

SUP

JANUARY 2020

PROJECT ID: 8309-00-70
WITH: N/A

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 = 42

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

T SHANAGOLDEN, PIEPER ROAD

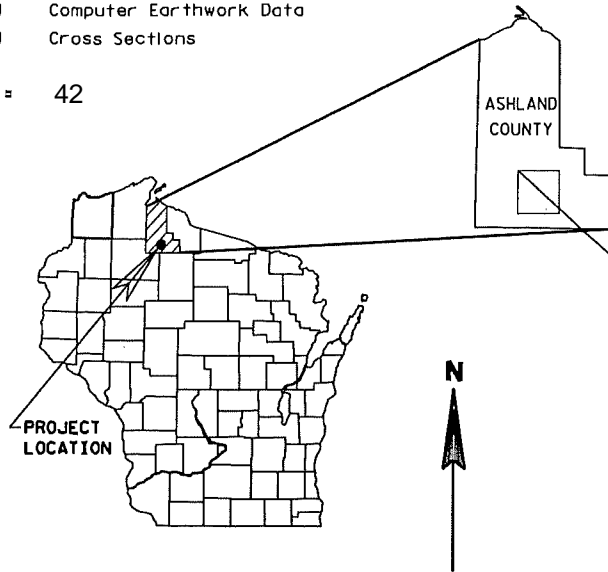
E FORK CHIPPEWA R BRIDGE B020069

LOCAL STREET

ASHLAND COUNTY

STATE PROJECT NUMBER
8309-00-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8309-00-70	WISC 2019818	1



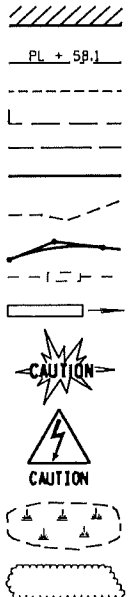
30

DESIGN DESIGNATION

- A.A.D.T. (2020) = < 100
- A.A.D.T. (2040) = < 100
- D.H.V. = 10
- D. = 50/50
- T. = 5%
- DESIGN SPEED = < 25 MPH
- ESALS = N/A

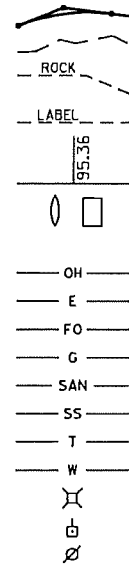
CONVENTIONAL SYMBOLS PLAN

- 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

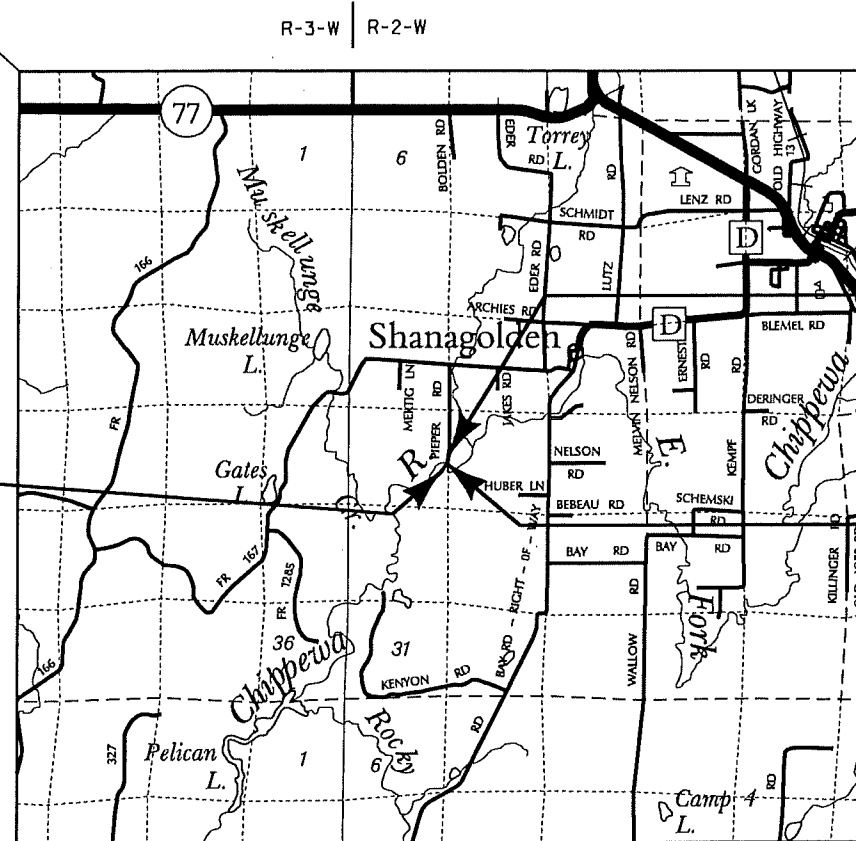


PROFILE

- 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



BEGIN PROJECT
STA. 19+15
Y = 144980.56
X = 558919.75



T-43-N
T-42-N

END PROJECT
STA. 20+85
Y = 145122.54
X = 559006.86

STRUCTURE B-2-69

T-42-N
T-41-N

LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.032 MI.

SURVEY PERFORMED IN 2018.
COORDINATES ON THIS PLAN ARE REFERENCED TO
THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS),
ASHLAND COUNTY.

ACCEPTED FOR

Town of Shanagolden

7/17/19
Date
Carter Fodberg
Town Chairman

ORIGINAL PLANS PREPARED BY

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



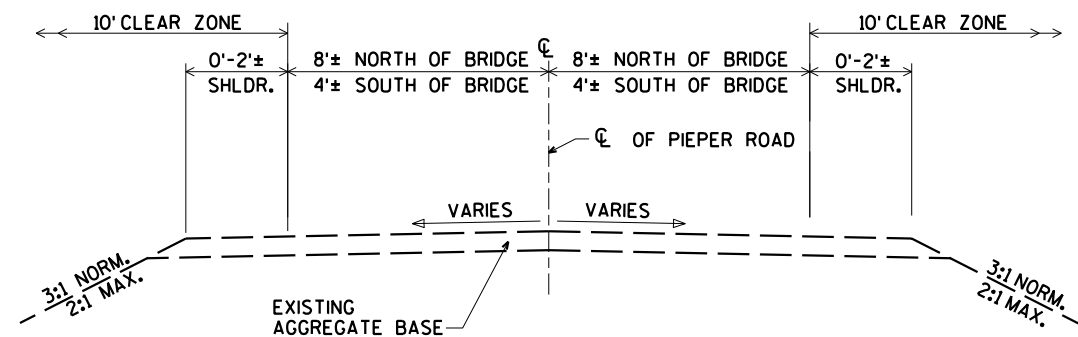
DATE 7/12/2019

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor: AYRES ASSOCIATES INC
Designer: AYRES ASSOCIATES INC
Project Manager: MATTHEW VAN NATTA
Regional Examiner: NORTHWEST REGION
Regional Supervisor: ANDREW STENSLAND

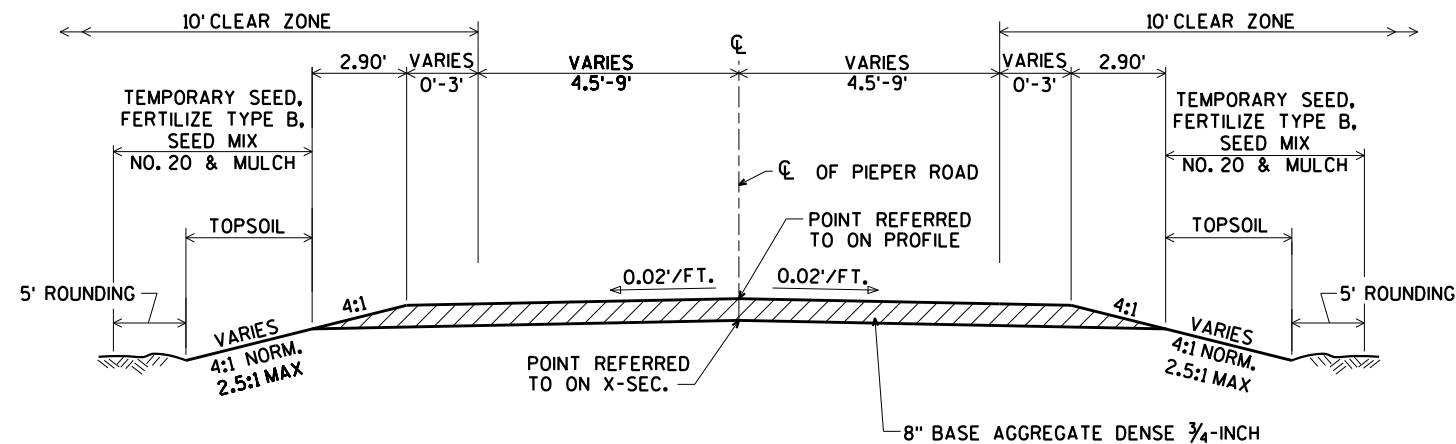
APPROVED FOR THE DEPARTMENT
DATE: 7/29/19
[Signature]
(Signature)

E



TYPICAL EXISTING SECTION

STA. 19+15 TO STA. 20+85



TYPICAL FINISHED SECTION

STA. 19+15 TO STA. 20+85

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.

THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING AND FIELD LOCATING ALL UTILITIES.

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

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.

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

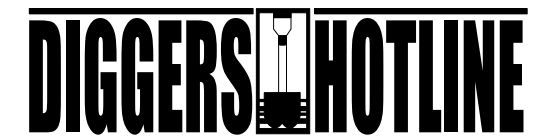
WHEN THE QUANTITY OF THE ITEM OF BASE LAYER OR SURFACE LAYER IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OF THICKNESS OF THE LAYER AS SHOWN ON THE PLANS IS APPROXIMATE, AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

UTILITIES

CENTURYLINK
 425 ELLINGSON AVE.
 PO BOX 78
 HAWKINS, WI 54530
 ATTN: BEN BAKER
 715-585-6303
 ben.baker@centurylink.com

PRICE ELECTRIC COOPERATIVE
 W6308 SPRINGS DRIVE
 PO BOX 110
 PHILLIPS, WI 54555
 ATTN: DAVE PISCA
 715-339-2155
 dpisca@price-electric.com

* * DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS



Dial 811 or (800)242-8511

www.DiggersHotline.com

WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONTACT:

SHAWN HASELEU
 810 WEST MAPLE STREET
 SPOONER, WI 54801
 715-635-4228
 shawn.haseleu@wisconsin.gov

DESIGNER

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

TOWN OF SHANAGOLDEN

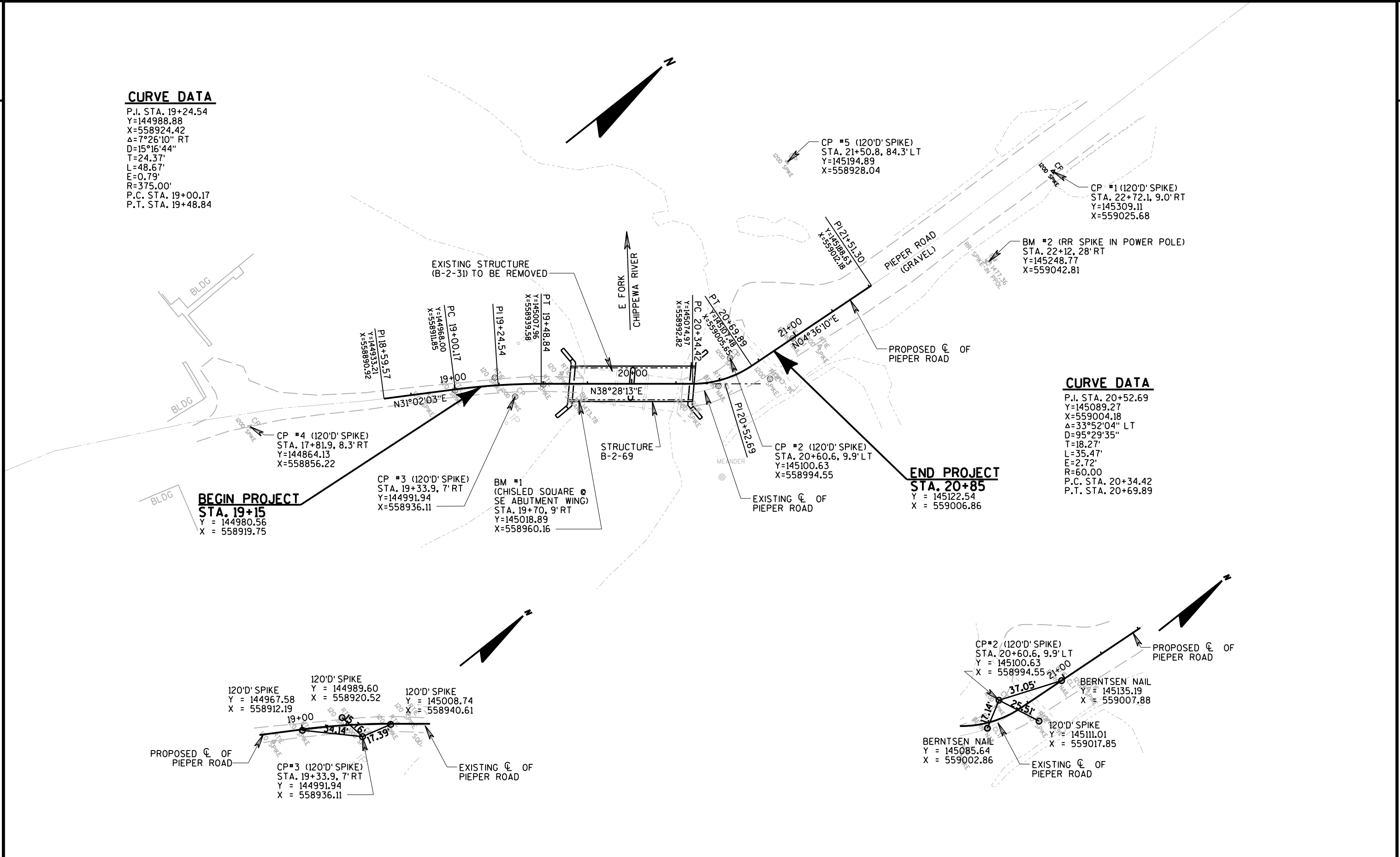
TOWN OF SHANAGOLDEN
 21605 EDER ROAD
 GLIDDEN, WI 54727
 ATTN: CARTER FORSBERG, CHAIRMAN
 715-274-2712

CURVE DATA

P.I. STA. 19+24.54
 Y=144988.88
 X=558924.42
 $\Delta=7^{\circ}26'10''$ RT
 $D=15^{\circ}16'44''$
 $T=24.37'$
 $L=48.67'$
 $E=0.79'$
 $R=375.00'$
 P.C. STA. 19+00.17
 P.T. STA. 19+48.84

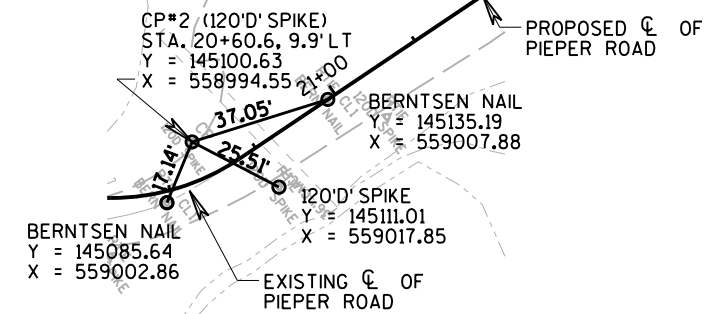
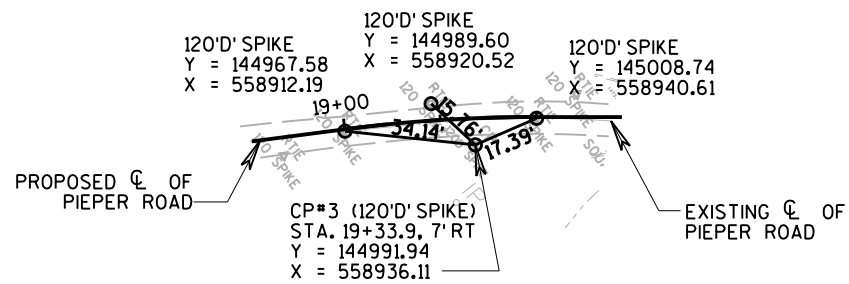
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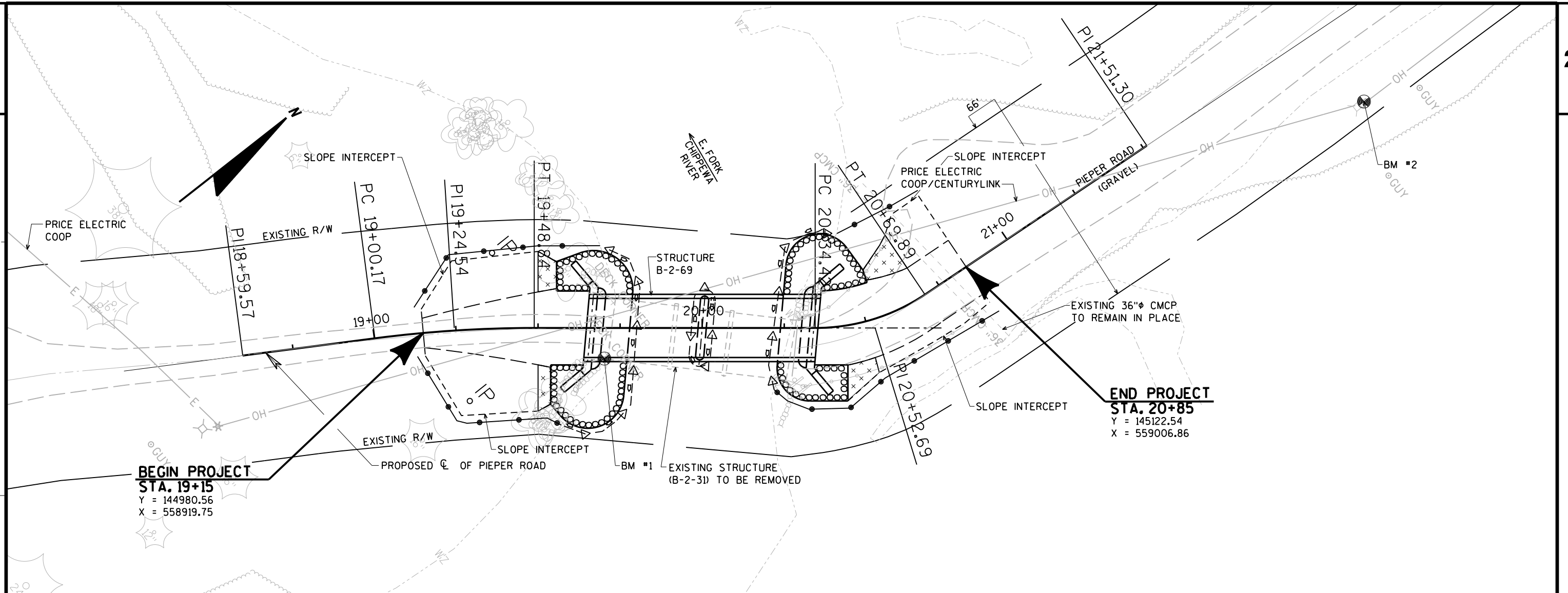
P.I. STA. 20+52.69
 Y=145089.27
 X=559004.18
 $\Delta=33^{\circ}52'04''$ LT
 $D=95^{\circ}29'35''$
 $T=18.27'$
 $L=35.47'$
 $E=2.72'$
 $R=60.00'$
 P.C. STA. 20+34.42
 P.T. STA. 20+69.89



BEGIN PROJECT
STA. 19+15
 Y = 144980.56
 X = 558919.75

END PROJECT
STA. 20+85
 Y = 145122.54
 X = 559006.86





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STA. 19+15**
Y = 144980.56
X = 558919.75

**END PROJECT
STA. 20+85**
Y = 145122.54
X = 559006.86

	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 = 0.14 ACRES
 TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.26 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

HIGH WATER₂ EL. 1468.8

Estimate Of Quantities

8309-00-70

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	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 20+00	LS	1.000	1.000
0008	205.0100	Excavation Common	CY	42.000	42.000
0010	206.1000	Excavation for Structures Bridges (structure) 01. B-2-69	LS	1.000	1.000
0012	208.0100	Borrow	CY	25.000	25.000
0014	210.1500	Backfill Structure Type A	TON	220.000	220.000
0016	213.0100	Finishing Roadway (project) 01. 8309-00-70	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	125.000	125.000
0020	502.0100	Concrete Masonry Bridges	CY	161.000	161.000
0022	502.3200	Protective Surface Treatment	SY	145.000	145.000
0024	502.3210	Pigmented Surface Sealer	SY	60.000	60.000
0026	505.0400	Bar Steel Reinforcement HS Structures	LB	4,440.000	4,440.000
0028	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	23,200.000	23,200.000
0030	506.0105	Structural Steel Carbon	LB	350.000	350.000
0032	516.0500	Rubberized Membrane Waterproofing	SY	10.000	10.000
0034	550.0020	Pre-Boring Rock or Consolidated Materials	LF	120.000	120.000
0036	550.0500	Pile Points	EACH	17.000	17.000
0038	550.2108	Piling CIP Concrete 10 3/4 X 0.50-Inch	LF	670.000	670.000
0040	606.0300	Riprap Heavy	CY	145.000	145.000
0042	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	140.000	140.000
0044	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0046	614.0920	Salvaged Rail	LF	97.000	97.000
0048	618.0100	Maintenance And Repair of Haul Roads (project) 01. 8309-00-70	EACH	1.000	1.000
0050	619.1000	Mobilization	EACH	1.000	1.000
0052	624.0100	Water	MGAL	4.000	4.000
0054	625.0100	Topsoil	SY	125.000	125.000
0056	627.0200	Mulching	SY	345.000	345.000
0058	628.1504	Silt Fence	LF	300.000	300.000
0060	628.1520	Silt Fence Maintenance	LF	600.000	600.000
0062	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0064	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0066	628.2027	Erosion Mat Class II Type C	SY	40.000	40.000
0068	628.6005	Turbidity Barriers	SY	280.000	280.000
0070	628.7504	Temporary Ditch Checks	LF	50.000	50.000
0072	629.0210	Fertilizer Type B	CWT	0.300	0.300
0074	630.0120	Seeding Mixture No. 20	LB	10.000	10.000
0076	630.0200	Seeding Temporary	LB	10.000	10.000

Estimate Of Quantities

8309-00-70

Line	Item	Item Description	Unit	Total	Qty
0078	630.0300	Seeding Borrow Pit	LB	2.000	2.000
0080	630.0500	Seed Water	MGAL	8.000	8.000
0082	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0084	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0086	638.2102	Moving Signs Type II	EACH	2.000	2.000
0088	638.2602	Removing Signs Type II	EACH	6.000	6.000
0090	638.3000	Removing Small Sign Supports	EACH	6.000	6.000
0092	638.4000	Moving Small Sign Supports	EACH	1.000	1.000
0094	642.5001	Field Office Type B	EACH	1.000	1.000
0096	643.0420	Traffic Control Barricades Type III	DAY	1,200.000	1,200.000
0098	643.0705	Traffic Control Warning Lights Type A	DAY	1,800.000	1,800.000
0100	643.0900	Traffic Control Signs	DAY	675.000	675.000
0102	643.5000	Traffic Control	EACH	1.000	1.000
0104	645.0111	Geotextile Type DF Schedule A	SY	80.000	80.000
0106	645.0120	Geotextile Type HR	SY	290.000	290.000
0108	650.4500	Construction Staking Subgrade	LF	100.000	100.000
0110	650.6500	Construction Staking Structure Layout (structure) 01. B-2-69	LS	1.000	1.000
0112	650.9910	Construction Staking Supplemental Control (project) 01.8309-00-70	LS	1.000	1.000
0114	650.9920	Construction Staking Slope Stakes	LF	100.000	100.000
0116	715.0502	Incentive Strength Concrete Structures	DOL	966.000	966.000
0118	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	150.000	150.000
0120	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000

PIERPER 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				
19+15 - 20+85	PIEPER ROAD	42	52	67	-25	0	25	

- 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.

CLEARING AND GRUBBING

				201.0105	201.0205
				CLEARING	GRUBBING
STATION	TO	STATION	OFFSET	STA	STA
19+00	-	20+00	LT & RT	1	1
TOTALS				1	1

BASE QUANTITIES

			305.0110
			BASE AGGREGATE DENSE 3/4-INCH
STA	TO	STA	TON
19+15	--	19+64.75	50
20+35.25	--	20+85	70
UNDISTRIBUTED			5
TOTALS			125

WATER

PURPOSE	624.0100 WATER MGAL
COMPACTION	2
DUST CONTROL	2
TOTAL	4

EROSION CONTROL MOBILIZATION ITEMS

		628.1905	628.1910
		MOBILIZATIONS	MOBILIZATIONS
		EROSION CONTROL	EMERGENCY EROSION CONTROL
LOCATION	EACH	EACH	EACH
ID 8309-00-70	4	4	4
TOTALS	4	4	4

TURBIDITY BARRIERS

LOCATION	628.6005 SY
SOUTH ABUTMENT	90
NORTH ABUTMENT	70
PIER	65
UNDISTRIBUTED	55
TOTAL	280

TEMPORARY DITCH CHECKS

LOCATION	628.7504 LF
UNDISTRIBUTED	50
TOTAL	50

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

EROSION CONTROL ITEMS

STA	TO	STA	LOCATION	625.0100 TOPSOIL	627.0200 MULCHING	628.1504 SILT FENCE	628.1520 SILT FENCE MAINTENANCE	628.2027 EROSION MAT CLASS II TYPE C	629.0210 FERTILIZER TYPE B	630.0120 SEEDING MIXTURE NO. 20	630.0200 SEEDING TEMPORARY	630.0300 SEEDING BORROW PIT	630.0500 SEED WATER
				SY	SY	LF	LF	SY	CWT	LB	LB	LB	MGAL
19+15	--	19+64.75	RT	55	95	60	120	5	0.1	3	3	0	2
19+15	--	19+64.75	LT	45	85	70	140	5	0.1	2	2	0	2
20+35.25	--	20+85	RT	0	50	80	160	10	0.0	2	2	0	1
20+35.25	--	20+85	LT	0	45	30	60	10	0.0	1	1	0	1
UNDISTRIBUTED				25	70	60	120	10	0.1	2	2	2	2
TOTALS				125	345	300	600	40	0.3	10	10	2	8

TRAFFIC CONTROL ITEMS

LOCATION	DURATION DAYS	643.0420 BARRICADES TYPE III		643.0705 WARNING LIGHTS TYPE A		643.0900 SIGNS	
		NO.	DAY	NO.	DAY	NO.	DAY
PER SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" PIEPER ROAD	75	16	1,200	24	1,800	9	675
TOTALS			1,200		1,800		675

TRAFFIC CONTROL PLACEMENT SUBJECT TO ENGINEER APPROVAL

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

SIGNING ITEMS

STATION	LOC	634.0612	637.2230	638.2102	638.2602	638.3000	638.4000	SIGNAGE TYPE
		POSTS WOOD 4X6-INCH X 12-FT	SIGNS TYPE II REFLECTIVE F	MOVING SIGNS TYPE II	REMOVING SIGNS TYPE II	REMOVING SMALL SIGN SUPPORTS	MOVING SMALL SIGN SUPPORTS	
		EACH	SF	EACH	EACH	EACH	EACH	
19+63	RT	1	3	--	--	--	--	W5-52L
19+65	LT	1	3	--	--	--	--	W5-52R
19+69	RT	--	--	--	1	1	--	WEIGHT LIMIT 20 TONS
19+70	RT	--	--	--	1	1	--	W5-52L
19+73	LT	--	--	--	1	1	--	W5-52R
20+28	RT	--	--	--	1	1	--	W5-52R
20+30	LT	--	--	--	1	1	--	W5-52L
20+31	RT	--	--	2	--	--	1	SHANAGOLDEN TWP 19475 & 19471
20+35	RT	1	3	--	--	--	--	W5-52R
20+36	LT	1	3	--	--	--	--	W5-52L
20+54	LT	--	--	--	1	1	--	WEIGHT LIMIT 20 TONS
TOTALS		4	12	2	6	6	1	

SALVAGED RAIL

STA	TO	STA	LOCATION	614.0920 LF
20+26	--	20+74	RT	58
20+29	--	20+70	LT	39
TOTAL				97

NOTE: SALVAGE EXISTING GUARDRAIL TO TOWN OF SHANAGOLDEN

STAKING ITEMS

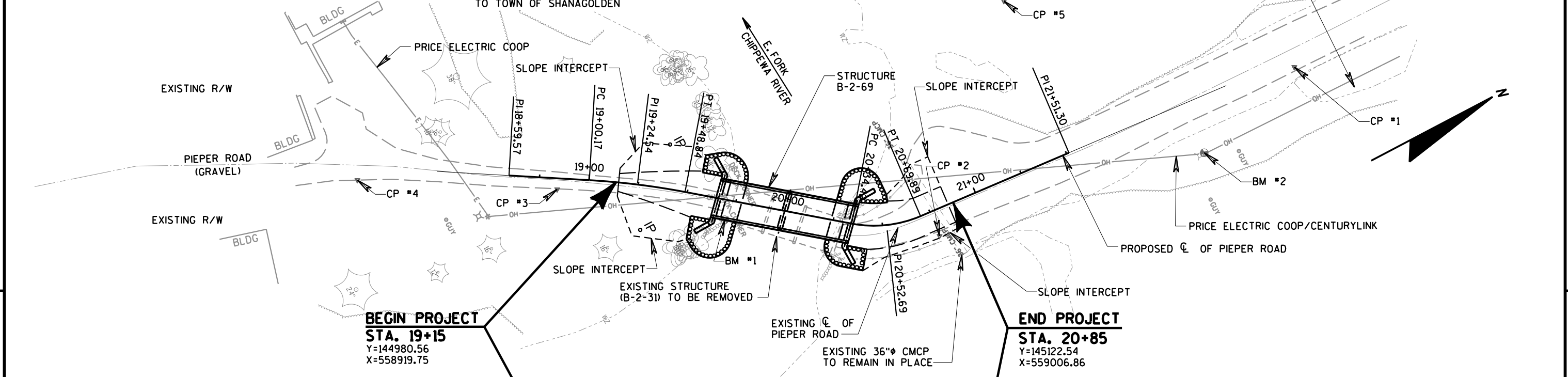
LOCATION	650.4500	650.9920
	CONSTRUCTION STAKING SUBGRADE	CONSTRUCTION STAKING SLOPE STAKES
	LF	LF
19+15 - 20+85	100	100
TOTALS	100	100

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

BENCH MARKS			
NO.	STA.	DESCRIPTION	ELEV.
1	19+70	CHISELED SQUARE @ SE ABUTMENT WING, 9' RT	1473.78
2	22+12	RR SPIKE IN POWER POLE, 28' RT	1477.36

NOTE:
FOR ALIGNMENT CONTROL POINTS, BEARINGS,
AND COORDINATES, SEE "ALIGNMENT CONTROLS"
SHEET.

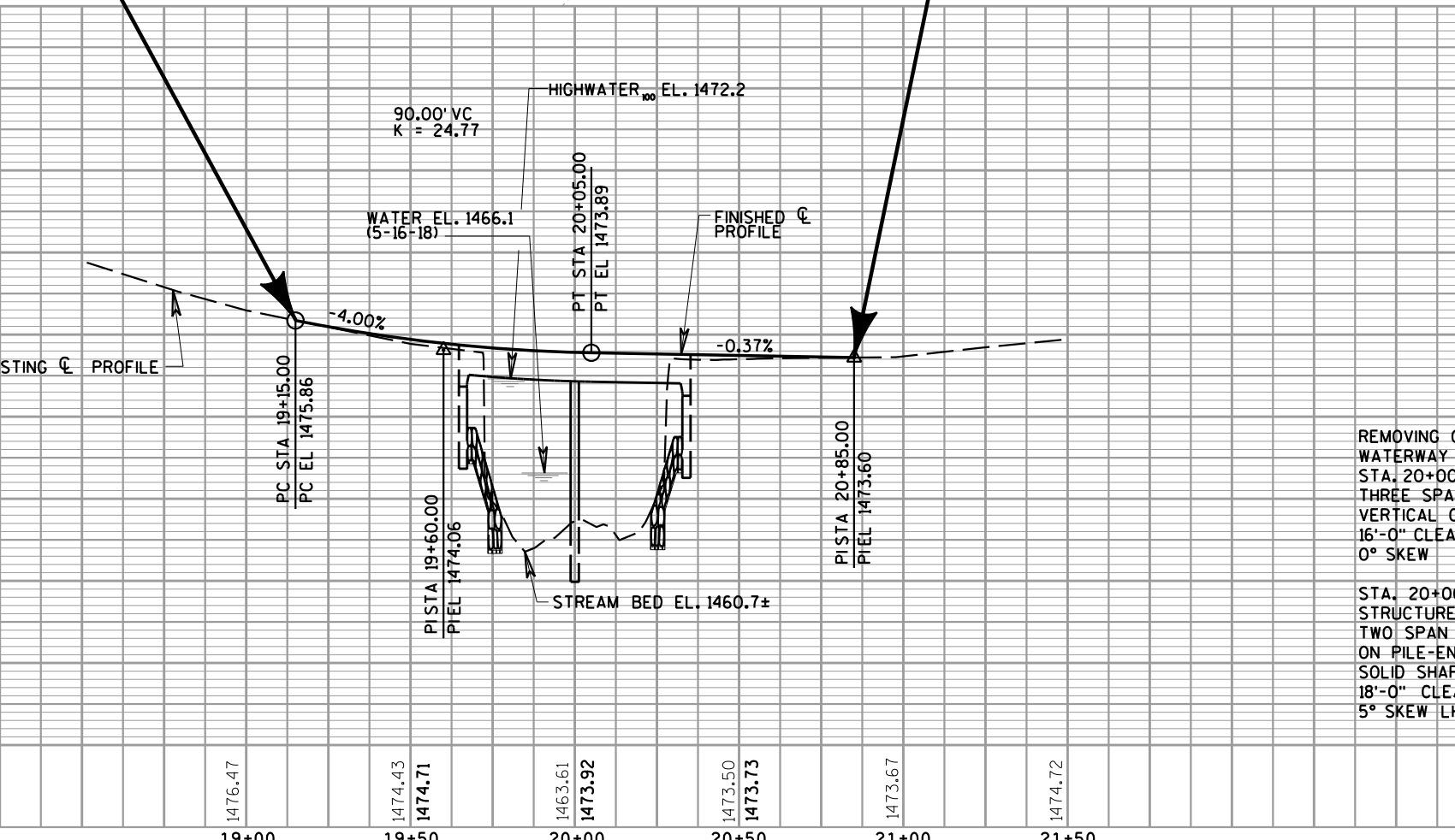
SALVAGE EXISTING GUARDRAIL AND TIMBER DECK
TO TOWN OF SHANAGOLDEN



BEGIN PROJECT
STA. 19+15
Y=144980.56
X=558919.75

END PROJECT
STA. 20+85
Y=145122.54
X=559006.86

EARTHWORK SUMMARY	
STA. 19+15 TO STA. 19+64.75	
EXC. COMMON	12 C.Y.
FILL	52 C.Y.
SHR. = 30%	
BORROW	55 C.Y.



EARTHWORK SUMMARY	
STA. 20+35.25 TO STA. 20+85	
EXC. COMMON	30 C.Y.
FILL	0 C.Y.
SHR. = 30%	
WASTE	30 C.Y.

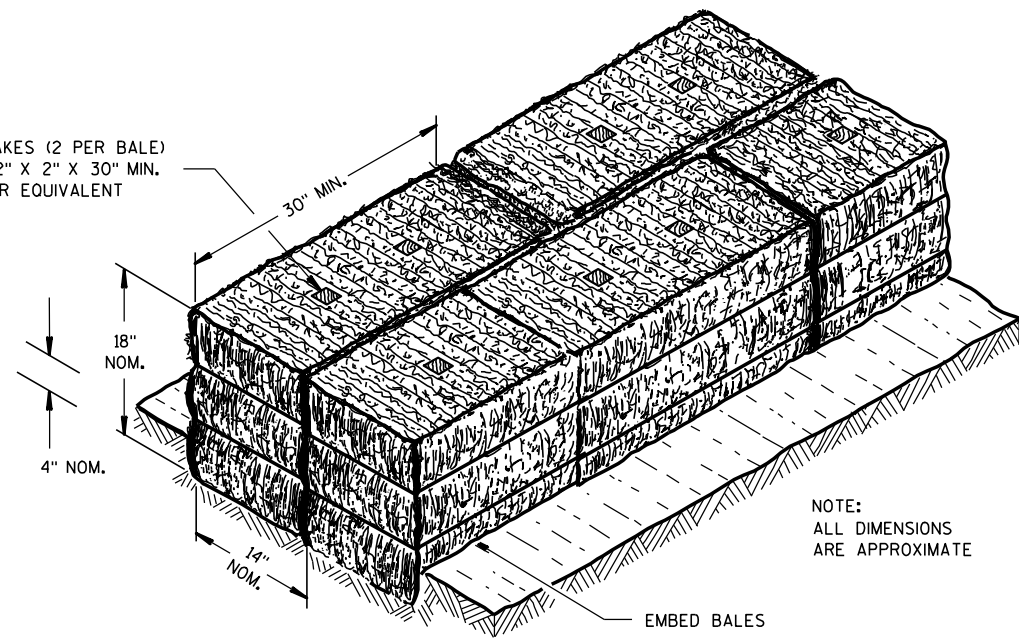
REMOVING OLD STRUCTURE OVER
WATERWAY WITH MINIMAL DEBRIS
STA. 20+00, STRUCTURE B-2-31
THREE SPAN TIMBER SLAB BRIDGE ON
VERTICAL CONCRETE ABUTMENTS & TIMBER PIERS
16'-0" CLEAR RDWY. x 57.2' O.A.L.
0° SKEW

STA. 20+00
STRUCTURE B-2-69 REQ'D.
TWO SPAN CONCRETE FLAT SLAB BRIDGE
ON PILE-ENCASED (A5) ABUTMENTS AND
SOLID SHAFT PILE-ENCASED PIER
18'-0" CLEAR ROADWAY x 70'-6" O.A.L.
5° SKEW LHF

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)
15C02-07A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-07B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

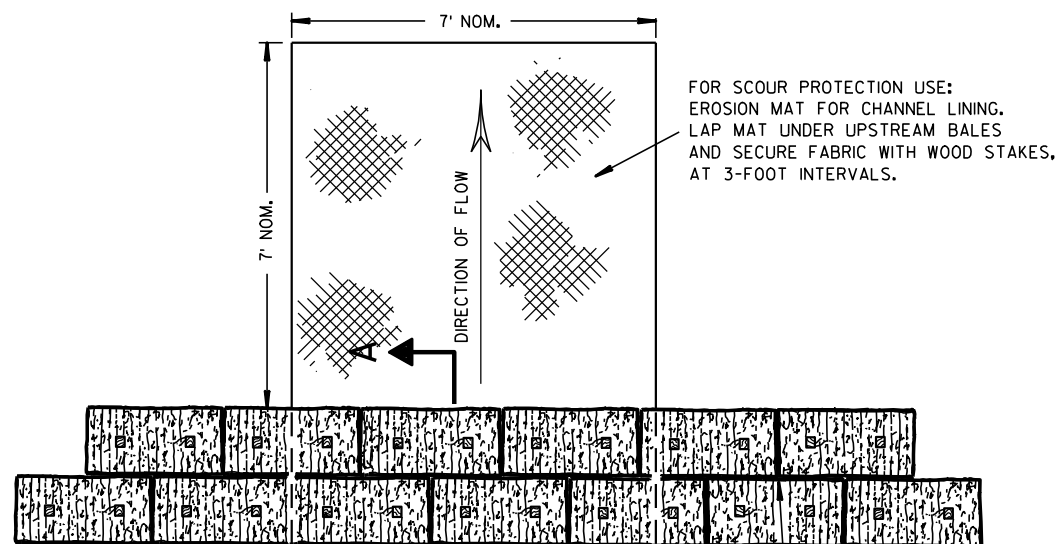
WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

EMBED BALES

SECTION A-A

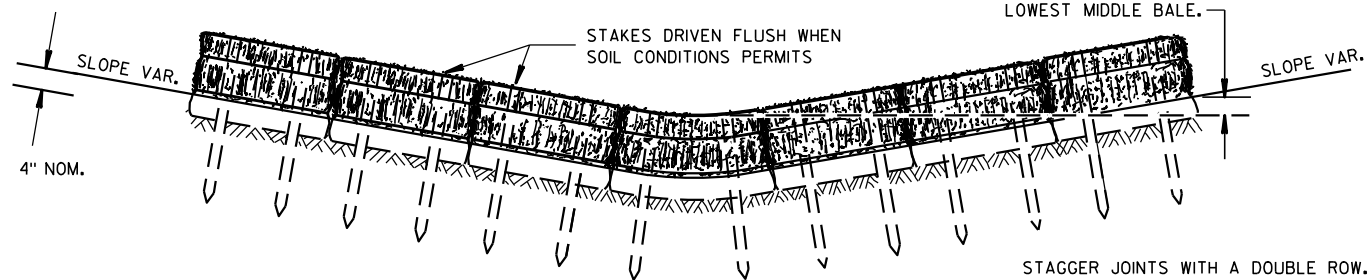


FOR SCOUR PROTECTION USE:
EROSION MAT FOR CHANNEL LINING.
LAP MAT UNDER UPSTREAM BALES
AND SECURE FABRIC WITH WOOD STAKES,
AT 3-FOOT INTERVALS.

STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

PLAN VIEW

BOTTOM ELEVATION OF END BALE SHALL
BE EQUAL TO OR GREATER THAN TOP OF
LOWEST MIDDLE BALE.



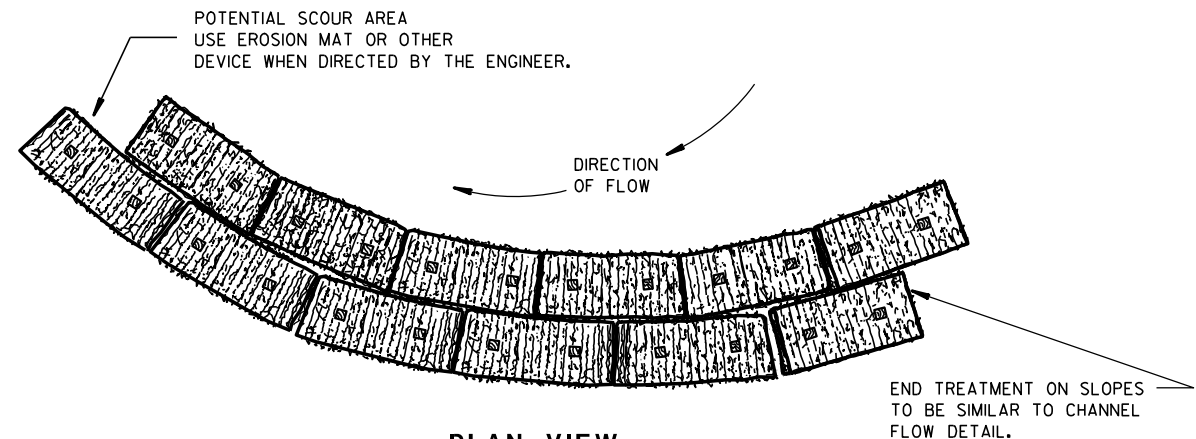
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

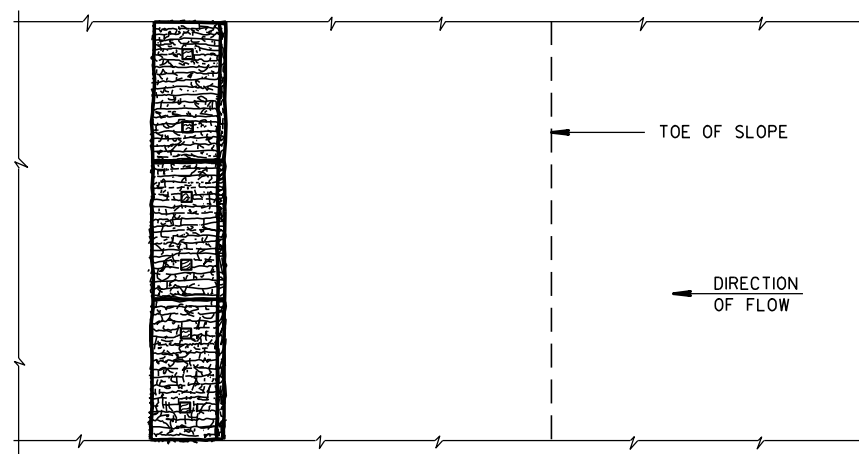
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- 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.

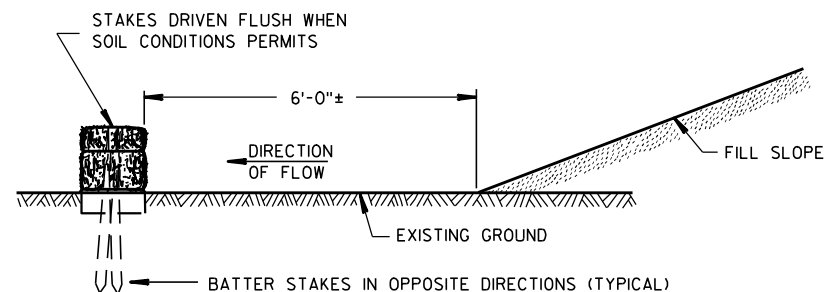


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

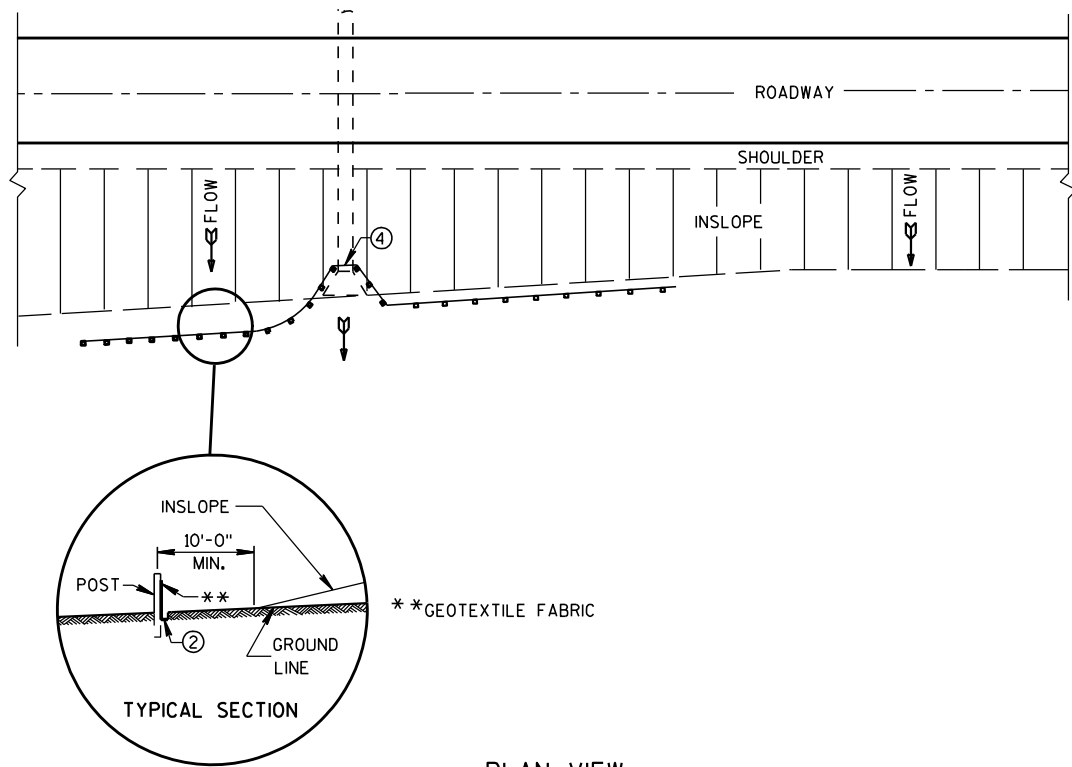
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

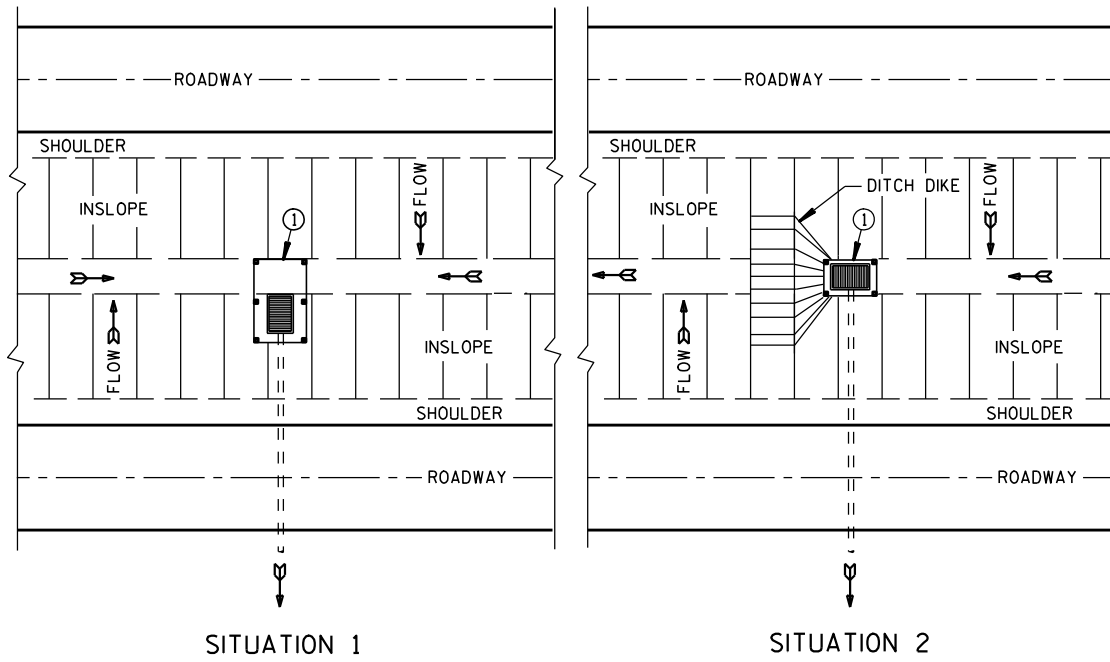
TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

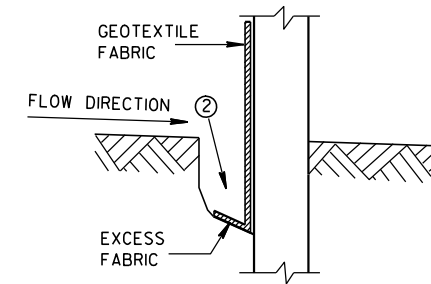


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

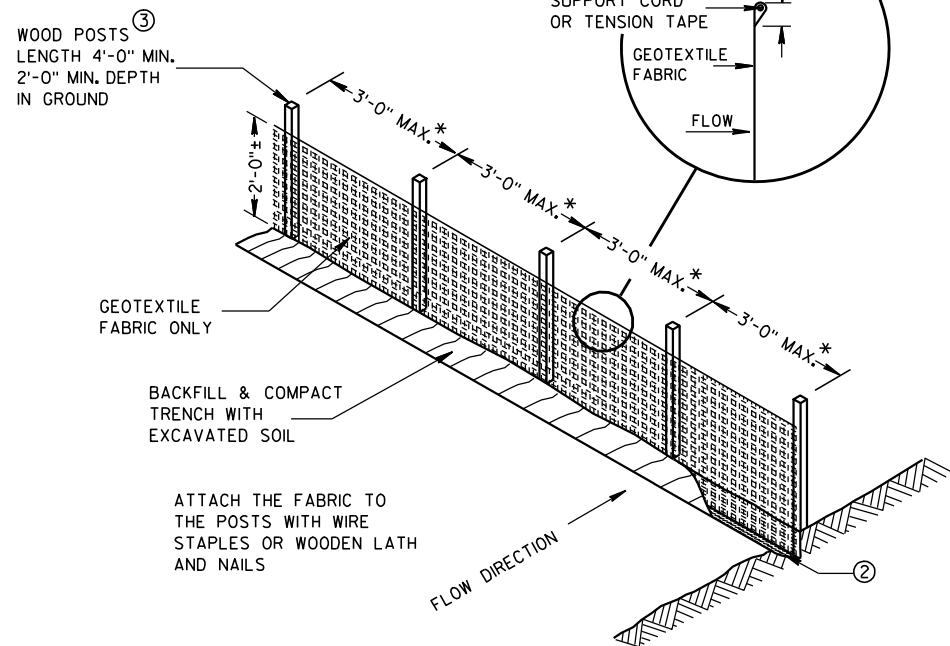
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 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.



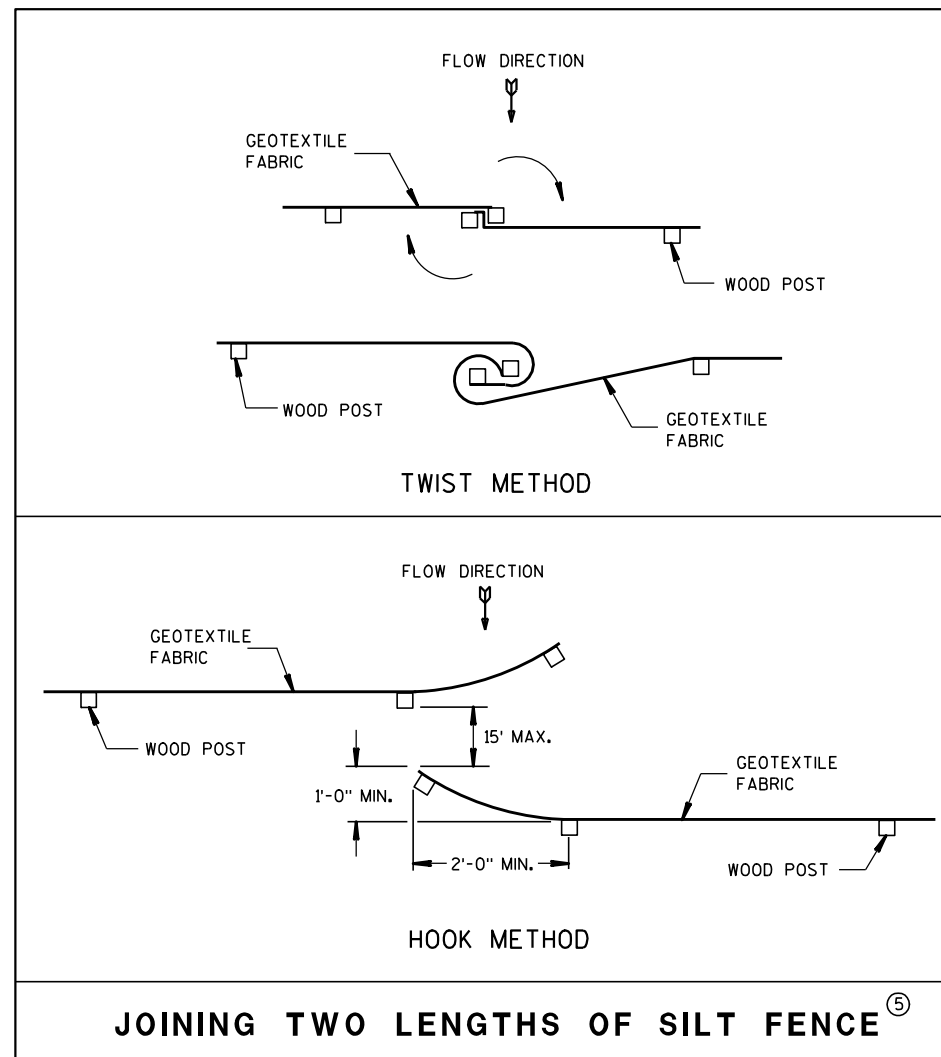
TRENCH DETAIL

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

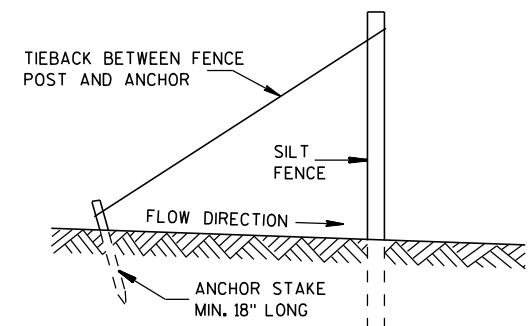


SILT FENCE

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



JOINING TWO LENGTHS OF SILT FENCE ⑤

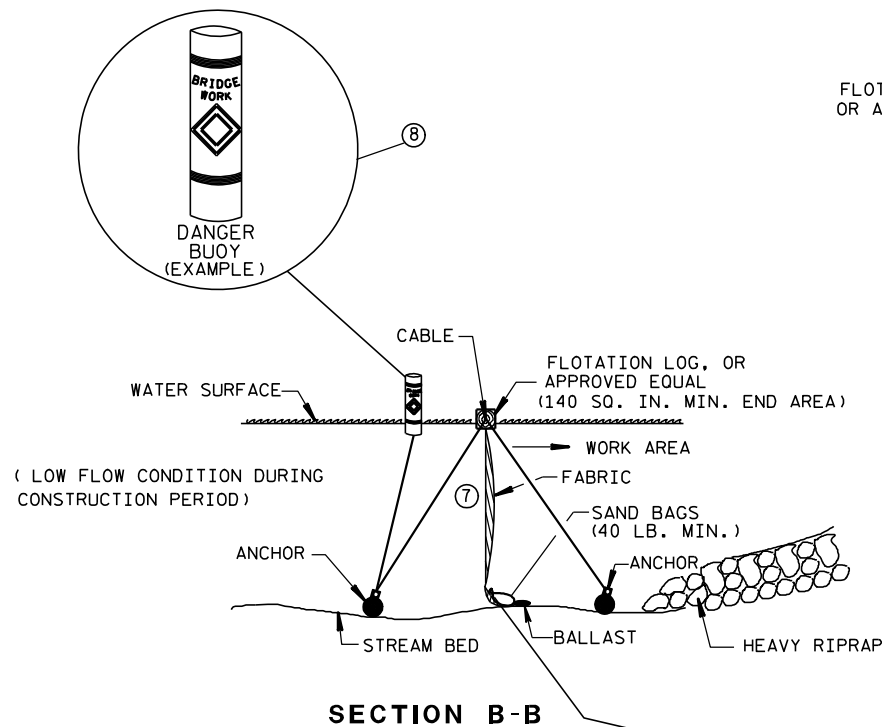


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

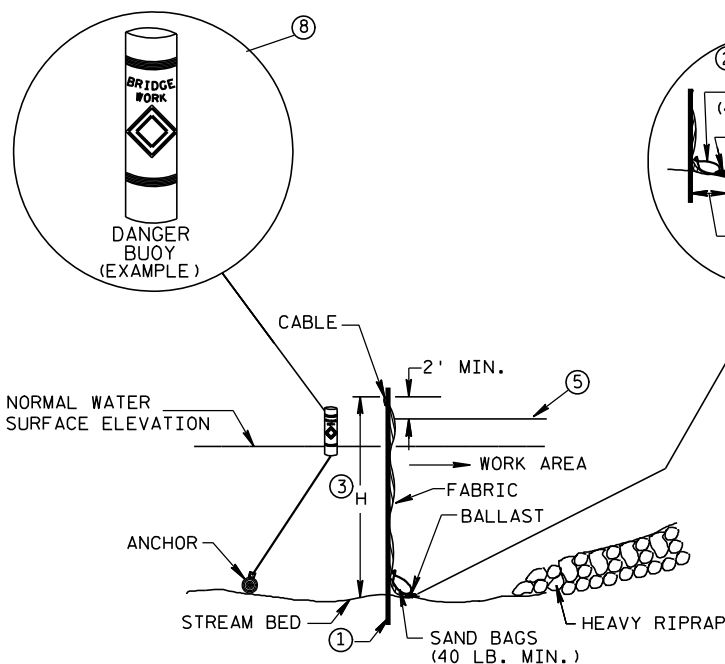
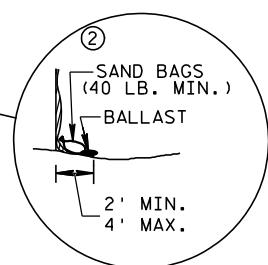
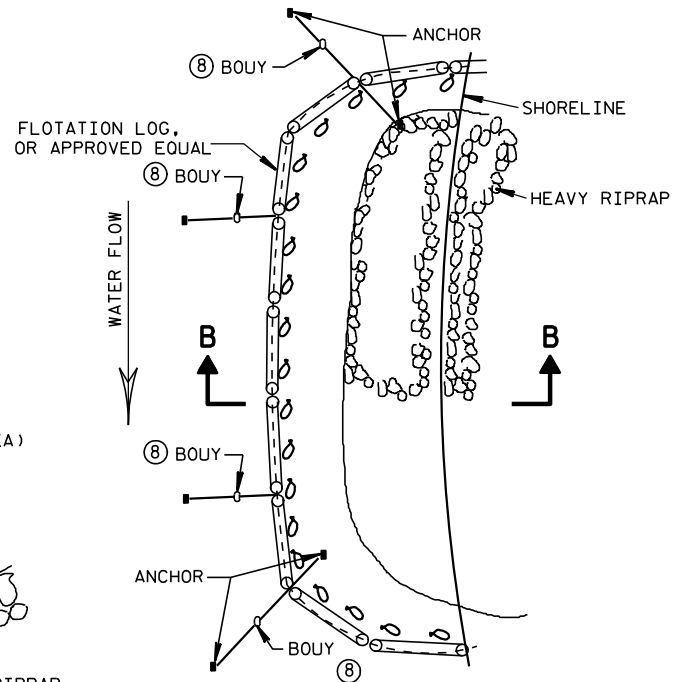
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



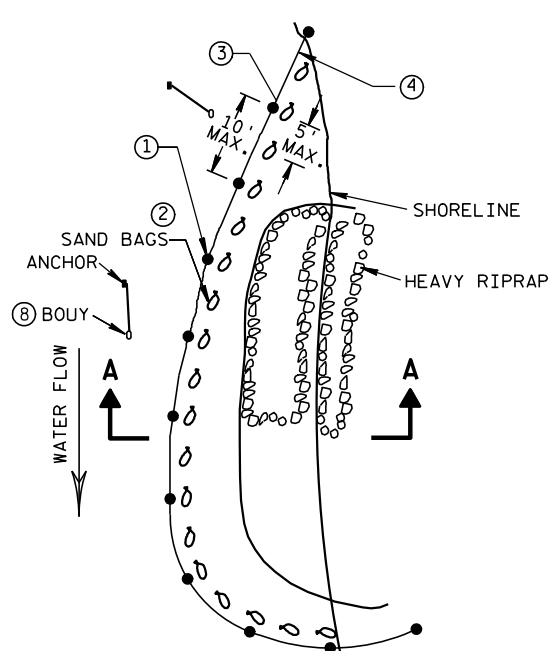
SECTION B-B

TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A

TURBIDITY BARRIER STANDARD POST INSTALLATION



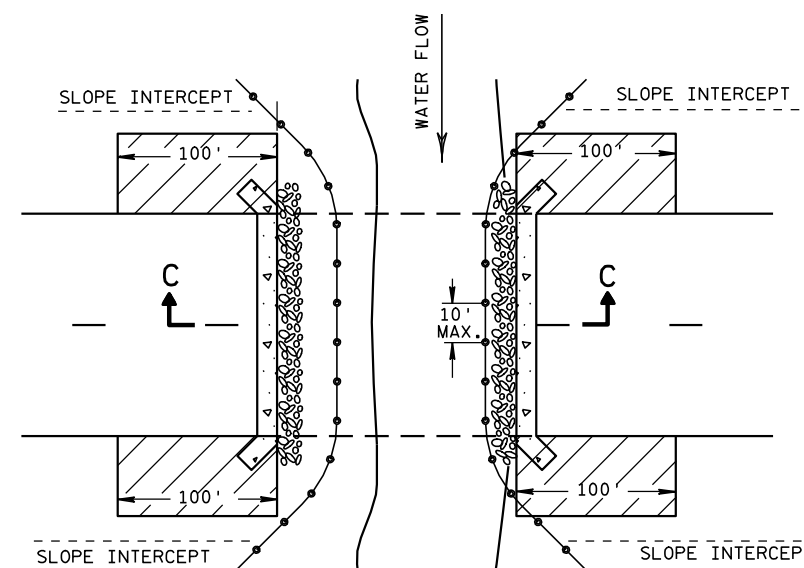
PLAN VIEW

GENERAL NOTES

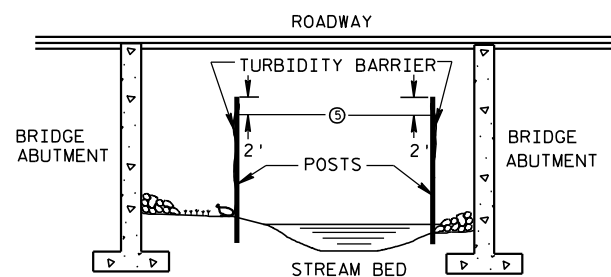
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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 O2 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.



PLAN VIEW



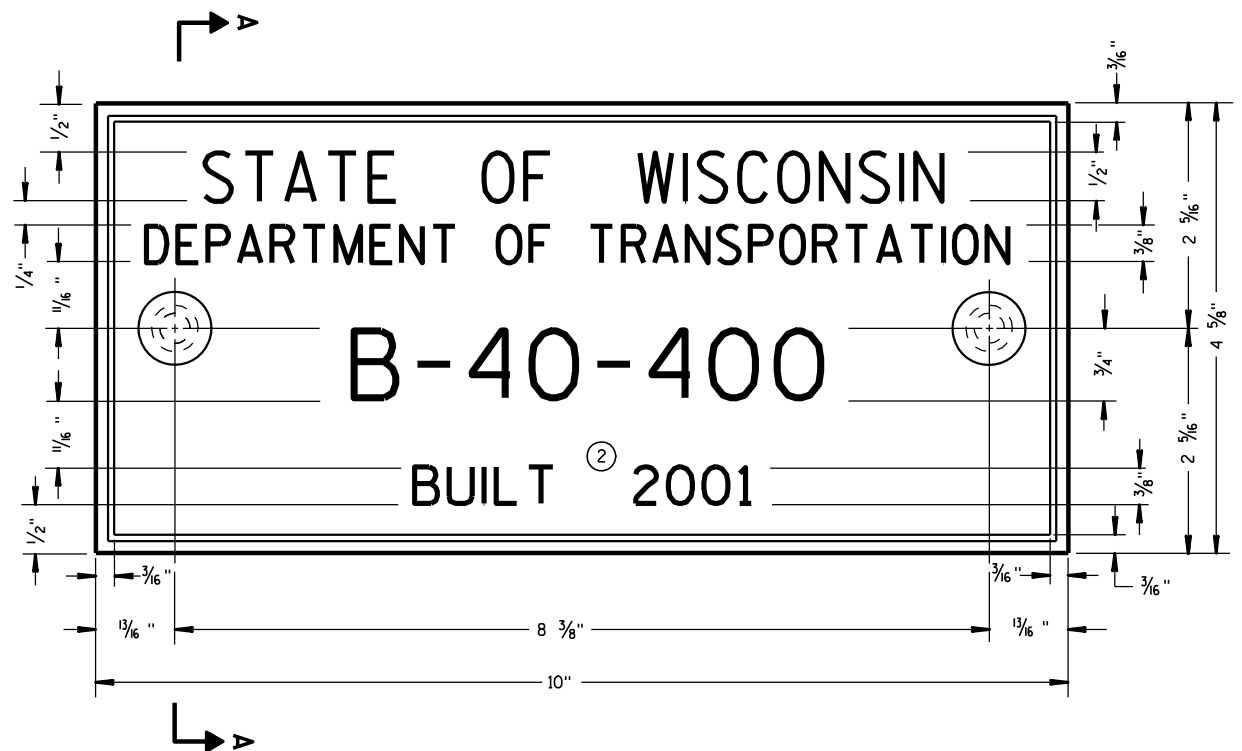
SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING
TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



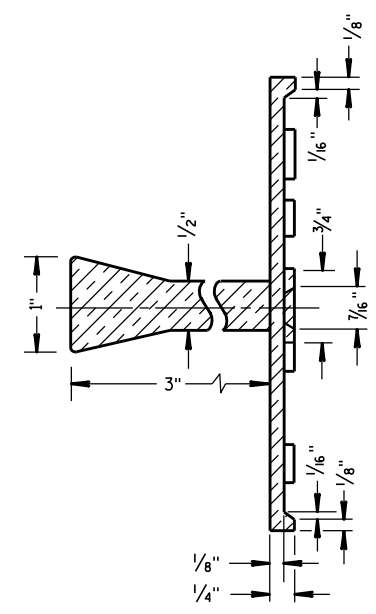
TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

GENERAL NOTES

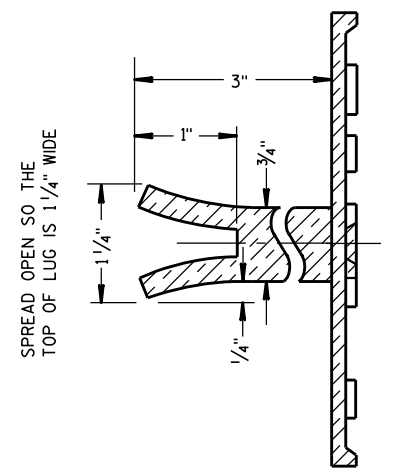
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

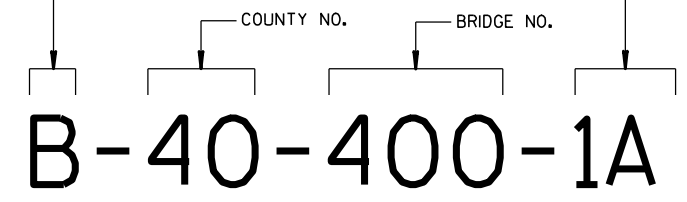
6

6

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

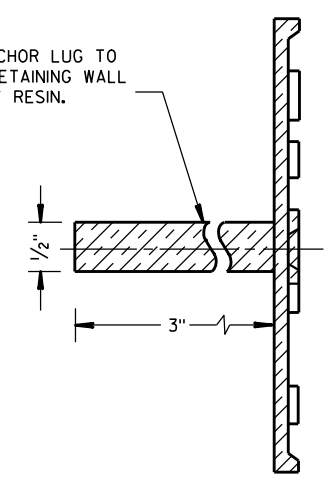
B = BRIDGE
C = CULVERT
R = RETAINING WALL

UNIT NO. FOR MULTIPLE
UNIT BRIDGE



**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

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

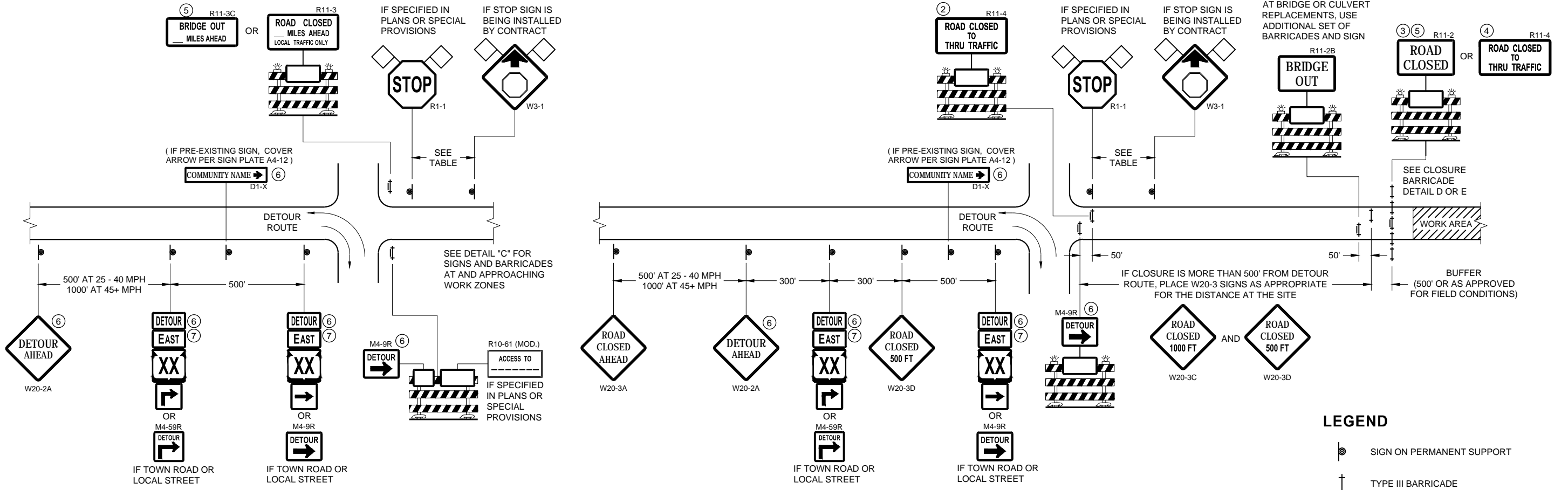


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

S.D.D. 12 A 3-10

S.D.D. 12 A 3-10

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



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
 WORK ZONE GREATER THAN OR EQUAL TO 1/2 MILE FROM
 DETOUR ROUTE (1000 FEET IF URBAN)

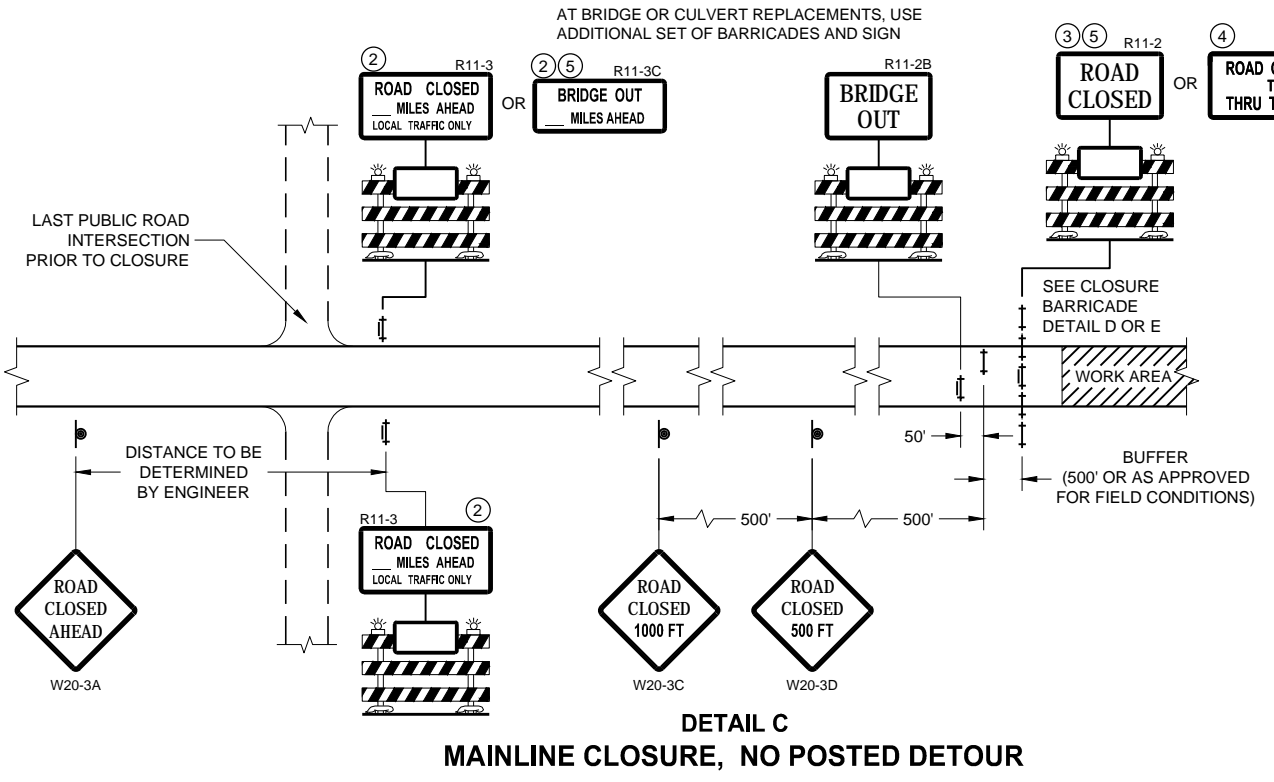
DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
 WORK ZONE LESS THAN 1/2 MILE FROM
 DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)

M4 - 8
 M3 - X
 M1 - 4 OR M1 - 6 OR M1 - 5A
 M05 - 1 OR M06 - 1

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

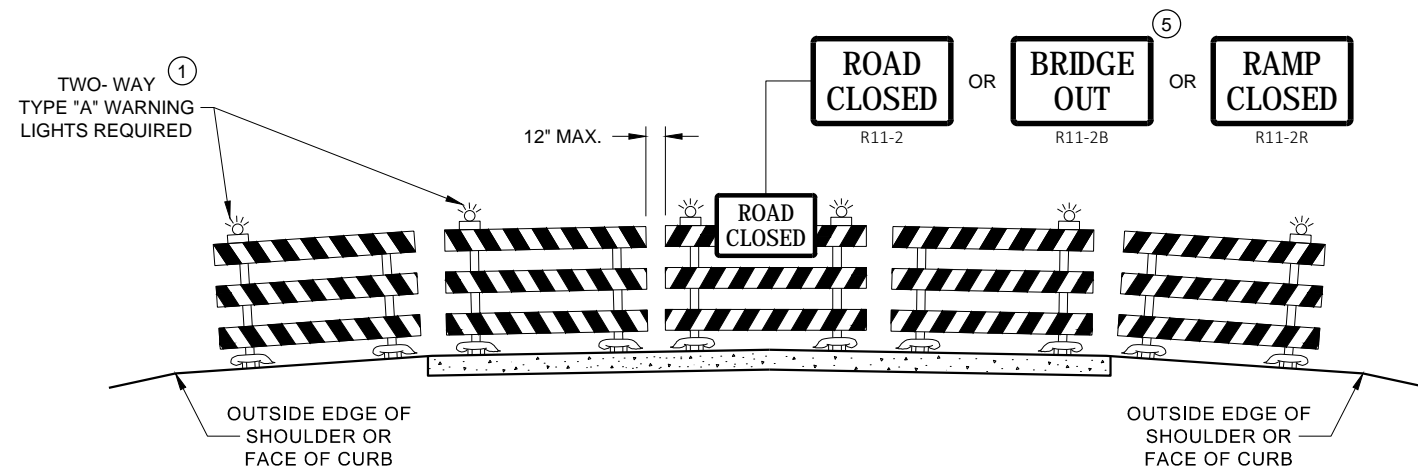
SEE SDD 15C2-SHEET "b"
 FOR GENERAL NOTES
 AND FOOTNOTES ① THROUGH ⑦

**BARRICADES AND SIGNS
 FOR MAINLINE CLOSURES**

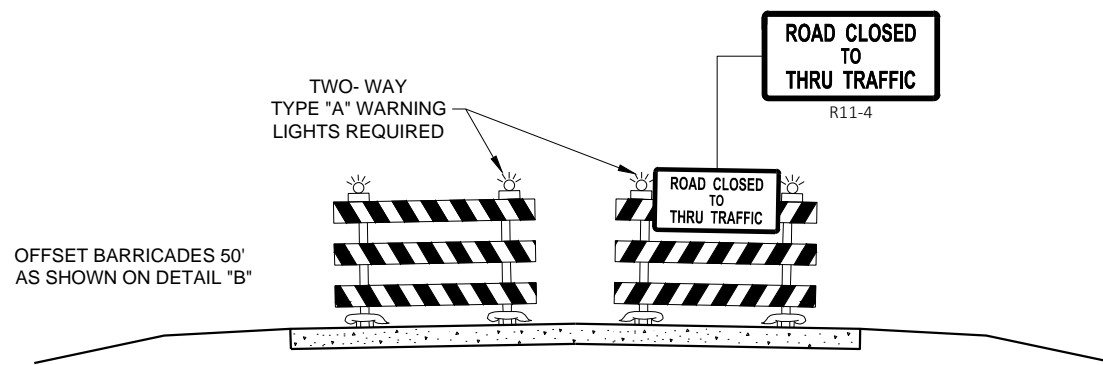
STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED
 November 2018 /S/ Andrew Heidtke
 DATE DATE WORK ZONE ENGINEER

FHWA



**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 THE BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL 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 SHALL, 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" (36" X 18" 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)
- MO5 - 1 AND MO6 - 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 AN 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 ROAD 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
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA

GENERAL NOTES

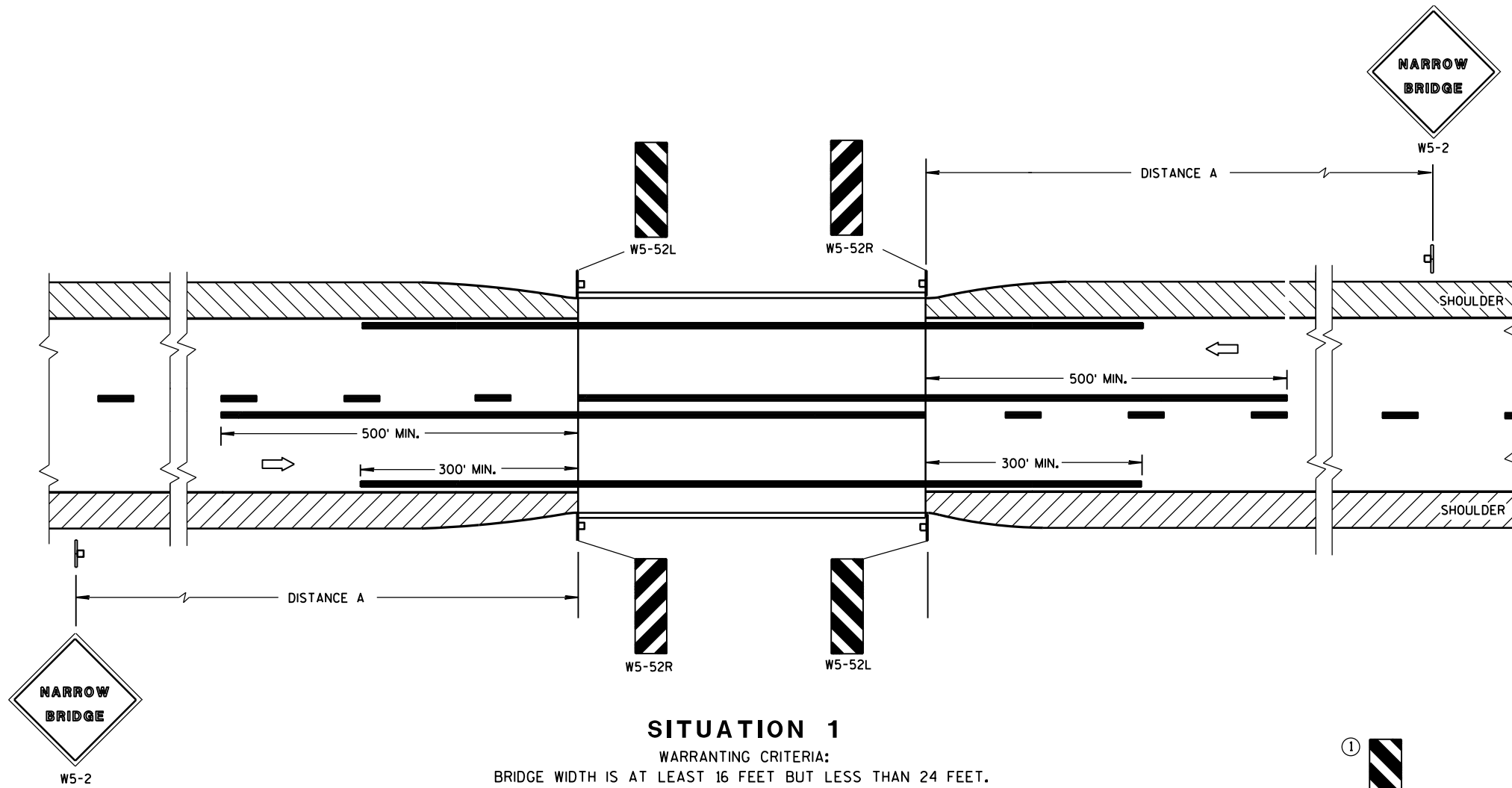
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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.

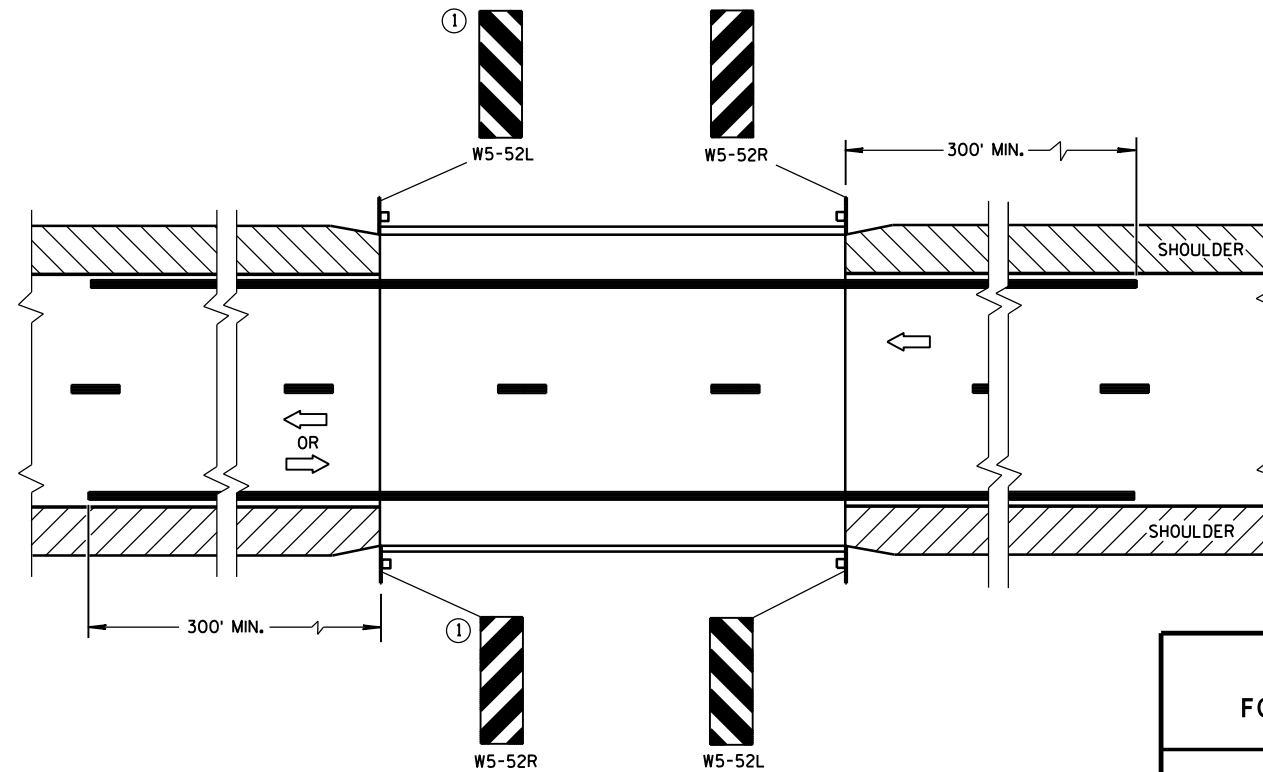
① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC



SITUATION 1

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



SITUATION 2

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

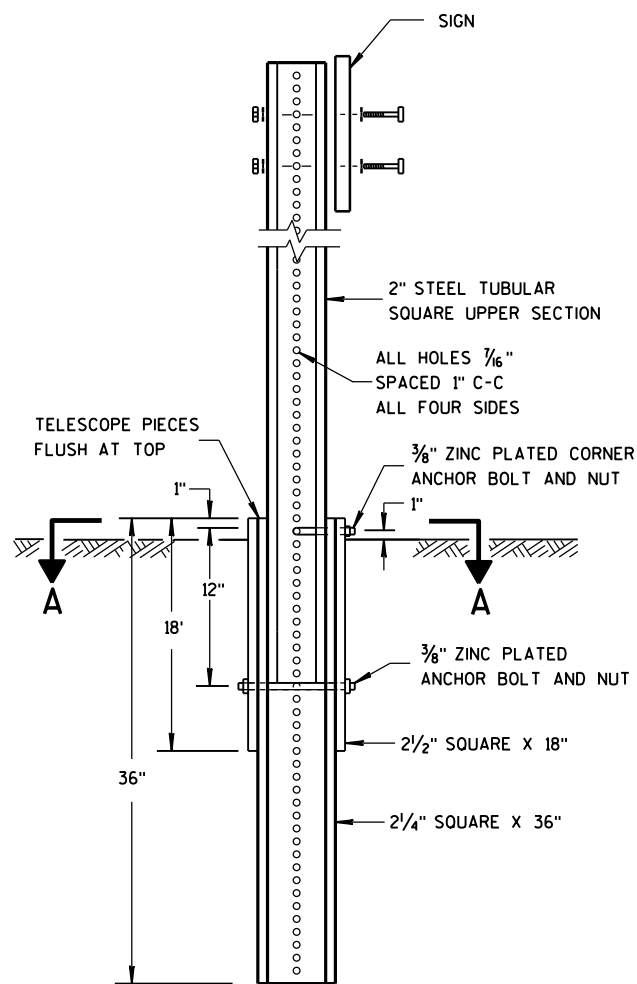
DISTANCE TABLE

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

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



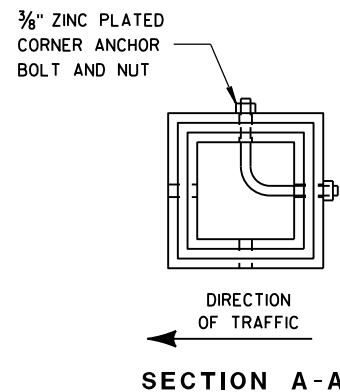
DETAIL OF TUBULAR STEEL SIGN POST

TUBULAR STEEL POSTS

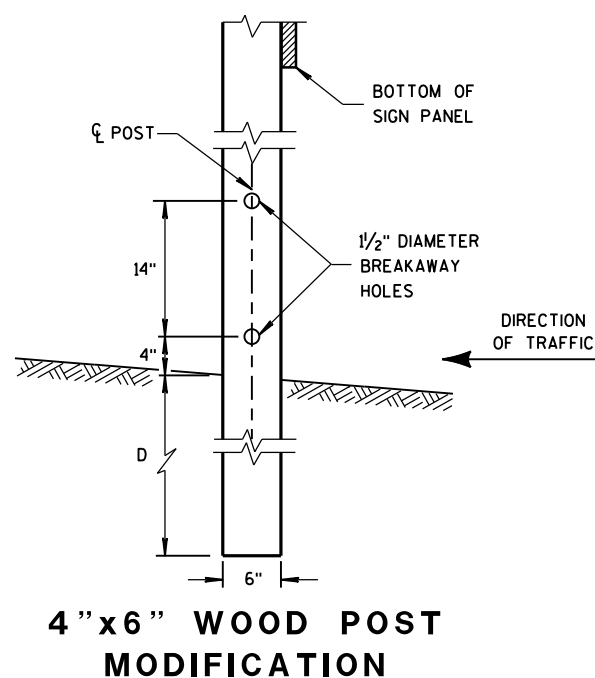
AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

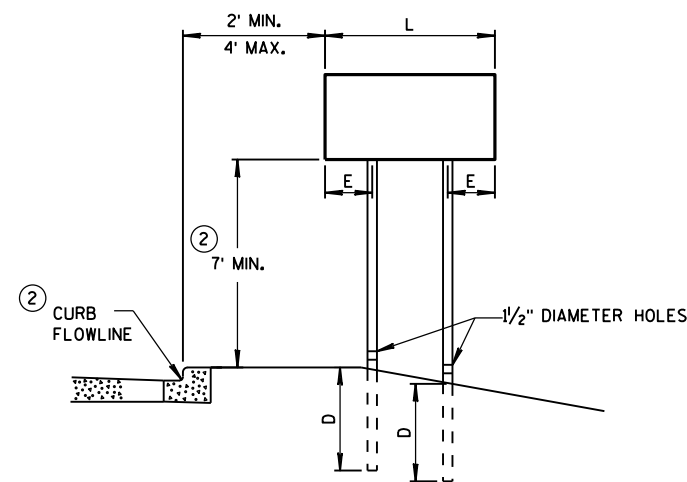
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.



SECTION A-A



4" X 6" WOOD POST MODIFICATION

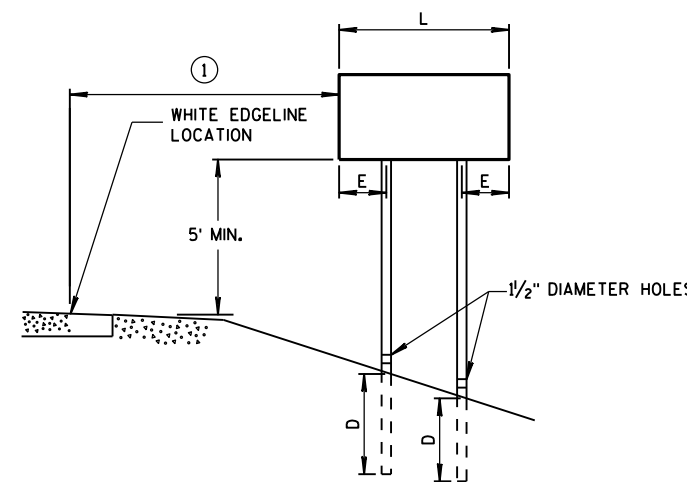


URBAN AREA

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'



RURAL AREA

4" X 6" WOOD POST

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

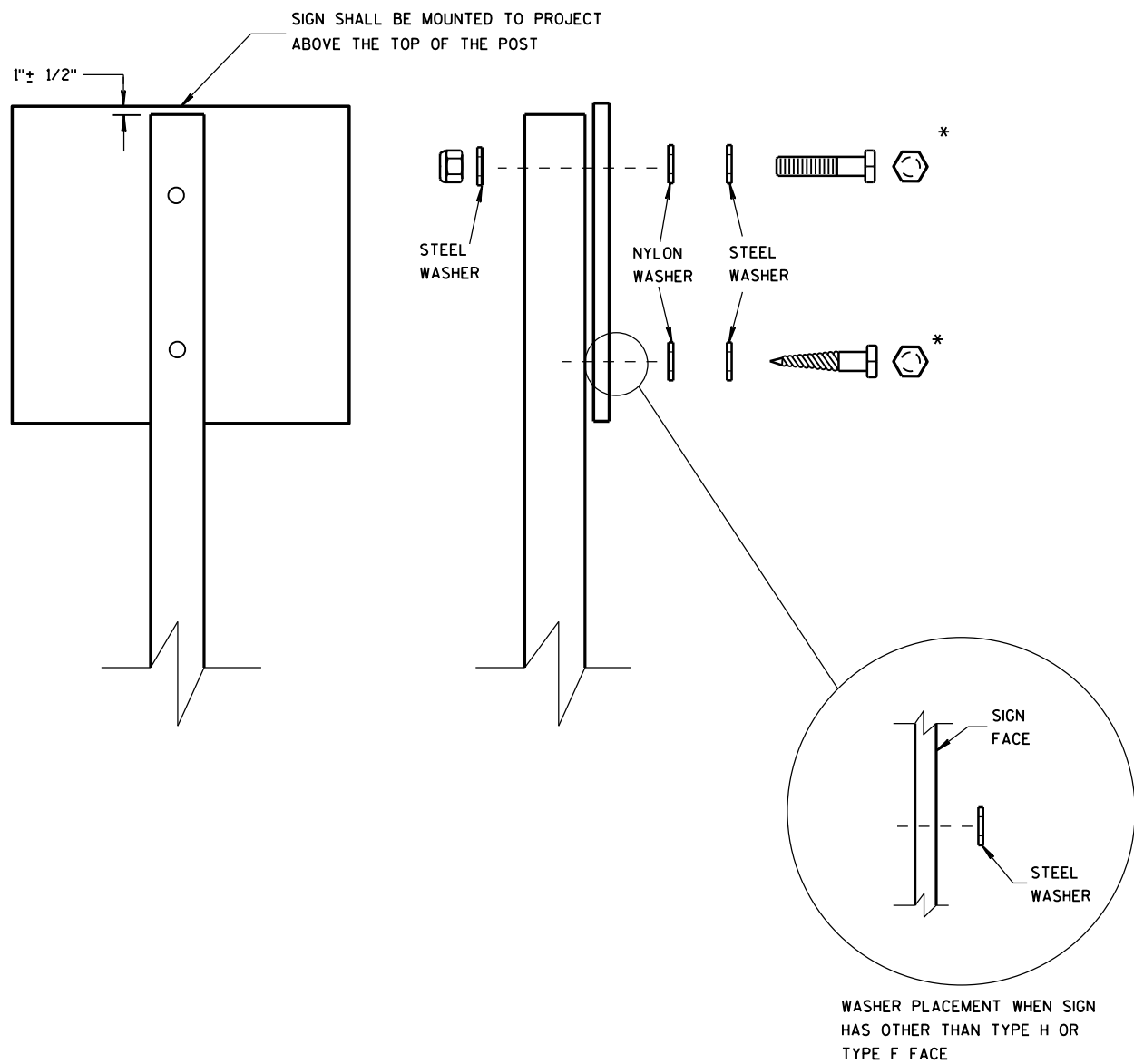
SEE NOTE ③

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 - 5/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

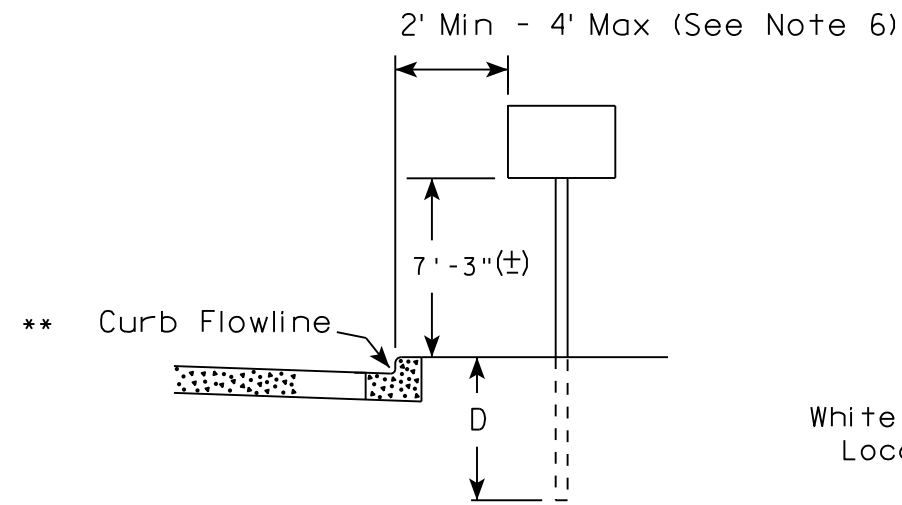
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL

1-1/4" O.D. X 3/8" I.D. X .080 NYLON FOR ALL TYPE H SIGNS

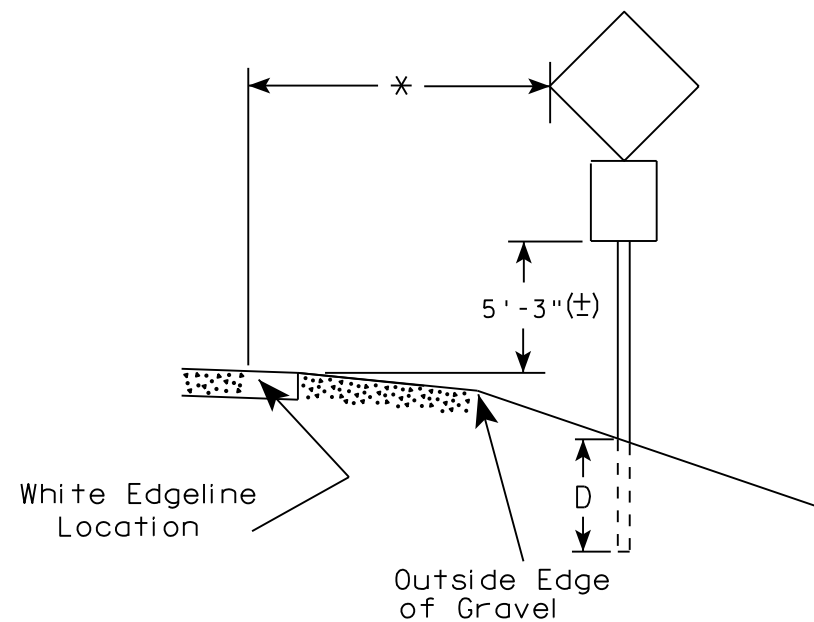
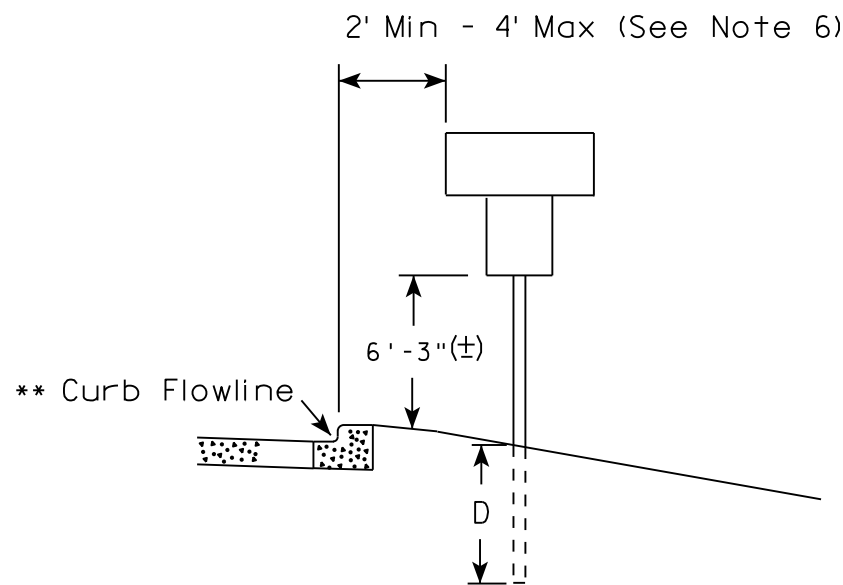
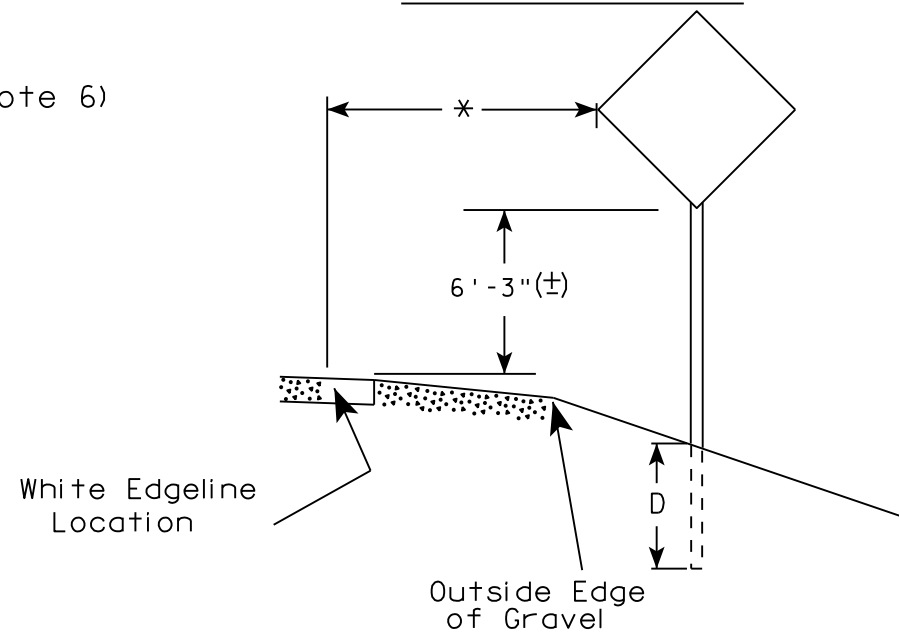
* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

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

URBAN AREA



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. 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" (±).

* * 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

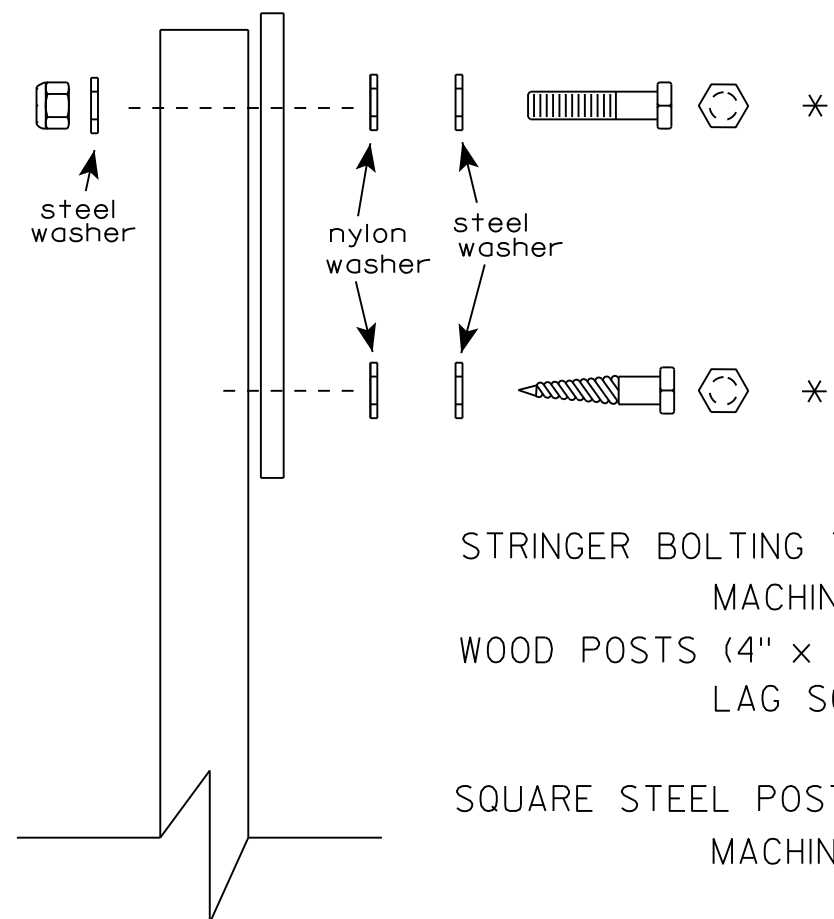
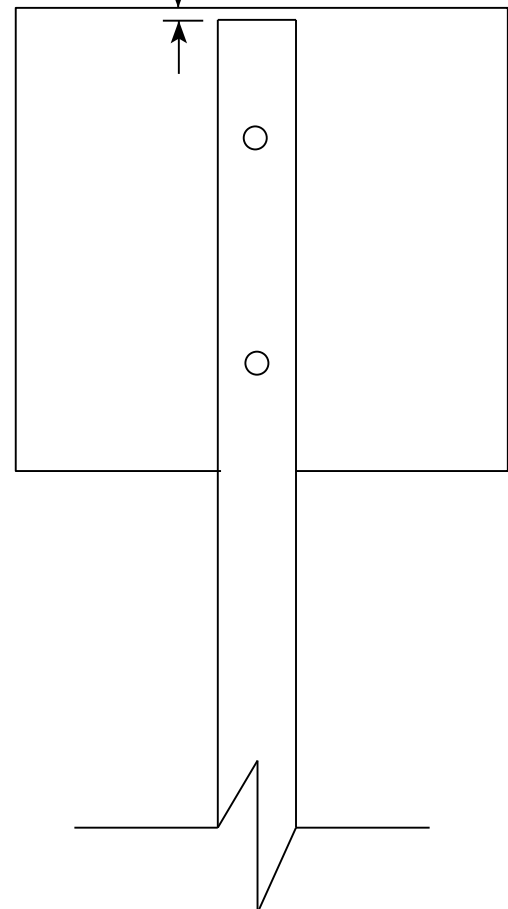
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

1"± 1/2"

SIGN SHALL BE MOUNTED TO PROJECT ABOVE THE TOP OF THE POST



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.

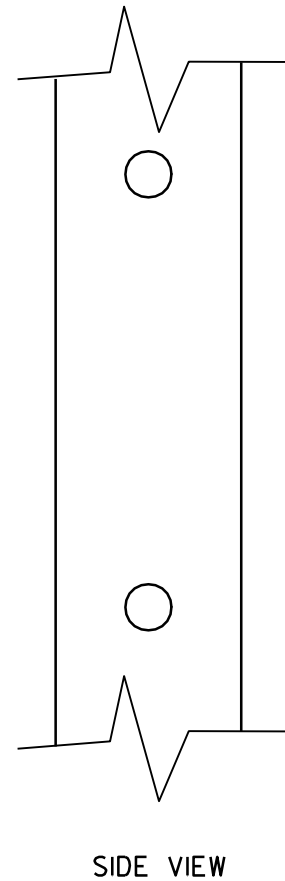
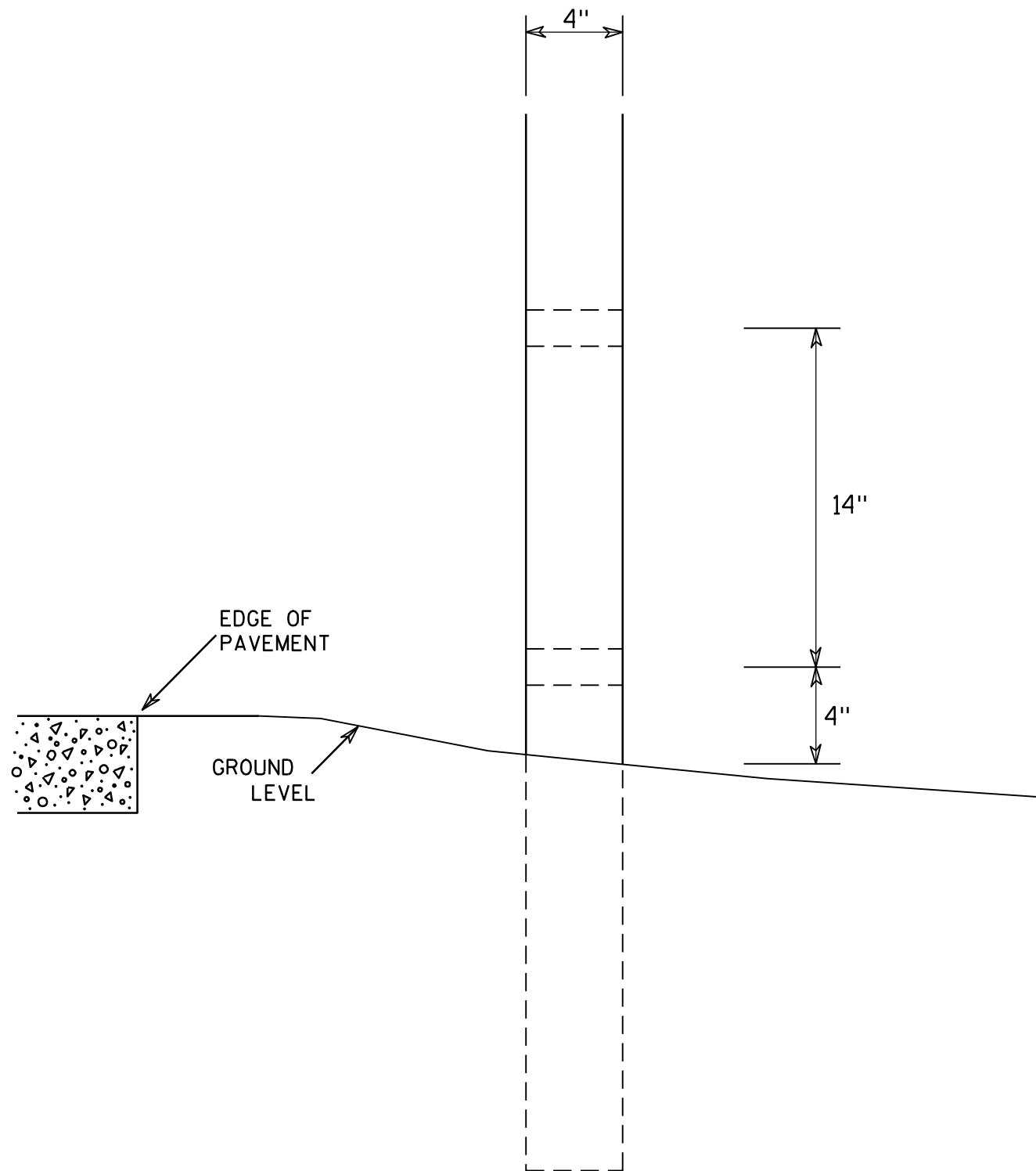
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- 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.

7

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




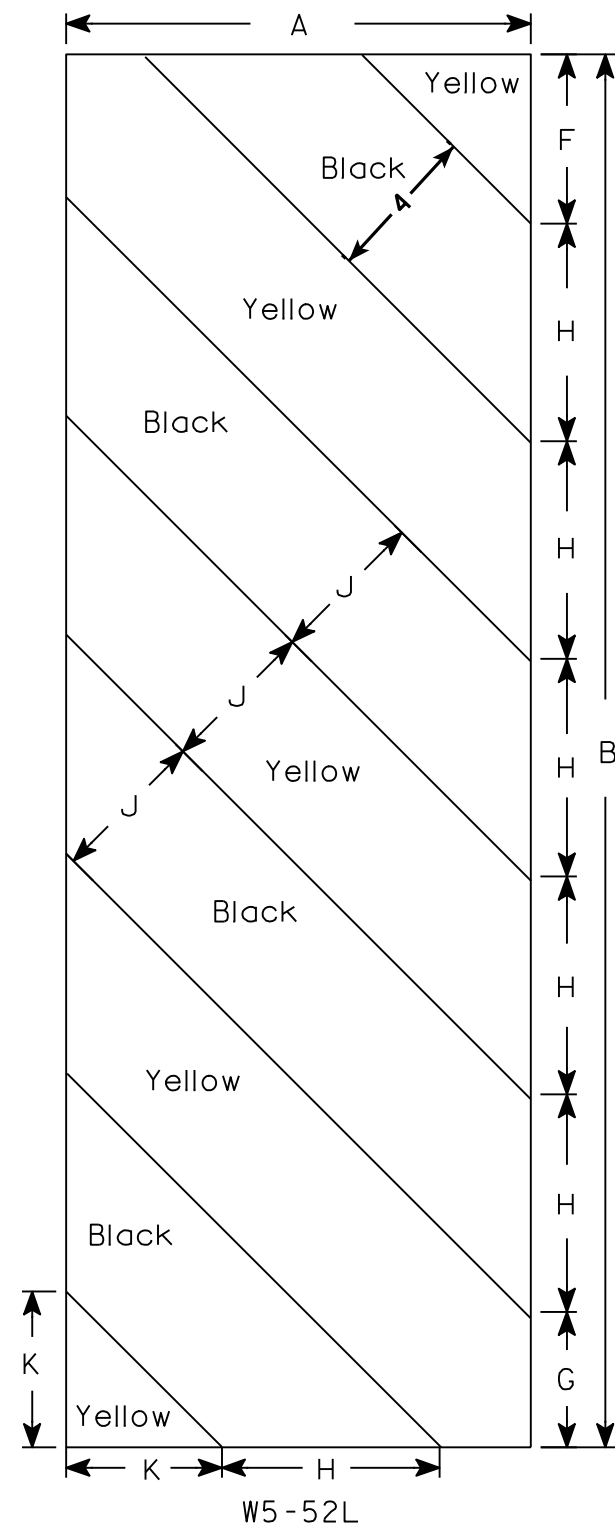
GENERAL NOTES

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

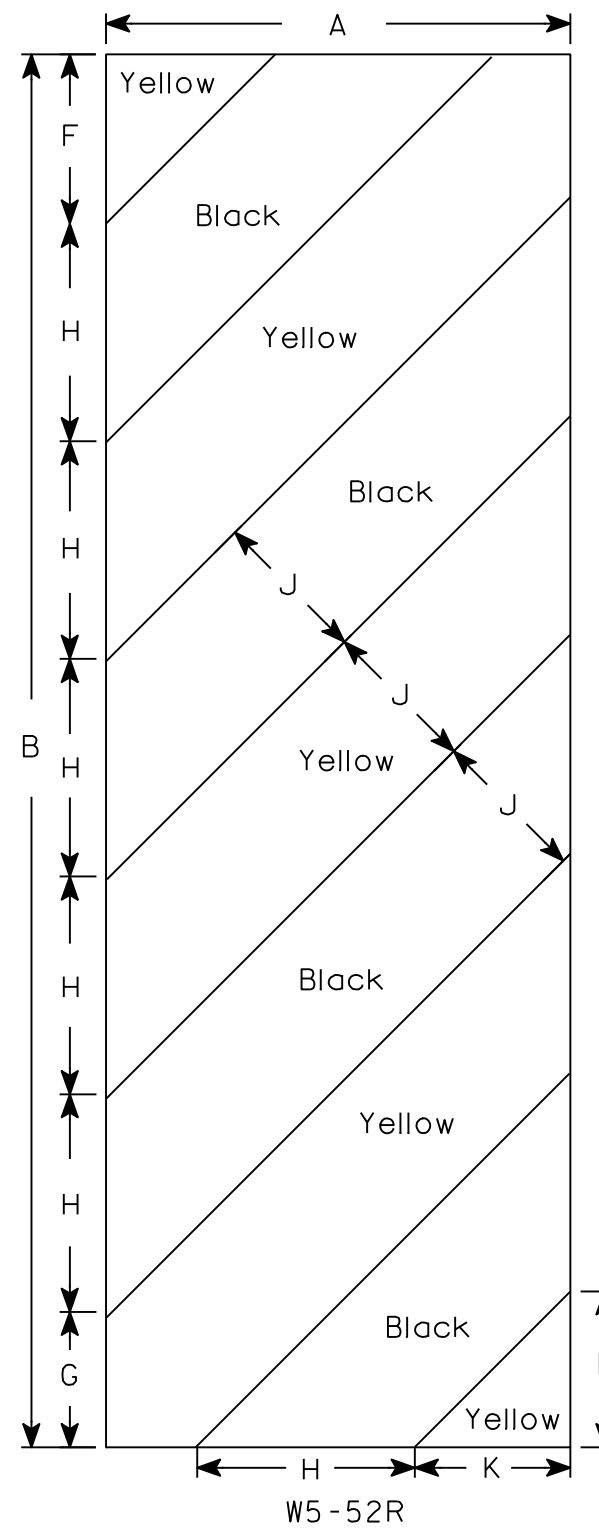
7

7

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



W5-52L



W5-52R

NOTES

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

7

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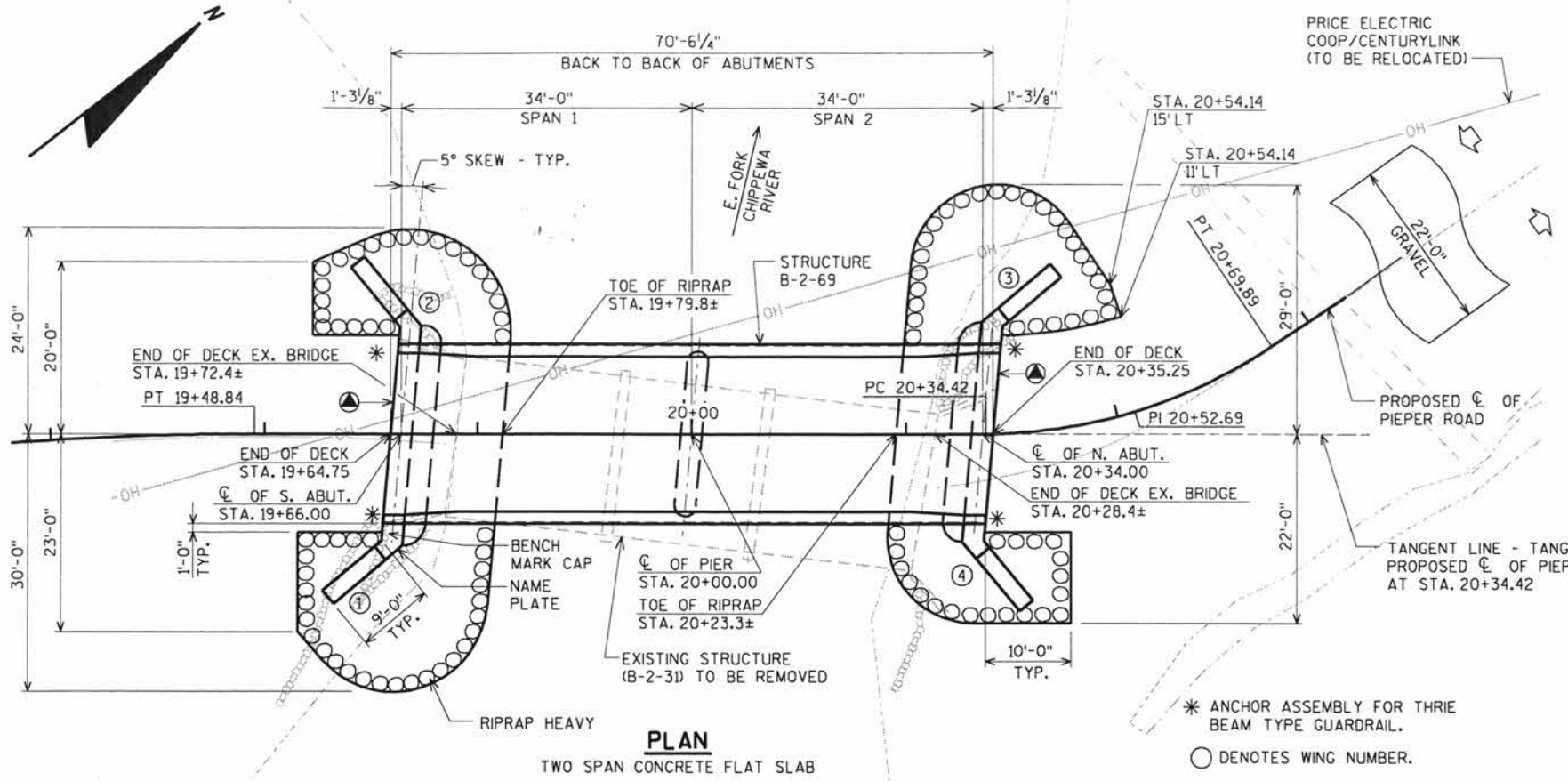
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN
W5-52L & W5-52R

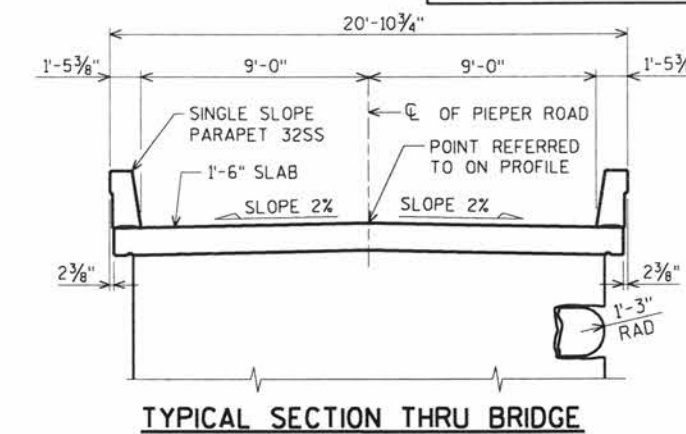
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



CURVE DATA
 P.I. STA. 20+52.69
 $\Delta = 33^{\circ}52'04''$ LT
 $D = 95^{\circ}29'35''$
 $R = 60.00'$
 $T = 18.27'$
 $L = 35.47'$
 $E = 2.72'$
 PC STA. 20+34.42
 PT STA. 20+69.89



DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
 INVENTORY RATING FACTOR: 1.12
 OPERATING RATING FACTOR: 1.45
 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

$Q_{100} = 3000$ c.f.s.
 $VEL. = 7.05$ f.p.s.
 $HW_{100} = EL. 1472.18$
 WATERWAY AREA = 425 sq. ft.
 DRAINAGE AREA = 161.0 sq. mi.
 ROADWAY OVERTOPPING = N/A
 SCOUR CRITICAL CODE = 5
 DATUM = NAVD88 (2012)

2 YEAR FREQUENCY

$Q_2 = 900$ c.f.s.
 $VEL. = 4.46$ f.p.s.
 $HW_2 = EL. 1468.07$

FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON $10\frac{3}{4}'' \phi \times 0.50''$ CIP CONCRETE PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 110 TONS # PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 40'-0" AT THE SOUTH ABUTMENT AND 30'-0" AT THE NORTH ABUTMENT. PRE-BORE PILES 10'-0" PRIOR TO DRIVING.

PIER TO BE SUPPORTED ON $10\frac{3}{4}'' \phi \times 0.50''$ CIP CONCRETE PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS # PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 50'-0".

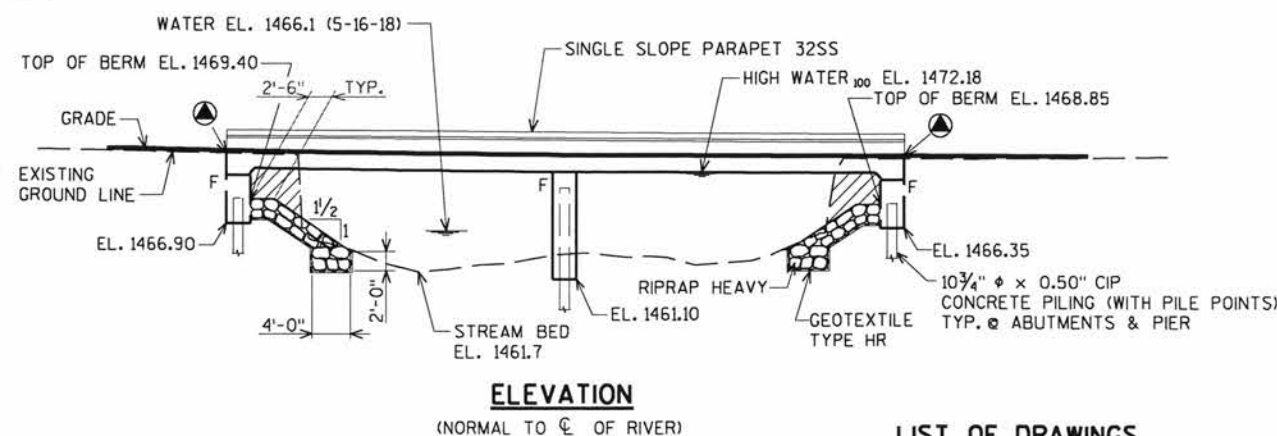
#THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

TRAFFIC DATA:

A.A.D.T. = <100 (2020)
 A.A.D.T. = <100 (2040)
 R.D.S. = <25 M.P.H.

COST OF EXCAVATION IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-2-69".

- * ANCHOR ASSEMBLY FOR THRIE BEAM TYPE GUARDRAIL.
- DENOTES WING NUMBER.
- ▲ PROTECTION ANGLE AT END OF DECK.

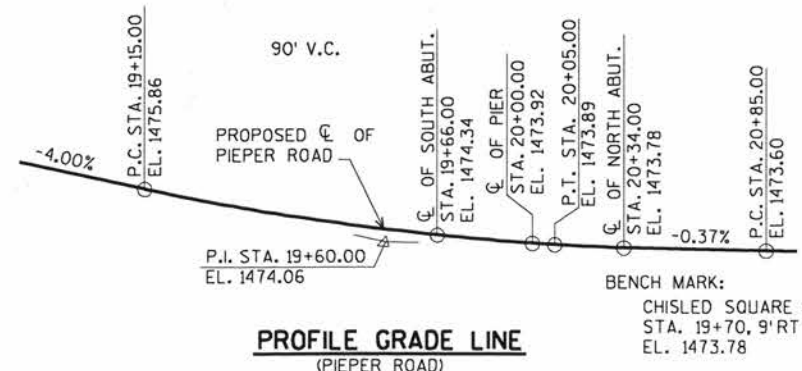


ELEVATION

(NORMAL TO C.E. OF RIVER)

LIST OF DRAWINGS

1. GENERAL PLAN
2. QUANTITIES AND NOTES
3. SUBSURFACE EXPLORATION
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT WING 1 DETAILS
6. SOUTH ABUTMENT WING 2 DETAILS
7. NORTH ABUTMENT
8. NORTH ABUTMENT WING 3 DETAILS
9. NORTH ABUTMENT WING 4 DETAILS
10. ABUTMENT BILL OF BARS
11. PIER
12. SUPERSTRUCTURE
13. SUPERSTRUCTURE DETAILS
14. SINGLE SLOPE PARAPET 32SS



PROFILE GRADE LINE

(PIEPER ROAD)



6/25/2019

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

CONSULTANT CONTACT:
 DAN SYDOW
 (715)-834-3161

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY			
AYRES ASSOCIATES		3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	William C. Diehn, Sr.		07/31/19
CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-2-69			
PIEPER ROAD OVER E. FORK CHIPPEWA RIVER			
COUNTY	ASHLAND	TOWN/CITY/VILLAGE	SHANAGOLDEN
DESIGN SPEC.	AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS		
DESIGNED BY	JLB	DESIGN CK'D.	CJM
DRAWN BY	ZSS	PLANS CK'D.	BNS
GENERAL PLAN			SHEET 1 OF 14

\$PRFNAME\$ U:\42-1126.00 - Ashland Co., In Shanagolden, Pieper Road\Structure\es+421126 gp.dgn

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

8

8

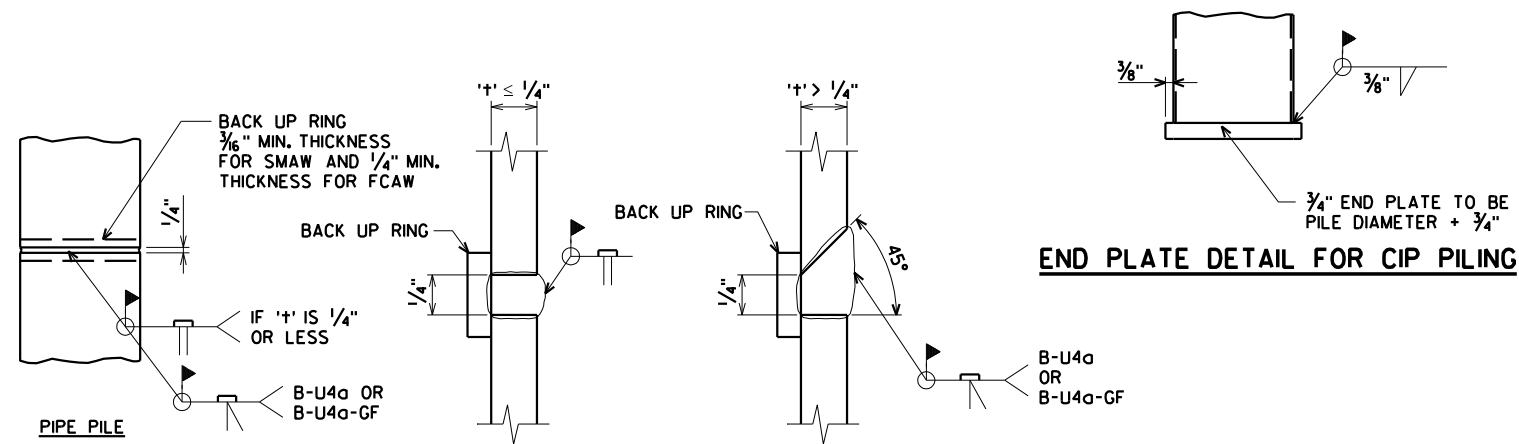
TOTAL ESTIMATED QUANTITIES

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 20+00	LS	-----	-----	-----	-----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-2-69	LS	-----	-----	-----	-----	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	110	-----	110	-----	220
502.0100	CONCRETE MASONRY BRIDGES	CY	21	19	21	100	161
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	-----	145	145
502.3210	PIGMENTED SURFACE SEALER	SY	-----	-----	-----	60	60
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1,730	980	1,730	-----	4,440
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,310	40	1,310	20,540	23,200
506.0105	STRUCTURAL STEEL CARBON	LB	-----	-----	-----	350	350
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	5	-----	5	-----	10
550.0020	PRE-BORING ROCK OR CONSOLIDATED MATERIALS	LF	60	-----	60	-----	120
550.0500	PILE POINTS	EACH	6	5	6	-----	17
550.2108	PILING CIP CONCRETE 10 3/4" x 0.50-INCH	LF	240	250	180	-----	670
606.0300	RIPRAP HEAVY	CY	75	-----	70	-----	145
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	70	-----	70	-----	140
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	-----	-----	-----	4	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	40	-----	40	-----	80
645.0120	GEOTEXTILE TYPE HR	SY	150	-----	140	-----	290
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 ALTERNATIVE METHOD IS APPROVED BY THE ENGINEER.
 THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-2-69" SHALL BE THE EXISTING GROUNDLINE.
 THE EXISTING STRUCTURE, B-2-31, TO BE REMOVED, IS A THREE SPAN TIMBER SLAB BRIDGE ON CONCRETE ABUTMENTS AND TIMBER PIERS, 57.2 FOOT LONG WITH A 16 FOOT 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 AND PIGMENTED SURFACE SEALER 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.
 THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.

● SALVAGE EXISTING TIMBER DECK TO TOWN OF SHANAGOLDEN

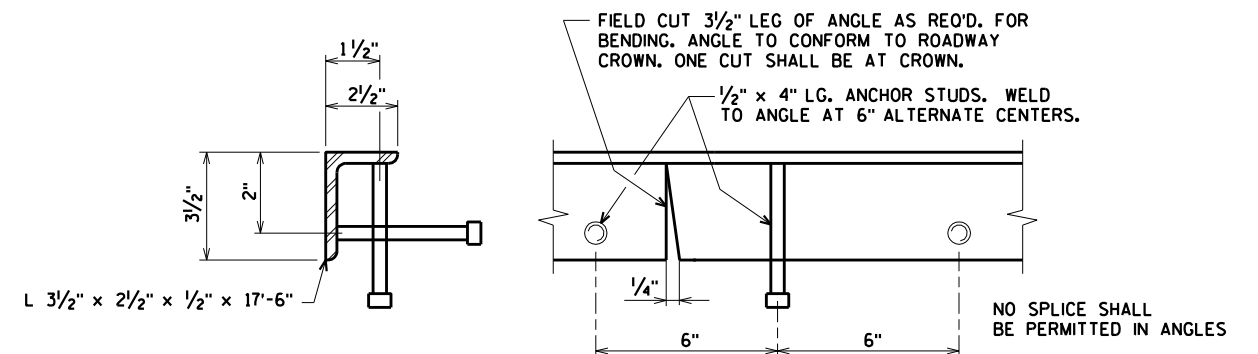


PILE SPLICE DETAIL

CAST-IN-PLACE PILE SHELL MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

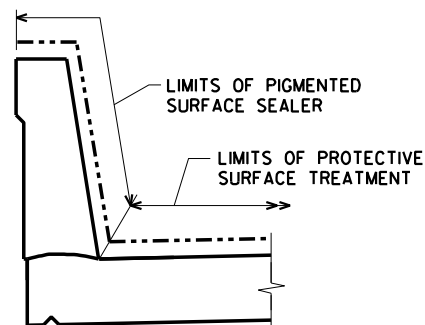
CIP PILE WELD DETAIL

END PLATE DETAIL FOR CIP PILING

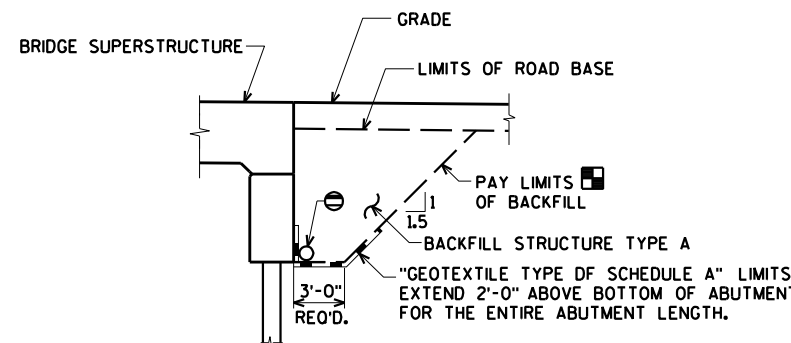


PROTECTION ANGLE DETAIL

(ANGLE AND STUDS TO BE PAID FOR AT THE UNIT PRICE BID FOR "STRUCTURAL STEEL CARBON". (NO PAINT REQ'D.))
 SANDBLAST PROTECTION ANGLE AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PROTECTION ANGLE SHALL BE HOT DIPPED GALVANIZED.



PROTECTIVE SURFACE TREATMENT AND PIGMENTED SURFACE SEALER DETAILS



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 SHEET 5.

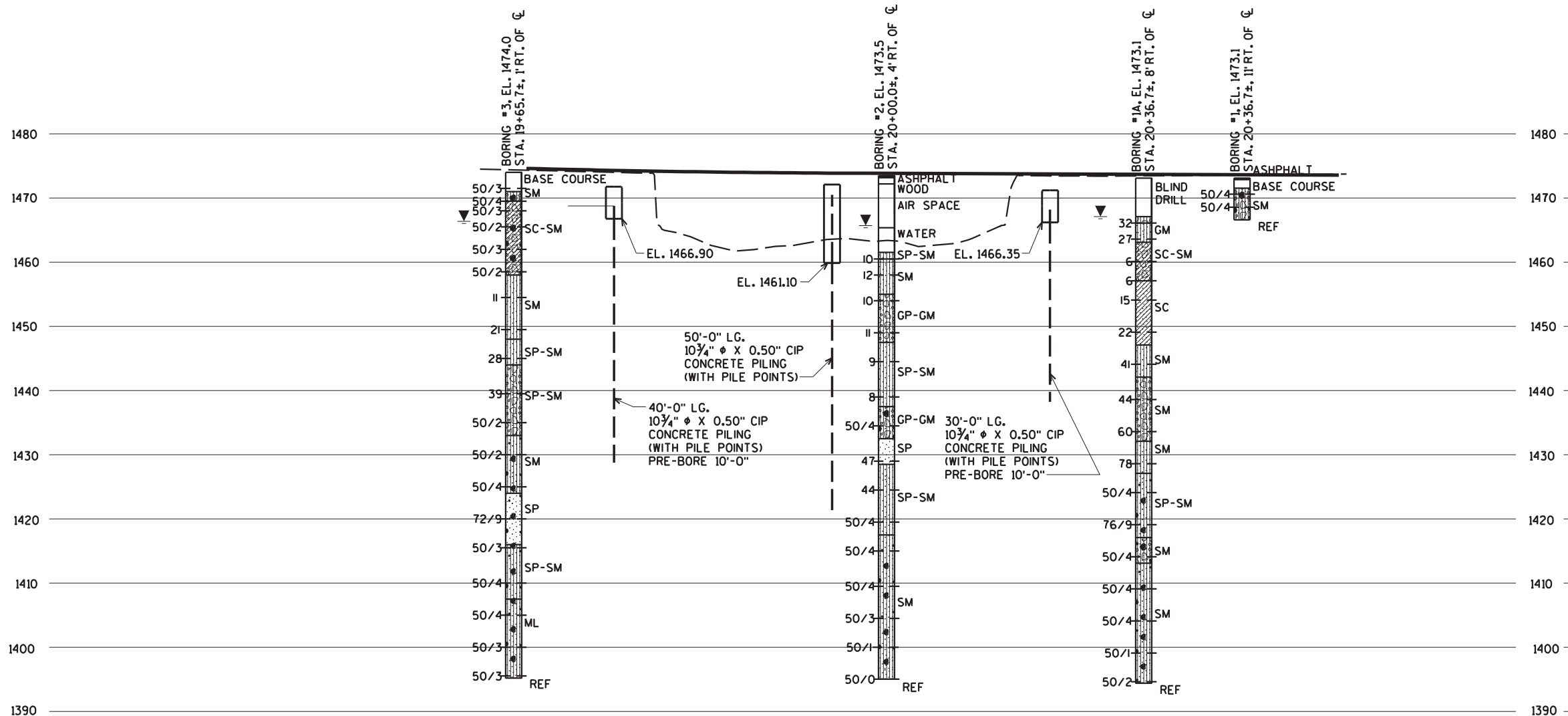
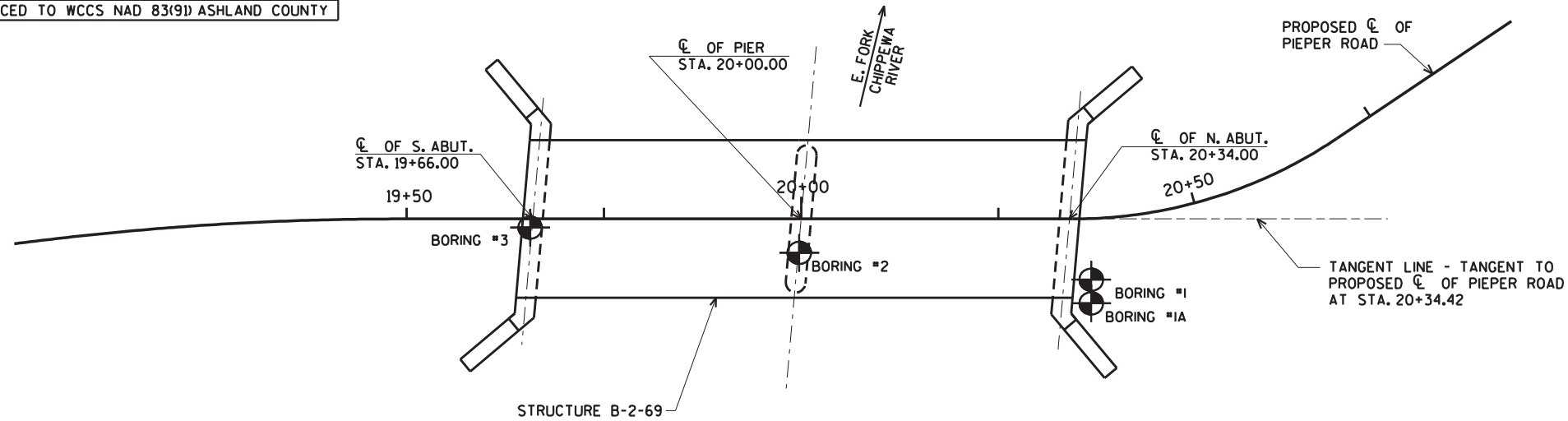
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-2-69			
DRAWN BY ZSS		PLANS CK'D. JLB	
QUANTITIES AND NOTES			SHEET 2 OF 14

\$PRNAME\$ U:\42-1126.00 - Ashland Co. In Shanagolden, Pieper Road\Structures\421126 soils.dgn

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	SEPTEMBER 4, 2018	145072.29	559001.42
1A	SEPTEMBER 4, 2018	145070.43	559003.76
2	SEPTEMBER 4, 2018	145045.45	558975.74
3	SEPTEMBER 5, 2018	145020.74	558982.02

BORINGS COMPLETED BY: GEOTECHNICAL DRILLING CONTRACTORS, LLC
 REPORT COMPLETED BY: ECS MIDWEST, LLC
 ALL COORDINATES REFERENCED TO WCCS NAD 83(9) ASHLAND COUNTY



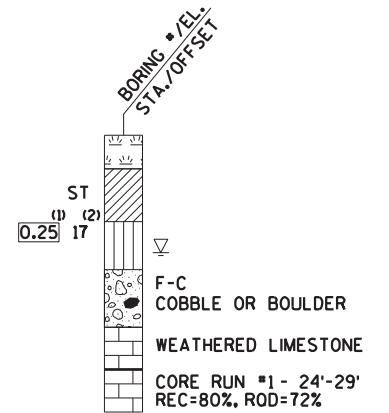
STATE PROJECT NUMBER

8309-00-00

MATERIAL SYMBOLS

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

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

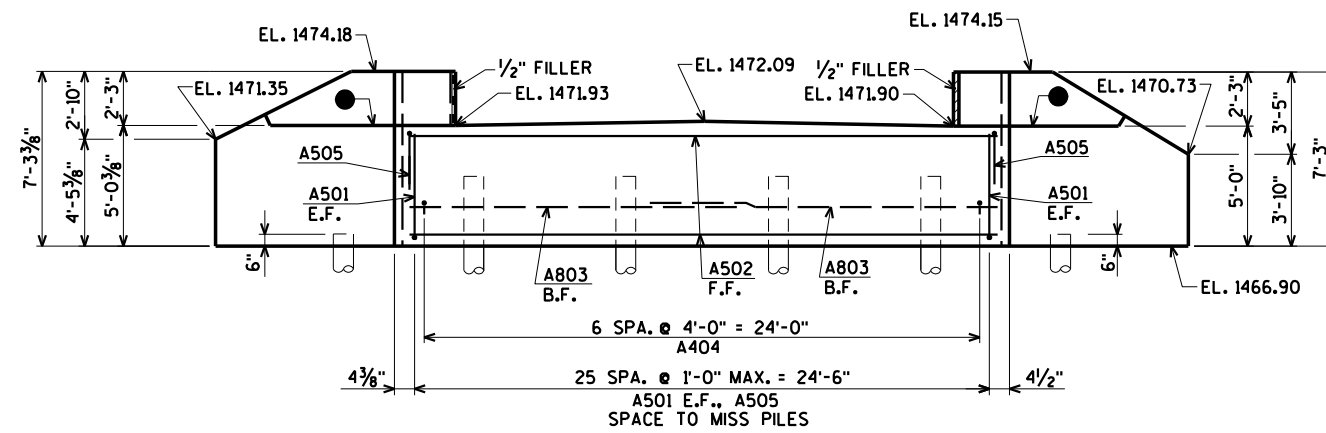
BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT 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.

8

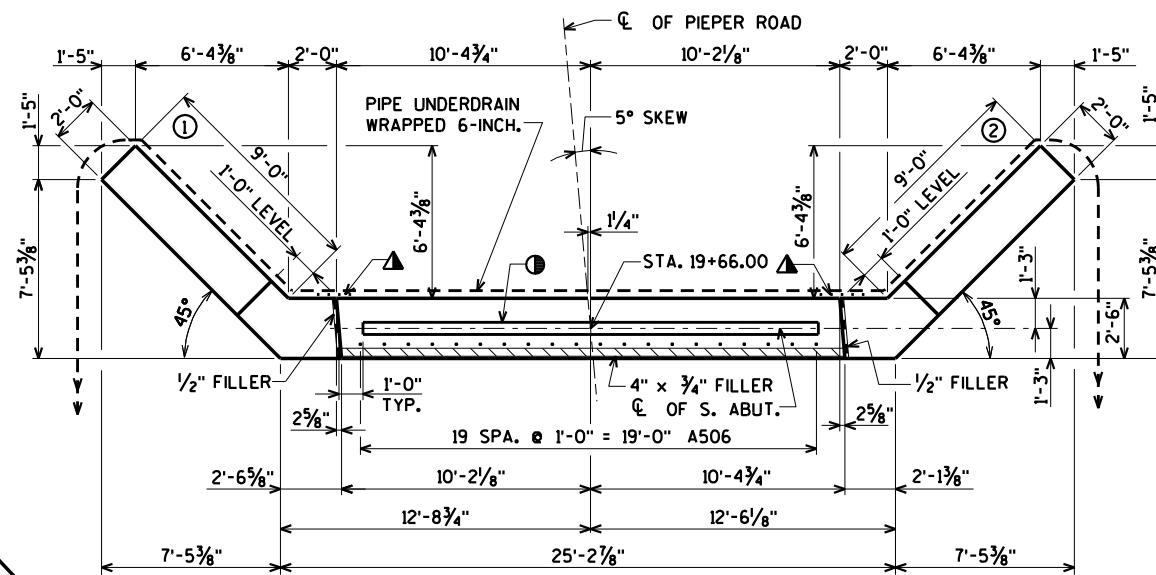
8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-2-69			
DRAWN BY		ZSS	PLANS CKD. JLB
SUBSURFACE EXPLORATION			SHEET 3 OF 14

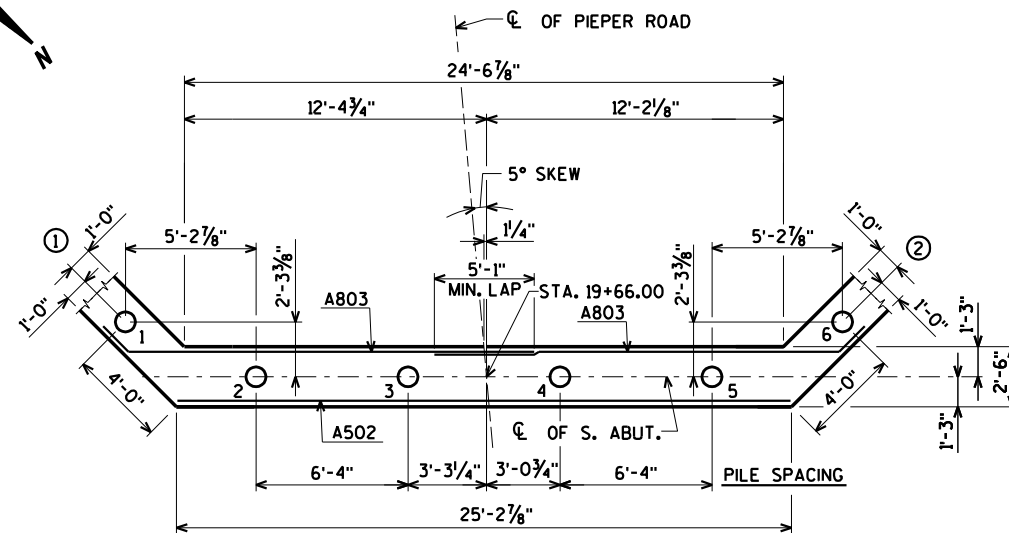
NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)



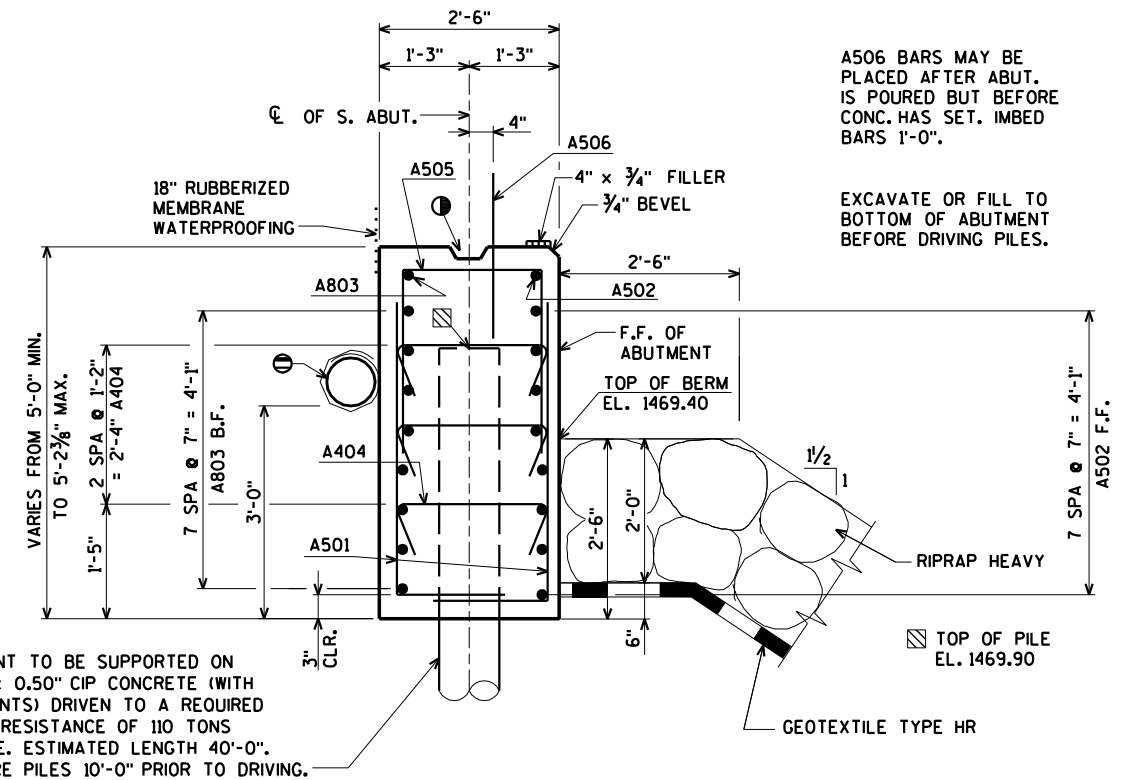
ELEVATION
(LOOKING SOUTH)



PLAN



PILE LAYOUT



TYPICAL SECTION THRU BODY

ABUTMENT TO BE SUPPORTED ON 10 3/4" x 0.50" CIP CONCRETE (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 110 TONS PER PILE. ESTIMATED LENGTH 40'-0". PRE-BORE PILES 10'-0" PRIOR TO DRIVING.

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

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. FOR RODENT SHIELD DETAIL SEE SHEET 5.

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

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

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

FOR PILE SPLICE DETAIL SEE SHEET 2.

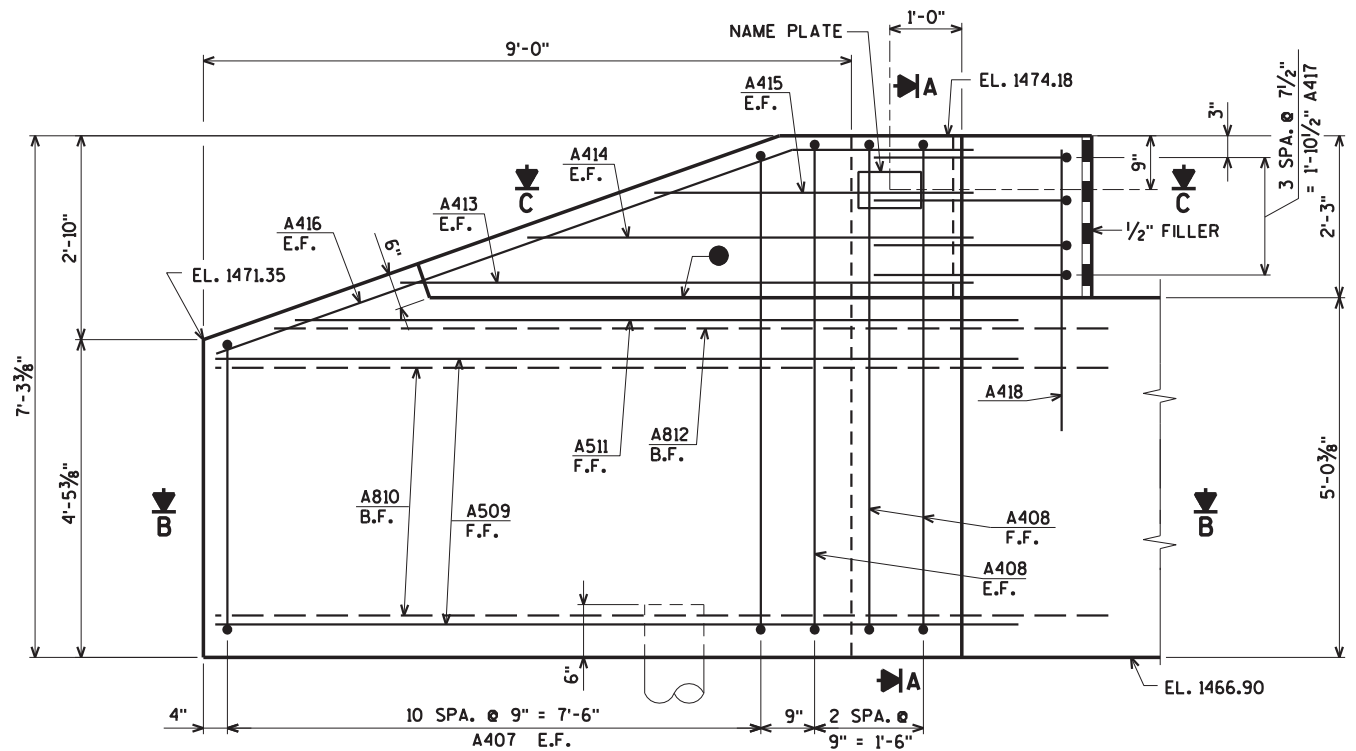
B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

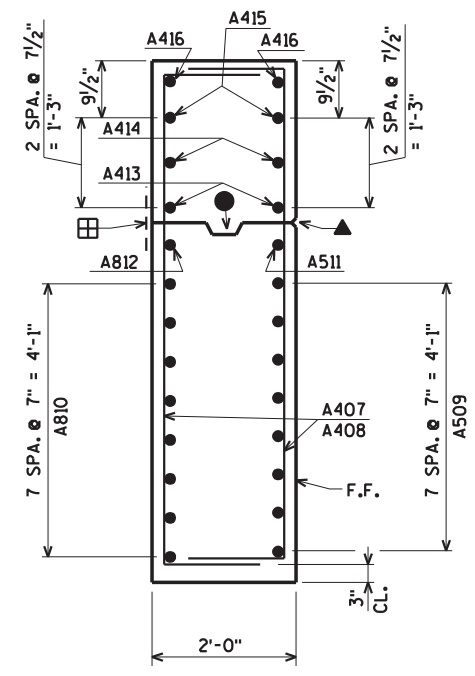
E.F. DENOTES EACH FACE.

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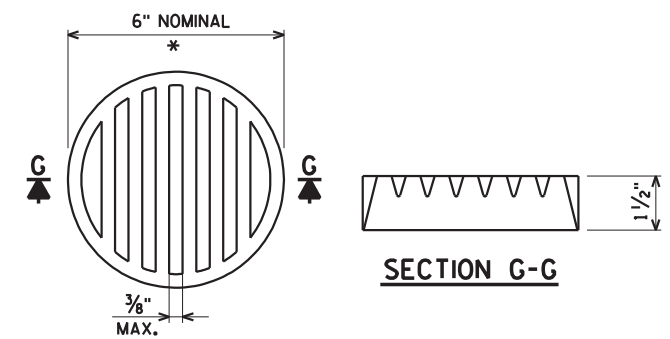
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-2-69			
DRAWN BY		CLS	PLANS CK'D. JLB
SOUTH ABUTMENT			SHEET 4 OF 14



ELEVATION - WING I



SECTION A



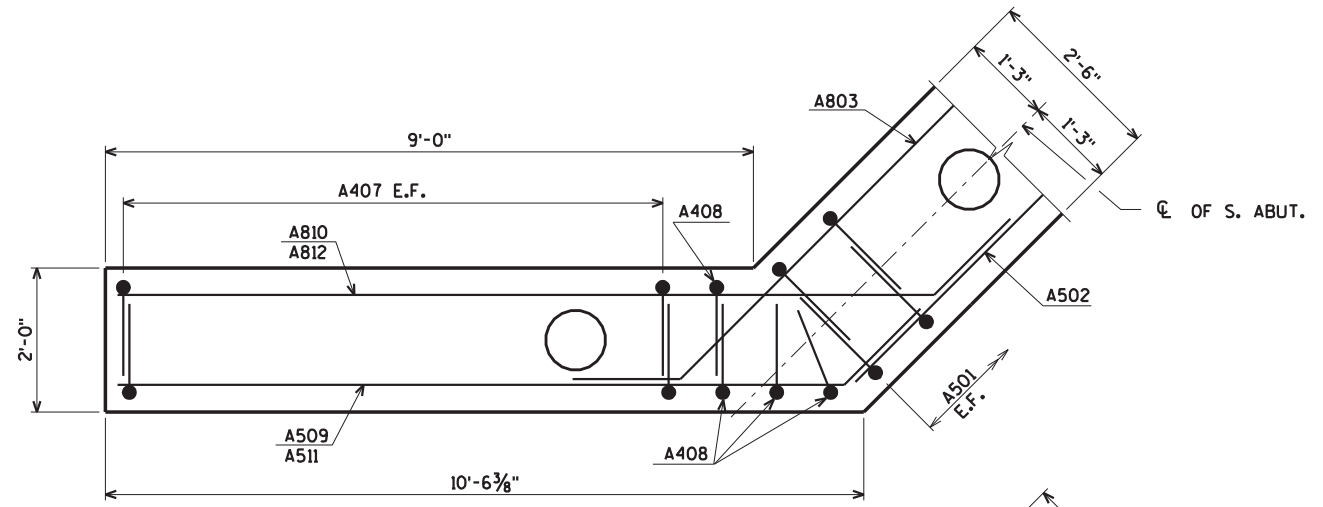
SECTION G-G

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

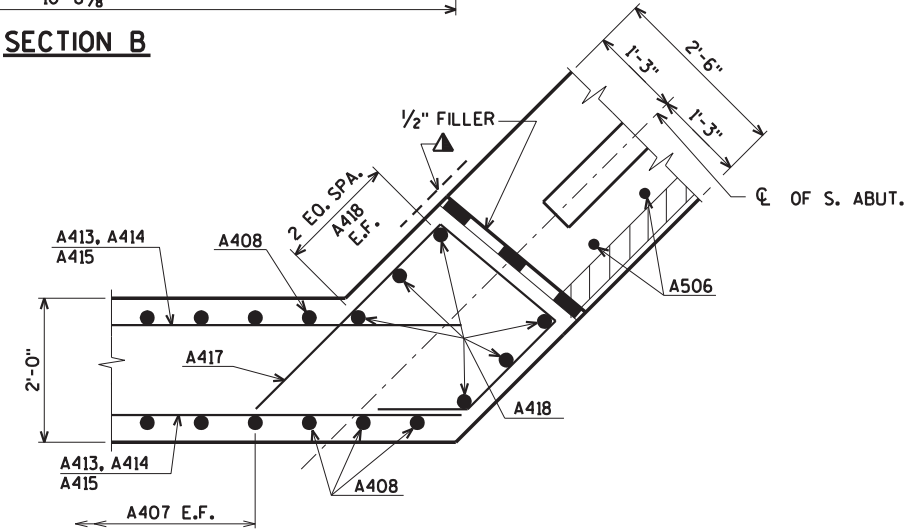
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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



SECTION B



SECTION C

- ▲ 3/4" 'V' GROOVE ON F.F. OF WING WALL - NOT REQUIRED IF CONST. JT. IS NOT USED.
 - OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".
 - ▲ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WINGWALL.
 - ▣ 18" RUBBERIZED MEMBRANE WATERPROOFING. IF CONST. JOINT IS USED (COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES")
- B.F. DENOTES BACK FACE.
F.F. DENOTES FRONT FACE.
E.F. DENOTES EACH FACE.

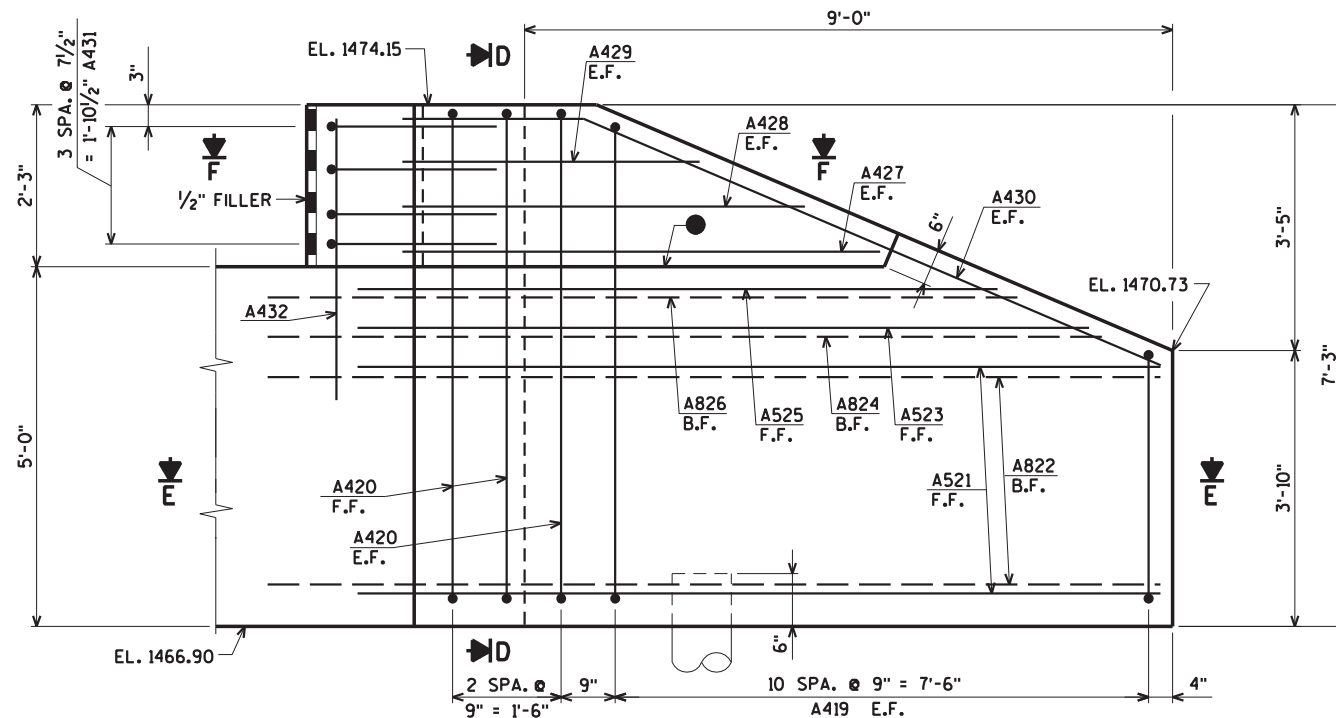
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-2-69			
DRAWN BY		CLS	PLANS CK'D. JLB
SOUTH ABUTMENT WING 1 DETAILS			SHEET 5 OF 14

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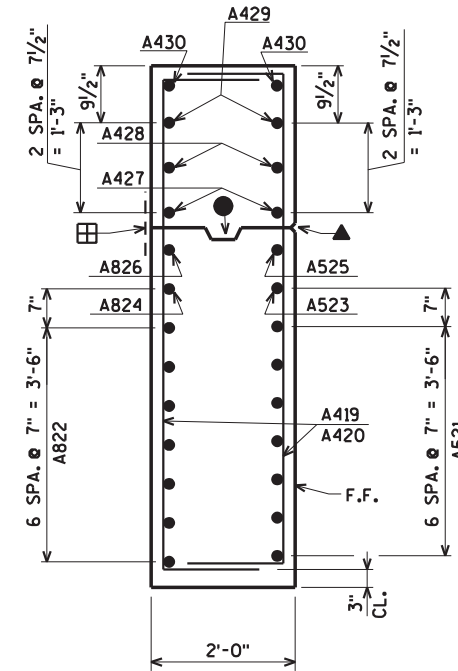
5/22/2019 PENTABLEBReou-shd_util.tbl

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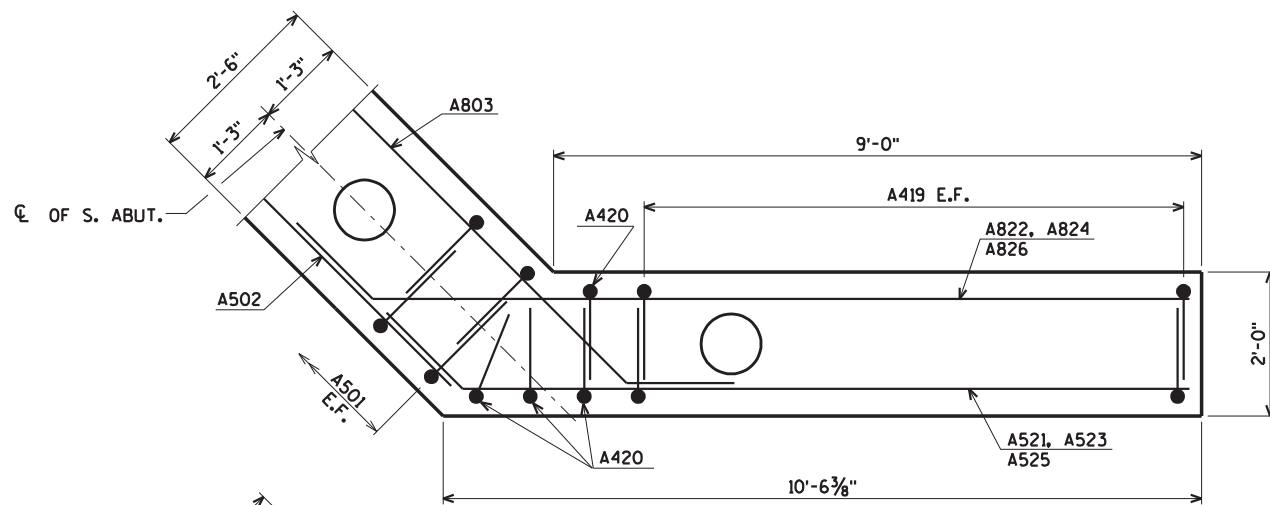
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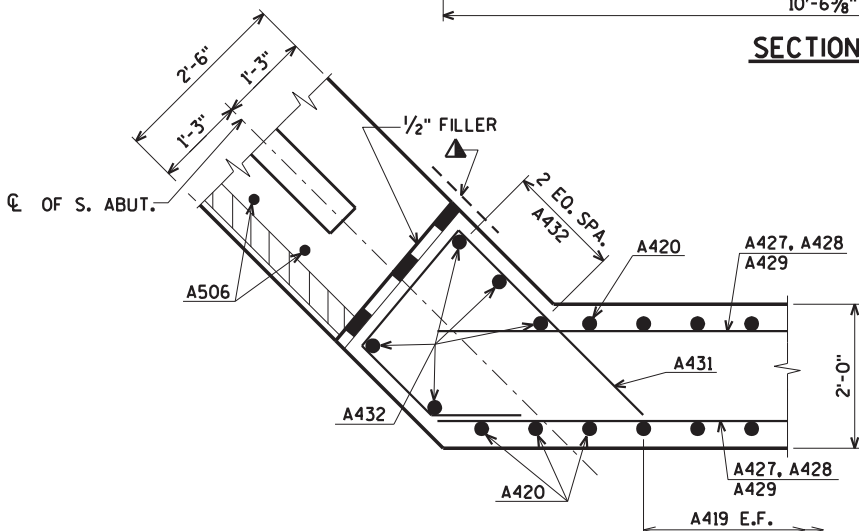
ELEVATION - WING 2



SECTION D



SECTION E



SECTION F

- ▲ 3/4" 'V' GROOVE ON F.F. OF WING WALL - NOT REQUIRED IF CONST. JT. IS NOT USED.
 - OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".
 - ▲ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WINGWALL.
 - ▣ 18" RUBBERIZED MEMBRANE WATERPROOFING. IF CONST. JOINT IS USED (COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES")
- 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

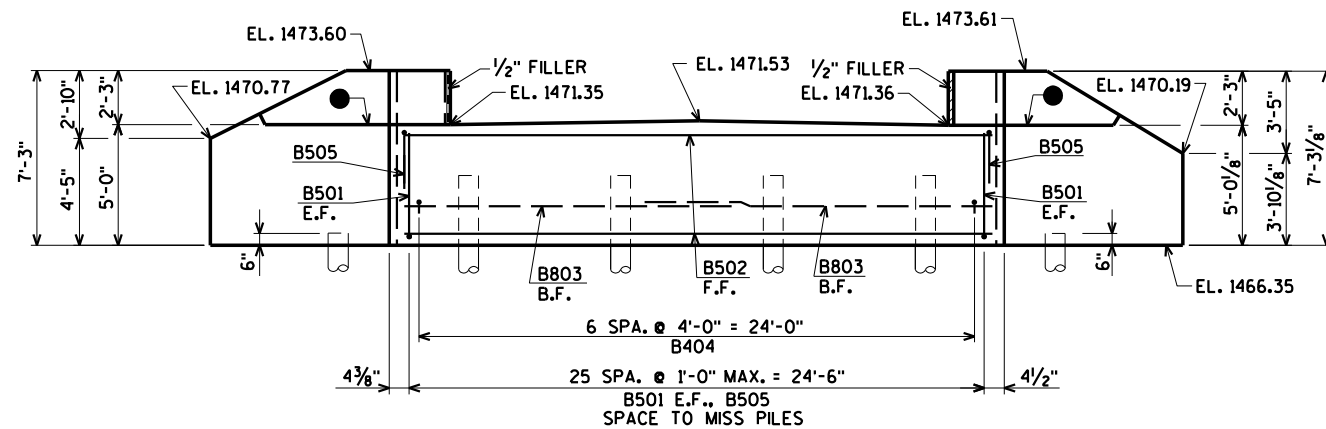
STRUCTURE B-2-69

DRAWN BY CLS PLANS CK'D. JLB

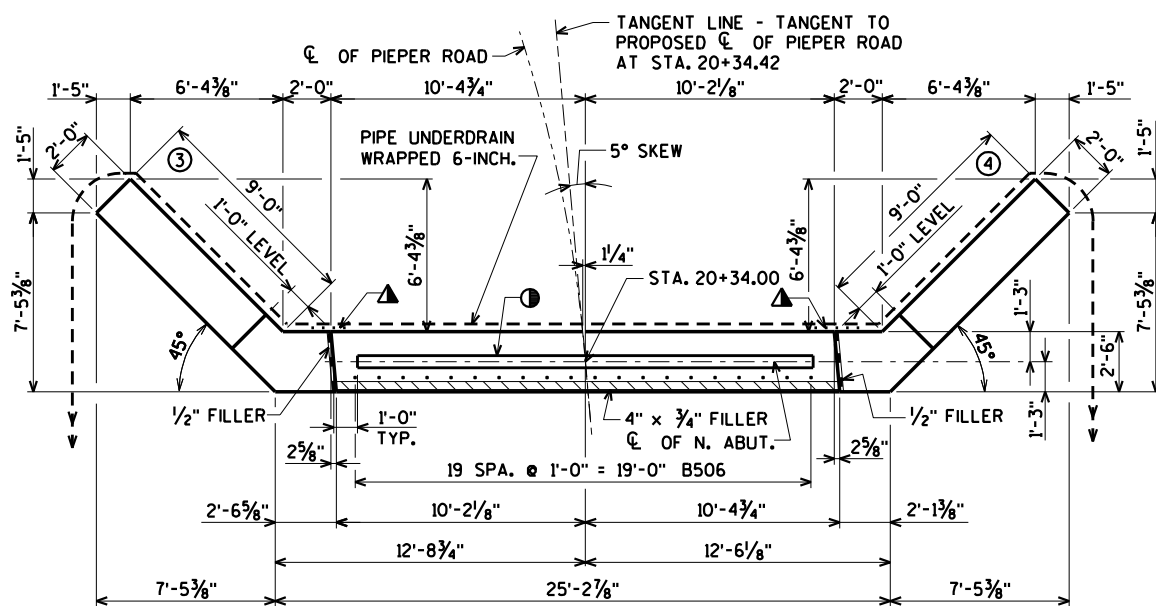
SOUTH ABUTMENT WING 2 DETAILS
SHEET 6 OF 14

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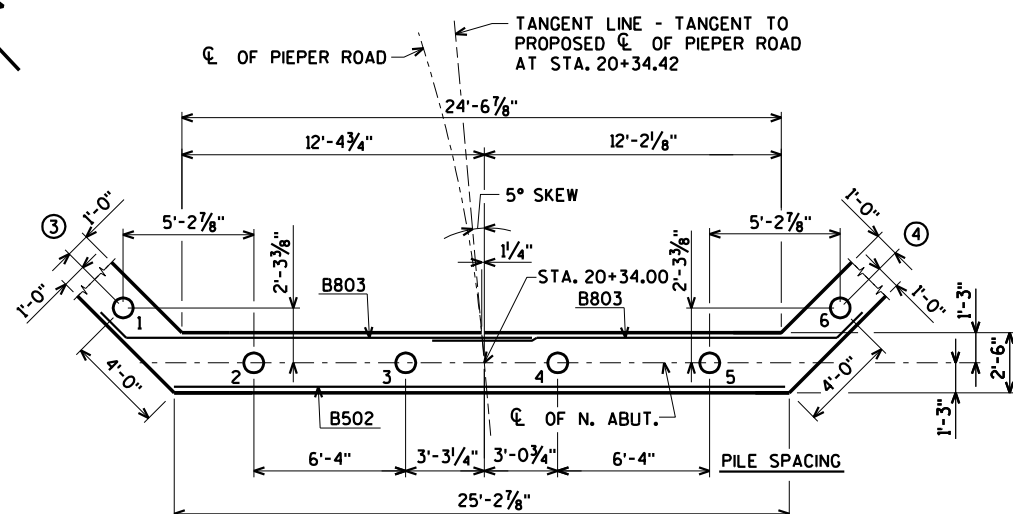
NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)



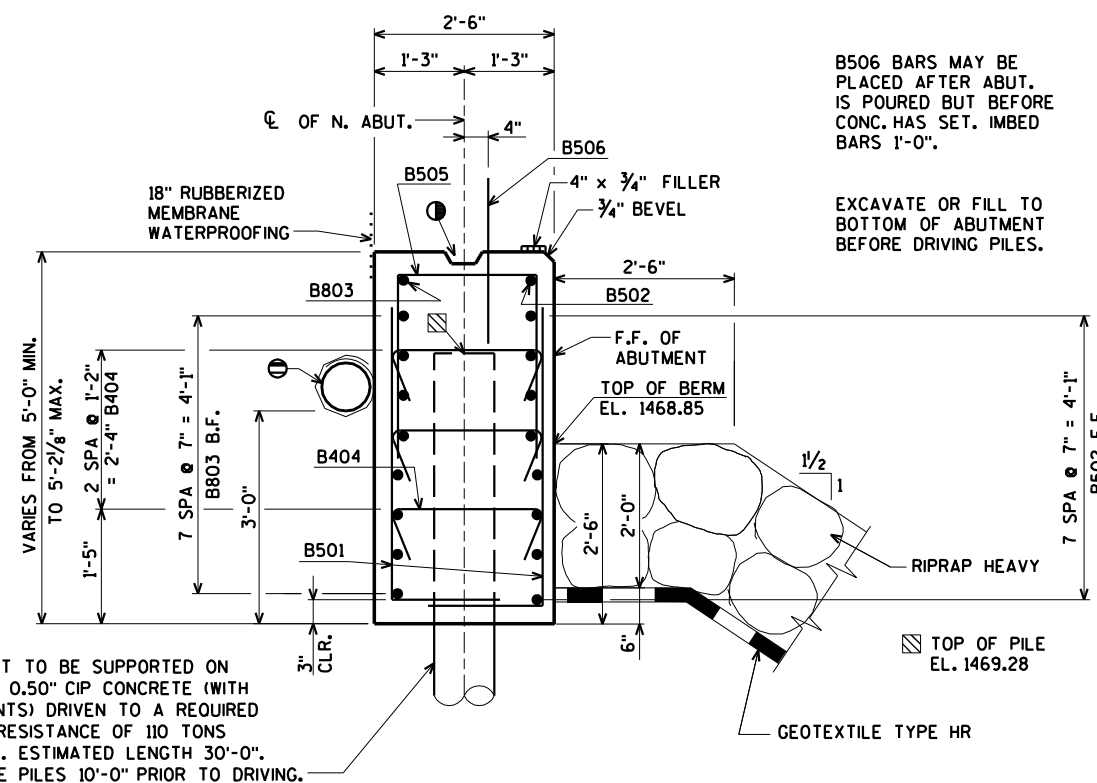
ELEVATION
(LOOKING NORTH)



PLAN



PILE LAYOUT



TYPICAL SECTION THRU BODY

ABUTMENT TO BE SUPPORTED ON 10 3/4" x 0.50" CIP CONCRETE (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 110 TONS PER PILE. ESTIMATED LENGTH 30'-0". PRE-BORE PILES 10'-0" PRIOR TO DRIVING.

B506 BARS MAY BE PLACED AFTER ABUT. IS POURED BUT BEFORE CONC. HAS SET. IMBED BARS 1'-0".

EXCAVATE OR FILL TO BOTTOM OF ABUTMENT BEFORE DRIVING PILES.

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

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. FOR RODENT SHIELD DETAIL SEE SHEET 5.

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

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

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

FOR PILE SPLICE DETAIL SEE SHEET 2.

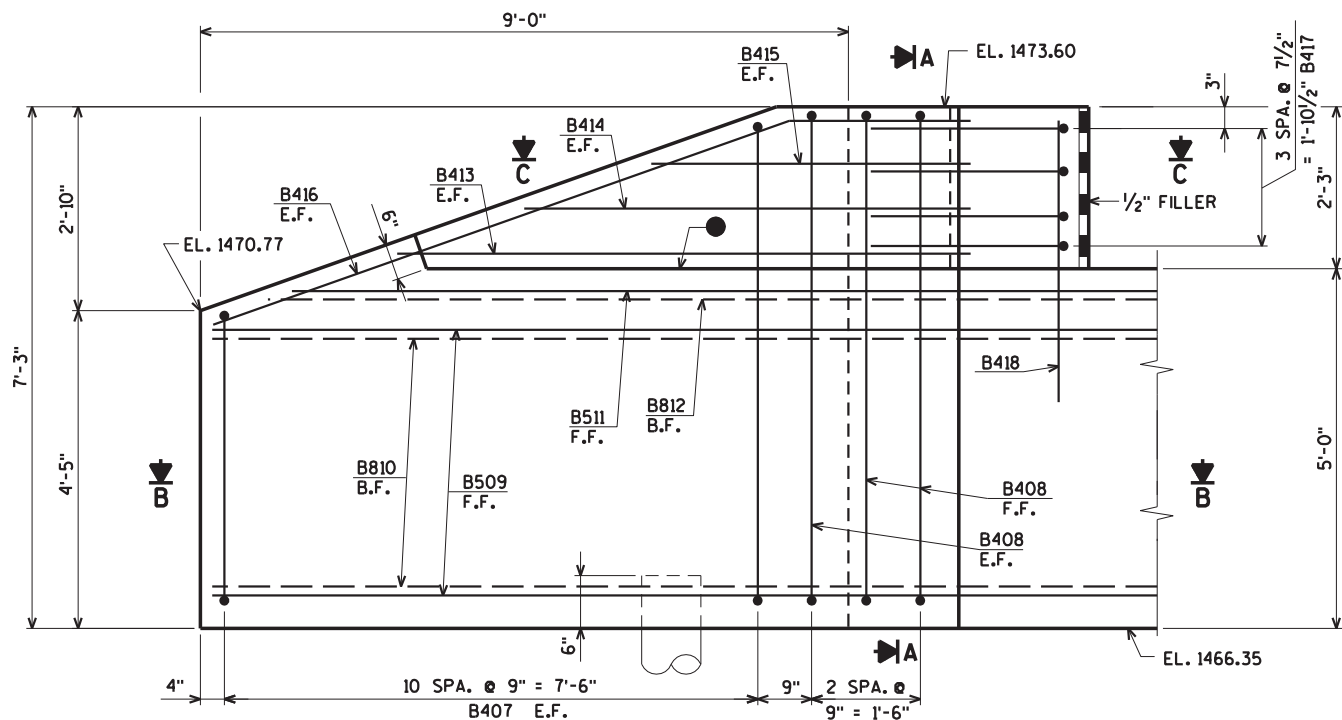
B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

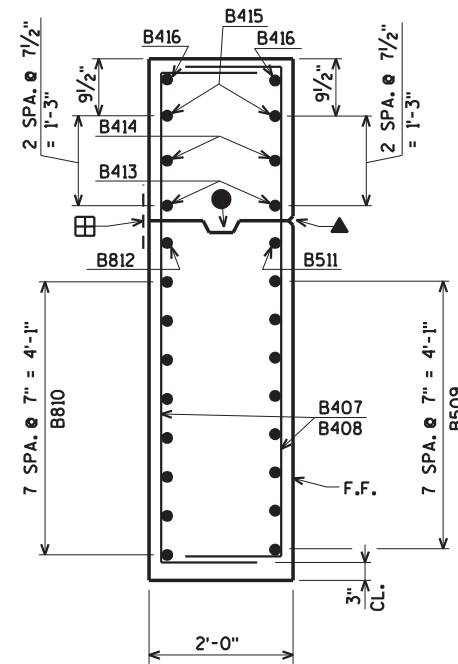
E.F. DENOTES EACH FACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-2-69			
DRAWN BY		CLS	PLANS CK'D. JLB
NORTH ABUTMENT			SHEET 7 OF 14

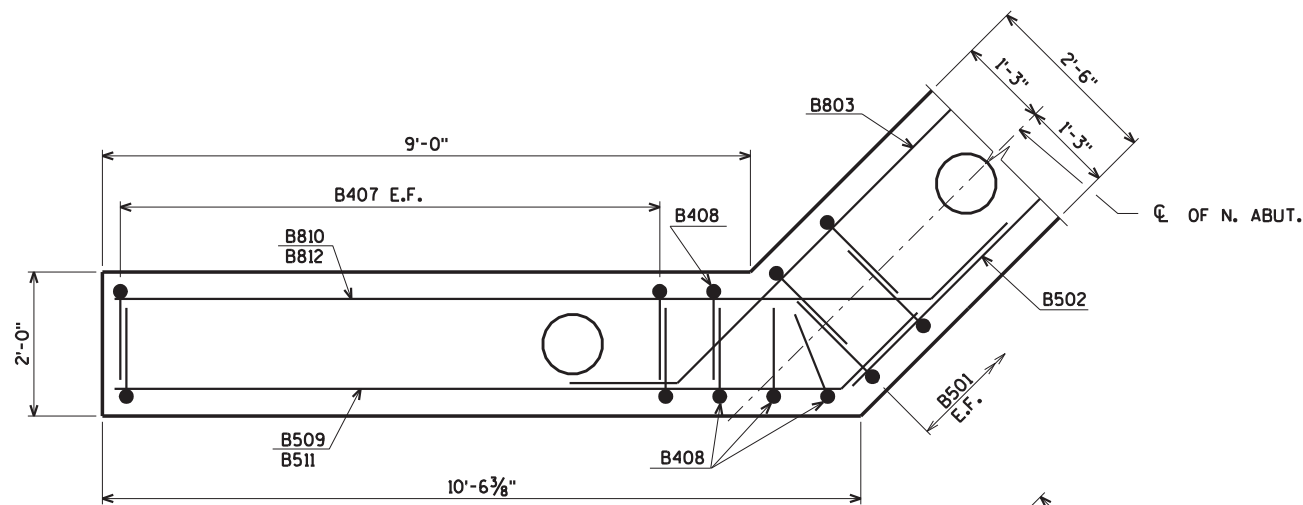
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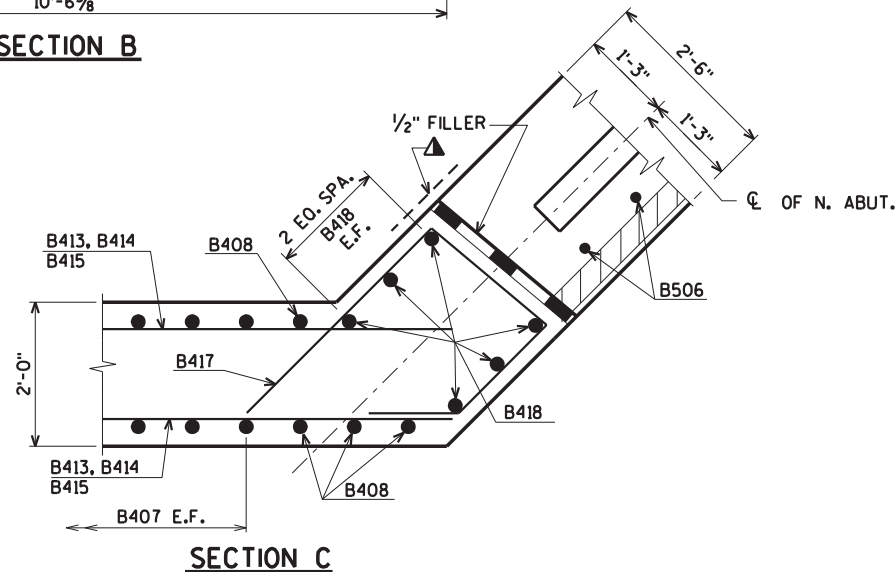
ELEVATION - WING 3



SECTION A



SECTION B



SECTION C

- ▲ 3/4" 'V' GROOVE ON F.F. OF WING WALL - NOT REQUIRED IF CONST. JT. IS NOT USED.
 - OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".
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- B.F. DENOTES BACK FACE.
 F.F. DENOTES FRONT FACE.
 E.F. DENOTES EACH FACE.

NO.	DATE	REVISION	BY

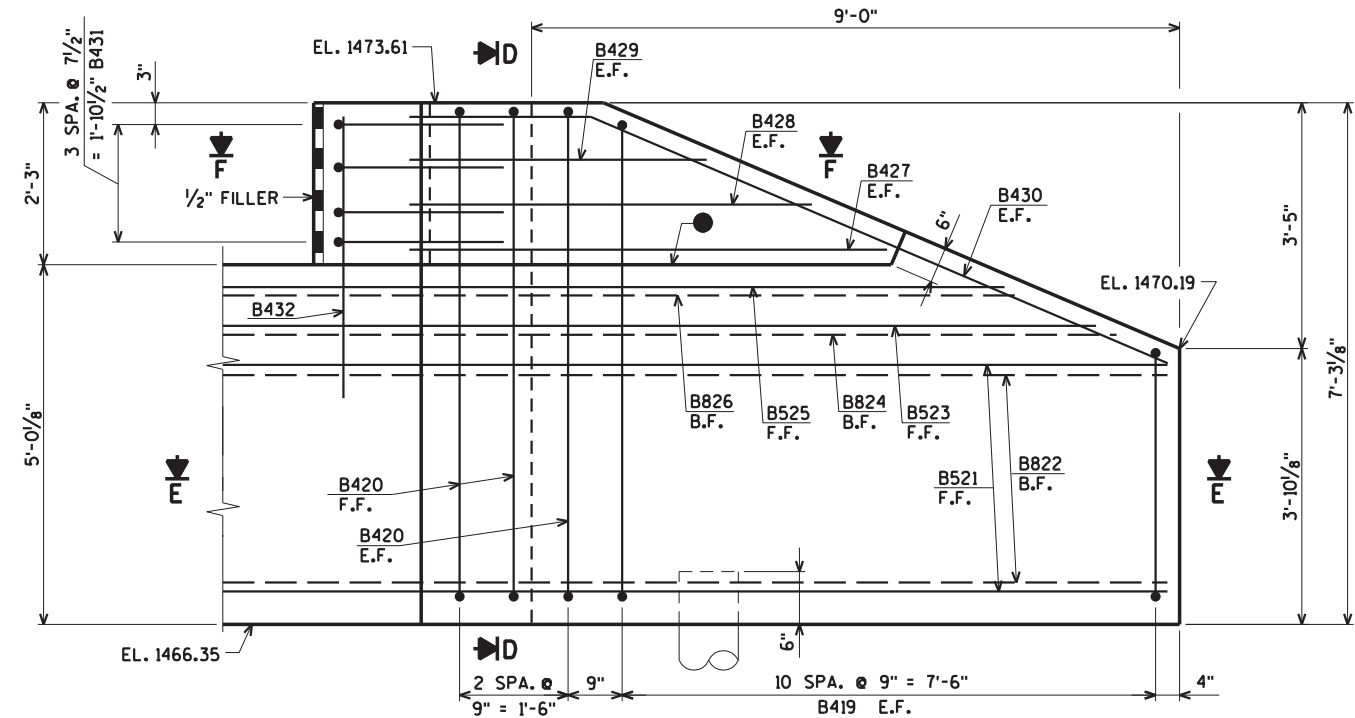
STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

STRUCTURE B-2-69

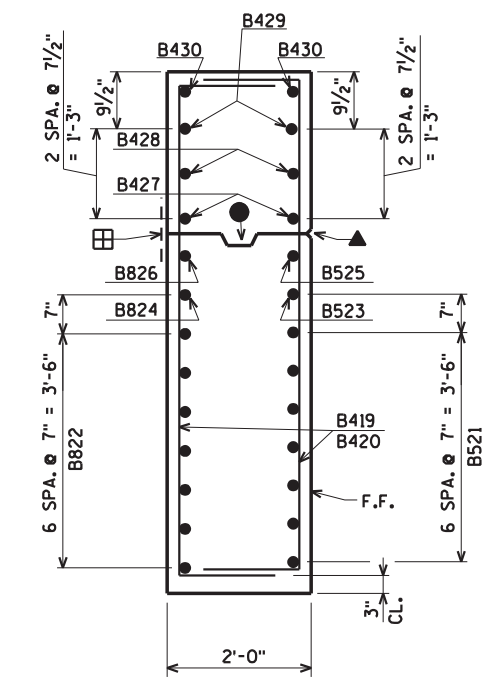
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NORTH ABUTMENT WING 3 DETAILS
 SHEET 8 OF 14

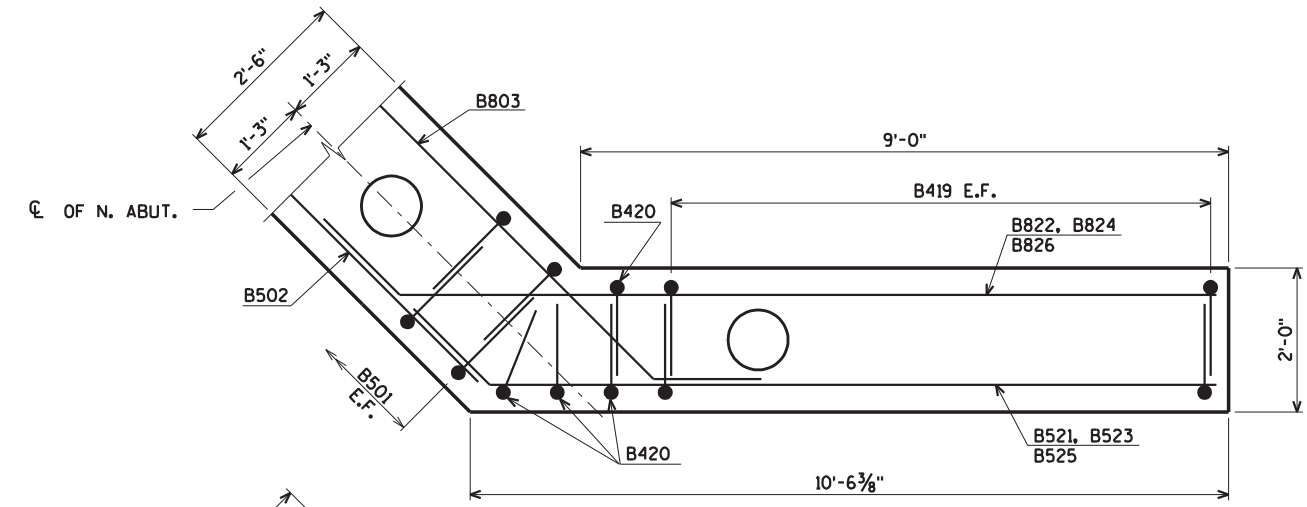
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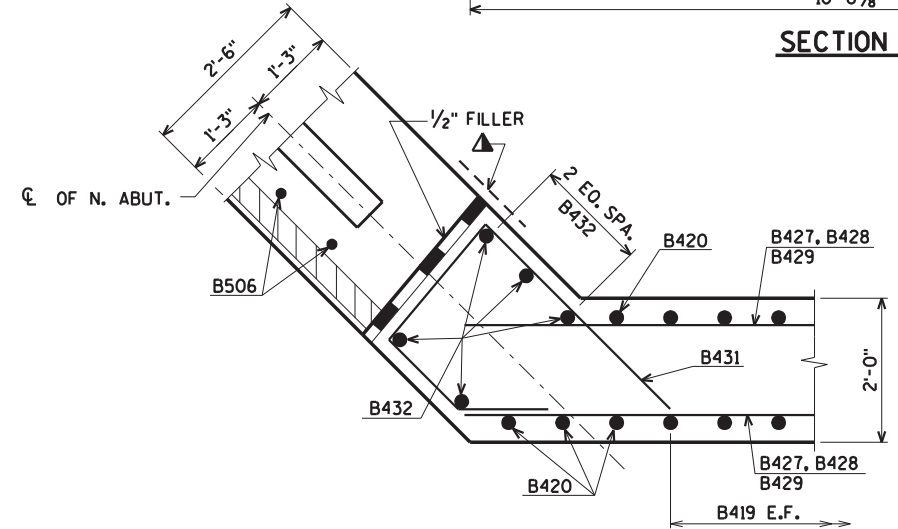
ELEVATION - WING 4



SECTION D



SECTION E



SECTION F

- ▲ 3/4" 'V' GROOVE ON F.F. OF WING WALL - NOT REQUIRED IF CONST. JT. IS NOT USED.
 - OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".
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- 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-2-69			
DRAWN BY		CLS	PLANS CK'D. JLB
NORTH ABUTMENT WING 4 DETAILS			SHEET 9 OF 14

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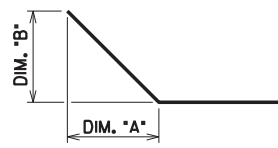
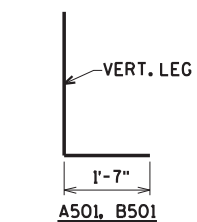
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BILL OF BARS - SOUTH ABUTMENT

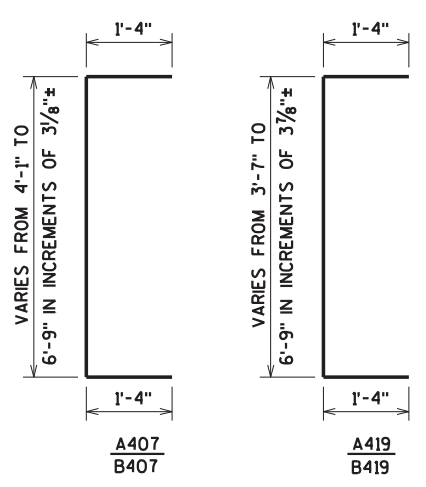
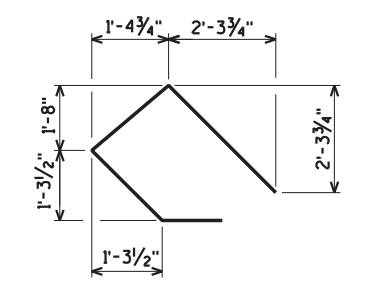
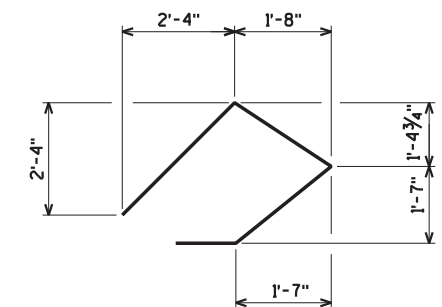
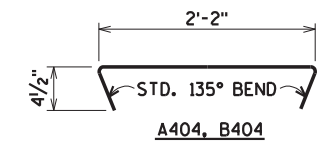
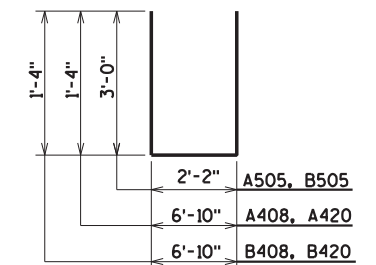
BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR BUNDLED	BAR SERIES	1,730# UNCOATED 1,310# COATED
						LOCATION
A501		52	6-1	X		BODY VERT. E.F.
A502		9	24-10			BODY HORIZ. F.F.
A803		18	19-0	X		BODY HORIZ. B.F.
A404		21	2-9	X		BODY TIES
A505		26	7-11	X		BODY VERT. TOP
A506	X	20	2-0			BODY DOWELS
A407	X	22	7-11	X	⊗	WING 1 VERT. E.F.
A408	X	4	9-4	X		WING 1 VERT. E.F.
A509	X	8	11-7	X		WING 1 HORIZ. F.F.
A810	X	8	13-5	X		WING 1 HORIZ. B.F.
A511	X	1	10-4	X		WING 1 HORIZ. F.F.
A812	X	1	12-2	X		WING 1 HORIZ. B.F.
A413	X	2	7-6			WING 1 HORIZ. E.F.
A414	X	2	5-9			WING 1 HORIZ. E.F.
A415	X	2	3-11			WING 1 HORIZ. E.F.
A416	X	2	10-9	X		WING 1 DIAG. E.F.
A417	X	4	9-0	X		WING 1 HORIZ.
A418	X	6	3-7			WING 1 VERT.
A419	X	22	7-8	X	⊗	WING 2 VERT. E.F.
A420	X	4	9-4	X		WING 2 VERT. E.F.
A521	X	7	11-7	X		WING 2 HORIZ. F.F.
A822	X	7	13-5	X		WING 2 HORIZ. B.F.
A523	X	1	10-2	X		WING 2 HORIZ. F.F.
A824	X	1	12-0	X		WING 2 HORIZ. B.F.
A525	X	1	9-2	X		WING 2 HORIZ. F.F.
A826	X	1	11-0	X		WING 2 HORIZ. B.F.
A427	X	2	6-7			WING 2 HORIZ. E.F.
A428	X	2	5-1			WING 2 HORIZ. E.F.
A429	X	2	3-8			WING 2 HORIZ. E.F.
A430	X	2	11-0	X		WING 2 DIAG. E.F.
A431	X	4	8-6	X		WING 2 HORIZ.
A432	X	5	3-7			WING 2 VERT.

BILL OF BARS - NORTH ABUTMENT

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR BUNDLED	BAR SERIES	1,730# UNCOATED 1,310# COATED
						LOCATION
B501		52	6-1	X		BODY VERT. E.F.
B502		9	24-10			BODY HORIZ. F.F.
B803		18	19-0	X		BODY HORIZ. B.F.
B404		21	2-9	X		BODY TIES
B505		26	7-11	X		BODY VERT. TOP
B506	X	20	2-0			BODY DOWELS
B407	X	22	7-11	X	⊗	WING 3 VERT. E.F.
B408	X	4	9-4	X		WING 3 VERT. E.F.
B509	X	8	11-7	X		WING 3 HORIZ. F.F.
B810	X	8	13-5	X		WING 3 HORIZ. B.F.
B511	X	1	10-4	X		WING 3 HORIZ. F.F.
B812	X	1	12-2	X		WING 3 HORIZ. B.F.
B413	X	2	7-6			WING 3 HORIZ. E.F.
B414	X	2	5-9			WING 3 HORIZ. E.F.
B415	X	2	3-11			WING 3 HORIZ. E.F.
B416	X	2	10-9	X		WING 3 DIAG. E.F.
B417	X	4	9-0	X		WING 3 HORIZ.
B418	X	6	3-7			WING 3 VERT.
B419	X	22	7-8	X	⊗	WING 4 VERT. E.F.
B420	X	4	9-4	X		WING 4 VERT. E.F.
B521	X	7	11-7	X		WING 4 HORIZ. F.F.
B822	X	7	13-5	X		WING 4 HORIZ. B.F.
B523	X	1	10-2	X		WING 4 HORIZ. F.F.
B824	X	1	12-0	X		WING 4 HORIZ. B.F.
B525	X	1	9-2	X		WING 4 HORIZ. F.F.
B826	X	1	11-0	X		WING 4 HORIZ. B.F.
B427	X	2	6-7			WING 4 HORIZ. E.F.
B428	X	2	5-1			WING 4 HORIZ. E.F.
B429	X	2	3-8			WING 4 HORIZ. E.F.
B430	X	2	11-0	X		WING 4 DIAG. E.F.
B431	X	4	8-6	X		WING 4 HORIZ.
B432	X	5	3-7			WING 4 VERT.



BAR NO.	DIM. 'A'	DIM. 'B'
A803	1'-0 3/4"	1'-0 3/4"
A509	1'-0 3/4"	1'-0 3/4"
A810	1'-0 3/4"	1'-0 3/4"
A511	1'-0 3/4"	1'-0 3/4"
A812	1'-0 3/4"	1'-0 3/4"
A416	8'-0"	2'-9"
A521	1'-0 3/4"	1'-0 3/4"
A822	1'-0 3/4"	1'-0 3/4"
A523	1'-0 3/4"	1'-0 3/4"
A824	1'-0 3/4"	1'-0 3/4"
A525	1'-0 3/4"	1'-0 3/4"
A826	1'-0 3/4"	1'-0 3/4"
A430	8'-0"	3'-4"
B803	1'-0 3/4"	1'-0 3/4"
B509	1'-0 3/4"	1'-0 3/4"
B810	1'-0 3/4"	1'-0 3/4"
B511	1'-0 3/4"	1'-0 3/4"
B812	1'-0 3/4"	1'-0 3/4"
B416	8'-0"	2'-9"
B521	1'-0 3/4"	1'-0 3/4"
B822	1'-0 3/4"	1'-0 3/4"
B523	1'-0 3/4"	1'-0 3/4"
B824	1'-0 3/4"	1'-0 3/4"
B525	1'-0 3/4"	1'-0 3/4"
B826	1'-0 3/4"	1'-0 3/4"
B430	8'-0"	3'-4"



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.

B.F. DENOTES BACK FACE.
F.F. DENOTES FRONT FACE.
E.F. DENOTES EACH FACE.

BAR SERIES TABLE

BAR MARK	NO REQ'D.	LENGTH
A407	2 SERIES OF 11	6'-7" TO 9'-3"
A419	2 SERIES OF 11	6'-1" TO 9'-3"
B407	2 SERIES OF 11	6'-7" TO 9'-3"
B419	2 SERIES OF 11	6'-1" TO 9'-3"

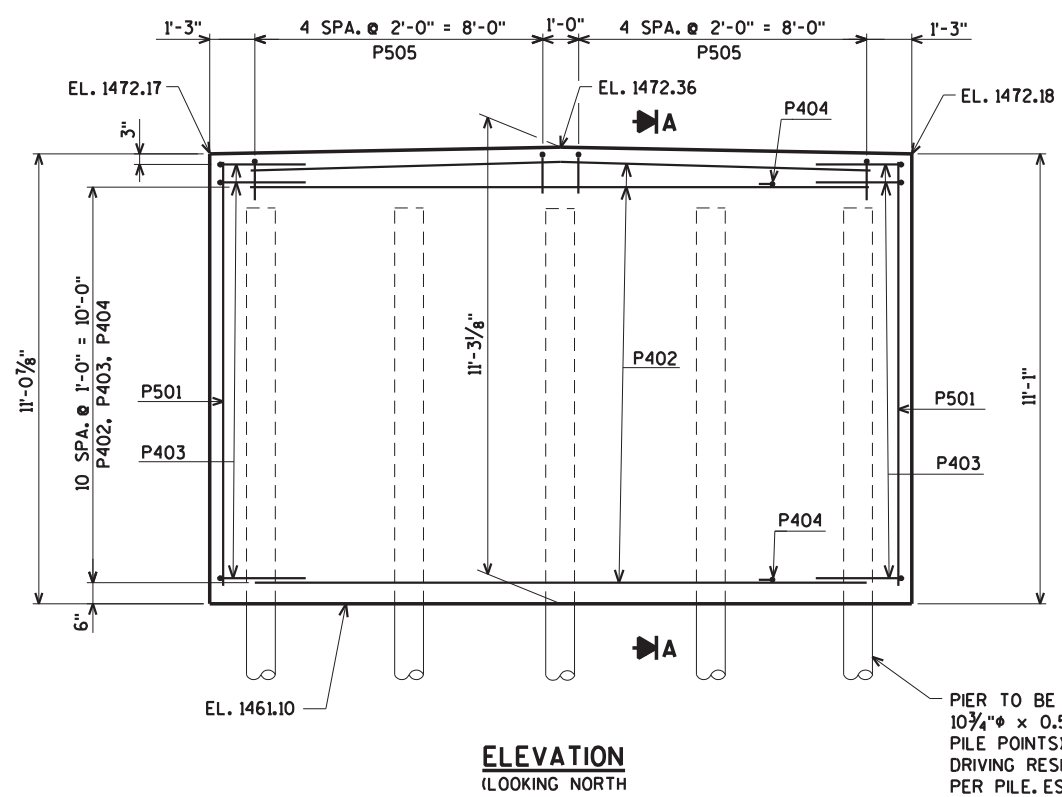
BUNDLE AND TAG EACH SERIES SEPARATELY.

8

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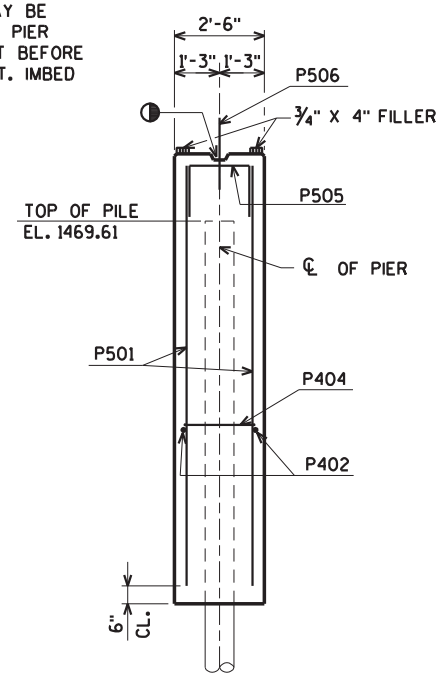
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-2-69			
DRAWN BY		CLS	PLANS CK'D. JLB
ABUTMENT BILL OF BARS			SHEET 10 OF 14

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ELEVATION
(LOOKING NORTH)

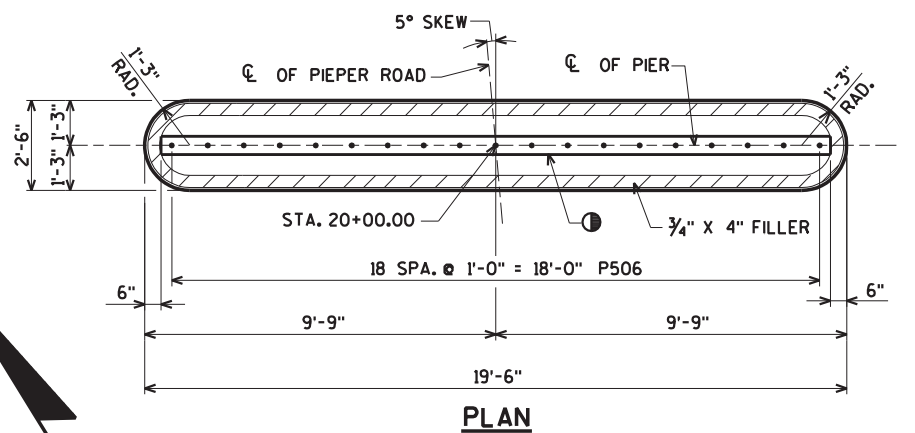
P506 BARS MAY BE PLACED AFTER PIER IS POURED BUT BEFORE CONC. HAS SET. IMBED BARS 1'-0".



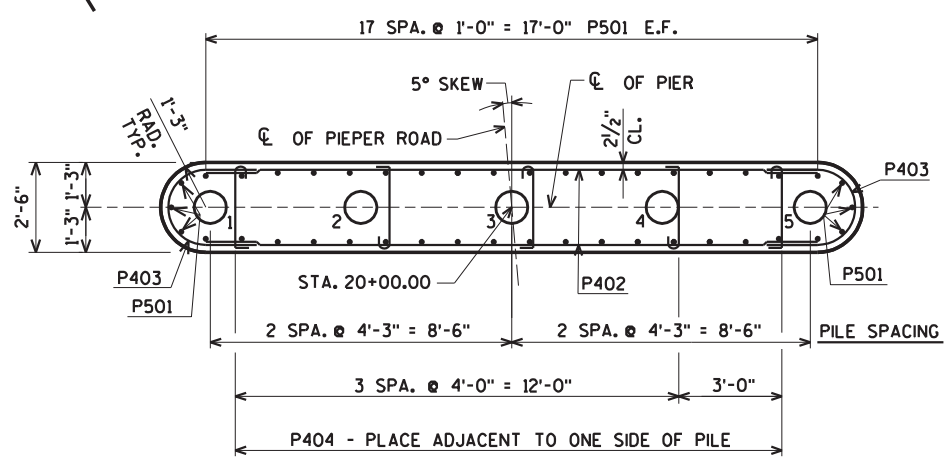
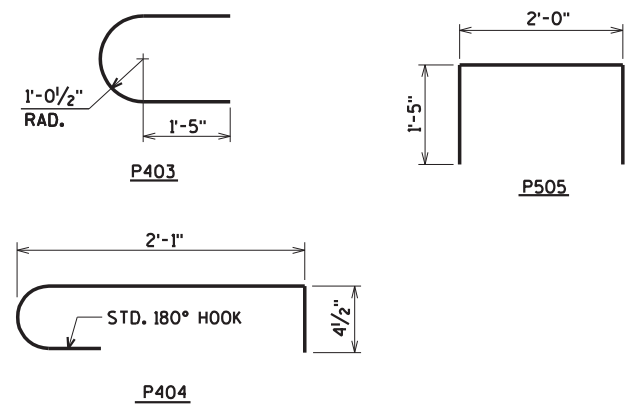
SECTION A

BILL OF BARS						40# COATED 980# UNCOATED
BAR NO.	COATED BAR	NO. REOD.	LENGTH	BENT BAR	BUNDLED	LOCATION
P501		42	10-4			COLUMN VERT.
P402		24	17-0			COLUMN HORIZ.
P403		24	6-1 X			COLUMN HORIZ. @ ENDS
P404		55	2-11 X			COLUMN TIES
P505		10	4-7 X			COLUMN TOP
P506	X	19	2-0			COLUMN DOWELS

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



PLAN



PILE LAYOUT

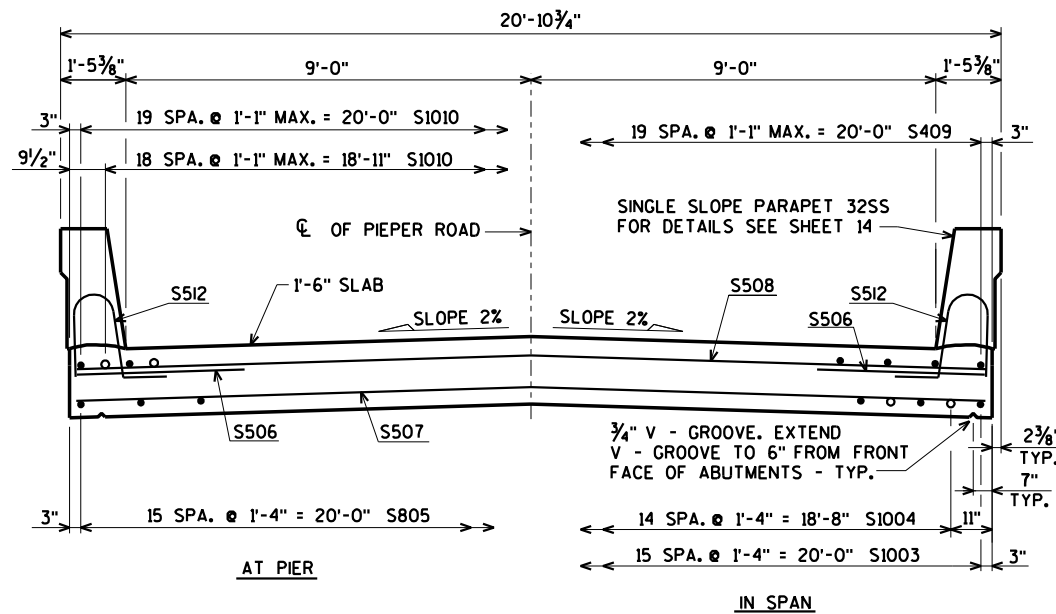
KEYED CONST. JOINT - FORMED BY BEVELED 2" x 6".

FOR PILE SPLICE DETAIL SEE SHEET 2.

E.F. DENOTES EACH FACE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-2-69			
DRAWN BY		CLS	PLANS CK'D. JLB
PIER			SHEET 11 OF 14

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CROSS SECTION THRU BRIDGE

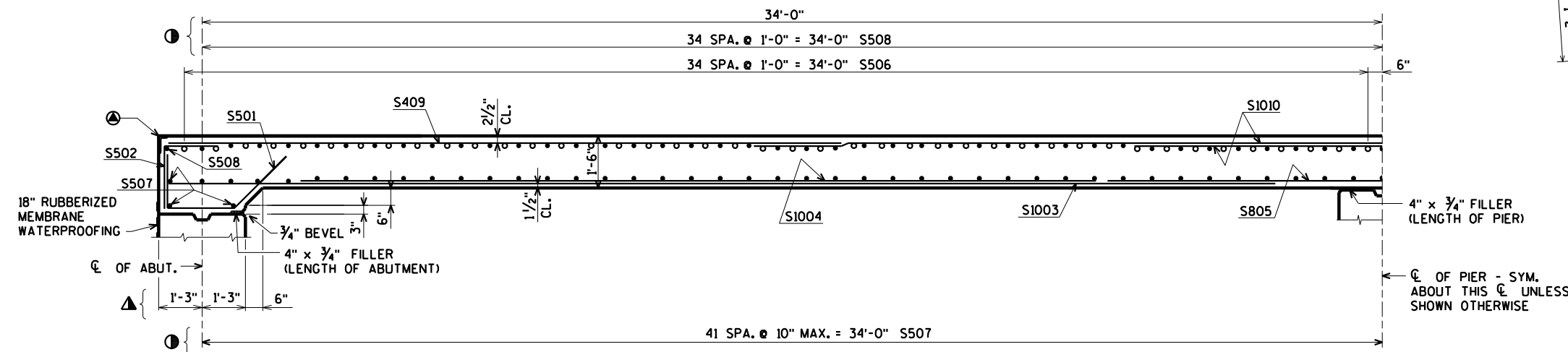
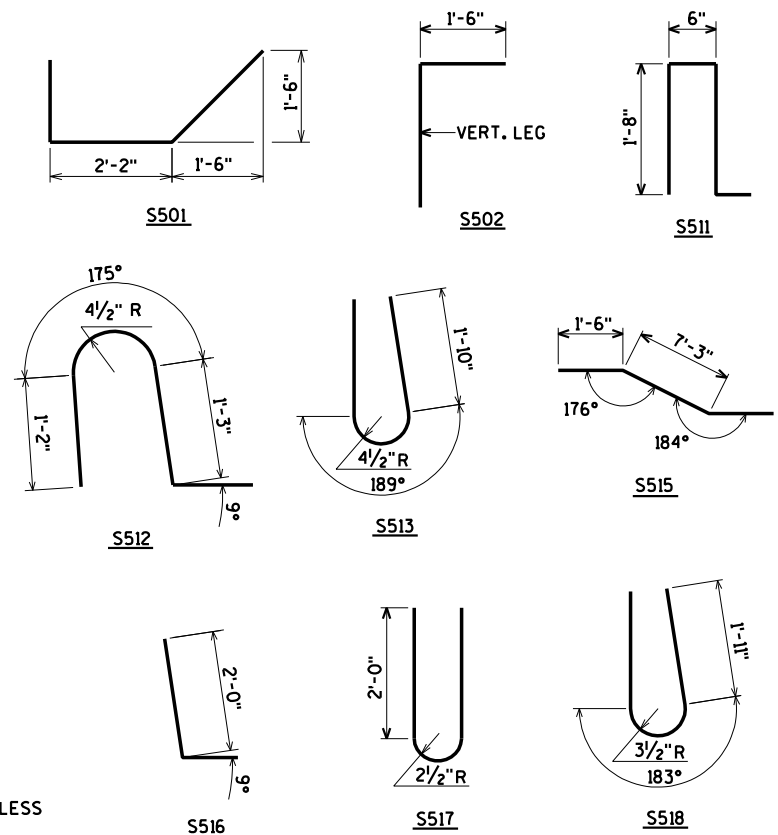
TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

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

BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	20,540* COATED	
							LOCATION	
S501	X	42	5-8	X			SLAB @ ABUT.	
S502	X	42	3-3	X			SLAB @ ABUT.	
S1003	X	32	32-3				SLAB LONG. BOT.	
S1004	X	30	22-11				SLAB LONG. BOT.	
S805	X	16	15-10				SLAB LONG. BOT. @ PIER	
S506	X	140	5-0				SLAB TRANS. TOP @ EDGES	
S507	X	89	20-3				SLAB TRANS. BOT.	
S508	X	71	20-3				SLAB TRANS. TOP	
S409	X	40	19-6				SLAB LONG. TOP	
S1010	X	39	24-11				SLAB LONG. TOP @ PIER	
S511	X	68	4-4	X			SLAB @ PARAPET VERT.	
S512	X	160	4-5	X			SLAB @ PARAPET VERT.	
S513	X	160	5-0	X			PARAPET VERT.	
S514	X	20	36-0				PARAPET HORIZ.	
S515	X	4	36-2	X			PARAPET HORIZ.	
S516	X	48	2-9	X			SLAB @ PARAPET VERT.	
S517	X	44	4-9	X			PARAPET VERT.	
S518	X	24	4-10	X			PARAPET VERT.	

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

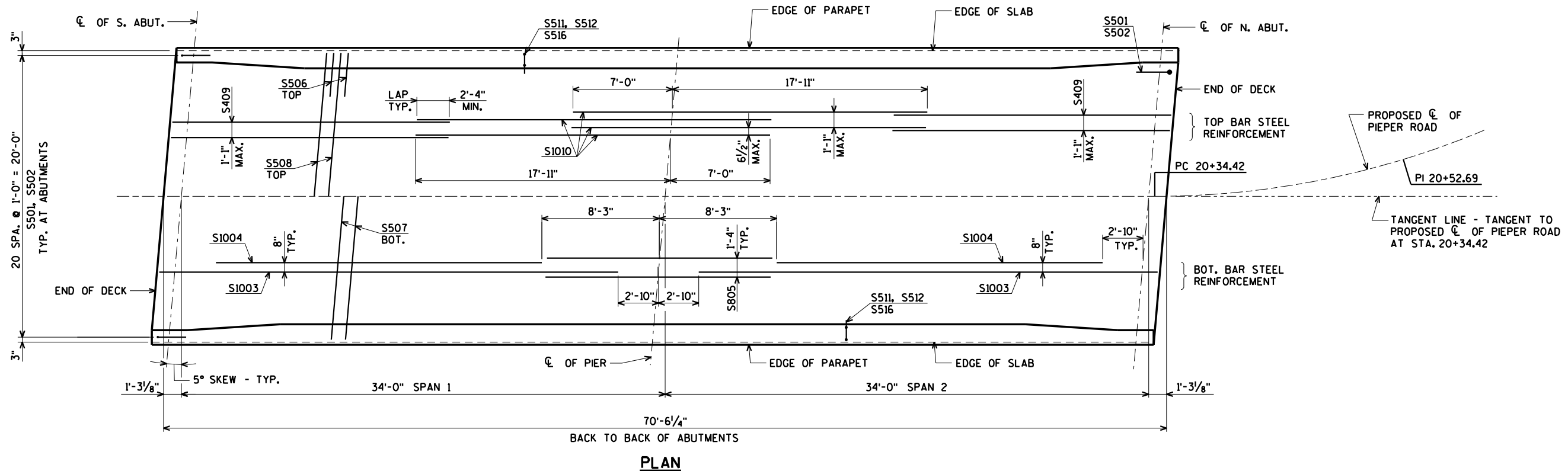
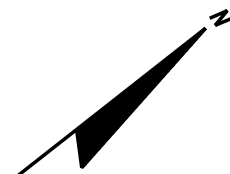


PART LONGITUDINAL SECTION

- ⊙ STEEL PROTECTION ANGLE. SEE DETAILS ON SHEET 2.
- ⊙ DIMENSIONS MEASURED ALONG CL OF PIEPER ROAD.
- ⊙ DIMENSIONS MEASURED NORMAL TO CL OF SUBSTRUCTURE.

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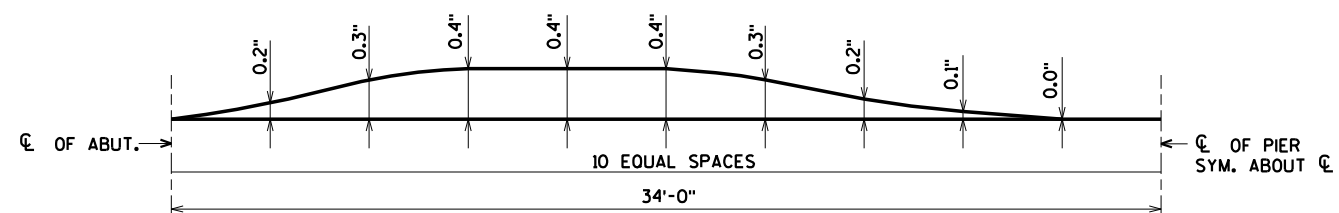
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-2-69			
DRAWN BY CLS		PLANS CK'D. JLB	
SUPERSTRUCTURE			SHEET 12 OF 14



TOP OF DECK ELEVATIONS

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

LOCATION	CL OF S. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL OF PIER	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL OF N. ABUT.
W. EDGE OF SLAB	1474.15	1474.08	1474.03	1473.97	1473.93	1473.88	1473.84	1473.81	1473.78	1473.75	1473.73	1473.72	1473.70	1473.69	1473.67	1473.66	1473.65	1473.64	1473.62	1473.61	1473.60
FACE OF WEST PARAPET	1474.15	1474.09	1474.03	1473.98	1473.93	1473.88	1473.84	1473.81	1473.78	1473.75	1473.73	1473.72	1473.70	1473.69	1473.68	1473.66	1473.65	1473.64	1473.62	1473.61	1473.60
CL OF PIEPER ROAD	1474.34	1474.28	1474.22	1474.17	1474.12	1474.07	1474.03	1474.00	1473.97	1473.94	1473.92	1473.90	1473.88	1473.87	1473.86	1473.85	1473.83	1473.82	1473.81	1473.80	1473.78
FACE OF EAST PARAPET	1474.18	1474.12	1474.06	1474.00	1473.95	1473.90	1473.86	1473.82	1473.79	1473.76	1473.74	1473.72	1473.71	1473.69	1473.68	1473.67	1473.66	1473.64	1473.63	1473.62	1473.61
E. EDGE OF SLAB	1474.18	1474.12	1474.06	1474.00	1473.95	1473.90	1473.86	1473.83	1473.79	1473.77	1473.74	1473.72	1473.71	1473.69	1473.68	1473.67	1473.66	1473.64	1473.63	1473.62	1473.61



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

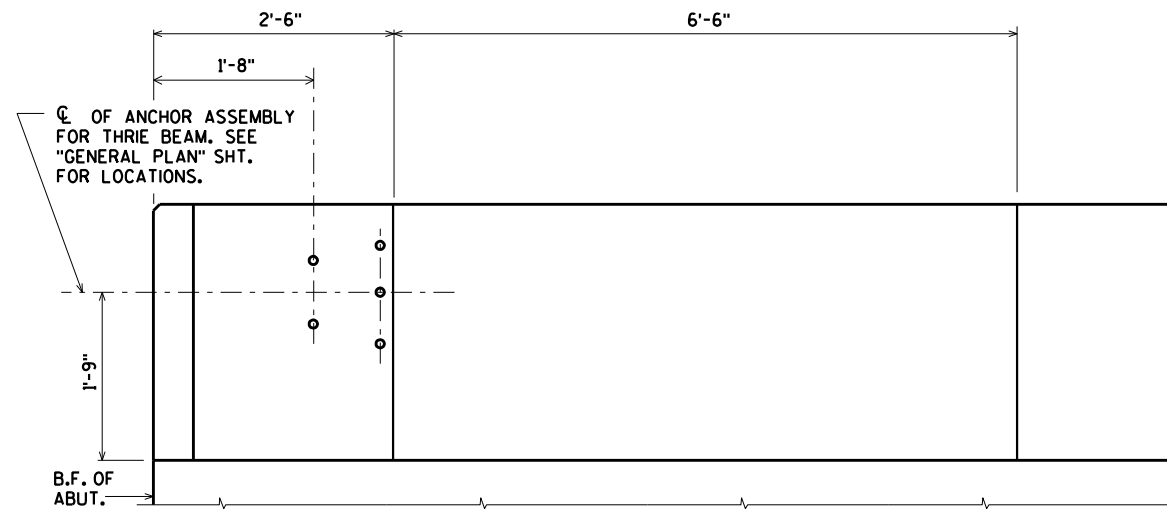
6/11/2019 PENTABLE:Requ-shd_util.tbl

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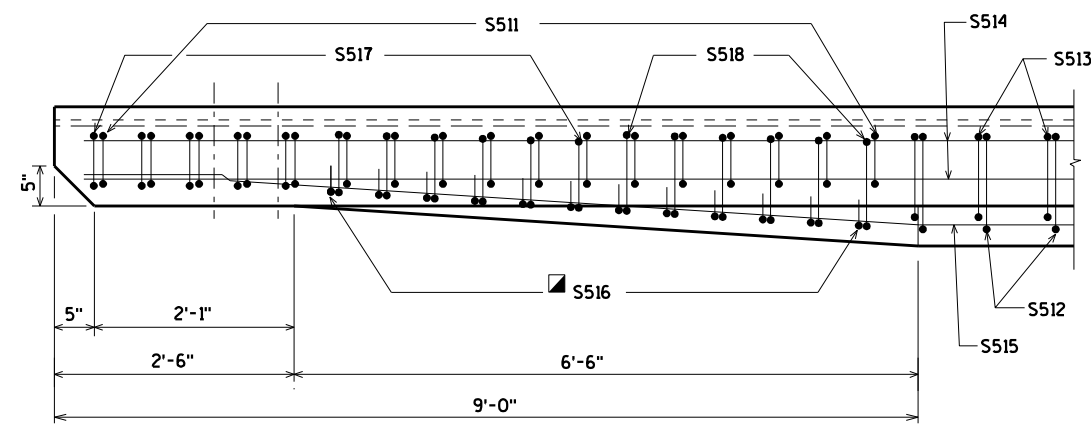
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NO.	DATE	REVISION	BY
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STRUCTURE B-2-69			
DRAWN BY		CLS	PLANS CK'D. JLB
SUPERSTRUCTURE DETAILS			SHEET 13 OF 14

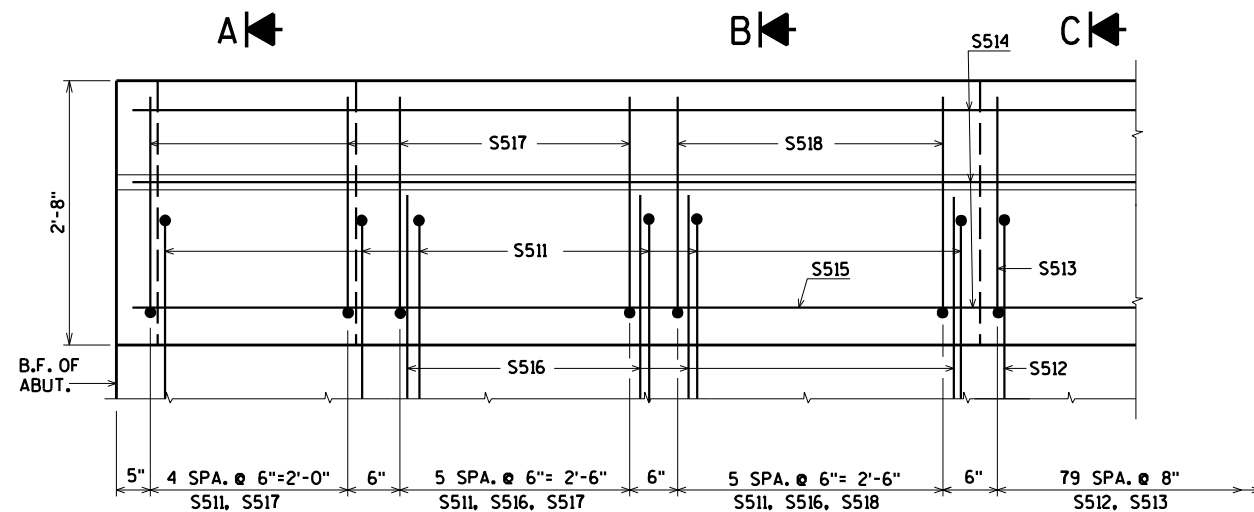
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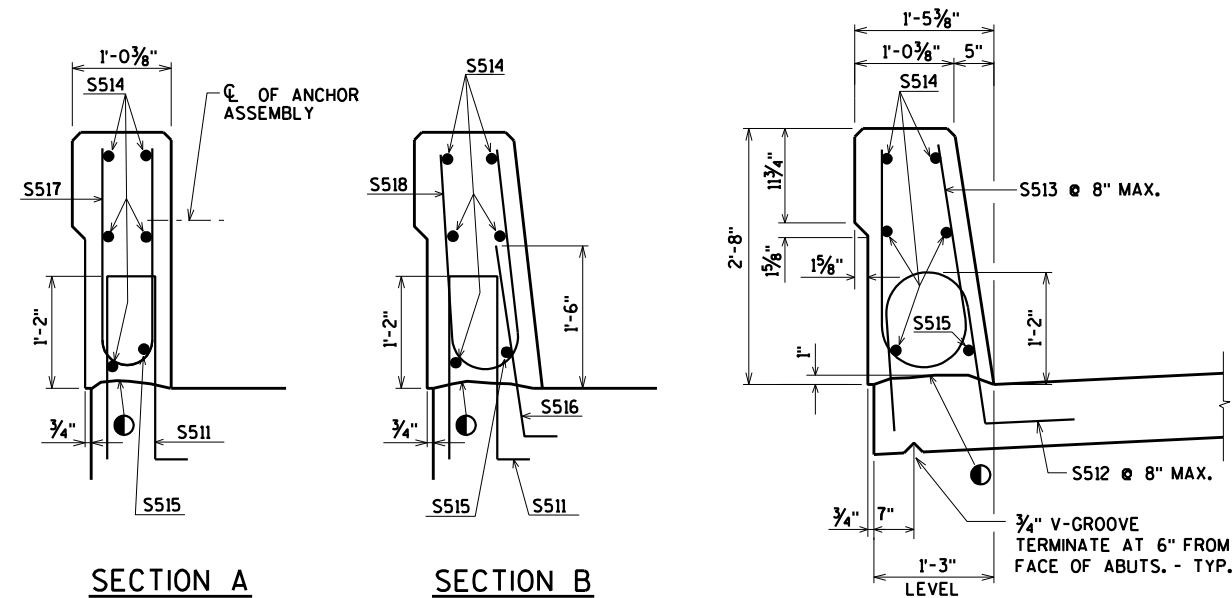
INSIDE ELEVATION



PLAN



OUTSIDE ELEVATION



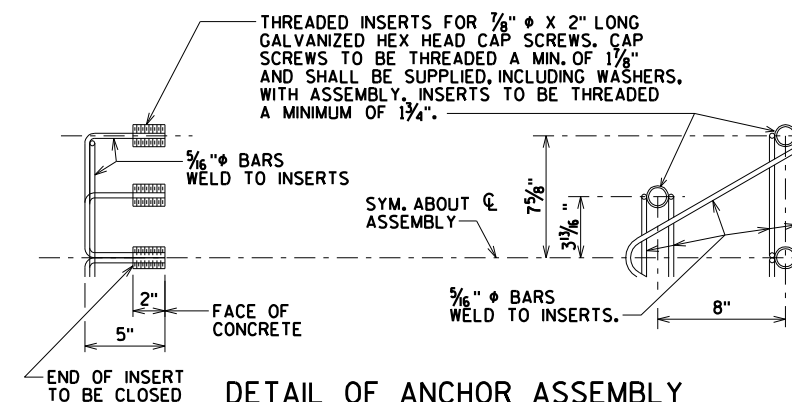
SECTION A

SECTION B

SECTION C

⊙ CONST. JOINT - STRIKE OFF AS SHOWN.

▣ S516 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE S516 BARS CORRECTLY ALONG TRANSITION OF PARAPET.



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

6/11/2019 PENTABLE:Requ-shd_util.tbl

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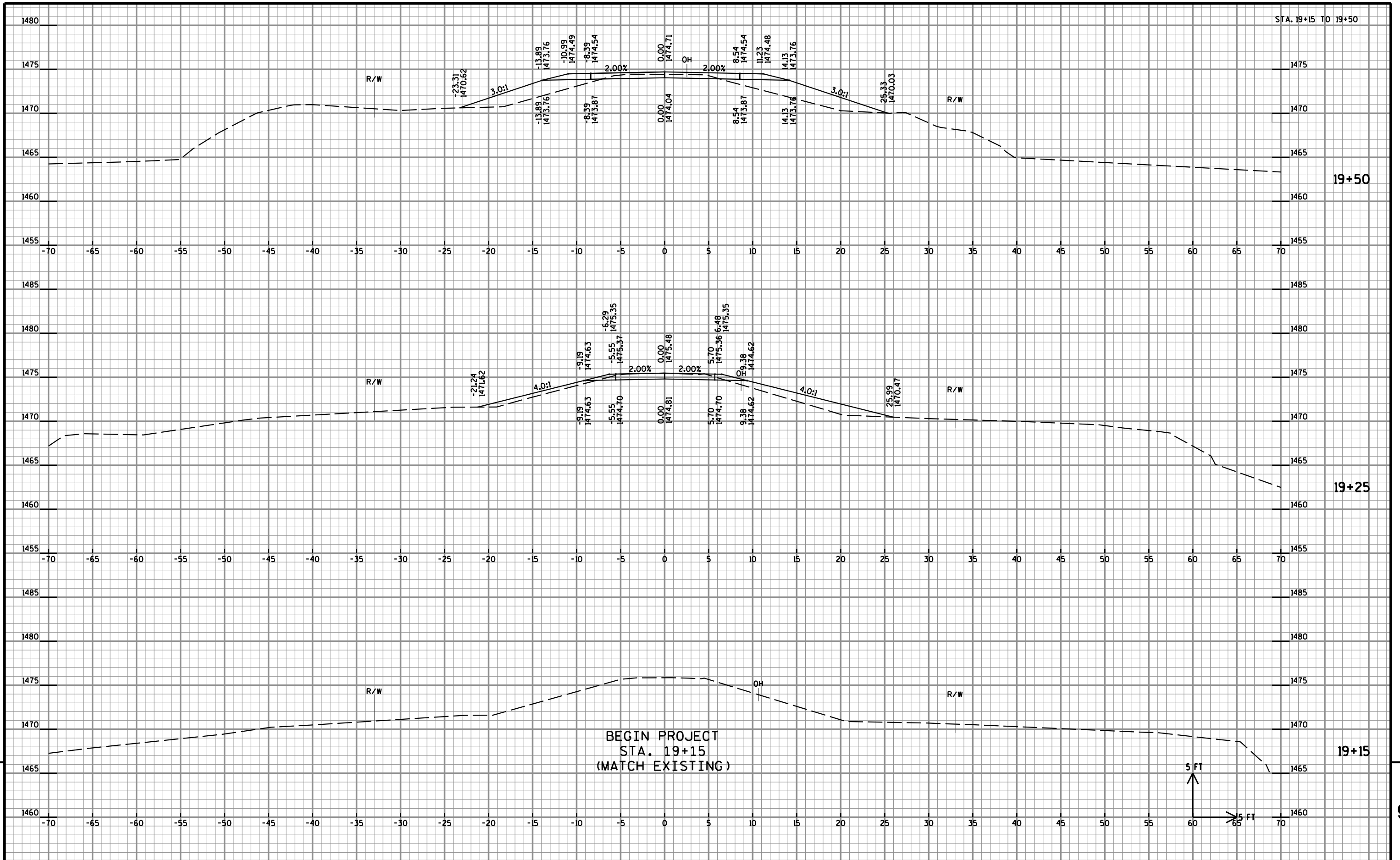
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-2-69			
DRAWN BY		CLS	PLANS CK'D. JLB
SINGLE SLOPE PARAPET 32SS			SHEET 14 OF 14

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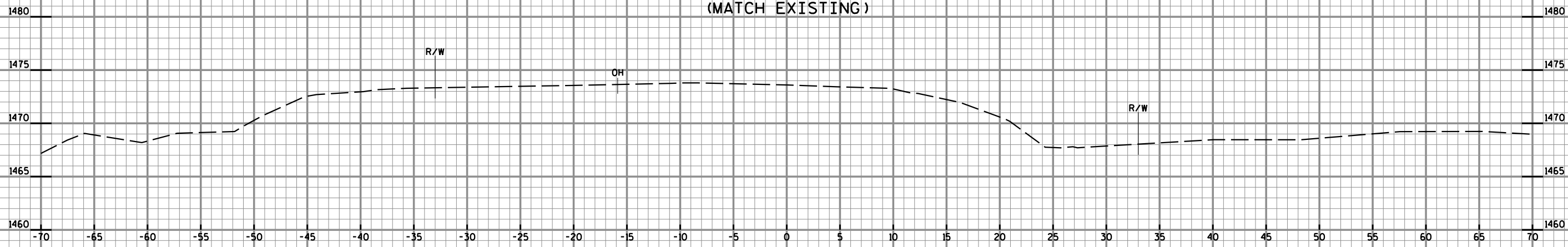
PIEPER ROAD COMPUTER EARTHWORK

Station	Distance	Area (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass Ordinate
		Cut	Fill	Cut	Fill	Cut 1.00	Expanded Fill 1.30	
19+15	--	7.6	0.0	--	--	--	--	--
19+25	10	7.8	19.5	3	4	3	5	-2
19+50	25	5.0	38.9	6	27	9	40	-31
19+64.75	15	5.0	38.9	3	21	12	67	-55
B-02-0069	--	--	--	--	--	--	--	--
20+35.25	--	13.0	0.1	--	--	--	--	--
20+50	15	13.0	0.1	7	0	19	67	-48
20+75	25	20.1	0.0	15	0	34	67	-33
20+85	10	25.5	0.0	8	0	42	67	-25
				42	52			

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)

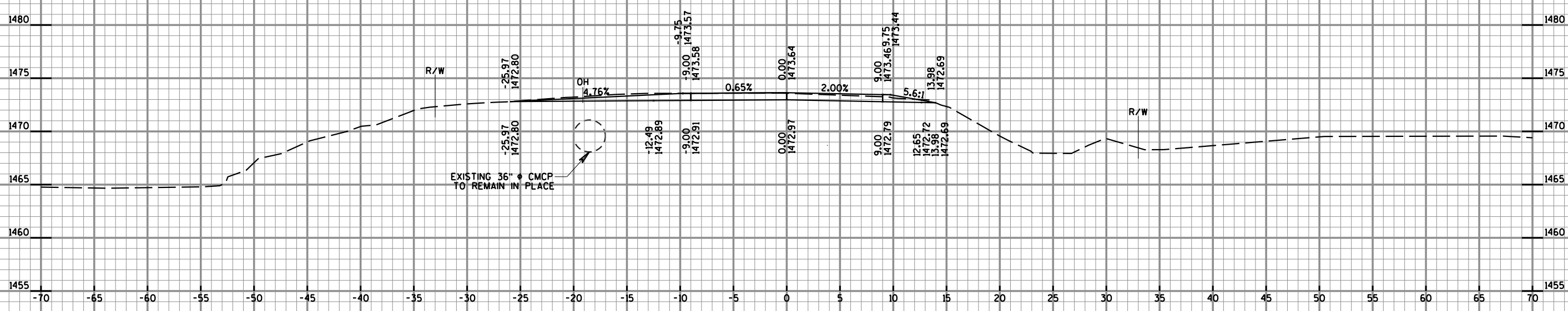


END PROJECT
STA. 20+85
(MATCH EXISTING)



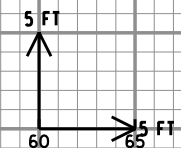
20+85

20+75



20+50

STRUCTURE B-2-69



9

9



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