

NWL  
PROJECT ID: 8421-00-70  
WITH: N/A  
COUNTY: RUSK

DECEMBER 2017

ORDER OF SHEETS

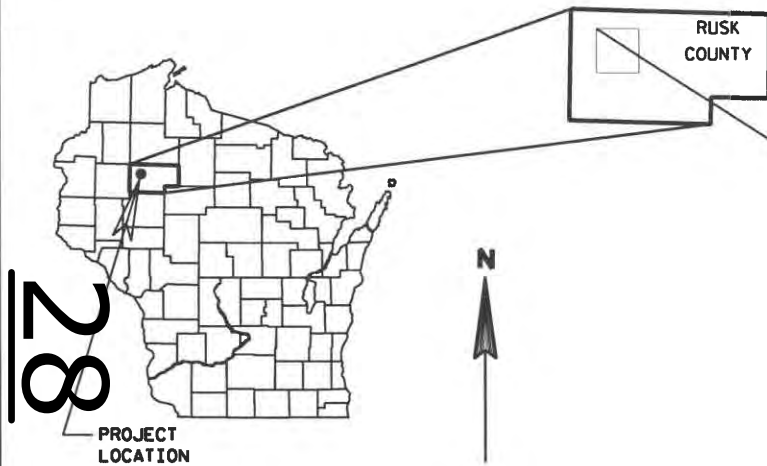
Section No.	1	Title
Section No.	2	Typical Sections and Details (Includes Erosion Control Plans)
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plan
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section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

TOTAL SHEETS = 40

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION  
PLAN OF PROPOSED IMPROVEMENT  
T ATLANTA, FETKE ROAD  
DEVILS CREEK BRIDGE B540121  
LOC STR  
RUSK COUNTY

STATE PROJECT NUMBER  
8421-00-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8421-00-70	WISC 2018026	1



DESIGN DESIGNATION

A.A.D.T. (2018)	=	<100
A.A.D.T. (2038)	=	<100
D.H.V.	=	10
D.	=	50/50
T.	=	5%
DESIGN SPEED	=	45 MPH
ESALS	=	36,500

CONVENTIONAL SYMBOLS  
PLAN

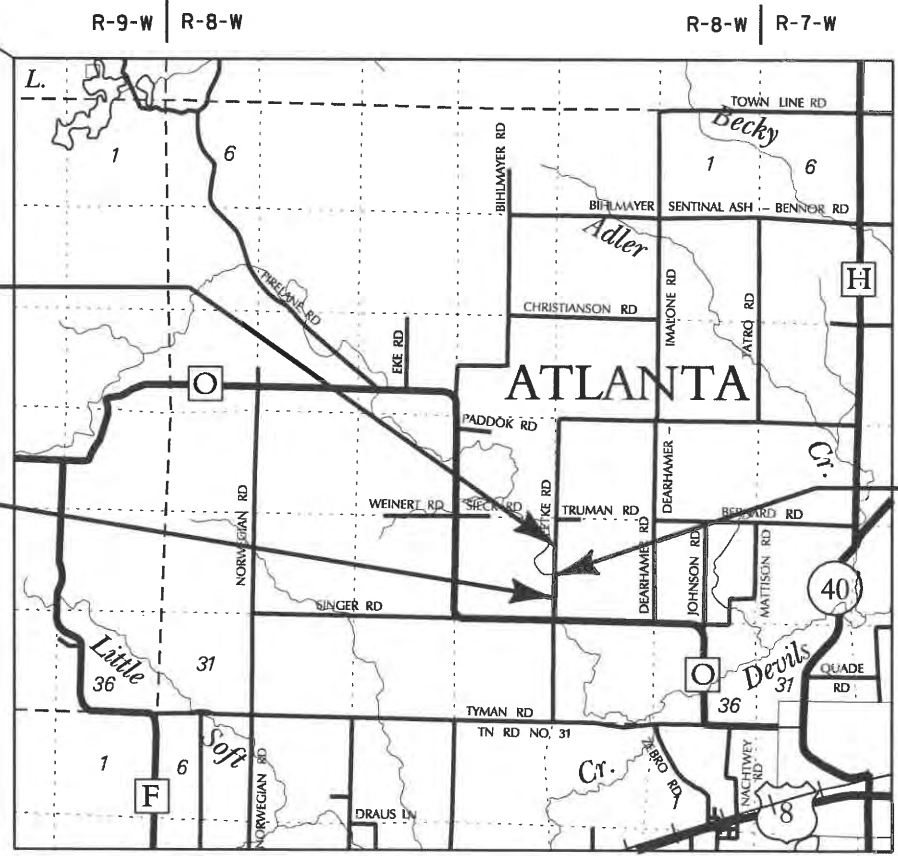
CORPORATE LIMITS	PL + 58.1
PROPERTY LINE	PL + 58.1
LOT LINE	PL + 58.1
LIMITED HIGHWAY EASEMENT	PL + 58.1
EXISTING RIGHT OF WAY	PL + 58.1
PROPOSED OR NEW R/W LINE	PL + 58.1
SLOPE INTERCEPT	PL + 58.1
REFERENCE LINE	PL + 58.1
EXISTING CULVERT	PL + 58.1
PROPOSED CULVERT (Box or Pipe)	PL + 58.1
COMBUSTIBLE FLUIDS	PL + 58.1
HIGH VOLTAGE	PL + 58.1
MARSH AREA	PL + 58.1
WOODED OR SHRUB AREA	PL + 58.1

PROFILE

GRADE LINE	PL + 58.1
ORIGINAL GROUND	PL + 58.1
MARSH OR ROCK PROFILE (To be noted as such)	PL + 58.1
SPECIAL DITCH	PL + 58.1
GRADE ELEVATION	PL + 58.1
CULVERT (Profile View)	PL + 58.1
UTILITIES	PL + 58.1
OVERHEAD	PL + 58.1
ELECTRIC	PL + 58.1
FIBER OPTIC	PL + 58.1
GAS	PL + 58.1
SANITARY SEWER	PL + 58.1
STORM SEWER	PL + 58.1
TELEPHONE	PL + 58.1
WATER	PL + 58.1
UTILITY PEDESTAL	PL + 58.1
POWER POLE	PL + 58.1
TELEPHONE POLE	PL + 58.1

END PROJECT  
STA. 11+75.00  
Y = 571339.31  
X = 752302.46

BEGIN PROJECT  
STA. 8+50.00  
Y = 571014.31  
X = 752300.98



LAYOUT  
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.062 MI.

T-36-N  
T-35-N

STRUCTURE B-54-121

T-35-N  
T-34-N

COORDINATES ON THIS PLAN ARE REFERENCED TO  
THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS),  
RUSK COUNTY

ACCEPTED FOR  
Town of Atlanta  
7/10/17  
Date  
Chairman

ACCEPTED FOR  
County of Rusk  
7/10/17  
Date  
Highway Commissioner

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

WISCONSIN  
DANIEL N. SYDOW  
E-38363  
WI  
PROFESSIONAL ENGINEER

DATE 7/5/2017

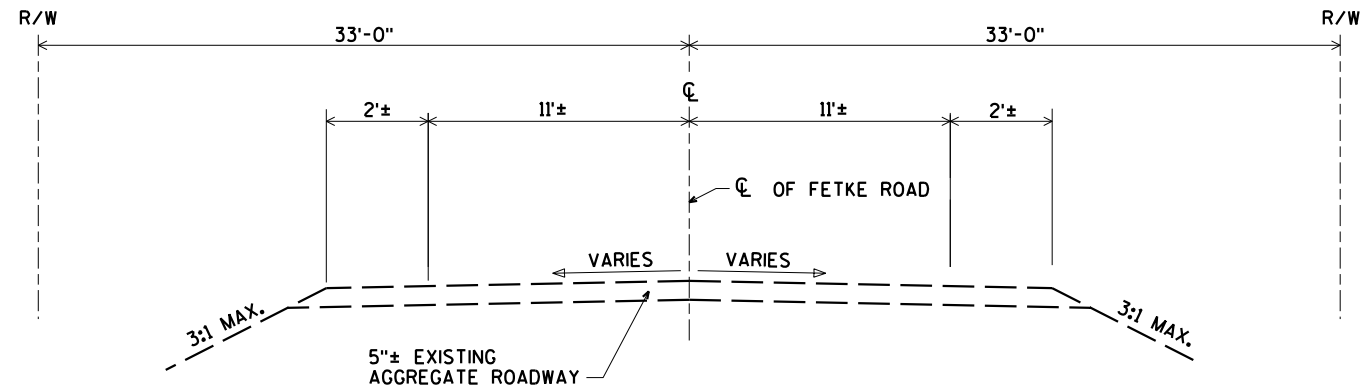
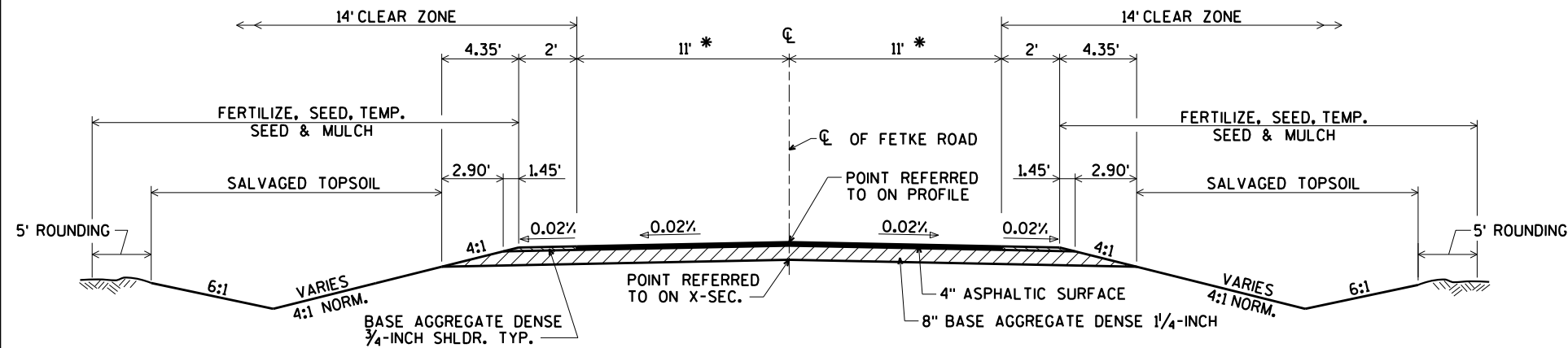
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY  
Surveyor AYRES ASSOCIATES INC  
Designer AYRES ASSOCIATES INC

Management Consultant KNIGHT E/A INC.  
C.O. Examiner

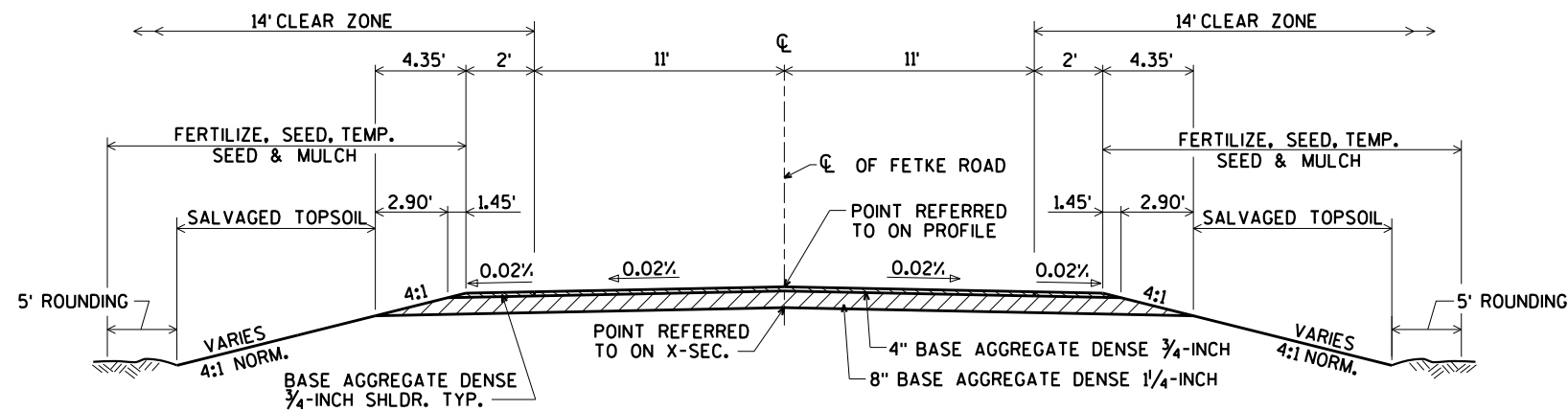
APPROVED FOR THE DEPARTMENT  
DATE: 7/24/17  
Management Consultant Signature

E

**EXISTING TYPICAL SECTION****FINISHED TYPICAL PAVED SECTION**

(STA. 9+26.73 TO STA. 9+76.73)  
(STA. 10+23.27 TO STA. 10+73.27)

\* ASPHALTIC SURFACE SHALL BE PLACED 26.5' WIDE  
AT ENDS OF BRIDGE AND TAPER TO 22' WIDE  
AT 50' FROM THE ENDS OF THE BRIDGE.

**FINISHED TYPICAL UNPAVED SECTION**

(STA. 8+50 TO STA. 9+26.73)  
(STA. 10+73.27 TO STA. 11+75)

**GENERAL NOTES**

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

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

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

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCLUSIVE OF THE  
ROADBED, SHALL BE FERTILIZED, SEEDED, AND MULCHED AS DIRECTED  
BY THE ENGINEER.

SEED MIXTURE NO. 20 AND SEEDING TEMPORARY SHALL BE USED IN  
THE PROJECT AND SHALL BE PLACED AS SHOWN IN THE PLANS AND/OR  
AS DIRECTED BY THE ENGINEER.

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

**UTILITIES**

BRUCE TELEPHONE COMPANY  
620 N. ALVEY ST.  
BRUCE, WI 54819  
ATTN: CURT KEMMITZ  
715-868-5111  
ckb101@brucetel.net

JUMP RIVER ELECTRIC CO-OP  
1102 W. 9th ST. N.  
LADYSMITH, WI 54848  
ATTN: HANK LEW  
715-532-5524  
hlew@jrec.net

\*\* DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS

**DIGGERS HOTLINE**

Dial **811** or (800)242-8511

www.DiggersHotline.com

**WISCONSIN DEPARTMENT OF  
NATURAL RESOURCES CONTACT:**

AMY CRONK  
810 WEST MAPLE ST.  
SPOONER, WI. 54801  
715-635-4229  
amy.cronk@wisconsin.gov

**DESIGNER**

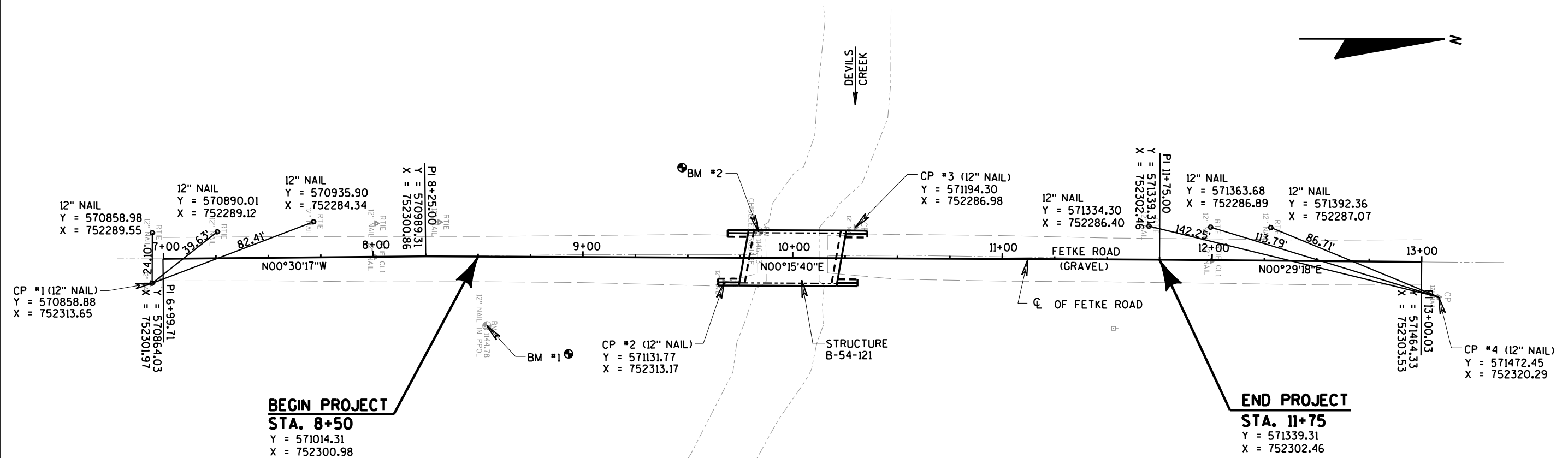
AYRES ASSOCIATES  
3433 OAKWOOD HILLS PARKWAY  
EAU CLAIRE, WI 54701  
ATTN: DANIEL N. SYDOW  
715-834-3161  
sydowd@AyresAssociates.com

**TOWN OF ATLANTA**

STEVE TIEGS, CHAIRMAN  
W12294 BERNARD ROAD  
BRUCE, WI. 54819  
715-868-5727  
speck1@brucetel.net

**RUSK COUNTY**

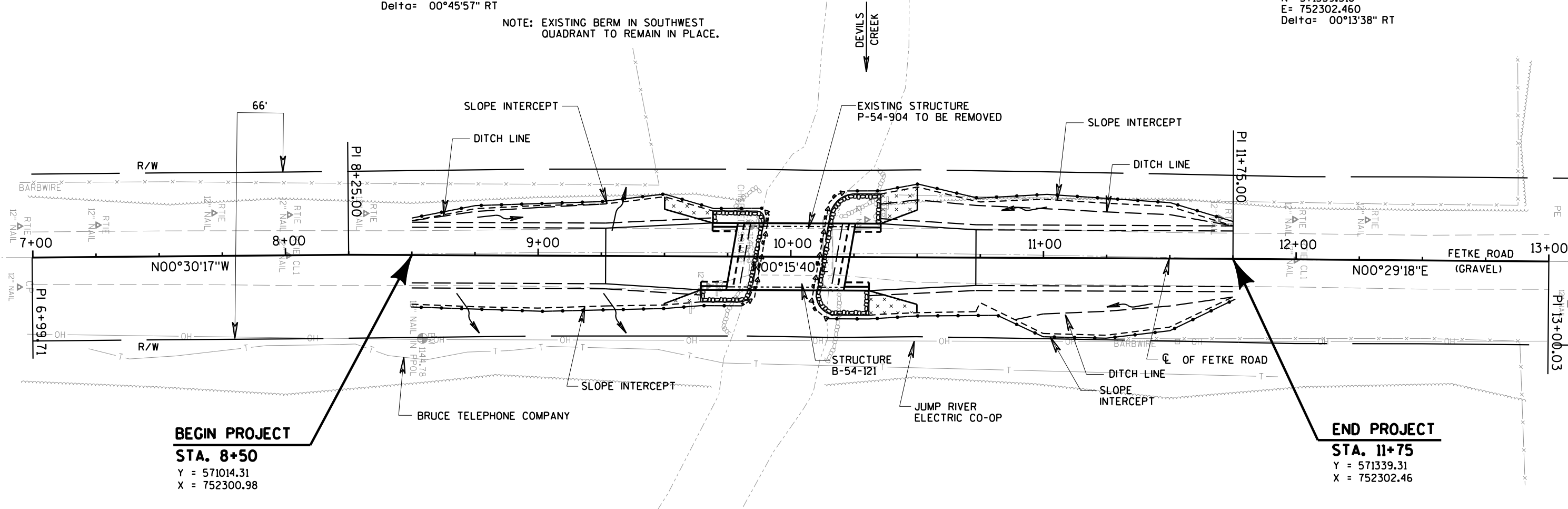
SCOTT EMCH, HIGHWAY COMMISSIONER  
N4711 HIGHWAY 27  
LADYSMITH, WI 54848  
715-532-2633  
semch@ruskcountywi.us



PI= 8+25.00  
N= 570989.314  
E= 752300.864  
Delta= 00°45'57" RT

PI= 11+75.00  
N= 571339.310  
E= 752302.460  
Delta= 00°13'38" RT

NOTE: EXISTING BERM IN SOUTHWEST QUADRANT TO REMAIN IN PLACE.



**BEGIN PROJECT  
STA. 8+50**  
Y = 571014.31  
X = 752300.98

**END PROJECT  
STA. 11+75**  
Y = 571339.31  
X = 752302.46

	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 = 0.492 ACRES  
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.298 ACRES

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

LEGEND

- EROSION MAT CLASS II TYPE C
- SILT FENCE
- TURBIDITY BARRIER
- RIPRAP HEAVY
- FLOW DIRECTION

Estimate Of Quantities

8421-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	1.000	1.000
0004	201.0205	Grubbing	STA	1.000	1.000
0006	203.0210.S	Abatement of Asbestos Containing Material (structure) 01. P-54-904	LS	1.000	1.000
0008	203.0700.S	Removing Old Structure Over Waterway With Debris Capture System (station) 01. 10+00	LS	1.000	1.000
0010	205.0100	Excavation Common	CY	265.000	265.000
0012	206.1000	Excavation for Structures Bridges (structure) 01. B-54-121	LS	1.000	1.000
0014	210.1500	Backfill Structure Type A	TON	150.000	150.000
0016	213.0100	Finishing Roadway (project) 01. 8421-00-70	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	140.000	140.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	440.000	440.000
0022	455.0605	Tack Coat	GAL	16.000	16.000
0024	465.0105	Asphaltic Surface	TON	65.000	65.000
0026	502.0100	Concrete Masonry Bridges	CY	152.000	152.000
0028	502.3200	Protective Surface Treatment	SY	170.000	170.000
0030	505.0400	Bar Steel Reinforcement HS Structures	LB	3,260.000	3,260.000
0032	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	19,240.000	19,240.000
0034	513.4061	Railing Tubular Type M (structure) 01. B-54-121	LF	139.000	139.000
0036	516.0500	Rubberized Membrane Waterproofing	SY	18.000	18.000
0038	550.0020	Pre-Boring Rock or Consolidated Materials	LF	40.000	40.000
0040	550.0500	Pile Points	EACH	8.000	8.000
0042	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	340.000	340.000
0044	606.0300	Riprap Heavy	CY	90.000	90.000
0046	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	150.000	150.000
0048	619.1000	Mobilization	EACH	1.000	1.000
0050	624.0100	Water	MGAL	10.000	10.000
0052	625.0500	Salvaged Topsoil	SY	410.000	410.000
0054	627.0200	Mulching	SY	845.000	845.000
0056	628.1504	Silt Fence	LF	760.000	760.000
0058	628.1520	Silt Fence Maintenance	LF	1,515.000	1,515.000
0060	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0062	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0064	628.2027	Erosion Mat Class II Type C	SY	95.000	95.000
0066	628.6005	Turbidity Barriers	SY	175.000	175.000
0068	628.7504	Temporary Ditch Checks	LF	50.000	50.000
0070	629.0210	Fertilizer Type B	CWT	1.000	1.000
0072	630.0120	Seeding Mixture No. 20	LB	30.000	30.000
0074	630.0200	Seeding Temporary	LB	30.000	30.000

Estimate Of Quantities

8421-00-70

Line	Item	Item Description	Unit	Total	Qty
0076	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0078	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0080	638.2102	Moving Signs Type II	EACH	2.000	2.000
0082	638.2602	Removing Signs Type II	EACH	6.000	6.000
0084	638.3000	Removing Small Sign Supports	EACH	6.000	6.000
0086	642.5001	Field Office Type B	EACH	1.000	1.000
0088	643.5000	Traffic Control	EACH	1.000	1.000
0090	645.0111	Geotextile Type DF Schedule A	SY	70.000	70.000
0092	645.0120	Geotextile Type HR	SY	200.000	200.000
0094	650.4500	Construction Staking Subgrade	LF	278.000	278.000
0096	650.5000	Construction Staking Base	LF	278.000	278.000
0098	650.6500	Construction Staking Structure Layout (structure) 01. B-54-121	LS	1.000	1.000
0100	650.9910	Construction Staking Supplemental Control (project) 01. 8421-00-70	LS	1.000	1.000
0102	650.9920	Construction Staking Slope Stakes	LF	278.000	278.000
0104	715.0502	Incentive Strength Concrete Structures	DOL	912.000	912.000
0106	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0108	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000

EARTHWORK SUMMARY (CATEGORY 0010)										
DIVISION	STATION TO STATION	LOCATION	**p** 205.0100 EXCAVATION COMMON	SALVAGED/ UNUSABLE PAVEMENT MATERIAL (2)	AVAILABLE MATERIAL (4)	UNEXPANDED FILL (3)	EXPANDED FILL (5)	MASS ORDINATE ±(6)	WASTE CY	**p** 208.0100 BORROW CY
			CUT (1)							
			CY	CY	CY	CY	CY	CY	CY	CY
1	8+50 TO 9+77	FETKE ROAD	117	0	117	6	8	109	109	0
	10+23 TO 11+75	FETKE ROAD	148	0	148	4	5	143	143	0
GRANDTOTAL			265	0	265	10	13	252	252	0
TOTAL EXCAVATION COMMON			265 CY	TOTAL WASTE 252 CY						

NOTES:  
1) EXCAVATION COMMON IS THE SUM OF THE CUT COLUMN. ITEM NUMBER 205.0100  
2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.  
3) DOES NOT INCLUDE UNUSABLE PAVEMENT EXCAVATION VOLUME.  
4) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL  
5) EXPANDED FILL FACTOR = 1.30  
EXPANDED FILL = UNEXPANDED FILL \* FILL FACTOR  
6) THE MASS ORDINATE ± QTY CALCUTATED FOR THE DIVISION.  
PLUS (+) QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION.  
MINUS (-) QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.  
  
\*\*p\*\* PAY PLAN QUANTITY

CLEARING AND GRUBBING (CATEGORY 0010)			
STATION TO STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
Sta. 10+00 to Sta. 11+00	FETKE ROAD	1	1

BASE AGGREGATE DENSE (CATEGORY 0010)			
STATION TO STATION	LOCATION	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON
Sta. 8+50 to Sta. 9+27	FETKE ROAD	55	120
Sta. 9+27 to Sta 9+77	FETKE ROAD	5	80
Sta. 10+23 to Sta. 10+73	FETKE ROAD	5	80
Sta. 10+73 to Sta 11+75	FETKE ROAD	75	160
TOTALS		140	440

213.0100 FINISHING ROADWAY (CATEGORY 0010)	
LOCATION	EACH
PROJECT 8421-00-70	1

PAVING QUANTITIES (CATEGORY 0010)			
STATION TO STATION	LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
Sta. 9+27 to Sta 9+77	FETKE ROAD	8	32.5
Sta. 10+23 to Sta. 10+73	FETKE ROAD	8	32.5
TOTALS		16	65

619.1000 MOBILIZATION	
LOCATION	EACH
PROJECT 8421-00-70 (CATEGORY 0010)	0.2
PROJECT 8421-00-70 (CATEGORY 0020)	0.8
TOTAL	1

WATER (CATEGORY 0010)		
TYPE	LOCATION	624.0100
		WATER MGAL
COMPACTION	FETKE ROAD	9
DUST CONTROL	FETKE ROAD	1
TOTALS		10

SALVAGED TOPSOIL, MULCHING, FERTILIZER, SEED & TEMPORARY SEED (CATEGORY 0010)

STATION TO STATION	LOCATION	625.0500	627.0200	629.0210	630.0120	630.0200
		SALVAGED TOPSOIL SY	MULCHING SY	FERTILIZER TYPE B CWT	SEEDING NO. 20 LB	SEEDING TEMPORARY LB
Sta. 8+50 to Sta. 11+75	FETKE ROAD	410	770	0.6	25	23
Undistributed		---	75	0.4	5	7
TOTALS		410	845	1.0	30	30

SILT FENCE & SILT FENCE MAINTENANCE (CATEGORY 0010)

STATION TO STATION	LOCATION	628.1504	628.1520
		LF	MAINTENANCE LF
Sta. 8+50 to Sta. 9+89	FETKE ROAD, LT	145	290
Sta. 8+50 to Sta. 9+80	FETKE ROAD, RT	135	270
Sta. 10+22 to Sta. 11+75	FETKE ROAD, LT	155	310
Sta. 10+15 to Sta. 11+75	FETKE ROAD, RT	170	340
Undistributed		155	305
TOTALS		760	1,515

MOBILIZATIONS EROSION CONTROL & EMERGENCY EROSION CONTROL (CATEGORY 0010)

LOCATION	628.1905	628.1910
	MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
PROJECT 8421-00-70	4	2

628.2027 EROSION MAT CLASS II TYPE C (CATEGORY 0010)

STATION TO STATION	LOCATION	SY
Sta. 9+50 to Sta. 9+69	FETKE ROAD, LT	17
Sta. 9+50 to Sta. 9+64	FETKE ROAD, RT	7
Sta. 10+35 to Sta. 10+50	FETKE ROAD, LT	28
Sta. 10+31 to Sta. 10+50	FETKE ROAD, RT	23
Undistributed		20
TOTAL		95

628.6005 TURBIDITY BARRIER (CATEGORY 0010)

LOCATION	SY
SOUTH ABUTMENT	60
NORTH ABUTMENT	80
UNDISTRIBUTED	35
TOTALS	175

628.7504 TEMPORARY DITCH CHECKS (CATEGORY 0010)

LOCATION	LF
UNDISTRIBUTED	50



634.0612 WOOD POSTS 4X6 INCH X 12 FT (CATEGORY 0010)

STATION	LOCATION	EACH
Sta. 9+63	FETKE ROAD, RT (W5-52R)	1
Sta. 9+68	FETKE ROAD, LT (W5-52L)	1
Sta. 10+32	FETKE ROAD, RT (W5-52L)	1
Sta. 10+37	FETKE ROAD, RT (W5-52R)	1
TOTAL		4

637.2230 SIGNS TYPE II REFLECTIVE F (CATEGORY 0010)

STATION	LOCATION	DESCRIPTION	SF
Sta. 9+63	FETKE ROAD, RT	W5-52R (OBJECT MARKER)	3
Sta. 9+68	FETKE ROAD, LT	W5-52L (OBJECT MARKER)	3
Sta. 10+32	FETKE ROAD, RT	W5-52L (OBJECT MARKER)	3
Sta. 10+37	FETKE ROAD, LT	W5-52R (OBJECT MARKER)	3
TOTAL			12

638.2102 MOVING SIGNS TYPE II (CATEGORY 0010)

EXISTING STATION	LOCATION	NEW STATION	DESCRIPTION	EACH
Sta. 9+61	FETKE ROAD, RT	Sta. 9+61	"DEVILS CREEK FISHERY AREA, WISCONSIN DEPT. OF NATURAL RESOURCES"	1
Sta. 10+37	FETKE ROAD, LT	Sta. 10+38	"DEVILS CREEK FISHERY AREA, WISCONSIN DEPT. OF NATURAL RESOURCES"	1
TOTAL				2

REMOVING (CATEGORY 0010)

STATION	LOCATION	DESCRIPTION	638.2602	638.3000
			REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH
Sta. 9+72	FETKE ROAD, RT	"WEIGHT LIMIT 12 TONS"	1	1
Sta. 9+83	FETKE ROAD, RT	OBJECT MARKER	1	1
Sta. 9+83	FETKE ROAD, LT	OBJECT MARKER	1	1
Sta. 10+16	FETKE ROAD, LT	OBJECT MARKER	1	1
Sta. 10+16	FETKE ROAD, RT	OBJECT MARKER	1	1
Sta. 10+37	FETKE ROAD, LT	"WEIGHT LIMIT 12 TONS"	1	1
TOTAL			6	6

642.5001 FIELD OFFICE TYPE B (CATEGORY 0010)

LOCATION	EACH
PROJECT 8421-00-70	1

643.5000 TRAFFIC CONTROL (CATEGORY 0010)

LOCATION	EACH
PROJECT 8421-00-70	1

CONSTRUCTION STAKING

CATEGORY	LOCATION	650.4500	650.5000	650.6500	650.9910	650.9920
		SUBGRADE LF	BASE LF	STRUCTURE LAYOUT LS	SUPPLEMENTARY CONTROL LS	SLOPE STAKES LF
0010	Sta. 8+50 to Sta. 11+75	278	278	---	1	278
0020	B-16-0134	---	---	1	---	---
TOTALS		278	278	1	1	278

BENCH MARKS			
NO.	STA.	DESCRIPTION	ELEV.
1	8+54	12" NAIL IN POWER POLE, 33' RT.	1144.78
2	9+84	CHIS. SO. ON SW WINGWALL, 13' LT.	1146.73

PI= 8+25.00  
N= 570989.314  
E= 752300.864  
Delta= 00°45'57" RT

PI= 11+75.00  
N= 571339.310  
E= 752302.460  
Delta= 00°13'38" RT

NOTE: EXISTING BERM IN SOUTHWEST QUADRANT TO REMAIN IN PLACE.

- SIGN-REMOVE AND MOVE
- SIGN-REMOVE AND PLACE NEW
- SIGN-REMOVE

BEGIN PROJECT  
STA. 8+50  
Y = 571014.31  
X = 752300.98

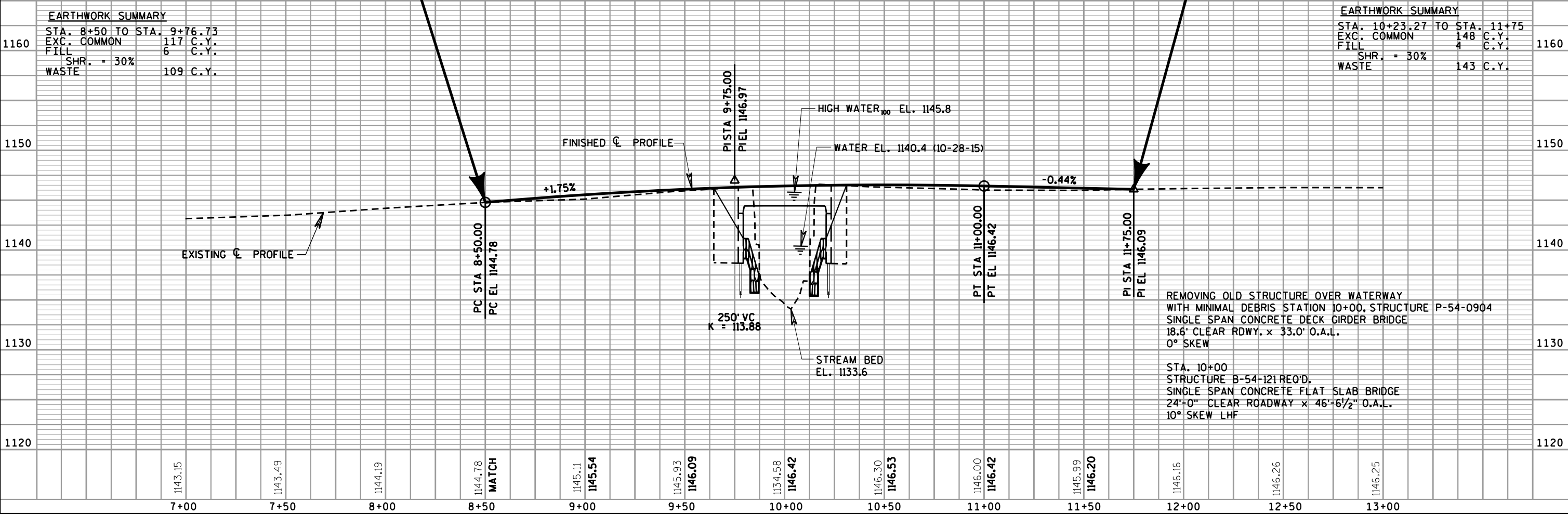
END PROJECT  
STA. 11+75  
Y = 571339.31  
X = 752302.46

EARTHWORK SUMMARY

STA. 8+50 TO STA. 9+76.73  
EXC. COMMON 117 C.Y.  
FILL 6 C.Y.  
SHR. = 30%  
WASTE 109 C.Y.

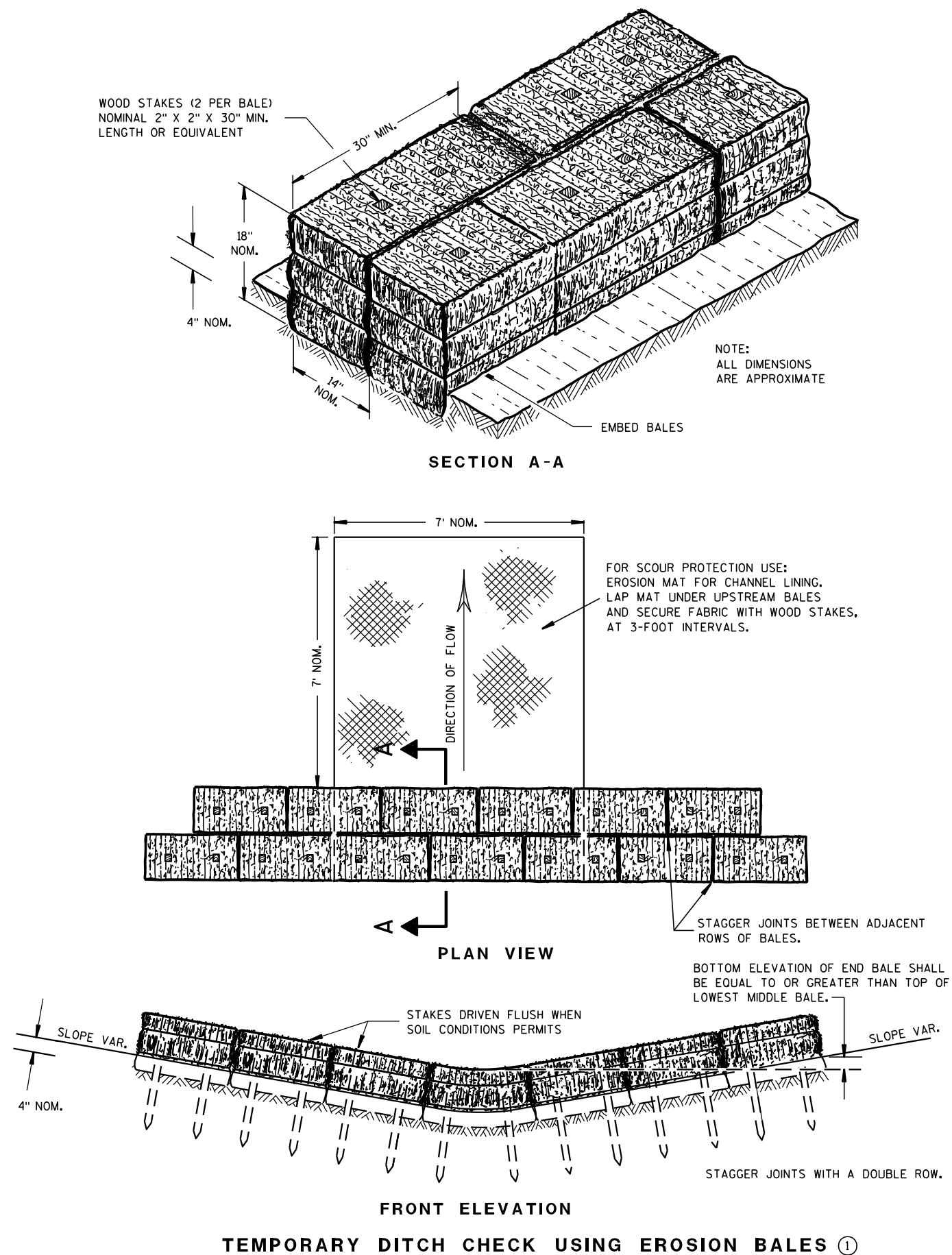
EARTHWORK SUMMARY

STA. 10+23.27 TO STA. 11+75  
EXC. COMMON 148 C.Y.  
FILL 4 C.Y.  
SHR. = 30%  
WASTE 143 C.Y.



Standard Detail Drawing List

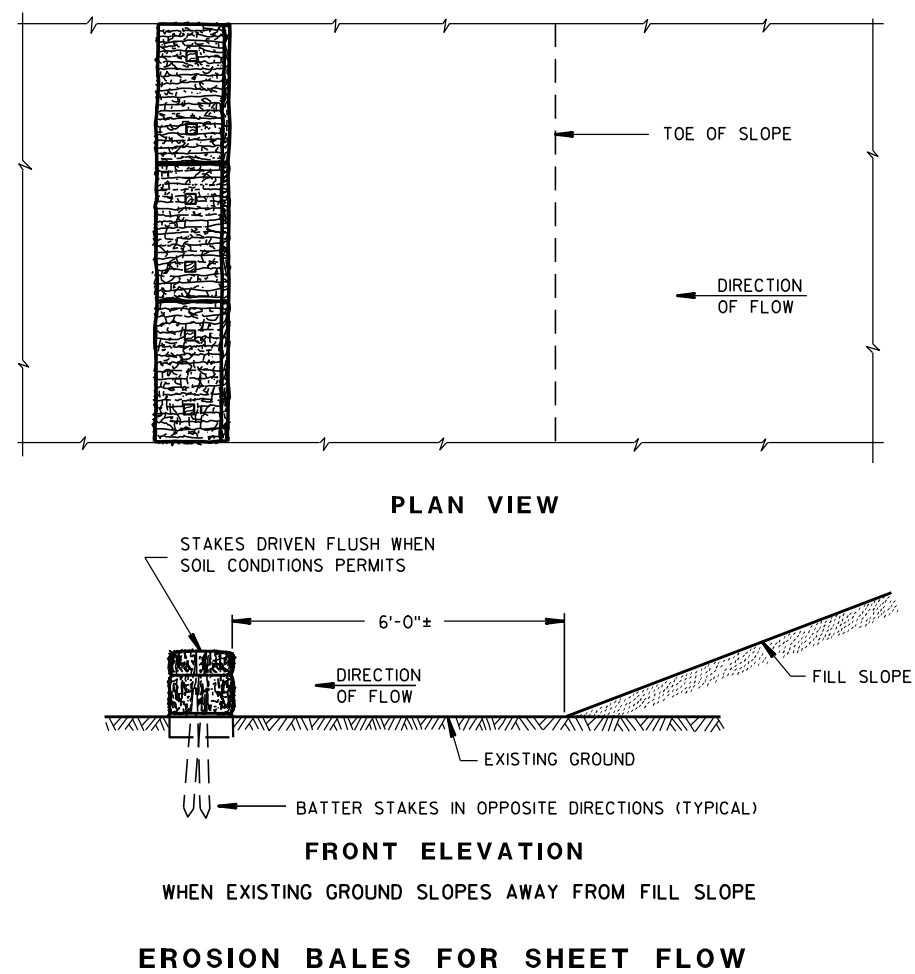
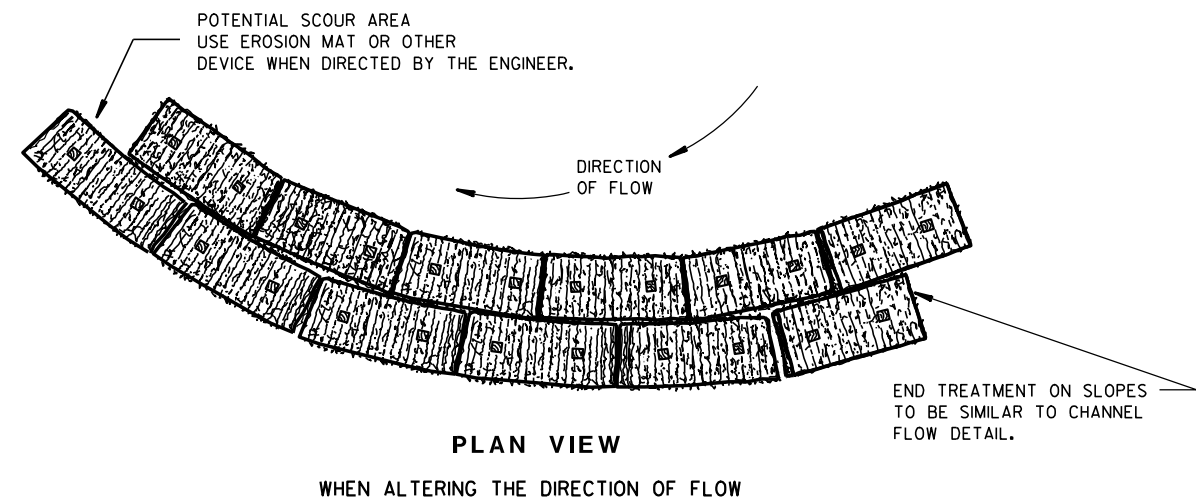
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES



## GENERAL NOTES

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

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

TYPICAL INSTALLATIONS OF  
EROSION BALES / TEMPORARY  
DITCH CHECKS

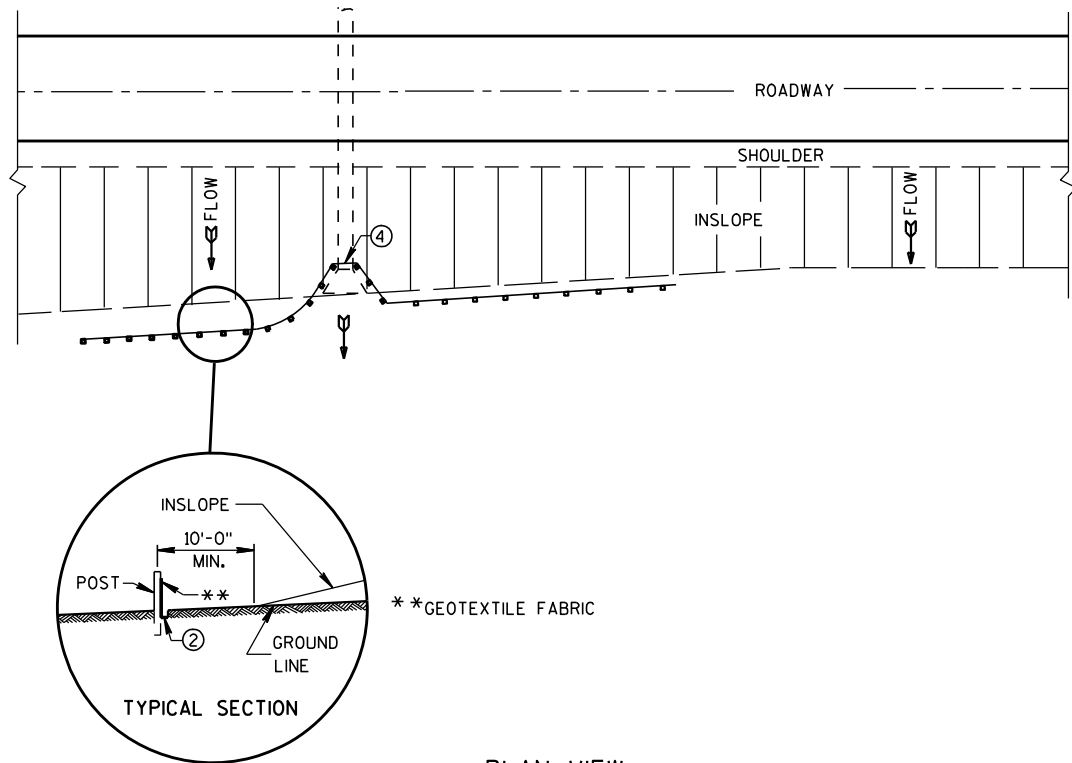
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

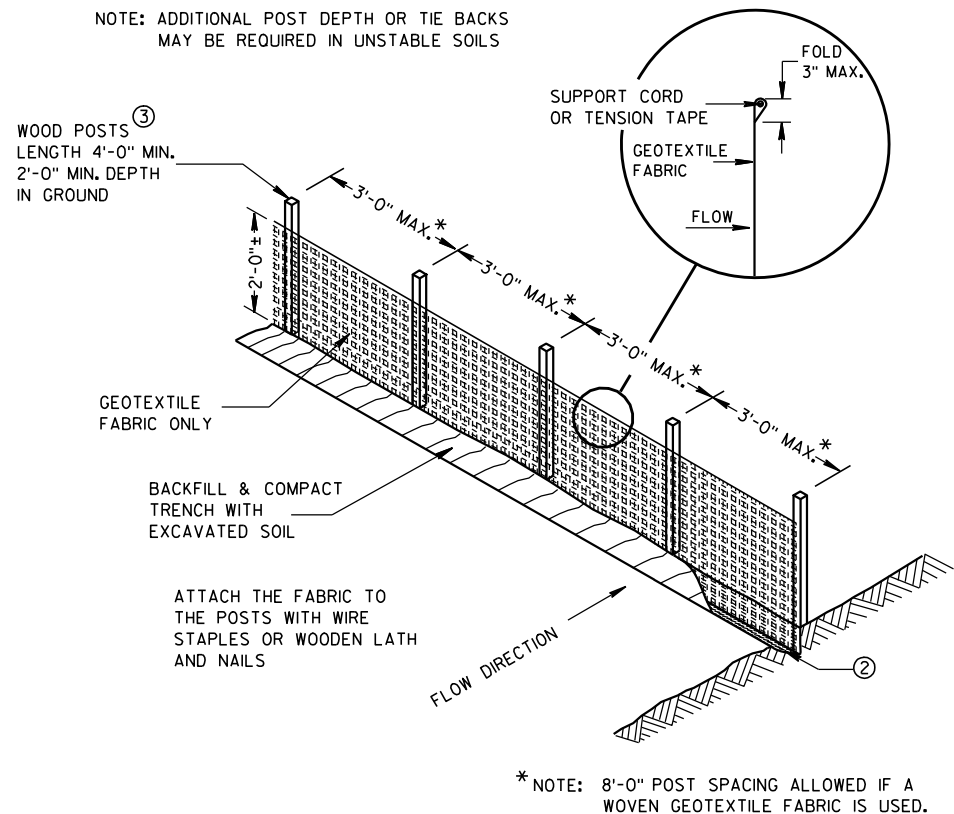
6/04/02  
DATE

FHWA

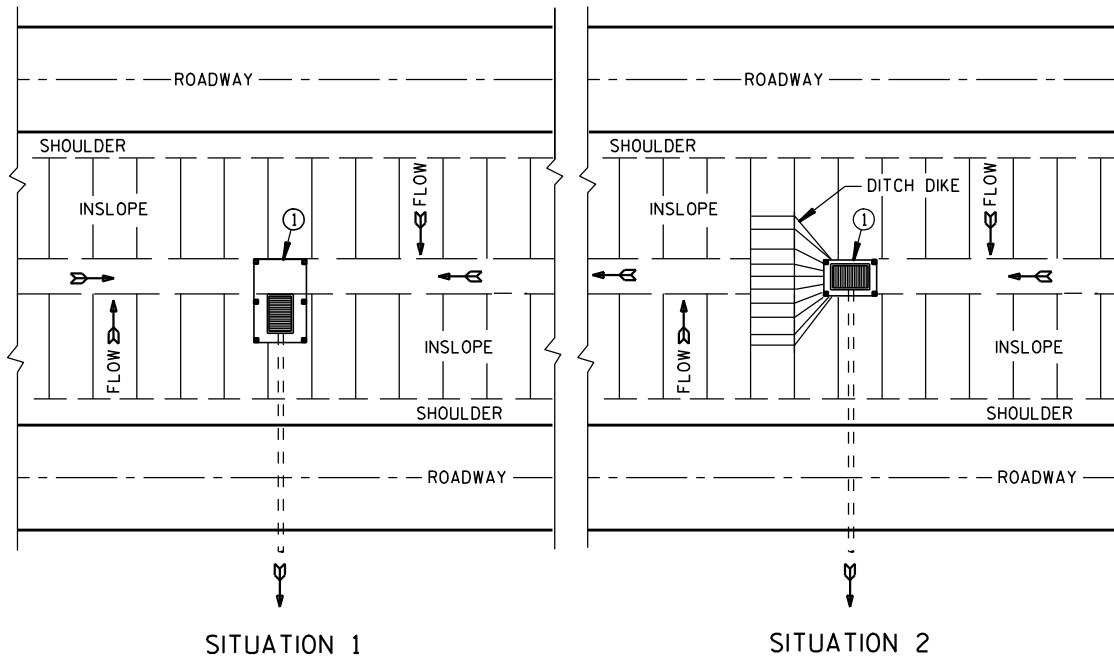
/S/ Beth Canestra  
CHIEF ROADWAY DEVELOPMENT ENGINEER



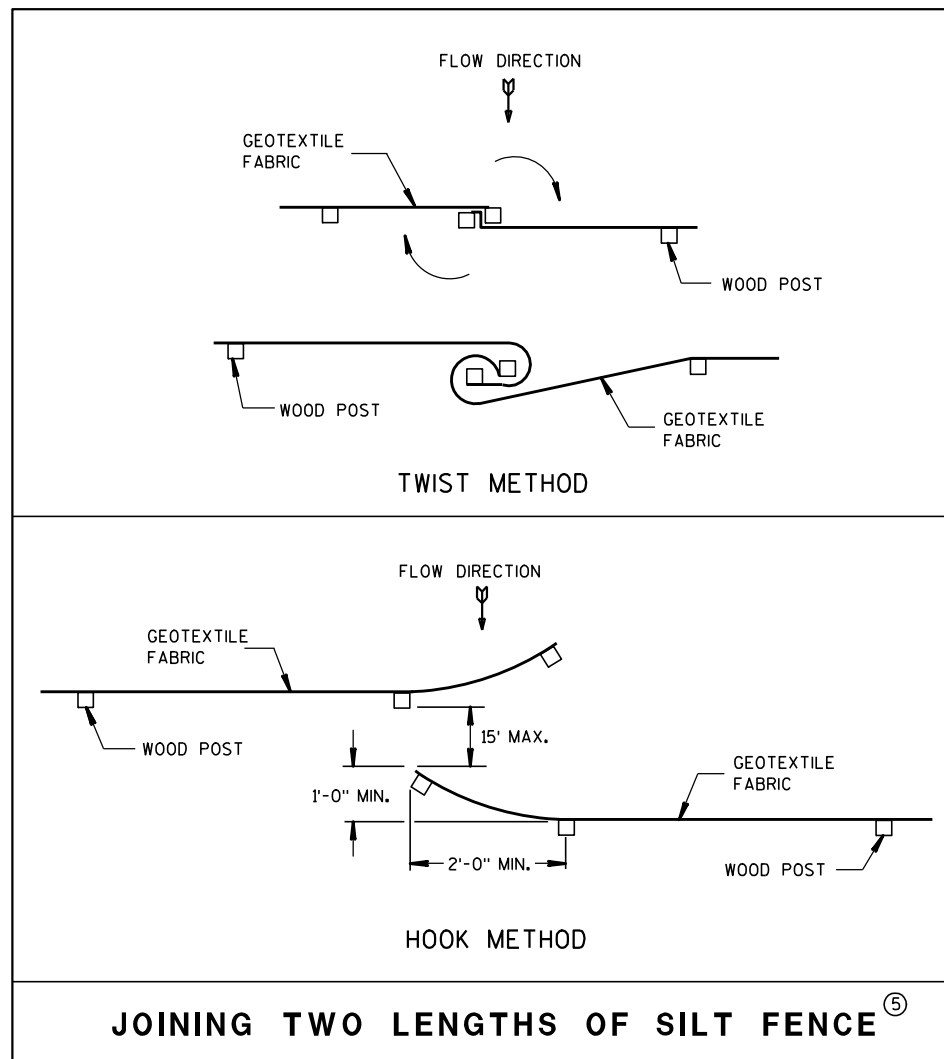
PLAN VIEW  
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW  
SILT FENCE AT MEDIAN SURFACE DRAINS

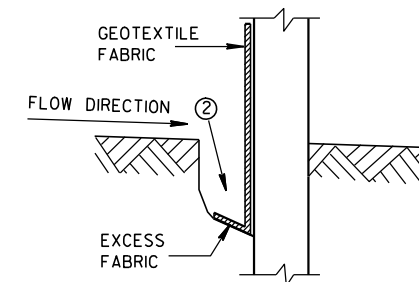


JOINING TWO LENGTHS OF SILT FENCE

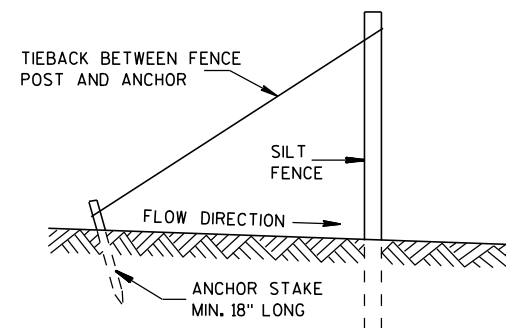
GENERAL NOTES

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 1 1/8" X 1 1/8" 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

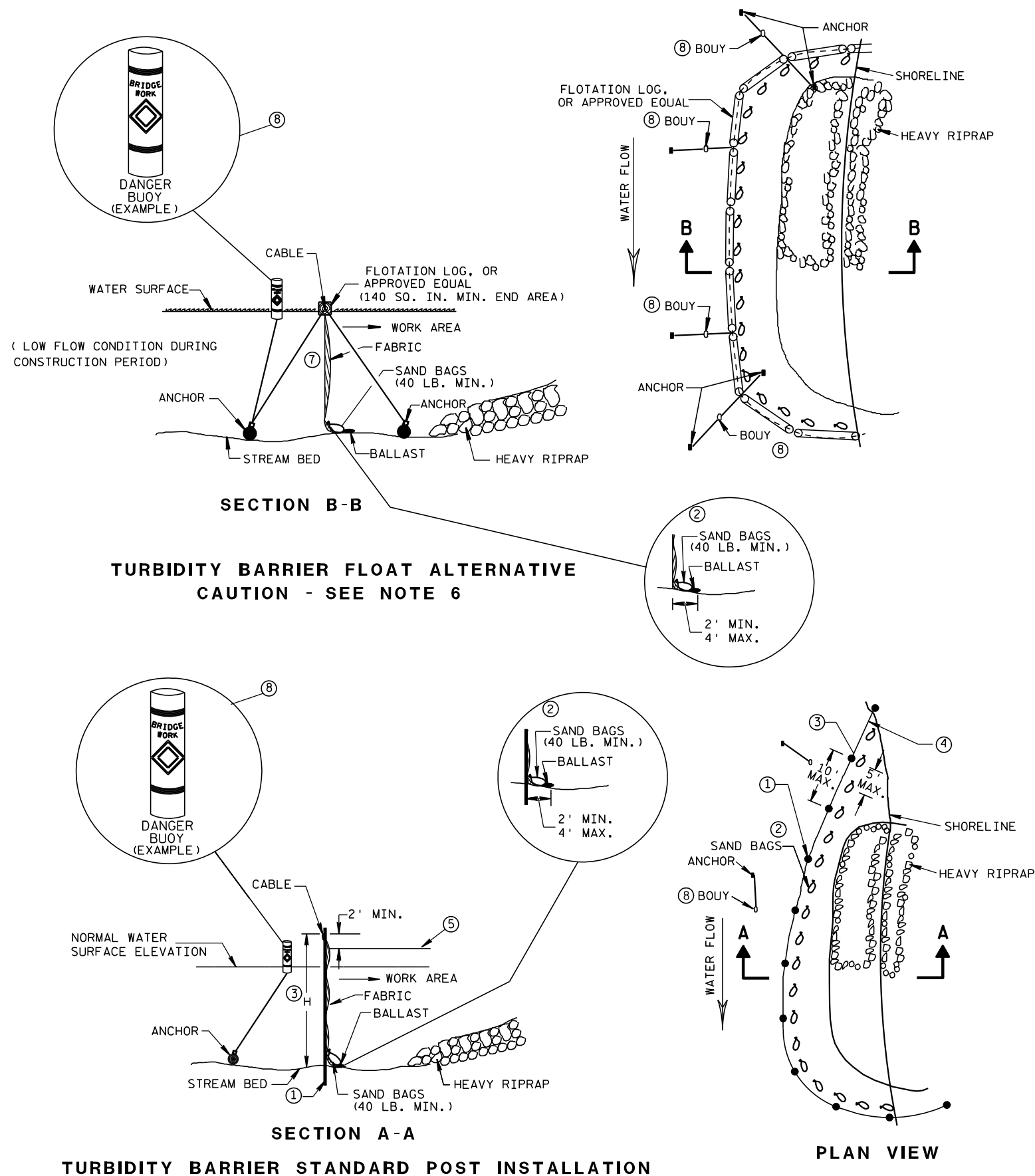


SILT FENCE TIE BACK  
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

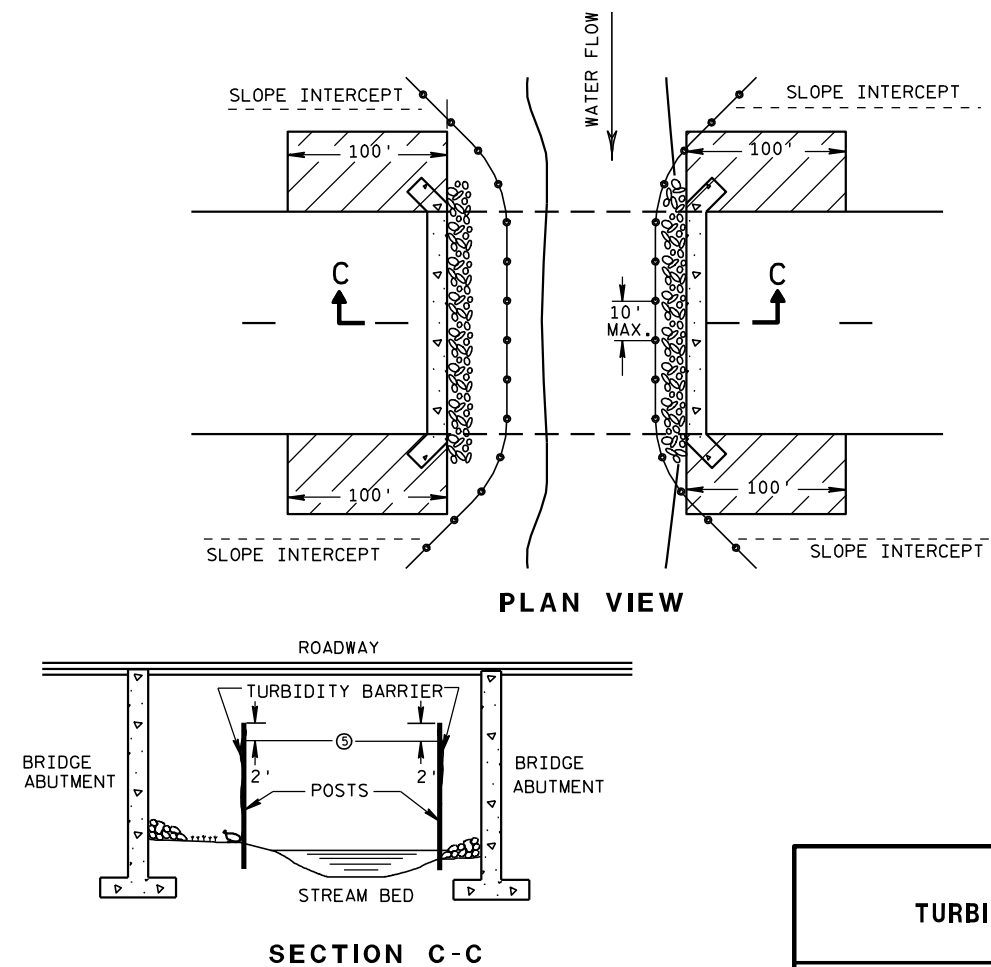


## GENERAL NOTES

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. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER 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.



## TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

### TURBIDITY BARRIER

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

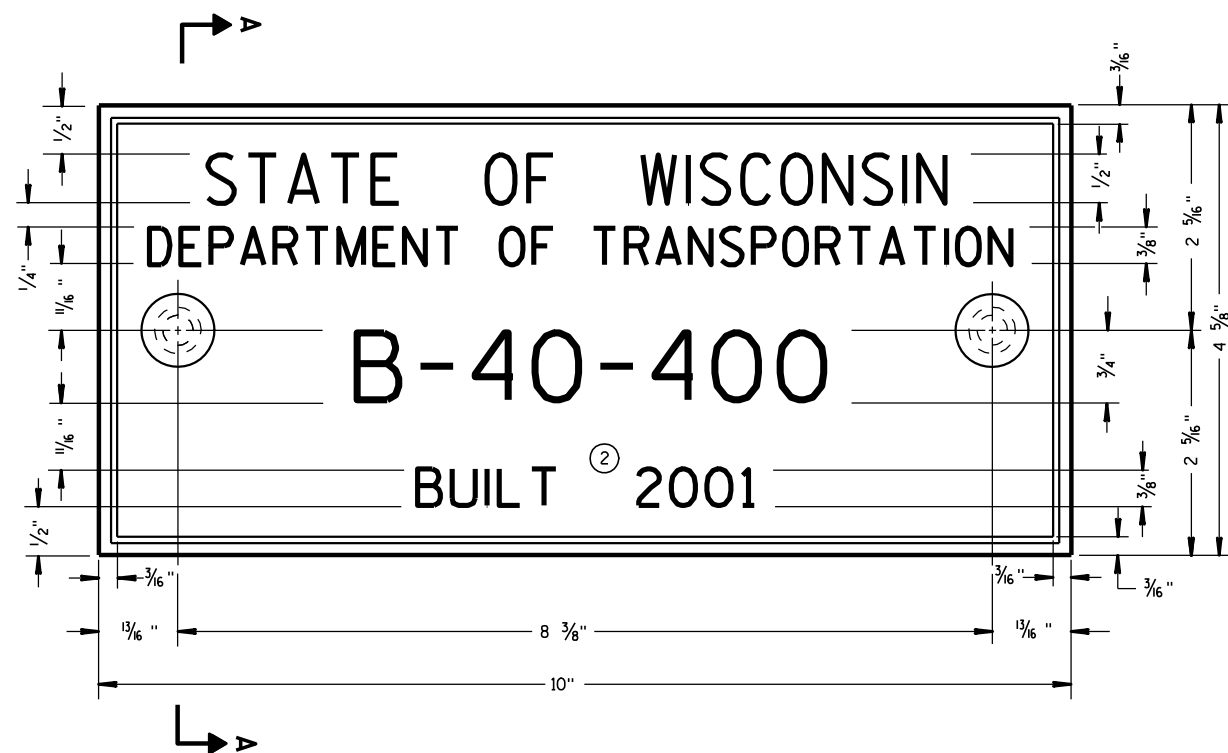
APPROVED

6/04/02

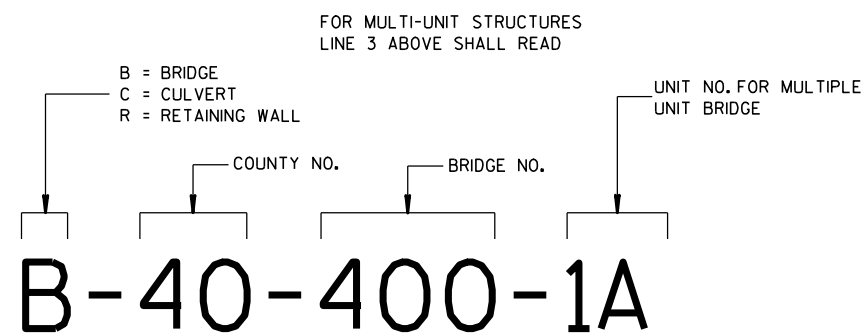
DATE

FHWA

/S/ Beth Canestra  
CHIEF ROADWAY DEVELOPMENT ENGINEER



**TYPICAL NAME PLATE**  
(BRIDGES, CULVERTS, AND RETAINING WALLS)



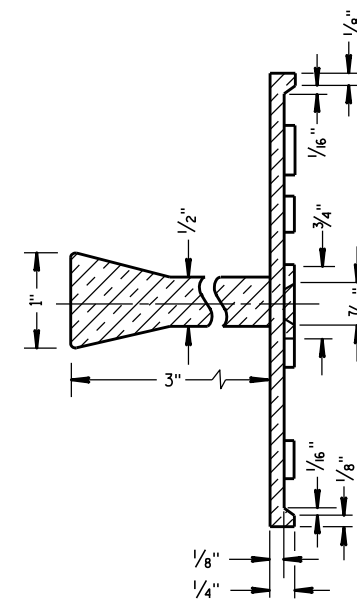
**NUMBERING DESIGNATION  
MULTI-UNIT STRUCTURES**

## GENERAL NOTES

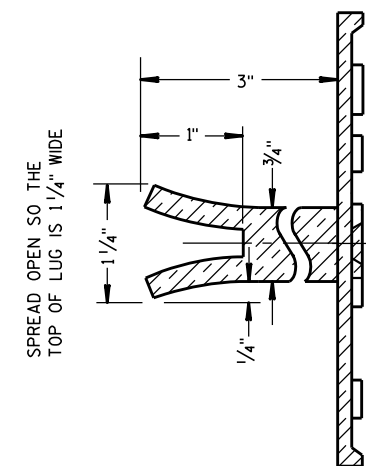
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.

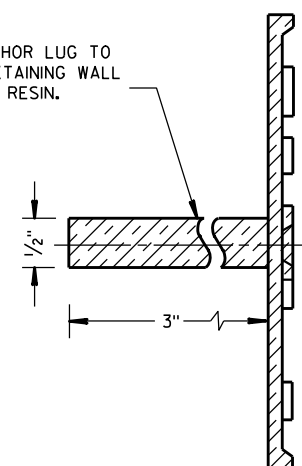


**SECTION A-A**



**ALTERNATE LUG**

- ① ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.



**ALTERNATE LUG**  
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE  
(STRUCTURES)**

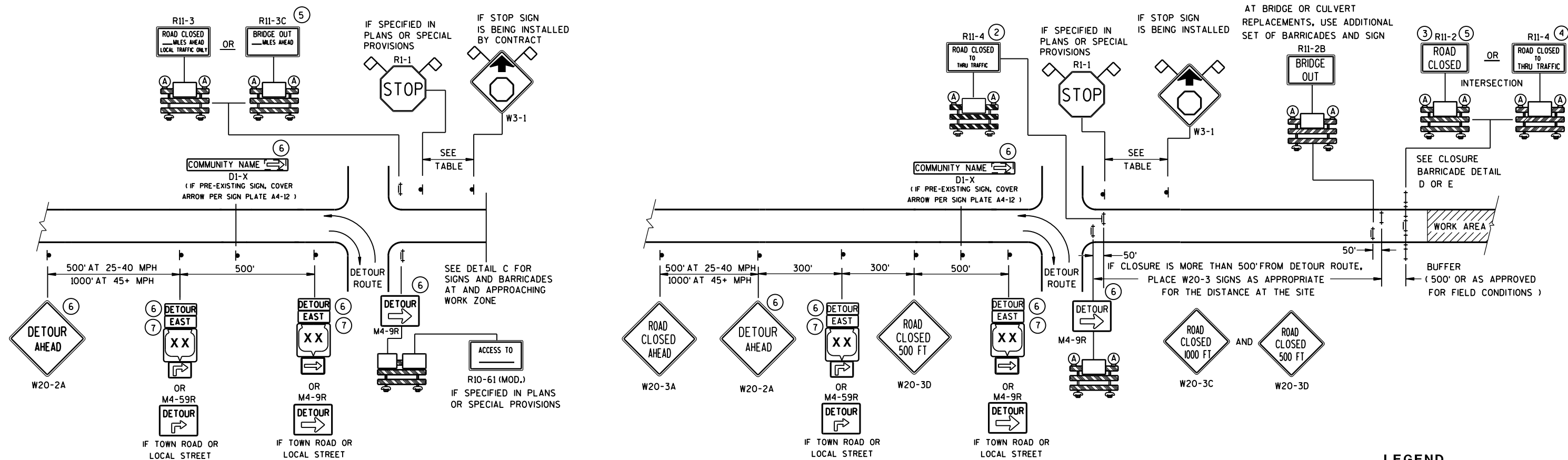
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10  
DATE

FHWA

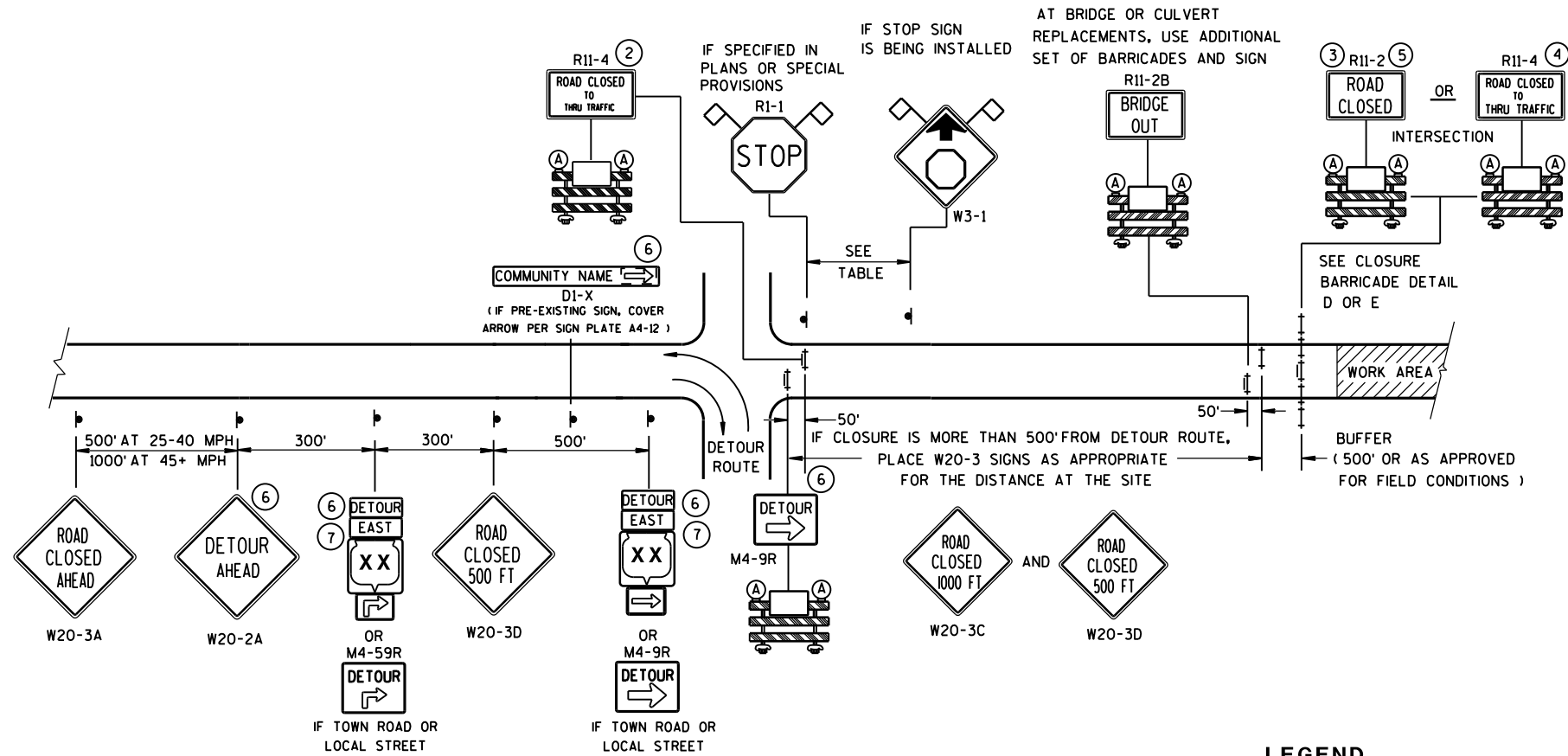
/S/ Scot Becker  
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



DETAIL A

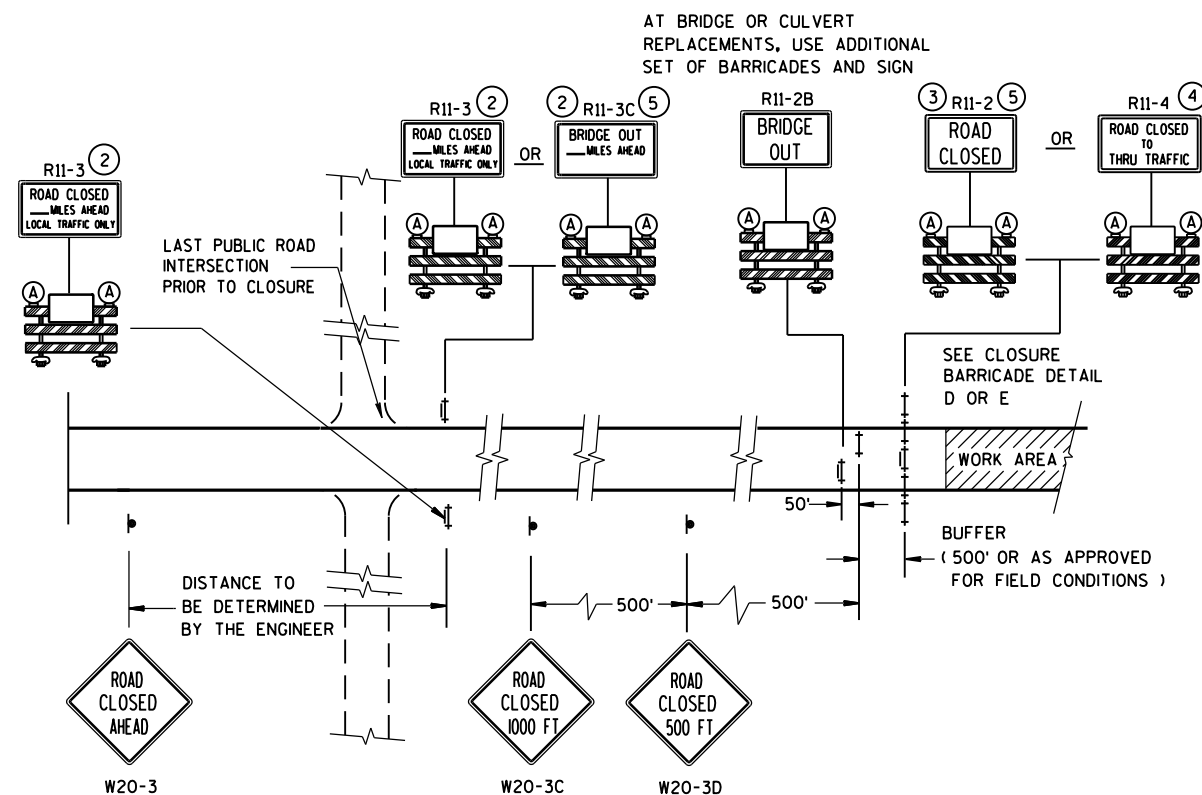
**MAINLINE CLOSURE WITH POSTED DETOUR**

WORK ZONE GREATER THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN )



DETAIL B  
MAINLINE CLOSURE WITH POSTED DETOUR













WORK ZONE LESS THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN )



DETAIL C

**MAINLINE CLOSURE, NO POSTED DETOUR**

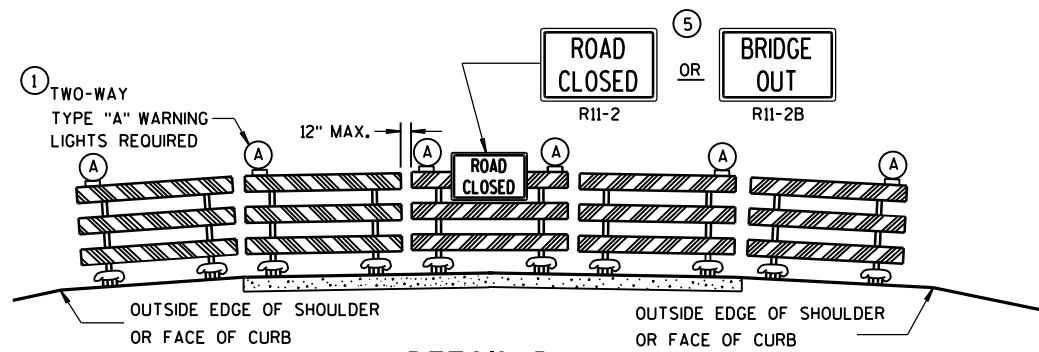
SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

- # LEGEND
-  SIGN ON PERMANENT SUPPORT
-  TYPE III BARRICADE
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE "A" WARNING LIGHT (FLASHING)
-  WORK AREA
-  M4-8
-  M3-X
-  M1-4
-  M1-5A
-  M1-6
-  M05-1
-  M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

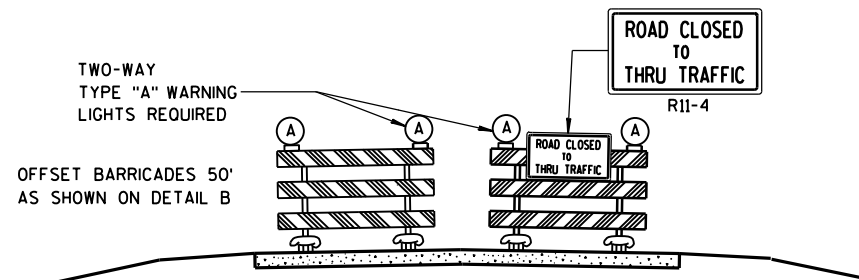
SEE SDD 15C2-SHEET "b"  
FOR GENERAL NOTES  
AND FOOTNOTES ① THROUGH ⑦

<b>BARRICADES AND SIGNS FOR MAINLINE CLOSURES</b>	
<b>STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</b>	
<b>Sept. 2015</b>	<b>/S/ Peter Amokobe Atepe</b>
<b>DATE</b>	<b>STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER</b>
<b>FHWA</b>	





DETAIL D  
ROAD CLOSURE BARRICADE DETAIL  
APPROACH VIEW



DETAIL E  
LANE CLOSURE BARRICADE DETAIL  
APPROACH VIEW

SEE SDD 15C2-SHEET "a" FOR LEGEND

## GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

R11-2 SHALL BE 48" X 30".

R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".

M4-9 SHALL BE 30" X 24".

M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)

M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)

M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)

M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)

D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

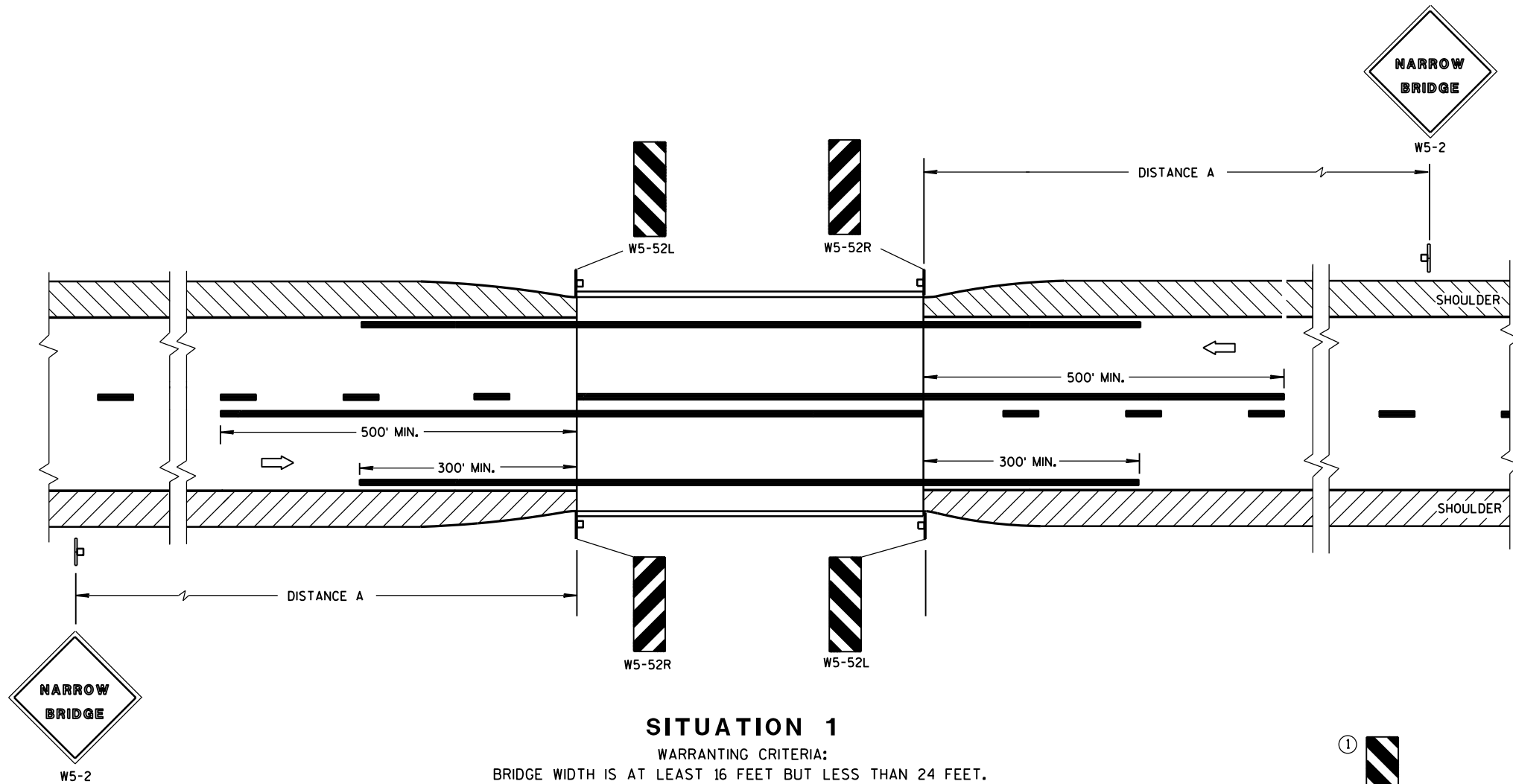
R1-1 SHALL BE 36" X 36".

- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).
- 2 THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.
- 3 FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.
- 4 FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.
- 5 FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.
- 6 INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- 7 "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

## BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



### SITUATION 1

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

DISTANCE TABLE

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

### GENERAL NOTES

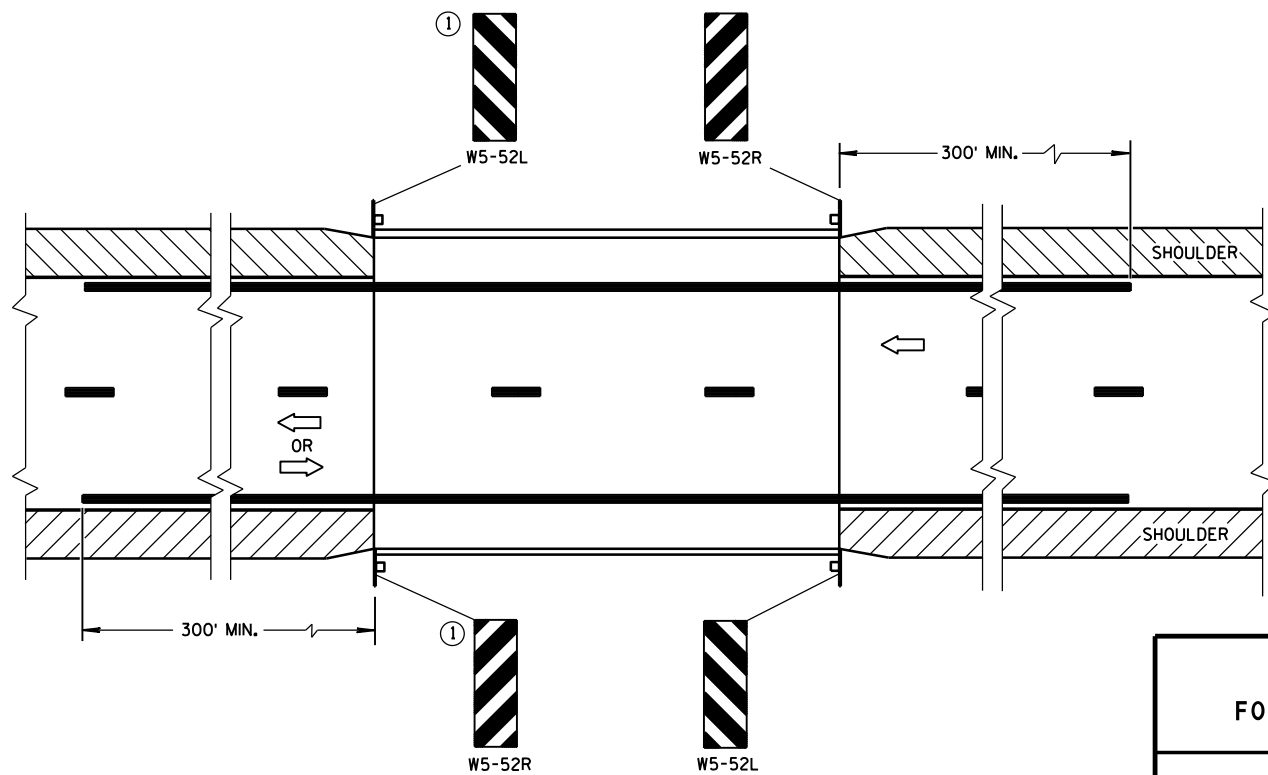
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC



### SITUATION 2

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

### SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

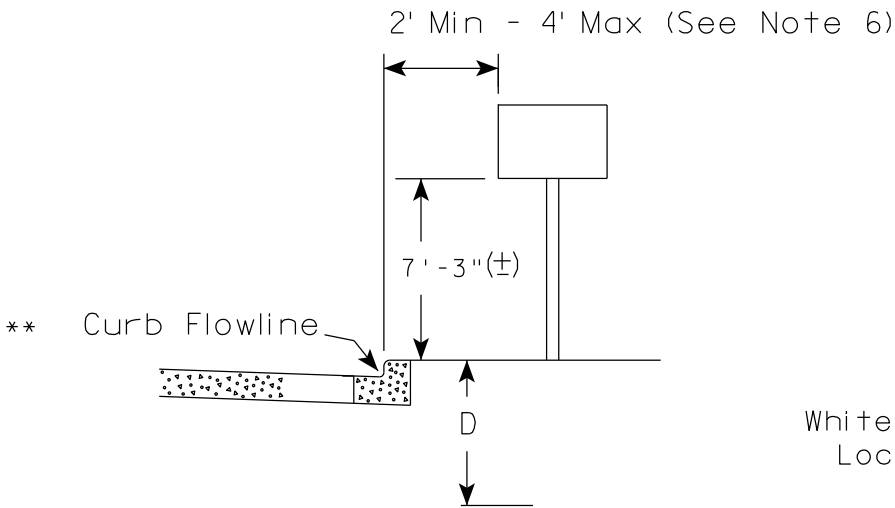
#### APPROVED

June 2017  
DATE

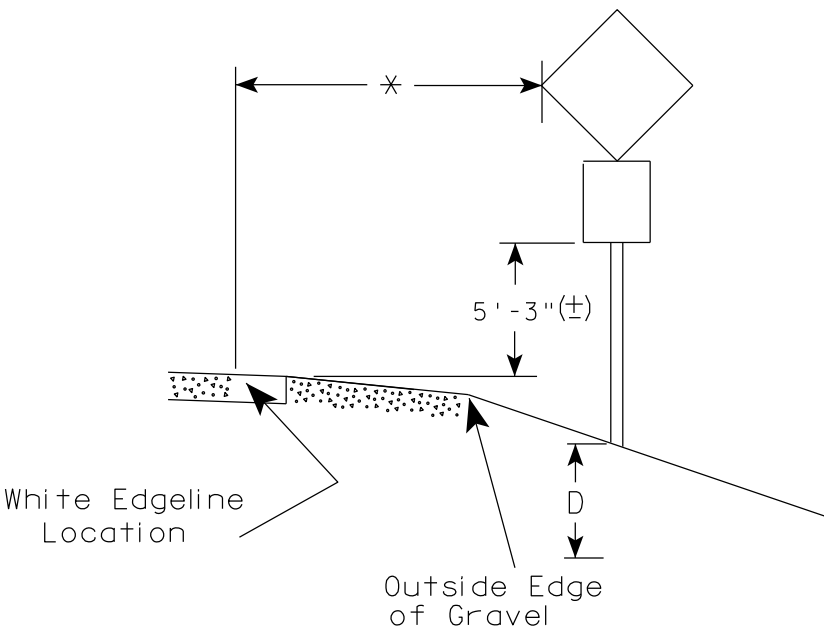
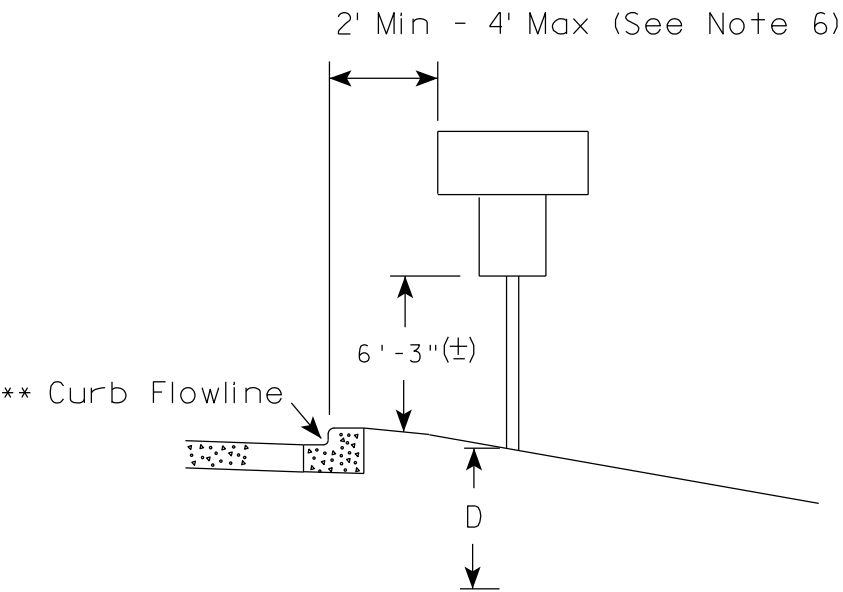
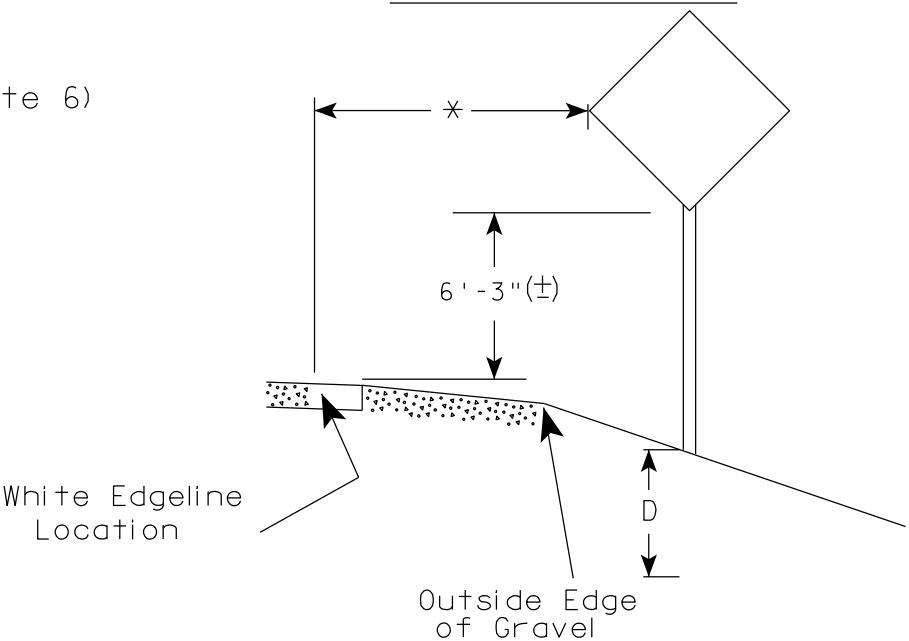
/S/ Matthew R. Rauch  
STATE SIGNING AND MARKING ENGINEER

FHWA

URBAN AREA



RURAL AREA (See Note 2)



POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) 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 signs 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), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

✖✖ 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.

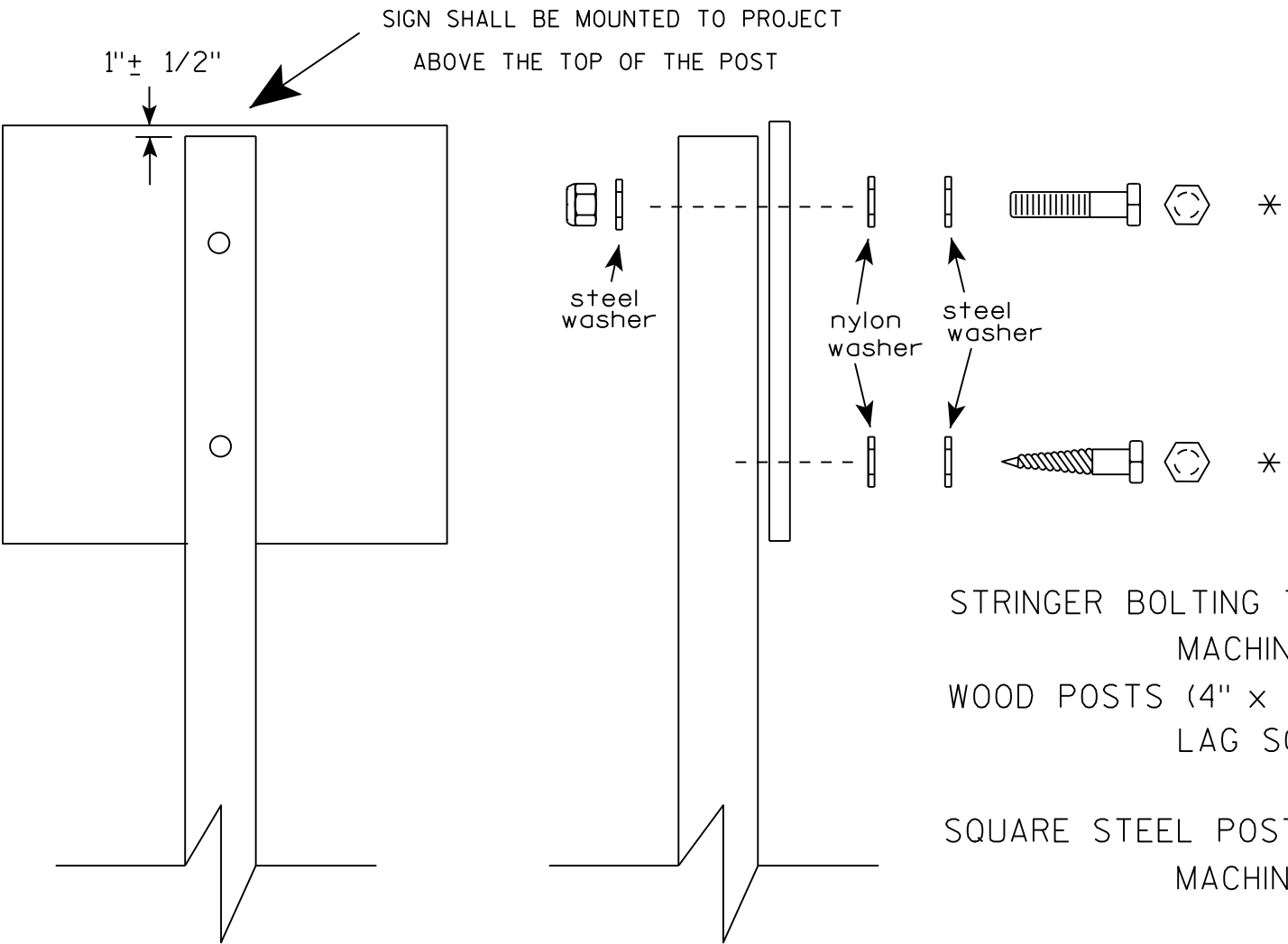
\* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION  
OF PERMANENT TYPE II  
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED  
*Matthew R. Rauch*  
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-3.20



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

- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
  - 3/8" X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
  - 3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
- O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
  - 1-1/4" O.D. X 3/8" I.D. X .080 NYLON

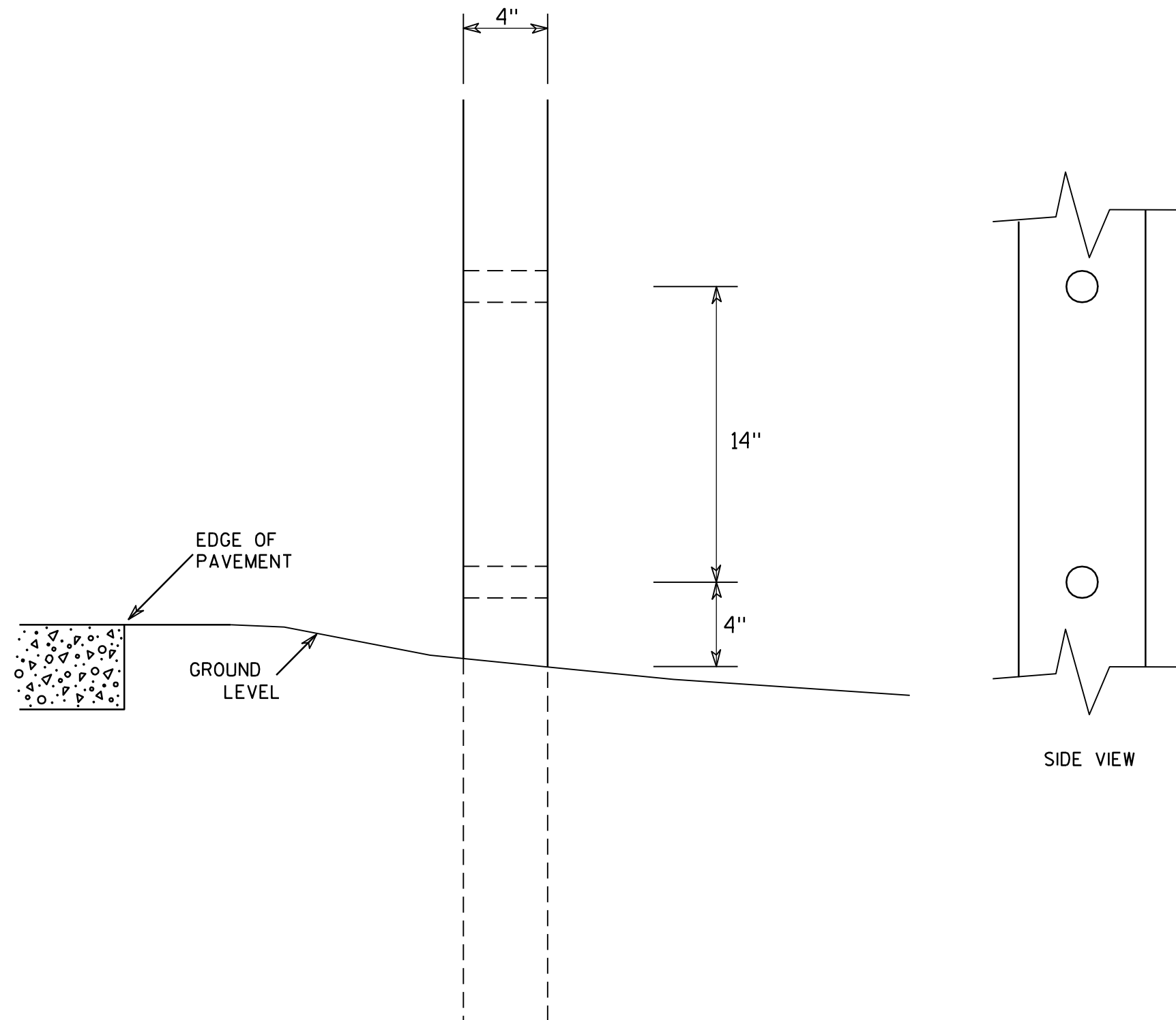
\* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

ATTACHMENT OF SIGNS  
TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

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



# GENERAL NOTES

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

## 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

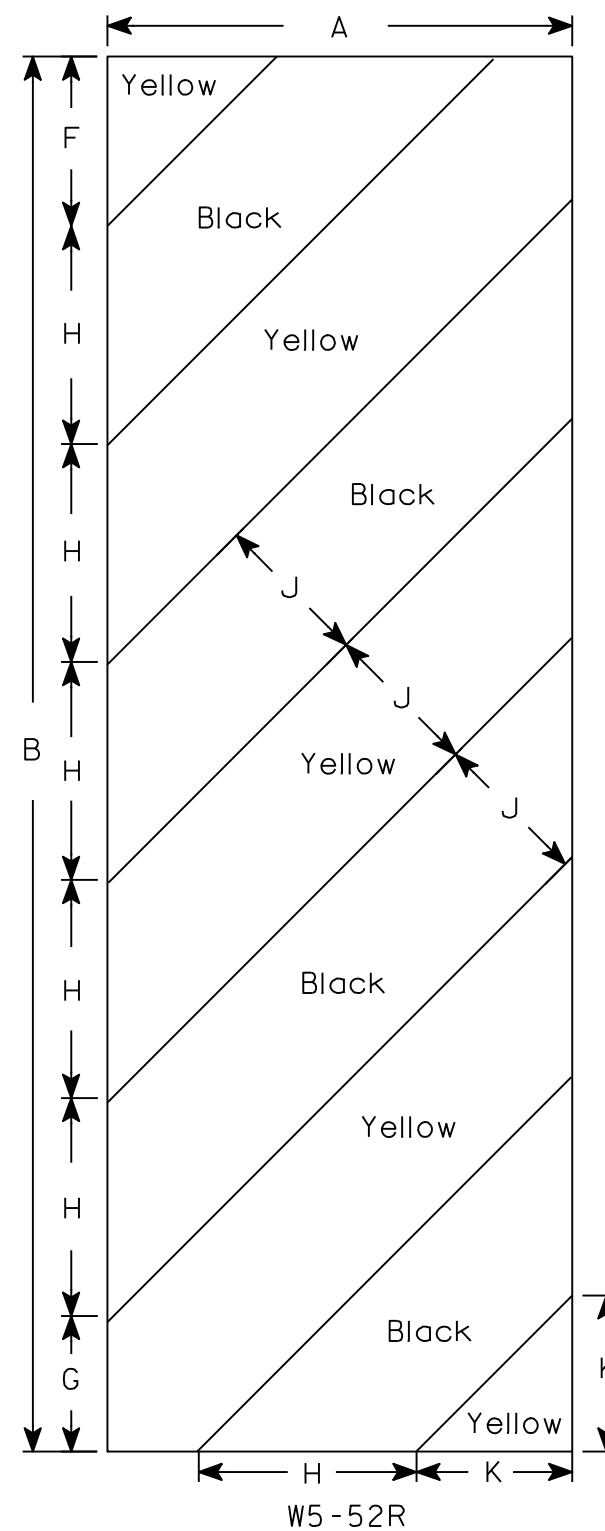
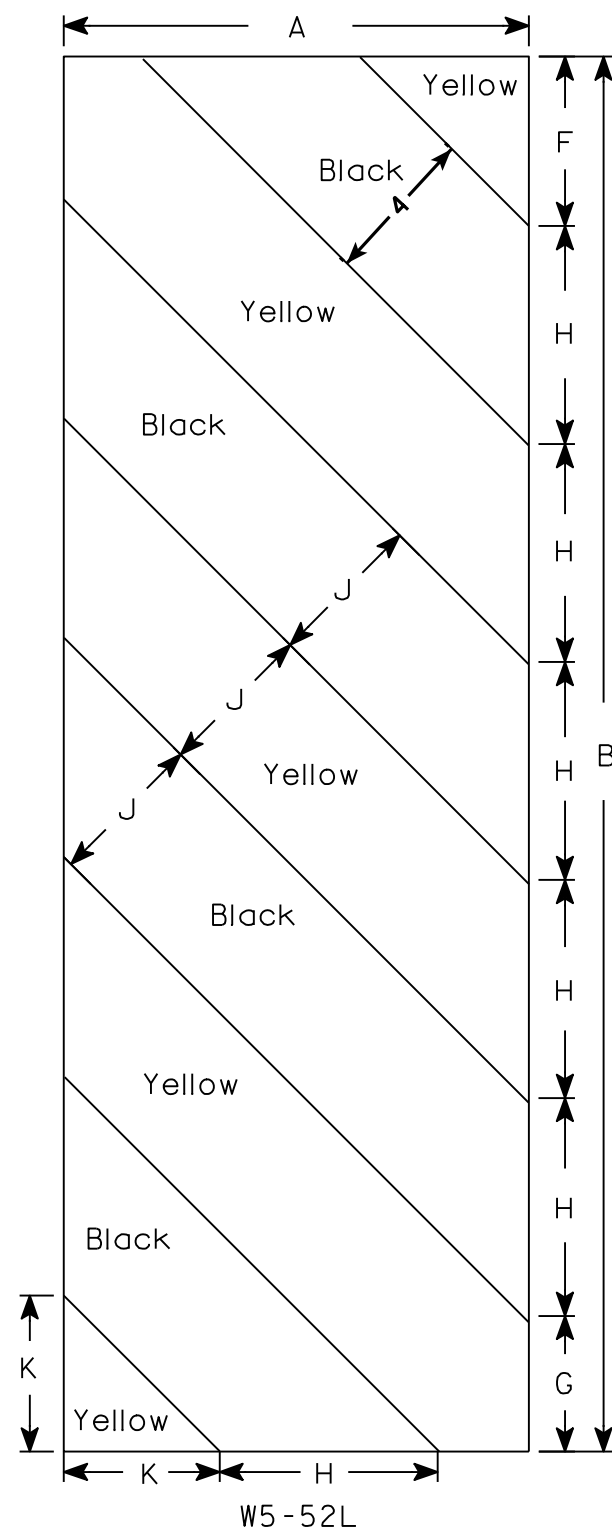
PROJECT NO: 8421-00-70

HWY: FETKE ROAD

COUNTY: RUSK

SHEET NO:

E



## 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.

[illegible]

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: 8421-00-70
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HWY: FETKE ROAD

COUNTY: RUSK

SHEET NO:
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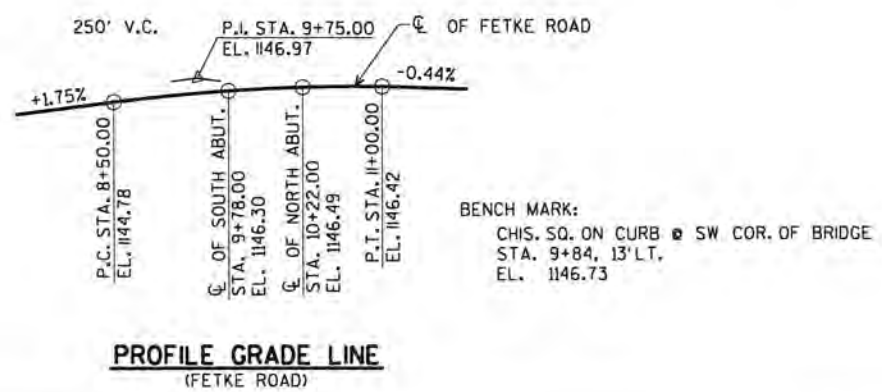
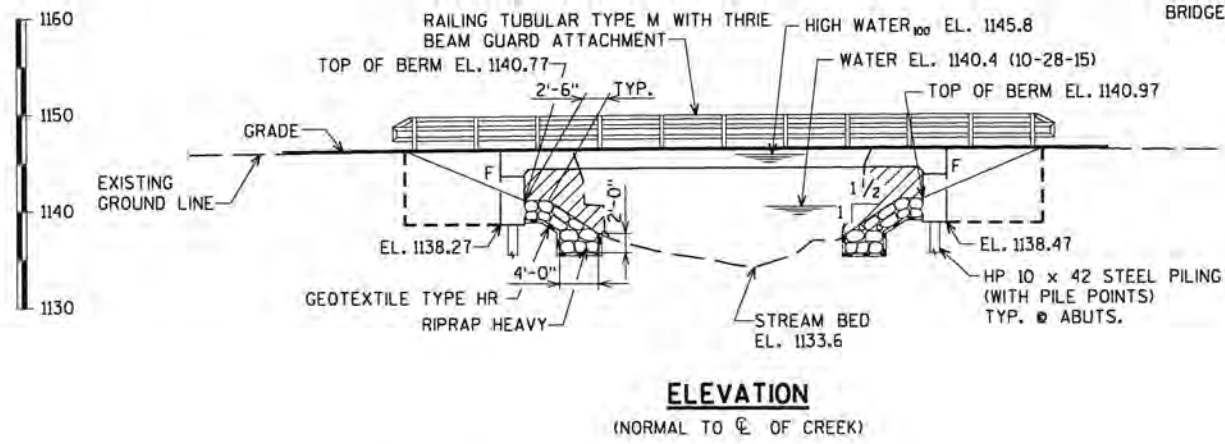
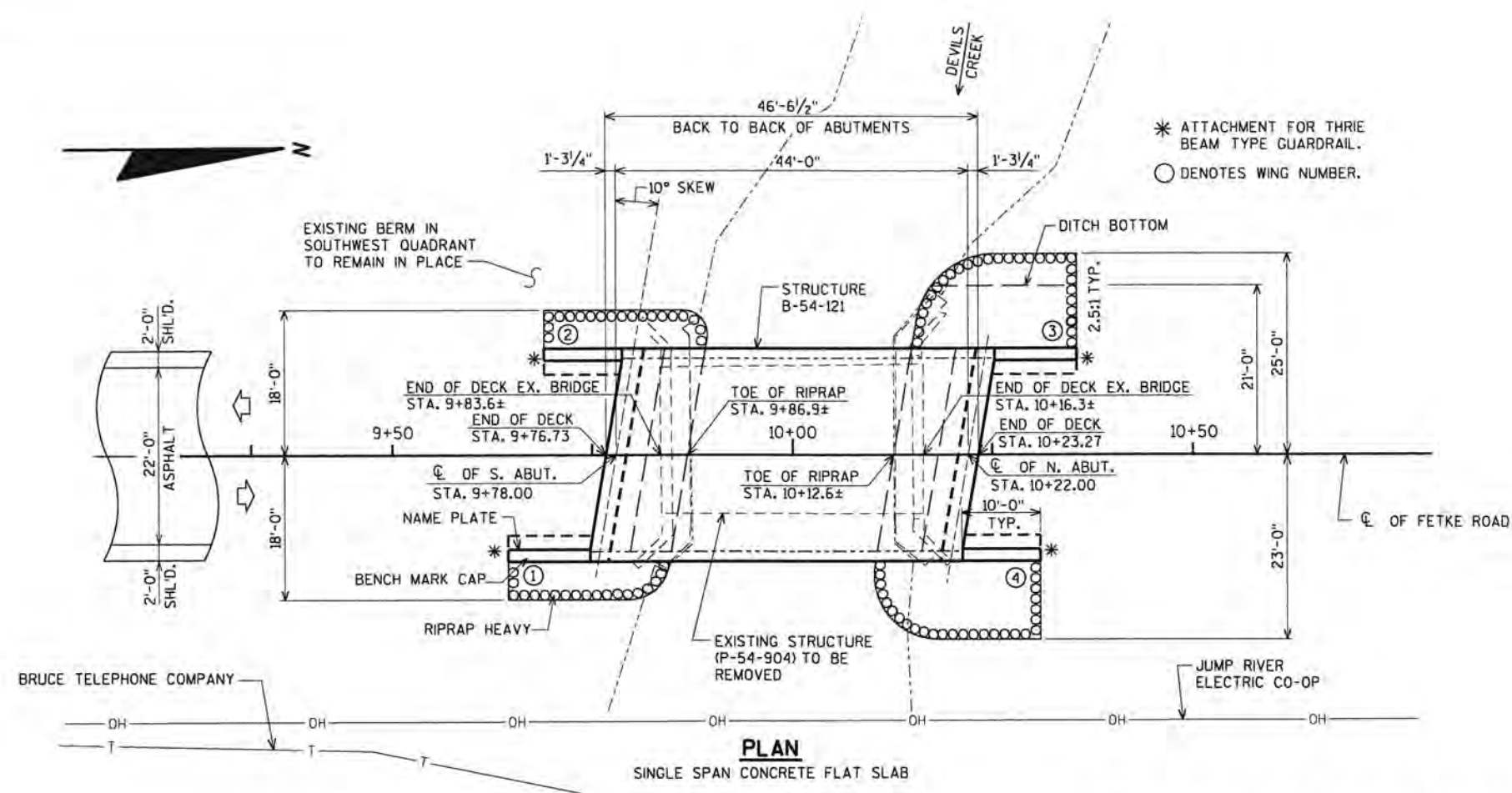
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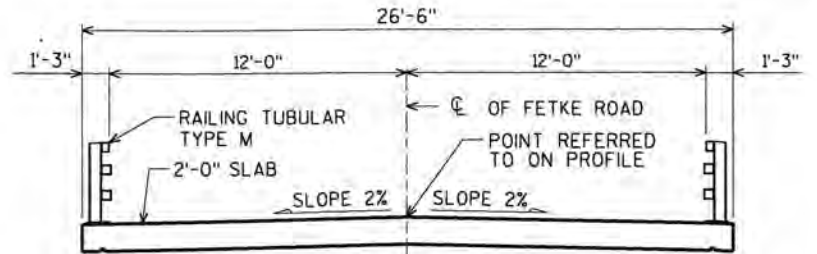
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DATE: DATE: DATE:  
CHECKED BY: BACK CHECKED BY: CORRECTED BY:

8



- LIST OF DRAWINGS**
1. GENERAL PLAN
  2. QUANTITIES AND NOTES
  3. SUBSURFACE EXPLORATION
  4. SOUTH ABUTMENT
  5. SOUTH ABUTMENT WING DETAILS
  6. SOUTH ABUTMENT DETAILS AND BILL OF BARS
  7. NORTH ABUTMENT
  8. NORTH ABUTMENT WING DETAILS
  9. NORTH ABUTMENT DETAILS AND BILL OF BARS
  10. SUPERSTRUCTURE
  11. SUPERSTRUCTURE PLAN
  12. RAILING TUBULAR TYPE M



**DESIGN DATA**

**LIVE LOAD:**  
DESIGN LOADING: HL-93  
INVENTORY RATING FACTOR: 1.06  
OPERATING RATING FACTOR: 1.38  
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS  
STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 #/S.F.

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

**HYDRAULIC DATA:**  
**100 YEAR FREQUENCY**  
 $Q_{100} = 3,700$  c.f.s. { BRIDGE = 2,280 c.f.s.  
VEL. = 8.8 f.p.s. { OVERFLOW = 1,420 c.f.s.  
HW<sub>100</sub> = EL. 1145.8  
WATERWAY AREA = 258 sq. ft.  
DRAINAGE AREA = 27.1 sq. mi.  
SCOUR CRITICAL CODE = 5  
DATUM = NAVD88 (2012)

**2 YEAR FREQUENCY**  
 $Q_2 = 870$  c.f.s.  
VEL. = 5.9 f.p.s.  
HW<sub>2</sub> = EL. 1141.8

**ROAD OVERTOPPING FREQUENCY**  
 $Q_3 = 1,100$  c.f.s.  
WATER SURFACE EL. 1143.1  
FREQUENCY = 3 YEARS

**FOUNDATION DATA:**  
SOUTH ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ± PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. PRE-BORE PILES 10'-0". ESTIMATED LENGTH 40'-0".  
NORTH ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ± PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 45'-0".  
\*THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

**TRAFFIC DATA:**  
A.D.T. = <100 (2018)  
A.D.T. = <100 (2038)  
R.D.S. = 45 M.P.H.

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY <b>AYRES ASSOCIATES</b> 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED <i>William C. Dreher</i> <sup>SDR</sup> 08/21/17 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-54-121			
FETKE ROAD OVER DEVILS CREEK			
COUNTY	RUSK	TOWN/CITY/VILLAGE	ATLANTA
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	CJM	DESIGN CKD.	CKJ
DRAWN BY	CJM/CLS	PLANS CKD.	BNS
GENERAL PLAN			SHEET 1 OF 12

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STATE PROJECT NUMBER

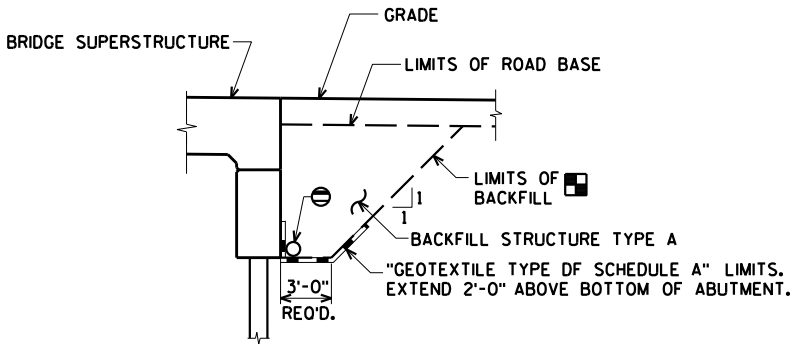
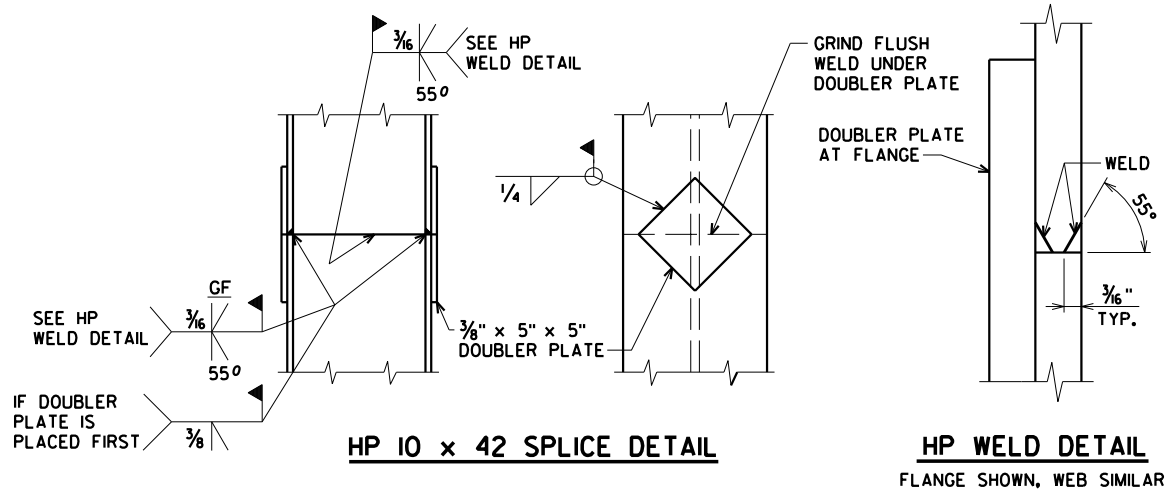
8421-00-70

**TOTAL ESTIMATED QUANTITIES**

BID ITEM NUMBER	BID ITEMS	UNIT	S. ABUT.	N. ABUT.	SUPER.	TOTAL
203.0210.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL P-54-904	LS	-----	-----	-----	1
203.0700.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH DEBRIS CAPTURE SYSTEM STATION 10+00	LS	-----	-----	-----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-54-121	LS	-----	-----	-----	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	75	75	-----	150
502.0100	CONCRETE MASONRY BRIDGES	CY	28	28	96	152
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	170	170
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1,630	1,630	-----	3,260
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,370	1,370	16,500	19,240
513.4061	RAILING TUBULAR TYPE M B-54-121	LF	23	23	93	139
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	9	9	-----	18
550.0020	PRE-BORING ROCK OR CONSOLIDATED MATERIAL	LF	40	-----	-----	40
550.0500	PILE POINTS	EACH	4	4	-----	8
550.1100	PILING STEEL HP 10-INCH x 42 LB	LF	160	180	-----	340
606.0300	RIPRAP HEAVY	CY	35	55	-----	90
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	75	75	-----	150
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	35	35	-----	70
645.0120	GEOTEXTILE TYPE HR	SY	80	120	-----	200
	NON-BID ITEMS					
	FILLER	SIZE	-----	-----	-----	1/2" & 3/4"
	NAME PLATE					

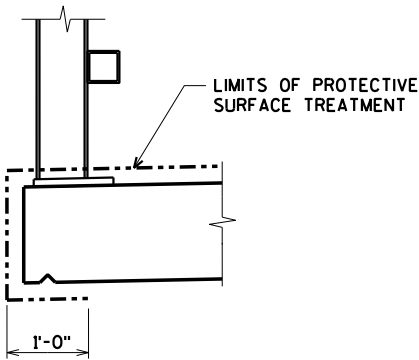
**GENERAL NOTES**

DRAWINGS SHALL NOT BE SCALED.  
BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.  
THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE. JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.  
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.  
SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.  
THE EXISTING GROUND LINE SHALL BE THE UPPER LIMIT FOR EXCAVATION FOR STRUCTURES.  
THE EXISTING STRUCTURE, P-54-904, TO BE REMOVED, IS A SINGLE SPAN CONCRETE BRIDGE, 33 FT. LONG WITH A 18.6 FT. CLEAR ROADWAY WIDTH.  
AT BACKFACE OF ABUTMENTS ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE TYPE A.  
PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.  
EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.



**BACKFILL STRUCTURE LIMITS**

- BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEETS 6 & 9.



**PROTECTIVE SURFACE TREATMENT DETAIL**

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-54-121			
	DRAWN BY	CJM	PLANS CK'D. CJM
QUANTITIES AND NOTES			SHEET 2 OF 12

ORIGINAL PLANS PREPARED BY  
**AYRES ASSOCIATES**  
3433 Oakwood Hills Parkway  
Eau Claire, WI 54701  
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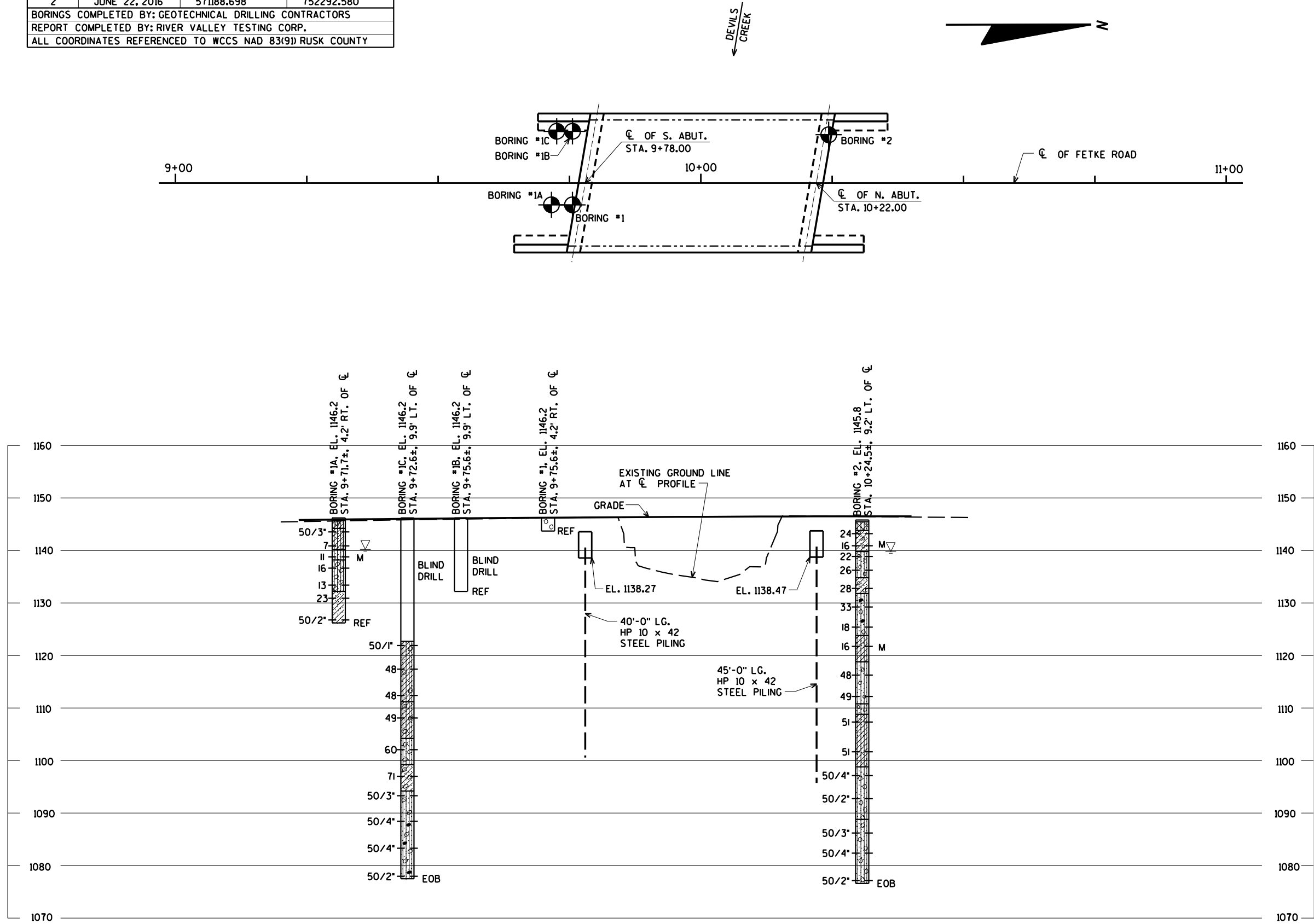
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BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	JUNE 22, 2016	571139.863	752305.699
1A	JUNE 22, 2016	571135.863	752305.681
1B	JUNE 22, 2016	571139.927	752291.700
1C	JUNE 22, 2016	571136.927	752291.686
2	JUNE 22, 2016	571188.698	752292.580

BORINGS COMPLETED BY: GEOTECHNICAL DRILLING CONTRACTORS

REPORT COMPLETED BY: RIVER VALLEY TESTING CORP.

ALL COORDINATES REFERENCED TO WCCS NAD 83(91) RUSK COUNTY



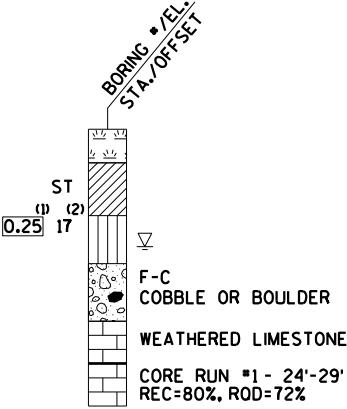
STATE PROJECT NUMBER

8421-00-70

MATERIAL SYMBOLS

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

LEGEND OF BORING



<sup>(1)</sup> UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

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

GROUND WATER ELEVATION

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

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

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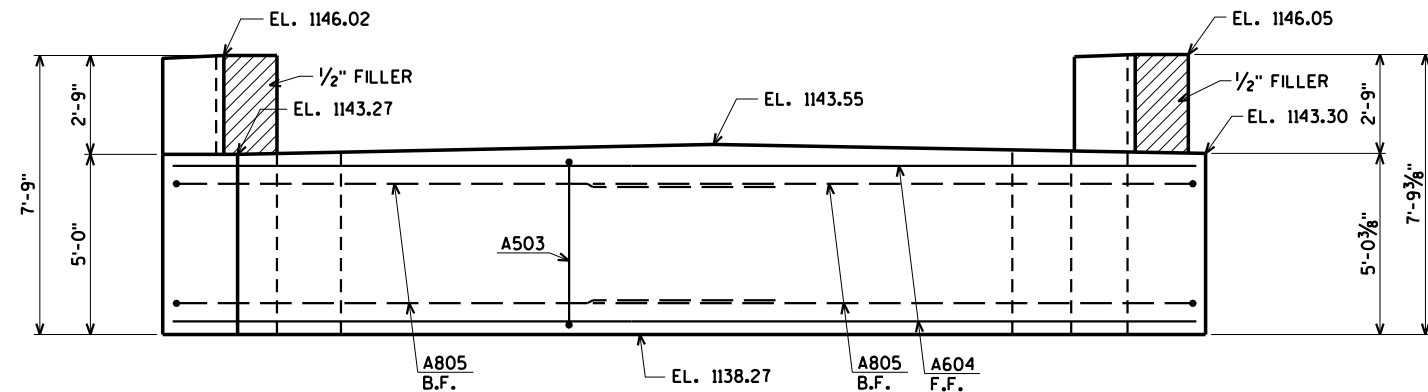
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-54-121			
DRAWN BY		CJM	PLANS CK'D. CJM
SUBSURFACE EXPLORATION		SHEET 3 OF 12	

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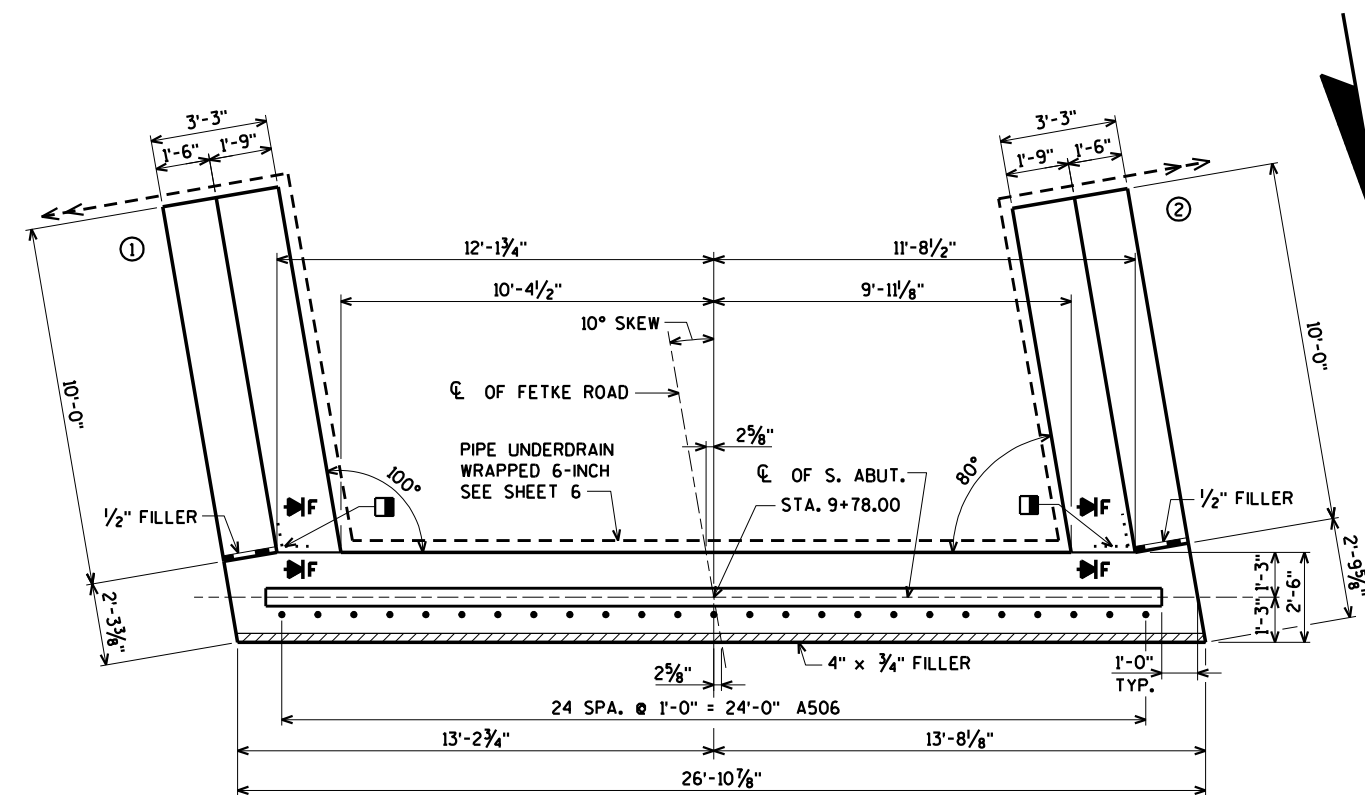
NOTE:  
SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF  
1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT  
SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).

STATE PROJECT NUMBER

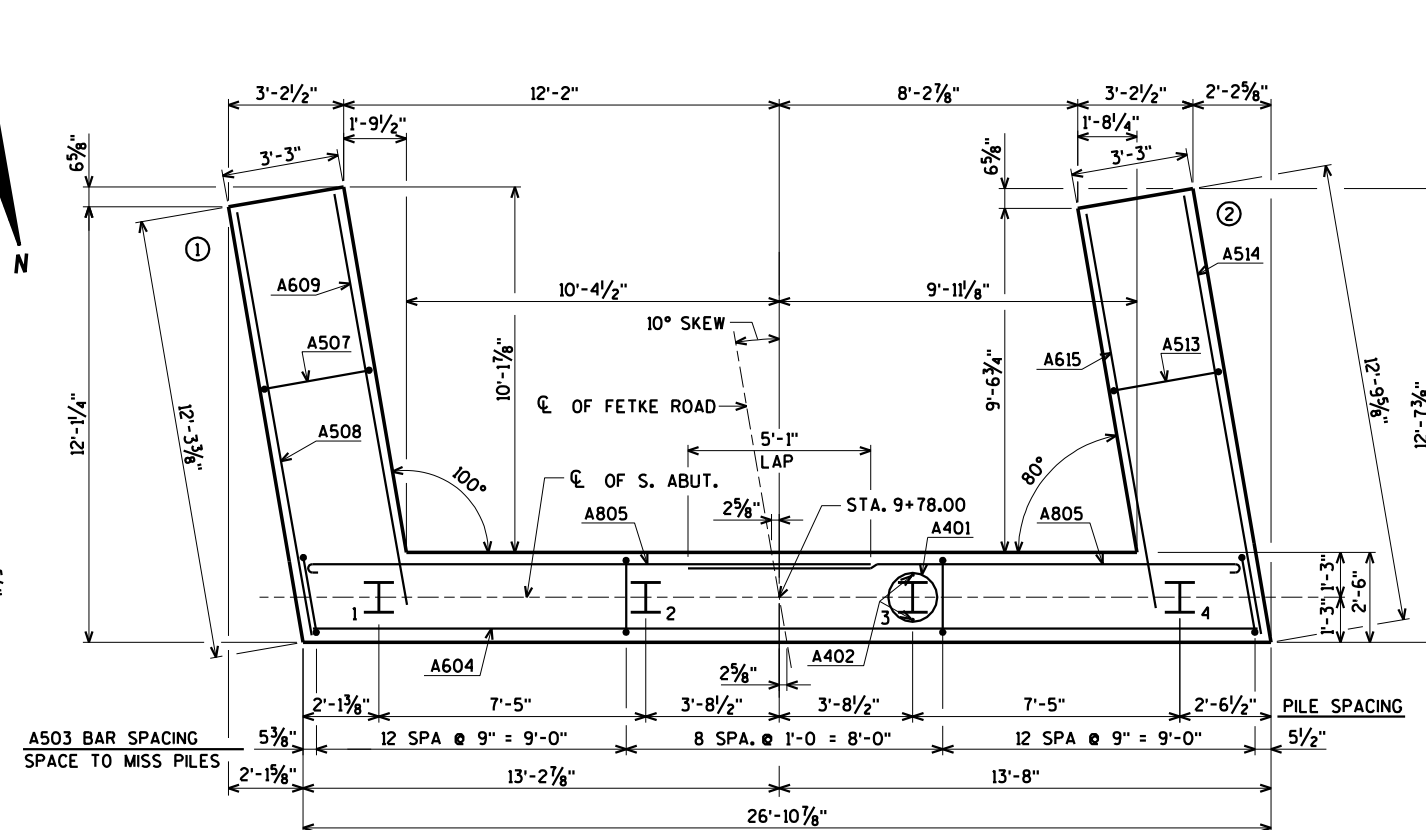
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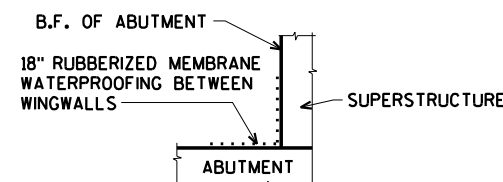
**ELEVATION**  
(LOOKING SOUTH)



**PLAN**



**PILE LAYOUT**



**SECTION F**

1 VERTICAL 18" RUBBERIZED MEMBRANE  
WATERPROOFING TO EXTEND FROM  
BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

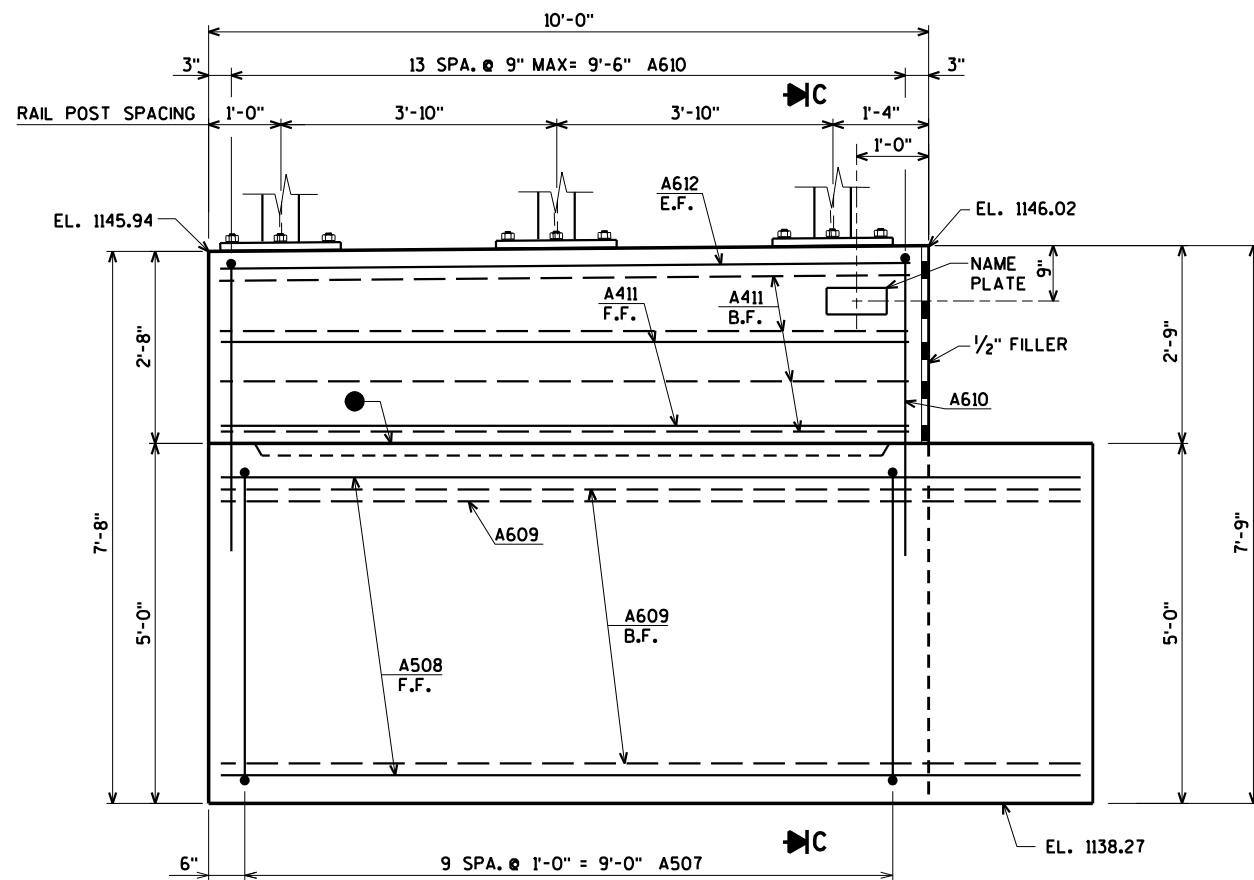
F.F. DENOTES FRONT FACE

ORIGINAL PLANS PREPARED BY  
**AYRES ASSOCIATES**  
3433 Oakwood Hills Parkway  
Eau Claire, WI 54701  
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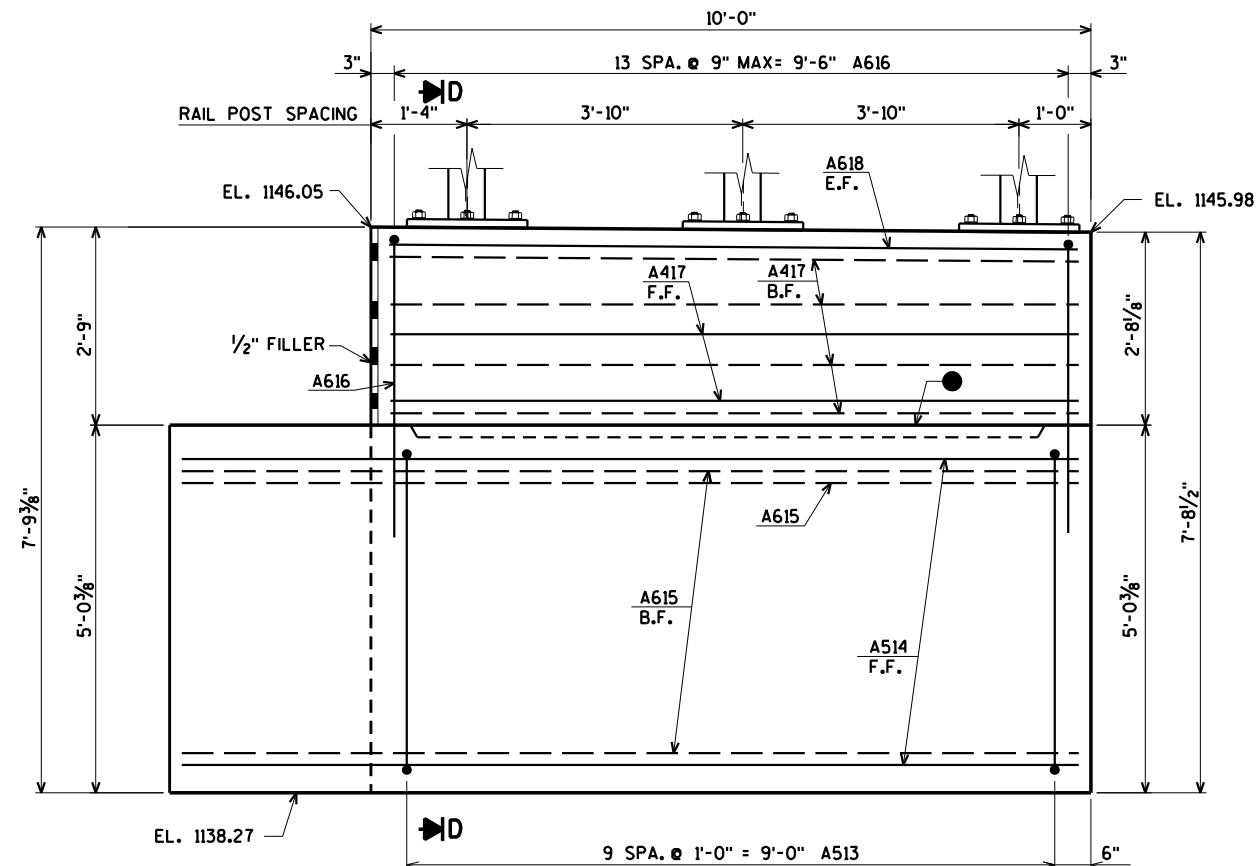
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-54-121			
DRAWN BY		CLS	PLANS CK'D. CJM
SOUTH ABUTMENT		SHEET 4 OF 12	

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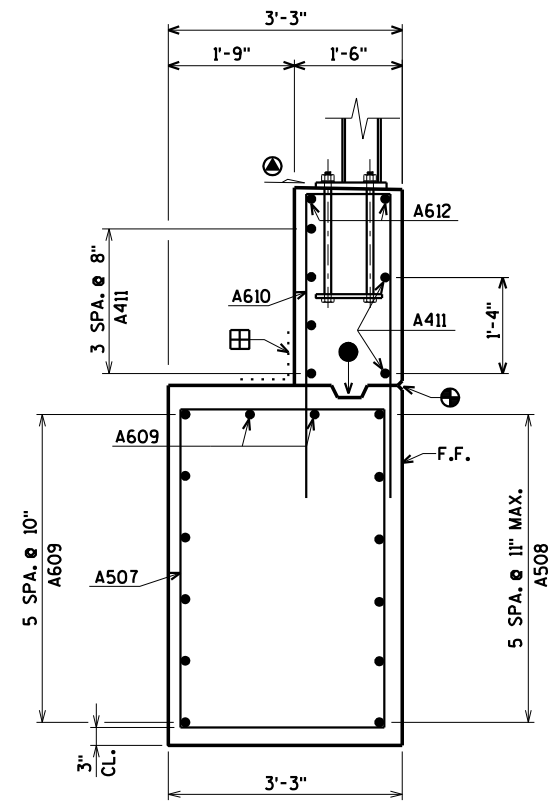
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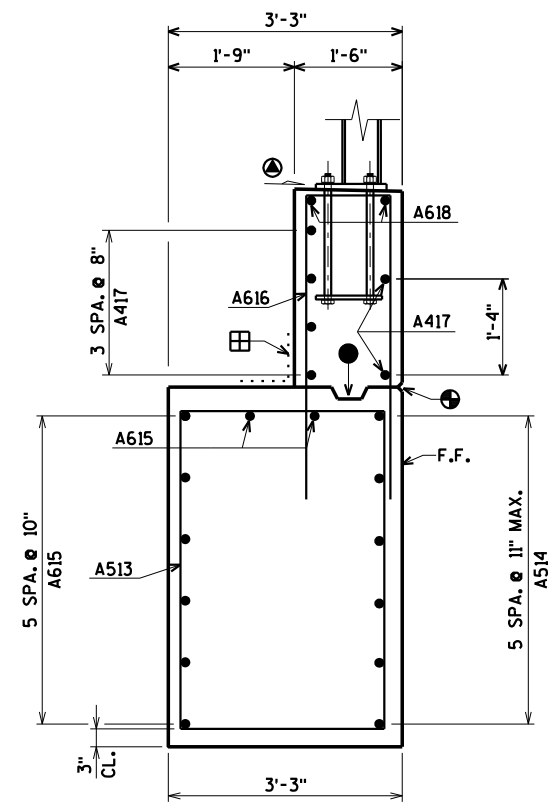
ELEVATION - WING 1



ELEVATION - WING 2



SECTION C



SECTION D

- ⊙ SLOPE SAME AS SUPERSTRUCTURE
- ⊕ 3/4" V GROOVE ON FRONT FACE OF WINGWALL.
- OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6".
- ⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.
- B.F. DENOTES BACK FACE.
- F.F. DENOTES FRONT FACE.
- E.F. DENOTES EACH FACE.

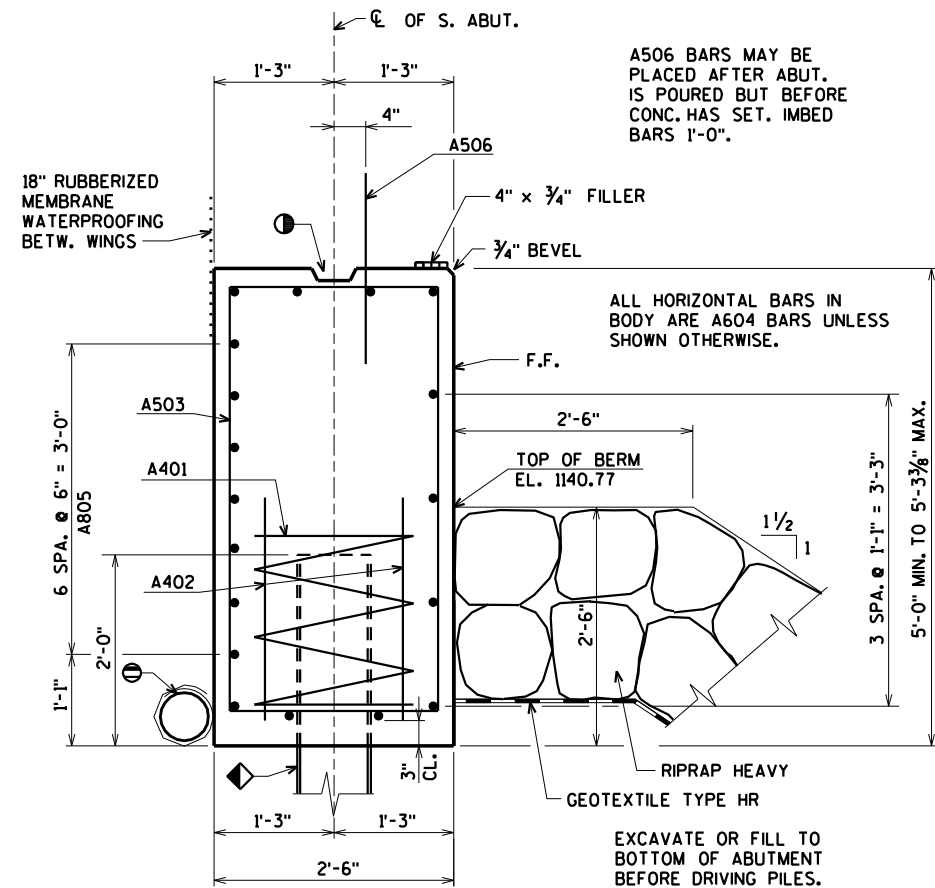
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-54-121			
DRAWN BY		CLS	PLANS CK'D. CJM
SOUTH ABUTMENT WING DETAILS			SHEET 5 OF 12

ORIGINAL PLANS PREPARED BY  
**AYRES ASSOCIATES**  
3433 Oakwood Hills Parkway  
Eau Claire, WI 54701  
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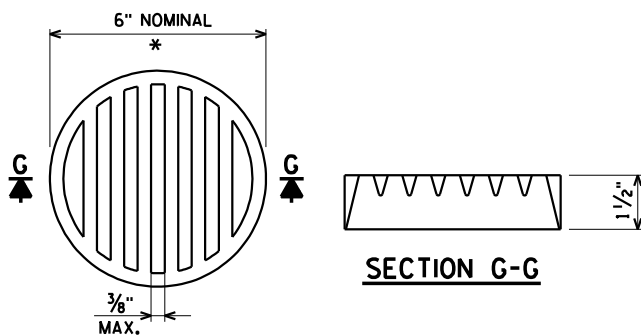
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U:\42-1004.00 - Rusk County, In Atlanta, Fetke Rd\BRIDGE\421004 sa.dgn

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**TYPICAL SECTION THRU BODY**

ABUTMENT TO BE SUPPORTED ON  
HP 10 x 42 STEEL PILING (WITH PILE  
POINTS) WITH A REQUIRED DRIVING  
RESISTANCE OF 180 TONS PER PILE.  
PRE-BORE PILES 10'-0"  
ESTIMATED LENGTH 40'-0".



**SECTION G-G**

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

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

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

**RODENT SHIELD DETAIL**

PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5%  
MIN. TO SUITABLE DRAINAGE. ATTACH RODENT  
SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED  
ON THIS SHEET. RODENT SHIELD TO BE INCLUDED  
IN BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

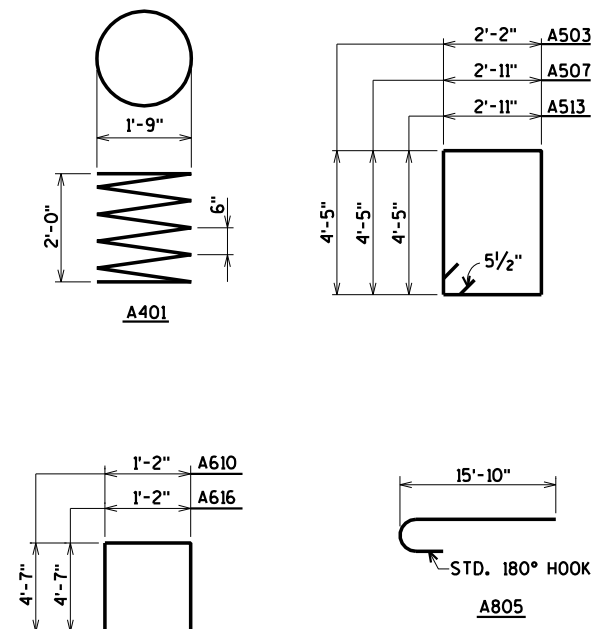
STATE PROJECT NUMBER

8421-00-70

**BILL OF BARS**

BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	1,370# COATED 1,630# UNCOATED
						LOCATION
A401		4	28-0	X		BODY @ PILES
A402		8	2-3			BODY @ PILES
A503		33	13-10	X		BODY VERT.
A604		11	26-6			BODY HORIZ.
A805		14	16-9	X		BODY HORIZ. B.F.
A506	X	25	2-0			BODY DOWELS
A507	X	10	15-4	X		WING 1 VERT.
A508	X	6	11-11			WING 1 HORIZ. F.F.
A609	X	8	11-11			WING 1 HORIZ. B.F.
A610	X	14	10-0	X		WING 1 VERT.
A411	X	6	9-8			WING 1 HORIZ. E.F.
A612	X	2	9-8			WING 1 HORIZ. E.F.
A513	X	10	15-4	X		WING 2 VERT.
A514	X	6	12-5			WING 2 HORIZ. F.F.
A615	X	8	11-11			WING 2 HORIZ. B.F.
A616	X	14	10-0	X		WING 2 VERT.
A417	X	6	9-8			WING 2 HORIZ. E.F.
A618	X	2	9-8			WING 2 HORIZ. E.F.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

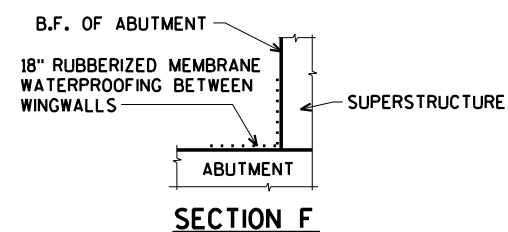
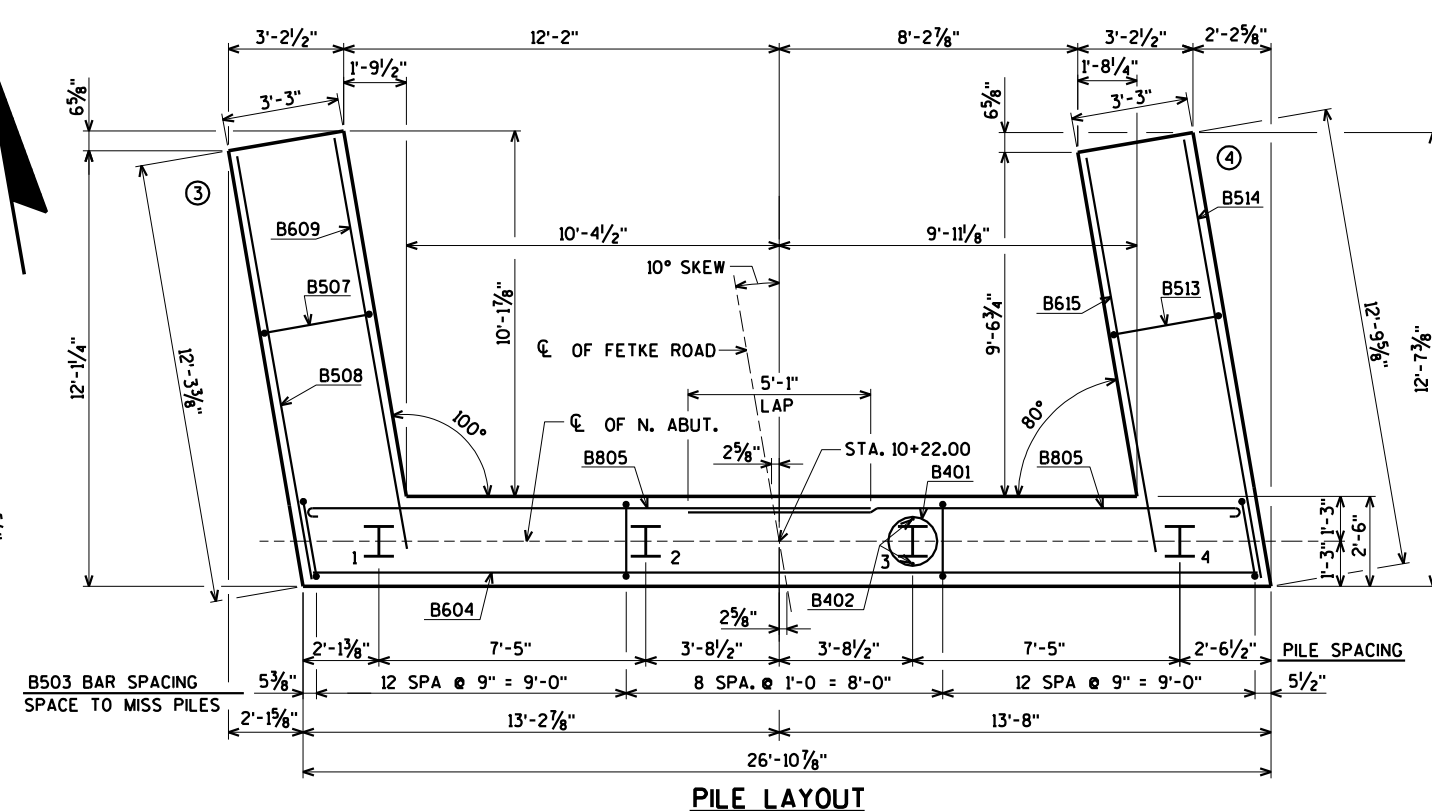
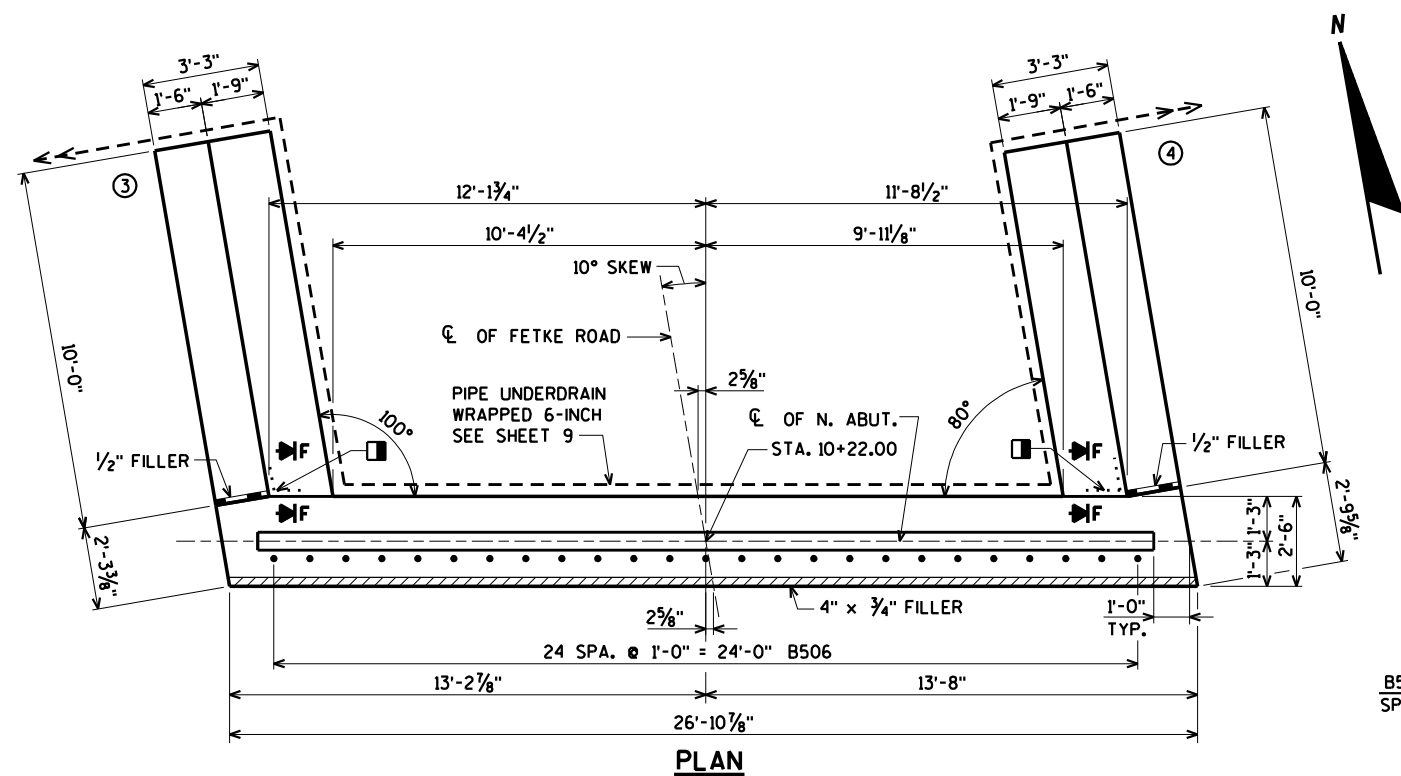
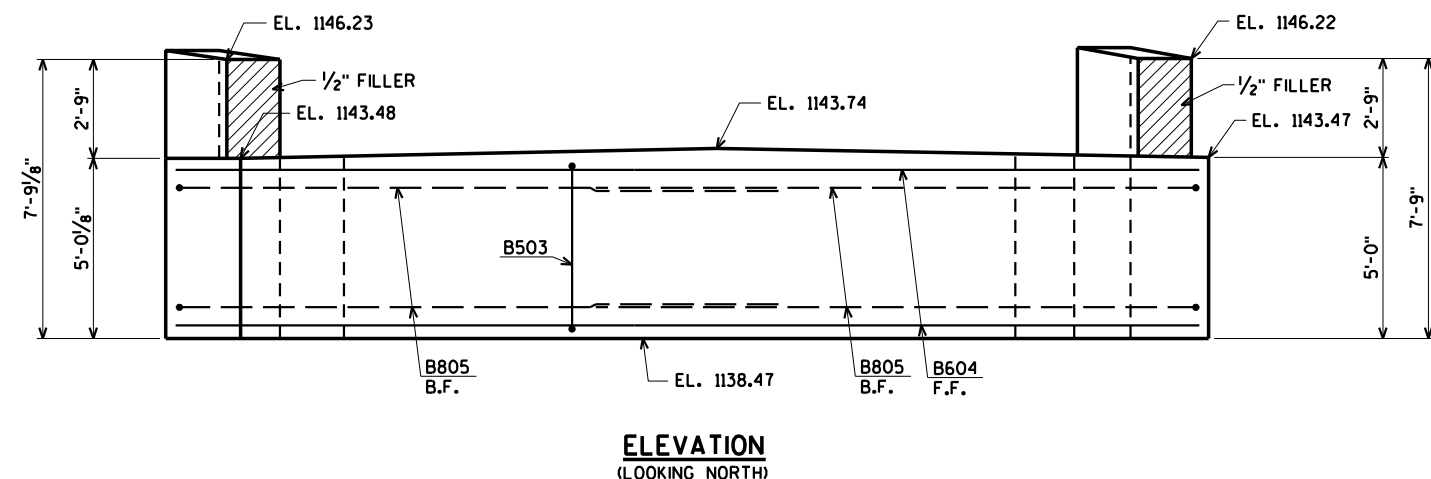


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-54-121			
DRAWN BY		CLS	PLANS CK'D. CJM
SOUTH ABUTMENT DETAILS AND BILL OF BARS			SHEET 6 OF 12

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

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NOTE:  
SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF  
1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT  
SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).



■ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

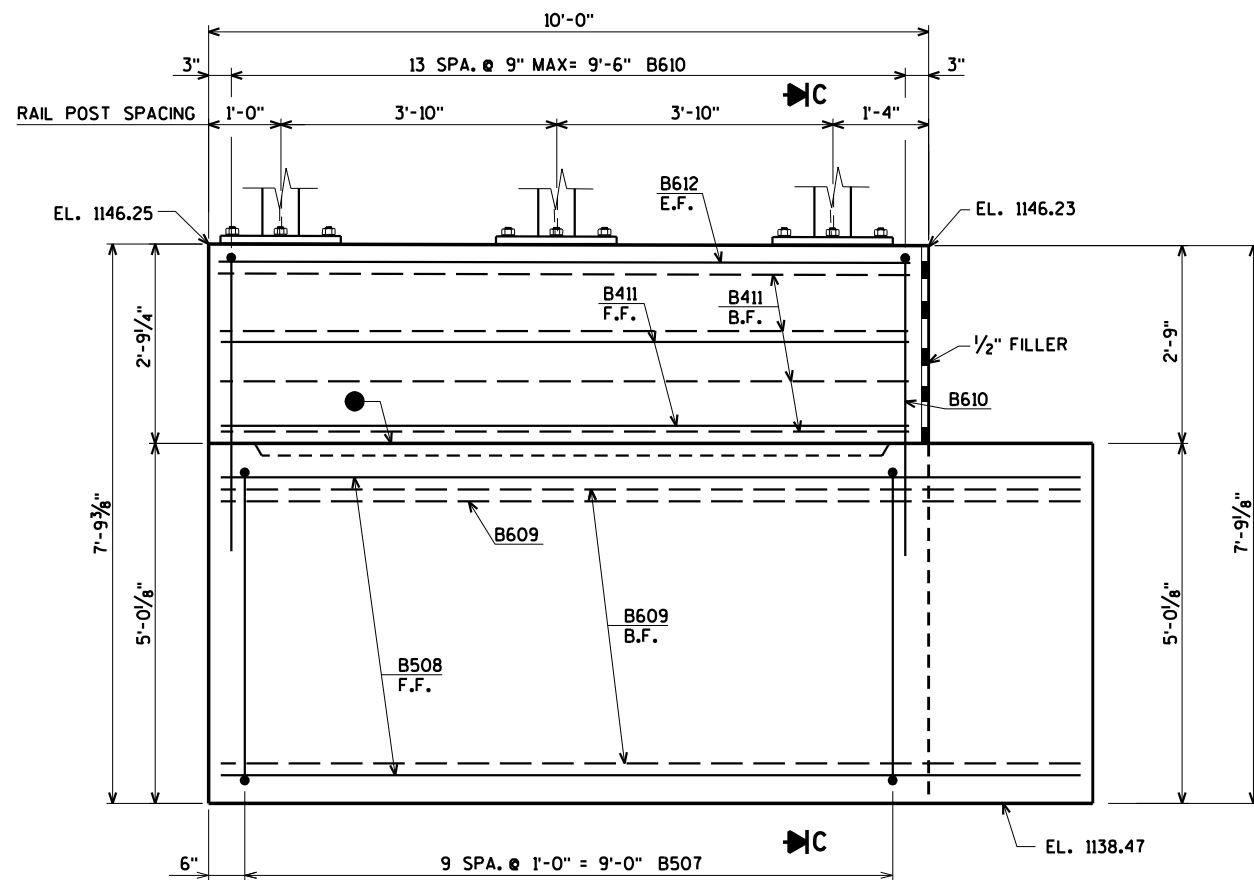
E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

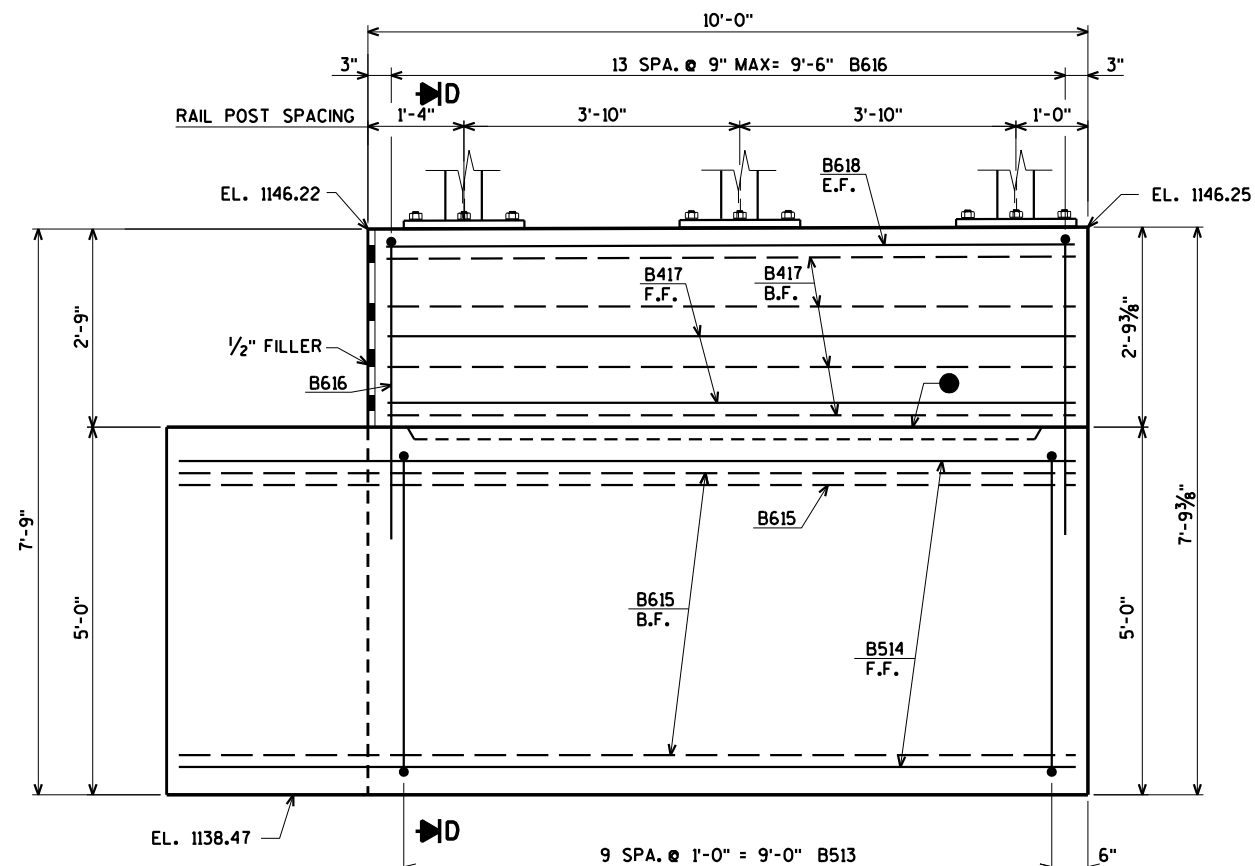
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-54-121			
	DRAWN BY	CLS	PLANS CK'D. CJM
NORTH ABUTMENT		SHEET 7 OF 12	

\$PRNAME\$  
U:\42-1004.00 - Rusk County, In Atlanta, Fetke Rd\BRIDGE\421004 na.dgn

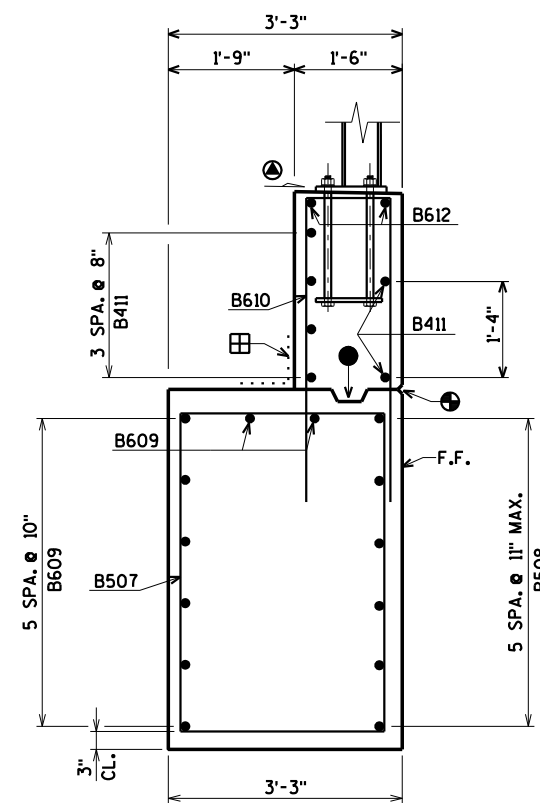
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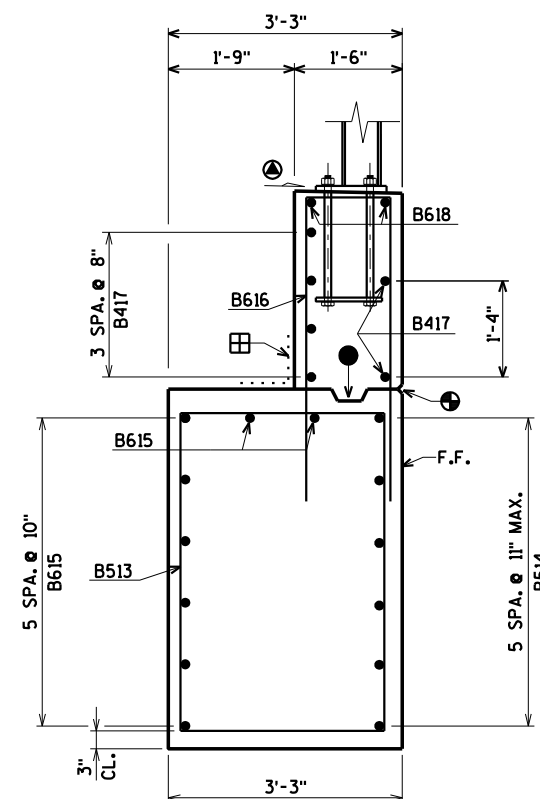
ELEVATION - WING 3



ELEVATION - WING 4



SECTION C



SECTION D

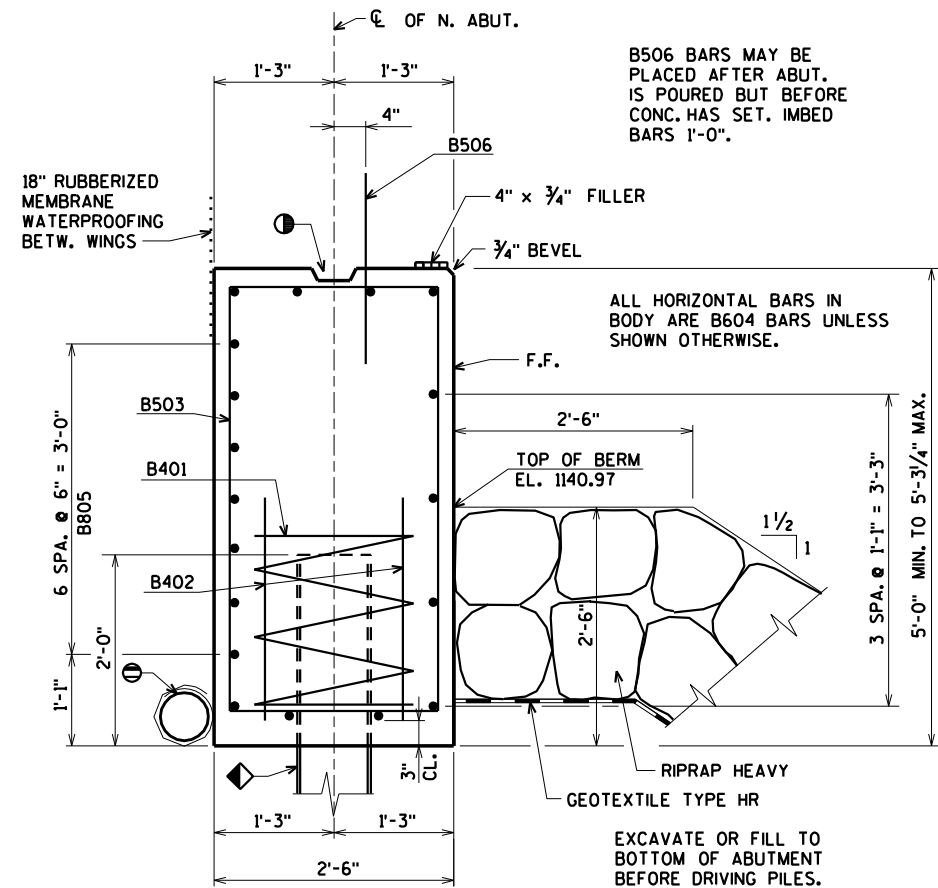
- ⊙ SLOPE SAME AS SUPERSTRUCTURE
- ⊕ 3/4" "V" GROOVE ON FRONT FACE OF WINGWALL.
- OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6".
- ⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.
- B.F. DENOTES BACK FACE.
- F.F. DENOTES FRONT FACE.
- E.F. DENOTES EACH FACE.

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-54-121			
DRAWN BY		CLS	PLANS CK'D. CJM
NORTH ABUTMENT WING DETAILS			SHEET 8 OF 12

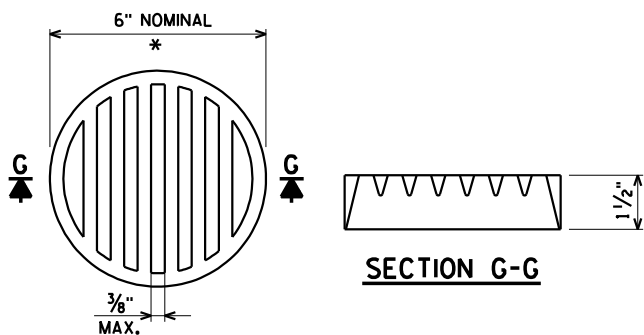
\$PRNAME\$  
U:\42-1004.00 - Rusk County, In Atlanta, Fetke Rd\BRIDGE\421004 na.dgn

8



TYPICAL SECTION THRU BODY

ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. ESTIMATED LENGTH 45'-0".



SECTION G-G

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

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

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

RODENT SHIELD DETAIL

PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON THIS SHEET. RODENT SHIELD TO BE INCLUDED IN BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

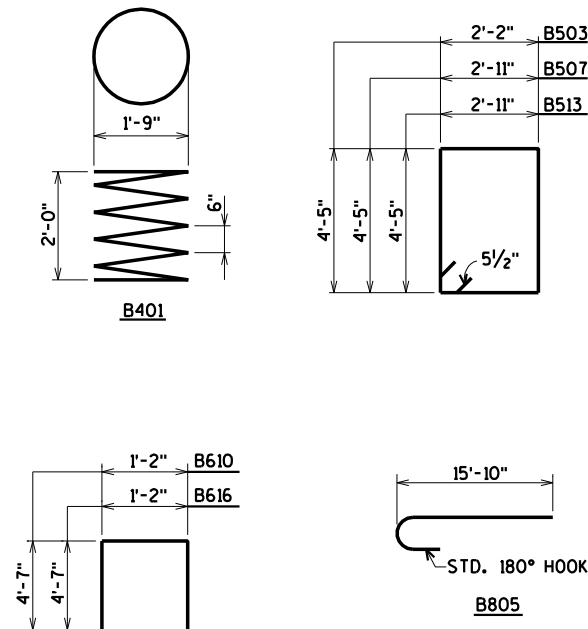
STATE PROJECT NUMBER

8421-00-70

BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	1,370' COATED 1,630' UNCOATED
						LOCATION
B401		4	28-0	X		BODY @ PILES
B402		8	2-3			BODY @ PILES
B503		33	13-10	X		BODY VERT.
B604		11	26-6			BODY HORIZ.
B805		14	16-9	X		BODY HORIZ. B.F.
B506	X	25	2-0			BODY DOWELS
B507	X	10	15-4	X		WING 3 VERT.
B508	X	6	11-11			WING 3 HORIZ. F.F.
B609	X	8	11-11			WING 3 HORIZ. B.F.
B610	X	14	10-0	X		WING 3 VERT.
B411	X	6	9-8			WING 3 HORIZ. E.F.
B612	X	2	9-8			WING 3 HORIZ. E.F.
B513	X	10	15-4	X		WING 4 VERT.
B514	X	6	12-5			WING 4 HORIZ. F.F.
B615	X	8	11-11			WING 4 HORIZ. B.F.
B616	X	14	10-0	X		WING 4 VERT.
B417	X	6	9-8			WING 4 HORIZ. E.F.
B618	X	2	9-8			WING 4 HORIZ. E.F.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-54-121			
DRAWN BY		CLS	PLANS CK'D. CJM
NORTH ABUTMENT DETAILS AND BILL OF BARS			SHEET 9 OF 12

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

8



### CROSS SECTION THRU BRIDGE

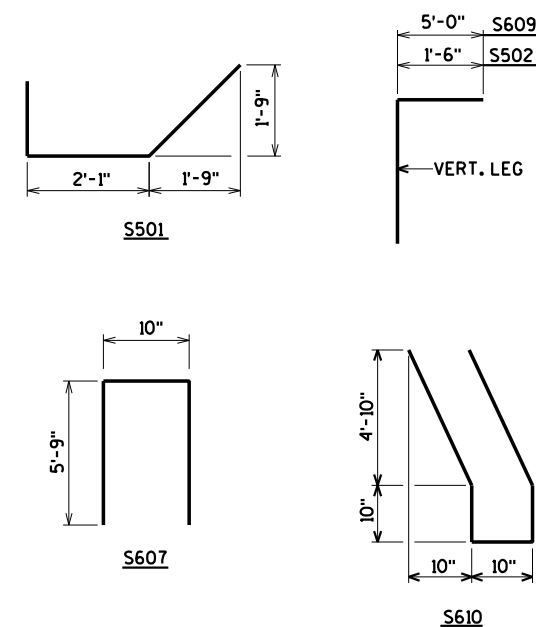


1103 S1103

## BUNDLING DETAIL

[illegible]

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

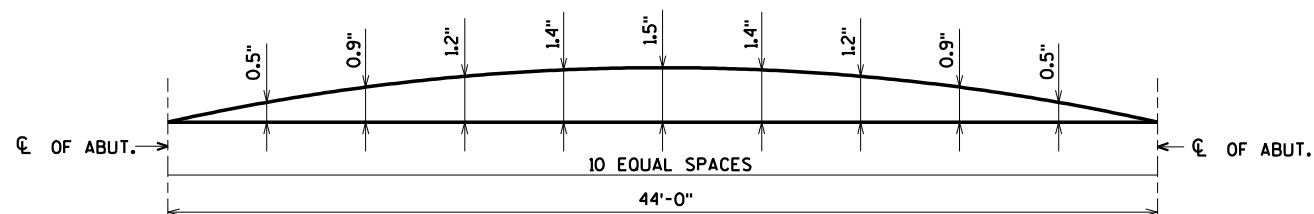


### PLAN





- 18" RUBBERIZED MEMBRANE WATERPROOFING  
 ● DIMENSIONS MEASURED ALONG C/L OF FETKE ROAD.  
 ▲ DIMENSIONS MEASURED NORMAL TO C/L OF SUBSTRUCTURE.



### CAMBER DIAGRAM

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

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE C OF ABUTMENTS AND 5/10 POINTS TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND CROWN OR C.

### TOP OF DECK ELEVATIONS

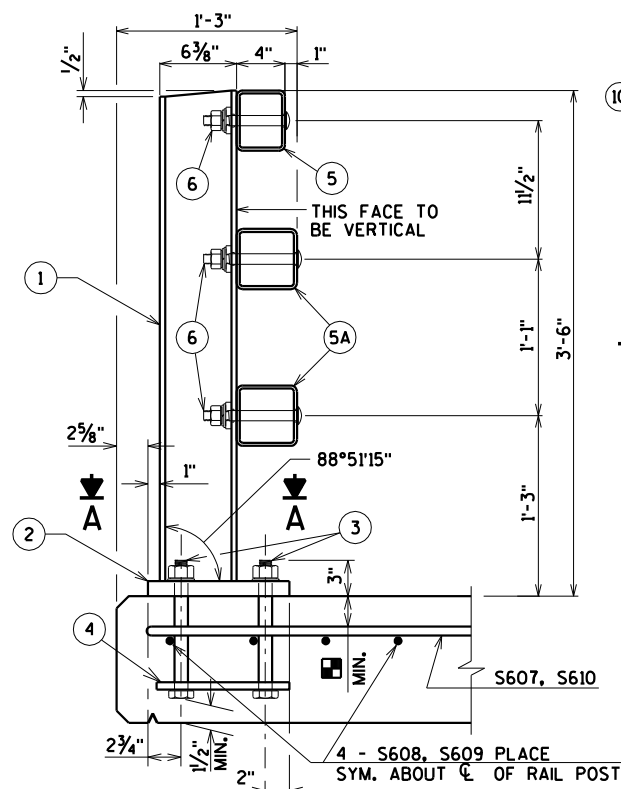
LOCATION	€ OF S. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	€ OF N. ABUT.
W. EDGE OF SLAB	1146.05	1146.08	1146.10	1146.12	1146.15	1146.16	1146.18	1146.20	1146.21	1146.22	1146.23
€ OF STRUCTURE	1146.30	1146.33	1146.35	1146.38	1146.40	1146.42	1146.44	1146.45	1146.47	1146.48	1146.49
E. EDGE OF SLAB	1146.02	1146.05	1146.08	1146.10	1146.12	1146.14	1146.16	1146.18	1146.20	1146.21	1146.22

ELEVATIONS SHOWN ARE FINISHED DECK AND DO NOT INCLUDE ALLOWANCES OF DEAD LOAD DEFLECTION AND FUTURE CREEP.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-54-121			
		DRAWN BY	CLC
		PLANS CK'D.	CJM
SUPERSTRUCTURE DETAILS		SHEET 11 OF 12	

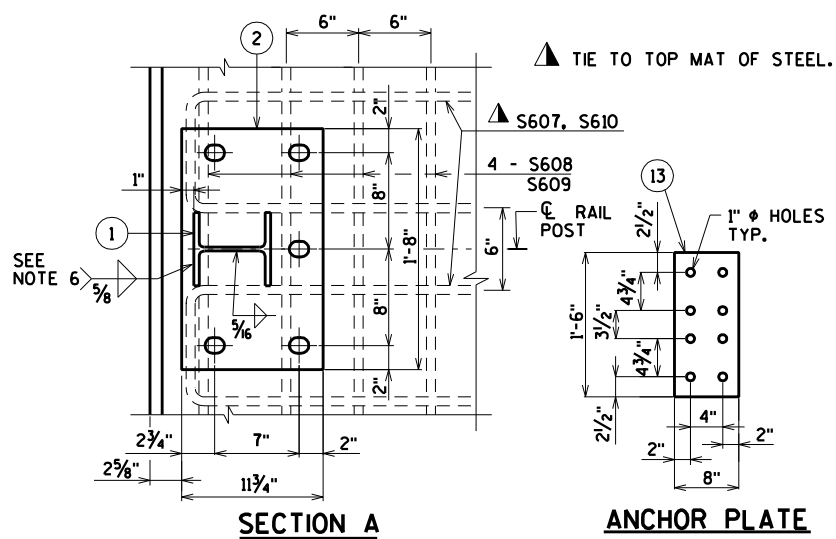
**LEGEND**

- 1 W6 x 25 WITH 1/8" x 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 1/4" x 11 3/4" x 1'-8" WITH 1 5/8" 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 - 1/6" 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 1 5/8" 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, 3/8" 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 1/2" 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" A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 5/8" x 1/4" LONGIT. SLOTTED HOLES AT FIELD JOINTS ~~AND 5/8" x 2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.~~
- 12 7/8" DIA. x 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" DIA. 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.

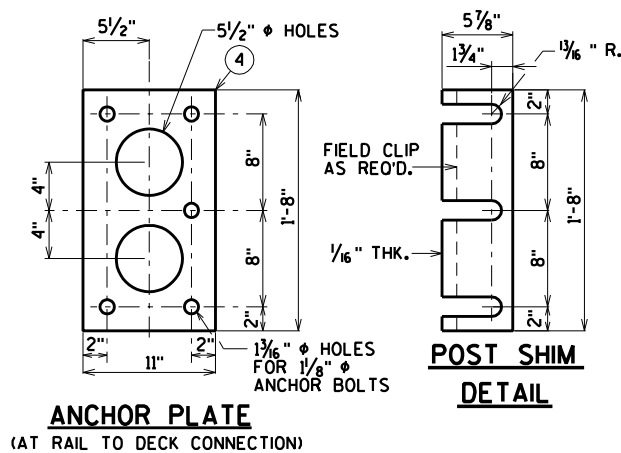


**SECTION THRU RAILING ON DECK**

PLACE BELOW TOP MAT SLAB REINFORCEMENT.

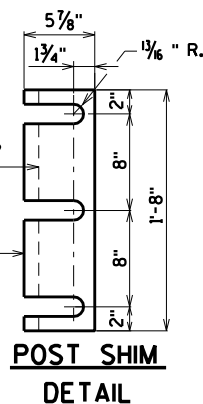


**SECTION A**

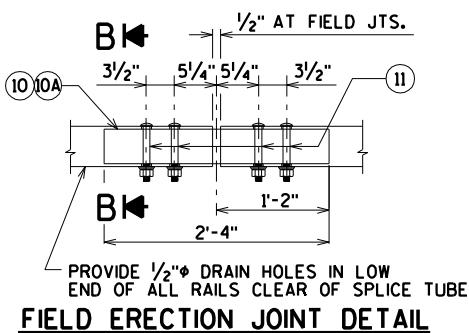


**ANCHOR PLATE**

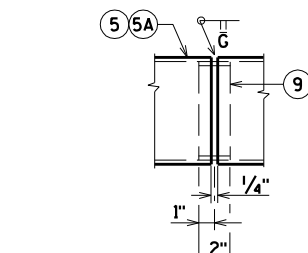
(AT RAIL TO DECK CONNECTION)



**POST SHIM DETAIL**

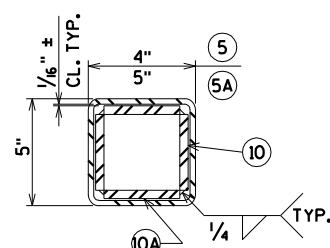


**FIELD ERECTION JOINT DETAIL**

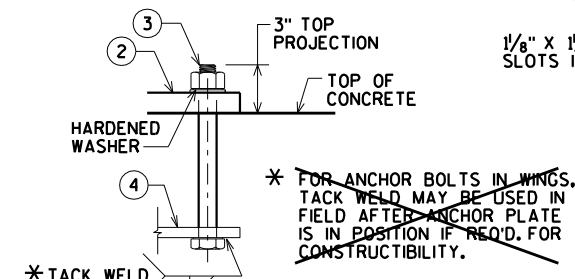


**SHOP RAIL SPLICE DETAIL**

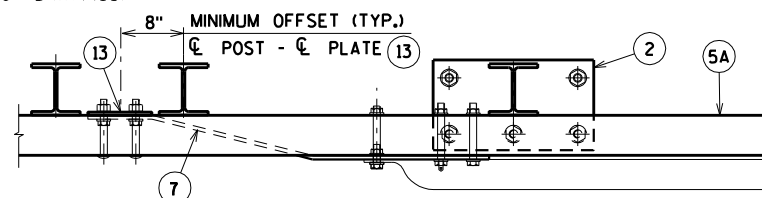
(LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS)



**SECTION B**

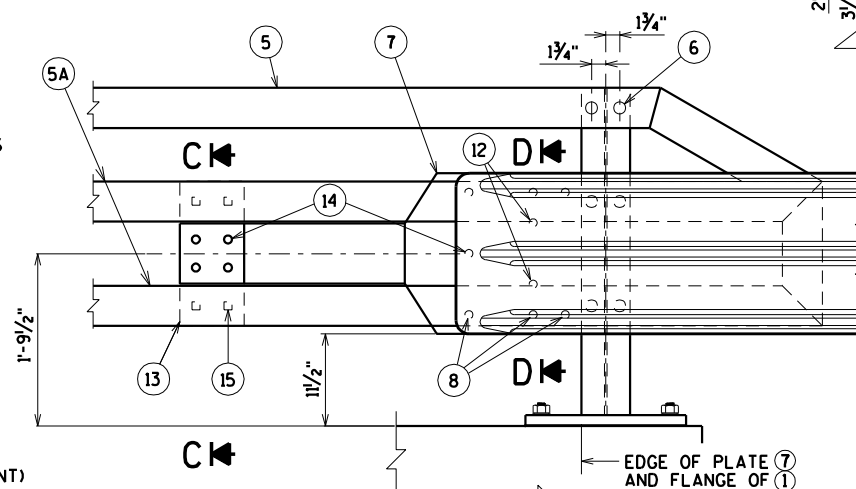


**ANCHOR BOLTS**



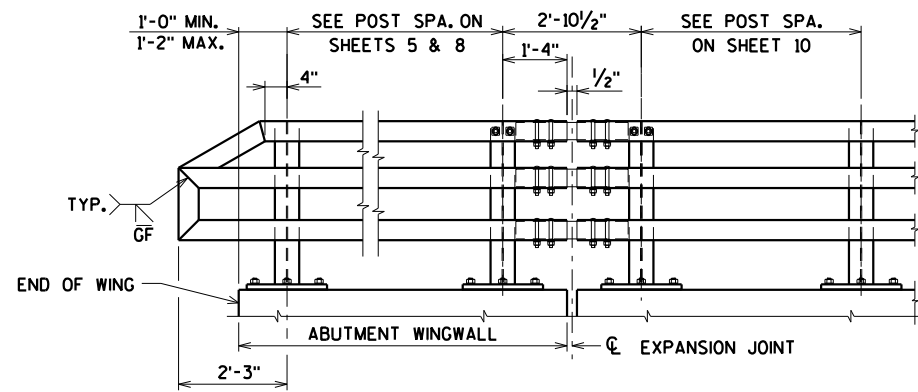
**TOP VIEW AT END POST**

(THRIE BEAM RAIL ATTACHMENT)

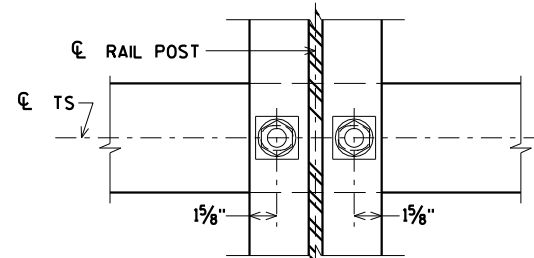


**DETAIL AT END POST**

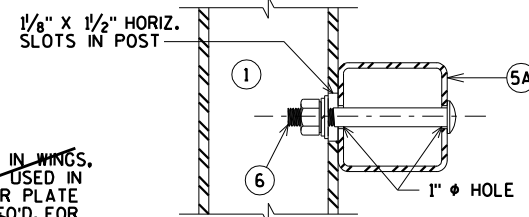
(THRIE BEAM RAIL ATTACHMENT)



**PART ELEVATION OF RAILING**



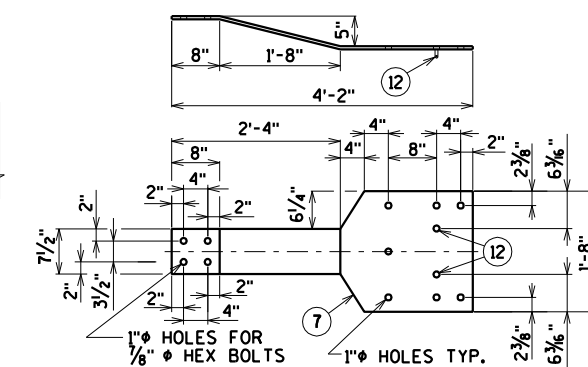
**SECTION THRU POST WEB**



**SECTION THRU RAIL**

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

**TYPICAL RAIL TO POST CONNECTIONS**



**BACK-UP PLATE DETAIL**

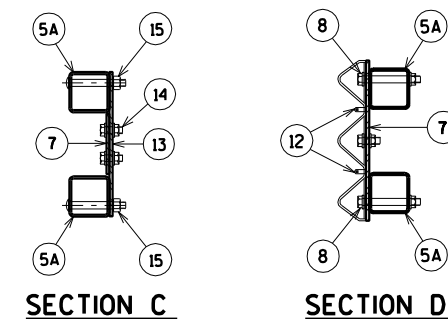
(AT BEAM GUARD ATTACHMENT)

**GENERAL NOTES**

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-54-121" 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 S.S.P.C. SPECIFICATIONS.
10. ~~WHEN PAINTING IS REQUIRED, ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 3 & 4) SHALL BE PAINTED OVER GALVANIZING WITH APPROVED TIE COAT AND TOP COAT.~~
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.

**AYRES ASSOCIATES**

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



**SECTION C**

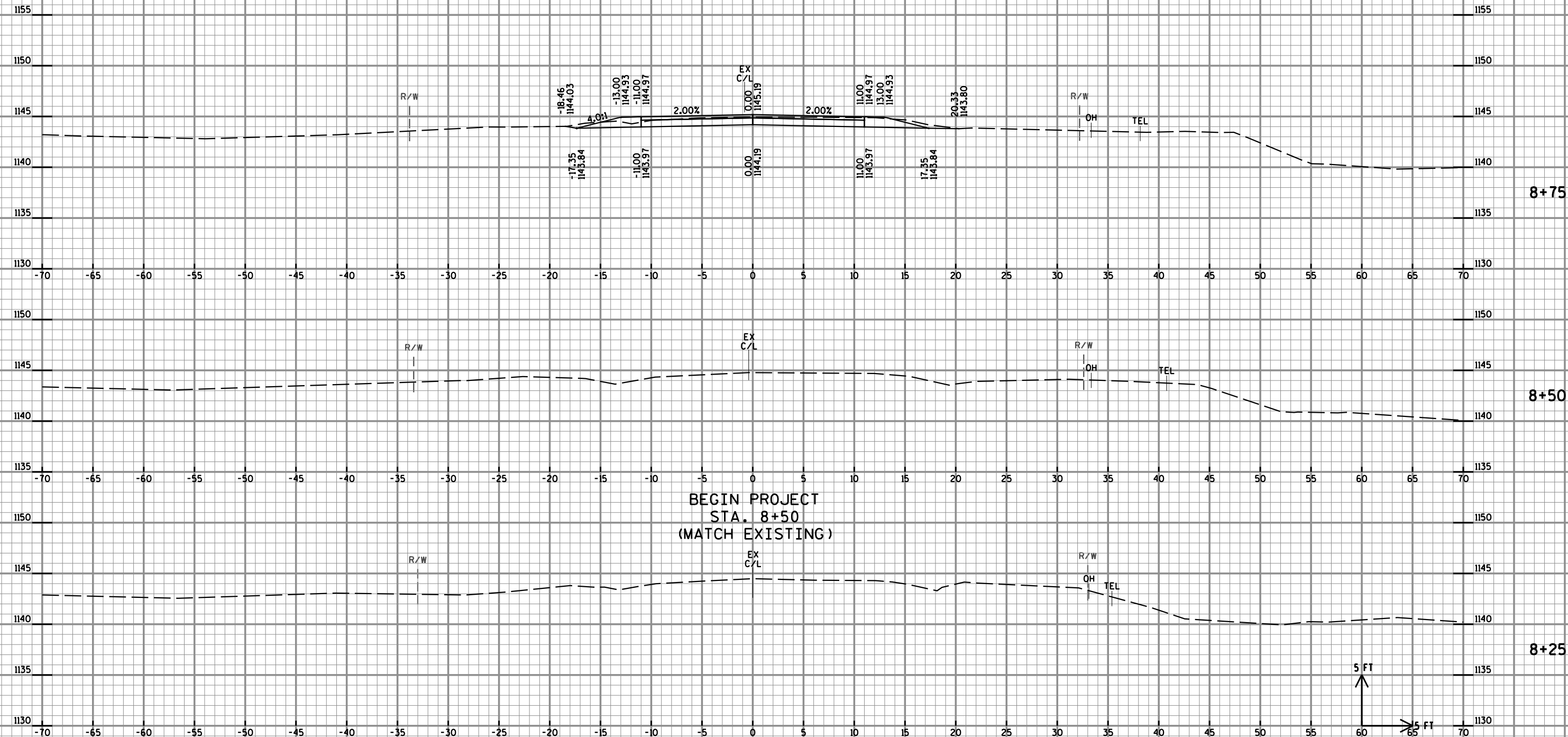
**SECTION D**

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-54-121			
DRAWN BY CLS		PLANS CK'D. CJM	
RAILING TUBULAR TYPE M			SHEET 12 OF 12

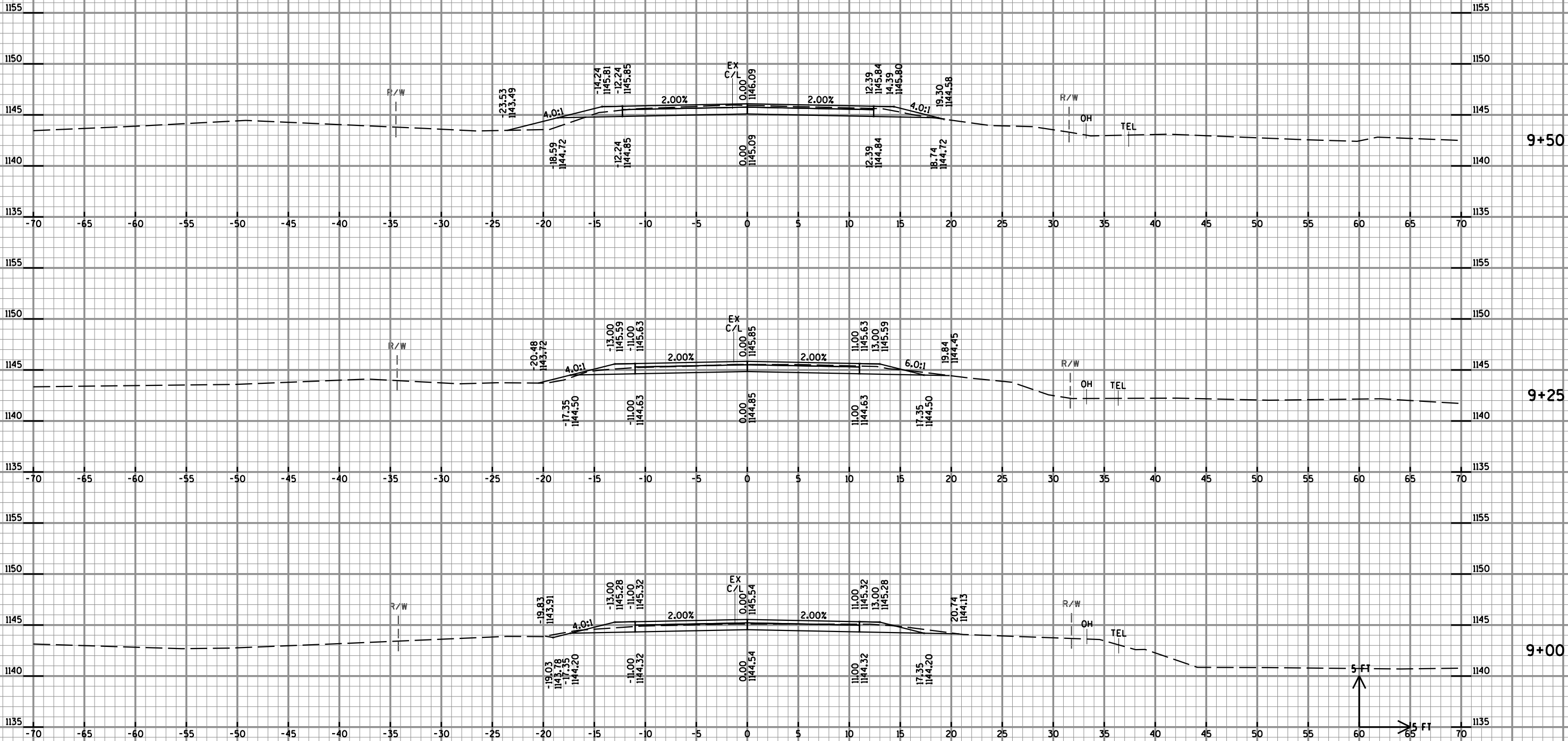
EARTHWORK SUMMARY (CATEGORY 0010)											
DIVISION	STATION	AREA			INCREMENTAL VOLUME			CUMULATIVE VOLUME			
		CUT SF	SALVAGED/ UNUSABLE PAVEMENT MATERIAL SF	FILL SF	CUT (1) CY	SALVAGED/ UNUSABLE PAVEMENT MATERIAL (2) CY	FILL (3) CY	EXPANDED		MASS CY	ORDINATE ±(5) CY
								CUT (1) 1.00 CY	FILL (4) 1.30 CY		
1	8+50	39	0	0	30	0	0	30	0		30
FETKE ROAD	8+75	26	0	0	22	0	0	52	0		52
	9+00	21	0	0	20	0	0	72	0		72
	9+25	22	0	1	21	0	2	93	3		90
	9+50	24	0	4	24	0	4	117	8		109
	9+77	24	0	4		0	0	117	8		109
	STRUCTURE (B-54-121)										
	10+23	32	0	1	32	0	1	32	1		31
	10+50	32	0	1	22	0	0	54	1		53
	10+75	16	0	0	20	0	1	74	3		71
	11+00	27	0	2	24	0	1	98	4		94
	11+25	26	0	1	23	0	1	121	5		116
	11+50	23	0	0	27	0	0	148	5		143
	11+75	35	0	0		0	0	148	5		143
TOTALS					265	0	10				252
205.0100 EXCAVATION COMMON =					SAY 265			208.0100 WASTE =		SAY 252	

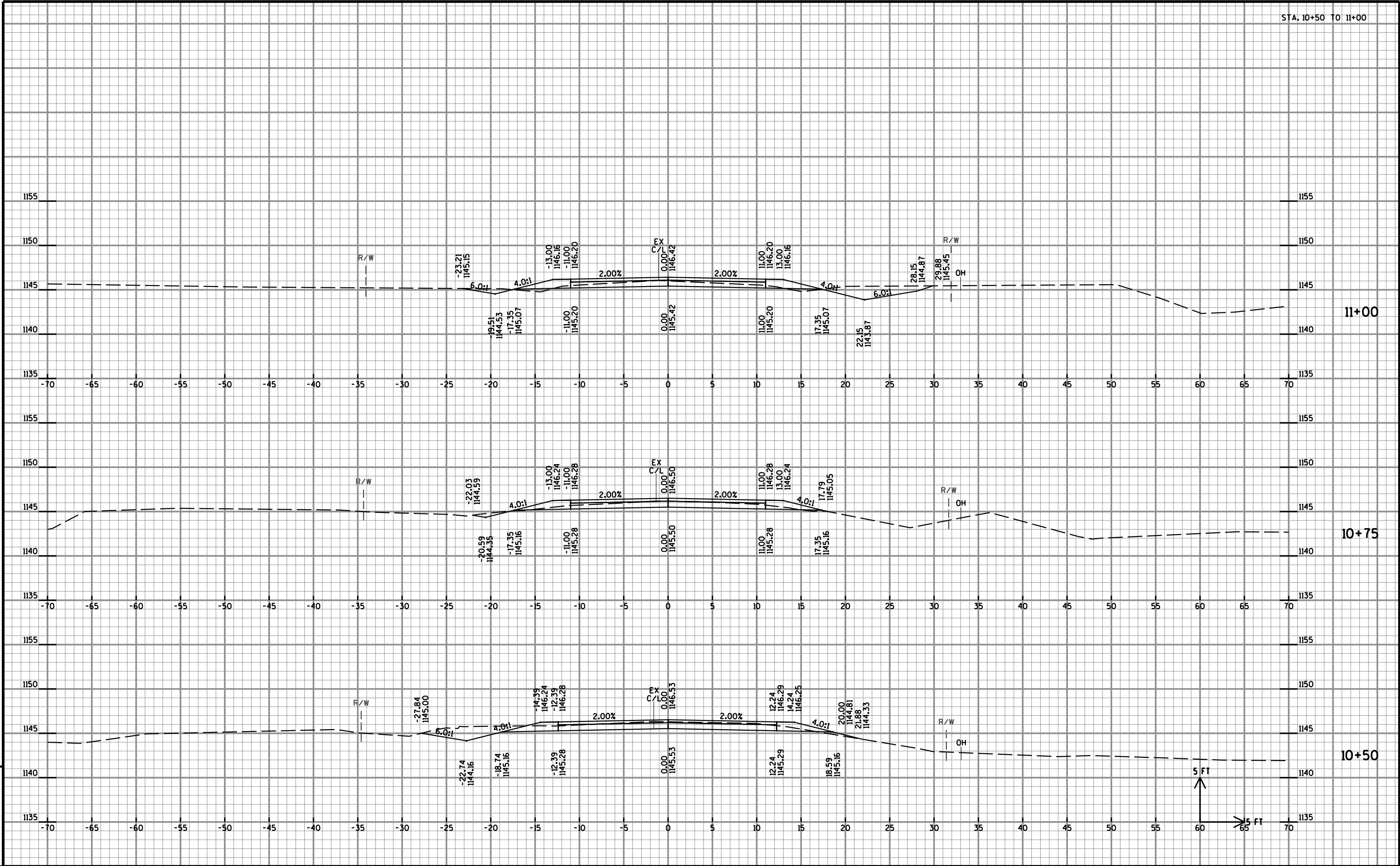
NOTES:  
1) EXCAVATION COMMON IS THE SUM OF THE CUT COLUMN. ITEM NUMBER 205.0100  
2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.  
3) DOES NOT INCLUDE UNUSABLE PAVEMENT EXCAVATION VOLUME.  
4) EXPANDED FILL FACTOR = 1.30 EXPANDED FILL = UNEXPANDED FILL \* FILL FACTOR  
5) THE MASS ORDINATE ± QTY CALCULATED FOR THE DIVISION.

PLUS (+) QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION.  
MINUS (-) QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

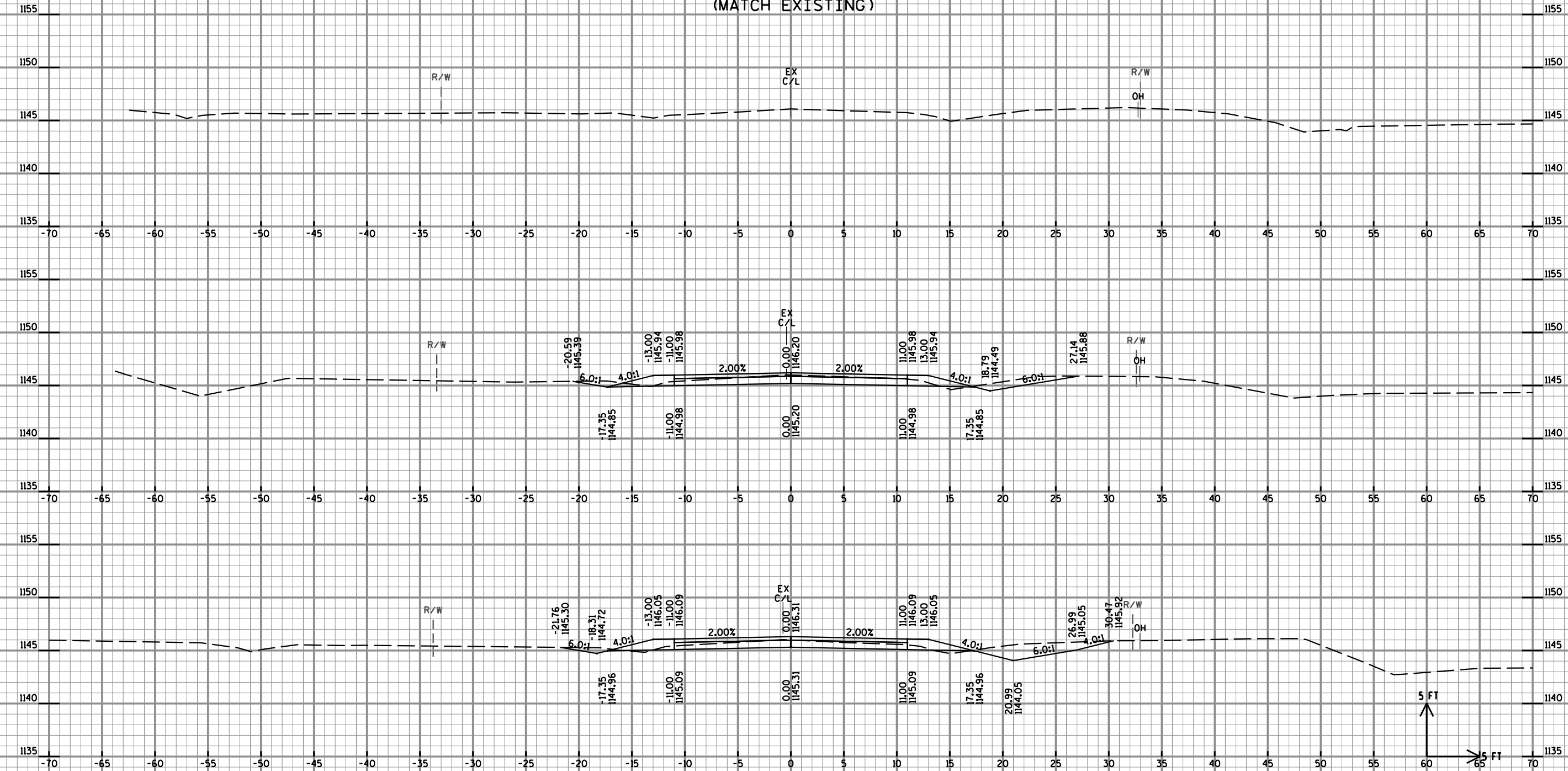


STRUCTURE B-54-121





END PROJECT  
STA. 11+75  
(MATCH EXISTING)





## ***Wisconsin Department of Transportation***

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