

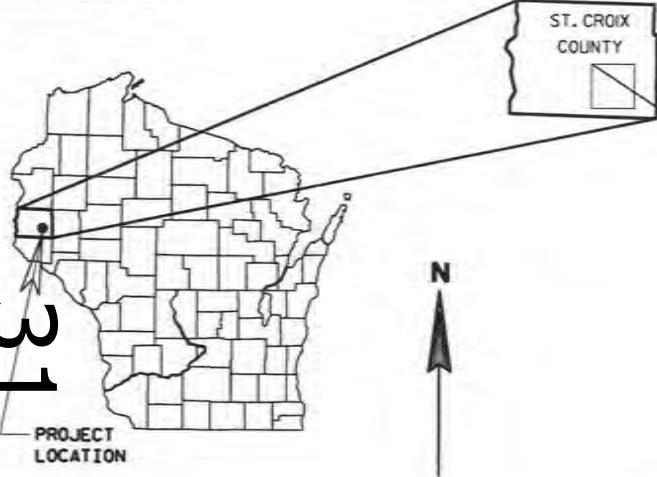
PROJECT ID: 8947-00-70  
WITH: N/A

COUNTY: ST. CROIX

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 = 34



DESIGN DESIGNATION

A.D.T. (2014)	=	170
A.D.T. (2034)	=	360
D.H.V.	=	4.1
D.	=	62/38
T.	=	5.1%
DESIGN SPEED	=	60 MPH
ESALS	=	N/A

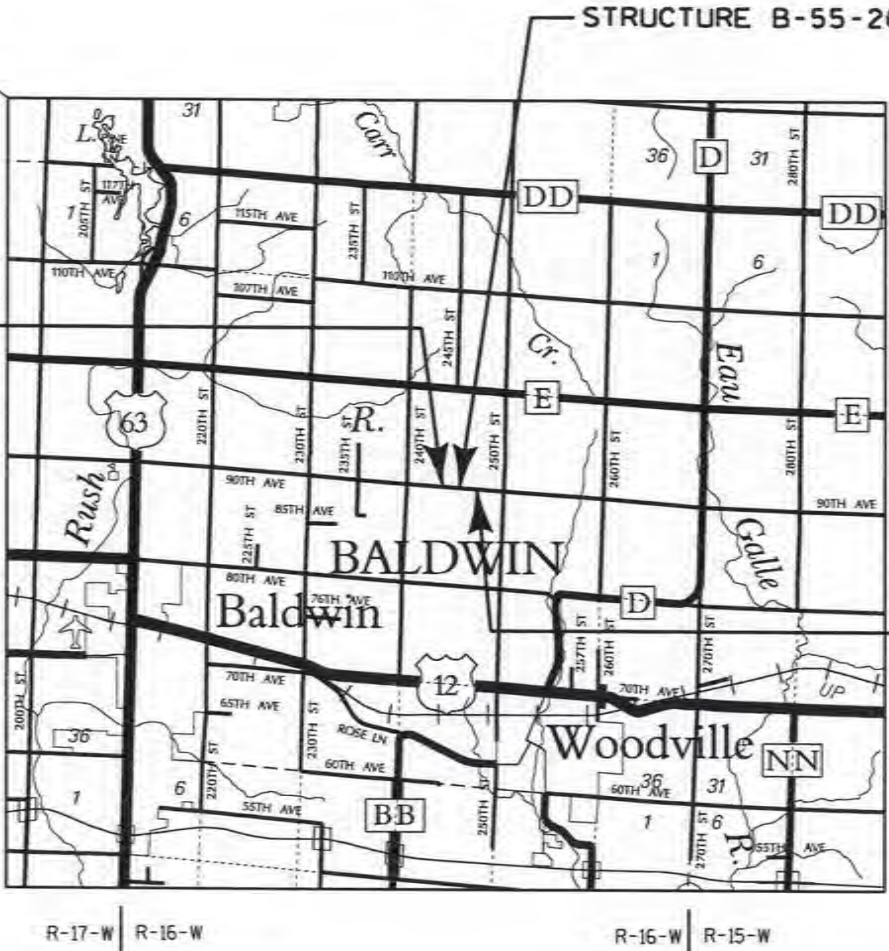
CONVENTIONAL SYMBOLS  
PLAN

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. 9+74.75  
Y = 347940.85  
X = 626852.03



LAYOUT  
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.010 MI.

T-30-N  
T-29-N

END PROJECT  
STA. 10+25.25  
Y = 347938.87  
X = 626902.49

T-29-N  
T-28-N

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION  
PLAN OF PROPOSED IMPROVEMENT  
T BALDWIN, 90th AVENUE  
TRIB TO CARR CREEK BRIDGE B550269  
LOCAL STREET  
ST. CROIX COUNTY

STATE PROJECT NUMBER  
8947-00-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8947-00-70	WISC 2013526	1

ACCEPTED FOR  
Town of Baldwin  
6-17-13 Joe Hurtgen  
Date Town Chairman

ACCEPTED FOR  
County of St. Croix  
06-13-2013 Tim Remberg  
Date County Highway Commissioner

ORIGINAL PLANS PREPARED BY  
AYRES ASSOCIATES 3433 Oakwood Hills Parkway  
Eau Claire, WI 54601  
www.AyresAssociates.com

WISCONSIN  
PROFESSIONAL ENGINEER  
CHRISTOPHER B. McMAHON  
E-29454  
EAU CLAIRE, WI

DATE 7/8/13

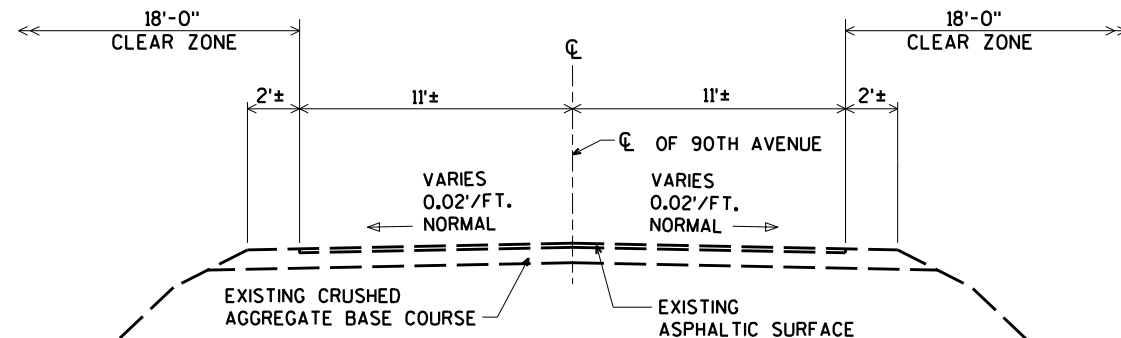
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY  
Surveyor AYRES ASSOCIATES INC  
Designer AYRES ASSOCIATES INC

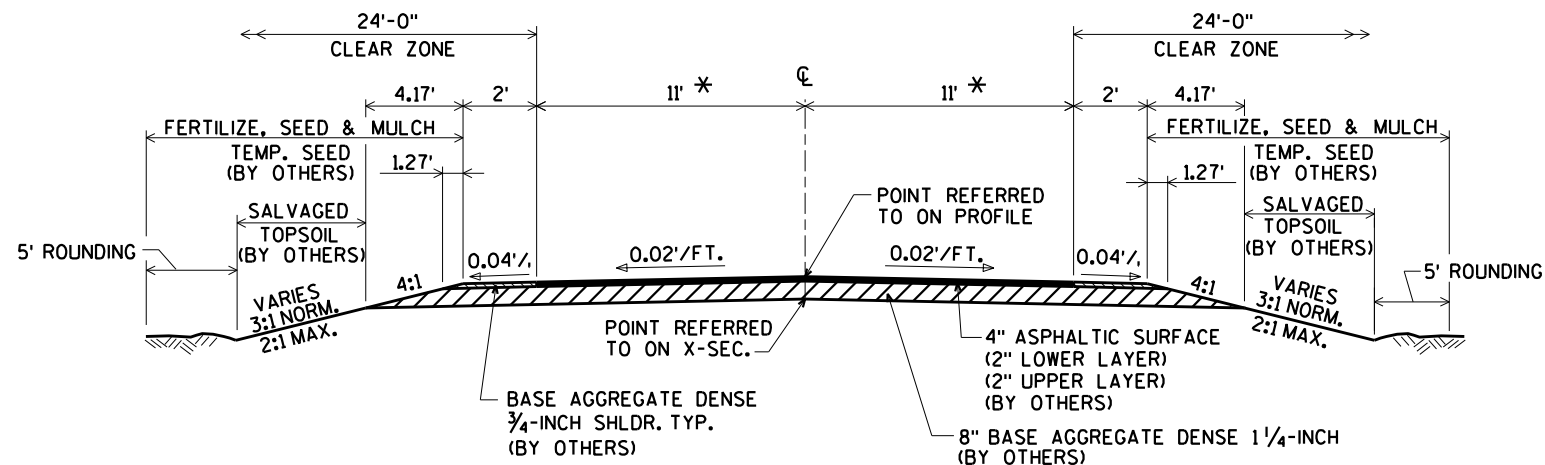
Management Consultant KNIGHT E/A INC.  
C.O. Examiner

APPROVED FOR THE DEPARTMENT  
DATE 7/29/13 Ryan B. McKone  
Management Consultant Signature

E



**TYPICAL EXISTING SECTION**



**TYPICAL FINISHED SECTION**  
(TO BE DONE BY OTHERS)

\* THE ASPHALT SURFACE SHALL BE PLACED 26.5 FEET  
WIDE AT THE ENDS OF THE BRIDGE TO 22 FEET WIDE  
AT 50 FEET FROM THE END OF BRIDGE.

**ABBREVIATIONS**

AC	ACRES
CHIS	CHISELED
CL	CENTERLINE
COR	CORNER
CWT	COUNT
CY	CUBIC YARD
EL	ELEVATION
GAL	GALLON
H	HOUSE
IP	IRON PIPE
LB	POUND
LF	LINEAR FEET
LS	LUMP SUM
LT	LEFT
MAX	MAXIMUM
MIN	MINIMUM
MON	MONUMENT
NORM	NORMAL
OAL	OVERALL LENGTH
PC	POINT OF CURVATURE
PD	PEDESTAL
PI	POINT OF INTERSECTION
PK	PARKER-KALON
PL	PROPERTY LINE
PLE	PERMANENT LIMITED EASEMENT
PP	POWER POLE
PT	POINT OF TANGENCY
R	RADIUS
REQ'D	REQUIRED
RT	RIGHT
R/W	RIGHT-OF-WAY
SF	SQUARE FEET
SHLDR	SHOULDER
STA	STATION
SY	SQUARE YARD
TLE	TEMPORARY LIMITED EASEMENT
VAR	VARIES
WL	WELL

**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.

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

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

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

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

THE LOCATION AND WIDTH OF THE EXISTING RIGHT-OF-WAY WAS NOT DETERMINED FOR THIS PROJECT. THE INFORMATION SHOWN IS ASSUMED AND AYRES ASSOCIATES DOES NOT WARRANT ITS ACCURACY.

**UTILITIES**

XCEL ENERGY  
1414 WEST HAMILTON AVE.  
EAU CLAIRE, WI 54702-0008  
ATTN: KYLE NEIDERMIRE  
715-737-1576  
kyle.s.neidermire@xcelenergy.com

ST. CROIX ELECTRIC COOPERATIVE  
1925 RIDGEWAY STREET  
HAMMOND, WI 54015-5039  
ATTN: ROB DOOLEY  
715-796-7000  
robdo@scecn.net

BALDWIN TELECOM, INC.  
930 MAPLE STREET  
BALDWIN, WI 54002  
ATTN: KEN CARLSRUD  
715-688-1039  
715-760-0966 (cell)  
ken.carlsrud@baldwin-telecom.net

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



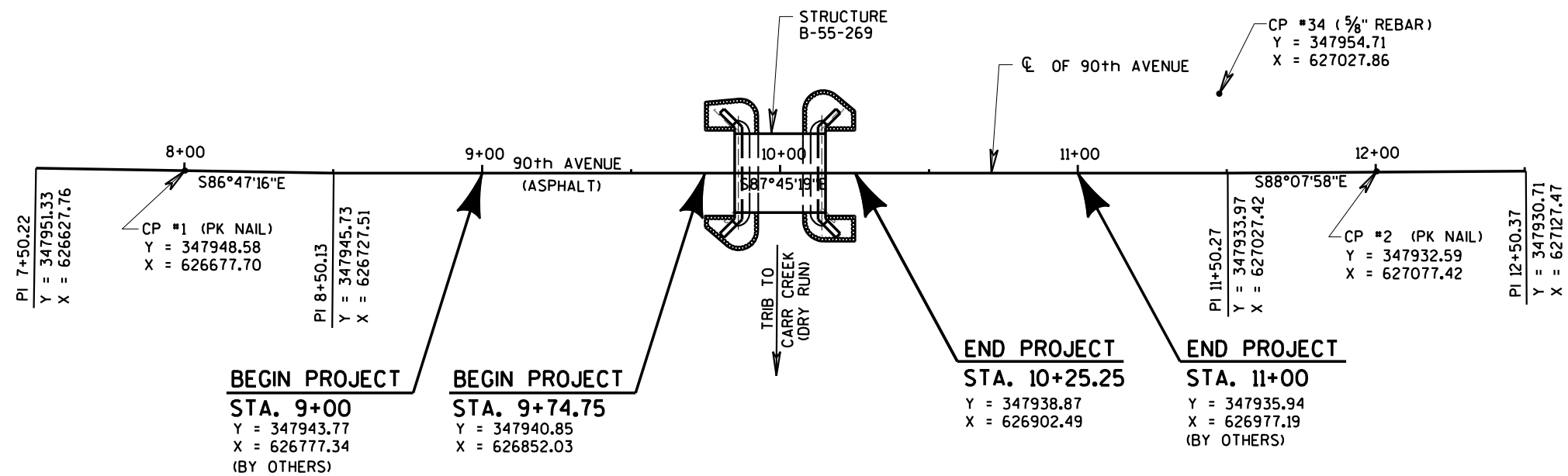
Toll Free (800) 242-8511  
Hearing Impaired TDD (800) 542-2289  
www.DiggersHotline.com

**DESIGNER**

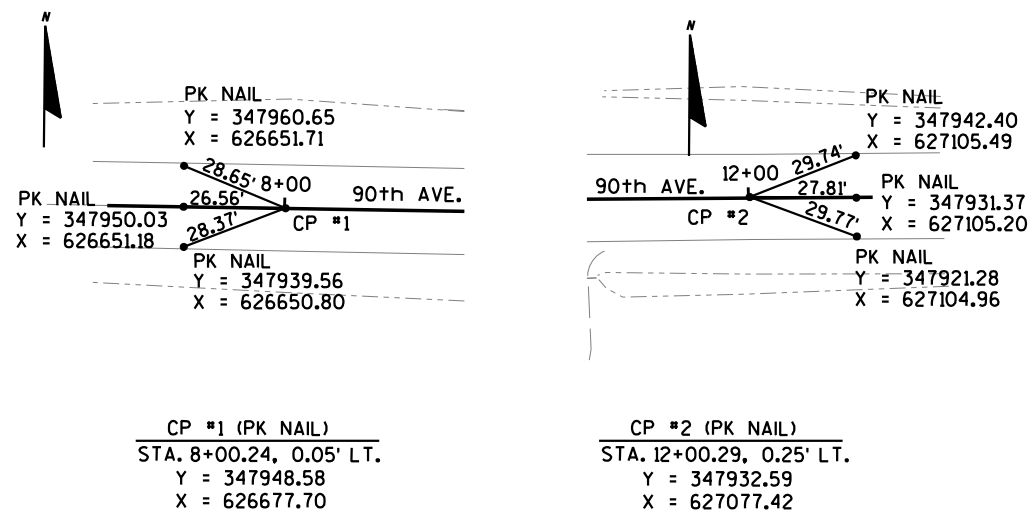
AYRES ASSOCIATES  
3433 OAKWOOD HILLS PARKWAY  
EAU CLAIRE, WI 54701  
ATTN: DAN SYDOW, PE  
715-834-3161  
mcmahonc@ayresassociates.com

**WISCONSIN DEPARTMENT OF  
NATURAL RESOURCES CONTACT:**

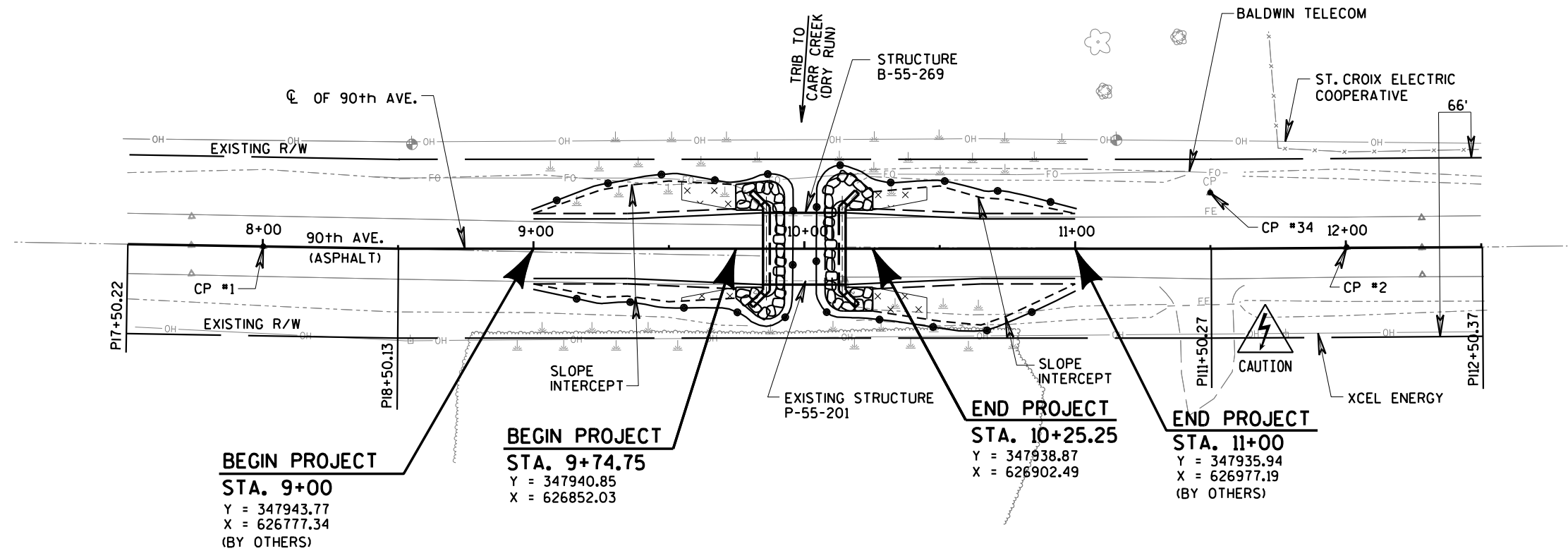
NICK SCHAFF  
1300 WEST CLAIREMONT AVE.  
P.O. BOX 4001  
EAU CLAIRE, WI 54702-4001  
715-839-1609  
nicholas.schaff@wisconsin.gov



### ALIGNMENT CONTROLS



### CONTROL POINT TIES



	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 = 0.30 ACRES

TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.18 ACRES

PROJECT NO: 8947-00-70

HWY: 90th AVE.

COUNTY: ST. CROIX

EROSION CONTROL

SCALE, FEET 0 25 50

SHEET

E

DATE 15OCT13		E S T I M A T E O F Q U A N T I T I E S			
LINE					8947-00-70
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	203.0500.S	REMOVING OLD STRUCTURE OVER WATERWAY (STATION) 01. 10+00	LS	1.000	1.000
0020	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-55-269	LS	1.000	1.000
0030	208.0100	BORROW	CY	40.000	40.000
0040	210.0100	BACKFILL STRUCTURE	CY	160.000	160.000
0050	213.0100	FINISHING ROADWAY (PROJECT) 01. 8947-00-70	EACH	1.000	1.000
0060	502.0100	CONCRETE MASONRY BRIDGES	CY	91.000	91.000
0070	502.3200	PROTECTIVE SURFACE TREATMENT	SY	105.000	105.000
0080	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	4,000.000	4,000.000
0090	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	9,380.000	9,380.000
0100	513.4060	RAILING TUBULAR TYPE M (STRUCTURE) 01. B-55-269	LS	1.000	1.000
0110	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	16.000	16.000
0120	550.2104	PILING C/P CONCRETE 10 3/4 X 0.25-INCH	LF	275.000	275.000
0130	606.0300	RI PRAP HEAVY	CY	85.000	85.000
0140	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	140.000	140.000
0150	619.1000	MOBILIZATION	EACH	1.000	1.000
0160	628.1504	SILT FENCE	LF	625.000	625.000
0170	628.1520	SILT FENCE MAINTENANCE	LF	1,250.000	1,250.000
0180	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	1.000	1.000
0190	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	1.000	1.000
0200	634.0612	POSTS WOOD 4X6-INCH X 12-FT	EACH	4.000	4.000
0210	637.2230	SIGNS TYPE II REFLECTIVE F	SF	12.000	12.000
0220	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
0230	643.0100	TRAFFIC CONTROL (PROJECT) 01. 8947-00-70	EACH	1.000	1.000
0240	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	220.000	220.000
0250	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-55-269	LS	1.000	1.000
0260	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 8947-00-70	LS	1.000	1.000
0270	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	546.000	546.000
0280	ASP.1TOA	ON-THE-JOB TRAINING APPRENTICE AT \$5.00/HR	HRS	1,200.000	1,200.000
0290	ASP.1TOG	ON-THE-JOB TRAINING GRADUATE AT \$5.00/HR	HRS	300.000	300.000

208.0100 BORROW (CATEGORY 0010)			
LOCATION		CY	
B-55-269 (Undistributed around wings)		40	
TOTAL		40	

213.0100 FINISHING ROADWAY (CATEGORY 0010)			
LOCATION		EACH	
PROJECT 8947-00-70		1	

619.1000 MOBILIZATION			
LOCATION		EACH	
PROJECT 8947-00-70 (CATEGORY 0020)		1	
TOTAL		1	

SILT FENCE & SILT FENCE MAINTENANCE (CATEGORY 0010)			
STATION TO STATION		628.1504	628.1520
LOCATION		LF	MAINTENANCE
Sta. 9+00 to Sta. 9+96		250	500
Sta. 10+05 to Sta. 11+00		250	500
Undistributed		125	250
TOTALS		625	1,250

MOBILIZATIONS EROSION CONTROL & EMERGENCY EROSION CONTROL (CATEGORY 0010)			
LOCATION		628.1905	628.1910
		MOBILIZATIONS	MOBILIZATIONS
		EROSION CONTROL	EROSION CONTROL
EACH		EACH	EACH
PROJECT 8947-00-70		1	1

634.0612 WOOD POSTS 4X6 INCH X 12 FT (CATEGORY 0010)			
STATION		LOCATION	
Sta. 9+84		LT (Object Marker)	
Sta. 9+84		RT (Object Marker)	
Sta. 10+16		LT (Object Marker)	
Sta. 10+16		RT (Object Marker)	
TOTAL		4	

637.2230 SIGNS TYPE II REFLECTIVE F (CATEGORY 0010)			
STATION		SF	
Sta. 9+84		LT (Object Marker)	W5-52L
Sta. 9+84		RT (Object Marker)	W5-52R
Sta. 10+16		LT (Object Marker)	W5-52R
Sta. 10+16		RT (Object Marker)	W5-52L
TOTAL		12	

642.5001 FIELD OFFICE TYPE B (CATEGORY 0010)			
LOCATION		EACH	
PROJECT 8947-00-70		1	

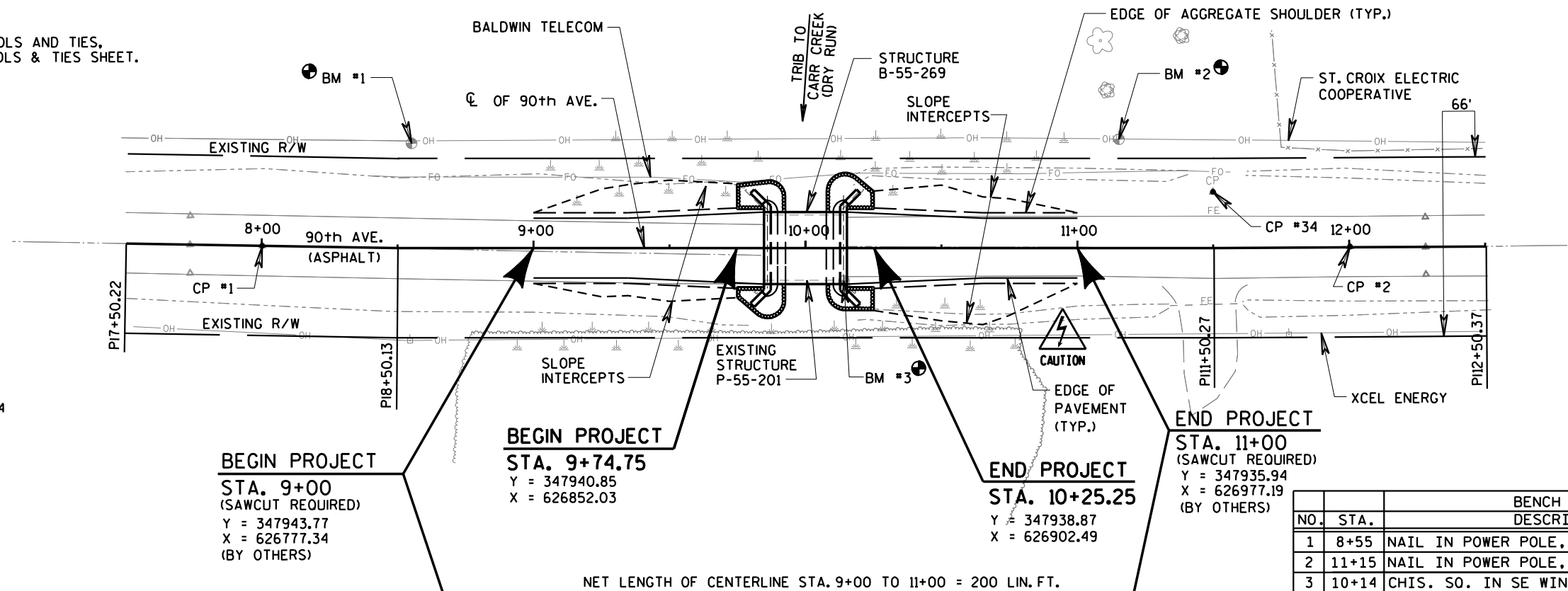
643.0100 TRAFFIC CONTROL (CATEGORY 0010)			
LOCATION		EACH	
PROJECT 8947-00-70		1	

CONSTRUCTION STAKING			
CATEGORY		650.6500	650.9910
LOCATION		STRUCTURE	SUPPLEMENTARY
		LAYOUT	CONTROL
LS		LS	LS
0010		ID 8947-00-70	---
0020		B-55-269	---
TOTALS		1	1

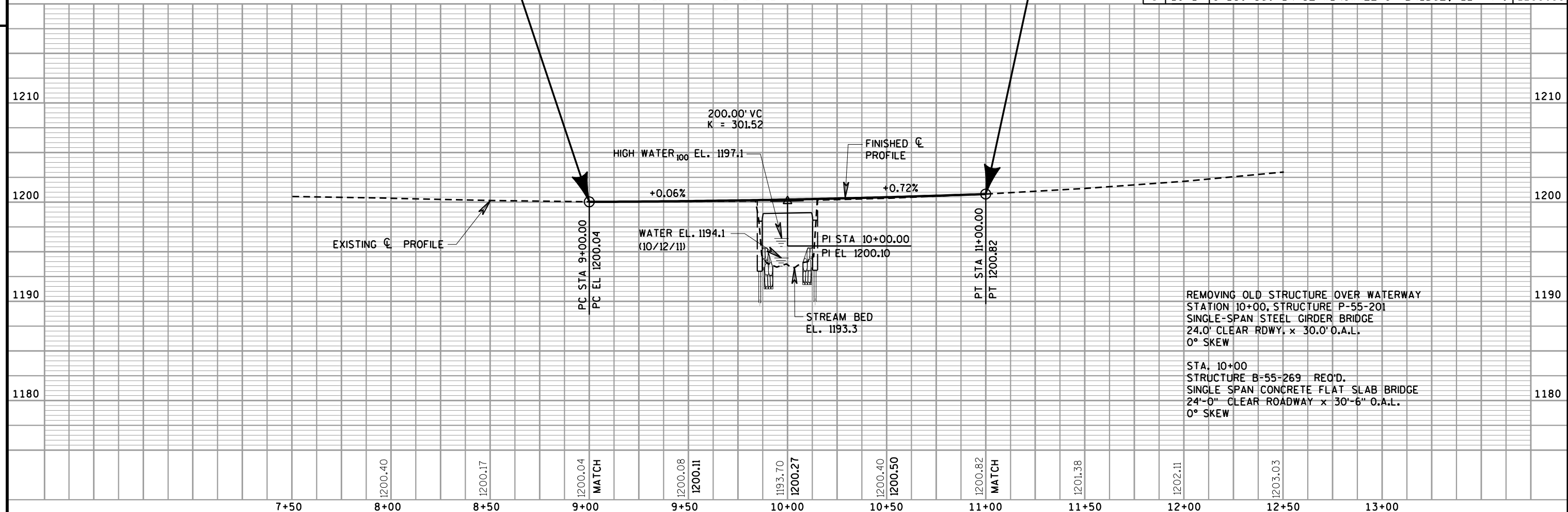


NOTES:  
FOR ALIGNMENT CONTROLS AND TIES,  
SEE ALIGNMENT CONTROLS & TIES SHEET.

ORIGIN OF LEVELS  
ST. CROIX COUNTY CP 34  
5/8" REBAR  
EL. 1200.30



BENCH MARKS			
NO.	STA.	DESCRIPTION	ELEV.
1	8+55	NAIL IN POWER POLE, 38' LT.	1198.66
2	11+15	NAIL IN POWER POLE, 40' LT.	1198.71
3	10+14	CHIS. SO. IN SE WINGWALL OF BRIDGE, 12' RT.	1200.00



REMOVING OLD STRUCTURE OVER WATERWAY  
STATION 10+00, STRUCTURE P-55-201  
SINGLE-SPAN STEEL GIRDER BRIDGE  
24'-0" CLEAR RDWY, x 30'-0" O.A.L.,  
0° SKEW

STA. 10+00  
STRUCTURE B-55-269 REQ'D.  
SINGLE SPAN CONCRETE FLAT SLAB BRIDGE  
24'-0" CLEAR ROADWAY x 30'-6" O.A.L.,  
0° SKEW

PROJECT NO: 8947-00-70

HWY: 90th AVE.

COUNTY: ST. CROIX

PLAN AND PROFILE

SCALE, FEET 0 25 50

SHEET

E

Standard Detail Drawing List

08E09-06	SILT FENCE
12A03-10	NAME PLATE (STRUCTURES)
15C02-04A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C06-06	SIGNING & MARKING FOR TWO LANE BRIDGES

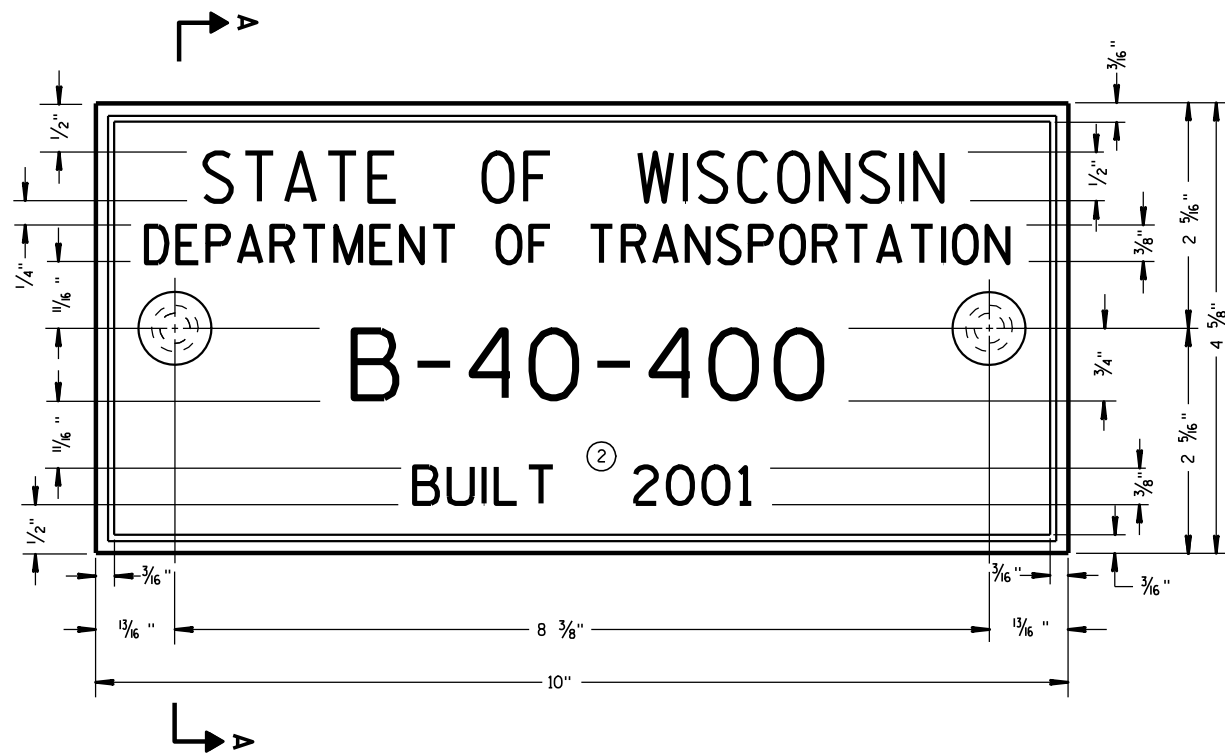




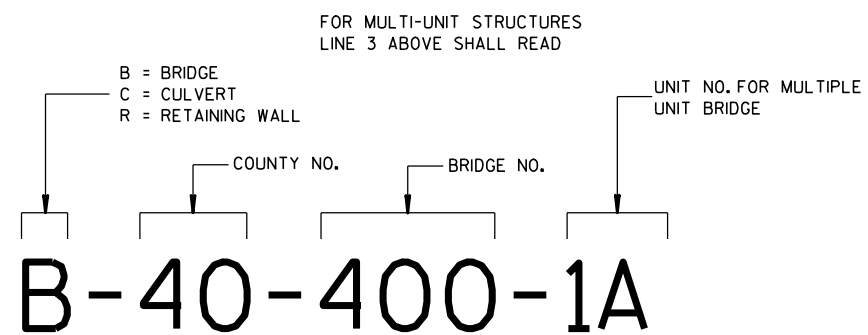
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS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



<p>SILT FENCE</p>	
<p>STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</p>	
<p>APPROVED 4-29-05 DATE</p>	<p>/s/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER</p>



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



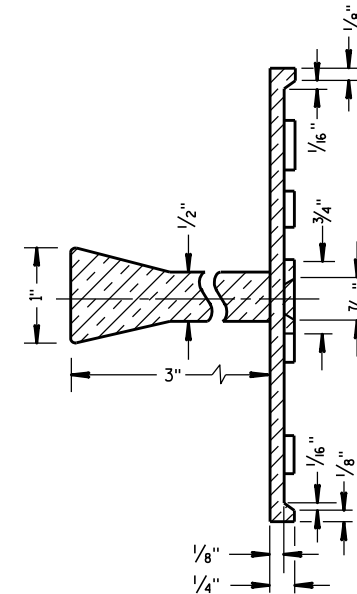
**NUMBERING DESIGNATION  
MULTI-UNIT STRUCTURES**

## GENERAL NOTES

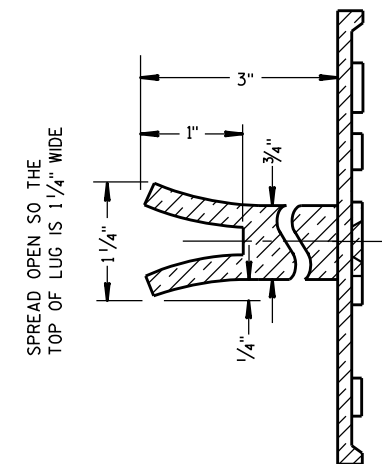
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.

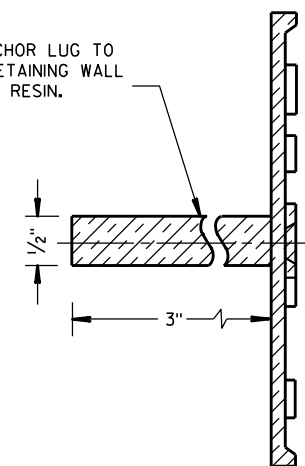


**SECTION A-A**



**ALTERNATE LUG**

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



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

**NAME PLATE  
(STRUCTURES)**

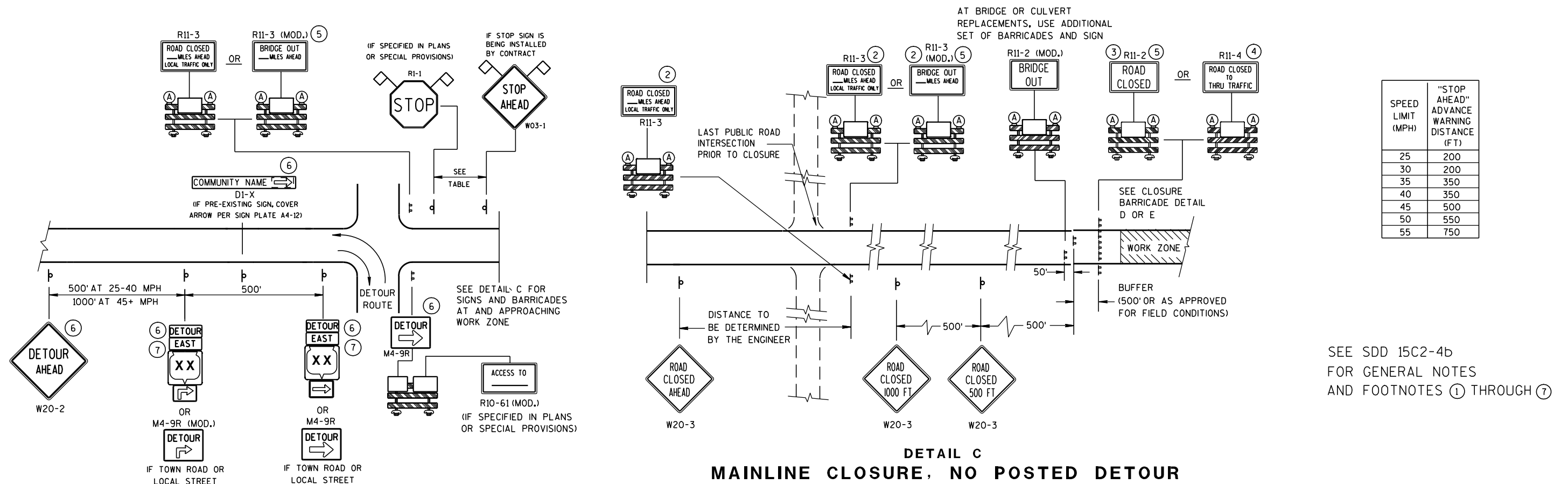
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

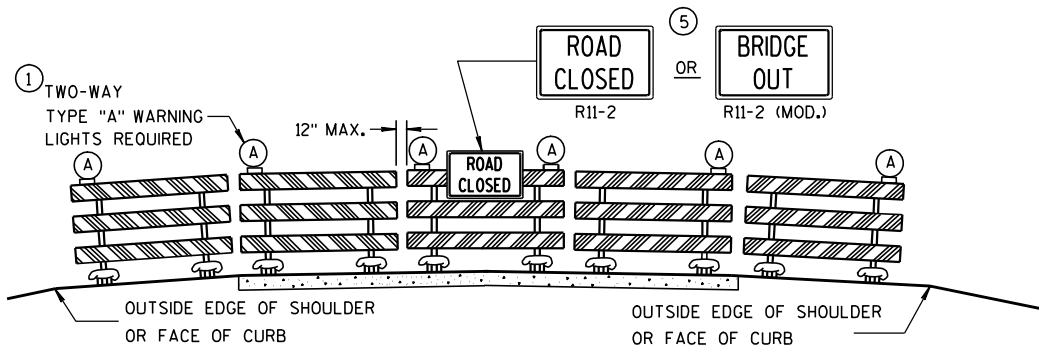
APPROVED

3/26/10  
DATE

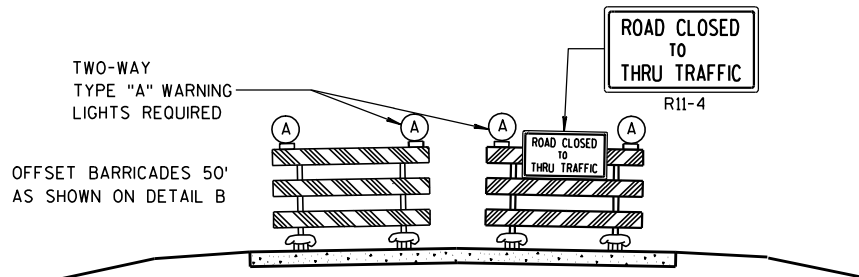
FHWA

/S/ Scot Becker  
CHIEF STRUCTURAL DEVELOPMENT ENGINEER





**DETAIL D**  
**ROAD CLOSURE BARRICADE DETAIL**  
APPROACH VIEW



**DETAIL E**  
**LANE CLOSURE BARRICADE DETAIL**  
APPROACH VIEW

SEE SDD 15C2-4a FOR LEGEND

**GENERAL NOTES**

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

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

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

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

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

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

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

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

THE REFLECTIVE SHEETING USED ON R11-2, R11-3, R11-4, R10-61 AND R1-1 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

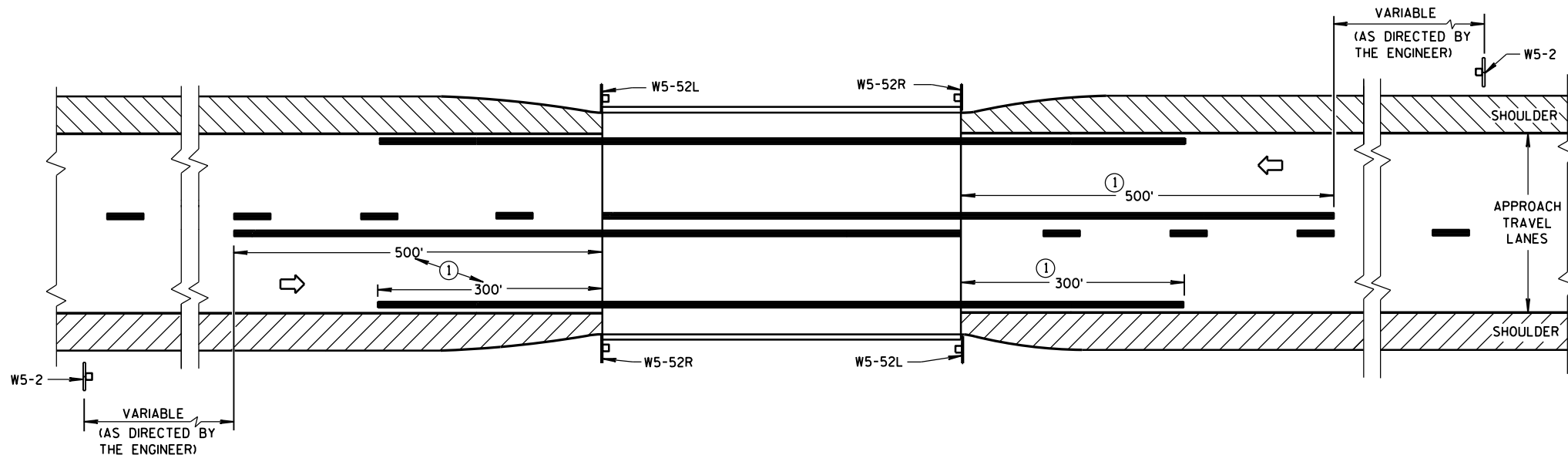
"WO AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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

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

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

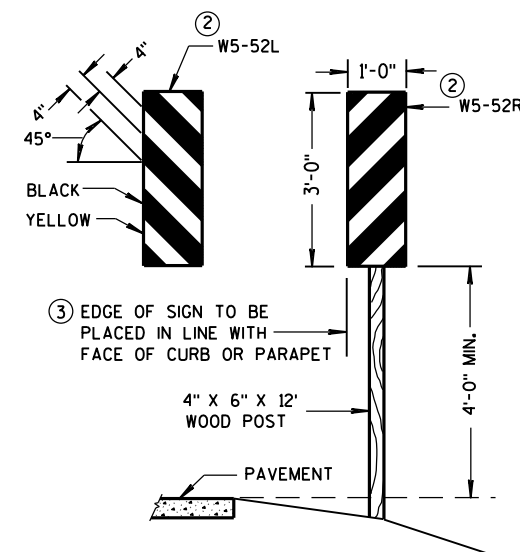
BARRICADES AND SIGNS FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
9/16/03 DATE	/S/ Thomas N. Notbohm CHIEF SIGNS AND MARKING ENGINEER
FHWA	



### SITUATION 1

WARRANTING CRITERIA:

BRIDGE WIDTH IS AT LEAST 18 FEET BUT LESS THAN 24 FEET



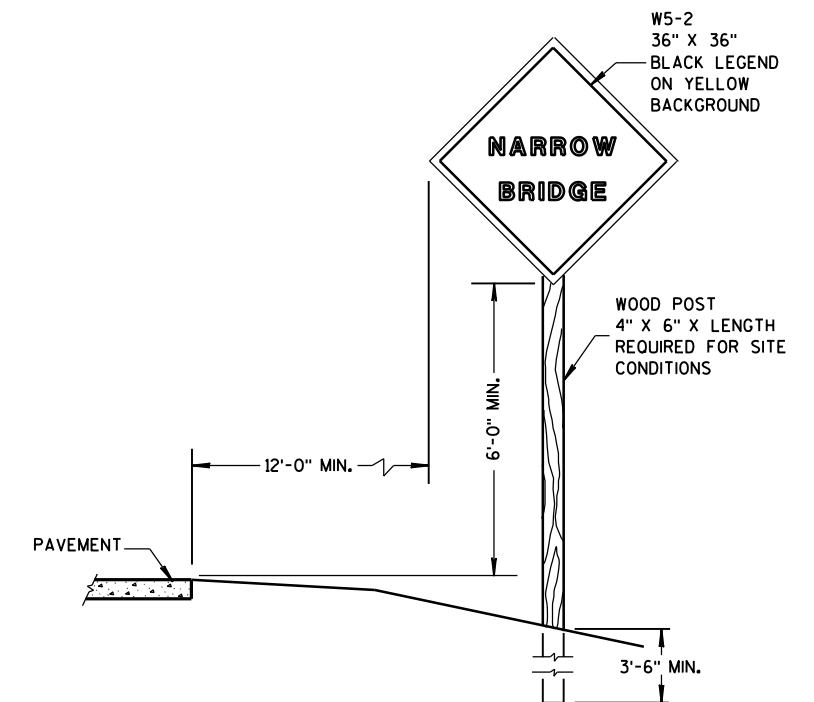
### OBJECT MARKER PLACEMENT

### GENERAL NOTES

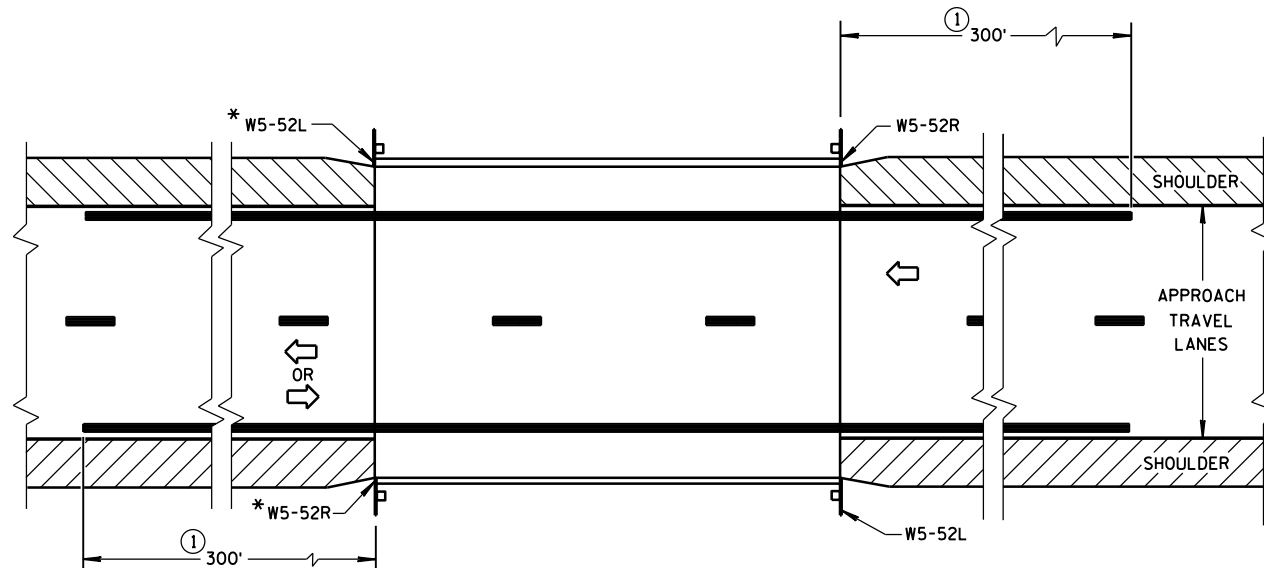
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

PAVEMENT MARKING SHOWN ON THIS DRAWING IS NOT REQUIRED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. WHEN SPECIFIED, PAVEMENT MARKING SHALL CONFORM TO THIS DRAWING AND OTHER CONTRACT REQUIREMENTS.

- ① MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.
- ② FACE OF OBJECT MARKERS W5-52R, AND W5-52L SHALL BE COVERED WITH TYPE F REFLECTIVE SHEETING.
- ③ LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.



### SIGN PLACEMENT



\*OMIT ON ONE-WAY TRAVELLED WAYS

### SITUATION 2

WARRANTING CRITERIA:

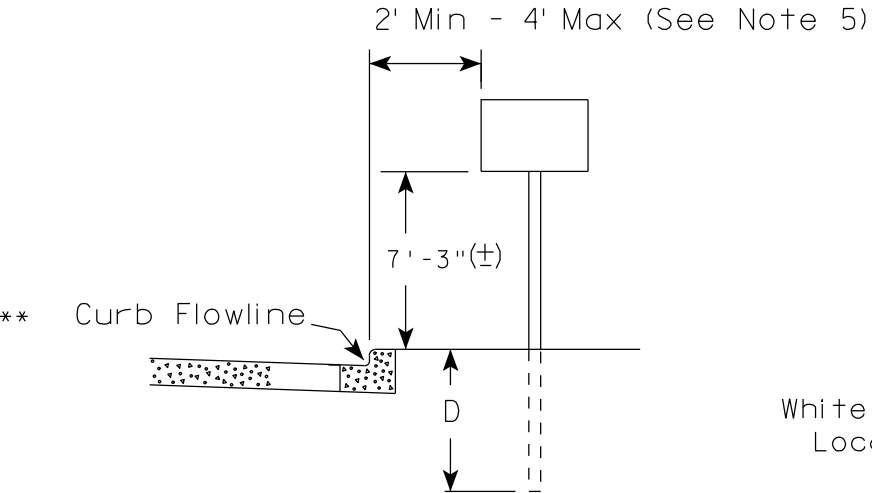
1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE IS LESS THAN 6 FEET WIDER (ON EACH SIDE) THAN APPROACH TRAVEL LANES.

### SIGNING & MARKING FOR TWO LANE BRIDGES

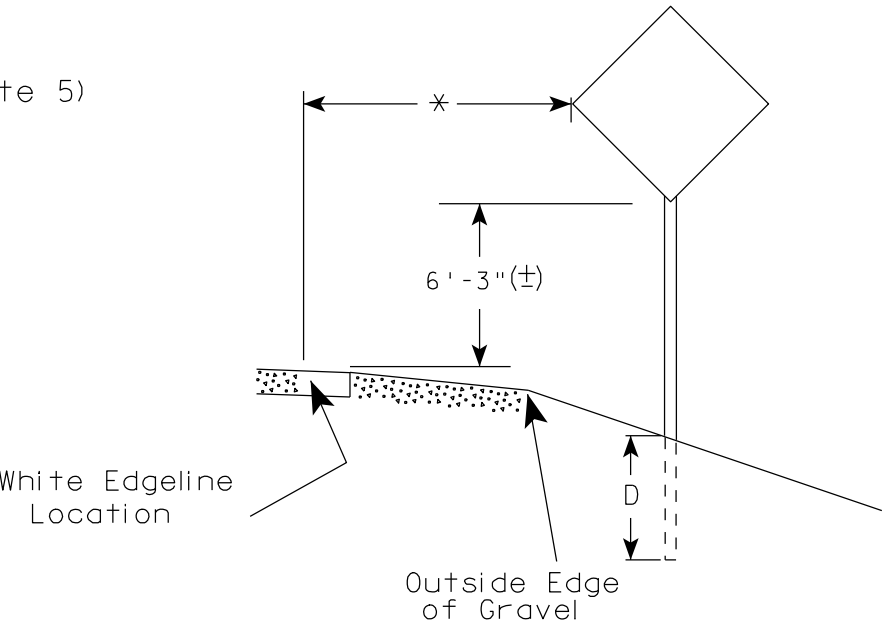
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
3/4/2013 /S/ Travis Feltes  
DATE STATE TRAFFIC ENGINEER OF DESIGN  
FHWA

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet or larger than 20 sq. ft. shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (±).

POST EMBEDMENT DEPTH

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

\* 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.

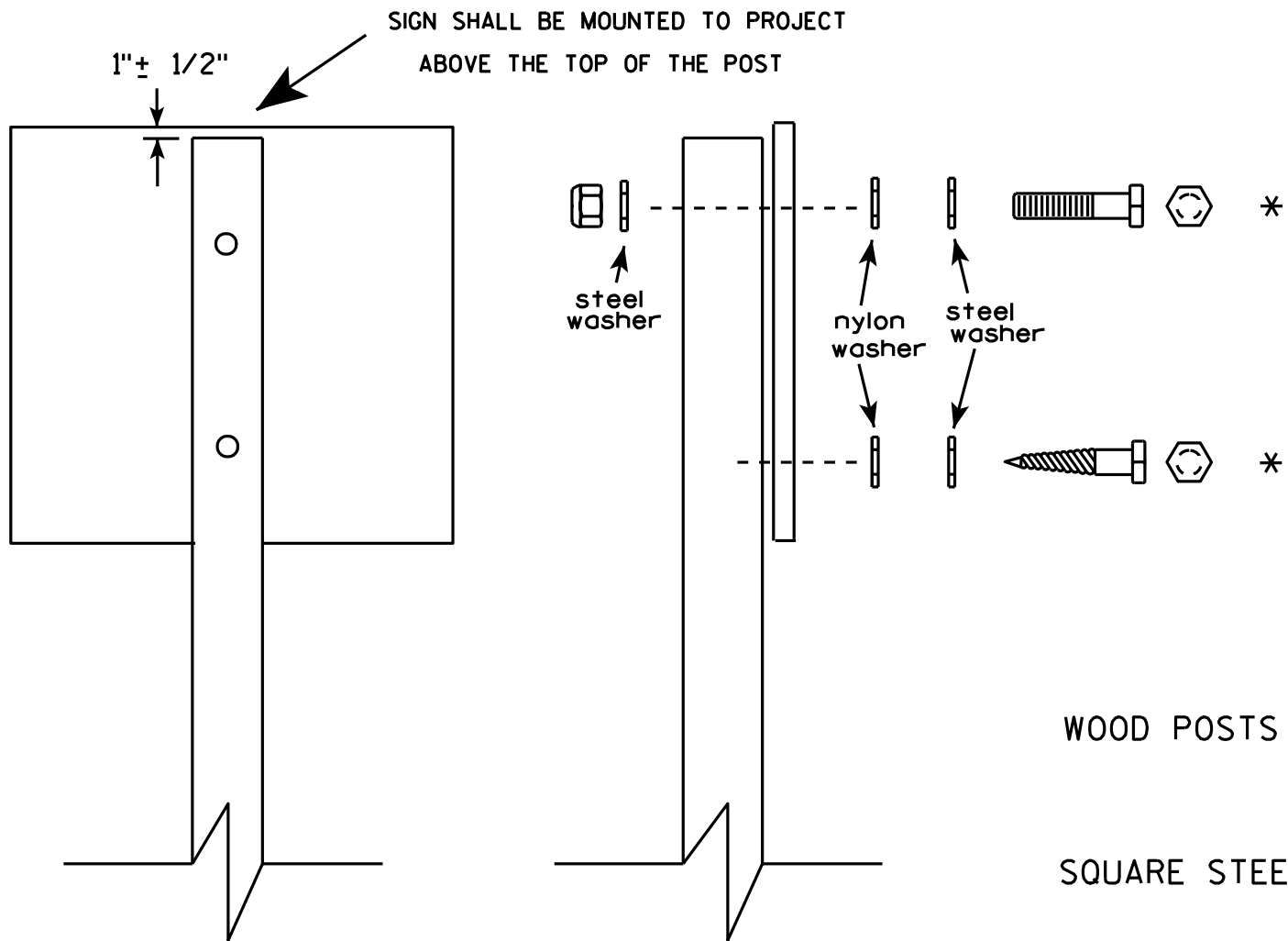
\*\* The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of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

TYPICAL INSTALLATION  
OF PERMANENT TYPE II  
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-3.16

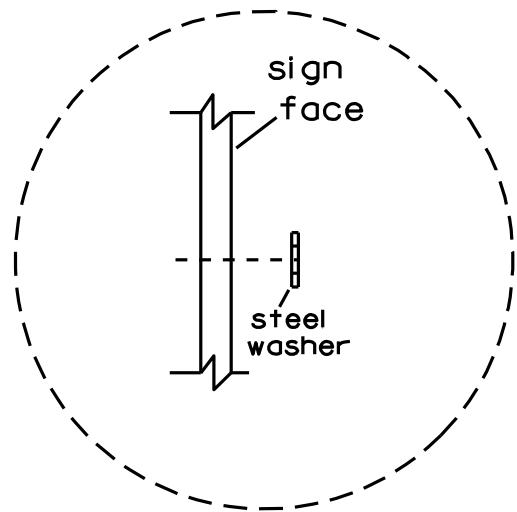


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

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

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

- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" X 3"
- MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
- RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
- O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
- 1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.

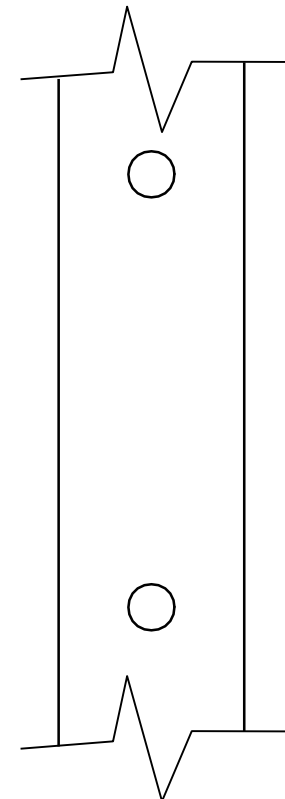
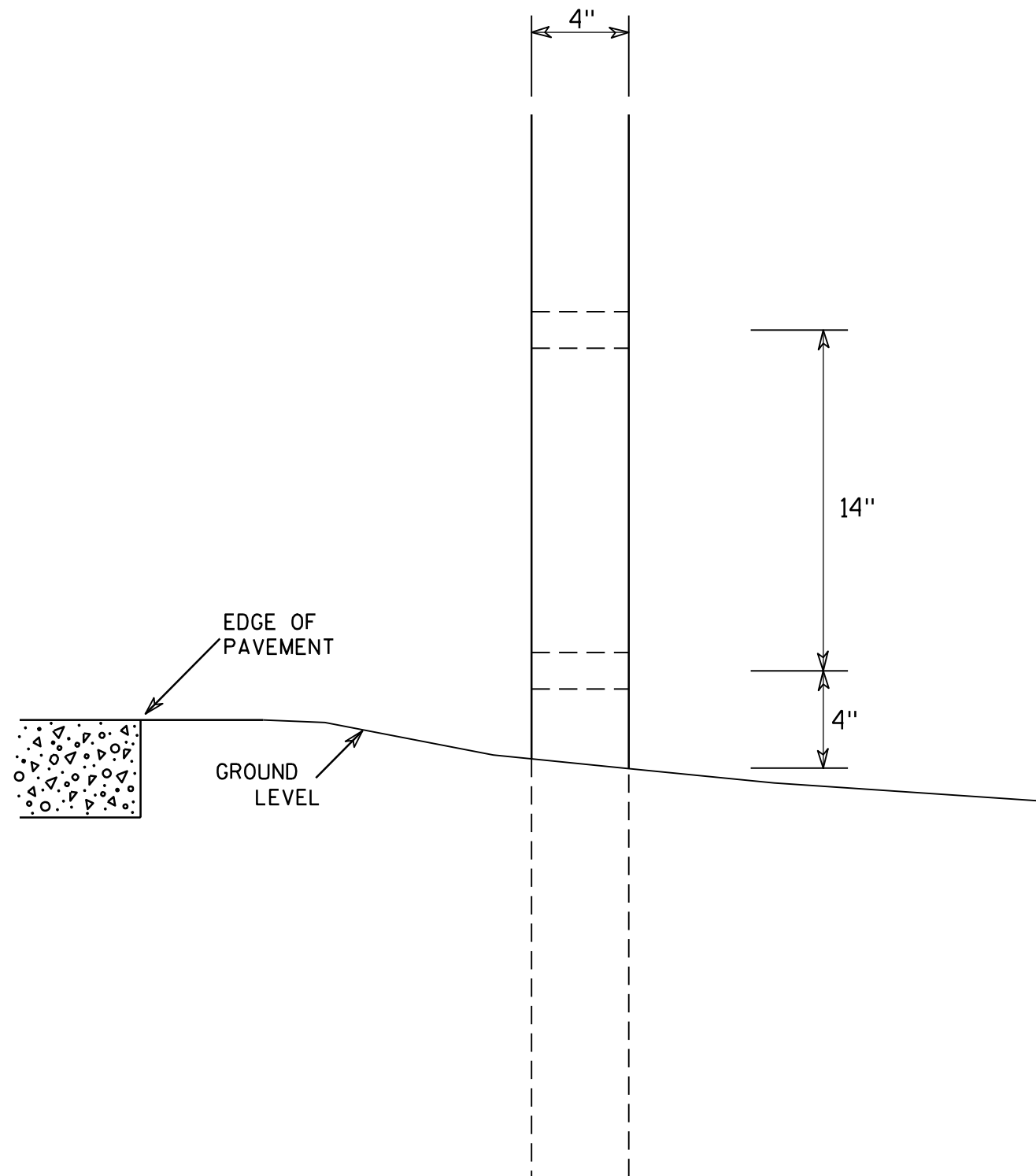


Washer Placement when Sign Has Other Than Type H or Type F Face

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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 3/23/10	PLATE NO. A4-8.7





SIDE VIEW

# GENERAL NOTES

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

## 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

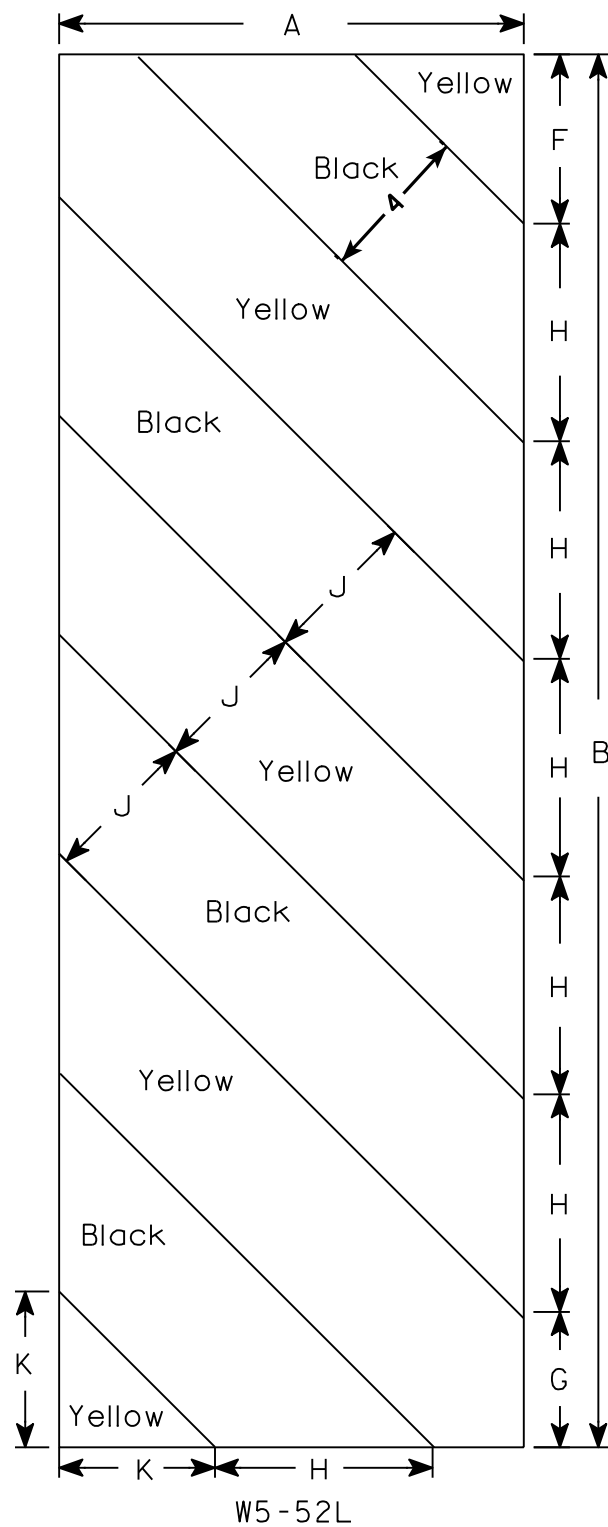
PROJECT NO: 8947-00-70

HWY: 90TH AVENUE

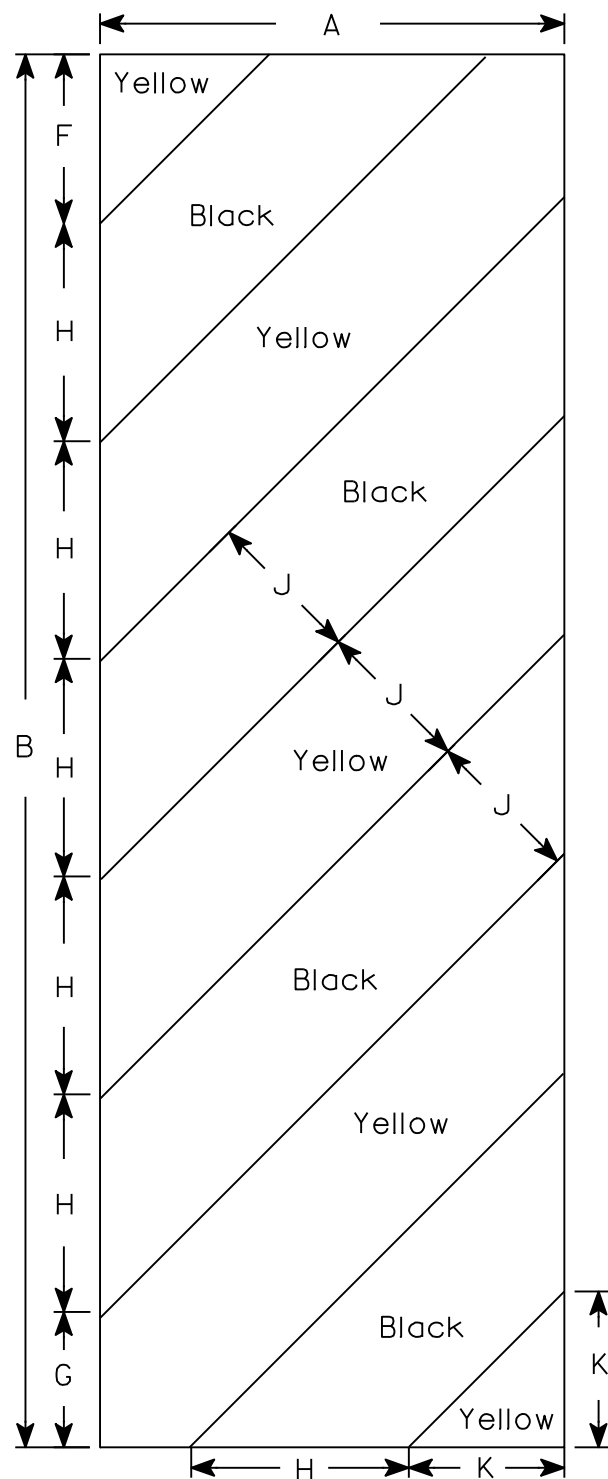
COUNTY: ST. CROIX

SHEET NO:

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 5⁄16																6.75
4																											
5																											

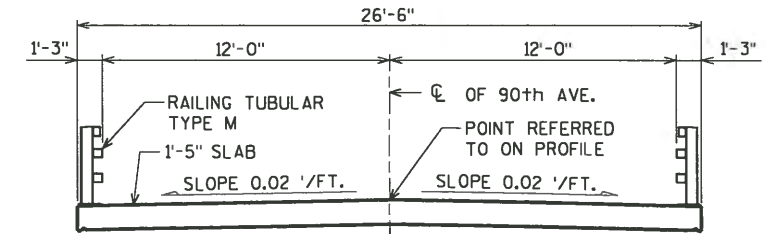
STANDARD SIGN

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



CROSS SECTION THRU ROADWAY

### DESIGN DATA

DESIGN RATING: HL-93  
INVENTORY RATING FACTOR: 1.14  
OPERATING RATING FACTOR: 1.48  
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 #/S.F.

CONCRETE MASONRY { SLAB \_\_\_\_\_ f'c = 4,000 p.s.i.  
ALL OTHER \_\_\_\_\_ f'c = 3,500 p.s.i.  
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) \_\_\_\_\_ fy = 60,000 p.s.i.

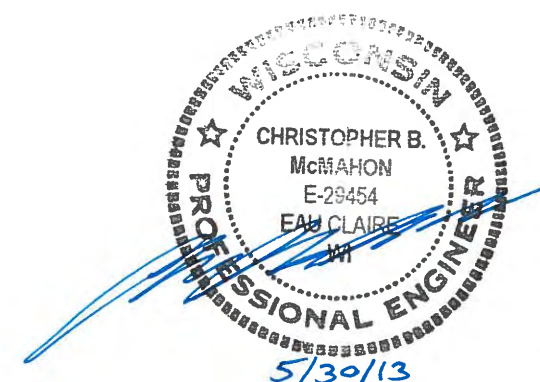
DRAINAGE AREA = 1.63 sq. mi.  
WATERWAY AREA = 73 sq. ft.  
V = 2.2 f.p.s.  
Q<sub>100</sub> = 160 c.f.s.  
HIGH WATER<sub>100</sub> EL. 1197.1  
HIGH WATER<sub>2</sub> EL. 1196.4  
ROWY. OVERFLOW = N/A  
SCOUR CRITICAL CODE = 8

WEST ABUTMENT TO BE SUPPORTED ON  $10\frac{3}{4}$ "  $\phi$  x 0.25" CIP CONCRETE PILING  
DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 90 TONS  $\pm$  PER PILE AS  
DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 30'-0".

EAST ABUTMENT TO BE SUPPORTED ON  $10\frac{3}{4}$ "  $\phi$  x 0.25" CIP CONCRETE PILING  
DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 90 TONS  $\pm$  PER PILE AS  
DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 25'-0".

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

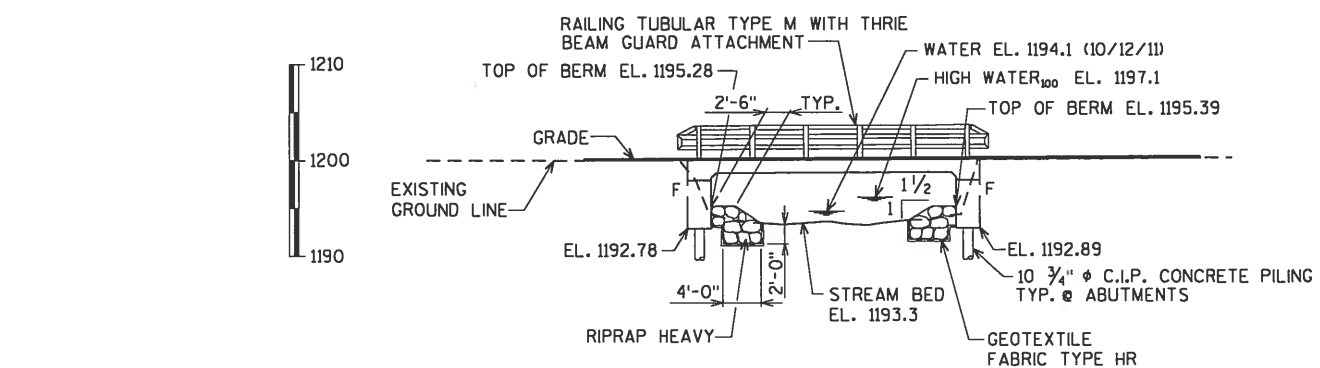
A.D.T. = 170 (2014)  
A.D.T. = 360 (2034)  
R.D.S. = 60 M.P.H.



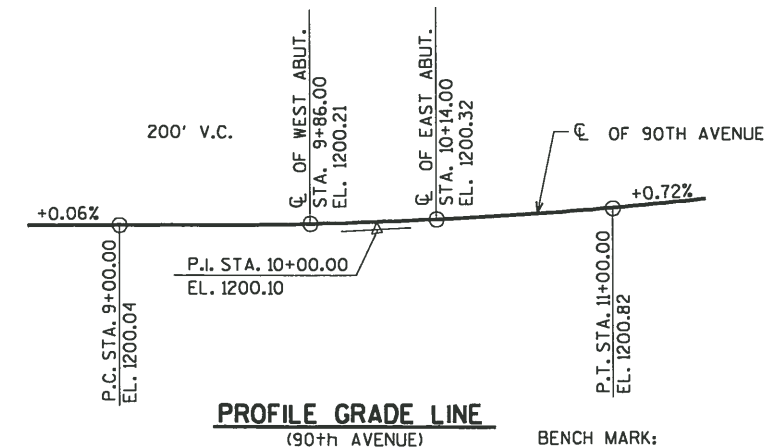
BRIDGE OFFICE CONTACT:  
WILLIAM DREHER  
(608)-266-8489

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

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY			
<b>AYRES ASSOCIATES</b>		3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	<i>William C. Duerhu</i> KAR CHIEF STRUCTURES DESIGN ENGINEER		08/12/13 DATE
STRUCTURE B-55-269			
90TH AVENUE OVER TRIB. TO CARR CREEK			
COUNTY ST. CROIX	TOWN/CITY/VILLAGE BALDWIN		
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY KAZ	DESIGN CK'D. JCK	DRAWN BY KAZ	PLANS CK'D. CBM
GENERAL PLAN			SHEET 1 OF 11



### ELEVATION



**PROFILE GRADE LINE**  
(90th AVENUE)

BENCH MARK:  
CHIS. SQ. IN SE WINGWALL OF BRIDGE  
STA. 10+14.0, 12' RT.  
EL. 1200.00

## LIST OF DRAWINGS

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

\$PRNAME\$  
U:\42-0849,00 - St. Croix Co. Town of Baldwin 90th Ave+BRIDGE+420849 gp.dgn

8

STATE PROJECT NUMBER

8947-00-70

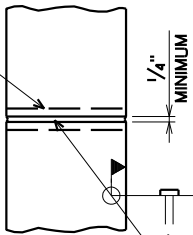
TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	W. ABUT.	E. ABUT.	SUPER.	TOTAL
203.0500.S	REMOVING OLD STRUCTURE OVER WATERWAY STATION 10+00	LS	-----	-----	-----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-55-269	LS	-----	-----	-----	1
210.0100	BACKFILL STRUCTURE	CY	80	80	-----	160
502.0100	CONCRETE MASONRY BRIDGES	CY	22.0	22.0	47.0	91
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	105	105
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	2,000	2,000	-----	4,000
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	640	640	8,100	9,380
513.4060	RAILING TUBULAR TYPE M B-55-269	LS	-----	-----	-----	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	8	8	-----	16
550.2104	PILING CIP CONCRETE 10¾ x 0.25-INCH	LF	150	125	-----	275
606.0300	RIPRAP HEAVY	CY	40	45	-----	85
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	70	70	-----	140
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	110	110	-----	220
	NON-BID ITEMS					
	FILLER	SIZE	-----	-----	-----	½" & ¾"

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 TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.  
SLAB FALSEWORK SHALL BE SUPPORTED ON PILES UNLESS OTHERWISE APPROVED BY THE ENGINEER.  
THE EXISTING GROUND LINE SHALL BE THE UPPER LIMIT FOR EXCAVATION FOR STRUCTURES.  
THE EXISTING STRUCTURE, P-55-201, TO BE REMOVED, IS A SINGLE SPAN STEEL GIRDER BRIDGE, 30.0 FT. LONG WITH A 24.0 FT. CLEAR ROADWAY WIDTH.  
AT BACKFACE OF ABUTMENTS ALL EXCAVATED VOLUME NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE.  
PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.

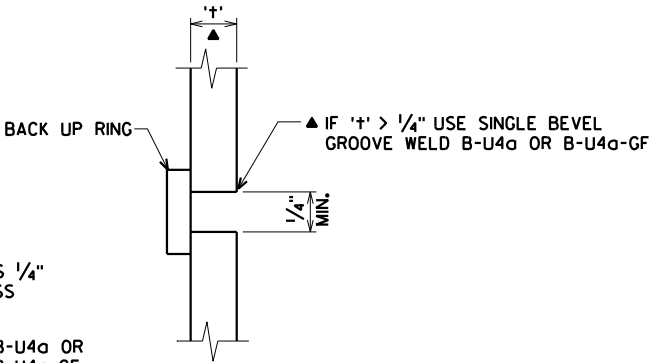
BACK UP RING  
⅜" MIN. THICKNESS  
FOR SMAW AND ¼" MIN.  
THICKNESS FOR FCAW



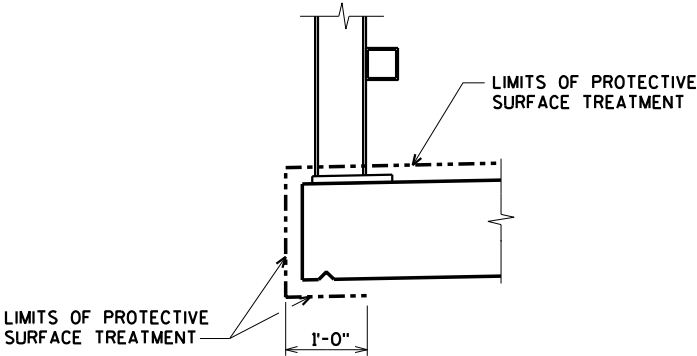
PIPE PILE

PILE SPLICE DETAIL

CAST-IN-PLACE PILE SHELL MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.  
GRINDING MAY BE USED IN LIEU OF BACKGOUGING.



CIP PILE WELD DETAIL



PROTECTIVE SURFACE TREATMENT DETAIL

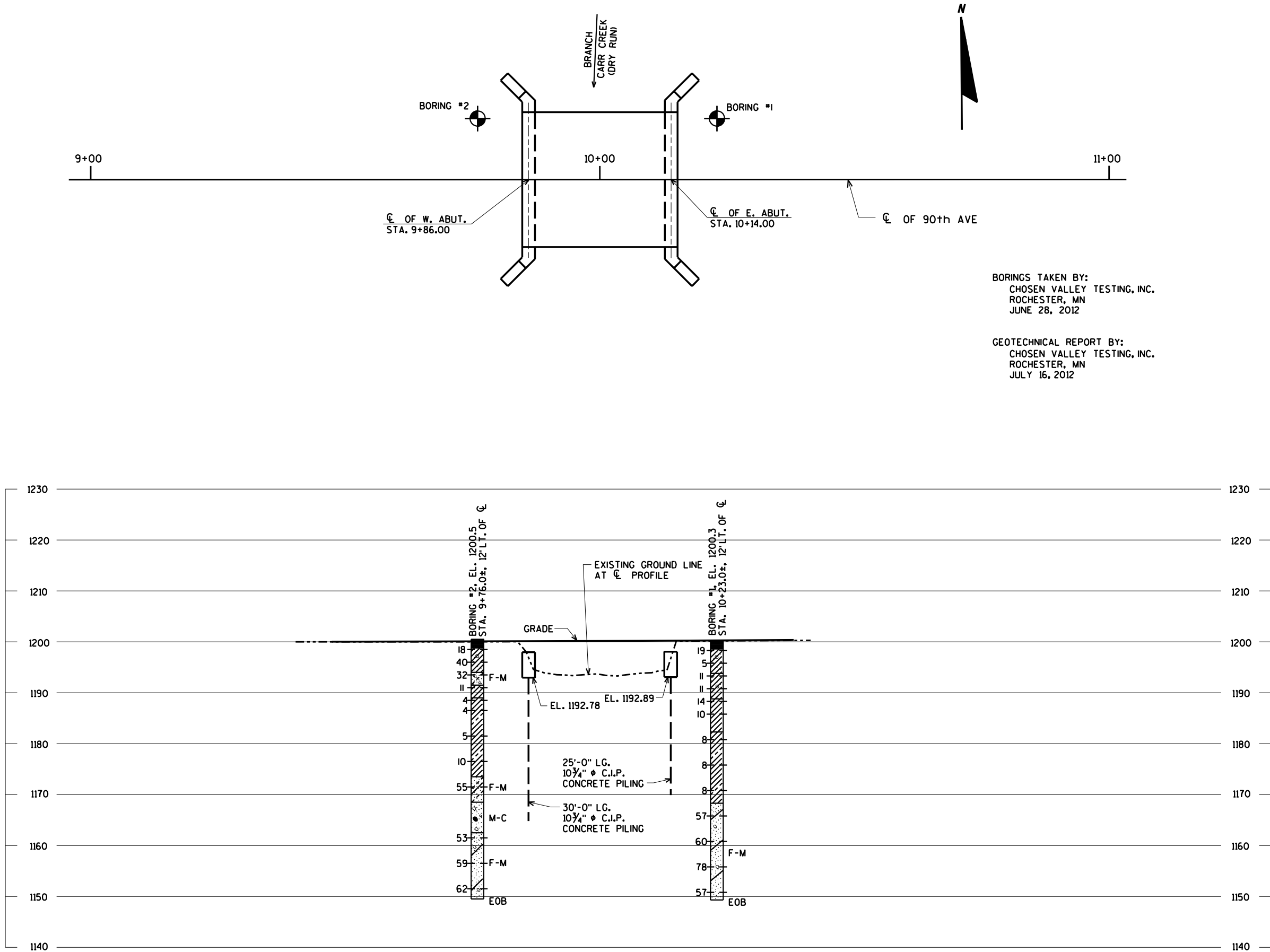
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-55-269			
DRAWN BY KAZ		PLANS CK'D. JCK/KLW	
QUANTITIES AND NOTES			SHEET 2 OF 11

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

\$PRNAME\$  
U:\42-0849.00 - St. Croix Co. Town of Baldwin 90th Ave±BRIDGE±420849 SL.dgn

8



BORINGS TAKEN BY:  
CHOSEN VALLEY TESTING, INC.  
ROCHESTER, MN  
JUNE 28, 2012

GEOTECHNICAL REPORT BY:  
CHOSEN VALLEY TESTING, INC.  
ROCHESTER, MN  
JULY 16, 2012

STATE PROJECT NUMBER

8947-00-70

ABBREVIATIONS

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

MATERIAL SYMBOLS

TOPSOIL SILT SANDSTONE  
SAND PEAT LIMESTONE  
GRAVEL CLAY IGNEOUS ROCK

LEGEND OF PROBING

PROBING NO.  
STA.  
ELEV.  
7 AVERAGE BLOWS PER FOOT  
REFUSAL 95/6

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

LEGEND OF BORING

ELEV. BORING NO.  
STA.

UNCONFINED STRENGTH 7.7  
BLOWS PER FT. USING 140# WT. FALLING 30"

WASH SAMPLE

SHELBY TUBE — S.T.

GROUND WATER ELEVATION

NO GROUND WATER OBSERVED ABOVE THIS ELEVATION

SANDY GRAVEL  
F. BOULDERS OR COBBLES  
SAND  
SILTY CLAY  
SO  
LIMESTONE

UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A Cased OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-55-269			
DRAWN BY		CLS	PLANS CK'D. JCK/KLW
SUBSURFACE EXPLORATION			SHEET 3 OF 11

\$PRFNAME\$  
U:±42-0849.00 - St. Croix Co. Town of Baldwin 90th Ave±BRIDGE±420849 wa.dgn

8947-00-70



- |  |      |               |                            |
|--|------|---------------|----------------------------|
|  |      |               |                            |
| NO.  | DATE | REVISION      | BY                         |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |               |                            |
| STRUCTURE B-55-269                                 |      |               |                            |
|  |      | DRAWN<br>BY   | CLS PLANS<br>CK'D. JCK/KLW |
| WEST<br>ABUTMENT                                   |      | SHEET 4 OF 11 |                            |

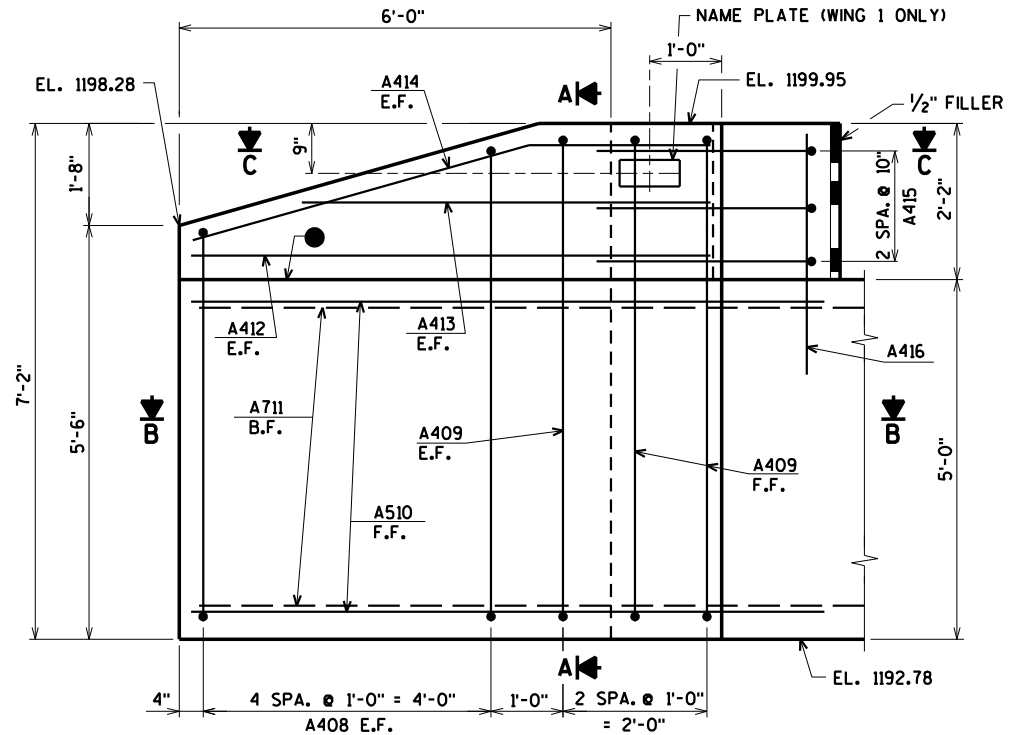
WEST  
ABUTMENT

SHEET 4 OF 11

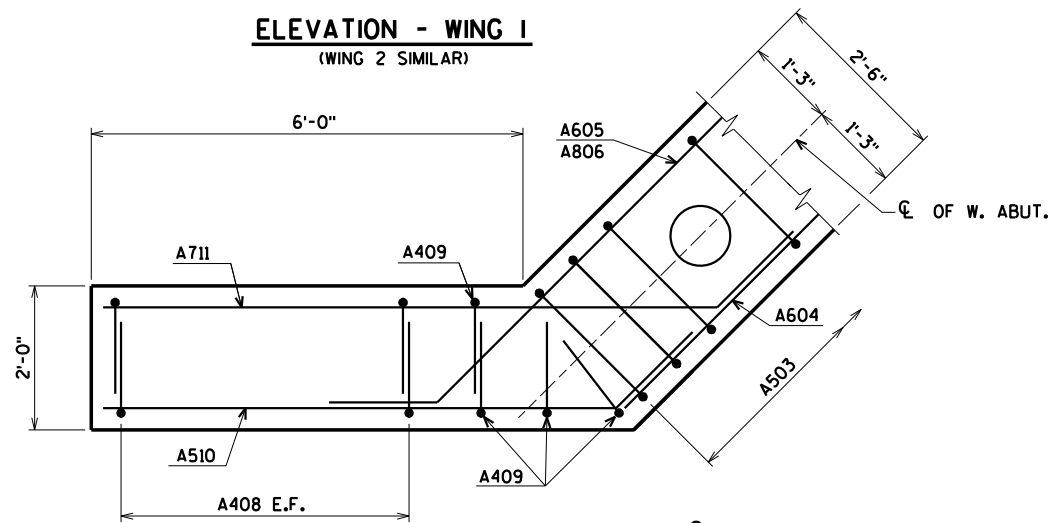
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STATE PROJECT NUMBER

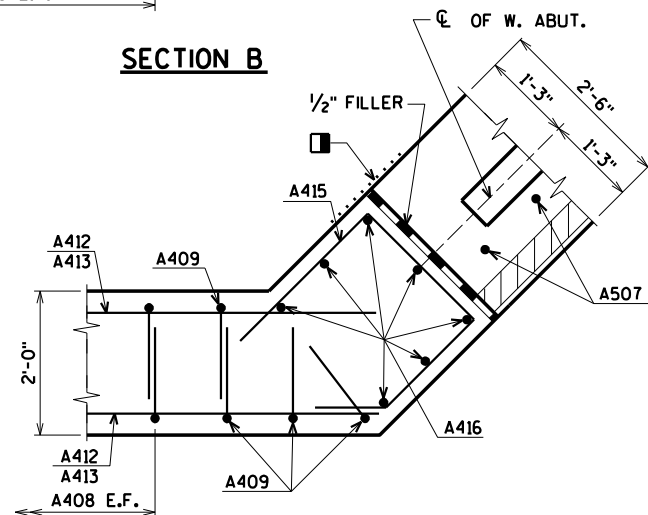
8947-00-70



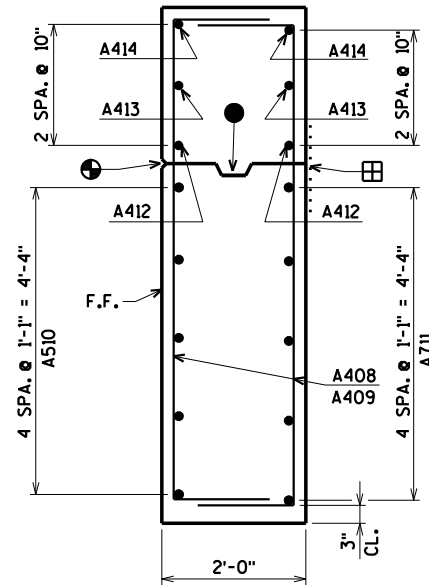
ELEVATION - WING 1  
(WING 2 SIMILAR)



SECTION B

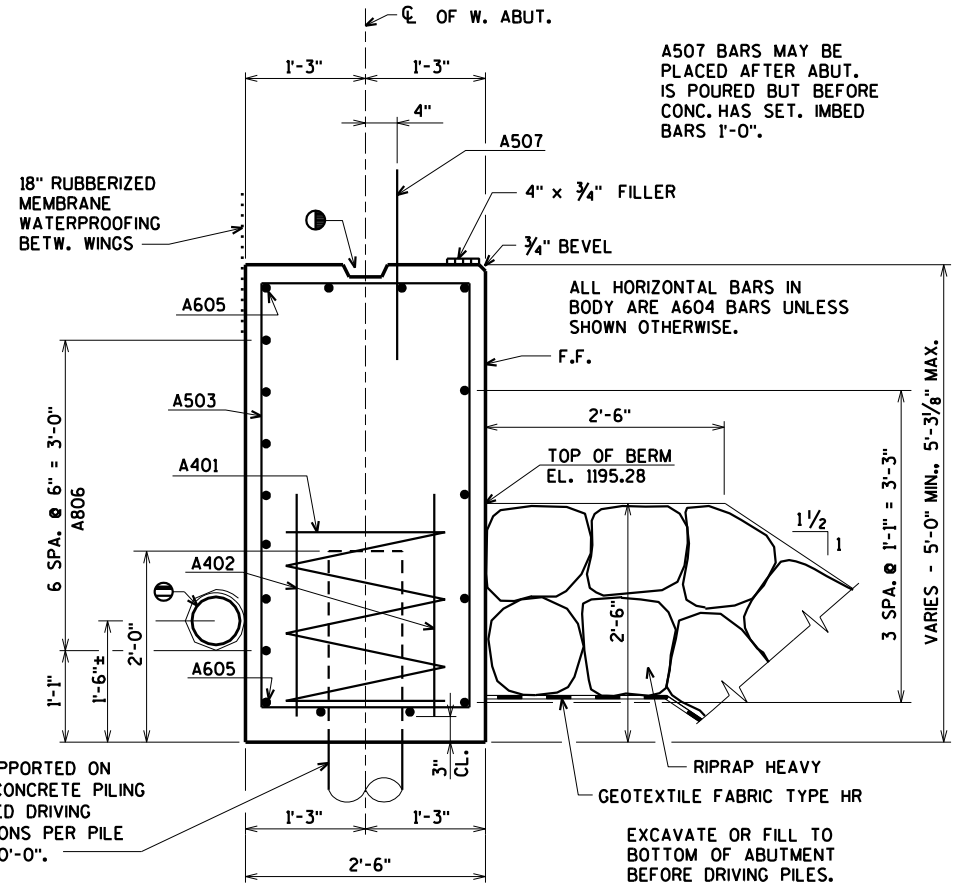


SECTION C



SECTION A

ABUTMENT TO BE SUPPORTED ON 10 3/4"  $\phi$  x 0.25" CIP CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 90 TONS PER PILE ESTIMATED LENGTH 30'-0".



TYPICAL SECTION THRU BODY

PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SDD REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN. RODENT SHIELD TO BE INCLUDED IN BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.

OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.

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

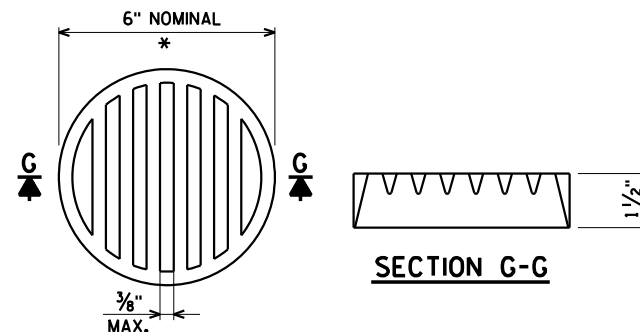
VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPlice DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE



\* 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 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 SHEET METAL SCREWS.

RODENT SHIELD DETAIL

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-55-269			
DRAWN BY		CLS	PLANS CK'D, JCK/KLW
WEST ABUTMENT WING DETAILS			SHEET 5 OF 11

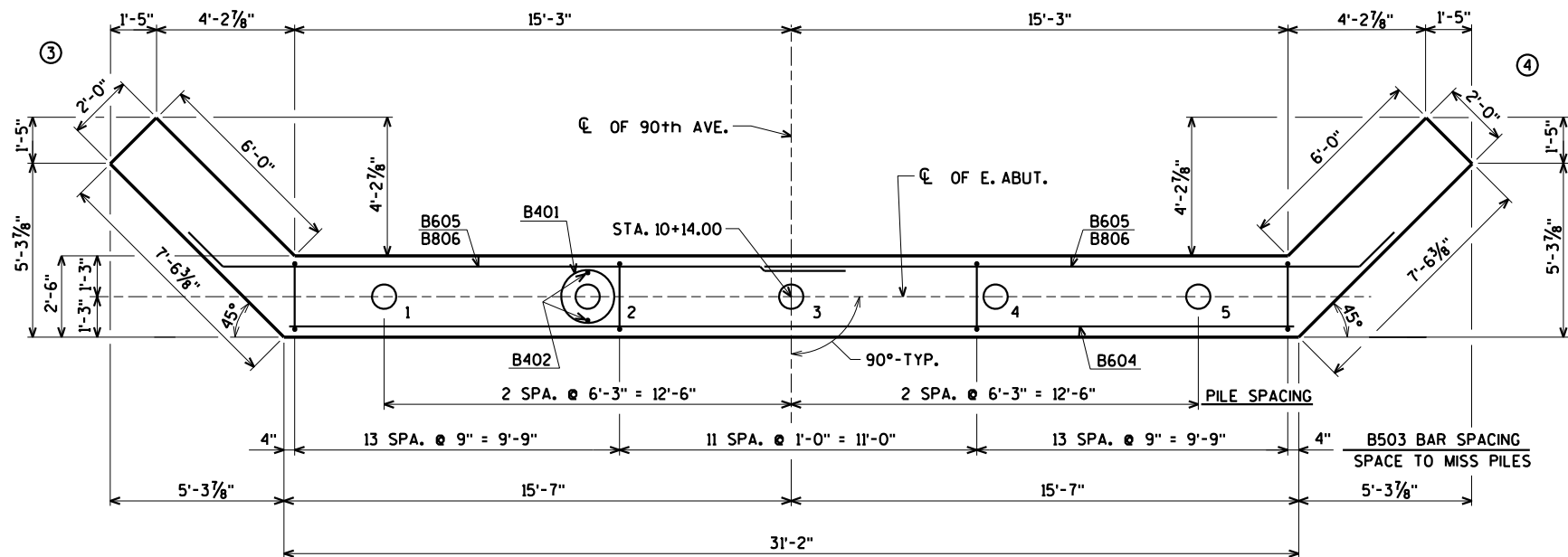
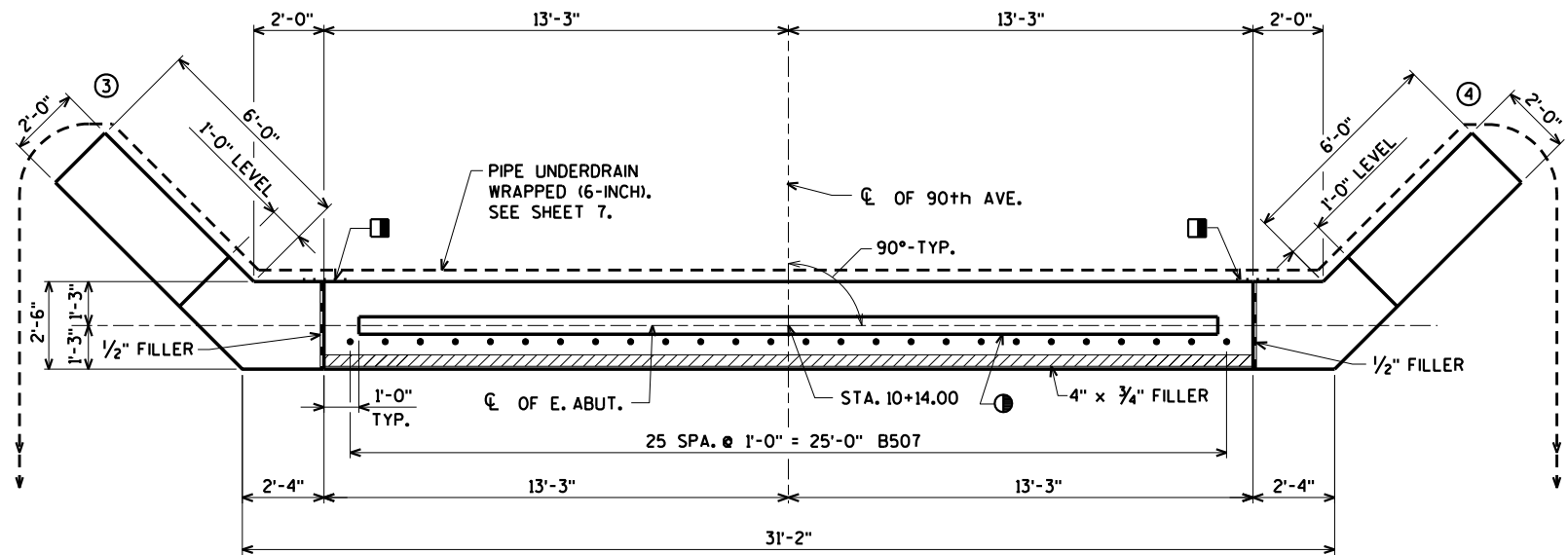
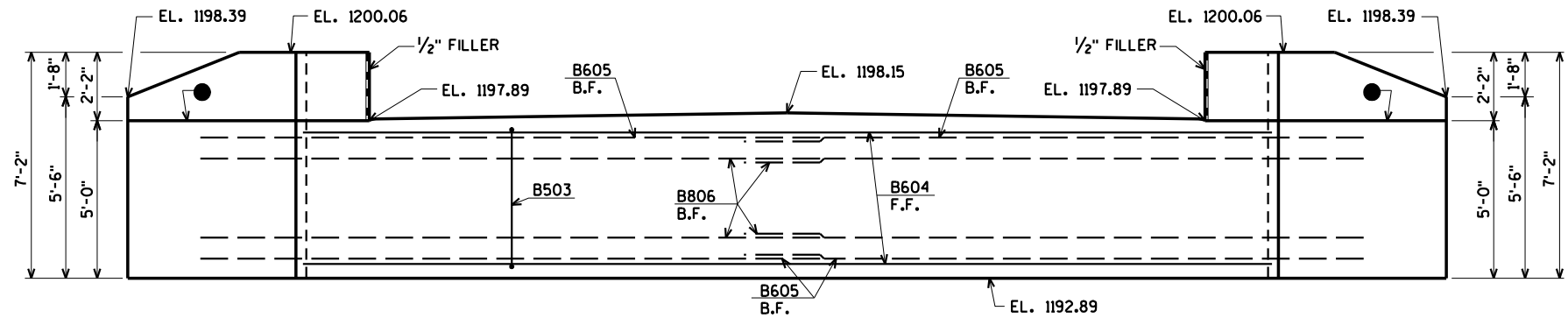


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NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)

STATE PROJECT NUMBER

8947-00-70



- OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.
  - ① KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".
  - VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.
- FOR PILE SPLICE DETAIL SEE SHEET 2.
- B.F. DENOTES BACK FACE  
F.F. DENOTES FRONT FACE

8

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-55-269			
DRAWN BY		CLS	PLANS CK'D, JCK/KLW
EAST ABUTMENT			SHEET 6 OF 11

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



THE RODENT SHIELD SHALL BE 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 SHEET METAL SCREWS.

### RODENT SHIELD DETAIL

- F.F. DENOTES FRONT FACE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-55-269			
		DRAWN BY	CLS PLANS CK'D. JCK/KL
EAST ABUTMENT WING DETAILS		SHEET 7 OF 1	

\$PRNAME\$  
U:\42-0849.00 - St. Croix Co. Town of Baldwin 90th Ave\BRIDGE\420849 wa.dgn

STATE PROJECT NUMBER

8947-00-70

BILL OF BARS - WEST ABUTMENT

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	2,000* UNCOATED 640* COATED
							LOCATION
A401		5	28-0	X			BODY @ PILES
A402		10	2-3				BODY @ PILES
A503		38	13-9	X			BODY VERT.
A604		9	31-1				BODY HORIZ. F.F.
A605		4	20-6	X			BODY HORIZ. B.F.
A806		14	21-7	X			BODY HORIZ. B.F.
A507	X	26	2-0				BODY DOWELS
A408	X	20	8-4	X		⊗	WINGS 1 & 2 VERT. E.F.
A409	X	8	9-3	X			WINGS 1 & 2 VERT. E.F.
A510	X	10	8-8	X			WINGS 1 & 2 HORIZ. F.F.
A711	X	10	10-3	X			WINGS 1 & 2 HORIZ. B.F.
A412	X	4	7-3				WINGS 1 & 2 HORIZ. E.F.
A413	X	4	5-2				WINGS 1 & 2 HORIZ. E.F.
A414	X	4	7-6	X			WINGS 1 & 2 DIAG. E.F.
A415	X	6	8-5	X			WINGS 1 & 2 HORIZ.
A416	X	14	3-6				WINGS 1 & 2 VERT.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

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

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

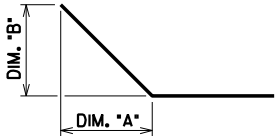
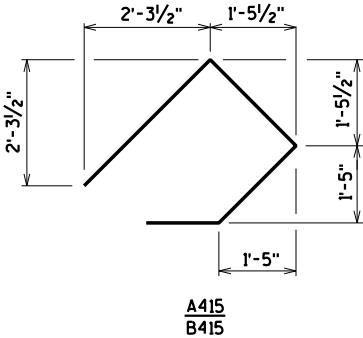
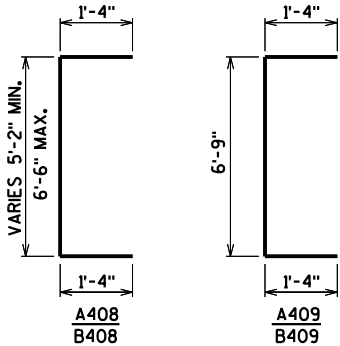
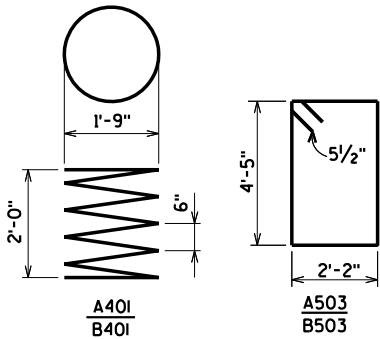
BAR SERIES TABLE

BAR MARK	NO REQ'D.	LENGTH
A408	4 SERIES OF 5	7'-8" TO 9'-0"
B408	4 SERIES OF 5	7'-8" TO 9'-0"

BUNDLE AND TAG EACH SERIES SEPARATELY.

BILL OF BARS - EAST ABUTMENT

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	2,000* UNCOATED 640* COATED
							LOCATION
B401		5	28-0	X			BODY @ PILES
B402		10	2-3				BODY @ PILES
B503		38	13-9	X			BODY VERT.
B604		9	31-1				BODY HORIZ. F.F.
B605		4	20-6	X			BODY HORIZ. B.F.
B806		14	21-7	X			BODY HORIZ. B.F.
B507	X	26	2-0				BODY DOWELS
B408	X	20	8-4	X		⊗	WINGS 3 & 4 VERT. E.F.
B409	X	8	9-3	X			WINGS 3 & 4 VERT. E.F.
B510	X	10	8-8	X			WINGS 3 & 4 HORIZ. F.F.
B711	X	10	10-3	X			WINGS 3 & 4 HORIZ. B.F.
B412	X	4	7-3				WINGS 3 & 4 HORIZ. E.F.
B413	X	4	5-2				WINGS 3 & 4 HORIZ. E.F.
B414	X	4	7-6	X			WINGS 3 & 4 DIAG. E.F.
B415	X	6	8-5	X			WINGS 3 & 4 HORIZ.
B416	X	14	3-6				WINGS 3 & 4 VERT.



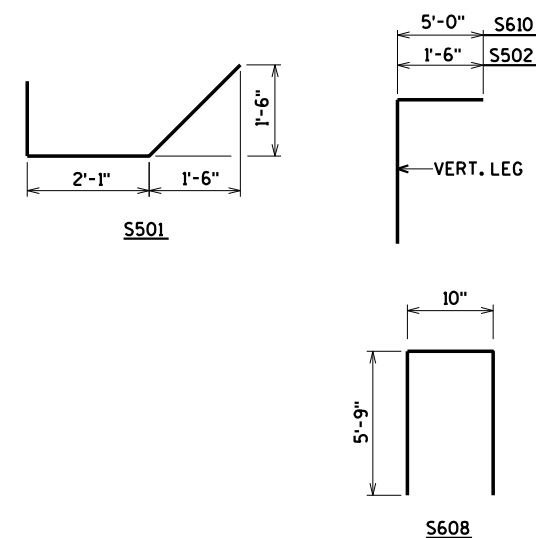
BAR NO.	DIM. 'A'	DIM. 'B'
A605	1'-0 3/4"	1'-0 3/4"
A806	1'-0 3/4"	1'-0 3/4"
A510	1'-0 3/4"	1'-0 3/4"
A711	1'-0 3/4"	1'-0 3/4"
A414	4'-10"	1'-7"
B605	1'-0 3/4"	1'-0 3/4"
B806	1'-0 3/4"	1'-0 3/4"
B510	1'-0 3/4"	1'-0 3/4"
B711	1'-0 3/4"	1'-0 3/4"
B414	4'-10"	1'-7"



### CROSS SECTION THRU ROADWAY

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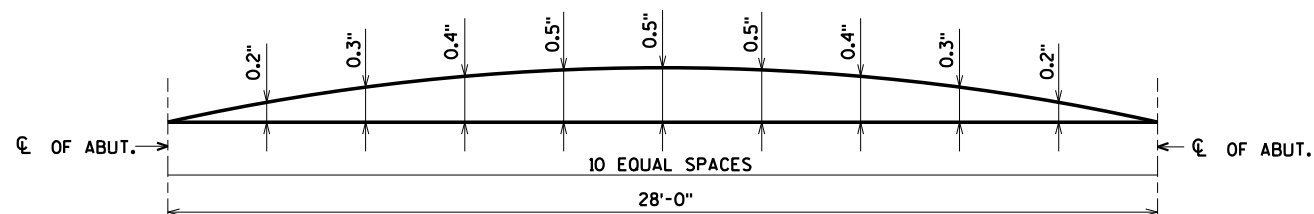
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



## PLAN



### PART LONGITUDINAL SECTION



### CAMBER DIAGRAM

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

### TOP OF DECK ELEVATIONS

LOCATION	€ OF W. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	€ OF E. ABUT.
N. EDGE OF SLAB	1199.95	1199.96	1199.97	1199.98	1199.99	1200.00	1200.01	1200.02	1200.03	1200.05	1200.06
€ OF STRUCTURE	1200.21	1200.22	1200.23	1200.24	1200.25	1200.26	1200.28	1200.29	1200.30	1200.31	1200.32
S. EDGE OF SLAB	1199.95	1199.96	1199.97	1199.98	1199.99	1200.00	1200.01	1200.02	1200.03	1200.05	1200.06

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-55-269			
		DRAWN BY	CLS PLANS CK'D. JCK/KL
SUPERSTRUCTURE DETAILS		SHEET 10 OF 11	

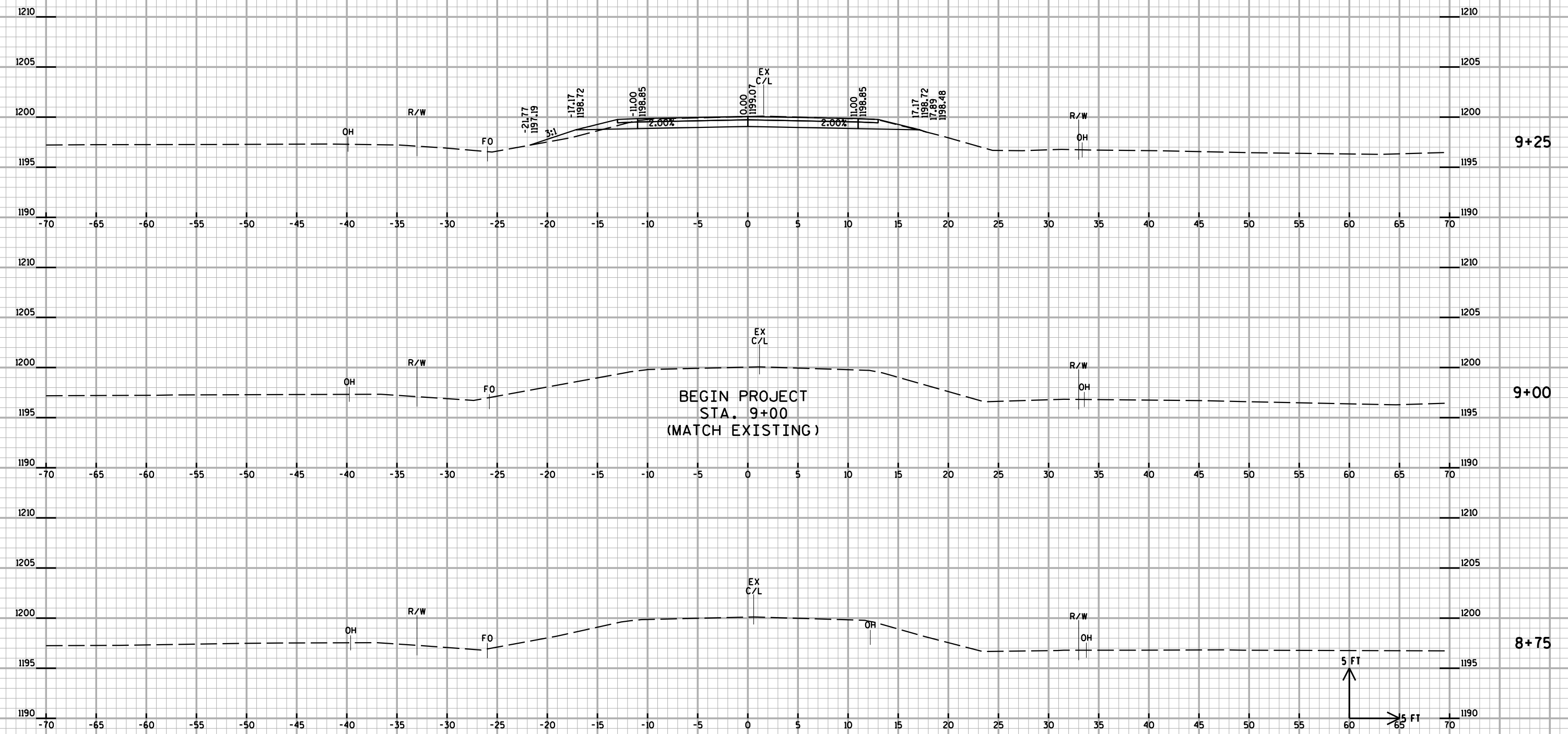
- ① W6 x 25 WITH  $1\frac{1}{8}$ " x  $1\frac{1}{2}$ " HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE  $1\frac{1}{4}$ " x  $11\frac{3}{4}$ " x 1'-8" WITH  $1\frac{1}{8}$ " x  $1\frac{1}{8}$ " SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.
- ③ ASTM A449 -  $1\frac{1}{8}$ " 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'-3" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10'-4" LONG AT ALL OTHER LOCATIONS.~~ (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)
- ④  $\frac{5}{8}$ " x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH  $1\frac{3}{8}$ " DIA. HOLES FOR ANCHOR BOLTS NO. 3
- ⑤ TS 5 x 4 x .025 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑤A TS 5 x 5 x .025 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑥  $\frac{7}{8}$ " DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT,  $\frac{3}{8}$ " x  $1\frac{5}{8}$ " x  $1\frac{5}{8}$ " WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
- ⑦  $\frac{1}{2}$ " THK. BACK-UP PLATE WITH 2 -  $\frac{7}{8}$ " x  $1\frac{1}{2}$ " 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  $\frac{7}{8}$ " DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
- ⑨ SPLICE SLEEVE FABRICATED FROM  $\frac{1}{4}$ " PLATE. PROVIDE "SLIDING FIT".
- ⑩  $\frac{3}{8}$ " x  $3\frac{5}{8}$ " x 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- ⑩A  $\frac{3}{8}$ " x  $2\frac{5}{8}$ " x 2'-4" PLATE USED IN NO. 5.  $\frac{3}{8}$ " x  $3\frac{5}{8}$ " x 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
- ⑪  ~~$\frac{7}{8}$ "  $\phi$  A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE  $1\frac{1}{2}$ " x  $1\frac{1}{4}$ " LONGIT. SLOTTED HOLES AT FIELD JOINTS AND  $1\frac{1}{2}$ " x  $2\frac{1}{4}$ " MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.~~
- ⑫  $\frac{7}{8}$ " DIA. x  $1\frac{1}{2}$ " LONG THREADED SHOP WELDED STUDS (2 REQ'D).
- ⑬  $\frac{3}{8}$ " 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  $\frac{7}{8}$ " DIA. x 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
- ⑮ 1"  $\phi$  HOLES IN TUBES NO. 5A FOR  $\frac{7}{8}$ " DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (T1-4).

**3433 Oakwood Hills Parkway**  
**Eau Claire, WI 54701**  
**[www.AyresAssociates.com](http://www.AyresAssociates.com)**

SHEET 11 OF 11



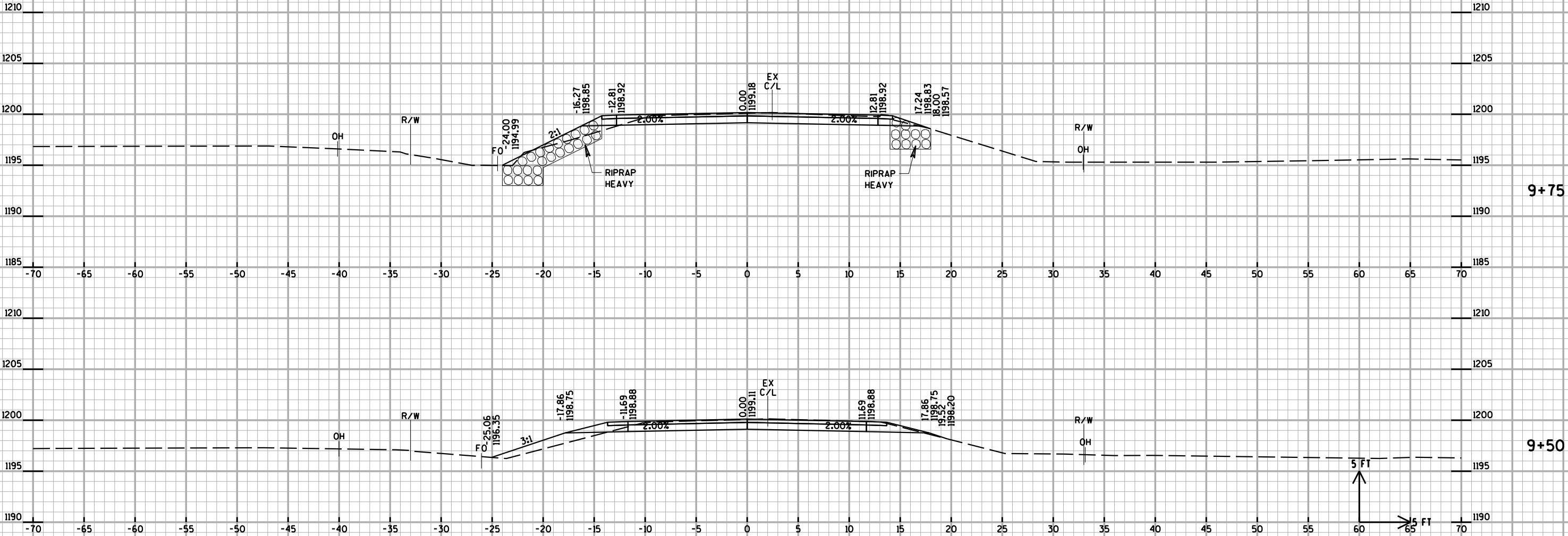


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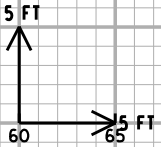
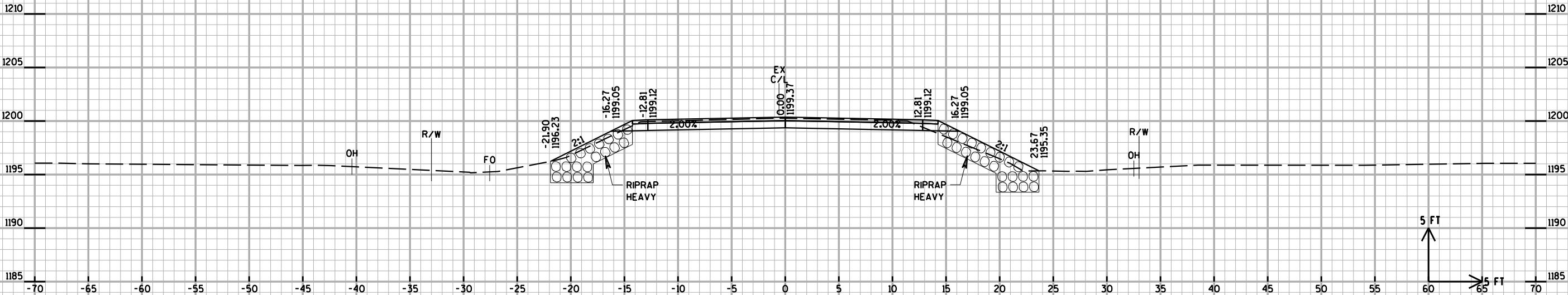
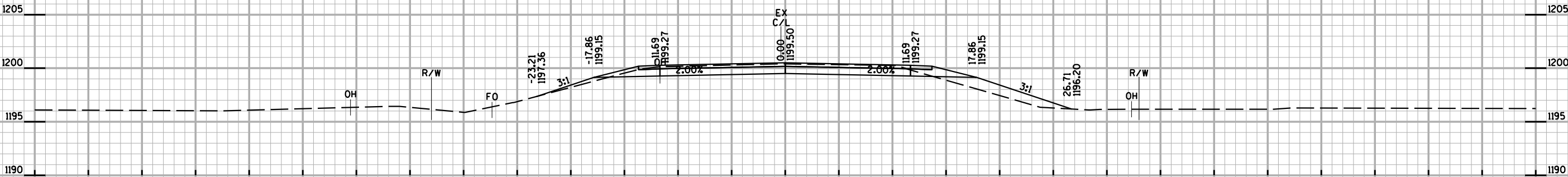
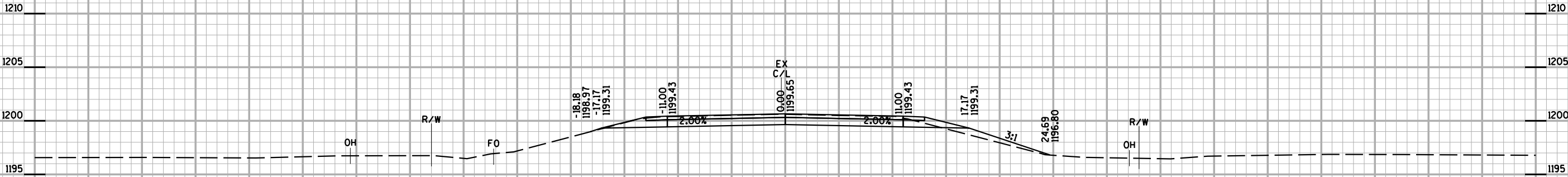
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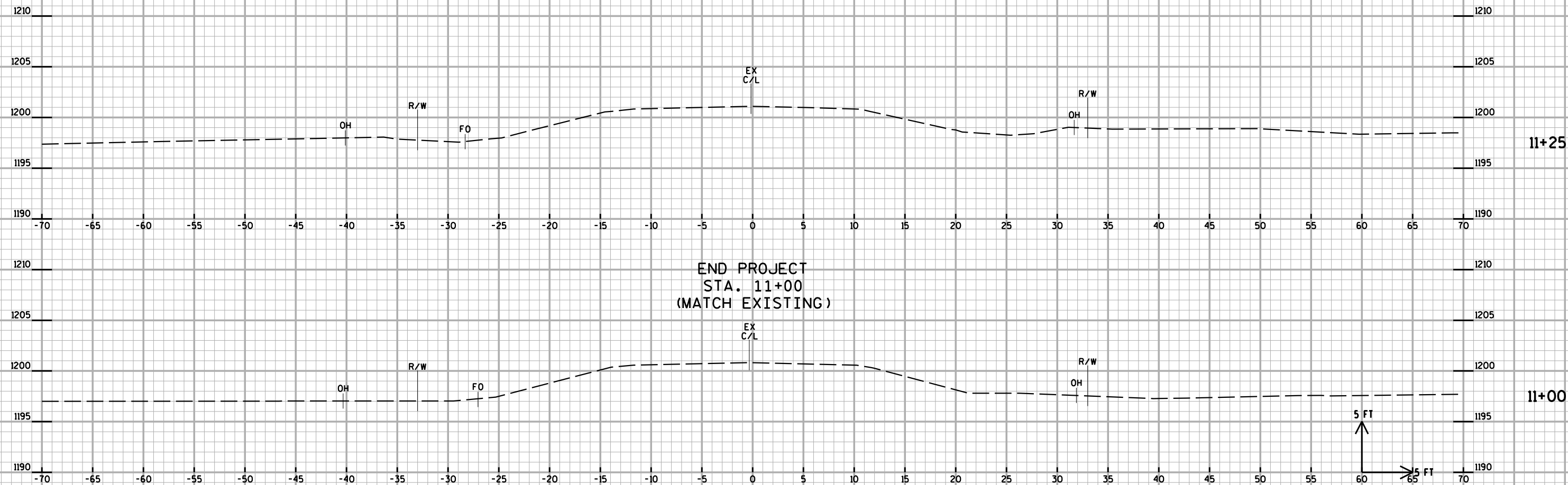
STRUCTURE B-55-269



STA. 10+25 TO 10+75  
FOR INFORMATION ONLY



STA. 11+00 TO 11+25  
FOR INFORMATION ONLY



PROJECT NO: 8947-00-70

HWY: 90TH AVE

COUNTY: ST. CROIX

CROSS SECTIONS

SHEET

E

FILE NAME : U:\42-0849.00 - St. Croix Co. Town of Baldwin 90th Ave\Inroads\420849\_xs.dgn

PLOT DATE : 6/10/2013

PLOT BY : AYRES-EC

PLOT NAME :

PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

## Notes



## *Wisconsin Department of Transportation*

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