETE PAVEMENT DOL
15+73	16+07	CTH S	110	250
18+92	19+25	CTH S	110	250
		TOTAL	220	500

3

ASPHALT

BEGIN STATION	END STATION	LOCATION	THICKNESS INCHES	455.0105 ASPHALTIC MATERIAL PG 58-28 TON	455.0605 TACK COAT GAL	460.1103 HMA PAVEMENT TYPE E-3 TON	460.2000 INCENTIVE DENSITY HMA PAVEMENT DOLLARS
7+89	15+73	WEST OF BRIDGE	2 (SURFACE)	24	90	400	260
7+89	15+73	WEST OF BRIDGE	3 (BINDER)	36	--	600	385
19+25	23+00	EAST OF BRIDGE	2 (SURFACE)	12	40	185	120
19+25	23+00	EAST OF BRIDGE	3 (BINDER)	17	--	275	180
		TOTALS		89	130	1,460	945

BEAM GUARD

BEGIN STATION	END STATION	LOCATION	614.0200 STEEL THRIE BEAM STRUCTURE APPROACH LF	614.0305 STEEL PLATE BEAM GUARD CLASS A LF	614.0370 STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL EACH
9+32.42	15+75.53	LT	21	575	1
9+63.72	12+88.63	RT	--	225	2
13+26.66	15+94.76	RT	21	200	1
19+03.71	21+09.32	LT	21	137.5	1
19+22.95	21+28.56	RT	21	137.5	1
		TOTALS	84	1,275	6

CULVERTS

STATION	LOCATION	521.0118 CULVERT PIPE CORRUGATED STEEL 18-INCH LF	521.1018 APRON ENDWALLS FOR CULVERT PIPE STEEL 18-INCH EACH	THICKNESS (INCHES)
13+00	RT	54	2	0.064

WATER

PROJECT	624.0100 WATER MGAL
6098-04-71	400

FENCE CHAIN LINK SALVAGED

BEGIN STATION	END STATION	LOCATION	616.0404 FENCE CHAIN LINK SALVAGED LF
12+70	13+40	RT	65

LANDSCAPING

BEGIN STATION	END STATION	LOCATION	625.0100 TOPSOIL SY	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB	SPV.0005.01 WETLAND SEEDING ZONE MIX ACRE
7+90	15+75	LT	1570	--	210	1	43	43	--
7+90	15+95	RT	1550	--	140	1	42	42	--
17+50	19+22	UNDER BRIDGE	--	1800	1800	2	--	48	0.4
19+00	23+00	LT	960	--	210	1	26	26	--
19+22	23+00	RT	860	--	210	1	24	24	--
		TOTALS	4,940	1,800	2,570	6	135	183	0.4

ALL QUANTITIES CATEGORY 0010
UNLESS OTHERWISE NOTED

EROSION CONTROL

BEGIN STATION	END STATION	LOCATION	606.0300 RIPRAP HEAVY CY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.2027 EROSION MAT CLASS II TYPE C SY	628.6005 TURBIDITY BARRIERS SY	628.7555 CULVERT PIPE CHECKS EACH	628.7570 ROCK BAGS EACH	645.0120 GEOTEXTILE FABRIC TYPE HR SY
7+90	8+90	LT	--	95	190	--	--	--	--	--	--	--
8+25	9+35	RT	--	125	250	--	--	--	--	--	--	--
8+58		LT	--	--	--	--	--	--	--	6	--	--
9+00	15+90	LT	425	410	820	--	--	1380	260	--	--	650
9+50	12+95	RT	310	200	400	--	--	600	180	--	--	475
13+05	16+25	RT	--	360	720	--	--	810	--	6	--	--
15+90	16+50	CROSS	--	--	--	--	--	--	260	--	--	--
17+25	17+75	CROSS	--	--	--	--	--	--	230	--	--	--
17+50	19+00	CROSS	--	300	600	--	--	--	--	--	--	--
19+00	23+00	LT	--	400	800	--	--	750	--	--	--	--
19+20	23+00	RT	--	380	760	--	--	650	--	--	--	--
UNDISTRIBUTED			40	120	240	7	4	810	70	--	50	100
		TOTALS	775	2,390	4,780	7	4	5,000	1,000	12	50	1,225

CONSTRUCTION STAKING

* ***

BEGIN STATION	END STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.6500 CONSTRUCTION STAKING STRUCTURE LAYOUT LS	650.7000 CONSTRUCTION STAKING CONCRETE PAVEMENT LF	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL LS	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF	SPV.0105.01 CONSTRUCTION STAKING SITE GRADING LS
7+90	16+00	WEST OF BRIDGE	810	1,620	---	25	---	810	---
17+50	19+00	BELOW SPAN 3	---	---	---	---	---	---	1
19+00	23+00	EAST OF BRIDGE	400	800	---	25	---	400	---
PROJECT		ENTIRE PROJECT	---	---	1	---	1	---	---
		TOTALS	1,210	2,420	1	50	1	1,210	1

* INCLUDES STAKING TOP OF BASE AGG 1 1/4-INCH AND TOP OF 3-INCH
*** CATEGORY 0020

ALL QUANTITIES CATEGORY 0010
UNLESS OTHERWISE NOTED

3

PERMANENT SIGNING

STATION	LOCATION	SIGN CODE/MESSAGE	W x H	634.0614 POSTS WOOD 4x6-INCH X 14 - FEET EACH	634.0618 POSTS WOOD 4x6-INCH X 18 - FEET EACH	637.0202 SIGNS REFLECTIVE TYPE II SF	638.2102 MOVING SIGNS TYPE II EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
15+00	CTH S, RT	NO JUMPING OR FISHING FROM BRIDGE	--	1	--	--	1	--	1
15+95	CTH S, RT	W5-52R/BRIDGE SIGN	36" X 12"	--	1	3.00	--	1	1
15+95	CTH S, RT	WOLF RIVER	--	--	--	--	1	--	--
15+95	CTH S, LT	W5-52R/BRIDGE SIGN	36" X 12"	--	1	3.00	--	1	1
19+05	CTH S, RT	W5-52R/BRIDGE SIGN	36" X 12"	--	1	3.00	--	1	1
19+05	CTH S, RT	WOLF RIVER	--	--	--	--	1	--	--
19+05	CTH S, LT	W5-52R/BRIDGE SIGN	36" X 12"	--	1	3.00	--	1	1
20+50	CTH S, LT	NO JUMPING OR FISHING FROM BRIDGE	--	1	--	--	1	--	1
		TOTALS		2	4	12	4	4	6

TRAFFIC CONTROL ITEMS BREAKDOWN

LOCATION	DESCRIPTION	DAYS IN SERVICE	643.0300 DRUMS NO.	643.0300 DRUMS DAYS	643.0420 TYPE III BARRICADES NO.	643.0420 TYPE III BARRICADES DAYS	643.0705 WARNING LIGHTS TYPE A NO.	643.0705 WARNING LIGHTS TYPE A DAYS	643.0900 SIGNS NO.	643.0900 SIGNS DAYS
CTH S	CLOSURE OF CTH S - BOTH SIDES OF BRIDGE	214	10	2,140	10	2,140	12	2,568	2	428
	TOTALS			2,140		2,140		2,568		428

PAVEMENT MARKING

BEGIN STATION	END STATION	LOCATION	646.0106 PAVEMENT MARKING EPOXY 4-INCH (YELLOW) LF	646.0106 PAVEMENT MARKING EPOXY 4-INCH (WHITE) LF	648.0100 LOCATING NO-PASSING ZONES MI
7+90	23+00	LEFT EDGELINE	--	1,510	--
7+90	23+00	RIGHT EDGELINE	--	1,510	--
7+90	15+00	NO PASSING EB	888	--	--
15+00	19+50	DOUBLE YELLOW	900	--	--
19+50	23+00	NO PASSING WB	438	--	--
7+90	23+00	CTH S	--	--	0.3
	TOTALS		2,225	3,020	0.3
			5,245		

SAWING PAVEMENT

STATION	LOCATION	690.0150 SAWING ASPHALT LF
7+90	CTH S	30
23+00	CTH S	30
	TOTALS	60

CULVERT HEADWALLS

STATION	LOCATION	SPV.0060.01 CULVERT HEADWALLS EACH
11+28	RT	1
11+28	LT	1
TOTALS		2

ALL QUANTITIES CATEGORY 0010
UNLESS OTHERWISE NOTED

PI STA 7+50.00
N=605782.101
E=775076.469

STA 9+00 LT
CONSTRUCT 17' WIDE
GRAVEL PE

Salvage Existing 18" Culvert

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

WETLAND BOUNDARY

WOLF RIVER

STATE OF WISCONSIN
DEPARTMENT OF
NATURAL RESOURCES

EXISTING R/W

TOWN OF ELLINGTON

GOV'T LOT 6
SEC. 18

GOV'T LOT 2
SEC. 18

WOODS

EXISTING 18" CMP

CLEARING AND GRUBBING

HARRISON MON.
Y=605770.790
X=774980.909

STA 11+11.73, 47' LT
BEGIN CULVERT
HEADWALL

STA 11+40.74, 47' LT
END CULVERT HEADWALL

AT&T

REMOVE RIPRAP

EXISTING 72" CMP

RIPRAP

SCALE 0' 10' 20' 40'

STA 9+32.42
22' LT

STA 9+82.38
20' LT

AT&T

STA 8+34.61
14.46' LT

STA 8+44.61
19.83' LT

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

140'

BEGIN ENERGY
ABSORBING TERMINAL

WE ENERGIES

CLASS A BEAM GUARD

N87°16'44"E

CTH S

120'

STA 12+88.63, 22' RT END
ENERGY ABSORBING TERMINAL

STA 12+38.68, 20' RT

STA 13+26.66, 22' RT BEGIN
ENERGY ABSORBING TERMINAL

PI 0+00.00

STA 13+50

HARRISON MON.
Y=605875.381
X=777630.529

QUARTER LINE

ASPHALT

SALVAGED RAIL

N87°44'22"E 614.01'

N87°44'22"E 2651.68'

S2°41'42"E

N87°44'22"E 2037.67'

STA 9+17.66
19.97' RT

STA 9+07.79
17.00' RT

STA 9+63.72, 22' RT

STA 10+13.68
20' RT

WETLAND BOUNDARY

REMOVE RIPRAP

REMOVE SMALL
PIPE CULVERT

PI 0+33.02

MATCHLINE

CONTROL POINT 1
Y=605,770.79
X=775,268.76

WE ENERGIES
AT&T
CHARTER COMMUNICATIONS

STA 11+14.37, 49' RT
BEGIN CULVERT HEADWALL

SLOPE
INTERCEPT

STA 11+43.38, 49' RT
END CULVERT
HEADWALL

38.60'

S0°43'16"E

S0°08'43"W

N87°12'01"E 72.00'

12+68
TLE 50.30'
PI 0+65.19

13+40
TLE 50.20'

EXISTING R/W

KENNETH PARTHIE

PL

STA 8+11 RT
CONSTRUCT 24' WIDE
GRAVEL PE

OUTAGAMIE COUNTY

GOV'T LOT 5
SEC. 18

WOLF RIVER

STA 9+45 RT
CONSTRUCT 16' WIDE
GRAVEL PE

IRVIN & ELEANOR
HEJNY

WETLAND BOUNDARY

FENCE CHAIN LINK
SALVAGED 4-FT

N11°50'41"W 75.66'

S11°12'28"W 80.59'

WETLAND BOUNDARY

TLE FOR DRIVEWAY
0.088 ACRES

PI STA 0+00.00
N=605808.48
E=775629.69

PI STA 0+33.02
N=605775.49
E=775631.24

PI STA 0+65.19
N=605743.45
E=775628.35

PI STA 1+18.03
N=605690.63
E=775627.24

1+00

1+18

PI 1+18.03

12+80
TLE 125'

30.00'
S87°16'44"W

13+10
TLE 125'

STA 13+00 RT
1-18" X 54' CPCS
W/ APRON
ENDWALLS REQ'D
INV 760.5 (W)
INV 760.9 (E)

STA 13+00 RT
CONSTRUCT 13' WIDE
GRAVEL PE
W/ 3:1 SIDE SLOPES
(SEE CROSS SECTIONS)

GOV'T LOT 3
SEC. 18

SCHEDULE OF LANDS & INTERESTS REQUIRED

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

PARCEL NUMBER	OWNER (S)	INTEREST REQUIRED	R/W ACRES REQUIRED NEW	R/W ACRES REQUIRED EXISTING	R/W ACRES REQUIRED TOTAL	T.L.E. ACRES	P.L.E. ACRES
1	IRWIN HEJNY, ELENOR HEJNY & PAUL HEJNY	T.L.E.	-----	-----	-----	0.088	-----

NOTES

COORDINATES ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1983, 2007 ADJUSTMENT (NAD83(2007)).

EXISTING RIGHT OF WAY FOR CTH S IS ESTABLISHED FROM PREVIOUS PROJECT: S 0384 (1).

BEGIN PROJECT 6098-04-71
STA 7+89.22
(BEGIN ABRUPTLY)
SAWCUT REQUIRED
Y=605783.964
X=775115.651

BENCH MARK TABLE

NO.	STATION	DESCRIPTION	ELEV.
1	13+89 RT	MAG NAIL IN POWER POLE #65-233	760.52
2	18+87 RT	CHISELED SQUARE ON THE NORTHEAST CORNER OF BRIDGE	769.55
3	21+11 RT	MAG NAIL IN POWER POLE #65-234	760.55

PI 0+00.08
EL 772.14

SSD=118'
K=2
20' VC

-2.00%

PT 0+38.80
EL 770.36

PI 0+28.80
EL 771.56

PC 0+18.80
EL 771.76

-12.00%

SSD=27'
K=1
20' V.C.

PI 1+06.31
EL 762.26

LOW PT. 1+12.79
EL 762.47

PT 1+16.31
EL 762.52

2.57%

PC 0+96.31
EL 763.46

PI 1+18.03
EL 762.56

775
770
765
760

768.8 764.6 769.02 761.5 763.07

0+00 1+00

PC 7+89.22
EL 767.02

K=138
190' VC

PRC 9+79.22
EL 768.73

PROPOSED GROUND @ REFERENCE LINE

PI 8+84.22
EL 767.22

EXISTING GROUND @ REFERENCE LINE

PI 12+69.22
EL 773.35

SSD=846'
K=299
580' VC

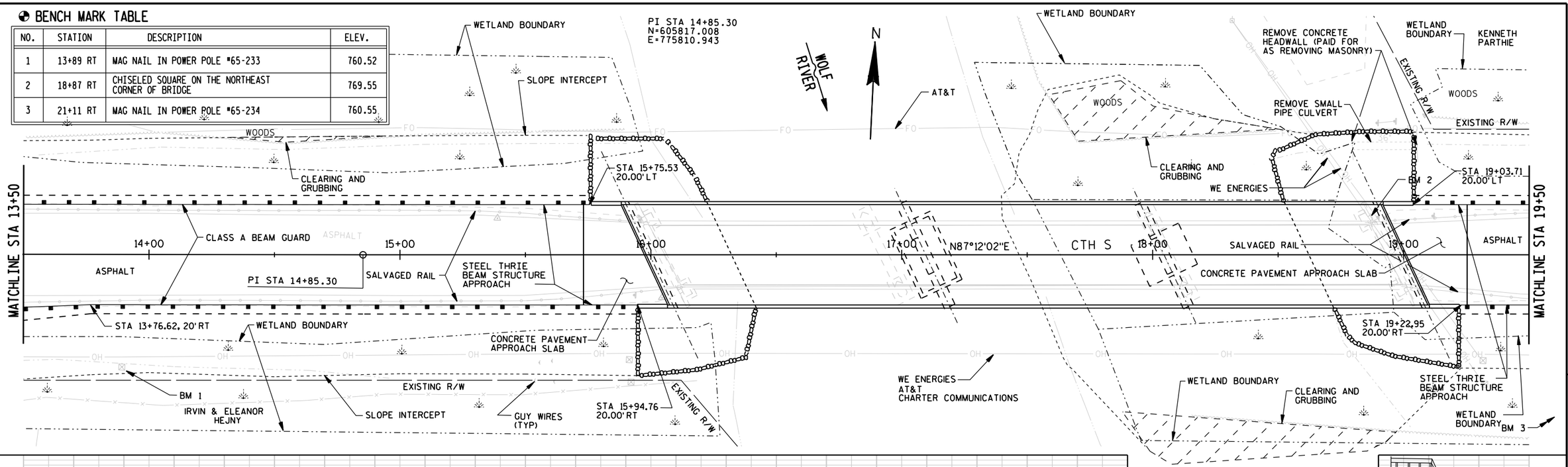
767.0 767.04 767.2 767.28 767.3 767.70 767.5 768.30 767.7 769.06 767.7 769.78 767.9 770.41 768.0 770.96 768.3 771.43 768.6 771.82 768.8 772.12 769.0 772.34

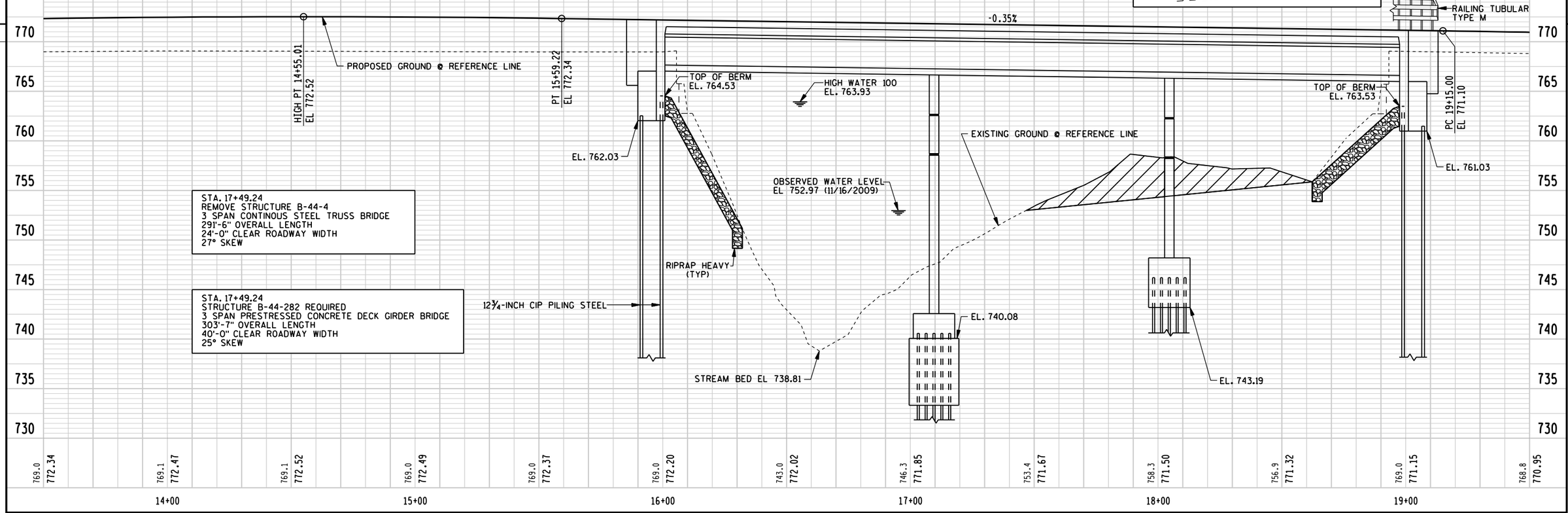
8+00 9+00 10+00 11+00 12+00 13+00

PROJECT NUMBER: 6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	PLAN AND PROFILE	SHEET 16	E

BENCH MARK TABLE

NO.	STATION	DESCRIPTION	ELEV.
1	13+89 RT	MAG NAIL IN POWER POLE #65-233	760.52
2	18+87 RT	CHISELED SQUARE ON THE NORTHEAST CORNER OF BRIDGE	769.55
3	21+11 RT	MAG NAIL IN POWER POLE #65-234	760.55





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PLOT TIME: 9:52:32 AM
PLOT SCALE: 1:39.9999
WISDOT/CADDS SHEET 40

PI STA 19+77.09
N=605841.028
E=776302.143

PI STA 23+00.00
N=605855.463
E=776624.730

KENNETH PARTHIE

PL

WETLAND BOUNDARY

OUTAGAMIE COUNTY

WOODS

EXISTING R/W

AT&T

GRAVEL

FO

STA 20+59.36, 20'LT

STA 21+09.32, 22'LT
END ENERGY ABSORBING TERMINAL

STA 21+84.40
17.00'LT

STA 22+67.00
17.00'LT

PI STA 23+00.00

MATCHLINE STA 19+50

20+00

21+00

CTH S

22+00

23+00

100'

CLASS A BEAM GUARD

ASPHALT

SALVAGED RAIL

STA 21+28.56, 22'RT
END ENERGY ABSORBING TERMINAL

CONTROL POINT #2
Y=605,833.18
X=776,634.39

XXXXXXXXXX

STA 22+03.63
17.00'RT

STA 20+78.59, 20'RT

PI STA 19+77.09

OH

BM 3

EXISTING R/W

BM 1/2

SLOPE INTERCEPT

WETLAND BOUNDARY

CHARTER COMMUNICATIONS
WE ENERGIES
AT&T

WOODS

LYLE P & VICTORIA A REIGEL

GUY WIRES
(TYP)

THERESA STEWART

24"

BENCH MARK TABLE

NO.	STATION	DESCRIPTION	ELEV.
1	13+89 RT	MAG NAIL IN POWER POLE #65-233	760.52
2	18+87 RT	CHISELED SQUARE ON THE NORTHEAST CORNER OF BRIDGE	769.55
3	21+11 RT	MAG NAIL IN POWER POLE #65-234	760.55

PI 20+75.00
EL 770.54

PROPOSED GROUND @ REFERENCE LINE

PRC 22+35.00
EL 767.89

PT 23+00.00
EL 766.97

SSD=985'
K=245
320' VC

K=136
65' VC

PI 22+67.50
EL 767.35

EXISTING GROUND @ REFERENCE LINE

END PROJECT 6098-04-71
STA 23+00.00
(END ABRUPTLY)
SAWCUT REQUIRED

780
775
770
765
760
755
750
745

768.8 770.95
768.6 770.65
768.4 770.25
768.1 769.75
767.8 769.15
767.7 768.44
767.4 767.65
767.0 766.97

20+00 21+00 22+00 23+00

PROJECT NUMBER: 6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	PLAN AND PROFILE	SHEET 18	E

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PLOT DATE: 10/13/2011
PLOT TIME: 9:53:27 AM

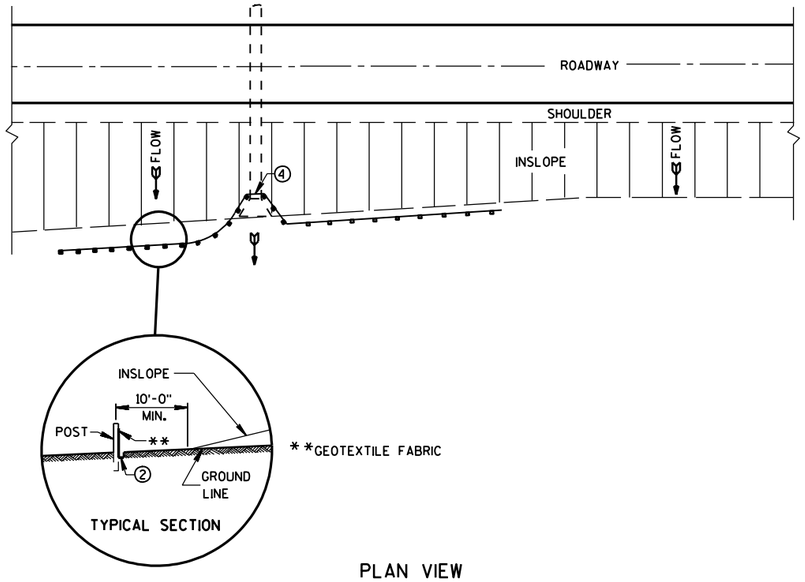
PLOT SCALE: 1:39.9999

WISDOT/CADDS SHEET 40

Standard Detail Drawing List

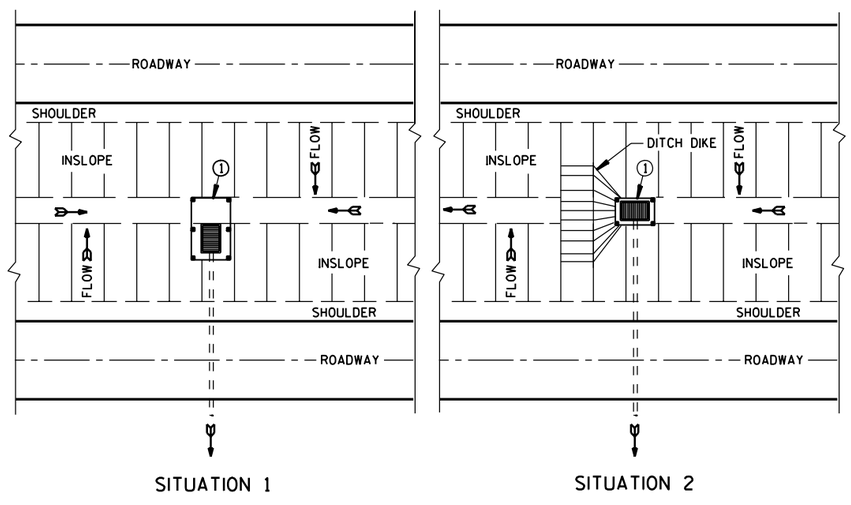
08E9-6	SILT FENCE
08E11-2	TURBIDITY BARRIER
08F1-11	APRON ENDWALLS FOR CULVERT PIPE
12A3-10	NAME PLATE (STRUCTURES)
13B2-6	CONCRETE PAVEMENT APPROACH SLAB
14B15-7A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-7B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-7C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B20-9A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-9B	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END AND VERTICAL FACED PARAPETS
14B20-9C	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SLOPED END PARAPETS
14B20-9D	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPE "F" AND "W"
14B20-9E	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPE "M"
14B20-9F	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL
14B20-9G	STEEL THRIE BEAM STRUCTURE APPROACH, SINGLE SLOPE ATTACHMENT
14B24-7A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-7B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-7C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
15B3-12A	CHAIN LINK FENCE
15B3-12B	CHAIN LINK FENCE
15C2-4A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C2-4B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C3-1	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C6-5	SIGNING & MARKING FOR TWO LANE BRIDGES
15C8-13A	PAVEMENT MARKING (MAINLINE)

6



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



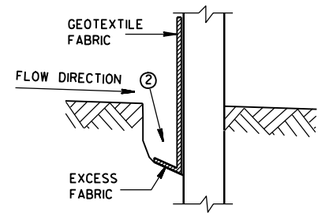
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

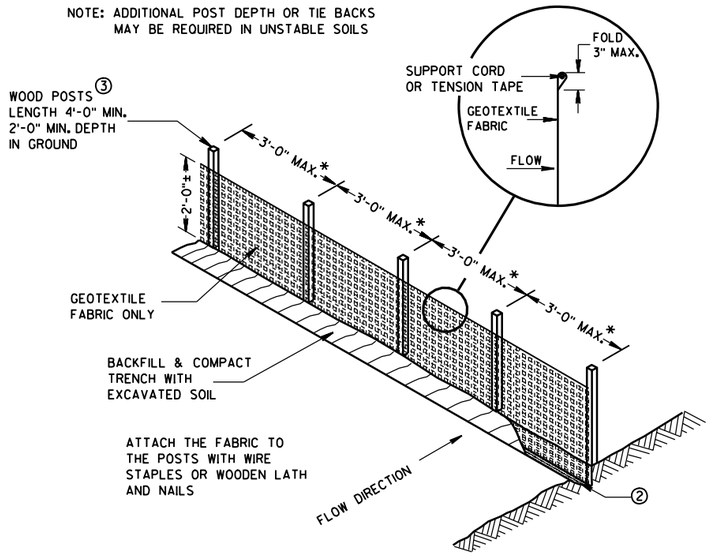
GENERAL NOTES

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.

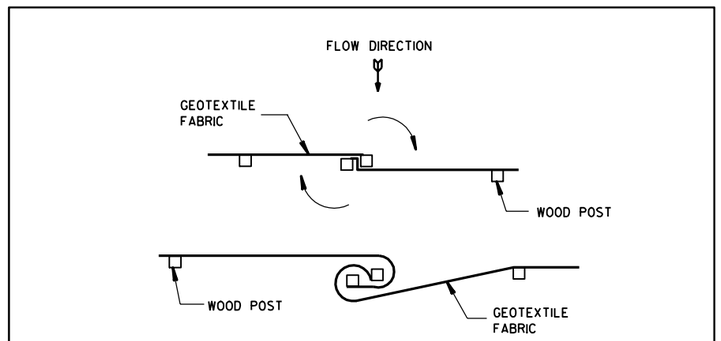


TRENCH DETAIL

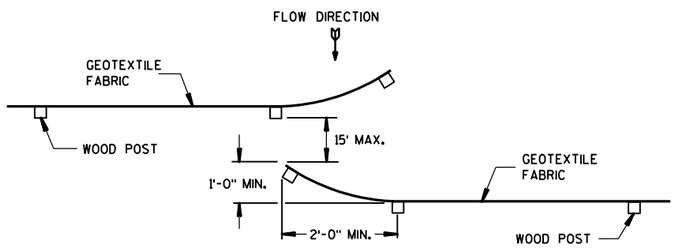


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

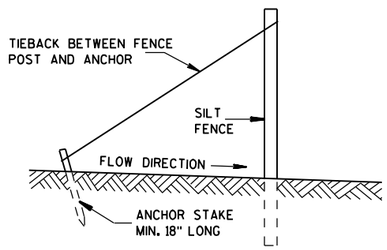


TWIST METHOD



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

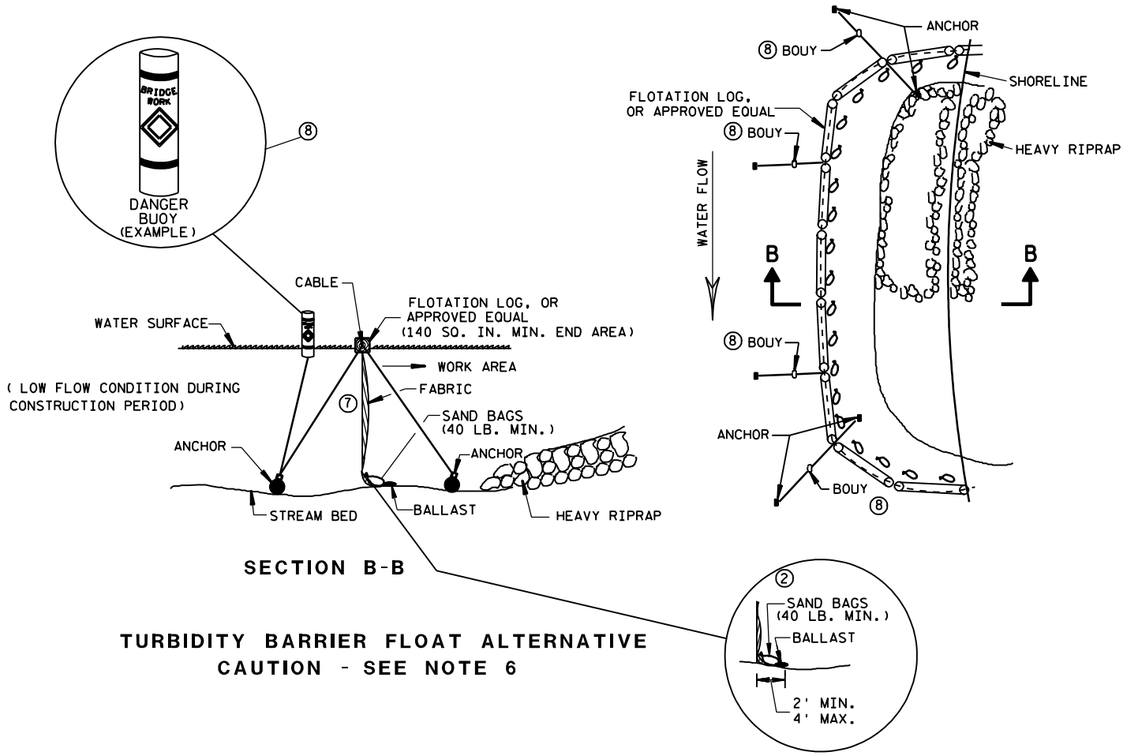
APPROVED
4-29-05
DATE
FHWA

CHIEF ROADWAY DEVELOPMENT ENGINEER

6

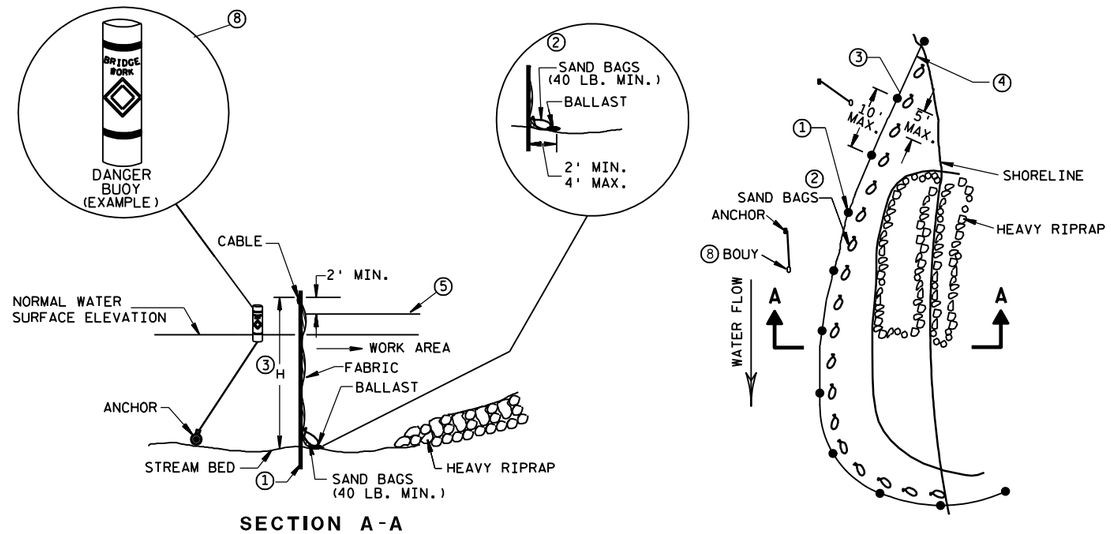
S.D.D. 8 E 9-6

S.D.D. 8 E 9-6



SECTION B-B

TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A

TURBIDITY BARRIER STANDARD POST INSTALLATION

PLAN VIEW

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.

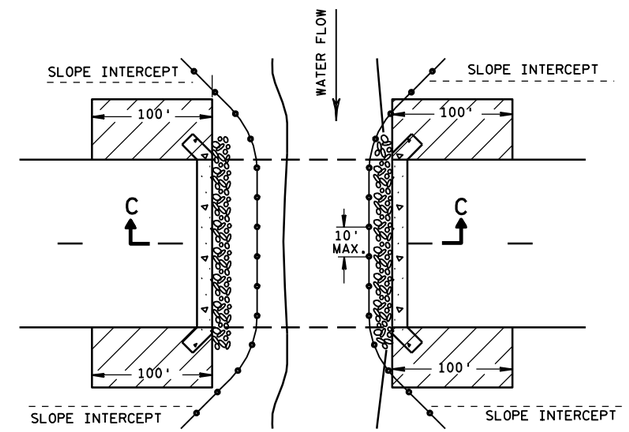
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

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.

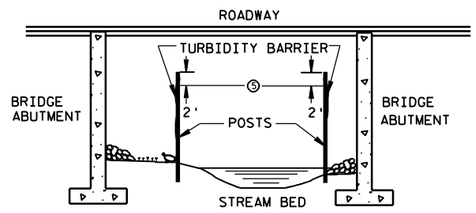
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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
FHWA
CHIEF ROADWAY DEVELOPMENT ENGINEER

6

S.D.D. 8 E 11-2

6

S.D.D. 8 E 11-2

METAL APRON ENDWALLS

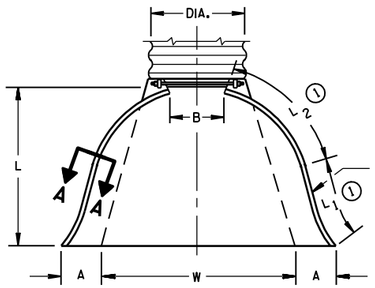
PIPE DIA. (IN.)	MIN. THICK. (inches) STEEL	MIN. THICK. (inches) ALUM.	DIMENSIONS (inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

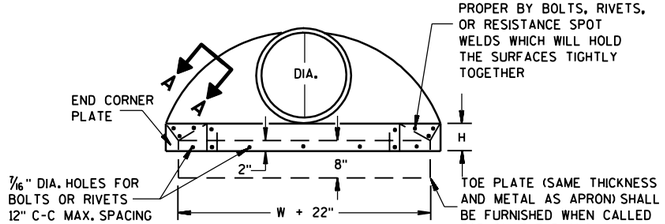
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (inches) T	A	B	C	D	E	G	APPROX. SLOPE
12	2	4	24	48 7/8	72 7/8	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

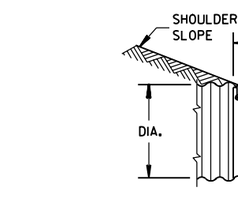
*MINIMUM
**MAXIMUM



PLAN VIEW

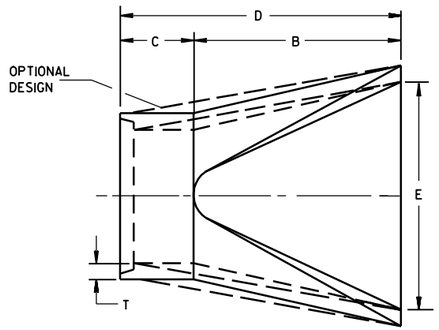


END VIEW

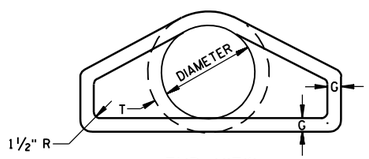


SIDE ELEVATION

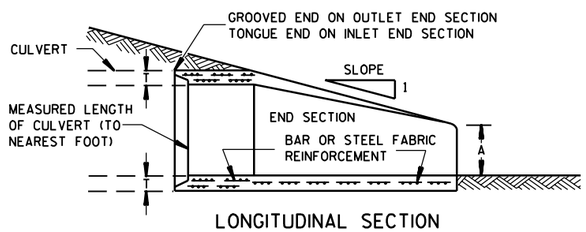
METAL ENDWALLS



PLAN

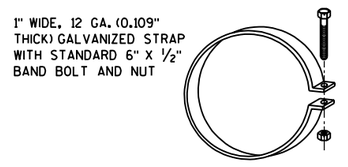


END VIEW



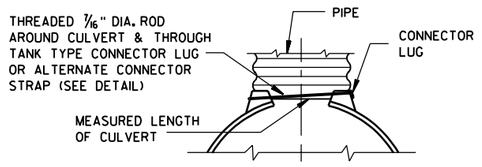
LONGITUDINAL SECTION

CONCRETE ENDWALLS

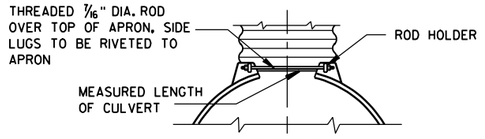


ALTERNATE FOR TYPE 1 CONNECTION

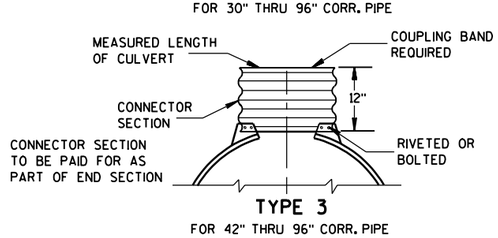
END SECTION CONNECTOR STRAP



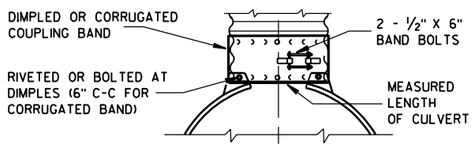
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

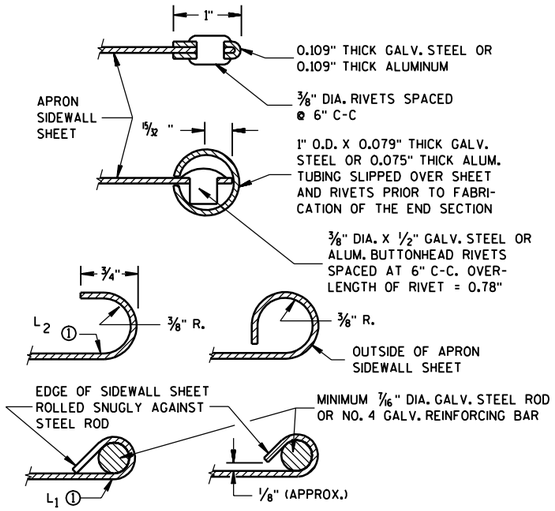
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

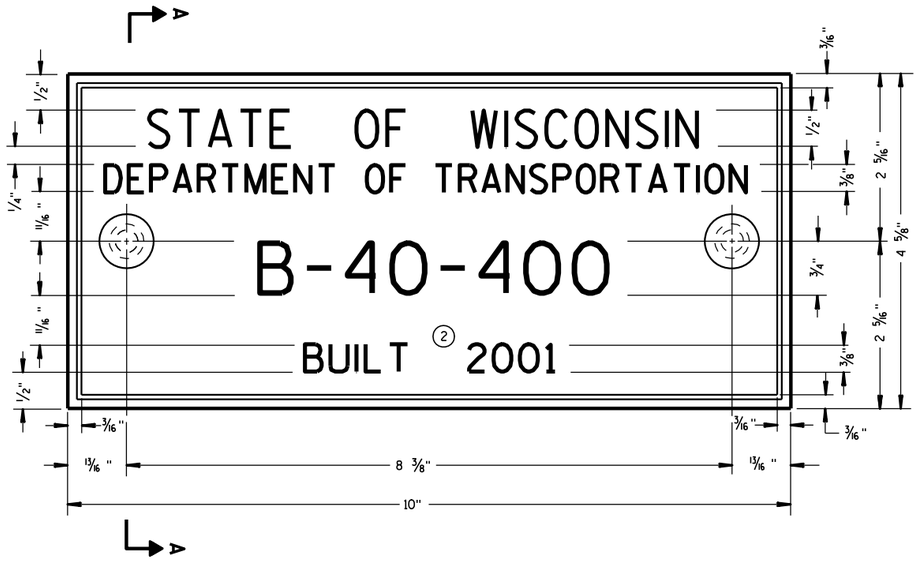
APPROVED
11/30/94
DATE

CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

6

S.D.D. 8 F 1-11



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)

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

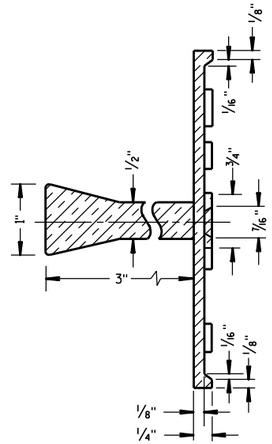
GENERAL NOTES

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

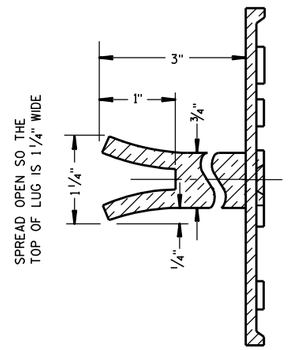
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

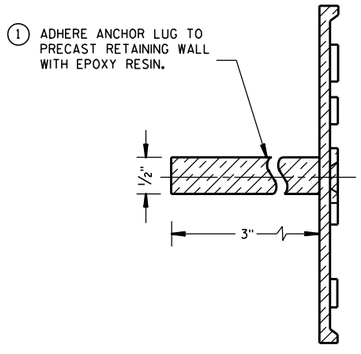
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE
(STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/26/10
DATE

/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER

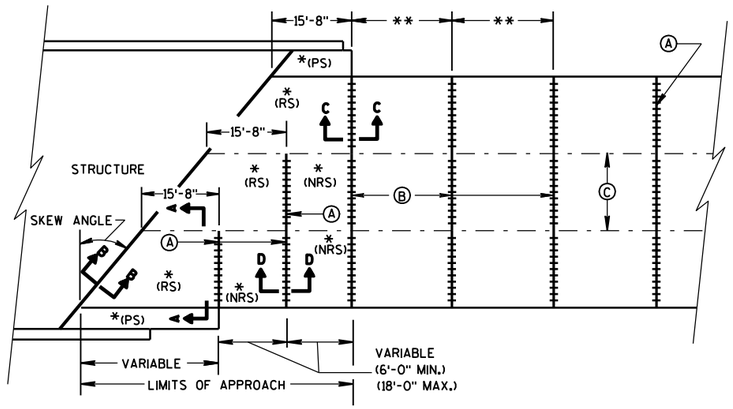
FHWA

6

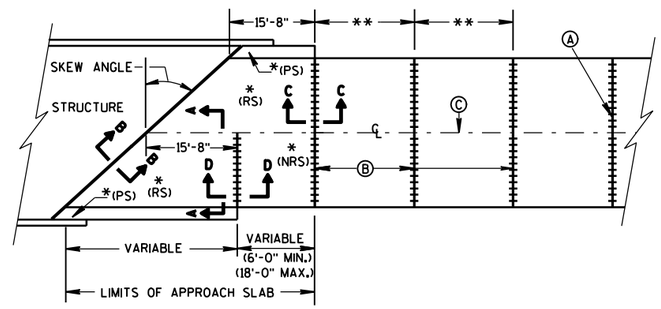
S.D.D. 12 A 3-10

6

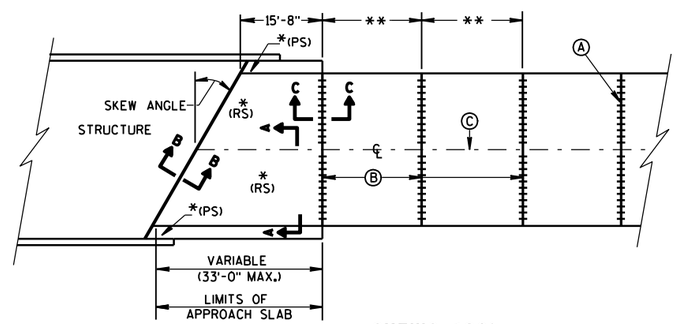
S.D.D. 12 A 3-10



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >30°
(PAVEMENT WIDTH ≤30')



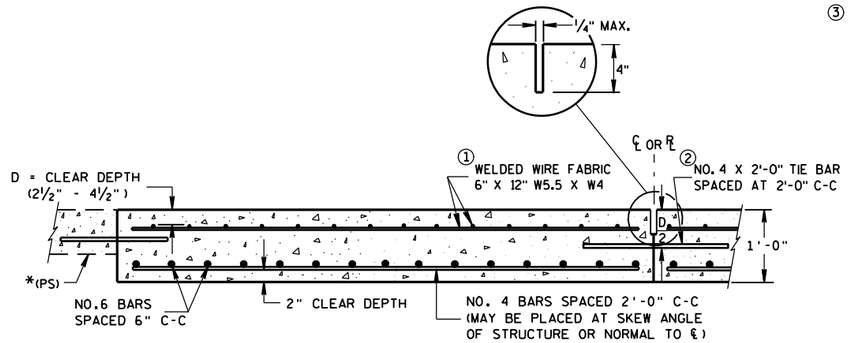
SKEWS ≤30°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

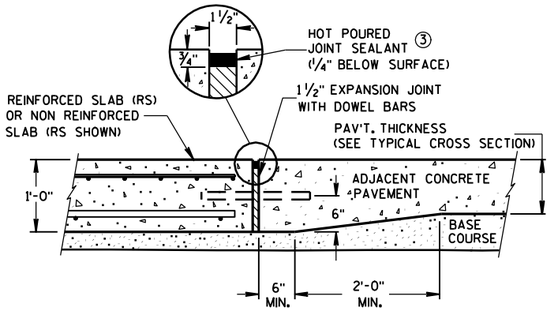
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN (SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

**STANDARD TRANSVERSE JOINT SPACING (SEE SDD 13C4, SDD 13C11, & SDD 13C13)

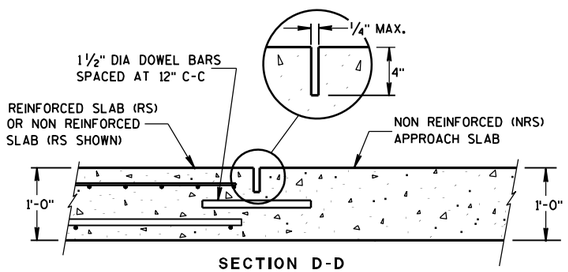
Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
Ⓑ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄
Ⓒ STANDARD LONGITUDINAL JOINT AND TIE BARS.



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

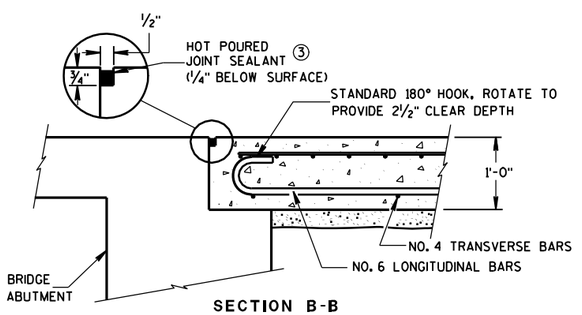
APPROACH SLABS ABUTTING AN HMA PAVEMENT OVER BASE COURSE DO NOT NEED TO BE DOWELED.

THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

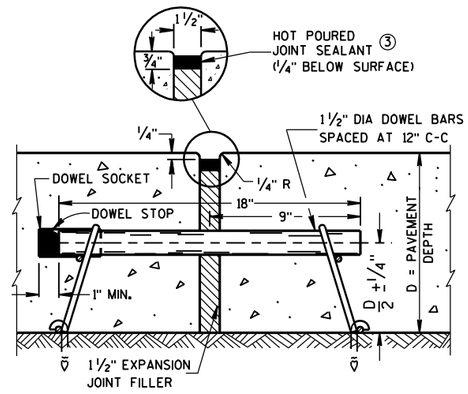
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

② THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.

③ USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



EXPANSION JOINT

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/11/2009 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DESIGN ENGINEER
FHWA

6

S.D.D. 13 B 2-6

6

S.D.D. 13 B 2-6

GENERAL NOTES

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

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

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

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

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

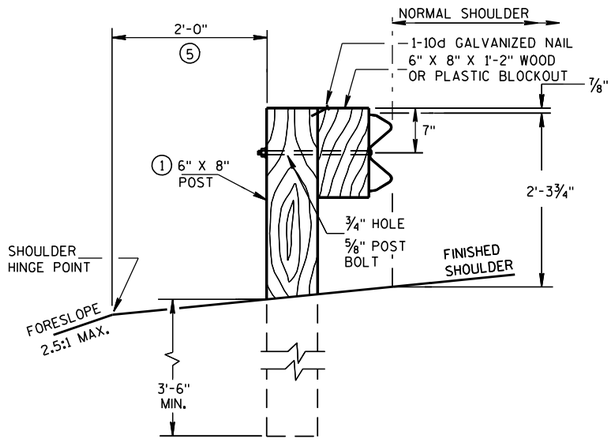
(4) USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.

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

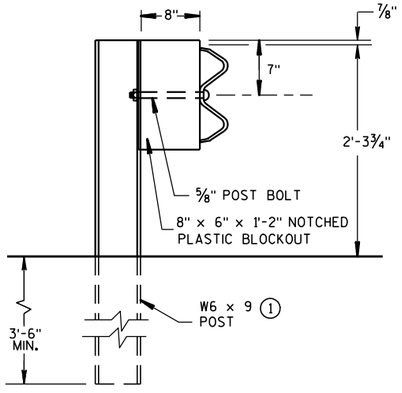
(6) IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED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

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

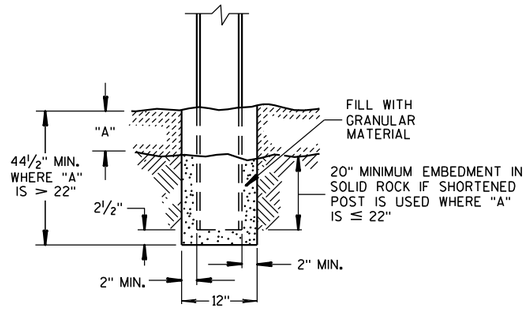
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



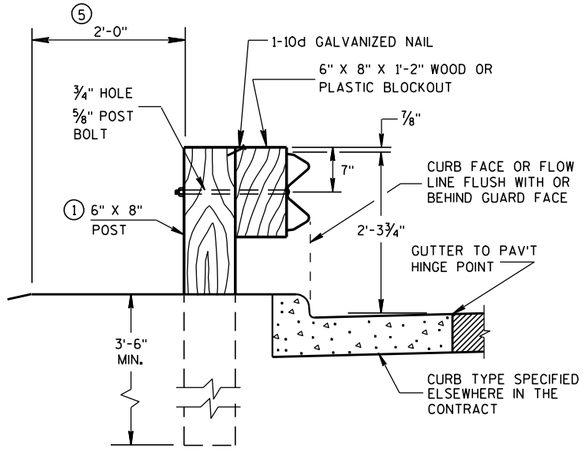
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



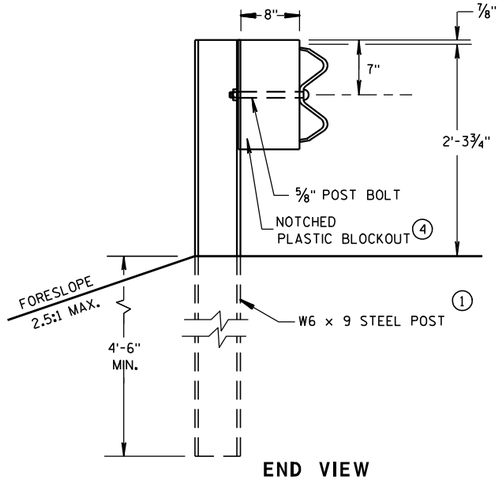
END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



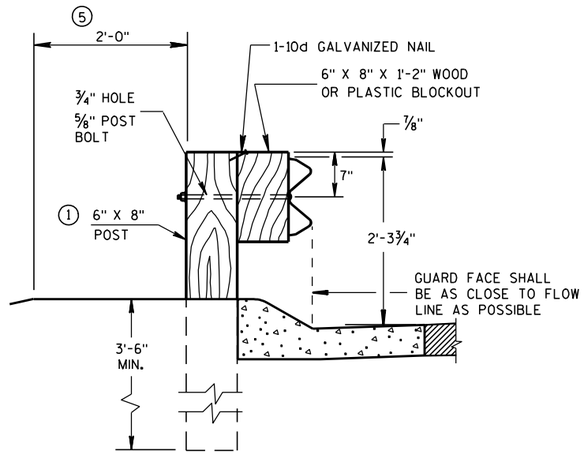
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)



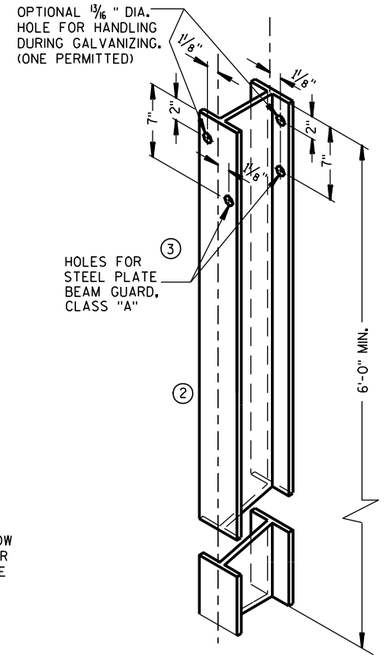
END VIEW
LOCATED ALONG A CURBED ROADWAY



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

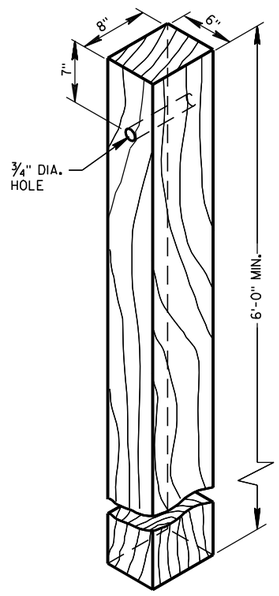


END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

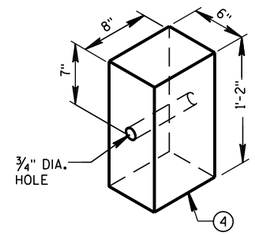


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

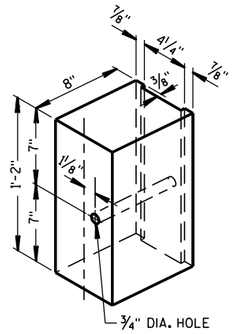
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



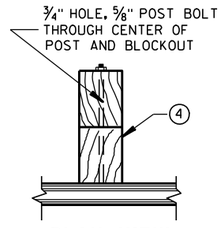
WOOD POST
(6"X8") NOMINAL



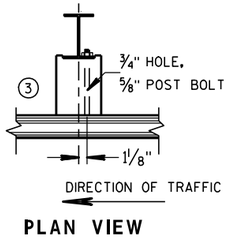
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



TYPICAL NOTCHED (1)
PLASTIC BLOCKOUT
FOR STEEL POSTS



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



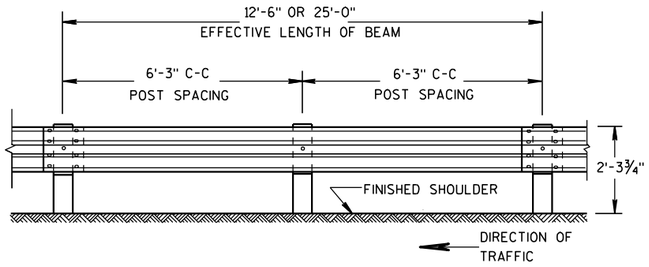
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

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

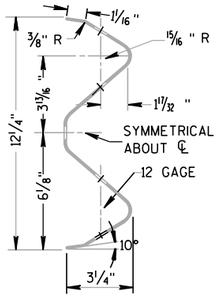
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 15-7a

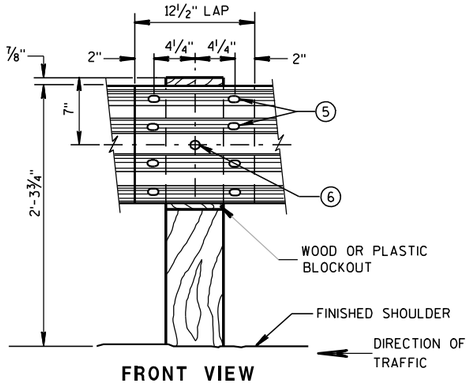


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM

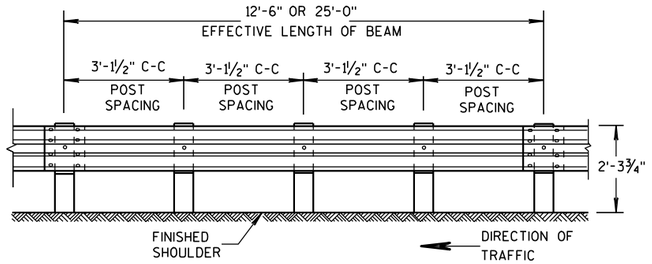


FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

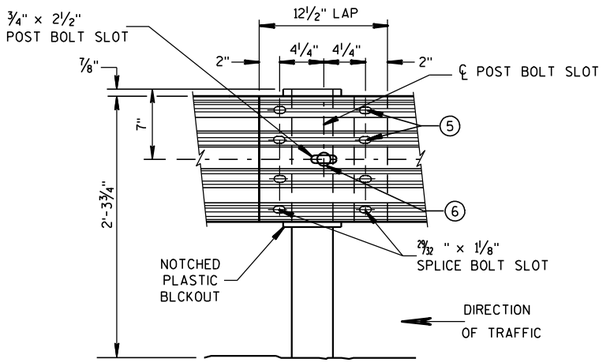
GENERAL NOTES

1. PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
2. DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
3. REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
4. PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.
5. 8 -⅝" ϕ X 2 " BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
6. ⅝" ϕ X 1'-6" BUTTON HEAD BOLT AND AND RECESS NUT WITH ROUND WASHER UNDER NUT.



FRONT VIEW

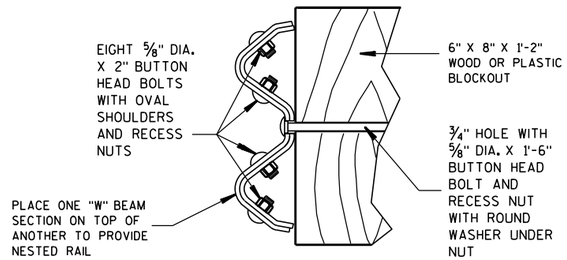
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

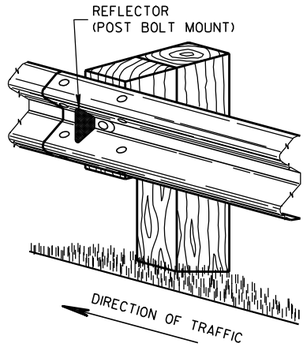


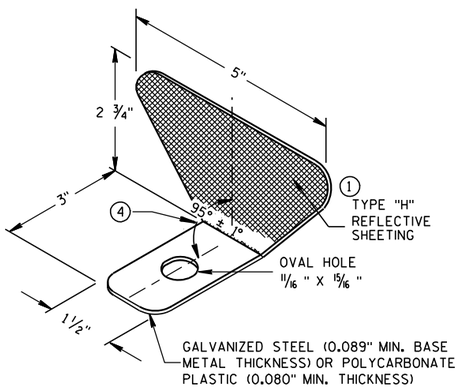
NESTED W BEAM (NW)

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

REFLECTOR SPACING (2)

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 (3) 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 2 (4)	3



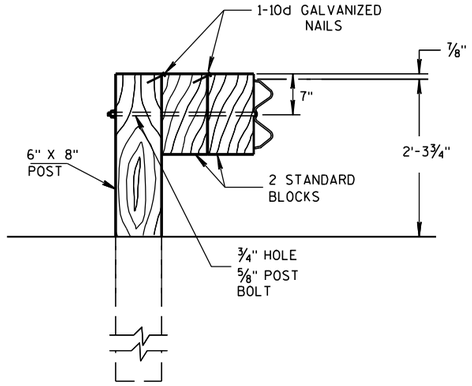


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION (1)

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

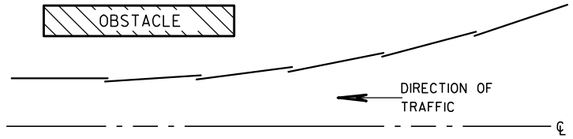
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 15-7b

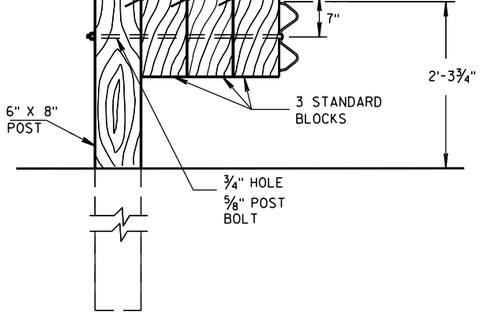


DETAIL FOR DOUBLE BLOCKS

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

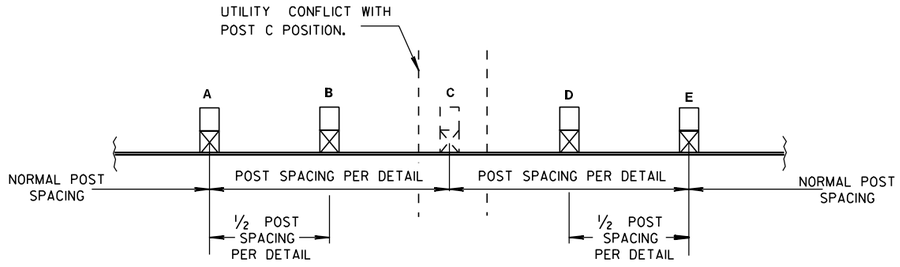


PLAN VIEW
BEAM LAPPING DETAIL



DETAIL FOR TRIPLE BLOCKS

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



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

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

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/23/11
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

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FHWA

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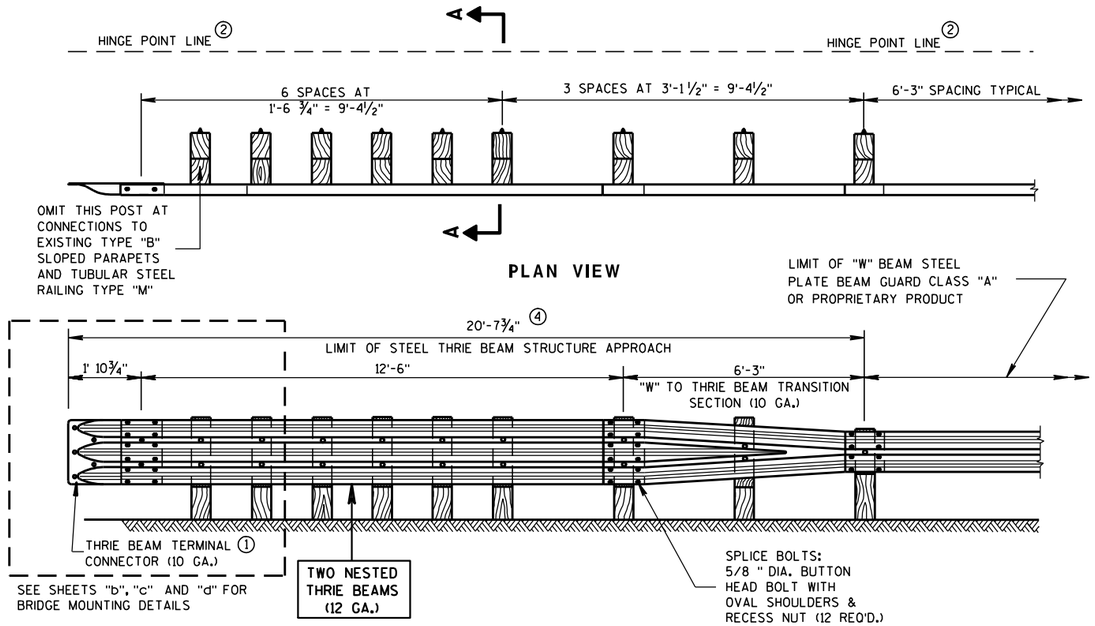
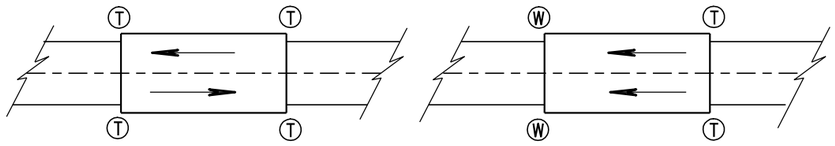
S.D.D. 14 B 15-7c





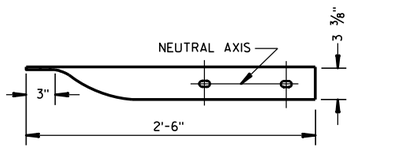
TWO WAY TRAFFIC

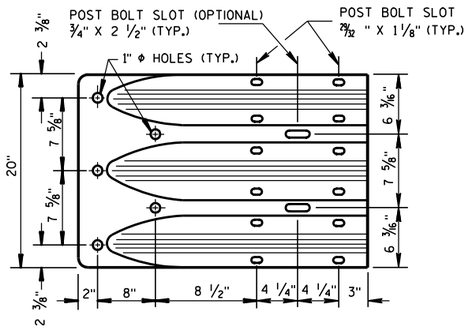
ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

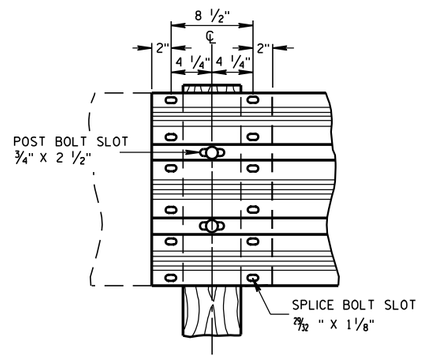
Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

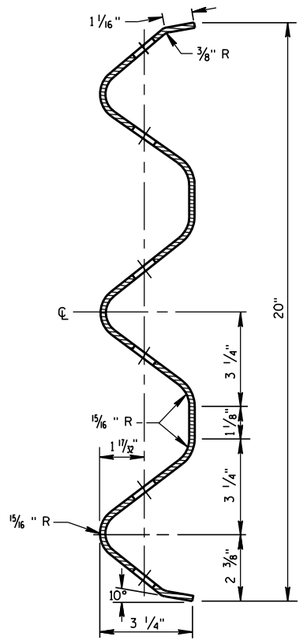




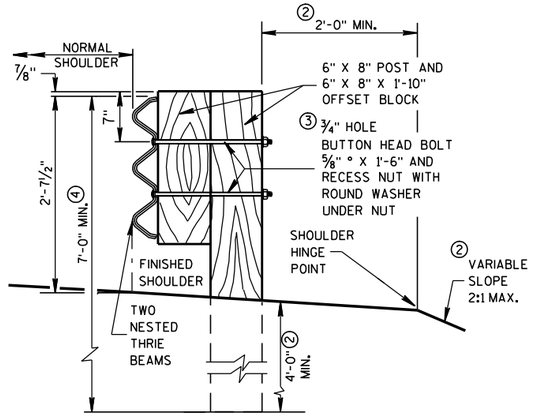
THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE



SECTION THRU THRIE BEAM RAIL ELEMENT



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.

FURNISH AND CONSTRUCT THRIE BEAM STRUCTURAL APPROACH ACCORDING TO THE REQUIREMENTS OF SECTION 614 OF THE STANDARD SPECIFICATIONS. THRIE BEAM SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO DESIGNATION M180, CLASS "A", TYPE 2.

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

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

IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2 INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN THE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATELY. (SEE SDD 14 B 15-4a).

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

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

③ BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F-1554, GRADE 55. NUTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-563 DH.

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

STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6-3-2010
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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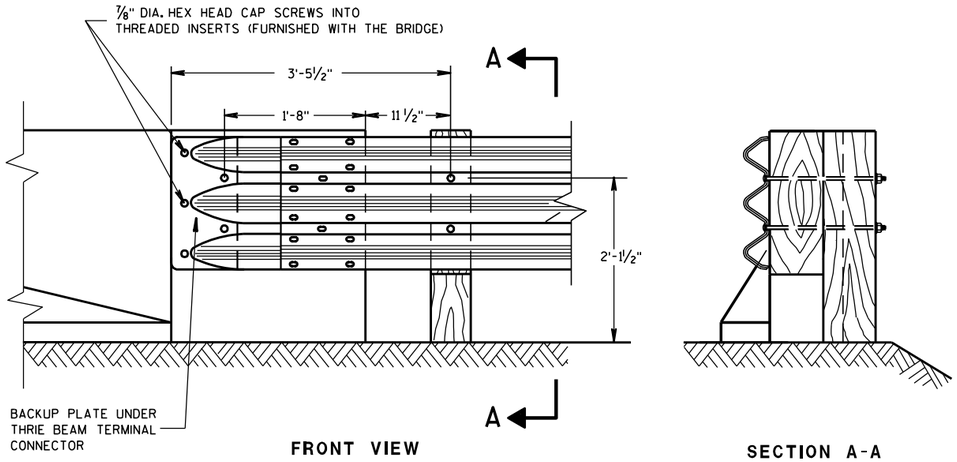
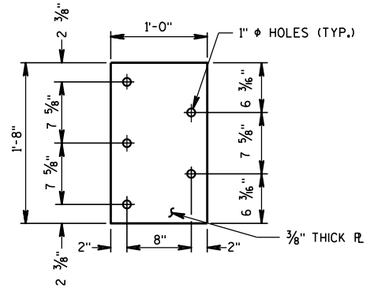


FRONT VIEW

SECTION A-A

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



② **BACKUP PLATE DETAIL**
(USE ONLY AT BRIDGE PARAPET CONNECTIONS)

GENERAL NOTES

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

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

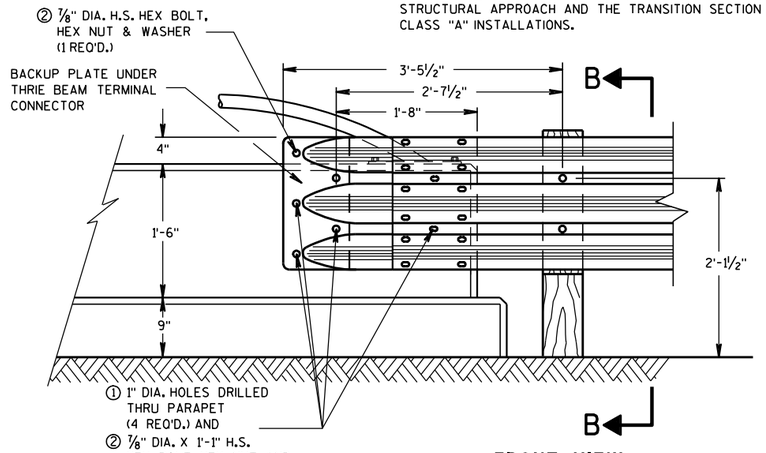
① INCLUDE THE PAYMENT FOR DRILLING BOLT HOLES THROUGH THE PARAPET, AND THE BACKUP PLATE AND ALL BOLTS, NUTS AND WASHERS IN THE ITEM "STEEL THRIE BEAM STRUCTURAL APPROACH".

② EACH BOLT AT THE BACK FACE OF THE PARAPET REQUIRES A HARDENED ROUND STEEL WASHER WITH A 2 ¼" O.D. X 5⁄32 " THICK.

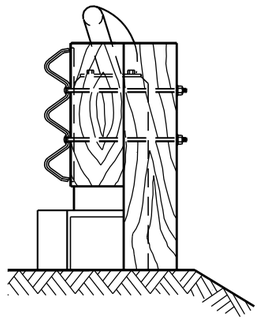
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

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

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

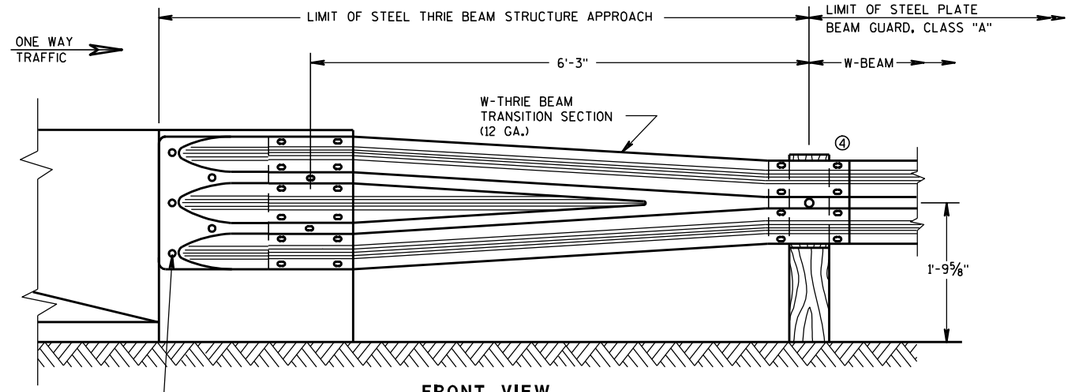


FRONT VIEW



SECTION B-B

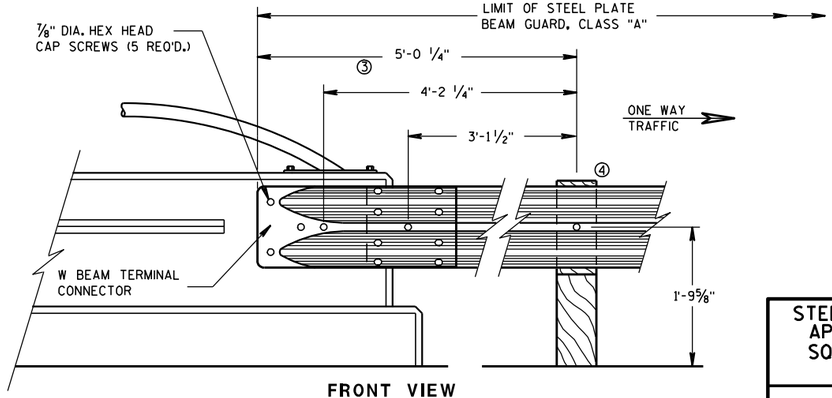
THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

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

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END AND VERTICAL FACED PARAPETS

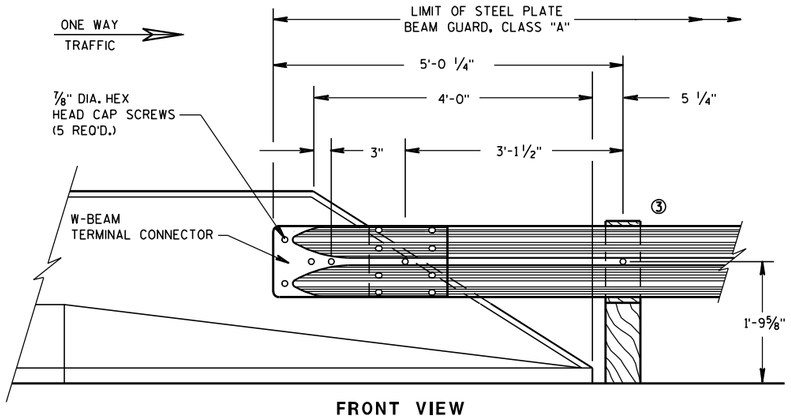
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6-3-2010
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA



FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

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

GENERAL NOTES

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

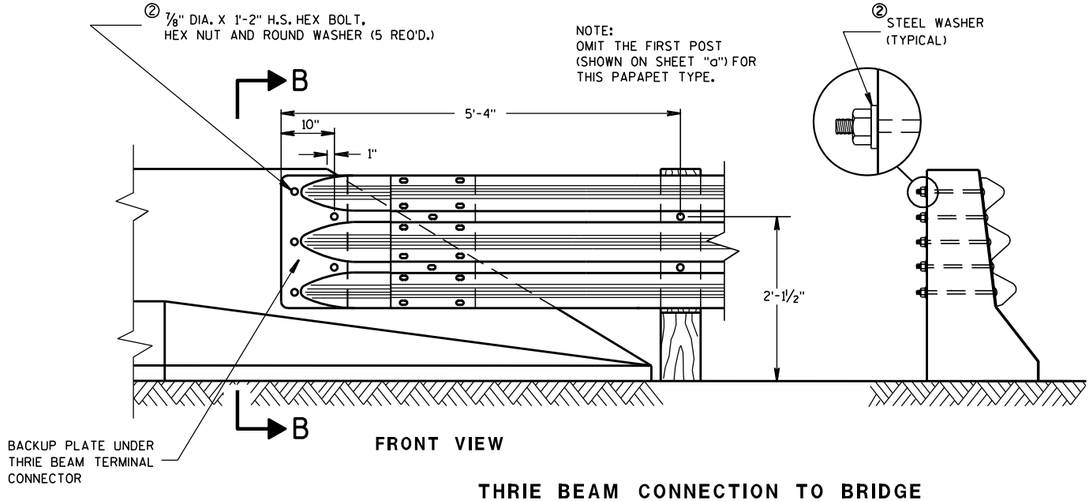
BOLTS, PLATES, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 325, AND BE GALVANIZED IN ACCORDANCE WITH ASTM A 153.

① INCLUDE THE PAYMENT FOR DRILLING BOLT HOLES THROUGH THE PARAPET, AND THE BACKUP PLATE AND ALL BOLTS, NUTS AND WASHERS IN THE ITEM "STEEL THRIE BEAM STRUCTURAL APPROACH".

② EACH BOLT AT THE BACK FACE OF THE PARAPET REQUIRES A HARDENED ROUND STEEL WASHER WITH A 2 1/4" O.D. X 5/32 " THICK.

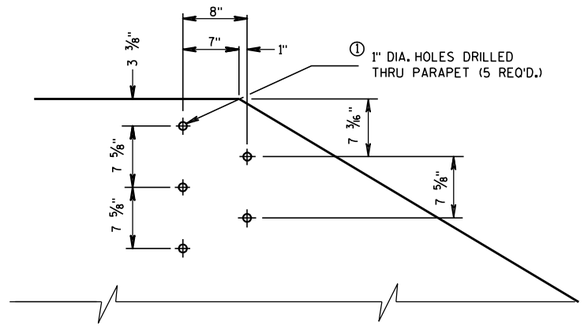
③ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

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



FRONT VIEW

THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS



DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SLOPED END PARAPETS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 6-3-2010 DATE FHWA	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER

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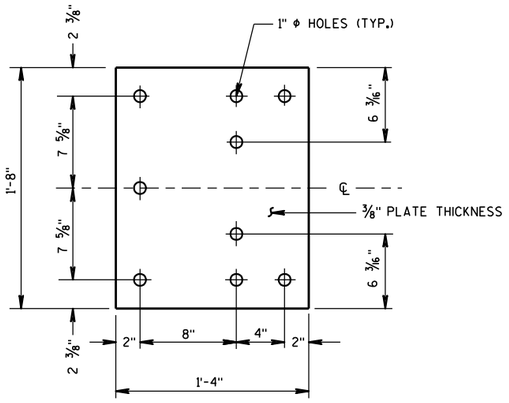
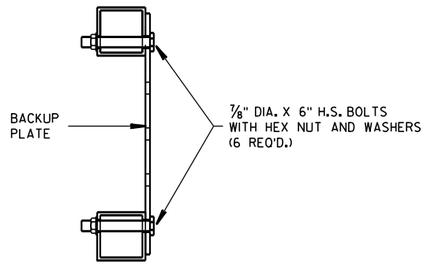


BACK-UP PLATE DETAIL



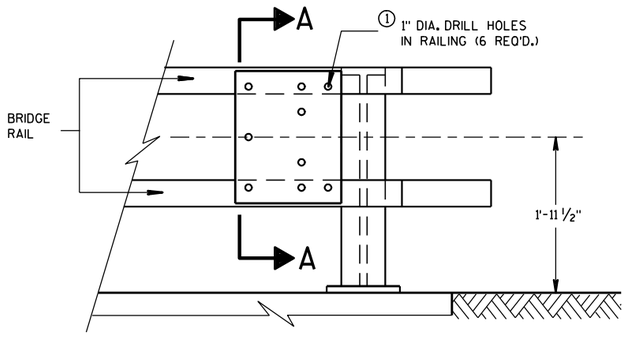
SECTION A-A

GENERAL NOTES

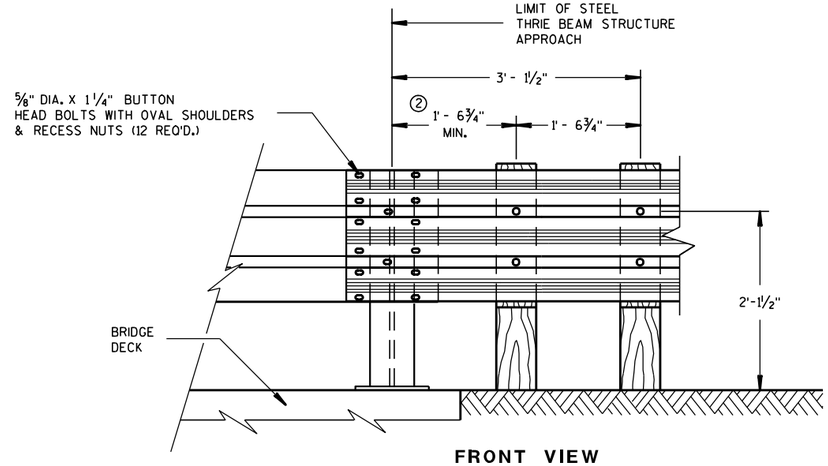
BOLTS, PLATES, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 325 AND BE GALVANIZED IN ACCORDANCE WITH ASTM A 153.

① INCLUDE THE PAYMENT FOR DRILLING HOLES IN RAILING IN THE ITEM "STEEL THRIE BEAM STRUCTURE APPROACH".

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

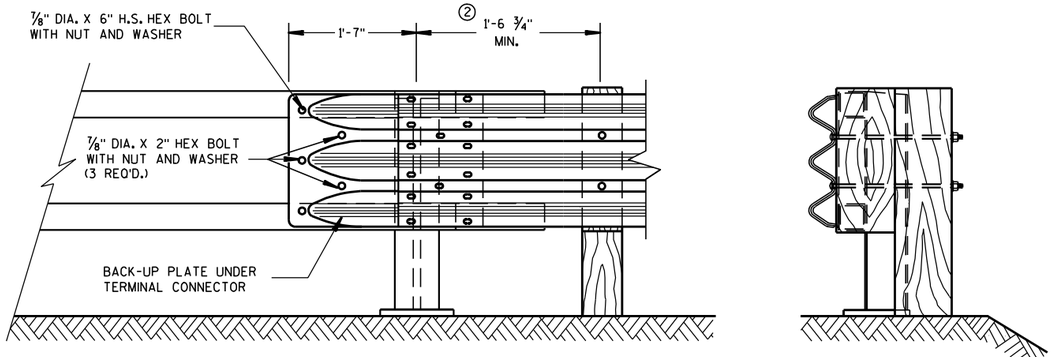


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW

END VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPES "F" AND "W"	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
6-3-2010 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	

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S.D.D. 14 B 20-9d

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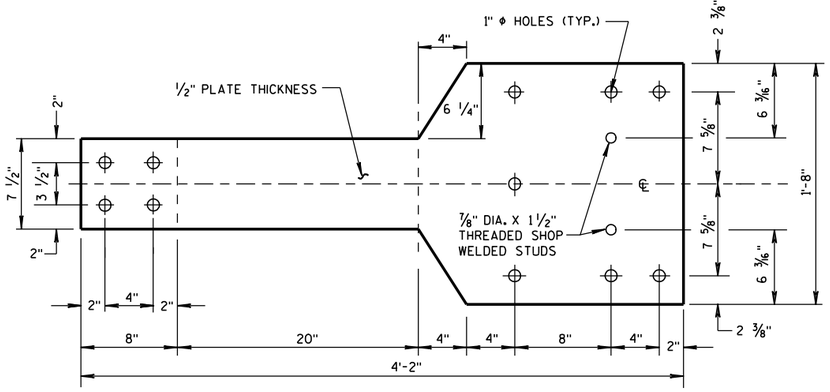
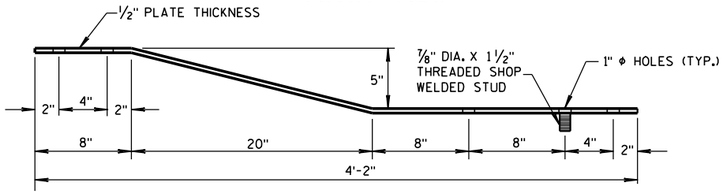
S.D.D. 14 B 20-9d

GENERAL NOTES

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

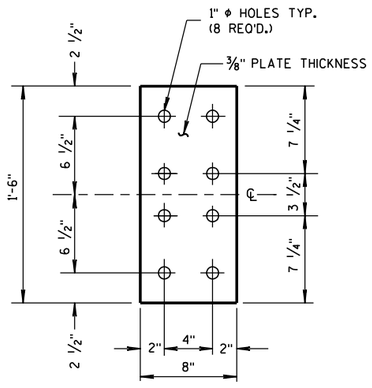


FRONT VIEW



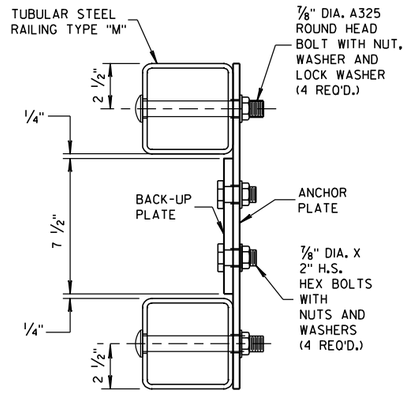
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

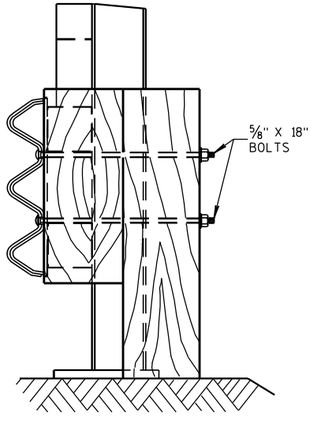


FRONT VIEW

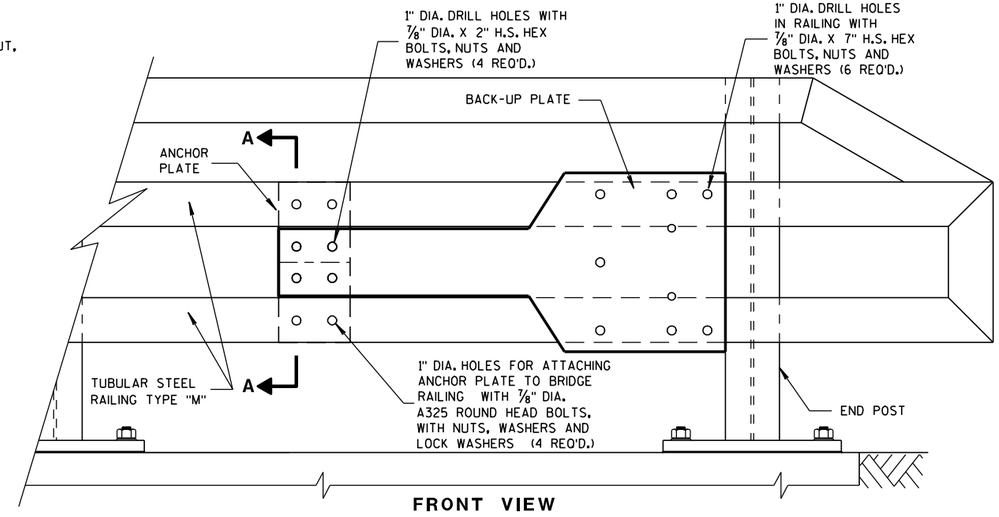
ANCHOR PLATE DETAIL, TYPE "M"



SECTION A-A

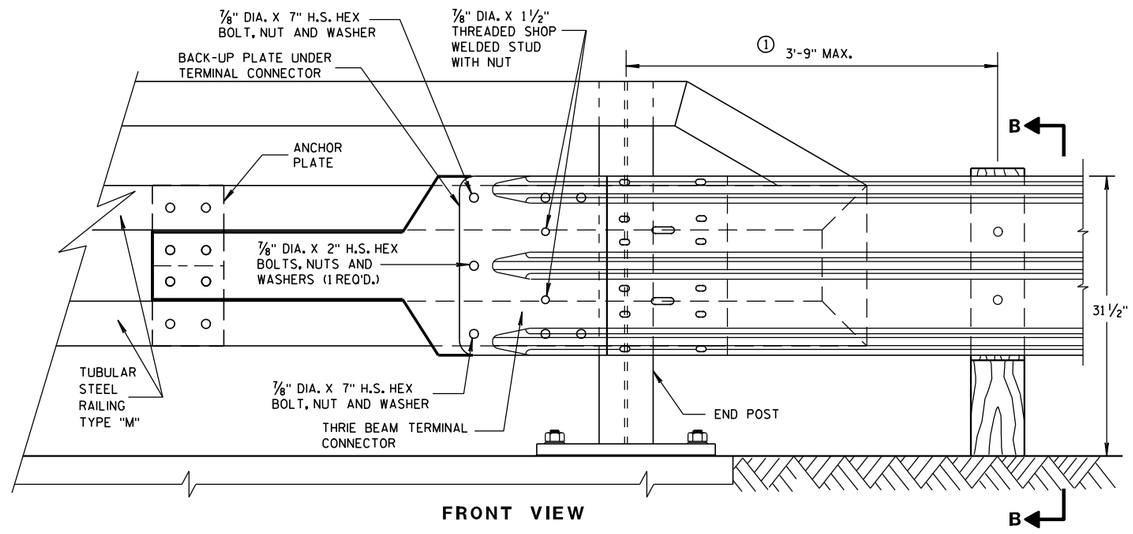


SECTION B-B

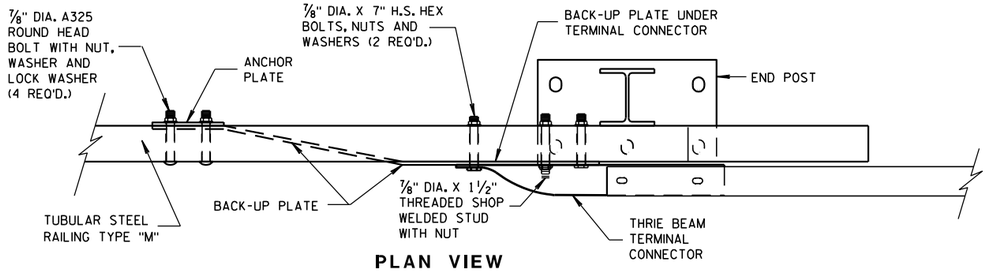


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6-3-2010
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

6

S.D.D. 14 B 20-9e

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

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

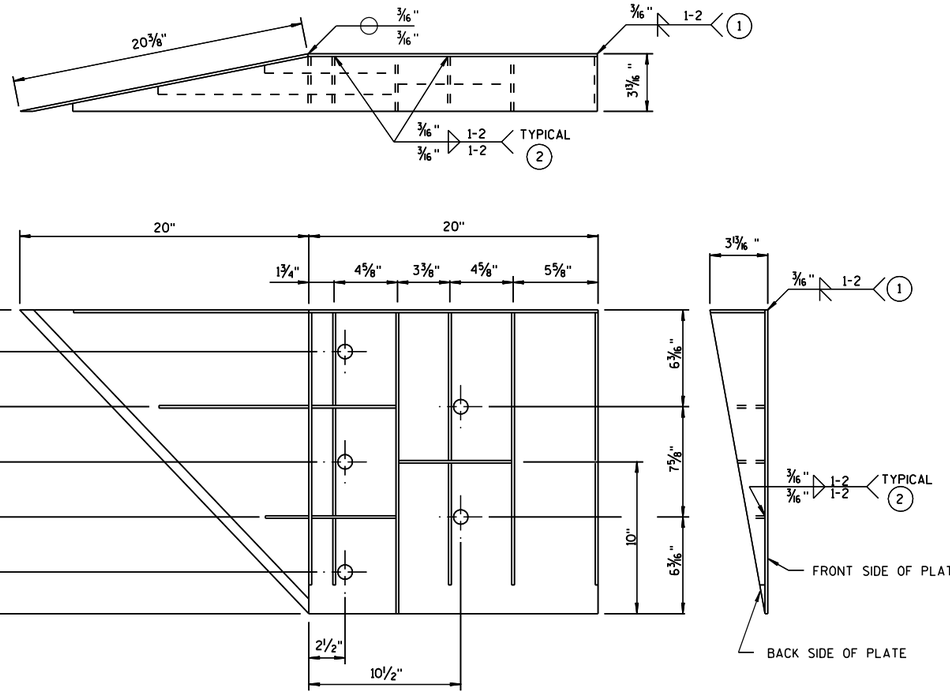
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

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

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



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

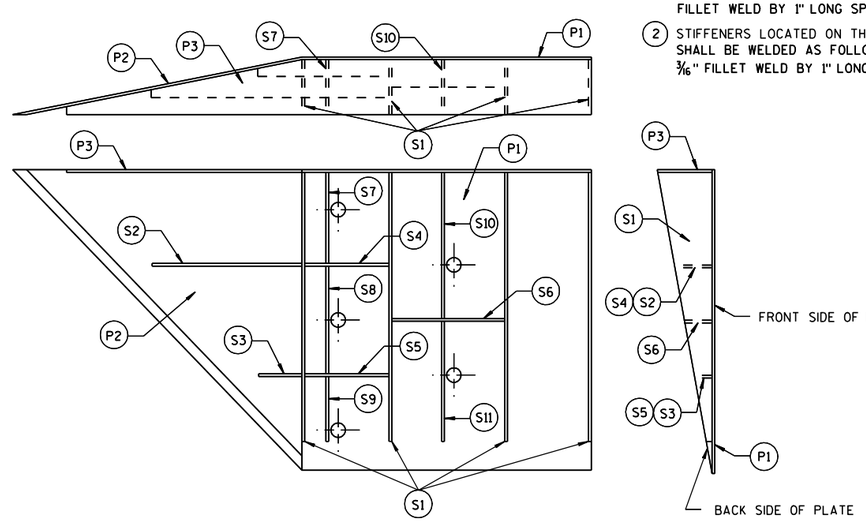


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

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

STEEL THRIE BEAM STRUCTURE APPROACH

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6-3-2010
DATE
FHWA

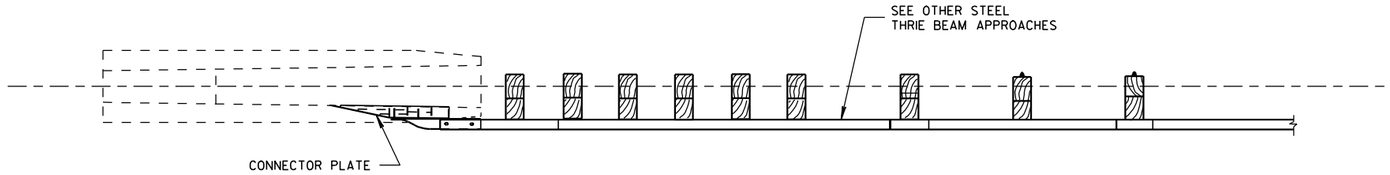
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

6

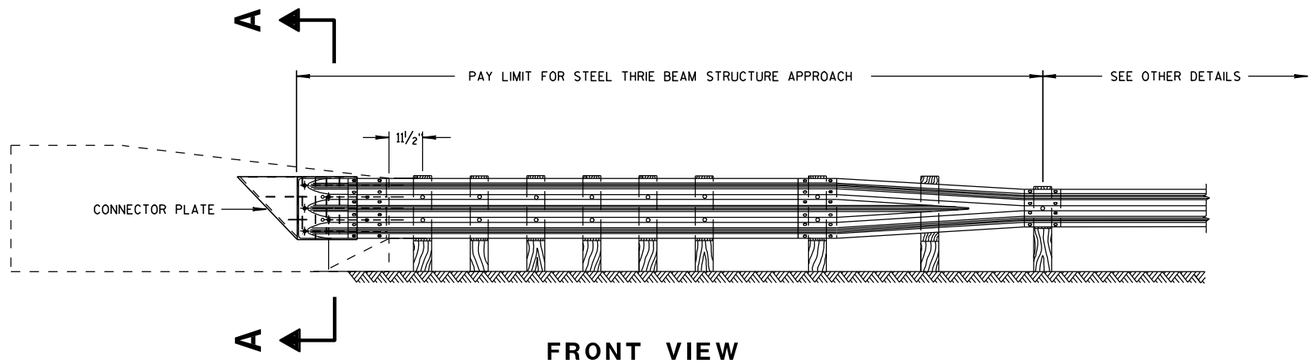
S.D.D. 14 B 20-9f

6

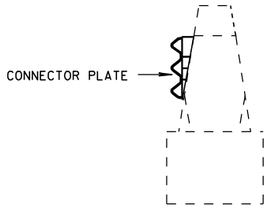
S.D.D. 14 B 20-9f



PLAN VIEW

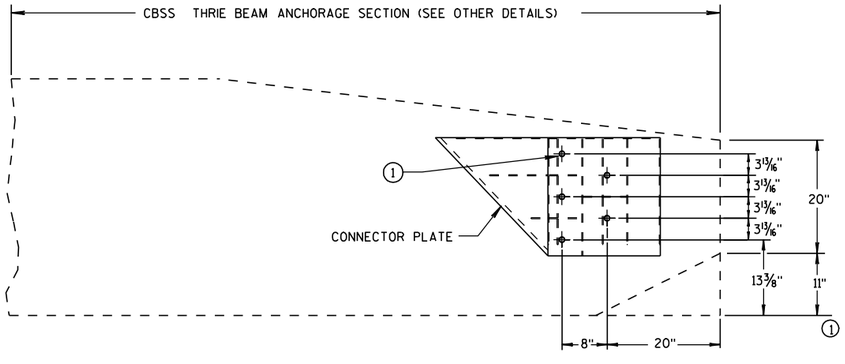


FRONT VIEW



SECTION A-A

SEE SDD 14B-20 FOR OTHER DETAILS.
CONSTRUCT PER STANDARD SPECIFICATION 614.
CONNECTOR PLATE INCIDENTAL TO STEEL THRIE BEAM STRUCTURE APPROACH.



CONNECTOR PLATE LOCATION

① USE ⅞" DIAMETER A325 BOLT WITH HEX HEAD AND, NUT, AND WASHER.
EXTEND ⅞" DIAMETER BOLT COMPLETELY THROUGH BARRIER.
BACK FACE OF BARRIER REQUIRES A HARDENED ROUND STEEL WASHER WITH 2¼" OUTER DIAMETER.
GROUT ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

STEEL THRIE BEAM STRUCTURE APPROACH

STEEL THRIE BEAM
STRUCTURE APPROACH,
SINGLE SLOPE ATTACHMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6-3-2010
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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S.D.D. 14 B 20-9g

6

S.D.D. 14 B 20-9g

BILL OF MATERIALS

NOTE NO.	QTY.	DESCRIPTION
①	4	WOOD BREAKAWAY TERMINAL POST: 5½" X 7½" X 3'-9"
②	**	STEEL TUBE: OPTION 1 - QUANITY OF 4 TS 8" X 6" X 0.188", 4'-6" LONG OR OPTION 2 - QUANITY OF 2 TS 8" X 6" X 0.188", 6'-0" AND 2 TS 8" X 6" X 0.188", 4'-6" LONG
③	2	SOIL PLATE: 2'-0" X 1'-6" X ¼" **
④	4	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
⑤	6	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
⑥	1	PIPE SLEEVE: 2" X 5 ½" STANDARD PIPE
⑦	1	BEARING PLATE
⑧	1	BCT CABLE ASSEMBLY
⑨	1	CABLE ANCHOR BOX
⑩	1	STRUT & YOKE
⑪	1	STEEL PLATE BEAM, END PANEL 12 GA. 13'-6½" LONG FOR SKT-350, ET-2000 AND ET-2000 PLUS
⑫	3	STEEL PLATE BEAM: 12 GA. 13'-6½"
⑬	1	ET-2000/ET-2000 PLUS GUARDRAIL EXTRUDER OR SKT-350 IMPACT HEAD: AS FURNISHED BY MANUFACTURER
⑭	1	REFLECTIVE SHEETING TYPE H: 18" X 18"
⑮	1	E.A.T. MARKER POST

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS. IF NONE ARE AVAILABLE, INSTALL ⅝" ø X 1'-6" BUTTON HEAD BOLTS AT ALL POSTS EXCEPT FOR POST 1.

(A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), 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) THE 13 SLOT FIRST RAIL PANEL MAY BE USED IN LIEU OF THE 3 SLOT RAIL PANEL ON SKT-350 ONLY.

(D) THE TOP OF THE STEEL TUBE ON POSTS 1 THROUGH 4 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

(E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 5 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.

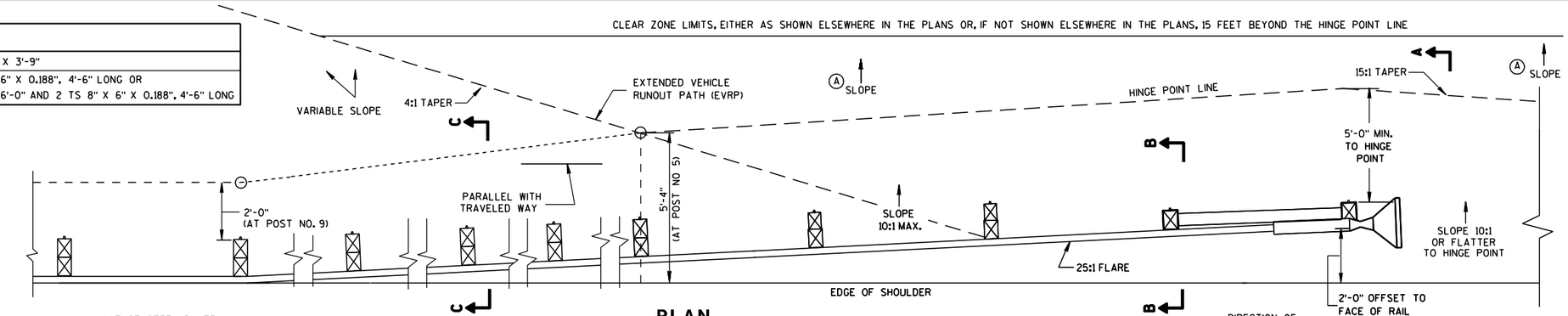
(F) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.

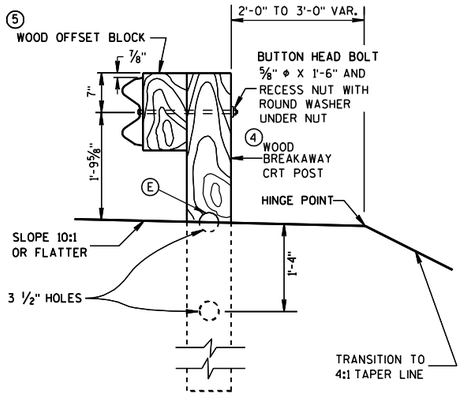
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

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

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

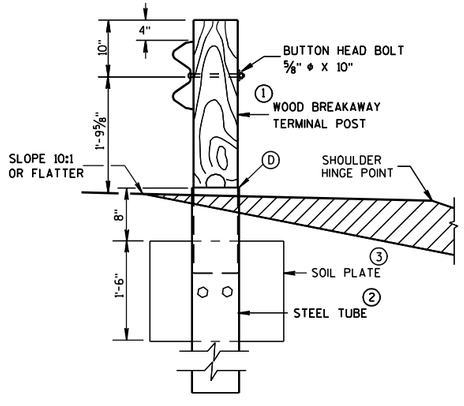
** SDD SHOWS 4 - 54 INCH STEEL TUBES WITH SOIL PLATES INSTALLED ON POST 1 AND POST 2. POST 3 AND 4 DO NOT NEED SOIL PLATES. AN ALTERNATIVE INSTALLATION WOULD CONSIST OF 2 - 72 INCH STEEL TUBES ON POST 1 AND POST 2 AND 54 INCH SOIL TUBES ON POSTS 3 AND 4. THE ALTERNATIVE INSTALLATION DOES NOT REQUIRE SOIL PLATES.





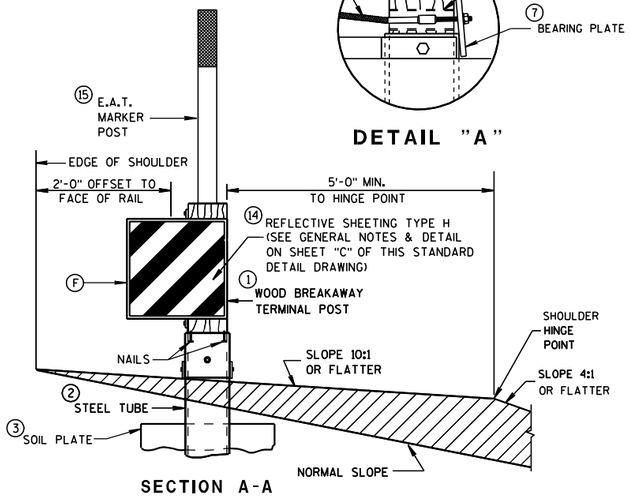
SECTION C-C

TYPICAL AT POST NOS. 6, 8



SECTION B-B

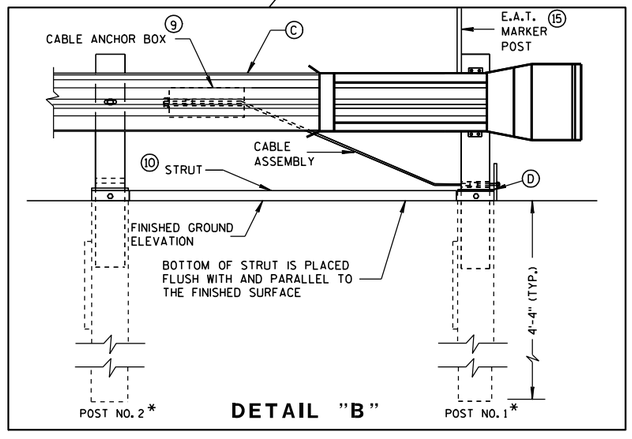
TYPICAL AT POST NO. 2*



SECTION A-A

TYPICAL AT POST NO. 1*

DETAIL "A"

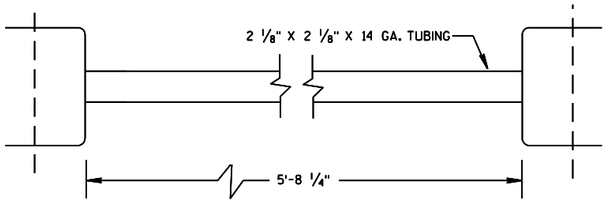


DETAIL "B"

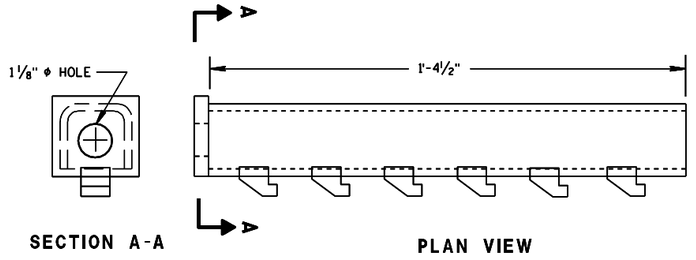
STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

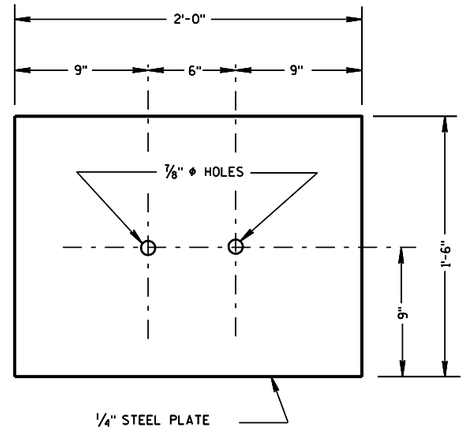
S.D.D. 14 B 24-7a



⑩ STRUT DETAIL (SKT-350)

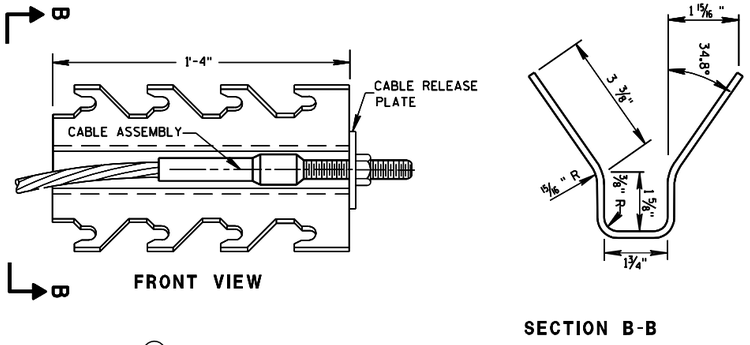


⑨ CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)



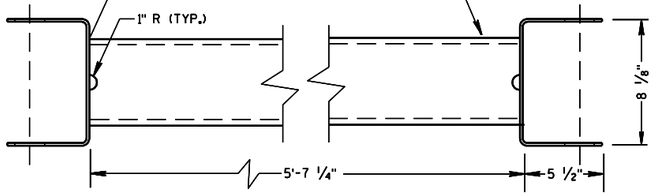
③ SOIL PLATE

(SKT-350, ET-2000/ET-2000 PLUS)



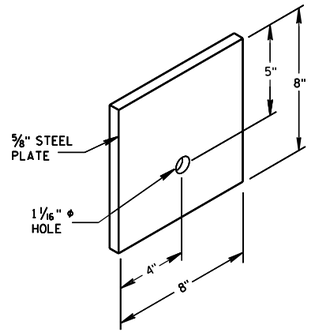
⑨ CABLE ANCHOR BOX (SKT-350)

(SKT-350)



⑩ STRUT DETAIL (ET-2000/ET-2000 PLUS)

(ET-2000/ET-2000 PLUS)



⑦ STEEL BEARING PLATE

(SKT-350, ET-2000/ET-2000 PLUS)

6

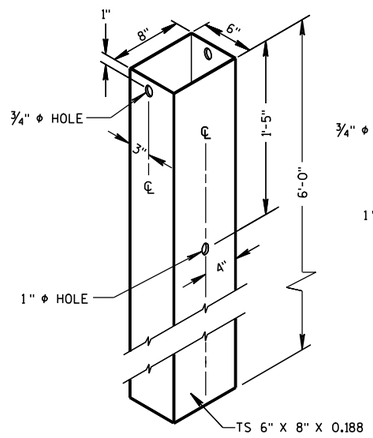
S.D.D. 14 B 24-7b

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

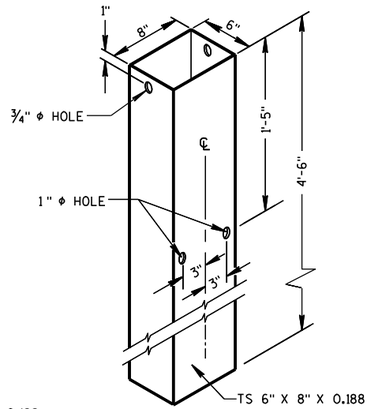
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

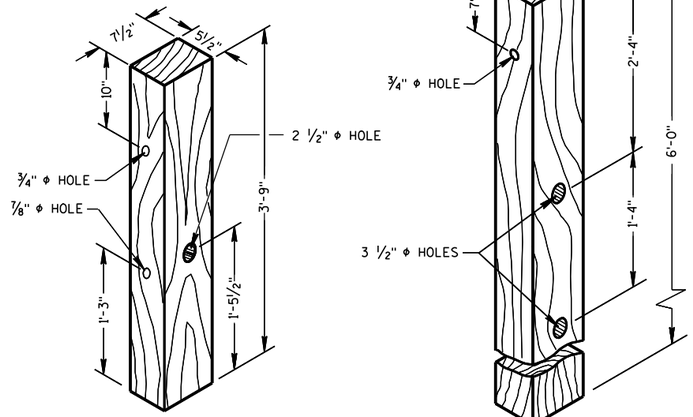
S.D.D. 14 B 24-7b



② 72" STEEL TUBE
(POSTS NO. 1-4



② 54" STEEL TUBE
(POSTS NO. 1-4



① TERMINAL POST
(POSTS NO. 1-4

④ CRT POST
(POSTS NO'S 5-8

WOOD BREAKAWAY POSTS

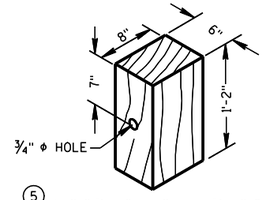
GENERAL NOTES

STEEL PLATE BEAM GUARD, ENERGY ABSORBING TERMINAL SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH, WHICH SHALL INCLUDE HARDWARE, STEEL PLATE BEAM GUARD, POSTS, REFLECTIVE SHEETING AND INSTALLATION AS SHOWN.

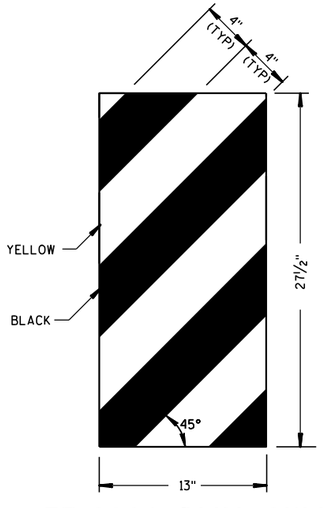
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 ½" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH,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

SEE APPROVED PRODUCTS LIST FOR ACCEPTABLE E. A. T. MARKER POST.

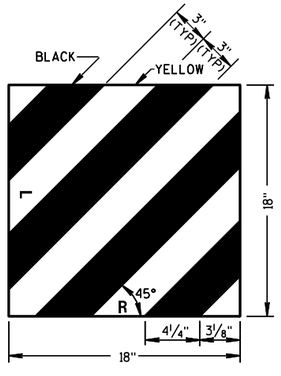
(G) ½" DIA. X 3" LAG BOLT WITH WASHER.



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

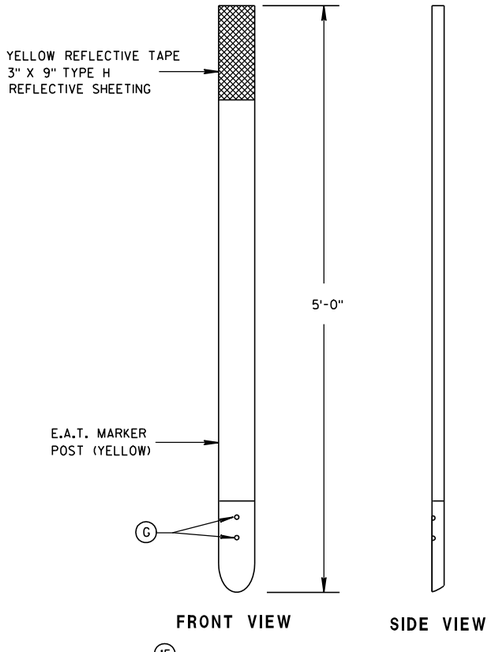


ET-2000 PLUS ONLY



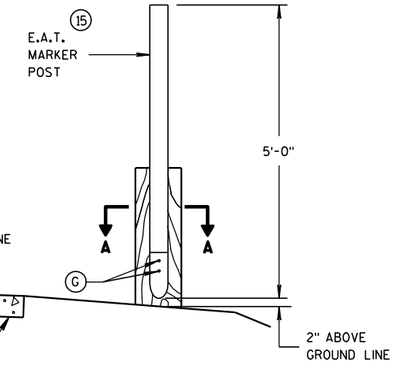
ET-2000 AND SKT-350

⑭ REFLECTIVE SHEETING DETAILS

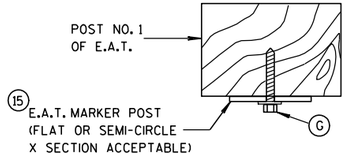


FRONT VIEW SIDE VIEW

⑮ E.A.T. MARKER POST



TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-12-10
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

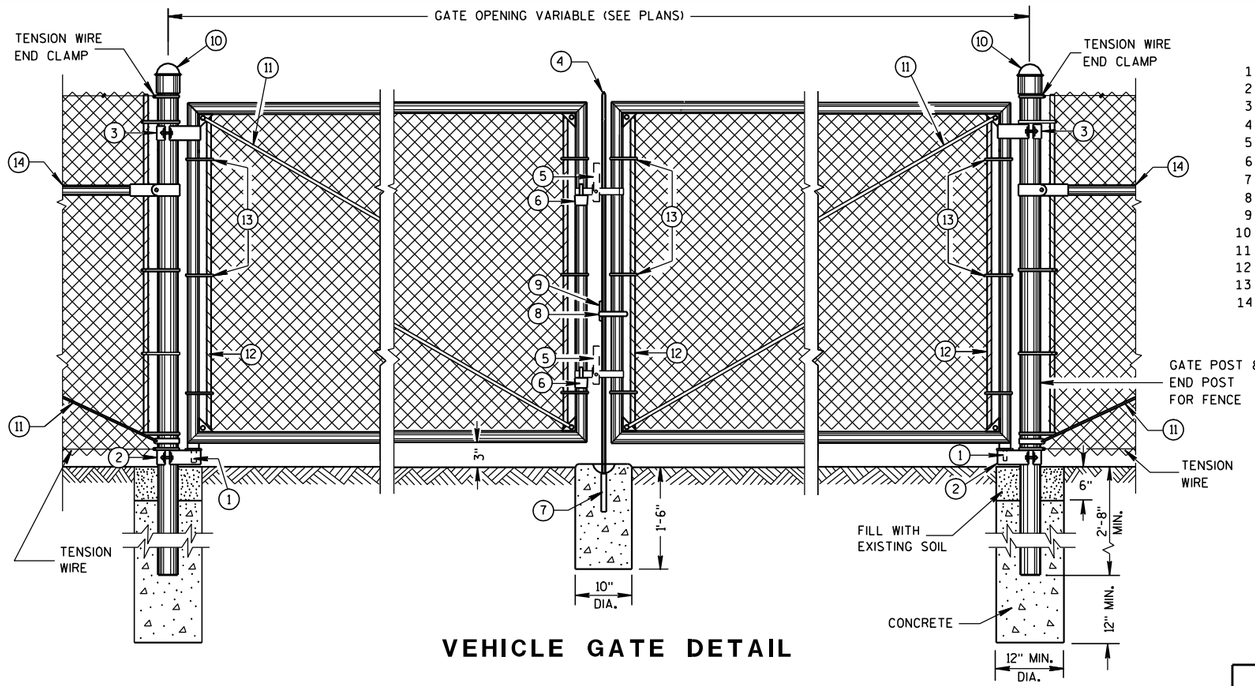
FHWA

6

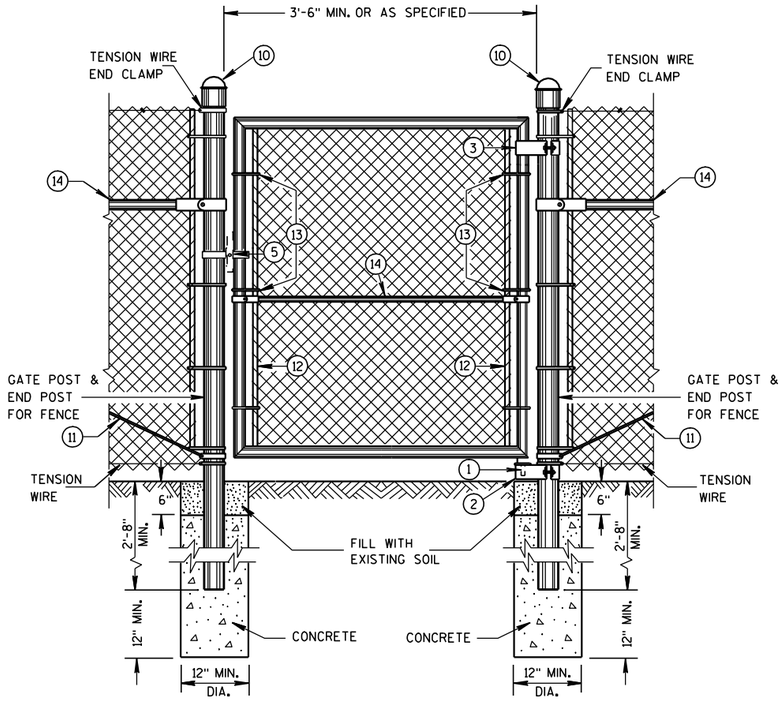
S.D.D. 14 B 24-7c

6

S.D.D. 14 B 24-7c



VEHICLE GATE DETAIL



PEDESTRIAN GATE DETAIL

LEGEND

1. STRAIGHT PLUG
2. BOTTOM HINGE
3. TOP HINGE
4. PLUNGER ROD
5. FULCRUM LATCH
6. FORK CATCH *
7. PLUNGER ROD CATCH
8. LOCK KEEPER GUIDE
9. LOCK KEEPER
10. DOME TOPS
11. TRUSS RODS
12. TENSION BAR
13. TENSION BANDS
14. BRACE RAIL

*NOT REQUIRED ON SINGLE SWING PEDESTRIAN GATE

GENERAL NOTES

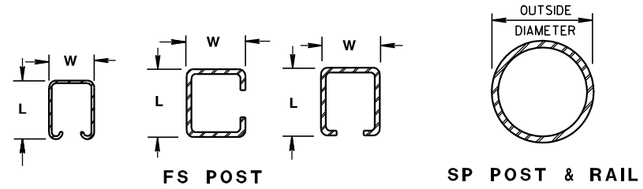
FENCE POSTS INSTALLED ON CONCRETE WALLS SHALL BE ANCHORED INTO EMBEDDED METAL SLEEVES OR CORED HOLE BY FILLING THE ANNULAR SPACE WITH PEA GRAVEL FOLLOWED BY AN EPOXY RESIN ADHESIVE. THE EPOXY RESIN ADHESIVE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 235, CLASS A, B OR C.

USE FENCE FABRIC KNUCKLED AT BOTH SELVAGES.

FOR LEAF GATES GREATER THAN 8 FEET WIDE, INSTALL INTERIOR VERTICAL BRACE RAIL AT 8 FOOT INTERVALS.

FOR FABRIC HEIGHTS GREATER THAN 8 FEET, INSTALL INTERIOR HORIZONTAL BRACE RAILS TO LEAF GATE.

MAXIMUM SAG FOR OUTER GATE MEMBER SHALL NOT EXCEED THE GREATER OF 1% OF THE LEAF GATE WIDTH OR 2 INCHES.



FS POST

SP POST & RAIL

CROSS SECTIONS OF POSTS AND RAILS

SHAPE, SIZE AND WEIGHT REQUIREMENTS FOR FORMED STEEL FENCE POST

POST TYPE	LENGTH (L) INCH	WIDTH (W) INCH	WEIGHT LBS/FT
FS1	1.625	1.25	1.35
FS2†	1.875	1.625	1.850
FS2	1.875	1.625	2.400
FS3	2.250	1.700	2.780

REQUIRED FENCE POST SIZES

USE	FABRIC HEIGHTS FEET	POST TYPE
TERMINAL POSTS **	LESS THAN OR EQUAL TO 6 FT.	SP3
	GREATER THAN OR EQUAL TO 6 FT.	SP4
LINE POSTS	LESS THAN OR EQUAL TO 6 FT.	SP2
	LESS THAN OR EQUAL TO 8 FT.	SP3
	GREATER THAN OR EQUAL TO 8 FT.	SP4
	LESS THAN OR EQUAL TO 8 FT.	FS2 OR FS2†
	GREATER THAN OR EQUAL TO 8 FT.	FS3

BRACE RAIL TYPES

USE		TYPE
BRACE RAIL		SP1 OR FS1

** INCLUDES END, CORNER, ANGLE, INTERSECTION AND INTERMEDIATE BRACED POSTS

REQUIRED POST SIZE FOR GATES

USE	LEAF WIDTHS FEET	POST TYPE
GATES	LESS THAN OR EQUAL TO 6 FT.	SP4
	LESS THAN OR EQUAL TO 13 FT.	SP5
	LESS THAN OR EQUAL TO 18 FT.	SP6
	LESS THAN OR EQUAL TO 23 FT.	SP7

SHAPE, SIZE AND WEIGHT REQUIREMENTS FOR ROUND STEEL FENCE POST

POST TYPE	OUTSIDE DIMENSION INCH	WALL THICKNESS INCH	WEIGHT LBS/FT
SP1	1.660	0.140	2.270
SP2	1.900	0.145	2.720
SP3	2.375	0.154	3.650
SP4	2.875	0.203	5.800
SP5	4.000	0.226	9.120
SP6	6.625	0.280	18.990
SP7	8.625	0.322	28.580

FENCE CHAIN LINK

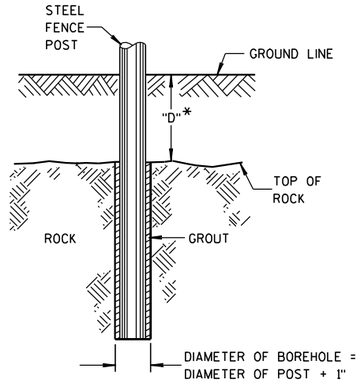
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 15 B 3-12a

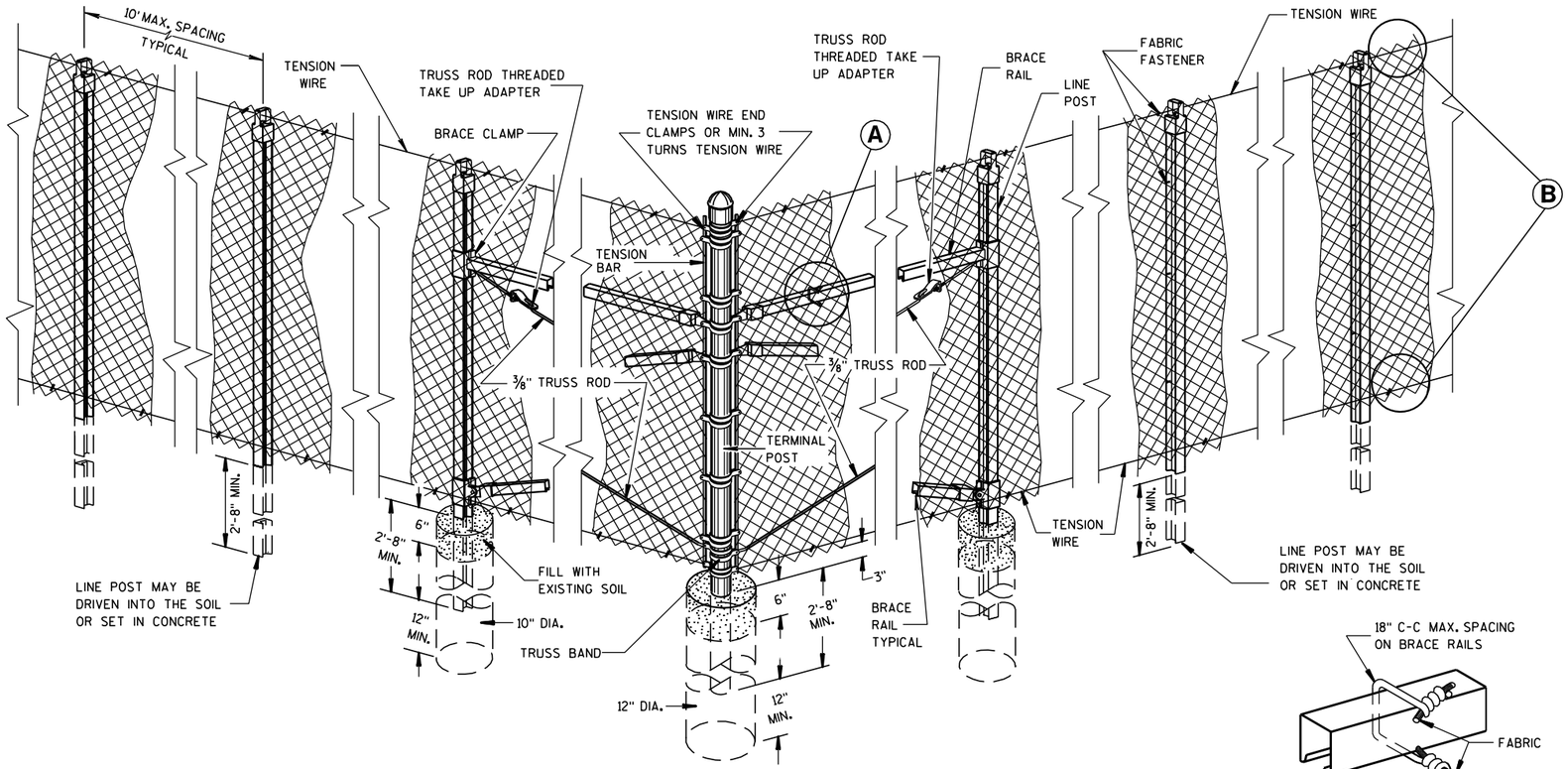
6

S.D.D. 15 B 3-12a



* IF "D" IS LESS THAN 2'-6", DRILL ROCK AND INSTALL GROUT

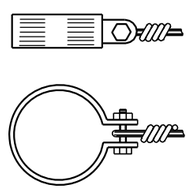
ROCK INSTALLATION OF LINE POST



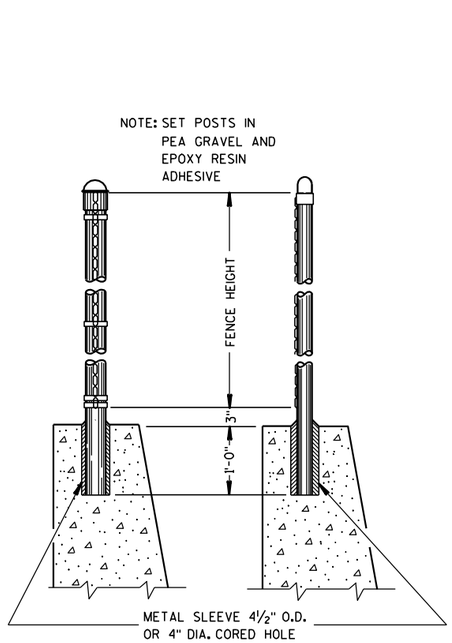
END, CORNER, ANGLE INTERSECTION & INTERMEDIATE BRACED POSTS

BRACE RAIL FABRIC FASTENER

Ⓐ

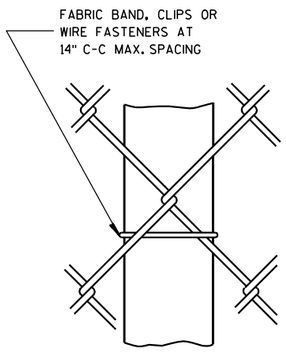


TENSION WIRE END CLAMP



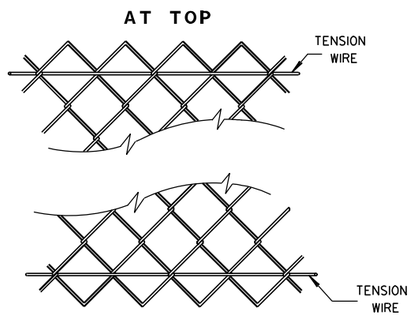
END POST & CORNER POST LINE POST

DETAILS OF FENCE ON WALL



LINE POST

FABRIC FASTENER



SELVAGES

Ⓑ

FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

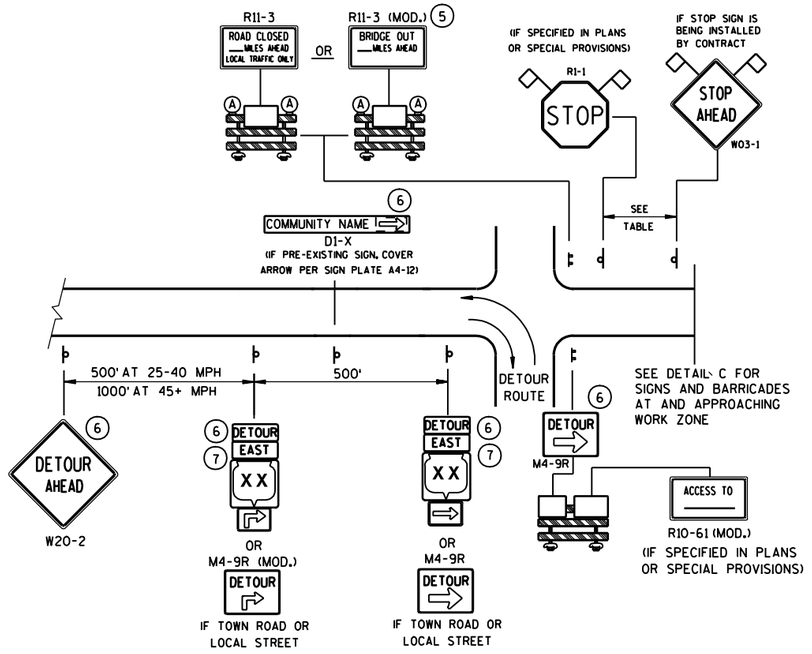
APPROVED
3/19/10 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 15 B 3-12b

6

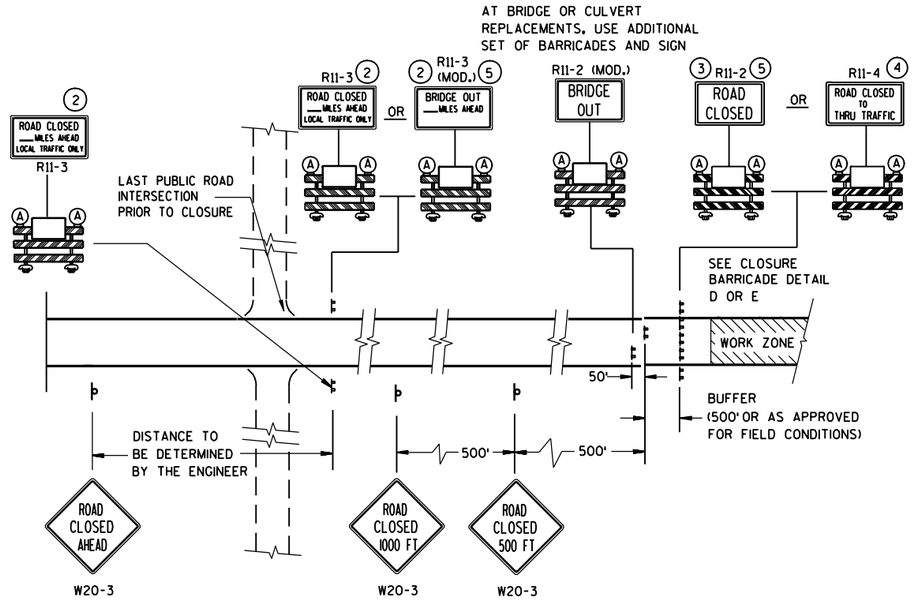
S.D.D. 15 B 3-12b



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

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

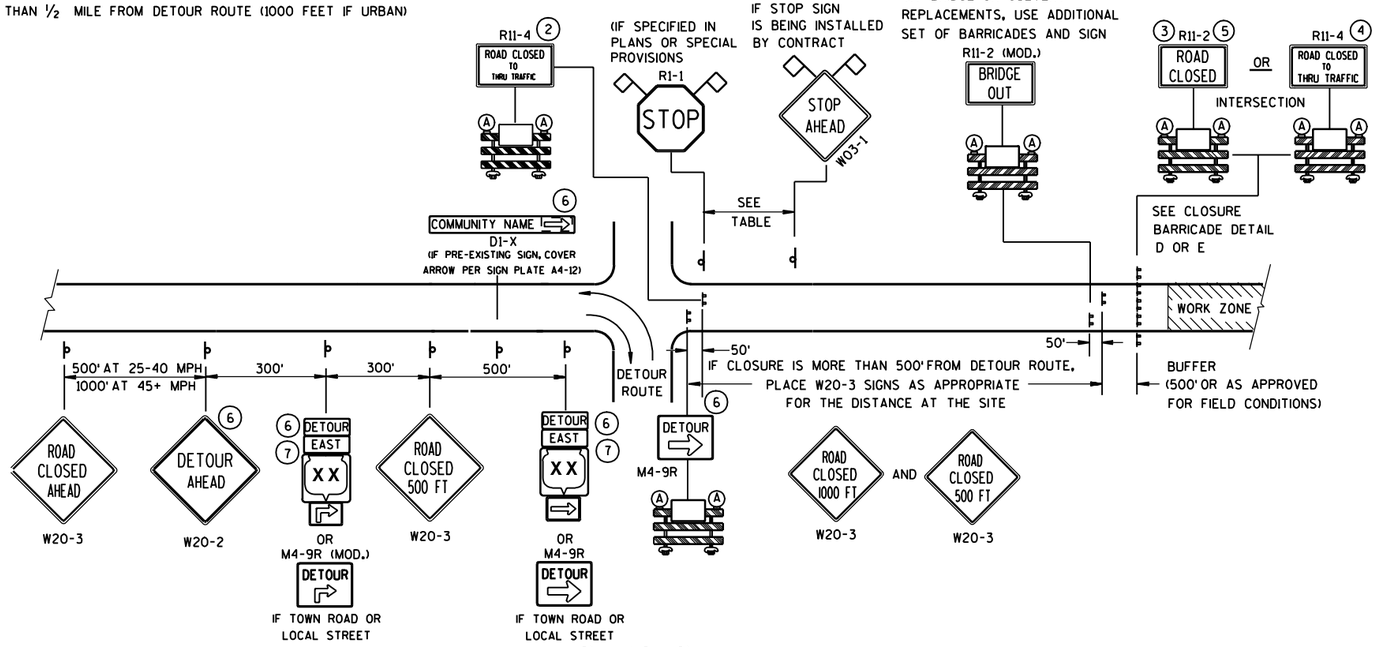


DETAIL C

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 15C2-4b
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦



DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR

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

LEGEND

- POST MOUNTED SIGN
- TYPE III BARRICADES
- (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK ZONE
- 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

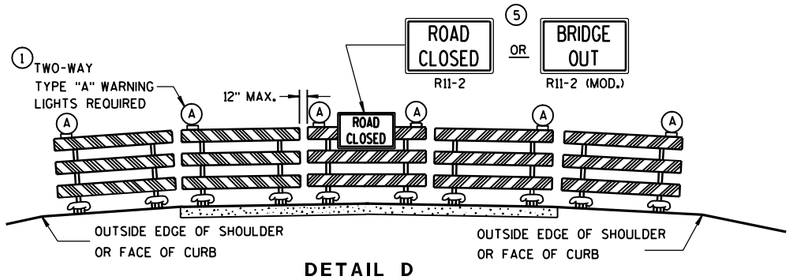
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 15 C 2-4a

6

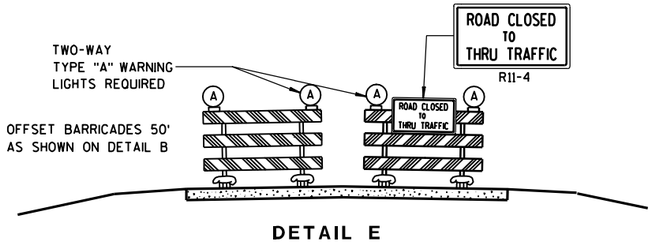
S.D.D. 15 C 2-4a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-4a 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.

THE REFLECTIVE SHEETING USED ON R11-2, R11-3, R11-4, R10-61 AND R1-1 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

"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 AND 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

APPROVED
9/16/03
DATE

Thomas N. Notbohm for
CHIEF SIGNS AND MARKING ENGINEER

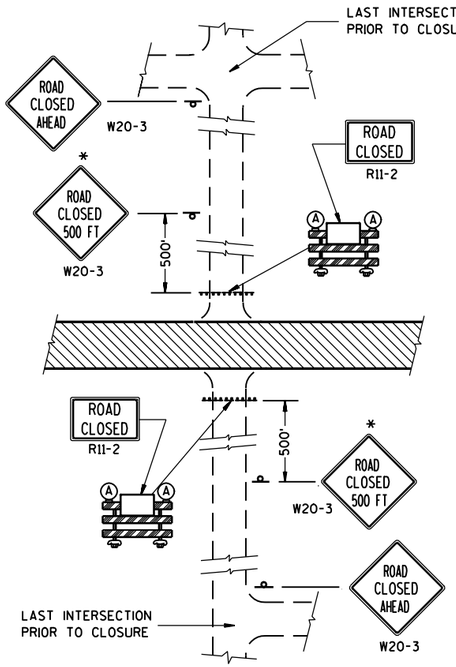
FHWA

6

S.D.D. 15 C 2-4b

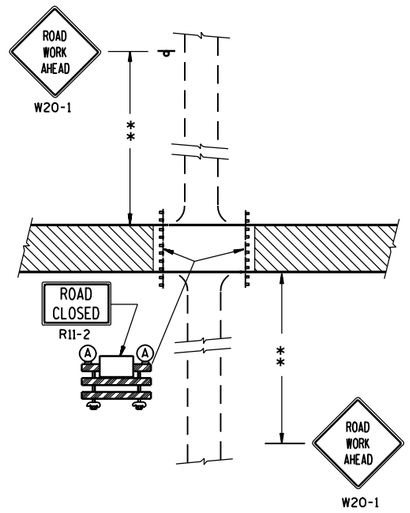
6

S.D.D. 15 C 2-4b



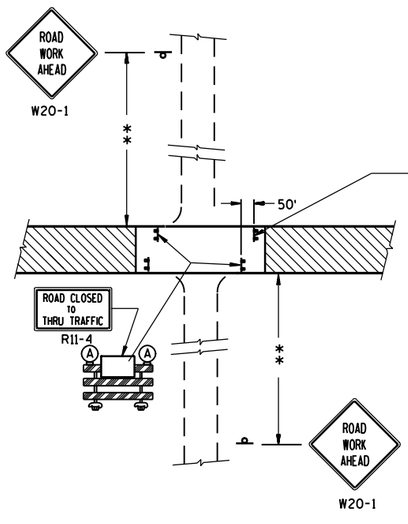
DETAIL 1

(NO ACCESS TO PROJECT)



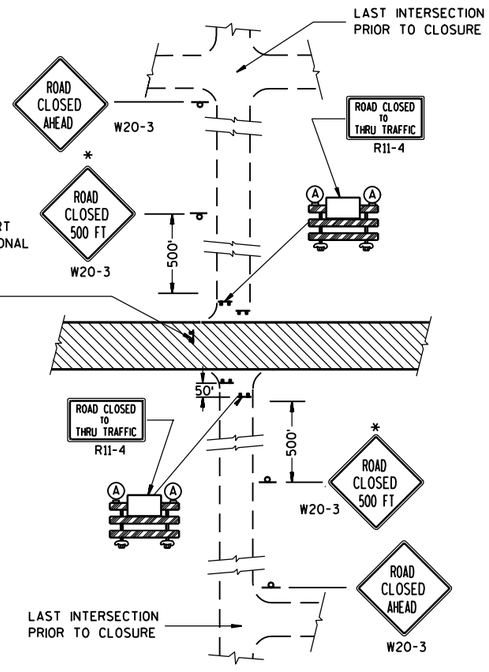
DETAIL 2

(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT).



DETAIL 3

(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR,
LOCAL BUSINESS AND RESIDENT ACCESS).



DETAIL 4

(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

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.

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

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 AND R11-4 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.

THE REFLECTIVE SHEETING USED ON R11-2, R11-3 AND R11-4 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

- POST MOUNTED WARNING SIGN
- TYPE III BARRICADES
- (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-16-03
DATE

Thomas N. Notbohm for
CHIEF SIGNS AND MARKING ENGINEER

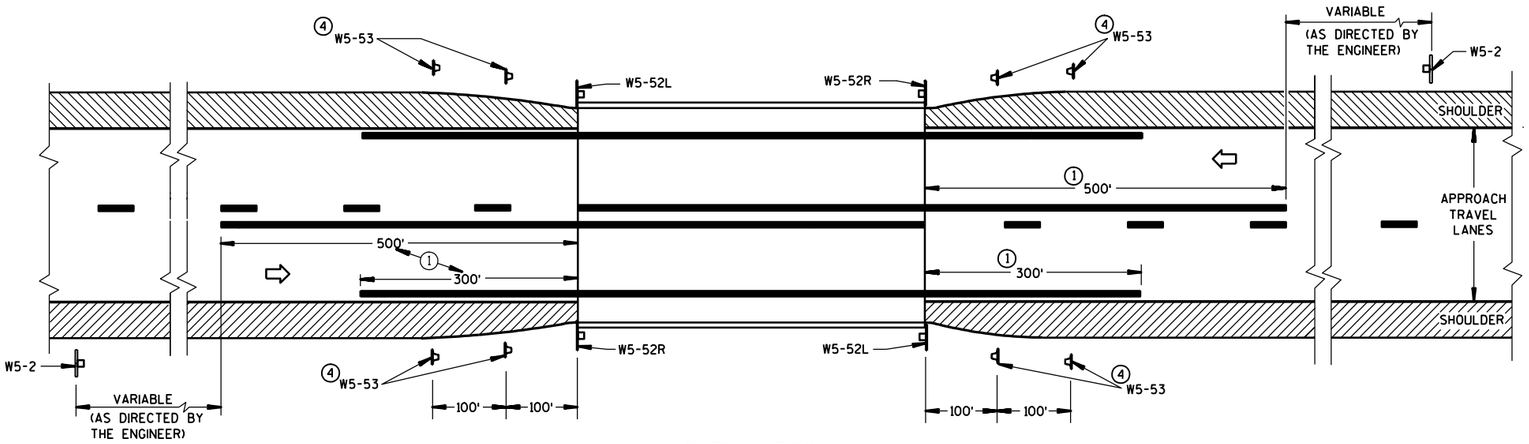
FHWA

6

S.D.D. 15 C 3-1

6

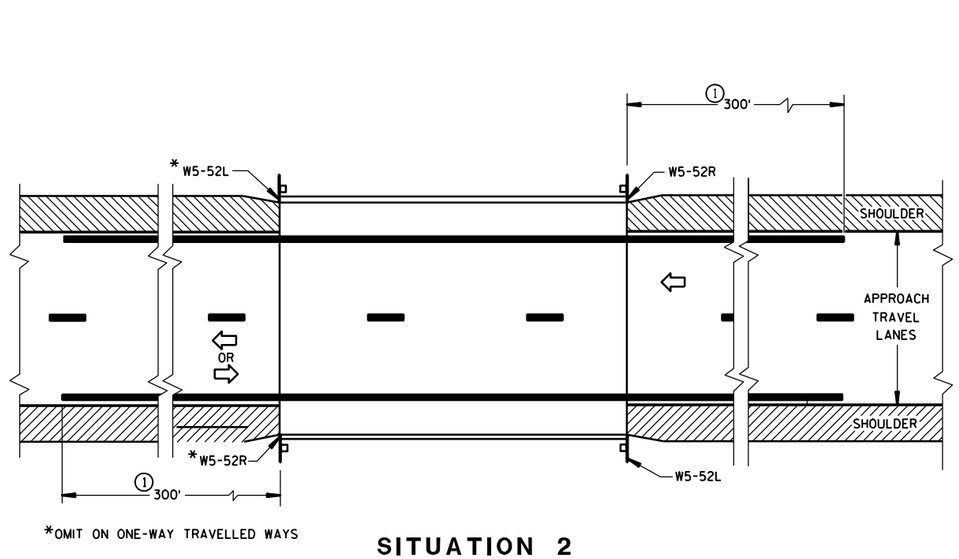
S.D.D. 15 C 3-1



SITUATION 1

WARRANTING CRITERION:

BRIDGE WIDTH IS AT LEAST 18 FEET BUT LESS THAN 24 FEET



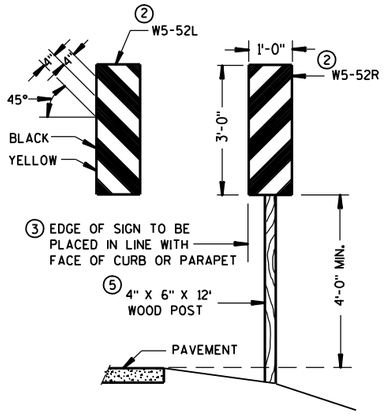
*OMIT ON ONE-WAY TRAVELLED WAYS

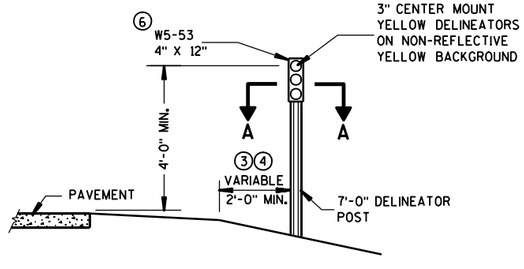
SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND

2. BRIDGE IS LESS THAN 6 FEET WIDER (ON EACH SIDE) THAN APPROACH TRAVEL LANES.





OBJECT MARKER PLACEMENT

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.

PAVEMENT MARKING SHOWN ON THIS DRAWING IS NOT REQUIRED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. WHEN SPECIFIED, PAVEMENT MARKING SHALL CONFORM TO THIS DRAWING AND OTHER CONTRACT REQUIREMENTS.

① MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.

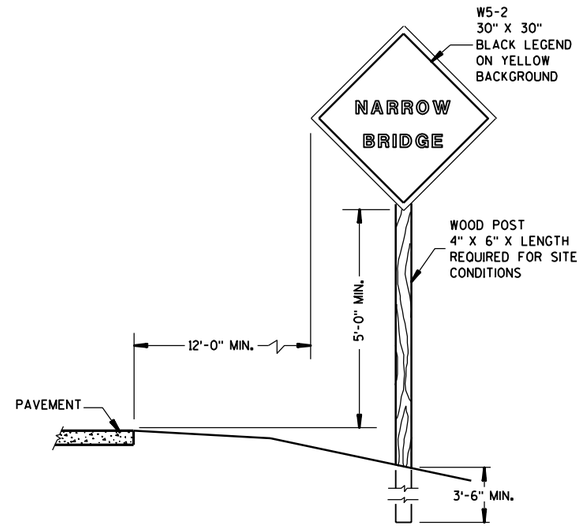
② FACE OF OBJECT MARKERS W5-52R AND W5-52L SHALL BE COVERED WITH TYPE H REFLECTIVE SHEETING.

③ LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.

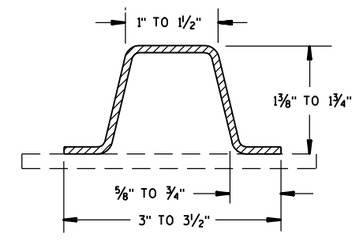
④ OBJECT MARKERS (W5-53) SHALL BE LOCATED ALONG A LINE FLARED AWAY FROM THE BRIDGE CORNER TO DELINEATE THE NARROWING OF THE SHOULDER OR BERM.

⑤ A 12 FOOT DELINEATOR POST MAY BE USED INSTEAD OF A WOOD POST.

⑥ NON-BID ITEM. INCIDENTAL TO OTHER ITEMS.



SIGN PLACEMENT



SECTION A-A

(MINIMUM WEIGHT 1.9 LBS. PER FT. AFTER GALVANIZING)

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/5/06 — DATE

/S/ Thomas N. Notbohm — STATE TRAFFIC ENGINEER OF DESIGN

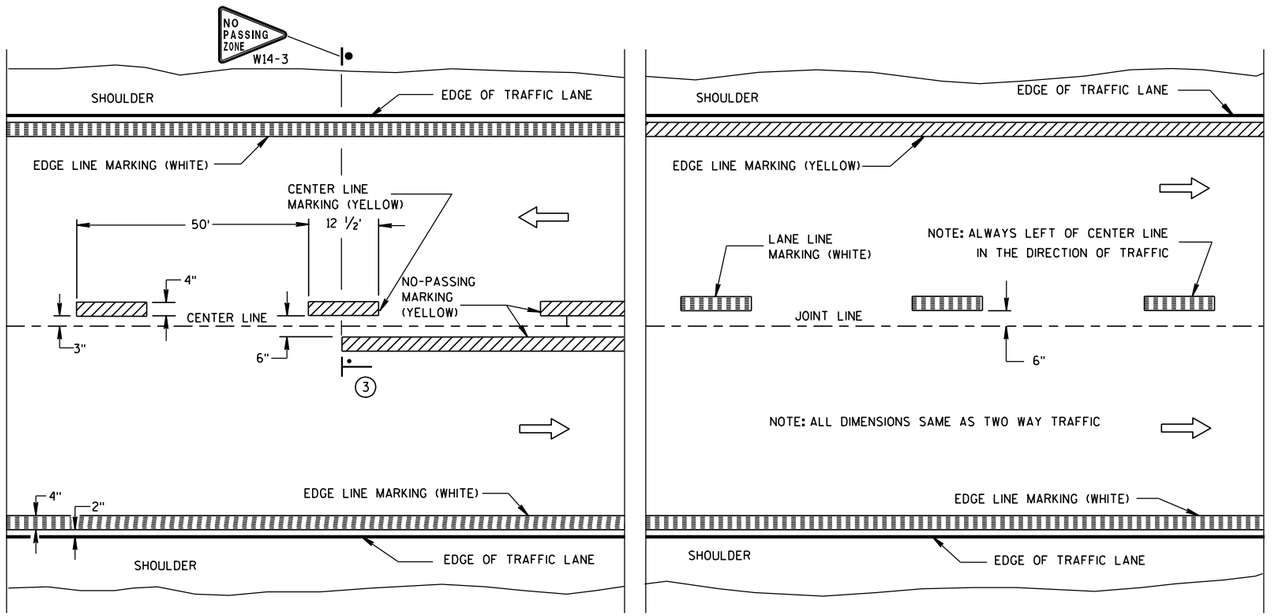
FHWA

6

S.D.D. 15 C 6-5

6

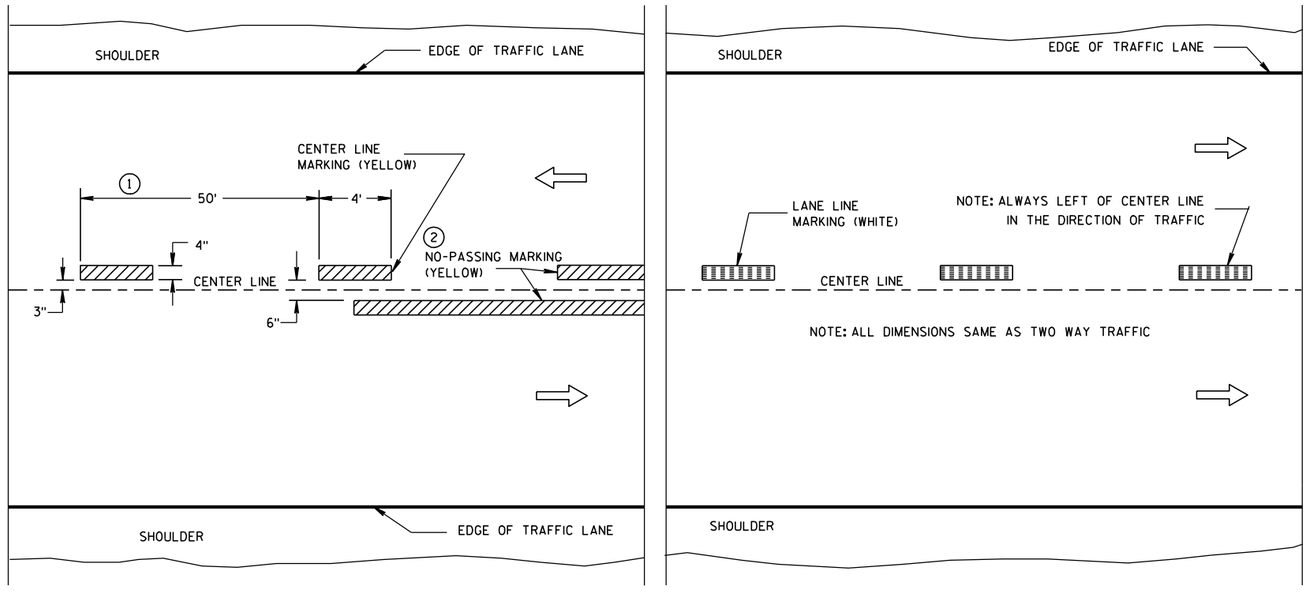
S.D.D. 15 C 6-5



TWO WAY TRAFFIC

ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC

ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

GENERAL NOTES

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

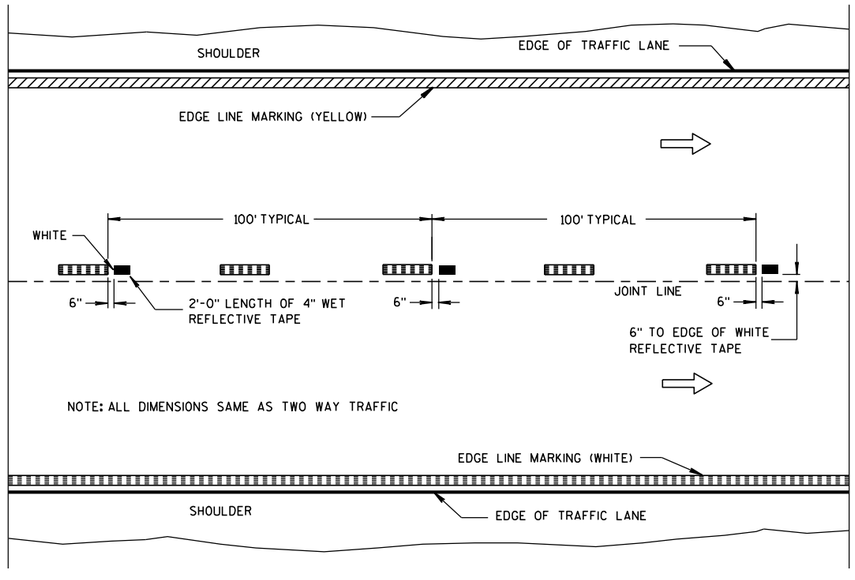
① HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.

② NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.

③ NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-10 DATE

/S/ Thomas N. Notbohm
STATE TRAFFIC ENGINEER OF DESIGN

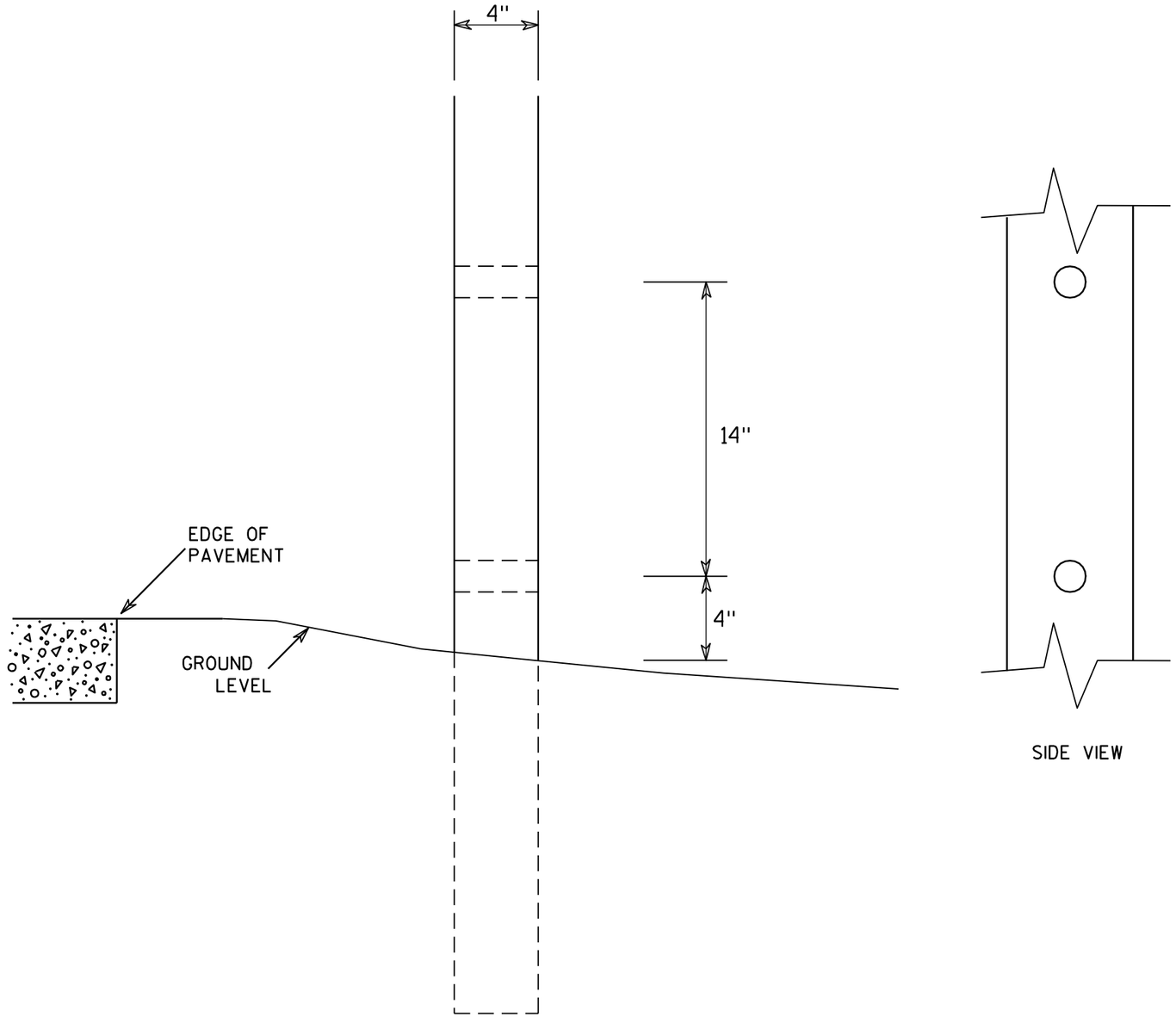
FHWA

6

S.D.D. 15 C 8-13a

6

S.D.D. 15 C 8-13a



SIDE VIEW

GENERAL NOTES

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

7

7

4 X 6 WOOD POST MODIFICATIONS

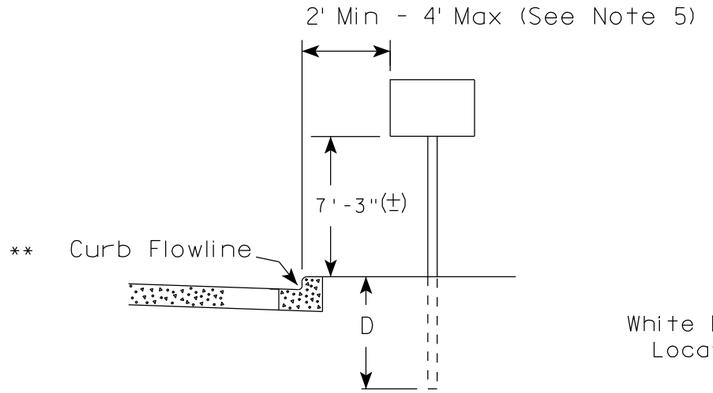
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

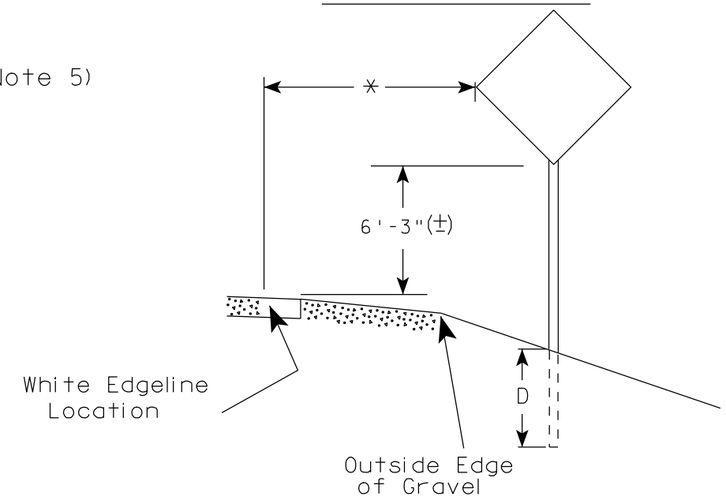
DATE 3/27/97 PLATE NO. A4-11.2

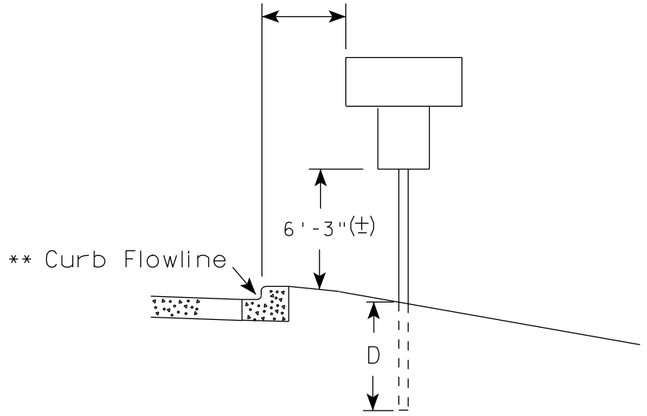
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 45	E

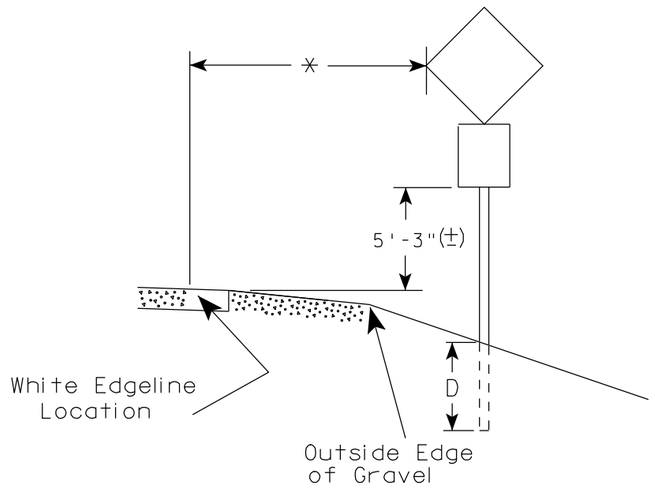
URBAN AREA



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.

GENERAL NOTES

1. Signs wider than 4 feet or larger than 20 sq. ft. 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. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
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 stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed 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), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (±).

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

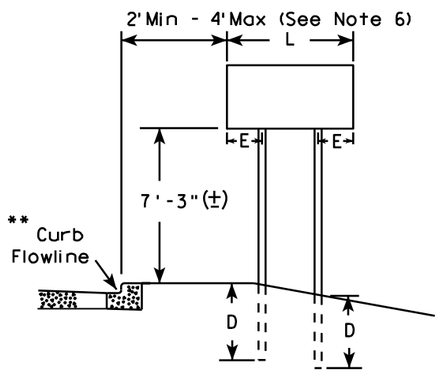
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

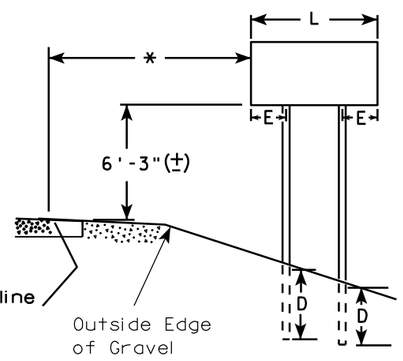
DATE 9/21/2011 PLATE NO. A4-3.16

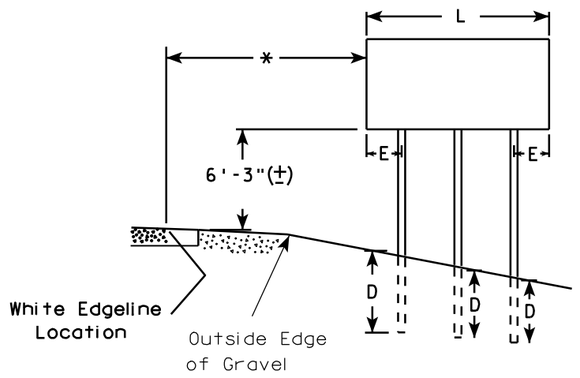
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 46	E

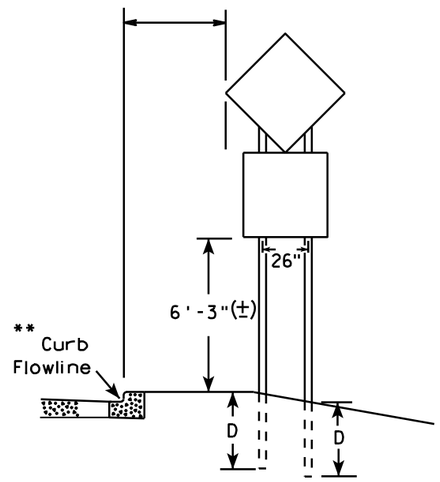
URBAN AREA



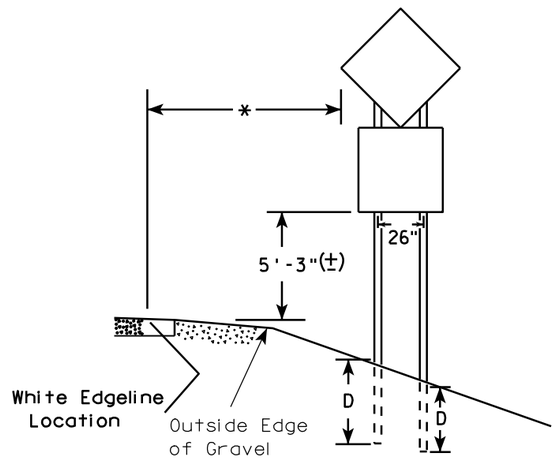
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

***	SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
	L	E
	Greater than 48" Less than 60"	12"
	60" to 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. For multiple post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. 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), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4"-3" (±).

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

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

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

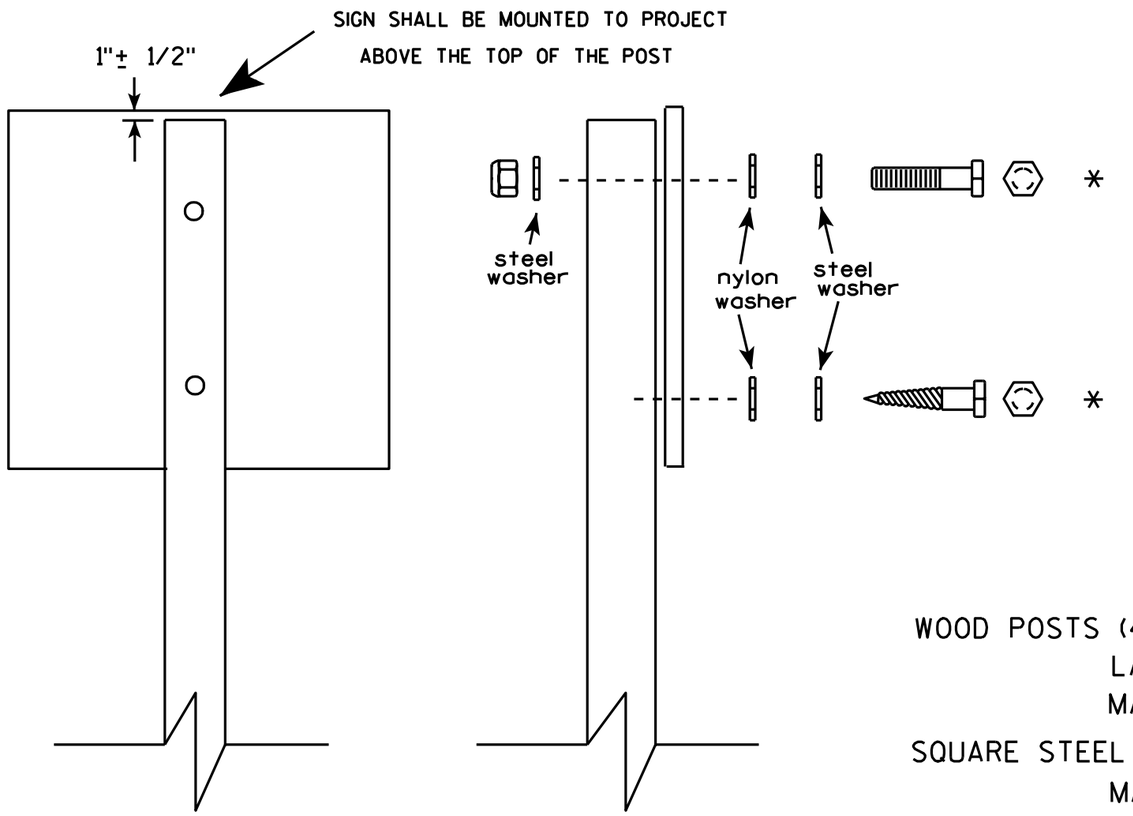
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-4.11

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 47	E



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

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

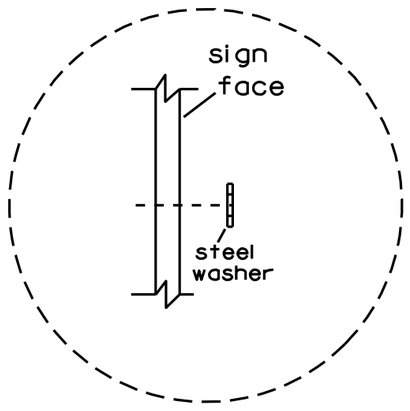
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

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.



Washer Placement when Sign Has Other Than Type H or Type F Face

* 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

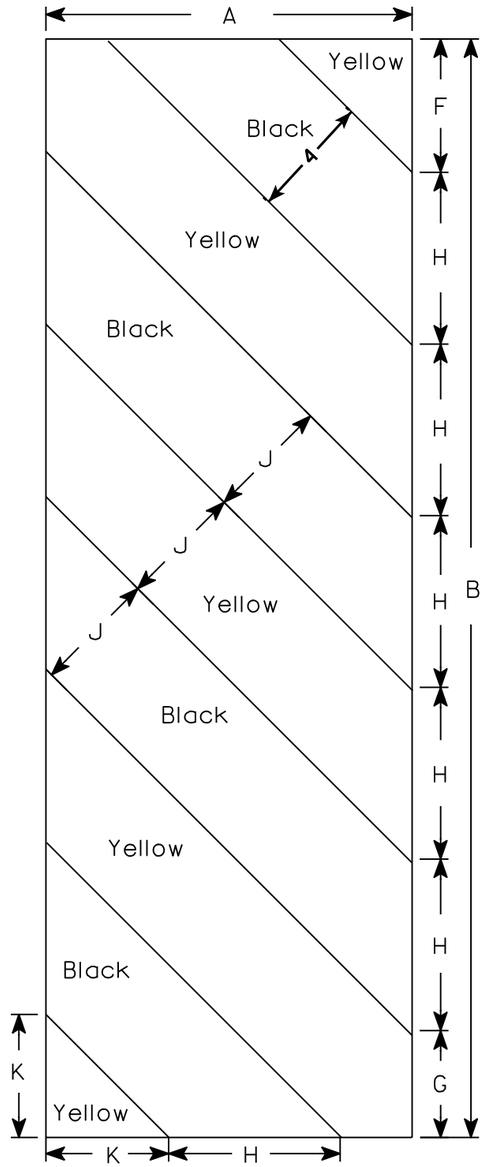
DATE 3/23/10 PLATE NO. A4-8.7

7

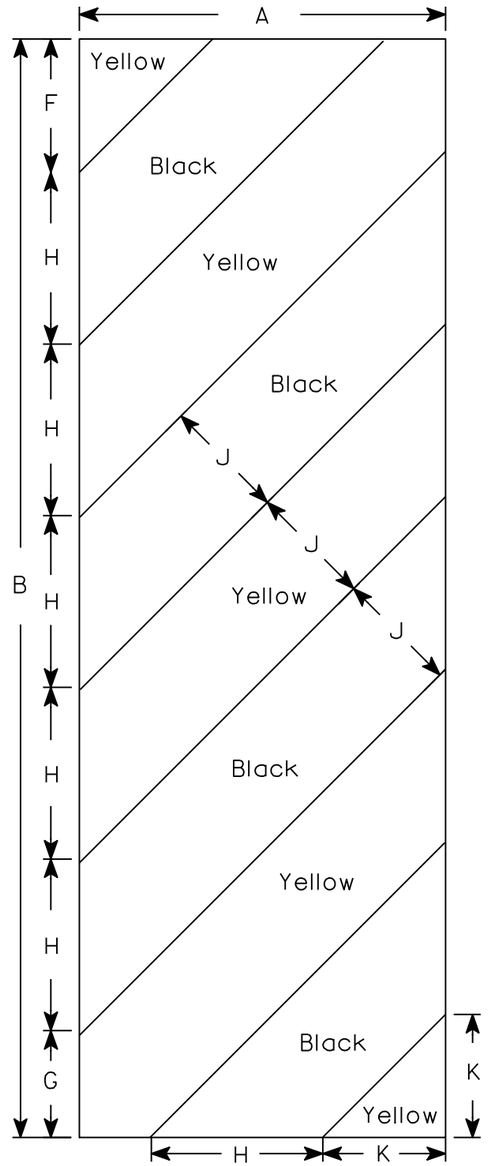
7

PROJECT NO:

SHEET NO: 48 E



W5-52L



W5-52R

NOTES

1. Sign is Type II - Type H 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																											

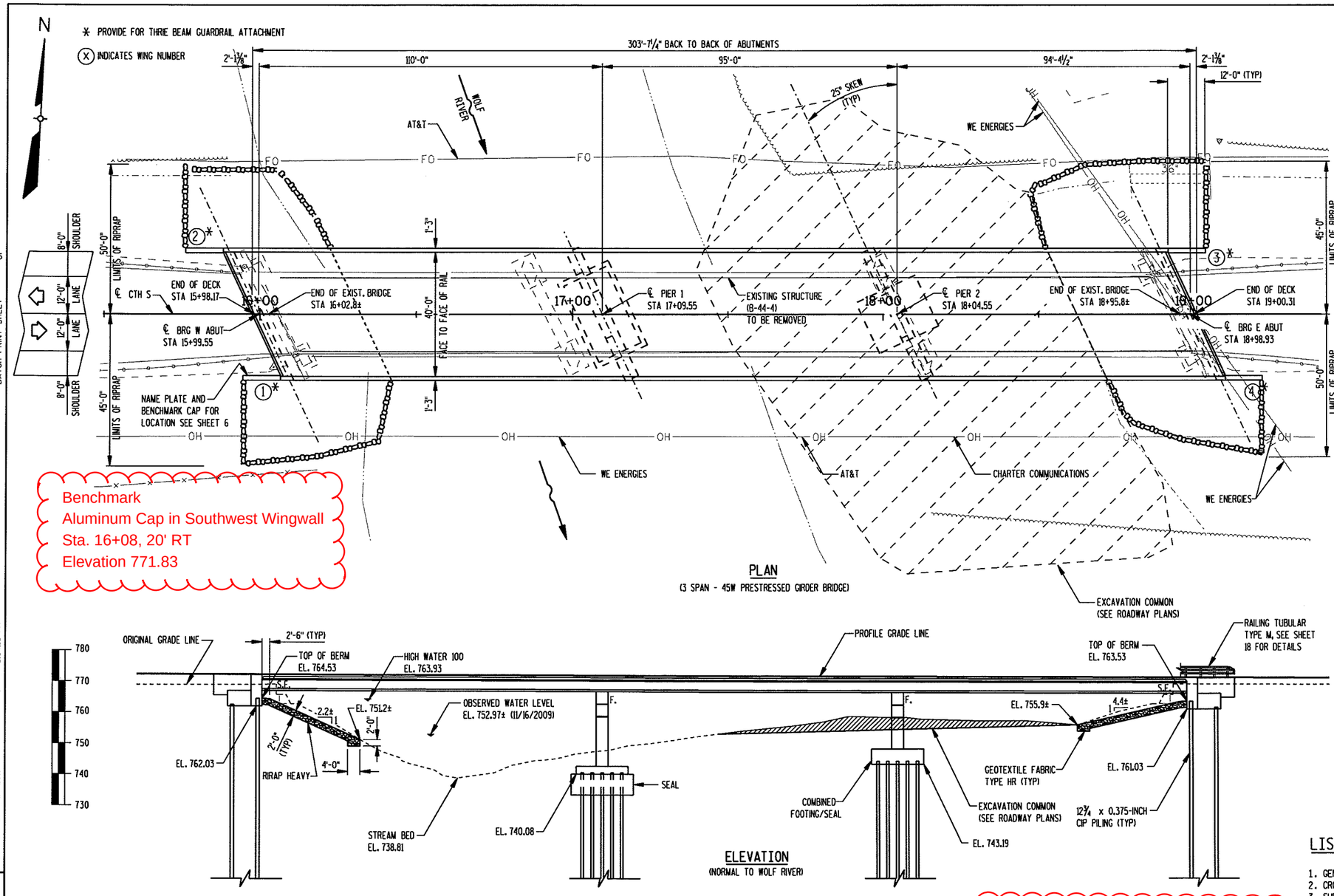
STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/22/11 PLATE NO. W5-52.8

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 49 | E



PLAN
(3 SPAN - 45W PRESTRESSED GIRDER BRIDGE)

Benchmark
Aluminum Cap in Southwest Wingwall
Sta. 16+08, 20' RT
Elevation 771.83

ELEVATION
(NORMAL TO WOLF RIVER)

BENCH MARK TABLE

NO.	STATION	DESCRIPTION	ELEVATION
1	13+89 RT.	MAG NAIL IN POWER POLE *65-233	760.52
2	18+87 RT.	CHISELED SQUARE ON NORTH EAST CORNER OF BRIDGE	769.56
3	21+11 RT.	MAG NAIL IN POWER POLE *65-234	760.55

ELEVATIONS SHOWN ON THIS PLAN ARE NAVD 88

KEVIN R. HAGEN E-38866 STEVENS POINT WI 10/4/2011 PROFESSIONAL ENGINEER

PROTECTIVE SURFACE TREATMENT
TK-590-1 MS Tri-Silane Clear
TK Products
11400 West 47th Street
Minnetonka, MN 55343

BRIDGE OFFICE:
WILLIAM DREHER (608) 266-8489
CONSULTANT:
KEVIN HAGEN (715) 342-3053
AECOM PROJECT NO. 60142286 (115310)

STATE PROJECT NUMBER
6098-04-71

DESIGN DATA

LIVELOAD:
DESIGN LOADING: HL-93
INVENTORY RATING FACTOR = 1.15
OPERATIONAL RATING FACTOR = 1.55
MAXIMUM STANDARD PERMIT VEHICLE LOAD = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 PSF.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY - SLAB — f'c = 4,000 P.S.I. ALL OTHER — f'c = 3,500 P.S.I.

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

45W" PRESTRESSED GIRDER

CONCRETE MASONRY — f'c = 7,800 P.S.I.

STRANDS-0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF — 270,000 P.S.I.

FOUNDATION DATA

WEST ABUTMENT TO BE SUPPORTED ON 12¾ x 0.375-INCH CIP CONC. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 169 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 95'-0" LONG.

PIER 1 TO BE SUPPORTED ON 12¾ x 0.375-INCH CIP CONC. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 152 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 85'-0".

PIER 2 TO BE SUPPORTED ON 12¾ x 0.375-INCH CIP CONC. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 164 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 100'-0".

EAST ABUTMENT TO BE SUPPORTED ON 12¾ x 0.375-INCH CIP CONC. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 128 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 95'-0" LONG.

** 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 THE MODIFIED GATES DYNAMIC FORMULA TO DETERMINE DRIVEN PILE CAPACITY.

TRAFFIC VOLUME

CTH S
A.D.T. (2012) = 2650
A.D.T. (2032) = 3650
DESIGN SPEED = 60 MPH

HYDRAULIC DATA

100 YEAR FREQUENCY

Q100	7,850 CFS
VELOCITY	2.6 FPS
HIGH WATER ELEVATION	763.93 ±
WATERWAY AREA	3,020 SQ. FT.
DRAINAGE AREA	1,467 SQ. MI.
ROAD OVERTOPPING	N/A
SCOUR CRITICAL CODE	5

2 YEAR FREQUENCY

Q2	3,570 CFS
HIGH WATER 2 ELEVATION	759.16 ±

UTILITIES

AT&T (TELEPHONE)
ATTN: VINCENT LEBRUN
920-735-3076 OFFICE

CHARTER COMMUNICATIONS (TV)
ATTN: RUDI RUDIGER
715-302-1550 (MOBILE)

WE ENERGIES (ELECTRIC)
ATTN: JIM QUINN
920-380-3401 OFFICE
920-450-9430 MOBILE

LIST OF DRAWINGS

NO.	DATE	REVISION	BY

AECOM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher KAR 10/10/11
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-44-282

CTH S OVER WOLF RIVER

COUNTY: OUTAGAMIE
TOWN/~~CITY/VILLAGE~~: ELLINGTON

DESIGN SPEC.
AASHTO LRFD DESIGN SPEC. 5th EDITION

DESIGNED BY	EAB	DESIGN CK'D.	ETP	DRAWN BY	ALB	PLANS CK'D.	ETP

GENERAL PLAN

SHEET 1 OF 18

PRINTER DRIVER: L:\library\TPN.CADstds\Workspace-Clients\WisDOT\Microstation\Resources\MS_Printing\Printer_Drivers\ET.PDF.11 x 17.plt
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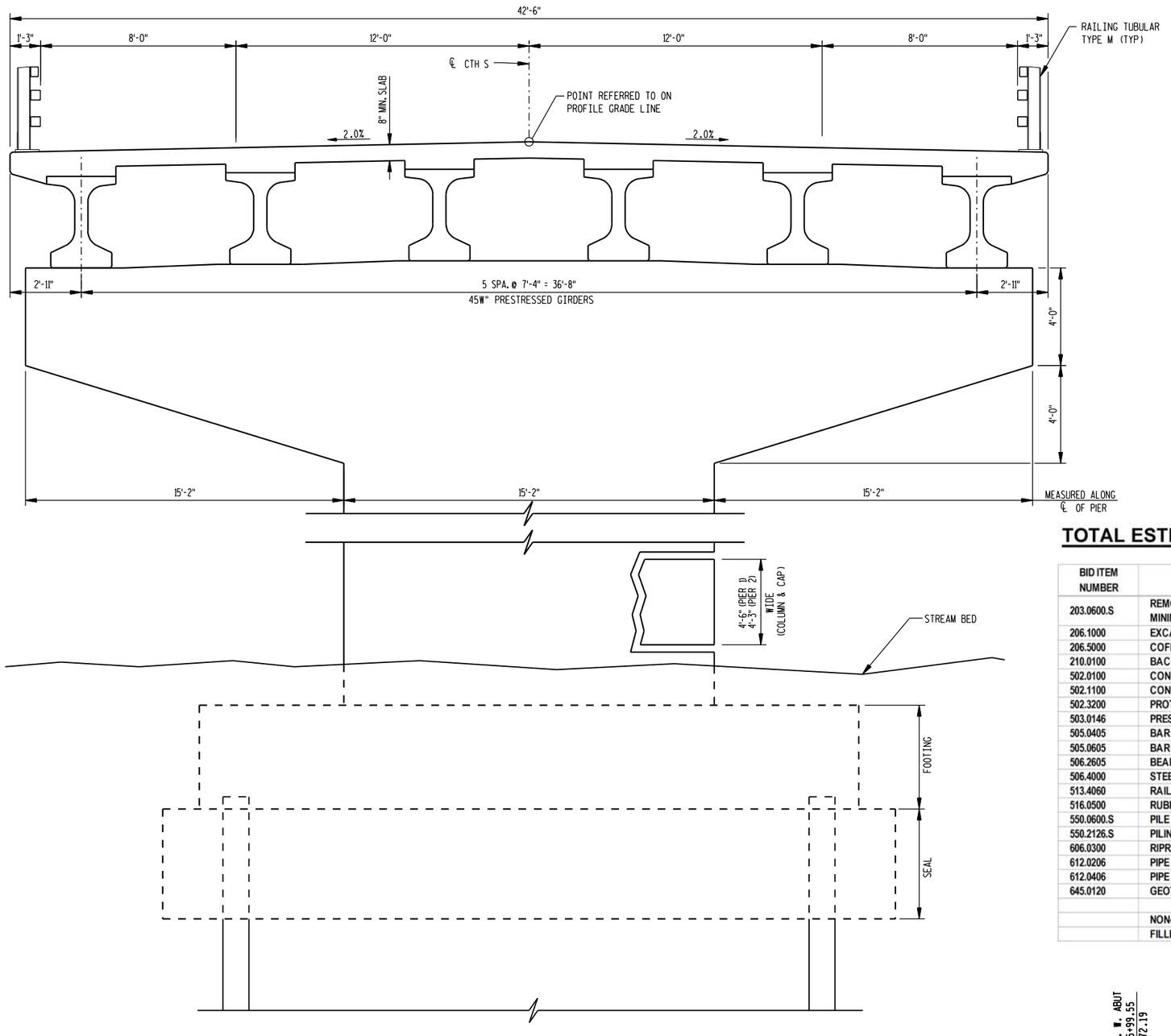


CROSS SECTION THRU ROADWAY-PIER 1 SHOWN
(LOOKING EAST)

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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 THE MODIFIED GATES DYNAMIC FORMULA TO DETERMINE DRIVEN PILE CAPACITY.

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

FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M153, TYPES I, II, OR III OR M213.

THE SLOPED FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE FABRIC TYPE 'HR' WITHIN THE LIMITS SHOWN ON SHEET 1, ON THE ABUTMENT SHEETS OR AS DIRECTED BY THE ENGINEER.

THE FIRST DIGIT OF A THREE DIGIT BAR MARK AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

THE EXISTING STRUCTURE (B-44-4) IS A THREE SPAN CONTINUOUS STEEL LOW TRUSS STRUCTURE, 291.5' LONG x 28.0' WIDE, TO BE REMOVED.

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

THE EXISTING GROUND LINE SHALL BE THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES.

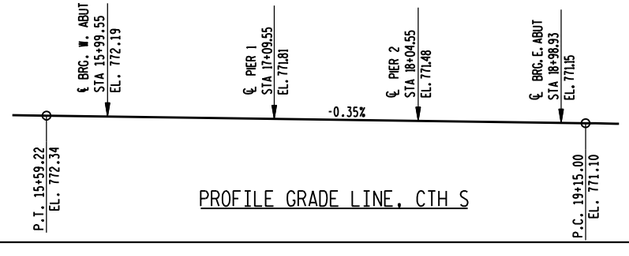
ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

CONCRETE FOR ABUTMENT AND PIER DIAPHRAMS SHALL BE PLACED WITH THE DECK CONCRETE. NO OPTIONAL CONSTRUCTION JOINT WILL BE PERMITTED.

HAUNCH CONCRETE QUANTITY IS BASED ON AN AVERAGE DEPTH OF 2⅝" WHICH IS THE MAXIMUM HAUNCH QUANTITY FOR WHICH THE CONTRACTOR WILL BE PAID.

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEM	UNIT	WEST ABUTMENT	PIER 1	PIER 2	EAST ABUTMENT	SUPER.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS, STATION 17+49	LS	——	——	——	——	——	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-44-282	LS	——	——	——	——	——	1
206.5000	COFFERDAMS STRUCTURE B-44-282	LS	——	——	——	——	——	1
210.0100	BACKFILL STRUCTURE	CY	185	——	——	185	——	370
502.0100	CONCRETE MASONRY BRIDGES	CY	42	152	131	42	438	805
502.1100	CONCRETE MASONRY SEAL	CY	——	90	——	——	——	90
502.3200	PROTECTIVE SURFACE TREATMENT	SY	——	——	——	——	1,440	1,440
503.0146	PRESTRESSED GIRDER TYPE I 45W-INCH	LF	——	——	——	——	1,800	1,800
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	2,590	23,580	21,910	2,630	——	50,710
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	1,480	——	——	1,480	107,710	110,670
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	6	12	12	6	——	36
506.4000	STEEL DIAPHRAGMS STRUCTURE B-44-282	EACH	——	——	——	——	30	30
513.4060	RAILING TUBULAR TYPE M STRUCTURE B-44-282	LS	——	——	——	——	——	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	11	——	——	11	——	22
550.0600.S	PILE REDRIVING	EACH	2	6	5	2	——	15
550.2126.S	PILING CIP CONCRETE 12 3/4 X 0.375-INCH	LF	1,045	3,400	3,200	1,235	——	8,880
606.0300	RIPRAP HEAVY	CY	305	——	——	320	——	625
612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	15	——	——	15	——	30
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	55	——	——	55	——	110
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	450	——	——	500	——	950
	NON-BID ITEMS							
	FILLER	SIZE	——	——	——	——	——	1/2" & 3/4"



PROFILE GRADE LINE, CTH S

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-282

DRAWN BY ALB | PLANS CK'D. ETP

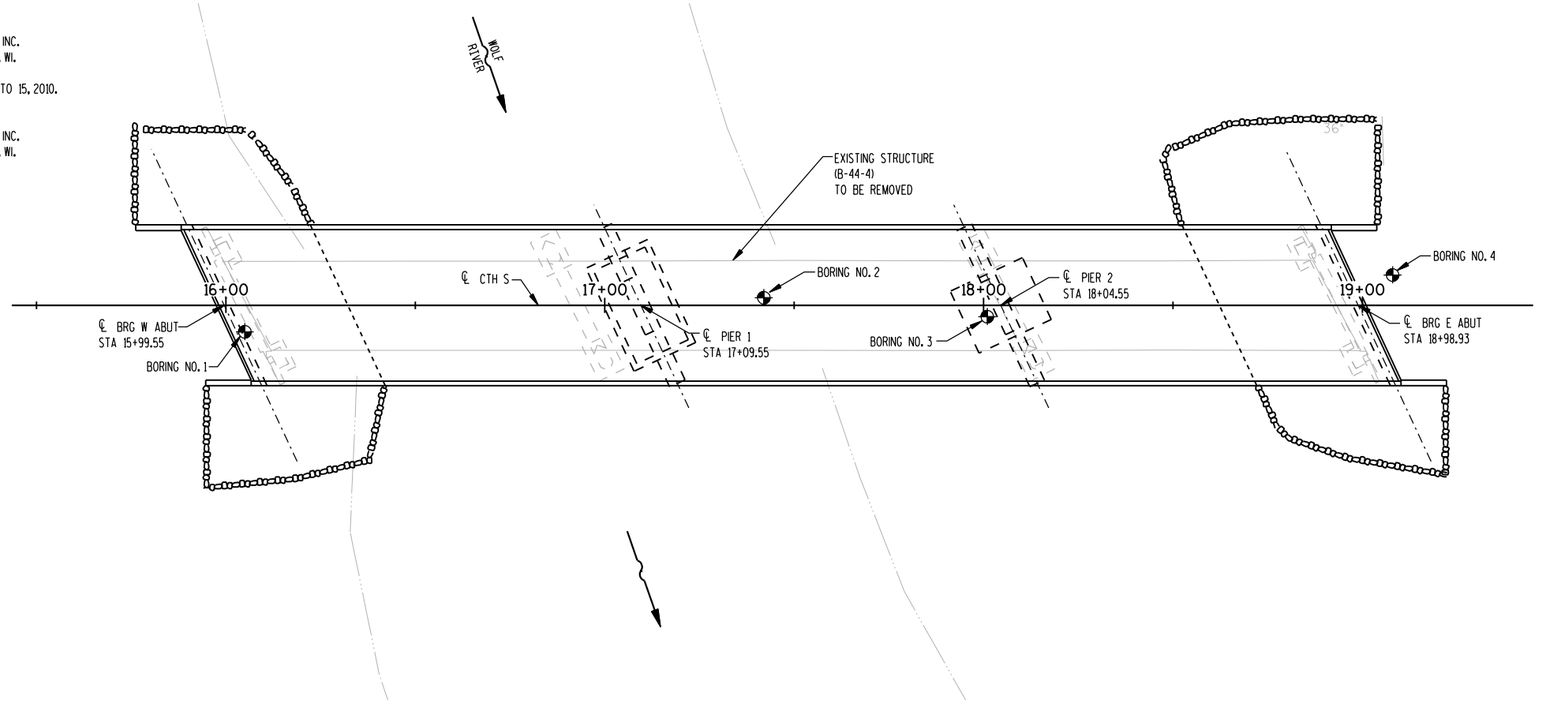
CROSS SECTION & QUANTITIES

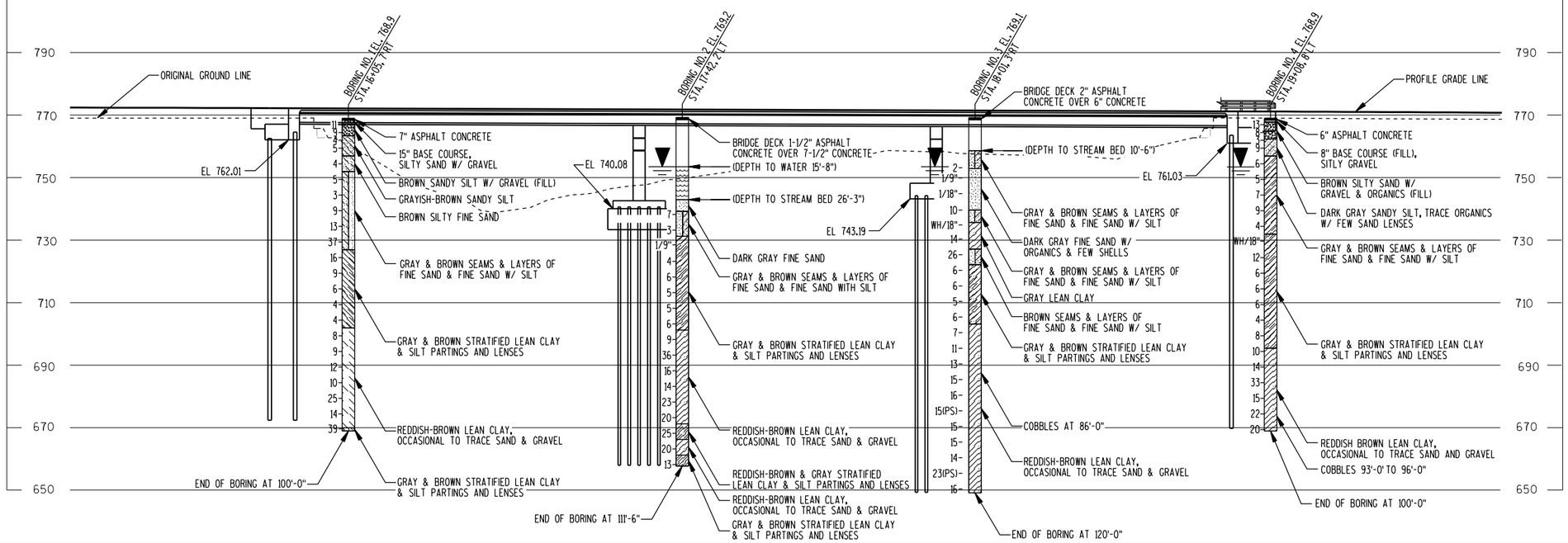
SHEET 2 OF 18

BORINGS PERFORMED BY:
SOILS & ENGINEERING SERVICES, INC.
1102 STEWART STREET, MADISON, WI.

BORINGS WERE PERFORMED ON JUNE 9 TO 15, 2010.

REPORT BY:
SOILS & ENGINEERING SERVICES, INC.
1102 STEWART STREET, MADISON, WI.





STATE PROJECT NUMBER

6098-04-71

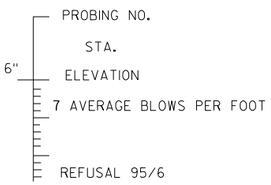
ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

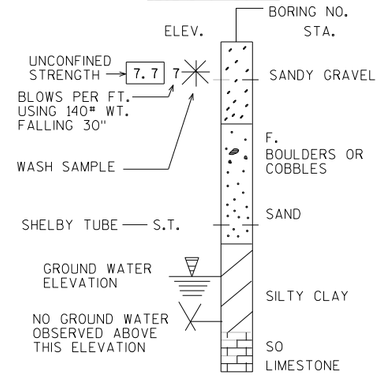
MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING



LEGEND OF BORING



UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-282

DRAWN BY ALB | PLANS CK'D. ETP

SUBSURFACE EXPLORATION

SHEET 3 OF 18

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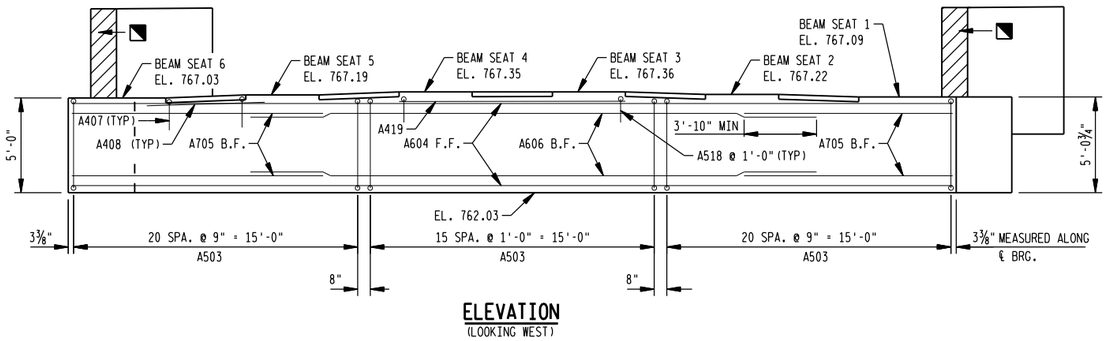
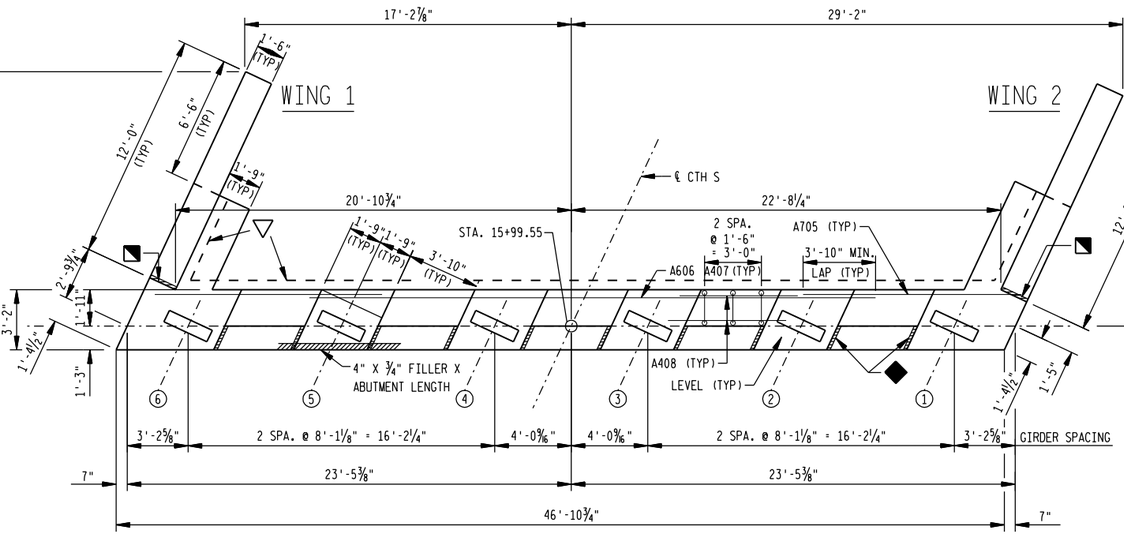
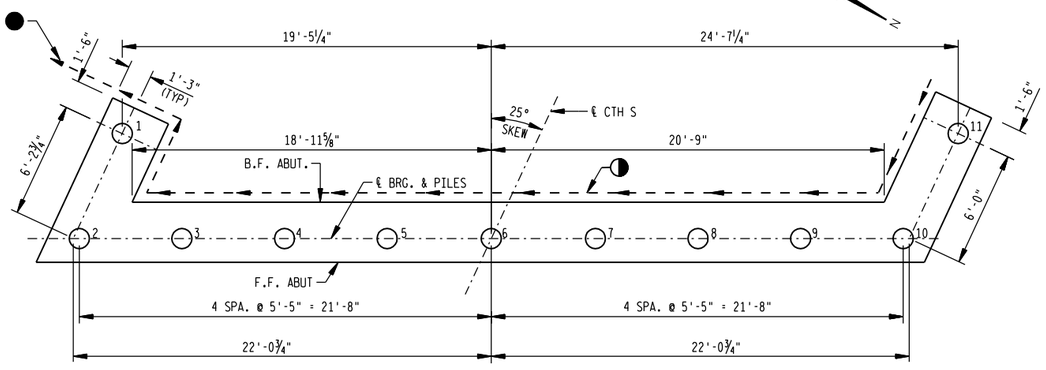


ELEVATION
(LOOKING WEST)

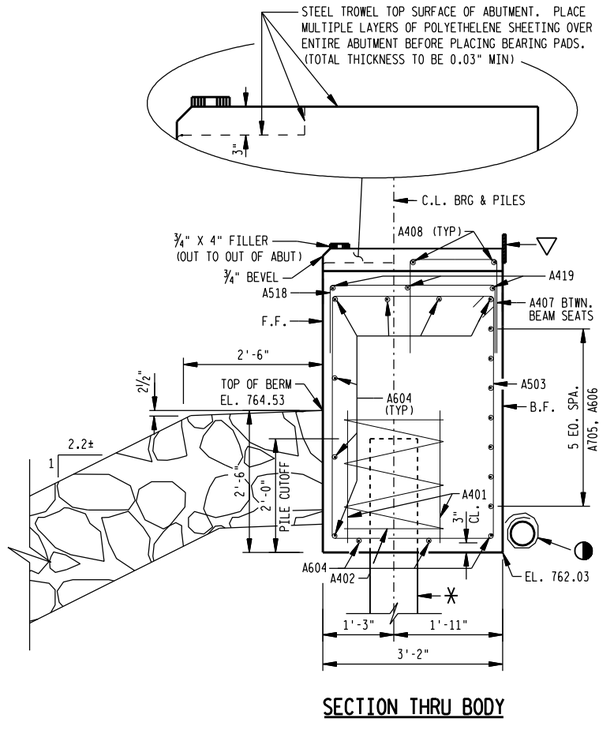
NO MATERIAL THAT WILL BE ENCASED BY ANY SUPERSTRUCTURE CONCRETE SHALL BE EMBEDDED OR ANCHORED TO THE ABUTMENT OR WINGS.



PLAN



PILE PLAN



SECTION THRU BODY

LEGEND

- ✳ WEST ABUTMENT TO BE SUPPORTED ON 12¾ x 0.375-INCH CIP CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 169 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES FORMULA. ESTIMATED 95'-0" LONG.
- ◑ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE.
- ◹ ½" FILLER (INCLUDED IN WING LENGTH) TO EXTEND FROM BRIDGE SEAT TO TOP OF WINGWALL SEAL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- ◆ ¾" CORK ON VERT. FACES OF BEAM SEATS PARALLEL TO GIRDERS.
- ▽ 18" (R.M.W.) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS ON BACK FACE.
- ● PIPE UNDERDRAIN UNPERFORATED, 6-INCH FROM BACK OF WING TO DISCHARGE. ATTACH RODENT SCREEN AT END OF PIPE UNDERDRAIN. SEE SHEET 7. DISCHARGE LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.
- (X) INDICATES GIRDER NUMBER.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-282

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WEST ABUTMENT

SHEET 4 OF 18

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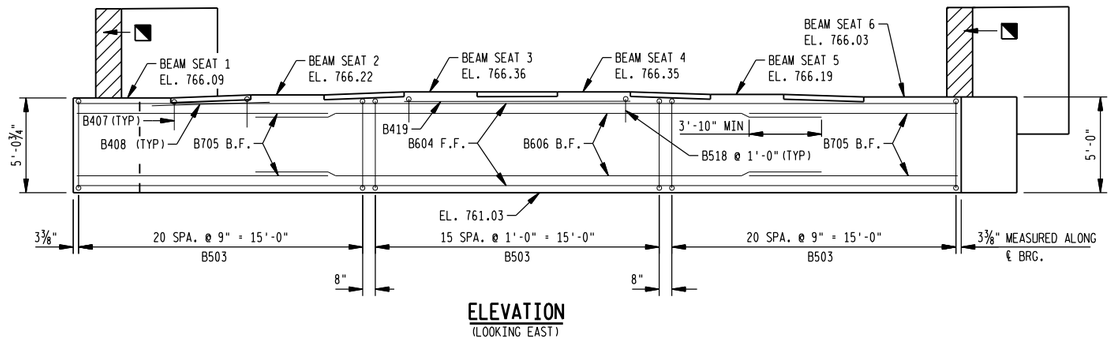
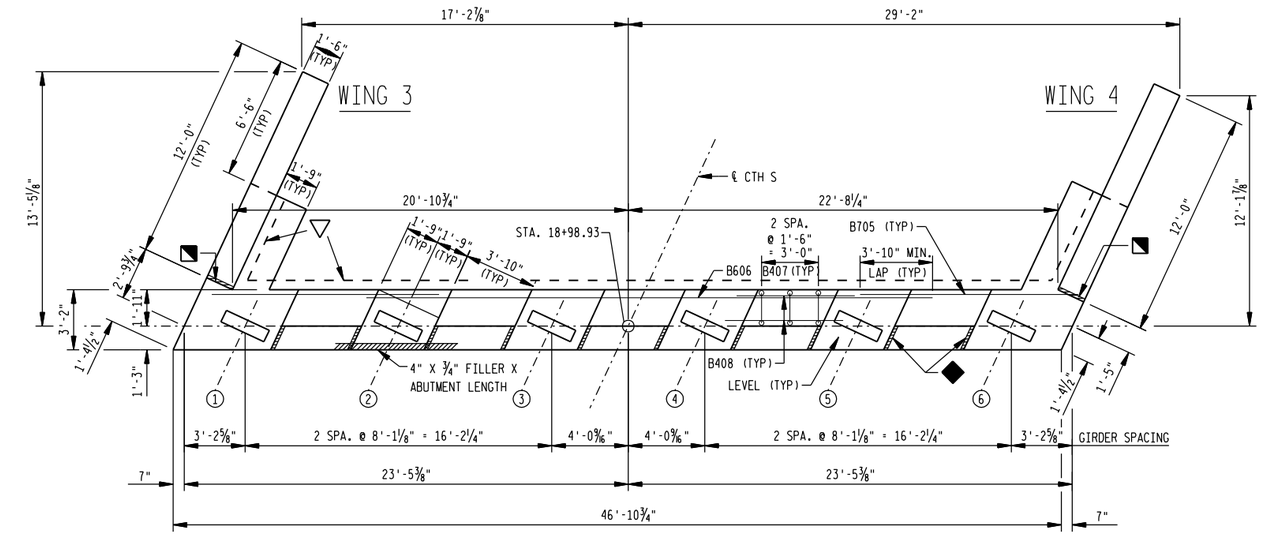
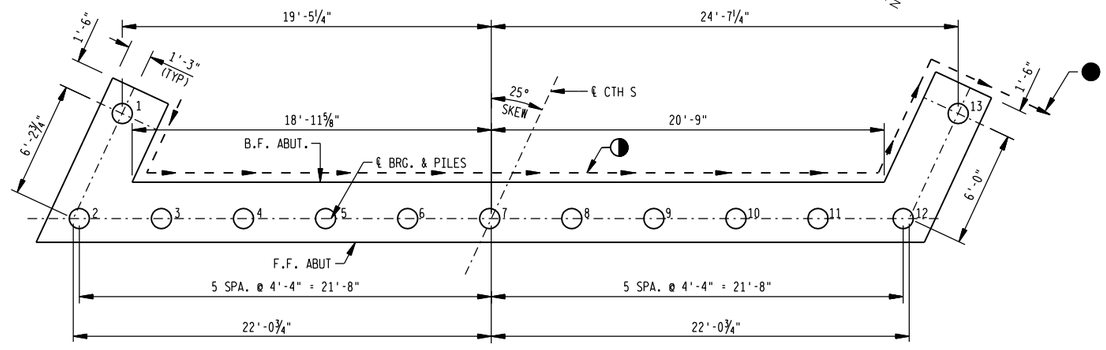


ELEVATION
(LOOKING EAST)

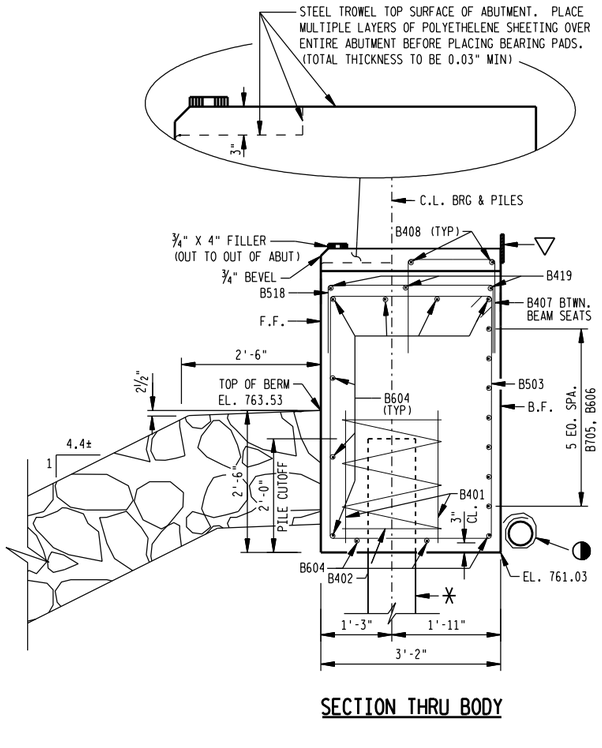


PLAN



PILE PLAN

NO MATERIAL THAT WILL BE ENCASED BY ANY SUPERSTRUCTURE CONCRETE SHALL BE EMBEDDED OR ANCHORED TO THE ABUTMENT OR WINGS.



SECTION THRU BODY

LEGEND

- ✳ EAST ABUTMENT TO BE SUPPORTED ON 12¾ x 0.375-INCH CIP CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 128 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES FORMULA. ESTIMATED 95'-0" LONG.
- ◑ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE.
- ◥ ½" FILLER (INCLUDED IN WING LENGTH) TO EXTEND FROM BRIDGE SEAT TO TOP OF WINGWALL SEAL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- ◆ ¾" CORK ON VERT. FACES OF BEAM SEATS PARALLEL TO GIRDERS.
- ▽ 18" (R.M.W.) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS ON BACK FACE.
- ● PIPE UNDERDRAIN UNPERFORATED, 6-INCH FROM BACK OF WING TO DISCHARGE. ATTACH RODENT SCREEN AT END OF PIPE UNDERDRAIN. SEE SHEET 7. DISCHARGE LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.
- Ⓧ INDICATES GIRDER NUMBER.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-282

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EAST ABUTMENT

SHEET 5 OF 18

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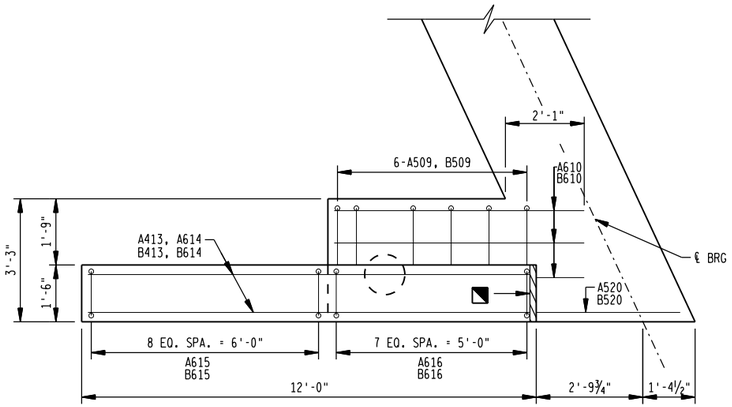
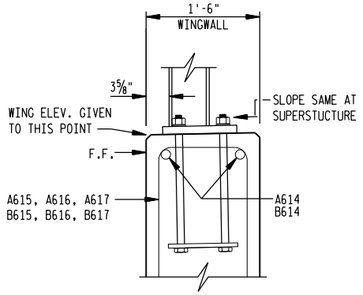
6098-04-71

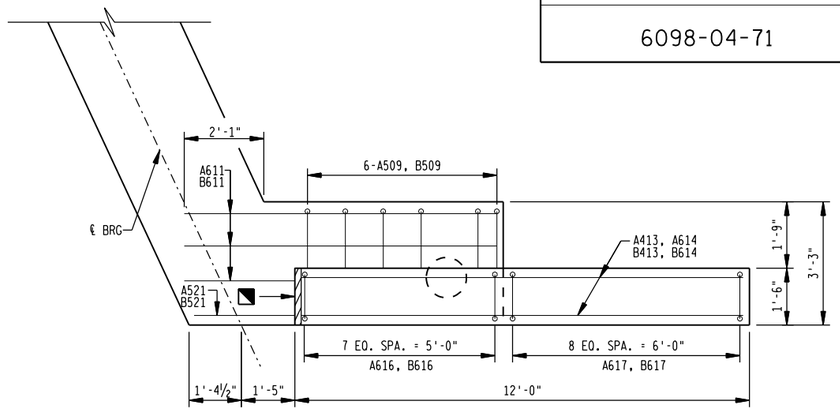


WING 1 & 3 PLAN

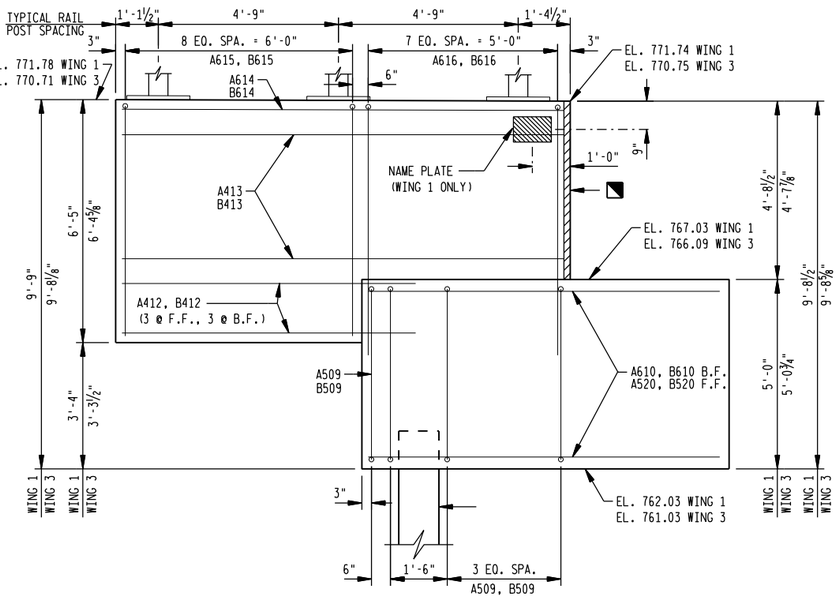


SECTION AT TOP OF WING

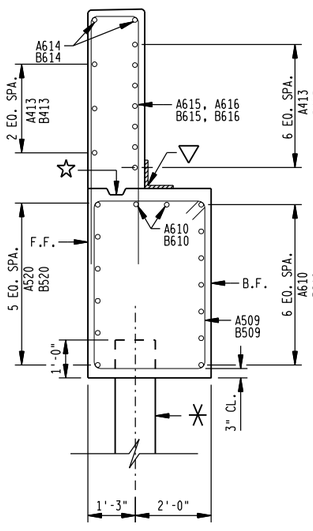
(TYPICAL)



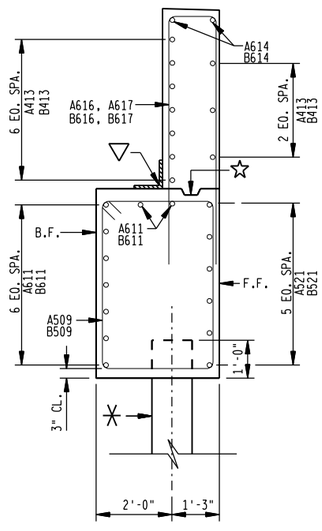
WING 2 & 4 PLAN



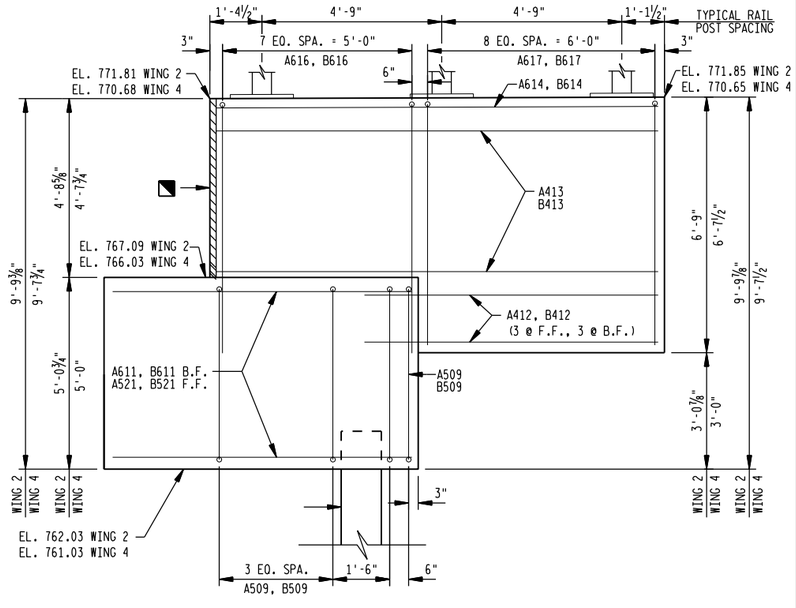
WING 1 & 3 ELEVATION



WING 1 & 3 SECTION



WING 2 & 4 SECTION



WING 2 & 4 ELEVATION

LEGEND

☆ OPTIONAL CONST. JOINT; KEYWAY FORMED BY BEVELED 2 x 6. (18" R.W.W. @ B.F. & ¾" "V" GROOVE @ F.F. IF JOINT IS USED.)

✳ WINGS 1 & 2 TO BE SUPPORTED ON 12¾ x 0.375-INCH CIP CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 169 TONS AS DETERMINED BY THE MODIFIED GATES FORMULA. ESTIMATED 95'-0" LONG.

WINGS 3 & 4 TO BE SUPPORTED ON 12¾ x 0.375-INCH CIP CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 128 TONS AS DETERMINED BY THE MODIFIED GATES FORMULA. ESTIMATED 95'-0" LONG.

◪ ½" FILLER (INCLUDED IN WING LENGTH) TO EXTEND FROM BRIDGE SEAT TO TOP OF WINGWALL SEAL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

▽ 18" (R.W.W.) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS ON BACK FACE.

NO.	DATE	REVISION	BY

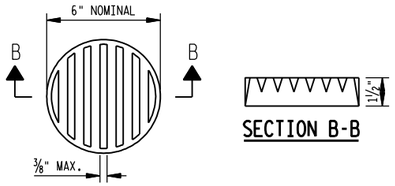
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-282

DRAWN BY ALB | PLANS CK'D. ETP

ABUTMENT DETAILS

SHEET 6 OF 18



RODENT SCREEN DETAIL

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

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

THE RODENT SCREEN 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 SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH SHEET METAL SCREWS.

BILL OF BARS WEST ABUTMENT

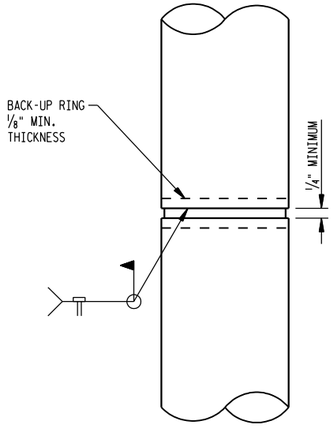
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION	
NON-COATED BARS						TOTAL WEIGHT = 2,590 LBS
A401	18	2 - 3			PILES - 2 PER PILE	VERT.
A402	9	28 - 0	X		PILES - 1 PER PILE	HORIZ.
A503	58	15 - 6	X		BODY	VERT.
A604	10	46 - 6			BODY - BOT., F.F., TOP	HORIZ.
A705	12	12 - 0			BODY - B.F.	HORIZ.
A606	6	30 - 2			BODY - B.F.	HORIZ.
A407	15	4 - 5	X		BODY - BTWN. BEAM SEATS	VERT.
A408	10	6 - 3			BODY - BTWN. BEAM SEATS	HORIZ.
A518	13	5 - 7	X		BODY - TOP, UNDER SEATS 3 & 4	VERT.
A419	3	12 - 0			BODY - TOP, UNDER SEATS 3 & 4	HORIZ.
COATED BARS						TOTAL WEIGHT = 1,480 LBS
A509	12	15 - 1	X		WINGS 1 & 2	VERT.
A610	9	6 - 9			WING 1	HORIZ.
A611	9	8 - 1			WING 2	HORIZ.
A412	12	7 - 9			WINGS 1 & 2	HORIZ.
A413	20	11 - 8			WINGS 1 & 2	HORIZ.
A614	4	11 - 8			WINGS 1 & 2	HORIZ.
A615	9	12 - 10	X		WING 1	VERT.
A616	16	14 - 0	X		WINGS 1 & 2	VERT.
A617	9	13 - 4	X		WING 2	VERT.
A520	6	9 - 4			WING 1	HORIZ.
A521	6	7 - 11			WING 2	HORIZ.

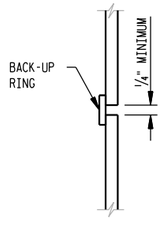
BILL OF BARS EAST ABUTMENT

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

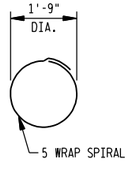
MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION	
NON-COATED BARS						TOTAL WEIGHT = 2,630 LBS
B401	22	2 - 3			PILES - 2 PER PILE	VERT.
B402	11	28 - 0	X		PILES - 1 PER PILE	HORIZ.
B503	58	15 - 6	X		BODY	VERT.
B604	10	46 - 6			BODY - BOT., F.F., TOP	HORIZ.
B705	12	12 - 0			BODY - B.F.	HORIZ.
B606	6	30 - 2			BODY - B.F.	HORIZ.
B407	15	4 - 5	X		BODY - BTWN. BEAM SEATS	VERT.
B408	10	6 - 3			BODY - BTWN. BEAM SEATS	HORIZ.
B518	13	5 - 7	X		BODY - TOP, UNDER SEATS 3 & 4	VERT.
B419	3	12 - 0			BODY - TOP, UNDER SEATS 3 & 4	HORIZ.
COATED BARS						TOTAL WEIGHT = 1,480 LBS
B509	12	15 - 1	X		WINGS 3 & 4	VERT.
B610	9	6 - 9			WING 3	HORIZ.
B611	9	8 - 1			WING 4	HORIZ.
B412	12	7 - 9			WINGS 3 & 4	HORIZ.
B413	20	11 - 8			WINGS 3 & 4	HORIZ.
B614	4	11 - 8			WINGS 3 & 4	HORIZ.
B615	9	12 - 10	X		WING 3	VERT.
B616	16	14 - 0	X		WINGS 3 & 4	VERT.
B617	9	13 - 4	X		WING 4	VERT.
B520	6	9 - 4			WING 3	HORIZ.
B521	6	7 - 11			WING 4	HORIZ.



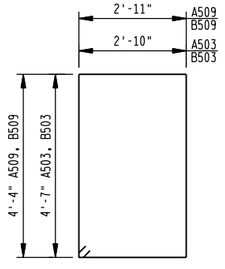
CAST-IN-PLACE
'PIPE PILE'



CIP PILE WELD DETAIL



A402
B402



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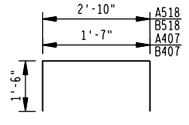
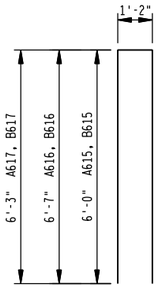


A407, A518
B407, B518



A615, A616, A617
B615, B616, B617

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-282

DRAWN BY ALB | PLANS CK'D. ETP

ABUTMENT DETAILS

SHEET 7 OF 18

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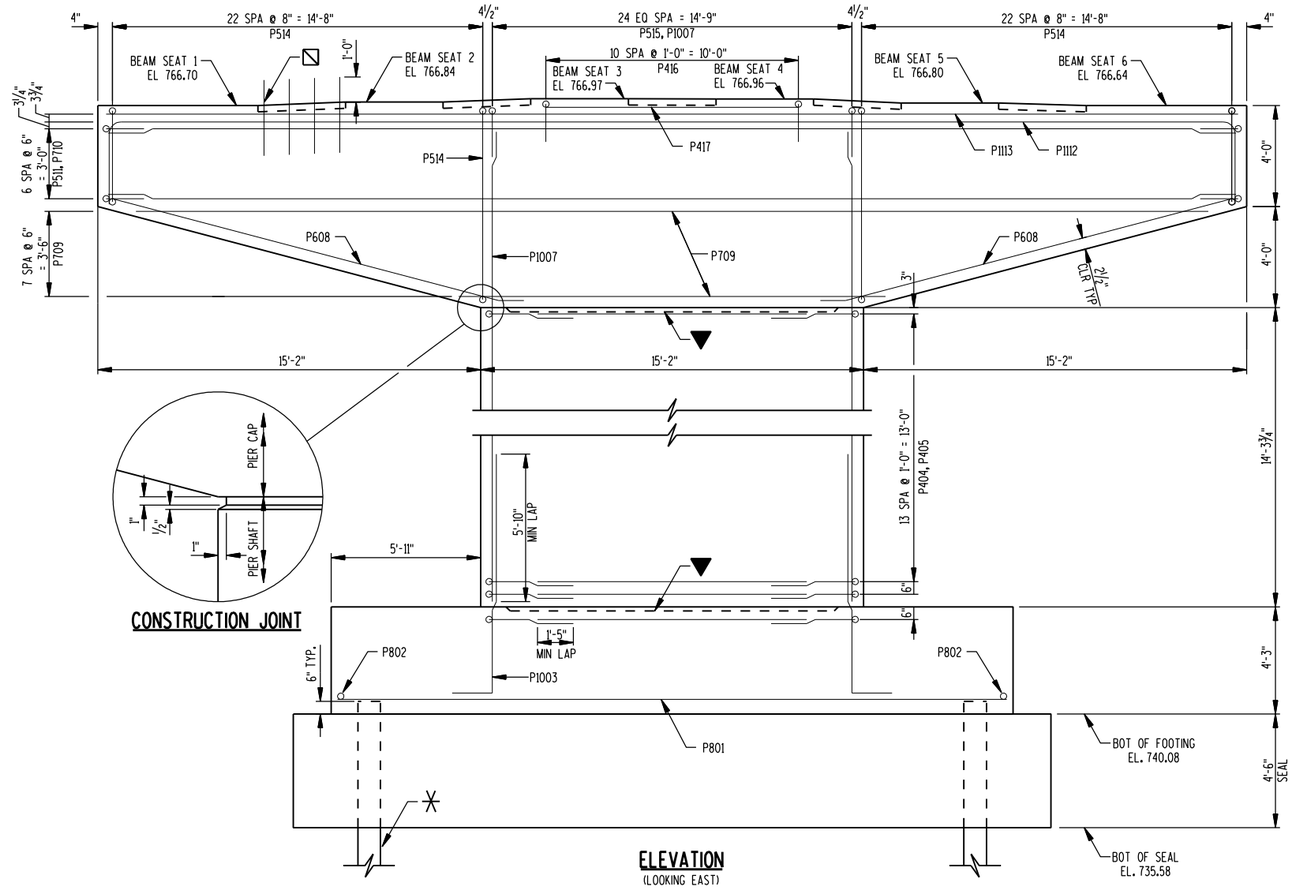
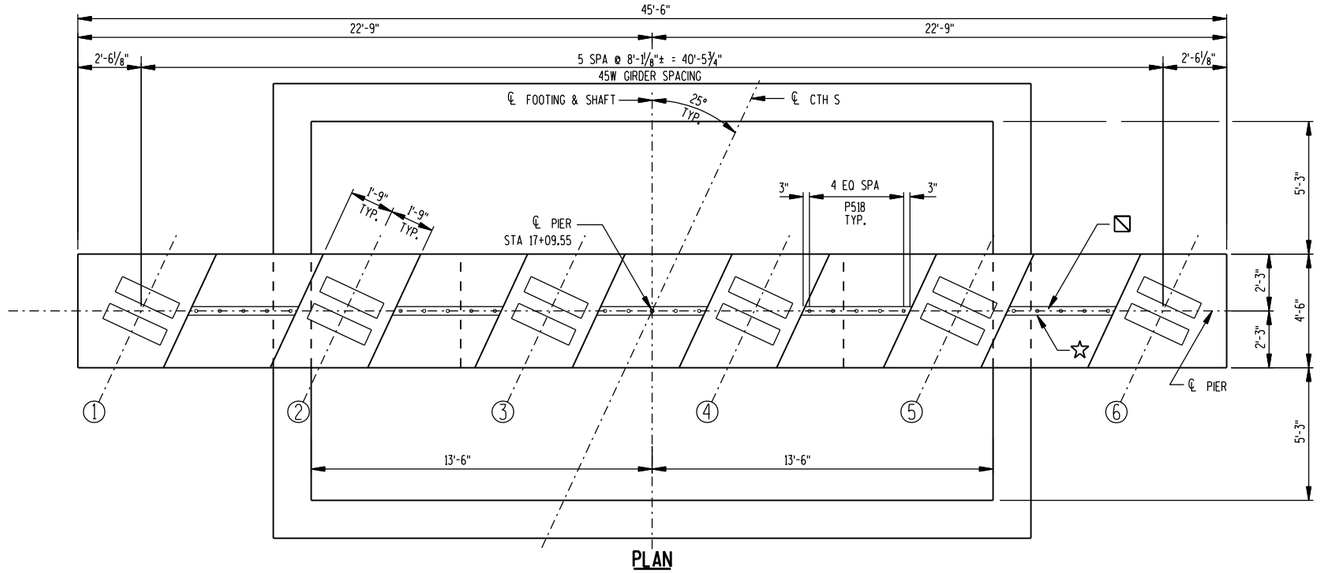
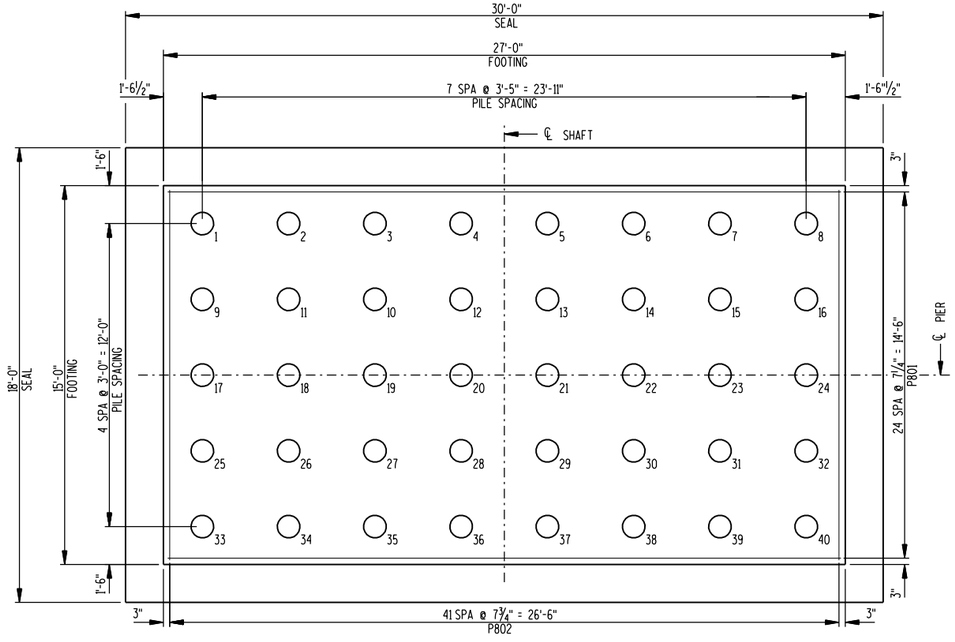


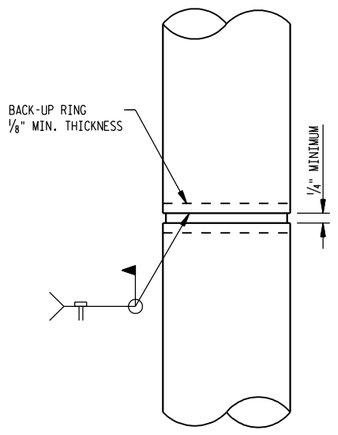
ELEVATION
(LOOKING EAST)



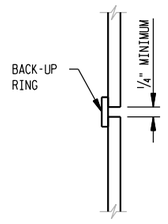
PLAN



FOOTING



CAST-IN-PLACE
PIPE PILE



CIP PILE WELD DETAIL

LEGEND

- ▼ KEYED CONSTRUCTION JOINT FORMED BY A BEVELED KEYWAY 4" DEEP x 1'-6" WIDE x 11'-2" LONG
- ⧅ P518 BARS BETWEEN BEAM SEATS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INTIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
- ✳ PIER 1 TO BE SUPPORTED ON 12¾ x 0.375-INCH CIP CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 152 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES FORMULA. ESTIMATED 85'-0" LONG.
- ☆ KEYED CONSTRUCTION JOINT FORMED BY A BEVELED KEYWAY 2" x 6" BETWEEN BEAM SEATS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-282

DRAWN BY ALB | PLANS CK'D. ETP

PIER 1

SHEET 8 OF 18

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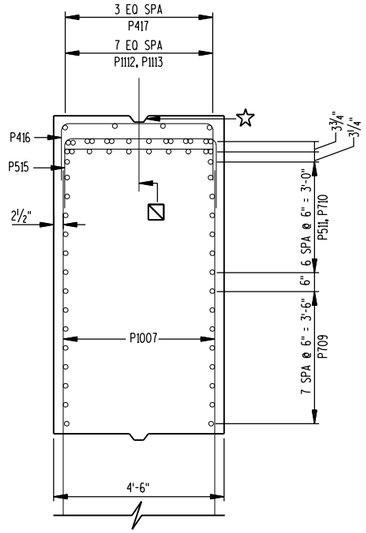
6098-04-71



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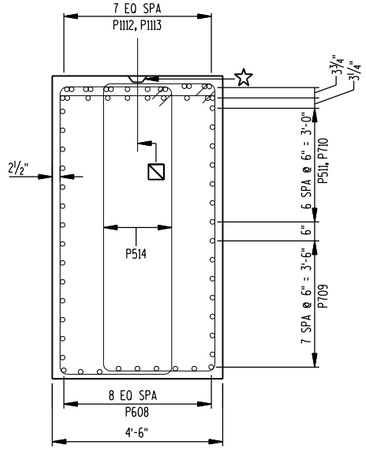

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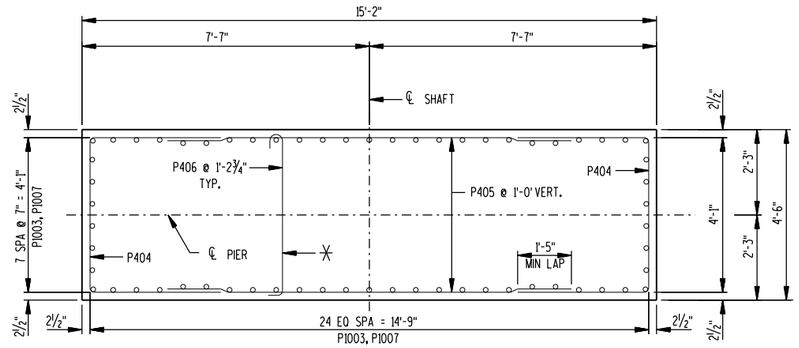

SECTION THRU SHAFT

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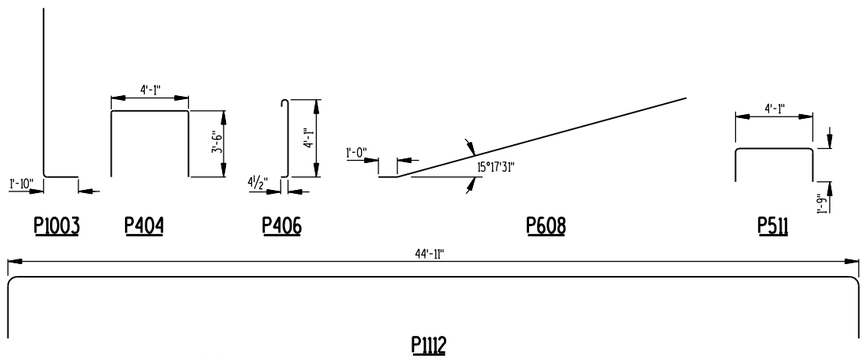

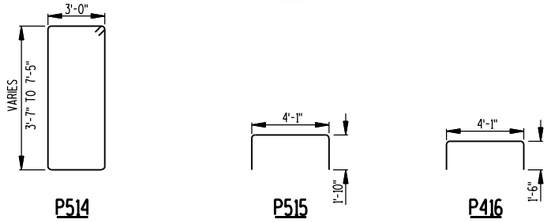

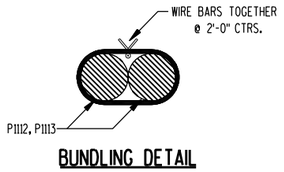

BUNDLING DETAIL

BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION	
NON-COATED BARS						TOTAL WEIGHT = 23,580 LBS
P801	25	26 - 6			FOOTING, BOTTOM	HORIZ.
P802	42	14 - 6			FOOTING, BOTTOM	HORIZ.
P1003	62	10 - 11	X		FOOTING, DOWEL	VERT.
P404	32	10 - 11	X		SHAFT, END	HORIZ.
P405	32	10 - 8			SHAFT, BOTH FACES	HORIZ.
P406	176	4 - 11	X		SHAFT, TIE	HORIZ.
P1007	62	21 - 3			SHAFT, ALL FACES	VERT.
P608	18	16 - 8	X		CAP, BOTH FACES	HORIZ.
P709	16	29 - 1		X	CAP, BOTH FACES	HORIZ.
P710	14	44 - 11			CAP, BOTH FACES	HORIZ.
P511	14	7 - 4	X		CAP, ENDS	HORIZ.
P1112	10	50 - 7	X		CAP, TOP	HORIZ.
P1113	14	41 - 0			CAP, TOP	HORIZ.
P514	92	17 - 9	X	X	CAP, STIRRUP	VERT.
P515	25	7 - 6	X		CAP, TOP	VERT.
P416	11	6 - 10	X		CAP, ADDITIONAL TOP	VERT.
P417	4	10 - 0			CAP, ADDITIONAL TOP	HORIZ.
P518	25	2 - 0			SLAB, DOWEL	VERT.

Bar Series

MARK	NO. REQ'D	LENGTH
P709	2 SERIES OF 8	15-4 to 42-10
P514	2 SERIES OF 23	13-9 to 21-9

LEGEND

▨ P518 BARS BETWEEN BEAM SEATS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INTIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

☆ KEYED CONSTRUCTION JOINT BY A BEVELED KEYWAY 2" x 6" BETWEEN BEAM SEATS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-282

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PIER 1 DETAILS

SHEET 9 OF 18

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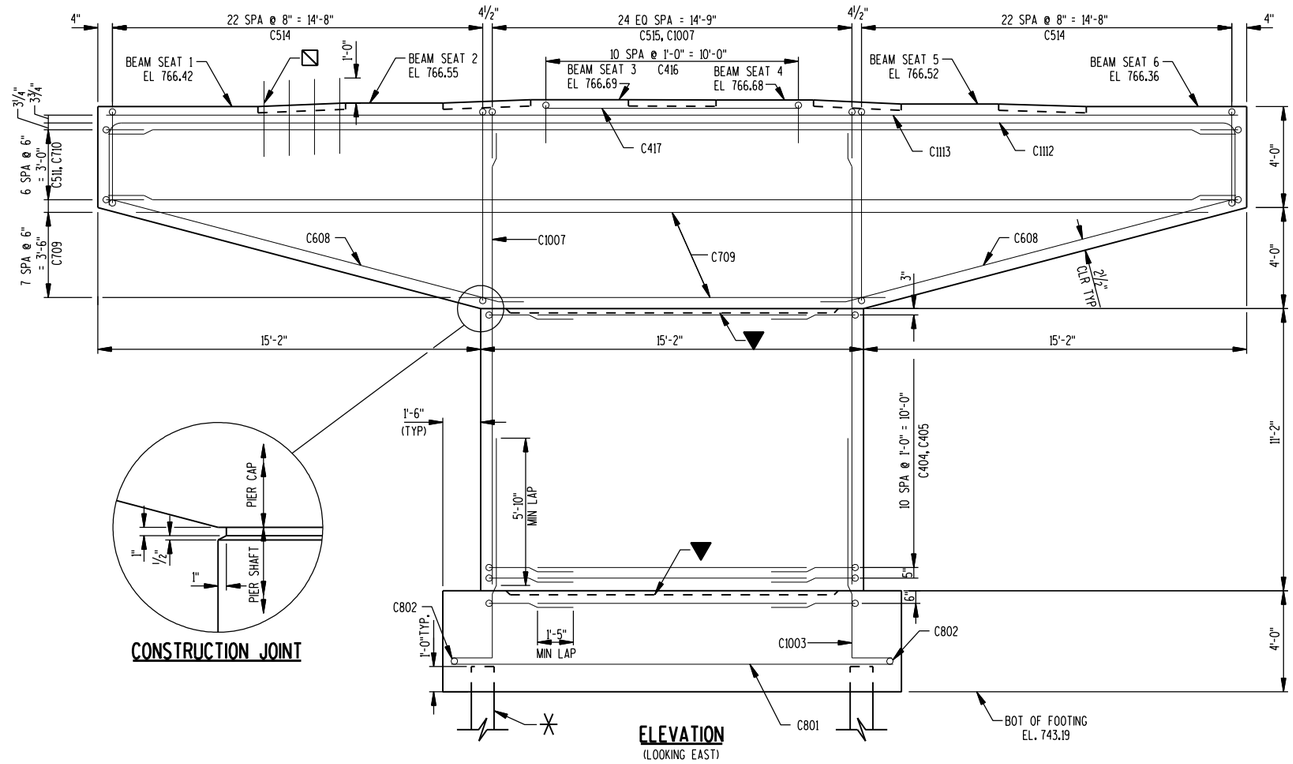

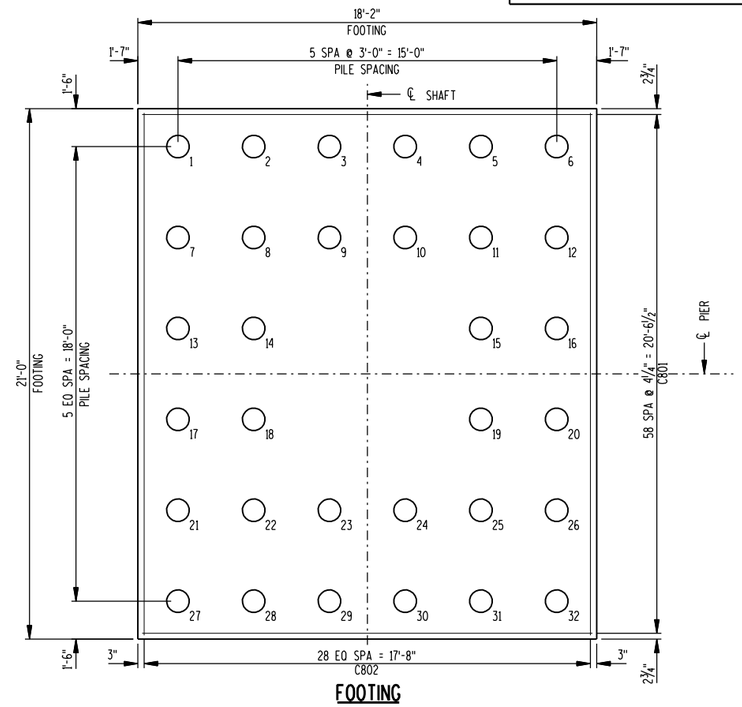

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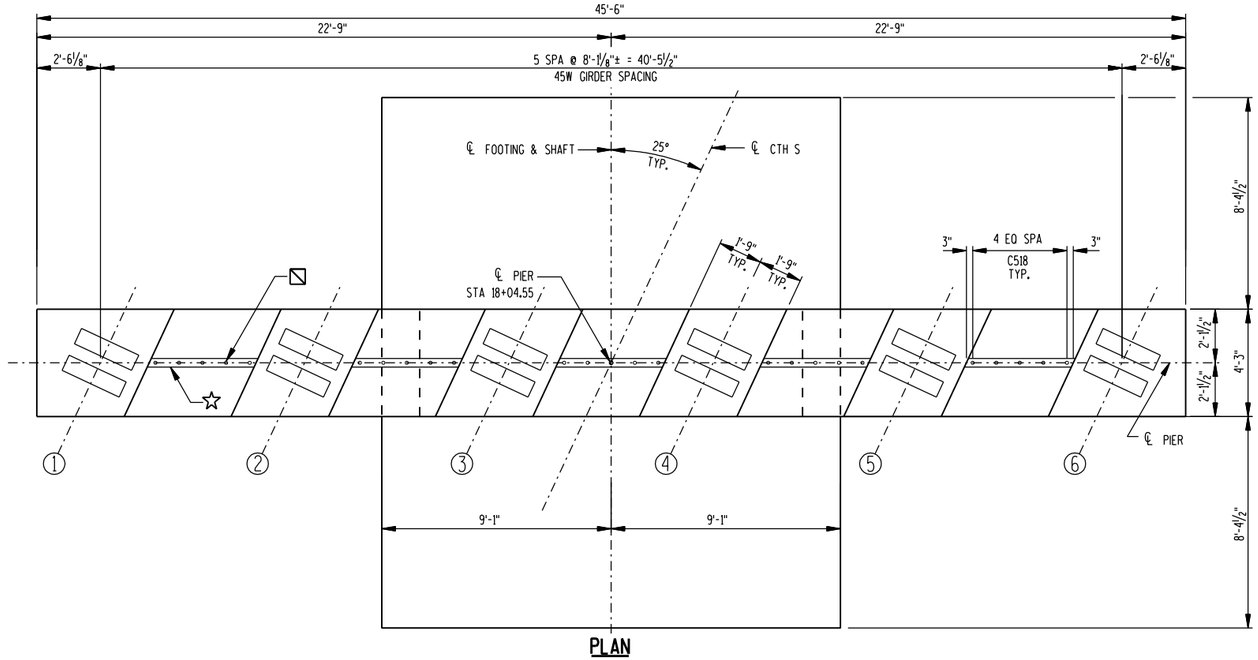

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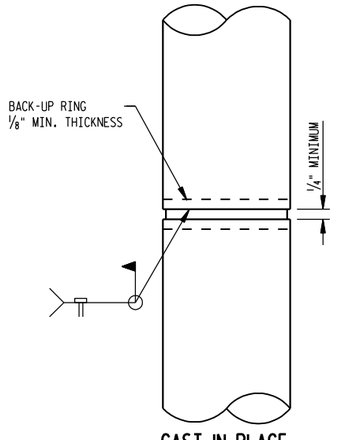
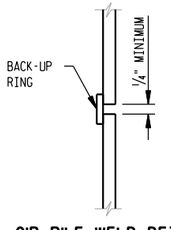


CAST-IN-PLACE PIPE PILE



CIP PILE WELD DETAIL

LEGEND

- ▼ KEYED CONSTRUCTION JOINT FORMED BY A BEVELED KEYWAY 4" DEEP x 1'-5" WIDE x 11'-2" LONG
- ▨ C518 BARS BETWEEN BEAM SEATS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INTIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
- ✳ PIER 2 TO BE SUPPORTED ON CIP 12¾x 0.375-INCH CIP CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 164 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES FORMULA. ESTIMATED 100'-0" LONG.
- ☆ KEYED CONSTRUCTION JOINT FORMED BY A BEVELED KEYWAY 2" x 6" BETWEEN BEAM SEATS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-282

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PIER 2

SHEET 10 OF 18

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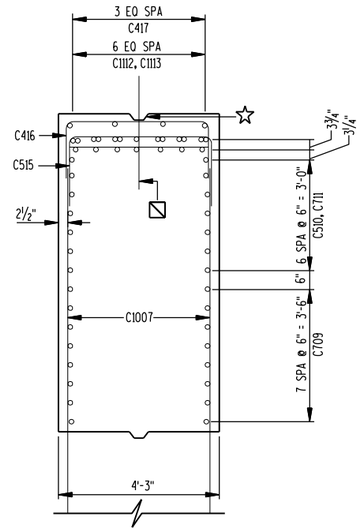

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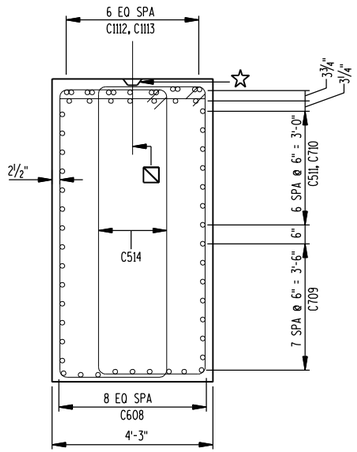

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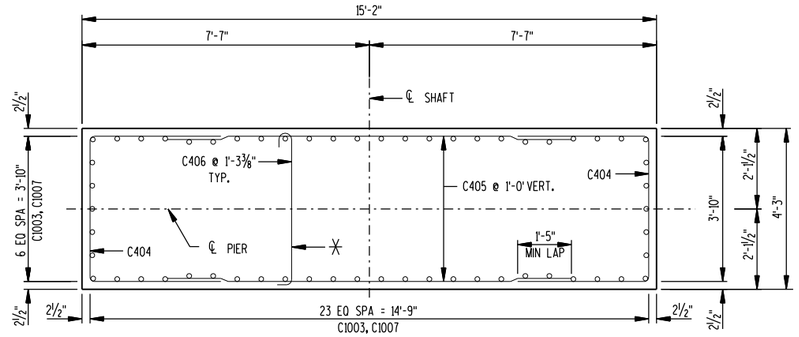

SECTION THRU SHAFT

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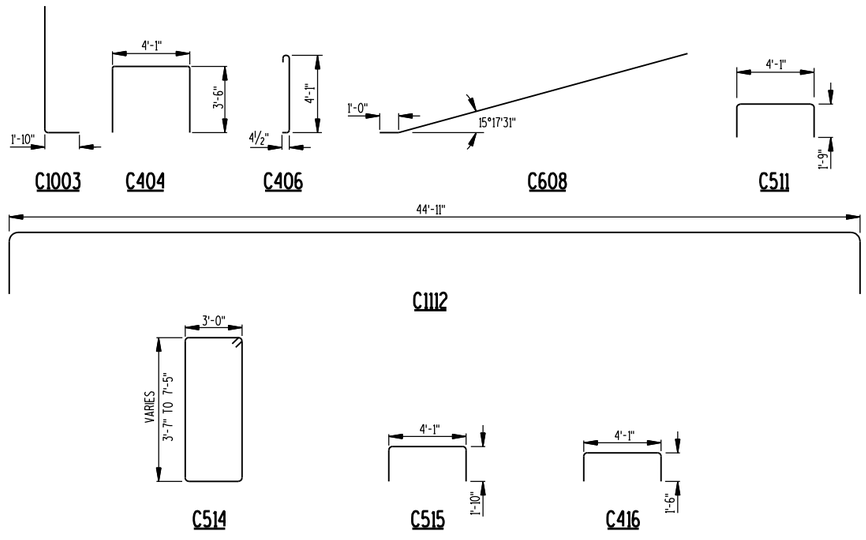

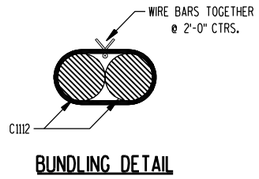

BUNDLING DETAIL

BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
NON-COATED BARS					TOTAL WEIGHT = 21,910 LBS
C801	59	17 - 8			FOOTING, BOTTOM HORIZ.
C802	29	20 - 6			FOOTING, BOTTOM HORIZ.
C1003	58	10 - 8	X		FOOTING, DOWEL VERT.
C404	26	10 - 8	X		SHAFT, END HORIZ.
C405	26	10 - 8			SHAFT, BOTH FACES HORIZ.
C406	143	4 - 8	X		SHAFT, TIE HORIZ.
C1007	58	18 - 2			SHAFT, BOTH FACES VERT.
C608	18	16 - 8	X		CAP, BOTH FACES HORIZ.
C709	16	29 - 1		X	CAP, BOTH FACES HORIZ.
C710	14	44 - 11			CAP, BOTH FACES HORIZ.
C511	14	7 - 1	X		CAP, ENDS HORIZ.
C1112	7	50 - 7	X		CAP, TOP HORIZ.
C1113	13	41 - 0			CAP, TOP HORIZ.
C514	92	17 - 9	X	X	CAP, STIRRUP VERT.
C515	25	7 - 3	X		CAP, TOP VERT.
C416	11	6 - 7	X		CAP, ADDITIONAL TOP VERT.
C417	4	10 - 0			CAP, ADDITIONAL TOP HORIZ.
C518	25	2 - 0			SLAB, DOWEL VERT.

Bar Series

MARK	NO. REQ'D	LENGTH
C709	2 SERIES OF 8	15-4 to 42-10
C514	2 SERIES OF 23	13-9 to 21-9

LEGEND

▨ C518 BARS BETWEEN BEAM SEATS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INTIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

☆ KEYED CONSTRUCTION JOINT FORMED BY A BEVELED KEYWAY 2" x 6" BETWEEN BEAM SEATS.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-282

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PIER 2 DETAILS

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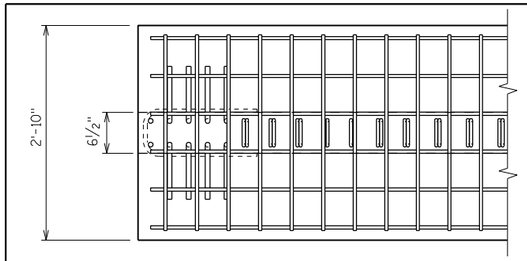
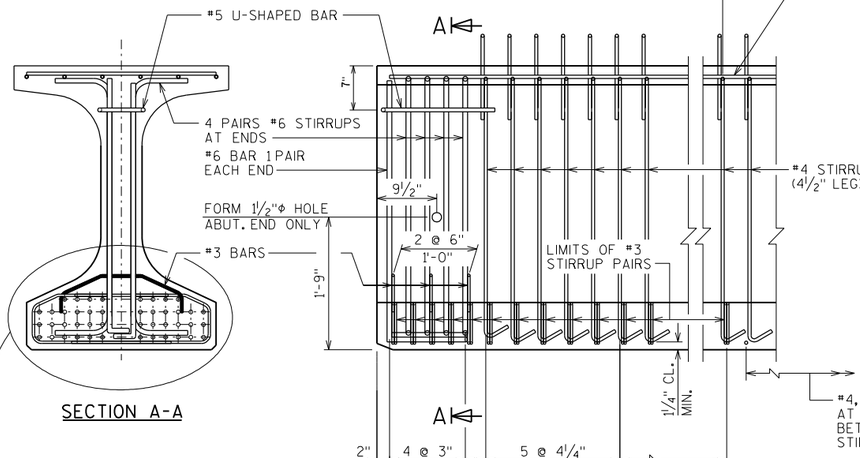


TOP FLANGE



BOTTOM FLANGE

SIDE VIEW & TYP. SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

Ⓑ 6 #4 BARS, FULL LENGTH, MIN. LAP = 2'-4"

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY FOR BONDING TO THE SLAB, EXCEPT THE OUTSIDE 8" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 8" OF THE TOP FLANGE.

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

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

PRESTRESSING STRANDS SHALL BE 0.6"ϕ - 7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 psi.

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

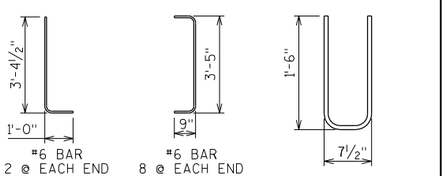
FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.

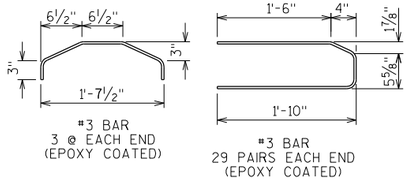
ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #4 STIRRUPS, 1 OPTION IS AVAILABLE:

USE ASTM A706, GRADE 60 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT CHIEF, (608)266-5161.





✳ 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 1/3 OF GIRDER	"P" MID 1/3 OF GIRDER	"P" END 1/3 OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳	("A"	"B" MIN.	"B" MAX.	"C")	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳
1	1-6	110'-4½"	0.74	1.43	1.98	2.32	2.44	2.32	1.97	1.43	0.74	7800	8"	7¼"	8"	0.6	34	6250	40	13.75	16.75	5		
2	1-6	94'-9"	0.39	0.76	1.06	1.24	1.31	1.24	1.06	0.77	0.39	7800	8"	7"	7½"	0.6	24	6250	41	13.25	16.25	4		
3	1-6	94'-9"	0.40	0.77	1.06	1.25	1.32	1.25	1.07	0.77	0.40	7800	7½"	7"	7½"	0.6	24	6250	41	13.25	16.25	4		

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STRUCTURE B-44-282

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45W" PRESTRESSED GIRDER DETAILS

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1-11
G45W

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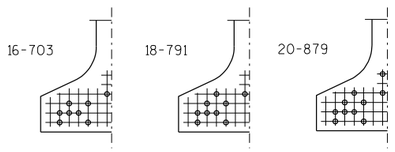
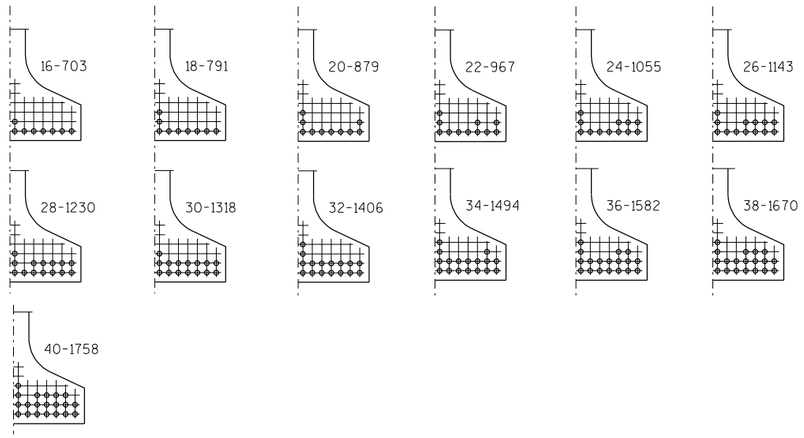


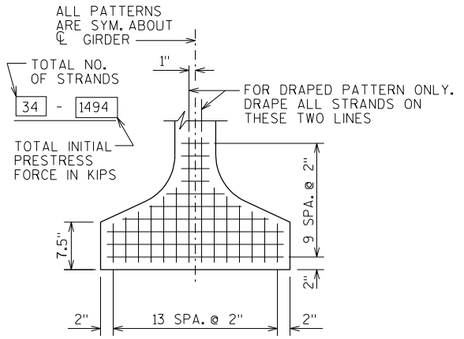
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS

0.6"ϕ STRANDS

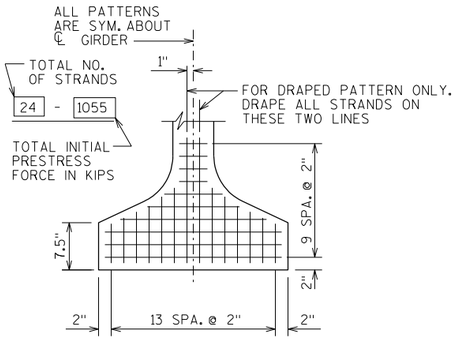


ARRANGEMENT AT ℄ SPAN - FOR GIRDERS WITH DRAPED STRANDS

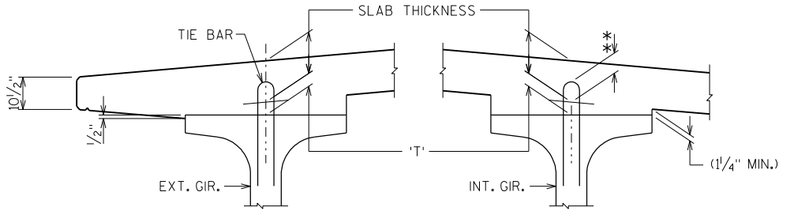
0.6"ϕ STRANDS



TYP. STRAND PATTERN - SPAN 1



TYP. STRAND PATTERN - SPANS 2&3



SLAB HAUNCH DETAIL

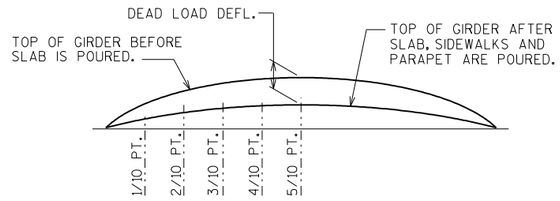
IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

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

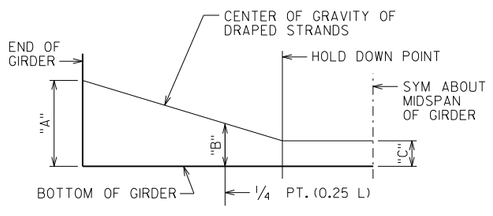
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

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

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



DEAD LOAD DEFLECTION DIAGRAM



DRAPED STRAND PROFILE

*THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN.

SPAN	CAMBER (IN.) *
1	2¾"
2	1½"
3	1½"

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS.
THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-282

DRAWN BY MES | PLANS CK'D. ETP

45W" PRESTRESSED GIRDER DETAILS

SHEET 13 OF 18

G45W
1-11

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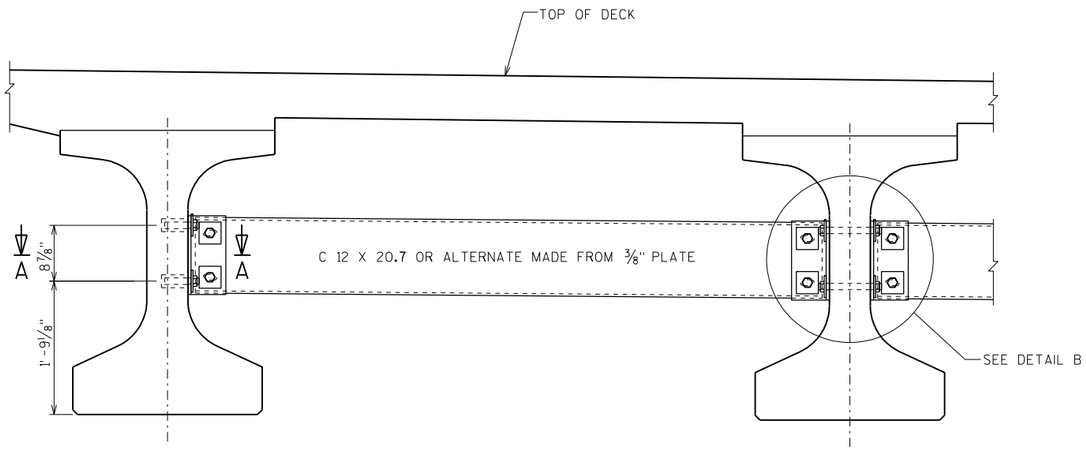


EXTERIOR GIRDER

INTERIOR GIRDER

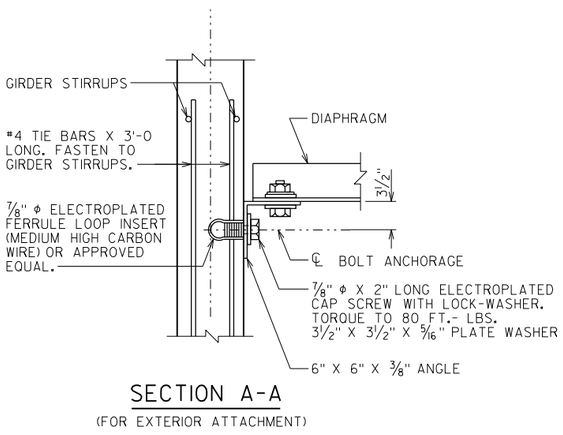
PART TRANSVERSE SECTION AT DIAPHRAGM

NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-44-282", EACH.

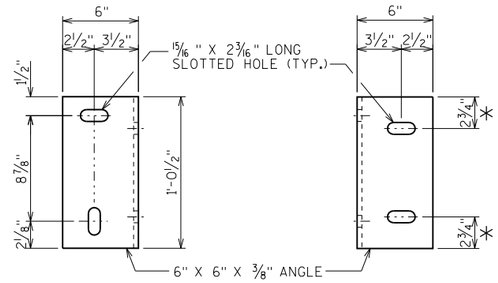
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT. ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.



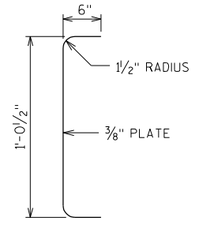
SECTION A-A

(FOR EXTERIOR ATTACHMENT)

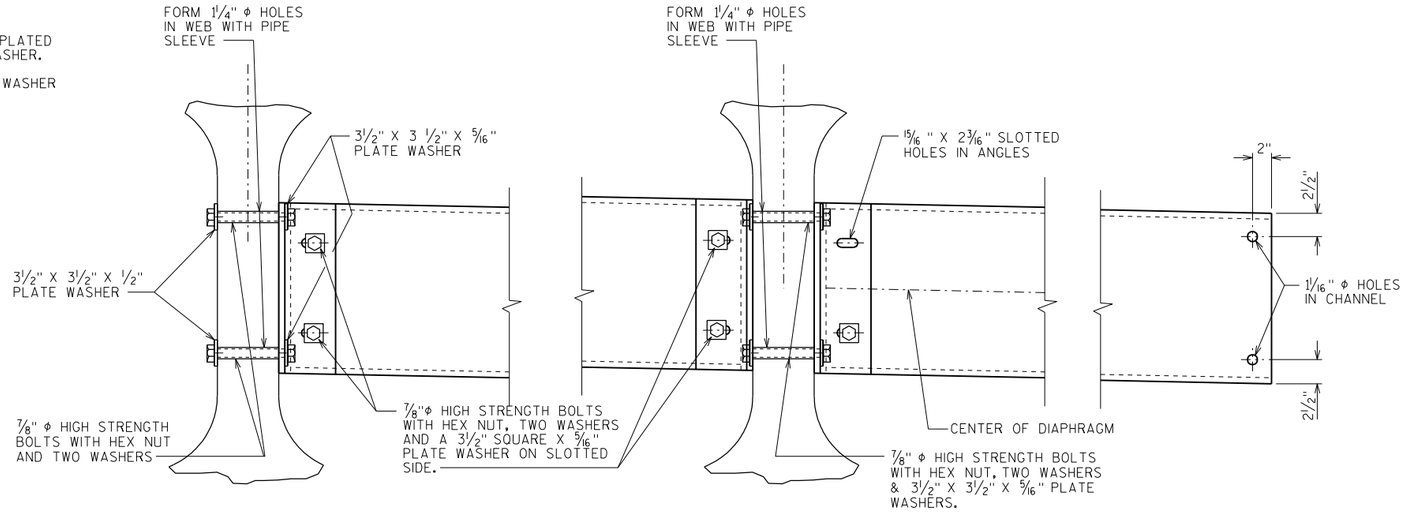


DIAPHRAGM SUPPORT

✳ 2½" FOR ALTERNATE PLATE DIAPHRAGM



SECTION THRU ALTERNATE DIAPHRAGM



(FOR STAGGERED DIAPHRAGM)

(FOR CONTINUOUS LINE OF DIAPHRAGMS)

DETAIL B

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-282

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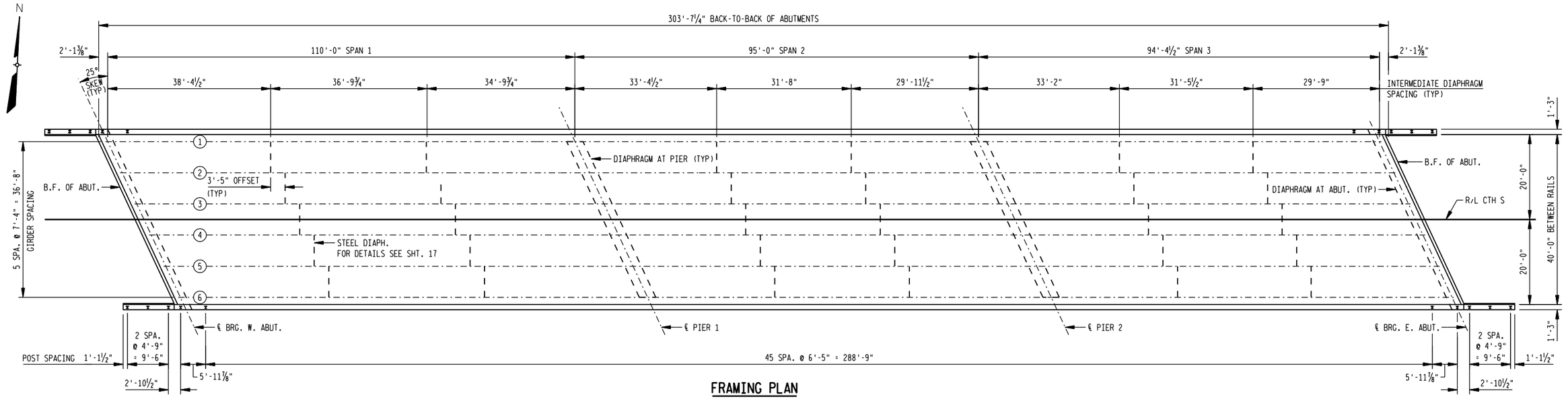
STEEL DIAPHRAGM

SHEET 14 OF 18

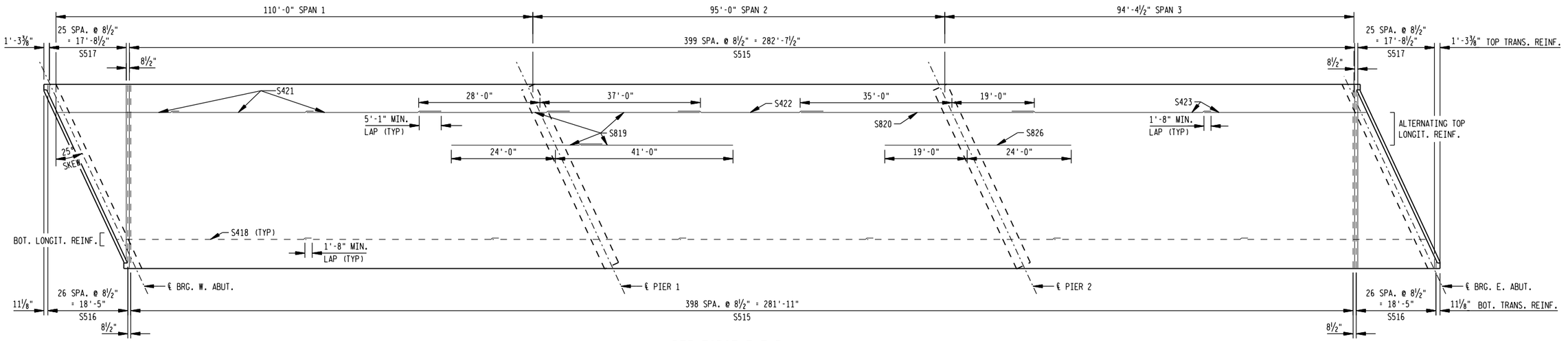
63

STATE PROJECT NUMBER

6098-04-71



FRAMING PLAN



REINFORCEMENT PLAN

NOTE:

SEE RAILING SHEET 20 FOR ADDITIONAL REINFORCEMENT REQUIRED AT RAIL POSTS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-282

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SUPERSTRUCTURE

SHEET 15 OF 18

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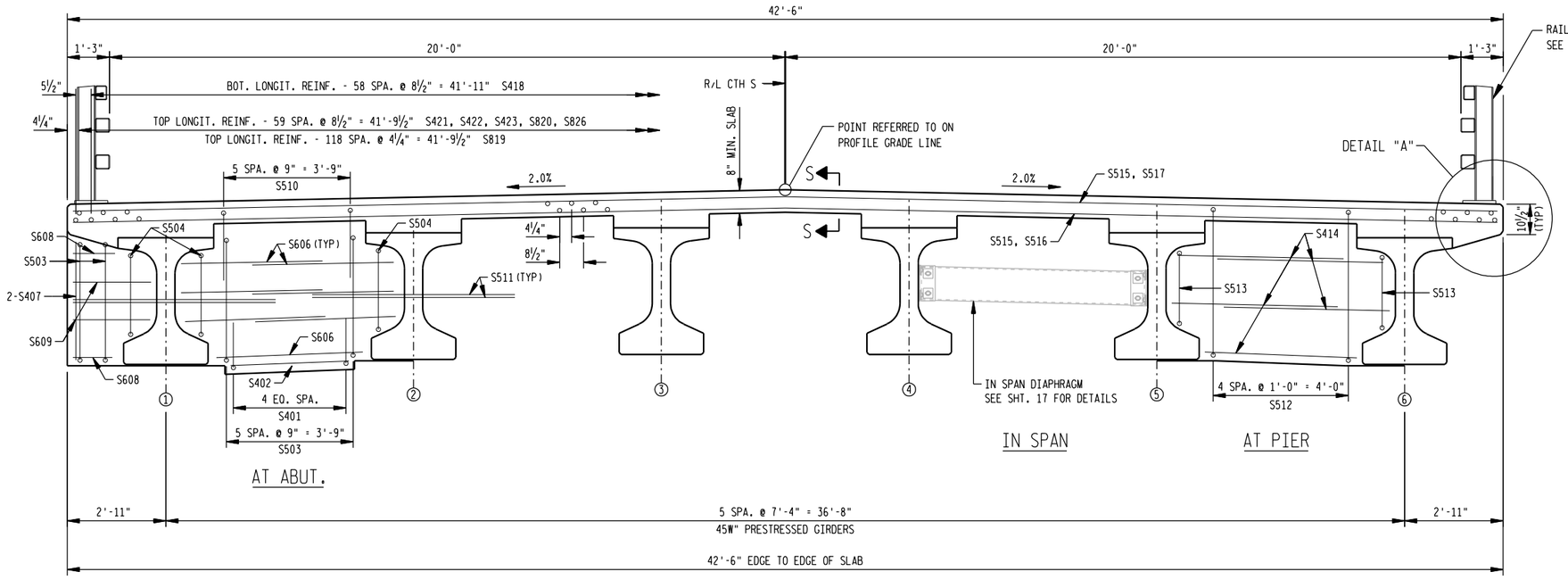
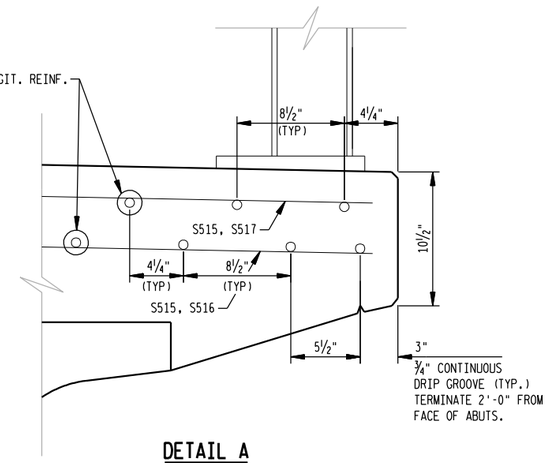
6098-04-71

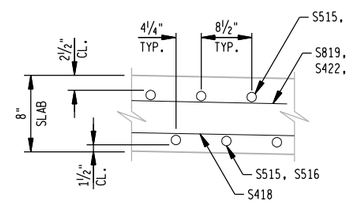


CROSS SECTION THRU ROADWAY

(LOOKING EAST)



DETAIL A



SECTION S-S

TOP OF DECK ELEVATIONS

	W. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER 1	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER 2	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	E. ABUT.
LT EDGE	771.81	771.77	771.73	771.69	771.66	771.62	771.58	771.54	771.50	771.46	771.42	771.39	771.36	771.32	771.29	771.26	771.22	771.19	771.16	771.13	771.09	771.06	771.02	770.99	770.96	770.92	770.89	770.86	770.83	770.79	770.76
GIR. 1	771.86	771.82	771.79	771.75	771.71	771.67	771.63	771.59	771.56	771.52	771.47	771.44	771.41	771.38	771.34	771.31	771.28	771.25	771.21	771.18	771.14	771.11	771.08	771.04	771.01	770.98	770.95	770.91	770.88	770.85	770.81
GIR. 2	772.00	771.96	771.92	771.88	771.84	771.81	771.77	771.73	771.69	771.65	771.61	771.58	771.54	771.51	771.48	771.45	771.41	771.38	771.35	771.31	771.28	771.24	771.21	771.18	771.15	771.11	771.08	771.05	771.01	770.98	770.95
GIR. 3	772.13	772.09	772.05	772.02	771.98	771.94	771.90	771.86	771.83	771.79	771.74	771.71	771.68	771.65	771.61	771.58	771.55	771.51	771.48	771.45	771.41	771.38	771.35	771.31	771.28	771.25	771.21	771.18	771.15	771.12	771.08
CROWN	772.20	772.16	772.12	772.08	772.05	772.01	771.97	771.93	771.89	771.85	771.81	771.78	771.75	771.71	771.68	771.65	771.61	771.58	771.55	771.52	771.48	771.45	771.41	771.38	771.35	771.32	771.28	771.25	771.22	771.18	771.15
GIR. 4	772.12	772.08	772.04	772.00	771.97	771.93	771.89	771.85	771.81	771.77	771.73	771.70	771.67	771.63	771.60	771.57	771.54	771.50	771.47	771.44	771.40	771.37	771.33	771.30	771.27	771.24	771.20	771.17	771.14	771.10	771.07
GIR. 5	771.96	771.92	771.88	771.85	771.81	771.77	771.73	771.69	771.65	771.62	771.57	771.54	771.51	771.48	771.44	771.41	771.38	771.34	771.31	771.28	771.24	771.21	771.18	771.14	771.11	771.08	771.04	771.01	770.98	770.95	770.91
GIR. 6	771.80	771.76	771.73	771.69	771.65	771.61	771.57	771.53	771.50	771.46	771.42	771.38	771.35	771.32	771.28	771.25	771.22	771.19	771.15	771.12	771.08	771.05	771.02	770.98	770.95	770.92	770.89	770.85	770.82	770.79	770.75
RT EDGE	771.74	771.70	771.66	771.62	771.59	771.55	771.51	771.47	771.43	771.39	771.35	771.32	771.29	771.25	771.22	771.19	771.16	771.12	771.09	771.06	771.02	770.99	770.95	770.92	770.89	770.86	770.82	770.79	770.76	770.72	770.69

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-282

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SUPERSTRUCTURE

SHEET 16 OF 18

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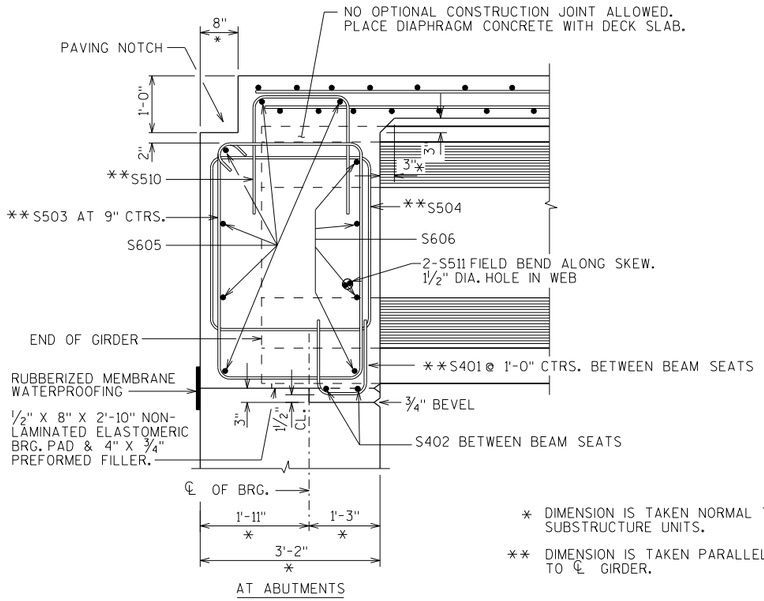
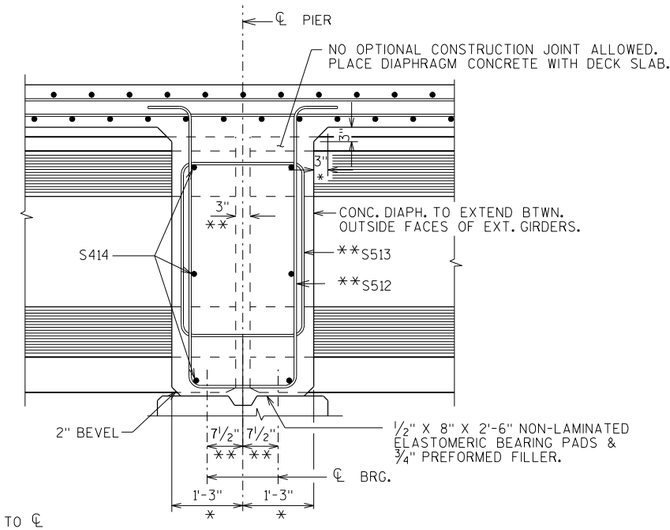


PART LONGIT. SECTION

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER.

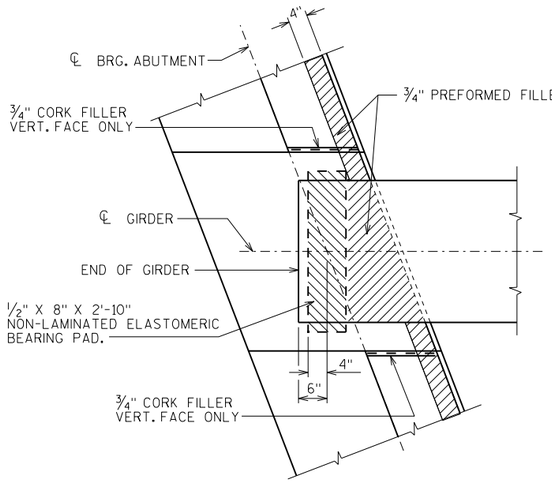


AT PIER DIAPHRAGM

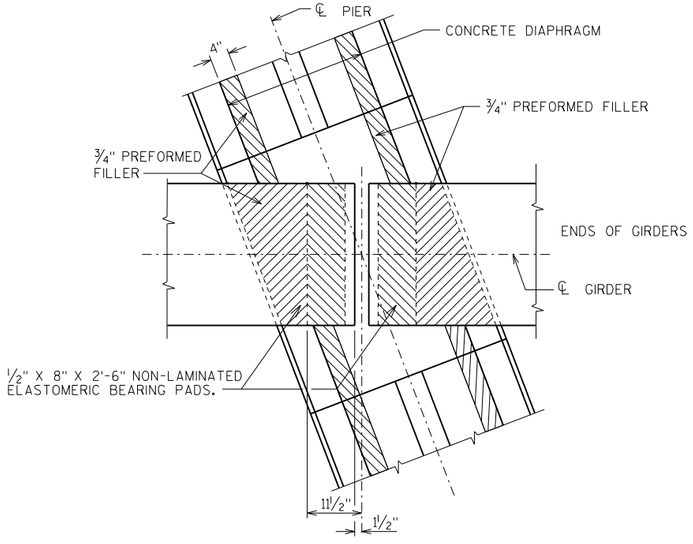
BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
ALL BAR STEEL REINFORCEMENT SHOWN IN THIS BILL SHALL BE EPOXY COATED.
▲ LENGTH SHOWN FOR BAR IS AN AVG. LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

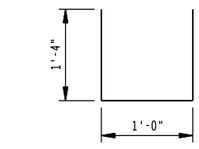
MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION	TOTAL WEIGHT = 107,710 LBS
S401	50	3 - 6	X		ABUT. DIAPH.	VERT.
S402	20	3 - 10			ABUT. DIAPH.	HORIZ.
S503	68	13 - 2	X		ABUT. DIAPH.	VERT.
S504	24	11 - 3	X		ABUT. DIAPH.	VERT.
S605	12	45 - 3			ABUT. DIAPH. - B.F. & SLAB	HORIZ.
S606	70	4 - 11			ABUT. DIAPH. - F.F.	HORIZ.
S407	8	3 - 8			ABUT. DIAPH. - ENDS	VERT.
S608	8	1 - 5			ABUT. DIAPH.	HORIZ.
S609	8	2 - 6			ABUT. DIAPH.	HORIZ.
S510	60	6 - 1	X		ABUT. DIAPH. & SLAB	VERT.
S511	24	6 - 0			ABUT. DIAPH.	HORIZ.
S512	50	11 - 10	X		PIER DIAPH.	VERT.
S513	20	9 - 3	X		PIER DIAPH.	VERT.
S414	100	4 - 11			PIER DIAPH.	HORIZ.
S515	799	42 - 2			SLAB - TOP & BOT.	TRANS.
S516	54	21 - 1		▲	SLAB - BOT.	TRANS.
S517	52	21 - 1		▲	SLAB - TOP	TRANS.
S418	427	44 - 6			SLAB - BOT.	LONGIT.
S819	238	35 - 1			SLAB - CONTINUITY - PIER 1	LONGIT.
S820	60	54 - 0			SLAB - CONTINUITY - PIER 2	LONGIT.
S421	180	30 - 6			SLAB - TOP - SPAN 1	LONGIT.
S422	60	33 - 2			SLAB - TOP - SPAN 2	LONGIT.
S423	120	41 - 8			SLAB - TOP - SPAN 3	LONGIT.
S624	384	6 - 0			SLAB - UNDER RAIL POSTS	LONGIT.
S625	192	12 - 0	X		SLAB - UNDER RAIL POSTS	TRANS.
S826	60	43 - 0			SLAB - CONTINUITY - PIER 2	LONGIT.



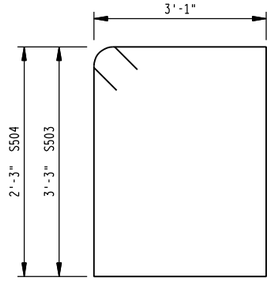
BEARING PAD DETAILS
(ABUTMENTS)



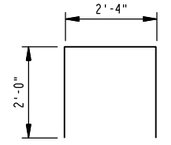
BEARING PAD DETAILS
(PIERS)



S401



S503, S504



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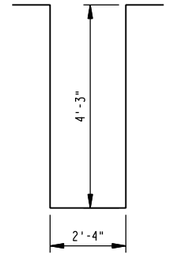

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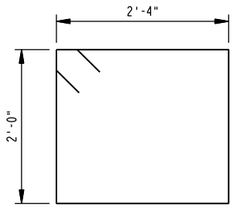

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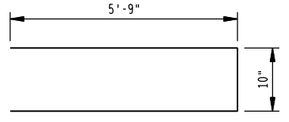

S625

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-282

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SUPERSTRUCTURE DETAILS

SHEET 17 OF 18

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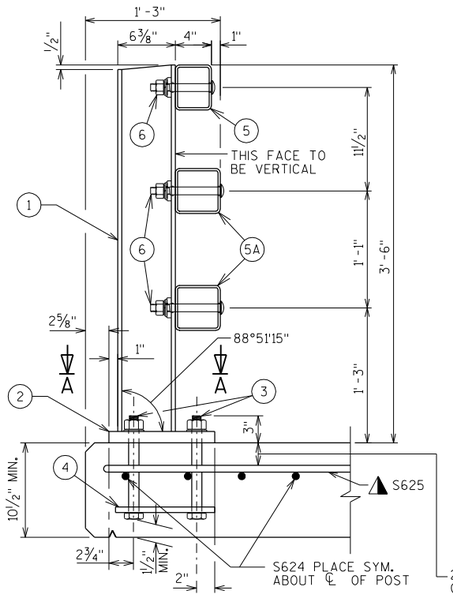
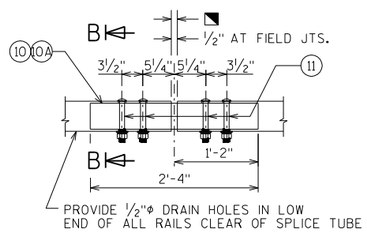
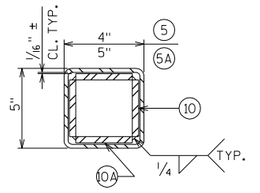


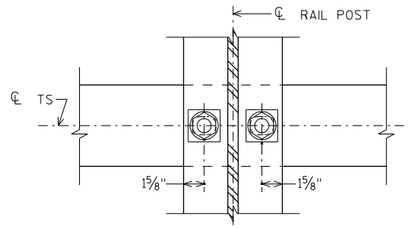
SECTION THRU RAILING ON DECK



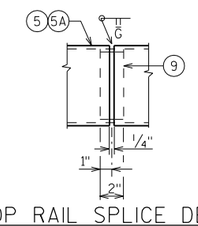
FIELD ERECTION JOINT DETAIL



SECTION B-B

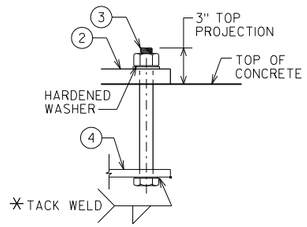


SECTION THRU POST WEB

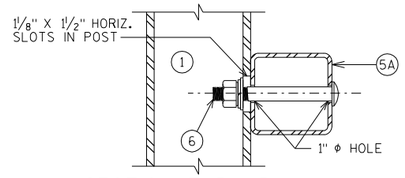


SHOP RAIL SPLICE DETAIL

LOCATION MUST BE SHOWN ON SHOP DRAWINGS



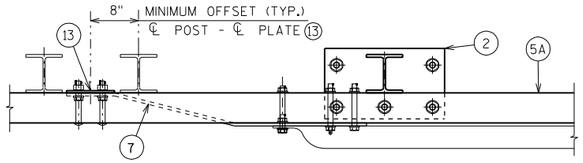
ANCHOR BOLTS



SECTION THRU RAIL

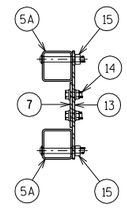
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS



TOP VIEW AT END POST

THRIE BEAM RAIL ATTACHMENT



SECTION C-C

LEGEND

(1) W6 x 25 WITH 1 1/8" X 1 1/2" 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 1 1/4" x 11 3/4" x 1'-8" WITH 1 5/16" X 1 5/8" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.

(3) ASTM A449 - 1 1/8" 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 10 3/4" 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) 5/8" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 13/16" 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) 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1 5/8" X 1 5/8" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)

(7) 1/2" THK. BACK-UP PLATE WITH 2 - 7/8" X 1 1/2" 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 7/8" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.

(9) SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".

(10) 3/8" X 3 5/8" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.

(10A) 3/8" X 2 5/8" X 2'-4" PLATE USED IN NO. 5, 3/8" X 3 5/8" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.

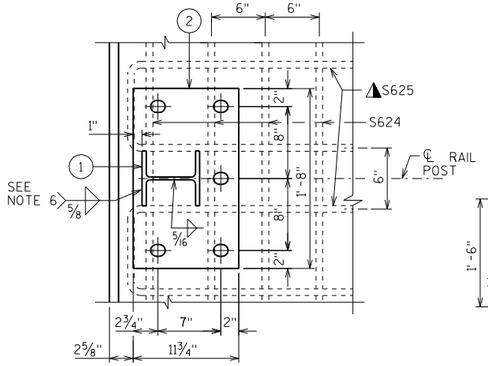
(11) 7/8" ϕ A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 15/16 " X 1 1/4" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 15/16 " X 2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.

(12) 7/8" DIA. X 1 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D).

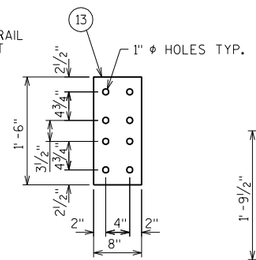
(13) 3/8" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.

(14) 7/8" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).

(15) 1" ϕ HOLES IN TUBES NO. 5A FOR 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

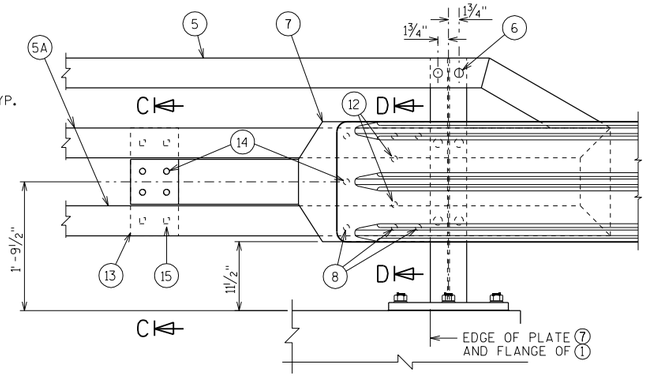


SECTION A-A



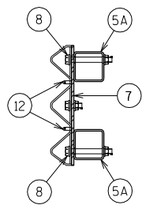
ANCHOR PLATE

AT BEAM GUARD ATTACHMENT



DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT



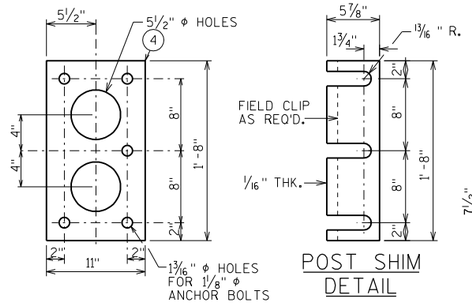
SECTION D-D

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-44-282" 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 1/8 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 SSPC 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.
11. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).
12. PLACE FIRST BOTTOM LONGITUDINAL BAR CLEAR OF DRIP GROOVE.

▲ TIE TO TOP MAT OF STEEL.

✳ FOR ANCHOR BOLTS IN WINGS, TACK WELD MAY BE USED IN FIELD AFTER ANCHOR PLATE IS IN POSITION IF REQ'D. FOR CONSTRUCTIBILITY.

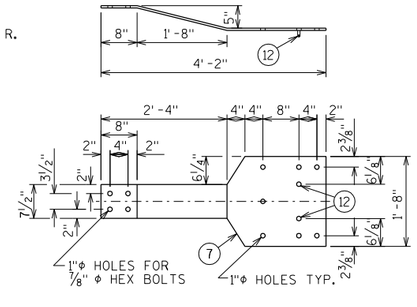
◥ RDWY. OPENING OR 2 1/2" MIN. FOR STRIP SEAL EXP. JOINT & 1/2" OPENING FOR A1 ABUTMENT.



ANCHOR PLATE

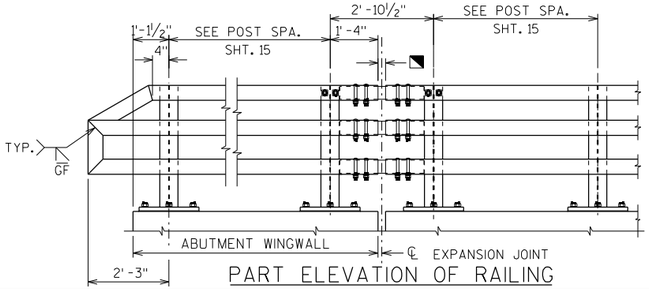
AT RAIL TO DECK CONNECTION

POST SHIM DETAIL



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-282

DRAWN BY MES | PLANS CK'D. ETP

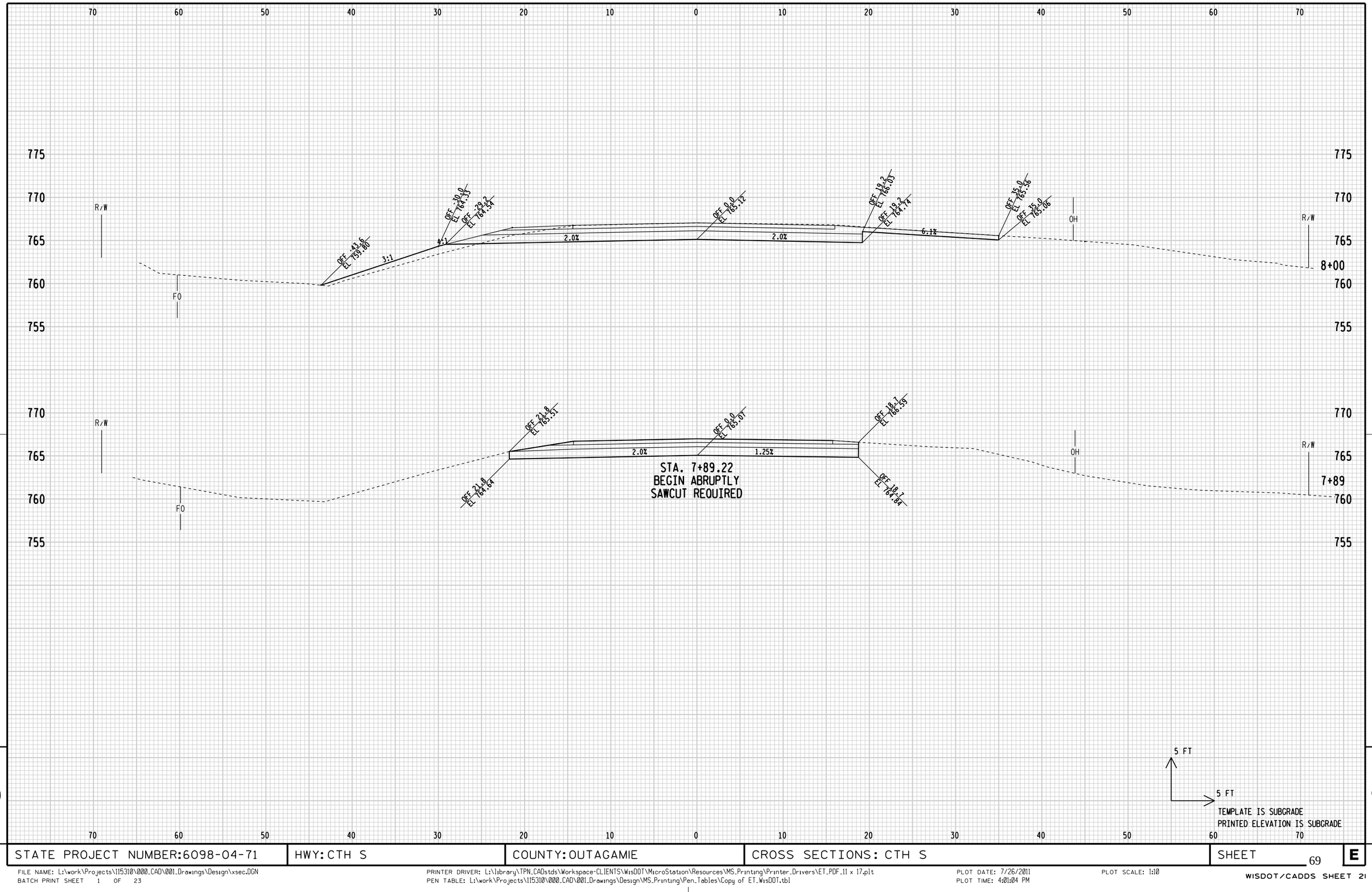
TUBULAR STEEL RAILING TYPE M

SHEET 18 OF 18

STATION	Real Station	Distance	AREA (SF) Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Incremental Vol (CY) (Unadjusted) Cut Note 1	Salvaged/Unusable Pavement Material Note 2	Fill Note 3	Marsh Exc	Rock Exc	EBS	Cumulative Vol (CY) Cut 1.00 Note 1	Expanded Fill 1.25	Expanded Marsh Backfill 1.50 Note 4	Expanded Rock 1.10	Expanded EBS Backfill 1.30 Note 5	Reduced Marsh in Fill 0.60 Note 6	Reduced EBS In Fill 0.80 Note 7	Mass Ordinate Note 8
7+89.22	789		73.51	15.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8+00.00	800	11	84.63	15.00	10.25	0	0	0	32	6	2	0	0	0	32	3	0	0	0	0	0	23
8+10.53	811	11	84.31	15.00	10.68	0	0	0	34	6	4	0	0	0	67	8	0	0	0	0	0	46
8+50.00	850	39	87.86	15.00	21.73	0	0	0	124	22	23	0	0	0	191	37	0	0	0	0	0	120
9+00.00	900	50	81.52	15.00	3.53	0	0	0	157	28	23	0	0	0	348	66	0	0	0	0	0	220
9+32.42	932	32	59.57	15.00	72.16	0	0	0	84	18	45	0	0	0	431	123	0	0	0	0	0	229
9+44.52	945	13	53.83	15.00	88.29	0	0	0	27	7	39	0	0	0	459	171	0	0	0	0	0	201
9+50.00	950	5	49.77	15.00	90.35	0	0	0	10	3	17	0	0	0	468	191	0	0	0	0	0	187
9+63.72	964	14	35.50	16.00	91.33	0	0	0	22	8	47	0	0	0	490	250	0	0	0	0	0	143
9+82.38	982	18	34.13	16.00	80.76	0	0	0	23	11	57	0	0	0	514	322	0	0	0	0	0	83
10+00.00	1000	18	29.33	16.00	117.56	0	0	0	21	11	66	0	0	0	535	405	0	0	0	0	0	11
10+13.68	1014	14	24.00	16.00	144.07	0	0	0	14	8	68	0	0	0	549	489	0	0	0	0	0	-68
10+50.00	1050	36	12.27	16.00	232.18	0	0	0	24	21	251	0	0	0	573	803	0	0	0	0	0	-379
11+00.00	1100	50	16.65	16.00	275.68	0	0	0	27	30	470	0	0	0	600	1391	0	0	0	0	0	-969
11+28.00	1128	28	0.33	16.00	228.98	0	0	0	9	17	262	0	0	0	608	1718	0	0	0	0	0	-1304
11+50.00	1150	22	19.05	16.00	253.08	0	0	0	8	13	196	0	0	0	616	1963	0	0	0	0	0	-1555
12+00.00	1200	50	8.83	16.00	273.58	0	0	0	26	30	488	0	0	0	642	2573	0	0	0	0	0	-2168
12+38.68	1239	39	13.41	16.00	269.26	0	0	0	16	23	392	0	0	0	658	3063	0	0	0	0	0	-2665
12+50.00	1250	11	10.05	16.00	285.28	0	0	0	5	7	113	0	0	0	663	3204	0	0	0	0	0	-2808
12+88.63	1289	39	9.40	16.00	403.94	0	0	0	14	23	498	0	0	0	677	3826	0	0	0	0	0	-3440
13+00.00	1300	11	12.23	16.00	456.88	0	0	0	4	7	175	0	0	0	681	4046	0	0	0	0	0	-3661
13+26.66	1327	27	9.30	16.00	291.89	0	0	0	11	16	374	0	0	0	692	4514	0	0	0	0	0	-4134
13+50.00	1350	23	0.00	16.00	269.04	0	0	0	4	14	239	0	0	0	696	4812	0	0	0	0	0	-4442
13+76.62	1377	27	0.00	16.00	272.72	0	0	0	0	16	271	0	0	0	696	5151	0	0	0	0	0	-4797
14+00.00	1400	23	0.00	16.00	279.95	0	0	0	0	14	235	0	0	0	696	5445	0	0	0	0	0	-5105
14+50.00	1450	50	0.00	16.00	274.44	0	0	0	0	30	513	0	0	0	696	6087	0	0	0	0	0	-5776
15+00.00	1500	50	0.00	16.00	275.44	0	0	0	0	30	509	0	0	0	696	6723	0	0	0	0	0	-6442
15+50.00	1550	50	0.00	16.00	275.09	0	0	0	0	30	510	0	0	0	696	7360	0	0	0	0	0	-7109
15+88.00	1588	138	0.00	16.00	265.02	0	0	0	0	82	1380	0	0	0	696	9086	0	0	0	0	0	-8910
					West End Sub-Totals				695	525	7260	0	0	0								

STATION	Real Station	Distance	AREA (SF) Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Incremental Vol (CY) (Unadjusted) Cut Note 1	Salvaged/Unusable Pavement Material Note 2	Fill Note 3	Marsh Exc	Rock Exc	EBS	Cumulative Vol (CY) Cut 1.00 Note 1	Expanded Fill 1.25	Expanded Marsh Backfill 1.50 Note 4	Expanded Rock 1.10	Expanded EBS Backfill 1.30 Note 5	Reduced Marsh in Fill 0.60 Note 6	Reduced EBS In Fill 0.80 Note 7	Mass Ordinate Note 8
19+10.00	1910		0.00	16.00	171.86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19+50.00	1950	40	0.00	16.00	200.62	0	0	0	0	24	276	0	0	0	0	345	0	0	0	0	0	-369
20+00.00	2000	50	0.00	16.00	164.68	0	0	0	0	30	338	0	0	0	0	768	0	0	0	0	0	-821
20+50.00	2050	50	2.19	16.00	165.10	0	0	0	2	30	305	0	0	0	2	1149	0	0	0	0	0	-1230
20+59.41	2059	9	3.00	16.00	152.46	0	0	0	1	5	53	0	0	0	3	1216	0	0	0	0	0	-1301
20+78.54	2079	20	5.10	16.00	142.23	0	0	0	3	12	109	0	0	0	6	1352	0	0	0	0	0	-1446
21+00.00	2100	21	8.54	16.00	171.53	0	0	0	5	12	122	0	0	0	11	1504	0	0	0	0	0	-1606
21+09.38	2109	9	10.74	15.00	186.06	0	0	0	3	5	60	0	0	0	14	1579	0	0	0	0	0	-1682
21+28.50	2129	20	15.68	15.00	171.18	0	0	0	10	11	132	0	0	0	24	1744	0	0	0	0	0	-1849
21+50.00	2150	21	20.52	15.00	131.25	0	0	0	14	12	118	0	0	0	38	1891	0	0	0	0	0	-1994
22+00.00	2200	50	40.99	15.00	116.63	0	0	0	57	28	230	0	0	0	95	2178	0	0	0	0	0	-2251
22+50.00	2250	50	67.19	15.00	50.33	0	0	0	100	28	155	0	0	0	195	2372	0	0	0	0	0	-2372
23+00.00	2300	50	79.24	15.00	0.00	0	0	0	136	28	47	0	0	0	331	2430	0	0	0	0	0	-2320
					East End Sub-Totals				330	220	1940	0	0	0								

STATION	Real Station	Distance	AREA (SF) Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Incremental Vol (CY) (Unadjusted) Cut Note 1	Salvaged/Unusable Pavement Material Note 2	Fill Note 3	Marsh Exc	Rock Exc	EBS	Cumulative Vol (CY) Cut 1.00 Note 1	Expanded Fill 1.25	Expanded Marsh Backfill 1.50 Note 4	Expanded Rock 1.10	Expanded EBS Backfill 1.30 Note 5	Reduced Marsh in Fill 0.60 Note 6	Reduced EBS In Fill 0.80 Note 7	Mass Ordinate Note 8
0+00.00	0		0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0+25.00	25	25	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0+50.00	50	25	0.00	0.00	185.82	0	0	0	0	0	86	0	0	0	0	108	0	0	0	0	0	-108
0+75.00	75	25	0.00	0.00	79.08	0	0	0	0	0	123	0	0	0	0	261	0	0	0	0	0	-261
0+85.48	85	10	0.00	0.00	36.63	0	0	0	0	0	21	0	0	0	0	288	0	0	0	0	0	-288
1+00.00	100	15	0.00	0.00	12.33	0	0	0	0	0	14	0	0	0	0	305	0	0	0	0	0	-305
1+18.03	118	18	6.50	0.00	0.00	0	0	0	2	0	4	0	0	0	2	310	0	0	0	0	0	-310
					East End Sub-Totals				2	0	245	0	0	0								



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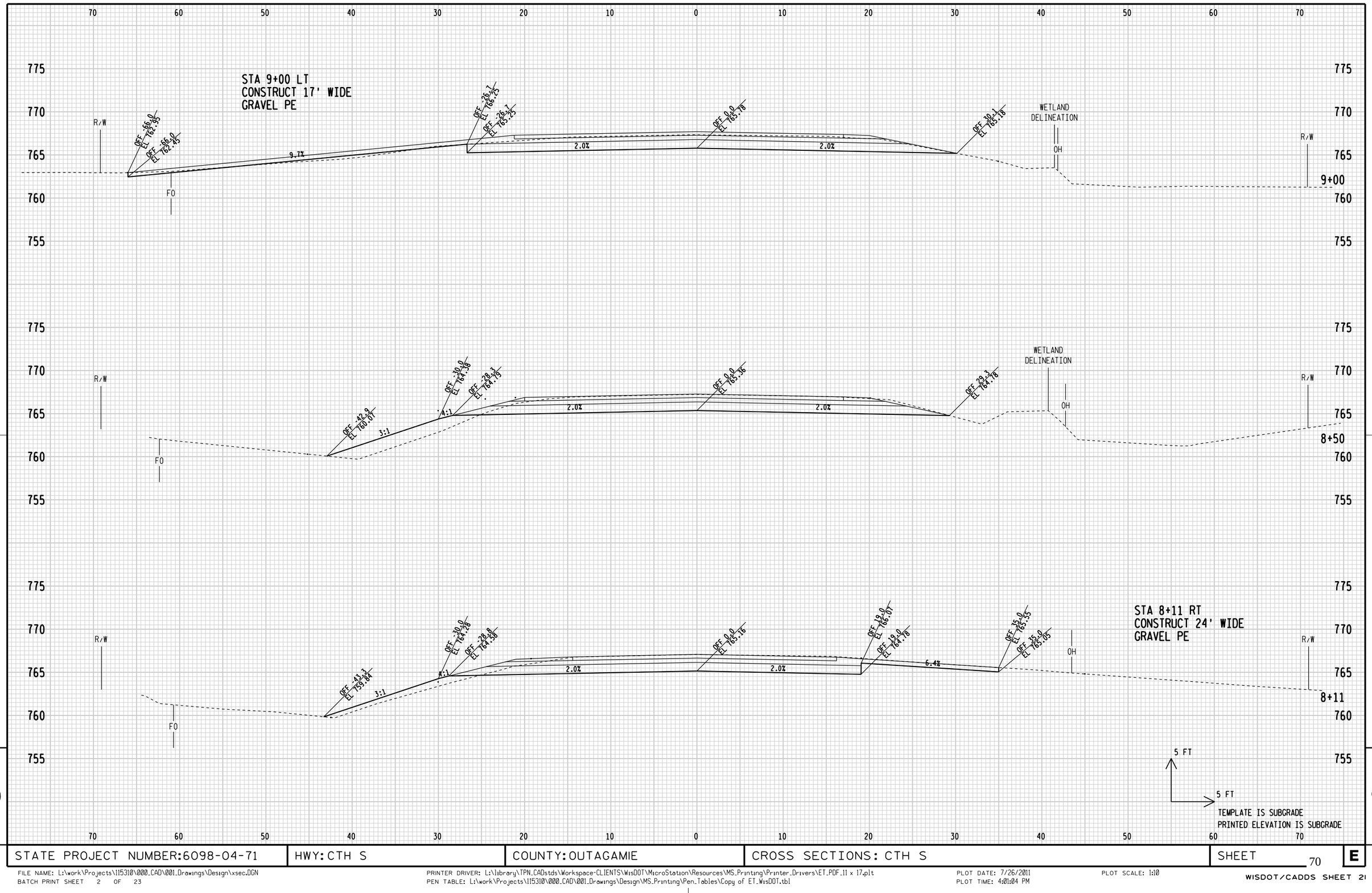

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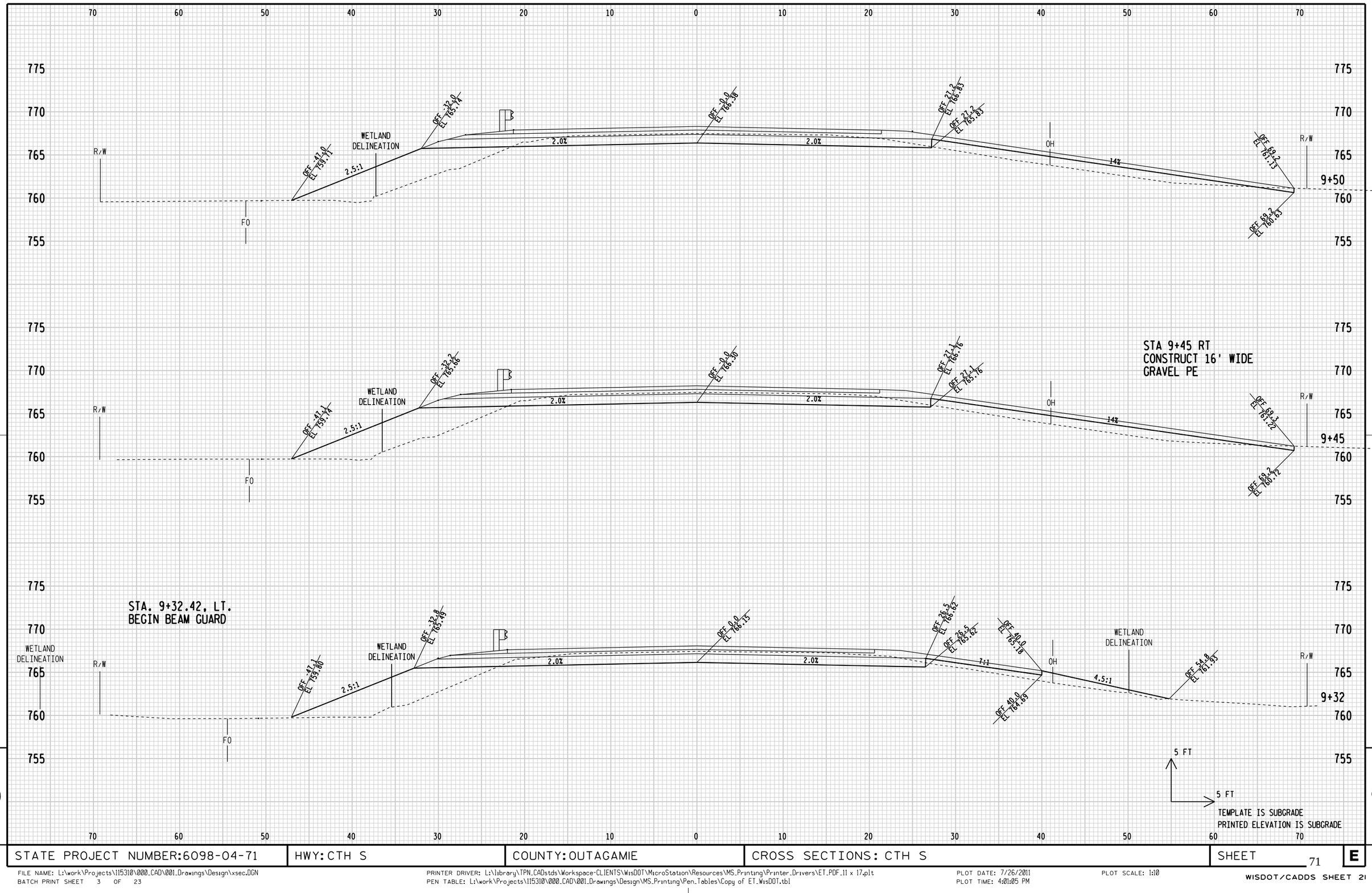

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STATE PROJECT NUMBER:6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH S	SHEET	E

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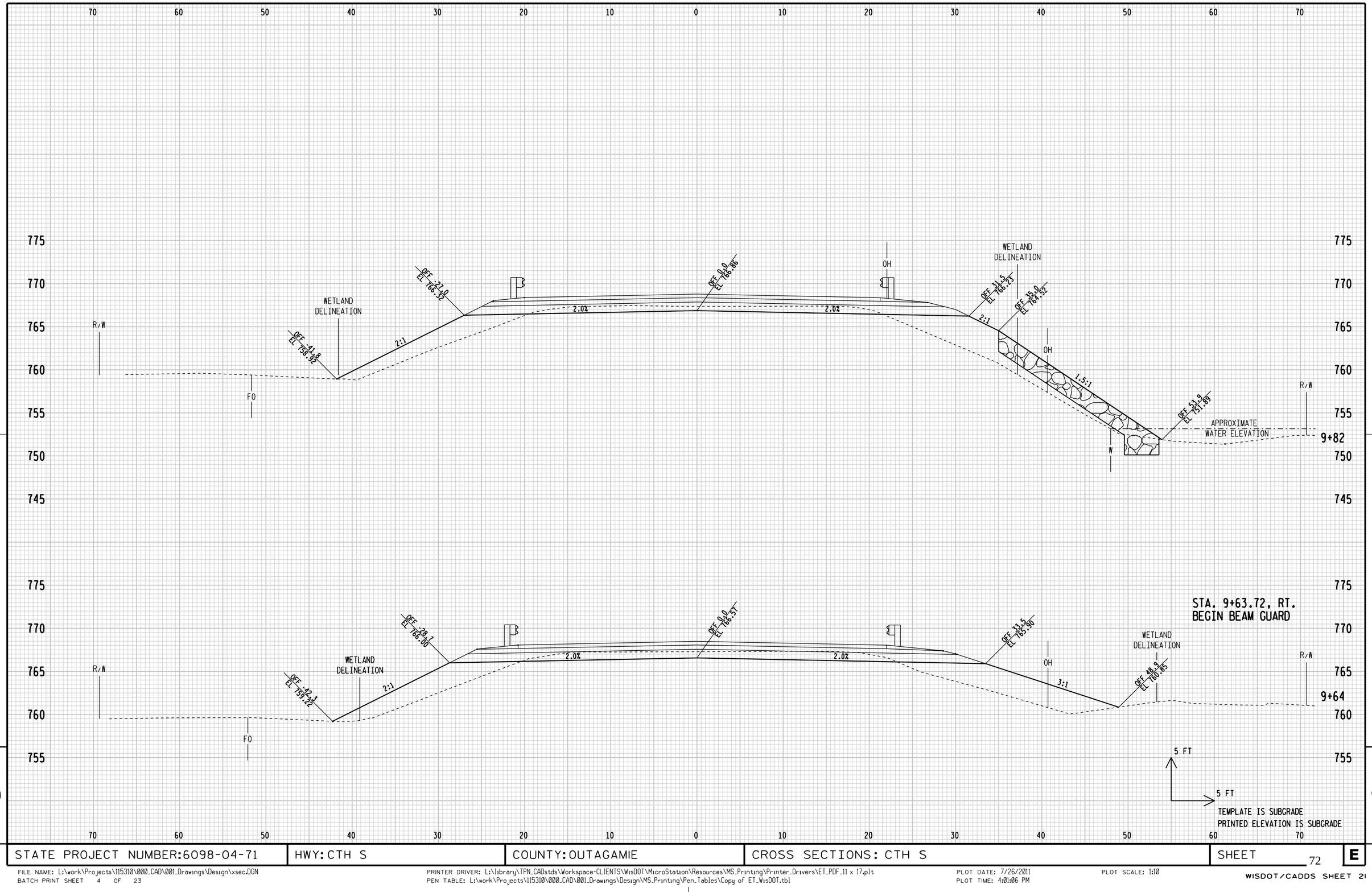

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STATE PROJECT NUMBER:6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH S	SHEET 72	E

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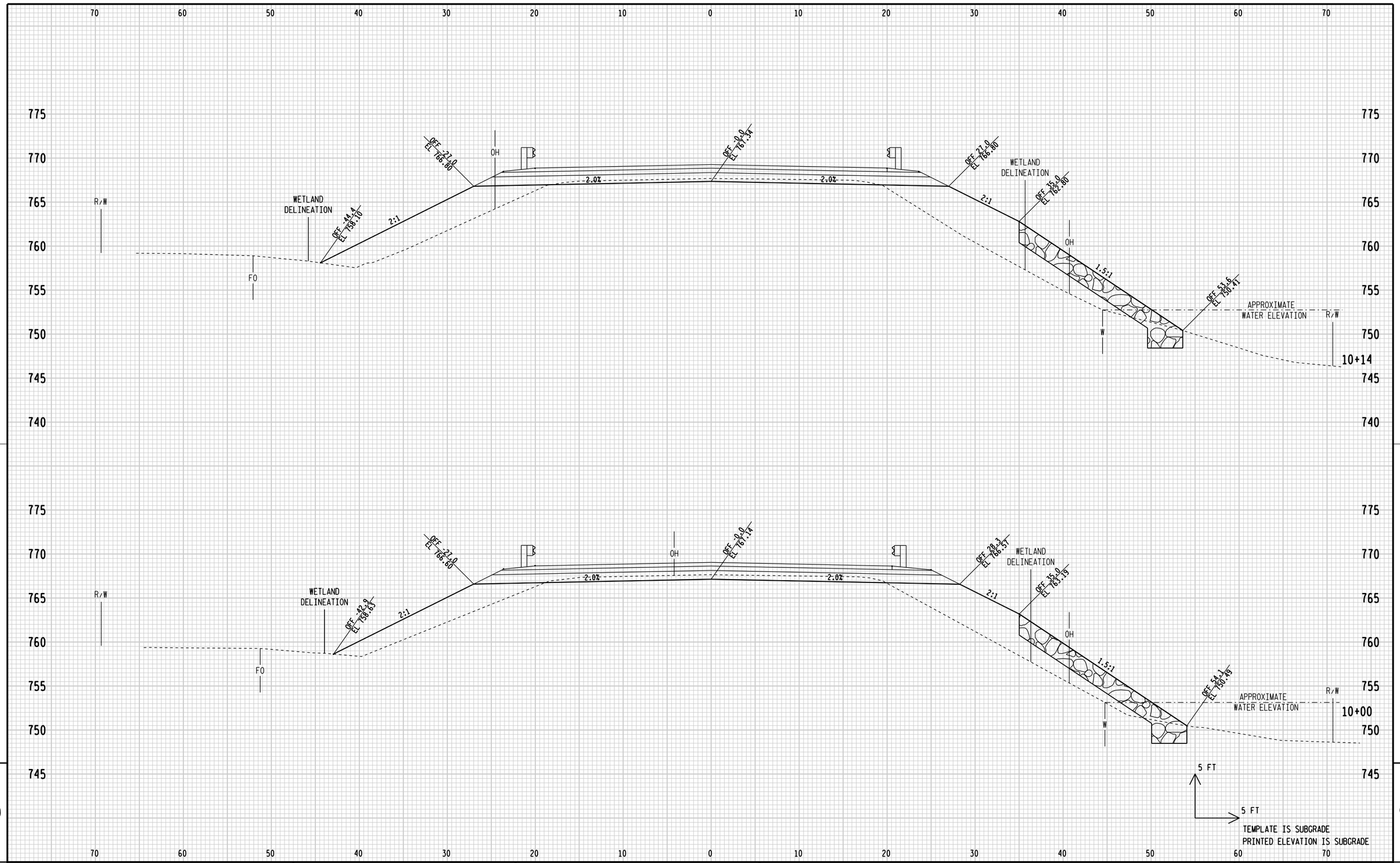

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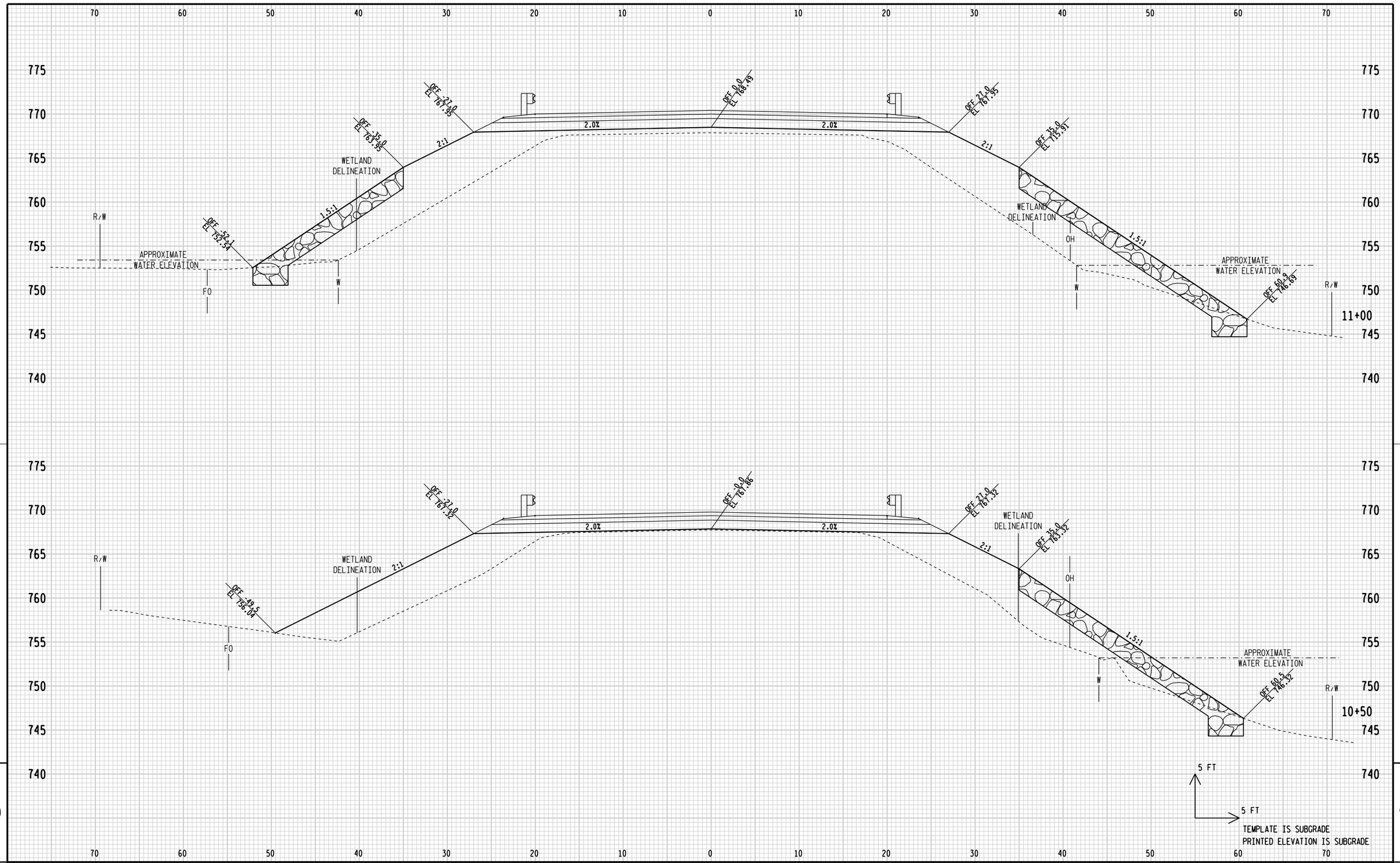
PLOT DATE: 7/26/2011
PLOT TIME: 4:01:06 PM
PLOT SCALE: 1:10
WISDOT/CADDS SHEET 21



STATE PROJECT NUMBER:6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH S	SHEET 74	E

FILE NAME: L:\work\Projects\115310\000_CAD\001_Drawings\Design\xsec.DGN
BATCH PRINT SHEET 6 OF 23
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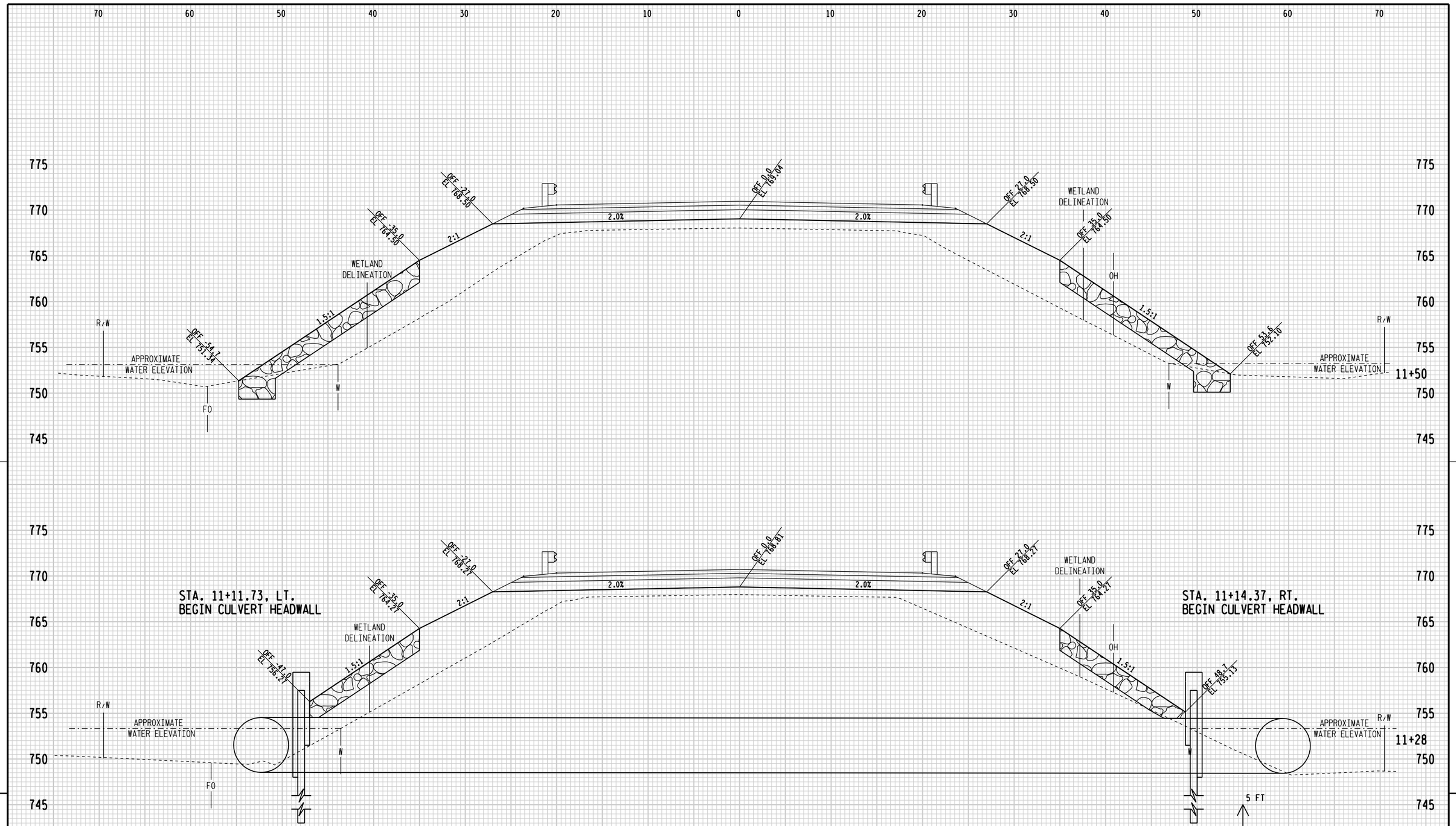
PLOT TIME: 4:01:07 PM
PLOT SCALE: 1:10
WISDOT/CADDS SHEET 21



STATE PROJECT NUMBER:6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH S	SHEET 75	E

FILE NAME: L:\work\Projects\115310\000_CAD\001_Drawings\Design\xsec.DGN
BATCH PRINT SHEET 7 OF 23
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-CLIENTS\WisDOT\MicroStation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
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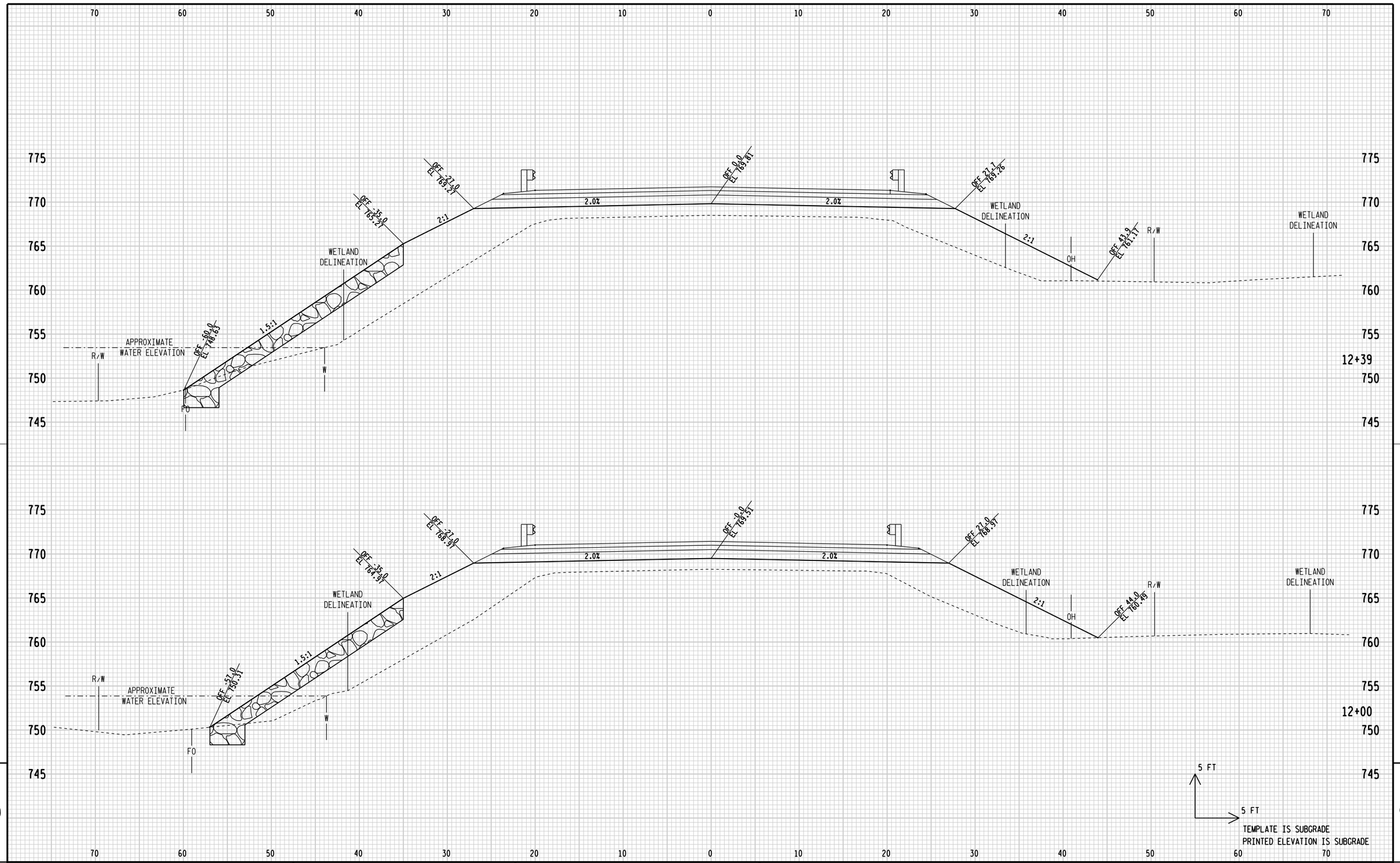
PLOT TIME: 4:01:08 PM
PLOT SCALE: 1:10
WISDOT/CADDS SHEET 21



9 9

STATE PROJECT NUMBER:6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH S	SHEET 76 E

FILE NAME: L:\work\Projects\115310\000_CAD\001_Drawings\Design\xsec.DGN
BATCH PRINT SHEET 8 OF 23
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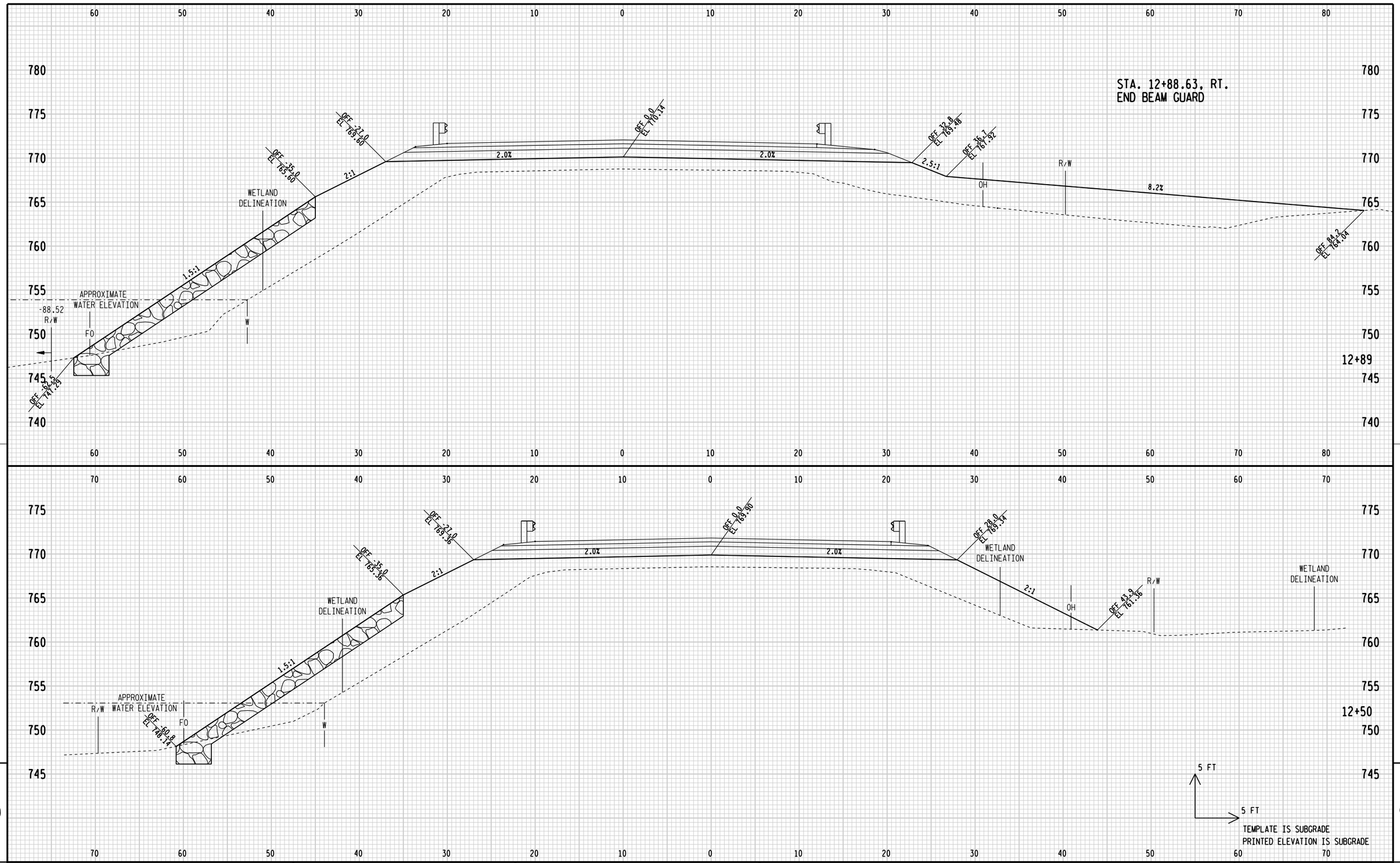
PEN TABLE: L:\work\Projects\115310\000_CAD\001_Drawings\Design\MS_Printing\Pen_Tables\Copy of ET_WisDOT.tbl
PLOT DATE: 7/26/2011
PLOT TIME: 4:01:09 PM
PLOT SCALE: 1:10
WISDOT/CADDS SHEET 21



STATE PROJECT NUMBER:6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH S	SHEET 77	E

FILE NAME: L:\work\Projects\115310\000_CAD\001_Drawings\Design\xsec.DGN
BATCH PRINT SHEET 9 OF 23
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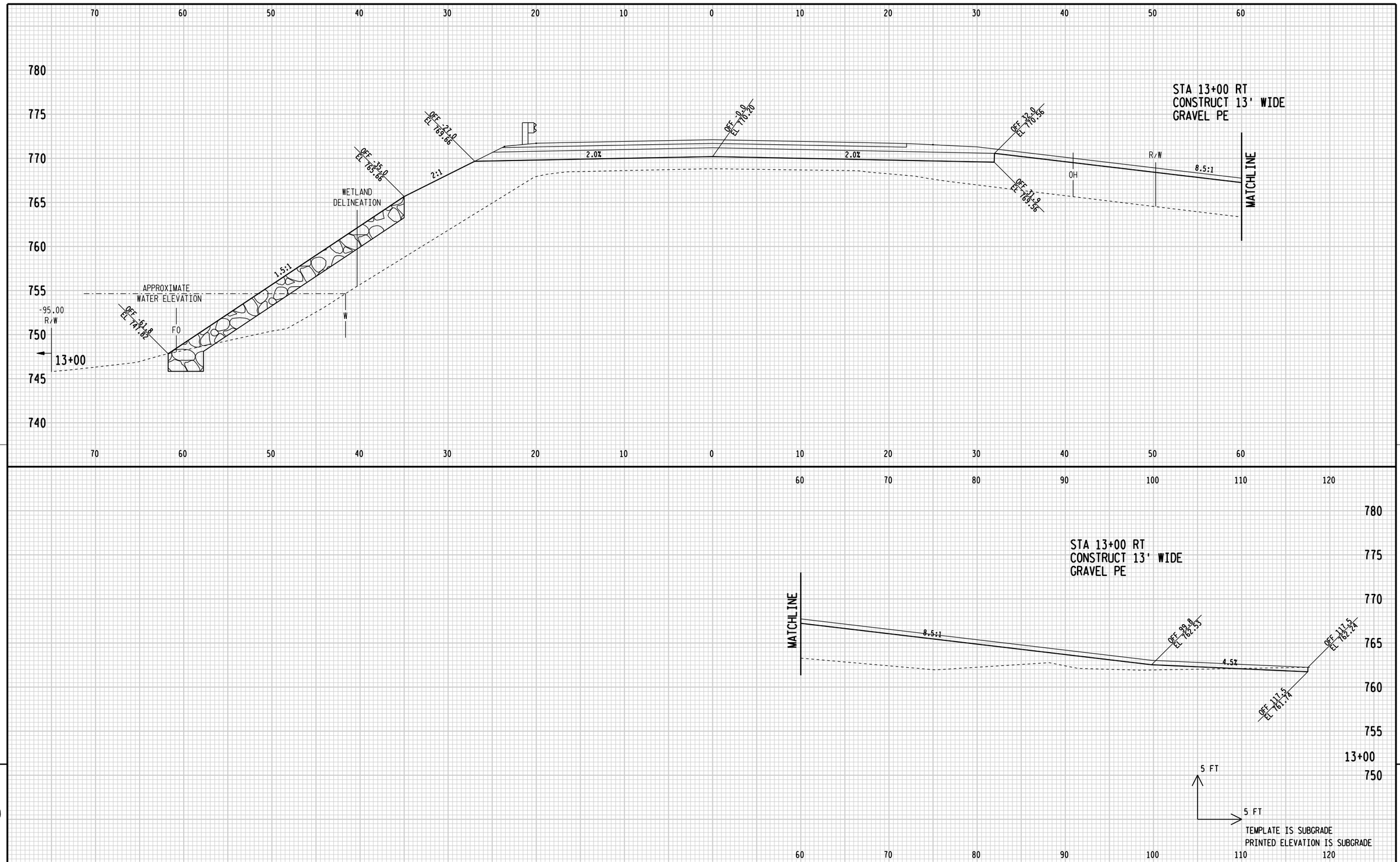
PEN TABLE: L:\work\Projects\115310\000_CAD\001_Drawings\Design\MS_Printing\Pen_Tables\Copy of ET_WisDOT.tbl
PLOT DATE: 7/26/2011
PLOT TIME: 4:01:10 PM
PLOT SCALE: 1:10
WISDOT/CADDS SHEET 21



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STATE PROJECT NUMBER:6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH S	SHEET 78	E

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BATCH PRINT SHEET 10 OF 23
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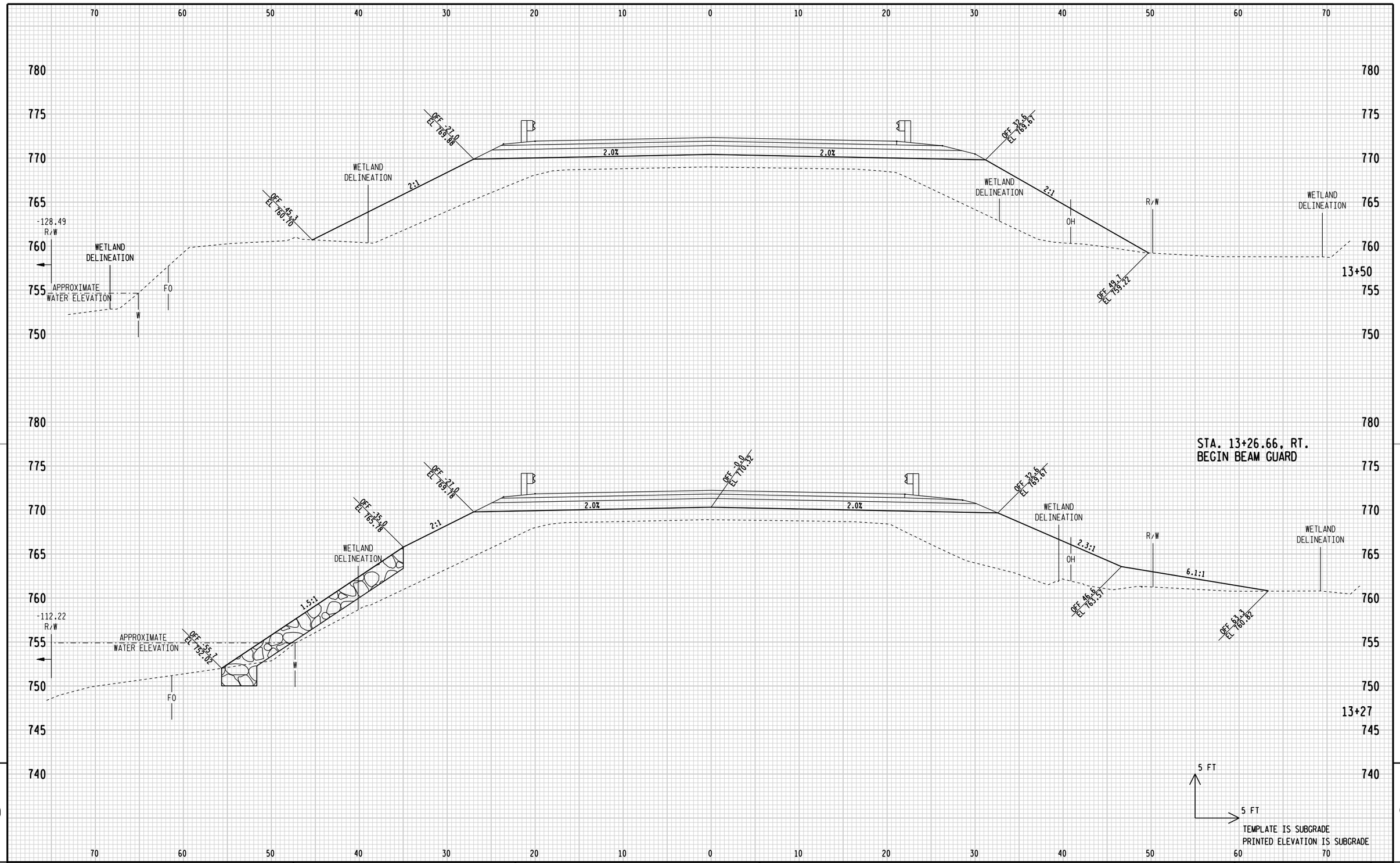
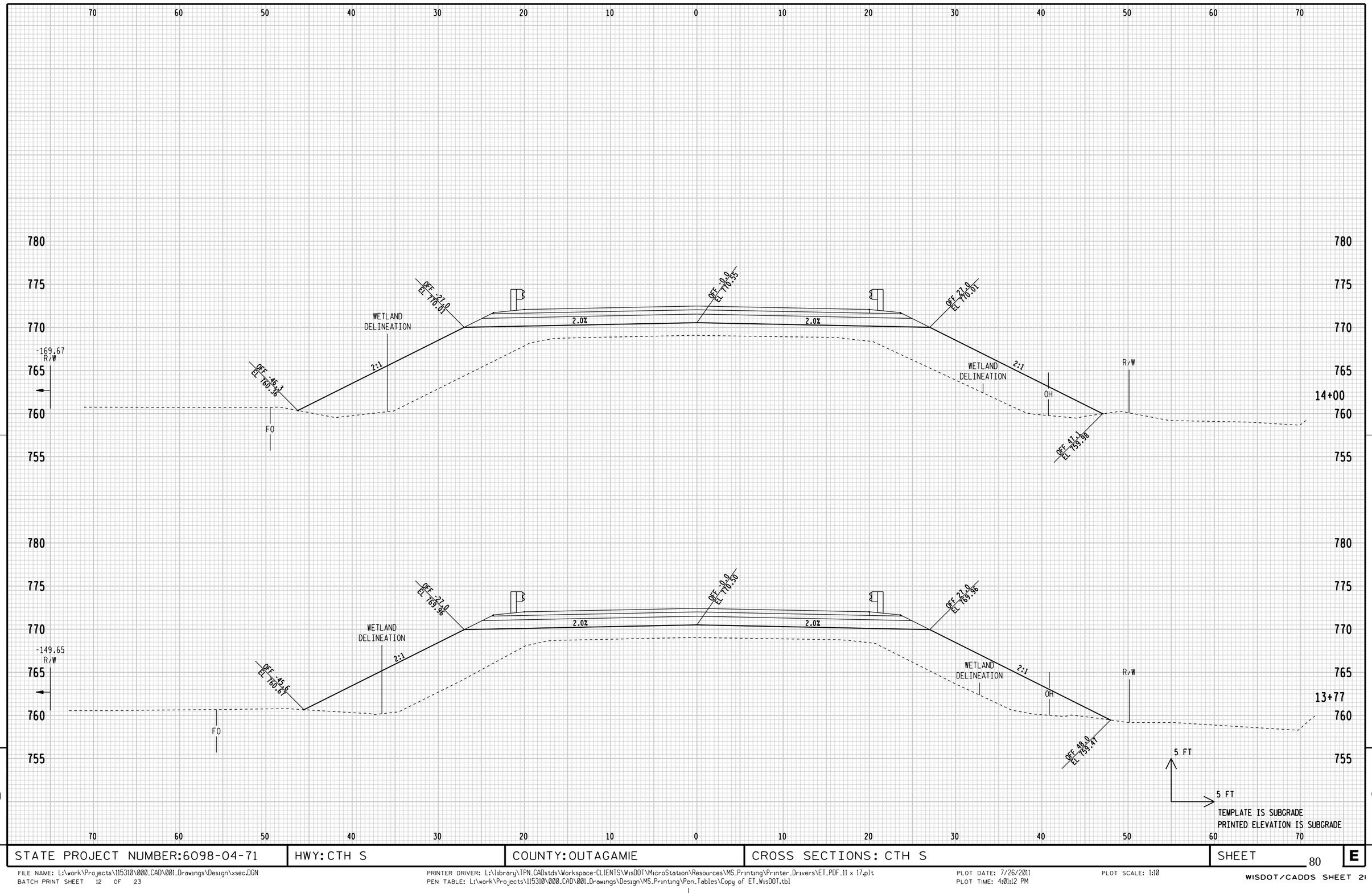
WISDOT/CADDS SHEET 21



STATE PROJECT NUMBER:6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH S	SHEET	E

FILE NAME: L:\work\Projects\115310\000_CAD\001_Drawings\Design\xsec.DGN
BATCH PRINT SHEET 11 OF 23
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-CLIENTS\WisDOT\MicroStation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
PEN TABLE: L:\work\Projects\115310\000_CAD\001_Drawings\Design\MS_Printing\Pen_Tables\Copy of ET_WisDOT.tbl
PLOT DATE: 7/26/2011
PLOT TIME: 4:01:11 PM
PLOT SCALE: 1:10
WISDOT/CADDS SHEET 21



STATE PROJECT NUMBER:6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH S	SHEET E

FILE NAME: L:\work\Projects\115310\000_CAD\001_Drawings\Design\xsec.DGN
BATCH PRINT SHEET 12 OF 23
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-CLIENTS\WisDOT\MicroStation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
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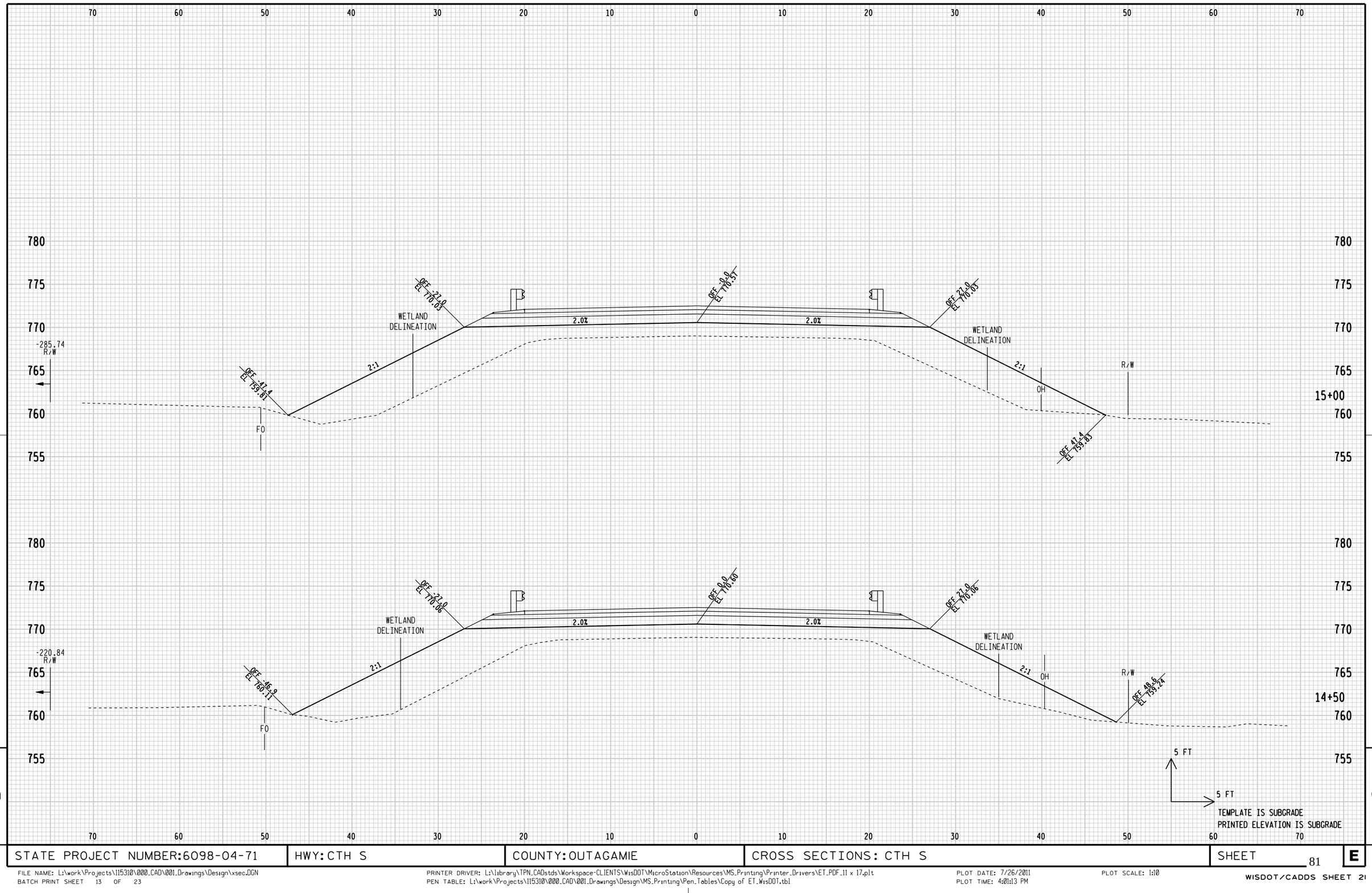
PLOT TIME: 4:01:12 PM
PLOT SCALE: 1:10
WISDOT/CADDS SHEET 21



STATE PROJECT NUMBER:6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH S	SHEET E

FILE NAME: L:\work\Projects\115310\000_CAD\001_Drawings\Design\xsec.DGN
BATCH PRINT SHEET 13 OF 23
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-CLIENTS\WisDOT\MicroStation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
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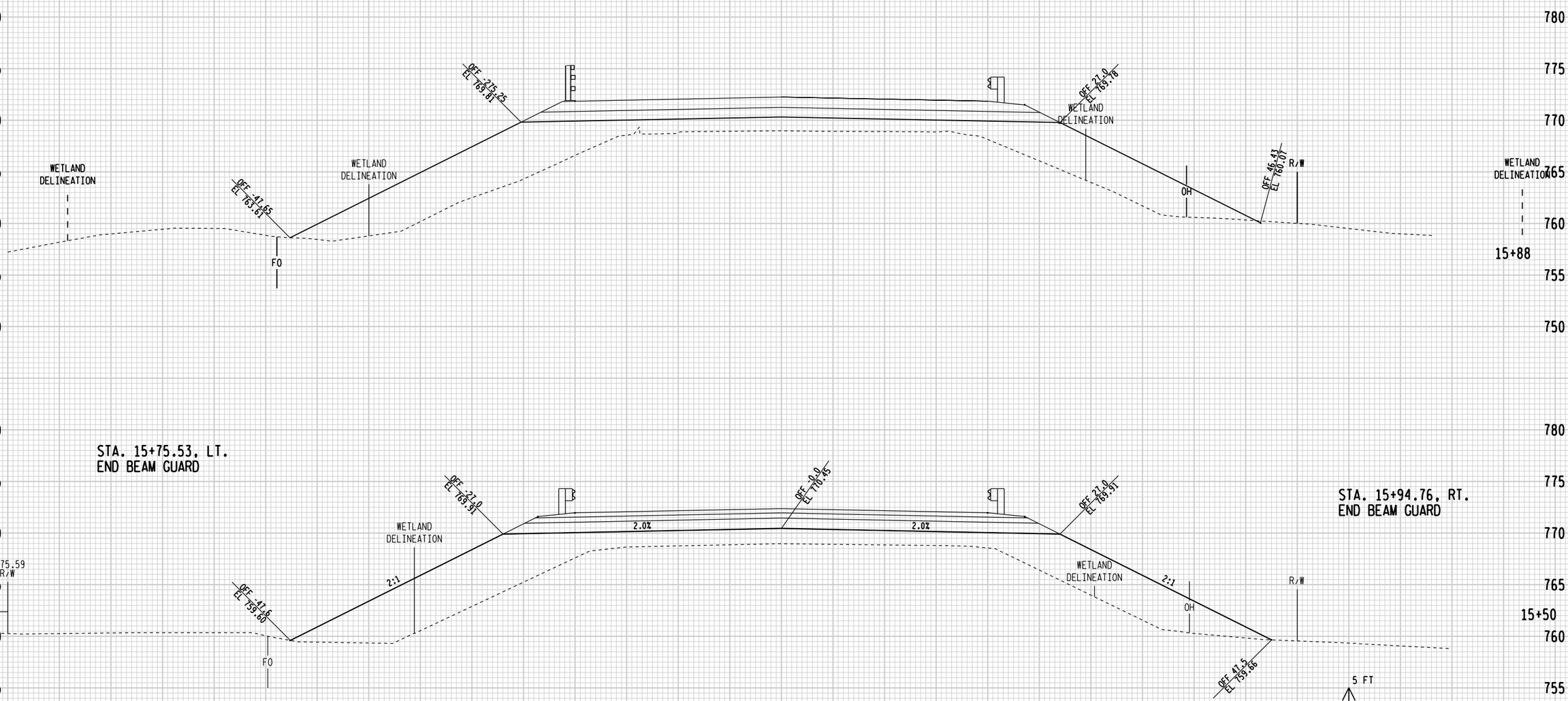
PLOT DATE: 7/26/2011
PLOT TIME: 4:01:13 PM
PLOT SCALE: 1:10
WISDOT/CADDS SHEET 21

STA. 15+98.17
END ABRUPTLY
STRUCTURE B-44-282



STATE PROJECT NUMBER:6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH S	SHEET 82 E

FILE NAME: L:\work\Projects\115310\000_CAD\001_Drawings\Design\xsec.DGN
BATCH PRINT SHEET 14 OF 23
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-CLIENTS\WisDOT\MicroStation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
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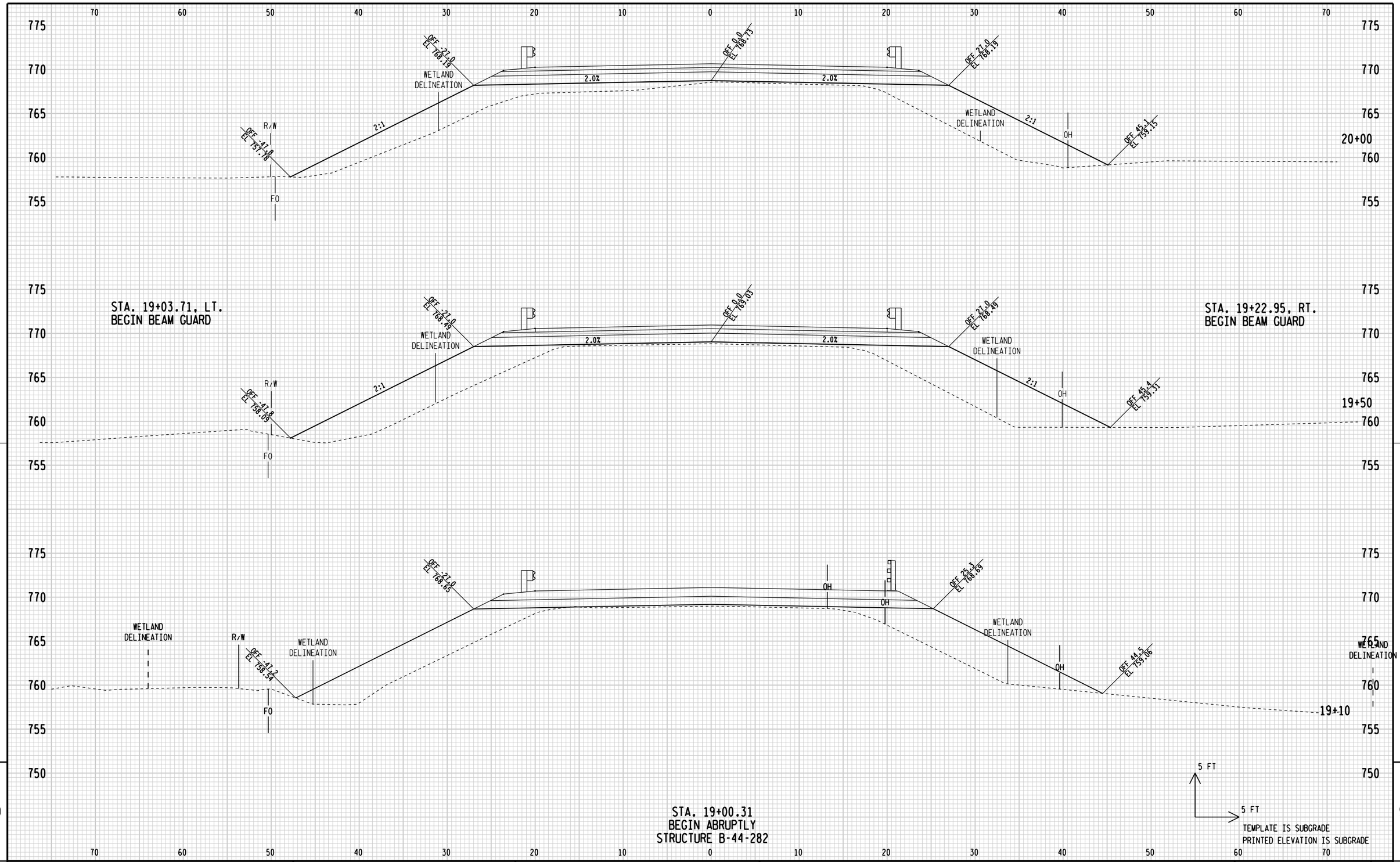
PLOT DATE: 7/26/2011
PLOT TIME: 4:01:13 PM
PLOT SCALE: 1:10
WISDOT/CADDS SHEET 21



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STATE PROJECT NUMBER:6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH S	SHEET E

FILE NAME: L:\work\Projects\115310\000_CAD\001_Drawings\Design\xsec.DGN
BATCH PRINT SHEET 18 OF 23
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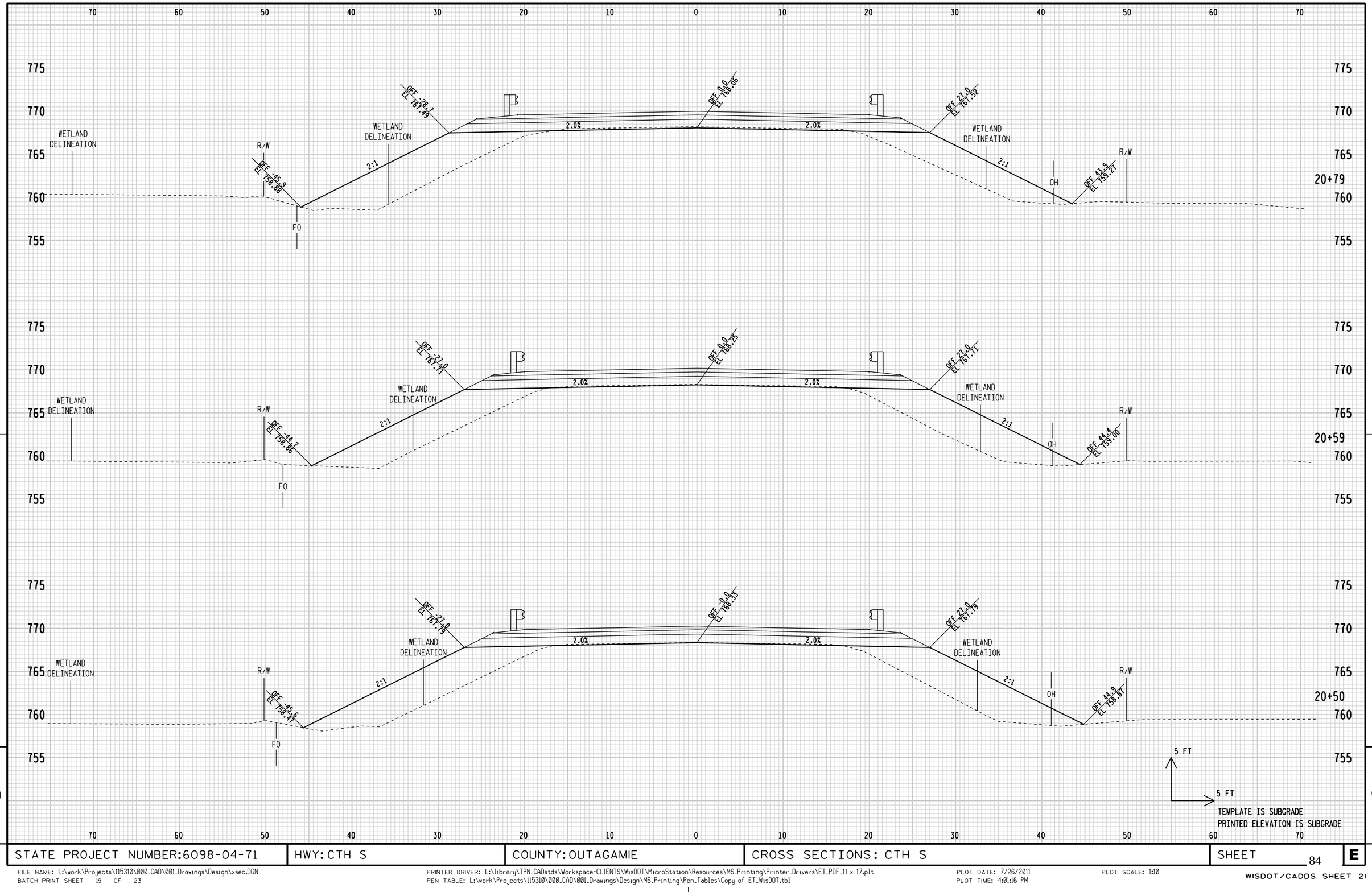
PLOT DATE: 7/26/2011
PLOT TIME: 4:01:15 PM
PLOT SCALE: 1:10
WISDOT/CADDS SHEET 21



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9

STATE PROJECT NUMBER:6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH S	SHEET 84	E

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BATCH PRINT SHEET 19 OF 23
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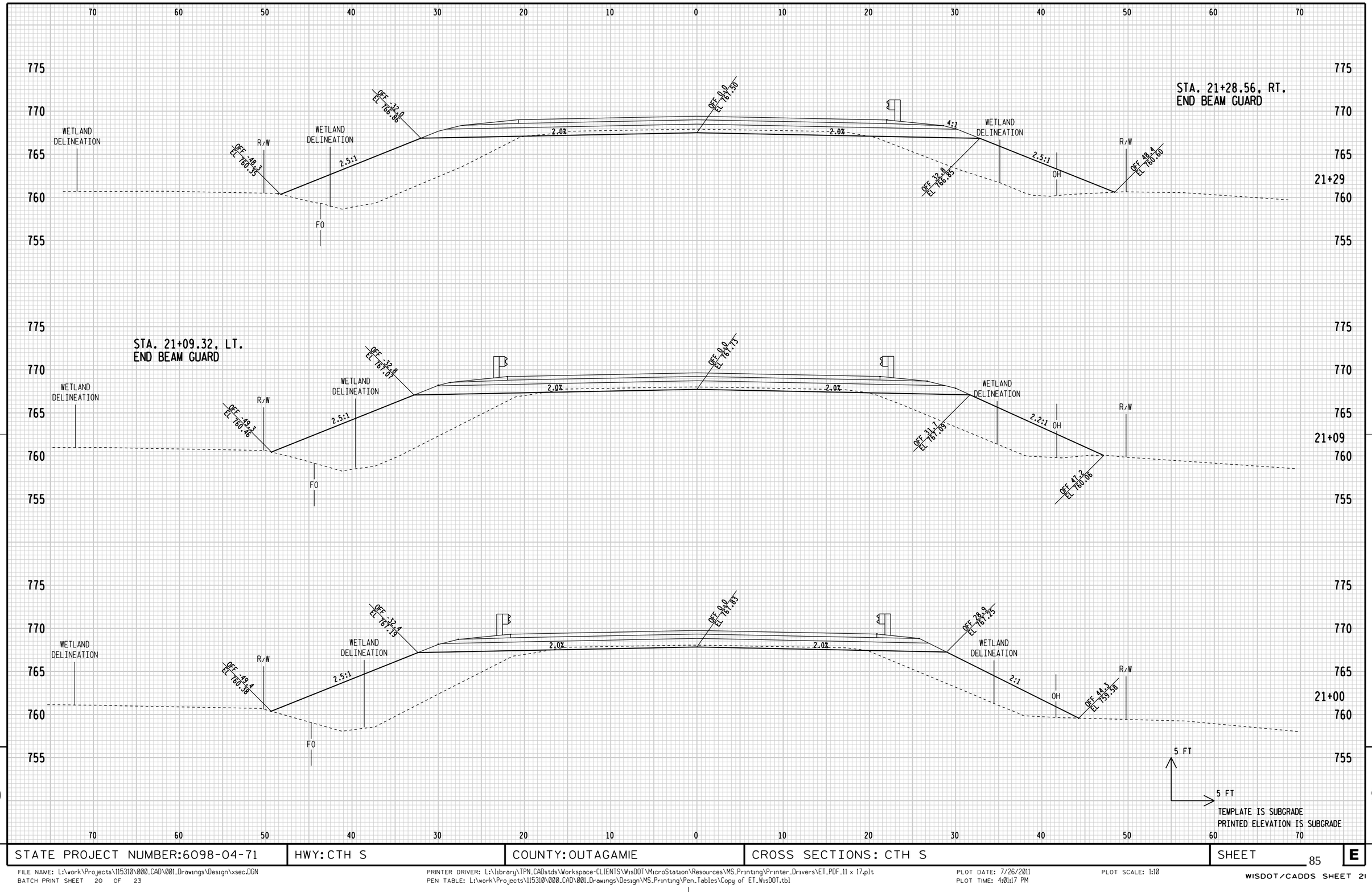
PLOT DATE: 7/26/2011
PLOT TIME: 4:01:16 PM
PLOT SCALE: 1:10
WISDOT/CADDS SHEET 21



STATE PROJECT NUMBER:6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH S	SHEET	E

FILE NAME: L:\work\Projects\115310\000_CAD\001_Drawings\Design\xsec.DGN
BATCH PRINT SHEET 20 OF 23
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-CLIENTS\WisDOT\MicroStation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
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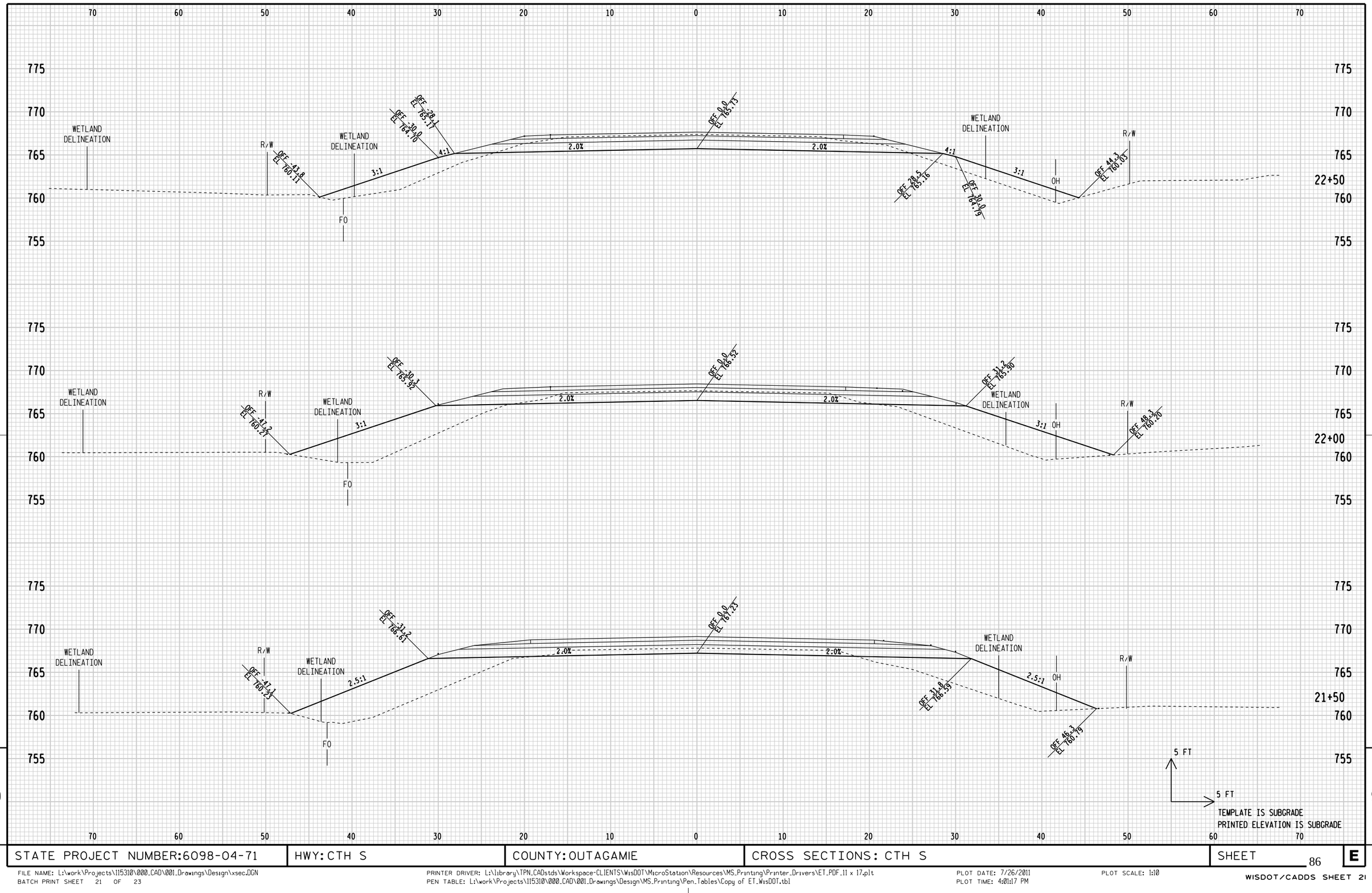
PLOT DATE: 7/26/2011
PLOT TIME: 4:01:17 PM
PLOT SCALE: 1:10
WISDOT/CADDS SHEET 21



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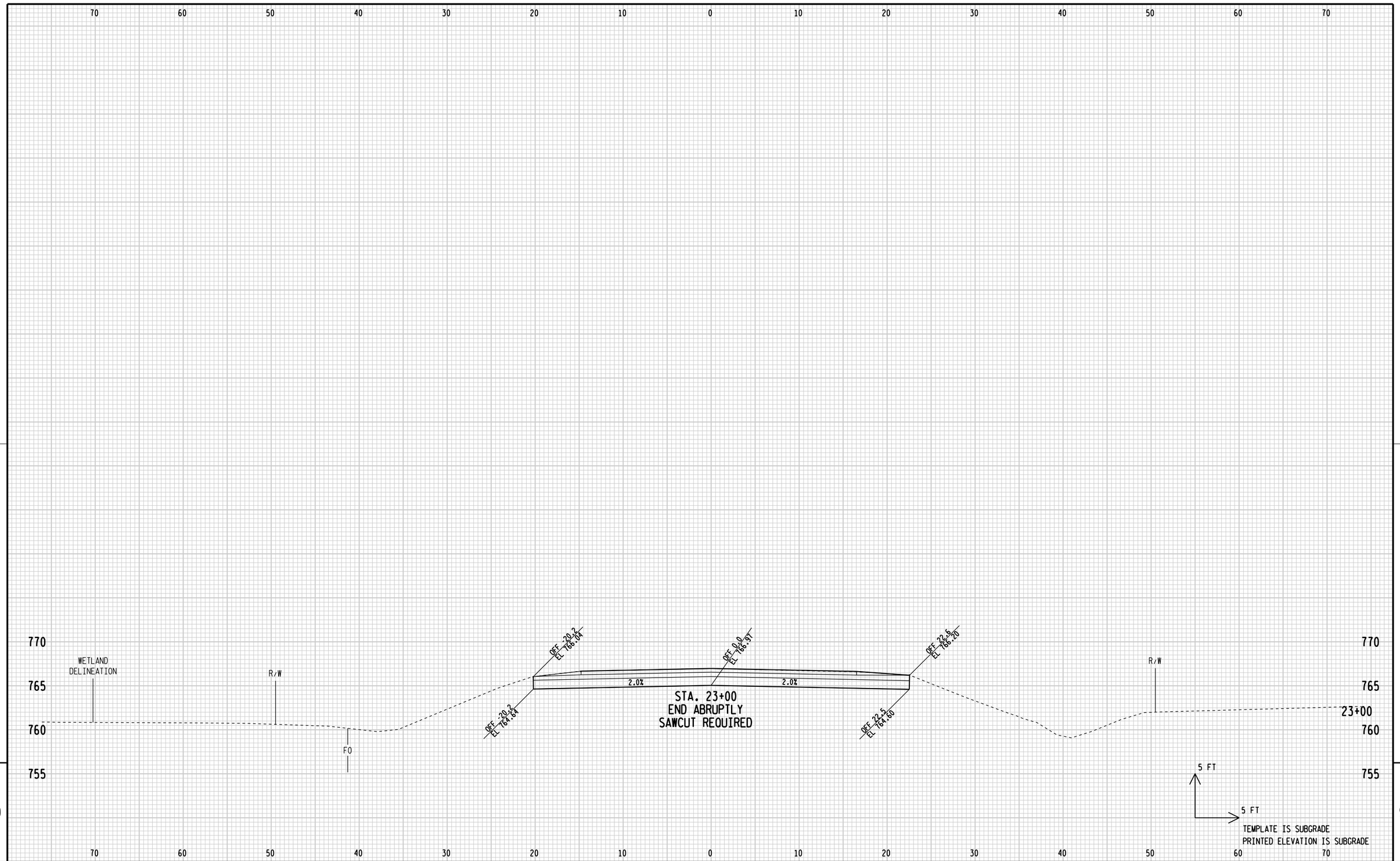
STATE PROJECT NUMBER:6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH S	SHEET E

FILE NAME: L:\work\Projects\115310\000_CAD\001_Drawings\Design\xsec.DGN
BATCH PRINT SHEET 21 OF 23
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-CLIENTS\WisDOT\MicroStation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
PEN TABLE: L:\work\Projects\115310\000_CAD\001_Drawings\Design\MS_Printing\Pen_Tables\Copy of ET_WisDOT.tbl
PLOT DATE: 7/26/2011
PLOT TIME: 4:01:17 PM
PLOT SCALE: 1:10
WISDOT/CADDS SHEET 21



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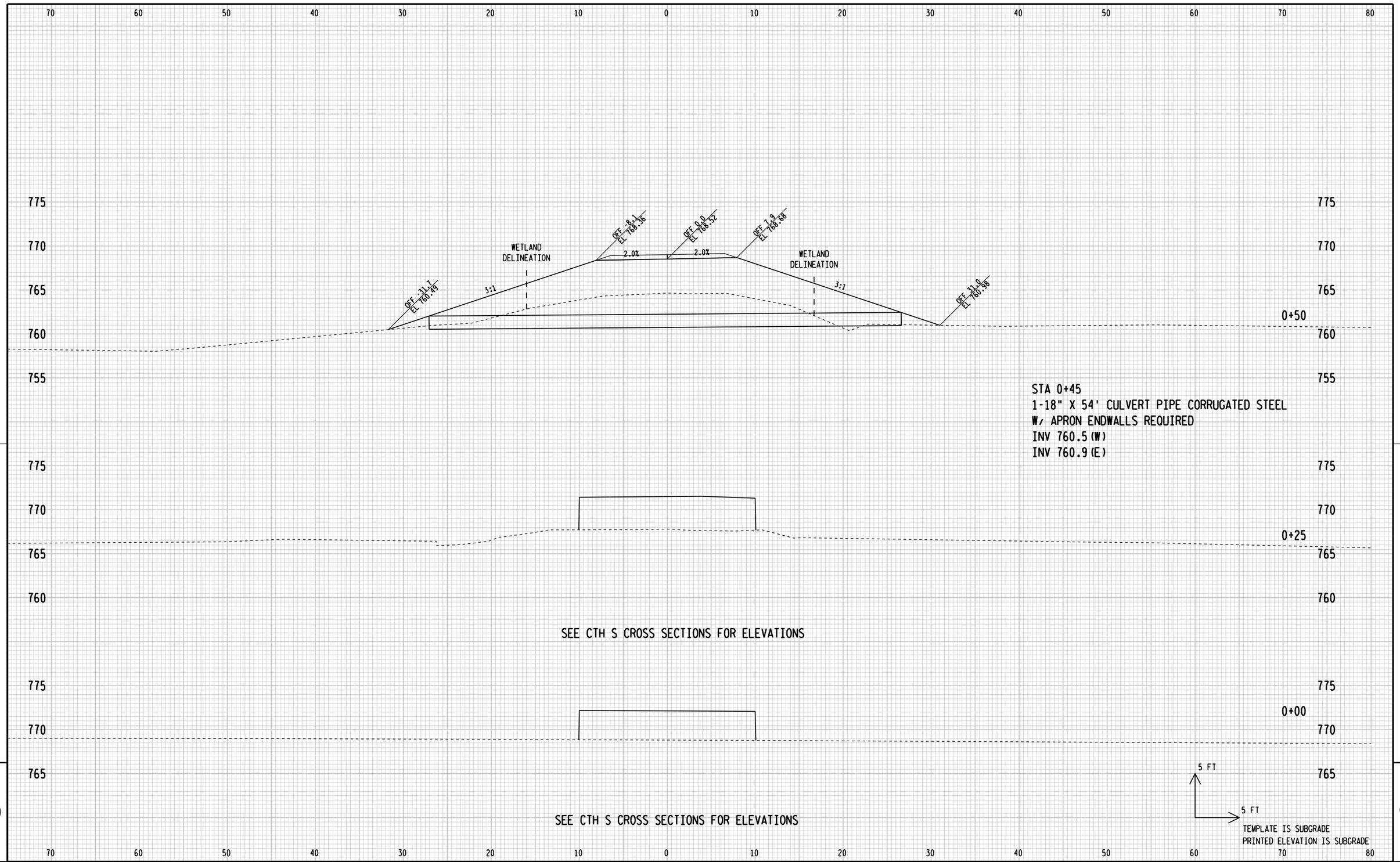
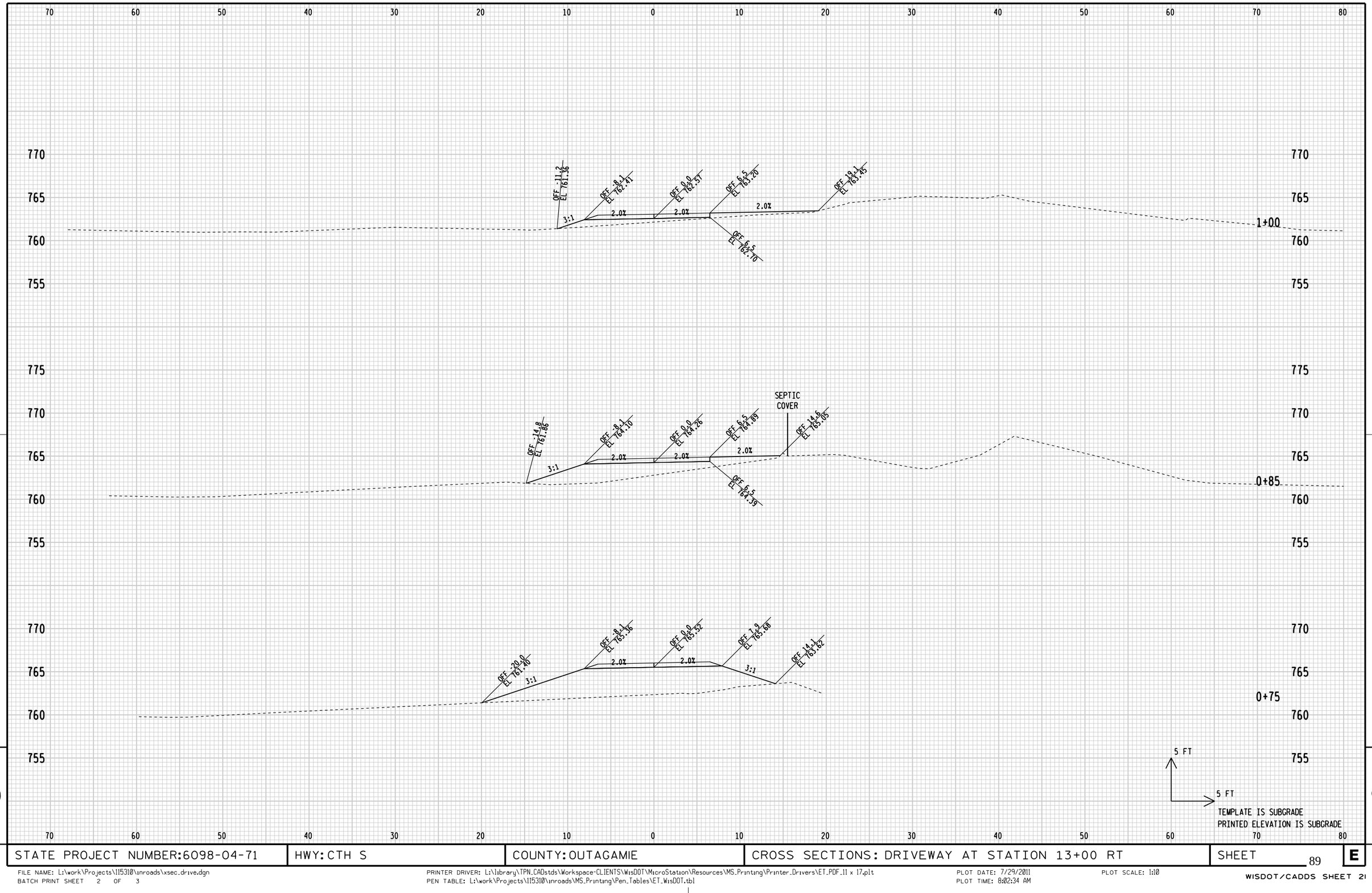
STATE PROJECT NUMBER:6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH S	SHEET 87	E



STATE PROJECT NUMBER:6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	CROSS SECTIONS: DRIVEWAY AT STATION 13+00 RT	SHEET 88	E

FILE NAME: L:\work\Projects\115310\inroads\xsec_drive.dgn
BATCH PRINT SHEET 1 OF 3
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-CLIENTS\WisDOT\MicroStation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
PEN TABLE: L:\work\Projects\115310\inroads\MS_Printing\Pen_Tables\ET_WisDOT.tbl
PLOT DATE: 7/29/2011
PLOT TIME: 8:02:34 AM
PLOT SCALE: 1:10
WISDOT/CADDS SHEET 21



STATE PROJECT NUMBER:6098-04-71	HWY: CTH S	COUNTY: OUTAGAMIE	CROSS SECTIONS: DRIVEWAY AT STATION 13+00 RT	SHEET 89 E

FILE NAME: L:\work\Projects\115310\inroads\xsec_drive.dgn
BATCH PRINT SHEET 2 OF 3

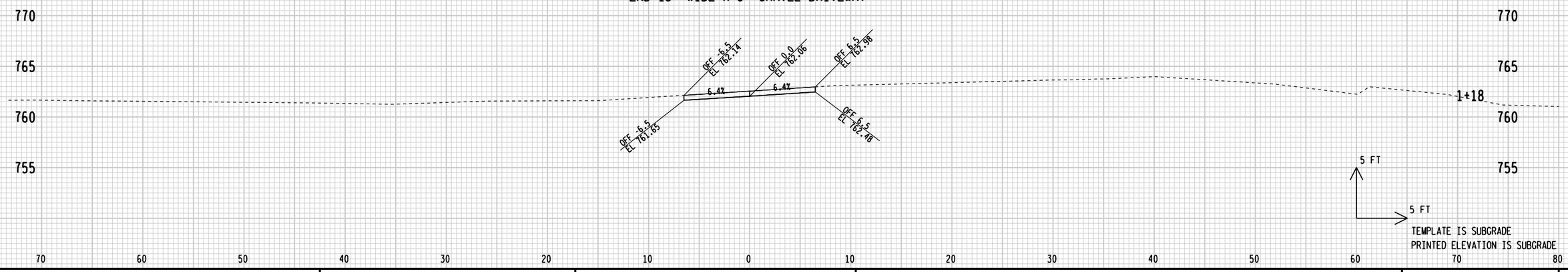
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-CLIENTS\WisDOT\MicroStation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
PEN TABLE: L:\work\Projects\115310\inroads\MS_Printing\Pen_Tables\ET_WisDOT.tbl

PLOT DATE: 7/29/2011
PLOT TIME: 8:02:34 AM

PLOT SCALE: 1:10

WISDOT/CADDS SHEET 21

STA 1+18
END 13' WIDE X 6" GRAVEL DRIVEWAY



STATE PROJECT NUMBER:6098-04-71	HWY:CTH S	COUNTY:OUTAGAMIE	CROSS SECTIONS: DRIVEWAY AT STATION 13+00 RT	SHEET 90 E

FILE NAME: L:\work\Projects\115310\inroads\xsec_drive.dgn
BATCH PRINT SHEET 3 OF 3

PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-CLIENTS\WisDOT\MicroStation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
PEN TABLE: L:\work\Projects\115310\inroads\MS_Printing\Pen_Tables\ET_WisDOT.tbl

PLOT DATE: 7/29/2011
PLOT TIME: 8:02:35 AM

PLOT SCALE: 1:10

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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