NWL

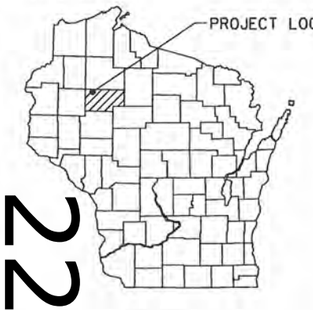
DEC 2014

PROJECT ID: 8434-00-70
WITH: N/A

COUNTY: RUSK

ORDER OF SHEETS

TOTAL SHEETS = 34



22

DESIGN DESIGNATION

A.A.D.T. 2015	=	<100
A.A.D.T. 2035	=	<100
D.H.V.	=	<10
D.D.	=	50-50
T.	=	10%
DESIGN SPEED	=	60 MPH
ESALS	=	7,300

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

T MURRY, MEADOW DAM ROAD

DEER CREEK BRIDGE B-54-0115

TWN RD

RUSK COUNTY

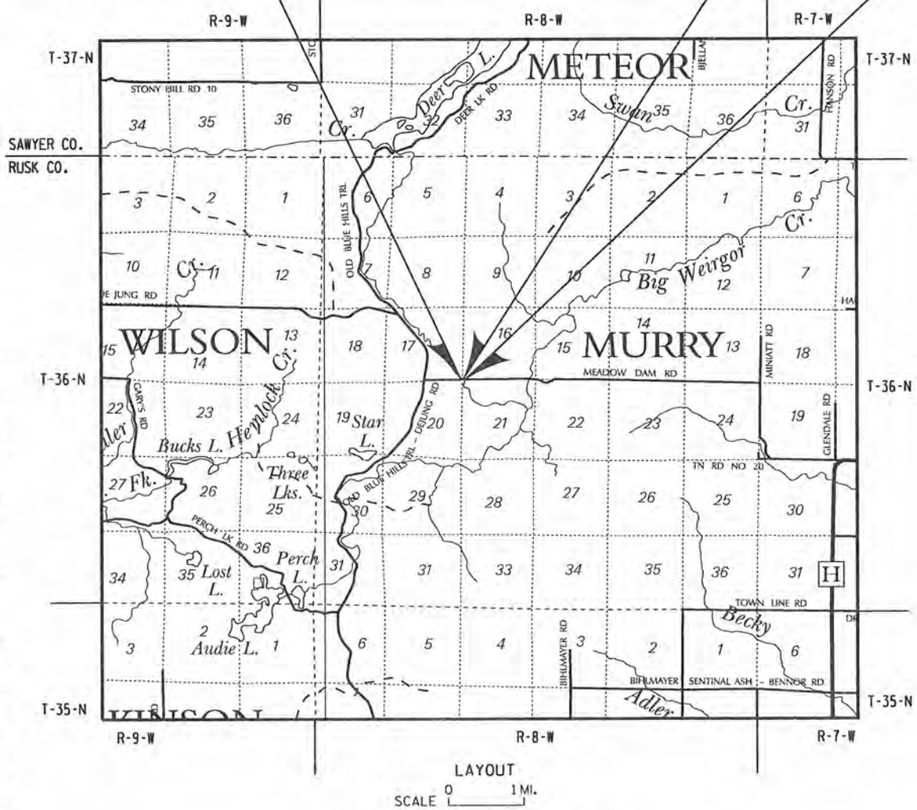
STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8434-00-70	WISC 2014453	1

STATE PROJECT NUMBER
8434-00-70

BEGIN PROJECT 8434-00-70
STA. 9+20.00
Y=10001.884
X=10168.752

STRUCTURE B-54-0115

END PROJECT 8434-00-70
STA. 10+90.00



LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.025 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO AN ASSUMED COORDINATE SYSTEM.

ACCEPTED FOR TOWN OF MURRY
BY
7/7/14 DATE — TOWN CHAIRMAN

ACCEPTED FOR COUNTY OF RUSK
BY
6-25-14 DATE — HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY
AECOM

WISCONSIN
KEVIN R. HAGEN
E-38866
STEVENS POINT
WI
PROFESSIONAL ENGINEER

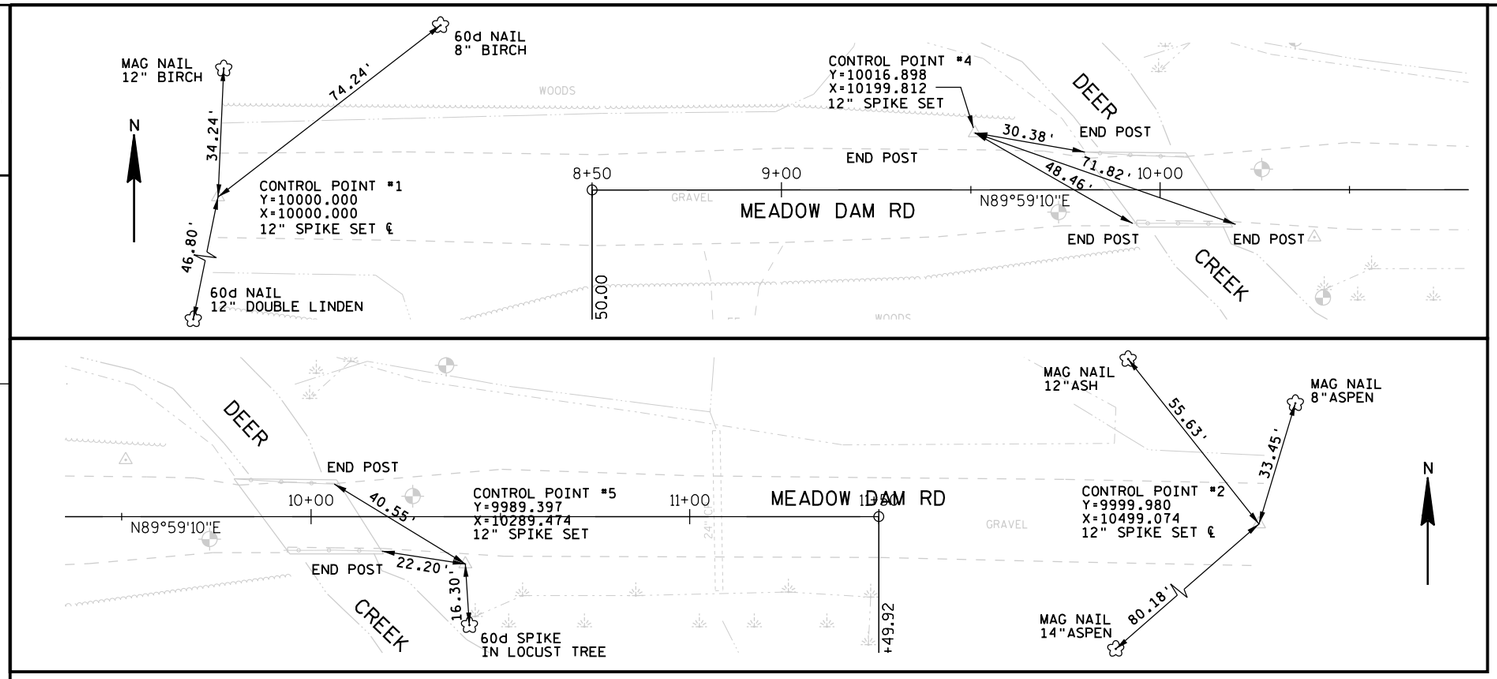
6/24/2014 (Date) — Kevin R. Hagen (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor: AECOM
Designer: AECOM
Management Consultant: KNIGHT E/A INC.
C.O. Examiner:

APPROVED FOR THE DEPARTMENT
DATE: 7/23/14 Ryan B McKane (Management Consultant Signature)

E



STANDARD ABBREVIATIONS

AVG	AVERAGE	EXC	EXCAVATION	R	RADIUS
BK	BACK	EXIST	EXISTING	RL OR ℄	REFERENCE LINE
BM	BENCH MARK	FE	FIELD ENTRANCE	RT	RIGHT
CL OR ℄	CENTER LINE	L	LENGTH OF CURVE	R/W	RIGHT OF WAY
△	CENTRAL ANGLE OR DELTA	N	NORTH	RD	ROAD
CE	COMMERCIAL ENTRANCE	PC	POINT OF CURVATURE	S	SOUTH
CTH	COUNTY TRUNK HIGHWAY	PI	POINT OF INTERSECTION	STA	STATION
CY OR CUYD	CUBIC YARD	PT	POINT OF TANGENCY	TLE	TEMPORARY LIMITED EASEMENT
CP	CULVERT PIPE	PE	PRIVATE ENTRANCE	T	TRUCKS (PERCENT OF)
D	DEGREE OF CURVE	PL	PROPERTY LINE	TYP	TYPICAL
DHV	DESIGN HOUR VOLUNE	PVC	VERTICAL POINT OF CURVE	USH	UNITED STATES HIGHWAY
DD	DIRECTIONAL DISTRIBUTION	PVI	VERTICAL POINT OF INTERSECTION	VC	VERTICAL CURVE
E	EAST	PVT	VERTICAL POINT OF TANGENCY	W	WEST
EL OR ELEV	ELEVATION				

WDNR CONTACT

DEPARTMENT OF NATURAL RESOURCES
ATTN: AMY CRONK
810 W. MAPLE STREET
SPOONER, WI 54801
(715)-635-4229
amy.cronk@wisconsin.gov

DESIGNER CONTACT

AECOM
ATTN: KEVIN HAGEN
200 INDIANA AVENUE
STEVENS POINT, WI 54481
(715)-342-3053
kevin.hagen@aecom.com
AECOM PROJECT NO. 60297370

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

** DENOTES UTILITIES THAT ARE NOT DIGGER'S HOTLINE MEMBERS

GENERAL NOTES

THERE MAY BE UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

PROVIDE SEED MIXTURE AS SHOWN ON THE TYPICAL SECTIONS.

WHERE THE QUANTITY OF BASE AGGREGATE DENSE AND ASPHALTIC SURFACE 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 AS 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.

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

FIELD ADJUST SILT FENCE TO FIT EXISTING CONDITIONS AS SHOWN ON THE PLANS.

ELEVATIONS SHOWN ON THIS PLAN ARE BASED ON NAVD 88 DATUM.

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 4" ASPHALTIC PAVEMENT SHALL CONSIST OF A 1¾" -INCH UPPER LAYER & A 2¼" -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 IS 0.257 ACRE AND THE TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES IS 0.166 ACRE.

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

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

RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 0.257 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.166 ACRES

PROJECT NUMBER: 8434-00-70	HWY: MEADOW DAM ROAD	COUNTY: RUSK	GENERAL NOTES	SHEET 2	E

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PLOT TIME: 2:30:44 PM
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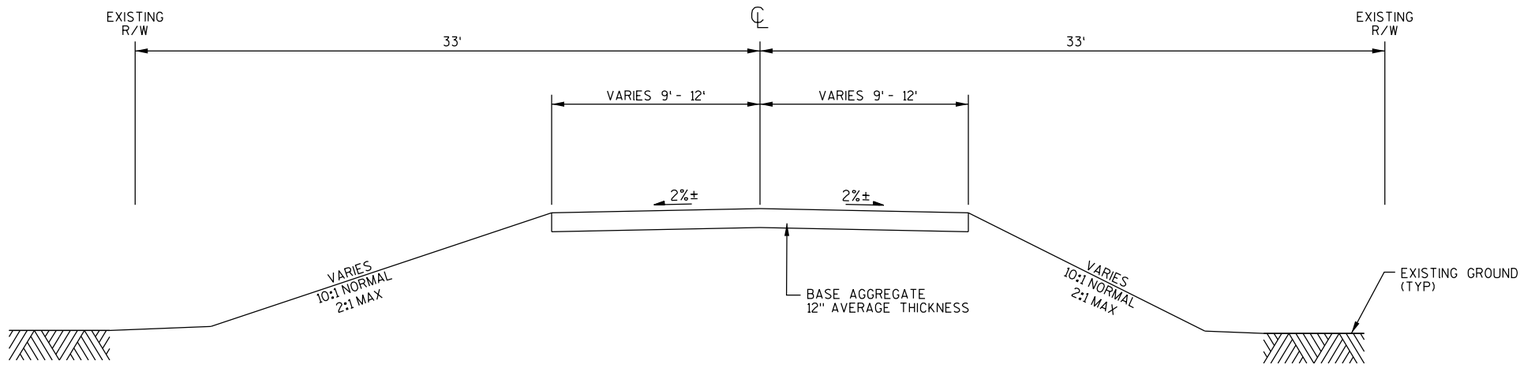
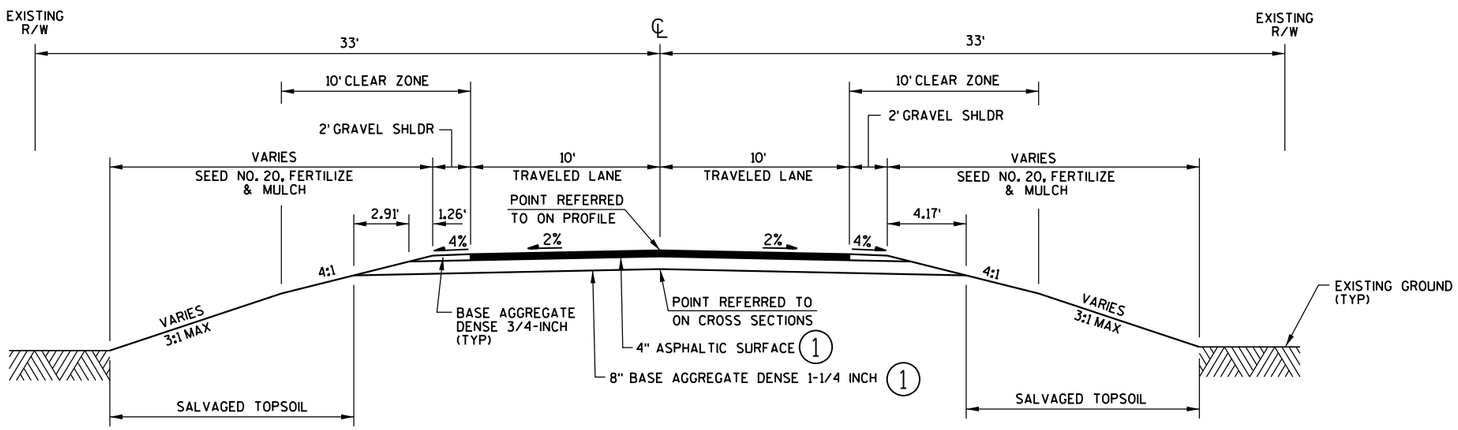
WISDOT/CADDS SHEET 42



TYPICAL EXISTING SECTION - MEADOW DAM ROAD

STA 9+20.00 - STA 10+90.00



TYPICAL FINISHED SECTION - MEADOW DAM ROAD

STA 9+31.05 - STA 9+81.06
STA 10+18.94 - STA 10+68.94

(1) 3" BASE AGGREGATE DENSE 3/4-INCH ON 9" BASE AGGREGATE DENSE 1-1/4 INCH IN PLACE OF 4" ASPHALTIC SURFACE AND 8" BASE AGGREGATE DENSE 1-1/4 INCH FROM STA 9+20.00 - STA 9+31.06 STA 10+68.94 - STA 10+90.00

PROJECT NUMBER: 8434-00-70	HWY: MEADOW DAM ROAD	COUNTY: RUSK	TYPICAL SECTIONS	SHEET 3	E

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PLOT SCALE: 1:8
WISDOT/CADDS SHEET 42

DATE 30SEP14 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	8434-00-70 QUANTITY
0010	201.0110	CLEARING	SY	85.000	85.000
0020	201.0210	GRUBBING	SY	85.000	85.000
0030	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 01. 10+00	LS	1.000	1.000
0040	205.0100	EXCAVATION COMMON	CY	144.000	144.000
0050	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-54-115	LS	1.000	1.000
0060	210.0100	BACKFILL STRUCTURE	CY	240.000	240.000
0070	213.0100	FINISHING ROADWAY (PROJECT) 01. 8434-00-70	EACH	1.000	1.000
0080	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	35.000	35.000
0090	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	200.000	200.000
0100	455.0605	TACK COAT	GAL	10.000	10.000
0110	465.0105	ASPHALTIC SURFACE	TON	60.000	60.000
0120	502.0100	CONCRETE MASONRY BRIDGES	CY	120.000	120.000
0130	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	4,640.000	4,640.000
0140	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	15,640.000	15,640.000
0150	513.4060	RAILING TUBULAR TYPE M (STRUCTURE) 01. B-54-115	LS	1.000	1.000
0160	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	20.000	20.000
0170	550.0020	PRE-BORING ROCK OR CONSOLIDATED MATERIALS	LF	320.000	320.000
0180	550.0500	PILE POINTS	EACH	14.000	14.000
0190	550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	350.000	350.000
0200	606.0300	RIPRAP HEAVY	CY	205.000	205.000
0210	612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	20.000	20.000
0220	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	110.000	110.000
0230	619.1000	MOBILIZATION	EACH	1.000	1.000
0240	625.0500	SALVAGED TOPSOIL	SY	65.000	65.000
0250	627.0200	MULCHING	SY	135.000	135.000
0260	628.1504	SILT FENCE	LF	350.000	350.000
0270	628.1520	SILT FENCE MAINTENANCE	LF	55.000	55.000
0280	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	2.000	2.000
0290	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	3.000	3.000
0300	628.2006	EROSION MAT URBAN CLASS I TYPE A	SY	15.000	15.000
0310	628.6005	TURBIDITY BARRIERS	SY	55.000	55.000
0320	628.7555	CULVERT PIPE CHECKS	EACH	5.000	5.000
0330	629.0210	FERTILIZER TYPE B	CWT	0.100	0.100
0340	630.0120	SEEDING MIXTURE NO. 20	LB	5.000	5.000
0350	630.0200	SEEDING TEMPORARY	LB	5.000	5.000
0360	634.0612	POSTS WOOD 4X6-INCH X 12-FT	EACH	4.000	4.000
0370	637.2230	SIGNS TYPE II REFLECTIVE F	SF	12.000	12.000
0380	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
0390	643.0100	TRAFFIC CONTROL (PROJECT) 01. 8434-00-70	EACH	1.000	1.000
0400	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	756.000	756.000
0410	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	1,512.000	1,512.000
0420	643.0900	TRAFFIC CONTROL SIGNS	DAY	882.000	882.000
0430	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	395.000	395.000
0440	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	150.000	150.000
0450	650.5000	CONSTRUCTION STAKING BASE	LF	150.000	150.000
0460	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-54-115	LS	1.000	1.000
0470	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 8434-00-70	LS	1.000	1.000

3

DATE 30SEP14 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	8434-00-70 QUANTITY
0480	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	150.000	150.000
0490	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	1,000.000	1,000.000
0500	ASP.1T0A	ON-THE-JOB TRAINING APPRENTICE AT $5.00/HR	HRS	1,200.000	1,200.000
0510	ASP.1T0G	ON-THE-JOB TRAINING GRADUATE AT $5.00/HR	HRS	300.000	300.000

3

CLEARING & GRUBBING

STATION	-	STATION	LOCATION	201.0110 CLEARING SY	201.0210 GRUBBING SY
9+20	-	9+90	LT	40	40
9+20	-	9+90	RT	45	45
PROJECT TOTAL				85	85

BASE AGGREGATE

STATION	-	STATION	LOCATION	305.0115 3/4-INCH TONS	305.0120 1 1/4-INCH TONS	REMARKS
9+20	-	9+90	WEST APPROACH	15	90	
10+10	-	10+90	EAST APPROACH	20	110	
PROJECT TOTAL				35	200	

ASPHALT PAVEMENT ITEMS

STATION	-	STATION	LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TONS
9+31	-	9+90	WEST APPROACH	5	30
10+10	-	10+70	EAST APPROACH	5	30
PROJECT TOTAL				10	60

LANDSCAPING

STATION	-	STATION	LOCATION	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
9+20	-	9+90	LT	15	30	0.02	1	1
9+20	-	9+90	RT	10	35	0.02	1	1
10+10	-	10+90	LT	10	30	0.02	1	1
10+10	-	10+90	RT	30	40	0.03	2	2
PROJECT TOTAL				65	135	0.1	5	5

EARTHWORK

From/To Station	Location	Excavation Common (1) (item # 205.0100) Cut (2)	Excavation Common (1) (item # 205.0100) EBS Excavation (3)	Salvaged/Unusable Pavement Material (4)	Available Material (5)	Unexpanded Fill	Expanded Fill (6) Factor 1.25	Mass Ordinate +/- (7)	Waste	Borrow (item #208.0100)	Comment:
9+20 - 10+90	Meadow Dam Road	144	0	0	144	10	13	131	131	0	
Grand Total		144	0	0	144	10	13	131	131	0	
	Total Exc Common	144							Total Borrow	0	

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/Unusable 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.

PERMANENT SIGNING

STATION	LOCATION	SIGN CODE/MESSAGE	SIGN SIZE IN x IN	637.2230 SIGNS TYPE II REFLECTIVE F SF	634.0612 POSTS WOOD 4X6-INCH 12 FT EACH
9+73	LT	W5-52L/BRIDGE HASH MARKS	12 X 36	3.00	1
9+89	RT	W5-52R/BRIDGE HASH MARKS	12 X 36	3.00	1
10+11	LT	W5-52R/BRIDGE HASH MARKS	12 X 36	3.00	1
10+27	RT	W5-52L/BRIDGE HASH MARKS	12 X 36	3.00	1
PROJECT TOTAL				12.00	4

CONSTRUCTION STAKING

STATION	-	STATION	LOCATION	650.4500 SUBGRADE LF	650.5000 BASE LF	650.9910 SUPPLEMENTAL CONTROL LS	650.9920 SLOPE STAKES LF
9+20	-	9+90	WEST APPROACH	70	70	0.5	70
10+10	-	10+90	EAST APPROACH	80	80	0.5	80
PROJECT TOTAL				150	150	1	150

EROSION CONTROL

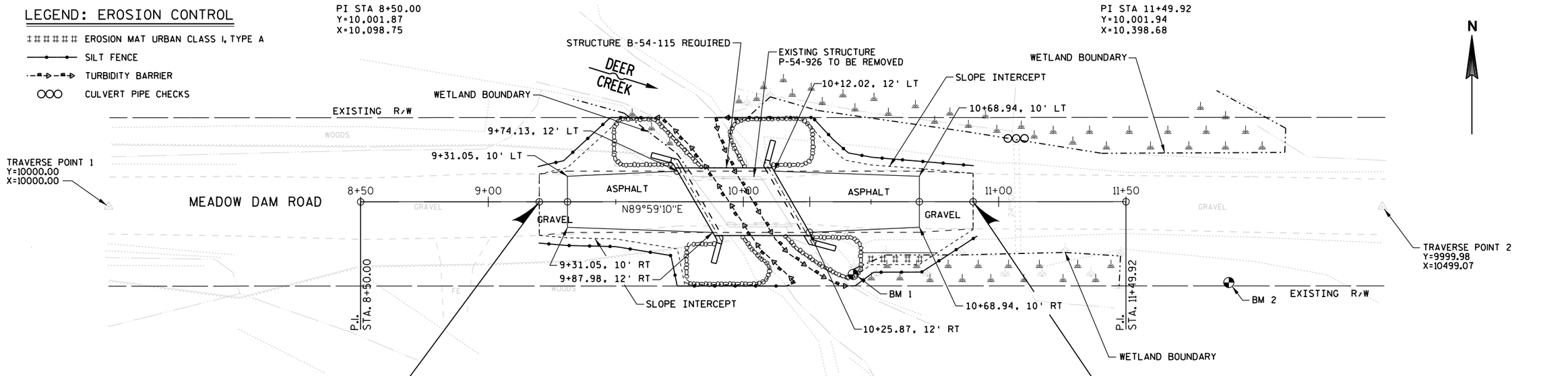
STATION	-	STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL (EACH)	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL (EACH)	628.2006 EROSION MAT URBAN CLASS I TYPE A SY	628.6005 TURBIDITY BARRIER SY	628.7555 CULVERT PIPE CHECKS EACH
9+20	-	9+90	LT	55	10	--	--	--	--	--
9+20	-	9+90	RT	110	15	--	--	--	--	--
9+64	-	10+20	CROSS	--	--	--	--	--	20	--
9+88	-	10+40	CROSS	--	--	--	--	--	35	--
10+10	-	10+90	LT	105	15	--	--	--	--	--
10+10	-	10+90	RT	55	10	--	--	15	--	--
11+05			LT	--	--	--	--	--	--	5
UNDISTRIBUTED				25	5	2	3	--	--	--
PROJECT TOTAL				350	55	2	3	15	55	5

TRAFFIC CONTROL

LOCATION	DAYS IN SERVICE	643.0100 TRAFFIC CONTROL PROJECT EACH	643.0420 TRAFFIC CONTROL BARRICADES TYPE III NO.	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAYS	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A NO.	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAYS	643.0900 TRAFFIC CONTROL SIGNS NO.	643.0900 TRAFFIC CONTROL SIGNS DAYS
MEADOW DAM ROAD	63	1	12	756	24	1,512	14	882
PROJECT TOTAL		1		756		1,512		882

LEGEND: EROSION CONTROL

- ‡‡‡‡‡‡ EROSION MAT URBAN CLASS I, TYPE A
- SILT FENCE
- TURBIDITY BARRIER
- CULVERT PIPE CHECKS



BENCH MARK TABLE

NO.	STATION	DESCRIPTION	ELEV.
1	10+42 RT	60d SPIKE IN 8" LOCUST SOUTH SIDE MEADOW DAM RD 45' EAST OF BRIDGE	1366.86
2	11+89 RT	60d SPIKE IN 14" ASPEN 190' EAST OF BRIDGE SOUTH SIDE ON MEADOW DAM RD 30' SOUTH	1366.07

BEGIN PROJECT 8434-00-70
STA 9+20.00
MATCH EXISTING
(BEGIN ABRUPTLY)
Y=10,001.884
X=10,168.752

END PROJECT 8434-00-70
STA 10+90.00
MATCH EXISTING
(END ABRUPTLY)

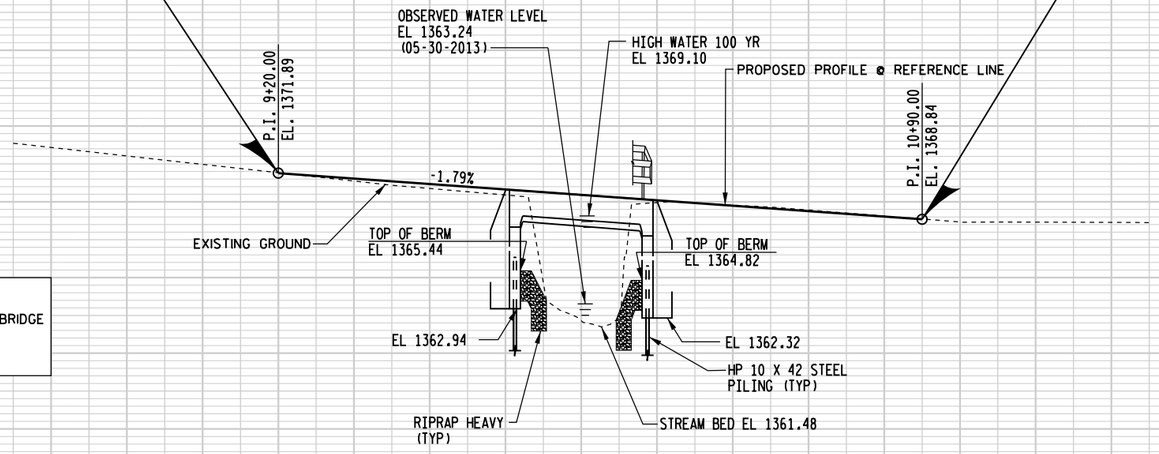
SCALE, FEET 0 20 40 HORIZ
0 5 10 VERT

EARTHWORK SUMMARY
STA 9+20 TO STA 10+00

CUT	63 CY
FILL	1 CY
FILL AT 1.25% EXP	1 CY
WASTE	62 CY

EARTHWORK SUMMARY
STA 10+00 TO STA 10+90

CUT	81 CY
FILL	9 CY
FILL AT 1.25% EXP	10 CY
WASTE	71 CY



STA 10+00.00
STRUCTURE B-54-115 REQUIRED
SINGLE SPAN CONCRETE FLAT SLAB BRIDGE
37'-11" OVERALL LENGTH
24'-0" CLEAR ROAD WIDTH
30° SKEW

STA 10+00.00
REMOVE STRUCTURE P-54-926
SINGLE SPAN STEEL DECK GIRDER BRIDGE
25'-10" OVERALL LENGTH
18'-3" CLEAR ROADWAY WIDTH
30° SKEW

PROJECT NUMBER: 8434-00-70	HWY: MEADOW DAM ROAD	COUNTY: RUSK	PLAN AND PROFILE	SHEET 7	E

FILE NAME: P:\60297370\900-WorkingDocs-CAD\Global CADD Standards\02-SHEETS\C\050101_pp.dgn
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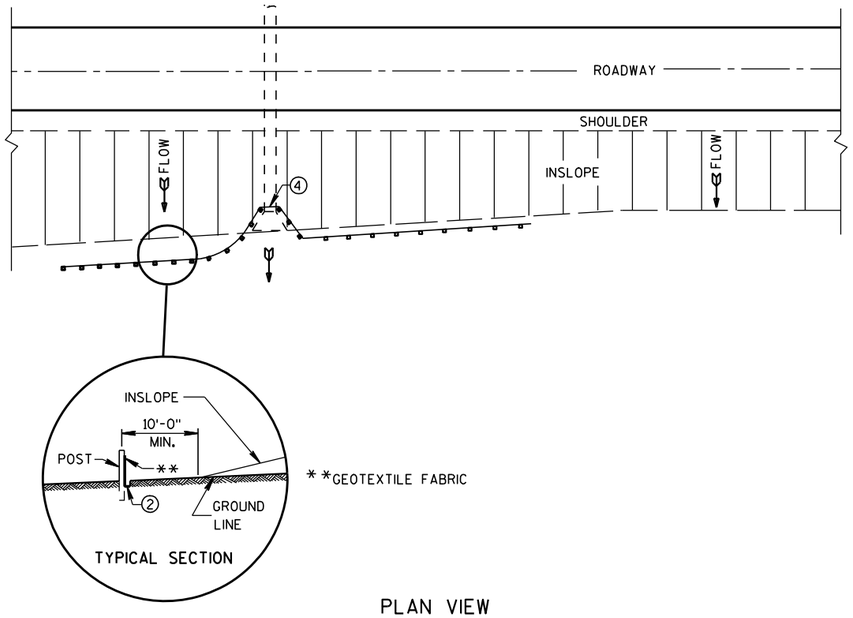
PLOT DATE: 7/22/2014
PLOT TIME: 10:41:34 AM
PLOT SCALE: 1:40
WISDOT/CADDS SHEET 40

Standard Detail Drawing List

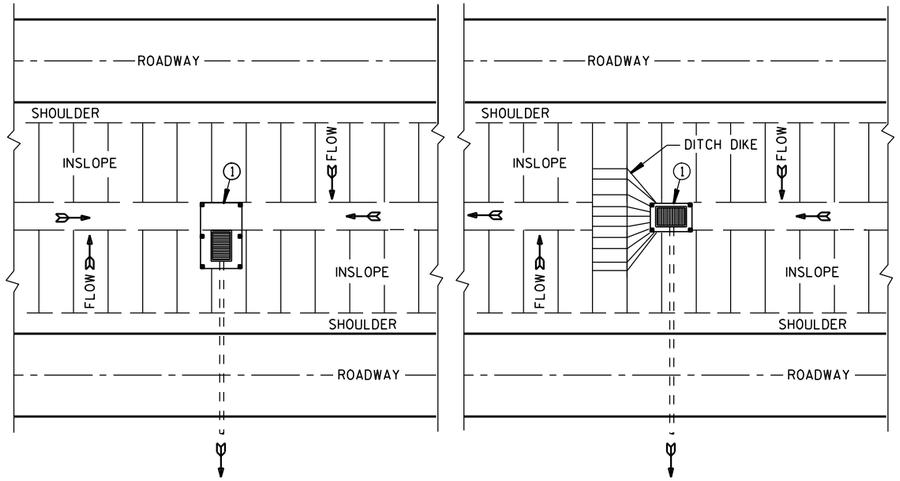
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C06-07	SIGNING & MARKING FOR TWO LANE BRIDGES

6



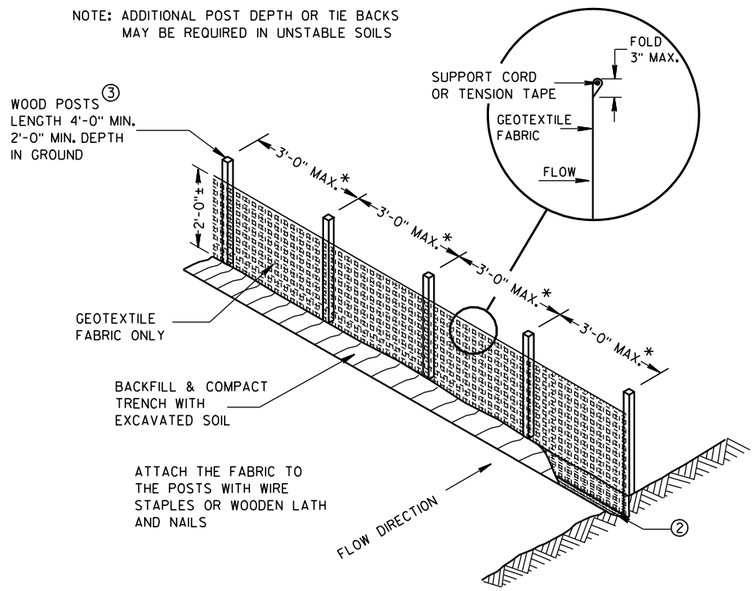
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



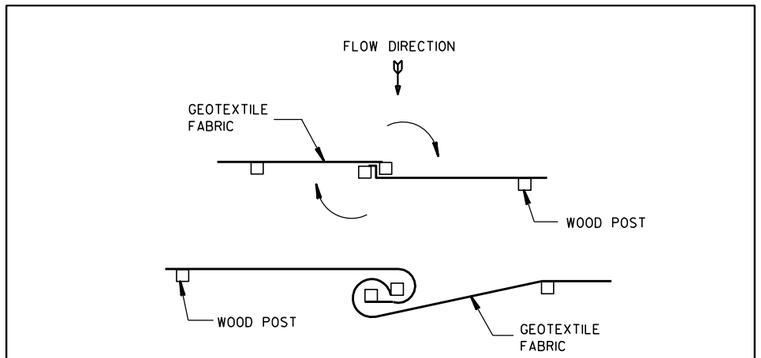
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS



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

SILT FENCE

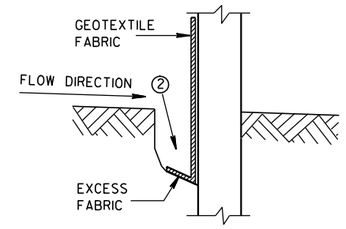


JOINING TWO LENGTHS OF SILT FENCE 5

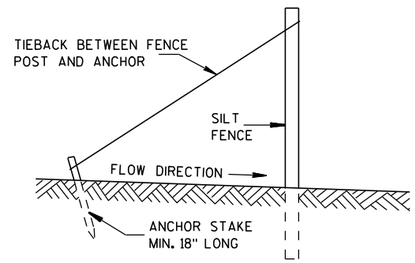
GENERAL NOTES

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

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



TRENCH DETAIL



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

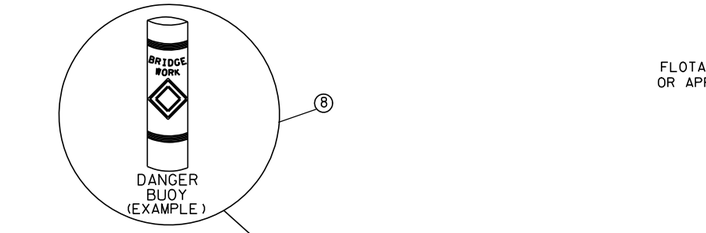
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

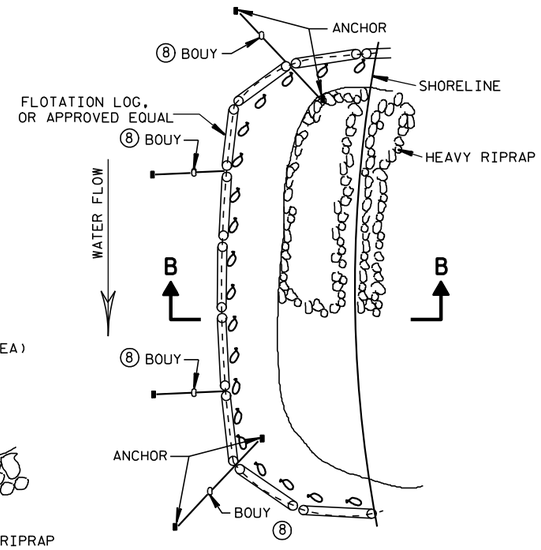
6

S.D.D. 8 E 9-6

6

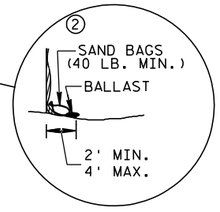
S.D.D. 8 E 9-6

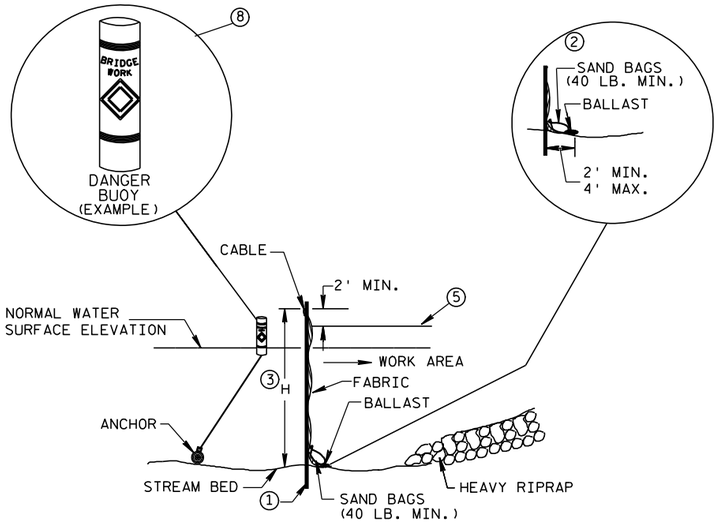




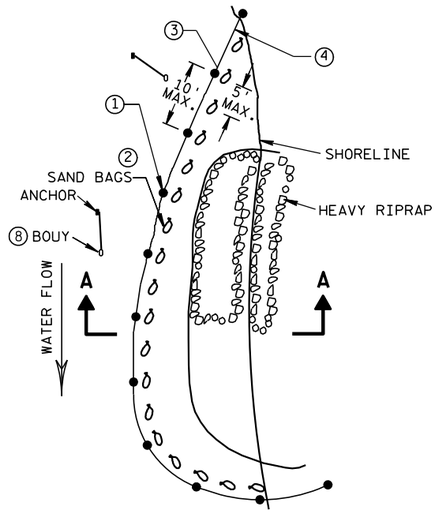
SECTION B-B

TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6





SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

GENERAL NOTES

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

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

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

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

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

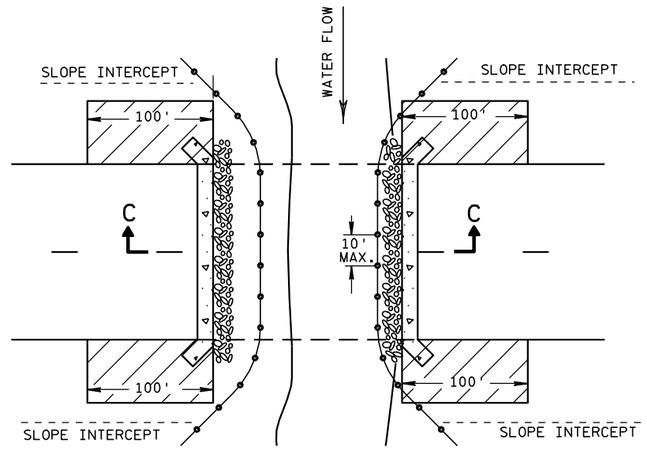
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

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

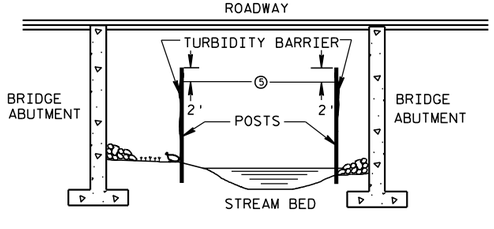
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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

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



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

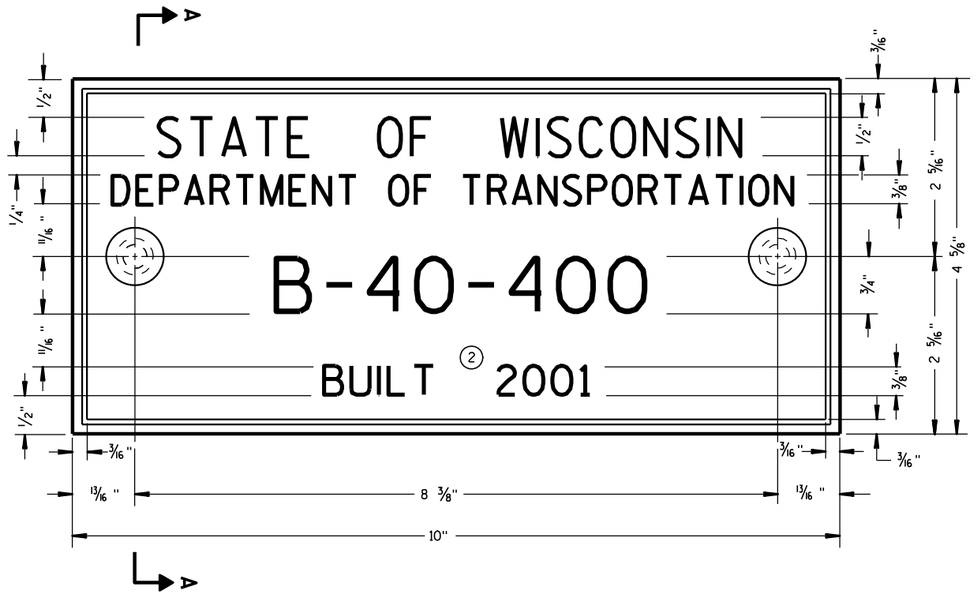
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

TURBIDITY BARRIER PLACEMENT DETAILS

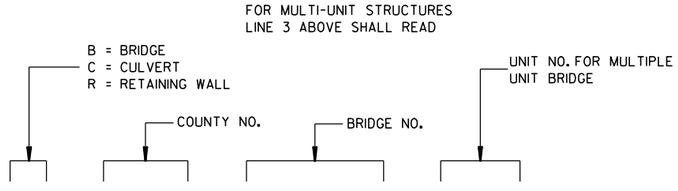
6

S.D.D. 8 E 11-2



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

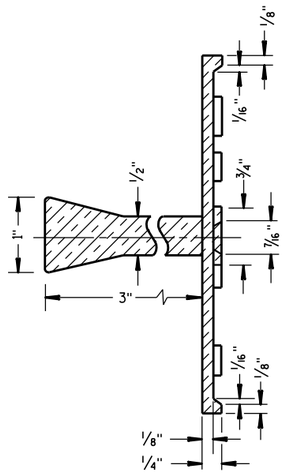
GENERAL NOTES

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

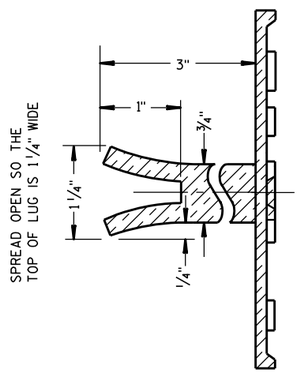
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

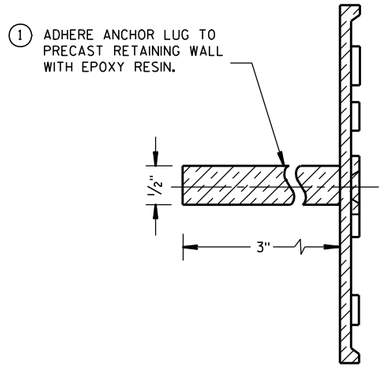
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
3/26/10 DATE	/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA	

6

S.D.D. 12 A 3-10

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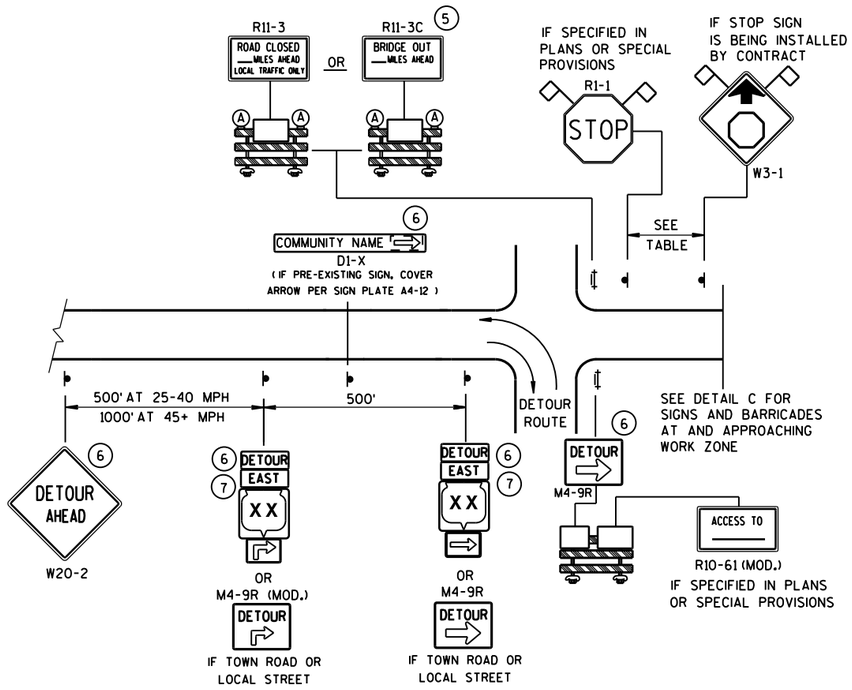
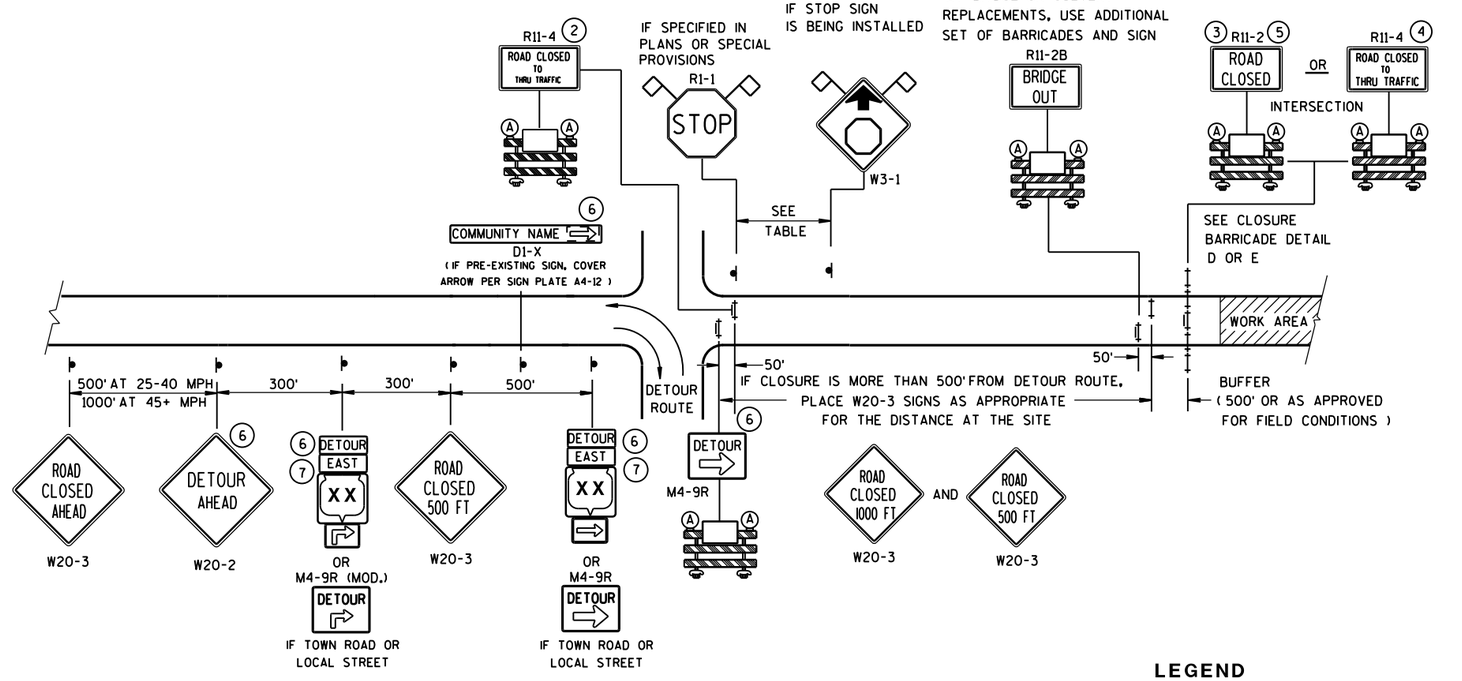
S.D.D. 12 A 3-10



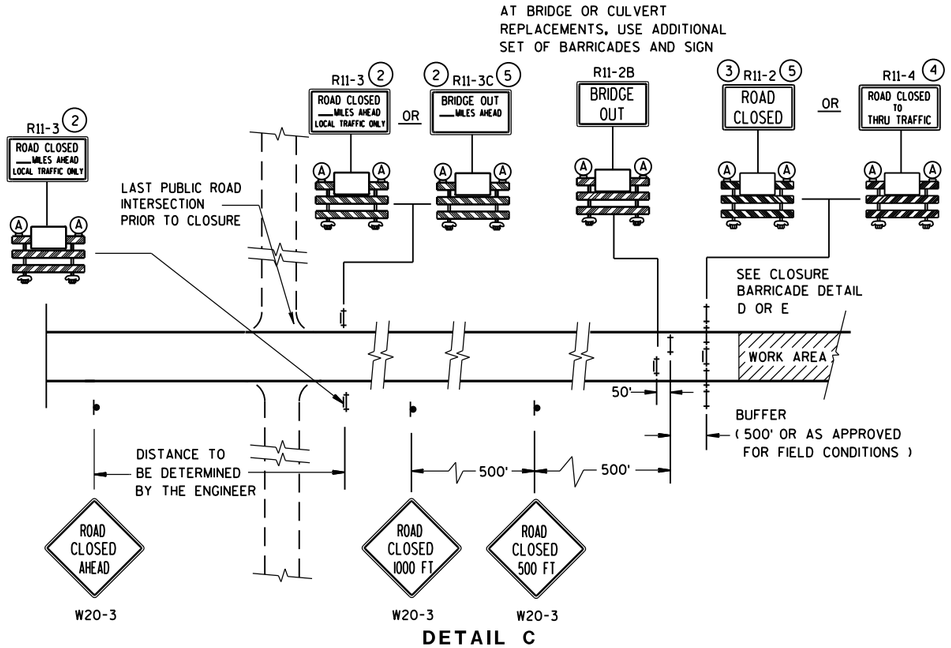
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

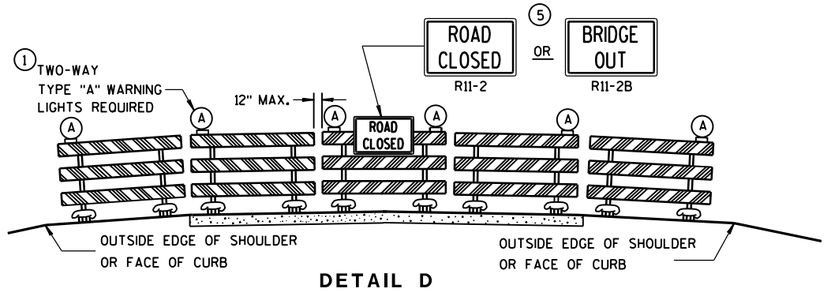
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 DATE — /S/ Travis Feltes STATE TRAFFIC ENGINEER — DESIGN

FHWA

6

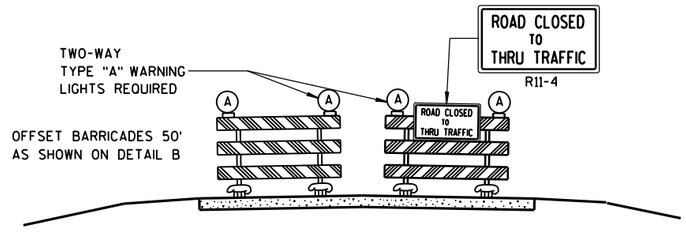
S.D.D. 15 C 2-5a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

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

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

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

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

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

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

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

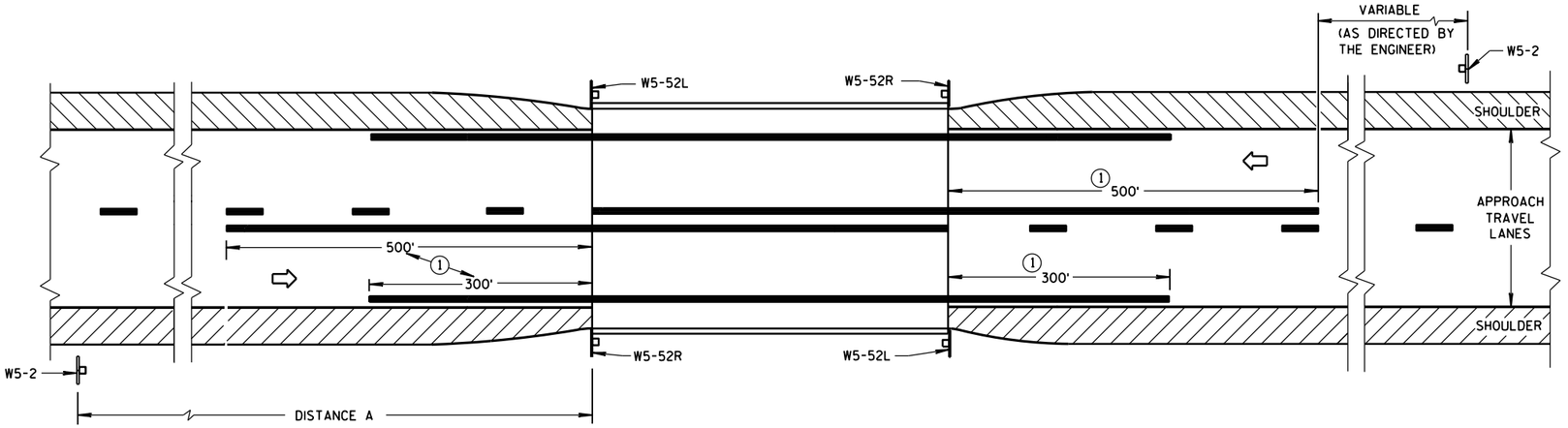
BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 C 2-5b



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 F REFLECTIVE SHEETING.

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

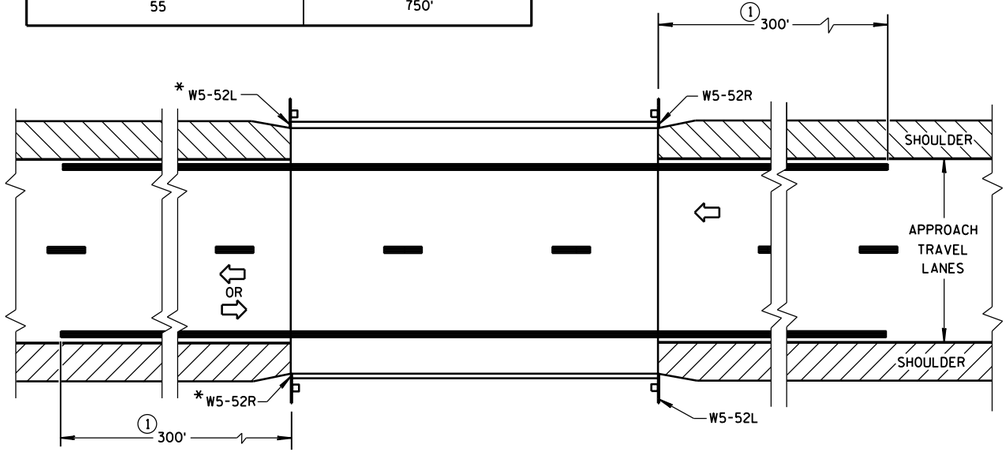
DISTANCE TABLE

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

SITUATION 1

WARRANTING CRITERIA:

BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET

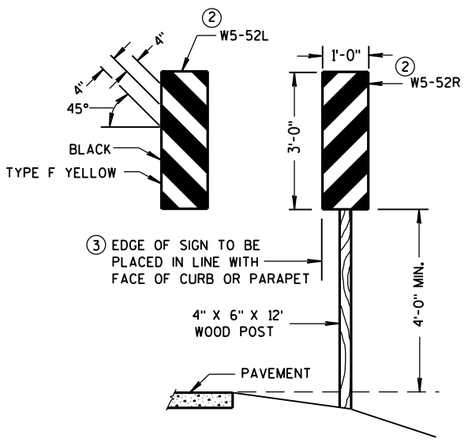


*OMIT ON ONE-WAY TRAVELLED WAYS

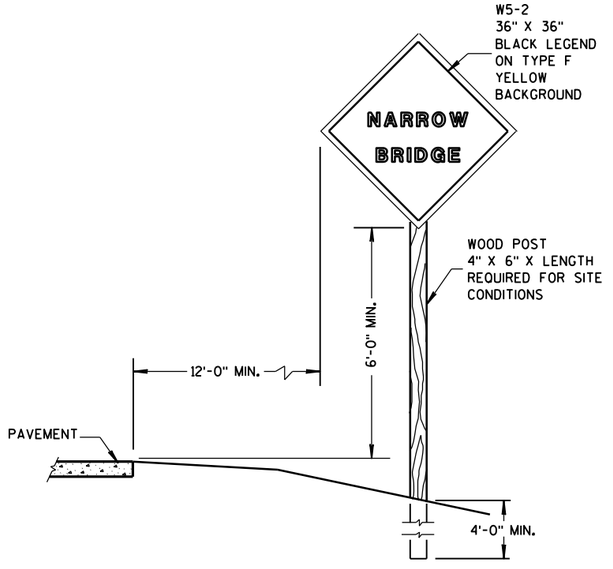
SITUATION 2

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



SIGN PLACEMENT

SIGNING & MARKING
FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

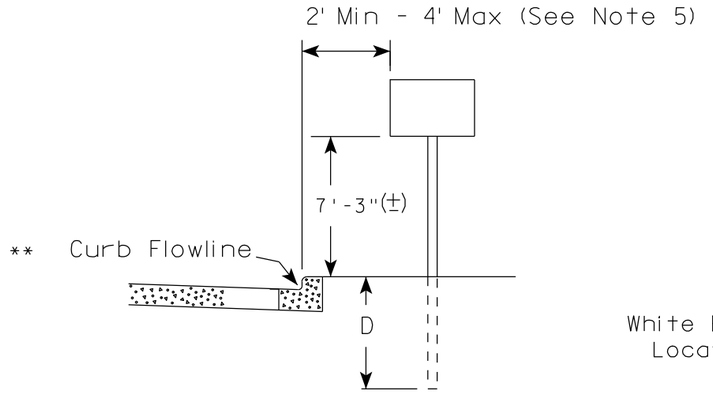
3-2014 DATE

/S/ Travis Feltes STATE TRAFFIC ENGINEER

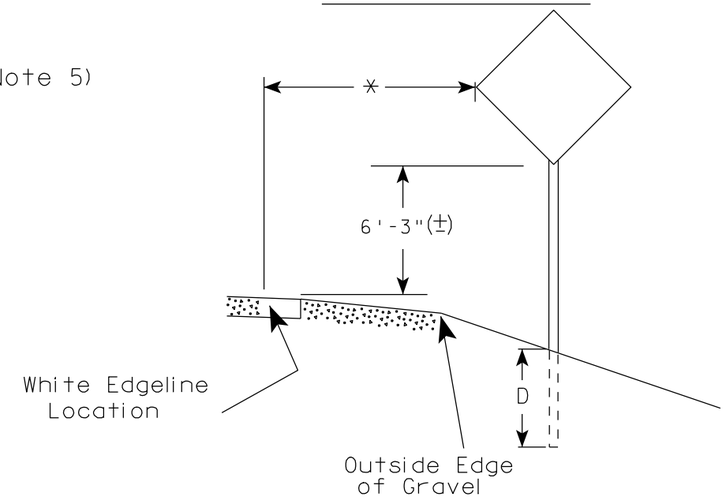
FHWA

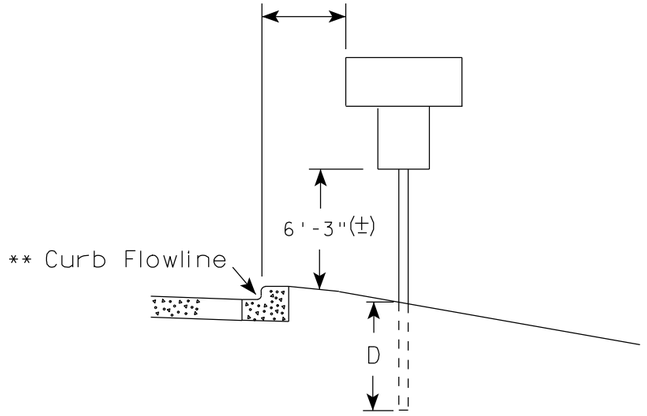
6
S.D.D. 15 C 6-7

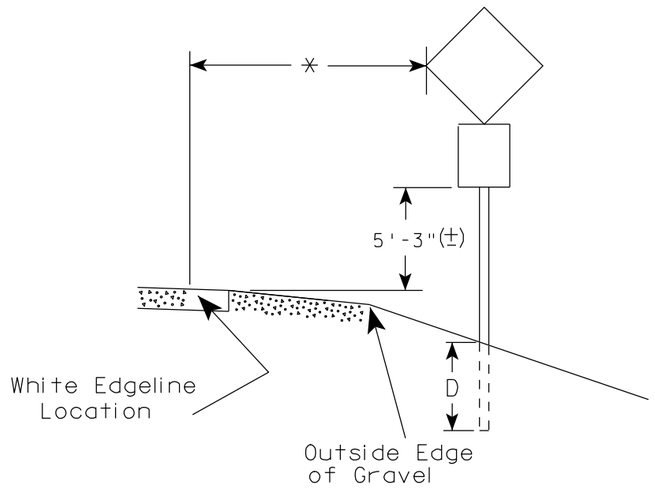
URBAN AREA



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'

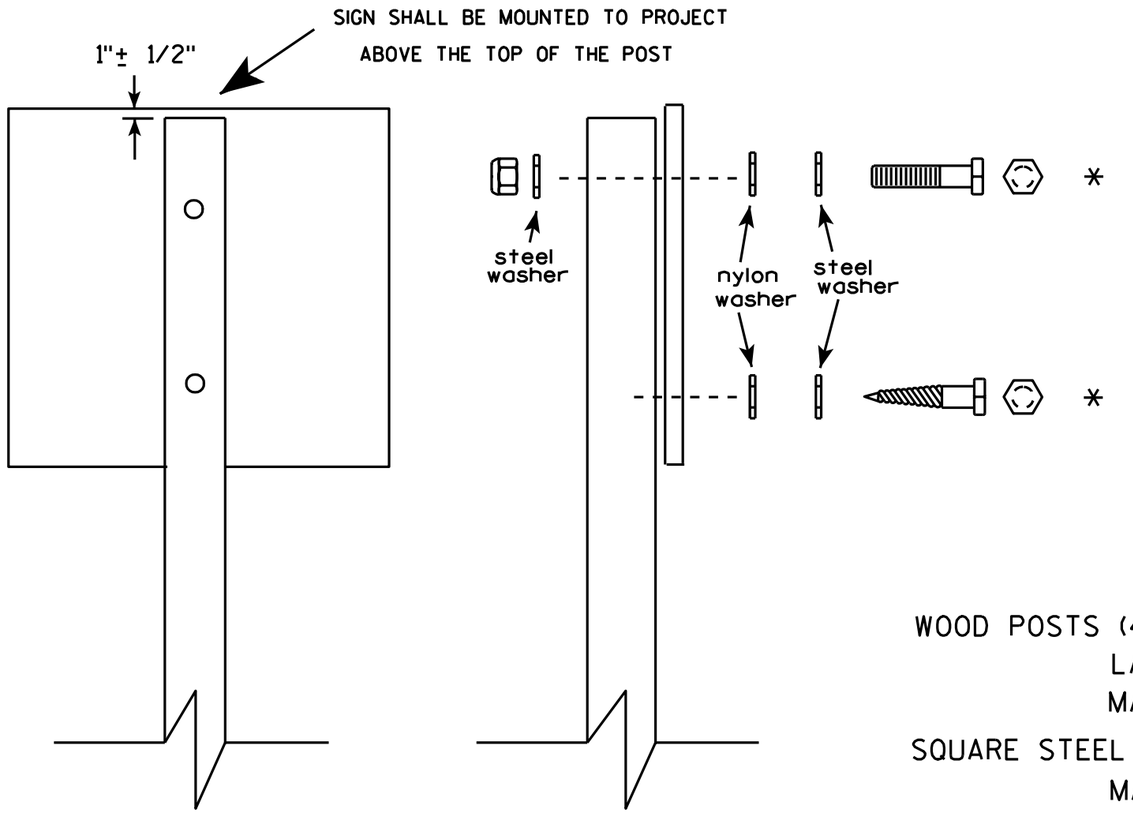
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

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: 15	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

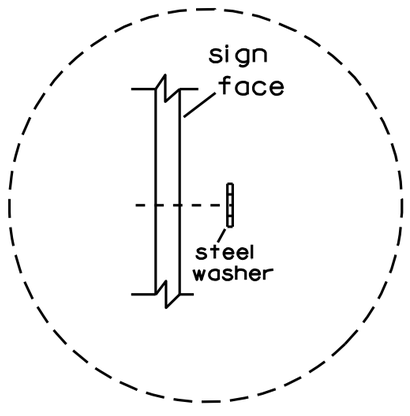
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

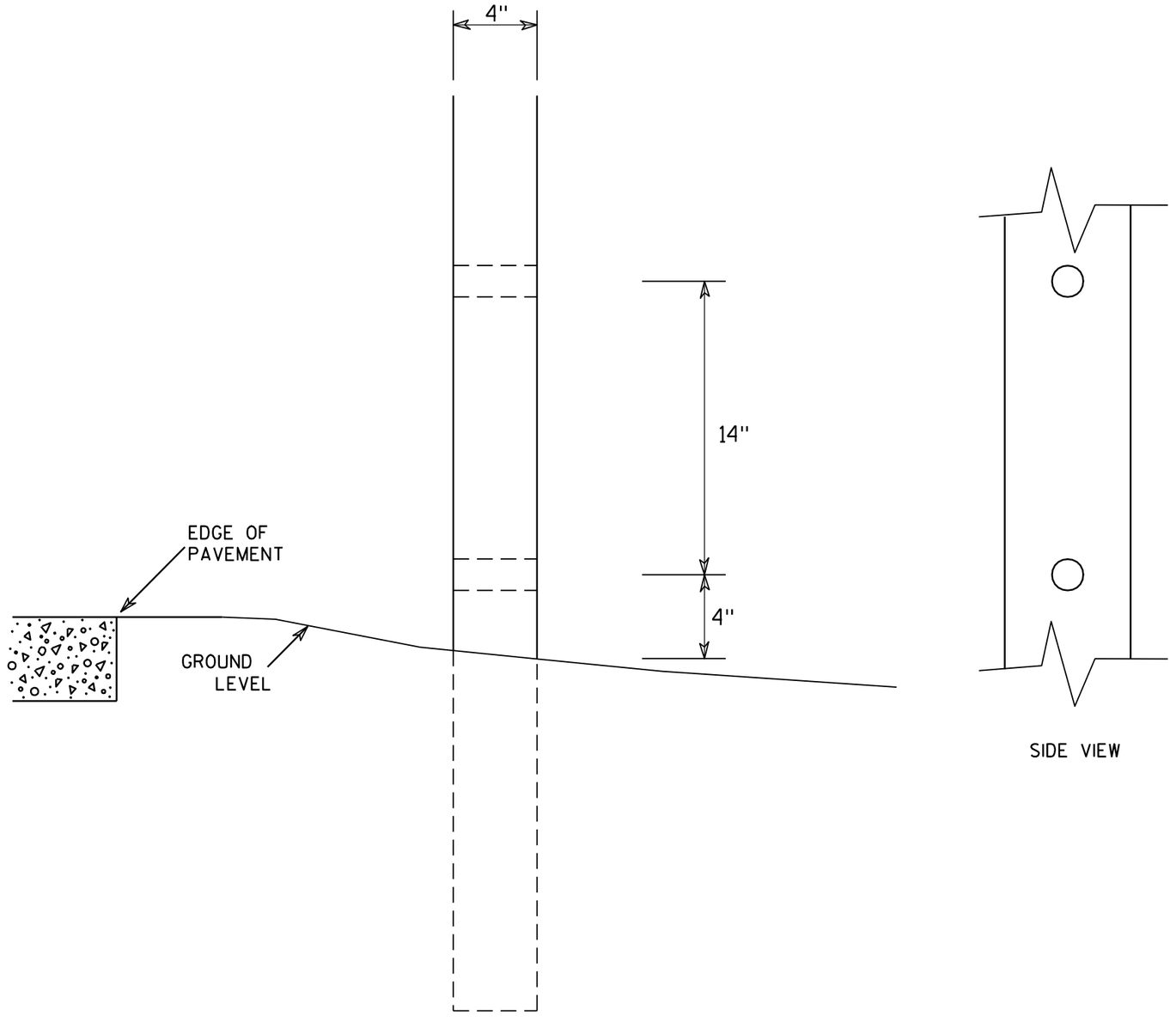
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

7

7



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

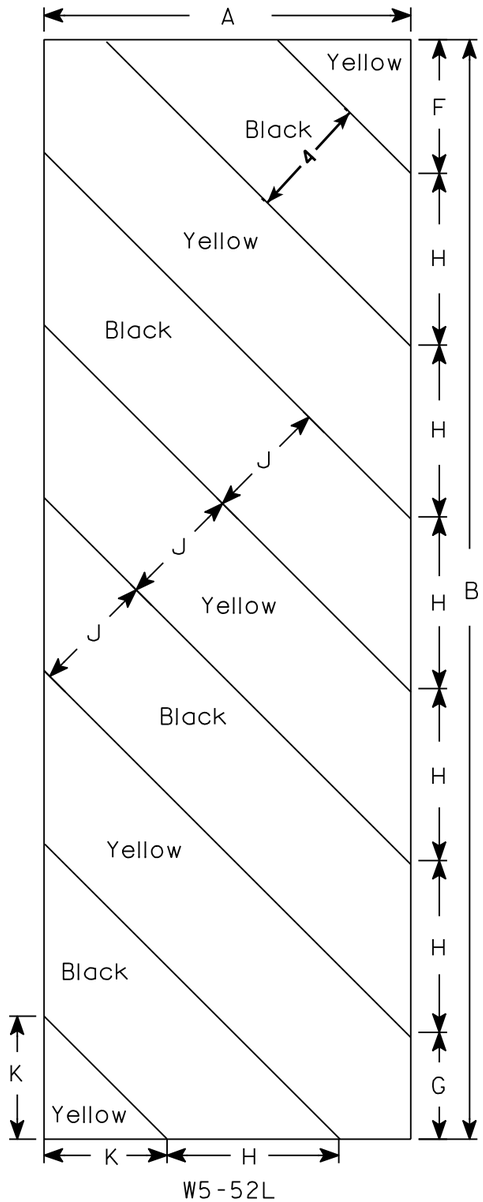
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

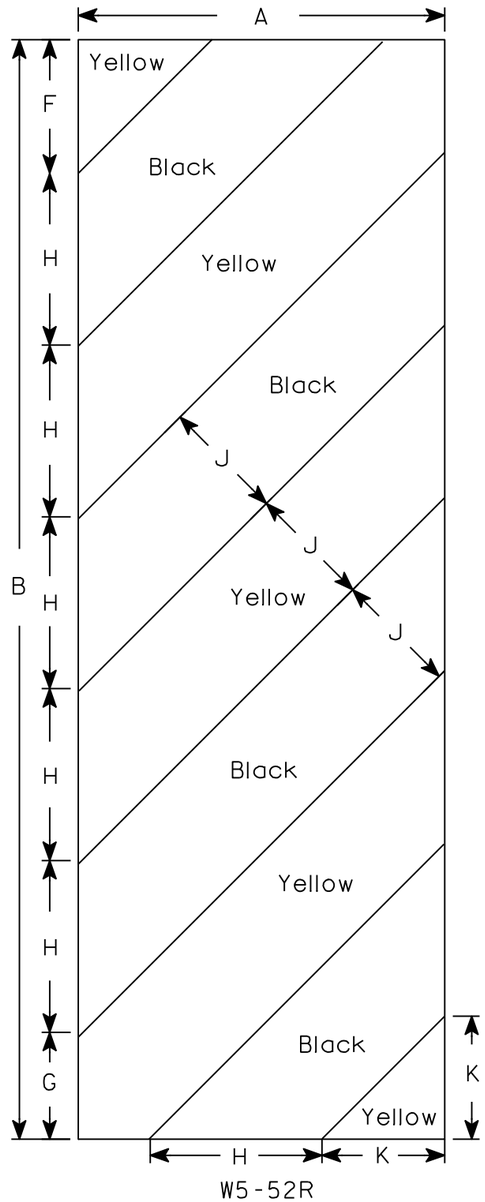
APPROVED Chester J Spang
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 17	E



W5-52L



W5-52R

NOTES

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

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

STANDARD SIGN

W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

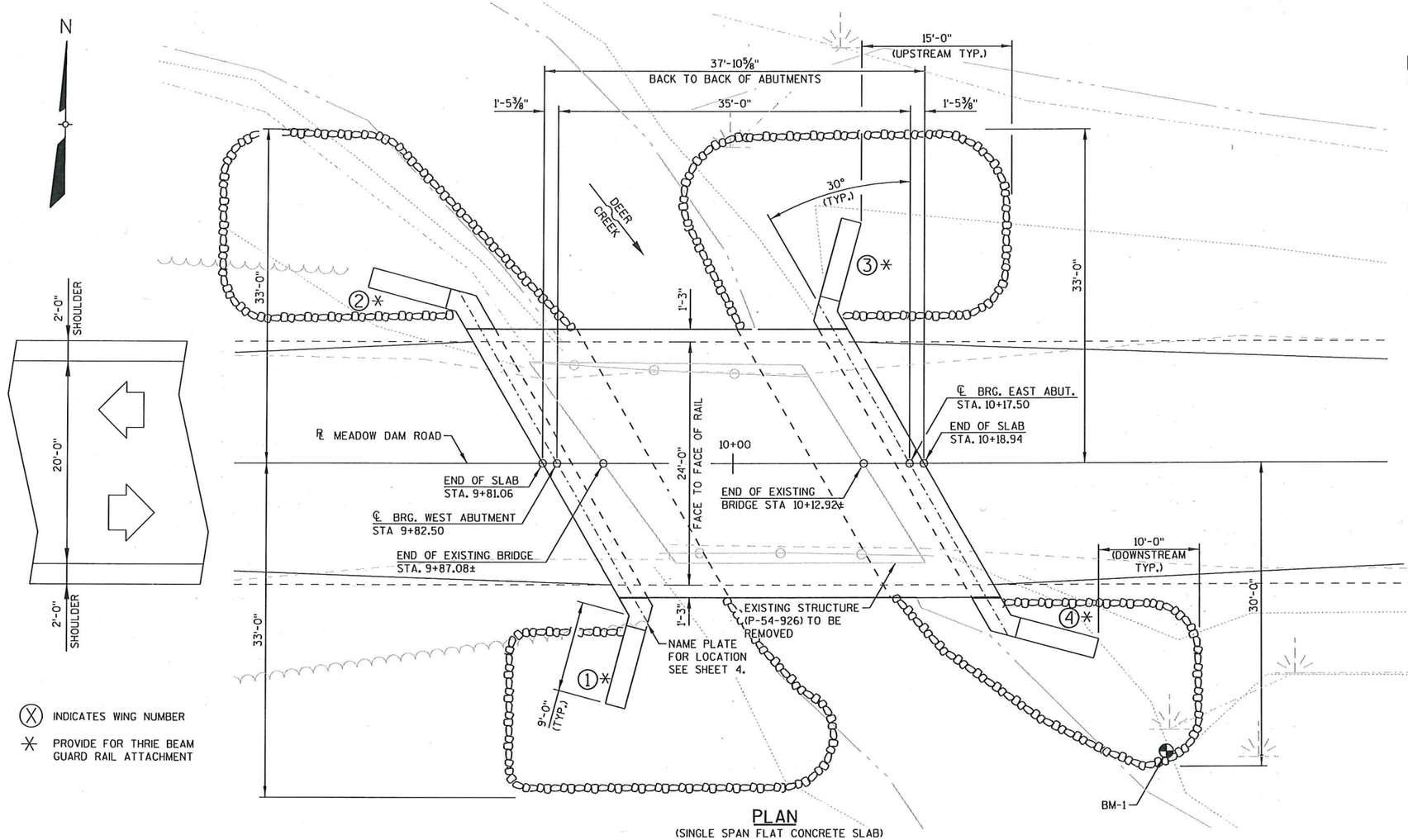
APPROVED Matthew R Rauch
for State Traffic Engineer

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

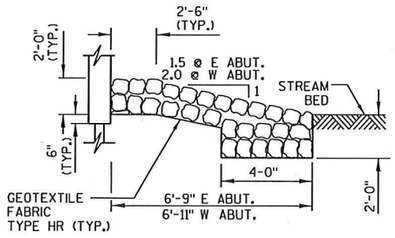
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 18 | E

STATE PROJECT NUMBER

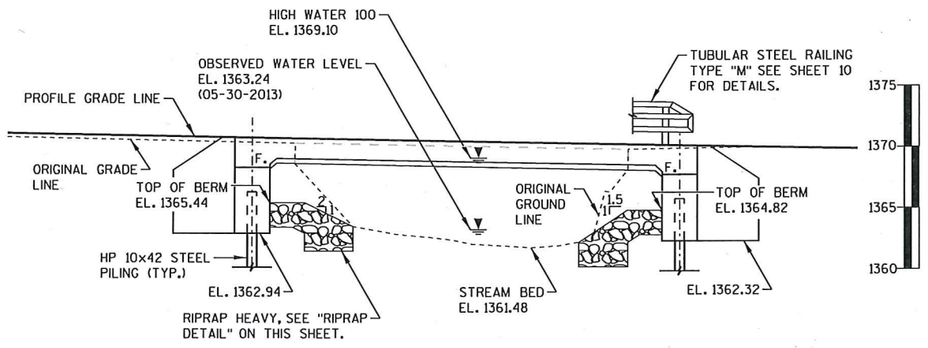
8434-00-70



PLAN
(SINGLE SPAN FLAT CONCRETE SLAB)



RIPRAP DETAIL



ELEVATION
(NORMAL TO DEER CREEK)

BENCH MARK TABLE

NO.	STATION	DESCRIPTION	ELEVATION
1	10+42 RT.	60d SPIKE IN 8" LOCUST SOUTH SIDE MEADOW DAM RD. 45' EAST OF BRIDGE	1366.86

ELEVATIONS SHOWN ON THIS PLAN ARE NAVD 88.

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR = 1.15
OPERATING RATING FACTOR = 1.49
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 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.

FOUNDATION DATA

ABUTMENTS AND WING WALLS TO BE SUPPORTED ON HP10x42 STEEL PILING. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 25'-0" LONG FOR THE EAST ABUTMENT AND WING WALLS. ESTIMATED 25'-0" LONG FOR THE WEST ABUTMENT AND WING WALLS.

** 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 GATE DYNAMIC FORMULA TO DETERMINE DRIVEN PILE CAPACITY.

TRAFFIC VOLUME

MEADOW DAM ROAD
A.D.T. (2015) = <100
A.D.T. (2035) = <100
DESIGN SPEED = 60 MPH

HYDRAULIC DATA

100 YEAR FREQUENCY
Q100 TOTAL ——— 850 CFS
- THRU BRIDGE ——— 730 CFS
- OVER ROAD ——— 120 CFS
VELOCITY THRU BRIDGE ——— 5.1 FPS
HIGH WATER ELEVATION ——— 1369.10±
WATERWAY AREA ——— 205 SQ. FT.
- THRU BRIDGE ——— 143 SQ. FT.
- OVER ROAD ——— 62 SQ. FT.
DRAINAGE AREA ——— 12.3 SQ. MI.
ROAD OVERTOPPING FREQUENCY — 56 YRS.
SCOUR CRITICAL CODE ——— 8

2 YEAR FREQUENCY
Q2 ——— 285 CFS
HIGH WATER 2 ELEVATION ——— 1366.28±

LIST OF DRAWINGS

WISCONSIN
KEVIN R. HAGEN
E-38866
STEVENS POINT
WI
PROFESSIONAL ENGINEER
6/13/2014

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
BILL DREHER (608) 266-8489

CONSULTANT CONTACT:
KEVIN HAGEN (715) 342-3053

AECOM PROJECT NUMBER: 60297370

NO.	DATE	REVISION	BY

AECOM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher KAR 08/05/14
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-54-115

MEADOW DAM ROAD OVER DEER CREEK

COUNTY RUSK | TOWN ~~CITY/VILLAGE~~ MURRY

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	EAN	DESIGN CK'D.	KRH	DRAWN BY	KAM	PLANS CK'D.	KRH

GENERAL PLAN

SHEET 1 OF 10

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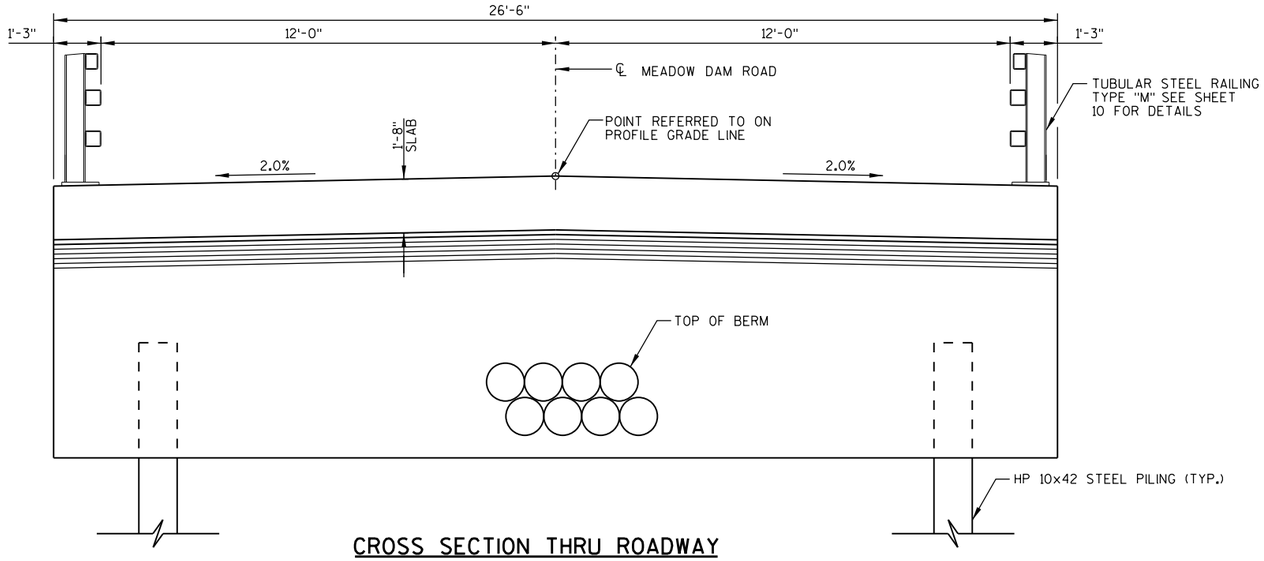
STATE PROJECT NUMBER
8434-00-70

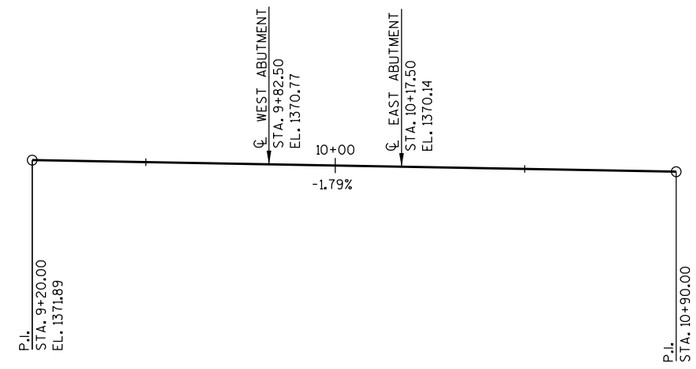


CROSS SECTION THRU ROADWAY

(LOOKING EAST)

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEM	UNIT	WEST ABUTMENT	EAST ABUTMENT	SUPER.	TOTAL
203.0600.S.01	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS, STATION 10+00	LS	-------	-------	-------	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES, B-54-115	LS	-------	-------	-------	1
210.0100	BACKFILL STRUCTURE	CY	120	120	-------	240
502.0100	CONCRETE MASONRY BRIDGES	CY	28	28	64	120
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	2,320	2,320	-------	4,640
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	1,460	1,460	12,720	15,640
513.4060	RAILING TUBULAR TYPE M, B-54-115	LS	-------	-------	-------	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	10	10	-------	20
550.0020	PRE-BORING ROCK OR CONSOLIDATED MATERIALS	LF	160	160		320
550.0500	PILE POINTS	EACH	7	7	-------	14
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	175	175	-------	350
606.0300	RIPRAP HEAVY	CY	105	100	-------	205
612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	10	10	-------	20
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	55	55	-------	110
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	200	195	-------	395
	NON-BID ITEMS					
	FILLER	SIZE				1/2" & 3/4"



PROFILE GRADE LINE, MEADOW DAM ROAD

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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 SLOPE OF THE 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 (P-54-926) IS A SINGLE SPAN STEEL DECK GIRDER BRIDGE, 25.8'LONG x 18.2' WIDE, TO BE REMOVED.

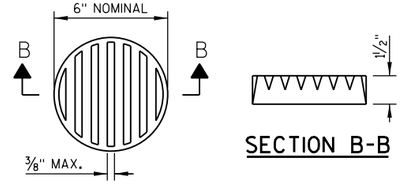
AT THE BACKFACE OF ABUTMENTS ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

ALL REQUIRED REMOVAL OF THE EXISTING SUBSTRUCTURES IS INCLUDED IN THE BID ITEM "REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS, STATION 10+00."

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATIVE METHOD IS APPROVED BY THE ENGINEER.

THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES.

EXCAVATION REQUIRED UNDER THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-54-115" IS NOT USED TO BALANCE THE EARTHWORK.



SECTION B-B

RODENT SHIELD DETAIL

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

ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE INCLUDED IN THE BID ITEM "PIPE UNDERDRAIN UNPERFORATED 6-INCH".

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-115

DRAWN BY KAM | PLANS CK'D. KRH

CROSS SECTION & QUANTITIES

SHEET 2 OF 10

20

8

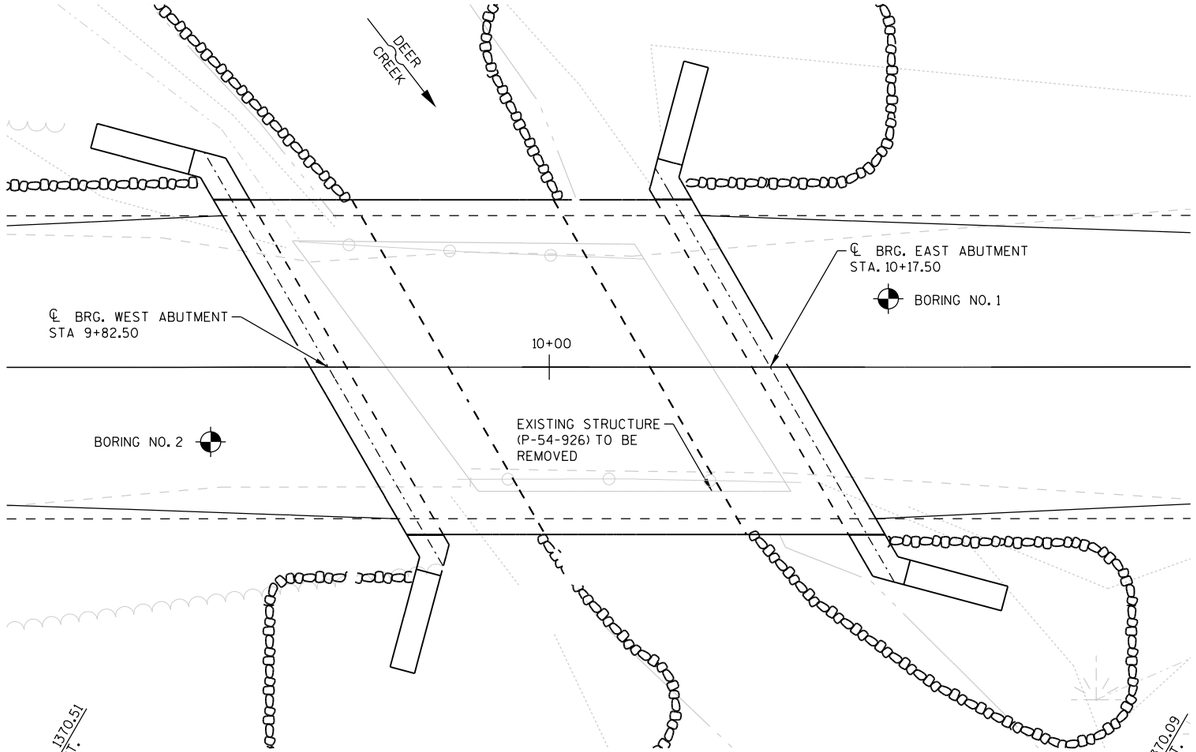
8

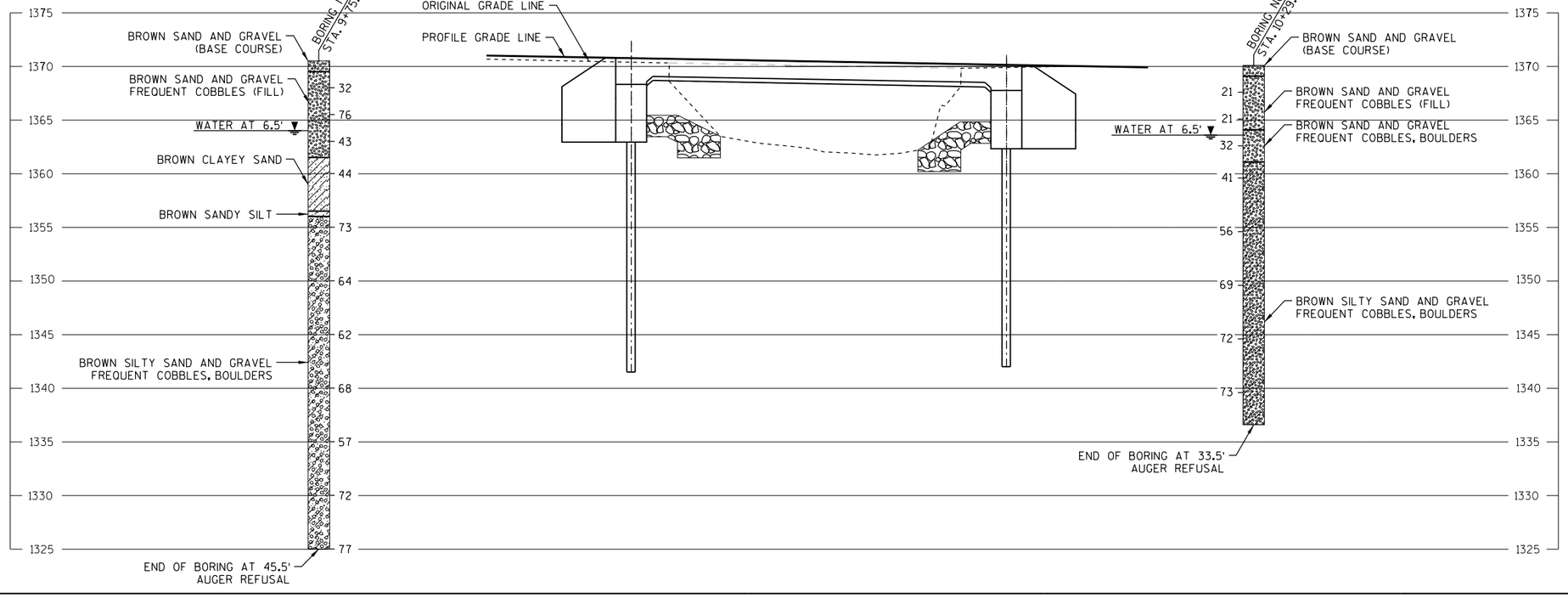
N

BORINGS PREFORMED BY:
NUMMELIN TESTING SERVICES
STEVENS POINT, WI

BORINGS WERE PERFORMED ON MAY 29 & 30, 2013.

REPORT BY:
NUMMELIN TESTING SERVICES
3217 WHITING AVE.
P.O. BOX 127
STEVENS POINT, WI 54481





STATE PROJECT NUMBER

8434-00-70

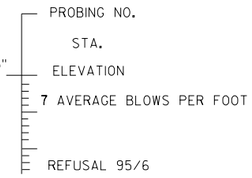
ABBREVIATIONS

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

MATERIAL SYMBOLS

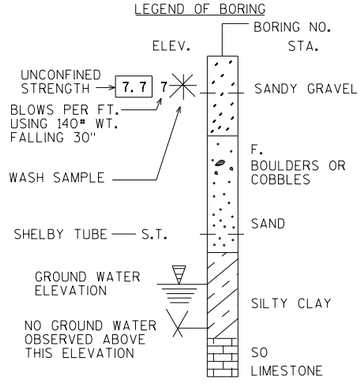
TOPSOIL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING



95/6=95 BLOWS FOR 6" PENETRATION
PROBING TAKEN WITH A 350# WT. FALLING 18" ON A 2" O.D. POINT.

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-54-115

DRAWN BY KAM | PLANS CK'D. EAN

SUBSURFACE EXPLORATION

SHEET 3 OF 10

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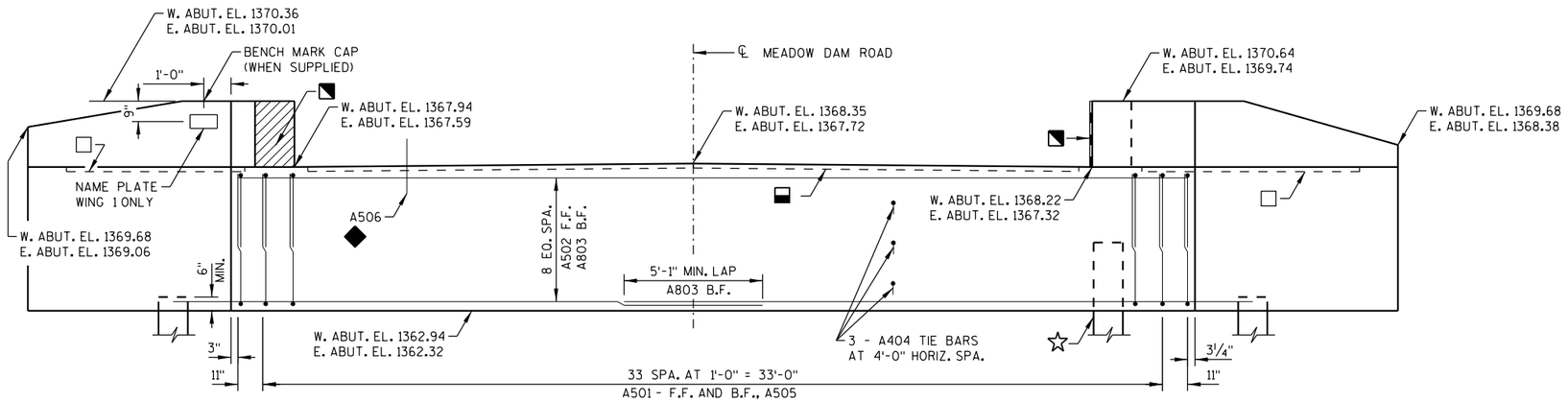
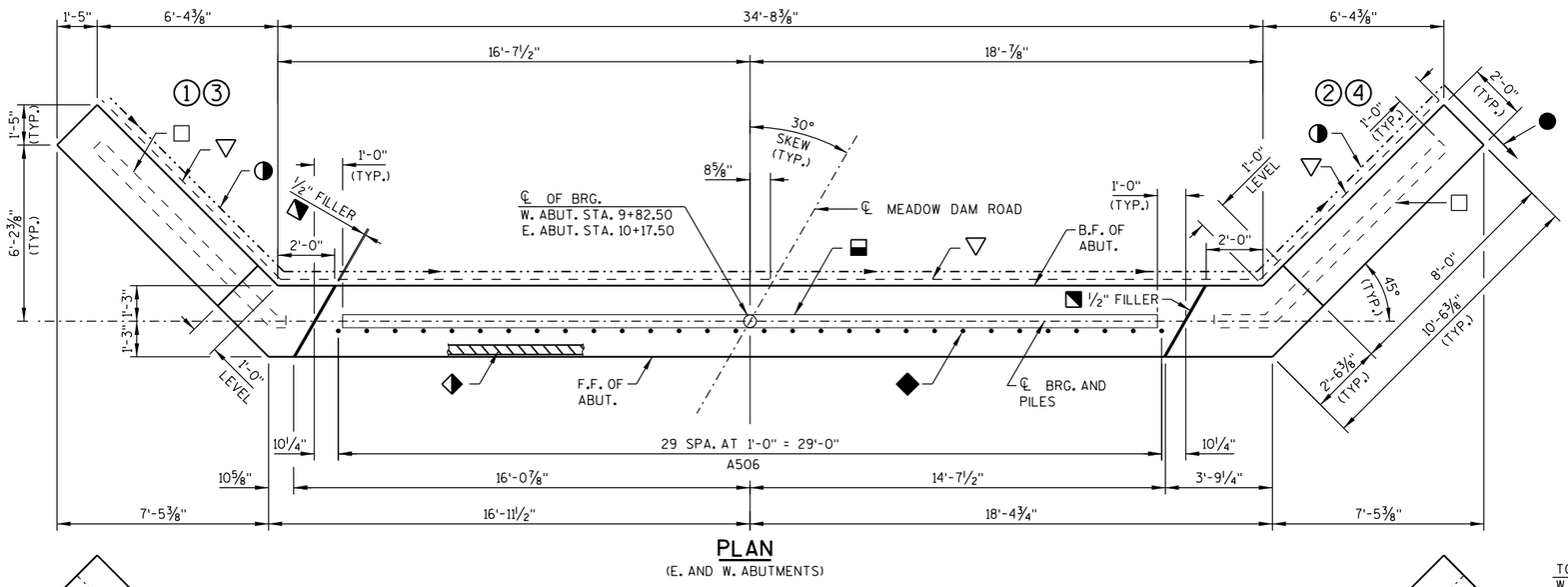
STATE PROJECT NUMBER

8434-00-70



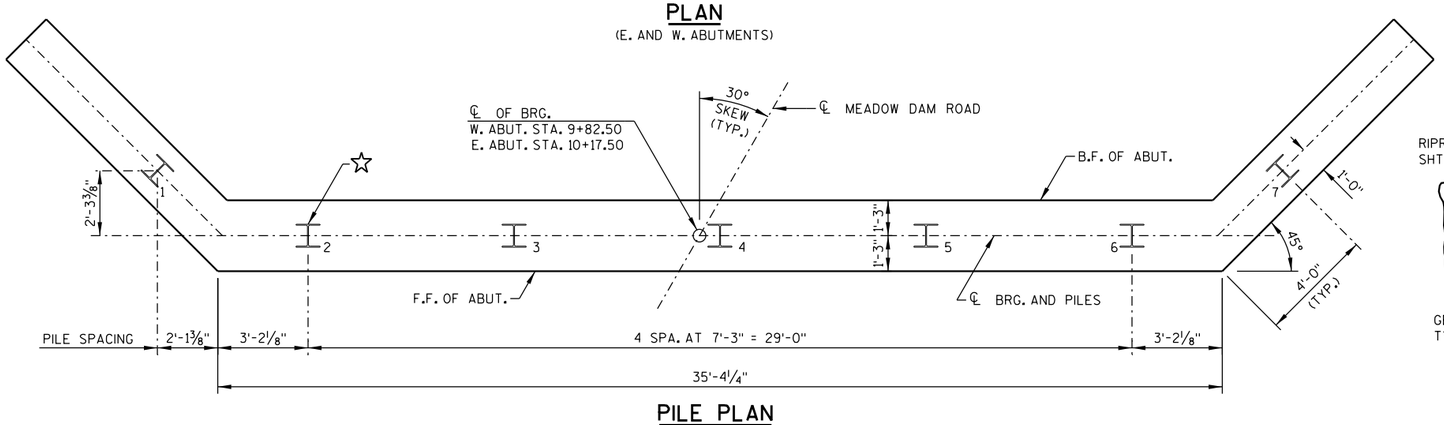
ELEVATION

(LOOKING EAST AT E. ABUTMENT,
LOOKING WEST AT W. ABUTMENT)



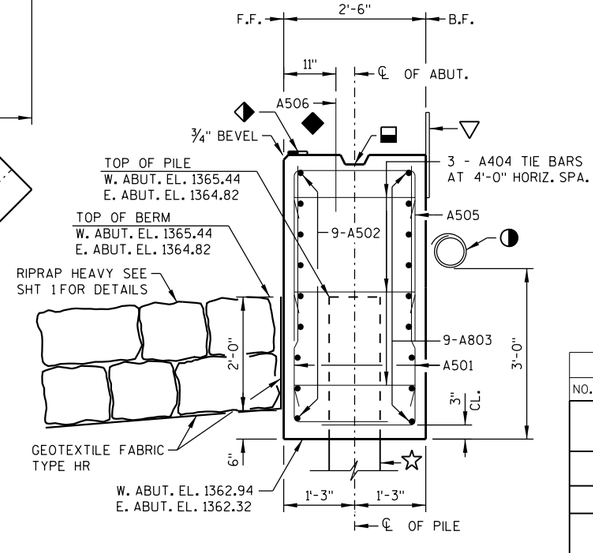
PLAN

(E. AND W. ABUTMENTS)



PILE PLAN

(E. AND W. ABUTMENTS)



TYPICAL SECTION THRU BODY

NOTES

ELEVATIONS AND DIMENSIONS ARE GIVEN AT THE ℄ OF ABUTMENT. FOR WING DETAILS AND ELEVATIONS SEE SHEETS 5 AND 6.

ALL PLAN DIMENSIONS ARE TO EDGE OF CONCRETE, NOT FILLER.

DO NOT PLACE FILL ABOVE 3'-0" FROM BOTTOM OF ABUTMENT UNTIL SUPERSTUCTURE IS IN PLACE.

LEGEND

- ☆ SUPPORT ABUTMENTS ON HP 10x42 STEEL PILING. SEE FOUNDATION DATA ON SHEET 1 AND PILE SPLICE DETAIL ON SHEET 7.
- ◑ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. DRAIN BOTH ABUTMENTS TO DOWNSTREAM SIDE OF BRIDGE.
- ● PIPE UNDERDRAIN, UNPERFORATED, 6-INCH FROM BACK OF WING TO DISCHARGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 2. DISCHARGE LOCATION TO BE DETERMINED BY ENGINEER IN THE FIELD.
- ◪ ½" FILLER TO EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)
- ◆ A506 AT 1'-0", COATED. BARS MAY BE PLACED AFTER CONCRETE HAS BEEN POURED BUT PRIOR TO ITS INITIAL SET. EMBED 1'-0".
- ▽ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- ◈ ¾" x 4" FILLER - TO EXTEND BETWEEN WING WALLS.
- ▬ KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2"x6".
- □ OPTIONAL CONSTRUCTION JOINT KEYWAY FORMED BY A BEVELED 2"x6".
- Ⓧ INDICATES WING NUMBER

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-115

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ABUTMENTS

SHEET 4 OF 10

22

8

8

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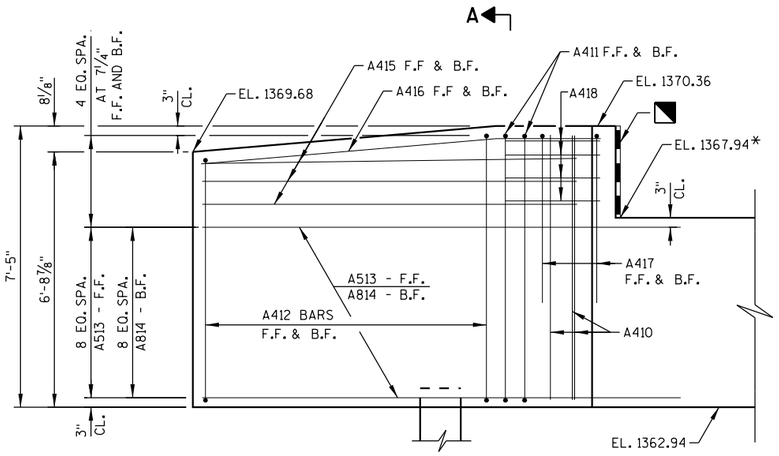
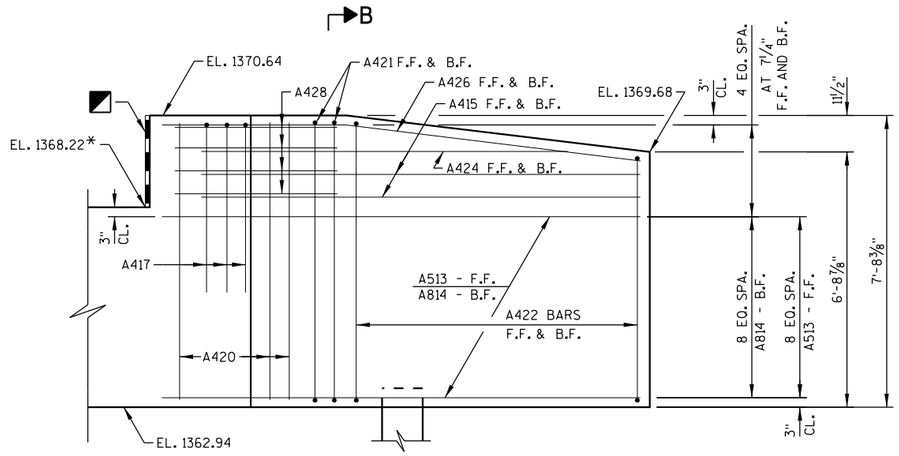
BATCH PRINT SHEET 5 OF 10

STATE PROJECT NUMBER
8434-00-70



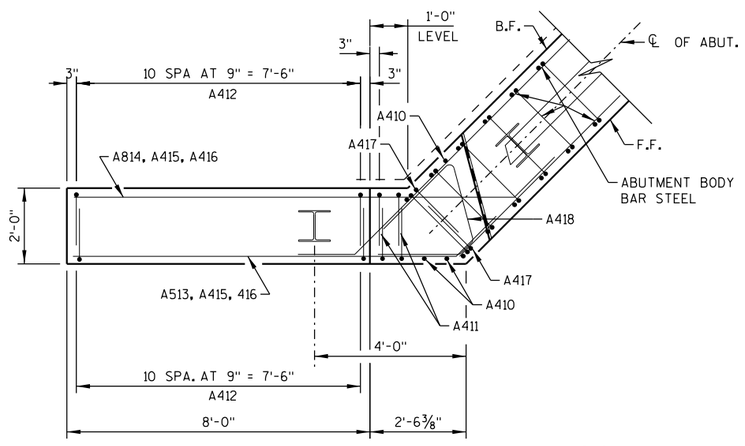
ELEVATION - WING 1



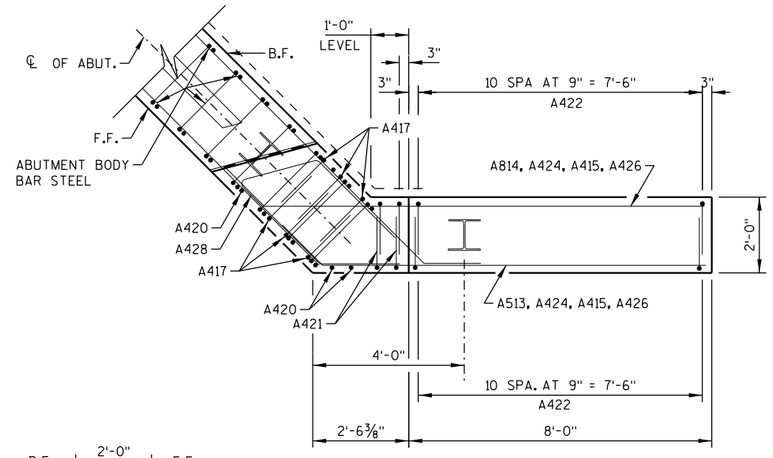
ELEVATION - WING 2

LEGEND

- ½" FILLER TO EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)
- * ELEVATIONS AND DIMENSIONS ARE GIVEN AT TH ℄ OF ABUTMENT.



PLAN - WING 1



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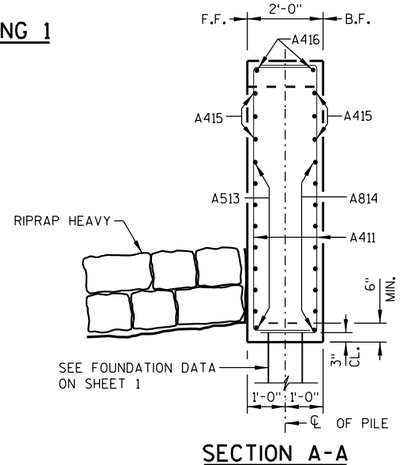
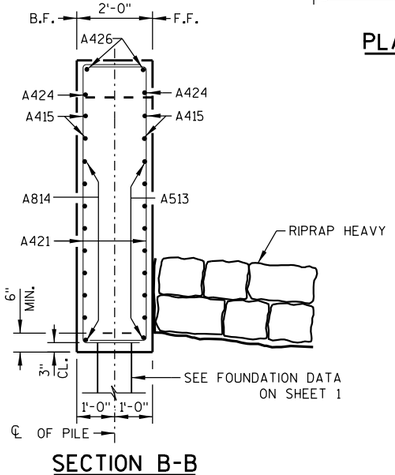


SECTION A-A



SECTION B-B

NO.	DATE	REVISION	BY

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STRUCTURE B-54-115

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WEST ABUTMENT WINGS

SHEET 5 OF 10

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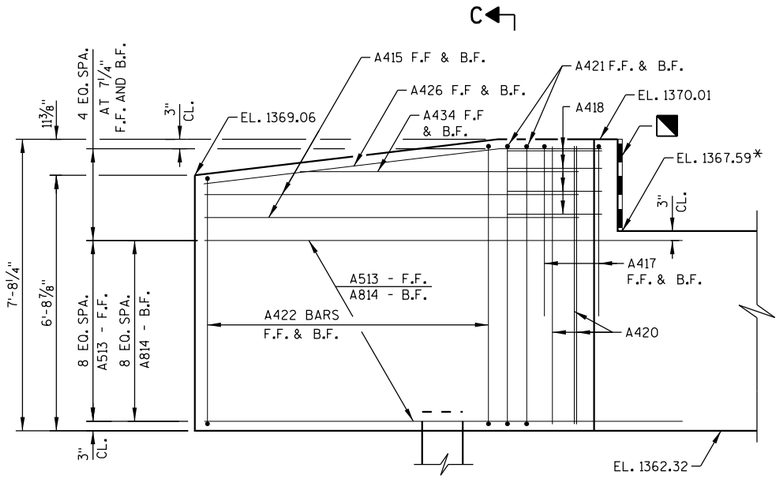
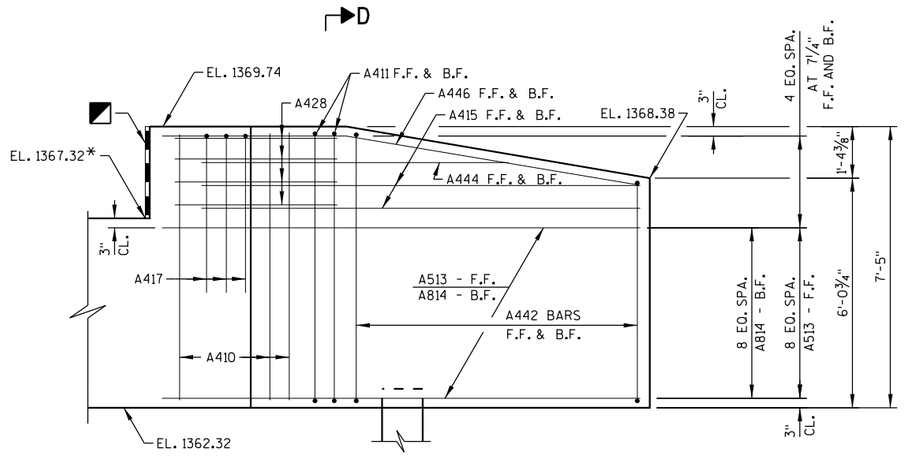
STATE PROJECT NUMBER

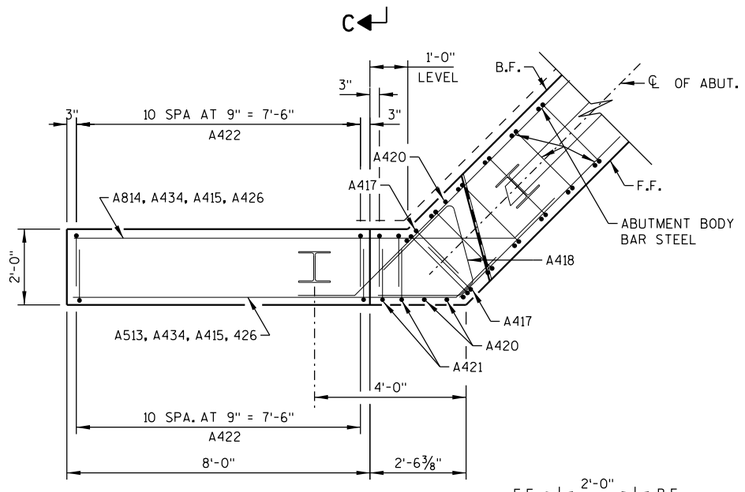
8434-00-70



ELEVATION - WING 3



ELEVATION - WING 4



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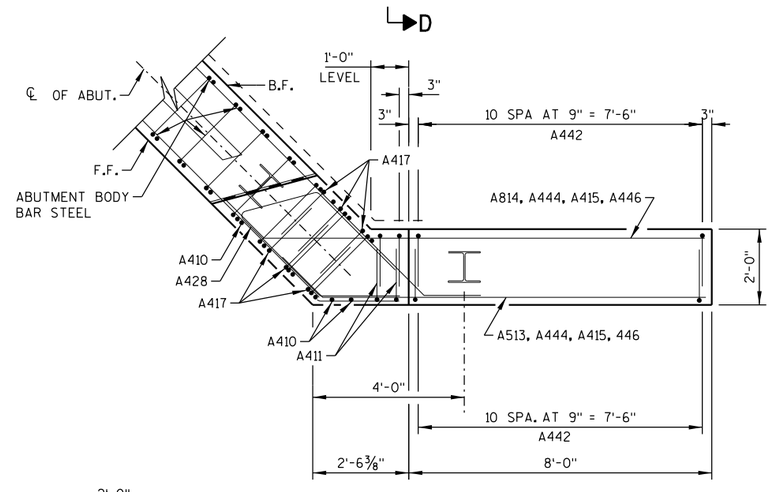

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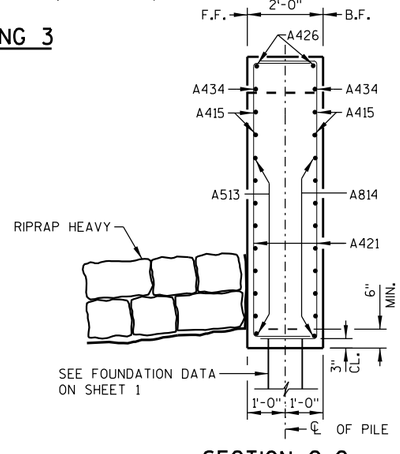
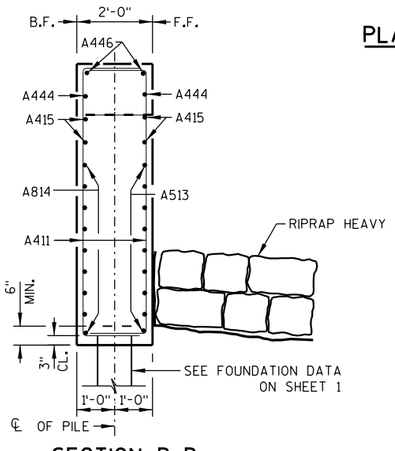


SECTION C-C



SECTION D-D

LEGEND

- ▩ ½" FILLER TO EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)
- * ELEVATIONS AND DIMENSIONS ARE GIVEN AT TH ℄ OF ABUTMENT.

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STRUCTURE B-54-115

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EAST ABUTMENT WINGS

SHEET 6 OF 10

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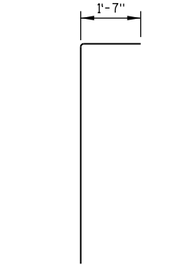
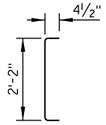
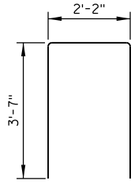


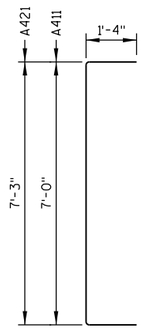
A501, A417



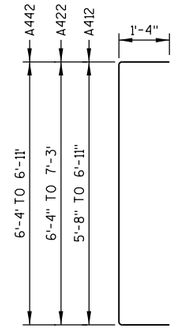
A404



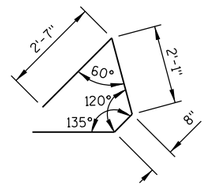
A505



A411, A421

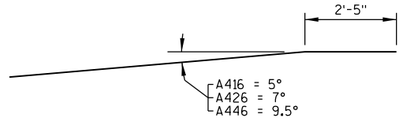


A412, A422, A442

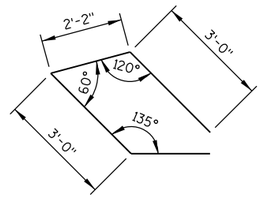


A418

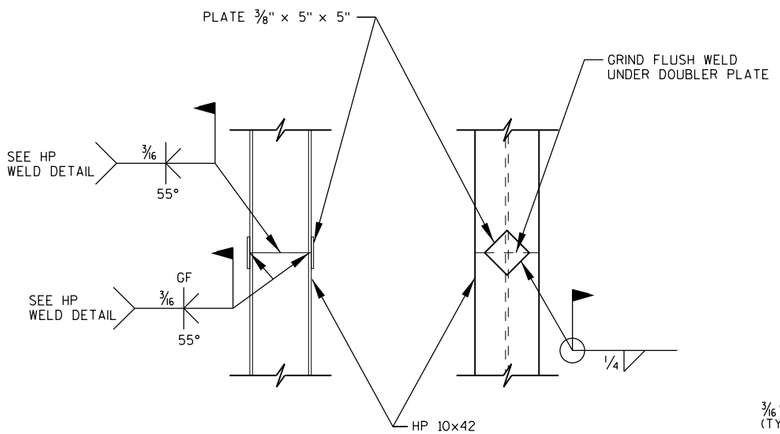
A513, A803, A814



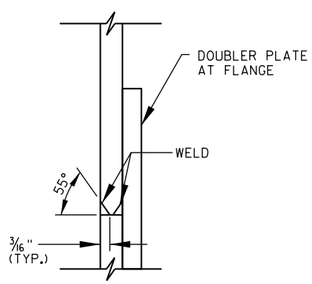
A416, A426, A446



A428



PILE SPLICE DETAIL



WELD DETAIL

BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

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

BOTH ABUTMENTS ARE INCLUDED IN THIS BILL OF BARS.

MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION	
NON-COATED BARS					TOTAL WEIGHT = 4,640 LBS	
A501	144	6 - 0	X		ABUTMENT BODY - F.F. & B.F.	VERT.
A502	18	35 - 4			ABUTMENT BODY - F.F.	HORIZ.
A803	36	23 - 9	X		ABUTMENT BODY - B.F.	HORIZ.
A404	60	2 - 9	X		ABUTENT BODY - TIE BARS	HORIZ.
A505	72	9 - 1	X		ABUTMENT BODY - TOP	VERT.

COATED BARS						
MARK	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION	TOTAL WEIGHT = 2,910 LBS
A506	60	2 - 0			ABUTMENT BODY - DOWEL TO SLAB	VERT.
A410	6	7 - 0			WING 1& 4 - F.F. & B.F.	VERT.
A411	8	9 - 6	X		WING 1& 4 - F.F. & B.F.	VERT.
A412	22	9 - 2	X	▲	WING 1- F.F. & B.F.	VERT.
A513	36	11 - 9	X		WING 1, 2, 3, & 4 - F.F.	HORIZ.
A814	36	13 - 4	X		WING 1, 2, 3, & 4 - B.F.	HORIZ.
A415	18	10 - 3			WING 1, 2, 3, & 4 - F.F. & B.F.	HORIZ.
A416	2	10 - 2	X		WING 1- F.F. & B.F. TOP	HORIZ.
A417	16	5 - 11	X		WING 1, 2, 3 & 4 - F.F. & B.F.	VERT.
A418	8	5 - 10	X		WING 1& 3 - TIE BARS	HORIZ.
A420	6	7 - 3			WING 2 & 3 - F.F. & B.F.	VERT.
A421	8	9 - 9	X		WING 2 & 3 - F.F. & B.F.	VERT.
A422	44	9 - 4	X	▲	WING 2 & 3- F.F. & B.F.	HORIZ.
A424	2	8 - 3			WING 2 - F.F. & B.F.	HORIZ.
A426	4	10 - 3	X		WING 2 & 3 - F.F. & B.F. TOP	HORIZ.
A428	8	11 - 0	X		WING 2 & 4 - TIE BARS	HORIZ.
A434	2	7 - 5			WING 3 - F.F. & B.F.	HORIZ.
A442	22	8 - 10	X	▲	WING 4 - F.F. & B.F.	HORIZ.
A444	2	6 - 8			WING 4 - F.F. & B.F.	HORIZ.
A446	2	10 - 3	X		WING 4 - F.F. & B.F. TOP	HORIZ.

BAR SERIES

MARK	NO. REQ'D	LENGTH
A412	2 SERIES OF 11	8'-10" TO 9'-5"
A422	4 SERIES OF 11	8'-10" TO 9'-9"
A442	2 SERIES OF 11	8'-2" TO 9'-5"

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-115

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ABUTMENT DETAILS

SHEET 7 OF 10

25

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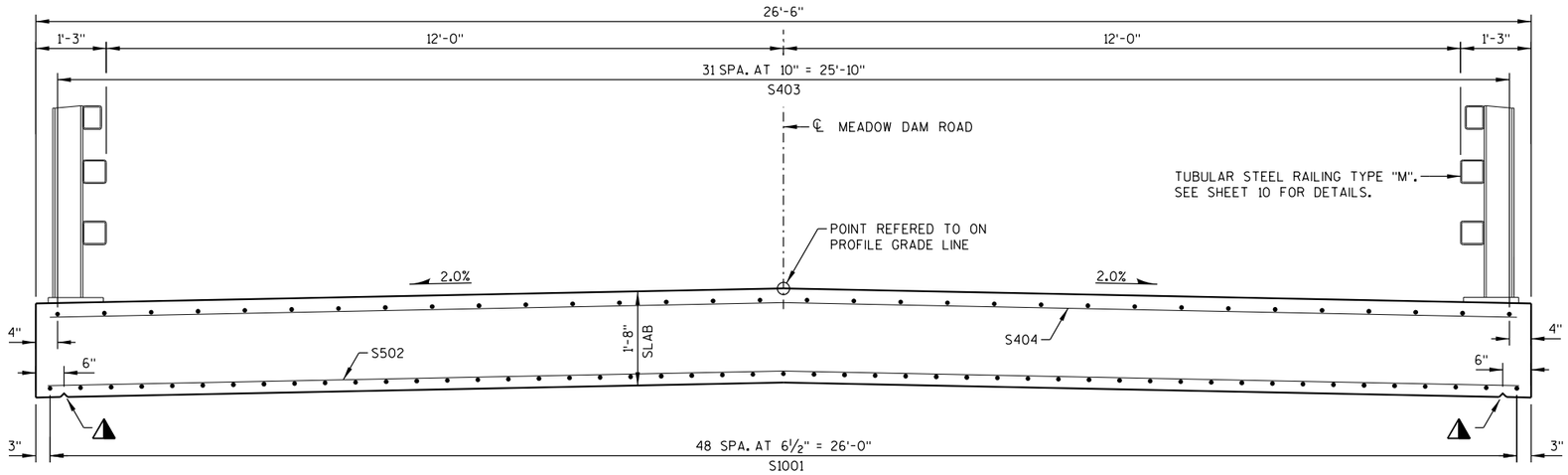
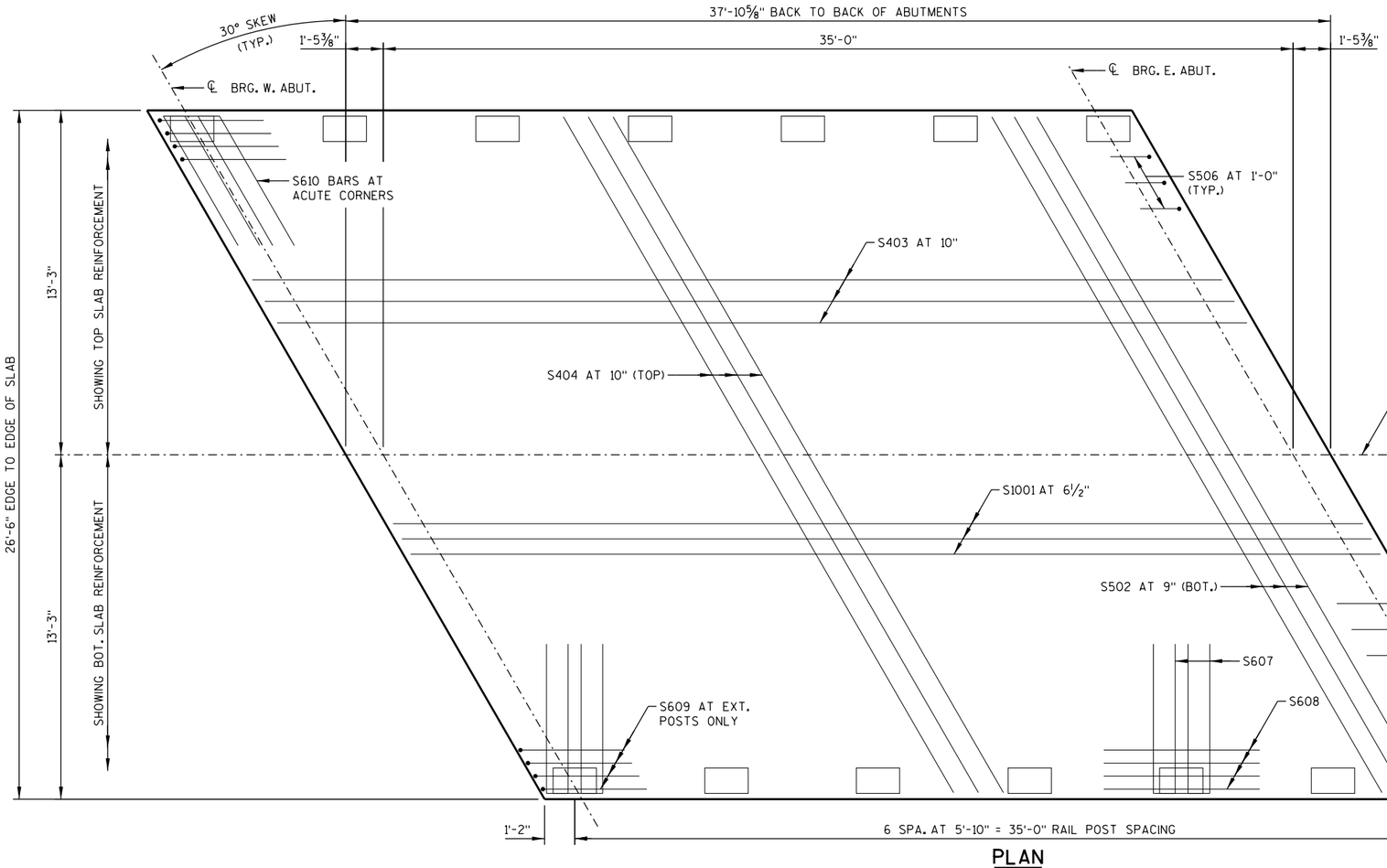
STATE PROJECT NUMBER
8434-00-70

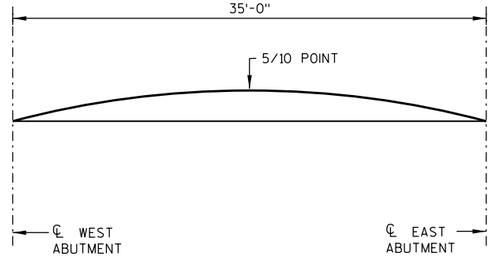


CROSS SECTION THRU BRIDGE

(LOOKING EAST)



PLAN



CAMBER DIAGRAM

	℄ BRG. W. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	℄ BRG. E. ABUT.
CAMBER (IN.)	0.00	0.31	0.58	0.80	0.94	0.98	0.94	0.80	0.58	0.31	0.00

NOTES

ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

CAMBER SPAN AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

LEGEND

◭ ¾" V-GROOVE, TERMINATE 2'-0" FROM FRONT FACE OF ABUTMENTS.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-115

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SUPERSTRUCTURE

SHEET 8 OF 10

PEN TABLE: S:_acm-CADstds_Libraries\WISDOT\MicroStation\Resources\WS_Printing\pen tables\AE_WisDOT.tbl
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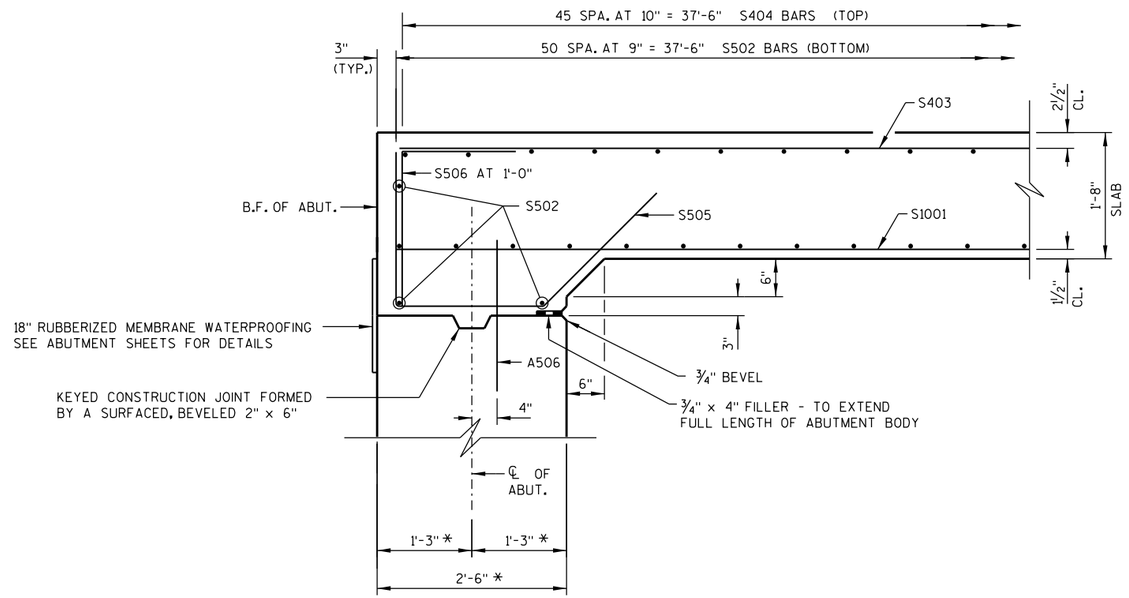


PARTIAL LONGITUDINAL SECTION

BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

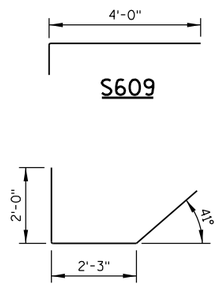
MARK	NO. REQ'D	LENGTH	BENT	LOCATION	
COATED BARS					TOTAL WEIGHT = 12,720 LBS
S1001	49	37 - 4		SLAB, BOTTOM	LONGIT.
S502	51	30 - 0		SLAB, BOTTOM	TRANS.
S403	32	37 - 4		SLAB, TOP	LONGIT.
S404	46	30 - 0		SLAB, TOP	TRANS.
S505	54	6 - 3	X	SLAB, ABUTMENT TIES	LONGIT.
S506	54	3 - 5	X	SLAB, ABUTMENT TIES	VERT.
S607	24	12 - 0	X	SLAB AT INT. POSTS AND OBTUSE EXT. POSTS - 2 PE	TRANS.
S608	40	6 - 0		SLAB AT INT. POSTS - 4 PER POST	LONGIT.
S609	16	4 - 10	X	SLAB AT EXT. POSTS - 4 PER POST	LONGIT.
S610	4	12 - 0	X	SLAB AT EXT. POSTS W/. ACUTE CRNR. - 2 PER POS	TRANS.

LEGEND

* DIMENSION TAKEN NORMAL TO SUBSTRUCTURE UNIT.

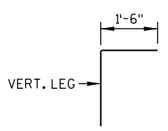
TOP OF DECK ELEVATIONS

	℄ BRG. W. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	℄ BRG. E. ABUT.
NORTH EDGE OF DECK	1370.64	1370.58	1370.51	1370.45	1370.39	1370.32	1370.26	1370.20	1370.14	1370.07	1370.01
℄ OF DECK	1370.77	1370.71	1370.65	1370.58	1370.52	1370.46	1370.40	1370.33	1370.27	1370.21	1370.14
SOUTH EDGE OF DECK	1370.36	1370.30	1370.24	1370.18	1370.11	1370.05	1369.99	1369.93	1369.86	1369.80	1369.74



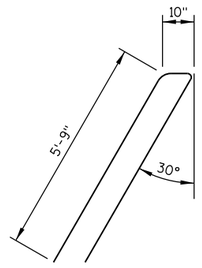
S609

S505



S506

S607



S610

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-115

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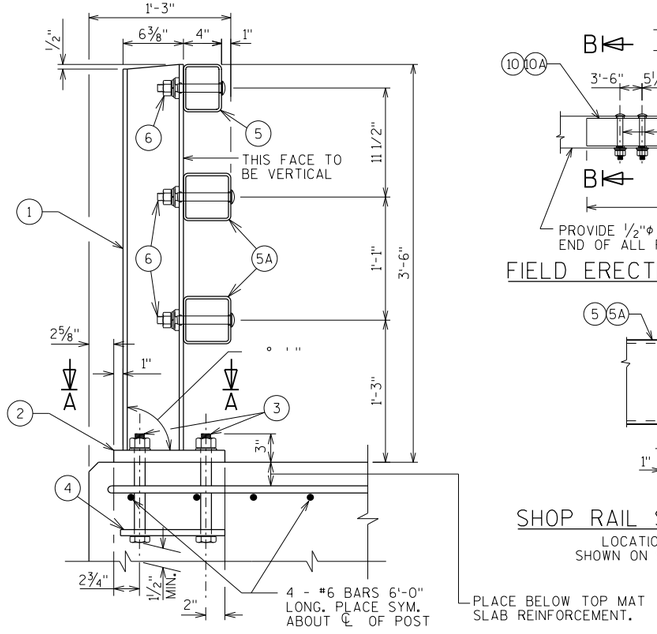
SUPERSTRUCTURE DETAILS

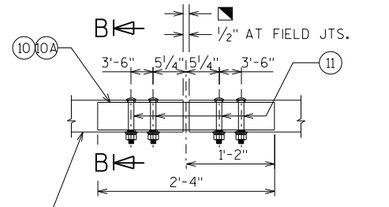
SHEET 9 OF 10

STATE PROJECT NUMBER

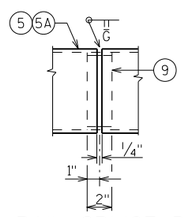
8434-00-70



SECTION THRU RAILING ON DECK

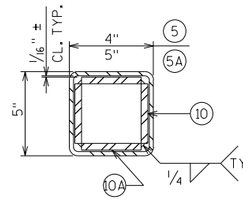


FIELD ERECTION JOINT DETAIL

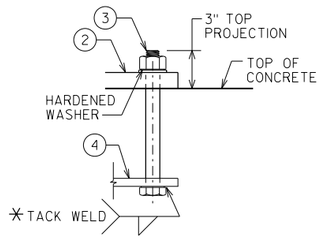


SHOP RAIL SPLICE DETAIL

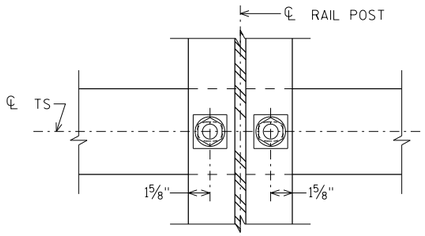
LOCATION MUST BE SHOWN ON SHOP DRAWINGS



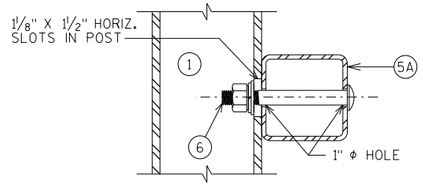
SECTION B-B



ANCHOR BOLTS



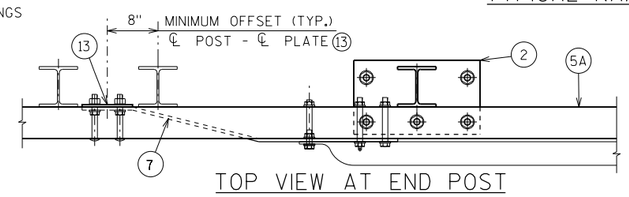
SECTION THRU POST WEB



SECTION THRU RAIL

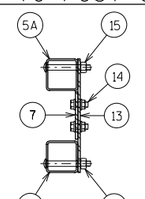
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS



TOP VIEW AT END POST

THRIE BEAM RAIL ATTACHMENT



SECTION C-C

LEGEND

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

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

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

(4) ⅝" × 11" × 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1⅜" DIA. HOLES FOR ANCHOR BOLTS NO. 3

(5) TS 5 × 4 × 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

(5A) TS 5 × 5 × 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

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

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

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

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

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

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

(11) ⅞" Φ A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 15/16" X 1¼" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 15/16" X 2¼" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.

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

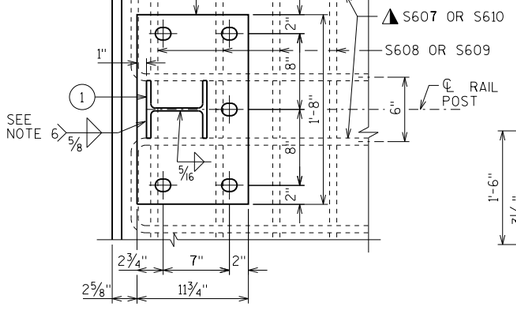
(13) ⅜" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.

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

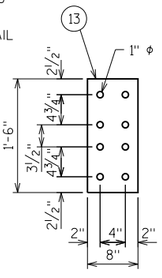
(15) 1" Φ HOLES IN TUBES NO. 5A FOR ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-54-115" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ⅛ TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY 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.

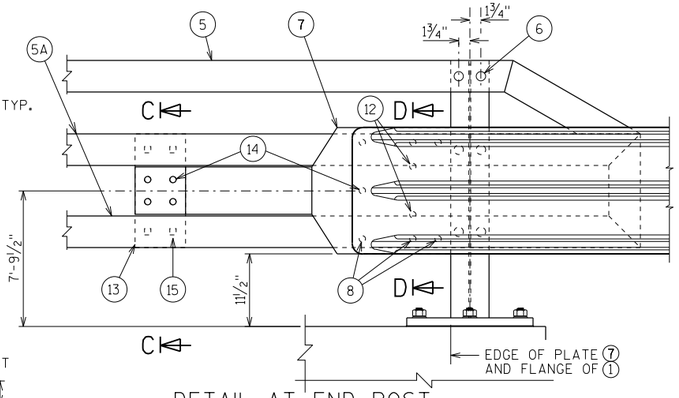


SECTION A-A



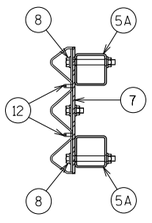
ANCHOR PLATE

AT BEAM GUARD ATTACHMENT

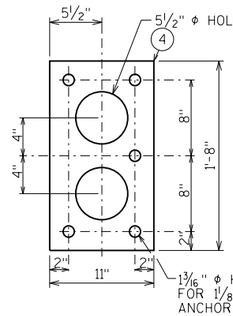


DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT

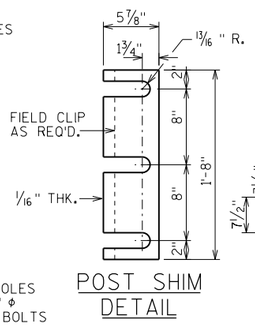


SECTION D-D

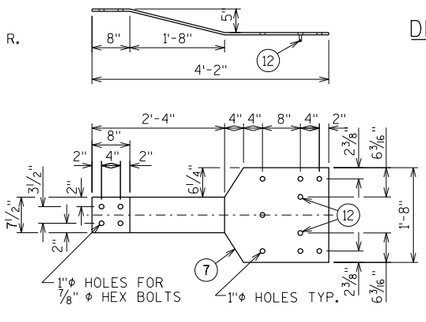


ANCHOR PLATE

AT RAIL TO DECK CONNECTION

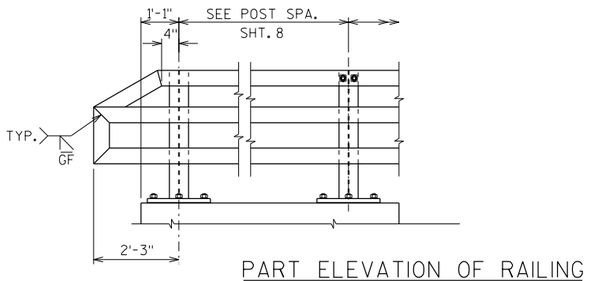


POST SHIM DETAIL



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

⚠ 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.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-115

DRAWN BY	KAM	PLANS CK'D.	KRH

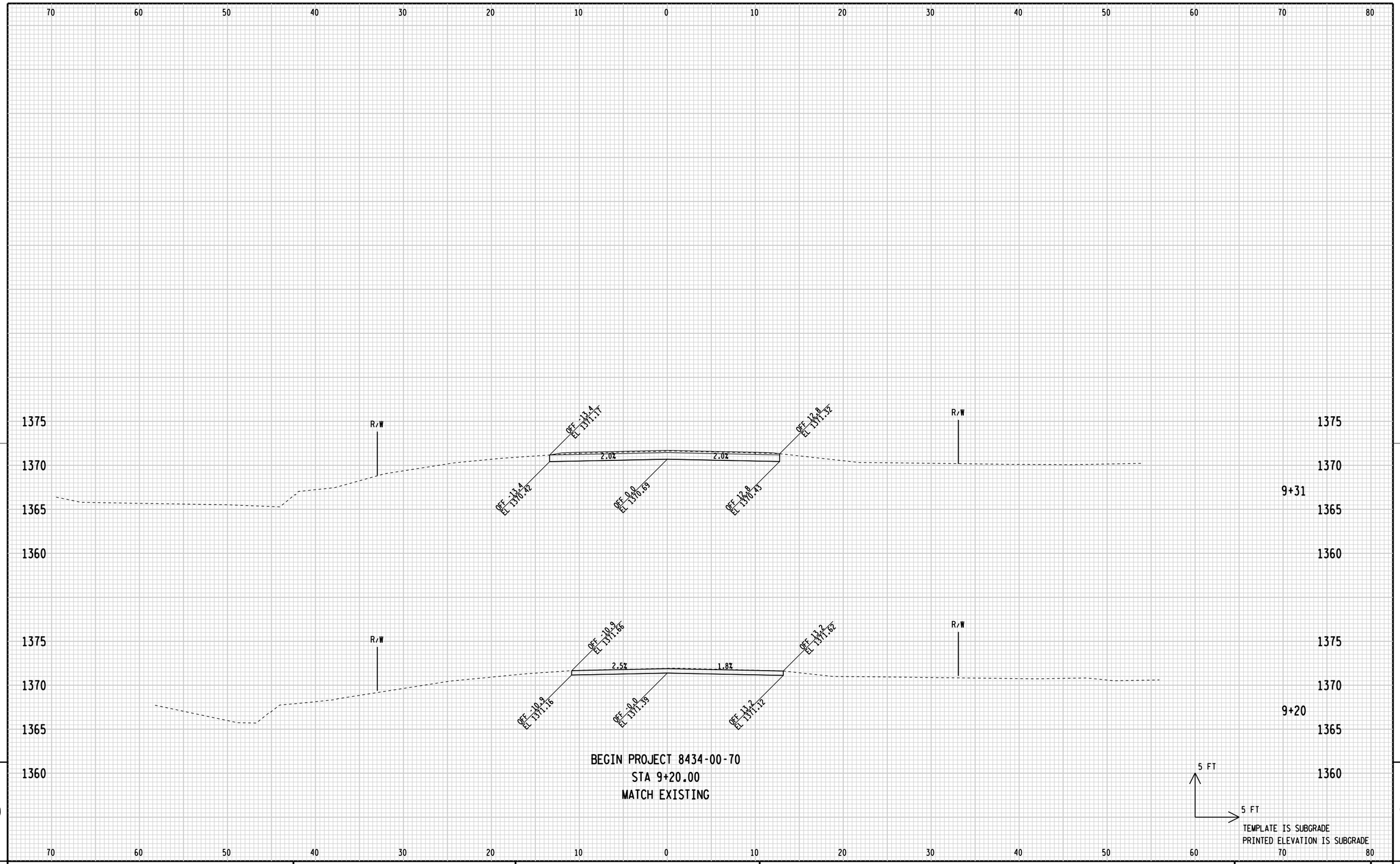
TUBULAR STEEL RAILING TYPE "M"

SHEET 10 OF 10

28

STATION	Real Station	Distance	AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)							Mass Ordinate
			Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut 1.00	Expanded Fill 1.25	Expanded Marsh Backfill 1.50	Expanded Rock 1.10	Expanded EBS Backfill 1.30	Reduced Marsh in Fill 0.60	Reduced EBS In Fill 0.80	
									Note 1	Note 2	Note 3				Note 1		Note 4		Note 5	Note 6	Note 7	Note 8
9+20.00	920		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9+31.06	931	11	23.66	0	0	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	0	5
9+50.00	950	19	29.96	0	0	0	0	0	19	0	0	0	0	0	24	0	0	0	0	0	0	24
9+74.13	974	24	28.56	0	1.92	0	0	0	26	0	1	0	0	0	50	1	0	0	0	0	0	49
10+00.00	1000	26	0	0	0	0	0	0	14	0	1	0	0	0	63	2	0	0	0	0	0	61
10+25.87	1026	26	32.87	0	2.73	0	0	0	16	0	1	0	0	0	79	4	0	0	0	0	0	75
10+50.00	1050	24	31.76	0	1.82	0	0	0	29	0	2	0	0	0	108	6	0	0	0	0	0	102
10+68.94	1069	19	27.34	0	4.6	0	0	0	21	0	2	0	0	0	129	9	0	0	0	0	0	120
10+90.00	1090	21	11.14	0	0	0	0	0	15	0	2	0	0	0	144	11	0	0	0	0	0	132
					Sta. 9+20 - Sta 10+90 Sub-Totals				144	0	10	0	0	0								

Notes:		
1 - Cut	Cut includes Salvaged/Unusable Pavement material	
2 - Salvaged/ Unusable Pavement Material	This does not show up in cross sections	
3 - Fill	Does not include Unusable Pavement Exc volume	
4 - Expanded Marsh Backfill	Will be backfilled with Granular Backfill (or Cut, or Borrow)	Note 4 - Select one based on input dialog selection
5 - Expanded EBS	Will be backfilled with Granular Backfill (or Cut, or Borrow)	Note 5 - Select one based on input dialog selection
6 - Reduced Marsh in Fill	Reduced Marsh Excavation that can be used in Fill	Note 6 - If excavated Marsh can be used in Fill
7 - Reduced EBS in Fill	Reduced EBS Excavation that can be used in Fill	Note 7 - If excavated EBS can be used in Fill
8 - Mass Ordinate	If Marsh or EBS to be backfilled with Cut or Borrow: [(Cut + Marsh Exc + EBS) - ((Fill - Reduced Marsh in Fill) - (Reduced EBS in Fill) - Expanded Rock) * Fill Factor)]	Note 8 - Select one based on mass haul input dialog selection. EBS and Marsh Exc used outside 1:1 in fill slopes
8 - Mass Ordinate	If Marsh and EBS to be backfilled with Granular: [(Cut + EBS + Marsh Exc) - ((Fill - (Reduced Marsh in Fill) - (Reduced EBS in Fill) - (Expanded Rock)) * Fill Factor))]	EBS and Marsh Exc used outside 1:1 in fill slopes
8 - Mass Ordinate	If Marsh and EBS to be backfilled with Granular: [(Cut) - ((Fill - Expanded Rock) * Fill Factor))]	Marsh and EBS are not usable outside the 1:1 slopes
8 - Mass Ordinate	If Marsh and EBS to be backfilled with Cut or Borrow: [(Cut) - ((Fill - Expanded Rock) * Fill Factor))]	Marsh and EBS are not usable outside the 1:1 slopes



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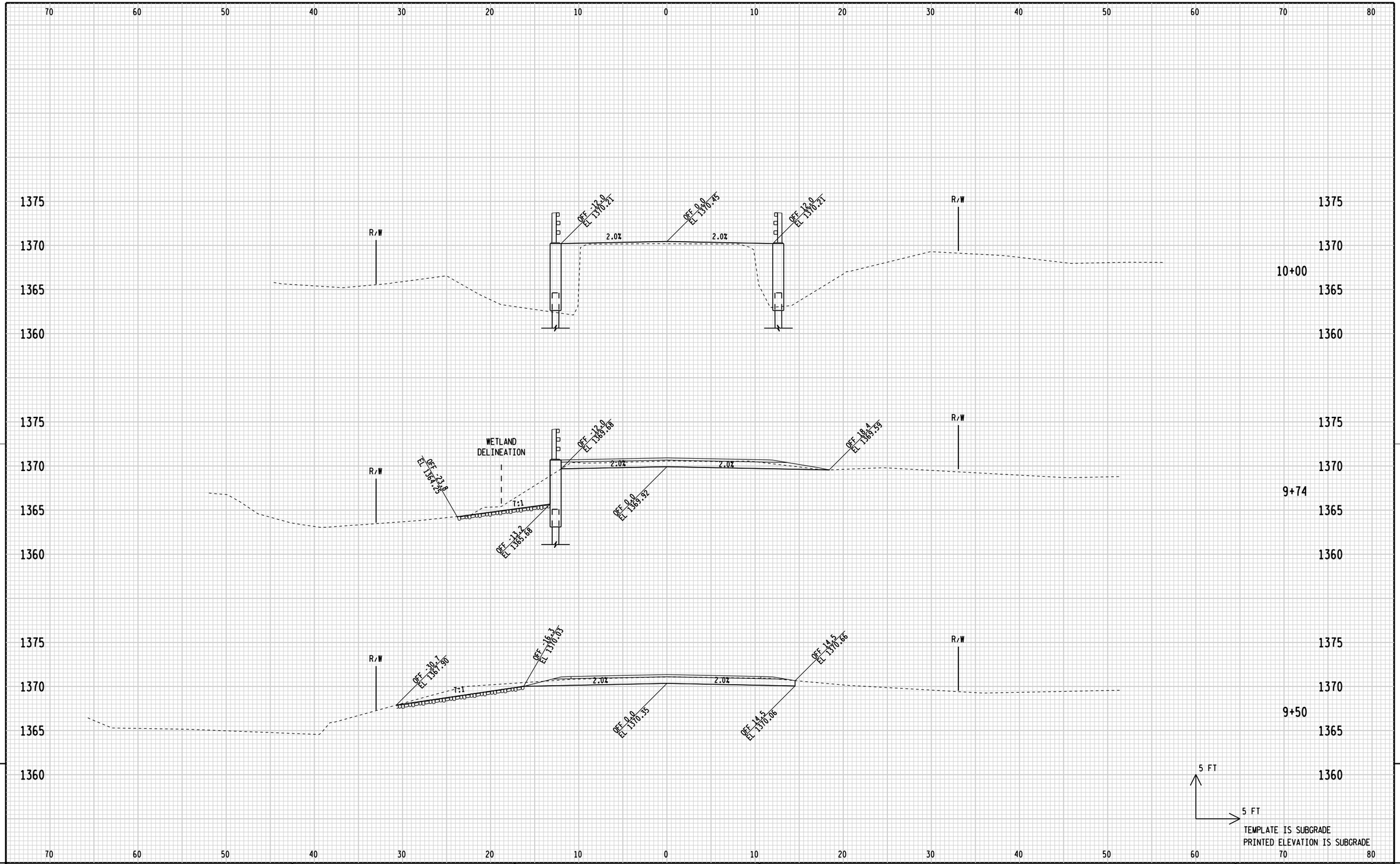

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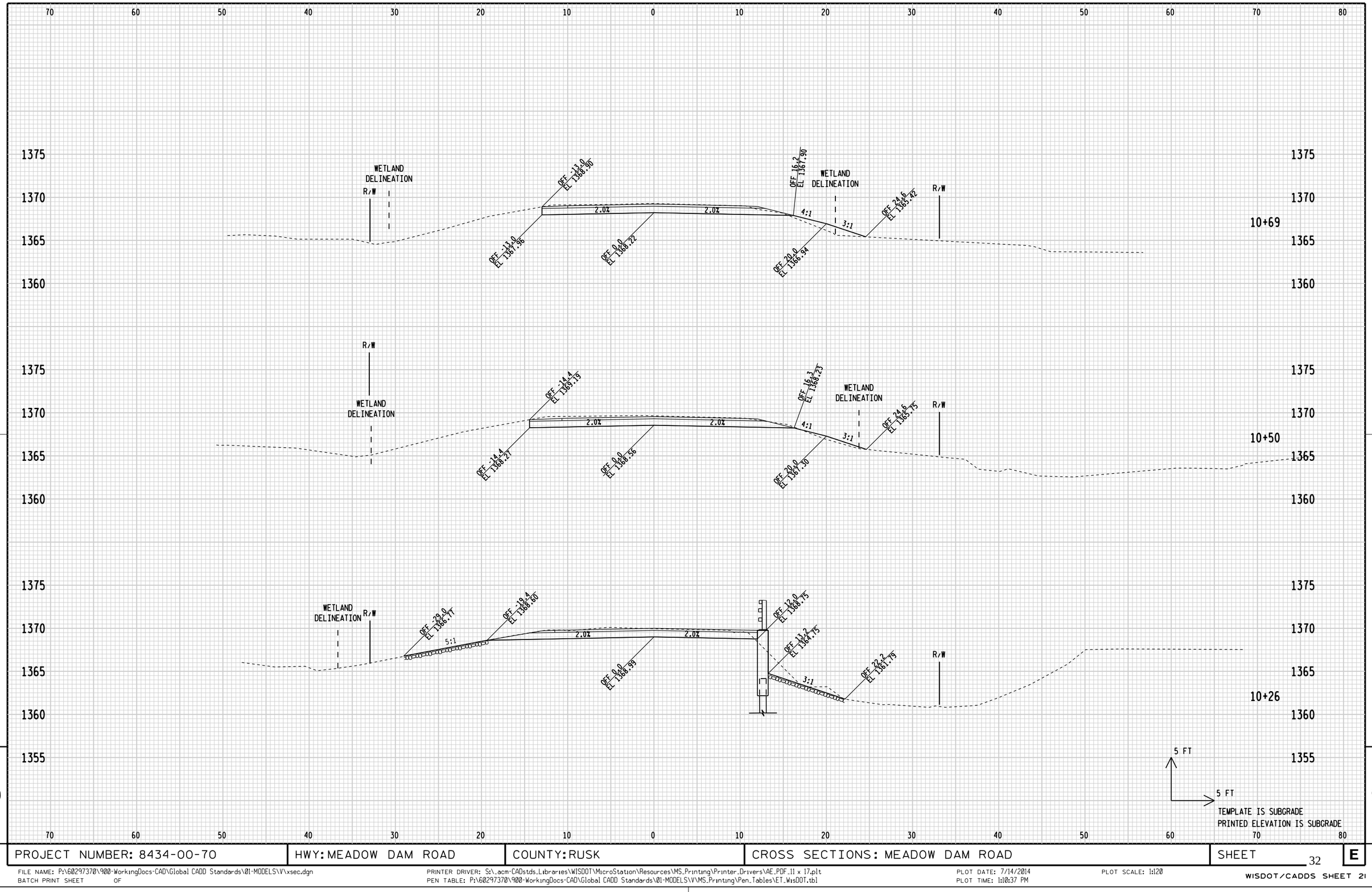

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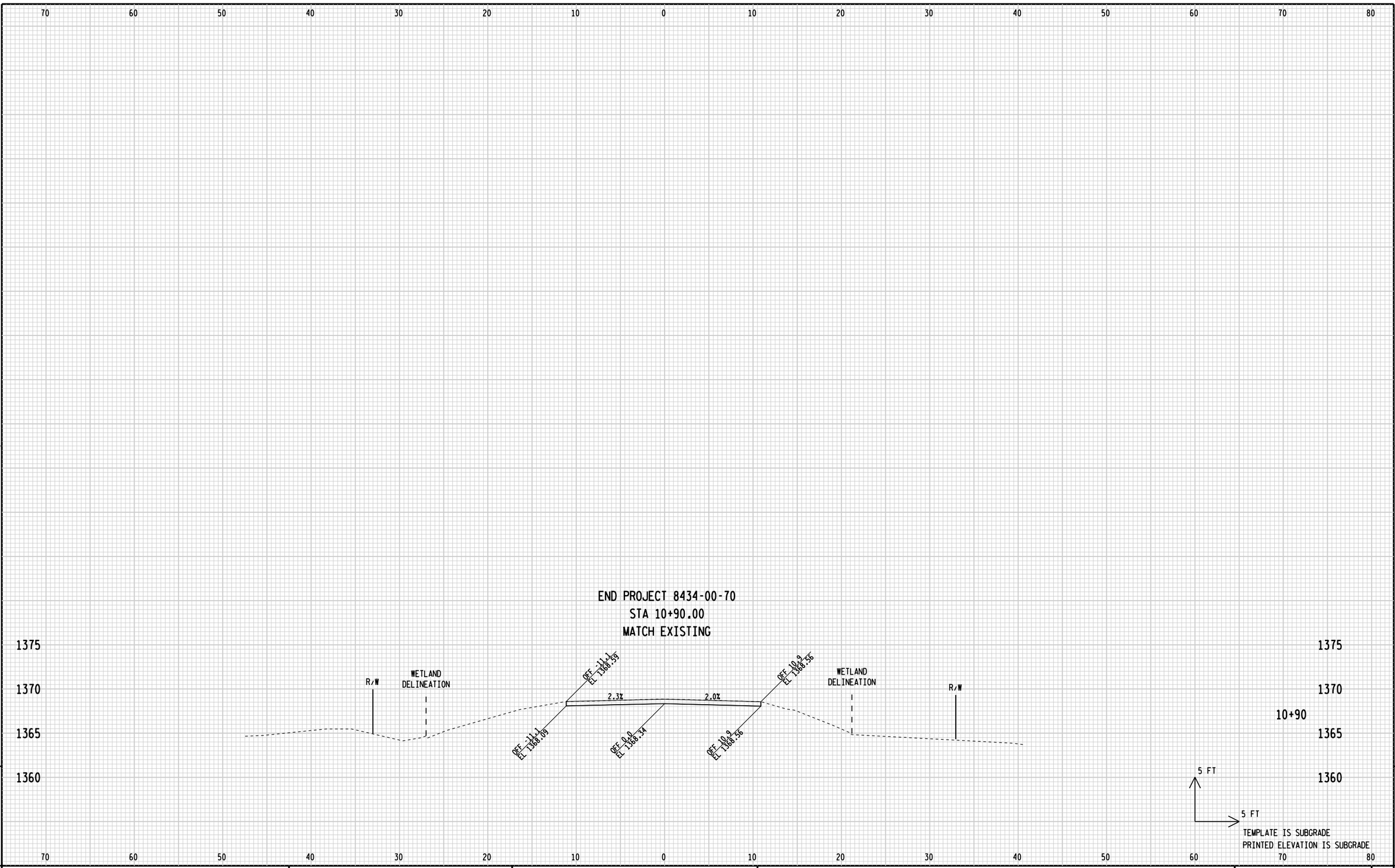

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WISDOT/CADDS SHEET 21

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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