

RHI
PROJECT ID: 6670-06-70
WITH: N/A
COUNTY: MARATHON

MARCH 2019
ORDER OF SHEETS

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

TOTAL SHEETS = 46

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

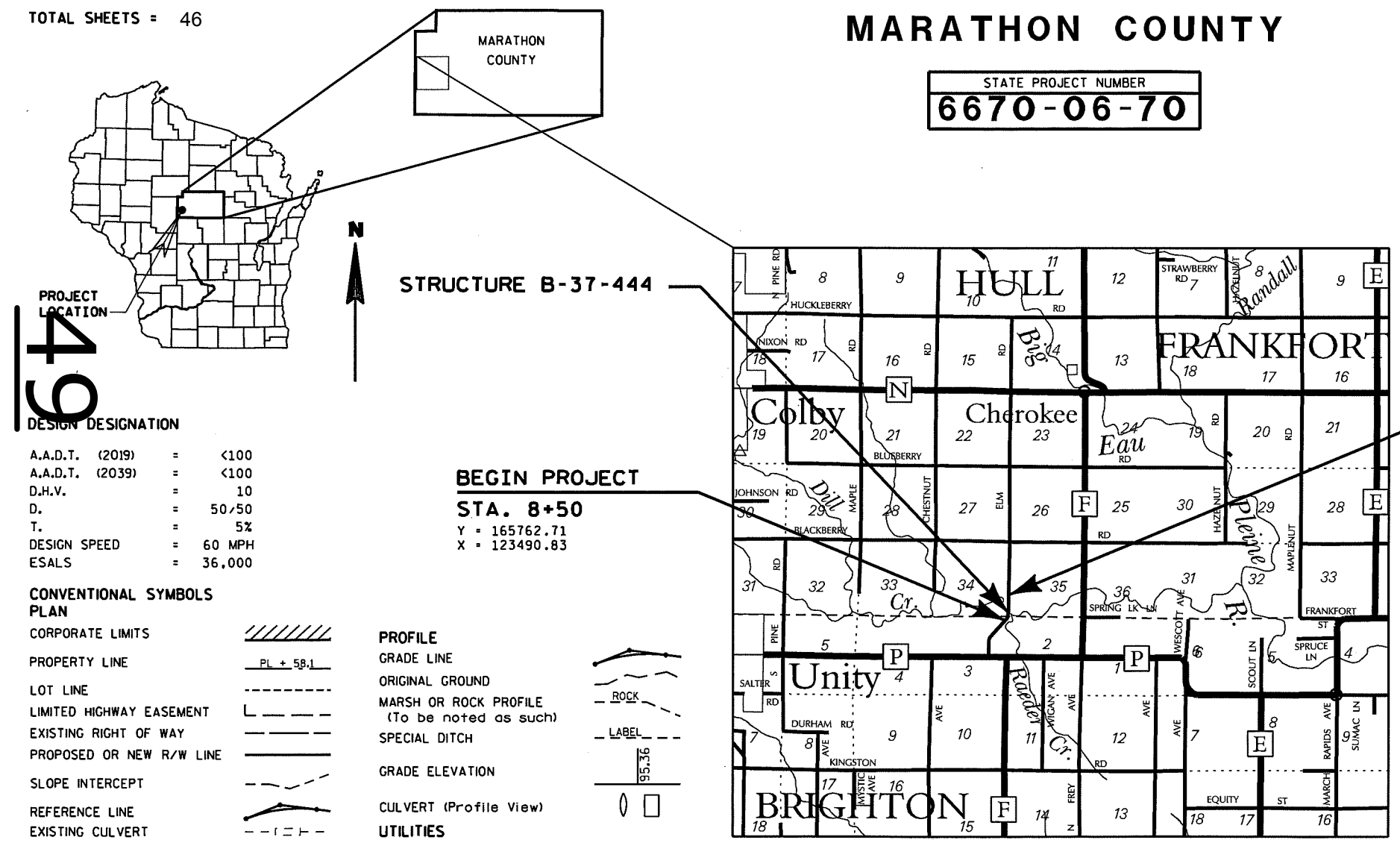
T HULL, ELM ROAD

DILL CREEK BRIDGE B-37-0444

LOCAL STREET
MARATHON COUNTY

STATE PROJECT NUMBER
6670-06-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6670-06-70	WISC 2019190	1



PROJECT LOCATION
49
DESIGN DESIGNATION

- | | | |
|-----------------|---|--------|
| A.A.D.T. (2019) | = | <100 |
| A.A.D.T. (2039) | = | <100 |
| D.H.V. | = | 10 |
| D. | = | 50/50 |
| T. | = | 5% |
| DESIGN SPEED | = | 60 MPH |
| ESALS | = | 36,000 |

CONVENTIONAL SYMBOLS
PLAN

- | | |
|--------------------------------|--|
| CORPORATE LIMITS | |
| PROPERTY LINE | |
| 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 | |
| HIGH VOLTAGE | |
| MARSH AREA | |
| WOODED OR SHRUB AREA | |

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

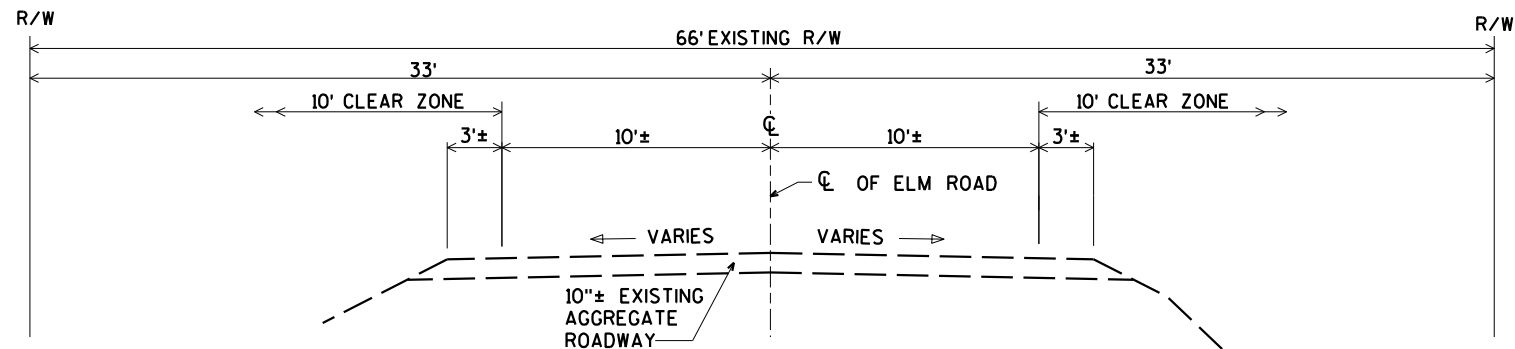
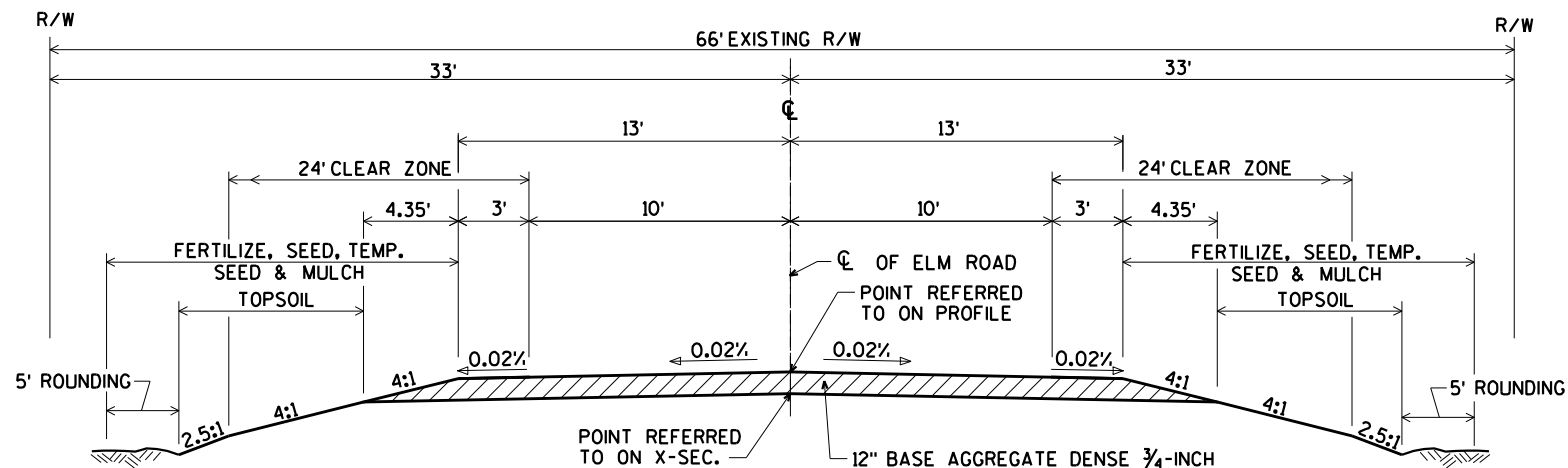
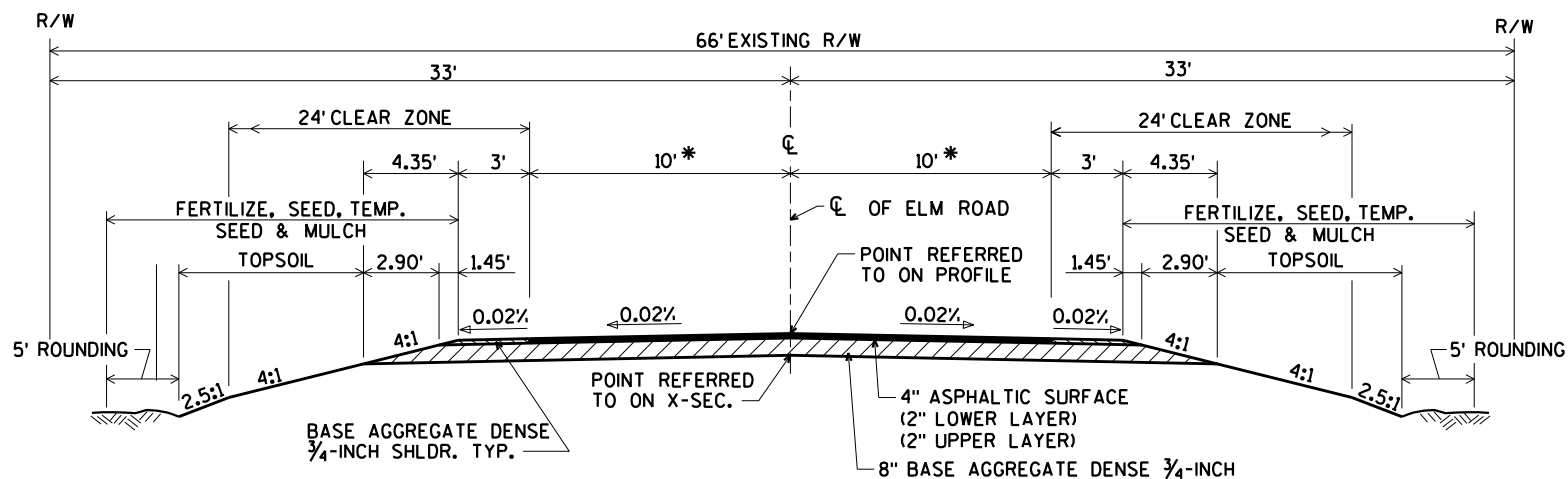
LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.047 MI.

END PROJECT
STA. 11+00
Y = 166012.52
X = 123500.67

T-28-N
T-27-N

ACCEPTED FOR	
Town of Hull	10-18-2018
Date	Town Chairperson
ACCEPTED FOR	
County of Marathon	10-18-18
Date	County Highway Commissioner
ORIGINAL PLANS PREPARED BY	
AYRES ASSOCIATES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com	
PROFESSIONAL ENGINEER	
CHRISTOPHER B. McMAHON E-20454 EAU CLAIRE, WI	
DATE 10/23/18	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
PREPARED BY	
Surveyor	AYRES ASSOCIATES INC
Designer	AYRES ASSOCIATES INC
Management Consultant CEDAR CORPORATION	
C.O. Examiner	
APPROVED FOR THE DEPARTMENT	
DATE: 10-29-2018	Management Consultant Signature

**EXISTING TYPICAL SECTION****FINISHED UNPAVED TYPICAL SECTION**STA. 8+50 TO STA. 9+03.55
STA. 10+96.45 TO STA. 11+00**FINISHED PAVED TYPICAL SECTION**

STA. 9+03.55 TO STA. 10+96.45

*ASPHALTIC SURFACE SHALL BE PLACED 26.5' WIDE
AT ENDS OF BRIDGE AND TAPER TO 20' WIDE
AT 50' FROM THE ENDS OF THE BRIDGE.**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.

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

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.

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

TOPSOIL SHALL BE PLACED ON THE SLOPES, TO THE POINT OF INTERCEPT WITH THE ORIGINAL GROUND SHOWN ON THE CROSS SECTIONS.

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

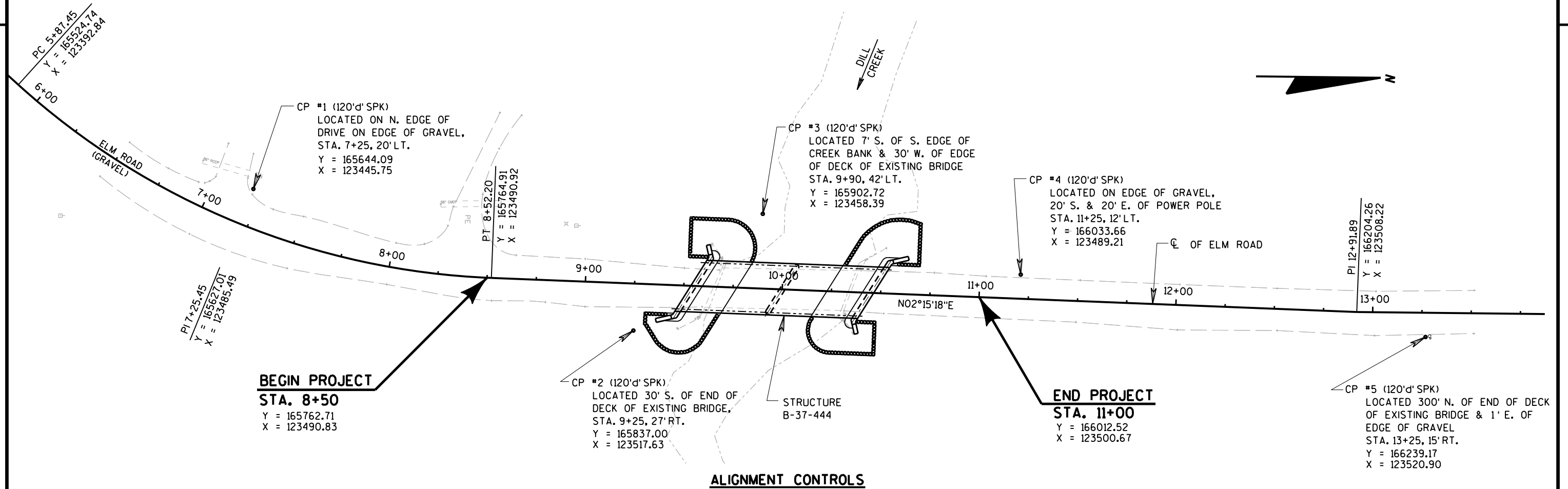
ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM (NAVD 88).

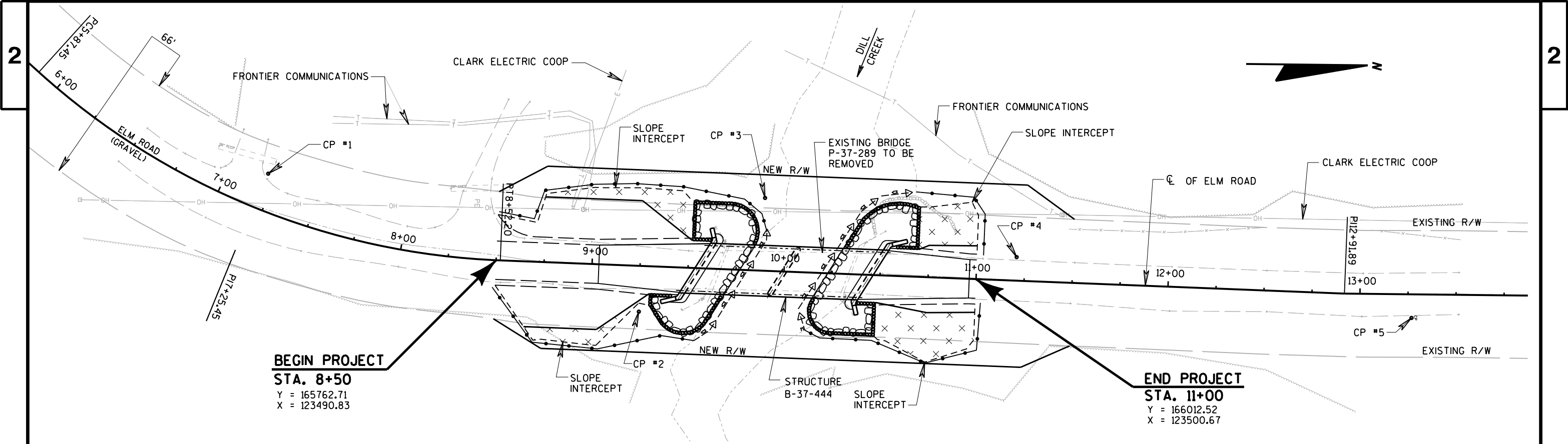
ASPHALT SURFACE SHALL USE 1/2" NOMINAL AGGREGATE SIZE.

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

THE LOCATION AND WIDTH OF THE EXISTING RIGHT OF WAY WAS DETERMINED BY THE COUNTY FOR THIS PROJECT. AYRES ASSOCIATES DOES NOT WARRANT IT'S ACCURACY.

UTILITIESFRONTIER COMMUNICATIONS
1851 N.14TH AVENUE
WAUSAU, WI 54401
ATTN: CALVIN KLADE
715-847-1550
715-573-2110 (CELL)
clavin.klade@ftr.comCLARK ELECTRIC COOP.
1209 WEST DALL-BERG RD.
GREENWOOD, WI 54437
ATTN: KENT WEIGEL
715-207-8883
kweigel@cecoop.com**DIGGERSHOTLINE**Dial **811** or (800) 242-8511
www.DiggersHotline.com**COUNTY CONTACT**MARATHON COUNTY HIGHWAY DEPT.
1430 WEST STREET
WAUSAU, WI 54401
ATTN: JAMES GRIESBACH, COMMISSIONER
715-261-1800
james.griesbach@co.marathon.wi.us**DESIGNER**AYRES ASSOCIATES
3433 OAKWOOD HILLS PARKWAY
EAU CLAIRE, WI 54701
ATTN: CHRIS McMAHON, PE
715-834-3161
mcmahonc@AyresAssociates.com**WISCONSIN DEPARTMENT OF
NATURAL RESOURCES CONTACT:**CASEY JONES
473 GRIFFITH DRIVE
WISCONSIN RAPIDS, WI 54494
715-421-7867
715-213-6571
casey.jones@wisconsin.gov





	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 = 0.638 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.196 ACRES

HIGH WATER 2 EL. 1253.4

- LEGEND
- EROSION MAT CLASS II TYPE C
 - TEMPORARY DITCH CHECKS (UNDISTRIBUTED)
 - SILT FENCE
 - RIPRAP HEAVY
 - TURBIDITY BARRIERS

Estimate Of Quantities

6670-06-70					
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	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 10+00	LS	1.000	1.000
0008	205.0100	Excavation Common	CY	140.000	140.000
0010	206.1000	Excavation for Structures Bridges (structure) 01. B-37-444	LS	1.000	1.000
0012	208.0100	Borrow	CY	286.000	286.000
0014	210.1500	Backfill Structure Type A	TON	370.000	370.000
0016	213.0100	Finishing Roadway (project) 01. 6670-06-70	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	340.000	340.000
0020	455.0605	Tack Coat	GAL	20.000	20.000
0022	465.0105	Asphaltic Surface	TON	65.000	65.000
0024	502.0100	Concrete Masonry Bridges	CY	266.000	266.000
0026	502.3200	Protective Surface Treatment	SY	330.000	330.000
0028	505.0400	Bar Steel Reinforcement HS Structures	LB	6,710.000	6,710.000
0030	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	36,200.000	36,200.000
0032	513.4061	Railing Tubular Type M	LF	189.000	189.000
0034	516.0500	Rubberized Membrane Waterproofing	SY	12.000	12.000
0036	550.0500	Pile Points	EACH	21.000	21.000
0038	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	490.000	490.000
0040	606.0300	Riprap Heavy	CY	350.000	350.000
0042	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	150.000	150.000
0044	618.0100	Maintenance And Repair of Haul Roads (project) 01. 6670-06-70	EACH	1.000	1.000
0046	619.1000	Mobilization	EACH	1.000	1.000
0048	624.0100	Water	MGAL	16.000	16.000
0050	625.0100	Topsoil	SY	690.000	690.000
0052	627.0200	Mulching	SY	680.000	680.000
0054	628.1504	Silt Fence	LF	580.000	580.000
0056	628.1520	Silt Fence Maintenance	LF	1,160.000	1,160.000
0058	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0060	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0062	628.2027	Erosion Mat Class II Type C	SY	415.000	415.000
0064	628.6005	Turbidity Barriers	SY	355.000	355.000
0066	628.7504	Temporary Ditch Checks	LF	50.000	50.000
0068	629.0210	Fertilizer Type B	CWT	0.800	0.800
0070	630.0120	Seeding Mixture No. 20	LB	30.000	30.000
0072	630.0200	Seeding Temporary	LB	30.000	30.000
0074	630.0300	Seeding Borrow Pit	LB	3.000	3.000

Estimate Of Quantities

6670-06-70					
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	638.2602	Removing Signs Type II	EACH	8.000	8.000
0082	638.3000	Removing Small Sign Supports	EACH	8.000	8.000
0084	642.5001	Field Office Type B	EACH	1.000	1.000
0086	643.0420	Traffic Control Barricades Type III	DAY	1,350.000	1,350.000
0088	643.0705	Traffic Control Warning Lights Type A	DAY	2,100.000	2,100.000
0090	643.0900	Traffic Control Signs	DAY	1,050.000	1,050.000
0092	643.5000	Traffic Control	EACH	1.000	1.000
0094	645.0111	Geotextile Type DF Schedule A	SY	100.000	100.000
0096	645.0120	Geotextile Type HR	SY	635.000	635.000
0098	650.4500	Construction Staking Subgrade	LF	160.000	160.000
0100	650.5000	Construction Staking Base	LF	160.000	160.000
0102	650.6500	Construction Staking Structure Layout (structure) 01. B-37-444	LS	1.000	1.000
0104	650.9910	Construction Staking Supplemental Control (project) 01. 6670-06-70	LS	1.000	1.000
0106	650.9920	Construction Staking Slope Stakes	LF	160.000	160.000
0108	715.0502	Incentive Strength Concrete Structures	DOL	1,596.000	1,596.000
0110	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	150.000	150.000
0112	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000

CLEARING AND GRUBBING

				201.0105	201.0205
				CLEARING	GRUBBING
STATION	TO	STATION	OFFSET	STA	STA
8+00	-	9+00	LT & RT	1	1
TOTALS				1	1

ELM ROAD EARTHWORK SUMMARY

From/To Station	Location	Excavation Common (1) (item # 205.0100)	Unexpanded Fill	Expanded Fill (2)	Mass Ordinate +/- (3)	Waste	Borrow (item #208.0100)	Comment:
		Cut		Factor 1.30				
8+50 - 11+00	ELM ROAD	140	327	426	-286	0	286	

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

PAVING AND BASE QUANTITIES

FINISHING ROADWAY
(ID 6670-06-70)

213.0100.01	
LOCATION	EACH
ELM ROAD	1
TOTAL	1

			305.0110	455.0605	465.0105
			BASE AGGREGATE	TACK	ASPHALTIC
			DENSE 3/4-INCH	COAT	SURFACE
STA	TO	STA	TON	GAL	TON
8+50	--	9+53.55	225	10	30
10+46.45	--	11+00	100	9	30
UNDISTRIBUTED			15	1	5
TOTALS			340	20	65

MAINTENANCE AND REPAIR OF HAUL ROADS

		618.0100
CATEGORY	PROJECT	EACH
0030	6670-06-70	1
TOTAL		1

MOBILIZATION

619.1000	
CATEGORY	EACH
0010	0.1
0020	0.9
TOTAL	1

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

		EROSION CONTROL ITEMS												
WATER						625.0100	627.0200	628.1504	628.1520	628.2027	629.0210	630.0120	630.0200	630.0300
						TOPSOIL	MULCHING	SILT FENCE	SILT FENCE	EROSION MAT	FERTILIZER	SEEDING	SEEDING	SEEDING
									MAINTENANCE	CLASS II TYPE C	TYPE B	MIXTURE	TEMPORARY	BORROW
PURPOSE	624.0100	STA	TO	STA	LOCATION	SY	SY	LF	LF	SY	CWT	NO. 20	LB	PIT
	WATER													
	MGAL													
COMPACTION	5.0	8+50	--	9+53.55	RT	150	210	120	240	45	0.2	7	7	1
DUST CONTROL	11.0	8+50	--	9+53.55	LT	205	245	160	320	80	0.2	9	9	
		10+46.45	--	11+00	RT	125	55	120	240	135	0.1	5	5	1
TOTAL	16.0	10+46.45	--	11+00	LT	70	35	65	130	75	0.1	3	3	
		UNDISTRIBUTED				140	135	115	230	80	0.3	6	6	1

FIELD OFFICE TYPE B

642.5001	
CATEGORY	EACH
0010	1
TOTAL	
	1

TRAFFIC CONTROL ITEMS

LOCATION	DURATION DAYS	643.0420 BARRICADES TYPE III		643.0705 WARNING LIGHTS TYPE A		643.0900 SIGNS		643.5000 TRAFFIC CONTROL
		NO.	DAY	NO.	DAY	NO.	DAY	EACH
PER SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"	75	18	1,350	28	2,100	14	1,050	--
ELM ROAD	--	--	--	--	--	--	--	1
TOTALS			1,350		2,100		1,050	1

TRAFFIC CONTROL PLACEMENT SUBJECT TO ENGINEER APPROVAL

STAKING ITEMS

CATEGORY	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE	650.5000 CONSTRUCTION STAKING BASE	650.6500.01 CONSTRUCTION STAKING STRUCTURE LAYOUT (B-37-0444)	650.9910.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (ID 6670-06-70)	650.9920 CONSTRUCTION STAKING SLOPE STAKES
		LF	LF	LS	LS	LF
0010	8+50 - 11+00	160	160	--	1	160
0020	B-37-0444	--	--	1	--	--
TOTALS		160	160	1	1	160

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

CURVE DATA

PI STA = 7+25.45
Y = 165627.012
X = 123485.012
DELTA = 39°55'07"
T = 138.00'
L = 264.75'
R = 380.00'
PC STA = 5+87.45
PT STA = 8+52.20

RW POINT TABLE		
POINT NO.	Y	X
100	165762.591	123493.535
101	165762.713	123490.825
102	165764.148	123459.066
103	165789.661	123441.854
104	166039.467	123451.690
105	166063.941	123465.553
106	166062.642	123498.536
107	166062.480	123502.635
108	166061.343	123531.519
109	166035.729	123546.617
110	165785.923	123536.780
111	165761.164	123525.088

SCHEDULE OF LANDS AND INTERESTS REQUIRED

PARCEL NO.	OWNERSHIP	INTEREST REQUIRED	R/W (ACRES)		
			NEW	EXISTING	TOTAL
1	HORACE D. AND BARBARA L. SMITH	FEE	0.103	0.228	0.331
2	JACOB F. AND SHINAE M. REYNOLDS	FEE	0.080	0.227	0.307
50	FRONTIER COMMUNICATIONS	RELEASE OF RIGHTS			

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

COURSE TABLE		
COURSE	BEARING	DISTANCE
100-101	N87°24'49"W	2.71'
101-102	N87°24'49"W	31.79'
102-103	N34°00'12"W	30.78'
103-104	N02°15'18"E	250.00'
104-105	N29°31'43"E	28.13'
105-106	S87°44'42"E	33.01'
106-107	S87°44'42"E	4.10'
107-108	S87°44'42"E	28.91'
108-109	S30°31'01"E	29.73'
109-110	S02°15'18"W	250.00'
110-111	S25°16'42"W	27.38'
111-100	N87°24'49"W	31.59'

R/W PROJECT NUMBER 6670-06-00	SHEET NUMBER 4.01	TOTAL SHEETS 1
FEDERAL PROJECT NUMBER		
PLAT OF RIGHT-OF-WAY REQUIRED FOR T HULL - ELM ROAD Dill Creek Bridge B-37-0444		
LOCAL ROAD MARATHON COUNTY		
CONSTRUCTION PROJECT NUMBER 6670-06-70		

PROJECT LOCATION
TOTAL NET LENGTH OF
CENTERLINE = 0.057 MILES

LAYOUT
SCALE 0 1 Mi.



APPROVED FOR
TOWN OF HULL

10-18-2018
DATE
TOWN CHAIRMAN

PLAT PREPARED BY

AYRES ASSOCIATES
Engineers/Architects
Scientists/Surveyors
3433 Oakwood Hills Parkway
Eau Claire, WI 54601

THE SURVEY IS PREPARED AT THE REQUEST
OF THE TOWN OF HULL.

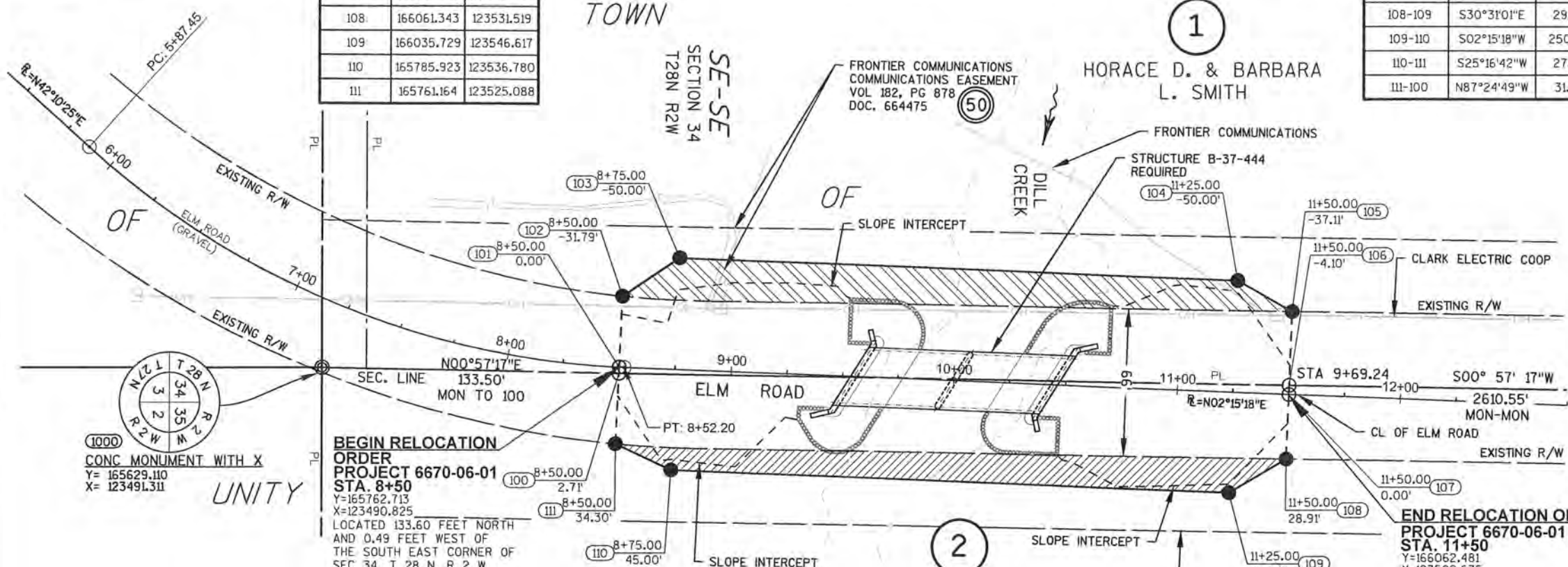
THE TOPOGRAPHY AND UTILITY SURVEY WAS
PERFORMED IN DECEMBER, 2013.

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



JAMES R. CAPPEART, P.L.S.
5-3044
DATE
10/2/2018

ELM ROAD
6670-06-70 / 6670-06-00 4.01



CONVENTIONAL ABBREVIATIONS

FOUND IRON PIPE/PIN (1" UNLESS NOTED)
R/W MONUMENT
SIGN
SECTION CORNER MONUMENT
SECTION CORNER SYMBOL
FEE (HATCH VARIES)

CONVENTIONAL
UTILITY SYMBOLS
WATER
GAS
TELEPHONE
OVERHEAD
TRANSMISSION LINES
ELECTRIC
CABLE TELEVISION
FIBER OPTIC
SANITARY SEWER
STORM SEWER
POWER POLE
TELEPHONE POLE
TELEPHONE PEDESTAL
ELECTRIC TOWER

CONVENTIONAL ABBREVIATIONS

ACRES
BUILDING
CENTERLINE
CERTIFIED SURVEY MAP
CORNER
DOCUMENT
EASEMENT
LAND CONTRACT
MONUMENT
PAGE
PERMANENT LIMITED EASEMENT
PROPERTY LINE
RECORDED AS
REFERENCE LINE
RELEASE OF RIGHTS
RIGHT-OF-WAY
SECTION
STATION
TEMPORARY LIMITED EASEMENT
VOLUME
LONG CHORD
LONG CHORD BEARING
RADIUS
DEGREE OF CURVE
CENTRAL ANGLE OR DELTA
LENGTH OF CURVE
TANGENT

JACOB F. & SHINAE M.
REYNOLDS

NOTES:
POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY
COORDINATES, MARATHON COUNTY ZONE, NAD83(2011), IN U.S.
SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND
GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

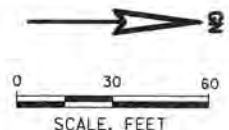
ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4" x 24"
REBARS W/PLASTIC CAP), UNLESS OTHERWISE NOTED, AND WILL BE PLACED
PRIOR TO THE COMPLETION OF THE PROJECT.

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

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

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

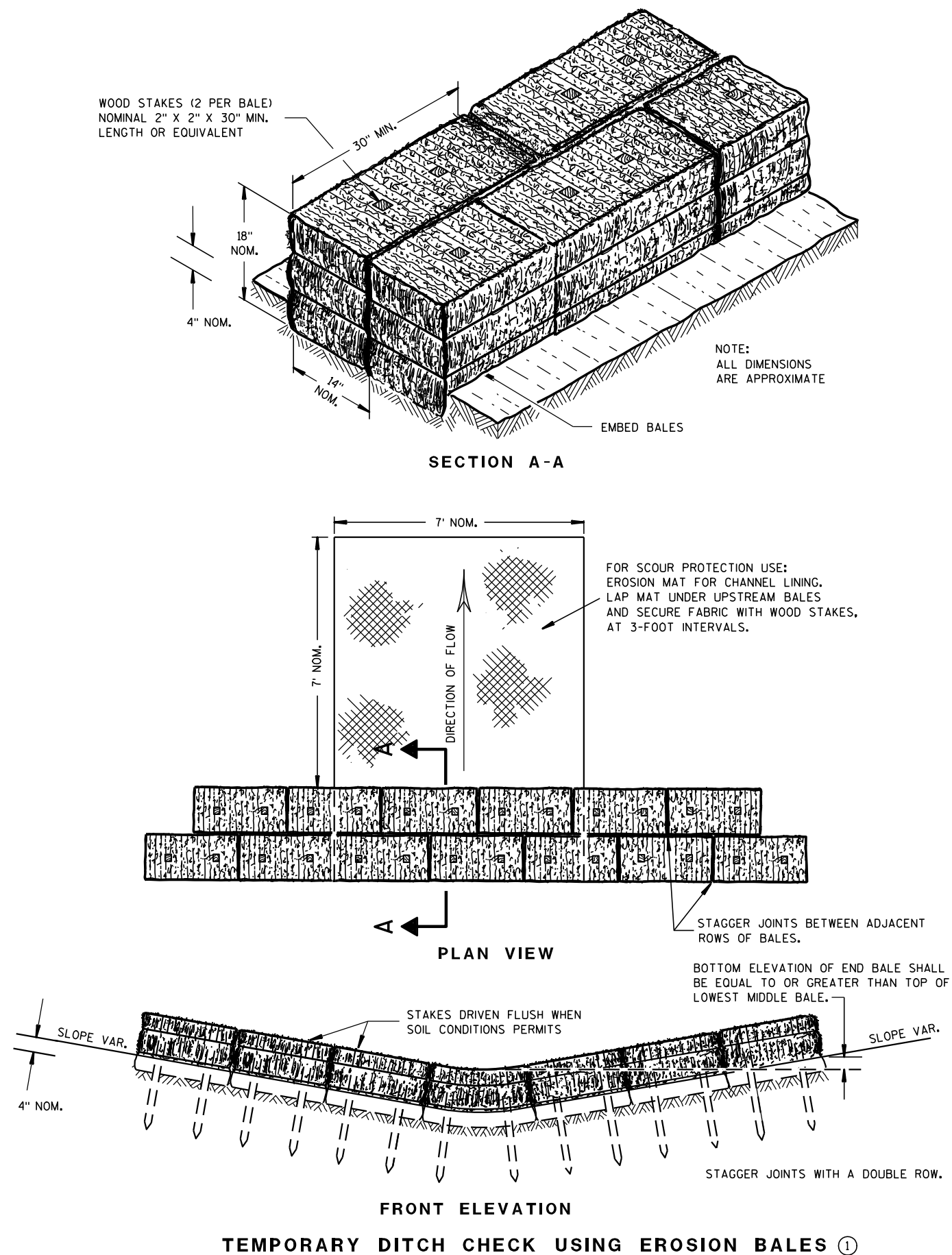
EXISTING ELM ROAD RIGHT-OF-WAY SHOWN HEREIN IS PRESUMED TO BE 66
FEET(4 RODS) IN WIDTH CENTERED ON THE EAST LINE OF SECTION 34, T28N,
R2W PER STATE STATUTE 82.31(2).



REVISION DATE

Standard Detail Drawing List

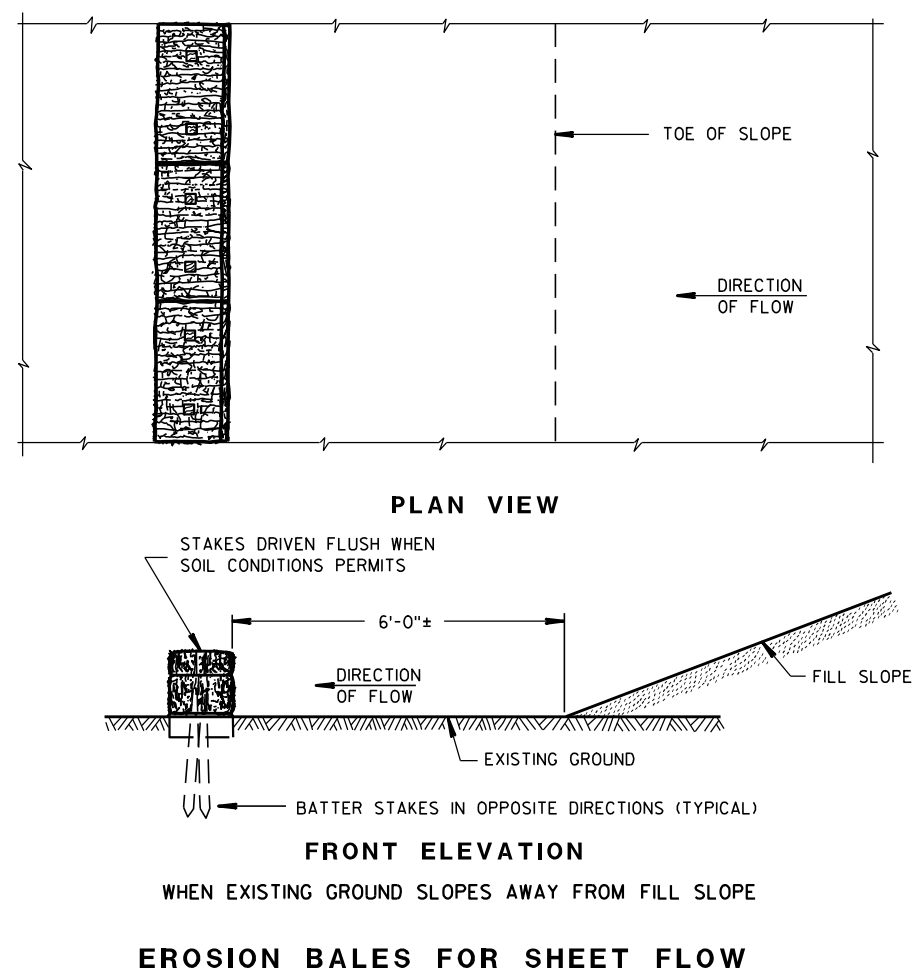
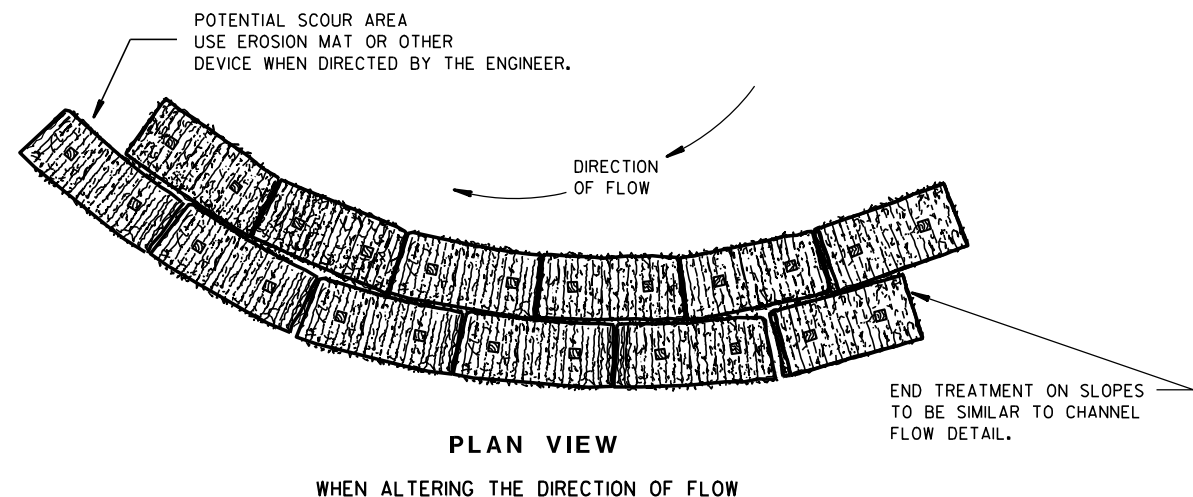
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



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

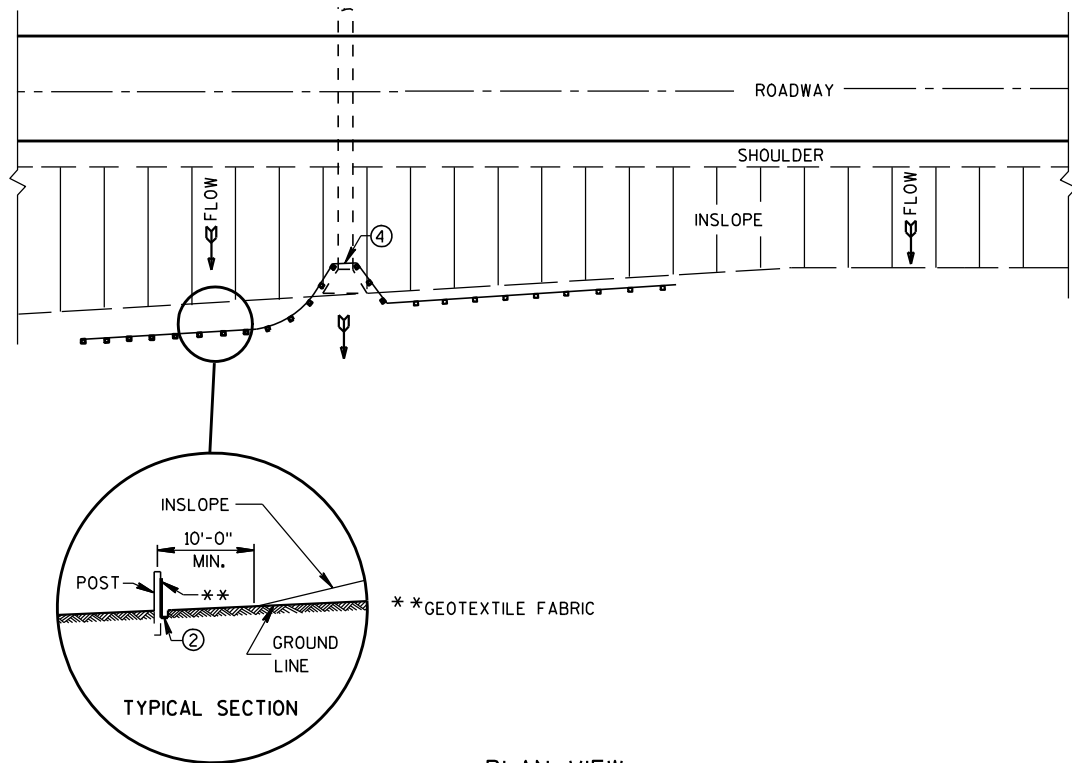
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

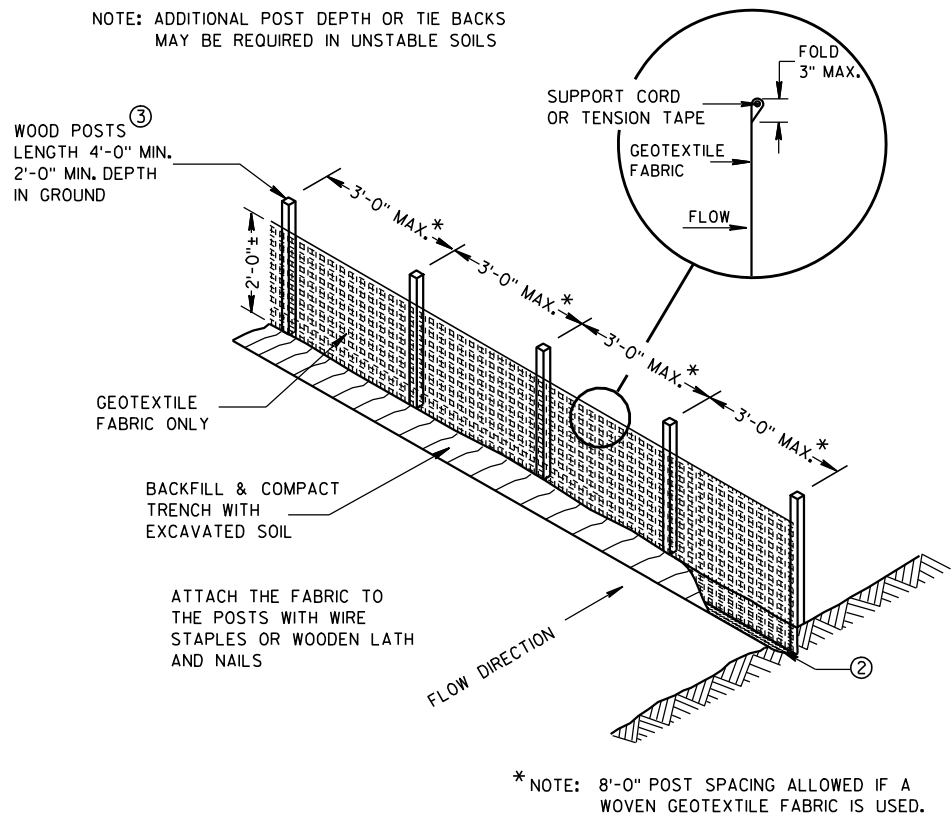
6/04/02
DATE

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

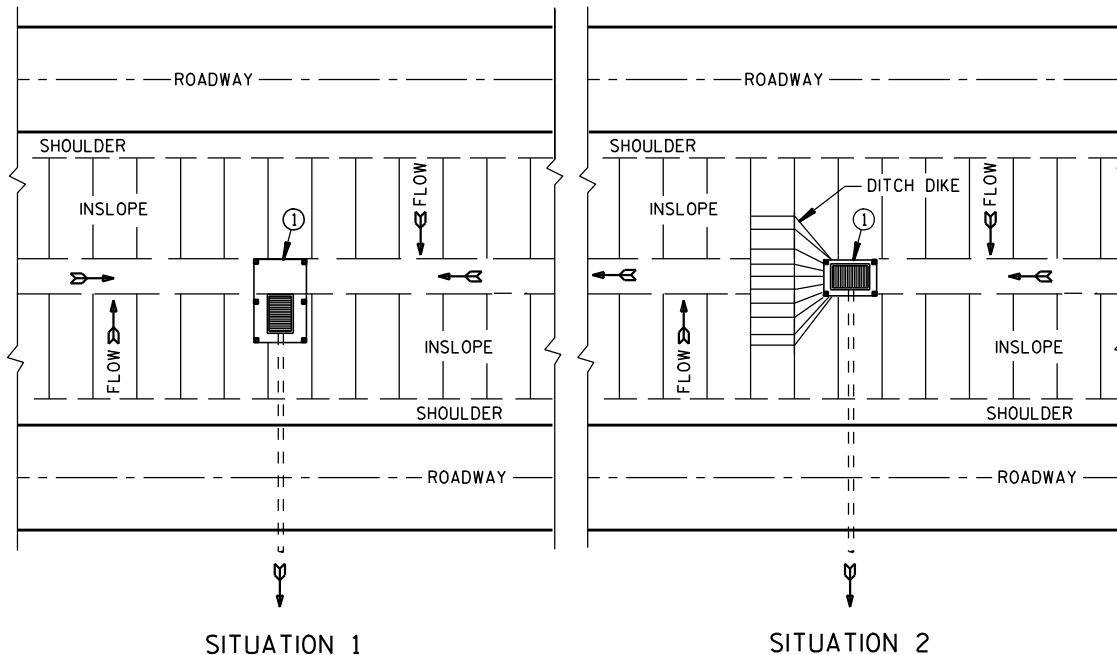
FHWA



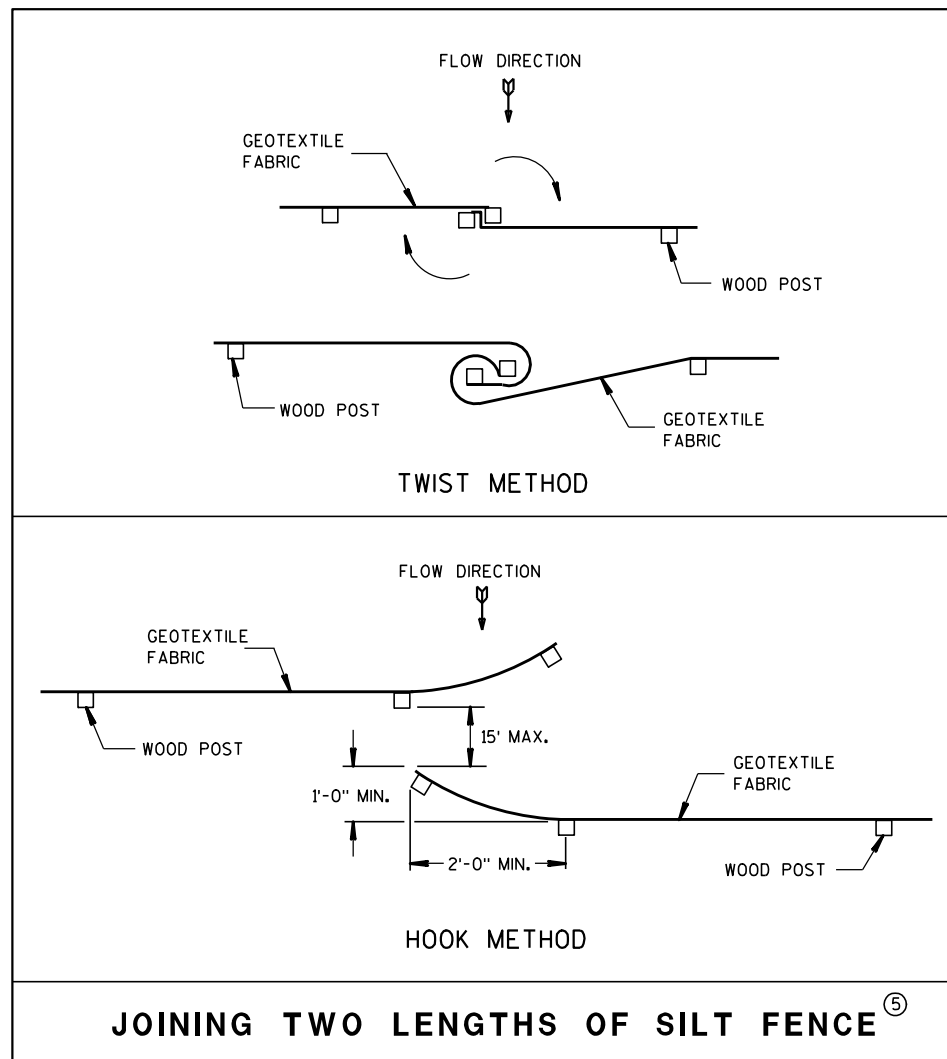
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

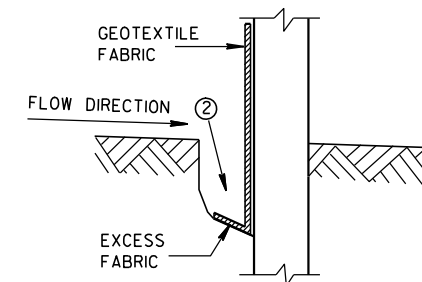


JOINING TWO LENGTHS OF SILT FENCE

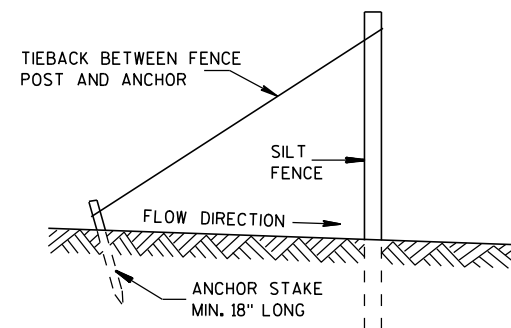
GENERAL NOTES

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.

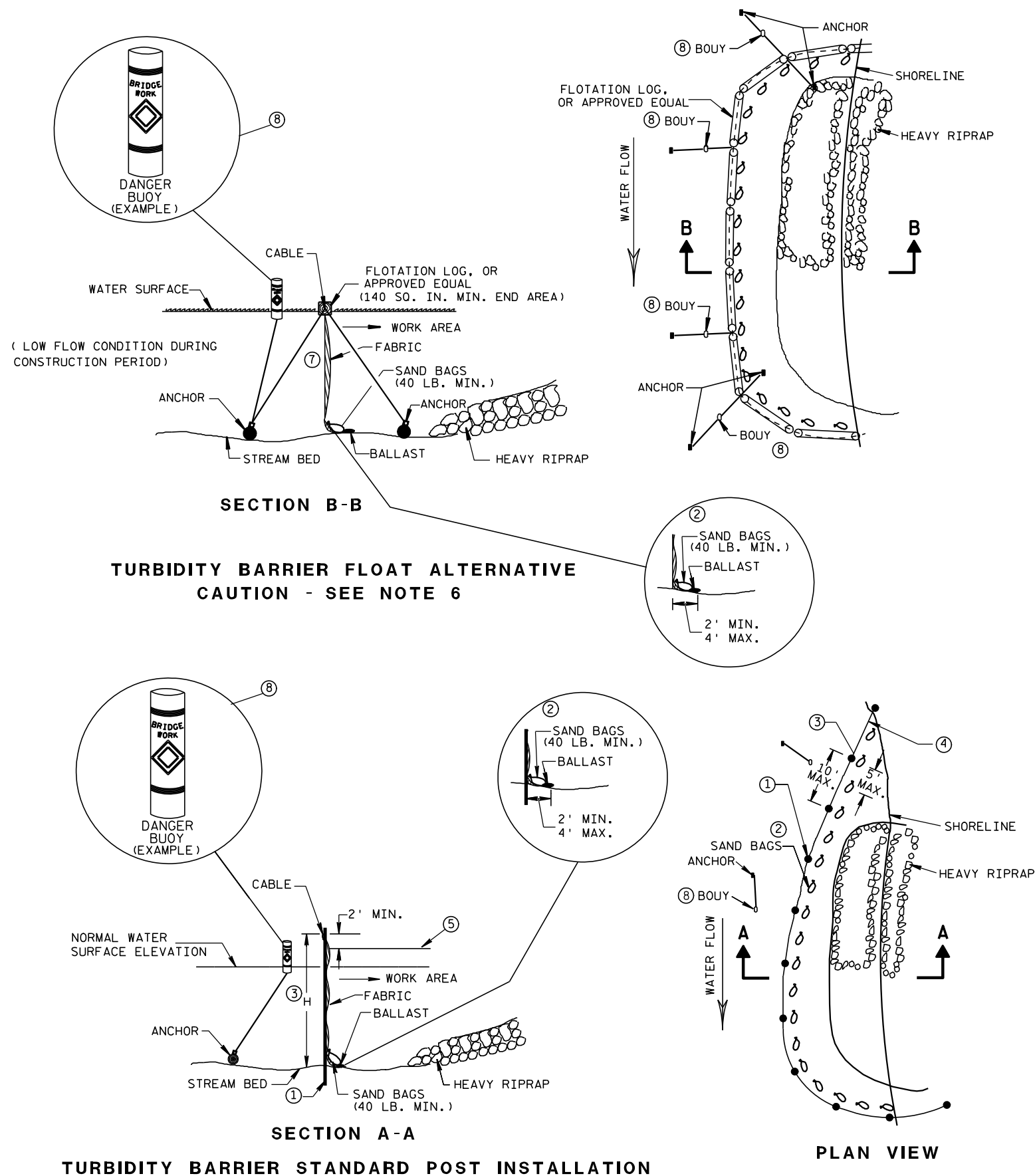


TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Canestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

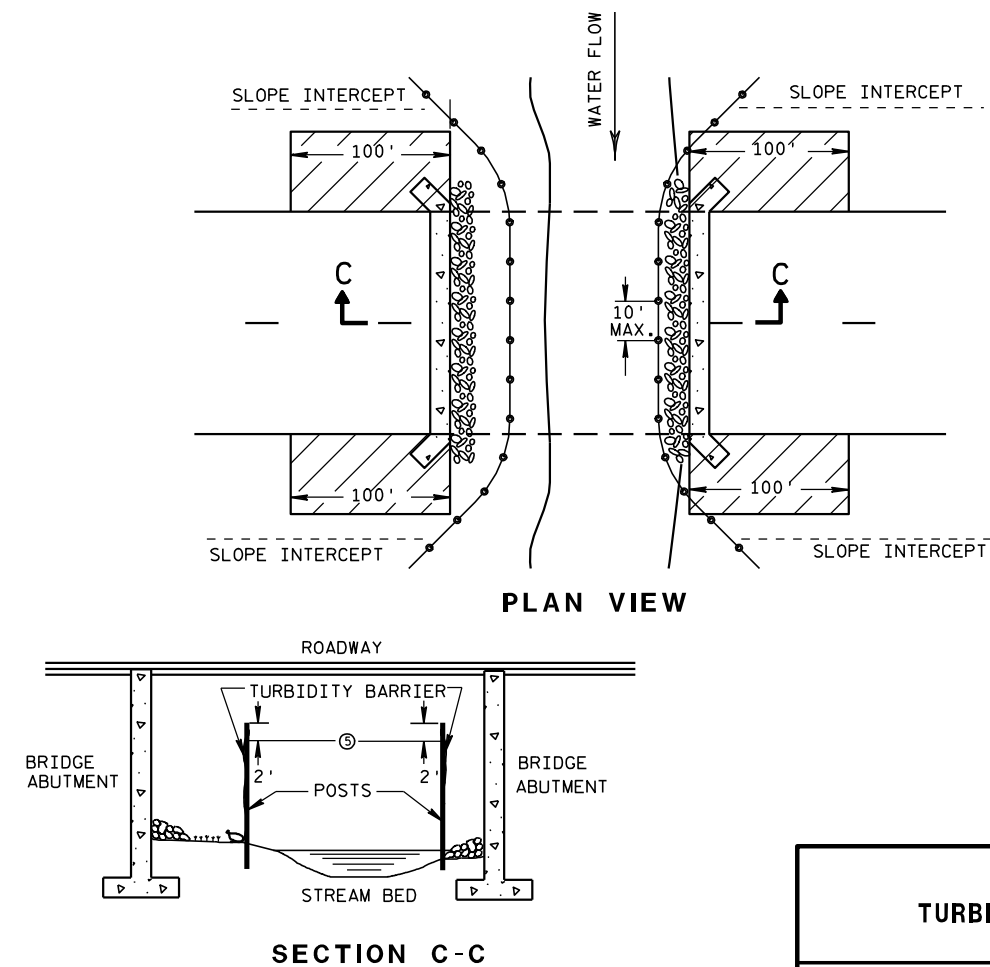


GENERAL NOTES

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

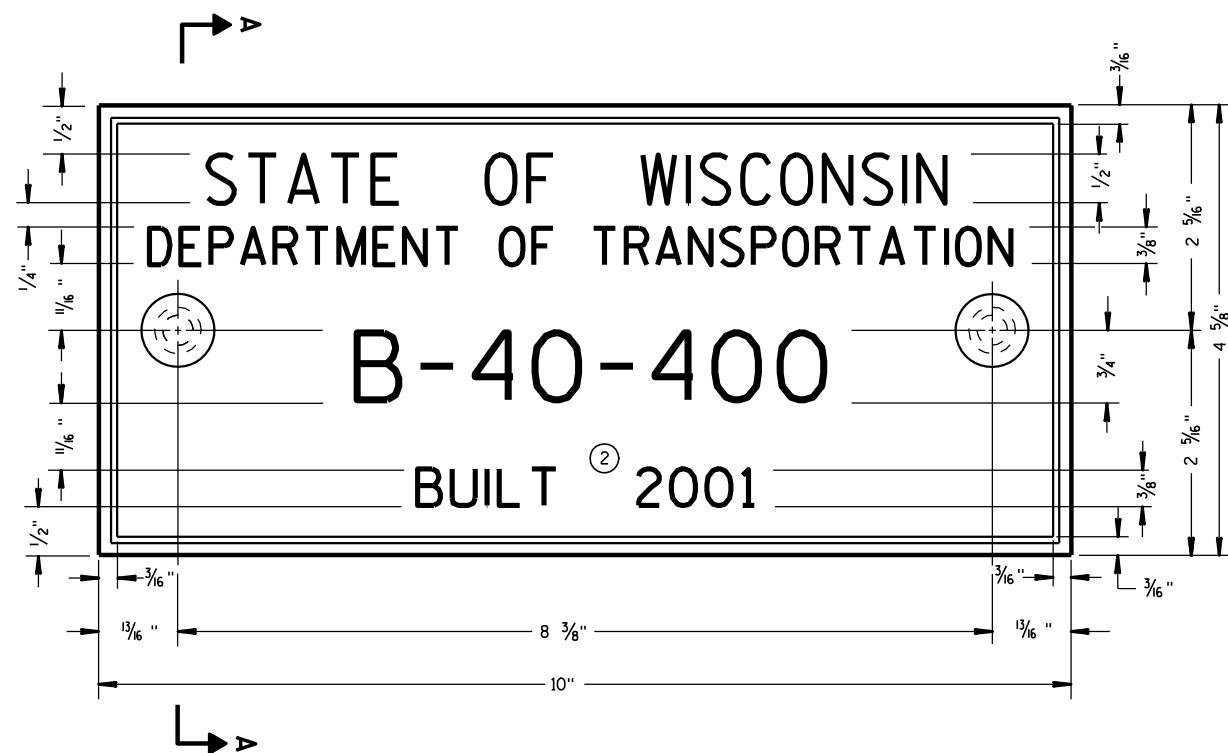
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

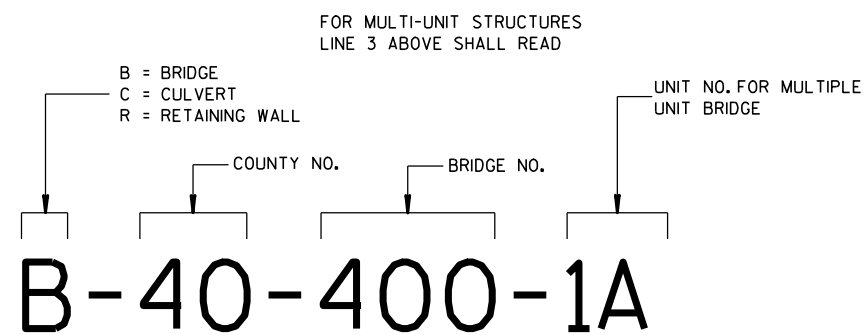
6/04/02
DATE

FHWA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



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



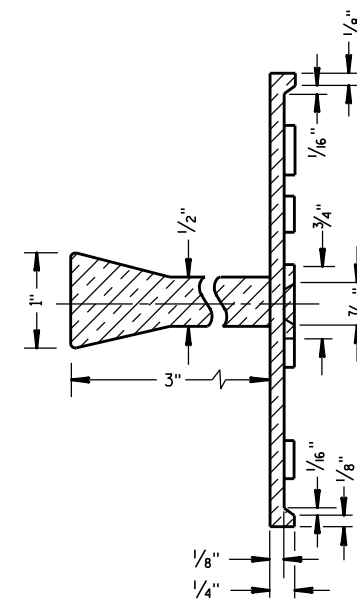
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

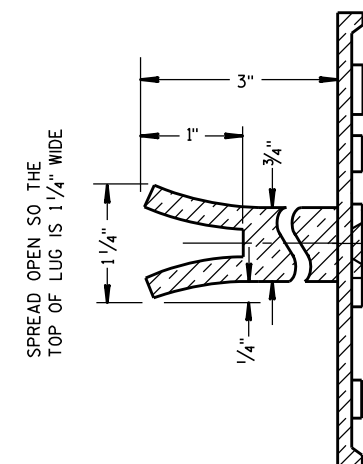
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.

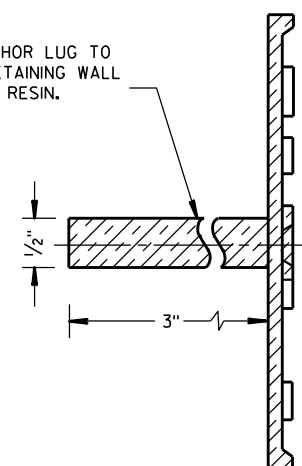


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

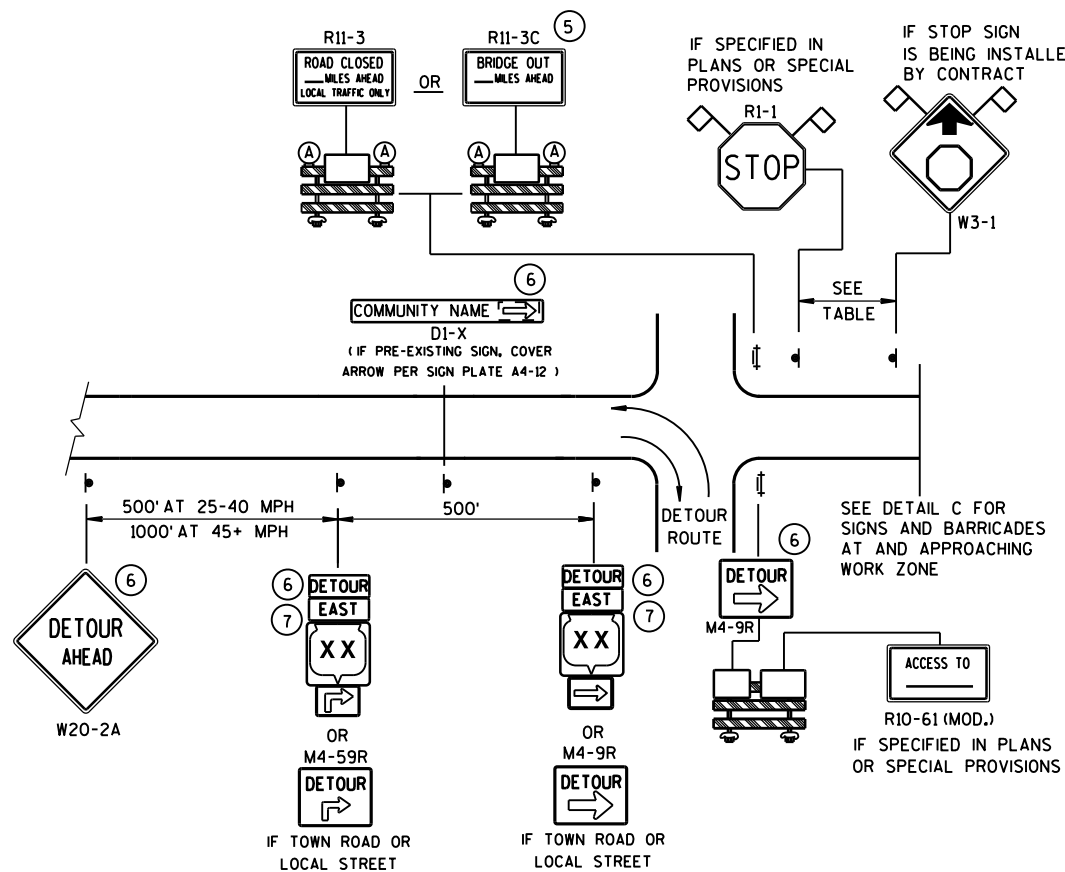
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

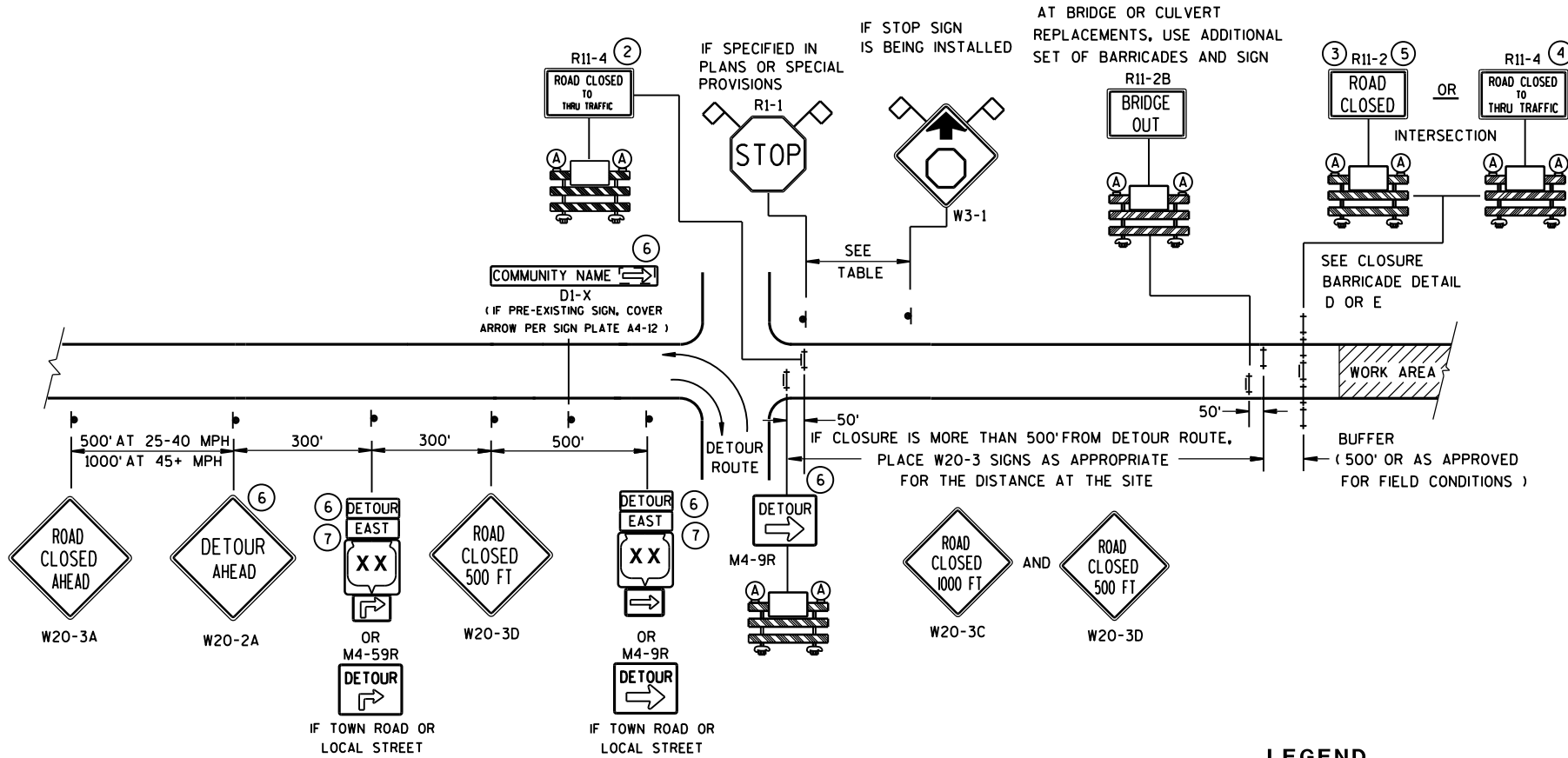
3/26/10
DATE

FHWA

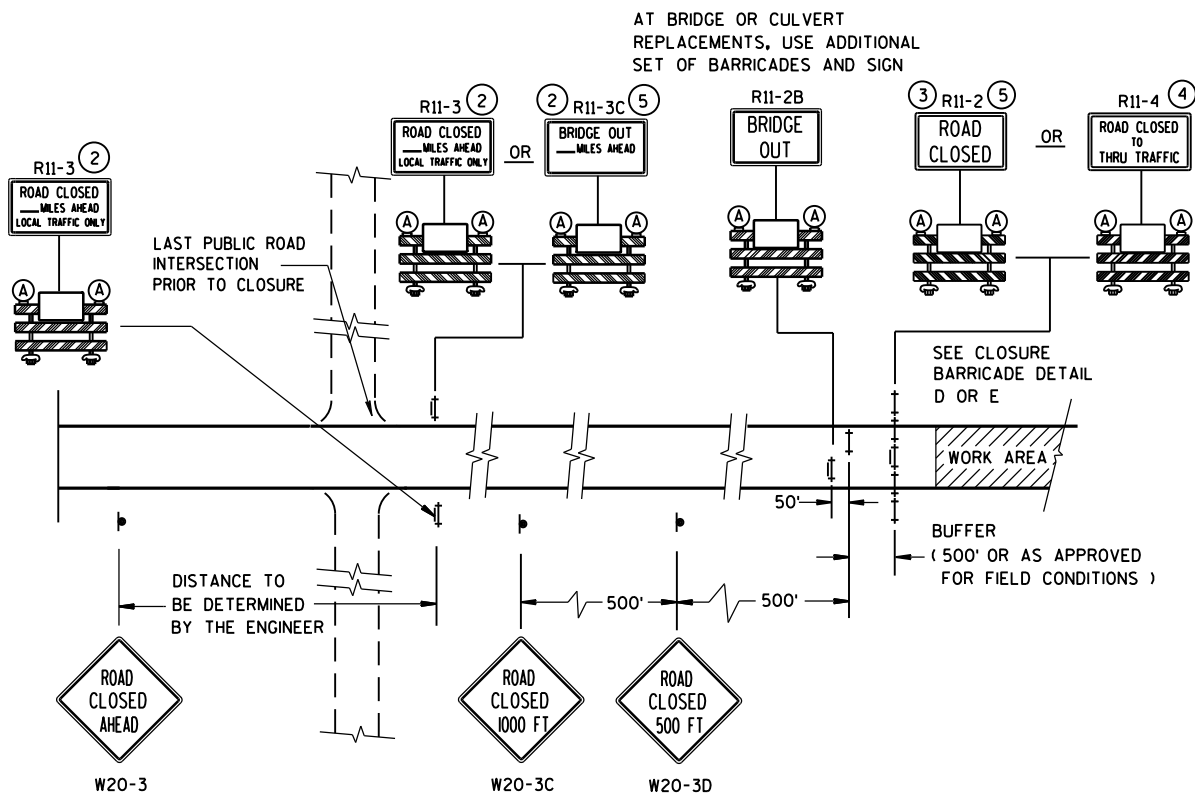
/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



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

LEGEND

- SIGN ON PERMANENT SUPPORT
- ⊥ TYPE III BARRICADE
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- Ⓐ TYPE "A" WARNING LIGHT (FLASHING)

WORK AREA

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

OR
M05-1 M06-1

FLAGS, 16" X 16" MIN., (ORANGE)

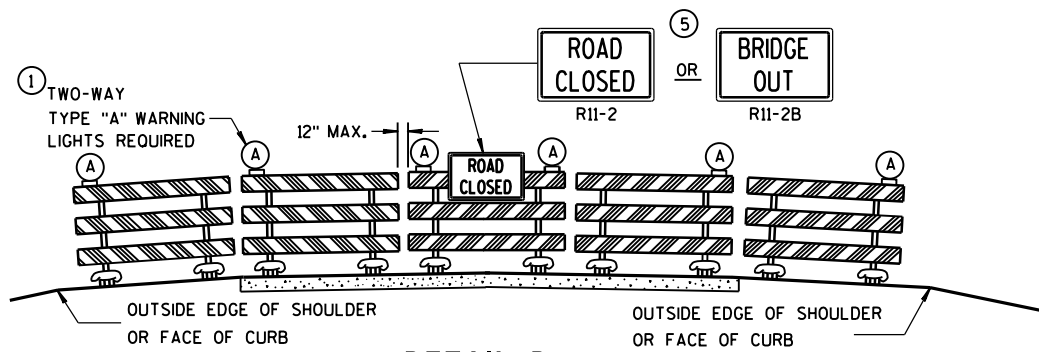
SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

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

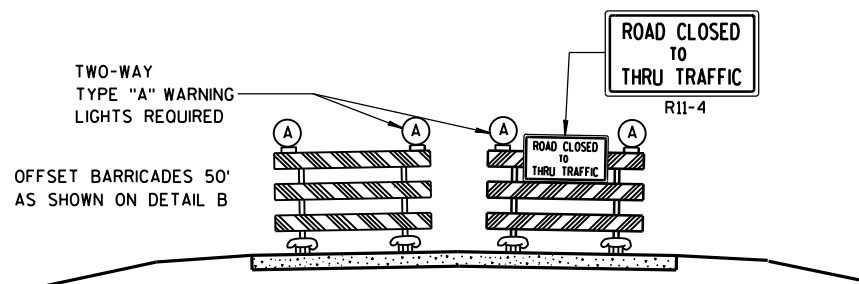
BARRICADES AND SIGNS
FOR
MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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:

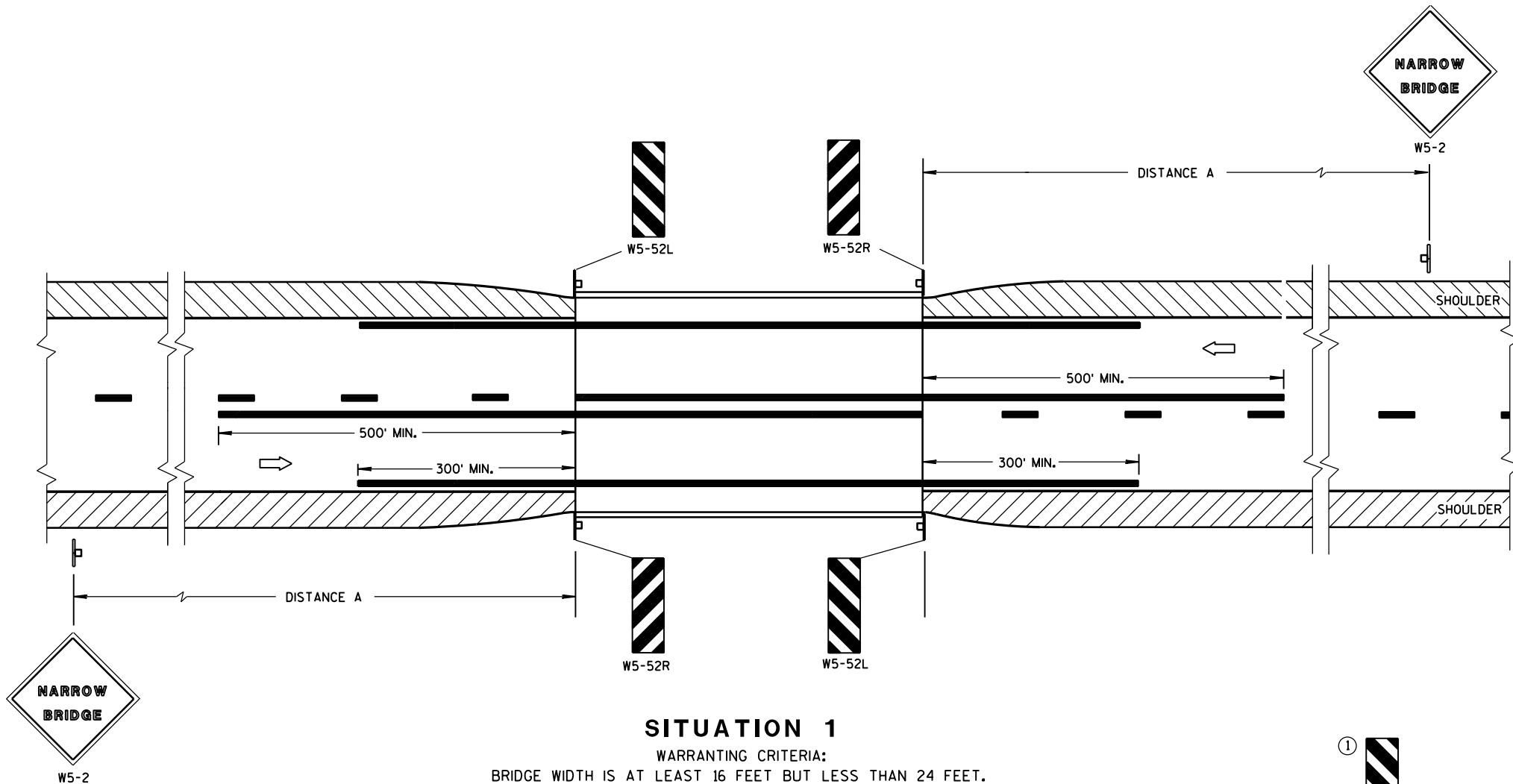
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" 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

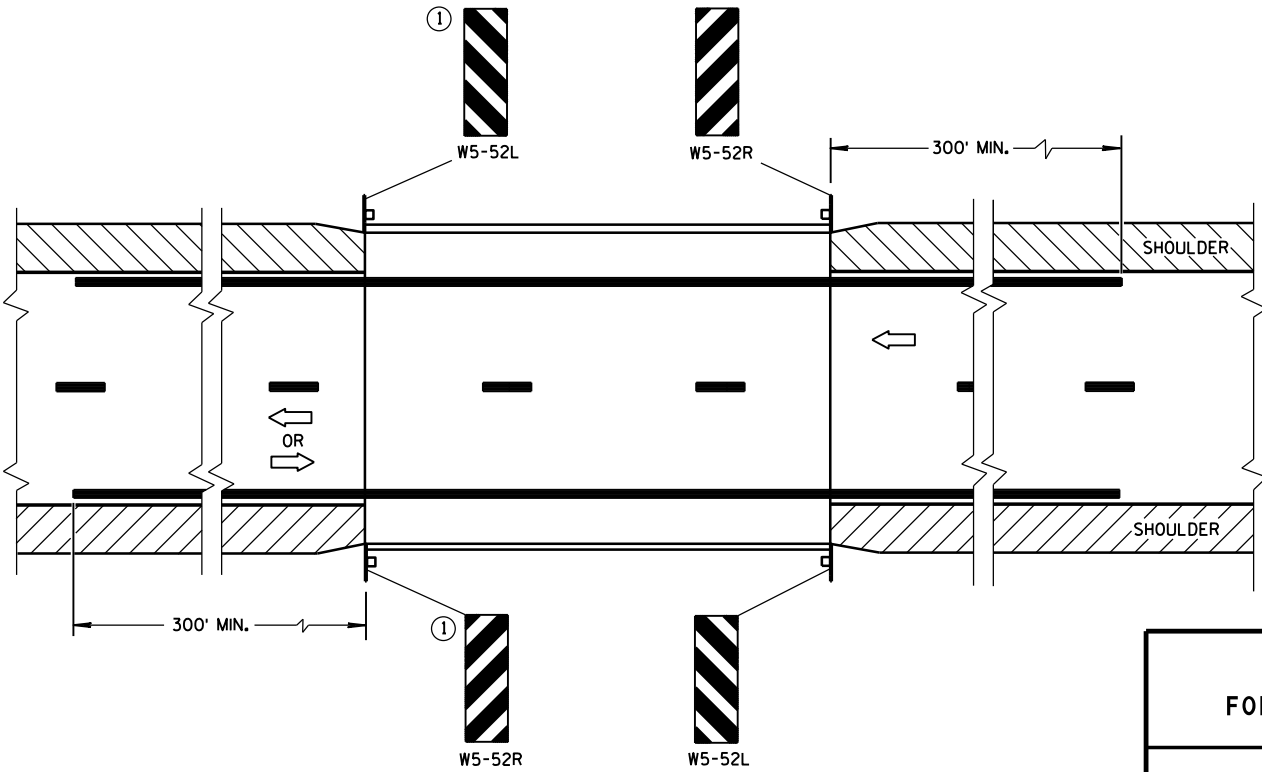


SITUATION 1

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'



SITUATION 2

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

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.

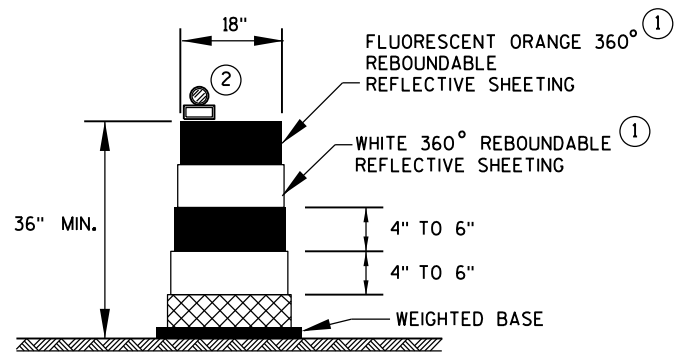
① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC

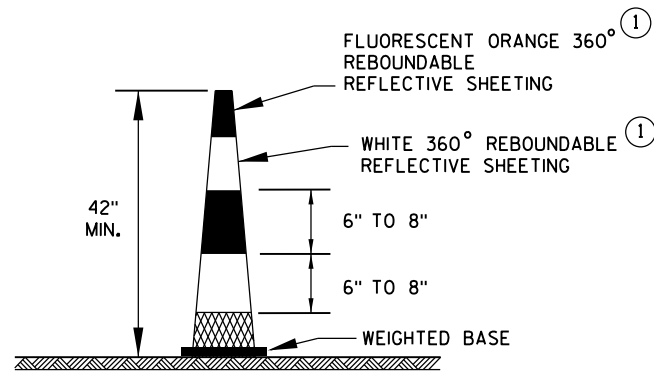
**SIGNING & MARKING
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



DRUM

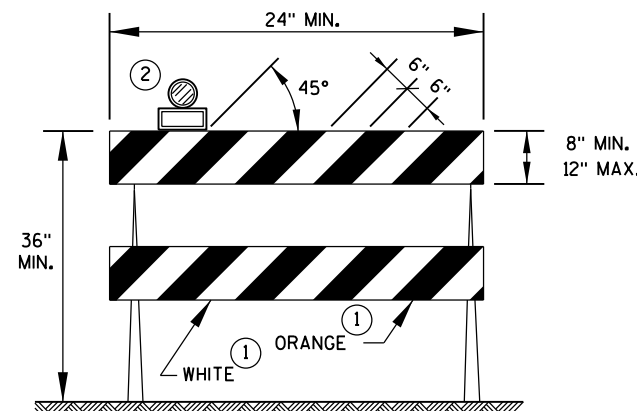


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

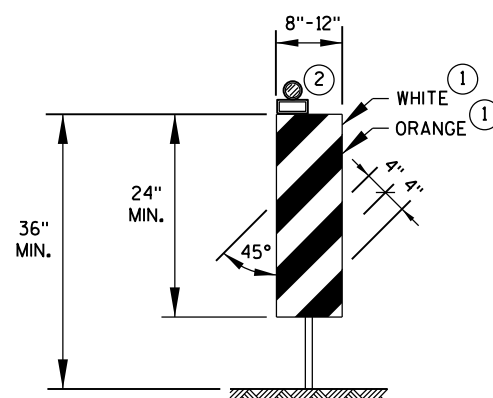
GENERAL NOTES

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



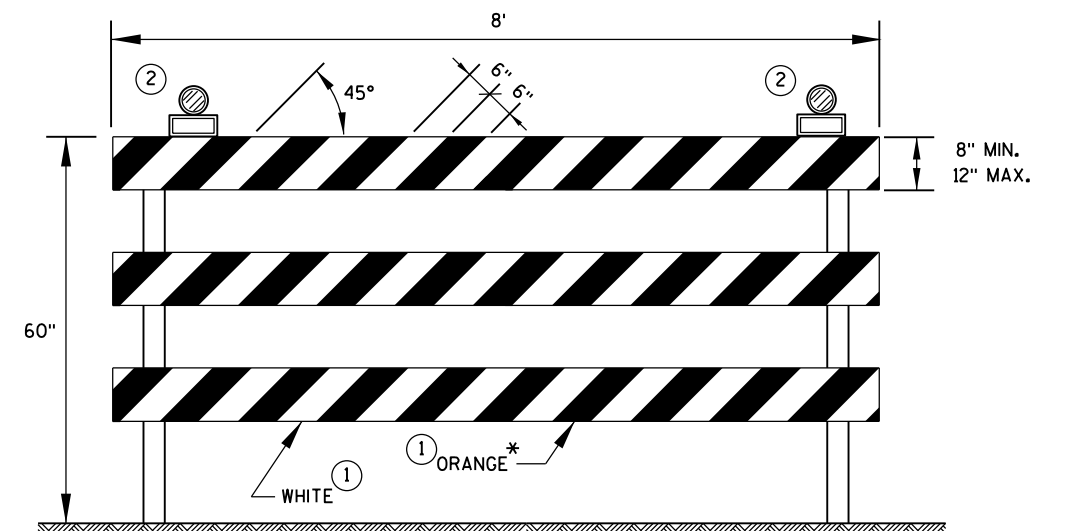
TYPE 2 BARRICADE

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



VERTICAL PANEL

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



TYPE 3 BARRICADE

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

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

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

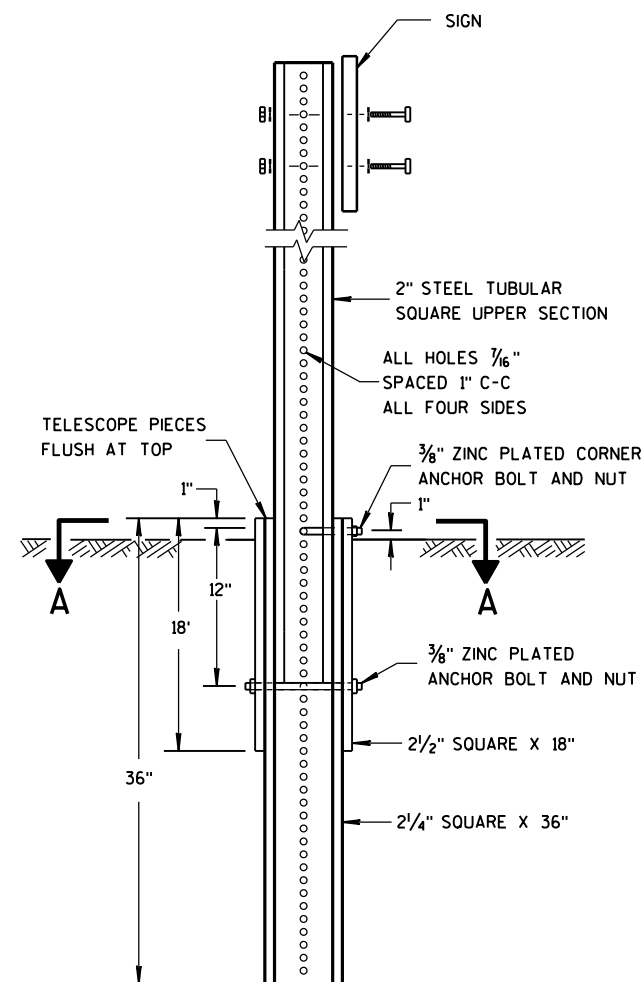
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

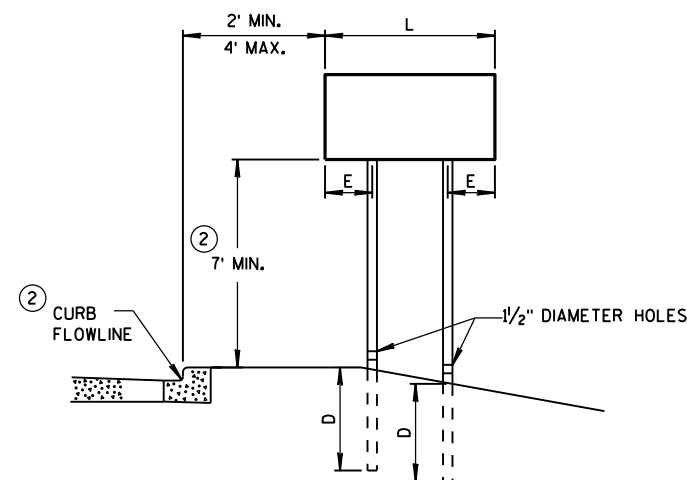
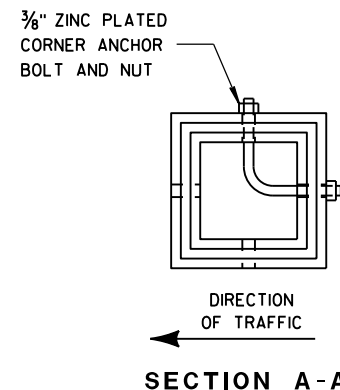


DETAIL OF TUBULAR
STEEL SIGN POST

TUBULAR STEEL POSTS

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

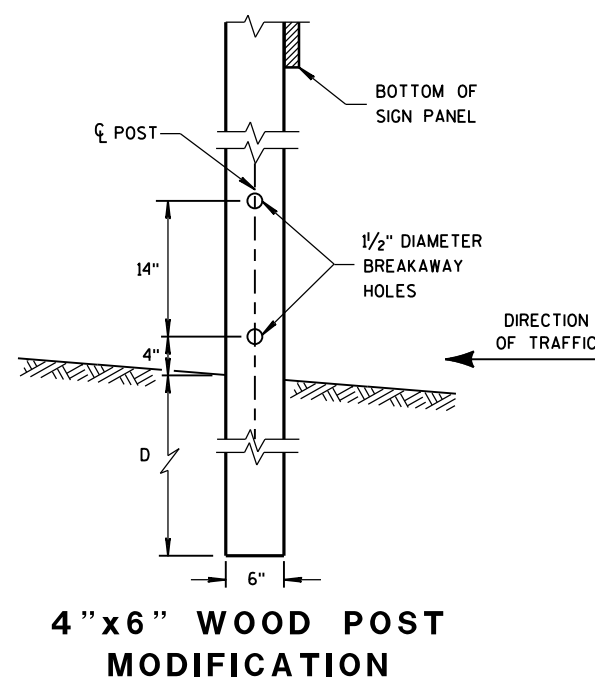
SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL
BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED
ON TUBULAR STEEL POSTS.



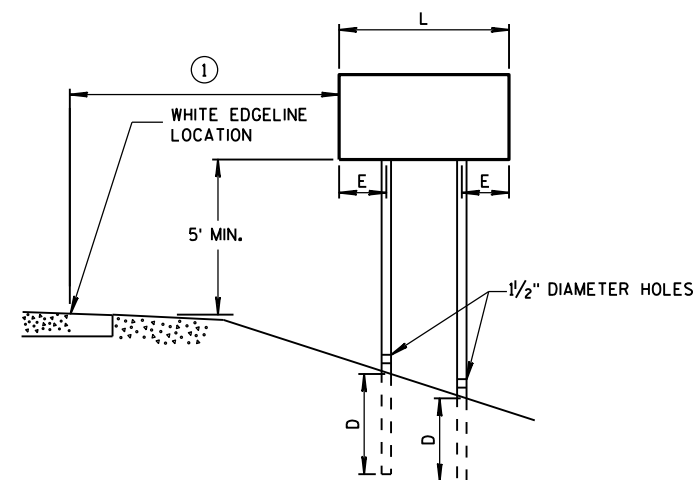
URBAN AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

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



4 "x6 " WOOD POST
MODIFICATION



RURAL AREA

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

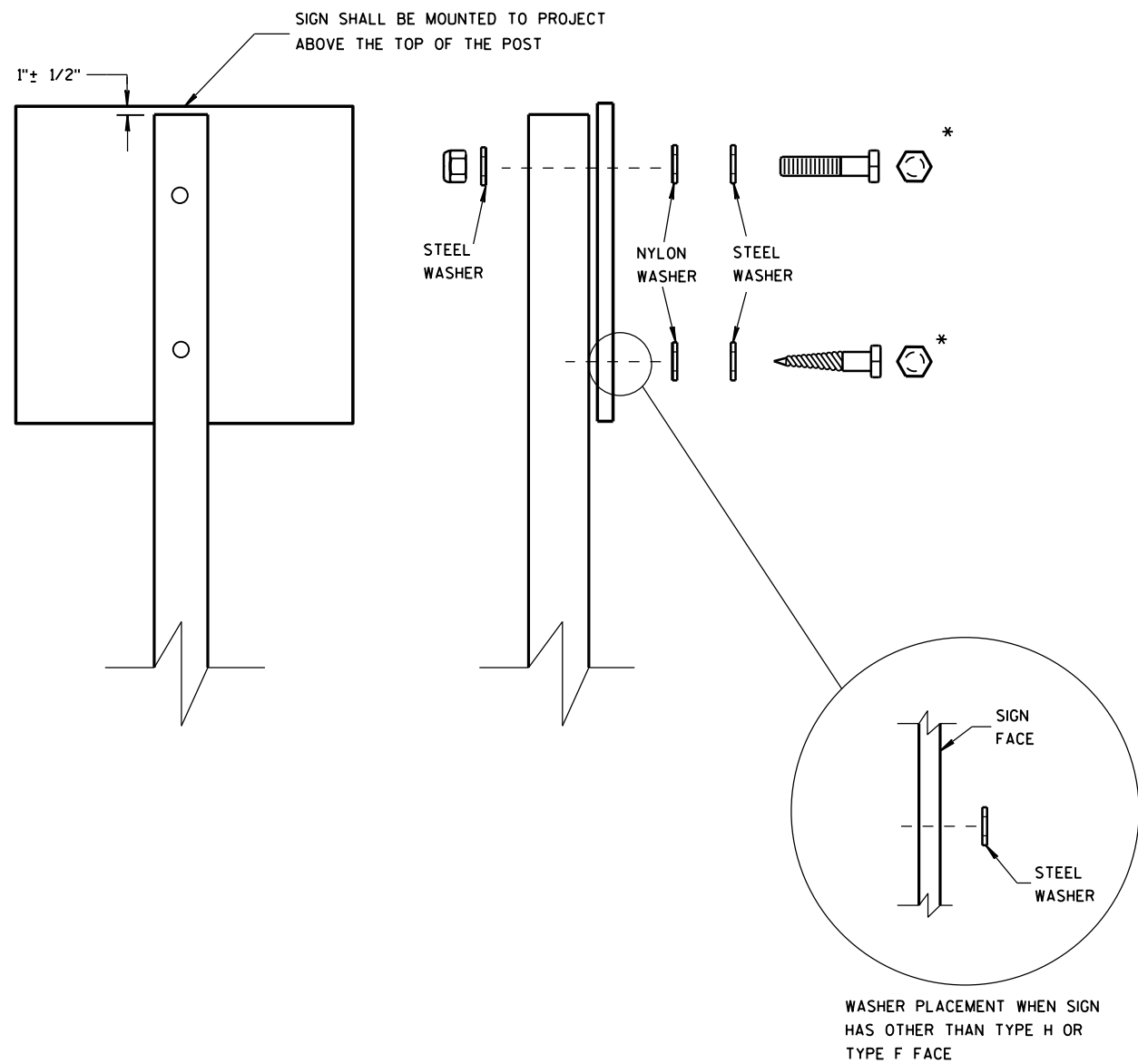
SEE NOTE ③

GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

TEMPORARY TRAFFIC CONTROL
SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

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

- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" x 3"
 - MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

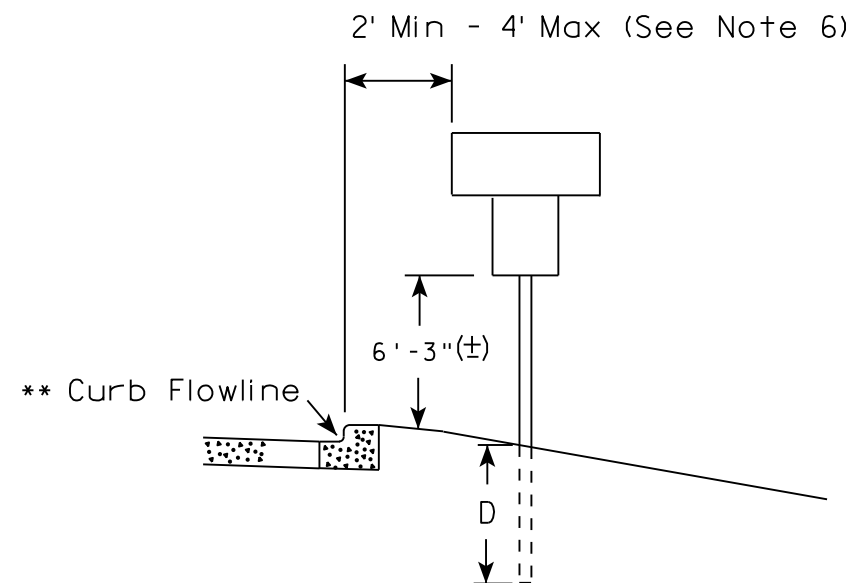
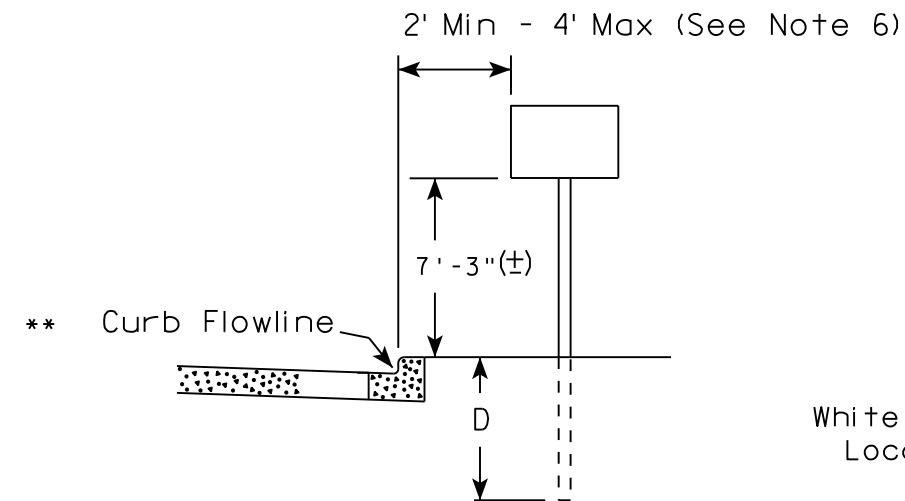
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" x 3-1/4" LENGTH W/ NUTS
 - RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

- WASHERS (ALL POSTS) -
- 1-1/4" O.D. x 3/8" I.D. x 1/16" STEEL
 - 1-1/4" O.D. x 3/8" I.D. x .080 NYLON FOR ALL TYPE H SIGNS

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

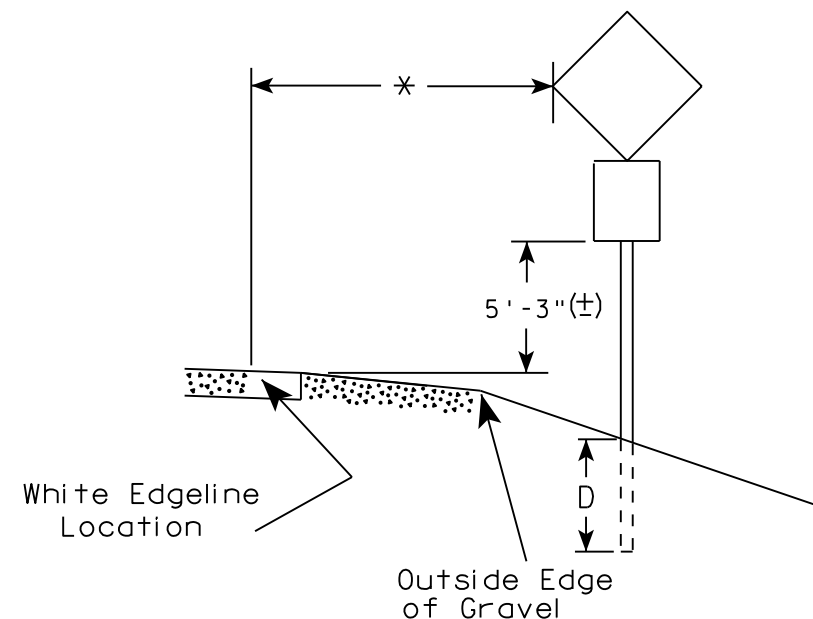
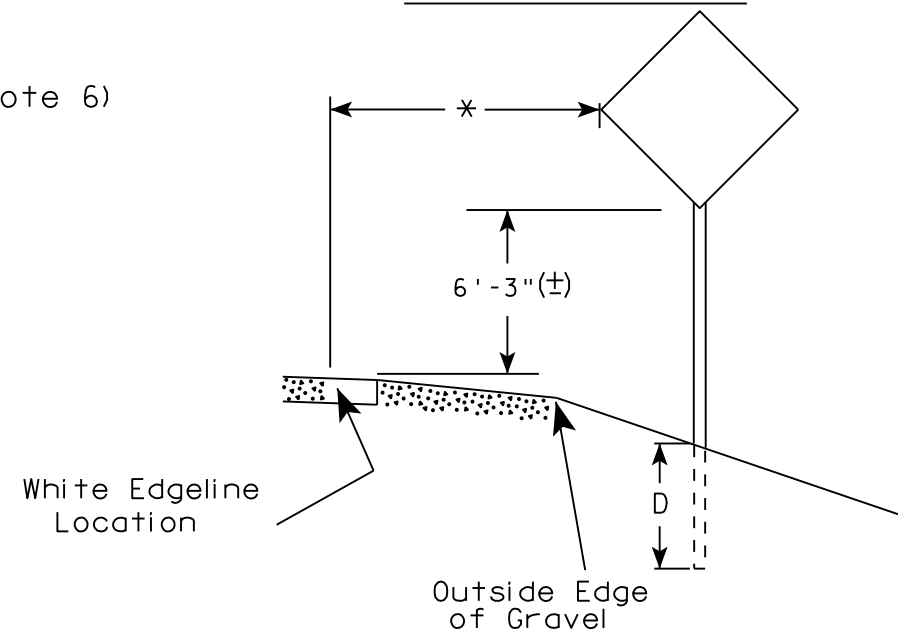
ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

URBAN AREA



✱✱ 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.

RURAL AREA (See Note 2)



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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

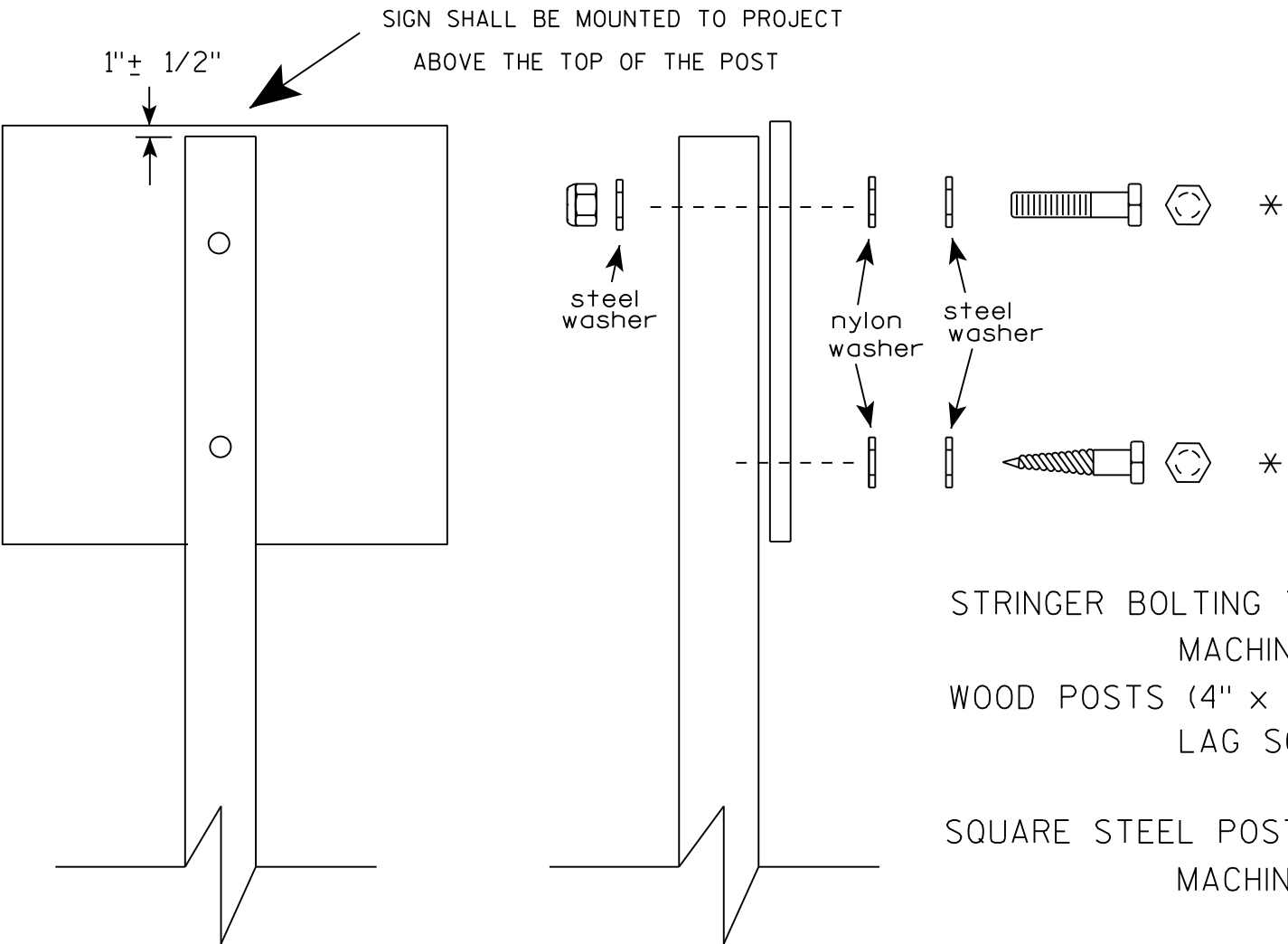
1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'-3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as 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" (±).

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



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

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

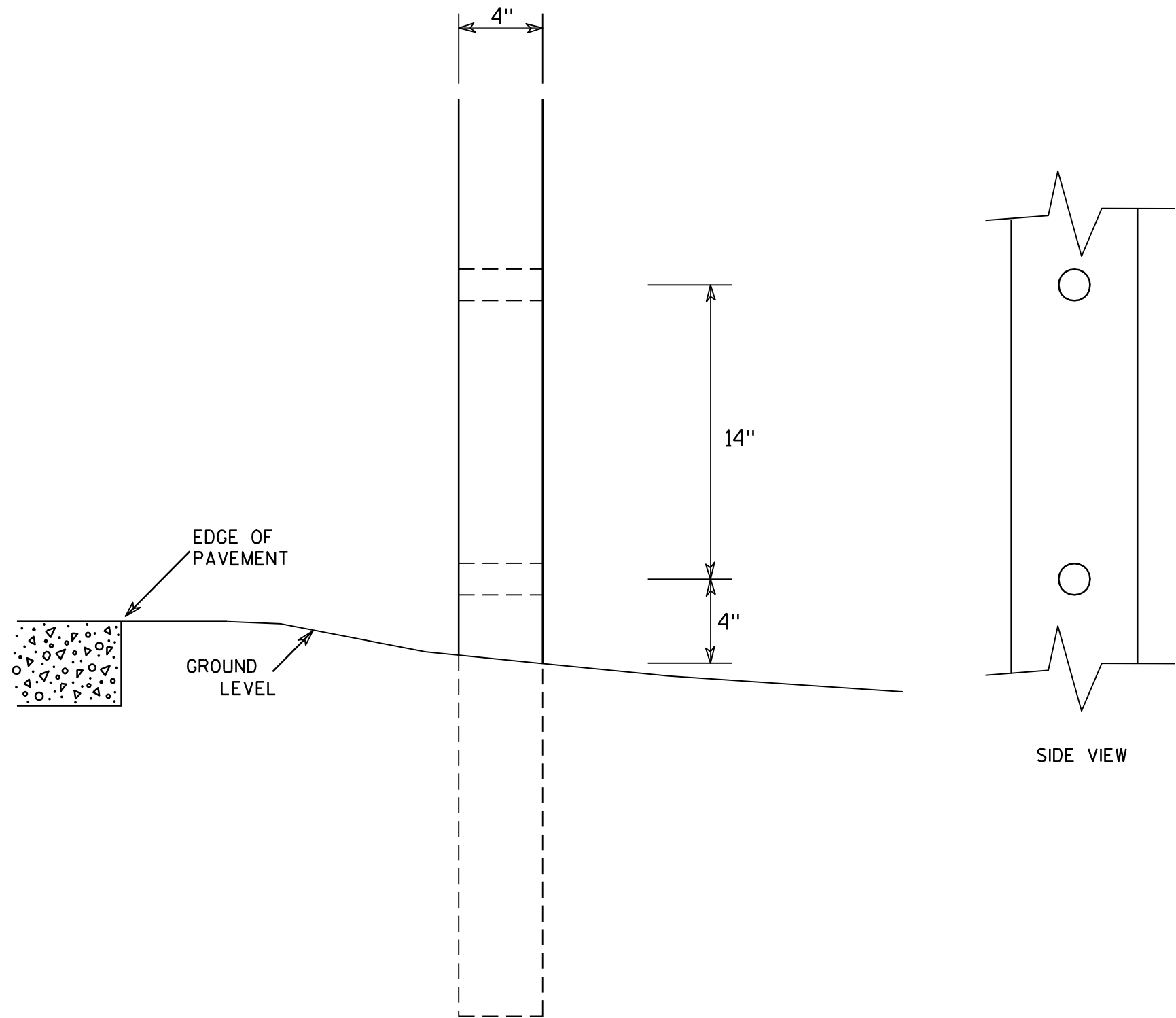
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 8/11/16	PLATE NO. A4-8.8

7

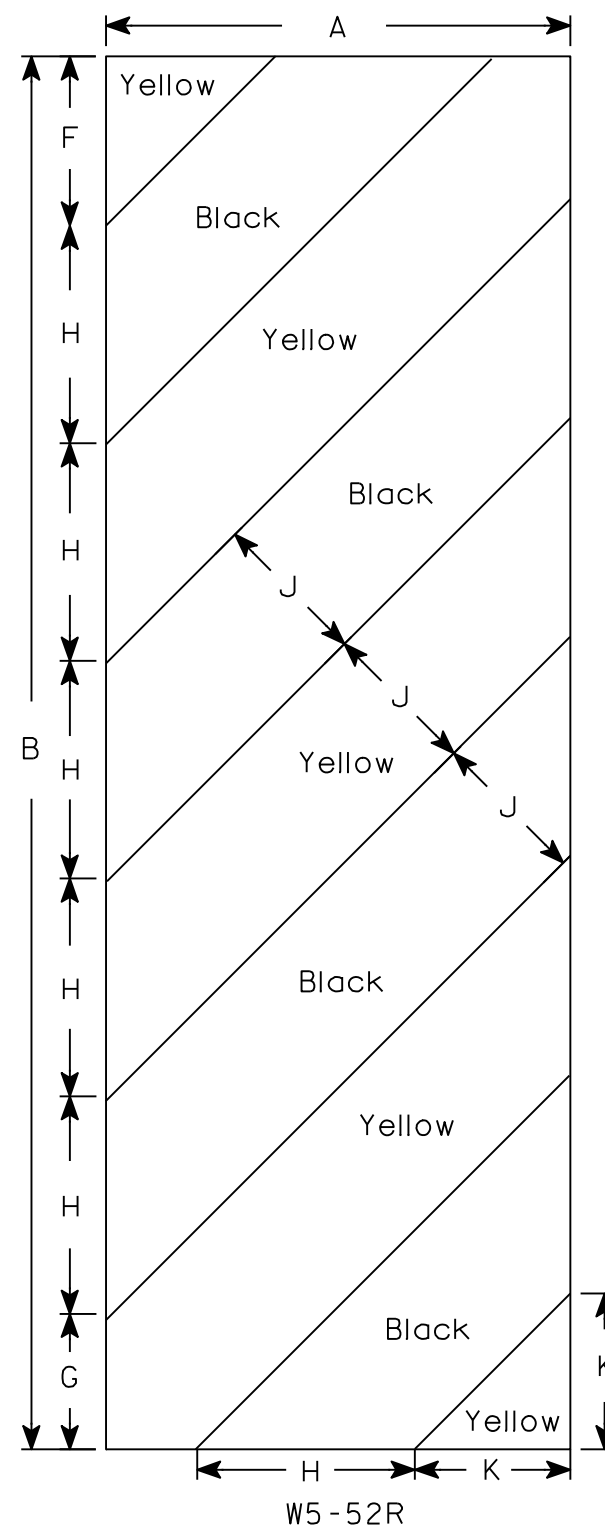
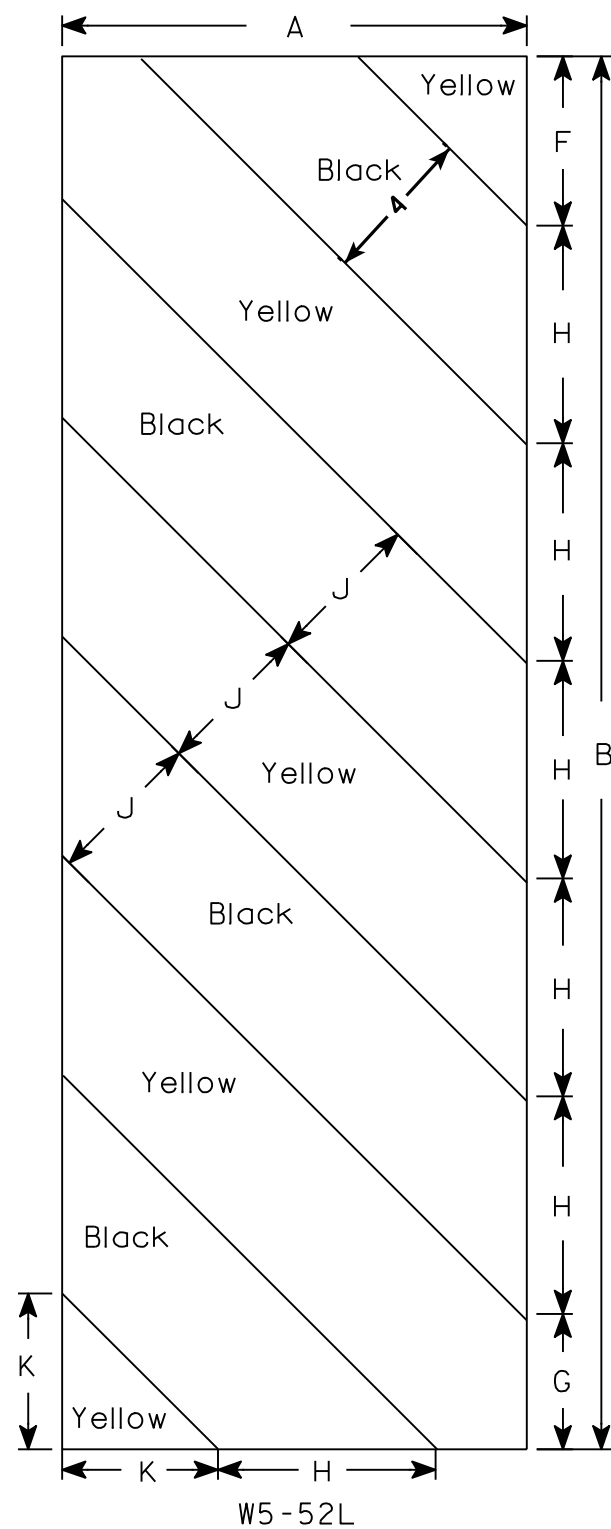


GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Chester J. Spang</i> for State Traffic Engineer
DATE 3/27/97	PLATE NO. A4-11.2



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: 6670-06-70

HWY: ELM ROAD

COUNTY: MARATHON

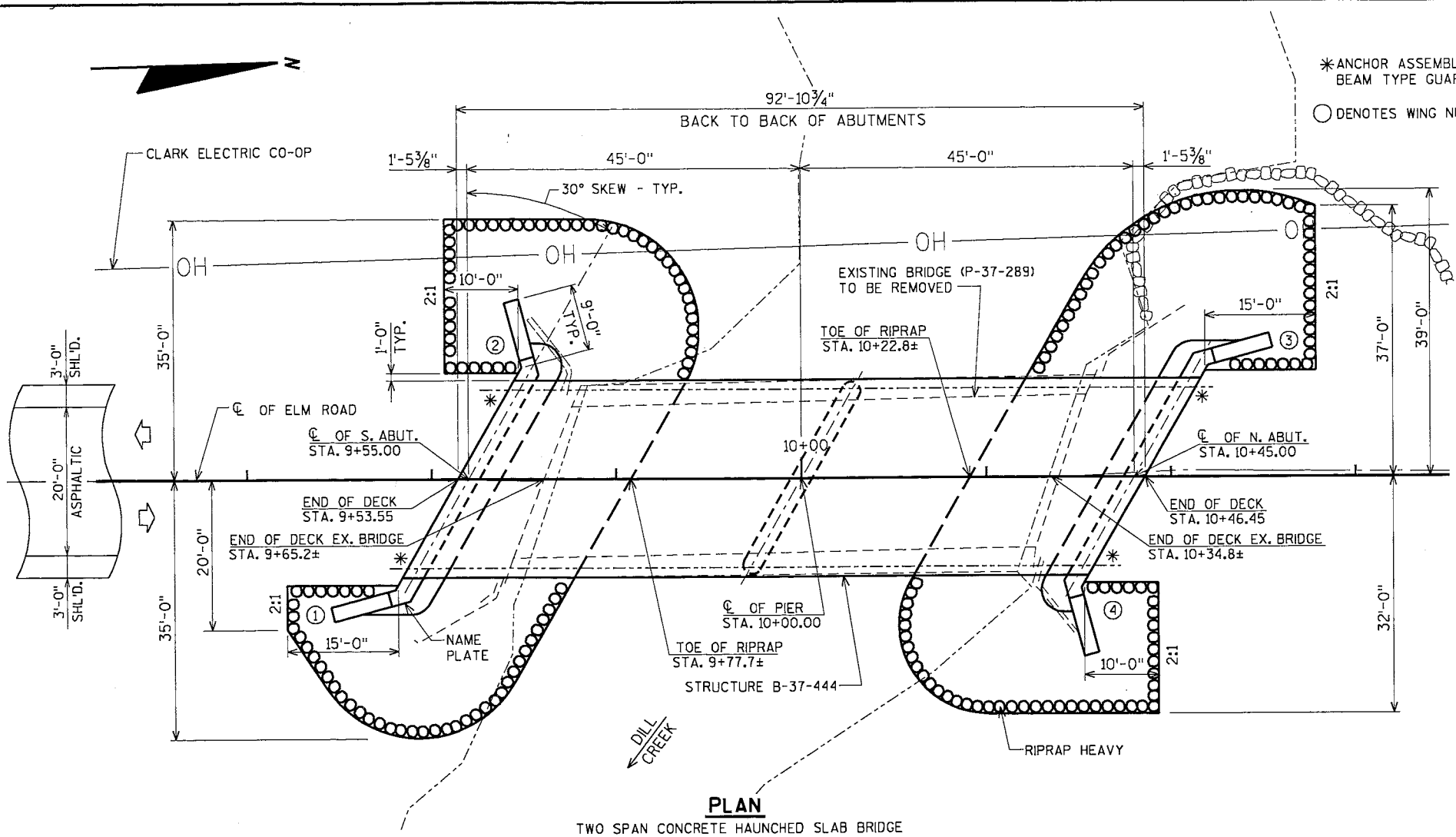
SHEET NO:

E

\$PRNAME\$
u:\42-0920.00 - marathon co - tn hull - elm road\bridge\420920 gp.dgn

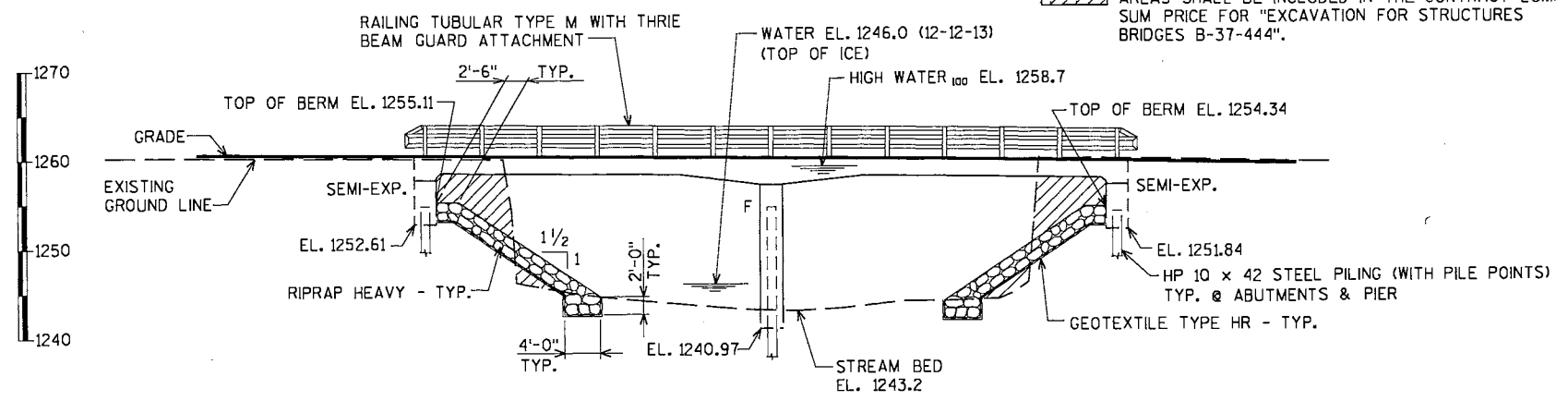
CHECKED BY: DATE:
BACK CHECKED BY: DATE:
CORRECTED BY: DATE:

8

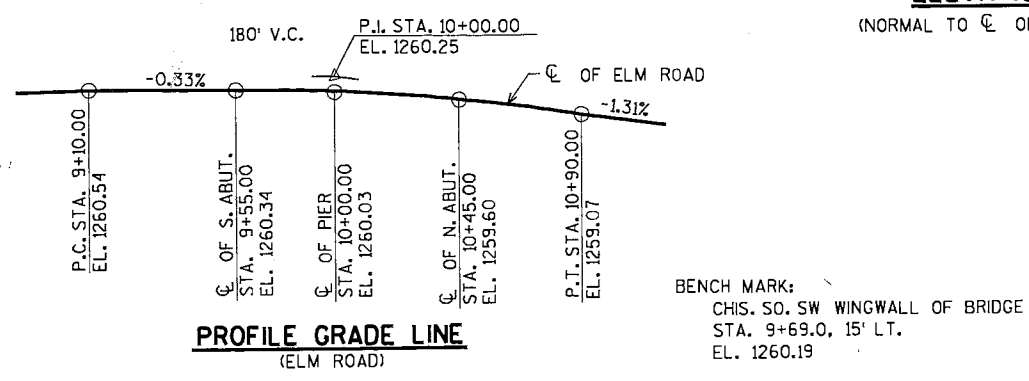


PLAN
TWO SPAN CONCRETE HAUNCHED SLAB BRIDGE

COST OF EXCAVATION AND FILL IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-37-444".



ELEVATION
(NORMAL TO C. OF CREEK)



PROFILE GRADE LINE
(ELM ROAD)

BENCH MARK:
CHIS. SO. SW WINGWALL OF BRIDGE
STA. 9+69.0, 15' LT.
EL. 1260.19

LIST OF DRAWINGS

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

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" 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) fy = 60,000 p.s.i.

HYDRAULIC DATA:

100 YEAR FREQUENCY
Q100 = 6,000 c.f.s. { BRIDGE = 5,764 c.f.s.
OVERFLOW = 236 c.f.s.
VEL. = 7.4 f.p.s.
HW100 = EL. 1258.7
WATERWAY AREA = 777 sq. ft.
DRAINAGE AREA = 40.7 sq. mi.
SCOUR CRITICAL CODE = 5
DATUM = NAVD88 (2012)

2 YEAR FREQUENCY
Q2 = 1,600 c.f.s.
VEL. = 3.3 f.p.s.
HW2 = EL. 1253.4

FREQUENCY OF OVERTOPPING

Q60 = 5,350 c.f.s.
WATER SURFACE EL. 1258.1
FREQUENCY = 60 YEARS

FOUNDATION DATA:

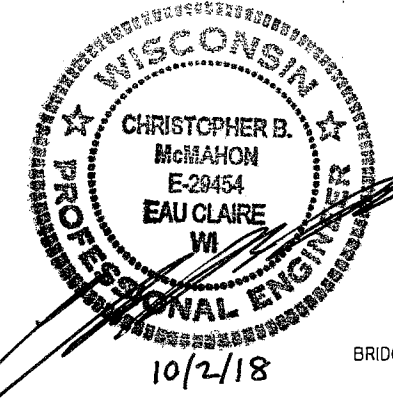
ABUTMENTS TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 105 TONS # PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 25'-0" AT THE SOUTH ABUTMENT AND 20'-0" AT THE NORTH ABUTMENT.

PIER 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 25'-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.A.D.T. = <100 (2016)
A.A.D.T. = <100 (2036)
R.D.S. = 60 M.P.H.

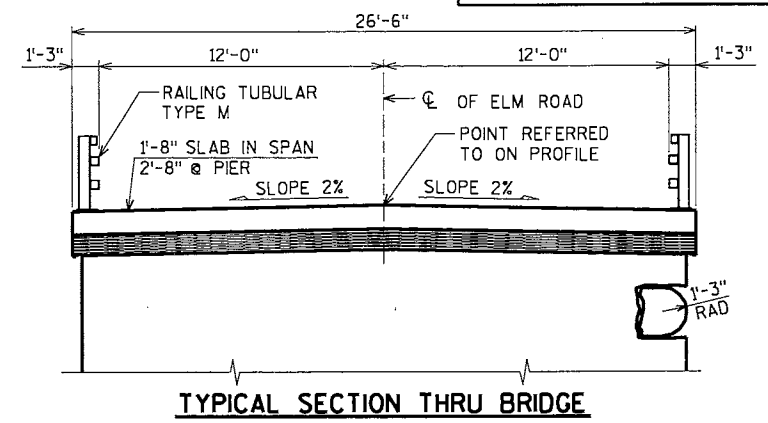


BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489

CONSULTANT CONTACT:
CHRIS MCMAHON
(715)-834-3161

STATE PROJECT NUMBER

6670-06-70



TYPICAL SECTION THRU BRIDGE

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY AYRES ASSOCIATES 3433 Oakwood Hills Parkway Eau Claire, WI 54601 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION ACCEPTED <i>William C. Dreher</i> SDR 11/02/18 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-37-444			
ELM ROAD OVER DILL CREEK			
COUNTY	MARATHON	TOWN/CITY/VILLAGE	HULL
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	AEB	DESIGN CK'D.	ZSS
DRAWN BY	CLS	PLANS CK'D.	CBM
GENERAL PLAN			SHEET 1 OF 13

8

\$PRNAME\$
U:\42-0920.00 - Marathon Co - Trn Huli - Elm Road\BRIDGE\420920 gp.dgn

STATE PROJECT NUMBER

6670-06-70

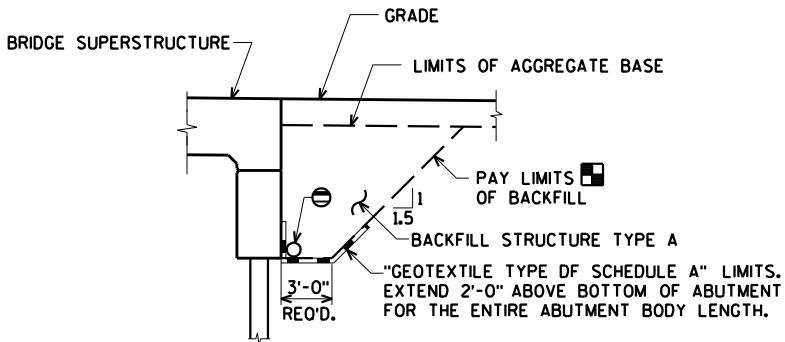
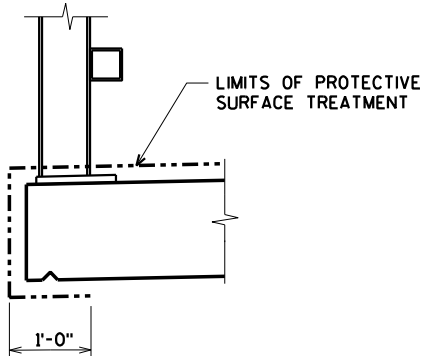
TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	S. ABUT.	PIER	N. ABUT.	SUPER.	TOTAL
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 10+00	LS	-----	-----	-----	-----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-37-444	LS	-----	-----	-----	-----	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	185	-----	185	-----	370
502.0100	CONCRETE MASONRY BRIDGES	CY	27	44	27	168	266
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	-----	330	330
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,340	2,030	2,340	-----	6,710
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,270	60	1,280	33,590	36,200
513.4061	RAILING TUBULAR TYPE M	LF	-----	-----	-----	189	189
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	6	-----	6	-----	12
550.0500	PILE POINTS	EACH	7	7	7	-----	21
550.1100	PILING STEEL HP 10-INCH x 42 LB	LF	175	175	140	-----	490
606.0300	RIPRAP HEAVY	CY	170	-----	180	-----	350
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	75	-----	75	-----	150
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	50	-----	50	-----	100
645.0120	GEOTEXTILE TYPE HR	SY	310	-----	325	-----	635
	NON-BID ITEMS						
	FILLER	SIZE	-----	-----	-----	-----	1/2" & 3/4"

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 ALTERNATIVE METHOD IS APPROVED BY THE ENGINEER.
THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-37-444" SHALL BE THE EXISTING GROUNDLINE.
THE EXISTING STRUCTURE, P-37-289, TO BE REMOVED, IS A SINGLE SPAN STEEL THRU TRUSS BRIDGE, 69.6 FT. LONG WITH A 21.8 FT. CLEAR ROADWAY WIDTH.
AT THE BACK FACE 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.
BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS NOTED OTHERWISE.
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.

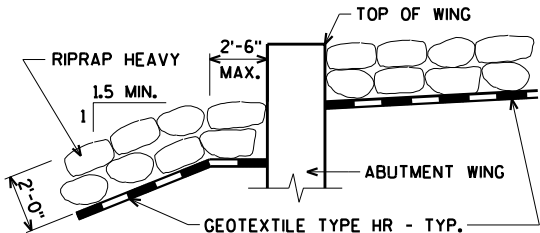
PROTECTIVE SURFACE TREATMENT DETAIL



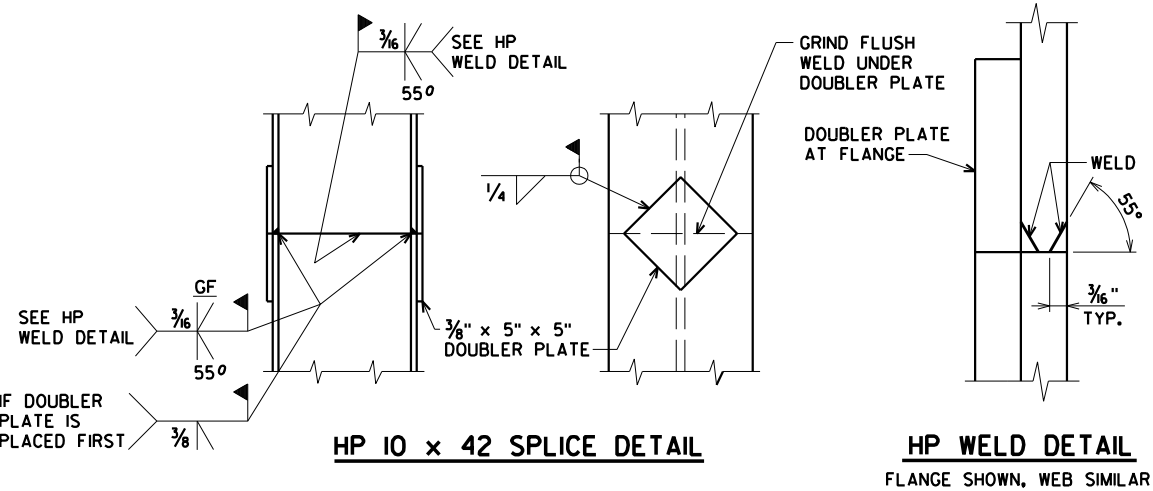
BACKFILL STRUCTURE LIMITS THRU ABUTMENT

- 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 SHEET 6.

NOTE: PLACE RIPRAP HEAVY AS SHOWN ON GENERAL PLAN SHEET



TYPICAL FILL SECTION AT WING TIPS



HP 10 x 42 SPLICE DETAIL

HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

8

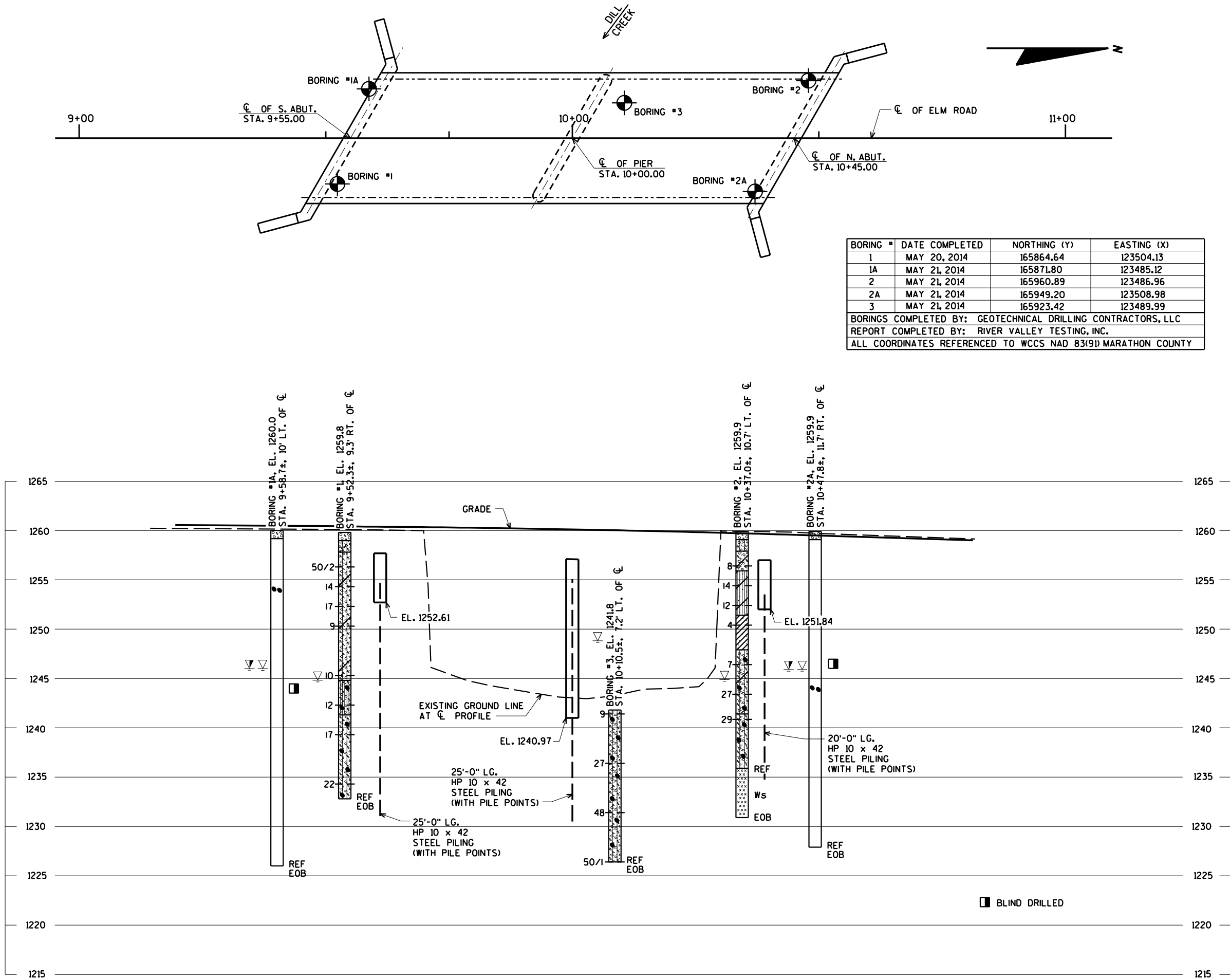
8

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-444			
DRAWN BY		CLS	PLANS CK'D. CBM
QUANTITIES AND NOTES		SHEET 2 OF 13	

\$PRNAME\$
U:\42-0920.00 - Marathon Co - Tn Hull - Elm Road\BRIDGE\420920 soils.DGN

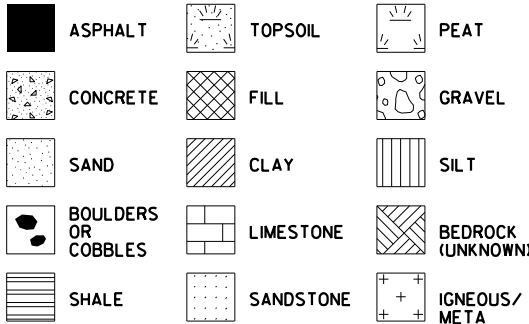
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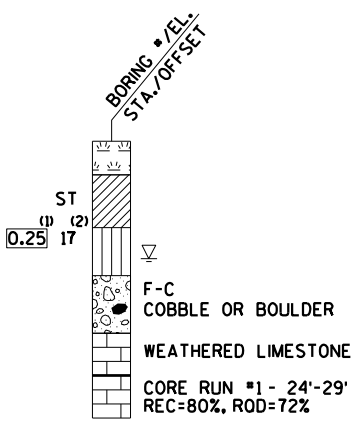
STATE PROJECT NUMBER

6670-06-70

MATERIAL SYMBOLS



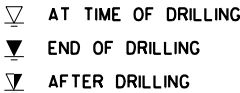
LEGEND OF BORING



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

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

GROUND WATER ELEVATION



ABBREVIATIONS

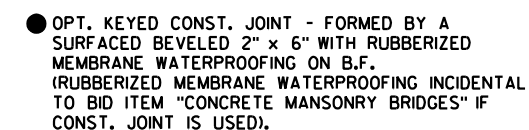
F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-444			
DRAWN BY		CLS	PLANS CK'D. CBM
SUBSURFACE EXPLORATION		SHEET 3 OF 13	

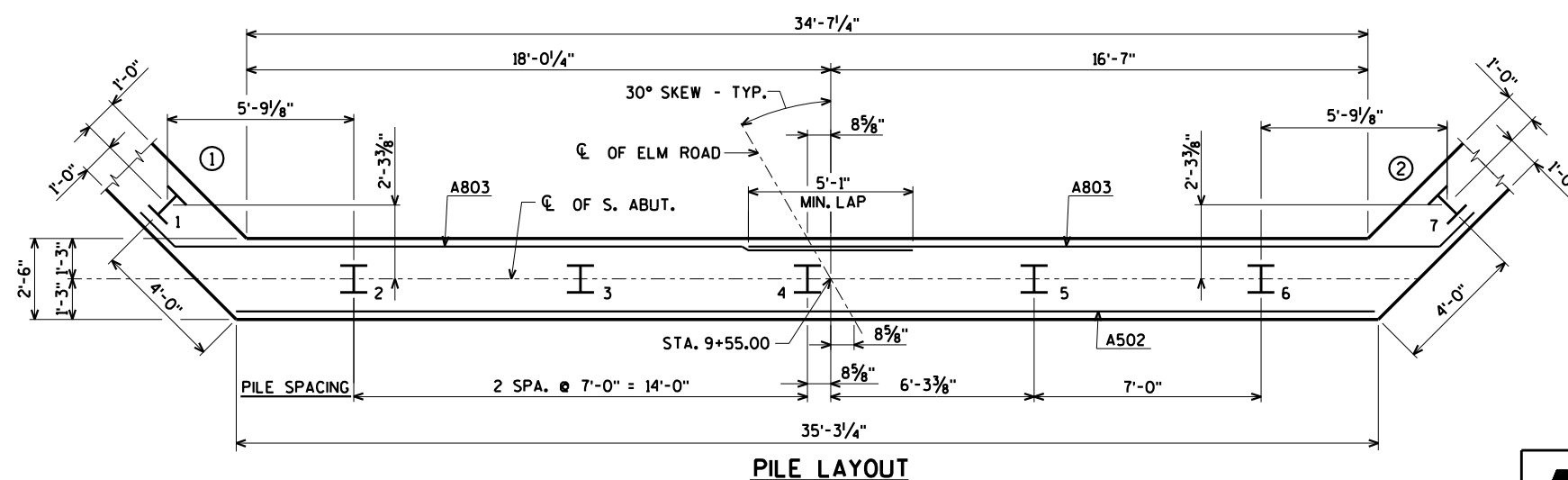
8



B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.



ORIGINAL PLANS PREPARED BY

AYRES
ASSOCIATES

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

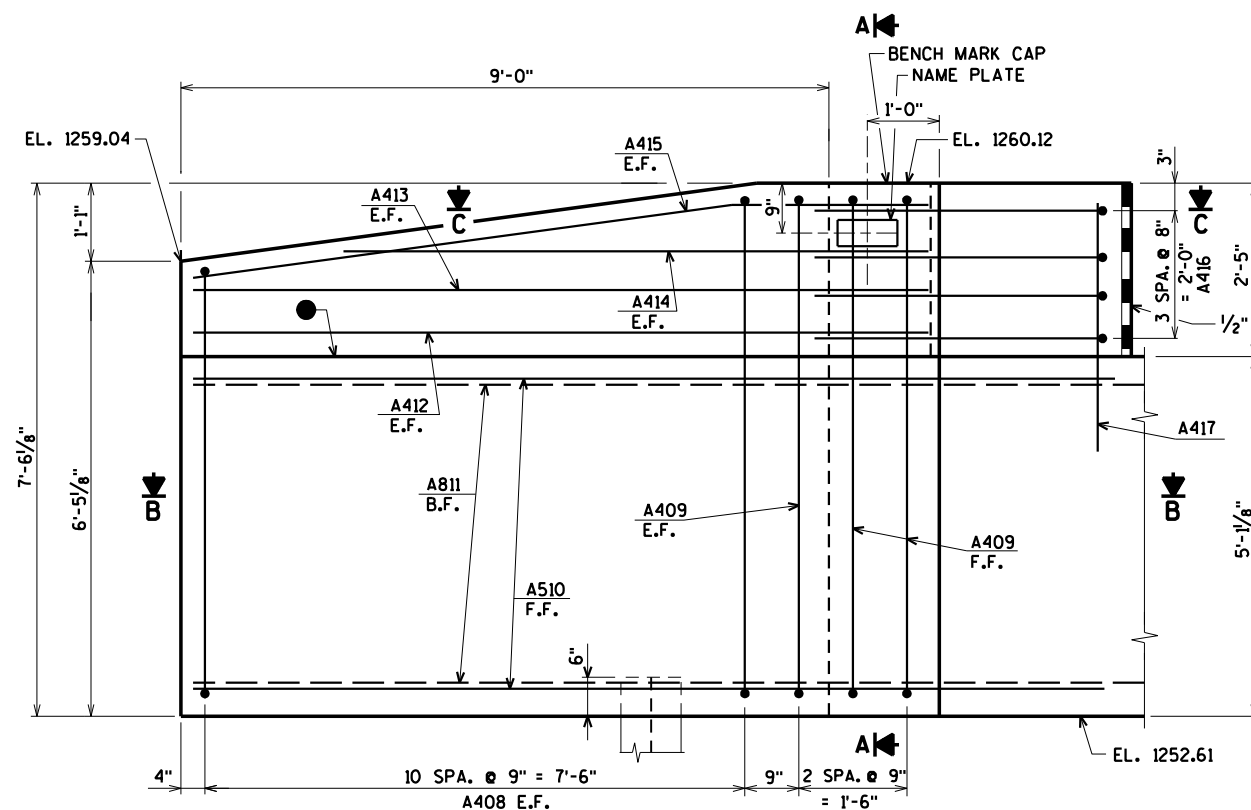
SOUTH
ABUTMENT

SHEET 4 OF 13

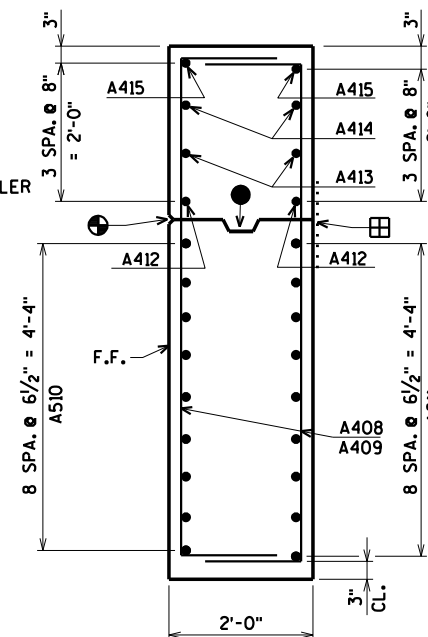
\$PRNAME\$
U:\42-0920.00 - Marathon Co - Tn Hull - Elm Road\BRIDGE\420920 sa.dgn

STATE PROJECT NUMBER

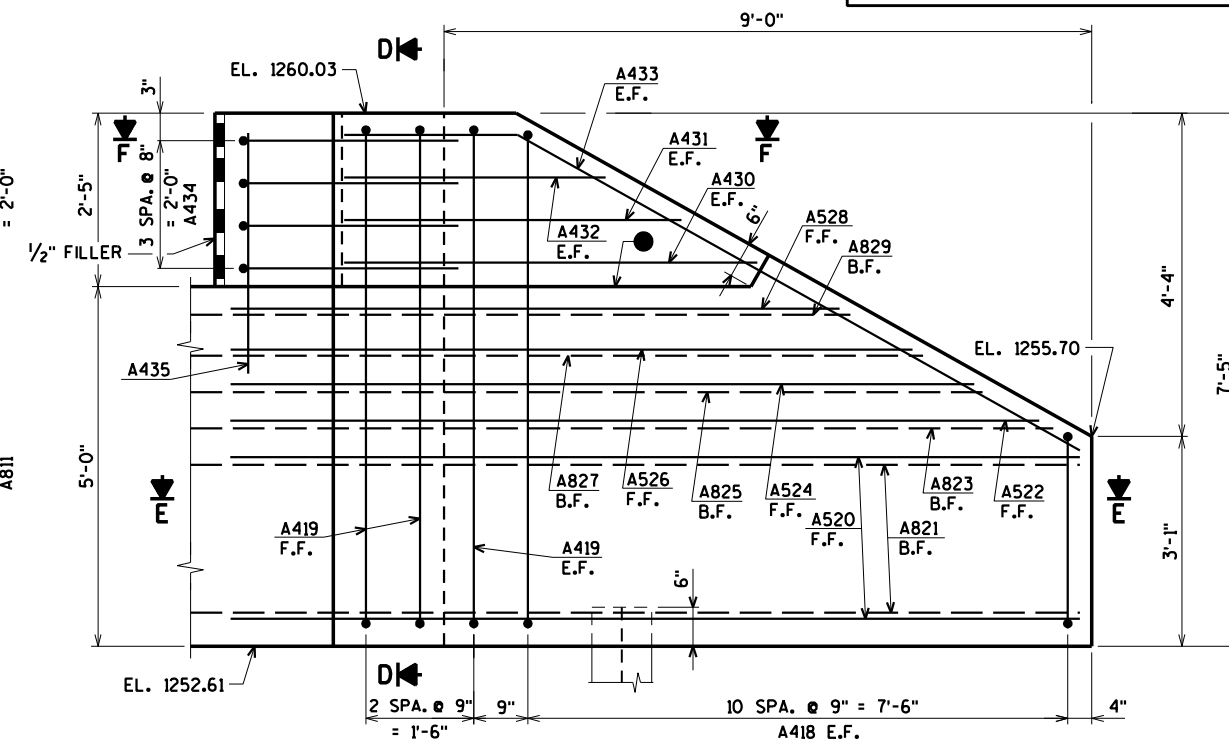
6670-06-70



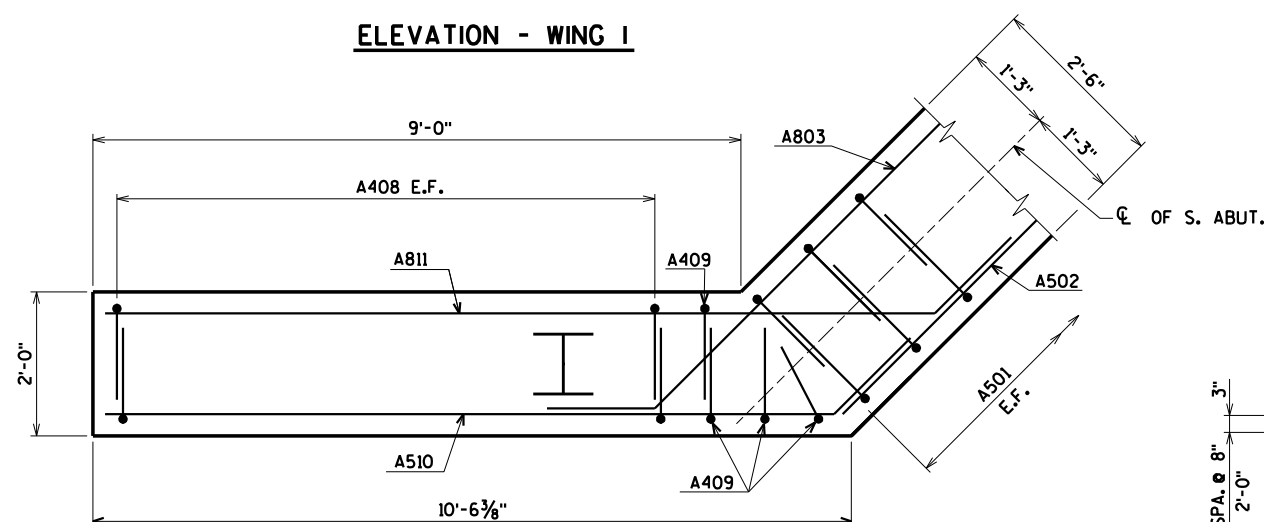
ELEVATION - WING 1



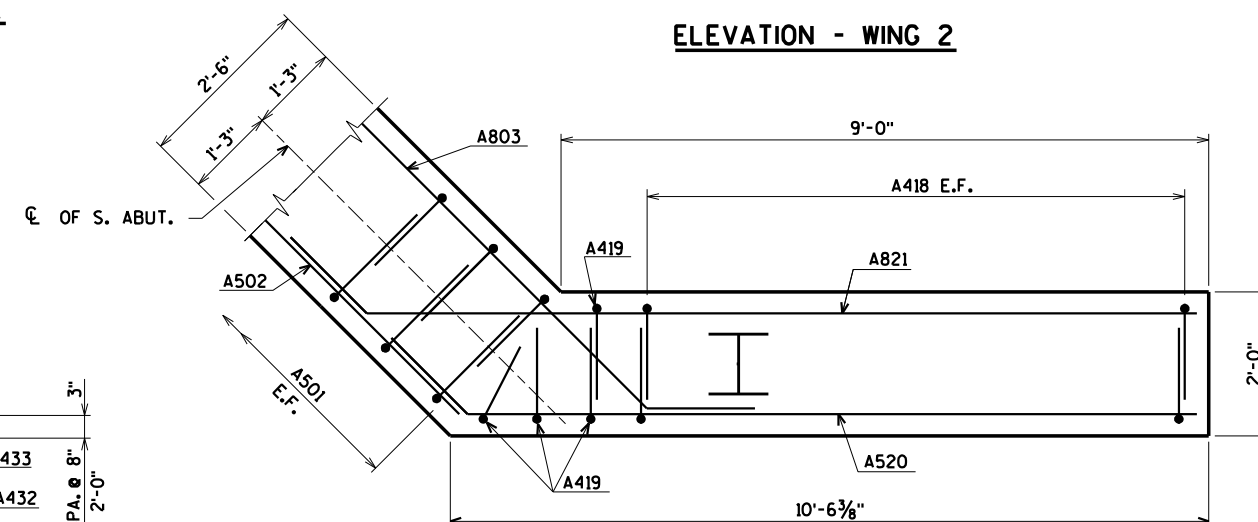
SECTION A



ELEVATION - WING 2



SECTION B



SECTION E

▣ RUBBERIZED MEMBRANE WATERPROOFING IF CONST. JOINT IS USED (COST INCIDENTAL TO BID ITEM "CONCRETE MANSIONRY BRIDGES")

● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F. (RUBBERIZED MEMBRANE WATERPROOFING INCIDENTAL TO BID ITEM "CONCRETE MANSIONRY BRIDGES" IF CONST. JOINT IS USED).

⊕ 3/4" 'V' GROOVE ON F.F. OF WING WALL NOT REQUIRED IF CONST. JT. IS NOT USED.

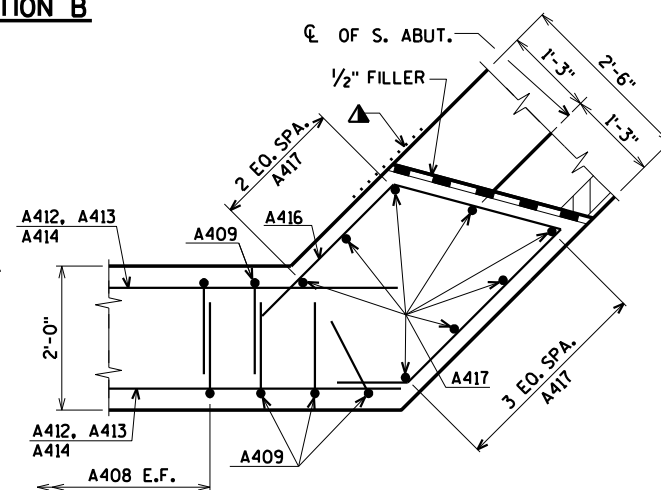
▲ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.

FOR PILE SPLICE DETAIL SEE SHEET 2.

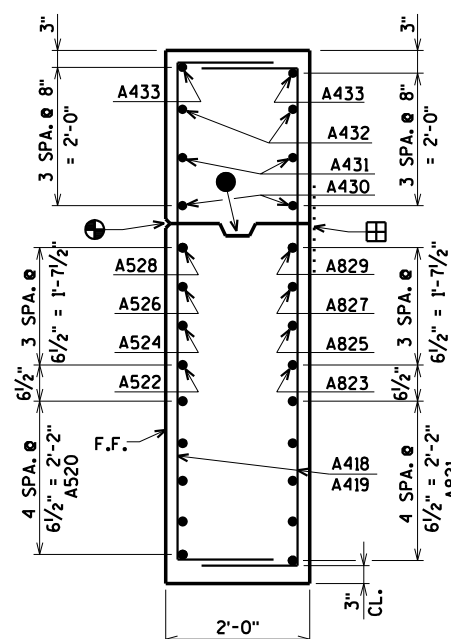
B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

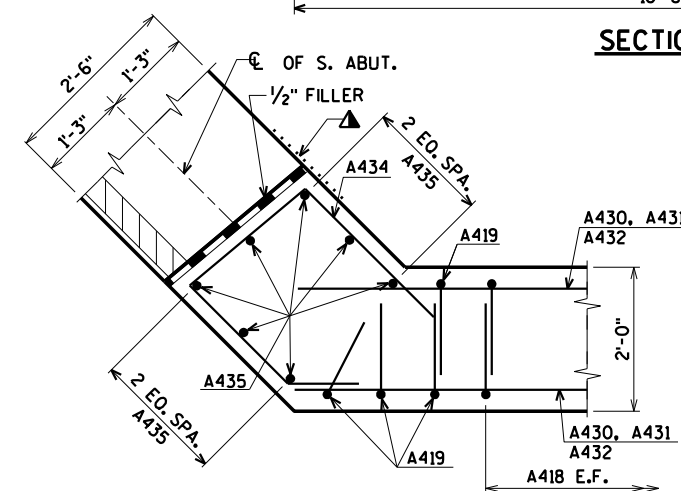
F.F. DENOTES FRONT FACE



SECTION C



SECTION D



SECTION F

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-444			
DRAWN BY		CLS	PLANS CK'D. CBM
SOUTH ABUTMENT WING DETAILS		SHEET 5 OF 13	

BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLE	BAR SERIES	2,340' UNCOATED 1,270' COATED
							LOCATION
A501		70	5'-10"	X			BODY VERT. E.F.
A502		9	35'-1"				BODY HORIZ. F.F.
A803		18	23'-8"	X			BODY HORIZ. B.F.
A404		27	2'-9"	X			BODY TIES
A505		35	7'-9"	X			BODY VERT. TOP
A406		2	30'-6"				BODY HORIZ. TOP NOTCH
A407		31	3'-9"	X			BODY VERT. TOP NOTCH
A408	X	22	9'-0"	X			WING 1 VERT. E.F.
A409	X	4	9'-7"	X			WING 1 VERT. E.F.
A510	X	9	11'-9"	X			WING 1 HORIZ. F.F.
A811	X	9	13'-1"	X			WING 1 HORIZ. B.F.
A412	X	2	10'-4"				WING 1 HORIZ. E.F.
A413	X	2	10'-4"				WING 1 HORIZ. E.F.
A414	X	2	7'-5"				WING 1 HORIZ. E.F.
A415	X	2	10'-2"	X			WING 1 DIAG. E.F.
A416	X	4	10'-1"	X			WING 1 HORIZ.
A417	X	8	3'-2"				WING 1 VERT.
A418	X	22	7'-4"	X			WING 2 VERT. E.F.
A419	X	4	9'-6"	X			WING 2 VERT. E.F.
A520	X	5	11'-9"	X			WING 2 HORIZ. F.F.
A821	X	5	13'-1"	X			WING 2 HORIZ. B.F.
A522	X	1	11'-2"	X			WING 2 HORIZ. F.F.
A823	X	1	12'-6"	X			WING 2 HORIZ. B.F.
A524	X	1	10'-2"	X			WING 2 HORIZ. F.F.
A825	X	1	11'-6"	X			WING 2 HORIZ. B.F.
A526	X	1	9'-2"	X			WING 2 HORIZ. F.F.
A827	X	1	10'-6"	X			WING 2 HORIZ. B.F.
A528	X	1	8'-2"	X			WING 2 HORIZ. F.F.
A829	X	1	9'-6"	X			WING 2 HORIZ. B.F.
A430	X	2	5'-9"				WING 2 HORIZ. E.F.
A431	X	2	4'-9"				WING 2 HORIZ. E.F.
A432	X	2	3'-9"				WING 2 HORIZ. E.F.
A433	X	2	11'-2"	X			WING 2 DIAG. E.F.
A434	X	4	7'-3"	X			WING 2 HORIZ.
A435	X	7	3'-2"				WING 2 VERT.

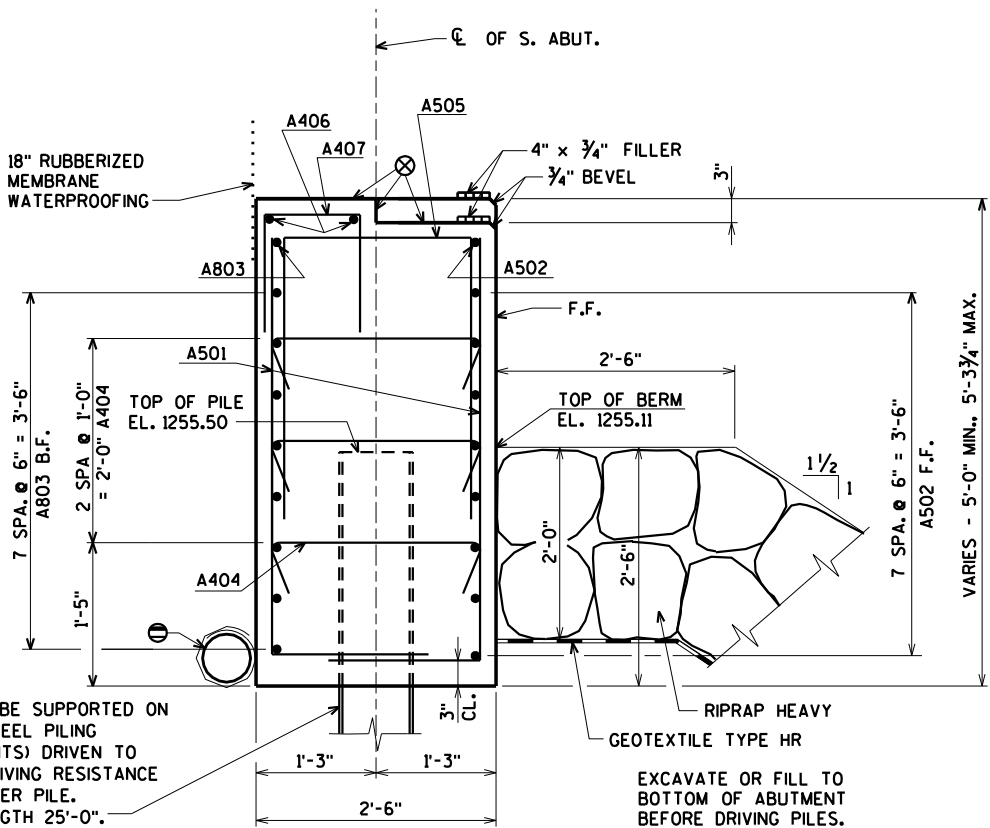
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

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

BAR SERIES TABLE

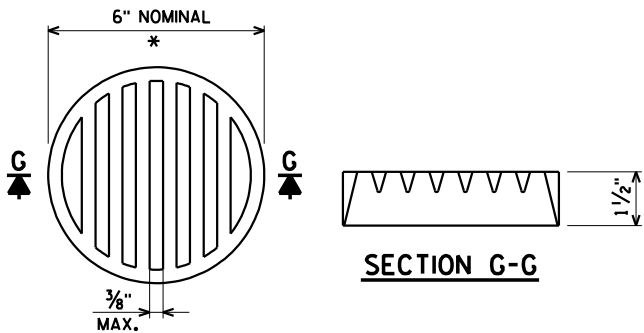
BAR MARK	NO REQ'D.	LENGTH
A408	2 SERIES OF 11	8'-6" TO 9'-6"
A418	2 SERIES OF 11	5'-4" TO 9'-4"

BUNDLE AND TAG EACH SERIES SEPARATELY.



TYPICAL SECTION THRU BODY

NOTE: DO NOT PLACE FILL ABOVE THREE FEET FROM BOTTOM OF ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

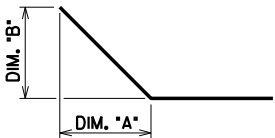
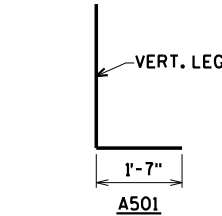


* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

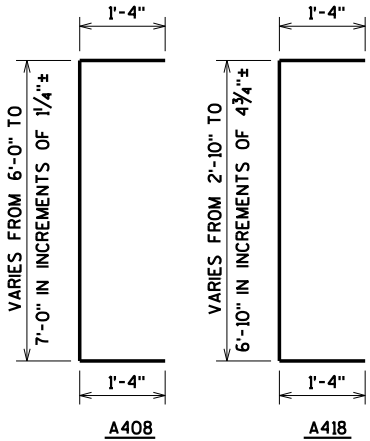
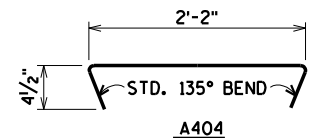
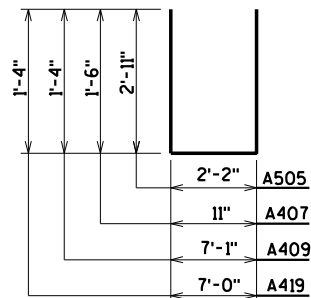
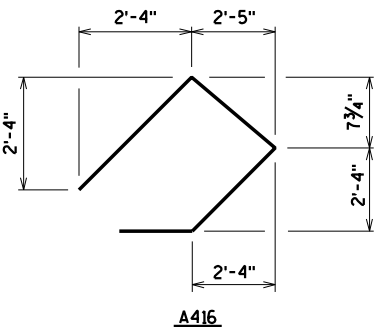
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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



BAR NO.	DIM. "A"	DIM. "B"
A803	1'-0 3/4"	1'-0 3/4"
A510	1'-0 3/4"	1'-0 3/4"
A811	1'-0 3/4"	1'-0 3/4"
A415	8'-0"	1'-1"
A520	1'-0 3/4"	1'-0 3/4"
A821	1'-0 3/4"	1'-0 3/4"
A522	1'-0 3/4"	1'-0 3/4"
A823	1'-0 3/4"	1'-0 3/4"
A524	1'-0 3/4"	1'-0 3/4"
A825	1'-0 3/4"	1'-0 3/4"
A526	1'-0 3/4"	1'-0 3/4"
A827	1'-0 3/4"	1'-0 3/4"
A528	1'-0 3/4"	1'-0 3/4"
A829	1'-0 3/4"	1'-0 3/4"
A433	8'-0"	4'-4"



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

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

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

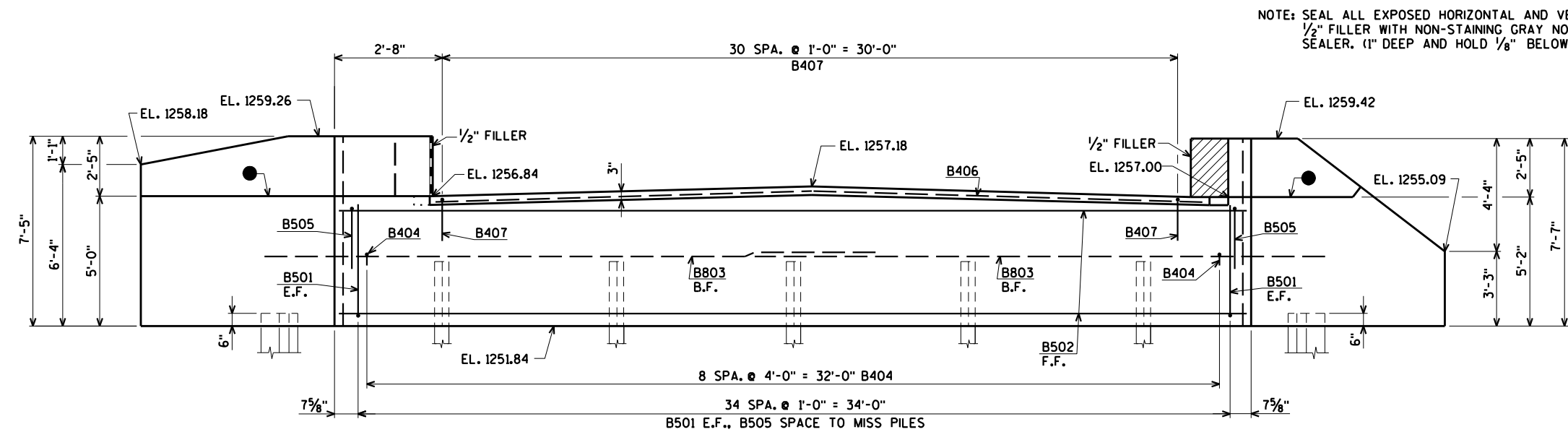
E.F. DENOTES EACH FACE.

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

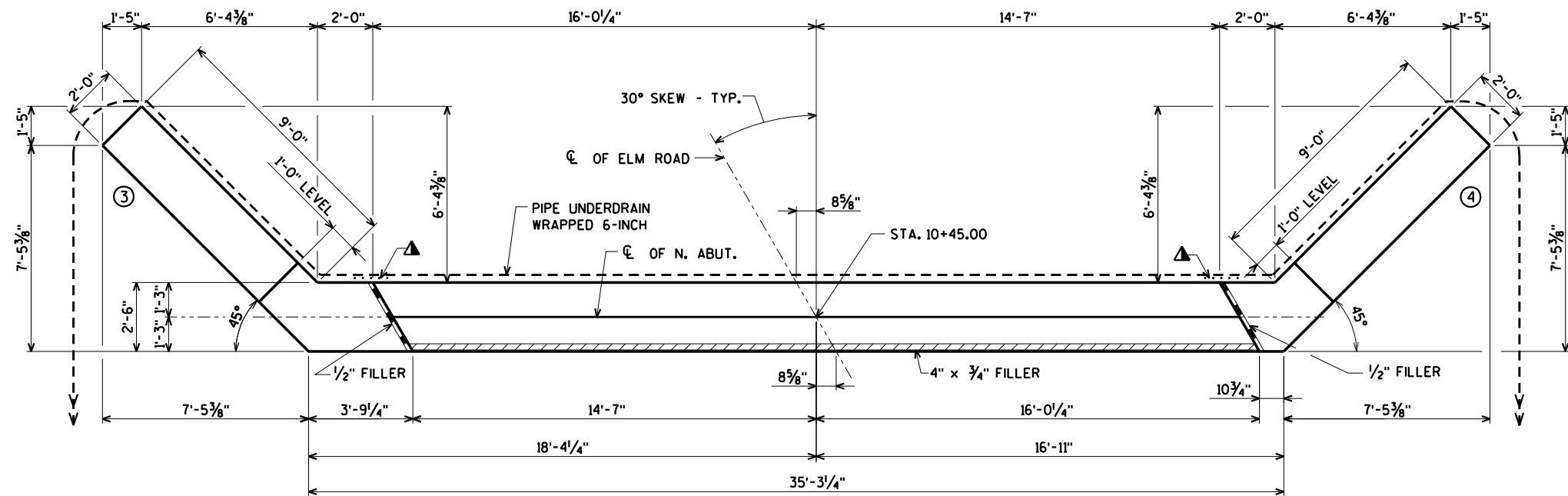
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-444			
DRAWN BY CLS		PLANS CK'D. CBM	
SOUTH ABUTMENT BILL OF BARS AND DETAILS			SHEET 6 OF 13

\$PRNAME\$
U:\42-0920.00 - Marathon Co - Trn Hull - Elm Road\BRIDGE\420920 na.dgn

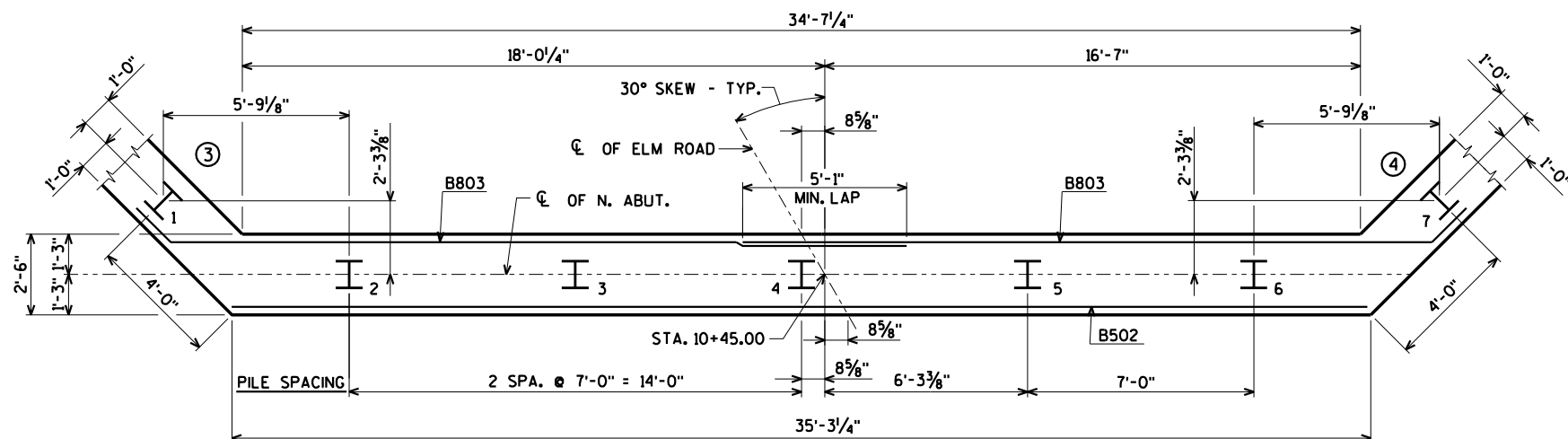
8



ELEVATION
(LOOKING NORTH)



PLAN



PILE LAYOUT

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

STATE PROJECT NUMBER

6670-06-70

● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F. (RUBBERIZED MEMBRANE WATERPROOFING INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES" IF CONST. JOINT IS USED).

▲ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE.

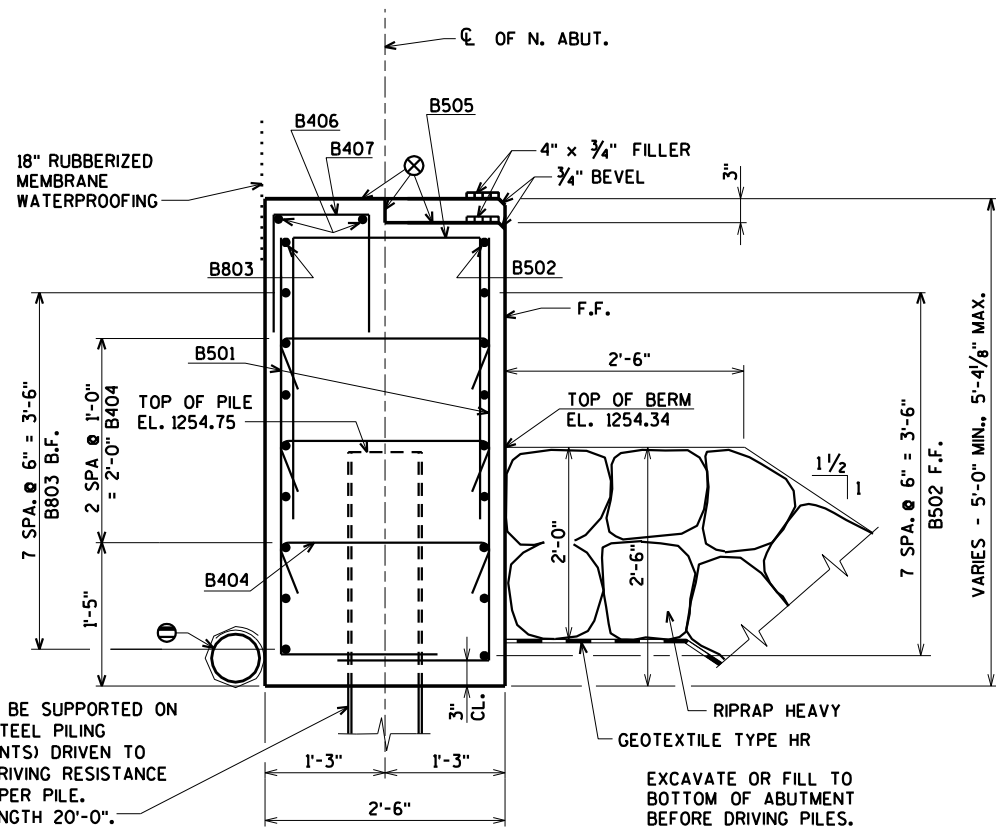
F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-444			
DRAWN BY		CLS	PLANS CK'D. CBM
NORTH ABUTMENT			SHEET 7 OF 13

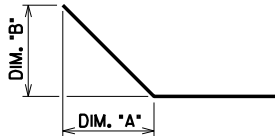
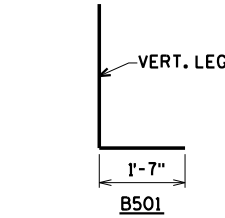


- ## SECTION C

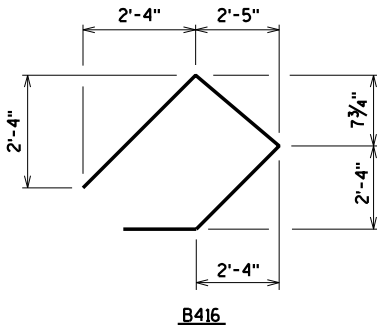


TYPICAL SECTION THRU BODY

NOTE: DO NOT PLACE FILL ABOVE THREE FEET FROM BOTTOM OF ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.



BAR NO.	DIM. 'A'	DIM. 'B'
B803	1'-0 3/4"	1'-0 3/4"
B510	1'-0 3/4"	1'-0 3/4"
B811	1'-0 3/4"	1'-0 3/4"
B415	8'-0"	1'-1"
B520	1'-0 3/4"	1'-0 3/4"
B821	1'-0 3/4"	1'-0 3/4"
B522	1'-0 3/4"	1'-0 3/4"
B823	1'-0 3/4"	1'-0 3/4"
B524	1'-0 3/4"	1'-0 3/4"
B825	1'-0 3/4"	1'-0 3/4"
B526	1'-0 3/4"	1'-0 3/4"
B827	1'-0 3/4"	1'-0 3/4"
B528	1'-0 3/4"	1'-0 3/4"
B829	1'-0 3/4"	1'-0 3/4"
B433	8'-0"	4'-4"



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

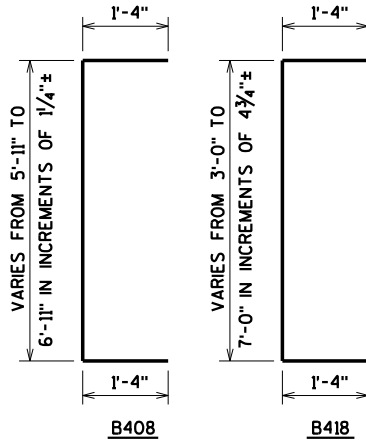
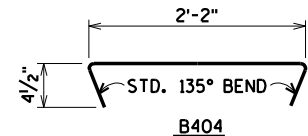
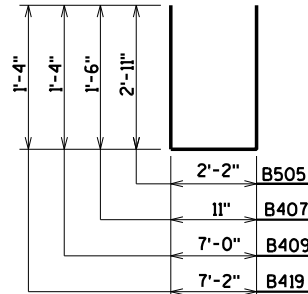
⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. FOR RODENT SHIELD SEE DETAIL ON SHEET 6.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.



BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLE	BAR SERIES	2,340# UNCOATED 1,280# COATED	LOCATION
B501		70	5-10	X				BODY VERT. E.F.
B502		9	35-1					BODY HORIZ. F.F.
B803		18	23-8	X				BODY HORIZ. B.F.
B404		27	2-9	X				BODY TIES
B505		35	7-9	X				BODY VERT. TOP
B406		2	30-6					BODY HORIZ. TOP NOTCH
B407		31	3-9	X				BODY VERT. TOP NOTCH
B408	X	22	8-11	X	⊗			WING 3 VERT. E.F.
B409	X	4	9-6	X				WING 3 VERT. E.F.
B510	X	9	11-9	X				WING 3 HORIZ. F.F.
B811	X	9	13-1	X				WING 3 HORIZ. B.F.
B412	X	2	10-4					WING 3 HORIZ. E.F.
B413	X	2	10-4					WING 3 HORIZ. E.F.
B414	X	2	7-5					WING 3 HORIZ. E.F.
B415	X	2	10-2	X				WING 3 DIAG. E.F.
B416	X	4	10-1	X				WING 3 HORIZ.
B417	X	8	3-2					WING 3 VERT.
B418	X	22	7-6	X	⊗			WING 4 VERT. E.F.
B419	X	4	9-8	X				WING 4 VERT. E.F.
B520	X	5	11-9	X				WING 4 HORIZ. F.F.
B821	X	5	13-1	X				WING 4 HORIZ. B.F.
B522	X	1	11-5	X				WING 4 HORIZ. F.F.
B823	X	1	12-9	X				WING 4 HORIZ. B.F.
B524	X	1	10-3	X				WING 4 HORIZ. F.F.
B825	X	1	11-7	X				WING 4 HORIZ. B.F.
B526	X	1	9-3	X				WING 4 HORIZ. F.F.
B827	X	1	10-7	X				WING 4 HORIZ. B.F.
B528	X	1	8-3	X				WING 4 HORIZ. F.F.
B829	X	1	9-7	X				WING 4 HORIZ. B.F.
B430	X	2	5-9					WING 4 HORIZ. E.F.
B431	X	2	4-9					WING 4 HORIZ. E.F.
B432	X	2	3-9					WING 4 HORIZ. E.F.
B433	X	2	11-2	X				WING 4 DIAG. E.F.
B434	X	4	7-3	X				WING 4 HORIZ.
B435	X	7	3-2					WING 4 VERT.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

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

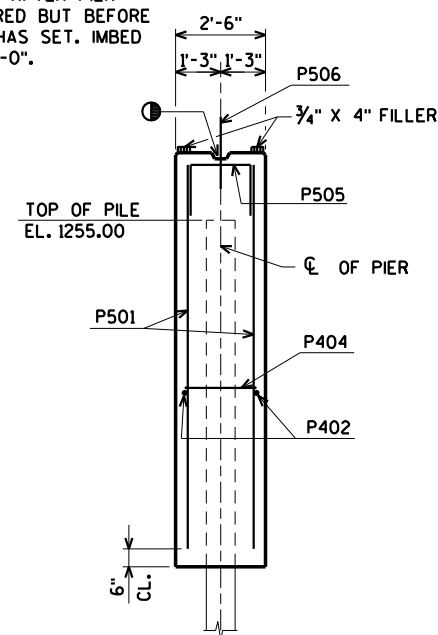
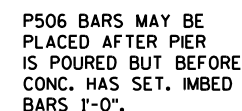
BAR SERIES TABLE

BAR MARK	NO REQ'D.	LENGTH
B408	2 SERIES OF 11	8'-5" TO 9'-5"
B418	2 SERIES OF 11	5'-6" TO 9'-6"

BUNDLE AND TAG EACH SERIES SEPARATELY.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-444			
DRAWN BY CLS		PLANS CK'D. CBM	
NORTH ABUTMENT BILL OF BARS AND DETAILS			SHEET 9 OF 13

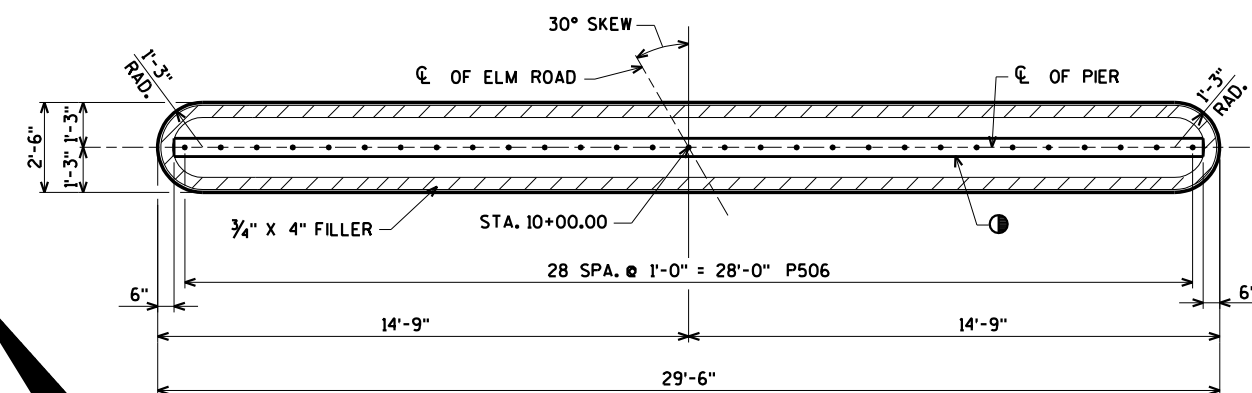
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com



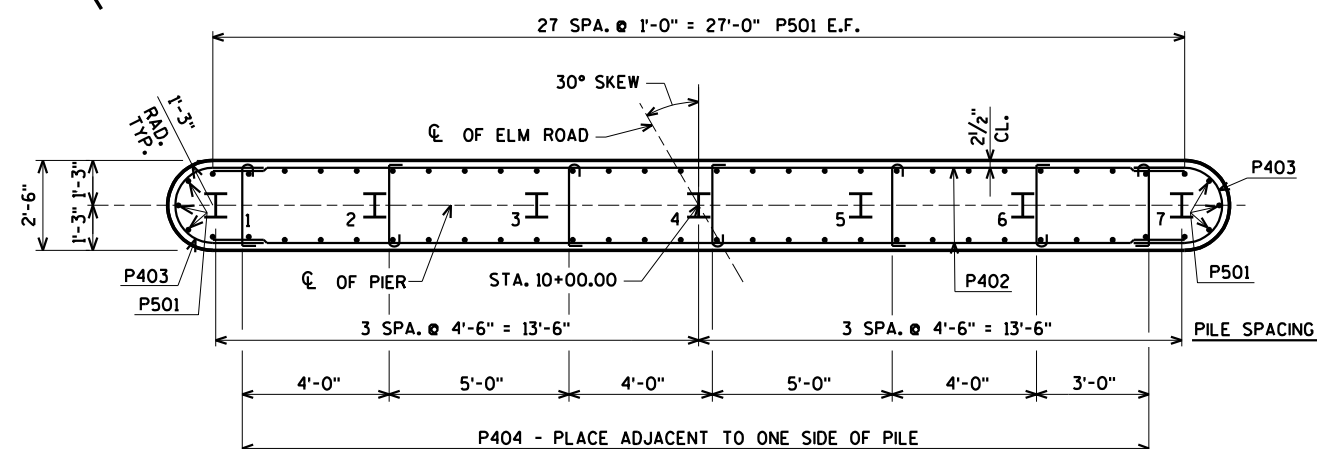
SECTION A

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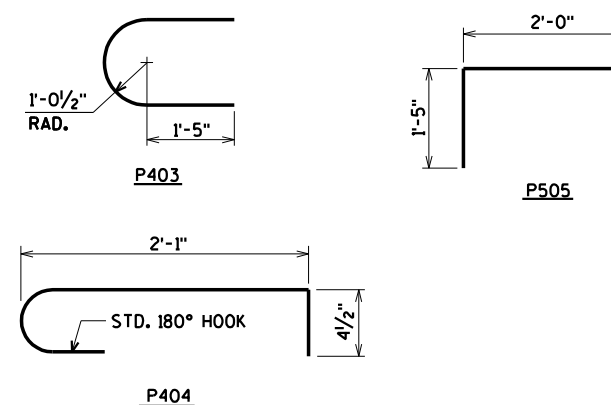
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



PLAN



PILE LAYOUT



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

FOR PILE SPLICE DETAIL SEE SHEET 2.

E.F. DENOTES EACH FACE

ORIGINAL PLANS PREPARED BY

AVRES
ASSOCIATES

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

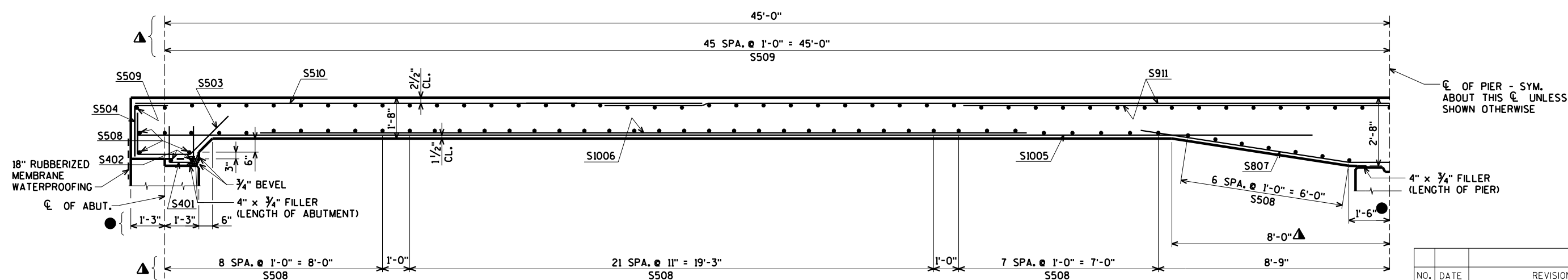
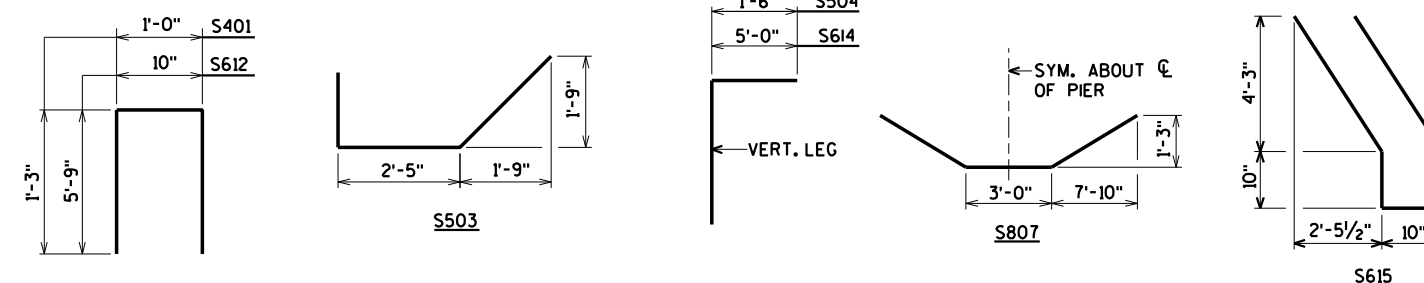
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-444			
DRAWN BY		CLS	PLANS CK'D. CBI
PIER		SHEET 10 OF	



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

<u>BILL OF MATERIALS</u>							
BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	33,590# COATED
							LOCATION
S401	X	54	3-4	X			SLAB @ ABUT. NOTCH
S402	X	4	30-2				SLAB @ ABUT. NOTCH
S503	X	54	6-6	X			SLAB @ ABUT.
S504	X	54	3-3	X			SLAB @ ABUT.
S1005	X	48	43-5				SLAB LONG. BOT.
S1006	X	46	28-10				SLAB LONG. BOT.
S807	X	24	18-9	X			SLAB LONG. BOT. @ PIER
S508	X	98	30-2				SLAB TRANS. BOT.
S509	X	93	30-2				SLAB TRANS. TOP
S510	X	54	21-6				SLAB LONG. TOP
S911	X	53	42-1				SLAB LONG. TOP @ PIER
S612	X	56	12-0	X			SLAB @ RAIL POSTS
S613	X	104	6-0				SLAB @ INT. RAIL POSTS
S614	X	16	6-0	X			SLAB @ END RAIL POSTS
S615	X	4	12-0	X			SLAB @ END RAIL POSTS

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



▲ DIMENSIONS MEASURED ALONG C OF ELM ROAD.

PART LONGITUDINAL SECTION

ORIGINAL PLANS PREPARED BY

AYRES
ASSOCIATES

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-444

DRAWN BY	CLS	PLANS CHK'D	CBM
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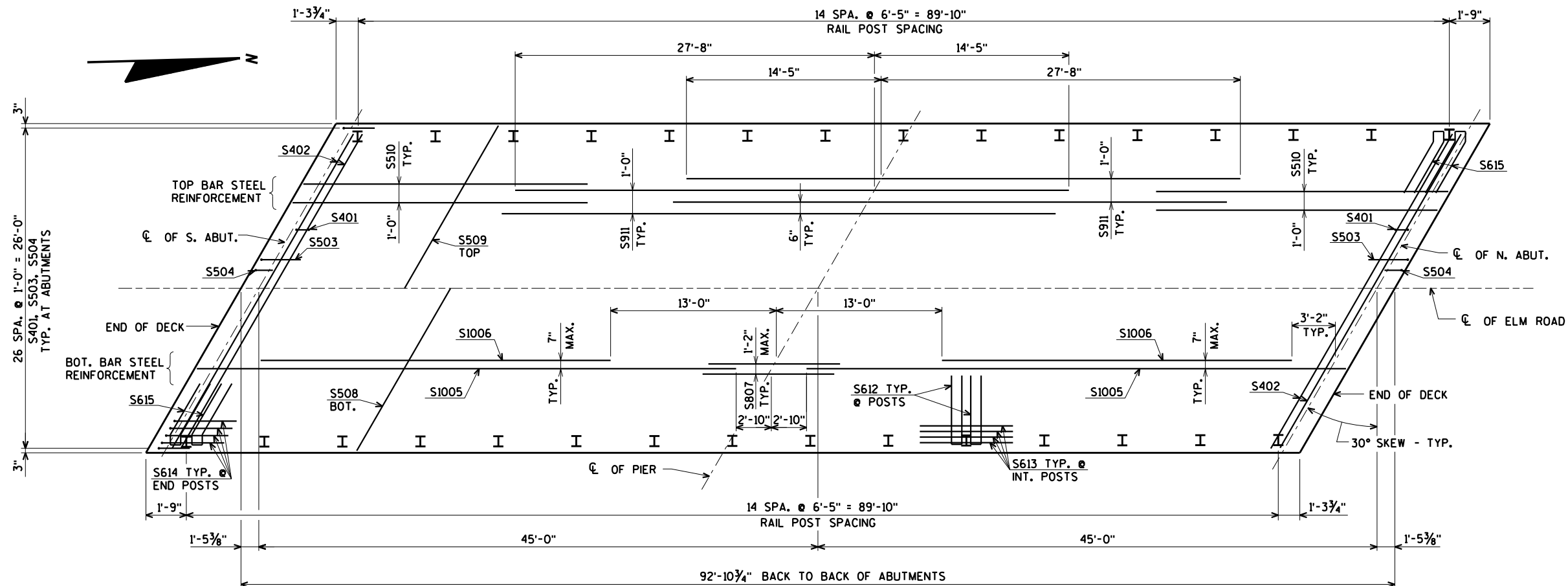
by SUPERSTRUCTURE

SHEET 11 OF 13

\$PRNAME\$
U:\42-0920.00 - Marathon Co - Trn Hull - Elm Road\BRIDGE\420920 sup.dgn

STATE PROJECT NUMBER

6670-06-70

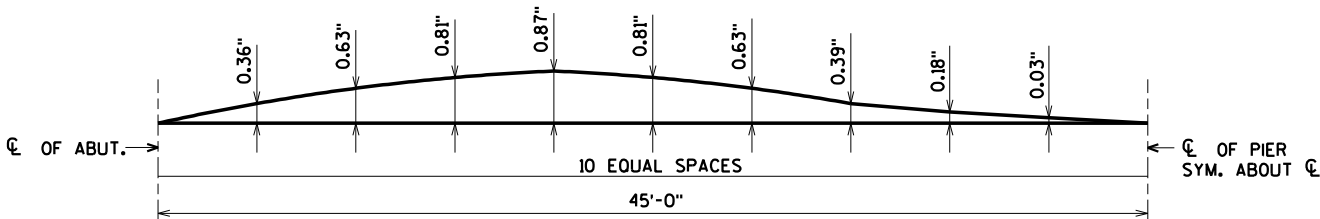


PLAN

TOP OF DECK ELEVATIONS

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

LOCATION	℄ OF S. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ OF PIER	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	1260.03	1260.00	1259.97	1259.94	1259.91	1259.88	1259.84	1259.81	1259.77	1259.74	1259.70	1259.66	1259.62	1259.58	1259.53	1259.49	1259.45	1259.40	1259.35	1259.31	1259.26
℄ OF STRUCTURE	1260.34	1260.31	1260.29	1260.26	1260.23	1260.20	1260.17	1260.13	1260.10	1260.06	1260.03	1259.99	1259.95	1259.91	1259.87	1259.83	1259.79	1259.74	1259.70	1259.65	1259.60
E. EDGE OF SLAB	1260.12	1260.09	1260.07	1260.04	1260.01	1259.98	1259.95	1259.92	1259.89	1259.86	1259.82	1259.79	1259.75	1259.71	1259.68	1259.64	1259.59	1259.55	1259.51	1259.46	1259.42



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 ℄ OF ABUTMENTS, ℄ OF PIER, AND AT 1/2 POINTS TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND CROWN OR ℄.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-444			
DRAWN BY		CLS	PLANS CK'D. CBM
SUPERSTRUCTURE PLAN			SHEET 12 OF 13

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

- 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 1/8" x 1 3/8" 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'-3" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10'-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 1/8" 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" ϕ A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 1/2" x 1 1/4" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND ~~3/8" x 2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS~~ IN PLATE NO. 10A.
- ⑫ 7/8" DIA. x 1 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D).
- ⑬ 3/8" x 8" x 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
- ⑭ 7/8" DIA. x 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
- ⑮ 1" ϕ HOLES IN TUBES NO. 5A FOR 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

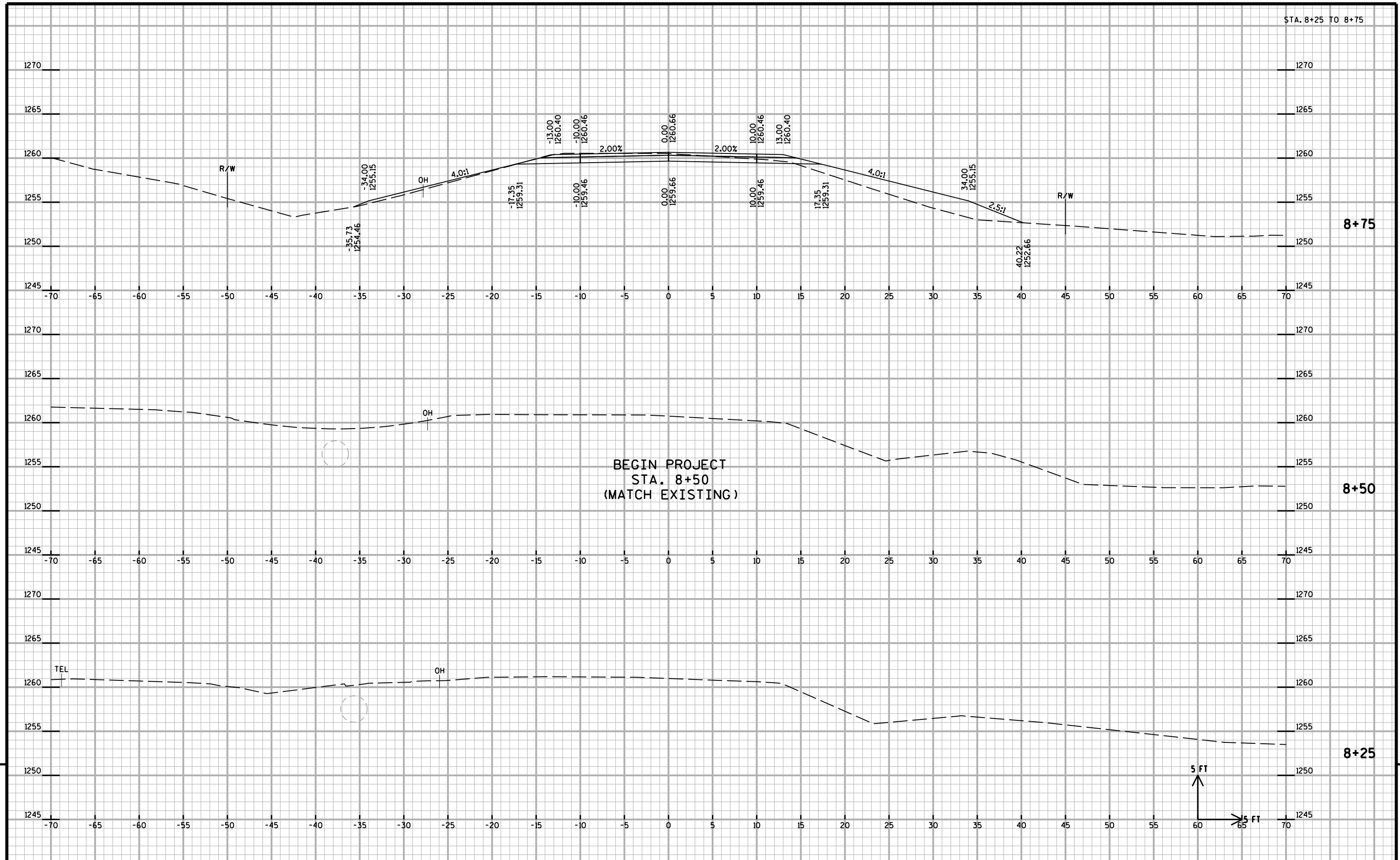
1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL $\frac{1}{8}$ 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 THE COAT AND TOP COAT.~~

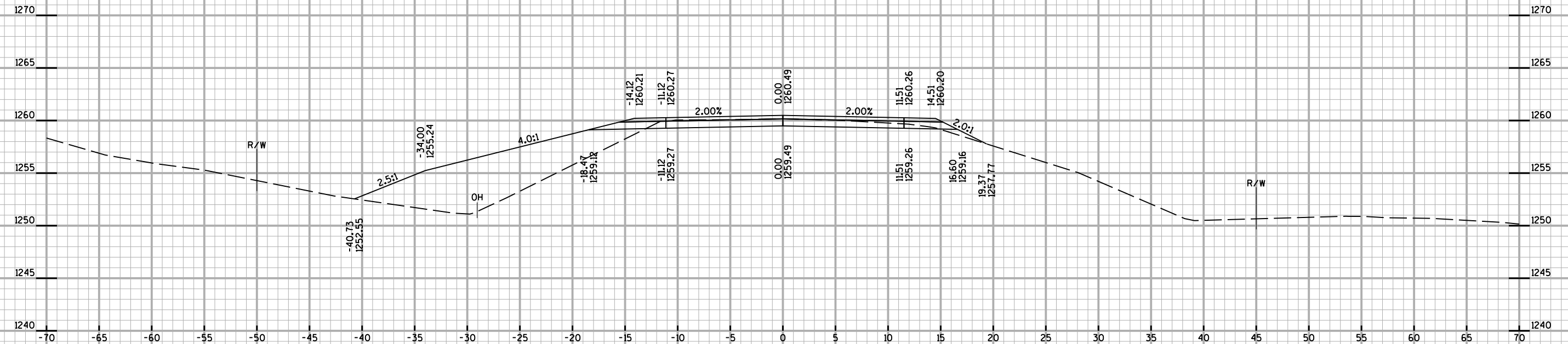
SECTION D

ELM ROAD COMPUTER EARTHWORK

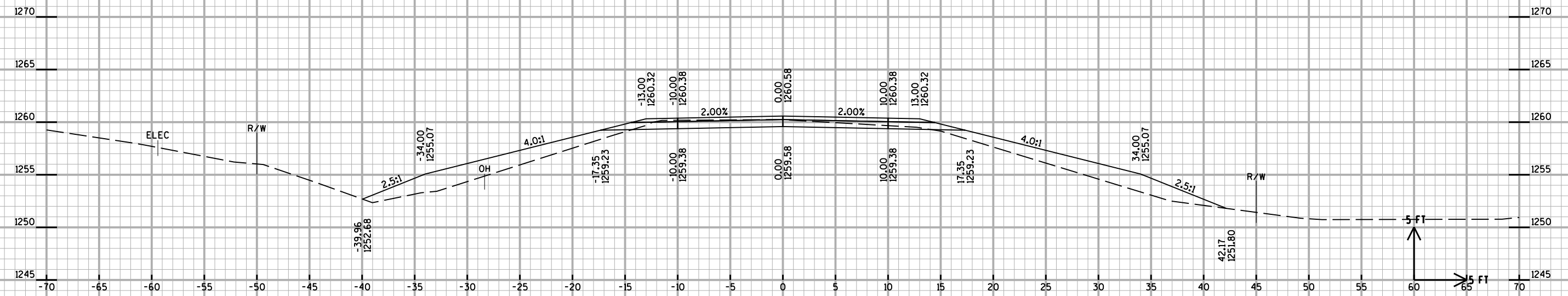
Station	Distance	Area (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass Ordinate
		Cut	Fill	Cut	Fill	Cut	Expanded	
							Fill	
				Note 1	Note 2	Note 1	1.00 1.30	Note 3
8+50	--	40.9	0.0					
8+75	25	23.0	36.6	30	17	30	22	8
9+00	25	15.2	61.5	18	45	48	81	-33
9+25	25	16.2	84.4	15	68	63	169	-106
9+50	25	16.0	43.6	15	59	78	246	-168
9+53.55	4	16.0	43.6	2	6	80	254	-174
B-37-0444	--	--	--	--	--	--	--	--
10+46.45	--	33.9	43.0			--	--	--
10+50	4	33.9	43.0	4	6	84	262	-178
10+75	25	31.9	84.1	30	59	114	338	-224
10+96	21	26.5	71.3	23	62	137	419	-282
11+00	4	25.8	0.0	3	5	140	426	-286
				140	327			

Note 1 - Cut	Cut includes existing asphalt pavement. Assumed to be reused as fill outside the 1:1 road core.
Note 2 - Fill	Volume needed to be filled.
Note 3 - Mass Ordinate	(Cut) - (Fill * 1.30)



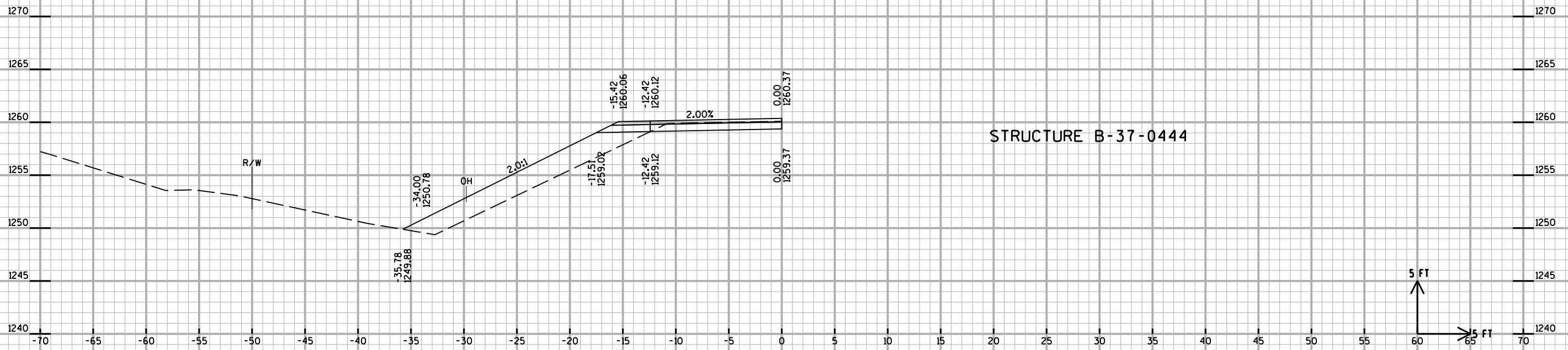


9+25



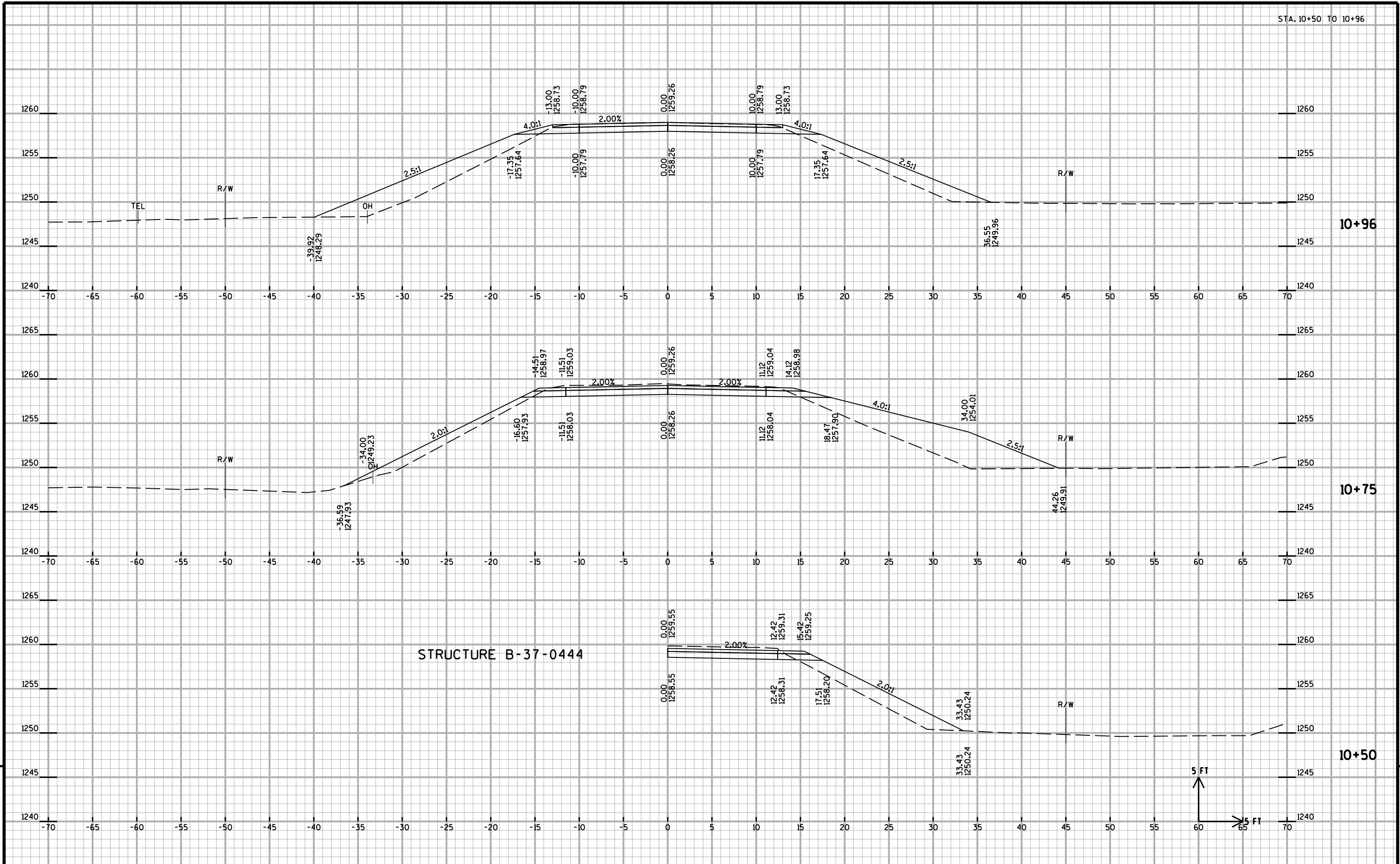
9+00

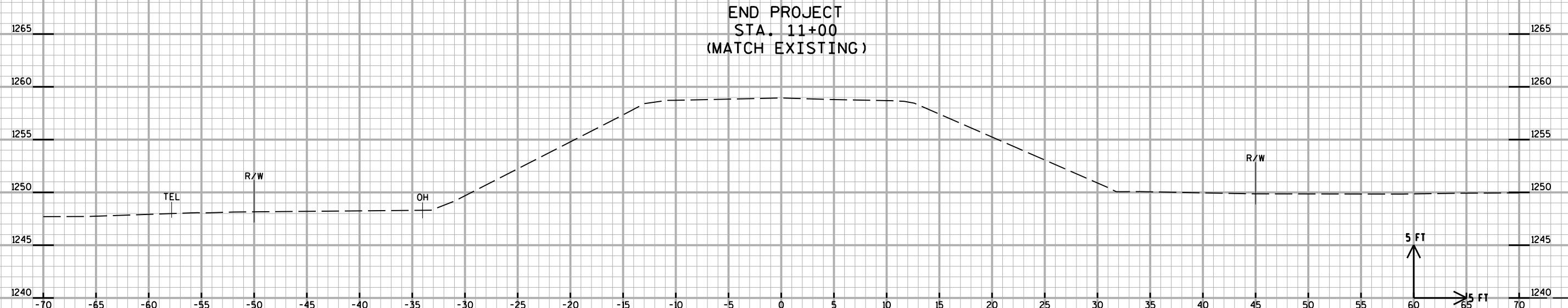
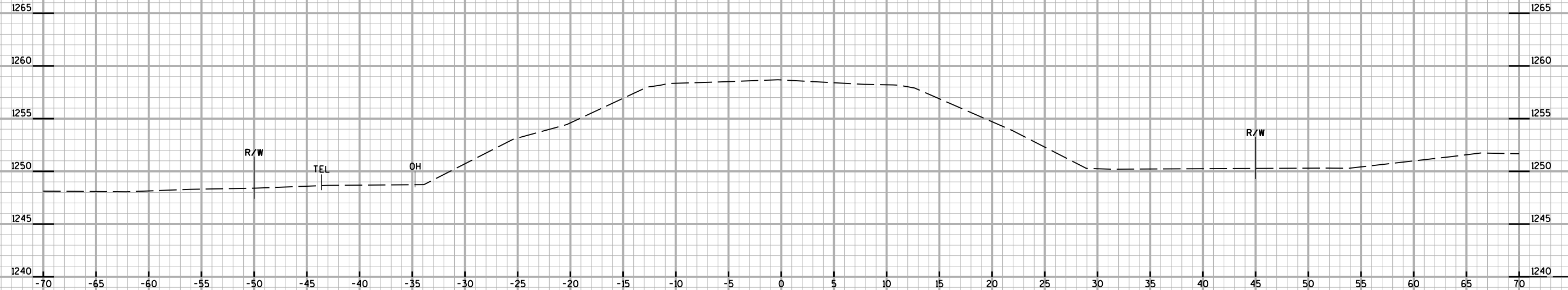
STRUCTURE B-37-0444

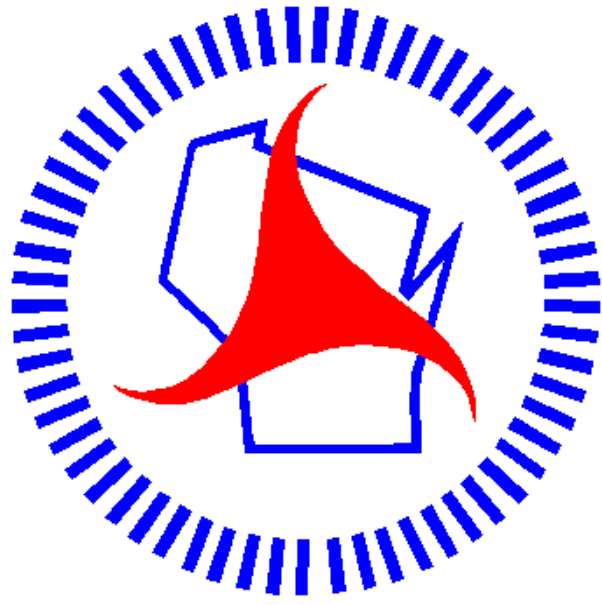


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