

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1630-00-71		

**STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION**

PLAN OF PROPOSED IMPROVEMENT

**GALESVILLE - WHITEHALL**

CULVERTS B-61-0290 & B-61-0289

**USH 53**

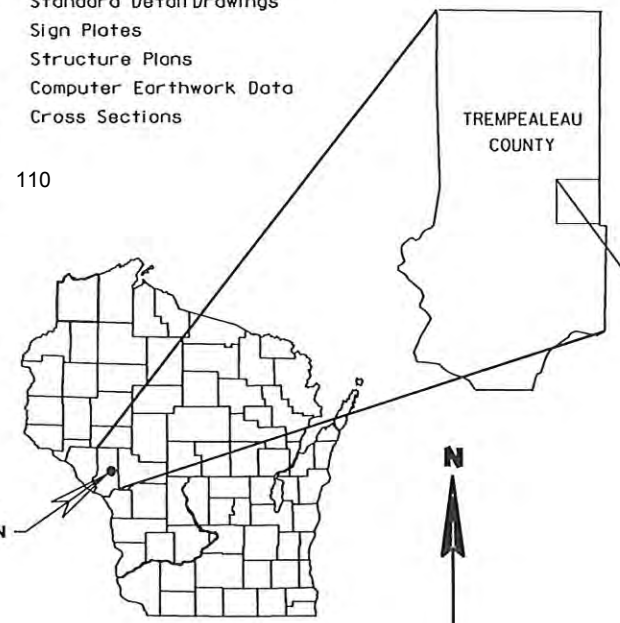
**TREMPEALEAU COUNTY**

STATE PROJECT NUMBER  
**1630-00-71**

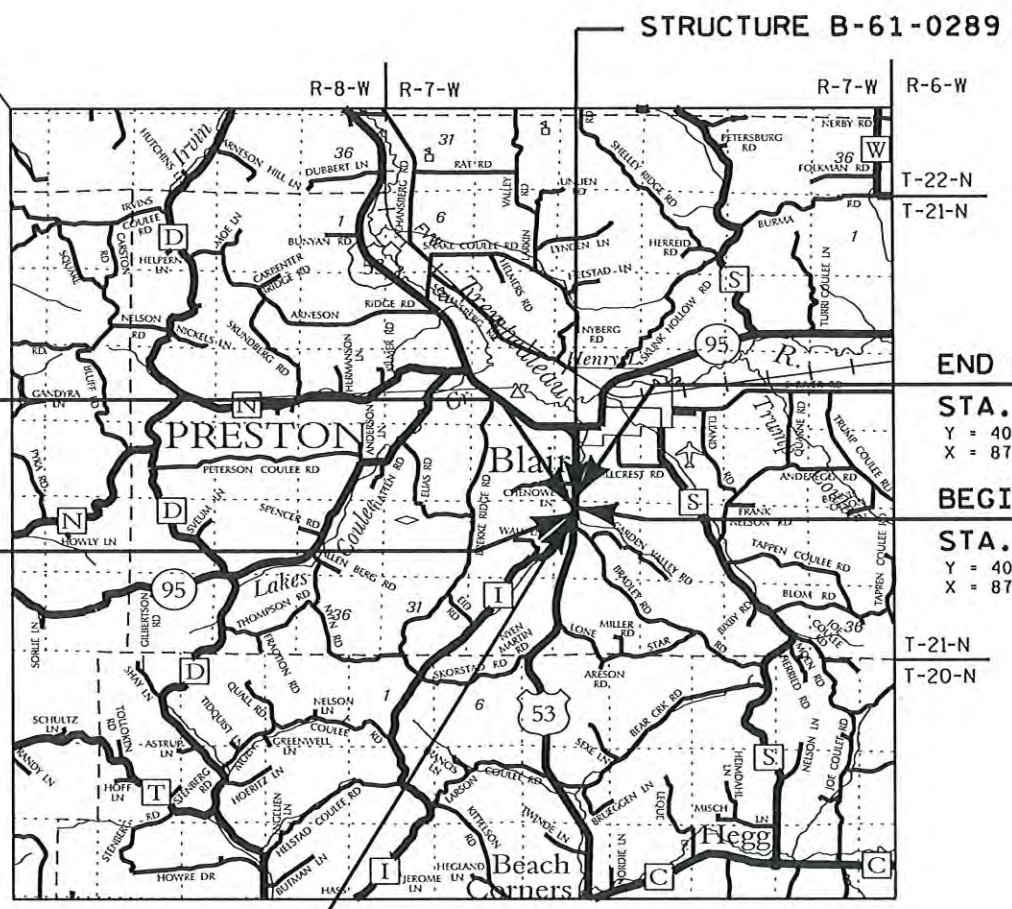
APRIL 2022  
ORDER OF SHEETS

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 = 110



31



**DESIGN DESIGNATION**

A.A.D.T. (2022)	=	4,100
A.A.D.T. (2042)	=	4,600
D.H.V.	=	460
D.	=	60/40
T.	=	25%
DESIGN SPEED	=	60 MPH
ESALS	=	2,000,000

**END PROJECT**

**STA. 15+75**  
Y = 405855.30  
X = 875735.00

**BEGIN PROJECT**

**STA. 12+50**  
Y = 405530.51  
X = 875723.33

**END PROJECT**

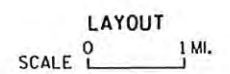
**STA. 23+50**  
Y = 406629.75  
X = 875764.12

**BEGIN PROJECT**

**STA. 22+00**  
Y = 406479.87  
X = 875758.12

**CONVENTIONAL SYMBOLS PLAN**

<b>CORPORATE LIMITS</b>		<b>PROFILE</b>	
<b>PROPERTY LINE</b>		<b>GRADE LINE</b>	
<b>LOT LINE</b>		<b>ORIGINAL GROUND</b>	
<b>LIMITED HIGHWAY EASEMENT</b>		<b>MARSH OR ROCK PROFILE</b>	
<b>EXISTING RIGHT OF WAY</b>		<b>(To be noted as such)</b>	
<b>PROPOSED OR NEW R/W LINE</b>		<b>SPECIAL DITCH</b>	
<b>SLOPE INTERCEPT</b>		<b>GRADE ELEVATION</b>	
<b>REFERENCE LINE</b>		<b>CULVERT (Profile View)</b>	
<b>EXISTING CULVERT</b>		<b>UTILITIES</b>	
<b>PROPOSED CULVERT</b>		<b>OVERHEAD</b>	
<b>(Box or Pipe)</b>		<b>ELECTRIC</b>	
<b>COMBUSTIBLE FLUIDS</b>		<b>FIBER OPTIC</b>	
		<b>GAS</b>	
<b>HIGH VOLTAGE</b>		<b>SANITARY SEWER</b>	
		<b>STORM SEWER</b>	
<b>MARSH AREA</b>		<b>TELEPHONE</b>	
		<b>WATER</b>	
<b>WOODED OR SHRUB AREA</b>		<b>UTILITY PEDESTAL</b>	
		<b>POWER POLE</b>	
		<b>TELEPHONE POLE</b>	



TOTAL NET LENGTH OF CENTERLINE = 0.062 MI. (C-61-80 SOUTH SITE)  
TOTAL NET LENGTH OF CENTERLINE = 0.028 MI. (B-61-289 NORTH SITE)

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), TREMPEALEAU COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

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



DATE 10/12/2021

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	AYRES ASSOCIATES INC
Designer	AYRES ASSOCIATES INC
Project Manager	JEFFREY SAXBY, PE
Regional Examiner	TOU YANG, PE
Regional Supervisor	TYLER RONGSTAD, PE

APPROVED FOR THE DEPARTMENT  
DATE: 10/27/21 *[Signature]*  
Signature

**E**

**GENERAL NOTES**

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

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

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

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

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).

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

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

**UTILITIES**

CENTURYLINK  
TELEPHONE  
333 NORTH FRONT ST  
LA CROSSE, WI 54601  
ATTN: BRIAN STELPLUGH  
608-615-4136  
608-780-1238 (mobile)  
brian.stelplugh@lumen.com

RIVERLAND ENERGY COOPERATIVE  
ELECTRIC  
N28988 STATE ROAD 93  
P.O. BOX 277  
ARCADIA, WI 54612  
ATTN: TIM HOLTAN  
608-323-3381  
608-797-0102 (mobile)  
tholtan@riverlandenergy.com

TRI-COUNTY COMMUNICATIONS COOPERATIVE  
COMMUNICATIONS LINE  
417 5TH AVENUE NORTH  
PO BOX 578  
STRUM, WI 54770  
ATTN: BUCK WEBB  
715-695-2691  
bwebb@tccpro.net

CHARTER COMMUNICATIONS  
COMMUNICATIONS LINE  
1228 12TH AVENUE S.  
ONALASKA, WI 54650  
ATTN: PERRY McCLELLAN  
608-317-6213 (mobile)  
Perry.McClellan@charter.com



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

**WISCONSIN DEPARTMENT OF  
NATURAL RESOURCES CONTACT:**

AMY LESIK  
1300 WEST CLAIREMONT AVENUE  
EAU CLAIRE, WI 54701  
715-495-1903  
amy.l.lesik@wisconsin.gov

**DESIGNER**

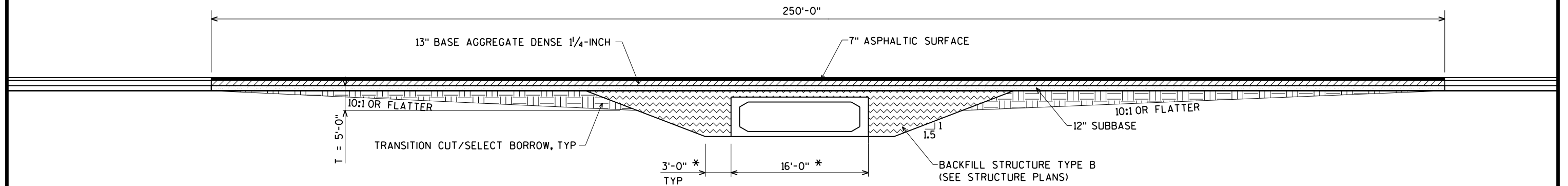
AYRES ASSOCIATES  
3433 OAKWOOD HILLS PARKWAY  
EAU CLAIRE, WI 54701  
ATTN: DANIEL N. SYDOW  
715-834-3161  
sydowd@AyresAssociates.com

**WISCONSIN DEPARTMENT  
OF TRANSPORTATION CONTACT:**

JEFFREY R. SAXBY  
WisDOT CONSULTANT PROJECT MANAGER  
902-380-2805  
jsaxby@sehinc.com







**BOX CULVERT TRANSITION CUT**

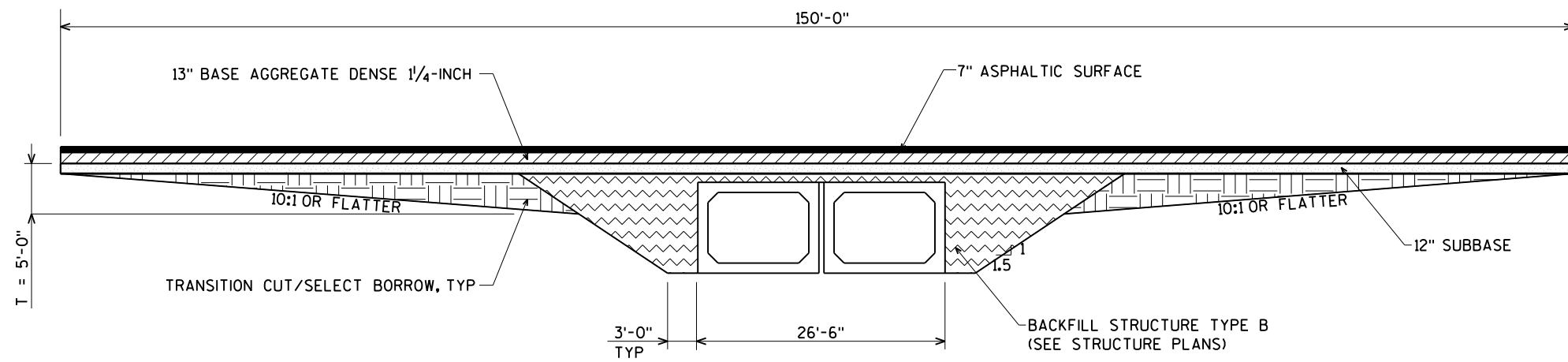
SOUTH CULVERT SITE - STA 13+00 - STA 15+50

\* NORMAL TO  $\phi$  OF CULVERT

TRANSITION CUT DEPTH (T) = THE LESSER OF THE DEPTH TO CENTER OF BOX CULVERT OR 5'-0".  
DO NOT EXTEND TRANSITION CUT BELOW HORIZONTAL CENTER OF BOX CULVERT.

TRANSITION CUT IS PAID FOR AS EXCAVATION COMMON.  
TRANSITION CUT WIDTH IS FROM SUBGRADE SHOULDER POINT TO SUBGRADE SHOULDER POINT.  
BACKFILL THE TRANSITION CUT AREA WITH SELECT BORROW.





**BOX CULVERT TRANSITION CUT**

NORTH CULVERT SITE - STA 22+00 - STA 23+50

TRANSITION CUT DEPTH (T) = THE LESSER OF THE DEPTH TO CENTER OF BOX CULVERT OR 5'-0".  
DO NOT EXTEND TRANSITION CUT BELOW HORIZONTAL CENTER OF BOX CULVERT.

TRANSITION CUT IS PAID FOR AS EXCAVATION COMMON.  
TRANSITION CUT WIDTH IS FROM SUBGRADE SHOULDER POINT TO SUBGRADE SHOULDER POINT.  
BACKFILL THE TRANSITION CUT AREA WITH SELECT BORROW.



**CURVE DATA**

P.I. STA. 2+37.81  
Δ=39°39'21" RT  
D=572°57'28"  
T=3.61'  
L=6.92'  
E=0.63'  
R=10.00'

PI 2+37.81  
Y = 405732.23  
X = 875654.74

PC 2+34.20  
Y = 405719.38  
X = 875656.94

PT 2+41.12  
Y = 405735.84  
X = 875654.87

PI 3+03.92  
Y = 405798.60  
X = 875657.08

BRANCH  
REYNOLDS COULEE  
CREEK

BM#1 (RR SPIKE IN PP)  
Y = 405373.26  
X = 875673.66

CP #2 (120D SPIKE)  
Y = 405676.11  
X = 875709.67

☉ OF TEMPORARY  
BYPASS CHANNEL

N02°01'00"E

☉ OF USH 53

PI 10+00.00

11+00

12+00

13+00

14+00

15+00

16+00

17+00

N02°08'24"E (ASPHALT)

N02°01'00"E

STRUCTURE B-61-0290

EXISTING STRUCTURE  
(C-61-830) TO BE REMOVED

BM#2 (CHIS. SO. ON WING)  
Y = 405650.18  
X = 875759.61

CP #3 (120D SPIKE)  
Y = 405964.50  
X = 875764.22

**BEGIN PROJECT**  
**STA. 12+50**  
Y = 405530.51  
X = 875723.33

**END PROJECT**  
**STA. 15+75**  
Y = 405855.30  
X = 875735.00

CP #1 (120D SPIKE)  
Y = 405272.74  
X = 875733.59

PC 0+60.06  
Y = 405591.25  
X = 875762.92

PT 0+63.02  
Y = 405593.83  
X = 875761.48

PI 0+61.55  
Y = 405592.64  
X = 875762.39

**ALIGNMENT CONTROLS**

**CURVE DATA**

P.I. STA. 0+61.55  
Δ=17°00'00" LT  
D=572°57'28"  
T=1.49'  
L=2.97'  
E=0.11'  
R=10.00'

PI 0+00.00  
Y = 405535.09  
X = 875751.94

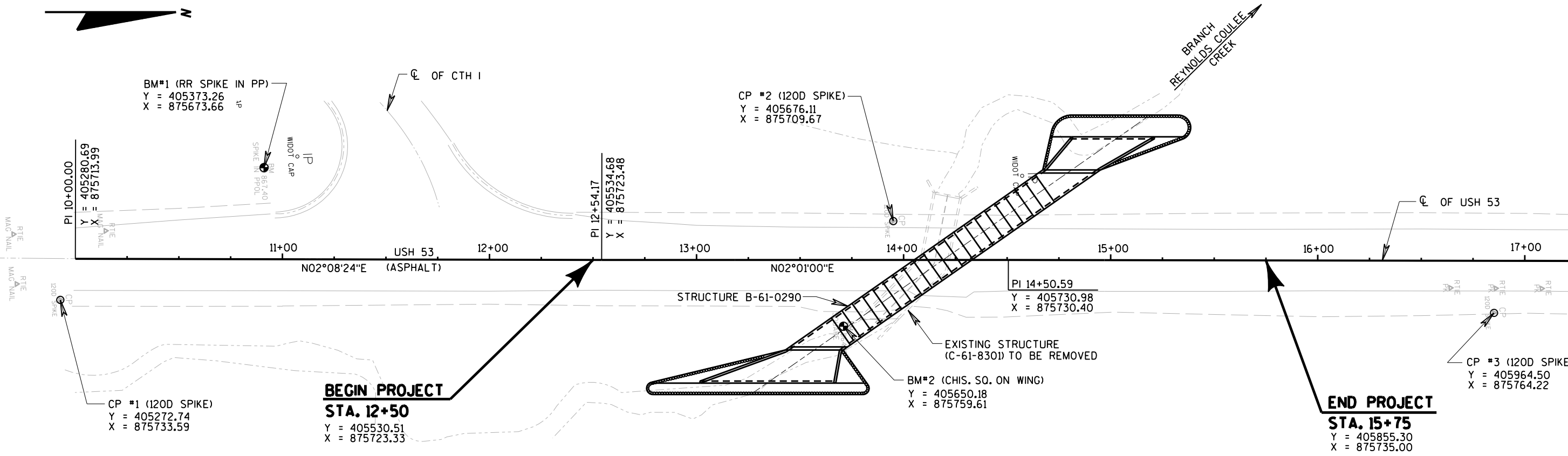
N20°38'21"W

N37°38'21"W

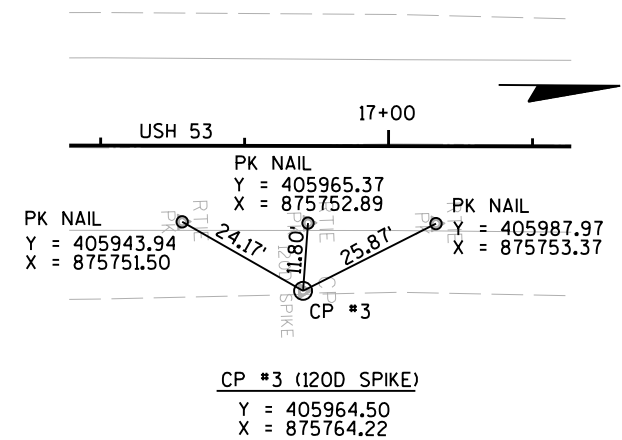
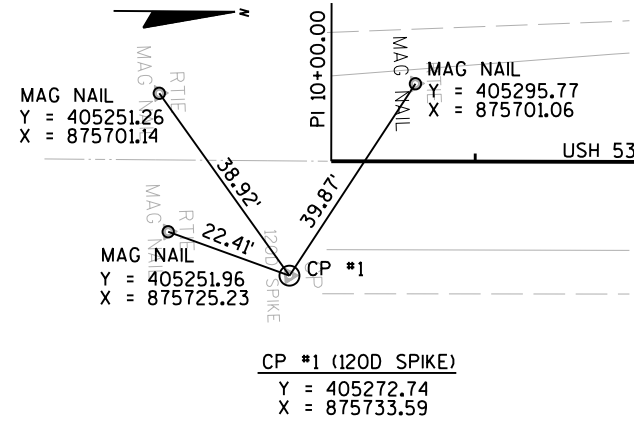
N02°01'00"E

N02°01'00"E

N02°01'00"E

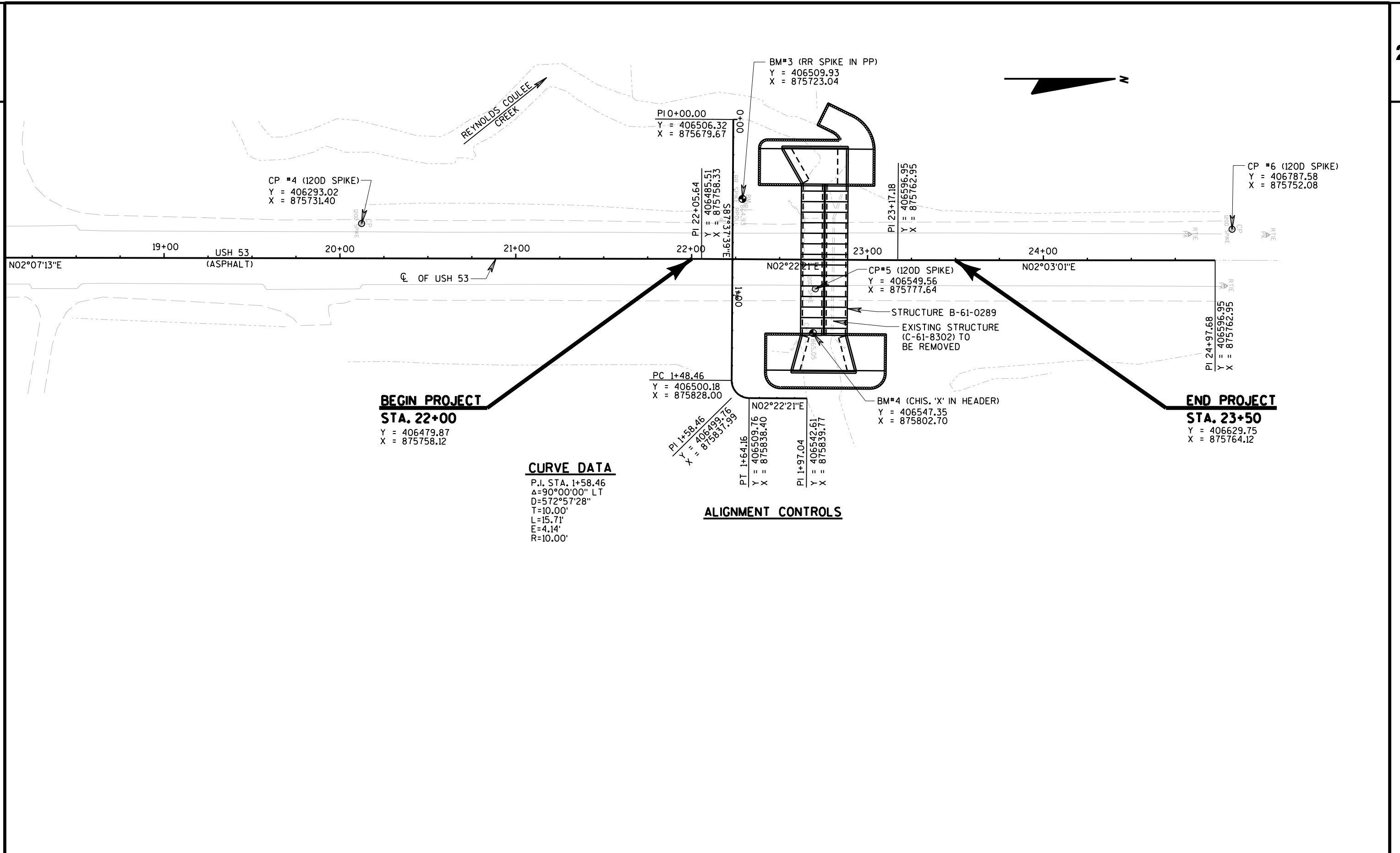


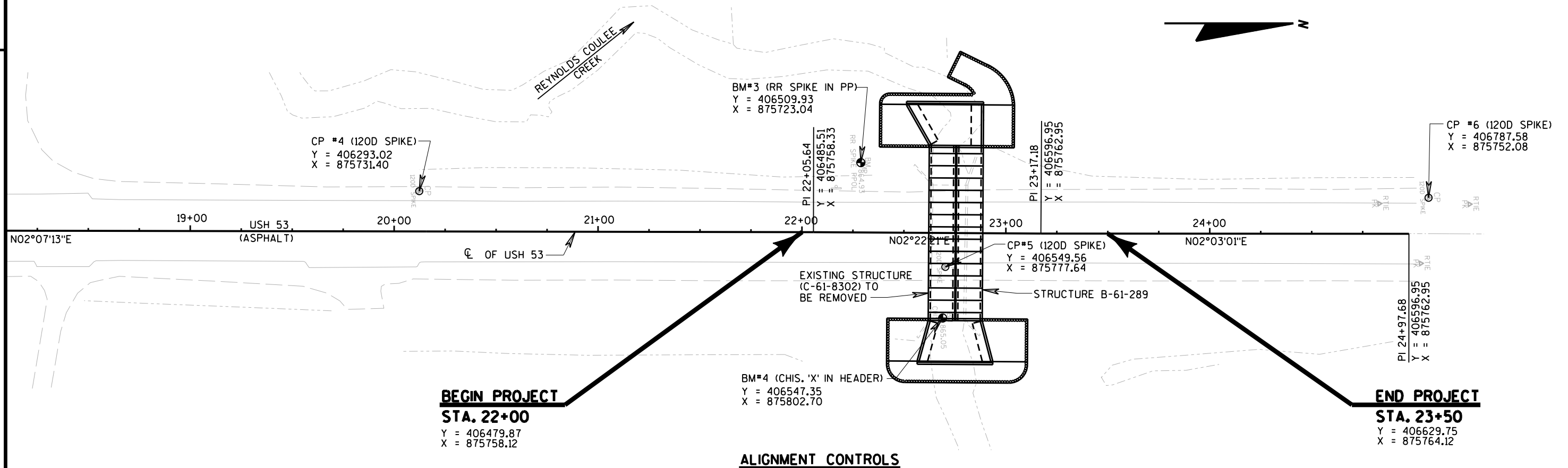
**ALIGNMENT CONTROLS**



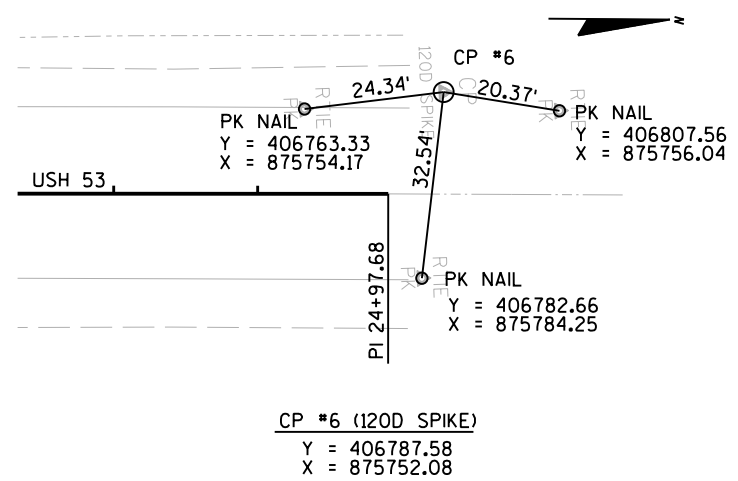
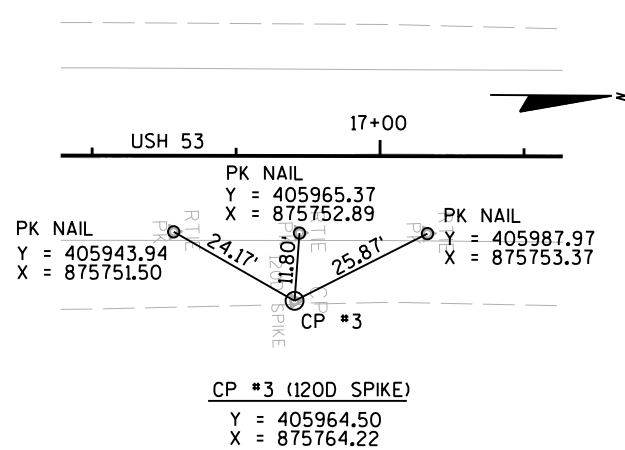
**ALIGNMENT TIES**

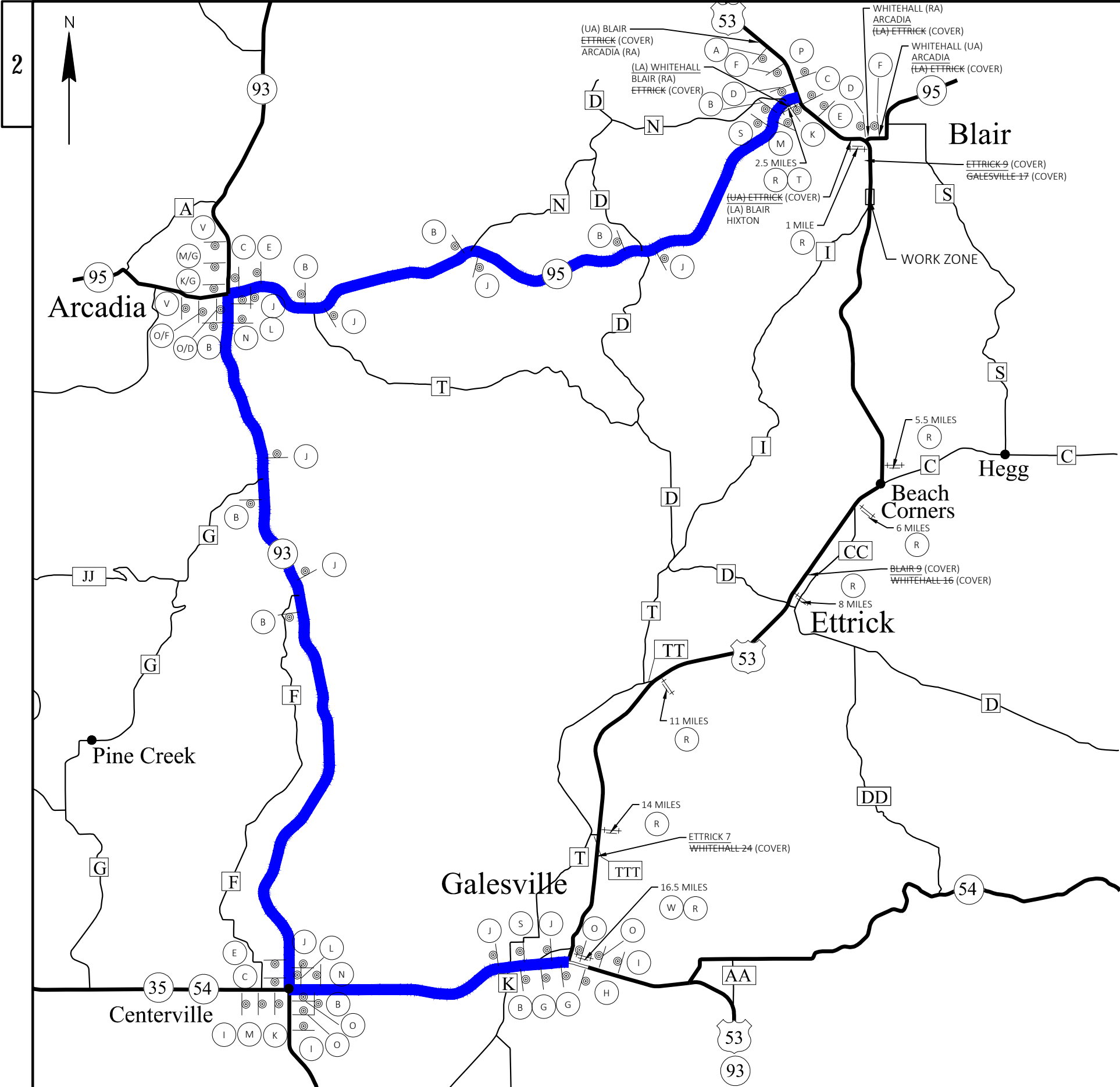






NOTE:  
FOR LOCATION, SEE ALIGNMENT CONTROLS SOUTH SITE





<b>DETOUR AHEAD</b> W20-2A	<b>DETOUR</b> M4-8 24"x12" <b>SOUTH</b> 53 M1-4 24"x24"	<b>DETOUR</b> M4-8 24"x12" <b>SOUTH</b> 53 M1-4 24"x24"	<b>DETOUR</b> M4-8 24"x12" <b>SOUTH</b> 53 M1-4 24"x24"	<b>DETOUR</b> M4-8 24"x12" <b>SOUTH</b> 53 M1-4 24"x24"	<b>DETOUR</b> M4-8 24"x12" <b>SOUTH</b> 53 M1-4 24"x24"	<b>DETOUR</b> M4-8 24"x12" <b>SOUTH</b> 53 M1-4 24"x24"	<b>END DETOUR</b> M4-8A 24"x18" <b>SOUTH</b> 53 M1-4 24"x24"
A	B	C	D	E	F	G	H
<b>DETOUR AHEAD</b> W20-2A	<b>DETOUR</b> M4-8 24"x12" <b>NORTH</b> 53 M1-4 24"x24"	<b>DETOUR</b> M4-8 24"x12" <b>NORTH</b> 53 M1-4 24"x24"	<b>DETOUR</b> M4-8 24"x12" <b>NORTH</b> 53 M1-4 24"x24"	<b>DETOUR</b> M4-8 24"x12" <b>NORTH</b> 53 M1-4 24"x24"	<b>DETOUR</b> M4-8 24"x12" <b>NORTH</b> 53 M1-4 24"x24"	<b>DETOUR</b> M4-8 24"x12" <b>NORTH</b> 53 M1-4 24"x24"	<b>END DETOUR</b> M4-8A 24"x18" <b>NORTH</b> 53 M1-4 24"x24"
I	J	K	L	M	N	O	P
<b>BRIDGE OUT XX MILES AHEAD LOCAL TRAFFIC ONLY</b> R11-3B 60"x30"	<b>DETOUR NEXT 30 MILES</b> G20-51 60"x24"	<b>DETOUR</b> M4-9R 30"x24"	<b>53</b> M1-4 24"x24"	<b>DETOUR AHEAD</b> W20-2A			
R	S	T	V	V			
<b>ROAD OPEN TO ETRICK</b> R10-61 60"x30"	W						

**TRAFFIC CONTROL NOTES:**

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

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.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE COVERED OR REMOVED AS NEEDED AND AS APPROVED BY THE ENGINEER. THERE IS AN UNDISTRIBUTED AMOUNT IN THE QUANTITIES FOR THESE SIGNS.

ALL SIGNS SHALL BE 48"x48" UNLESS NOTED BY THE ENGINEER.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND SHALL BE ORANGE.

FOR DETAILS NOT SHOWN SEE SDD "DETOUR SIGNING FOR MAINLINE CLOSURES" AND "BARRICADES AND SIGNS FOR MAINLINE, DETOUR, ON RAMP, OFF RAMP CLOSURES AND ADVANCED WIDTH RESTRICTION" FOR ADDITIONAL INFORMATION.



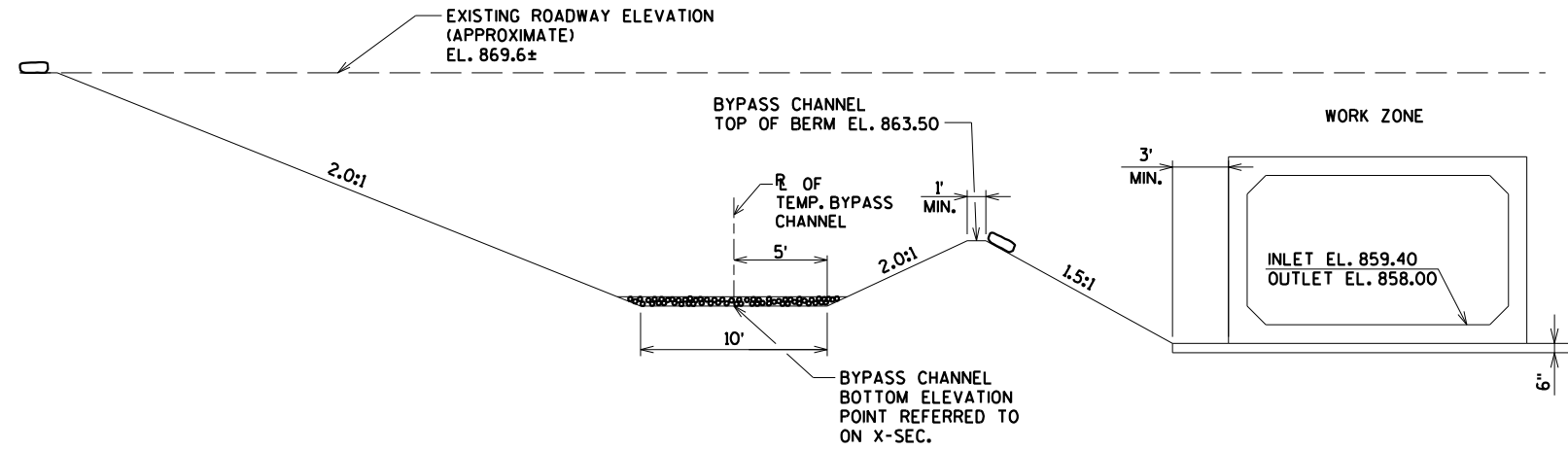
**NOTES:**

CONSTRUCT TEMPORARY BYPASS CHANNEL WITH MINIMUM BOTTOM WIDTH OF 10 FEET AND MAXIMUM SIDE SLOPES OF 2.0:1.

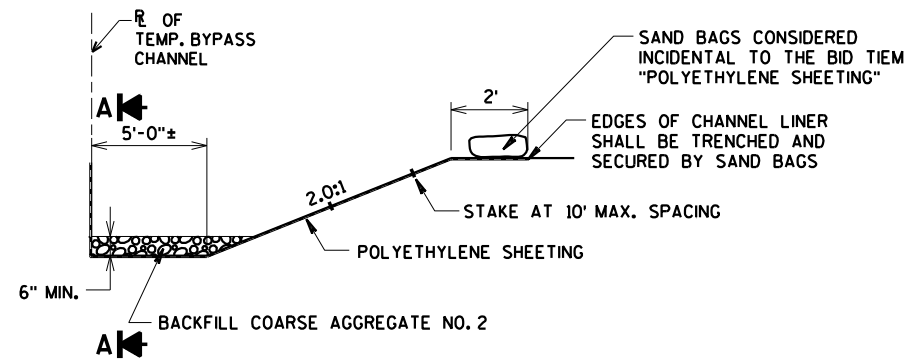
LINE CHANNEL AND SIDE SLOPES WITH POLYETHYLENE SHEETING WITH 3-FOOT MINIMUM OVERLAP PLACED FROM DISCHARGE END TO INLET END.

EDGES OF CHANNEL LINER SHALL BE TRENCHED AND SECURED WITH SAND BAGS. STAKE LINER ON SLOPES AT 10 FOOT MAXIMUM SPACING.

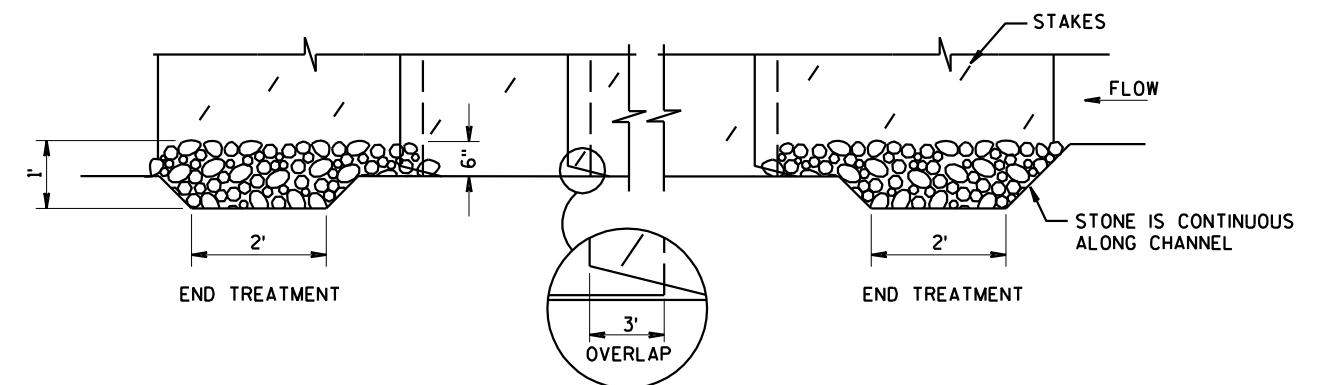
PLACE NO. 2 AGGREGATE ACROSS THE WIDTH OF THE CHANNEL BOTTOM



**TYPICAL SECTION OF TEMPORARY BYPASS CHANNEL**



**TYPICAL HALF SECTION OF TEMPORARY BYPASS CHANNEL**



**OVERLAP DETAIL - SECTION A**

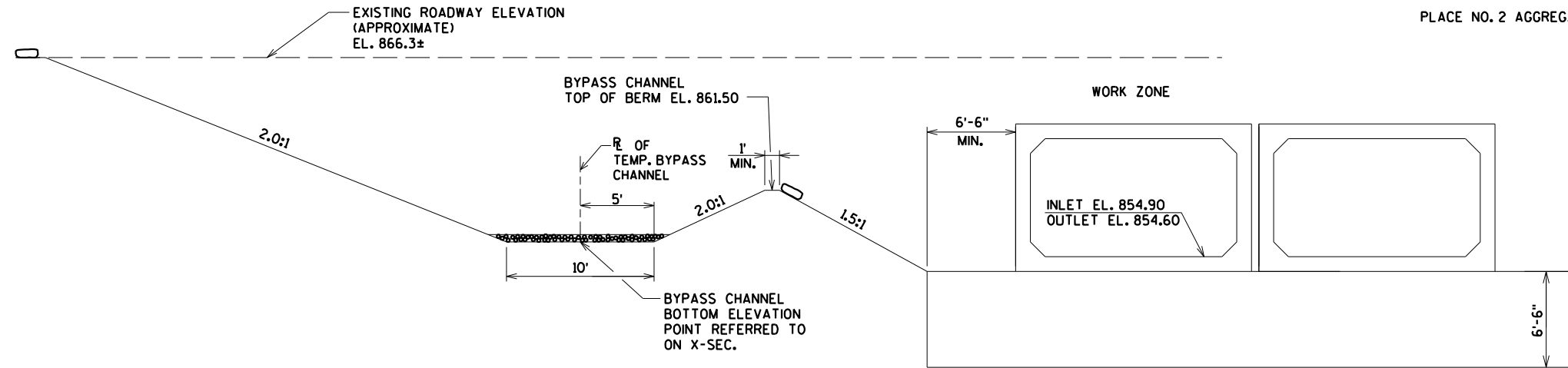
**NOTES:**

CONSTRUCT TEMPORARY BYPASS CHANNEL WITH MINIMUM BOTTOM WIDTH OF 10 FEET AND MAXIMUM SIDE SLOPES OF 2.0:1.

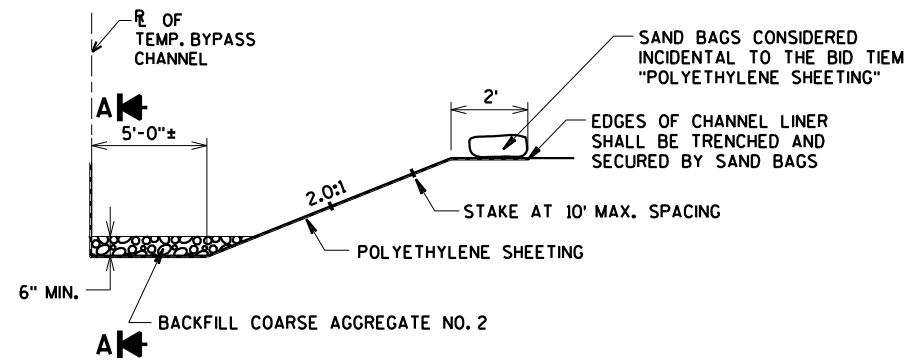
LINE CHANNEL AND SIDE SLOPES WITH POLYETHYLENE SHEETING WITH 3-FOOT MINIMUM OVERLAP PLACED FROM DISCHARGE END TO INLET END.

EDGES OF CHANNEL LINER SHALL BE TRENCHED AND SECURED WITH SAND BAGS. STAKE LINER ON SLOPES AT 10 FOOT MAXIMUM SPACING.

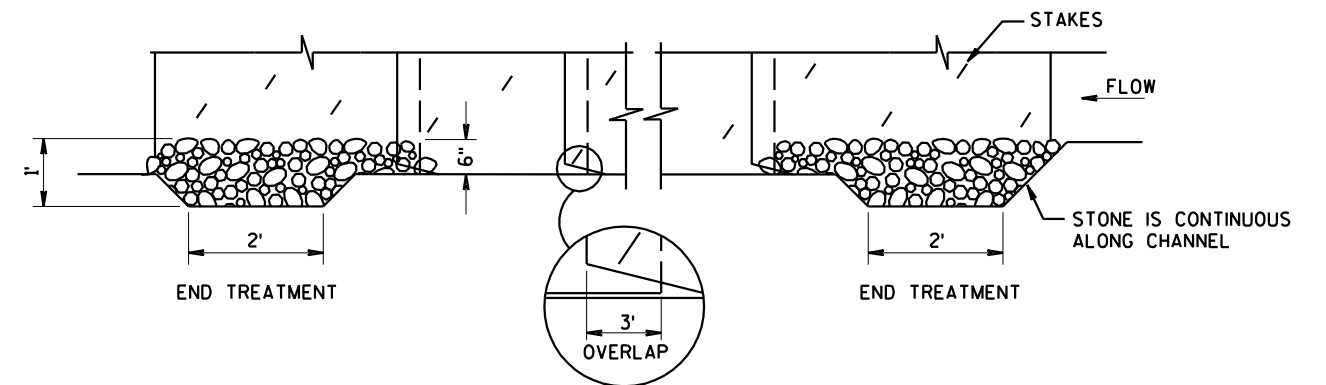
PLACE NO. 2 AGGREGATE ACROSS THE WIDTH OF THE CHANNEL BOTTOM



**TYPICAL SECTION OF TEMPORARY BYPASS CHANNEL**



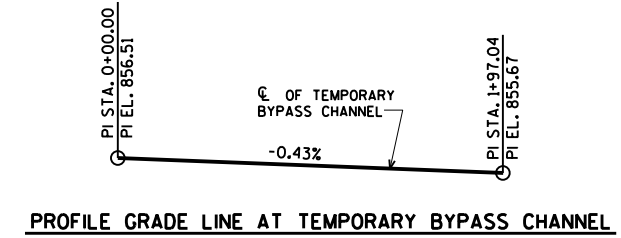
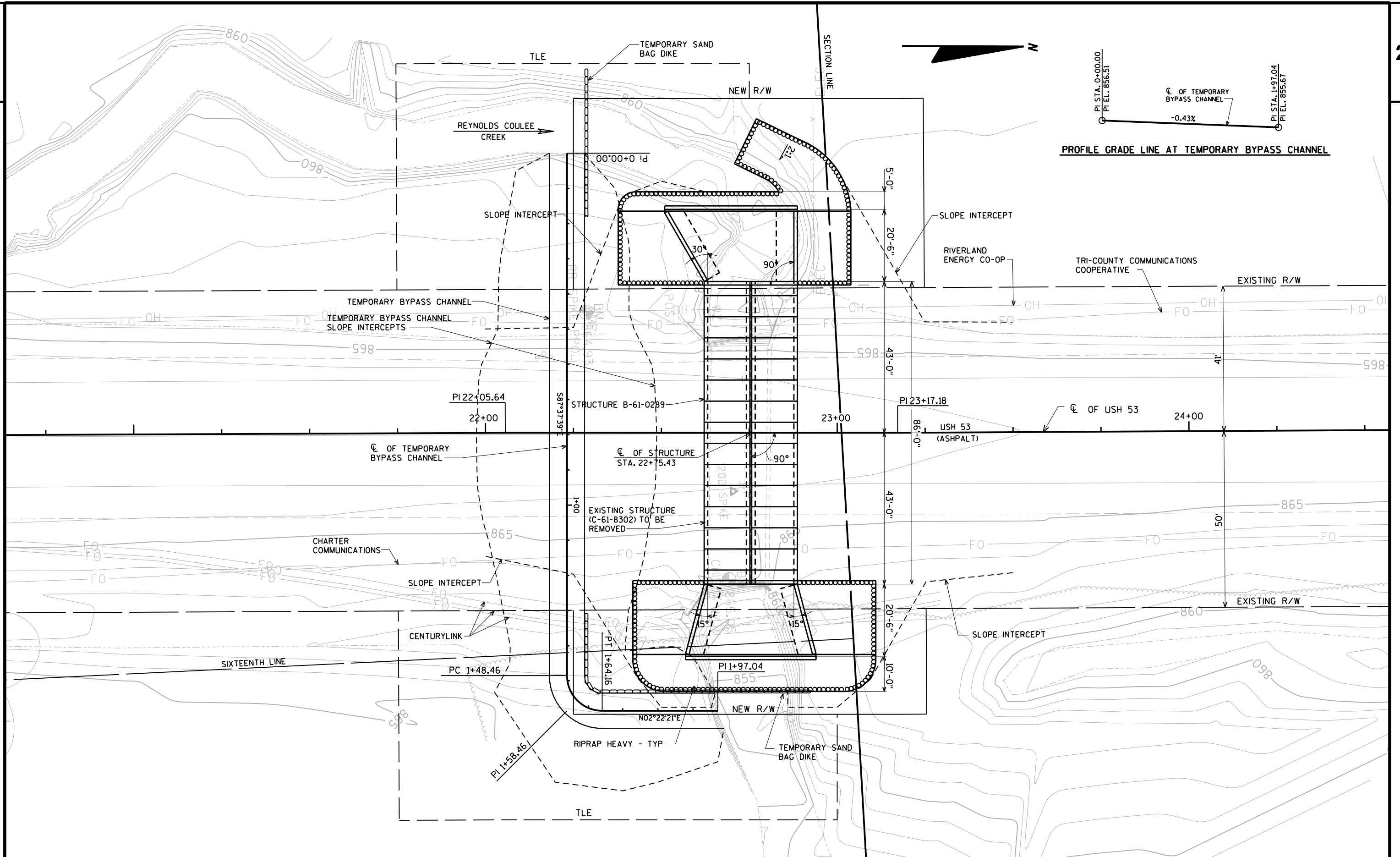
**TYPICAL HALF SECTION OF TEMPORARY BYPASS CHANNEL**

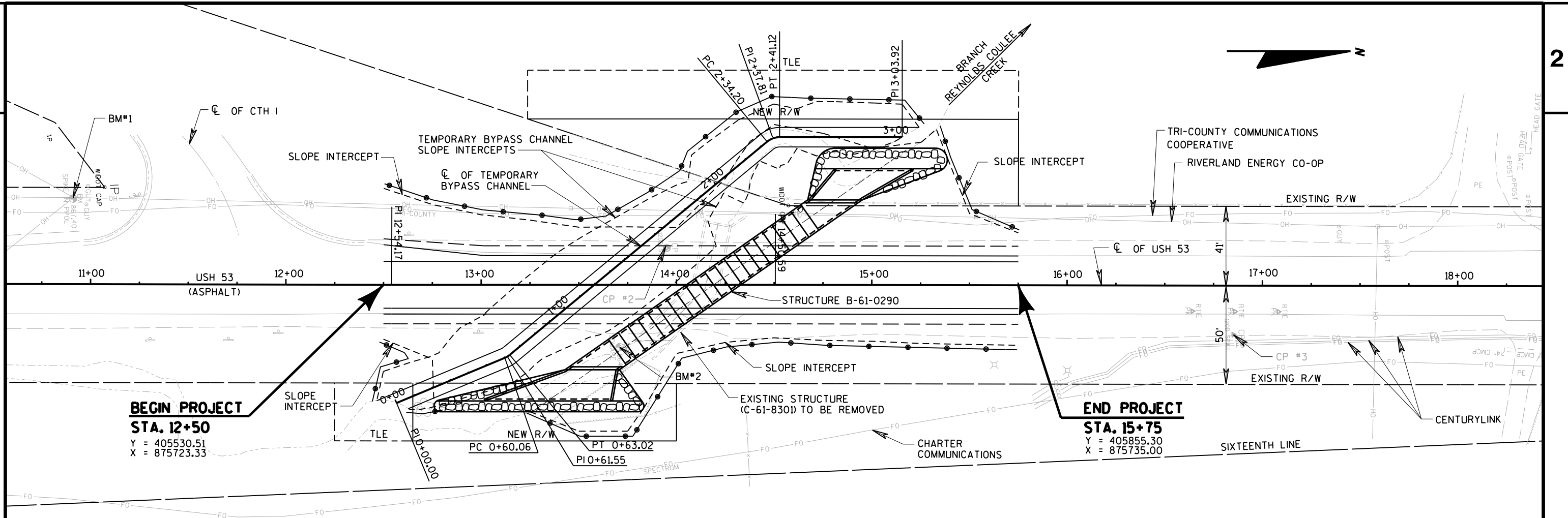


**OVERLAP DETAIL - SECTION A**









**BEGIN PROJECT**  
**STA. 12+50**  
 Y = 405530.51  
 X = 875723.33

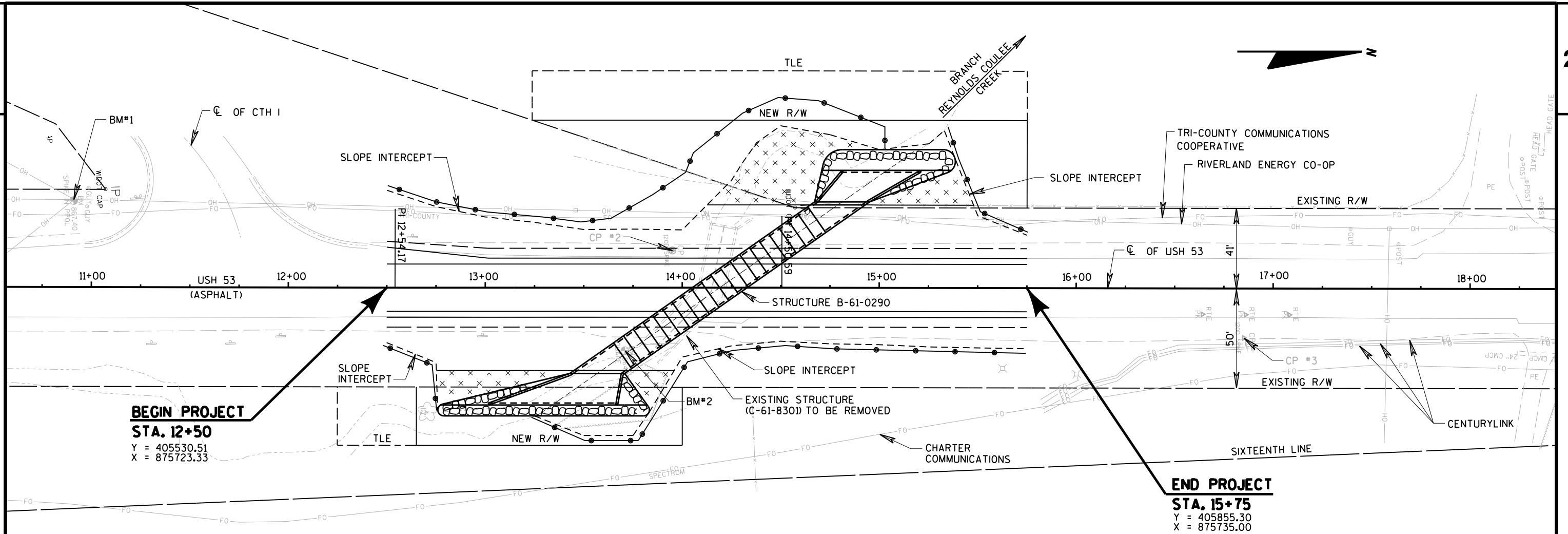
**END PROJECT**  
**STA. 15+75**  
 Y = 405855.30  
 X = 875735.00

	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											

**LEGEND**

- TEMPORARY DITCH CHECKS (UNDISTRIBUTED)
- SILT FENCE
- RIPRAP HEAVY

TOTAL PROJECT AREA = 1.27 ACRES  
 TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.69 ACRES



**BEGIN PROJECT**  
**STA. 12+50**  
 Y = 405530.51  
 X = 875723.33

**END PROJECT**  
**STA. 15+75**  
 Y = 405855.30  
 X = 875735.00

	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											

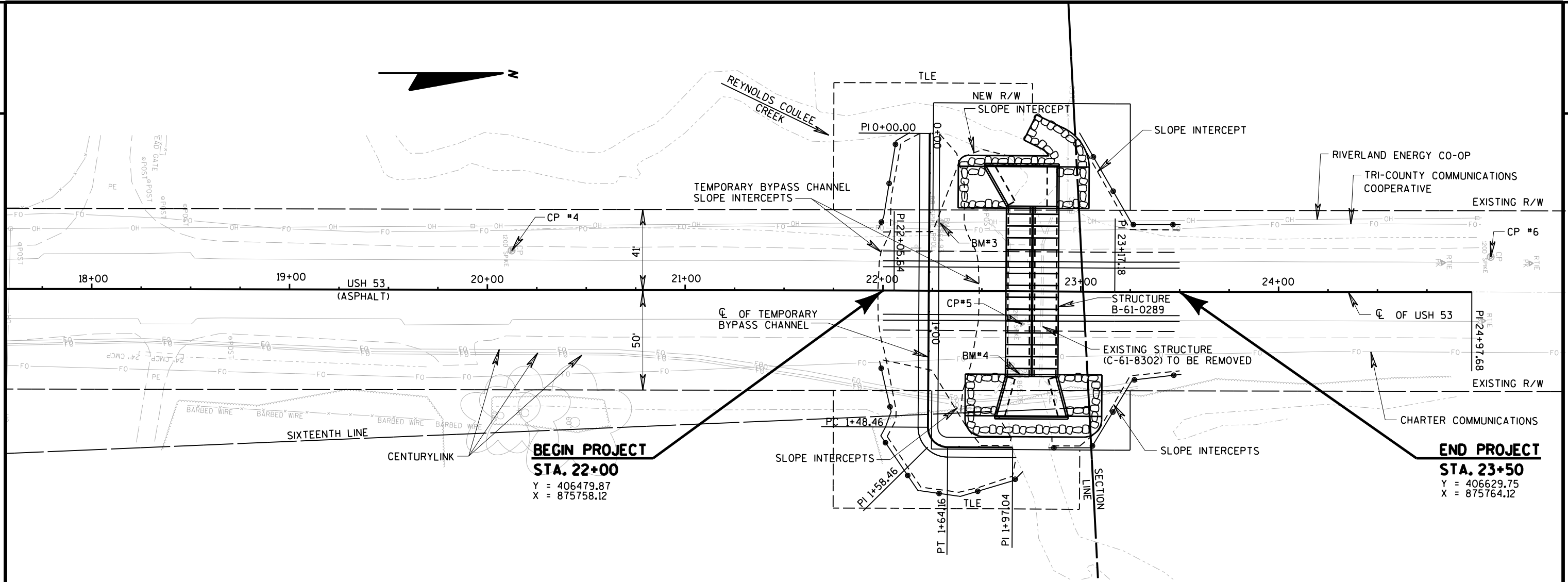
HIGH WATER 2 EL. 864.20

**LEGEND**

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

TOTAL PROJECT AREA = 1.27 ACRES  
 TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.69 ACRES

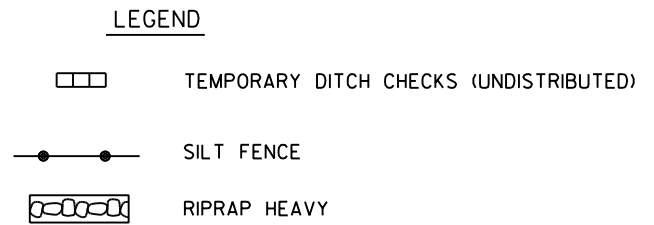




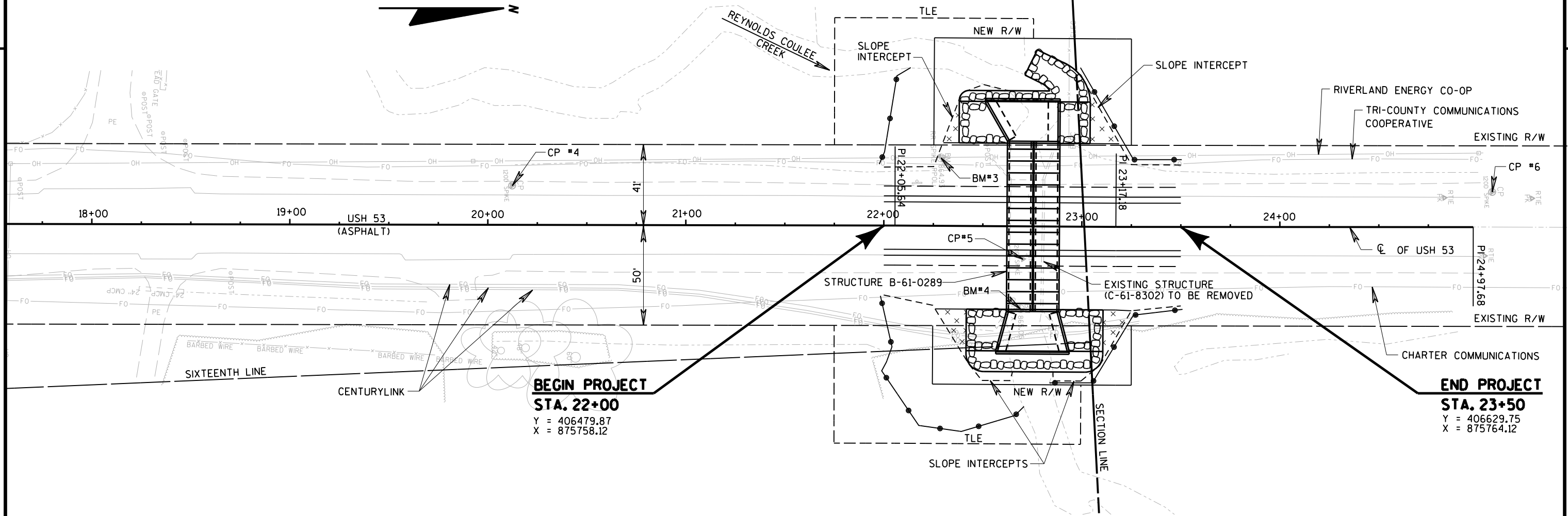
**BEGIN PROJECT**  
**STA. 22+00**  
 Y = 406479.87  
 X = 875758.12

**END PROJECT**  
**STA. 23+50**  
 Y = 406629.75  
 X = 875764.12

	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 = 0.51 ACRES  
 TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.38 ACRES



	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											

HIGH WATER 2 EL. 860.94

LEGEND

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

TOTAL PROJECT AREA = 0.51 ACRES  
 TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.38 ACRES

Estimate Of Quantities

1630-00-71

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	203.0250	Removing Structure Over Waterway Remove Debris (structure) 01. C-61-8301	EACH	1.000	1.000
0008	203.0250	Removing Structure Over Waterway Remove Debris (structure) 02. C-61-8302	EACH	1.000	1.000
0010	204.0100	Removing Concrete Pavement	SY	1,270.000	1,270.000
0012	205.0100	Excavation Common	CY	6,746.000	6,746.000
0014	206.2000	Excavation for Structures Culverts (structure) 01. B-61-0290	LS	1.000	1.000
0016	206.2000	Excavation for Structures Culverts (structure) 02. B-61-0289	LS	1.000	1.000
0018	208.0100	Borrow	CY	859.000	859.000
0020	208.1100	Select Borrow	CY	1,272.000	1,272.000
0022	209.0300.S	Backfill Coarse Aggregate (size) 01. NO. 2	CY	110.000	110.000
0024	210.2500	Backfill Structure Type B	TON	4,870.000	4,870.000
0026	213.0100	Finishing Roadway (project) 01. 1630-00-71	EACH	1.000	1.000
0028	305.0110	Base Aggregate Dense 3/4-Inch	TON	220.000	220.000
0030	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,735.000	1,735.000
0032	311.0110	Breaker Run	TON	1,930.000	1,930.000
0034	350.0104	Subbase	TON	2,045.000	2,045.000
0036	455.0605	Tack Coat	GAL	224.000	224.000
0038	465.0105	Asphaltic Surface	TON	625.000	625.000
0040	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	475.000	475.000
0042	504.0100	Concrete Masonry Culverts	CY	194.000	194.000
0044	504.1001.S	Precast Concrete Wingwalls (structure) 01. B-61-0289	EACH	1.000	1.000
0046	504.2000.S	Precast Concrete Box Culvert (ft X ft) 01. 14 FT X 6 FT	LF	121.000	121.000
0048	504.2000.S	Precast Concrete Box Culvert (ft X ft) 02. 11 FT X 7 FT	LF	172.000	172.000
0050	505.0400	Bar Steel Reinforcement HS Structures	LB	12,270.000	12,270.000
0052	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	2,330.000	2,330.000
0054	516.0500	Rubberized Membrane Waterproofing	SY	55.000	55.000
0056	606.0300	Riprap Heavy	CY	340.000	340.000
0058	606.0700	Grouted Riprap Heavy	CY	10.000	10.000
0060	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1630-00-71	EACH	1.000	1.000
0062	619.1000	Mobilization	EACH	1.000	1.000
0064	623.0200	Dust Control Surface Treatment	SY	2,660.000	2,660.000
0066	624.0100	Water	MGAL	21.000	21.000
0068	625.0100	Topsoil	SY	1,205.000	1,205.000
0070	627.0200	Mulching	SY	2,115.000	2,115.000
0072	628.1504	Silt Fence	LF	1,315.000	1,315.000
0074	628.1520	Silt Fence Maintenance	LF	2,630.000	2,630.000
0076	628.1905	Mobilizations Erosion Control	EACH	6.000	6.000
0078	628.1910	Mobilizations Emergency Erosion Control	EACH	6.000	6.000
0080	628.2027	Erosion Mat Class II Type C	SY	555.000	555.000
0082	628.5505	Polyethylene Sheeting	SY	2,380.000	2,380.000
0084	628.7504	Temporary Ditch Checks	LF	80.000	80.000
0086	629.0210	Fertilizer Type B	CWT	1.800	1.800
0088	630.0120	Seeding Mixture No. 20	LB	74.000	74.000
0090	630.0200	Seeding Temporary	LB	74.000	74.000
0092	630.0500	Seed Water	MGAL	64.000	64.000
0094	633.5200	Markers Culvert End	EACH	4.000	4.000
0096	642.5001	Field Office Type B	EACH	1.000	1.000
0098	643.0420	Traffic Control Barricades Type III	DAY	2,600.000	2,600.000

Estimate Of Quantities

1630-00-71

Line	Item	Item Description	Unit	Total	Qty
0100	643.0705	Traffic Control Warning Lights Type A	DAY	4,000.000	4,000.000
0102	643.0900	Traffic Control Signs	DAY	22,700.000	22,700.000
0104	643.0920	Traffic Control Covering Signs Type II	EACH	23.000	23.000
0106	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0108	643.5000	Traffic Control	EACH	1.000	1.000
0110	645.0105	Geotextile Type C	SY	870.000	870.000
0112	645.0120	Geotextile Type HR	SY	660.000	660.000
0114	646.1020	Marking Line Epoxy 4-Inch	LF	1,070.000	1,070.000
0116	650.4500	Construction Staking Subgrade	LF	475.000	475.000
0118	650.5000	Construction Staking Base	LF	475.000	475.000
0120	650.6500	Construction Staking Structure Layout (structure) 01. B-61-0290	LS	1.000	1.000
0122	650.6500	Construction Staking Structure Layout (structure) 02. B-61-0289	LS	1.000	1.000
0124	650.9910	Construction Staking Supplemental Control (project) 01. 1630-00-71	LS	1.000	1.000
0126	650.9920	Construction Staking Slope Stakes	LF	976.000	976.000
0128	690.0150	Sawing Asphalt	LF	126.000	126.000
0130	715.0502	Incentive Strength Concrete Structures	DOL	1,164.000	1,164.000
0132	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 01. 14+15	EACH	1.000	1.000
0134	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 02. 22+72	EACH	1.000	1.000
0136	SPV.0060	Special 01. Temporary Sand Bag Dike	EACH	2.000	2.000

**CLEARING & GRUBBING**

CATEGORY	STATION	TO	STATION	LOCATION	201.0105	201.0205
					CLEARING STA	GRUBBING STA
0010	13+00	-	14+00	SOUTH SITE	2	2
0010	22+00	-	23+00	NORTH SITE	2	2
TOTAL 0010					4	4

**REMOVING CONCRETE PAVEMENT**

CATEGORY	STATION	TO	STATION	LOCATION	204.0100
					REMOVING CONCRETE PAVEMENT SY
0010	12+50	-	15+75	SOUTH SITE - MAINLINE	870
0010	22+00	-	23+50	NORTH SITE - MAINLINE	400
TOTAL 0010					1,270

**TEMPORARY BYPASS**

CATEGORY	STATION	TO	STATION	LOCATION	209.0300.S.01	628.5505	SPV.0060.01
					BACKFILL COARSE AGGREGATE (SIZE) (01. NO. 2) CY	POLYETHYLENE SHEETING SY	SPECIAL (01. TEMPORARY SAND BAG DIKE) EACH
0010	0+00	-	3+04	SOUTH SITE - BYPASS CHANNEL	70	1,380	1
0010	0+00	-	1+97	NORTH SITE - BYPASS CHANNEL	40	1,000	1
TOTAL 0010					110	2,380	2

**ASPHALT**

CATEGORY	STATION	TO	STATION	LOCATION	455.0605	465.0105
					TACK COAT GAL	ASPHALTIC SURFACE TON
0010	12+50	-	15+75	SOUTH SITE	154	430
0010	22+00	-	23+50	NORTH SITE	70	195
TOTAL 0010					224	625

**NOTES:**

- \* TACK COAT APPLICATION RATE = 0.07 GAL/SY
- \*\* ASSUMED ASPHALT AT 112 LBS/SY/IN

**USH 53 EARTHWORK SUMMARY**

From/To Station	Location	Common Excavation (1) (Item 205.0100)			Unexpanded Fill	Expanded Fill (2) Factor 1.30	Mass Ordinate +/- (3)	Waste	Borrow (Item 208.0100)	Select Borrow (Item 208.1100)	Comment:
		Cut	Transition Cut	Unusable							
12+50 to 15+75	SOUTH SITE - MAINLINE	1826	516	221	750	975	1146	1146	0	671	
22+00 to 23+50	NORTH SITE - MAINLINE	1131	462	102	520	676	815	815	0	601	
0+00 to 3+04	SOUTH SITE - BYPASS CHANNEL	1414	0	0	1426	1854	-440	0	440	0	
0+00 to 1+97	NORTH SITE - BYPASS CHANNEL	1397	0	0	1397	1816	-419	0	419	0	
<b>TOTAL</b>		<b>6746</b>				<b>5321</b>			<b>859</b>	<b>1272</b>	

- 1) Common Excavation is the Cut. Item number 205.0100.
- 2) Expanded Fill. Factor = 1.30; Expanded Fill = Unexpanded Fill \* Fill Factor (Does not include Unusable Cut from existing concrete excavation volume.)
- 3) The Mass Ordinate + or - Qty calculated for the side of the waterway. Plus quantity indicates an excess of material on the side of the waterway.
- 4) All quantities shown in CY.

**BASE AGGREGATE DENSE**

CATEGORY	STATION	TO	STATION	LOCATION	305.0110	305.0120	350.0104	624.0100
					BASE AGGREGATE DENSE 3/4-INCH TON	BASE AGGREGATE DENSE 1 1/4-INCH TON	SUBBASE TON	WATER MGAL
0010	12+50	-	15+75	SOUTH SITE	150	1,190	1,400	14
0010	22+00	-	23+50	NORTH SITE	70	545	645	7
TOTAL 0010					220	1,735	2,045	21

**ASPHALT CENTERLINE RUMBLE STRIPS**

CATEGORY	STATION	TO	STATION	LOCATION	465.0475
					ASPHALT CENTERLINE RUMBLE STRIPS 2-LANE RURAL LF
0010	12+50	-	15+75	SOUTH SITE	325
0010	22+00	-	23+50	NORTH SITE	150
TOTAL 0010					475

**MAINTENANCE AND REPAIR OF HAUL ROADS**

CATEGORY	STATION	TO	STATION	LOCATION	618.0100.01
					MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) (01. 1630-00-71) EACH
0010	12+50	-	23+50	USH 53	1
TOTAL 0010					1



**EROSION CONTROL AND FINISHING ITEMS**

CATEGORY	STATION	TO	STATION	LOCATION	625.0100	627.0200	628.1504	628.1520	628.2027	628.7504	629.0210	630.0120	630.0200	630.0500
					TOPSOIL SY	MULCHING SY	SILT FENCE LF	SILT FENCE MAINTENANCE LF	EROSION MAT CLASS II TYPE C SY	TEMPORARY DITCH CHECKS LF	FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 20 LB	SEEDING TEMPORARY LB	SEED WATER MGAL
0010	12+50	-	15+75	LT	510	585	365	730	260	-	0.6	23	23	19
0010	12+50	-	15+75	RT	315	485	330	660	105	-	0.4	16	16	13
0010	22+00	-	23+50	LT	150	280	135	270	35	-	0.2	9	9	7
0010	22+00	-	23+50	RT	230	340	220	440	45	-	0.3	11	11	9
0010	UNDISTRIBUTED				-	425	265	530	110	80	0.3	15	15	16
TOTAL 0010					1,205	2,115	1,315	2,630	555	80	1.8	74	74	64

**TRAFFIC CONTROL**

**MARKERS CULVERT END**

CATEGORY	STATION	OFFSET	LOCATION	633.5200 MARKERS CULVERT END EACH
0010	13+41	RT	B-61-0290	1
0010	14+97	LT	B-61-0290	1
0010	22+60	RT	B-61-0289	1
0010	22+90	LT	B-61-0289	1
TOTAL 0010				4

CATEGORY	LOCATION	DURATION		643.0420 TRAFFIC CONTROL BARRICADES TYPE III		643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A		643.0900 TRAFFIC CONTROL SIGNS		643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II	643.1050 TRAFFIC CONTROL SIGNS PCMS	643.5000 TRAFFIC CONTROL EACH
		DAYS	NO.	DAY	NO.	DAY	NO.	DAY	NO.	EACH	DAY	EACH
0010	PRE-CONSTRUCTION	7	-	-	-	-	-	-	2	-	14	-
0010	PER SDD 15C2	100	14	1,400	20	2,000	4	400	-	-	-	-
0010	USH 53	100	8	800	16	1,600	213	21,300	-	-	-	1
0010	UNDISTRIBUTED	-	4	400	4	400	10	1,000	-	23	-	-
TOTAL 0010				2,600		4,000		22,700		23	14	1

NOTE: UNDISTRIBUTED QUANTITY FOR BID ITEM 643.0920 IS FOR ONE CYCLE.

**PAVEMENT MARKING ITEMS**

CATEGORY	STATION	TO	STATION	LOCATION	646.1020 MARKING LINE EPOXY 4-INCH WHITE YELLOW	
					LF	LF
0010	12+50	-	15+75	SOUTH SITE	650	82
0010	22+00	-	23+50	NORTH SITE	300	38
					950	120
TOTAL 0010					1,070	

**STAKING**

CATEGORY	STATION	TO	STATION	LOCATION	650.4500	650.5000	650.6500.01	650.6500.02	650.9910.01	650.9920
					CONSTRUCTION STAKING SUBGRADE LF	CONSTRUCTION STAKING BASE LF	CONSTRUCTION STAKING LAYOUT (STRUCTURE) (01. B-61-0290) LS	CONSTRUCTION STAKING LAYOUT (STRUCTURE) (02. B-61-0289) LS	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 1630-00-71) LS	CONSTRUCTION STAKING SLOPE STAKES LF
0010	12+50	-	15+75	SOUTH SITE	325	325	-	-	-	325
0010	22+00	-	23+50	NORTH SITE	150	150	-	-	-	150
0010	0+00	-	3+04	SOUTH SITE - BYPASS CHANNEL	-	-	-	-	-	304
0010	0+00	-	1+97	NORTH SITE - BYPASS CHANNEL	-	-	-	-	-	197
0010	12+50	-	23+50	PROJECT-WIDE	-	-	-	-	1	-
TOTAL 0010					475	475	0	0	1	976
0020	14+05.05	-	14+32.95	B-61-0290	-	-	1	-	-	-
TOTAL 0020					0	0	1	0	0	0
0030	22+75.43	-	22+88.68	B-61-0289	-	-	-	1	-	-
TOTAL 0030					0	0	0	1	0	0
PROJECT TOTAL					475	475	1	1	1	976

**SAWING ASPHALT**

CATEGORY	STATION	LOCATION	690.0150 SAWING ASPHALT LF
0010	12+50	MAINLINE	36
0010	15+75	MAINLINE	30
0010	22+00	MAINLINE	30
0010	23+50	MAINLINE	30
TOTAL 0010			126

**INSTALLING AND MAINTAINING BIRD DETERRENT SYSTEM**

CATEGORY	LOCATION	999.2000.S INSTALLING AND MAINTAINING BIRD DETERRENT SYSTEM EACH
0010	B-61-0290 (14+15)	1
0010	B-61-0289 (22+72)	1
TOTAL 0010		2



**TRANSPORTATION PROJECT PLAT NO: 1630-00-21-4.01 AMENDMENT NO: 1**  
**AMENDS UTILITY NUMBER 102 AND REMOVES UTILITY NUMBER 103 TO TRANSPORTATION PROJECT**  
**PLAT NO. 1630-00-21-4.01 RECORDED AS DOCUMENT NUMBER 463571 AND FILED IN PLAT CABINET A,**  
**PAGE 148**

THAT PART OF THE SOUTHEAST 1/4 OF THE SOUTHWEST 1/4 AND THAT PART OF THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 21, AND THAT PART OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 AND THAT PART OF THE NORTHWEST 1/4 OF SECTION 28, ALL IN TOWNSHIP 21 NORTH, RANGE 7 WEST, TOWN OF PRESTON, TREMPLEAU COUNTY, WISCONSIN.

RELOCATION ORDER USH 53 GALESVILLE TO WHITEHALL, C-61-8301 AND C-61-8302 - TREMPLEAU COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.09, AND 84.50, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:

1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS Laid OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.

2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT OF TRANSPORTATION AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

NOTES:  
 POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), TREMPLEAU COUNTY, NAD83(2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.  
 RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER SURVEYS OF PUBLIC RECORD.  
 DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINES.

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

ALL RIGHT-OF-WAY LINES DEPICTED IN THE NON-ACQUISITION AREAS ARE INTENDED TO RE-ESTABLISH EXISTING RIGHT-OF-WAY LINES AS DETERMINED FROM PREVIOUS PROJECTS, OTHER RECORDED DOCUMENTS, OR FROM CENTERLINE OF EXISTING PAVEMENTS.

PARCEL AND UTILITY IDENTIFICATION NUMBERS MAY NOT POINT TO ALL AREAS OF ACQUISITION, AS NOTED ON THE TYP DETAIL PAGE.

ALL EXISTING IRON PINS ARE CAPPED 3/4" UNLESS OTHERWISE NOTED.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4" X 24" IRON REBAR), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE:  
 USH 53: PREVIOUS JOB NO. 5297 AND PROJECT NO. 1633-07-21.  
 CTH 1: PREVIOUS PROJECT NO. 1633-07-21.

NOTES:  
 A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON, THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM DESIRABLE. ALL (TLES) ON THIS PLAT EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

FOR THE LATEST ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN EAU CLAIRE, WI.

**SCHEDULE OF LANDS AND INTERESTS REQUIRED**

PARCEL NO.	OWNER(S)	INTEREST REQUIRED		R/W (ACRES)	
		FEE	FEE & TLE	EXISTING	TOTAL
1	JAMES E. ENGELLEN	0.037	0.049	0.086	---
2	STEPHEN J. TSCHANZ AND CORI L. TSCHANZ	0.434	0.850	1.284	0.376

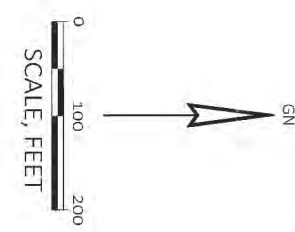
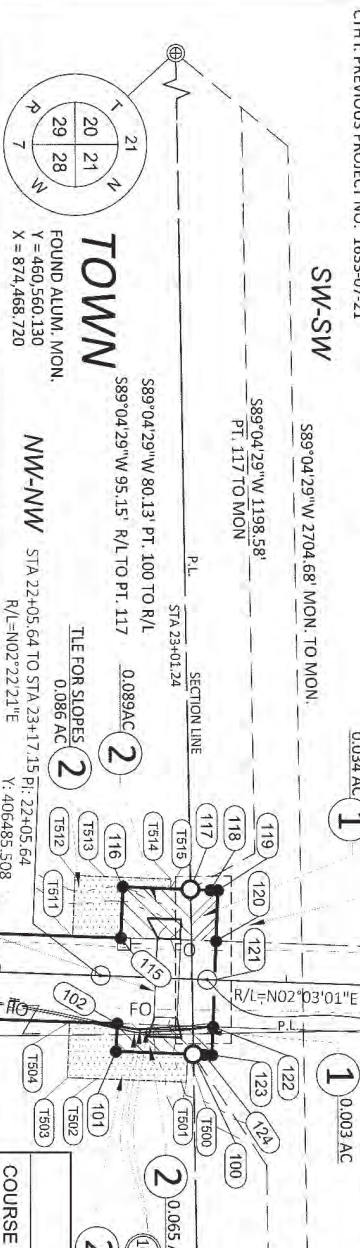
OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT.

**UTILITY INTERESTS REQUIRED**

UTILITY NO.	OWNER(S)	INTEREST REQUIRED
100	RIVERLAND ENERGY COOPERATIVE	RELEASE OF RIGHTS
101	TRI-COUNTY COMMUNICATIONS COOPERATIVE	RELEASE OF RIGHTS
102	CENTURYLINK	RELEASE OF RIGHTS

**UTILITY EASEMENTS**

UTILITY NO.	OWNER(S)	EASEMENTS
100	RIVERLAND ENERGY COOPERATIVE	V. 96, P. 21, DOC. NO. 122057 - PARCEL 1 V. 109, P. 171, DOC. NO. 141901 - PARCEL 1 V. 273, P. 283, DOC. NO. 239373 - PARCEL 1
100	RIVERLAND ENERGY COOPERATIVE	V. 95, P. 564, DOC. NO. 122341 - PARCEL 2 V. 96, P. 576, DOC. NO. 124525 - PARCEL 2
101	TRI-COUNTY COMMUNICATIONS COOPERATIVE	V. 1046, P. 143, DOC. NO. 441698 - PARCEL 2 V. 168, P. 218, DOC. NO. 191218 - PARCEL 1 V. 299, P. 546, DOC. NO. 289125 - PARCEL 1 V. 520, P. 1, DOC. NO. 328248 - PARCEL 1
102	CENTURYLINK	V. 168, P. 232, DOC. NO. 288702 - PARCEL 2 V. 401, P. 91, DOC. NO. 288702 - PARCEL 2 V. 520, P. 1, DOC. NO. 328248 - PARCEL 2



**R/W POINT STATION & OFFSET TABLE**

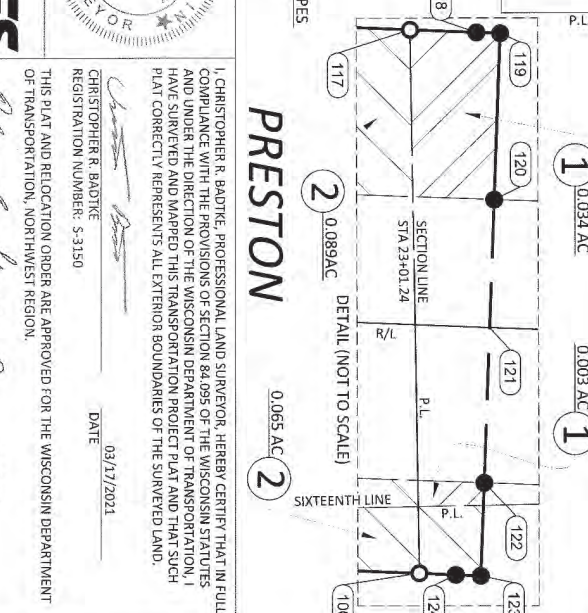
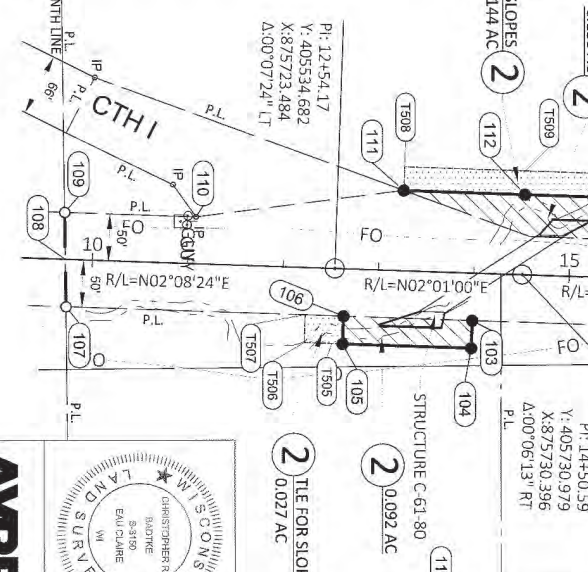
POINT	STATION	OFFSET	POINT	STATION	OFFSET
100	23+05.85	80.00'	113	15+75.00	85.00'
101	22+25.00	80.00'	114	15+75.00	40.61'
102	22+25.00	50.42'	115	22+25.00	40.83'
103	14+00.00	50.58'	116	22+25.00	95.00'
104	14+00.00	80.00'	117	22+95.76	95.00'
105	12+65.00	80.00'	118	23+17.45	95.00'
106	12+65.00	50.36'	119	23+25.00	95.00'
107	9+74.26	50.49'	120	23+25.00	41.25'
108	9+71.77	0.00'	121	23+25.00	0.00'
109	9+69.32	49.50'	122	23+25.00	50.01'
110	11+07.20	49.58'	123	23+25.00	80.00'
111	13+23.79	85.00'	124	23+16.95	80.00'
112	14+50.51	85.00'			

**TLE POINT STATION & OFFSET TABLE**

POINT	STATION	OFFSET	POINT	STATION	OFFSET
T500	23+00.00	80.00'	T508	13+23.79	110.00'
T501	23+00.00	110.00'	T509	14+50.69	110.00'
T502	22+05.40	110.00'	T510	15+75.00	110.00'
T503	21+75.00	110.00'	T511	21+75.00	40.74'
T504	21+75.00	50.52'	T512	21+75.00	105.00'
T505	12+54.08	80.00'	T513	22+05.41	105.00'
T506	12+25.00	80.00'	T514	22+75.00	105.00'
T507	12+25.00	50.36'	T515	22+75.00	95.00'

**R/W COURSE TABLE**

COURSE	BEARING	DISTANCE	COURSE	BEARING	DISTANCE
100-101	S02°22'21"W	80.85'	113-114	S87°52'47"E	44.39'
101-102	N87°37'39"W	29.58'	114-115	N02°06'31"E	650.18'
102-103	S02°06'33"W	824.69'	115-116	N87°37'39"W	54.17'
103-104	S87°59'00"E	29.42'	116-117	N02°22'21"E	70.76'
104-105	S02°01'00"W	135.00'	117-118	N02°22'21"E	21.15'
105-106	N87°59'00"W	29.64'	118-119	N02°03'01"E	7.55'
106-107	S02°06'33"W	290.85'	119-120	S87°56'59"E	53.75'
107-108	S89°18'35"W	50.55'	120-121	S87°56'59"E	41.25'
108-109	S89°18'35"W	49.56'	121-122	S87°56'59"E	50.01'
109-110	N02°06'34"E	137.88'	122-123	S87°56'59"E	29.99'
110-111	N07°11'41"W	219.31'	123-124	S02°03'01"W	8.05'
111-112	N02°01'00"E	126.88'	124-100	S02°22'21"W	11.56'
112-113	N02°07'13"E	124.48'			



CHRISTOPHER R. BADTKE, PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF SECTION 84.05 OF THE WISCONSIN STATUTES AND UNDER THE DIRECTION OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION, I HAVE SURVEYED AND MAPPED THIS TRANSPORTATION PROJECT PLAT AND THAT SUCH PLAT CORRECTLY REPRESENTS ALL EXTENSION BOUNDARIES OF THE SURVEYED LAND.

CHRISTOPHER R. BADTKE  
 REGISTRATION NUMBER: 53150  
 DATE: 03/17/2021

DEBRA B. STENSILAND  
 DATE: 3/17/2021



RESERVED FOR REGISTER OF DEEDS  
 PROJECT NUMBER 1630-00-21-4.01  
 AMENDMENT NO. 1

ACCEPTED FOR RECORDING AND FILING IN THE OFFICE OF THE REGISTER OF DEEDS IN TREMPLEAU COUNTY, WISCONSIN AT 2:12 PM ON MAY 29<sup>TH</sup> 2021 AS DOCUMENT # 466247 AND FILED IN PLAT CAB. A - 148

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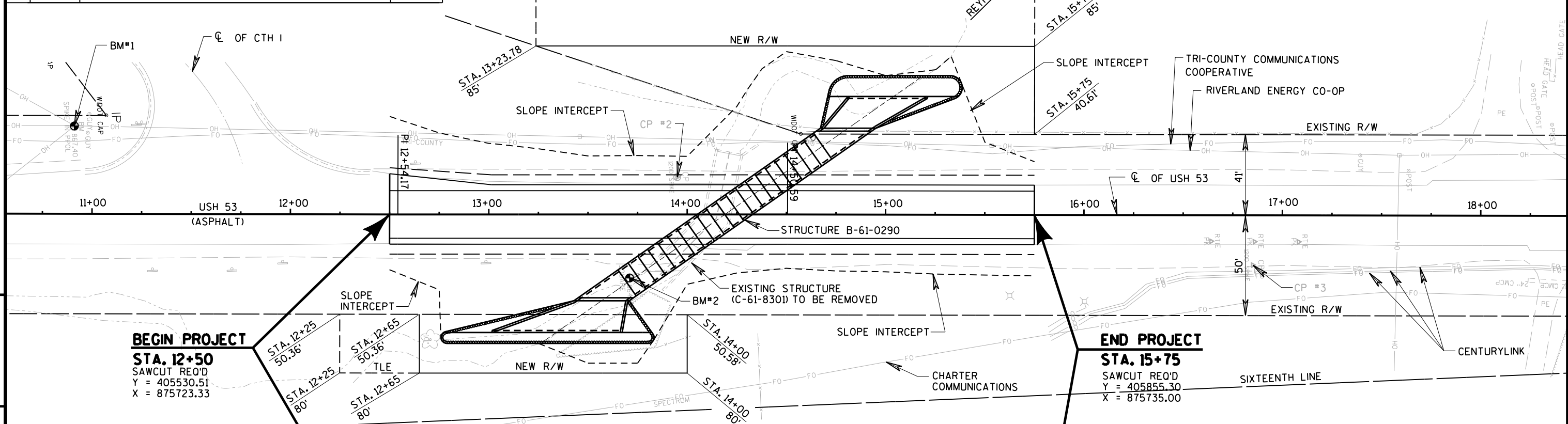
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 AMENDMENT NO. 1</

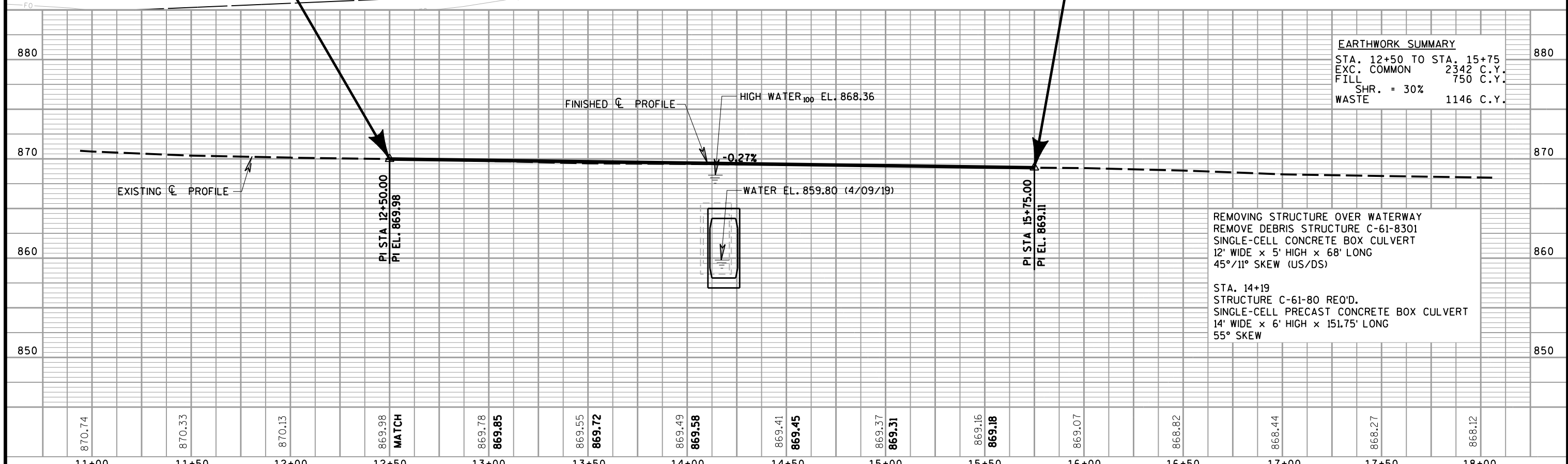


BENCH MARKS			
NO.	STA.	DESCRIPTION	ELEV.
1	10+91	RR SPIKE IN POWER POLE, 44' LT.	867.40
2	13+71	CHIS. SQUARE ON WING, 32' RT	864.15



**BEGIN PROJECT**  
**STA. 12+50**  
 SAWCUT REQ'D  
 Y = 405530.51  
 X = 875723.33

**END PROJECT**  
**STA. 15+75**  
 SAWCUT REQ'D  
 Y = 405855.30  
 X = 875735.00



EARTHWORK SUMMARY	
STA. 12+50 TO STA. 15+75	
EXC. COMMON	2342 C.Y.
FILL	750 C.Y.
SHR. = 30%	
WASTE	1146 C.Y.

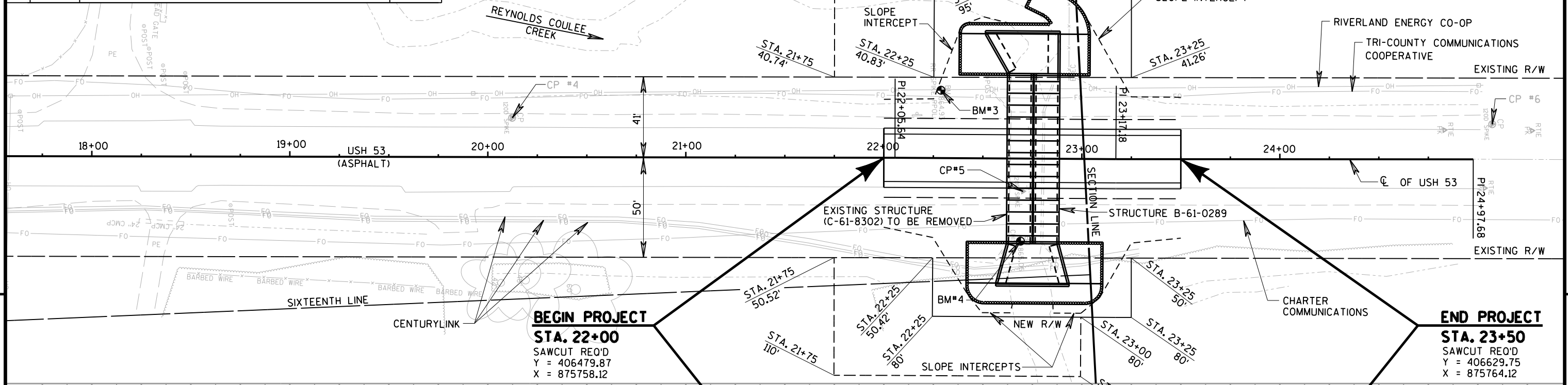
REMOVING STRUCTURE OVER WATERWAY  
 REMOVE DEBRIS STRUCTURE C-61-8301  
 SINGLE-CELL CONCRETE BOX CULVERT  
 12' WIDE x 5' HIGH x 68' LONG  
 45°/11° SKEW (US/DS)

STA. 14+19  
 STRUCTURE C-61-80 REQ'D.  
 SINGLE-CELL PRECAST CONCRETE BOX CULVERT  
 14' WIDE x 6' HIGH x 151.75' LONG  
 55° SKEW

870.74	870.33	870.13	869.98	MATCH	869.78	869.85	869.55	869.72	869.49	869.58	869.41	869.45	869.37	869.31	869.16	869.18	869.07	868.82	868.44	868.27	868.12	
11+00	11+50	12+00	12+50	13+00	13+50	14+00	14+50	15+00	15+50	16+00	16+50	17+00	17+50	18+00								

PROJECT NO: 1630-00-71    HWY: USH 53    COUNTY: TREMPLEALEAU    PLAN AND PROFILE B-61-290 SOUTH SITE    SCALE, FEET 0 25 50    SHEET E

BENCH MARKS			
NO.	STA.	DESCRIPTION	ELEV.
3	22+29	RR SPIKE IN POWER POLE, 34' LT.	864.93
4	22+69	CHIS. 'X' IN HEADER, 42' RT	865.05

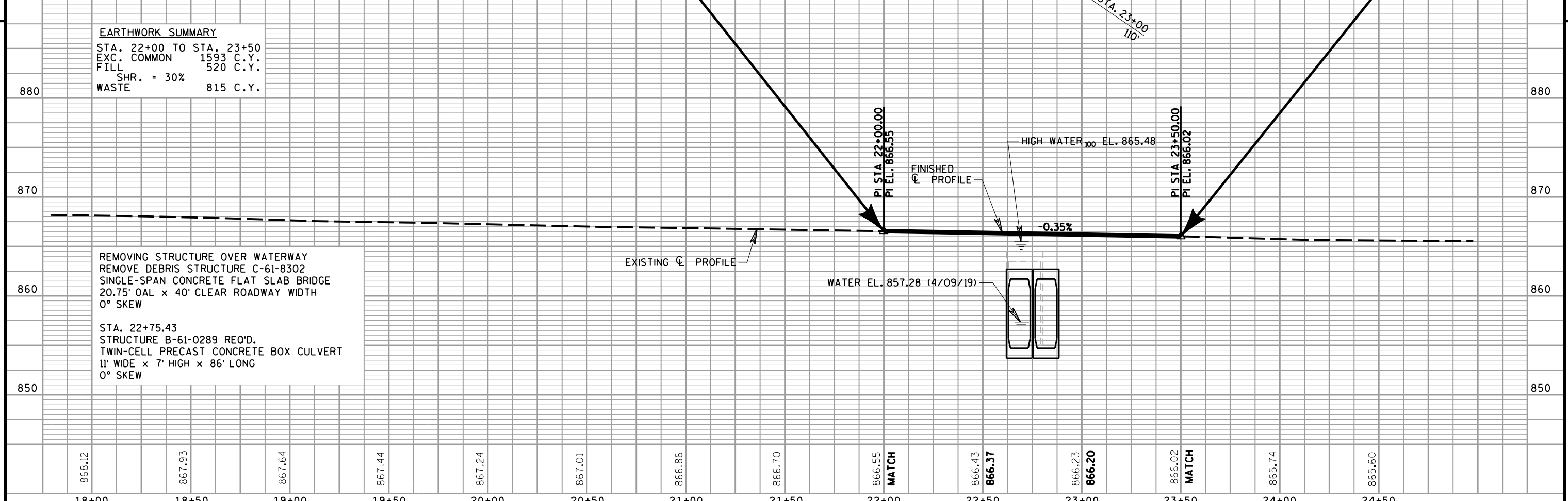


**EARTHWORK SUMMARY**

STA. 22+00 TO STA. 23+50	
EXC. COMMON	1593 C.Y.
FILL	520 C.Y.
SHR. = 30%	
WASTE	815 C.Y.

REMOVING STRUCTURE OVER WATERWAY  
 REMOVE DEBRIS STRUCTURE C-61-8302  
 SINGLE-SPAN CONCRETE FLAT SLAB BRIDGE  
 20.75' OAL x 40' CLEAR ROADWAY WIDTH  
 0° SKEW

STA. 22+75.43  
 STRUCTURE B-61-0289 REQ'D.  
 TWIN-CELL PRECAST CONCRETE BOX CULVERT  
 11' WIDE x 7' HIGH x 86' LONG  
 0° SKEW



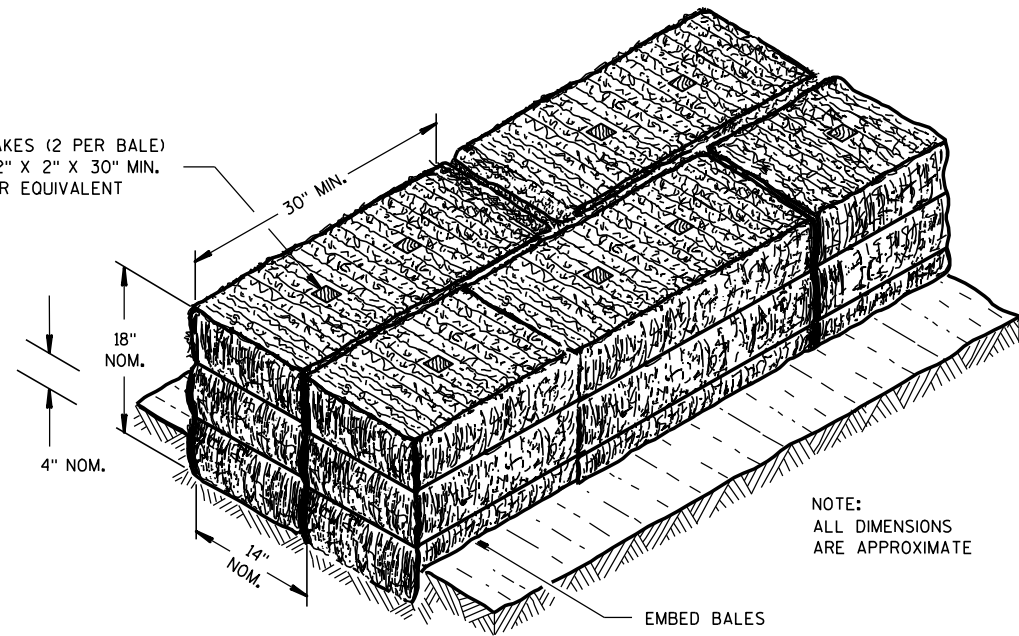
868.12	867.93	867.64	867.44	867.24	867.01	866.86	866.70	866.55	MATCH	866.43	866.37	866.23	866.20	866.02	MATCH	865.74	865.60
18+00	18+50	19+00	19+50	20+00	20+50	21+00	21+50	22+00	22+50	23+00	23+50	24+00	24+50				

PROJECT NO: 1630-00-71    HWY: USH 53    COUNTY: TREMPLEALEAU    PLAN AND PROFILE B-61-289 NORTH SITE    SCALE, FEET 0 25 50    SHEET E

## Standard Detail Drawing List

08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
12A03-10	NAME PLATE (STRUCTURES)
13A11-03A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-03B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13C19-03	HMA LONGITUDINAL JOINTS
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C02-08D	ON RAMP LANE CLOSURE
15C02-08E	OFF RAMP LANE CLOSURE
15C02-08F	ADVANCED WIDTH RESTRICTION SIGNING
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

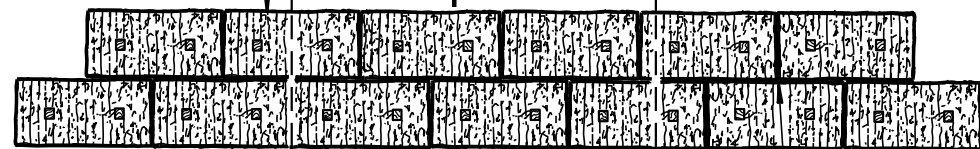
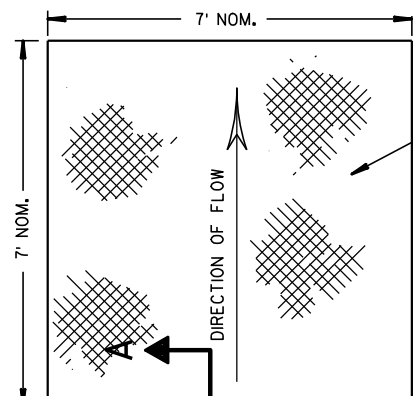
WOOD STAKES (2 PER BALE)  
NOMINAL 2" X 2" X 30" MIN.  
LENGTH OR EQUIVALENT



NOTE:  
ALL DIMENSIONS  
ARE APPROXIMATE

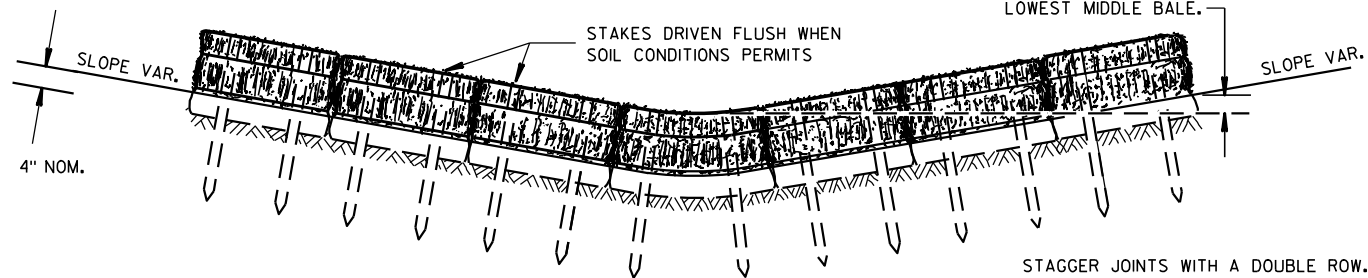
EMBED BALES

SECTION A-A



PLAN VIEW

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



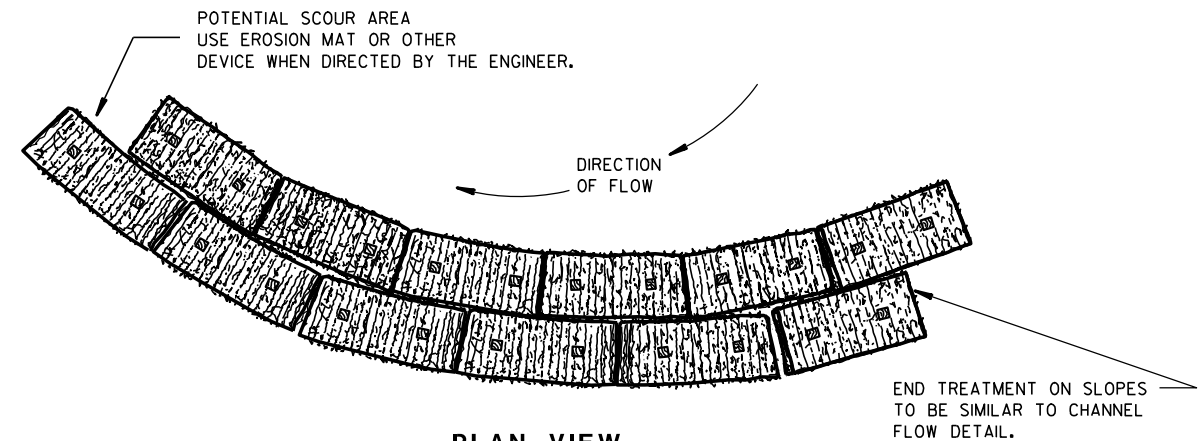
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

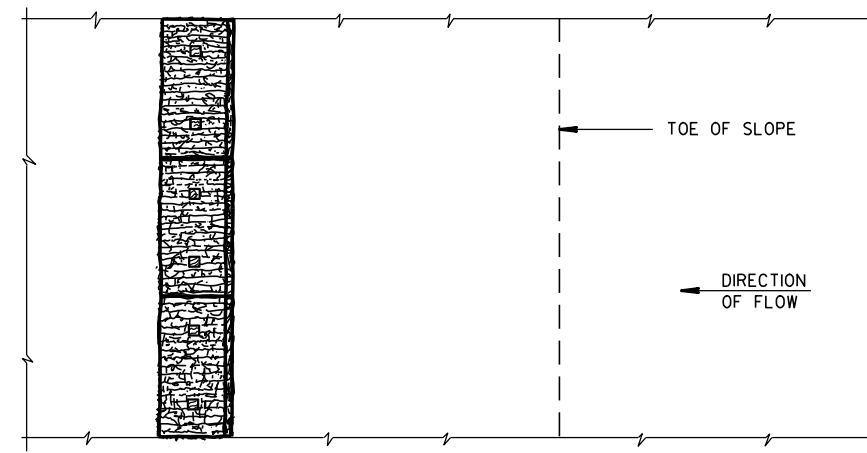
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

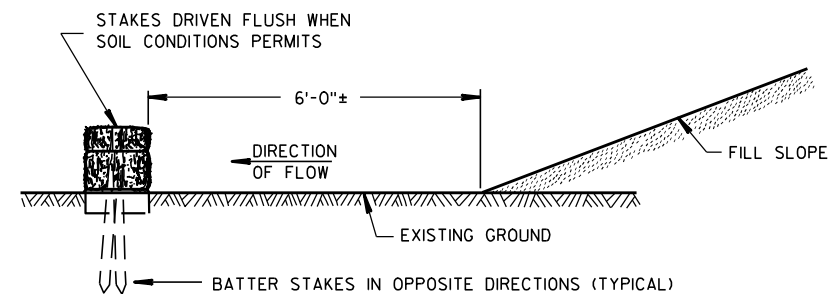


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

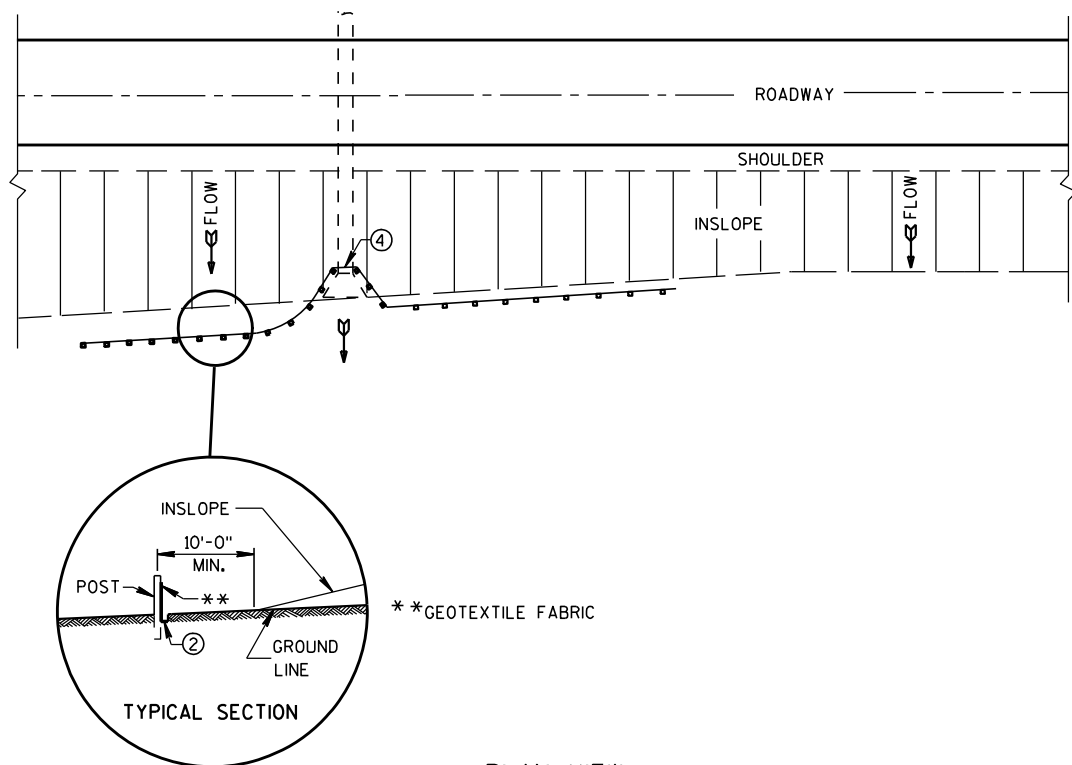
EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF  
EROSION BALES / TEMPORARY  
DITCH CHECKS

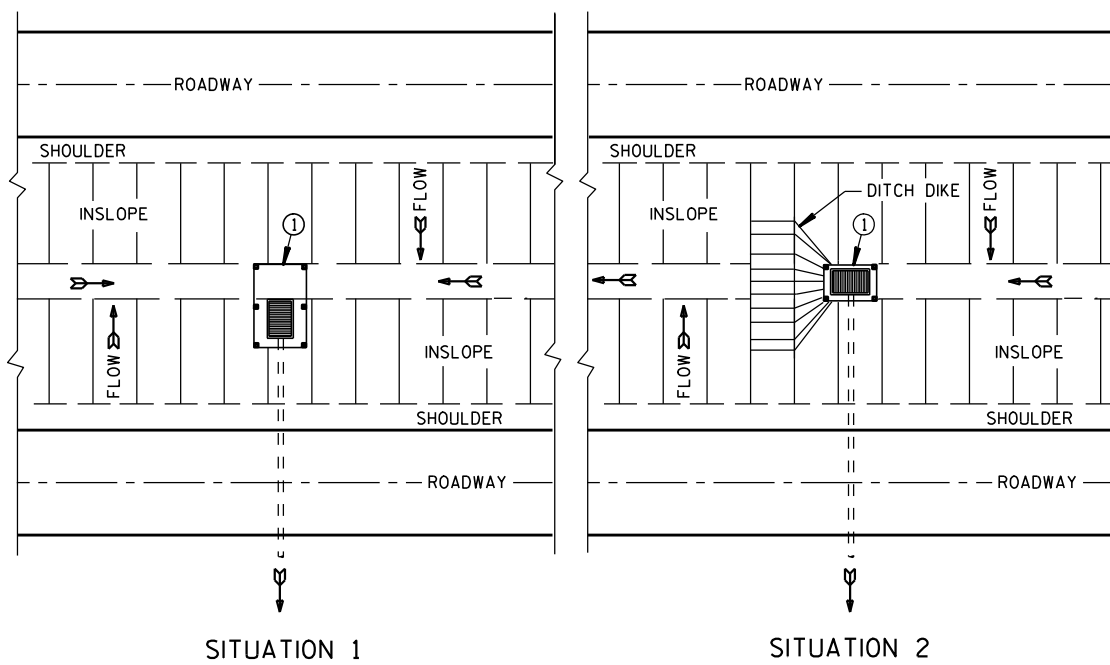
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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





PLAN VIEW  
TYPICAL APPLICATION OF SILT FENCE

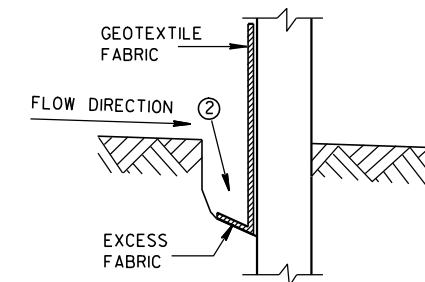


SITUATION 1 SITUATION 2  
PLAN VIEW  
SILT FENCE AT MEDIAN SURFACE DRAINS

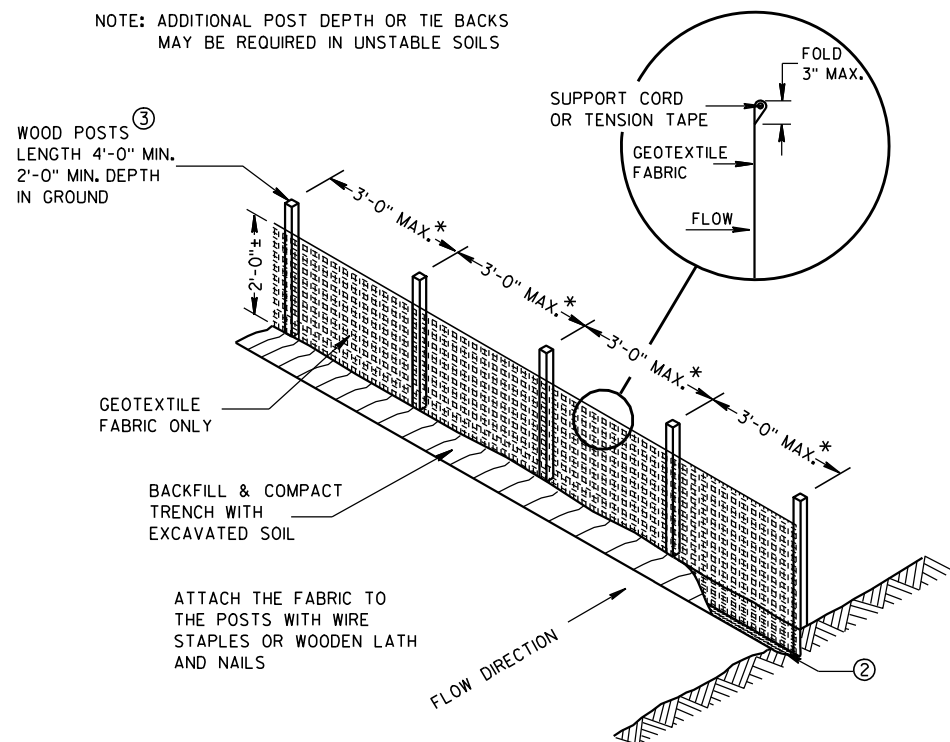
**GENERAL NOTES**

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

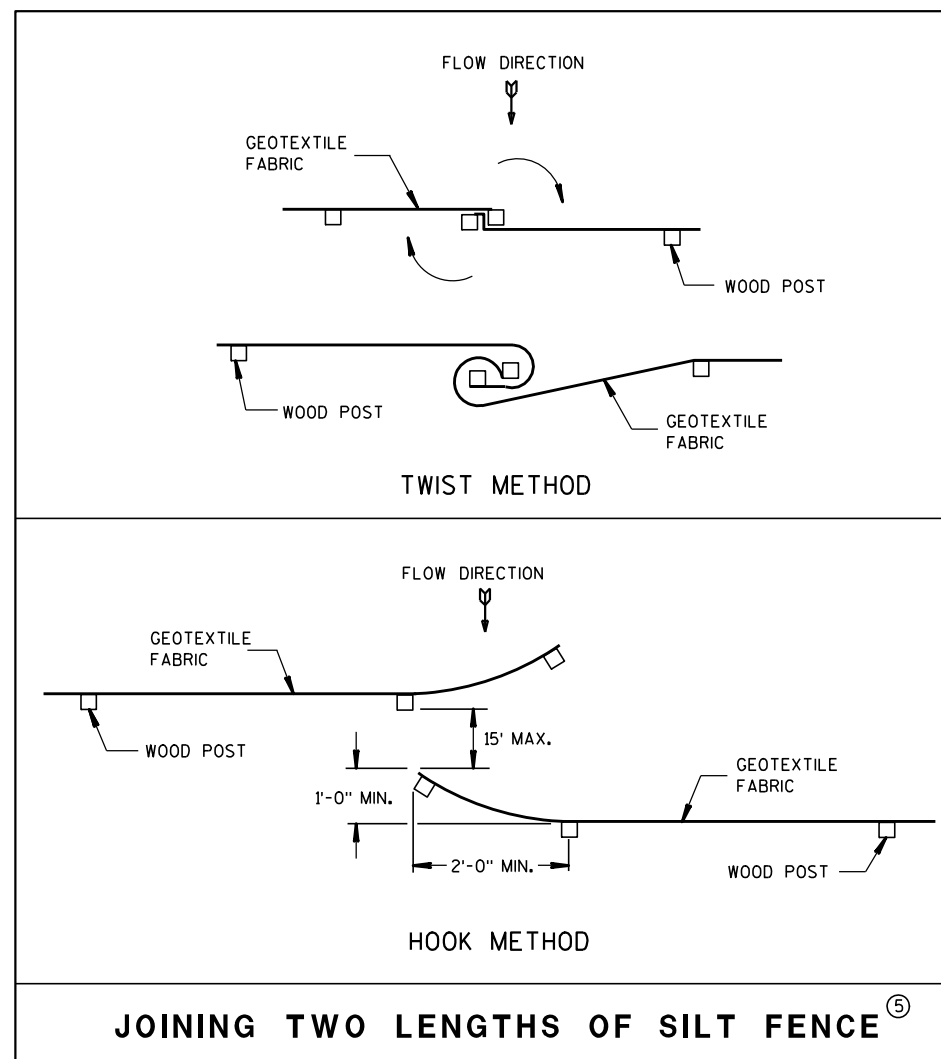
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



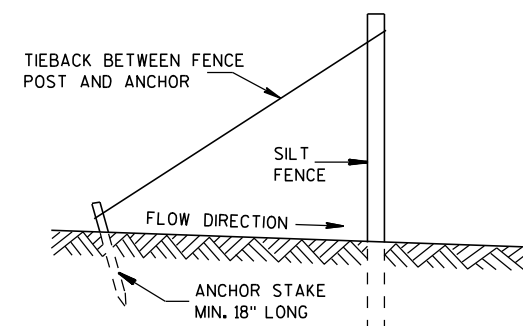
TRENCH DETAIL



SILT FENCE



JOINING TWO LENGTHS OF SILT FENCE ⑤

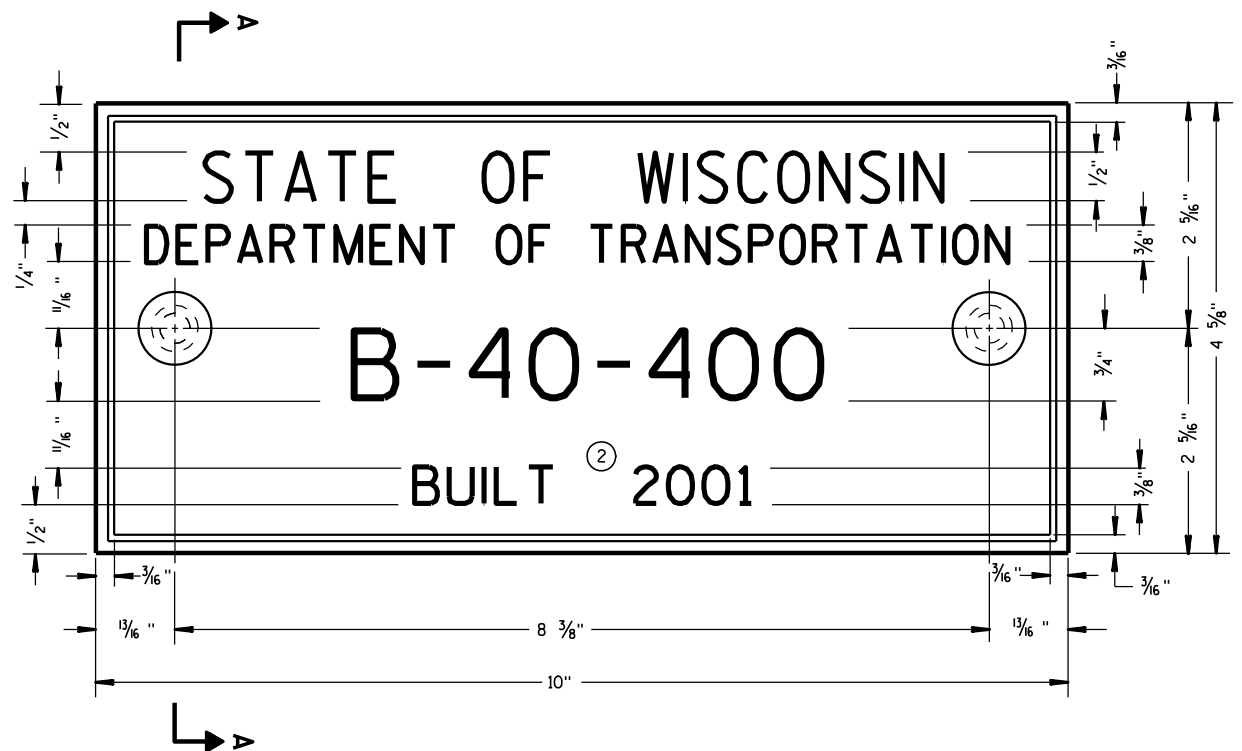


SILT FENCE TIE BACK  
(WHEN REQUIRED BY THE ENGINEER)

**SILT FENCE**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



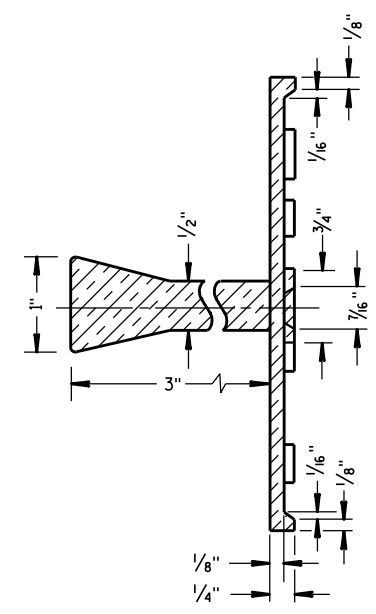
**TYPICAL NAME PLATE**  
(BRIDGES, CULVERTS, AND RETAINING WALLS)

**GENERAL NOTES**

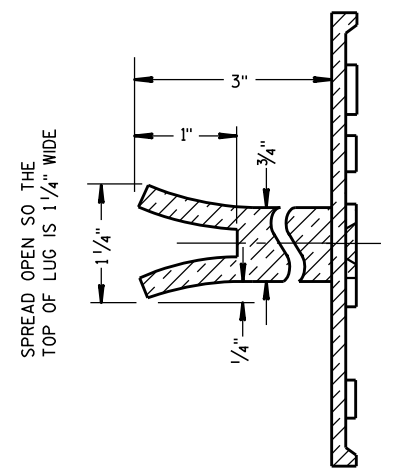
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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



**SECTION A-A**



**ALTERNATE LUG**

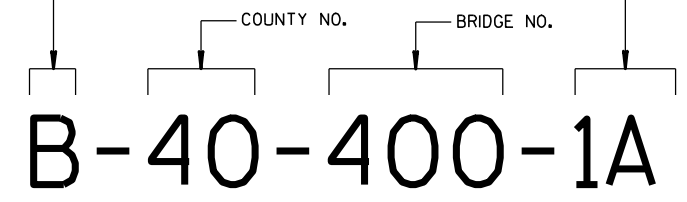
6

6

FOR MULTI-UNIT STRUCTURES  
LINE 3 ABOVE SHALL READ

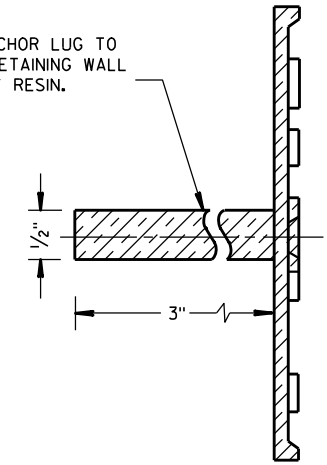
B = BRIDGE  
C = CULVERT  
R = RETAINING WALL

UNIT NO. FOR MULTIPLE  
UNIT BRIDGE



**NUMBERING DESIGNATION  
MULTI-UNIT STRUCTURES**

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



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

S.D.D. 12 A 3-10

S.D.D. 12 A 3-10

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

**GENERAL NOTES**

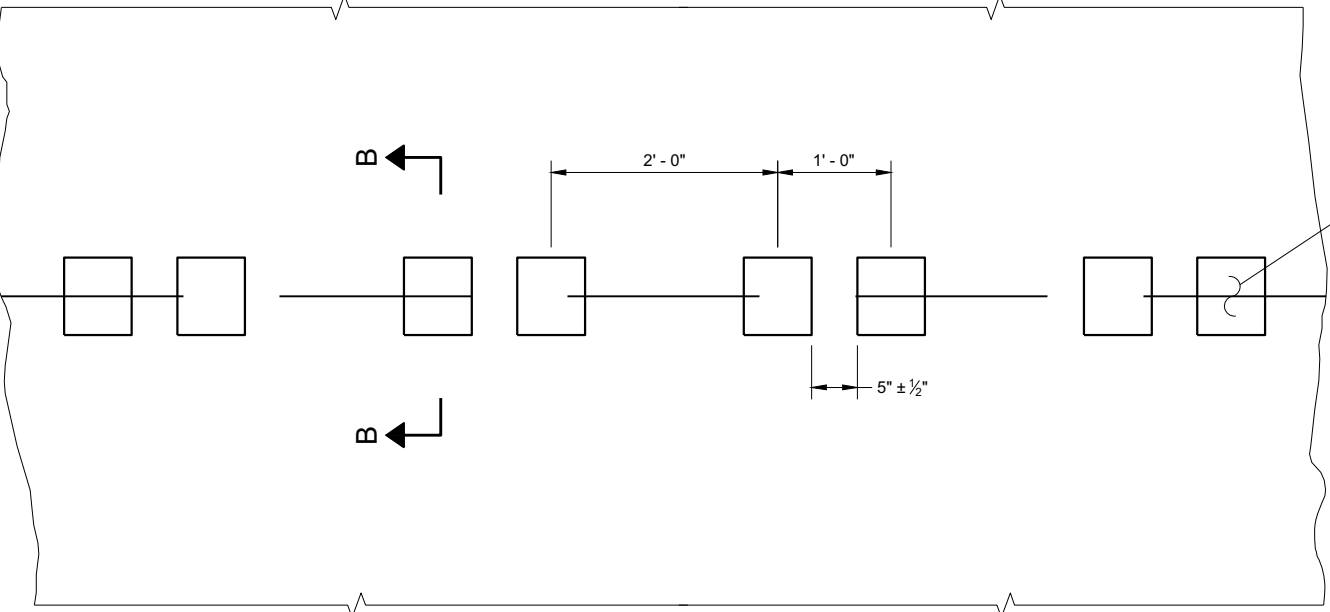
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

DO NOT MILL CENTERLINE GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

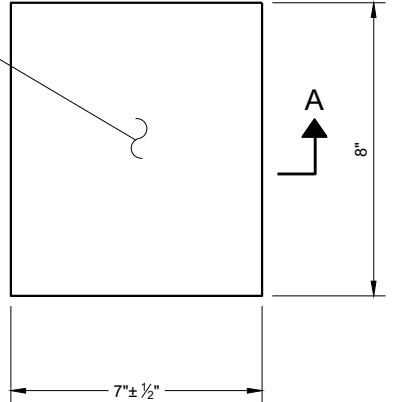
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

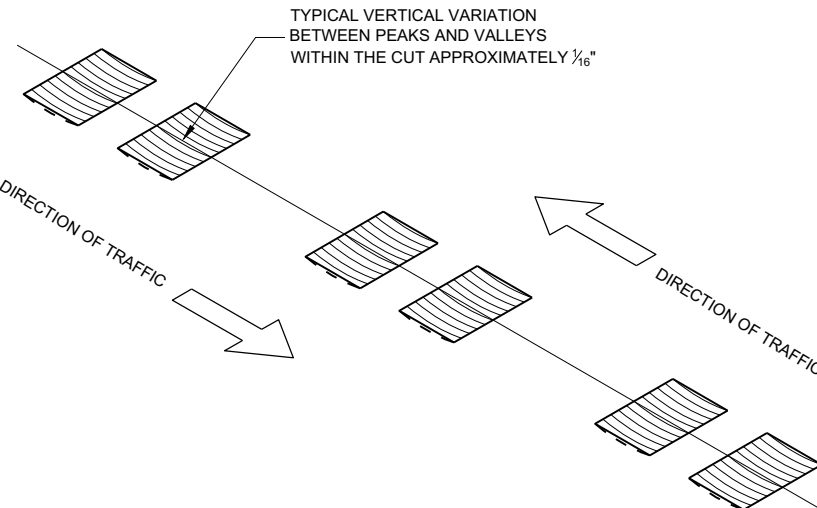
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



**PLAN VIEW  
SHOULDER WITH GROOVES**

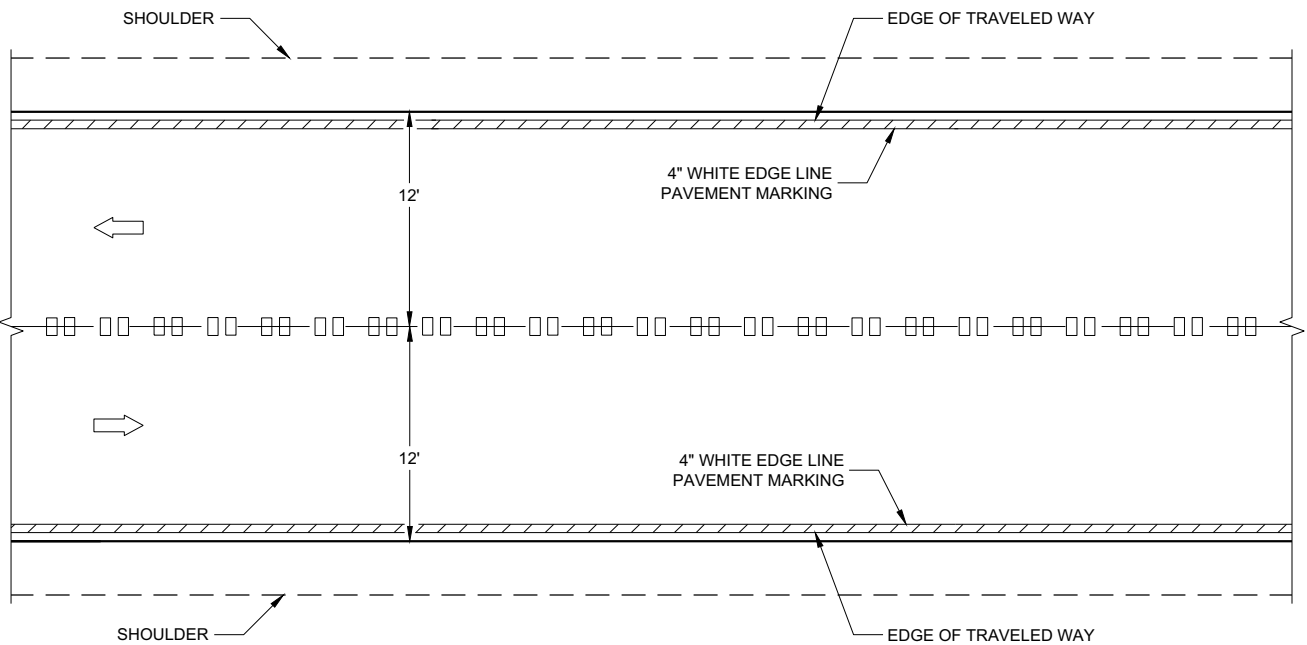


**PLAN VIEW  
(SINGLE GROOVE)**

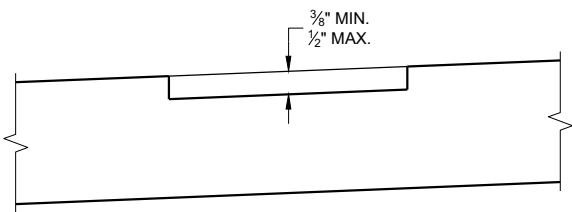


**ISOMETRIC**

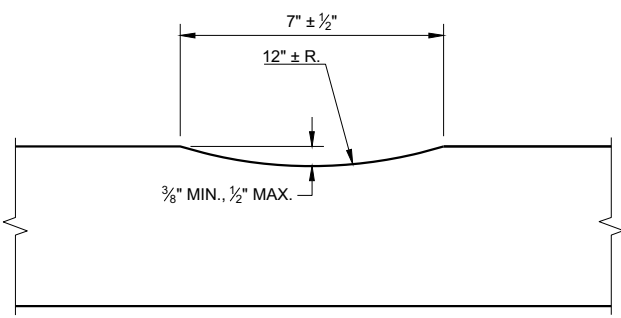
**PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP**



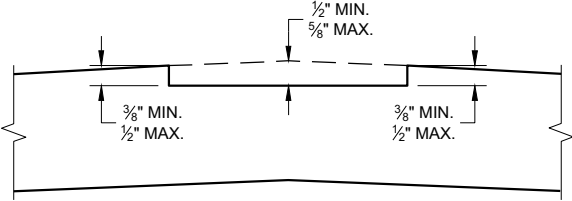
**CENTERLINE GROOVES ON TWO-WAY ROADWAYS**



**SECTION B - B  
SUPERELEVATED ROADWAY**



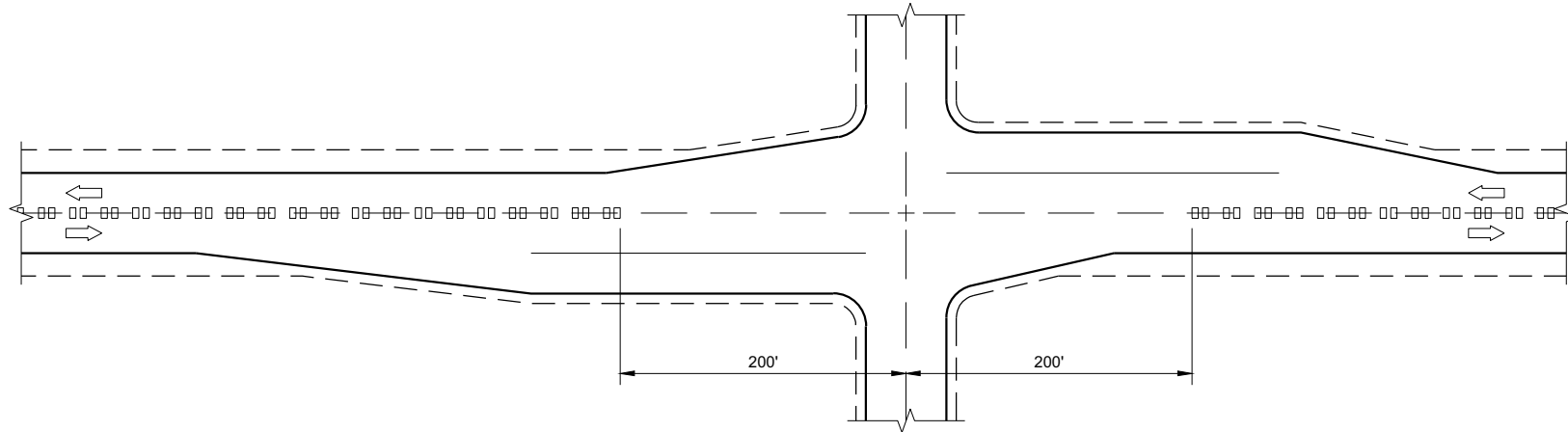
**SECTION A - A**



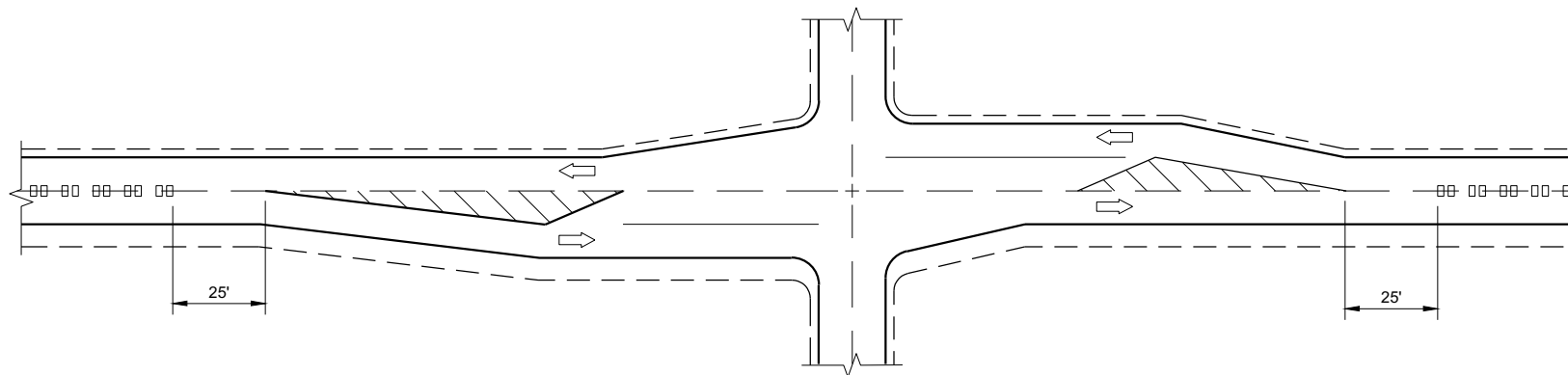
**SECTION B - B  
CROWNED ROADWAY**

**2-LANE RURAL  
CENTER LINE RUMBLE STRIP,  
MILLING**

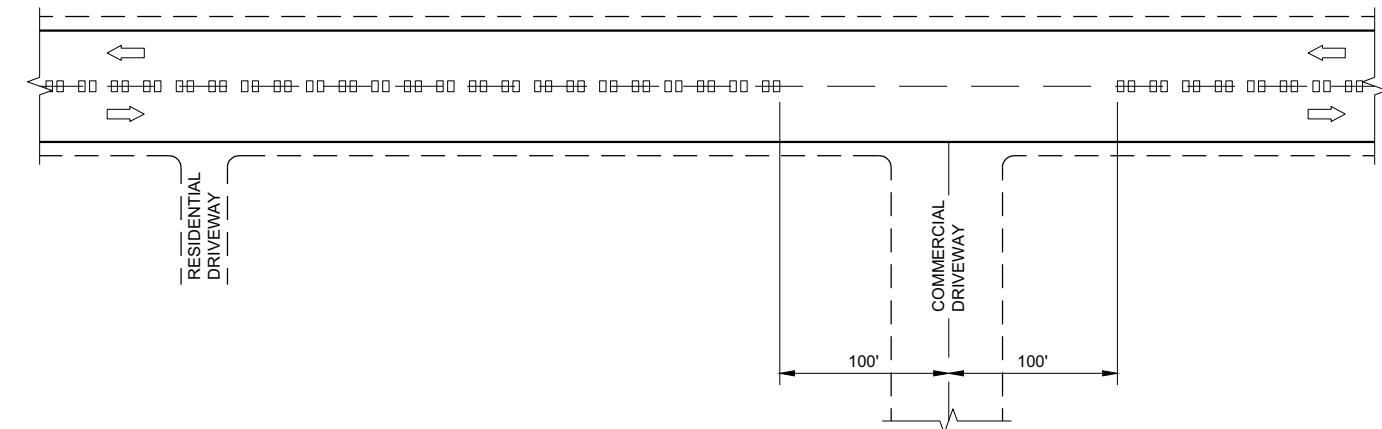
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



**CENTERLINE GROOVES AT INTERSECTIONS**



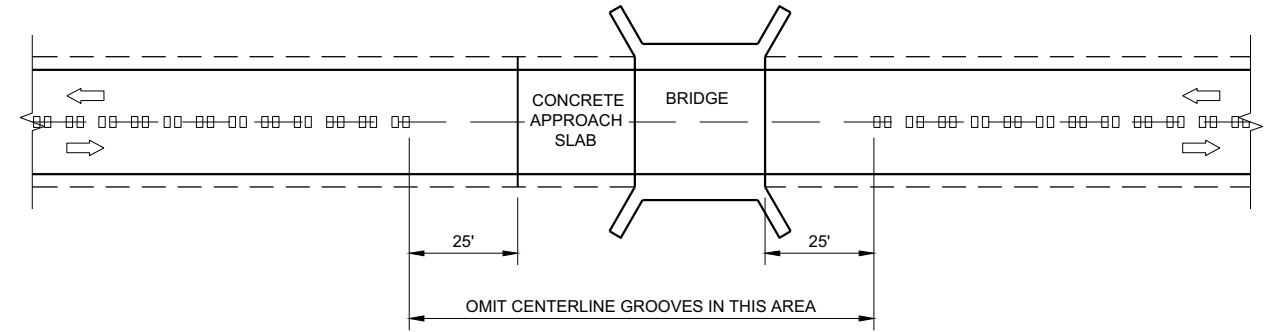
**CENTERLINE GROOVES AT INTERSECTIONS  
(WITH LEFT TURN LANES)**



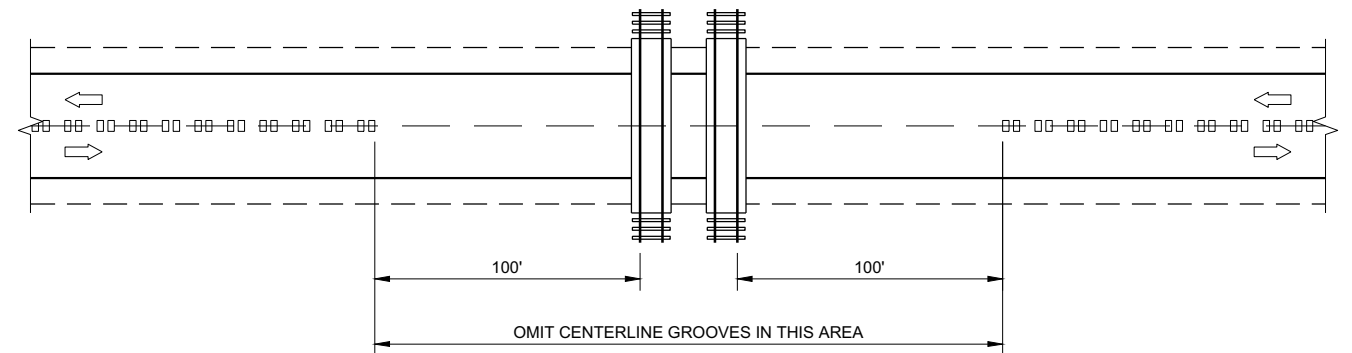
**CENTERLINE GROOVES AT DRIVEWAYS<sup>①</sup>**

**GENERAL NOTES**

- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



**CENTERLINE GROOVES AT BRIDGES**



**CENTERLINE GROOVES AT RAILROADS**

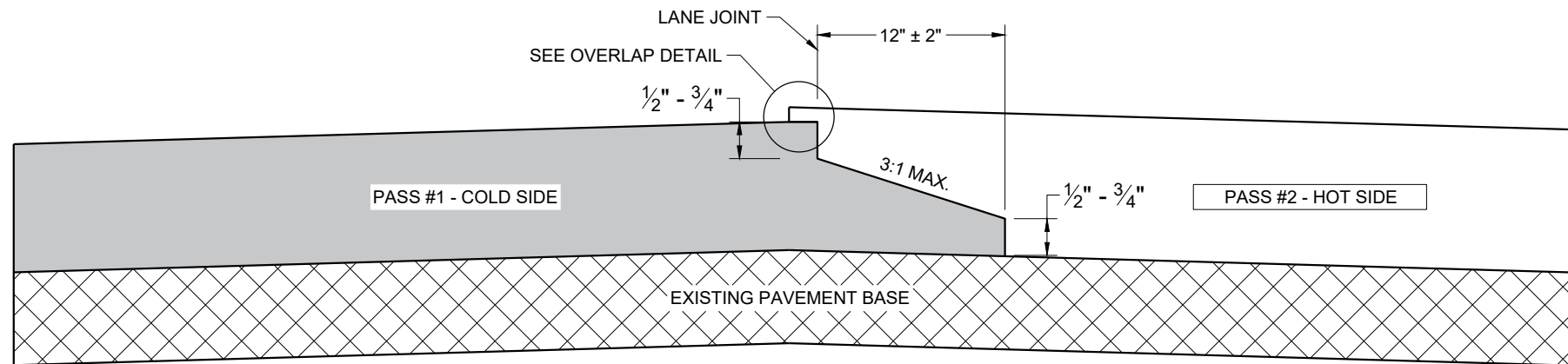
6

6

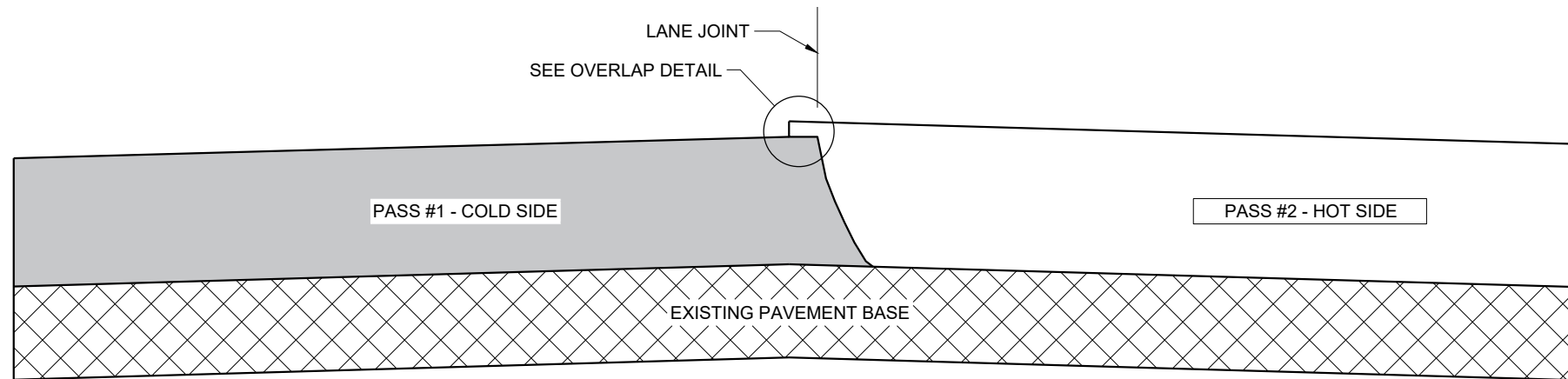
SDD 13A11 - 03b

SDD 13A11 - 03b

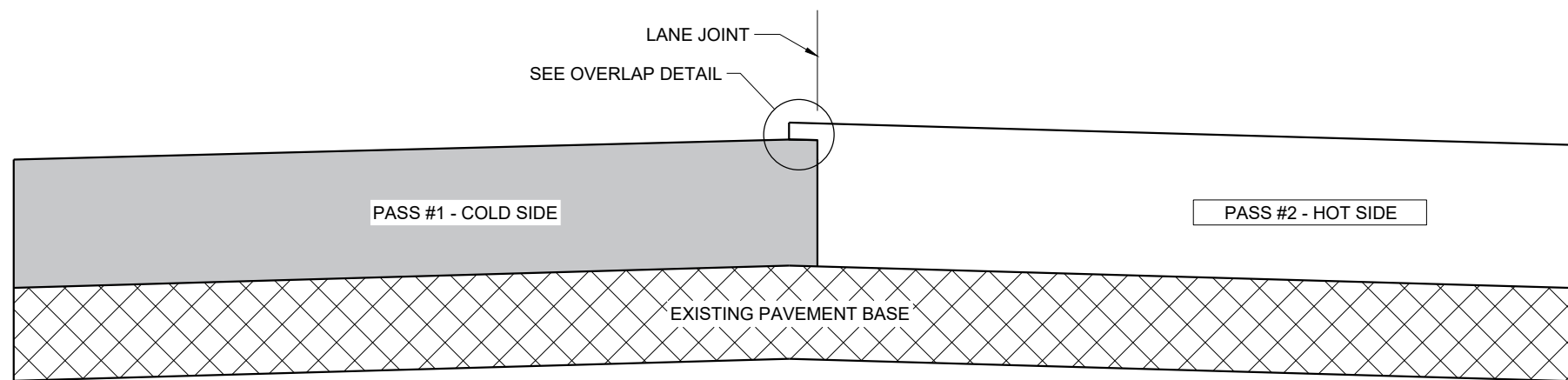
<b>2-LANE RURAL CENTERLINE RUMBLE STRIP, MILLING</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 7/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



**TYPICAL PAVEMENT CROSS SECTION  
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT (MILLED)**

**GENERAL NOTES**

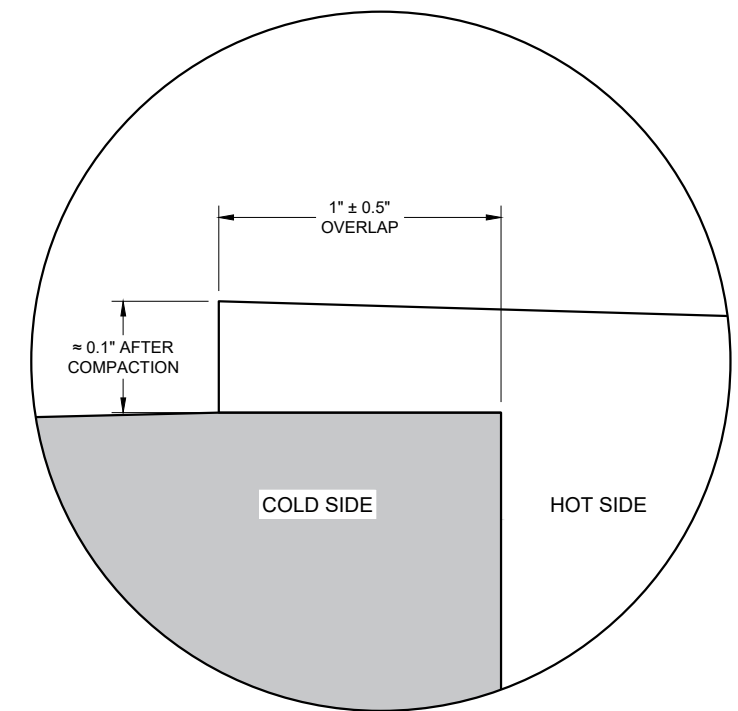
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY  $1" \pm 0.5"$  AND THE HOT SIDE OF THE JOINT REMAINS HIGHER THAN THE COLD SIDE BY APPROXIMATELY  $0.1"$  AFTER FINAL COMPACTION. (IT WILL BE FLUSH WHEN PAVING IN ECHELON.)

ONLY REMOVE THE LONGITUDINAL NOTCHED WEDGE JOINT FOR SMA PAVEMENT OR AS DIRECTED BY THE ENGINEER TO ADDRESS SPECIFIC LENGTHS OF JOINT DAMAGED BY TRAFFIC.

WHEN MILLING BACK OR REMOVING ANY LONGITUDINAL JOINT, LIMIT THE MATERIAL REMOVED TO  $2"$  FROM THE TOP NOTCH OR FROM THE VERTICAL JOINT EDGE ON THE COLD SIDE OF THE JOINT.

USE LONGITUDINAL MILLED JOINT AS PLANS SHOW OR THE AS THE ENGINEER DIRECTS.



**OVERLAP DETAIL (TYPICAL)**

6

6

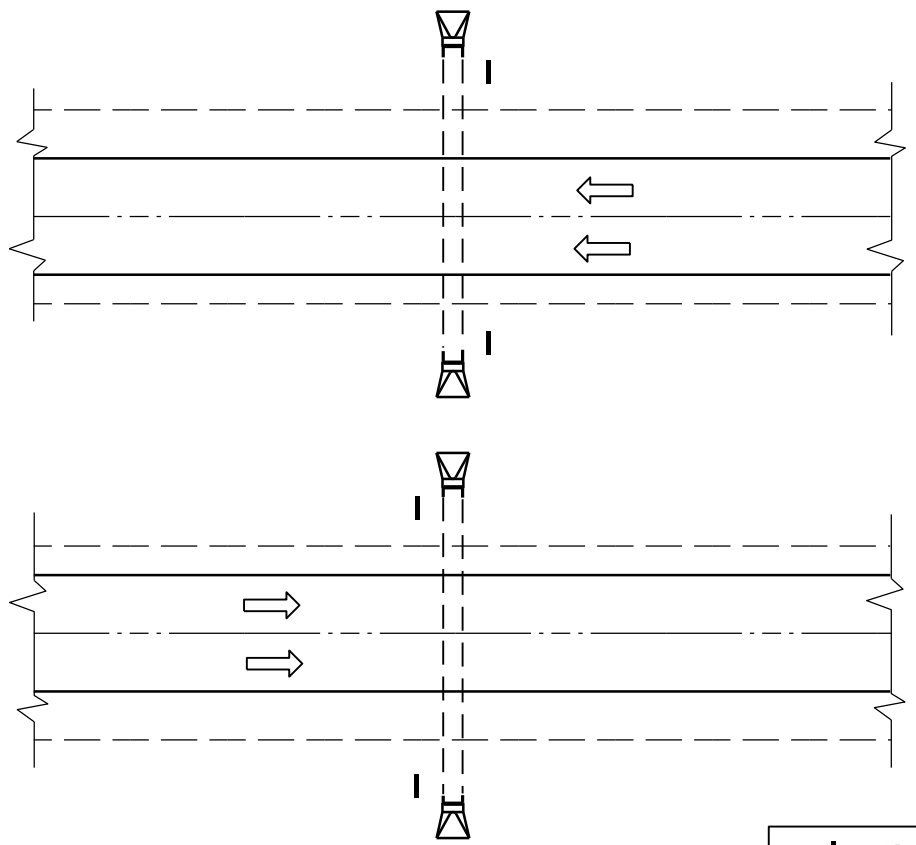
SDD 13C19 - 03

SDD 13C19 - 03

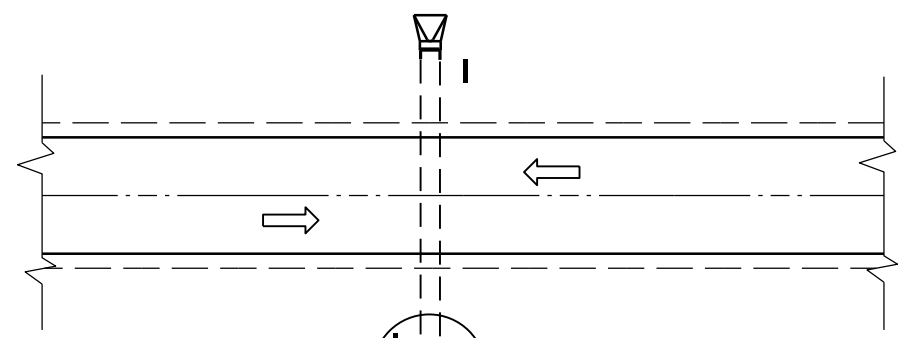
**HMA LONGITUDINAL JOINTS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

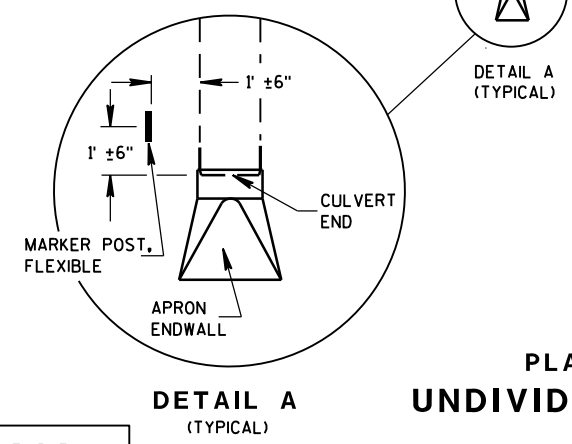
APPROVED  
November 2020 DATE /S/ Steven Hefel  
HMA PAVEMENT ENGINEER  
FHWA



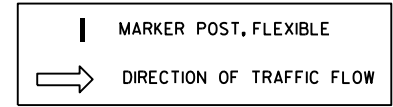
PLAN VIEW  
DIVIDED HIGHWAY



PLAN VIEW  
UNDIVIDED HIGHWAY

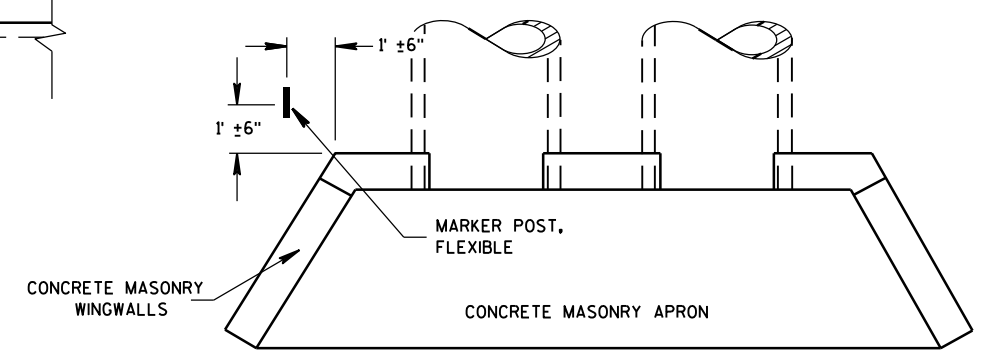


DETAIL A  
(TYPICAL)



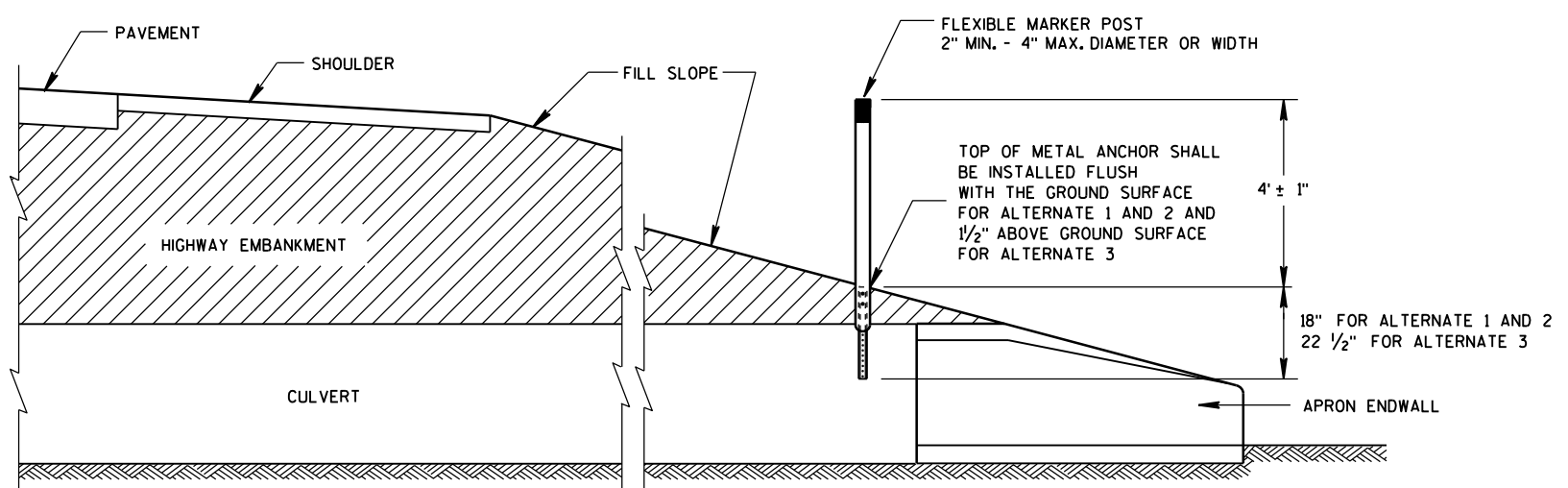
**GENERAL NOTES**

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.



PLAN VIEW  
CONCRETE MASONRY ENDWALLS FOR  
CULVERT PIPE AND PIPE ARCH

**FLEXIBLE MARKER POST LOCATION**



CROSS SECTION  
FLEXIBLE MARKER POST

**FLEXIBLE MARKER POST  
FOR CULVERT END**

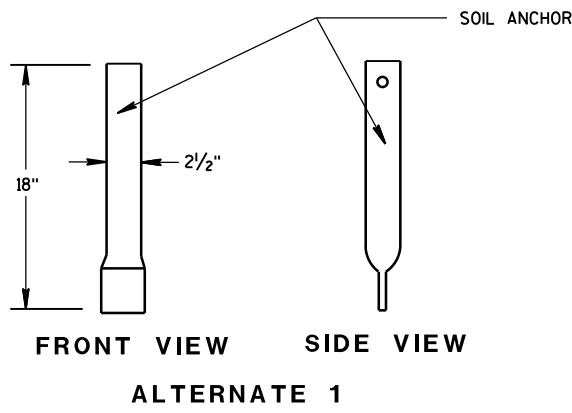
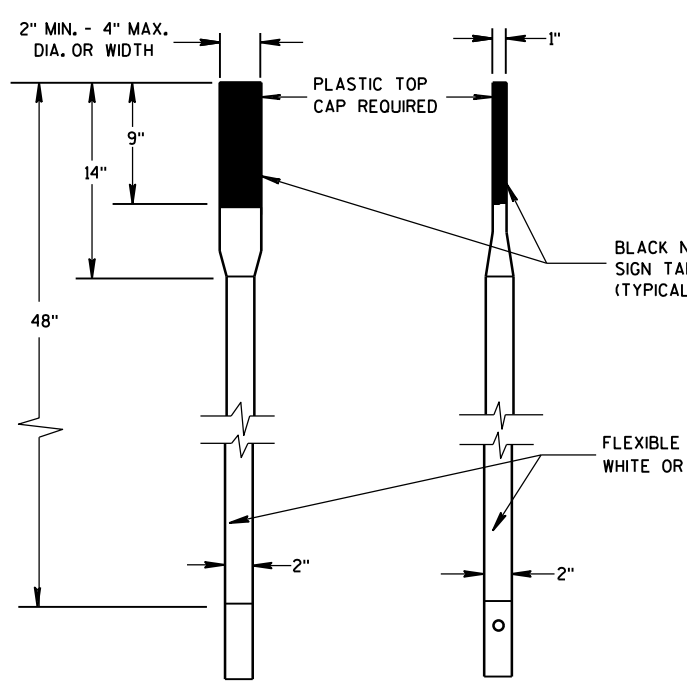
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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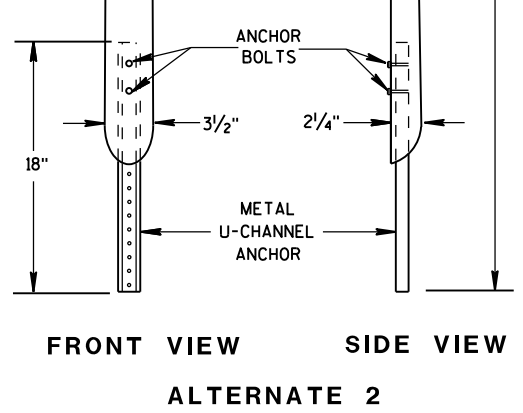
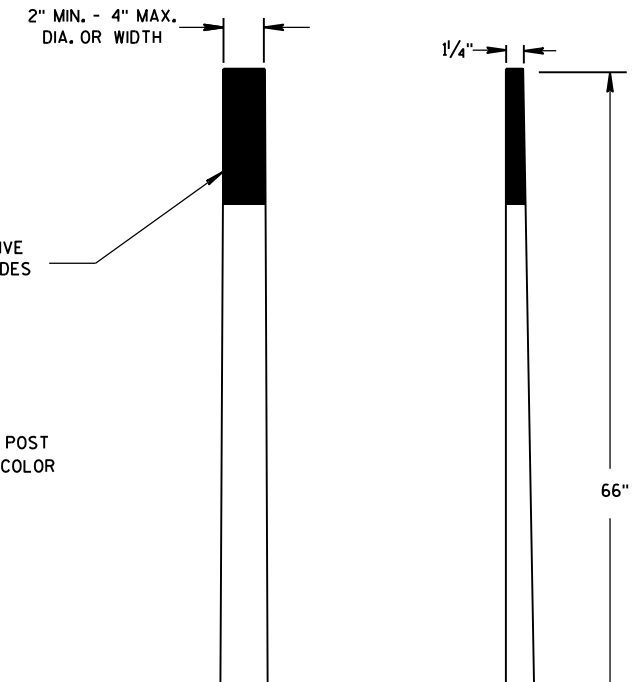
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S.D.D. 15 A 3-2a

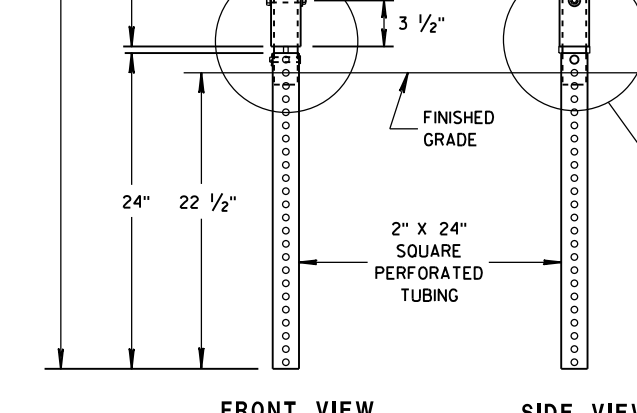
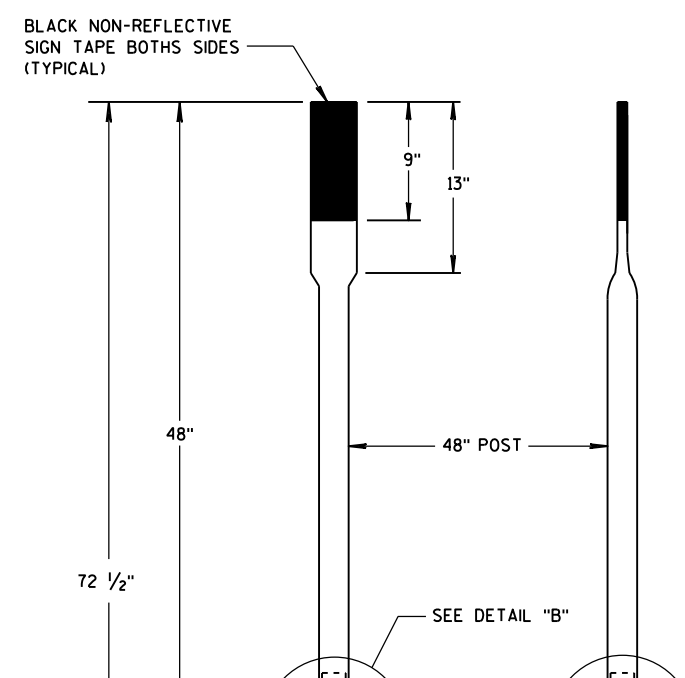
S.D.D. 15 A 3-2a



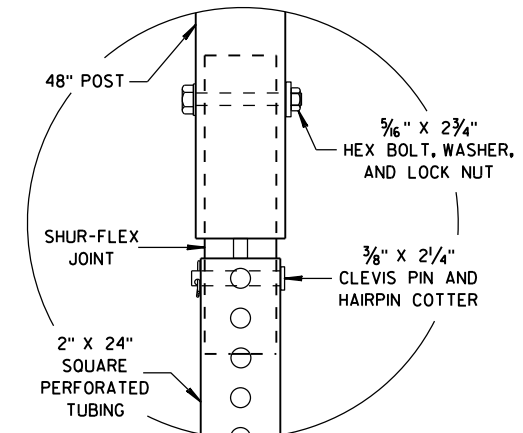
FRONT VIEW SIDE VIEW  
ALTERNATE 1



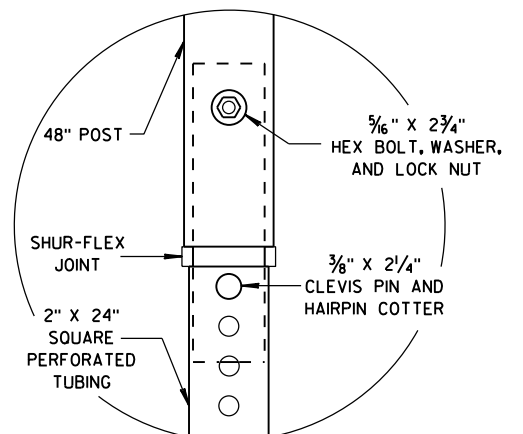
FRONT VIEW SIDE VIEW  
ALTERNATE 2



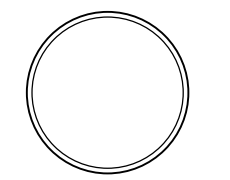
FRONT VIEW SIDE VIEW  
ALTERNATE 3



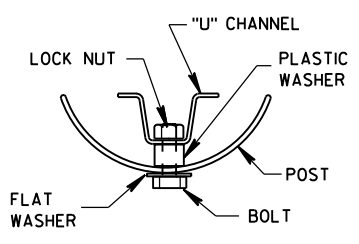
DETAIL B



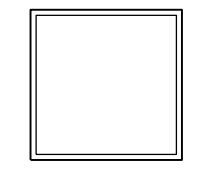
DETAIL C



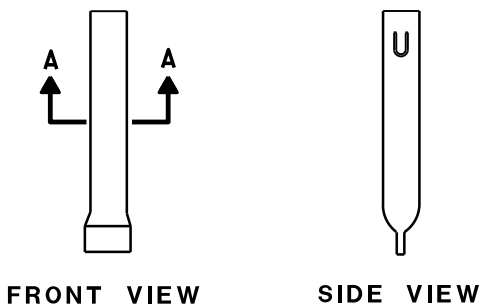
SECTION A-A



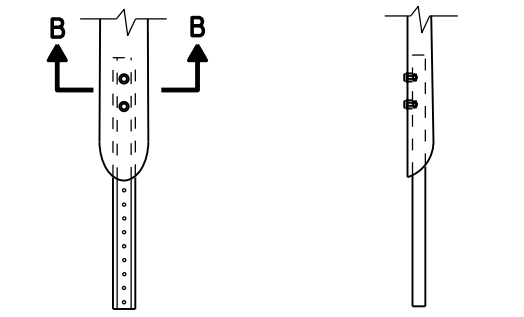
SECTION B-B



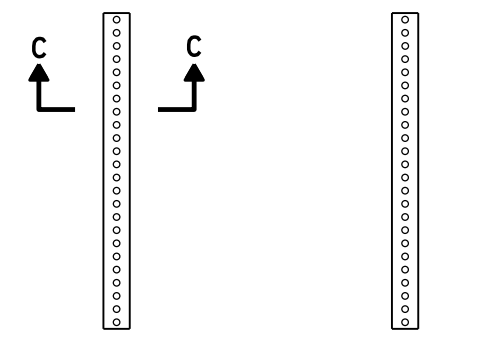
SECTION C-C



FRONT VIEW SIDE VIEW  
ALTERNATE 1



FRONT VIEW SIDE VIEW  
ALTERNATE 2

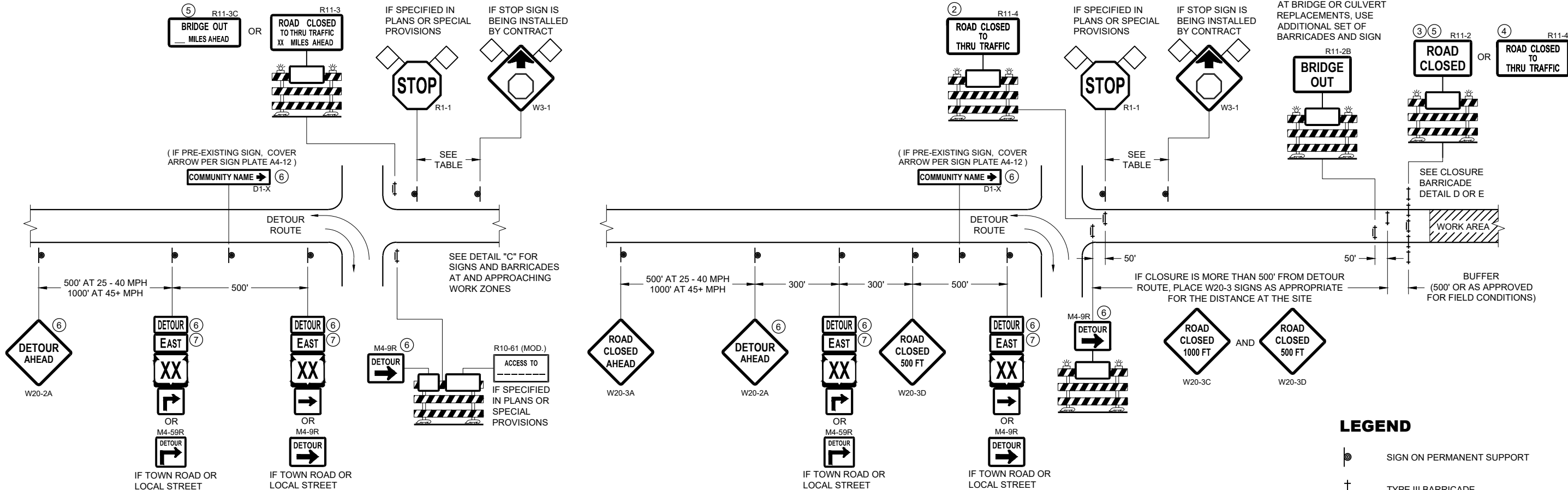


FRONT VIEW SIDE VIEW  
ALTERNATE 3

**FLEXIBLE MARKER POST ANCHORS**

<b>FLEXIBLE MARKER POST FOR CULVERT END</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/1/2012 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	





**DETAIL A  
MAINLINE CLOSURE WITH POSTED DETOUR**

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

**DETAIL B  
MAINLINE CLOSURE WITH POSTED DETOUR**

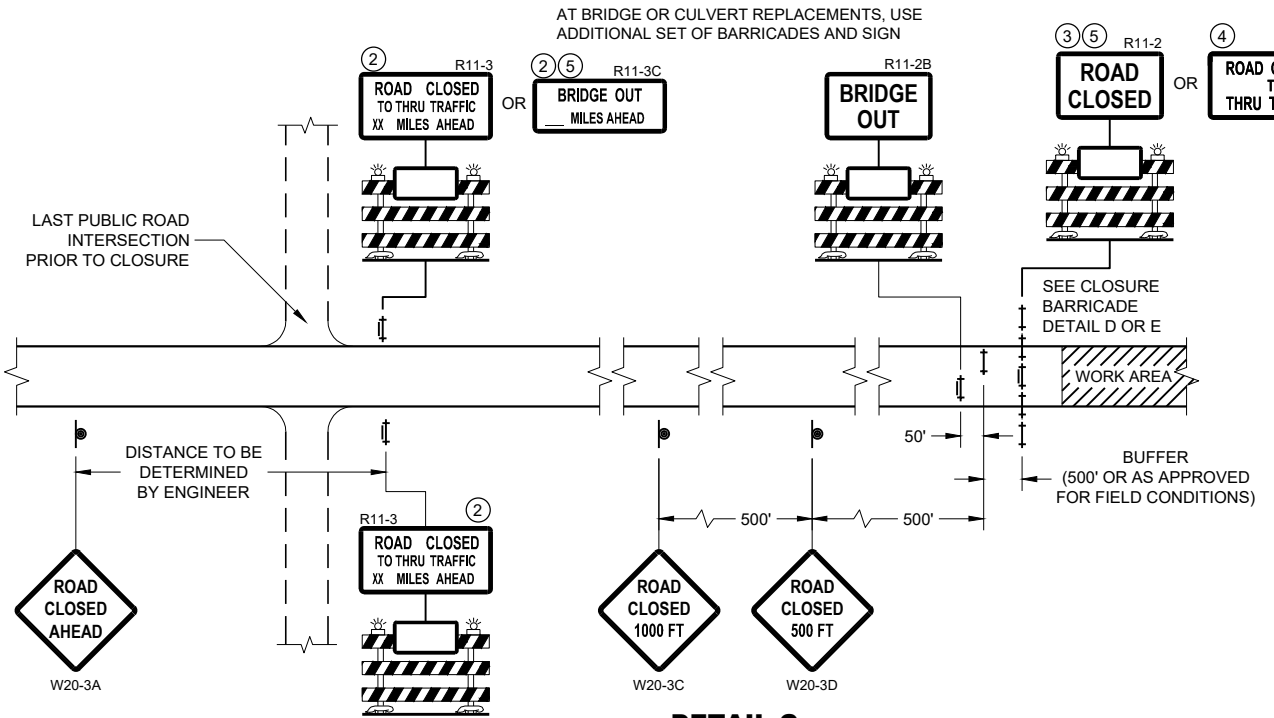
WORK ZONE LESS THAN 1/2 MILE FROM  
DETOUR ROUTE ( 1000 FEET IF URBAN )

**LEGEND**

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

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

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



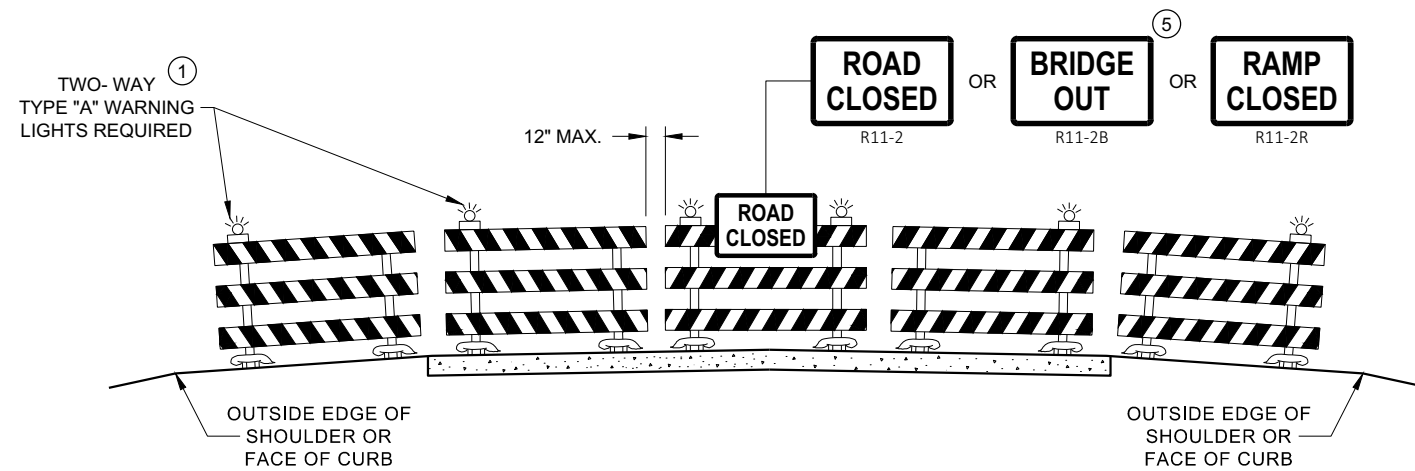
**DETAIL C  
MAINLINE CLOSURE, NO POSTED DETOUR**

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

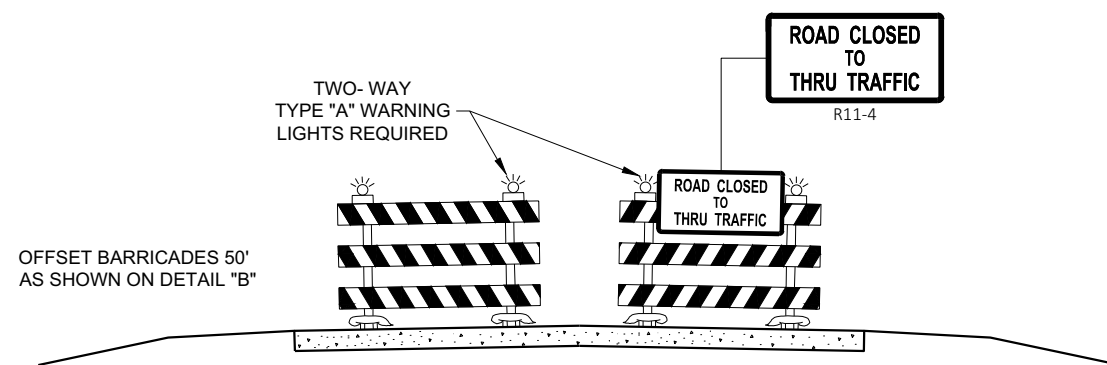
**BARRICADES AND SIGNS  
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2020 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER  
FHWA



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



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

SEE SDD 15C2 - SHEET "a" FOR LEGEND

**GENERAL NOTES**

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

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

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

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

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

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

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

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

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

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

- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

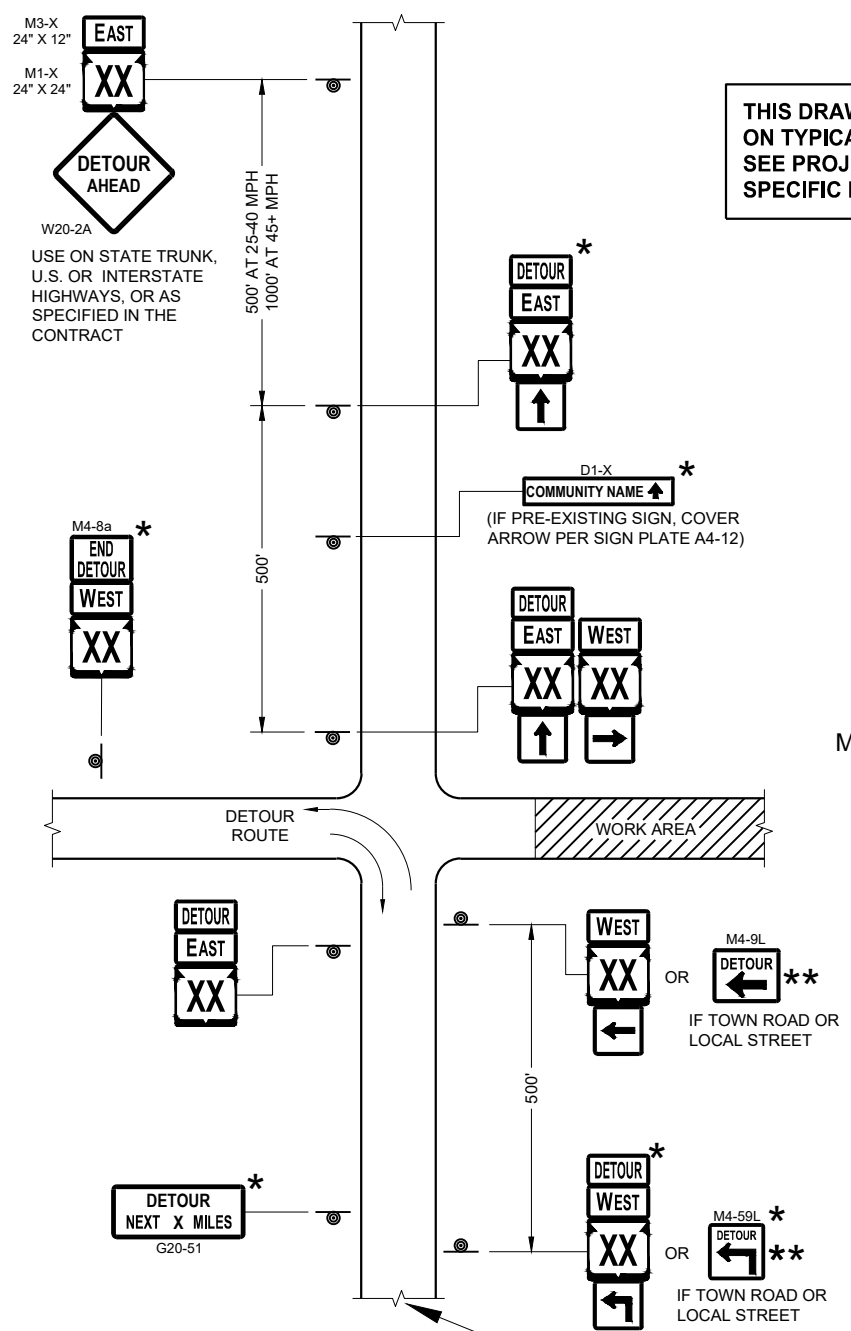
- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS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

**BARRICADES AND SIGNS  
FOR  
VARIOUS CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2020 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA



THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

**LEGEND**

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1
- M06 - 1

**GENERAL NOTES**

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

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. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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.

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

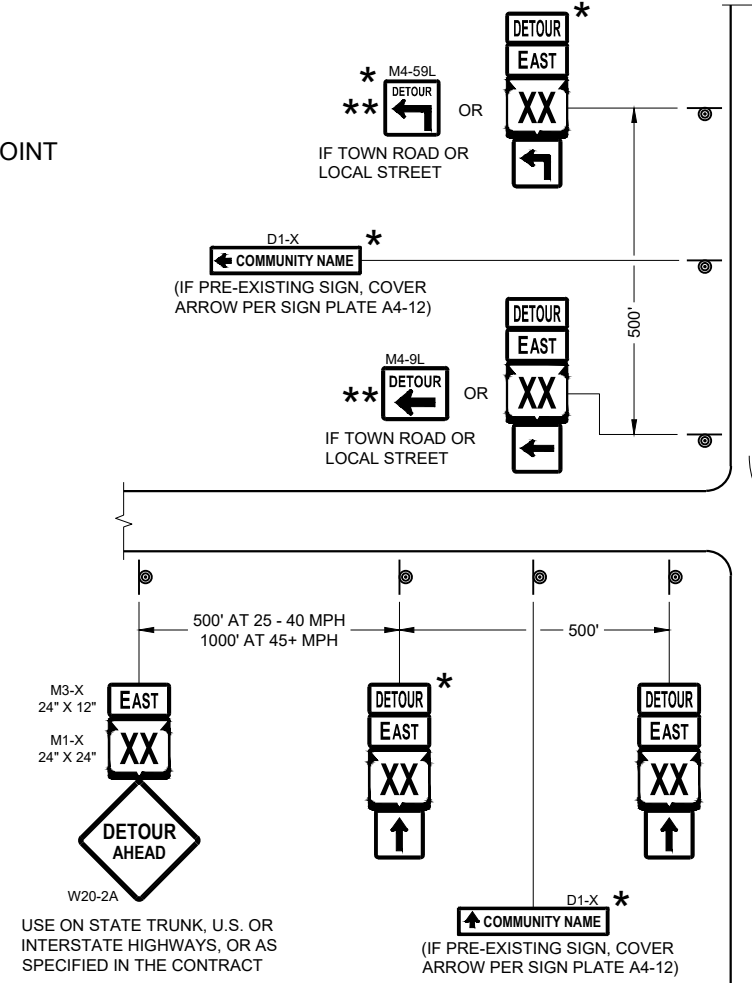
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

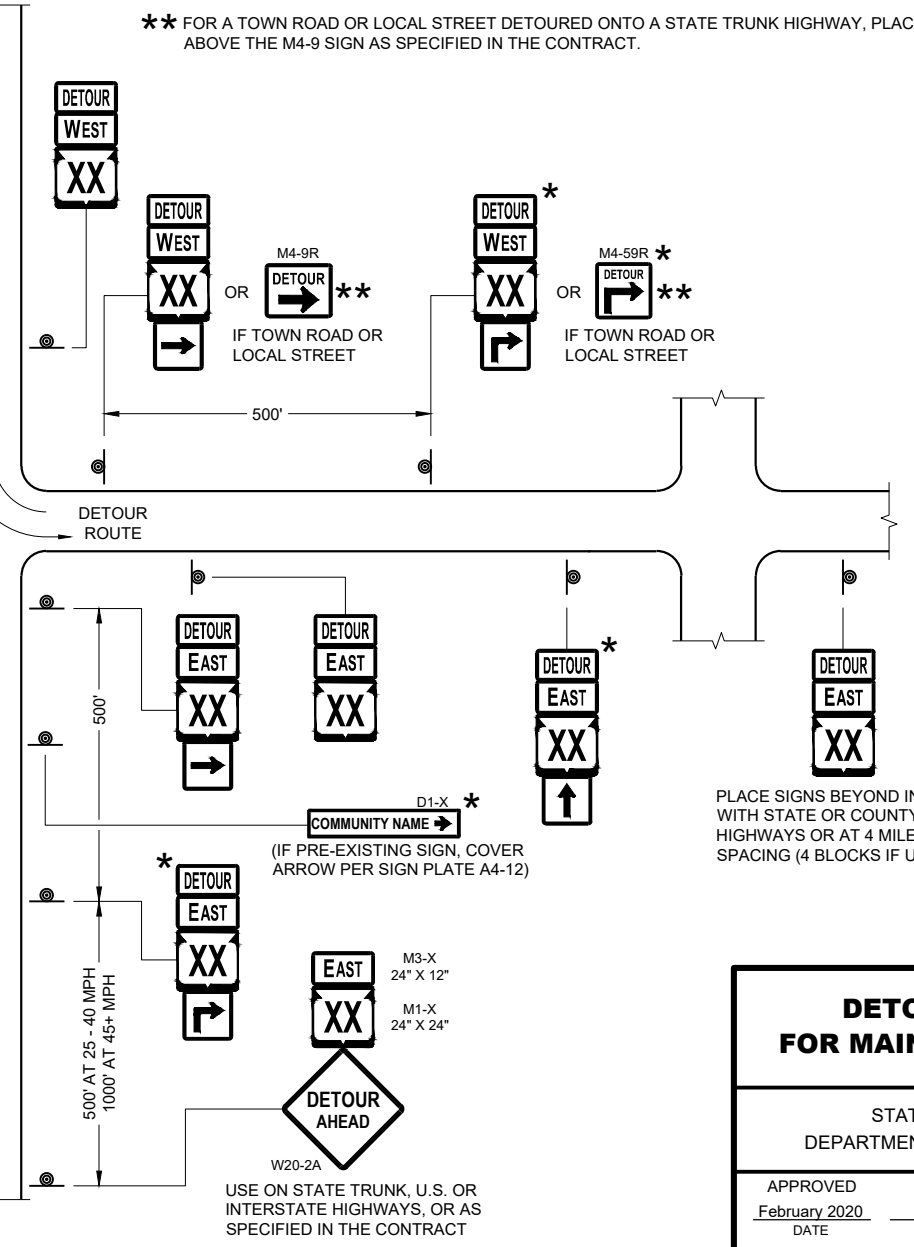
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

- \* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- \*\* FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

MATCH POINT



**DETAIL F  
DETOUR SIGNING**



**DETOUR SIGNING  
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2020 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

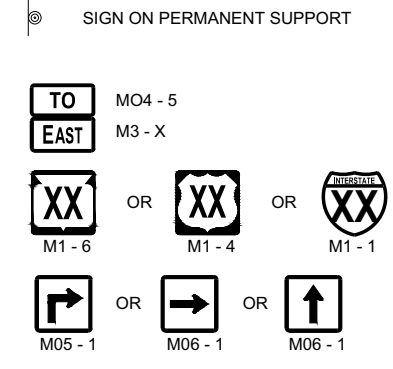
FHWA

SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

PLACE SIGNS BEYOND INTERSECTIONS WITH STATE OR COUNTY TRUNK HIGHWAYS OR AT 4 MILE MAXIMUM SPACING (4 BLOCKS IF URBAN AREA)

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL TO SIGN LAYOUT AND SPACING. SEE PROJECT TO SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

**LEGEND**



**GENERAL NOTES**

- THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- IF THERE ARE ANY ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE TO ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT TO SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.
- THE SPACING BETWEEN TRAFFIC CONTROL AND TO SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
- 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.
- SIGNS THAT SHALL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.
- "MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- SIGN SIZES SHALL BE AS FOLLOW:  
M3 - X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS).  
M04 - 5 SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS).  
M1 - 1, M1 - 4, AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS).  
M05 - 1, M05 - 2, AND M06 - 1, SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS).  
W20 - 53A SHALL BE 48" X 48"
- \* PLACE "RAMP CLOSED BEGINNING" SIGN 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR LAYOUT.

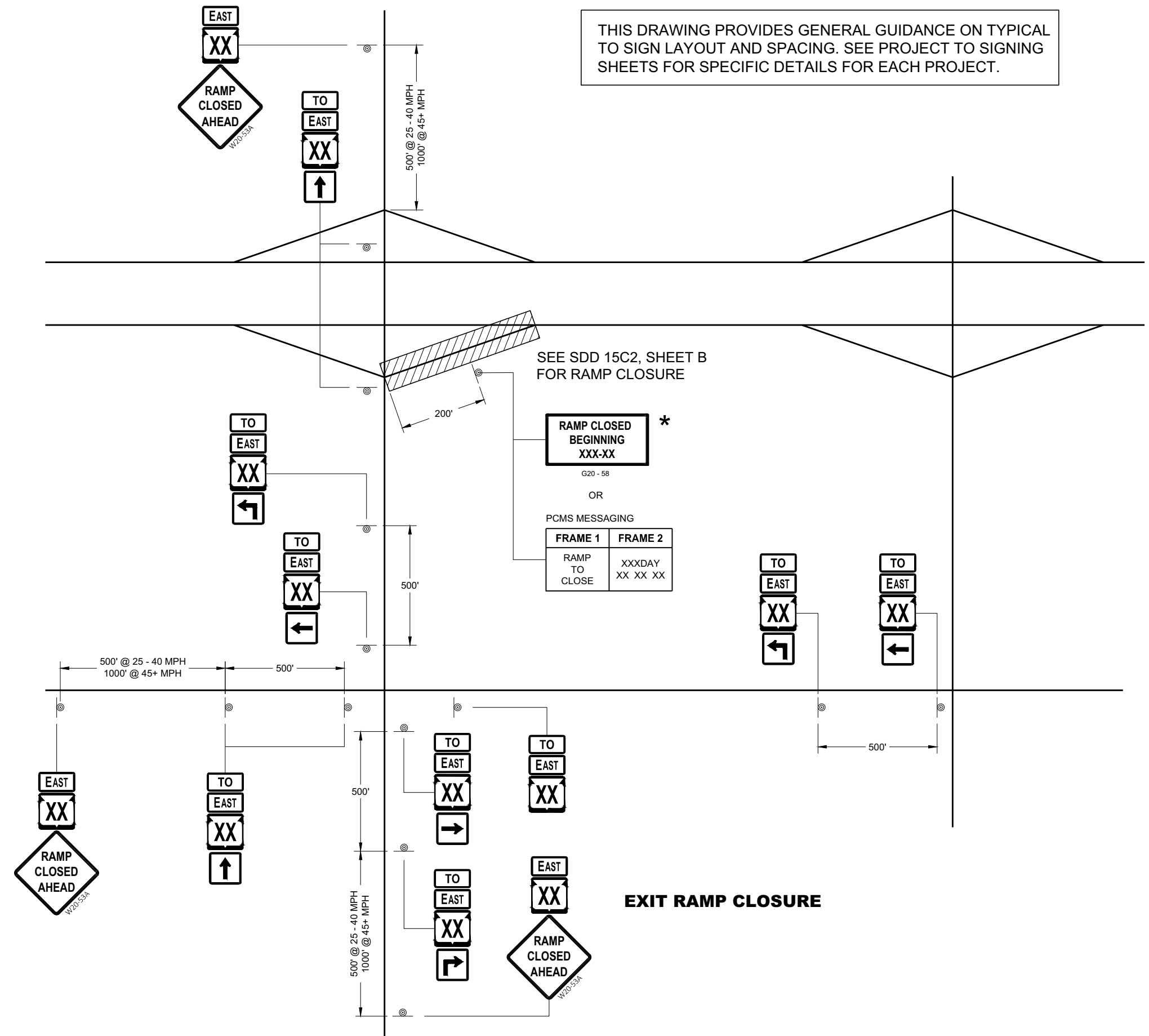
6

6

SDD 15C02 - 08d

SDD 15C02 - 08d

**EXIT RAMP CLOSURE**



**ON RAMP  
LANE CLOSURE**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2020 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

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THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL "TO" MO-4 SIGN LAYOUT AND SPACING. SEE PROJECT TO SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

**LEGEND**

- ⊙ SIGN ON PERMANENT SUPPORT
- PCMS PORTABLE CHANGEABLE MESSAGE SIGN
- TO MO4 - 5
- M1 - 4 OR M1 - 6 OR M1 - 5A
- M05 - 1 OR M05 - 2 OR M06 - 1 OR M06 - 2 OR M06 - 4

**GENERAL NOTES**

- SEE SDD 15D16 "TRAFFIC CONTROL, EXIT RAMP CLOSURE" DETAIL FOR TRAFFIC CONTROL AT EXIT RAMP CLOSURE.
- THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- IF THERE ARE ANY ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE "TO" MO-4 ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT TO SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.
- THE SPACING BETWEEN TRAFFIC CONTROL AND "TO" MO-4 SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
- 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.
- SIGNS THAT SHALL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.
- "MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- SIGN SIZES SHALL BE AS FOLLOW:  
 MO4 - 5 SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS).  
 M1 - 4, M1 - 5A, AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS).  
 MO5 - 1, MO5 - 2, AND MO6 - 1, SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS).
- ① ONLY ADD IF THERE ARE NO EXISTING ROUTE MARKERS FOR THE INTERSECTING ROADWAY.

SEE SDD 15D16 FOR RAMP CLOSURE

**EXIT RAMP CLOSURE**

6

6

SDD 15C02 - 08e

SDD 15C02 - 08e

PCMS MESSAGING

FRAME 1	FRAME 2
EXIT XX CLOSED	USE EXIT XX

OR

FIXED MESSAGE SIGN

HWY XX  
RAMP CLOSED  
USE EXIT XX

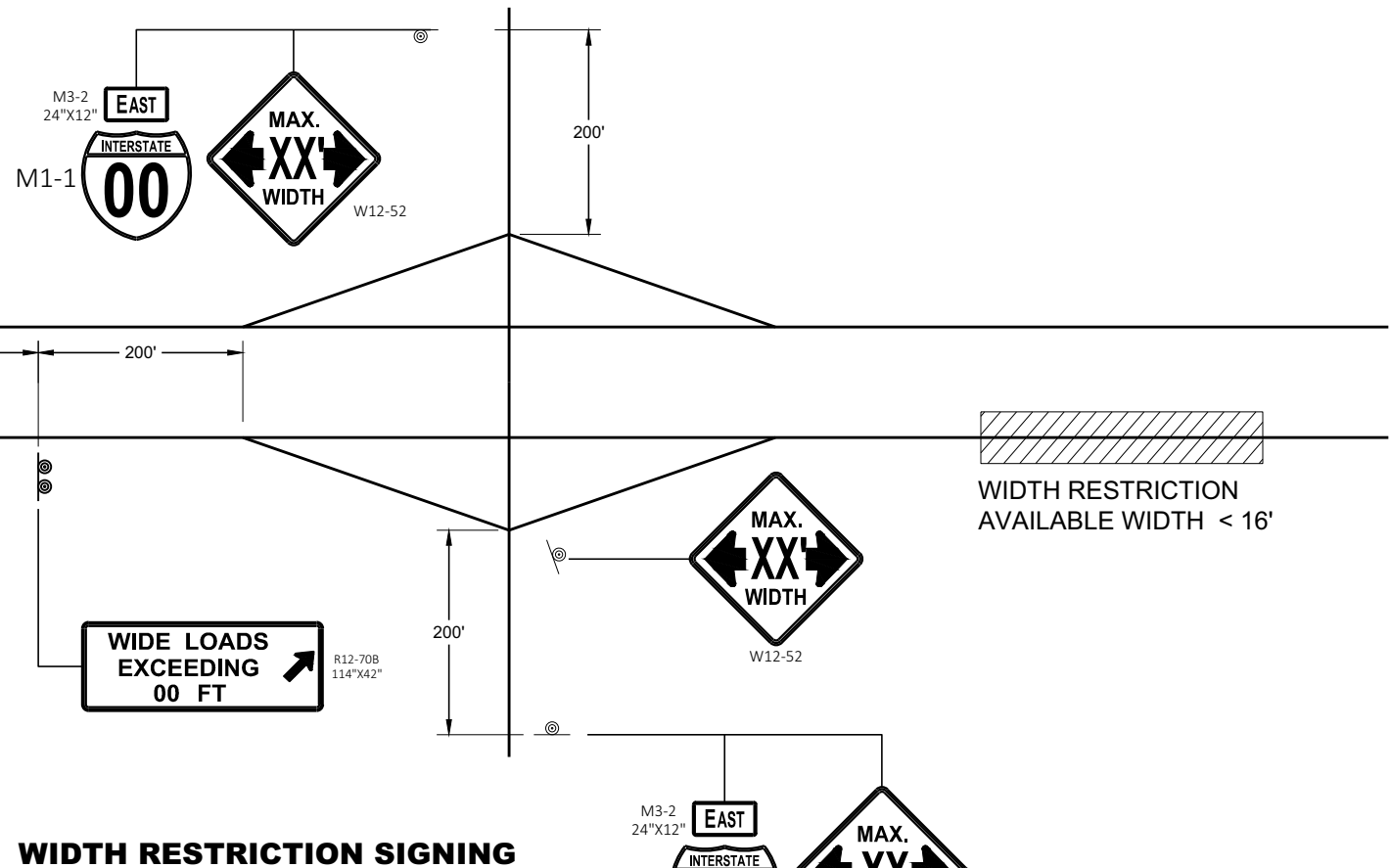
G20 - 56

**OFF RAMP  
LANE CLOSURE**

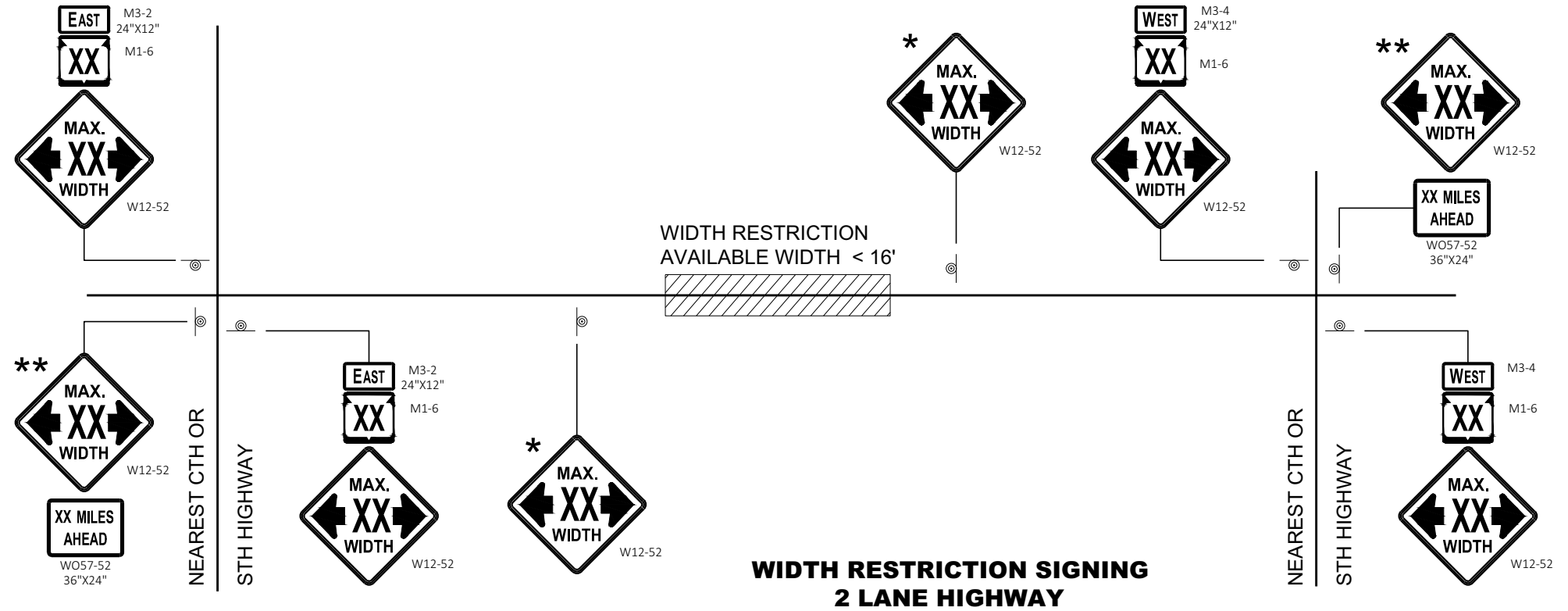
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2020 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA



**WIDTH RESTRICTION SIGNING**



**WIDTH RESTRICTION SIGNING  
2 LANE HIGHWAY**

**LEGEND**

⊙ SIGN ON PERMANENT SUPPORT

**GENERAL NOTES**

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

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

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.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

WIDTH ON SIGN TO BE APPROXIMATELY ONE FOOT LESS THAN AVAILABLE WIDTH.

\* PLACE 500 FEET AFTER THE W20 - 1A AND 500 FEET BEFORE ADDITIONAL SIGNS FOR ROADWAYS WITH A PRE - CONSTRUCTION SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350 FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200 FOOT TYPICAL SPACING.

\*\* SIGN SHALL BE VISIBLE FROM ROADWAY.

\*\*\* ADDITIONAL SIGNS NEEDED IF THERE IS AN ON RAMP BETWEEN SIGNS.

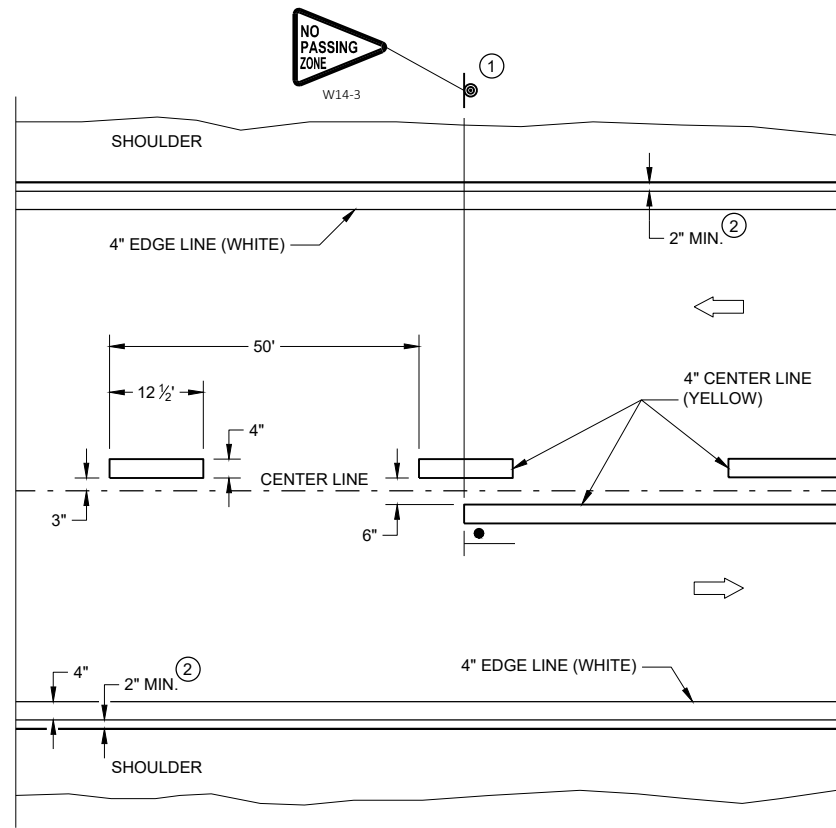


WIDTH ON SIGN TO BE APPROX. 1 - FOOT LESS THAN AVAILABLE WIDTH

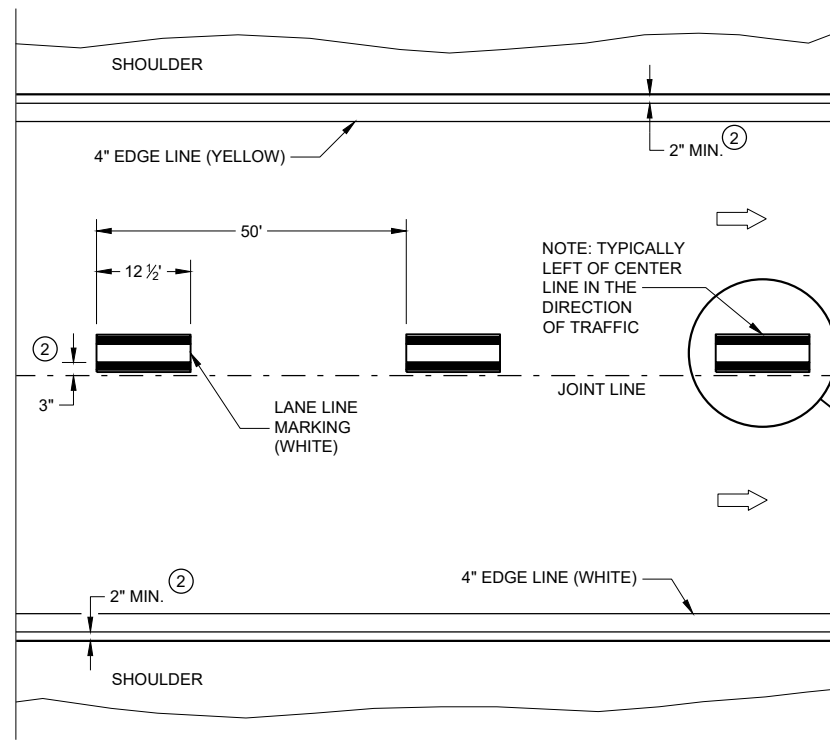
**ADVANCED WIDTH RESTRICTION SIGNING**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2020 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER  
FHWA

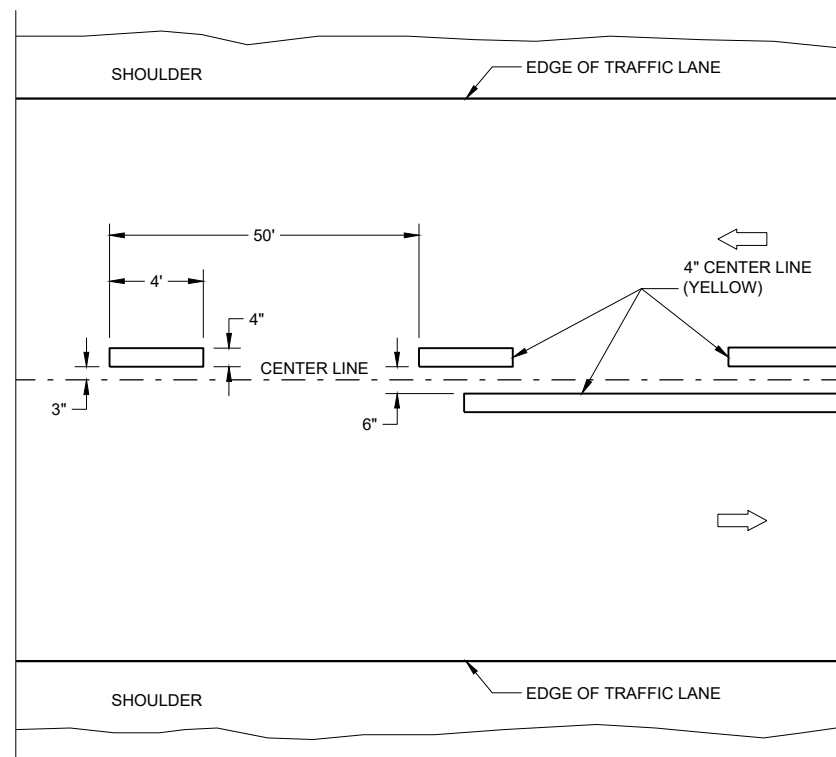


**TWO WAY TRAFFIC**

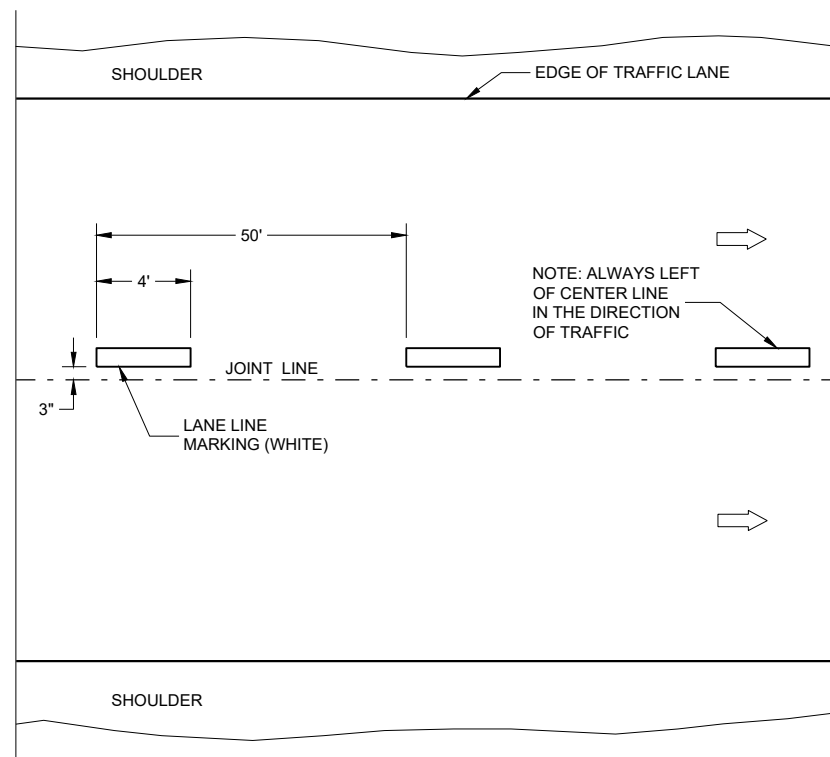


**ONE WAY TRAFFIC**

**PERMANENT PAVEMENT MARKING**



**TWO WAY TRAFFIC**



**ONE WAY TRAFFIC**

**TEMPORARY PAVEMENT MARKING**

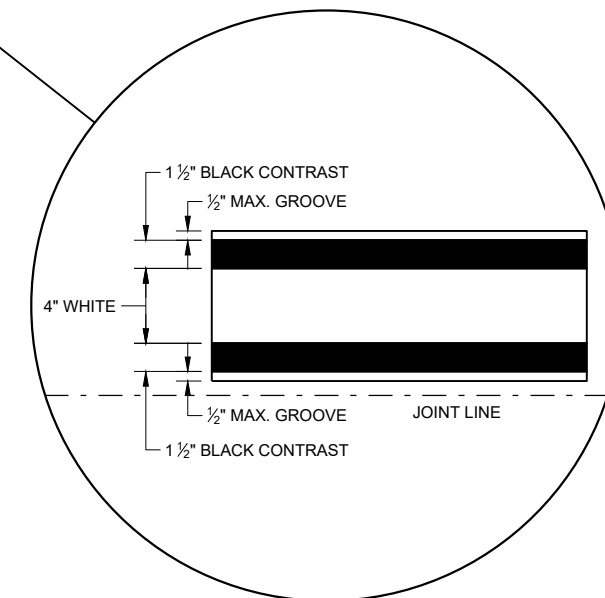
**GENERAL NOTES**

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

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

**LEGEND**

- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

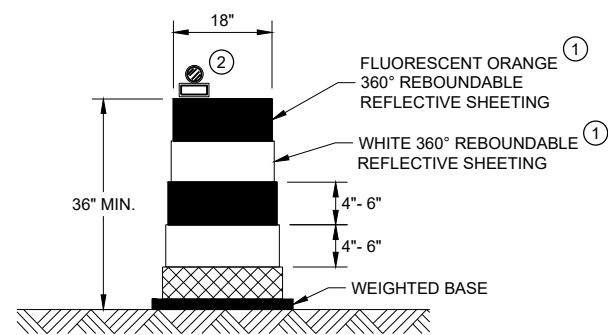


**LONGITUDINAL MARKING  
(MAINLINE)**

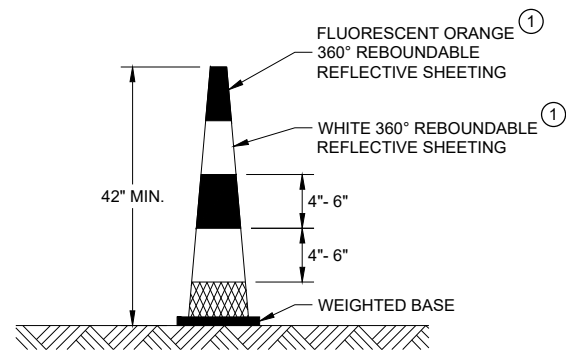
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2020 /S/ Matthew Rauch  
DATE STATEWIDE SIGNING AND MARKING  
ENGINEER



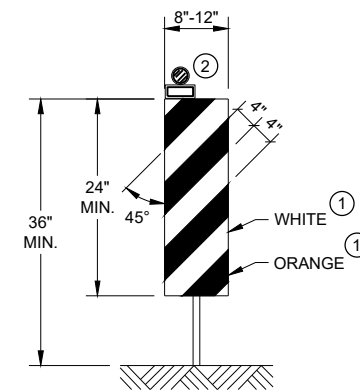


**DRUM**



**42" CONE**

DO NOT USE IN TAPERS  
 1/2 SPACING OF DRUMS

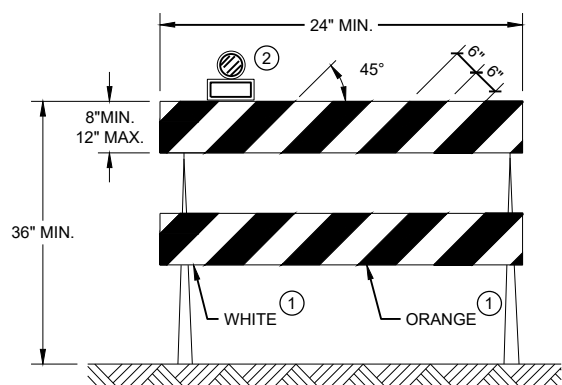


**VERTICAL PANEL**

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

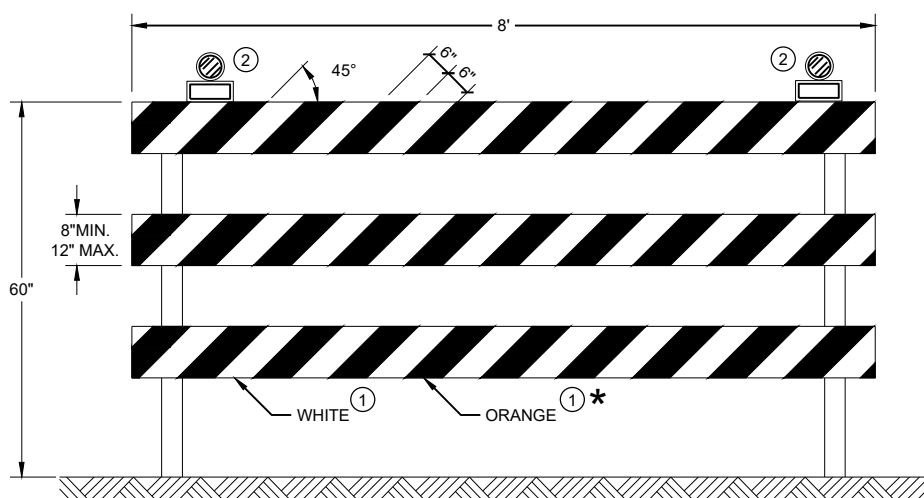
**GENERAL NOTES**

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



**TYPE II BARRICADE**

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



**TYPE III BARRICADE**

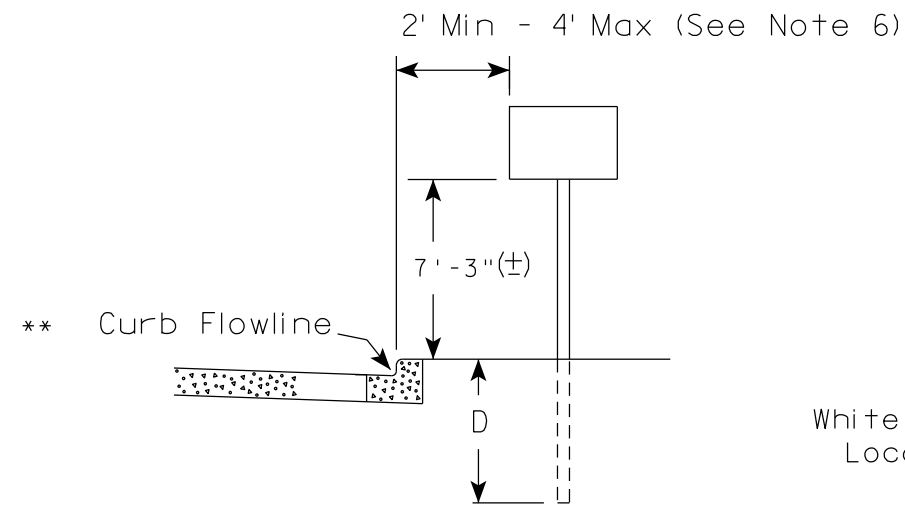
IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

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

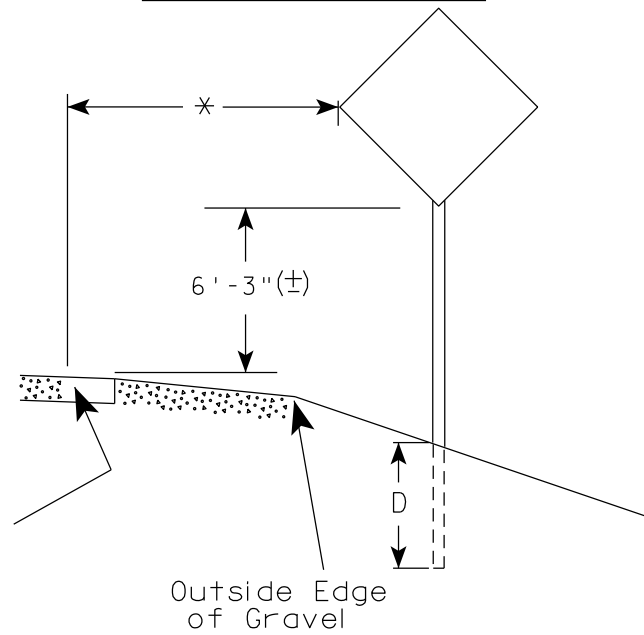
<b>CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

URBAN AREA

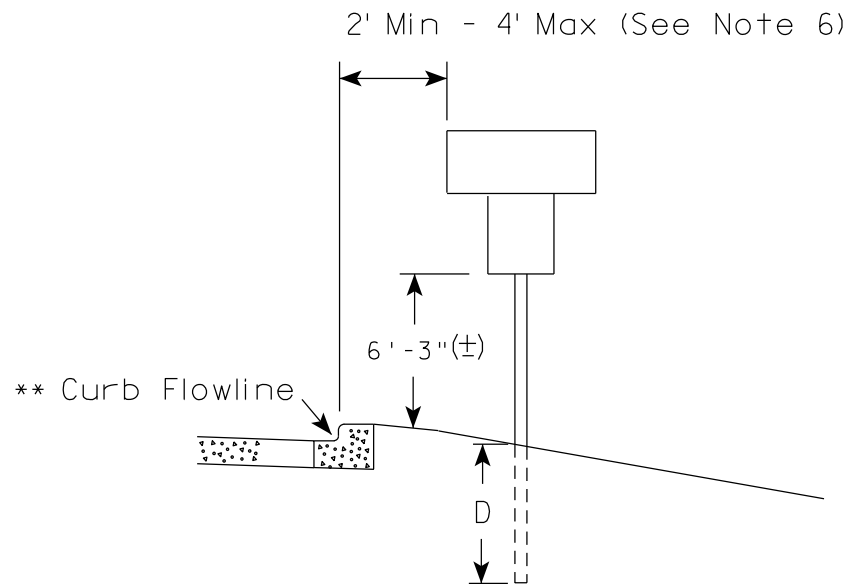
RURAL AREA (See Note 2)



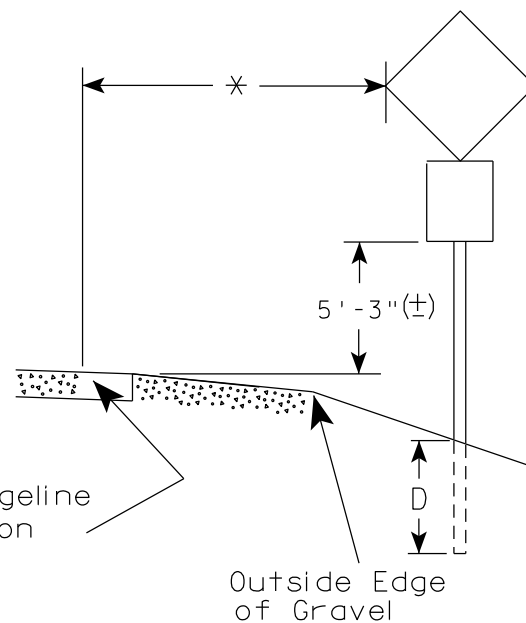
White Edgeline Location



Outside Edge of Gravel



White Edgeline Location



Outside Edge of Gravel

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.  
The Double Arrow sign (W12-1D) 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" (±).
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 signs mounted on traffic signal poles is 5'- 3" (±).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (±) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the 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.

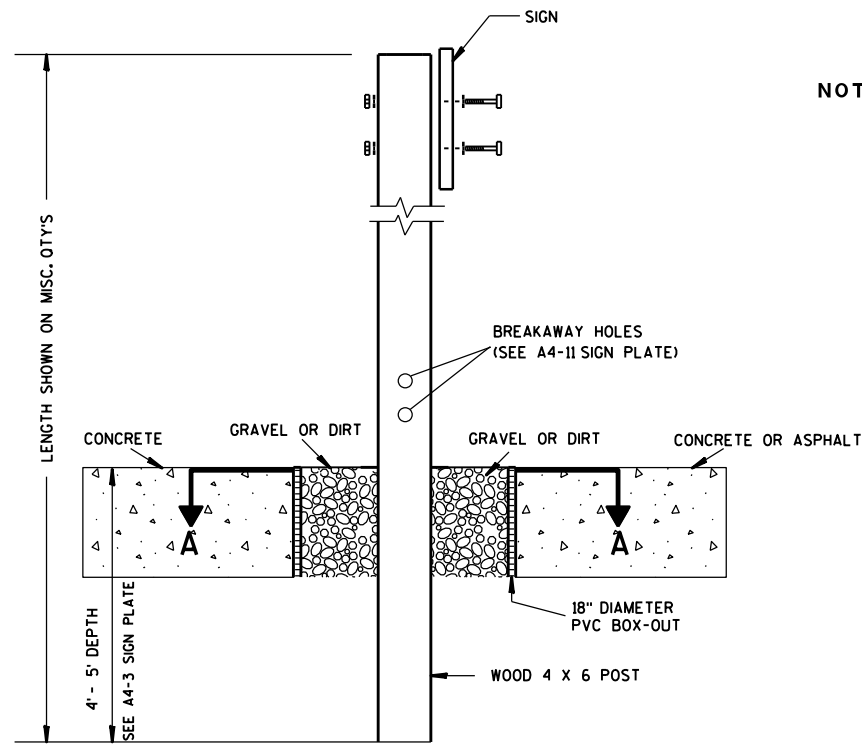
\* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

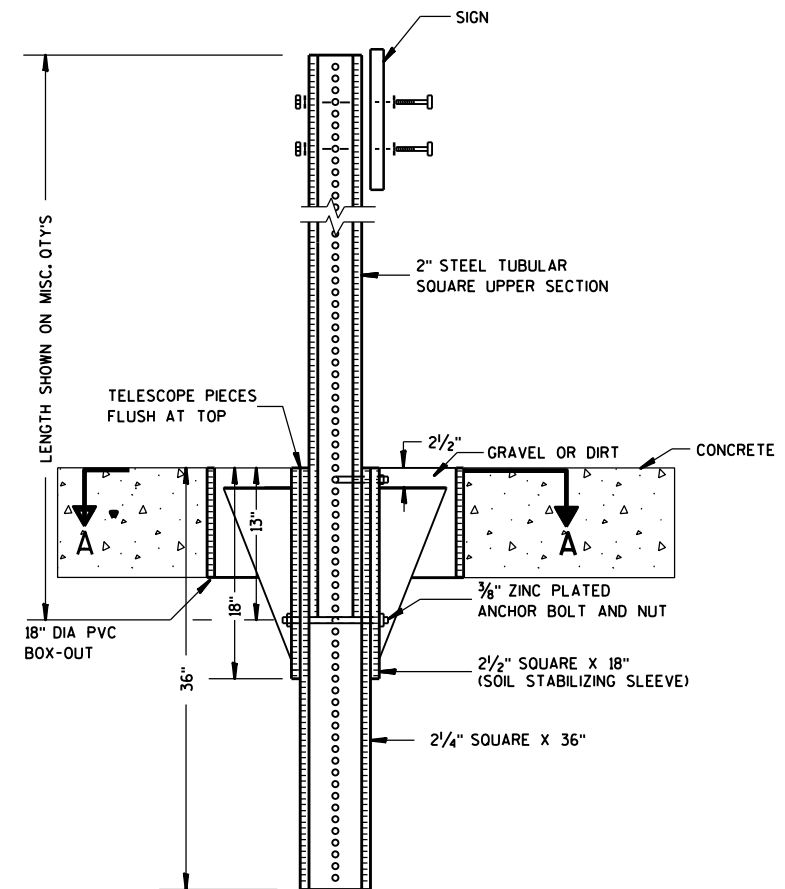
DATE 5/13/2020 PLATE NO. A4-3.22



**ELEVATION VIEW**

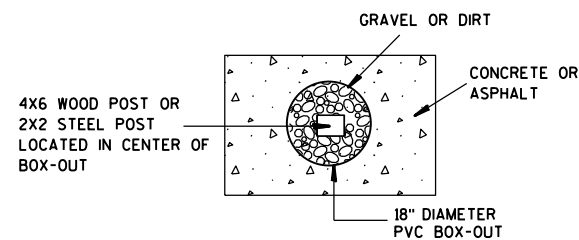
**DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT**

- NOTES:**
1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
  2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
  3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



**ELEVATION VIEW**

**DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT**



**PLAN VIEW**

**FOR NEW CONCRETE/ ASPHALT INSTALLATIONS**

**SIGN POST  
BOX-OUTS  
A4-3B**

WISCONSIN DEPT OF TRANSPORTATION

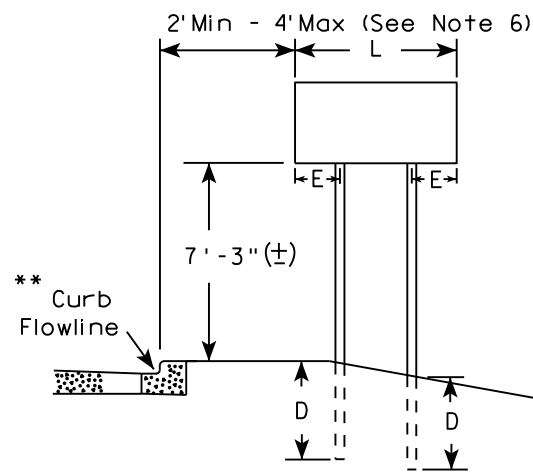
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

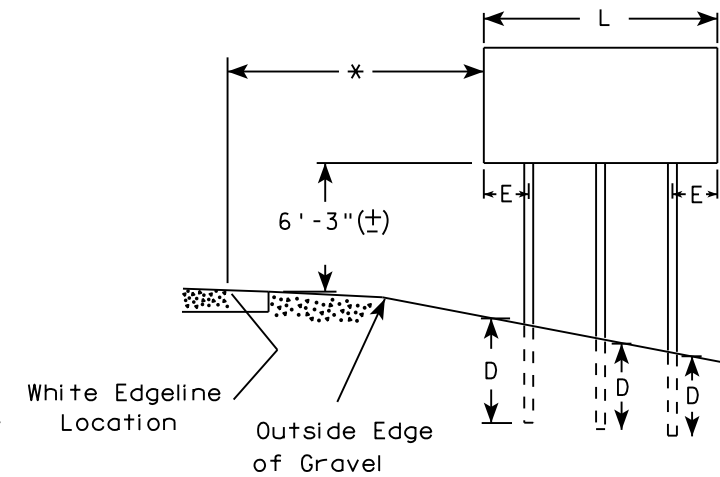
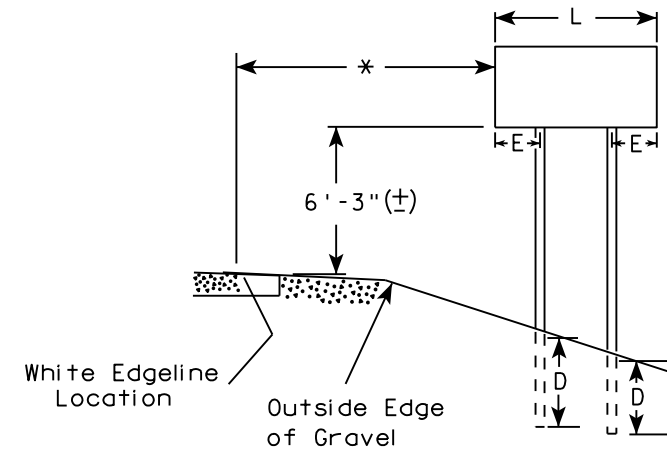
GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. 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), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

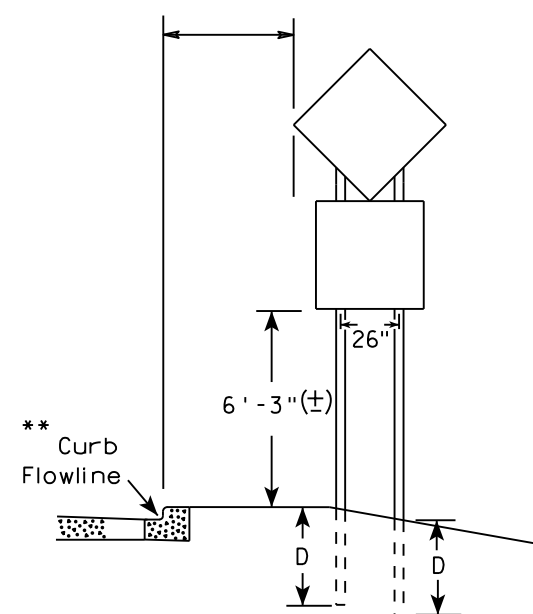
URBAN AREA



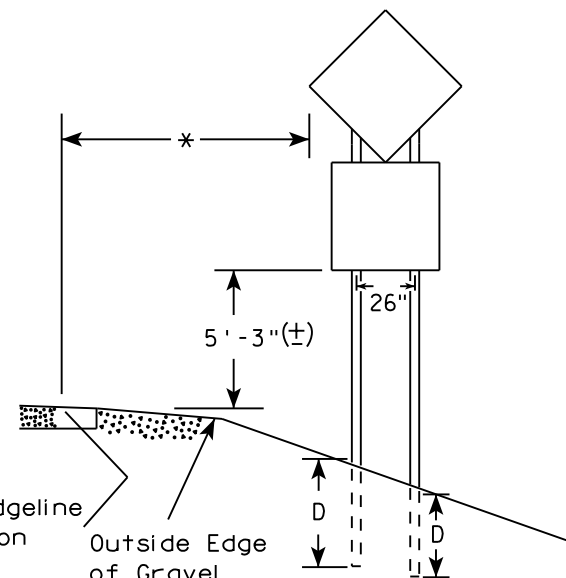
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

\* 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.

\*\*\* See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 108"	L/5

\*\*\*

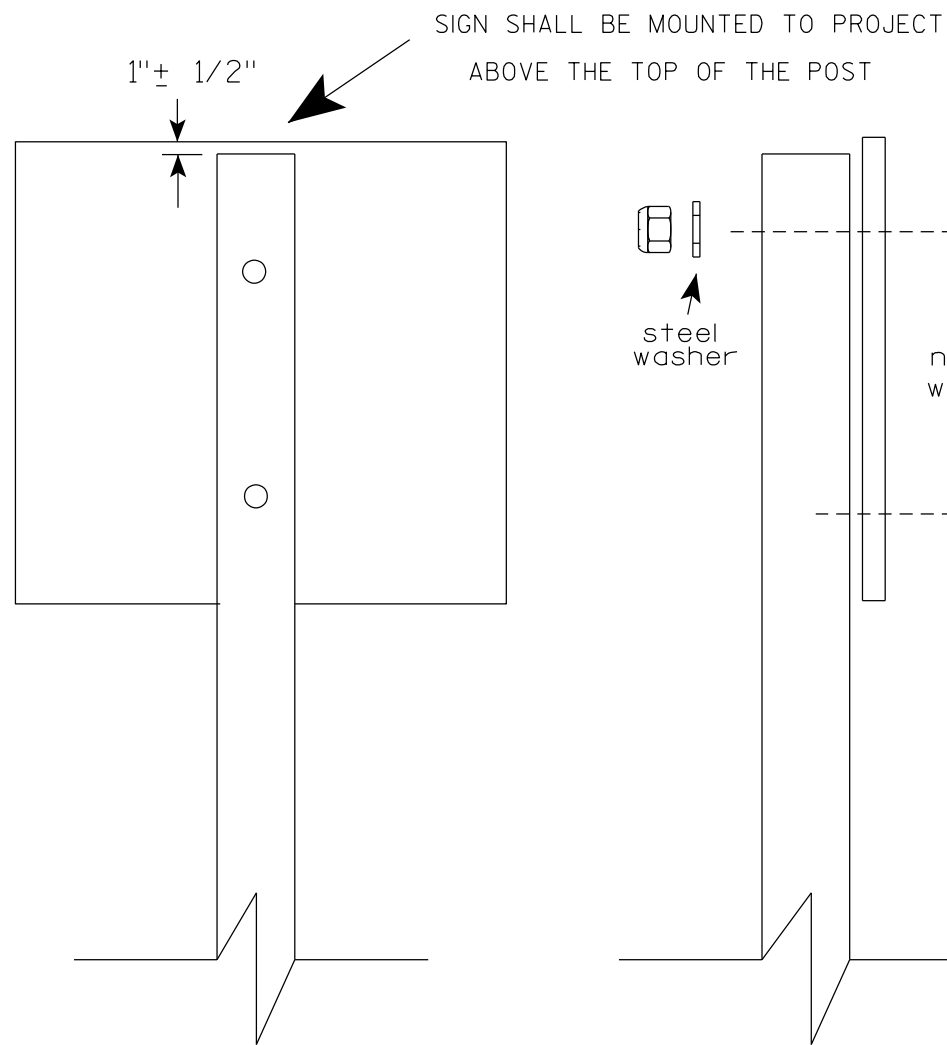
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION  
 APPROVED *Matthew R. Rauch*  
 For State Traffic Engineer  
 DATE 8/21/17 PLATE NO. A4-4.15



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

- Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- 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.

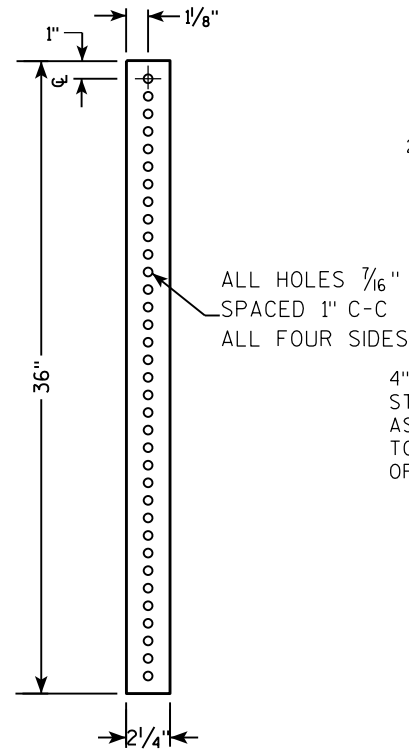
- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS -  $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS -  $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)  
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS -  $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)  
 $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS -  $\frac{9}{32}$ " (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  $\frac{3}{8}$ " I.D. X  $\frac{1}{16}$ " STEEL
- 1-1/4" O.D. X  $\frac{3}{8}$ " I.D. X .080 NYLON

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

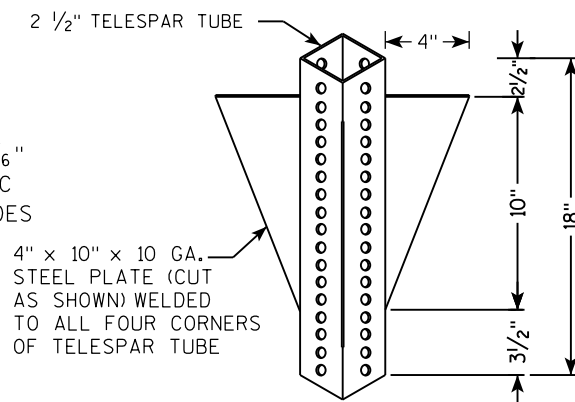
ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9

**TELESCOPIC TUBING ANCHORS  
TWO PIECE SYSTEM**

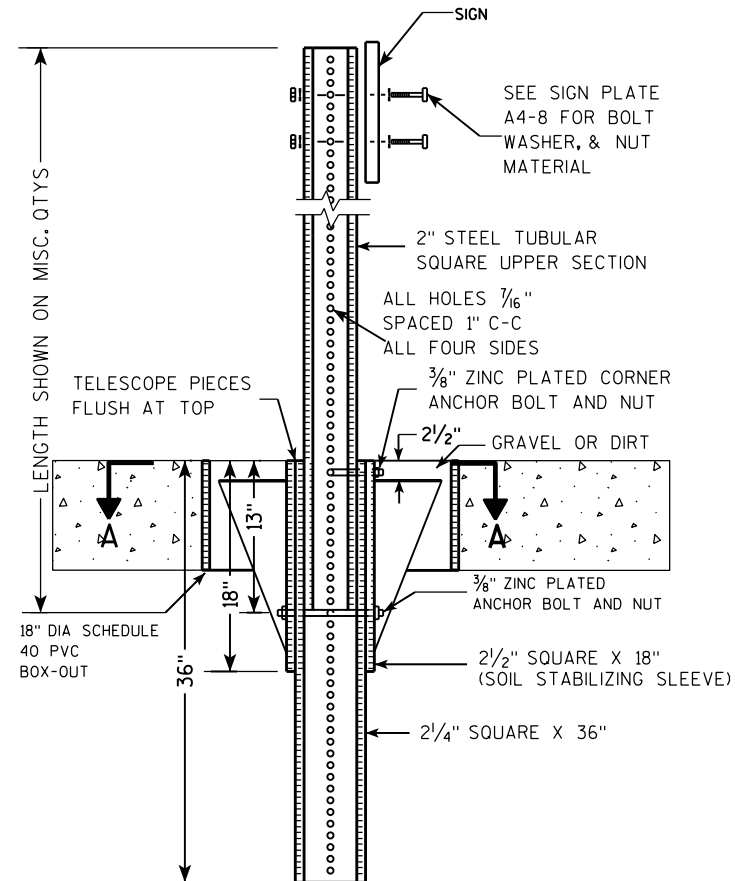
2 1/4" SQUARE  
12 GAUGE  
PERFORATED  
GALVANIZED FINISH



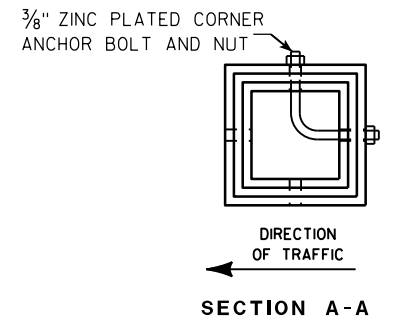
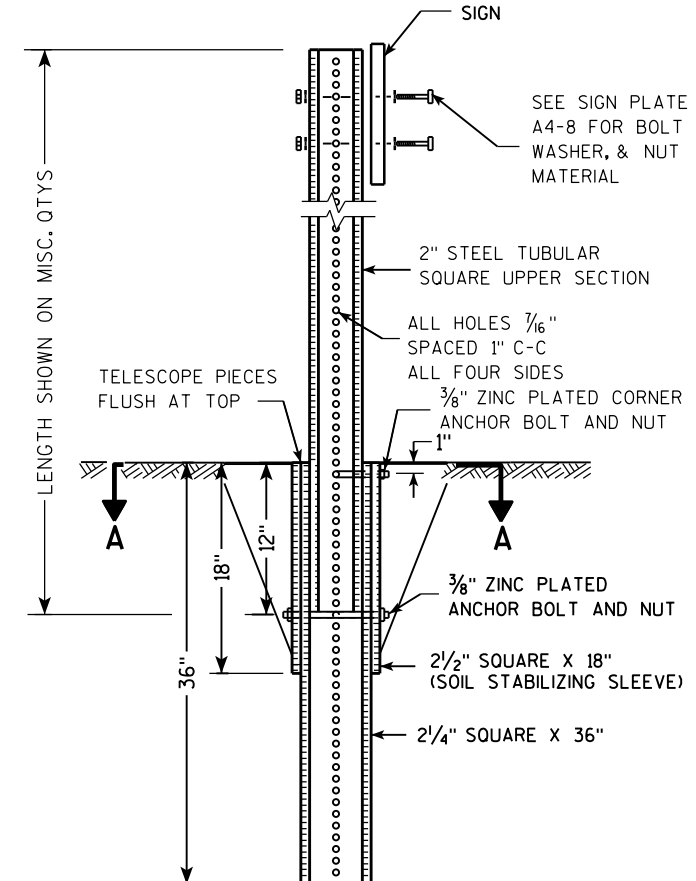
2 1/2" SQUARE  
12 GAUGE  
OMNI-DIRECTIONAL  
PERFORATED  
SOIL STABILIZING SLEEVE  
GALVANIZED FINISH



**DETAIL OF TUBULAR STEEL SIGN POST  
(IN POURED CONCRETE OR ASPHALT)**



**DETAIL OF TUBULAR STEEL SIGN POST  
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)**



Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

**TUBULAR STEEL  
SIGN POST  
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9

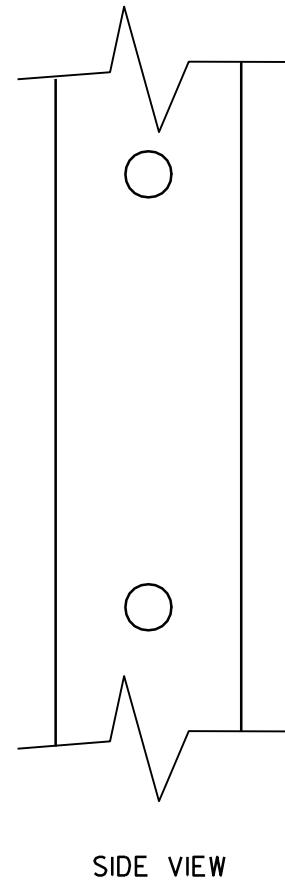
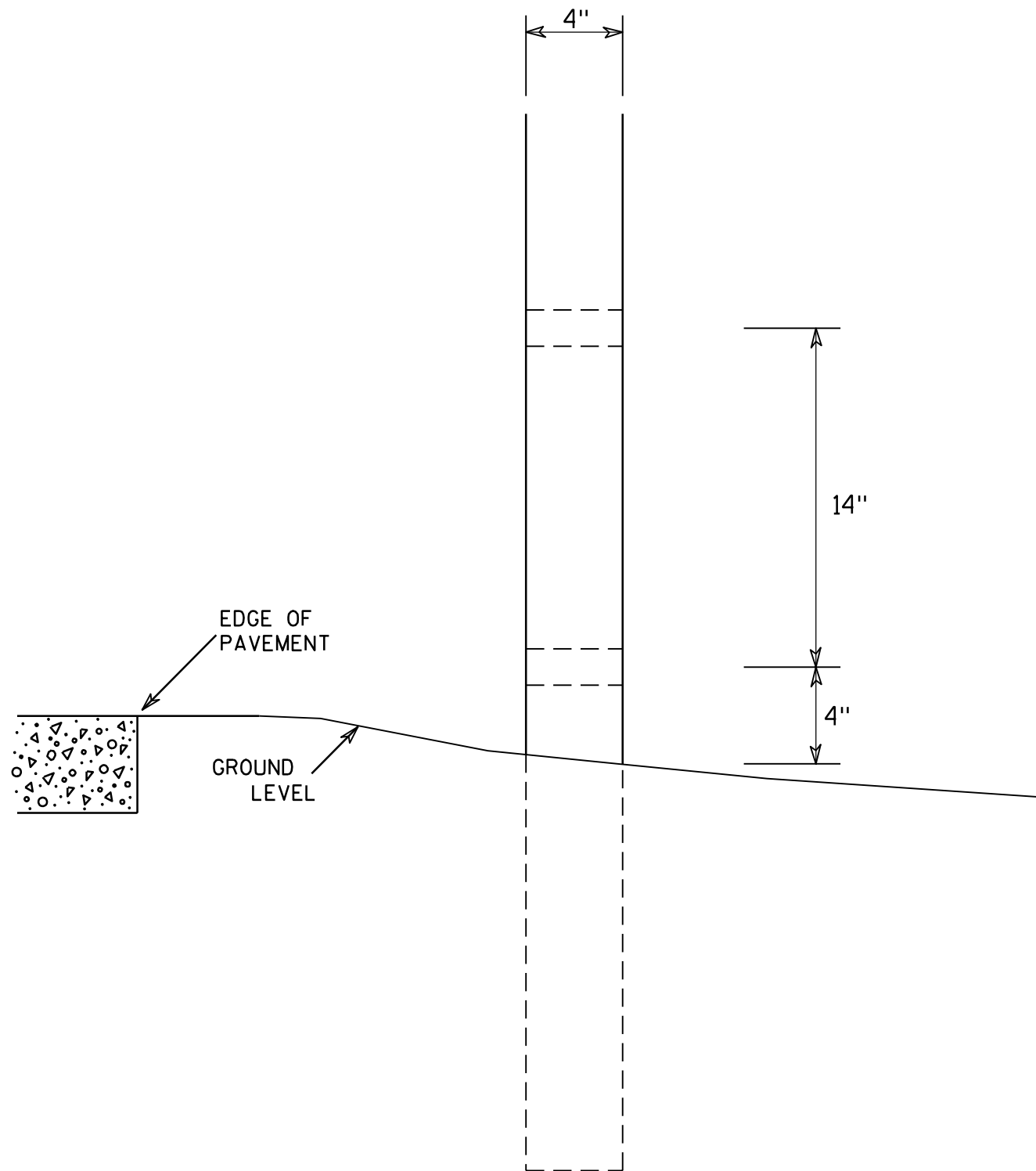
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



GENERAL NOTES

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

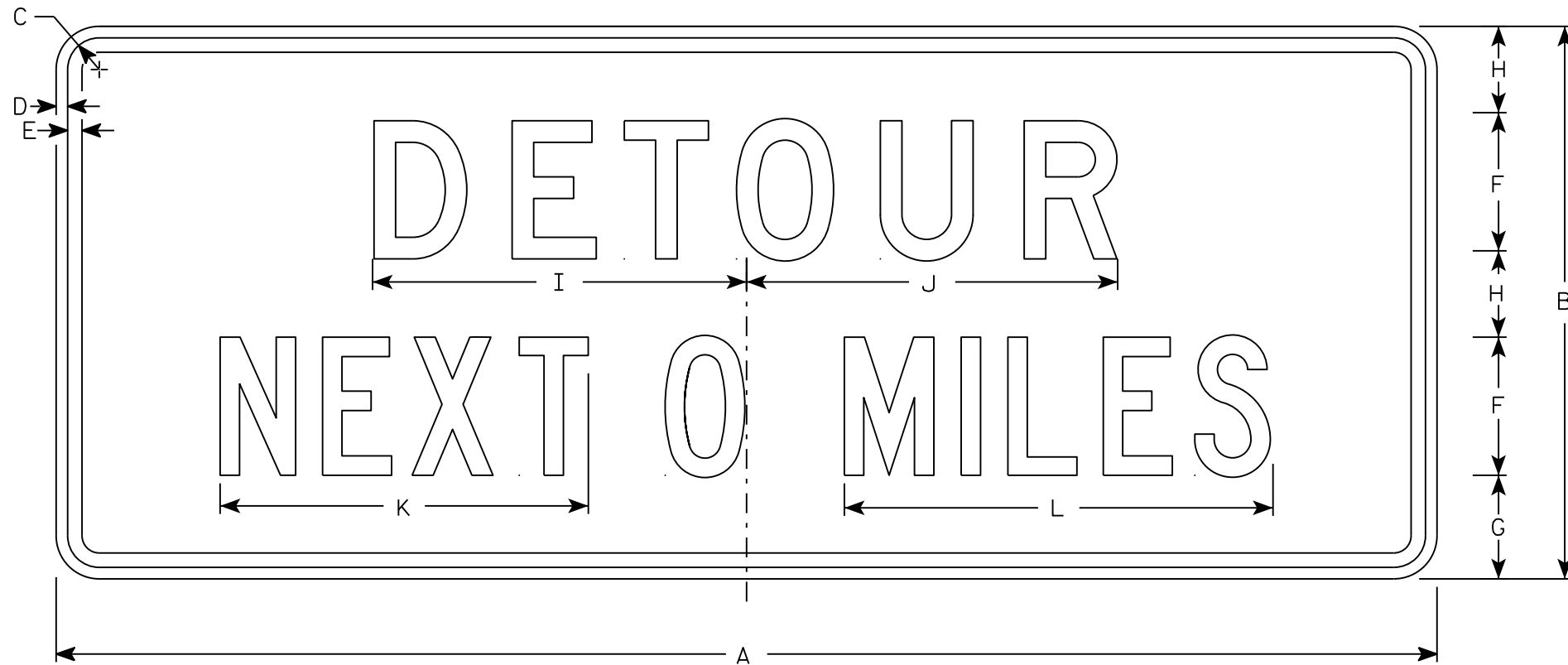
7

7

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

NOTES

1. Sign is Type II - Type F Reflective
2. Color:  
Background - Orange  
Message - Black
3. Message Series - Line 1 is D and Line 2 is C
4. 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.
5. Round distance to nearest whole Mile and substitute appropriate numerals and optically adjust spacing to achieve proper balance



G20-51

7

7

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																											
2	60	24	1 3/8	1/2	5/8	6	4 1/2	3 3/4	16 1/4	16 1/8	16	18 5/8															10
3																											
4	60	24	1 3/8	1/2	5/8	6	4 1/2	3 3/4	16 1/4	16 1/8	16	18 5/8															10
5																											

STANDARD SIGN  
G20-51

WISCONSIN DEPT OF TRANSPORTATION

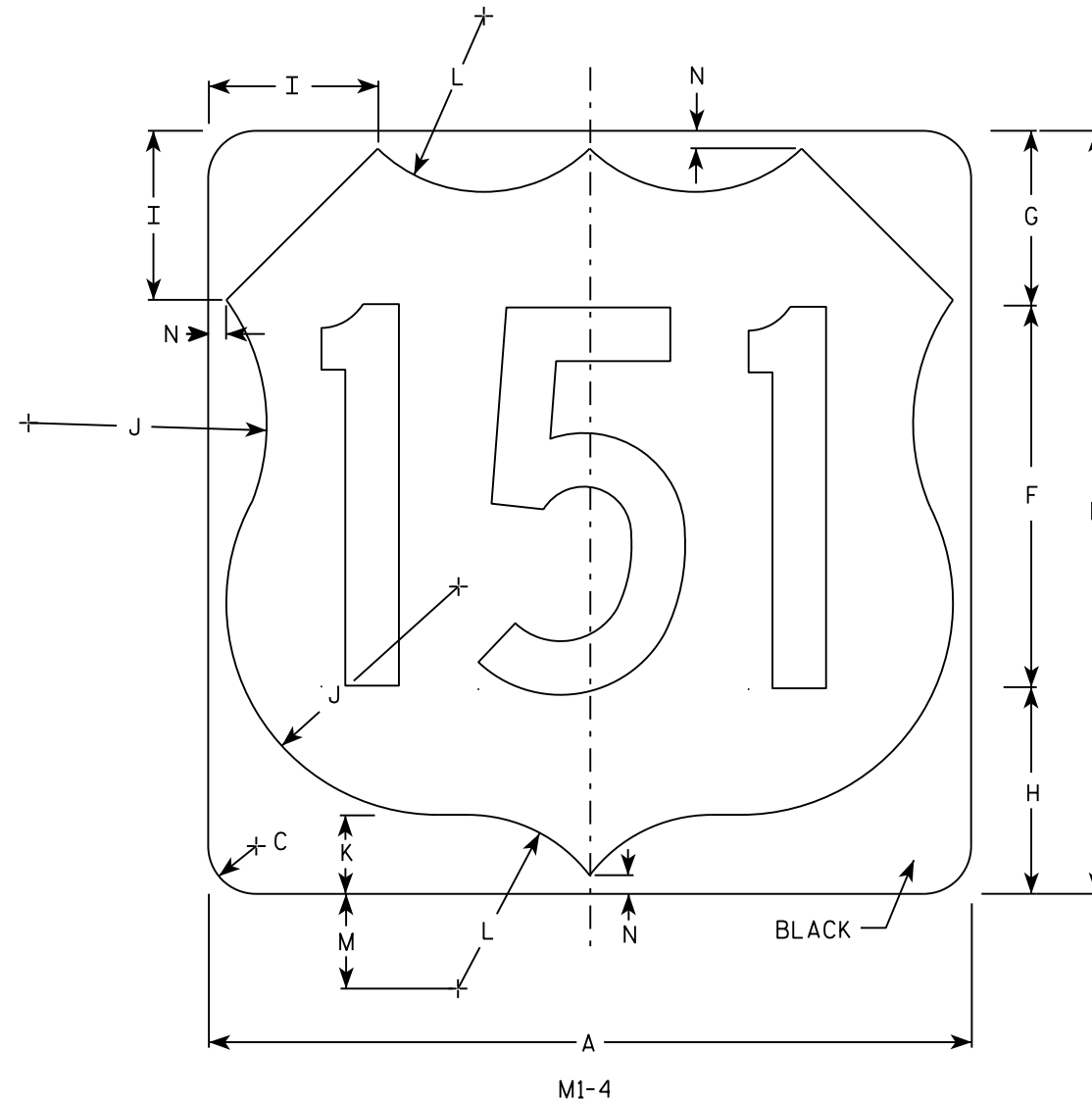
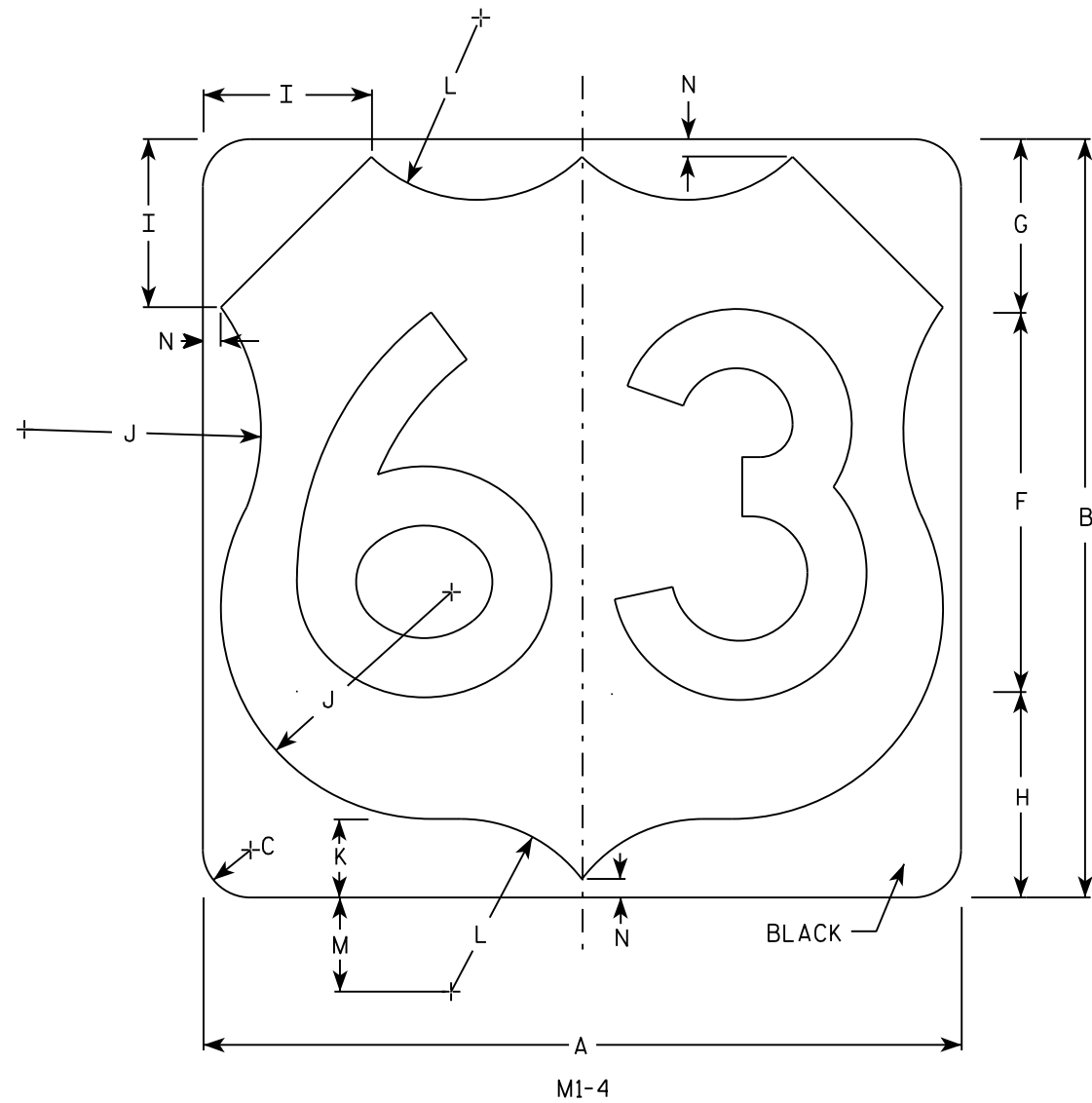
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/14/17 PLATE NO. G20-51.2



NOTES

1. Sign is Type II - Type H Reflective
2. Color:  
Background - White  
Message - Black
3. Message Series - D except 3 number signs Series C
4. 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.



7

7

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																											
2	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0

USH MARKER  
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

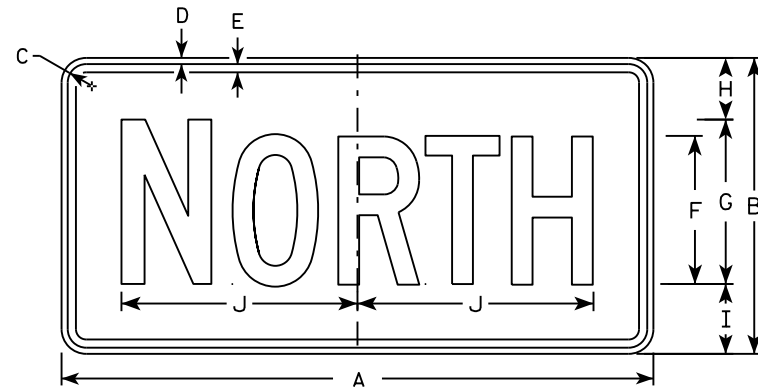
APPROVED *Matthew R Rauch*  
For State Traffic Engineer

DATE 3/16/18 PLATE NO. M1-4.10

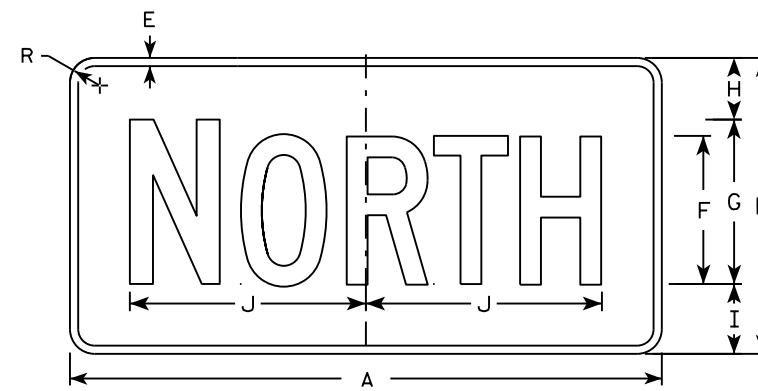
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ **E**

NOTES

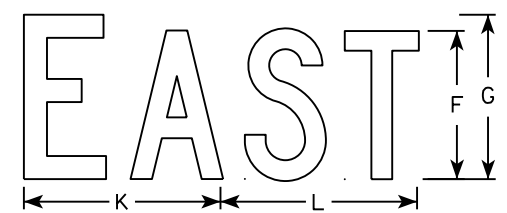
- All Signs Type II - Type H
- Color:
  - Background - See note 5
  - Message - See note 5
- Message Series - C
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M3-1 thru M3-4 Background - White  
 Message - Black  
 MB3-1 thru MB3-4 Background - Blue  
 Message - White  
 MK3-1 thru MK3-4 Background - Green  
 Message - White  
 MM3-1 thru MM3-4 Background - White  
 Message - Green  
 MN3-1 thru MN3-4 Background - Brown  
 Message - White  
 MP3-1 thru MP3-4 Background - White  
 Message - Blue
- Note the first letter of each direction is larger than the remainder of the message.



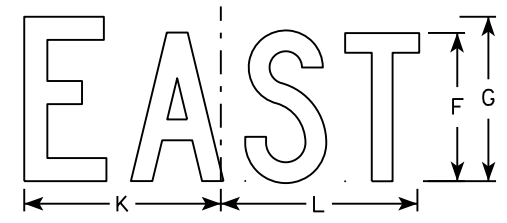
M3-1  
MM3-1  
MP3-1



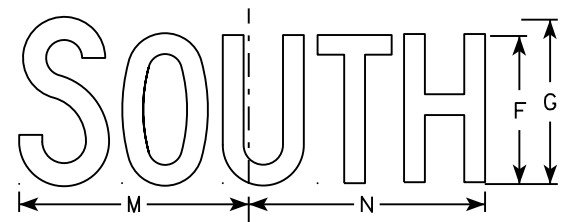
MB3-1  
MK3-1  
MN3-1



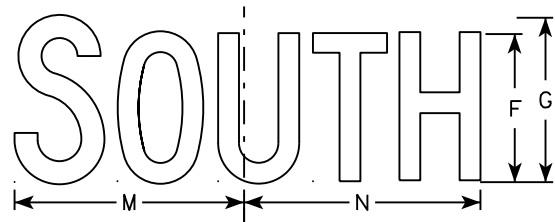
M3-2  
MM3-2  
MP3-2



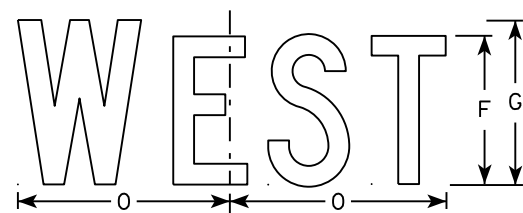
MB3-2  
MK3-2  
MN3-2



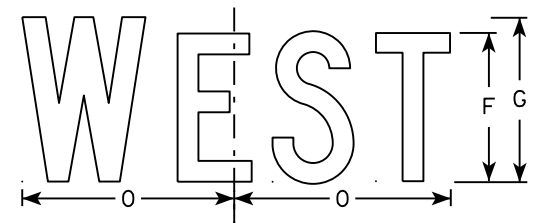
M3-3  
MM3-3  
MP3-3



MB3-3  
MK3-3  
MN3-3



M3-4  
MM3-4  
MP3-4



MB3-4  
MK3-4  
MN3-4

7

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																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

STANDARD SIGNS  
M3-1 thru M3-4  
SERIES

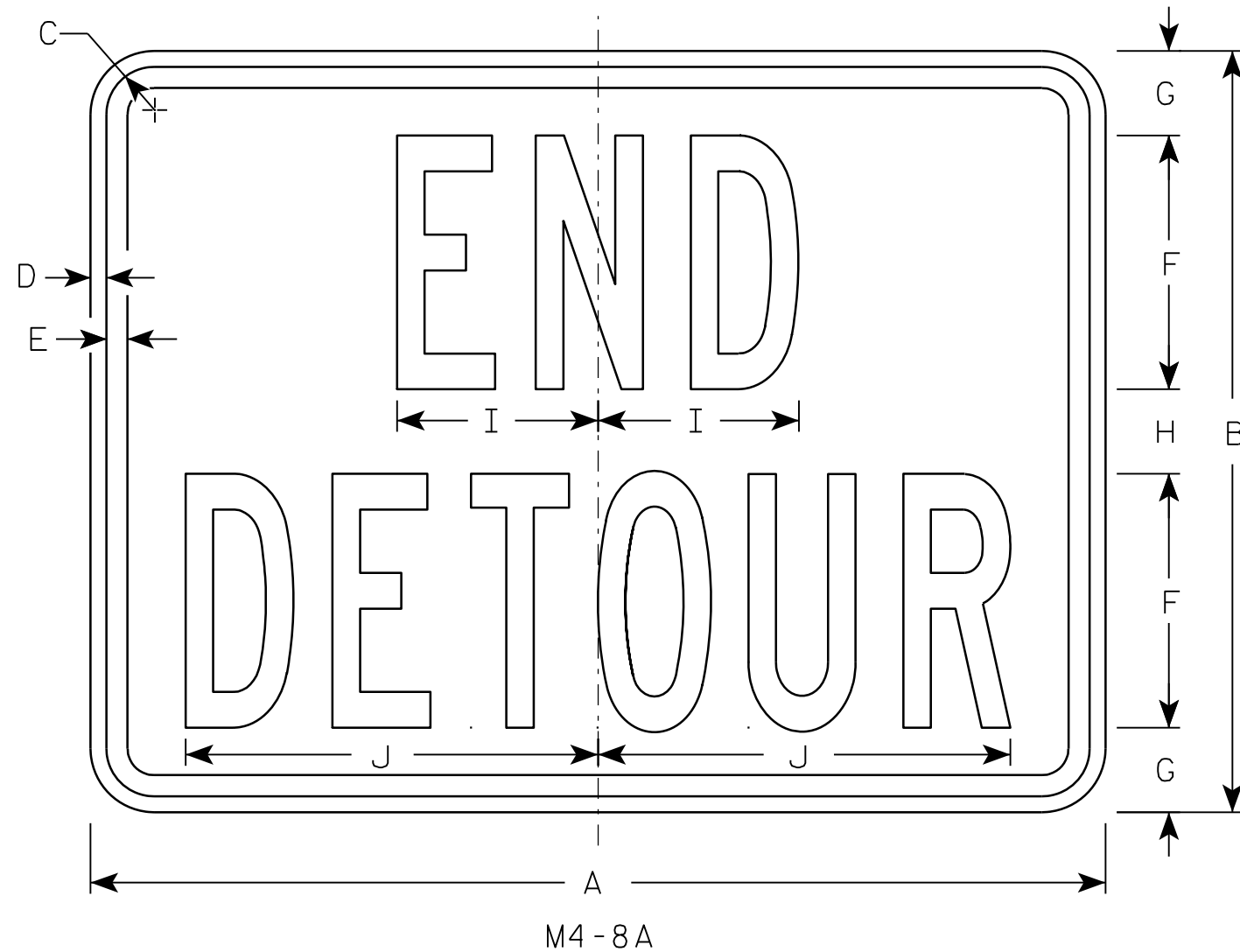
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M3-1.14

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - Orange  
Message - Black
3. Message Series - B
4. 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.



7

7

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																											
2	24	18	1 1/8	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/8	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4																											
5																											

STANDARD SIGN  
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

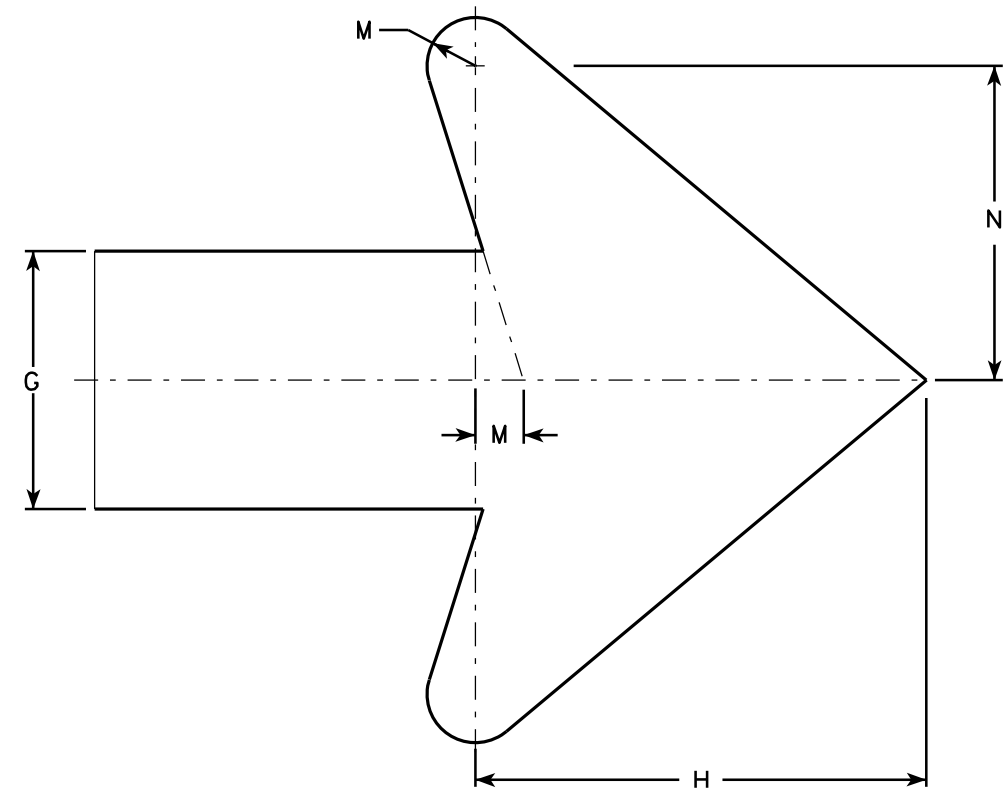
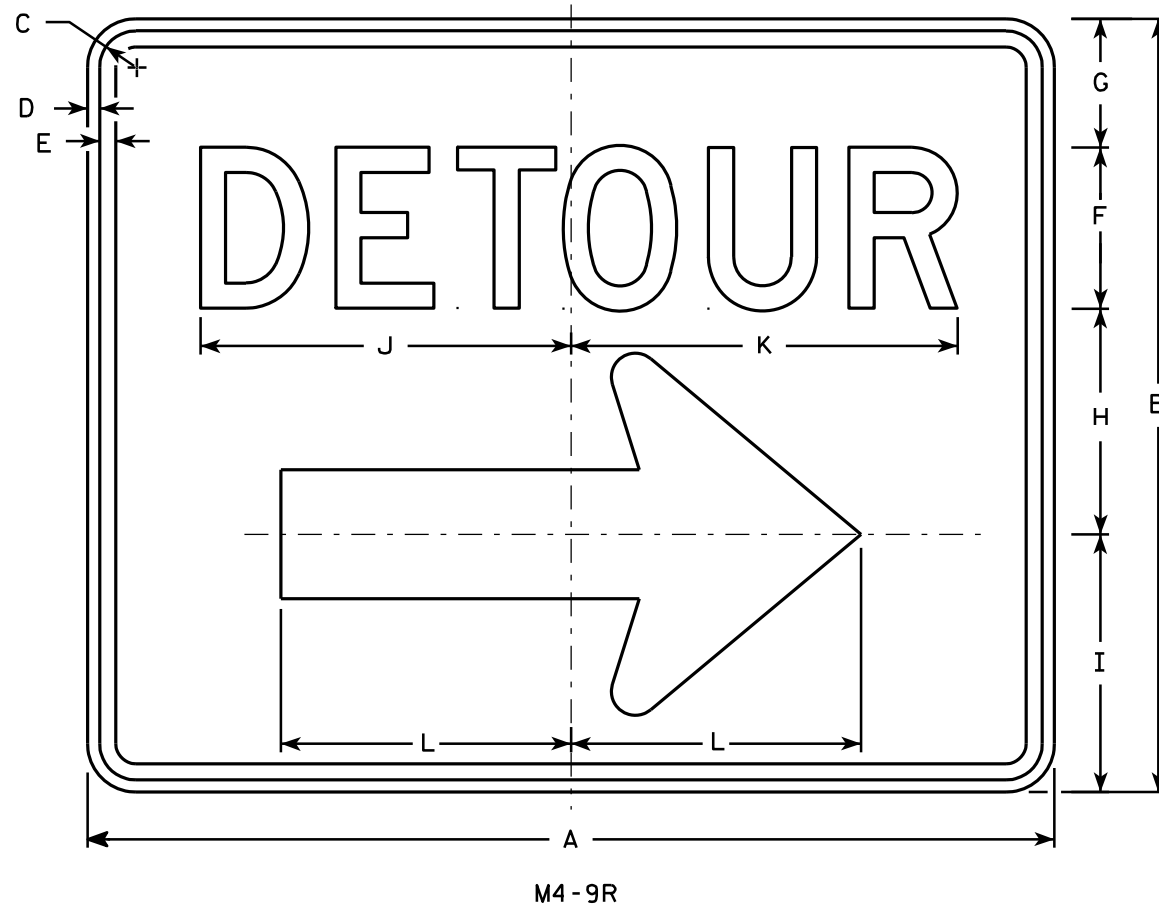
APPROVED *Matthew R Rauch*  
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-8A.2

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**

**NOTES**

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - Orange  
Message - Black
3. Message Series - D
4. 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.
5. M4-9L is the same as M4-9R except the arrow is reversed.



Arrow Detail

7

7

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																											
2	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
3	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
4	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0
5	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0

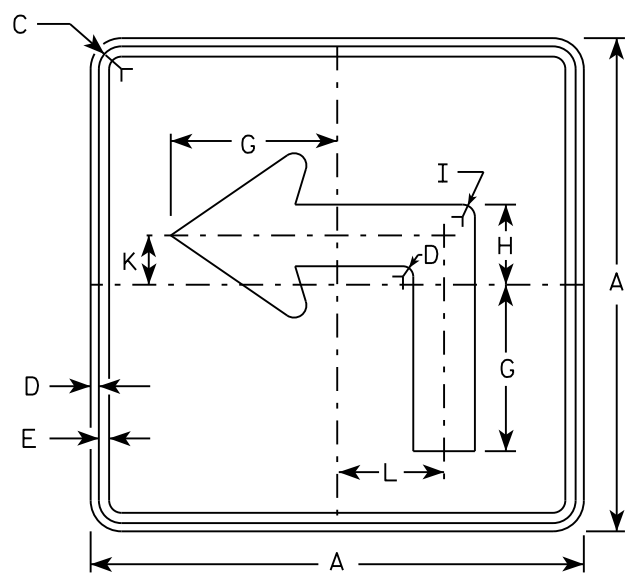
**STANDARD SIGN**  
**M4-9 R & L**

*WISCONSIN DEPT OF TRANSPORTATION*

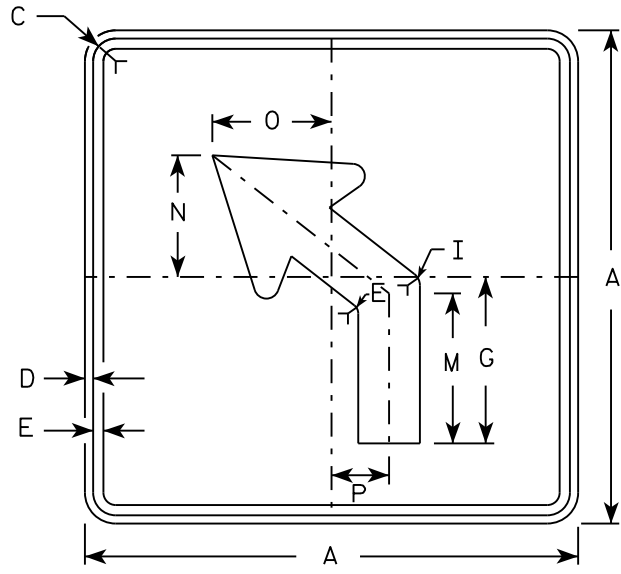
APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-9R.4

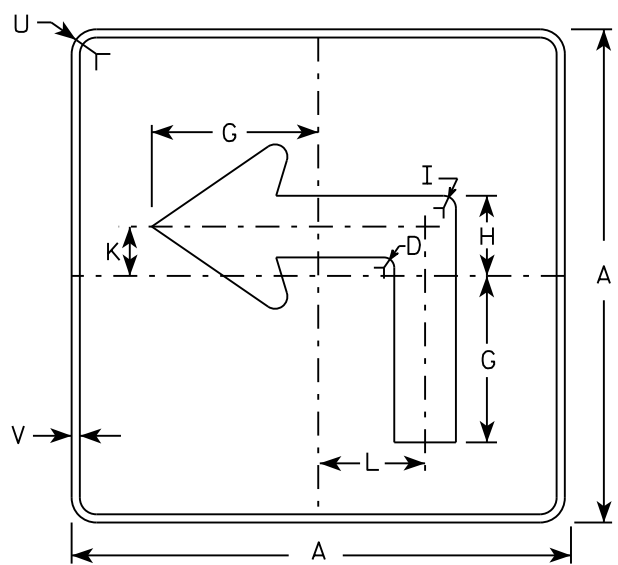
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**



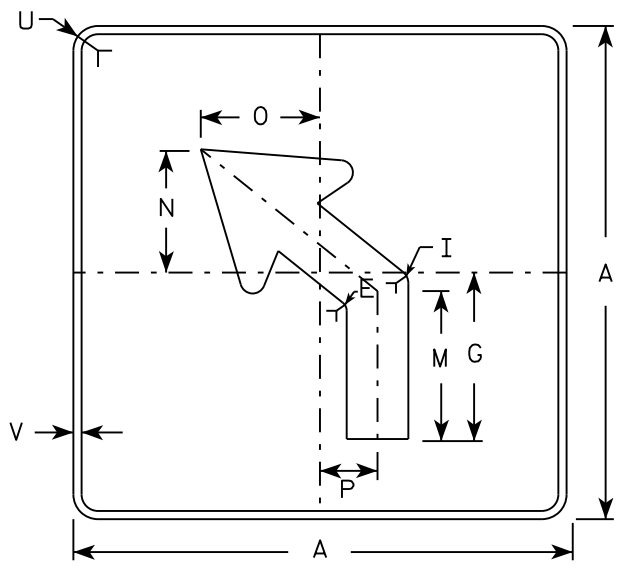
M5-1L  
MM5-1L  
M05-1L  
MP5-1L



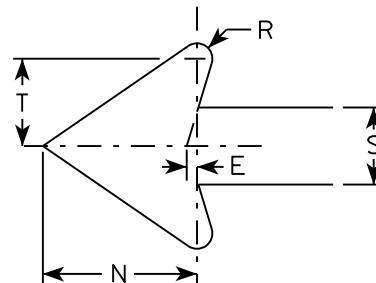
M5-2L  
MM5-2L  
M05-2L  
MP5-2L



MB5-1L  
MK5-1L  
MN5-1L  
MR5-1L



MB5-2L  
MK5-2L  
MN5-2L  
MR5-2L



NOTES

- Signs are Type II - Type H reflective except as shown
- Color:
  - Background - See note 4
  - Message - See note 4
- 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.
- M5-1 and M5-2 Background - White  
Message - Black
  - MB5-1 and MB5-2 Background - Blue  
Message - White
  - MK5-1 and MK5-2 Background - Green  
Message - White
  - MM5-1 and MM5-2 Background - White  
Message - Green
  - MN5-1 and MN5-2 Background - Brown  
Message - White
  - M05-1 and M05-2 Background - Orange - Type F Reflective  
Message - Black
  - MP5-1 and MP5-2 Background - White - Type H Reflective  
Message - Blue
  - MR5-1 and MR5-2 Background - Brown  
Message - Yellow
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

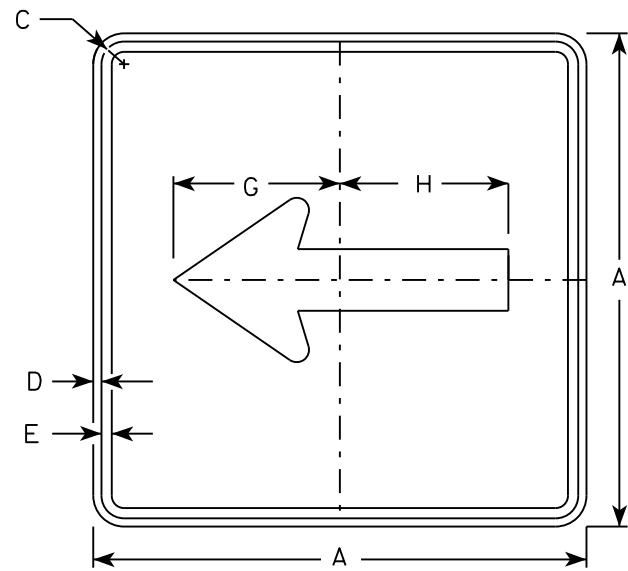
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

STANDARD SIGN  
M5-1 & M5-2

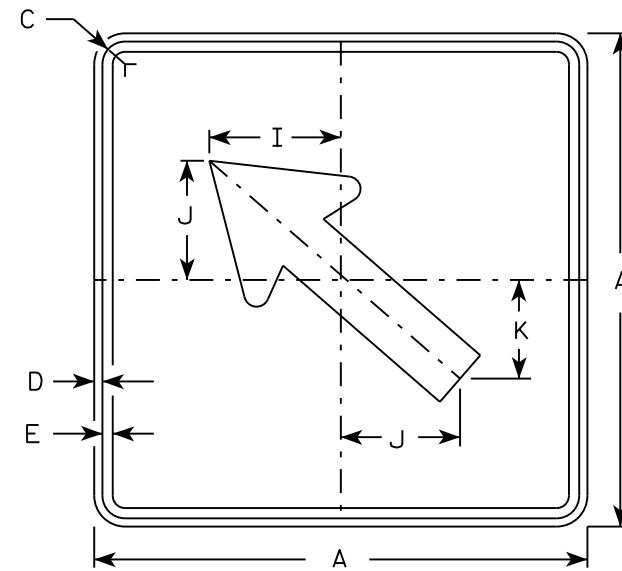
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

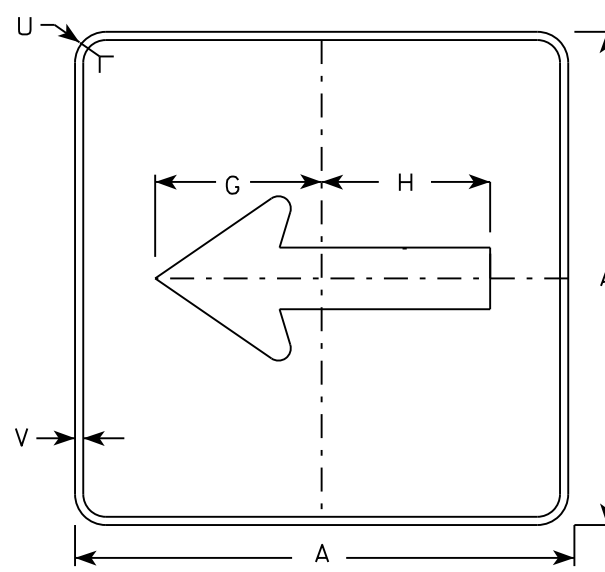
DATE 10/15/15 PLATE NO. M5-1.13



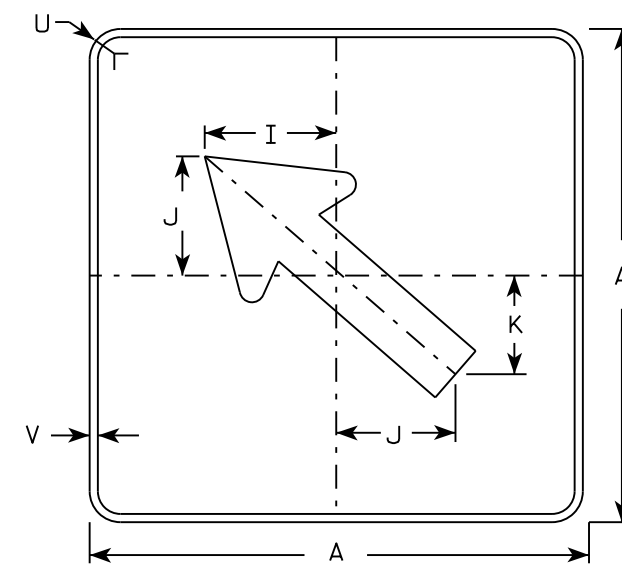
M6-1  
MM6-1  
M06-1  
MP6-1



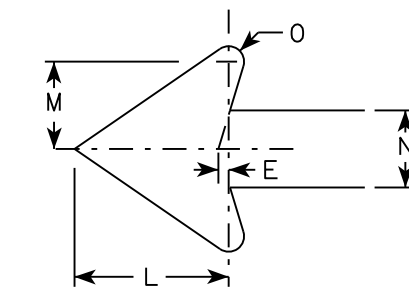
M6-2  
MM6-2  
M06-2  
MP6-2



MB6-1  
MK6-1  
MN6-1  
MR6-1



MB6-2  
MK6-2  
MN6-2  
MR6-2



NOTES

- Signs are Type II - Type H except as Shown
- Color:  
Background - See note 4  
Message - See note 4
- 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.
- M6-1 and M6-2 Background - White  
Message - Black  
MB6-1 and MB6-2 Background - Blue  
Message - White  
MK6-1 and MK6-2 Background - Green  
Message - White  
MM6-1 and MM6-2 Background - White  
Message - Green  
MN6-1 and MN6-2 Background - Brown  
Message - White  
M06-1 and M06-2 Background - Orange - Type F Reflective  
Message - Black  
MP6-1 and MP6-2 Background - White  
Message - Blue  
MR6-1 and MR6-2 Background - Brown  
Message - Yellow

7

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																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

STANDARD SIGN  
M6-1 & M6-2  
SERIES

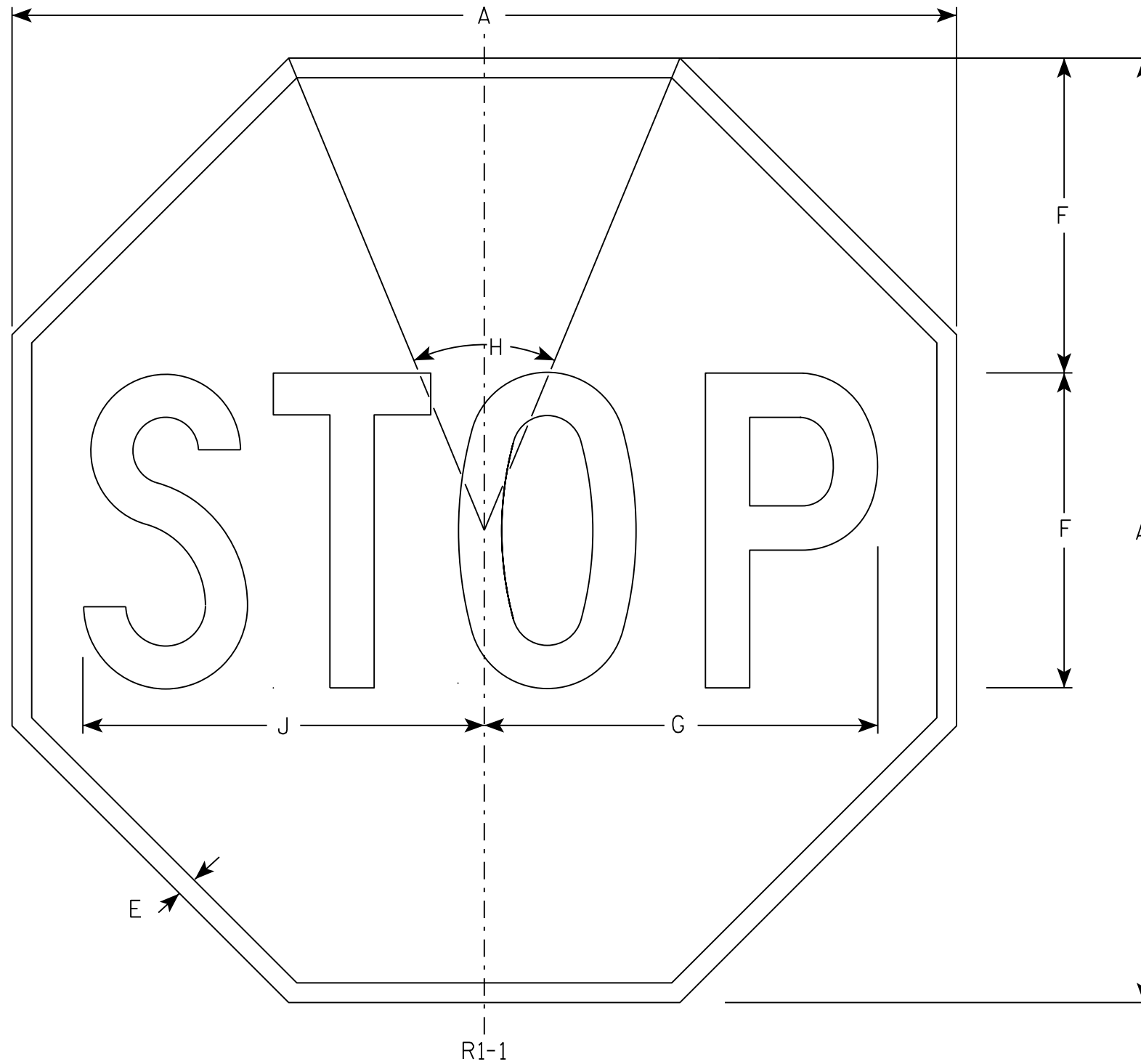
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M6-1.15

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - Red  
Message - White
3. Message Series - C



7

7

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	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**

STANDARD SIGN  
R1-1

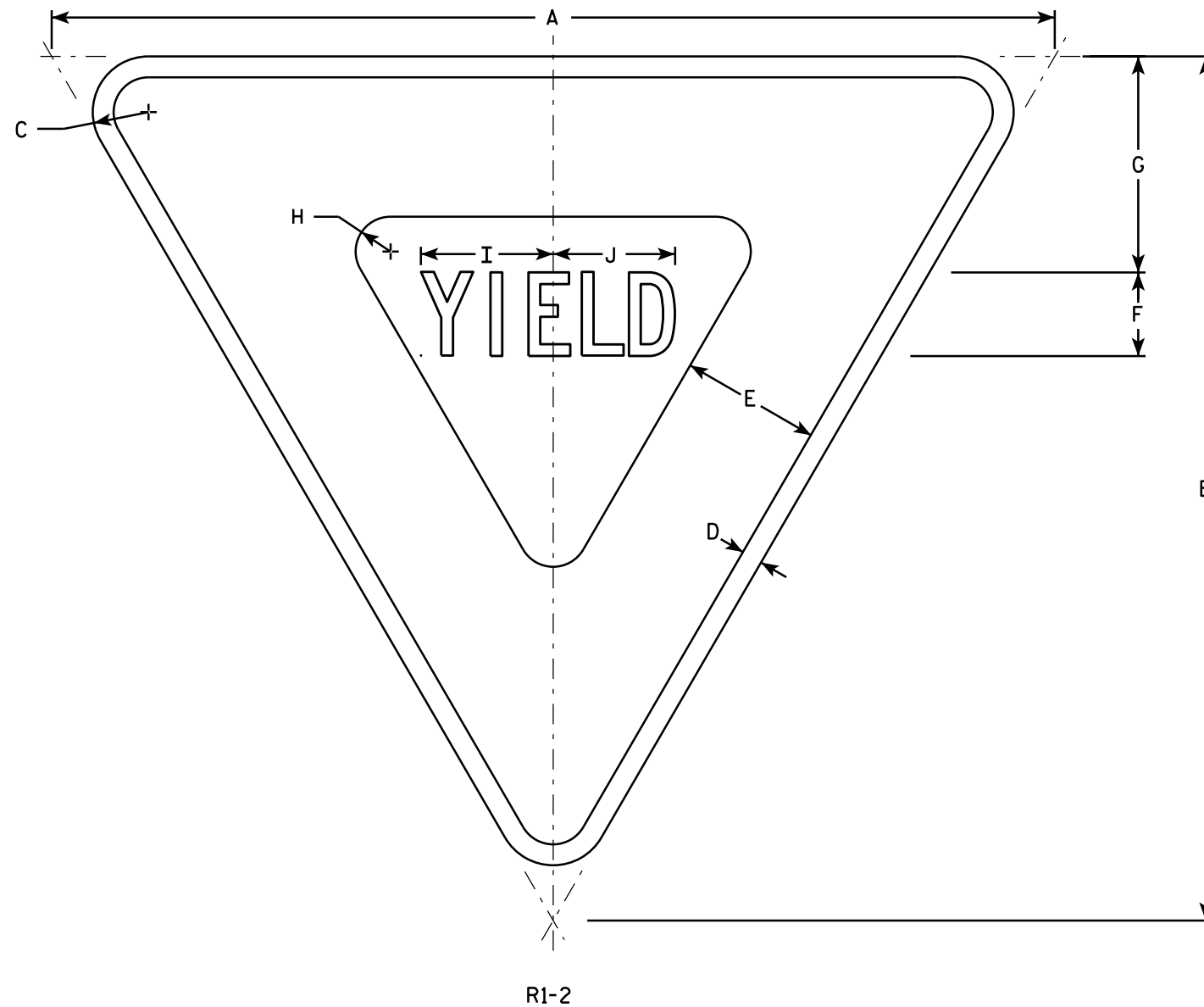
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - White  
Message - See note 5
3. Message Series - C
4. 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.
5. The border strip and word message are reflectorized red.



7

7

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	30	26	1 1/2	5/8	4	2 1/2	6 3/8	7/8	4	3 5/8																	2.71
2S	36	31	2	3/4	5	3	7 3/4	1 1/4	4 3/4	4 3/8																	3.88
2M	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
3	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
4	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
5	60	52	3	1 1/2	8	5	13	2 1/2	7 7/8	7 1/4																	10.83
6																											
7	18	15 1/2	1	3/8	2 1/2	1 1/2	3 7/8	5/8	2 3/8	2 1/4																	0.97

**STANDARD SIGN**  
R1-2

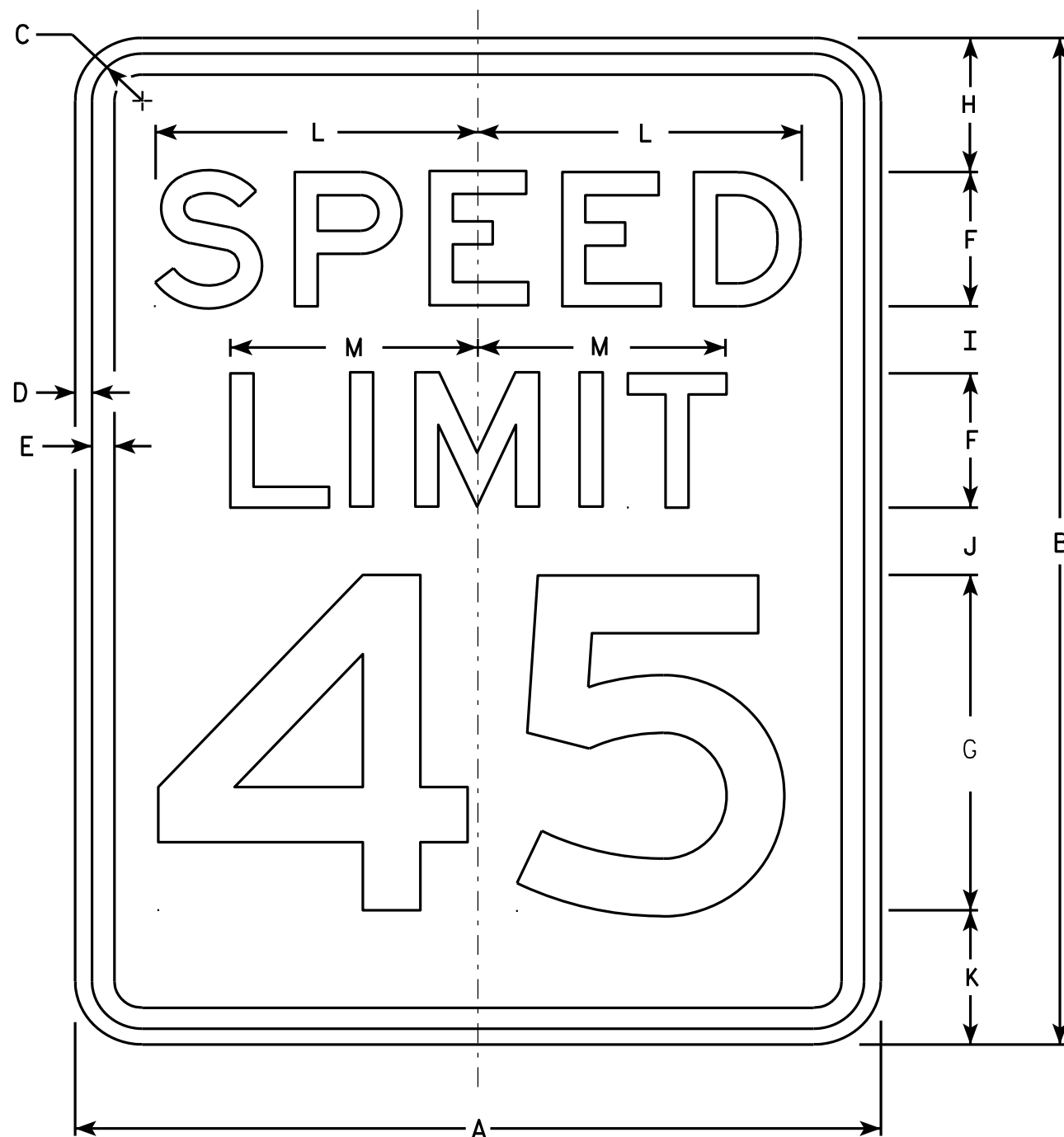
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 10/13/14 PLATE NO. R1-2.12

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ **E**





R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - White  
Message - Black
3. Message Series - E
4. 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.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

7

7

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	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

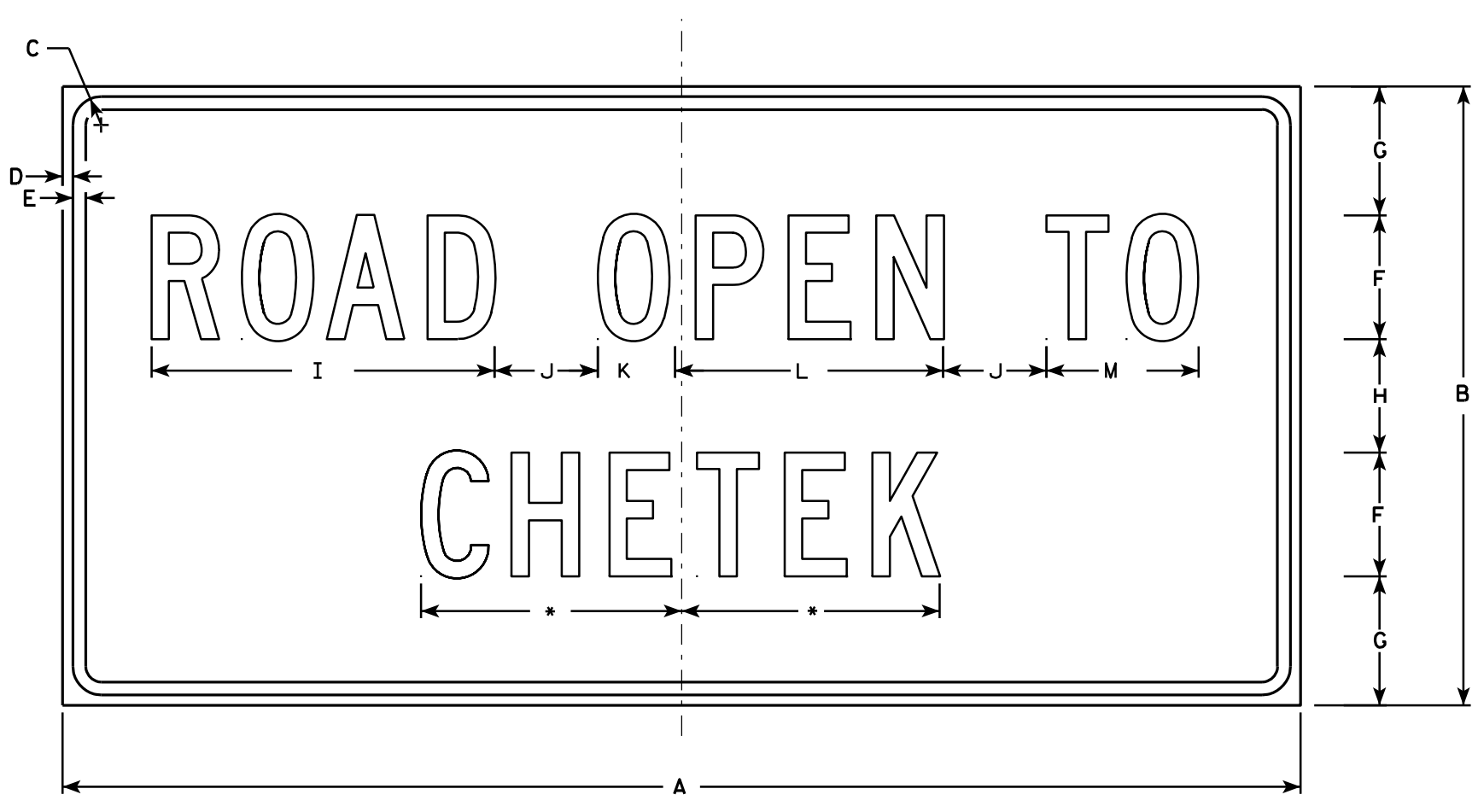
STANDARD SIGN  
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E



R10-61

\*See note 5

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - White  
Message - Black
3. Message Series - C
4. 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.
5. Substitute appropriate message and optically balance.

7

7

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	36	24	1 3/8	1/2	5/8	4	5 1/2	5	10 3/4	2	2 1/8	8 3/8	4 5/8														6.0
2S	60	30	1 3/8	1/2	5/8	6	6 1/4	5 1/2	16 5/8	5	3 3/4	13	7 3/8														12.5
2M	60	30	1 3/8	1/2	5/8	6	6 1/4	5 1/2	16 5/8	5	3 3/4	13	7 3/8														12.5
3																											
4																											
5																											

**STANDARD SIGN**  
R10-61

WISCONSIN DEPT OF TRANSPORTATION

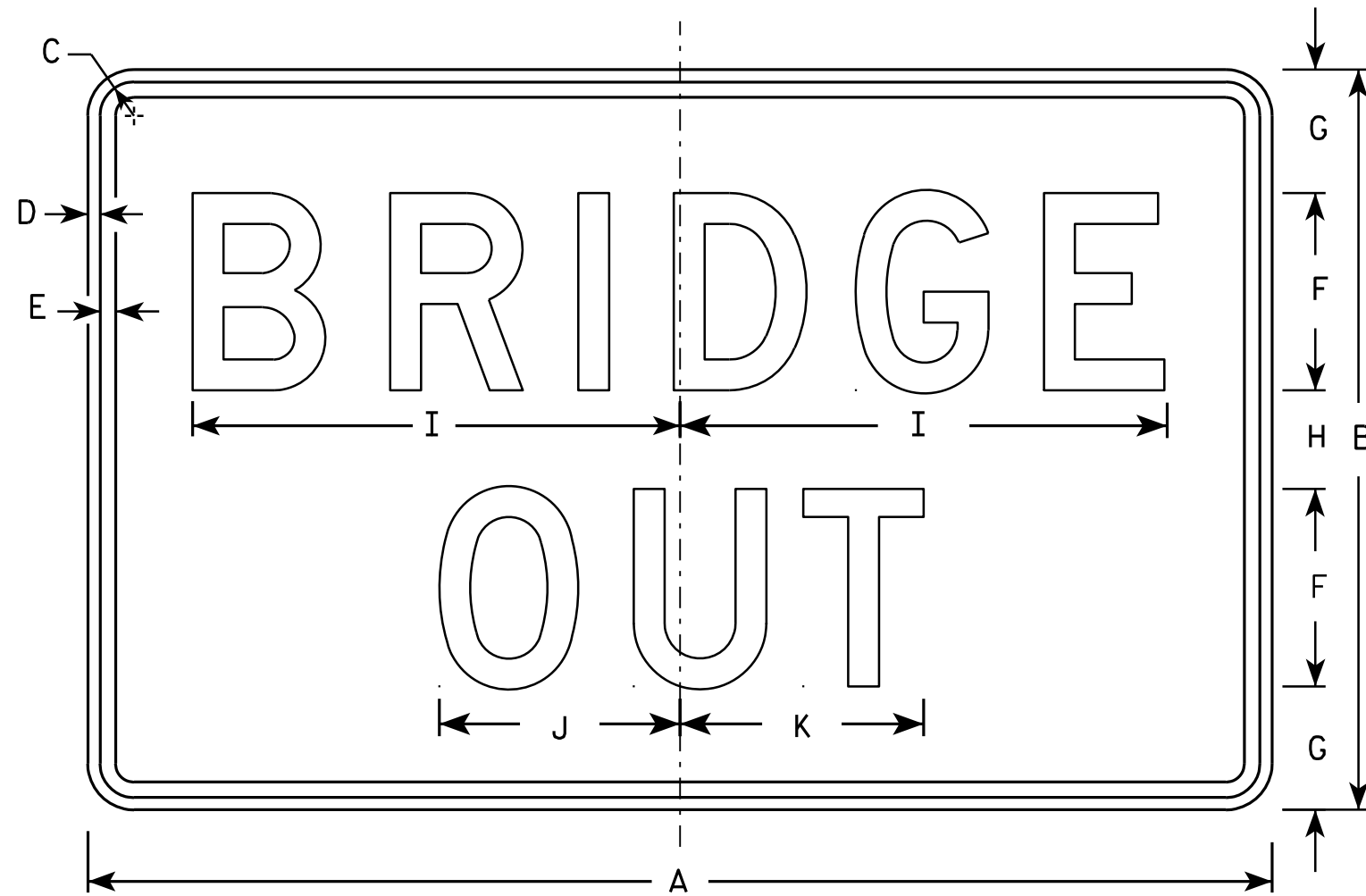
APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 4/4/11 PLATE NO. R10-61.5

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - White  
Message - Black
3. Message Series - D
4. 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.



R11-2B

7

7

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	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0

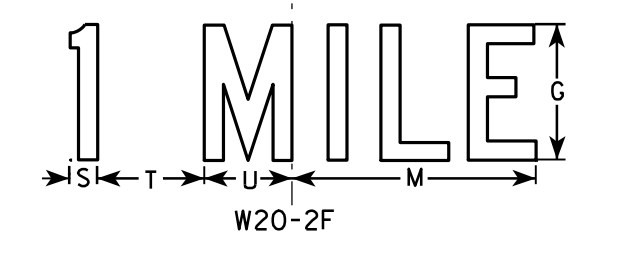
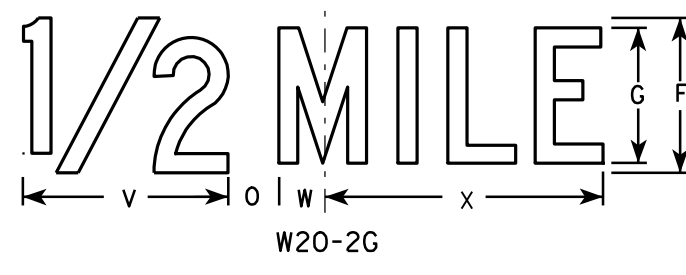
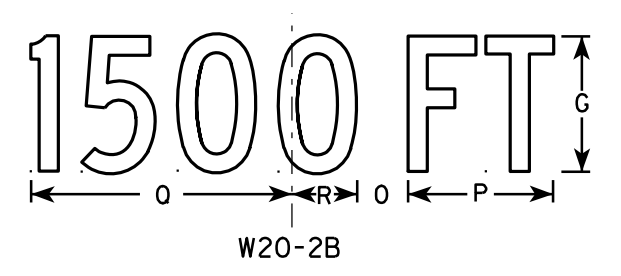
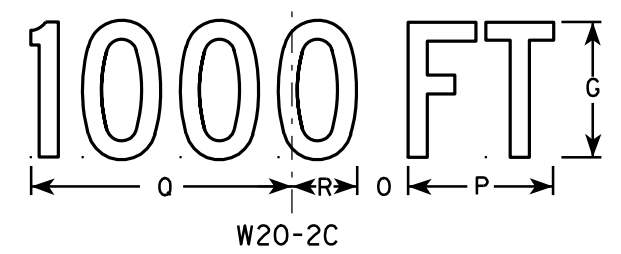
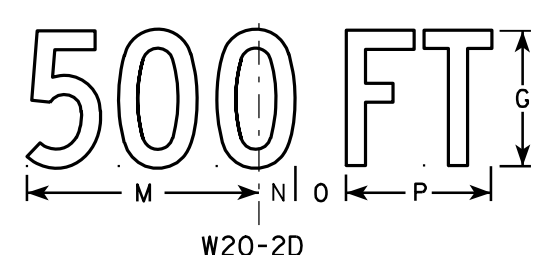
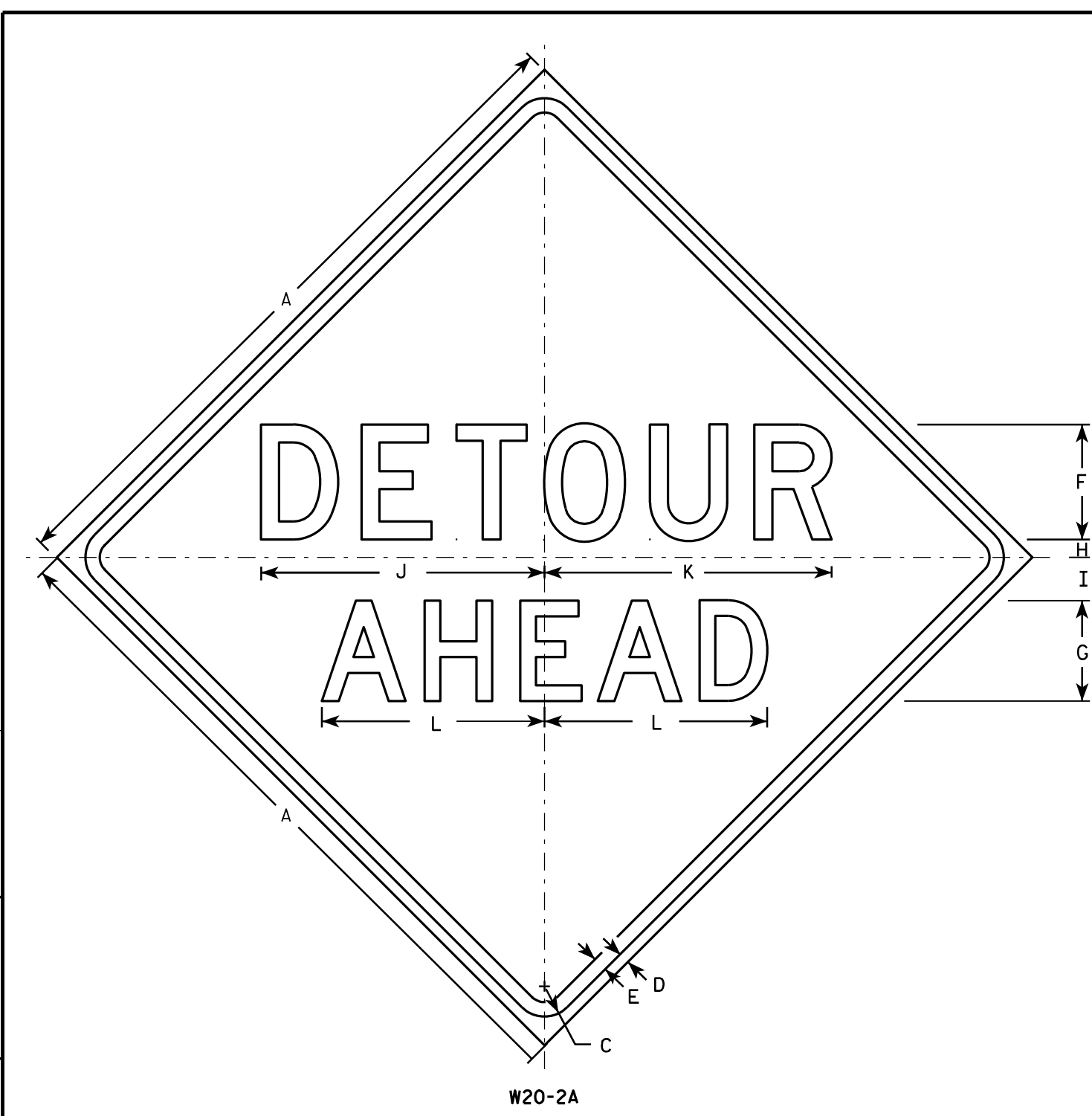
**STANDARD SIGN**  
R11-2B

*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2B.2

PROJECT NO: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E



**NOTES**

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - Orange  
Message - Black
3. Message Series - See note 5
4. 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.
5. Line 1 is Series D.  
Line 2 is Series D for AHEAD and Series C for all other distances.

7

7

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	36		1 5/8	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

STANDARD SIGN  
W20-2A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Raub*  
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-2.6

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E

**DESIGN DATA**

**LIVE LOAD:**  
 DESIGN LOADING: HL-93  
 INVENTORY RATING FACTOR: 1.0  
 OPERATING RATING FACTOR: 1.3  
 WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 240 KIPS

**EARTH LOAD:** DESIGNED FOR A FILL HEIGHT RANGE OF 3.0 TO 3.5 FEET

**MATERIAL PROPERTIES:**

PRECAST CONCRETE  $f'_c = 5,000$  p.s.i.  
 CONCRETE MASONRY  $f'_c = 3,500$  p.s.i.  
 HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60)  $f_y = 60,000$  p.s.i.

**FOUNDATION DATA:**

FACTORED BEARING RESISTANCE: 1,500 p.s.f.

**HYDRAULIC DATA:**

**100 YEAR FREQUENCY**  
 $Q_{100} = 1,190$  c.f.s.  
 VEL. = 7.9 f.p.s.  
 HW<sub>100</sub> = EL. 865.31  
 WATERWAY AREA = 150 sq. ft.  
 DRAINAGE AREA = 6.3 sq. mi.  
 ROADWAY OVERTOPPING = N/A  
 SCOUR CRITICAL CODE = 8

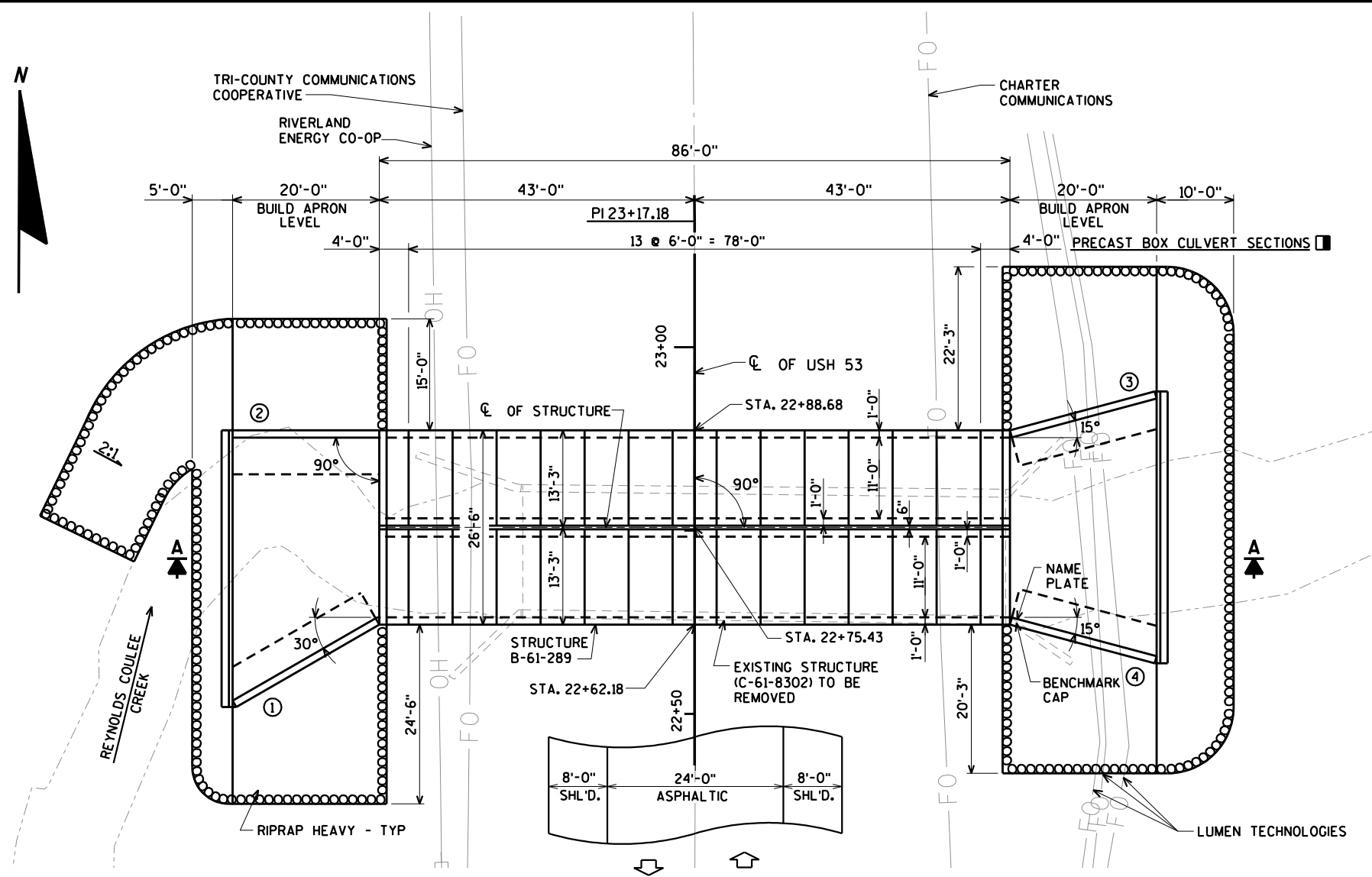
**2 YEAR FREQUENCY**  
 $Q_2 = 260$  c.f.s.  
 VEL. = 1.9 f.p.s.  
 HW<sub>2</sub> = EL. 861.24

**TRAFFIC DATA:**

A.A.D.T. = 4,100 (2022)  
 A.A.D.T. = 4,600 (2042)  
 R.D.S. = 60 M.P.H.

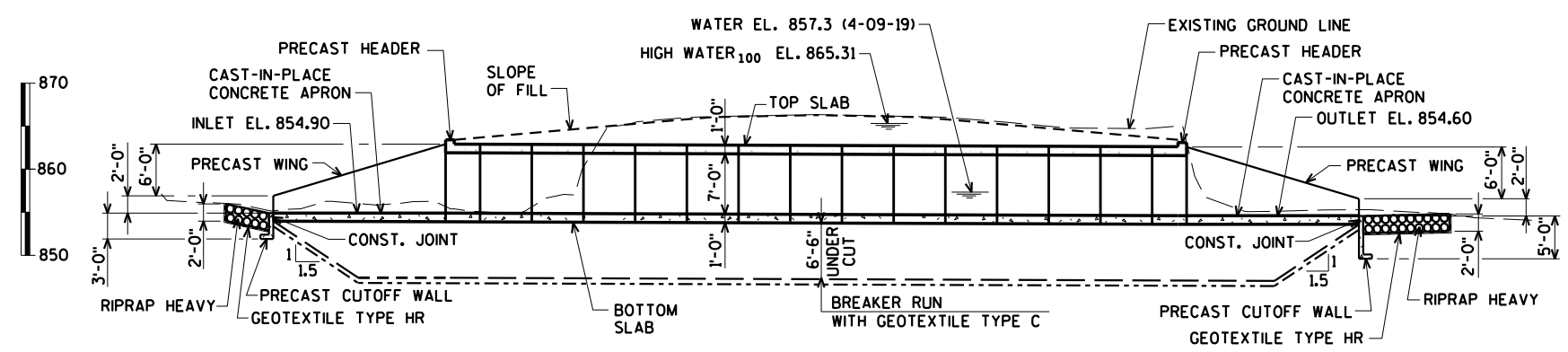
**LIST OF DRAWINGS**

1. GENERAL PLAN
2. TYPICAL SECTION, QUANTITIES AND NOTES
3. PRECAST CONCRETE BOX CULVERT BARREL DETAILS
4. PRECAST CONCRETE BOX CULVERT END DETAILS
5. SUBSURFACE EXPLORATION



**PLAN**  
 (TWIN-CELL PRECAST CONCRETE BOX CULVERT)

- DENOTES WING NUMBER.
- ALTERNATE LENGTHS FOR PC BOX CULVERT SECTIONS MAY BE USED. MINIMUM LENGTH IS 4'-0".



**SECTION A**



09/01/2021

BRIDGE OFFICE CONTACT:  
 AARON BONK  
 (608)-261-0261  
 CONSULTANT CONTACT:  
 ARLEN BEAUDETTE  
 (715)-834-3161

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY <b>AYRES</b> 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	[Signature]		SDR 11/29/21 DATE
CHIEF STRUCTURES DESIGN ENGINEER			
<b>STRUCTURE B-61-289</b>			
USH 53 OVER REYNOLDS COULEE CREEK			
COUNTY	TREMPEALEAU	TOWN/CITY/VILLAGE	PRESTON
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	JLB	DESIGN CK'D.	JCK
DRAWN BY	CLP	PLANS CK'D.	AEB
<b>GENERAL PLAN</b>			SHEET 1 OF 5

9/1/2021  
 PENTABLE:BRcou\_shd\_util.tbl

DATE:  
 DATE:

CHECKED BY:  
 BACK CHECKED BY:  
 CORRECTED BY:

8

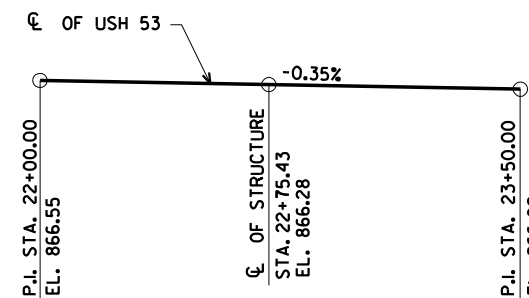
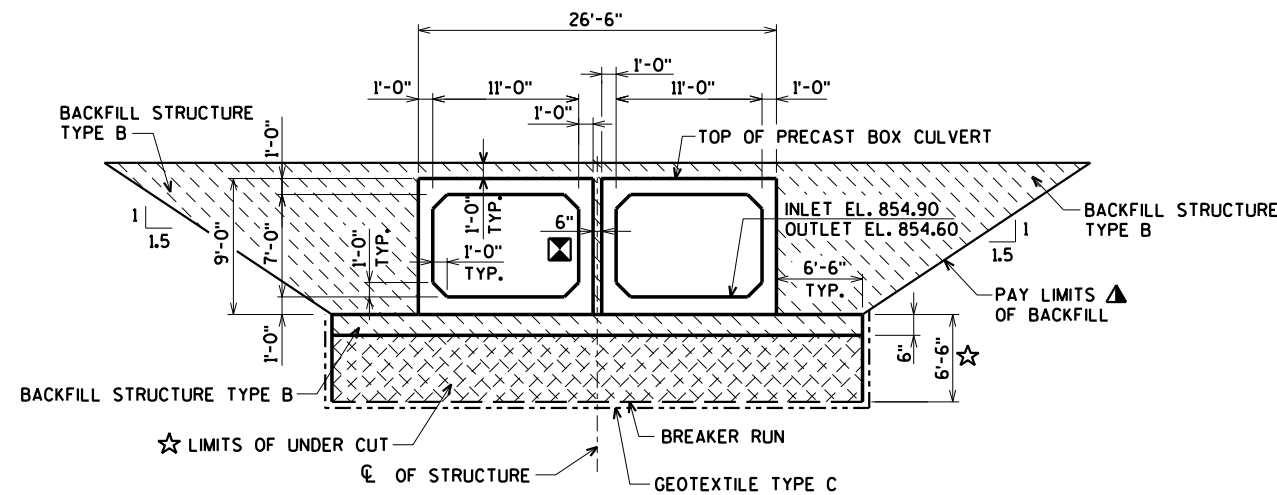
8

**GENERAL NOTES**

DRAWINGS SHALL NOT BE SCALED.  
 BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR  
 UNLESS SHOWN OR NOTED OTHERWISE.  
 THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURE CULVERTS B-61-289"  
 SHALL BE THE EXISTING GROUND LINE.  
 THE EXISTING STRUCTURE, C-61-8302, TO BE REMOVED, IS A BURIED  
 SINGLE-SPAN CONCRETE FLAT SLAB BRIDGE, 20.75' OAL x 40' CLEAR  
 ROADWAY WIDTH.

**TOTAL ESTIMATED QUANTITIES**

ITEM NUMBER	BID ITEMS	AMOUNT
203.0250	REMOVING STRUCTURE OVER WATERWAY REMOVE DEBRIS C-61-8302	1 EACH
206.2000	EXCAVATION FOR STRUCTURES CULVERTS B-61-289	1 LS
210.2500	BACKFILL STRUCTURE TYPE B	2,560 TON
311.0110	BREAKER RUN	1,930 TON
504.0100	CONCRETE MASONRY CULVERTS	63 CY
504.1000.S.01	PRECAST CONCRETE WINGWALLS B-61-289	1 EACH
504.2000.S.02	PRECAST CONCRETE BOX CULVERT 11 FT. x 7 FT.	172 LF
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	10 SY
606.0300	RIPRAP HEAVY	210 CY
645.0105	GEOTEXTILE TYPE C	870 SY
645.0120	GEOTEXTILE TYPE HR	380 SY



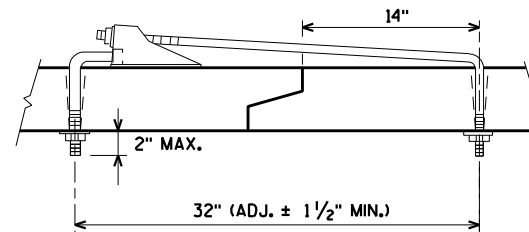
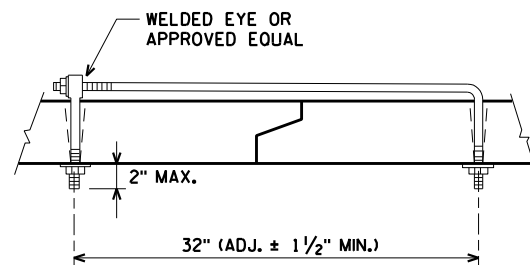
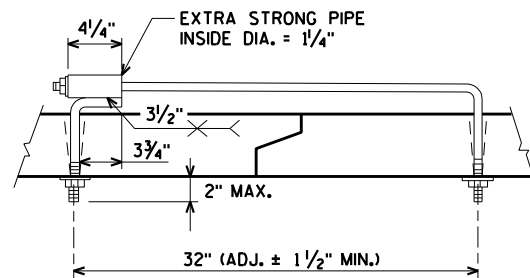
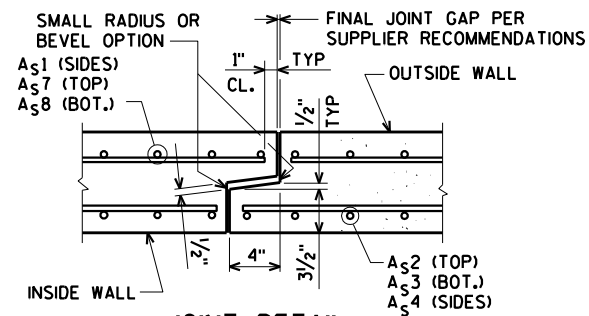
BENCH MARK:  
 BM#4 CHIS. 'X' IN HEADER  
 STA. 22+69, 42' RT. OF C.E.  
 E. 865.05

**TYPICAL SECTION THRU PRECAST BOX CULVERT**

- ▲ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- ☆ UNDER CUT 6'-6". EXCAVATION FOR UNDER CUT TO BE INCLUDED IN EXCAVATION FOR STRUCTURES. BACKFILL WITH BREAKER RUN. PLACE GEOTEXTILE TYPE C AND BACKFILL WITH BREAKER RUN. ALL PRECAST BOX SECTIONS SHALL BE PLACED ON A BEDDING OF BACKFILL STRUCTURE TYPE B OF 6" MIN. DEPTH.
- ☒ CLEAR SPACING BETWEEN BARRELS SHALL BE 6 INCHES AND THE SPACE BETWEEN ADJACENT BARRELS FROM THE TOP OF BEDDING TO TOP OF TOP SLAB SHALL BE FILLED WITH GRADE 'B' CONCRETE. GRADE 'B' CONCRETE INCLUDED IN BID ITEM "CONCRETE MASONRY CULVERTS".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-61-289</b>			
DRAWN BY	CLP	PLANS CK'D.	JCK
<b>TYPICAL SECTION, QUANTITIES AND NOTES</b>			SHEET 2 OF 5

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



**JOINT TIES**

NOTES:  
EITHER EYE BOLT TIES, WELDED PIPE TIES, OR CANOPY TIES MAY BE USED. THREADS MAY BE CUT OR ROLLED. TIE NUTS SHALL BE TIGHTENED AS DIRECTED BY THE ENGINEER. (2 TIES REQ'D. PER JOINT.) (TIES TO BE GALVANIZED.)

**NOTES**

DETAILS FOR MATERIALS, FABRICATION, CONSTRUCTION AND DESIGN OF PRECAST BOX CULVERTS NOT SHOWN OR STATED ON THIS DRAWING SHALL BE IN ACCORDANCE WITH THE CURRENT ASTM SPECIFICATION, C1577; AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS; WISCONSIN DOT BRIDGE MANUAL; WISCONSIN DOT STANDARD SPECIFICATIONS & APPLICABLE SPECIAL PROVISIONS, EXCEPT THAT THE CONCRETE MIXTURE SHALL CONTAIN NOT LESS THAN 565 LBS. OF CEMENTITIOUS MATERIALS PER CUBIC YARD.

THE DESIGN OF PRECAST BOX CULVERTS WITH ALL FILL HEIGHTS SHALL BE AS STATED IN ASTM C1577.

ALL PRECAST BOX SECTIONS SHALL BE PLACED ON A BEDDING OF "BACKFILL STRUCTURE" OF 6" MINIMUM DEPTH.

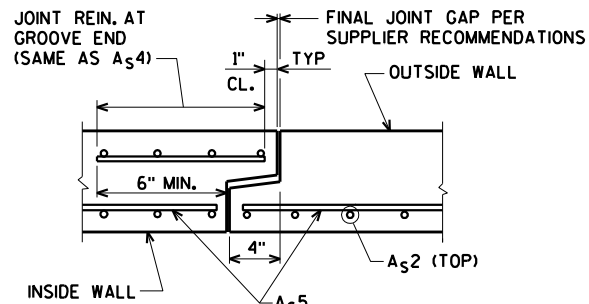
NOT MORE THAN FOUR (4) HOLES MAY BE CAST, DRILLED OR OTHERWISE NEATLY MADE IN THE SHELL OF EACH PIECE OF BOX SECTION FOR HANDLING. THE HOLES SHALL BE TAPERED UNLESS DRILLED. HOLES SHALL BE FILLED WITH PORTLAND CEMENT MORTAR EXCEPT TAPERED HOLES MAY BE FILLED WITH CONCRETE PLUGS SECURED WITH PORTLAND CEMENT MORTAR OR OTHER APPROVED ADHESIVE.

THE JOINT ON THE BOTTOM OF THE CULVERT & THE SIDES OF THE CULVERT FROM THE BOTTOM TO A POINT 1'-0" FROM THE CEILING SHALL BE SEALED WITH A PERFORMED MASTIC. PREFORMED MASTIC MUST CONFORM TO AASHTO MATERIALS SPEC. M198, TYPE B. A 2'-0" STRIP OF GEOTEXTILE TYPE OF SCHEDULE A SHALL BE PLACED OVER THE JOINTS ON THE TOP AND ON THE SIDES OF THE CULVERT. THE GEOTEXTILE SHALL CONFORM TO SECTION 645.2.2.4. OF THE STANDARD SPECIFICATION. (FABRIC NOT REQUIRED OVER INSIDE WALL JOINTS OF MULTICELL INSTALLATION).

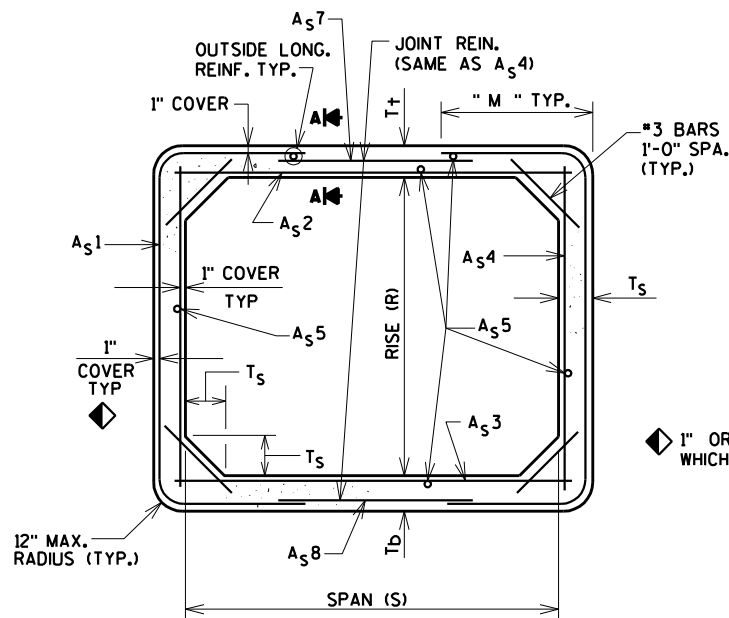
MASTIC AND GEOTEXTILE ARE INCIDENTAL TO THE BID ITEM "PRECAST CONCRETE BOX CULVERT 11 FT x 7 FT".

THE COVER OF CONCRETE OVER THE REINFORCEMENT SHALL BE 1 INCH OR 2 INCHES AS SHOWN WITH AN ALLOWABLE VARIATION OF - 3/8 INCH TO + 1/2 INCH.

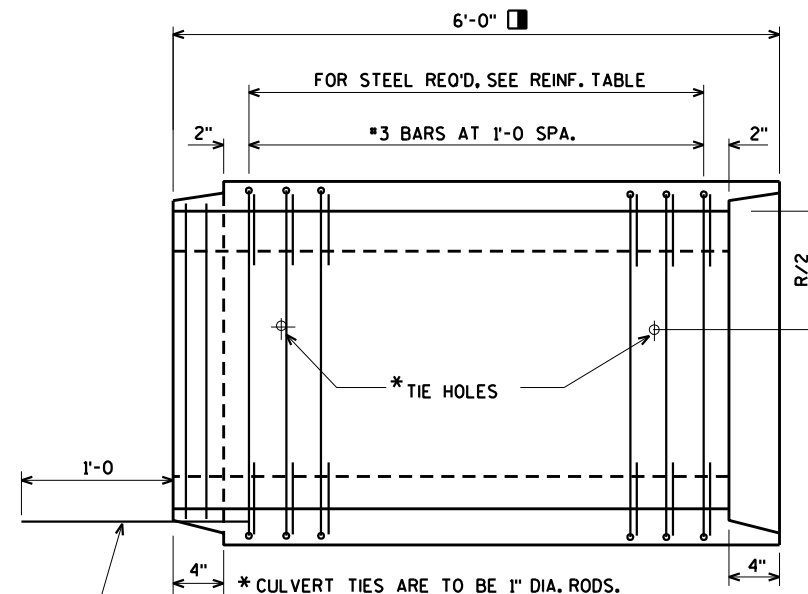
THE SPACING CTR. TO CTR. OF THE CIRCUMFERENTIAL WIRES SHALL NOT BE LESS THAN 2 INCHES NOR MORE THAN 4 INCHES. THE SPACING CTR. TO CTR. OF THE LONGITUDINAL WIRES SHALL NOT BE MORE THAN 8 INCHES. PROVIDE 0.03 SQ. IN./FT. MIN. LONG. REINFORCEMENT AT EACH FACE IN SLABS AND WALLS.



**SECTION A**



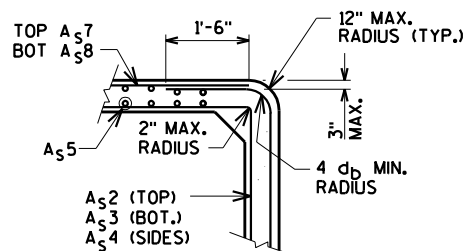
**SECTION THRU BARREL**  
FOR 2'-0" OR MORE OF COVER



**LONGITUDINAL SECTION**

**BOX CULVERT BARREL DATA**

DIMENSIONS			EARTH COVER (FT.) VARIES 3'-0" TO 3'-6"					
11 S (FT.)	7 R (FT.)	12 T (IN.)	AREA (IN <sup>2</sup> )/FT.			LENGTH M		
REINFORCEMENT			AREA (IN <sup>2</sup> )/FT.	LENGTH	M	AREA (IN <sup>2</sup> )/FT.	LENGTH	M
A <sub>S</sub> 1			0.313	16'-8"	3'-11"			
A <sub>S</sub> 2			0.337	11'-8"	--			
A <sub>S</sub> 3			0.288	11'-8"	--			
A <sub>S</sub> 4			0.288	7'-8"	--			
A <sub>S</sub> 5			0.133	5'-8"	--			
A <sub>S</sub> 6			---	---	--			
A <sub>S</sub> 7			0.288	6'-6"	--			
A <sub>S</sub> 8			0.288	6'-6"	--			
TOTAL BARREL OR PANEL LENGTH			86'-0"					



**ALTERNATE DETAIL OPTION**

\$PRNAME\$ I:\42\42-1171.00 - Trempealeau Co, USH 53 Culverts\CADD\Final\421171.N BOXprecast.dgn

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-61-289</b>			
DRAWN BY	CLP	PLANS CK'D.	JCK
<b>PRECAST CONCRETE BOX CULVERT BARREL DETAILS</b>			SHEET 3 OF 5

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

**GENERAL NOTES**

CONCRETE COVER ON ALL REINFORCEMENT IN THE PRECAST ELEMENTS SHALL BE 2" UNLESS SHOWN OR NOTED OTHERWISE.

STEEL REINFORCEMENT SHALL BE EITHER GRADE 60 DEFORMED BARS (FY = 60,000 P.S.I.) OR WELDED DEFORMED - WIRE FABRIC OF EQUIVALENT AREA, (FY = 65,000 P.S.I.)

THE MINIMUM CONCRETE STRENGTH OF THE FIELD POURED CONCRETE SHALL BE 3,500 P.S.I.

ALTERNATE DETAILS OF EQUAL STRENGTH AND HYDRAULIC CAPACITY TO THE DETAILS SHOWN ON THIS SHEET MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

THE MINIMUM CONCRETE STRENGTH OF THE CONCRETE IN THE PRECAST APRON ELEMENTS SHALL BE 4,000 P.S.I.

THE PRECAST ELEMENTS SHALL BE PROVIDED WITH SUITABLE LIFTING DEVICES FOR HANDLING AND PLACEMENT OF THE ELEMENTS.

VERTICAL CONSTRUCTION JOINTS THRU THE WALLS AND FOOTING WILL BE ALLOWED ONLY WITH THE APPROVAL OF THE ENGINEER. DETAILS MUST BE SHOWN ON THE SHOP DRAWINGS FOR APPROVAL.

THE AREA OF REINFORCING STEEL NOT IDENTIFIED IN SECTIONS SHALL CONFORM TO THE FOLLOWING TEMPERATURE AND SHRINKAGE REQUIREMENTS:

THICKNESS	T & S REINF.
≤ 12"	#4 @ 18"
> 12" - 18"	#4 @ 12"

THE MAXIMUM BAR SIZE OF GRADE 60 DEFORMED BARS, OTHER THAN THE A<sub>S</sub>10 BARS, SHALL BE #5.

THE 7/8" DIA. ANCHOR BOLTS SHALL BE GALVANIZED AND CONFORM TO THE REQUIREMENTS OF A.S.T.M. A575.

ALL EXPOSED CORNERS SHALL BE BEVELED 3/4" ON THE SIDES OR TOOL EDGED WITH A 1/2" MINIMUM RADIUS EDGER.

PRECAST CUT OFF WALLS MAY BE FIELD SPliced BY EXTENDING THE REINFORCING STEEL FROM BOTH SEGMENTS TO BE SPliced 1'-6" INTO THE SPlice ZONE, LAPPING THE STEEL ± 1'-6" AND FIELD POURING A SECTION OF CUT OFF WALL 1'-6" LONG.

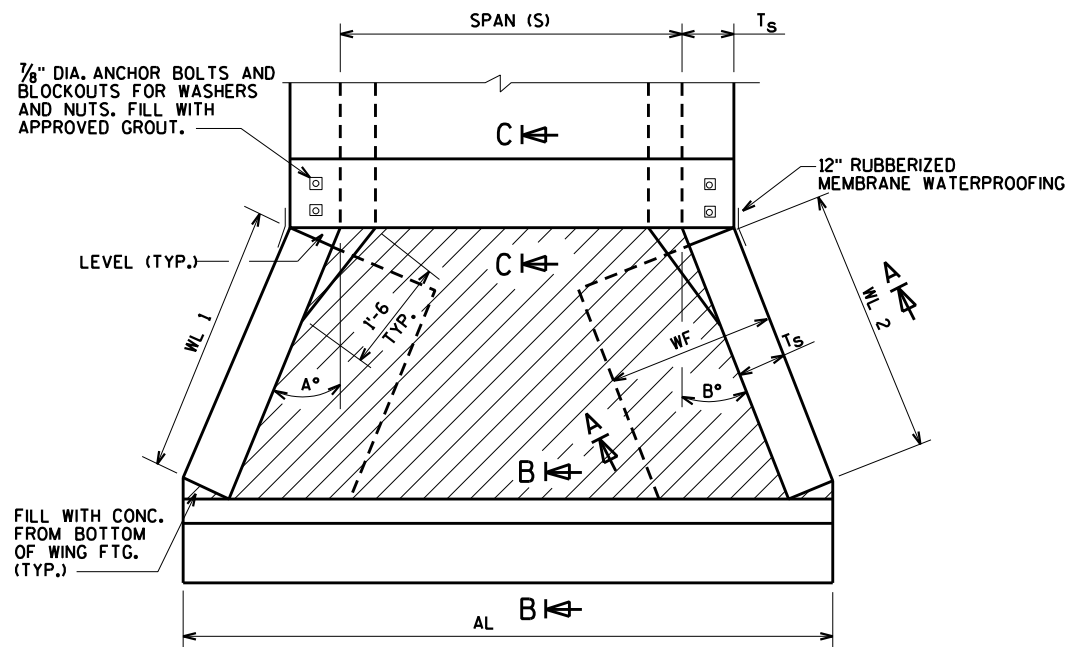
PRECAST ELEMENTS MAY BE POURED IN PLACE AT THE OPTION OF THE CONTRACTOR.

APRONS SHALL BE POURED AND CURED PRIOR TO BACKFILLING WINGWALLS.

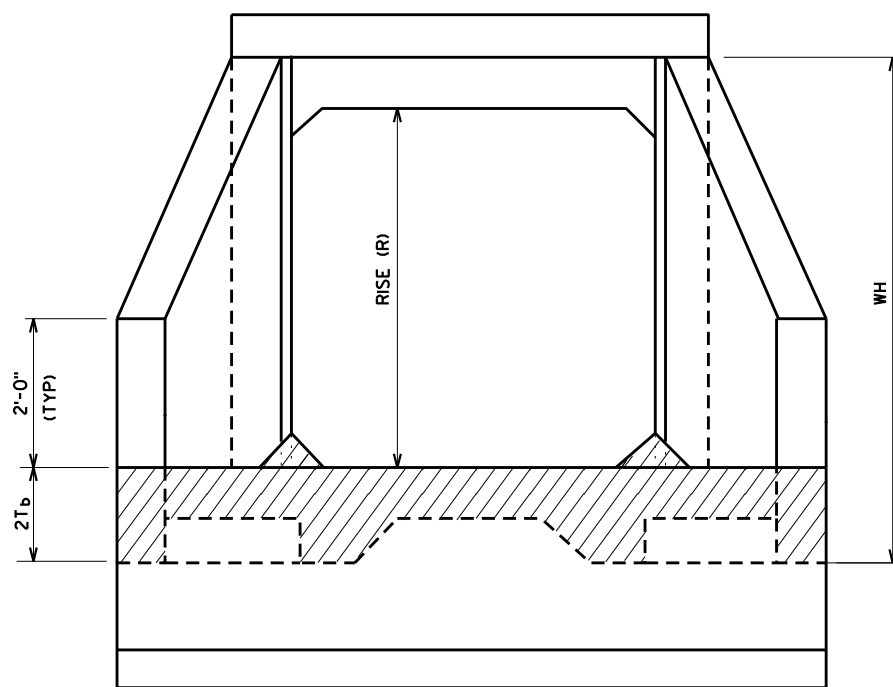
\*\*

	R.(FT.)	S(FT.)	T OR T <sub>S</sub> (IN)	SKEW	ANGLE A	ANGLE B	WL 1	WL 2	AL	AH	WH	BE1	BE2
INLET	7	11	12	0°	0°	30°	20'-0"	22'-6 1/4"	37'-9 1/4"	3'	10'	---	---
OUTLET	7	11	12	0°	15°	15°	20'-5 1/4"	20'-5 1/4"	37'-1"	5'	10'	---	---

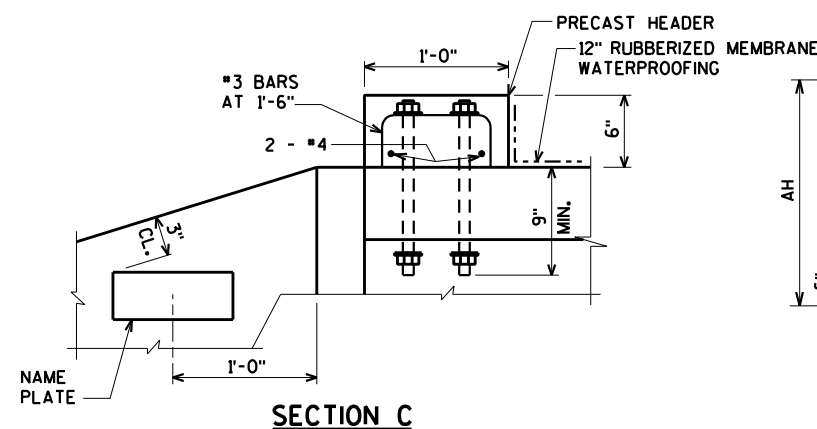
\*\*APPROXIMATE DIMENSIONS, PRECAST MANUFACTURER TO CONFIRM



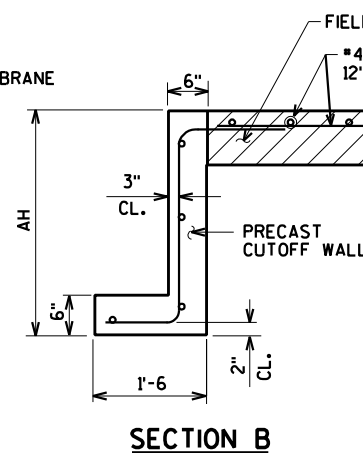
**APRON PLAN**  
(NON-SKEWED STRUCTURE)



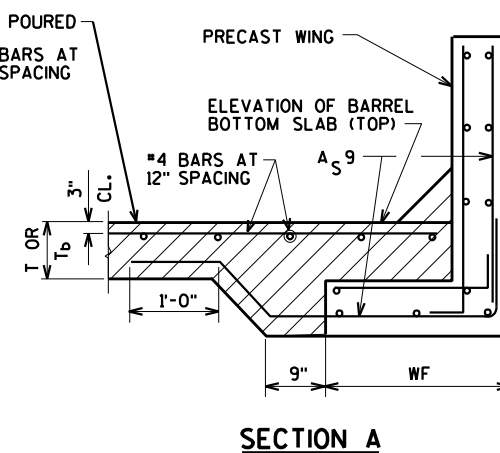
**END VIEW**



**SECTION C**



**SECTION B**



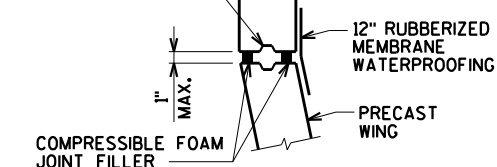
**SECTION A**



COST OF FIELD POURED CONCRETE AND BAR STEEL REINFORCEMENT HS STRUCTURES IN THE HATCHED AREAS SHALL BE INCLUDED IN THE BID ITEM "CONCRETE MASONRY CULVERTS"

RISE (R)	A <sub>S</sub> 9 IN. <sup>2</sup> /FT	WF
4'-0"	.19	2'-6"
6'-0"	.24	3'-6"
8'-0"	.31	4'-0"
10'-0"	.34	4'-9"

PROVIDE KEYWAY FULL-HEIGHT OF WALL. FILL WITH NON-SHRINK GROUT AFTER APRON UNITS ARE SET.



**JOINT DETAIL**

JOINT DETAIL EXAMPLE SHOWN. PRECAST SUPPLIER TO SUBMIT JOINT DETAIL FOR ACCEPTANCE.

ORIGINAL PLANS PREPARED BY

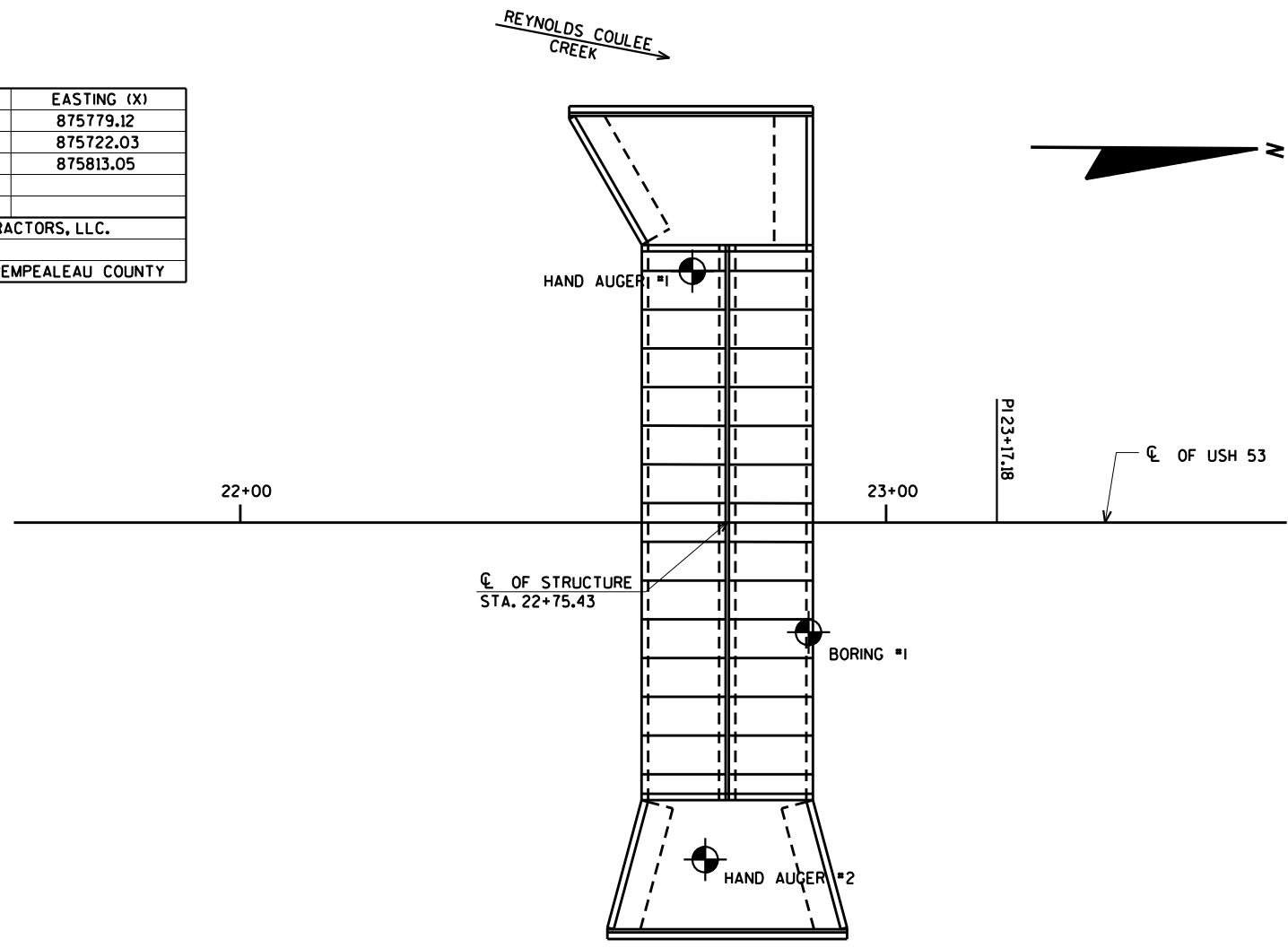
**AYRES**

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-61-289</b>			
DRAWN BY CLP		PLANS CK'D. JCK	
<b>PRECAST CONCRETE BOX CULVERT END DETAILS</b>			SHEET 4 OF 5

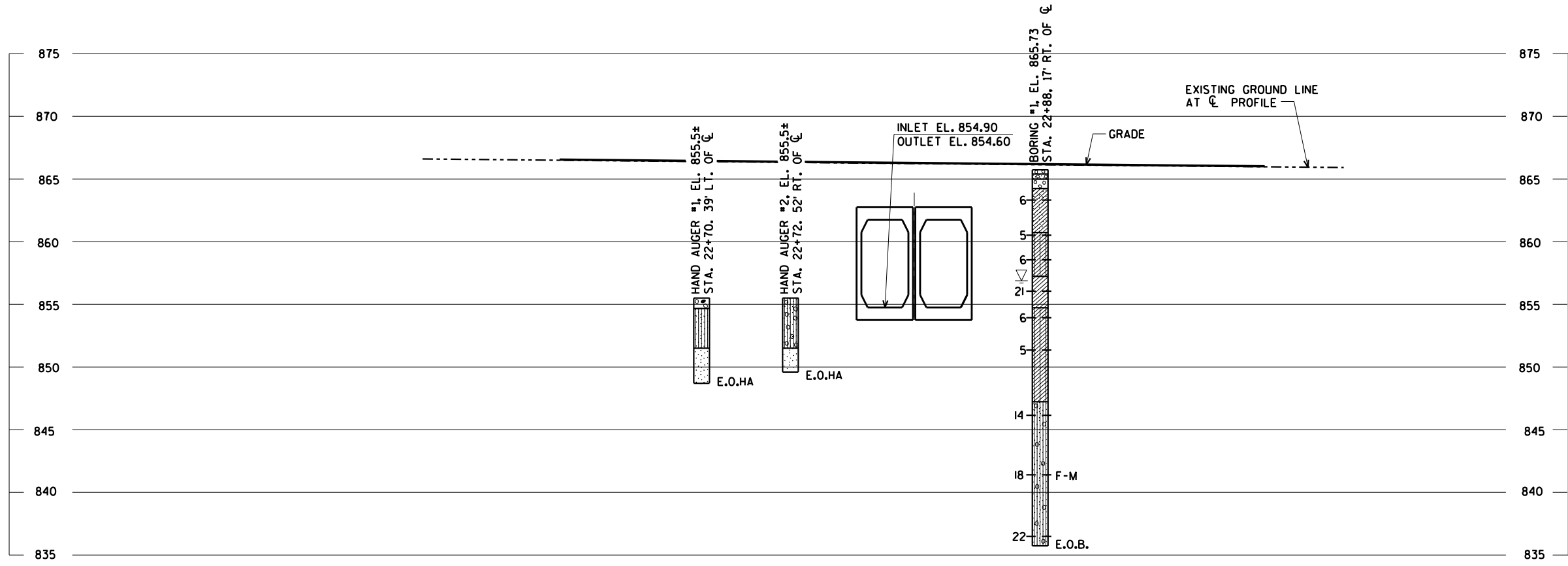
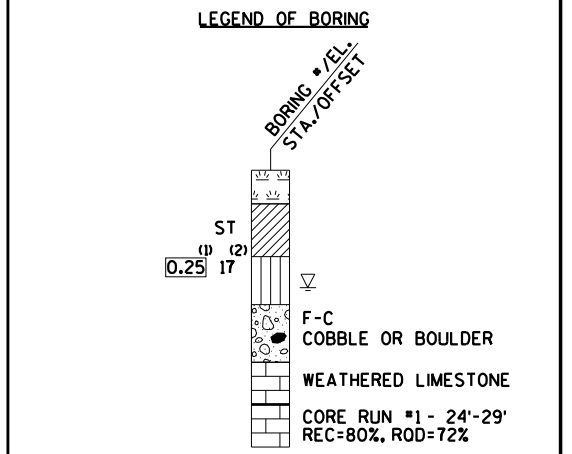


BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	12/23/2019	406566.97	875779.12
HAND AUGER 1	12/23/2019	406551.46	875722.03
HAND AUGER 2	12/23/2019	406549.96	875813.05
BORINGS COMPLETED BY: GEOTECHNICAL DRILLING CONTRACTORS, LLC.			
REPORT COMPLETED BY: ECS MIDWEST, LLC.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) TREMPLEALEAU COUNTY			



**MATERIAL SYMBOLS**

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



**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.

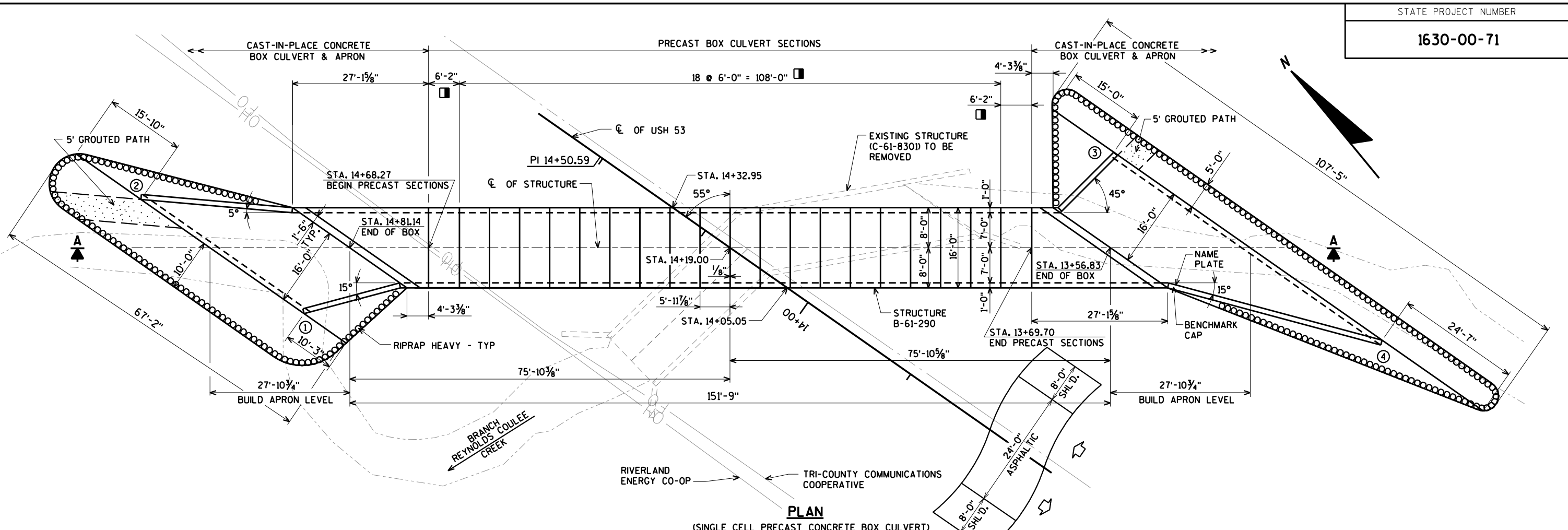
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-61-289</b>			
DRAWN BY		CLP	PLANS CKD. JCK
<b>SUBSURFACE EXPLORATION</b>			SHEET 5 OF 5

7/27/2021 PENTABLE:BRedu\_shd\_util.tbl

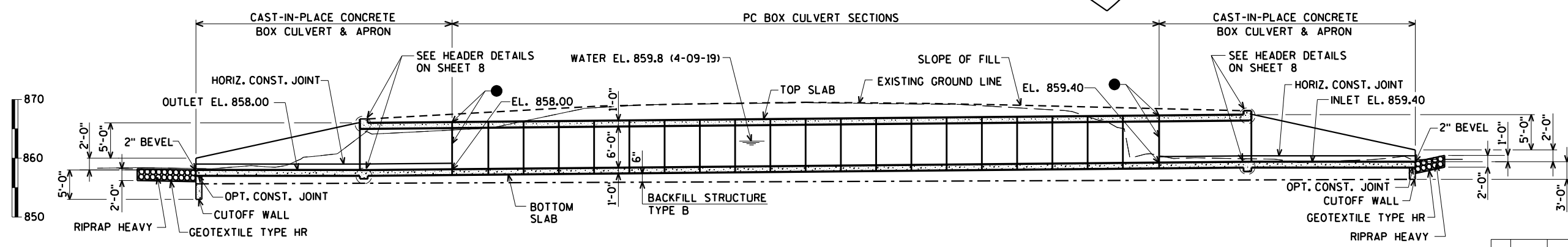
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9/1/2021  
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**PLAN**  
(SINGLE CELL PRECAST CONCRETE BOX CULVERT)



**SECTION A**

- DENOTES WING NUMBER.
- ALTERNATE LENGTHS FOR PC BOX CULVERT SECTIONS MAY BE USED. MINIMUM LENGTH IS 4'-0".
- 18" RUBBERIZED MEMBRANE WATERPROOFING REQUIRED ON TOP OF SLAB AND UP THE OUTSIDE OF THE WALLS. TYPICAL AT CAST-IN-PLACE CONCRETE TO PRECAST CONCRETE JOINTS.

- LIST OF DRAWINGS**
1. GENERAL PLAN
  2. TYPICAL SECTION, QUANTITIES AND NOTES
  3. PRECAST CONCRETE BOX CULVERT BARREL DETAILS
  4. APRON PLAN WINGS 1 & 2
  5. APRON PLAN WINGS 3 & 4
  6. WINGS 1 & 2 DETAILS
  7. WINGS 3 & 4 DETAILS
  8. BOX DETAILS
  9. CAST-IN-PLACE BAR STEEL LAYOUT
  10. BILL OF BARS AND DETAILS
  11. SUBSURFACE EXPLORATION



09/01/2021

BRIDGE OFFICE CONTACT:  
AARON BONK  
(608)-261-0261

CONSULTANT CONTACT:  
ARLEN BEAUDETTE  
(715)-834-3161

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY			
<b>AYRES</b> 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	 SDR 11/29/21 CHIEF STRUCTURES DESIGN ENGINEER DATE		
<b>STRUCTURE B-61-290</b>			
USH 53 OVER BRANCH REYNOLDS COULEE CREEK			
COUNTY	TREMPEALEAU	TOWN/CITY/VILLAGE	PRESTON
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	JLB	DESIGN CKD.	JCK
DRAWN BY	CLP	PLANS CKD.	AEB
<b>GENERAL PLAN</b>			SHEET 1 OF 11

**DESIGN DATA**

**LIVE LOAD:**

DESIGN LOADING: HL-93  
 INVENTORY RATING FACTOR: 1.00  
 OPERATING RATING FACTOR: 1.30  
 WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 255 KIPS

**EARTH LOAD:** DESIGNED FOR A FILL HEIGHT RANGE OF 3.0 TO 4.0 FEET

**MATERIAL PROPERTIES:**

CONCRETE MASONRY  $f'_c = 3,500$  p.s.i.  
 PRECAST CONCRETE MASONRY  $f'_c = 5,000$  p.s.i.  
 HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60)  $f_y = 60,000$  p.s.i.

**FOUNDATION DATA:**

FACTORED BEARING RESISTANCE: 2,250 p.s.f.

**HYDRAULIC DATA:**

<b>100 YEAR FREQUENCY</b>	<b>2 YEAR FREQUENCY</b>
$Q_{100} = 700$ c.f.s.	$Q_2 = 140$ c.f.s.
VEL. = 8.5 f.p.s.	VEL. = 2.3 f.p.s.
$HW_{100} = EL. 868.59$	$HW_2 = EL. 864.20$
WATERWAY AREA = 82 sq. ft.	
DRAINAGE AREA = 3.3 sq. mi.	
ROADWAY OVERTOPPING = N/A	
SCOUR CRITICAL CODE = 8	

**TRAFFIC DATA:**

A.A.D.T. = 4,100 (2022)  
 A.A.D.T. = 4,600 (2042)  
 R.D.S. = 60 M.P.H.

**TOTAL ESTIMATED QUANTITIES**

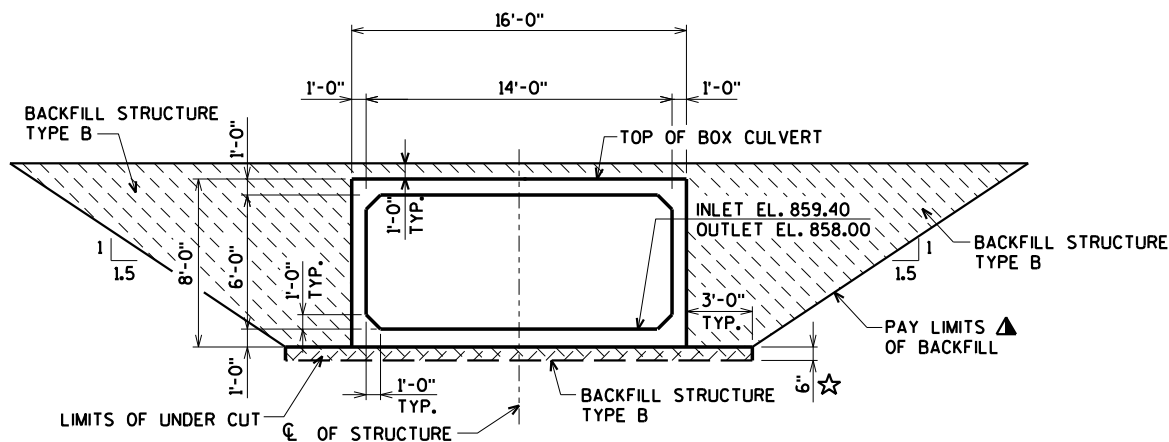
ITEM NUMBER	BID ITEMS	AMOUNT
203.0250	REMOVING STRUCTURE OVER WATERWAY REMOVE DEBRIS C-61-8301	1 EACH
206.2000	EXCAVATION FOR STRUCTURES CULVERTS B-61-290	1 LS
210.2500	BACKFILL STRUCTURE TYPE B	2,310 TON
504.0100	CONCRETE MASONRY CULVERTS	131 CY
504.2000.S.01	PRECAST CONCRETE BOX CULVERT 14 FT. x 6 FT.	121 LF
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	12,270 LB
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	2,330 LB
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	45 SY
606.0300	RIPRAP HEAVY	130 CY
606.0700	GROUTED RIPRAP HEAVY	10 CY
645.0120	GEOTEXTILE TYPE HR	280 SY

**NON-BID ITEMS**

FILLER  $\frac{3}{4}$  SIZE

**GENERAL NOTES**

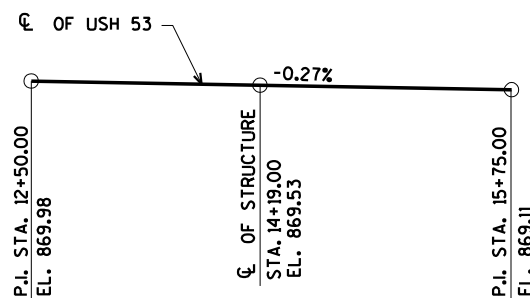
DRAWINGS SHALL NOT BE SCALED.  
 BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.  
 THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.  
 JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.  
 THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURE CULVERTS B-61-290" SHALL BE THE EXISTING GROUND LINE.  
 THE ALTERNATE CUTOFF WALL MAY BE USED IN LIEU OF THE CAST-IN-PLACE CONCRETE CUTOFF WALLS. PAYMENT SHALL BE BASED ON THE CONCRETE CUTOFF WALLS.  
 THE CONCRETE IN THE CUTOFF WALL MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.  
 THE EXISTING STRUCTURE, C-61-8301, TO BE REMOVED, IS A KINKED SINGLE-CELL CONCRETE BOX CULVERT, 12' WIDE x 5' HIGH x 68' LONG.  
 ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE TYPE B AS SHOWN IN THE DETAIL ON THIS SHEET.  
 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.  
 FILL SLOPES FLATTER THAN 2 1/2:1 SHALL BE WARPED TO MEET THE TYPE OF THE WINGWALLS.  
 THE CONTRACTOR SHALL SUPPLY A NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE WILL BE INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY CULVERTS".



**TYPICAL SECTION THRU BOX CULVERT**

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

☆ UNDER CUT 6". EXCAVATION FOR UNDER CUT TO BE INCLUDED IN EXCAVATION FOR STRUCTURES. BACKFILL WITH BACKFILL STRUCTURE TYPE B.



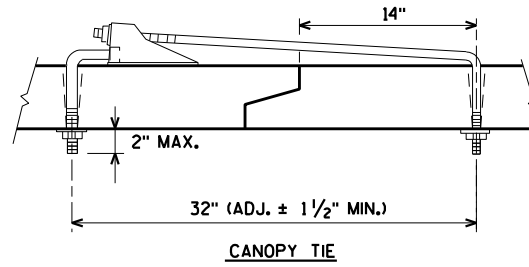
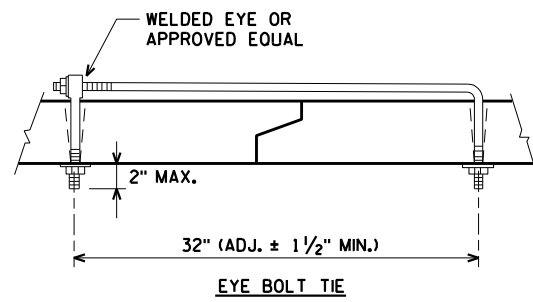
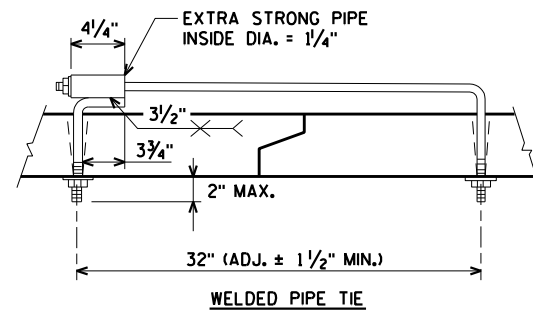
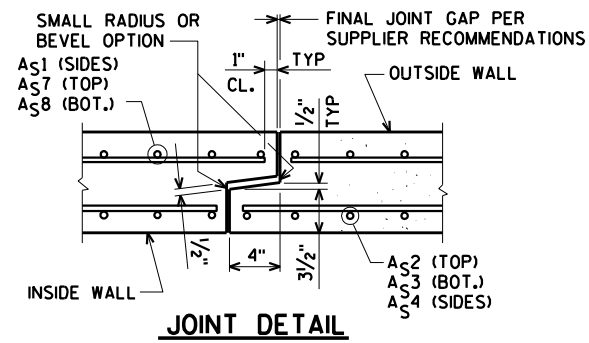
**PROFILE GRADE LINE**  
(USH 53)

BENCH MARK:  
 BM#2 CHIS. SQ. ON WING  
 STA. 13+71, 32' RT. OF CL  
 E. 864.15

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-61-290</b>			
DRAWN BY		CLP	PLANS CK'D. JCK
<b>TYPICAL SECTION, QUANTITIES AND NOTES</b>			SHEET 2 OF 11

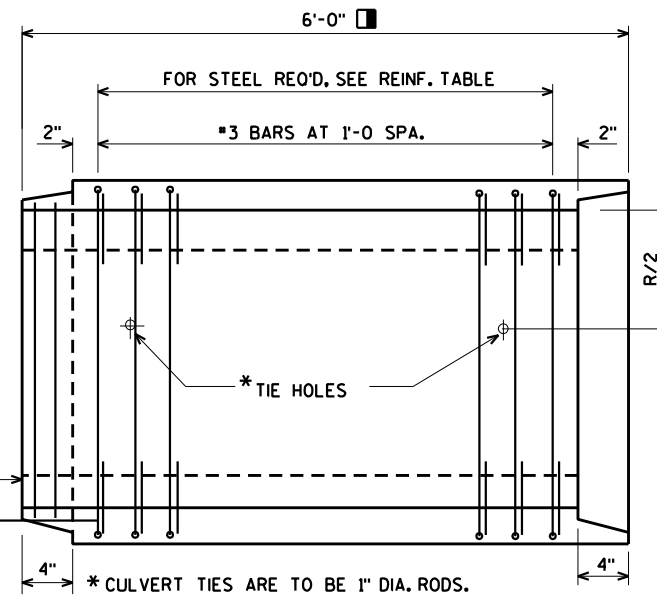
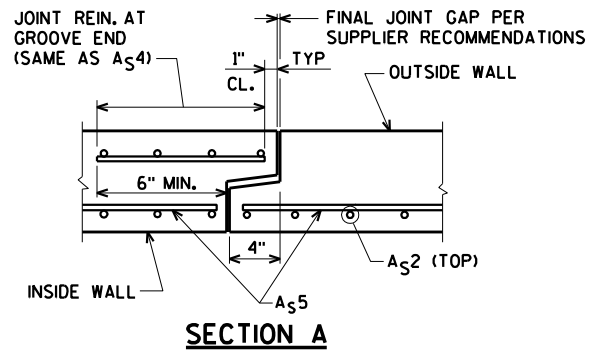
ORIGINAL PLANS PREPARED BY  
**AYRES** 3433 Oakwood Hills Parkway  
 Eau Claire, WI 54701  
 www.AyresAssociates.com

\$PRNAME\$ I:4242-1171.00 - Trempealeau Co, USH 53 Culverts+CADD+Final+421171 S\_Boxprecast.dgn



**JOINT TIES**

NOTES:  
 EITHER EYE BOLT TIES, WELDED PIPE TIES, OR CANOPY TIES MAY BE USED.  
 THREADS MAY BE CUT OR ROLLED. TIE NUTS SHALL BE TIGHTENED AS DIRECTED  
 BY THE ENGINEER. (2 TIES REQ'D. PER JOINT.) (TIES TO BE GALVANIZED.)



**NOTES**

DETAILS FOR MATERIALS, FABRICATION, CONSTRUCTION AND DESIGN OF PRECAST BOX CULVERTS NOT SHOWN OR STATED ON THIS DRAWING SHALL BE IN ACCORDANCE WITH THE CURRENT ASTM SPECIFICATION, C1577; AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS; WISCONSIN DOT BRIDGE MANUAL; WISCONSIN DOT STANDARD SPECIFICATIONS & APPLICABLE SPECIAL PROVISIONS, EXCEPT THAT THE CONCRETE MIXTURE SHALL CONTAIN NOT LESS THAN 565 LBS. OF CEMENTITIOUS MATERIALS PER CUBIC YARD.

THE DESIGN OF PRECAST BOX CULVERTS WITH ALL FILL HEIGHTS SHALL BE AS STATED IN ASTM C1577.

ALL PRECAST BOX SECTIONS SHALL BE PLACED ON A BEDDING OF "BACKFILL STRUCTURE" OF 6" MINIMUM DEPTH.

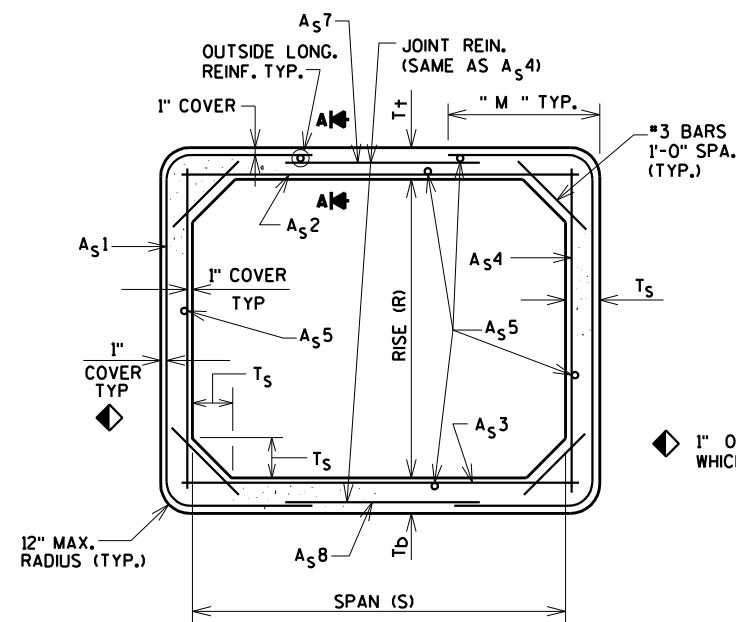
NOT MORE THAN FOUR (4) HOLES MAY BE CAST, DRILLED OR OTHERWISE NEATLY MADE IN THE SHELL OF EACH PIECE OF BOX SECTION FOR HANDLING. THE HOLES SHALL BE TAPERED UNLESS DRILLED. HOLES SHALL BE FILLED WITH PORTLAND CEMENT MORTAR EXCEPT TAPERED HOLES MAY BE FILLED WITH CONCRETE PLUGS SECURED WITH PORTLAND CEMENT MORTAR OR OTHER APPROVED ADHESIVE.

THE JOINT ON THE BOTTOM OF THE CULVERT & THE SIDES OF THE CULVERT FROM THE BOTTOM TO A POINT 1'-0" FROM THE CEILING SHALL BE SEALED WITH A PERFORMED MASTIC. PERFORMED MASTIC MUST CONFORM TO AASHTO MATERIALS SPEC. M198, TYPE B. A 2'-0" STRIP OF GEOTEXTILE TYPE DF SCHEDULE A SHALL BE PLACED OVER THE JOINTS ON THE TOP AND ON THE SIDES OF THE CULVERT. THE GEOTEXTILE SHALL CONFORM TO SECTION 645.2.2.4. OF THE STANDARD SPECIFICATION. (FABRIC NOT REQUIRED OVER INSIDE WALL JOINTS OF MULTICELL INSTALLATION).

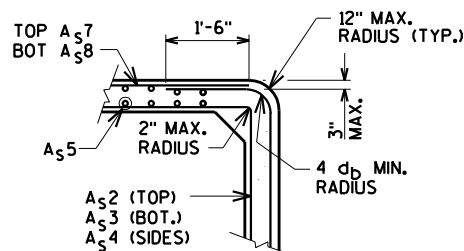
MASTIC AND GEOTEXTILE ARE INCIDENTAL TO THE BID ITEM "PRECAST CONCRETE BOX CULVERT 14 FT x 6 FT".

THE COVER OF CONCRETE OVER THE REINFORCEMENT SHALL BE 1 INCH OR 2 INCHES AS SHOWN WITH AN ALLOWABLE VARIATION OF - 3/8 INCH TO + 1/2 INCH.

THE SPACING CTR. TO CTR. OF THE CIRCUMFERENTIAL WIRES SHALL NOT BE LESS THAN 2 INCHES NOR MORE THAN 4 INCHES. THE SPACING CTR. TO CTR. OF THE LONGITUDINAL WIRES SHALL NOT BE MORE THAN 8 INCHES. PROVIDE 0.03 SQ. IN./FT. MIN. LONG. REINFORCEMENT AT EACH FACE IN SLABS AND WALLS.



**SECTION THRU BARREL**  
 FOR 2'-0" OR MORE OF COVER



**ALTERNATE DETAIL OPTION**

**BOX CULVERT BARREL DATA**

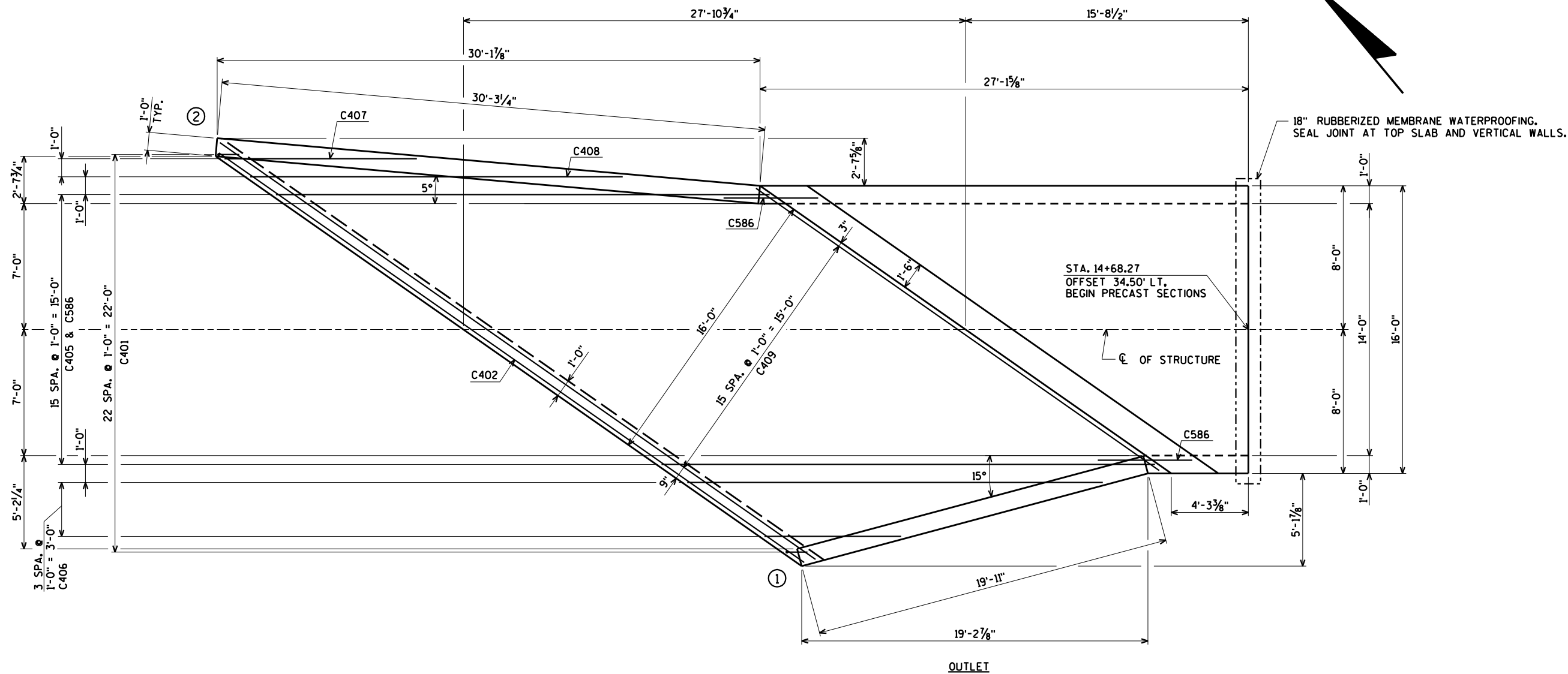
DIMENSIONS			EARTH COVER (FT.) VARIES 3'-0" TO 4'-0"					
14" S (FT.)	6" R (FT.)	12" T (IN.)	AREA (IN <sup>2</sup> )/FT.			LENGTH M		
REINFORCEMENT			AREA (IN <sup>2</sup> )/FT.	LENGTH	M	AREA (IN <sup>2</sup> )/FT.	LENGTH	M
A <sub>S</sub> 1			0.522	16'-6"	4'-4"			
A <sub>S</sub> 2			0.480	14'-4"	--			
A <sub>S</sub> 3			0.288	14'-4"	--			
A <sub>S</sub> 4			0.288	6'-8"	--			
A <sub>S</sub> 5			0.133	5'-8"	--			
A <sub>S</sub> 6			--	--	--			
A <sub>S</sub> 7			0.288	10'-4"	--			
A <sub>S</sub> 8			0.288	10'-4"	--			
TOTAL BARREL OR PANEL LENGTH			120'-4"					

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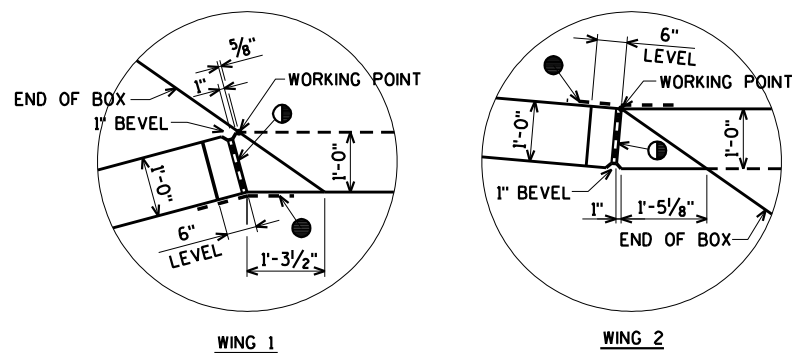
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-61-290</b>			
DRAWN BY CLP		PLANS CK'D. JCK	
<b>PRECAST CONCRETE BOX CULVERT BARREL DETAILS</b>			SHEET 3 OF 11

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



PLAN OF APRON



CORNER DETAILS

- 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM HORIZ. CONST. JT. TO TOP OF WING.
- ⊙ 3/4" FILLER TO EXTEND FROM HORIZ. CONST. JT. TO TOP OF WING.

NOTES:

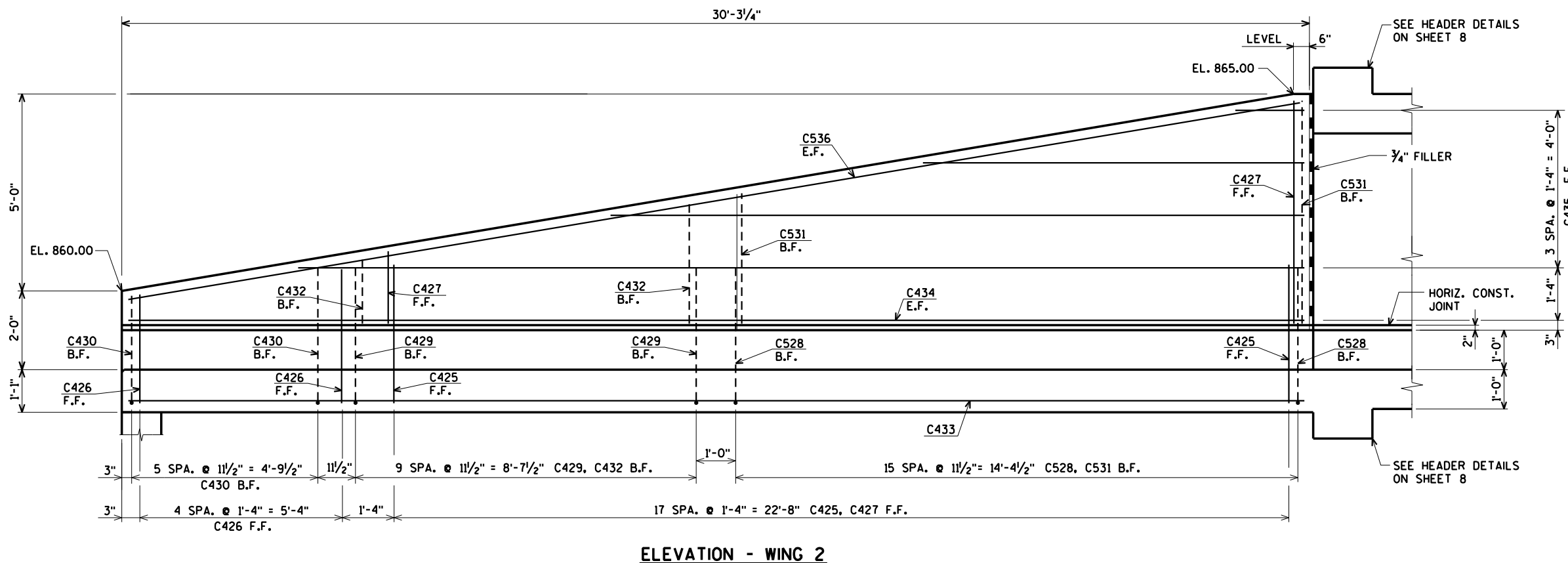
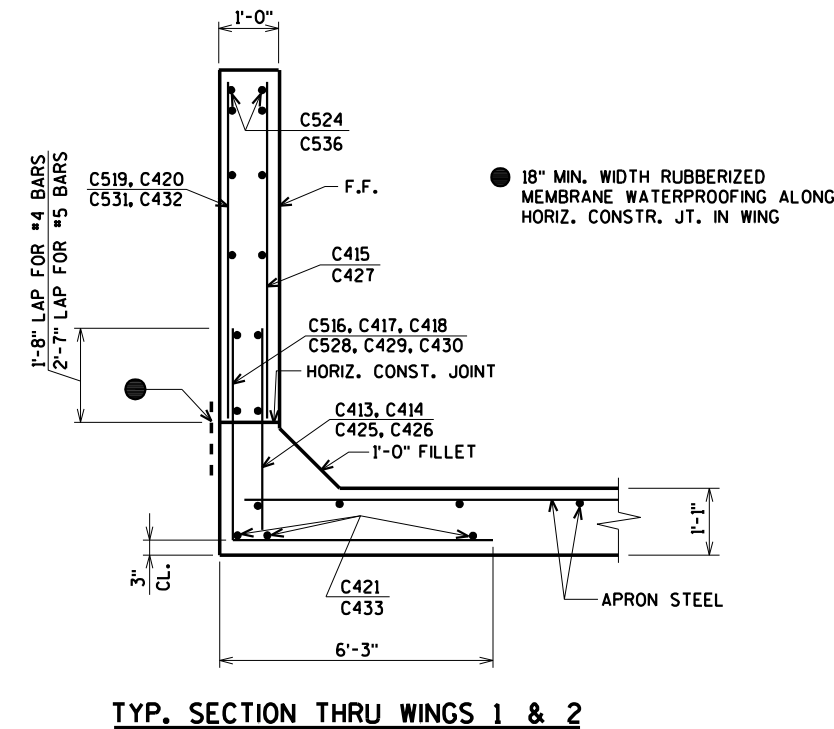
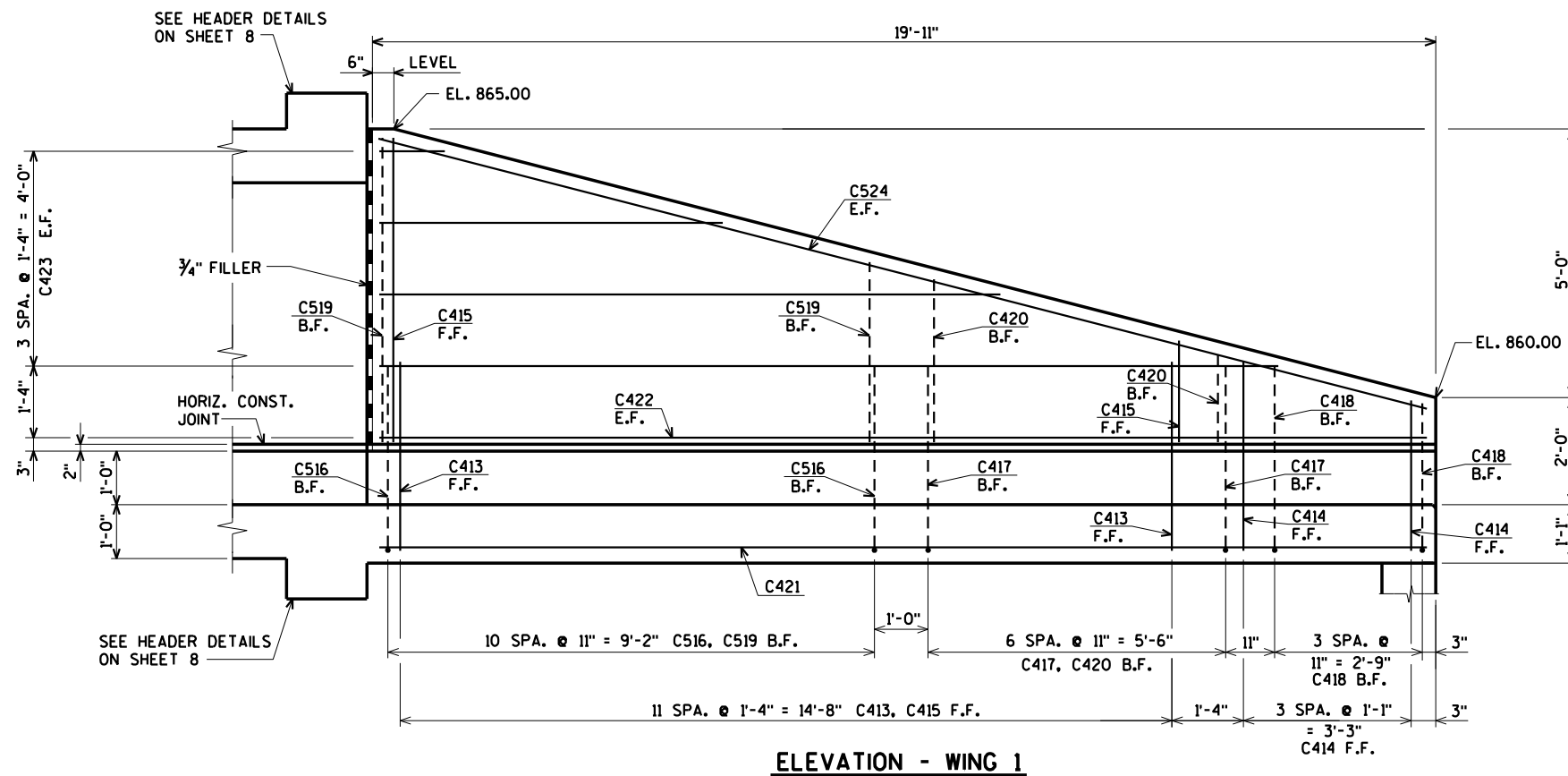
DO NOT RUN ANY BAR STEEL REINF. THRU JOINT FILLER.

FOR APRON CONNECTION AND C586 BAR INFORMATION, SEE DETAIL ON SHEET 10.

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-61-290</b>			
DRAWN BY CLP		PLANS CK'D. JCK	
<b>APRON PLAN WINGS 1 &amp; 2</b>			SHEET 4 OF 11





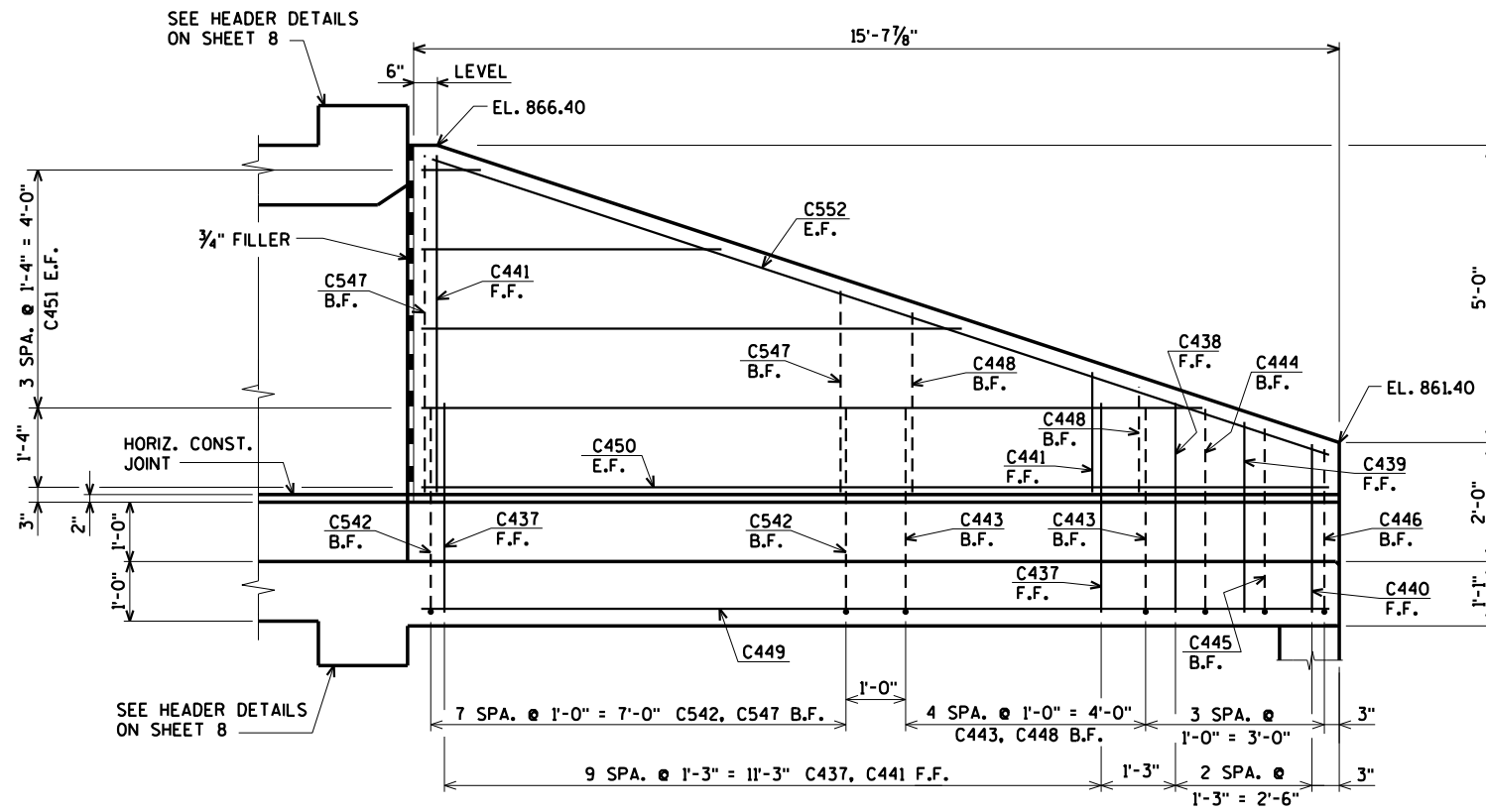
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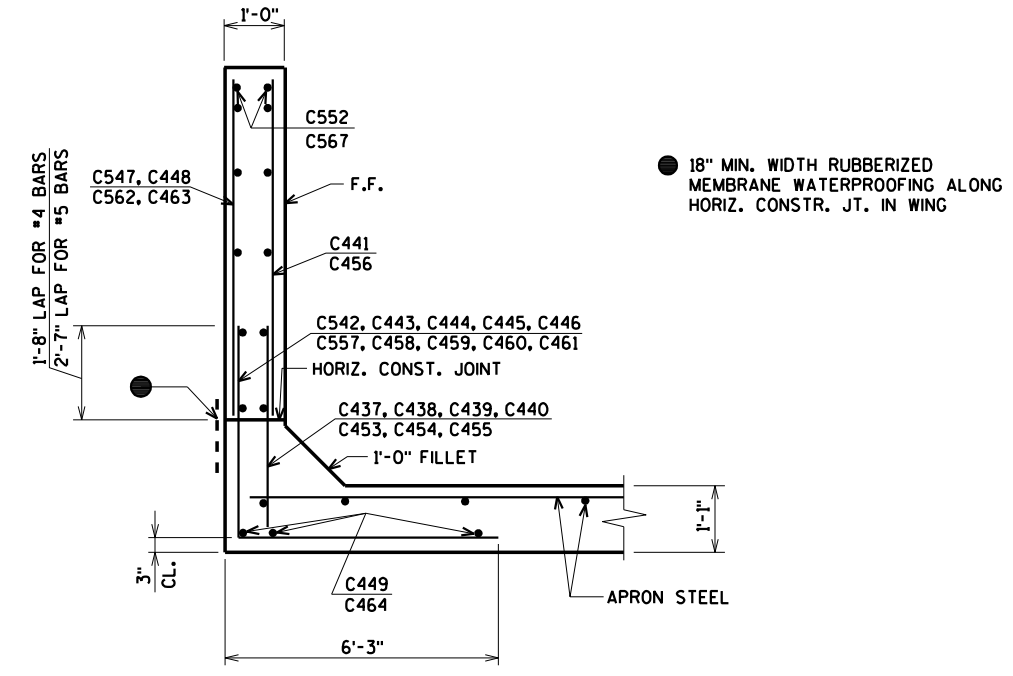
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-61-290</b>			
DRAWN BY		CLP	PLANS CK'D. JCK
<b>WINGS 1 &amp; 2 DETAILS</b>			SHEET 6 OF 11

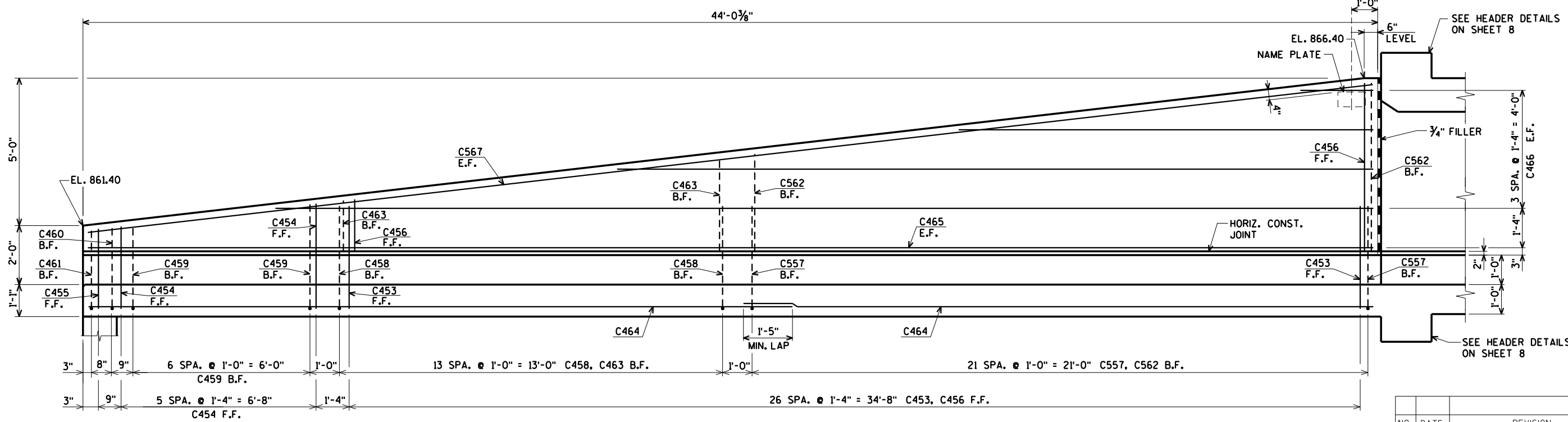
ORIGINAL PLANS PREPARED BY  
**AYRES** 3433 Oakwood Hills Parkway  
Eau Claire, WI 54701  
www.AyresAssociates.com



ELEVATION - WING 3



TYP. SECTION THRU WINGS 3 & 4



ELEVATION - WING 4

\$PRNAME\$ I:\42\42-1171.00 - Trempealeau Co. USH 53 Culvert\CADD\Final\421171S details.dgn

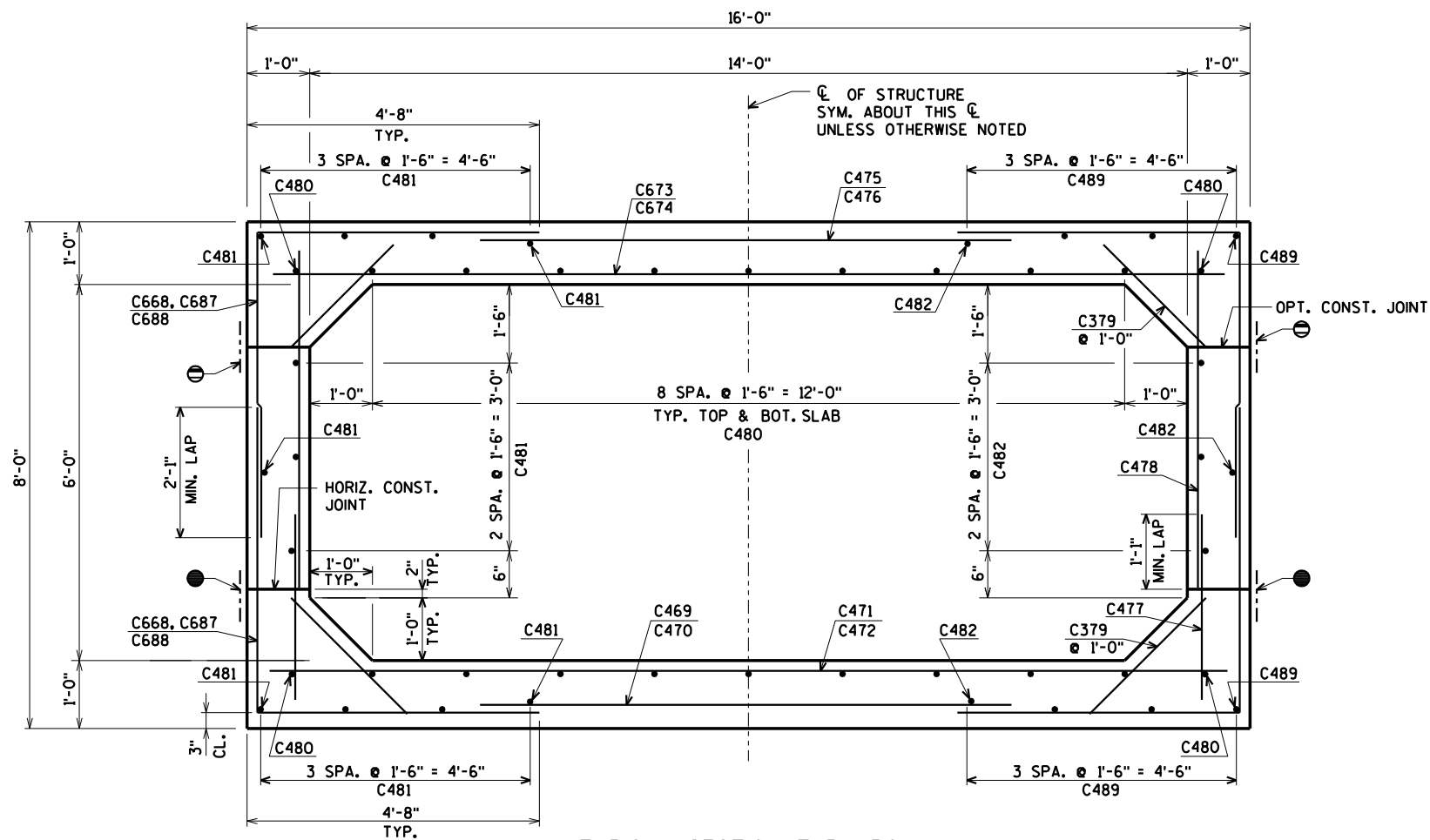
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8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-61-290</b>			
DRAWN BY		CLP	PLANS CK'D. JCK
<b>WINGS 3 &amp; 4 DETAILS</b>			SHEET 7 OF 11

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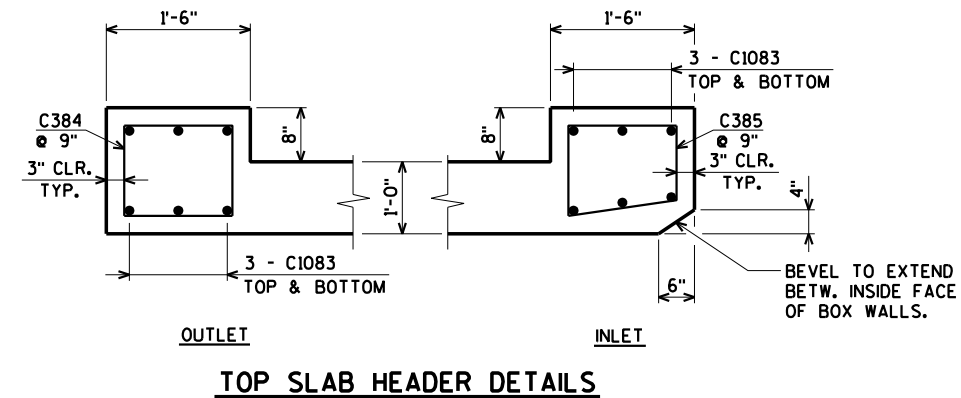




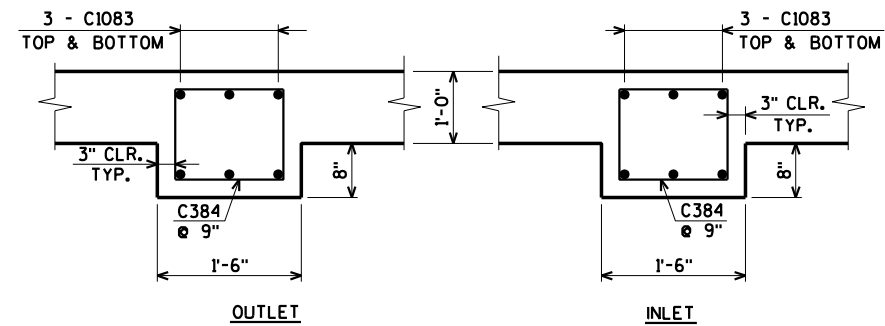
**TYPICAL SECTION THRU BOX**

(LOOKING WEST AT INLET END)  
(LOOKING EAST AT OUTLET END)

- 18" MIN. WIDTH RUBBERIZED MEMBRANE WATERPROOFING ALONG CONST. JOINT.
- ⊖ RUBBERIZED MEMBRANE WATERPROOFING IF CONST. JOINT IS USED (COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY CULVERT").



**TOP SLAB HEADER DETAILS**

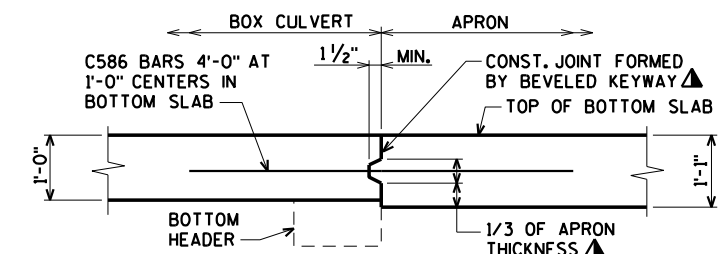
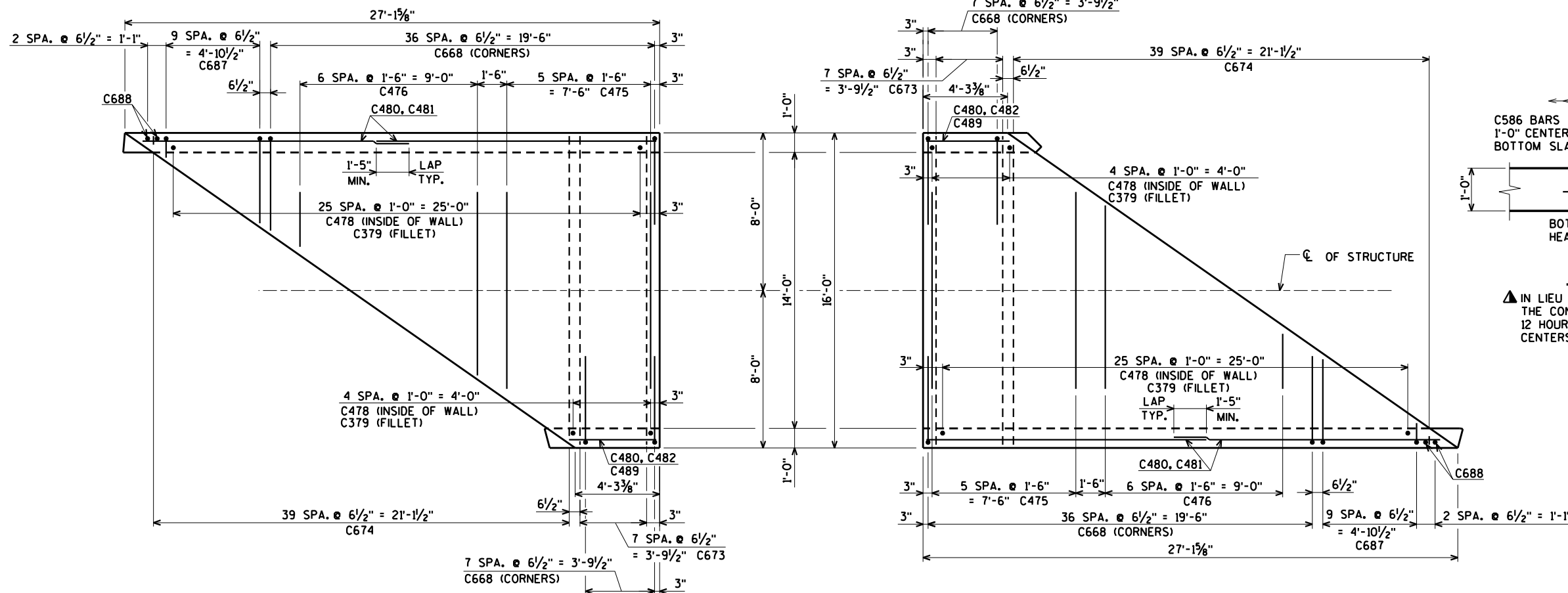


**BOTTOM SLAB HEADER DETAILS**

7/29/2021 PENTABLE:BRReou\_shd\_util.tbl

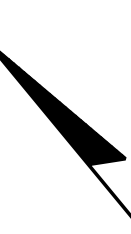
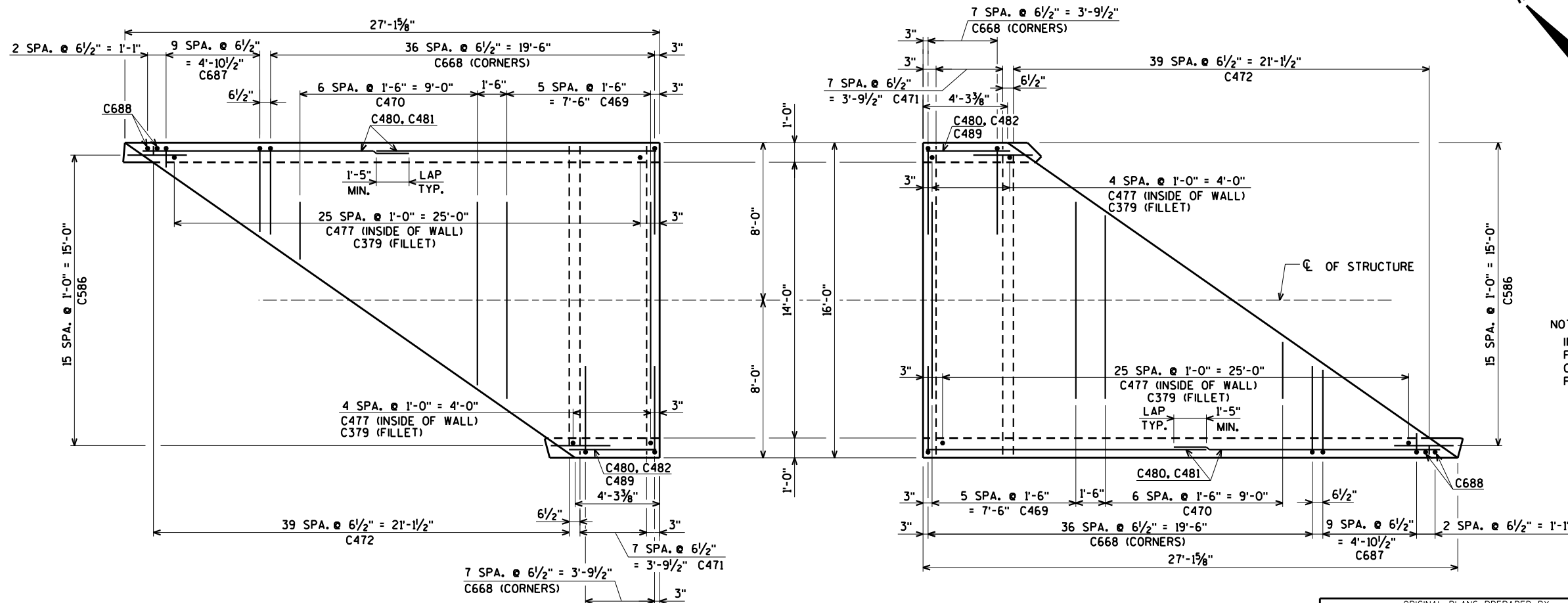
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-61-290</b>			
DRAWN BY	CLP	PLANS CK'D.	JCK
<b>BOX DETAILS</b>			SHEET 8 OF 11

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**APRON CONNECTION DETAIL**

▲ IN LIEU OF CONSTRUCTION JOINTS IN THE BOTTOM SLAB, THE CONTACTOR MAY USE 2" DEEP SAW CUTS WITHIN 12 HOURS AFTER POURING, #5 BARS 4'-0" AT 1'-0" CENTERS REQUIRED.



**NOTE:**  
INCORPORATE #5 BARS FROM EXTERNAL PRECAST PANELS INTO CAST-IN-PLACE BOX CULVERT IN BOTTOM SLAB, TOP SLAB, AND WALLS. FOR DETAILS, SEE SHEET 3.

7/29/2021  
PENTABLE:BRRedu\_shd\_ufil.tbl

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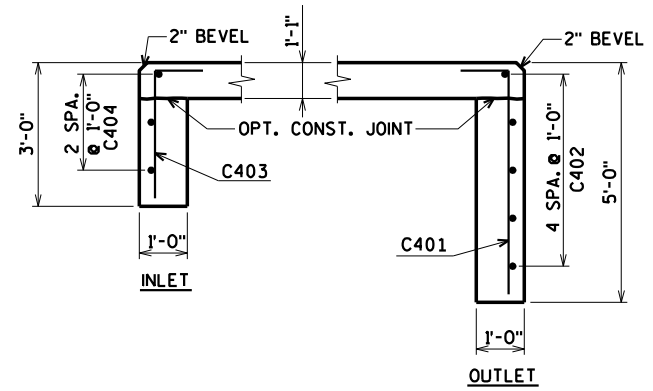
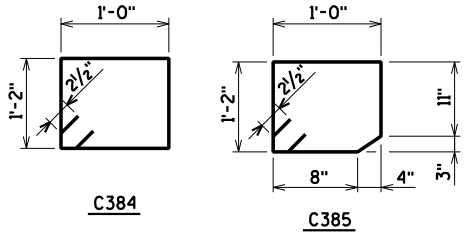
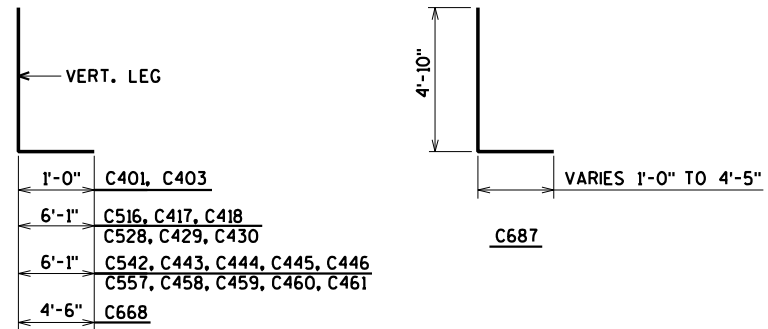
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-61-290</b>			
DRAWN BY CLP		PLANS CK'D. JCK	
<b>CAST-IN-PLACE BAR STEEL LAYOUT</b>			SHEET 9 OF 11

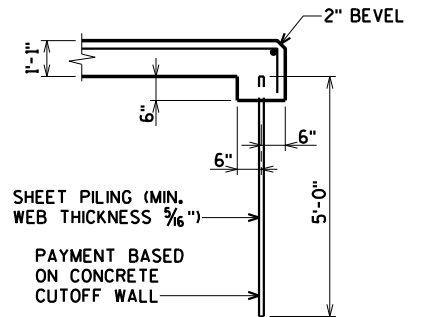
ORIGINAL PLANS PREPARED BY  
**AYRES**  
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**BILL OF BARS**

BAR. NO.	COATED BAR NO. REQ'D.	LENGTH	BENT BAR BUNDLED	BAR SERIES	2,330* COATED 12,270* UNCOATED
					LOCATION
C401	23	5-7	X		CUTOFF WALL OUTLET
C402	5	39-8			CUTOFF WALL OUTLET
C403	37	3-7	X		CUTOFF WALL INLET
C404	6	33-5			CUTOFF WALL INLET
C405	32	27-3			APRON INLET & OUTLET
C406	4	15-4			APRON OUTLET WING 1
C407	1	10-8			APRON OUTLET WING 2
C408	1	20-8			APRON OUTLET WING 2
C409	16	33-9			APRON OUTLET
C410	10	14-2			APRON INLET WING 3
C411	10	15-4			APRON INLET WING 4
C412	32	23-11			APRON INLET
C413	X	12	3-8		WING 1 VERT. F.F.
C414	X	4	3-1		WING 1 VERT. F.F.
C415	X	12	3-9		WING 1 VERT. F.F.
C516	X	11	10-7	X	WING 1 VERT. B.F.
C417	X	7	9-8	X	WING 1 VERT. B.F.
C418	X	4	9-1	X	WING 1 VERT. B.F.
C519	X	11	4-6		WING 1 VERT. B.F.
C420	X	7	2-4		WING 1 VERT. B.F.
C421	3	19-11			WING 1 HORIZ. APRON
C422	X	2	19-6		WING 1 HORIZ. E.F.
C423	X	8	8-11		WING 1 HORIZ. E.F.
C524	X	2	19-10		WING 1 DIAG. E.F.
C425	X	18	3-8		WING 2 VERT. F.F.
C426	X	5	3-2		WING 2 VERT. F.F.
C427	X	18	3-8		WING 2 VERT. F.F.
C528	X	16	10-7	X	WING 2 VERT. B.F.
C429	X	10	9-8	X	WING 2 VERT. B.F.
C430	X	6	9-1	X	WING 2 VERT. B.F.
C531	X	16	4-6		WING 2 VERT. B.F.
C432	X	10	2-5		WING 2 VERT. B.F.
C433	3	29-11			WING 2 HORIZ. APRON
C434	X	2	29-10		WING 2 HORIZ. E.F.
C435	X	8	13-8		WING 2 HORIZ. E.F.
C536	X	2	30-0		WING 2 DIAG. E.F.
C437	X	10	3-8		WING 3 VERT. F.F.
C438	X	1	3-5		WING 3 VERT. F.F.
C439	X	1	3-0		WING 3 VERT. F.F.
C440	X	1	2-8		WING 3 VERT. F.F.
C441	X	10	3-10		WING 3 VERT. F.F.
C542	X	8	10-7	X	WING 3 VERT. B.F.
C443	X	5	9-8	X	WING 3 VERT. B.F.
C444	X	1	9-4	X	WING 3 VERT. B.F.
C445	X	1	9-0	X	WING 3 VERT. B.F.
C446	X	1	8-8	X	WING 3 VERT. B.F.
C547	X	8	4-6		WING 3 VERT. B.F.
C448	X	5	2-4		WING 3 VERT. B.F.
C449	3	15-3			WING 3 HORIZ. APRON
C450	X	2	15-3		WING 3 HORIZ. E.F.
C451	X	8	7-1		WING 3 HORIZ. E.F.
C552	X	2	15-9		WING 3 DIAG. E.F.
C453	X	27	3-8		WING 4 VERT. F.F.
C454	X	6	3-1		WING 4 VERT. F.F.
C455	X	1	2-8		WING 4 VERT. F.F.
C456	X	27	3-8		WING 4 VERT. F.F.
C557	X	22	10-7	X	WING 4 VERT. B.F.
C458	X	14	9-8	X	WING 4 VERT. B.F.
C459	X	7	9-2	X	WING 4 VERT. B.F.
C460	X	1	8-8	X	WING 4 VERT. B.F.
C461	X	1	8-7	X	WING 4 VERT. B.F.
C562	X	22	4-6		WING 4 VERT. B.F.
C463	X	14	2-5		WING 4 VERT. B.F.
C464	6	22-7			WING 4 HORIZ. APRON
C465	X	2	43-7		WING 4 HORIZ. E.F.
C466	X	8	19-10		WING 4 HORIZ. E.F.
C567	X	2	43-7		WING 4 DIAG. E.F.
C668	180	9-2	X		BOX CORNERS
C469	12	9-6			BOX SLAB TRANS. BOT.
C470	14	5-5			BOX SLAB TRANS. BOT.
C471	16	15-8			BOX SLAB TRANS. BOT.
C472	80	8-0			BOX SLAB TRANS. BOT.
C673	16	15-8			BOX SLAB TRANS. TOP
C674	80	8-0			BOX SLAB TRANS. TOP



SECTION THRU CUTOFF WALL



SECTION THRU ALTERNATE CUTOFF WALL

**BAR SERIES TABLE**

BAR MARK	NO REQ'D.	LENGTH
C406	1 SERIES OF 4	7'-7" TO 23'-1"
C409	1 SERIES OF 16	27'-1" TO 40'-4"
C410	1 SERIES OF 10	3'-2" TO 25'-1"
C411	1 SERIES OF 10	5'-0" TO 25'-8"
C412	2 SERIES OF 16	14'-3" TO 33'-7"
C414	1 SERIES OF 4	2'-8" TO 3'-6"
C415	1 SERIES OF 12	1'-10" TO 5'-8"
C418	1 SERIES OF 4	8'-8" TO 9'-5"
C519	1 SERIES OF 11	3'-4" TO 5'-8"
C420	1 SERIES OF 7	1'-8" TO 3'-0"
C423	2 SERIES OF 4	1'-2" TO 16'-8"
C426	1 SERIES OF 5	2'-8" TO 3'-7"
C427	1 SERIES OF 18	1'-9" TO 5'-7"
C430	1 SERIES OF 6	8'-8" TO 9'-6"
C531	1 SERIES OF 16	3'-3" TO 5'-8"
C432	1 SERIES OF 10	1'-8" TO 3'-1"
C435	2 SERIES OF 4	1'-9" TO 25'-7"
C441	1 SERIES OF 10	1'-11 TO 5'-8"
C547	1 SERIES OF 8	3'-4" TO 5'-8"
C448	1 SERIES OF 5	1'-8" TO 3'-0"
C451	2 SERIES OF 4	1'-0" TO 13'-2"
C454	1 SERIES OF 6	2'-8" TO 3'-6"
C456	1 SERIES OF 27	1'-8" TO 5'-8"
C459	1 SERIES OF 7	8'-10" TO 9'-6"
C562	1 SERIES OF 22	3'-3" TO 5'-8"
C463	1 SERIES OF 14	1'-8" TO 3'-1"
C466	2 SERIES OF 4	2'-5" TO 37'-3"
C470	2 SERIES OF 7	1'-9" TO 9'-1"
C472	2 SERIES OF 40	7" TO 15'-5"
C674	2 SERIES OF 40	7" TO 15'-5"
C476	2 SERIES OF 7	1'-9" TO 9'-1"
C480	8 SERIES OF 11	3'-3" TO 13'-7"
C687	4 SERIES OF 10	5'-8" TO 9'-1"
C489	4 SERIES OF 4	4'-1" TO 10'-6"

**BILL OF BARS**

BAR. NO.	COATED BAR NO. REQ'D.	LENGTH	BENT BAR BUNDLED	BAR SERIES	LOCATION
C475	12	9-6			BOX SLAB TRANS. TOP
C476	14	5-5			BOX SLAB TRANS. TOP
C477	62	3-1			BOX WALLS DOWELS
C478	62	5-7			BOX WALLS VERT.
C379	124	2-5			BOX SLAB FILLET TOP & BOT.
C480	88	8-5			BOX LONG.
C481	48	13-11			BOX LONG.
C482	8	4-1			BOX LONG.
C1083	24	27-3			BOX HEADER INLET & OUTLET
C384	102	4-8	X		BOX HEADER INLET & OUTLET
C385	34	4-8	X		BOX HEADER INLET TOP
C586	32	4-0			APRON INLET & OUTLET
C687	40	7-5	X		BOX CORNERS
C688	8	4-9			BOX CORNERS
C489	16	7-4			BOX LONG.

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.

BUNDLE AND TAG EACH SERIES SEPARATELY.

7/28/2021 PENTABLE:BRRequ\_shd\_util.tb1

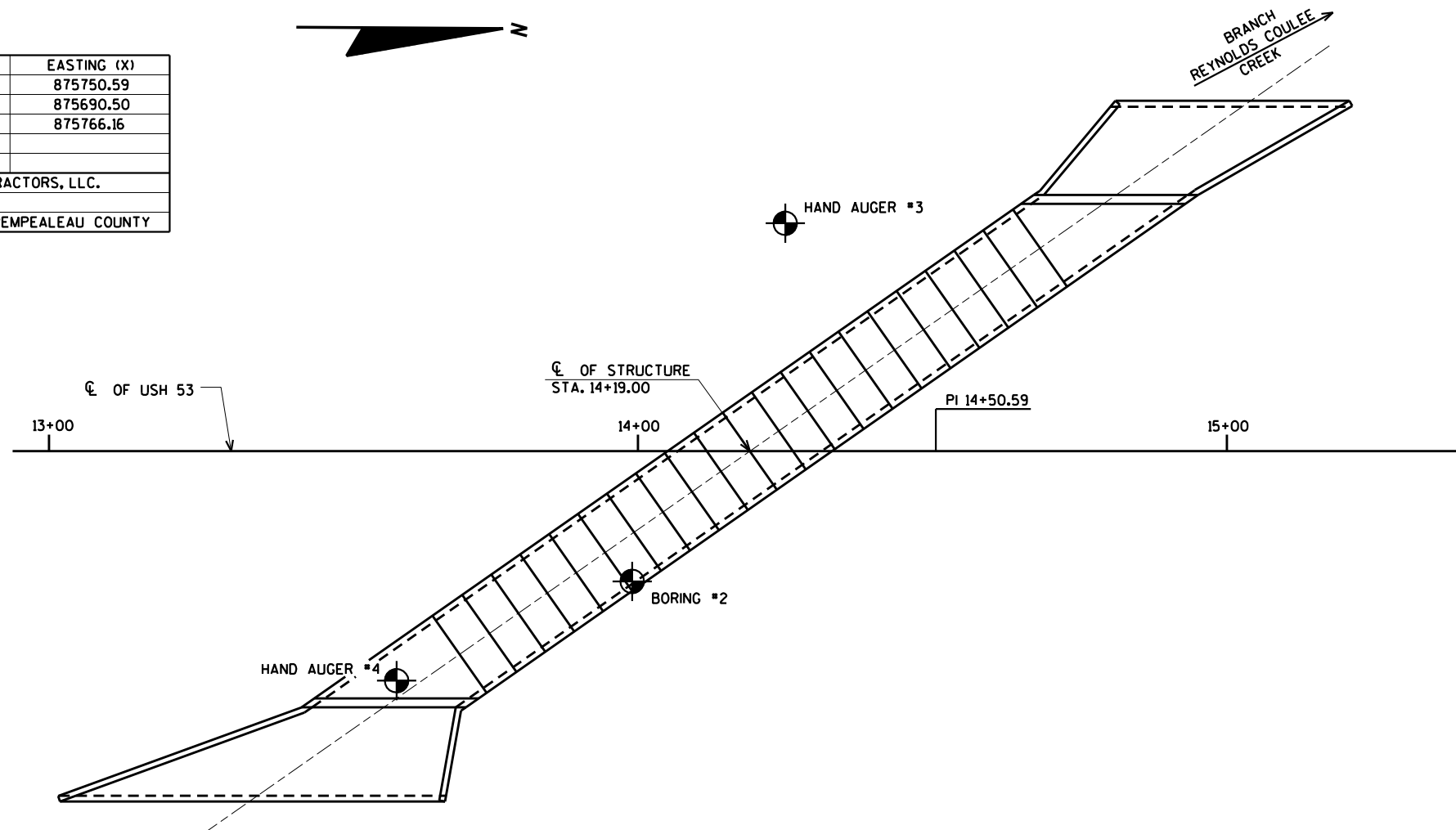
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-61-290</b>			
DRAWN BY		CLP	PLANS CK'D. JCK
<b>BILL OF BARS AND DETAILS</b>			SHEET 10 OF 11

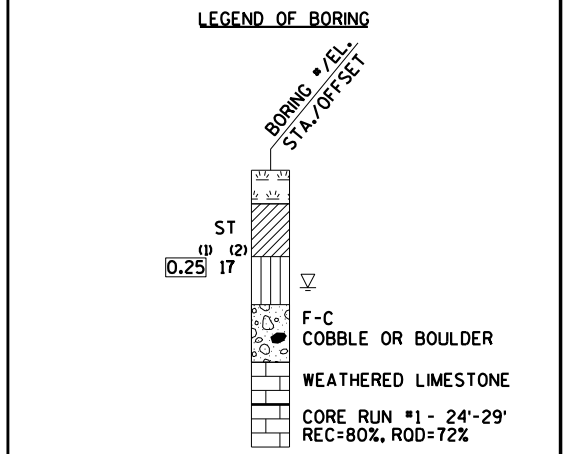
ORIGINAL PLANS PREPARED BY  
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 Eau Claire, WI 54701  
 www.AyresAssociates.com

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
2	12/23/2019	405679.19	875750.59
HAND AUGER 3	12/23/2019	405706.35	875690.50
HAND AUGER 4	12/23/2019	405638.44	875766.16
BORINGS COMPLETED BY: GEOTECHNICAL DRILLING CONTRACTORS, LLC.			
REPORT COMPLETED BY: ECS MIDWEST, LLC.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) TREMPLEALEAU COUNTY			



**MATERIAL SYMBOLS**

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



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

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

**GROUND WATER ELEVATION**

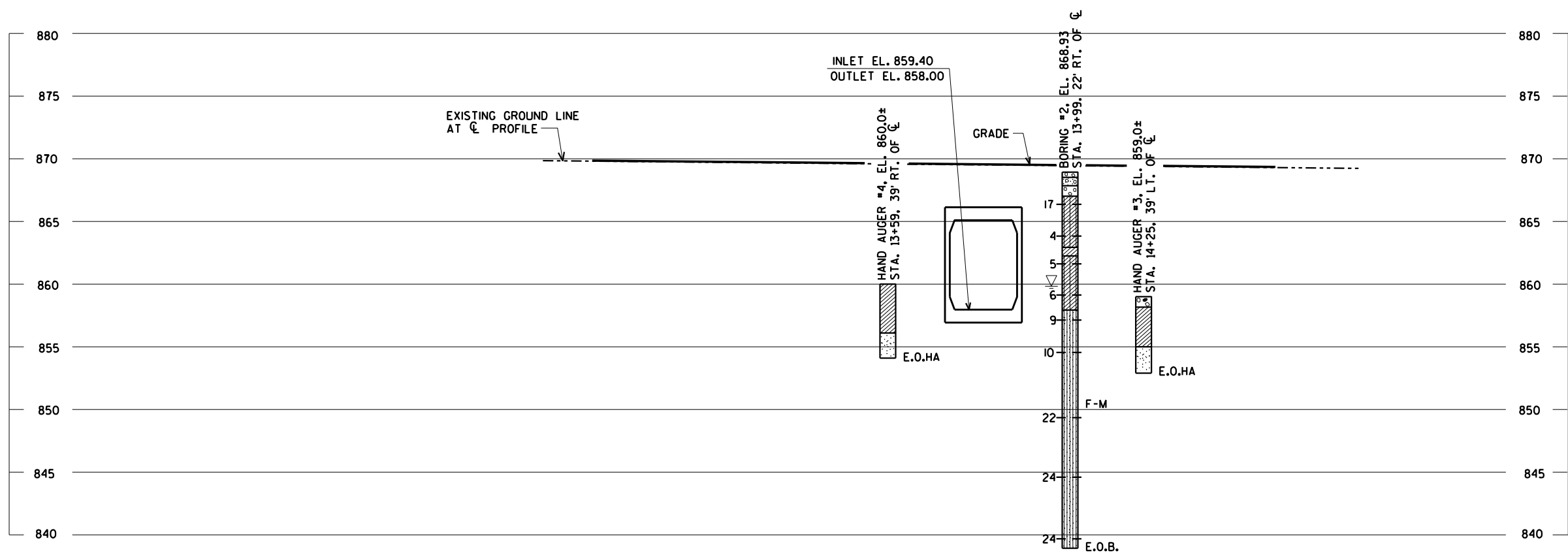
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**ABBREVIATIONS**

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			
<b>STRUCTURE B-61-290</b>			
DRAWN BY CLP		PLANS CKD. JCK	
<b>SUBSURFACE EXPLORATION</b>			SHEET 11 OF 11

7/28/2021 PENTABLE:BRRedu\_shd\_util.tbl

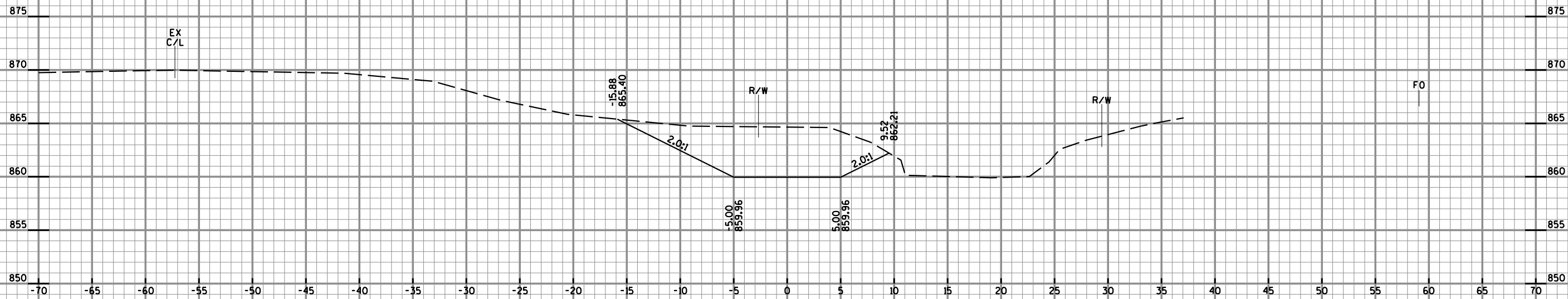
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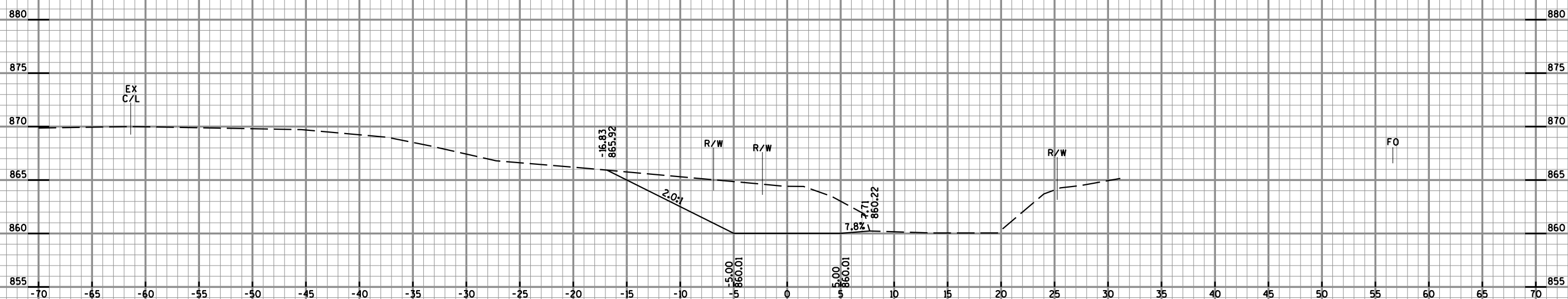
**BYPASS CHANNEL – SOUTH SITE COMPUTER EARTHWORK**

Station	Distance	Area (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)			Mass Ordinate Note 5
		Cut	Unusable Cut	Constructing Channel Fill	Restoring Channel Fill	Cut	Unusable Cut	Constructing Channel Fill	Restoring Channel Fill	Cut 1.00	Unusable Cut	Expanded Fill 1.30	
0+00	--	39.0	0	0	39.0	0	0	0	0	0	0	0	0
0+10	10	77.1	0	0	77.1	22	0	0	22	22	0	29	-7
0+20	10	81.6	0	0	81.6	29	0	0	29	51	0	66	-15
0+30	10	91.0	0	0	91.0	32	0	0	32	83	0	108	-25
0+40	10	99.3	0	0	99.3	35	0	0	35	118	0	153	-35
0+50	10	97.1	0	0	97.1	36	0	0	36	154	0	200	-46
0+60	10	115.1	0	0	115.1	39	0	0	39	193	0	251	-58
0+70	10	154.5	0	0	154.5	50	0	0	50	243	0	316	-73
0+80	10	203.2	0	0	203.2	66	0	0	66	309	0	402	-93
0+90	10	233.9	0	0	233.9	81	0	0	81	390	0	507	-117
1+00	10	244.8	0	0	244.8	89	0	0	89	479	0	623	-144
1+10	10	251.2	0	0	251.2	92	0	0	92	571	0	742	-171
1+20	10	255.0	0	0	255.0	94	0	0	94	665	0	865	-200
1+30	10	253.9	0	0	253.9	94	0	0	94	759	0	987	-228
1+40	10	246.4	0	0	246.4	93	0	0	93	852	0	1108	-256
1+50	10	232.0	0	0	232.0	89	0	0	89	941	0	1223	-282
1+60	10	210.9	0	0	210.9	82	0	0	82	1023	0	1330	-307
1+70	10	183.3	0	0	183.3	73	0	0	73	1096	0	1425	-329
1+80	10	148.3	0	0	148.3	61	0	0	61	1157	0	1504	-347
1+90	10	70.7	0	0	70.7	41	0	0	41	1198	0	1557	-359
2+00	10	48.6	0	0	48.6	22	0	0	22	1220	0	1586	-366
2+10	10	44.1	0	9.2	44.1	17	0	2	17	1237	0	1611	-374
2+20	10	20.0	0	11.2	20.0	12	0	4	12	1249	0	1632	-383
2+30	10	18.3	0	1.3	18.3	7	0	2	7	1256	0	1643	-387
2+40	10	30.8	0	3.2	30.8	9	0	1	9	1265	0	1656	-391
2+50	10	20.5	0	1.6	20.5	10	0	1	10	1275	0	1671	-396
2+60	10	40.1	0	4.2	40.1	11	0	1	11	1286	0	1686	-400
2+70	10	99.1	0	0	99.1	26	0	1	26	1312	0	1721	-409
2+80	10	103.9	0	0	103.9	38	0	0	38	1350	0	1771	-421
2+90	10	79.7	0	0	79.7	34	0	0	34	1384	0	1815	-431
3+00	10	49.7	0	0	49.7	24	0	0	24	1408	0	1846	-438
3+04	4	32.6	0	0	32.6	6	0	0	6	1414	0	1854	-440
						1414	0	12	1414				

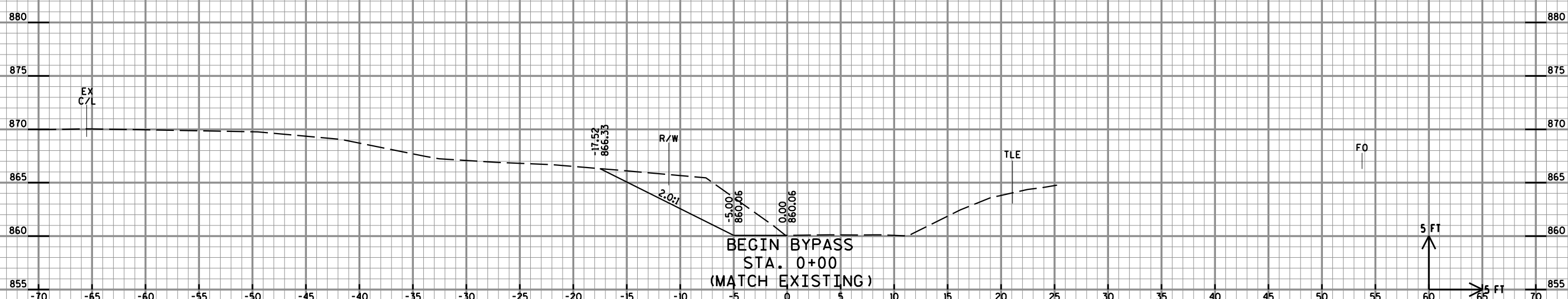
Note 1 - Cut	Cut includes excavation for Bypass Channel and excludes the Structure Excavation area.
Note 2 - Unusable Cut	This does not show up in cross sections. Accounted for in USH 53 Roadway Earthwork calculations.
Note 3 - Fill	Material required to construct bypass channel.
Note 4 - Fill	Material required to restore excavated bypass channel back to proposed roadway subgrade or existing surface outside the roadway. Does not include Structure Backfill within 15:1 slopes.
Note 5 - Mass Ordinate	[Cut - Unusable Cut - (Fill*Fill Factor)]



0+20



0+10

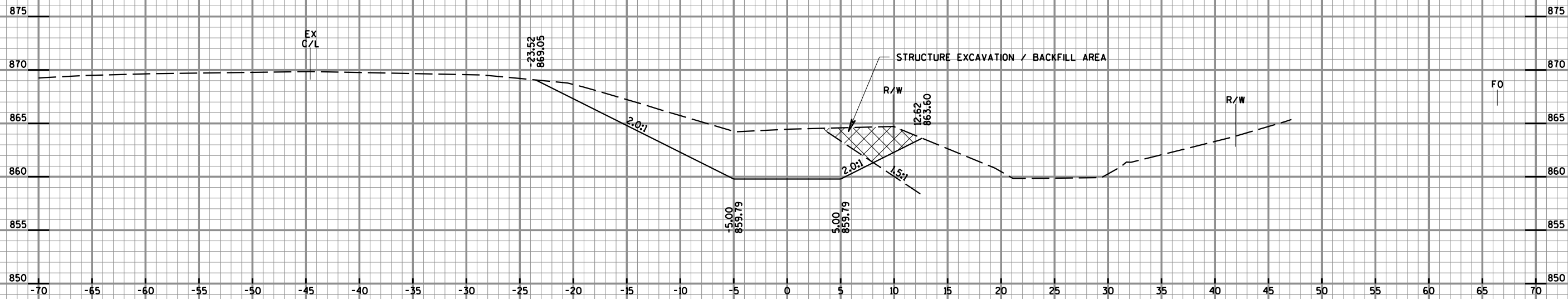


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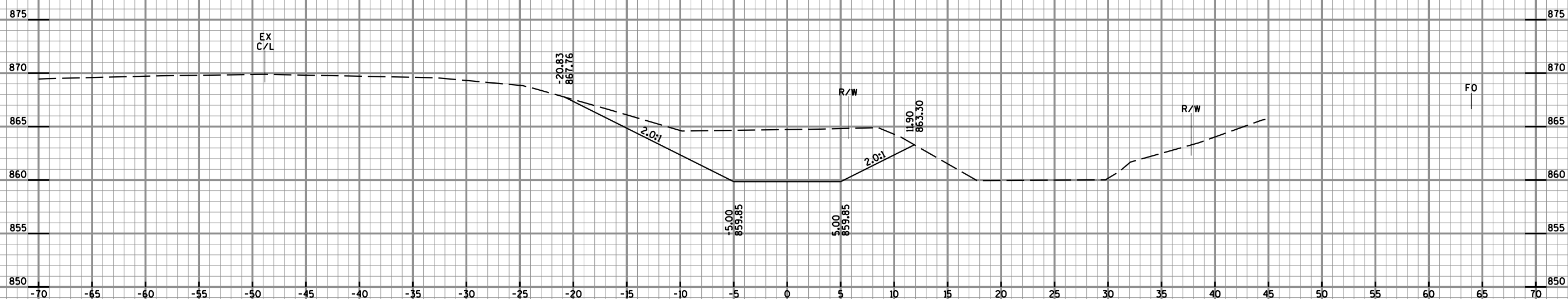
BEGIN BYPASS  
STA. 0+00  
(MATCH EXISTING)

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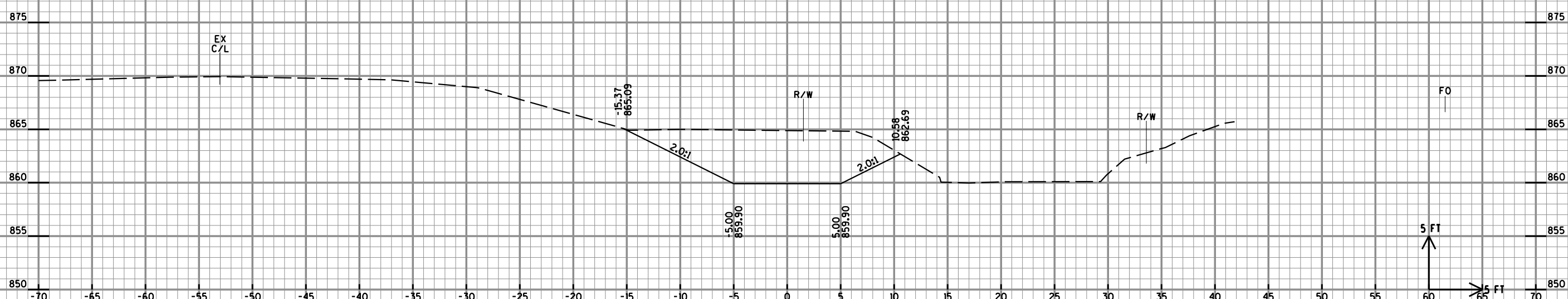
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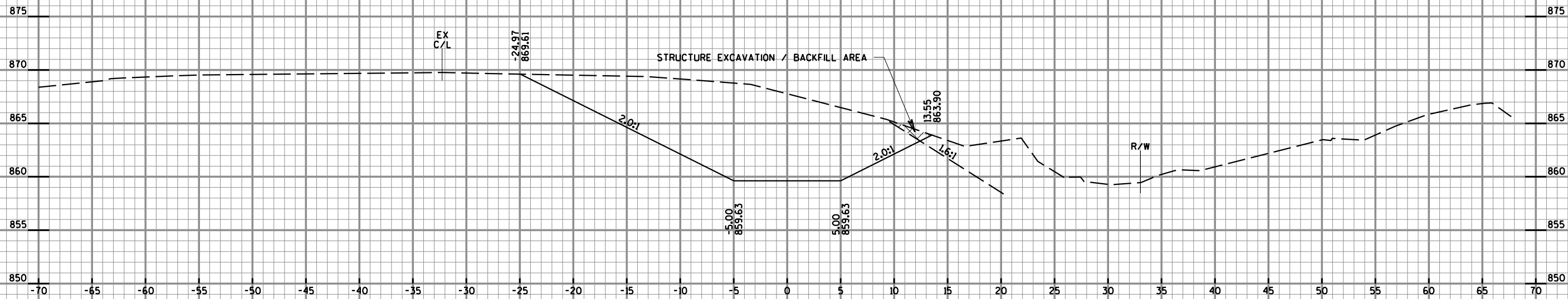
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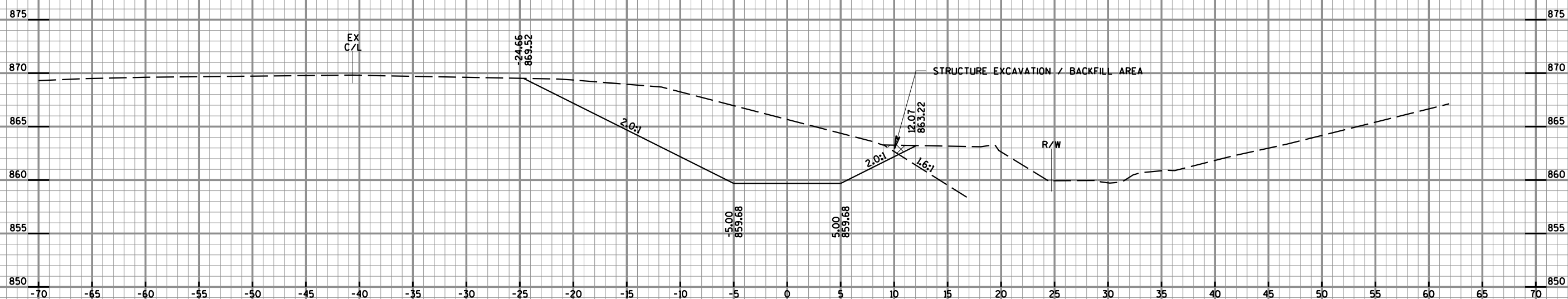
0+40



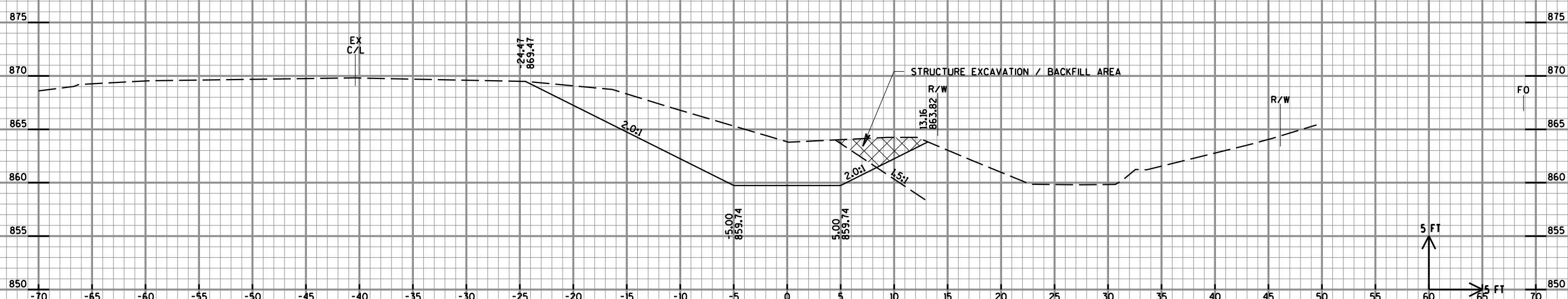
0+30



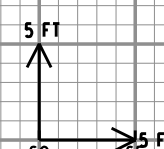
0+80



0+70



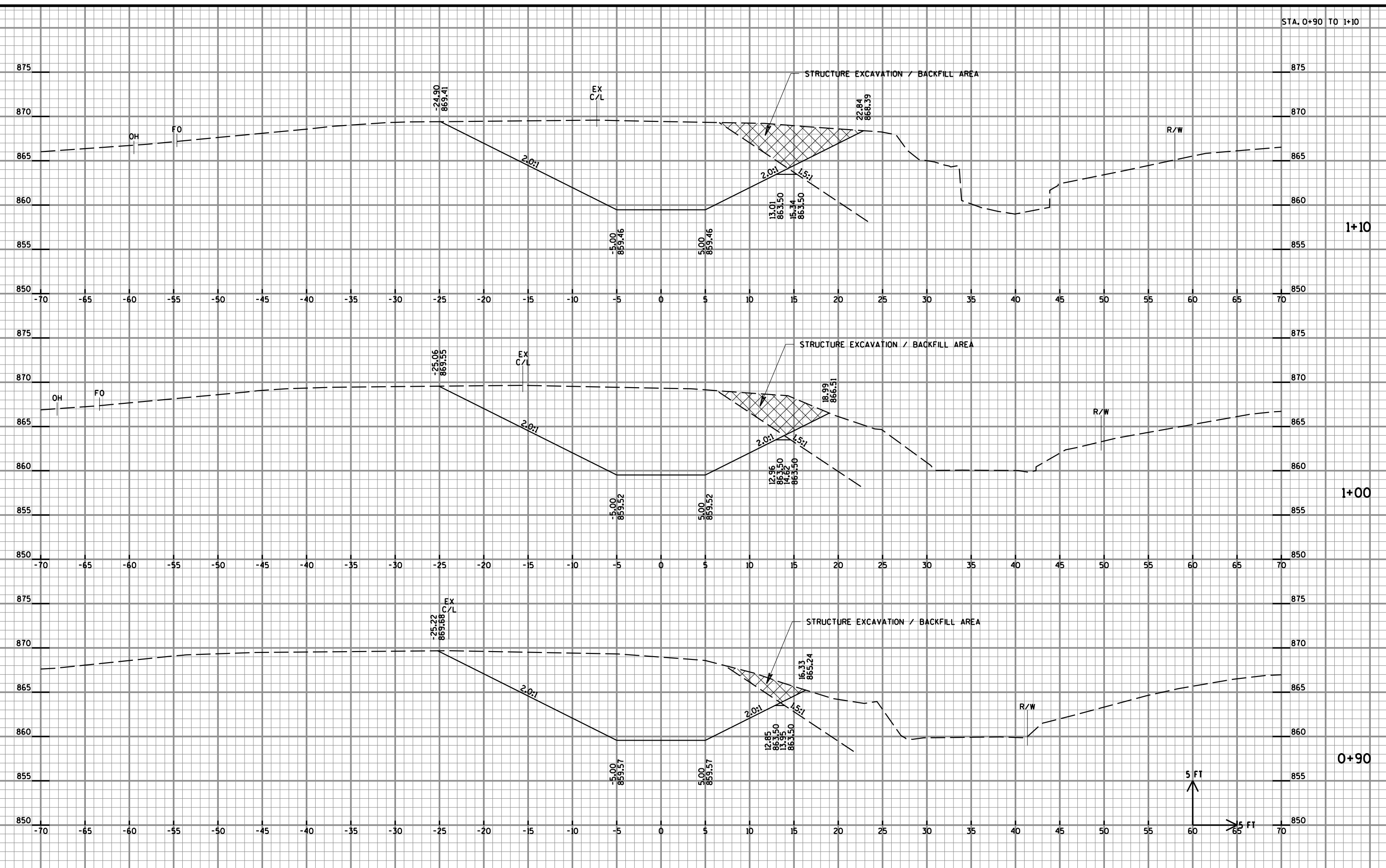
0+60

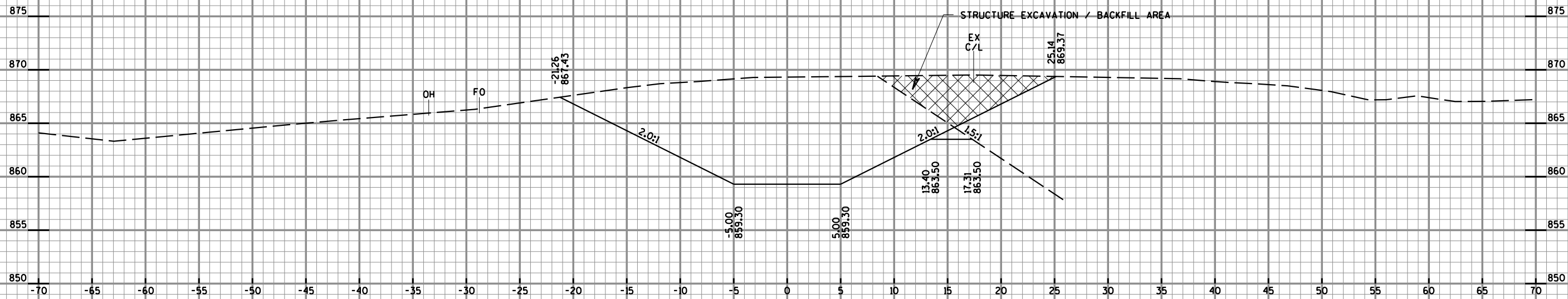


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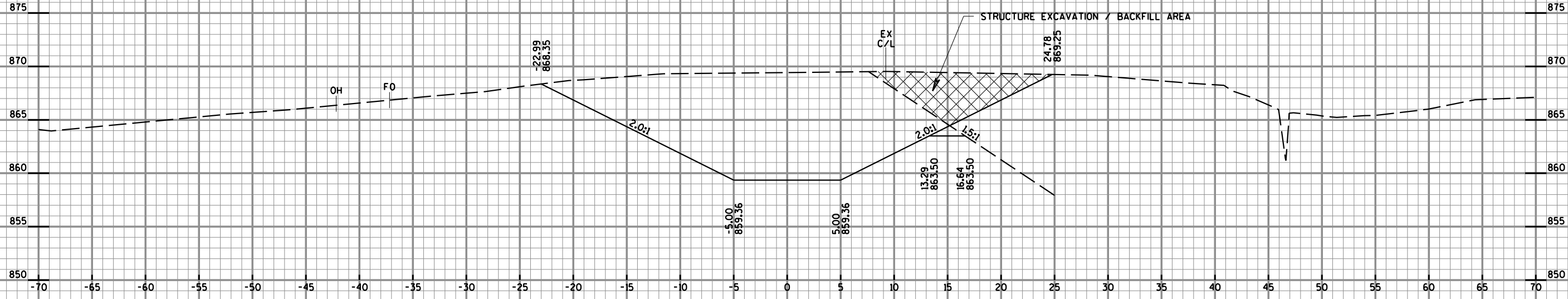


STA. 0+90 TO 1+10

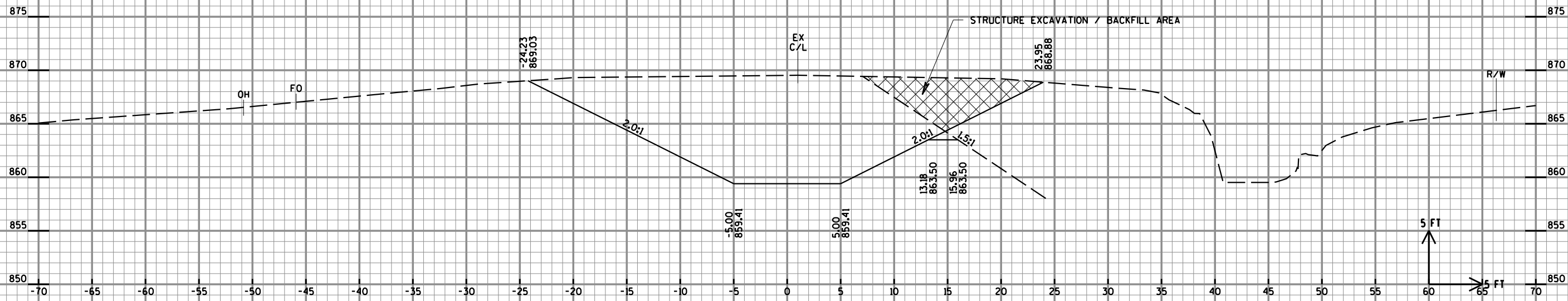




1+40



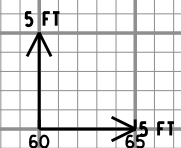
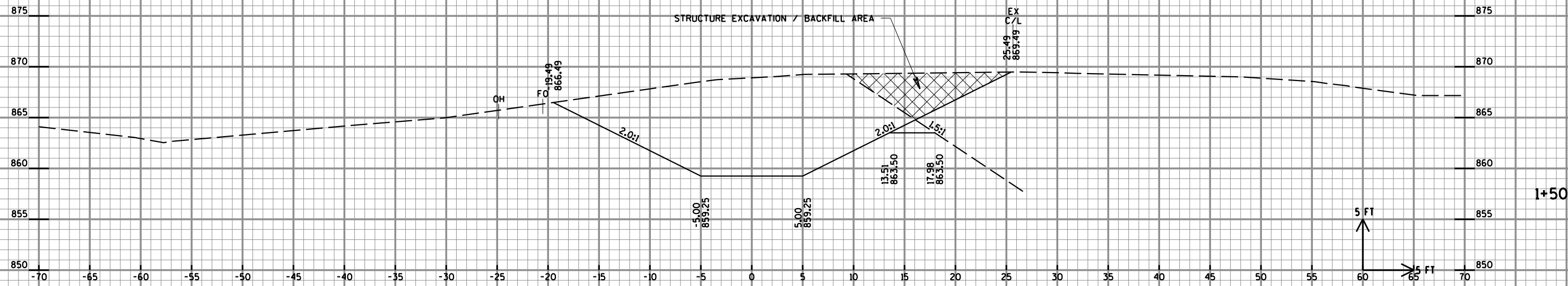
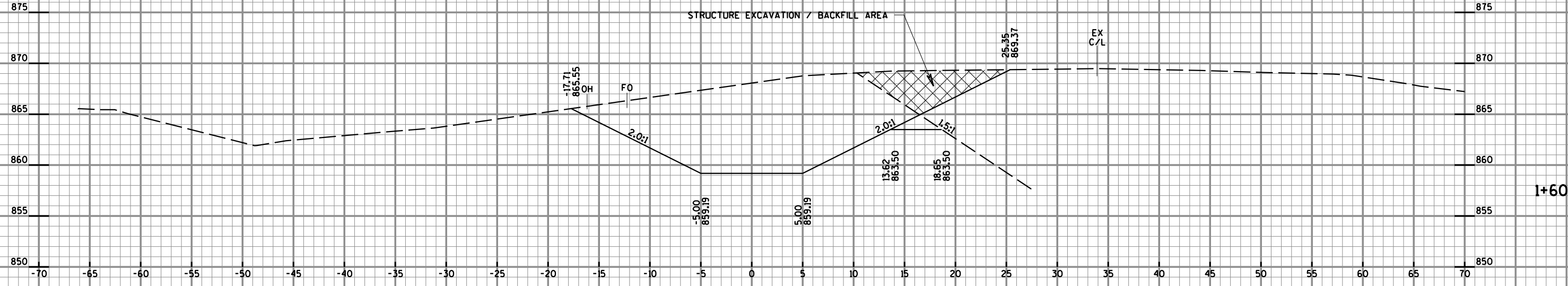
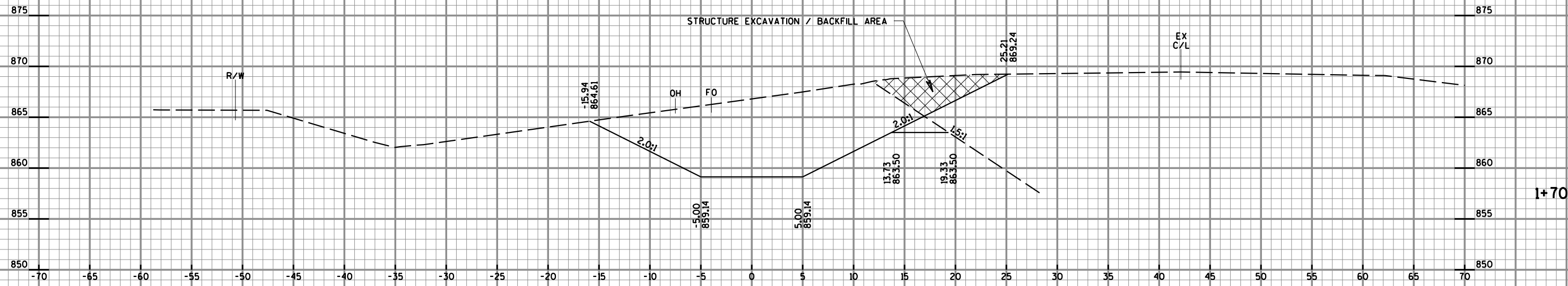
1+30



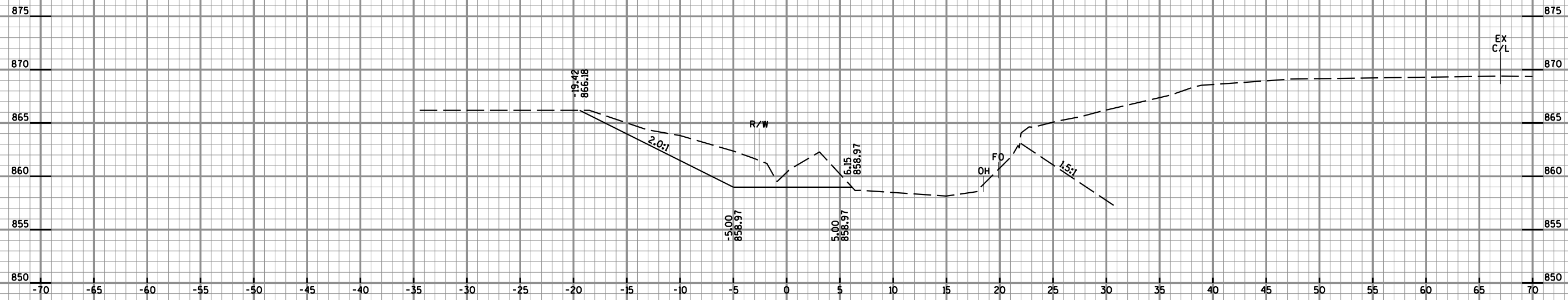
1+20

9

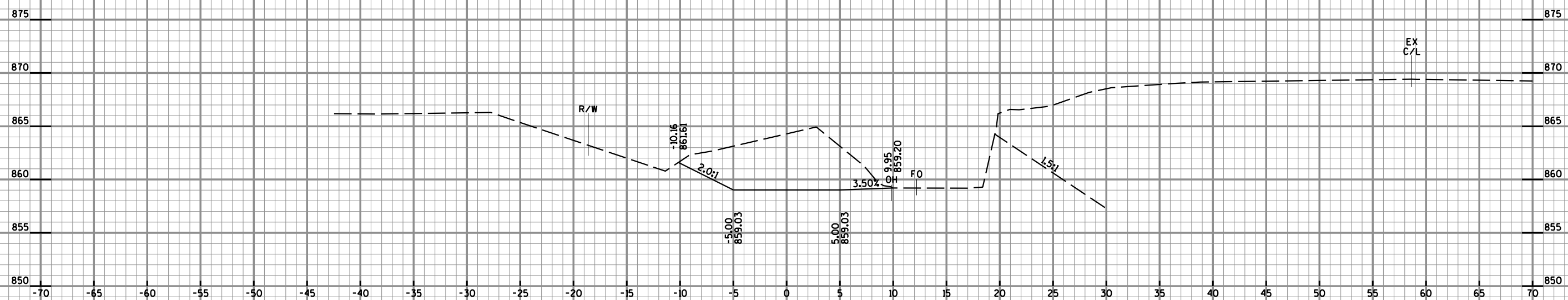
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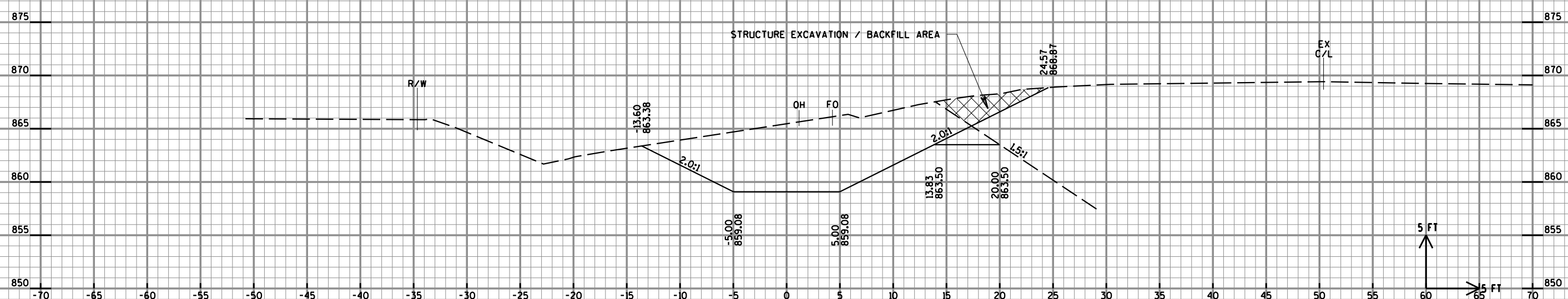
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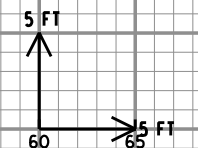
2+00



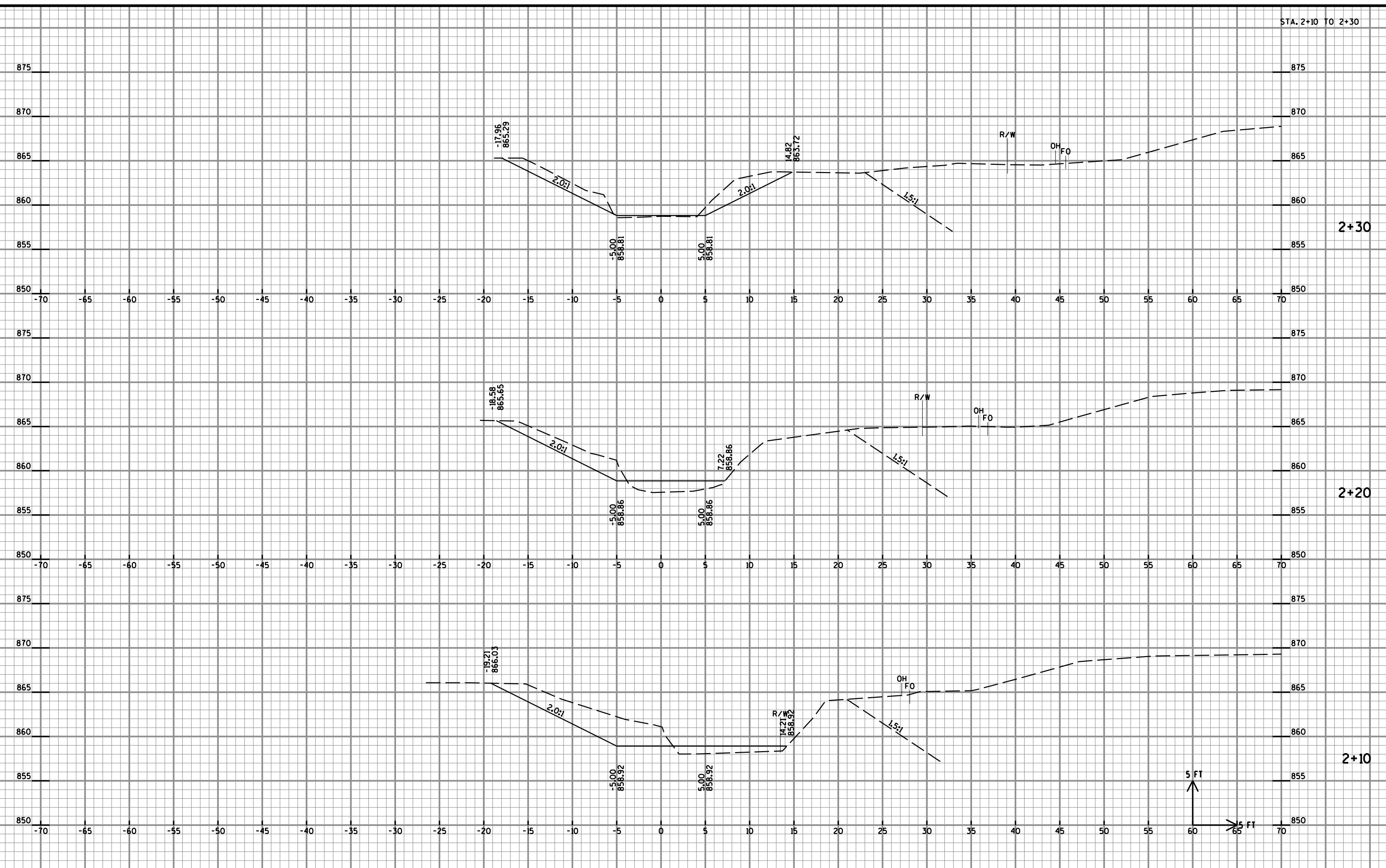
1+90



1+80

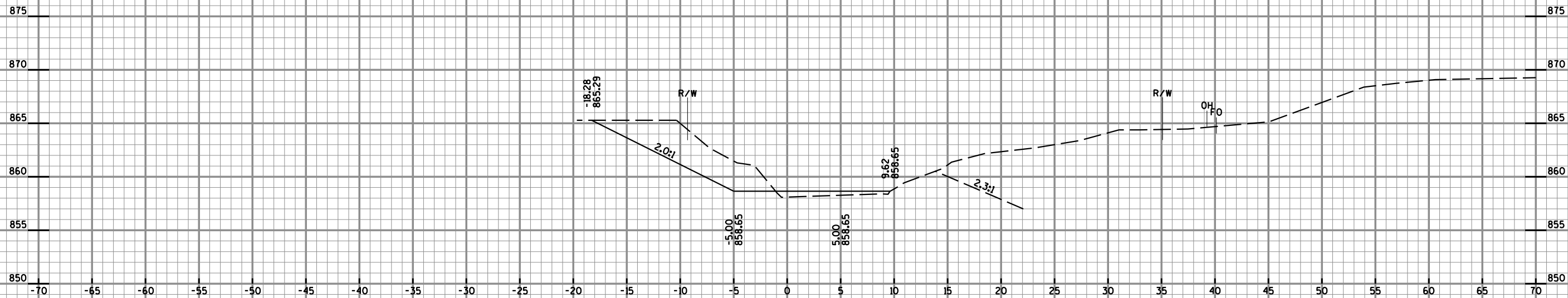


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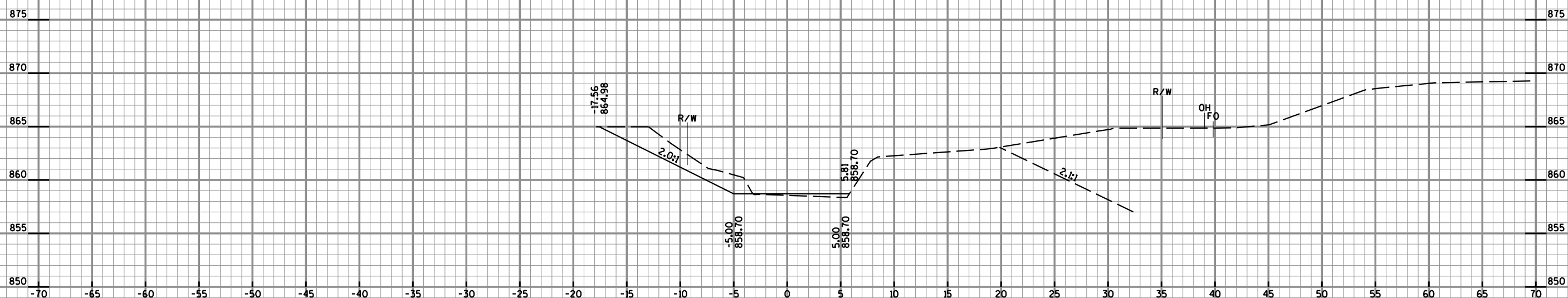


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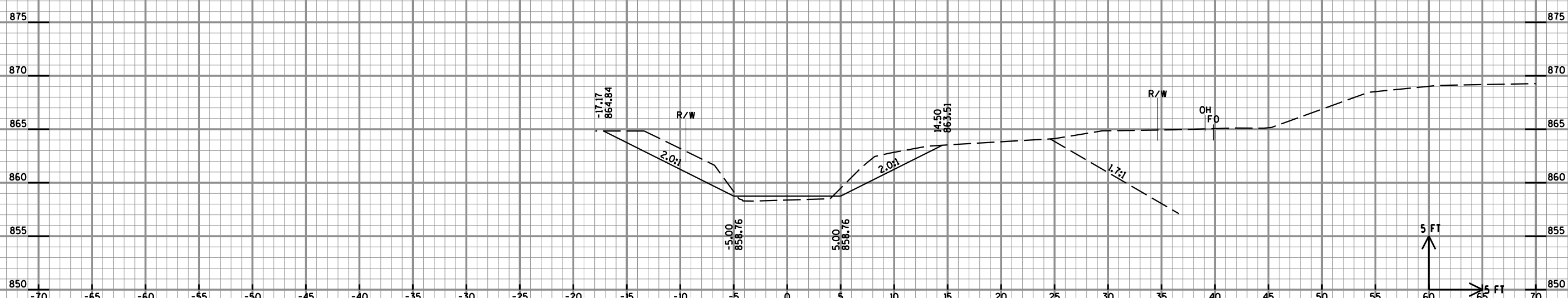
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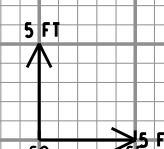
2+60



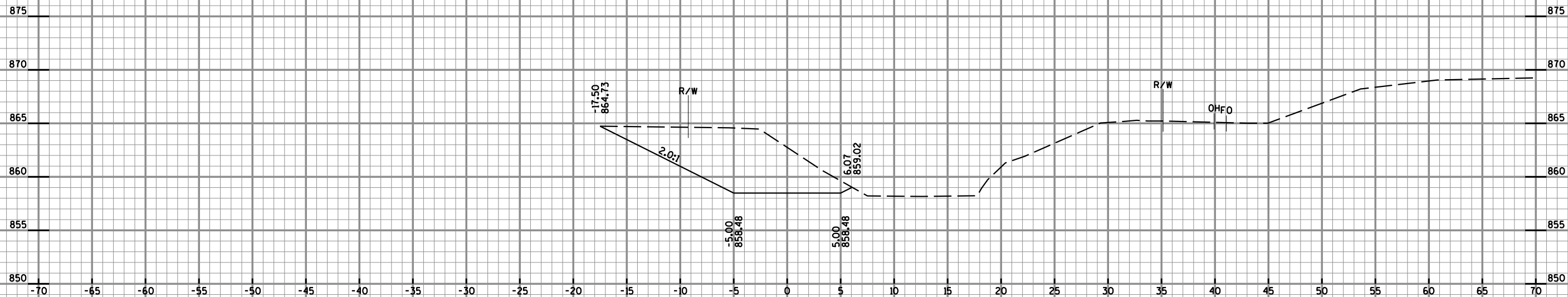
2+50



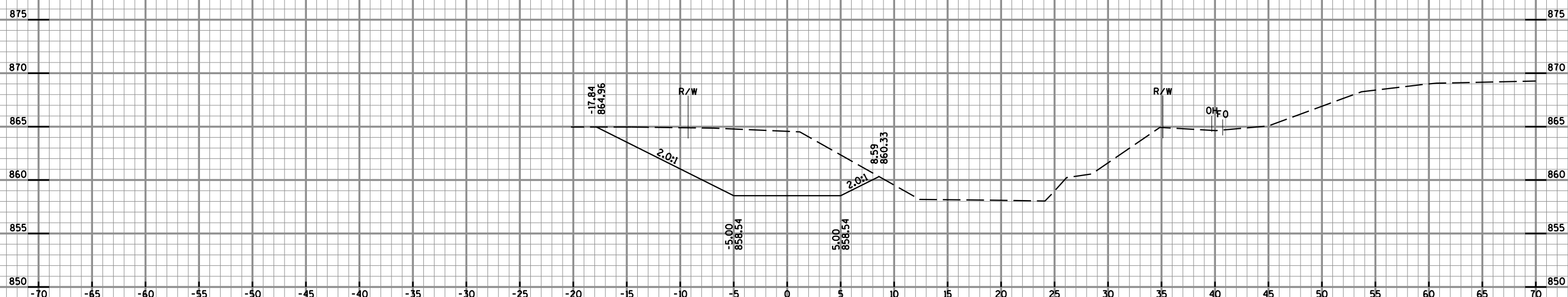
2+40



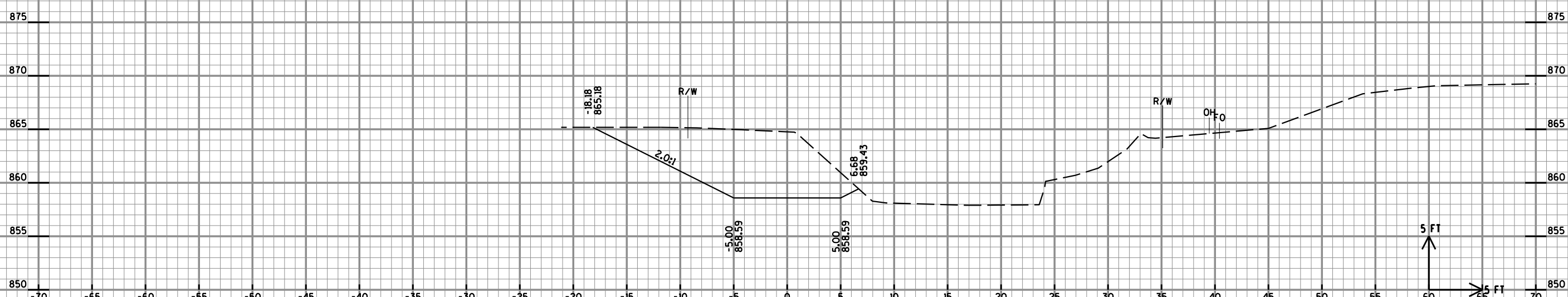
9



2+90



2+80

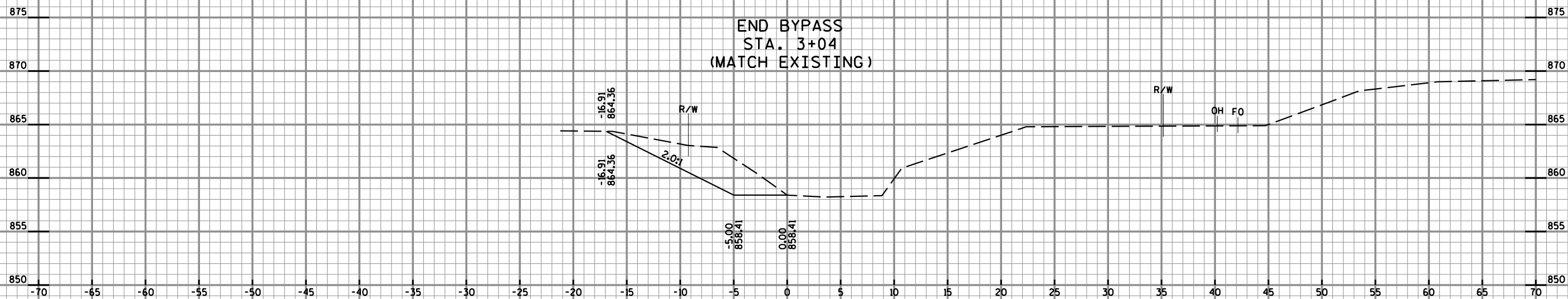


2+70

9

9

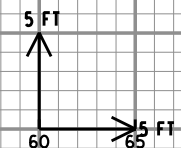
END BYPASS  
STA. 3+04  
(MATCH EXISTING)



3+04



3+00



9

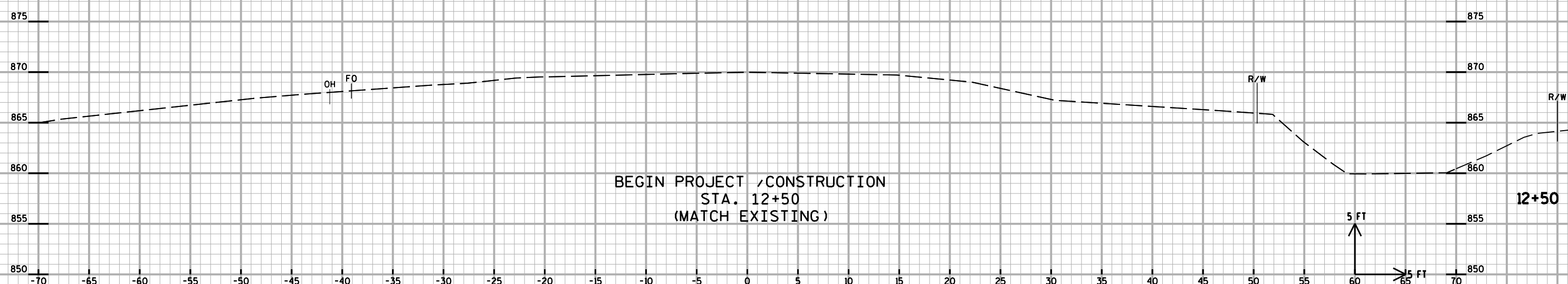
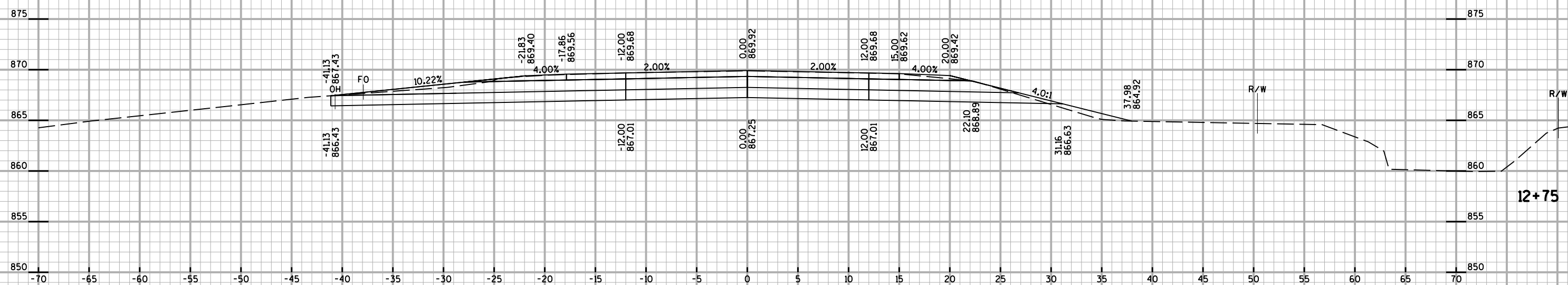
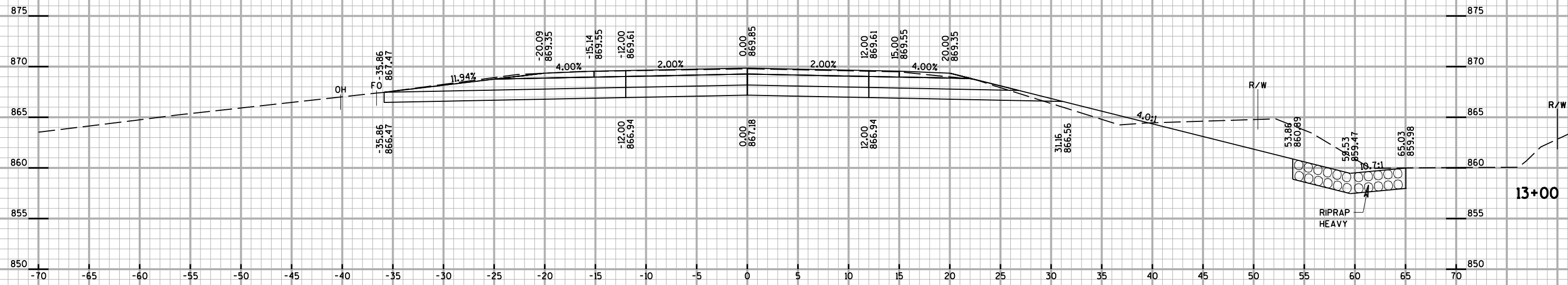
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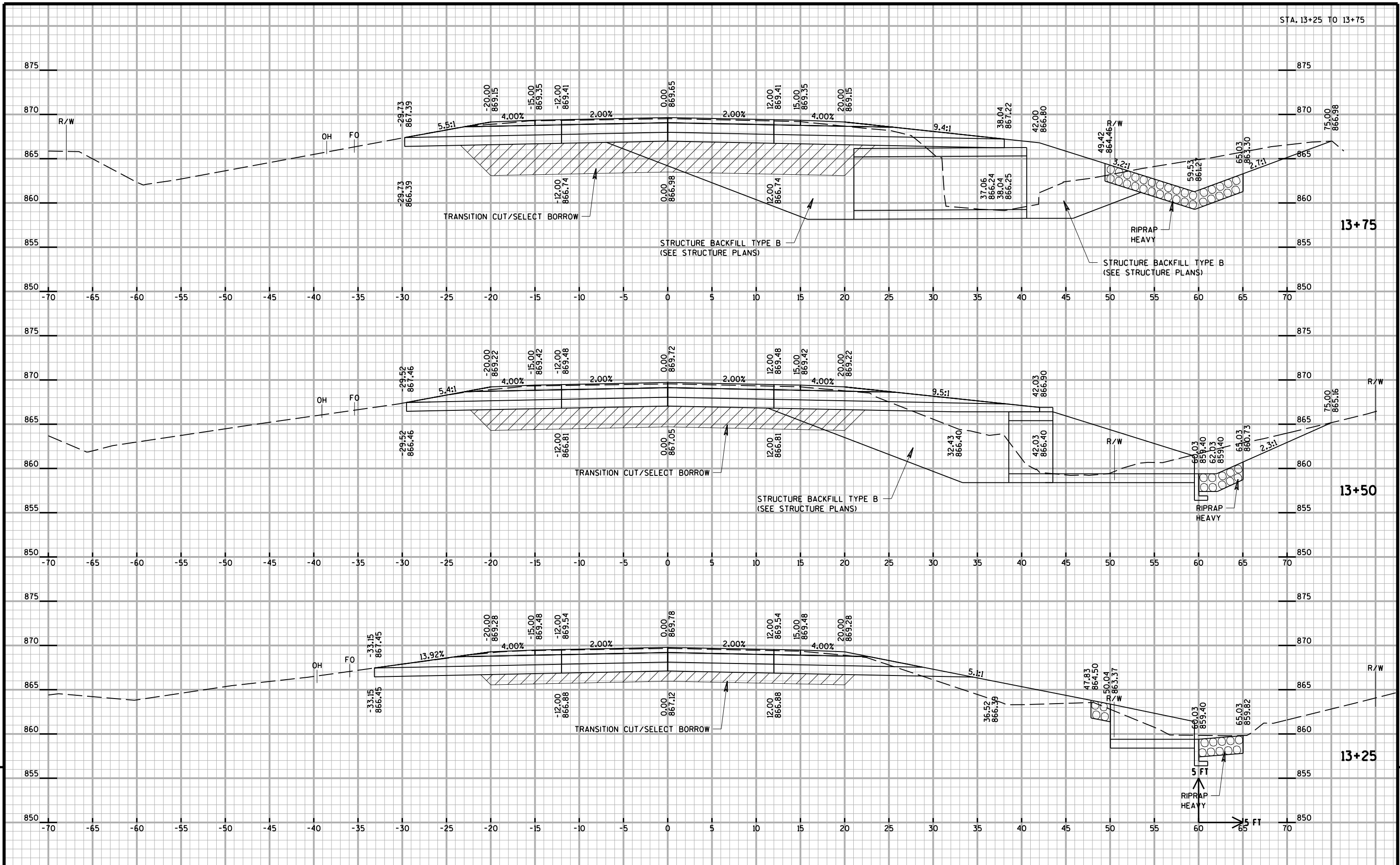
**USH 53 – SOUTH SITE COMPUTER EARTHWORK**

Station	Distance	Area (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)			Mass Ordinate
		Unusable Cut	Cut	Fill	Cut	Unusable Cut	Fill	Cut 1.00	Unusable Cut	Expanded Fill 1.30	
12+50	--	173.4	18.0	0.0	0	0	0	0	0	0	0
12+75	25	153.6	18.0	3.2	151	17	1	151	17	1	133
13+00	25	190.6	18.0	6.0	159	17	4	310	34	7	270
13+25	25	185.1	18.0	73.6	174	17	37	484	51	55	378
13+50	25	249.5	18.0	99.6	201	17	80	685	68	159	458
13+75	25	326.4	18.0	151.5	267	17	116	952	85	309	558
14+00	25	130.5	18.0	2.8	212	17	71	1164	102	402	660
14+25	25	131.4	18.0	103.4	121	17	49	1285	119	465	701
14+50	25	123.7	18.0	68.1	118	17	79	1403	136	568	699
14+75	25	262.3	18.0	156.2	179	17	104	1582	153	703	726
15+00	25	222.8	18.0	93.6	225	17	116	1807	170	854	783
15+25	25	267.2	18.0	48.5	227	17	66	2034	187	940	907
15+50	25	132.3	18.0	5.1	185	17	25	2219	204	972	1043
15+75	25	134.3	18.0	0.0	123	17	2	2342	221	975	1146
					2342	221	750				

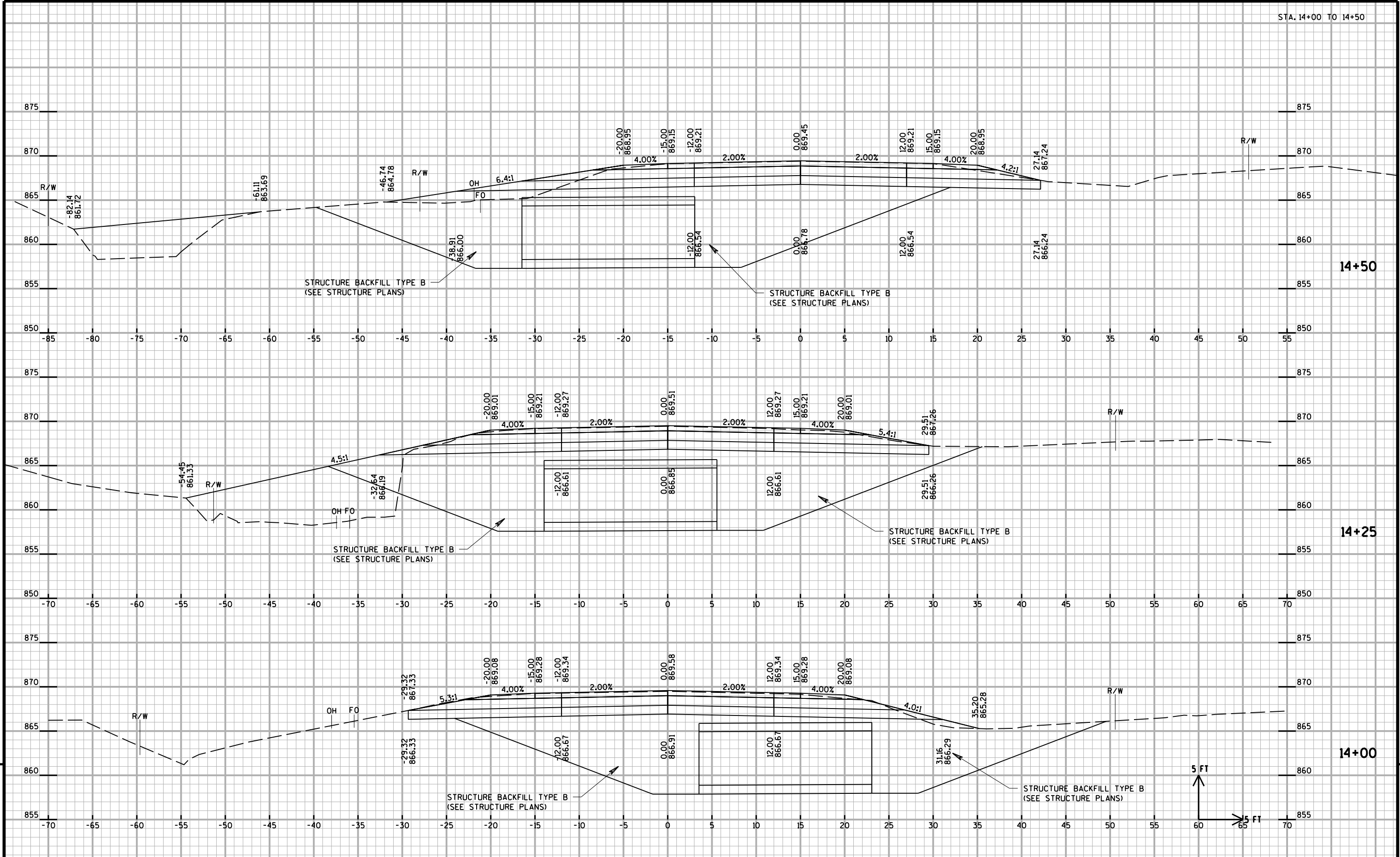
Note 1 - Cut	Cut includes existing asphalt pavement. Assumed to be reused as fill outside the 1:1 road core.
Note 2 - Unusable Cut	This does not show up in cross sections. Assumes the existing concrete to be 9" thickness and roadway width of 24'.
Note 3 - Fill	Does not include Unusable Cut from existing concrete excavation volume.
Note 4 - Mass Ordinate	[Cut - Unusable Cut - (Fill * Fill Factor)]

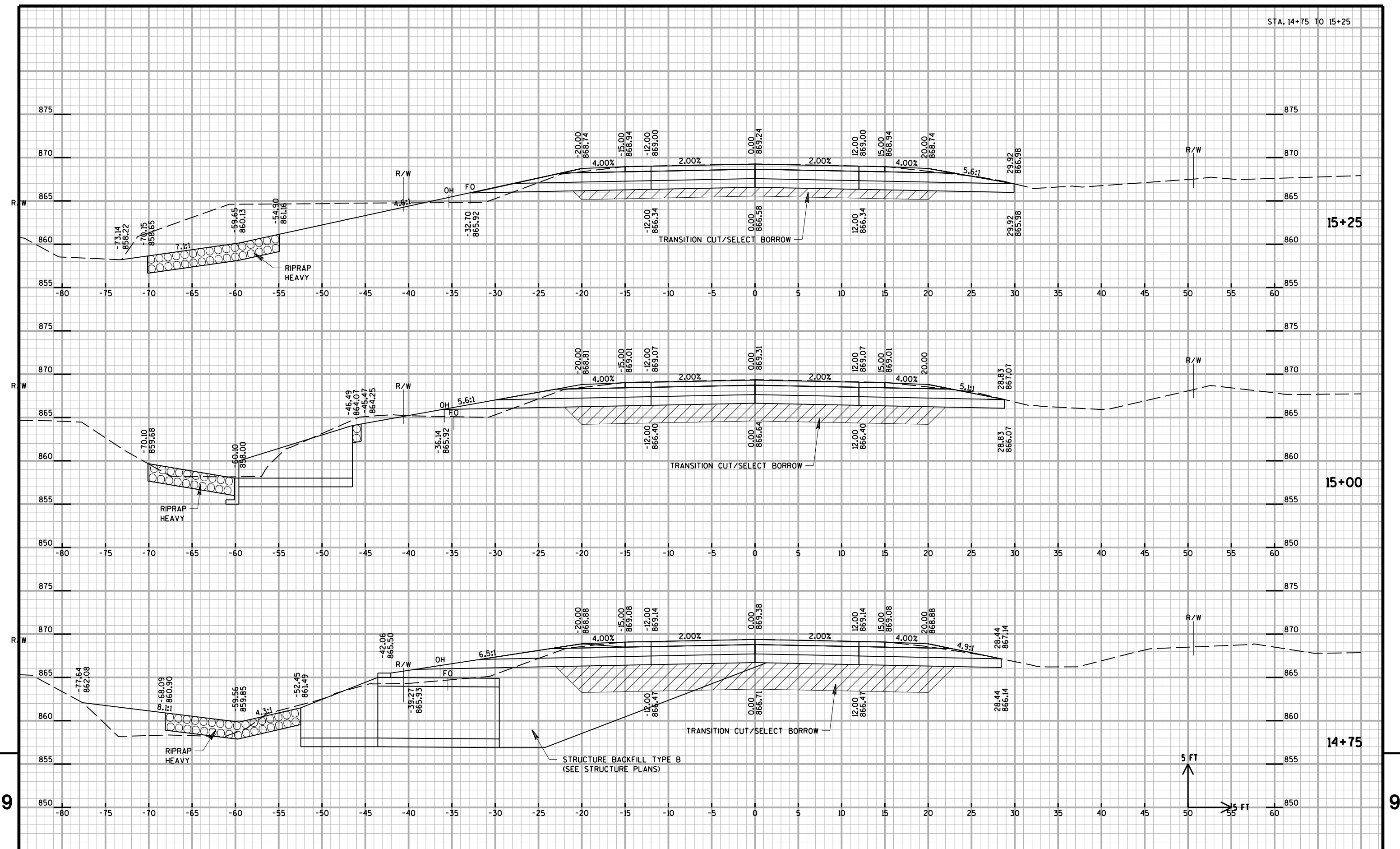


BEGIN PROJECT /CONSTRUCTION  
STA. 12+50  
(MATCH EXISTING)

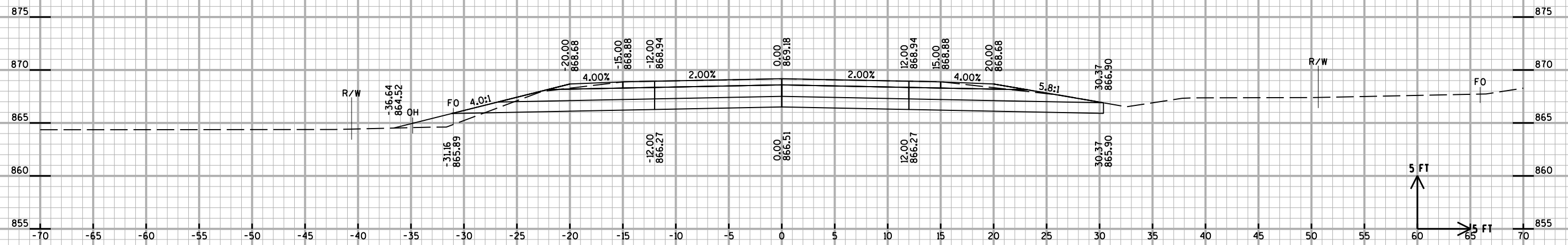
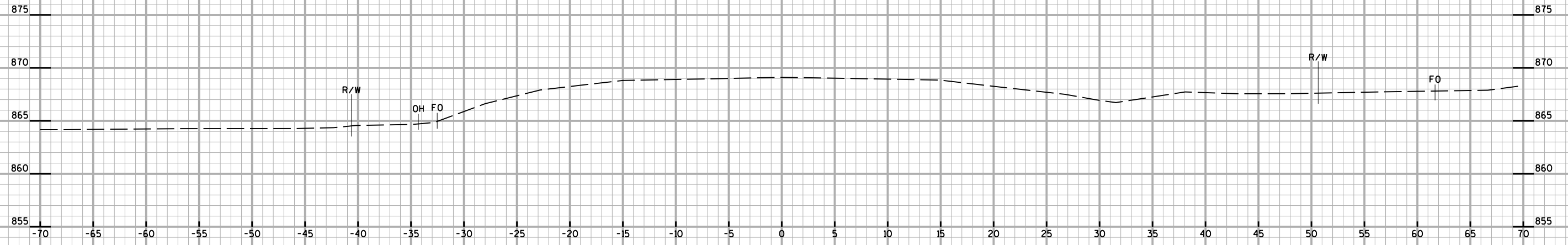


PROJECT NO: 1630-00-71      HWY: USH 53      COUNTY: TREMPLEAU      CROSS SECTIONS C-61-80 SOUTH SITE      SHEET E





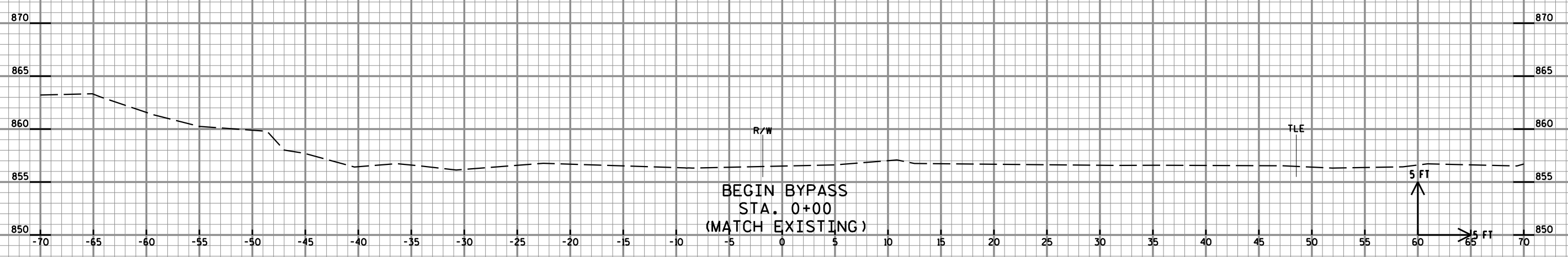
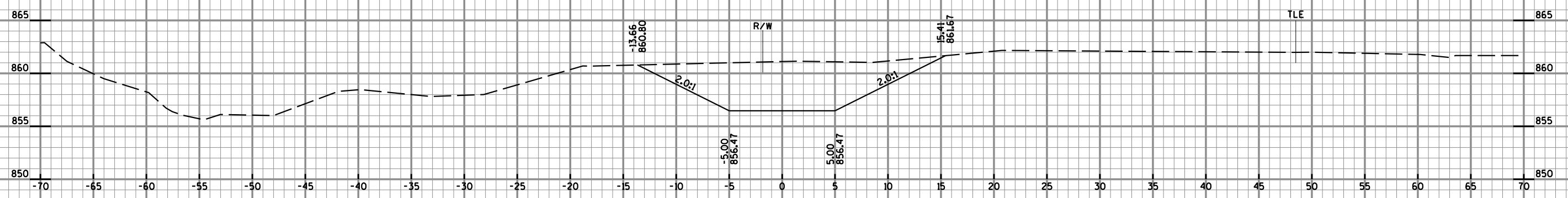
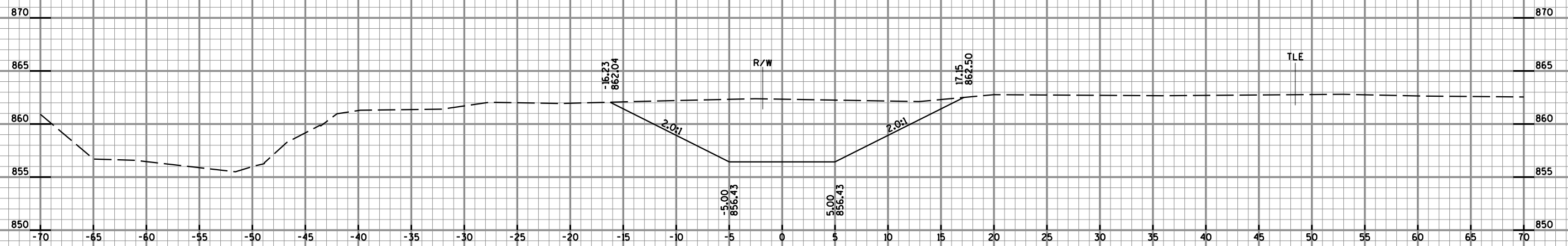
END PROJECT  
STA. 15+75  
(MATCH EXISTING)



**BYPASS CHANNEL – NORTH SITE COMPUTER EARTHWORK**

Station	Distance	Area (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)			Mass Ordinate
		Unusable Cut	Restoring Cut	Channel Fill	Cut	Unusable Cut	Restoring Channel Fill	Cut 1.00	Unusable Cut	Expanded Fill 1.30	
0+00	--	0	0	0	0	0	0	0	0	0	0
0+10	10	88.7	0	88.7	16	0	16	16	0	21	-5
0+20	10	125.7	0	125.7	40	0	40	56	0	73	-17
0+30	10	160.3	0	160.3	53	0	53	109	0	142	-33
0+40	10	173.7	0	173.7	62	0	62	171	0	222	-51
0+50	10	180.8	0	180.8	66	0	66	237	0	308	-71
0+60	10	274.4	0	274.4	84	0	84	321	0	417	-96
0+70	10	295.7	0	295.7	106	0	106	427	0	555	-128
0+80	10	303.9	0	303.9	111	0	111	538	0	699	-161
0+90	10	300.6	0	300.6	112	0	112	650	0	845	-195
1+00	10	282.8	0	282.8	108	0	108	758	0	985	-227
1+10	10	245.8	0	245.8	98	0	98	856	0	1113	-257
1+20	10	205.6	0	205.6	84	0	84	940	0	1222	-282
1+30	10	156.9	0	156.9	67	0	67	1007	0	1309	-302
1+40	10	127.5	0	127.5	53	0	53	1060	0	1378	-318
1+50	10	153.8	0	153.8	52	0	52	1112	0	1446	-334
1+60	10	199.6	0	199.6	65	0	65	1177	0	1530	-353
1+70	10	197.0	0	197.0	73	0	73	1250	0	1625	-375
1+80	10	176.8	0	176.8	69	0	69	1319	0	1715	-396
1+90	10	131.6	0	131.6	57	0	57	1376	0	1789	-413
1+97	7	32.3	0	32.3	21	0	21	1397	0	1816	-419
					1397	0	1397				

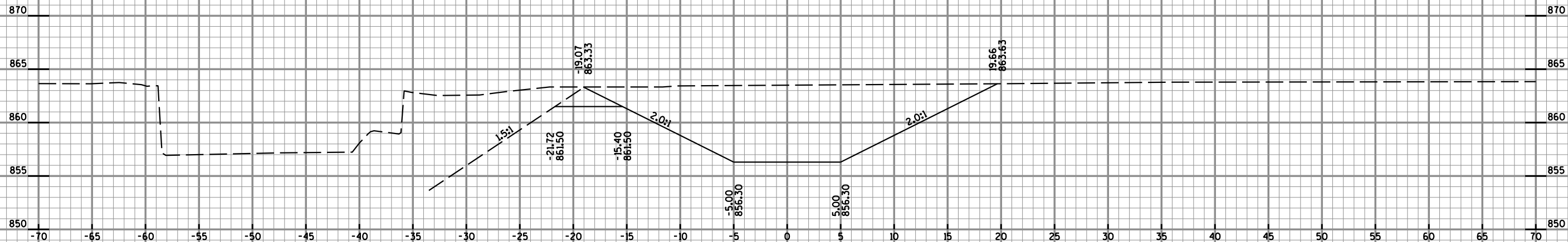
Note 1 - Cut	Cut includes excavation for Bypass Channel and excludes the Structure Excavation area.
Note 2 - Unusable Cut	This does not show up in cross sections. Accounted for in USH 53 Roadway Earthwork calculations.
Note 3 - Fill	Material required to restore excavated bypass channel back to proposed roadway subgrade or existing surface outside the roadway. Does not include Structure Backfill within 15:1 slopes.
Note 4 - Mass Ordinate	[Cut - Unusable Cut - (Fill*Fill Factor)]



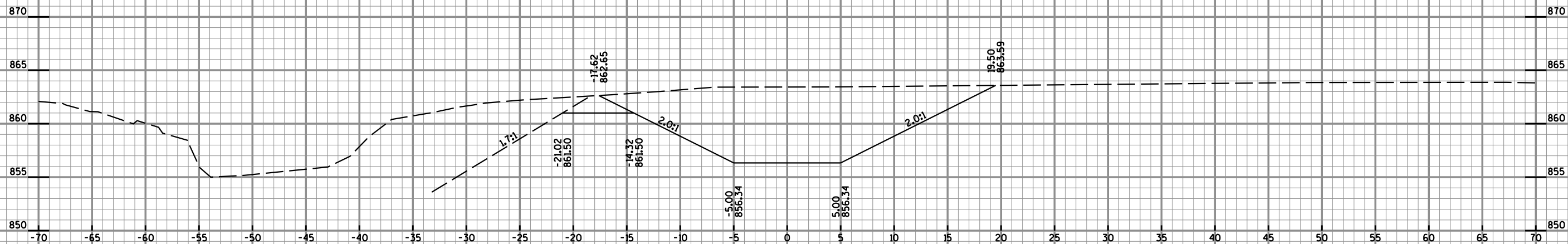
9

9

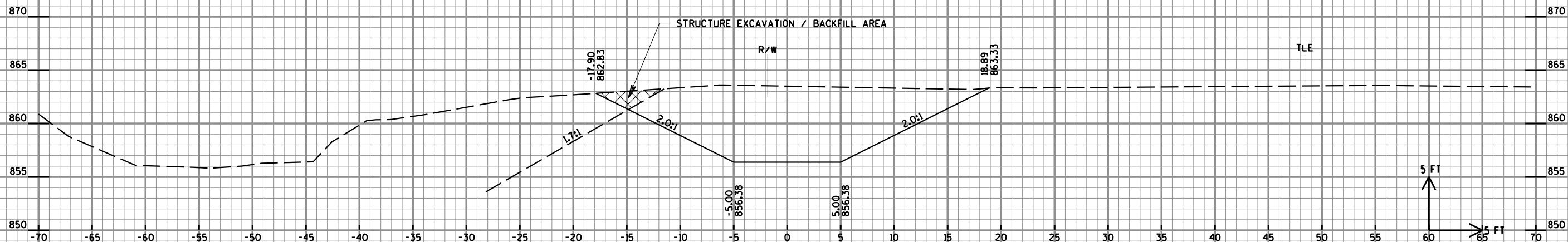




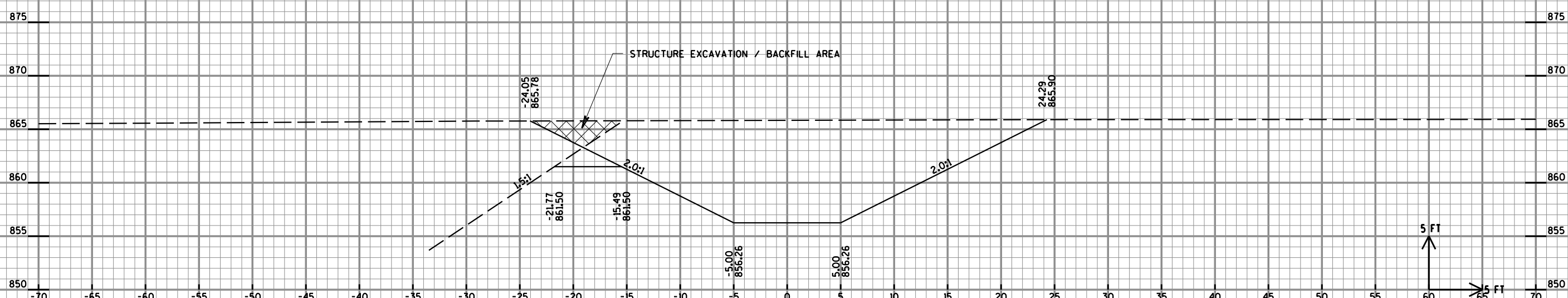
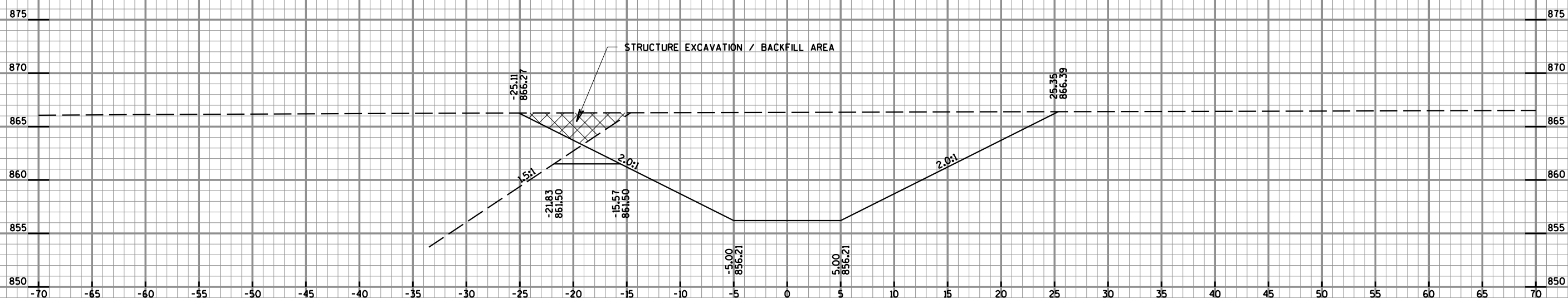
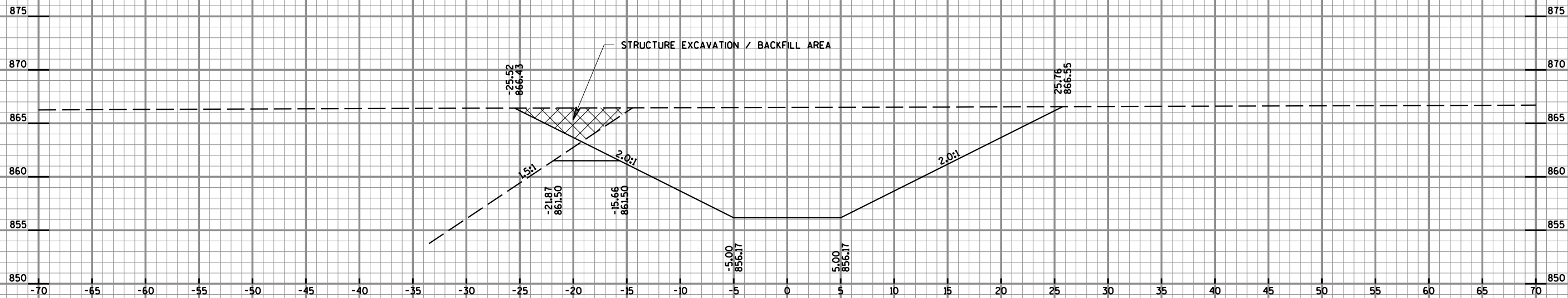
0+50



0+40



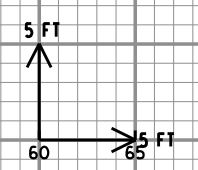
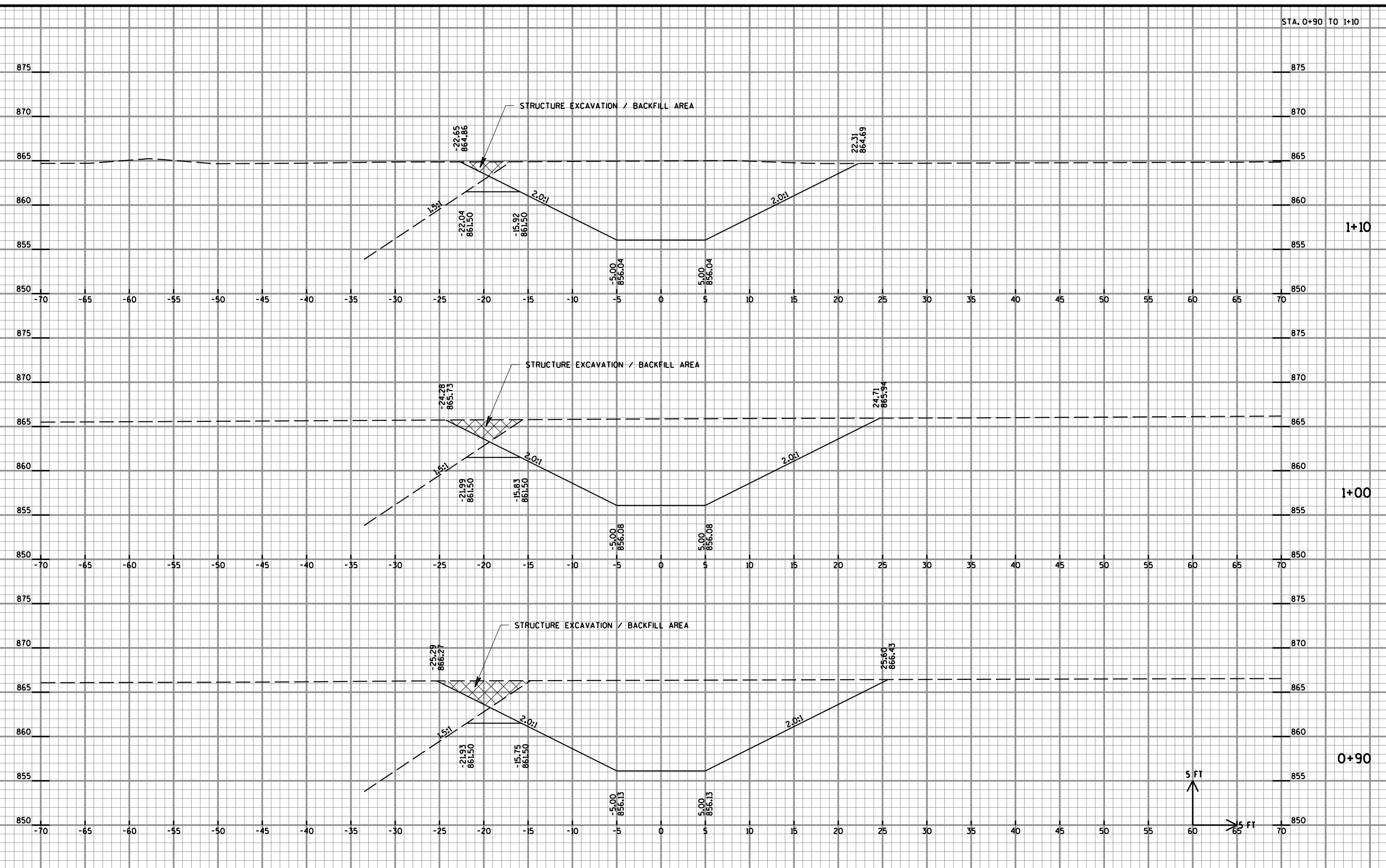
0+30

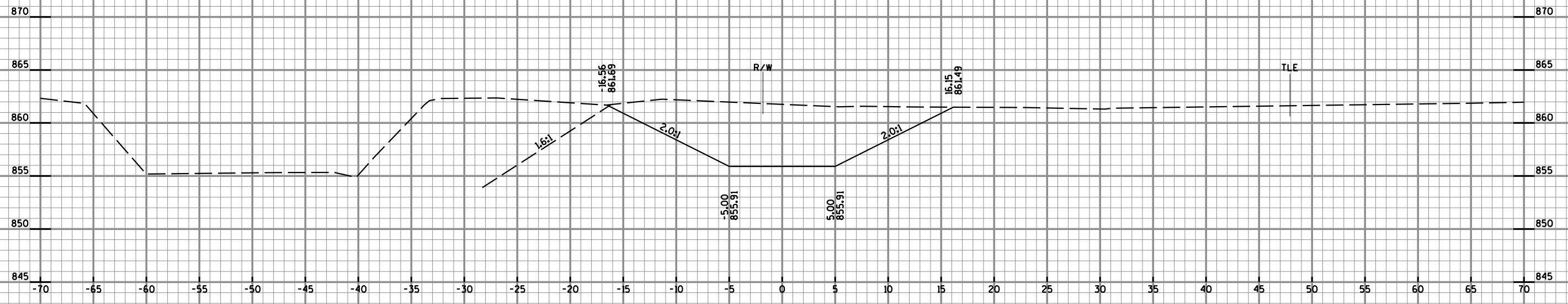


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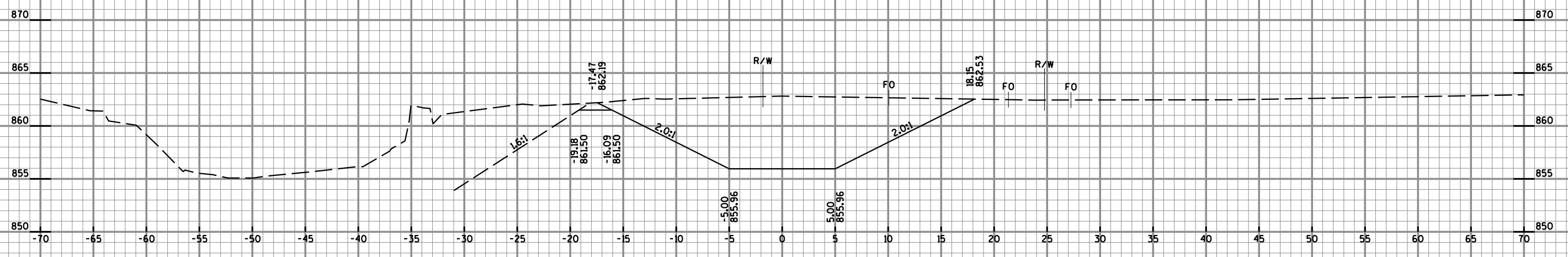
9

STA. 0+90 TO 1+10

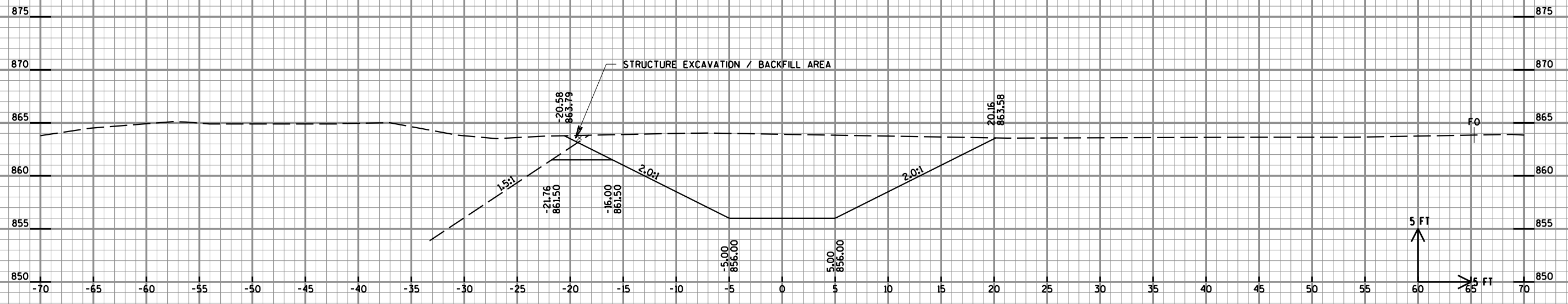




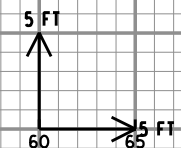
1+40



1+30

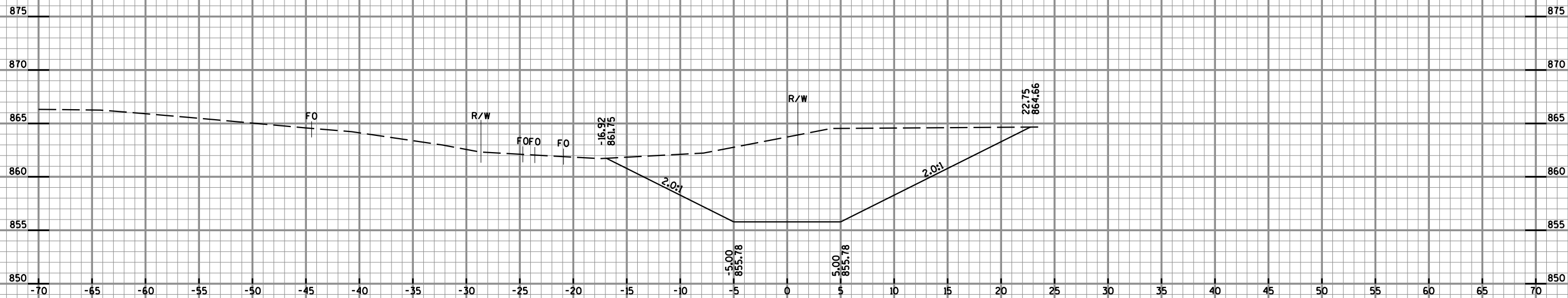


1+20

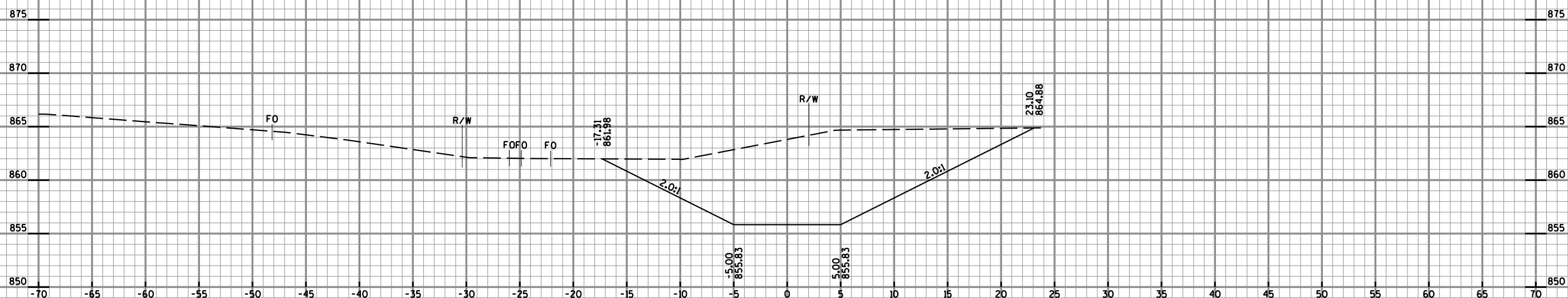


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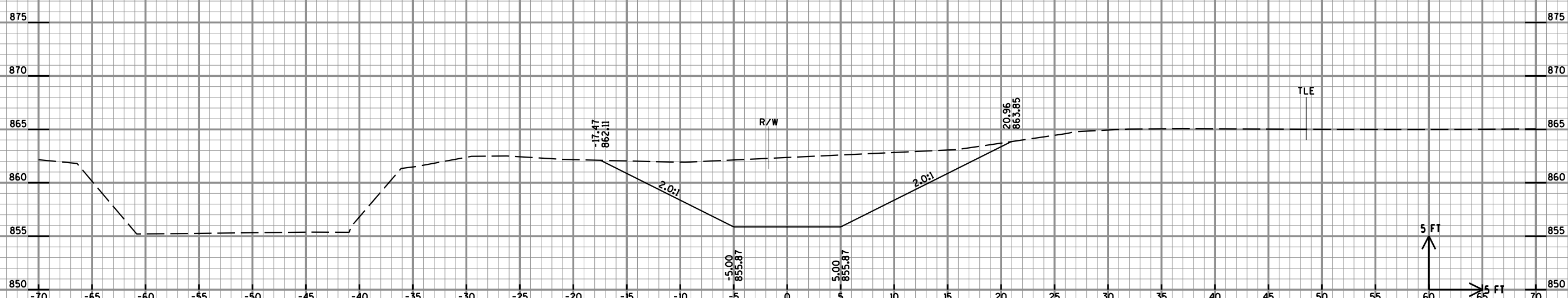
9



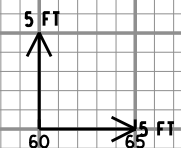
1+70



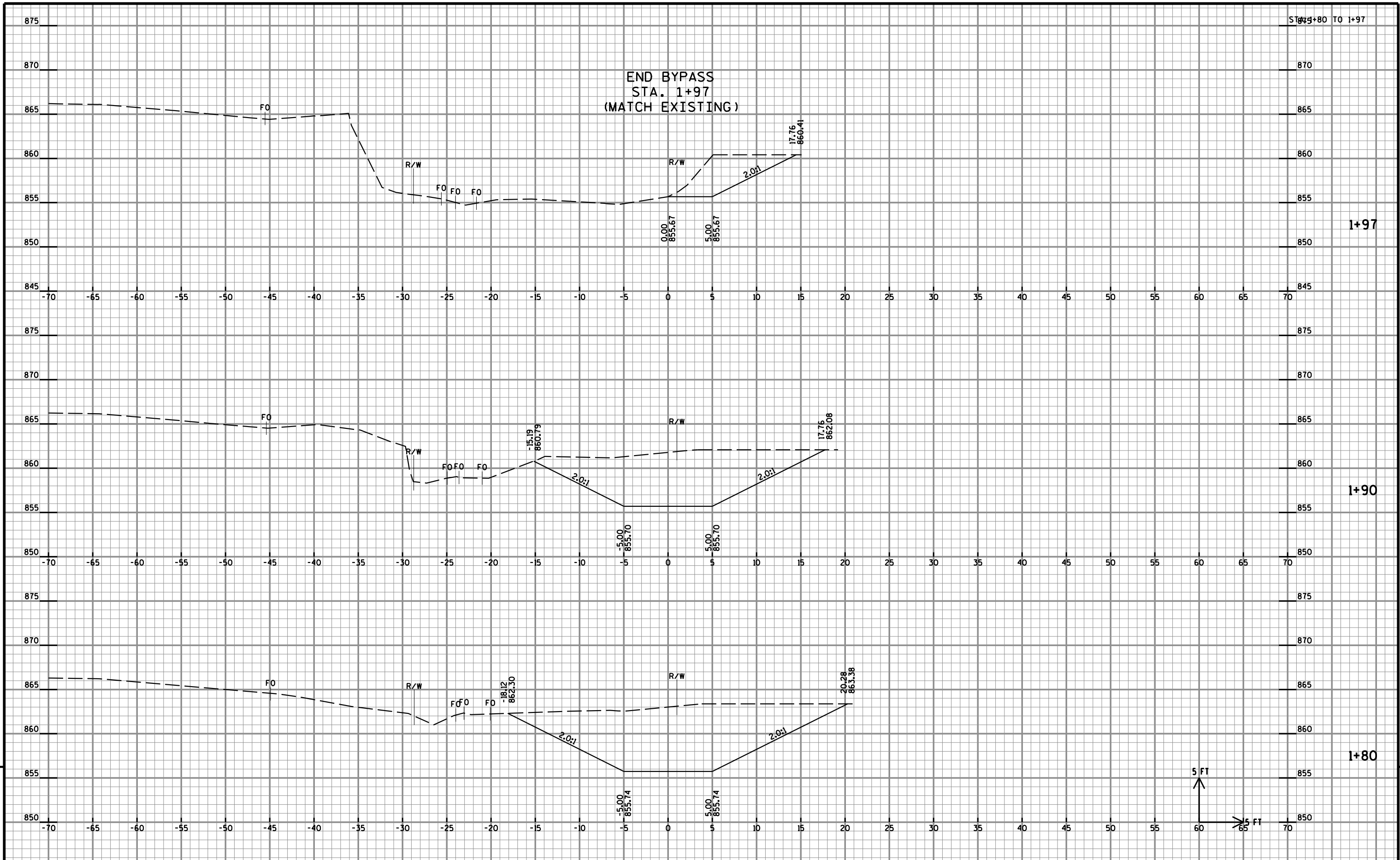
1+60



1+50



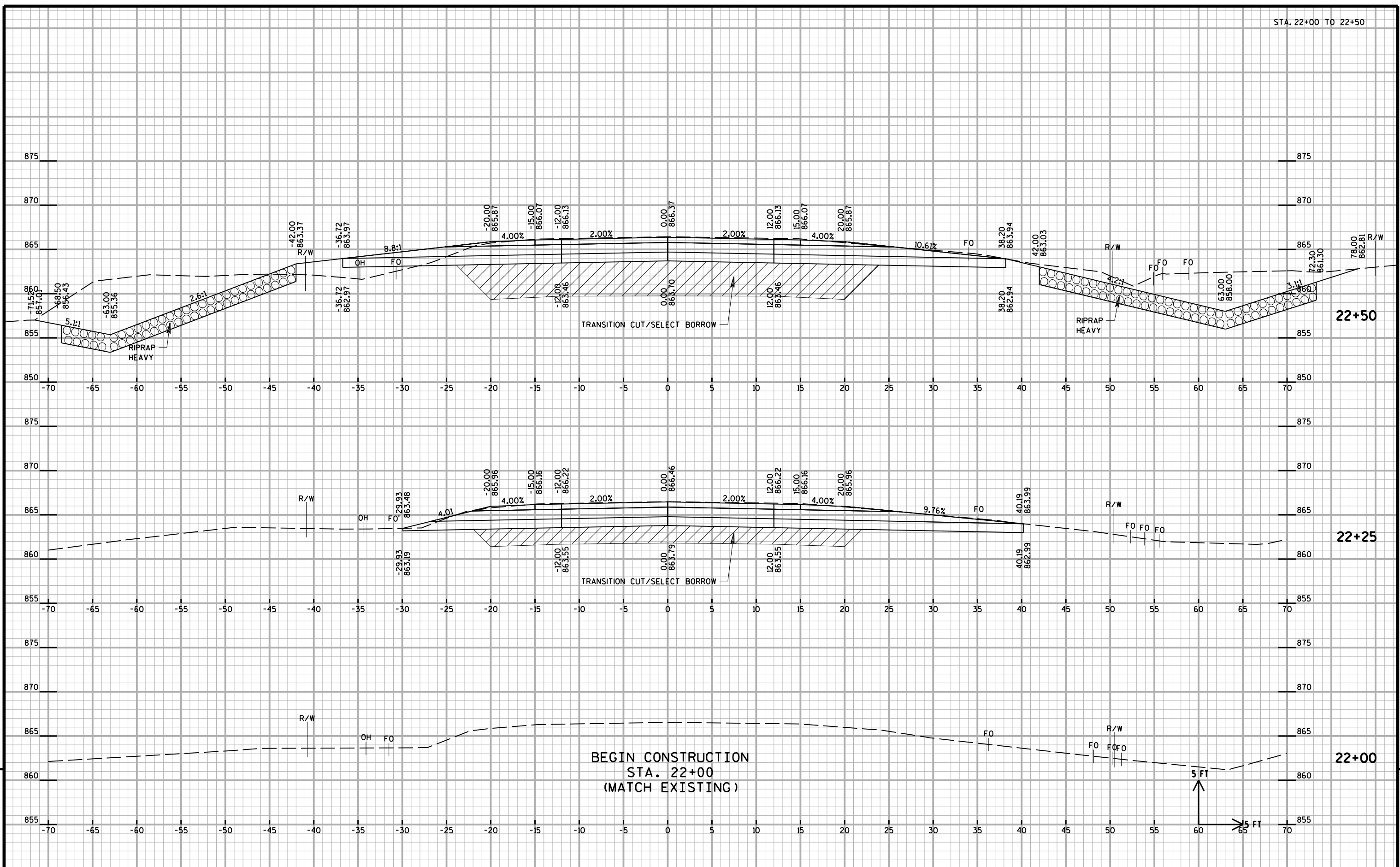
9



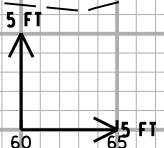
**USH 53 – NORTH SITE COMPUTER EARTHWORK**

Station	Distance	Area (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)			Mass Ordinate
		Cut	Unusable Cut	Fill	Cut	Unusable Cut	Fill	Cut	Unusable Cut	Expanded Fill	
					Note 1		Note 2	1.00		1.30	Note 3
22+00	--	146.4	18.0	0.0	--	--	--	0	0	0	0
22+25	25	237.9	18.0	80.9	178	17	37	178	17	48	113
22+50	25	479.8	18.0	185.5	332	17	123	510	34	208	268
22+75	25	167.2	18.0	39.4	300	17	104	810	51	343	416
23+00	25	446.7	18.0	176.8	284	17	100	1094	68	473	553
23+25	25	239.0	18.0	80.7	317	17	119	1411	85	628	698
23+50	25	153.3	18.0	0.0	182	17	37	1593	102	676	815
					1593	102	520				

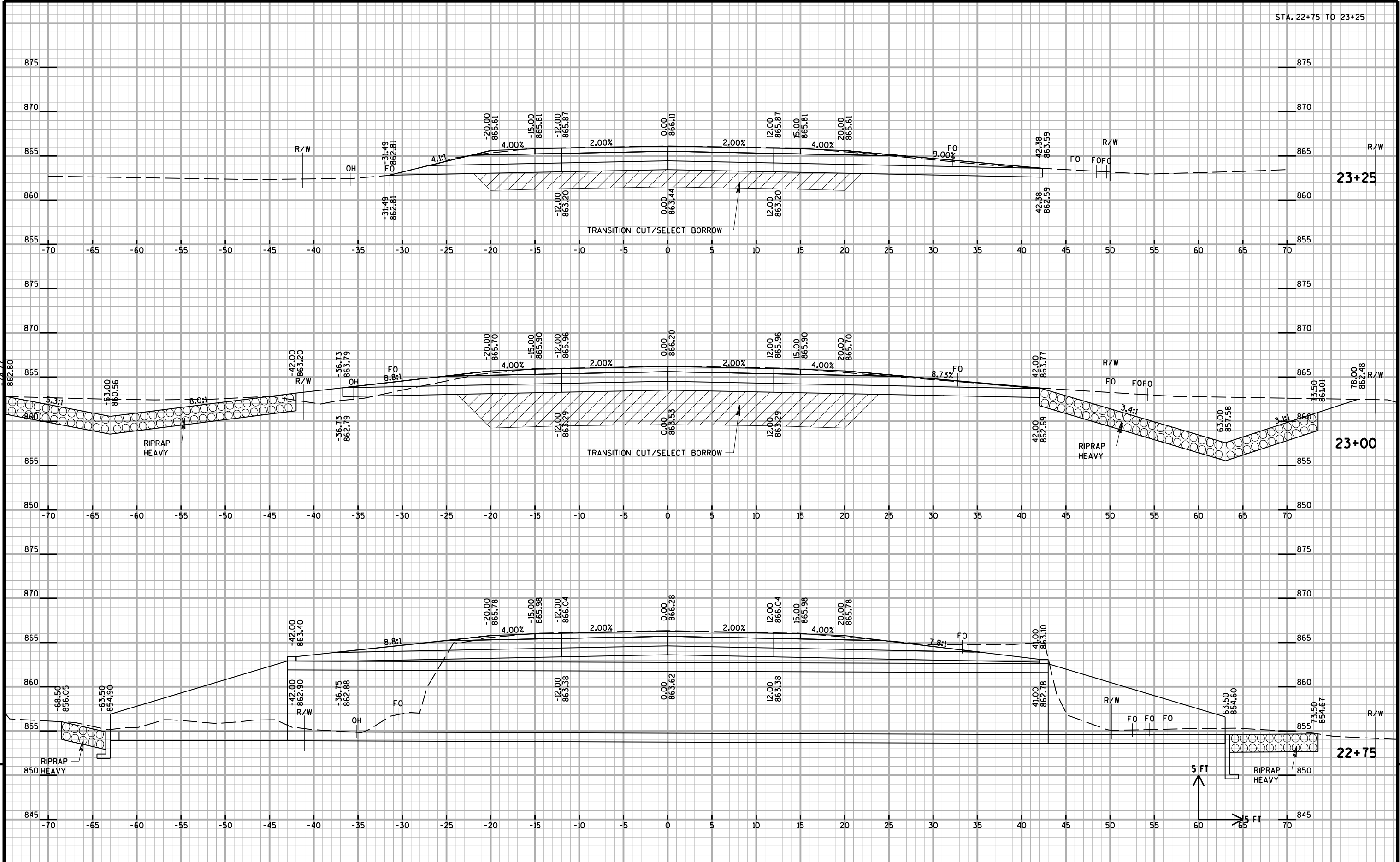
Note 1 - Cut	Cut includes existing asphalt pavement. Assumed to be reused as fill outside the 1:1 road core.
Note 2 - Unusable Cut	This does not show up in cross sections. Assumes the existing concrete to be 9" thickness and roadway width of 24'.
Note 3 - Fill	Does not include Unusable Cut from existing concrete excavation volume.
Note 4 - Mass Ordinate	[Cut - Unusable Cut - (Fill * Fill Factor)]



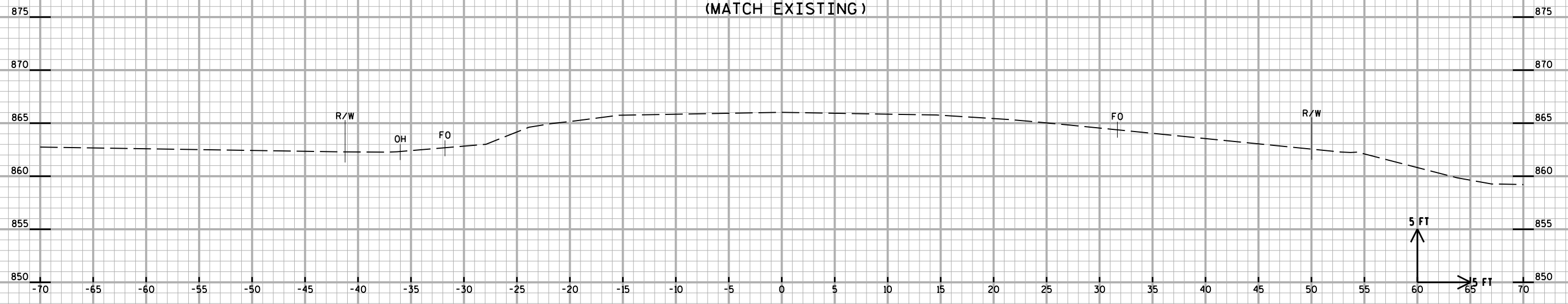
BEGIN CONSTRUCTION  
STA. 22+00  
(MATCH EXISTING)







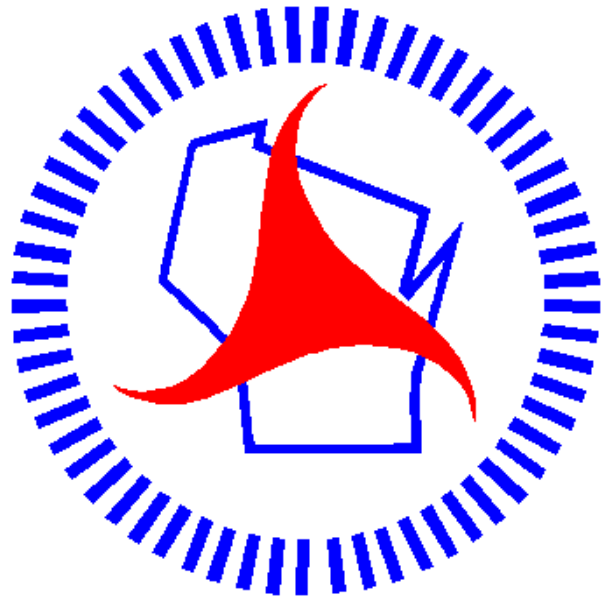
END PROJECT/CONSTRUCTION  
STA. 23+50  
(MATCH EXISTING)



9

9

# Notes



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