SUP

PROJECT ID: 8461-00-71

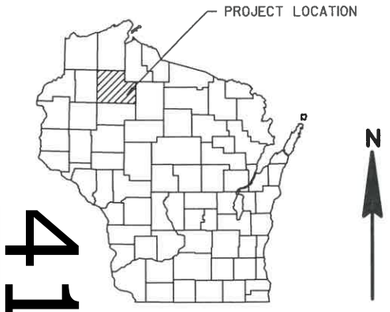
WITH: N/A

COUNTY: SAWYER

MARCH 2018

ORDER OF SHEETS

TOTAL SHEETS = 42



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DESIGN DESIGNATION 8461-00-71

A.A.D.T.	2018	= 30
A.A.D.T.	2038	= 40
D.H.V.		= 4
D.D.		= 50/50
T.		= 10%
DESIGN SPEED		= 30
ESALS		= 36,500

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 (300'EB')
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

T WINTER, HANSON ROAD

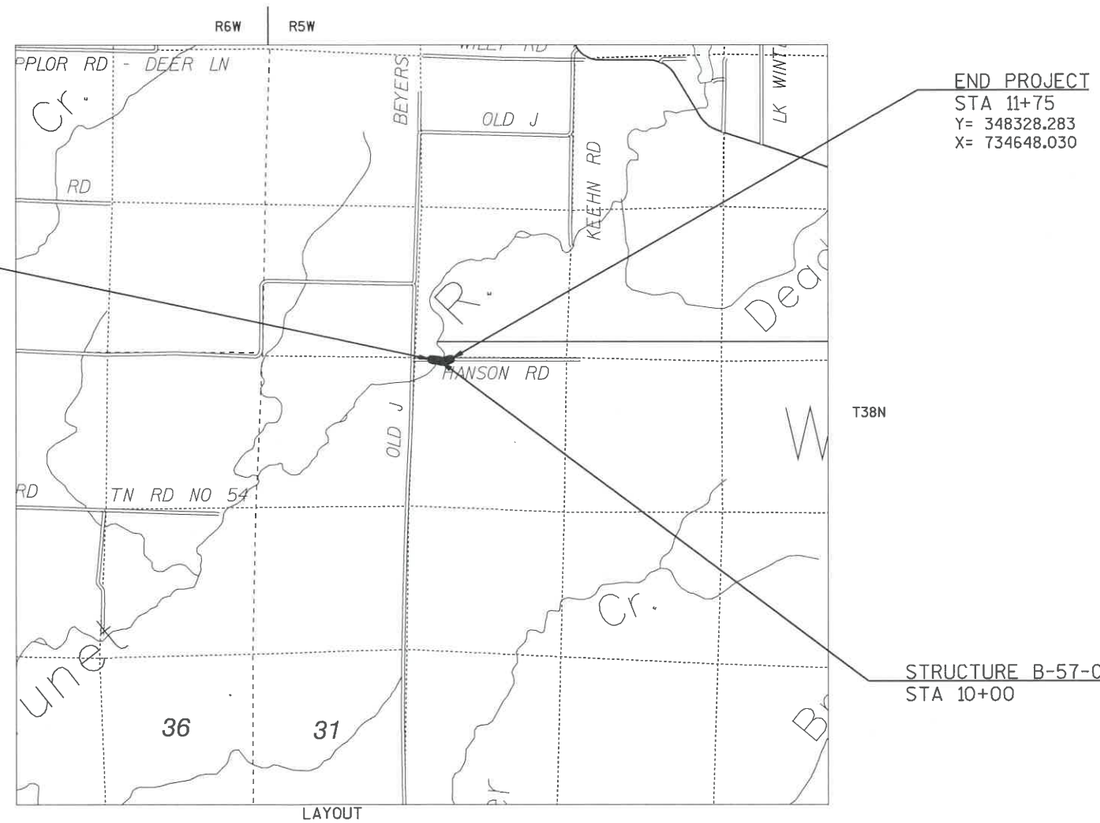
BRUNET RIVER BRIDGE B-57-0088

LOC STR

SAWYER COUNTY

STATE PROJECT NUMBER
8461-00-71

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8461-00-71		



TOTAL NET LENGTH OF CENTERLINE = 0.071 MI

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

ACCEPTED FOR
COUNTY of SAWYER
9/28/17 (Date) (Highway Commissioner Signature)

ACCEPTED FOR
TOWN of WINTER
9-20-17 (Date) (Town Chairman Signature)

ORIGINAL PLANS PREPARED BY

SEH
WISCONSIN
TARA L. KRISTA 37975 CHIPPEWA FALLS, WI
PROFESSIONAL ENGINEER
9-18-17 (Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	SEH
Designer	SEH
Managment Consultant	KNIGHT E/A INC.

APPROVED FOR THE DEPARTMENT
DATE: 10/20/17 (Management Consultant Signature)

E

2

GENERAL NOTES

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

WHEN THE QUANTITY OF BASE AGGREGATE IS MEASURED FOR PAYMENT BY THE TON OR CUBIC YARD, 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 OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS IS APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

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

THE EXACT LOCATION OF THE EROSION CONTROL DEVICES SHALL BE DETERMINED IN THE FIELD.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE 4-INCH SALVAGED TOPSOILED, FERTILIZED, SEEDED AND MULCHED.

ALL GRAVEL DIMENSIONS AND STATIONS ARE SHOWN TO THE EDGE OF GRAVEL UNLESS NOTED OTHERWISE.

SILT FENCE IS TO BE PLACED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER, AND IN PLACE PRIOR TO BRIDGE REMOVAL.

RUNOFF COEFFICIENT TABLE

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

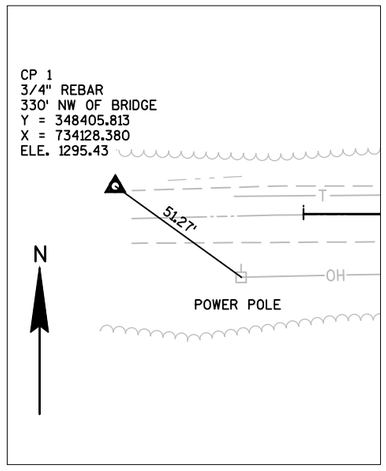
TOTAL PROJECT AREA = 0.63 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.49 ACRES

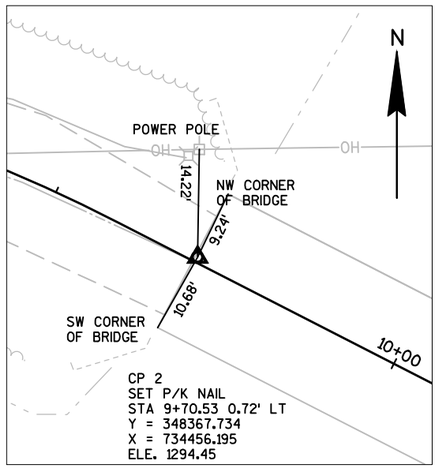
UTILITY CONTACTS

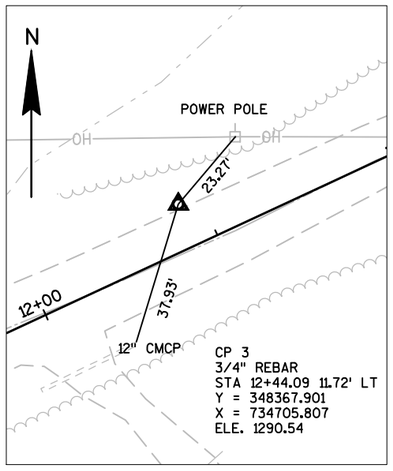
CENTURYLINK
400 W 9TH ST N, SUITE #5
LADYSMITH, WI 54848
TELEPHONE: 715.532.0032
ATTENTION: BRIAN HUHN
EMAIL: BRIAN.HUHN@CENTURYLINK.COM

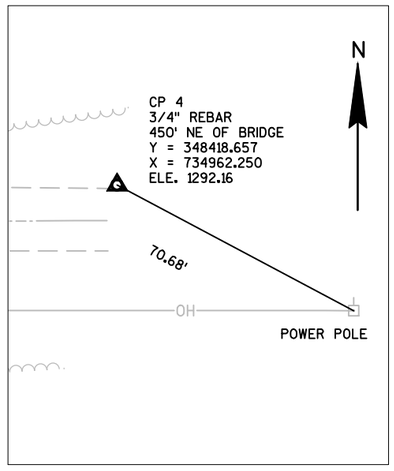
NORTH CENTRAL POWER COMPANY
3661 NORTH CLARK STREET
RADISSON, WI 54867
TELEPHONE: 715.945.2630
ATTENTION: GREG PARKER
EMAIL: NCPGREG85@YAHOO.COM

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









ALIGNMENT TIES

DESIGN CONTACT

SEH
10 NORTH BRIDGE STREET
CHIPPEWA FALLS, WI 54729
TELEPHONE: 715.720.6291
ATTENTION: TARA KRISTA
EMAIL: TKRISTA@SEHINC.COM

WDNR CONTACT

DNR NORTHERN REGION HQ
810 WEST MAPLE STREET
SPOONER, WI 54701
TELEPHONE: 715.635.4228
ATTENTION: SHAWN HASELEU
EMAIL: SHAWN.HASELEU@WISCONSIN.GOV

COUNTY CONTACT

SAWYER COUNTY HIGHWAY DEPARTMENT
14688 W CTH B
HAYWARD, WI 54834
TELEPHONE: 715.634.2691
ATTENTION: GARY GEDART
EMAIL: HIGHWAY@SAWYERCOUNTYGOV.ORG

TOWN CONTACT

TOWN OF WINTER
P.O. BOX 129
WINTER, WI 54896
TELEPHONE: 715.266.3131
ATTENTION: DAVID KINSLEY
EMAIL: TOWNOFWINTER@CENTURYTEL.NET

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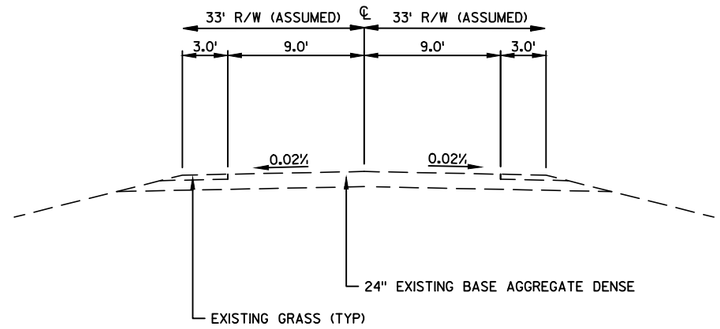
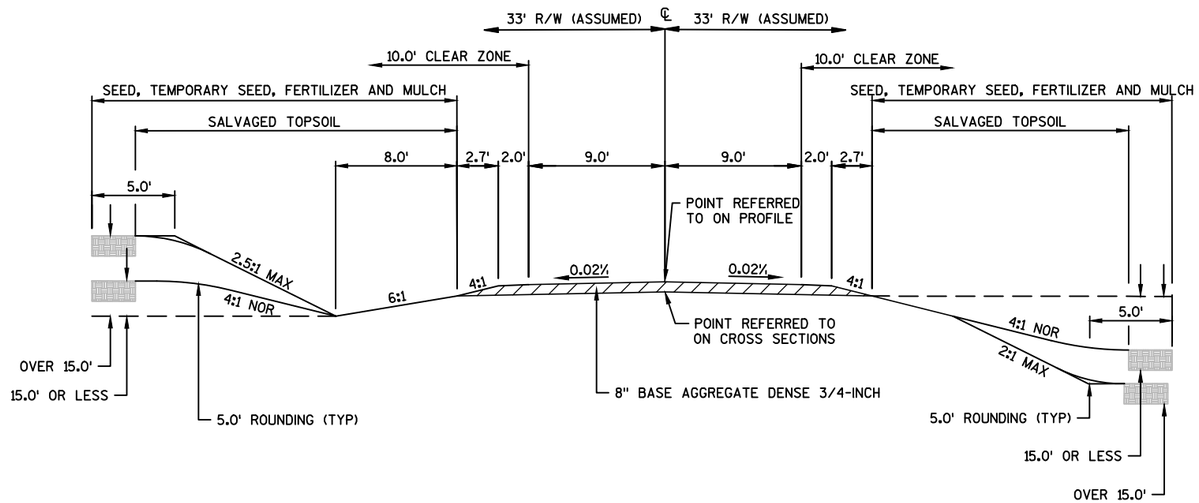


TYPICAL EXISTING SECTION

STA 8+00 TO STA 9+70
STA 10+30 TO STA 11+75

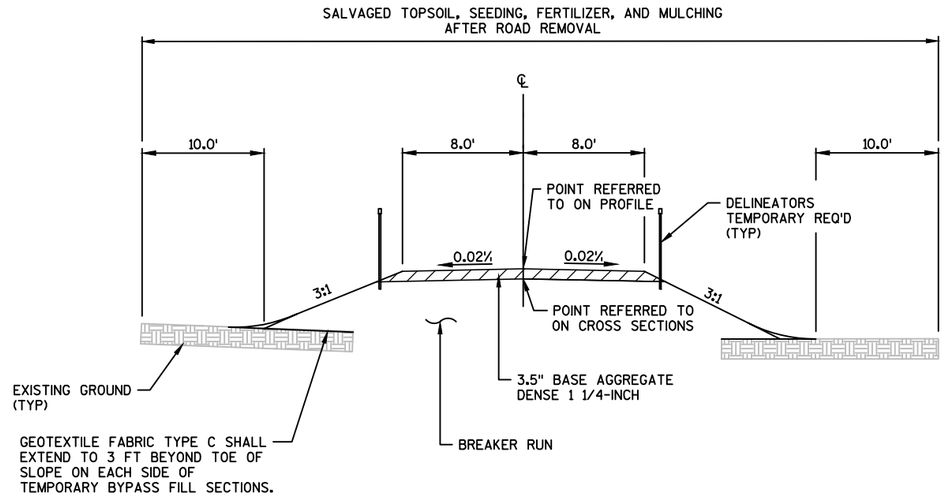


TYPICAL FINISHED SECTION

STA 8+00 TO STA 9+61.23
STA 10+38.77 TO STA 11+75

PROJECT NO: 8461-00-71	HWY: HANSON ROAD	COUNTY: SAWYER	TYPICAL SECTIONS	SHEET 3	E

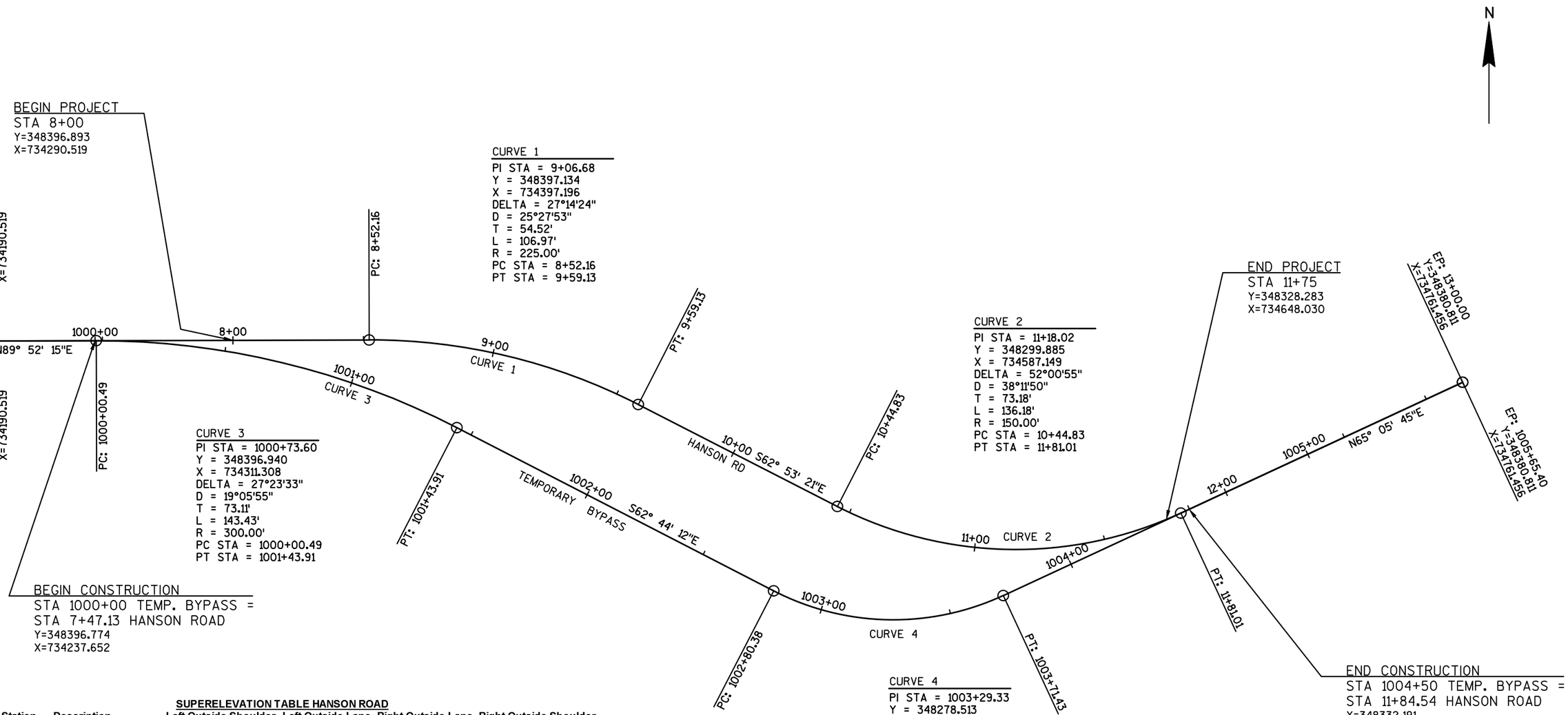
2



TYPICAL TEMPORARY BYPASS SECTION

STA 1000+82 TO STA 1003+88

2



CURVE 1
PI STA = 9+06.68
Y = 348397.134
X = 734397.196
DELTA = 27°14'24"
D = 25°27'53"
T = 54.52'
L = 106.97'
R = 225.00'
PC STA = 8+52.16
PT STA = 9+59.13

CURVE 2
PI STA = 11+18.02
Y = 348299.885
X = 734587.149
DELTA = 52°00'55"
D = 38°11'50"
T = 73.18'
L = 136.18'
R = 150.00'
PC STA = 10+44.83
PT STA = 11+81.01

CURVE 3
PI STA = 1000+73.60
Y = 348396.940
X = 734311.308
DELTA = 27°23'33"
D = 19°05'55"
T = 73.11'
L = 143.43'
R = 300.00'
PC STA = 1000+00.49
PT STA = 1001+43.91

CURVE 4
PI STA = 1003+29.33
Y = 348278.513
X = 734541.118
DELTA = 52°10'03"
D = 57°17'45"
T = 48.95'
L = 91.05'
R = 100.00'
PC STA = 1002+80.38
PT STA = 1003+71.43

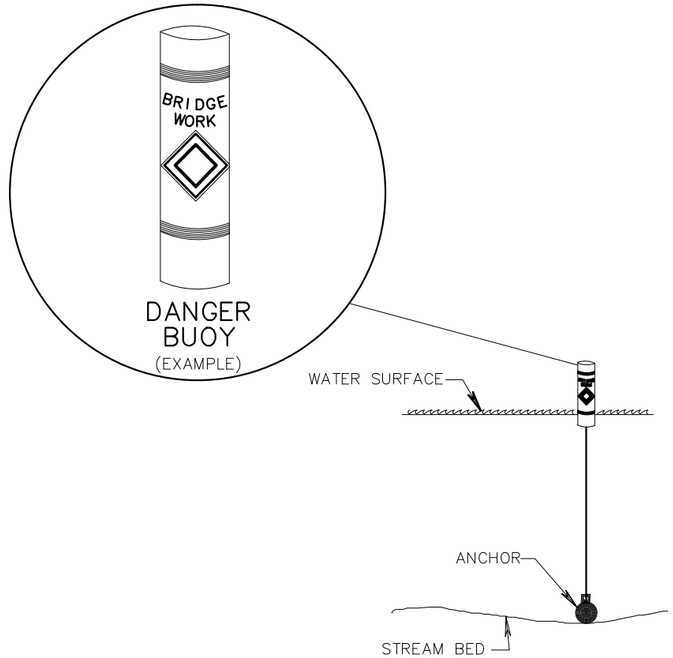
BEGIN CONSTRUCTION
STA 1000+00 TEMP. BYPASS =
STA 7+47.13 HANSON ROAD
Y=348396.774
X=734237.652

END CONSTRUCTION
STA 1004+50 TEMP. BYPASS =
STA 11+84.54 HANSON ROAD
Y=348332.191
X=734656.734

SUPERELEVATION TABLE HANSON ROAD

Curve	Station	Description	Left Outside Shoulder	Left Outside Lane	Right Outside Lane	Right Outside Shoulder
	8+00.00'	Begin Alignment	-2.00%	-2.00%	-2.00%	-2.00%
1	8+00.00'	End Normal Shoulder	-2.00%	-2.00%	-2.00%	-2.00%
1	8+00.00'	End Normal Crown	-2.00%	-2.00%	-2.00%	-2.00%
1	8+18.00'	Level Crown	0.00%	0.00%	-2.00%	-2.00%
1	8+36.00'	Begin Full Super	2.00%	2.00%	-2.00%	-2.00%
1	9+14.00'	End Full Super	2.00%	2.00%	-2.00%	-2.00%
1	9+32.00'	Level Crown	0.00%	0.00%	-2.00%	-2.00%
1	9+50.00'	Begin Normal Crown	-2.00%	-2.00%	-2.00%	-2.00%
1	9+50.00'	Begin Normal Shoulder	-2.00%	-2.00%	-2.00%	-2.00%
2	10+50.00'	End Normal Shoulder	-2.00%	-2.00%	-2.00%	-2.00%
2	10+50.00'	End Normal Crown	-2.00%	-2.00%	-2.00%	-2.00%
2	10+68.00'	Level Crown	-2.00%	-2.00%	0.00%	0.00%
2	10+86.00'	Begin Full Super	-2.00%	-2.00%	2.00%	2.00%
2	11+40.00'	End Full Super	-2.00%	-2.00%	2.00%	2.00%
2	11+58.00'	Level Crown	-2.00%	-2.00%	0.00%	0.00%
2	11+75.00'	Begin Normal Crown	-2.00%	-2.00%	-2.00%	-2.00%
2	11+75.00'	Begin Normal Shoulder	-2.00%	-2.00%	-2.00%	-2.00%
	11+75.00'	End Alignment	-2.00%	-2.00%	-2.00%	-2.00%

2



DANGER BUOY PLACEMENT DETAIL

USE AS DIRECTED BY ENGINEER

NOTE: IF RECREATIONAL BOATERS NAVIGATE THROUGH THE SITE, CONSTRUCTION ACTIVITIES MUST CEASE UNTIL BOATERS ARE SAFELY THROUGH THE CONSTRUCTION ZONE.

PROJECT NO: 8461-00-71	HWY: HANSON ROAD	COUNTY: SAWYER	DETAILS	SHEET 6	E

8461-00-71

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	4.000	4.000
0004	201.0205	Grubbing	STA	4.000	4.000
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	576.000	576.000
0010	206.1000	Excavation for Structures Bridges (structure) 01. B-57-0088	LS	1.000	1.000
0012	208.0100	Borrow	CY	94.000	94.000
0014	210.1500	Backfill Structure Type A	TON	170.000	170.000
0016	213.0100	Finishing Roadway (project) 01. 8461-00-71	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	400.000	400.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	100.000	100.000
0022	311.0110	Breaker Run	TON	800.000	800.000
0024	502.0100	Concrete Masonry Bridges	CY	206.000	206.000
0026	502.3200	Protective Surface Treatment	SY	290.000	290.000
0028	505.0400	Bar Steel Reinforcement HS Structures	LB	4,605.000	4,605.000
0030	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	33,830.000	33,830.000
0032	506.0105	Structural Steel Carbon	LB	475.000	475.000
0034	513.4061	Railing Tubular Type M (structure) 01. B-57-0088	LF	198.000	198.000
0036	516.0500	Rubberized Membrane Waterproofing	SY	18.000	18.000
0038	526.0100	Temporary Structure (station) 01. 1002+25	LS	1.000	1.000
0040	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	310.000	310.000
0042	606.0300	Riprap Heavy	CY	176.000	176.000
0044	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	200.000	200.000
0046	618.0100	Maintenance And Repair of Haul Roads (project) 01. 8461-00-71	EACH	1.000	1.000
0048	619.1000	Mobilization	EACH	1.000	1.000
0050	624.0100	Water	MGAL	10.000	10.000
0052	625.0500	Salvaged Topsoil	SY	427.000	427.000
0054	627.0200	Mulching	SY	562.000	562.000
0056	628.1504	Silt Fence	LF	645.000	645.000
0058	628.1520	Silt Fence Maintenance	LF	645.000	645.000
0060	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0062	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0064	628.2008	Erosion Mat Urban Class I Type B	SY	150.000	150.000
0066	628.6005	Turbidity Barriers	SY	300.000	300.000
0068	629.0205	Fertilizer Type A	CWT	0.400	0.400
0070	630.0120	Seeding Mixture No. 20	LB	16.000	16.000
0072	630.0200	Seeding Temporary	LB	16.000	16.000
0074	633.1100	Delineators Temporary	EACH	17.000	17.000

8461-00-71

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	5.000	5.000
0082	638.3000	Removing Small Sign Supports	EACH	5.000	5.000
0084	642.5001	Field Office Type B	EACH	1.000	1.000
0086	643.0300	Traffic Control Drums	DAY	2,040.000	2,040.000
0088	643.0420	Traffic Control Barricades Type III	DAY	1,020.000	1,020.000
0090	643.0705	Traffic Control Warning Lights Type A	DAY	2,040.000	2,040.000
0092	643.0715	Traffic Control Warning Lights Type C	DAY	2,040.000	2,040.000
0094	643.0900	Traffic Control Signs	DAY	2,448.000	2,448.000
0096	643.5000	Traffic Control	EACH	1.000	1.000
0098	645.0105	Geotextile Type C	SY	950.000	950.000
0100	645.0111	Geotextile Type DF Schedule A	SY	70.000	70.000
0102	645.0120	Geotextile Type HR	SY	344.000	344.000
0104	650.4500	Construction Staking Subgrade	LF	487.000	487.000
0106	650.6500	Construction Staking Structure Layout (structure) 01. B-57-0088	LS	1.000	1.000
0108	650.9910	Construction Staking Supplemental Control (project) 01. 8461-00-71	LS	1.000	1.000
0110	650.9920	Construction Staking Slope Stakes	LF	487.000	487.000
0112	715.0502	Incentive Strength Concrete Structures	DOL	1,266.000	1,266.000

3

CLEARING & GRUBBING

STATION - STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
HANSON ROAD			
8+00 - 11+75	LT & RT	4	4
ITEM TOTALS		4	4

TEMPORARY STRUCTURE (STA 1002+25)

STATION - STATION	526.0100 LS
TEMPORARY BYPASS	1
ITEM TOTAL	1

3

EXCAVATION

STATION - STATION	LOCATION	205.0100 COMMON CY	AIR FILL CY	EXPAND. FILL CY	208.0100 BORROW CY	REMARKS
HANSON ROAD						
8+00 - 9+61.23	LT & RT	57	39	50	-7	
10+38.77 - 11+75	LT & RT	23	98	128	105	
TEMPORARY BYPASS	LT & RT	4	0	0	-4	TEMPORARY BYPASS CONSTRUCTION
TEMPORARY BYPASS	LT & RT	492	-	-	-	TEMPORARY BYPASS REMOVAL
ITEM TOTALS		576	137	178	94	

NOTES:
1) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN COMMON EXCAVATION.
2) FILL DOES NOT INCLUDE UNUSABLE PAVEMENT EXCAVATION VOLUME.
3) FILL WILL BE BACKFILLED WITH CUT OR BORROW.
4) POSITIVE BORROW INDICATES A SHORTAGE OF MATERIAL.
5) EXPANSION FACTOR = 1.3

MAINTENANCE AND REPAIR OF HAUL ROADS (8461-00-71)

STATION - STATION	618.0100 EACH
HANSON ROAD	
CATEGORY 0030	1
ITEM TOTAL	1

MOBILIZATION

STATION - STATION	619.1000 EACH
HANSON ROAD	
CATEGORY 0010	0.25
CATEGORY 0020	0.75
ITEM TOTAL	1

FINISHING ROADWAY (8461-00-71)

STATION - STATION	213.0100 EACH
HANSON ROAD	1
ITEM TOTAL	1

SALVAGED TOPSOIL, MULCHING, FERTILIZER AND SEEDING

STATION - STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	629.0205 FERTILIZER TYPE A CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB
HANSON ROAD						
8+00 - 9+61.23	LT & RT	228	314	0.2	9	9
10+38.77 - 11+75	LT & RT	199	249	0.2	7	7
ITEM TOTALS		427	562	0.4	16	16

BASE AGGREGATE DENSE

STATION - STATION	LOCATION	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON	311.0110 BREAKER RUN TON	624.0100 WATER MGAL
HANSON ROAD					
8+00 - 9+61.23	LT & RT	200	-	-	4
10+38.77 - 11+75	LT & RT	170	-	-	3
UNDISTRIBUTED		30	-	-	-
TEMPORARY BYPASS	LT & RT	-	79	800	2
UNDISTRIBUTED		-	21	-	1
ITEM TOTALS		400	100	800	10

EROSION CONTROL ITEMS

STATION - STATION	LOCATION	606.0300** RIPRAP HEAVY CY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.6005 TURBIDITY BARRIER SY	645.0105 GEOTEXTILE TYPE C SY	645.0120** GEOTEXTILE TYPE HR SY
HANSON ROAD								
8+00 - 9+73.96	LT & RT	-	375	375	-	130	-	-
10+28.96 - 11+75	LT & RT	36	270	270	-	170	-	54
UNDISTRIBUTED	LT & RT	-	-	-	150	-	-	-
TEMPORARY BYPASS	LT & RT	-	-	-	-	-	950	-
ITEM TOTALS		36	645	645	150	300	950	54

**ITEM LOCATED ELSEWHERE IN PLANS

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010, UNLESS OTHERWISE NOTED.

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MOBILIZATIONS EROSION CONTROL

STATION - STATION	628.1905 EROSION CONTROL EACH	628.1910 EMERGENCY EROSION CONTROL EACH
HANSON ROAD	3	3
ITEM TOTALS	3	3

DELINEATORS TEMPORARY

STATION - STATION	LOCATION	633.1100 EACH	REMARKS
TEMPORARY BYPASS	LT & RT	17	25' SPACING
ITEM TOTAL		17	

FIELD OFFICE TYPE B

STATION - STATION	642.5001 EACH
HANSON ROAD	1
ITEM TOTAL	1

PERMANENT SIGNING

SIGN GROUP CODE	SIGN CODE	SIGN MESSAGE	TYPE II SIZE	637.2230 SIGNS TYPE II REFLECTIVE F SF	634.0612 POSTS WOOD 4X6-INCH 12-FT EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
HANSON ROAD								
1-1		WEIGHT LIMIT 10 TON		-	-	1	1	REMOVE
1-2	W5-52R	CLEARANCE STRIPER	12" X 36"	3	1	1	1	REPLACE
1-3	W5-52L	CLEARANCE STRIPER	12" X 36"	3	1	1	1	REPLACE
1-4	W5-52L	CLEARANCE STRIPER	12" X 36"	3	1	1	1	REPLACE
1-5	W5-52R	CLEARANCE STRIPER	12" X 36"	3	1	1	1	REPLACE
ITEM TOTALS				12	4	5	5	

TRAFFIC CONTROL

STATION - STATION	643.0300 DRUMS DAY	643.0420 BARRICADES TYPE III DAY	643.0705 WARNING LIGHTS TYPE A DAY	643.0715 WARNING LIGHTS TYPE C DAY	643.0900 SIGNS DAY	643.5000 TRAFFIC CONTROL EACH
HANSON ROAD 8+00 - 11+75	2040	1020	2040	2040	2448	1
ITEM TOTAL	2040	1020	2040	2040	2448	1

CONSTRUCTION STAKING

STATION - STATION	LOCATION	650.4500 SUBGRADE LF	*650.6500 STRUCTURE LAYOUT B-57-0088 LS	650.9910 SUPPLEMENTAL CONTROL (8461-00-71) LS	650.9920 SLOPE STAKES LF
HANSON ROAD					
8+00 - 9+61.23	LT & RT	161	-	-	161
10+00	LT & RT	-	1	1	-
10+38.77 - 11+75	LT & RT	136	-	-	136
TEMPORARY BYPASS	LT & RT	190	-	-	190
ITEM TOTALS		487	1	1	487

*CATEGORY 0020

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010, UNLESS OTHERWISE NOTED.

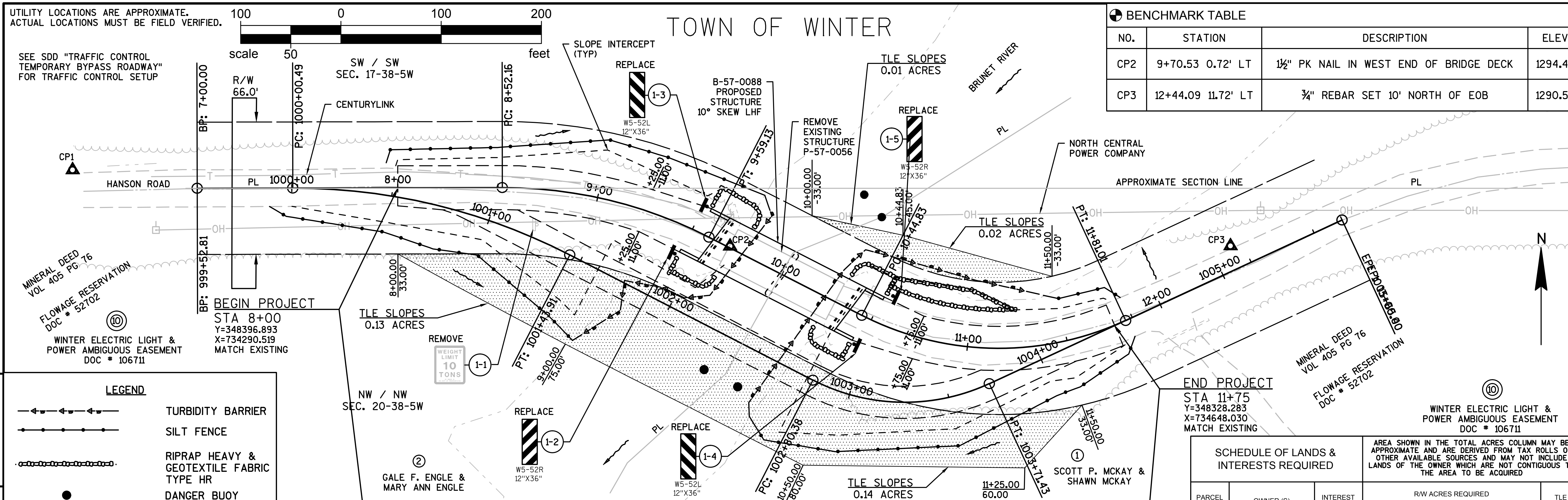
UTILITY LOCATIONS ARE APPROXIMATE. ACTUAL LOCATIONS MUST BE FIELD VERIFIED.

SEE SDD "TRAFFIC CONTROL TEMPORARY BYPASS ROADWAY" FOR TRAFFIC CONTROL SETUP

TOWN OF WINTER

BENCHMARK TABLE

NO.	STATION	DESCRIPTION	ELEV
CP2	9+70.53 0.72' LT	1½" PK NAIL IN WEST END OF BRIDGE DECK	1294.45
CP3	12+44.09 11.72' LT	¾" REBAR SET 10' NORTH OF EOB	1290.54



100 0 100 200
scale 50 feet
SW / SW
SEC. 17-38-5W
R/W
66.0'
BP: 7+00.00
PC: 1000+00.49
PC: 8+52.16
CENTURYLINK
SLOPE INTERCEPT (TYP)
REPLACE
W5-52L 12"X36"
1-3
B-57-0088 PROPOSED STRUCTURE 10° SKEW LHF
REMOVE EXISTING STRUCTURE P-57-0056
TLE SLOPES 0.01 ACRES
BRUNET RIVER
REPLACE
1-5
W5-52R 12"X36"
PL
NORTH CENTRAL POWER COMPANY
CP1
HANSON ROAD
1000+00
8+00
9+00
1001+00
CP2
10+00
APPROXIMATE SECTION LINE
TLE SLOPES 0.02 ACRES
PT: 11+81.01
CP3
1005+00
12+00
11+00
1004+00
1003+00
1002+00
N
MINERAL DEED VOL 405 PG 76
FLOWAGE RESERVATION DOC # 52702
10
WINTER ELECTRIC LIGHT & POWER AMBIGUOUS EASEMENT DOC # 106711
BP: 999+52.81
BEGIN PROJECT
STA 8+00
Y=348396.893
X=734290.519
MATCH EXISTING
TLE SLOPES 0.13 ACRES
REMOVE
WEIGHT LIMIT 10 TONS
1-1
PT: 1001+43.91
NW / NW
SEC. 20-38-5W
REPLACE
1-2
W5-52R 12"X36"
2
GALE F. ENGLE & MARY ANN ENGLE
REPLACE
1-4
W5-52L 12"X36"
PC: 1002+80.38
TLE SLOPES 0.14 ACRES
11+25.00 60.00
PT: 1003+71.43
1
SCOTT P. MCKAY & SHAWN MCKAY
END PROJECT
STA 11+75
Y=348328.283
X=734648.030
MATCH EXISTING
MINERAL DEED VOL 405 PG 76
FLOWAGE RESERVATION DOC # 52702
10
WINTER ELECTRIC LIGHT & POWER AMBIGUOUS EASEMENT DOC # 106711
LEGEND
TURBIDITY BARRIER
SILT FENCE
RIPRAP HEAVY & GEOTEXTILE FABRIC TYPE HR
DANGER BUOY
5
5

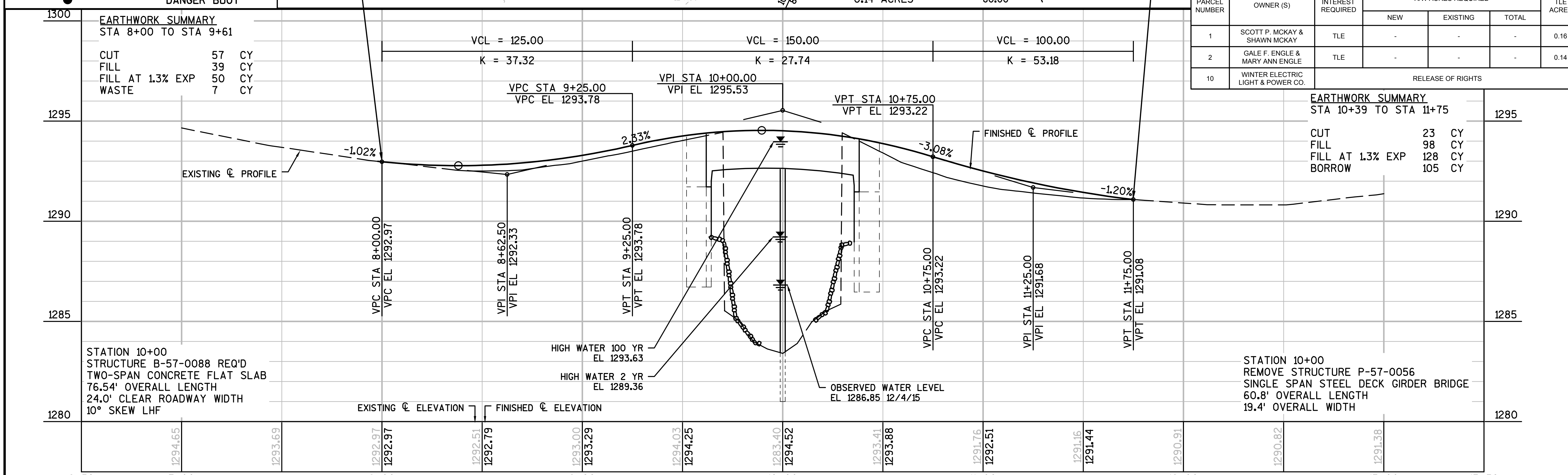
SCHEDULE OF LANDS & INTERESTS REQUIRED			AREA SHOWN IN THE TOTAL ACRES COLUMN MAY BE APPROXIMATE AND ARE DERIVED FROM TAX ROLLS OR OTHER AVAILABLE SOURCES AND MAY NOT INCLUDE LANDS OF THE OWNER WHICH ARE NOT CONTIGUOUS TO THE AREA TO BE ACQUIRED			
PARCEL NUMBER	OWNER (S)	INTEREST REQUIRED	R/W ACRES REQUIRED			TLE ACRES
			NEW	EXISTING	TOTAL	
1	SCOTT P. MCKAY & SHAWN MCKAY	TLE	-	-	-	0.16
2	GALE F. ENGLE & MARY ANN ENGLE	TLE	-	-	-	0.14
10	WINTER ELECTRIC LIGHT & POWER CO.	RELEASE OF RIGHTS				

EARTHWORK SUMMARY
STA 8+00 TO STA 9+61

CUT	57	CY
FILL	39	CY
FILL AT 1.3% EXP	50	CY
WASTE	7	CY

EARTHWORK SUMMARY
STA 10+39 TO STA 11+75

CUT	23	CY
FILL	98	CY
FILL AT 1.3% EXP	128	CY
BORROW	105	CY



1300
1295
1290
1285
1280
VCL = 125.00
K = 37.32
VCL = 150.00
K = 27.74
VCL = 100.00
K = 53.18
VPI STA 10+00.00
VPI EL 1295.53
VPC STA 9+25.00
VPC EL 1293.78
VPT STA 10+75.00
VPT EL 1293.22
FINISHED ℄ PROFILE
-1.02%
2.33%
-3.08%
-1.20%
EXISTING ℄ PROFILE
VPC STA 8+00.00
VPC EL 1292.97
VPI STA 8+62.50
VPI EL 1292.33
VPT STA 9+25.00
VPT EL 1293.78
VPC STA 10+75.00
VPC EL 1293.22
VPI STA 11+25.00
VPI EL 1291.68
VPT STA 11+75.00
VPT EL 1291.08
HIGH WATER 100 YR EL 1293.63
HIGH WATER 2 YR EL 1289.36
OBSERVED WATER LEVEL EL 1286.85 12/4/15
EXISTING ℄ ELEVATION
FINISHED ℄ ELEVATION
1294.65
1293.69
1292.97
1292.97
1292.51
1292.79
1293.00
1293.29
1294.03
1294.25
1283.40
1294.52
1293.41
1293.88
1291.76
1292.51
1291.16
1291.44
1290.91
1290.82
1291.38
6+50
7+00
8+00
9+00
10+00
11+00
12+00
13+00
13+50

STATION 10+00
STRUCTURE B-57-0088 REQ'D
TWO-SPAN CONCRETE FLAT SLAB
76.54' OVERALL LENGTH
24.0' CLEAR ROADWAY WIDTH
10° SKEW LHF

STATION 10+00
REMOVE STRUCTURE P-57-0056
SINGLE SPAN STEEL DECK GIRDER BRIDGE
60.8' OVERALL LENGTH
19.4' OVERALL WIDTH

PROJECT NO: 8461-00-71	HWY: HANSON ROAD	COUNTY: SAWYER	PLAN AND PROFILE: HANSON ROAD	SHEET 11	E

UTILITY LOCATIONS ARE APPROXIMATE.
ACTUAL LOCATIONS MUST BE FIELD VERIFIED.

SEE SDD "TRAFFIC CONTROL
TEMPORARY BYPASS ROADWAY"
FOR TRAFFIC CONTROL SETUP

NO.	STATION	DESCRIPTION	ELEV
CP2	9+70.53 0.72' LT	1½" PK NAIL IN WEST END OF BRIDGE DECK	1294.45
CP3	12+44.09 11.72' LT	¾" REBAR SET 10' NORTH OF EOB	1290.54

BEGIN CONSTRUCTION
STA 1000+00 TEMP. BYPASS =
STA 7+47.13 HANSON ROAD
Y=348396.774
X=734237.652
MATCH EXISTING

END CONSTRUCTION
STA 1004+50 TEMP. BYPASS =
STA 11+84.54 HANSON ROAD
Y=348332.191
X=734656.734
MATCH EXISTING

LEGEND

—◂▪—◂▪—◂▪—	TURBIDITY BARRIER
—•—•—•—•—	SILT FENCE
○○○○○○○○○○	RIPRAP HEAVY & GEOTEXTILE FABRIC TYPE HR

EARTHWORK SUMMARY
STA 1000+00 TO STA 1001+50

CUT	9 CY
FILL (BREAKER RUN)	126 CY = 228 TON
WASTE	9 CY

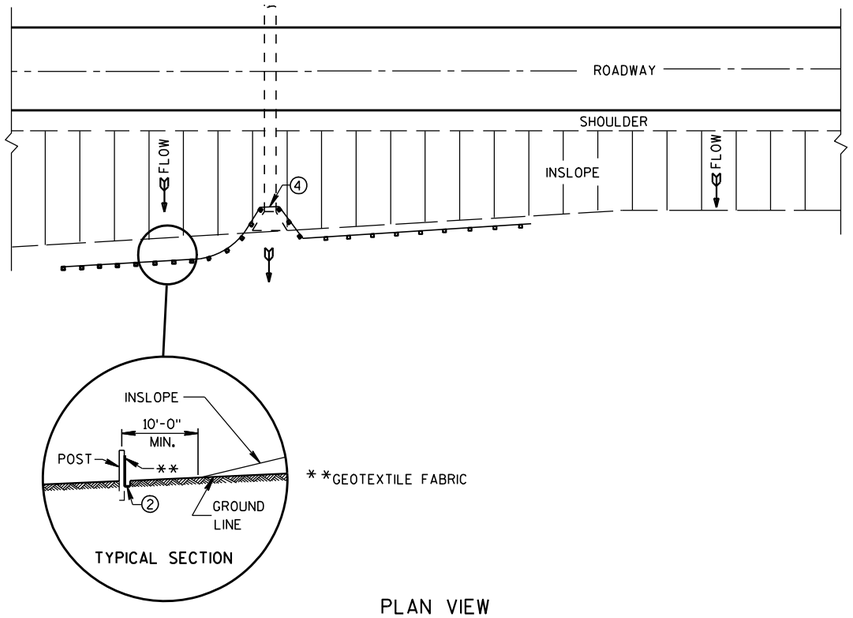
EARTHWORK SUMMARY
STA 1003+00 TO STA 1004+50

CUT	5 CY
FILL (BREAKER RUN)	267 CY = 482 TON
WASTE	5 CY

TEMPORARY STRUCTURE REQ'D
201 SF WATERWAY OPENING
16.0' CLEAR WIDTH
Q5 = 2319 CFS
HW5 = 1290.71
MINIMUM LOW CHORD = 1291.11'

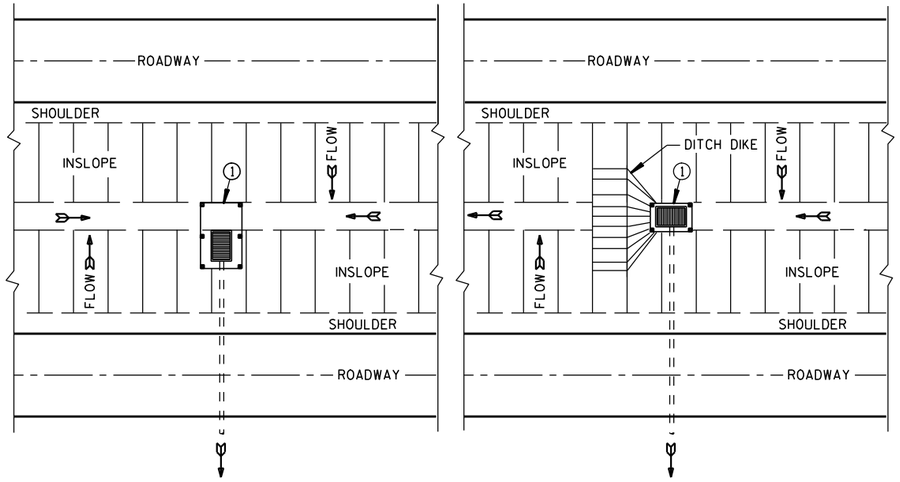
Standard Detail Drawing List

08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
15A02-09	DELINEATOR POST, DELINEATOR REFLECTOR AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15D31-03	TRAFFIC CONTROL, TEMPORARY BYPASS ROADWAY



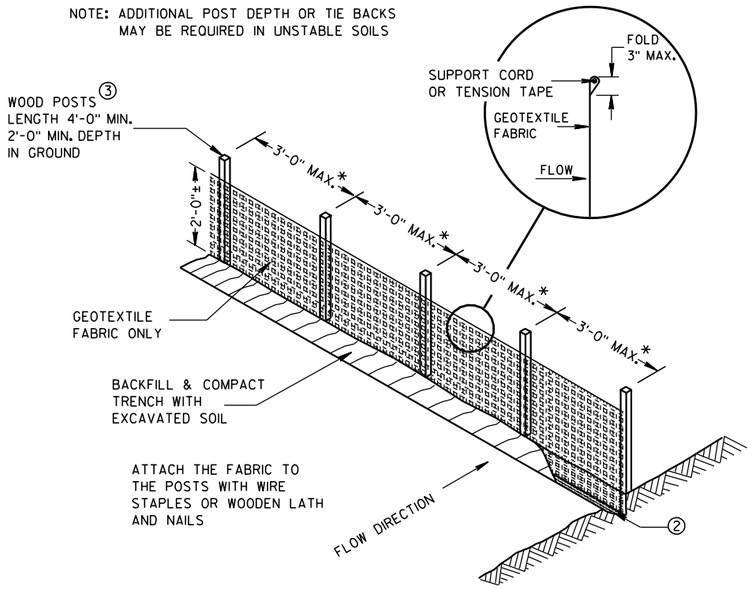
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



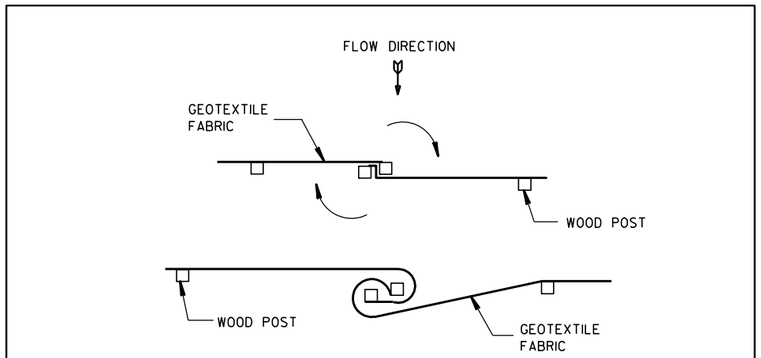
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS



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

SILT FENCE

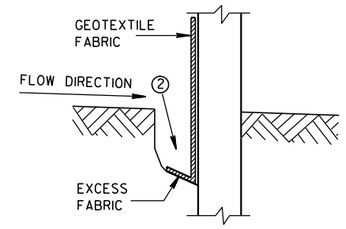


JOINING TWO LENGTHS OF SILT FENCE 5

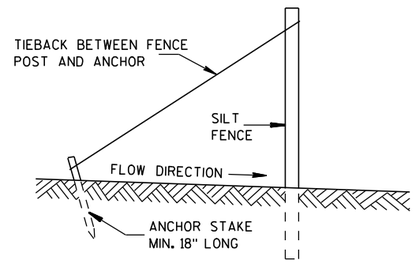
GENERAL NOTES

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

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



TRENCH DETAIL



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

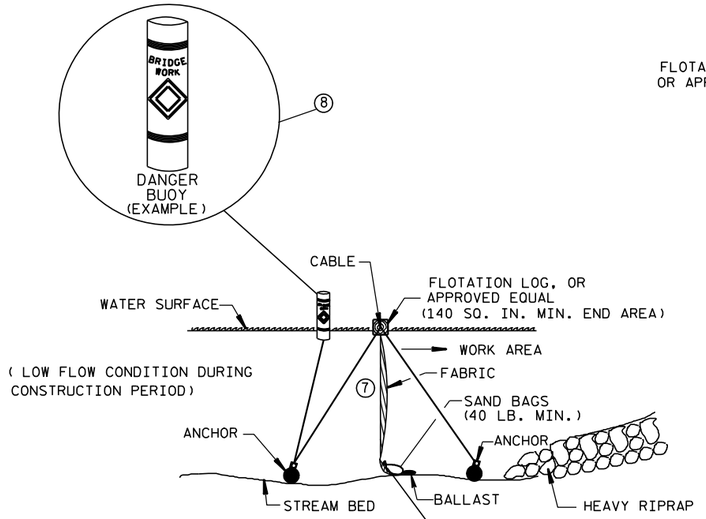
SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

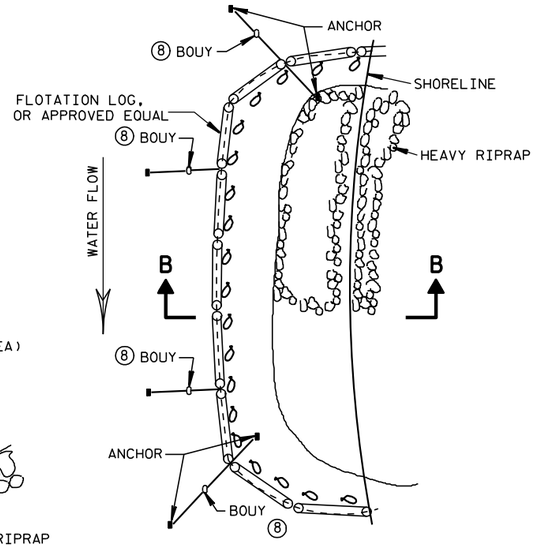
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

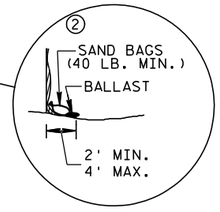
S.D.D. 8 E 9-6

S.D.D. 8 E 9-6

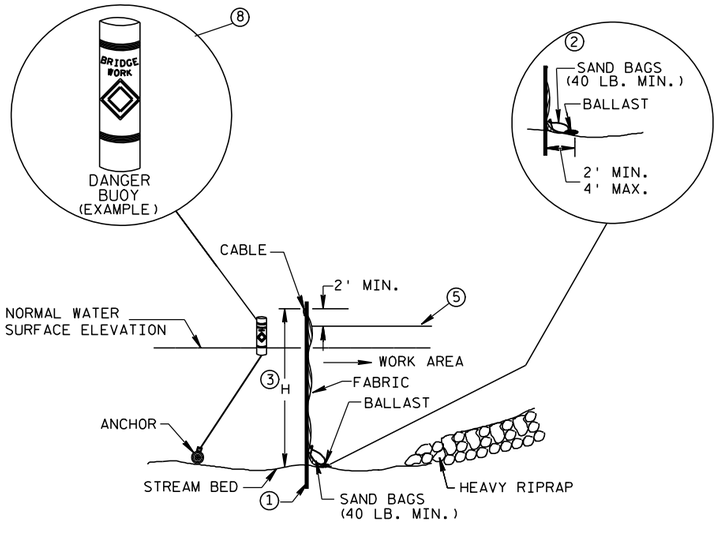


SECTION B-B

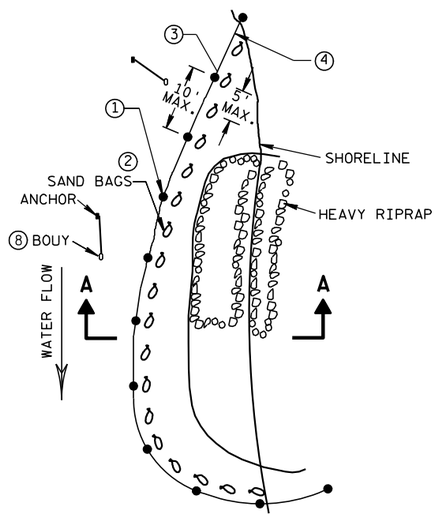




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

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

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

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

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

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

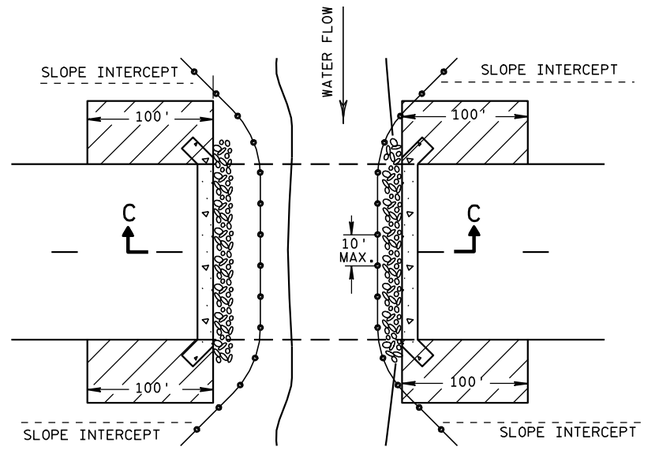
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

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

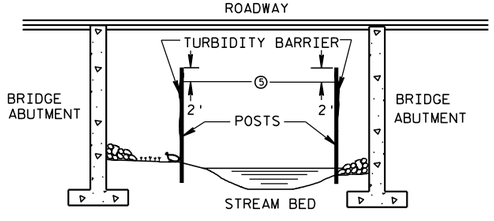
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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

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



PLAN VIEW



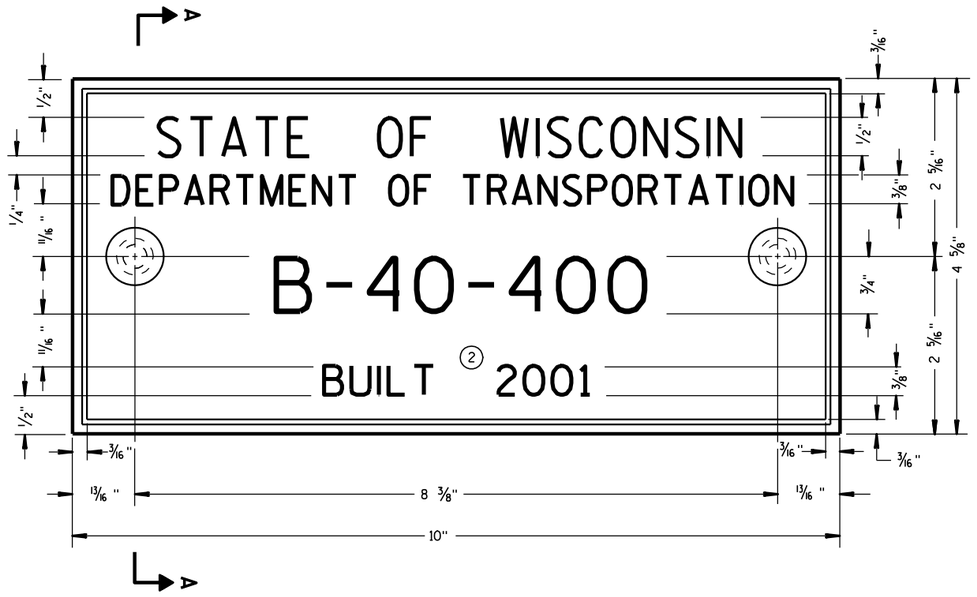
SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

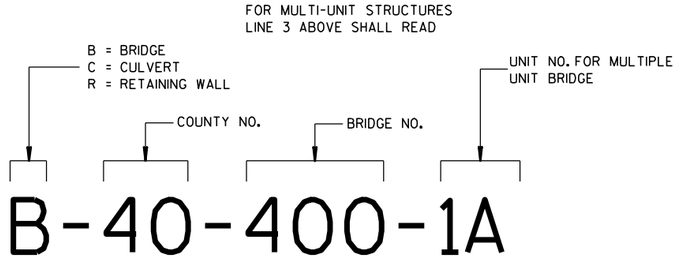
TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

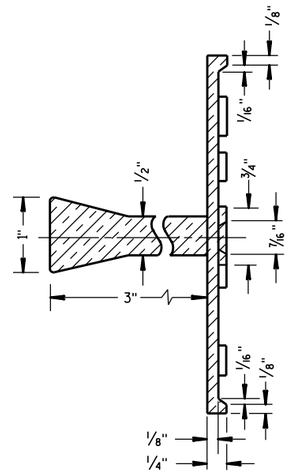
GENERAL NOTES

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

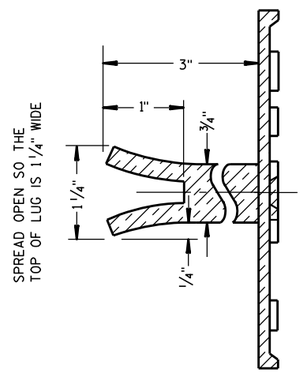
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

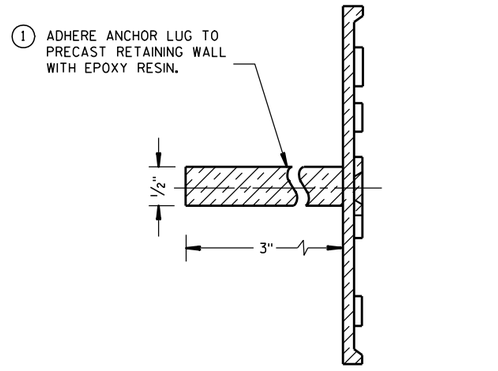
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER

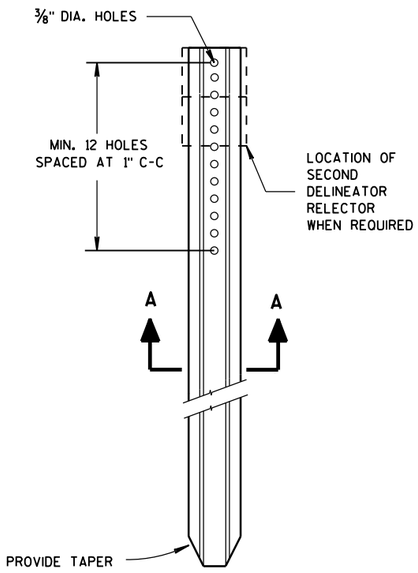
FHWA

6

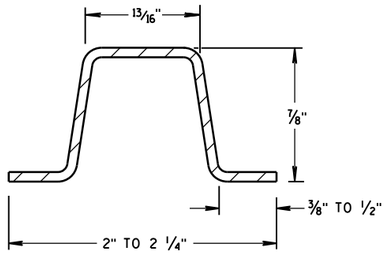
S.D.D. 12 A 3-10

6

S.D.D. 12 A 3-10

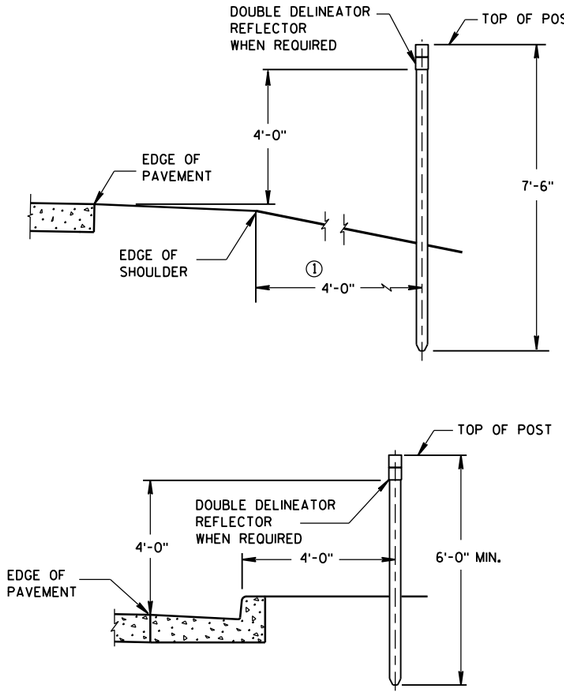


DELINEATOR POST



SECTION A-A

WEIGHT 1.12 LBS PER FT. ± 0.1 LB.

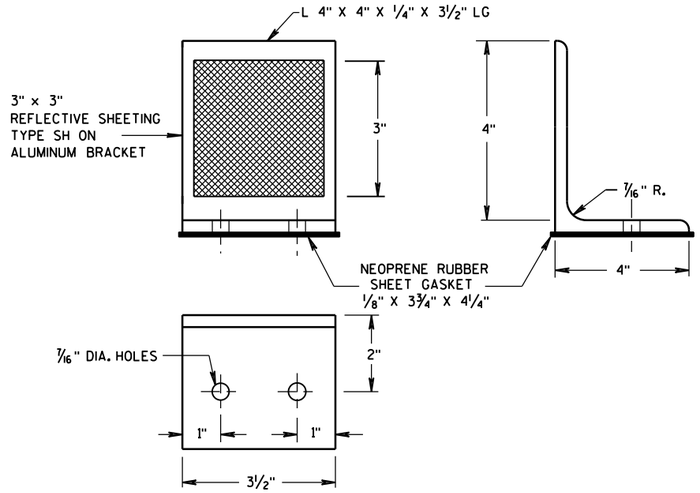


TYPICAL INSTALLATIONS OF DELINEATOR POSTS

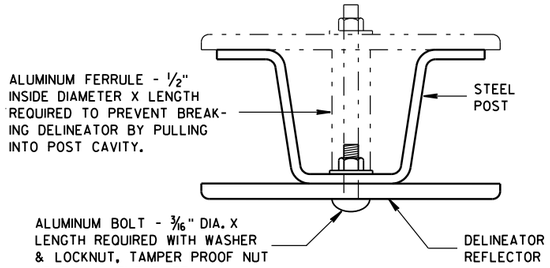
GENERAL NOTES

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

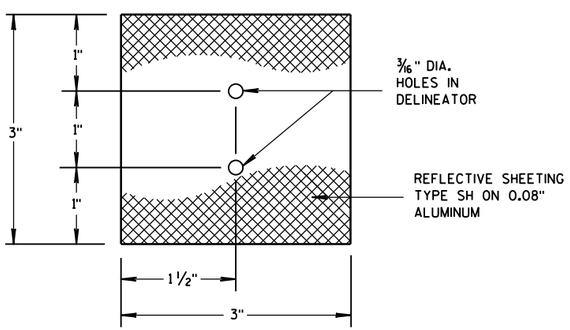
① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.



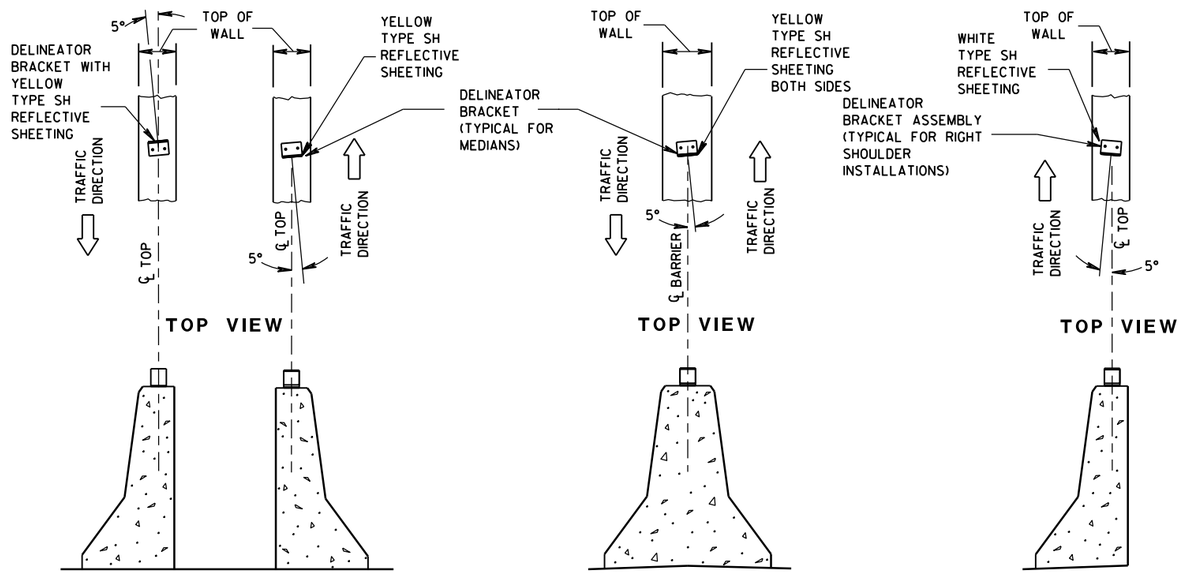
DELINEATOR BRACKET



MOUNTING DETAIL FOR DELINEATOR REFLECTOR

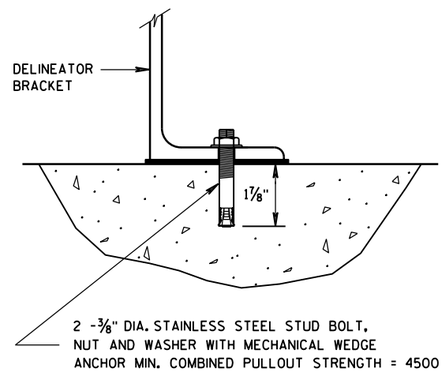


3"x 3" DELINEATOR REFLECTOR



DOUBLE BARRIERS IN MEDIAN | MEDIAN BARRIER | BARRIER LOCATED TO RT. OF TRAFFIC FLOW

LOCATION AND AIMING DETAILS FOR DELINEATOR BRACKETS MOUNTED ON CONCRETE BARRIERS



DELINEATOR BRACKET MOUNTING DETAIL

DELINEATOR POST, DELINEATOR REFLECTOR AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

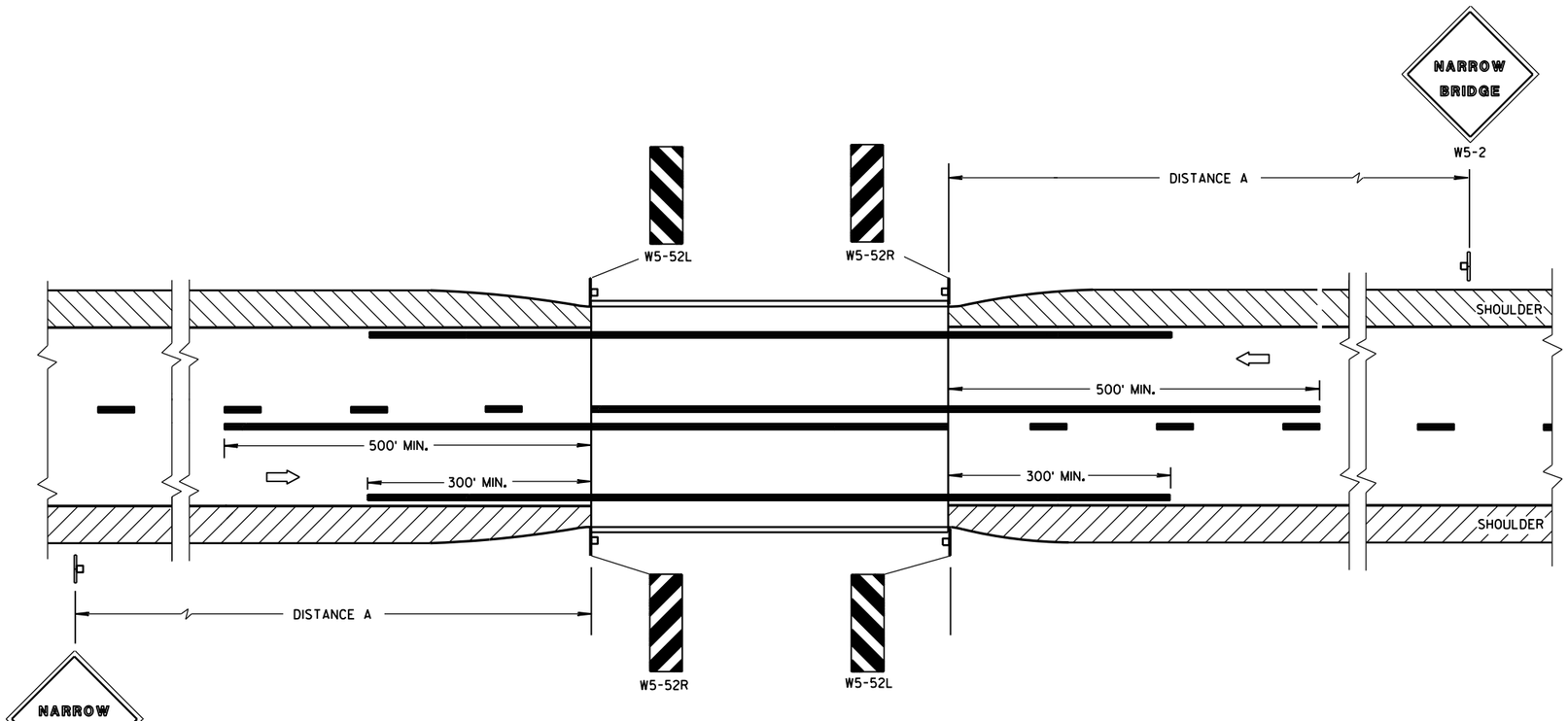
APPROVED
4-18-16 DATE
/S/ Matthew R. Rauch
STATE SIGNING AND MAR[illegible] GINEER
FHWA

6

S.D.D. 15 A 2-9

6

S.D.D. 15 A 2-9



SITUATION 1

WARRANTING CRITERIA:

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

DISTANCE TABLE

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

GENERAL NOTES

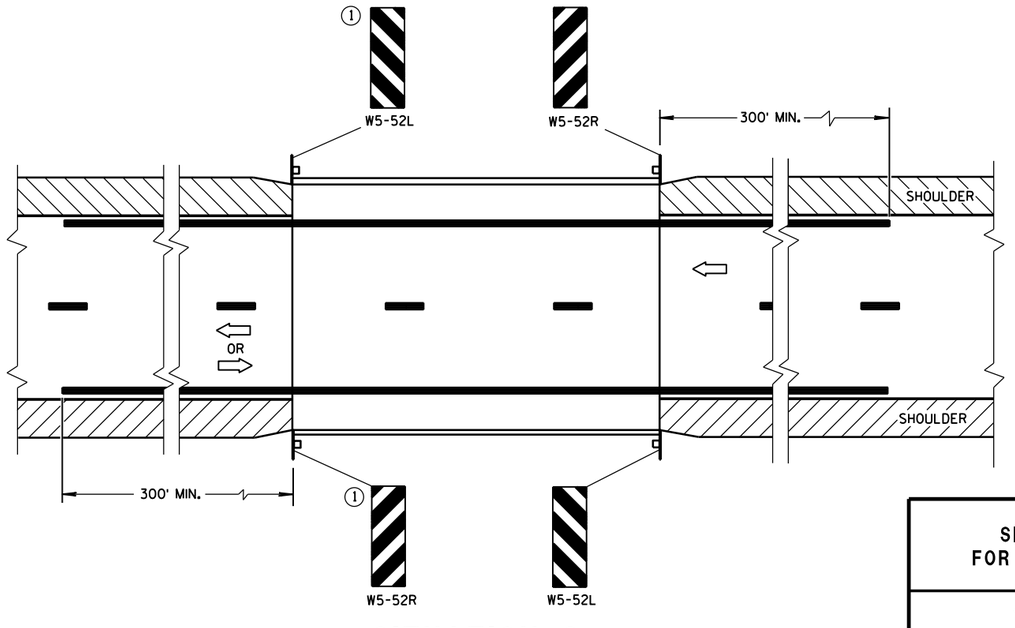
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

(1) OMIT ON ONE-WAY TRAVELLED WAYS.

⇨ DIRECTION OF TRAFFIC



SITUATION 2

WARRANTING CRITERIA:

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

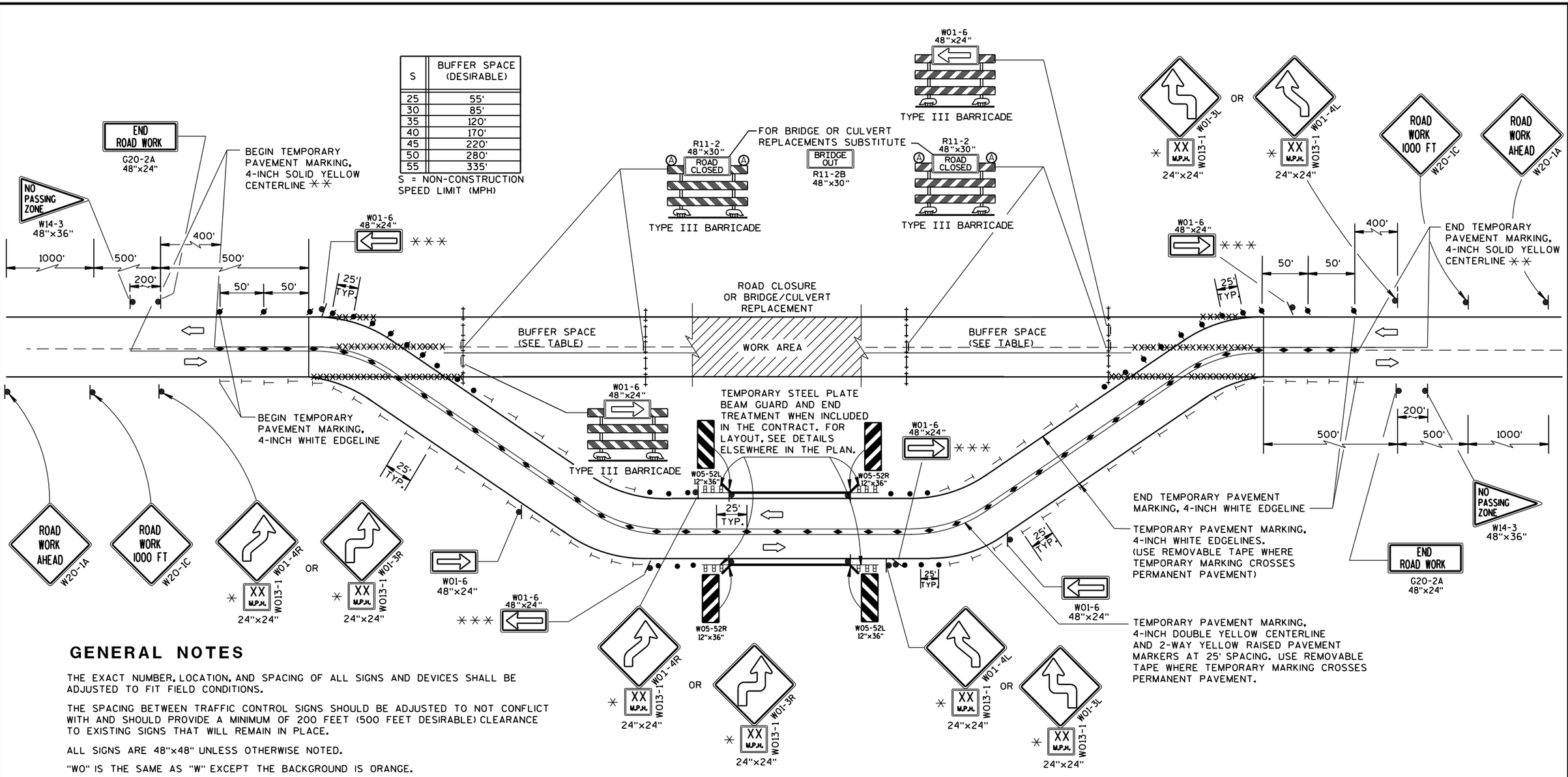
SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 15 C 6-9



S	BUFFER SPACE (DESIRABLE)
25	55'
30	85'
35	120'
40	170'
45	220'
50	280'
55	335'

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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

EQUIPMENT, VEHICLES, OR MATERIAL SHOULD NOT BE STORED IN BUFFER SPACE.

✳ IF ADVISORY SPEED IS GREATER THAN 30 MPH, USE THE W01-4 SIGN. IF ADVISORY SPEED IS 30 MPH OR LESS, USE THE W01-3 SIGN.

✳✳ WHEN THE DISTANCE TO/FROM THE NEXT CLOSEST NO-PASSING ZONE IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES AS INDICATED IN THE SPECIFICATIONS, THE TWO ZONES SHALL BE CONNECTED.

✳✳✳ OMIT THESE W01-6 SIGNS IF THE ADVISORY SPEED OF THE CURVE IS GREATER THAN 30 MPH.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY-BURN LIGHT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- TEMPORARY DELINEATOR, (WHITE) (SINGLE DELINEATOR)
- TEMPORARY RAISED PAVEMENT MARKERS (TWO-WAY YELLOW)
- XXX REMOVE PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- TEMPORARY STEEL PLATE BEAM GUARD AND END TREATMENT
- WORK AREA

TRAFFIC CONTROL, TEMPORARY BYPASS ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

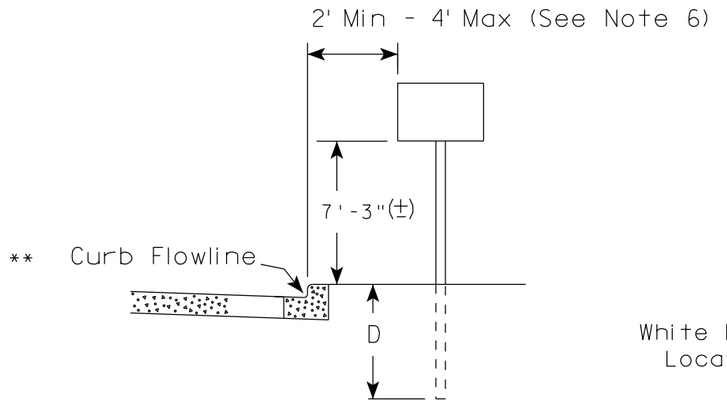
APPROVED

Sept. 2015 — DATE
/S/ Peter Amakobe Atepe — STATEWIDE WORK ZONE SAFETY ENGINEER — FHWA

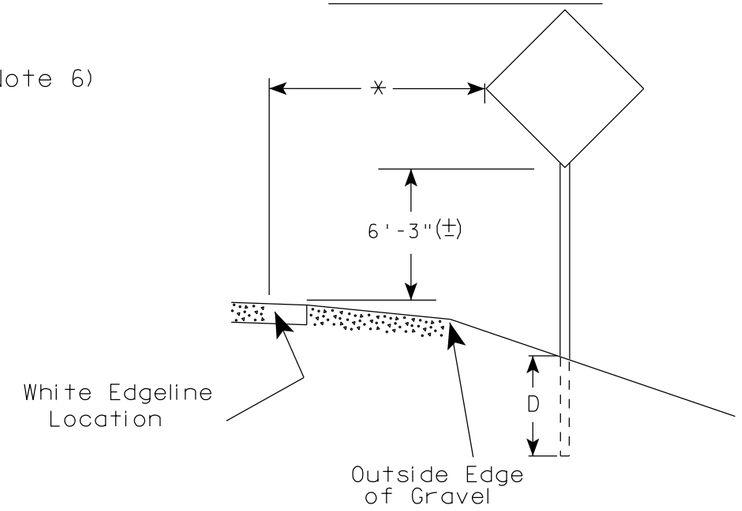
6

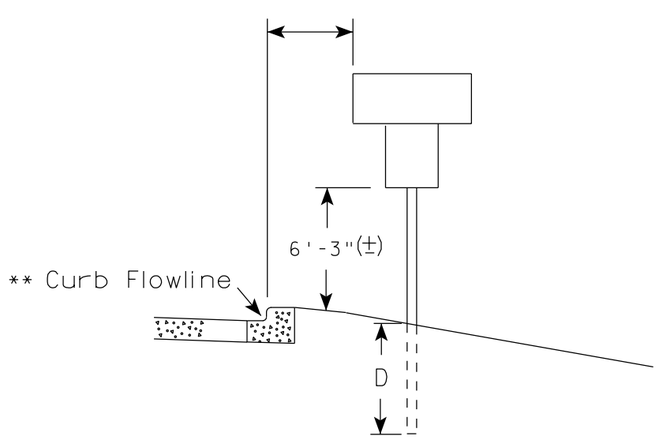
S.D.D. 15 D 31-3

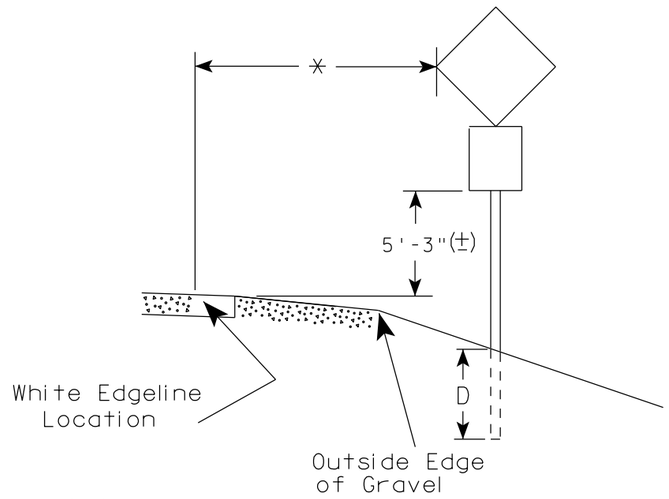
URBAN AREA



RURAL AREA (See Note 2)







GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directd 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" (±).

POST EMBEDMENT DEPTH

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

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

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

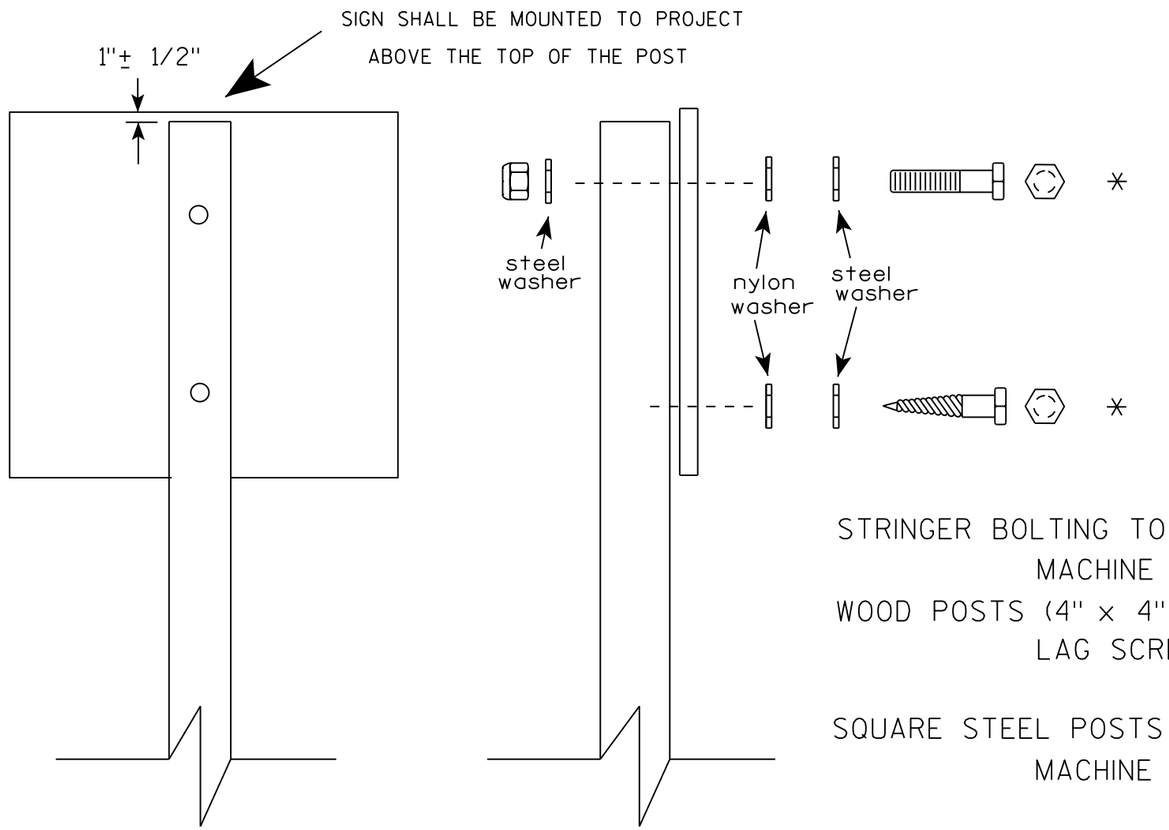
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



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

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

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

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

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

WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS

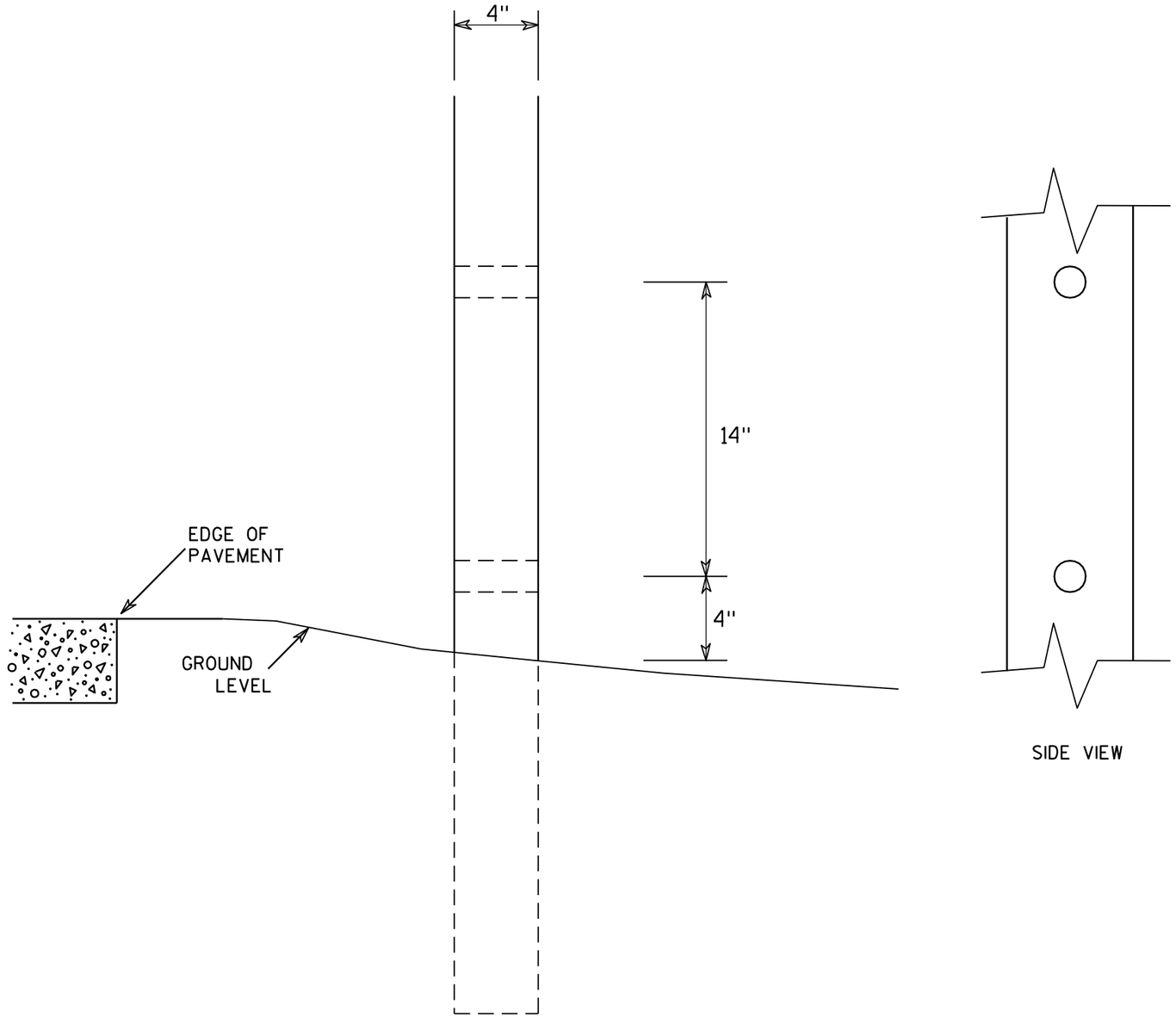
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

PROJECT NO: SHEET NO: E

FILE NAME : C:\CADfiles\Projects\tr_stdplate\A48.DGN PLOT DATE : 11-AUG-2016 11:35 PLOT BY : $$ plotuser $$



SIDE VIEW

GENERAL NOTES

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

7

7

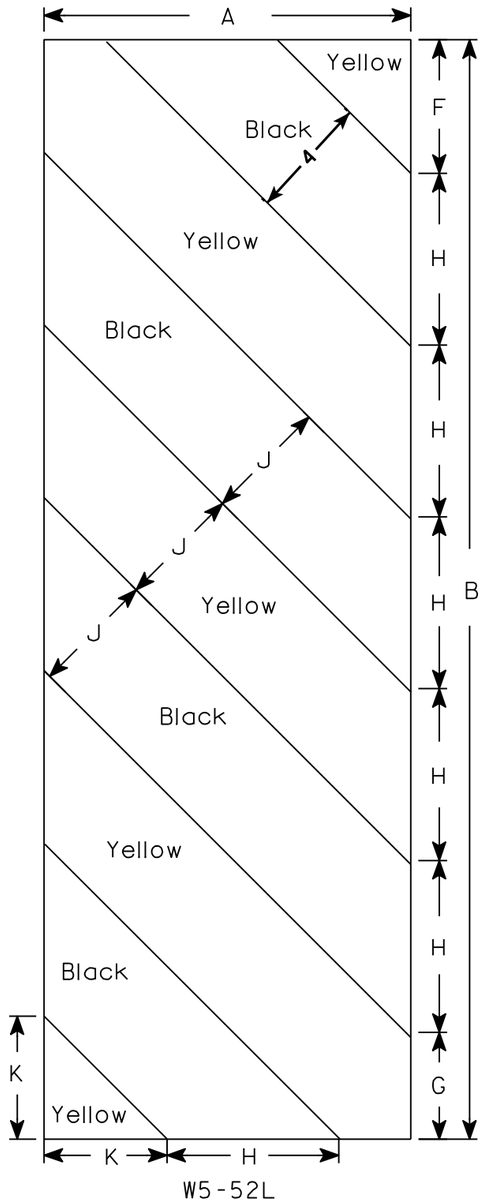
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

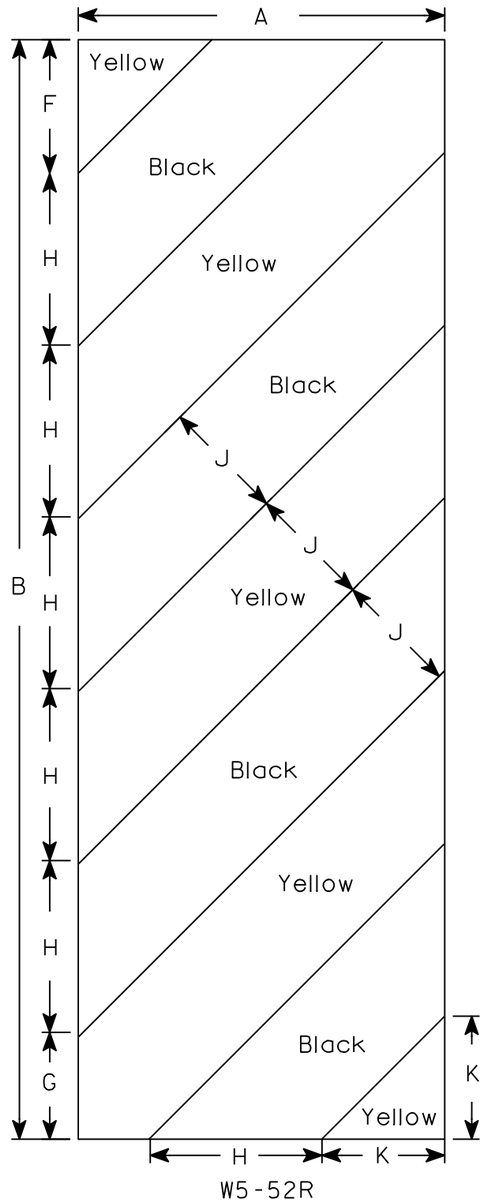
APPROVED Chester J Spang for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 22	E



W5-52L



W5-52R

NOTES

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

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

STANDARD SIGN

W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 23	E

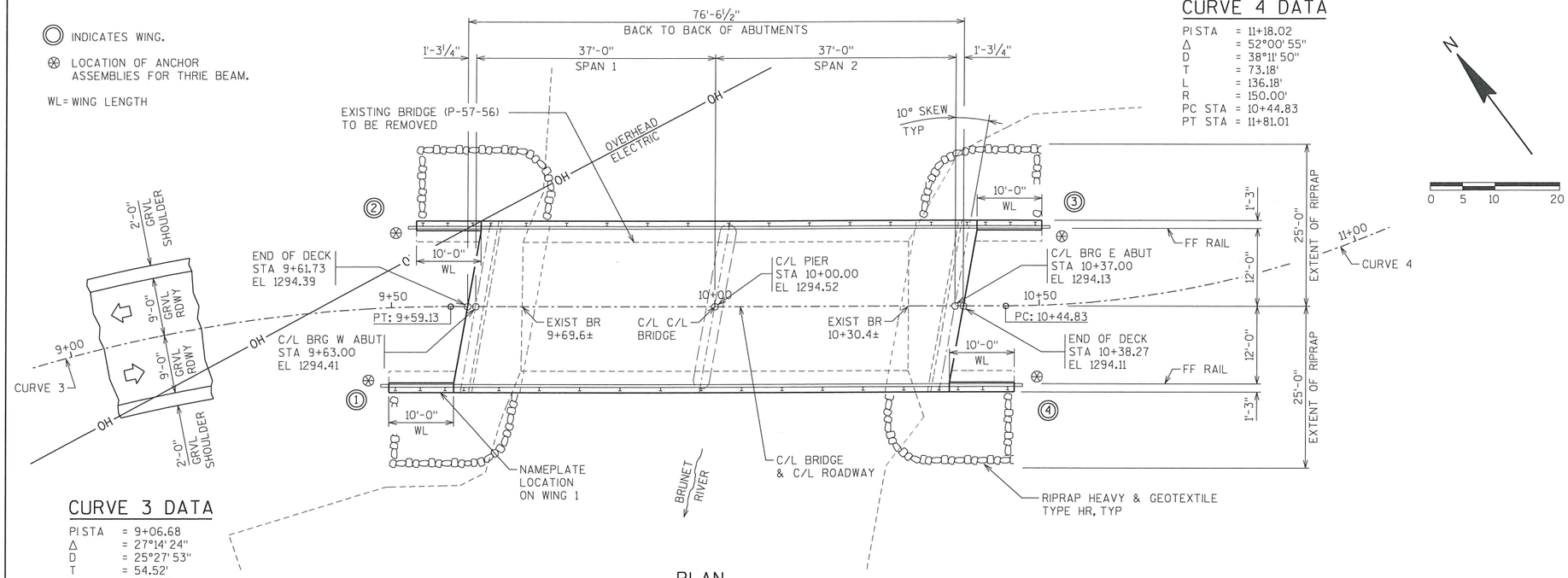
PLOT TIME: 8:48:08 AM
PLOT DATE: 9/27/2017
FILE NAME : S:\PT\S\Sawye\13468O\5-final-dsgn\51-drawings\20-Struct\bridge\b57088gl.dgn

STATE PROJECT NUMBER
8461-00-71

INDICATES WING.

LOCATION OF ANCHOR ASSEMBLIES FOR THRIE BEAM.

WL= WING LENGTH



PLAN

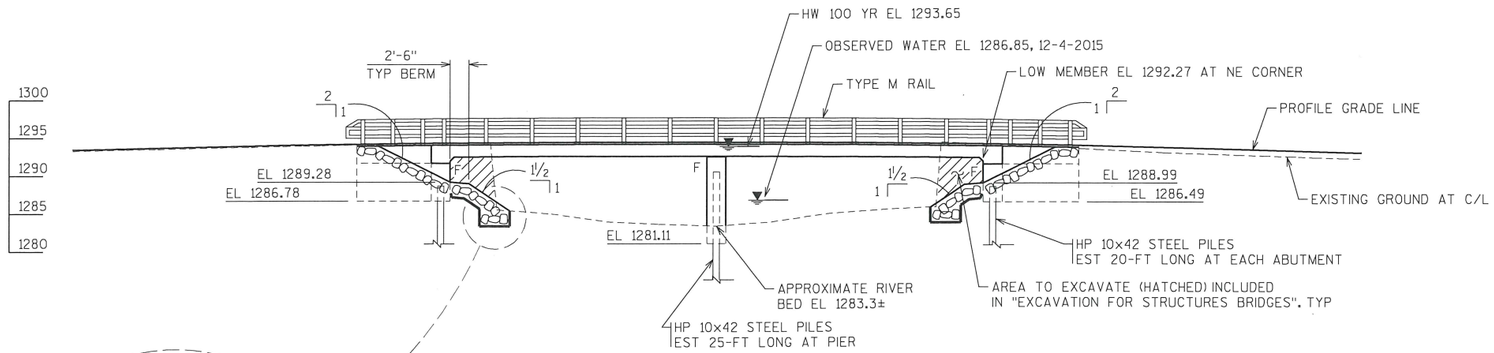
TWO-SPAN REINFORCED CONCRETE CONTINUOUS FLAT SLAB BRIDGE

CURVE 3 DATA

PI STA = 9+06.68
Δ = 27°14' 24"
D = 25°27' 53"
T = 54.52'
L = 106.97'
R = 225.00'
PC STA = 8+52.16
PT STA = 9+59.13

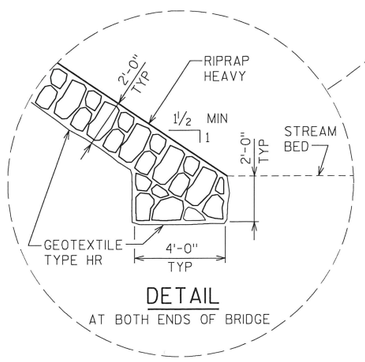
CURVE 4 DATA

PI STA = 11+18.02
Δ = 52°00' 55"
D = 38°11' 50"
T = 73.18'
L = 136.18'
R = 150.00'
PC STA = 10+44.83
PT STA = 11+81.01



ELEVATION

LOOKING NORTH
LOOKING NORMAL TO C/L SUBSTRUCTURES



DETAIL

AT BOTH ENDS OF BRIDGE

BENCHMARK (DATUM = NAVD88)			
NO	STATION	DESCRIPTION	ELEV
CP2	9+70.53, 0.72' LT	½" PK NAIL IN WEST END OF BRIDGE DECK	1294.45
CP3	12+44.09, 11.72' LT	¾" REBAR SET 10' NORTH OF EOB	1290.54

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.04
OPERATING RATING FACTOR: RF = 1.35
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 PSF

INVENTORY AND OPERATING RATINGS DO NOT INCLUDE FUTURE WEARING SURFACE.

MATERIAL PROPERTIES:

CONCRETE MASONRY - SUPERSTRUCTURE f'c = 4,000 psi
- ALL OTHER f'c = 3,500 psi

HIGH STRENGTH BAR STEEL REINFORCEMENT
AASHTO GRADE 60 fy = 60,000 psi

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10X42 STEEL PILING WITH A REQUIRED DRIVING RESISTANCE OF 140 TONS* PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED 20-LONG AT BOTH ABUTMENTS.

PIER TO BE SUPPORTED ON HP 10X42 STEEL PILING WITH A REQUIRED DRIVING RESISTANCE OF 150 TONS* PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED 25-LONG AT PIER.

*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.

HYDRAULIC DATA

100 YEAR FREQUENCY

Q_{100}	4700	CFS
Q_{100} OVER ROAD	1131	CFS
Q_{100} THRU STRUCTURE	3569	CFS
VELOCITY	7.31	FPS
HIGH WATER EL	1293.65	FT
WATERWAY AREA	488.1	SQ FT
DRAINAGE AREA	73.5	SQ MI

ROADWAY OVERFLOW DESIGN FREQUENCY

YEARS	8	
Q	2620	CFS
HIGH WATER EL	1291.27	FT

2 YEAR FREQUENCY

Q_2	1473	CFS
HIGH WATER EL	1289.36	FT

SCOUR CODE 5

TRAFFIC DATA

ADT (2018) = 30
ADT (2038) = 40
DHV = 4
DD = 50/50
T = 10 %
DESIGN SPEED = 30 MPH

LIST OF DRAWINGS

WISCONSIN PROFESSIONAL ENGINEER
CHRISTOPHER J. BLUM
E-33157
MADISON
WI

9.27.17

SEH CONTACT: CHRIS BLUM, PE, 608.620.6192
WISDOT BRIDGE OFFICE CONTACT: BILL DREHER, PE, 608.266.8489

NO.	DATE	REVISION	BY

SHORT ELLIOTT HENDRICKSON INC.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 11/08/17
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-57-88

HANSON ROAD OVER BRUNET RIVER

COUNTY	TOWN ~~CITY/VILLAGE~~
SAWYER	WINTER

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
NCK	SJR	DLF	CJB

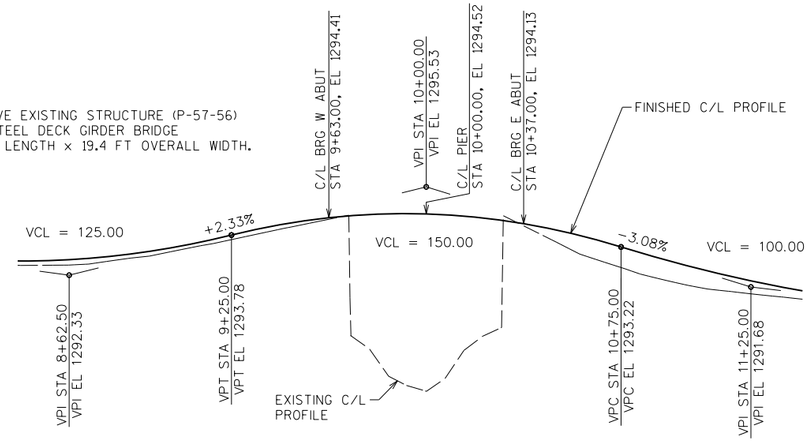
GENERAL PLAN

SHEET 24 OF 9

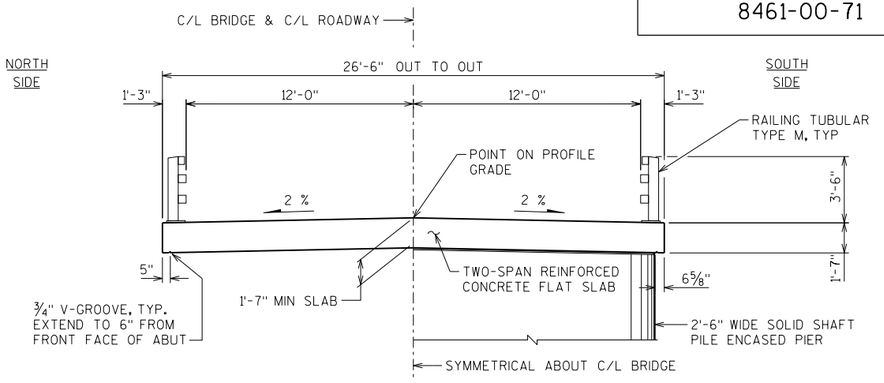
8

8

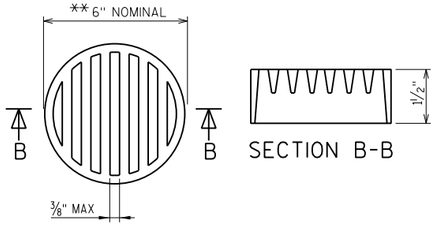
STATE PROJECT NUMBER
8461-00-71



PROFILE GRADE LINE



CROSS SECTION THRU BRIDGE
(LOOKING EAST)



RODENT SHEILD

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

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

TOTAL ESTIMATED QUANTITIES - B-57-88

	BID ITEM NUMBER	BID ITEMS	UNIT	WEST ABUT	EAST ABUT	PIER	SUPER	TOTALS
	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 10+00	LS	-	-	-	-	1
	206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-57-88	LS	-	-	-	-	1
(1)	210.1500	BACKFILL STRUCTURE TYPE A	TON	85	85	-	-	170
	502.0100	CONCRETE MASONRY BRIDGES	CY	28	28	27	123	206
	502.3200	PROTECTIVE SURFACE TREATMENT	SY	-	-	-	290	290
	505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1,650	1,650	1,305	-	4605
	505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,365	1,365	50	31,050	33,830
	506.0105	STRUCTURAL STEEL CARBON	LB	-	-	-	475	475
	513.4061	RAILING TUBULAR TYPE M B-57-88	LF	-	-	-	198	198
	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	9	9	-	-	18
	550.1100	PILING STEEL HP 10-INCH x 42 LB	LF	80	80	150	-	310
	606.0300	RIPRAP HEAVY	CY	70	70	-	-	140
(2)	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	100	100	-	-	200
	645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	35	35	-	-	70
	645.0120	GEOTEXTILE TYPE HR	SY	145	145	-	-	290
		NON-BID ITEMS						
		FILLER	SIZE	———	———	———	———	½ & ¾

(1) A FACTOR OF 2.0 WAS USED TO CONVERT CU YDS TO TONS.

(2) INCLUDES RODENT SHEILD FOR PIPE UNDERDRAIN PER SDD 8F6-4.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

FOR EXISTING STRUCTURE SEE PROFILE GRADE LINE THIS SHEET.

REFER TO ROADWAY DRAWINGS FOR EXISTING UTILITY LOCATIONS.

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

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

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

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 ABUTMENTS DETAILS.

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-ASPHALTIC JOINT SEALER (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONCRETE).

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-57-88 SHALL BE THE EXISTING GROUNDLINE.

EXCAVATION BELOW THE ABUTMENTS AND ABUTMENTS BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

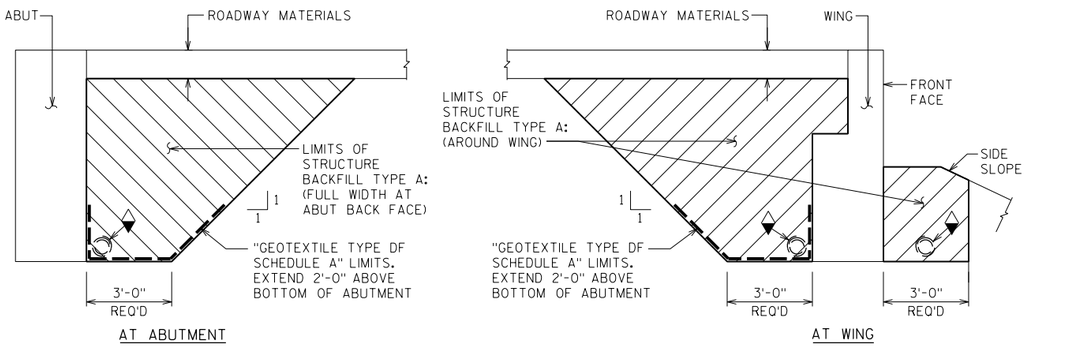
THE QUANTITY FOR BACKFILL STRUCTURE TYPE A IS CALCULATED BASED ON THE BACKFILL STRUCTURE LIMITS DETAILS SHOWN ON THIS SHEET.

BACKFILL STRUCTURE BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

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

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF AASHTO DESIGNATION M153 TYPE 1, 2, OR 3 OR AASHTO DESIGNATION M213.

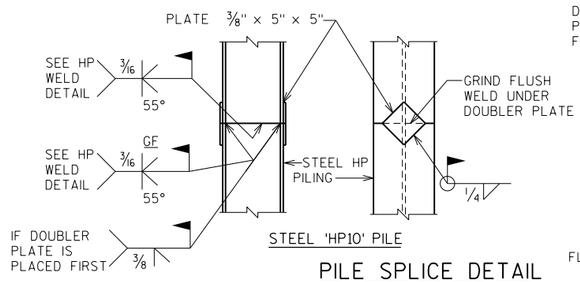
APPLY A PROTECTIVE SURFACE TREATMENT PER THE STANDARD SPECIFICATIONS AND THE SUPERSTRUCTURE DETAILS SHEET.



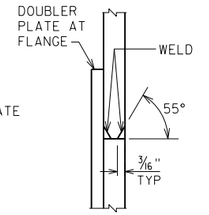
BACKFILL STRUCTURE LIMITS

A FACTOR OF 2.0 WAS USED TO CONVERT CU YDS TO TONS

◆ PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE.



PILE SPLICE DETAIL



'HP10' WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-57-88

DRAWN BY DLF | PLANS CK'D. CJB

CROSS SECTION AND QUANTITIES

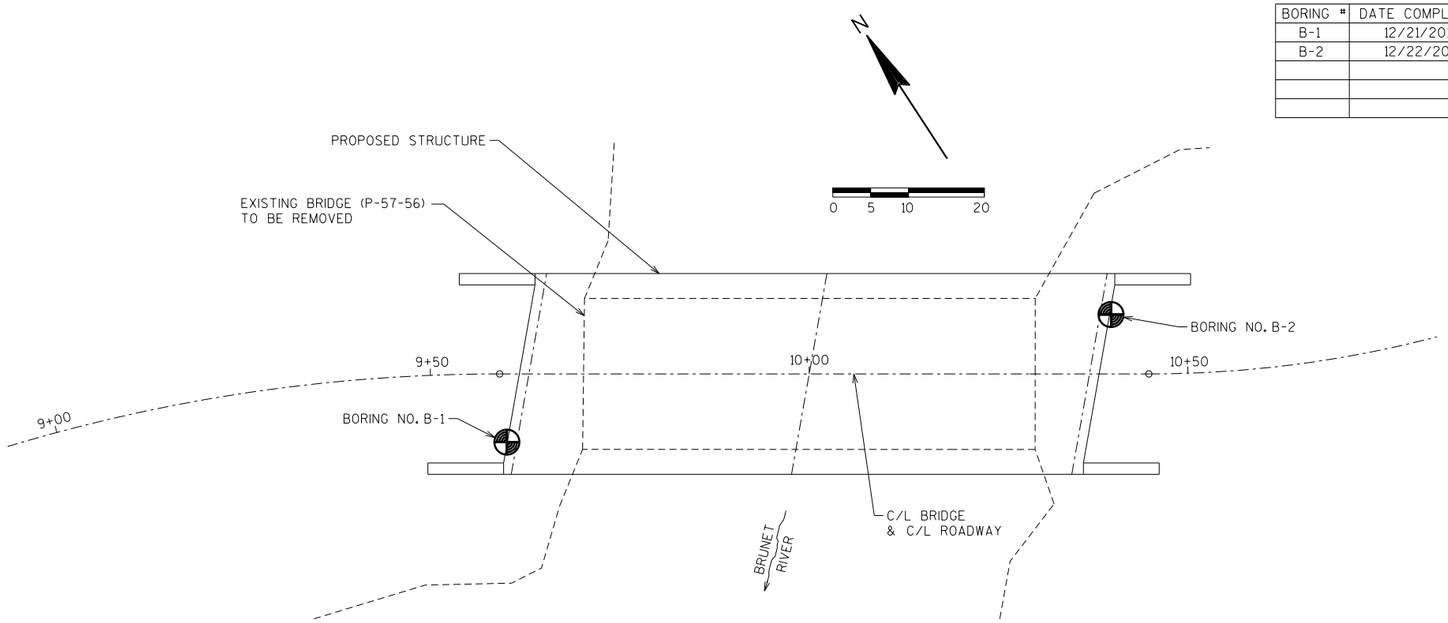
SHEET 2 OF 9
25

PLOT DATE: 9/25/2017 PLOT TIME: 9:47:38 AM
FILE NAME : S:\PTS\Sowye\134680\5-final-dsgn\5l-drawings\20-Struct\bridge\b57088g2.dgn

8

8

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
B-1	12/21/2015	-	-
B-2	12/22/2015	-	-



SOIL BORINGS PERFORMED BY:

AMERICAN TESTING, INC.
1837 COUNTY HIGHWAY OO
CHIPPEWA FALLS, WISCONSIN 54729
PH: (715) 861-5045
www.amengtest.com

REPORT BY:
BENJAMIN B MATTSON, P.E.
GEOTECHNICAL ENGINEER

STATE PROJECT NUMBER

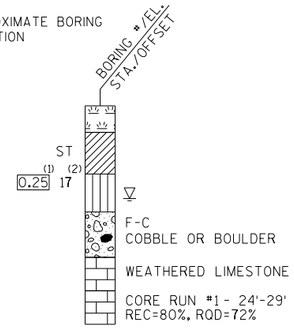
8461-00-71

MATERIAL SYMBOLS

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

LEGEND OF BORING

= APPROXIMATE BORING LOCATION



(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

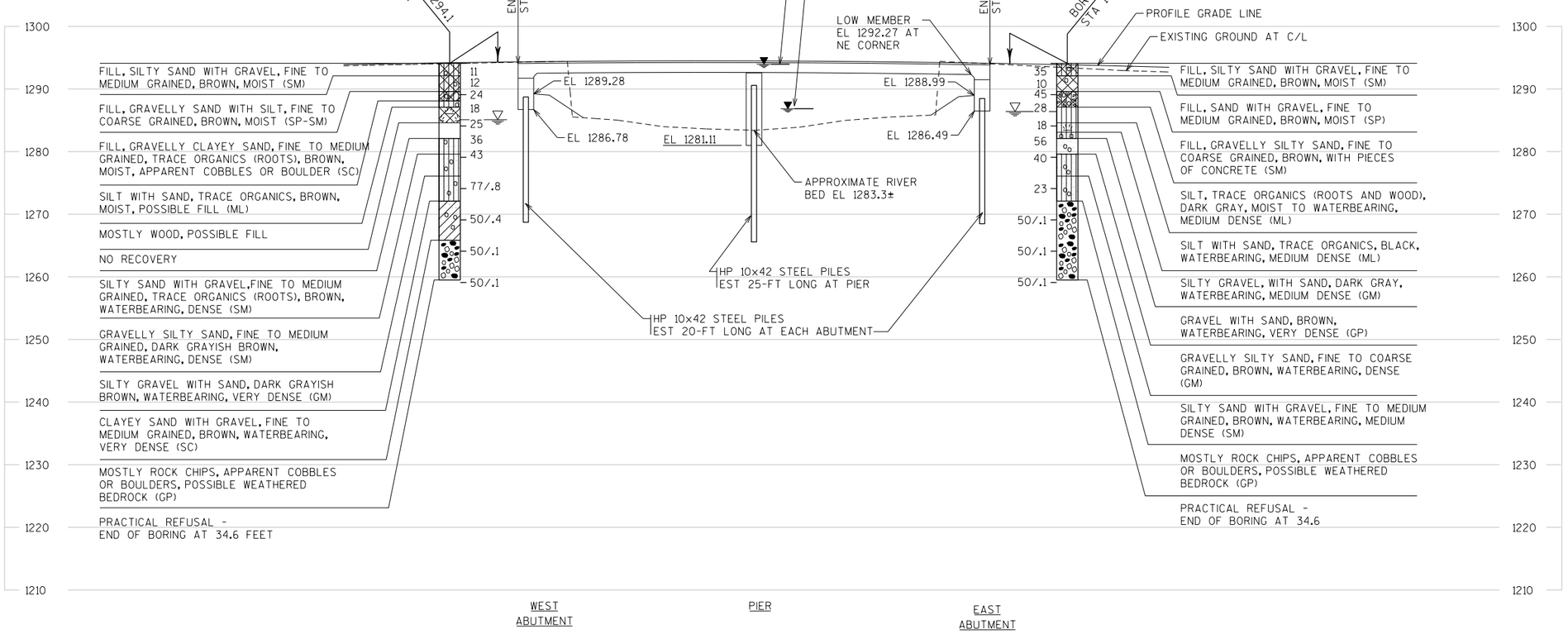
- AT TIME OF DRILLING
- END OF DRILLING
- AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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



NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-57-88

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SUBSURFACE EXPLORATION

SHEET 3 OF 9

26

PLOT DATE: 9/25/2017 PLOT TIME: 9:47:38 AM

FILE NAME : S:\PT\S\Sawye\134680\5-final-dsgn\5i-drawings\20-Struct\bridge\b57088bl.dgn

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PLOT DATE: 9/25/2017
PLOT TIME: 9:47:38 AM
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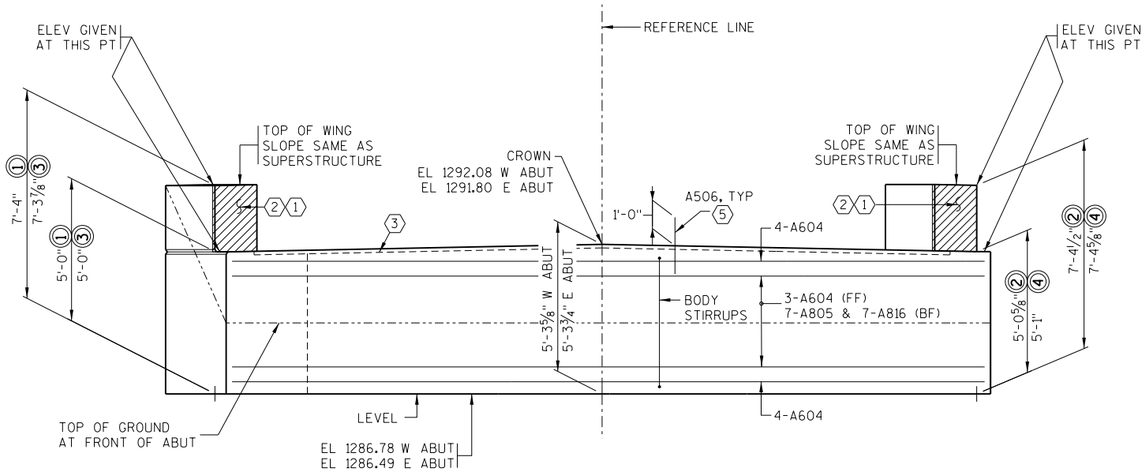
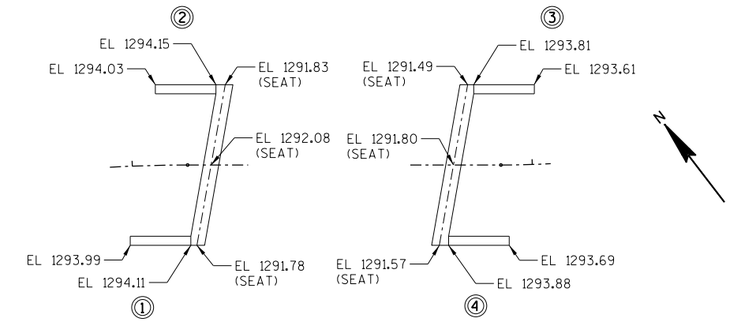
STATE PROJECT NUMBER

8461-00-71



FRONT ELEVATION

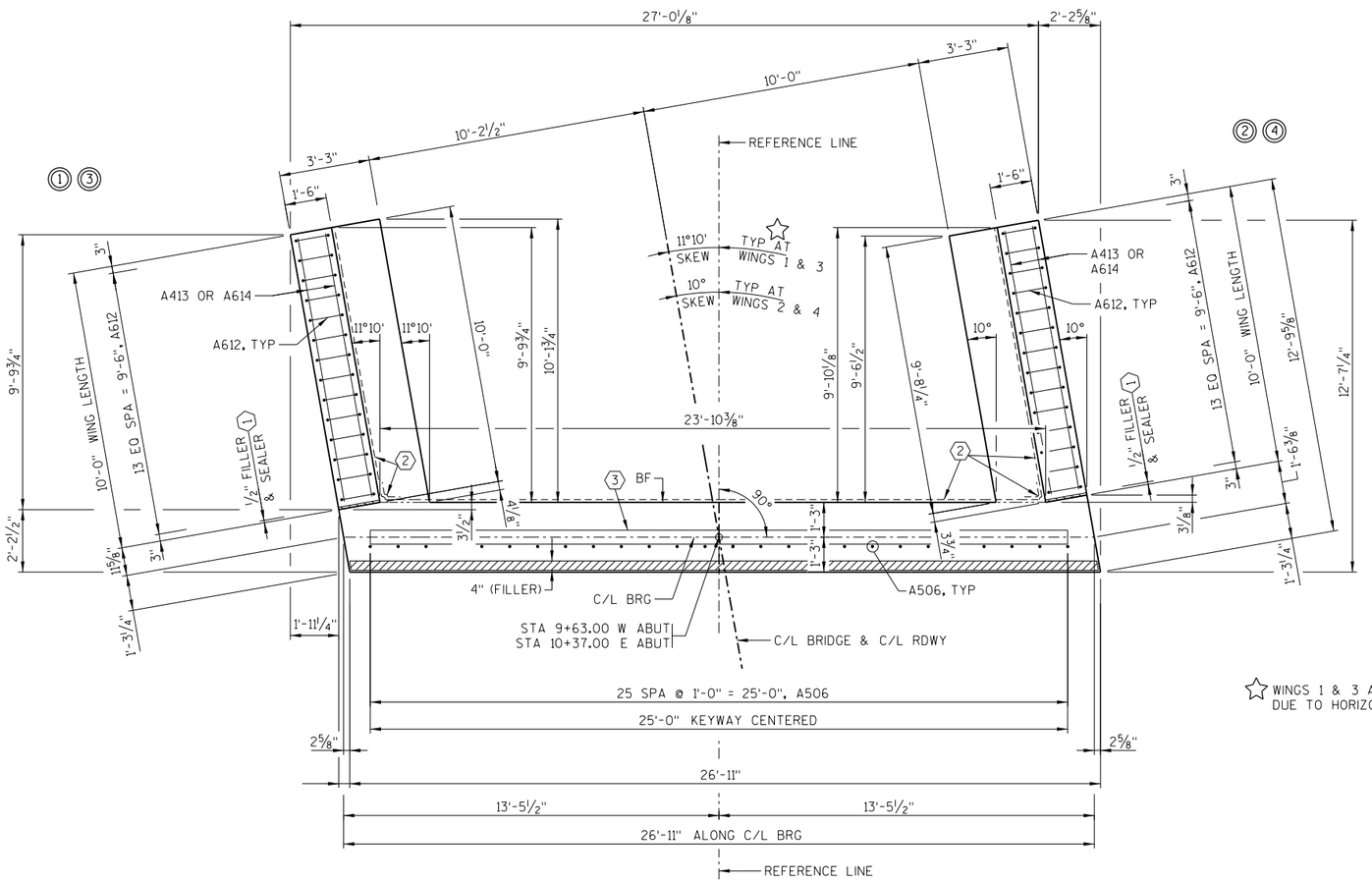
(PILES NOT SHOWN FOR CLARITY)



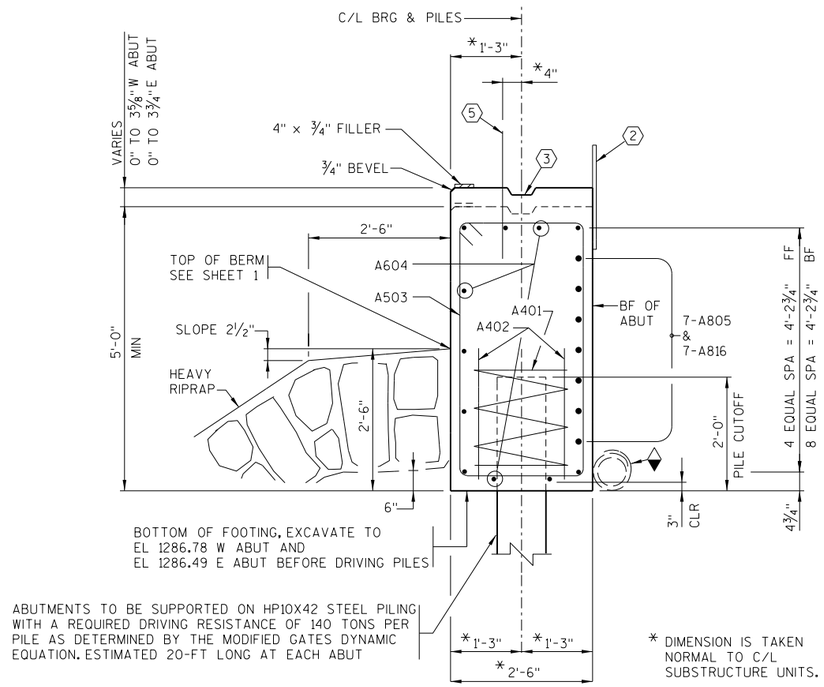
WEST ABUT

EAST ABUT

ELEVATIONS GIVEN AT THESE POINTS



PLAN



TYPICAL SECTION THRU BODY

ALL HORIZ BARS TO BE A604 UNLESS OTHERWISE SHOWN OF NOTED

☆ WINGS 1 & 3 ARE SET BACK AN ADDITIONAL 1° 10' SKEW DUE TO HORIZONTAL CURVE IN ROADWAY

NOTES:

SEE ABUTMENT NOTES ON SHEET 5 (① ② ③ ⑤ ◆).

W ABUT = WEST ABUTMENT
E ABUT = EAST ABUTMENT

FF = FRONT FACE
BF = BACK FACE
EF = EACH FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-57-88

DRAWN BY DLF | PLANS CK'D. CJB

WEST AND EAST ABUTMENT DETAILS

SHEET 4 OF 9
27

8

8

PLOT DATE: 9/25/2017
PLOT TIME: 9:47:39 AM
FILE NAME : S:\PT\S\Sawye\136880\5-final-dsgn\5i-drawings\20-Struct\bridge\b5708802.dgn

STATE PROJECT NUMBER
8461-00-71

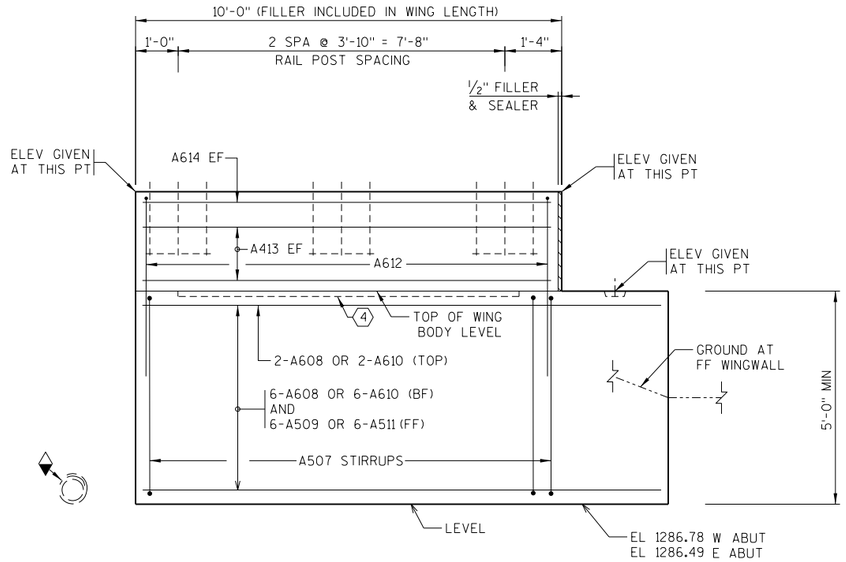
NOTE: THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE ENGLISH BAR DIAMETER SIZE.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT.

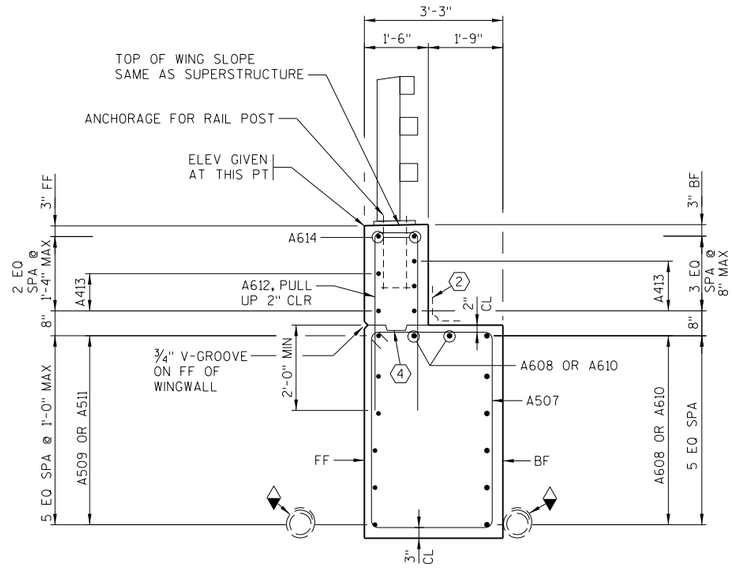
* NO. REQ'D. IS FOR 2 ABUTMENTS. DIVIDE BY 2 FOR EACH ABUTMENT.

BILL OF BARS — BOTH ABUTMENTS

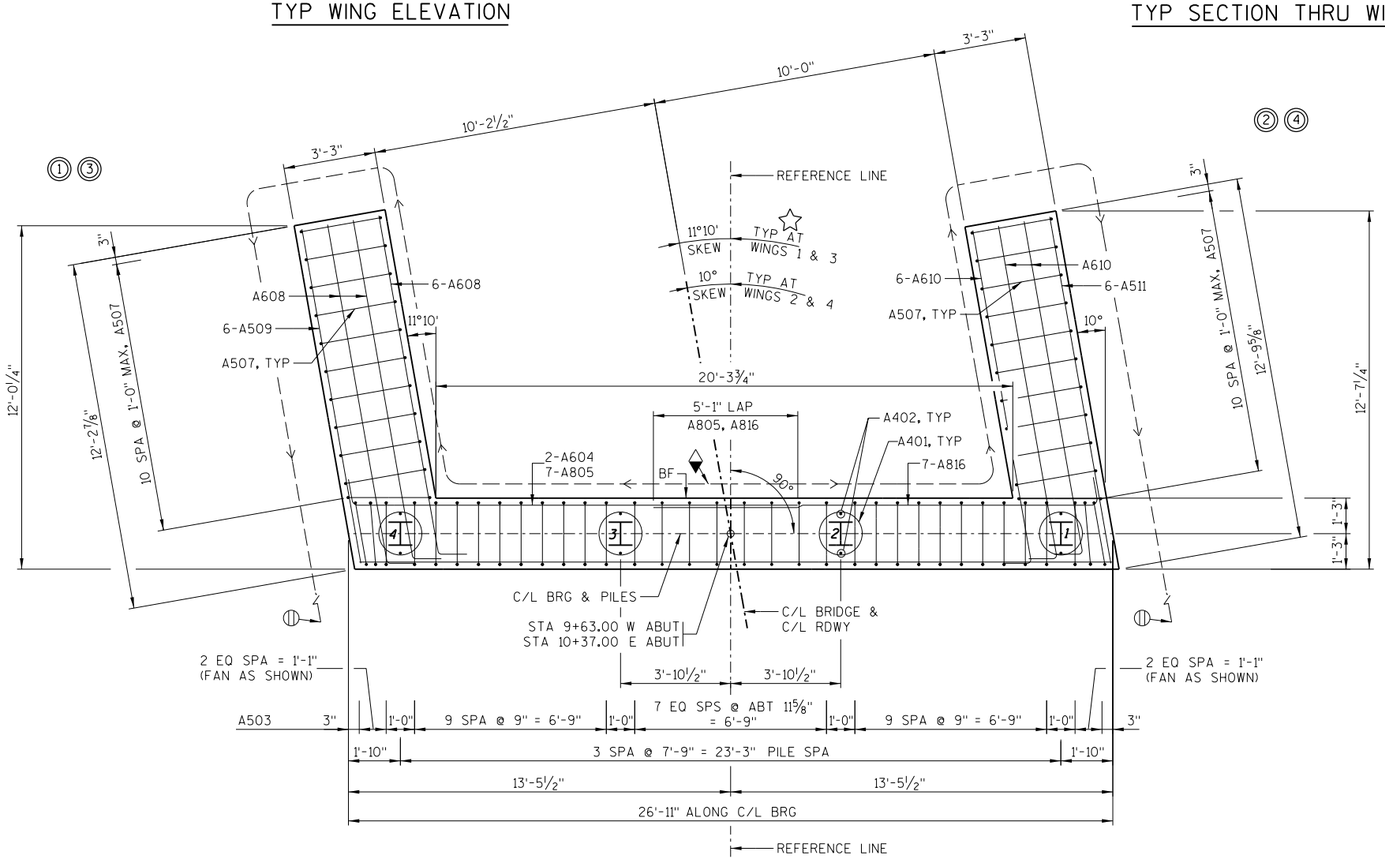
BAR MARK	COAT	NO. * REQ'D.	LENGTH (FT-IN)	BAR SERIES	BENT	LOCATION
A401		8	28 - 0		X	BODY AT PILES
A402		16	2 - 3			BODY AT PILES
A503		68	13 - 8		X	BODY STIRRUPS
A604		22	26 - 7			BODY HORIZ
A805		14	17 - 0		X	BODY HORIZ BF
A506	X	52	2 - 0			BODY DOWELS
A507	X	44	15 - 1		X	WING STIRRUPS
A608	X	16	13 - 1		X	WING HORIZ BF 1 & 3 & TOP
A509	X	12	11 - 1			WING HORIZ FF 1 & 3
A610	X	16	12 - 8		X	WING HORIZ BF 2 & 4 & TOP
A511	X	12	12 - 4			WING HORIZ FF 2 & 4
A612	X	56	9 - 2		X	WING VERT
A413	X	20	9 - 7			WING HORIZ EF
A614	X	8	9 - 7			WING HORIZ EF TOP
NOT USED			-			
A816		14	17 - 0		X	BODY HORIZ BF



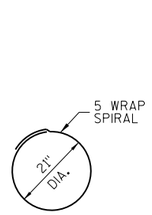
TYP WING ELEVATION



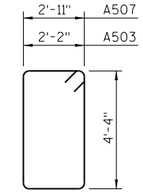
TYP SECTION THRU WINGWALLS



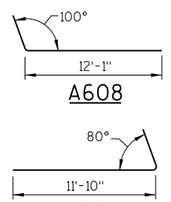
FOOTING LAYOUT



A401

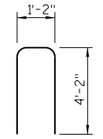


A503, A507

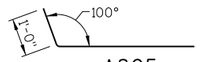


A608

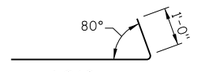
A610



A612



A805



A816

ABUTMENT NOTES:

(1) SEAL ALL EXPOSED HORIZ. AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-ASPHALTIC JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE). FILLER INCLUDED IN WING LENGTH.

(2) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ & VERT JOINTS ON BACKFACE. VERTICAL WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.

(3) KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2" X 6".

(4) OPTIONAL KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2" X 6" WITH MEMBRANE ON BACKFACE.

(5) A506 BARS MAY BE PLACED AFTER CONC HAS BEEN POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.

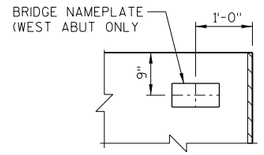
◆ PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT END OF PIPE.

Ⓓ ATTACH RODENT SHIELD AT END OF PIPE UNDERDRAIN, FOR RODENT SHIELD DETAIL SEE SHEET 2.

◎ INDICATES WING

W ABUT = WEST ABUTMENT
E ABUT = EAST ABUTMENT

FF = FRONT FACE
BF = BACK FACE
EF = EACH FACE



NAMEPLATE LOCATION DETAIL

(ON WING 1 WEST ABUTMENT ONLY)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-57-88

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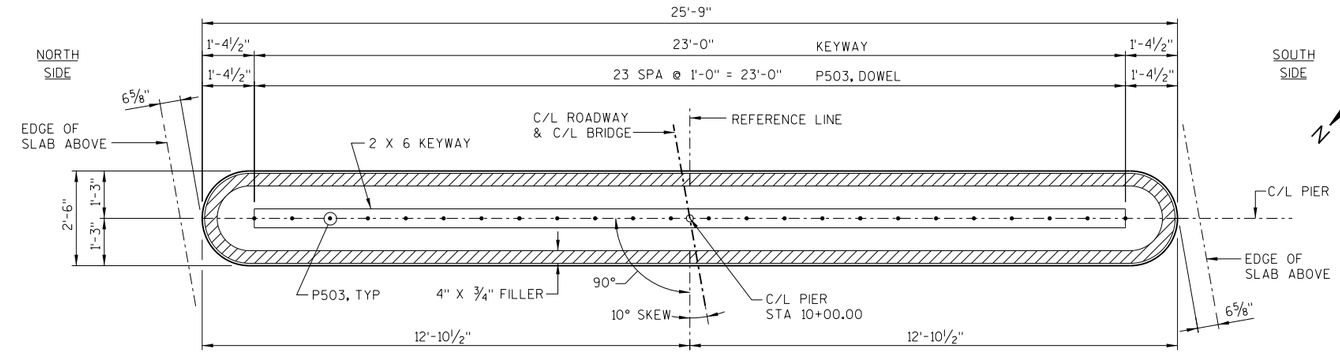
WEST AND EAST ABUTMENT DETAILS

SHEET 5 OF 9
28

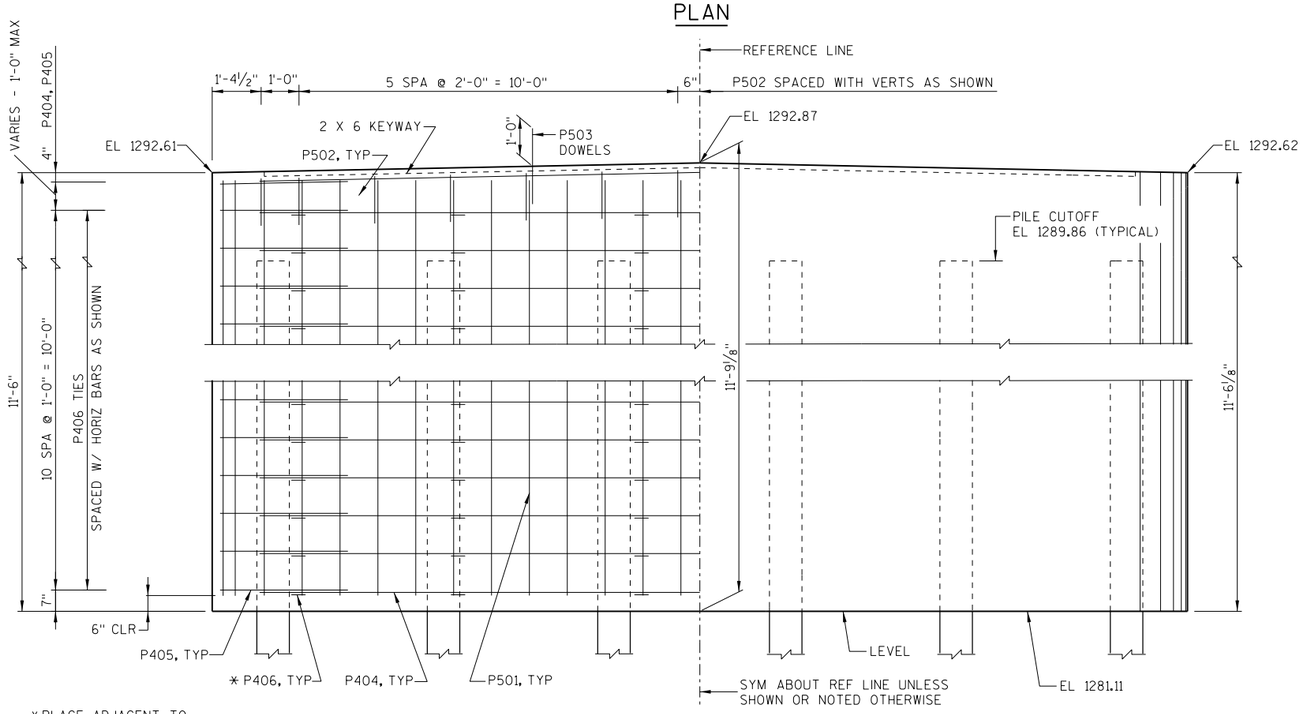
8

8

STATE PROJECT NUMBER
8461-00-71

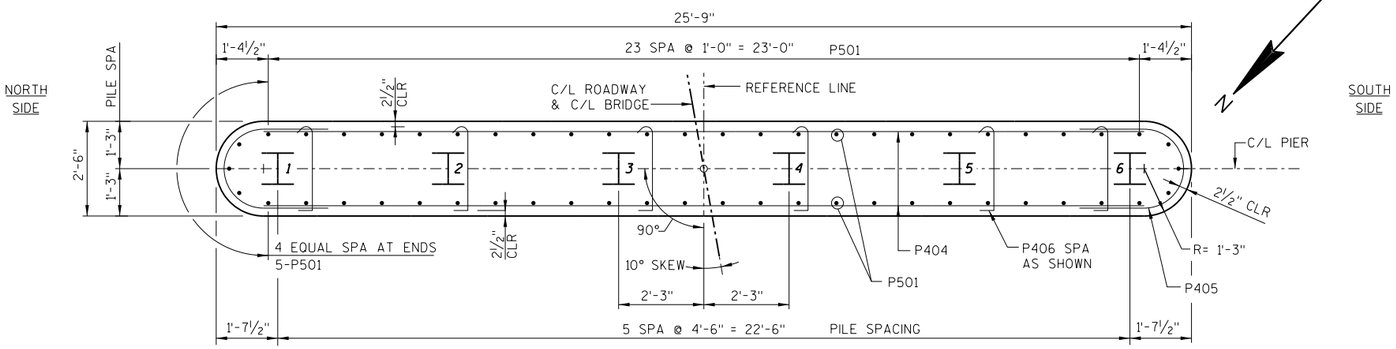


PLAN



*PLACE ADJACENT TO EACH PILE ONLY

ELEVATION
LOOKING UP STATION



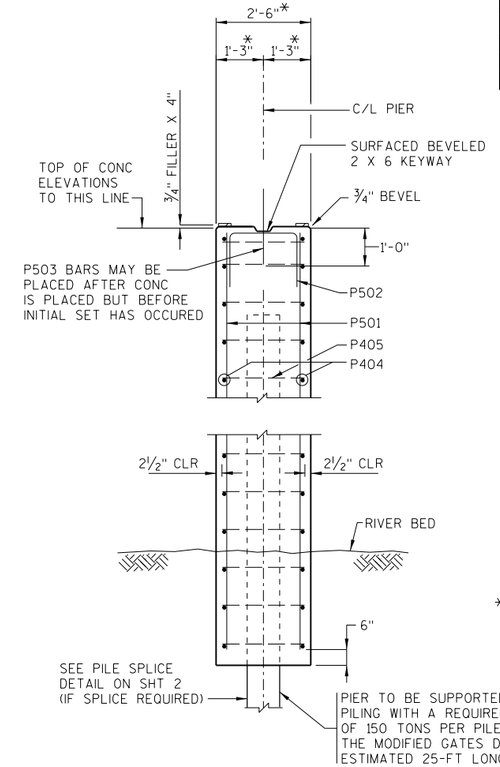
FOOTING LAYOUT

NOTE: THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE ENGLISH BAR DIAMETER SIZE.

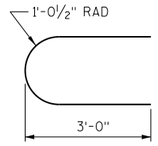
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT.

BILL OF BARS — PIER

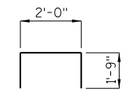
BAR MARK	COAT	NO. REQ'D.	LENGTH (FT - IN)	BAR SERIES	BENT	LOCATION
P501		54	10 - 10			SHAFT VERT
P502		14	5 - 3		X	CAP TIE
P503	X	24	2 - 0			DOWEL
P404		24	23 - 3			SHAFT HORIZ
P405		24	7 - 4		X	SHAFT TIE
P406		66	3 - 0		X	SHAFT TIE



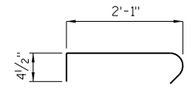
TYPICAL SECTION THRU PIER



P405



P502



P406

FF = FRONT FACE
BF = BACK FACE
EF = EACH FACE

* DIMENSION IS TAKEN NORMAL TO C/L SUBSTRUCTURE UNITS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-57-88

DRAWN BY DLF | PLANS CK'D. CJB

PIER DETAILS

SHEET 6 OF 9
29

PLOT TIME: 8:48:08 AM
PLOT DATE: 9/27/2017
FILE NAME : S:\PTV\S\Sawye\136680\5-final-dsgn\5l-drawings\20-Struct\bridge\b57088pl.dgn

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8

PLOT DATE: 9/25/2017 PLOT TIME: 9:47:39 AM
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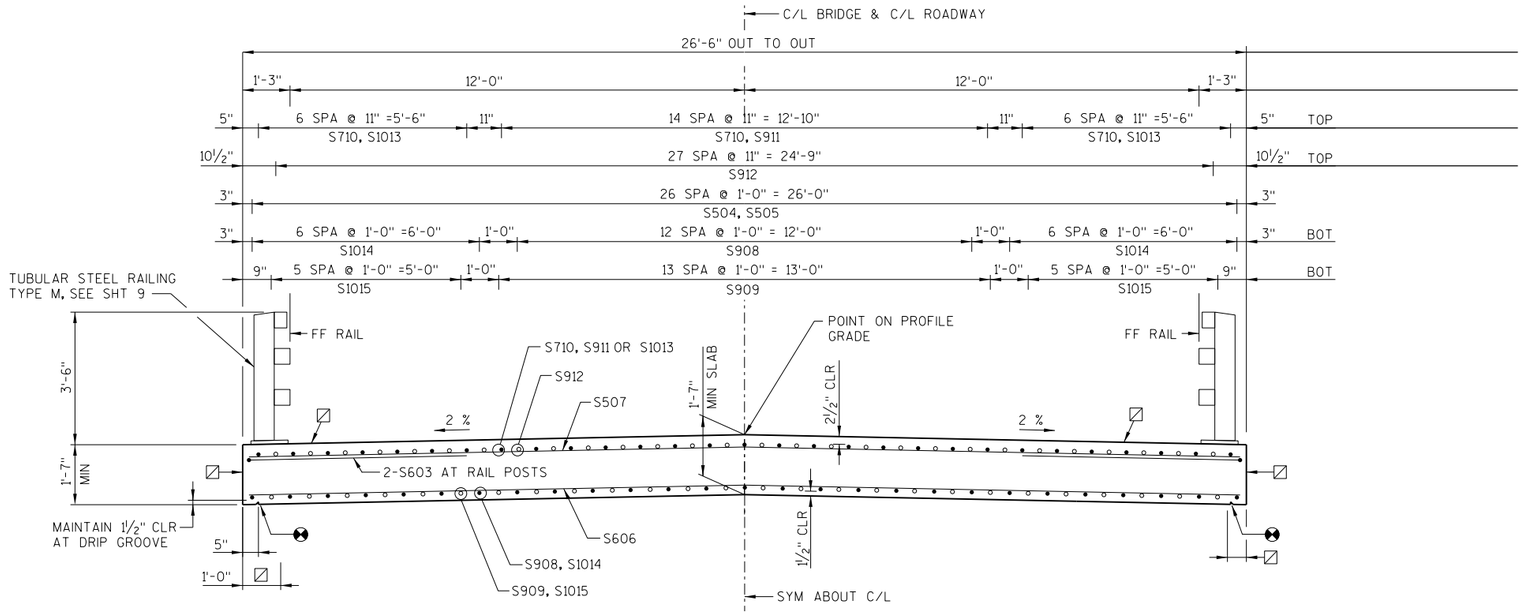
STATE PROJECT NUMBER
8461-00-71



TRANSVERSE SECTION

SUPERSTRUCTURE NOTES:

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

PRIOR TO RELEASING SLAB FLASEWORK, TAKE TOP OF SLAB ELEVATIONS AT C/L ABUTS, C/L PIERS AND 5/10 POINTS TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE LINE AND CROWN OR C/L.

TRANSVERSE BARS SHALL BE PLACED PARALLEL TO THE C/L OF SUBSTRUCTURE UNITS.

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 ON CONTINUOUS BAR CHAIRS APPROXIMATELY 4'-0" CENTERS.

⊕ ¾" V-GROOVE, EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUTMENT.

☒ COAT WITH PROTECTIVE SURFACE TREATMENT PER THE STANDARD SPECIFICATIONS. PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE TOP AND EXTERIOR EXPOSED FACE OF WINGS, AND THE END 1'-0" OF THE FRONT FACE OF ABUTMENT.

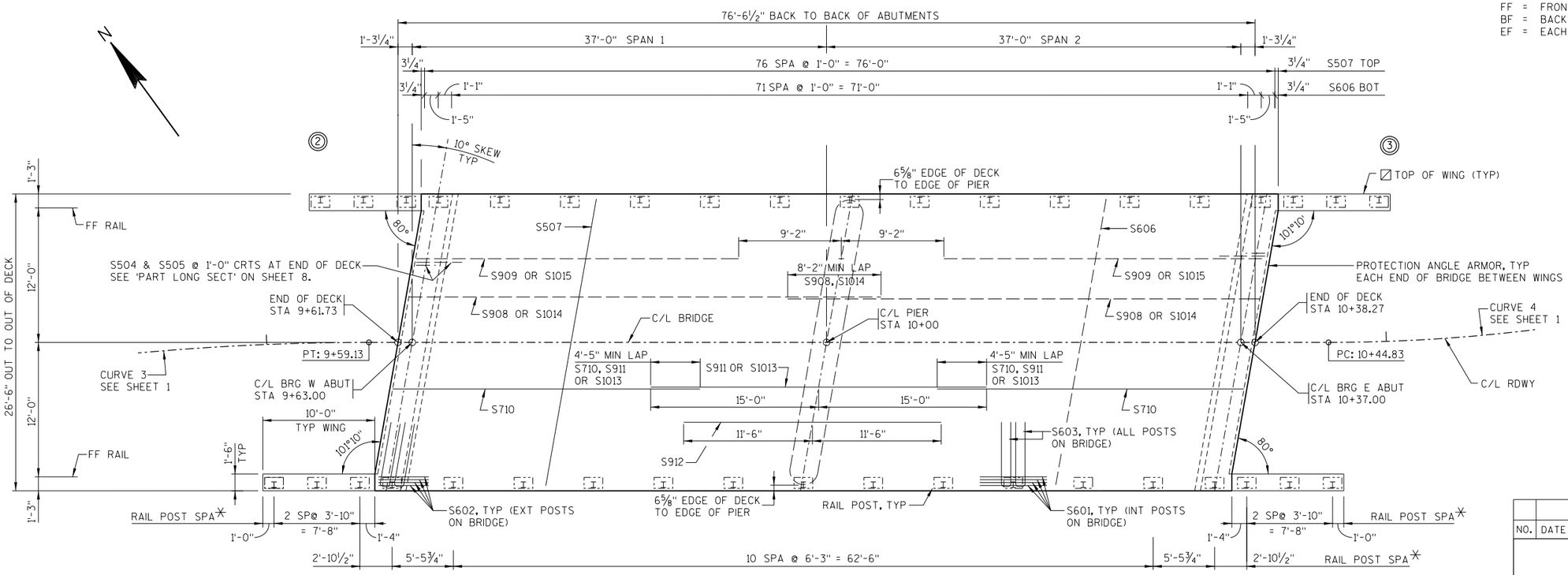
——— INDICATES TOP BAR STEEL REINFORCEMENT

— — — — INDICATES BOTTOM BAR STEEL REINFORCEMENT

✳ TYPICAL EACH SIDE OF DECK. MEASURED ALONG EDGE OF DECK

◎ INDICATES WING.

FF = FRONT FACE
BF = BACK FACE
EF = EACH FACE



DECK PLAN

FINAL TOP OF DECK ELEVATIONS

	SPAN 1											SPAN 2										
	W ABUT	.1	.2	.3	.4	.5	.6	.7	.8	.9	PIER	.1	.2	.3	.4	.5	.6	.7	.8	.9	E ABUT
NORTH EDGE OF DECK	1294.16	1294.19	1294.22	1294.24	1294.25	1294.26	1294.27	1294.27	1294.26	1294.26	1294.24	1294.22	1294.20	1294.17	1294.13	1294.09	1294.05	1294.00	1293.95	1293.89	1293.82
C/L	1294.41	1294.44	1294.47	1294.49	1294.51	1294.52	1294.53	1294.54	1294.53	1294.53	1294.52	1294.50	1294.48	1294.45	1294.42	1294.38	1294.34	1294.30	1294.25	1294.19	1294.13
SOUTH EDGE OF DECK	1294.12	1294.16	1294.19	1294.21	1294.23	1294.25	1294.26	1294.27	1294.27	1294.27	1294.26	1294.25	1294.23	1294.20	1294.18	1294.14	1294.10	1294.06	1294.01	1293.96	1293.90

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-57-88

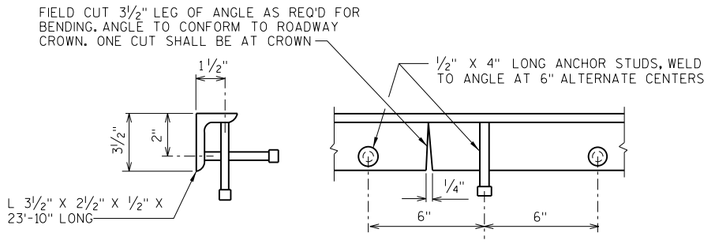
DRAWN BY DLF | PLANS CK'D. CJB

SUPERSTRUCTURE DETAILS

SHEET 7 OF 9
30

8

8



PROTECTION ANGLE ARMOR

(PAYMENT BASED ON 9.9 LBS/FT)

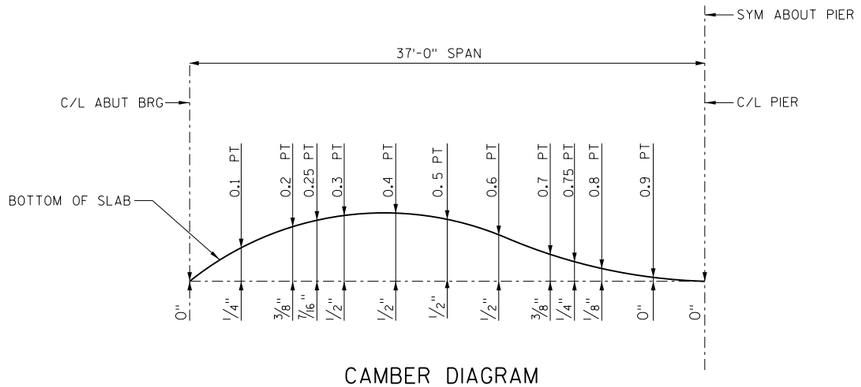
PROTECTION ANGLE ARMOR NOTES:

ONE FIELD SPLICE SHALL BE PERMITTED IN ANGLES OVER 34'-0" IN LENGTH.

ANGLE AND STUDS TO BE PAID FOR AT THE UNIT PRICE BID FOR "STRUCTURAL CARBON STEEL". NO PAINTING REQUIRED.

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.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO ASTM DESIGNATION A709 GRADE 36.



CAMBER DIAGRAM

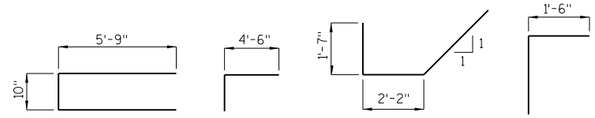
CAMBER SPAN AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE VERTICAL ROADWAY PROFILE OR ALLOWANCE FOR FORM SETTLEMENT. DEAD LOAD DEFLECTION ONLY EQUALS APPROXIMATELY 1/3 OF CAMBER VALUES SHOWN.

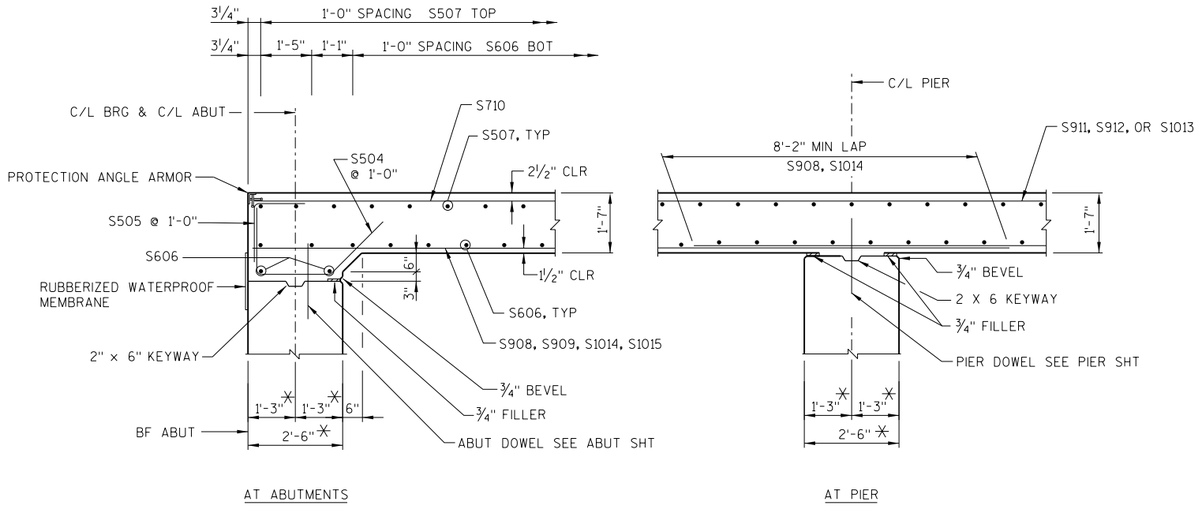
NOTE: THE FIRST DIGIT OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE ENGLISH BAR DIAMETER SIZE.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT.

BILL OF BARS — SUPERSTRUCTURE

BAR MARK	COAT	NO. REQ'D.	LENGTH (FT-IN)	BAR SERIES	BENT	LOCATION
S601	X	88	6 - 0			RAIL POST
S602	X	16	6 - 0		X	RAIL POST
S603	X	52	12 - 0		X	RAIL POST
S504	X	54	5 - 11		X	END OF DECK
S505	X	54	3 - 1		X	END OF DECK
S606	X	80	26 - 6			BOT TRANS
S507	X	77	26 - 6			TOP TRANS
S908	X	26	42 - 2			BOT LONG
S909	X	28	29 - 0			BOT LONG
S710	X	58	27 - 7			TOP LONG
S911	X	15	30 - 0			TOP LONG
S912	X	28	23 - 0			TOP LONG
S1013	X	14	30 - 0			TOP LONG
S1014	X	28	42 - 2			BOT LONG
S1015	X	24	29 - 0			BOT LONG





PARTIAL LONGITUDINAL SECTION

✳ DIMENSION IS TAKEN NORMAL TO C/L SUBSTRUCTURE UNITS.

SUPERSTRUCTURE NOTES:

SEE SHEET 7 FOR SUPERSTRUCTURE NOTES:

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

TRANSVERSE BARS SHALL BE PLACED PARALLEL TO THE C/L OF SUBSTRUCTURE UNITS.

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 ON CONTINUOUS BAR CHAIRS APPROXIMATELY 4'-0" CENTERS.

FF = FRONT FACE
BF = BACK FACE
EF = EACH FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-57-88

DRAWN BY DLF | PLANS CK'D. CJB

SUPERSTRUCTURE DETAILS

SHEET 8 OF 9

31

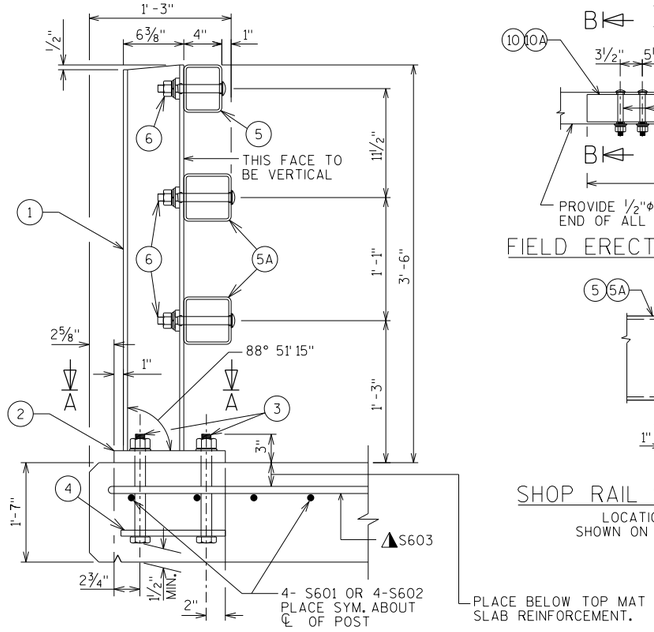
8

8

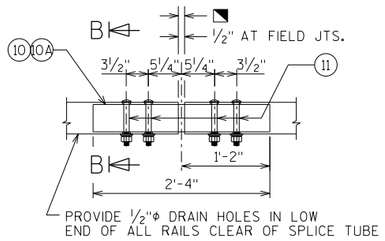
PLOT TIME: 9:47:40 AM
PLOT DATE: 9/25/2017
FILE NAME : S:\PTS\Sawyer\136680\5-final-dsgn\5i-drawings\20-Struct\bridge\b57088mil.dgn

STATE PROJECT NUMBER

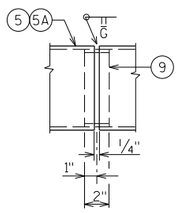
8461-00-71



SECTION THRU RAILING ON SLAB

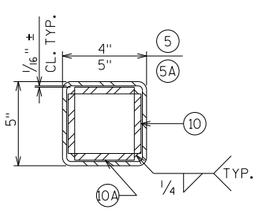


FIELD ERECTION JOINT DETAIL

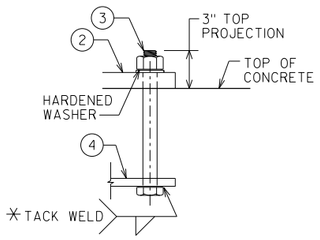


SHOP RAIL SPLICE DETAIL

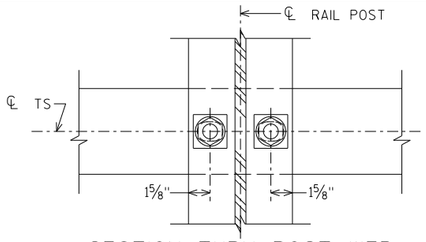
LOCATION MUST BE SHOWN ON SHOP DRAWINGS



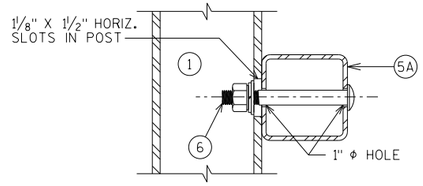
SECTION B-B



ANCHOR BOLTS



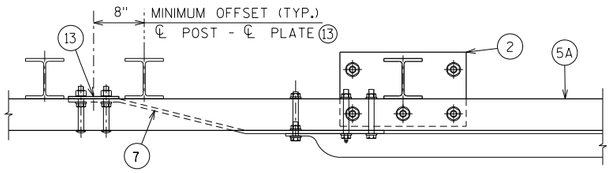
SECTION THRU POST WEB



SECTION THRU RAIL

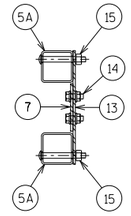
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS



TOP VIEW AT END POST

THRIE BEAM RAIL ATTACHMENT



SECTION C-C

LEGEND

(1) W6 x 25 WITH 1 1/8" X 1 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.

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

(3) ASTM A449 - 1 1/8" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10 3/4" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)

(4) 5/8" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 3/16" DIA. HOLES FOR ANCHOR BOLTS NO. 3

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

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

(6) 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1 5/8" X 15/8" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)

(7) 1/2" THK. BACK-UP PLATE WITH 2 - 7/8" X 1 1/2" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.

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

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

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

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

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

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

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

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

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

GENERAL NOTES

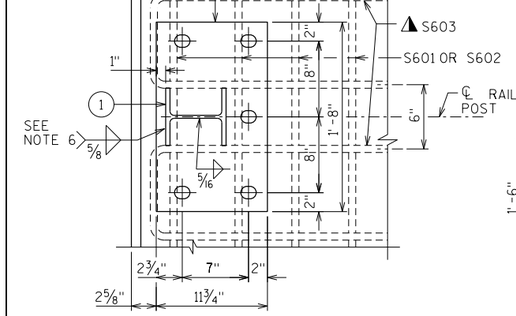
1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-57-88" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.
10. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).

▲ TIE TO TOP MAT OF STEEL.

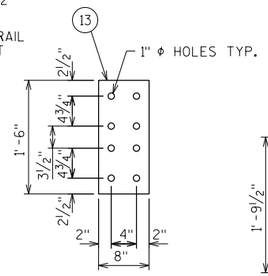
✳ FOR ANCHOR BOLTS IN WINGS, TACK WELD MAY BE USED IN FIELD AFTER ANCHOR PLATE IS IN POSITION IF REQ'D. FOR CONSTRUCTIBILITY.

◥ RDWY. OPENING OR 1/2" OPENING FOR A1 ABUTMENT.

SEE SHEET 5 AND 7 FOR RAIL POST SPACING.

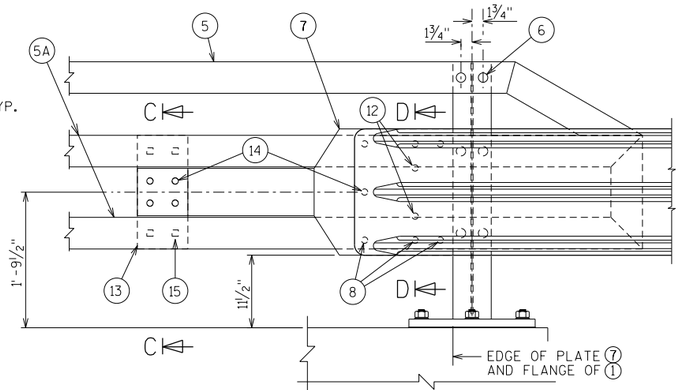


SECTION A-A



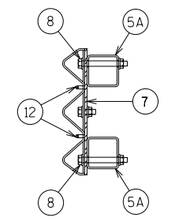
ANCHOR PLATE

AT BEAM GUARD ATTACHMENT

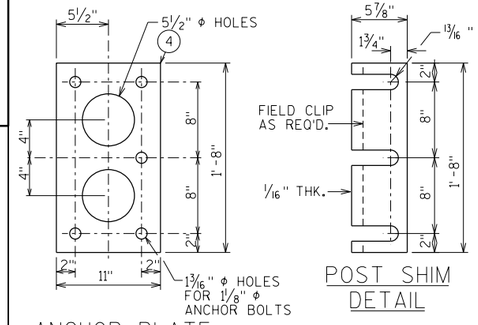


DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT



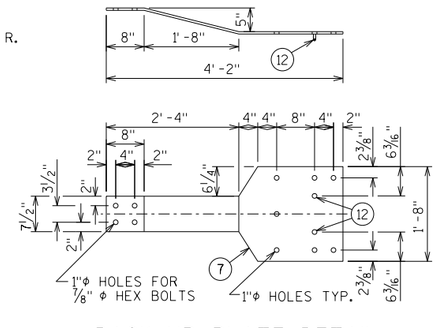
SECTION D-D



ANCHOR PLATE

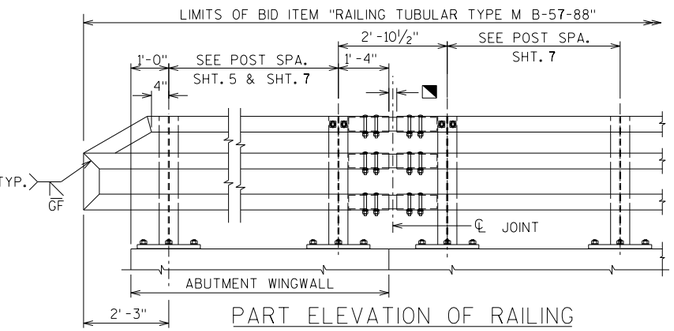
AT RAIL TO SLAB CONNECTION

POST SHIM DETAIL



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-57-88

DRAWN BY DLF | PLANS CK'D. CJB

TUBULAR STEEL RAILING TYPE M

SHEET 9 OF 9

32

RAILM
7-16

HANSON ROAD								
		AREA (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		
Station	Distance	Cut	Fill	Cut Note 1	Fill Note 2	Cut 1.00 Note 1	Expanded Fill 1.30 Note 3	Mass Ordinate Note 4
8+00	0.00	14.63	0.11	0.0	0.0	0.0	0.0	0
8+50	50.00	6.47	3.06	19.5	2.9	20	4	16
9+00	50.00	6.97	16.98	12.4	18.6	32	28	4
9+50	50.00	16.57	1.31	21.8	16.9	54	50	4
9+61	11.00	0	0	3.4	0.3	57	50	7
10+39	78.00	0	0	0.0	0.0	57	50	7
10+50	11.00	5.33	34.35	1.1	7.0	58	59	-1
11+00	50.00	0.14	28.78	5.1	58.5	63	135	-72
11+50	50.00	7.59	4.37	7.2	30.7	70	175	-105
11+75	25.00	13.8	0.06	9.9	2.1	80	178	-98

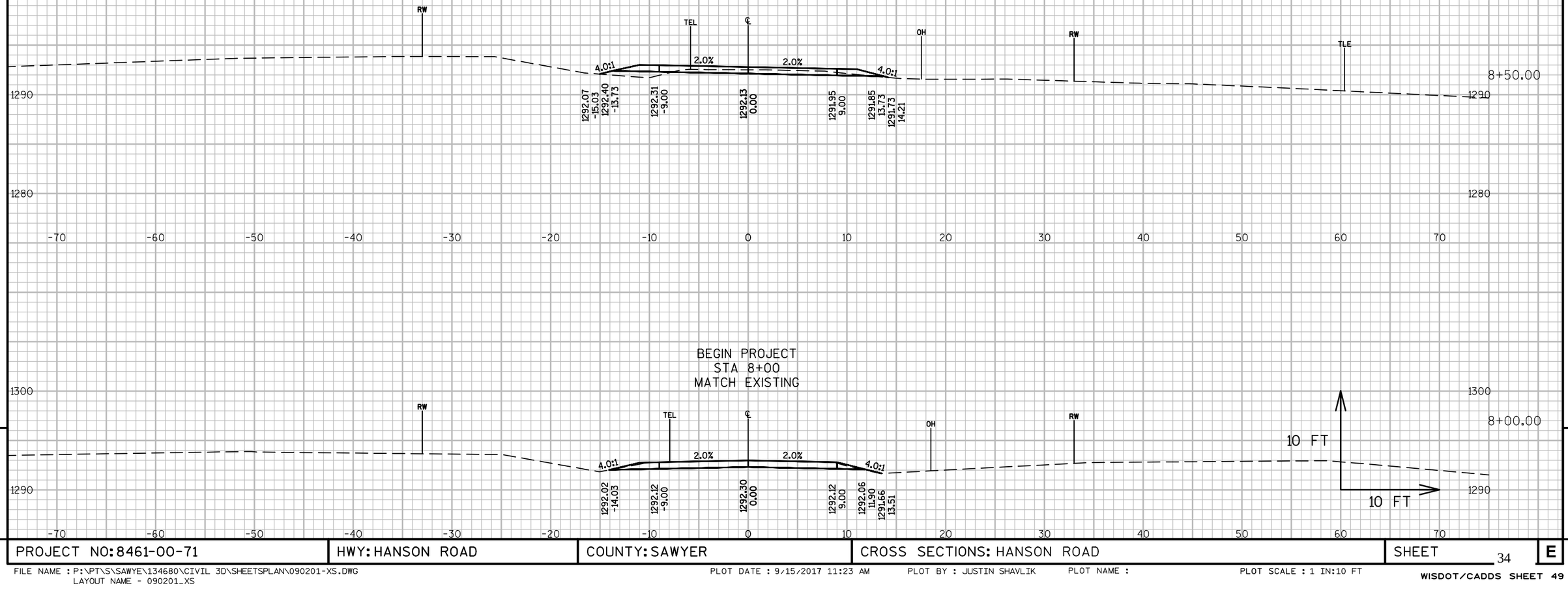
Notes:
1) Salvaged/Unusable Pavement Material is included in Cut.
2) Does not include Unusable Pavement Excavation volume.
3) Will be backfilled with Cut or Borrow.
4) Plus quantity indicates an excess of material. Minus indicates a shortage of material.

9

9

PROJECT NO: 8461-00-71 | HWY: HANSON ROAD | COUNTY: SAWYER | EARTHWORK TABULATIONS | SHEET 33 | E

UTILITY LOCATIONS ARE APPROXIMATE.
ACTUAL LOCATIONS MUST BE FIELD VERIFIED.



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9

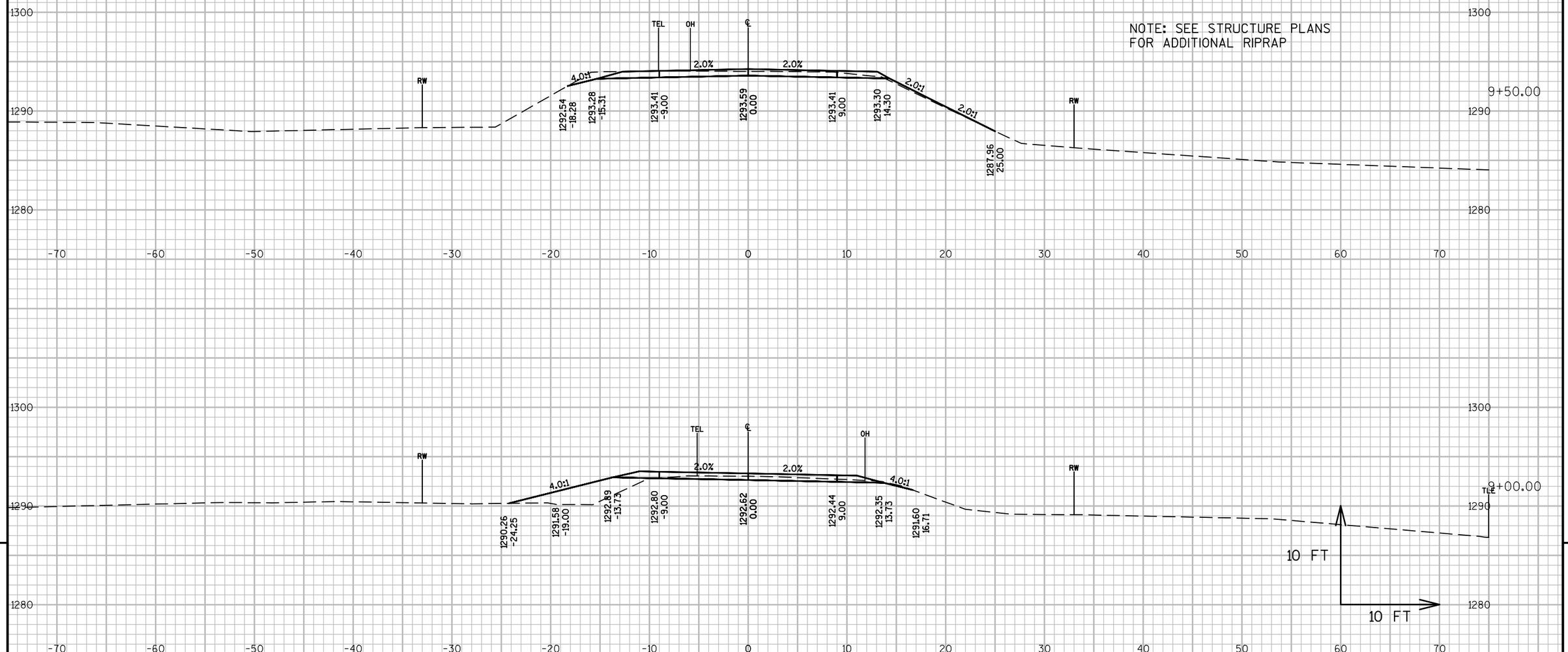
PROJECT NO: 8461-00-71	HWY: HANSON ROAD	COUNTY: SAWYER	CROSS SECTIONS: HANSON ROAD	SHEET 34	E

FILE NAME : P:\PT\S\SAWYE\134680\CIVIL 3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090201_XS

PLOT DATE : 9/15/2017 11:23 AM PLOT BY : JUSTIN SHAVLIK PLOT NAME : PLOT SCALE : 1 IN:10 FT

UTILITY LOCATIONS ARE APPROXIMATE.
ACTUAL LOCATIONS MUST BE FIELD VERIFIED.

STRUCTURE B-57-88
STA 10+00



NOTE: SEE STRUCTURE PLANS
FOR ADDITIONAL RIPRAP

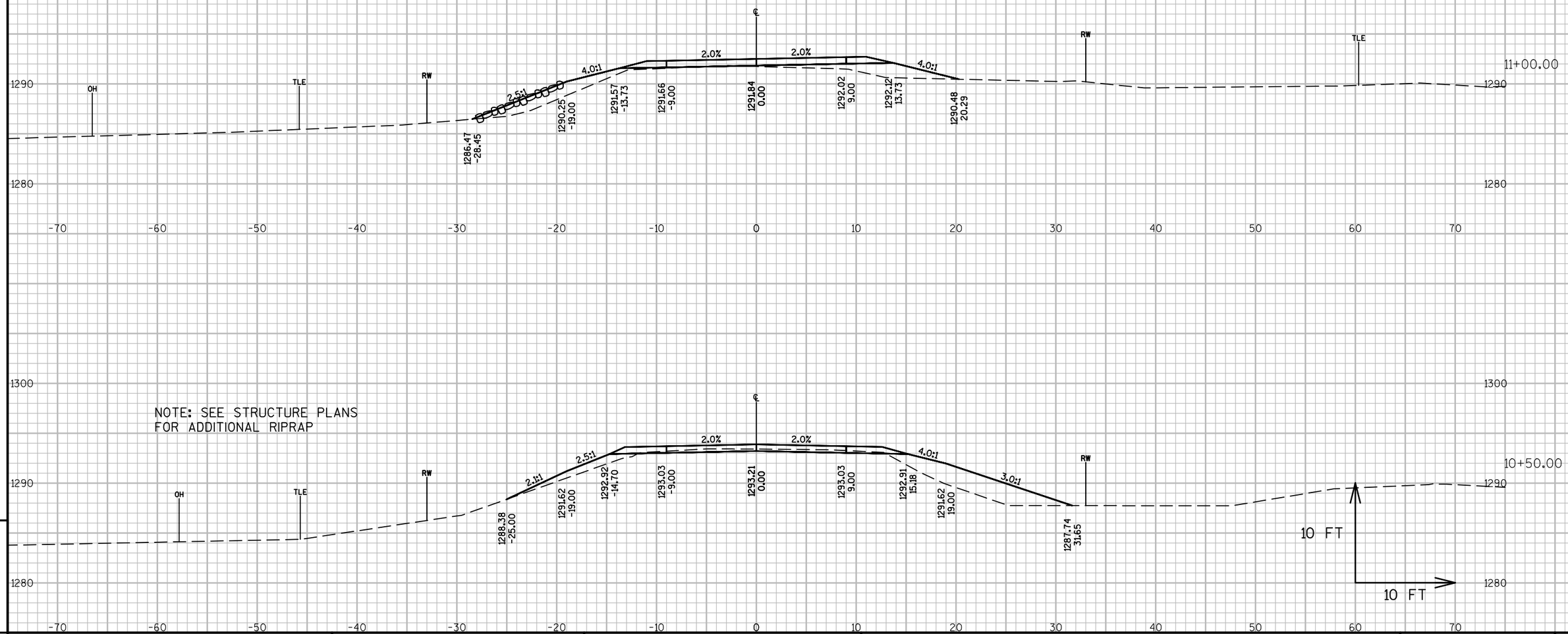
PROJECT NO: 8461-00-71	HWY: HANSON ROAD	COUNTY: SAWYER	CROSS SECTIONS: HANSON ROAD	SHEET 35	E

FILE NAME : P:\PT\S\SAWYE\134680\CIVIL 3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090202_XS

PLOT DATE : 9/15/2017 11:23 AM PLOT BY : JUSTIN SHAVLIK PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

UTILITY LOCATIONS ARE APPROXIMATE.
ACTUAL LOCATIONS MUST BE FIELD VERIFIED.



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PROJECT NO: 8461-00-71	HWY: HANSON ROAD	COUNTY: SAWYER	CROSS SECTIONS: HANSON ROAD	SHEET 36	E

FILE NAME : P:\PT\S\SAWYE\134680\CIVIL 3D\SHEETSPLAN\090201-XS.DWG
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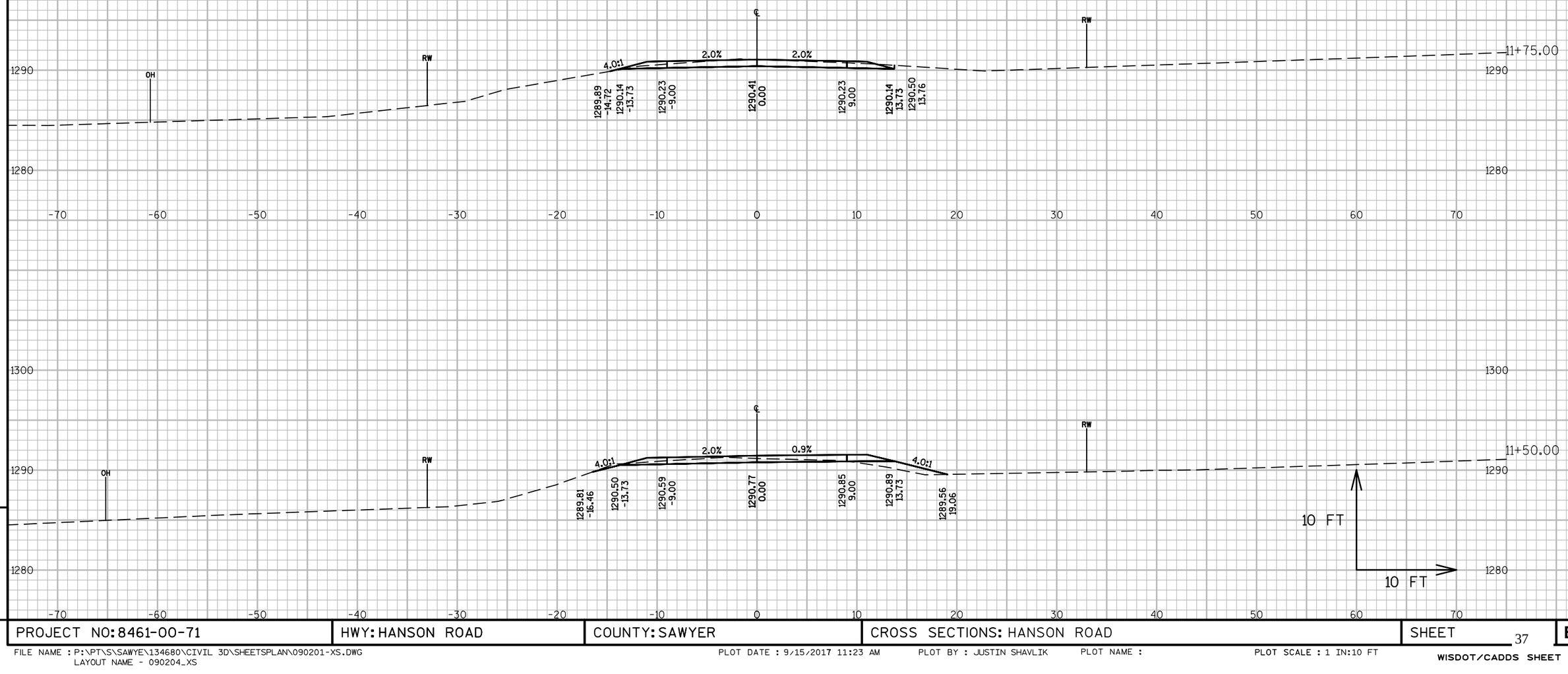
WISDOT/CADDS SHEET 49

UTILITY LOCATIONS ARE APPROXIMATE.
ACTUAL LOCATIONS MUST BE FIELD VERIFIED.

END PROJECT
STA 11+75
MATCH EXISTING



9 9

PROJECT NO: 8461-00-71	HWY: HANSON ROAD	COUNTY: SAWYER	CROSS SECTIONS: HANSON ROAD	SHEET 37	E

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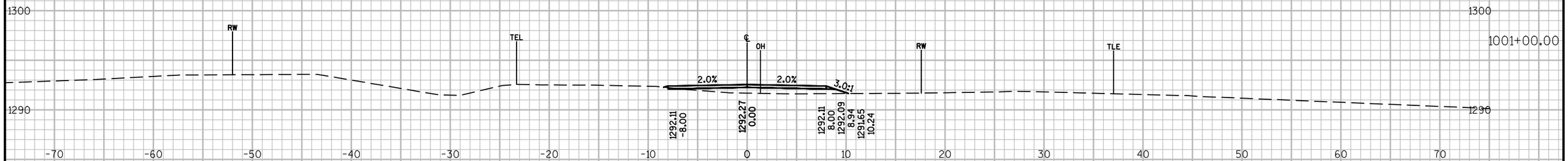
LAYOUT NAME - 090204_XS

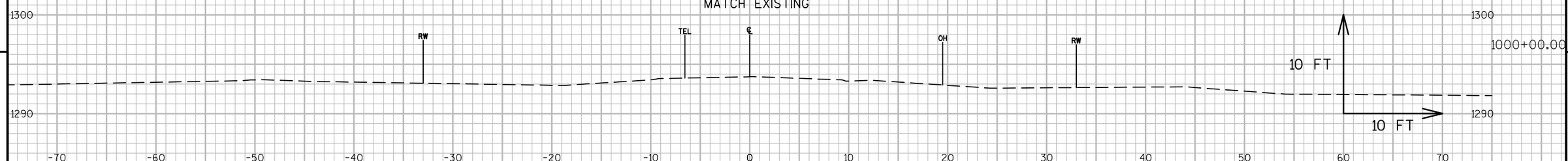
PLOT DATE : 9/15/2017 11:23 AM PLOT BY : JUSTIN SHAVLIK PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

UTILITY LOCATIONS ARE APPROXIMATE.
ACTUAL LOCATIONS MUST BE FIELD VERIFIED.



BEGIN TEMPORARY BYPASS
STA 1000+00
MATCH EXISTING



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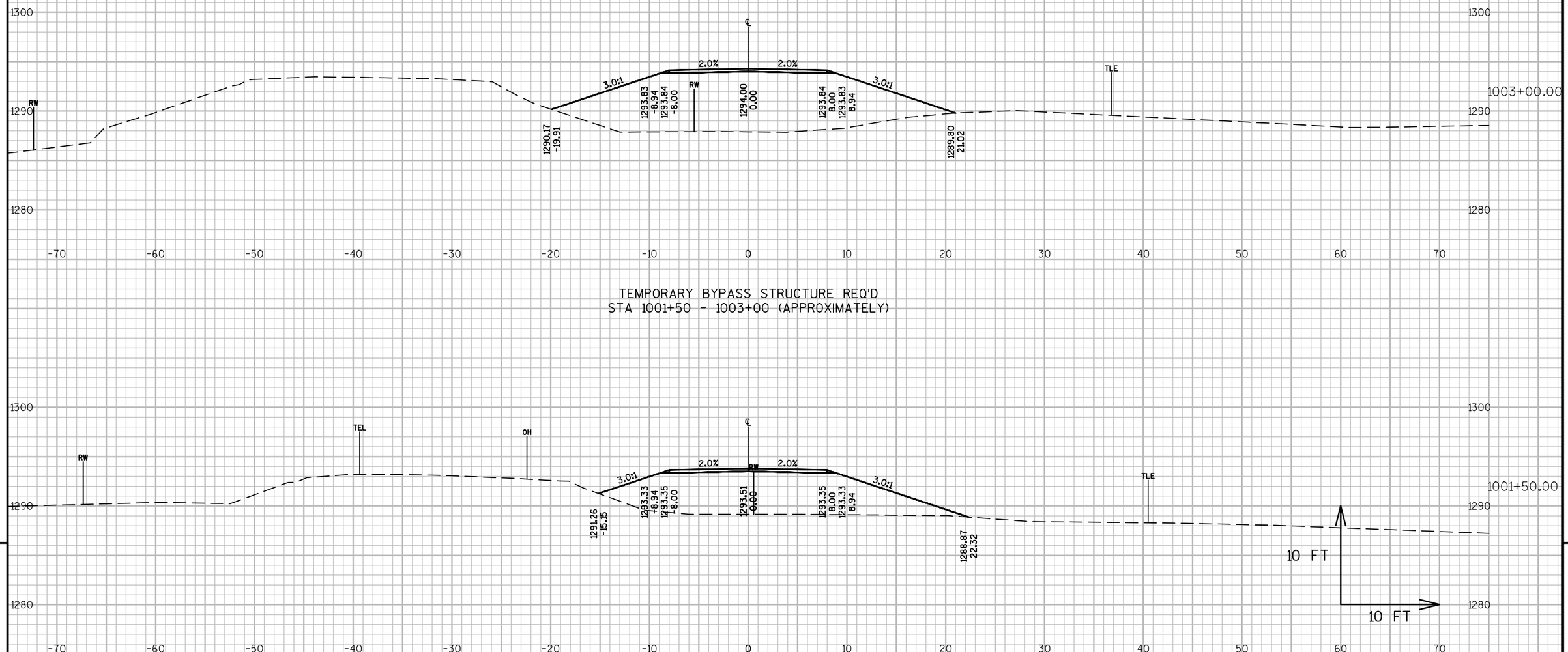
PROJECT NO: 8461-00-71	HWY: HANSON ROAD	COUNTY: SAWYER	CROSS SECTIONS: TEMPORARY BYPASS	SHEET 38	E

FILE NAME : P:\PT\S\SAWYE\134680\CIVIL 3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090205_XS

PLOT DATE : 9/15/2017 11:24 AM PLOT BY : JUSTIN SHAVLIK PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

UTILITY LOCATIONS ARE APPROXIMATE.
ACTUAL LOCATIONS MUST BE FIELD VERIFIED.

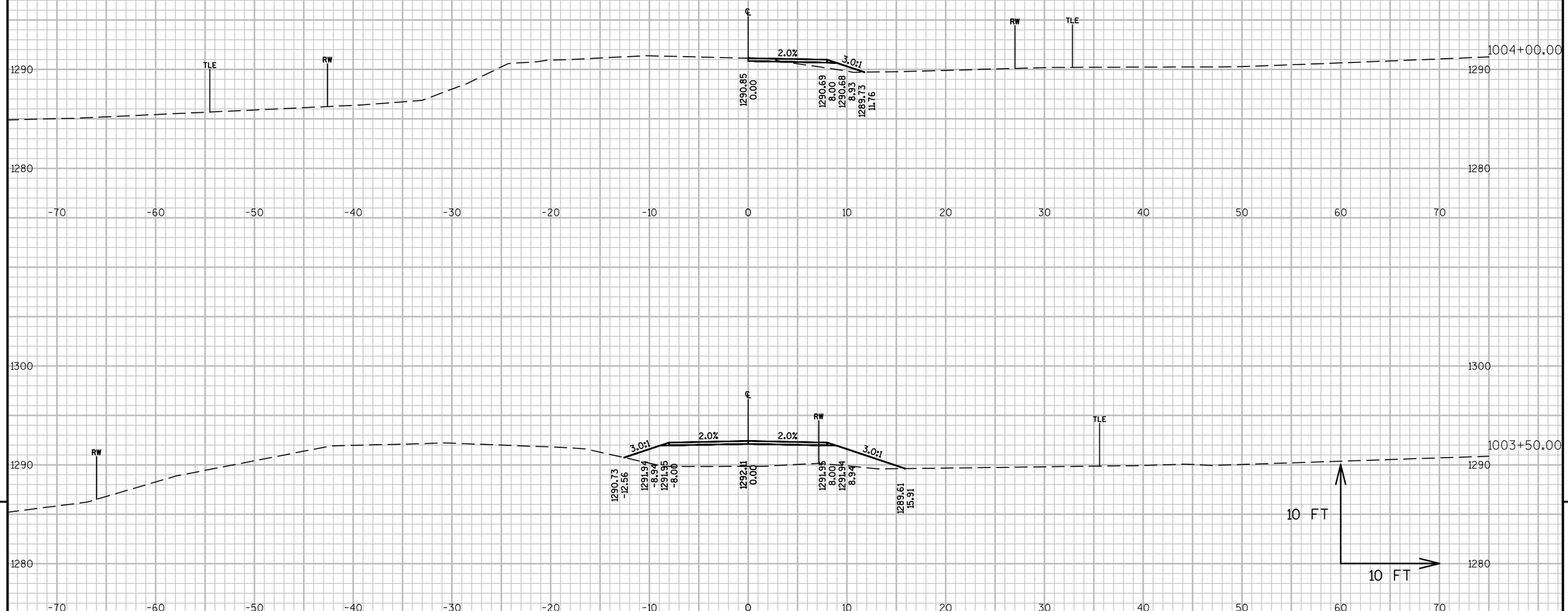


PROJECT NO: 8461-00-71	HWY: HANSON ROAD	COUNTY: SAWYER	CROSS SECTIONS: TEMPORARY BYPASS	SHEET 39	E

FILE NAME : P:\PT\S\SAWYE\134680\CIVIL 3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090206_XS
PLOT DATE : 9/15/2017 11:24 AM PLOT BY : JUSTIN SHAVLIK PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

UTILITY LOCATIONS ARE APPROXIMATE.
ACTUAL LOCATIONS MUST BE FIELD VERIFIED.



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PROJECT NO: 8461-00-71	HWY: HANSON ROAD	COUNTY: SAWYER	CROSS SECTIONS: TEMPORARY BYPASS	SHEET 40	E

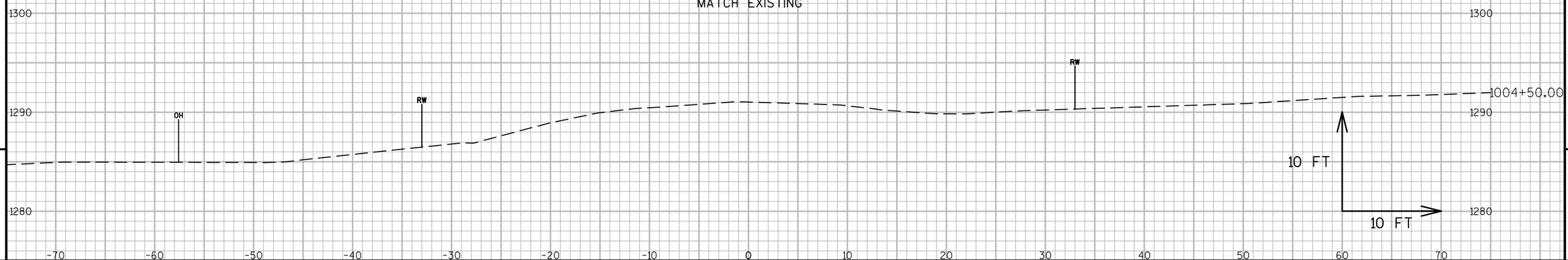
FILE NAME : P:\PT\S\SAWYE\134680\CIVIL 3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090207_XS

PLOT DATE : 9/15/2017 11:24 AM PLOT BY : JUSTIN SHAVLIK PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

UTILITY LOCATIONS ARE APPROXIMATE.
ACTUAL LOCATIONS MUST BE FIELD VERIFIED.

END TEMPORARY BYPASS
STA 1004+50
MATCH EXISTING



9 9

PROJECT NO: 8461-00-71	HWY: HANSON ROAD	COUNTY: SAWYER	CROSS SECTIONS: TEMPORARY BYPASS	SHEET 41	E

FILE NAME : P:\PT\S\SAWYE\134680\CIVIL 3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090208_XS

PLOT DATE : 9/15/2017 11:24 AM PLOT BY : JUSTIN SHAVLIK PLOT NAME : PLOT SCALE : 1 IN:10 FT

Wisconsin Department of Transportation

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