

APPROVED FOR THE DEPARTMENT

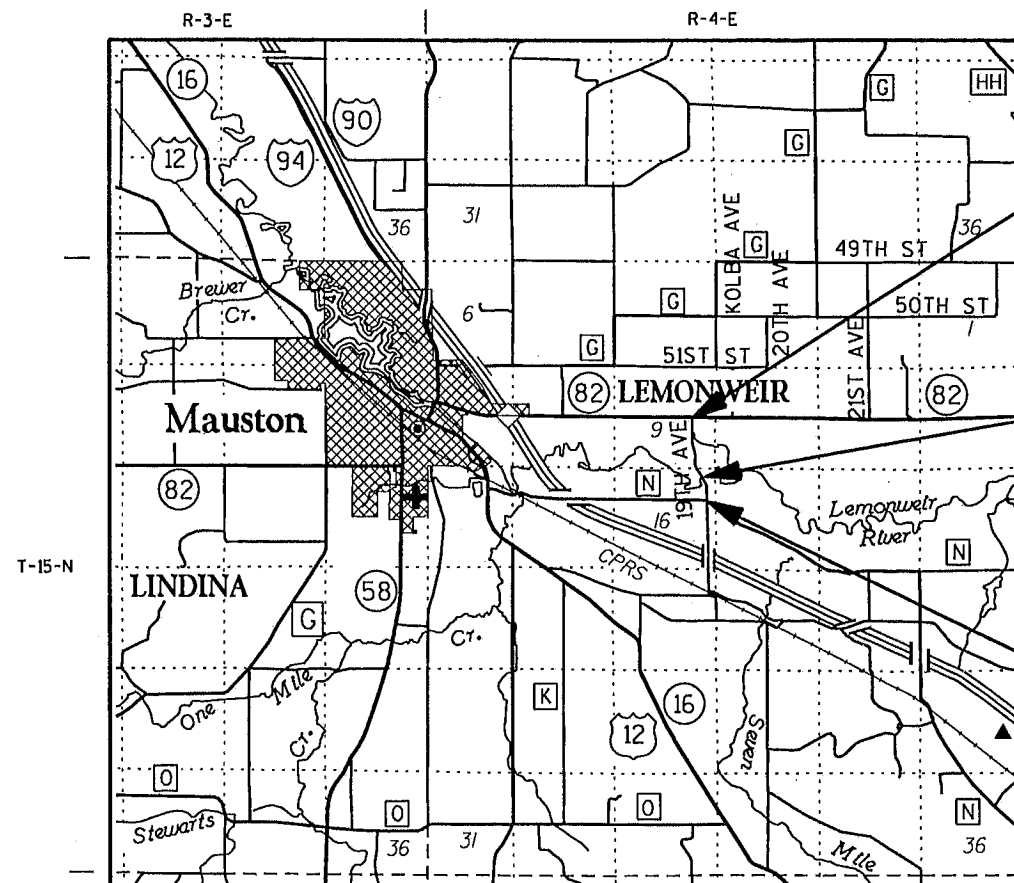
DATE: 10/30/14 [Signature]
Management Consultant Signature

E

PLAN OF PROPOSED IMPROVEMENT

TOWN ROAD
JUNEAU COUNTY

STATE PROJECT NUMBER
6648-00-73



BEGIN PROJECT
(I.D. 6648-00-73)
STA. 1+80.74
Y = 152,172.97
X = 478,519.83

LAYOUT

SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.842 MI.

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

GENERAL NOTES

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS SHALL BE FERTILIZED, SEEDED AND MULCHED AS DIRECTED BY THE ENGINEER. OVERSOW PERMANENT SEEDING AREAS WITH TEMPORARY SEED AT 1.5 LBS. PER 1000 SQUARE FEET.

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

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

THE EROSION CONTROL ITEMS SHOWN ON THE PLANS ARE AT SUGGESTED LOCATIONS, THE ENGINEER SHALL DETERMINE THE EXACT LOCATION OF EROSION CONTROL ITEMS. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY. THE CONTRACTOR WILL REMOVE ITEMS AT ENGINEER'S DIRECTION.

NO EQUIPMENT OR MATERIALS SHALL BE STORED OR IMPACT ANY WETLANDS OR WATERWAYS.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO USGS DATUM NAVD 88.

THE 4" HMA PAVEMENT TYPE E-0.3 CONSISTS OF A 1¾" UPPER LAYER AND A 2¼" LOWER LAYER.

SILT FENCE AND TURBIDITY BARRIER TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER AND IN PLACE PRIOR TO BRIDGE REMOVAL.

ABBREVIATIONS

AC	ACRES	LHF	LEFT HAND FORWARD
AC	ASPHALT CEMENT	L	LENGTH
AEW	APRON ENDWALL	LS	LUMP SUM
ASPH	ASPHALT	NC	NORMAL CROWN
AVG	AVERAGE	N	NORTH
ADT	AVERAGE DAILY TRAFFIC	Y	NORTH GRID COORDINATE
BAD	BASE AGGREGATE DENSE	PACS	PIPE ARCH CORRUGATED STEEL
BM	BENCHMARK	PT	POINT
CL	CENTERLINE	PC	POINT OF CURVATURE
CC	CENTER TO CENTER	PI	POINT OF INTERSECTION
CONC	CONCRETE	PT	POINT OF TANGENCY
CPRC	CULVERT PIPE REINFORCED CONCRETE	PL	PROPERTY LINE
CSCP	CORRUGATED STEEL CULVERT PIPE	PE	PRIVATE ENTRANCE
CSM	CERTIFIED SURVEY MAP	R	RADIUS
CTH	COUNTY TRUNK HIGHWAY	REOD	REQUIRED
CULV	CULVERT	R/W	RIGHT-OF-WAY
CP	CULVERT PIPE	RHF	RIGHT HAND FORWARD
C&G	CURB & GUTTER	SALV	SALVAGED
D	DEGREE OF CURVE	SHLDR	SHOULDER
DHV	DESIGN HOURLY VOLUME	SDD	STANDARD DETAIL DRAWINGS
DIA	DIAMETER	STA	STATION
DWY	DRIVEWAY	SE	SUPERELEVATION
E	EAST	TAN	TANGENT
X	EAST GRID COORDINATE	TLE	TEMPORARY LIMITED EASEMENT
ELEV	ELEVATION	T	TRUCKS
EW	ENDWALL	TYP	TYPICAL
ENT	ENTRANCE	VERT	VERTICAL
ESALS	EQUIVALENT SINGLE AXLE LOADS	VC	VERTICAL CURVE
EXC	EXCAVATION	VOL	VOLUME
EBS	EXCAVATION BELOW SUBGRADE	WV	WATER VALVE
EXIST	EXISTING	W	WELL
FF	FACE TO FACE		
FERT	FERTILIZER		
FE	FIELD ENTRANCE		
FG	FINISHED GRADE		
FT	FOOT		
G.V.	GAS VALVE		
INV	INVERT		
IP	IRON PIPE		
JCT	JUNCTION		

ORDER OF SHEETS

- 1. GENERAL NOTES
- 2. PROJECT OVERVIEW
- 3. TYPICAL SECTIONS
- 4. CONSTRUCTION DETAILS
- 5. INTERSECTIONS
- 6. EROSION CONTROL
- 7. ALIGNMENT

COUNTY CONTACT

JUNEAU COUNTY HIGHWAY DEPARTMENT
ATTN.: DENNIS WEISS, COMMISSIONER
930 E. STATE STREET
MAUSTON, WI 53948
PHONE: 608-847-5874
DWEISS@CO.JUNEAU.WI.US

TOWN CONTACT

TOWN OF LEMONWEIR
ATTN.: CARIN LEACH, TOWN CLERK
N3935 19TH AVENUE
MAUSTON, WI 53948
PHONE: 608-847-4786
TWNLEMN@MERR.COM

DESIGN CONTACT

MSA PROFESSIONAL SERVICES, INC.
ATTN.: QUIRIN R. KLINK, P.E.
1230 SOUTH BOULEVARD
BARABOO, WI 53913
PHONE: 608-355-8890
OKLINK@MSA-PS.COM

DNR LIAISON

DEPARTMENT OF NATURAL RESOURCES
ATTN.: MARC HERSHFELD
473 GRIFFITH AVE.
WISCONSIN RAPIDS, WI 54494
PHONE: 715-421-7867
MARC.HERSHFELD@WISCONSIN.GOV

UTILITIES

ELECTRIC:
ALLIANT ENERGY
ATTN: JASON HOGAN
SUITE 1000
4902 NORTH BILTMORE LANE
MADISON, WI 53718
PHONE: 608-395-7395
JASONHOGAN@ALLIANTENERGY.COM

COMMUNICATION/TELEPHONE:
FRONTIER COMMUNICATIONS OF WI
ATTN: JERRY MOORE (LOCAL CONTACT)
2222 WEST WISCONSIN STREET
PORTAGE, WI 53901
PHONE: 608-742-9507
JEROLD.R.MOORE@FTR.COM

TRANSMISSION LINES:
AMERICAN TRANSMISSION COMPANY (ATC)
ATTN: DEVIN MAHAFFEY
W234 N2000 RIDGEVIEW PKWY. CT.
WAUKESHA, WI 53188-1022
PHONE: 262-506-6983
DMAHAFFEY@ATCLLC.COM

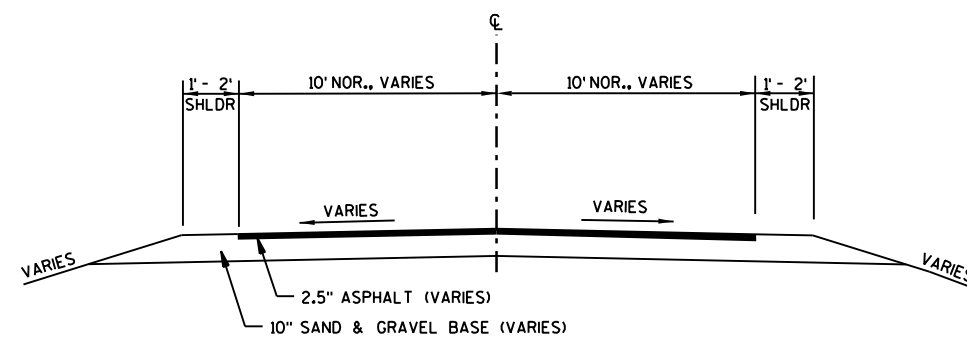


* - NOT A MEMBER
OF DIGGERS HOTLINE.

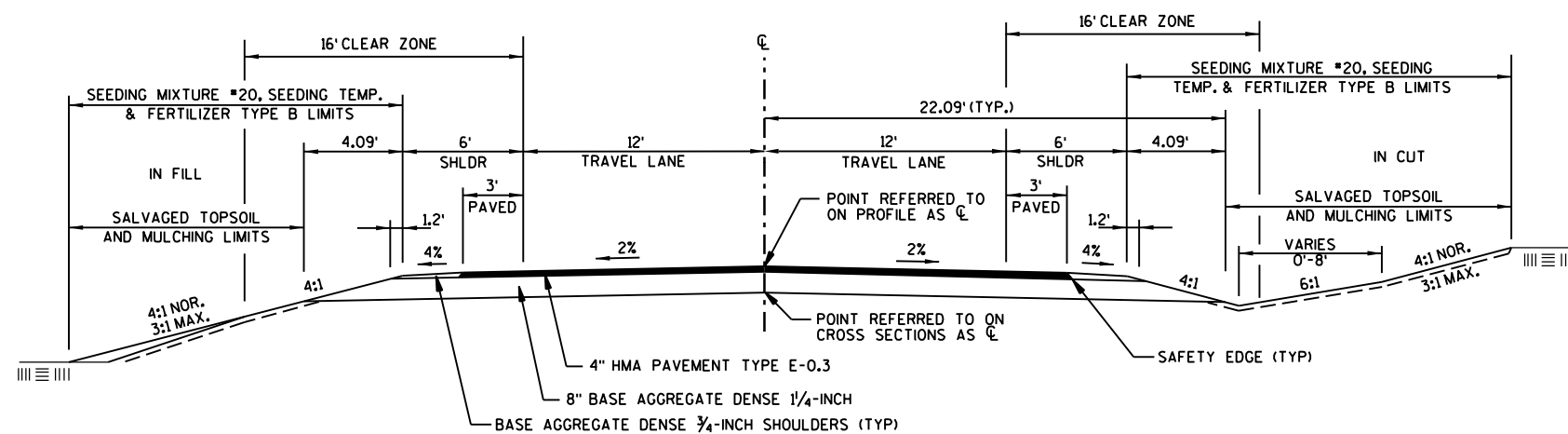
RUNOFF COEFFICIENT TABLE				
	HYDROLOGIC SOIL TABLE			
	A	B	C	D
	SLOPE RANGE %	SLOPE RANGE %	SLOPE RANGE %	SLOPE RANGE %
LAND USE:	6 & OVER	6 & OVER	6 & OVER	6 & OVER
SIDE SLOPE-TURF	.25 .32	.27 .34	.28 .36	.30 .38
PAVEMENT:				
ASPHALT	.70 - .95			
CONCRETE	.80 - .95			
GRAVEL ROADS, SHOULDERS	.40 - .60			

THE RUNOFF COEFFICIENTS OF SURFACE DRAINAGE AT THE PROJECT SITES WILL NOT BE CHANGED FROM BEFORE TO AFTER CONSTRUCTION. THE TOTAL AREA OF THE PROJECT IS 8.84 ACRES. THE TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES IS 8.84 ACRES.



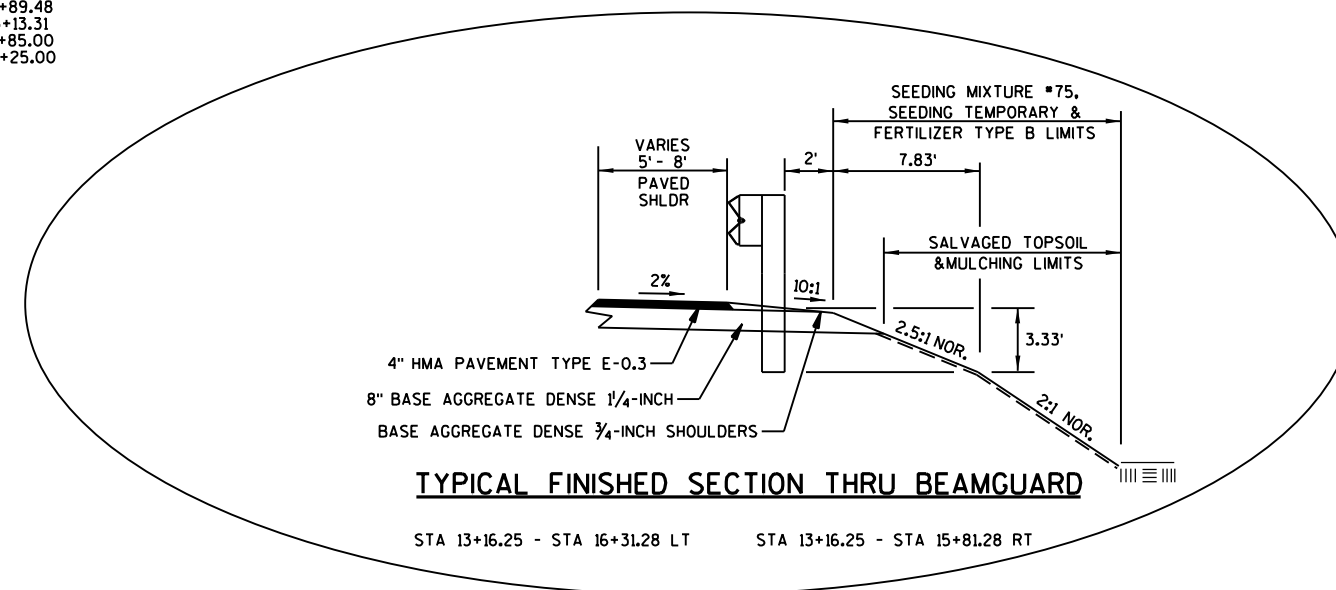


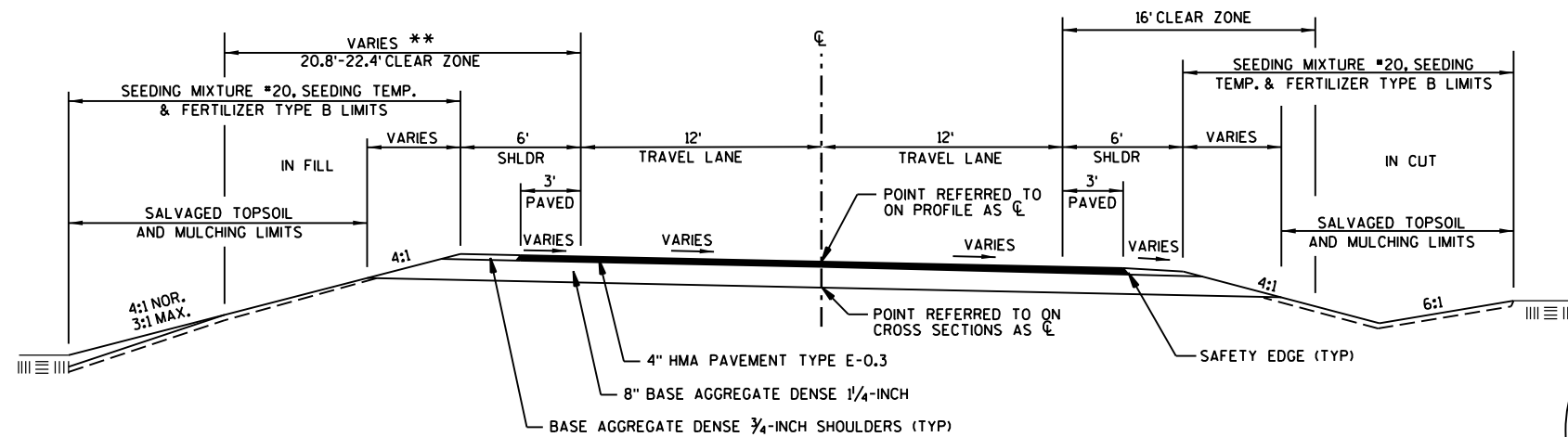
TYPICAL EXISTING SECTION



TYPICAL FINISHED SECTION

STA 1+80.74 - STA 5+38.92
 STA 11+48.71 - STA 18+40.20
 STA 24+62.94 - STA 24+89.48
 STA 29+83.84 - STA 33+13.31
 STA 38+68.65 - STA 42+85.00
 STA 45+00.00 - STA 46+25.00



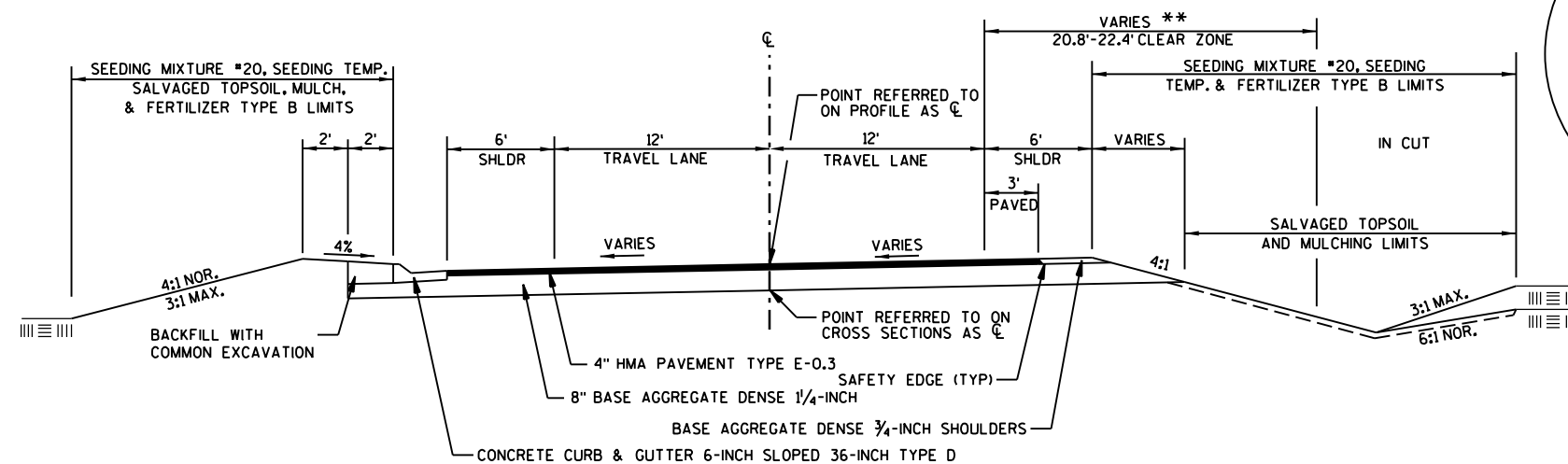


TYPICAL SUPERELEVATED FINISHED SECTION

STA 5+38.92 - STA 6+50.00
 STA 9+50.00 - STA 11+48.71
 STA 18+40.20 - STA 24+62.94
 STA 24+89.48 - STA 29+83.84
 STA 33+13.31 - STA 38+68.65

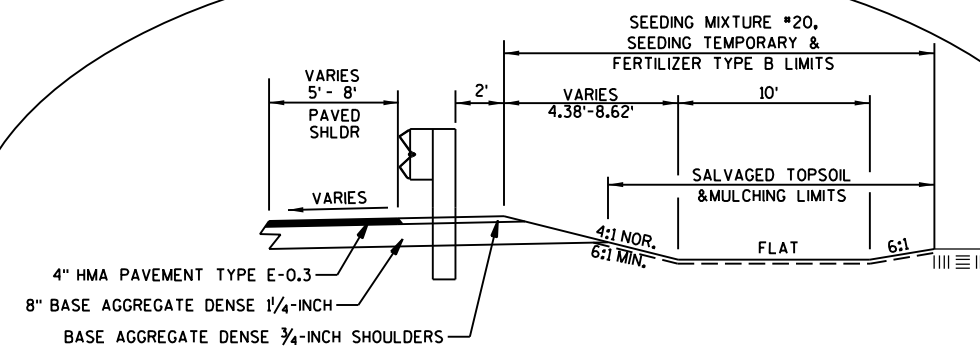
TYPICAL SUPERELEVATED FINISHED SECTION THRU BEAMGUARD

STA 10+16.54 - STA 11+43.75 RT



TYPICAL FINISHED SECTION WITH CURB & GUTTER

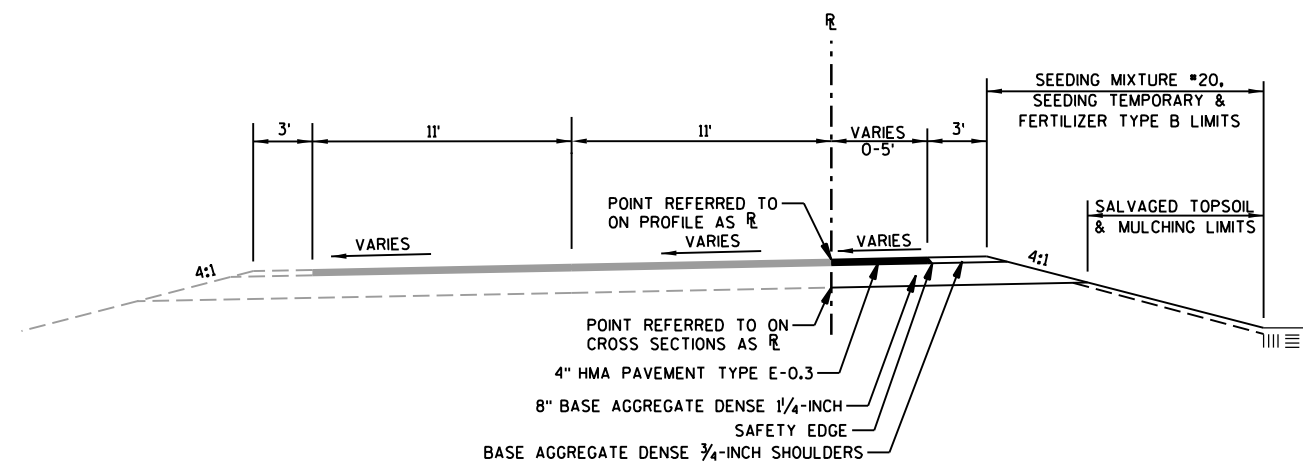
STA 6+50 - STA 9+50
 STA 42+85 - STA 45+00 (REVERSED)



TYPICAL SUPERELEVATED FINISHED SECTION THRU BEAMGUARD

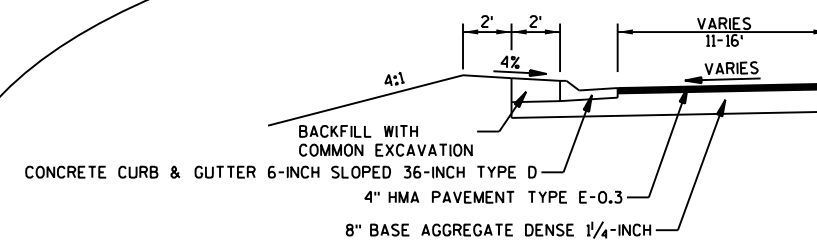
STA 10+19.10 - STA 11+43.75 LT

**CLEAR ZONE VARIES BASED ON CURVE RADIUS



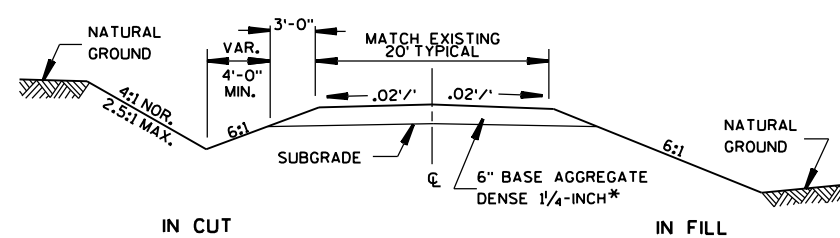
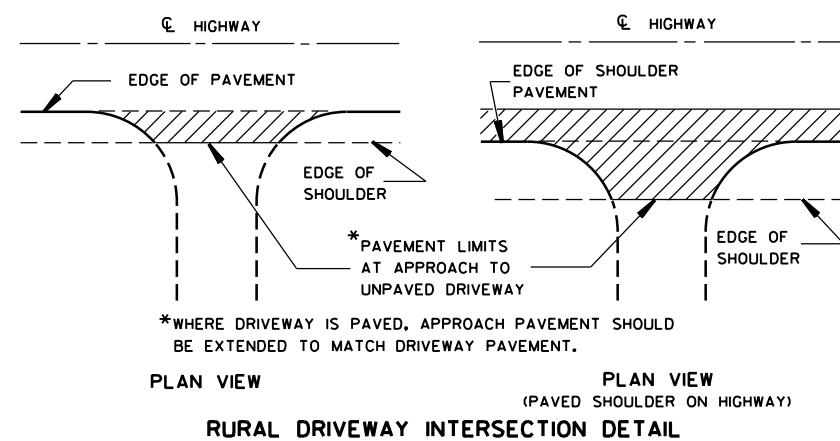
TYPICAL FINISHED SUPERELEVATED SECTION FOR WIDENING ON CTH N

STA 73+25.19 - STA 76+63.61



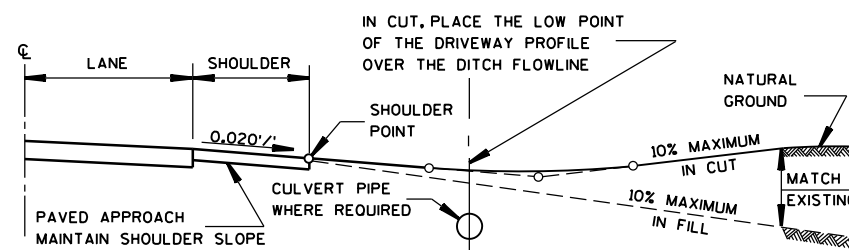
TYPICAL FINISHED SUPERELEVATED SECTION FOR CURB & GUTTER

CTH N & 19TH AVE. INTERSECTION

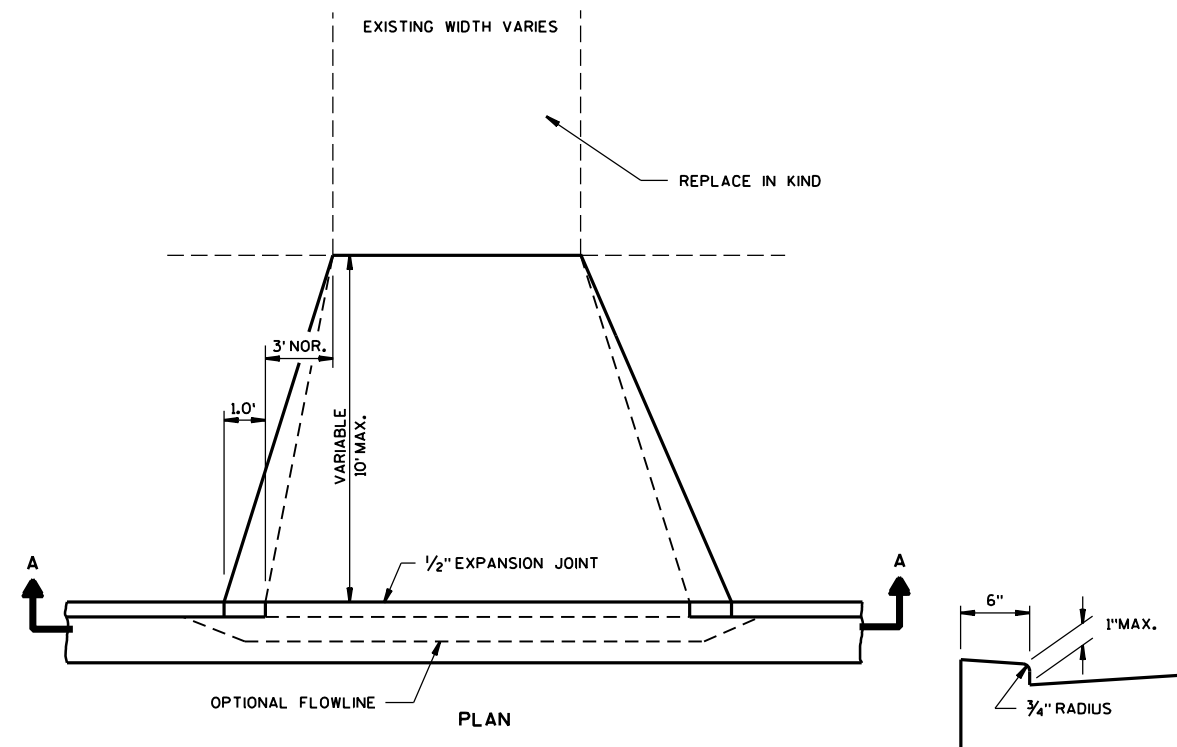


TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE

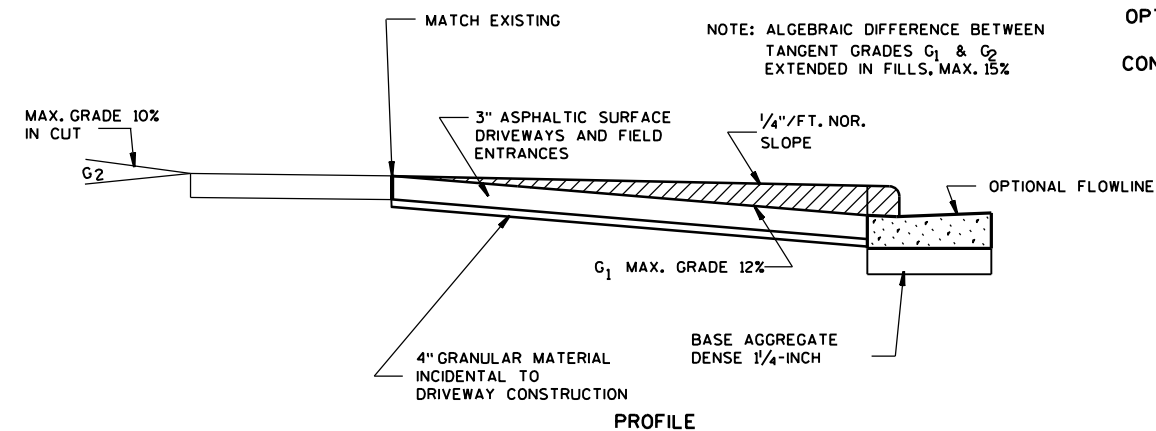
*=WHERE DRIVEWAY IS PAVED, USE 3" ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES OVER 4" BASE AGGREGATE DENSE 1/4-INCH



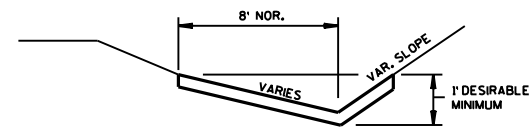
TYPICAL DRIVEWAY PROFILES



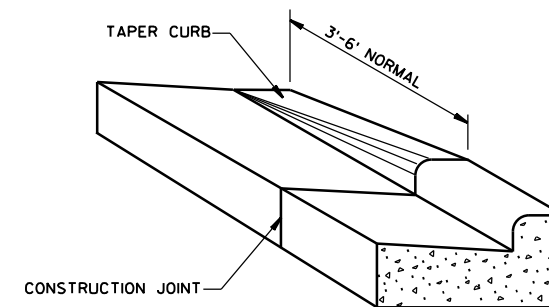
OPTIONAL METHOD FOR CONCRETE GUTTER



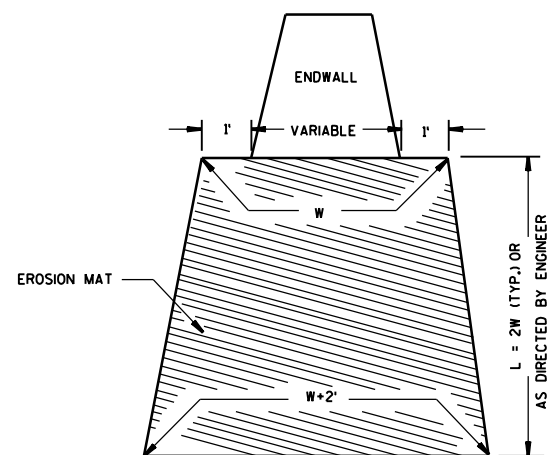
RURAL DRIVEWAY DETAIL WITH CURB & GUTTER



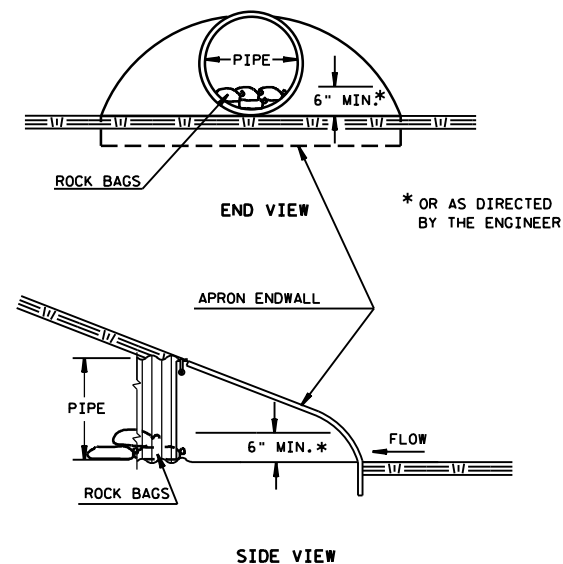
EROSION MAT DETAIL FOR DITCHES



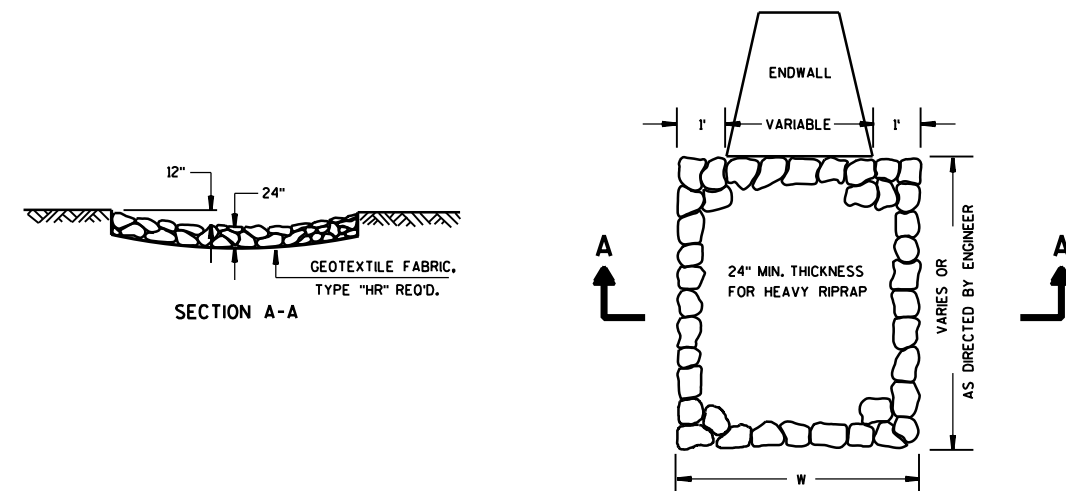
DETAIL OF CURB & GUTTER TERMINI



EROSION MAT TREATMENT AT CULVERTS



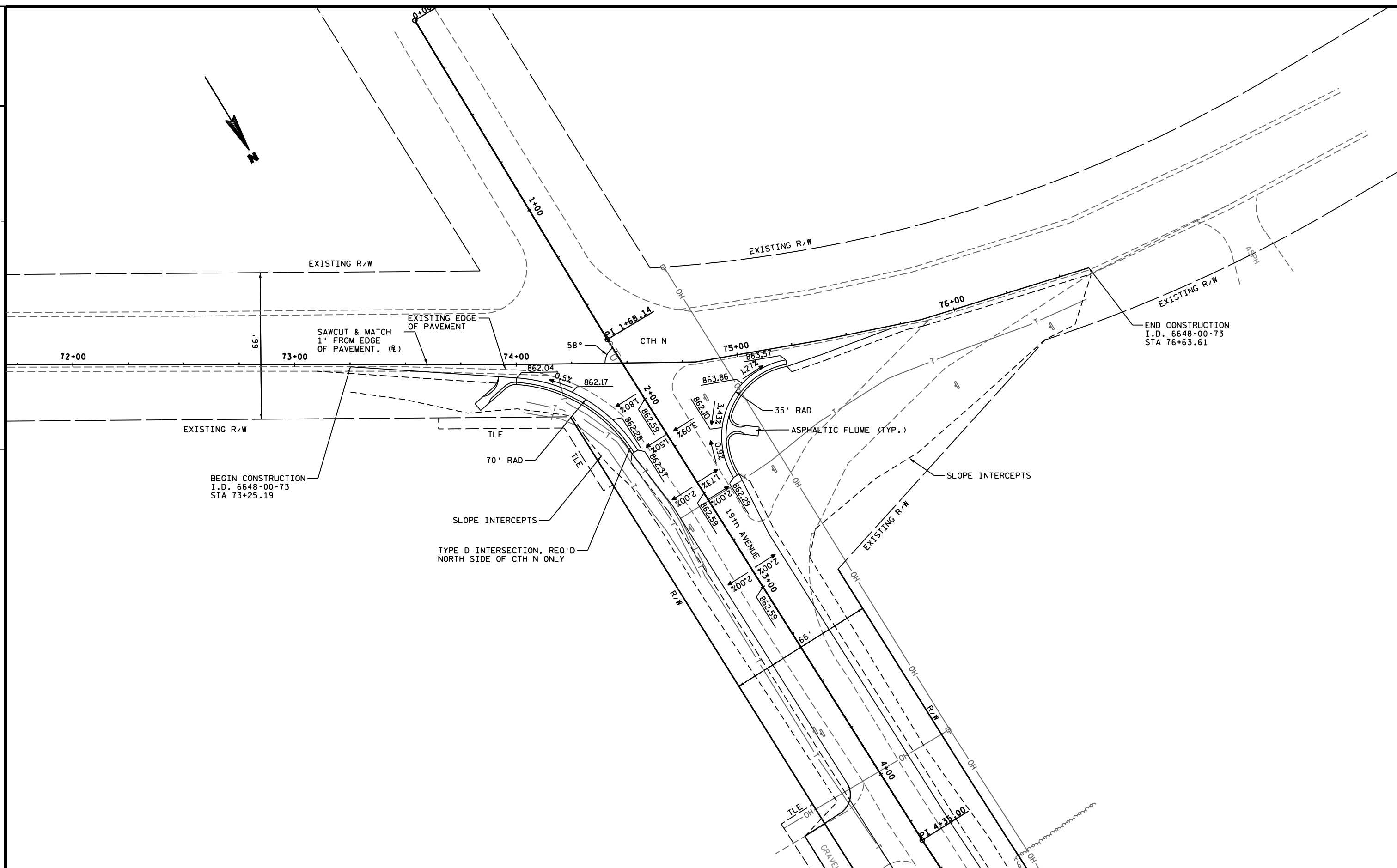
CULVERT PIPE CHECK



HEAVY RIPRAP TREATMENT AT CULVERTS

2

2



PROJECT NO:6648-00-73

HWY: TOWN ROAD

COUNTY: JUNE AU

CTH N INTERSECTION DETAIL

SHEET

1

FILE NAME : P:\11100s\11140s\11145\11145000\caddWDOT\Planshts\Details\021201_pd.dgn

PLOT DATE : 8/29/2014

PLOT BY : bmaxwell

PLOT NAME :

PLOT SCALE : 1:39.9998

WISDOT/CADDS SHEET 42

021201_pd.dgn 8/29/2014 9:34:33 AM bmaxwell

LEGEND

- SILT FENCE
—○— RIP RAP HEAVY (SEE B-29-0144 PLANS)
—▲— TURBIDITY BARRIER
—→— CHANNEL WATER FLOW
- - - SLOPE INTERCEPT
▨ WORK AREA

NOTES:

SEE EROSION CONTROL DETAIL SHEETS
FOR AREAS SOUTH OF STA. 11+00 AND
NORTH OF STA. 15+00.

WORK STAGING, WORK AREA LIMITS AND
EROSION CONTROL DEVICE LOCATIONS ARE
APPROXIMATE. OBTAIN APPROVALS OF
MODIFICATIONS WITH WDNR & ENGINEER
THROUGH THE ECIP PROCESS.

BEGIN CONSTRUCTION
I.D. 6648-00-72
STA. 57+75

IN LAST MOMENTS OF STAGE 1,
REMOVE THIS APPROXIMATE AREA
TO 2' ABOVE WATER LINE.

STRUCTURE B-29-0144
(I.D. 6648-00-72)

END CONSTRUCTION
I.D. 6648-00-72
STA. 63+00

CHANNEL REALIGNMENT

EXISTING BOAT RAMP

SLOPE INTERCEPTS (TYP.)

LEGEND

-  SILT FENCE
-  RIP RAP HEAVY (SEE B-29-0144 PLANS)
-  TURBIDITY BARRIER
-  CHANNEL WATER FLOW
-  SLOPE INTERCEPT
-  WORK AREA

AFTER REMOVAL OF (A),
PLACE FILL AND RIPRAP
HEAVY, SEE SECT. B-B.

STRUCTURE B-29-0144
(I.D. 6648-00-72)

REMOVE (A) TO
ELEV. 846.0

BEGIN CONSTRUCTION
I.D. 6648-00-72
STA. 57+75

LEMONWEIR RIVER
57+00

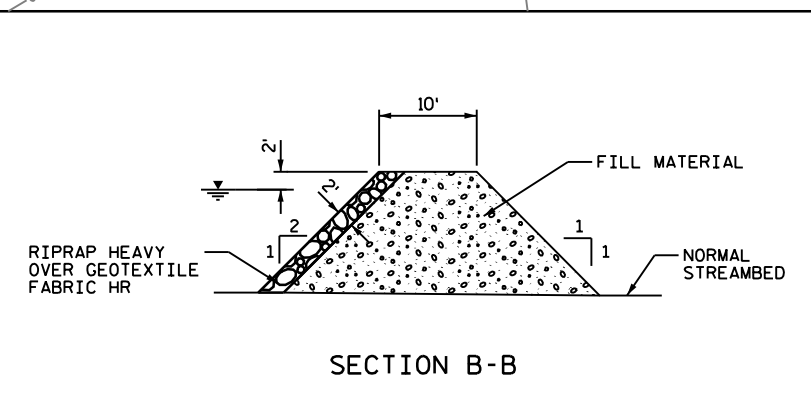
SLOPE INTERCEPTS

EXISTING BOAT RAMP

END CONSTRUCTION
I.D. 6648-00-72
STA. 63+00

CHANNEL REALIGNMENT

ACTIVE FLOW



NOTES:

SEE EROSION CONTROL DETAIL SHEETS
FOR AREAS SOUTH OF STA. 11+00 AND
NORTH OF STA. 15+00.

WORK STAGING, WORK AREA LIMITS AND
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MODIFICATIONS WITH WDNR & ENGINEER
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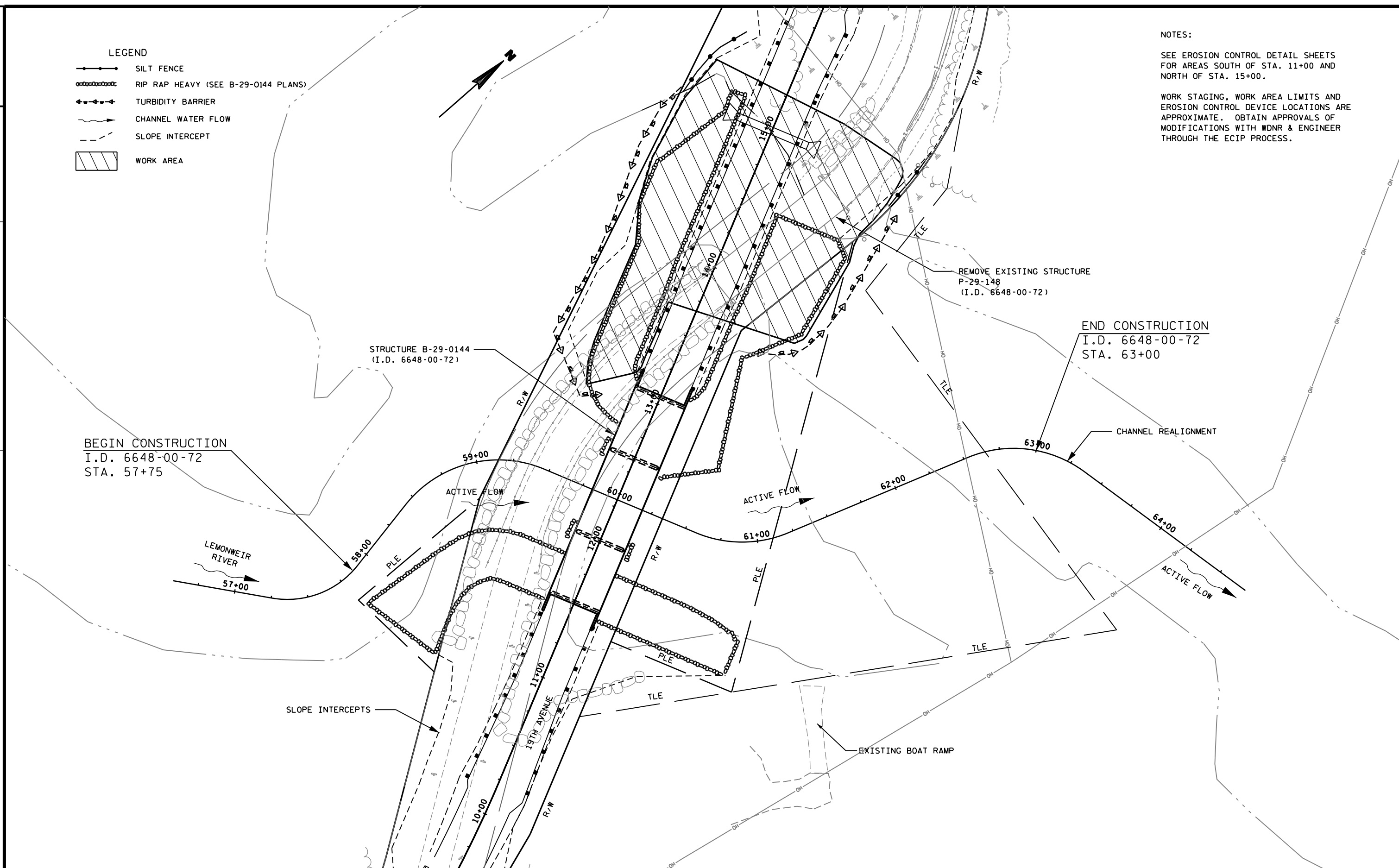
LEGEND

- SILT FENCE
—○— RIP RAP HEAVY (SEE B-29-0144 PLANS)
—◆— TURBIDITY BARRIER
—→— CHANNEL WATER FLOW
- - - SLOPE INTERCEPT
▨ WORK AREA

NOTES:

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FOR AREAS SOUTH OF STA. 11+00 AND
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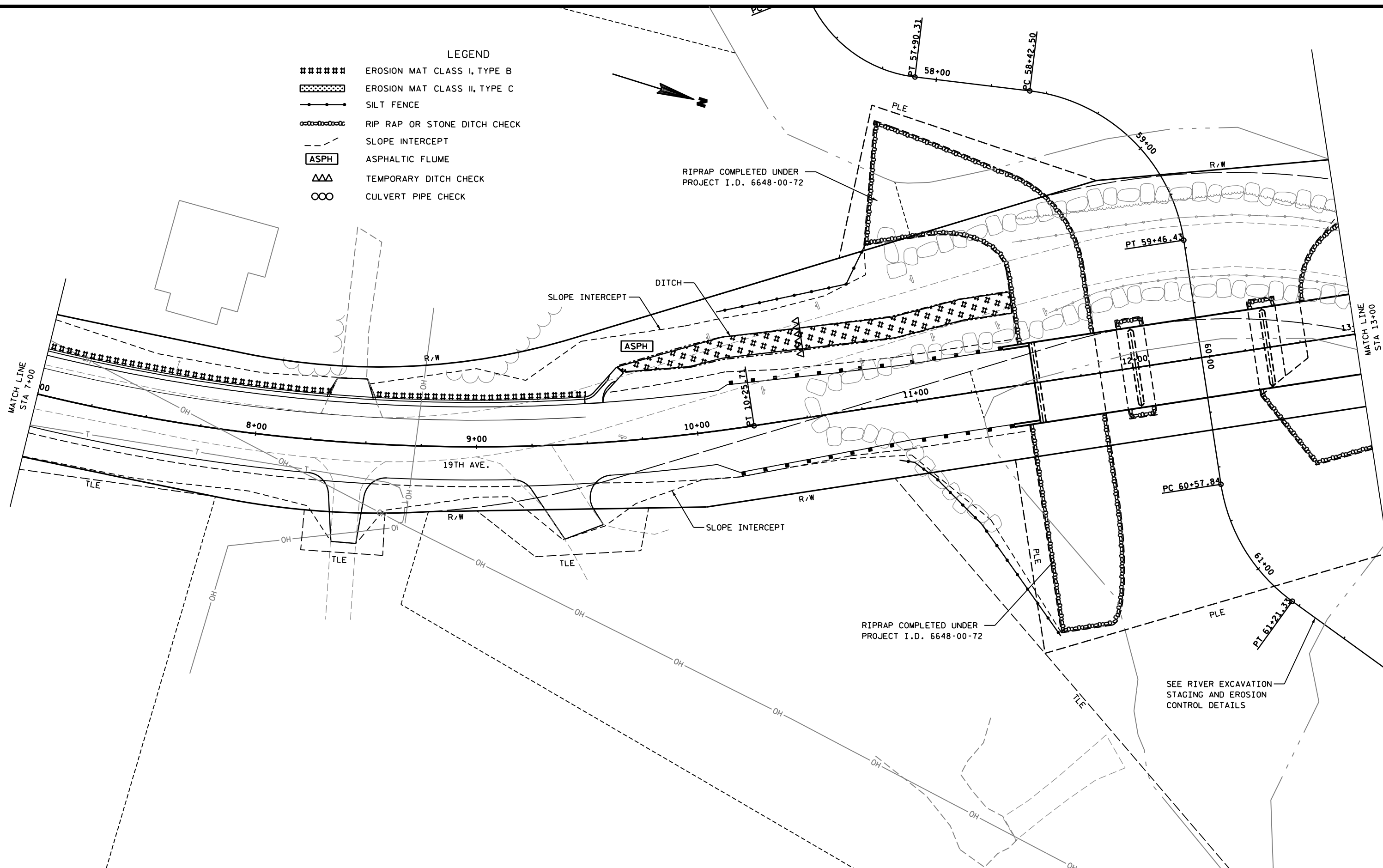


2



LEGEND

- ##### EROSION MAT CLASS I, TYPE B
oooooooooooo EROSION MAT CLASS II, TYPE C
-.-.-.-.- SILT FENCE
o-o-o-o-o-o-o-o RIP RAP OR STONE DITCH CHECK
- - - - - SLOPE INTERCEPT
[ASPH] ASPHALTIC FLUME
△△△ TEMPORARY DITCH CHECK
ooo CULVERT PIPE CHECK



PROJECT NO:6648-00-72/73

HWY:TOWN ROAD

COUNTY:JUNEAU

EROSION CONTROL

SHEET

14

E

FILE NAME : P:\11100s\11140s\11145\11145000\cadd\WDOT\Planshts\Erosion Control\022002_ec.dgn

PLOT DATE : 12/29/2014

PLOT BY : bmaxwell

PLOT NAME :

PLOT SCALE : 1:40

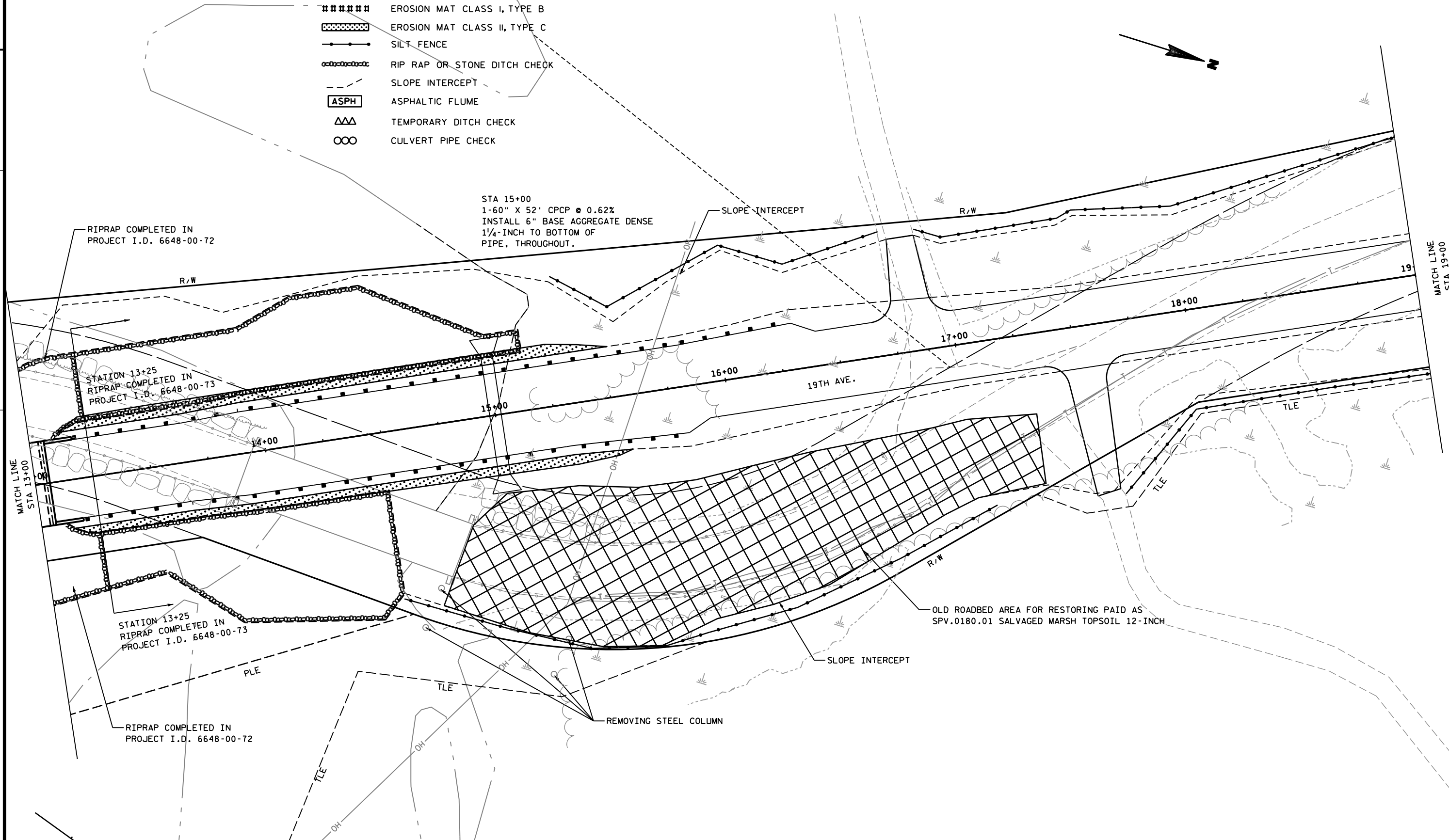
WISDOT/CADDs SHEET 42

022002_ec.dgn 12/29/2014 10:42:02 AM bmaxwell

LEGEND

- ##### EROSION MAT CLASS I, TYPE B
■■■■■■■■ EROSION MAT CLASS II, TYPE C
—●—●— SILT FENCE
-o-o-o-o- RIP RAP OR STONE DITCH CHECK
- - - SLOPE INTERCEPT
[ASPH] ASPHALTIC FLUME
△△△ TEMPORARY DITCH CHECK
○○○ CULVERT PIPE CHECK

STA 15+00
1-60" X 52' CSCP @ 0.62%
INSTALL 6" BASE AGGREGATE DENSE
1 1/4-INCH TO BOTTOM OF
PIPE, THROUGHOUT.



PROJECT NO:6648-00-72/73

HWY:TOWN ROAD

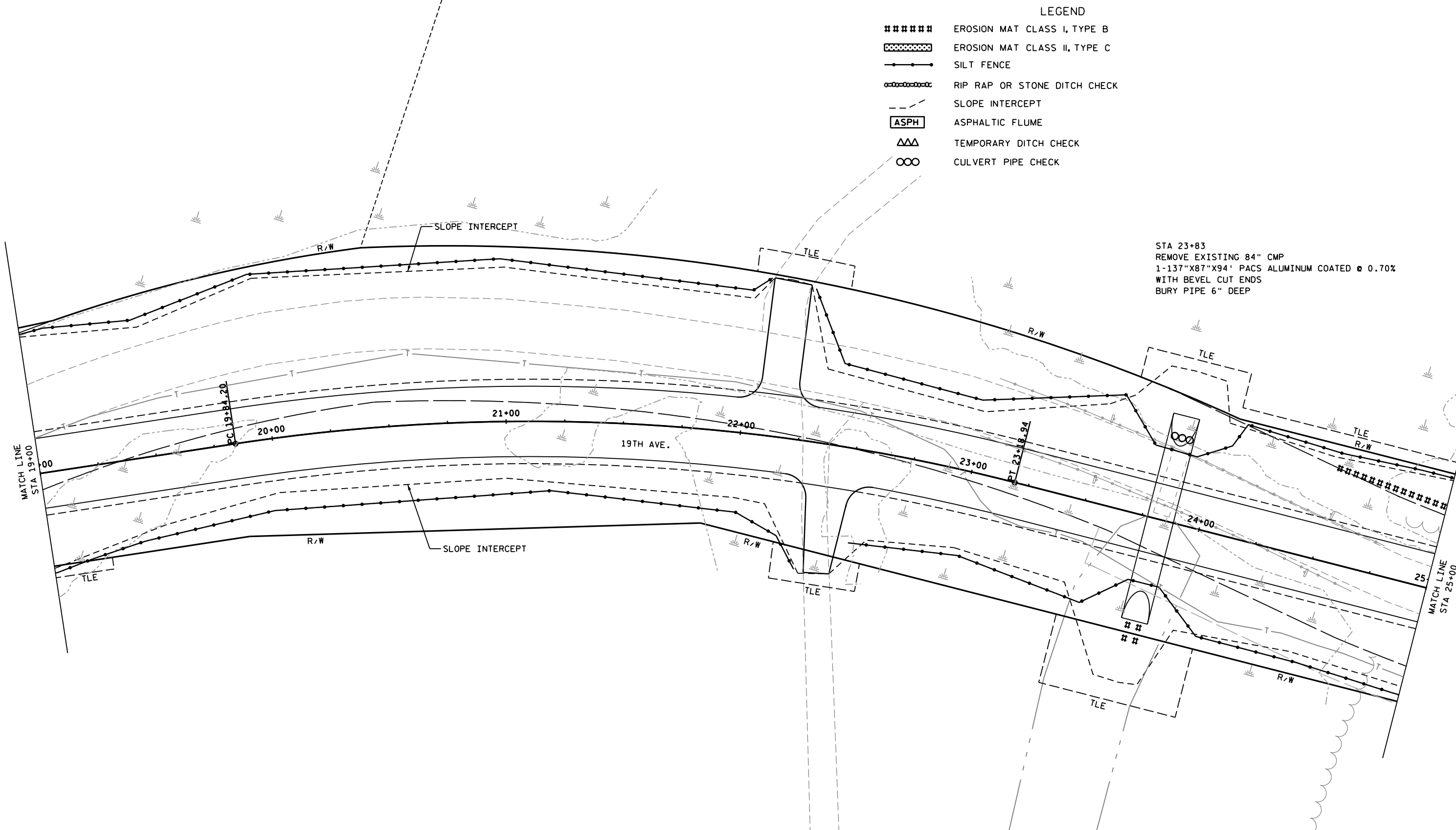
COUNTY:JUNEAU

EROSION CONTROL

SHEET

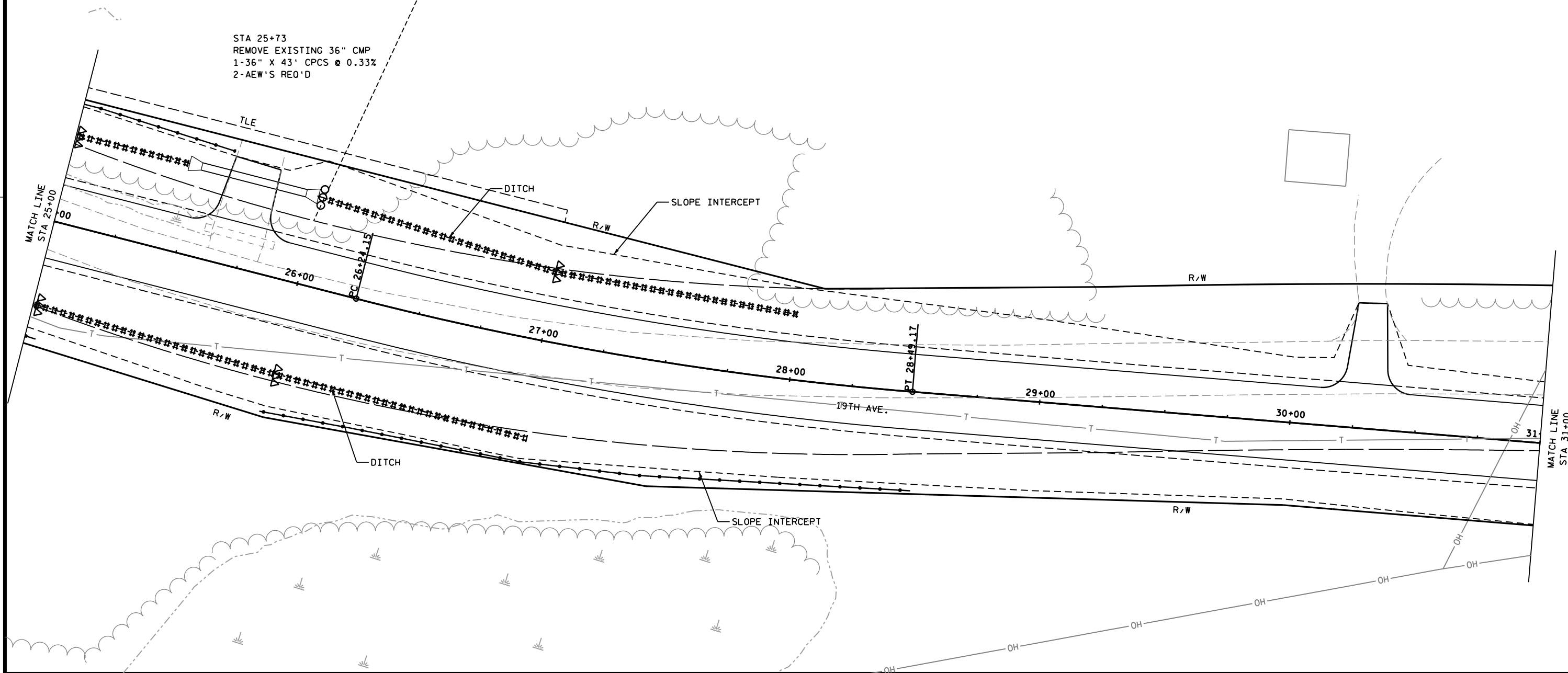
15

E



- LEGEND
- ##### EROSION MAT CLASS I, TYPE B
 - ##### EROSION MAT CLASS II, TYPE C
 - SILT FENCE
 - RIP RAP OR STONE DITCH CHECK
 - - - SLOPE INTERCEPT
 - ASPH ASPHALTIC FLUME
 - △△△ TEMPORARY DITCH CHECK
 - CULVERT PIPE CHECK

STA 25+73
REMOVE EXISTING 36" CMP
1-36" X 43' CPCS @ 0.33%
2-AEW'S REQ'D



PROJECT NO:6648-00-73

HWY:TOWN ROAD

COUNTY:JUNEAU

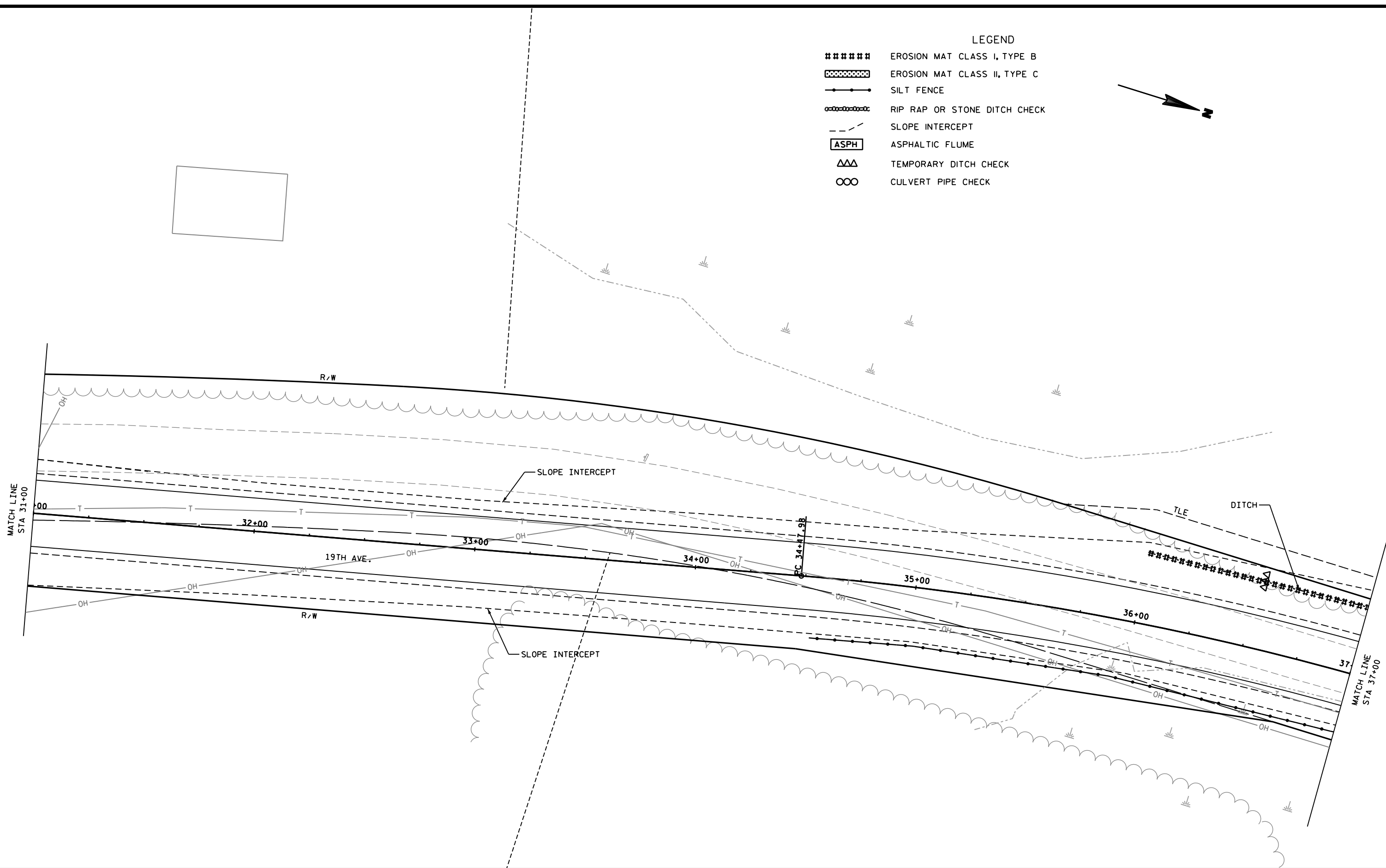
EROSION CONTROL

SHEET

17

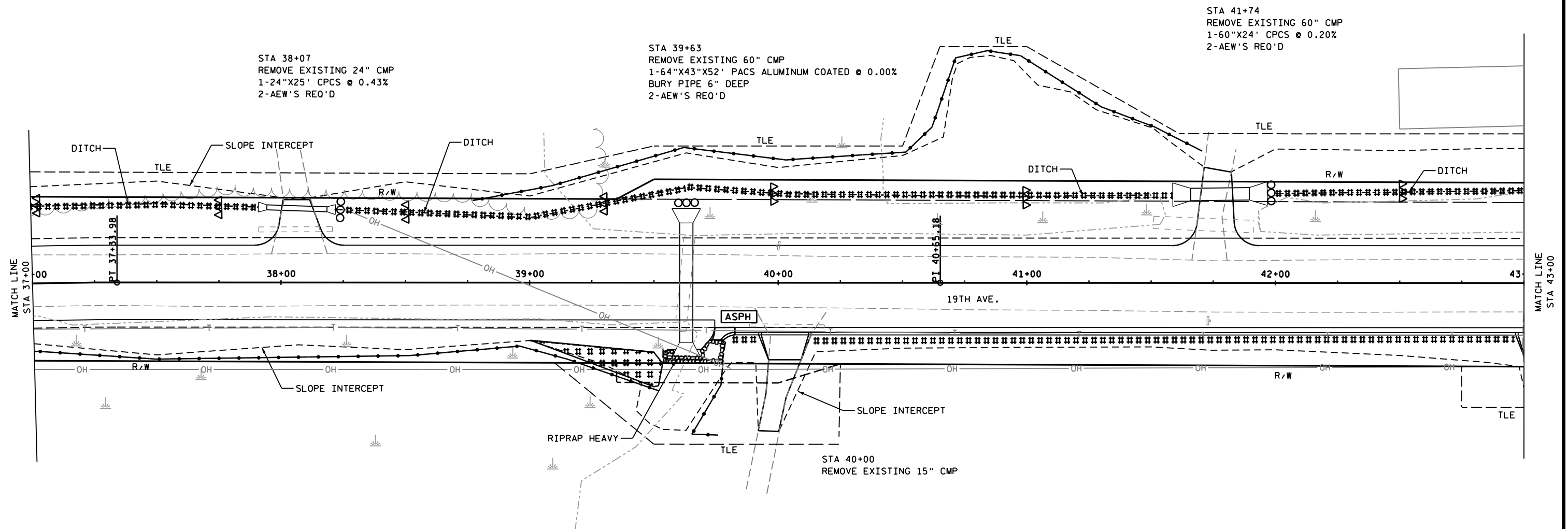
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- LEGEND
- ##### EROSION MAT CLASS I, TYPE B
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 - SILT FENCE
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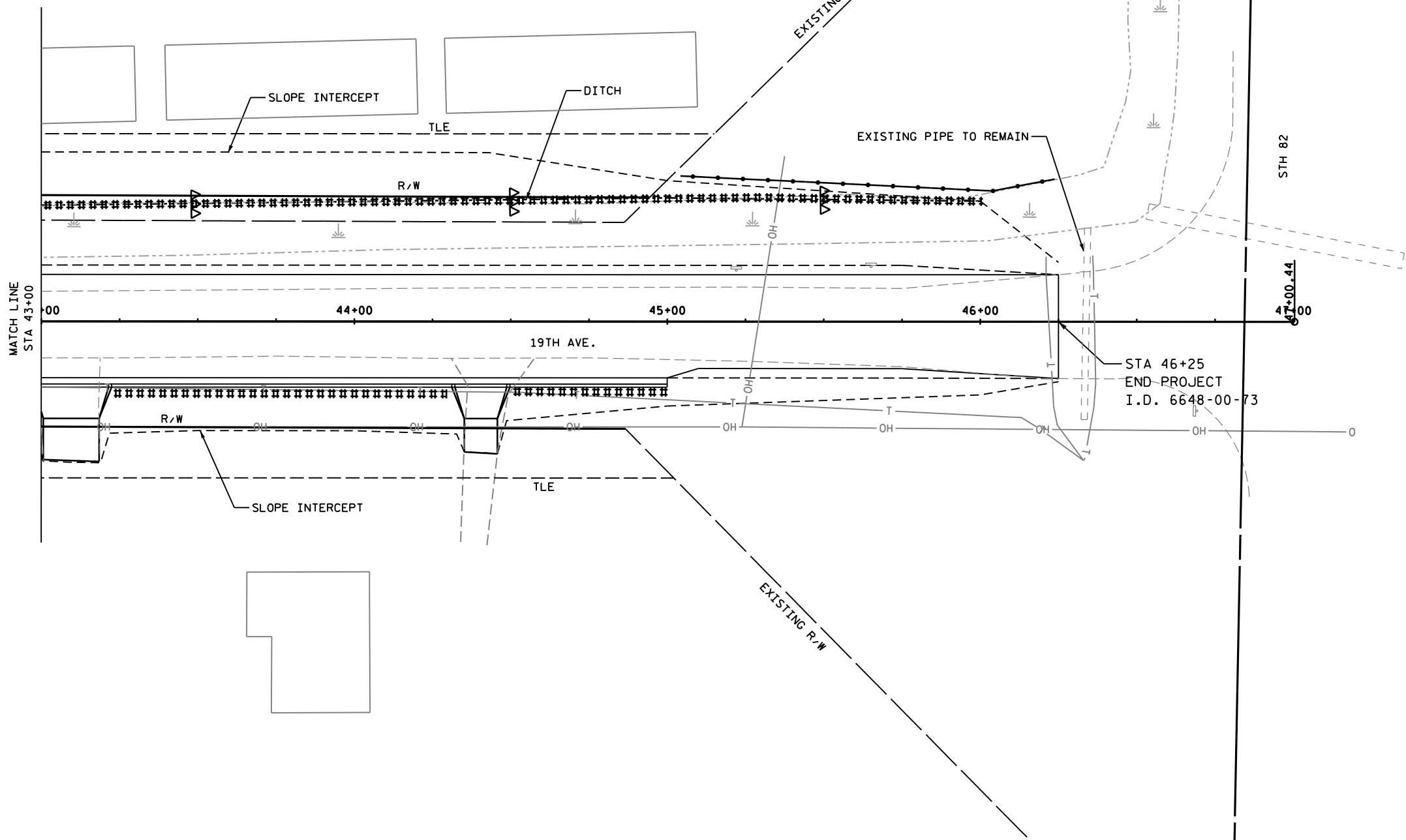


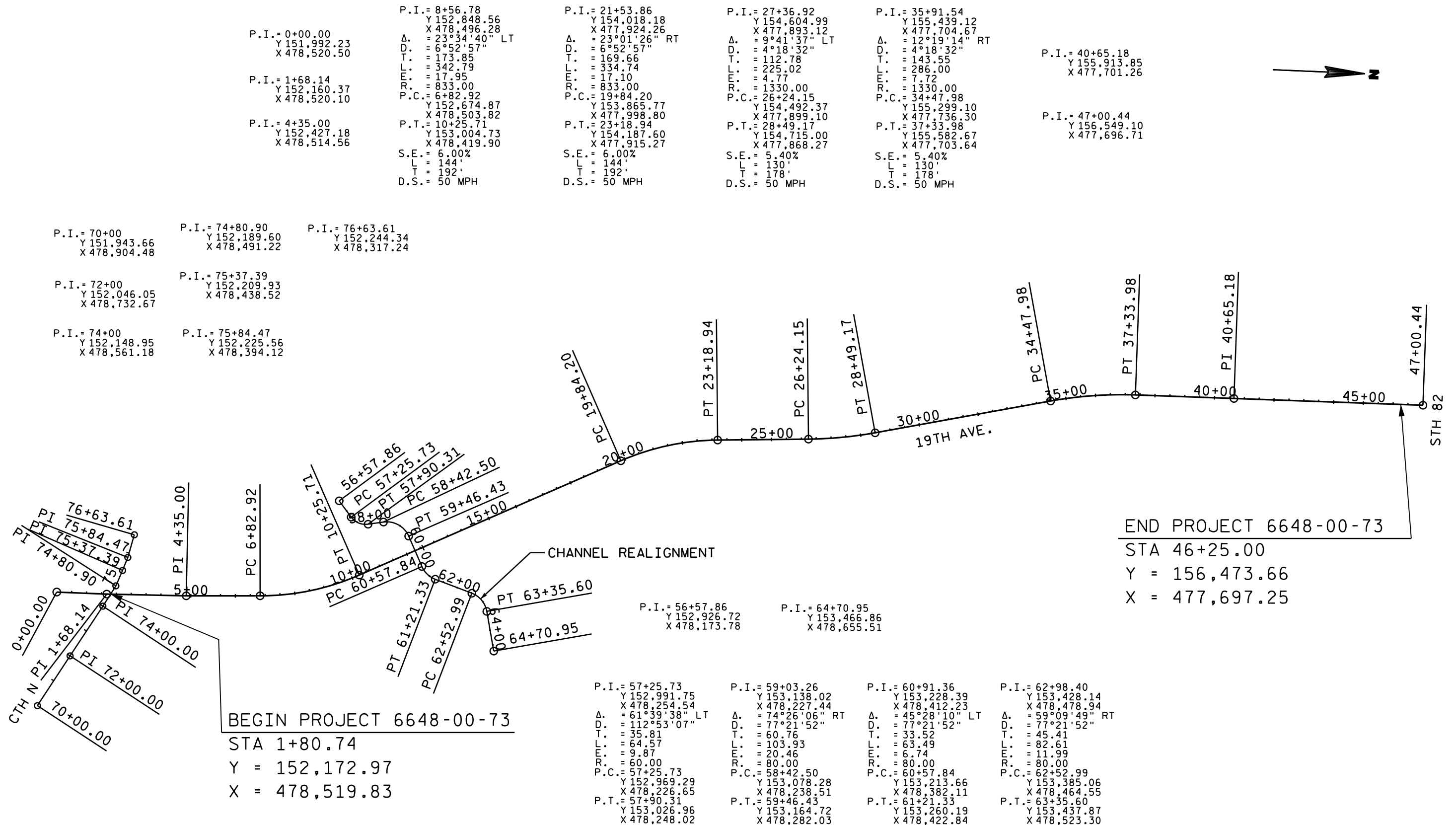
LEGEND

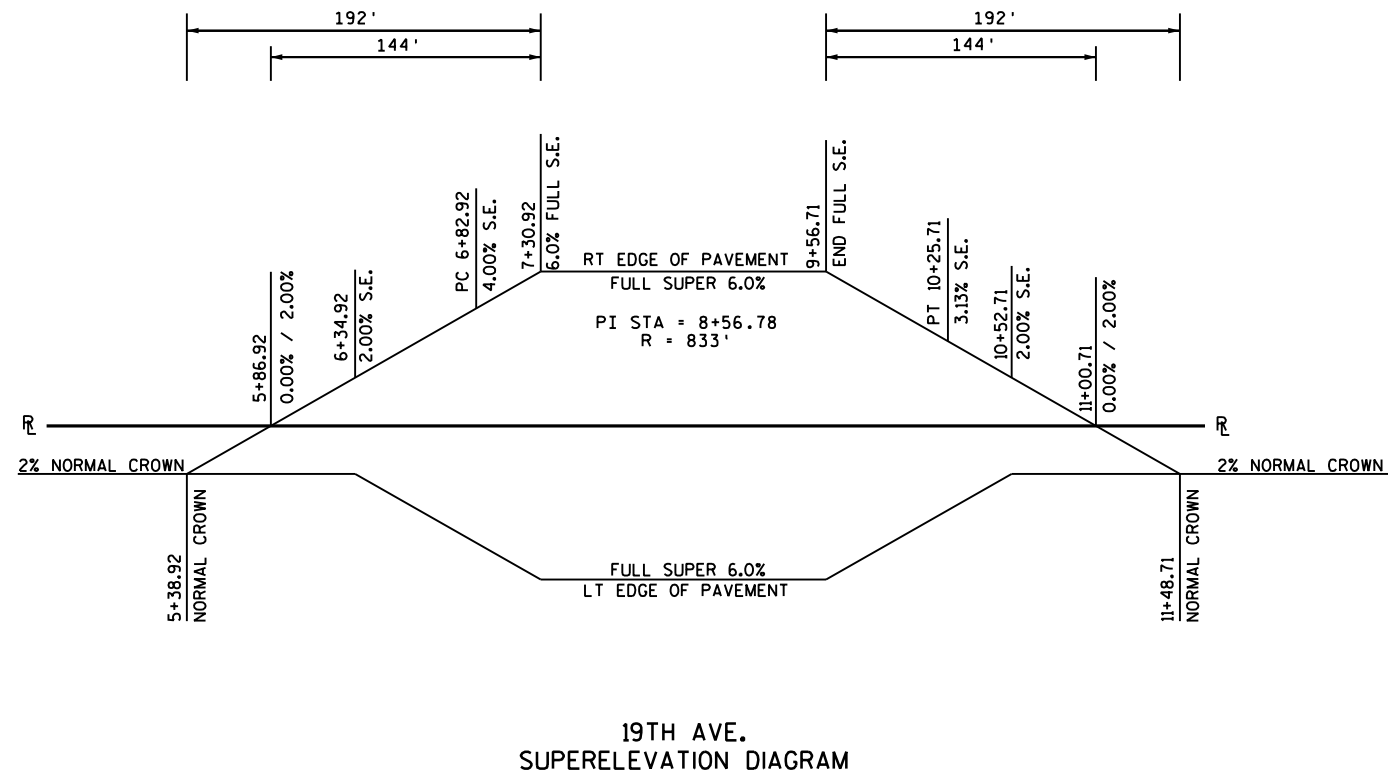
#####	EROSION MAT CLASS I, TYPE B
oooooooooooo	EROSION MAT CLASS II, TYPE C
-----	SILT FENCE
o-o-o-o-o-o-o-o	RIP RAP OR STONE DITCH CHECK
-----	SLOPE INTERCEPT
ASPH	ASPHALTIC FLUME
AAA	TEMPORARY DITCH CHECK
OOO	CULVERT PIPE CHECK



- LEGEND
- ##### EROSION MAT CLASS I, TYPE B
 - EROSION MAT CLASS II, TYPE C
 - SILT FENCE
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 - SLOPE INTERCEPT
 - ASPH ASPHALTIC FLUME
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 - CULVERT PIPE CHECK

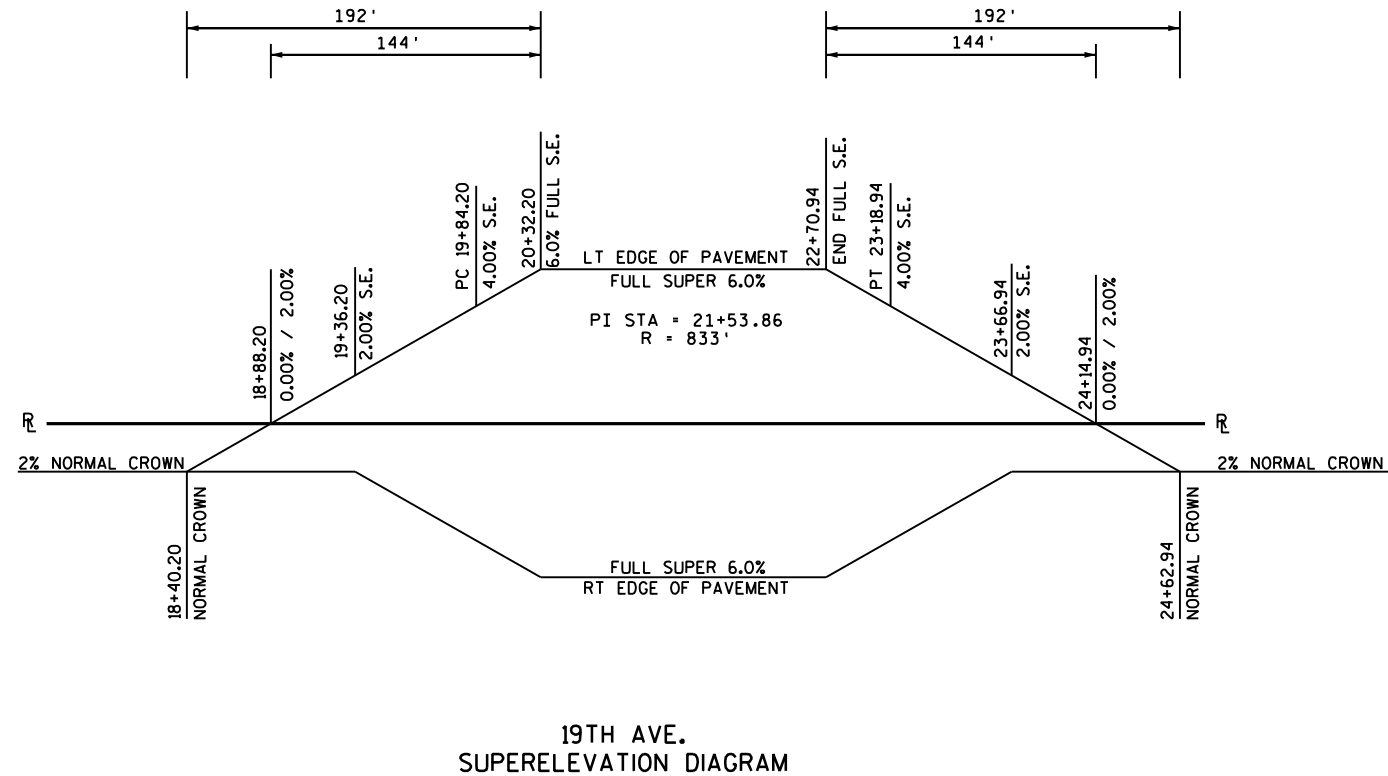




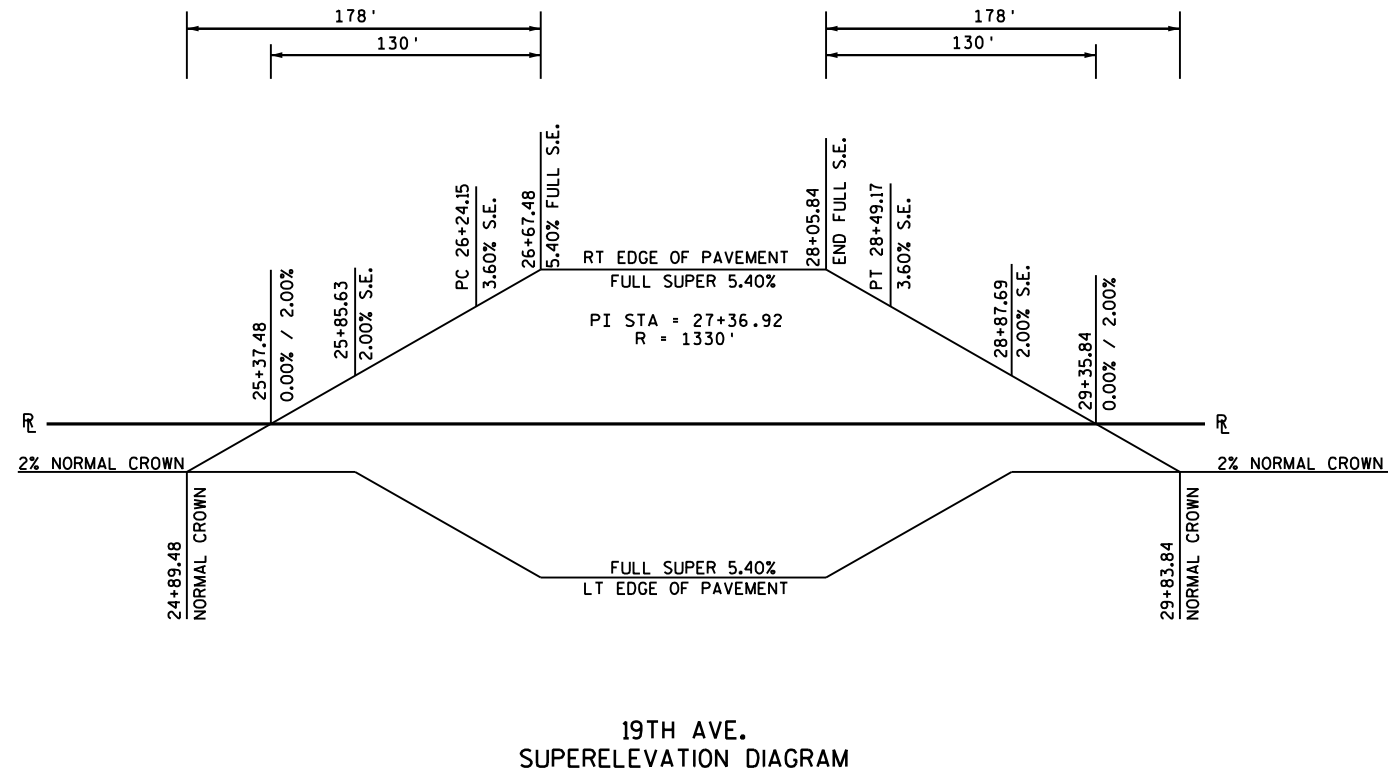


STATION	SUPERELEVATION RATE	
	19TH AVE.	
	TO LT. EDGE	TO RT. EDGE
5+38.92	-2.00%	-2.00%
5+50.00	-2.00%	-1.54%
5+86.92	-2.00%	0.00%
6+00.00	-2.00%	+0.55%
6+34.92	-2.00%	+2.00%
6+50.00	-2.63%	+2.63%
6+82.92	-4.00%	+4.00%
7+00.00	-4.71%	+4.71%
7+30.92	-6.00%	+6.00%
9+56+71	-6.00%	+6.00%
10+00.00	-4.20%	+4.20%
10+25.71	-3.13%	+3.13%
10+50.00	-2.11%	+2.11%
10+52.71	-2.00%	+2.00%
11+00.00	-2.00%	+0.30%
11+00.71	-2.00%	0.00%
11+48.71	-2.00%	-2.00%

NOTE: SUPERELEVATION RATES
ARE PROJECTED OUT FROM
THE REFERENCE LINE
LOOKING UP STATION

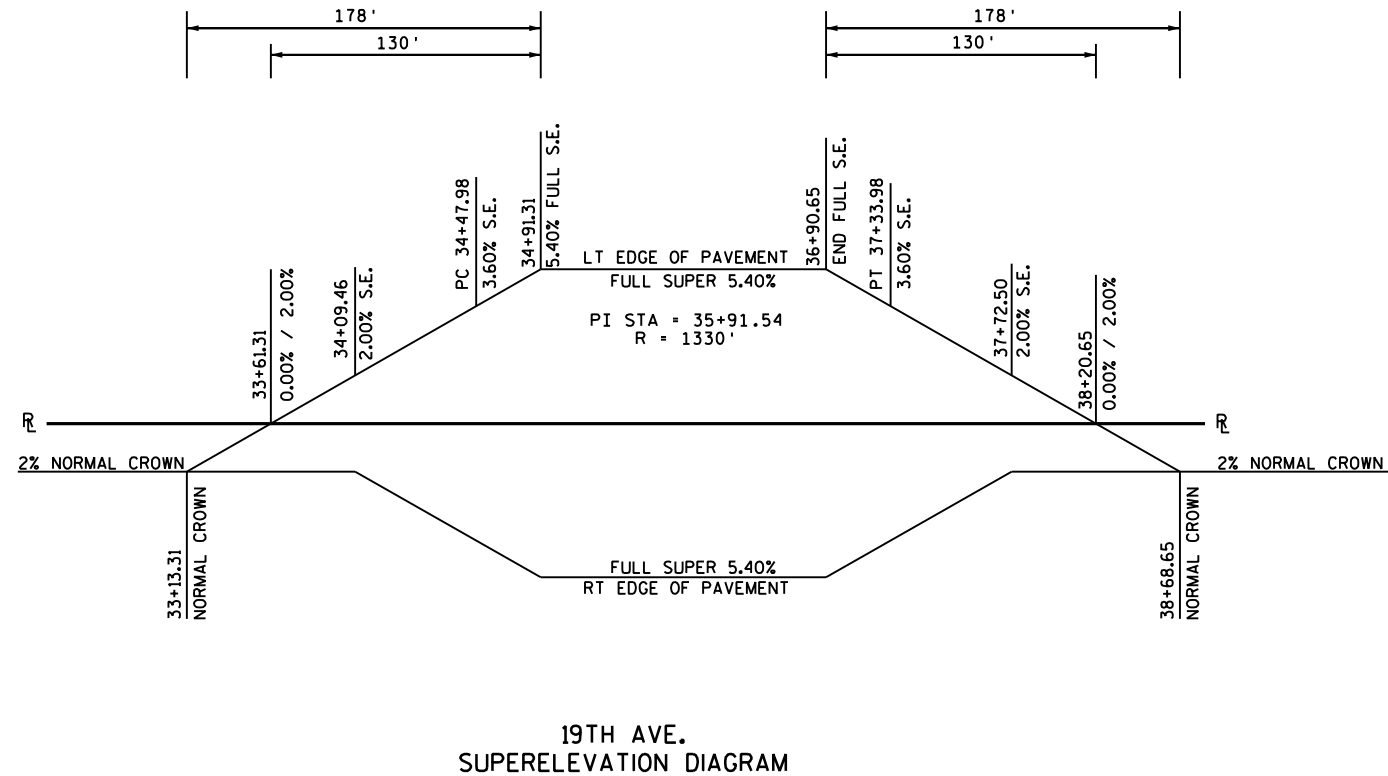


STATION	SUPERELEVATION RATE	
	19TH AVE.	
	TO LT. EDGE	TO RT. EDGE
18+40.20	-2.00%	-2.00%
18+88.20	+0.00%	-2.00%
19+00.00	+0.49%	-2.00%
19+36.20	+2.00%	-2.00%
19+50.00	+2.58%	-2.58%
19+84.20	+4.00%	-4.00%
20+00.00	+4.66%	-4.66%
20+32.20	+6.00%	-6.00%
22+70.94	+6.00%	-6.00%
23+00.00	+4.78%	-4.78%
23+18.94	+4.00%	-4.00%
23+50.00	+2.71%	-2.71%
23+66.94	+2.00%	-2.00%
24+00.00	+0.62%	-2.00%
24+14.94	+0.00%	-2.00%
24+62.94	-2.00%	-2.00%



STATION	SUPERELEVATION RATE	
	19TH AVE.	
	TO LT. EDGE	TO RT. EDGE
24+89.48	-2.00%	-2.00%
25+37.48	-2.00%	0.00%
25+50.00	-2.00%	+0.52%
25+85.63	-2.00%	+2.00%
26+00.00	-2.60%	+2.60%
26+24.15	-3.60%	+3.60%
26+50.00	-4.67%	+4.67%
26+67.48	-5.40%	+5.40%
28+05.84	-5.40%	+5.40%
28+49.17	-3.60%	+3.60%
28+50.00	-3.57%	+3.57%
28+87.69	-2.00%	+2.00%
29+00.00	-2.00%	+1.49%
29+35.84	-2.00%	+0.00%
29+83.84	-2.00%	-2.00%

NOTE: SUPERELEVATION RATES
ARE PROJECTED OUT FROM
THE REFERENCE LINE
LOOKING UP STATION



STATION	SUPERELEVATION RATE	
	19TH AVE.	
	TO LT. EDGE	TO RT. EDGE
33+13.31	-2.00%	-2.00%
33+61.31	+0.00%	-2.00%
34+00.00	+1.61%	-2.00%
34+09.46	+2.00%	-2.00%
34+47.98	+3.60%	-3.60%
34+50.00	+3.68%	-3.68%
34+91.31	+5.40%	-5.40%
36+90.65	+5.40%	-5.40%
37+00.00	+5.01%	-5.01%
37+33.98	+3.60%	-3.60%
37+50.00	+2.93%	-2.93%
37+72.50	+2.00%	-2.00%
38+00.00	+0.86%	-2.00%
38+20.65	+0.00%	-2.00%
38+68.65	-2.00%	-2.00%

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DATE 05JAN15			E S T I M A T E O F Q U A N T I T I E S			
LINE				6648-00-72	6648-00-73	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY	QUANTITY
0010	201.0105	Clearing	STA	1.000		1.000
0020	201.0205	Grubbing	STA	30.000		30.000
0030	203.0100	Removing Small Pipe Culverts	EACH	6.000		6.000
0040	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. Station 14+33.43	LS	1.000	1.000	
0050	204.0165	Removing Guardrail	LF	1,227.000		1,227.000
0060	204.9060.S	Removing (Item Description) 01. Steel Column	EACH	4.000		4.000
0070	205.0100	Excavation Common	CY	23,386.000	14,567.000	8,819.000
0080	205.0200	Excavation Rock	CY	30.000		30.000
0090	206.1000	Excavation for Structures Bridges (structure) 01. B-29-0144	LS	1.000	1.000	
0100	206.5000	Cofferdams (structure) 01. B-29-0144	LS	1.000	1.000	
0110	208.0100	Borrow	CY	806.000		806.000
0120	210.0100	Backfill Structure	CY	220.000	220.000	
0130	213.0100	Finishing Roadway (project) 01. 6648-00-73	EACH	1.000		1.000
0140	305.0110	Base Aggregate Dense 3/4-Inch	TON	825.000		825.000
0150	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	12,174.000		12,174.000
0160	440.4410.S	Incentive IRI Ride	DOL	3,256.000		3,256.000
0170	455.0105	Asphaltic Material PG58-28	TON	239.000		239.000
0180	455.0605	Tack Coat	GAL	771.000		771.000
0190	460.1100	Hma Pavement Type E-0.3	TON	3,451.000		3,451.000
0200	460.2000	Incentive Density HMA Pavement	DOL	2,209.000		2,209.000
0210	460.4000	HMA Cold Weather Paving	TON	863.000		863.000
0220	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	63.000		63.000
0230	465.0315	Asphaltic Flumes	SY	31.000		31.000
0240	502.0100	Concrete Masonry Bridges	CY	607.000	607.000	
0250	502.3200	Protective Surface Treatment	SY	121.000	121.000	
0260	505.0405	Bar Steel Reinforcement HS Bridges	LB	10,890.000	10,890.000	
0270	505.0605	Bar Steel Reinforcement HS Coated Bridges	LB	78,190.000	78,190.000	
0280	509.5100.S	Polymer Overlay	SY	619.000	619.000	
0290	513.4060	Railing Tubular Type M (structure) 01. B-29-0144	LS	1.000	1.000	
0300	516.0500	Rubberized Membrane Waterproofing	SY	21.000	21.000	
0310	521.0124	Culvert Pipe Corrugated Steel 24-Inch	LF	25.000		25.000
0320	521.0136	Culvert Pipe Corrugated Steel 36-Inch	LF	43.000		43.000
0330	521.0160	Culvert Pipe Corrugated Steel 60-Inch	LF	24.000		24.000
0340	521.1024	Apron Endwalls for Culvert Pipe Steel 24-Inch	EACH	2.000		2.000
0350	521.1036	Apron Endwalls for Culvert Pipe Steel 36-Inch	EACH	2.000		2.000
0360	521.1060	Apron Endwalls for Culvert Pipe Steel 60-Inch	EACH	4.000		4.000
0370	521.1264	Apron Endwalls for Pipe Arch Steel 64x43-Inch	EACH	2.000		2.000
0380	529.0364	Pipe Arch Corrugated Steel Aluminum Coated 64x43-Inch	LF	52.000		52.000
0390	550.0020	Pre-Boring Rock or Consolidated Materials	LF	90.000	90.000	
0400	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	955.000	955.000	
0410	601.0557	Concrete Curb And Gutter 6-Inch Sloped 36-Inch Type D	LF	941.000		941.000

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DATE 05JAN15		E S T I M A T E O F Q U A N T I T I E S				
LINE					6648-00-72	6648-00-73
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY	QUANTITY
0420	606.0300	Riprap Heavy	CY	2,043.000	1,145.000	898.000
0430	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	220.000	220.000	
0440	614.2300	Mgs Guardrail 3	LF	475.000	75.000	400.000
0450	614.2500	Mgs Thrie Beam Transition	LF	157.600	157.600	
0460	614.2610	Mgs Guardrail Terminal EAT	EACH	4.000	4.000	
0470	619.1000	Mobilization	EACH	1.000	0.550	0.450
0480	624.0100	Water	MGAL	677.000		677.000
0490	625.0500	Salvaged Topsoil	SY	17,044.000		17,044.000
0500	627.0200	Mulching	SY	16,151.000		16,151.000
0510	628.1504	Silt Fence	LF	3,642.000		3,642.000
0520	628.1520	Silt Fence Maintenance	LF	3,642.000		3,642.000
0530	628.1905	Mobilizations Erosion Control	EACH	6.000		6.000
0540	628.1910	Mobilizations Emergency Erosion Control	EACH	5.000		5.000
0550	628.2004	Erosion Mat Class I Type B	SY	2,373.000		2,373.000
0560	628.2027	Erosion Mat Class II Type C	SY	218.000		218.000
0570	628.6005	Turbidity Barriers	SY	1,510.000		1,510.000
0580	628.7504	Temporary Ditch Checks	LF	106.000		106.000
0590	628.7555	Culvert Pipe Checks	EACH	57.000		57.000
0600	629.0210	Fertilizer Type B	CWT	13.510		13.510
0610	630.0120	Seeding Mixture No. 20	LB	350.000		350.000
0620	630.0140	Seeding Mixture No. 40	LB	33.000		33.000
0630	630.0175	Seeding Mixture No. 75	LB	42.000		42.000
0640	630.0200	Seeding Temporary	LB	579.000		579.000
0650	633.5100	Markers Row	EACH	28.000		28.000
0660	633.5200	Markers Culvert End	EACH	12.000		12.000
0670	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	2.000		2.000
0680	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	10.000		10.000
0690	637.2210	Signs Type II Reflective H	SF	26.360		26.360
0700	637.2230	Signs Type II Reflective F	SF	30.000		30.000
0710	638.2102	Moving Signs Type II	EACH	1.000		1.000
0720	638.2602	Removing Signs Type II	EACH	32.000		32.000
0730	638.3000	Removing Small Sign Supports	EACH	32.000		32.000
0740	642.5001	Field Office Type B	EACH	1.000		1.000
0750	643.0100	Traffic Control (project) 01. 6648-00-73	EACH	1.000		1.000
0760	643.0300	Traffic Control Drums	DAY	3,040.000		3,040.000
0770	643.0420	Traffic Control Barricades Type III	DAY	3,040.000		3,040.000
0780	643.0705	Traffic Control Warning Lights Type A	DAY	1,824.000		1,824.000
0790	643.0900	Traffic Control Signs	DAY	3,800.000		3,800.000
0800	645.0120	Geotextile Fabric Type HR	SY	3,355.000	1,880.000	1,475.000
0810	646.0106	Pavement Marking Epoxy 4-Inch	LF	17,884.000		17,884.000
0820	648.0100	Locating No-Passing Zones	MI	0.840		0.840
0830	650.4500	Construction Staking Subgrade	LF	4,630.000		4,630.000
0840	650.5000	Construction Staking Base	LF	4,630.000		4,630.000
0850	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	941.000		941.000
0860	650.6000	Construction Staking Pipe Culverts	EACH	3.000		3.000
0870	650.6500	Construction Staking Structure Layout (structure) 01. B-29-0144	LS	1.000	1.000	
0880	650.9920	Construction Staking Slope Stakes	LF	4,630.000		4,630.000
0890	690.0150	Sawing Asphalt	LF	436.000		436.000
0900	715.0502	Incentive Strength Concrete Structures	DOL	3,642.000	3,642.000	
0910	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000		1,200.000
0920	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000		600.000

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DATE 05JAN15			E S T I M A T E O F Q U A N T I T I E S			
LINE					6648-00-72	6648-00-73
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY	QUANTITY
0930	SPV.0090	Special 01. Culvert Pipe Corrugated Polyethylene 60-Inch	LF	52.000		52.000
0940	SPV.0090	Special 02. Pipe Arch Corrugated Steel Aluminum Coated 137x87-Inch	LF	94.000		94.000
0950	SPV.0180	Special 01. Salvaged Marsh Topsoil 12-Inch	SY	1,893.000		1,893.000
0960	SPV.0195	Special 01. Select Crushed Material For Travel Corridor Interstitial Space	TON	552.000	320.000	232.000

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CLEARING & GRUBBING			
STATION - STATION	LOCATION	201.0105	201.0205
		CLEARING STA	GRUBBING STA
8+50 - 9+50	LT	---	1
10+00 - 14+00	RT	---	4
11+00 - 14+00	LT	---	3
15+00 - 16+00	LT	---	1
17+00 - 19+00	LT	---	2
15+00 - 25+00	RT	---	10
24+50 - 28+50	LT	---	4
33+00 - 34+00	RT	---	1
36+00 - 40+00	LT	---	4
UNDISTRIBUTED		1	---
TOTAL PROJECT 6648-00-73		1	30

NOTE: CLEARING PERFORMED BY OTHERS PRIOR TO CONSTRUCTION

REMOVING PIPES				
STATION	LOCATION	APPROX. SIZE	TYPE	203.0100
				REMOVING SMALL PIPE CULVERTS EACH
23+83	CROSS DRAIN	84"	CMP	1
25+58 - 25+87	LT	36"	CMP	1
39+63	CROSS DRAIN	60"	CMP	1
37+90 - 38+21	LT	24"	CMP	1
39+89 - 40+19	RT	15"	CMP	1
41+51 - 41+90	LT	60"	CMP	1
TOTAL PROJECT 6648-00-73				6

REMOVING GUARDRAIL		
STATION - STATION	LOCATION	204.0165
		REMOVING GUARDRAIL LF
11+53.27 - 13+94.86	LT	255
11+64.66 - 13+83.57	LT	231
14+72.34 - 16+71.52	RT	206
14+84.49 - 16+58.45	RT	180
23+00 - 24+70	LT & RT	175
23+00 - 24+78	LT	180
TOTAL PROJECT 6648-00-73		1,227

REMOVING STEEL COLUMN		
STATION - STATION	LOCATION	204.9060.S
		REMOVING STEEL COLUMN EACH
14+56	86' RT	1
14+66	70' RT	1
15+08	114' RT	1
15+17	100' RT	1
TOTAL PROJECT 6648-00-73		4

BASE AGGREGATE				
STATION - STATION	LOCATION	305.0110	305.0120	624.0100
		BASE AGGREGATE DENSE 3/4-INCH TON	BASE AGGREGATE DENSE 1 1/4-INCH TON	WATER* MGAL
1+80.74 - 46+25**	MAINLINE	645	9,487	152
CTH N	RT	15	252	4
UNDISTRIBUTED		165	2,435	39
TOTAL PROJECT 6648-00-73		825	12,174	195

* ADDITIONAL QUANTITIES LISTED ELSEWHERE
**INCLUDES DRIVEWAYS

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EXCAVATION & BORROW

Division	From / To Station	Location	Common Excavation (1)	(ITEM # 205.0100)	Salvaged / Unusable Pavement Material (4)	Available Material (5)	Rock Excavation (7)	Expanded Rock (12)	Unexpanded Fill	Expanded Fill (6)	Mass Ordinate + / - (7)	Waste	Borrow (ITEM # 208.0100)	
			Cut (2)	EBS Excavation (3)			(item #205.0200)	Factor 1.10		Factor 1.30				
1	2+00 - 46+25 73+25.19 - 76+63.61 10+16.10 - 11+50	19TH AVENUE CTH N RT & LT FOR BEAMGUARD POSTS	8,500	---	756	7744	27	30	17,421	22,609	-14865	---	14865	
			319	---	6	313	0	0	24	31	-14583	---	-282	
			---	---	---	---	3	3	---	---	---	---	-3	
			8819	0	762	8057	30	33	17445	22640	-14583	0	14579	
Division 1 Subtotal			8819	0	762	8057	30	33	17445	22640	-14583	0	14579	
Grand Total Project 6648-00-73			8819	0	762	8057	30	33	17445	22640	-14583	0	14579	
2	57+75 - 63+00	RIVER CHANNEL	14567	---	0	14567	0	0	611	794	13773	---	-13773	
Division 2 Subtotal														
Grand Total Project 6648-00-72			14567	0	0	14567	0	0	611	794	13773	---	-13773	
Total Common Exc				23,387	762		30							806

- 1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
- 2) Salvaged/Unsuable Pavement Material is included in Cut.
- 3) EBS Excavation to be backfilled with Select Crushed material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.
- 4) Salvaged/Unusable Pavement Material
- 5) Available Material = Cut - Salvaged/Unusuable Pavement Material
- 6) Expanded Fill. Factor = 1.30
- 7) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

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HMA PAVEMENT

STATION - STATION	THICKNESS	455.0105	455.0605	460.1100	460.4000
	INCHES	ASPHALTIC MATERIAL PG58-28	TACK* COAT	HMA PAVEMENT TYPE E-0.3	HMA** COLD WEATHER PAVING
		TON	GAL	TON	TON
1+80.74 - 11+53.75	4	59	189	845	211
13+06.25 - 46+25	4	180	582	2,606	652
TOTAL PROJECT 6648-00-73		239	771	3,451	863

* TACK COAT CALCULATED USING 0.05 GAL/SY
** HMA COLD WEATHER PAVING CALCULATED AS 25% OF TOTAL HMA TONNAGE

ASPHALTIC DRIVEWAYS

STATION	LOCATION	465.0120
		ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES
		TON
4+70	RT	7
5+75	RT	9
6+50	RT	15
8+42	RT	8
8+42	LT	3
30+29	LT	9
40+00	RT	4
43+09	RT	5
44+43	RT	3
TOTAL PROJECT 6648-00-73		63

FLUMES

STATION	LOCATION	465.0315
		ASPHALTIC FLUMES
		SY
74+00	RT	10
2+32	LT	7
9+50	LT	10
39+75	RT	4
TOTAL PROJECT 6648-00-73		31

APRON ENDWALL SUMMARY

STATION	LOCATION	INVERT ELEV.	521.1024	521.1036	521.1060	521.1264	633.5200
			APRON ENDWALLS FOR CULVERT PIPE STEEL	APRON ENDWALLS FOR CULVERT PIPE STEEL	APRON ENDWALLS FOR CULVERT PIPE STEEL	APRON ENDWALLS FOR PIPE ARCH STEEL	MARKERS CULVERT END
			24-INCH EACH	36-INCH EACH	60-INCH EACH	64X43-INCH EACH	EACH
15+00	25.42' LT	854.87	---	---	1	---	1
15+00	26.16' RT	854.55	---	---	1	---	1
25+51.58	35.81' LT	857.40	---	1	---	---	1
25+94.55	35.78' LT	857.54	---	1	---	---	1
37+94.22	30.26' LT	857.63	1	---	---	---	1
38+18.42	29.46' LT	857.53	1	---	---	---	1
39+63	26.00' LT	854.00	---	---	---	1	1
39+63	26.00' RT	854.00	---	---	---	1	1
41+65.95	35.55' LT	856.08	---	---	1	---	1
41+89.51	35.83' LT	856.13	---	---	1	---	1
23+83	LT & RT	---	---	---	---	---	2
TOTAL			2	2	4	2	12

CONCRETE CURB & GUTTER

STATION - STATION	LOCATION	601.0557	650.5500
		CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE D	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER
		LF	LF
1+61.83 - 2+17.68	RT	64	64
2+16.13 - 2+51.17	LT	65	65
6+50 - 9+50	LT	294	294
39+82.57 - 45+00	RT	518	518
TOTAL PROJECT 6648-00-73		941	941

CULVERT SUMMARY

STATION	LOCATION	STEEL MIN THICKNESS INCHES	ALUMINUM MIN THICKNESS INCHES	521.0124	521.0136	521.0160	529.0364	SPV.0090.01	SPV.0090.02	650.6000
				CULVERT PIPE CORRUGATED STEEL	CULVERT PIPE CORRUGATED STEEL	CULVERT PIPE CORRUGATED STEEL	PIPE ARCH CORRUGATED STEEL ALUMINUM COATED 64X43-INCH	CULVERT PIPE CORRUGATED POLYETHYLENE	PIPE ARCH CORRUGATED STEEL ALUMINUM COATED 137X87-INCH*	CONSTRUCTION STAKING PIPE CULVERTS
				24-INCH LF	36-INCH LF	60-INCH LF		60-INCH LF		EACH
15+00	CROSS DRAIN	---	---	---	---	---	---	52	---	1
23+83	CROSS DRAIN	0.109	0.105	---	---	---	---	---	94	1
25+73	LT	0.079	0.105	---	43	---	---	---	---	---
38+07	LT	0.064	0.075	25	---	---	---	---	---	---
39+63	CROSS DRAIN	0.109	0.105	---	---	---	52	---	---	1
41+74	LT	0.109	0.105	---	---	24	---	---	---	---
TOTAL				25	43	24	52	52	94	3

*=BEVELED ENDS REQUIRED, SEE CROSS SECTION STA 23+83

PROJECT NO: 6648-00-73

HWY: TOWN ROAD

COUNTY: JUNEAU

MISCELLANEOUS QUANTITIES

SHEET NO: 29

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RIPRAP				
		606.0300	645.0120	SPV.0195.01
		RIPRAP	GEOTEXTILE	SELECT CRUSHED
		HEAVY	FABRIC	MATERIAL FOR
			TYPE HR	TRAVEL CORRIDOR
				INTERSTITIAL SPACE
STATION - STATION	LOCATION	CY	SY	TON
13+25 - 15+15	LT	455	768	137
13+25 - 14+50	RT	432	690	96
39+50 - 39+80	RT	11	17	---
TOTAL PROJECT 6648-00-73		898	1,475	232

ROADWAY BARRIERS				
		614.2300	614.2500	614.2610
		MGS	MGS	MGS
		GUARDRAIL	THRIE	GUARDRAIL
		3	BEAM	TERMINAL
			TRANSITION	EAT
STATION - STATION	LOCATION	LF	LF	EACH
10+16.54 - 10+69.45	RT	---	---	1
10+69.45 - 11+06.95	RT	37.5	---	---
11+06.95 - 11+46.35	RT	---	39.4	---
10+16.10 - 10+69.45	LT	---	---	1
10+69.45 - 11+06.95	LT	37.5	---	---
11+06.95 - 11+46.35	LT	---	39.4	---
13+13.65 - 13+53.05	LT	---	39.4	---
15+78.15 - 16+31.28	LT	---	---	1
13+13.65 - 13+53.05	RT	---	39.4	---
15+31.28 - 15+81.28	RT	---	---	1
TOTAL PROJECT 6648-00-72		75.0	157.6	4
		614.2300	614.2500	614.2610
		MGS	MGS	MGS
		GUARDRAIL	THRIE	GUARDRAIL
		3	BEAM	TERMINAL
			TRANSITION	EAT
STATION - STATION	LOCATION	LF	LF	EACH
13+53.05 - 15+78.15	LT	225	---	---
13+53.05 - 15+31.28	RT	175	---	---
TOTAL PROJECT 6648-00-73		400.0	0	0

SILT FENCE			
		628.1504	628.1520
		SILT FENCE	SILT FENCE
			MAINTENANCE
STATION - STATION	LOCATION	LF	LF
10+12 - 10+75	LT	80	80
10+85 - 11+50	RT	110	110
14+50 - 17+10	RT	275	275
15+25 - 16+70	LT	155	155
16+90 - 22+10	LT	545	545
17+65 - 22+25	RT	480	480
22+25 - 25+65	LT	380	380
22+50 - 25+10	RT	260	260
26+00 - 28+50	RT	265	265
34+50 - 39+50	RT	500	500
39+75 - 39+80	RT	45	45
38+75 - 41+60	LT	330	330
45+00 - 46+25	LT	120	120
12+70 - 12+98	STAGE 1 RT	37	37
15+00 - 15+60	STAGE 3 LT	60	60
TOTAL PROJECT 6648-00-73		3,642	3,642

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FINISHING ITEMS										
		625.0500	627.0200	629.0210	630.0120	630.0140	630.0175	630.0200	624.0100	SPV.0180.01
		SALVAGED	MULCHING	FERTILIZER	SEEDING	SEEDING	SEEDING	SEEDING	WATER*	SALVAGED
		TOPSOIL		TYPE B	MIXTURE	MIXTURE	MIXTURE	TEMPORARY		MARSH
					NO 20	NO 40	NO 75			TOPSOIL 12-INCH
STATION - STATION	LOCATION	SY	SY	CWT	LB	LB	LB	LB	MGAL	SY
73+10 - 74+25	RT	89	65	0.08	4	---	---	4	2.9	---
74+85 - 76+65	RT	662	636	0.46	20	---	---	20	16.4	---
1+80.74 - 4+00	RT	90	66	0.11	5	---	---	5	4.0	---
2+25 - 6+45	LT	302	280	0.31	13	---	---	13	10.9	---
4+35 - 10+00	RT	397	397	0.38	---	11	---	16	13.6	---
6+45 - 9+50	LT	335	100	0.21	---	6	---	9	7.6	---
9+50 - 11+50	LT	378	378	0.47	20	---	---	20	16.6	---
10+00 - 11+50	RT	168	168	0.13	5	---	---	5	4.5	---
13+00 - 16+75	LT	658	658	0.46	---	---	5	20	16.4	---
14+50 - 17+45	RT	538	538	0.42	---	---	4	18	15.1	---
14+60 - 17+25	RT	---	---	---	---	---	---	---	---	1,515
16+90 - 22+00	LT	2,003	2,003	1.41	---	---	14	60	50.3	---
17+65 - 22+25	RT	545	545	0.47	---	---	5	20	16.9	---
22+25 - 24+05	LT	374	374	0.29	---	---	3	12	10.3	---
22+50 - 24+05	RT	387	387	0.29	---	---	3	12	10.2	---
24+05 - 46+25	LT	4,220	4,220	3.28	140	---	---	140	116.8	---
24+05 - 39+85	RT	1,976	1,976	1.70	73	---	---	73	60.7	---
39+85 - 46+25	RT	515	132	0.34	---	10	---	15	12.2	---
UNDISTRIBUTED		3,409	3,230	2.7	70	7	8	116	96.6	379
TOTAL PROJECT 6648-00-73		17,044	16,151	13.51	350	33	42	579	482.0	1,893

* ADDITIONAL QUANTITIES LISTED ELSEWHERE

PROJECT NO: 6648-00-72/73

HWY: TOWN ROAD

COUNTY: JUNEAU

MISCELLANEOUS QUANTITIES

SHEET NO: 30

E

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EROSION CONTROL

STATION	LOCATION	628.2004	628.2027	628.7504	628.7555
		EROSION MAT CLASS I TYPE B SY	EROSION MAT CLASS II TYPE C SY	TEMPORARY DITCH CHECKS LF	CULVERT PIPE CHECKS EACH
73+25 - 73+75	RT	52	---	---	---
74+00 - 2+18	RT	56	---	---	---
2+20 - 2+50	LT	48	---	---	---
6+50 - 9+50	LT	244	---	---	---
9+63 - 11+45	LT	175	---	---	---
10+50	LT	---	---	16	---
23+83	LT & RT	43	---	---	20
24+50 - 25+50	LT	89	---	---	---
25+00	LT & RT	---	---	12	---
25+50	LT	16	---	---	---
26+00	LT & RT	---	---	6	8
26+00 - 28+00	LT	178	---	---	---
25+00 - 27+00	RT	178	---	---	---
27+00	LT	---	---	6	---
36+00 - 37+90	LT	172	---	---	---
36+50	LT	---	---	6	---
37+00	LT	---	---	6	---
37+75	LT	---	---	6	---
37+90	LT	---	---	---	---
38+25	LT	---	---	---	5
38+25 - 41+60	LT	296	---	---	---
38+50	LT	---	---	6	---
39+30	LT	---	---	6	---
39+63	LT	---	---	---	12
39+00 - 39+50	RT	42	---	---	---
39+82 - 39+93	RT	9	---	---	---
40+00	LT	---	---	6	---
41+00	LT	---	---	6	---
40+12 - 42+97	RT	251	---	---	---
41+60	LT	32	---	---	---
42+00	LT	---	---	---	12
42+00 - 46+00	LT	356	---	---	---
42+50	LT	---	---	6	---
43+50	LT	---	---	6	---
44+50	LT	---	---	6	---
43+22 - 44+30	RT	94	---	---	---
44+50 - 45+00	RT	44	---	---	---
45+50	LT	---	---	6	---
13+15 - 15+52	LT	---	127	---	---
13+15 - 15+56	RT	---	91	---	---
TOTAL PROJECT 6648-00-73		2,373	218	106	57

PERMANENT SIGNS

STATION	LOCATION	CODE	SIZE	637.2210	637.2230	634.0612	634.0614	REMARKS
				SIGNS TYPE II REFLECTIVE H SF	SIGNS TYPE II REFLECTIVE F SF	POSTS WOOD 4X6-INCH X 12-FT EACH	POSTS WOOD 4X6-INCH X 14-FT EACH	
2+20	LT	R1-1	30" X 30"	5.18	---	1	---	STOP
3+60	RT	R2-1	24" X 30"	5.00	---	---	1	SPEED LIMIT 45
7+20	LT	W3-1	36" X 36"	---	9.00	---	1	STOP AHEAD
11+40	RT	R9-56	18" X 24"	3.00	---	---	1	NO FISHING OR DIVING FROM BRIDGE
11+50	RT	W5-52R	12" X 36"	---	3.00	---	1	BRIDGE HASH MARK
11+50	LT	W5-52L	12" X 36"	---	3.00	---	1	BRIDGE HASH MARK
13+20	LT	R9-56	18" X 24"	3.00	---	---	1	NO FISHING OR DIVING FROM BRIDGE
13+16	RT	W5-52R	12" X 36"	---	3.00	---	1	BRIDGE HASH MARK
13+16	LT	W5-52L	12" X 36"	---	3.00	---	1	BRIDGE HASH MARK
41+70	RT	W3-1	36" X 36"	---	9.00	---	1	STOP AHEAD
45+25	LT	R2-1	24" X 30"	5.00	---	---	1	SPEED LIMIT 45
46+70	RT	R1-1	30" X 30"	5.18	---	1	---	STOP
TOTAL PROJECT 6648-00-73				26.36	30.00	2	10	

MARKERS ROW

STATION	PLAT POINT	633.5100
		MARKERS ROW EACH
7+37.65	102	1
10+00.00	205	1
11+95.00	105	1
17+30.00	106	1
19+15.00	107	1
20+43.90	108	1
23+00.00	109	1
13+67.68	206	1
14+52.34	207	1
17+99.51	209	1
19+84.20	210	1
21+86.51	211	1
24+05.24	110	1
28+10.00	111	1
29+20.95	112	1
32+61.98	113	1
34+47.98	114	1
25+00.00	212	1
26+00.00	213	1
27+50.00	214	1
30+00.00	215	1
34+47.98	216	1
35+59.49	115	1
39+35.00	116	1
39+50.00	117	1
44+94.33	118	1
36+71.71	217	1
44+86.64	219	1
TOTAL		28

MOVING SIGNS

STATION	LOCATION	638.2102	MOVE TO	DESCRIPTION
		MOVING SIGNS TYPE II EACH		
76+38	20' RT	1	10' RT	45 TON BRIDGE
TOTAL PROJECT 6648-00-73		1		

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PROJECT NO: 6648-00-73

HWY: TOWN ROAD

COUNTY: JUNEAU

MISCELLANEOUS QUANTITIES

SHEET NO: 31

E

REMOVING SIGNS				
STATION	LOCATION	638.2602	638.3000	DESCRIPTION
		REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	
75+91	RT	1	1	STOP SIGN
2+13	LT	1	1	STOP SIGN
2+57	LT	1	1	YIELD
2+60	RT	1	1	WEIGHT LIMIT 8 TON
3+68	RT	1	1	45 MPH
3+71	RT	1	1	NARROW BRIDGE
9+66	LT	1	1	WEIGHT LIMIT 8 TON
10+06	LT	1	1	STOP AHEAD
10+20 - 11+40	LT	4	4	CHEVRONS
10+25 - 11+25	LT	2	2	CHEVRONS
11+65	LT	1	1	NO SWIMMING OR FISHING OFF BRIDGE
14+00	RT	2	2	BRIDGE HASH MARKS
14+75	RT	2	2	BRIDGE HASH MARKS
15+50	RT	1	1	NO SWIMMING OR FISHING OFF BRIDGE
15+80	RT	1	1	ARROW
16+68	RT	1	1	WEIGHT LIMIT 8 TON
23+50	LT	2	2	BRIDGE HASH MARKS
24+50	LT & RT	2	2	BRIDGE HASH MARKS
33+75	LT	1	1	NARROW BRIDGE
40+00	LT	1	1	CURVES
41+75	RT	1	1	STOP AHEAD
45+22	LT	1	1	WEIGHT LIMIT 8 TON
45+65	LT	1	1	45 MPH
46+70	RT	1	1	STOP SIGN
TOTAL PROJECT 6648-00-73		32	32	

TRAFFIC CONTROL								
STATION - STATION	LOCATION	DURATION	643.0300 TRAFFIC CONTROL		643.0420 TRAFFIC CONTROL		643.0705 TRAFFIC CONTROL	
			DRUMS	DRUMS	BARRICADES TYPE III	BARRICADES TYPE III	LIGHTS TYPE A	LIGHTS TYPE A
			EACH	DAYS	EACH	DAYS	EACH	DAYS
CTH N EAST OF 19TH AVE.	SHLD CLOSURE (1)	152	20	3040	---	---	---	---
INTERSECTION	CTH N/19TH AVE. (2)	152	---	---	7	1064	4	608
INTERSECTION	STH 82/19TH AVE. (2)	152	---	---	7	1064	4	608
9+50	SOUTH END OF BRIDGE (3)	152	---	---	3	456	2	304
16+75	NORTH END OF BRIDGE (3)	152	---	---	3	456	2	304
TOTAL PROJECT 6648-00-73				3040		3040		1824

- (1) SEE SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY"
(2) SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"
(3) EXTRA SET OF BARRICADES SEE "SDD BARRICADES AND SIGNS FOR MAINLINE CLOSURES"

TRAFFIC CONTROL SIGNS						
				643.0900 TRAFFIC CONTROL SIGNS		
STATION - STATION	SIZE	TYPE	DURATION	EACH	DAYS	DESCRIPTION
19TH AVE. SOUTH OF CTH N (1)	48" X 48"	W20-1	152	1	152	ROAD CLOSED AHEAD
19TH AVE. SOUTH OF CTH N (1)	48" X 48"	W20-1	152	1	152	ROAD CLOSED 1000 FT
19TH AVE. SOUTH OF CTH N (1)	48" X 48"	W20-1	152	1	152	ROAD CLOSED 500 FT
19TH AVE. SOUTH OF CTH N (1)	48" X 24"	G20-2A	152	1	152	END ROAD WORK
CTH N EAST OF 19TH AVE. (2)	48" X 48"	W20-1	152	1	152	ROAD WORK AHEAD
CTH N EAST OF 19TH AVE. (2)	48" X 48"	W21-5	152	1	152	SHOULDER WORK
CTH N WEST OF 19TH AVE. (2)	48" X 24"	G20-2A	152	1	152	END ROAD WORK
CTH N WEST OF 19TH AVE. (3)	48" X 48"	W20-1	152	1	152	ROAD WORK AHEAD
CTH N WEST OF 19TH AVE. (3)	48" X 48"	W20-1	152	1	152	ROAD WORK 1000 FT
CTH N WEST OF 19TH AVE. (3)	48" X 48"	W20-1	152	1	152	ROAD WORK 500 FT
CTH N EAST OF 19TH AVE. (3)	48" X 24"	G20-2A	152	1	152	END ROAD WORK
CTH N/19TH AVE. INTERSECTION (1)	48" X 30"	R11-2B	152	1	152	BRIDGE OUT
CTH N/19TH AVE. INTERSECTION (1)	60" X 30"	R11-4	152	1	152	ROAD CLOSED TO THRU TRAFFIC
9+50, AT SOUTH END OF BRIDGE (1)	48" X 30"	R11-2B	152	1	152	BRIDGE OUT
16+75, AT NORTH END OF BRIDGE (1)	48" X 30"	R11-2B	152	1	152	BRIDGE OUT
STH 82/19TH AVE. INTERSECTION (1)	48" X 30"	R11-2B	152	1	152	BRIDGE OUT
STH 82/19TH AVE. INTERSECTION (1)	60" X 30"	R11-4	152	1	152	ROAD CLOSED TO THRU TRAFFIC
STH 82 EAST OF 19TH AVE. (3)	48" X 24"	G20-2A	152	1	152	END ROAD WORK
STH 82 EAST OF 19TH AVE. (3)	48" X 48"	W20-1	152	1	152	ROAD WORK AHEAD
STH 82 EAST OF 19TH AVE. (3)	48" X 48"	W20-1	152	1	152	ROAD WORK 1000 FT
STH 82 EAST OF 19TH AVE. (3)	48" X 48"	W20-1	152	1	152	ROAD WORK 500 FT
STH 82 WEST OF 19TH AVE. (3)	48" X 24"	G20-2A	152	1	152	END ROAD WORK
STH 82 WEST OF 19TH AVE. (3)	48" X 48"	W20-1	152	1	152	ROAD WORK AHEAD
STH 82 WEST OF 19TH AVE. (3)	48" X 48"	W20-1	152	1	152	ROAD WORK 1000 FT
STH 82 WEST OF 19TH AVE. (3)	48" X 48"	W20-1	152	1	152	ROAD WORK 500 FT
TOTAL PROJECT 6648-00-73					3,800	

- (1) SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"
(2) SEE SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY"
(3) SEE SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC"

3

PAVEMENT MARKING			
STATION - STATION	LOCATION	646.0106	646.0106
		PAVEMENT MARKING EPOXY 4-INCH (WHITE) LF	PAVEMENT MARKING EPOXY 4-INCH (YELLOW) LF
73+25 - 74+00	RT EDGETLINE	75	---
75+21 - 75+71	RT EDGETLINE	50	---
2+02 - 46+78	CENTERLINE DOUBLE YELLOW	---	8,952
2+18 - 46+43	RT EDGETLINE	4,426	---
2+51 - 46+32	LT EDGETLINE	4,381	---
SUBTOTAL		8,932	8,952
TOTAL PROJECT 6648-00-73		17,884	

CONSTRUCTION STAKING			
STATION - STATION	650.4500	650.5000	650.9920
	CONSTRUCTION STAKING SUBGRADE LF	CONSTRUCTION STAKING BASE LF	CONSTRUCTION STAKING SLOPE STAKES LF
1+80.74 - 11+53.75	973	973	973
13+06.25 - 46+25	3319	3319	3319
73+25.19 - 76+63.61	338	338	338
TOTAL PROJECT 6648-00-73	4,630	4,630	4,630

LOCATING NO-PASSING ZONES	
STATION - STATION	648.0100 LOCATING NO-PASSING ZONES MI
1+80.74 - 46+25	0.84
TOTAL PROJECT 6648-00-73	0.84

SAWING		
STATION	LOCATION	690.0150 SAWING ASPHALT LF
73+25.19 - 76+63.61	RT EDGE OF CTH N	339
4+70	DRIVEWAY RT	11
5+75	DRIVEWAY RT	11
6+50	DRIVEWAY RT	20
8+42	DRIVEWAY RT	11
30+29	DRIVEWAY LT	11
46+25	19TH AVE.	33
TOTAL PROJECT 6648-00-73		436

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SCHEDULE OF LANDS & INTERESTS REQUIRED

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

R/W REQUIRED

PARCEL NUMBER	SHEET NUMBER	OWNER(S) NAME	INTEREST REQUIRED	FEE NEW (Acre)	EXISTING (Acre)	TOTAL FEE (Acre)	TLE (Acre)	PLE (Acre)
2	4.04	David L. Anderson and Elizabeth Ann Anderson, his wife, as survivorship marital property	TLE	-	-	-	0.06	-
3	4.04 & 4.05	Barbara J. Baker	PLE	-	-	-	-	0.02
4	4.04	Gregory S. Bires and Lois M. Bires, husband and wife, as survivorship marital property	TLE	-	-	-	0.06	-
6	4.04 & 4.05	Juneau County, Wisconsin, a municipal body corporate	FEE, PLE & TLE	0.13	-	0.13	0.48	0.07
7	4.05	Town of Lemonweir, a political corporation	FEE & PLE	0.44	-	0.44	-	0.04
8	4.05 & 4.06	Guy D. Smith and Evelyn M. Smith, husband and wife, as survivorship marital property an undivided 1/2 interest and Victor J. Bollig and Debra Bollig, husband and wife, as survivorship marital property, an undivided 1/2 interest	FEE & TLE	1.07	1.03	2.10	0.13	-
9	4.05	Martin F. Dudenhoefer and Lucretia L. Dudenhoefer, husband and wife, as survivorship marital property	FEE	0.18	-	0.18	-	-
10	4.05 & 4.06	Dale A. Sauve, a single person	FEE & TLE	0.07	0.44	0.51	0.05	-
11	4.06	Barbara D. Meyer, a single person	FEE & TLE	0.07	0.54	0.61	0.01	-
12	4.06 & 4.07	Clifford P. Bollig and Debbra A. Bollig, husband and wife, as survivorship marital property	FEE & TLE	-	0.31	0.31	0.07	-
13	4.06 & 4.07	Stephanie A. Flint	FEE, PLE & TLE	0.15	0.65	0.80	0.06	0.01
14	4.07	Guy D. Smith and Evelyn M. Smith, husband and wife, as survivorship marital property an undivided 1/2 interest and Victor J. Bollig and Debra Bollig, husband and wife, as survivorship marital property, an undivided 1/2 interest	FEE & TLE	0.10	0.39	0.49	0.32	-
15	4.07	Larry L. Bonner and Bonnie J. Bonner, his wife, as joint tenants and to the survivor	FEE & TLE	-	0.51	0.51	0.08	-
97	4.06 - 4.07	American Transmission Company, LLC	Release of Rights					
98	4.06 - 4.07	Wisconsin Power & Light dba Alliant Energy	Release of Rights					
99	4.05 - 4.06	Frontier Communications of Wisconsin	Release of Rights					

REVISION DATE 9/25/2014

DATE 8/11/2014

SCALE, FEET



HWY: TOWN ROAD

COUNTY: JUNEAU

STATE R/W PROJECT NUMBER 6648-00-02/03

CONSTRUCTION PROJECT NUMBER 6648-00-72/73

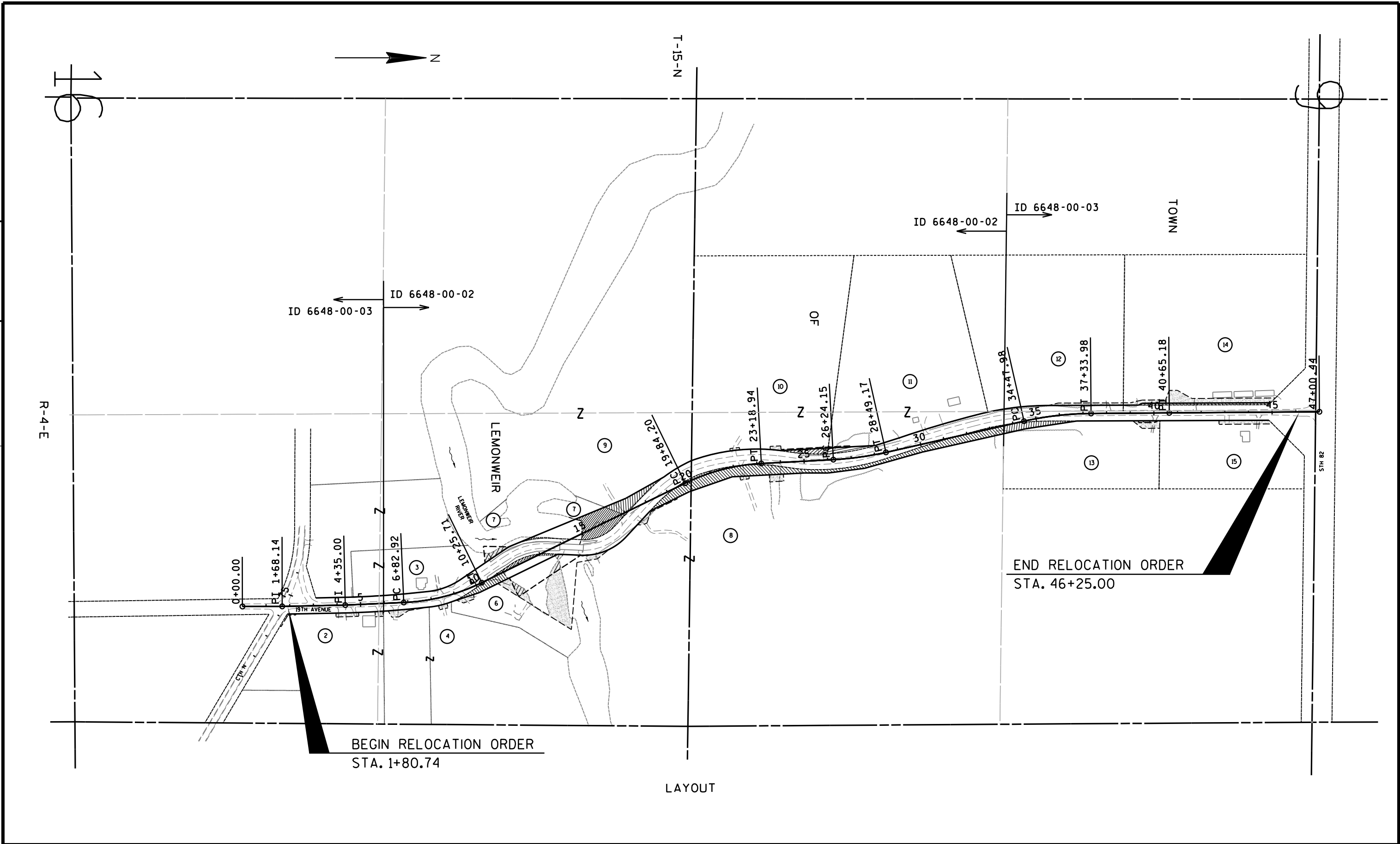
PLAT SHEET 4.02

PS&E SHEET 35

E

4

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REVISION DATE 9/25/2014 NC	DATE 8/11/2014	NOT TO SCALE	HWY: TOWN ROAD	STATE R/W PROJECT NUMBER 6648-00-02/03	PLAT SHEET 4.03
			COUNTY: JUNEAU	CONSTRUCTION PROJECT NUMBER 6648-00-72/73	PS&E SHEET 36

POINT NUMBER	Y	X	STATION	OFFSET
* 10	152,172.97	478,519.83	1+80.74	0.00 CL
* 12	152,981.46	478,430.84	10+00.00	0.00 CL
* 13	152,957.51	478,377.77	10+00.00	58.22 L
* 100	152,302.74	478,484.16	3+11.23	32.97 L
* 101	152,399.05	478,482.40	4+07.55	32.74 L
102	152,725.36	478,462.55	7+37.65	37.31 L
* 103	152,775.60	478,457.45	7+90.42	35.32 L
* 104	152,915.32	478,406.42	9+46.65	47.85 L
* 200	152,181.73	478,552.38	1+88.83	32.73 R
* 201	152,400.27	478,548.39	4+07.40	33.26 R
* 202	152,732.15	478,528.20	7+37.27	28.68 R
* 203	152,782.29	478,523.11	7+85.91	30.52 R
* 204	152,876.09	478,500.83	8+79.01	29.53 R
205	152,995.21	478,461.29	10+00.00	33.41 R

PT - PT	BEARING	DISTANCE
10-100	N 15°22'09" W	134.59'
100-101	N 01°02'48" W	96.32'
102-103	N 05°48'20" W	50.49'
104-13	N 34°10'42" W	51.00'
13-12	S 65°42'24" W	58.22'
10-200	N 74°56'02" E	33.71'
200-201	N 01°02'48" W	218.58'
202-203	N 05°48'20" W	50.36'
204-205	N 18°21'52" W	125.51'
205-12	N 65°42'24" E	33.41'
204-104	N 67°26'16" W	102.23'

CURVE	LENGTH	CHORD LENGTH	CHORD BEARING	RADIUS
101-102 C-1	327.01'	326.92'	N03°-28'-48"W	3,871.66'
103-104 C-2	150.27'	148.74'	N20°-03'-43"W	303.59'
201-202 C-3	332.59'	332.49'	N03°-28'-48"W	3,937.66'
203-204 C-4	96.68'	96.41'	N13°-21'-34"W	369.30'

NOTE: INVERSING BETWEEN COORDINATES, IN CLOSE PROXIMITY WITH EACH OTHER, MAY NOT REPLICATE THE BEARINGS AND DISTANCES SHOWN ON THIS PLAT.

ALIGNMENT DATA	
P.I. = 0+00.00	P.I. = 8+56.78
Y 151,992.23	Y 152,848.56
X 478,520.50	X 478,496.28
	Δ = 23°34'40" LT
P.I. = 1+68.14	T = 173.85
Y 152,160.37	L = 342.79
X 478,520.10	R = 833.00
	P.C. = 6+82.92
	Y 152,674.87
	X 478,503.82
P.I. = 4+35.00	P.T. = 10+25.71
Y 152,427.18	Y 153,004.73
X 478,514.56	X 478,419.90

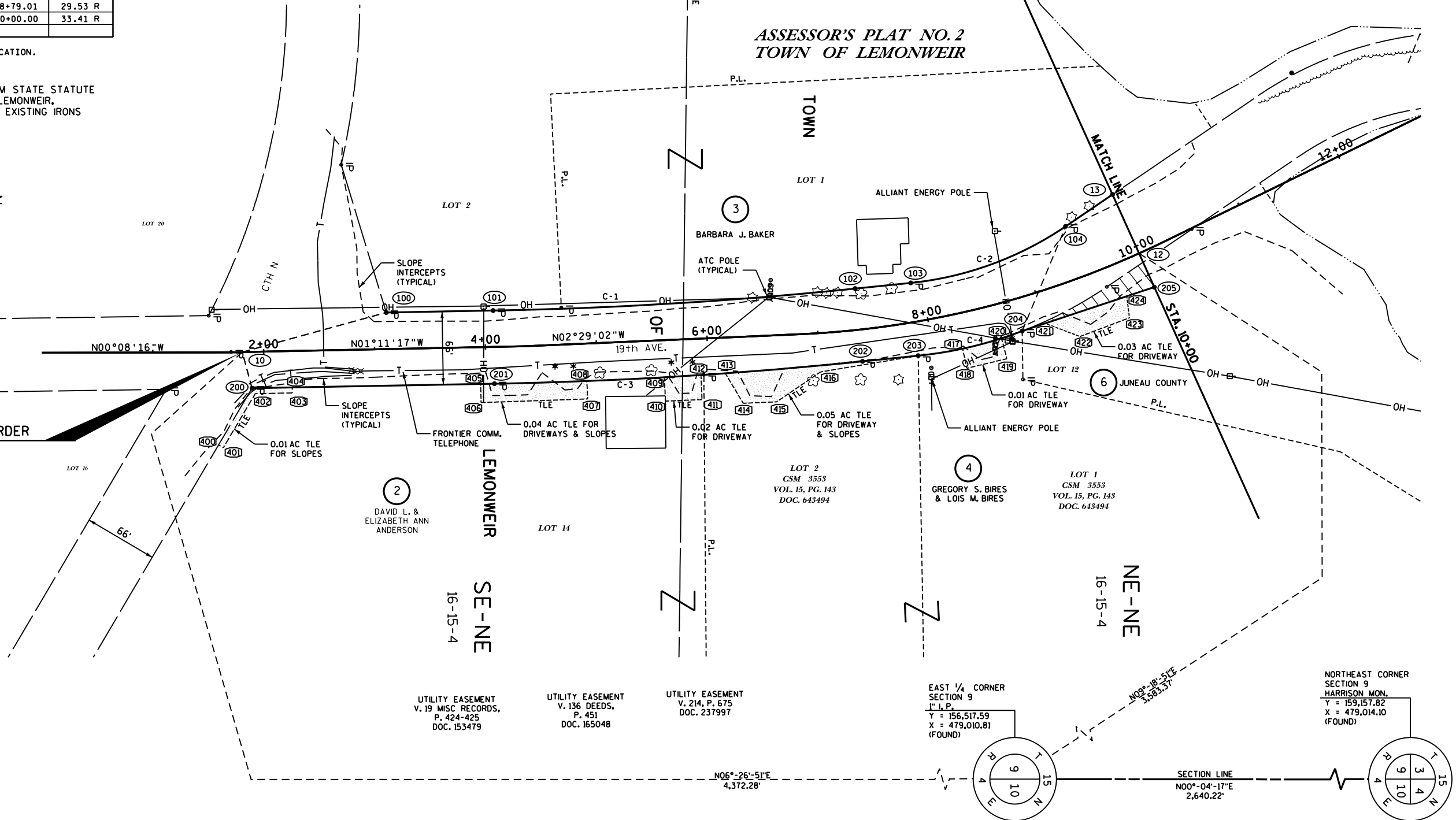
* - NO MONUMENT TO BE SET AT THIS LOCATION.

NOTE:
EXISTING HIGHWAY R/W ESTABLISHED FROM STATE STATUTE 82.31, ASSESSOR'S PLAT NO. 2, TOWN OF LEMONWEIR, CERTIFIED SURVEY MAPS OF RECORD AND EXISTING IRONS LOCATED IN THE FIELD.

POINT NUMBER	STATION	OFFSET
400	1+59.12	83.44 R
401	1+63.40	86.02 R
402	1+91.61	37.73 R
403	2+25.00	37.81 R
404	2+25.00	32.81 R
405	3+95.00	33.23 R
406	3+95.00	50.00 R
407	4+90.00	50.00 R
408	4+90.00	33.82 R
409	5+60.00	33.46 R
410	5+60.00	55.00 R
411	5+93.00	55.00 R
412	5+93.00	32.85 R
413	6+15.00	32.30 R
414	6+30.00	60.00 R
415	6+60.00	60.00 R
416	7+00.00	35.00 R
417	8+25.00	31.87 R
418	8+25.00	50.00 R
419	8+60.00	50.00 R
420	8+60.00	30.91 R
421	9+00.00	28.83 R
422	9+25.00	50.00 R
423	9+70.00	50.00 R
424	9+75.00	30.78 R

BEGIN RELOCATION ORDER

STA. 1+80.74
Y = 152,172.97
X = 478,519.83



REVISION DATE 9/25/2014

DATE 8/11/2014

SCALE, FEET

HWY: TOWN ROAD

STATE R/W PROJECT NUMBER 6648-00-02/03

PLAT SHEET 4.04

GRID FACTOR

COUNTY: JUNEAU

CONSTRUCTION PROJECT NUMBER 6648-00-72/73

PS&E SHEET

37

E

POINT NUMBER	Y	X	STATION	OFFSET
*12	152,981.46	478,430.84	10+00.00	0.00 CL
*13	152,957.51	478,377.77	10+00.00	58.22 L
*14	154,172.46	477,966.14	23+00.00	49.80 R
*15	154,168.69	477,916.49	23+00.00	0.00 CL
105	153,118.96	478,268.14	11+95.00	86.14 L
106	153,614.12	478,062.87	17+30.00	53.00 L
107	153,775.67	477,972.09	19+15.00	63.57 L
108	153,891.54	477,903.21	20+43.90	76.88 L
109	154,163.97	477,854.30	23+00.00	62.37 L
205	152,995.21	478,461.29	10+00.00	33.41 R
206	153,326.42	478,299.30	13+67.68	33.00 R
207	153,422.83	478,303.72	14+52.34	79.33 R
*208	153,616.50	478,224.71	16+61.04	93.43 R
209	153,717.42	478,115.87	17+99.51	40.00 R
210	153,883.34	478,034.73	19+84.20	40.00 R
211	154,064.88	477,971.85	21+86.51	40.00 R
300	153,018.68	478,336.23	10+75.00	69.03 L
301	153,012.15	478,265.99	11+00.00	135.00 L
302	153,121.90	478,399.33	11+40.00	33.00 R
303	153,160.70	478,478.67	11+40.00	121.32 R

PT - PT	BEARING	DISTANCE
12-13	S 65°42'24" W	58.22'
13-105	N 34°10'42" W	195.16'
105-106	N 22°31'01" W	536.03'
106-107	N 29°19'55" W	185.30'
109-15	N 85°39'35" E	62.37'
12-205	N 65°42'24" E	33.41'
205-206	N 26°03'42" W	368.70'
206-207	N 02°37'28" E	96.51'
208-209	N 47°09'40" W	148.42'
209-210	N 26°03'42" W	184.69'
210-211	N 19°06'14" W	192.12'
211-14	N 03°02'15" W	107.73'
14-15	S 85°39'35" W	49.80'
300-301	S 84°41'32" W	70.58'
301-105	N 01°09'19" E	106.83'
105-300	S 34°10'42" E	121.21'
207-303	S 33°43'06" E	315.15'
303-302	S 63°56'18" W	88.32'
302-206	N 26°03'42" W	227.67'

CURVE	LENGTH	CHORD LENGTH	CHORD BEARING	RADIUS
207-208 C-5	215.94'	209.17'	N22°-11'-43"W	247.79'
107-108 C-6	135.04'	134.80'	N30°-43'-48"W	653.00'
108-109 C-7	278.13'	276.77'	N10°-10'-39"W	810.39'

NOTE: INVERSING BETWEEN COORDINATES, IN CLOSE PROXIMITY WITH EACH OTHER, MAY NOT REPLICATE THE BEARINGS AND DISTANCES SHOWN ON THIS PLAT.

ALIGNMENT DATA

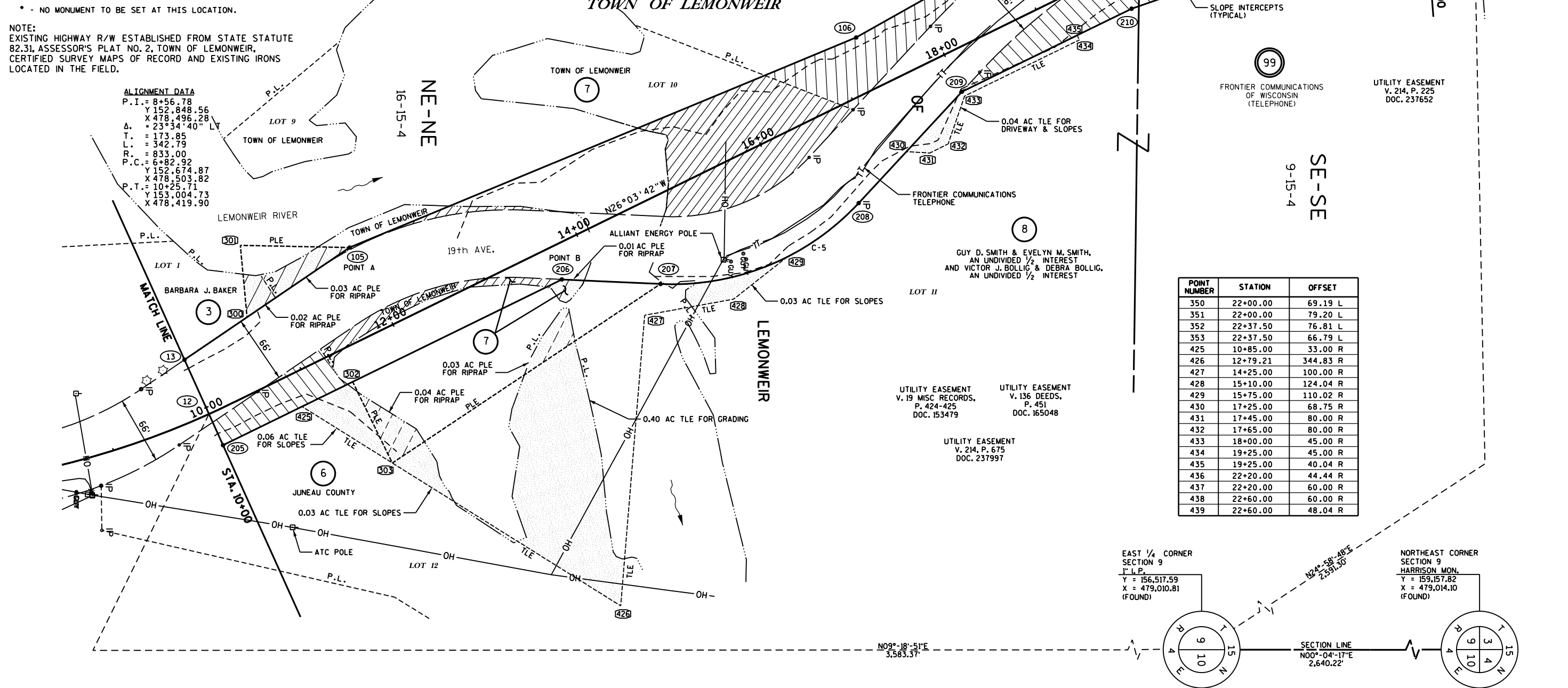
P.I. = 21+53.86
Y 154,018.18
X 477,924.26
Δ = 23°01'26" RT
T = 169.66
L = 334.74
R = 833.00
P.C. = 19+84.20
Y 153,865.77
X 477,998.80
P.T. = 23+18.94
Y 154,187.60
X 477,915.27

* - NO MONUMENT TO BE SET AT THIS LOCATION.

NOTE:
EXISTING HIGHWAY R/W ESTABLISHED FROM STATE STATUTE 82.31, ASSESSOR'S PLAT NO. 2, TOWN OF LEMONWEIR, CERTIFIED SURVEY MAPS OF RECORD AND EXISTING IRONS LOCATED IN THE FIELD.

ALIGNMENT DATA

P.I. = 8+56.78
Y 152,848.56
X 478,496.28
Δ = 23°34'40" LT
T = 173.85
L = 342.79
R = 833.00
P.C. = 6+82.92
Y 152,674.87
X 478,503.82
P.T. = 10+25.71
Y 153,004.73
X 478,419.90



POINT NUMBER	STATION	OFFSET
350	22+00.00	69.19 L
351	22+00.00	79.20 L
352	22+37.50	76.81 L
353	22+37.50	66.79 L
425	10+85.00	33.00 R
426	12+79.21	344.83 R
427	14+25.00	100.00 R
428	15+10.00	124.04 R
429	15+75.00	110.02 R
430	17+25.00	68.75 R
431	17+45.00	80.00 R
432	17+65.00	80.00 R
433	18+00.00	45.00 R
434	19+25.00	45.00 R
435	19+25.00	40.04 R
436	22+20.00	44.44 R
437	22+20.00	60.00 R
438	22+60.00	60.00 R
439	22+60.00	48.04 R

EAST 1/4 CORNER
SECTION 9
I.P.P.
Y = 156,517.59
X = 479,010.81
(FOUND)

NORTHEAST CORNER
SECTION 9
HARRISON MON.
Y = 159,157.82
X = 479,014.10
(FOUND)

REVISION DATE 9/25/2014

DATE 8/11/2014

SCALE, FEET

HWY: TOWN ROAD

STATE R/W PROJECT NUMBER 6648-00-02/03

PLAT SHEET 4.05

GRID FACTOR

COUNTY: JUNEAU

CONSTRUCTION PROJECT NUMBER 6648-00-72/73

PS&E SHEET

38

E

POINT NUMBER	Y	X	STATION	OFFSET
* 14	154,172.46	477,966.14	23+00.00	49.80 R
* 15	154,168.69	477,916.49	23+00.00	0.00 CL
* 16	155,299.09	477,736.30	34+47.98	0.00 CL
109	154,163.97	477,854.30	23+00.00	62.37 L
110	154,271.12	477,860.76	24+05.24	50.00 L
111	154,669.48	477,839.50	28+10.00	37.53 L
112	154,774.48	477,805.85	29+20.95	47.77 L
113	155,102.09	477,708.38	32+61.98	70.65 L
114	155,285.45	477,675.93	34+47.98	61.88 L
212	154,371.05	477,955.60	25+00.00	50.00 R
213	154,471.17	477,955.30	26+00.00	55.00 R
214	154,624.90	477,935.95	27+50.00	50.00 R
215	154,869.39	477,867.21	30+00.00	33.00 R
216	155,306.36	477,768.49	34+47.98	33.00 R

PT - PT	BEARING	DISTANCE
15-109	S 85°39'35" W	62.37'
110-111	N 03°03'19" W	398.93'
111-112	N 17°46'20" W	110.26'
114-16	N 77°16'07" E	61.88'
15-14	N 85°39'35" E	49.80'
14-212	N 03°02'15" W	198.87'
212-213	N 00°10'31" W	100.12'
213-214	N 07°10'24" W	154.94'
214-215	N 15°42'10" W	253.97'
215-216	N 12°43'53" W	447.98'
216-16	S 77°16'07" W	33.00'
112-215	N 32°53'09" E	113.02'

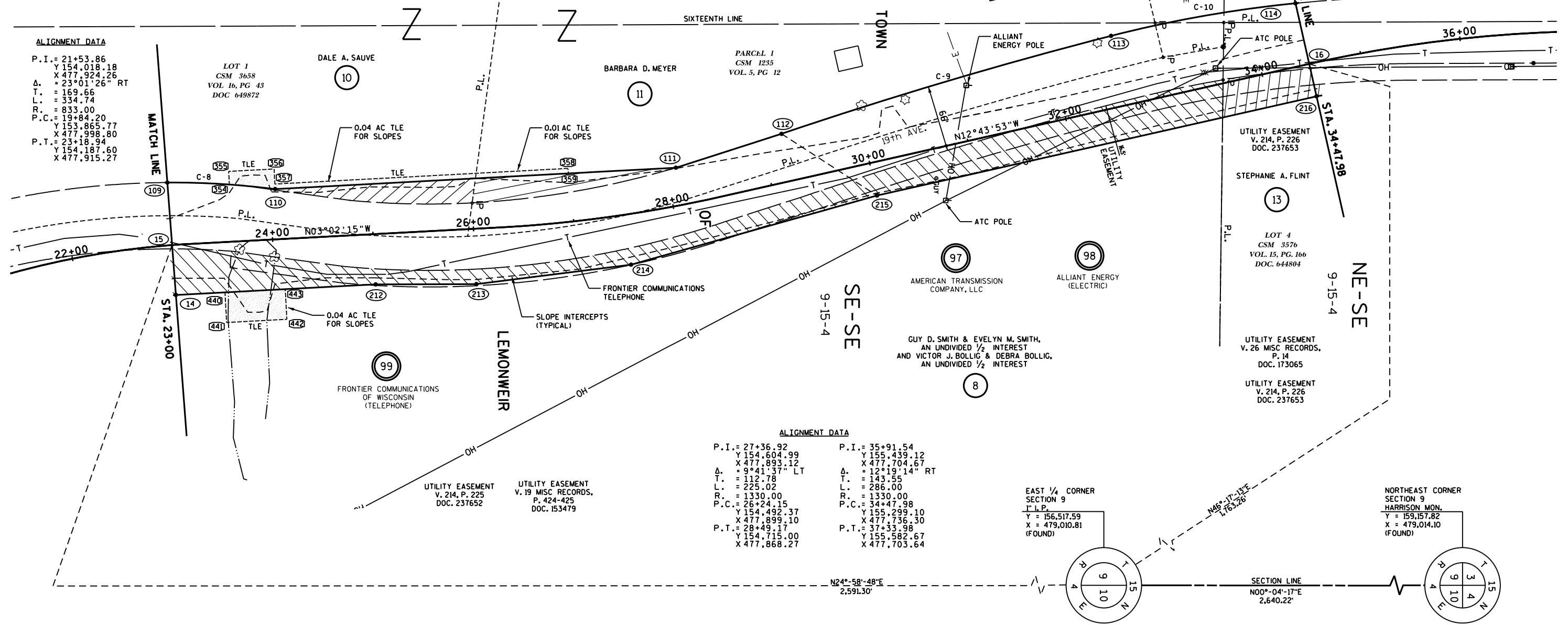
CURVE	LENGTH	CHORD LENGTH	CHORD BEARING	RADIUS
109-110 C-8	107.43'	107.35'	N03°-27'-08"E	810.39'
112-113 C-9	341.88'	341.80'	N16°-34'-08"W	4,492.78'
113-114 C-10	186.39'	186.21'	N10°-02'-01"W	1,226.00'

NOTE: INVERSING BETWEEN COORDINATES, IN CLOSE PROXIMITY WITH EACH OTHER, MAY NOT REPLICATE THE BEARINGS AND DISTANCES SHOWN ON THIS PLAT.

POINT NUMBER	STATION	OFFSET
354	23+60.00	56.90 L
355	23+60.00	70.00 L
356	24+05.24	70.00 L
357	24+05.24	55.00 L
358	27+00.00	53.01 L
359	27+00.00	48.01 L
440	23+50.00	50.00 R
441	23+50.00	80.00 R
442	24+10.00	80.00 R
443	24+10.00	50.00 R

* - NO MONUMENT TO BE SET AT THIS LOCATION.

NOTE:
EXISTING HIGHWAY R/W ESTABLISHED FROM STATE STATUTE 82.31, ASSESSOR'S PLAT NO. 2, TOWN OF LEMONWEIR, CERTIFIED SURVEY MAPS OF RECORD AND EXISTING IRONS LOCATED IN THE FIELD.



REVISION DATE 9/25/2014	DATE 8/11/2014	SCALE, FEET 0 50 100	HWY: TOWN ROAD	STATE R/W PROJECT NUMBER 6648-00-02/03	PLAT SHEET 4.06
GRID FACTOR			COUNTY: JUNEAU	CONSTRUCTION PROJECT NUMBER 6648-00-72/73	PS&E SHEET 39

POINT NUMBER	Y	X	STATION	OFFSET
* 11	156,473.66	477,697.24	46+25.00	0.00 CL
* 16	155,299.09	477,736.30	34+47.98	0.00 CL
114	155,285.45	477,675.93	34+47.98	61.88 L
115	155,402.30	477,669.93	35+59.49	46.83 L
116	155,783.43	477,668.54	39+35.00	33.65 L
117	155,798.38	477,660.49	39+50.00	41.60 L
118	156,342.71	477,658.51	44+94.33	39.67 L
216	155,306.36	477,768.49	34+47.98	33.00 R
217	155,522.04	477,735.49	36+71.71	30.00 R
* 218	155,873.93	477,734.21	40+25.02	32.67 R
219	156,335.55	477,732.54	44+86.64	34.30 R
305	155,783.91	477,734.54	39+35.00	32.35 R
306	155,783.96	477,742.29	39+35.00	40.10 R
307	155,848.96	477,742.05	40+00.00	40.33 R

PT - PT	BEARING	DISTANCE
16-114	S 77°16'07" W	61.88'
115-116	N 00°12'29" W	381.14'
116-117	N 28°19'31" W	16.98'
117-118	N 00°12'29" W	544.33'
118-11	N 16°28'38" E	136.56'
16-216	N 77°16'07" E	33.00'
216-217	N 08°41'51" W	218.19'
217-218	N 00°12'29" W	351.89'
218-219	N 00°12'29" W	461.62'
219-11	N 14°20'07" W	142.55'
218-307	S 17°26'00" E	26.17'
307-306	S 00°12'29" E	65.00'
306-305	S 89°35'21" W	7.75'
305-218	N 00°12'29" W	90.02'

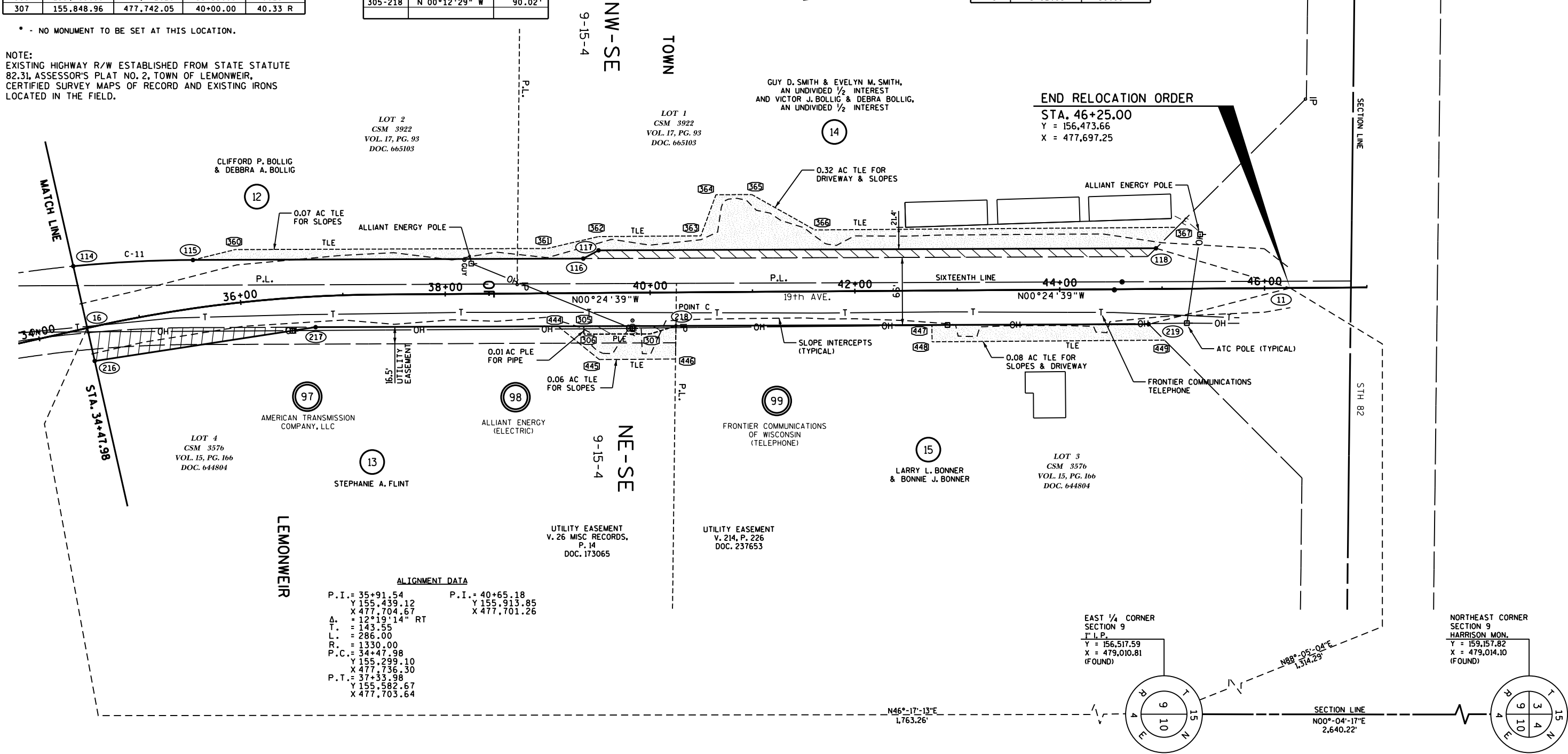
CURVE	LENGTH	CHORD LENGTH	CHORD BEARING	RADIUS
114-115 C-11	117.05'	117.00'	N02°-56'-35"W	1,226.00'

NOTE: INVERSING BETWEEN COORDINATES, IN CLOSE PROXIMITY WITH EACH OTHER, MAY NOT REPLICATE THE BEARINGS AND DISTANCES SHOWN ON THIS PLAT.

POINT NUMBER	STATION	OFFSET
360	36+00.00	51.86 L
361	39+00.00	43.77 L
362	39+50.00	55.00 L
363	40+50.00	55.00 L
364	40+65.00	95.00 L
365	41+00.00	95.00 L
366	41+61.35	60.00 L
367	45+15.00	60.00 L
444	39+10.00	32.26 R
445	39+50.00	65.00 R
446	40+24.40	65.00 R
447	42+75.00	33.55 R
448	42+75.00	50.00 R
449	45+02.08	50.00 R

* - NO MONUMENT TO BE SET AT THIS LOCATION.

NOTE:
EXISTING HIGHWAY R/W ESTABLISHED FROM STATE STATUTE 82.31, ASSESSOR'S PLAT NO. 2, TOWN OF LEMONWEIR, CERTIFIED SURVEY MAPS OF RECORD AND EXISTING IRONS LOCATED IN THE FIELD.



REVISION DATE 9/25/2014

DATE 8/11/2014

SCALE, FEET

HWY: TOWN ROAD

STATE R/W PROJECT NUMBER 6648-00-02/03

PLAT SHEET 4.07

GRID FACTOR

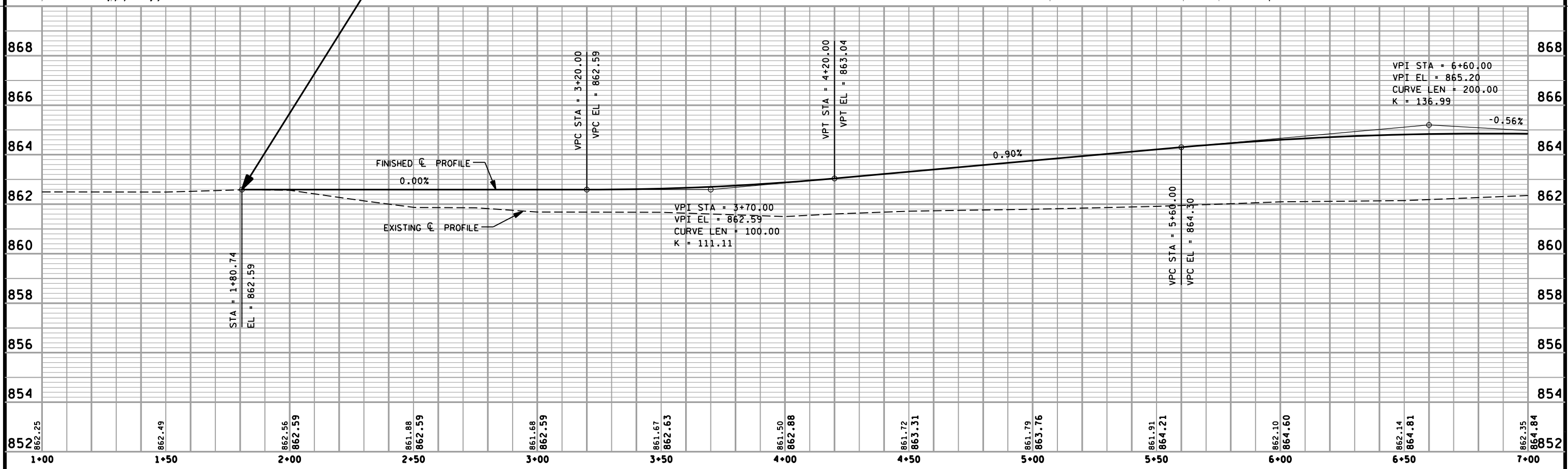
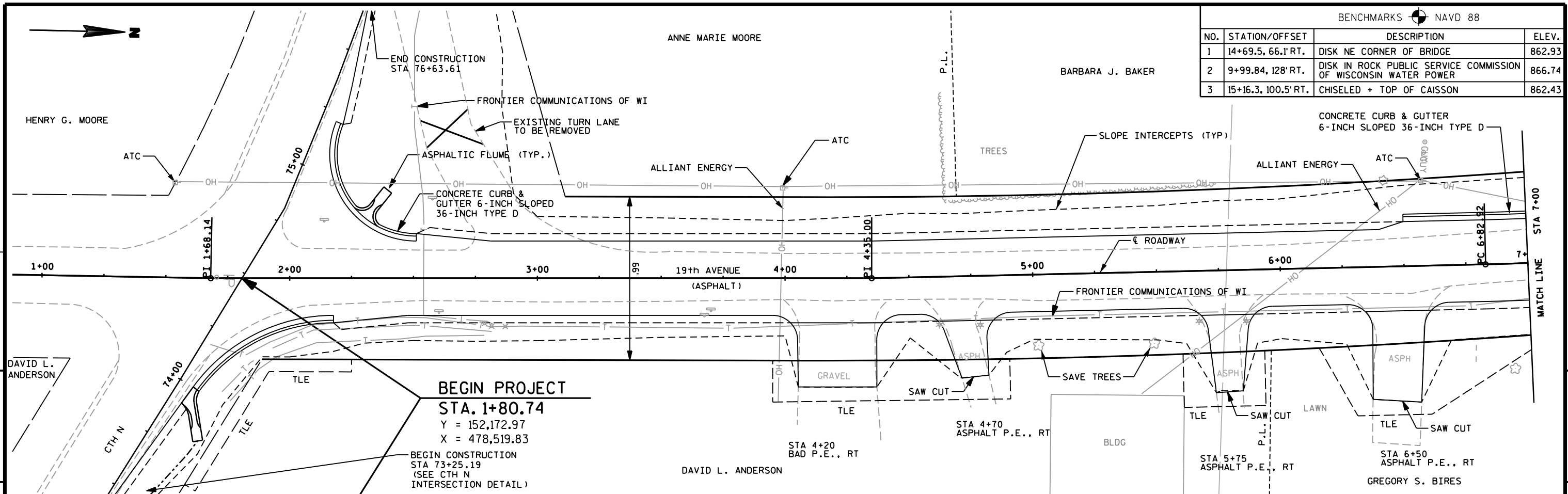
COUNTY: JUNEAU

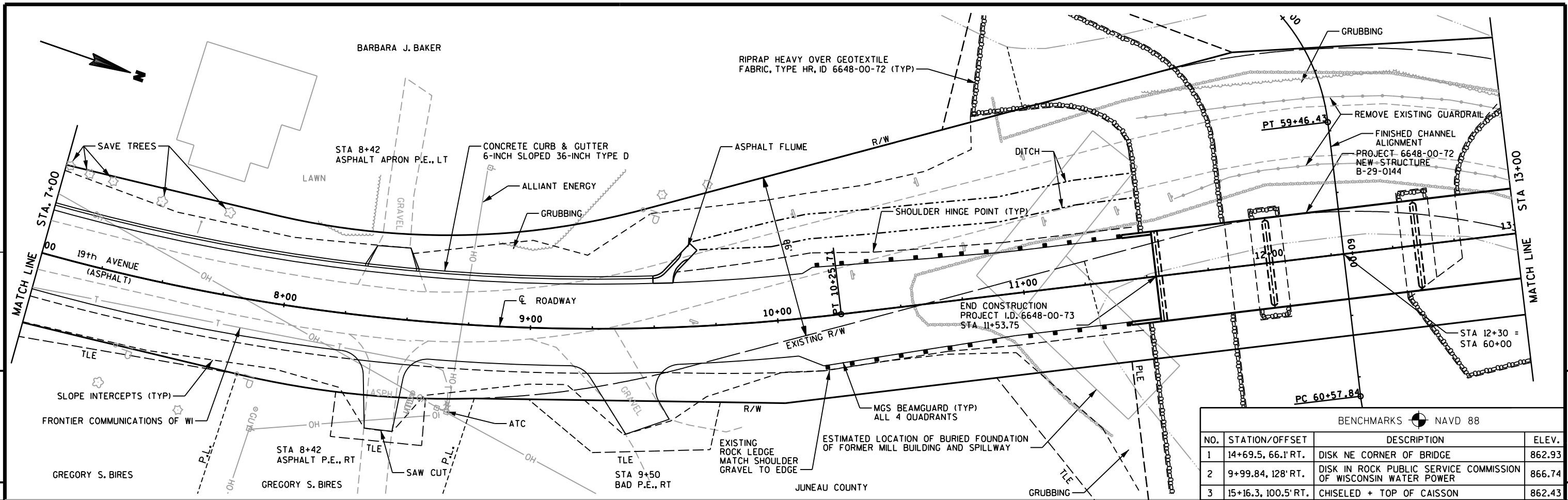
CONSTRUCTION PROJECT NUMBER 6648-00-72/73

PS&E SHEET

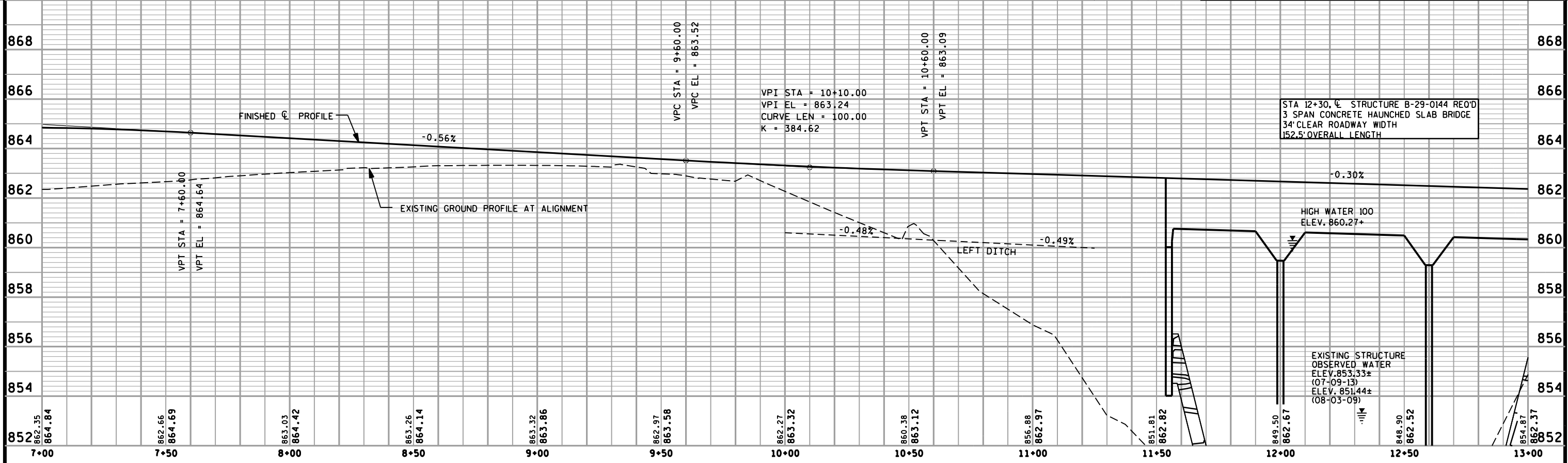
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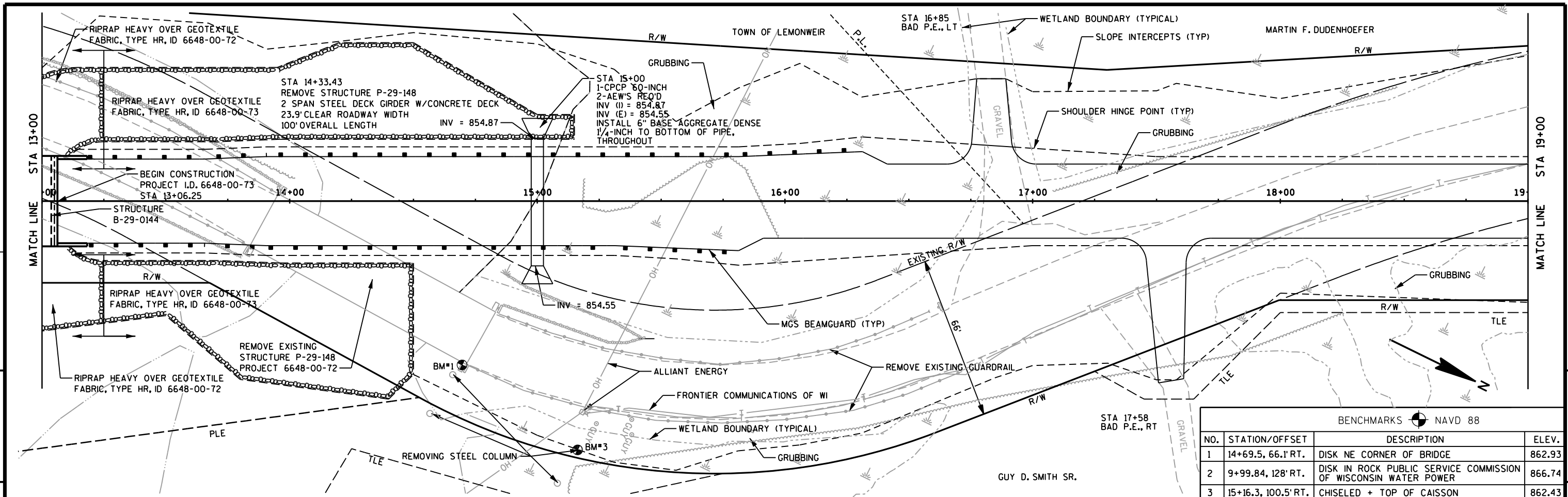
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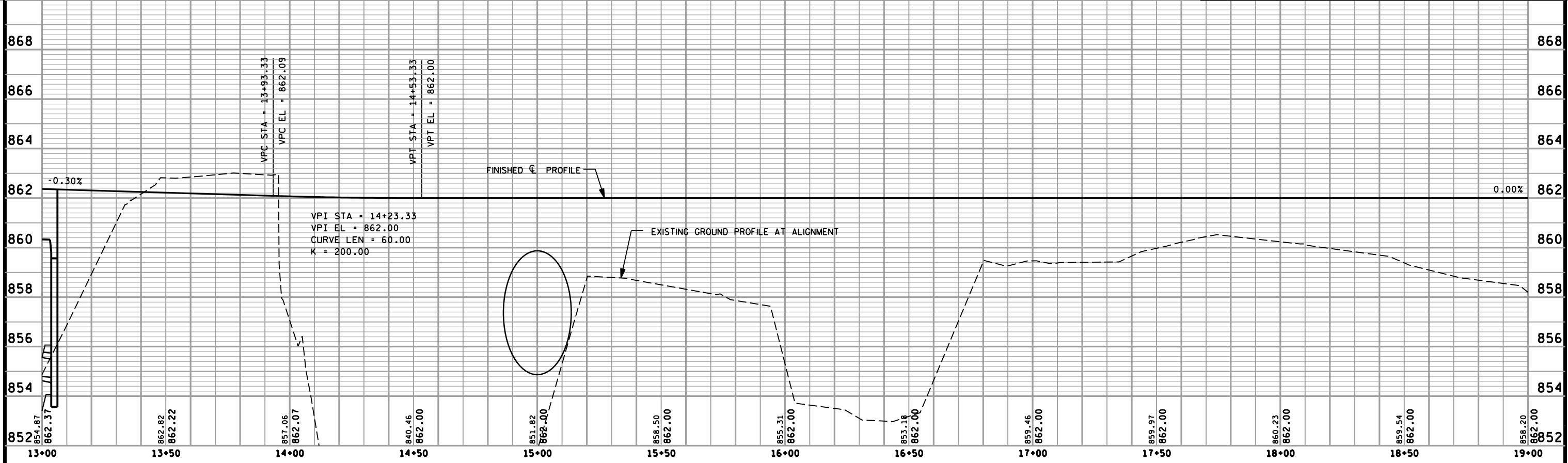


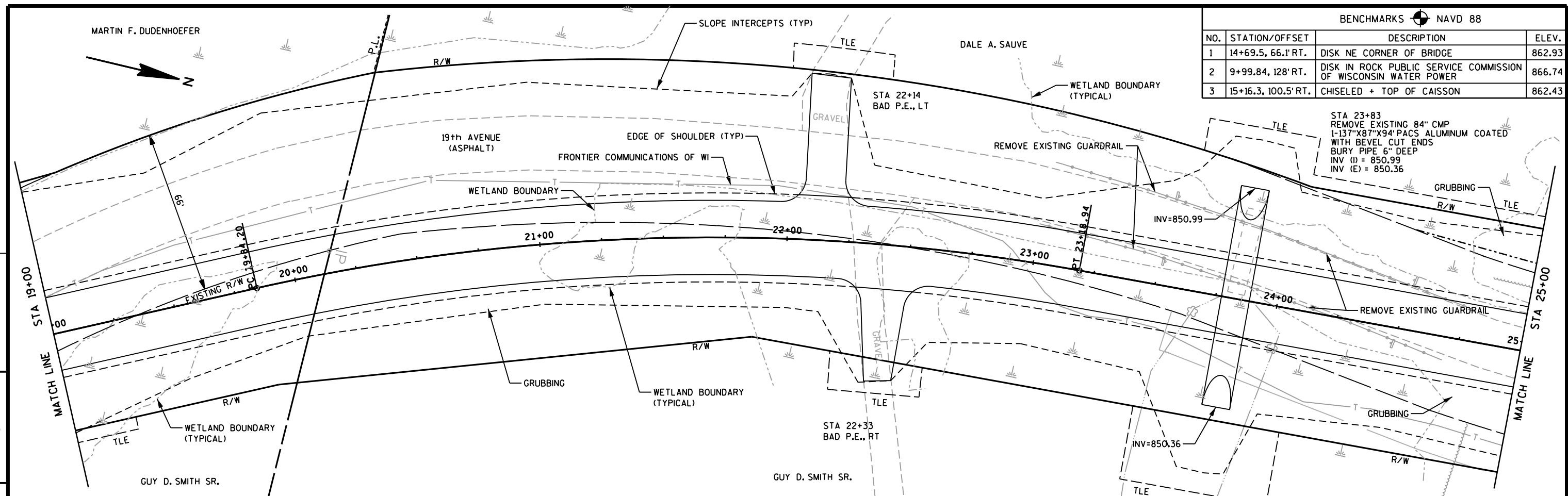
BENCHMARKS NAVD 88			
NO.	STATION/OFFSET	DESCRIPTION	ELEV.
1	14+69.5, 66.1' RT.	DISK NE CORNER OF BRIDGE	862.93
2	9+99.84, 128' RT.	DISK IN ROCK PUBLIC SERVICE COMMISSION OF WISCONSIN WATER POWER	866.74
3	15+16.3, 100.5' RT.	CHISELED + TOP OF CAISSON	862.43



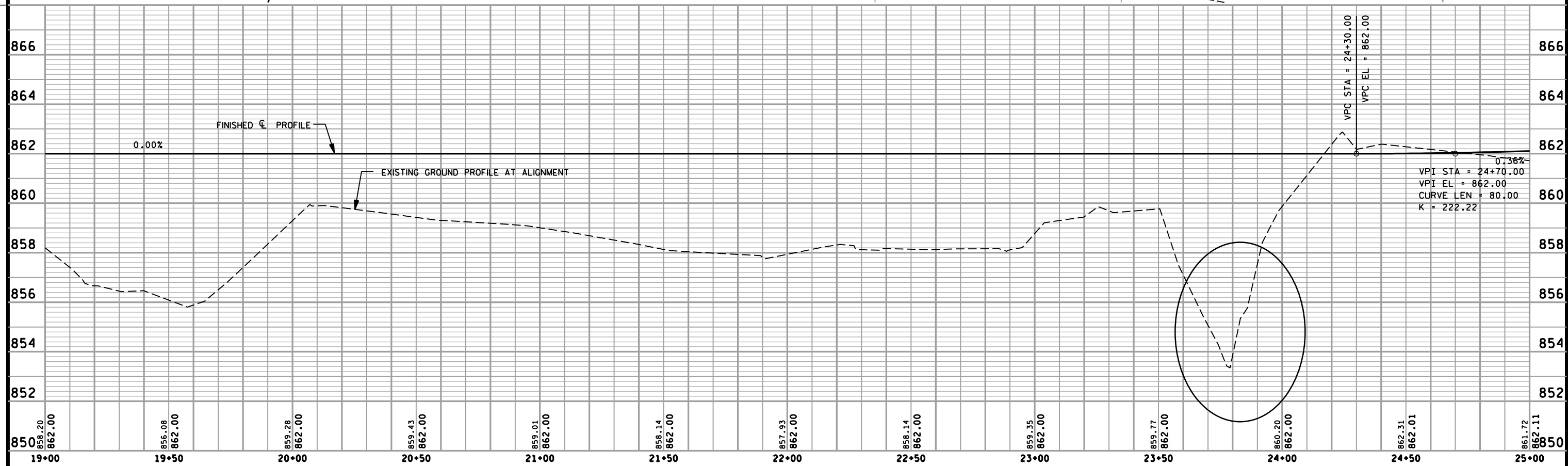


BENCHMARKS NAVD 88			
NO.	STATION/OFFSET	DESCRIPTION	ELEV.
1	14+69.5, 66.1' RT.	DISK NE CORNER OF BRIDGE	862.93
2	9+99.84, 128' RT.	DISK IN ROCK PUBLIC SERVICE COMMISSION OF WISCONSIN WATER POWER	866.74
3	15+16.3, 100.5' RT.	CHISELED + TOP OF CAISSON	862.43

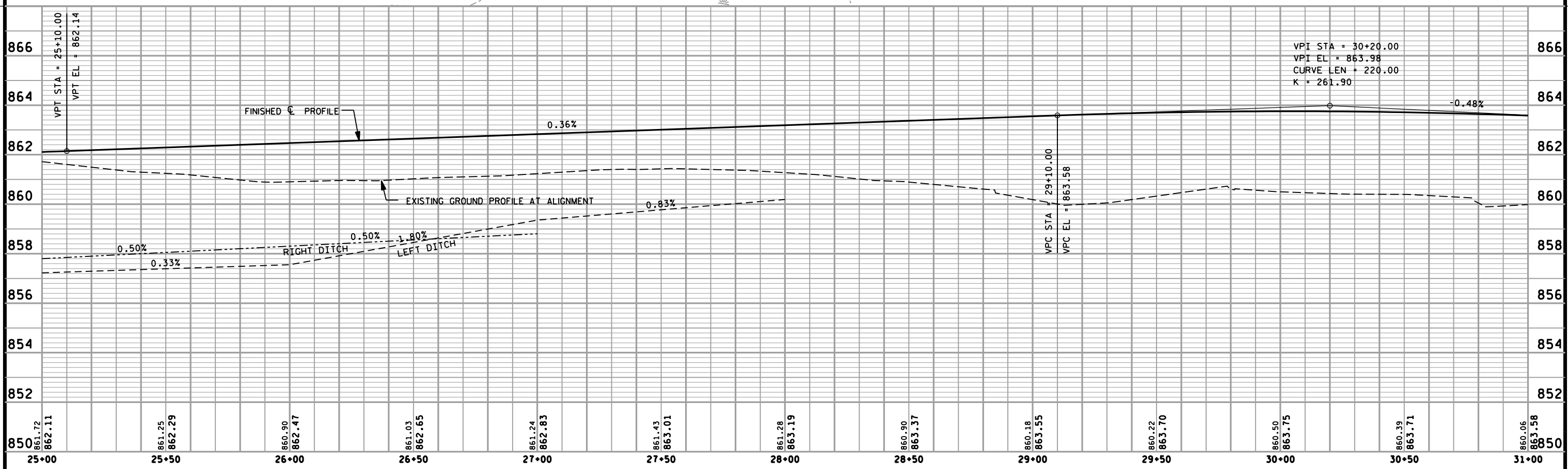
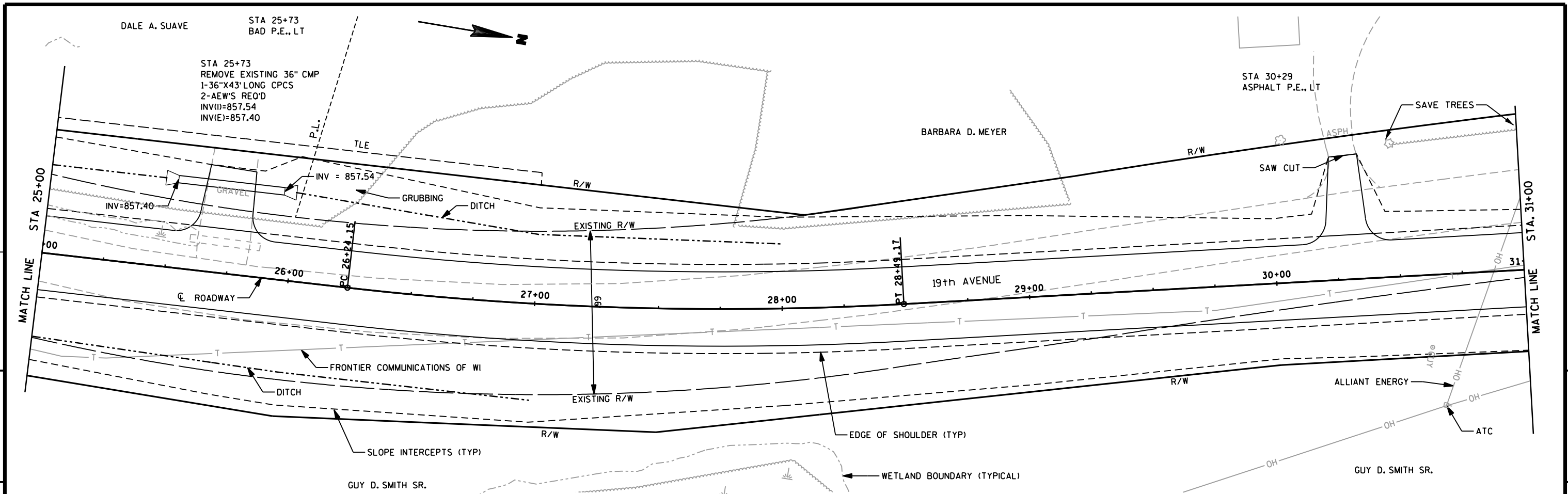


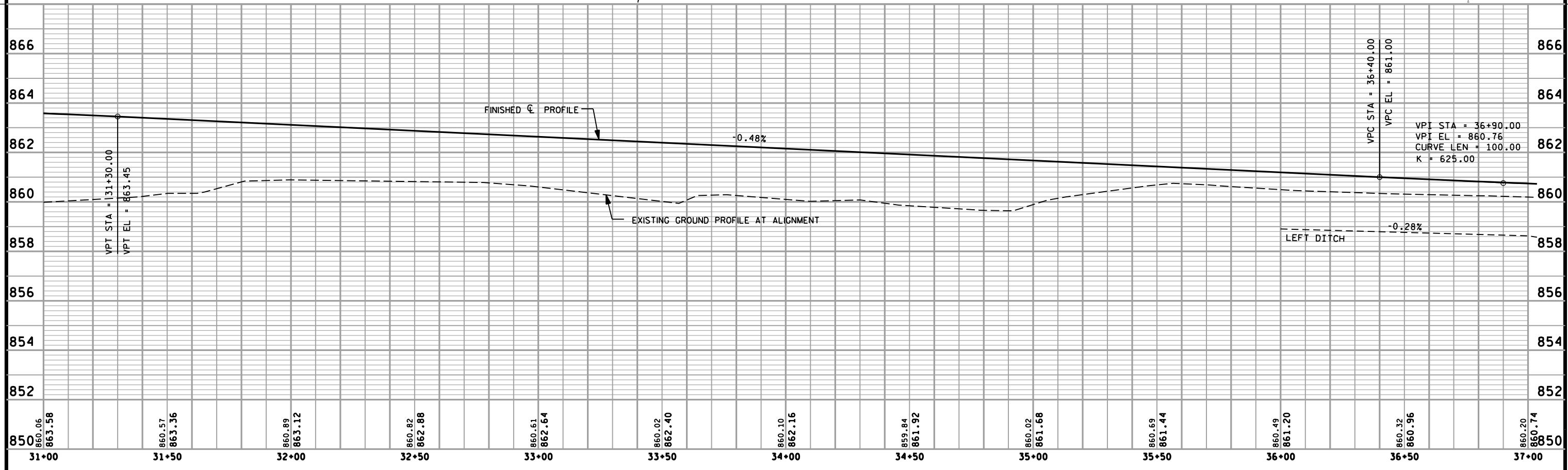
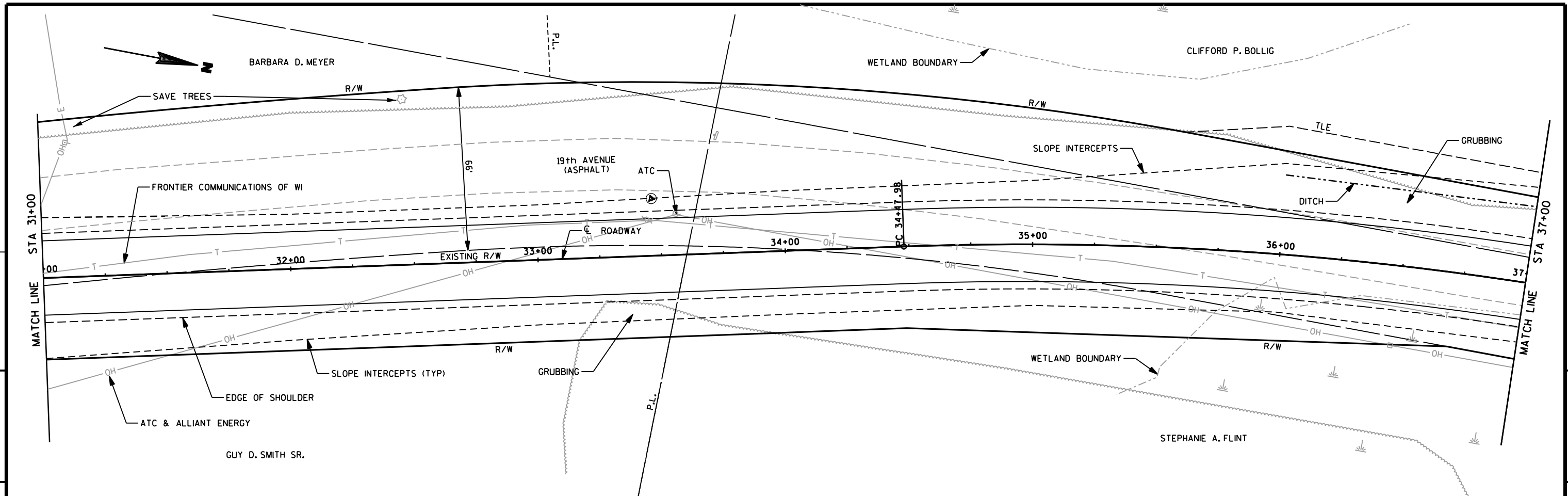


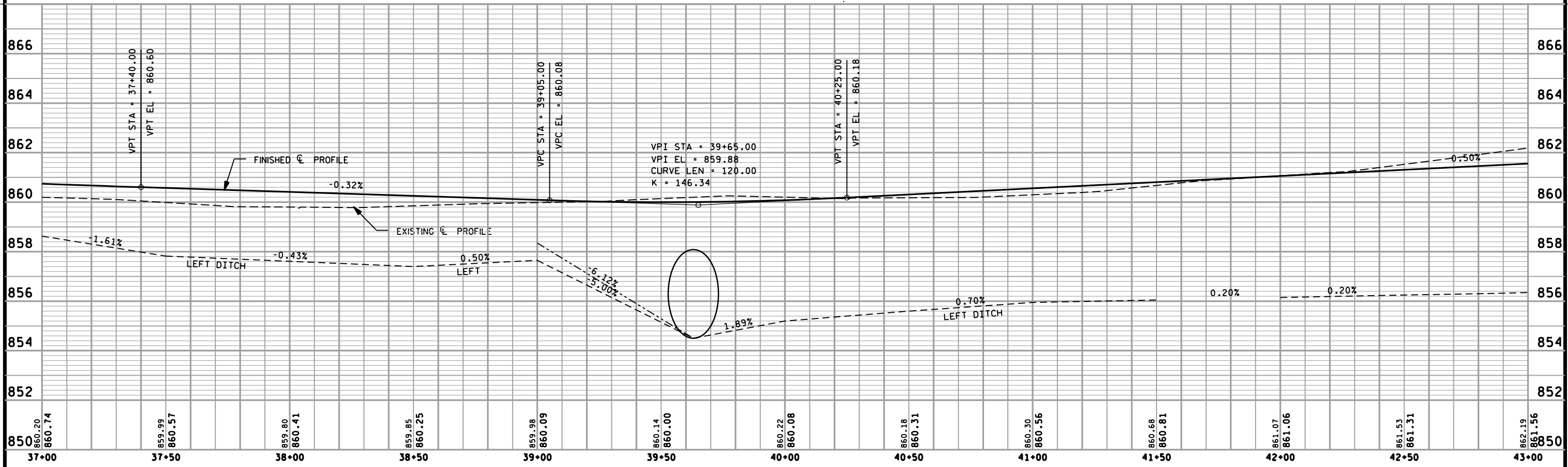
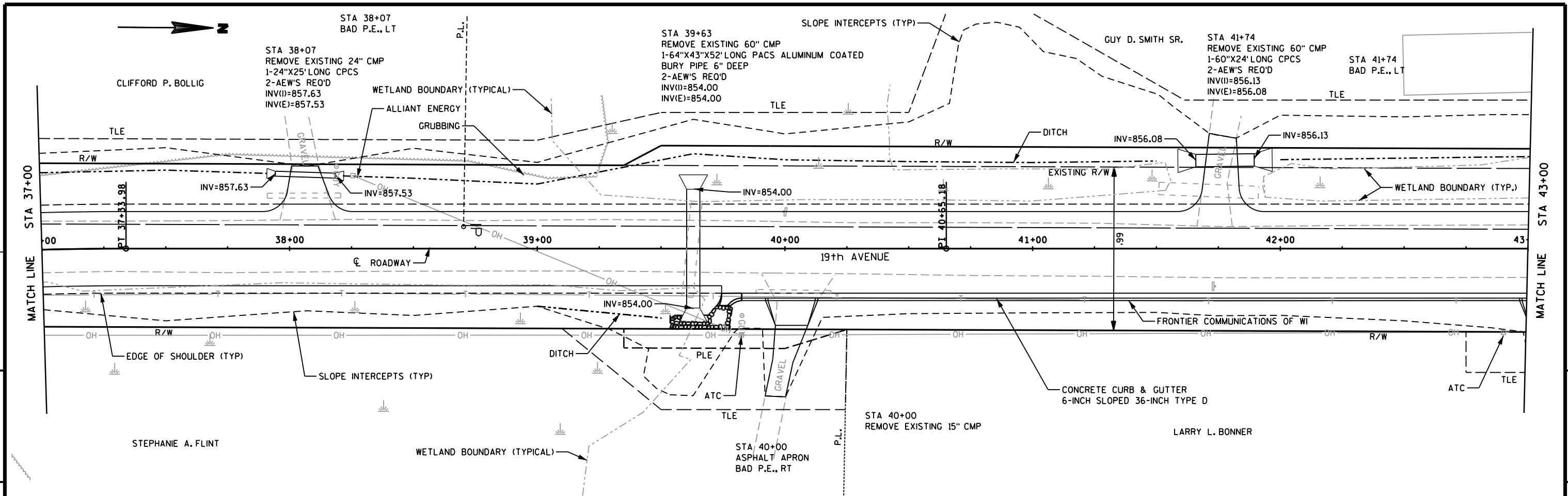
BENCHMARKS NAVD 88			
NO.	STATION/OFFSET	DESCRIPTION	ELEV.
1	14+69.5, 66.1' RT.	DISK NE CORNER OF BRIDGE	862.93
2	9+99.84, 128' RT.	DISK IN ROCK PUBLIC SERVICE COMMISSION OF WISCONSIN WATER POWER	866.74
3	15+16.3, 100.5' RT.	CHISELED + TOP OF CAISSON	862.43

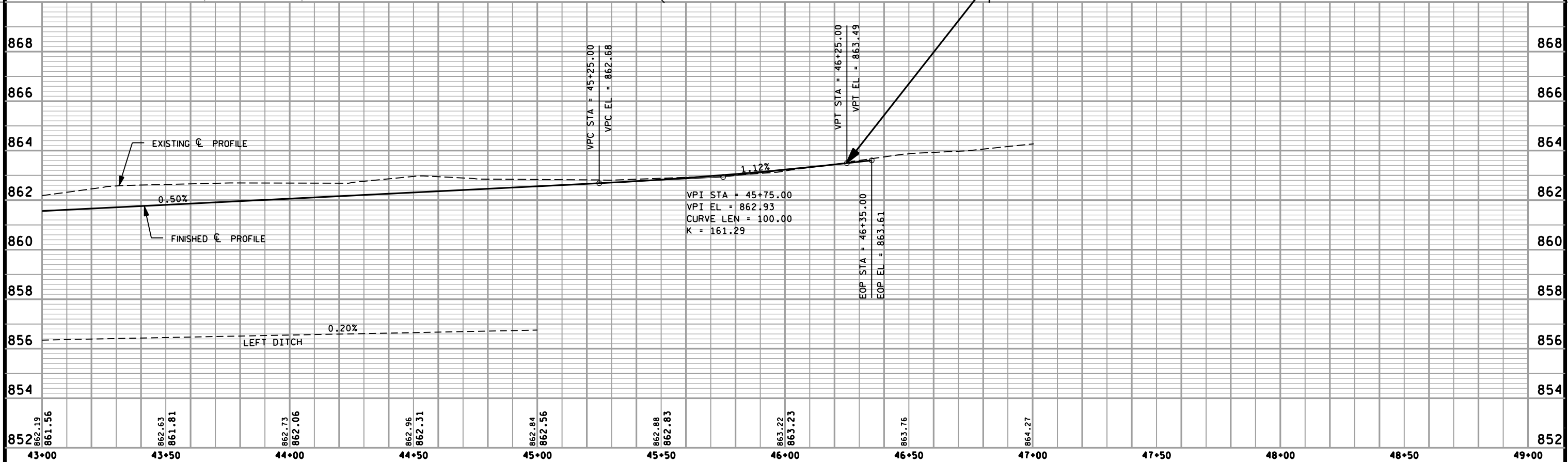
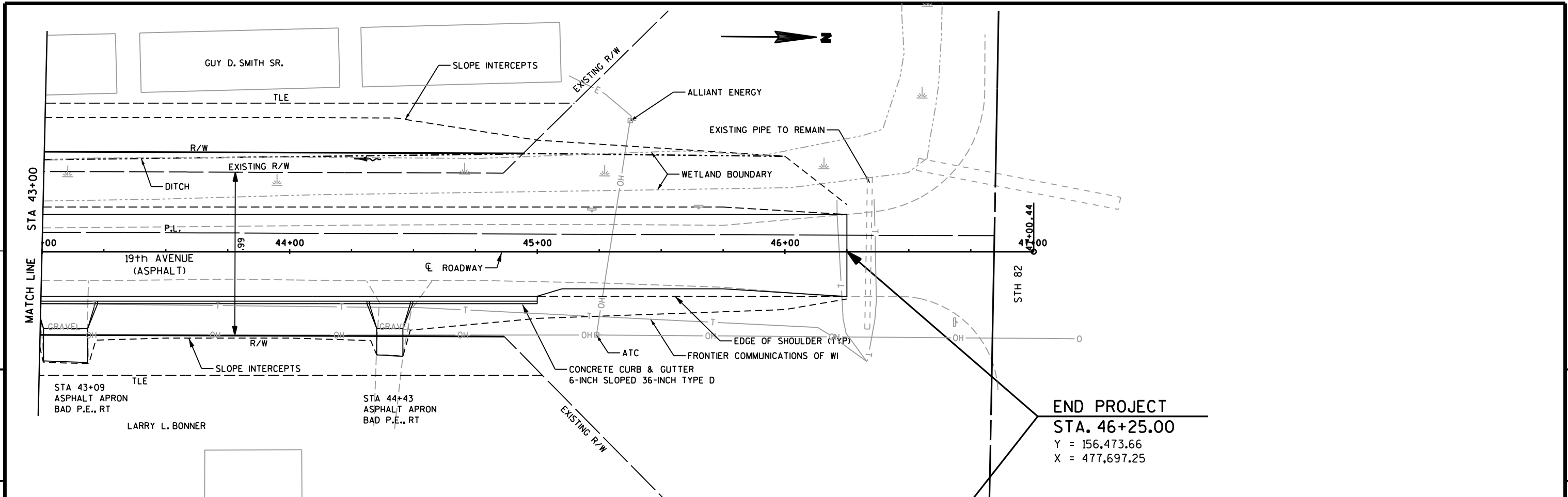


PROJECT NO: 6648-00-73	HWY: TOWN ROAD	COUNTY: JUNEAU	PLAN & PROFILE - 19TH AVENUE	SHEET 44	E
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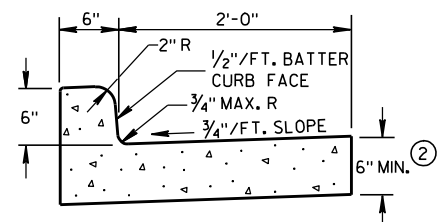




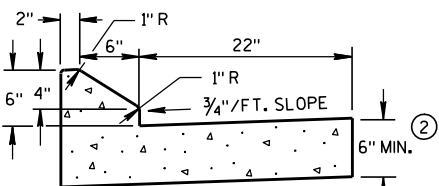


Standard Detail Drawing List

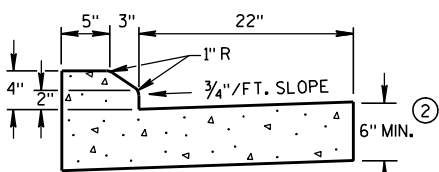
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
12A03-10	NAME PLATE (STRUCTURES)
13B02-07A	CONCRETE BRIDGE APPROACH
13B02-07B	STRUCTURAL APPROACH SLAB AND CONCRETE BRIDGE APPROACH
14B29-01	SAFETY EDGE
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A01-11	MARKER POST FOR RIGHT-OF-WAY
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
15D27-02	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH



TYPES A & D ①



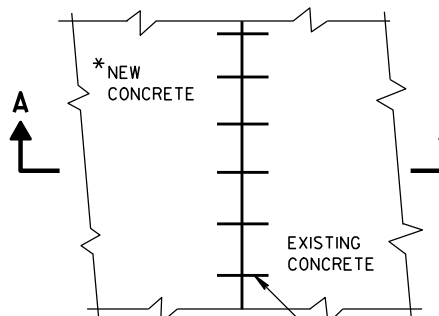
6" SLOPED CURB TYPES G & J ①



4" SLOPED CURB TYPES G & J ①

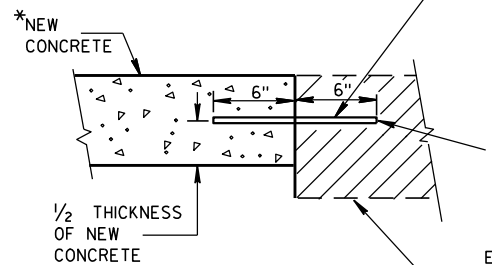
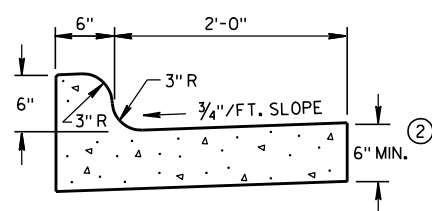
CONCRETE CURB & GUTTER 30"

* NEW CURB & GUTTER,
SURFACE DRAINS,
CONCRETE PAVEMENT
OR OTHER NEW CONCRETE.

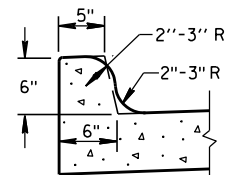
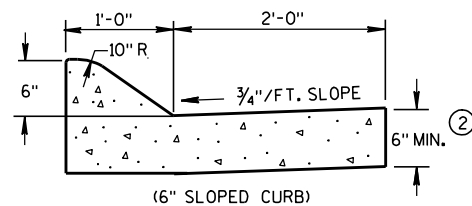


PLAN VIEW

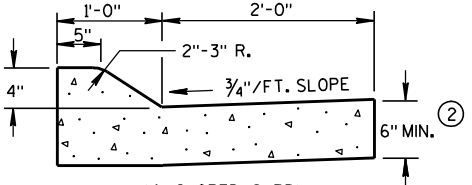
NO. 6 TIE BARS SPACED 2'-6" C-C,
INSTALLED PERPENDICULAR
TO THE LONGITUDINAL JOINT.

SECTION A-A
TIE BARS DRILLED
INTO EXISTING PAVEMENT

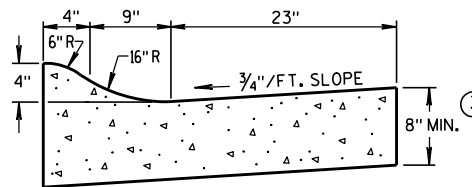
TYPES K & L ①

OPTIONAL CURB SHAPE
FOR TYPES K & L ①

(6" SLOPED CURB)

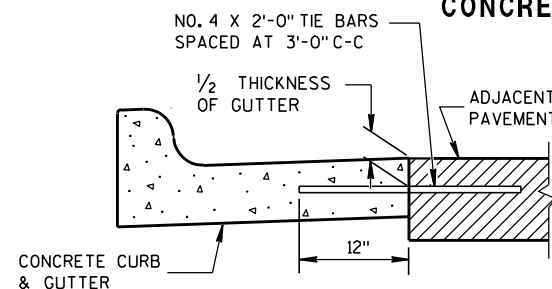


TYPES A & D ①

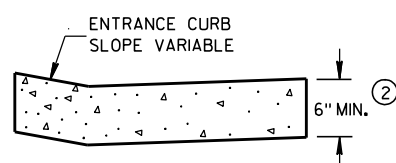
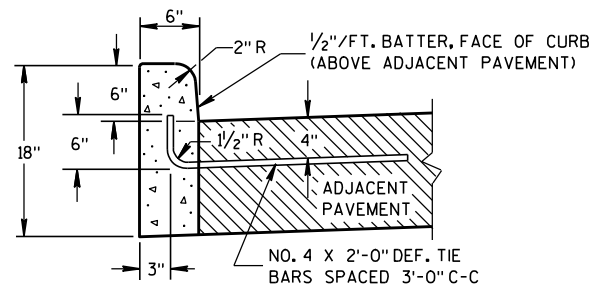


4" SLOPED CURB TYPES R & T ① ④

CONCRETE CURB & GUTTER 36"

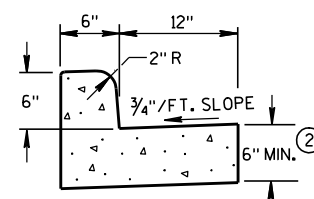
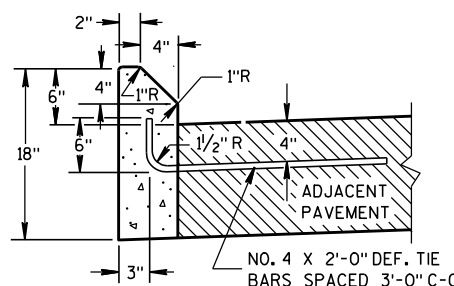


TYPICAL TIE BAR LOCATION ①

DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

TYPES A & D ①

CONCRETE CURB

TYPES A & D
CONCRETE CURB & GUTTER 18"

TYPES G & J ①

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

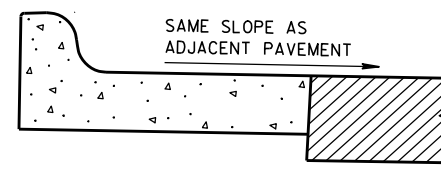
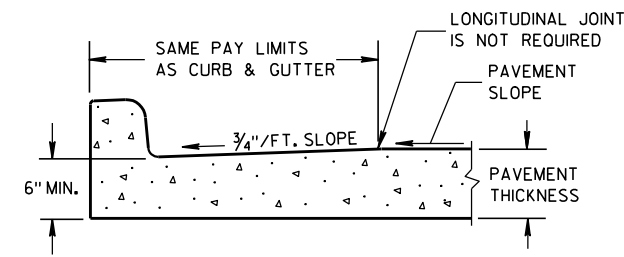
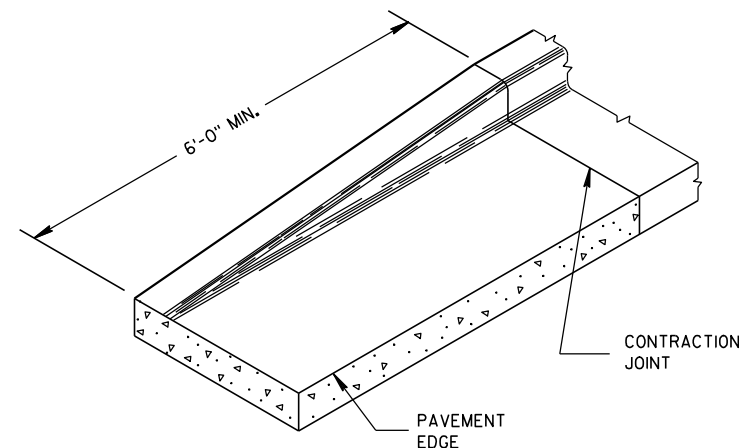
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ④ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑤ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

REVERSE SLOPE GUTTER ⑤
(TYPICAL FOR ALL CURB & GUTTER TYPES)PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER

END SECTION CURB & GUTTER

CONCRETE CURB, CONCRETE
CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/4/08

DATE

FHWA

/S/ Jerry H. 7

ROADWAY STANDARDS 50

ENGINEER

ENT

6



PLAN VIEW
FLUME AT CURB END



6

S.D.D. 8 D 4-5

- ① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- ② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- ③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

EXPANSION JOINT

CONCRETE CURB AND GUTTER

2" MIN. CURB HEIGHT

4" R

TAPER CURB TO FLOW LINE

INCREASE ϕ FROM RIGHT ANGLE TO BEST FIT FIELD CONDITIONS

8'-0"

4'-0"

EDGE OF PAVEMENT

3'-0" MIN.

SURFACE DRAIN IS SYMMETRICAL WHEN CURB AND GUTTER IS CONTINUED

SHOULDER OR BERM HINGE POINT

JOINTS

W3 WIRE MESH (SEE SECTION D-D)

RIPRAP

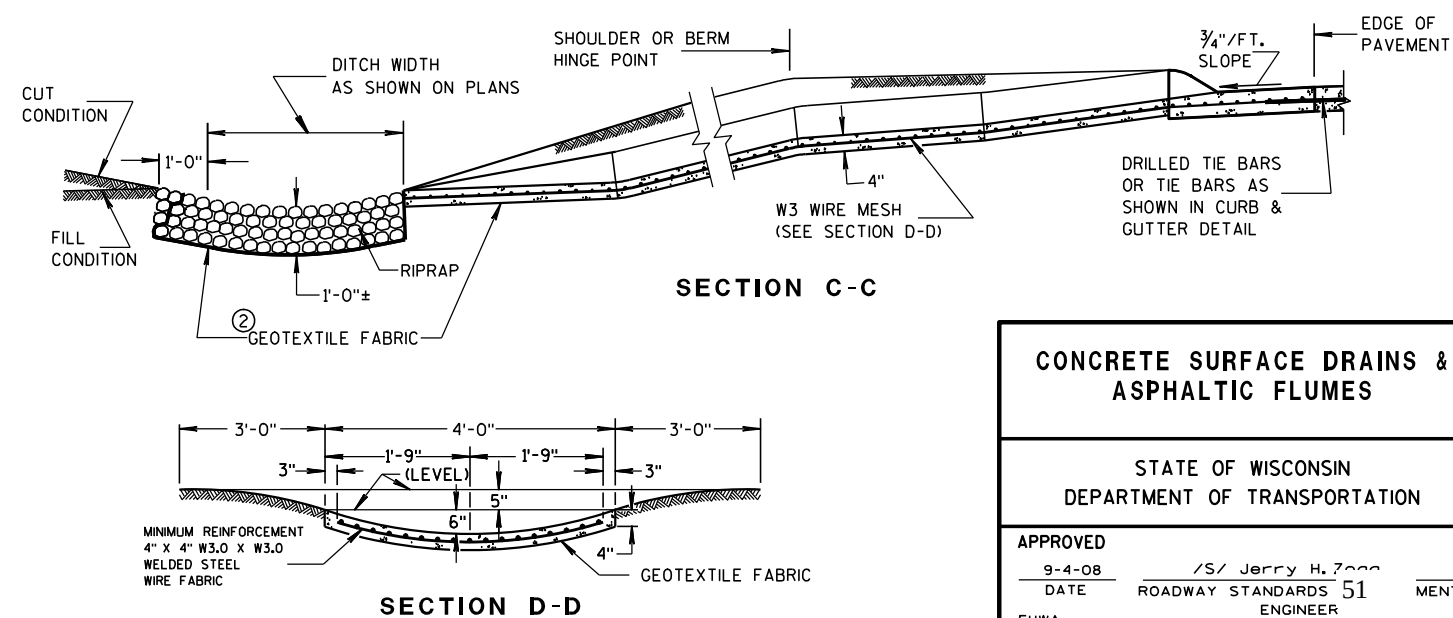
6'-0" OR AS REQUIRED

1'-0" ON CUT SLOPE

DITCH

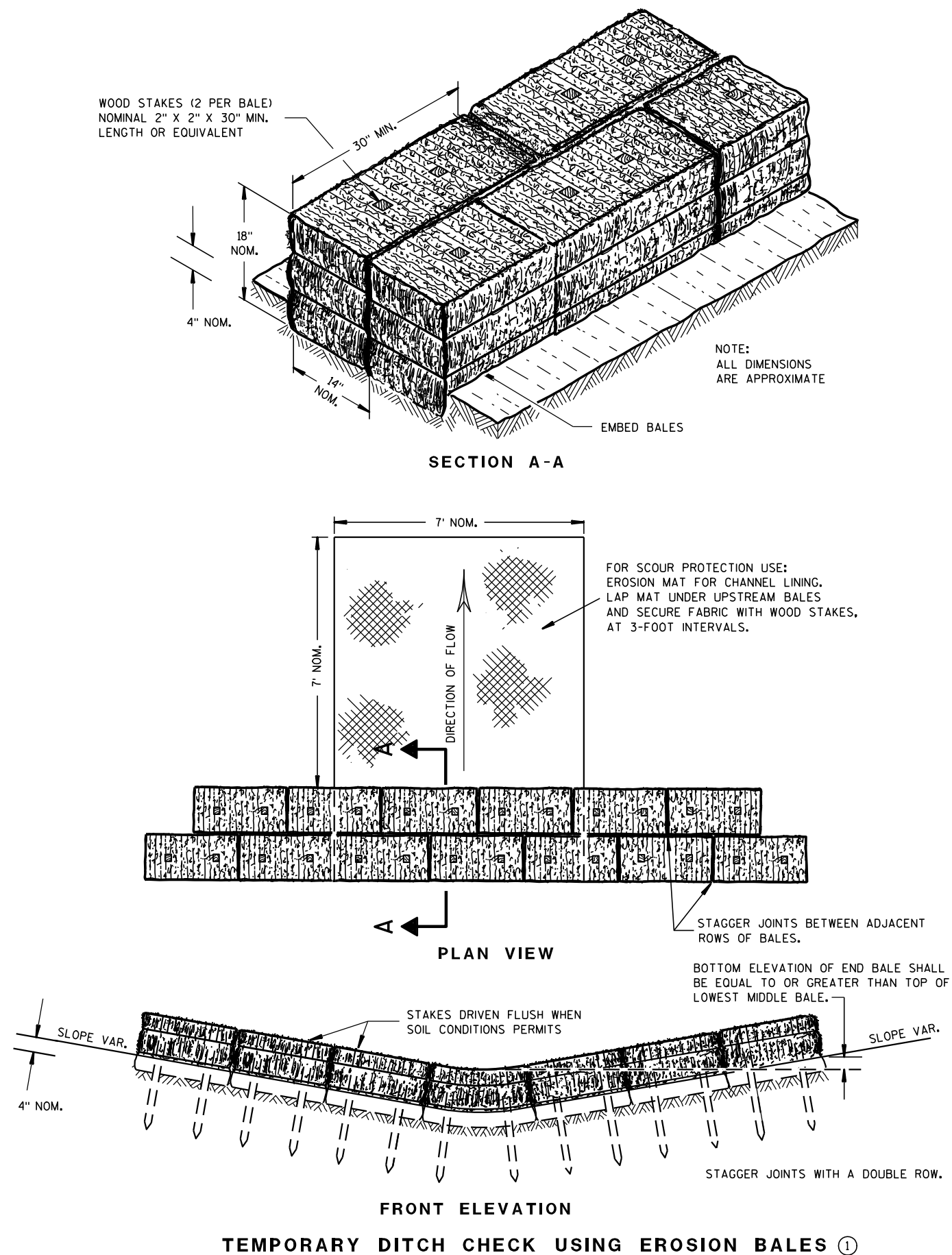
PLAN VIEW

PLAN VIEW



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

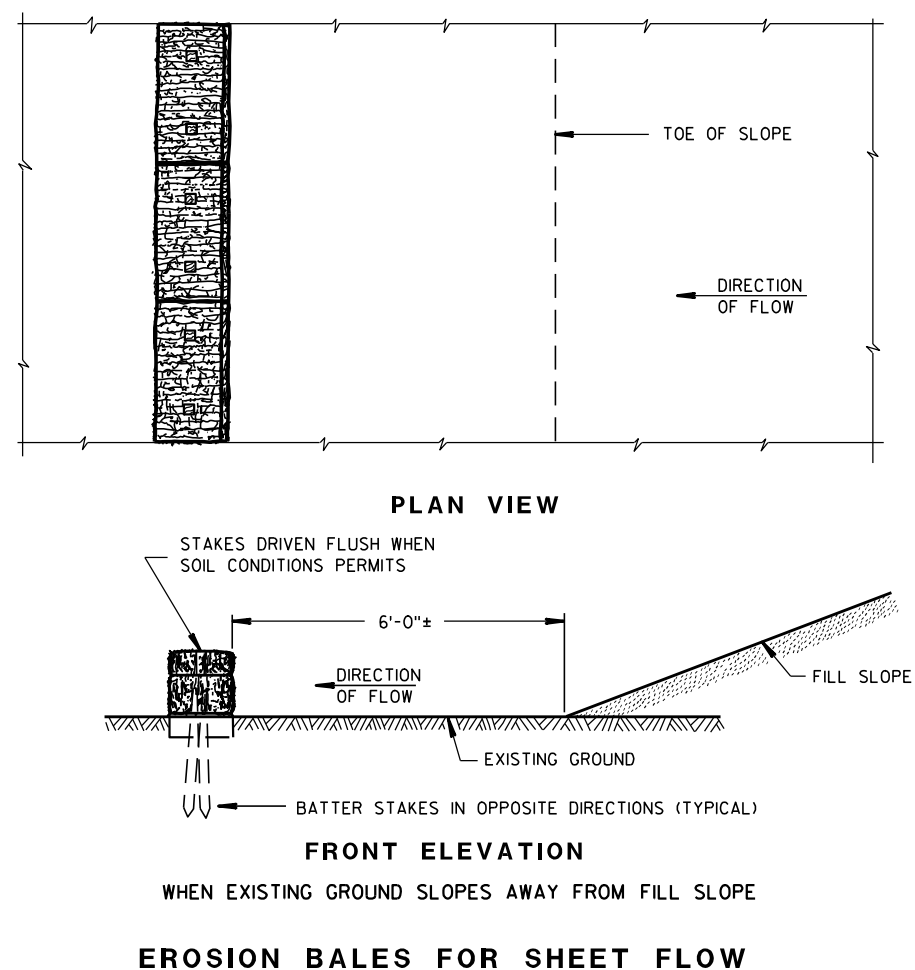
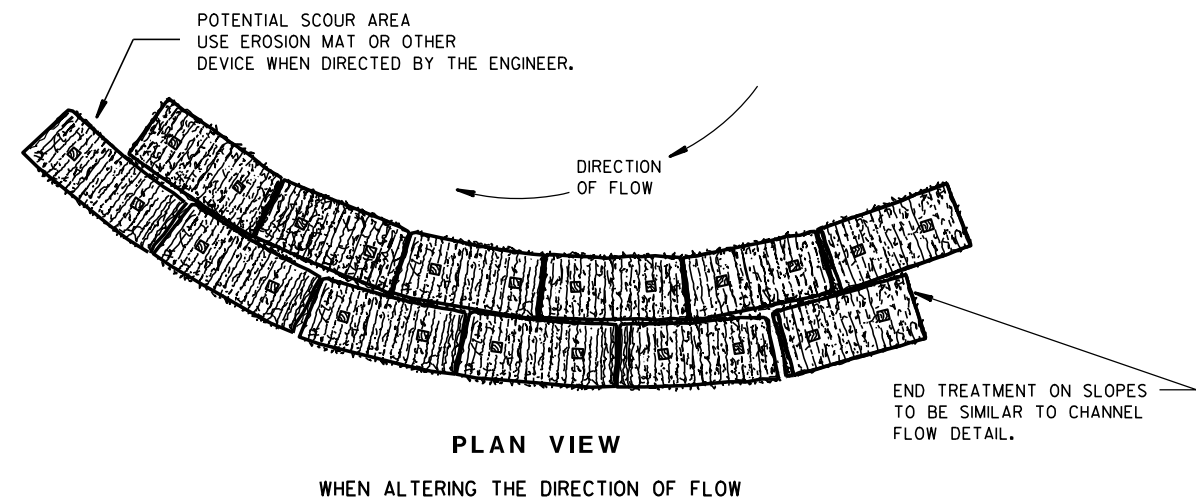
APPROVED
9-4-08 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS 51 MENT
FHWA ENGINEER



GENERAL NOTES

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

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

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02
DATE

/S/ Beth Connors
CHIEF ROADWAY DEVELOPER

FHWA



- 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 1½" X 1½" 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.

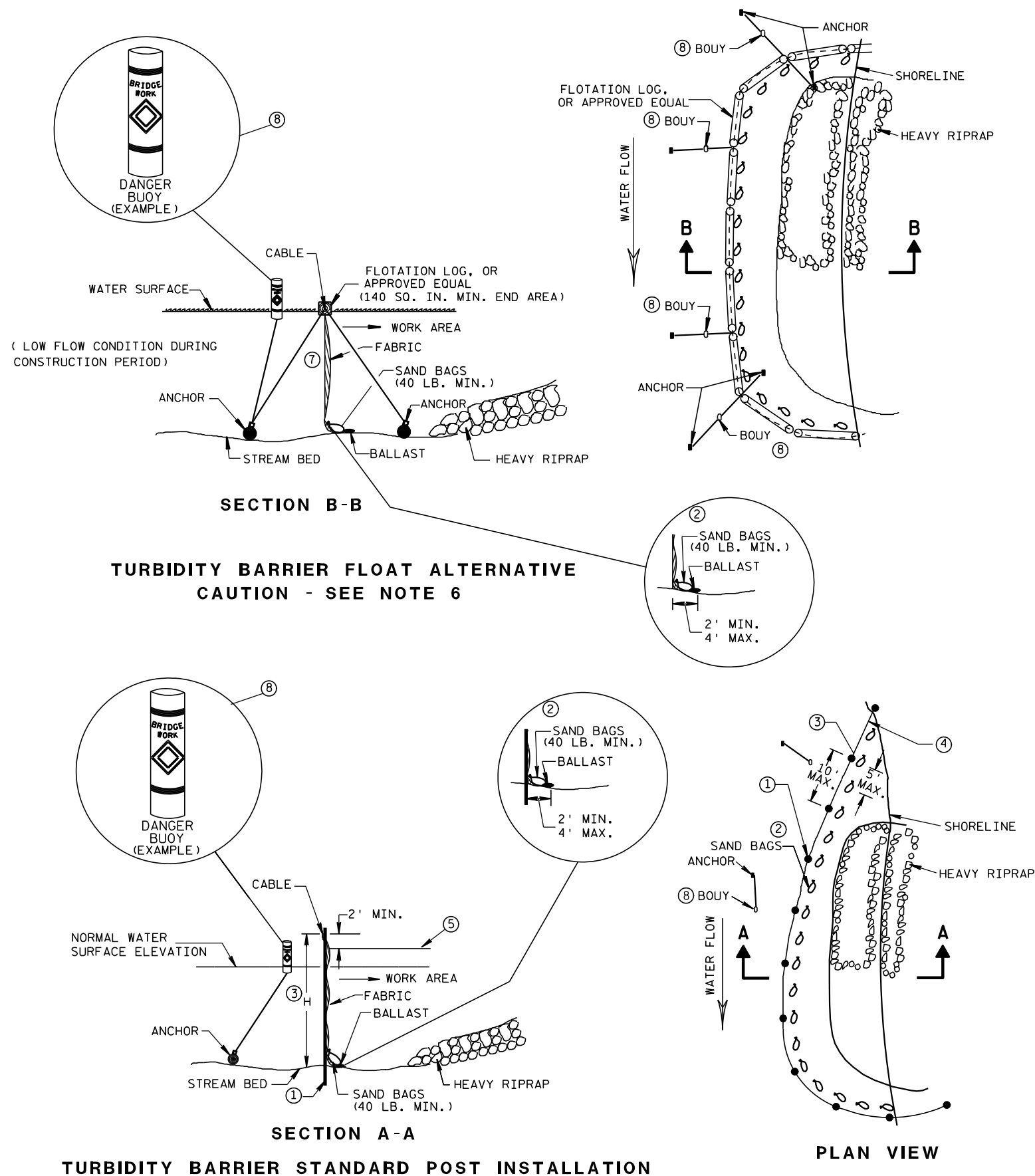


SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

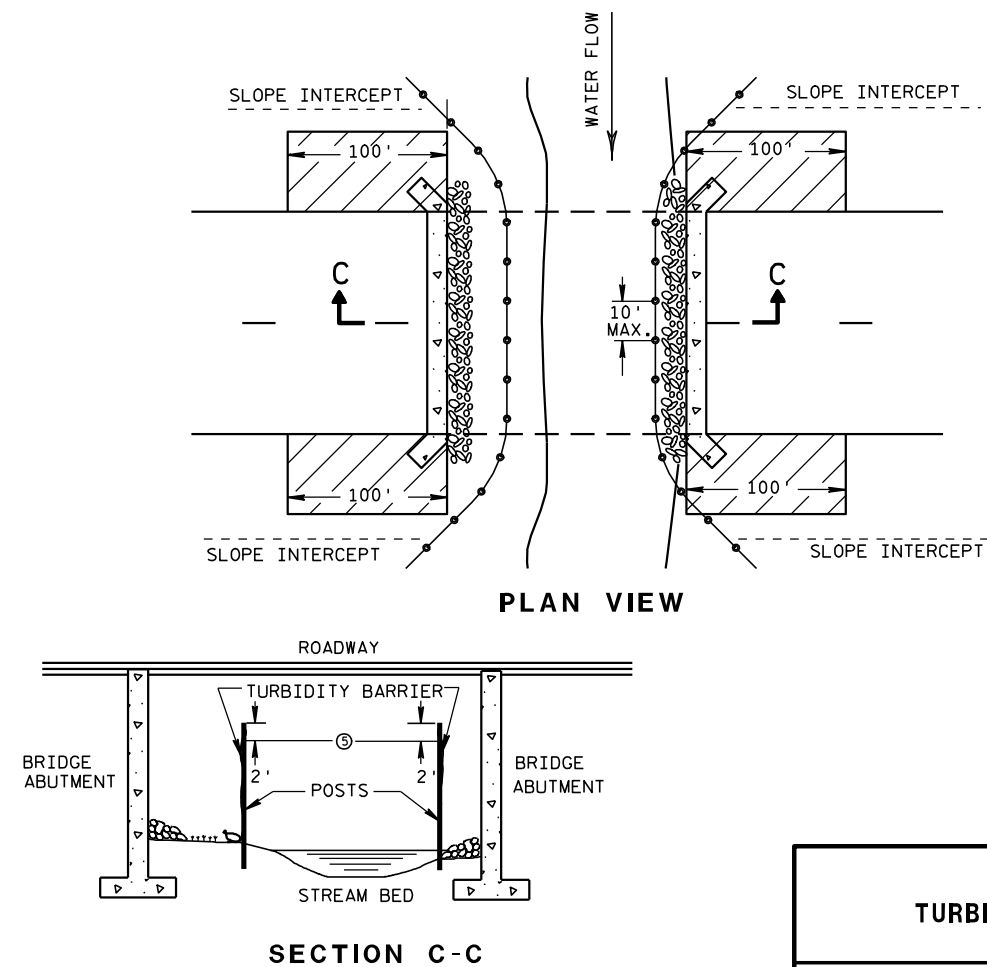


GENERAL NOTES

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

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

- ① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
- ② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
- ③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.
- ④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
- ⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.
- ⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.
- ⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
- ⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02

DATE

/S/ Beth Conn

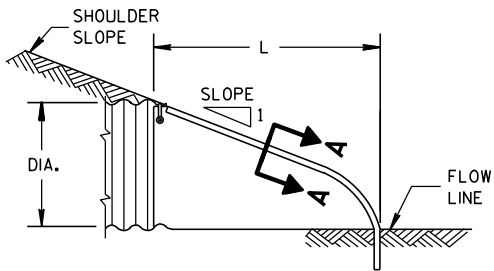
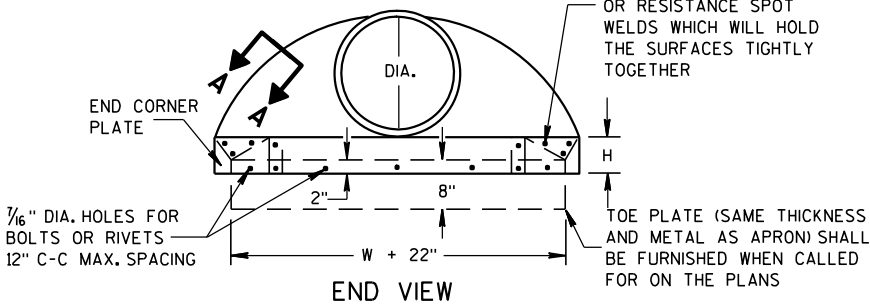
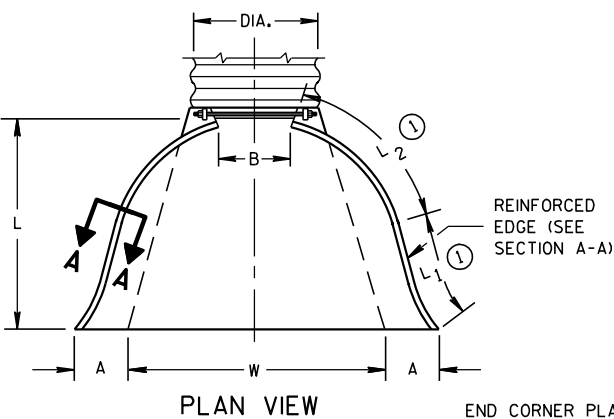
CHIEF ROADWAY DEVELOPER

FWHA

54 INEER

METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY	
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1½")	L ₁ ①	L ₂ ①	W (±2")			
12	.064	.060	6	6	6	21	12	17½	24	2½ to 1	1 Pc.	
15	.064	.060	7	8	6	26	14	21¾	30	2½ to 1	1 Pc.	
18	.064	.060	8	10	6	31	15	28¼	36	2½ to 1	1 Pc.	
21	.064	.060	9	12	6	36	18	29⅝	42	2½ to 1	1 Pc.	
24	.064	.075	10	13	6	41	18	37¼	48	2½ to 1	1 Pc.	
30	.079	.075	12	16	8	51	18	52¼	60	2½ to 1	1 Pc.	
36	.079	.105	14	19	9	60	24	59¾	72	2½ to 1	2 Pc.	
42	.109	.105	16	22	11	69	24	75⅝	84	2½ to 1	2 Pc.	
48	.109	.105	18	27	12	78	24	81	90	2¼ to 1	3 Pc.	
54	.109	.105	18	30	12	84	30	85½	102	2¼ to 1	3 Pc.	
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3 Pc.	
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3 Pc.	
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3 Pc.	
78	.109x	.105x	18	42	12	87	—	—	132	1½ to 1	3 Pc.	
84	.109x	.105x	18	45	12	87	—	—	138	1½ to 1	3 Pc.	
90	.109x	.105x	18	37	12	87	—	—	144	1½ to 1	3 Pc.	
96	.109x	.105x	18	35	12	87	—	—	150	1½ to 1	3 Pc.	

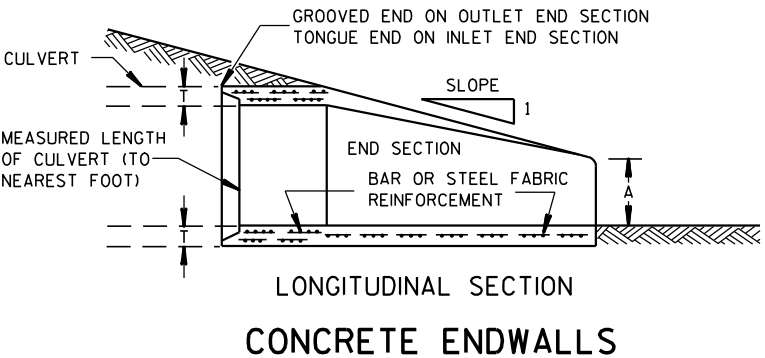
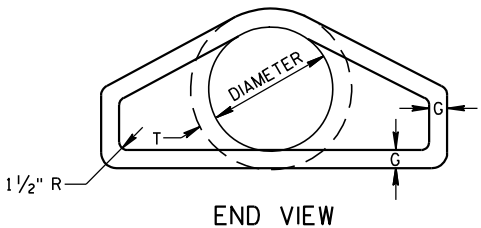
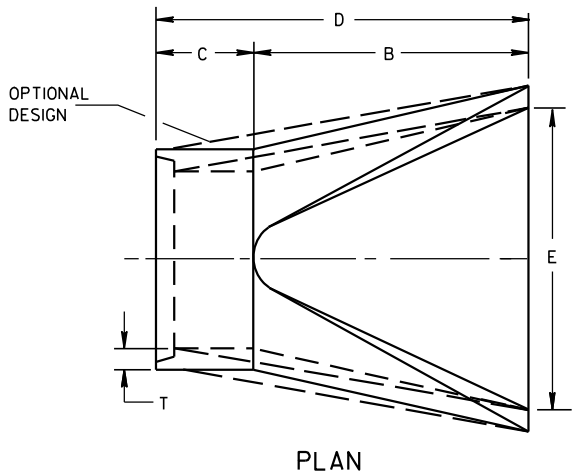
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



SIDE ELEVATION
METAL ENDWALLS

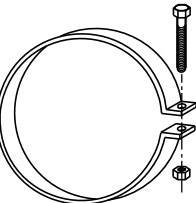
REINFORCED CONCRETE APRON ENDWALLS								
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 ¹ / ₈	72 ¹ / ₈	24	2	3 to 1
15	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	3 to 1
18	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	3 to 1
21	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	3 to 1
24	3	9 ¹ / ₂	43 ¹ / ₂	30	73 ¹ / ₂	48	3	3 to 1
27	3 ¹ / ₄	10 ¹ / ₂	49 ¹ / ₂	24	73 ¹ / ₂	54	3 ¹ / ₄	3 to 1
30	3 ¹ / ₂	12	54	19 ³ / ₄	73 ¹ / ₂	60	3 ¹ / ₂	3 to 1
36	4	15	63	34 ³ / ₄	97 ³ / ₄	72	4	3 to 1
42	4 ¹ / ₂	21	63	35	98	78	4 ¹ / ₂	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 ¹ / ₂	27	65	33 ¹ / ₄ -35	98 ¹ / ₄ -100	90	5 ¹ / ₂	2 ¹ / ₂ to 1
60	6	30-35	60	39	99	96	5	2 to 1
66	6 ¹ / ₂	24-30	72-78	21-27	99	102	5 ¹ / ₂	2 to 1
72	7	24-36	78	21	99	108	6	2 to 1
78	7 ¹ / ₂	24-36	78	21	99	114	6 ¹ / ₂	2 to 1
84	8	36	90 ¹ / ₂	21	111 ¹ / ₂	120	6 ¹ / ₂	1 ¹ / ₂ to 1
90	8 ¹ / ₂	41	87 ¹ / ₂	24	111 ¹ / ₂	132	6 ¹ / ₂	1 ¹ / ₂ to 1

* MINIMUM
** MAXIMUM

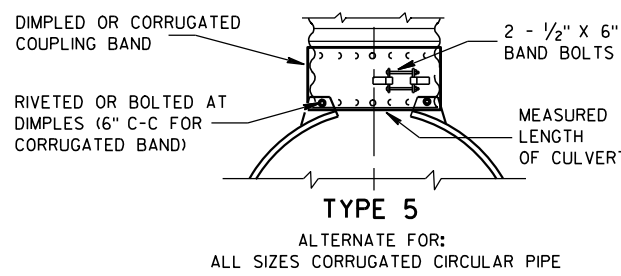
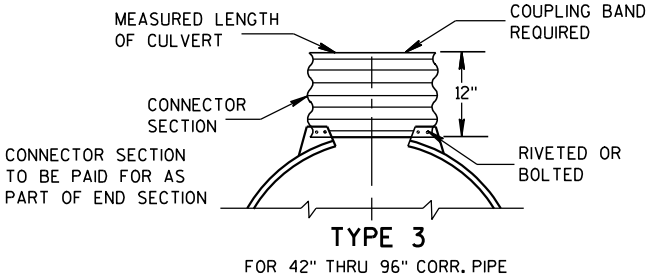
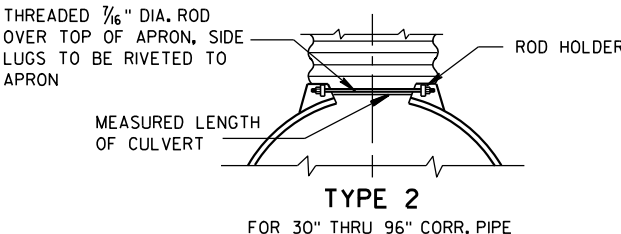
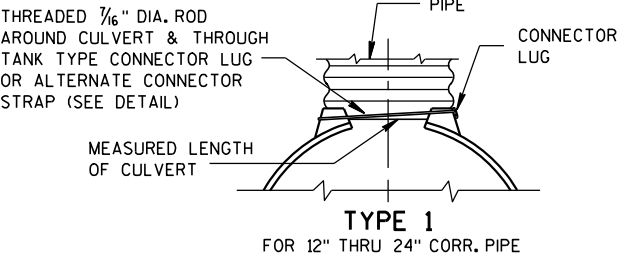


LONGITUDINAL SECTION
CONCRETE ENDWALLS

1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



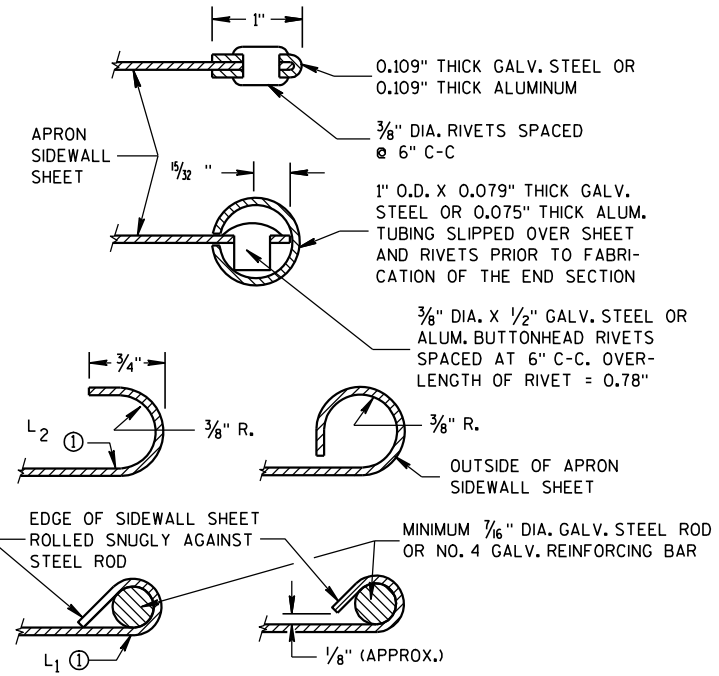
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

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.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

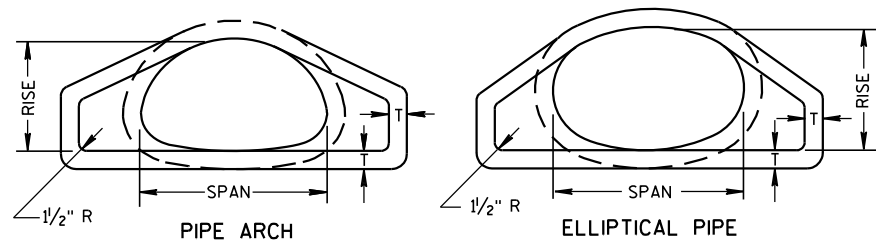
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

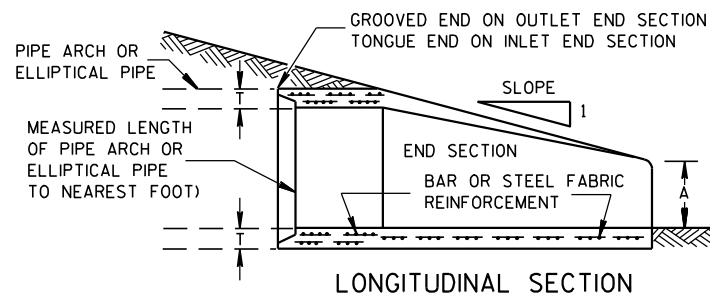
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 11/30/94 DATE	/S/ Rory L. Rhin... CHIEF ROADWAY DEVELOP 55 NEER
FHWA	

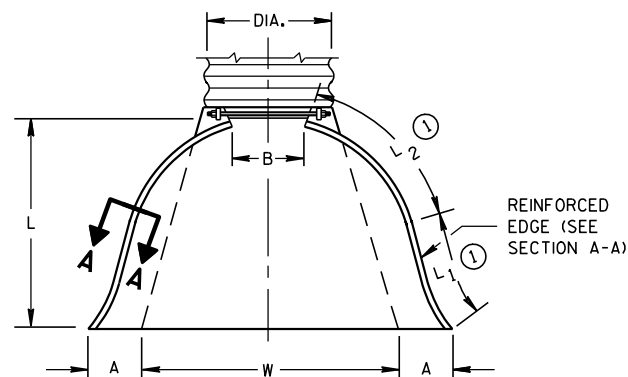


END VIEW



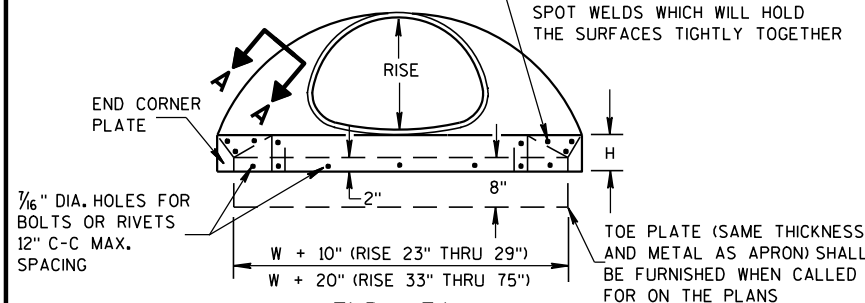
LONGITUDINAL SECTION

CONCRETE ENDWALLS

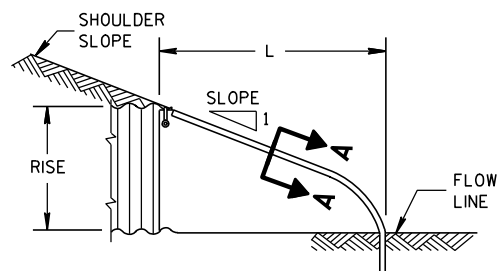
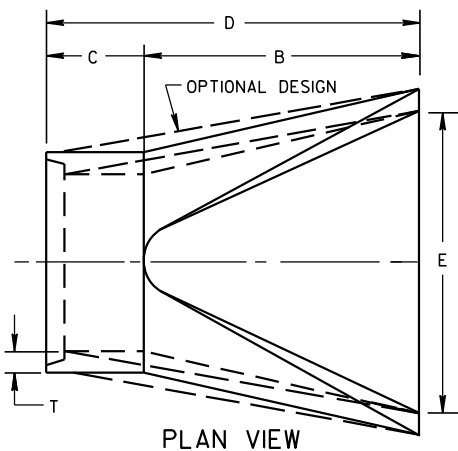


PLAN VIEW

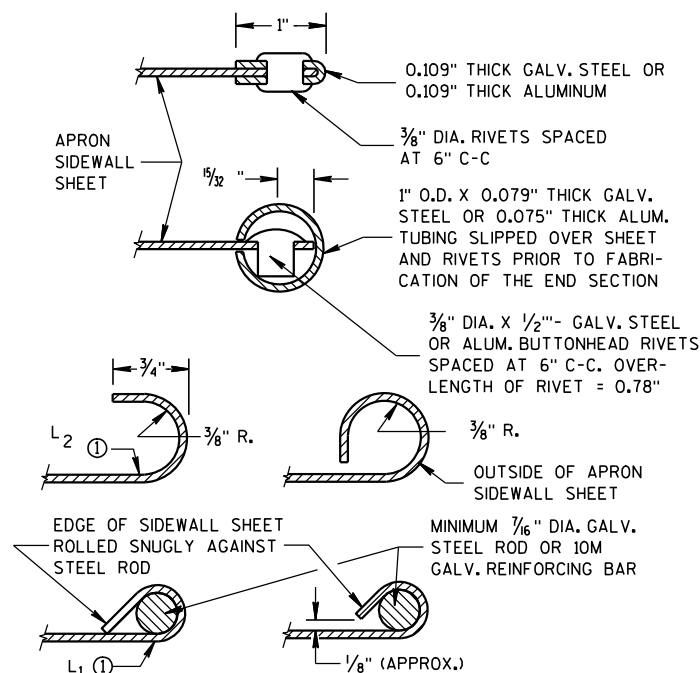
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



END VIEW

SIDE ELEVATION
METAL ENDWALLS

PLAN VIEW



SECTION A-A

2- 2 ² / ₃ " x 1 ¹ / ₂ " CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK.		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
15	17	13	.064	.060	7	9	6	19	14	16	30	2 1/2 to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19 3/8	36	2 1/2 to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21 3/4	42	2 1/2 to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27 1/2	48	2 1/2 to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37 5/8	60	2 1/2 to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45 3/8	75	2 1/2 to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54 3/4	85	2 1/2 to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2 1/2 to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72 3/4	102	2 1/4 to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82 1/4	114	2 1/4 to 1	3 Pc.
66	77	52	.109*	.105*	18	36	12	77	—	—	126	2 to 1	3 Pc.
72	83	57	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.

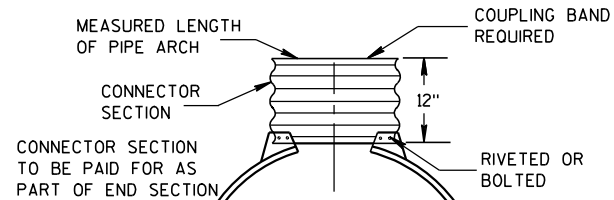
3" X 1" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1½")	L ₁ ①	L ₂ ①	W (±2")		
48	53	41	.109	.105	18	26	12	63	24	72¾	90	2½ to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82¼	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1½ to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1½ to 1	3 Pc.
72	81	59	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.
78	87	63	.109*	.105*	22	38	12	77	—	—	148	1½ to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1½ to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1½ to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1½ to 1	3 Pc.

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL
SEE GENERAL NOTES

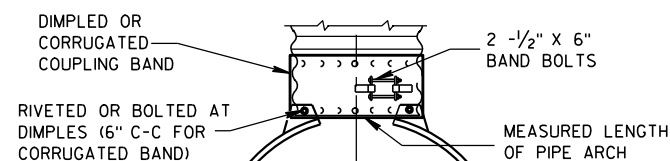
TYPE 2

FOR 17" X 13" THRU 112" X 75" PIPE ARCH



TYPE 3

FOR 64" X 43" THRU 112" X 75" PIPE ARCH



TYPE 5

ALTERNATE FOR:
ALL SIZES CORRUGATED PIPE ARCHESNOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

REINFORCED CONCRETE PIPE ARCH

EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE
	** SPAN	** RISE	T	A	B	C	D	E	
24	29	18	3	8 1/2	39	33	72	48	3 to 1
30	36	22	3 1/2	9 1/2	50	46	96	60	3 to 1
36	44	27	4	11 1/8	60	36	96	72	3 to 1
42	51	31	4 1/2	15 1/16	60	36	96	78	3 to 1
48	58	36	5	21	60	36	96	84	3 to 1
54	65	40	5 1/2	25 1/2	60	36	96	90	3 to 1
60	73	45	6	31	60	36	96	96	3 to 1
72	88	54	7	31	60	39	99	120	2 to 1
84	102	62	8	28 1/2	83	19	102	144	2 to 1

REINFORCED CONCRETE ELLIPTICAL PIPE

EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE
	** SPAN	** RISE	T	A	B	C	D	E	
24	30	19	3 1/4	8 1/2	39	33	72	48	3 to 1
30	38	24	3 3/4	9 1/2	54	18	72	60	3 to 1
36	45	29	4 1/2	11 1/8	60	24	84	72	2 1/2 to 1
42	53	34	5	15 1/4	60	36	96	78	2 1/2 to 1
48	60	38	5 1/2	21	60	36	96	84	2 1/2 to 1
54	68	43	6	25 1/2	60	36	96	90	2 1/2 to 1
60	76	48	6 1/2	30	60	36	96	96	2 1/2 to 1

**NOMINAL SIZE

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.

CONCRETE APRON ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM APRON ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE ARCH PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 77" X 52" THROUGH 112" X 75" APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR
PIPE ARCH AND
ELLIPTICAL PIPESTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

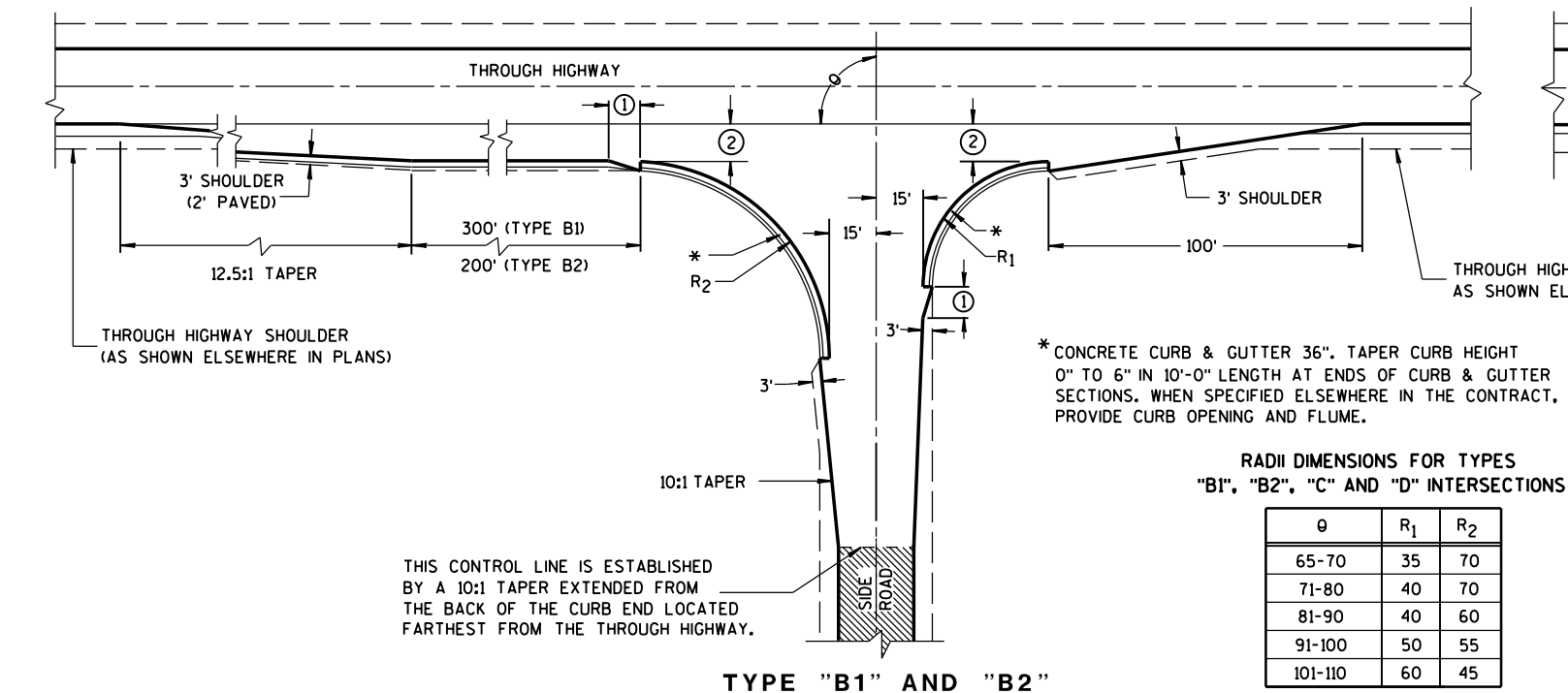
11/30/94

DATE

FHWA

/S/ Rory L. Rhinehart
CHIEF ROADWAY DEVELOPER

ENGINEER



RADII DIMENSIONS FOR TYPES "B1", "B2", "C" AND "D" INTERSECTIONS

θ	R ₁	R ₂
65-70	35	70
71-80	40	70
81-90	40	60
91-100	50	55
101-110	60	45

GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

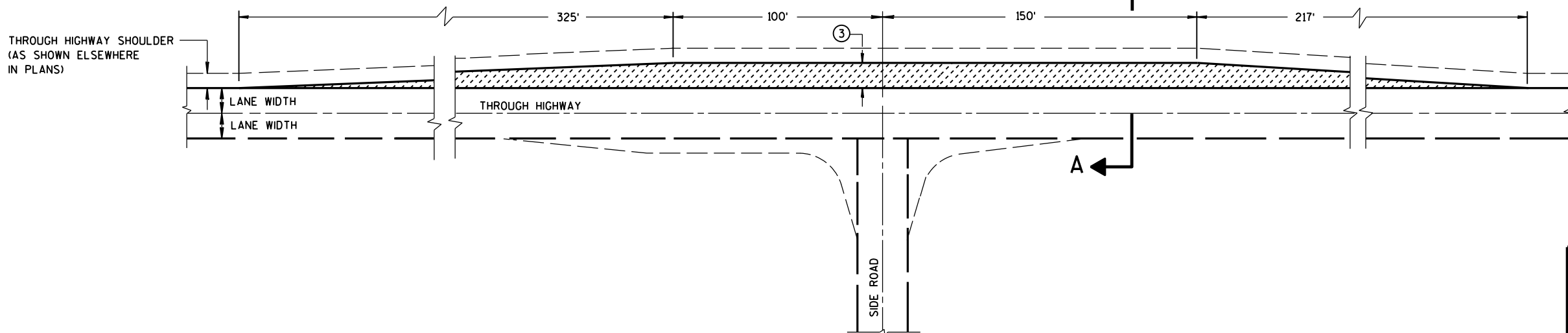
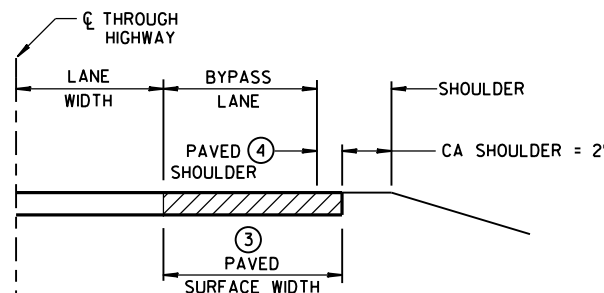
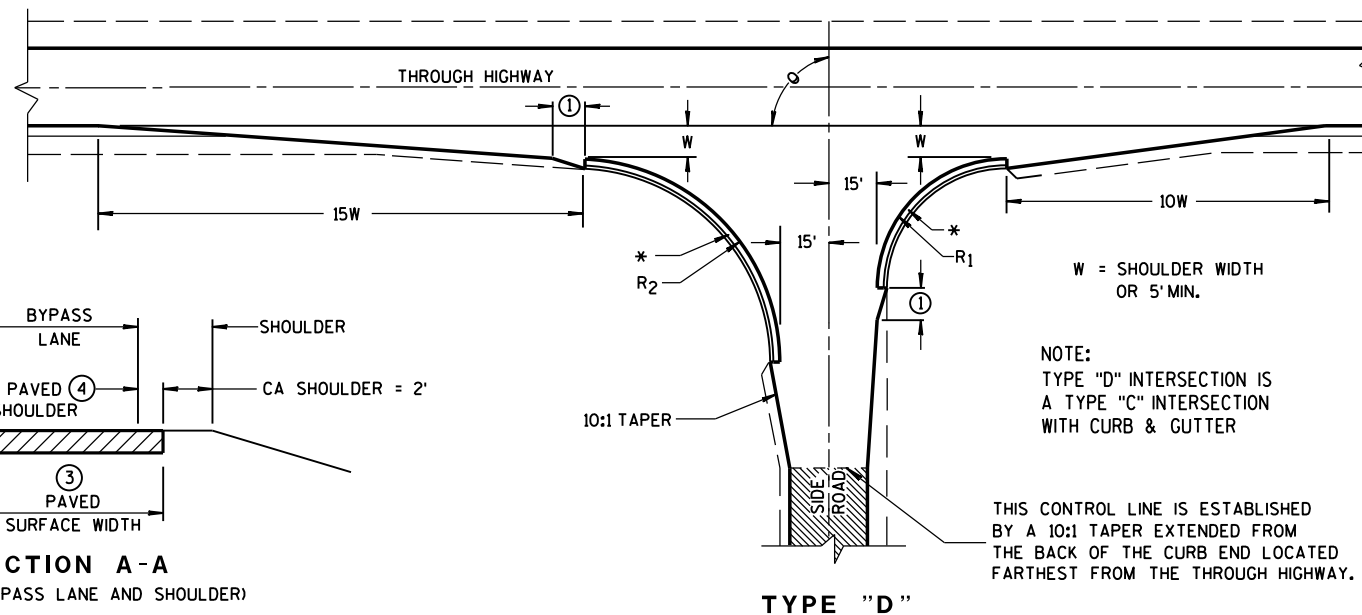
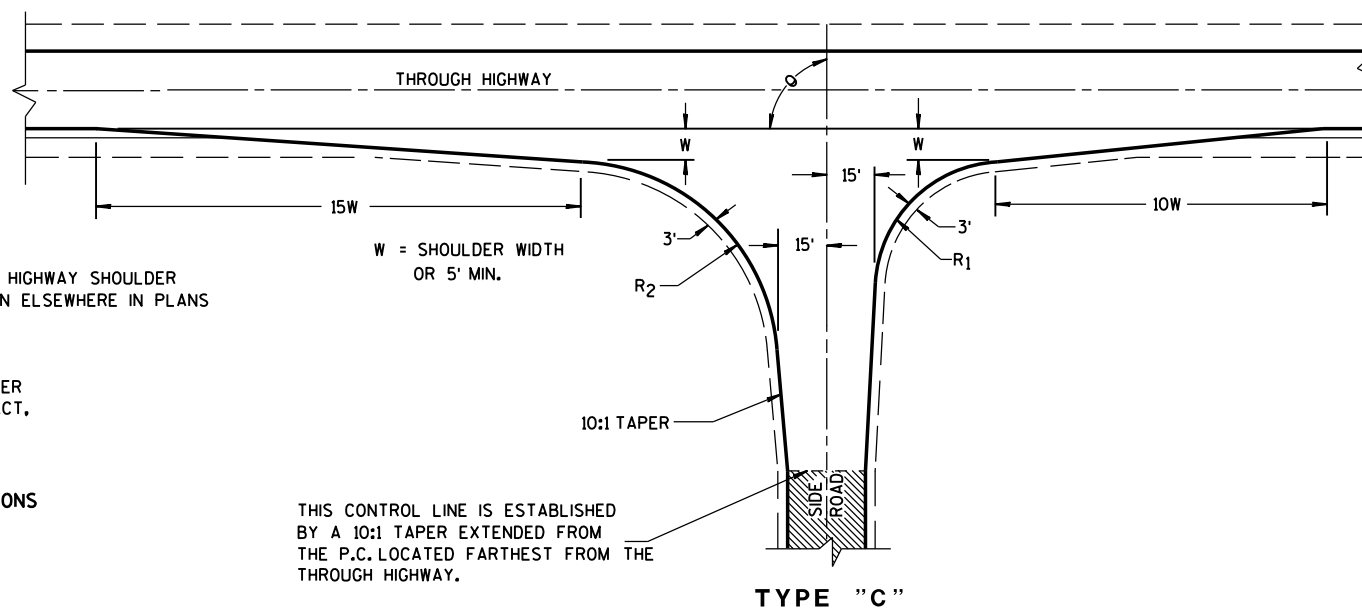
WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

EXISTING PAVED SURFACE

BYPASS LANE

- ① 10-FT TYPICAL.
- ② 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

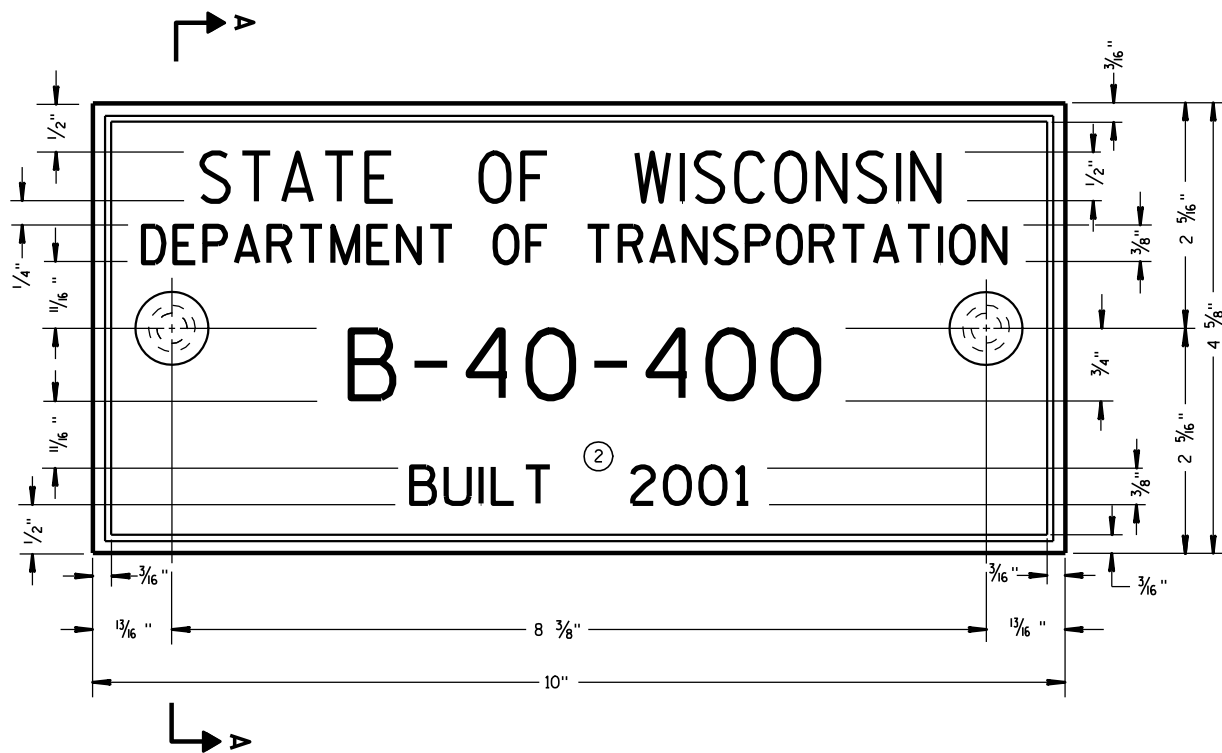
**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.
- ③ BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.
- ④ BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.



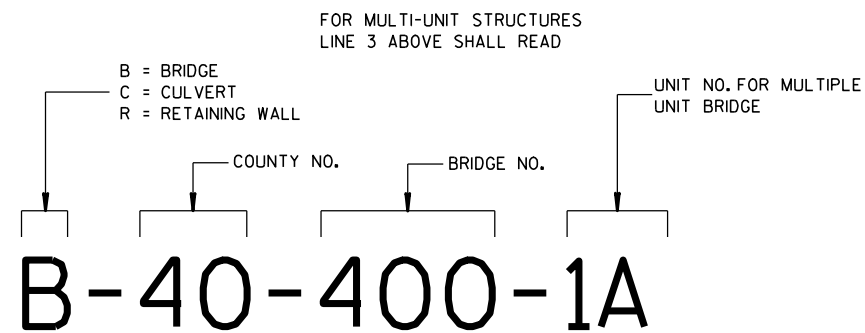
TEE INTERSECTION BYPASS LANE DETAIL

AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND "D" AND TEE INTERSECTION BYPASS LANE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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



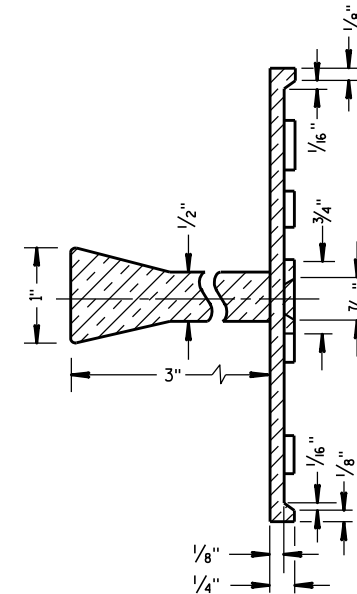
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

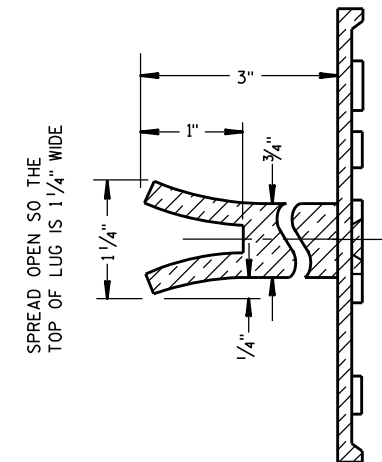
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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

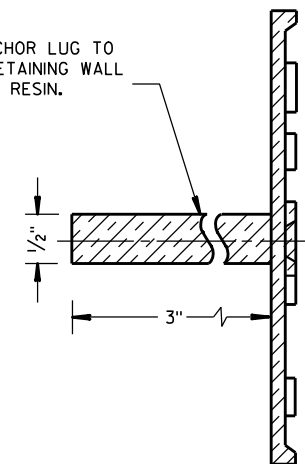


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

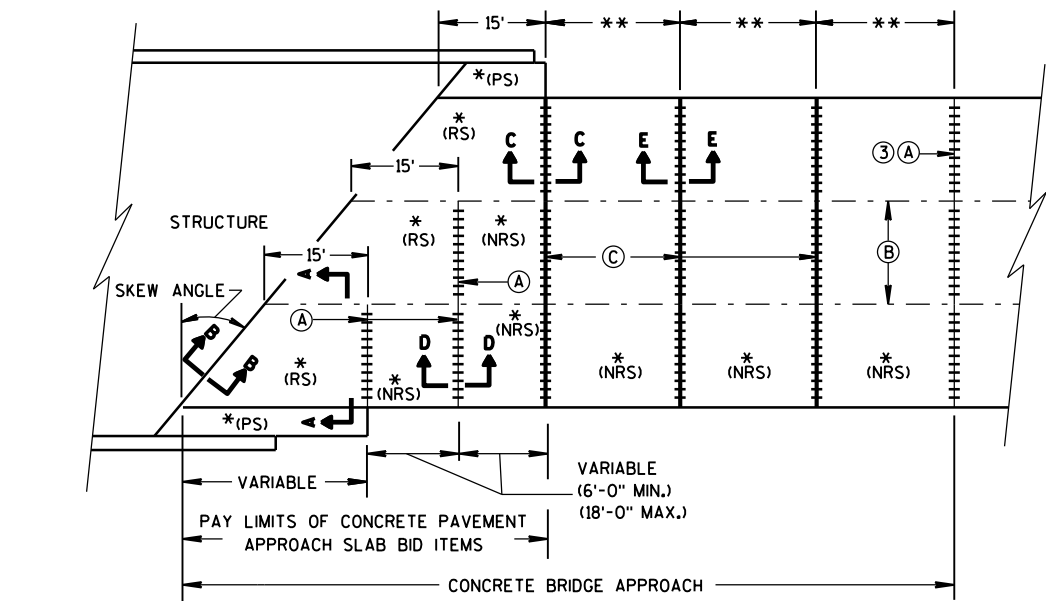
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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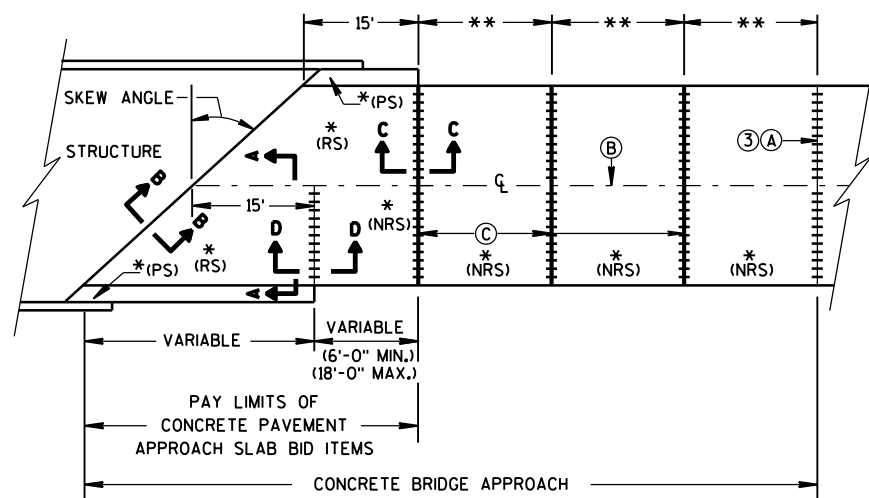
3/26/10
DATE

FHWA

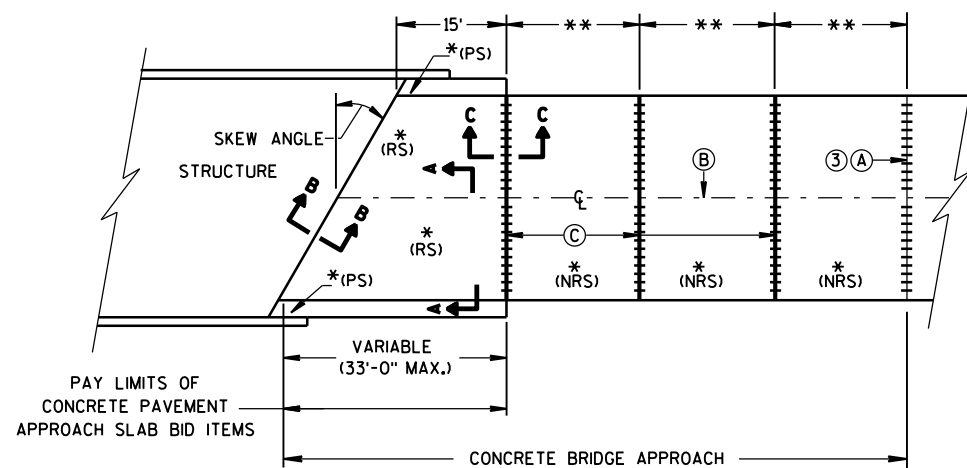
/S/ Scot Beck
CHIEF STRUCTURAL DEVELOPER
58
JEER



**SKewed APPROACH
(PAVEMENT MORE THAN 2 LANES)**



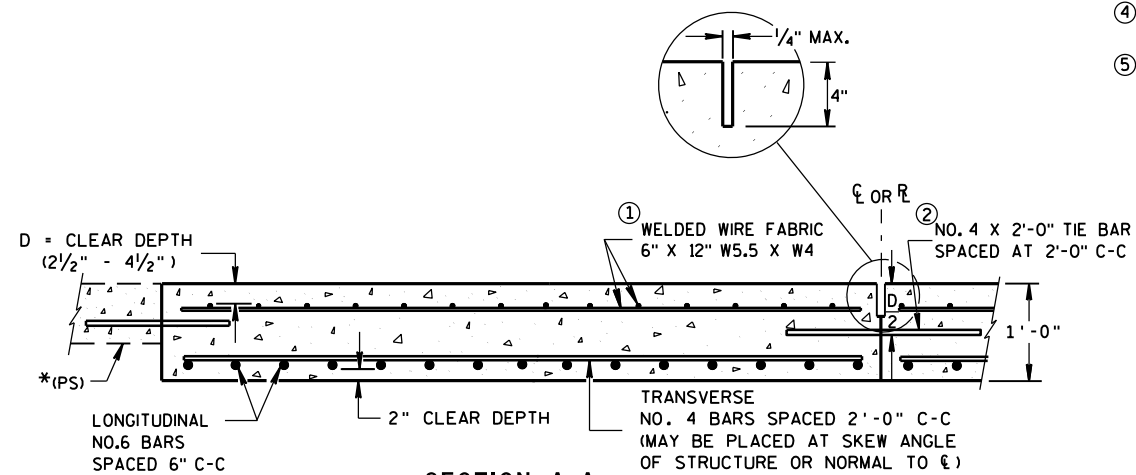
**SKEWS > 30°
(PAVEMENT WIDTH ≤ 30')**



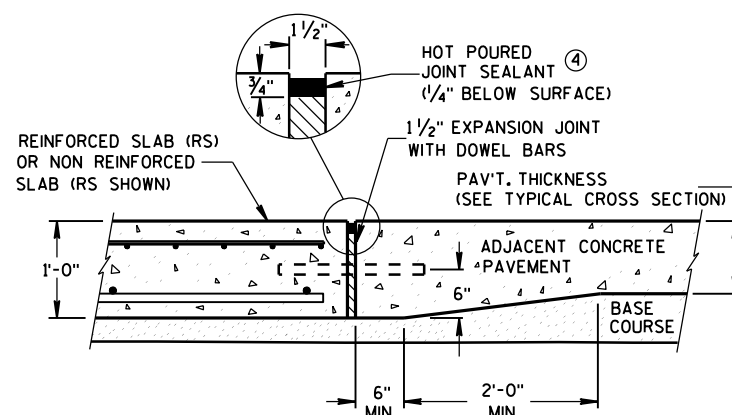
**SKEWS ≤ 30°
(PAVEMENT WIDTH ≤ 30')
APPROACH SLAB AND ADJACENT PAVEMENT**

- *(RS) = REINFORCED CONCRETE SLAB
 *(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN
 (SEE DETAILS ELSEWHERE IN THE PLAN)
 *(NRS) = NON-REINFORCED CONCRETE SLAB
 **STANDARD TRANSVERSE JOINT SPACING
 (SEE SDD 13C4, SDD 13C11, & SDD 13C13)
 ***STANDARD DOWEL BAR DIAMETER
 (SEE SDD 13C11, & SDD 13C13)

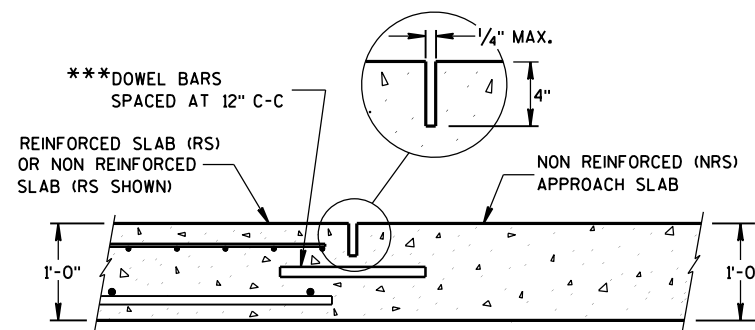
- (A) STANDARD CONTRACTION JOINT NORMAL TO R_L OR R_C
 (B) STANDARD LONGITUDINAL JOINT AND TIE BARS.
 (C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO R_L OR R_C



**SECTION A-A
REINFORCEMENT POSITIONING DETAIL**



**SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**



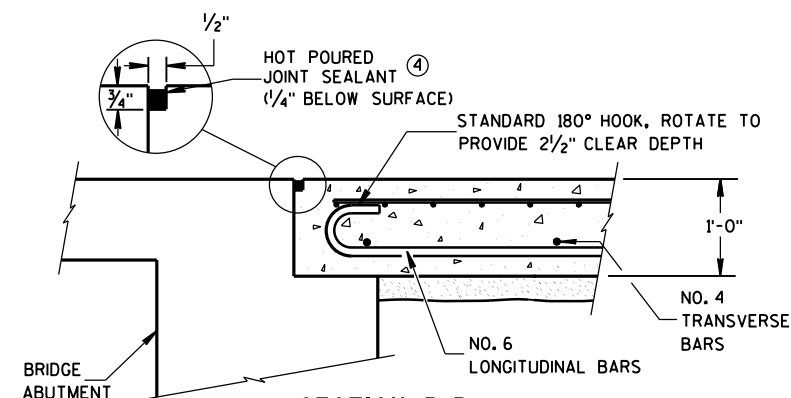
**SECTION D-D
CONTRACTION JOINT**

GENERAL NOTES

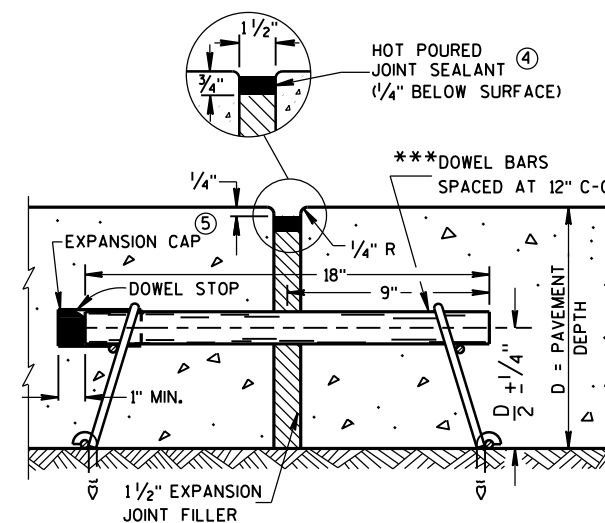
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- DO NOT DOWEL A CONTRACTION JOINT THAT ABUTS AN HMA PAVEMENT.
- USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.
- PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.



**SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT**



**SECTION E-E
EXPANSION JOINT**

CONCRETE BRIDGE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2014

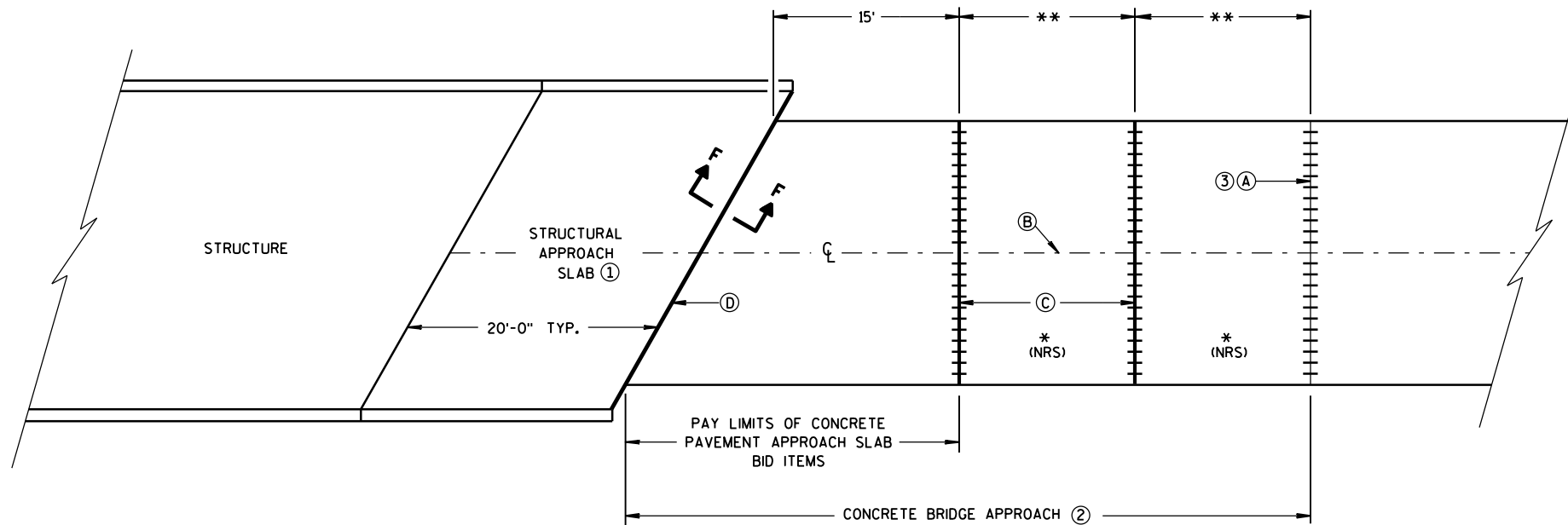
DATE

/S/ Deb Bischoff

PAVEMENT POLICY & DE 59

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**BRIDGE APPROACHES****GENERAL NOTES**

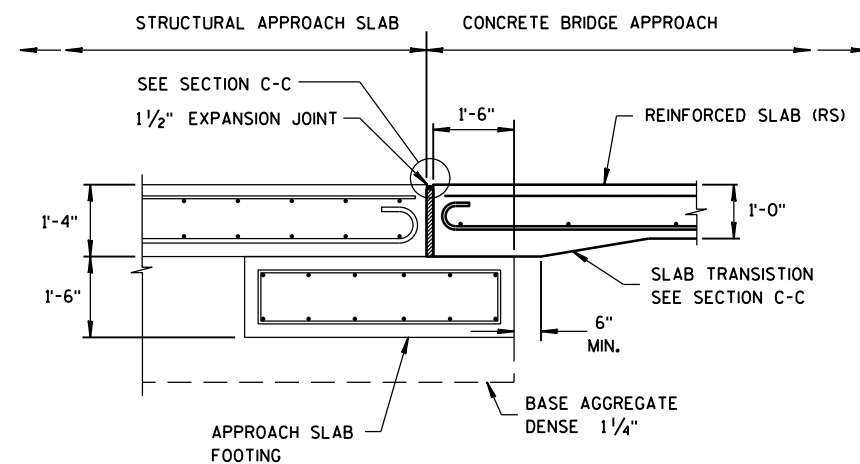
ALL PROJECTS THAT INVOLVE A STRUCTURAL APPROACH SLAB WILL ALSO HAVE A CONCRETE BRIDGE APPROACH.

- ① CONFORM TO APPLICABLE BRIDGE MANUAL STANDARD DRAWINGS FOR *STRUCTURAL APPROACH SLABS* (SEE CHAPTER 12 - ABUTMENTS).
- ② CONFORM TO SHEET (a) OF THIS SET FOR *CONCRETE BRIDGE APPROACH* DETAILS, WITH ONE EXCEPTION—WHEN CONSTRUCTING A *CONCRETE BRIDGE APPROACH* NEXT TO A *STRUCTURAL APPROACH SLAB*, AS SHOWN IN THE DETAIL DRAWING, THE *CONCRETE BRIDGE APPROACH* WILL ONLY HAVE TWO EXPANSION JOINTS; THE THIRD EXPANSION JOINT IS AT THE END OF THE *STRUCTURAL APPROACH SLAB*.
- ③ DO NOT DOWEL A CONTRACTION JOINT THAT ABUTS AN HMA PAVEMENT.

*(NRS) = NON-REINFORCED CONCRETE SLAB

**STANDARD TRANSVERSE JOINT SPACING
(SEE SDD 13C4, SDD 13C11, & SDD 13C13)

- Ⓐ STANDARD CONTRACTION JOINT NORMAL TO R_L OR C_L
- Ⓑ STANDARD LONGITUDINAL JOINT AND TIE BARS.
- Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO R_L OR C_L
- Ⓓ 1½" EXPANSION JOINT (NO DOWELS)

**SECTION F-F****FOOTING DETAIL**

STRUCTURAL APPROACH SLAB TO CONCRETE BRIDGE APPROACH

**STRUCTURAL APPROACH SLAB
AND
CONCRETE BRIDGE APPROACH**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

APPROVED

June, 2014

DATE

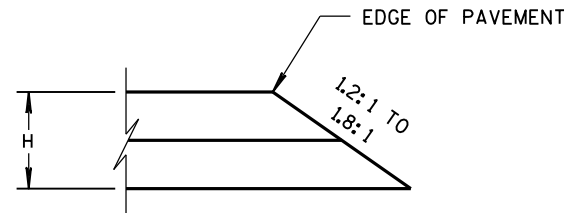
FHWA

/S/ Deb Bischoff

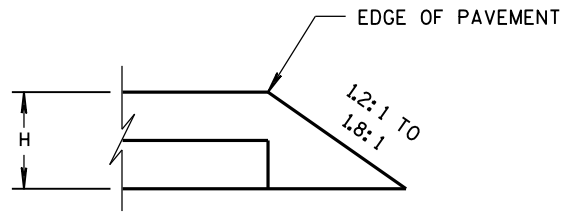
PAVEMENT POLICY & DE

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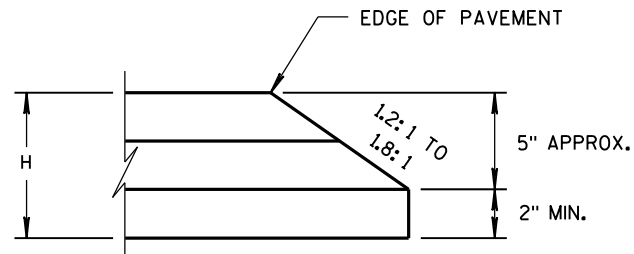
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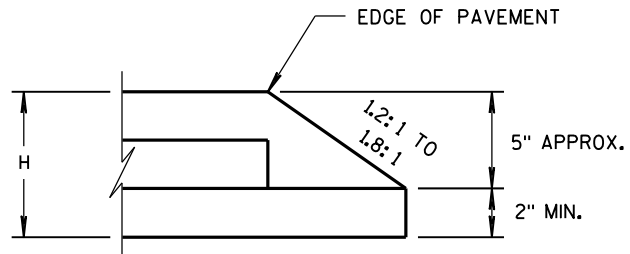
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

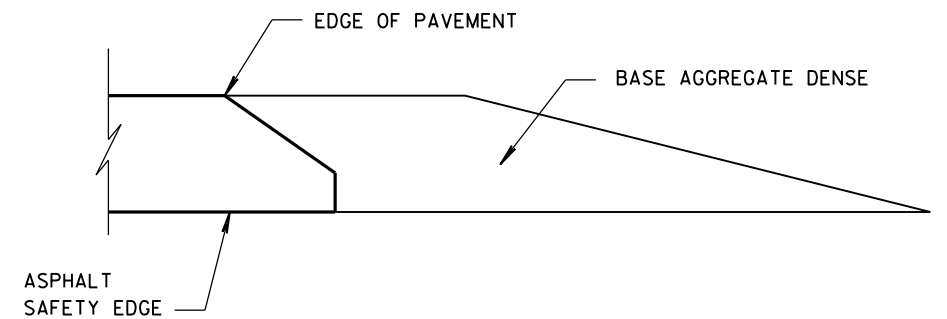


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE _{SM}		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED DATE 11/30/2012	/S/ Jerry H. Zoog ROADWAY STANDARDS ENGINEER	61 ENT
FHWA		

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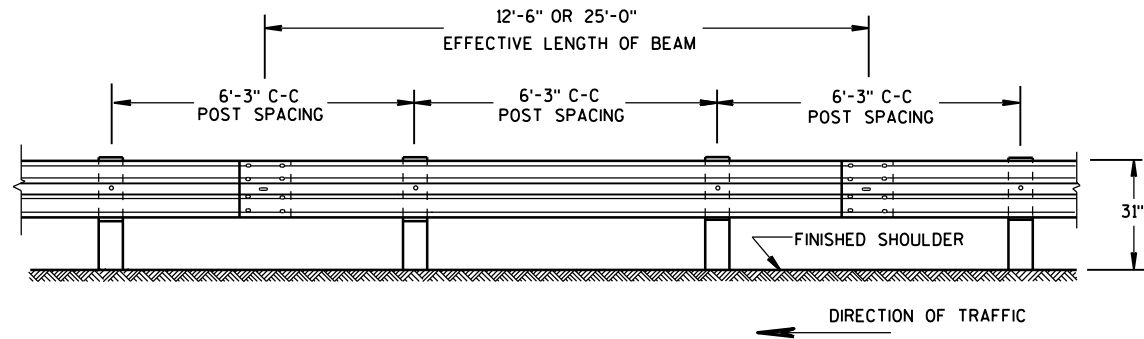
- S.D.D. 14 B 42-3a**



S.D.D. 14 B 42-3a

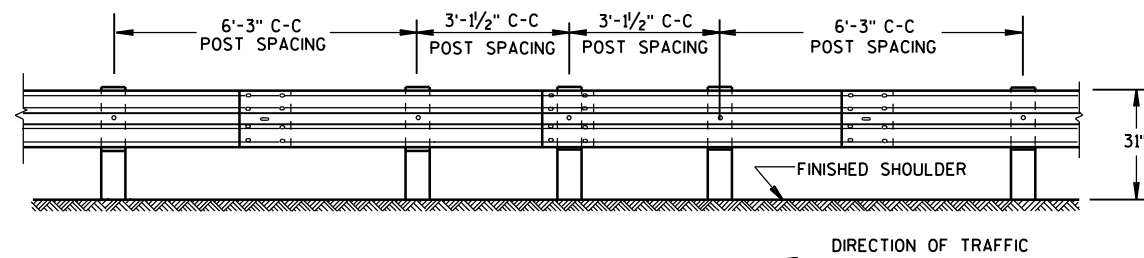


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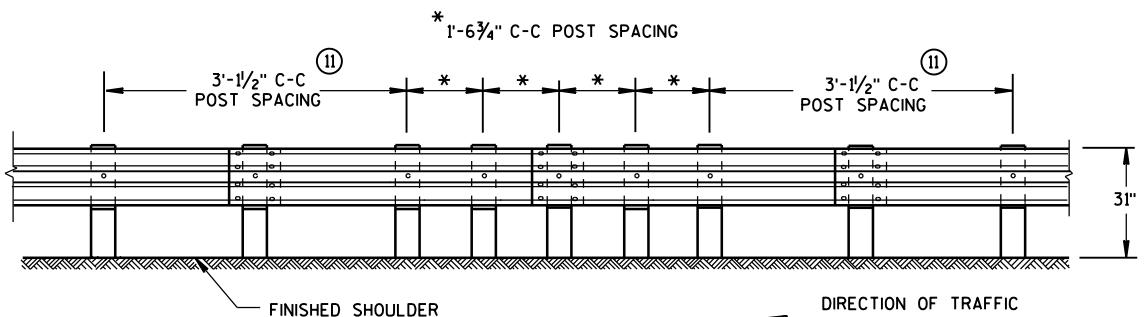
FRONT VIEW

POST SPACING STANDARD INSTALLATION



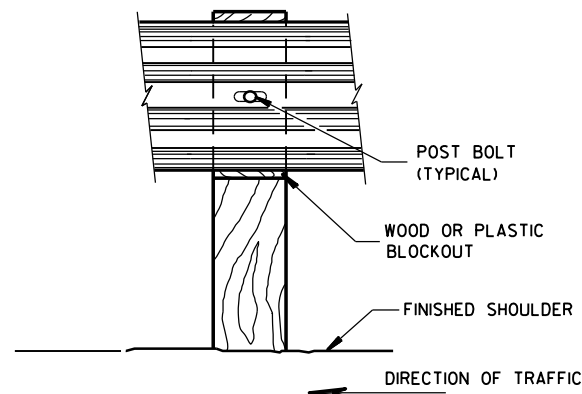
FRONT VIEW

HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)

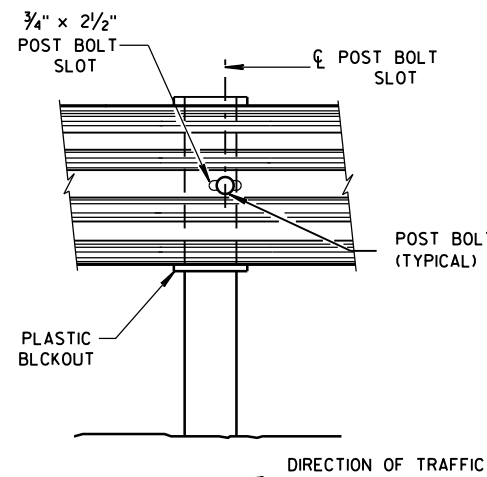


FRONT VIEW

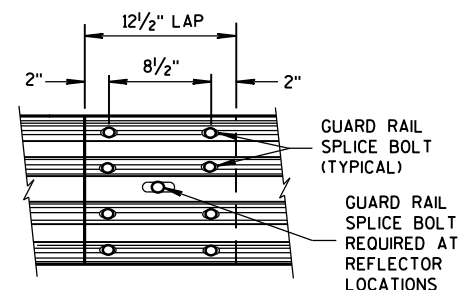
QUARTER POST SPACING (QS)



FRONT VIEW AT WOOD POST

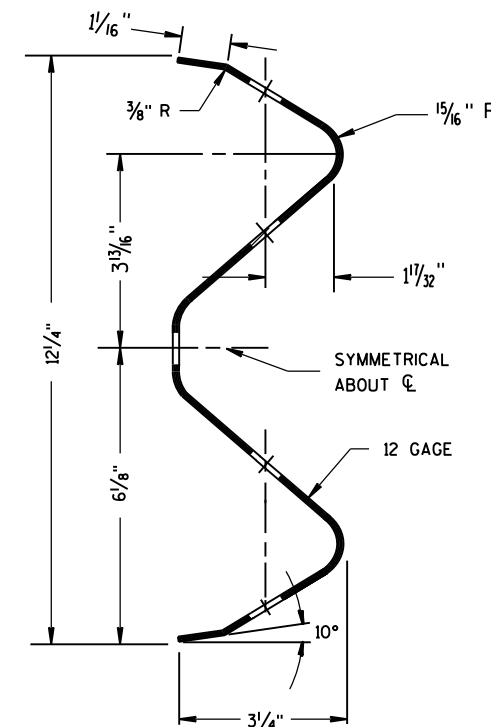


FRONT VIEW AT STEEL POST

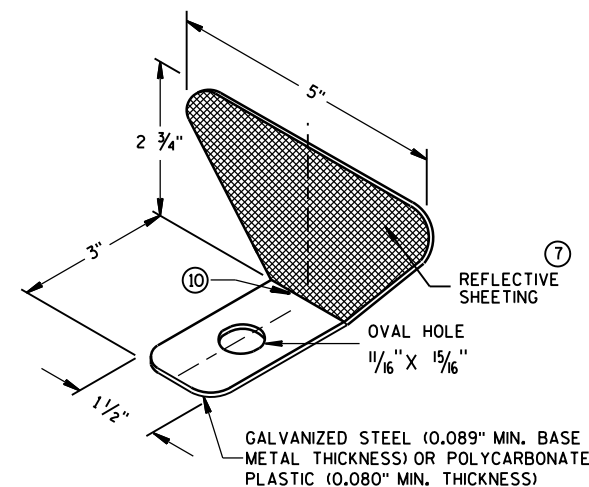
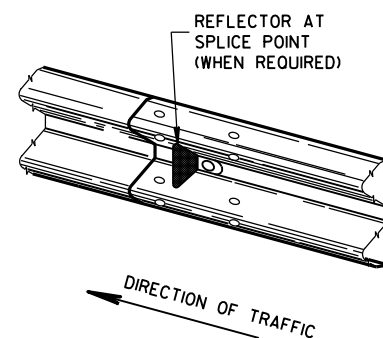


FRONT VIEW

MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

- ⑦ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
- ⑨ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
- ⑩ PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
- ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND $\frac{5}{8}$ " DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

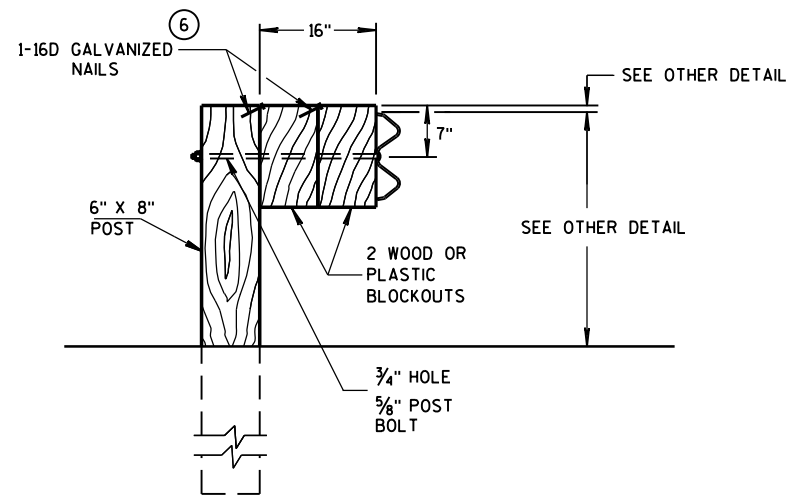
GUARD RAIL SPLICE BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

REFLECTOR SPACING

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 ⑨	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ⑩	3
	> 200'	100' C-C	2	

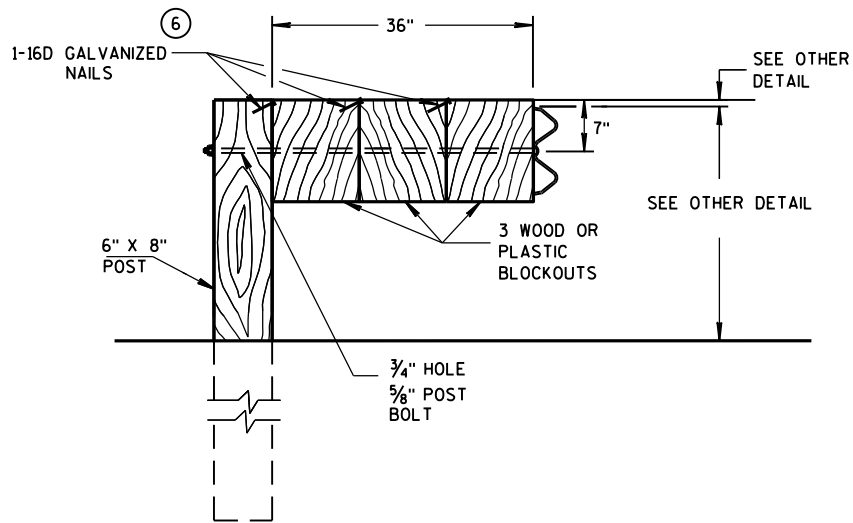
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

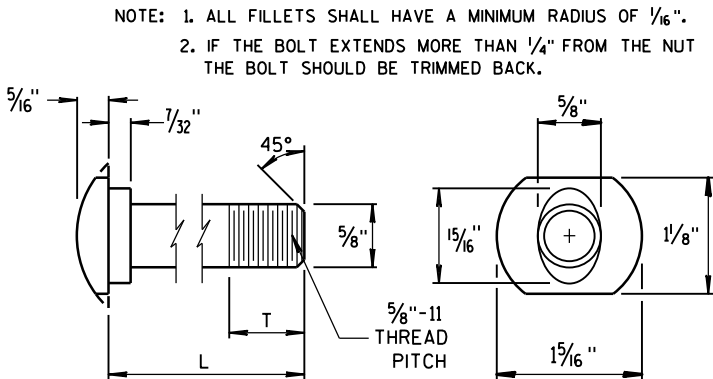
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

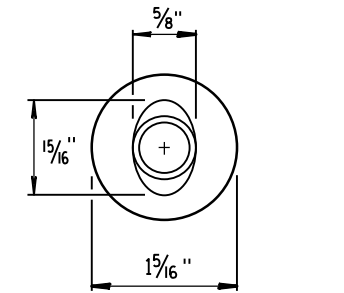
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

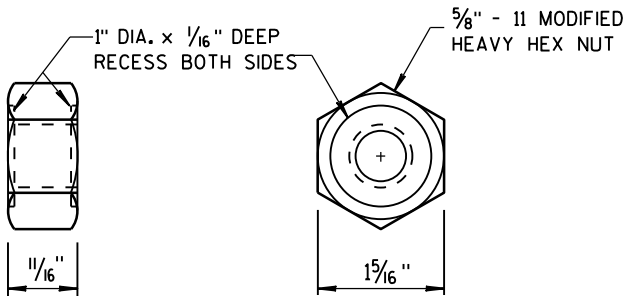


POST BOLT TABLE

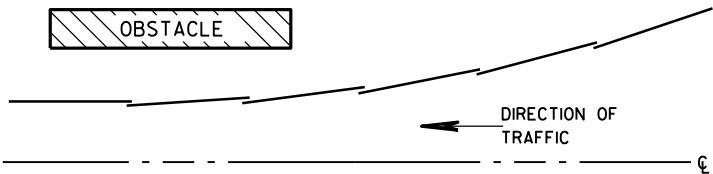
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



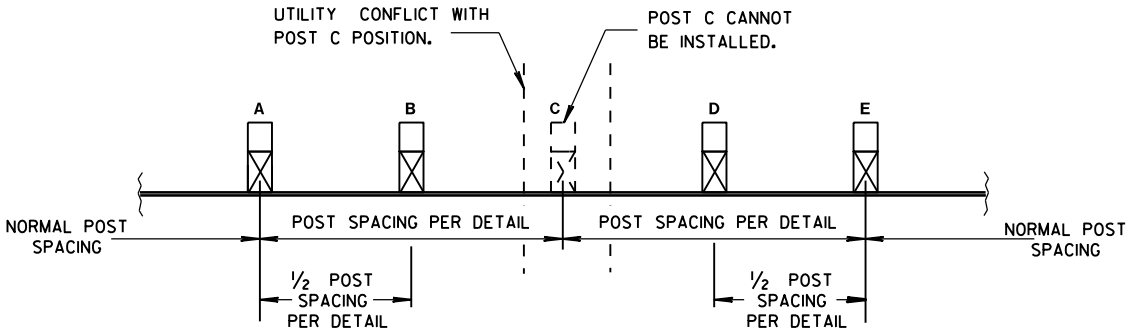
ALTERNATE BOLT HEAD



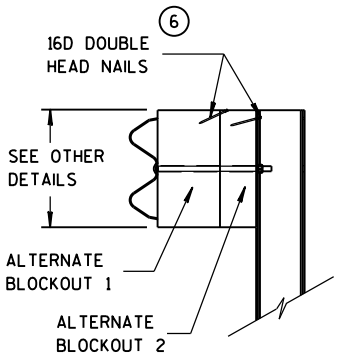
POST BOLT
AND RECESS NUT



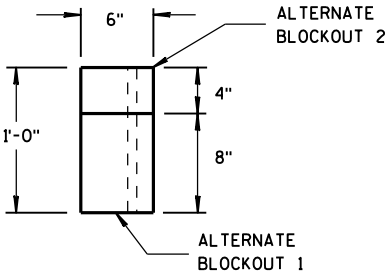
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS (64) INT
FHWA ENGINEER

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.
- (D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.
- (F) 1/2" DIAMETER X 3" LONG LAG BOLT AND WASHER.
- (H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.
- (I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

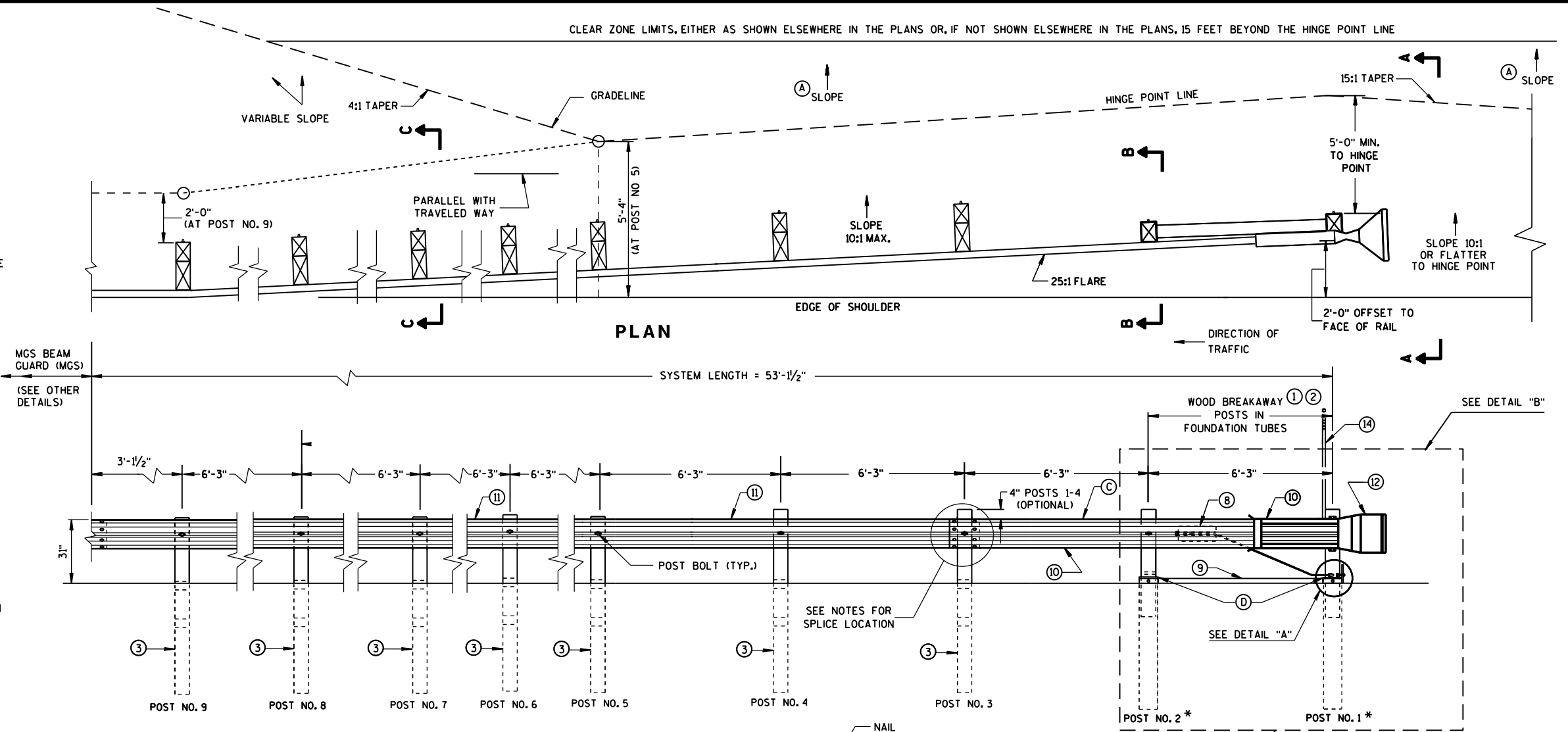
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

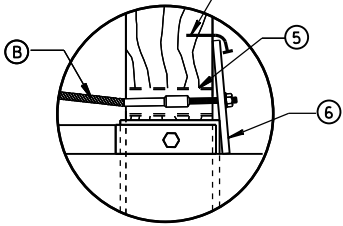
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

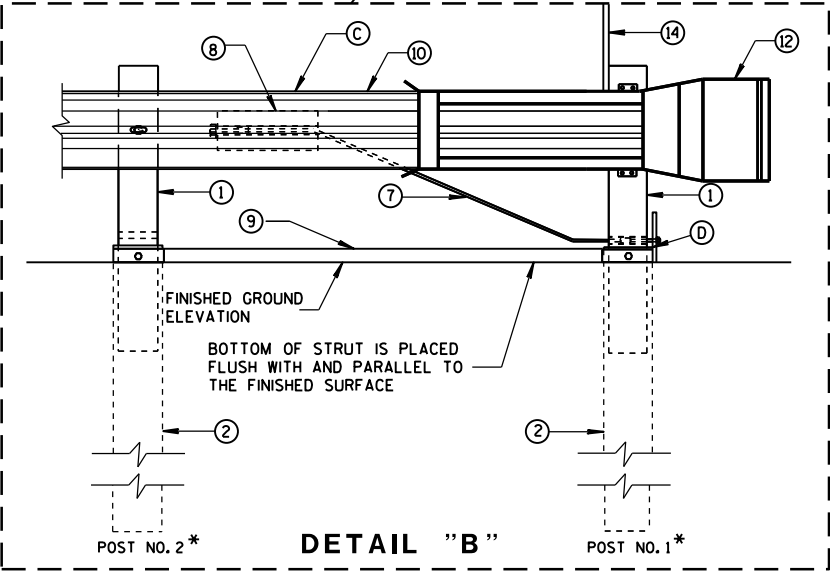
THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



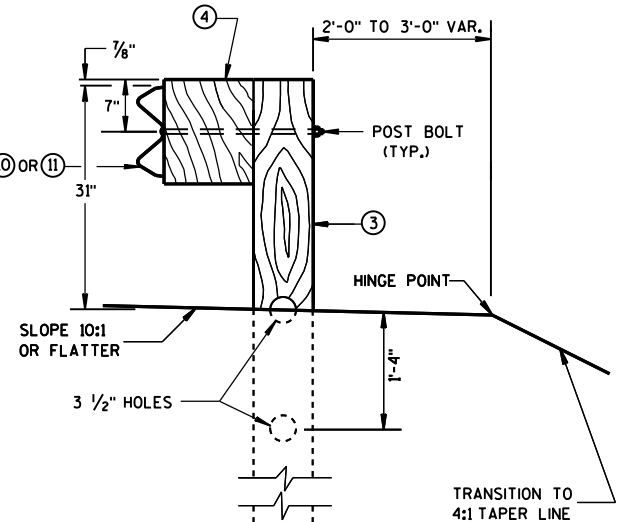
ELEVATION



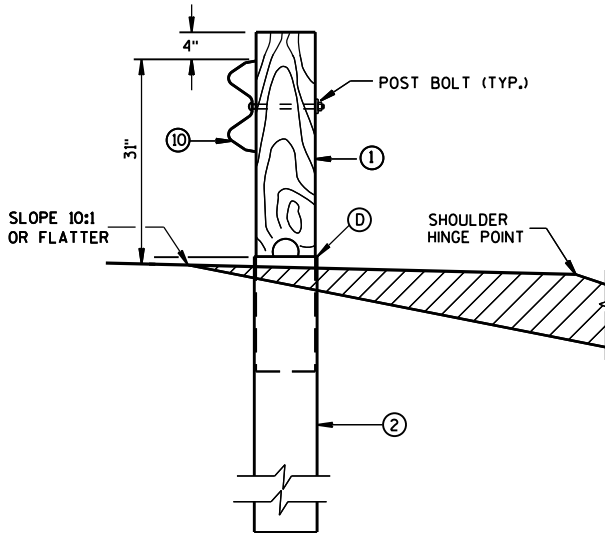
DETAIL "A"



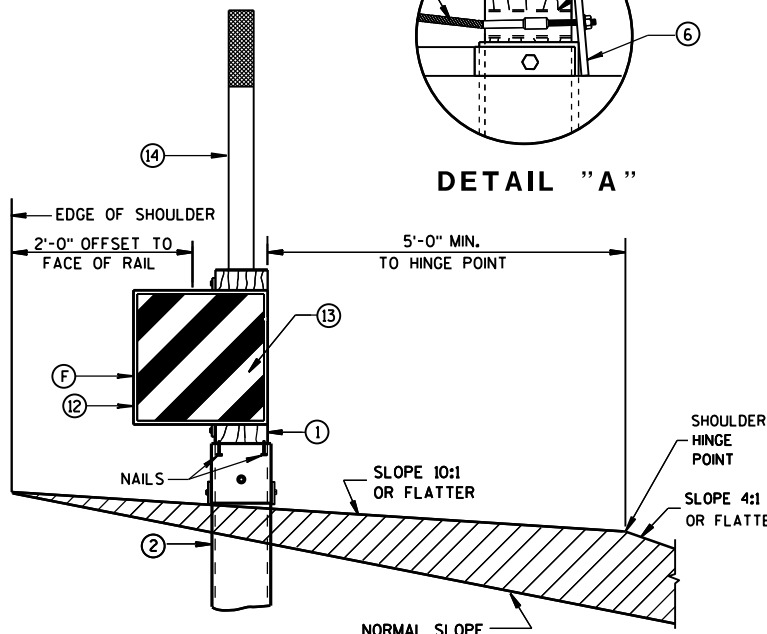
DETAIL "B"



SECTION C-C
TYPICAL AT POST NOS. 3-9



SECTION B-B
TYPICAL AT POST NO. 2*

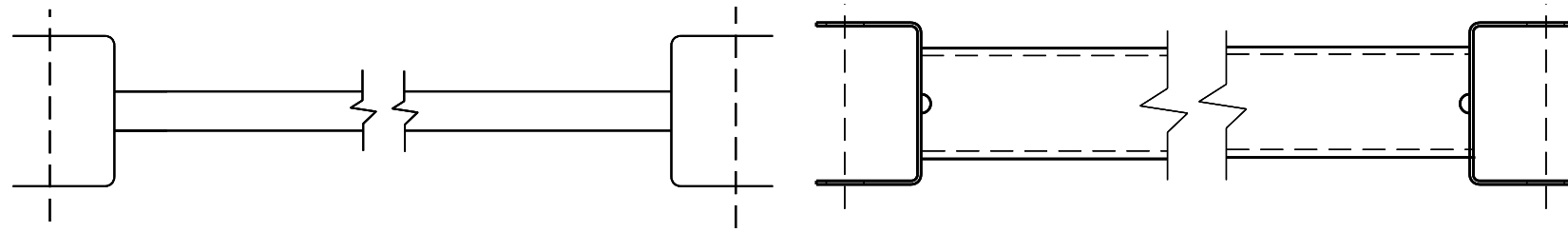


SECTION A-A
TYPICAL AT POST NO. 1*

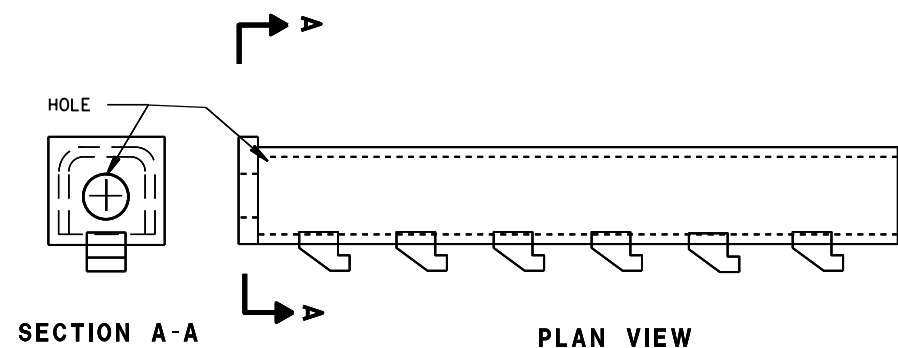
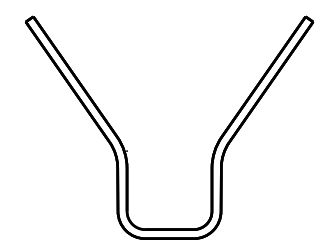
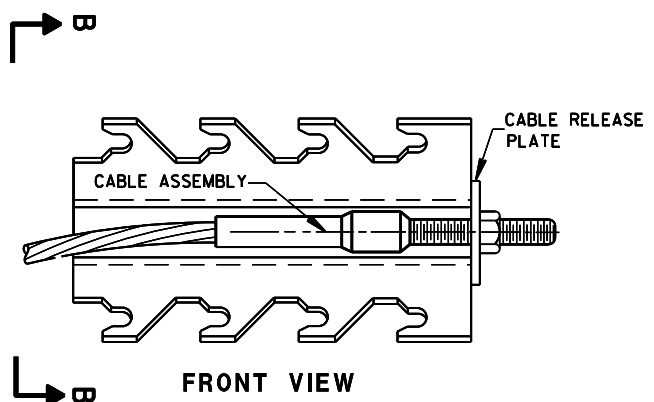
MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

65



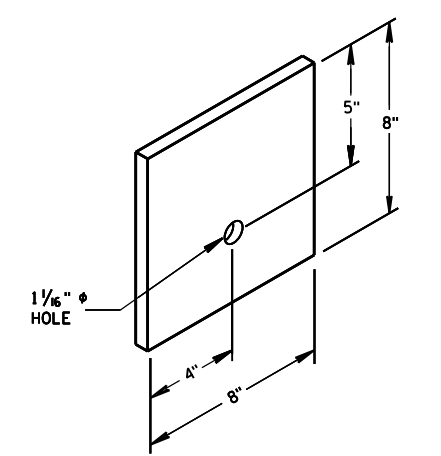
9 H
GENERIC GROUND STRUT



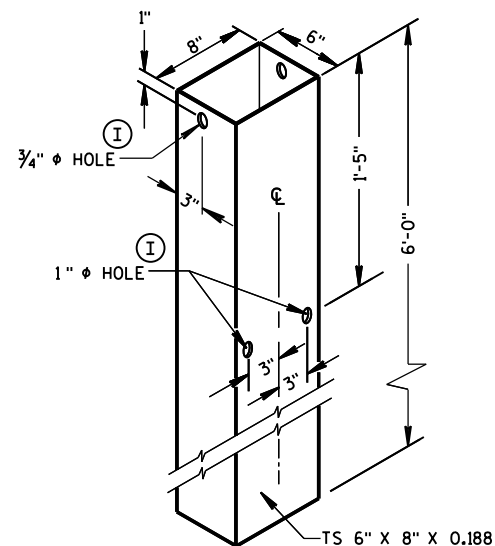
8 H
GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

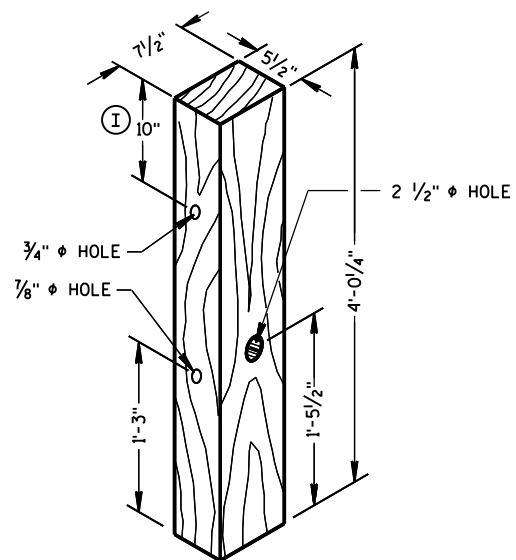
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	END SECTION EAT
⑬	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
⑭	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



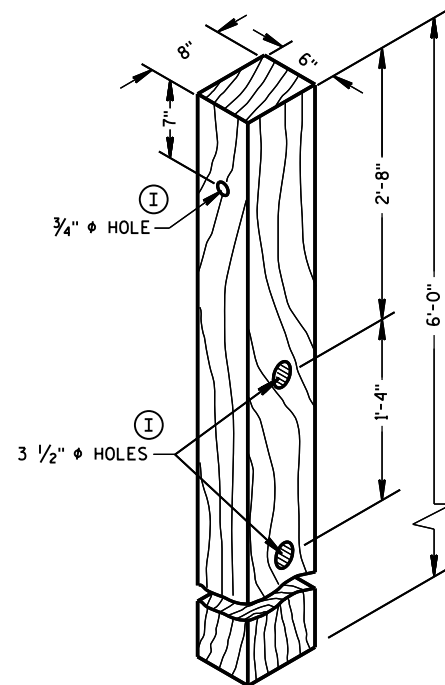
⑥
BEARING PLATE



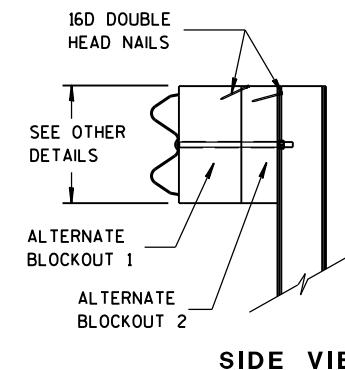
FOUNDATION TUBE ②



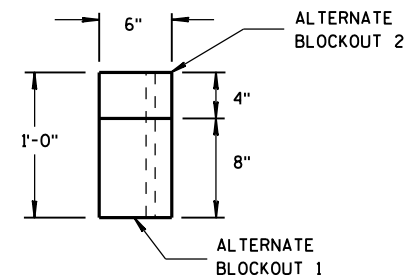
POSTS NUMBER 1 AND 2
WOOD BREAKAWAY POST ①



POSTS NUMBER 3-9
WOOD CRT POST ③

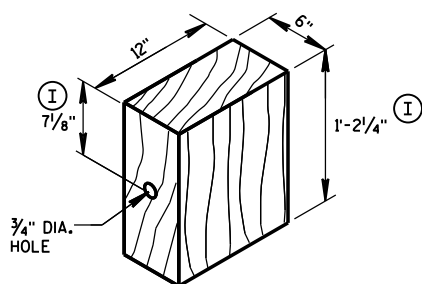


SIDE VIEW



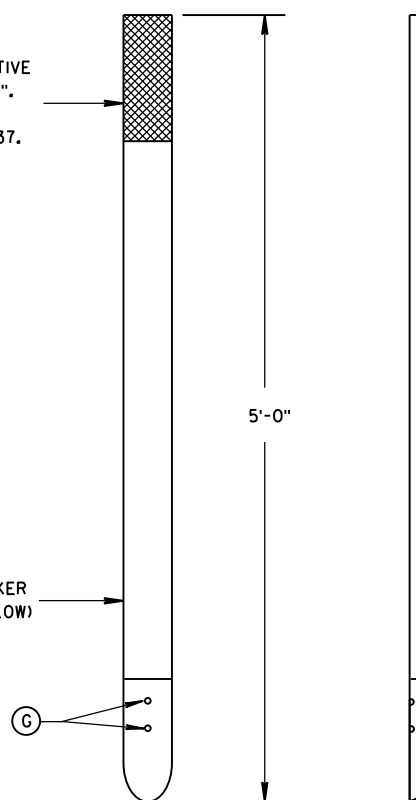
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL



WOOD BLOCKOUT ④
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

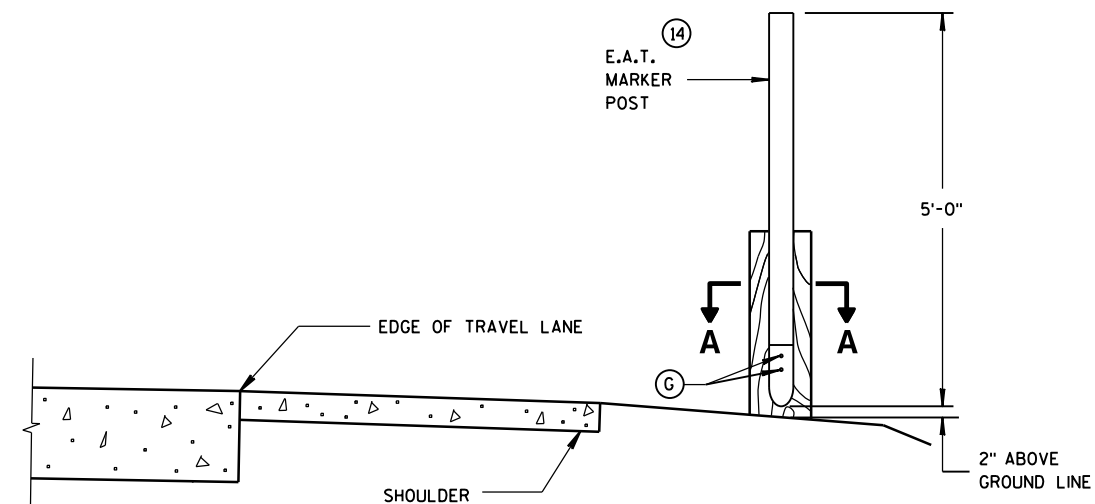
TYPE H
YELLOW REFLECTIVE
SHEETING 3" X 9".
SEE STANDARD
SPECIFICATION 637.



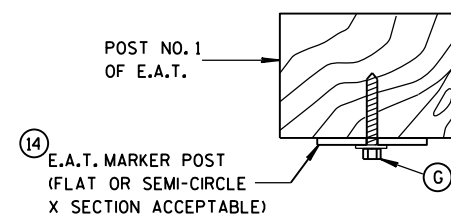
FRONT VIEW

SIDE VIEW

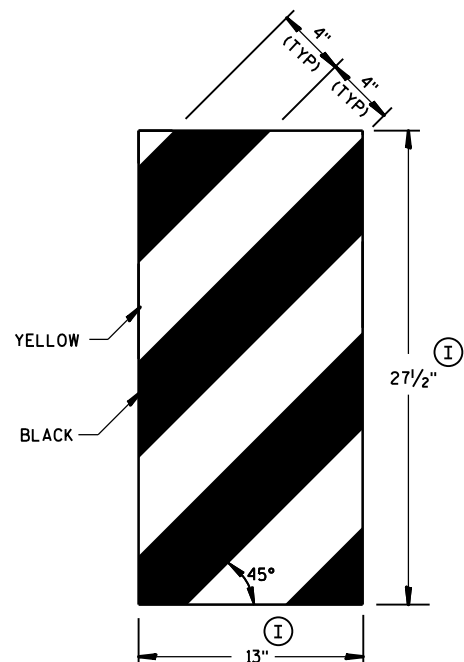
E.A.T. MARKER POST ⑭



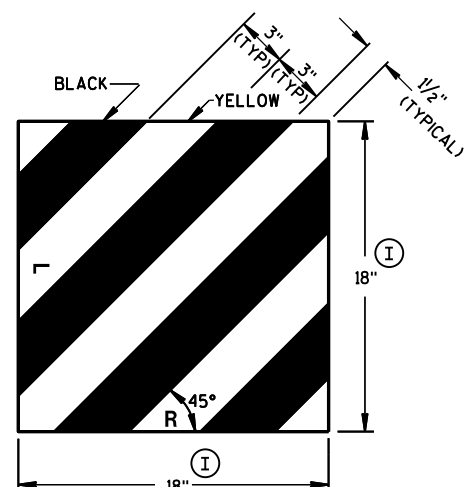
TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A



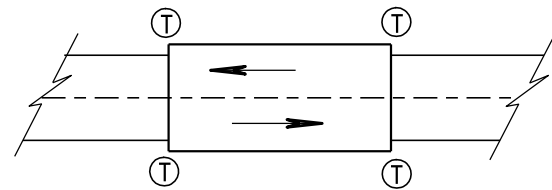
GENERIC REFLECTIVE SHEETING ⑬ ①



MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

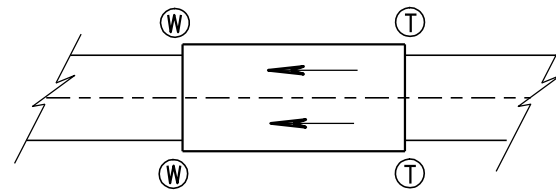
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS 67 ENT
FHWA ENGINEER



TWO WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION



ONE WAY TRAFFIC

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".

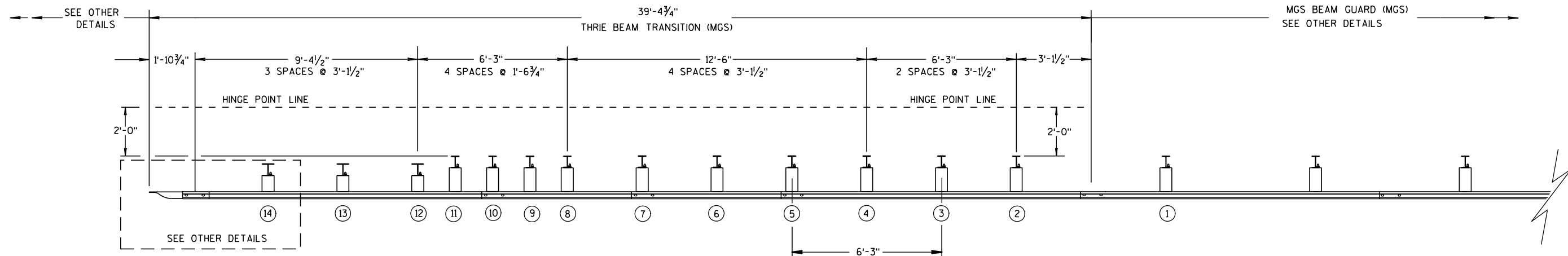
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

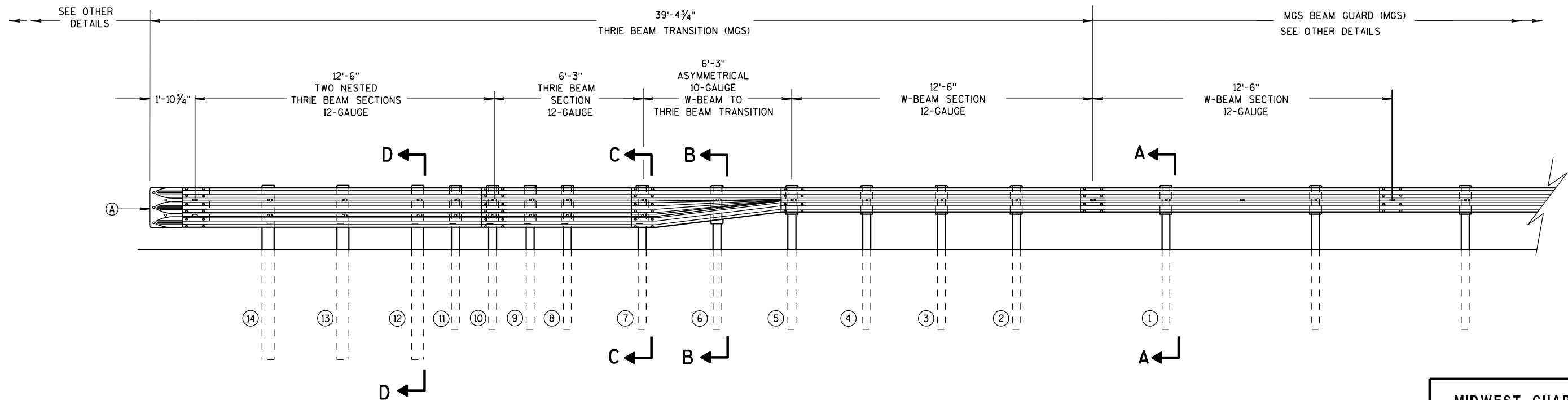
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

Ⓐ BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

68

6

S.D.D. 14 B 45-3b



S.D.D. 14 B 45-3b



S.D.D. 14 B 45-3b

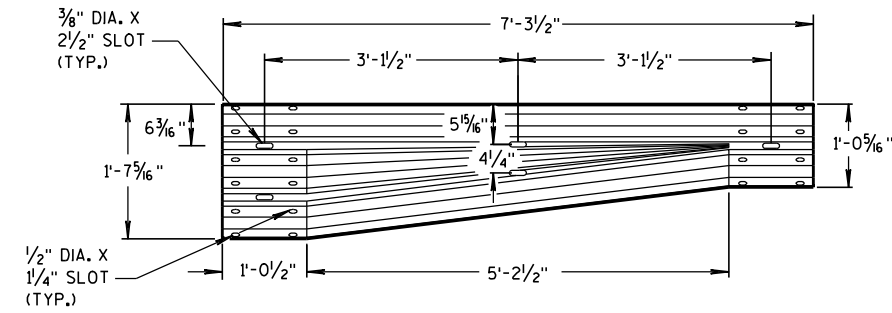
10

10

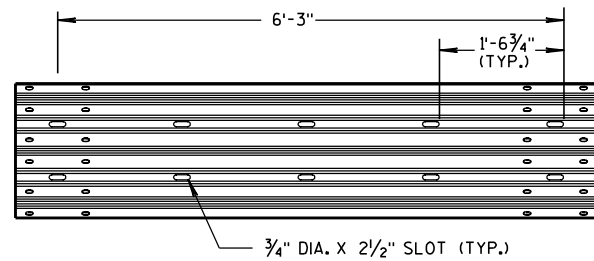
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

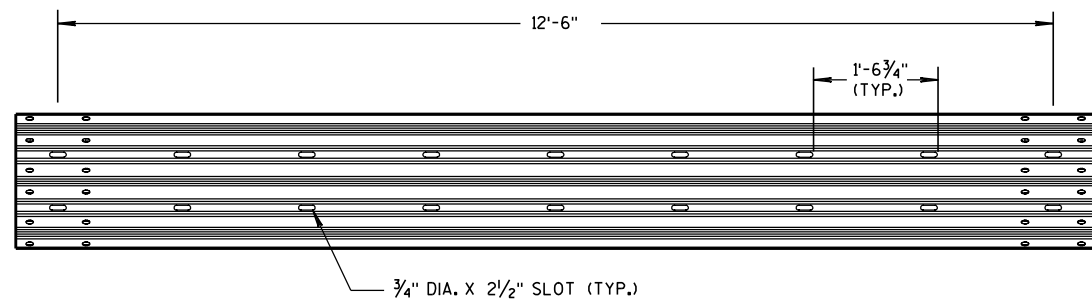
S.D.D. 14 B 46-3b



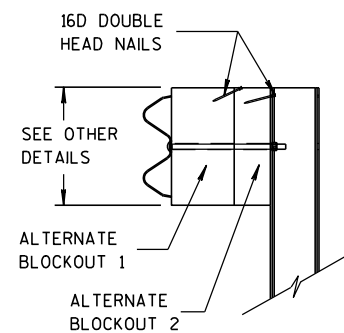
W-BEAM TO THRIE BEAM TRANSITION SECTION



6'-3" THRIE BEAM SECTION

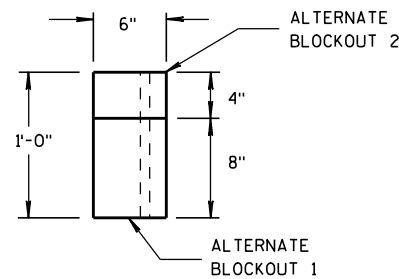


12'-6" THRIE BEAM SECTION

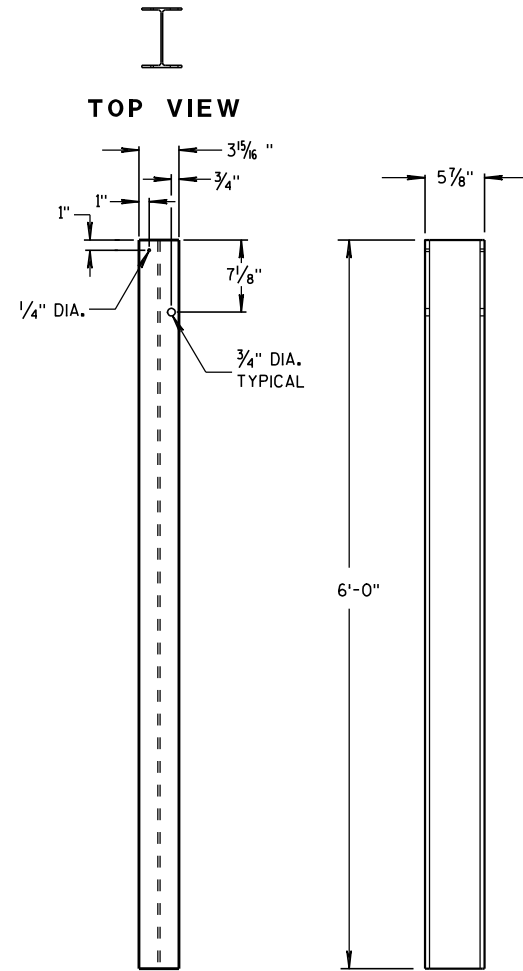


SIDE VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



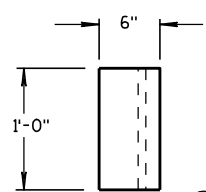
TOP VIEW



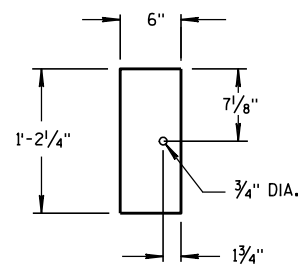
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

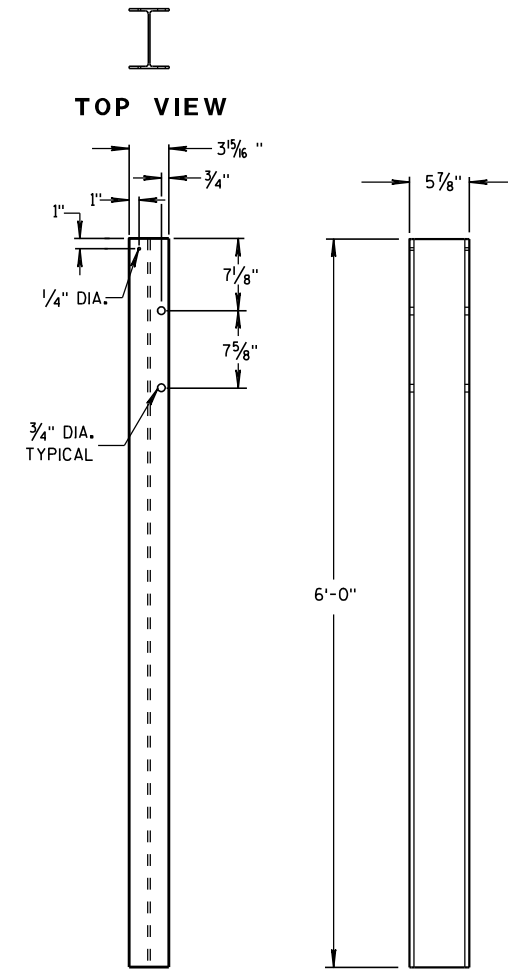


TOP VIEW



FRONT VIEW

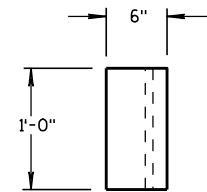
BLOCKOUT POSTS 1-5



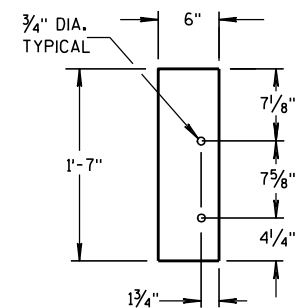
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-11

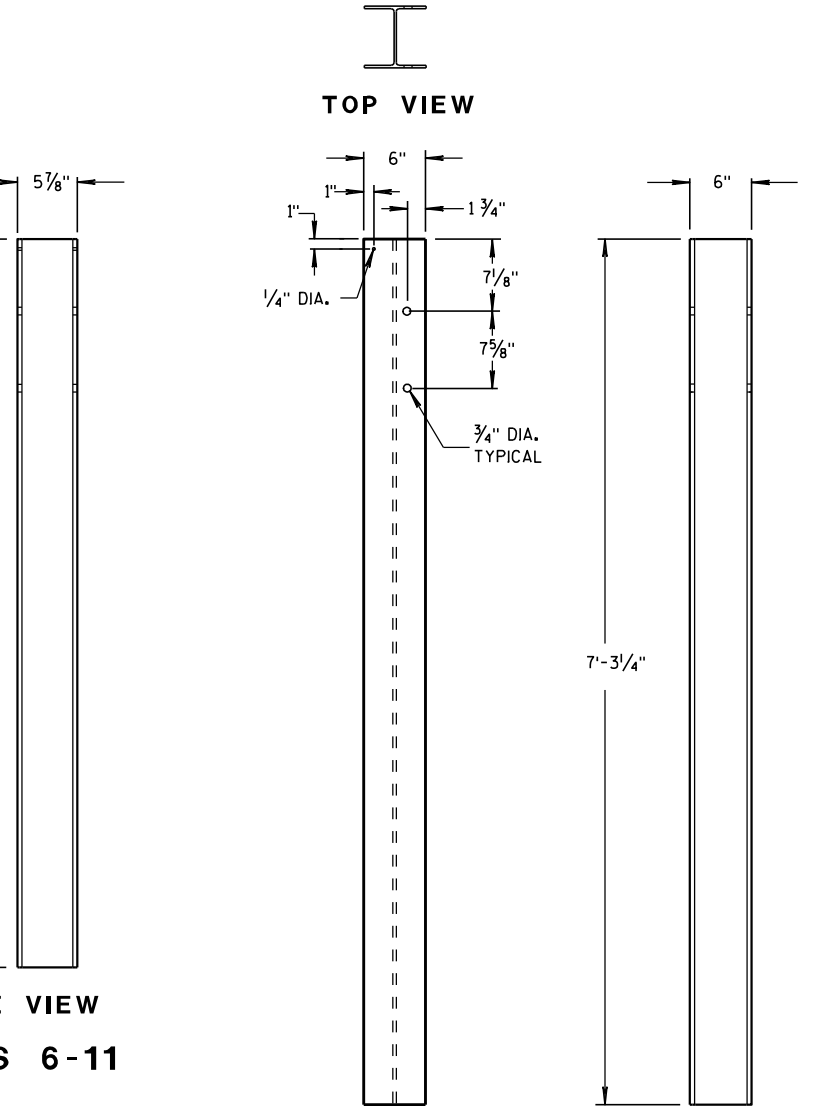


TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

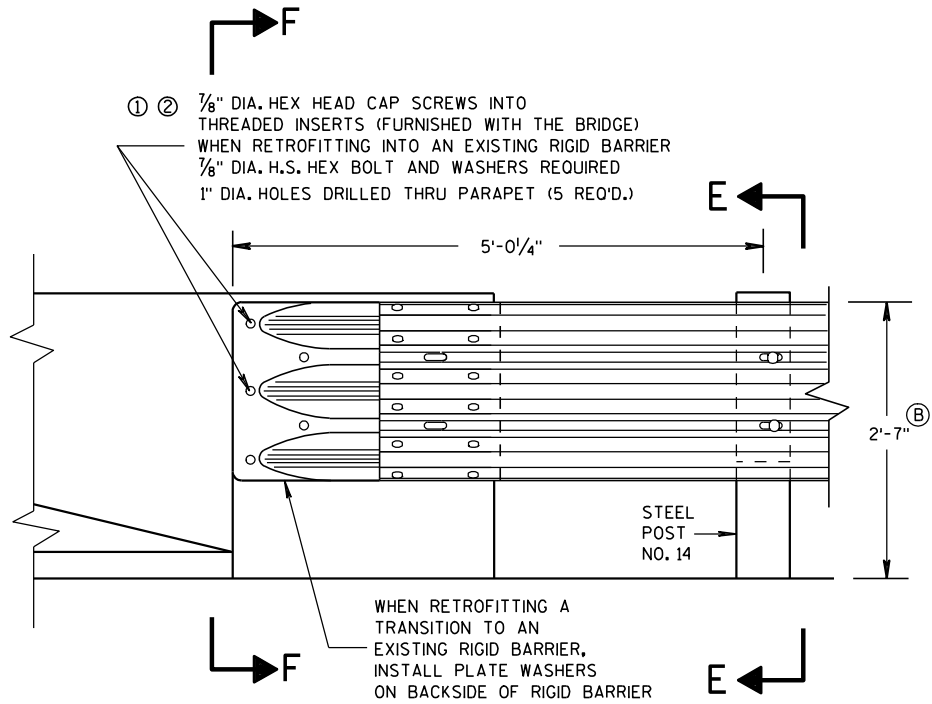
SIDE VIEW

STEEL POSTS 12-14

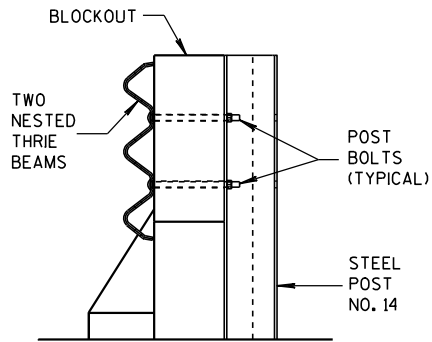
STEEL POST SIZES

POST NUMBER	SECTION TYPE	LENGTH
①	W6x9	72"
②	W6x9	72"
③	W6x9	72"
④	W6x9	72"
⑤	W6x9	72"
⑥	W6x9	72"
⑦	W6x9	72"
⑧	W6x9	72"
⑨	W6x9	72"
⑩	W6x9	72"
⑪	W6x9	72"
⑫	W6x15	87 1/8"
⑬	W6x15	87 1/8"
⑭	W6x15	87 1/8"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)



FRONT VIEW
THRIE BEAM CONNECTION TO BRIDGE
PARAPET WITH SQUARE ENDS

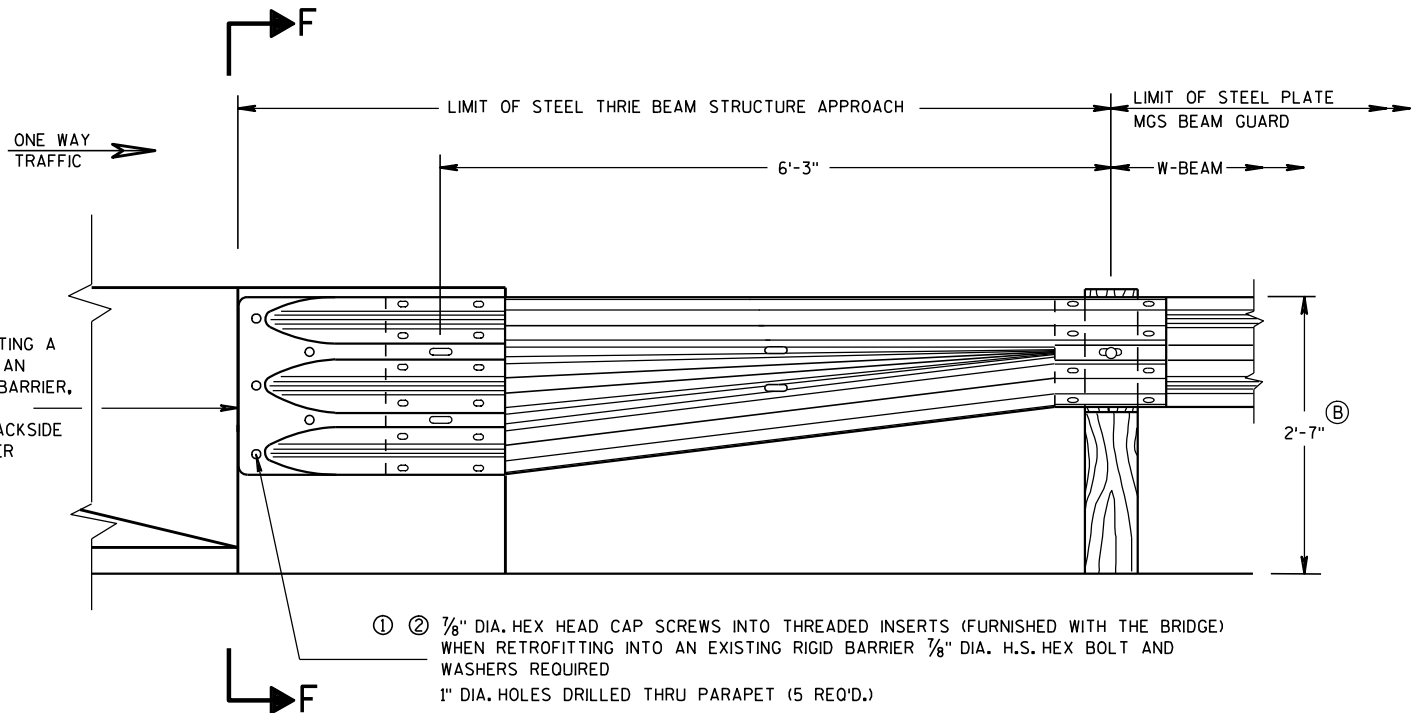


SECTION E-E

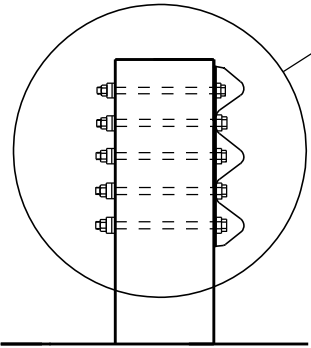
GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

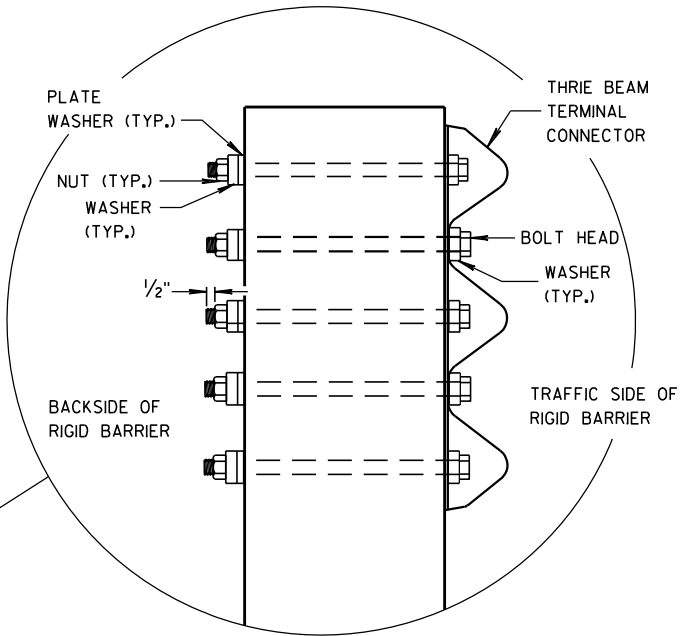
- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② BOLTS MAY BE A325 BOLTS OR A449 BOLTS, BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".
- (B) TOLERANCE FOR TOP OF BEAM IS ± 1".



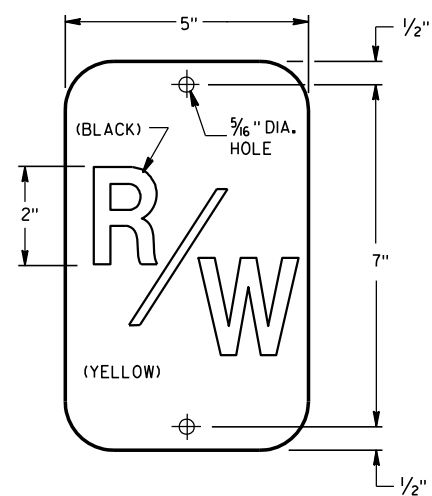
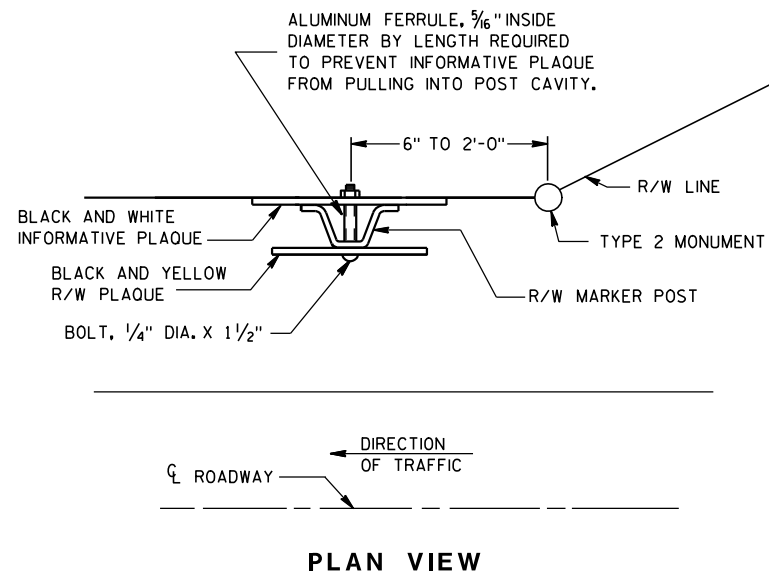
FRONT VIEW
W BEAM TRANSITION AND CONNECTION TO
BRIDGE PARAPETS WITH SQUARE ENDS
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



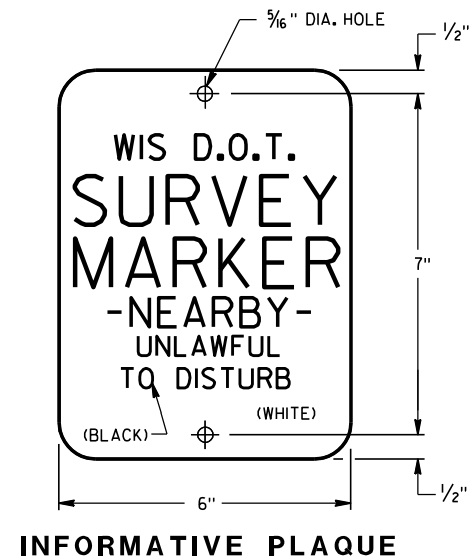
SECTION F-F



MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED 8/31/2012 DATE	/S/ Jerry H. Zapp ROADWAY STANDARDS ENGINEER	ENT
FHWA		



THE RIGHT-OF-WAY PLAQUE AND INFORMATIVE PLAQUE WILL BE FURNISHED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION.



GENERAL NOTES

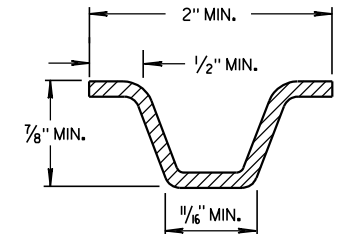
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

A STEEL MARKER POST FOR RIGHT-OF-WAY SHALL BE PLACED IN THE RIGHT-OF-WAY, WITH THE BACK OF THE POST ON THE LONGER RIGHT-OF-WAY TANGENT, 6 INCHES TO 24 INCHES FROM EACH TYPE 2 MONUMENT TO SERVE AS A GUARD POST, AND AT OTHER LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

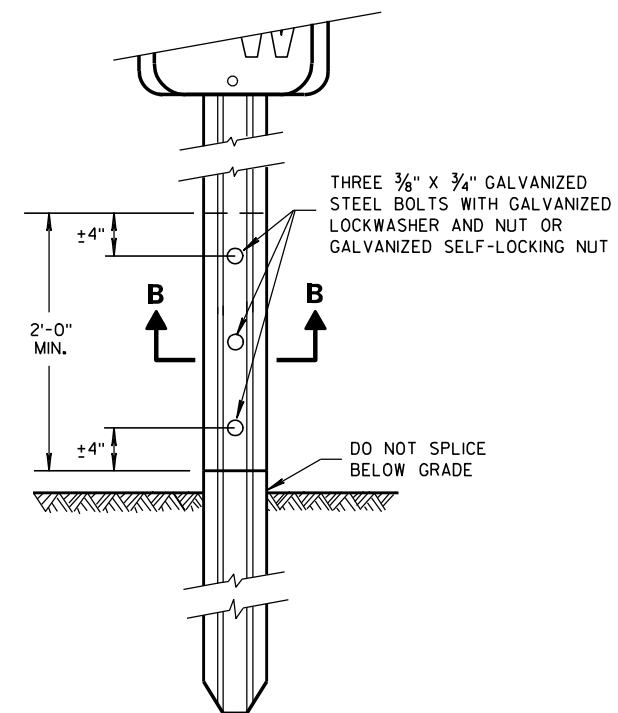
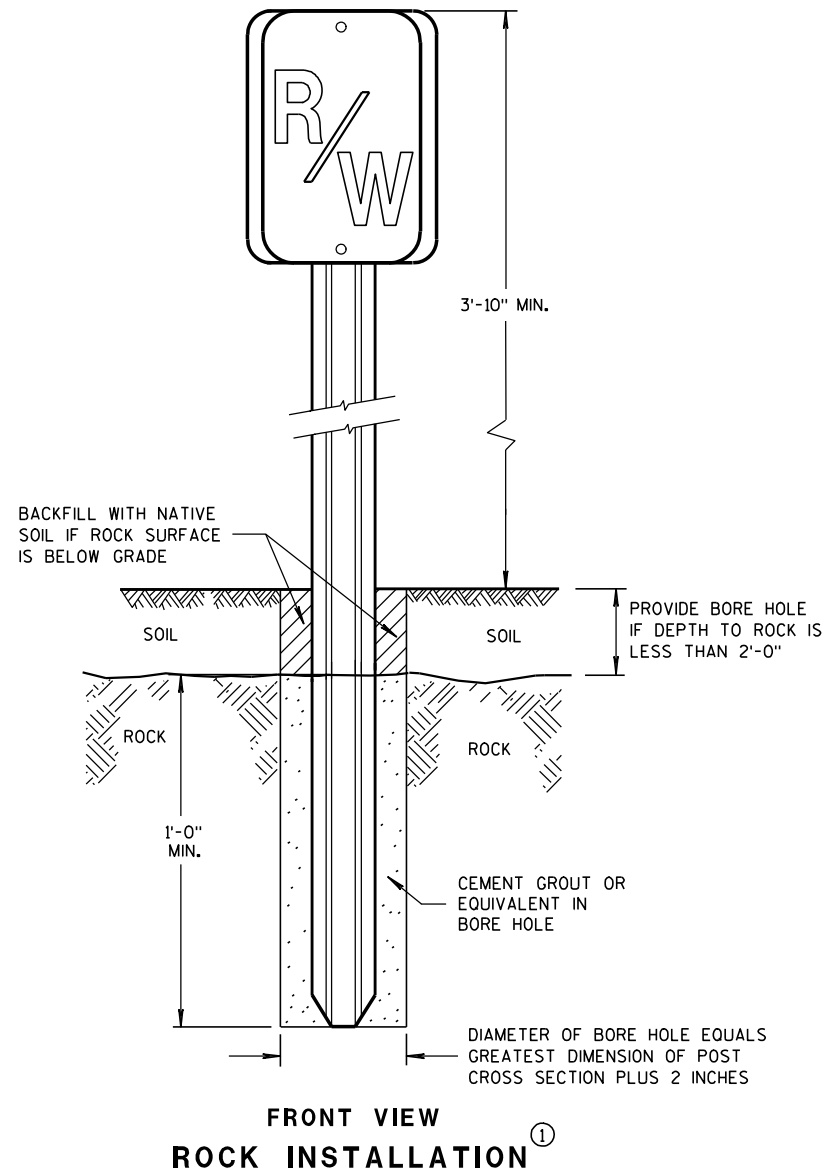
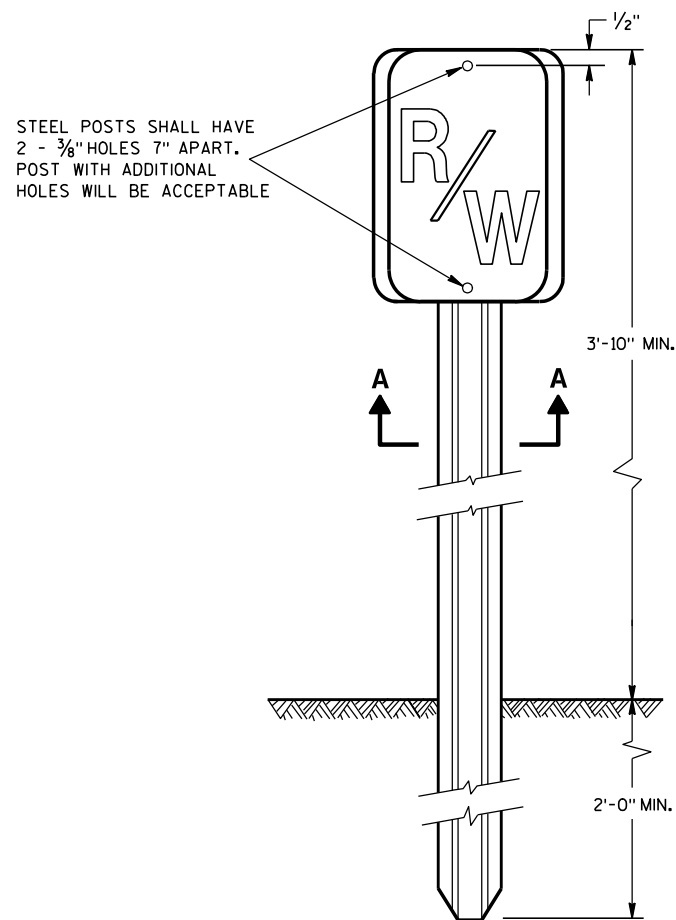
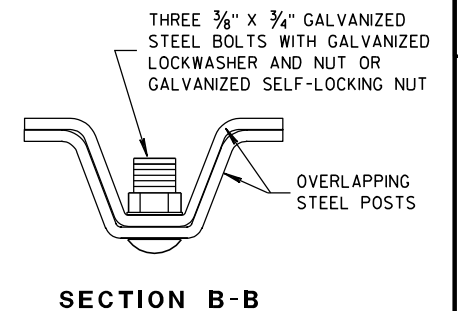
THE "R/W" PLAQUE SHALL FACE THE ROADWAY AND THE INFORMATIVE PLAQUE SHALL FACE AWAY FROM THE ROADWAY. R/W AND INFORMATIVE PLAQUES WILL BE FURNISHED BY THE DEPARTMENT OF TRANSPORTATION.

STEEL MARKER POSTS SHALL MEET THE MINIMUM MATERIAL REQUIREMENTS FOR STEEL DELINEATOR POSTS; EXCEPT POSTS PAINTED WITH FEDERAL YELLOW ENAMEL NEED NOT BE ZINC COATED.

- ① IN AREAS OF SOLID ROCK, DRILL A BORE HOLE 2" GREATER THAN THE WIDEST DIMENSION OF THE POST CROSS SECTION INTO THE ROCK TO A MINIMUM DEPTH OF 12 INCHES. CUT OR SPLICE THE POST SO THAT A MINIMUM LENGTH OF 3'-10" PROTRUDES ABOVE THE GROUND. BLOW OUT THE BORE HOLE IN THE ROCK USING COMPRESSED AIR. FILL THE BORE HOLE WITH CEMENT GROUT, OR EQUIVALENT, DEPENDING ON THE STABILITY OF THE ROCK,



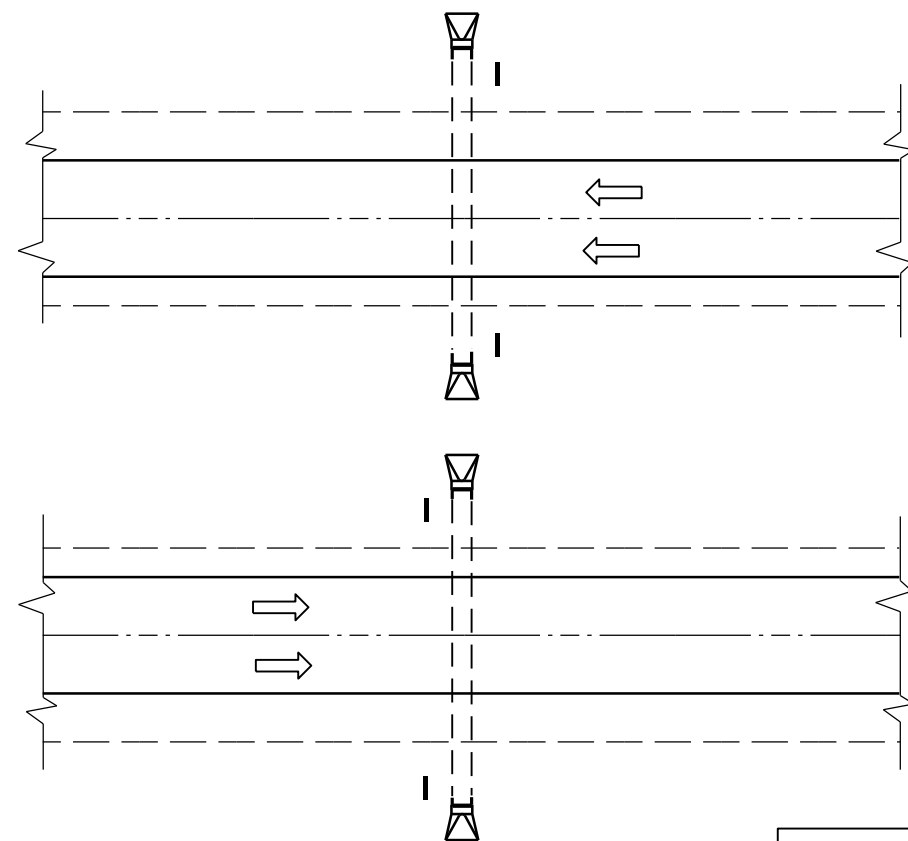
MIN. WEIGHT 1.12 LB./FT.
SECTION A-A



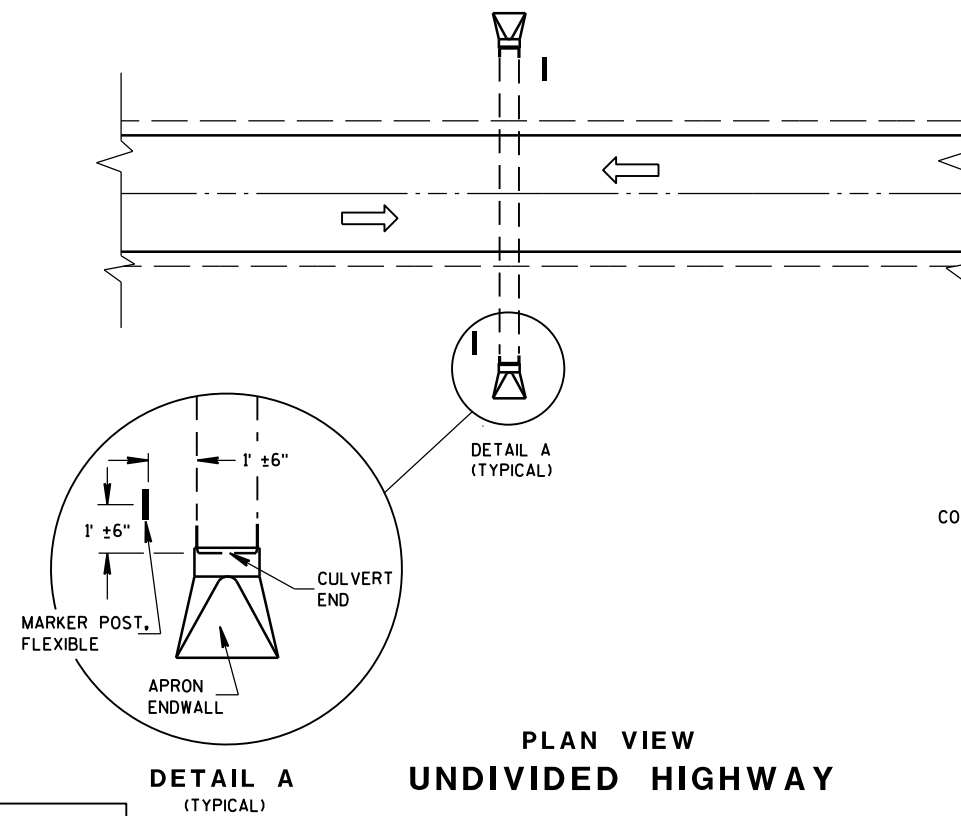
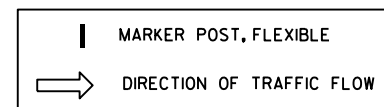
**MARKER POST
FOR RIGHT-OF-WAY**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/27/09 /S/ Ray Kumapovi
DATE CHIEF SURVEYING AND M 72 SINEER
FHWA



PLAN VIEW
DIVIDED HIGHWAY

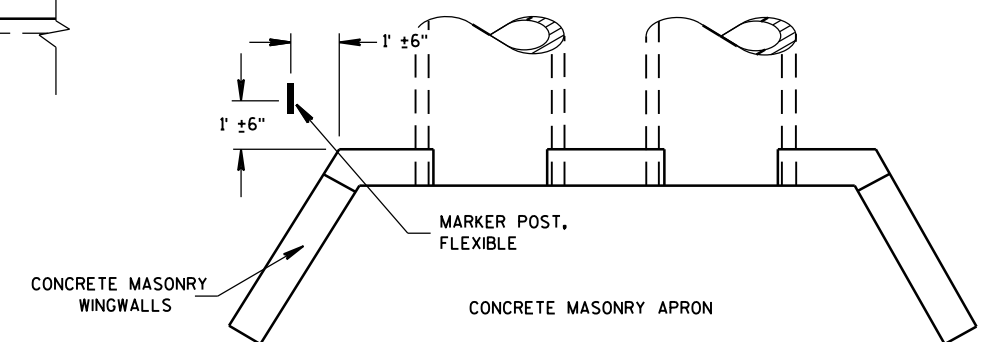


PLAN VIEW
UNDIVIDED HIGHWAY

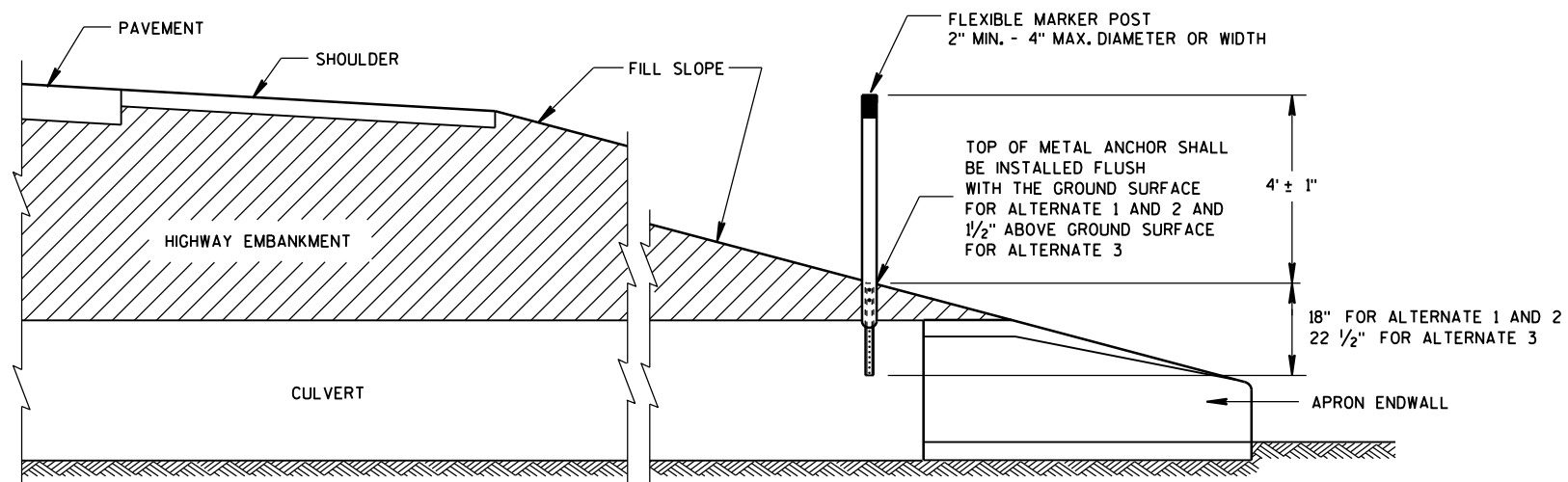
FLEXIBLE MARKER POST LOCATION

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.



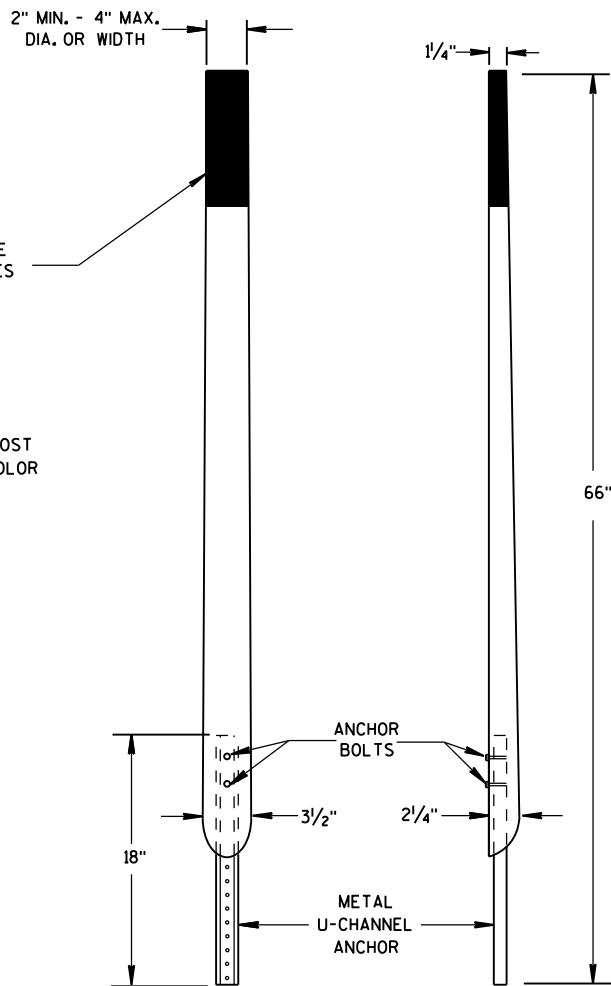
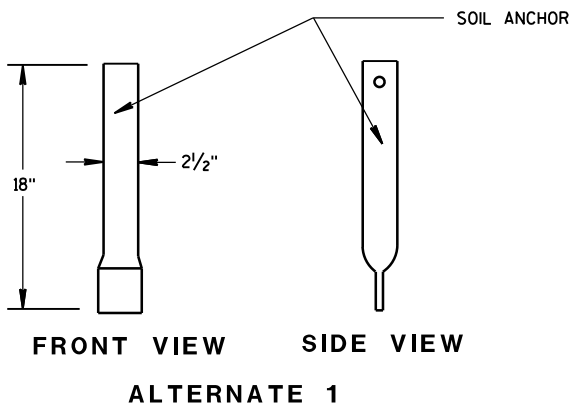
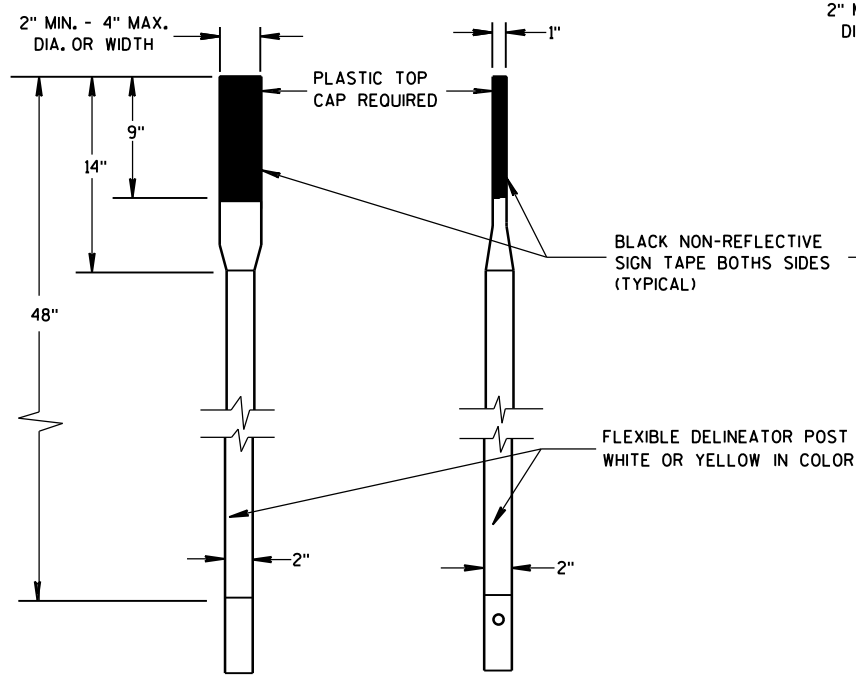
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



CROSS SECTION
FLEXIBLE MARKER POST

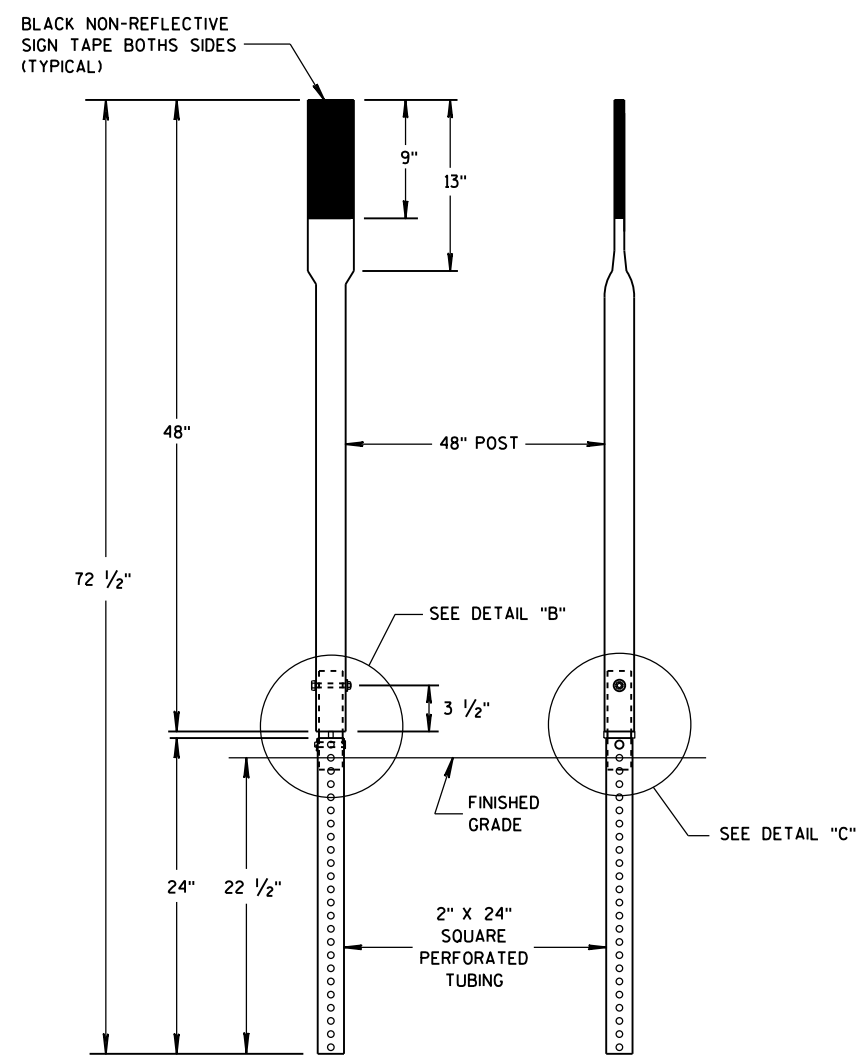
FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

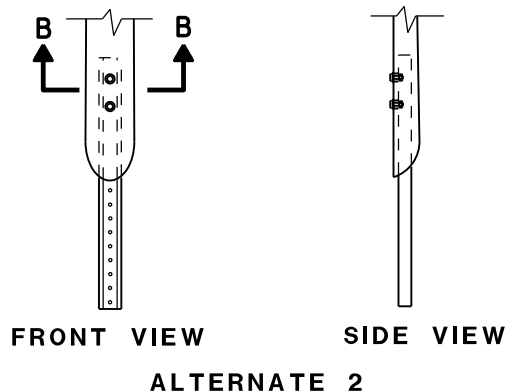
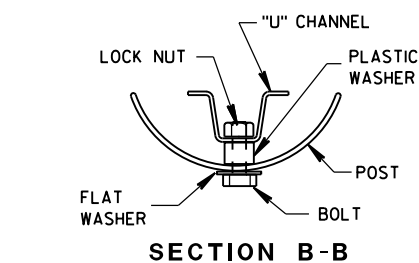
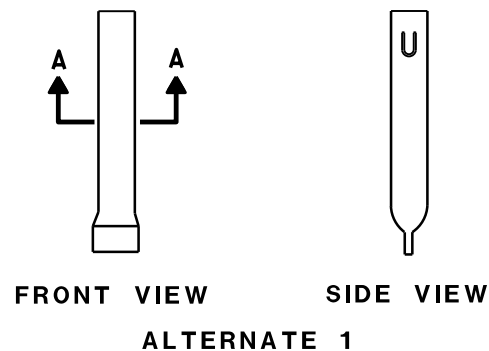
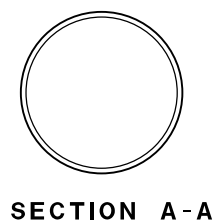
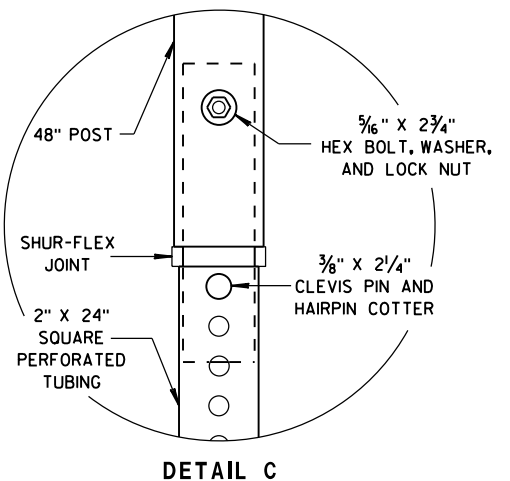
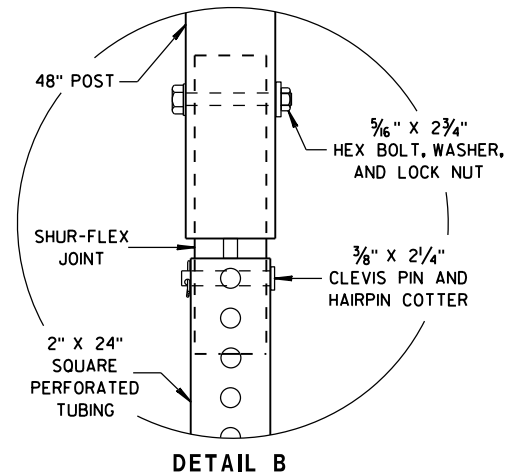
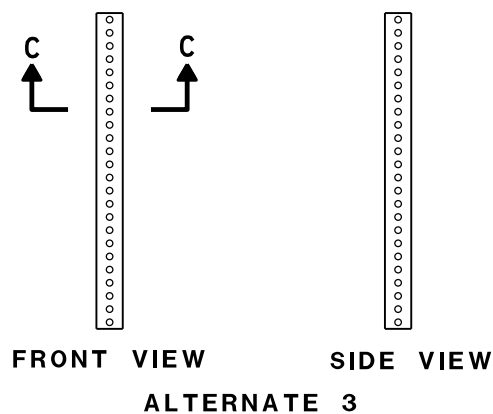
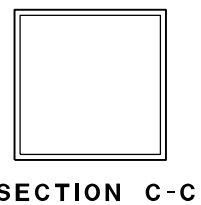


FRONT VIEW SIDE VIEW
ALTERNATE 2

FLEXIBLE MARKER POSTS



FRONT VIEW SIDE VIEW
ALTERNATE 3

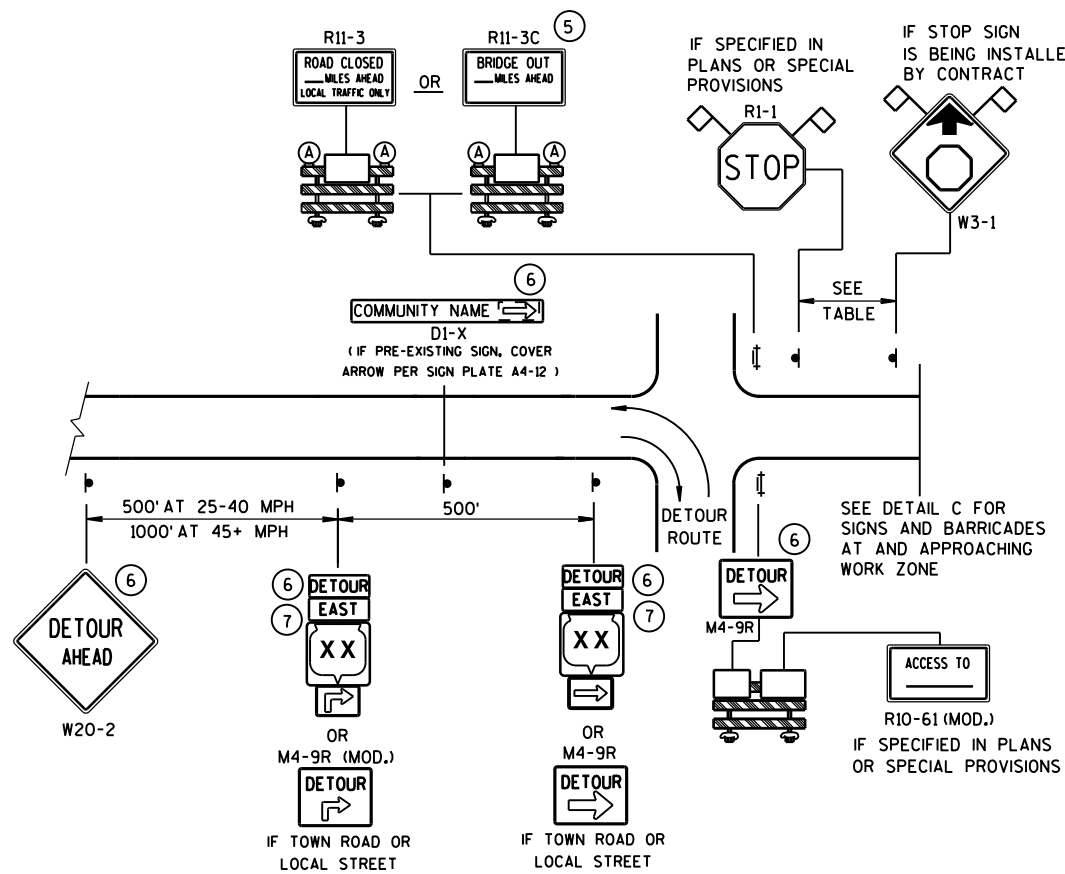


FLEXIBLE MARKER POST ANCHORS

FLEXIBLE MARKER POST
FOR CULVERT END

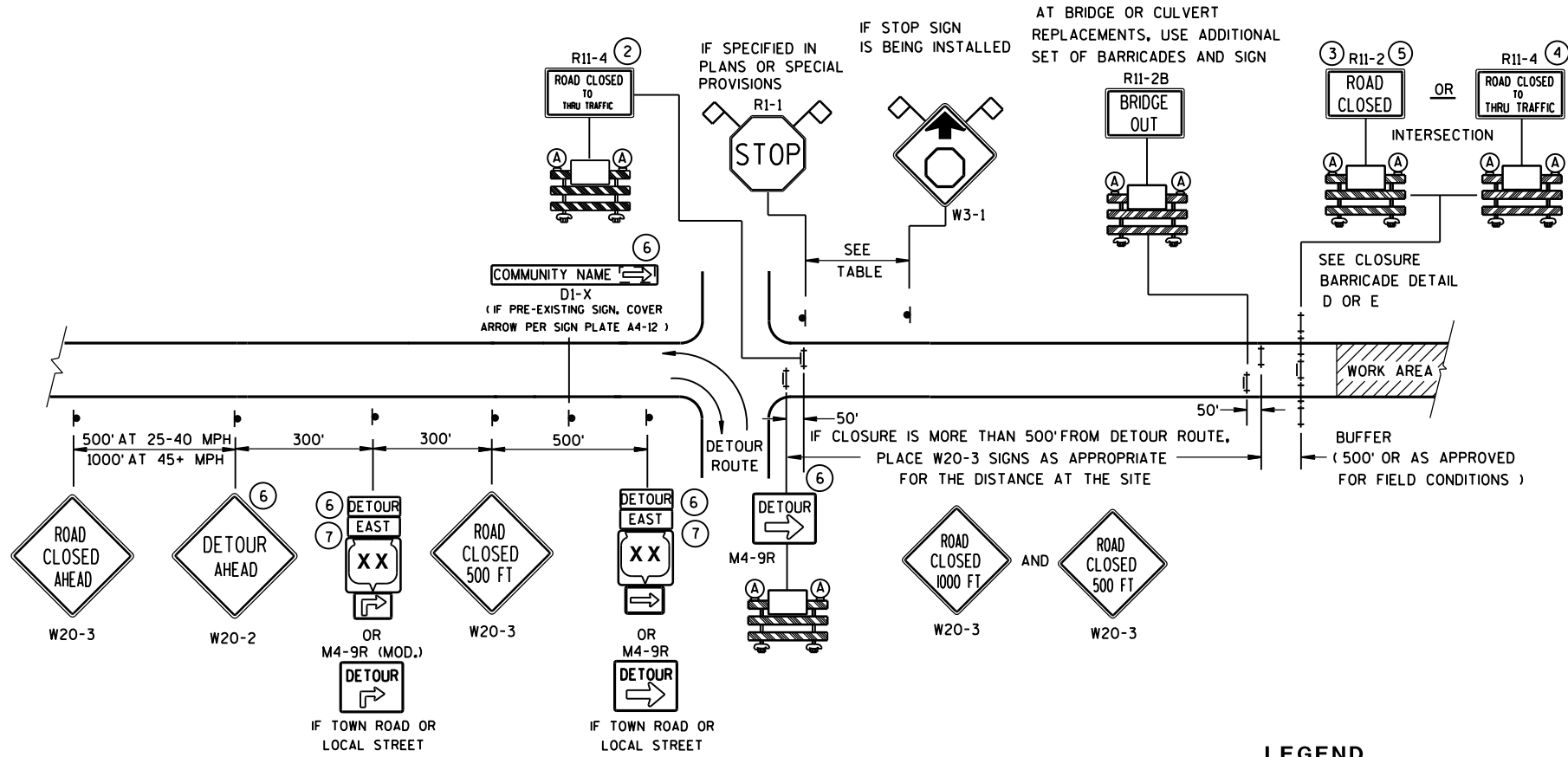
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/1/2012 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER 74 IGN
FHWA



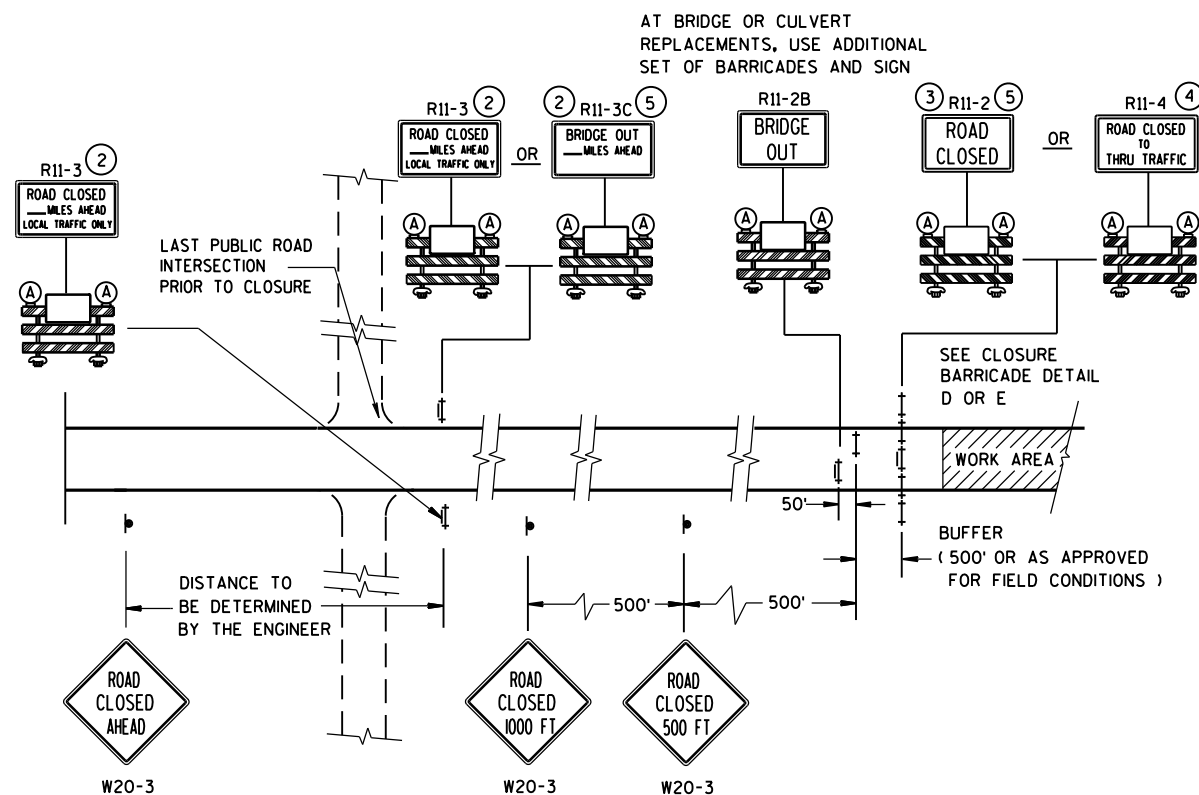
DETAIL A MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL B MAINLINE CLOSURE WITH POSTED DETOUR

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

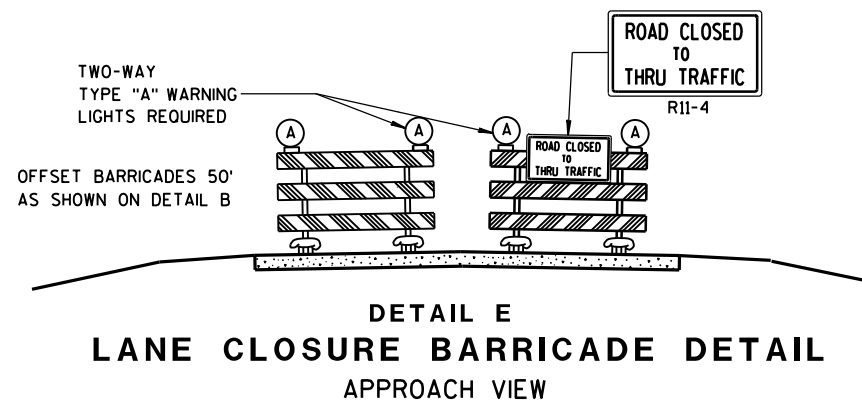
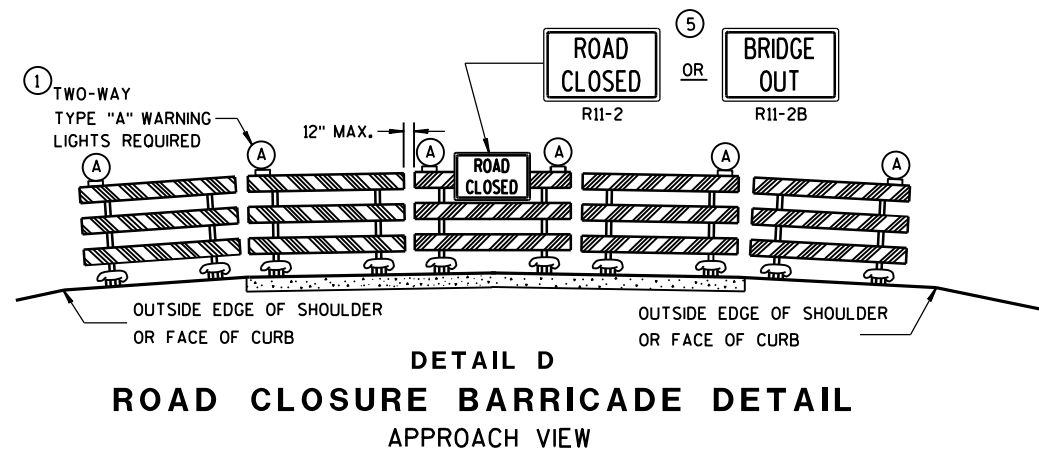


DETAIL C MAINLINE CLOSURE, NO POSTED DETOUR

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

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
8/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINE 75	ESIGN
FHWA		



SEE SDD 15C2-SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

R11-2 SHALL BE 48" X 30".

R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".

M4-9 SHALL BE 30" X 24".

M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)

M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)

M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)

M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)

D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

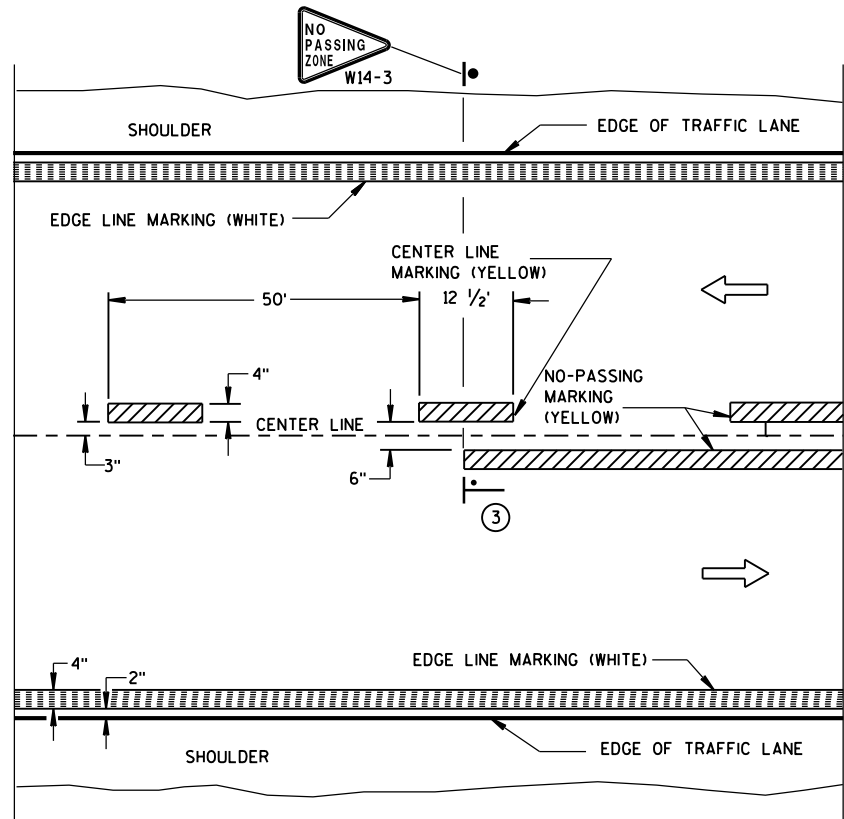
R1-1 SHALL BE 36" X 36".

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

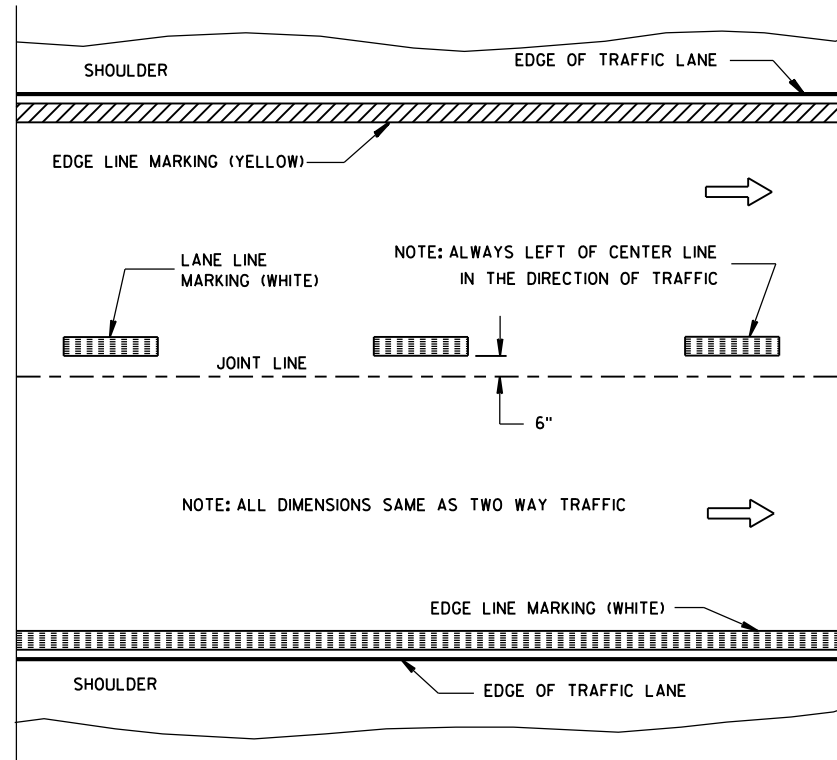
BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINE 76 ESIGN
FHWA

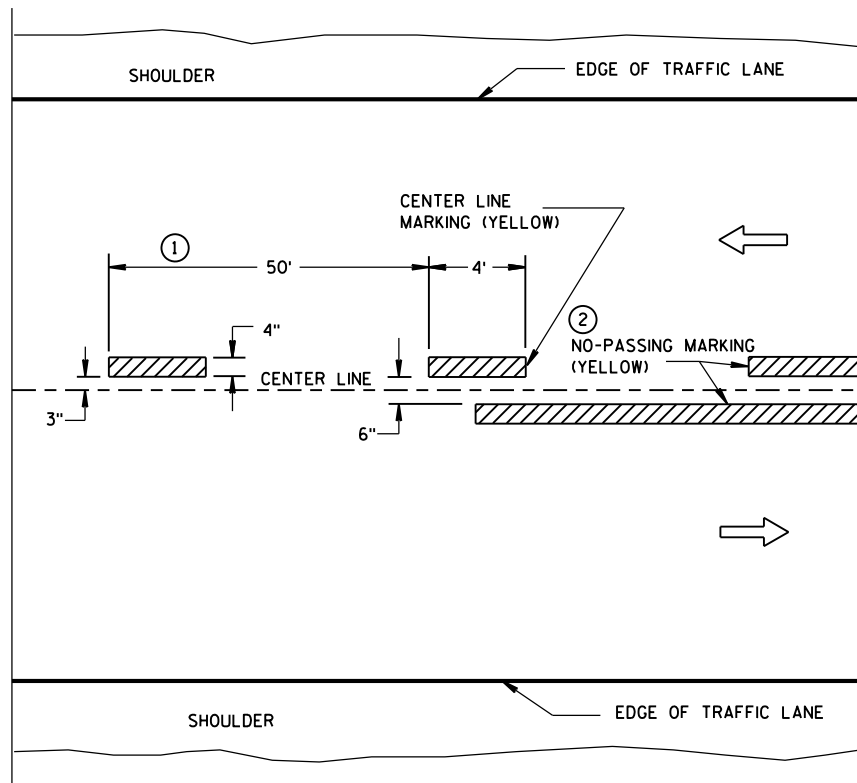


TWO WAY TRAFFIC

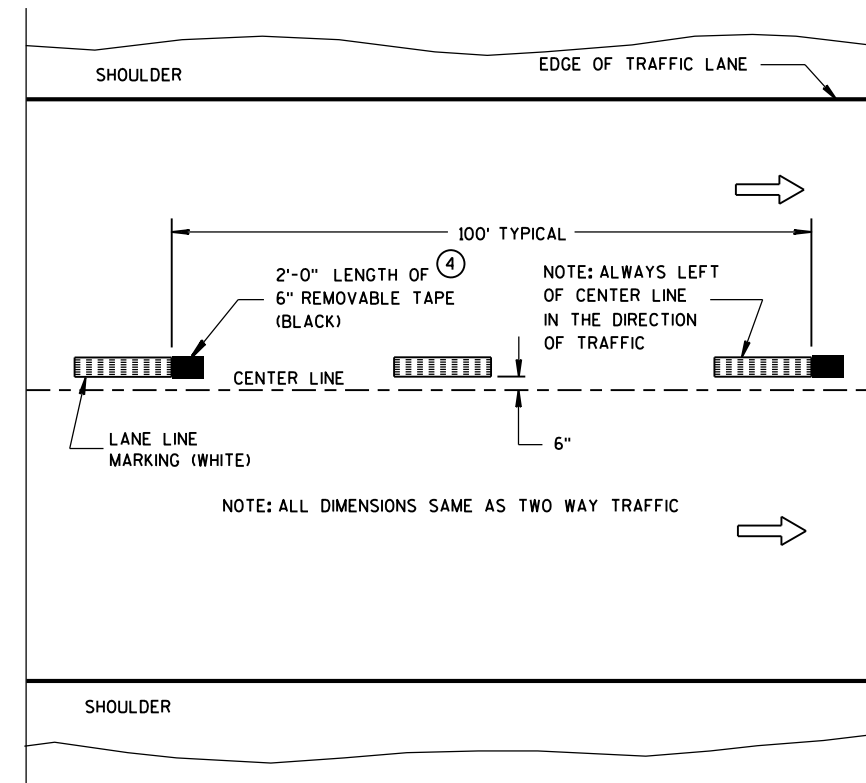


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING
(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

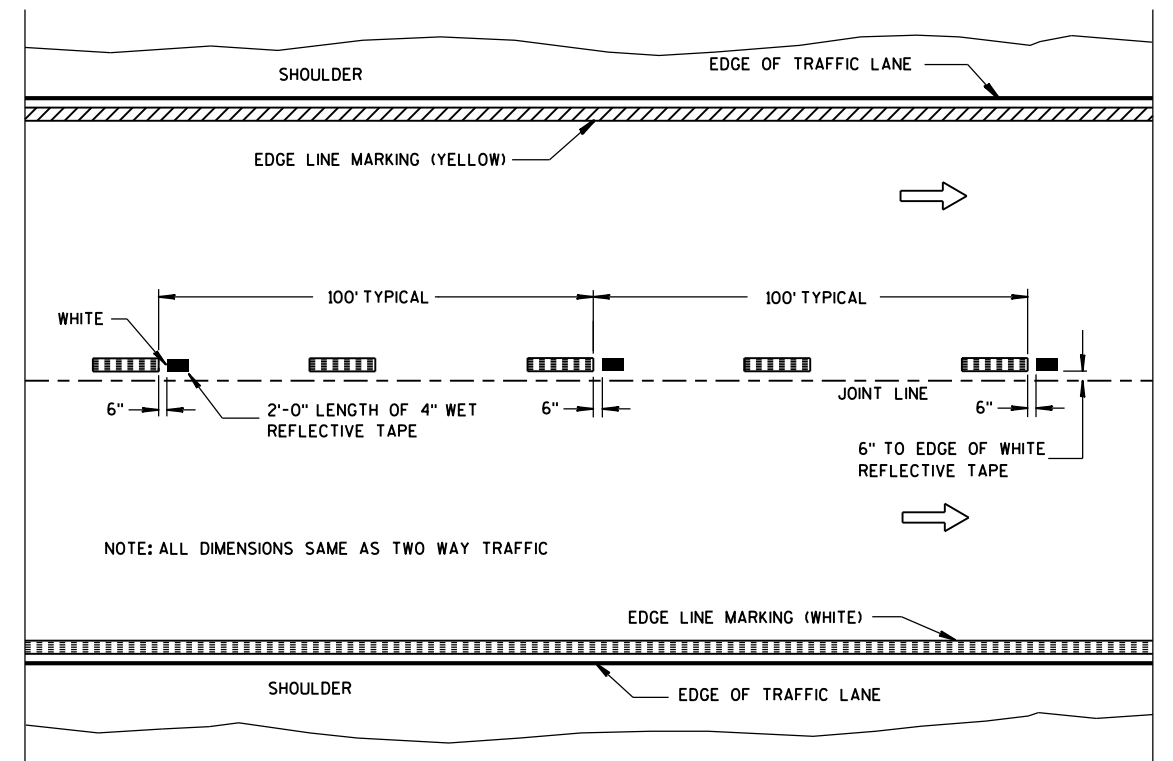
GENERAL NOTES

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

- 1 HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
- 2 NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
- 3 NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
- 4 CONCRETE ONLY.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

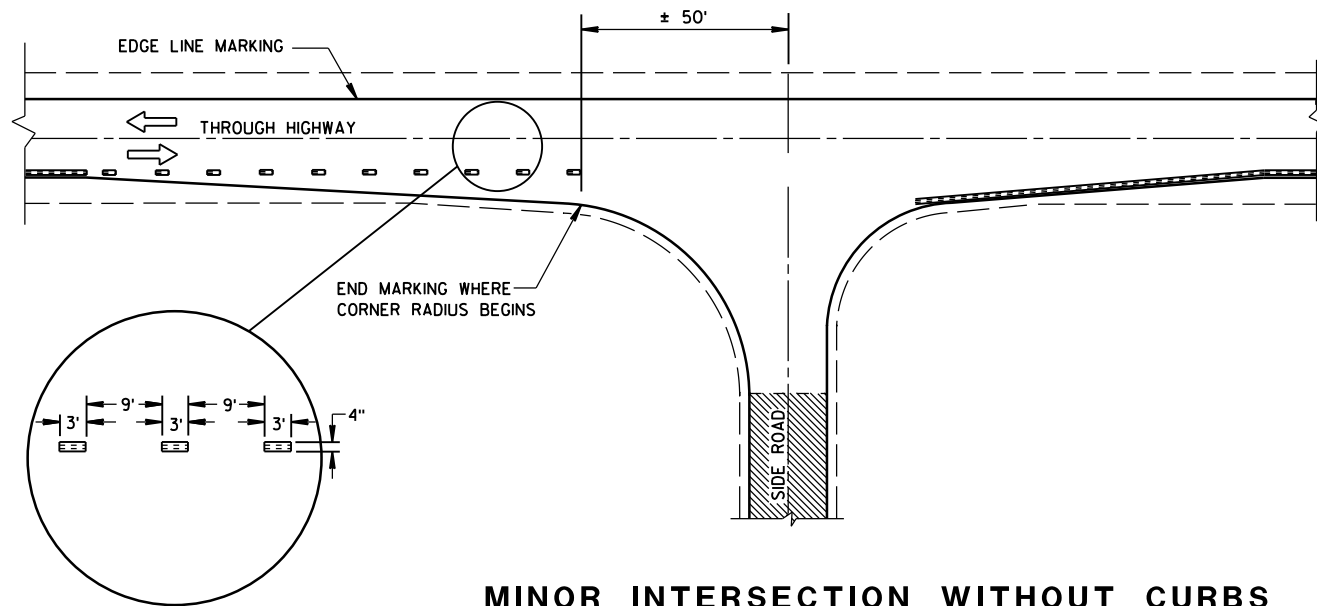
LEGEND

- "T" MARKING
- POST MOUNTED SIGN

PAVEMENT MARKING
(MAINLINE)

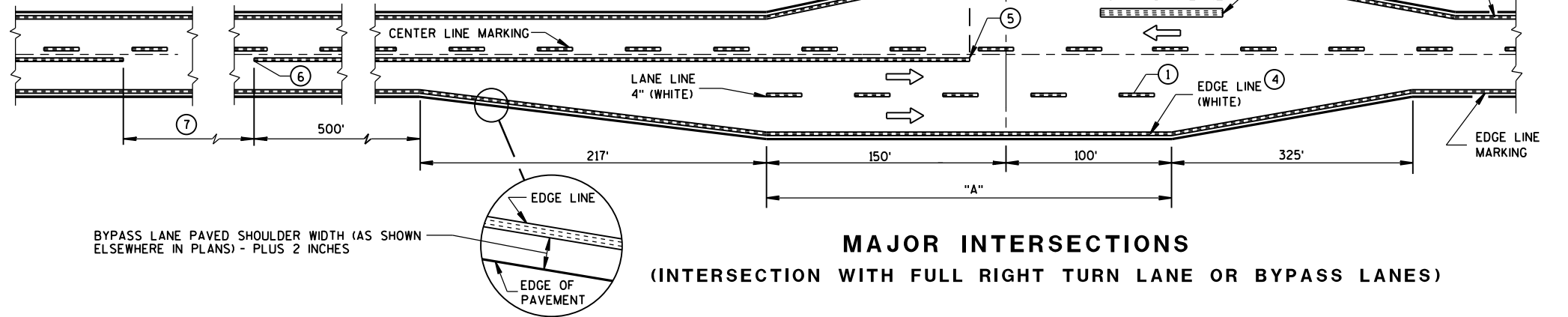
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5-13-2013 /S/ Travis Feltes
DATE STATE TRAFFIC E 77
FHWA

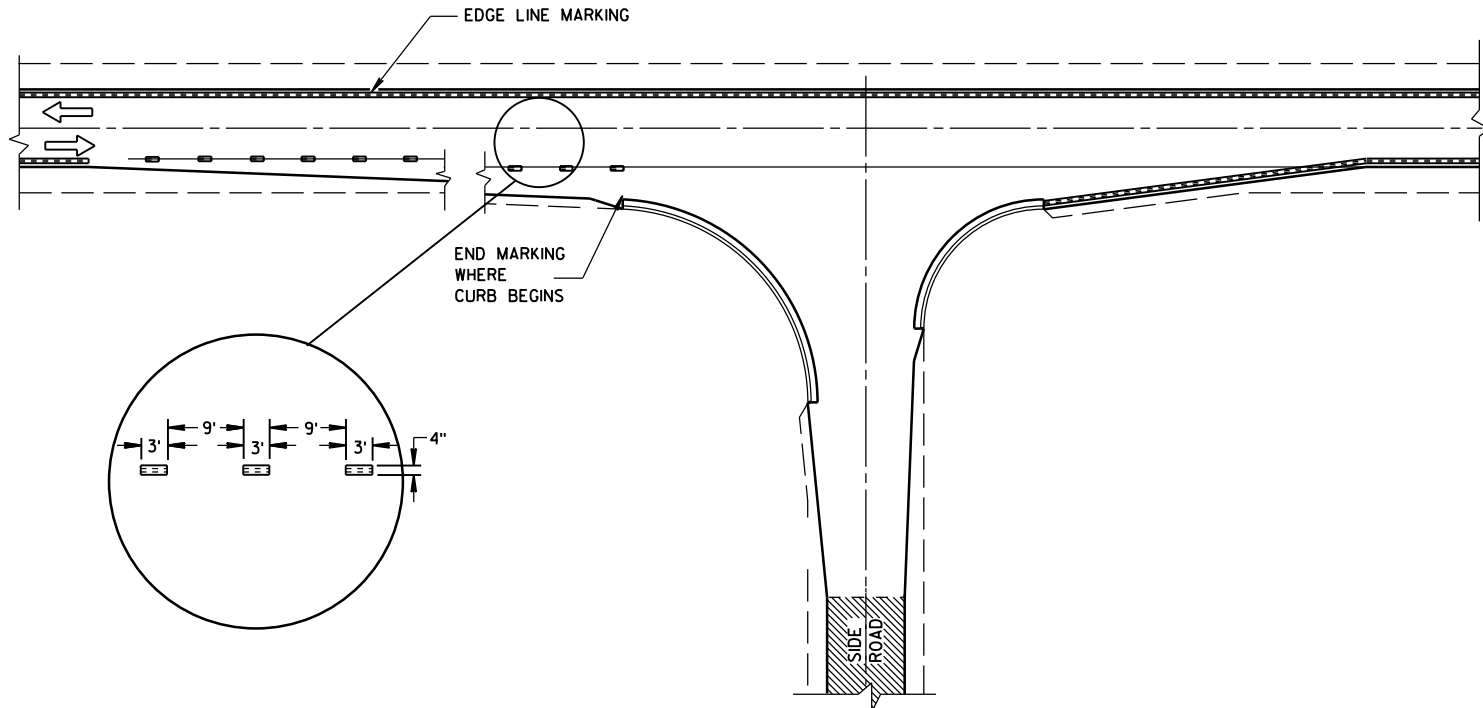


MINOR INTERSECTION WITHOUT CURBS

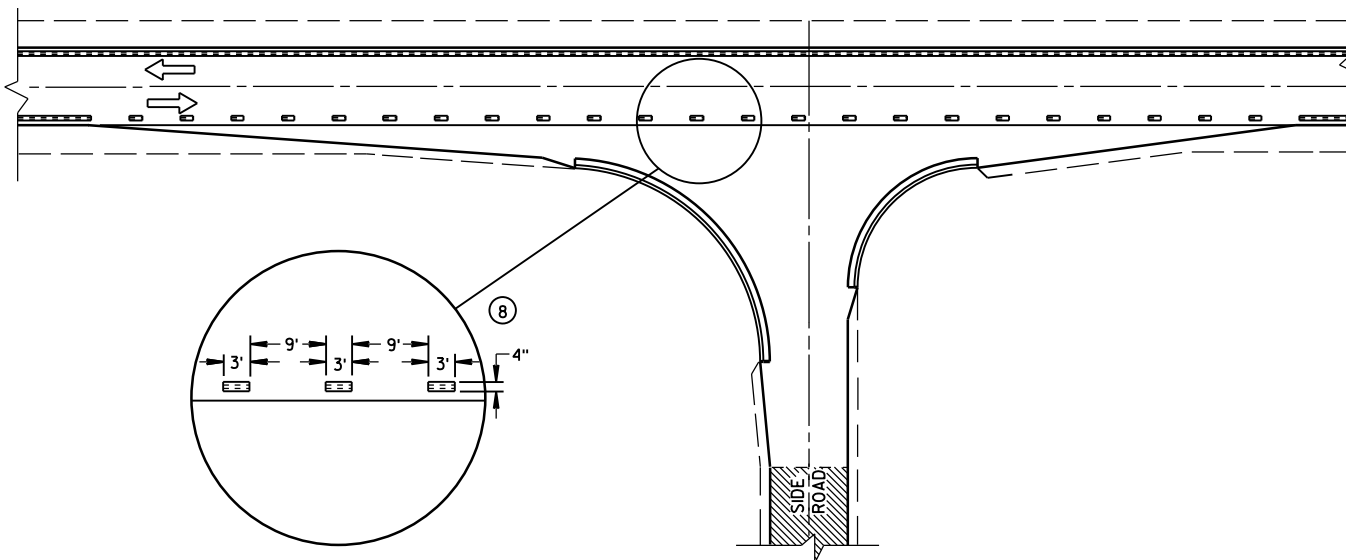
POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



MAJOR INTERSECTIONS
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS
(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS
(FOR SPECIAL CONDITIONS AS SPECIFIED)

GENERAL NOTES

- EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.
- 1 WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
 - 2 WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
 - 3 ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.
 - 4 THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.
 - 5 BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.
 - 6 BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
 - 7 IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.
 - 8 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
- ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

LEGEND

- TRAFFIC CONTROL DRUM
- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⚡➡ FLASHING ARROW BOARD
- ▨ WORK AREA

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT SHOULDER. FOR CLOSING THE LEFT SHOULDER, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR DIVIDED ROADWAYS WITH ANY NUMBER OF TRAVEL LANES.

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

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

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

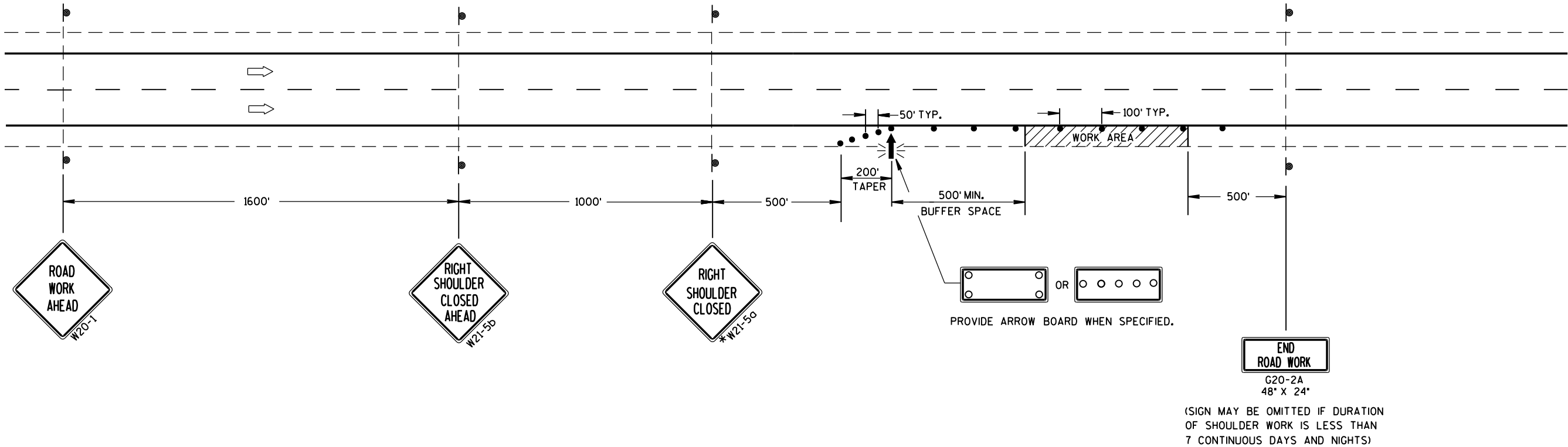
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-5a SIGN MAY BE OMITTED.

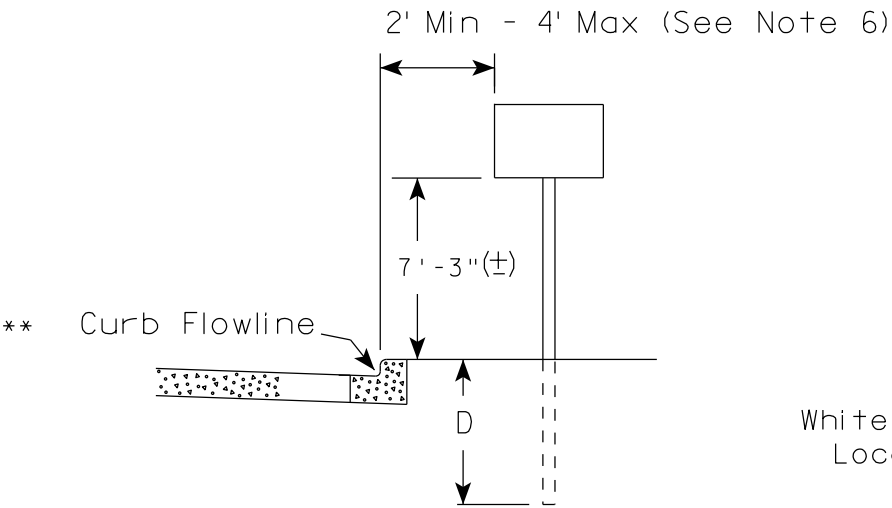


TRAFFIC CONTROL
SHOULDER CLOSURE ON DIVIDED
ROADWAY, SPEEDS GREATER
THAN 40 MPH

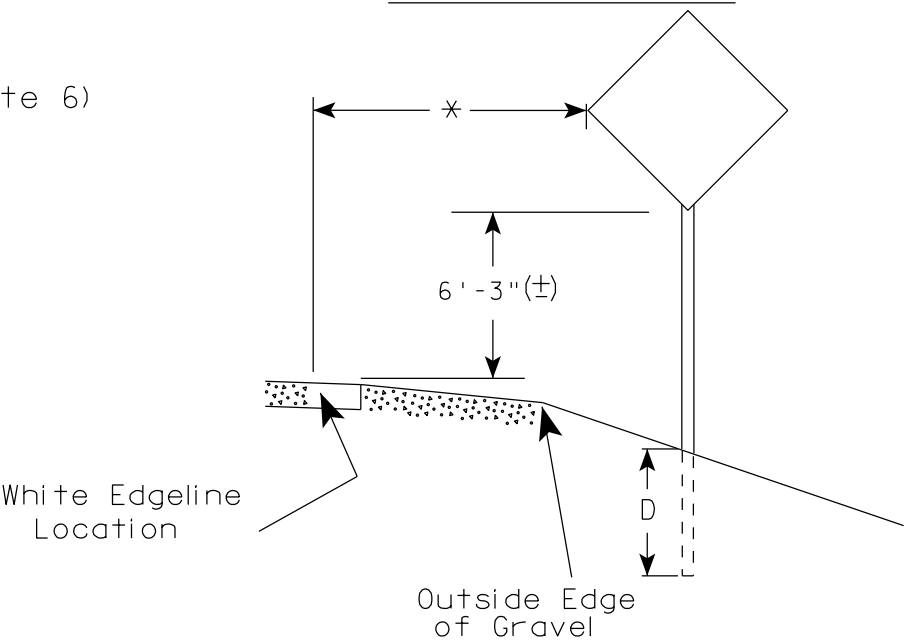
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINE 79 SIGN
FHWA

URBAN AREA



RURAL AREA (See Note 2)



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

POST EMBEDMENT DEPTH

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

×× 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.

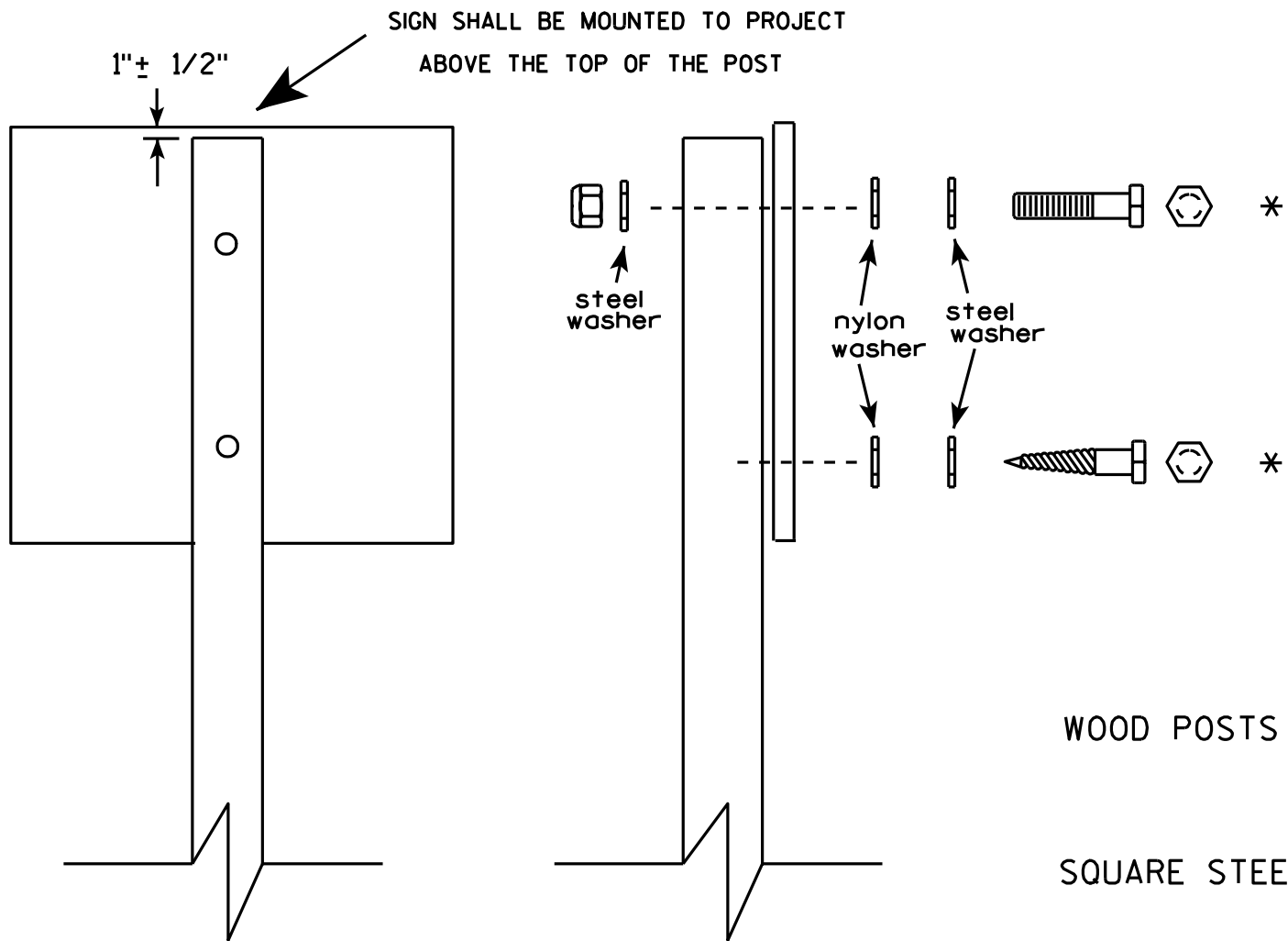
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 9/30/13 PLATE NO. A4-3.18

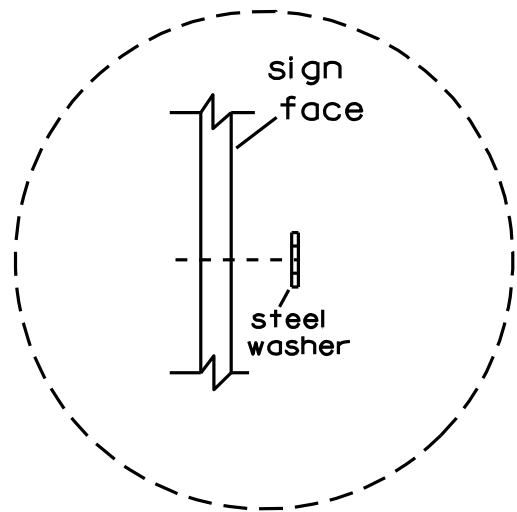


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

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

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

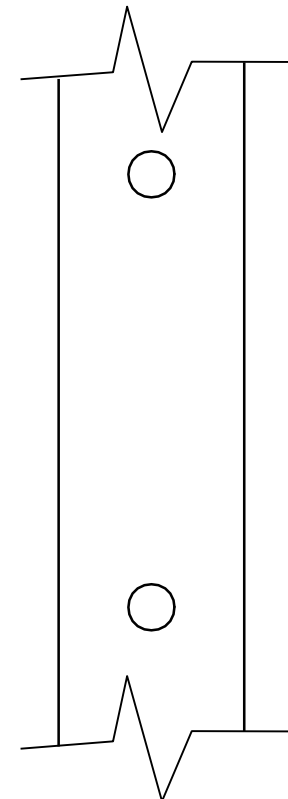
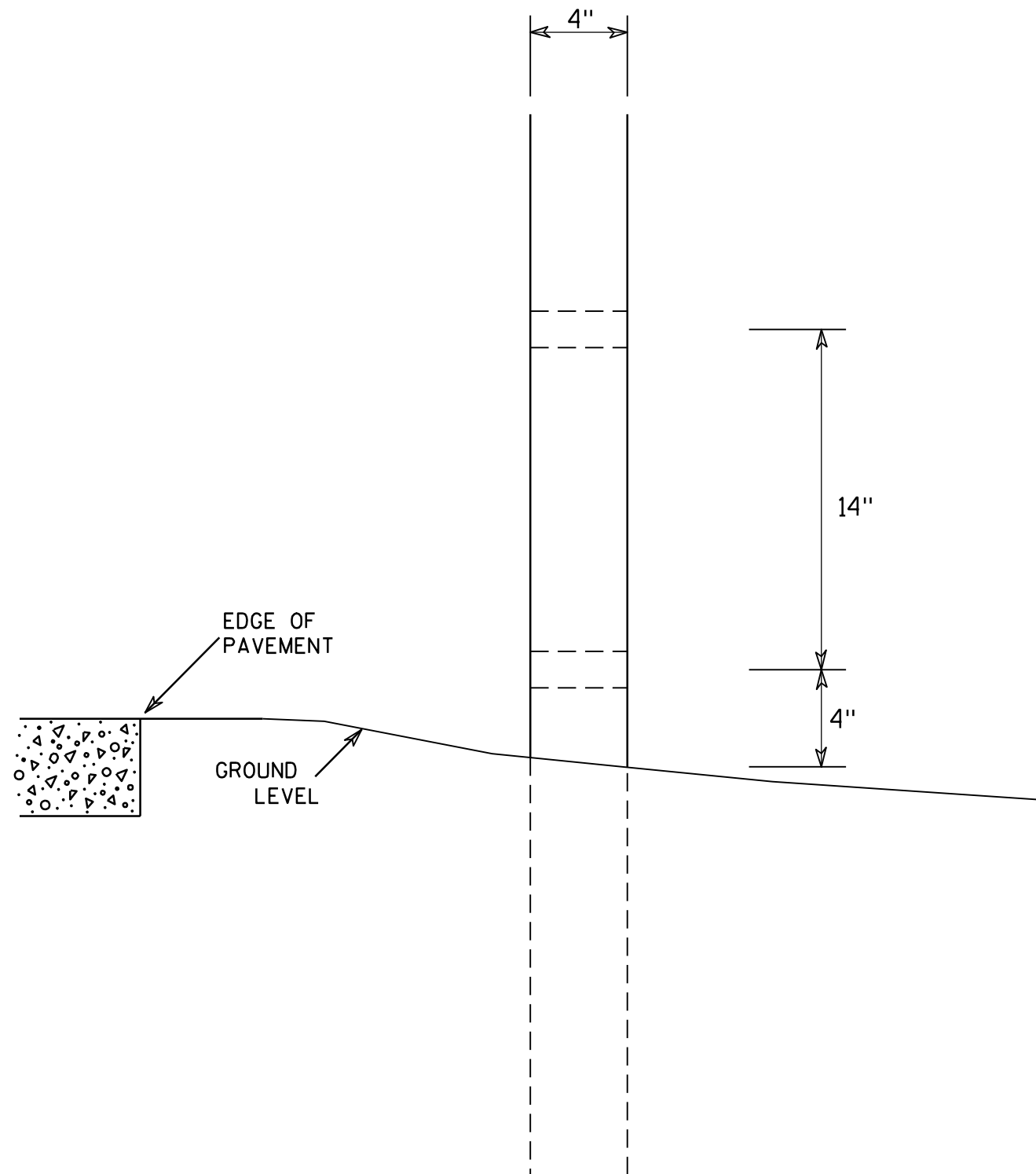
- WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts
- SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375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



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

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

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



SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST
MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

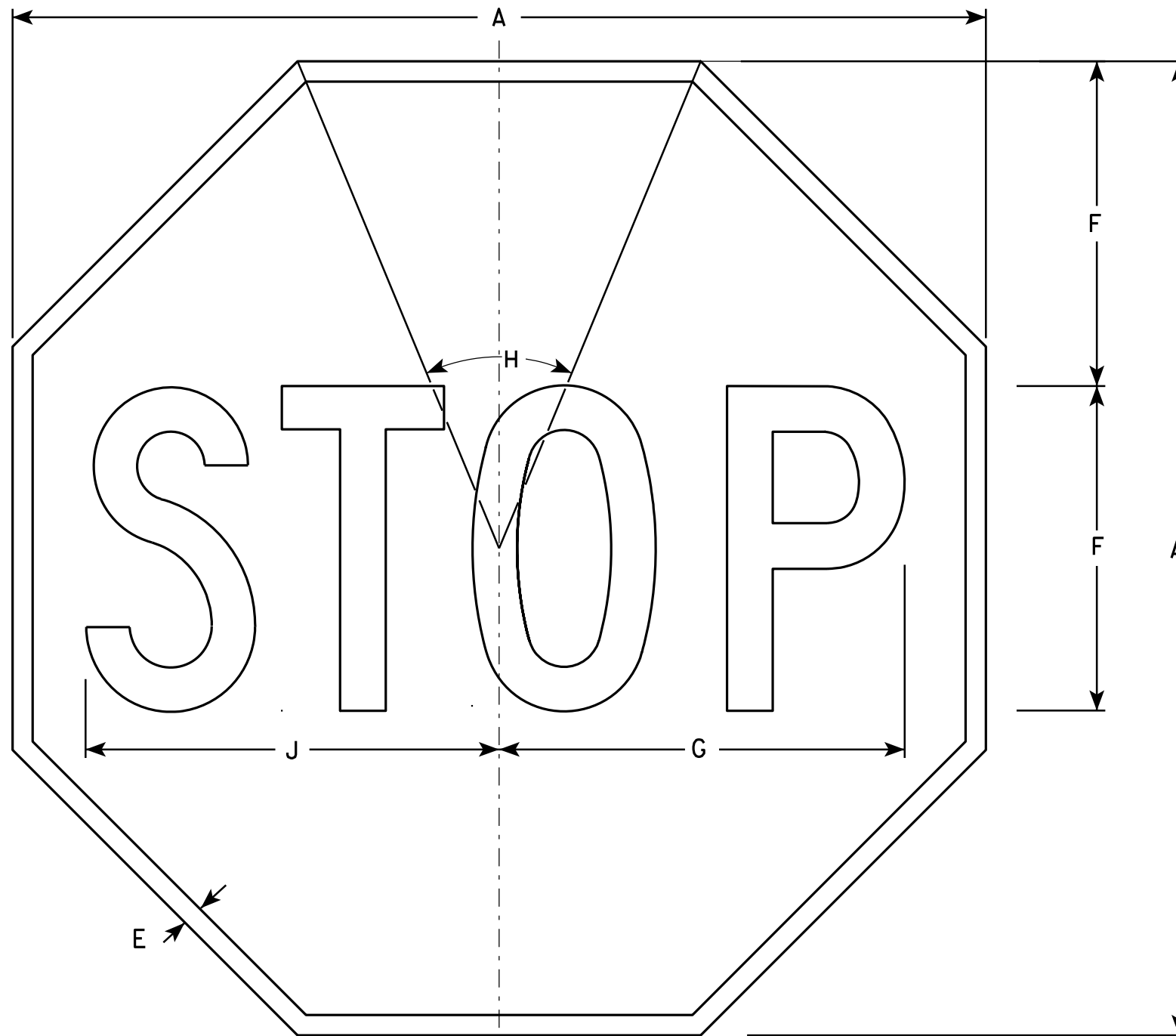
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 82

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 - Red
Message - White
3. Message Series - C

R1-1

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	24				3/8	8	10	45°		10 1/4																	3.31
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

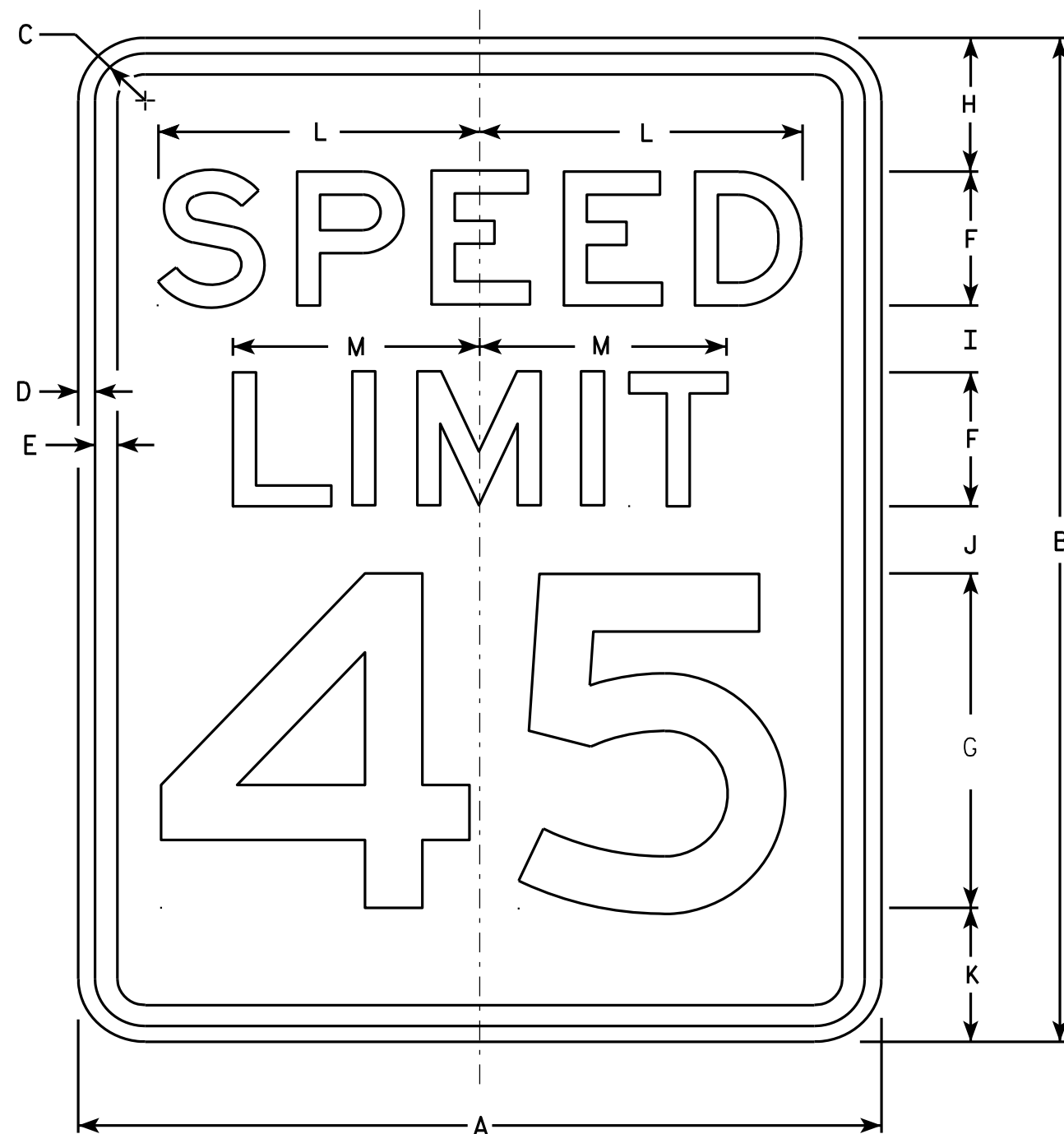
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1.12

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 83	E
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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.

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: 84 E

7



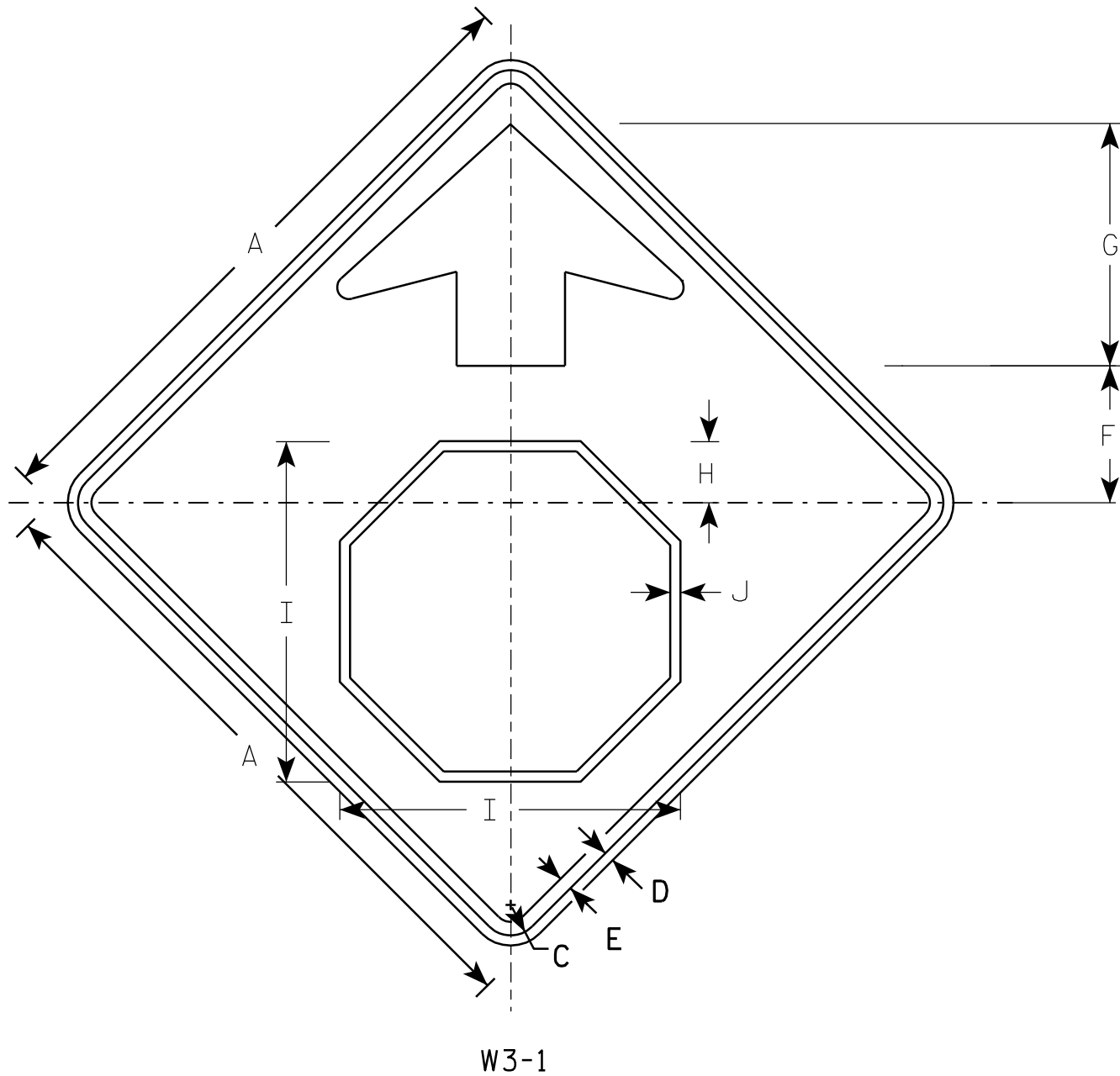
NOTES

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 - 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 E.
Lines 2, 3, 4, 5 and 6 are Series C.

7

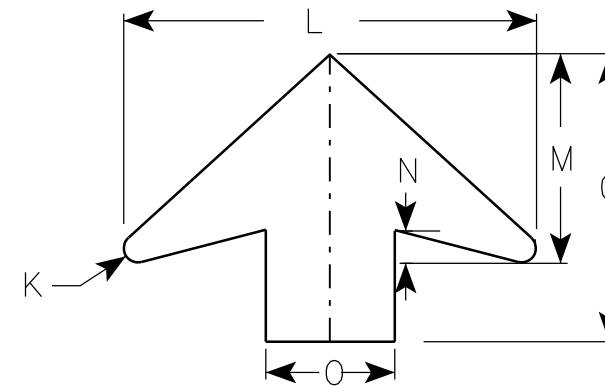
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	18	24	1 1/8	3/8	1/2	3	1 1/2	2	1	3 1/8	6 3/8		5 1/4	2 1/8	5 3/4												3.0
2M	18	24	1 1/8	3/8	1/2	3	1 1/2	2	1	3 1/8	6 3/8		5 1/4	2 1/8	5 3/4												3.0
3																											
4																											
5																											

STANDARD SIGN R9-56	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 4/4/2011	PLATE NO. R9-56.5



NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - YELLOW
Arrow & Border - BLACK
Stop Symbol - WHITE BORDER ON RED BACKGROUND



ARROW DETAIL

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		1 3/8	1/2	5/8	6 1/4	11 1/4	2 7/8	15 3/4	1/2	1/2	16	8	1 1/4	5												6.25
2S	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
2M	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
3	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0

PROJECT NO:

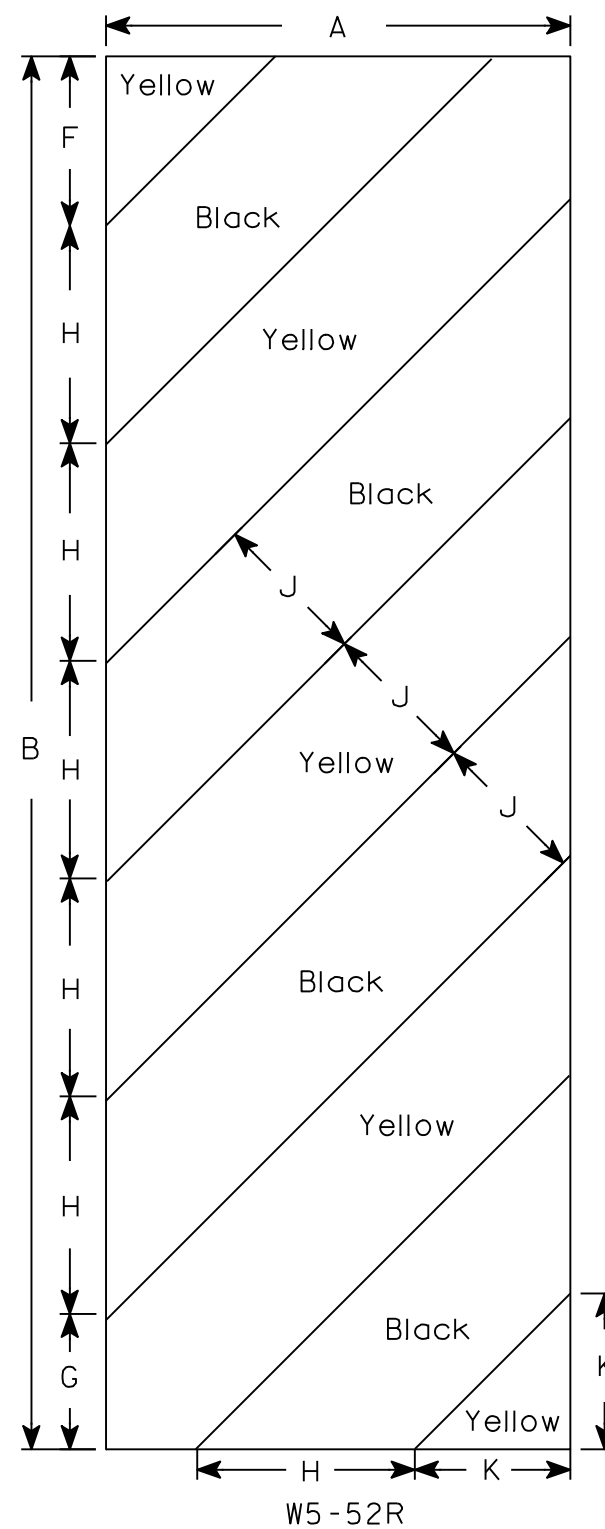
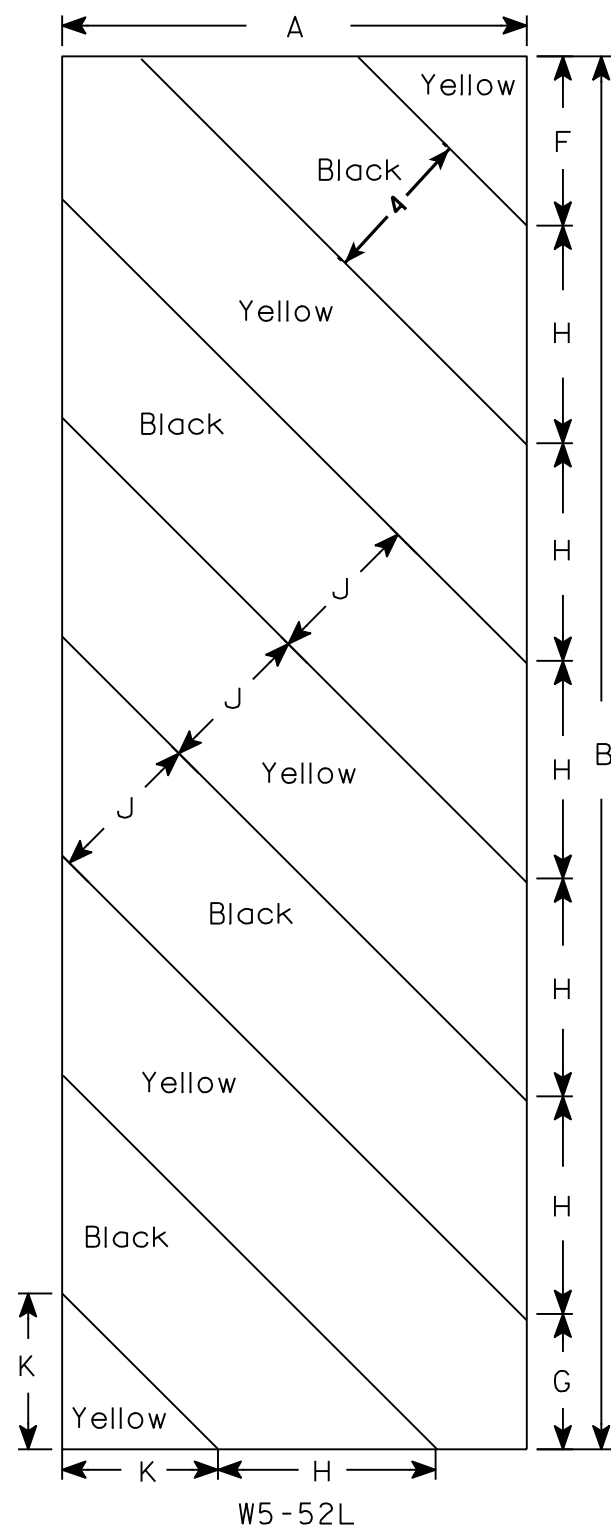
STANDARD SIGN
W3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/7/10 PLATE NO. W3-1.12

SHEET NO: 86

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 - Yellow
 - Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Alternate colors of stripes as shown.

[illegible]

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 5/29/12 PLATE NO. W5-52.9

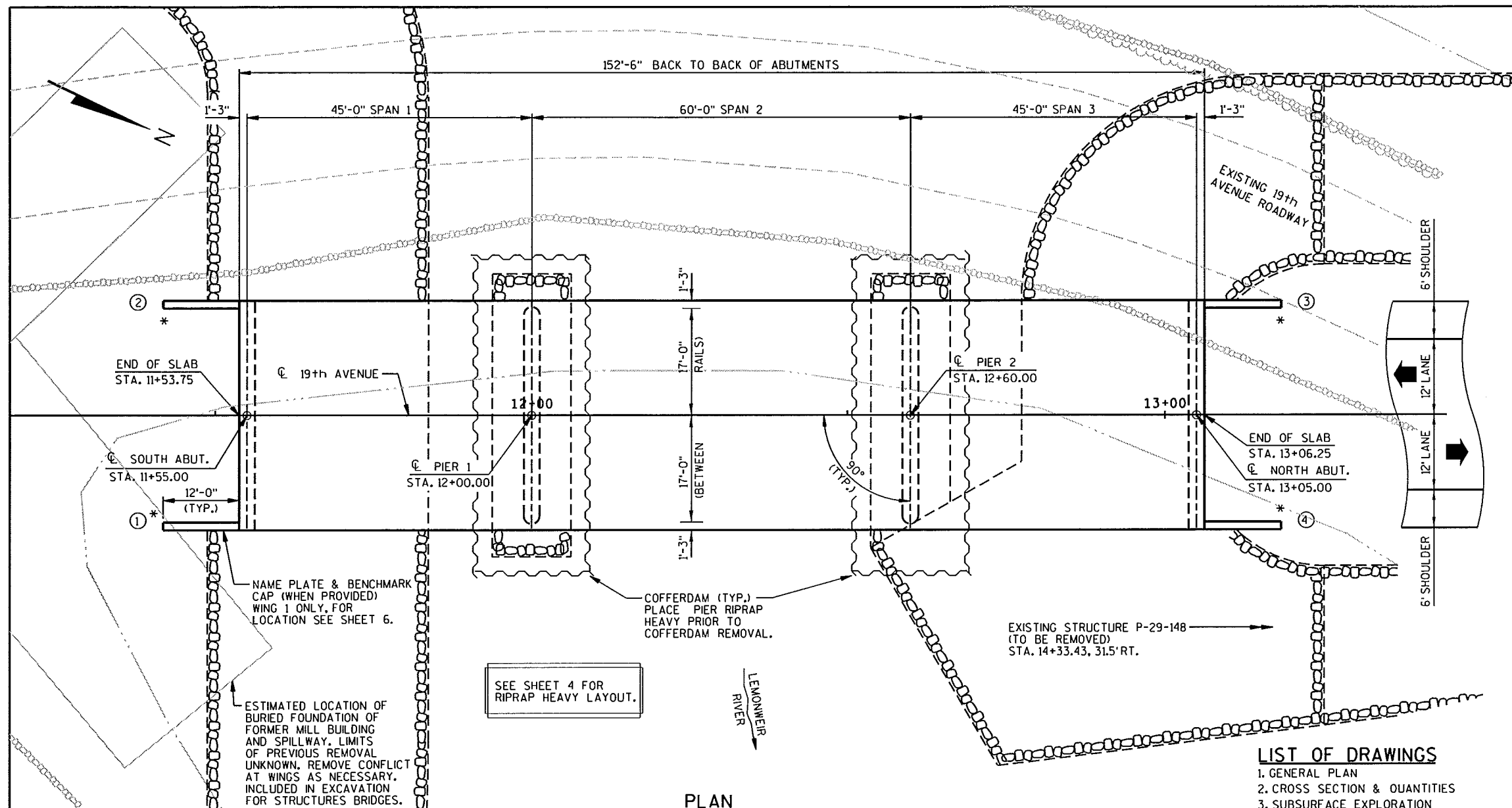
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 87

E



PLAN
(THREE SPAN HAUNCHED CONCRETE SLAB)

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. RIPRAP HEAVY LAYOUT
5. SOUTH ABUTMENT
6. SOUTH ABUTMENT DETAILS
7. NORTH ABUTMENT
8. NORTH ABUTMENT DETAILS
9. PIER 1
10. PIER 2
11. SUPERSTRUCTURE
12. SUPERSTRUCTURE DETAILS
13. RAILING TUBULAR TYPE M

STATE PROJECT NUMBER			
6648-00-72			
BENCHMARKS			
NAVD 88			
NO.	STATION/OFFSET	DESCRIPTION	ELEV.
1	14+69.5, 66.1' RT.	DISK NE CORNER OF BRIDGE	862.93
2	9+99.84, 128' RT.	DISK IN ROCK PUBLIC SERVICE COMMISSION OF WISCONSIN WATER POWER	866.74
3	15+16.3, 100.5' RT.	CHISELED + TOP OF CAISSON	862.43

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF=1.05
OPERATIONAL RATING FACTOR: RF=1.36
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS.
STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

TRAFFIC DATA:
A.A.D.T. (2015) = 365
A.A.D.T. (2035) = 525
R.D.S. = 50 MPH

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY, SLAB $f_c = 4,000$ P.S.I.
ALL OTHER $f_c = 3,500$ P.S.I.
HIGH-STRENGTH BAR STEEL REINFORCEMENT, GRADE 60 $f_y = 60,000$ P.S.I.
PILING STEEL HP $f_y = 50,000$ P.S.I.

FOUNDATION DATA:

ABUTMENTS AND PIERS TO BE SUPPORTED ON PILING STEEL HP 10-INCH X 42 LB. DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED PILE LENGTHS ARE 20'-0" AT THE SOUTH ABUTMENT, 30'-0" AT PIER 1, 40'-0" AT PIER 2, AND 45'-0" AT THE NORTH ABUTMENT. PIER 1 PILING SHALL BE PREBORED 3'-0" MINIMUM INTO FIRM SANDSTONE BEDROCK IF BEDROCK IS LOCATED LESS THAN 10'-0" BELOW THE BOTTOM OF THE PIER. SEAT PREBORED PILING BY TAPPING IN PLACE, DRIVING NOT REQUIRED.

THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5.

HYDRAULIC DATA:

100 YEAR FREQUENCY
DRAINAGE AREA 615 SQ. MI.
O₁₀₀ - TOTAL 9,230 C.F.S.
- THRU BRIDGE 9,036 C.F.S.
- THRU SUPPLEMENTAL STRUCTURE 144 C.F.S.
VELOCITY - THRU BRIDGE 5.44 FT./SEC.
- SUPPLEMENTAL STRUCTURE 2.29 FT./SEC.
WATERWAY AREA - THRU BRIDGE 1,671 SQ. FT.
- SUPPLEMENTAL STRUCTURE 63 SQ. FT.
SCOUR CRITICAL CODE 5
HIGH WATER₁₀₀ ELEVATION 860.27 ±
O₂ ELEVATION (3,700 CFS) 856.66 ±

○ - INDICATES WING NUMBER

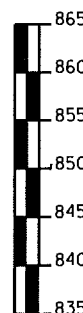
* - INDICATES LOCATION OF PROVISION FOR THREE BEAM GUARD ATTACHMENT AT WINGS.

▨ - EXCAVATION OF THE STREAMBED AND PLACING FILL BELOW THE ABUTMENTS ARE INCLUDED IN THE BID ITEM "EXCAVATION COMMON", SEE ROAD PLANS.

RAILING TUBULAR TYPE M FOR DETAILS SEE SHEET 13.

FOR TRAVEL CORRIDOR INTERSTITIAL SPACE, PLACE SELECT CRUSHED MATERIAL TO FILL VOIDS FROM 1'-0" BELOW THE OBSERVED WATER ELEVATION TO EL. 857.2 (TYPICAL AT ALL RIPRAP HEAVY).

PROFILE GRADE LINE



PILING STEEL HP 10-INCH X 42 LB ESTIMATED PILE LENGTH 20'-0"

GEOTEXTILE FABRIC TYPE HR REQ'D. UNDER ALL RIPRAP HEAVY (TYP. BOTH ABUTMENTS, PIERS, AND ALL SLOPES).

ELEVATION

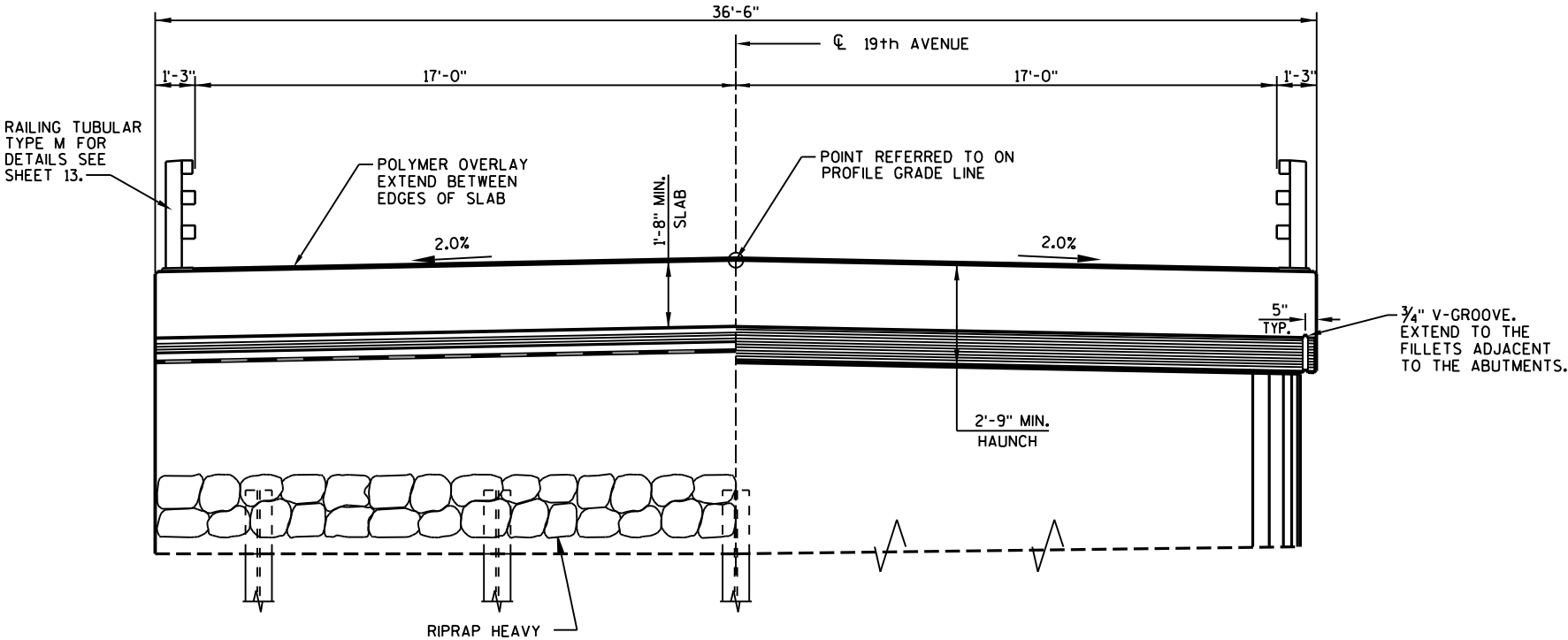
(NORMAL TO 19th AVENUE SOUTH)

CONSULTANT DESIGN CONTACT:
LEAH RHODES
(608) 355-8945

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



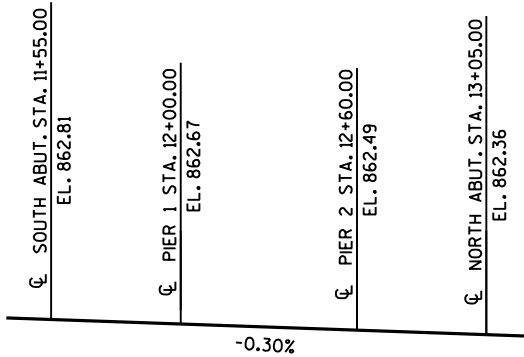
NO.	DATE	REVISION	BY
MSA TRANSPORTATION • MUNICIPAL DEVELOPMENT • ENVIRONMENTAL PROFESSIONAL SERVICES 1230 South Boulevard Baraboo, WI 53913 608-356-2771 1-800-362-4505 Fax: 608-356-2770			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION ACCEPTED <i>William C. Dreher</i> KAR 11/20/14 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-29-0144			
19th AVENUE SOUTH OVER THE LEMONWEIR RIVER			
COUNTY	JUNEAU	TOWN/CITY/VILLAGE	LEMONWEIR
DESIGN SPEC. AASHTO LRFD DESIGN SPECIFICATIONS			
DESIGNED BY	LJR	DESIGN CK'D.	JRS
DRAWN BY	RLR	PLANS CK'D.	LJR
GENERAL PLAN			SHEET 1 OF 13 88



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 MARK SIGNIFIES THE BAR SIZE.
- THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE FABRIC TYPE HR TO THE LIMITS SHOWN ON SHEET 1, SHEET 4, AND ON THE ABUTMENT SHEETS OR AS DIRECTED BY THE ENGINEER.
- THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-29-0144" FOR THE ABUTMENTS. THE FINISHED STREAMBED ELEVATION 846.0± SHALL BE THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-29-0144" FOR THE PIERS.
- SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE, UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.
- THIS STRUCTURE WILL REPLACE EXISTING BRIDGE P-29-148, A 99.9 FT. LONG TWO SPAN STEEL DECK GIRDER BRIDGE ON EARTH RETAINING CONCRETE ABUTMENTS AND CAISSON PIERS.
- AT THE ABUTMENTS, PLACE BACKFILL STRUCTURE ON A 1½:1 SLOPE OFFSET 3'-0" MINIMUM FROM THE BOTTOM OF THE BACK FACE OF THE ABUTMENT.
- ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO USGS DATUM NAVD 88, AND WERE ESTABLISHED AT THE SITE USING GPS TECHNOLOGY.
- PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE EDGES OF SLAB, TO THE OUTSIDE 1'-0" OF THE UNDERSIDE OF SLAB, TO THE TOPS OF WINGS, AND TO THE EXPOSED FRONT FACES OF WINGS.
- POLYMER OVERLAY SHALL BE APPLIED TO THE TOP OF SLAB PRIOR TO INSTALLATION OF RAILING TUBULAR TYPE M.

AT ABUTMENTS AT PIERS
CROSS SECTION THRU BRIDGE
(LOOKING NORTH)

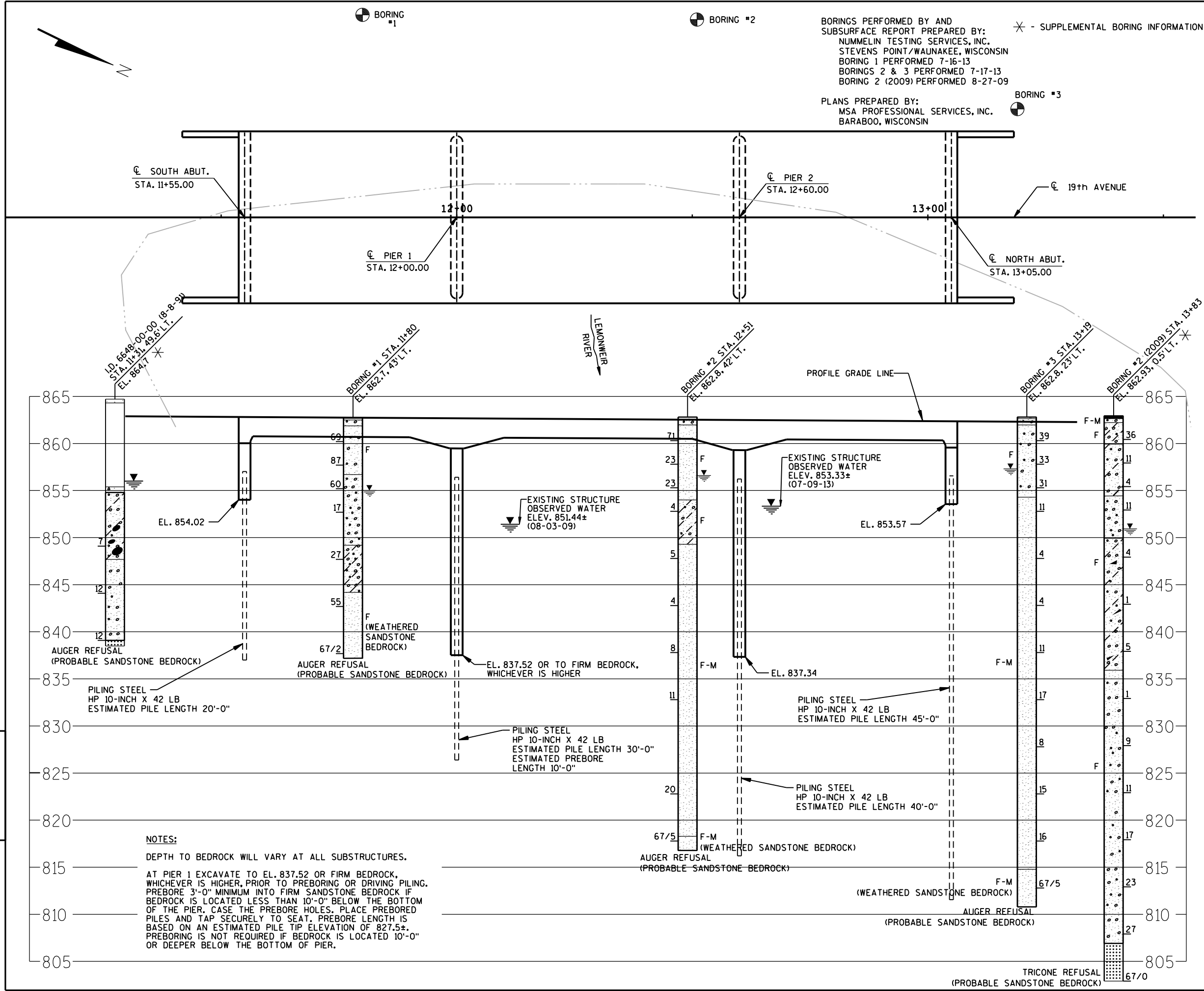


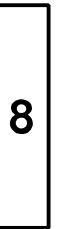
PROFILE GRADE LINE - 19th AVENUE

TOTAL ESTIMATED QUANTITIES

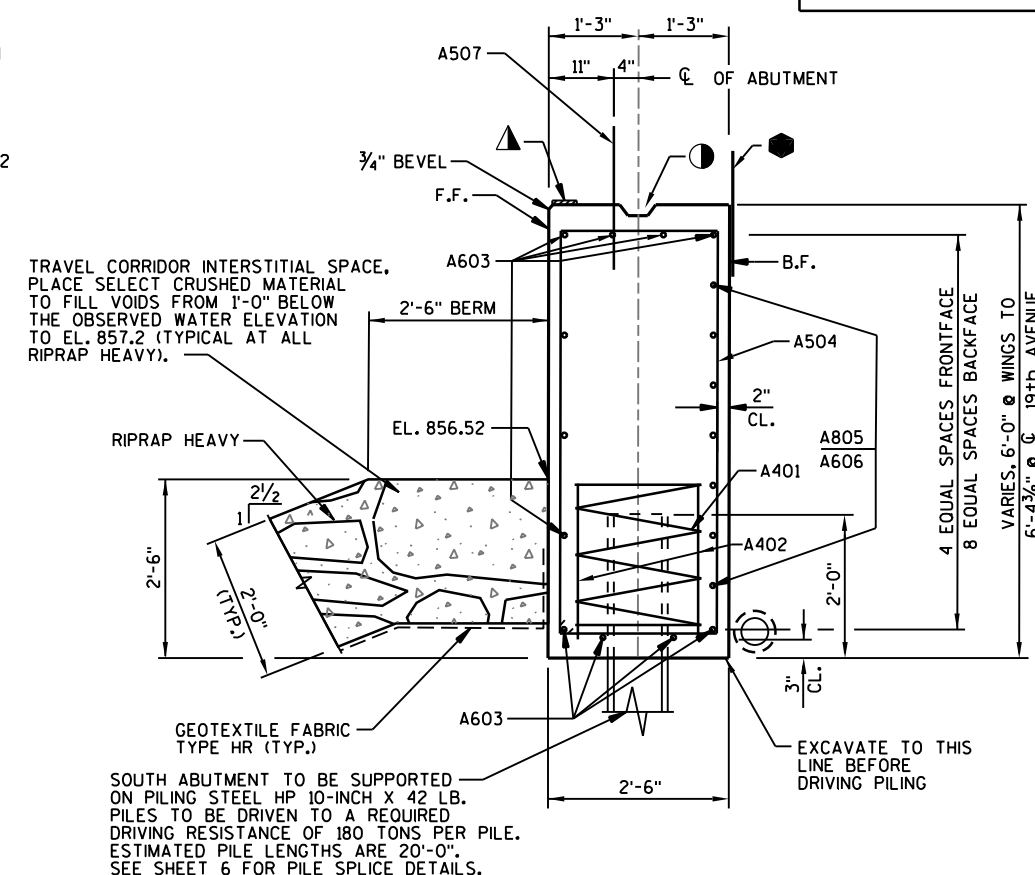
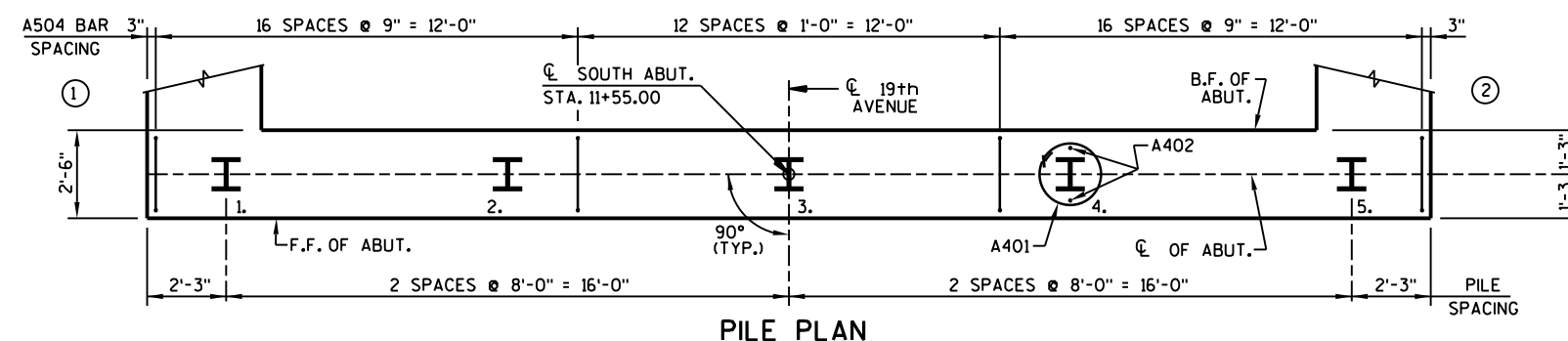
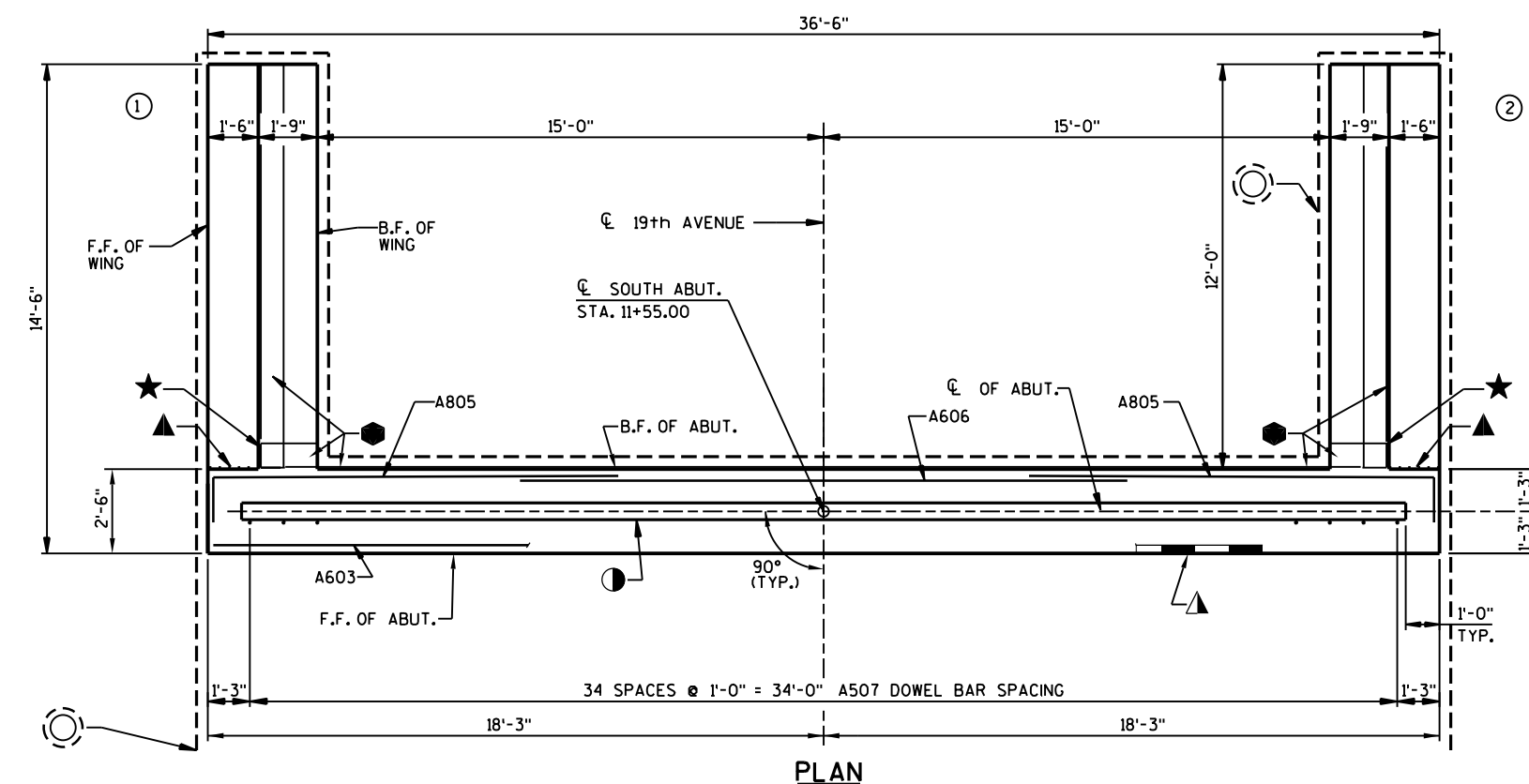
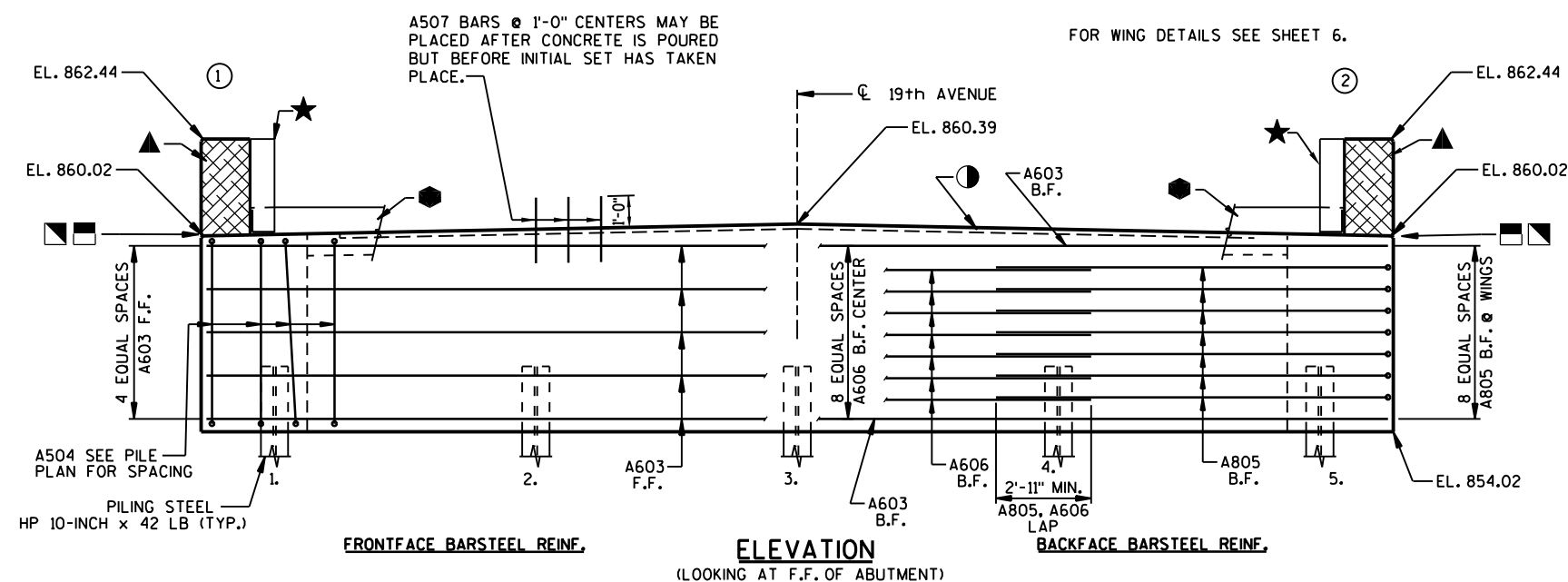
ITEM NUMBER	BID ITEM	UNIT	SOUTH ABUT.	PIER 1	PIER 2	NORTH ABUT.	SUPER	TOTAL
203.0600.S.01	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 14+33.43	LS	-	-	-	-	-	1
206.1000.01	EXCAVATION FOR STRUCTURE BRIDGES B-29-0144	LS	-	-	-	-	-	1
206.5000.01	COFFERDAMS B-29-0144	LS	-	-	-	-	-	1
210.0100	BACKFILL STRUCTURE	CY	110	-	-	110	-	220
502.0100	CONCRETE MASONRY BRIDGES	CY	42	70	70	42	383	607
502.3200	PROTECTIVE SURFACE TREATMENT	SY	13	-	-	13	95	121
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	2140	3305	3305	2140	-	10890
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	1690	70	70	1690	74670	78190
509.5100.S	POLYMER OVERLAY	SY	-	-	-	-	619	619
513.4060.01	RAILING TUBULAR TYPE M B-29-0144	LS	-	-	-	-	-	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	10.5	-	-	10.5	-	21
550.0020	PRE-BORING ROCK OR CONSOLIDATED MATERIALS	LF	-	90	-	-	-	90
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	100	270	360	225	-	955
606.0300	RIPRAP HEAVY	CY	720	35	30	360	-	1145
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	110	-	-	110	-	220
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	1150	95	85	550	-	1880
SPV.0195.01	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR INTERSTITIAL SPACE	TON	240	-	-	80	-	320
NON-BID ITEMS								
PREFORMED FILLER								
SIZE								

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-29-0144			
DRAWN BY RLR		PLANS CK'D. LJR	
CROSS SECTION & QUANTITIES			SHEET 2 OF 13 89





FILE= 11145000_04.DGN
DATE= 10/13/2014



TYPICAL SECTION THRU ABUTMENT

LEGEND

-  - OPTIONAL KEYED CONSTRUCTION JOINT ON WING FORMED BY BEVELED 2x6.
IF JOINT IS USED PLACE  ON B.F. OF WING.
-  - $\frac{3}{4}$ " "V" GROOVE ON FRONT FACE OF WING WALL, REQ'D. ONLY WHERE CONST. JOINT IS USED.
-  - KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2x6.
-  - $\frac{1}{2}$ " FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP & HOLD $\frac{1}{8}$ " BELOW SURFACE OF CONCRETE).
-  - 4"x $\frac{3}{4}$ " FILLER, EXTEND FULL LENGTH OF ABUTMENT BETWEEN EDGES OF SLAB.
-  - VERTICAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM BRIDGE SEAT TO TOP OF WINGS.
-  - HORIZONTAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND BETWEEN WINGS. PLACE BOTTOM HALF HORIZONTAL AT HAUNCHED AREA OF WINGS IF OPTIONAL CONSTRUCTION JOINT IS USED.
-  - PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU GEOTEXTILE FABRIC AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT PROTECTION AT ENDS OF PIPE, SEE RODENT SHIELD DETAIL, SHEET 8.
-  - INDICATES WING NUMBER. F.F. - FRONT FACE B.F. - BACK FACE CL. - CLEAR

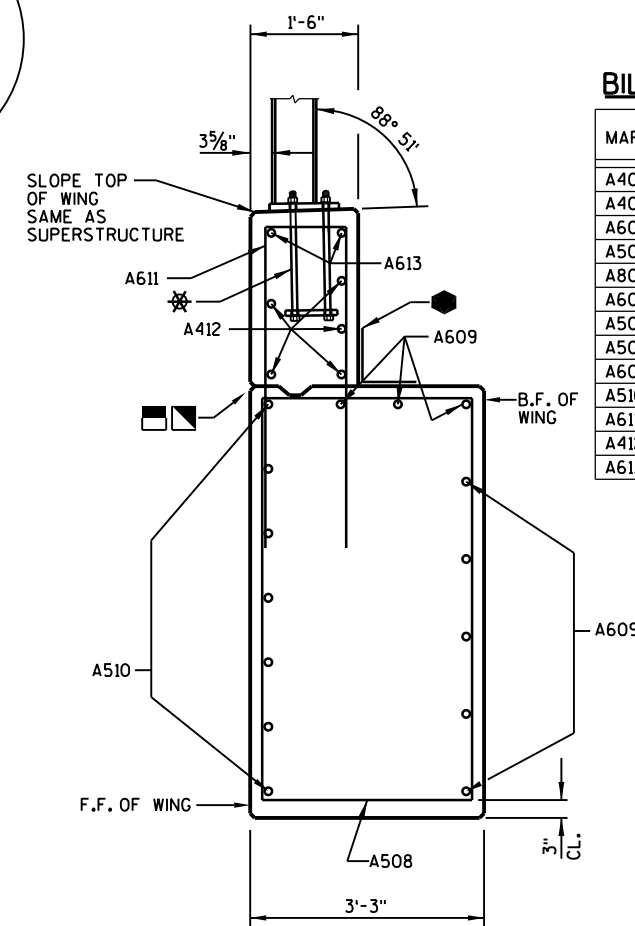
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-29-0144	
		DRAWN BY	RLR
		PLANS CK'D.	JRS
SOUTH ABUTMENT		SHEET 5 OF 1 —92—	

(COATED) 1690 LBS.
(UNCOATED) 2140 LBS.

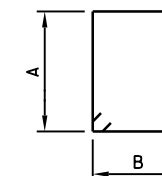
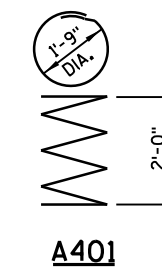
BILL OF BARS

MARK	NUMBER COATED	NUMBER UNCOATED	LENGTH	BENT	LOCATION
A401	-	5	28'-0"	X	ABUTMENT BODY - 1 SPIRAL WRAP @ EACH PILING
A402	-	10	2'-3"		ABUTMENT BODY - 2 @ EACH PILING - VERT.
A603	-	11	36'-2"		ABUTMENT BODY - F.F., TOP & BOTTOM - HORIZ.
A504	-	45	16'-0"	X	ABUTMENT BODY - STIRRUP - VERT.
A805	-	14	13'-2"	X	ABUTMENT BODY - B.F. @ WINGS - HORIZ.
A606	-	7	18'-0"		ABUTMENT BODY - B.F. @ CENTER - HORIZ.
A507	35	-	2'-0"		ABUTMENT BODY - TOP - DOWELS - VERT.
A508	24	-	17'-8"	X	WINGS 1 & 2 - BASE - STIRRUP - VERT.
A609	16	-	13'-11"		WINGS 1 & 2 - BASE - B.F. & CENTER - HORIZ.
A510	14	-	14'-2"		WINGS 1 & 2 - BASE - F.F. - HORIZ.
A611	34	-	9'-6"	X	WINGS 1 & 2 - TOP - STIRRUP - VERT.
A412	10	-	11'-8"		WINGS 1 & 2 - TOP - F.F. & B.F. - HORIZ.
A613	4	-	11'-8"		WINGS 1 & 2 - TOP - F.F. & B.F. - HORIZ.

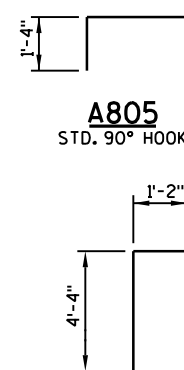
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.



SECTION A-A THRU WING 1

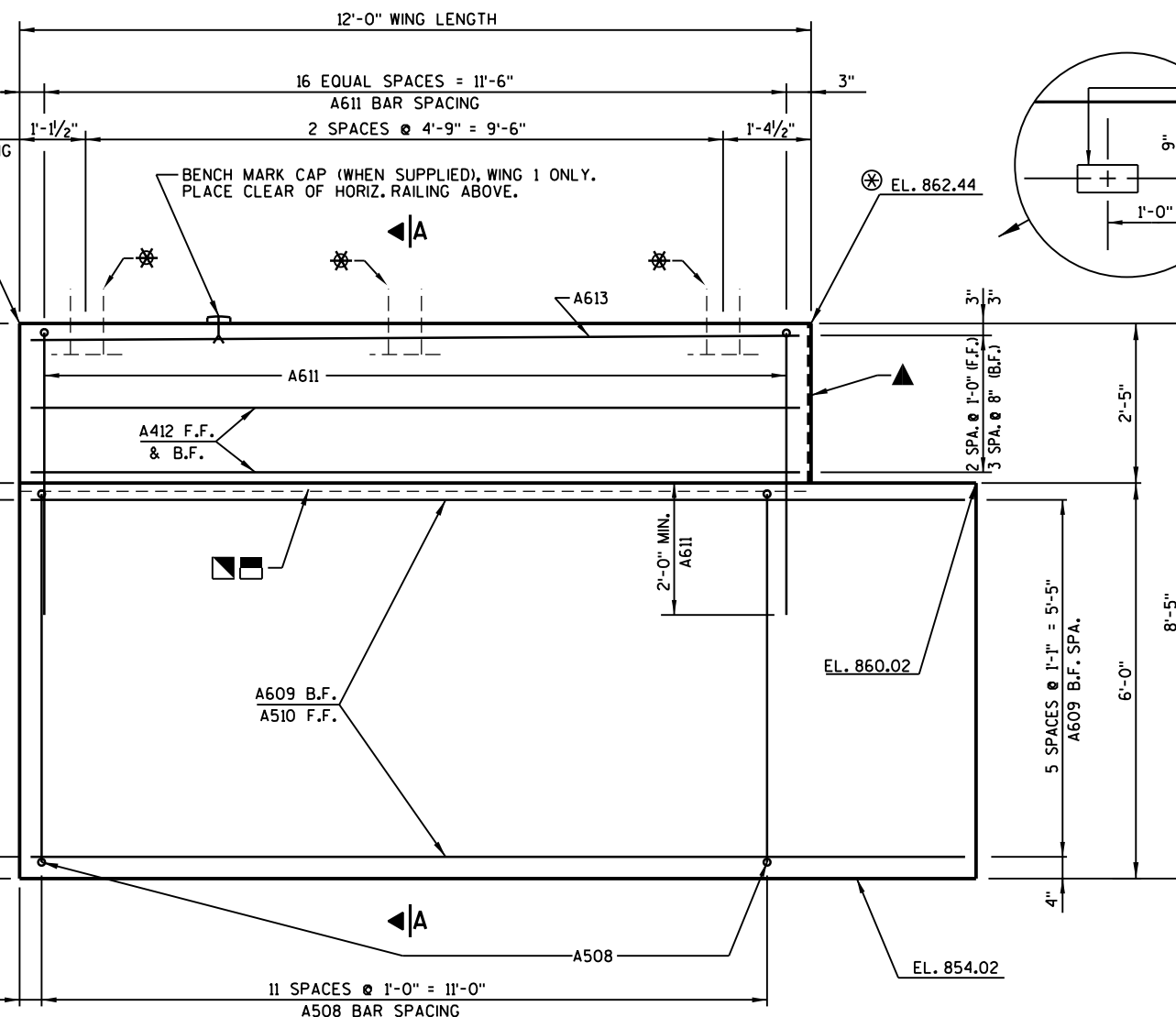


MARK	A	B
A504	5'-6"	2'-2"
A508	5'-7"	2'-11"

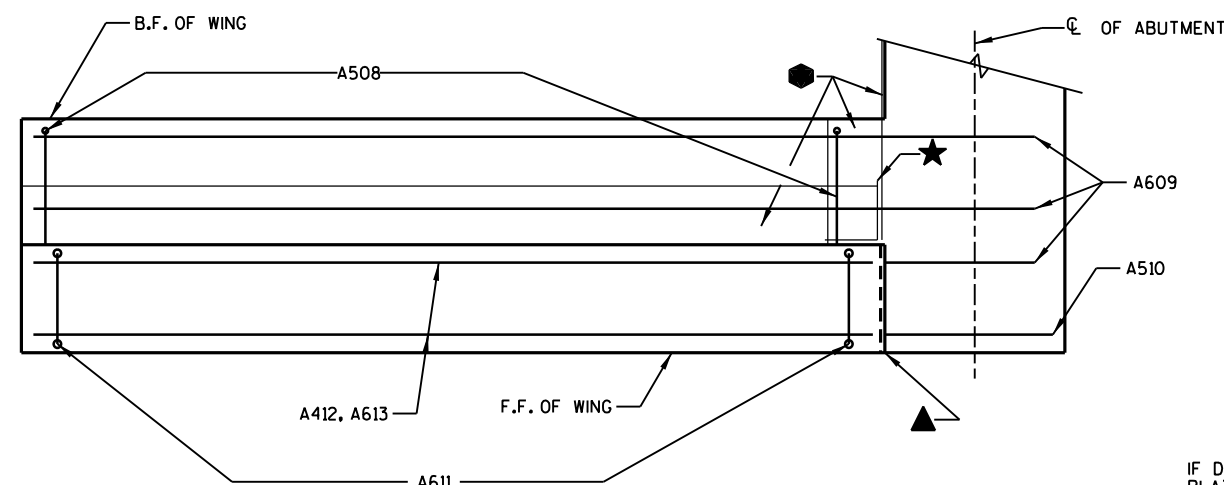


WING 1 SHOWN
WING 2 OPPOSITE HAND

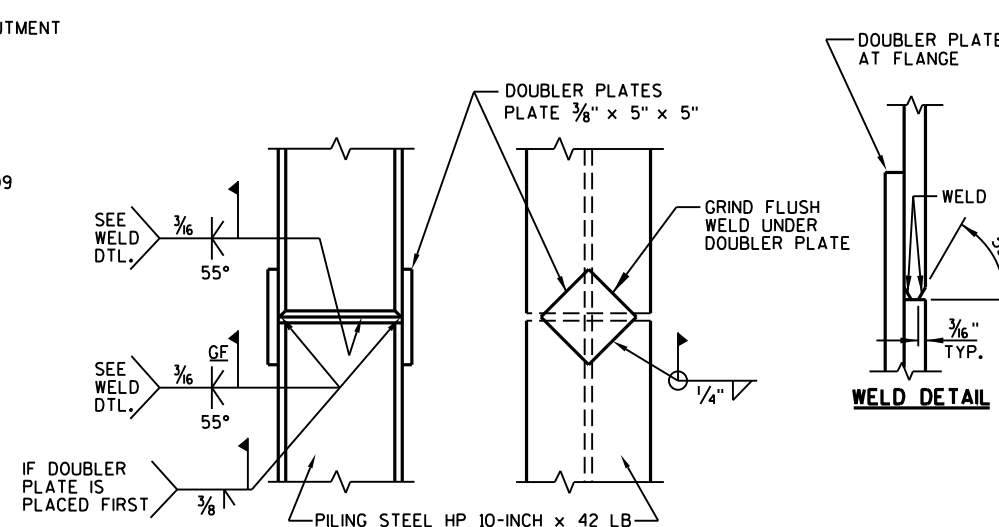
SEE SHEET 5 LEGEND
FOR DESCRIPTION OF



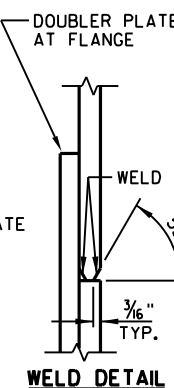
ELEVATION WING 1



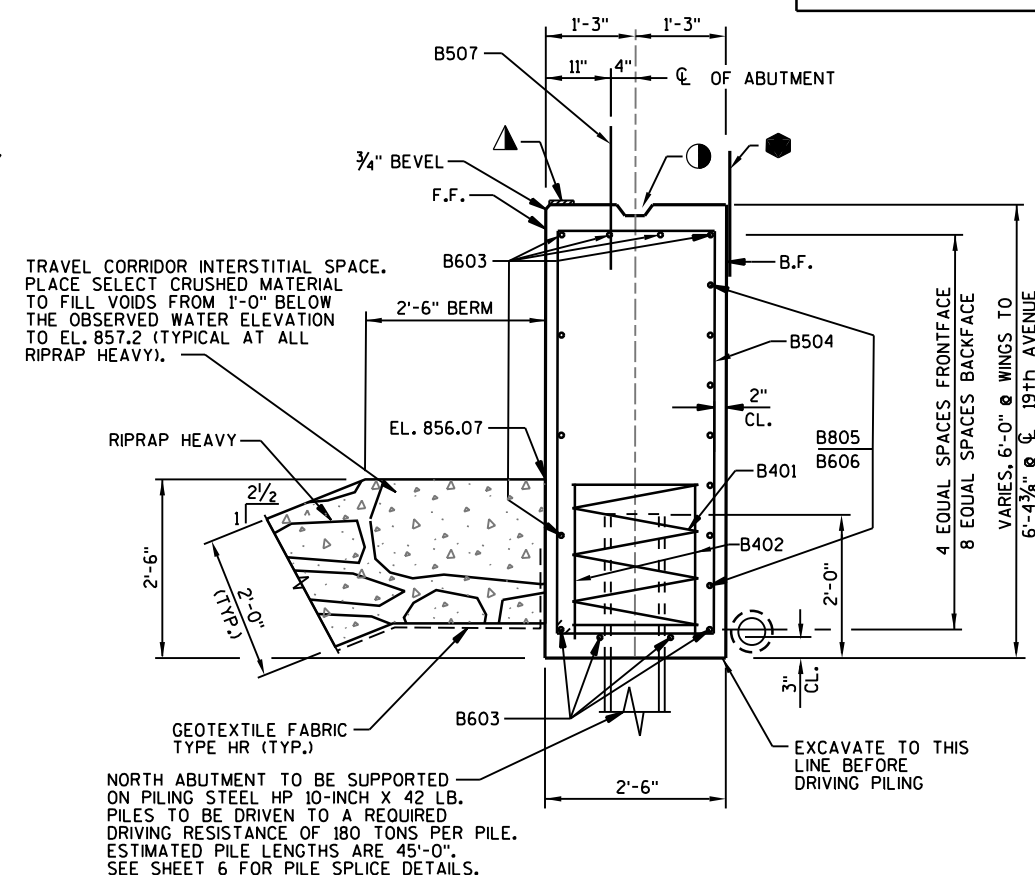
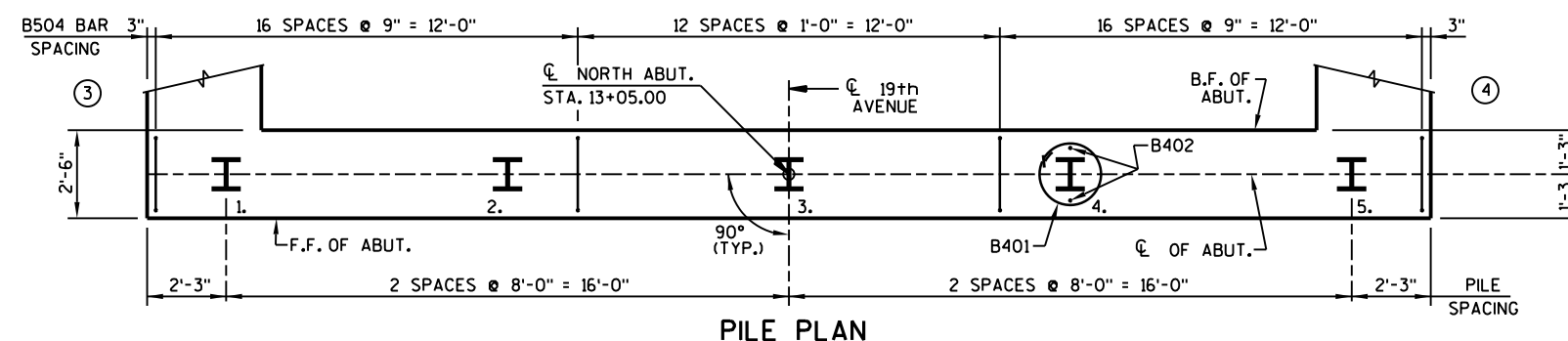
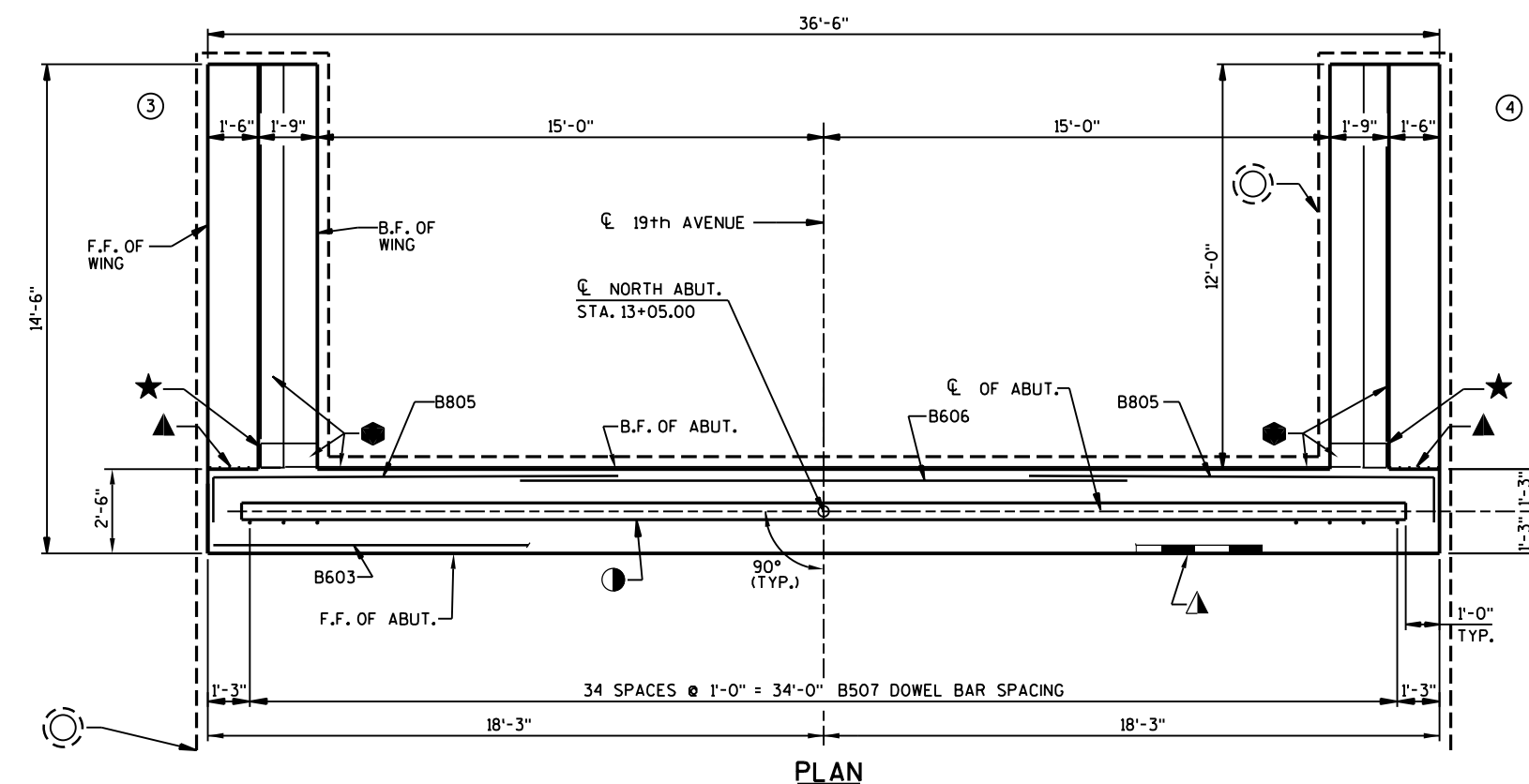
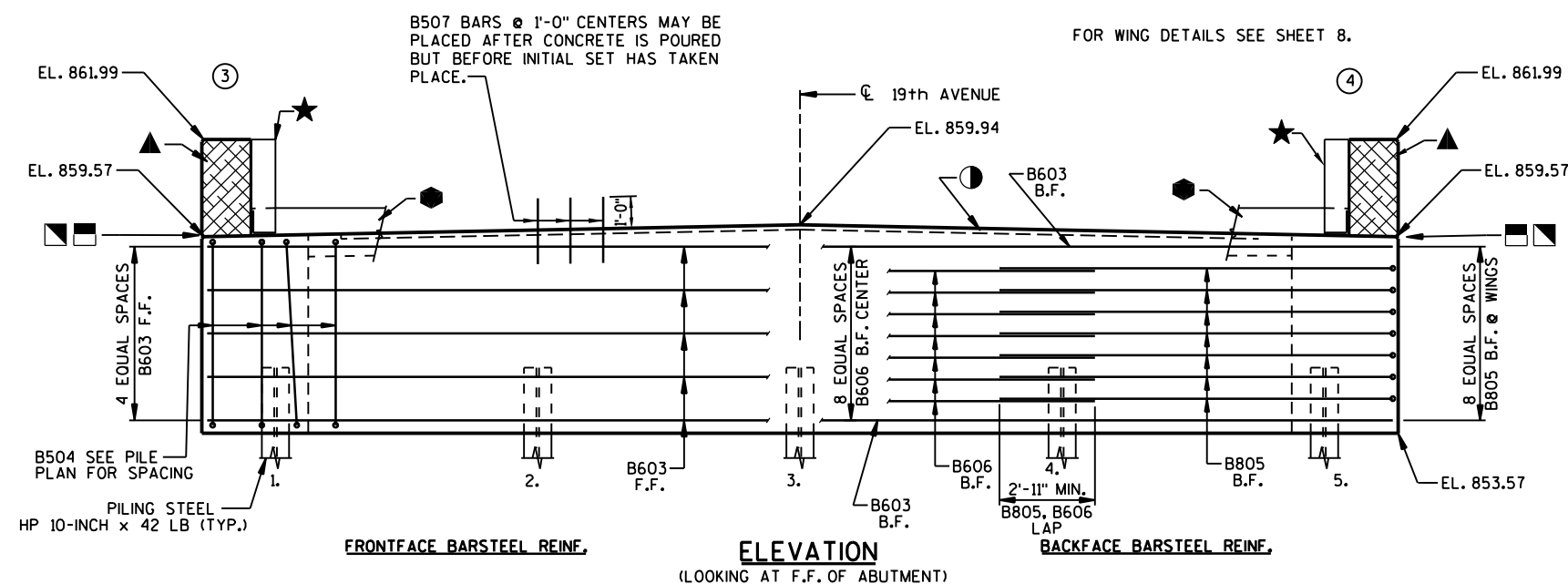
PLAN WING 1



PILE SPLICE DETAILS



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-29-0144			
DRAWN BY RLR		PLANS CK'D. JRS	
SOUTH ABUTMENT DETAILS		SHEET 6 OF 13 93	



TYPICAL SECTION THRU ABUTMENT

LEGEND

-  - OPTIONAL KEYED CONSTRUCTION JOINT ON WING FORMED BY BEVELED 2x6.
IF JOINT IS USED PLACE  ON B.F. OF WING.
-  - $\frac{3}{4}$ " "V" GROOVE ON FRONT FACE OF WING WALL, REQ'D. ONLY WHERE CONST. JOINT IS USED.
-  - KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2x6.
-  - $\frac{1}{2}$ " FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP & HOLD $\frac{1}{8}$ " BELOW SURFACE OF CONCRETE).
-  - 4"x $\frac{3}{4}$ " FILLER, EXTEND FULL LENGTH OF ABUTMENT BETWEEN EDGES OF SLAB.
-  - VERTICAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM BRIDGE SEAT TO TOP OF WINGS.
-  - HORIZONTAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND BETWEEN WINGS. PLACE BOTTOM HALF HORIZONTAL AT HAUNCHED AREA OF WINGS IF OPTIONAL CONSTRUCTION JOINT IS USED.
-  - PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU GEOTEXTILE FABRIC AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT PROTECTION AT ENDS OF PIPE, SEE RODENT SHIELD DETAIL, SHEET 8.
-  - INDICATES WING NUMBER. F.F. - FRONT FACE B.F. - BACK FACE CL. - CLEAR

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-29-0144	
		DRAWN BY	RLR
		PLANS CK'D.	JRS
NORTH ABUTMENT		SHEET 7 OF 13 — 94 —	

✱ - FOR RAIL POST ANCHOR
DETAILS SEE SHEET 13.

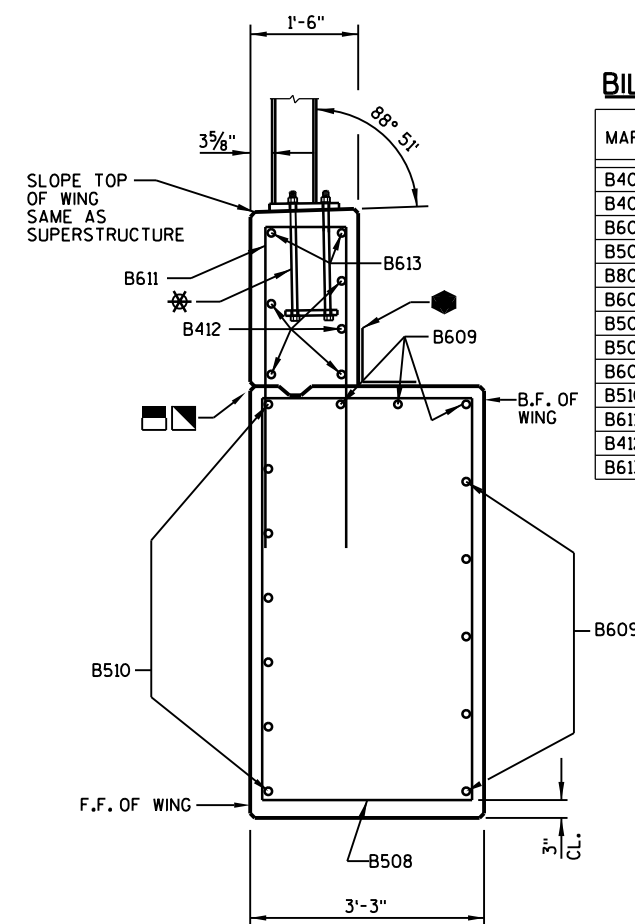
⊗ - ELEVATIONS ARE GIVEN
AT THE F.F. OF WING.

(COATED) 1690 LBS.
(UNCOATED) 2140 LBS.

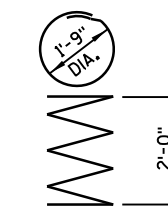
BILL OF BARS

MARK	NUMBER COATED	REQUIRED UNCOATED	LENGTH	BENT	LOCATION
B401	-	5	28'-0"	X	ABUTMENT BODY - 1 SPIRAL WRAP @ EACH PILING
B402	-	10	2'-3"		ABUTMENT BODY - 2 @ EACH PILING - VERT.
B603	-	11	36'-2"		ABUTMENT BODY - F.F., TOP & BOTTOM - HORIZ.
B504	-	45	16'-0"	X	ABUTMENT BODY - STIRRUP - VERT.
B805	-	14	13'-2"	X	ABUTMENT BODY - B.F. @ WINGS - HORIZ.
B606	-	7	18'-0"		ABUTMENT BODY - B.F. @ CENTER - HORIZ.
B507	35	-	2'-0"		ABUTMENT BODY - TOP - DOWELS - VERT.
B508	24	-	17'-8"	X	WINGS 3 & 4 - BASE - STIRRUP - VERT.
B609	16	-	13'-11"		WINGS 3 & 4 - BASE - B.F. & CENTER - HORIZ.
B510	14	-	14'-2"		WINGS 3 & 4 - BASE - F.F. - HORIZ.
B611	34	-	9'-6"	X	WINGS 3 & 4 - TOP - STIRRUP - VERT.
B412	10	-	11'-8"		WINGS 3 & 4 - TOP - F.F. & B.F. - HORIZ.
B613	4	-	11'-8"		WINGS 3 & 4 - TOP - F.F. & B.F. - HORIZ.

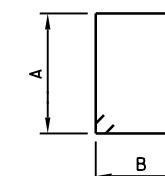
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.



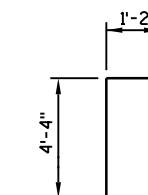
SECTION B-B THRU WING 3



B401

B805
STD. 90° HOOK

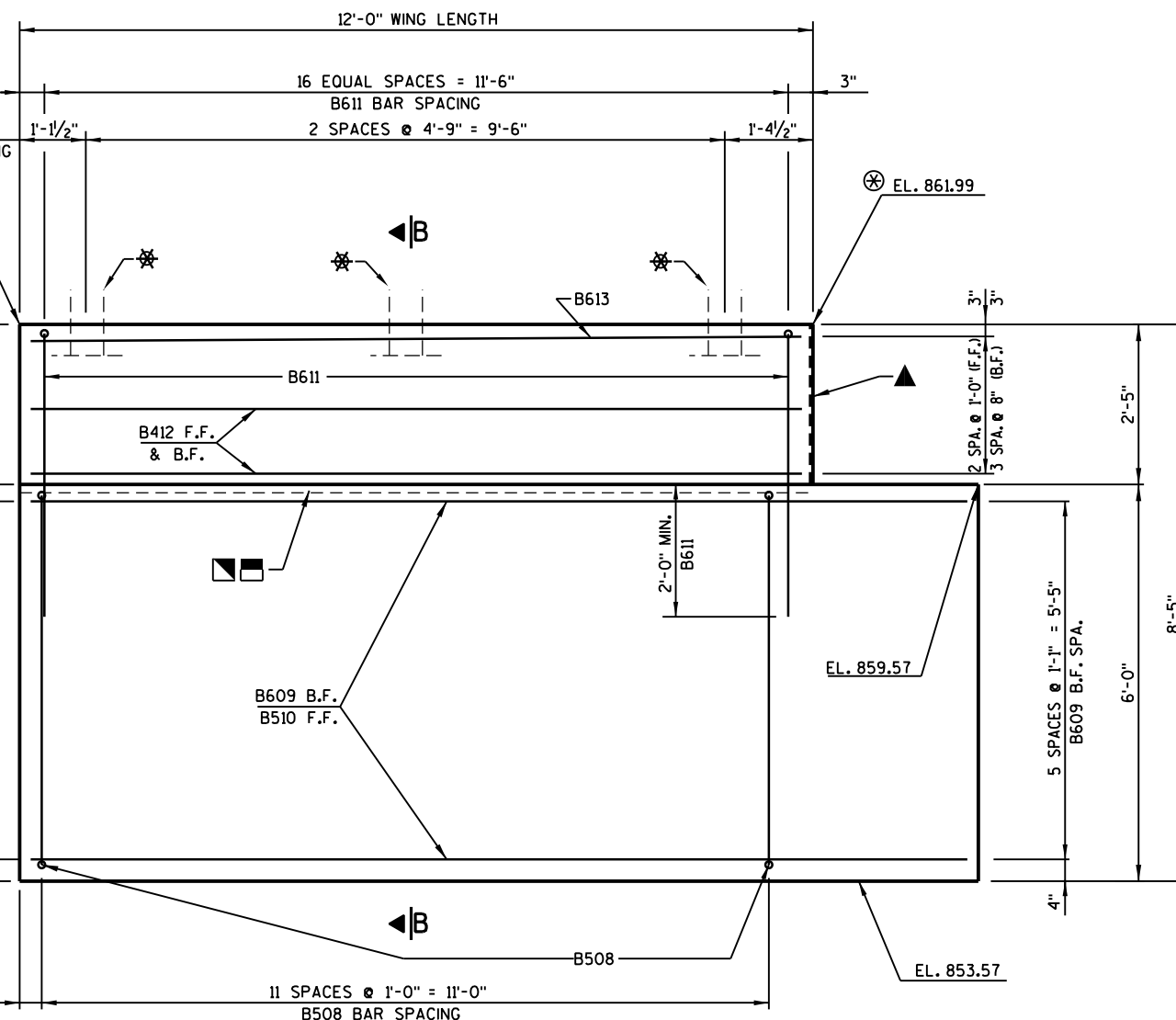
MARK	A	B
B504	5'-6"	2'-2"
B508	5'-7"	2'-11"



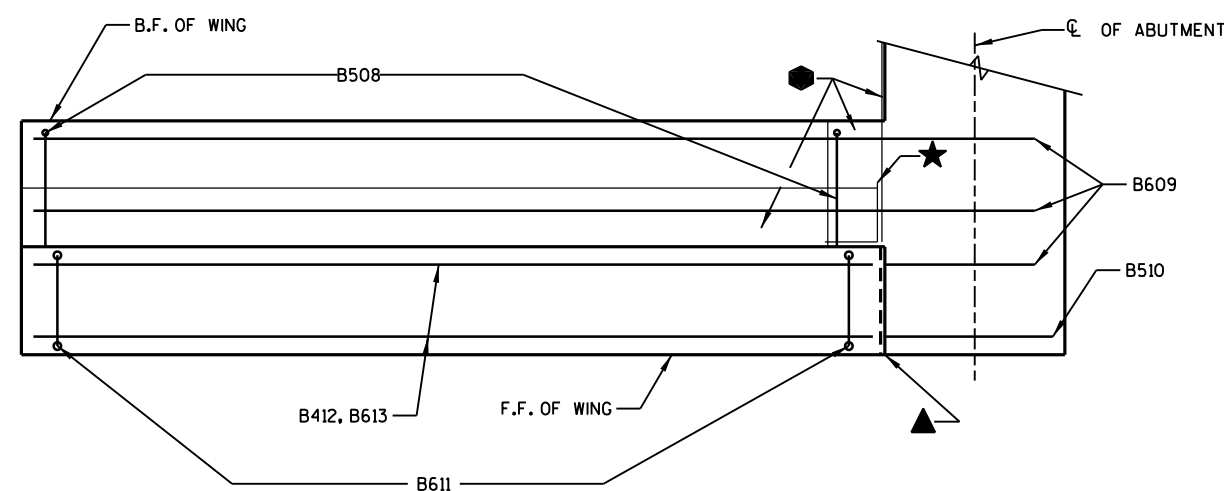
B611

WING 3 SHOWN
WING 4 OPPOSITE HAND

SEE SHEET 7 LEGEND
FOR DESCRIPTION OF



ELEVATION WING 3

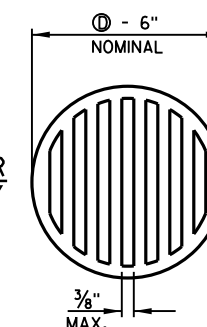


PLAN WING 3

RODENT SHIELD NOTES:

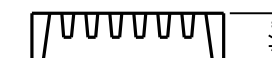
ORIENT SHIELD SO SLOTS ARE VERTICAL.

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH STAINLESS STEEL SHEET METAL SCREWS. THE RODENT SHIELD SHALL BE INCLUDED IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".



RODENT SHIELD

⊙ - DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.



SECTION R-R

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-29-0144			
DRAWN BY RLR		PLANS CK'D. JRS	
NORTH ABUTMENT DETAILS		SHEET 8 OF 13 95	

COATED 70 LBS.

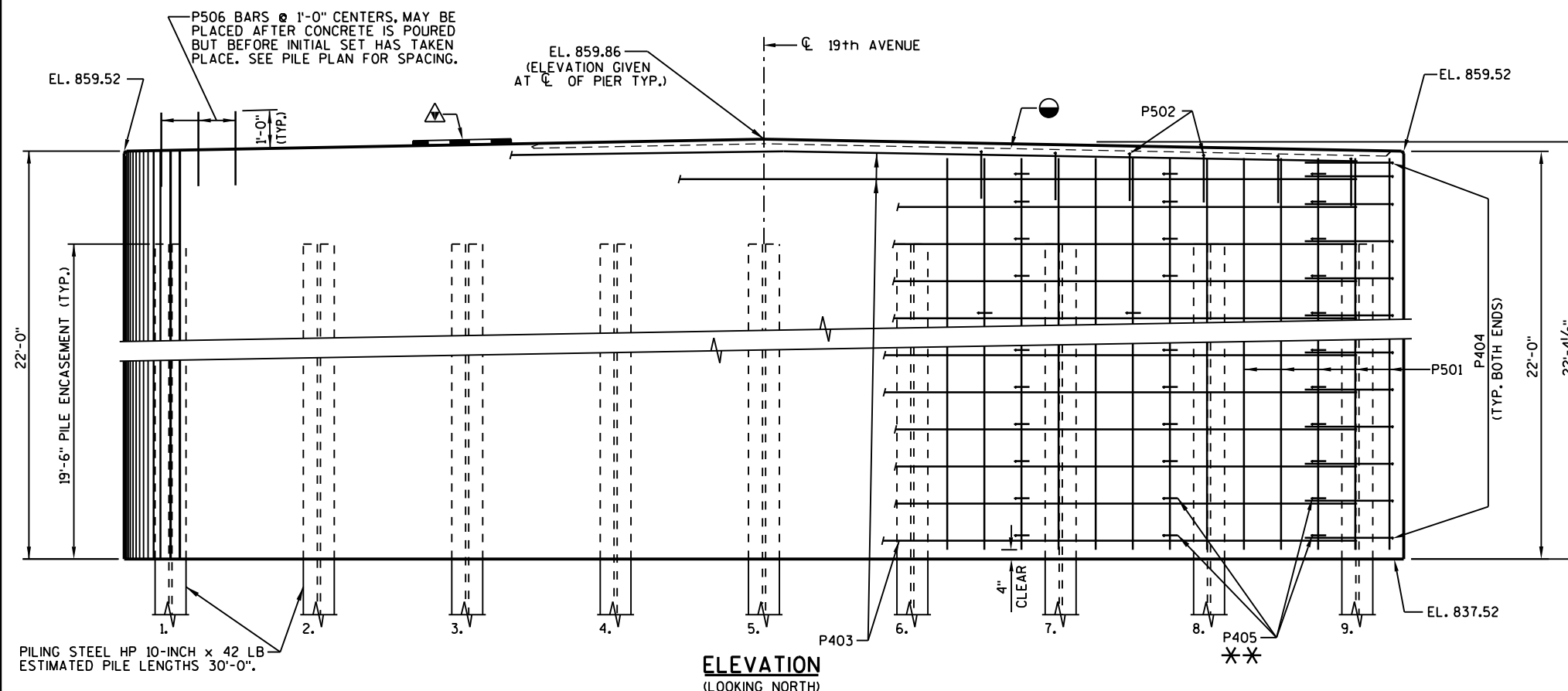
UNCOATED 3305 LBS.

BILL OF BARS

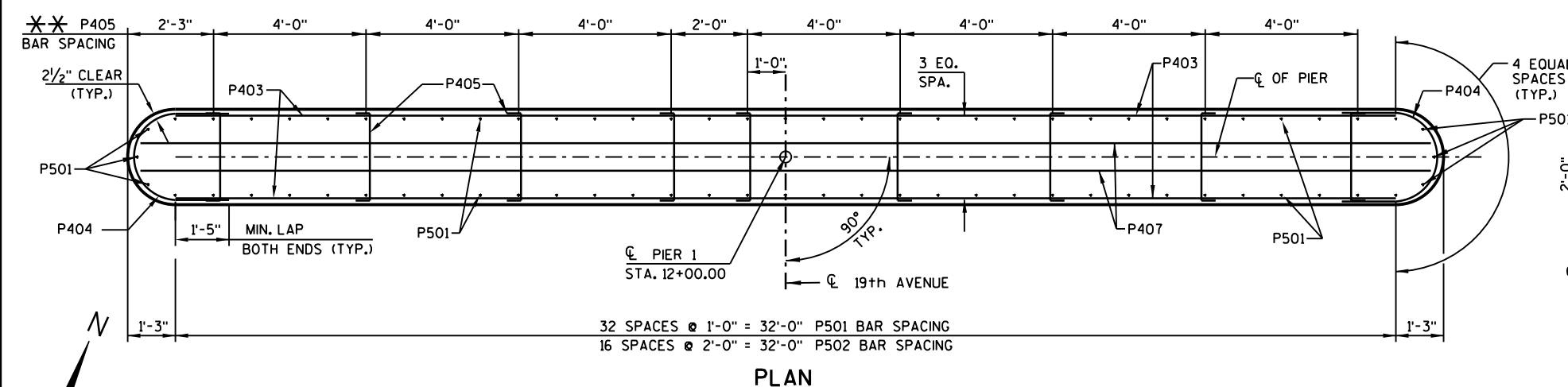
MARK	NO. REQ'D.	LENGTH	BENT	LOCATION	
P501	72	21'-6"		PIER SHAFT	- VERT.
P502	17	4'-5"	X	" STIRRUPS TOP	"
P403	48	32'-0"		" TOP & SIDES	- HORIZ.
P404	46	6'-1"	X	" AT ENDS	"
P405	198	2'-8"	X	" TIES	"
P506	33	2'-0"		" DOWELS @ TOP	- VERT.
P407	2	33'-10"		" SHAFT TOP	- HORIZ.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

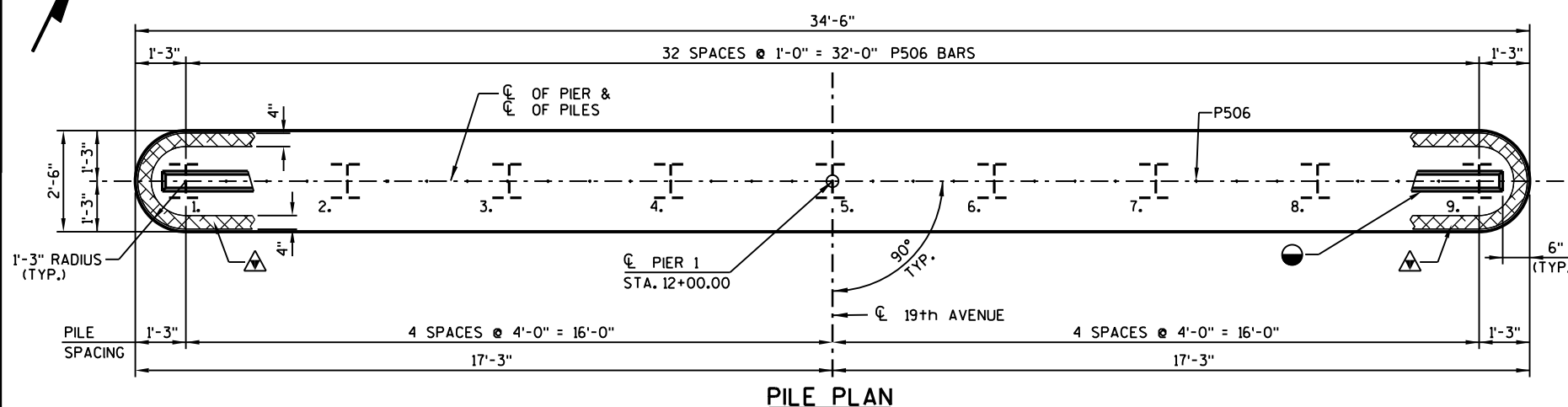
(C) - THESE BARS SHALL BE EPOXY COATED.



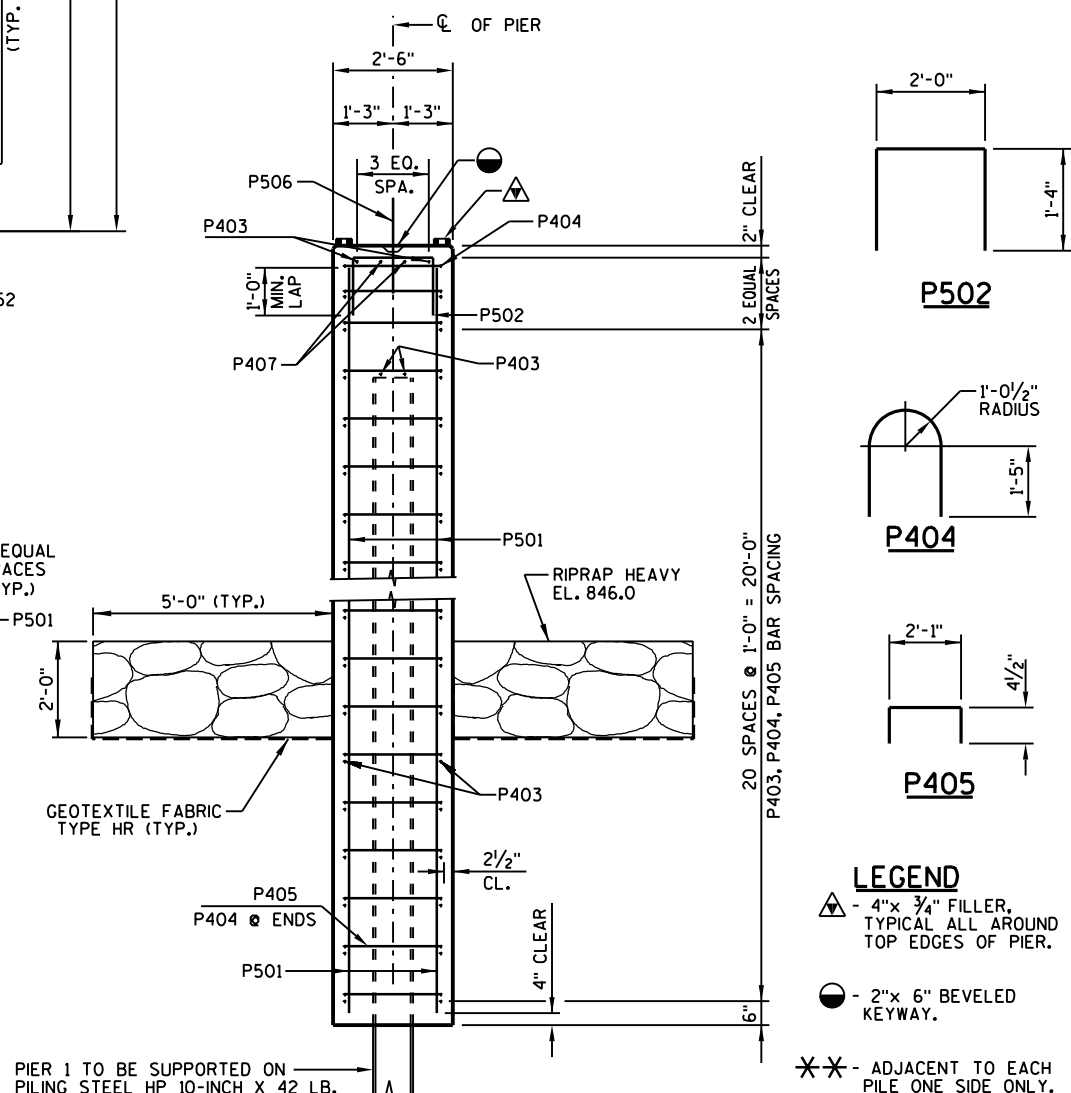
ELEVATION
(LOOKING NORTH)



PLAN



PILE PLAN



LEGEND

 - 4"x 3/4" FILLER,
TYPICAL ALL AROUND
TOP EDGES OF PIER.

● - 2"x 6" BEVELED
KEYWAY.

**- ADJACENT TO EACH
PILE ONE SIDE ONLY.

TYPICAL SECTION
THRU PIER

NOTES:

AT PIER 1 EXCAVATE TO EL. 837.52 OR FIRM BEDROCK, WHICHEVER IS HIGHER, PRIOR TO PREBORING OR DRIVING PILING. PREBORE 3'-0" MINIMUM INTO FIRM SANDSTONE BEDROCK IF BEDROCK IS LOCATED LESS THAN 10'-0" BELOW THE BOTTOM OF THE TOWER. AS THE PREBORE HOLES, PLACE PREBORED PILES AND TAP SECURELY TO SEAT. PREBORE LENGTH IS BASED ON AN ESTIMATED PILE TIP ELEVATION OF 827.5+. PREBORING IS NOT REQUIRED IF BEDROCK IS LOCATED 10'-0" OR DEEPER BELOW THE BOTTOM OF PIER.

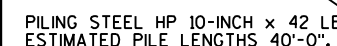
IF FIRM BEDROCK IS FOUND HIGHER THAN EL. 837.52, P501 BARS MAY BE FIELD CUT TO FIT, OR REMOVE ROCK TO BUILD PIER TO PLAN DIMENSIONS. MAINTAIN 1'-0" MAXIMUM SPACING ON HORIZONTAL BAR STEEL IF P501 BARS ARE SHORTENED.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-29-0144	
DRAWN BY		RLR	PLANS CK'D. JRS
PIER 1		SHEET 9 OF 1 96	

COATED 70 LBS.
UNCOATED 3305 LBS.

MARK	NO. REQ'D.	LENGTH	BENT	LOCATION	
N501	72	21'-6"		PIER SHAFT	- VERT.
N502	17	4'-5"	X	" STIRRUPS TOP	"
N403	48	32'-0"		" TOP & SIDES	- HORIZ.
N404	46	6'-1"	X	" AT ENDS	"
N405	198	2'-8"	X	" TIES	"
N506	33	2'-0"		" DOWELS @ TOP	- VERT.
N407	2	33'-10"		" SHAFT TOP	- HORIZ.

③ - THESE BARS SHALL BE EPOXY COATED.



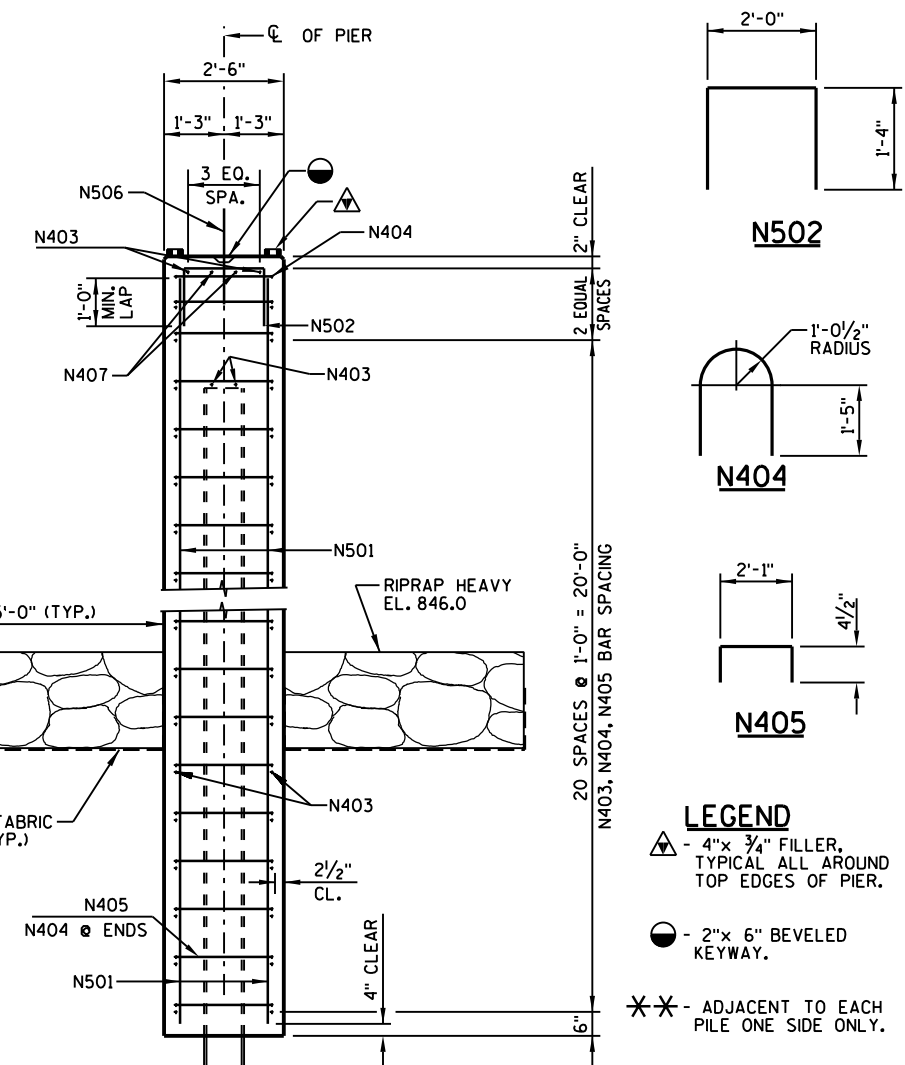
ELEVATION
(LOOKING NORTH)



PLAN



PILE PLAN



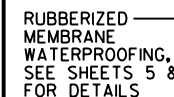
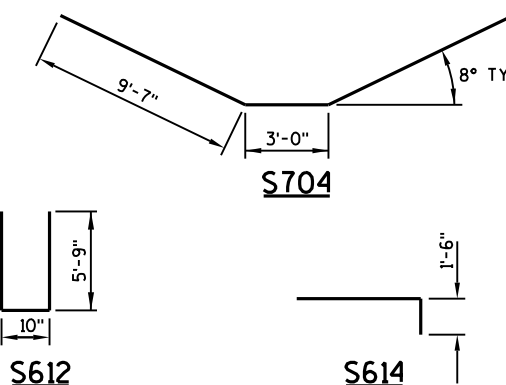
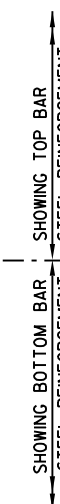
PIER 2 TO BE SUPPORTED ON
 PILING STEEL HP 10-INCH X 42 LB.
 PILES TO BE DRIVEN TO A REQUIRED
 DRIVING RESISTANCE OF 180 TONS PER PILE.
 ESTIMATED PILE LENGTHS ARE 40'-0".
 SEE SHEET 6 FOR PILE SPICE DETAILS.

TYPICAL SECTION
THRU PIER

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-29-0144	
DRAWN BY		RLR	PLANS CKD. JRS
PIER 2		SHEET <u>10</u> OF <u>11</u> —97—	

MARK	NO. REQ'D.	LENGTH	BENT	LOCATION
S501	78	7'-0"	X	DIAPHRAGM @ ABUTS. - LONGIT.
S902	78	39'-10"		SLAB BOTTOM - SPANS 1 & 3 - LONGIT.
S903	76	29'-3"		SLAB BOTTOM - SPANS 1 & 3 - LONGIT.
S704	78	22'-2"	X	HAUNCH OVER PIERS - LONGIT.
S905	39	47'-6"		SLAB BOTTOM - SPAN 2 - LONGIT.
S906	38	33'-2"		SLAB BOTTOM - SPAN 2 - LONGIT.
S507	300	36'-2"		SLAB TOP & BOTTOM - TRANS.
S508	78	16'-6"		SLAB TOP - @ ABUT. - LONGIT.
S909	78	47'-7"		SLAB TOP - SPANS 1 & 3 AND OVER PIERS - LONGIT.
S910	76	50'-6"		SLAB TOP - SPAN 2 AND OVER PIERS - LONGIT.
S511	2	35'-8"		SLAB TOP - SPAN 2 @ EDGE OF SLAB - LONGIT.
S612	96	12'-0"	X	SLAB @ RAIL POST, TWO PER POST
S613	176	6'-0"		SLAB @ RAIL POST, FOUR PER POST
S614	16	6'-0"	X	SLAB @ RAIL CORNER POSTS AS NOTED

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.



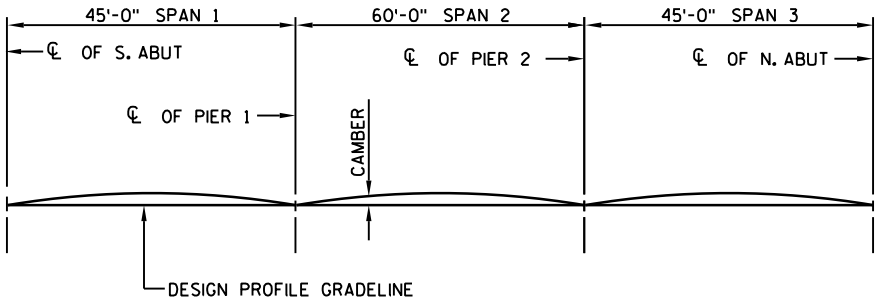
13

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-29-0144	
DRAWN BY		RLR	PLANS CK'D. JRS
SUPERSTRUCTURE		SHEET 11 OF 98	

TOP OF SLAB ELEVATIONS
AND CAMBER VALUES

LOCATION	EAST EDGE OF SLAB ELEV.	CL ELEV.	WEST EDGE OF SLAB ELEV.	CAMBER VALUE (INCHES)
S. ABUT.	862.44	862.81	862.44	0
1/10	862.43	862.79	862.43	1/4
2/10	862.41	862.78	862.41	1/2
3/10	862.40	862.76	862.40	5/8
4/10	862.39	862.75	862.39	5/8
5/10	862.37	862.74	862.37	5/8
6/10	862.36	862.72	862.36	1/2
7/10	862.35	862.71	862.35	1/4
8/10	862.33	862.70	862.33	1/8
9/10	862.32	862.68	862.32	0
PIER 1	862.31	862.67	862.31	0
1/10	862.29	862.65	862.29	1/8
2/10	862.27	862.63	862.27	3/8
3/10	862.25	862.62	862.25	5/8
4/10	862.23	862.60	862.23	7/8
5/10	862.22	862.58	862.22	1
6/10	862.20	862.56	862.20	7/8
7/10	862.18	862.54	862.18	5/8
8/10	862.16	862.53	862.16	3/8
9/10	862.14	862.51	862.14	1/8
PIER 2	862.13	862.49	862.13	0
1/10	862.11	862.48	862.11	0
2/10	862.10	862.46	862.10	1/8
3/10	862.08	862.45	862.08	1/4
4/10	862.07	862.44	862.07	1/2
5/10	862.06	862.42	862.06	5/8
6/10	862.04	862.41	862.04	5/8
7/10	862.03	862.40	862.03	5/8
8/10	862.02	862.38	862.02	1/2
9/10	862.00	862.37	862.00	1/4
N. ABUT.	861.99	862.36	861.99	0

NOTE: TOP OF SLAB ELEVATIONS SHOWN ARE PRIOR TO THE APPLICATION OF THE POLYMER OVERLAY.



CAMBER DIAGRAM

GENERAL NOTES

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

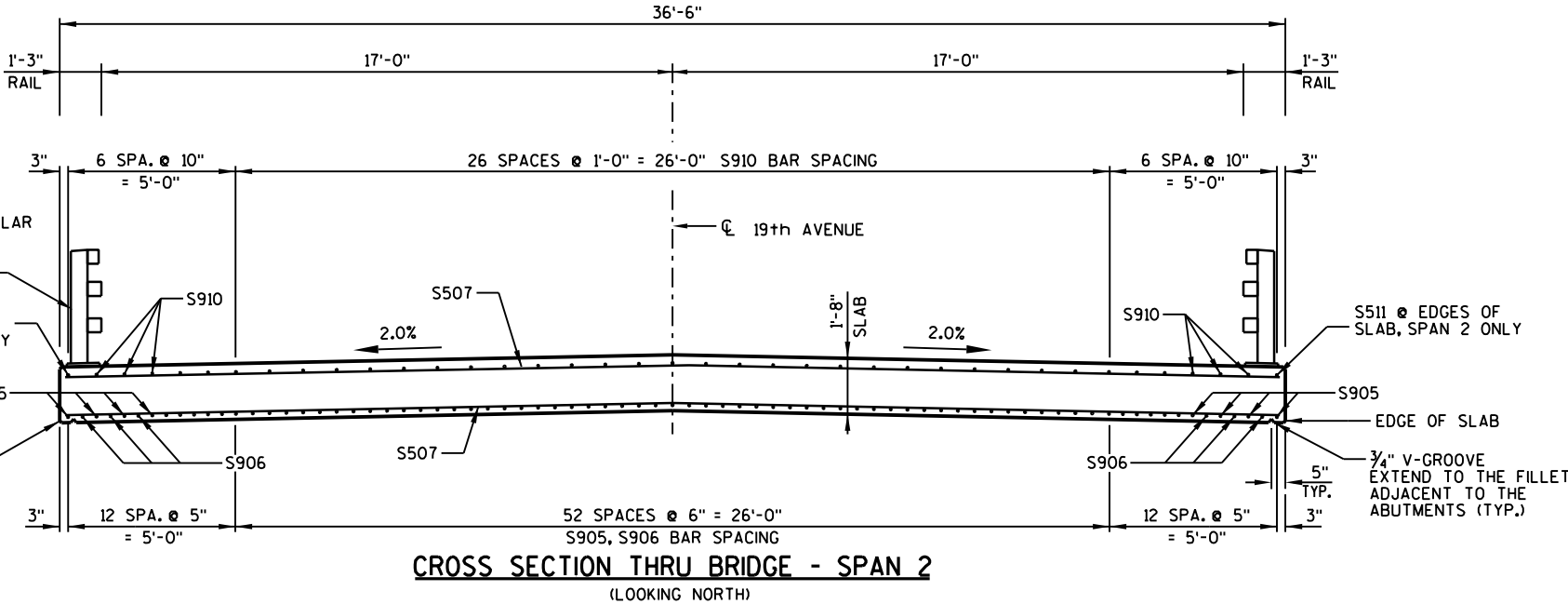
TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED
BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS
EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE
SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY
4'-0" CENTERS.

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD
DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE
ALLOWANCE FOR FORM SETTLEMENT. DEAD LOAD DEFLECTION
APPROXIMATES 1/3 OF CAMBER VALUES SHOWN.

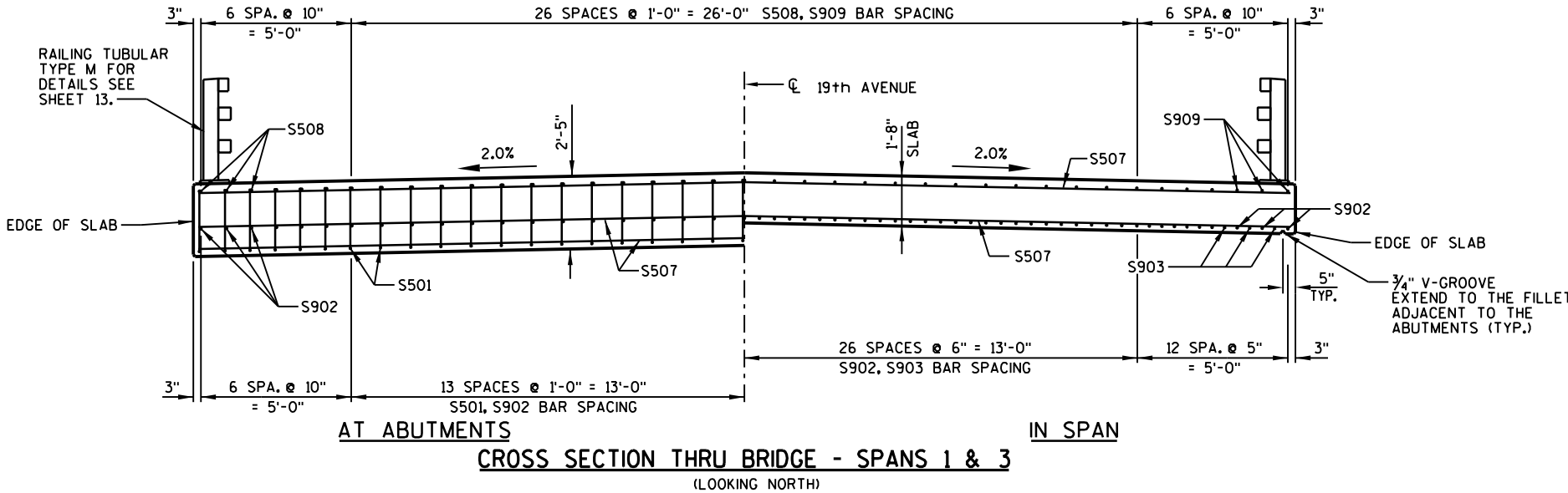
PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB
ELEVATIONS AT THE CL OF ABUTMENTS, THE CL OF PIERS
AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS
ALONG EDGES OF SLAB AND CROWN OR CL.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-29-0144			
DRAWN BY RLR		PLANS CK'D. JRS	
SUPERSTRUCTURE DETAILS			SHEET 12 OF 13 99

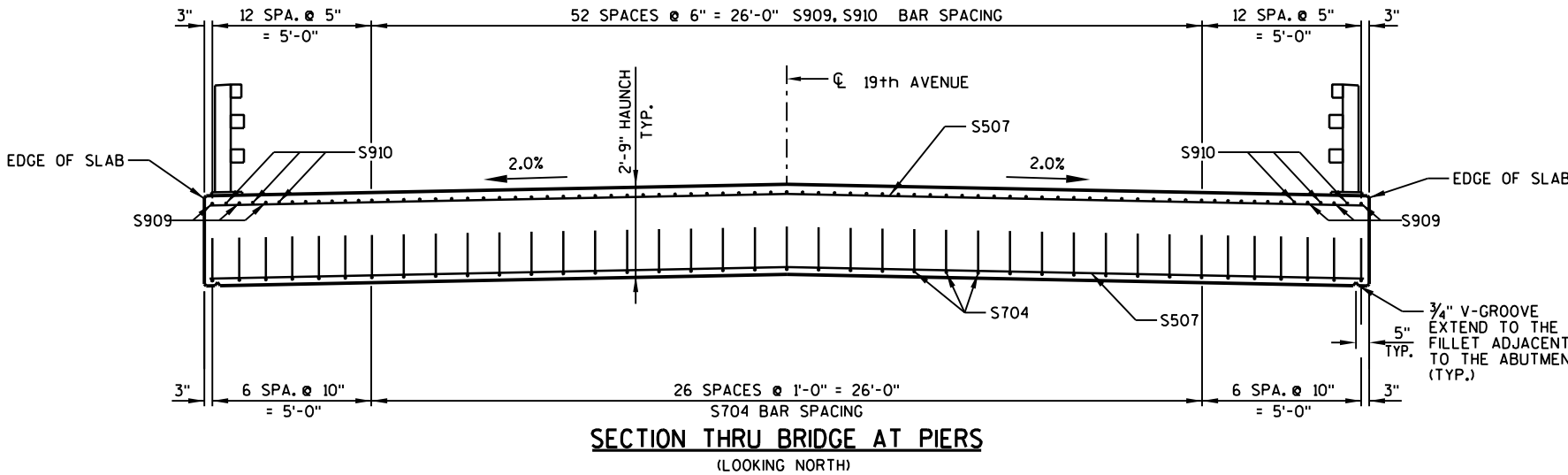
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DATE= 8/28/2014



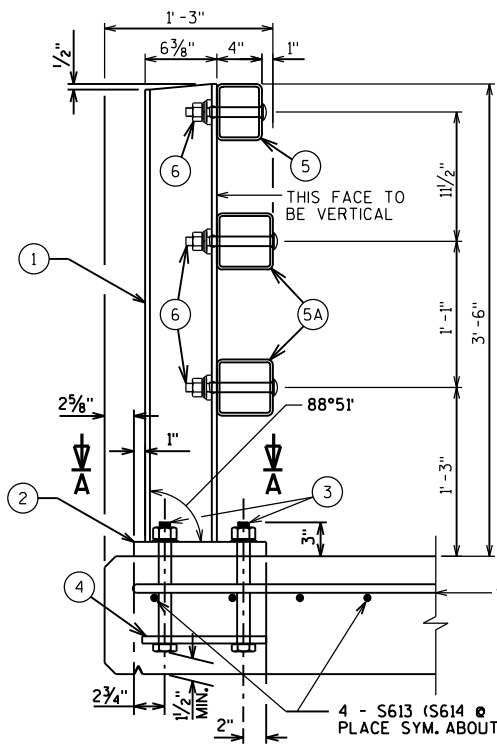
CROSS SECTION THRU BRIDGE - SPAN 2
(LOOKING NORTH)



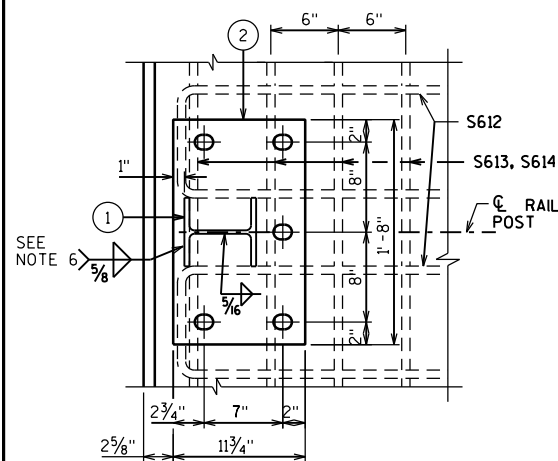
CROSS SECTION THRU BRIDGE - SPANS 1 & 3
(LOOKING NORTH)



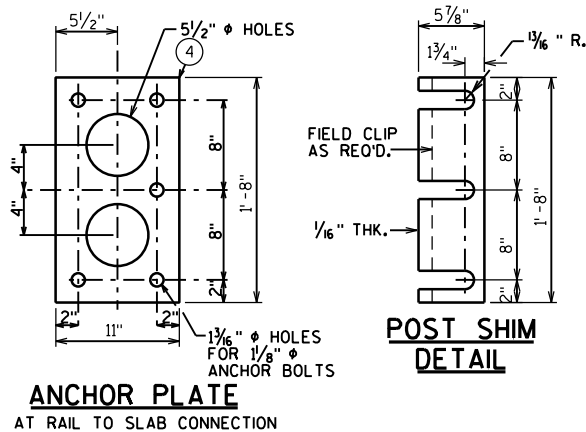
SECTION THRU BRIDGE AT PIERS
(LOOKING NORTH)



SECTION THRU RAILING ON SLAB

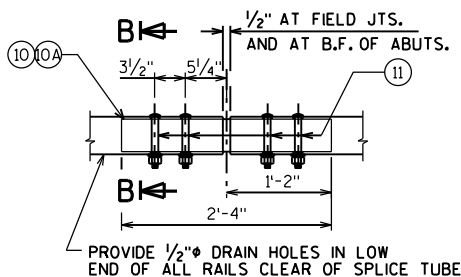


SECTION A-A

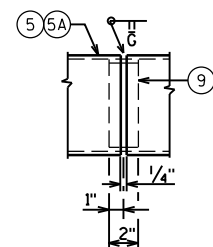


ANCHOR PLATE

AT RAIL TO SLAB CONNECTION

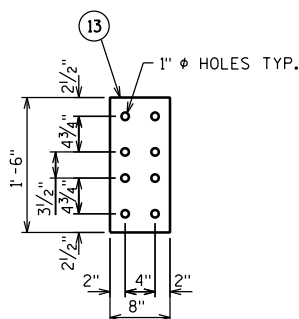


FIELD ERECTION JOINT DETAIL



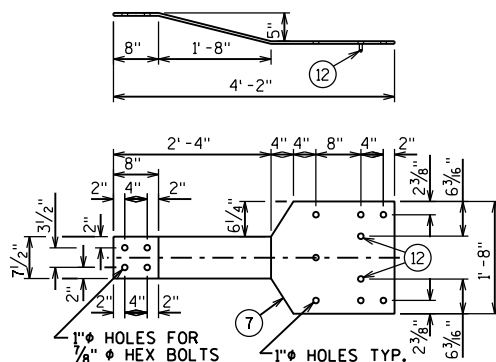
SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



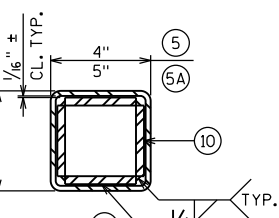
ANCHOR PLATE

AT BEAM GUARD ATTACHMENT

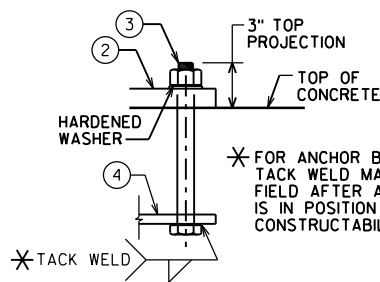


BACK-UP PLATE DETAIL

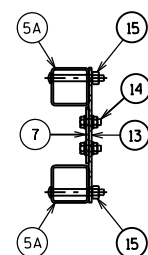
AT BEAM GUARD ATTACHMENT



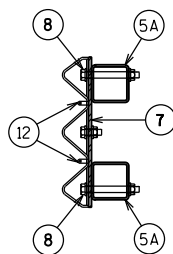
SECTION B-B



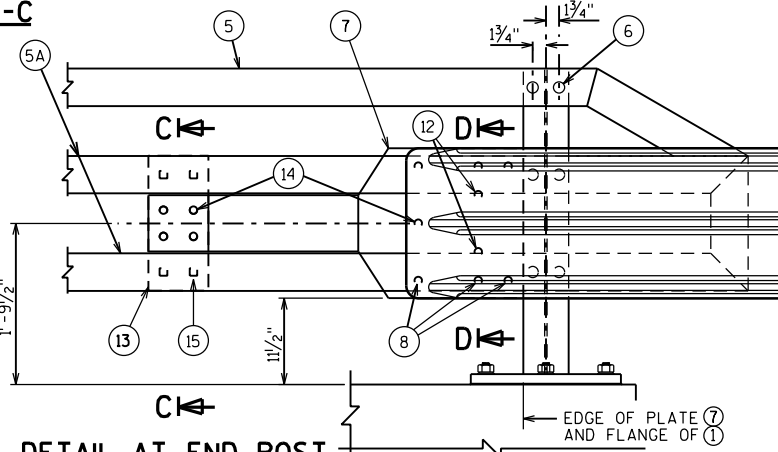
ANCHOR BOLTS



SECTION C-C

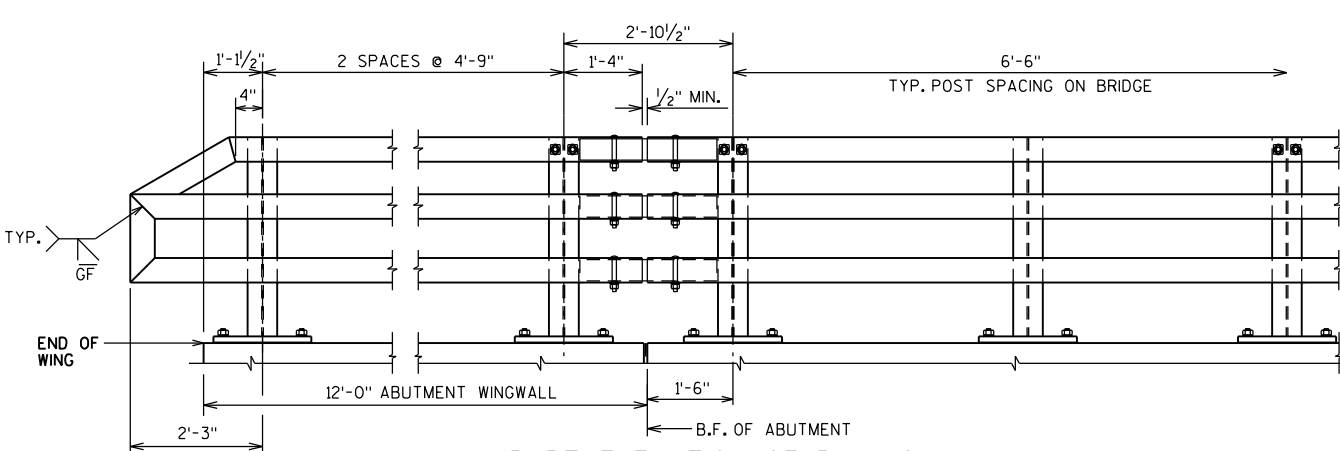


SECTION D-D

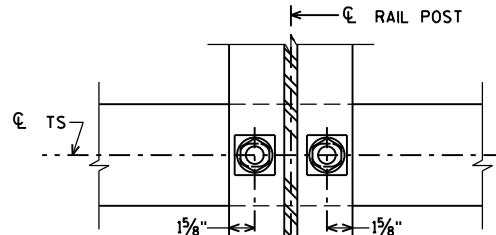


DETAIL AT END POST

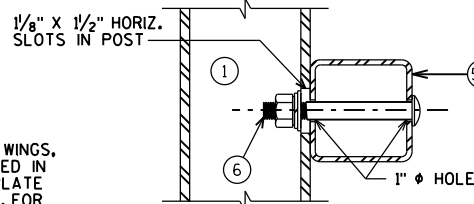
(THREE BEAM RAIL ATTACHMENT)



PART ELEVATION OF RAILING



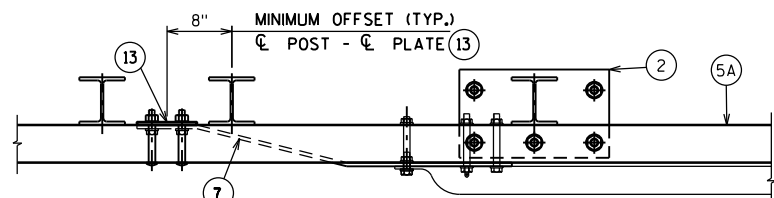
SECTION THRU POST WEB



SECTION THRU RAIL

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

TYPICAL RAIL TO POST CONNECTIONS



TOP VIEW AT END POST

(THREE BEAM RAIL ATTACHMENT)

LEGEND

- W6 x 25 with 1/8" x 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- PLATE 1/4" x 11 3/4" x 1'-8" WITH 1 5/8" x 1 5/8" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.
- ASTM A449 - 1/8" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-3" LONG IN CONCRETE SLAB. USE 1'-9" LONG IN ABUTMENT WINGS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)
- 5/8" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 3/8" DIA. HOLES FOR ANCHOR BOLTS NO. 3
- TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- 5A TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/8" x 1 5/8" x 1 5/8" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
- 1/2" THK. BACK-UP PLATE WITH 2 - 7/8" x 1 1/2" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THREE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR 7/8" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
- SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".
- 3/8" x 3 5/8" x 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- 3/8" x 2 5/8" x 2'-4" PLATE USED IN NO. 5. 3/8" x 3 5/8" x 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
- 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 5/8" x 1 1/4" LONGIT. SLOTTED HOLES AT FIELD JOINTS IN PLATE NO. 10A.
- 7/8" DIA. x 1 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D.).
- 3/8" x 8" x 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THREE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- 7/8" DIA. x 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQUIRED).
- 1" DIA. HOLES IN TUBES NO. 5A FOR 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

- BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-29-0144" WHICH INCLUDES ALL ITEMS SHOWN.
- RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
- THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
- RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE.
- ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
- WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
- FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
- POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
- ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.
- PAINTING IS NOT REQUIRED.
- THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).
- PLACE FIRST BOTTOM LONGITUDINAL BAR CLEAR OF DRIP GROOVE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-29-0144	
DRAWN BY		RLR	PLANS CK'D. JRS
RAILING TUBULAR TYPE M		SHEET 13 OF 13 100	

19TH AVE.

STATION	DISTANCE FEET	AREA (SF)		ROCK EXCAVATION		ADJ. CY	INCREMENTAL VOL (CY)		CUMULATIVE VOL (CY)		MASS HAUL
		COMMON	FILL	SF	CY		COMMON	FILL *	COMMON	FILL	
1+82.00	18.00	0	0	0	0	0	6	7	6	7	-1
2+00.00		17	16	0							
2+17.68	17.68	20	17	0	0	0	12	14	18	21	-3
2+17.69	0.01	19	16	0	0	0	0	0	18	21	-3
2+30.00	12.31	10	29	0	0	0	7	13	24	34	-10
2+50.00	20.00	15	23	0	0	0	9	25	34	59	-25
2+51.17	1.17	28	15	0	0	0	1	1	35	60	-25
2+51.18	0.01	30	14	0	0	0	0	0	35	60	-25
2+75.00	23.82	27	13	0	0	0	25	15	60	75	-16
3+00.00	25.00	5	8	0	0	0	15	12	75	88	-13
3+50.00	50.00	0	14	0	0	0	5	26	80	114	-34
4+00.00	50.00	0	15	0	0	0	0	34	80	149	-68
4+20.00	20.00	12	35	0	0	0	4	24	84	173	-88
4+50.00	30.00	0	33	0	0	0	6	50	91	222	-131
4+70.00	20.00	3	49	0	0	0	1	40	92	262	-170
5+00.00	30.00	0	43	0	0	0	2	66	94	328	-234
5+50.00	50.00	0	59	0	0	0	0	122	94	450	-356
5+75.00	25.00	11	41	0	0	0	5	60	99	510	-411
6+00.00	25.00	0	81	0	0	0	5	73	104	584	-479
6+50.00	50.00	1	127	0	0	0	1	250	106	833	-728
7+00.00	50.00	0	85	0	0	0	1	256	107	1089	-982
7+50.00	50.00	2	50	0	0	0	2	162	108	1251	-1143
8+00.00	50.00	8	24	0	0	0	9	89	117	1341	-1224
8+42.00	42.00	7	78	0	0	0	11	103	128	1444	-1315
8+50.00	8.00	19	20	0	0	0	4	19	132	1463	-1330
9+00.00	50.00	35	1	0	0	0	50	24	182	1487	-1305
9+23.00	23.00	35	1	0	0	0	30	1	212	1488	-1276
9+50.00	27.00	36	25	0	0	0	36	17	248	1505	-1258
10+00.00	50.00	76	13	2	2	2	104	46	351	1551	-1199
10+16.00	16.00	72	13	7	3	3	44	10	395	1561	-1166
10+41.00	25.00	70	16	13	9	10	66	18	461	1578	-1117
10+66.00	25.00	76	28	8	9	10	68	26	529	1605	-1076
10+94.00	28.00	75	90	0	4	4	78	80	607	1684	-1077
11+25.00	31.00	78	443	0	0	0	87	398	694	2082	-1387
11+53.75	28.75	71	1046	0	0	0	79	1030	774	3112	-2338
11+53.76	0.01	0	0	0	0	0	0	0	774	3112	-2339
13+06.24	152.48	0	0	0	0	0	0	0	774	3112	-2339
13+06.25	0.01	576	517	0	0	0	0	0	774	3113	-2339
13+25.00	18.75	441	392	0	0	0	353	411	1127	3523	-2396
13+66.00	41.00	186	32	0	0	0	476	418	1603	3941	-2338
13+91.00	25.00	25	248	0	0	0	97	168	1700	4110	-2409
14+50.00	59.00	0	1901	0	0	0	27	3053	1727	7162	-5435
15+00.00	50.00	362	625	0	0	0	335	3041	2062	10203	-8141
15+31.00	31.00	263	106	0	0	0	359	545	2421	10748	-8327
15+56.00	25.00	210	138	0	0	0	219	147	2640	10895	-8255
15+81.00	25.00	149	257	0	0	0	166	238	2806	11132	-8326
16+06.00	25.00	143	526	0	0	0	135	471	2941	11603	-8662
16+31.00	25.00	134	138	0	0	0	128	399	3070	12003	-8933
16+85.00	54.00	97	85	0	0	0	231	290	3301	12293	-8992
17+00.00	15.00	79	178	0	0	0	49	95	3350	12388	-9038
17+50.00	50.00	2	124	0	0	0	75	364	3425	12752	-9327
17+58.00	8.00	2	124	0	0	0	1	48	3425	12799	-9374
18+00.00	42.00	0	72	0	0	0	1	198	3427	12998	-9571
19+00.00	100.00	62	197	0	0	0	115	649	3542	13646	-10105
19+50.00	50.00	38	211	0	0	0	93	491	3635	14138	-10503
	50.00				0	0	99	379	3734	14517	-10783

CONTINUED ON NEXT PAGE

CONTINUED FROM PREVIOUS PAGE

19TH AVE.

STATION	DISTANCE FEET	AREA (SF)		ROCK EXCAVATION		ADJ. CY	INCREMENTAL VOL (CY)		CUMULATIVE VOL (CY)		MASS HAUL
		COMMON	FILL	SF	CY		COMMON	FILL *	COMMON	FILL	
20+00.00	100.00	69	104	0	0	0	255	513	3989	15030	-11041
21+00.00	100.00	69	110	0	0	0	210	607	4199	15637	-11438
22+00.00	14.00	45	143	0	0	0	12	91	4211	15728	-11517
22+14.00	19.00	0	127	0	0	0	0	122	4211	15850	-11639
22+33.00	67.00	1	140	0	0	0	1	373	4212	16223	-12012
23+00.00	50.00	0	92	0	0	0	41	194	4253	16417	-12164
23+50.00	33.00	45	69	0	0	0	72	491	4325	16907	-12583
23+83.00	17.00	72	548	0	0	0	40	317	4365	17224	-12860
24+00.00	50.00	54	226	0	0	0	84	394	4448	17618	-13169
24+50.00	50.00	36	101	0	0	0	83	172	4532	17789	-13257
25+00.00	73.00	54	42	0	0	0	109	116	4641	17905	-13264
25+73.00	27.00	27	24	0	0	0	49	60	4690	17965	-13275
26+00.00	100.00	72	68	0	0	0	189	313	4879	18279	-13400
27+00.00	100.00	30	62	0	0	0	64	427	4943	18706	-13763
28+00.00	100.00	5	116	0	0	0	9	624	4952	19330	-14378
29+00.00	100.00	0	144	0	0	0	0	571	4952	19901	-14949
30+00.00	29.00	0	94	0	0	0	1	140	4953	20041	-15088
30+29.00	71.00	2	108	0	0	0	3	367	4956	20408	-15452
31+00.00	100.00	0	107	0	0	0	0	389	4956	20796	-15841
32+00.00	100.00	0	55	0	0	0	0	222	4956	21019	-16063
33+00.00	100.00	0	38	0	0	0	0	203	4956	21222	-16266
34+00.00	100.00	0	47	0	0	0	0	177	4956	21399	-16443
35+00.00	100.00	0	27	0	0	0	15	121	4971	21520	-16549
36+00.00	100.00	8	24	0	0	0	52	102	5023	21622	-16599
37+00.00	50.00	20	19	0	0	0	37	57	5060	21678	-16619
37+50.00	57.00	20	28	0	0	0	40	45	5100	21724	-16624
38+07.00	43.00	18	5	0	0	0	46	11	5146	21735	-16589
38+50.00	50.00	40	6	0	0	0	68	12	5214	21747	-16534
39+00.00	50.00	33	4	0	0	0	115	12	5329	21760	-16431
39+50.00	13.00	91	6	0	0	0	58	14	5387	21774	-16386
39+63.00	37.00	150	37	0	0	0	186	50	5573	21824	-16250
40+00.00	50.00	122	19	0	0	0	186	45	5759	21869	-16110
40+50.00	50.00	79	19	0	0	0	382	55	6141	21924	-15783
41+00.00	50.00	333	27	0	0	0	418	53	6559	21977	-15418
41+50.00	24.00	119	17	0	0	0	86	10	6646	21987	-15341
41+74.00	26.00	75	0	0	0	0	96	14	6742	22000	-15259
42+00.00	50.00	124	22	0	0	0	232	57	6974	22058	-15084
42+50.00	35.00	126	26	0	0	0	167	43	7141	22101	-14960
42+85.00	24.00	132	26	0	0	0	127	30	7268	22132	-14863
43+09.00	91.00	154	27	0	0	0	479	133	7748	22265	-14517
44+00.00	43.00	130	34	0	0	0	197	73	7944	22338	-14394
44+43.00	57.00	117	37	0	0	0	248	99	8192	22437	-14245
45+00.00	100.00	118	35	0	0	0	285	164	8477	22601	-14124
46+00.00	25.00	36	33	0	0	0	23	47	8500	22648	-14147
46+25.00		14	45	0	0						

4443

27

8,500

30

22,648

* INCLUDES 1.3 EXPANSION FACTOR

PROJECT ID 6648-00-73
CTH N

STATION	DISTANCE FEET	AREA (SF)		INCREMENTAL VOL (CY)		CUMULATIVE VOL (CY)		MASS HAUL
		COMMON	FILL	COMMON	FILL *	COMMON	FILL	
73+25.19	24.81	7	0	7	1	7	1	6
73+50.00	50.00	8	2	16	5	23	6	17
74+00.00	0.08	9	3	0	0	23	6	17
74+00.08	24.92	11	8	12	10	35	16	19
74+25.00	25.00	14	8	15	5	50	21	29
74+50.00	50.00	17	0	29	7	79	28	51
75+00.00	21.20	14	6	23	3	102	31	70
75+21.20	0.01	44	0	0	0	102	31	70
75+21.21	28.79	41	0	53	0	154	31	123
75+50.00	20.98	58	0	40	0	194	31	163
75+70.98	29.02	51	0	52	0	246	31	215
76+00.00	50.00	21	0	67	0	313	31	282
76+50.00	13.61	4	0	6	0	319	31	288
76+63.61								

338 319 31

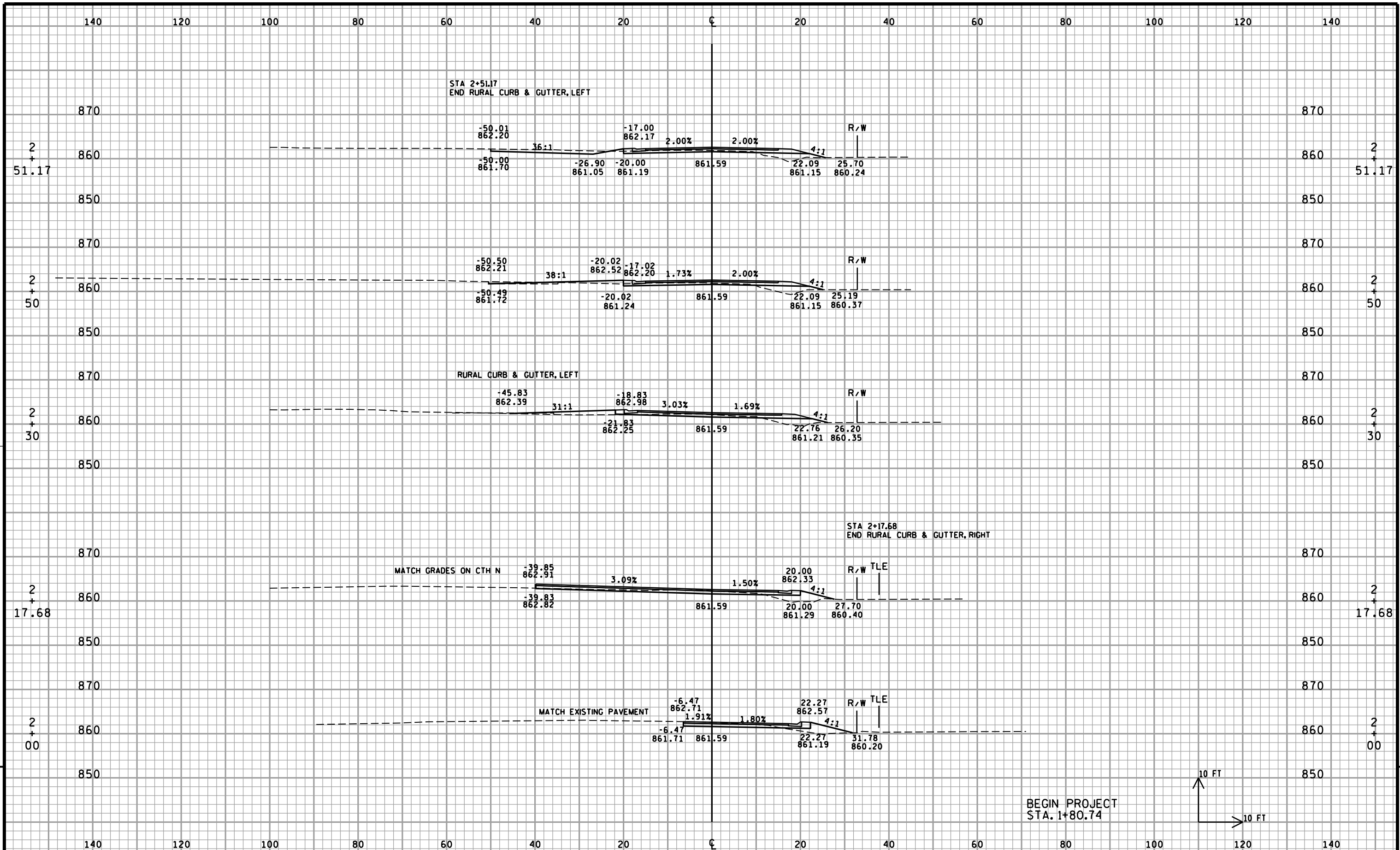
* INCLUDES 1.3 EXPANSION FACTOR

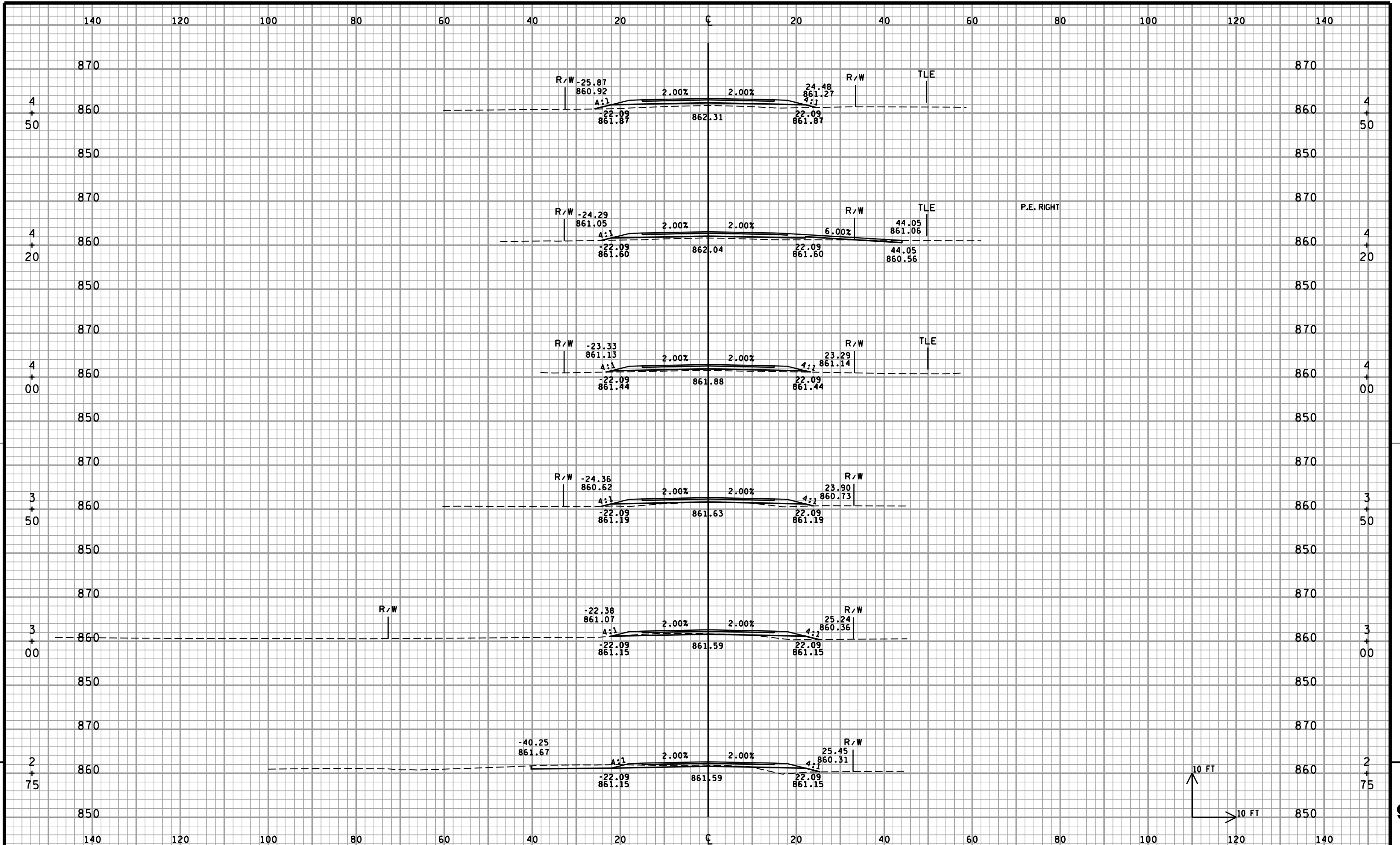
PROJECT ID 6648-00-72
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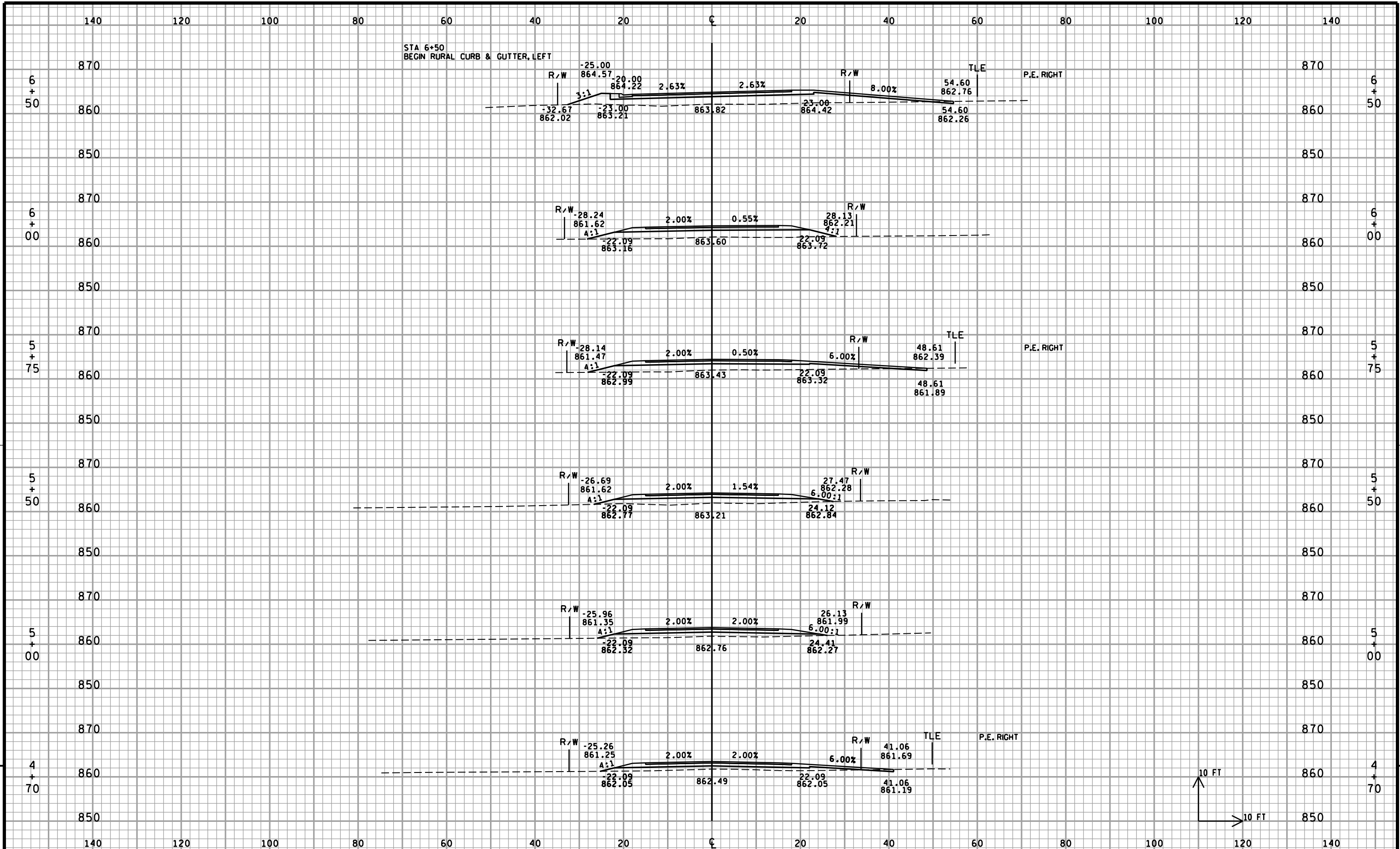
STATION	DISTANCE FEET	AREA (SF)		INCREMENTAL VOL (CY)		CUMULATIVE VOL (CY)		MASS HAUL
		COMMON	FILL	COMMON	FILL *	COMMON	FILL	
57+75.00	25.00	3	0	4	1	4	1	3
58+00.00	50.00	6	2	436	2	440	3	437
58+50.00	25.00	465	0	544	0	984	3	981
58+75.00	25.00	711	0	863	0	1847	3	1844
59+00.00	25.00	1153	0	1426	0	3273	3	3270
59+25.00	25.00	1926	0	2417	0	5690	3	5687
59+50.00	50.00	3294	0	3466	0	9156	3	9152
60+00.00	50.00	449	0	416	395	9572	399	9173
60+50.00	50.00	1	329	1	395	9573	794	8779
61+00.00	50.00	0	0	1121	0	10694	794	9900
61+50.00	50.00	1211	0	2319	0	13013	794	12218
62+00.00	50.00	1294	0	1376	0	14389	794	13595
62+50.00	50.00	193	0	178	0	14567	794	13773
63+00.00		0	0					

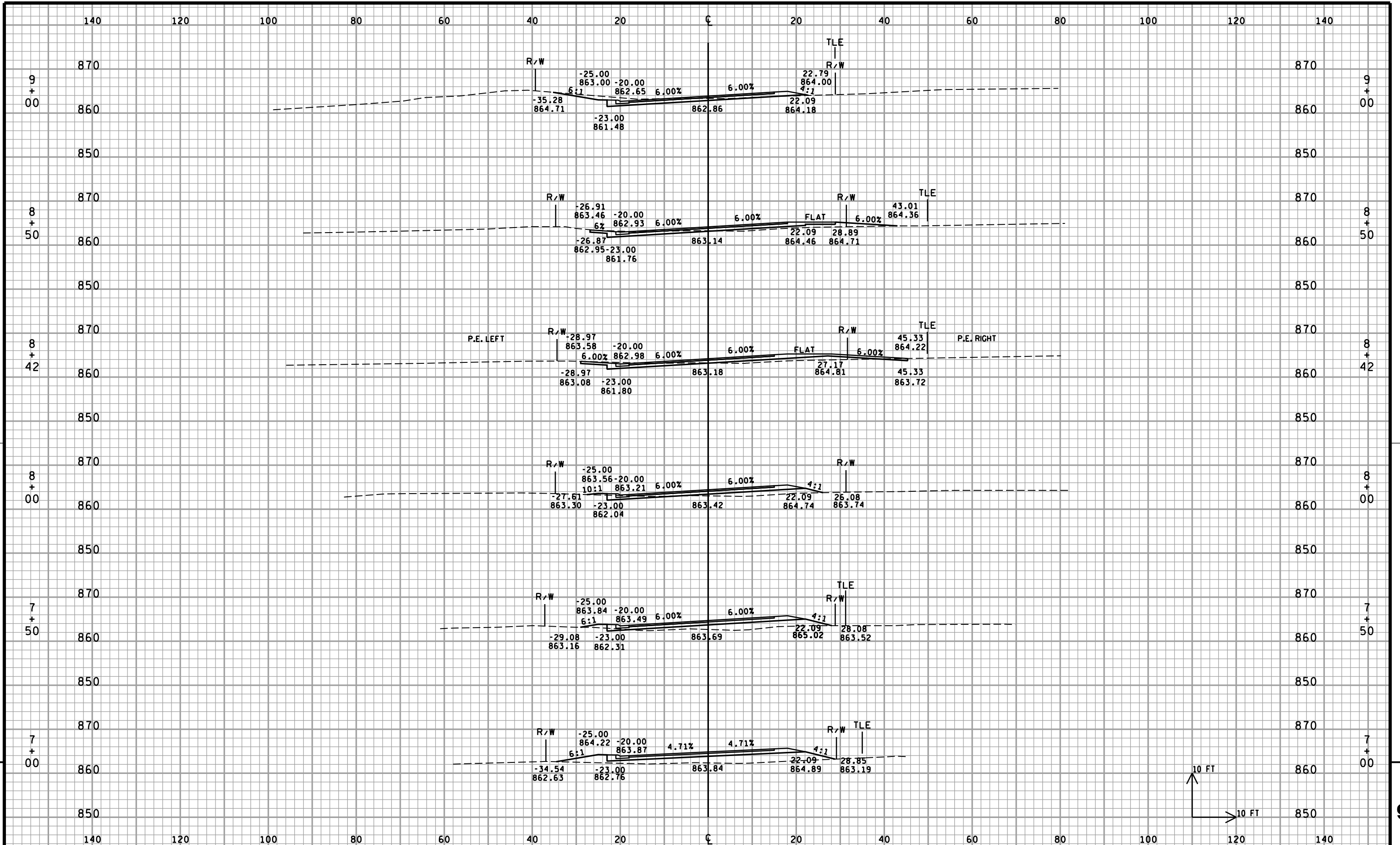
525 14,567 794

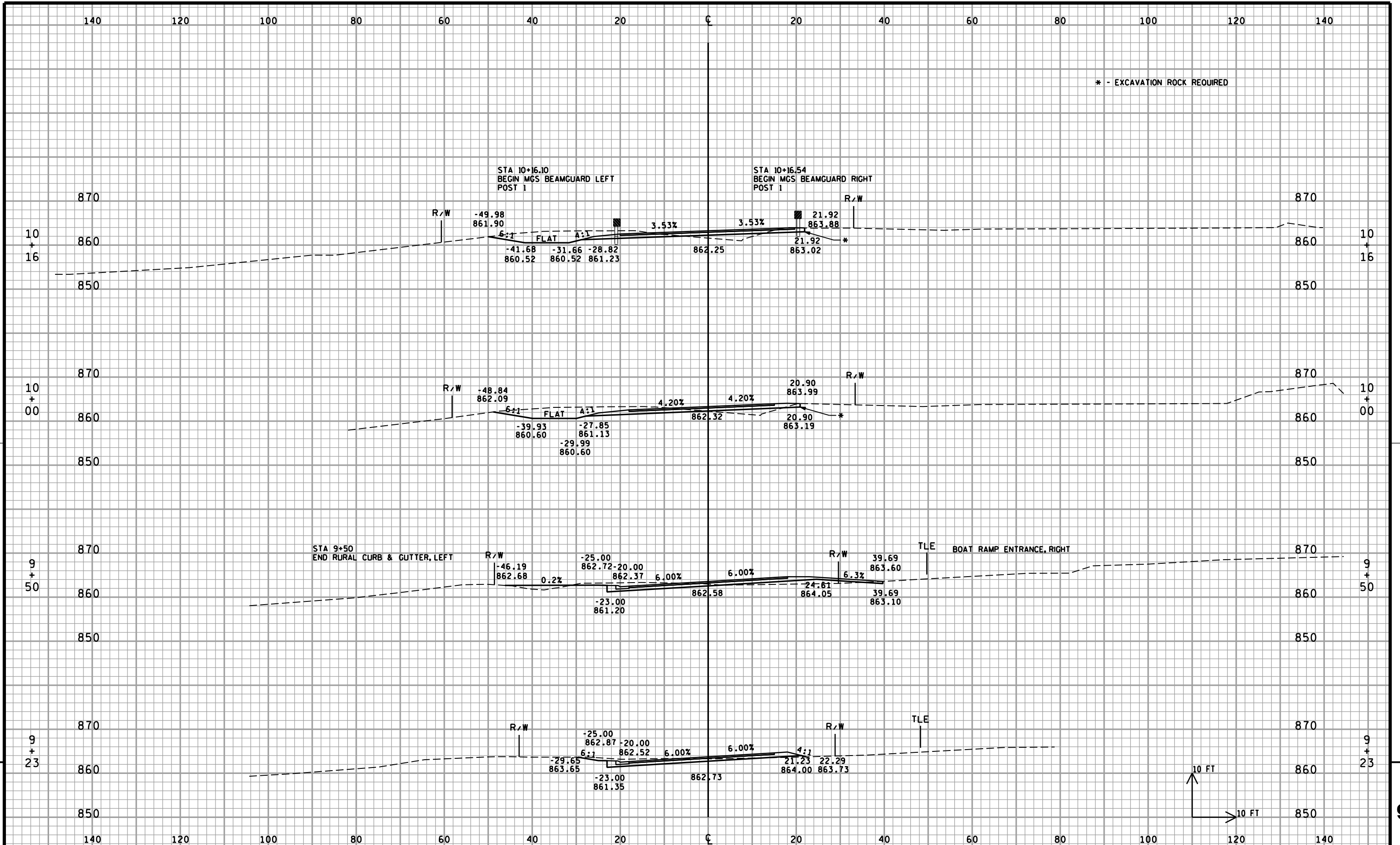
* INCLUDES 1.3 EXPANSION FACTOR

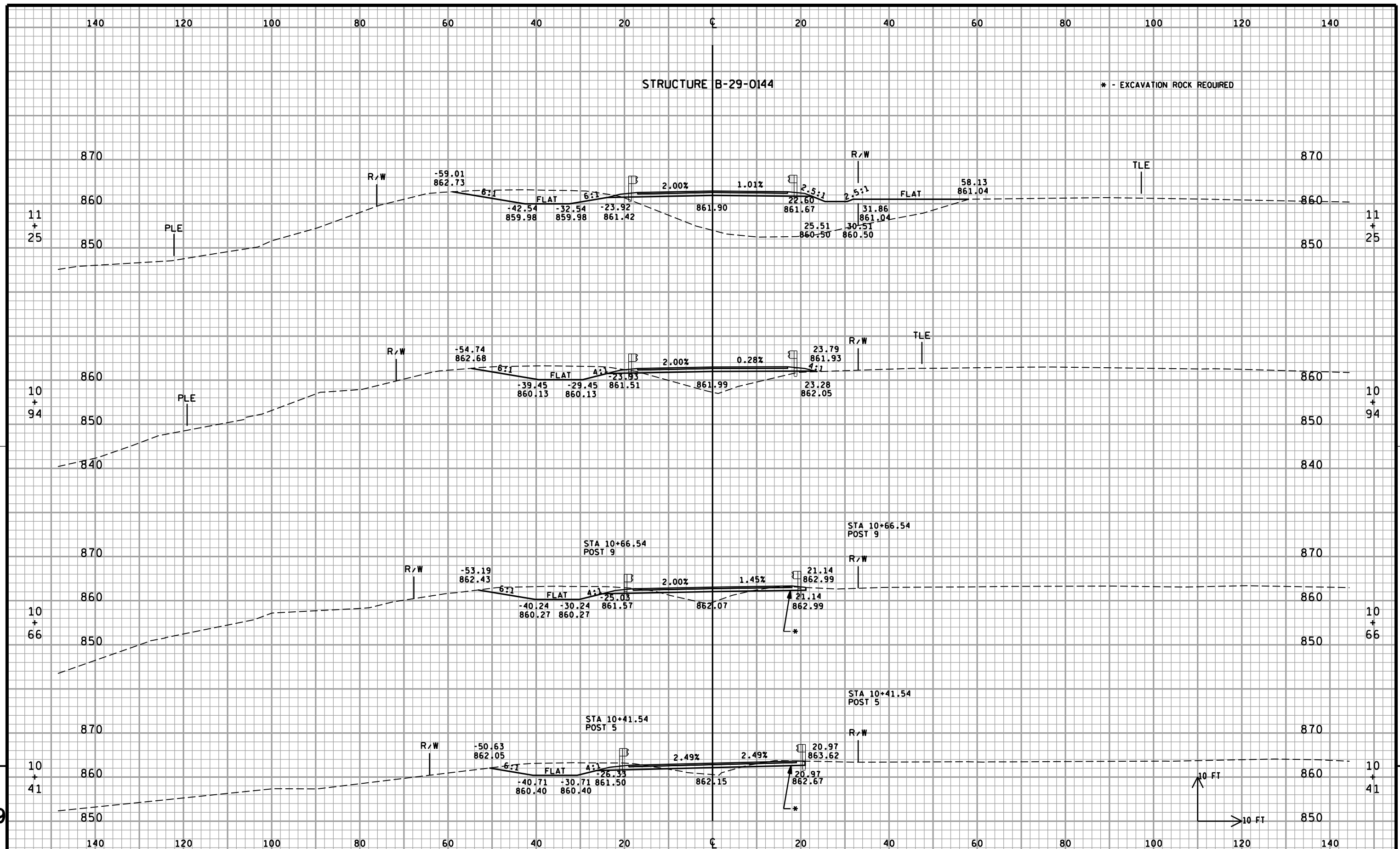


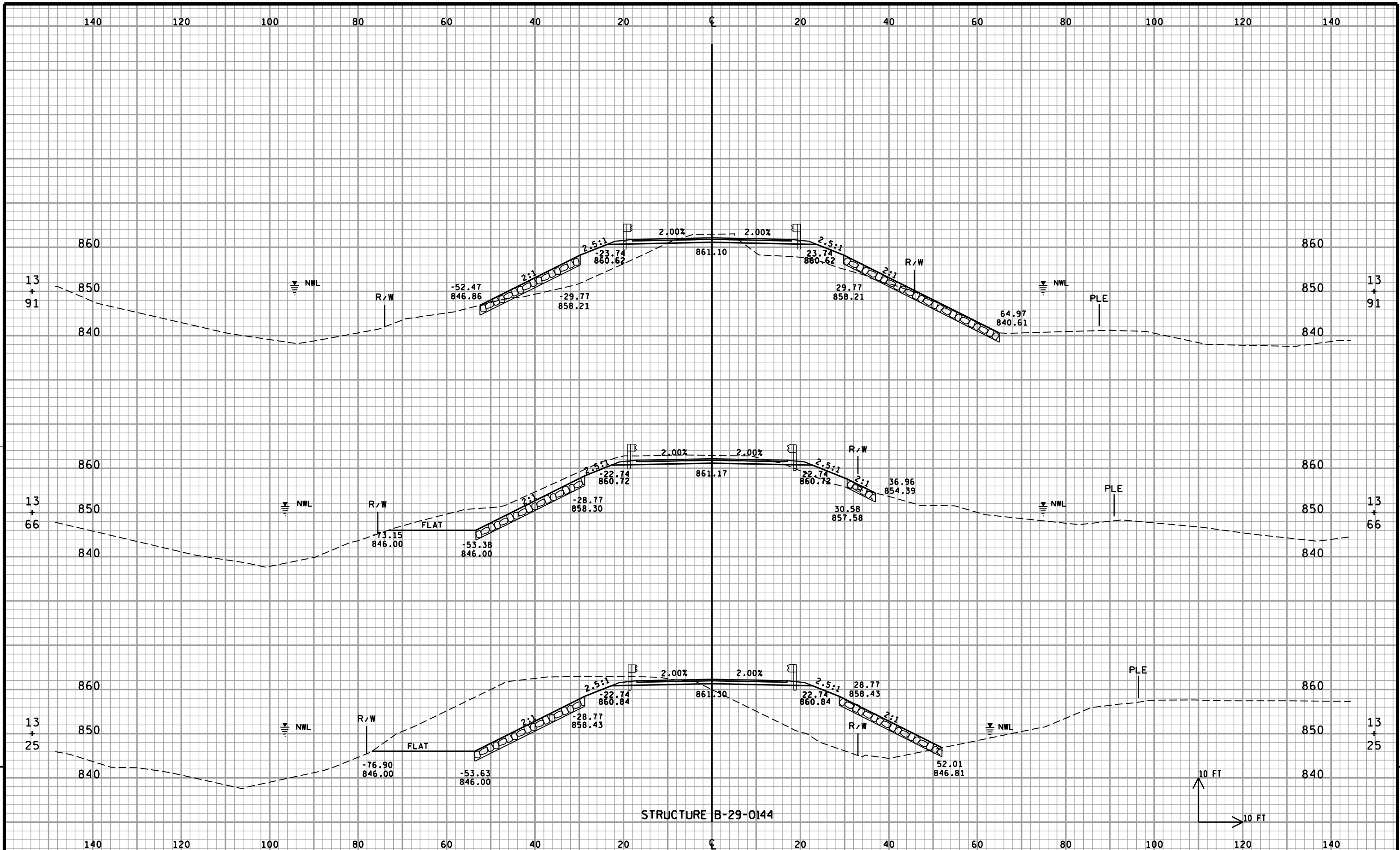












PROJECT NO:6648-00-73

HWY:TOWN ROAD

COUNTY:JUNEAU

CROSS SECTIONS: 19th AVE.

SHEET

110

E

FILE NAME : P:\11100s\11140s\11145\11145000\cadd\WDOT\Planshts\Cross sections\rc007014.dgn

PLOT DATE : 8/29/2014

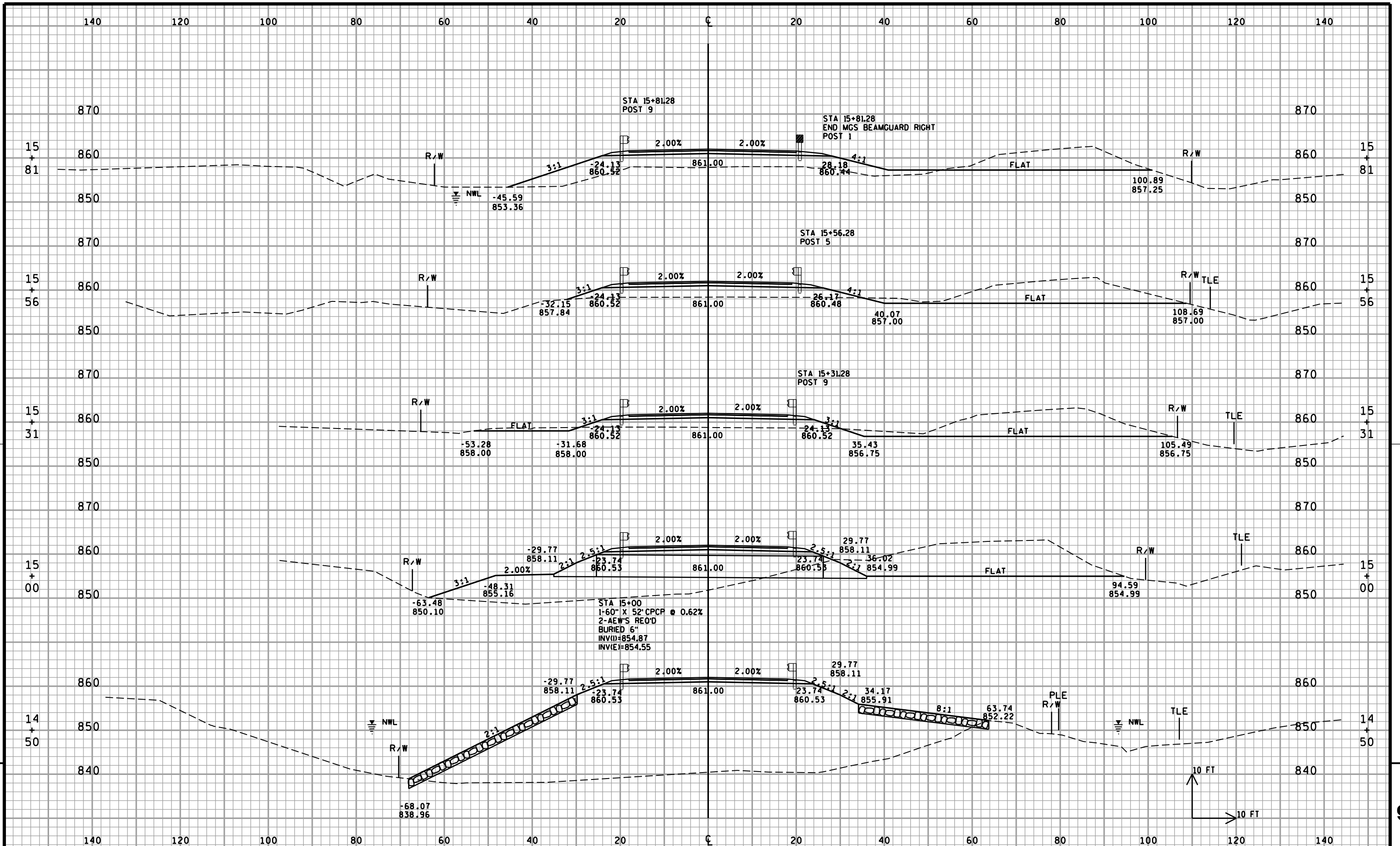
PLOT BY : bmaxwell

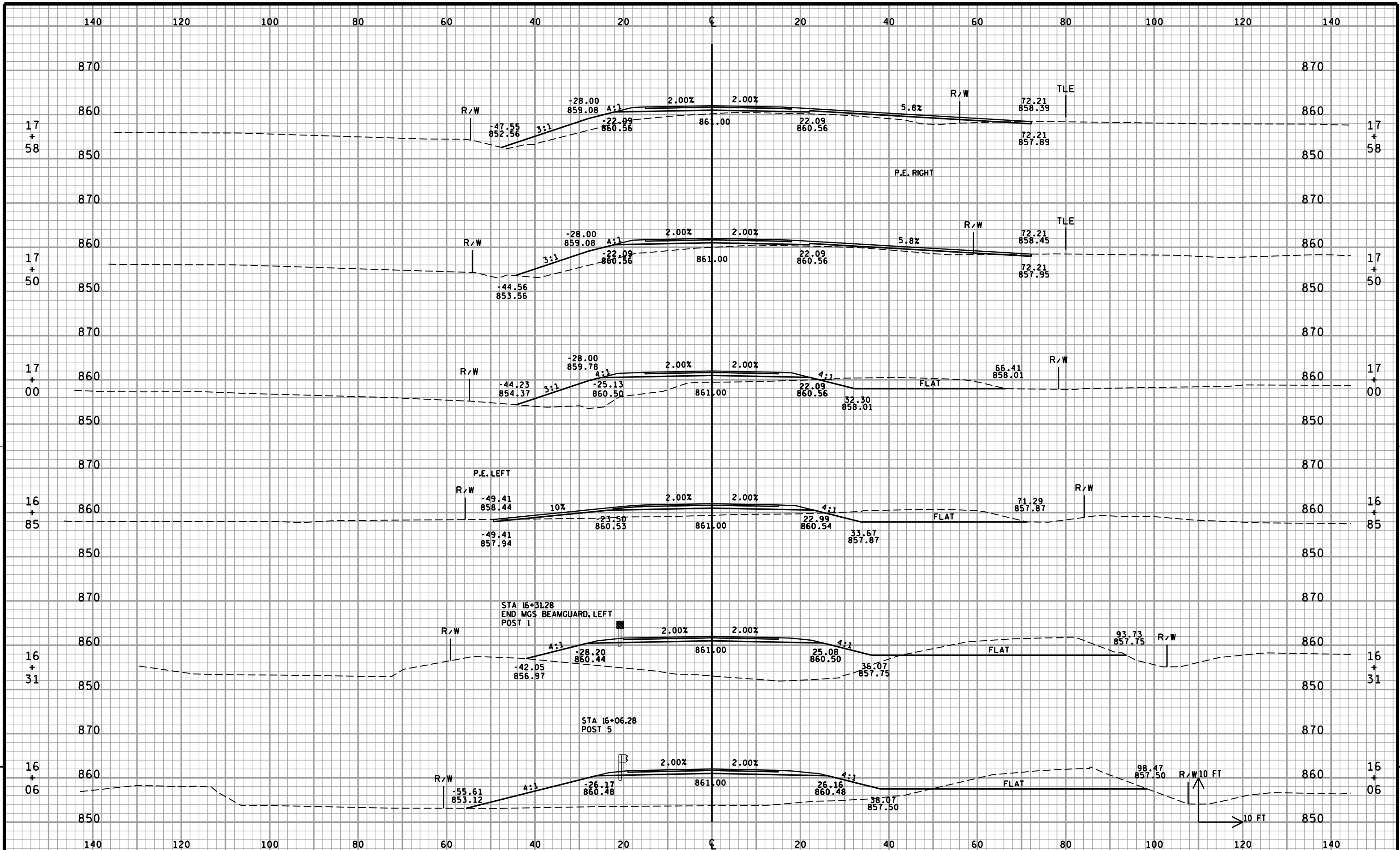
PLOT NAME :

PLOT SCALE : 1:1.99999

WISDOT/CADDs SHEET 21

rc007014.dgn 8/29/2014 9:30:35 AM bmaxwell





PROJECT NO:6648-00-73

HWY:TOWN ROAD

COUNTY:JUNEAU

CROSS SECTIONS:19th AVE.

SHEET

112

E

FILE NAME : P:\11100s\11140s\11145\11145000\cadd\WDOT\Planshts\Cross sections\rc009014.dgn

PLOT DATE : 8/29/2014

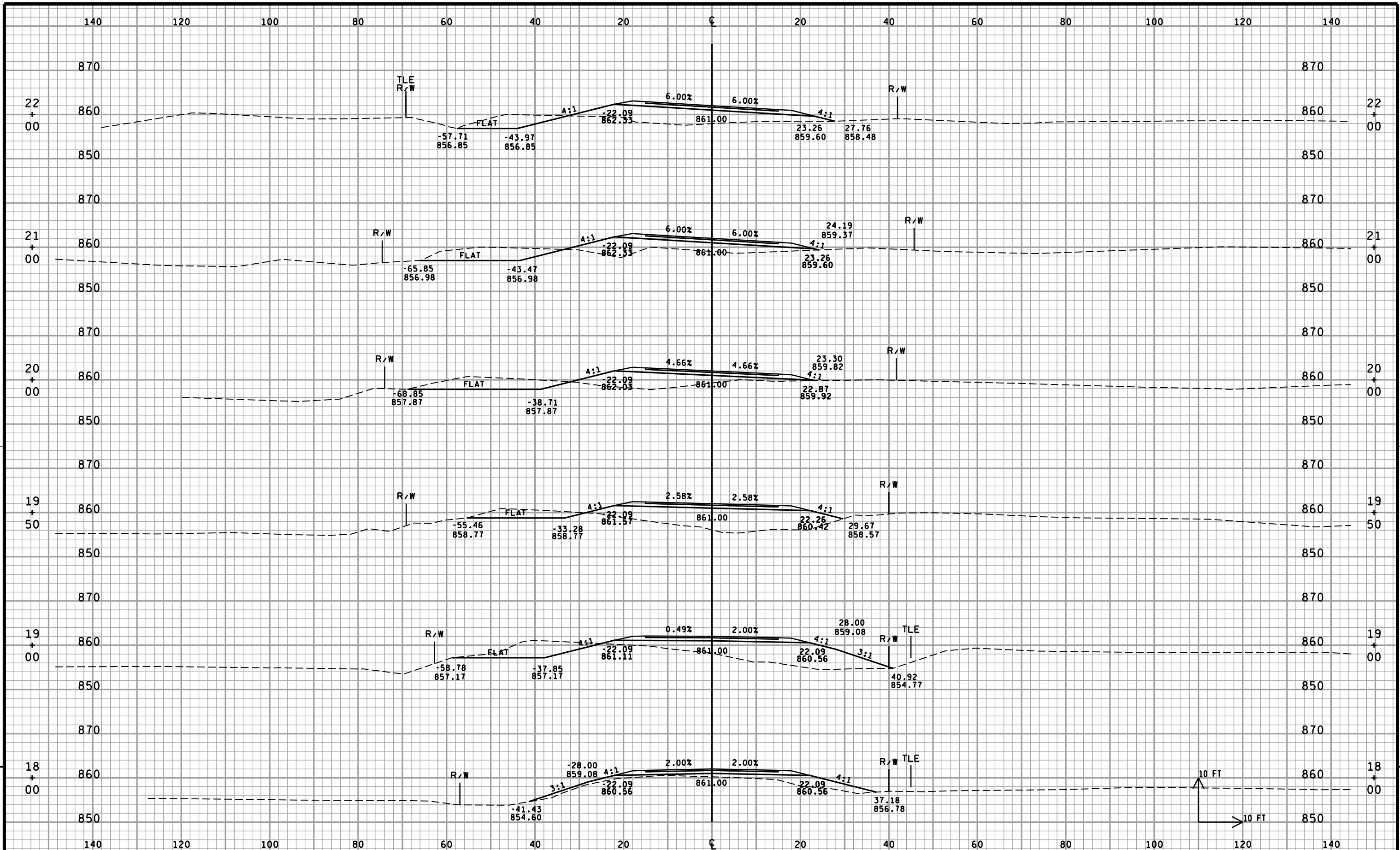
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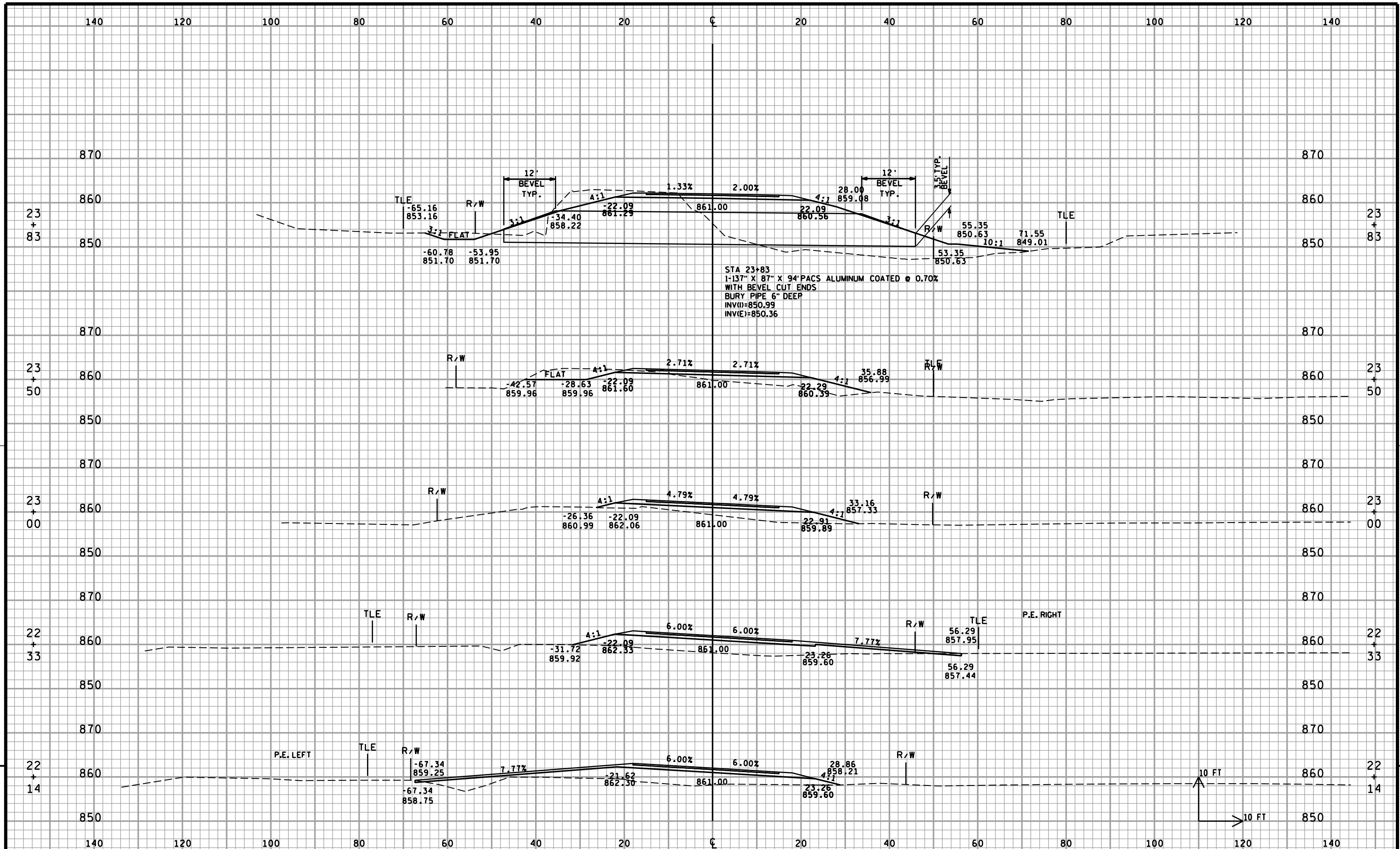
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PLOT SCALE : 1:1.99999

WISDOT/CADDS SHEET 21

rc009014.dgn 8/29/2014 9:30:37 AM bmaxwell





PROJECT NO:6648-00-73

HWY:TOWN ROAD

COUNTY:JUNEAU

CROSS SECTIONS: 19th AVE.

SHEET

114

E

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PLOT DATE : 8/29/2014

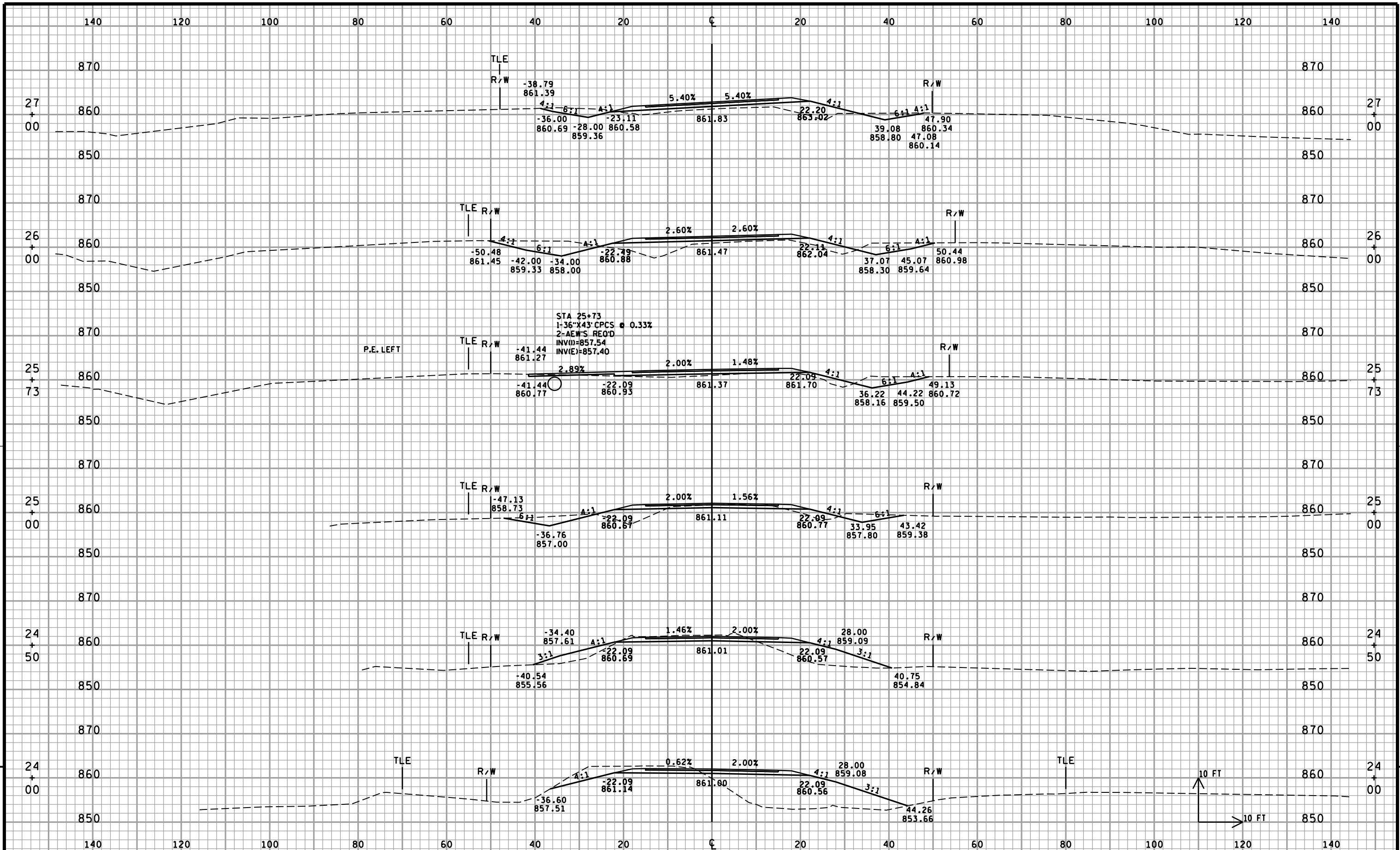
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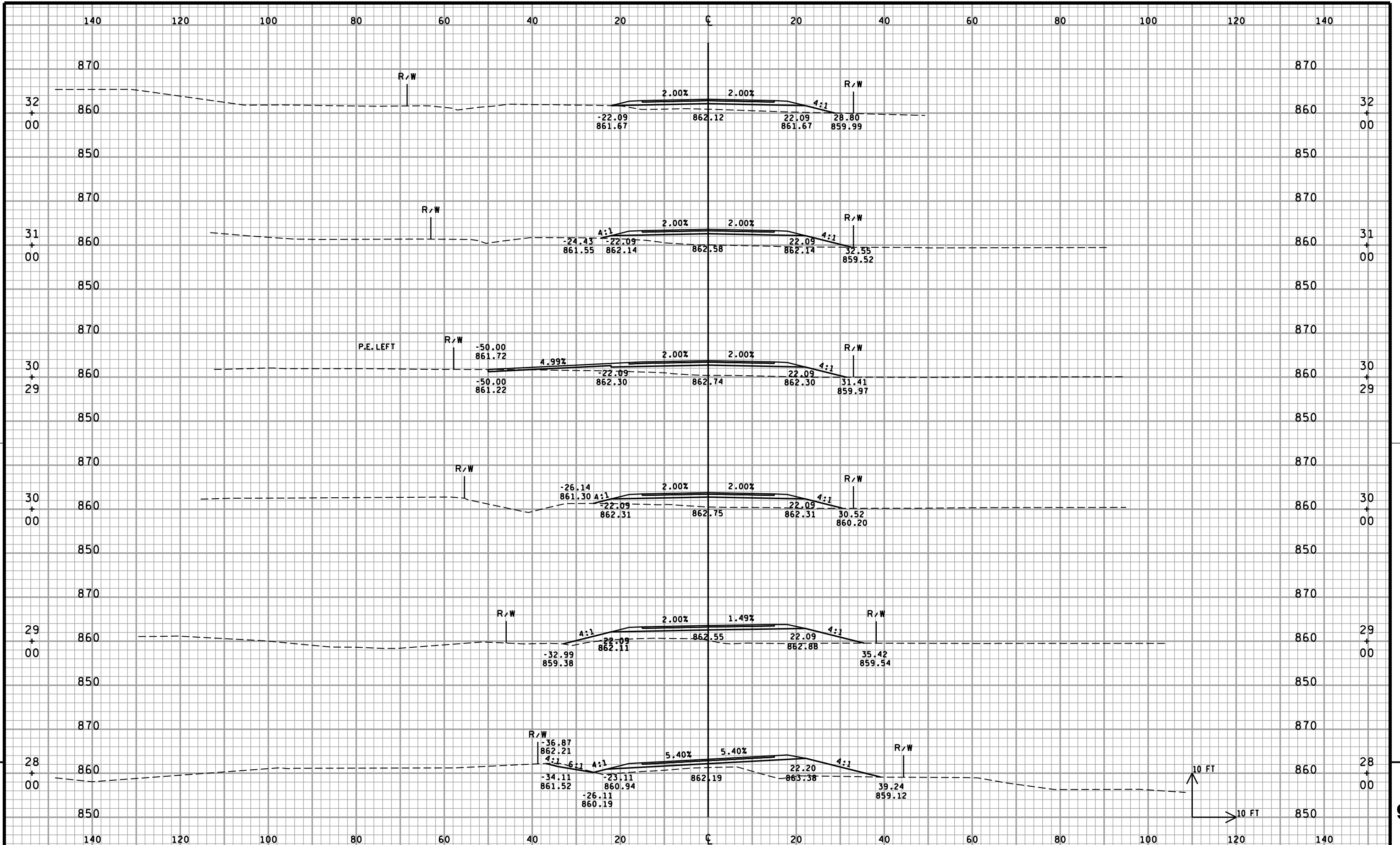
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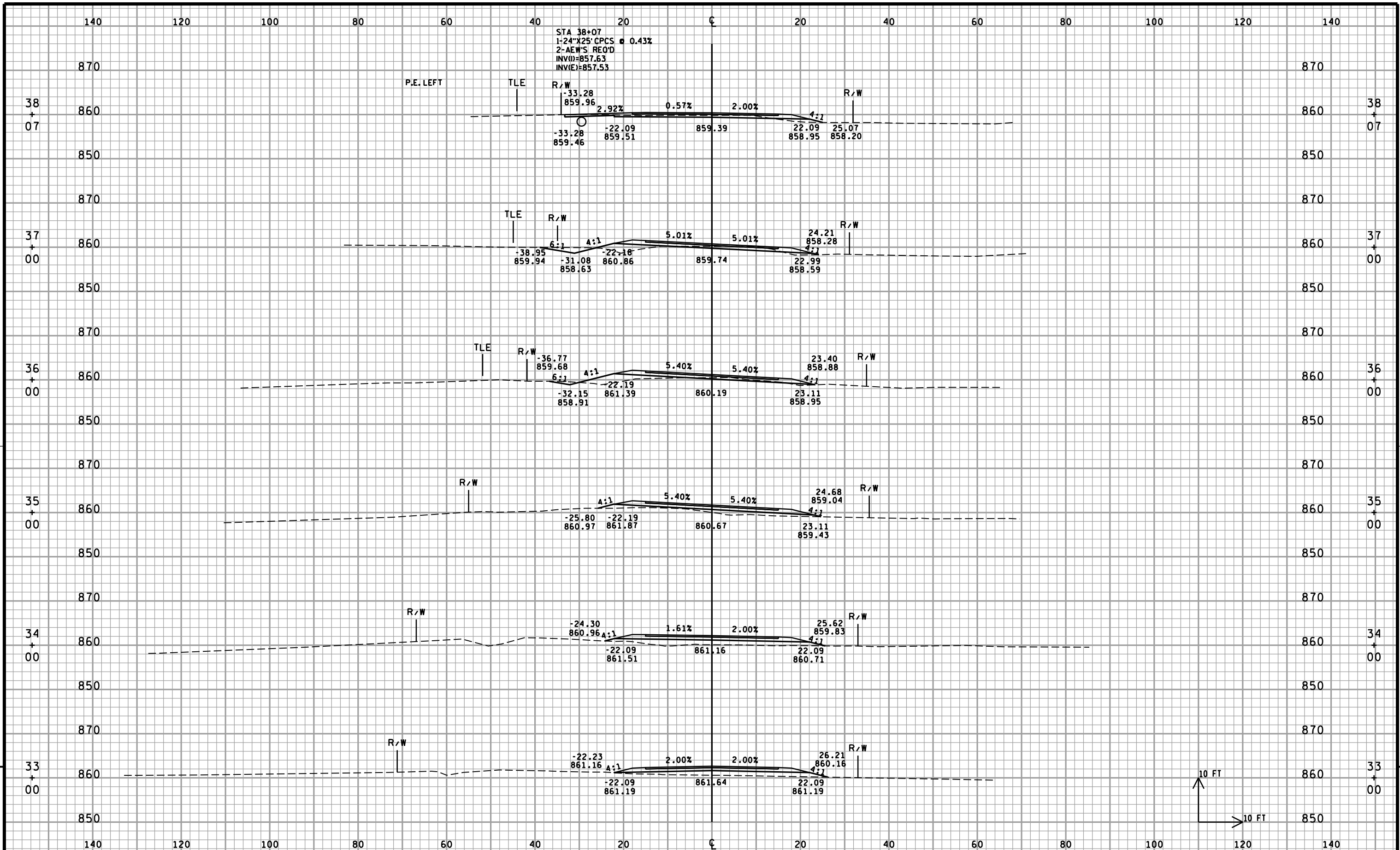
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WISDOT/CADDs SHEET 21

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PROJECT NO:6648-00-73

HWY:TOWN ROAD

COUNTY:JUNEAU

CROSS SECTIONS: 19th AVE.

SHEET

117

E

FILE NAME : P:\11100s\11140s\11145\11145000\cadd\WDOT\Planshts\Cross sections\rc014014.dgn

PLOT DATE : 8/29/2014

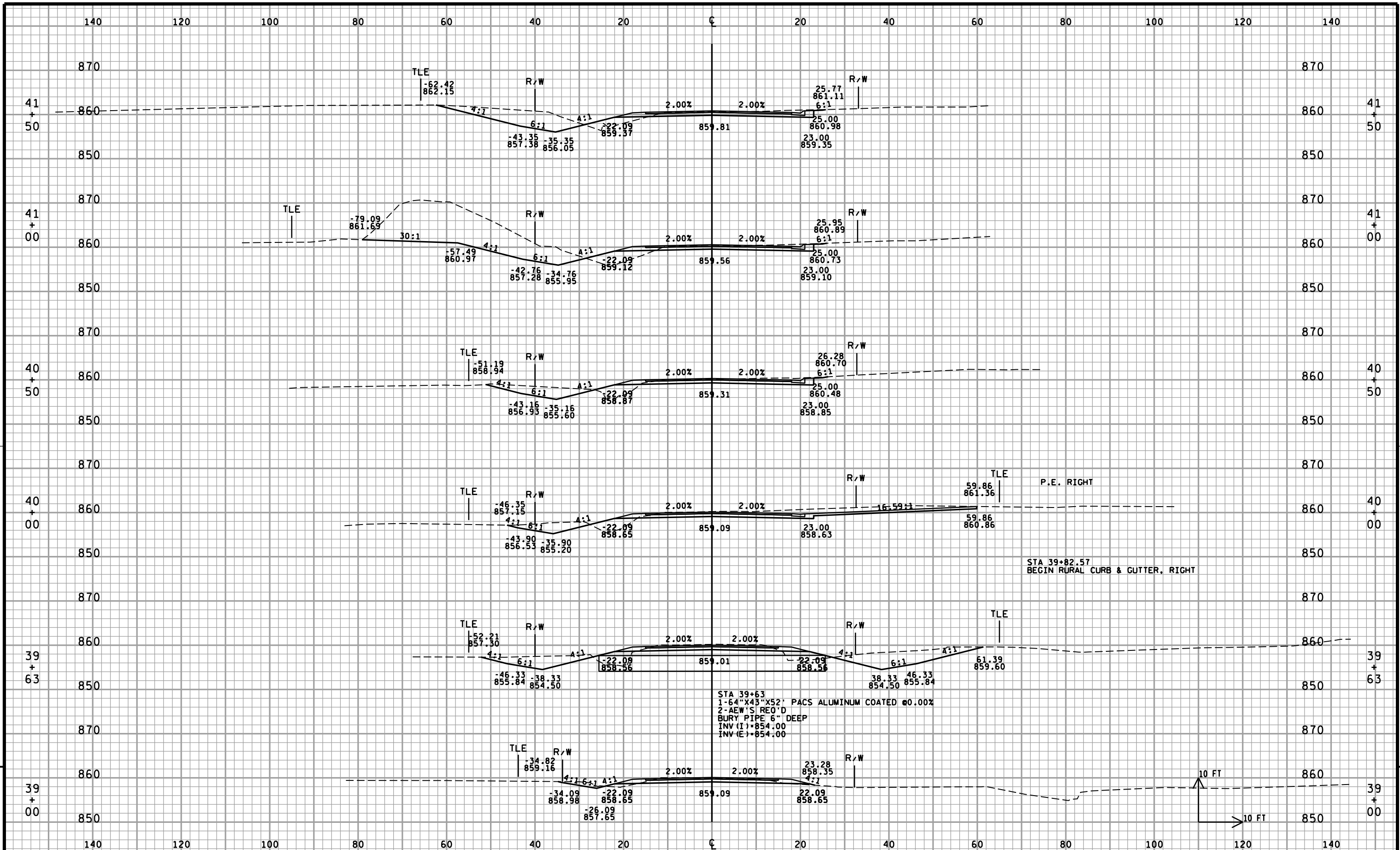
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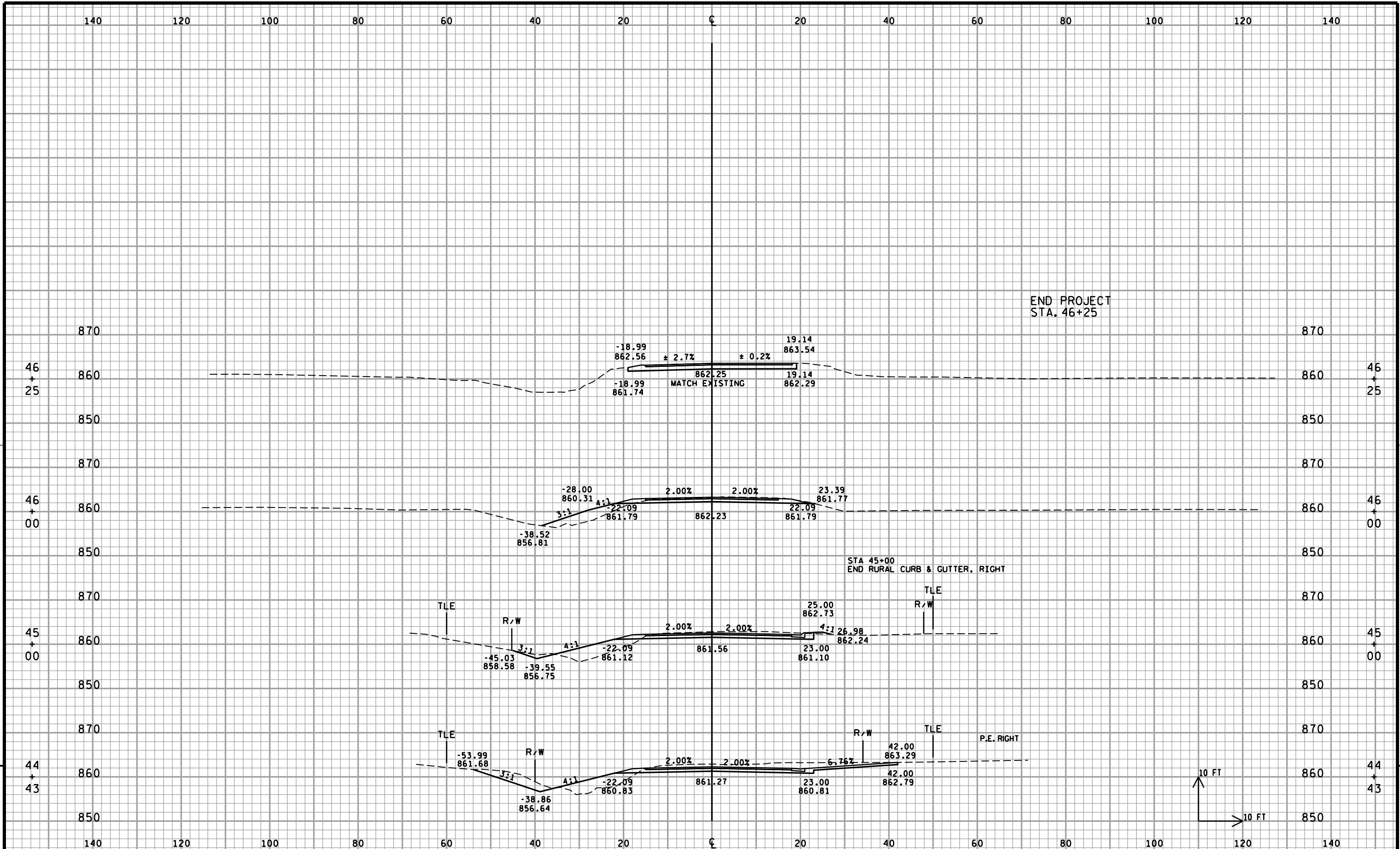
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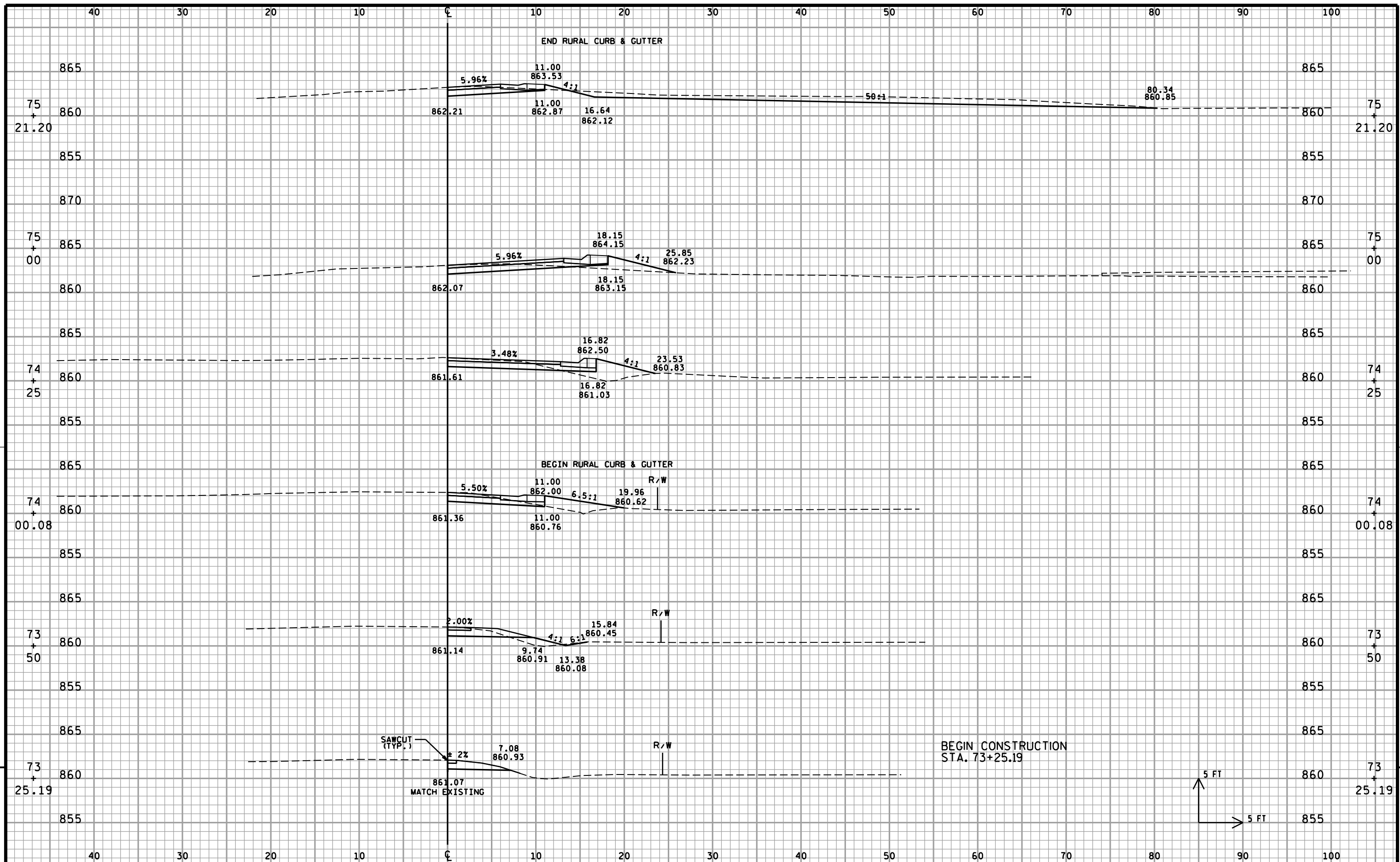
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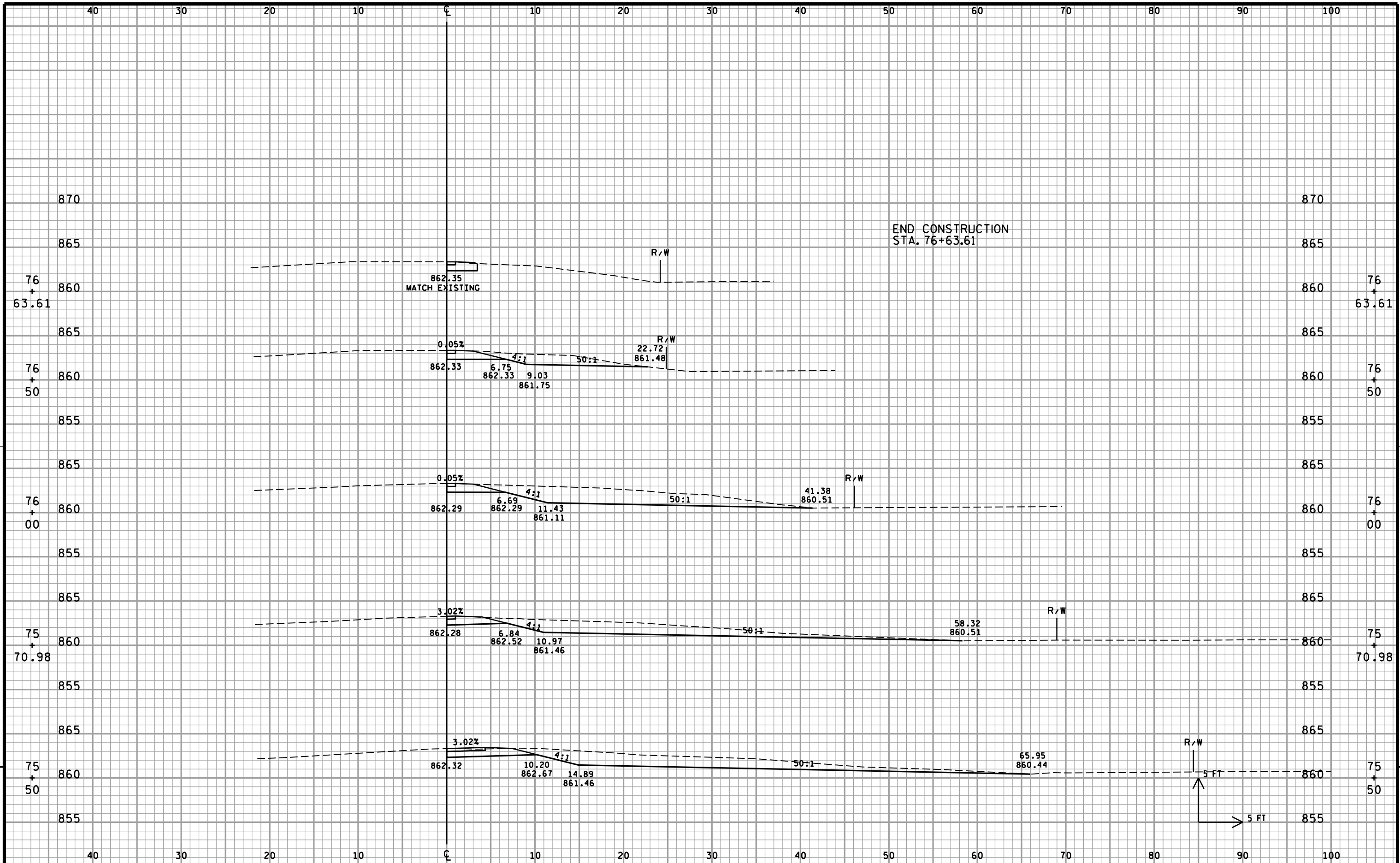
WISDOT/CADDS SHEET 21

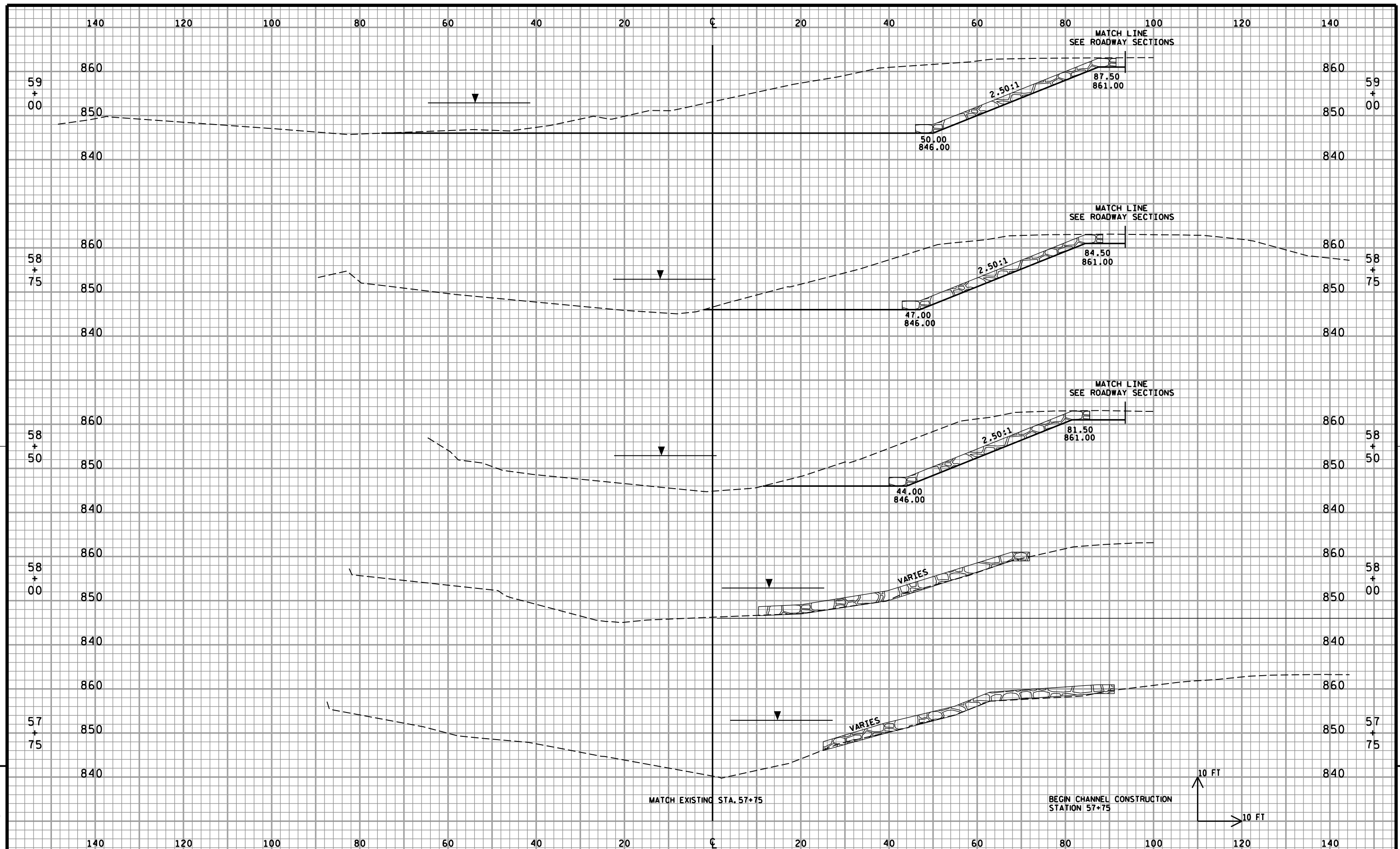
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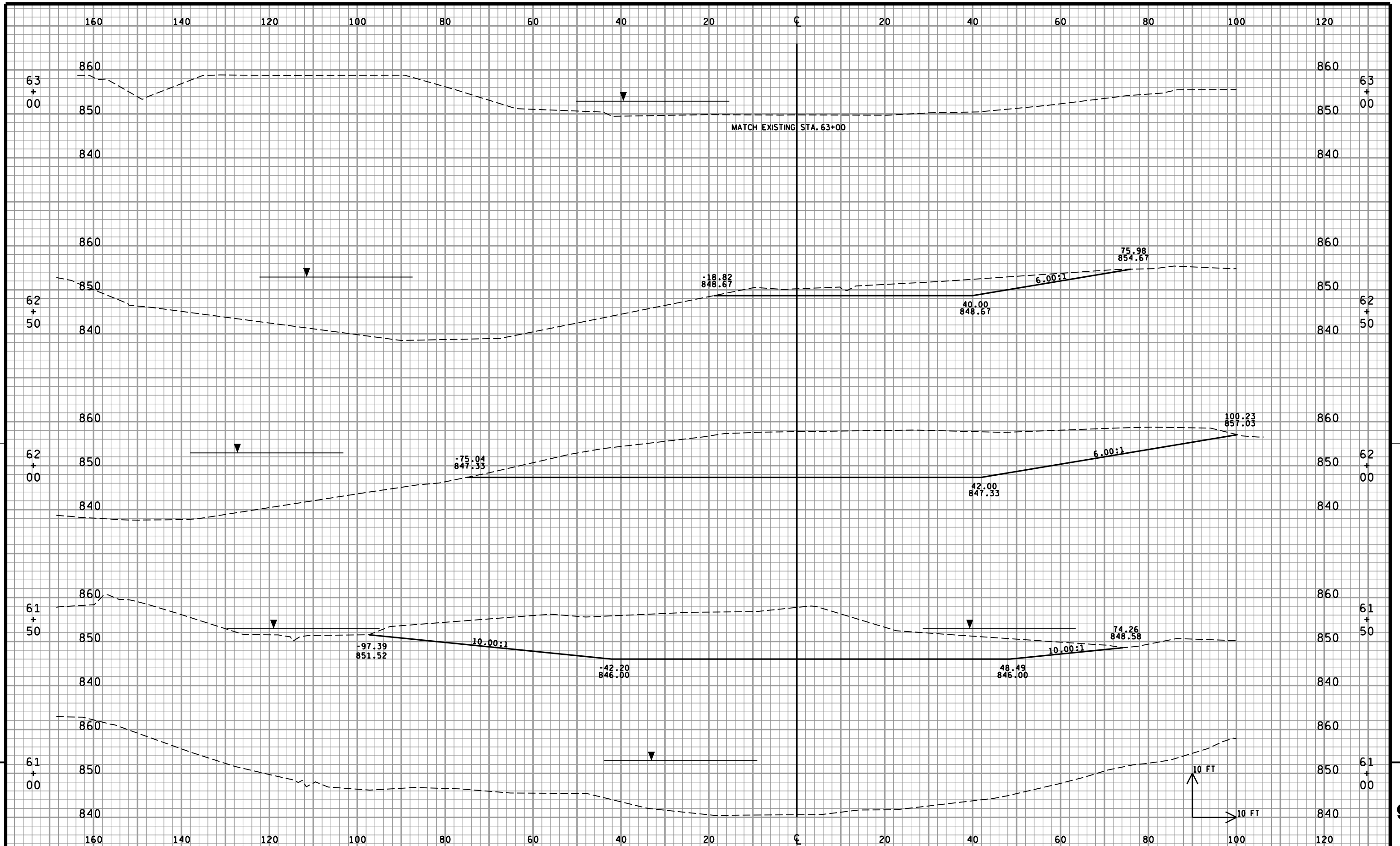


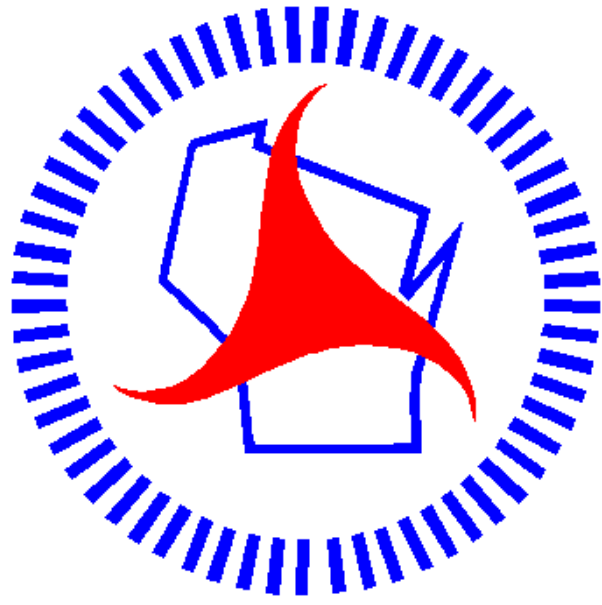












Wisconsin Department of Transportation

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