

UTILITIES

COMMUNICATIONS LINE

AT&T LEGACY
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COPY ALL CORRESPONDENCE TO:
BILL KOENIG
PO BOX 244
LAKE MILLS, WI 53551-0244
608-628-0575
Jmc140@frontier.com

BALWIN TELECOM
KEN CARLSRUD
930 MAPLE STREET
BALDWIN, WI 54002
715-684-3346 (OFFICE)
715-760-0966 (MOBILE)
Ken.Carlsrud@baldwin-telecom.net

CENTURYLINK COMMUNICATIONS
BOB SAMPSON
1310 E. MARY STREET
OTTUMWA, IA 52501
641-684-4106 (OFFICE)
636-887-5367 (MOBILE)
Robert.Sampson@Centurylink.com

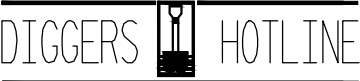
LEVEL 3 COMMUNICATIONS
BRADLEY J. MORSETH
715 NORTH 2ND STREET
MINNEAPOLIS, MN 55401
612-343-3257 (OFFICE)
612-805-9479 (MOBILE)
brad.morseth@level3.com
COPY ALL CORRESPONDENCE TO:
Level3.networkrelocations@level3.com

ELECTRICITY - DISTRIBUTION

XCEL ENERGY
DARREN NORDSKOG
1201 LIVINGSTONE ROAD
HUDSON, WI 54016
715-386-4798 (OFFICE)
715-410-3755 (MOBILE)
darren.m.nordskog@xcelenergy.com
COPY ALL CORRESPONDENCE TO:
DAWN SCHULTZ
1414 W HAMILTON AVE
PO BOX 8
EAU CLAIRE, WI 54702-0008
715-737-2482 (OFFICE)
dawn.schultz@xcelenergy.com

DNR

DNR WEST CENTRAL REGION HQ
CHRIST WILLGER
1300 W CLAIREMONT AVE
PO BOX 4001
EAU CLAIRE, WI 54702
715-839-1609 (OFFICE)
Christopher.J.Willger@wisconsin.gov



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

GENERAL NOTES

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

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED AND MULCHED.

THE EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE CONTRACTOR'S EROSION CONTROL IMPLEMENTATION PLAN (ECIP) AND APPROVED BY THE ENGINEER IN CONSULTATION WITH THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES.

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

LOCATIONS FOR PERMANENT SIGNS SHOWN ON THE PLAN ARE APPROXIMATE. ACTUAL LOCATIONS OF PERMANENT SIGNS ARE TO BE COORDINATED IN THE FIELD BY THE ENGINEER.

4.5-INCH ASPHALTIC SURFACE SPECIAL SHALL BE CONSTRUCTED WITH AN 2.5-INCH LOWER LAYER AND 2-INCH UPPER LAYER.

3-INCH ASPHALTIC SURFACE SPECIAL SHALL BE CONSTRUCTED WITH AN 1.5-INCH LOWER LAYER AND 1.5-INCH UPPER LAYER.

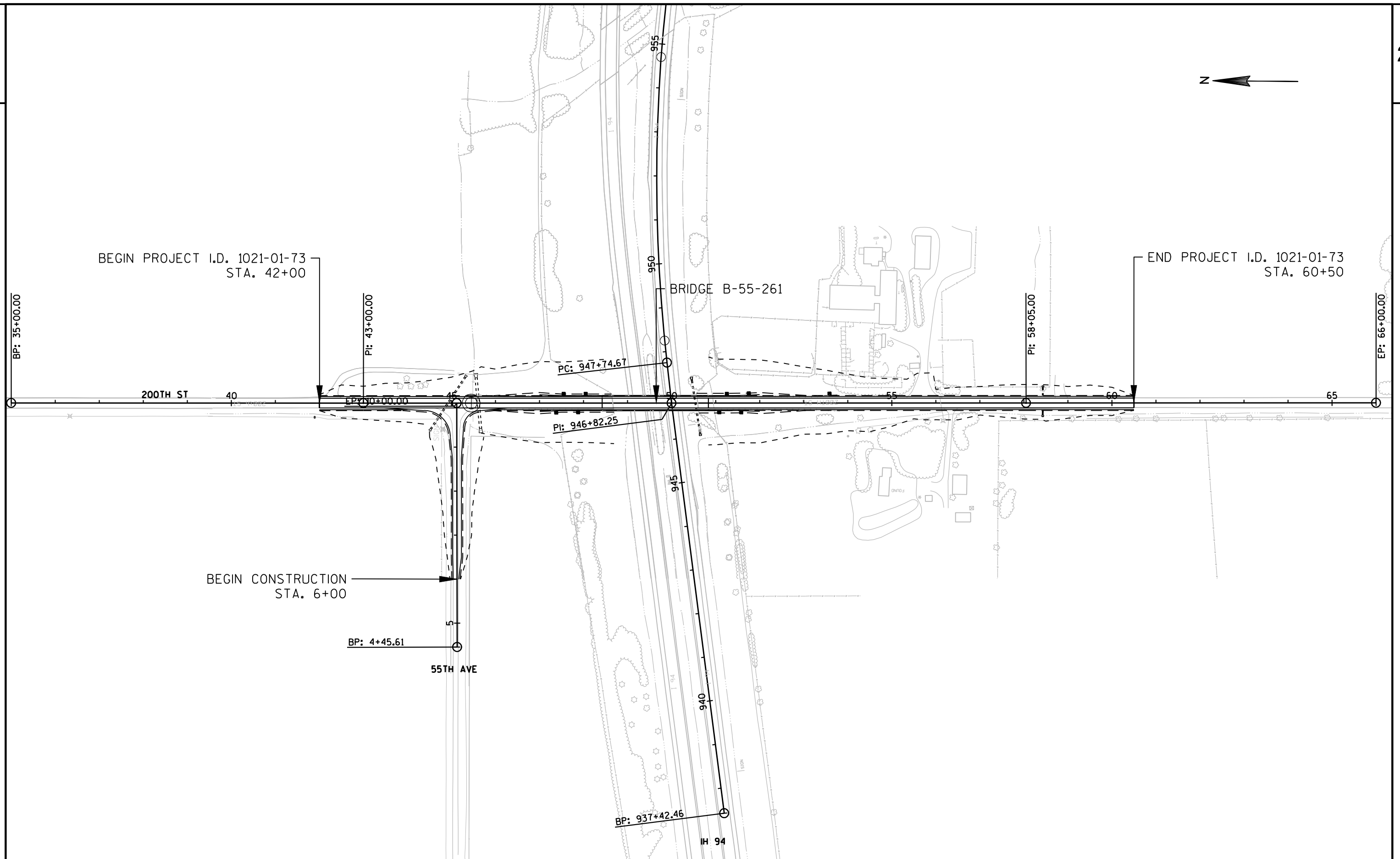
DETAILS OF INSTALLATION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS PLAN SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, SPECIAL PROVISIONS, STANDARD DETAILS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

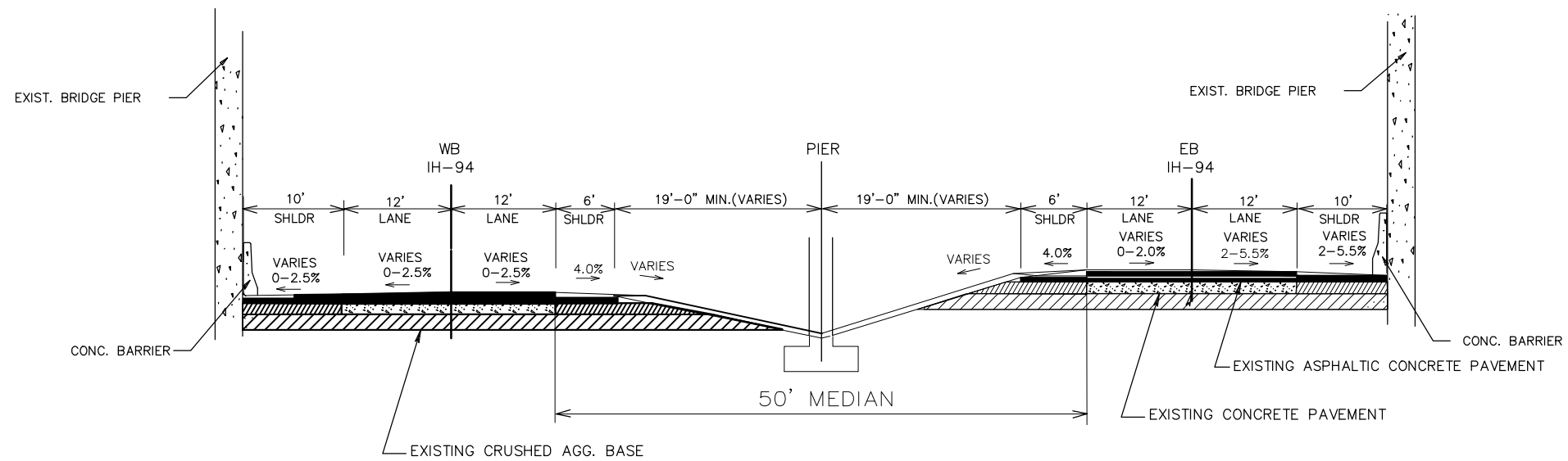
LIST OF STANDARD ABBREVIATIONS

ABUT.	ABUTMENT
AGG.	AGGREGATE
AH.	AHEAD
APPROX.	APPROXIMATE
A.E.W.	APRON ENDWALL
ASPH.	ASPHALTIC
A.D.T.	AVERAGE DAILY TRAFFIC
AZ.	AZIMUTH
BK.	BACK
BEG.	BEGIN
B.M.	BENCH MARK
C/L	CENTER LINE
CONC.	CONCRETE
CONST.	CONSTRUCTION
CO.	COUNTY
C.T.H.	COUNTY TRUNK HIGHWAY
X-SEC.	CROSS SECTION
CR.	CRUSHED
CFS	CUBIC FEET/SECOND
C.Y., CU. YD.	CUBIC YARD
CULV.	CULVERT
C.P.	CULVERT PIPE
D.O.T.	DEPARTMENT OF TRANSPORTATION
D.H.V.	DESIGN HOUR VOLUME
DIA.	DIAMETER
D.	DIRECTIONAL DISTRIBUTION
DISCH. OR DIS.	DISCHARGE
EA.	EACH
ELECT.	ELECTRIC
EL. OR ELEV.	ELEVATION
EMB.	EMBANKMENT
E.B.S.	EXCAVATION BELOW SUBGRADE
EXIST.	EXISTING
FERT.	FERTILIZE
F.E.	FIELD ENTRANCE
FIN.	FINISHED
FT.	FOOT
F.L.	FLOW LINE
GA.	GAUGE
HORIZ.	HORIZONTAL
CWT.	HUNDREDWEIGHT
INL.	INLET
LT.	LEFT
L.H.F.	LEFT-HAND FORWARD
LIN.	LINEAR
LIN. FT.	LINEAR FOOT
L.S.	LUMP SUM
MAX.	MAXIMUM
MI.	MILE
MISC.	MISCELLANEOUS
N.E.	NORTH EAST
N.W.	NORTH WEST
PAV'T	PAVEMENT
P.C.	POINT OF CURVATURE
P.I.	POINT OF INTERSECTION
P.T.	POINT OF TANGENCY
P.O.T.	POINT ON TANGENT
LB.	POUND
P.E.	PRIVATE ENTRANCE
PROJ.	PROJECT
R.	RANGE
REQ'D	REQUIRED
RT.	RIGHT
R.H.F.	RIGHT-HAND FORWARD
R/W	RIGHT OF WAY
RD.	ROAD
SHR.	SHRINKAGE
SL.	SLOPE
STD.	STANDARD
S.D.D.	STANDARD DETAIL DRAWINGS
S.T.H.	STATE TRUNK HIGHWAY
STA.	STATION
S.P.P.A.	STRUCTURAL PLATE PIPE ARCH
STRUCT.	STRUCTURE
SURF.	SURFACE
TEL.	TELEPHONE
TN.	TOWN
T.	TRUCKS (PERCENT OF)
UNCL.	UNCLASSIFIED
U.G.	UNDERGROUND
V.	VELOCITY OR DESIGN SPEED
V.C.	VERTICAL CURVE

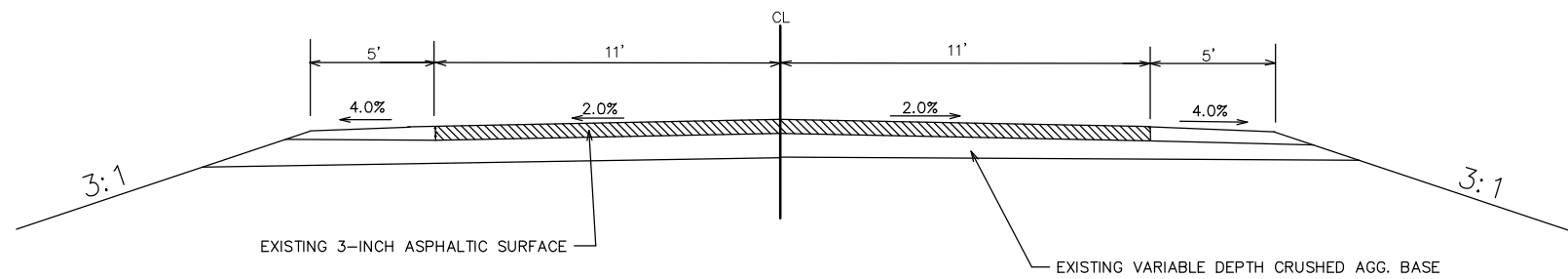
2

2 |

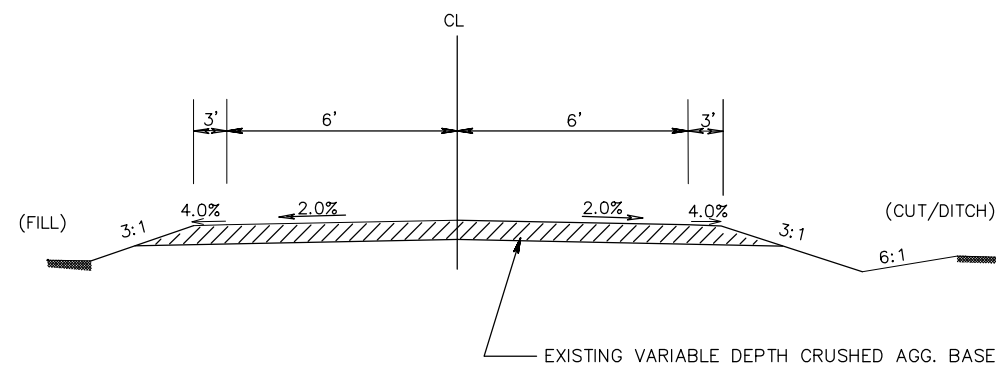




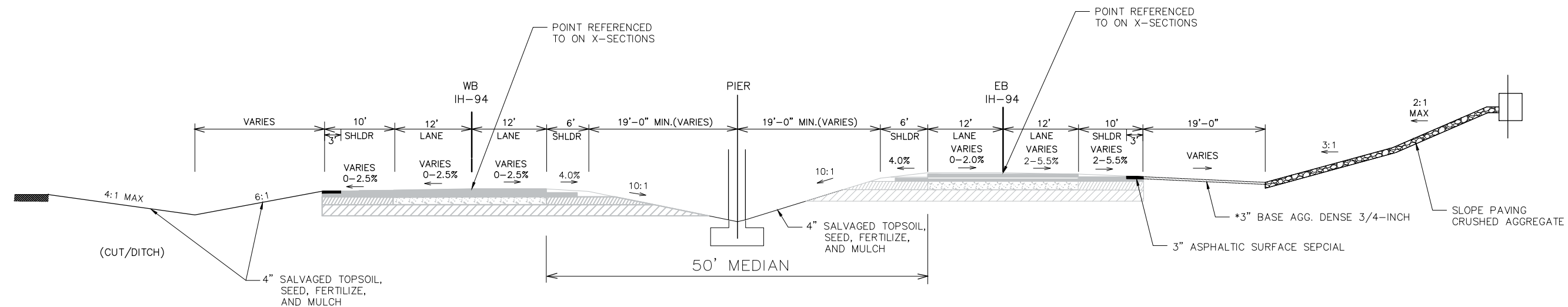
TYPICAL EXISTING SECTION
IH 94 AT 200TH STREET



TYPICAL EXISTING SECTION
200TH STREET



TYPICAL EXISTING SECTION
55TH AVE



TYPICAL FINISHED SECTION (4-LANE IH-94)

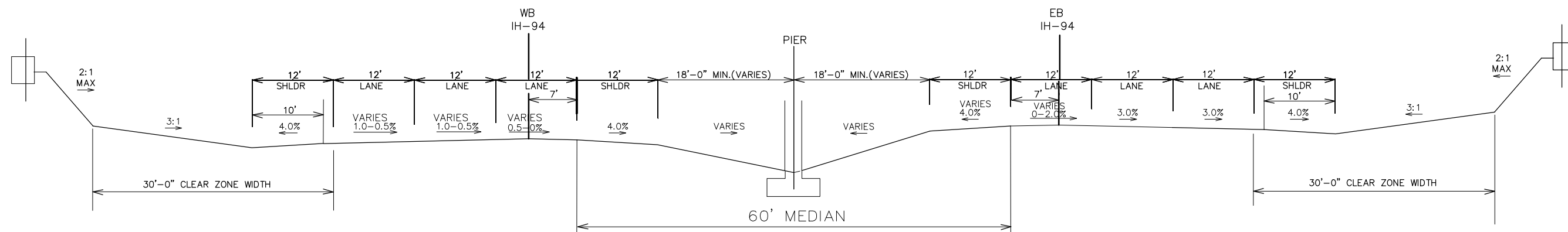
LOOKING EAST

MATCH EXISTING SE TRANSITION

STA. 946+00 - STA. 948+00 WB

STA. 945+75 - STA. 947+75 EB

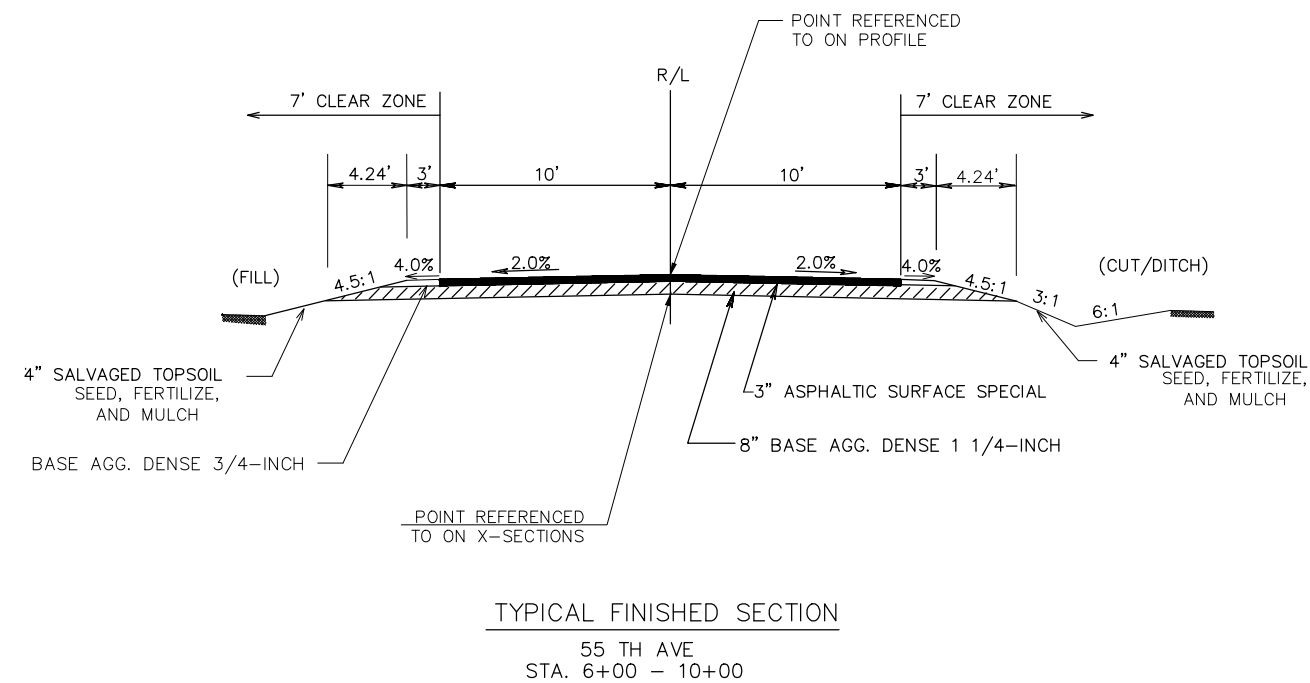
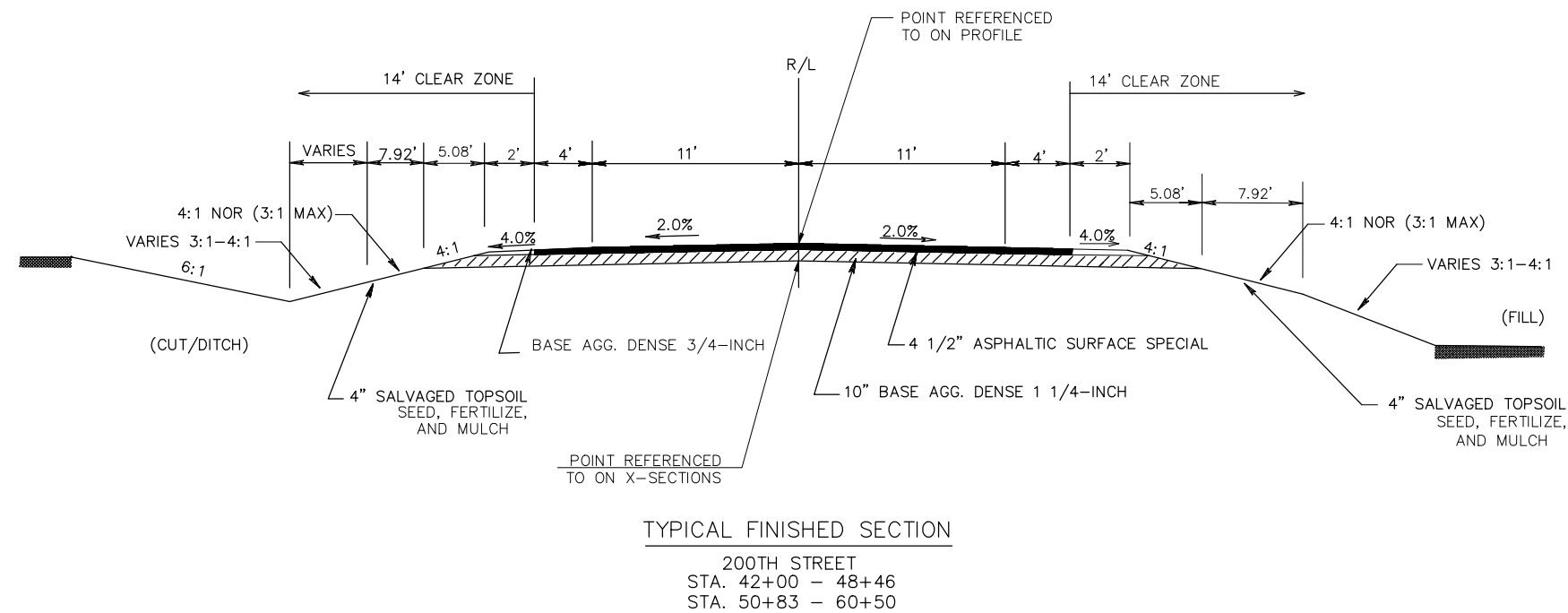
*PLACE BASE AGGREGATE WITHIN
SLOPE PAVING LIMITS ONLY.

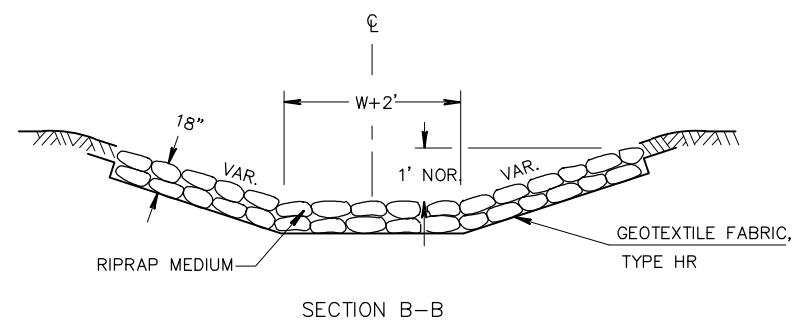
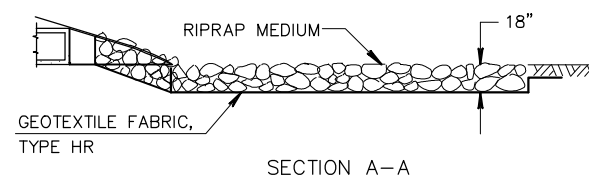
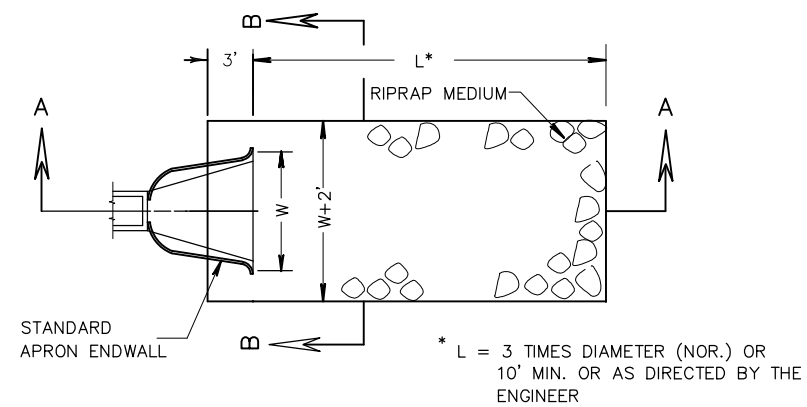


TYPICAL FUTURE SECTION (6 LANE IH-94)

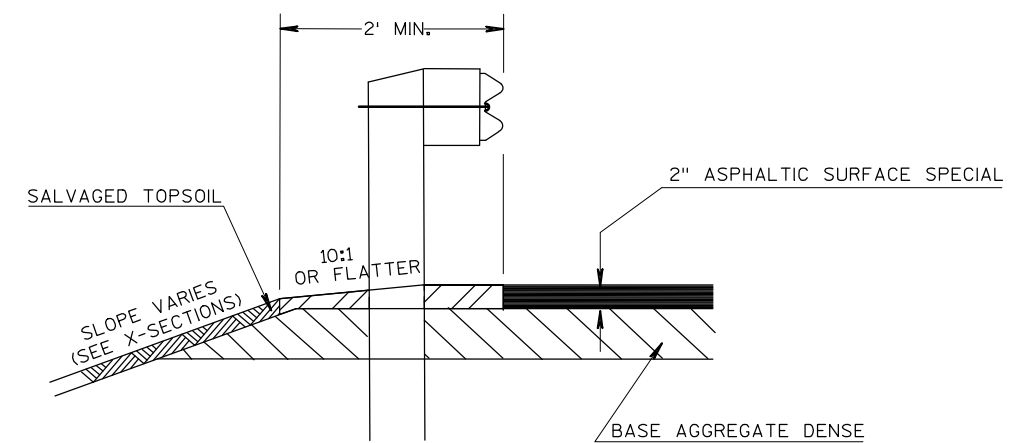
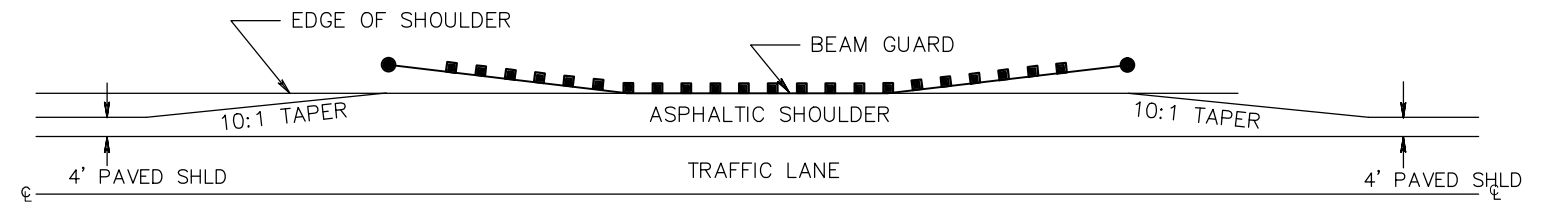
LOOKING EAST

FOR INFORMATION ONLY

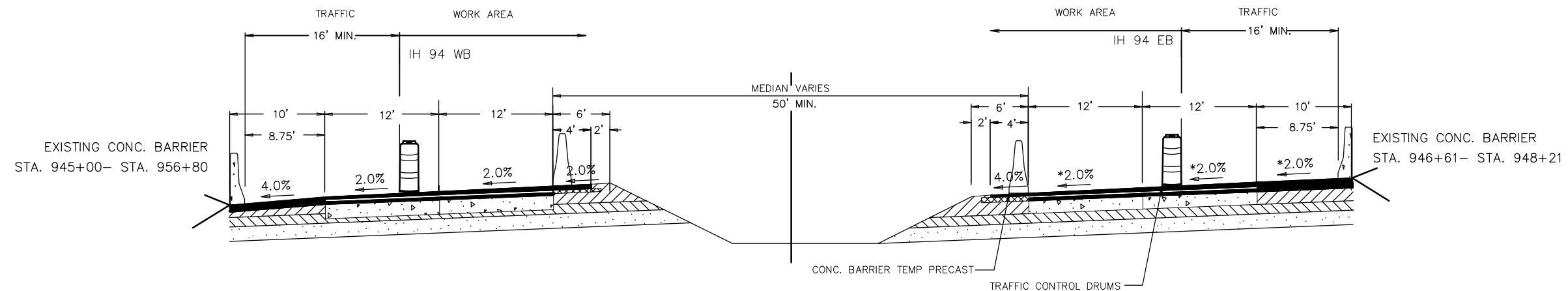
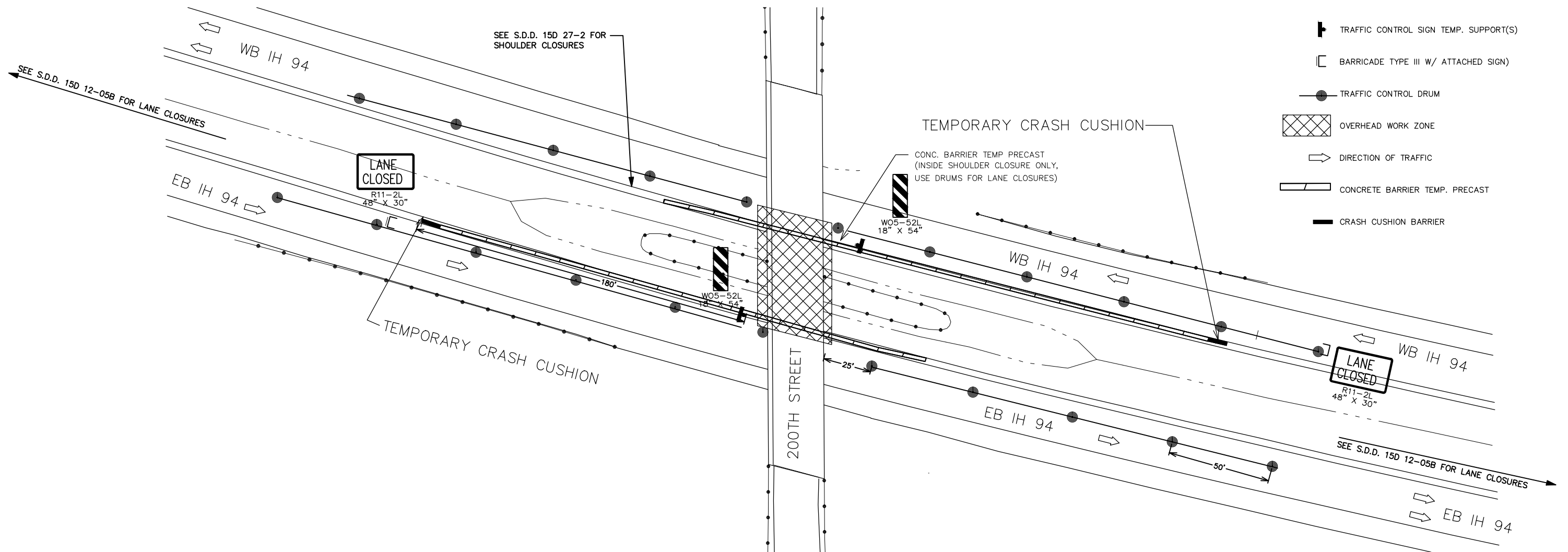


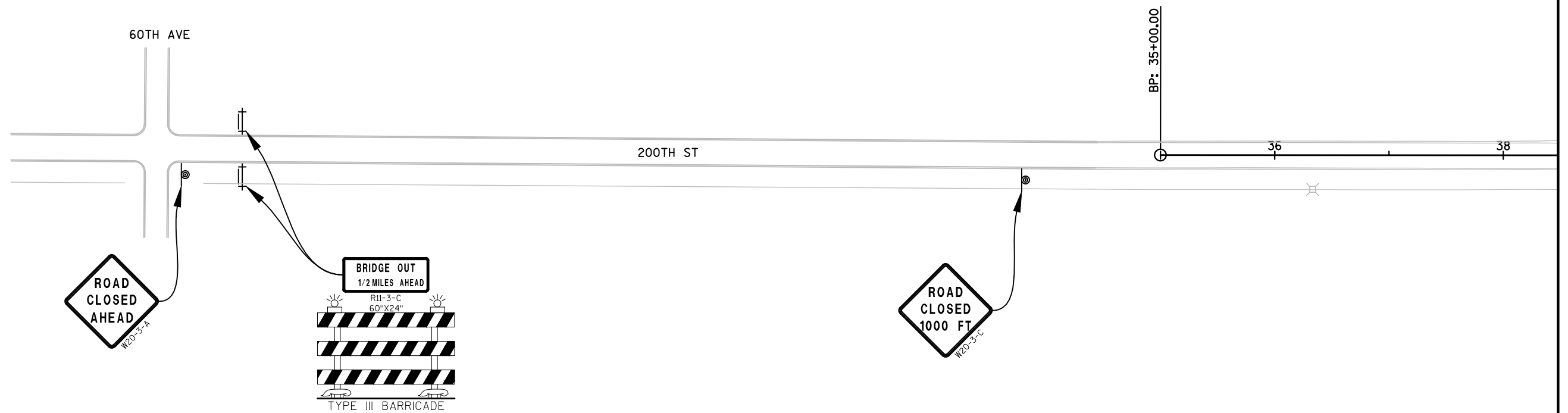


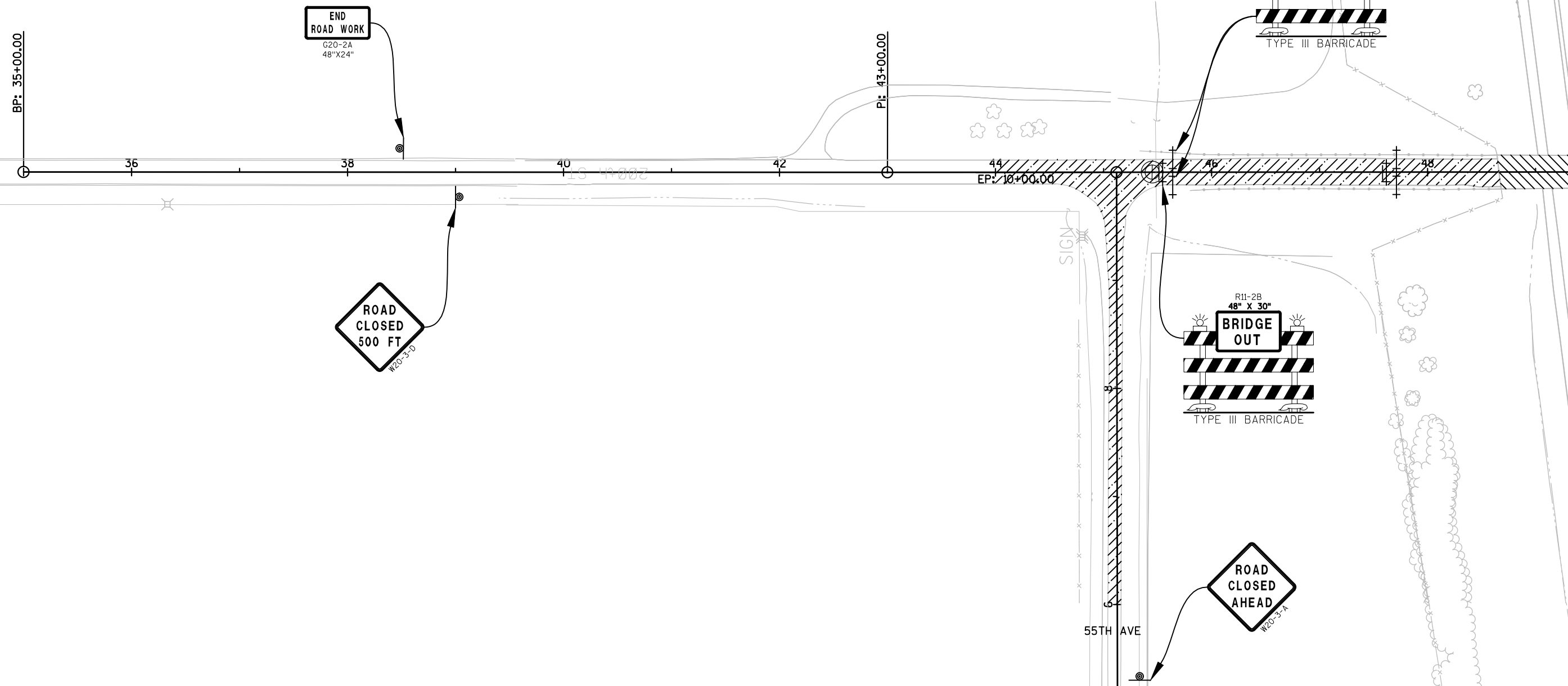
RIPRAP AND GEOTEXTILE FABRIC DETAIL
AT APRON ENDWALLS

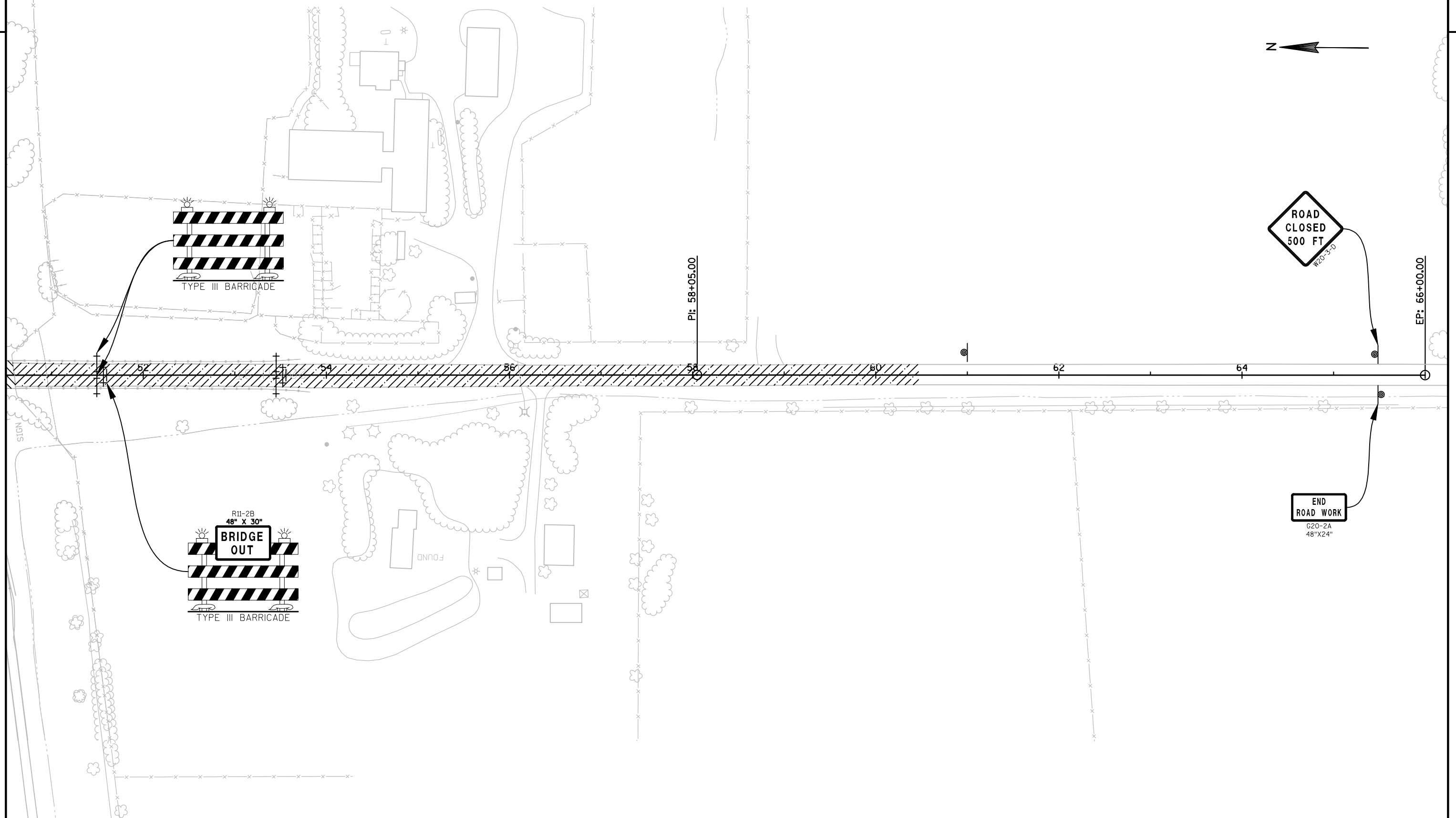


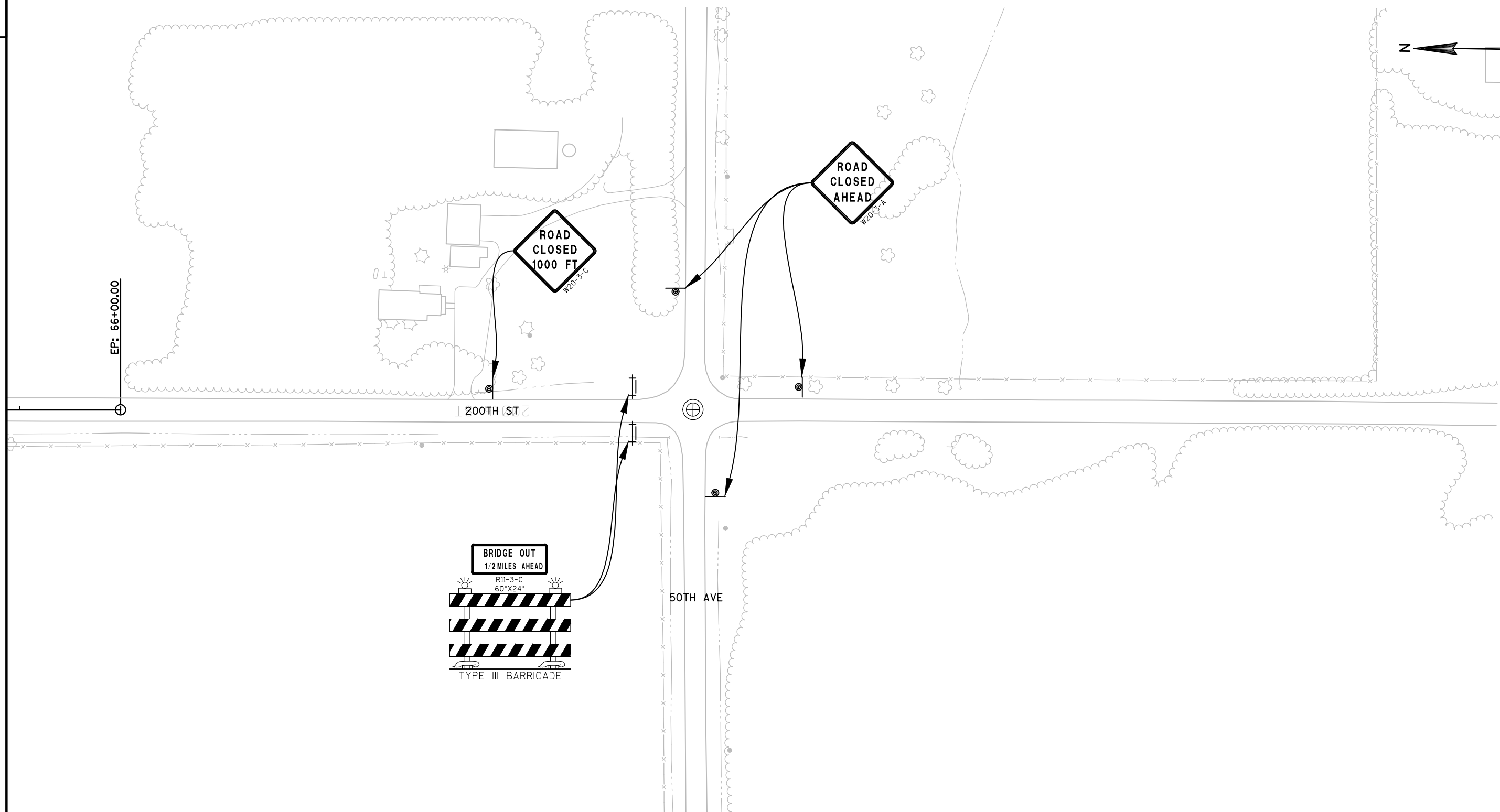
DETAIL FOR ASPHALTIC SHOULDER AT BEAM GUARD





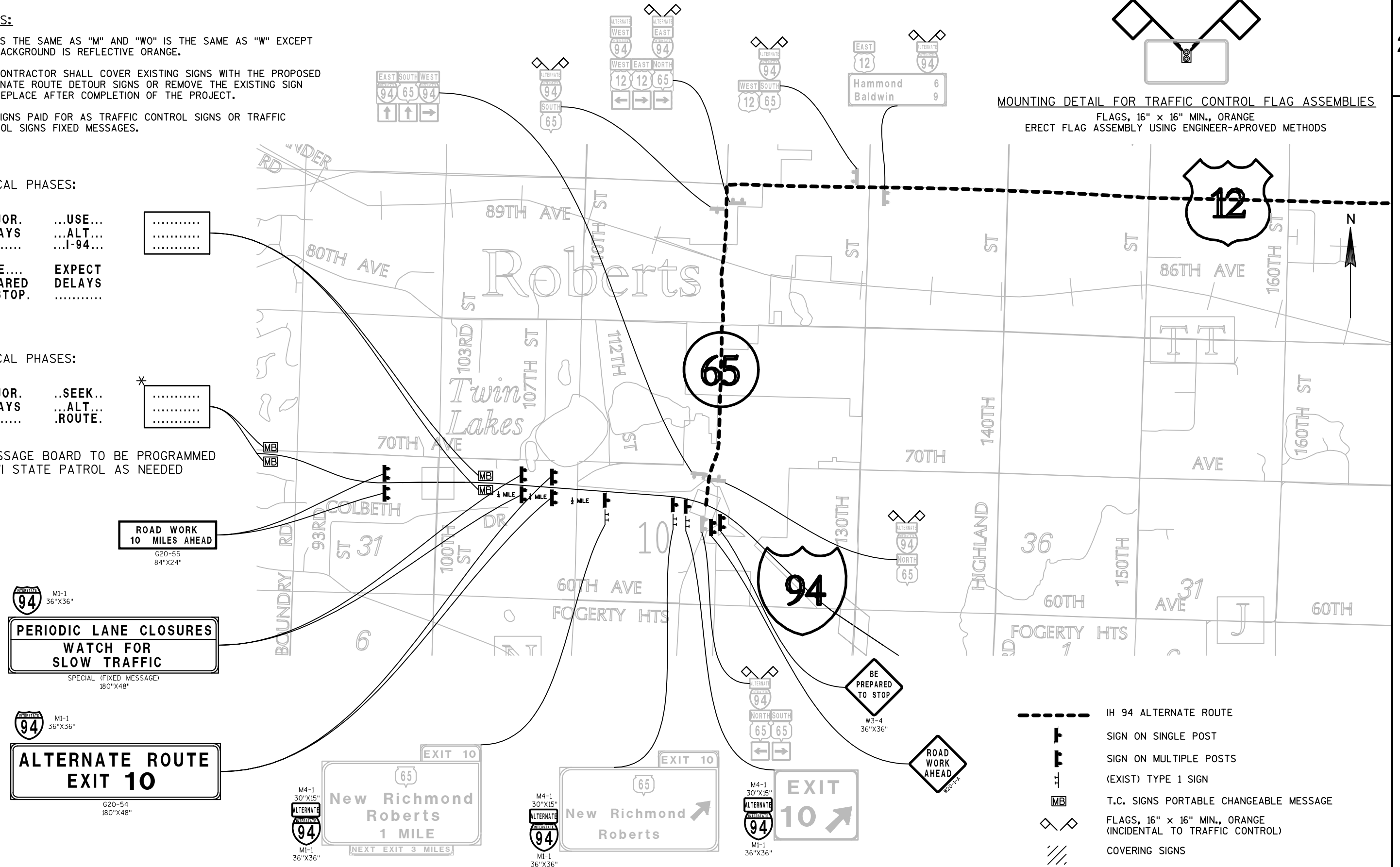


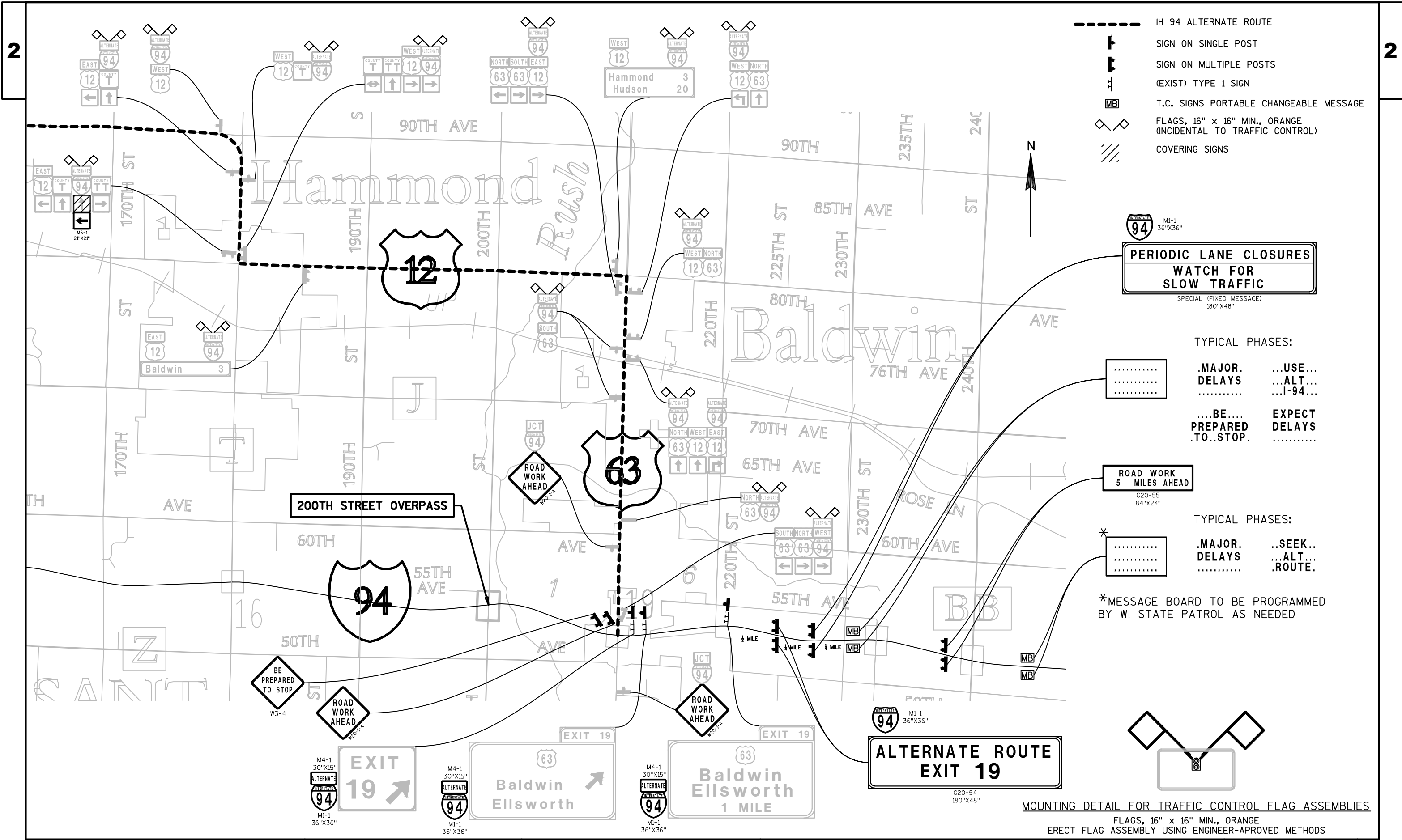




ALL SIGNS PAID FOR AS TRAFFIC CONTROL SIGNS OR TRAFFIC
CONTROL SIGNS FIXED MESSAGES.

*MESSAGE BOARD TO BE PROGRAMMED
BY WI STATE PATROL AS NEEDED

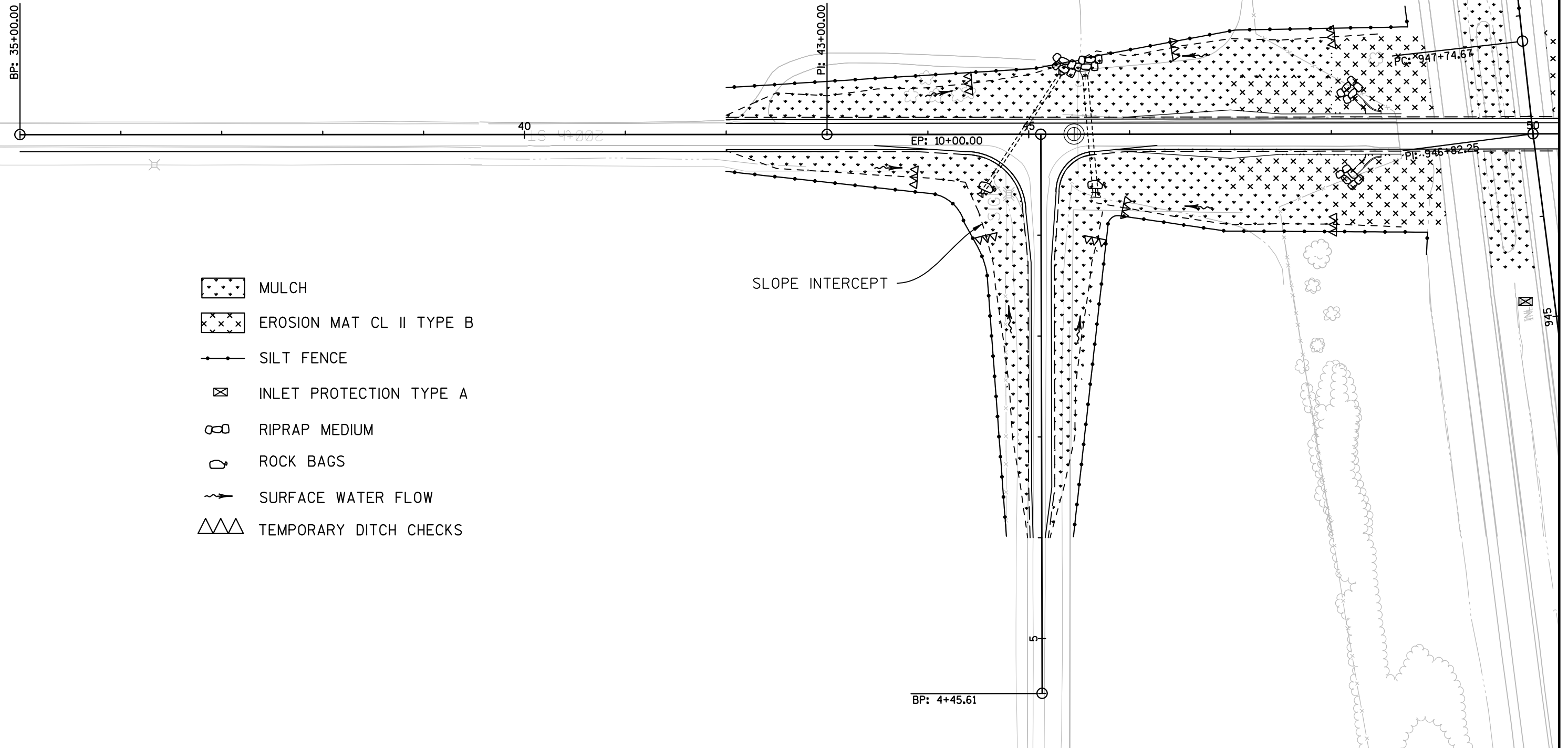




NOTES:

INSTALL EROSION CONTROL ITEMS AS THE PLANS
SHOW AND AS DIRECTED BY THE FIELD ENGINEER.

FERTILIZE AND SEED ALL DISTURBED AREAS.



- MULCH
- EROSION MAT CL II TYPE B
- SILT FENCE
- INLET PROTECTION TYPE A
- RIPRAP MEDIUM
- ROCK BAGS
- SURFACE WATER FLOW
- TEMPORARY DITCH CHECKS

NOTES:

INSTALL EROSION CONTROL ITEMS AS THE PLANS SHOW AND AS DIRECTED BY THE FIELD ENGINEER.

FERTILIZE AND SEED ALL DISTURBED AREAS.



47+74.67

946+02.25

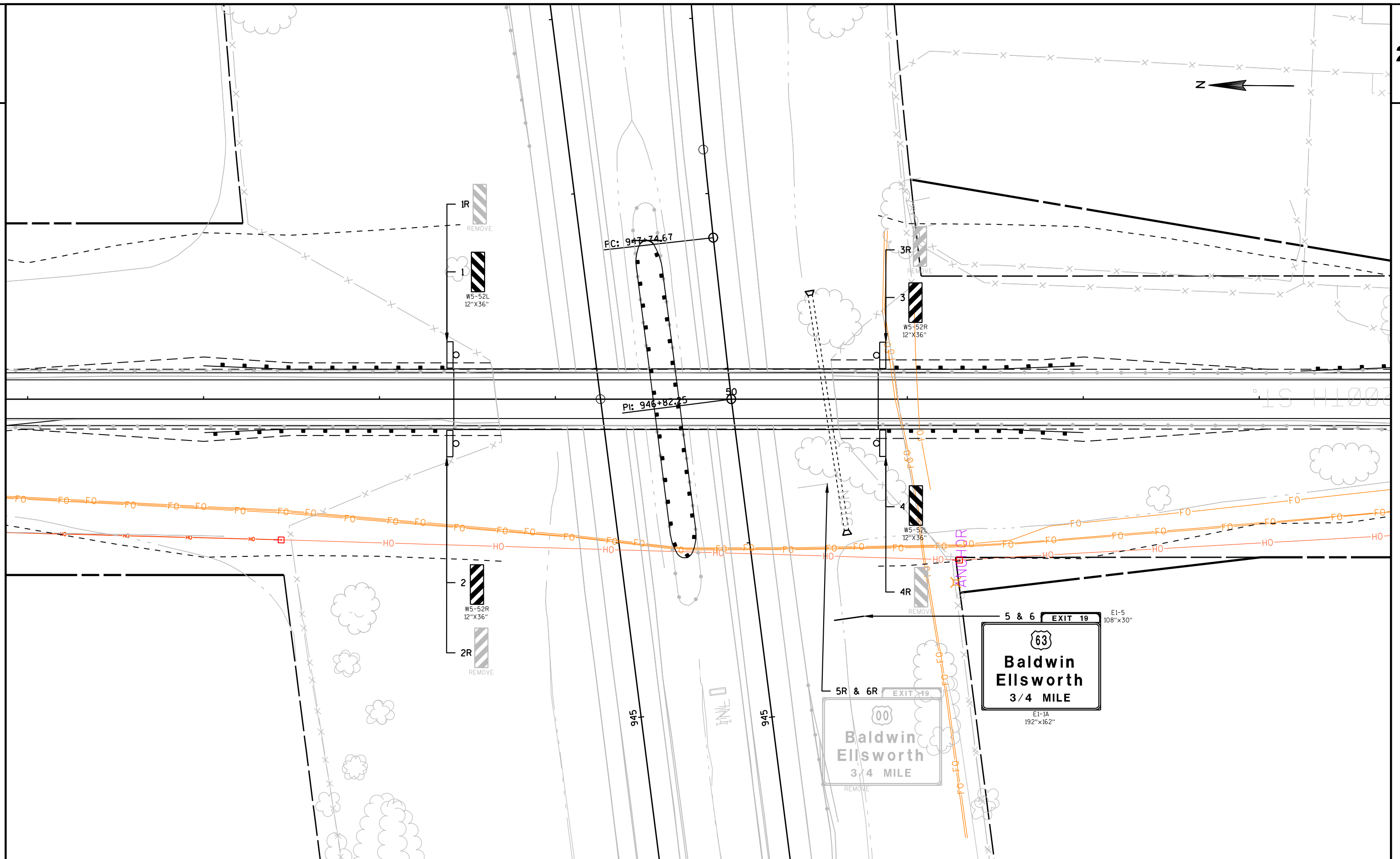
50

945

SLOPE INTERCEPT

FOUND

PI: 58+05.00



Alignment: ALIPROF-200TH-EXIST-N2S

Tangent Data

Description	PT Station	Northing	Easting
Start:	35+00.000	331335.355	604662.085
End:	43+00.000	330535.378	604668.216

Tangent Data

Parameter	Value	Parameter	Value
Length:	800.000	Course:	S 00° 26' 20.7876" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	43+00.000	330535.378	604668.216
End:	58+05.001	329030.432	604681.086

Tangent Data

Parameter	Value	Parameter	Value
Length:	1505.001	Course:	S 00° 29' 23.7836" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	58+05.001	329030.432	604681.086
End:	66+00.000	328235.461	604687.804

Tangent Data

Parameter	Value	Parameter	Value
Length:	794.999	Course:	S 00° 29' 03.1106" E

Alignment: 55th Ave-Lt Pvm Edge

Tangent Data

Description	PT Station	Northing	Easting
Start:	6+00.000	330328.084	604269.961
End:	6+50.121	330329.865	604320.051

Tangent Data

Parameter	Value	Parameter	Value
Length:	50.121	Course:	N87° 57' 45.8384" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	6+50.121	330329.865	604320.051
End:	8+73.084	330332.083	604543.003

Tangent Data

Parameter	Value	Parameter	Value
Length:	222.963	Course:	N 89° 25' 48.5377" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	8+73.084	330332.083	604543.003
End:	9+23.372	330337.580	604592.989

Tangent Data

Parameter	Value	Parameter	Value
Length:	50.287	Course:	N 83° 43' 25.8953" E

Curve Point Data

Description	Station	Northing	Easting
PC:	9+23.372	330337.580	604592.989
RP:		330397.577	604592.392
PT:	10+17.536	330398.090	604652.390

Circular Curve Data

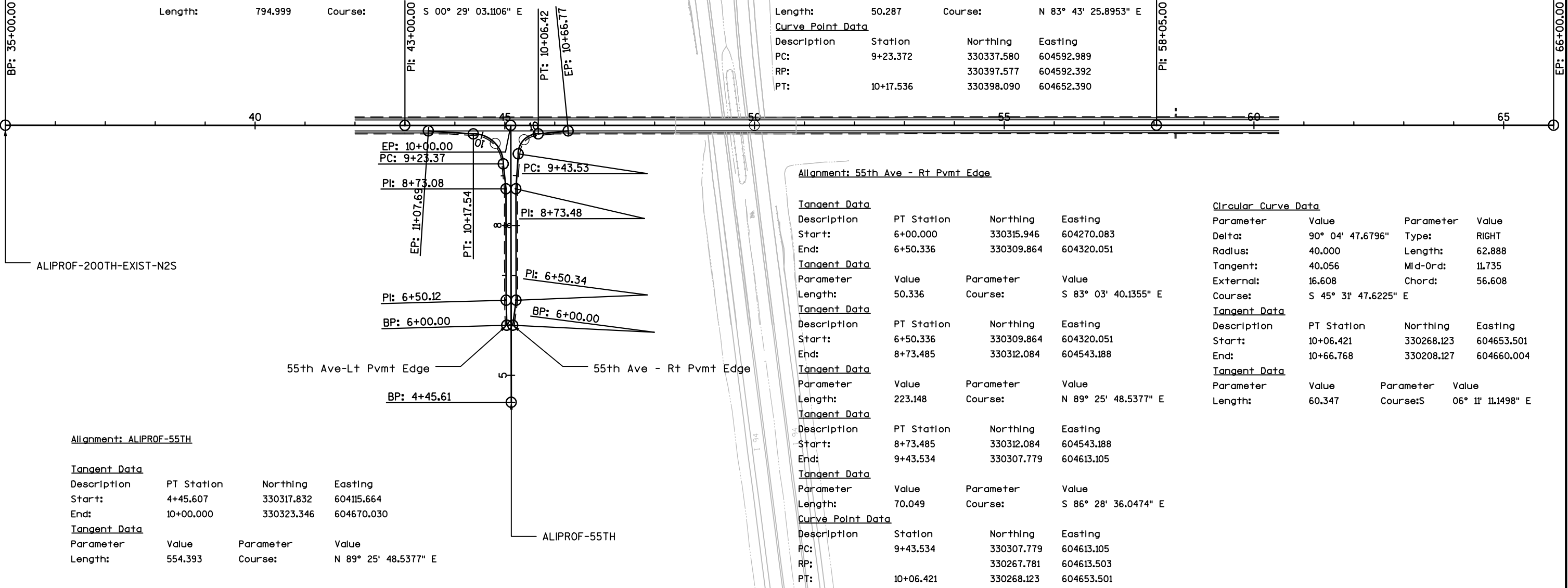
Parameter	Value	Parameter	Value
Delta:	89° 55' 12.3204"	Type:	LEFT
Radius:	60.000	Length:	94.164
Tangent:	59.916	Mid-Ord:	17.544
External:	24.794	Chord:	84.794
Course:	N 44° 28' 12.3775" E		

Tangent Data

Description	PT Station	Northing	Easting
Start:	10+17.536	330398.090	604652.390
End:	11+07.687	330488.090	604657.610

Tangent Data

Parameter	Value	Parameter	Value
Length:	90.151	Course:	N 03° 19' 11.3385" E



Alignment: ALIPROF-55TH

Tangent Data

Description	PT Station	Northing	Easting
Start:	4+45.607	330317.832	604115.664
End:	10+00.000	330323.346	604670.030

Tangent Data

Parameter	Value	Parameter	Value
Length:	554.393	Course:	N 89° 25' 48.5377" E

Alignment: 55th Ave - Rt Pvm Edge

Tangent Data

Description	PT Station	Northing	Easting
Start:	6+00.000	330315.946	604270.083
End:	6+50.336	330309.864	604320.051

Tangent Data

Parameter	Value	Parameter	Value
Length:	50.336	Course:	S 83° 03' 40.1355" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	6+50.336	330309.864	604320.051
End:	8+73.485	330312.084	604543.188

Tangent Data

Parameter	Value	Parameter	Value
Length:	223.148	Course:	N 89° 25' 48.5377" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	8+73.485	330312.084	604543.188
End:	9+43.534	330307.779	604613.105

Tangent Data

Parameter	Value	Parameter	Value
Length:	70.049	Course:	S 86° 28' 36.0474" E

Curve Point Data

Description	Station	Northing	Easting
PC:	9+43.534	330307.779	604613.105
RP:		330267.781	604613.503
PT:	10+06.421	330268.123	604653.501

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	90° 04' 47.6796"	Type:	RIGHT
Radius:	40.000	Length:	62.888
Tangent:	40.056	Mid-Ord:	11.735
External:	16.608	Chord:	56.608
Course:	S 45° 31' 47.6225" E		

Tangent Data

Description	PT Station	Northing	Easting
Start:	10+06.421	330268.123	604653.501
End:	10+66.768	330208.127	604660.004

Tangent Data

Parameter	Value	Parameter	Value
Length:	60.347	Course:	S 06° 11' 11.1498" E

Alignment: ALIPROF-I94WB

Tangent Data

Description	PT Station	Northing	Easting
Start:	937+38.567	329782.330	603738.530
End:	949+35.961	329944.059	604924.952

Tangent Data

Parameter	Value	Parameter	Value
Length:	1197.395	Course:	N 82° 14' 14.8724" E

Curve Point Data

Description	Station	Northing	Easting
PC:	949+35.961	329944.059	604924.952
RP:		326139.582	605443.567
PT:	968+23.195	329738.454	606781.899

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	28° 09' 41.2789"	Type:	RIGHT
Radius:	3839.663		
Length:	1887.234	Tangent:	963.084
Mid-Ord:	115.367	External:	118.941
Chord:	1868.295	Course:	S 83° 40' 54.4882" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	968+23.195	329738.454	606781.899
End:	969+52.740	329693.300	606903.320

Tangent Data

Parameter	Value	Parameter	Value
Length:	129.545	Course:	S 69° 36' 03.8487" E

PI STA = 958+99.05
Y = 330074.141
X = 605879.211
DELTA = 28°09'41"
D = 1°29'32"
T = 963.08'
L = 1887.23'
R = 3839.66'
PC STA = 949+35.96
PT STA = 968+23.20

PI STA = 955+77.91
Y = 329942.823
X = 605563.393
DELTA = 24°09'54"
D = 1°31'37"
T = 803.24'
L = 1582.59'
R = 3752.36'
PC STA = 947+74.67
PT STA = 963+57.26

Alignment: ALIPROF-I94EB

Tangent Data

Description	PT Station	Northing	Easting
Start:	937+42.459	329708.420	603743.030
End:	946+82.250	329835.404	604674.202

Tangent Data

Parameter	Value	Parameter	Value
Length:	939.791	Course:	N 82° 14' 04.1786" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	946+82.250	329835.404	604674.202
End:	947+74.671	329846.488	604765.956

Tangent Data

Parameter	Value	Parameter	Value
Length:	92.421	Course:	N 83° 06' 42.2945" E

Curve Point Data

Description	Station	Northing	Easting
PC:	947+74.671	329846.488	604765.956
RP:		326121.214	605215.989
PT:	963+57.257	329704.273	606330.388

Circular Curve Data

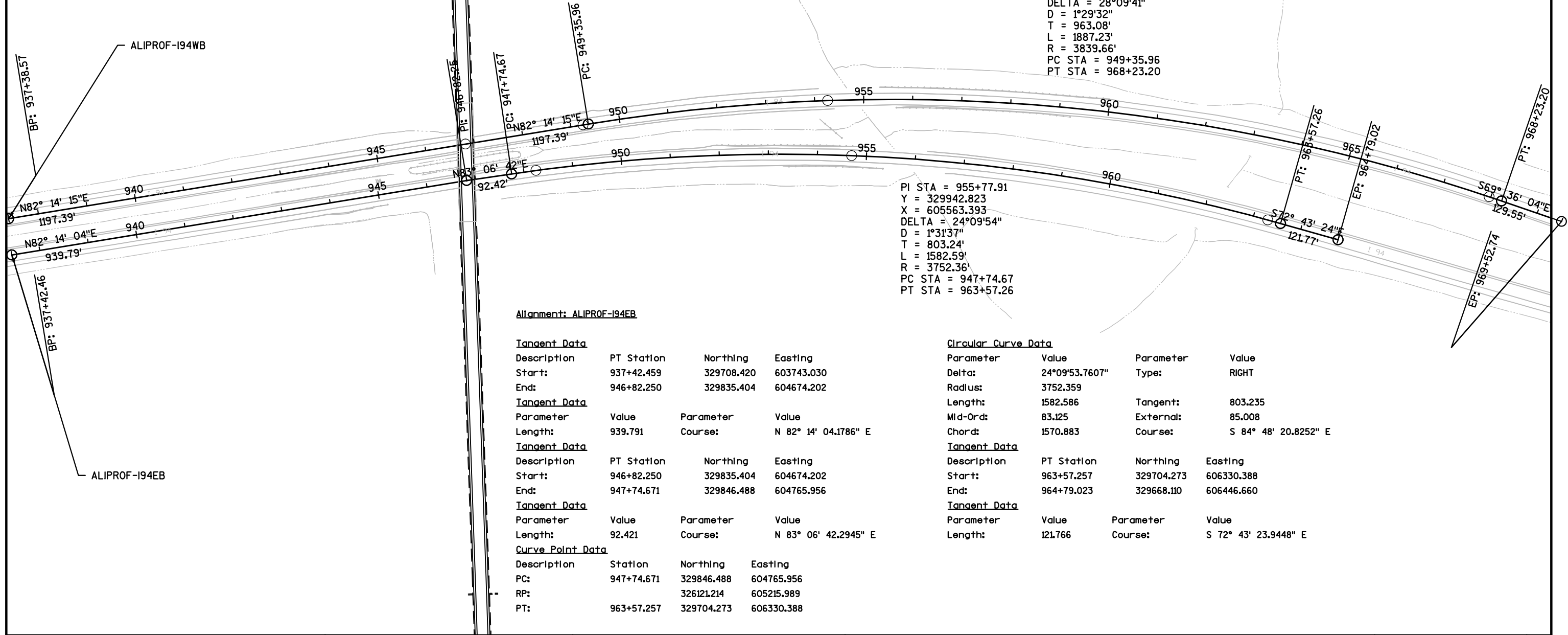
Parameter	Value	Parameter	Value
Delta:	24°09'53.7607"	Type:	RIGHT
Radius:	3752.359		
Length:	1582.586	Tangent:	803.235
Mid-Ord:	83.125	External:	85.008
Chord:	1570.883	Course:	S 84° 48' 20.8252" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	963+57.257	329704.273	606330.388
End:	964+79.023	329668.110	606446.660

Tangent Data

Parameter	Value	Parameter	Value
Length:	121.766	Course:	S 72° 43' 23.9448" E



3

DATE 14SEP15		E S T I M A T E O F Q U A N T I T I E S			
LINE					1021-01-73
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	201.0105	Clearing	STA	8.000	8.000
0020	201.0205	Grubbing	STA	8.000	8.000
0030	203.0100	Removing Small Pipe Culverts	EACH	4.000	4.000
0040	203.0200	Removing Old Structure (station) 01. Sta. 49+50	LS	1.000	1.000
0050	204.0110	Removing Asphaltic Surface	SY	3,440.000	3,440.000
0060	204.0157	Removing Concrete Barrier	LF	340.000	340.000
0070	204.0170	Removing Fence	LF	1,760.000	1,760.000
0080	204.0190	Removing Surface Drains	EACH	2.000	2.000
0090	204.0220	Removing Inlets	EACH	2.000	2.000
0100	205.0100	Excavation Common	CY	865.000	865.000
0110	206.1000	Excavation for Structures Bridges (structure) 01. B-55-0261	LS	1.000	1.000
0120	208.0100	Borrow	CY	24,275.000	24,275.000
0130	210.0100	Backfill Structure	CY	505.000	505.000
0140	213.0100	Finishing Roadway (project) 01. 1021-01-73	EACH	1.000	1.000
0150	305.0110	Base Aggregate Dense 3/4-Inch	TON	780.000	780.000
0160	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	6,000.000	6,000.000
0170	455.0605	Tack Coat	GAL	203.000	203.000
0180	465.0315	Asphaltic Flumes	SY	30.000	30.000
0190	502.0100	Concrete Masonry Bridges	CY	516.000	516.000
0200	502.3200	Protective Surface Treatment	SY	845.000	845.000
0210	502.3210	Pigmented Surface Sealer	SY	195.000	195.000
0220	503.0146	Prestressed Girder Type I 45W-Inch	LF	1,415.000	1,415.000
0230	505.0400	Bar Steel Reinforcement HS Structures	LB	6,505.000	6,505.000
0240	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	87,760.000	87,760.000
0250	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	24.000	24.000
0260	506.4000	Steel Diaphragms (structure) 01. B-55-0261	EACH	20.000	20.000
0270	516.0500	Rubberized Membrane Waterproofing	SY	16.000	16.000
0280	521.1024	Apron Endwalls for Culvert Pipe Steel 24-Inch	EACH	2.000	2.000
0290	521.1036	Apron Endwalls for Culvert Pipe Steel 36-Inch	EACH	2.000	2.000
0300	521.1060	Apron Endwalls for Culvert Pipe Steel 60-Inch	EACH	2.000	2.000
0310	522.0130	Culvert Pipe Reinforced Concrete Class III 30-Inch	LF	136.000	136.000
0320	522.1030	Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	EACH	2.000	2.000
0330	529.0124	Culvert Pipe Corrugated Steel Aluminum Coated 24-Inch	LF	60.000	60.000
0340	529.0136	Culvert Pipe Corrugated Steel Aluminum Coated 36-Inch	LF	141.000	141.000
0350	529.0160	Culvert Pipe Corrugated Steel Aluminum Coated 60-Inch	LF	116.000	116.000
0360	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	1,785.000	1,785.000
0370	603.8000	Concrete Barrier Temporary Precast Delivered	LF	550.000	550.000
0380	603.8125	Concrete Barrier Temporary Precast Installed	LF	550.000	550.000
0390	604.0500	Slope Paving Crushed Aggregate	SY	353.000	353.000
0400	606.0200	Riprap Medium	CY	90.000	90.000
0410	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	138.000	138.000

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DATE 14SEP15		E S T I M A T E O F Q U A N T I T I E S			
LINE					1021-01-73
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0420	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0430	614.0905	Crash Cushions Temporary	EACH	2.000	2.000
0440	614.0920	Salvaged Rail	LF	1,481.000	1,481.000
0450	614.2300	MGS Guardrail 3	LF	150.000	150.000
0460	614.2500	MGS Thrie Beam Transition	LF	156.000	156.000
0470	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0480	616.0100	Fence Woven Wire (height) 01. 4.0 Ft	LF	1,760.000	1,760.000
0490	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1021-01-73	EACH	1.000	1.000
0500	619.1000	Mobilization	EACH	1.000	1.000
0510	624.0100	Water	MGAL	50.000	50.000
0520	625.0500	Salvaged Topsoil	SY	22,530.000	22,530.000
0530	627.0200	Mulching	SY	17,880.000	17,880.000
0540	628.1504	Silt Fence	LF	3,900.000	3,900.000
0550	628.1520	Silt Fence Maintenance	LF	3,900.000	3,900.000
0560	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0570	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0580	628.2023	Erosion Mat Class II Type B	SY	5,150.000	5,150.000
0590	628.7005	Inlet Protection Type A	EACH	1.000	1.000
0600	628.7504	Temporary Ditch Checks	LF	120.000	120.000
0610	628.7570	Rock Bags	EACH	28.000	28.000
0620	629.0210	Fertilizer Type B	CWT	14.300	14.300
0630	630.0120	Seeding Mixture No. 20	LB	406.000	406.000
0640	630.0200	Seeding Temporary	LB	609.000	609.000
0650	630.0300	Seeding Borrow Pit	LB	400.000	400.000
0660	633.5200	Markers Culvert End	EACH	8.000	8.000
0670	634.0814	Posts Tubular Steel 2x2-Inch X 14-FT	EACH	4.000	4.000
0680	635.0200	Sign Supports Structural Steel HS	LB	677.000	677.000
0690	636.0100	Sign Supports Concrete Masonry	CY	1.600	1.600
0700	636.0500	Sign Supports Steel Reinforcement	LB	98.000	98.000
0710	637.1220	Signs Type I Reflective SH	SF	238.500	238.500
0720	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0730	638.2601	Removing Signs Type I	EACH	2.000	2.000
0740	638.2602	Removing Signs Type II	EACH	4.000	4.000
0750	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0760	638.3100	Removing Structural Steel Sign Supports	EACH	1.000	1.000
0770	642.5201	Field Office Type C	EACH	1.000	1.000
0780	643.0100	Traffic Control (project) 01. 1021-01-73	EACH	1.000	1.000
0790	643.0300	Traffic Control Drums	DAY	11,400.000	11,400.000
0800	643.0420	Traffic Control Barricades Type III	DAY	2,000.000	2,000.000
0810	643.0705	Traffic Control Warning Lights Type A	DAY	4,000.000	4,000.000
0820	643.0715	Traffic Control Warning Lights Type C	DAY	2,800.000	2,800.000
0830	643.0800	Traffic Control Arrow Boards	DAY	400.000	400.000
0840	643.0900	Traffic Control Signs	DAY	7,800.000	7,800.000
0850	643.0920	Traffic Control Covering Signs Type II	EACH	1.000	1.000
0860	643.1000	Traffic Control Signs Fixed Message	SF	240.000	240.000
0870	643.1050	Traffic Control Signs PCMS	DAY	400.000	400.000
0880	645.0120	Geotextile Fabric Type HR	SY	120.000	120.000
0890	646.0106	Pavement Marking Epoxy 4-Inch	LF	5,900.000	5,900.000
0900	648.0100	Locating No-Passing Zones	MI	0.390	0.390
0910	649.0400	Temporary Pavement Marking Removable Tape 4-Inch	LF	400.000	400.000

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DATE 14SEP15		E S T I M A T E O F Q U A N T I T I E S			
LINE					1021-01-73
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0920	649.0506	Temporary Pavement Marking Removable Mask-Out Tape 6-Inch	LF	400.000	400.000
0930	650.4500	Construction Staking Subgrade	LF	2,250.000	2,250.000
0940	650.5000	Construction Staking Base	LF	2,250.000	2,250.000
0950	650.6000	Construction Staking Pipe Culverts	EACH	4.000	4.000
0960	650.6500	Construction Staking Structure Layout (structure) 01. B-55-261	LS	1.000	1.000
0970	650.9910	Construction Staking Supplemental Control (project) 01. 1021-01-73	LS	1.000	1.000
0980	650.9920	Construction Staking Slope Stakes	LF	4,500.000	4,500.000
0990	690.0150	Sawing Asphalt	LF	384.000	384.000
1000	715.0502	Incentive Strength Concrete Structures	DOL	3,180.000	3,180.000
1010	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	630.000	630.000
1020	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	2,000.000	2,000.000
1030	SPV.0045	Special 01. Portable Changeable Message Signs Remote Control	DAY	400.000	400.000
1040	SPV.0090	Special 01. Fence Chain Link Polymer Coated 6-Ft	LF	475.000	475.000
1050	SPV.0090	Special 02. Salvage And Reinstall Steel Thire Beam And Bull Nose Terminal	LF	475.000	475.000
1060	SPV.0195	Special 01. Asphaltic Surface Special	TON	1,600.000	1,600.000

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CLEARING AND GRUBBING

CATEGORY	STATION TO	STATION	LOCATION	CLEARING 201.0105 STA	GRUBBING 201.0205 STA	REMARKS
0010	7+50	- 9+50	55TH, RT	2	2	
0010	43+50	- 44+50	200TH, LT	1	1	
0010	50+25	- 51+25	200TH, RT & LT	1	1	
0010	53+00	- 57+00	200TH, RT & LT	4	4	
TOTAL 0010				8	8	

REMOVING SMALL PIPE CULVERTS

CATEGORY	STATION	LOCATION	203.0100 EACH	REMARKS
0010	44+90	200TH STREET	1	CPCS 36X98'
0010	45+42	200TH STREET	1	CPCS 60"X98'
0010	50+40	200TH STREET	1	CPCS 36"X112'
0010	58+43	200TH STREET	1	CPCS 24"X48'
TOTAL 0010			4	

REMOVING ASPHALTIC SURFACE

NOTE: ASPHALTIC PAVEMENT BETWEEN STA 42+00 TO 43+50 AND 59+00 TO 60+50 IS INCLUDED IN COMMON EXCAVATION BID ITEM.

CATEGORY	STATION TO	STATION	LOCATION	204.0110 SY	REMARKS
0010	43+50	- 48+66	200TH STREET	1265	
0010	50+60	- 59+00	200TH STREET	2055	
0010		PROJECT	IH 94 EB & WB	120	3' AT CONCRETE BARRIER
TOTAL 0010				3440	

REMOVING CONCRETE BARRIER

CATEGORY	STATION TO	STATION	LOCATION	204.0157 LF	REMARKS
0010	946+61	- 948+21	I 94, WB	160	INCLUDE GUTTER & FOOTING
0010	945+00	- 946+80	I 94, EB	180	INCLUDE GUTTER & FOOTING
TOTAL 0010				340	

REMOVING FENCE

CATEGORY	STATION TO	STATION	LOCATION	204.0170 LF	REMARKS
0010	47+25	- 48+63	200TH STREET, LT	160	NE QUAD
0010	47+48	- 48+69	200TH STREET, RT	160	NW QUAD
0010	50+56	- 51+00	200TH STREET, LT	110	SE QUAD
0010	50+62	- 51+25	200TH STREET, RT	130	SW QUAD
0010	51+00	- 58+50	200TH STREET, LT	1200	SE R/W
TOTAL 0010				1760	

REMOVING SURFACE DRAINS

CATEGORY	STATION TO	STATION	LOCATION	204.0190 EACH	REMARKS
0010	4850	- 4865	200TH STREET, RT & LT	2	
TOTAL 0010				2	

REMOVING INLETS				
CATEGORY	STATION	LOCATION	204.0220 EACH	REMARKS
0010	48+53	200TH STREET, RT & LT	2	
TOTAL 0010			2	

FINISHING ROADWAY (01. 1021-01-73)				
CATEGORY	STATION TO	STATION	213.0100 EACH	REMARKS
0010	PROJECT	200TH ST & IH 94	1	ENTIRE PROJECT
TOTAL 0010			1	

EARTHWORK SUMMARY TABLE

FILL FACTOR = 1.3

GROUP CODE	STATION	TO	STATION	LOCATION	205.0100 EXCAVATION COMMON CY	(1) ASPHALTIC PAVEMENT CY	(2) USEABLE MATERIAL CY	EXPANDED FILL CY	208.0100 BORROW EXCAVATION CY	(3) SUITABLE WASTE CY	(4) UNSUITABLE WASTE CY	(5) EXCAVATION BELOW SUBGRADE CY
010	42+00	-	48+46	200TH STREET	156	32	124	9518	9394	0	0	0
010	50+83.5	-	60+50	200TH STREET	158	32	126	11319	11193	0	0	0
010	6+00	-	9+23.1	55TH AVE	151	0	151	2301	2150	0	0	0
010	9+23.4	-	10+17.5	55TH AVE, LT	3	0	3	868	865	0	0	0
010	9+22.7	-	10+06.4	55TH AVE, RT	1	0	1	671	670	0	0	0
010	945+75	-	947+75	IH 94 EB	238	0	238	96	0	142	0	0
010	946+50	-	947+50	IH 94 WB	157	0	157	80	0	77	0	0
Total					865				24275			

- (1) ASPHALTIC PAVEMENT IS NOT INCLUDED IN THE QUANTITY OF EXCAVATION COMMON (EXCEPT STA 42+00 TO 43+50 AND 59+00 TO 60+50). ASPHALTIC PAVEMENT IS PAID FOR AS REMOVING ASPHALTIC SURFACE.
- (2) USEABLE MATERIAL = EXCAVATION COMMON - EBS - SALVAGED ASPHALT
- (3) SUITABLE WASTE IS SURPLUS MATERIAL SUITABLE FOR USE AS FILL THAT IS BEYOND THE VOLUME NEEDED FOR THE PROJECT.
- (4) UNSUITABLE WASTE = EBS
- (5) EXCAVATION BELOW SUBGRADE IS NOT USED TO BALANCE EARTHWORK. QUANTITY IS INCLUDED AND PAID FOR IN THE ITEM OF EXCAVATION COMMON.

BASE AGGREGATE DENSE						
CATEGORY	STATION TO	STATION	LOCATION	BASE AGGREGATE DENSE 3/4-INCH 305.0110	BASE AGGREGATE DENSE 1 1/4-INCH 305.0120	REMARKS
				TON	TON	
0010	42+00 -	48+46	200TH STREET	180	2020	SHOULDER + LANE
0010	46+00 -	48+46	200TH STREET	80	85	BEAM GUARD
0010	6+00 -	9+50	55TH AVE	50	670	SHOULDER + LANE
0010	50+83 -	60+50	200TH STREET	270	3025	SHOULDER + LANE
0010	50+83 -	53+05	200TH STREET	70	80	BEAM GUARD
0010	42+00 -	60+50	200TH STREET	50	120	DRIVEWAY & FIELD ENTRANCE
0010		PROJECT	IH 94 EB & WB	80	-	OUTSIDE SHOULDERS UNDER BRIDGE
TOTAL 0010				780	6000	

TACK COAT					
CATEGORY	STATION TO	STATION	LOCATION	455.0605 GAL	REMARKS
0010	42+00 -	48+66	200TH STREET	82	
0010	50+60 -	60+50	200TH STREET	121	
TOTAL 0010				203	

ASPHALTIC FLUMES				
CATEGORY	STATION	LOCATION	465.0315 SY	REMARKS
0010	48+38	200TH STREET	30	LT & RT
TOTAL 0010			30	

AEW FOR CULVERT PIPE									
CATEGORY	STATION TO	STATION	LOCATION	APRON ENDWALLS FOR CULVERT PIPE 24-INCH 521.1024 EACH	APRON ENDWALLS FOR CULVERT PIPE 36-INCH 521.1036 EACH	APRON ENDWALLS FOR CULVERT PIPE 60-INCH 521.1060 EACH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH 522.1030 EACH	REMARKS	
0010		58+43	200TH STREET	2	-	-	-		
0010		44+90	200TH STREET	-	2	-	-		
0010		45+50	200TH STREET	-	-	2	-		
0010	946+00 -	947+50	IH 94 EB	-	-	-	2	RT	
TOTAL 0010				2	2	2	2		

CULVERT PIPE									
MINIMUM STEEL PIPE THICKNESS:									
DIAMETER		THICKNESS		CULVERT PIPE REINFORCED CONCRETE CLASS III 30-INCH 522.0130 LF	CULVERT PIPE CORRUGATED STEEL ALUMINUM COATED 24-INCH 529.0124 LF	CULVERT PIPE CORRUGATED STEEL ALUMINUM COATED 36-INCH 529.0136 LF	CULVERT PIPE CORRUGATED STEEL ALUMINUM COATED 60-INCH 529.0160 LF	REMARKS	
24-INCH	0.064-INCH								
36-INCH	0.079-INCH								
60-INCH	0.138-INCH								
0010	946+00 -	947+50	I-94 EB	136	-	-	-	RT	
0010		58+43	200TH STREET	-	60	-	-		
0010		44+92	200TH STREET	-	-	141	-		
0010		45+61	200TH STREET	-	-	-	116		
TOTAL 0010				136	60	141	116		

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CONCRETE BARRIER

CATEGORY	STATION	LOCATION	CONCRETE BARRIER TEMPORARY PRECAST DELIVERED 603.8000	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED 603.8125	REMARKS
			LF	LF	
0010	PROJECT	I-94 EB	275	275	MEDIAN SHLD CLOSURE
0010	PROJECT	I-94 WB	275	275	MEDIAN SHLD CLOSURE
TOTAL 0010			550	550	

RIPRAP MEDIUM

CATEGORY	STATION	LOCATION	606.0200	REMARKS
			CY	
0010	946+00	I-94 EB, RT	15	AEW
0010	45+40	200TH STREET, LT	15	AEW
0010	45+50	200TH STREET, LT	15	AEW
0010	48+38	200TH STREET, LT	15	FLUME
0010	48+38	200TH STREET, RT	15	FLUME
0010	58+43	200TH STREET, LT	15	AEW
TOTAL 0010			90	

MGS GUARDRAIL

CATEGORY	STATION	TO	STATION	LOCATION	MGS GUARDRAIL 3 614.2300	MGS THRIE BEAM TRANSITION 614.2500	MGS GUARDRAIL TERMINAL EAT 614.2610	REMARKS
					LF	LF	EACH	
0010	47+00	-	48+42	200TH STREET, LT	50	39	1	
0010	47+00	-	48+42	200TH STREET, RT	50	39	1	
0010	50+83	-	52+00	200TH STREET, LT	25	39	1	
0010	50+83	-	52+00	200TH STREET, RT	25	39	1	
TOTAL 0010					150	156	4	

CRASH CUSHIONS TEMPORARY

CATEGORY	STATION	LOCATION	614.0905	REMARKS
			EACH	
0010	PROJECT	I-94 EB	1	
0010	PROJECT	I-94 WB	1	
TOTAL 0010			2	

SALVAGED RAIL

CATEGORY	STATION	TO	STATION	LOCATION	614.0920	REMARKS
					LF	
0010	45+28	-	48+64	200TH STREET	336	LT
0010	45+76	-	48+64	200TH STREET	288	RT
0010	50+56	-	53+81	200TH STREET	325	LT
0010	50+56	-	53+93	200TH STREET	337	RT
0010	948+21	-	949+31	I-94 WB	110	LT
0010	945+95	-	946+80	I-94 EB	85	RT
TOTAL 0010					1481	

FENCE WOVEN WIRE (01. 4.0 FT)

CATEGORY	STATION	TO	STATION	LOCATION	616.0100	REMARKS
					LF	
0010	47+25	-	48+63	200TH STREET, LT	160	NE QUAD
0010	47+48	-	48+69	200TH STREET, RT	160	NW QUAD
0010	50+56	-	51+00	200TH STREET, LT	110	SE QUAD
0010	50+62	-	51+25	200TH STREET, RT	130	SW QUAD
0010	51+00	-	58+50	200TH STREET, LT	1200	SE R/W
TOTAL 0010					1760	

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MAINTENANCE AND REPAIR OF HAUL ROADS (01. 1021-01-73)

MOBILIZATION

CATEGORY	STATION TO STATION	LOCATION	618.0100 EACH	REMARKS
0010	42+00 - 60+50	200TH STREET	1	ENTIRE PROJECT
TOTAL 0010			1	

CATEGORY	STATION	LOCATION	619.1000 EACH	REMARKS
0010	PROJECT	200TH STREET	0.40	ROADWAY
TOTAL 0010			0.40	
0020	PROJECT	200TH STREET	0.60	STRUCTURE
TOTAL 0020			0.60	

WATER

CATEGORY	STATION TO STATION	LOCATION	624.0100 MGAL	REMARKS
0010	42+00 - 60+50	PROJECT	50	BASE AGG / DUST CONTRL
TOTAL 0010			50	

SILT FENCE

CATEGORY	STATION TO STATION	LOCATION	SILT FENCE 628.1504 LF	SILT FENCE MAINTENANCE 628.1520 LF	REMARKS
0010	41+00 - 49+00	55TH & 200TH	1900	1900	OUTSIDE INTERCEPT
0010	50+25 - 60+50	200TH STREET	2000	2000	OUTSIDE INTERCEPT
TOTAL 0010			3900	3900	

RESTORATION

CATEGORY	STATION TO STATION	LOCATION	SALVAGED TOPSOIL 625.0500 SY	MULCHING 627.0200 SY	EROSION MAT CLASS II TYPE B 628.2023 SY	FERTILIZER TYPE B 629.0210 CWT	SEEDING MIXTURE NO. 20 630.0120 LB	SEEDING TEMPORARY 630.0200 LB	SEEDING BORROW PIT 630.0300 LB	REMARKS
0010	41+00 - 49+00	55TH & 200TH	11200	8640	2560	7.1	202	303	-	SLOPES
0010	50+25 - 60+50	200TH STREET	10000	7910	2090	6.3	180	270	-	SLOPES
0010	945+60 - 947+80	I-94	1330	1330	-	0.9	24	36	-	MEDIAN
0010		UNDISTRIBUTED	-	-	500	-	-	-	400	DIRECT BY ENGINEER
TOTAL 0010			22530	17880	5150	14.3	406	609	400	

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MOBILIZATION EROSION

CATEGORY	STATION	LOCATION	MOBILIZATION EROSION CONTROL 628.1905	MOBILIZATION EMERGENCY EROSION CONTROL 628.1910	REMARKS
			EACH	EACH	
0010	PROJECT	200TH STREET	3	3	
TOTAL 0010			3	3	

TEMPORARY DITCH CHECKS

CATEGORY	STATION	TO	STATION	LOCATION	628.7504 LF	REMARKS
0010			8+00	55TH AVE	24	LT & RT
0010	44+00	-	52+00	200TH STREET	96	
TOTAL 0010					120	

INLET PROTECTION TYPE A

CATEGORY	STATION	LOCATION	628.7005 EACH	REMARKS
0010	945+00	I-94	1	MEDIAN
TOTAL 0010			1	

ROCK BAGS

CATEGORY	STATION	LOCATION	628.7570 EACH	REMARKS
0010	58+43	200TH STREET	3	RT
0010	946+00	IH 94	5	RT
0010	44+50	200TH STREET	7	RT
0010	45+70	200TH STREET	13	RT
TOTAL 0010			28	

PERMANENT SIGNING

NOTE: SIGN REMOVALS ARE INCLUDED UNDER SIMILAIR SIGN GROUP NUMBER.
I BEAMS FOR TYPE I SIGNS ARE TYPE B.

APPROX. STATION LOCATION	SIGN GROUP NUMBER	SIGN CODE	SIGN MESSAGE	SIGN SIZE W x H (INCHES)	637.1220 SIGNS TYPE 1	637.2230 SIGNS TYPE II	635.0200 SIGN SUPPORTS STRUCT. STEEL	636.0100 SIGN SUPPORTS CONCRETE	636.0500 SIGH SUPPORTS STEEL	634.0814 POST TUBULAR STEEL	638.2601 REMOVING SIGNS	638.2602 REMOVING SIGNS	638.3000 REMOVING SMALL SIGN	638.3100 REMOVING STRUCT. STEEL
					REFLECTIVE SH	REFLECTIVE F	HIGH-STRENGTH	MASONRY	REINFORCEMENT	2X2-INCH X 14-FT	TYPE I	TYPE II	SUPPORT	SIGN SUPPORTS
					SF	SF	LB	CY	LB	EACH	EACH	EACH	EACH	EACH
48+45, LT	1	W5-52L	CLEARANCE STRIPER DOWN RIGHT	12 x 36	-	3.00	-	-	-	1	-	1	1	-
48+45, RT	2	W5-52R	CLEARANCE STRIPER DOWN LEFT	12 x 36	-	3.00	-	-	-	1	-	1	1	-
50+84, LT	3	W5-52R	CLEARANCE STRIPER DOWN LEFT	12 x 36	-	3.00	-	-	-	1	-	1	1	-
50+84, RT	4	W5-52L	CLEARANCE STRIPER DOWN RIGHT	12 x 36	-	3.00	-	-	-	1	-	1	1	-
945+75, RT	5	E1-1A	63 BALDWIN ELLSWORTH 3/4 MILE	192 x 162	216.00	-	677	1.6	98	-	1	-	-	1
945+75, RT	6	E1-5	EXIT 19	108 x 30	22.50	-	-	-	-	-	1	-	-	-
PROJECT TOTALS					238.50	12.00	677	1.6	98	4	2	4	4	1

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MARKERS CULVERT END

CATEGORY	STATION TO	STATION	LOCATION	633.5200 EACH	REMARKS
0010	946+00 -	947+36	I-94 EB, RT	2	
0010	44+92		200TH STREET, RT & LT	2	
0010	45+61		200TH STREET, RT & LT	2	
0010	58+43		200TH STREET, RT & LT	2	
TOTAL 0010				8	

FIELD OFFICE TYPE C

CATEGORY	STATION	LOCATION	642.5201 EACH	REMARKS
0010	PROJECT	200TH STREET	1	
TOTAL 0010			1	

GEOTEXTILE FABRIC TYPE HR

CATEGORY	STATION TO	STATION	LOCATION	645.0120 SY	REMARKS
0010		946+00	I-94 EB	20	END CULVERT
0010	44+92 -	58+43	200TH STREET	60	END CULVERT
0010		48+38	200TH STREET	40	ASPHALT FLUMES
TOTAL 0010				120	

LOCATING NO-PASSING ZONES

CATEGORY	STATION TO	STATION	LOCATION	648.0100 MI	REMARKS
0010	40+00 -	61+00	200TH STREET	0.39	
TOTAL 0010				0.39	

TRAFFIC CONTROL DEVICES

CATEGORY	STATION	LOCATION	TRAFFIC CONTROL (01. 1021-01-73) 643.0100 EACH	TRAFFIC CONTROL DRUMS 643.0300 DAY	TRAFFIC CONTROL BARRICADES TYPE III 643.0420 DAY	TRAFFIC CONTROL WARNING LIGHTS TYPE A 643.0705 DAY	TRAFFIC CONTROL WARNING LIGHTS TYPE C 643.0715 DAY	TRAFFIC CONTROL ARROW BOARDS 643.0800 DAY	TRAFFIC CONTROL SIGNS 643.0900 DAY	TRAFFIC CONTROL COVERING SIGNS TYPE II 643.0920 EACH	TRAFFIC CONTROL SIGNS FIXED MESSAGE 643.1000 SF	TRAFFIC CONTROL SIGNS PCMS 643.1050 DAY	PORTABLE CHANGEABLE MESSAGE SIGNS REMOTE CONTROL SPV.0045.01 DAY	REMARKS
0010	PROJECT	IH 94 / 200TH ST	1	-	-	-	-	-	2900	1	240	-	-	100 DAYS
0010	PROJECT	IH 94 EB & WB	-	11400	400	800	2800	400	3200	-	-	400	400	100 DAYS
0010	PROJECT	200TH ST	-	-	1600	3200	-	-	1700	-	-	-	-	100 DAYS
TOTAL 0010			1	11400	2000	4000	2800	400	7800	1	240	400	400	

PAVEMENT MARKING

NOTE:
INSTALL TEMPORARY PAVEMENT MARKING REMOVABLE
TAPE 4-INCH AS NEEDED FOR TRAFFIC CONTROL.

				PAVEMENT MARKING EPOXY 4-INCH 646.0106	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH 649.0400	TEMPORARY PAVEMENT MARKING REMOVABLE MASK-OUT TAPE 6-INCH 649.0506	REMARKS
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	
0010	42+00	-	60+50	200TH STREET	1900	-	WHITE EDGE LINE
0010	42+00	-	60+50	200TH STREET	1900	-	YELLOW EDGE LINE
0010	42+00	-	60+50	200TH STREET	250	-	DASH YELLOW
0010	42+00	-	60+50	200TH STREET	1850	-	NO PASSING ZONE
0010			PROJECT	I-94 EB & WB	-	400	UNDISTRIBUTED
TOTAL 0010					5900	400	

SAWING ASPHALT

					690.0150	
CATEGORY	STATION	TO	STATION	LOCATION	LF	REMARKS
0010			42+00	200TH STREET	22	MAINLINE
0010			60+50	200TH STREET	22	MAINLINE
0010	946+61	-	948+21	IH 94, WB	160	3' SHLD
0010	945+00	-	946+80	IH 94, EB	180	3' SHLD
TOTAL 0010					384	

02. SALVAGE AND REINSTALL STEEL THRIE BEAM AND BULL NOSE TERMINAL

				SPV.0090.02	REMARKS
CATEGORY	STATION	TO	STATION	LOCATION	
0010	945+68	-	947+98	IH 94	MEDIAN
TOTAL 0010				475	

01. ASPHALTIC SURFACE SPECIAL

					SPV.0195.01		
CATEGORY	STATION	TO	STATION	LOCATION	TON	REMARKS	
0010	42+00	-	48+46	200TH STREET	550	MAINLINE	
0010	50+83	-	60+50	200TH STREET	820	MAINLINE	
0010	6+00	-	8+73	55TH AVE	110	55TH AVE	
0010	8+73	-	9+85	55TH AVE	100	TAPER AREA	
0010				IH 94 EB & WB	20	WIDENNING	AT CONCRETE BARRIER
TOTAL 0010					1600		

CONSTRUCTION STAKING

				CONSTRUCTION STAKING SUBGRADE 650.4500	CONSTRUCTION STAKING BASE 650.5000	CONSTRUCTION STAKING PIPE CULVERTS 650.6000	CONSTRUCTION STAKING STRUCTURE LAYOUT (01. B-55-261) 650.6500	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (01. 1021-01-73) 650.9910	CONSTRUCTION STAKING SLOPE STAKES 650.9920	REMARKS
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	EACH	LS	LS	
0010	42+00	-	60+50	200TH STREET	1850	1850	-	-	-	3700
0010	6+00	-	10+00	55TH AVE	400	400	-	-	-	800
0010	946+00	-	947+50	I-94 EB	-	-	1	-	-	-
0010			44+92	200TH STREET	-	-	1	-	-	-
0010			45+61	200TH STREET	-	-	1	-	-	-
0010			58+43	200TH STREET	-	-	1	-	-	-
0010			PROJECT	200TH ST & IH 94	-	-	-	1	1	-
TOTAL 0010					2250	2250	4	1	1	4500

TRANSPORTATION PROJECT PLAT NO: 1021-01-23-4.01

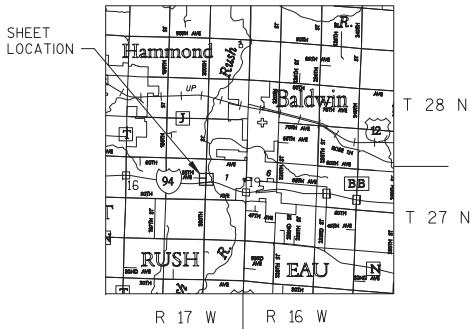
PART OF THE SE 1/4 OF THE NE 1/4 AND THE NE 1/4 OF THE SE 1/4, SECTION 2, TOWNSHIP 28 NORTH, RANGE 17 WEST, TOWN OF RUSH RIVER, ST. CROIX COUNTY, WISCONSIN.

RELOCATION ORDER IH 94 HUDSON-BALDWIN (200TH STREET BRIDGE B-55-0261)

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

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.09 AND 84.30, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:
1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

LOCATION SKETCH
NOT TO SCALE



NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY COORDINATES, ST. CROIX COUNTY, NAD83 (1991), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

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

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

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS" OF PUBLIC RECORD.

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINES.

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

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

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

PARCEL IDENTIFICATION NUMBERS MAY NOT POINT TO ALL AREAS OF ACQUISITION, AS NOTED ON THE SCHEDULE OF LANDS & INTERESTS REQUIRED.

EXISTING ACCESS CONTROL ALONG IH 94 HAS BEEN ESTABLISHED FROM PREVIOUS PROJECT I-94-1 (2) 0

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE: I-94-1 (2) 0

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 DEPARTMENT

PARCEL NUMBER	OWNER (S)	INTEREST REQUIRED	R/W ACRES REQUIRED			PLE ACRES	TLE ACRES
			NEW	EXISTING	TOTAL		
1	NICKOLAS P. HANSEN, TRUSTEE OF ALLEN AND DELORES HANSEN IRREVOCABLE FAMILY TRUST	FEE	0.13	-	0.13	-	-
2	JSK FAMILY TRUST	FEE	0.23	-	0.23	-	-

COURSE TABLE (TRAVERSE)				COURSE TABLE (SEGMENT)			
FROM	TO	DIRECTION	DISTANCE	FROM	TO	DIRECTION	DISTANCE
28	151	S00°29'27"E	204.26'	29	150	S00°25'06"E	2266.15'
151	107	S89°30'33"W	100.11'	151	35	S00°29'27"E	2419.16'
107	106	N00°29'24"W	162.62'	29	28	S00°25'06"E	2622.37'
106	104	N81°08'26"W	253.32'	28	35	S00°29'27"E	2623.41'
104	103	N00°34'12"W	66.00'				
103	102	N81°08'06"E	278.25'				
102	101	N00°25'06"W	250.36'				
101	100	N89°34'54"E	42.00'				
100	150	N89°34'54"E	33.00'				
150	28	S00°25'06"E	356.31'				

UTILITY INTERESTS REQUIRED		
UTILITY NUMBER	OWNER (S)	INTEREST REQUIRED
50	NORTHERN STATES POWER COMPANY d/b/a XCEL ENERGY	RELEASE OF RIGHTS
52	ST. CROIX ELECTRIC COOPERATIVE	RELEASE OF RIGHTS

PI STA= 955+77.91
Y = 329942.823
X = 605563.393
Δ = 24°09'54"
D = 1°31'37"
T = 803.24'
L = 1582.59'
R = 3752.36'

CONVENTIONAL UTILITY SYMBOLS

WATER
GAS
TELEPHONE
OVERHEAD
TRANSMISSION LINES
ELECTRIC
CABLE TELEVISION
FIBER OPTIC
SANITARY SEWER
STORM SEWER

CONVENTIONAL ABBREVIATIONS

ACCESS RIGHTS	AR	POINT OF COMPOUND CURVE	PCC
ACRES	AC	POINT OF INTERSECTION	PI
AHEAD	AH	PROPERTY LINE	PL
ALUMINUM	ALUM	RECORDED AS	(100')
AND OTHERS	ET AL	REFERENCE LINE	R/L
BACK	BK	REMAINING	REM
BLOCK	BLK	RIGHT	RT
CENTERLINE	C/L	RIGHT OF WAY	R/W
CERTIFIED SURVEY MAP	CSM	SECTION	SEC
CONCRETE	CONC	SEPTIC VENT	SEPV
COUNTY	CO	SQUARE FEET	SF
COUNTY TRUNK HIGHWAY	CTH	STATE TRUNK HIGHWAY	STH
DISTANCE	DIST	STATION	STA
CORNER	COR	SUBDIVISION	SUBD
DOCUMENT NUMBER	DOC	TANGENT	TAN
EASEMENT	EASE	TELEPHONE PEDESTAL	TP
EXISTING	EX	TEMPORARY LIMITED	TLE
GAS VALVE	GV	EASEMENT	E
GRID NORTH	GN	TRANSPORTATION PROJECT	TPP
HIGHWAY EASEMENT	HE	PLAT	PL
IDENTIFICATION	ID	UNITED STATES HIGHWAY	USH
LAND CONTRACT	LC	VOLUME	V
LEFT	LT		
MONUMENT	MON		
NATIONAL GEODETIC SURVEY	NOS		
NUMBER	NO	LONG CHORD	LC
OUTLOT	OL	LONG CHORD BEARING	LCB
PAGE	P	RADIUS	R
POINT OF TANGENCY	PT	DEGREE OF CURVE	D
PERMANENT LIMITED EASEMENT	PLE	CENTRAL ANGLE OR DELTA	Δ
POINT OF BEGINNING	POB	LENGTH OF CURVE	L
POINT OF CURVATURE	PC	TANGENT	T
		DIRECTION AHEAD	DA
		DIRECTION BACK	DB

CONVENTIONAL SYMBOLS

SECTION LINE	---	SECTION CORNER	⊙	R/W MONUMENT	●
QUARTER LINE	---			NON-MONUMENTED	○
SIXTEENTH LINE	---			R/W POINT	IP
NEW REFERENCE LINE	---	NOTATION FOR COMBUSTIBLE FLUIDS	⚠	FOUND IRON PIN	IP
NEW R/W LINE	---			VALVE (GAS, WATER, ETC.)	⊙ (TYPE)
EXISTING R/W LINE	---	NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES	⚡	SIGN	⊙ (TYPE)
PROPERTY LINE	---			OFF-PREMISE SIGN	⊙ (TYPE)
LOT, TIE & OTHER MINOR LINES	---			COMPENSABLE	⊙ (TYPE)
CORPORATE LIMITS	---			NON-COMPENSABLE	⊙ (TYPE)
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC.)	---	ELECTRIC POLE	⊙		
FEE ACQUISITION AREA (WATCHING VARIES BY OWNER)	---	TELEPHONE POLE	⊙		
TEMPORARY LIMITED EASEMENT AREA	---	PEDESTAL (LABEL TYPED) (TV, TEL, ELEC, ETC.)	⊙		
EASEMENT AREA (HIGHWAY, PERMANENT LIMITED, OR RESTRICTED DEVELOPMENT)	---			ACCESS CONTROLLED BY ACQUISITION	⊙
TRANSMISSION STRUCTURES	---			NO ACCESS (BY STATUTORY AUTHORITY)	⊙
BUILDING	---			ACCESS RESTRICTED BY PREVIOUS PROJECT OR CONTROL	⊙
NATIONAL GEODETIC SURVEY MONUMENT	---				
SIXTEENTH CORNER MONUMENT	---				

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

I, CHRISTINA MARTIN, PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF SECTION 84.095 OF THE WISCONSIN STATUTES AND UNDER THE DIRECTION OF THE DEPARTMENT OF TRANSPORTATION, I HAVE MAPPED THIS TRANSPORTATION PROJECT PLAT AND THAT SUCH PLAT CORRECTLY REPRESENTS ALL EXTERIOR BOUNDARIES OF THE SURVEYED LAND.

SIGNATURE: *Christina Martin* DATE: 1/15/15

PRINT NAME: CHRISTINA MARTIN
REGISTRATION NUMBER: S-2807

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION
NW REGION - EAU CLAIRE

SIGNATURE: _____ DATE: 1/15/15

PRINT NAME: MICHAEL PILLER



TRANSPORTATION PROJECT PLAT NO: 1021-01-23-4.02

PART OF THE SE 1/4 OF THE SE 1/4 AND THE NE 1/4 OF THE SE 1/4, SECTION 2, PART OF THE SW 1/4 OF THE SW 1/4 AND THE NW 1/4 OF THE SW 1/4, SECTION 1 TOWNSHIP 28 NORTH, RANGE 17 WEST, TOWN OF RUSH RIVER, ST. CROIX COUNTY, WISCONSIN.

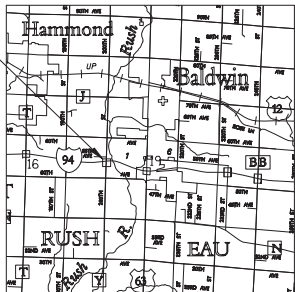
RELOCATION ORDER IH 94 HUDSON-BALDWIN (200TH STREET BRIDGE B-55-0261)

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

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.09 AND 84.30, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:
1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
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BASIS OF EXISTING R/W	YEAR
WISDOT RW PLAT I-94-1 (2) O	1987
CSM 705	1978
WISDOT RW PLAT 1023-1-21	1969

LOCATION SKETCH
NOT TO SCALE



NE-SE
SEC 2-28-17W

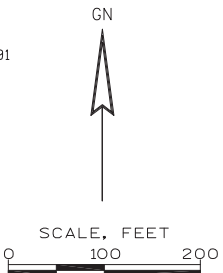
TOWN OF RUSH RIVER

SCHEDULE OF LANDS & INTERESTS REQUIRED

PARCEL NUMBER	OWNER (S)	INTEREST REQUIRED	R/W ACRES REQUIRED			PLE ACRES	TLE ACRES
			NEW	EXISTING	TOTAL		
4	DANIEL O. SCHULZE	FEE	0.08	-	0.08	-	-
5	LYLE J. NIPPOLDT AS TRUSTEE OF THE LYLE J. NIPPOLDT REVOCABLE TRUST	FEE	0.09	-	0.09	-	-
6	BURT H. RIVARD AND GARY ALLEN VIZENOR CO-TRUSTEES OF THE TRUST	FEE,TLE	0.28	-	0.28	-	0.04
7	JON-DE FARM, INC.	FEE,TLE	0.05	-	0.05	-	0.02

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

PI STA= 955+77.91
Y = 329942.823
X = 605563.393
Δ = 24°09'54"
D = 1°31'37"
T = 803.24'
L = 1582.59'
R = 3752.36'



CONVENTIONAL UTILITY SYMBOLS

WATER	—W—
GAS	—G—
TELEPHONE	—T—
OVERHEAD	—OH—
TRANSMISSION LINES	—E—
ELECTRIC	—TV—
CABLE TELEVISION	—FO—
FIBER OPTIC	—SAN—
SANITARY SEWER	—SS—

CONVENTIONAL ABBREVIATIONS

ACCESS RIGHTS	AR	POINT OF COMPOUND CURVE	PCC
ACRES	AC	POINT OF INTERSECTION	PI
AHEAD	AH	PROPERTY LINE	PL
ALUMINUM	ALUM	RECORDED AS	R/L
AND OTHERS	ET AL	REFERENCE LINE	RE
BACK	BK	REMAINING	RM
BLOCK	BLK	RIGHT OF WAY	R/W
CENTERLINE	C/L	SECTION	SEC
CERTIFIED SURVEY MAP	CSM	SEPTIC VENT	SEPV
CONCRETE	CONC	SQUARE FEET	SF
COUNTY	CO	STATE TRUNK HIGHWAY	STH
COUNTY TRUNK HIGHWAY	CTH	STATION	STA
DISTANCE	DIST	SUBDIVISION	SUBD
CORNER	COR	TANGENT	TAN
DOCUMENT NUMBER	DOC	TELEPHONE PEDESTAL	TP
EASEMENT	EASE	TEMPORARY LIMITED	TLE
EXISTING	EX	EASEMENT	EASE
GAS VALVE	GV	TRANSPORTATION PROJECT	TPP
GRID NORTH	GN	PLAT	PLAT
HIGHWAY EASEMENT	HE	UNITED STATES HIGHWAY	USH
IDENTIFICATION	ID	VOLUME	V
LAND CONTRACT	LC		
LEFT	LT		
MONUMENT	MON		
NATIONAL GEODETIC SURVEY	NGS		
NUMBER	NO	LONG CHORD	LC
OUTLOT	OL	LONG CHORD BEARING	LCB
PAGE	P	RADIUS	R
POINT OF TANGENCY	PT	DEGREE OF CURVE	D
PERMANENT LIMITED	PLE	CENTRAL ANGLE OR DELTA	Δ
EASEMENT	EASE	LENGTH OF CURVE	L
POINT OF BEGINNING	POB	TANGENT	T
POINT OF CURVATURE	PC	DIRECTION AHEAD	DA
		DIRECTION BACK	DB

CURVE DATA

CONVENTIONAL SYMBOLS

SECTION LINE	---	SECTION CORNER	⊙	R/W MONUMENT	•
QUARTER LINE	---	NOTATION FOR COMBUSTIBLE FLUIDS	⚠	NON-MONUMENTED	○
SIXTEENTH LINE	---	NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES	⚡	R/W POINT	IP
NEW REFERENCE LINE	---	LOT, TIE & OTHER MINOR LINES	---	FOUND IRON PIN	IP
NEW R/W LINE	---	CORPORATE LIMITS	---	VALVE (GAS, WATER, ETC.)	⊙ (TYPE)
EXISTING R/W LINE	---	UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC.)	---	SIGN	⊙ (TYPE)
PROPERTY LINE	---	FEE ACQUISITION AREA (WATCHING VARIES BY OWNER)	---	OFF-PREMISE SIGN	⊙ (TYPE)
TEMPORARY LIMITED EASEMENT AREA	---	TEMPORARY LIMITED EASEMENT AREA (HIGHWAY, PERMANENT LIMITED, OR RESTRICTED DEVELOPMENT)	---	COMPENSABLE	⊙ (TYPE)
EASEMENT AREA	---	TRANSMISSION STRUCTURES	---	NON-COMPENSABLE	⊙ (TYPE)
EASEMENT AREA (HIGHWAY, PERMANENT LIMITED, OR RESTRICTED DEVELOPMENT)	---	BUILDING	---	ACCESS CONTROLLED BY ACQUISITION	---
TRANSMISSION STRUCTURES	---	NATIONAL GEODETIC SURVEY MONUMENT	⊙	NO ACCESS (BY STATUTORY AUTHORITY)	---
BUILDING	---	SIXTEENTH CORNER MONUMENT	⊙	ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)	---

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

I, CHRISTINA MARTIN, PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF SECTION 84.095 OF THE WISCONSIN STATUTES AND UNDER THE DIRECTION OF THE DEPARTMENT OF TRANSPORTATION, I HAVE MAPPED THIS TRANSPORTATION PROJECT PLAT AND THAT SUCH PLAT CORRECTLY REPRESENTS ALL EXTERIOR BOUNDARIES OF THE SURVEYED LAND.

SIGNATURE: *Christina Martin* DATE: 1/15/15
PRINT NAME: CHRISTINA MARTIN
REGISTRATION NUMBER: S-2807
THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION
NW REGION - EAU CLAIRE
SIGNATURE: _____ DATE: 1/15/15
PRINT NAME: MICHAEL PILLER

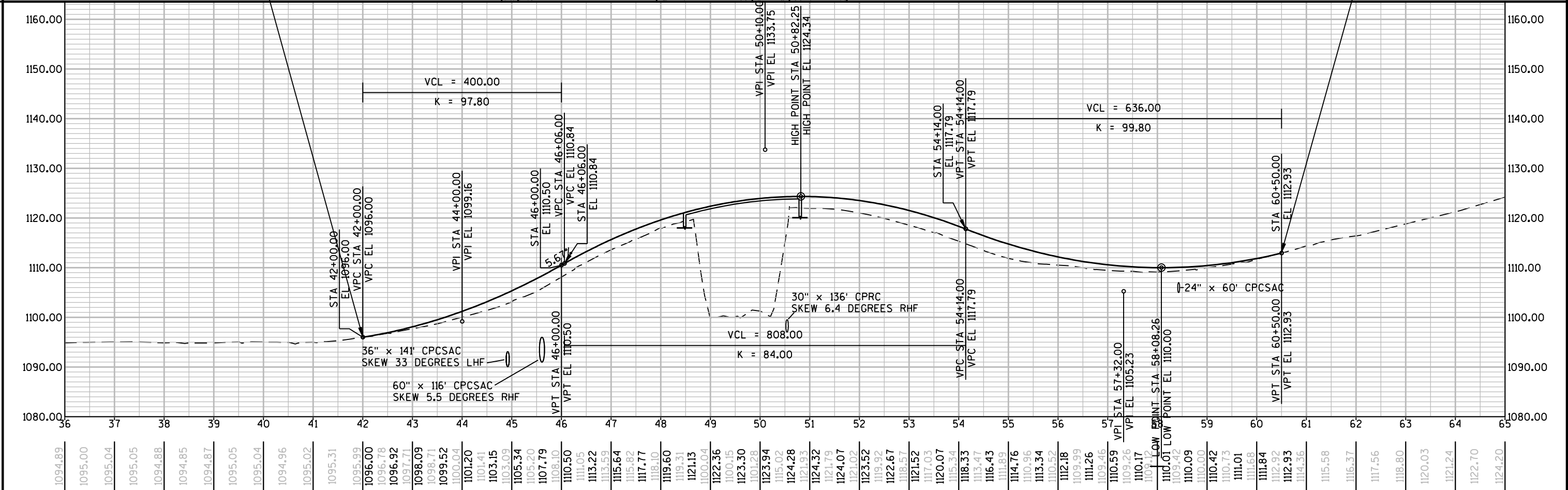
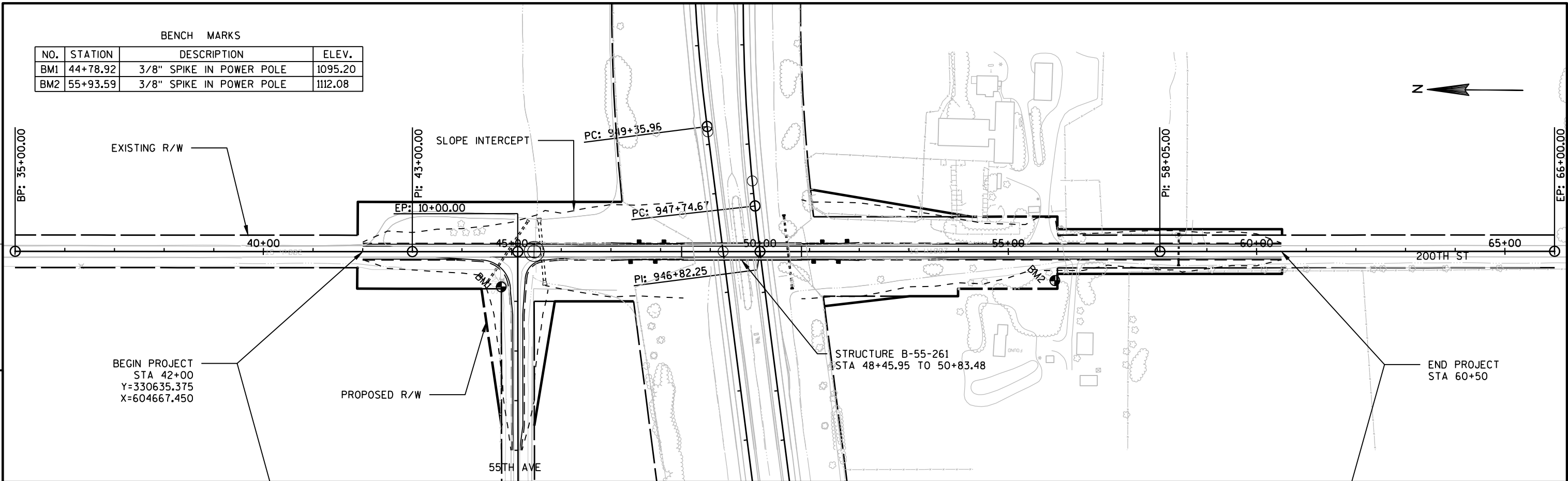


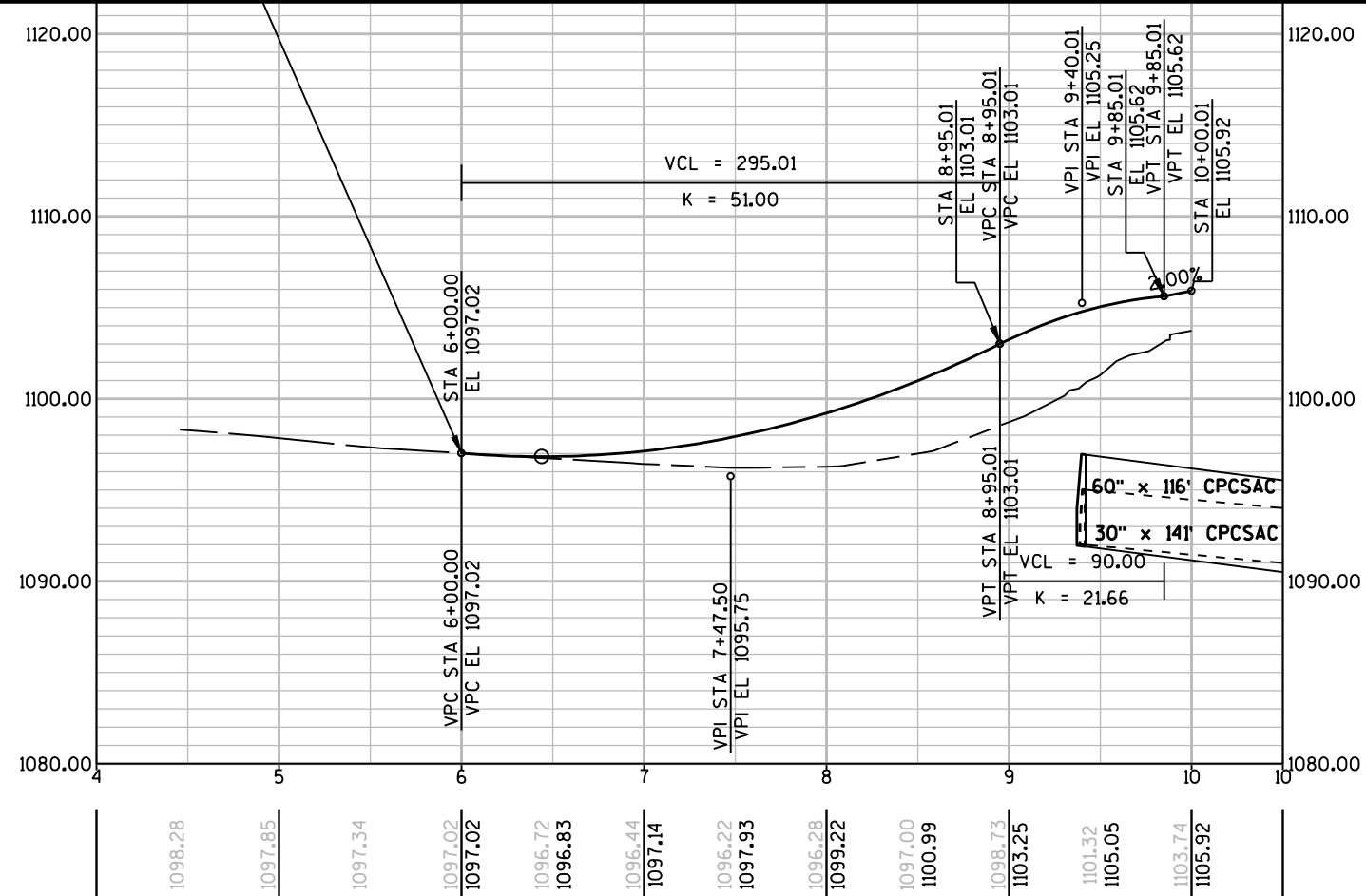
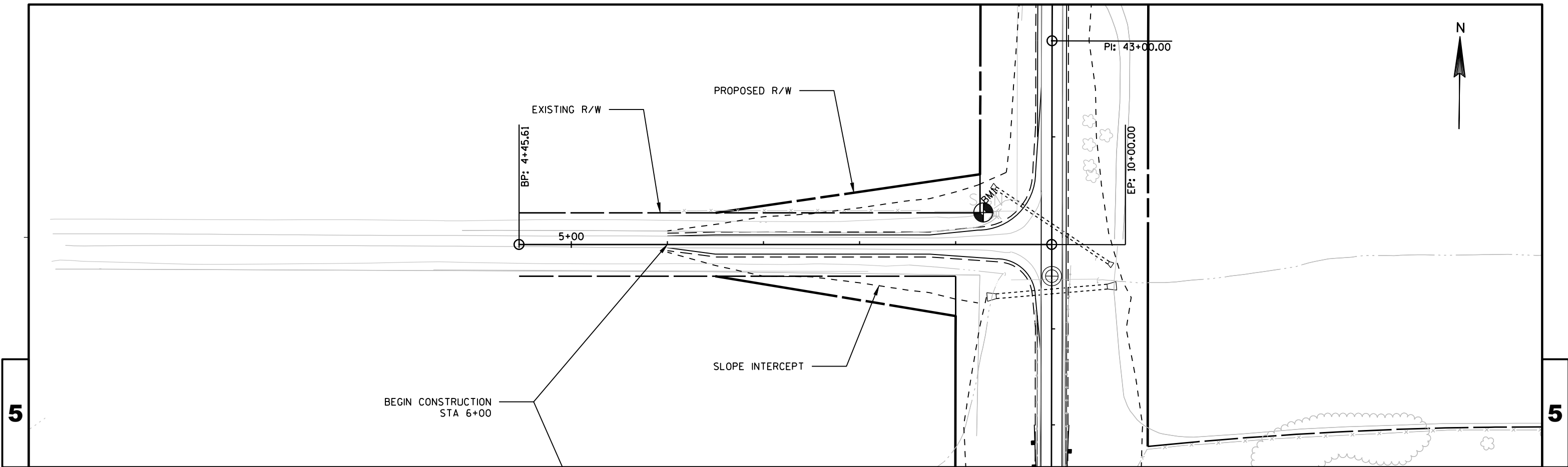
UTILITY INTERESTS REQUIRED		
UTILITY NUMBER	OWNER (S)	INTEREST REQUIRED
50	NORTHERN STATES POWER COMPANY D/B/A XCEL ENERGY, INC.	RELEASE OF RIGHTS
51	BALDWIN TELECOM INC.	RELEASE OF RIGHTS
52	ST. CROIX ELECTRIC COOPERATIVE	RELEASE OF RIGHTS

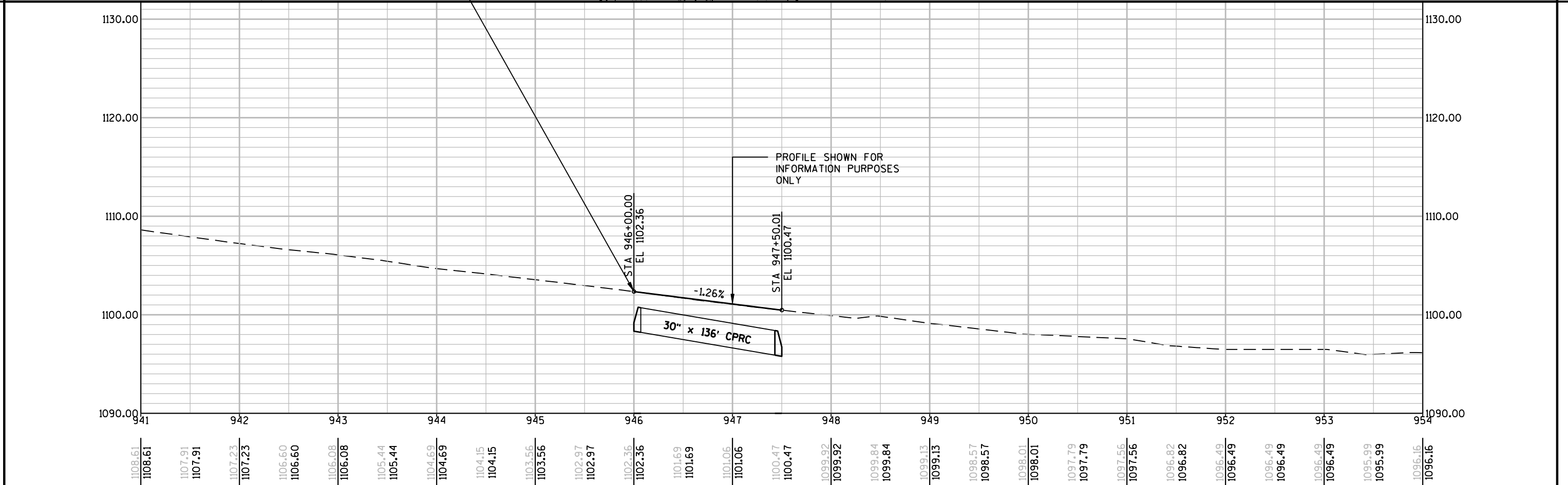
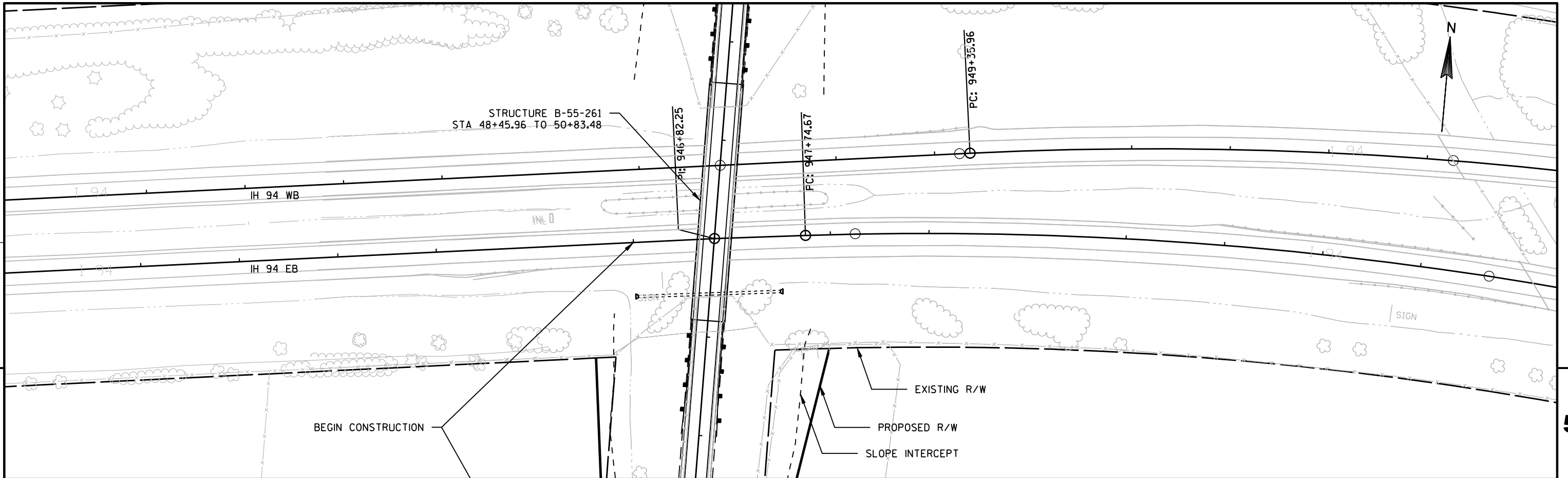
RECOVERED MONUMENTS			
POINT	Y	X	DESCRIPTION
1408	329707.41	604585.22	3/4" REBAR
1409	329436.08	604587.82	3/4" REBAR

EASEMENT TABLE		
OWNER	RECORDING INFORMATION	PARCEL
D&S DAIRY FACILITY, LLC	V. 1522 P. 197-200 DOC #625478	7
AGSTAR FINANCIAL SERVICES	DOC #862304	
AGSTAR FINANCIAL SERVICES	DOC #877878	
ST. CROIX ELECTRIC COOPERATIVE	DOC #193395A	4
NORTHERN STATES POWER COMPANY	DOC #254261	
RALPH W. OLSON	V. 415 P. 82-83	
LYLE J. NIPPOLDT	V. 509 P. 361 DOC #321198	

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
BM1	44+78.92	3/8" SPIKE IN POWER POLE	1095.20
BM2	55+93.59	3/8" SPIKE IN POWER POLE	1112.08







NOTES:
REMOVE EXISTING FENCE WITHIN R/W LIMITS.
CLEARING AND GRUBBING WITHIN GRADING LIMITS.
MAINTAIN ACCESS TO DRIVEWAYS DURING CONSTRUCTION.



PROPOSED R/W

(1) REMOVE SMALL PIPE CULVERT
(1) 36" x 141' CPCMAC (SKEW 33 DEGREES LHF)
(2) 36" AEW REQ'D
(2) MARKERS CULVERT END REQ'D
STA 44+92
(SEE X-SECTIONS)

(1) REMOVE SMALL PIPE CULVERT
(1) 60" x 116' CPCMAC (SKEW 5.5 DEGREES RHF)
(2) 60" AEW REQ'D
(2) MARKERS CULVERT END REQ'D
STA 45+61
(SEE X-SECTIONS)

MATCH EXIST
STA 42+00
(SAW CUT)

RESTORE FIELD ENTRANCE
TO EXISTING CONDITIONS
STA 42+30

PI: 43+00.00

EP: 10+00.00

200TH STREET

BALDWIN TELECOM

50TH AVE

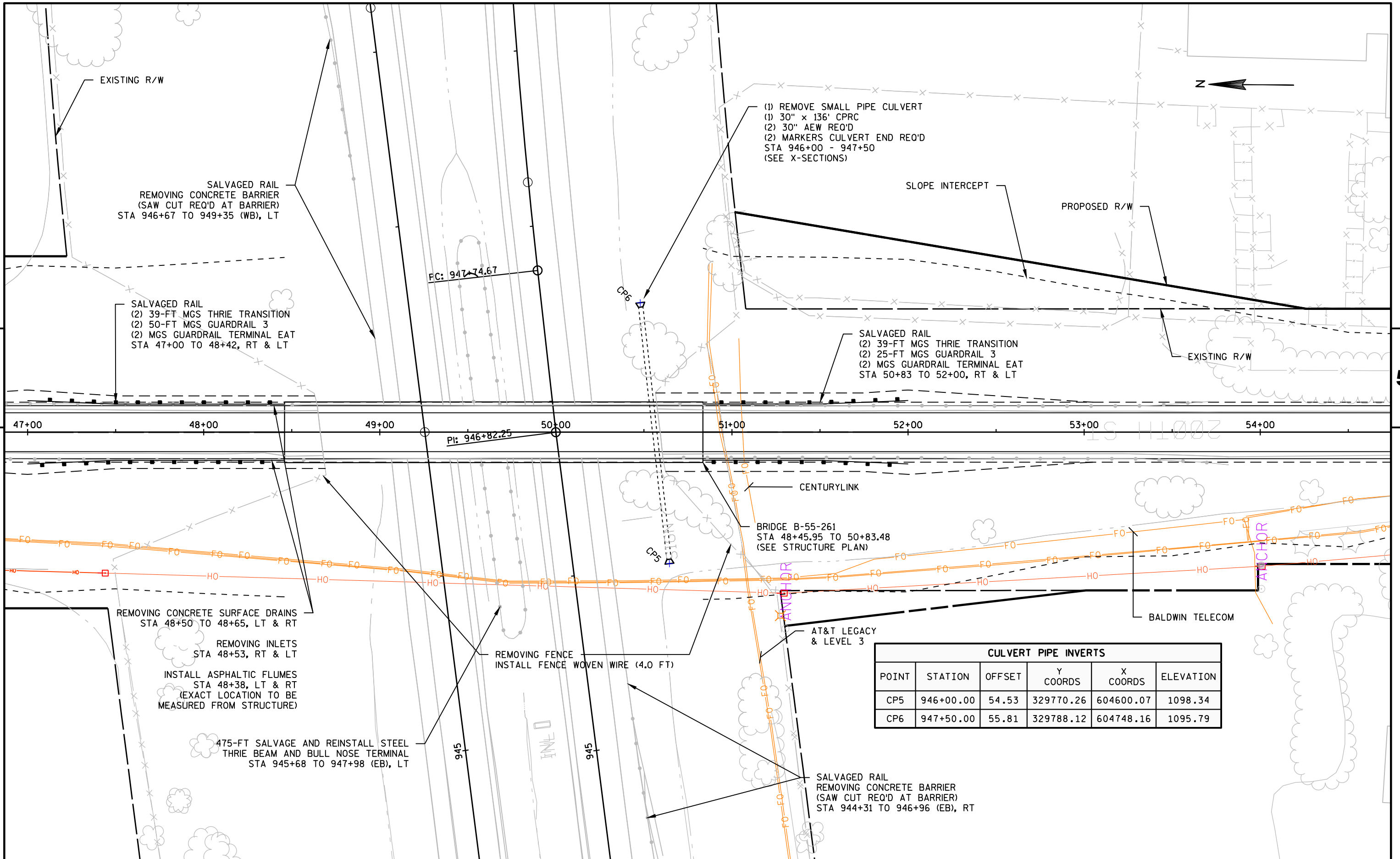
SLOPE INTERCEPT

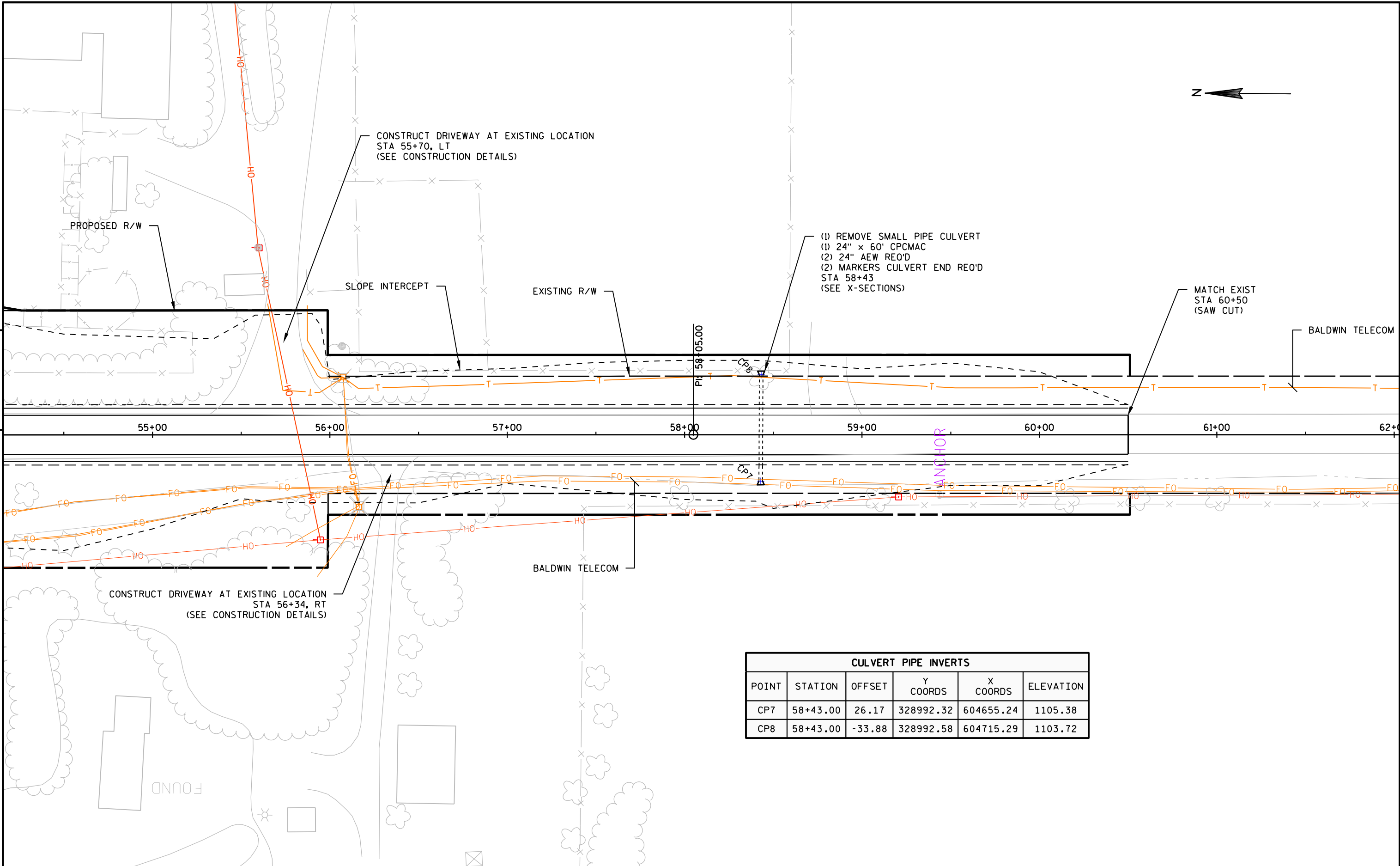
CULVERT PIPE INVERTS					
POINT	STATION	OFFSET	Y COORDS	X COORDS	ELEVATION
CP1	44+53.37	58.38	330381.51	604611.15	1092.00
CP2	45+31.18	-59.21	330304.72	604729.40	1090.70
CP3	45+66.07	57.78	330268.83	604612.72	1091.90
CP4	45+55.93	-57.78	330279.95	604728.18	1090.40

RADIUS POINTS					
POINT	STATION	OFFSET	Y COORDS	X COORDS	RADIUS
R1	44+37.15	77.00	330397.58	604592.39	60
R2	45+67.12	57.00	330267.78	604613.50	40

EXISTING R/W

PROPOSED R/W



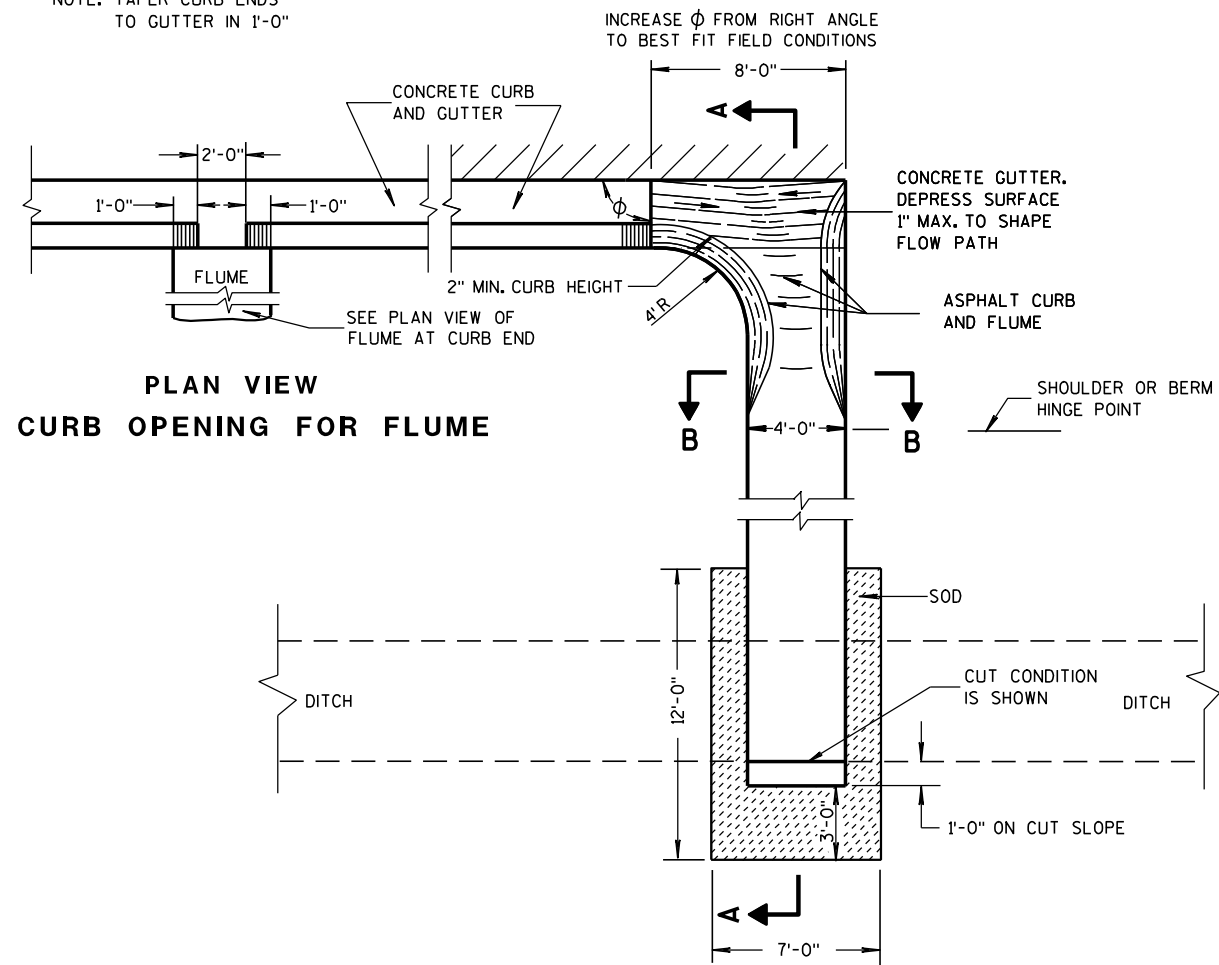


Standard Detail Drawing List

08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
12A03-10	NAME PLATE (STRUCTURES)
14B07-14A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-01A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
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)
14B45-03E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15B01-08A	FENCE WOVEN WIRE
15B01-08B	FENCE WOVEN WIRE
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C03-02	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C06-07	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
15D12-05B	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
15D27-02	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D38-01A	TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS
15D38-01B	ATTACHMENT OF SIGNS TO POSTS

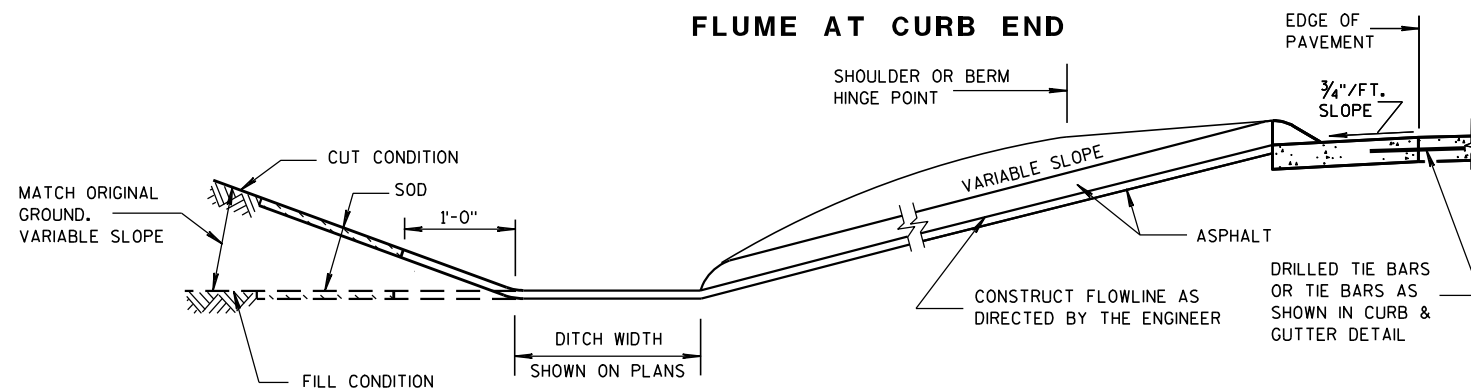
ASPHALTIC FLUME

NOTE: TAPER CURB ENDS
TO GUTTER IN 1'-0"

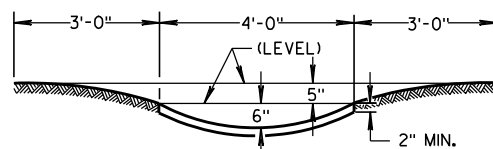


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

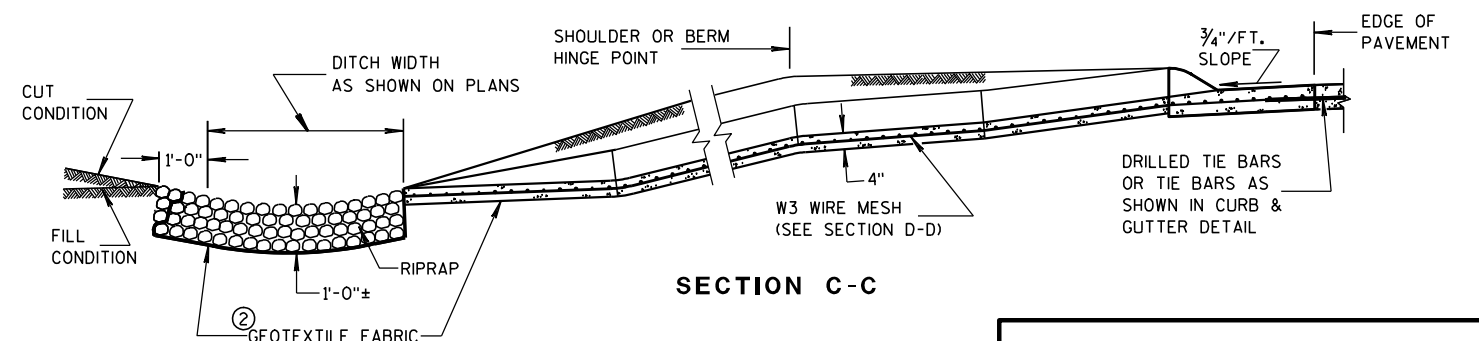
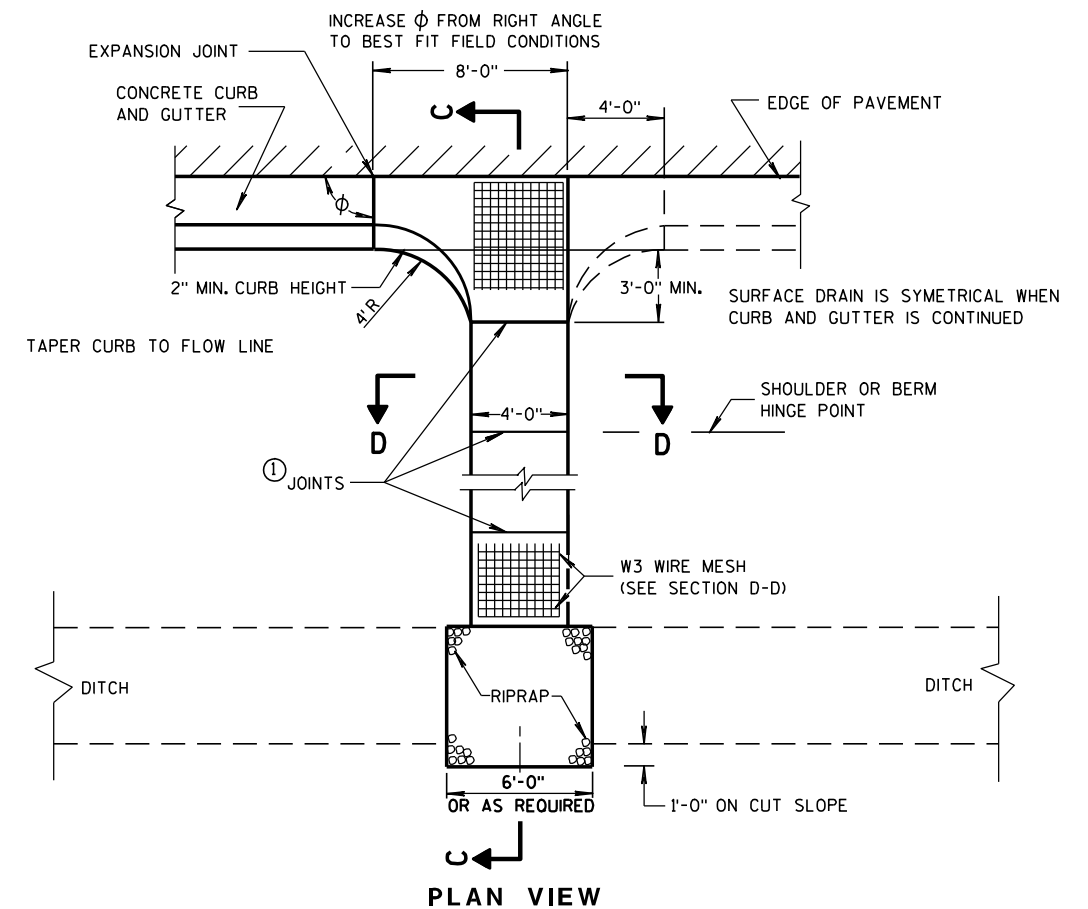
GENERAL NOTES

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

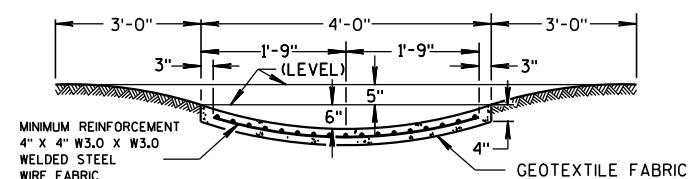
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

- ① JOINTS SHALL BE 1/8" TO 1/4" INCH WIDE BY 1 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

③ CONCRETE SURFACE DRAIN



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9-4-08

DATE

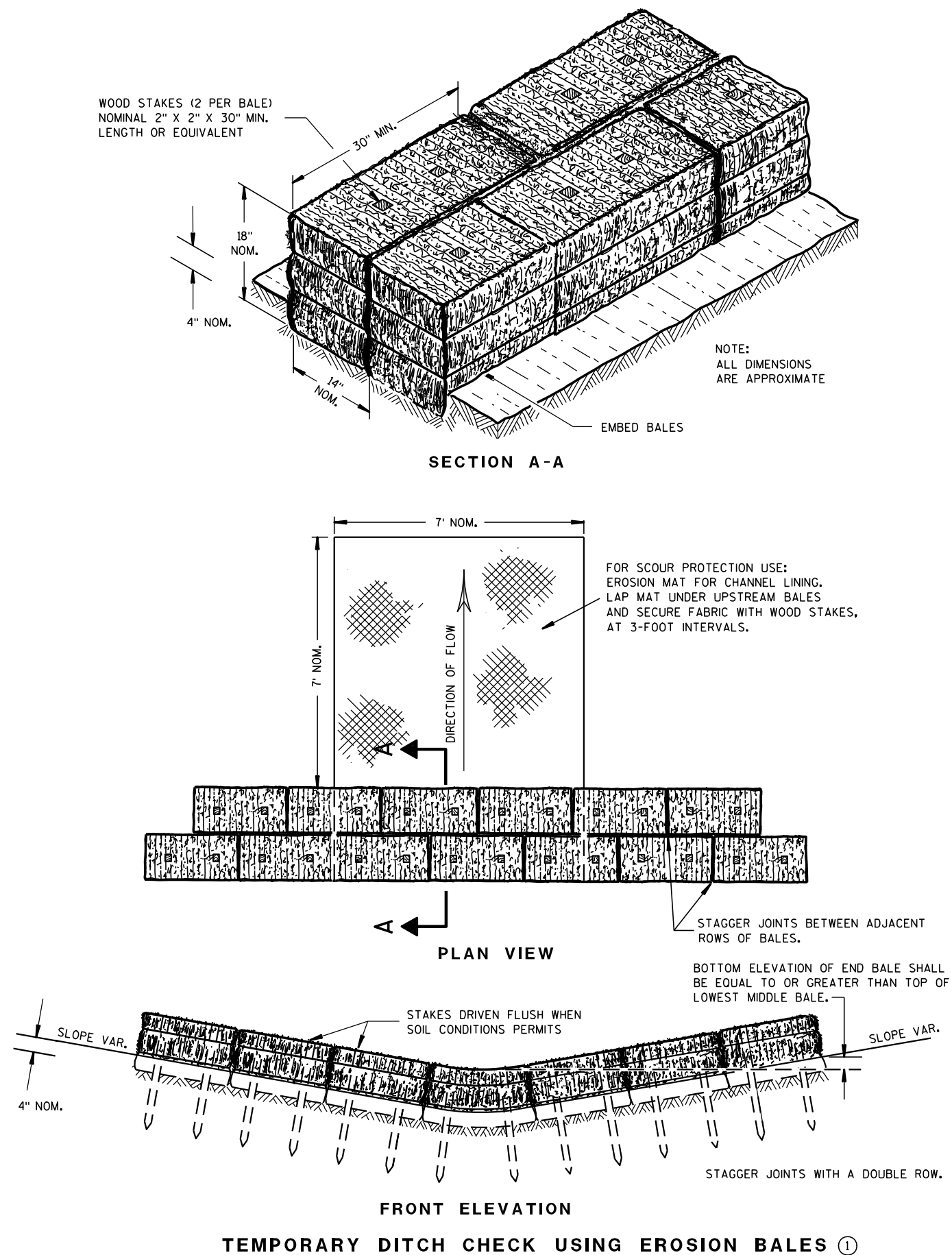
FHWA

/S/ Jerry H. 7000

ROADWAY STANDARDS 41

ENGINEER

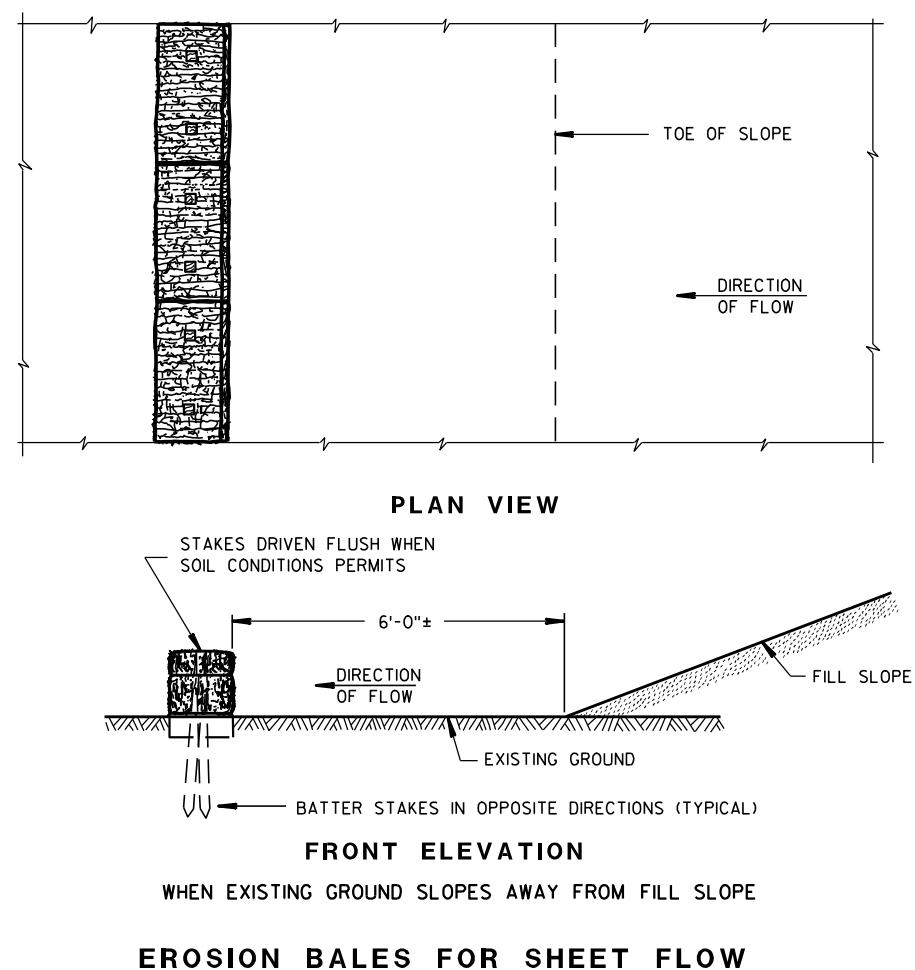
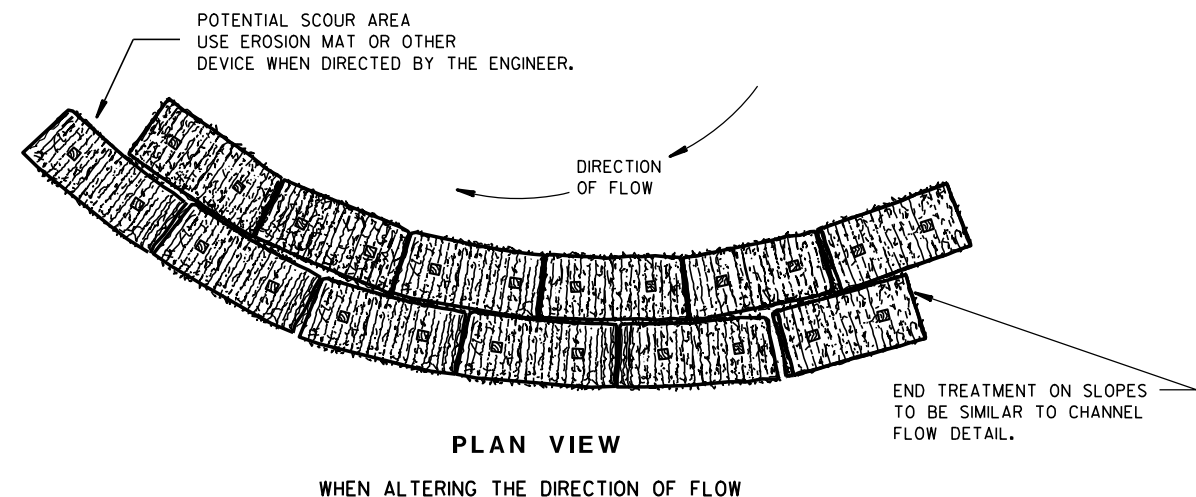
MENT



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 Conn-----
CHIEF ROADWAY DEVELOPER 42 ENGINEER

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.

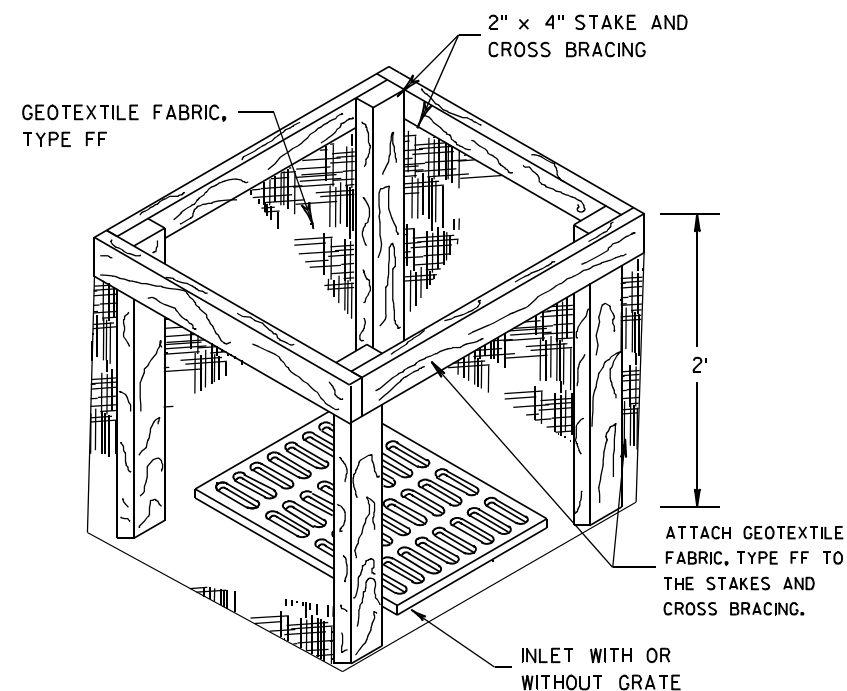
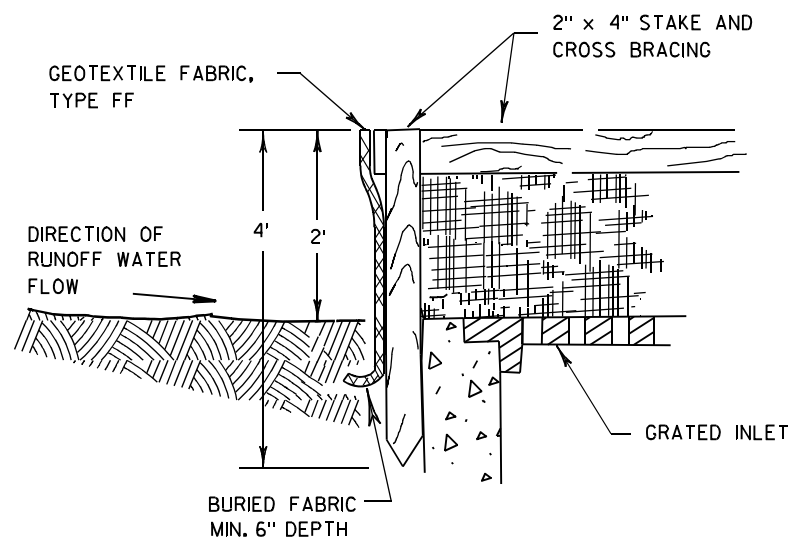


SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05
DATE /S/ Beth Connolly
CHIEF ROADWAY DEVELOPMENT 43 INCH

FHWA



INLET PROTECTION, TYPE A

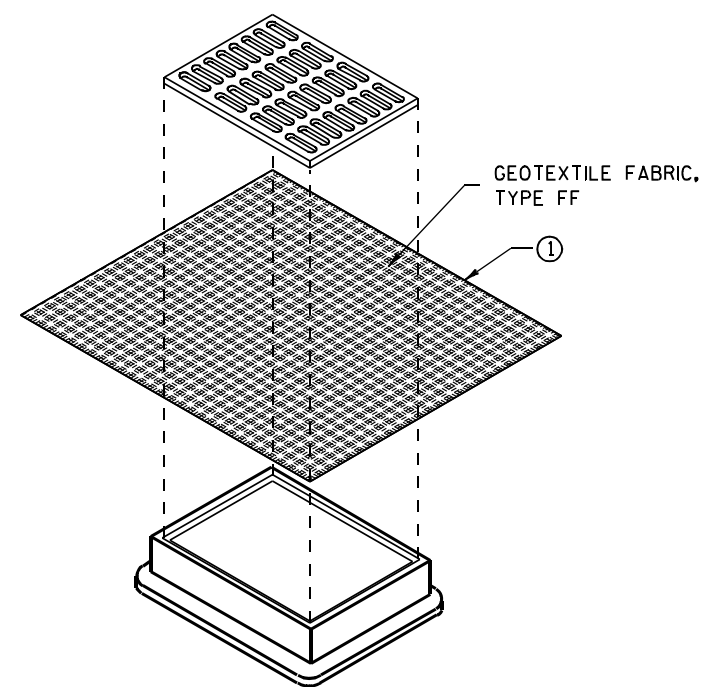
GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

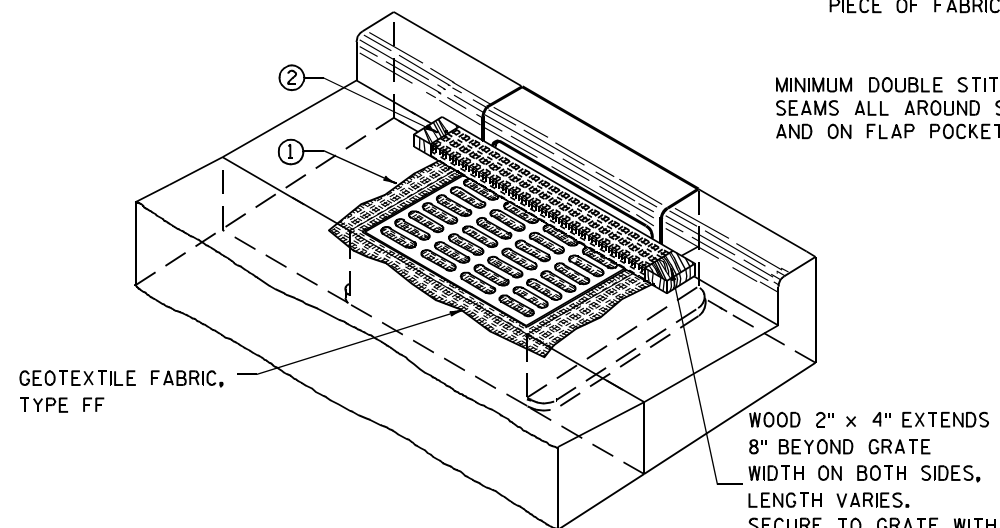
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



**INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)**

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

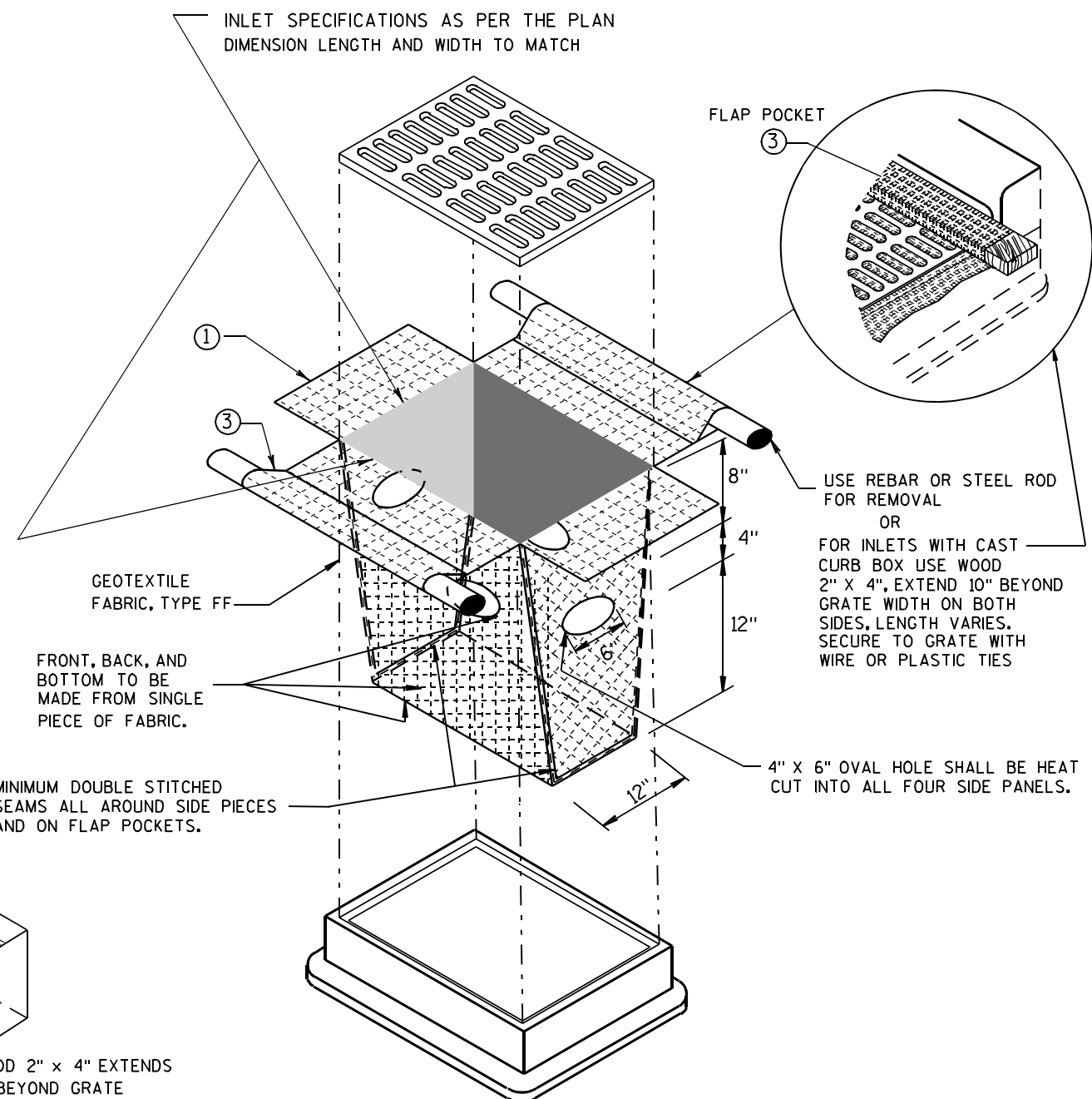
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLower THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.



INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

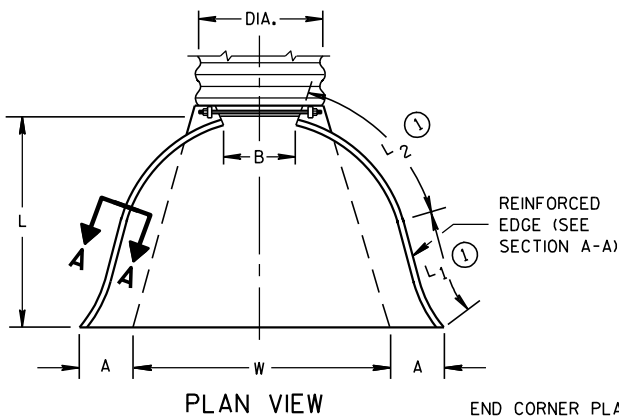
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connolly
DATE 44
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER

METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE		BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")			
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1		1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1		1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1		1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1		1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1		1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1		1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1		2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1		2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1		3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 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	1 1/2 to 1		3 Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1		3 Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1		3 Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1		3 Pc.

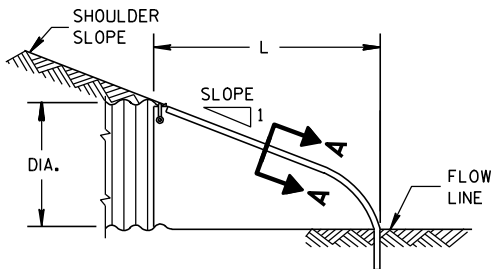
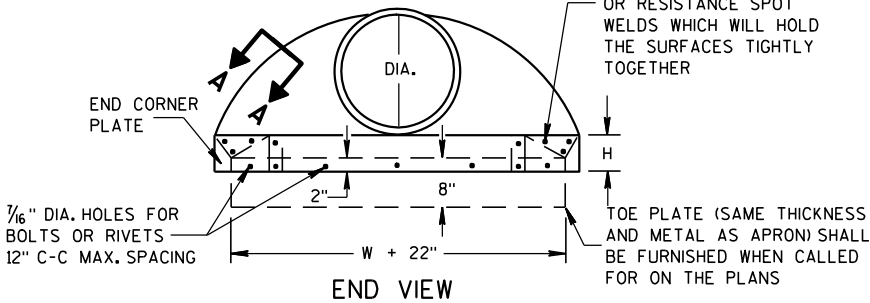
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



REINFORCED
EDGE (SEE
SECTION A-A)

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

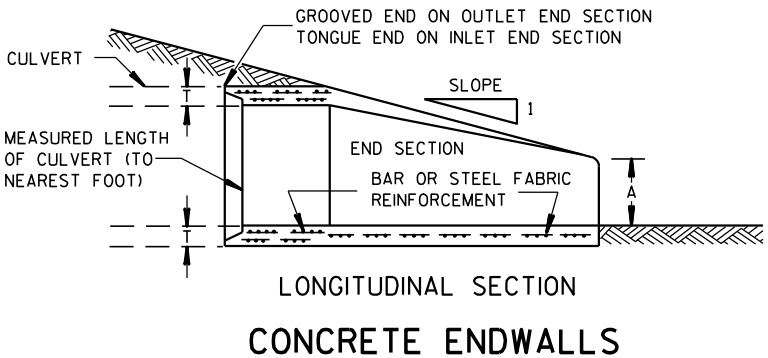
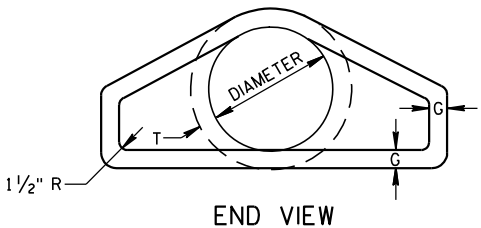
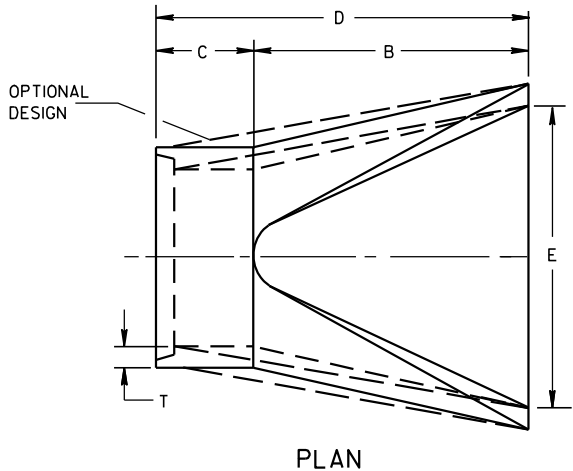
TOE PLATE (SAME THICKNESS
AND METAL AS APRON) SHALL
BE FURNISHED WHEN CALLED
FOR ON THE PLANS



SIDE ELEVATION
METAL ENDWALLS

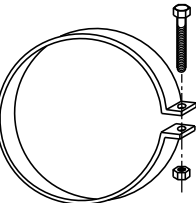
REINFORCED CONCRETE APRON ENDWALLS												
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE				
	T	A	B	C	D	E	G					
12	2	4	24	48 7/8	72 7/8	24	2	3 to 1				
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1				
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1				
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1				
24	3	9 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 2/5 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

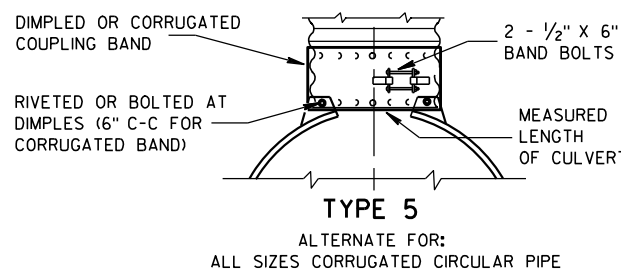
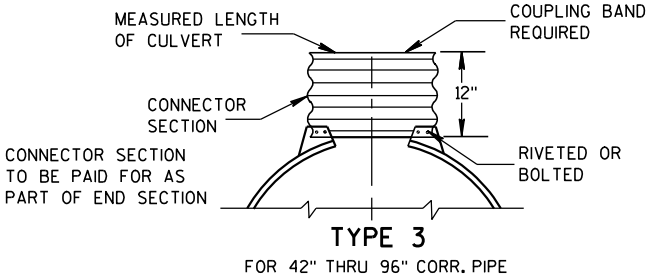
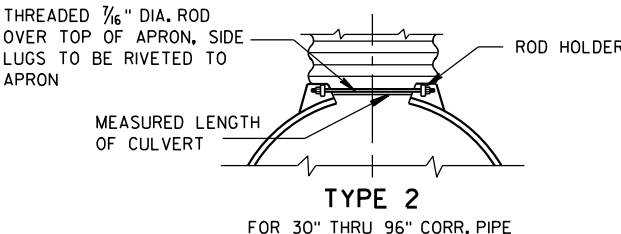
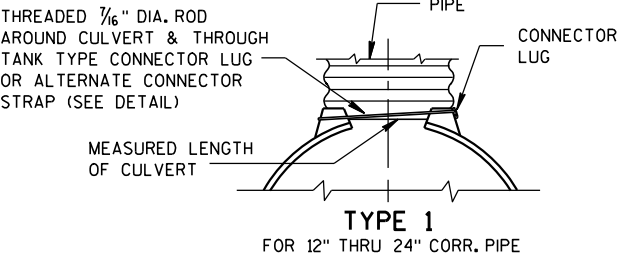


LONGITUDINAL SECTION
CONCRETE ENDWALLS

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



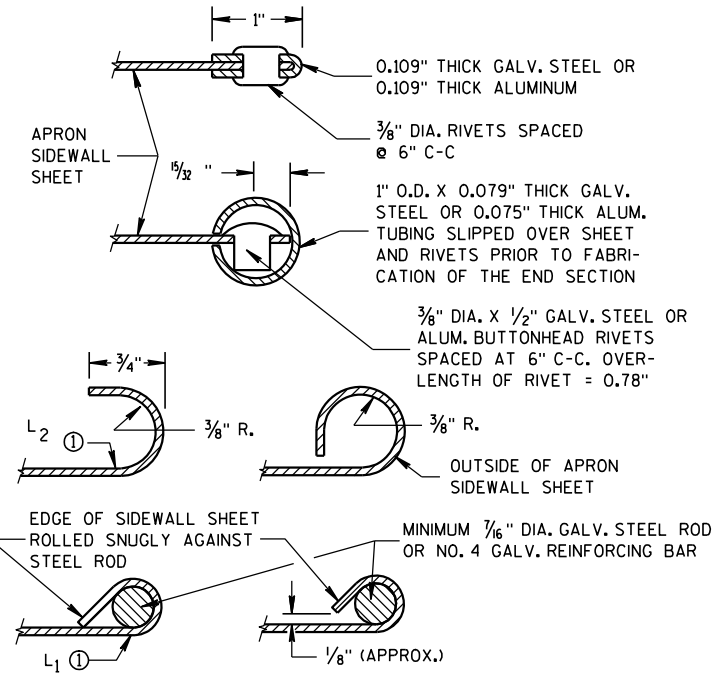
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.
DIMPLED BAND MAY BE USED WITH HELICALLY
CORRUGATED PIPE.

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.

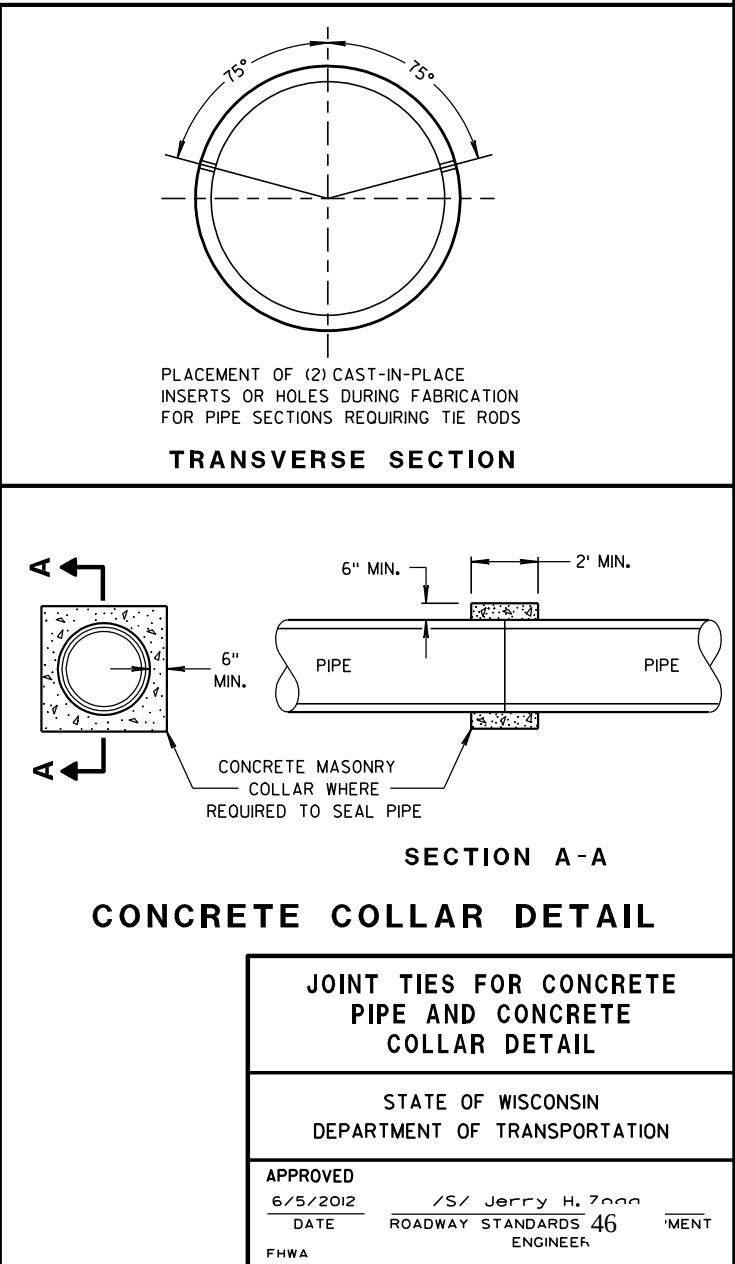
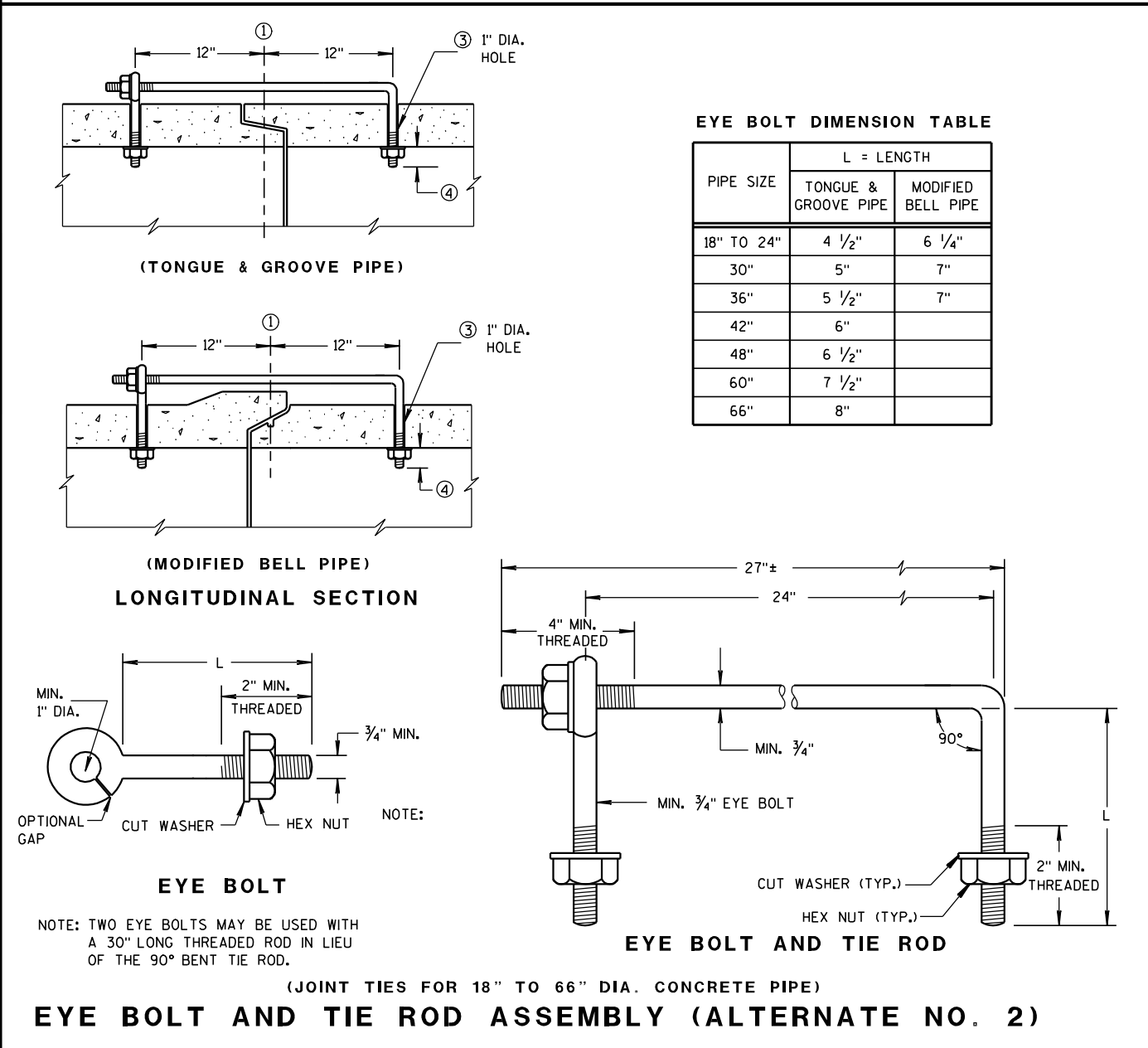
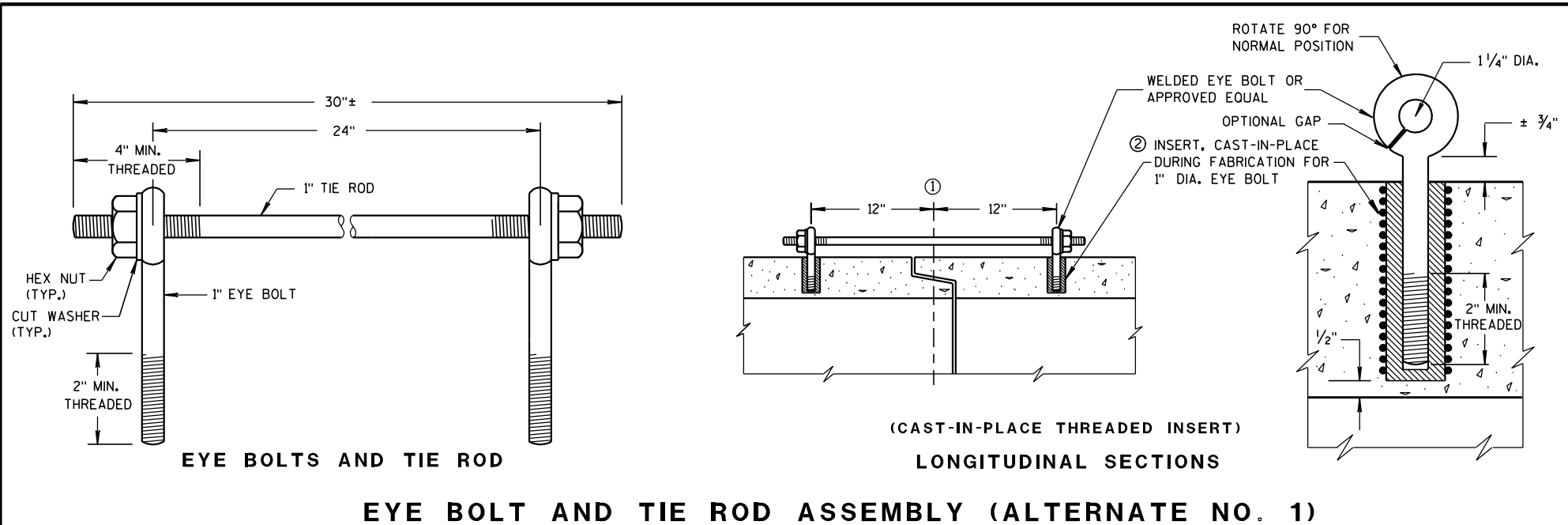
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND
LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL
THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND
LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH
OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT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

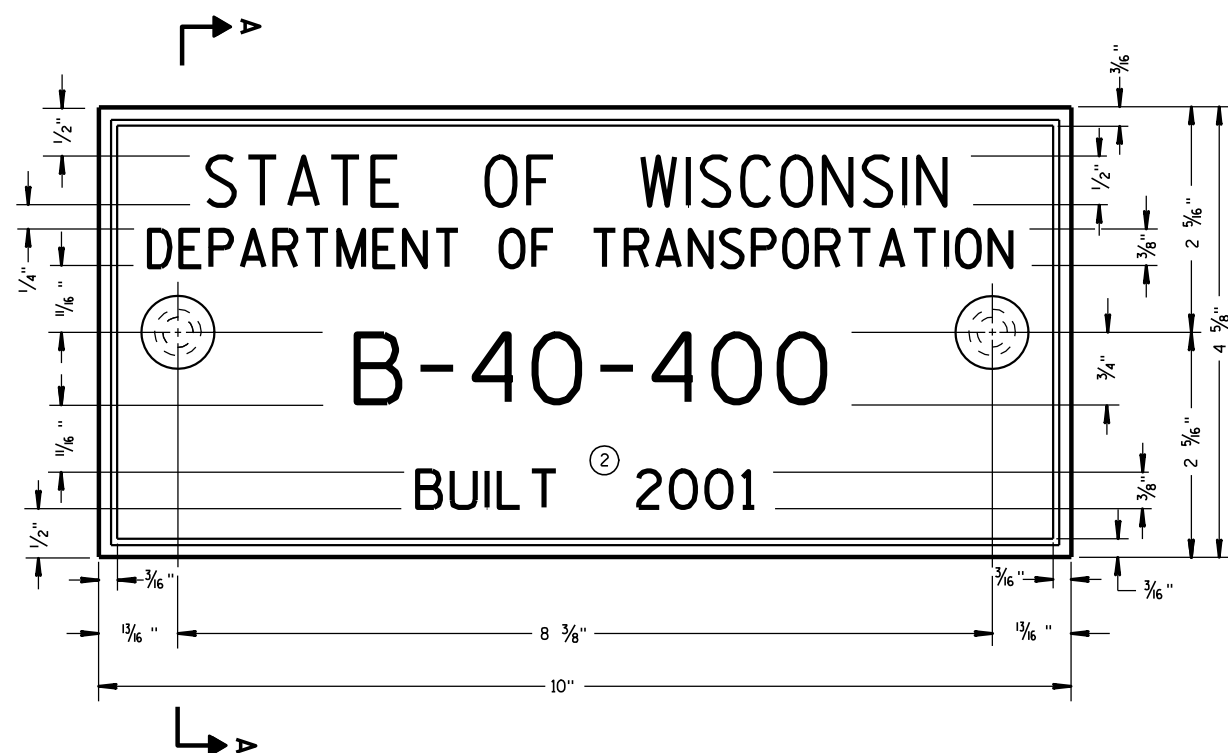
LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS
FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS.
FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED
EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH
GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES.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

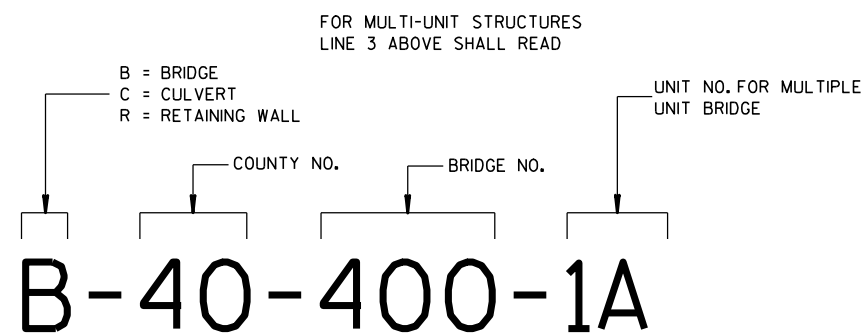
APRON ENDWALLS FOR CULVERT PIPE			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 11/30/94 DATE	/S/ Rory L. Rhinehart CHIEF ROADWAY DEVELOP 45	NEER	
FHWA			





TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



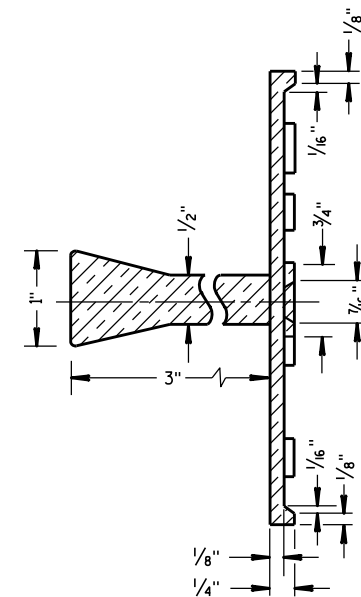
NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

GENERAL NOTES

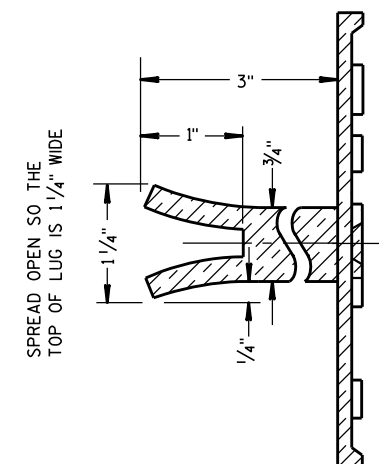
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

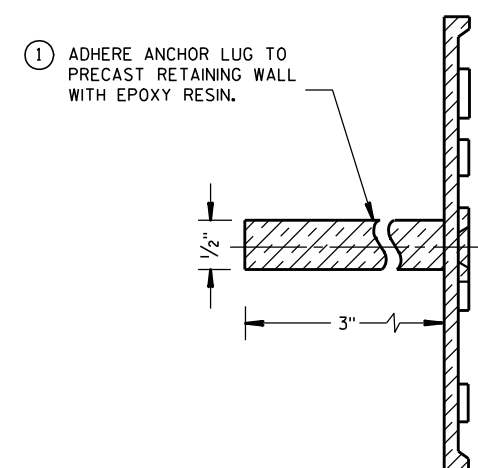
- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



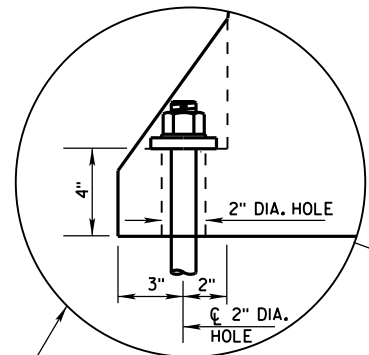
ALTERNATE LUG



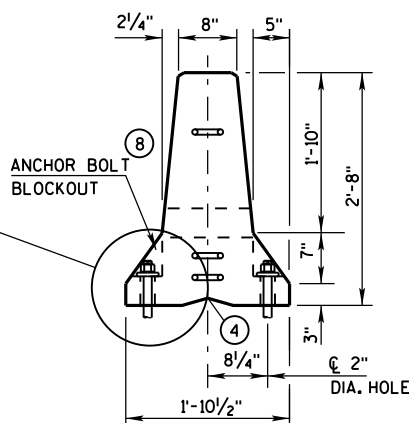
ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

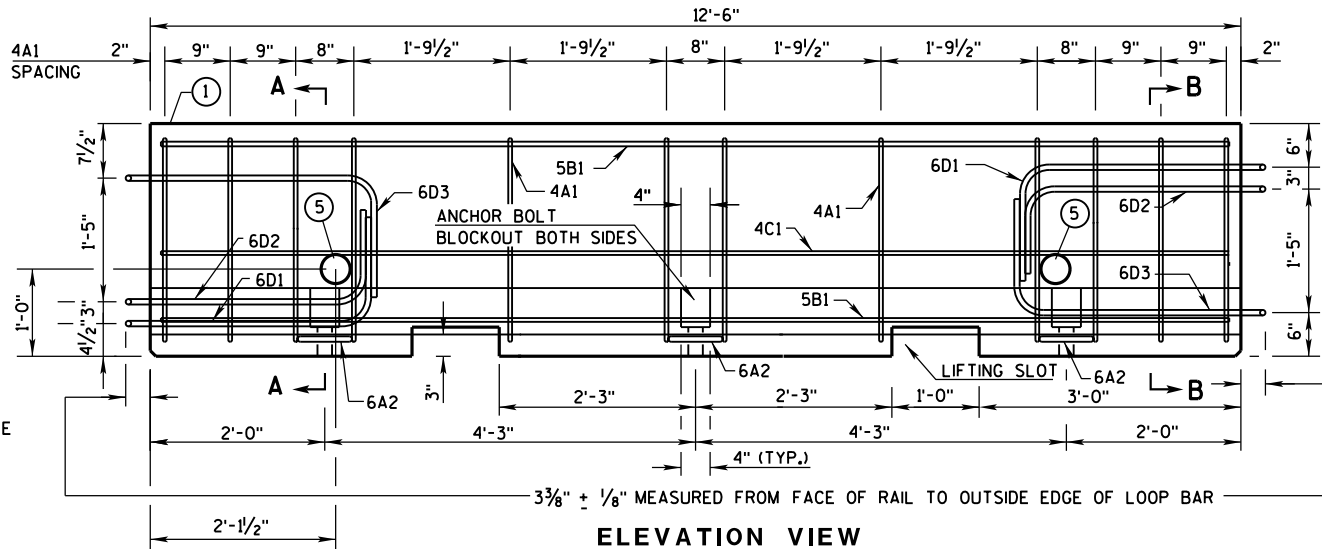
NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>3/26/10</u> DATE	<u>/S/ Scot Beck</u> CHIEF STRUCTURAL DEVELOPER 47
FHWA _____ _____ IEER	



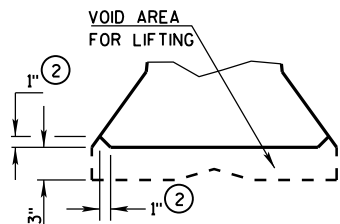
ANCHOR ON TRAFFIC SIDE
ONLY WHEN REQUIRED
(SEE SHEET D FOR ADDITIONAL
ANCHOR DETAIL)



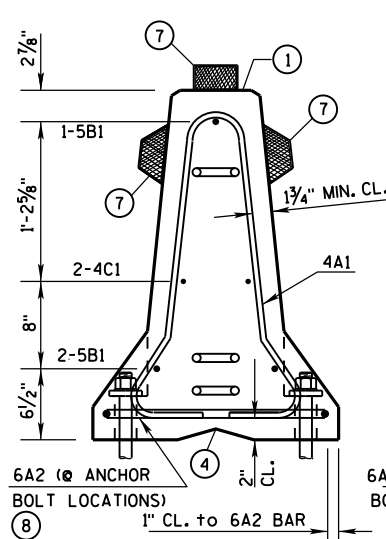
END VIEW



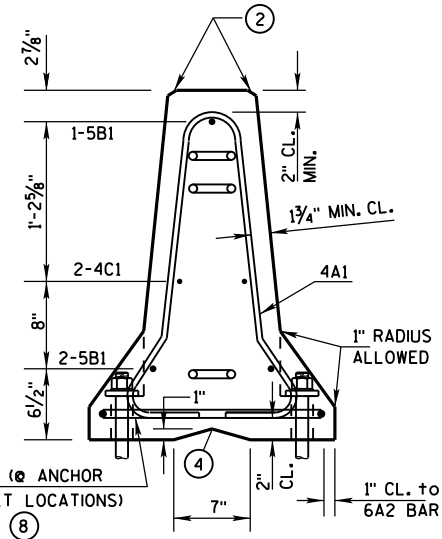
ELEVATION VIEW



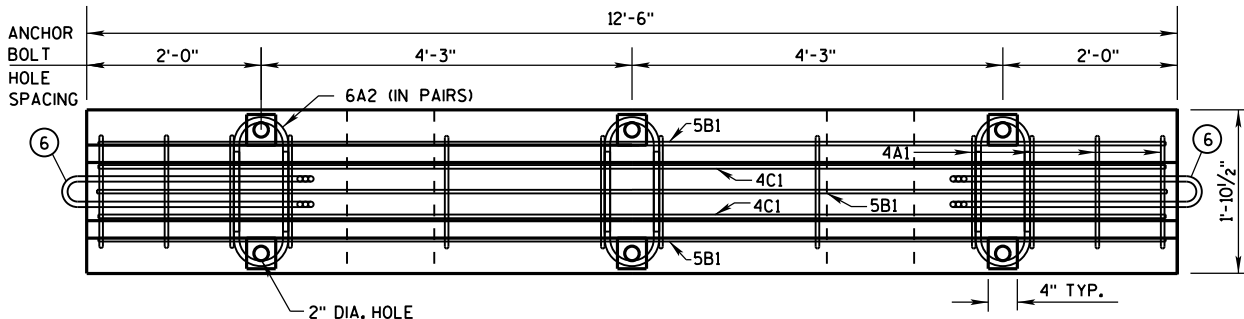
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

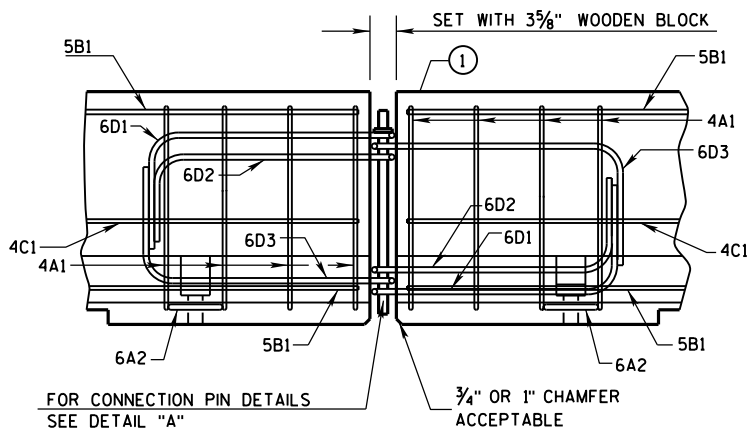


SECTION B-B
(STIRRUP PLACEMENT)

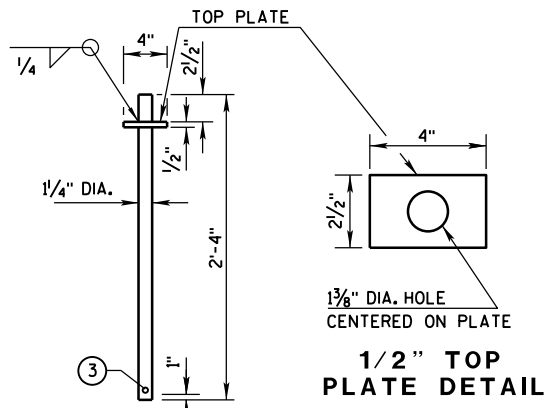


PLAN VIEW

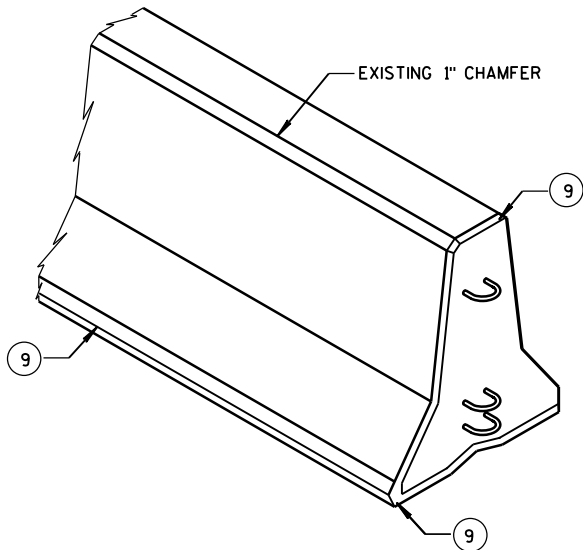
DETAILS OF BARRIER SECTION



DETAILS OF BARRIER CONNECTION



DETAIL "A"
CONNECTION PIN
(A36 STEEL (10.9 LB EACH))



GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-14(g) THRU 14B7-14(h).

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" (CBTP12.5) WITH OTHER TEMPORARY CONCRETE BARRIERS.

USE ASTM A-615, GRADE 60, DEFORMED STEEL BARS FOR BARS 4A1, 6A2, 5B1 AND 4C1 IN THE BARRIER SECTION AND FOR 4V1, 4V2, 4V3, 4V4, 4V5, 4V6, 4F1, 4F2 AND 5F3 IN THE BARRIER TAPER SECTION.

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE 3/4" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-1/2" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN 1/8" OF THE PLAN DIMENSION.

CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

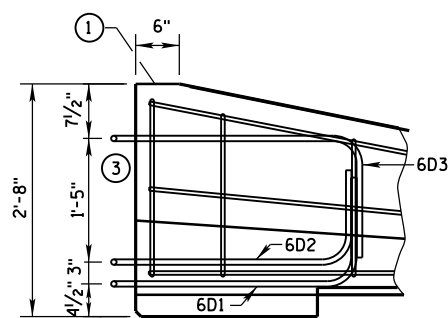
PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

INSTALL MECHANICAL OR ADHESIVE ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

- MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - TYPE: WICBTP
 - MANUFACTURER
 - DATE MANUFACTURED (MONTH AND YEAR)
- 1" CHAMFER TO PREVENT SPALLING.
- A 3/8" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..
- "V" NOTCH IS OPTIONAL.
- THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).
- NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.
- USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURER'S INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.
- SEE SHEET D FOR ANCHORING CRITERIA.
- 1" CHAMFER OPTIONAL.

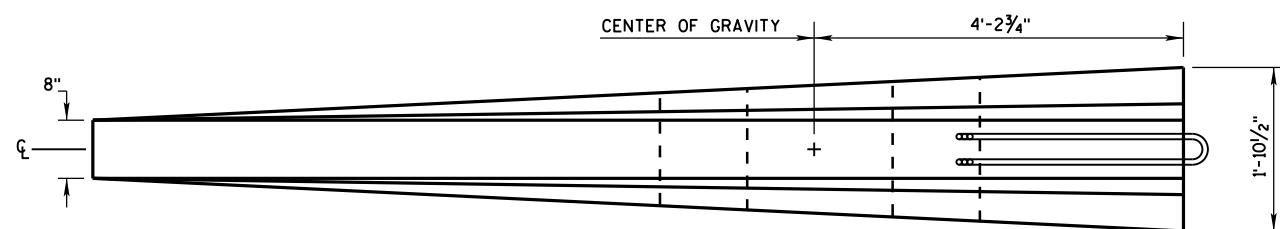
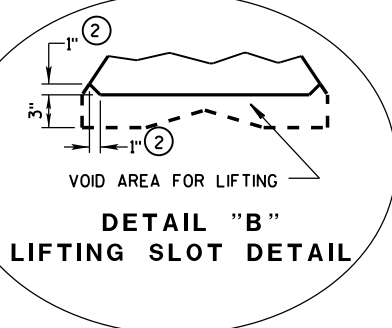
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

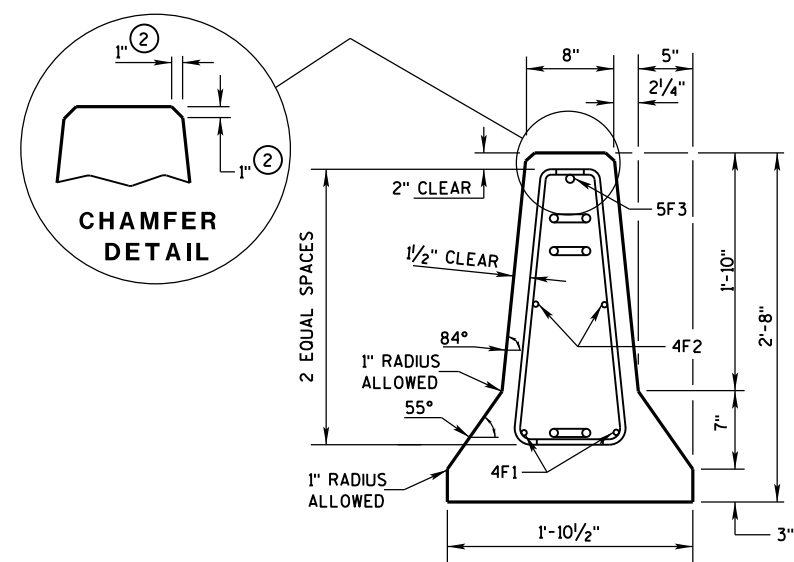


LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

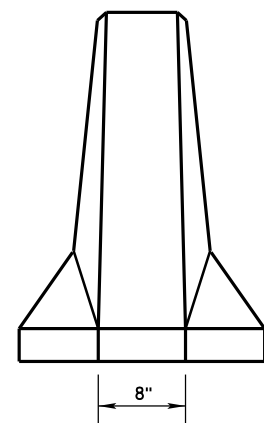
- ## GENERAL NOTES
- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - a. TYPE WICBTP
 - b. MANUFACTURER
 - c. DATE MANUFACTURED (MONTH AND YEAR)
 - ② 1" CHAMFER TO PREVENT SPALLING.
 - ③ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



PLAN VIEW

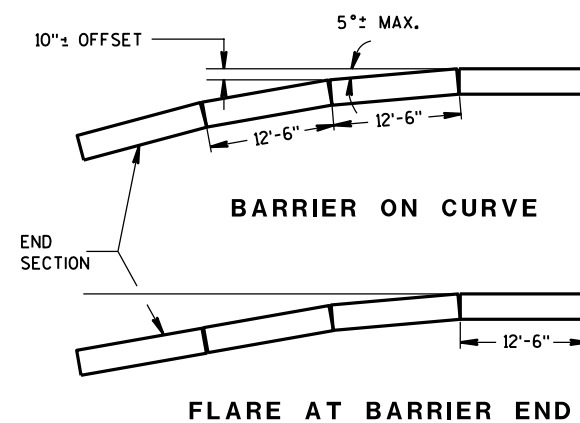


END SECTION



FRONT ELEVATION

DETAILS OF BARRIER TAPER SECTION



POSTED SPEED, (MPH)	FLARE RATE
40 OR LESS	6:1
45 OR GREATER	8:1

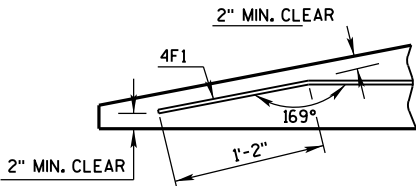
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION⁴⁹

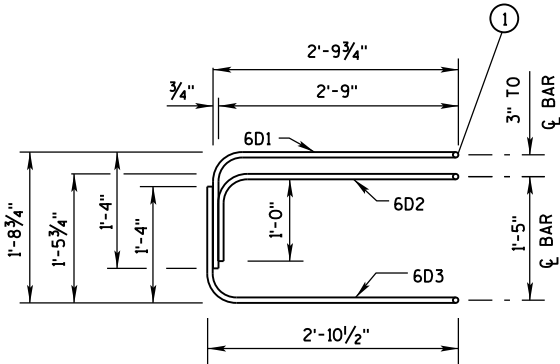
BARRIER TAPER SECTION
BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

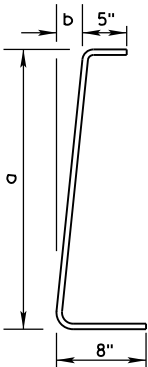
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



DETAIL "C"
BENT BAR DETAIL



ELEVATION
LOOP BAR ASSEMBLY



4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

BAR	a	b
V1	10"	1"
V2	1'-1"	1 1/4"
V3	1'-5"	1 5/8"
V4	1'-8"	1 7/8"
V5	2'-0 1/2"	2 3/8"
V6	2'-3"	2 3/4"

TAPER BARRIER SECTION

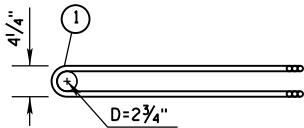
GENERAL NOTES

① NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

BARRIER SECTION
BILL OF MATERIALS

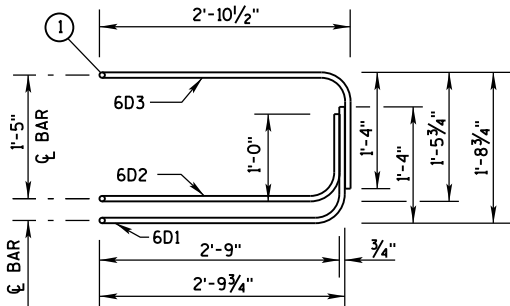
(PER 12'-6" BARRIER SECTION)

BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"

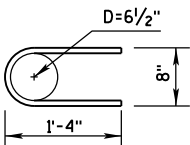


PLAN VIEW
LOOP BAR ASSEMBLY

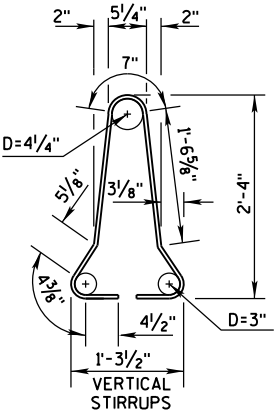
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2

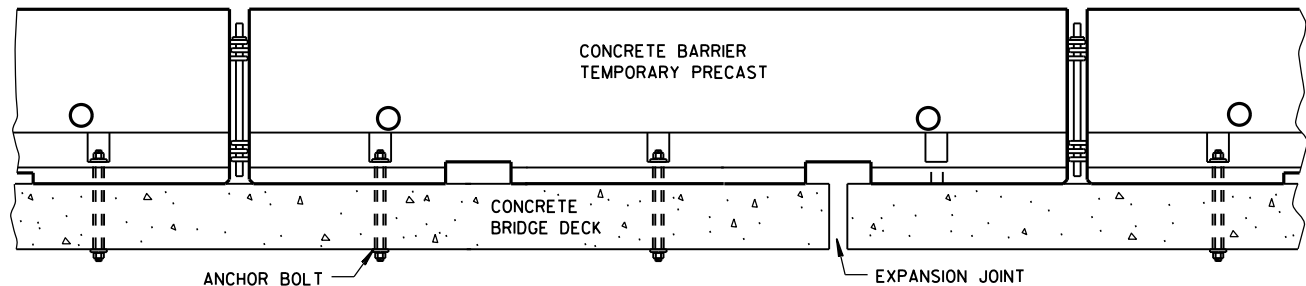
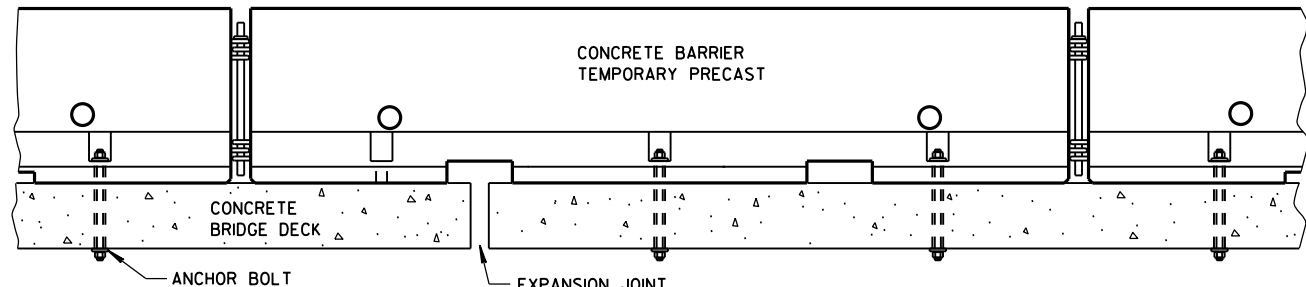


4A1

BARRIER SECTION

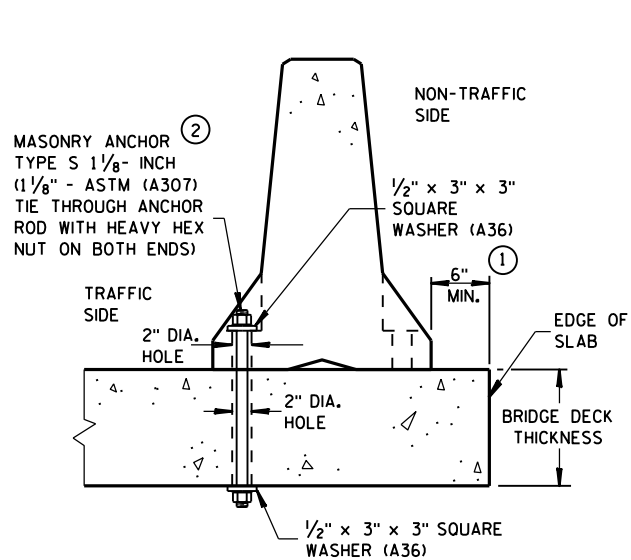
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



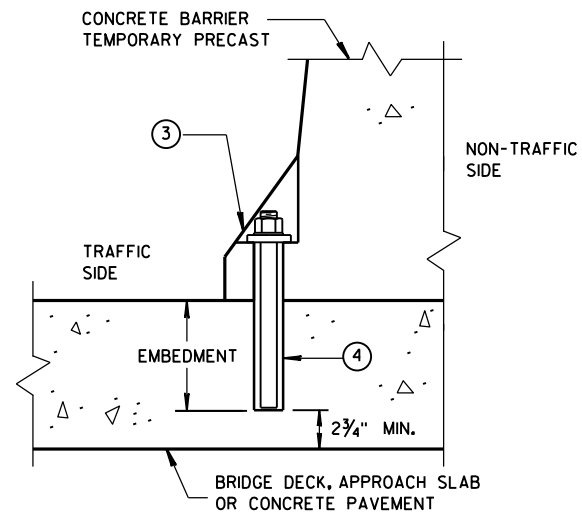
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.)



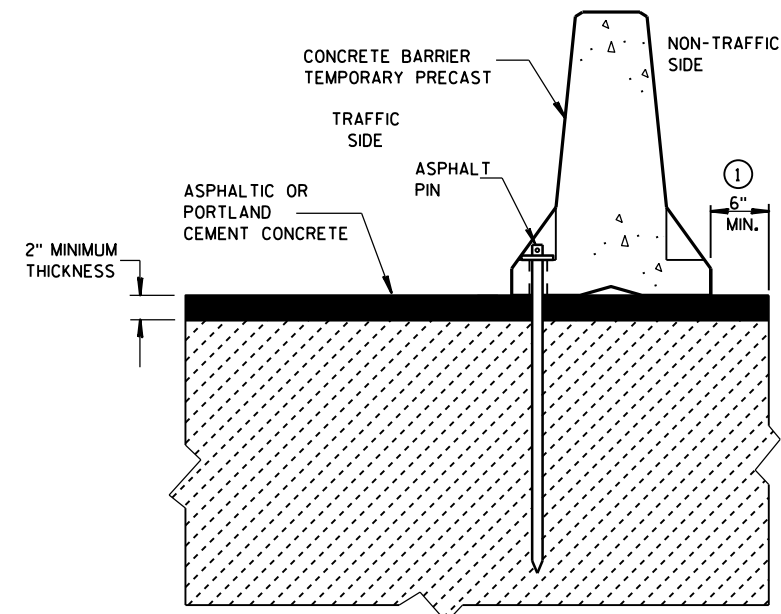
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



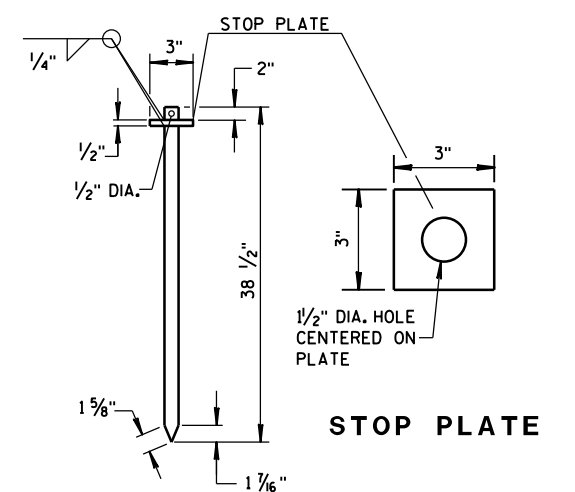
REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

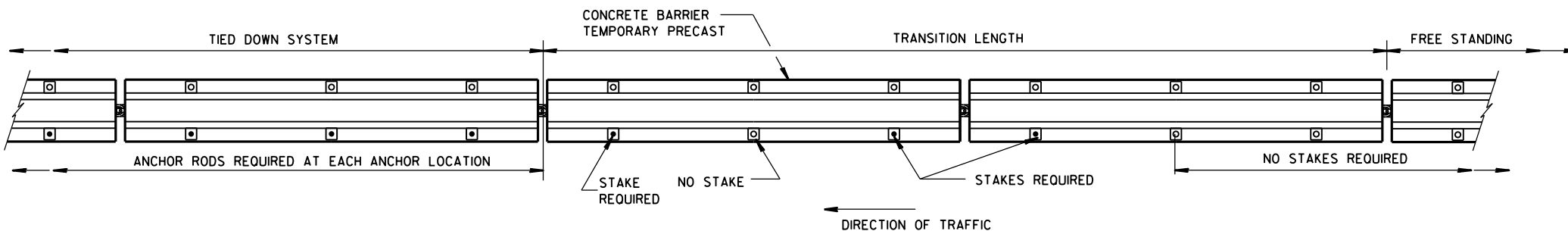


STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



ASPHALT PIN (ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

GENERAL NOTES

- ① CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" SHALL BE ANCHORED IF:
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V,
FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT,
IS LESS THAN 4 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF
AND THE POSTED SPEED IS 45 MPH OR GREATER, OR

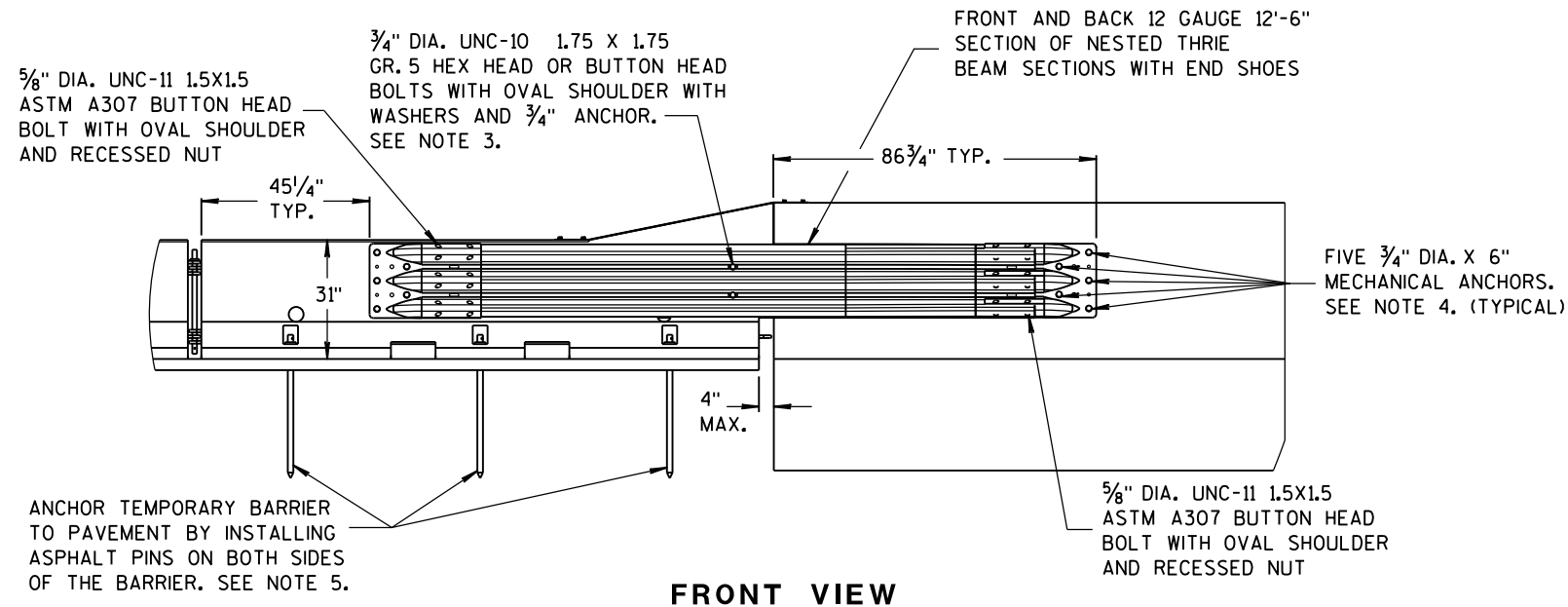
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V,
FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT,
IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF
AND THE POSTED SPEED IS 40 MPH OR LESS.
- ② ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED ANCHOR BOLT
INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE
BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE
S 1 1/8"-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE
ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

UPON REMOVAL OR RELOCATION OF THE BARRIER UNITS, REMOVE ALL ANCHOR BOLTS AND COMPLETELY
FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CON-
CRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERCIAL GROUT OR MATERIAL
IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.
- ③ 1/8" DIAMETER A307 THREADED ROD, 1/2" x 3" x 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL,
ASTM A563A HEAVY HEX NUT.
- ④ ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5/4" EMBEDMENT. SEE 603.2
AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



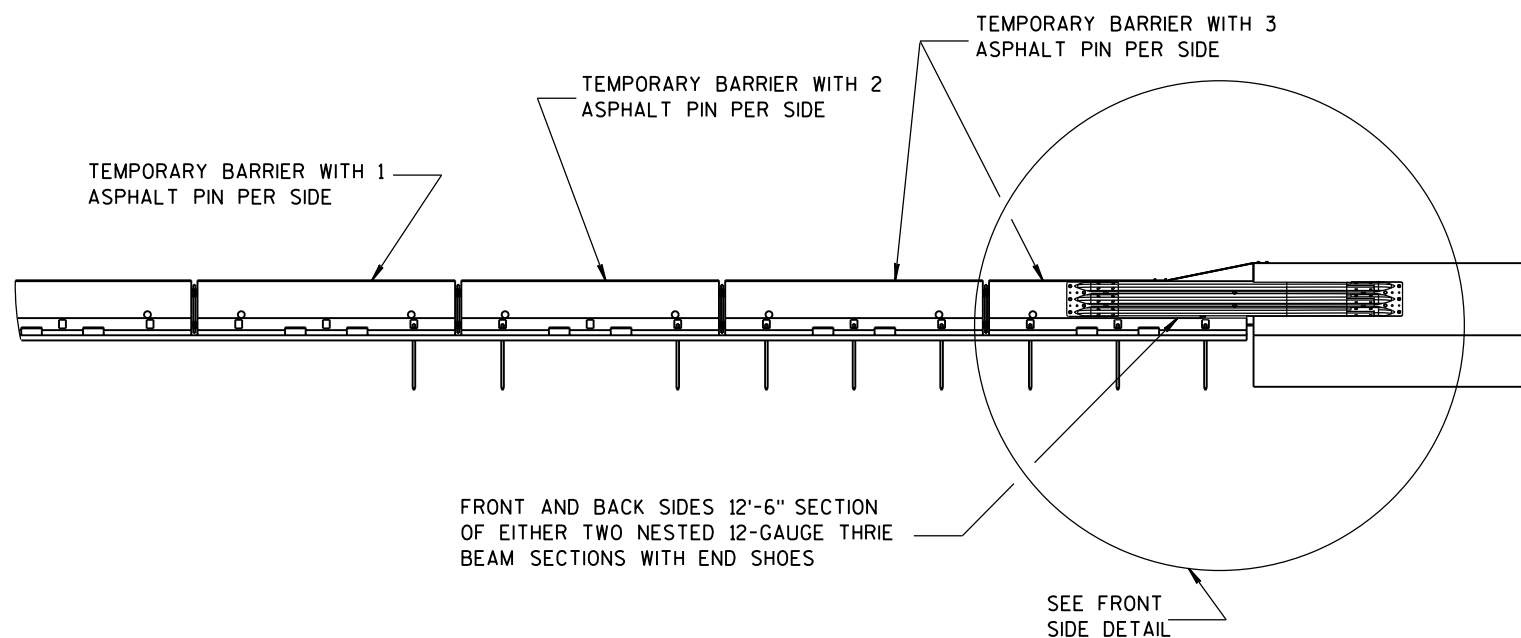
FRONT VIEW

NOTES

NESTED THRIE BEAM IS REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS.

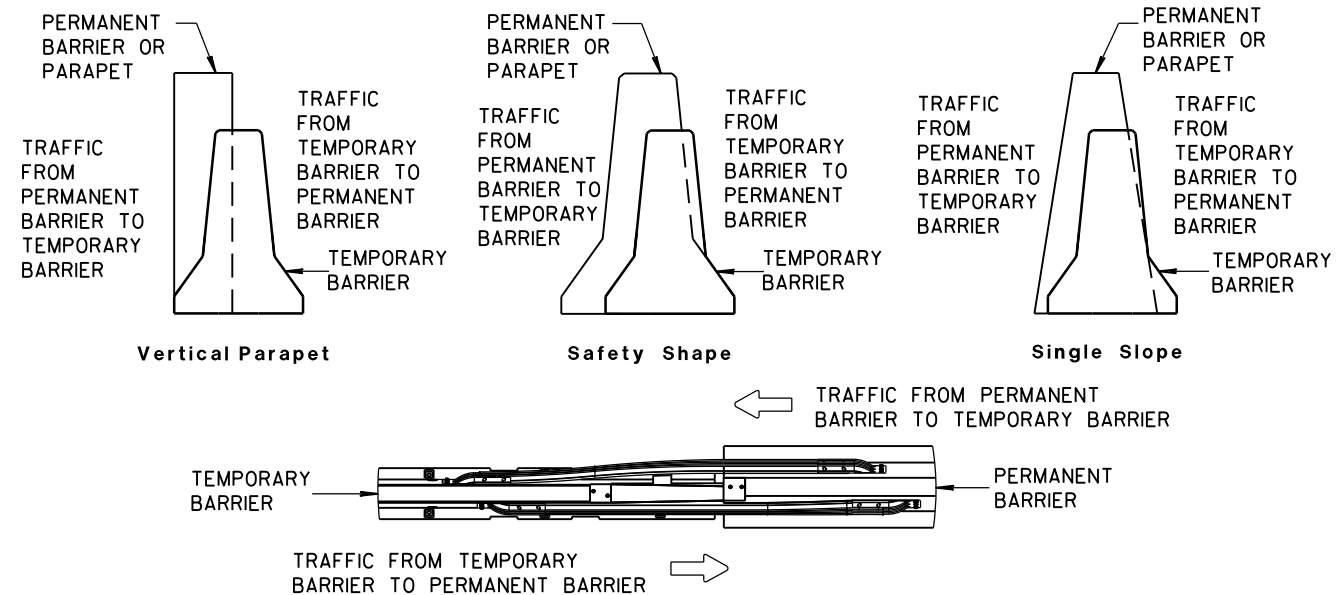
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.

4. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.

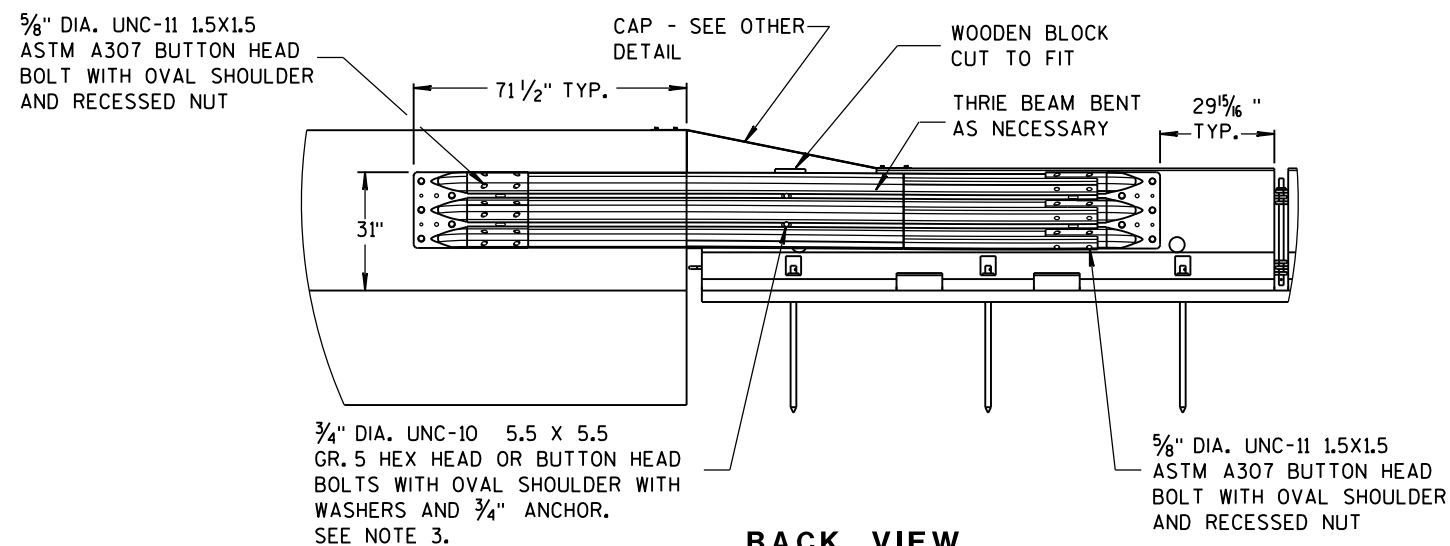


FRONT VIEW

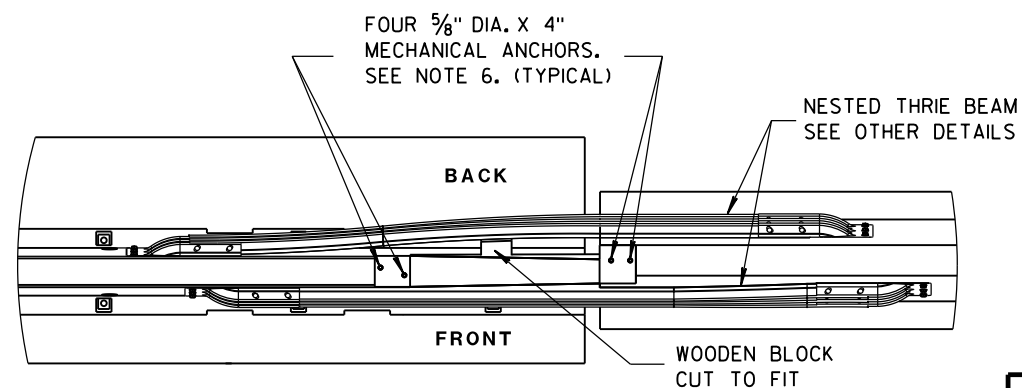
BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



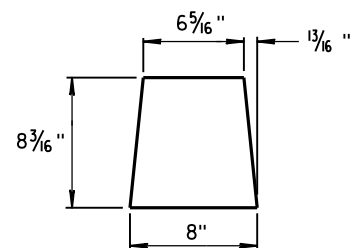
BACK VIEW



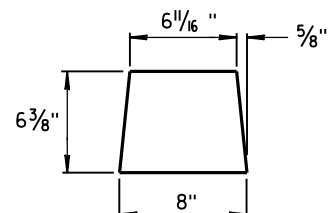
PLAN VIEW

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

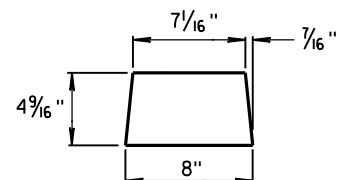
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



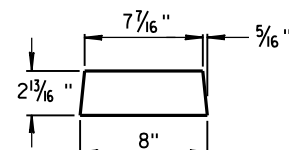
GUSSET 1



GUSSET 2

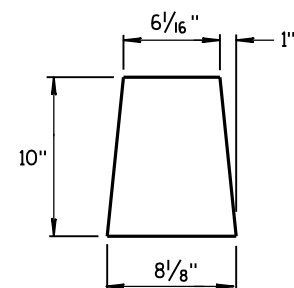


GUSSET 3

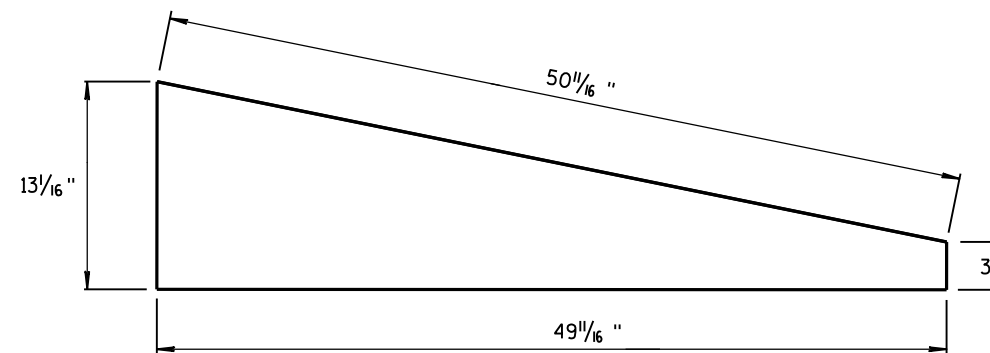


GUSSET 4

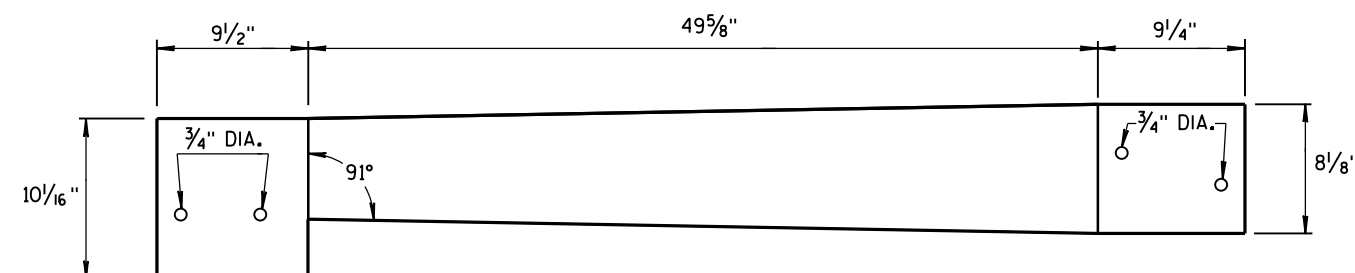
GUSSETS



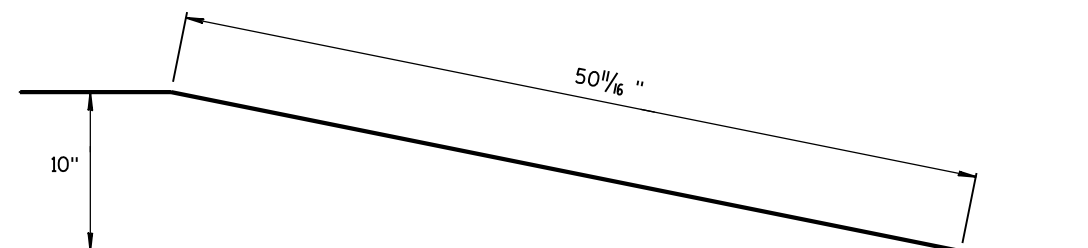
END PLATE



SIDE PLATE

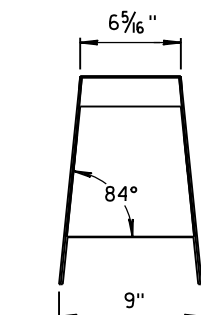
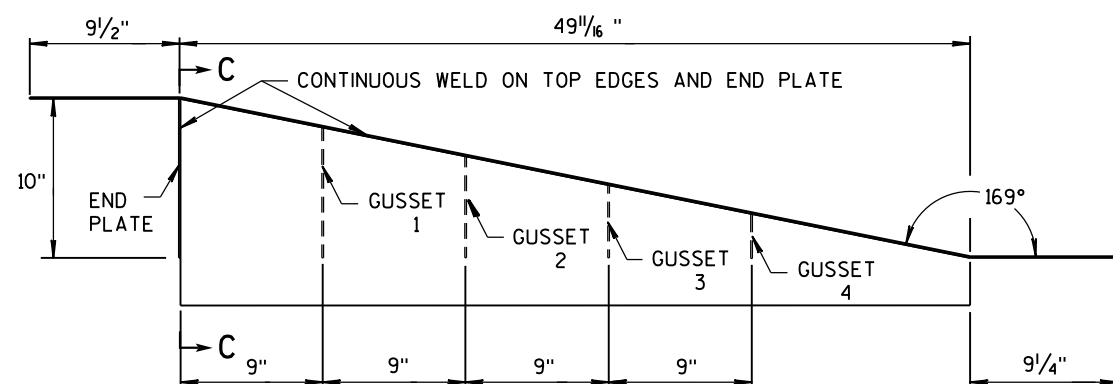
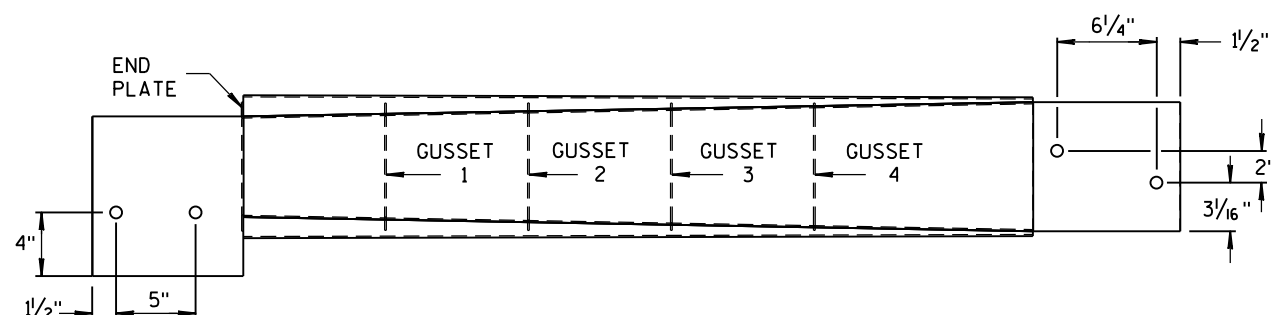


TOP PLATE



SIDE, TOP AND END PLATES FOR CAP FROM TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.



SECTION C-C

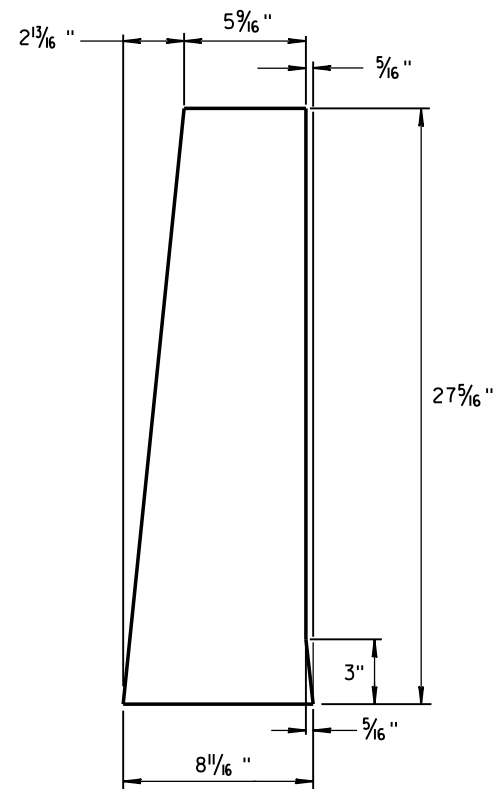
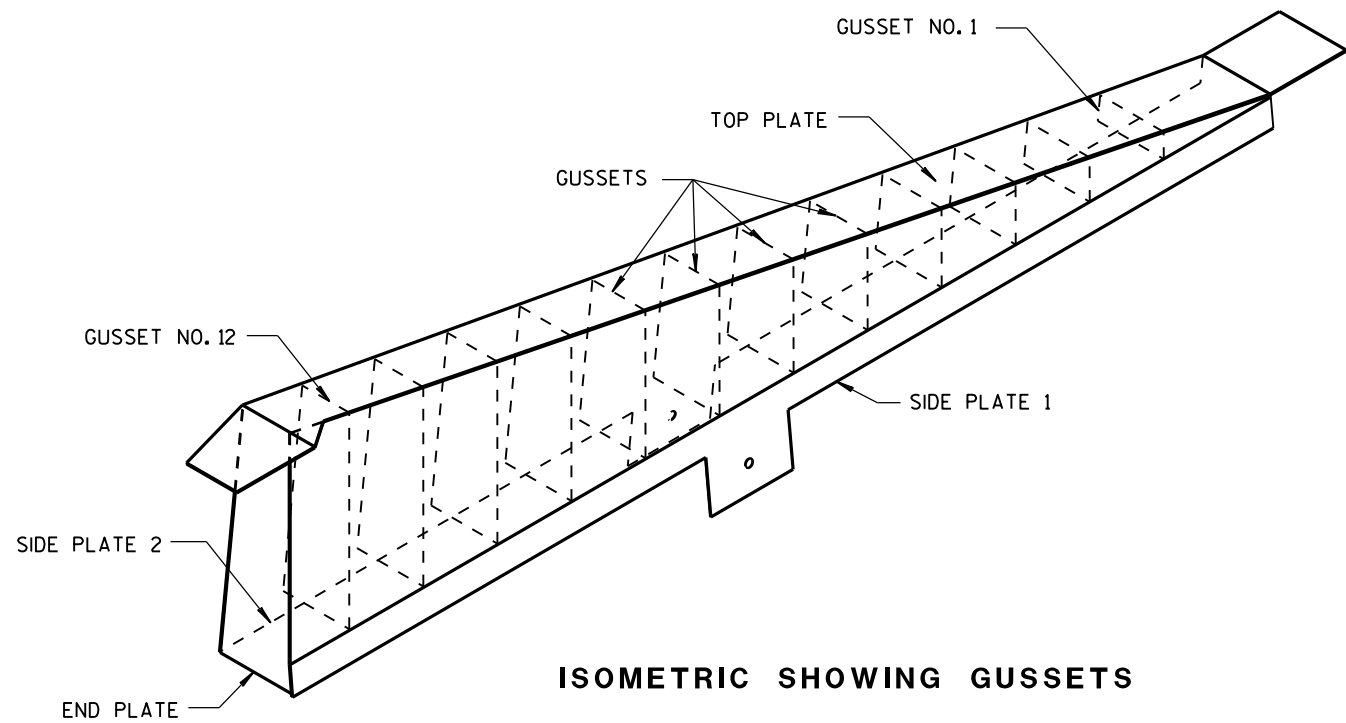
NOTES

- FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
- TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

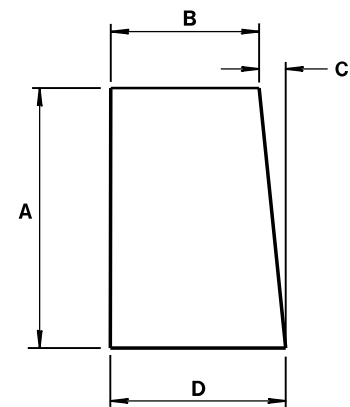
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



1/8" STEEL PLATE

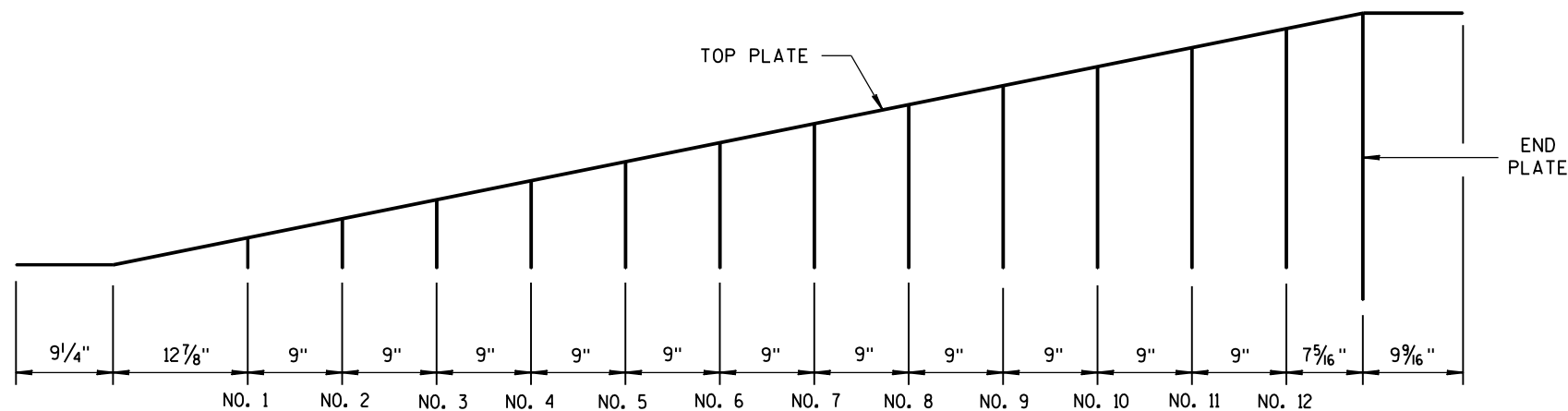


ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 1/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8"	11/16 "	8 1/16 "
4	8 5/16"	7 3/16"	7/8"	8 1/16 "
5	10 1/8"	7"	1 1/16 "	8 1/16 "
6	11 5/16 "	6 13/16 "	1 1/4"	8 1/16 "
7	13 3/4"	6 5/8"	1 7/16 "	8 1/16 "
8	15 9/16 "	6 7/16 "	1 9/16 "	8 1/16 "
9	17 3/8"	6 1/4"	1 13/16 "	8 1/16 "
10	19 3/16"	6 1/16"	1 15/16 "	8 1/16 "
11	21"	5 7/8"	2 3/16 "	8 1/16 "
12	22 13/16 "	5 11/16 "	2 5/16 "	8 1/16 "

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 STEEL AND GALVANIZED.

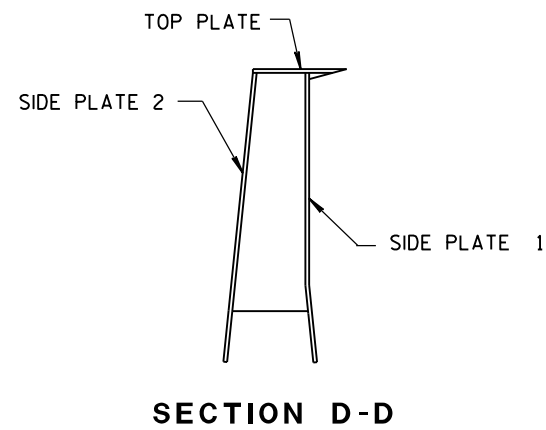
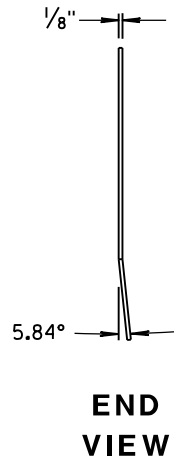
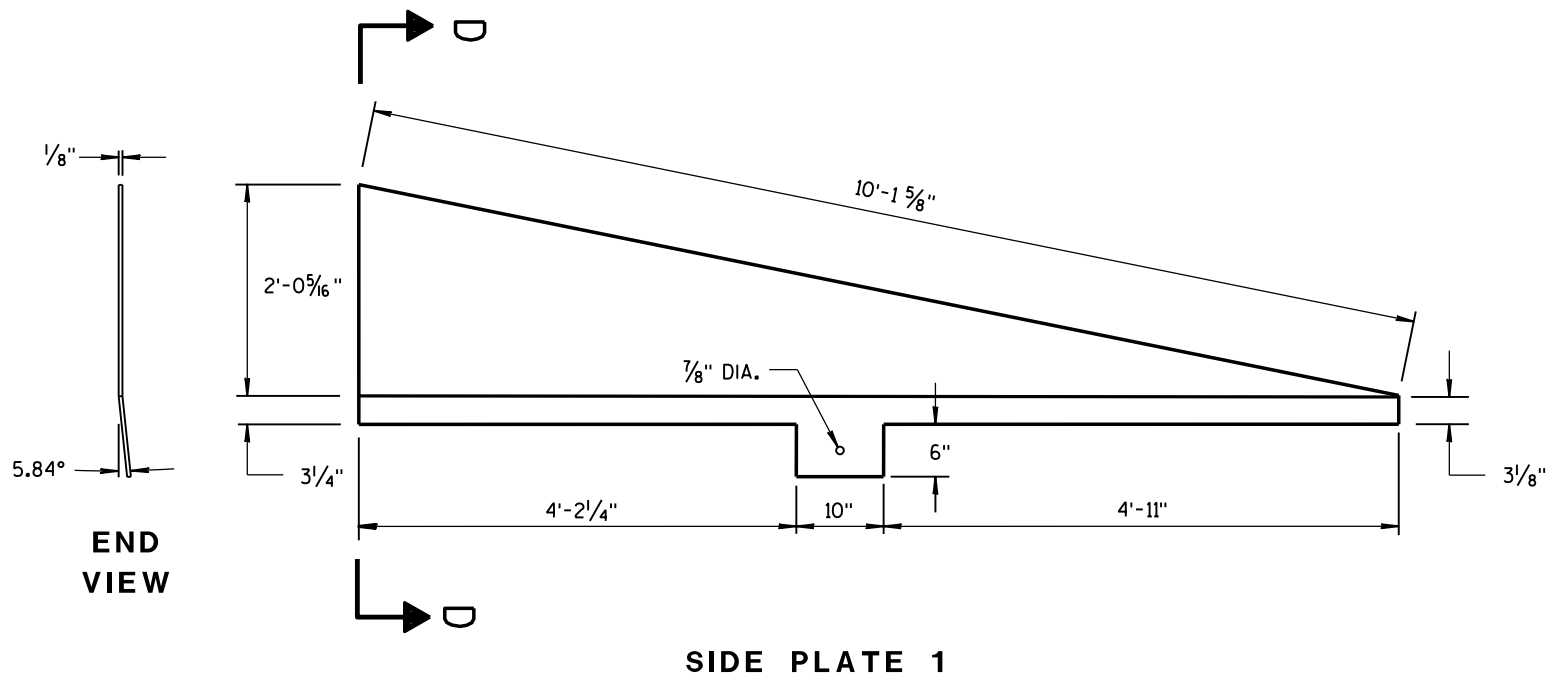
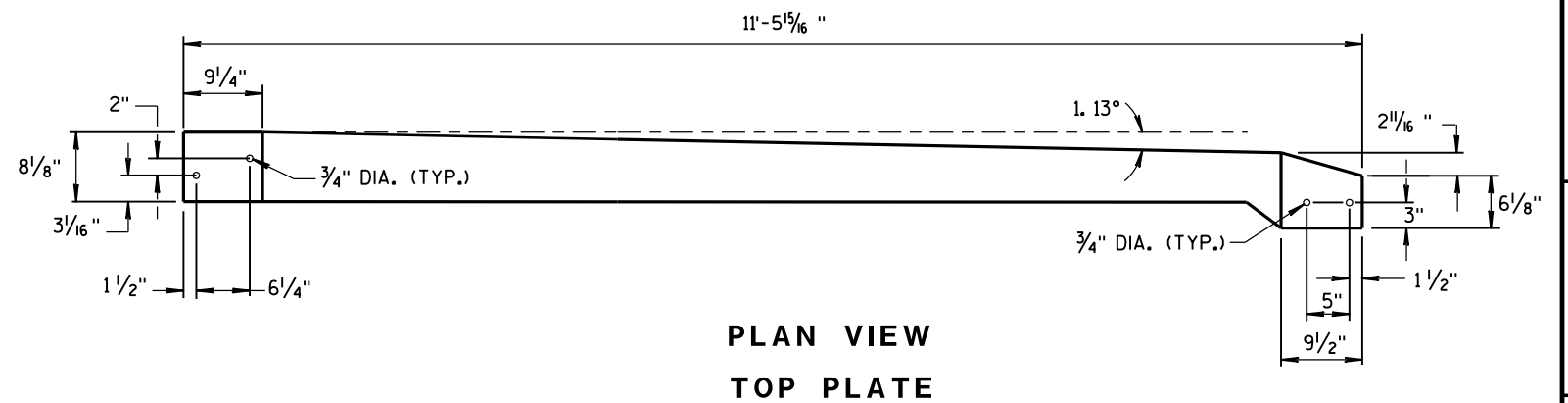
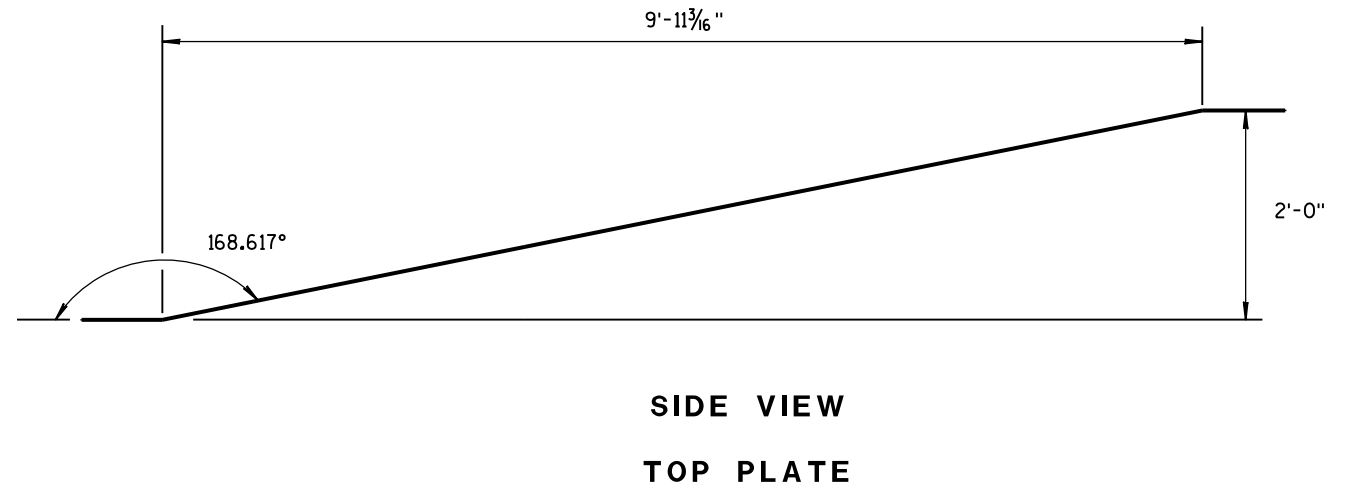
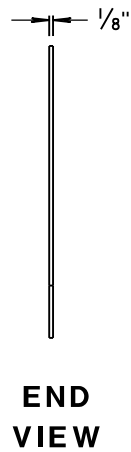
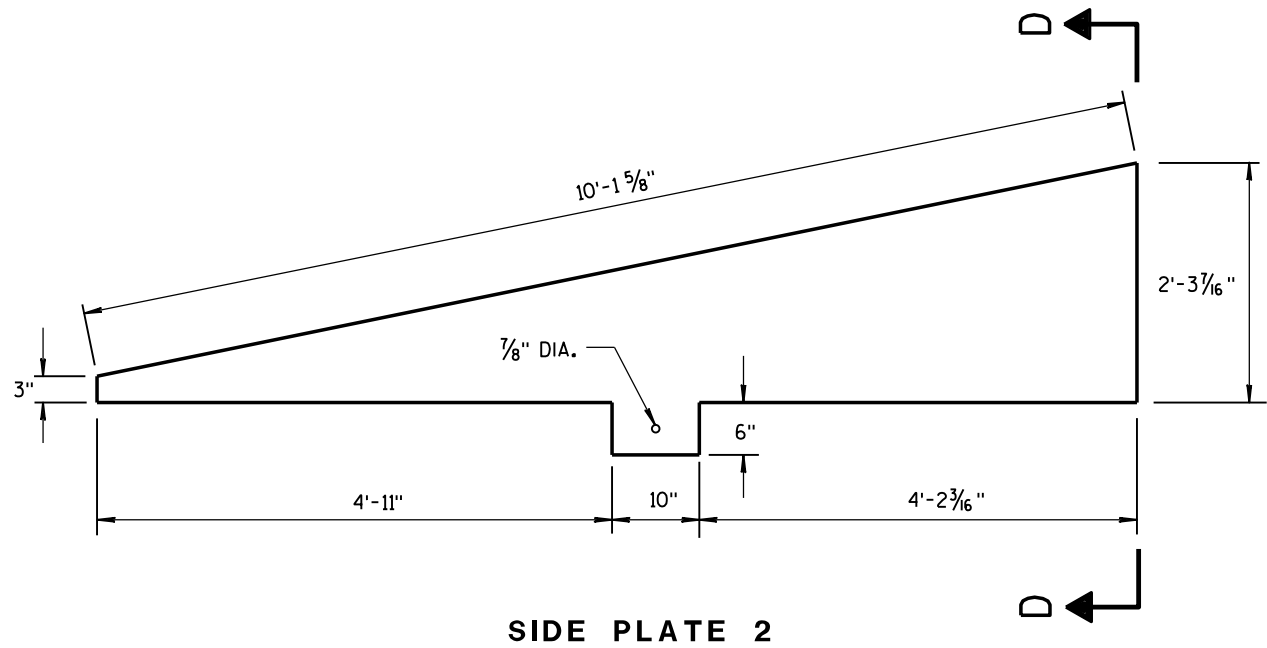
GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

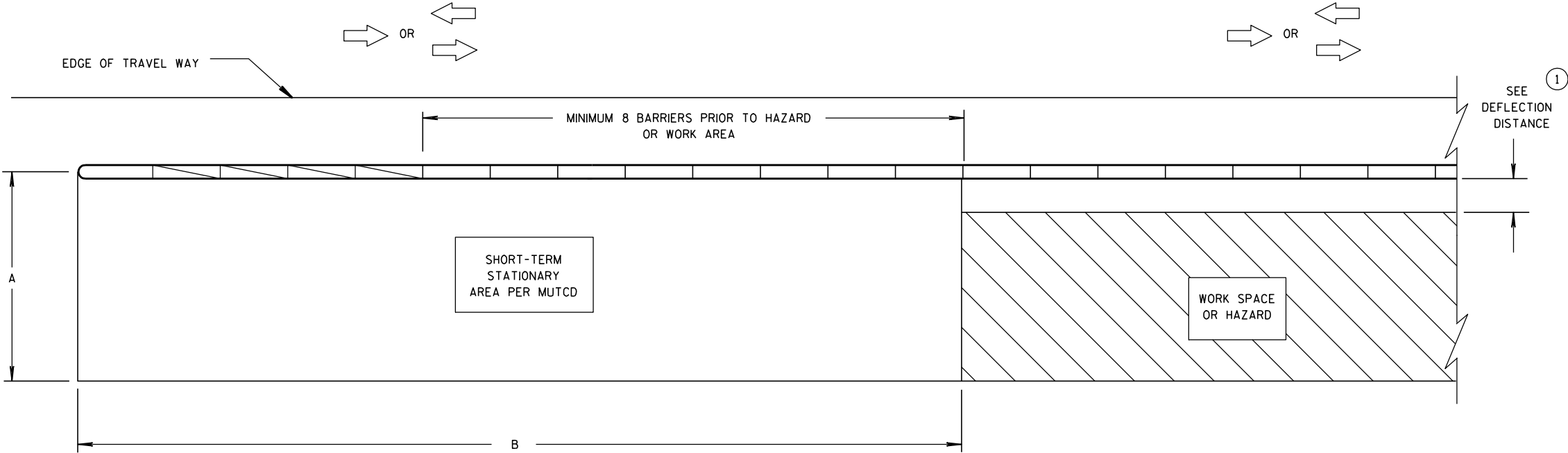
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

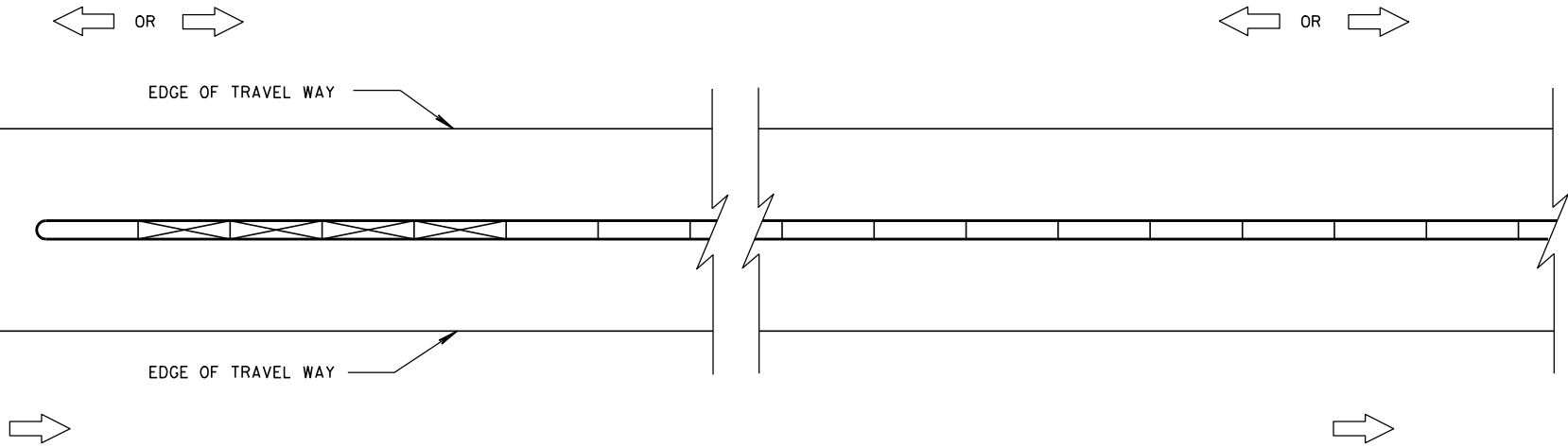


CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED June 2014 DATE	/S/ Jerry H. Zoag ROADWAY STANDARD ENGINEER	55 INT
FHWA		



**CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER**



**CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON BOTH SIDES OF BARRIER**

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

DETAILS PROVIDE A GENERAL LAYOUT OF TEMPORARY CONCRETE BARRIER, CRASH CUSHIONS, SAND BARREL ARRAYS AND TIE DOWN TRANSITIONS. DETAILS PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

ADDITIONAL TEMPORARY BARRIER MAY BE REQUIRED TO PROTECT TRAVELING PUBLIC FROM HAZARDS, CONTRACTOR'S OPERATIONS OR TO CONTROL TRAFFIC.

TEMPORARY BARRIER MAY BE REQUIRED TO BE ANCHORED TO PAVEMENT OR BRIDGE DECK.

FOR DETAILS ON CRASH CUSHION OR SAND BARREL ARRAYS SEE OTHER SECTIONS OF THE PLAN AND MANUFACTURE'S DETAILS.

SLOPES LEADING TO TEMPORARY BARRIER, CRASH CUSHION OR SAND BARREL ARRAY ARE 10:1 OR LESS.

- ① FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.
- ② VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

DIMENSION A TABLE ②

FACILITY	POSTED SPEED MPH	DIMENSION A	
		MIN. FT	MAX. FT
FREEWAY/EXPRESSWAY	ALL	15	20
NON-FREEWAY/EXPRESSWAY	GREATER THAN OR EQUAL TO 45	10	15
NON-FREEWAY/EXPRESSWAY	LESS THAN 45	8	10
AADT LESS THAN 1,500	ALL	8	10

DIMENSION B TABLE ②

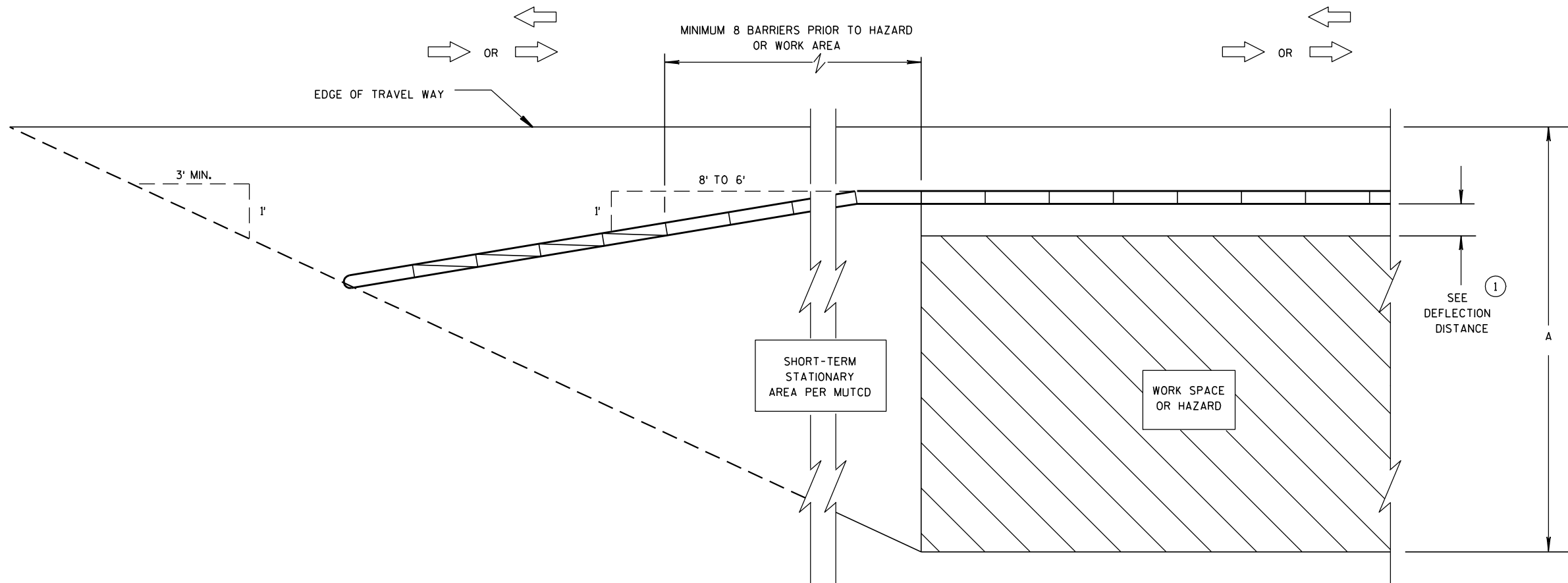
POSTED SPEEDS MPH	DIMENSION B FT
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645

LEGEND

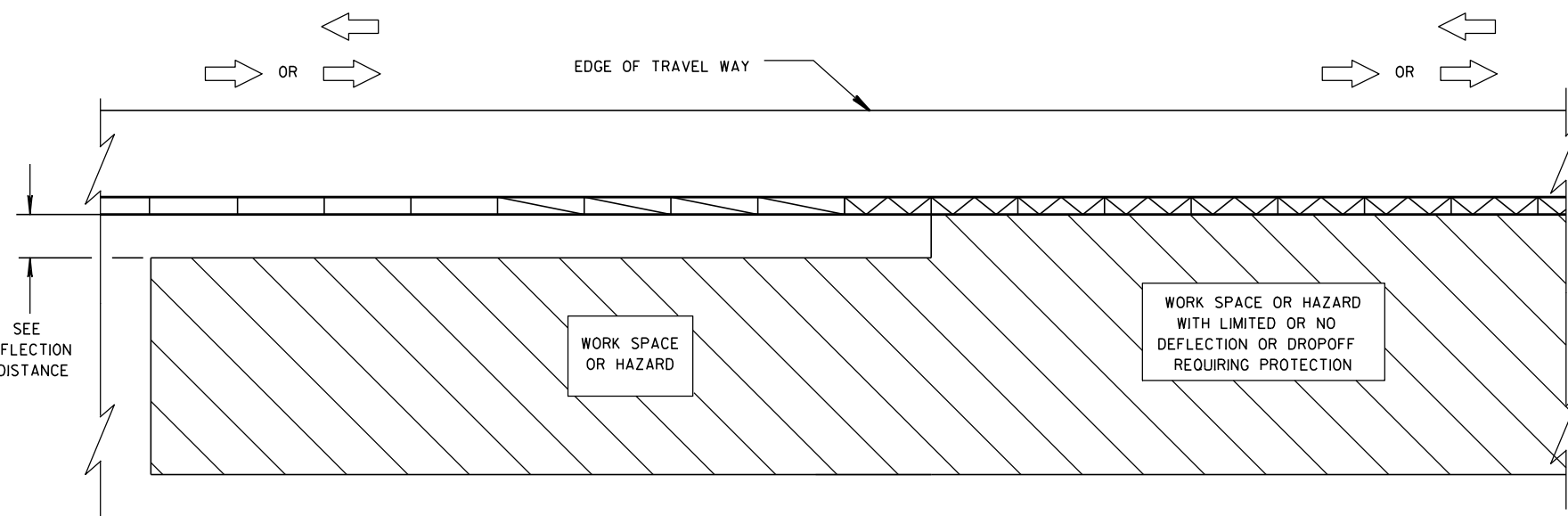
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

**CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON ONE SIDE - FLARED INSTALLATION**



**TRANSITION FROM FREE STANDING TEMPORARY BARRIER
TO ANCHORED BARRIER**

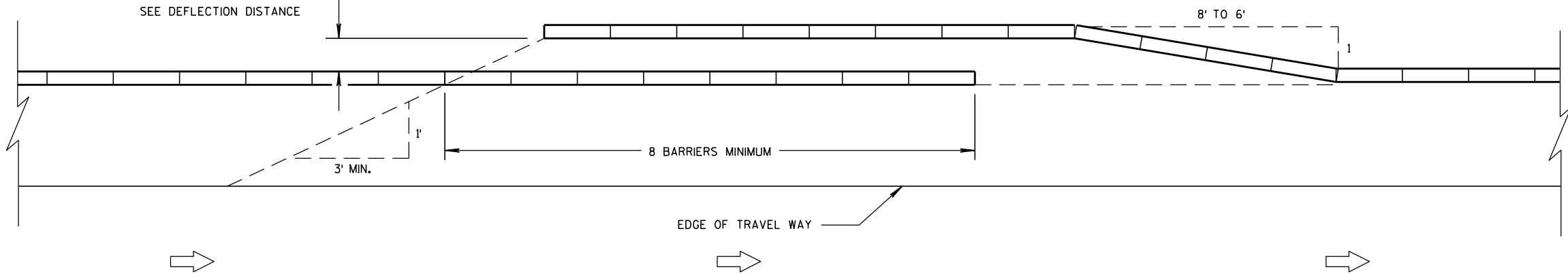
LEGEND

DIRECTION OF TRAVEL	
CRASH CUSHION OR SAND BARREL ARRAY	
SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS	
SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS	
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER	
PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET	
FREE STANDING TEMPORARY BARRIER	

**CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS**

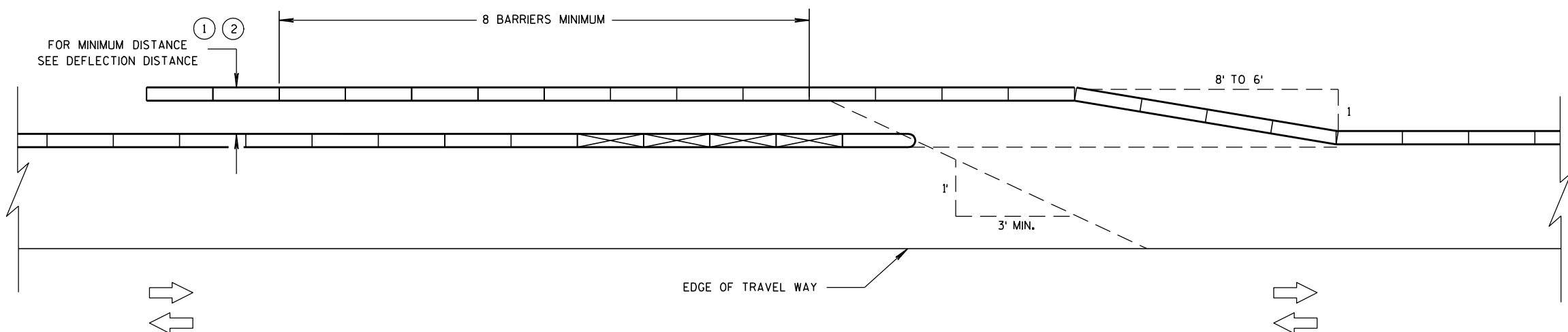
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

FOR MINIMUM DISTANCE
SEE DEFLECTION DISTANCE

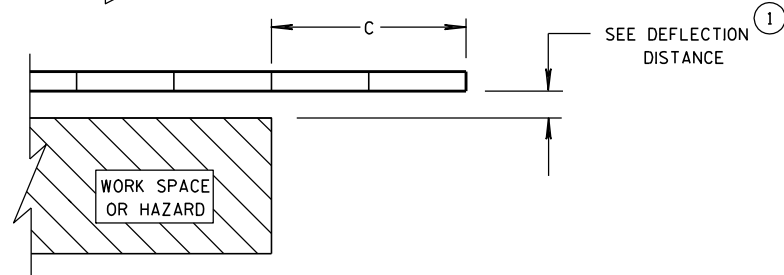


TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC

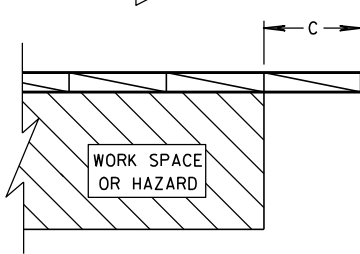
FOR MINIMUM DISTANCE
SEE DEFLECTION DISTANCE



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



**ENDING TEMPORARY BARRIER
DOWNSTREAM - UNANCHORED**



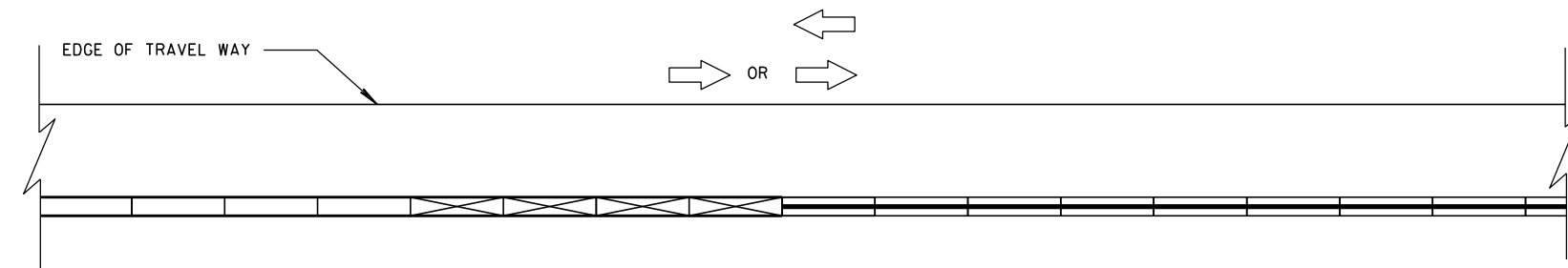
**ENDING TEMPORARY BARRIER
DOWNSTREAM - ANCHORED**

LEGEND

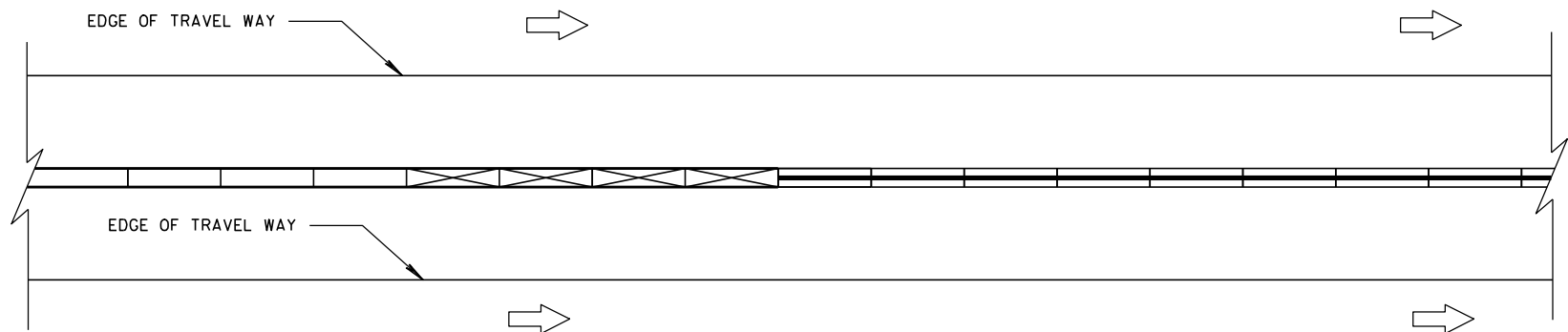
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

**CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



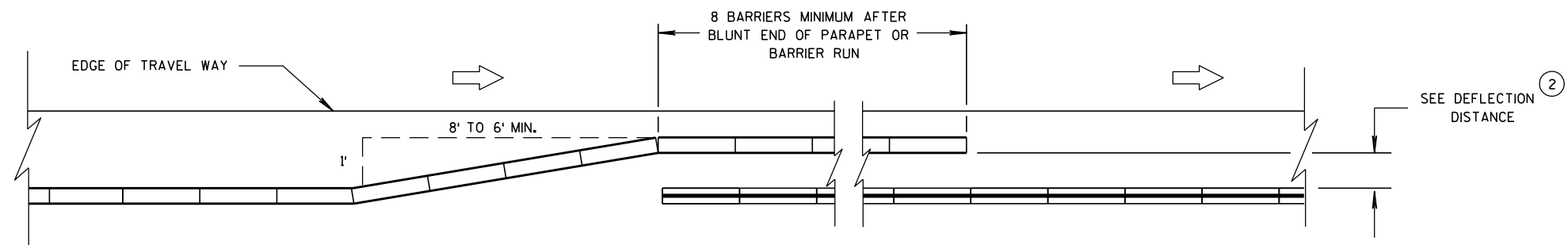
**CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE**



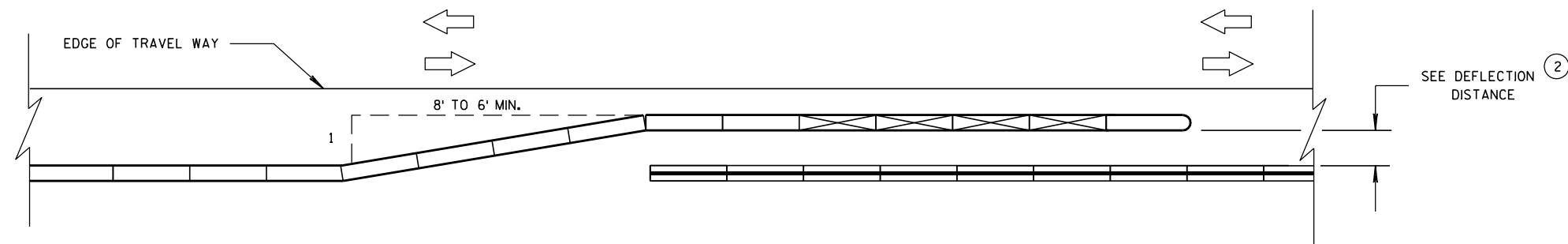
**CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES**

LEGEND

DIRECTION OF TRAVEL	
CRASH CUSHION OR SAND BARREL ARRAY	
SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS	
SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS	
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER	
PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET	
FREE STANDING TEMPORARY BARRIER	



**OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC**

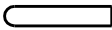
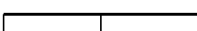


**OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC**

**CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

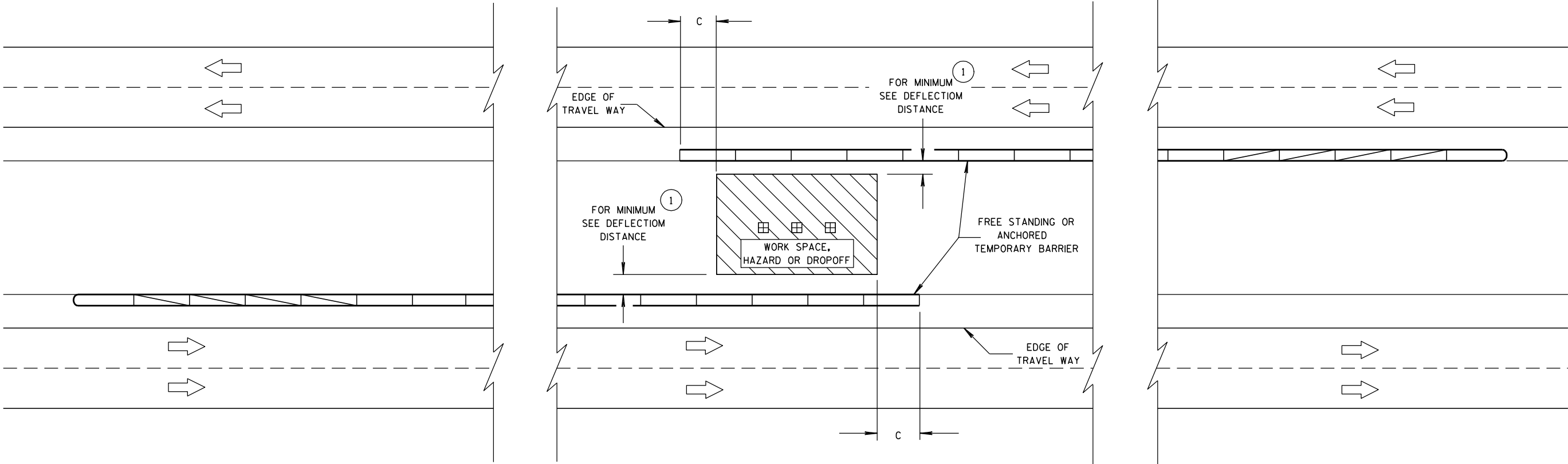
DIRECTION OF TRAVEL	
CRASH CUSHION OR SAND BARREL ARRAY	
SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS	
SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS	
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER	
PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET	
FREE STANDING TEMPORARY BARRIER	

DIMENSION C TABLE

2

AVAILABLE DEFLECTION DISTANCE	MINIMUM LENGTH OF BARRIER BEYOND HAZARD FT
GREATER THAN 8'	12.5
LESS THAN OR EQUAL TO 8' BUT GREATER THAN 4'	50
LESS THAN OR EQUAL TO 4'	100

6



6

**CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS 60
ENGINEER
FHWA

S.D.D. 14 B 8-1e

S.D.D. 14 B 8-1e

6

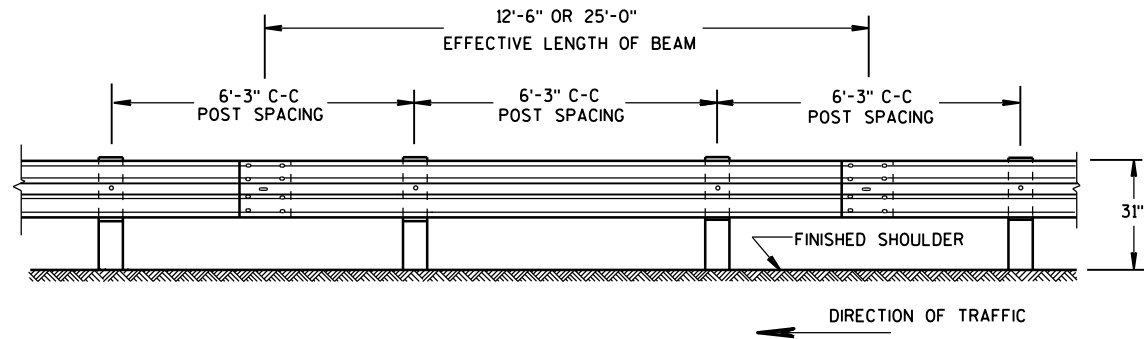
- S.D.D. 14 B 42-3a**



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

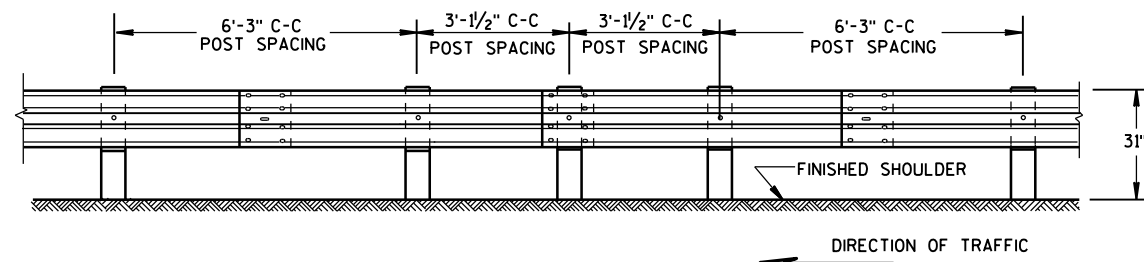


S.D.D. 14 B 42-3a



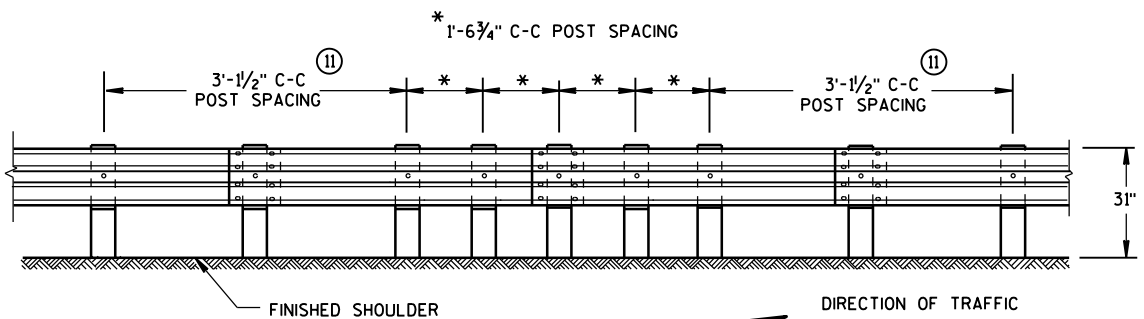
FRONT VIEW

POST SPACING STANDARD INSTALLATION



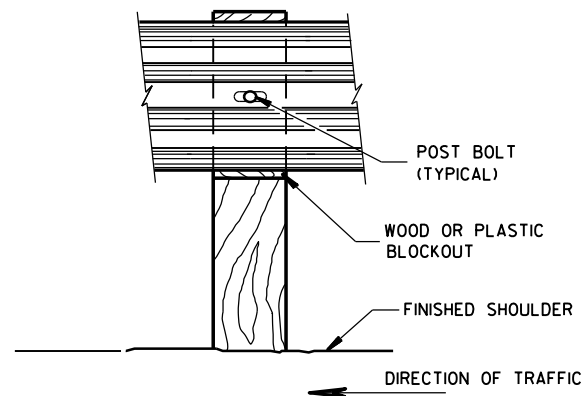
FRONT VIEW

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

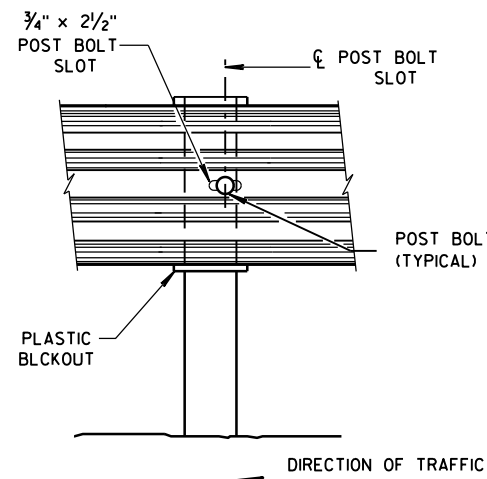


FRONT VIEW

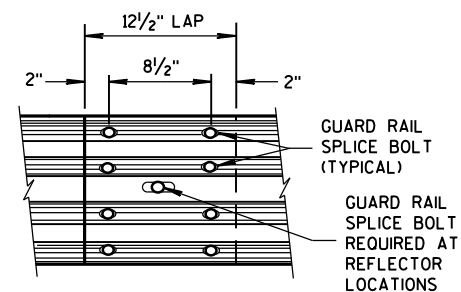
QUARTER POST SPACING (QS)



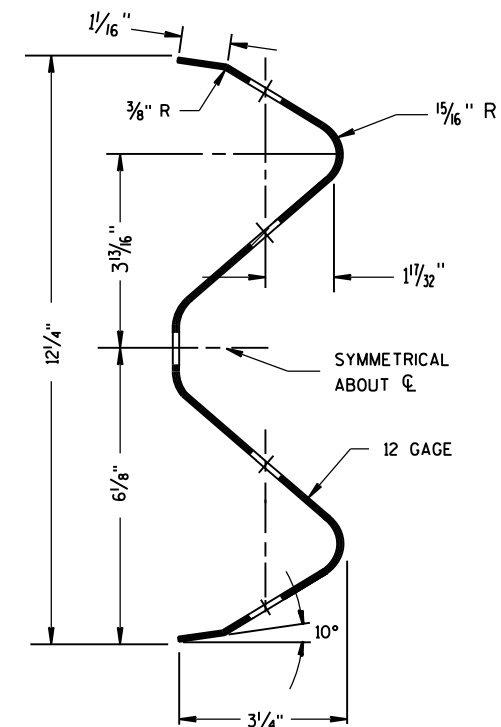
FRONT VIEW AT WOOD POST



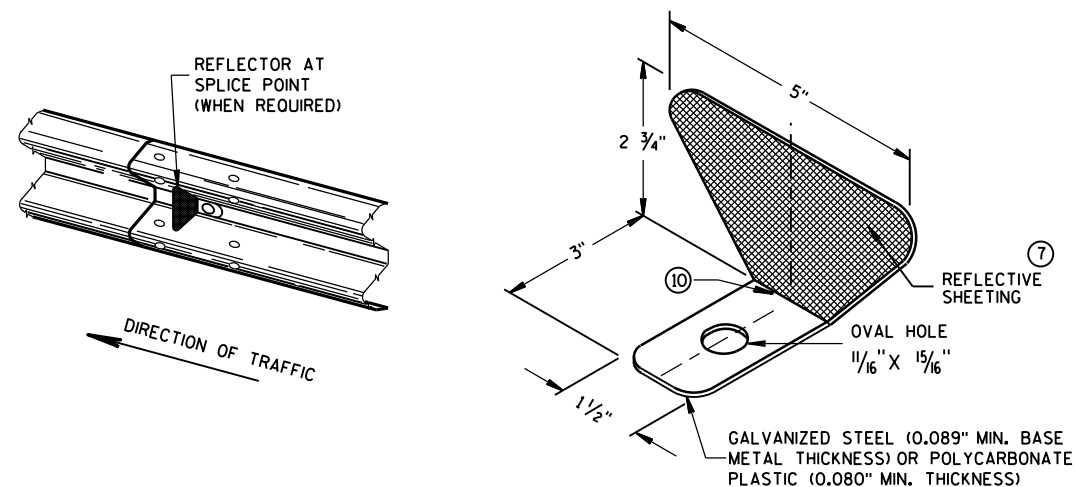
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

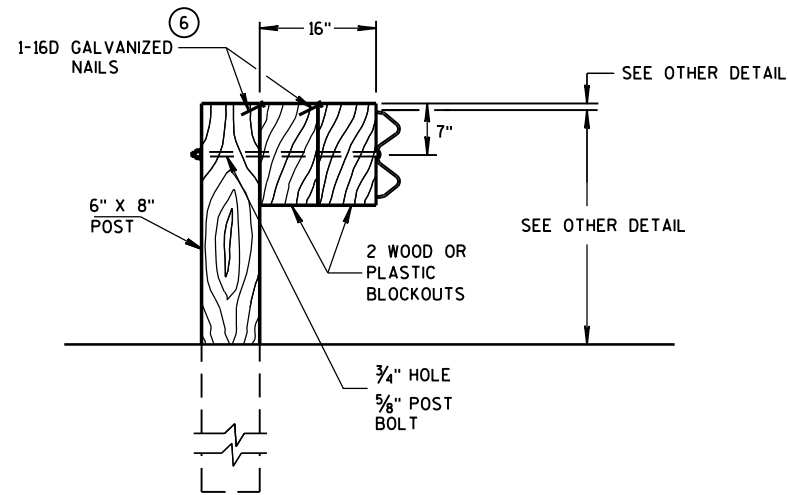
GENERAL NOTES

- 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 ^⑧				
	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	

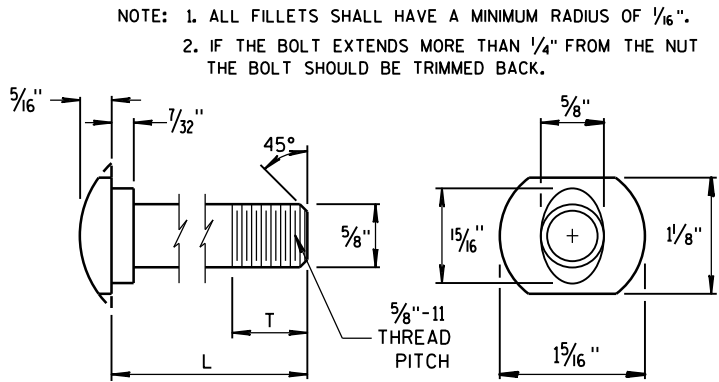
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

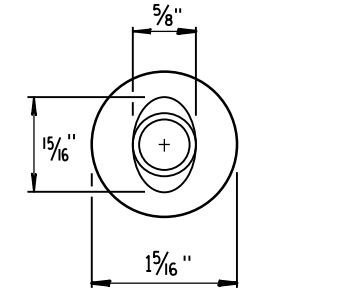


DETAIL FOR 16" BLOCKOUT DEPTH

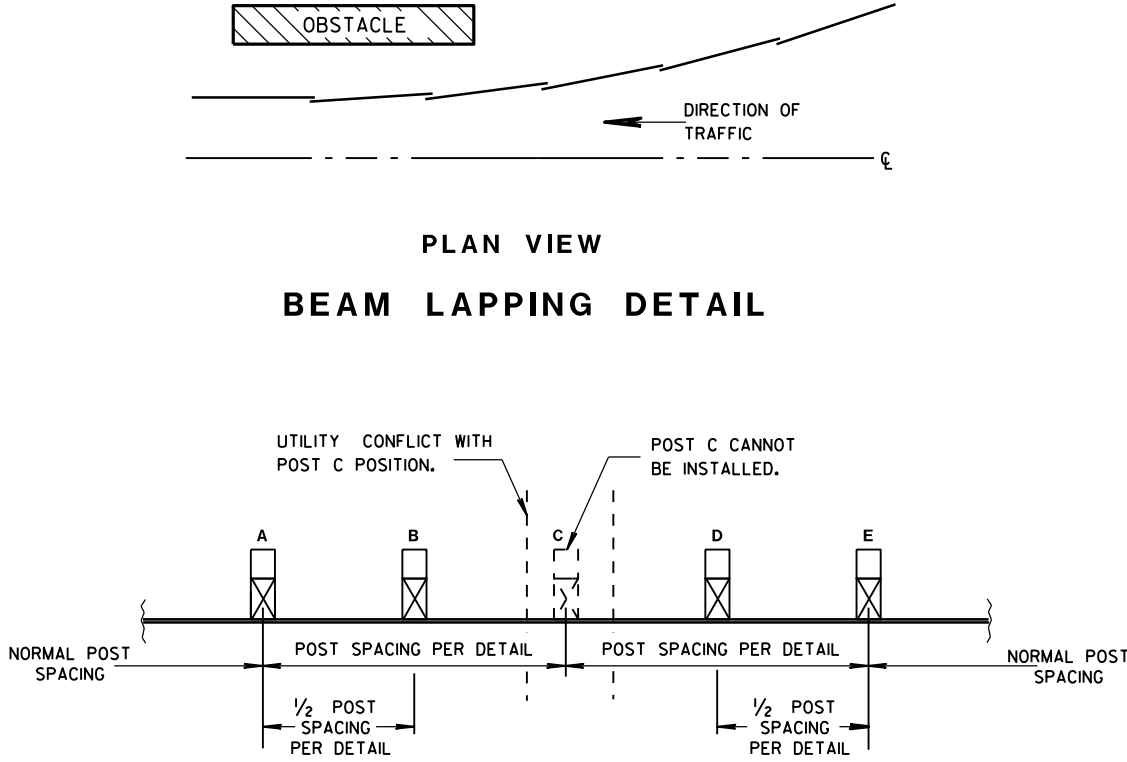
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



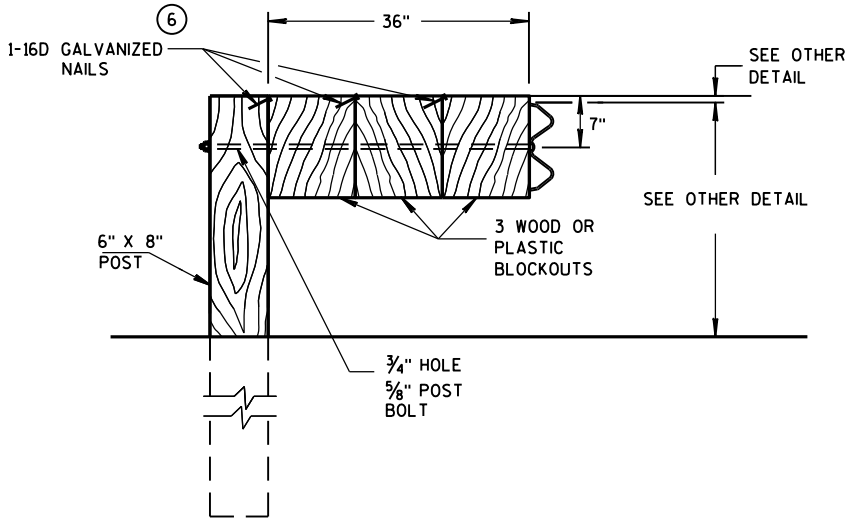
POST BOLT TABLE



ALTERNATE BOLT HEAD



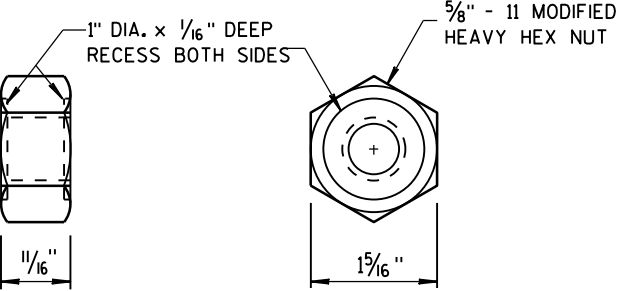
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



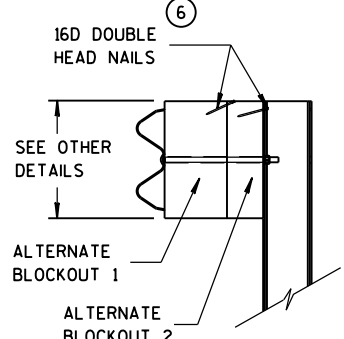
DETAIL FOR 36" BLOCKOUT DEPTH

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.

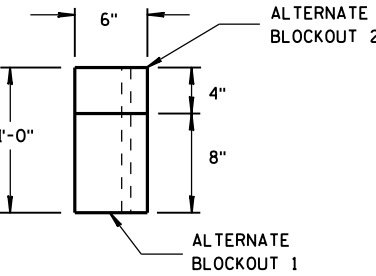
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



POST BOLT AND RECESS NUT



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2014 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS (63) ENT 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.
- (G) 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.

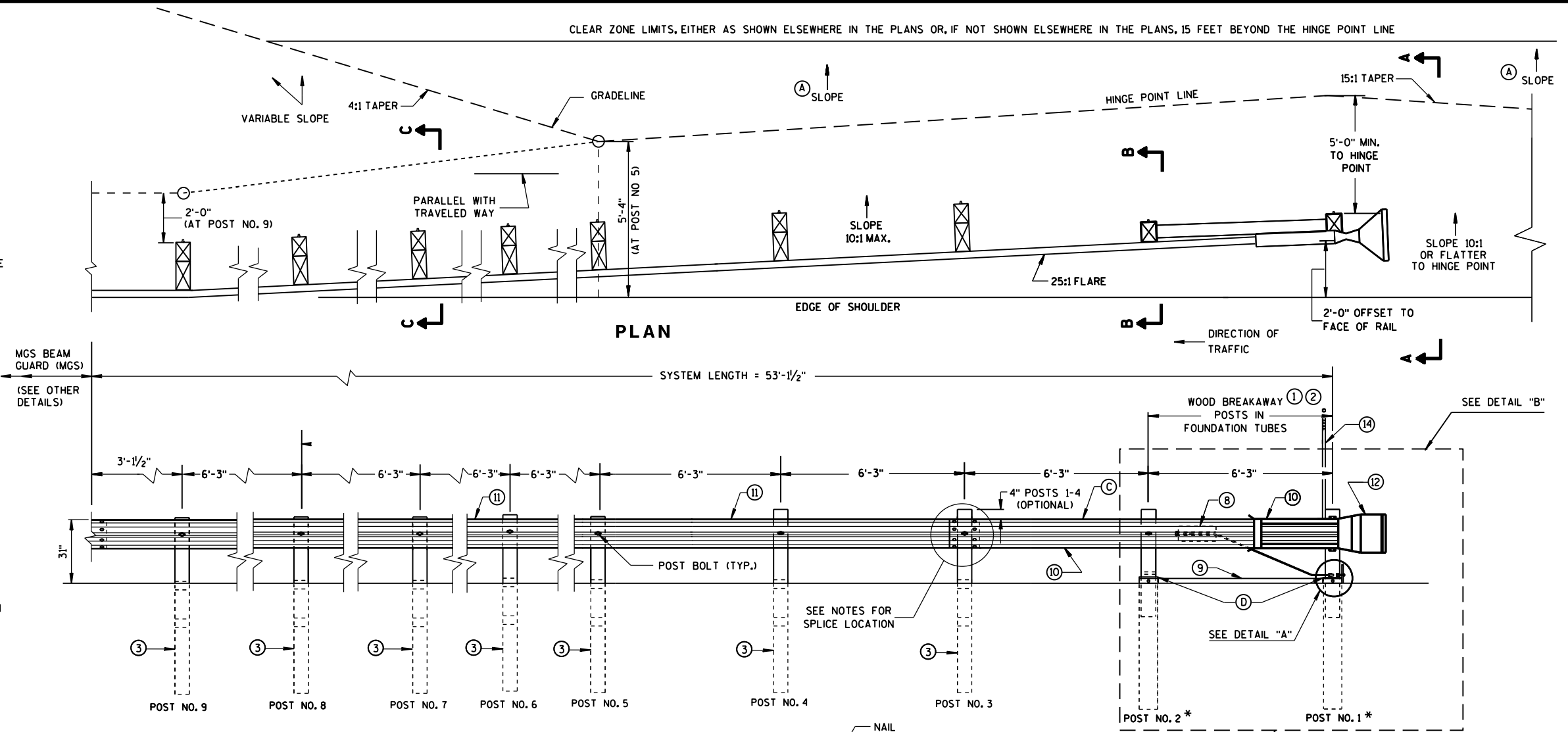
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

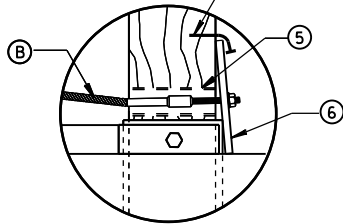
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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.

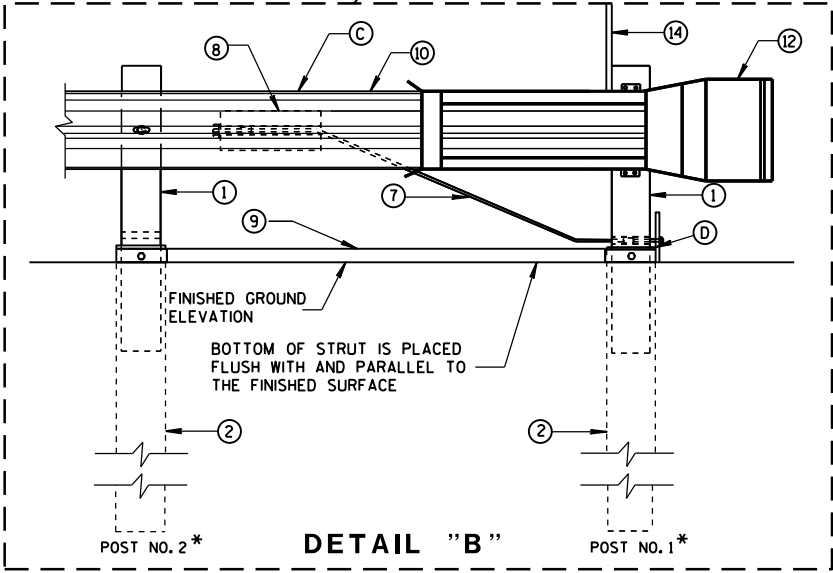
THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



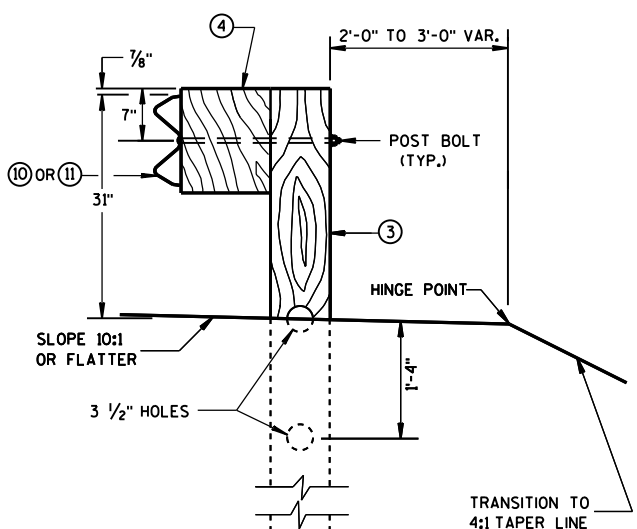
ELEVATION



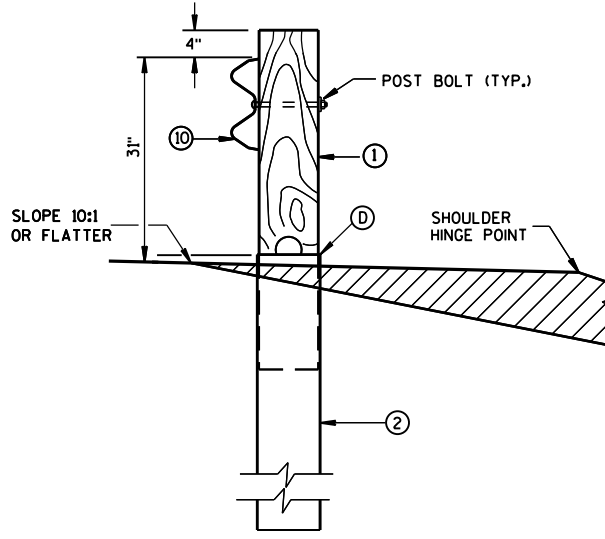
DETAIL "A"



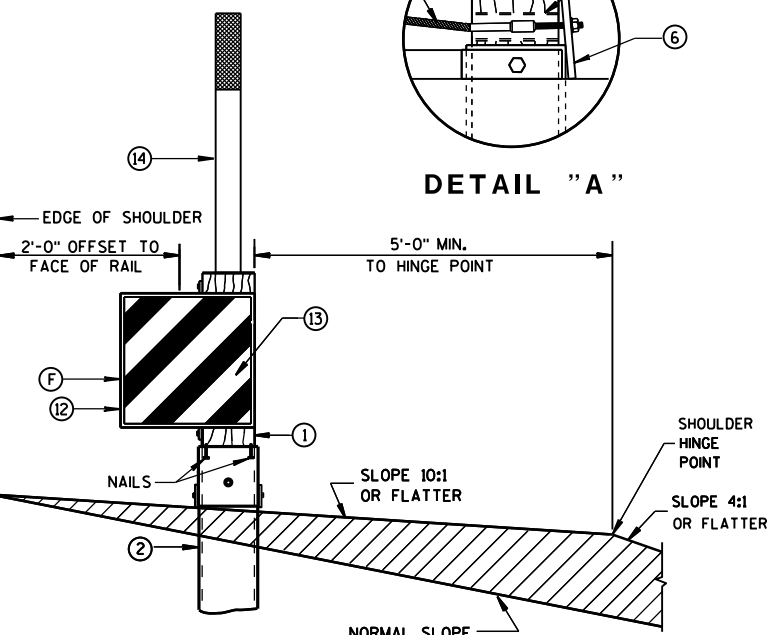
DETAIL "B"



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



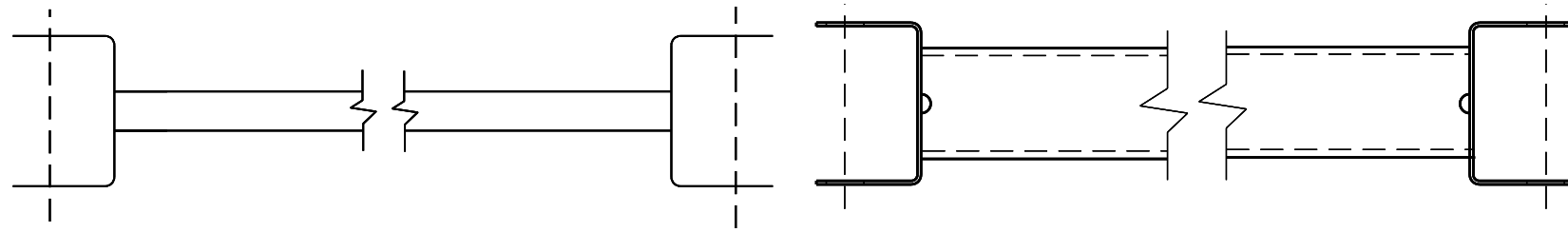
SECTION B-B
TYPICAL AT POST NO. 2*



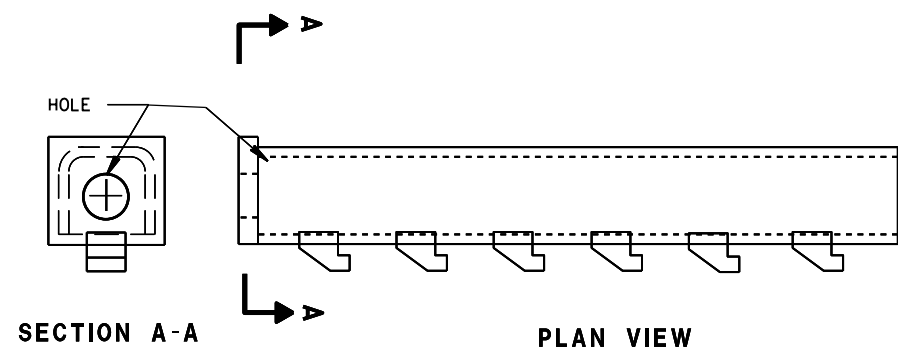
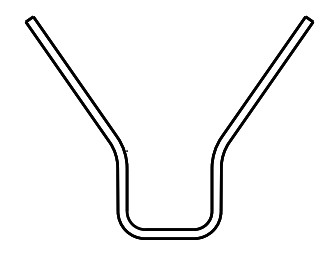
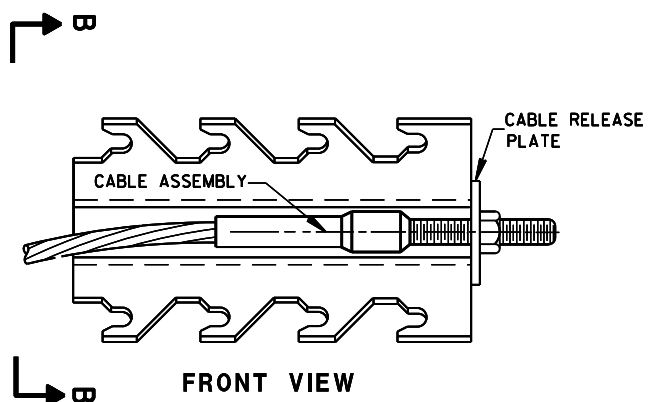
SECTION A-A
TYPICAL AT POST NO. 1*

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



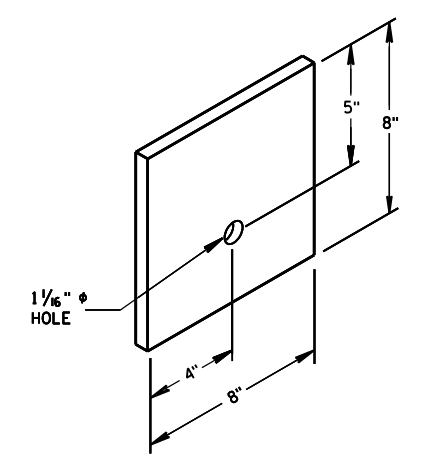
9 H
GENERIC GROUND STRUT



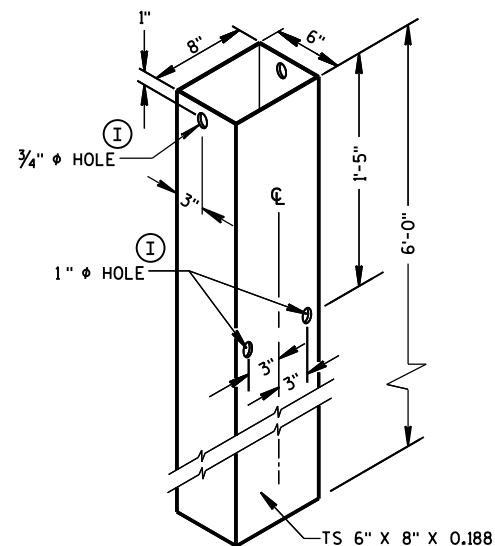
8 H
GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

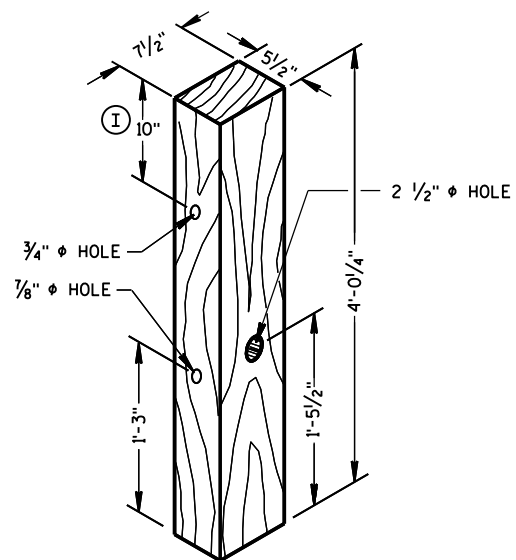
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND 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)



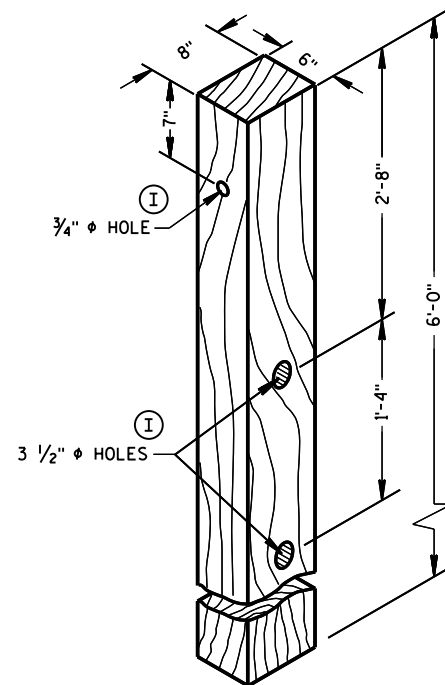
⑥
BEARING PLATE



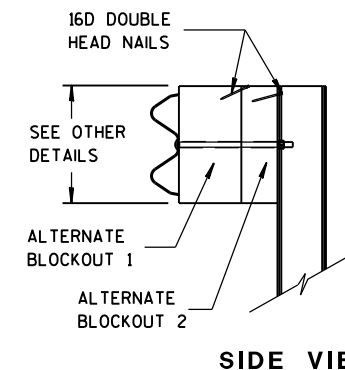
FOUNDATION TUBE ②



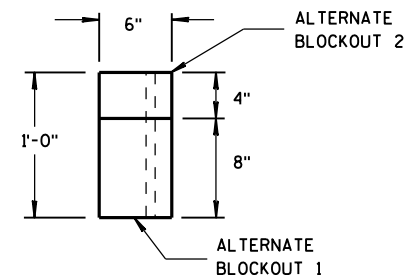
WOOD BREAKAWAY POST ①



WOOD CRT POST ③

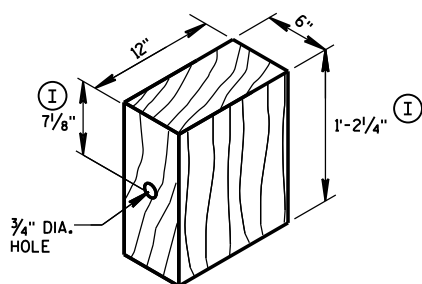


SIDE VIEW



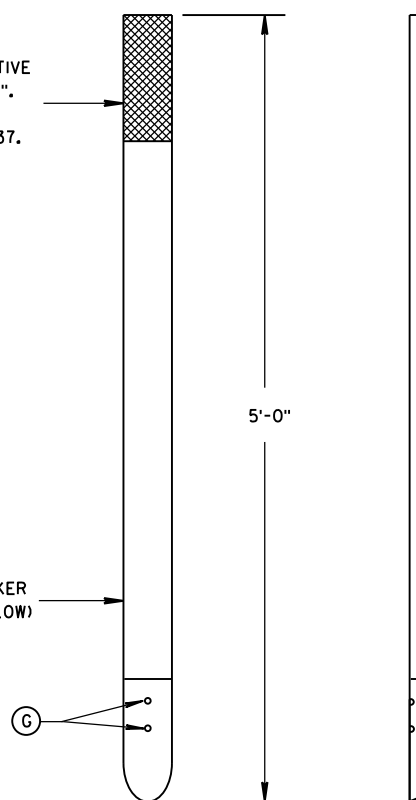
TOP VIEW

**ALTERNATE WOOD
BLOCKOUT DETAIL**



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

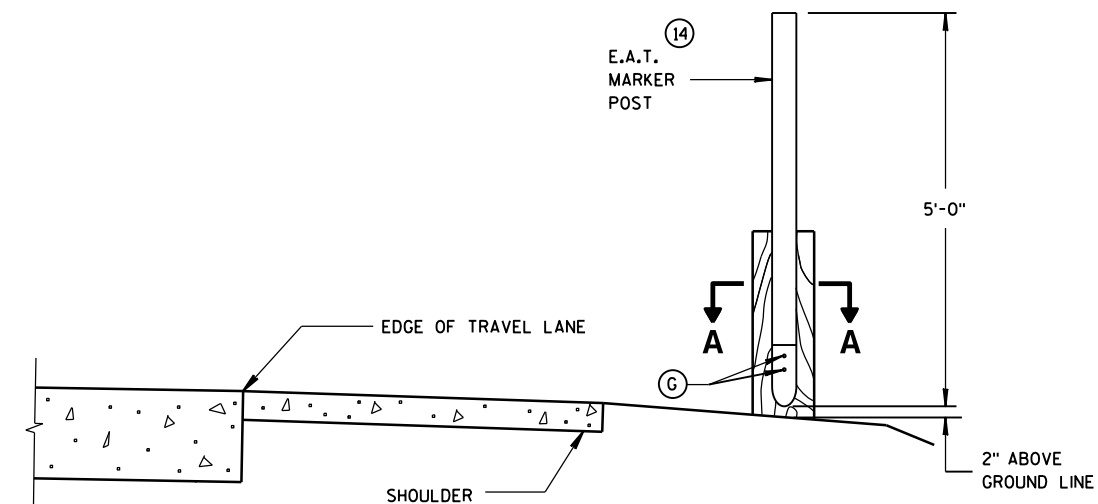
TYPE H
YELLOW REFLECTIVE
SHEETING 3" X 9".
SEE STANDARD
SPECIFICATION 637.



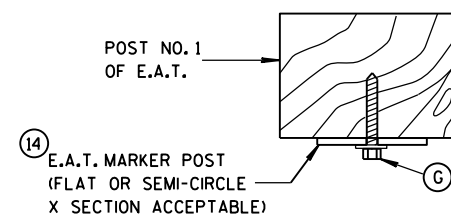
FRONT VIEW

SIDE VIEW

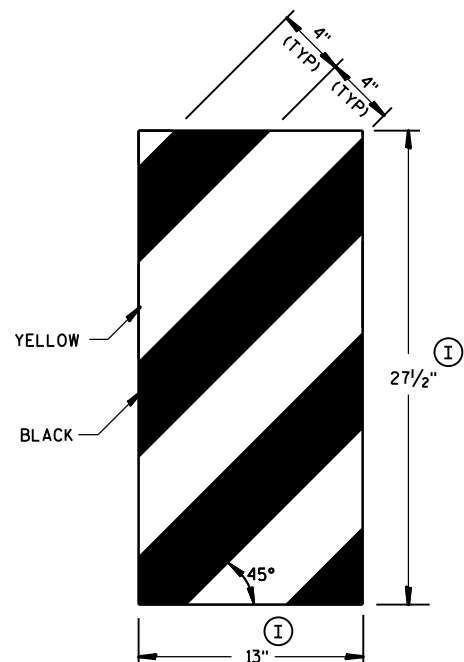
E.A.T. MARKER POST ⑭



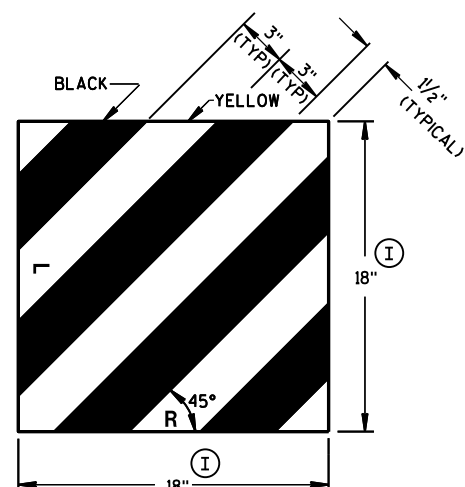
**TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1**
(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A



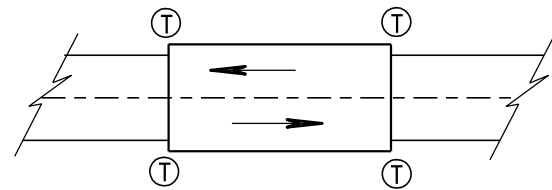
GENERIC REFLECTIVE SHEETING ⑬ ①



**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

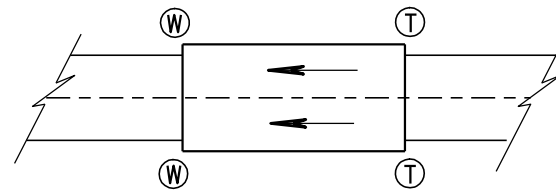
**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

APPROVED
June 2014 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS 66 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".

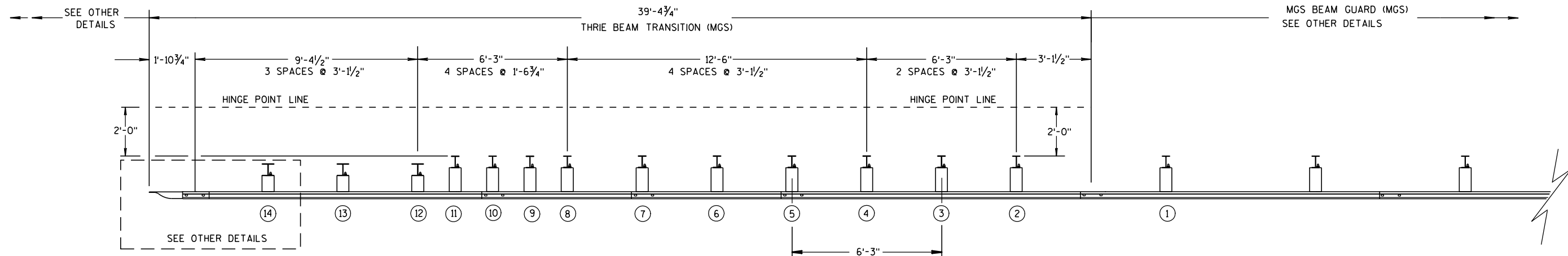
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

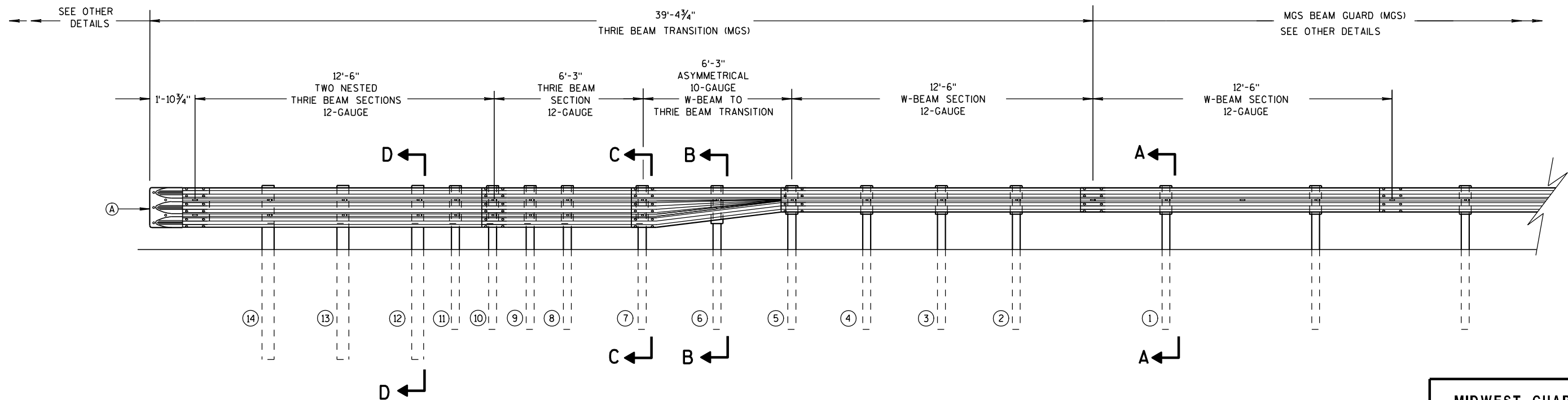
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

Ⓐ 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

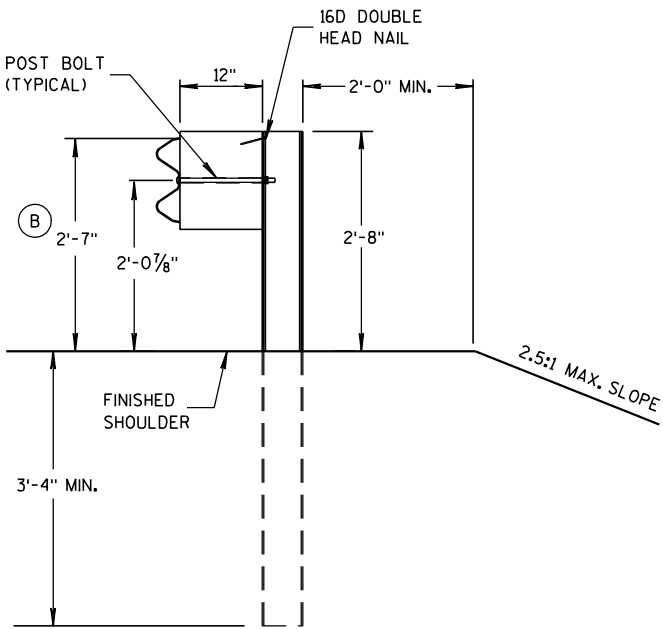
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

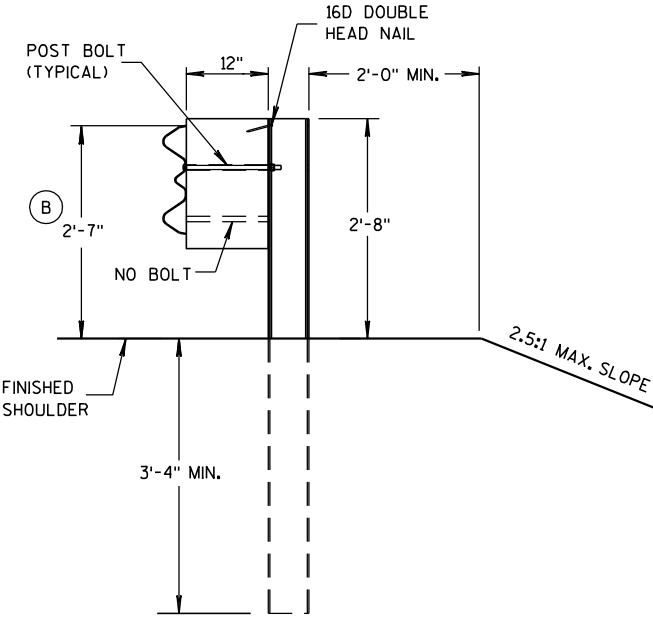
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

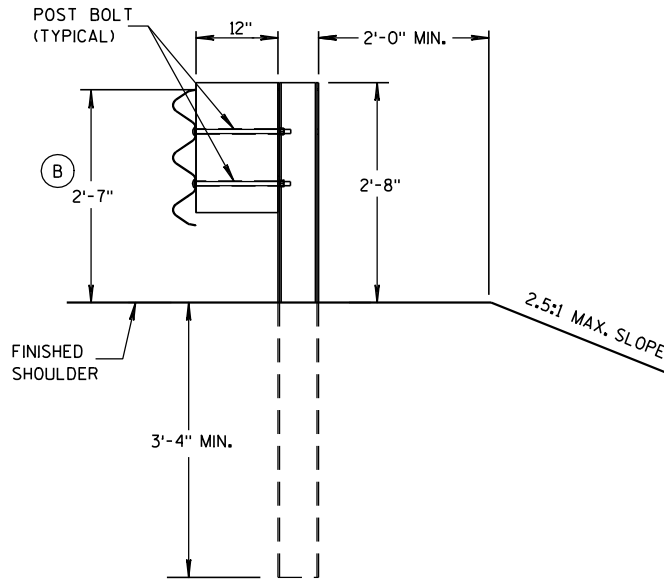
(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



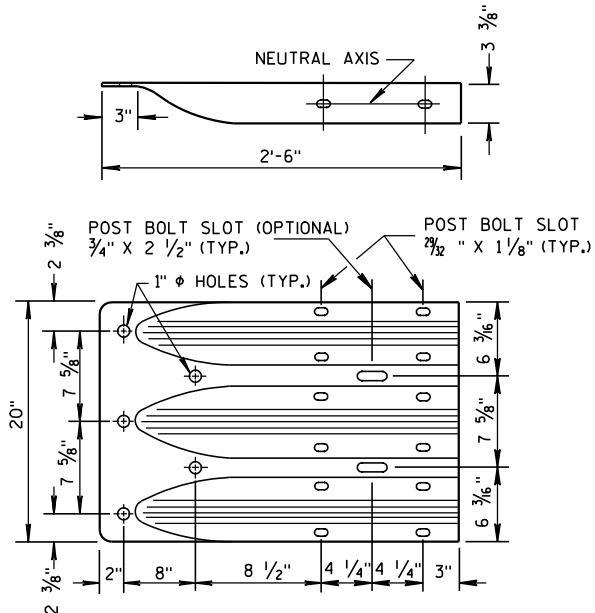
SECTION A-A
POSTS 1-5



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11



THRIE BEAM
TERMINAL CONNECTOR

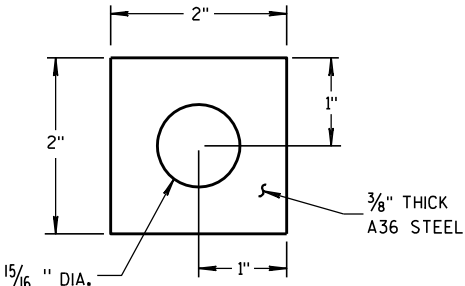
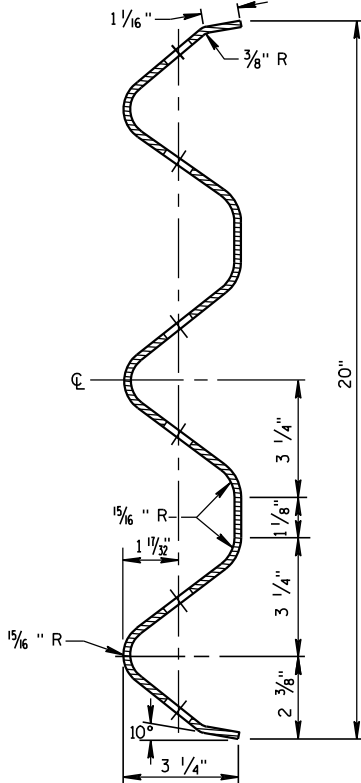
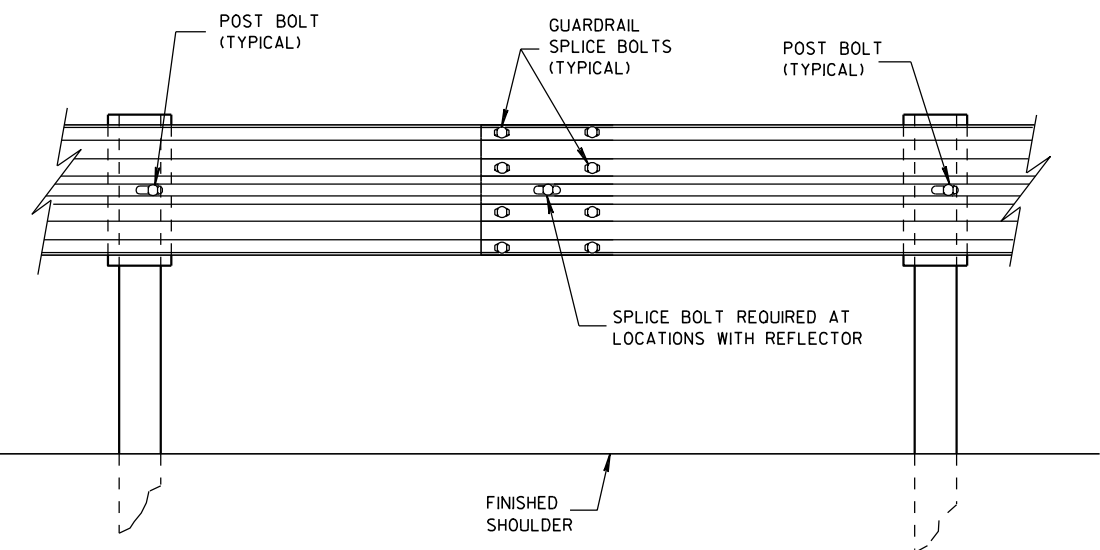


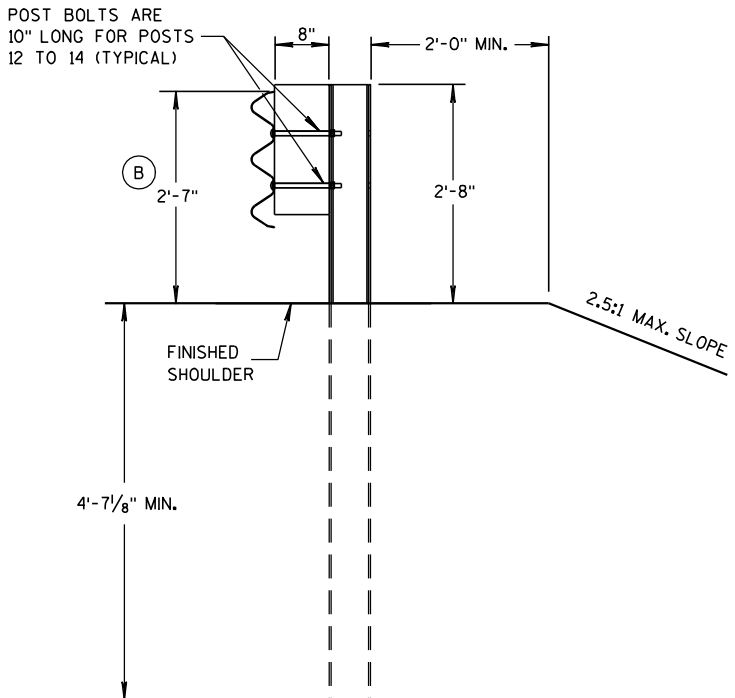
PLATE WASHER DETAIL



SECTION THRU THRIE
BEAM RAIL ELEMENT



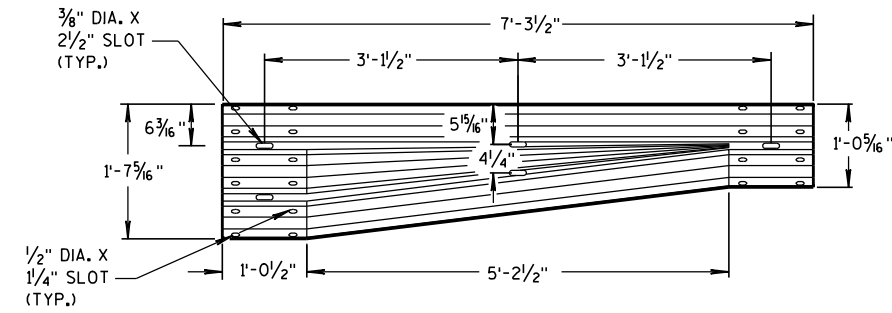
SPLICE DETAIL



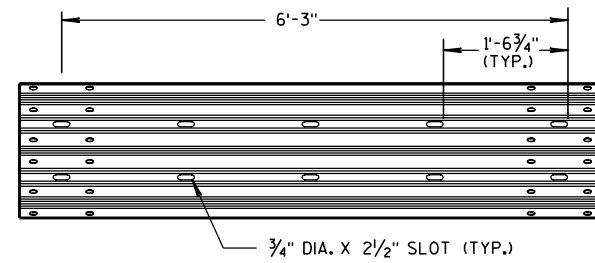
SECTION D-D
POSTS 12-14

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

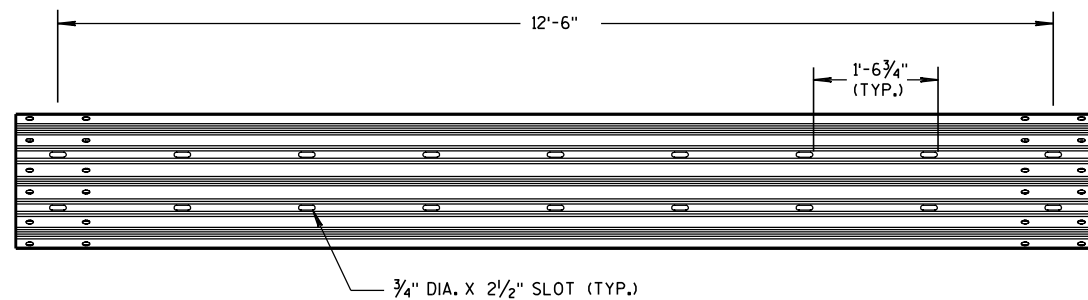
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



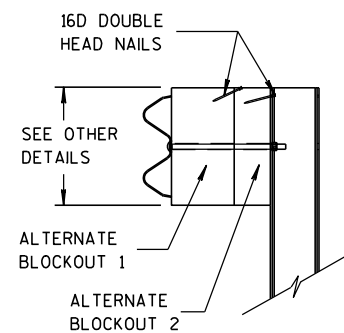
W-BEAM TO THRIE BEAM TRANSITION SECTION



6'-3" THRIE BEAM SECTION

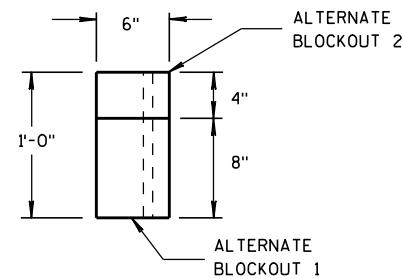


12'-6" THRIE BEAM SECTION

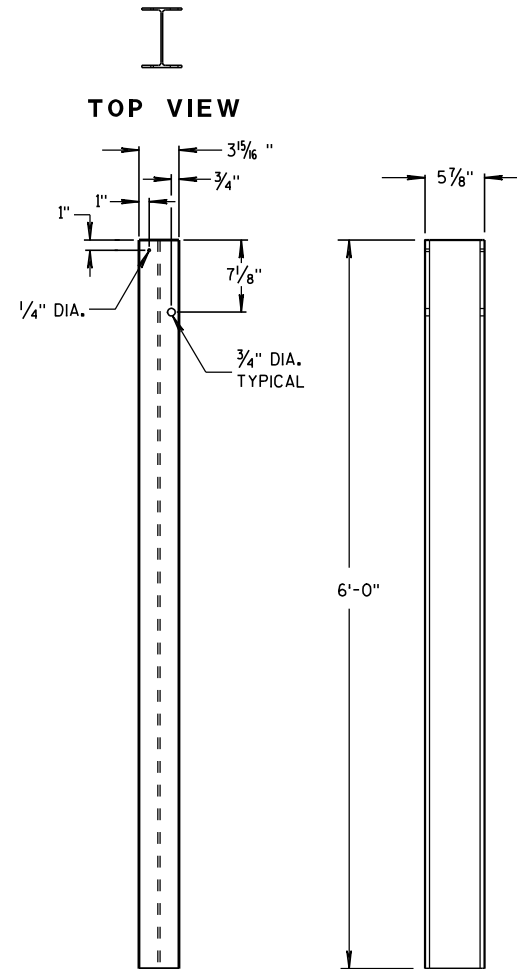


SIDE VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



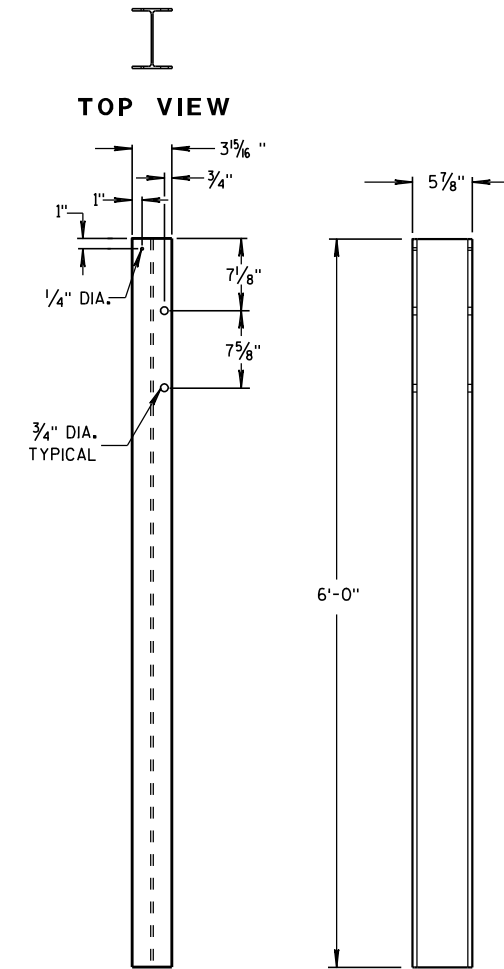
TOP VIEW



FRONT VIEW

SIDE VIEW

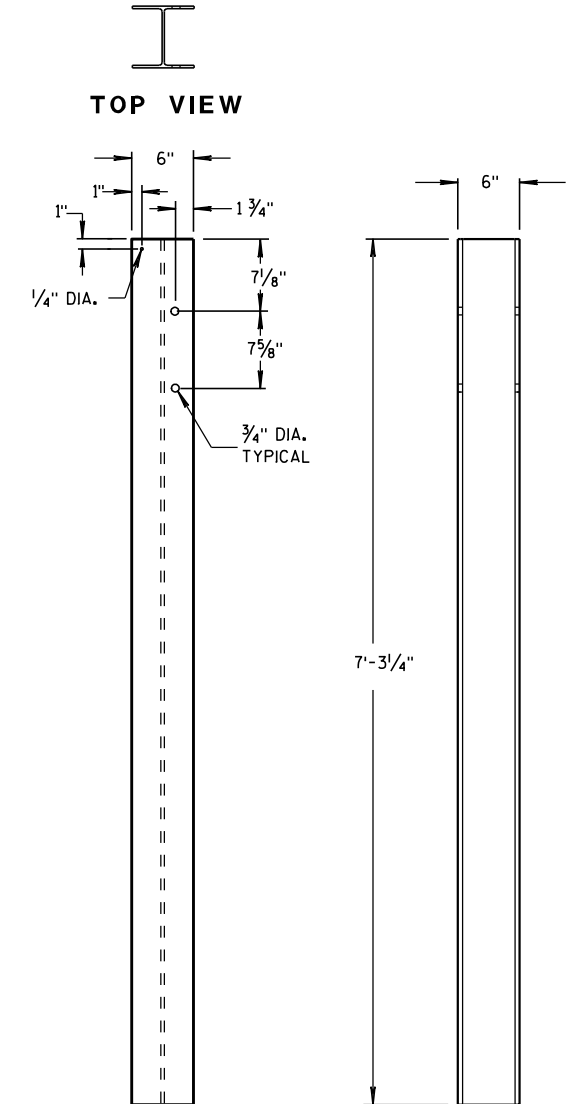
STEEL POSTS 1-5



FRONT VIEW

SIDE VIEW

STEEL POSTS 6-11



FRONT VIEW

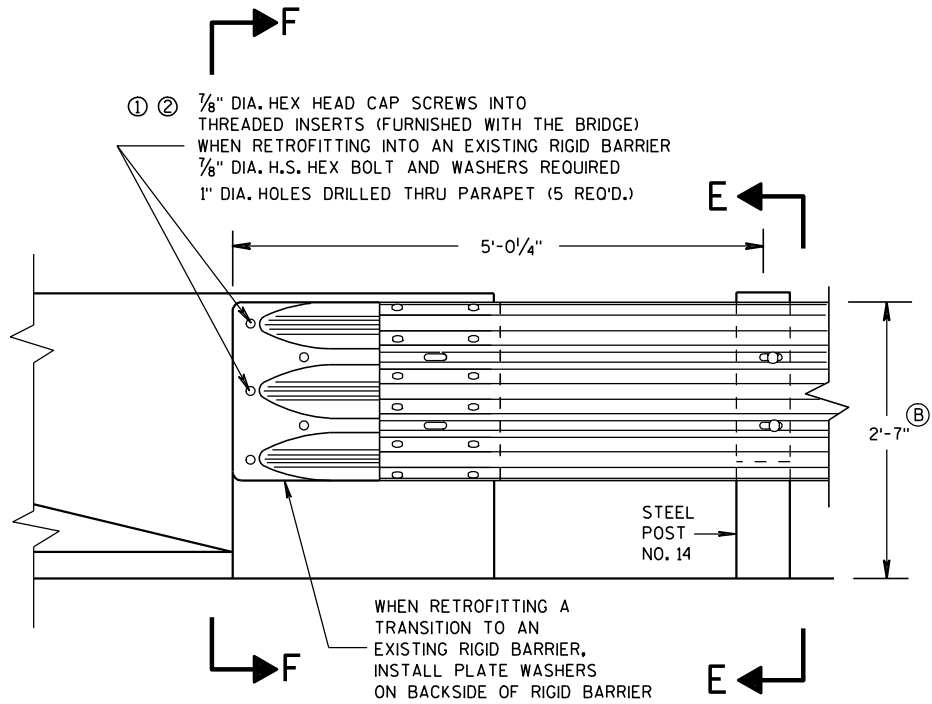
SIDE VIEW

STEEL POSTS 12-14

STEEL POST SIZES

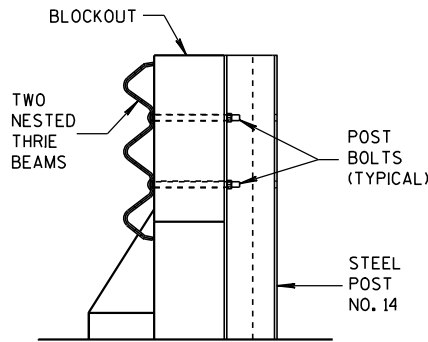
POST NUMBER	SECTION TYPE	LENGTH
①	W6x9	72"
②	W6x9	72"
③	W6x9	72"
④	W6x9	72"
⑤	W6x9	72"
⑥	W6x9	72"
⑦	W6x9	72"
⑧	W6x9	72"
⑨	W6x9	72"
⑩	W6x9	72"
⑪	W6x9	72"
⑫	W6x15	87 1/8"
⑬	W6x15	87 1/8"
⑭	W6x15	87 1/8"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)



FRONT VIEW

THRIE BEAM CONNECTION TO BRIDGE
PARAPET WITH SQUARE ENDS

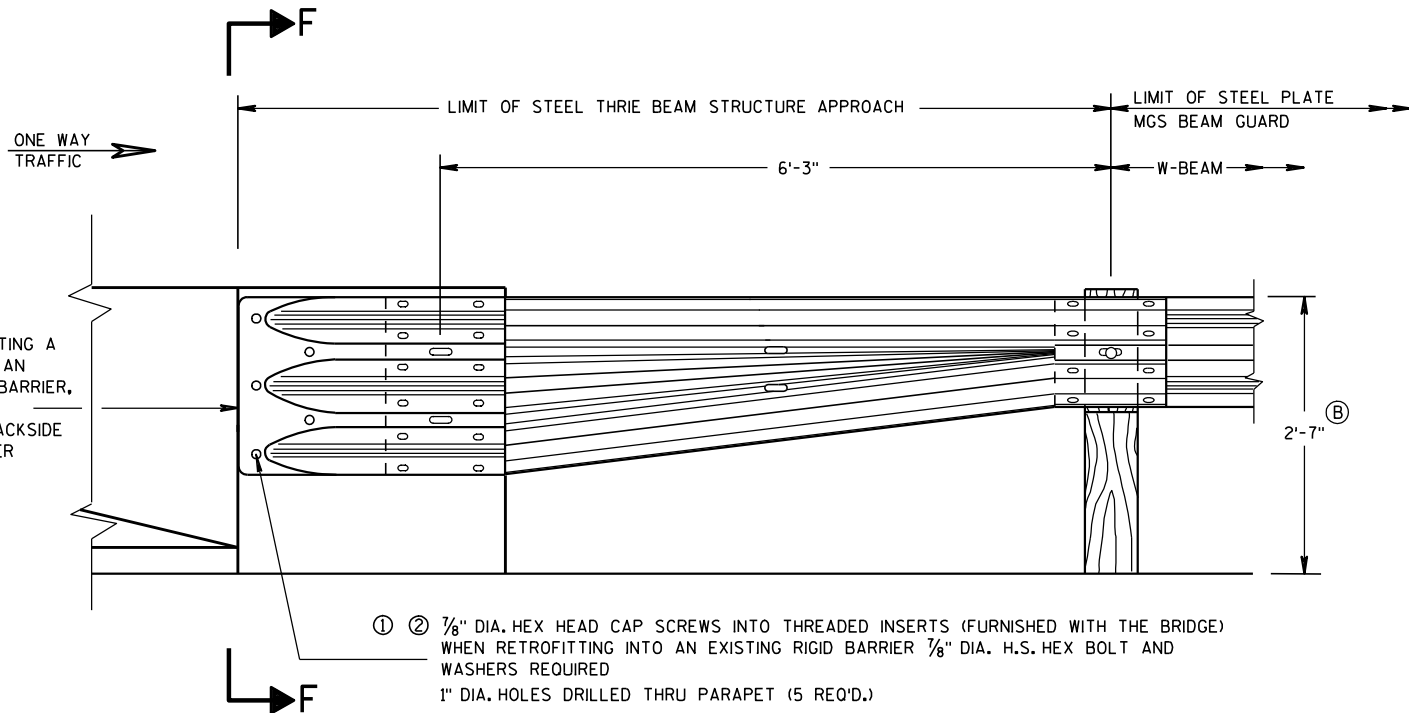


SECTION E-E

GENERAL NOTES

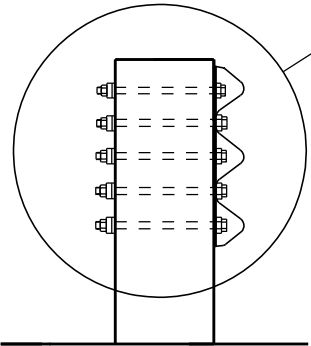
THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

- 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".

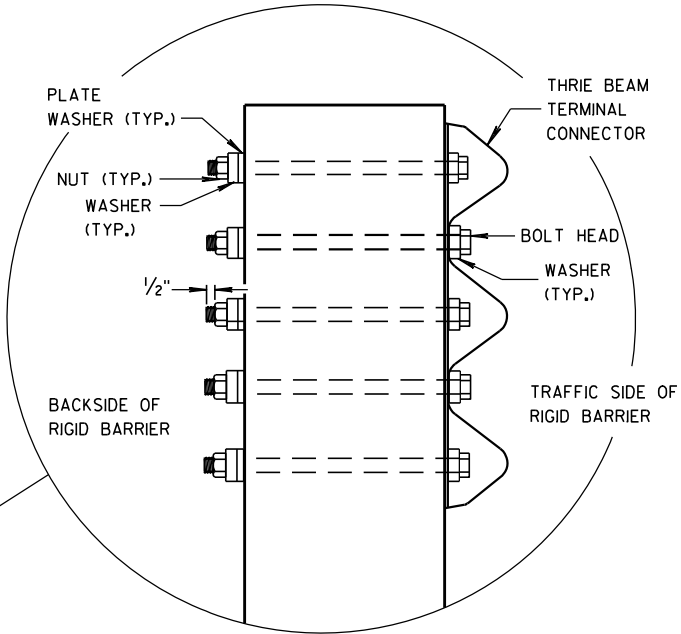


FRONT VIEW

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
FHWA	

6

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

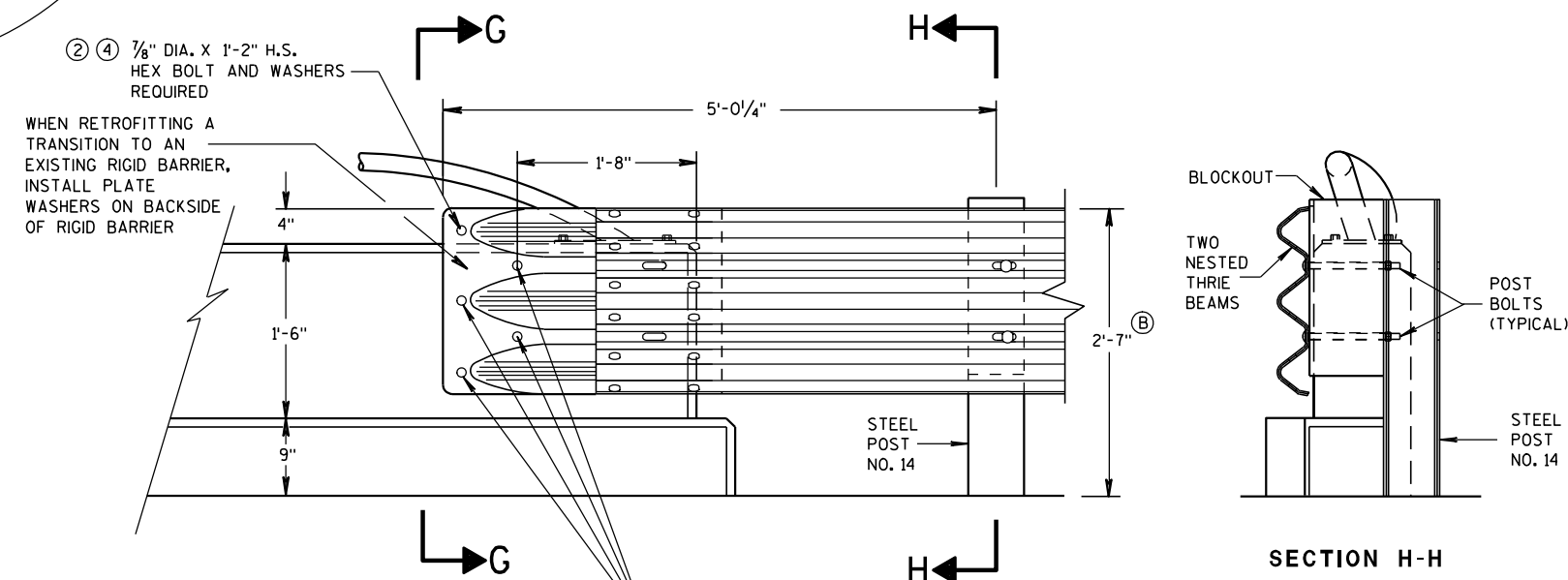
- 6



FRONT VIEW

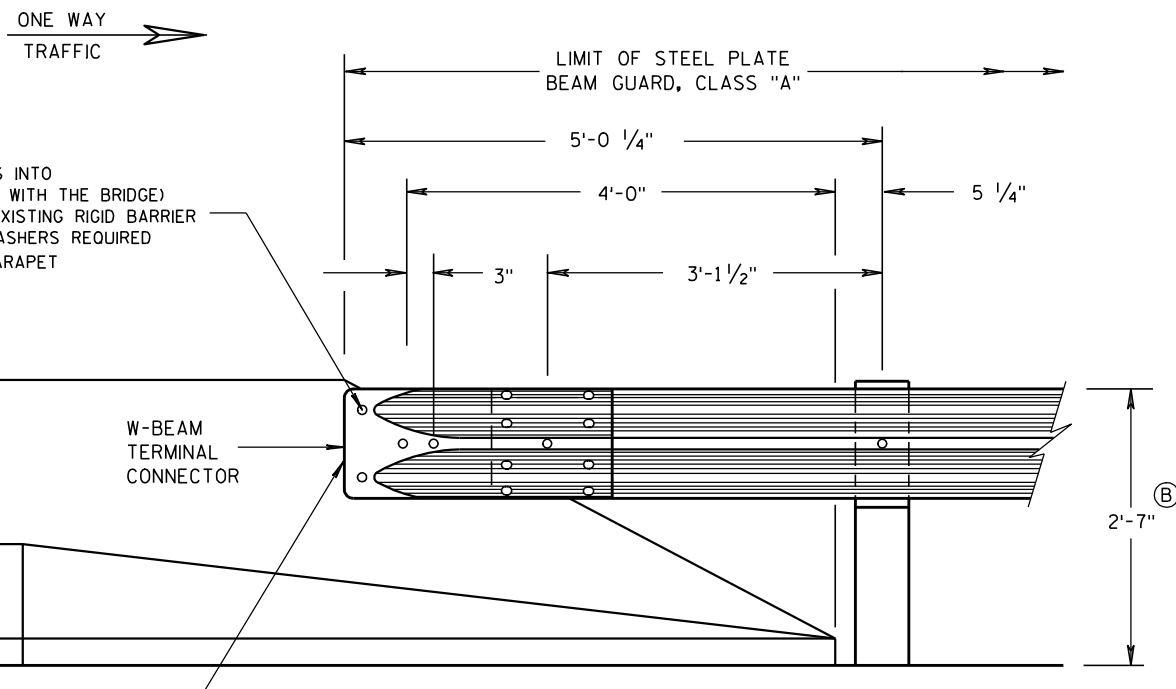
MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)

APPROVED
8-31-2012 /S/ Jerry H. Zoon
DATE ROADWAY STANDARDS (71) ENT
ENGINEER



SECTION H-H

MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)



FRONT VIEW

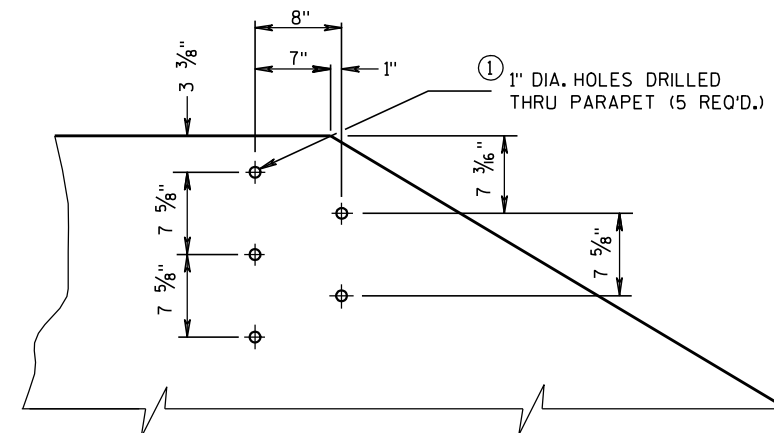
W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

WHEN RETROFITTING A TRANSITION
TO AN EXISTING RIGID BARRIER,
INSTALL PLATE WASHERS ON
BACKSIDE OF RIGID BARRIER.

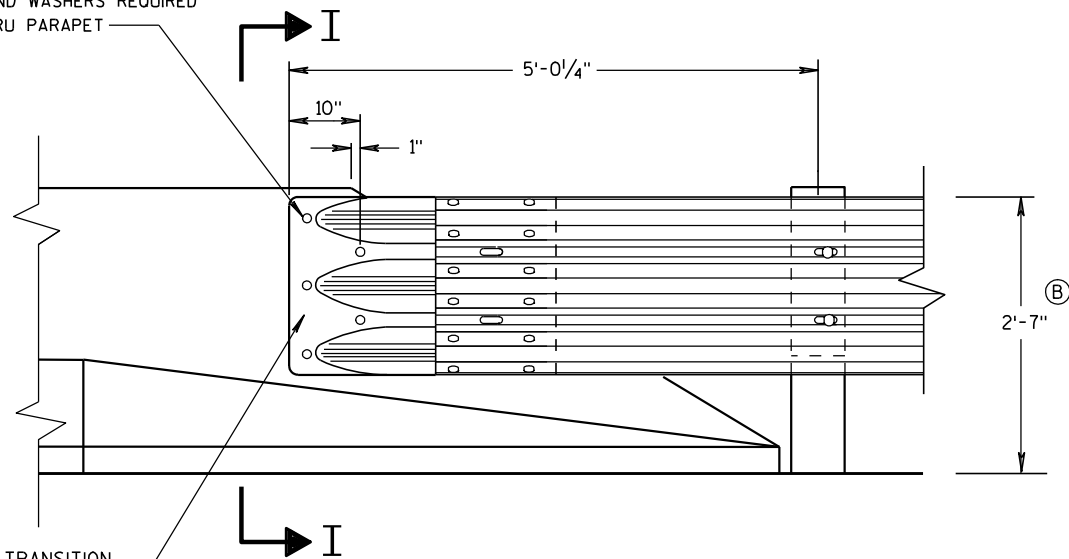
GENERAL NOTES

- 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 TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.



DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION

- ① ② 7/8" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER 7/8" DIA. H.S. HEX BOLT AND WASHERS REQUIRED 1" DIA. HOLES DRILLED THRU PARAPET (5 REQ'D.).

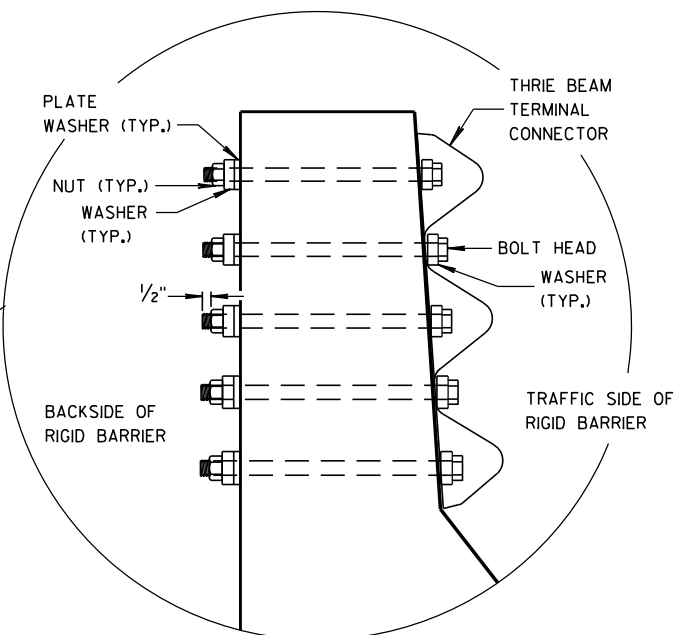


FRONT VIEW

THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

WHEN RETROFITTING A TRANSITION
TO AN EXISTING RIGID BARRIER,
INSTALL PLATE WASHERS ON
BACKSIDE OF RIGID BARRIER.

SECTION I-I



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012

DATE

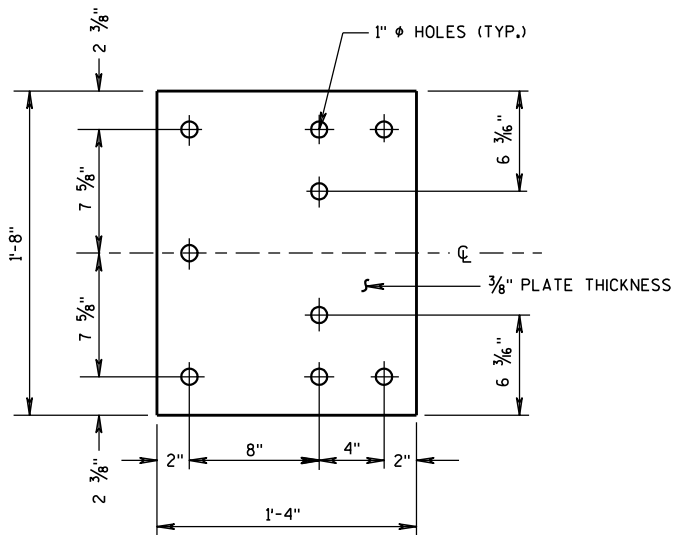
FHWA

/S/ Jerry H. Zopp

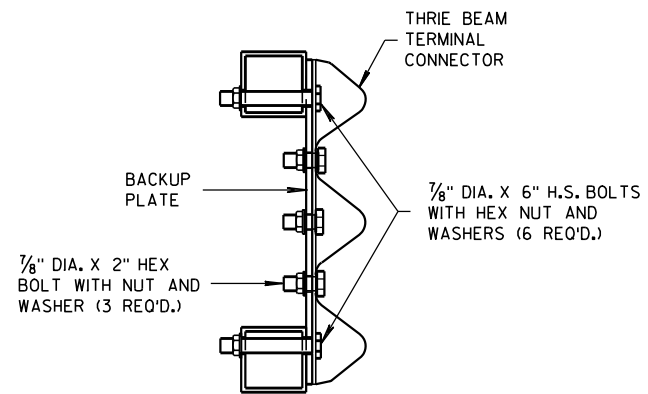
ROADWAY STANDARDS 72

ENGINEER

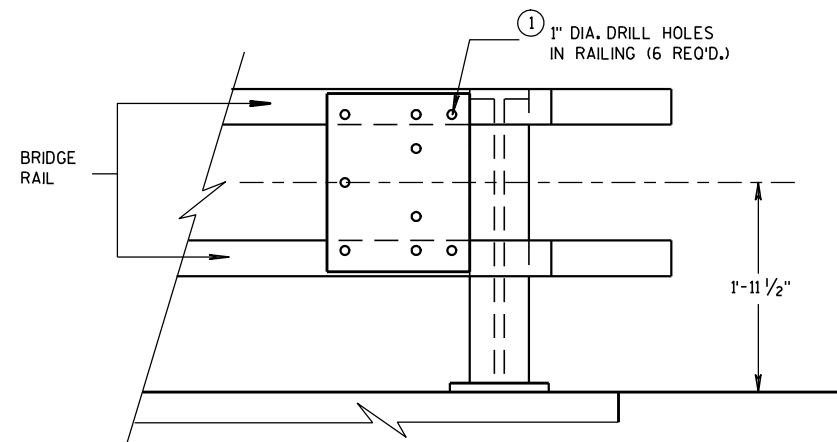
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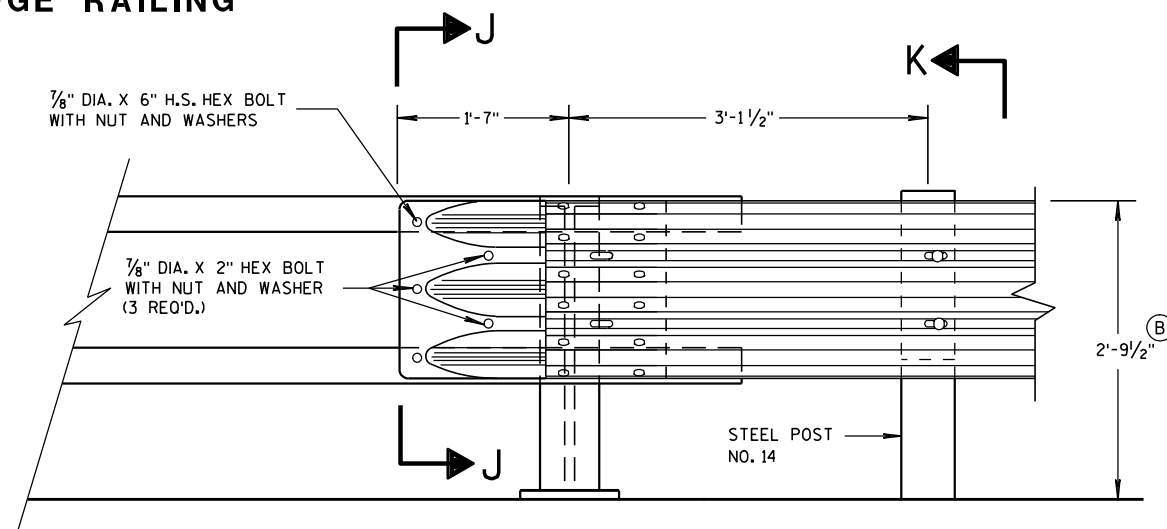
BACK-UP PLATE DETAIL



SECTION J-J

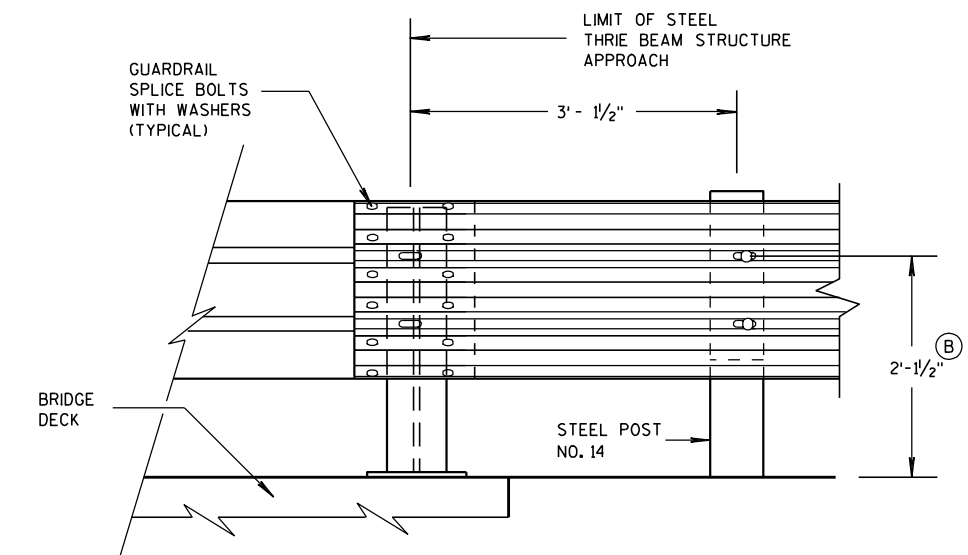


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



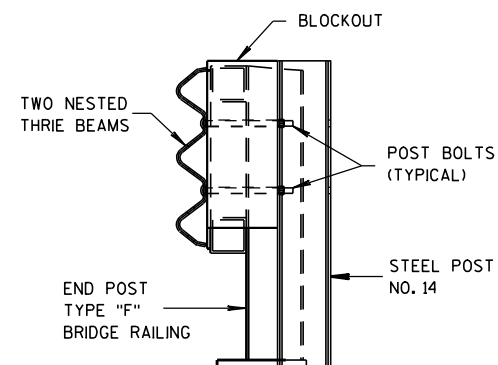
FRONT VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



SECTION K-K

GENERAL NOTES

- ① DRILLING HOLES THROUGH THE PAPER, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012

DATE

FHWA

/S/ Jerry H. Zeng

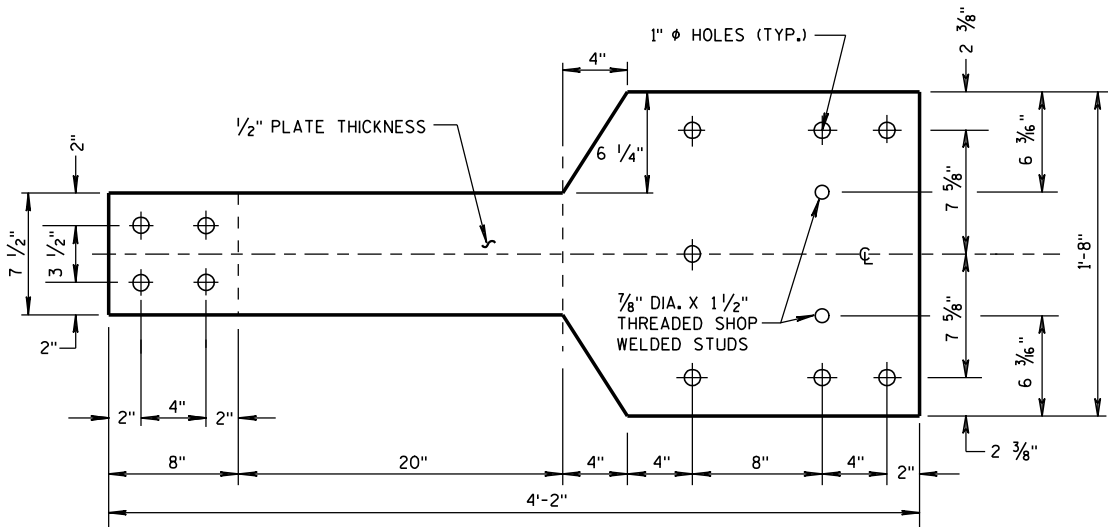
ROADWAY STANDARDS [73]

ENGINEER

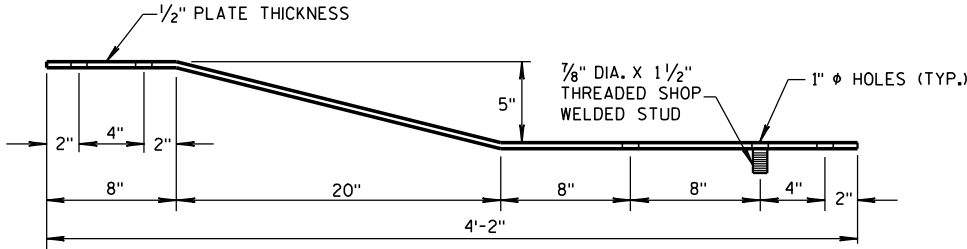
ENT

GENERAL NOTES

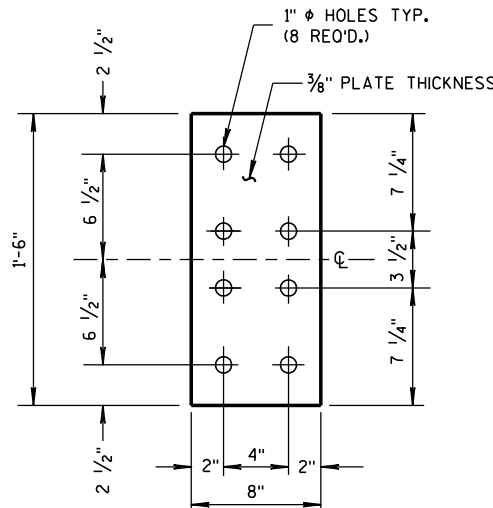
(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



FRONT VIEW

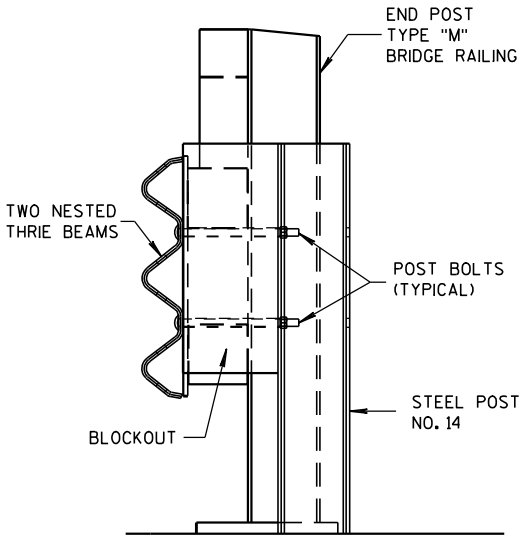


PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"

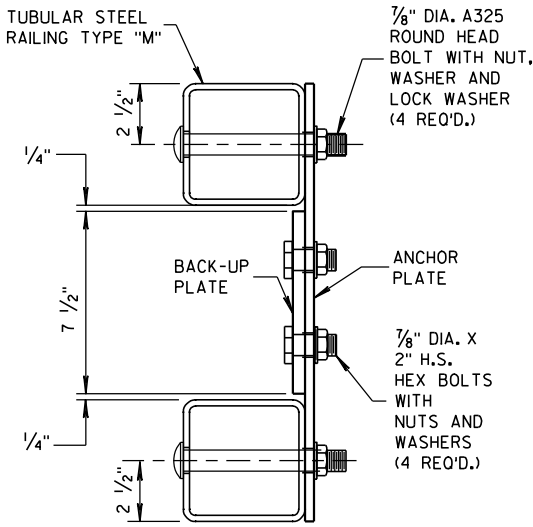


FRONT VIEW

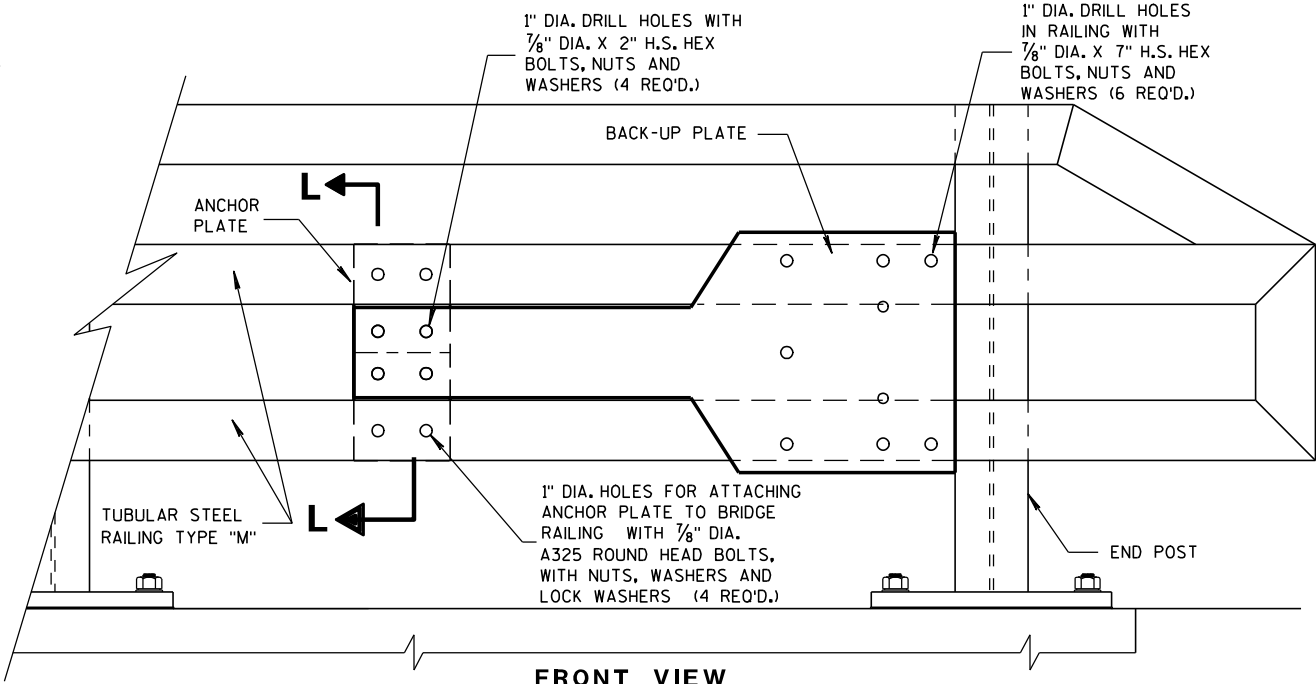
ANCHOR
PLATE DETAIL,
TYPE "M"



SECTION M-M

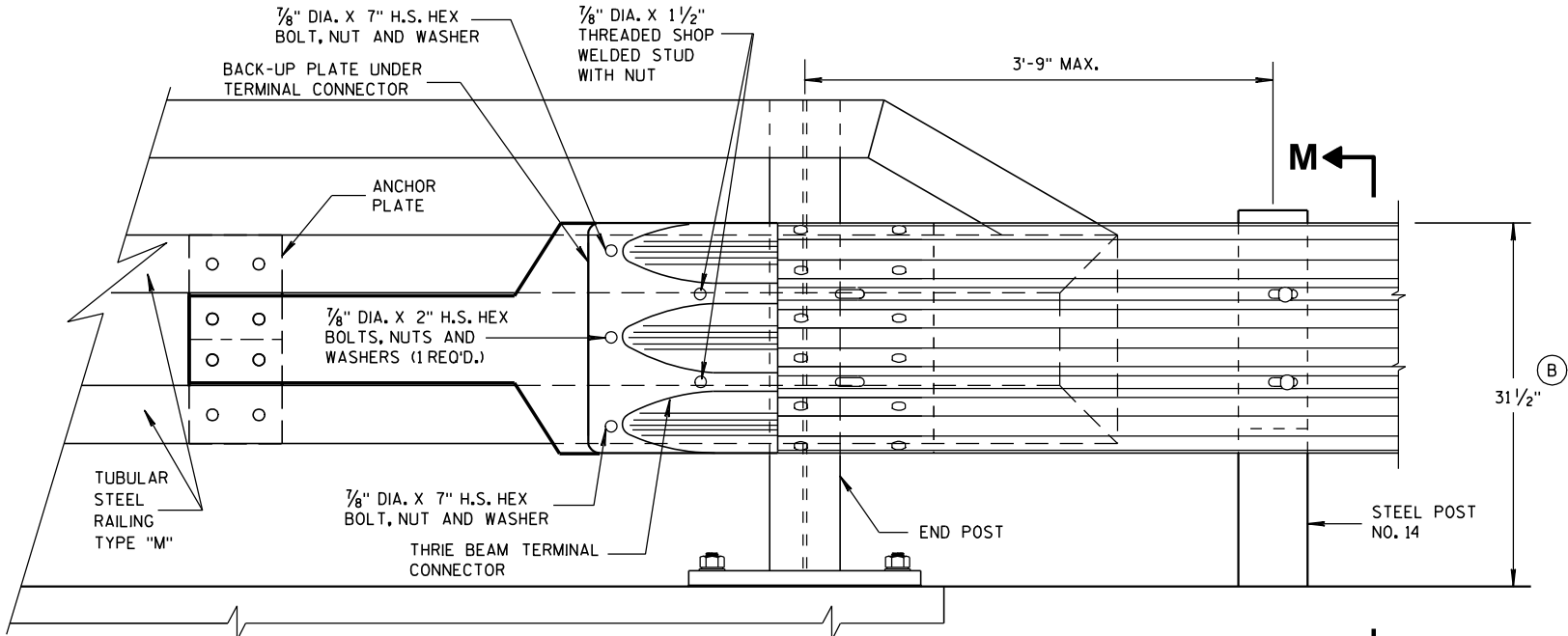


SECTION L-L

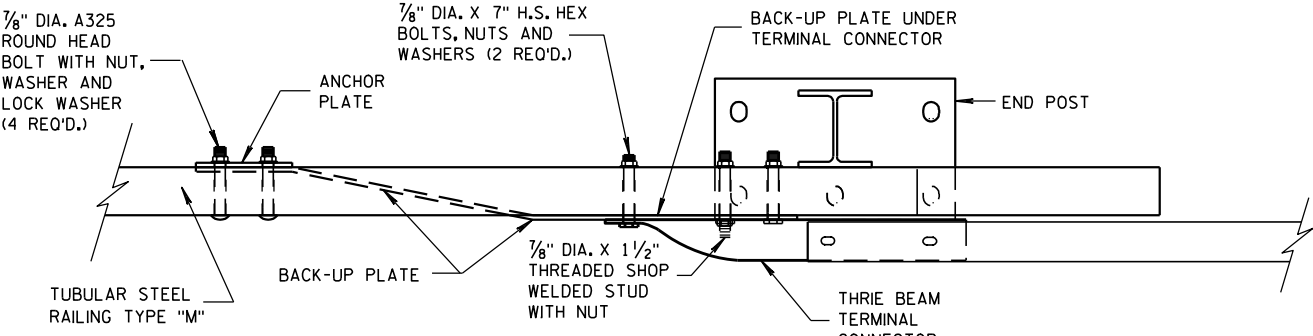


FRONT VIEW

ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-31-2012 DATE
JERRY H. ZOOZ
ROADWAY STANDARDS 74 ENGINEER
ENT



SINGLE SLOPE CONNECTION PLATE

COVER PLATE PANELS ARE $\frac{3}{16}$ " THICK.

ALL STIFFENERS ARE $\frac{1}{4}$ " THICK.

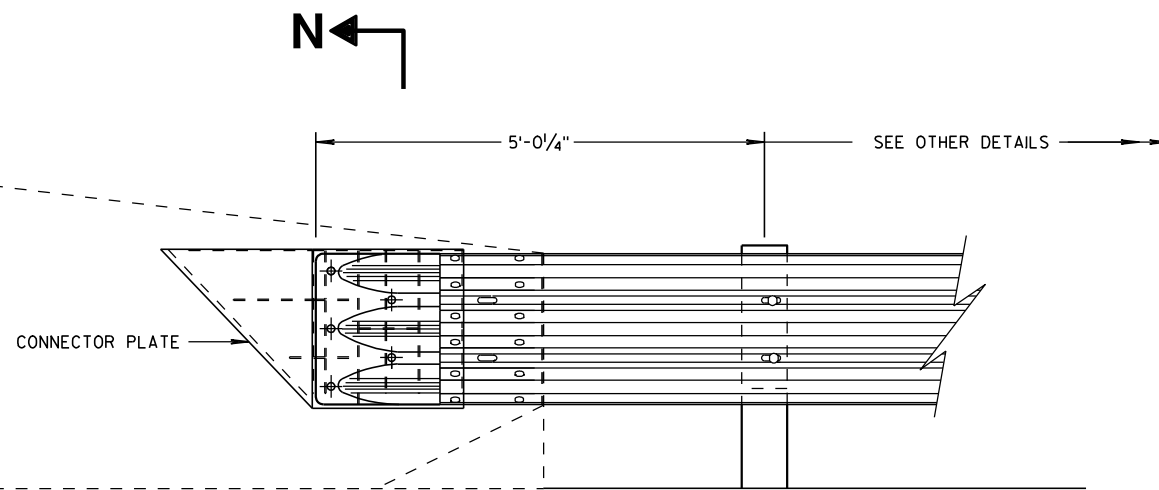
CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

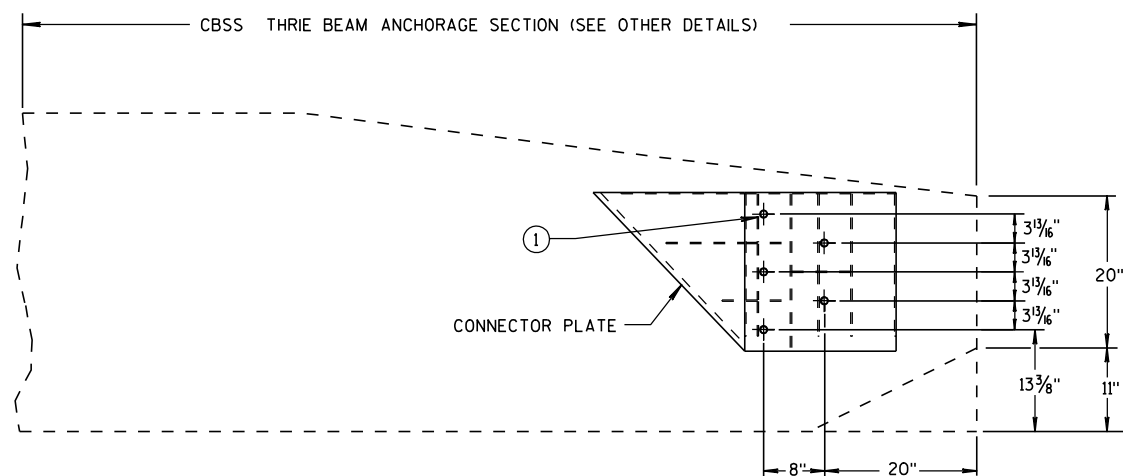
ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

- ① STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND $\frac{3}{8}$ " FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- ② STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
 $\frac{3}{8}$ " FILLET WELD BY 1" LONG SPACED AT 2".



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

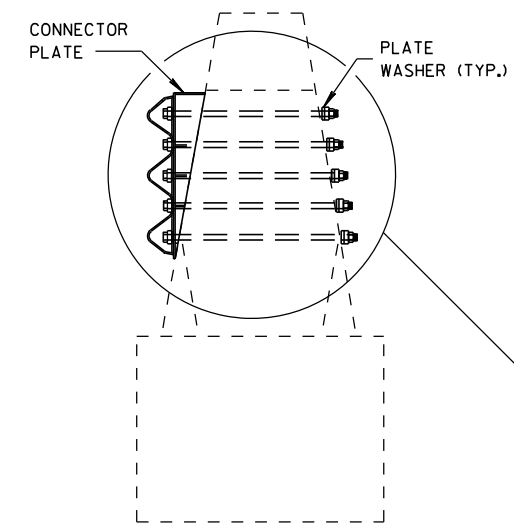


SINGLE SLOPE CONNECTION PLATE PLACEMENT

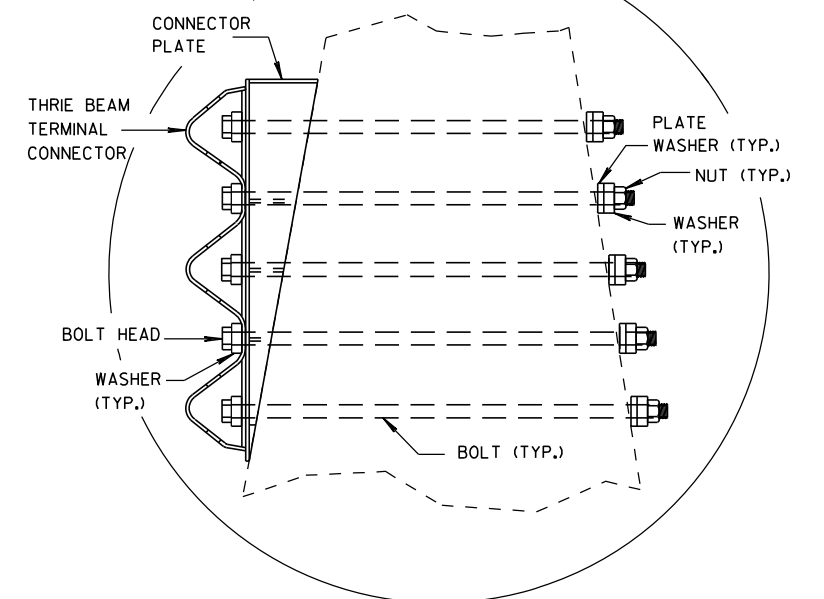
GENERAL NOTES

CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

- ① 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.



SECTION N-N



**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012

DATE

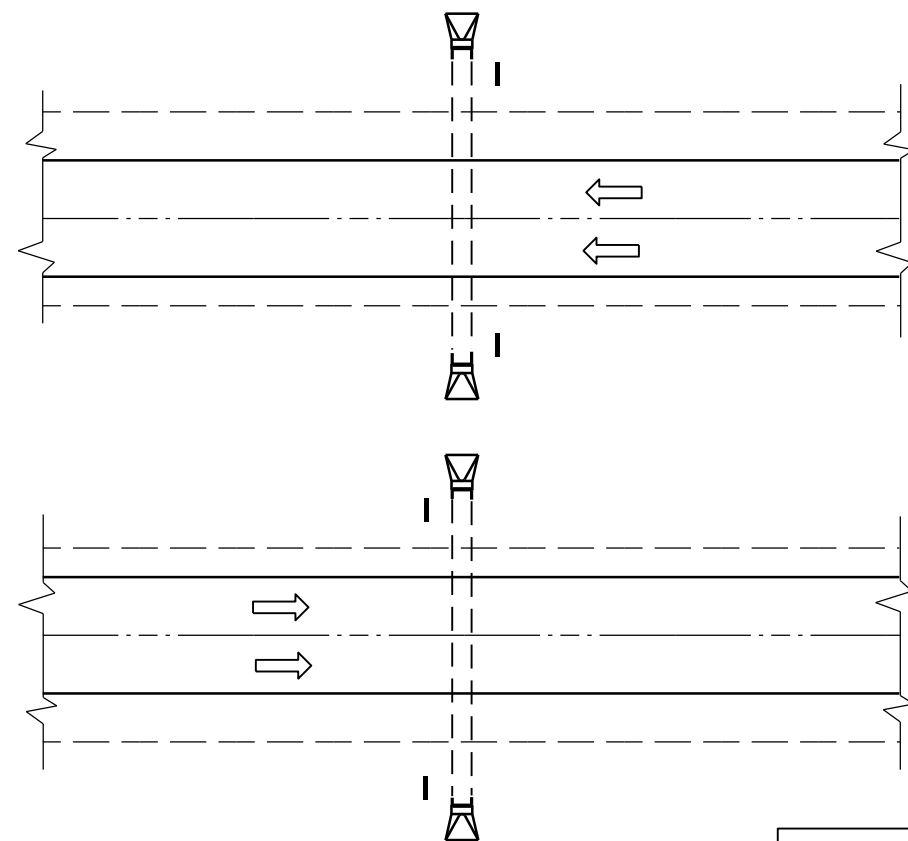
FHWA

/S/ Jerry H. 766

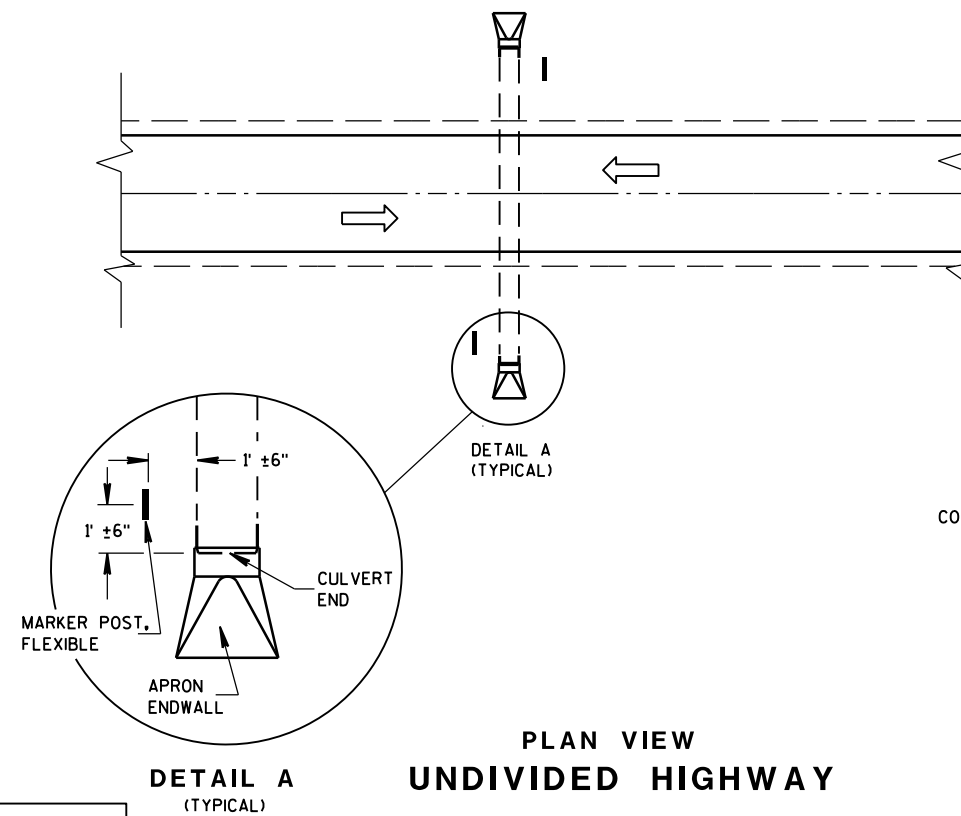
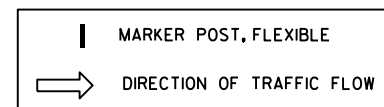
ROADWAY STANDARDS 176

ENGINEER

ENT



PLAN VIEW
DIVIDED HIGHWAY

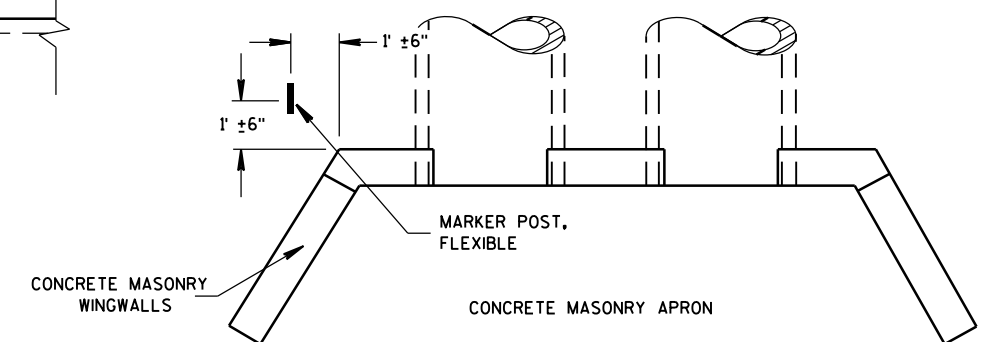


PLAN VIEW
UNDIVIDED HIGHWAY

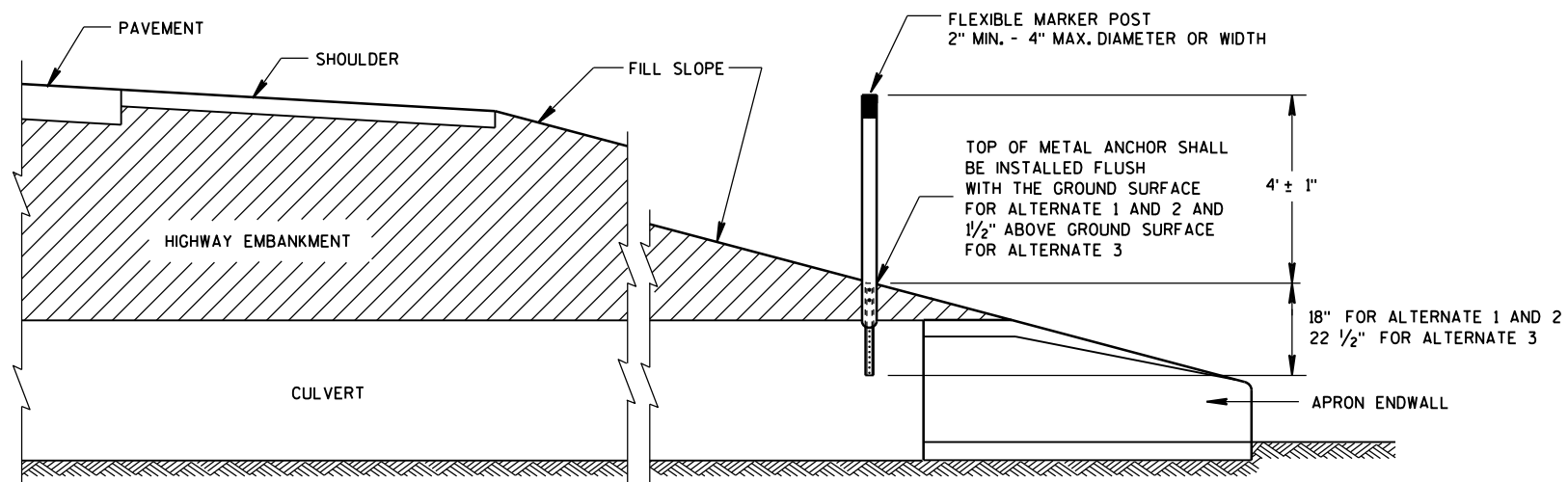
FLEXIBLE MARKER POST LOCATION

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.



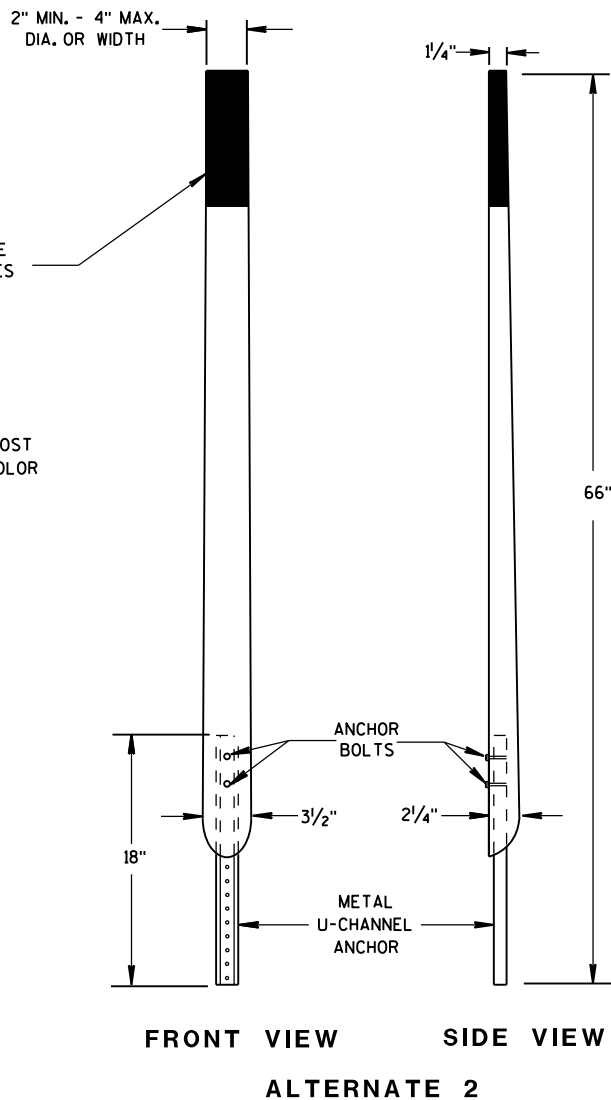
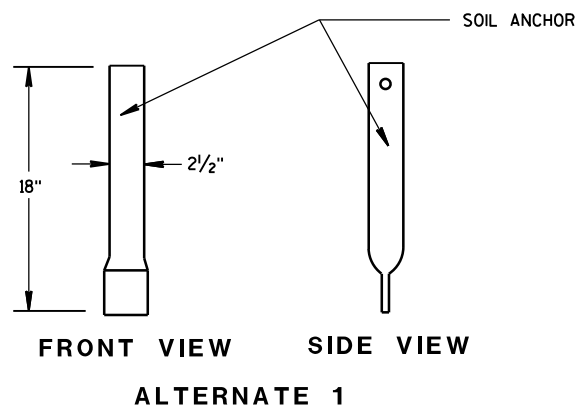
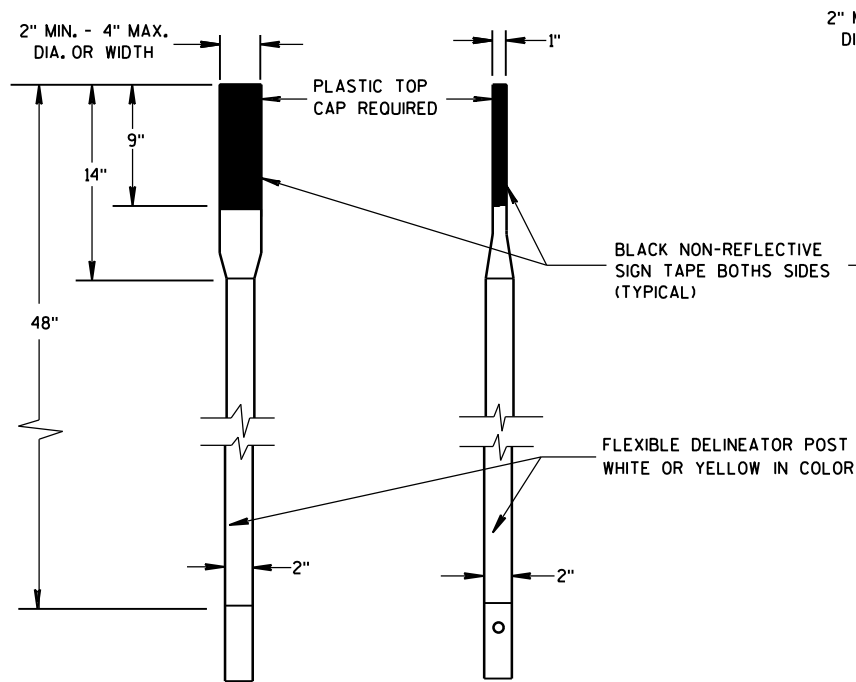
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



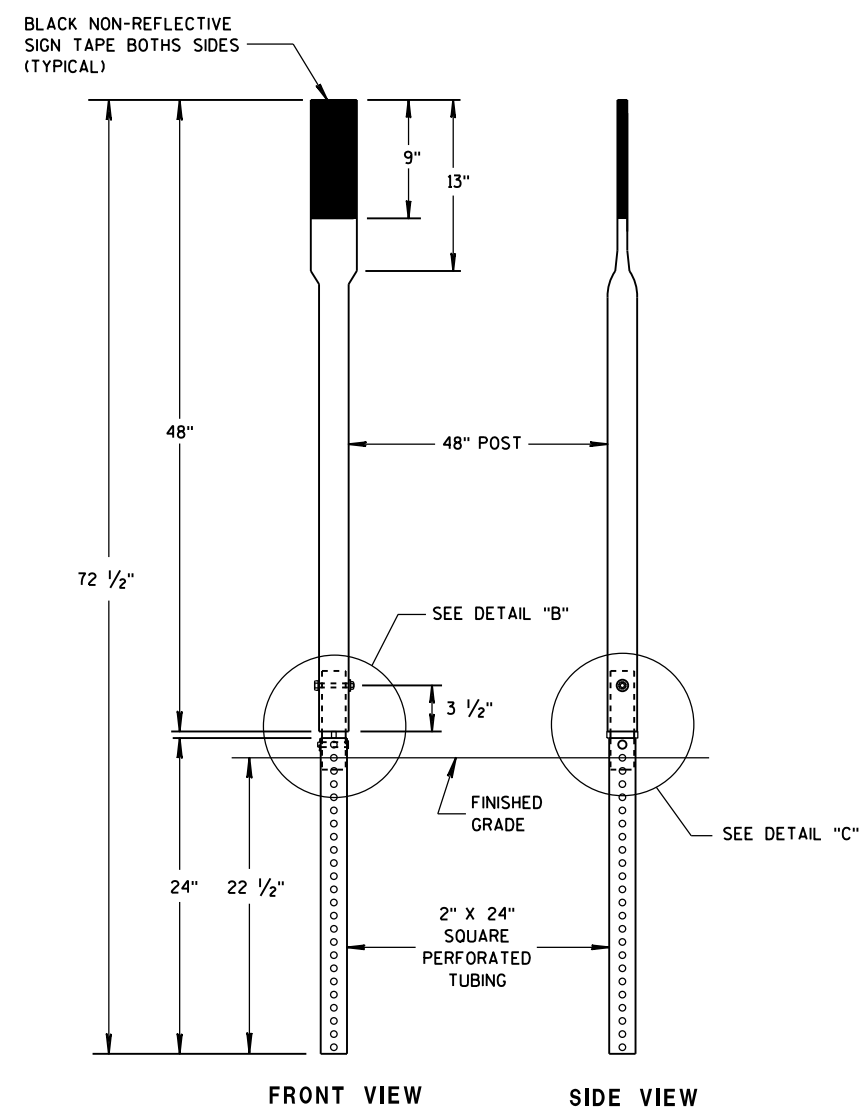
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

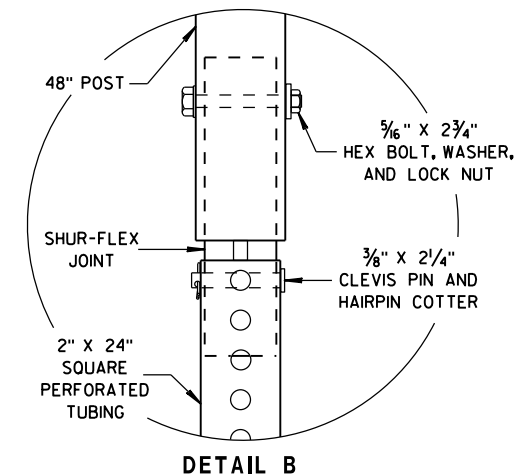
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



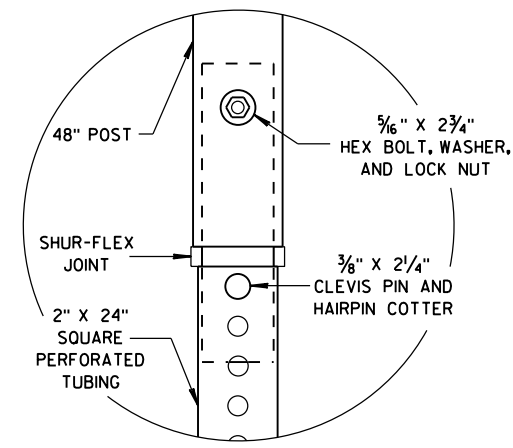
FLEXIBLE MARKER POSTS



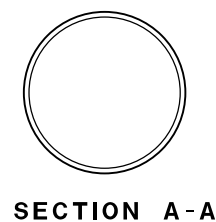
SECTION C-C



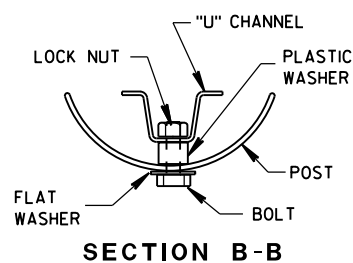
DETAIL B



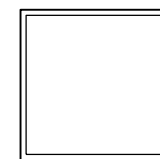
DETAIL C



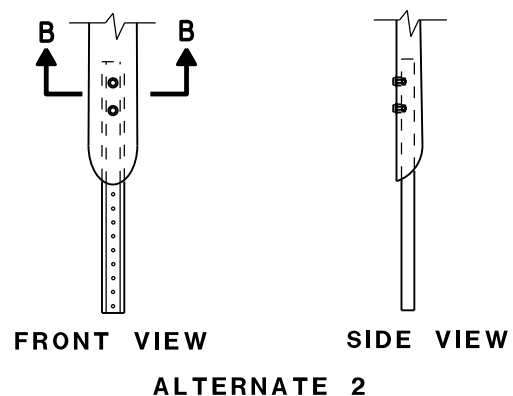
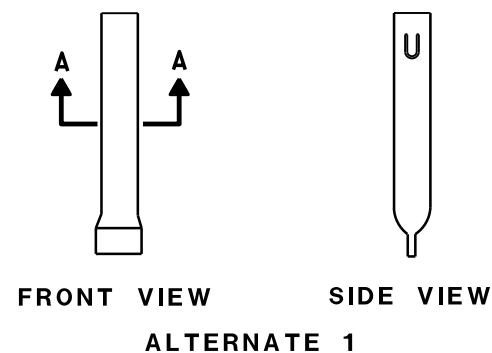
SECTION A-A



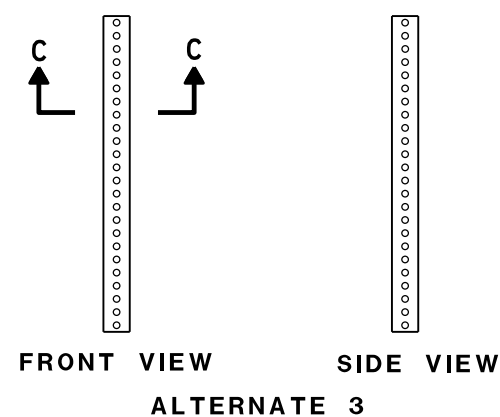
SECTION B-B



SECTION C-C



FLEXIBLE MARKER POST ANCHORS



SECTION C-C

FLEXIBLE MARKER POST
FOR CULVERT ENDSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/1/2012

DATE

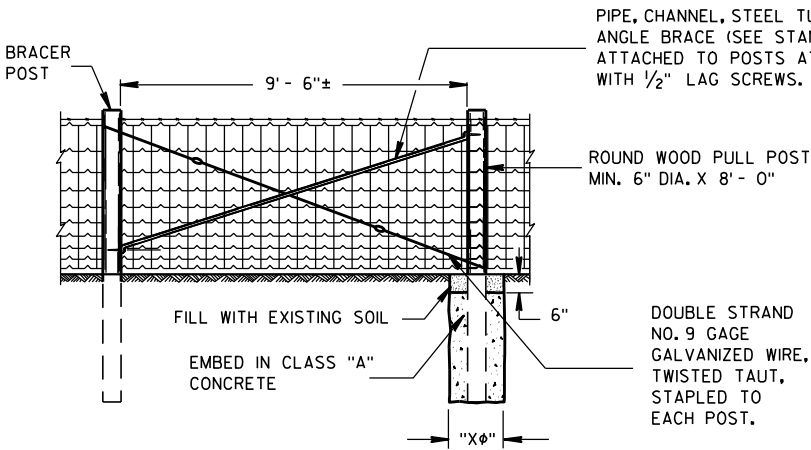
FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER 78

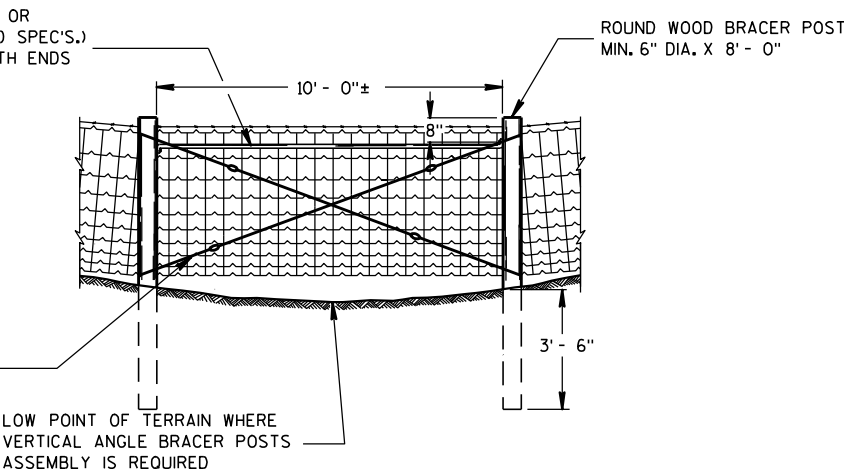
IGN

NOTE: PULL OR STRETCHER POST ASSEMBLIES SHALL BE PLACED MIDWAY BETWEEN END POSTS AND CORNER POSTS WHERE A RUN OF FENCE EXCEEDS 660' BUT IS LESS THAN 1,320'. FOR RUNS OF FENCE IN EXCESS OF 1,320' MAXIMUM SPACING OF PULL OR STRETCHER POST ASSEMBLIES SHALL BE 660'± C-C.

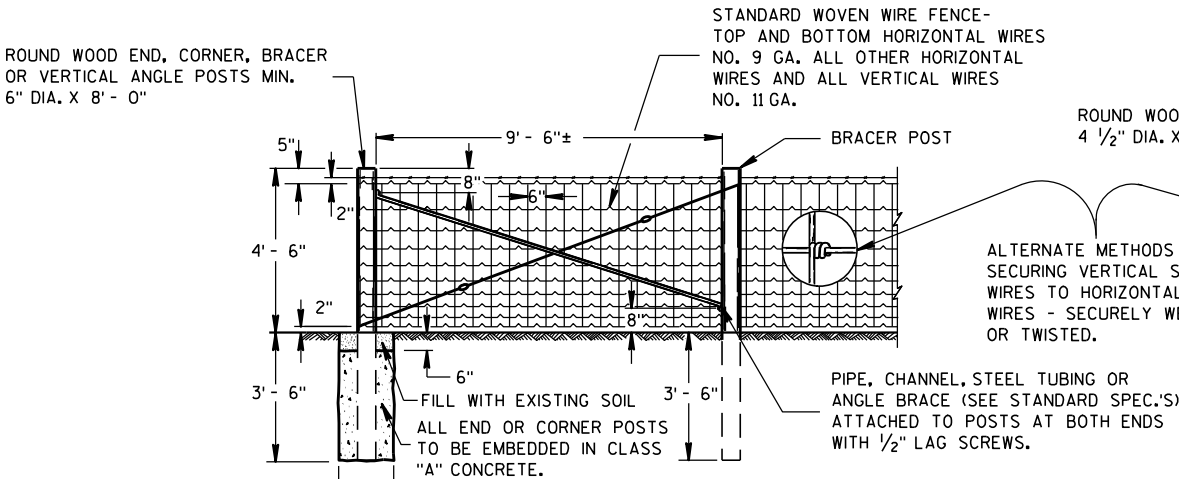
ILLUSTRATION SHOWS POSITION OF STANDARD STEEL BRACE, DOUBLE STRAND GALVANIZED WIRE, AND THE POST TO BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM LEFT TO RIGHT. THE BRACES SHALL BE POSITIONED ON THE OPPOSITE DIAGONALS AND THE OPPOSITE POST SHALL BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM RIGHT TO LEFT.



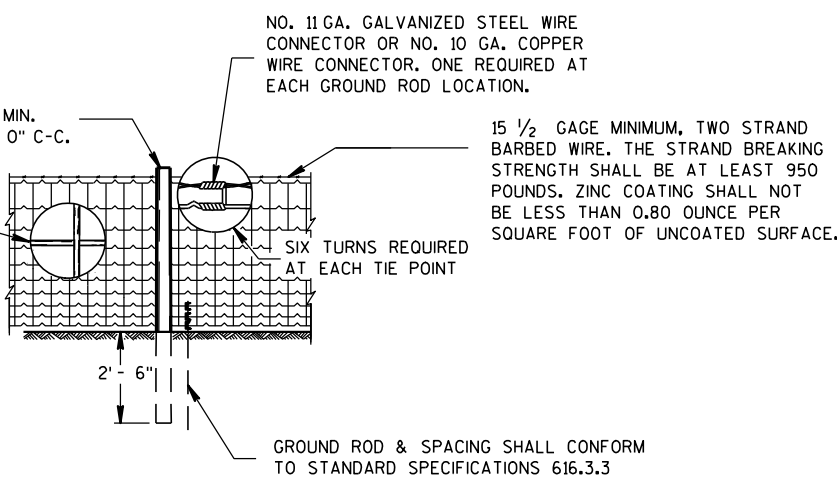
PULL OR STRETCHER POSTS ASSEMBLY



VERTICAL ANGLE BRACER POSTS ASSEMBLY

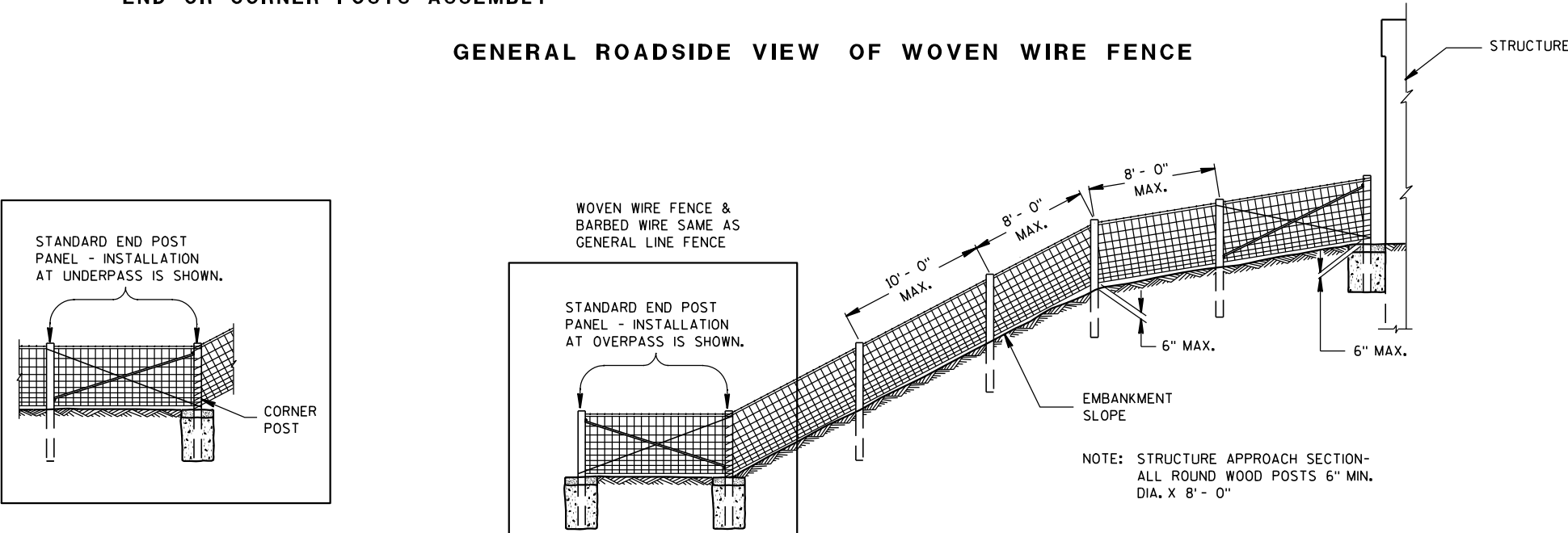


END OR CORNER POSTS ASSEMBLY



LINE FENCE CONSTRUCTION

GENERAL ROADSIDE VIEW OF WOVEN WIRE FENCE



FENCE DESIGN AT STRUCTURE APPROACH

GENERAL NOTES

"Xφ" = DIAMETER OF THE POST PLUS 12".

FENCE STAPLES SHOULD NEVER BE DRIVEN VERTICALLY INTO WOOD POSTS (WITH BOTH LEGS PARALLEL WITH THE WOOD GRAIN). DOING SO CAN SEPARATE THE GRAIN AND SIGNIFICANTLY REDUCE THE HOLDING POWER. ROTATING THE STAPLES SLIGHTLY OFF VERTICAL STRADDLES THE GRAIN AND PROVIDES MORE RESISTANCE TO PULL-OUT.

DO NOT STAPLE WIRE TIGHT TO THE LINE POSTS. ALLOW MOVEMENT OF WIRE FOR EXPANSION AND CONTRACTION. STAPLE ARRANGEMENT SHALL BE THE SAME FOR ALL OTHER POSTS EXCEPT THAT THEY SHALL BE DRIVEN TIGHT TO POSTS. ALL STAPLES SHALL BE 2" X 9 GAGE AND SHALL BE MANUFACTURED FROM GALVANIZED WIRE OR HOT DIP GALVANIZED AFTER FORMING. STAPLES SHALL HAVE SLASH-CUT POINTS.

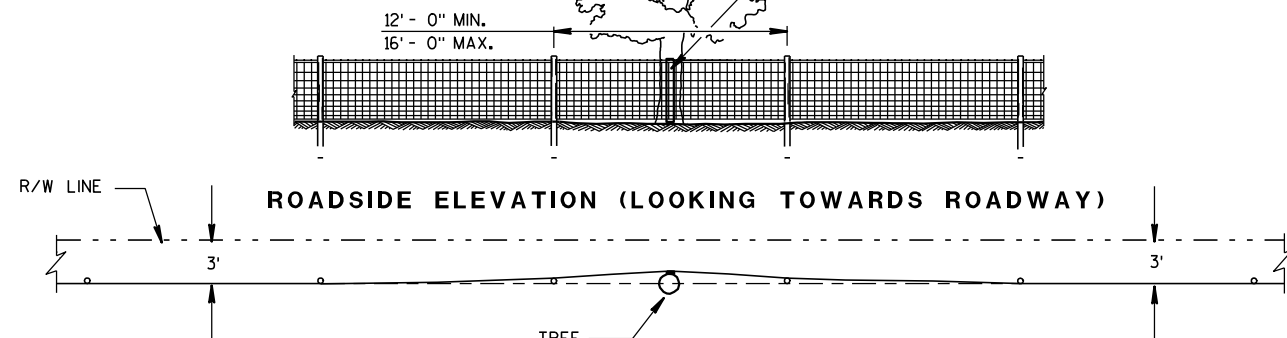
FENCE SHALL BE LOCATED 3'-0" INSIDE THE RIGHT OF WAY LINE UNLESS OTHERWISE INDICATED ON THE PLANS.

FENCE WOVEN WIRE

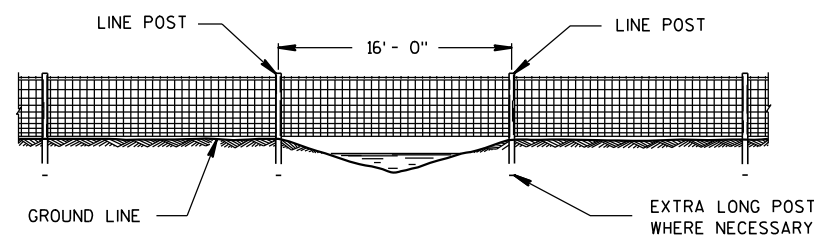
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

NOTE: TREE IN NORMAL FENCE LINE SPECIFICALLY ORDERED BY ENGINEER TO REMAIN IN PLACE.

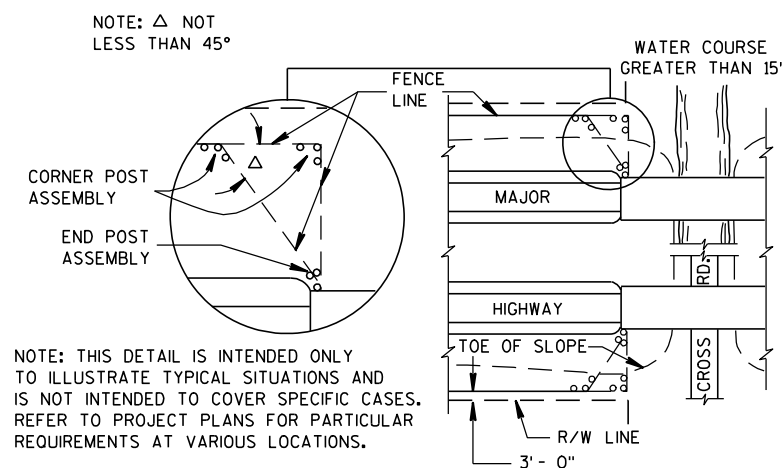
2" X 6" DOUGLAS FIR OR SO. YELLOW PINE PLACED BETWEEN TREE AND WOVEN WIRE FENCE. WOVEN WIRE FENCE AND BARBED WIRE TO BE STAPLED TO 2" X 6" LIKE AS TO LINE POST. 2" X 6" NOT FASTENED TO TREE.



PLAN VIEW
FENCE DESIGN AT TREES REMAINING
IN NORMAL FENCE LINE

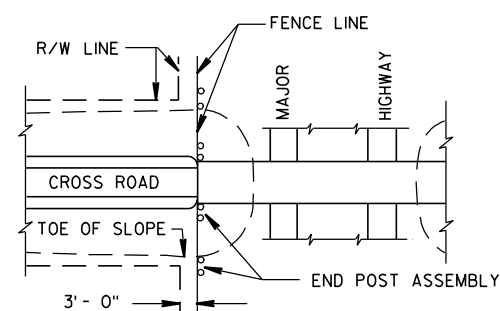


FENCE CONSTRUCTION OVER STREAM
COURSES OF 15 FT. OR LESS IN WIDTH

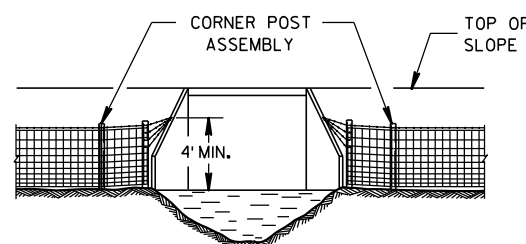


PLAN VIEW
MAJOR HIGHWAY OVERPASS OR STREAM COURSE
CROSSING OF GREATER THAN 15 FT. IN WIDTH

FENCE LOCATION AT STRUCTURES

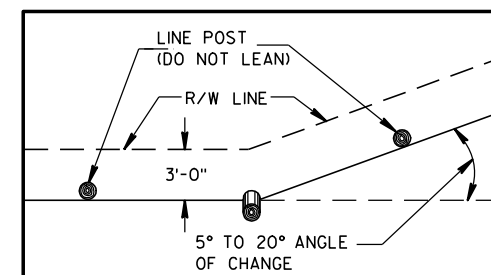


PLAN VIEW
MAJOR HIGHWAY UNDERPASS

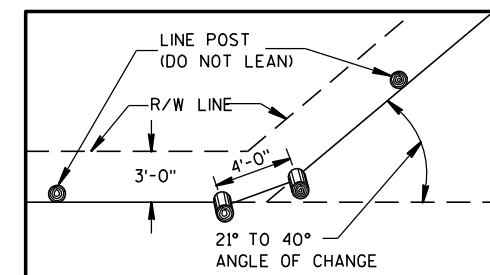


FENCE INSTALLATION TO WINGWALLS

NOTE: PLACE A MINIMUM OF 4 STRANDS OF BARBED WIRE, 6" MAXIMUM CENTERS IN FAN SHAPE CONNECTED TO AN EYE BOLT ON WINGWALL OR SET A LONE POST WHEN NECESSARY TO CONNECT BARBED WIRE.



PLAN VIEW
SINGLE POST CORNER

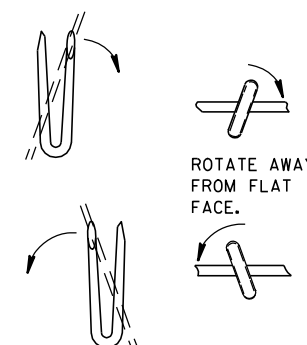


PLAN VIEW
DOUBLE POST CORNER

RIGHT OF WAY LINE CHANGE 40° AND LESS

NOTE: SINGLE AND DOUBLE POSTS SHALL BE A MIN. 6" DIA. X 8'-0" WITH A LEAN OF 4" TOWARD THE OUTSIDE OF THE CURVE.

WHEN THE RIGHT OF WAY LINE CHANGE IS MORE THAN 40° USE THE CORNER OR STRETCHER POSTS ASSEMBLY.



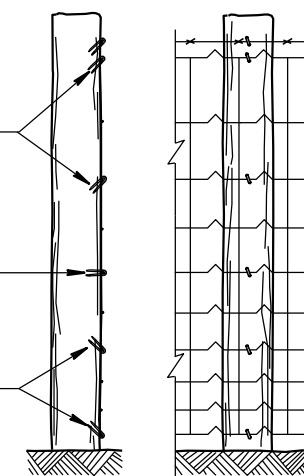
LINE POST

NOTE: WHEN POSTS ARE DRIVEN THE SMALL END SHALL BE DOWN.

STAPLES SLOPED DOWNWARD FOR SUSTAINED GRADES AND OVER KNOLLS.

STAPLES LEVEL FOR LEVEL GROUND.

SLOPE UPWARDS WHEN FENCE TENDS TO LIFT.



END ELEVATION
FARM SIDE ELEVATION
FENCE MOUNTING DETAIL

FENCE WOVEN WIRE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4/4/2008

DATE

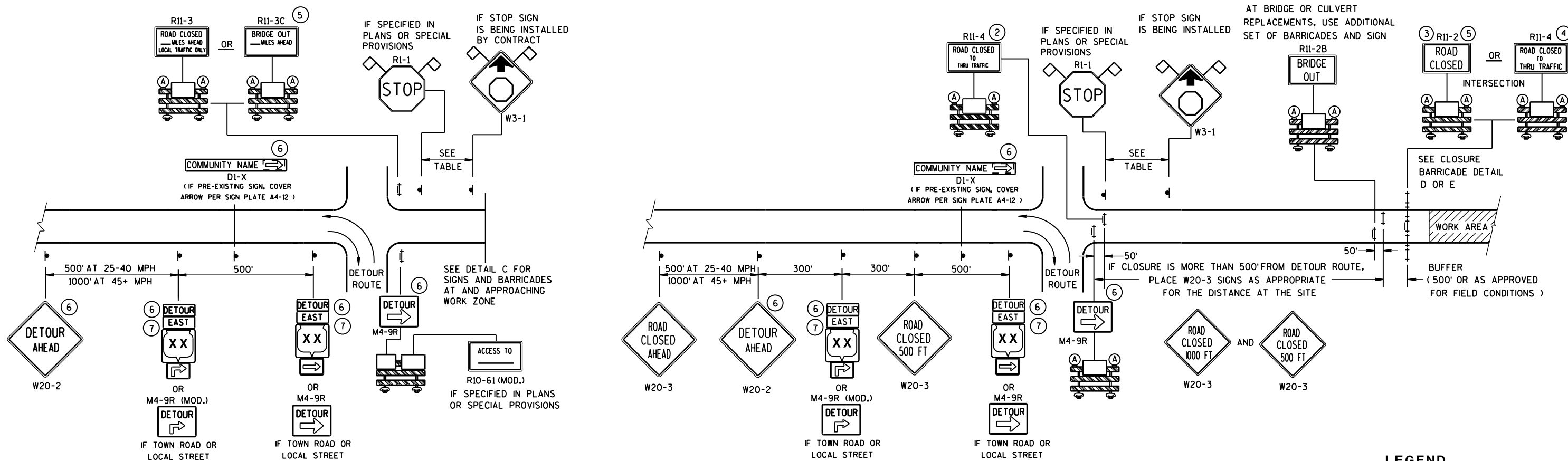
FHWA

/S/ Jerry H. 7----

ROADWAY STANDARDS 180

ENGINEER

ENT



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)

LEGEND

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

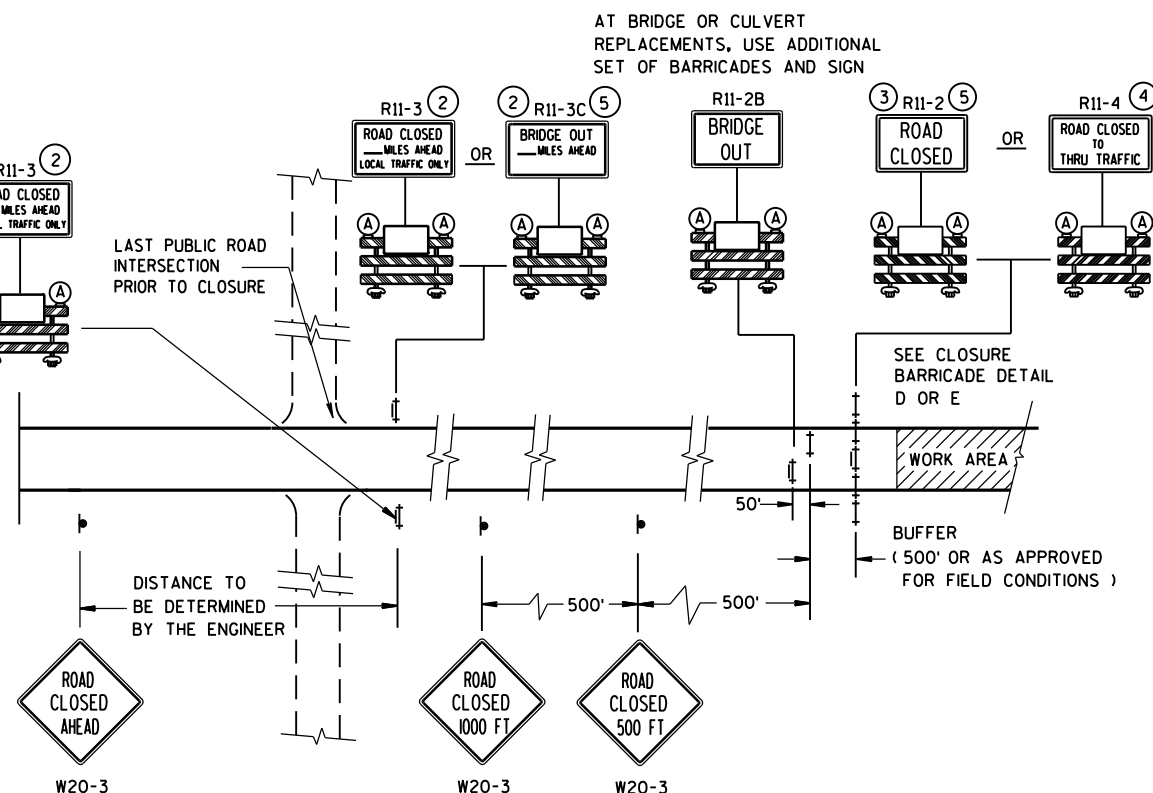
WORK AREA

DETOUR EAST
M4-8
M3-X
XX OR XX OR XX
M1-4 M1-5A M1-6

M05-1 OR M06-1

FLAGS, 16" X 16" MIN., (ORANGE)

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



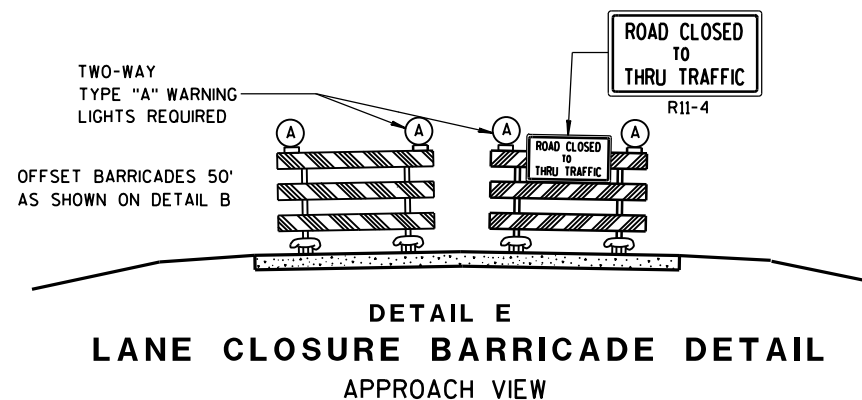
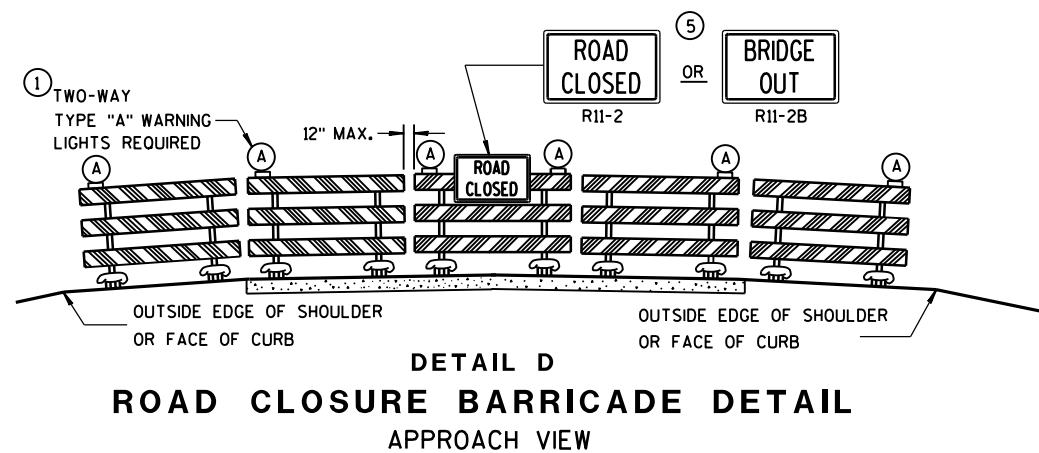
DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

**BARRICADES AND SIGNS
FOR
MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 DATE /S/ Travis Feltes
STATE TRAFFIC ENGINE 81
FHWA ESIGN



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.

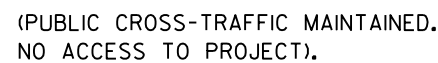
R1-1 SHALL BE 36" X 36".

- 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

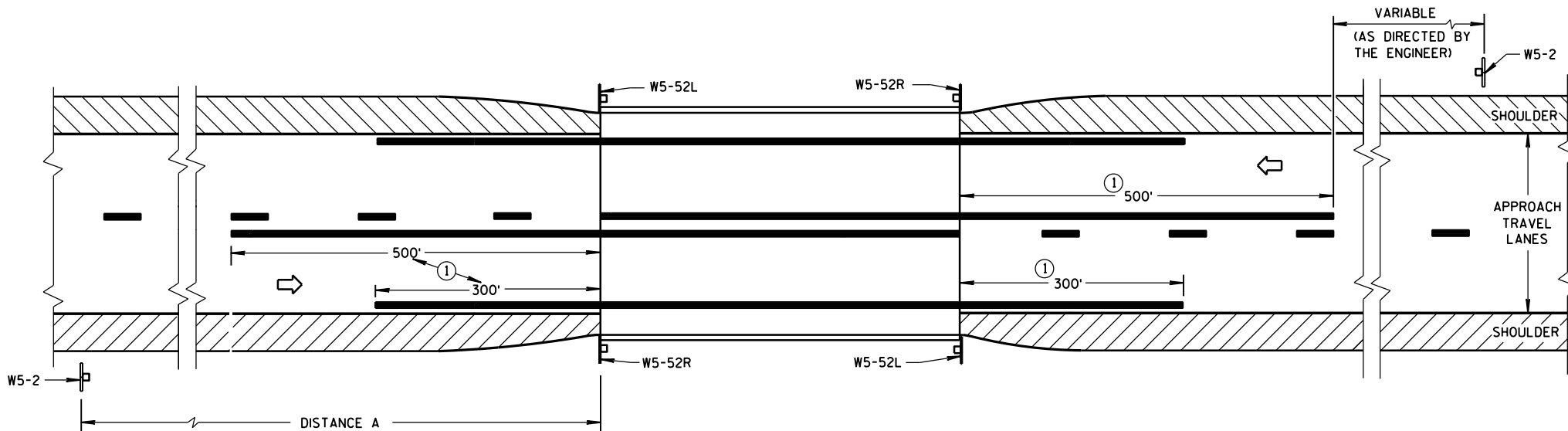
8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINE 82 ESIGN
FHWA



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

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

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINE 83 SIGN
FHWA	



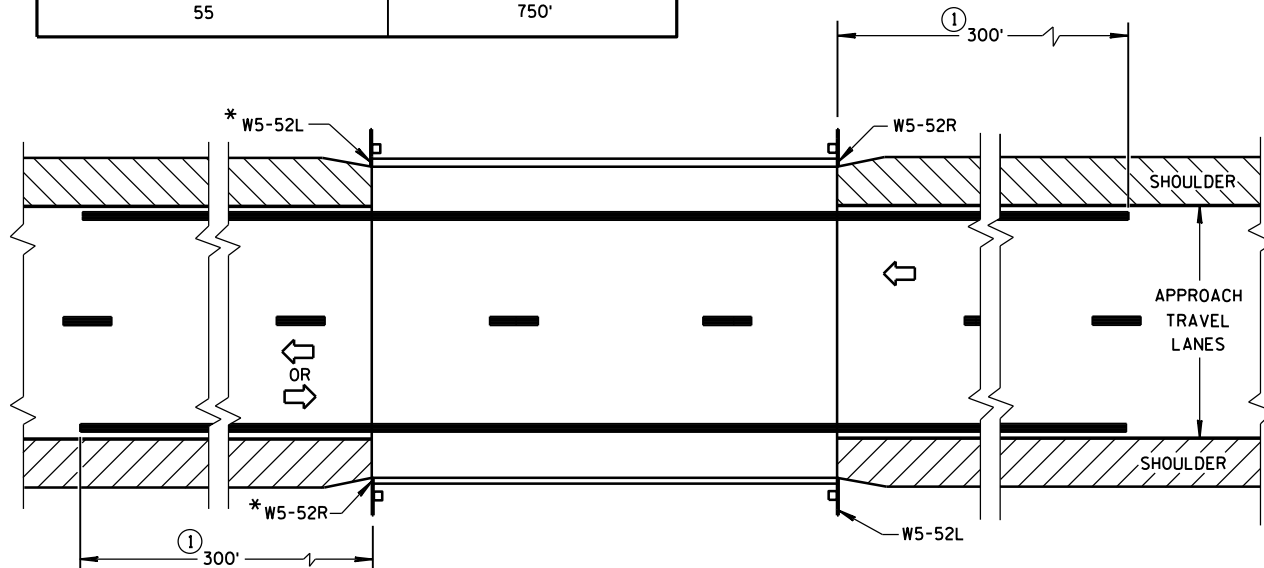
SITUATION 1

WARRANTING CRITERIA:

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

DISTANCE TABLE

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

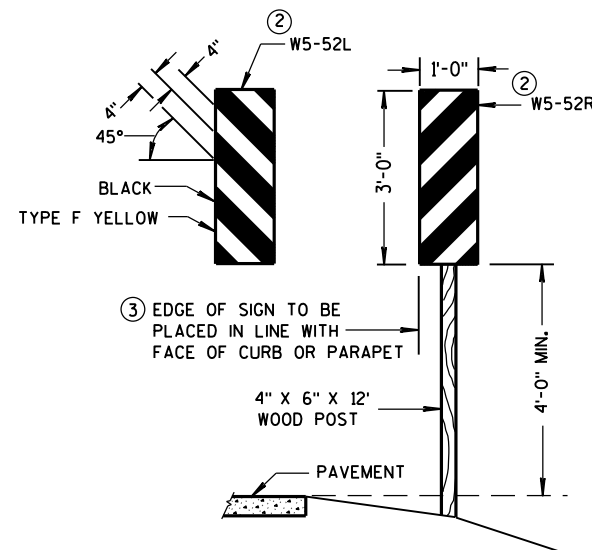


*OMIT ON ONE-WAY TRAVELLED WAYS

SITUATION 2

WARRANTING CRITERIA:

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



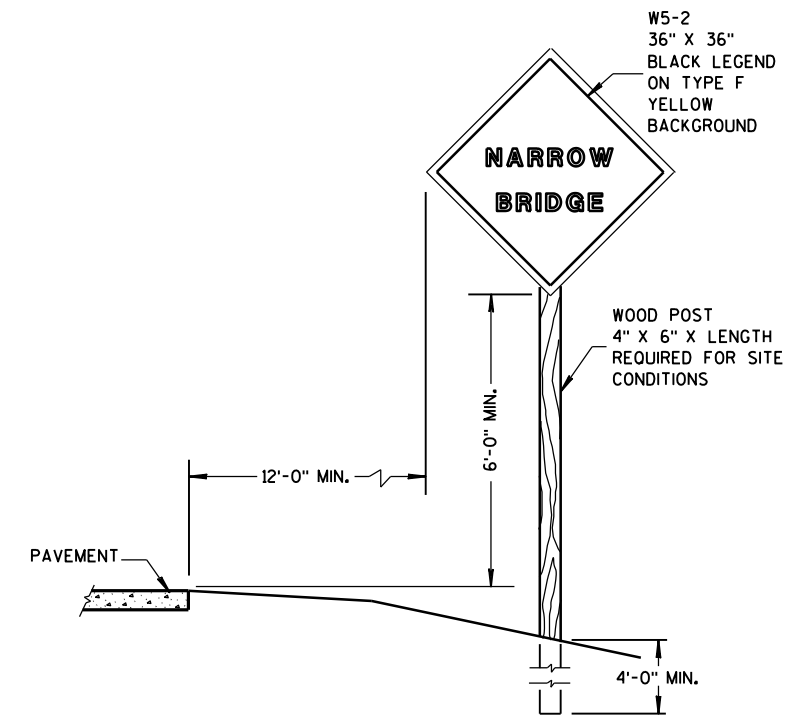
OBJECT MARKER PLACEMENT

GENERAL NOTES

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

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

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



SIGN PLACEMENT

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

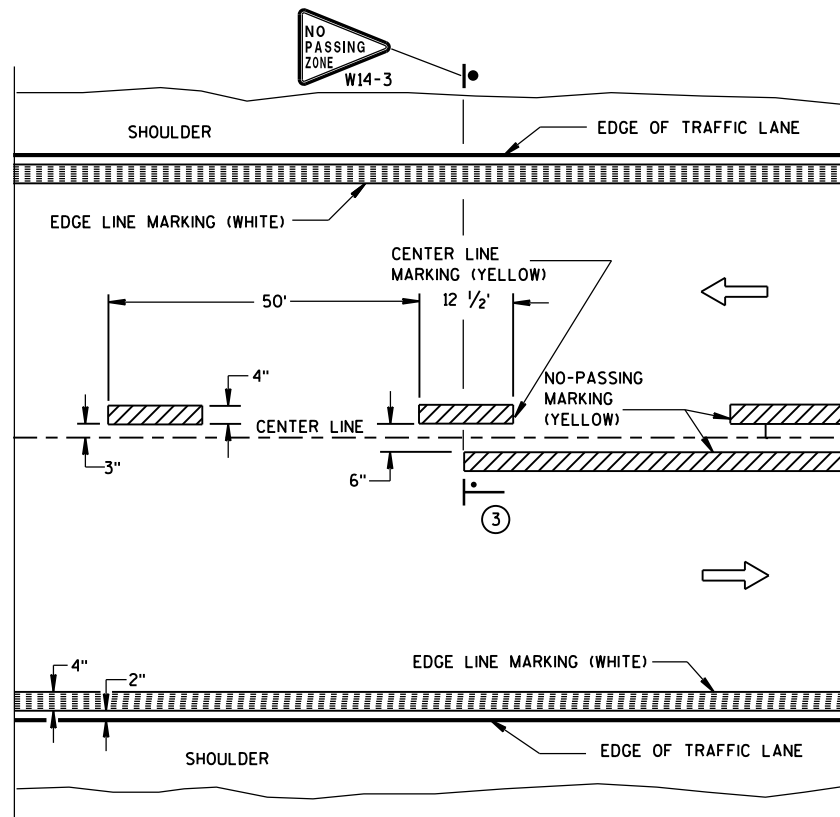
3-2014
DATE

FHWA

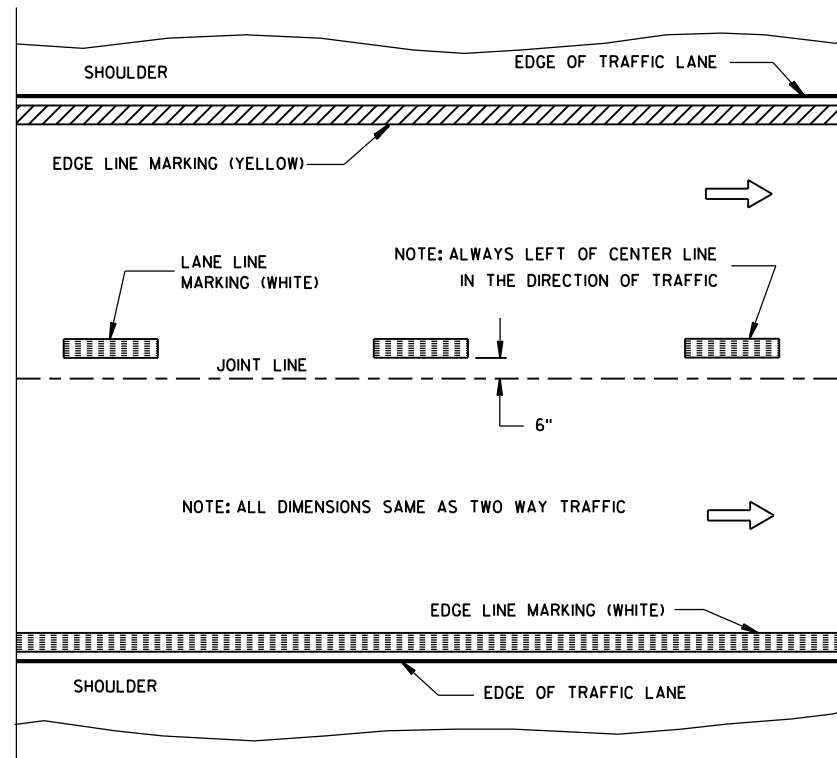
/S/ Travis Fettes
STATE TRAFFIC ENGINEER

84

JGN

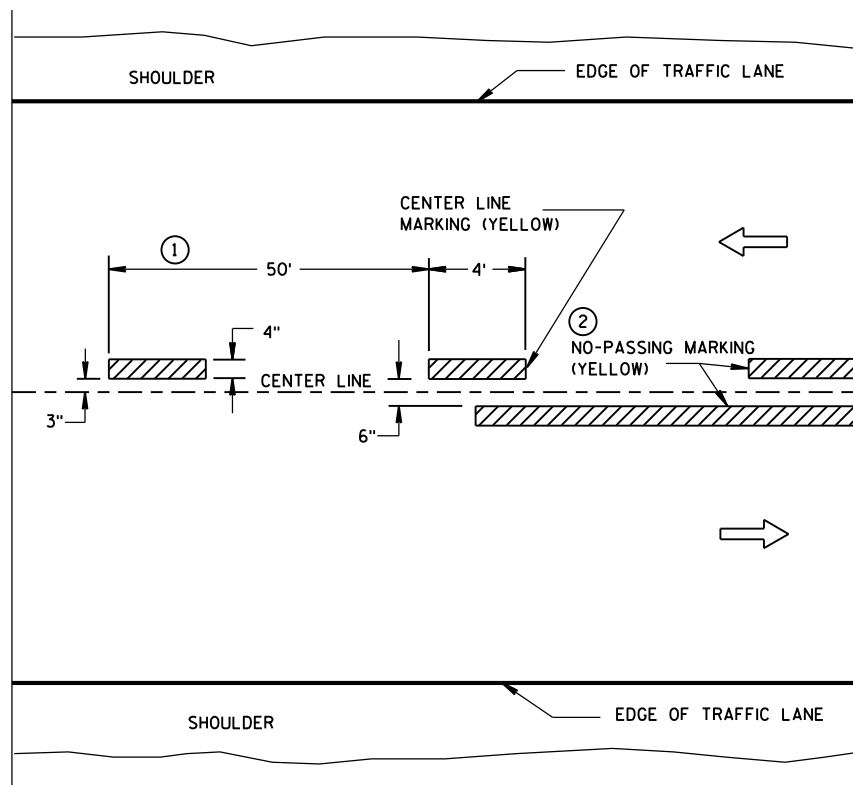


TWO WAY TRAFFIC

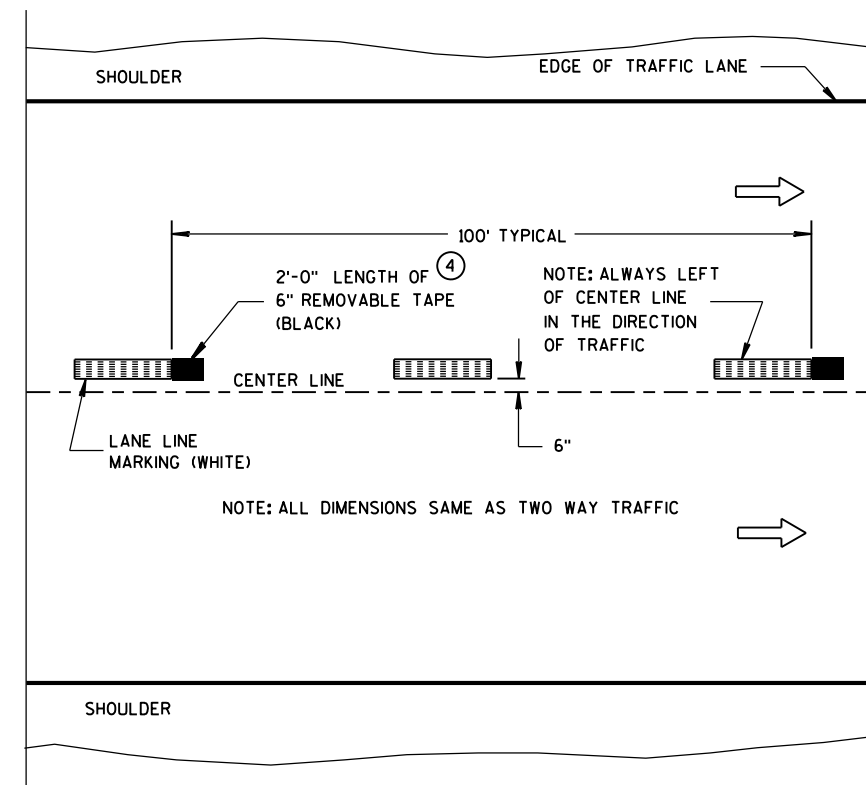


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

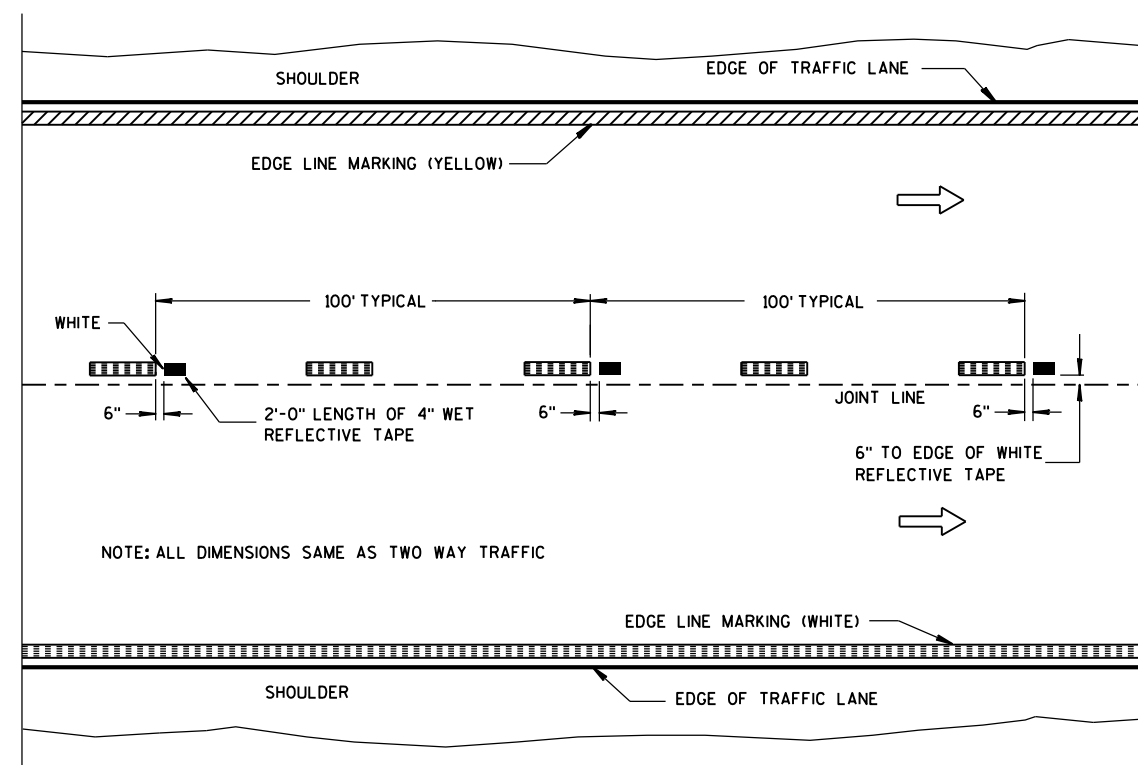
GENERAL NOTES

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

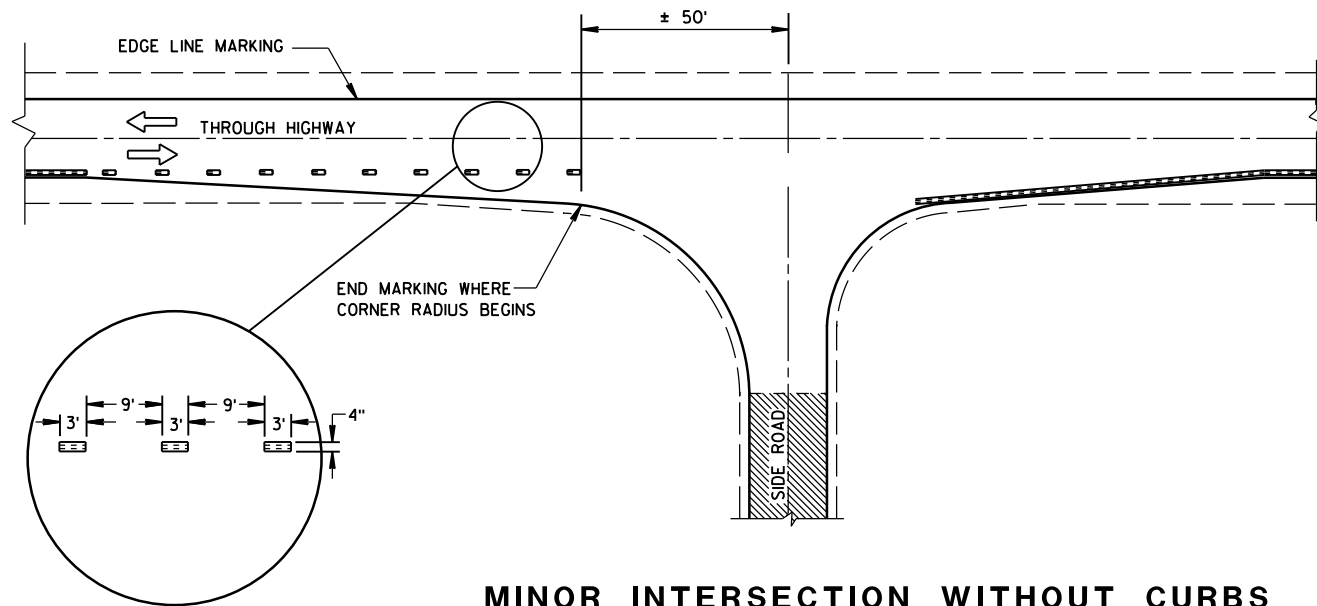
APPROVED

5-13-2013

DATE

FHWA

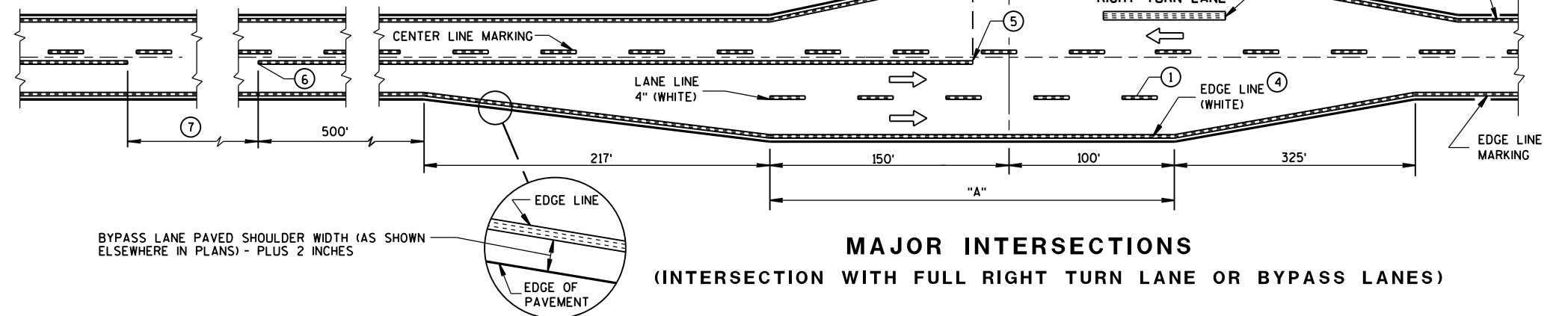
/S/ Travis Feltes
STATE TRAFFIC E 85



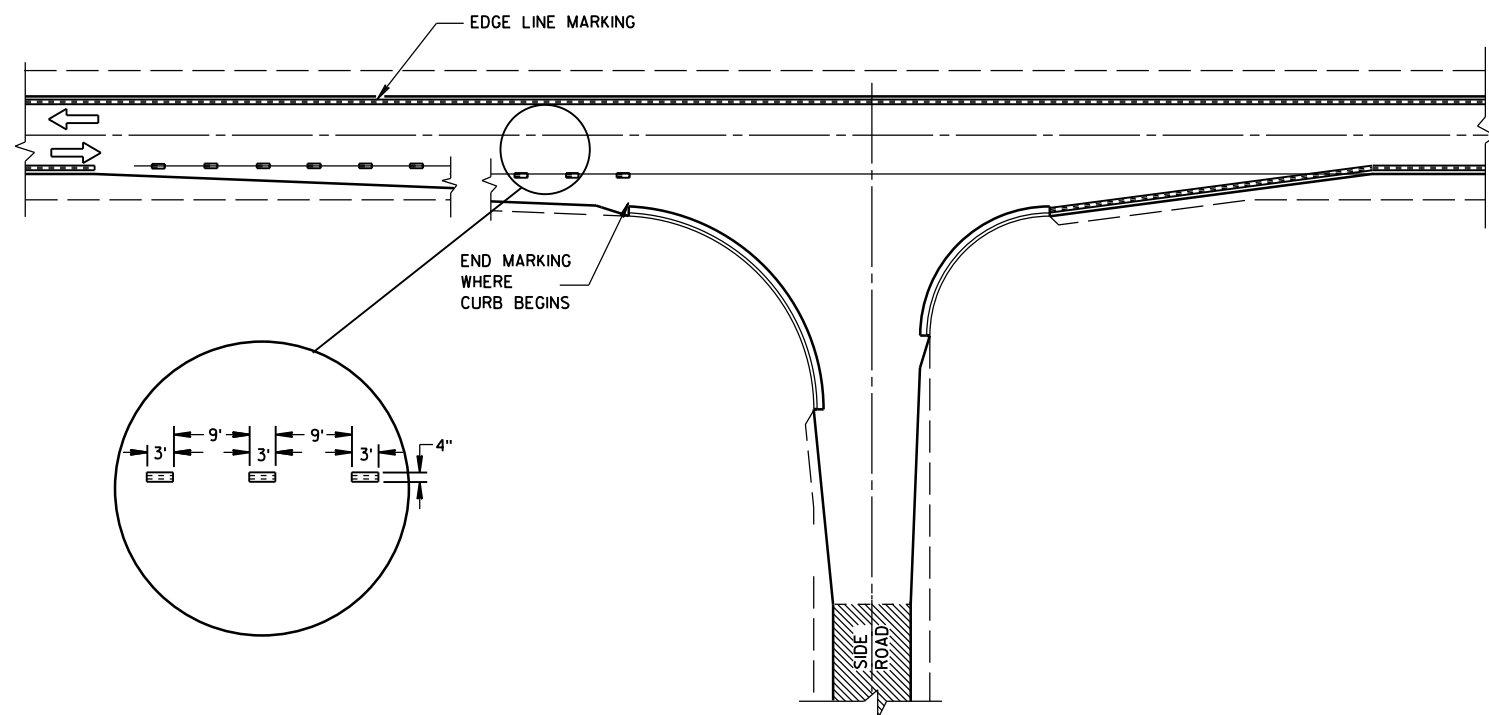
MINOR INTERSECTION WITHOUT CURBS

⑦

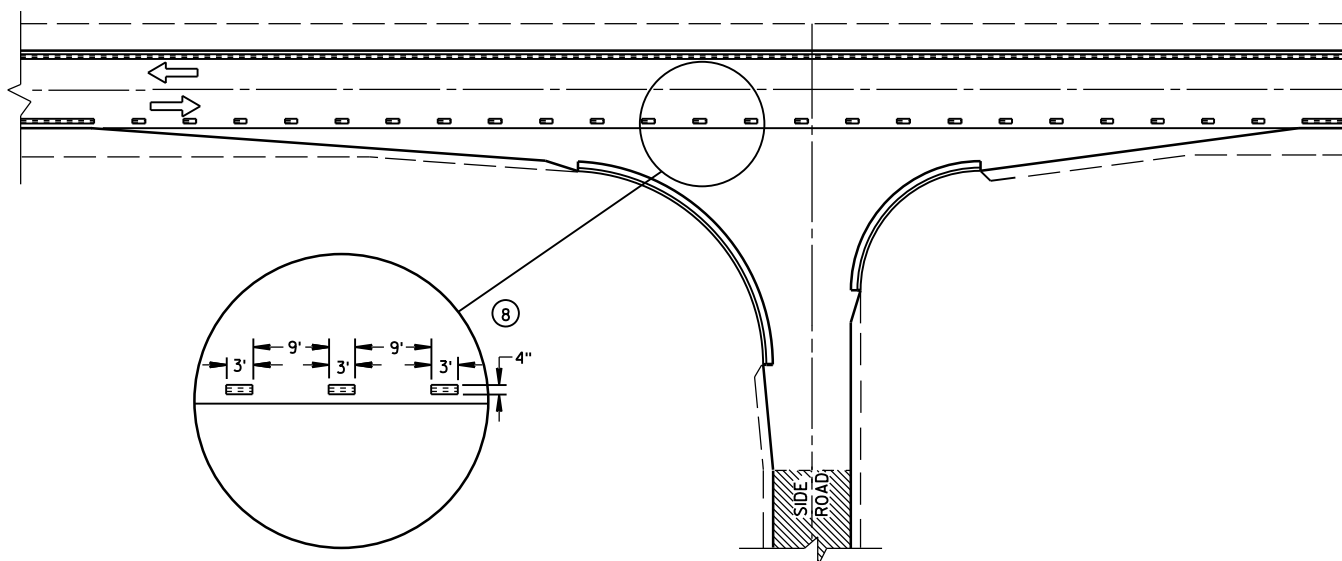
POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



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



MINOR INTERSECTION WITH CURBS
(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS
③ (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

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIREABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A Crossover MANEUVER.

* THE LEFT REVERSE CURVE SIGN (W01-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.

* * A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP, THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES. INCLUDE A 65 MPH RESUME SPEED LIMIT SIGN 200 FEET MINIMUM (500 FEET DESIREABLE) BEYOND THE "END OF ROADWORK" SIGN.

TYPE III BARRICADE WITH ATTACHED SIGN

© SIGN ON PERMANENT SUPPORT

TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT

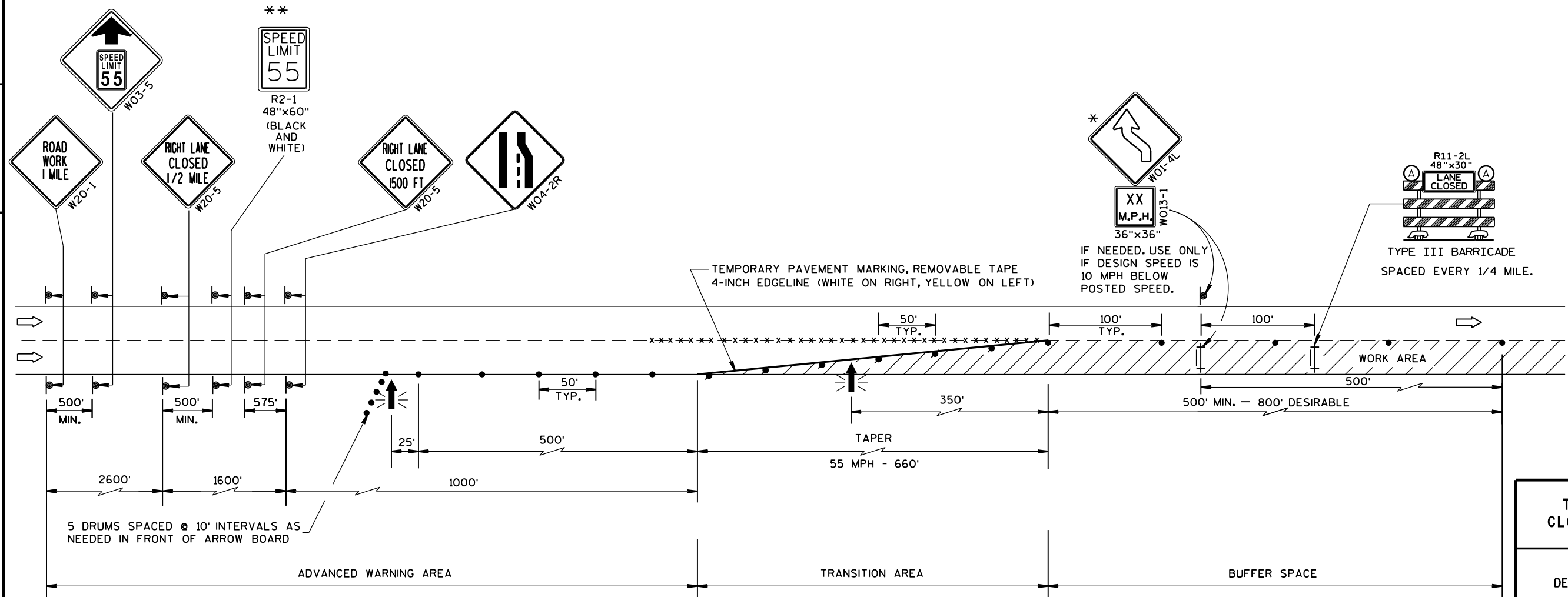
- TRAFFIC CONTROL DRUM

 FLASHING ARROW BOARD

Ⓐ TYPE "A" WARNING LIGHT (FLASHING)

~~X-X-X~~ REMOVING PAVEMENT MARKING

➡ DIRECTION OF TRAFFIC

 WORK AREA

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.

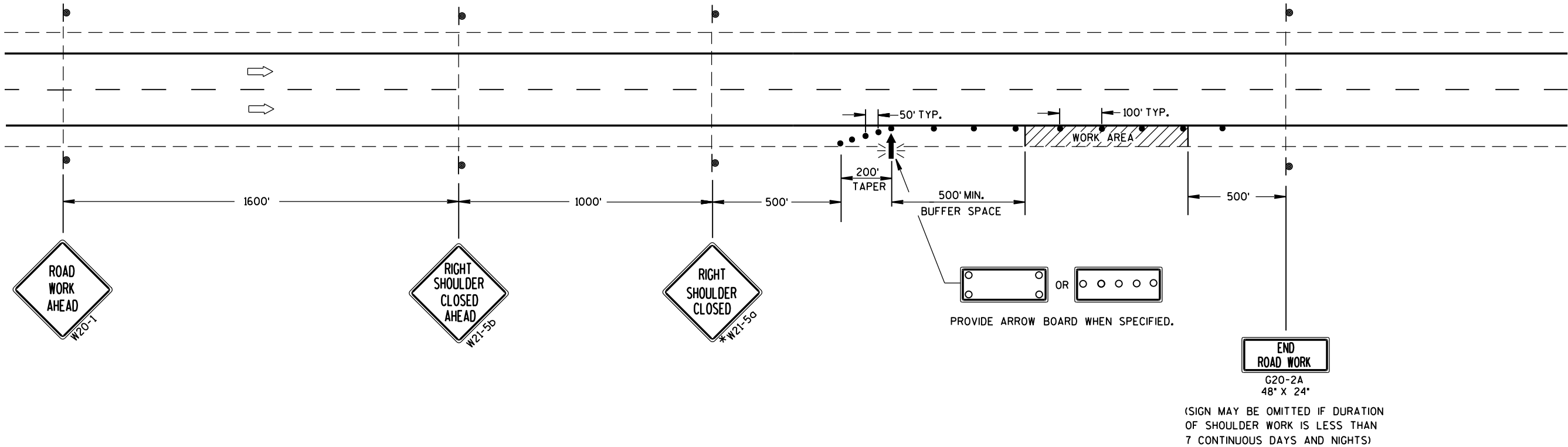
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

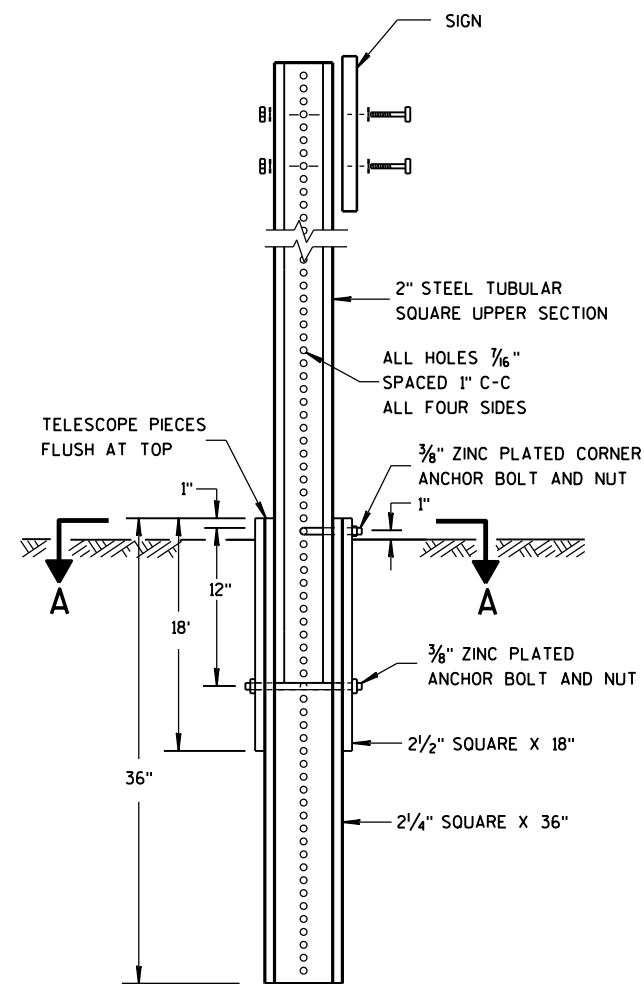
*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-5a SIGN MAY BE OMITTED.



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 88 SIGN
FHWA



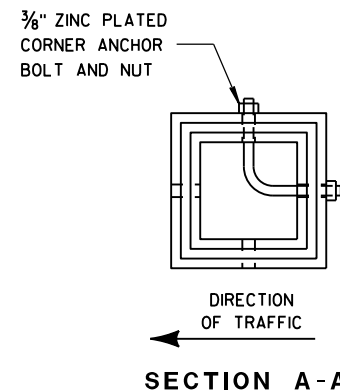
DETAIL OF TUBULAR
STEEL SIGN POST

TUBULAR STEEL POSTS

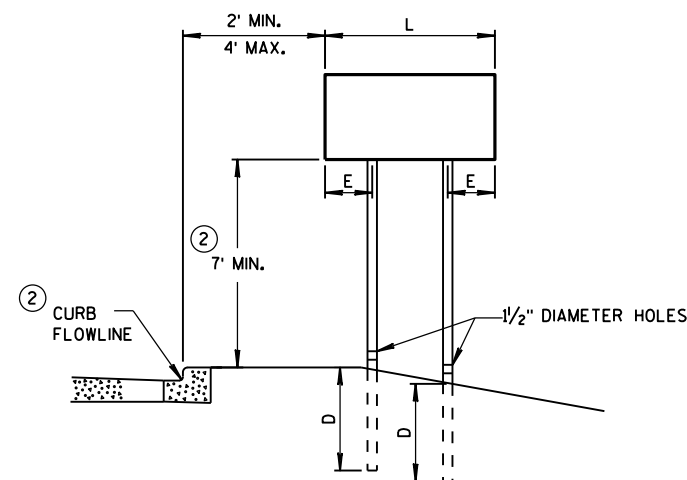
AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

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

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



SECTION A-A

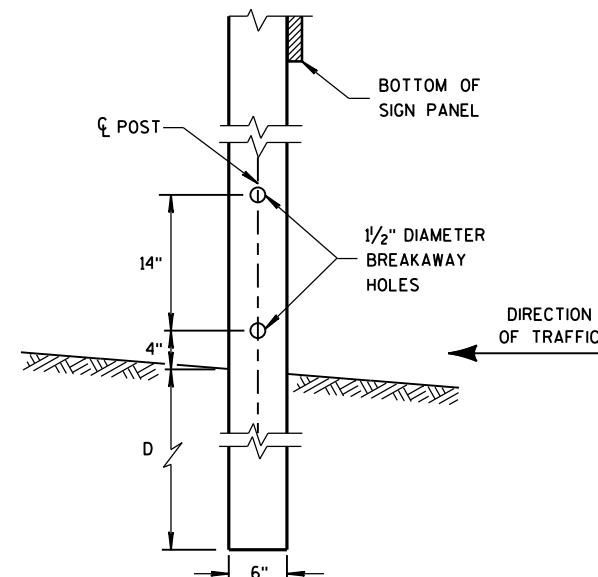


URBAN AREA

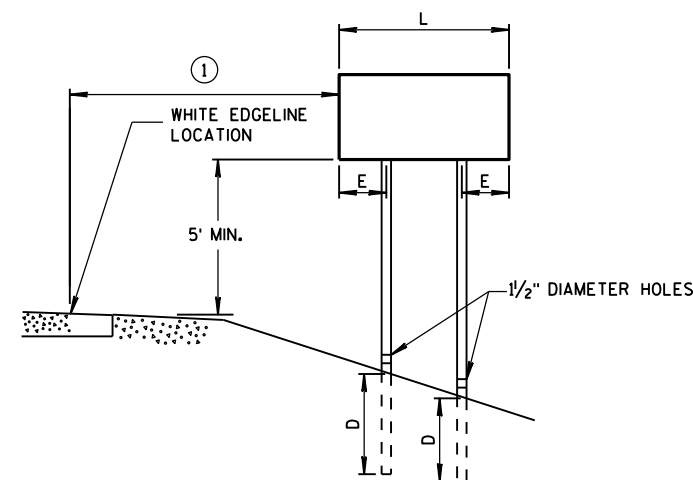
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST
EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



4" x 6" WOOD POST
MODIFICATION



RURAL AREA

4" X 6" WOOD POST

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

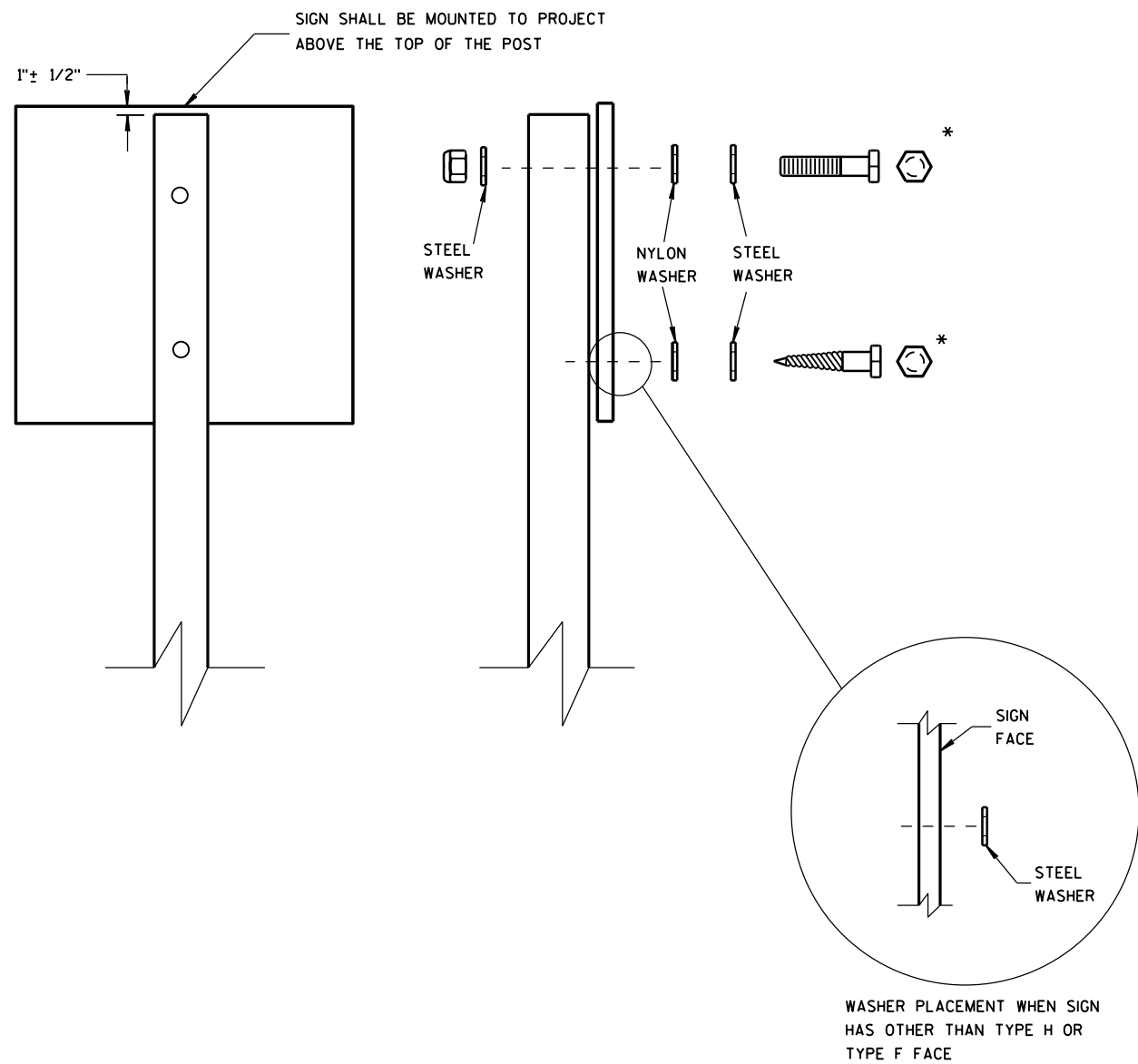
SEE NOTE ③

GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

TEMPORARY TRAFFIC CONTROL
FIXED MESSAGE SIGNS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

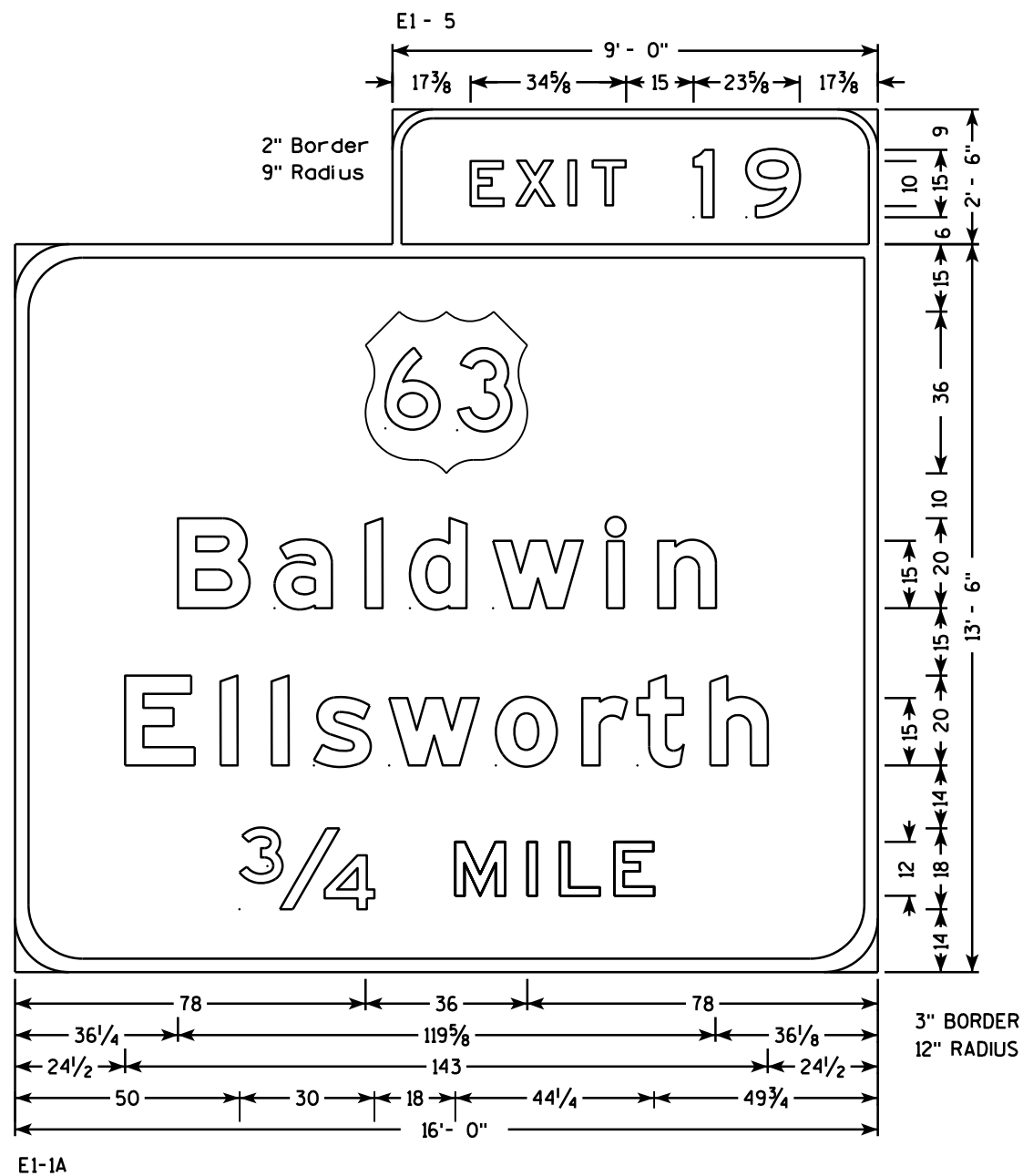
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" X 3"
 - MACHINE BOLTS - 5/16" X 6-1/2" OR 7" LENGTH W/ NUTS

- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" LENGTH W/ NUTS
 - RIVETS - 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

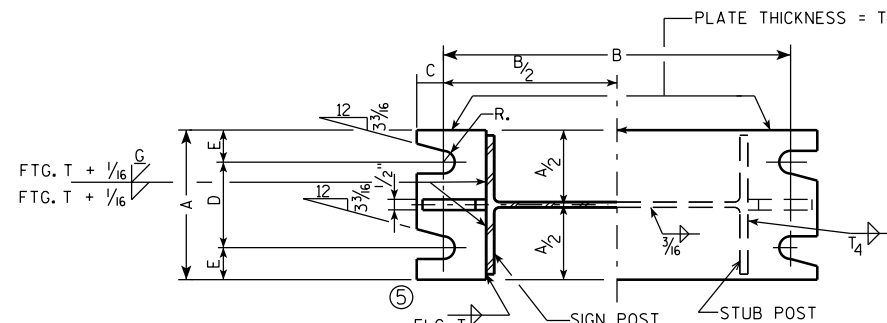
* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS TO POSTS		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED Feb. 2015	/S/ Travis Feltes	
DATE	STATE TRAFFIC ENGINE 90	SIGN
FHWA		



NOTES

1. All Signs are Type I - Type SH Reflective
2. Color:
Background - Green
Message - White
3. Message Series - E Modified except all cap WORDS are Series E



DESIGN DATA

WIND PRESSURE = 75 M.P.H.
WIND COMPONENTS - NORMAL = 1.0 TRANSVERSE = 0.0
ICE LOAD = 3 P.S.F.
GROUP LOADS PERCENT OF ALLOWABLE STRESS

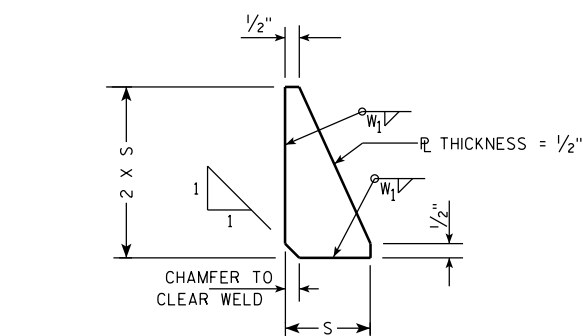
1. DEAD	100
2. DEAD & WIND	140
3. DEAD, ICE & 1/2 WIND ▲	140 ▲25 P.S.F. MIN.

ALLOWABLE SOIL PRESSURE = 1 1/2 T / SQ. FT.
WIND LOAD WAS APPLIED TO THE AREA OF THE SIGN AND
TO THE SUPPORTING MEMBERS.
ICE LOAD WAS APPLIED TO ONE FACE OF THE SIGN AND
AROUND THE SURFACE OF THE SUPPORTING MEMBERS.

GENERAL NOTES

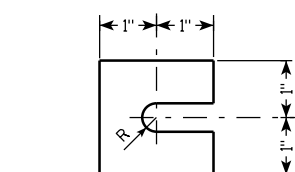
DRAWINGS SHALL NOT BE SCALED.
DESIGN CONFORMS WITH A.A.S.H.T.O. SPECIFICATIONS 1985.
ALL POSTS, POST STUBS & ATTACHMENTS SHALL BE
A.S.T.M. A709 GRADE 50.
THE POST, BASE PLATES, UPPER SIX INCHES OF STUB POST
FLANGE SPLICE PLATE AND FUSE PLATE SHALL BE
GALVANIZED AFTER FABRICATION.
H.S. BOLTS, WASHERS & NUTS SHALL BE A325 GALVANIZED
WHEN POSTS, POST STUBS AND ATTACHMENTS ARE
A709 GRADE 50 AND GALVANIZED.

SIGN POST AND STUB POST ELEVATION



STIFFENER PLATE DETAIL

(SEE TABLE FOR DIMENSIONS)

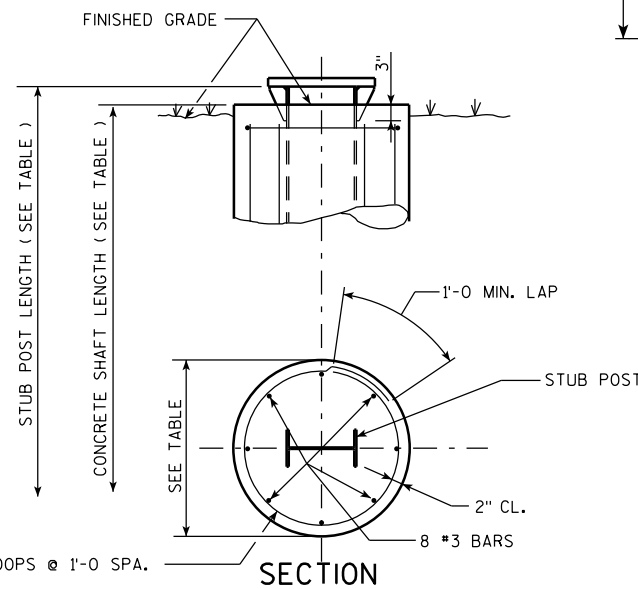


FURNISH 2 @ .012" ± THICK AND 2 @ .032" ± THICK SHIMS PER POST. SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK OR STRIP CONFORMING TO A.S.T. M.- B36.

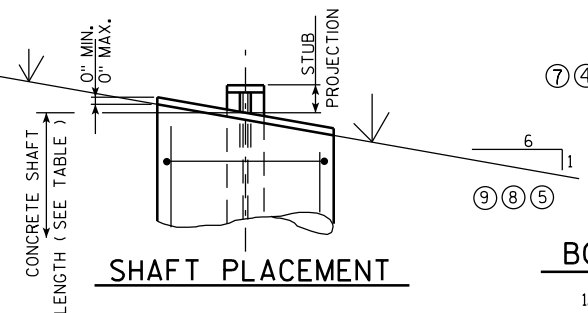
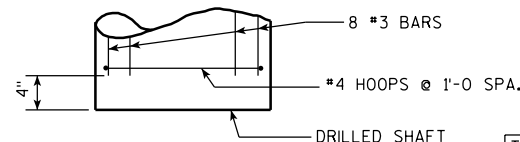
SHIM DETAIL

QUANTITIES FOR 1 FOOTING			
	CONC. MASONRY	C.Y.	REINF. STEEL LBS.
A	0.6		34
B	0.8		49
C	0.9		50
D	0.9		56
E	1.0		62

⑦	REFIN.	TYPE	#3	#4
		A	8 @ 4'-5"	5 @ 6'-3"
		B	8 @ 6'-5"	7 @ 6'-3"
		C	8 @ 6'-11"	7 @ 6'-3"
		D	8 @ 7'-5"	8 @ 6'-3"
		E	8 @ 7'-11"	9 @ 6'-3"



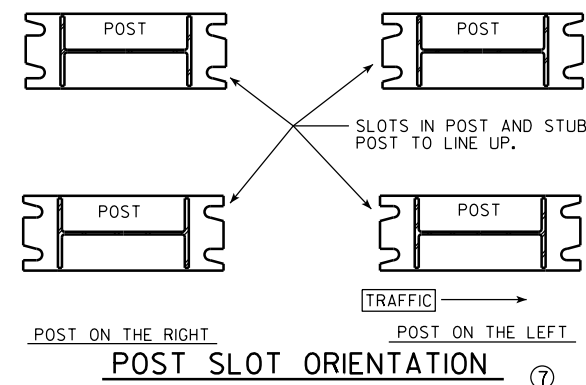
FOUNDATION DETAIL



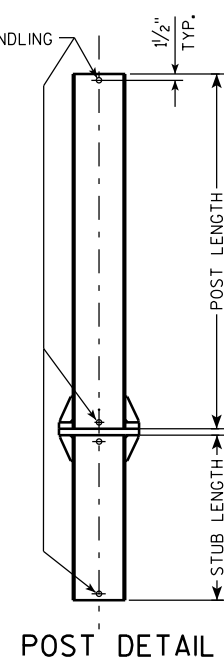
BOLTING PROCEDURE - BASE CONNECTION

1. ASSEMBLE SIGN POST TO STUB POST WITH BOLTS AND ONE OF THE FLAT WASHERS ON EACH BOLT BETW. PLATES.
2. SHIM AS REQ'D. TO PLUMB POST.
3. PRIOR TO BOLT TIGHTENING LUBRICATE BASE CONNECTION BOLTS WITH BEESWAX OR OTHER HIGH-WAX LUBRICANT.
4. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH 12" OR 15" WRENCH TO BED WASHERS & SHIMS AND TO CLEAN BOLT THREADS, THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE. (SEE TABLE)
5. BURR THREADS AT JUNCTION WITH NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.

NOTE:
TIGHTEN THE HIGH STRENGTH BOLTS TO THE TORQUE SHOWN.
DO NOT OVERTIGHTEN.



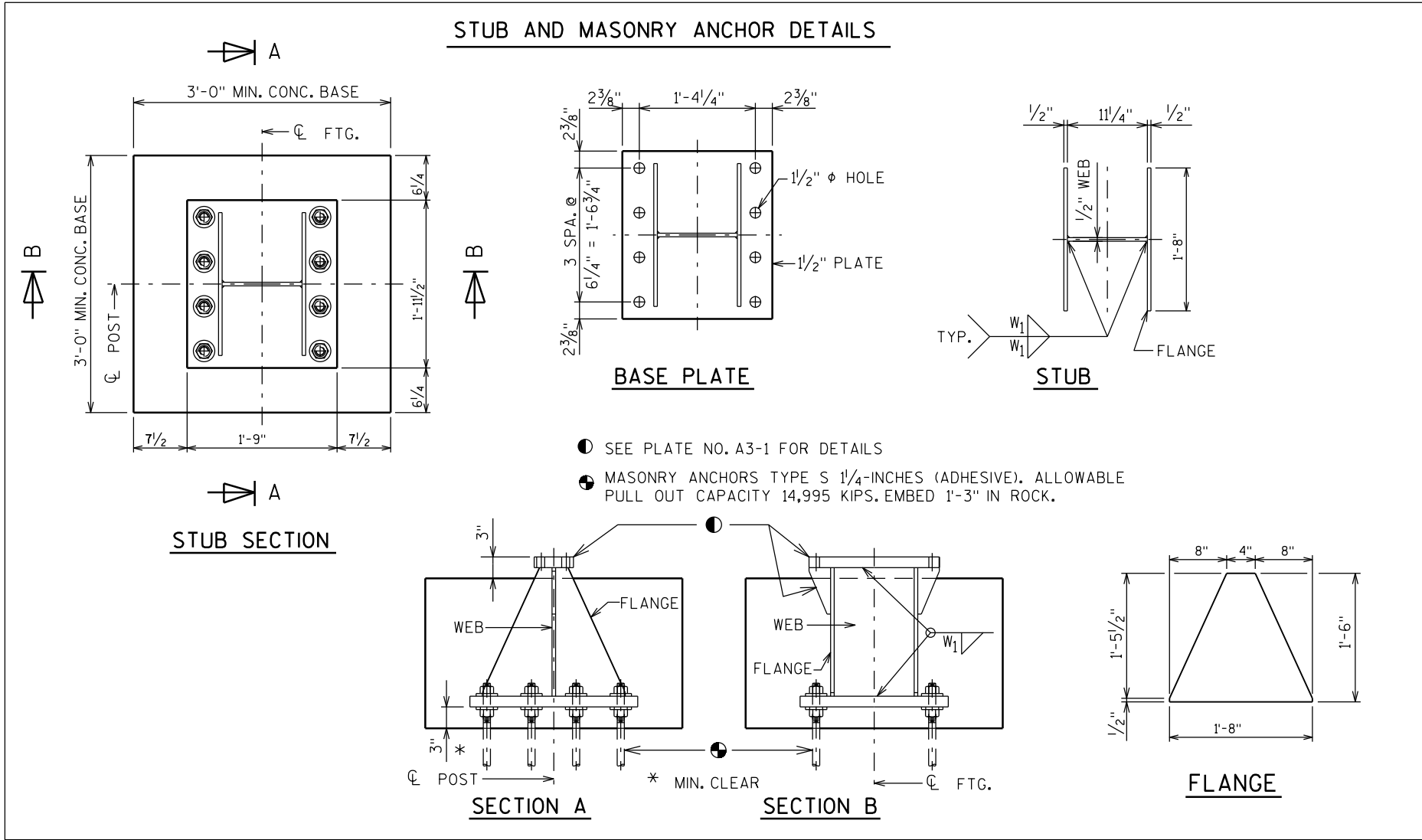
POST SLOT ORIENTATION



POST DETAIL

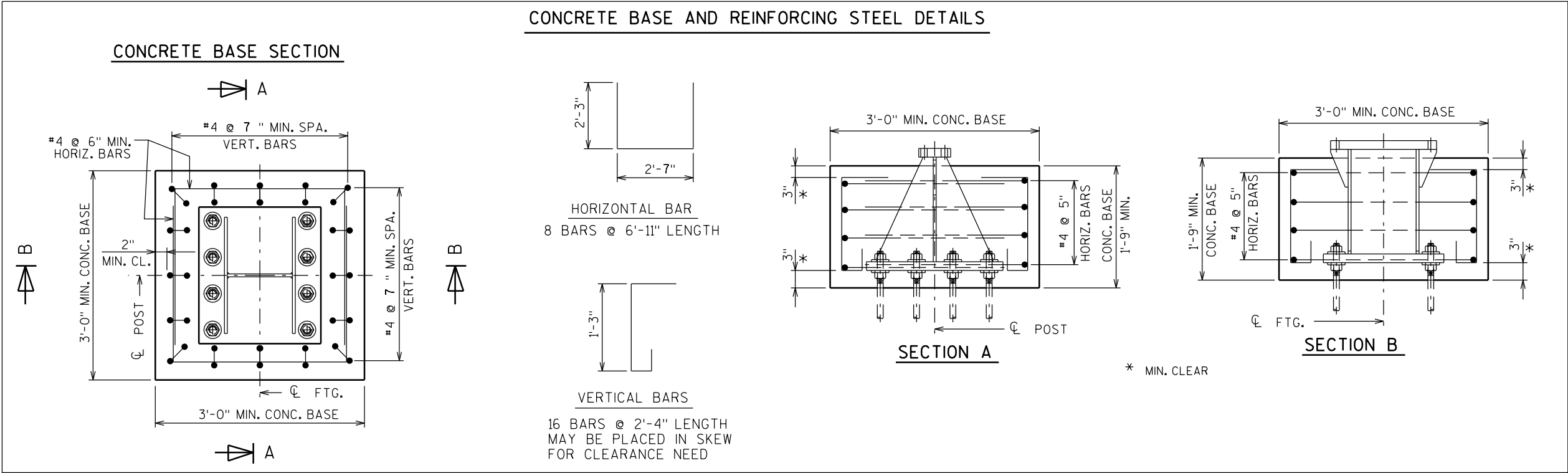
				BASE CONNECTION DATA TABLE												FOUNDATION DATA				②
L	X	TYPE	DIMENSION POST SIZE	BOLT SIZE & TORQUE	A	B	C	D	E	T ₁	T ₄	W ₁	R	S	STUB LENGTH	STUB PROJECTION	SHAFT DIAMETER	SHAFT LENGTH	K	
3 3/4	④	A	W10"X12.0 #/FT.	3/4" φ @ 75#-FT.	5/4"	1'-0 3/8	7/8"	3/2"	7/8"	1"	3/16"	5/16"	1 1/32"	2 1/8"	3'-6	3"	2'-0 φ	5'-0	76.0#	
4 3/4	④	B	W12"X16.0 #/FT.	7/8" φ @ 85#-FT.	5/2"	1'-4 1/4	1"	3/2"	1"	1 1/4"	1/4"	5/16"	1 5/32"	3"	5'-6	3"	2'-0 φ	7'-0	146.5#	
5		C	W12"X19.0 #/FT.	7/8" φ @ 85#-FT.	5/2"	1'-4 1/4	1"	3/2"	1"	1 1/2"	5/16"	5/16"	1 5/32"	3"	6'-0	3"	2'-0 φ	7'-6	182.1#	
5		D	W12"X22.0 #/FT.	7/8" φ @ 85#-FT.	5/2"	1'-4 1/4	1"	3/2"	1"	1 1/2"	3/8"	5/16"	1 5/32"	3"	6'-6	3"	2'-0 φ	8'-0	210.5#	
5	③	E	W12"X26.0 #/FT.	1" φ @ 90#-FT.	7"	1'-4 1/4	1 1/4"	4"	1 1/2"	1 1/2"	3/8"	5/16"	1 1/32"	3"	7'-0	3"	2'-0 φ	8'-6	293.0#	

STRUCTURAL CARBON STEEL PAY WTS. (1POST) = K+ (POST LENGTH X POST WT.)
 " K " INCLUDES STUB, BASE PLATES, STIFFS., BOLTS, AND WASHERS.



GENERAL NOTES

1. Quantities per Base:
- REINFORCING BAR STEEL = 62 LBS
 - CONCRETE = 0.6 C.Y.
 - STEEL WEIGHT = 335 LBS
2. All materials, except anchor rod, nuts and washers, are to be A.S.T.M. A709 grade 50. All materials to be galvanized after fabrication.
3. If the contractor encounters rock before reaching the footing depth, per the A3-1 Sign Detail, determine the pull-out capacity of a test adhesive anchor installed in the rock. If the test result equals or exceeds the pull-out capacity of 14,995 KIPS, the contractor may install the breakaway stub for rock, according to this detail.

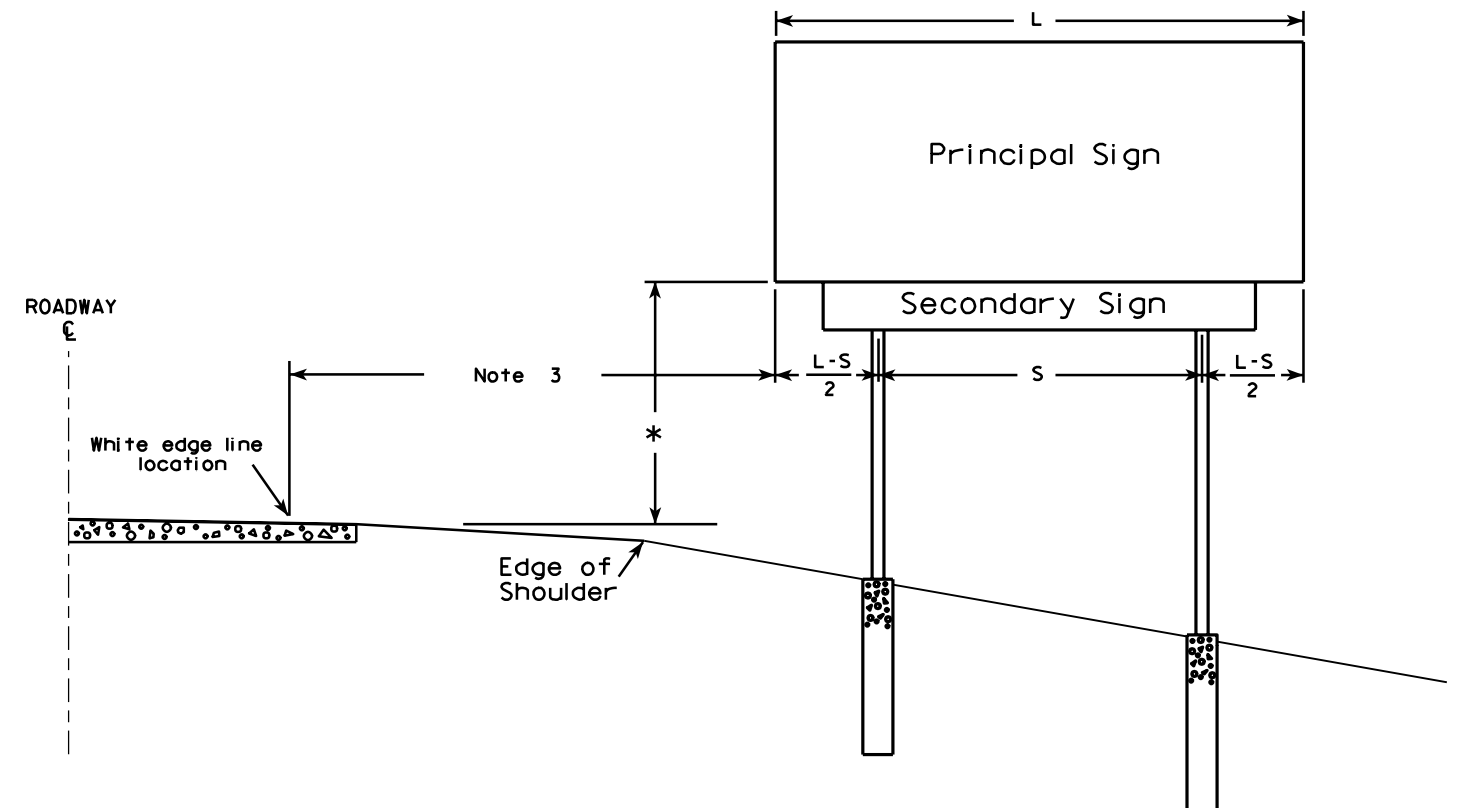
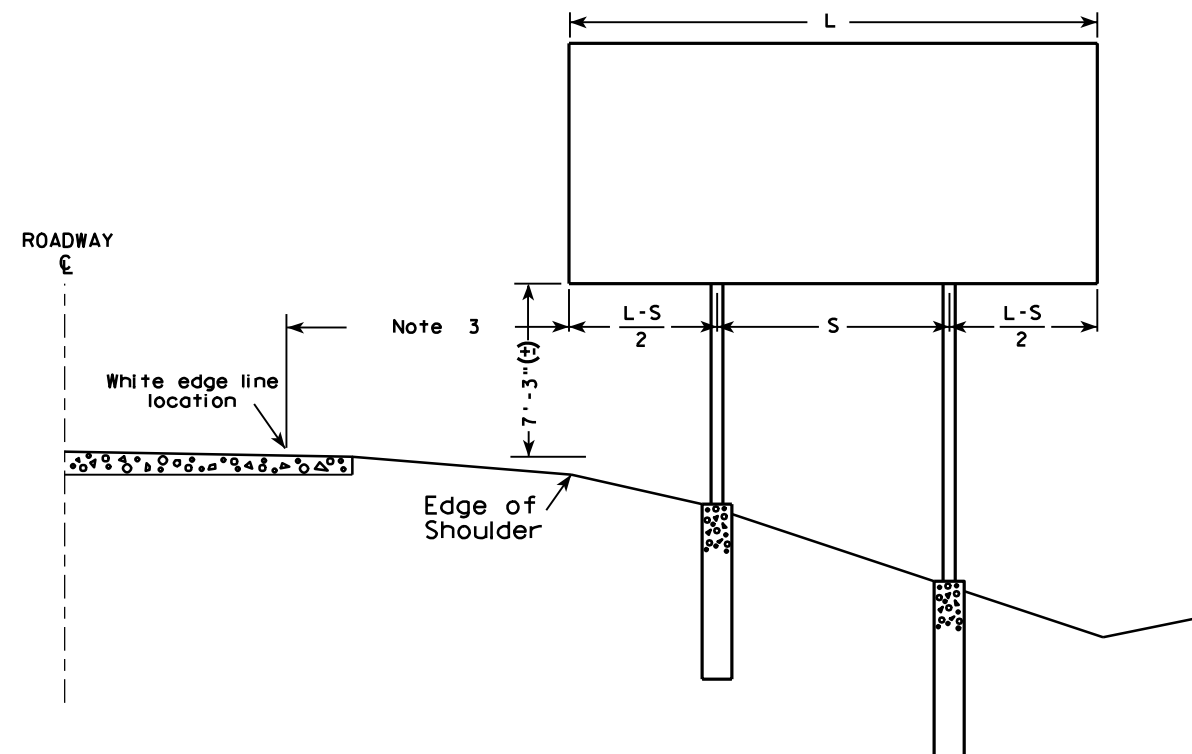


**ALTERNATE BREAK-AWAY
BASE ON ROCK
A3-1M**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/06/2014 PL 93 A3-1M.1



GENERAL NOTES

1. For a 2 post installation, S equals $3L/5$, but shall not be less than 9 ft.
2. For a 3 post installation, S equals $5L/7$, but shall not be less than 18 ft., and the space between any two posts shall not be less than 9 ft.
3. Unless noted in the plan, the sign offset distance shall be a minimum of 17'-6", desirable 30'-0".
4. The (±) tolerance shown on this sheet is 3 in.
5. The vertical sign height clearance detailed is measured from the bottom of the sign to the near edge of pavement.
6. Post lengths shown in the miscellaneous quantities are estimated lengths. The contractor shall verify post lengths at the time of final grading.
7. Refer to the Traffic Guidelines Manual for further guidance on minimum vertical clearance requirements.

* Clearance is 8'-3" (±) when the secondary sign is 3 ft. or less in height. For secondary signs larger than 3 ft., the clearance to the bottom of the secondary sign shall be 5'-3" (±).

TYPICAL INSTALLATION OF TYPE I SIGNS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 4/02/08

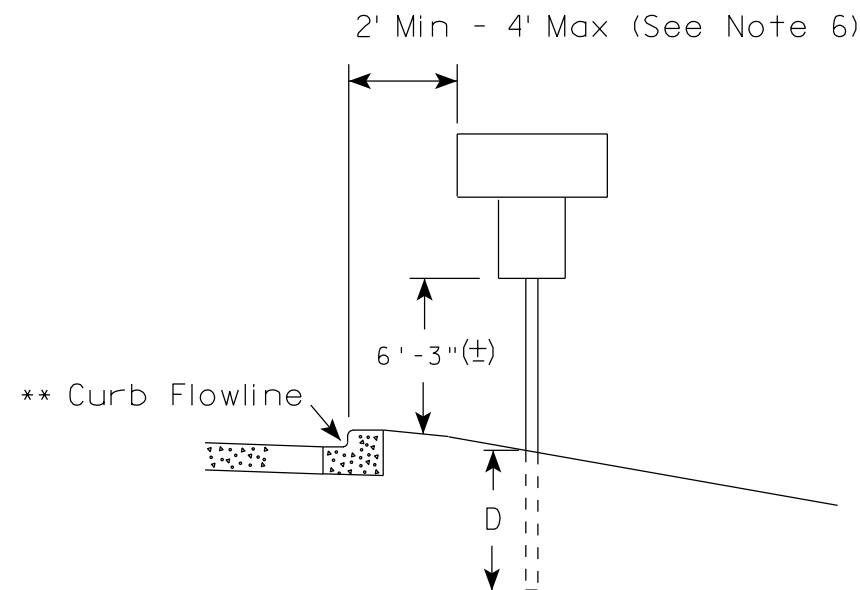
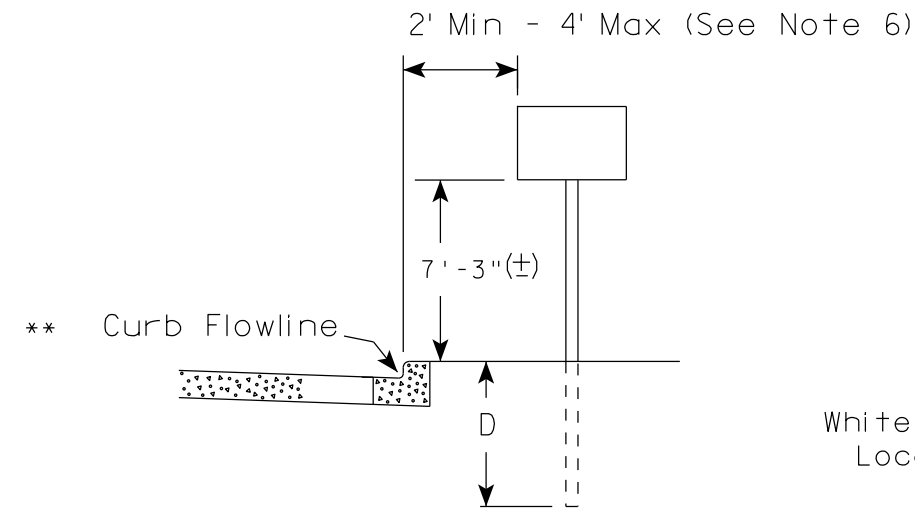
PLATE NO. A4-1.9

PROJECT NO:

SHEET NO: 94

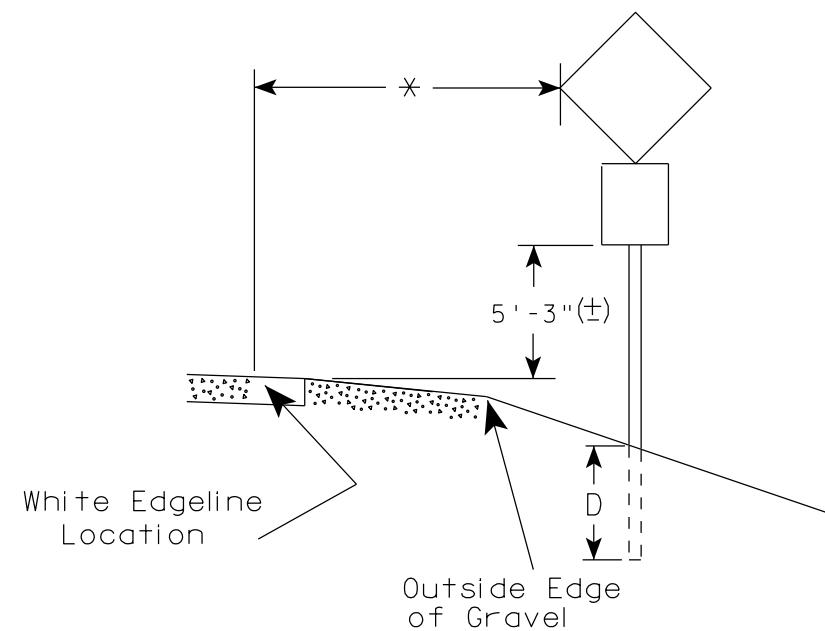
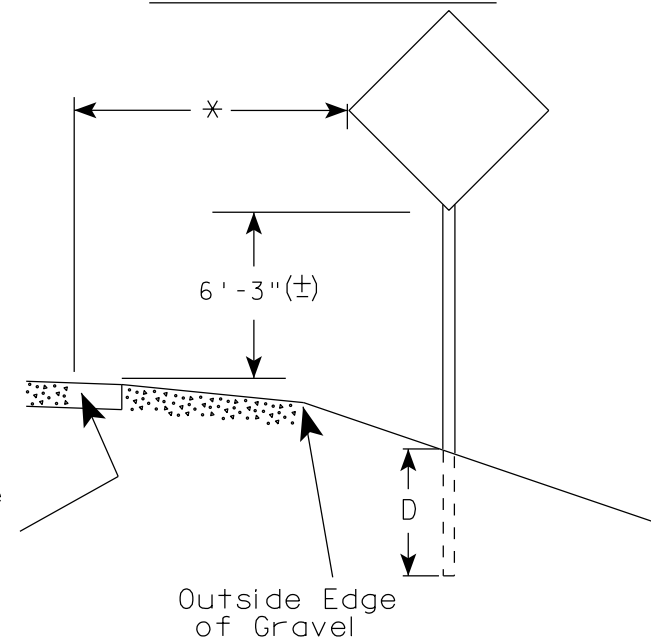
E

URBAN AREA



White Edgeline Location

RURAL AREA (See Note 2)



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.

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7' - 3" (±) or 6' - 3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7' - 3" (±) or 6' - 3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5' - 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5' - 3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2' - 3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4' - 3" (±).

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 7/23/15

PLATE NO. A4-3.20

95

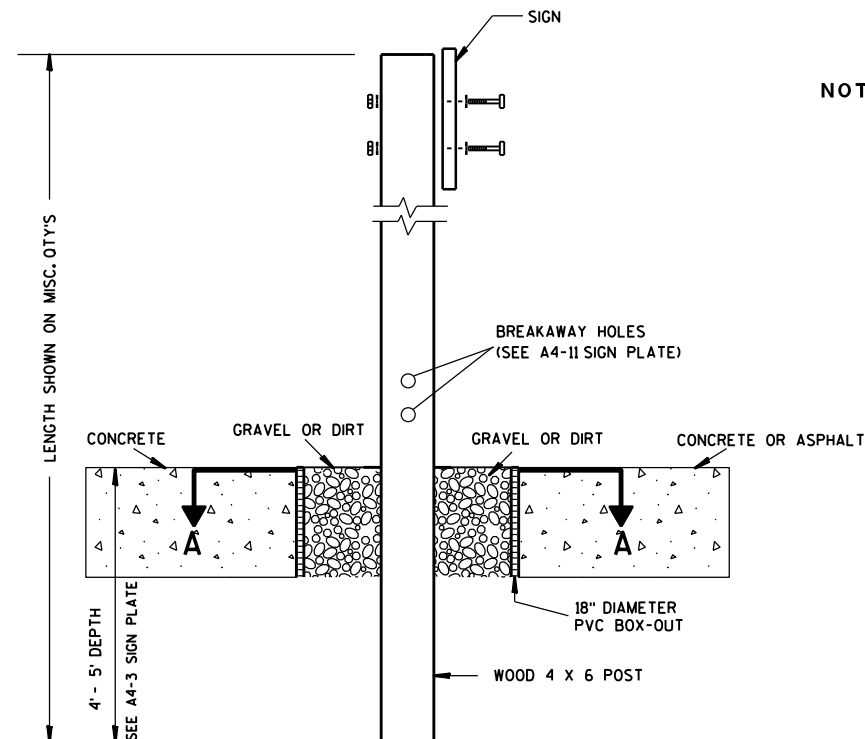
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

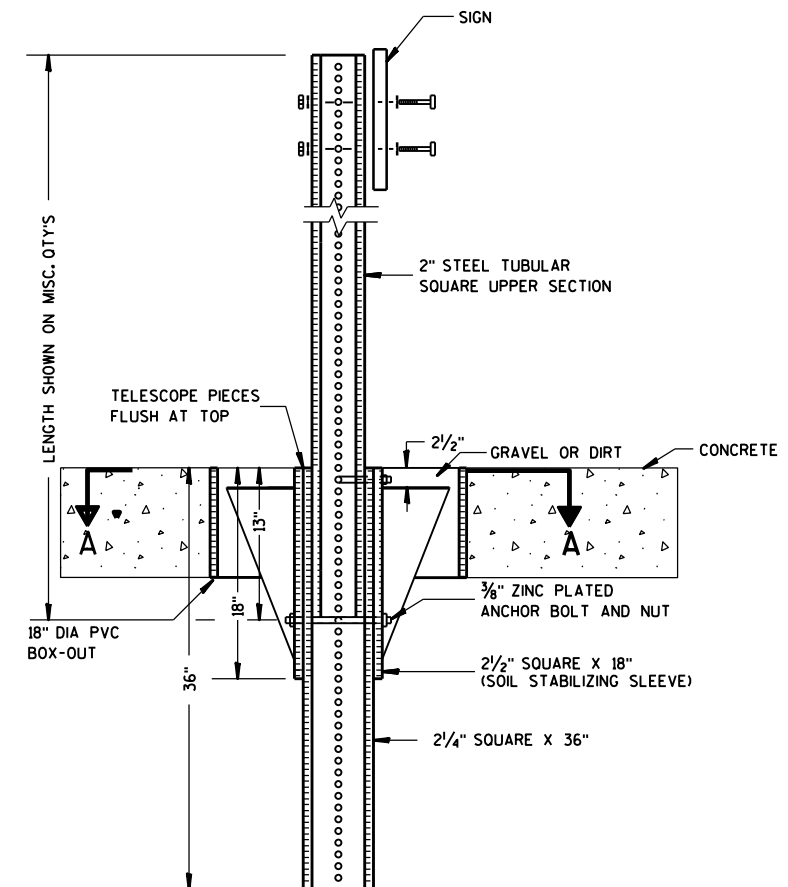
E



ELEVATION VIEW

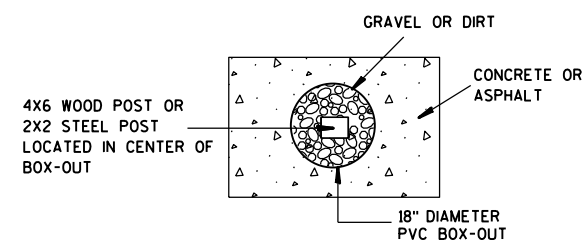
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 96 A4-3B.1

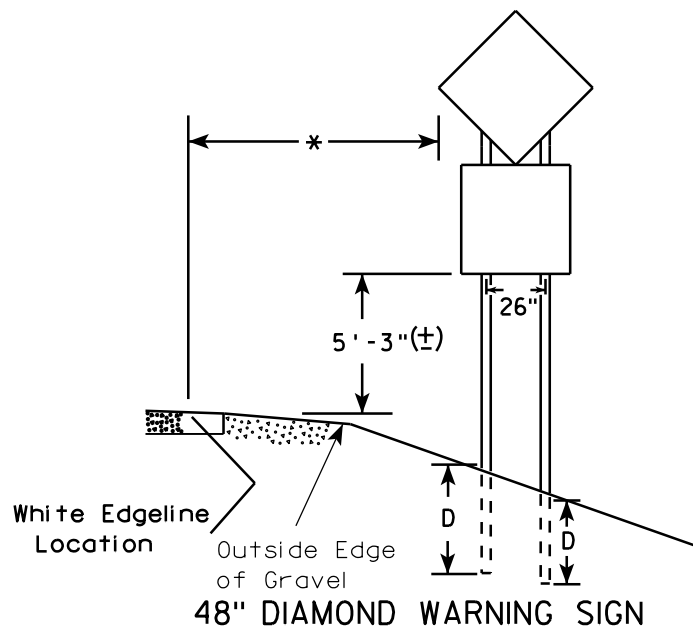
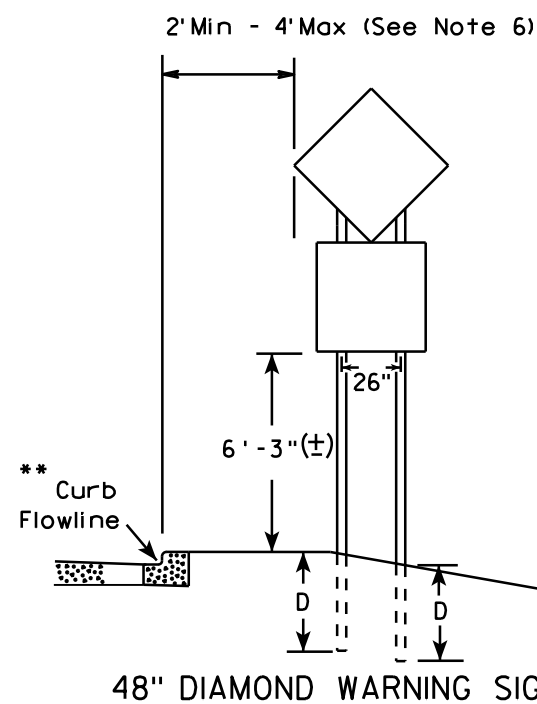
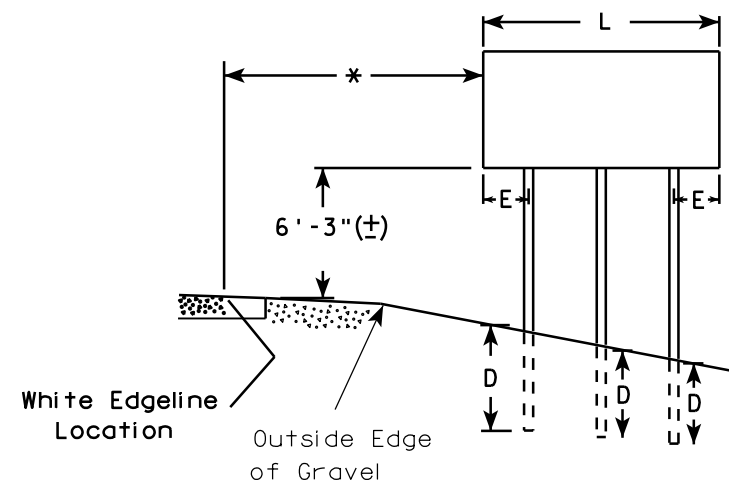
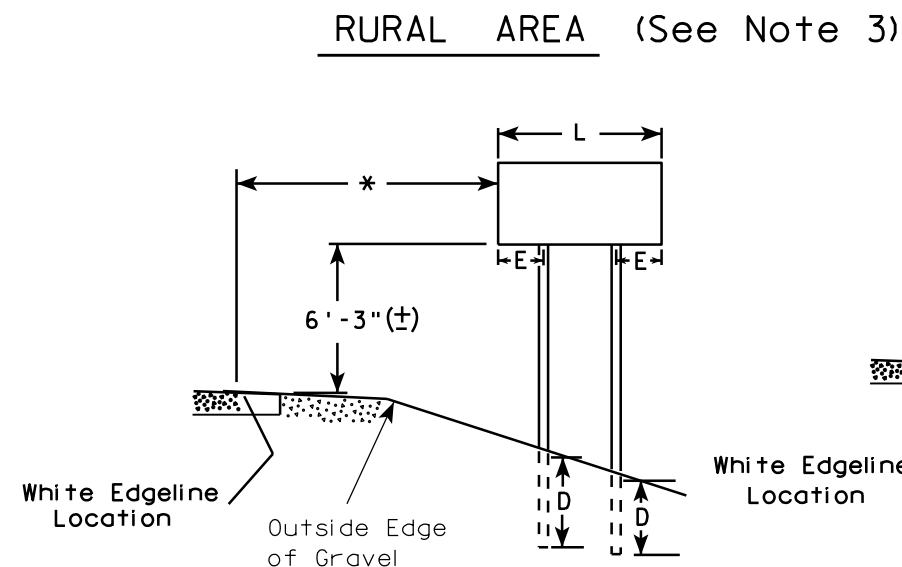
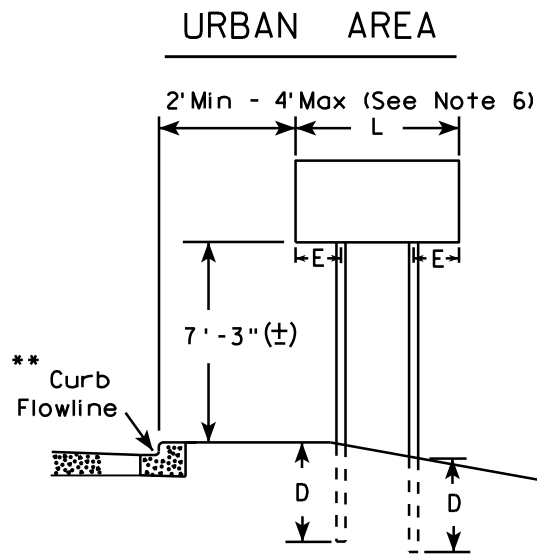
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



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

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

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

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

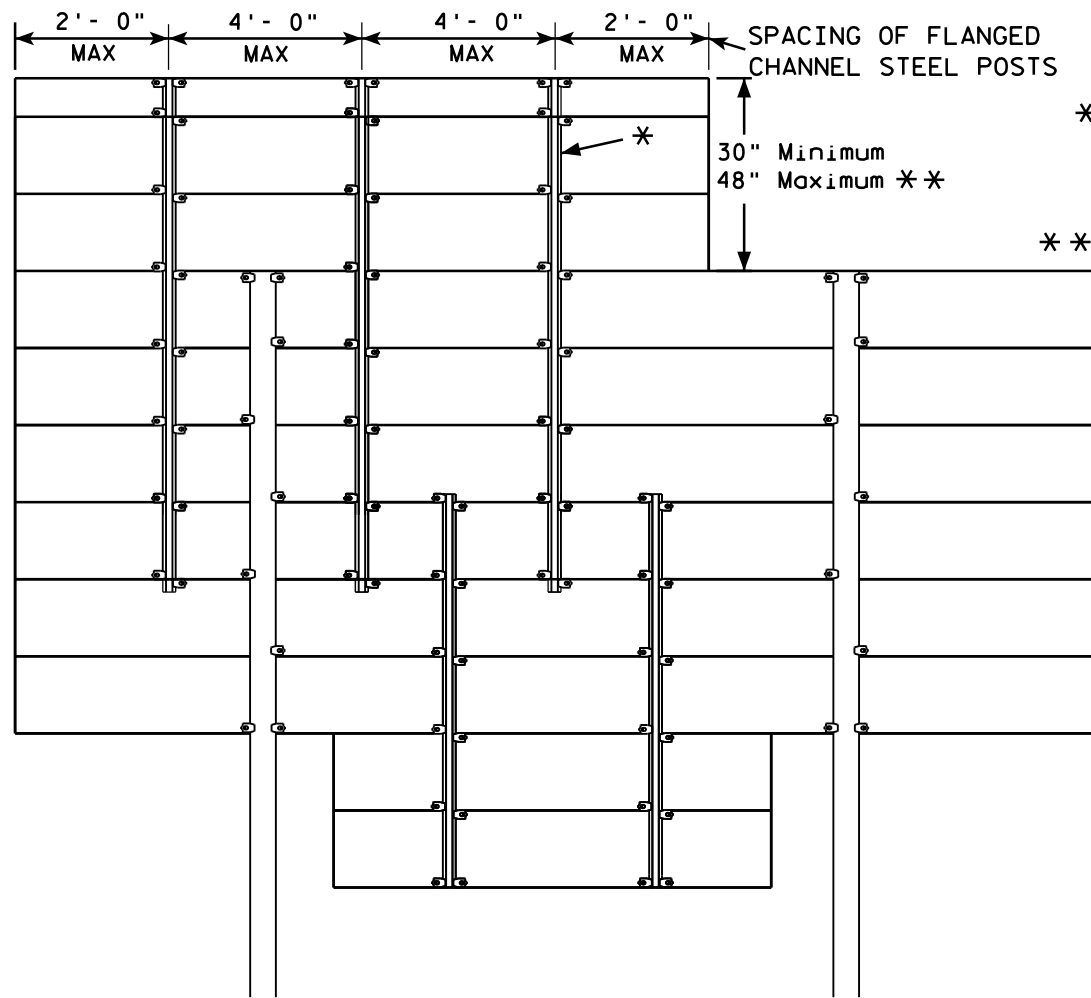
SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 7/23/15	PLATE NO. ^{AA-A} 14 -97

GROUND MOUNTED SIGN

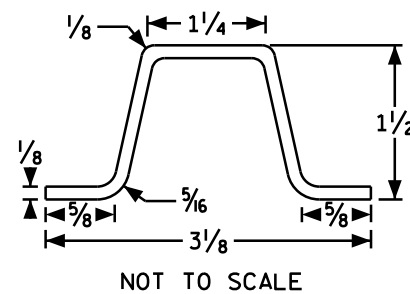


* = 2.00 lb/ft FLANGED CHANNEL, MIN. YIELD STRENGTH = 60,000 PSI (GRADE 60) GALVANIZED

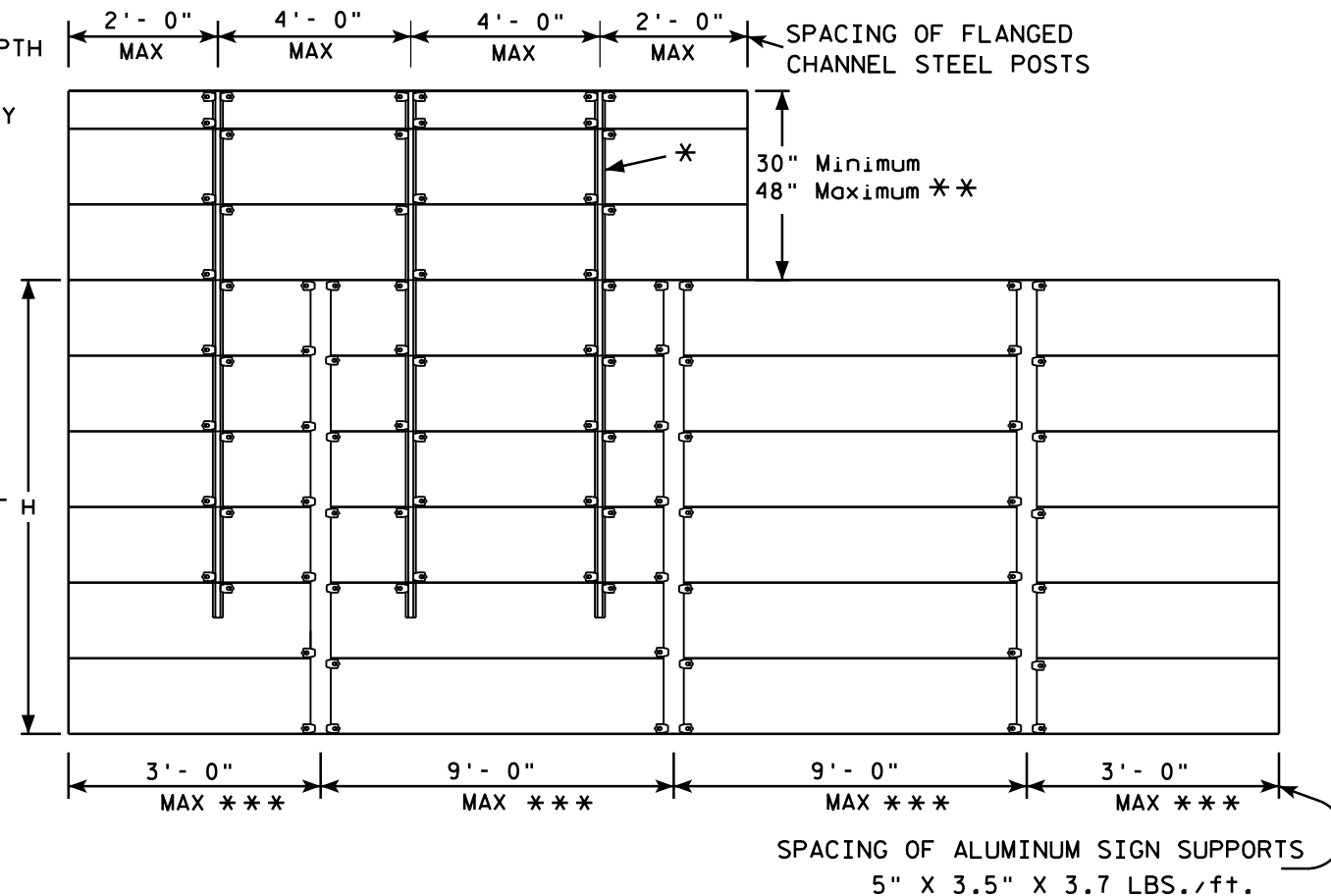
** = FOR 48" HEIGHT PANELS ON OVERHEAD STRUCTURES, ENTIRE SIGN SHALL BE CENTERED VERTICALLY ABOUT THE DEPTH OF THE TRUSS.

*** THESE SPACING DISTANCES SHALL ONLY BE USED WHEN THE MAIN SIGN HAS A MAXIMUM HEIGHT (DIMENSION H) OF 16 FT OR LESS. FOR SIGNS WITH A HEIGHT OF GREATER THAN 16 FT, STRUCTURAL CALCULATIONS SHALL BE PERFORMED.

FLANGE CHANNEL DETAIL



SIGN BRIDGE MOUNTED SIGN



GENERAL NOTES

1. Flanged channel steel posts shall conform to size and material above, and shall be considered as incidental to other items in the contract.
2. Number of Flanged channel steel supports varies with length of panel and shall be spaced as shown:
PANEL LENGTH 8'-0" OR LESS = 2 CHANNELS
PANEL LENGTH 9'-0" - 12'-0" = 3 CHANNELS
PANEL LENGTH 13'-0" OR MORE = 4 CHANNELS
If the flanged channel steel posts can not be horizontally spaced as shown, they can be moved so as to securely hold the sign.

3. The EXIT NUMBER PANEL shall normally be positioned above the guide sign aligned with the right edge of the guide sign. If the guide sign indicates a left exit, the EXIT NUMBER PANEL shall be aligned with the left edge of the guide sign.
4. If the bolt holes in the top panel (EXIT NUMBER), or sub panel (NEXT EXIT) line up with holes in main sign panel, stitch bolts shall be used in addition to the channels.
5. Provide post clips for each sign as shown. (Please note the differences between a ground mounted versus Sign bridge mounted sign as far as number of clips required on the main supports or beams)
6. Structural steel sign supports shall extend to the top of the main signs, as shown on the above details.

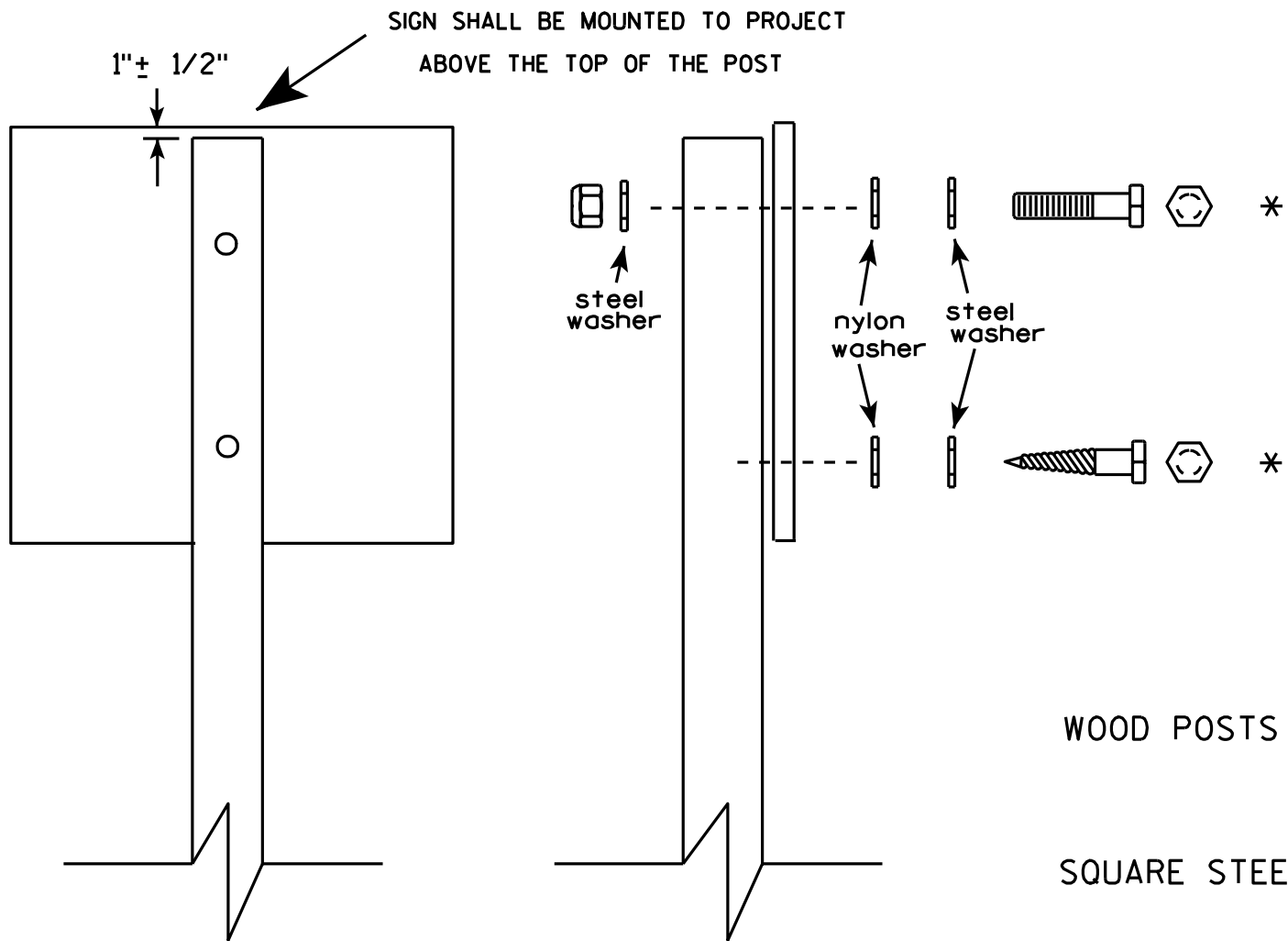
ATTACHMENT OF GUIDE SIGNS TO SUPPORTS

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 12/05/13 PLAT 98 4-6.12

PROJECT NO:

SHEET NO:

E

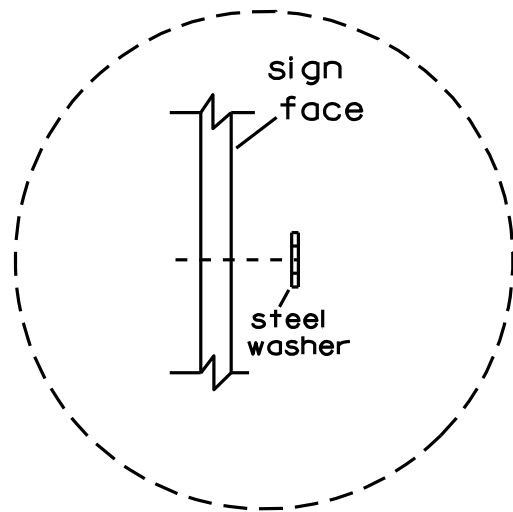


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

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

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

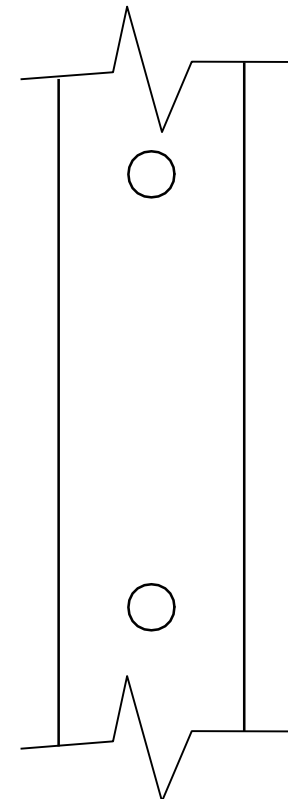
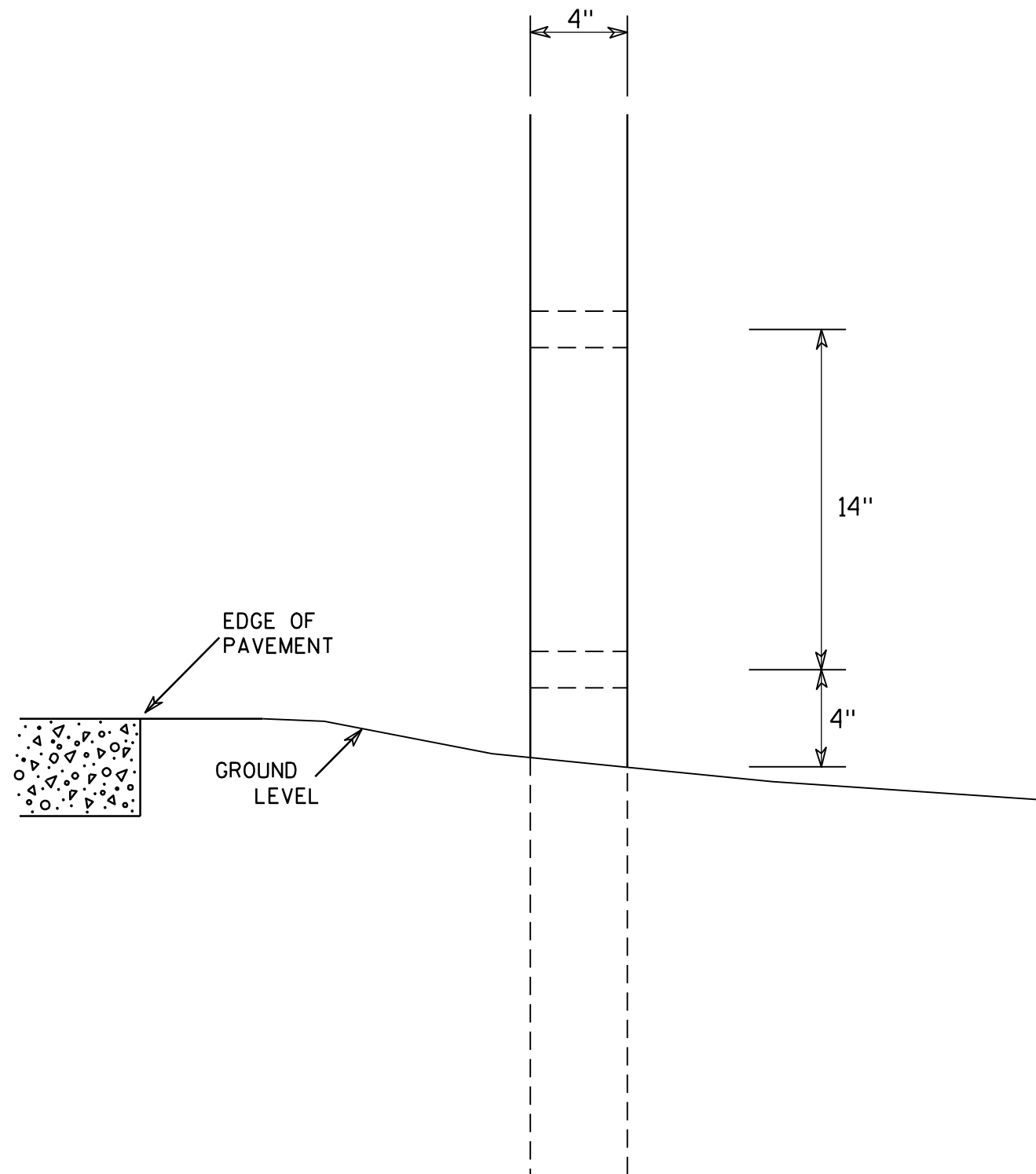
- WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts
- SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375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

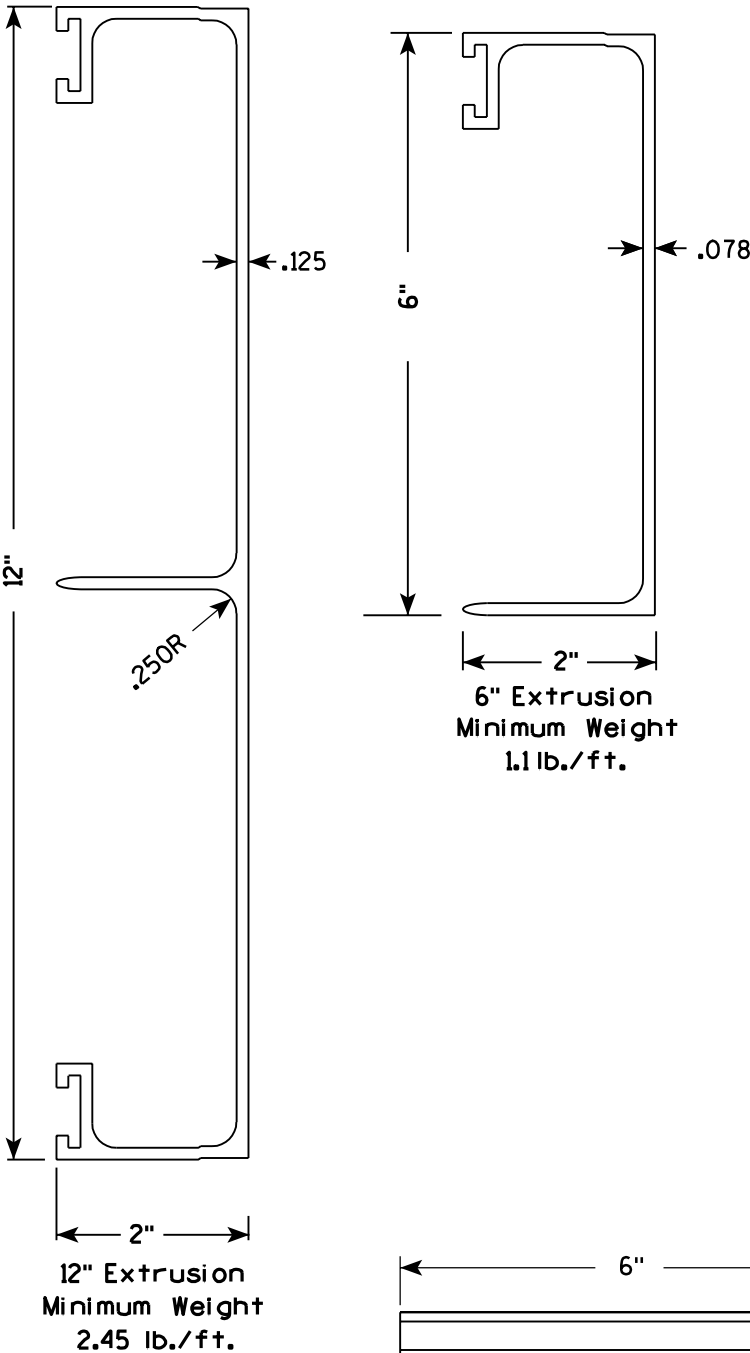
COUNTY:

SHEET NO: 100

E

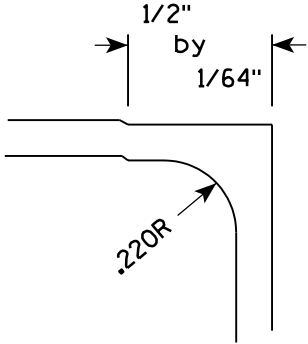
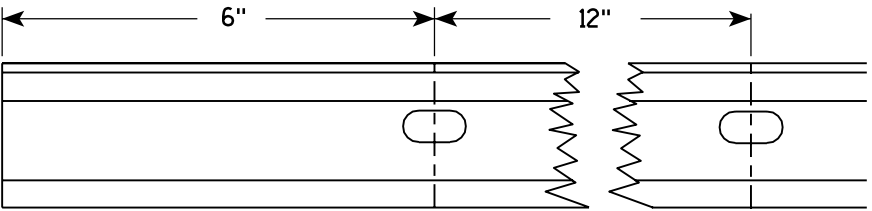
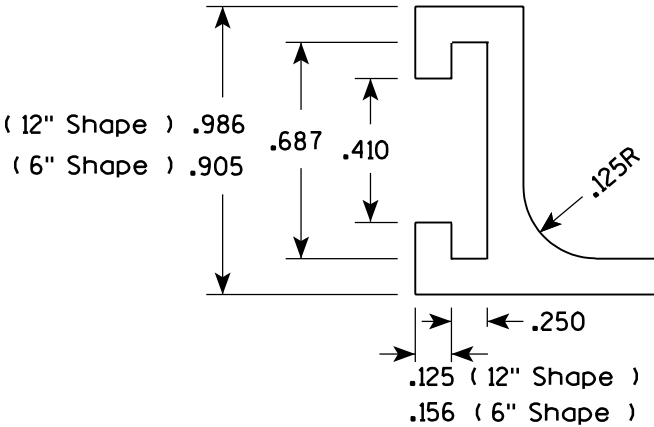
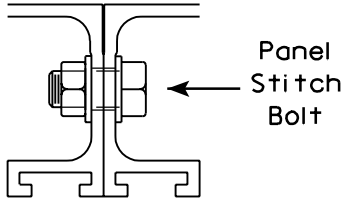
Extruded Shape

Hardware



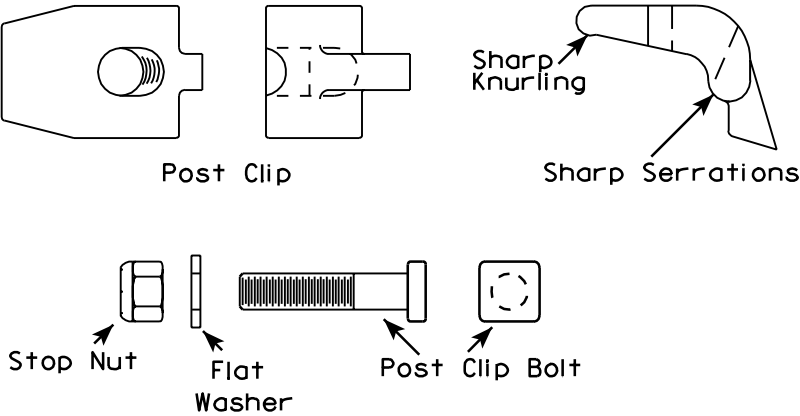
STITCH BOLT, WASHER & NUT

The hardware includes:
3/8 " - 16 X 3/4 " Economy Bolt 2024-T4 alloy
3/8 " - Stainless steel stop nut
3/8" X .064 Flat Washers, Alclad 2024-T4 alloy



POST CLIP, POST CLIP BOLT, WASHER & NUT

Post Clip shall be Alum. Alloy 356-T6
Post Clip Bolt shall be Stainless Steel.
Flat washer shall be 3/8" X .091, Stainless Steel.
Stop nut shall be stainless steel.



NOTES

1. The contractor may select any brand of extrusion that conforms to the illustrations or meets with the approval of the engineer, but all extrusions used on this contract shall be of the same brand.
2. Panel Stitch Bolts shall be used to assemble adjacent panels. Maximum stitch bolt spacing shall be 24" C-C, and a minimum of 4 bolts shall be used to connect any two extrusions.
3. Post Clips shall be used to attach the sign panel to the sign support.

ALUMINUM EXTRUSIONS FOR
TYPE I SIGNS

WISCONSIN DEPT OF TRANSPORTATION

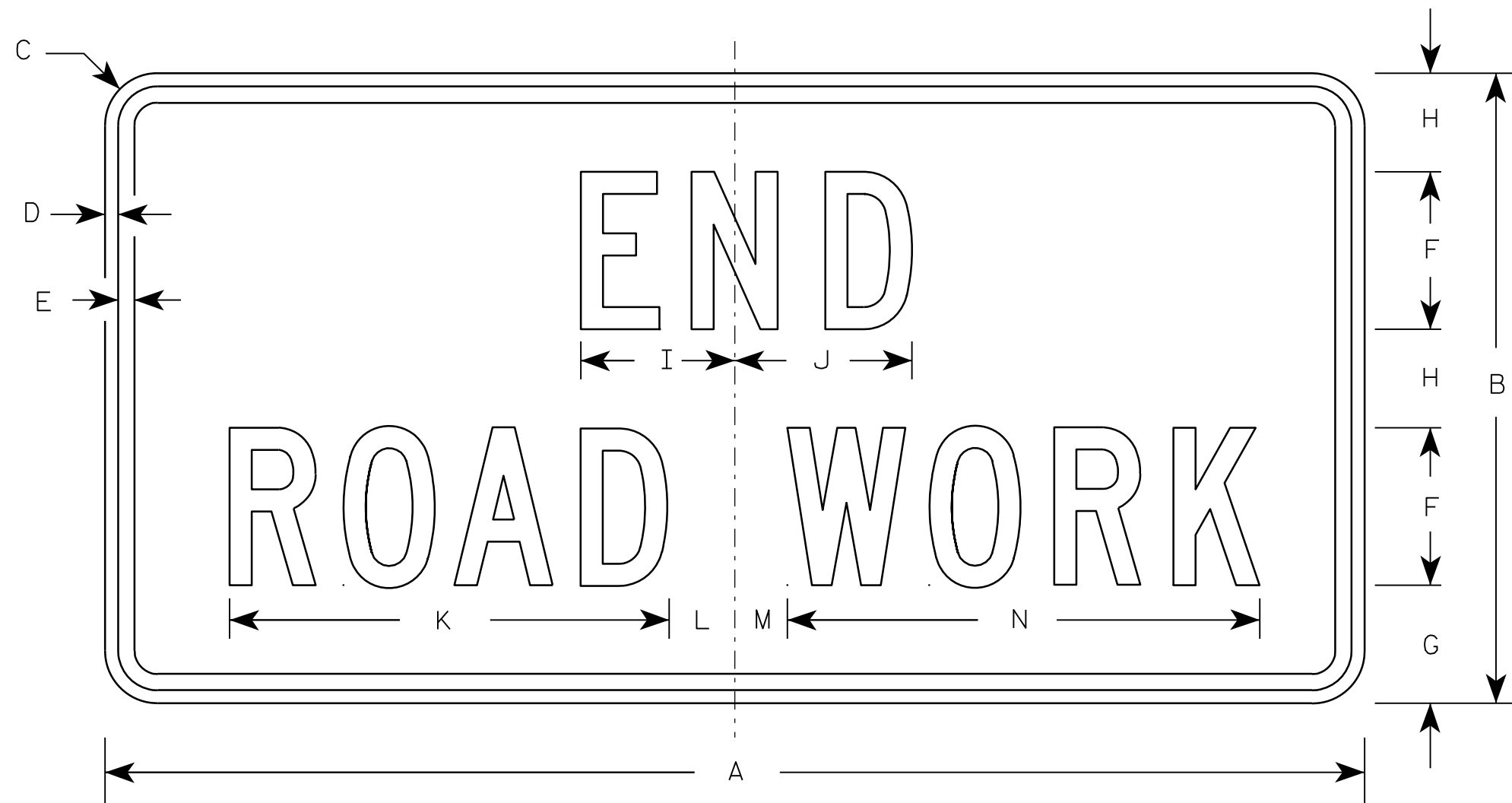
APPROVED *Chester J. Spang*
for State Traffic Engineer
DATE 11/18/99 PLATE NO. A5-2.9

PROJECT NO:

SHEET NO: 101

E

7



G20-2A

NOTES

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

Metric equivalent
for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

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.	Area sq. m.
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

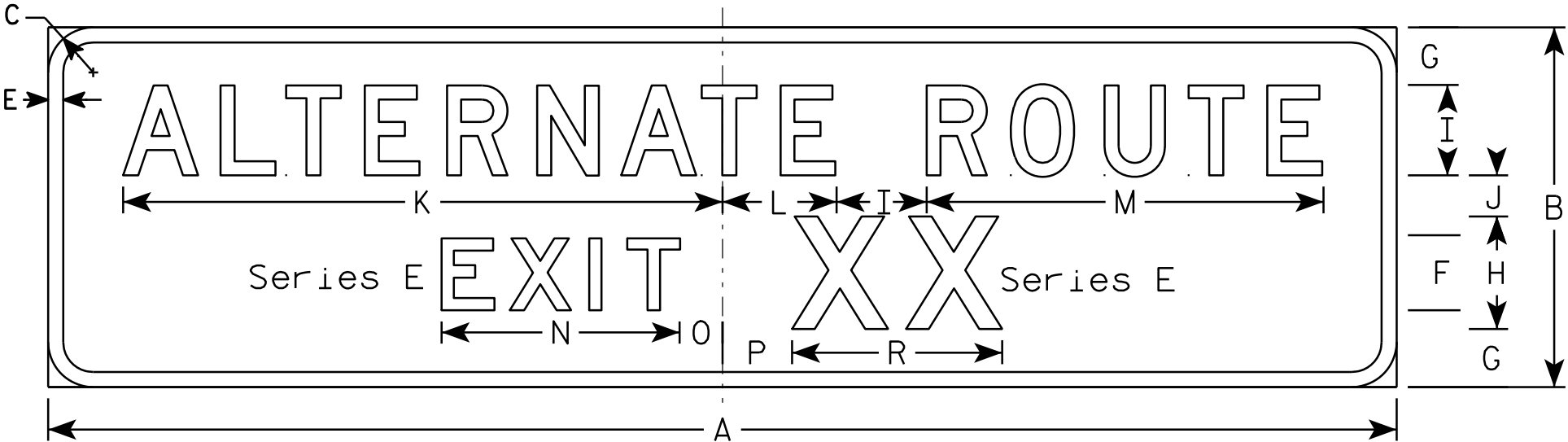
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 9/30/09 PLATE NO. G20-2A.8

7

NOTES

- 1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - D except as noted
- 4. Substitute appropriate numeral and adjust spacing to achieve proper balance.



G20-54

7

Metric equivalent
for this sign is:

SIZE	
1	
2	
3	
4	4500 mm X 1200 mm
5	

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	Areq sq. ft.	Areq m2
1																												
2																												
3																												
4	180	48	6		2	10	7 ¾	15	12	5 ½	80	15 ¼	53	31 ¾	5 ¾	9 ¼		28									60.0	5.4
5																												

STANDARD SIGN
G20-54

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 9/30/09 PLATE NO. G20-54.2

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 103	E
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NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - D
4. Substitute appropriate numeral and adjust spacing to achieve proper balance.



G20-55

Metric equivalent
for this sign is:

SIZE	
1	
2	
3	
4	2550 mm X 900 mm
5	

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	Areq sq. ft.	Areq m2
1																												
2																												
3																												
4	84	24	1 1/8	3/8	1/2	6	4 1/2	3	21 1/2	4	2	23 1/2	4 1/8	24 5/8	28 3/8												25.5	2.30
5																												

STANDARD SIGN
G20-55

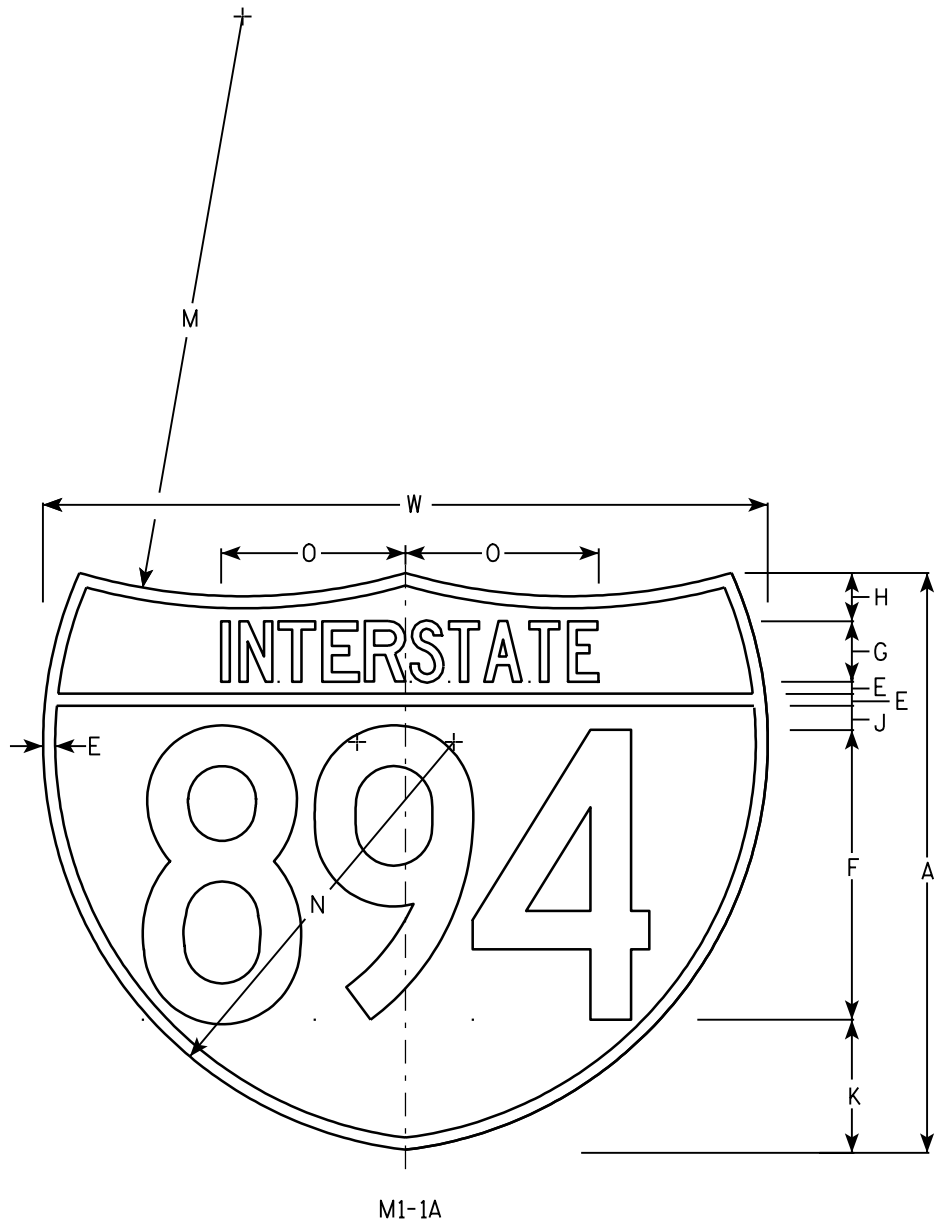
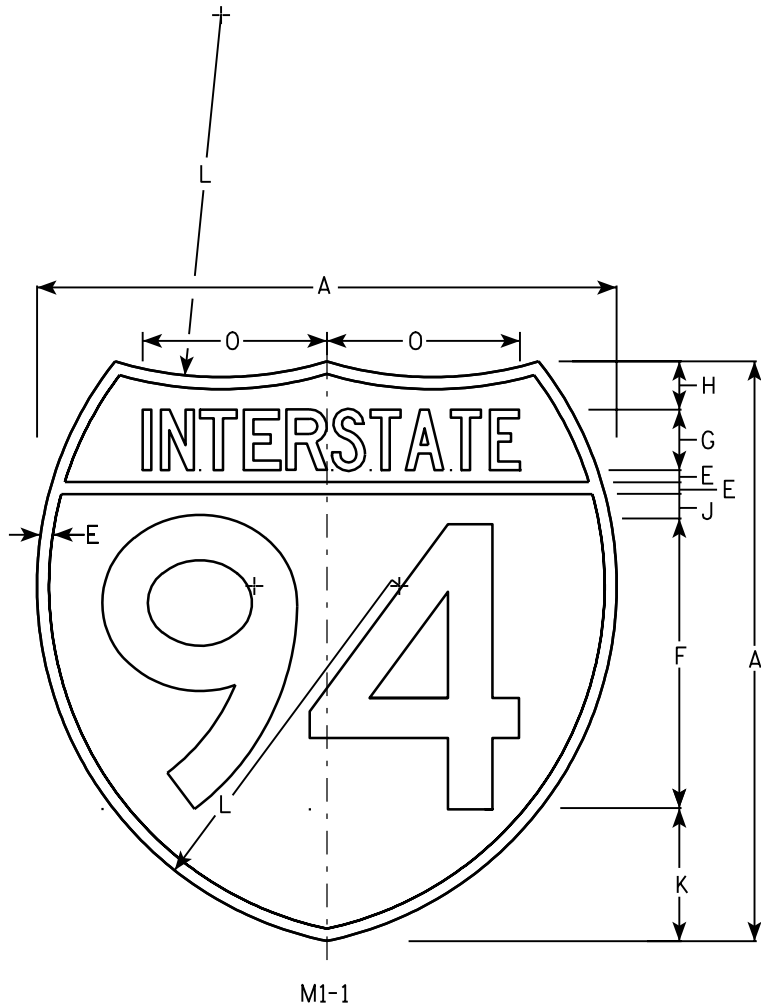
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 9/30/09 PLATE NO. G20-55.2

PROJECT NO: HWY: COUNTY: SHEET NO: 104 E

7



NOTES

- 1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Top Red - Bottom Blue (See Note 6)
Message - White - See Note 6
- 3. Message Series - See note 5
- 4. Substitute appropriate numerals & adjust spacing as per plate A10-1.
- 5. M1-1 - Numerals - D
Interstate - C
M1-1A - All copy - C
- 6. Permanent Signs
Message - Type H Reflective
Detour or other temporary signs
Background - Reflective
Message - Reflective

Metric equivalent for these signs are:

SIZE	M1 - 1	SIZE	M1 - 1A
1			
2	600 mm X 600 mm	2	600 mm X 750 mm
3	900 mm X 900 mm	3	900 mm X 1125 mm
4	900 mm X 900 mm	4	900 mm X 1125 mm
5	900 mm X 900 mm	5	900 mm X 1125 mm

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	Area sq. ft.	Area sq. ft.	Area m ²	Area m ²
1																													
2	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91	.36	.46
3	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
4	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
5	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05

INTERSTATE ROUTE MARKER
M1-1 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 08/23/05 PLATE NO. M1-1.8

7

NOTES

1. Sign is Type II - Type H except as Shown
2. Color:

Background - See Note 5

Message - See note 5
3. Message Series - B
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-1

Background - White

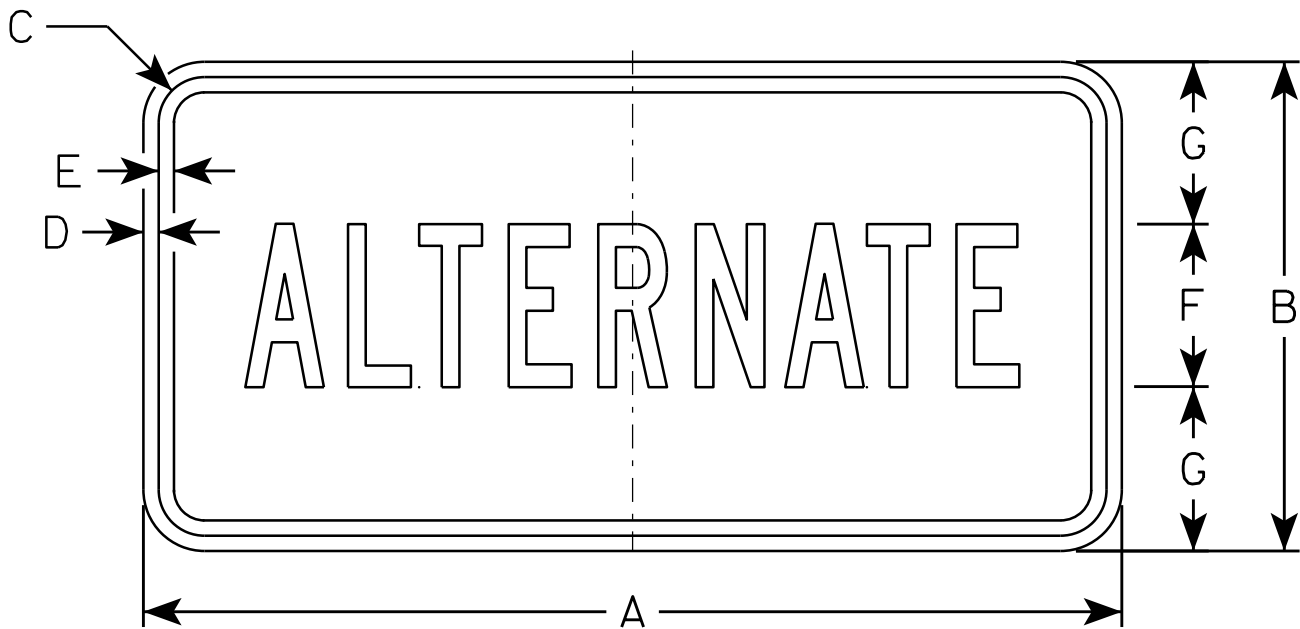
Message - Black
- MB4-1

Background - Blue

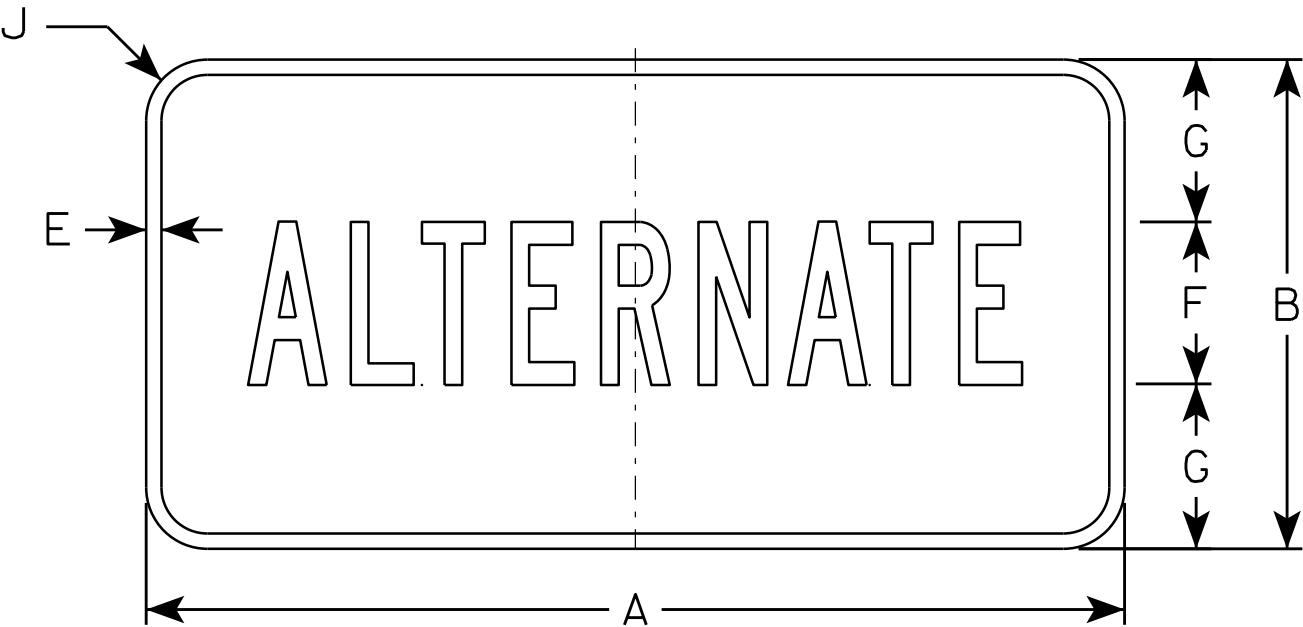
Message - White
- M04-1

Background - Orange - Type F

Message - Black



M4 - 1
M04 - 1



MB4 - 1

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	4	4	9 3/4	9 1/2	1 1/2																	2.00
3	36	18	1 1/8	3/8	1/2	7	5 1/2	16 3/8	16 1/2	1 1/2																	4.5
4	36	18	1 1/8	3/8	1/2	7	5 1/2	16 3/8	16 1/2	1 1/2																	4.5
5	36	18	1 1/8	3/8	1/2	7	5 1/2	16 3/8	16 1/2	1 1/2																	4.5

STANDARD SIGN

M4 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch

for State Traffic Engineer

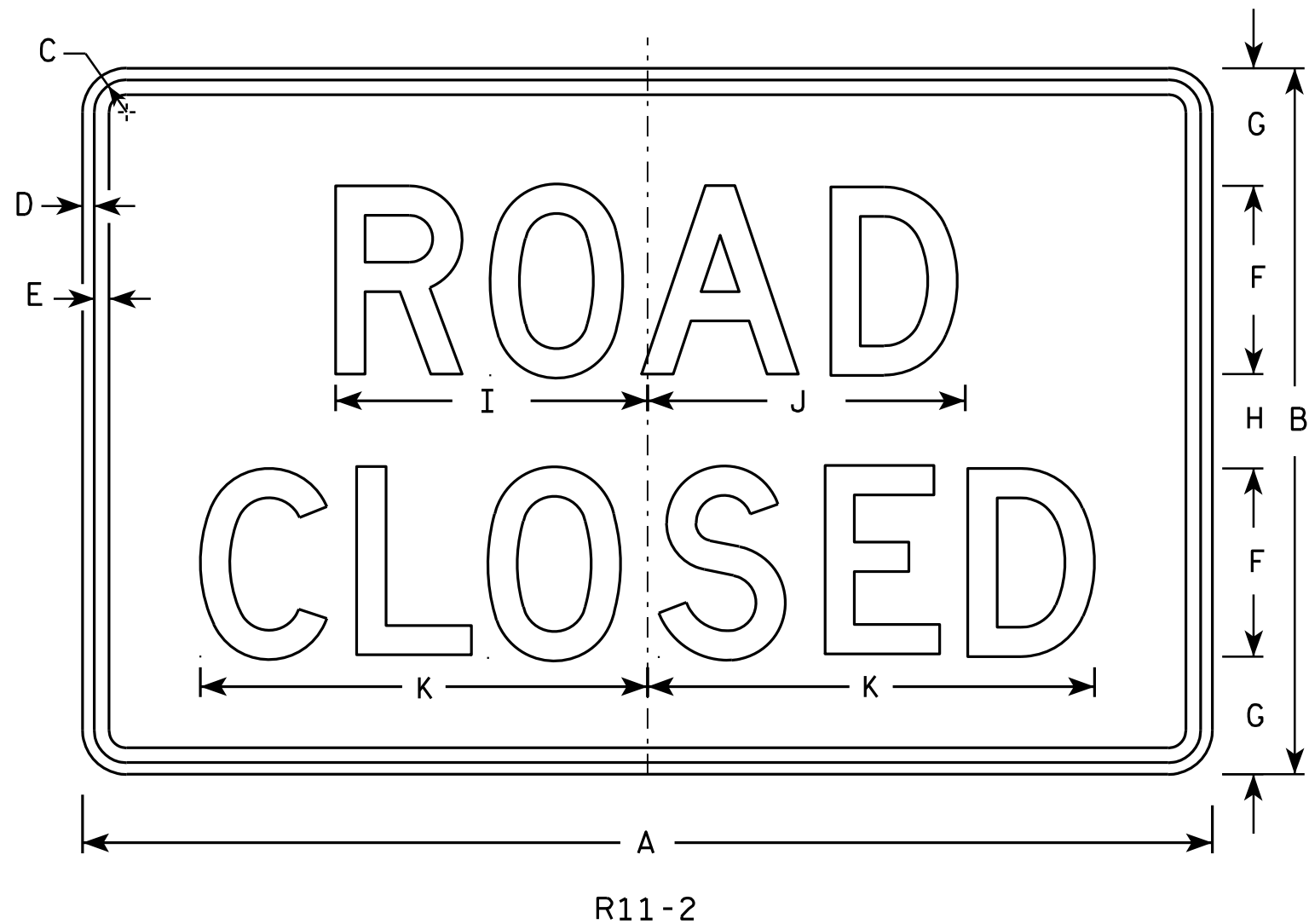
DATE 6/30/14

PLATE 106

'14-1.8

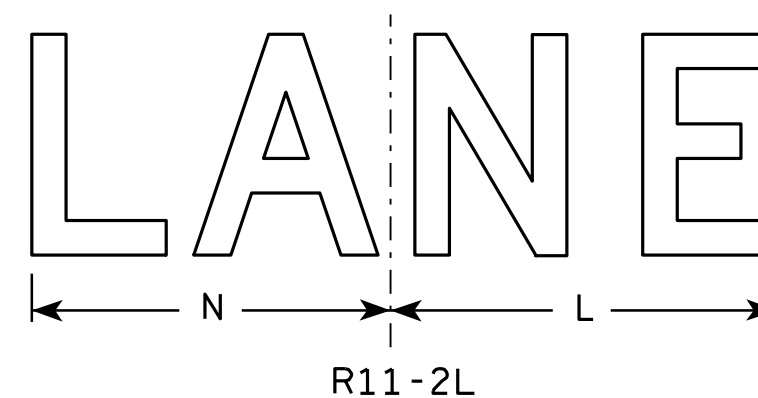
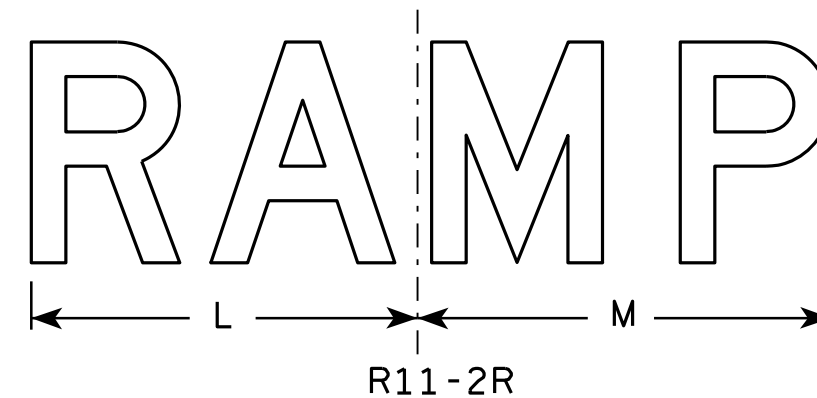
SHEET NO:

E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Modify the message as required.

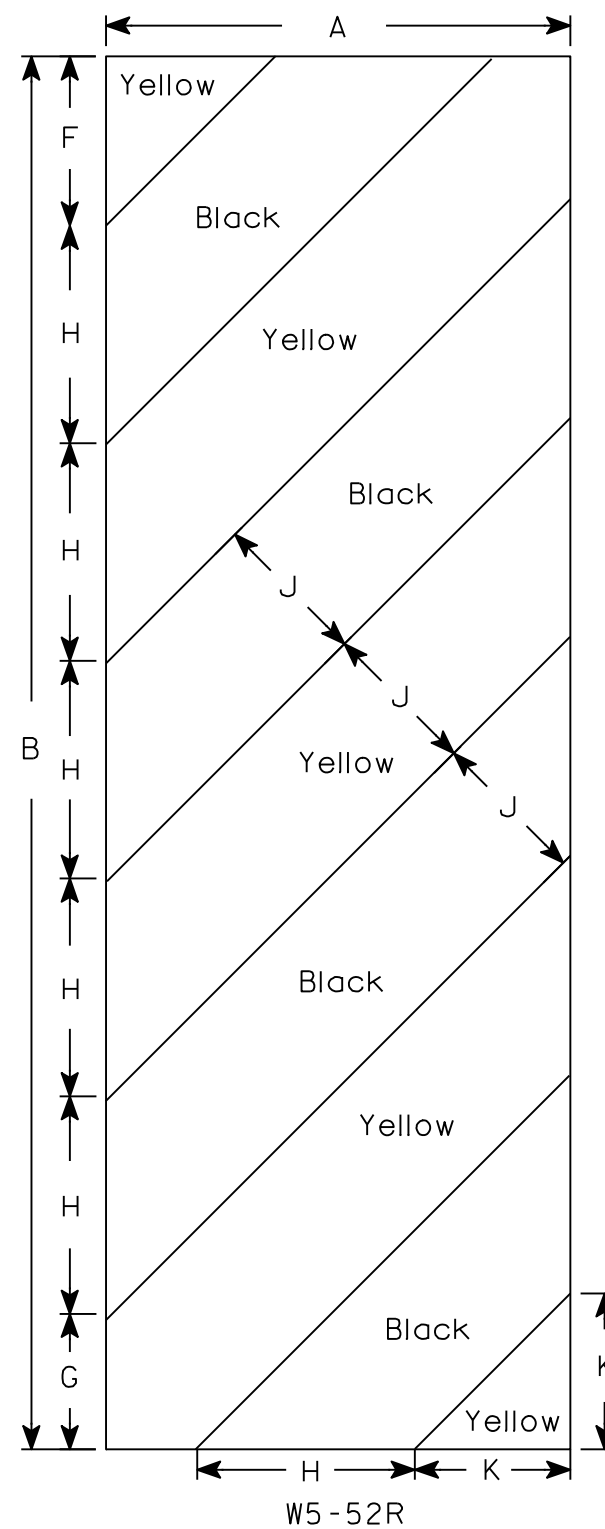
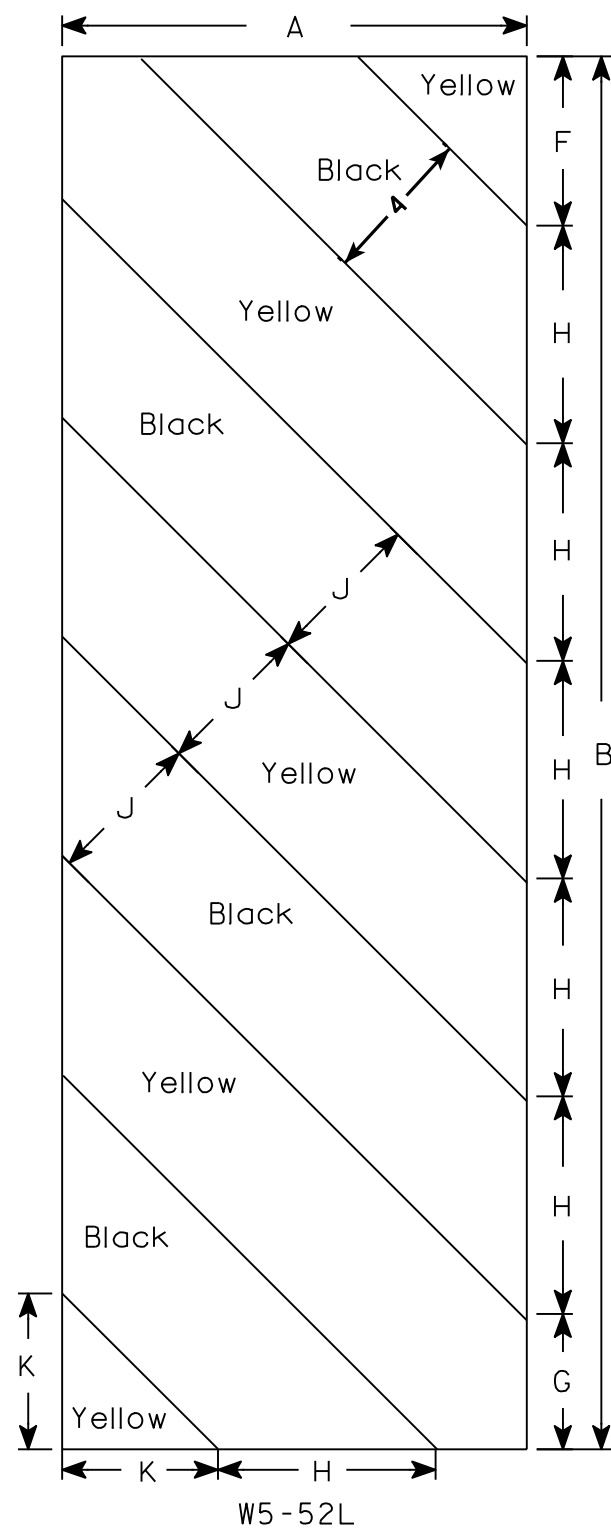


SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
2M	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
3	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
4	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
5	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0

STANDARD SIGN R11-2

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 4/1/11 PLATE NO. R11-2.10

PROJECT NO: HWY: COUNTY: SHEET NO: 107 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

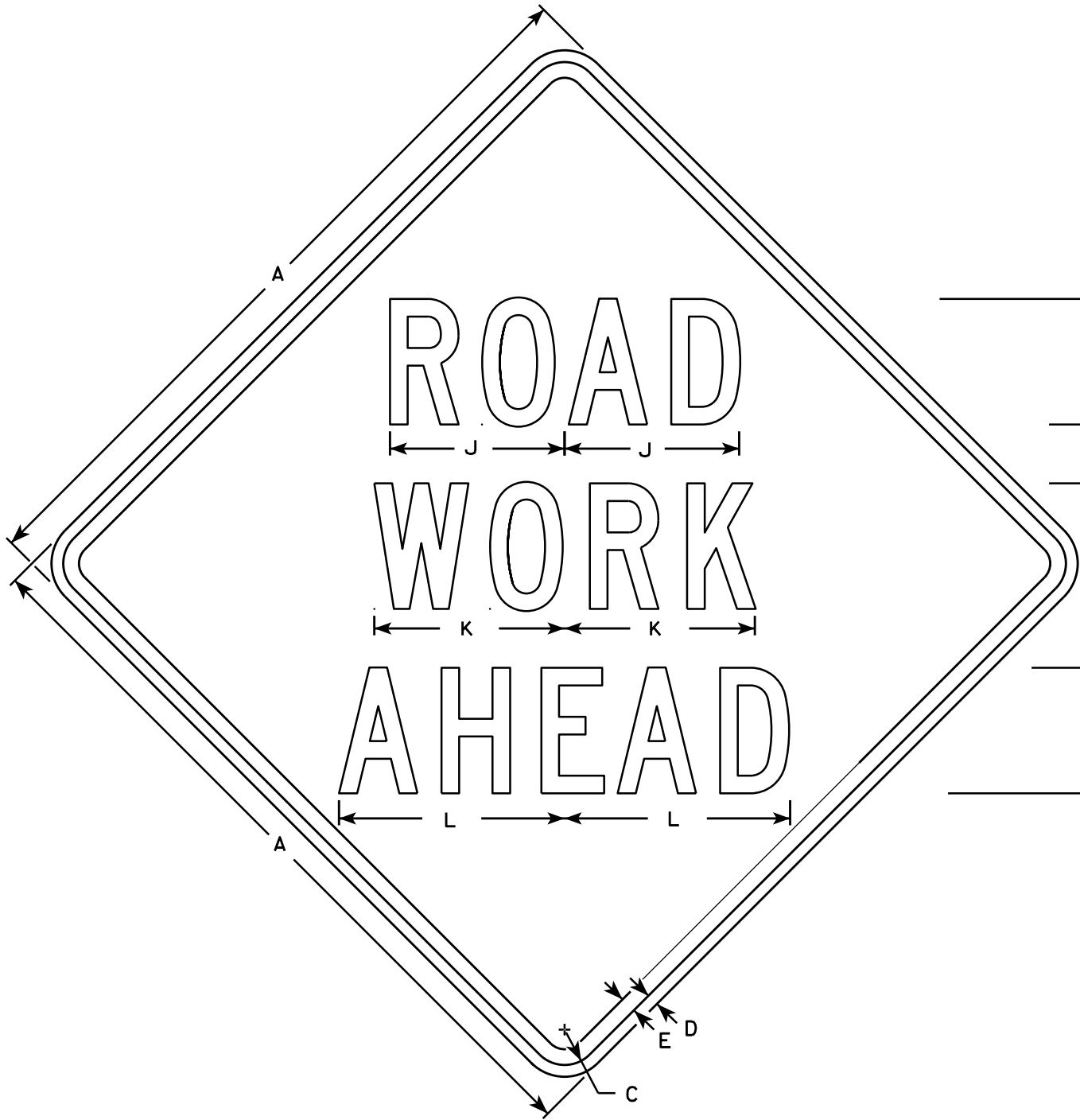
PROJECT NO:

HWY:

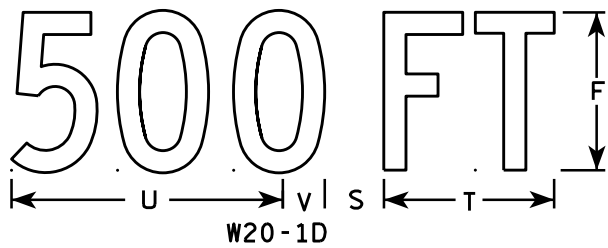
COUNTY:

SHEET NO: 109

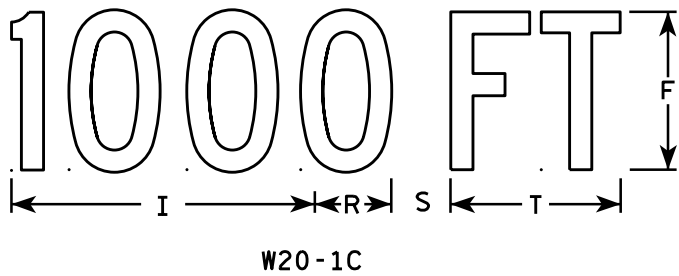
E



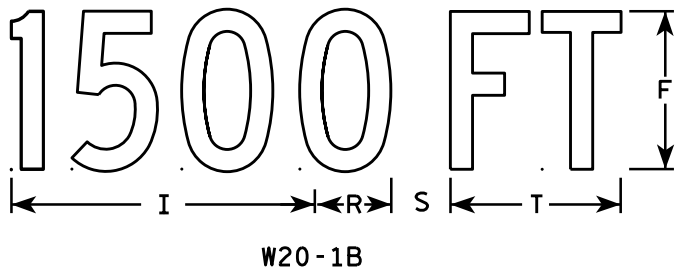
W20-1A



W20-1D



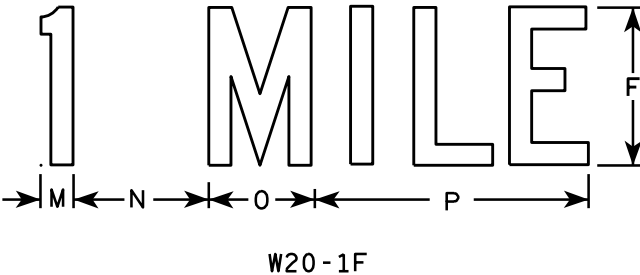
W20-1C



W20-1B

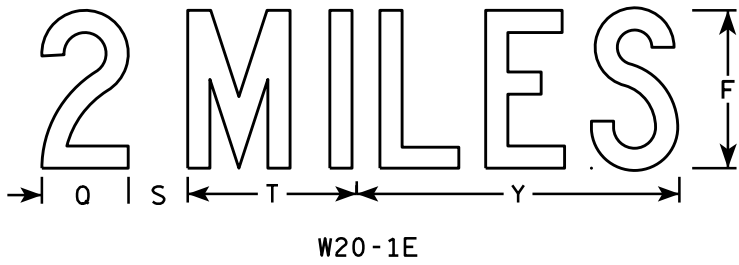


W20-1G



W20-1F

- NOTES**
- 1. Sign is Type II - Type F Reflective
 - 2. Color:
Background - Orange
Message - Black
 - 3. Message Series - C
 - 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1E

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 3/8	1/2	5/8	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9		2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

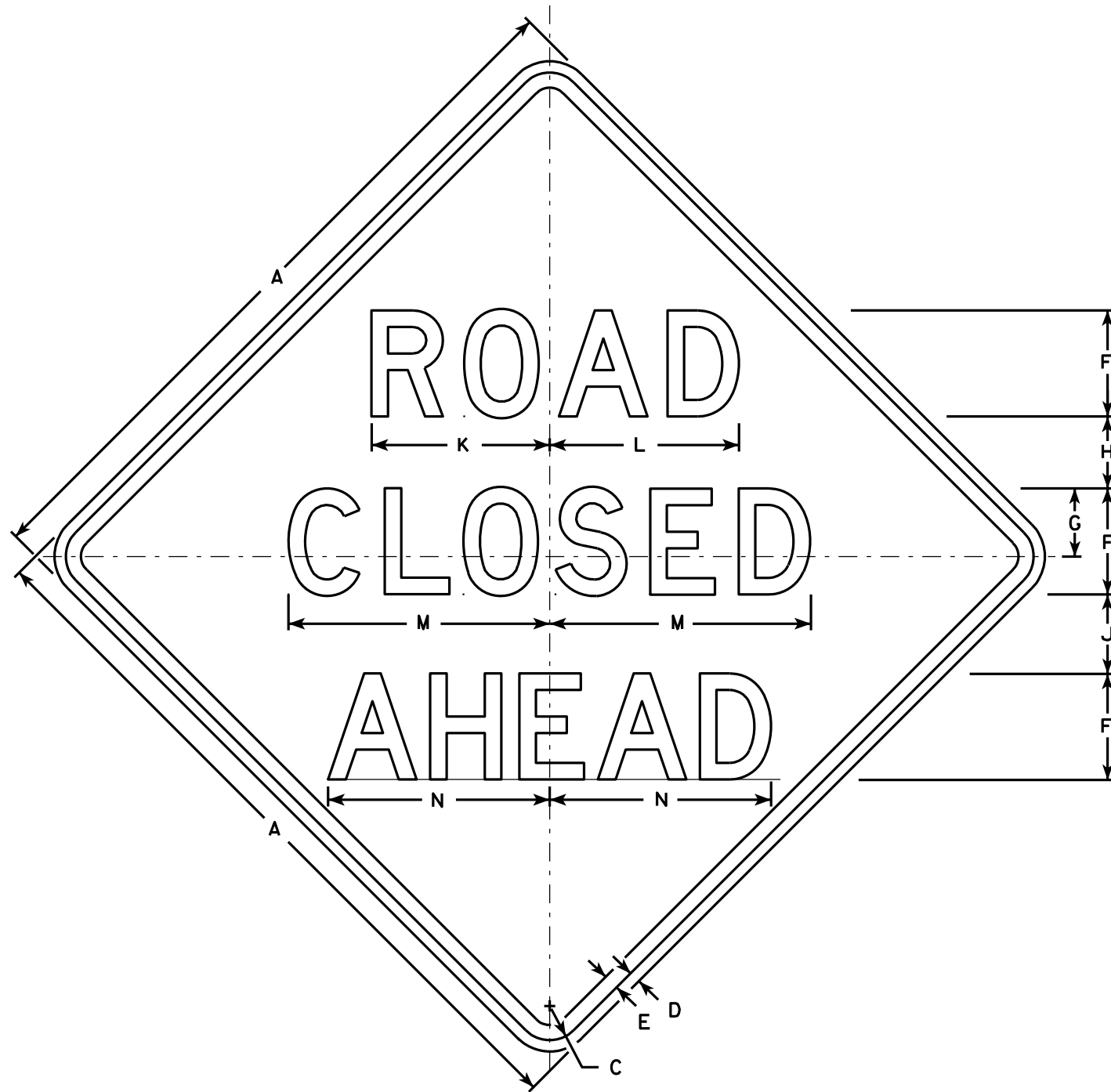
APPROVED

State Traffic Engineer

DATE 5/07/15

PLATE NO. W20-1.10

110



W20-3A

500 FT

W20-3D

1000 FT

W20-3C

1500 FT

W20-3B

1/2 MILE

W20-3G

1 MILE

W20-3F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1 and 2 are Series D.
Line 3 is Series D for AHEAD and Series C for all other distances.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-3.7

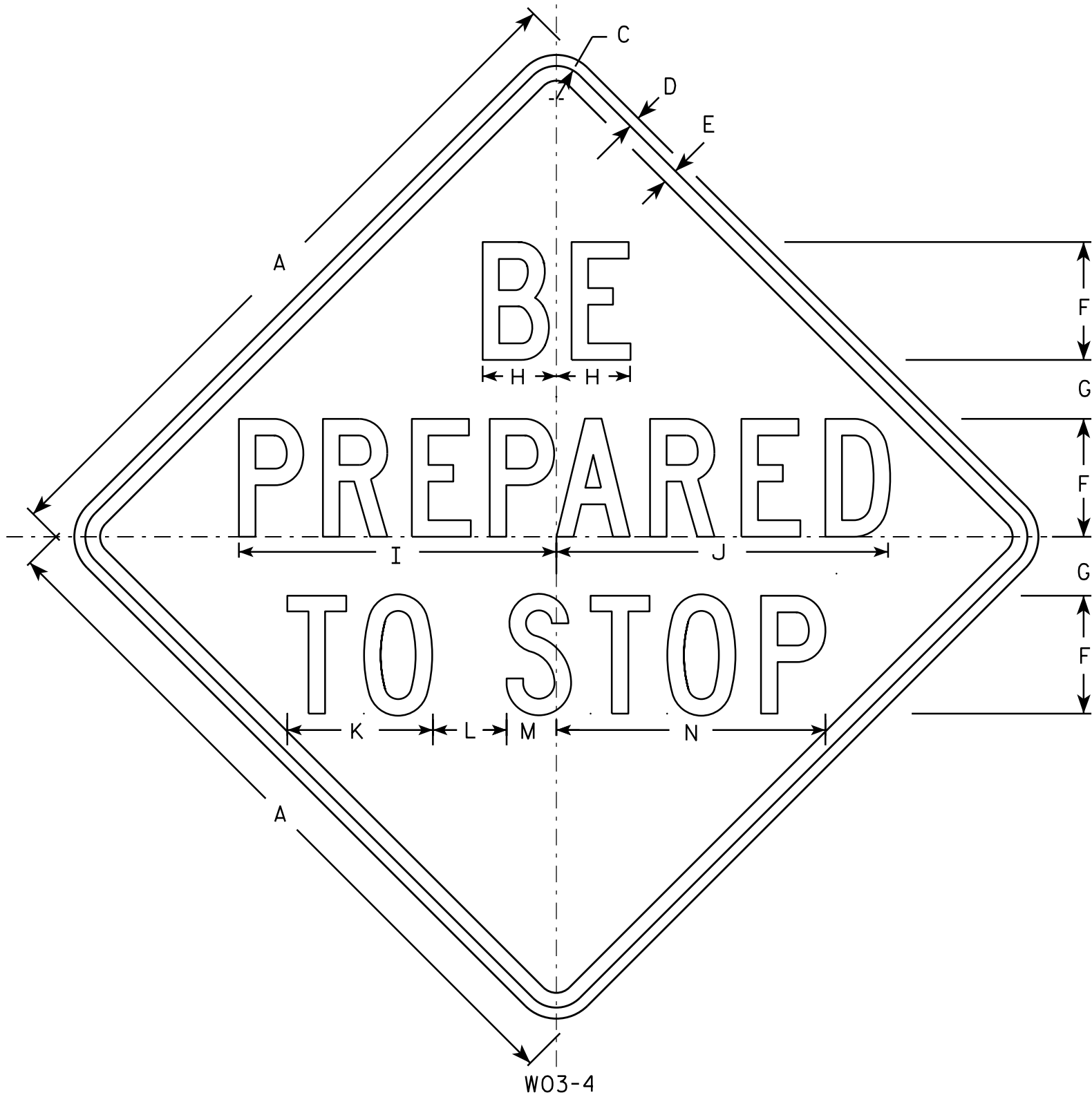
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 111

E



NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 3⁄8	1⁄2	5⁄8	6	2 1⁄2	3 3⁄4	15 7⁄8	16 7⁄8	7 3⁄8	4	2 3⁄8	13 3⁄4													9.0
2S	48		2 1⁄4	3⁄4	1	8	4	5	21 1⁄2	22 1⁄2	9 7⁄8	5	3 3⁄8	18 1⁄4													16.0
2M	48		2 1⁄4	3⁄4	1	8	4	5	21 1⁄2	22 1⁄2	9 7⁄8	5	3 3⁄8	18 1⁄4													16.0
3	48		2 1⁄4	3⁄4	1	8	4	5	21 1⁄2	22 1⁄2	9 7⁄8	5	3 3⁄8	18 1⁄4													16.0
4	48		2 1⁄4	3⁄4	1	8	4	5	21 1⁄2	22 1⁄2	9 7⁄8	5	3 3⁄8	18 1⁄4													16.0
5	48		2 1⁄4	3⁄4	1	8	4	5	21 1⁄2	22 1⁄2	9 7⁄8	5	3 3⁄8	18 1⁄4													16.0

STANDARD SIGN
W03-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/02/13 PLATE NO. 112 W03-4.1

PROJECT NO: HWY: COUNTY: SHEET NO: E

* PROVIDE FOR THREE BEAM GUARD RAIL ATTACHMENT AT UNUSED ANCHOR ASSEMBLIES CAULK HOLES SHUT WITH "100% SILICONE CAULK".

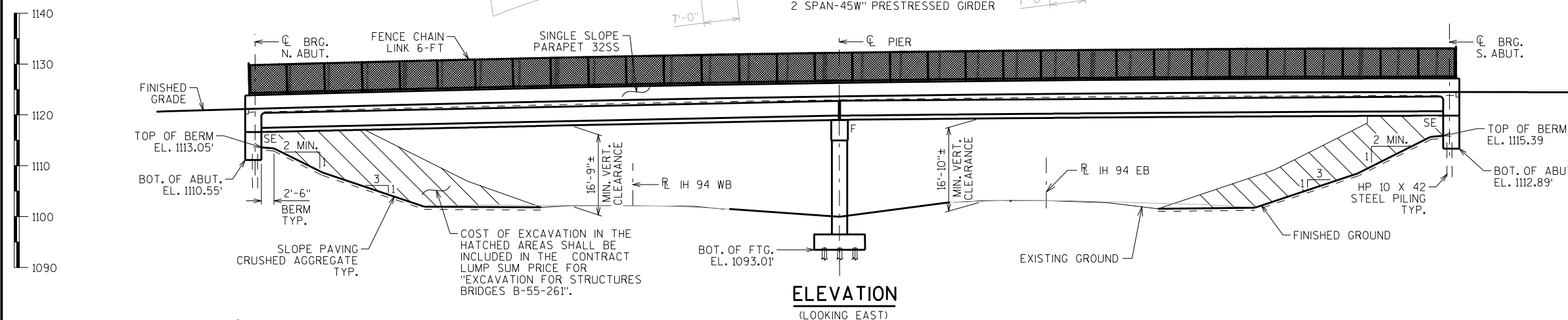
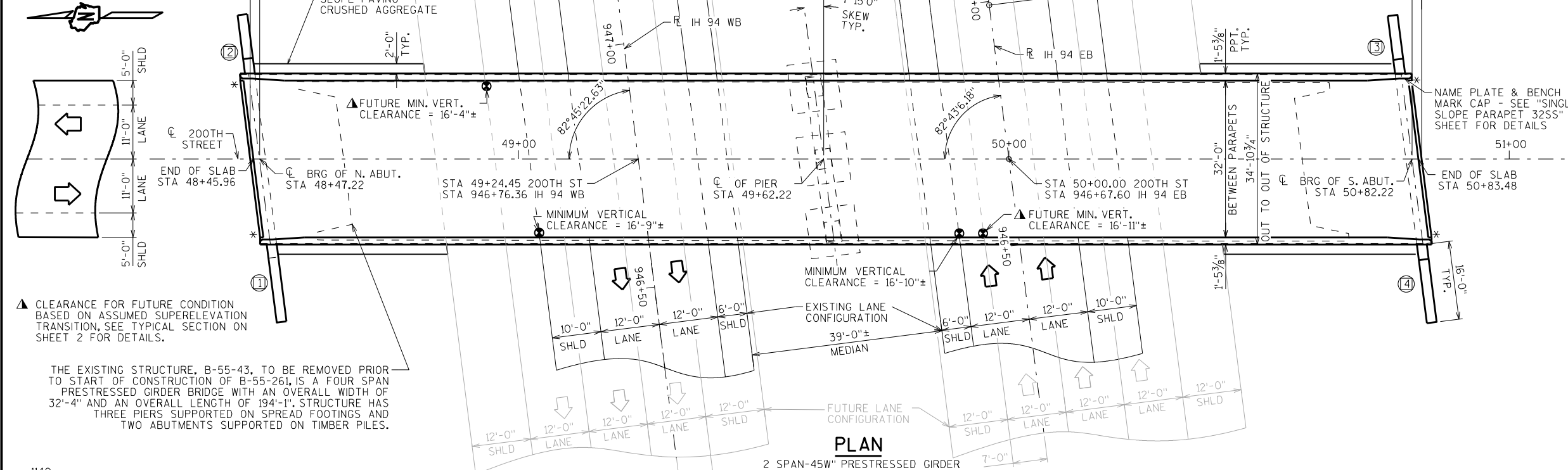
INDICATES WING NUMBER

STATE PROJECT NUMBER

1021-01-73

TRAFFIC VOLUME

IH 94
A.D.T.=57,700 (2034) A.D.T.=330 (2011)
R.D.S.=70 M.P.H. R.D.S.=50 M.P.H.



LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. NORTH ABUTMENT
5. NORTH ABUTMENT DETAILS
6. SOUTH ABUTMENT
7. SOUTH ABUTMENT DETAILS
8. PIER
9. 45W" PRESTRESSED GIRDER DETAILS 1
10. 45W" PRESTRESSED GIRDER DETAILS 2
11. STEEL DIAPHRAGM
12. SUPERSTRUCTURE
13. SUPERSTRUCTURE DETAILS
14. SINGLE SLOPE PARAPET 32SS
15. FENCING DETAILS
16. SLOPE PAVING CRUSHED AGGREGATE

STRUCTURE DESIGN CONTACTS:

STEVEN DOOCY (608) 261-6063
AARON BONK (608) 261-0261

NO.	DATE	REVISION	BY
ACCEPTED <i>William C. Duchen</i> 8/17/15 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-55-261			
200TH STREET OVER IH 94			
COUNTY	ST. CROIX	TOWN/CITY/VILLAGE	RUSH RIVER
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.			
DESIGNED BY	SAD	DESIGN CKD.	APC
DRAWN BY	SAD	PLANS CKD.	APC
GENERAL PLAN			SHEET 1 OF 16
			113

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF=1.09
OPERATING RATING FACTOR: RF=1.41
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250 (KIPS)

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

MATERIAL PROPERTIES:

CONCRETE MASONRY SLAB— f'_c = 4,000 P.S.I. ALL OTHER— f'_c = 3,500 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60— f_y = 60,000 P.S.I.
45W" PRESTRESSED GIRDERS, CONCRETE MASONRY— f'_c = 8,000 P.S.I.
STRANDS- 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS **PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
N. ABUTMENT ESTIMATED 55'-0" LONG.
S. ABUTMENT ESTIMATED 50'-0" LONG.

PIER TO BE SUPPORTED ON HP 10 X 42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS **PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 35'-0" LONG.

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

8

8

SCALE = 1/2"

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

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

THE GRADATION OF THE STRUCTURE BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 209.2.2 OF THE STANDARD SPECIFICATIONS FOR GRADE 1 MATERIAL.

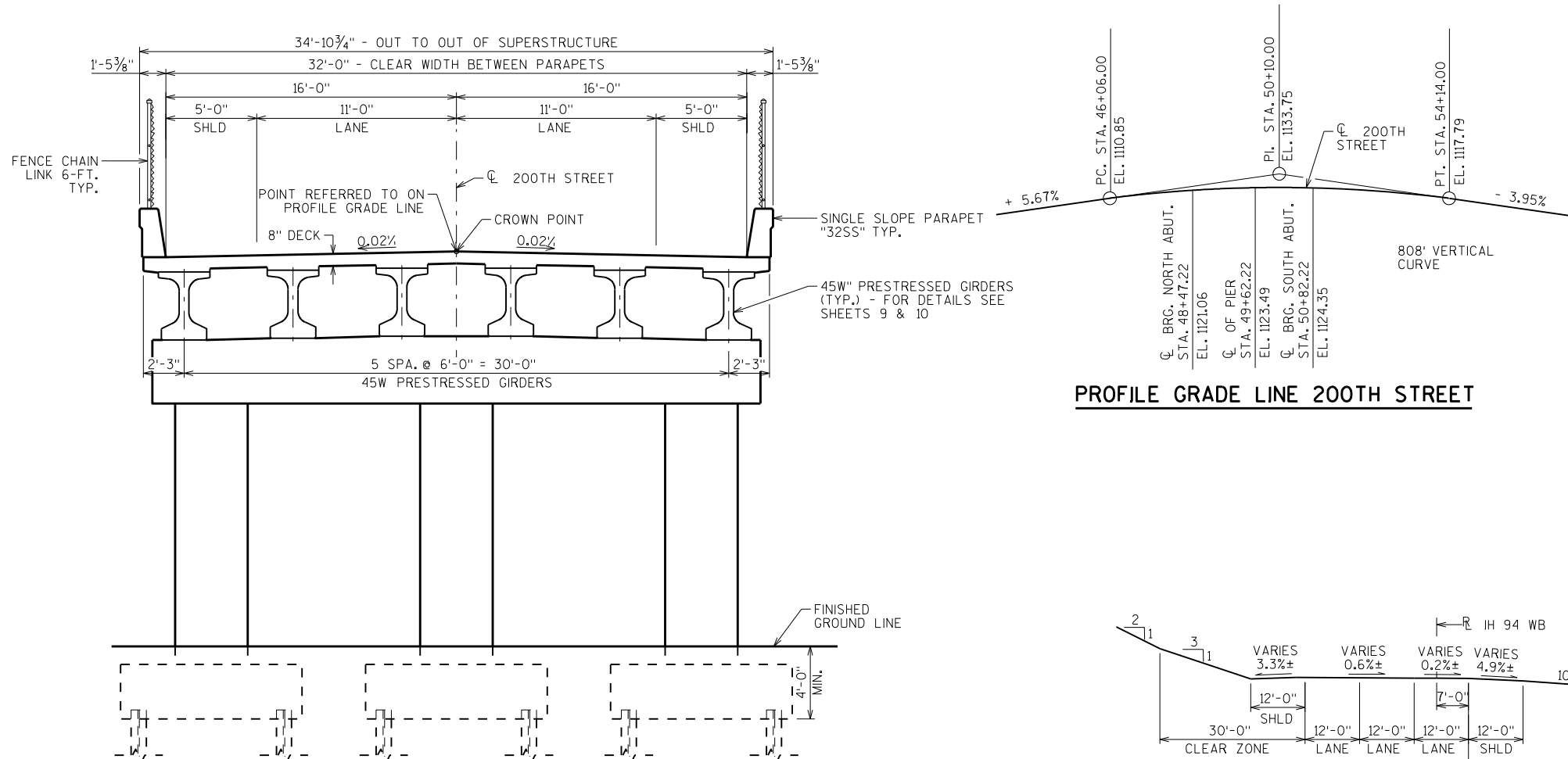
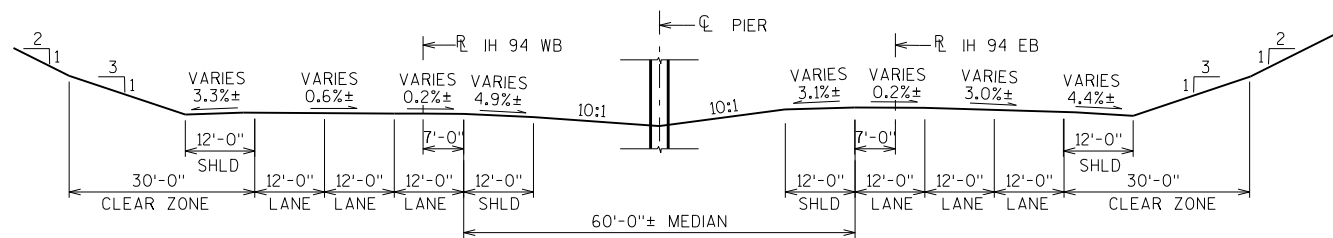
PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF DECK SURFACE.

PIGMENTED PROTECTIVE SURFACE TREATMENT FROM THE DEPARTMENT'S "CURE & SEAL COMPOUNDS FOR NON-TRAFFICKED SURFACES" APPROVED PRODUCTS LIST TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPET, INCLUDING PARAPETS ON ABUTMENT WINGS.

ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

THE EXISTING GROUND LINE SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIERS.

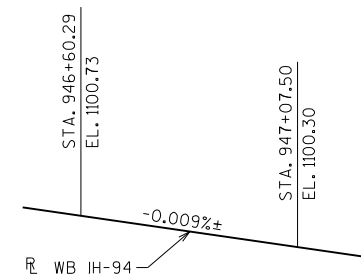
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH SLOPE PAVING MATERIAL TO THE EXTENT SHOWN ON SHEET 1, 16, AND IN THE ABUTMENT DETAILS.

**PROFILE GRADE LINE 200TH STREET****TYPICAL FUTURE SECTION THRU IH-94**

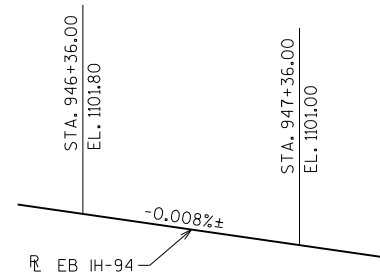
SECTION FOR INFORMATION ONLY, USED TO SIZE STRUCTURE

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	NORTH ABUT.	PIER 1	SOUTH ABUT.	TOTALS
203.0200	REMOVING OLD STRUCTURE STA. 49+50	LS	—	—	—	—	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-55-261	LS	—	—	—	—	1
210.0100	BACKFILL STRUCTURE	CY	—	242	—	263	505
502.0100	CONCRETE MASONRY BRIDGES	CY	347	44	75	50	516
502.3200	PROTECTIVE SURFACE TREATMENT	SY	845	—	—	—	845
502.3210	PIGMENTED SURFACE SEALER	SY	195	—	—	—	195
503.0146	PRESTRESSED GIRDER TYPE I 45W-INCH	LF	1415	—	—	—	1415
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	—	2095	2150	2260	6505
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	72,790	1735	11,155	1785	87,760
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	—	6	12	6	24
506.4000	STEEL DIAPHRAGMS B-55-261	EACH	20	—	—	—	20
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	—	8	—	8	16
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	—	440	945	400	1785
604.0500	SLOPE PAVING CRUSHED AGGREGATE	SY	—	161	—	192	353
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	—	69	—	69	138
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4	—	—	—	4
SPV.0090	FENCE CHAIN LINK POLYMER COATED 6-FT	LF	475	—	—	—	475
NON-BID ITEMS							
	BRIDGE SEAT PROTECTION	L.S.	—	—	—	—	1
	FILLER	SIZE	—	—	—	—	1/2" & 3/4"

**PROFILE GRADE LINE WB IH-94**

EXISTING PROFILE FOR INFORMATION ONLY

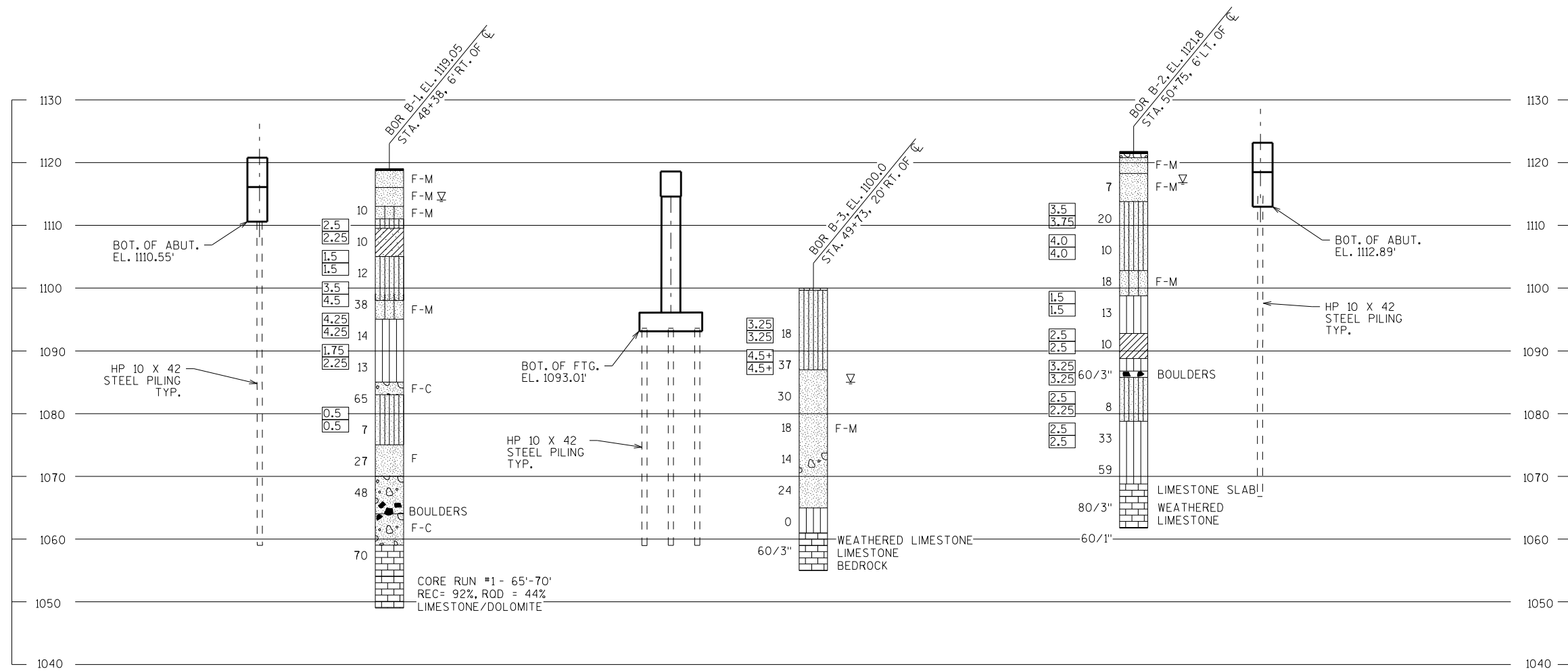
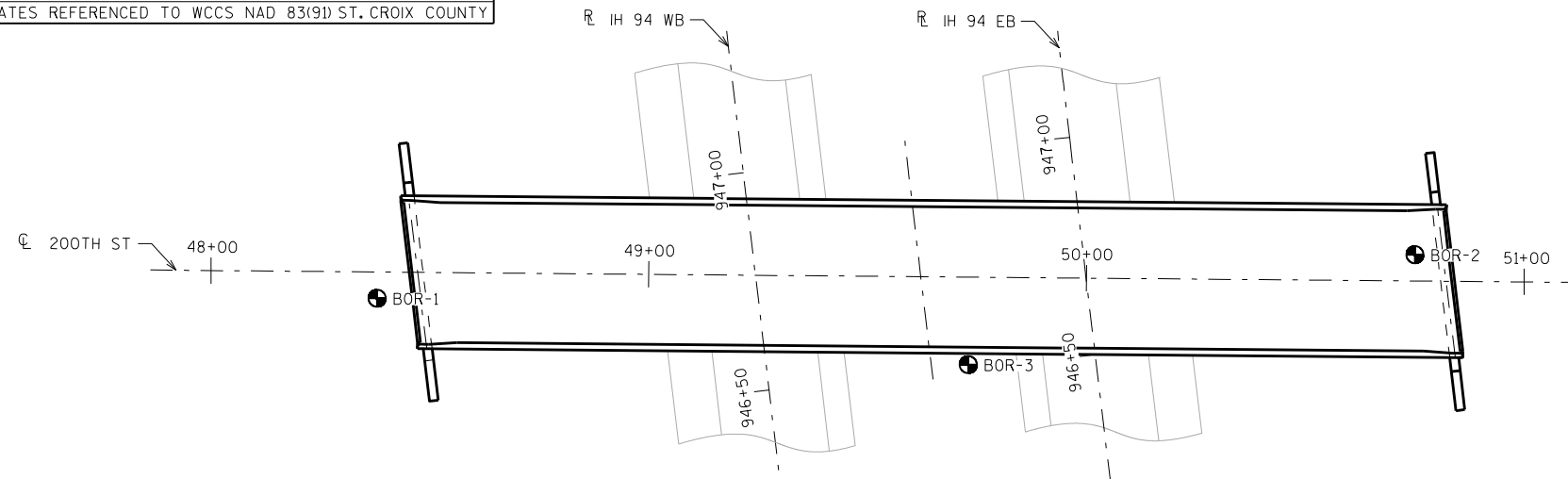
**PROFILE GRADE LINE EB IH-94**

EXISTING PROFILE FOR INFORMATION ONLY

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-55-261			
DRAWN BY		SAD	PLANS CK'D. APC
CROSS SECTION & QUANTITIES			SHEET 2
			114

HUDSON - BALDWIN
200TH STREET BRIDGE

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	5/20/2014	329999	604665
2	5/22/2014	329762	604680
3	6/4/2014	329887	604656
BORINGS COMPLETED BY: WISDOT			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) ST. CROIX COUNTY			



STATE PROJECT NUMBER

1021-01-73

MATERIAL SYMBOLS

ASPHALT

CONCRETE

SAND

BOULDERS OR COBBLES

SHALE

TOPSOIL

FILL

CLAY

LIMESTONE

SANDSTONE

PEAT

GRAVEL

SILT

BEDROCK (UNKNOWN)

IGNEOUS/META

LEGEND OF BORING

BORING #/EL.
STA., OFF-SET

ST

0.25

17

F-C

COBBLE OR BOULDER

WEATHERED LIMESTONE

CORE RUN #1 - 24'-29'

REC=80%, ROD=72%

(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

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

GROUND WATER ELEVATION

▽

 AT TIME OF DRILLING

▼

 END OF DRILLING

▽

 AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

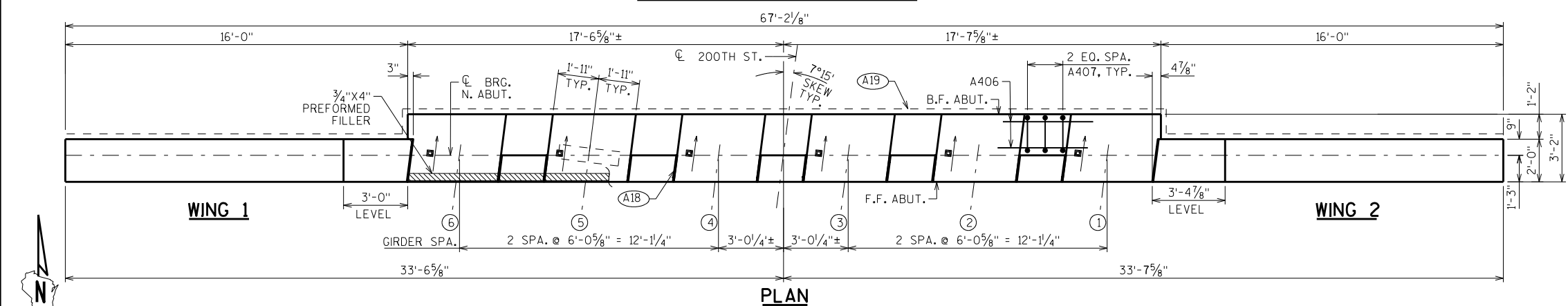
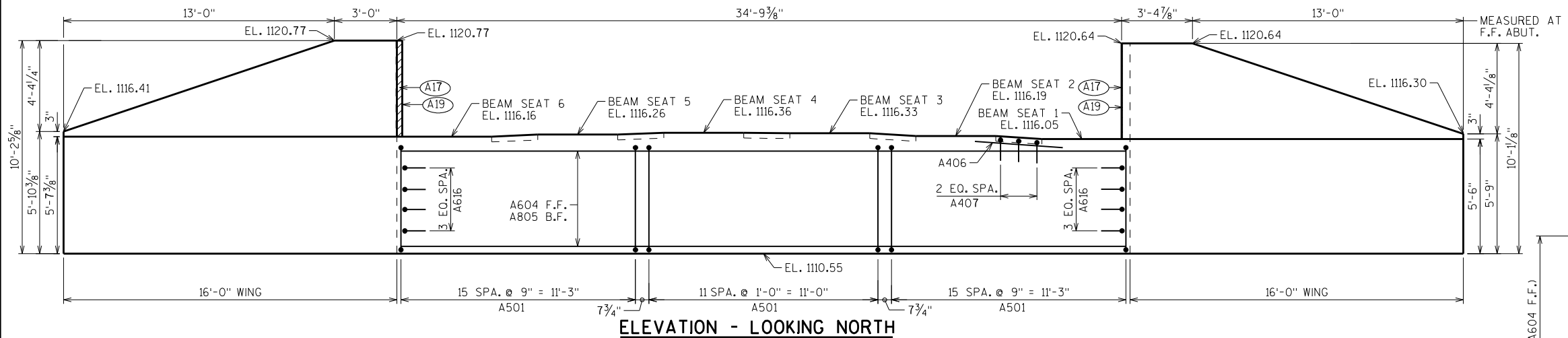
NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION
STRUCTURE B-55-261

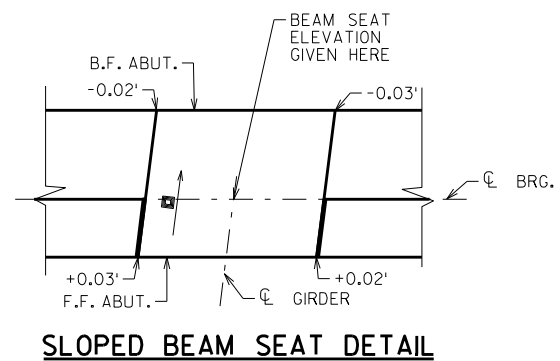
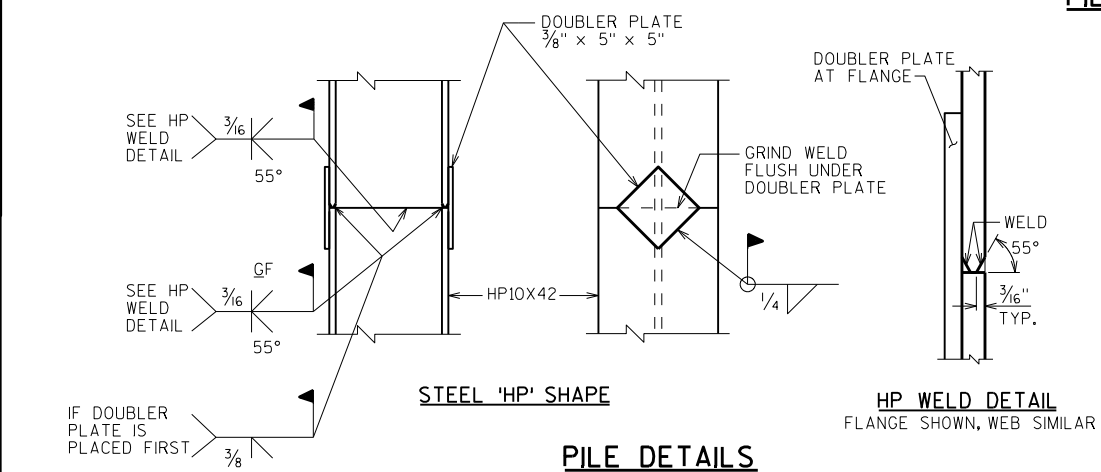
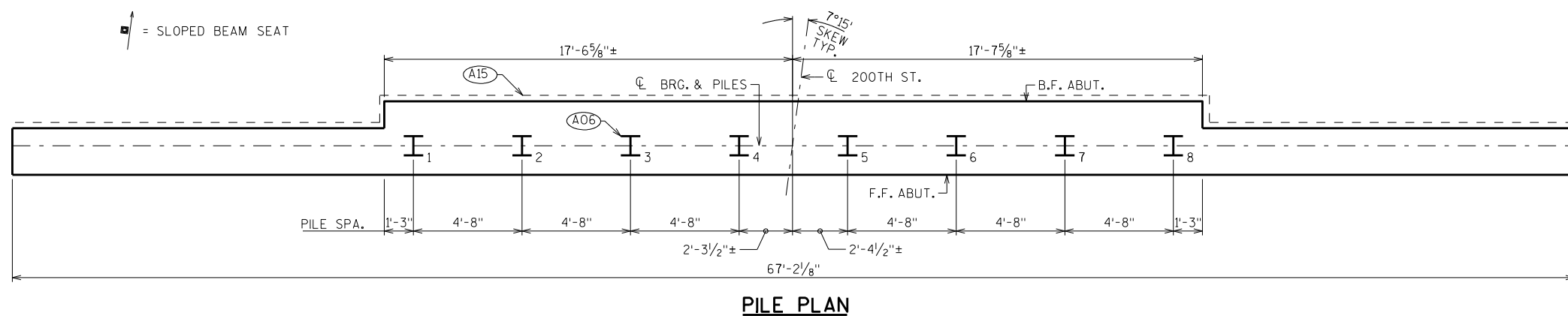
DRAWN BY PR/SAD	PLANS CKD. APC
SHEET 3	
115	

SUBSURFACE EXPLORATION

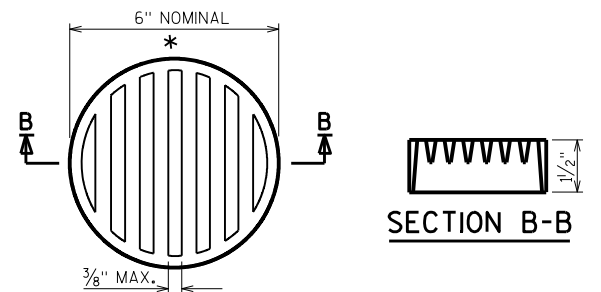
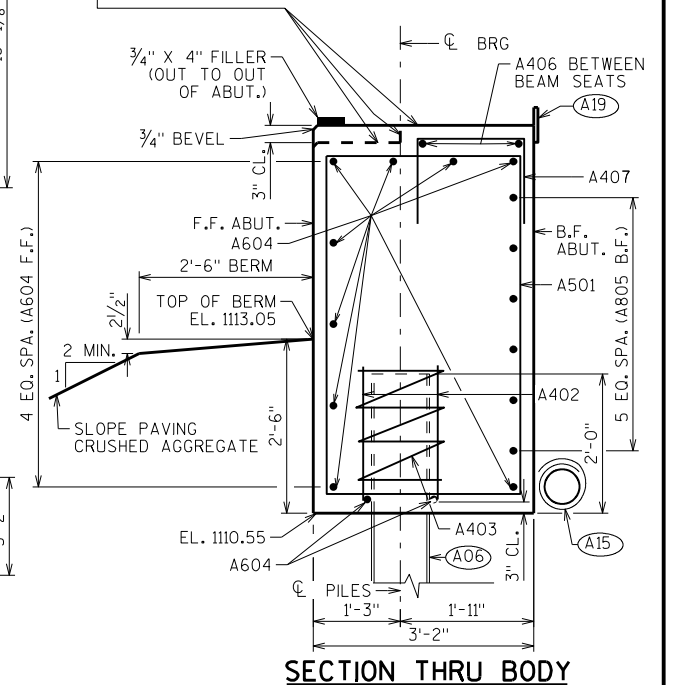
SCALE = 20.0



▣ = SLOPED BEAM SEAT



STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETING OVER ENTIRE ABUTMENT BEFORE PLACING BEARING PADS AND/OR SUPERSTRUCTURE. (TOTAL THICKNESS TO BE 0.03" MIN)



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

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

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

- (A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 55'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH); SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-55-261			
DRAWN BY		SAD	PLANS CKD. APC
NORTH ABUTMENT		SHEET 4	
		116	

BILL OF BARS

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

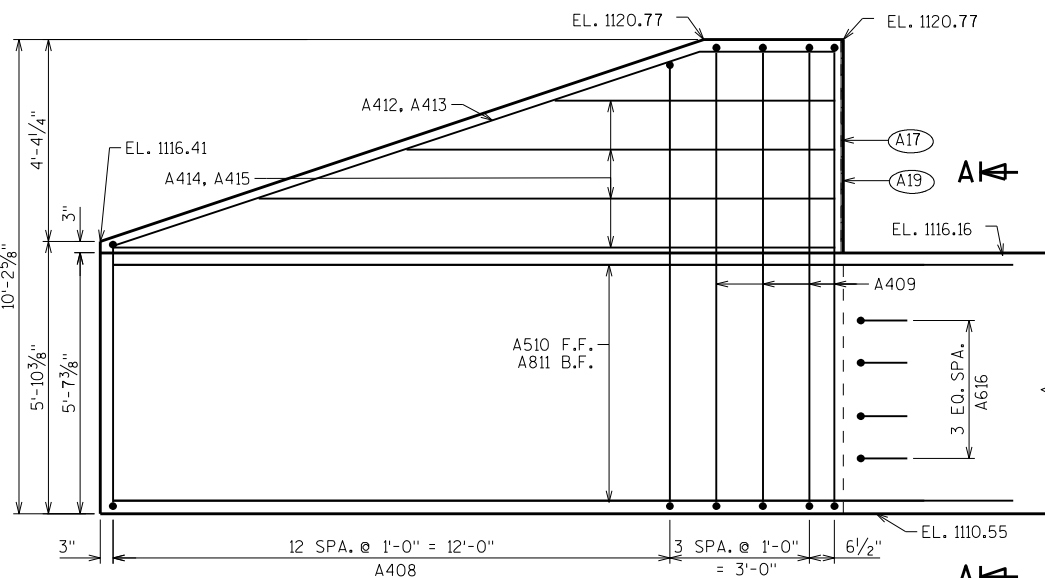
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		44	15'-8"	X		BODY - STIRRUPS - VERT.
A402		16	2'-3"			BODY - VERT. - 2 PER PILE
A403		8	28'-0"	X		BODY - VERT. - AT BODY PILES
A604		11	34'-10"			BODY - HORIZ. - F.F.
A805		6	34'-10"			BODY - HORIZ. - B.F.
A406		10	4'-3"			BODY - HORIZ. - BETWEEN BEAM SEATS
A407		15	3'-10"	X		BODY - VERT. - BETWEEN BEAM SEATS
▲ A408	X	26	10'-7"	X	▲	WING 1 - VERT. - F.F. & B.F.
A409	X	8	12'-11"	X		WING 1 - VERT. - F.F. & B.F.
A510	X	5	17'-7"			WING 1 - HORIZ. - F.F.
A811	X	8	19'-8"			WING 1 - HORIZ. - B.F.
A412	X	1	16'-2"	X		WING 1 - HORIZ. - TOP - F.F.
A413	X	1	16'-5"	X		WING 1 - HORIZ. - TOP - B.F.
▲ A414	X	4	10'-8"		▲	WING 1 - HORIZ. - F.F.
▲ A415	X	4	10'-11"		▲	WING 1 - HORIZ. - B.F.
A616	X	8	3'-7"	X		BODY/ENDS - WINGS 1&2 - HORIZ
▲ A417	X	26	10'-6"	X	▲	WING 2 - VERT. - F.F. & B.F.
A418	X	8	12'-10"	X		WING 2 - VERT. - F.F. & B.F.
A519	X	5	17'-11"			WING 2 - HORIZ. - F.F.
A820	X	8	19'-9"			WING 2 - HORIZ. - B.F.
A421	X	1	16'-7"	X		WING 2 - HORIZ. - TOP - F.F.
A422	X	1	16'-4"	X		WING 2 - HORIZ. - TOP - B.F.
▲ A423	X	4	11'-3"		▲	WING 2 - HORIZ. - F.F.
▲ A424	X	4	10'-11"		▲	WING 2 - HORIZ. - B.F.

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

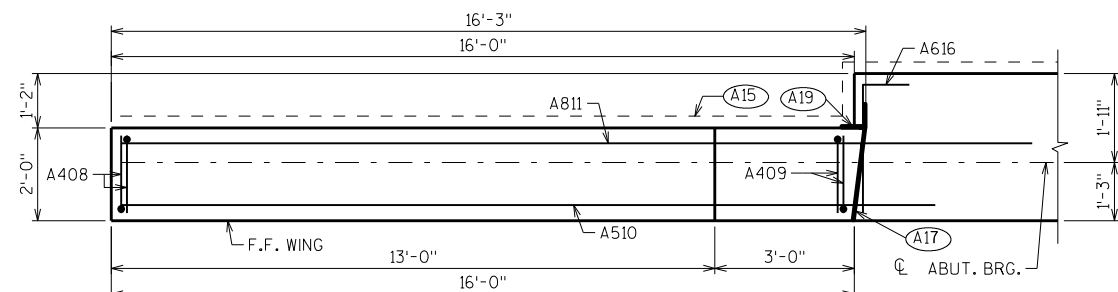
BAR SERIES TABLE

MARK	NO. REQ'D.	LENGTH
A408	2 SERIES OF 13	8'-7" TO 12'-8"
A414	1 SERIES OF 4	5'-11" TO 15'-6"
A415	1 SERIES OF 4	6'-2" TO 15'-9"
A417	2 SERIES OF 13	8'-6" TO 12'-7"
A423	1 SERIES OF 4	6'-5" TO 16'-0"
A424	1 SERIES OF 4	6'-2" TO 15'-9"

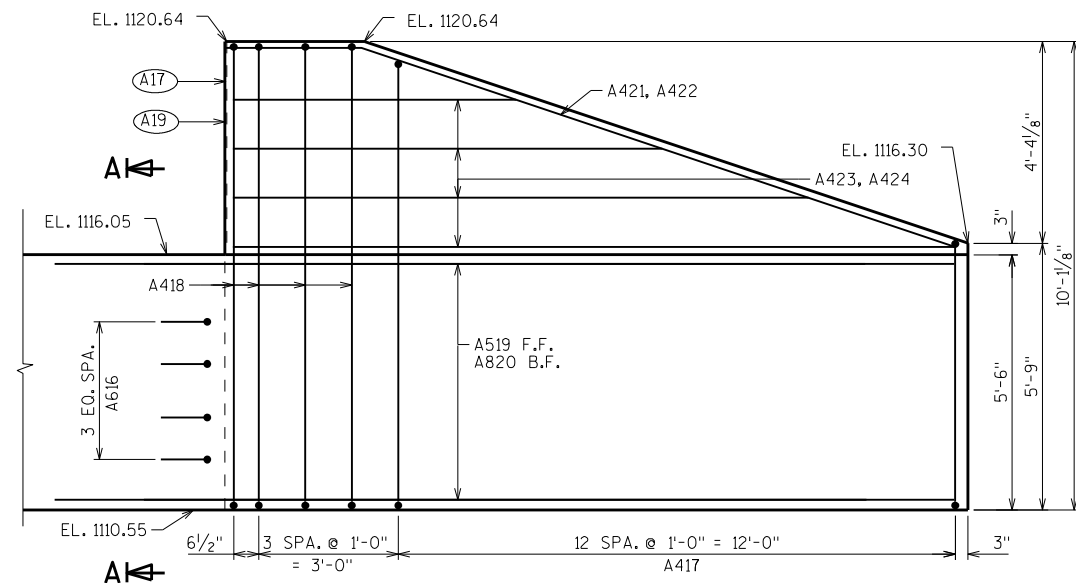
BUNDLE AND TAG EACH SERIES SEPARATELY.



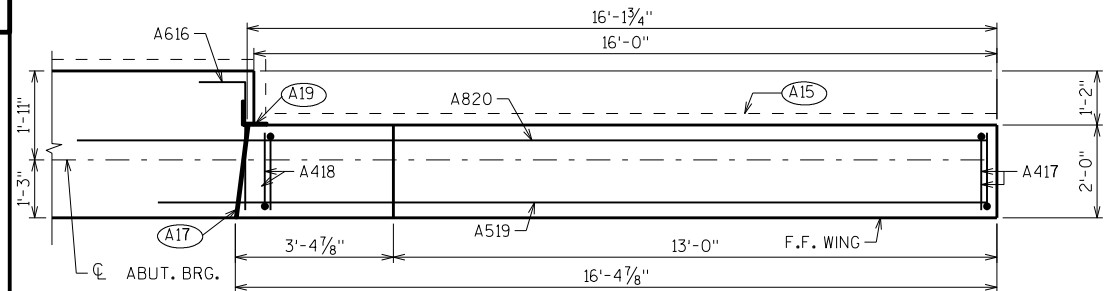
WING 1 ELEVATION LOOKING AT F.F. WING



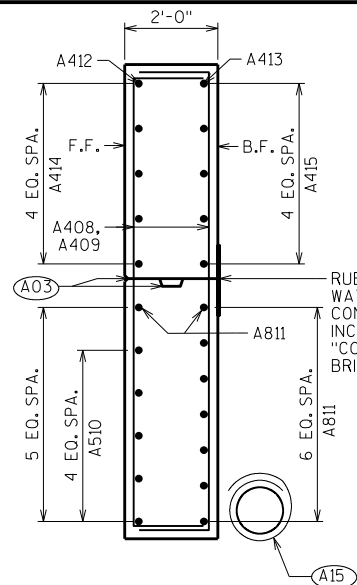
WING 1 PLAN



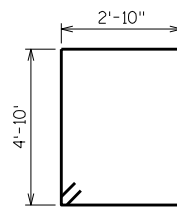
WING 2 ELEVATION LOOKING AT F.F. WING



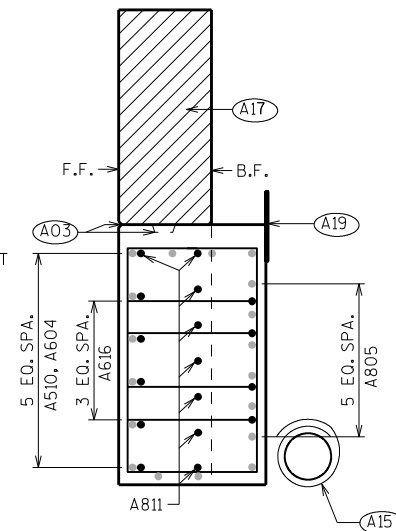
WING 2 PLAN



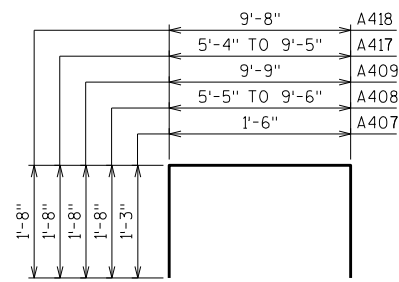
WING 1 SECTION



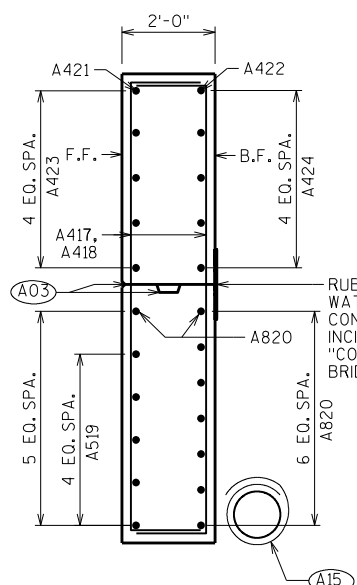
A501



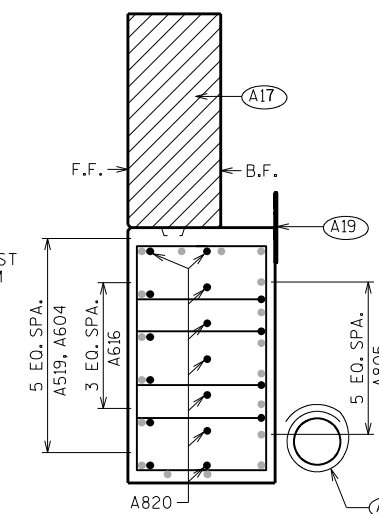
WING 1 SECTION A-A



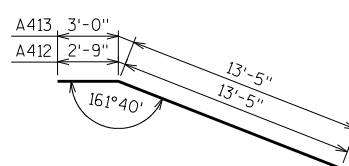
A407, A408, A409, A417, A418



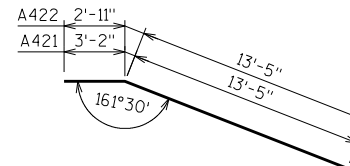
WING 2 SECTION



WING 2 SECTION A-A

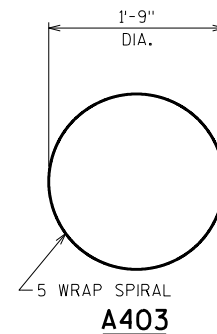


A412, A413

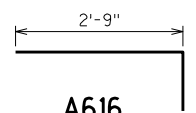


A421, A422

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6, (18\" R.M.W. @ B.F. & 3/4\" V\" GROOVE @ F.F. IF JOINT IS USED).
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2\" FILLER (INCLUDED IN WING LENGTH); SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2\" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1\" DEEP AND HOLD 1/8\" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3\" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18\" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

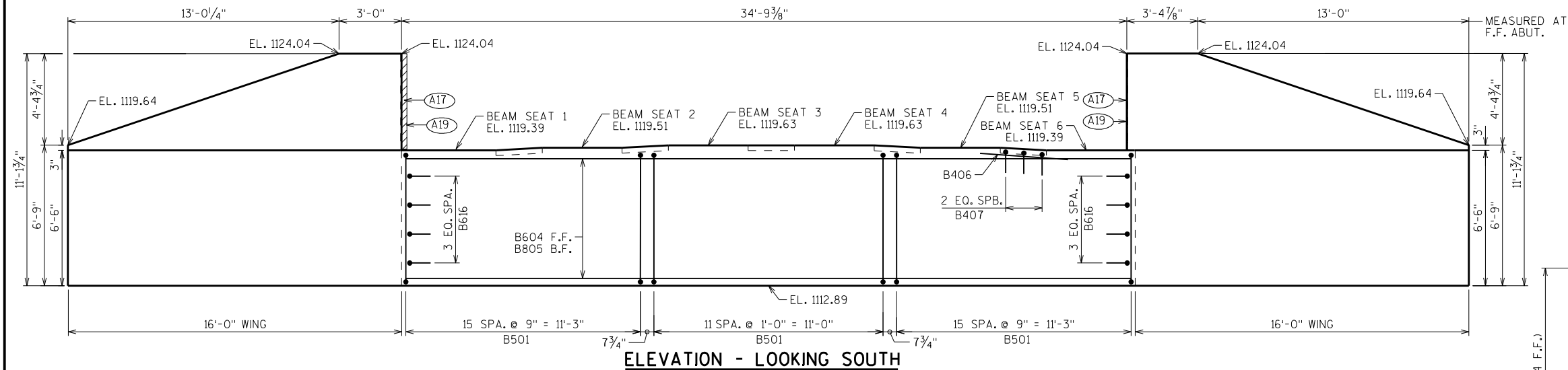


A403

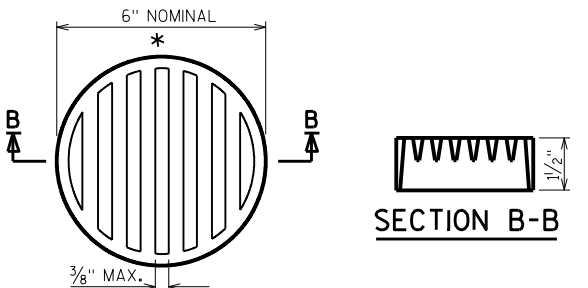
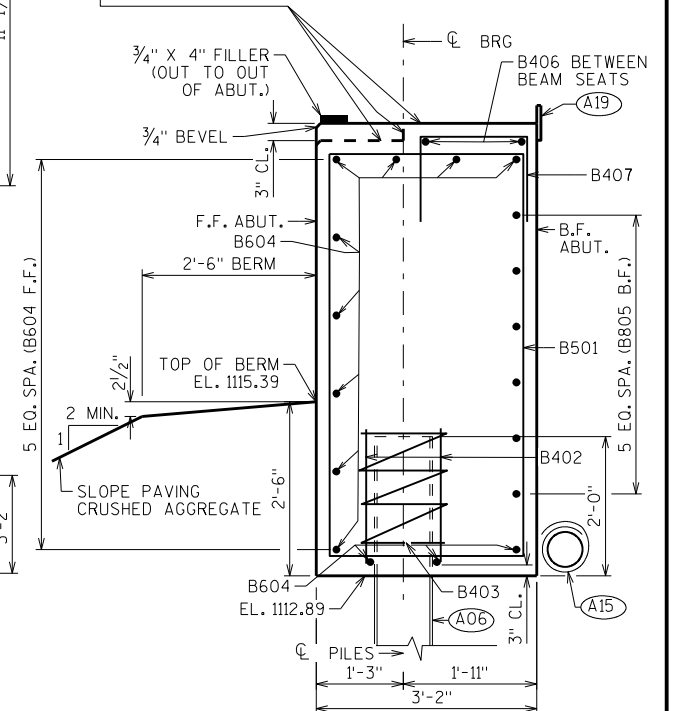


A616

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-55-261			
DRAWN BY		SAD	PLANS CK'D. APC
NORTH ABUTMENT DETAILS			SHEET 5
			117



STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETING OVER ENTIRE ABUTMENT BEFORE PLACING BEARING PADS AND/OR SUPERSTRUCTURE. (TOTAL THICKNESS TO BE 0.03" MIN)

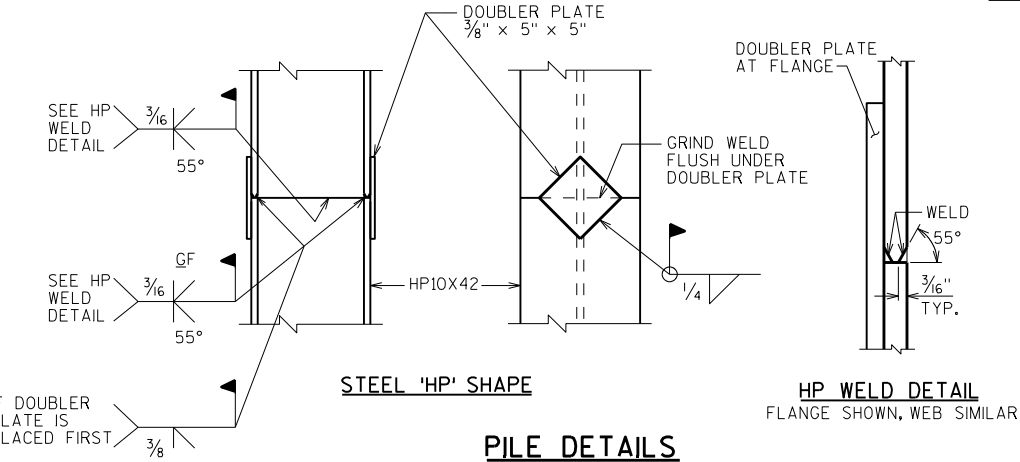
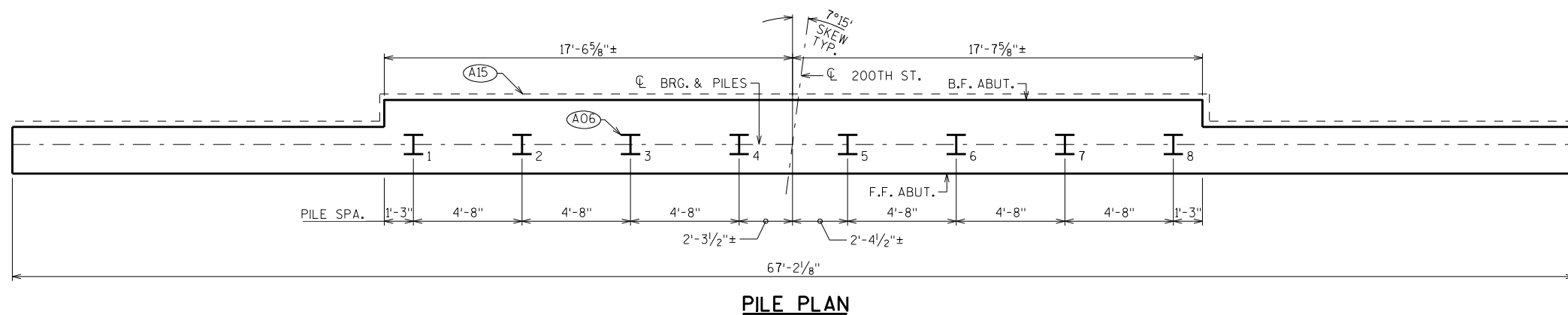
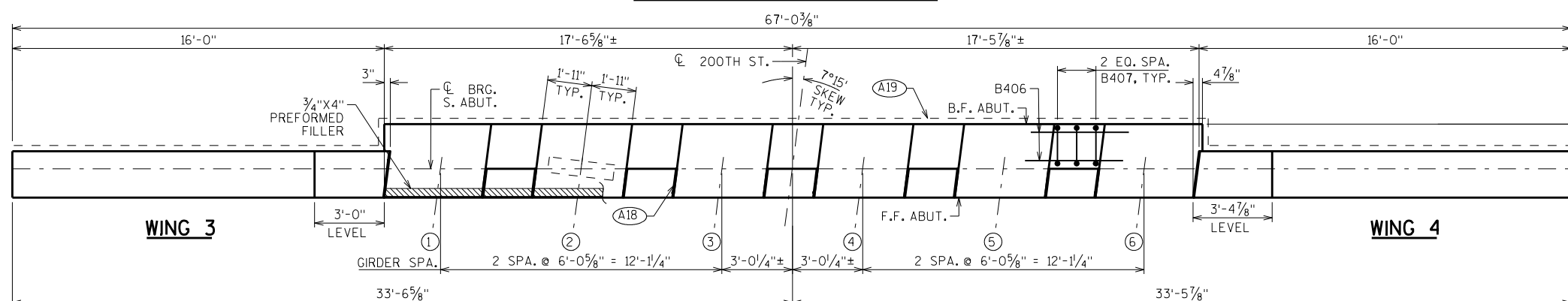


RODENT SHIELD DETAIL

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

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

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



(A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 50'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH); SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-55-261			
DRAWN BY		SAD	PLANS CKD. APC
SOUTH ABUTMENT			SHEET 6
			118

BILL OF BARS

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

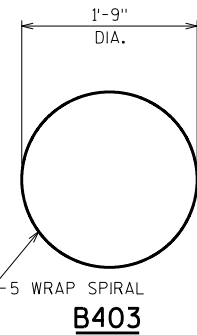
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501		44	18'-2"	X		BODY - STIRRUPS - VERT.
B402		16	2'-3"			BODY - VERT. - 2 PER PILE
B403		8	28'-0"	X		BODY - VERT. - AT BODY PILES
B604		12	34'-10"			BODY - HORIZ.
B805		6	34'-10"			BODY - HORIZ. - B.F.
B406		10	4'-3"			BODY - HORIZ. - BETWEEN BEAM SEATS
B407		15	3'-10"	X		BODY - VERT. - BETWEEN BEAM SEATS
▲ B408	X	26	11'-7"	X	▲	WING 1 - VERT. - F.F. & B.F.
B409	X	8	13'-10"	X		WING 1 - VERT. - F.F. & B.F.
B510	X	5	17'-7"			WING 1 - HORIZ. - F.F.
B811	X	8	19'-8"			WING 1 - HORIZ. - B.F.
B412	X	1	16'-2"	X		WING 1 - HORIZ. - TOP - F.F.
B413	X	1	16'-5"	X		WING 1 - HORIZ. - TOP - B.F.
▲ B414	X	4	10'-8"		▲	WING 1 - HORIZ. - F.F.
▲ B415	X	4	10'-11"		▲	WING 1 - HORIZ. - B.F.
B616	X	8	3'-7"	X		BODY/ENDS - WINGS 1&2 - HORIZ.
▲ B417	X	26	11'-7"	X	▲	WING 2 - VERT. - F.F. & B.F.
B418	X	8	13'-10"	X		WING 2 - VERT. - F.F. & B.F.
B519	X	5	17'-11"			WING 2 - HORIZ. - F.F.
B820	X	8	19'-9"			WING 2 - HORIZ. - B.F.
B421	X	1	16'-7"	X		WING 2 - HORIZ. - TOP - F.F.
B422	X	1	16'-4"	X		WING 2 - HORIZ. - TOP - B.F.
▲ B423	X	4	11'-3"		▲	WING 2 - HORIZ. - F.F.
▲ B424	X	4	10'-11"		▲	WING 2 - HORIZ. - B.F.

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

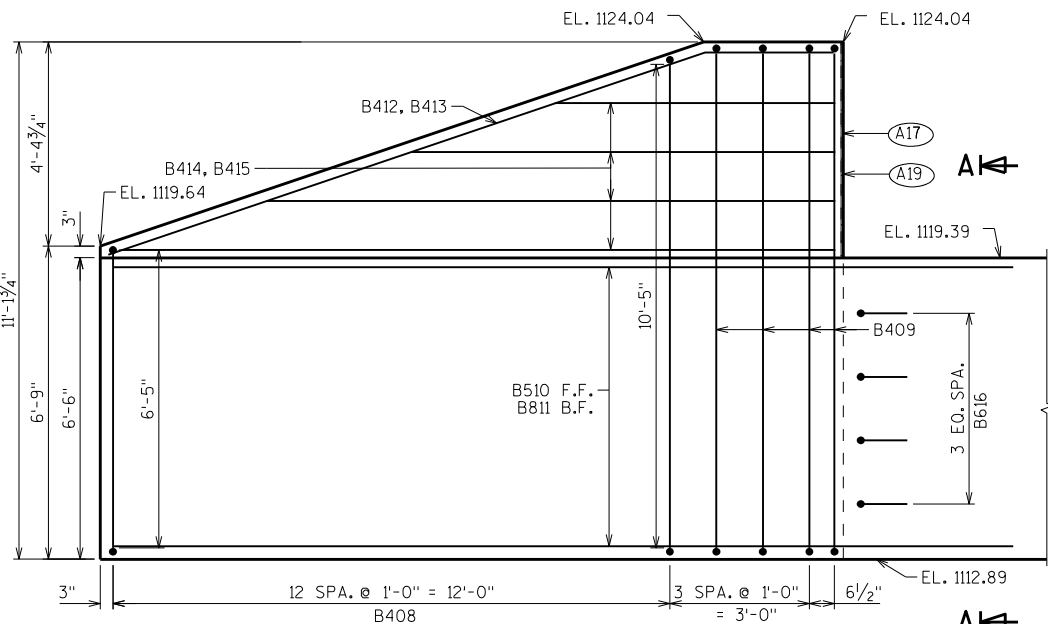
BAR SERIES TABLE

MARK	NO. REQ'D.	LENGTH
B408	2 SERIES OF 13	9'-6" TO 13'-7"
B414	1 SERIES OF 4	5'-11" TO 15'-6"
B415	1 SERIES OF 4	6'-2" TO 15'-9"
B417	2 SERIES OF 13	9'-6" TO 13'-7"
B423	1 SERIES OF 4	6'-5" TO 16'-0"
B424	1 SERIES OF 4	6'-2" TO 15'-9"

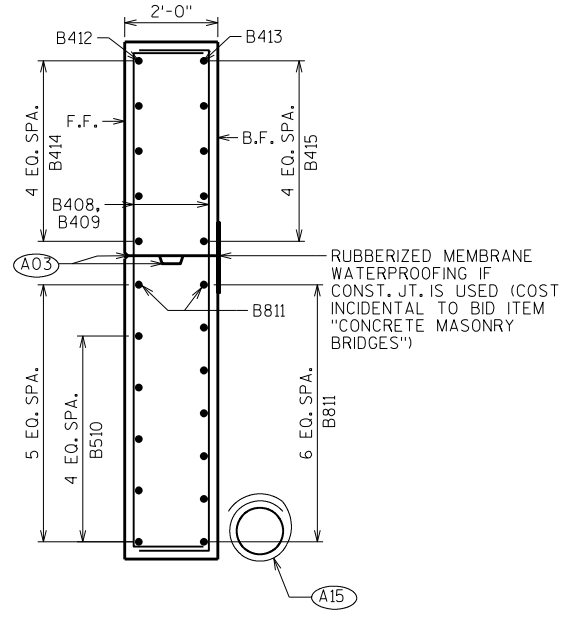
BUNDLE AND TAG EACH SERIES SEPARATELY.



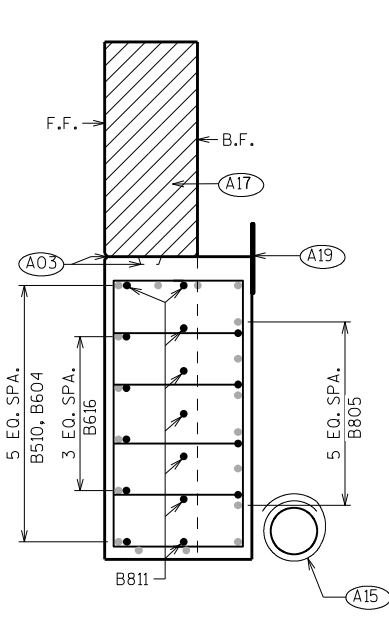
B403



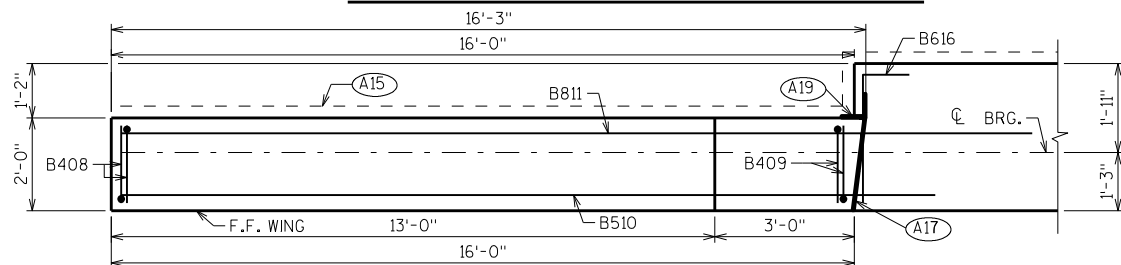
WING 3 ELEVATION LOOKING AT F.F. WING



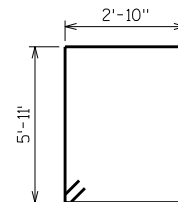
WING 3 SECTION



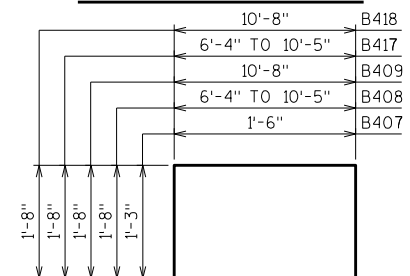
WING 3 SECTION A-A



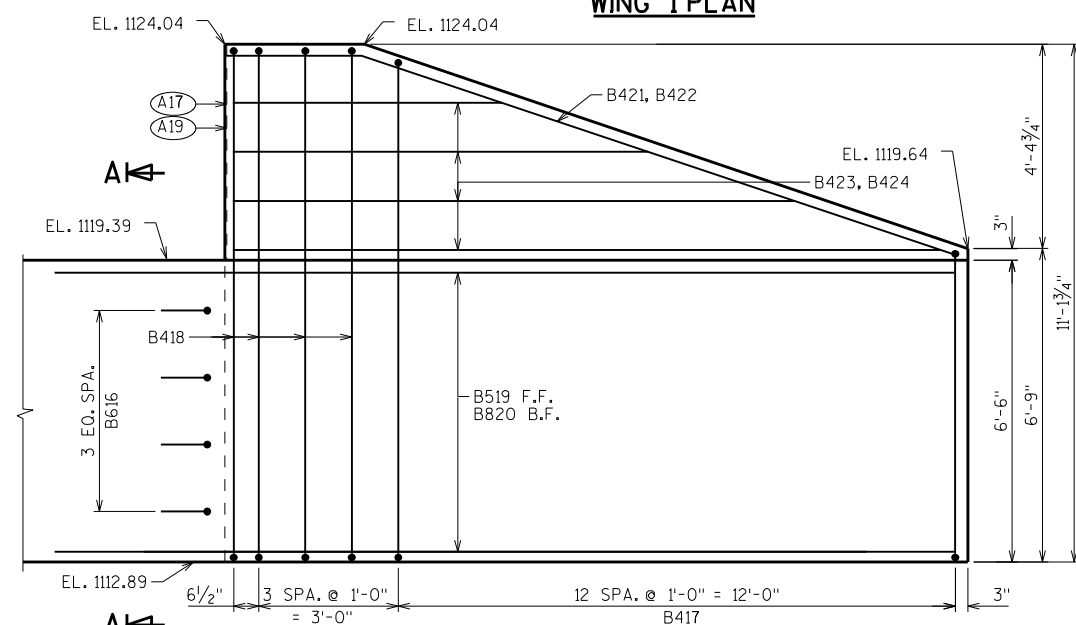
WING 1 PLAN



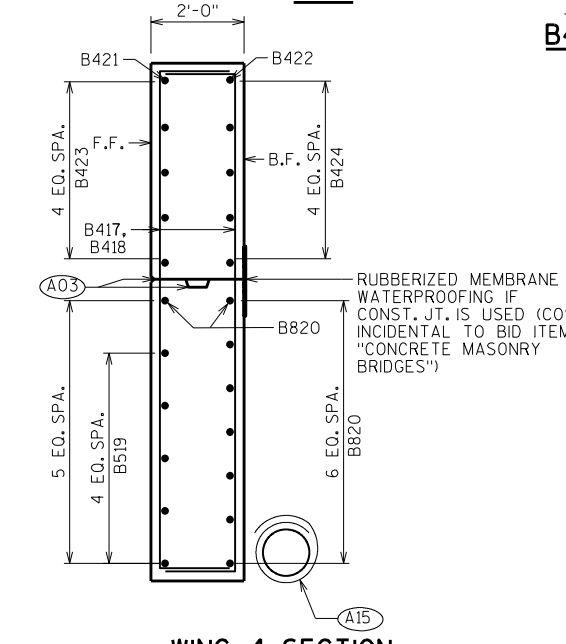
B501



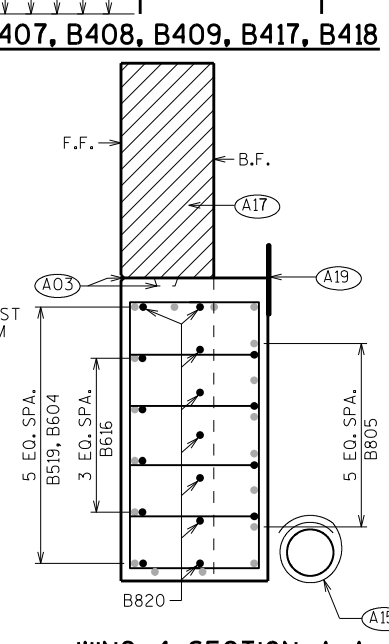
B407, B408, B409, B417, B418



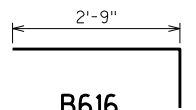
WING 4 ELEVATION LOOKING AT F.F. WING



WING 4 SECTION



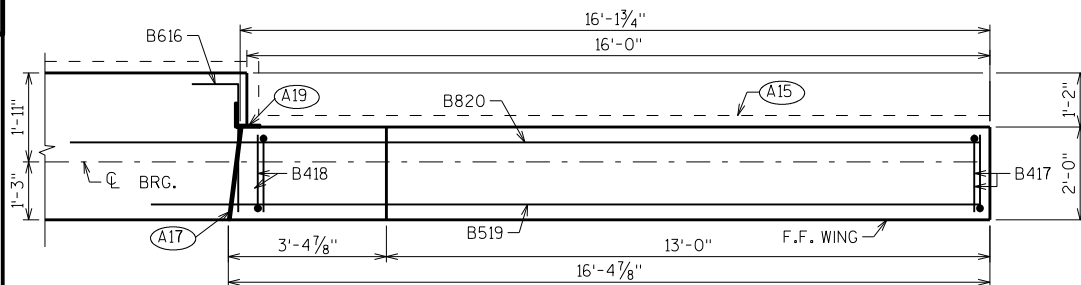
WING 4 SECTION A-A



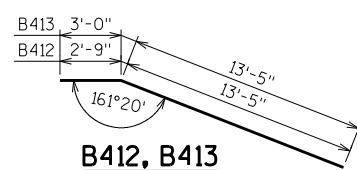
B616

8

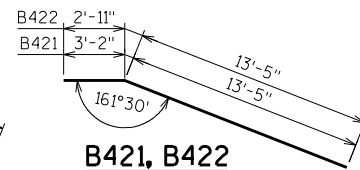
8



WING 4 PLAN



B412, B413



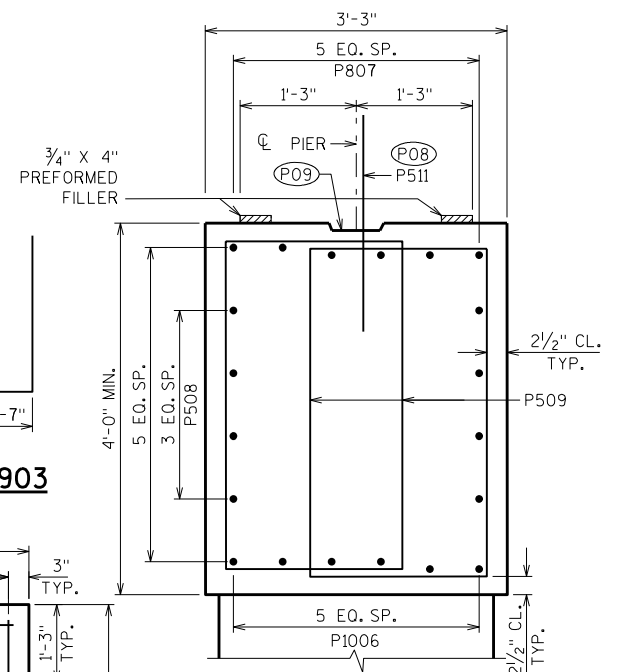
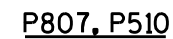
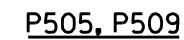
B421, B422

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6, (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-55-261			
DRAWN BY		SAD	PLANS CK'D. APC
SOUTH ABUTMENT DETAILS		SHEET 7	
		119	

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

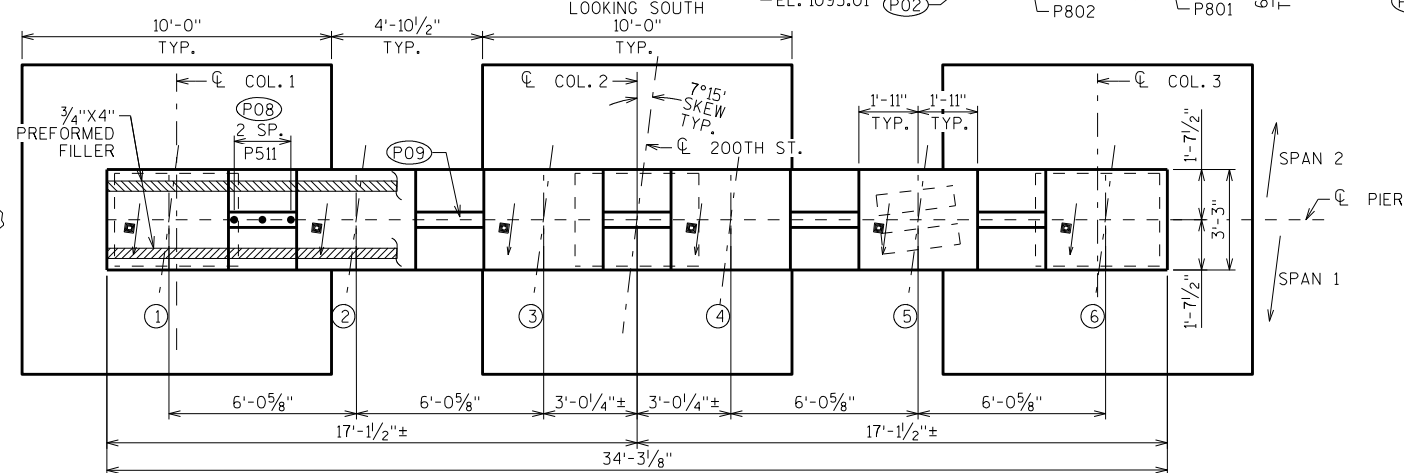
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
P801		33	9'-7"		FOOTING
P802		51	9'-7"		FOOTING
P903	X	54	10'-6"	X	FOOTING-COLUMN-VERTICAL
P904	X	54	22'-1"		COLUMN-VERTICAL
P505	X	228	10'-6"	X	COLUMN-STIRRUP
P1006	X	6	33'-10"		CAP-MAIN BOTTOM BARS
P807	X	6	40'-5"	X	CAP-MAIN TOP BARS
P508	X	8	33'-10"		CAP-SIDES
P509	X	64	11'-8"	X	CAP-STIRRUPS
P510	X	10	6'-0"	X	CAP-END U BARS
P511	X	15	2'-0"		CAP-DOWEL BARS



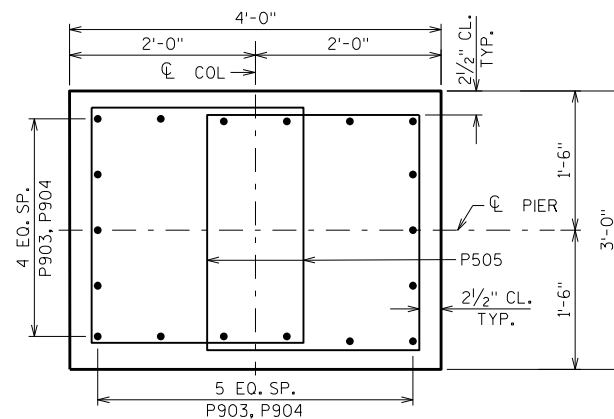
SECTION A-A: CAP

- (P01) 1'-3" X 2'-0" X 2" CONSTRUCTION JOINT FORMED BY BEVELED KEYWAY.
- (P02) SUPPORT PIER ON HP 10 X 42 STEEL PILING, ESTIMATED 35'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE.
- (P08) BARS @ 1'-0" CTRS. BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
- (P09) KEYED CONSTRUCTION JOINT-FORMED BY BEVELED 2 X 6 BETWEEN BEAM SEATS.

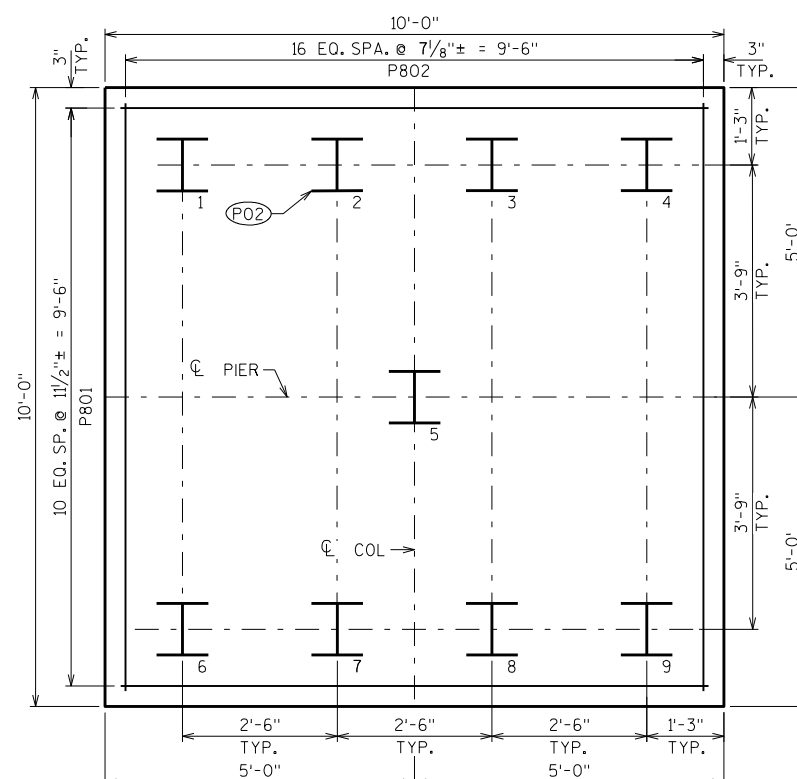
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-55-261			
		DRAWN BY	SAD PLANS CK'D. APC
PIER		SHEET 8	
		120	



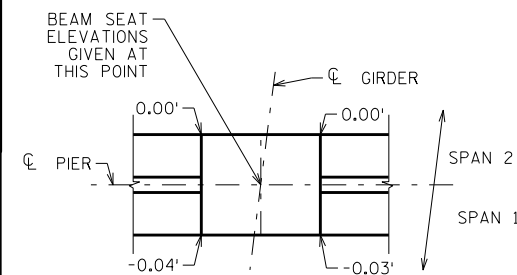
PLAN



SECTION B-B: TYP. COLUMN



SECTION C-C: TYP. FOOTING



SLOPED BEAM SEAT

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 8" OF THE GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 8" OF THE TOP FLANGE.

DO NOT APPLY CONCRETE SEALER TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

STRANDS SHALL BE FLUSH WITH THE END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, ENDS OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO APPLICATION OF THE SEALER.

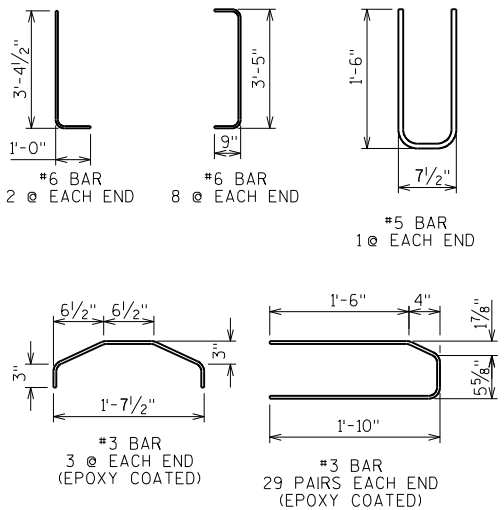
ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION.

PRESTRESSING STRANDS SHALL BE 0.6" DIA. -7 WIRE
LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF
270,000 psi.

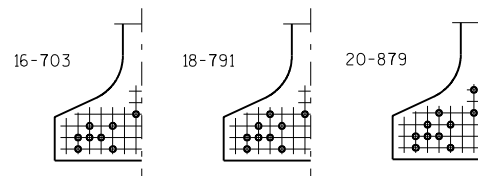
FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE
"STEEL DIAPHRAGM" SHEET.



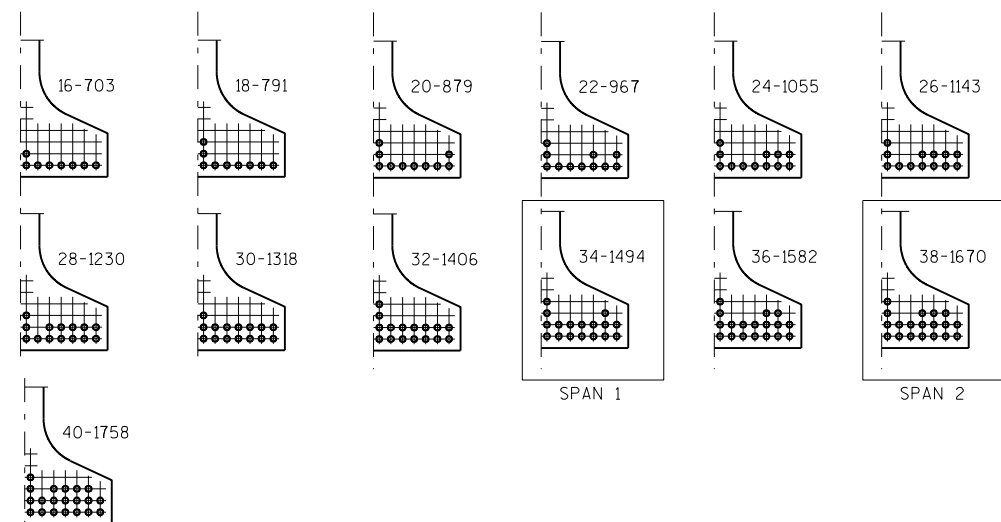
(A) DETAIL TYP. AT EACH END
(B) 6 # BARS, FULL LENGTH, MIN. LAP =
(SPAN 1) 6 #4, 1'-11" MIN. LAP
(SPAN 2) 6 #4, 1'-11" MIN. LAP

* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

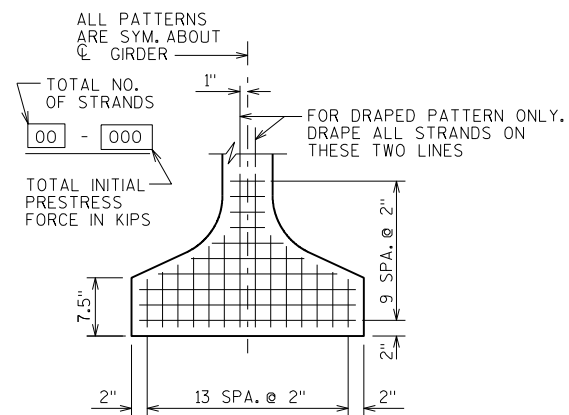
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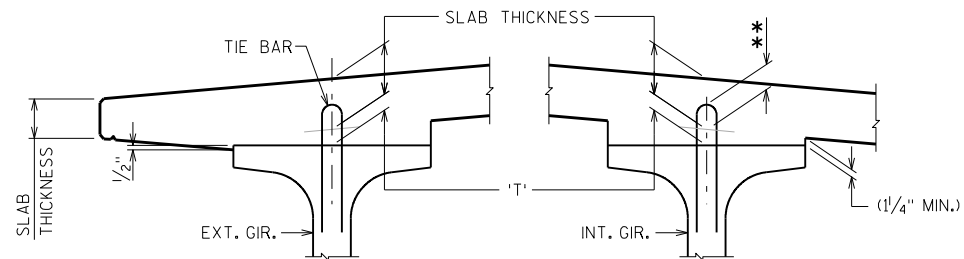
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS

0.6" ϕ STRANDS

ARRANGEMENT AT ϕ SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6" ϕ STRANDS

TYP. STRAND PATTERN



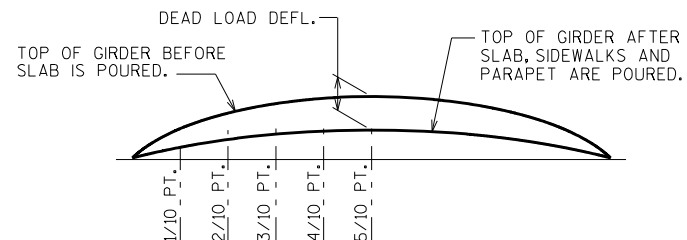
SLAB HAUNCH DETAIL

IF 1/4" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN 1/2" OR, ** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

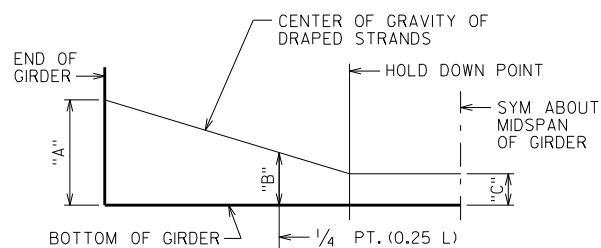
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ϕ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- SLAB THICKNESS
= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 3.0" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



DEAD LOAD DEFLECTION DIAGRAM



DRAPED STRAND PROFILE

*THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN)*
1	3.72
2	4.51

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS.
THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-55-261			
DRAWN BY		SAD	PLANS CK'D. APC
45W" PRESTRESSED GIRDER DETAILS 2		SHEET 10	
		122	

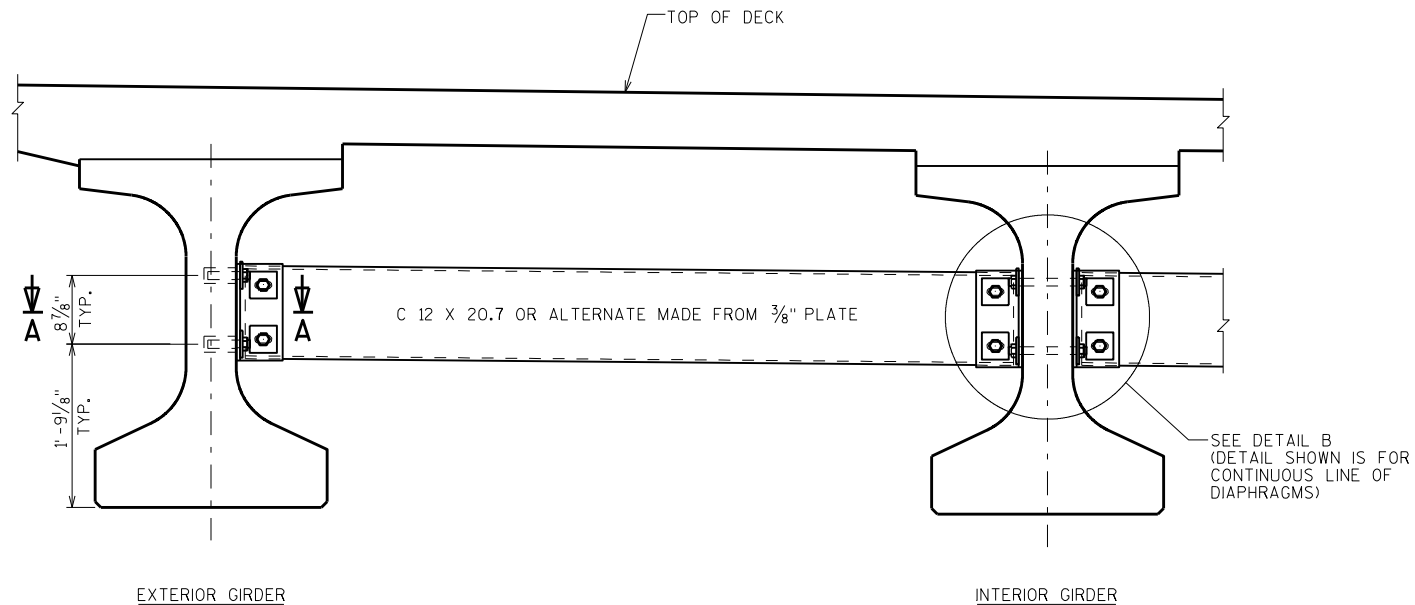
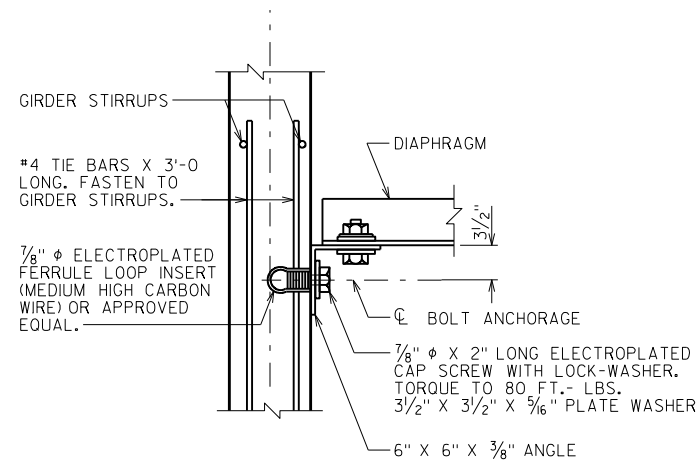
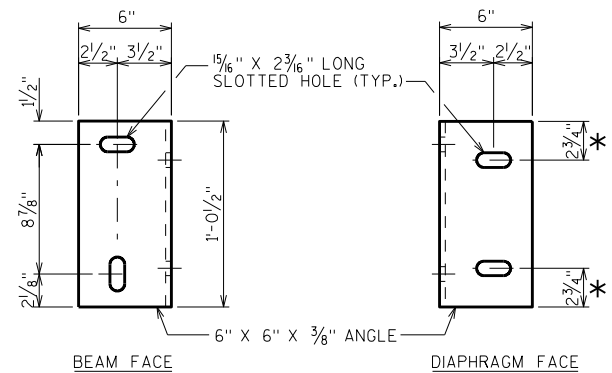
NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-55-261", EACH.

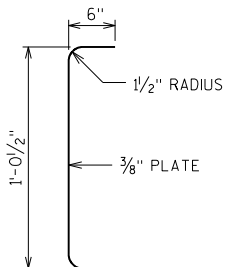
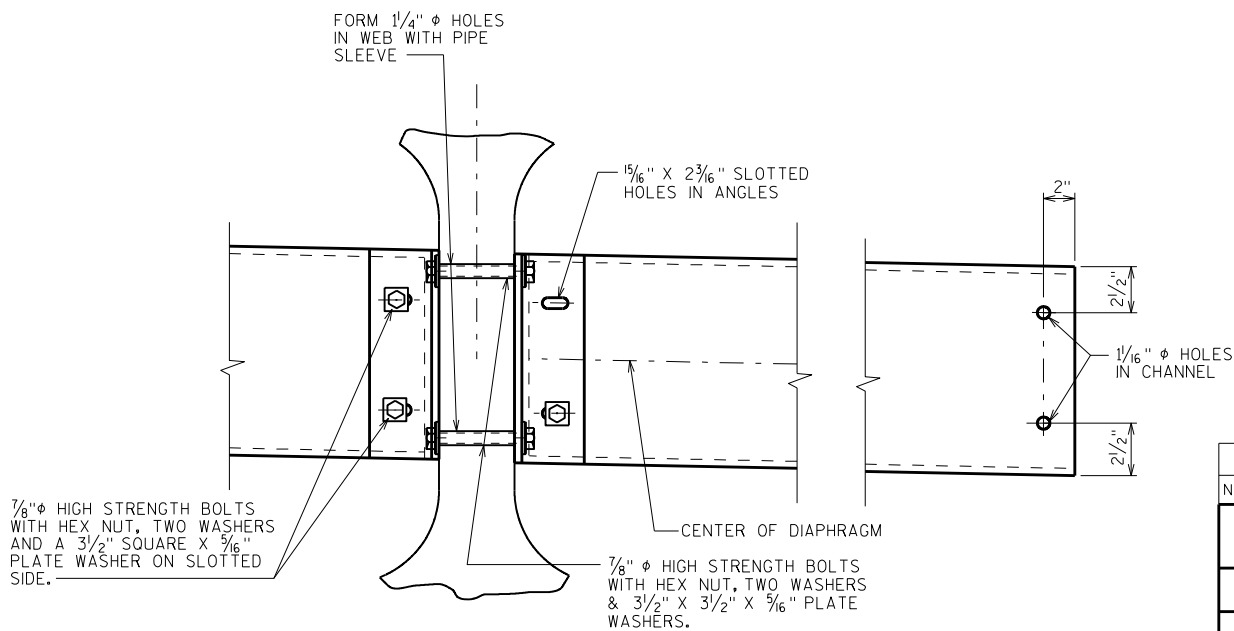
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

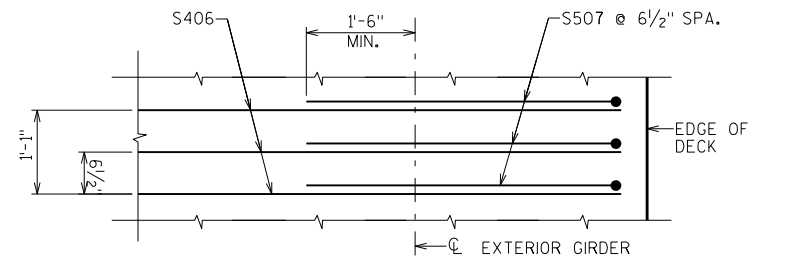
ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S10F ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.

**PART TRANSVERSE SECTION AT DIAPHRAGM****SECTION A-A**
(FOR EXTERIOR ATTACHMENT)**DIAPHRAGM SUPPORT**

* 2 1/2\"

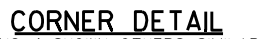
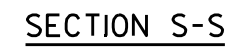
**SECTION THRU
ALTERNATE DIAPHRAGM****DETAIL B**
(FOR CONTINUOUS LINE OF DIAPHRAGMS)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-55-261			
DRAWN BY		SAD	PLANS CK'D. APC
STEEL DIAPHRAGM			SHEET 11
			123



PLAN

DETAIL A



CORNER DETAIL
WING 4 SHOWN, OTHERS SIMILAR

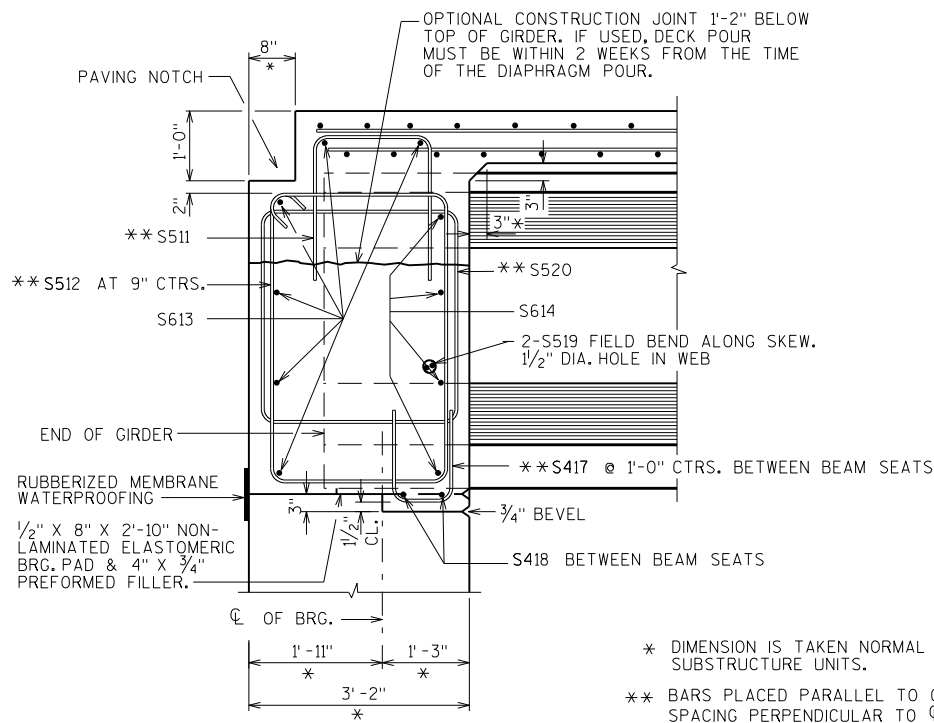


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-55-261			
		DRAWN BY	SAD
		PLANS CK'D.	APC
SUPERSTRUCTURE		SHEET 12	
		124	

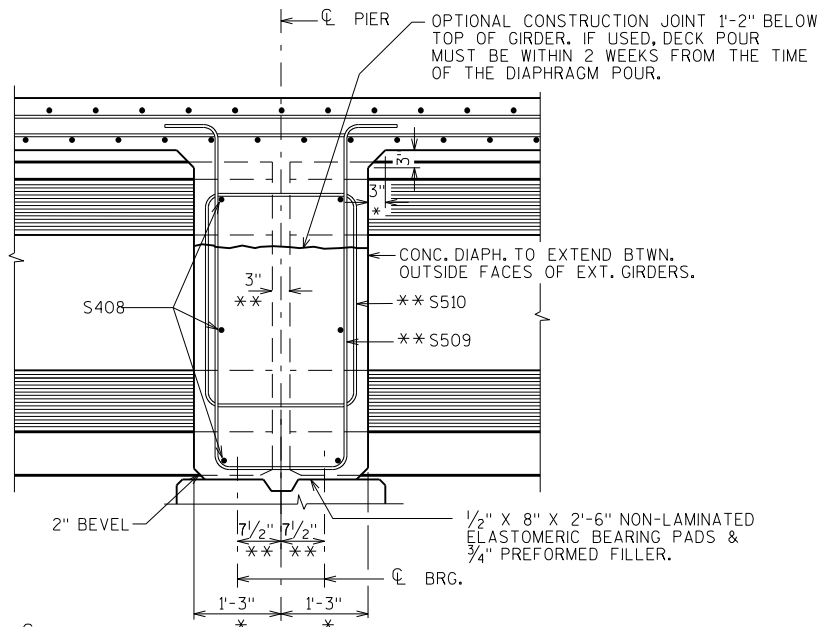
BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
S901	X	94	21'-9"		LONGITUDINAL CONTINUITY
S902	X	95	46'-6"		LONGITUDINAL CONTINUITY
S403	X	141	27'-11"		LONGITUDINAL TOP
S404	X	141	29'-11"		LONGITUDINAL TOP
S405	X	336	35'-4"		LONGITUDINAL BOTTOM
S406	X	875	34'-5"		TRANSVERSE TOP AND BOTTOM
S507	X	876	4'-1"	X	TRANSVERSE TOP - EDGE - BOTH SIDES
S408	X	30	3'-3"		PIER DIAPHRAGM - HORIZ. - F.F. & B.F.
S509	X	20	11'-6"	X	PIER DIAPHRAGM - VERT. - BTWN GIR. FLANGES
S510	X	10	9'-4"	X	PIER DIAPHRAGM - VERT. - UNDER GIR. FLANGES
S511	X	58	5'-9"	X	ABUT. DIAPHRAGM - VERT. - BTWN GIR. FLANGES
S512	X	58	13'-2"	X	ABUT. DIAPHRAGM - VERT. - BTWN GIR. FLANGES
S613	X	12	34'-5"		ABUT. DIAPHRAGM - HORIZ. - B.F.
S614	X	80	3'-8"		ABUT. DIAPHRAGM - HORIZ. - F.F.
S615	X	4	3'-6"	X	ABUT. DIAPHRAGM - HORIZ. - END
S616	X	8	5'-0"	X	ABUT. DIAPHRAGM - HORIZ. - END
S417	X	30	3'-3"	X	ABUT. DIAPHRAGM - VERT. - BTWN BEAM SEATS
S418	X	20	1'-9"		ABUT. DIAPHRAGM - HORIZ. - BTWN BEAM SEATS
S519	X	24	6'-0"		ABUT. DIAPHRAGM - HORIZ. - THRU GIR. ENDS
S520	X	24	10'-8"	X	ABUT. DIAPHRAGM - VERT. - UNDER GIRDER FLANGES

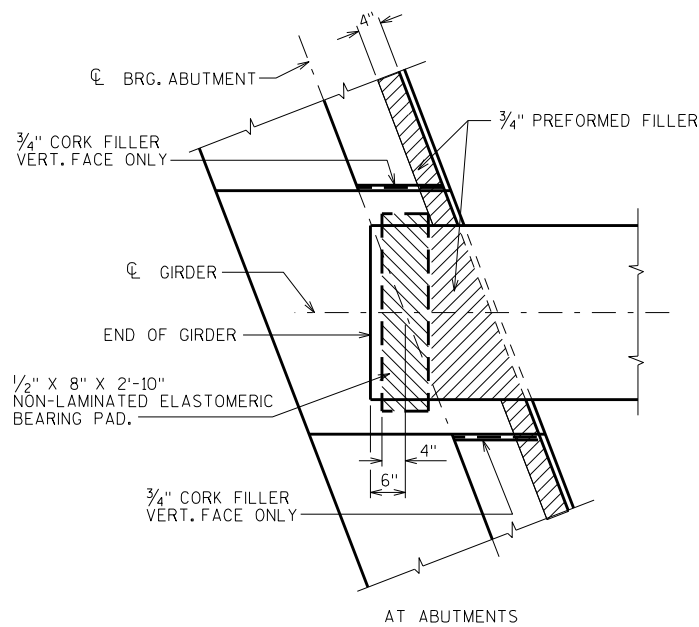


PART LONGIT. SECTION

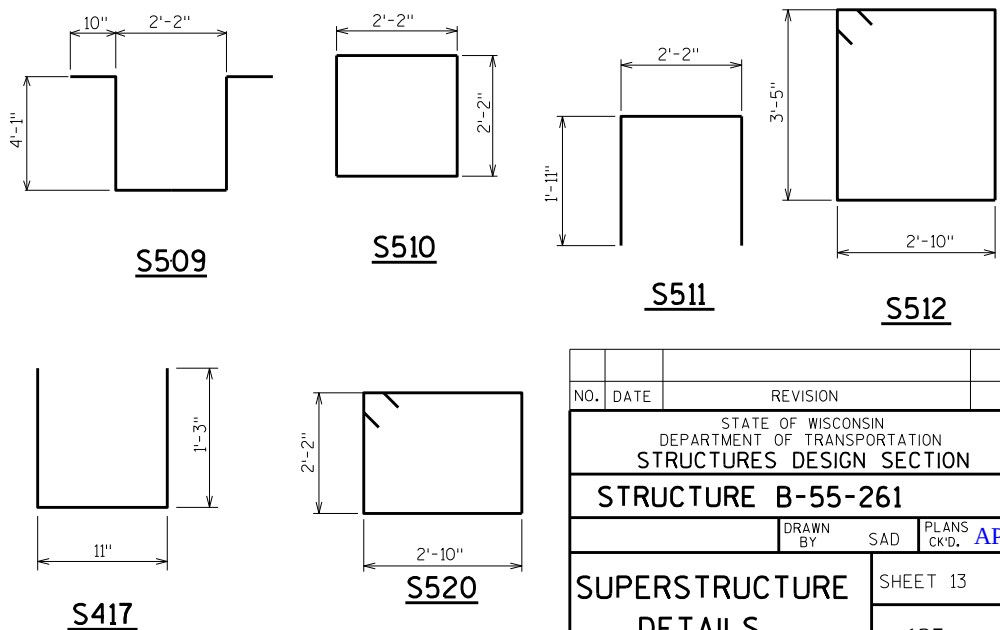
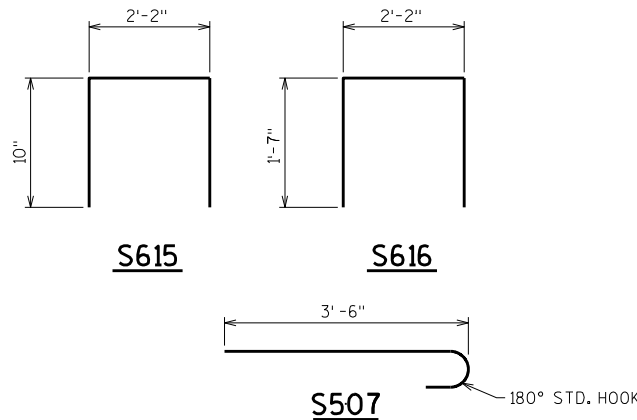
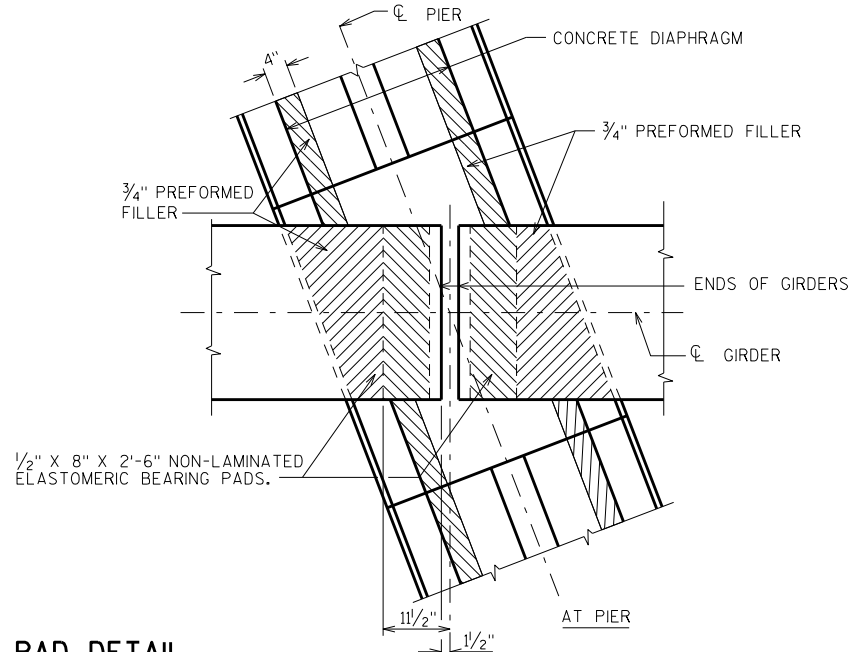


TOP OF DECK ELEVATIONS

	S. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER 1	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	N. ABUT.
E. EOD	1120.67	1120.99	1121.29	1121.58	1121.85	1122.10	1122.34	1122.56	1122.77	1122.96	1123.13	1123.30	1123.45	1123.58	1123.69	1123.79	1123.87	1123.93	1123.98	1124.01	1124.02
GIR. 1	1120.70	1121.02	1121.32	1121.61	1121.87	1122.13	1122.37	1122.59	1122.79	1122.98	1123.16	1123.33	1123.47	1123.61	1123.72	1123.82	1123.90	1123.96	1124.00	1124.03	1124.04
GIR. 2	1120.84	1121.16	1121.46	1121.74	1122.01	1122.26	1122.50	1122.72	1122.93	1123.12	1123.29	1123.46	1123.60	1123.73	1123.85	1123.94	1124.02	1124.08	1124.13	1124.15	1124.16
GIR. 3	1120.99	1121.30	1121.60	1121.88	1122.15	1122.40	1122.64	1122.86	1123.06	1123.25	1123.42	1123.59	1123.73	1123.86	1123.97	1124.07	1124.15	1124.21	1124.25	1124.28	1124.28
GIR. 4	1121.01	1121.32	1121.62	1121.90	1122.17	1122.42	1122.65	1122.87	1123.07	1123.26	1123.43	1123.59	1123.74	1123.87	1123.98	1124.07	1124.15	1124.21	1124.25	1124.28	1124.28
GIR. 5	1120.91	1121.22	1121.52	1121.80	1122.06	1122.31	1122.55	1122.76	1122.97	1123.15	1123.32	1123.48	1123.63	1123.76	1123.87	1123.96	1124.03	1124.09	1124.13	1124.16	1124.16
GIR. 6	1120.81	1121.12	1121.42	1121.70	1121.96	1122.21	1122.44	1122.66	1122.86	1123.04	1123.21	1123.37	1123.52	1123.64	1123.75	1123.84	1123.92	1123.98	1124.02	1124.04	1124.04
W. E.O.D.	1120.79	1121.10	1121.40	1121.68	1121.94	1122.19	1122.42	1122.64	1122.84	1123.02	1123.19	1123.35	1123.49	1123.62	1123.73	1123.82	1123.89	1123.95	1123.99	1124.01	1124.02



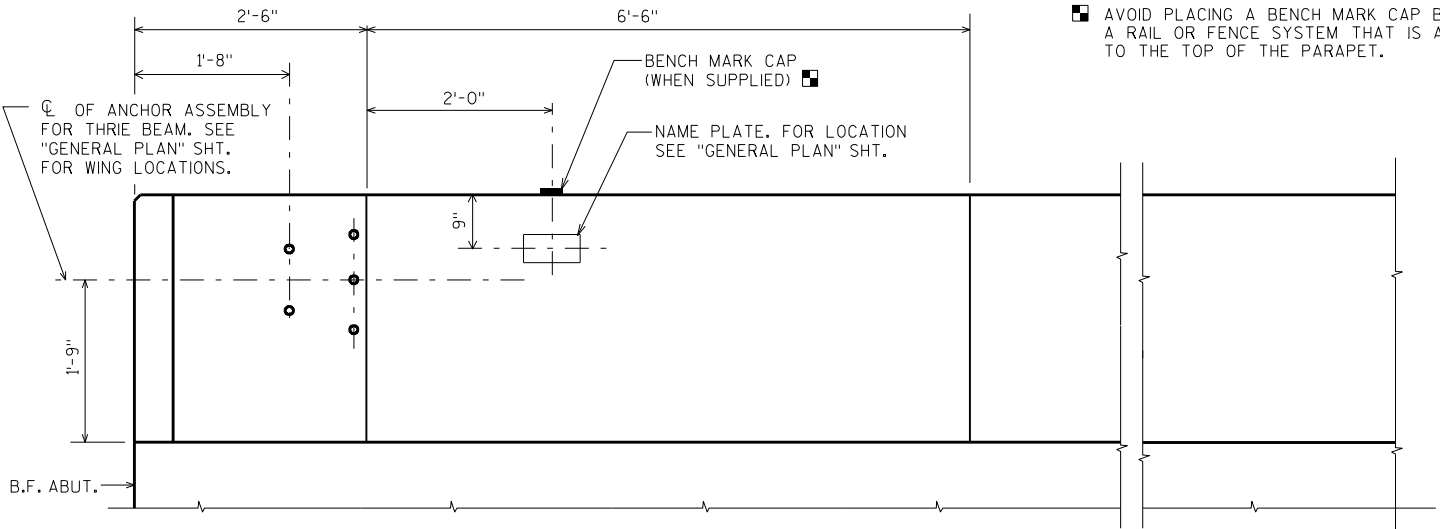
BEARING PAD DETAIL



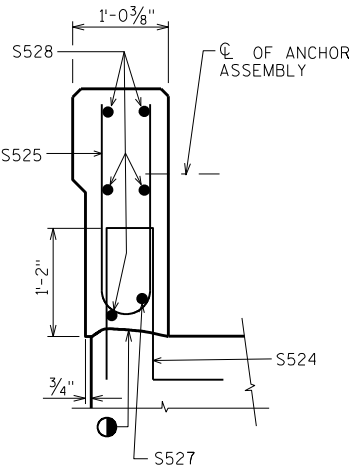
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-55-261			
DRAWN BY		SAD	PLANS CK'D. APC
SUPERSTRUCTURE DETAILS		SHEET 13	
		125	

BILL OF BARS

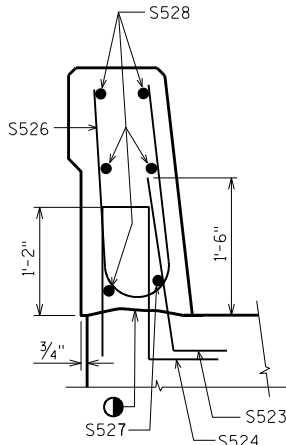
BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	LOCATION
S521	X	666	4'-5"	X	PARAPET VERT.
S522	X	666	5'-0"	X	PARAPET VERT.
S523	X	48	2'-9"	X	PARAPET-VERT.
S524	X	68	4'-4"	X	PARAPET-VERT.
S525	X	44	4'-9"	X	PARAPET-VERT.
S526	X	24	4'-10"	X	PARAPET-VERT.
S527	X	4	49'-1"	X	PARAPET-HORIZ.
S528	X	56	49'-1"		PARAPET HORIZ.



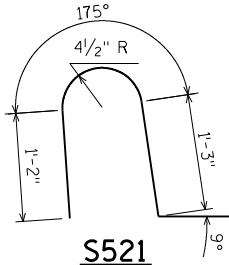
INSIDE ELEVATION



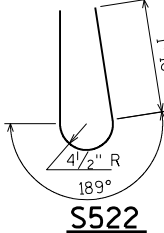
SECTION A



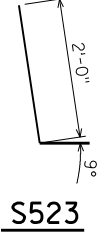
SECTION B



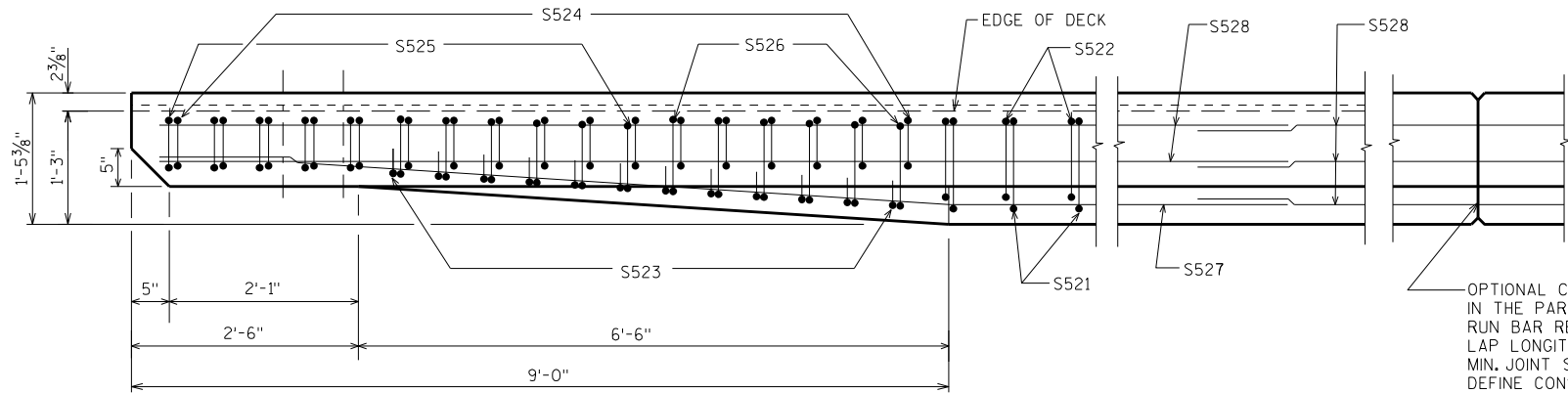
S521



S522

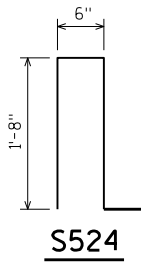


S523

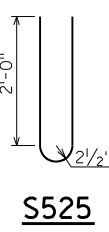


PLAN

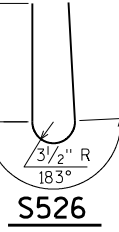
OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A 3/4" - 'V' GROOVE.



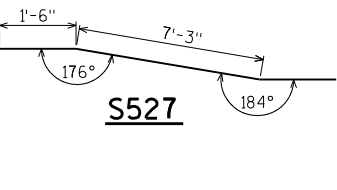
S524



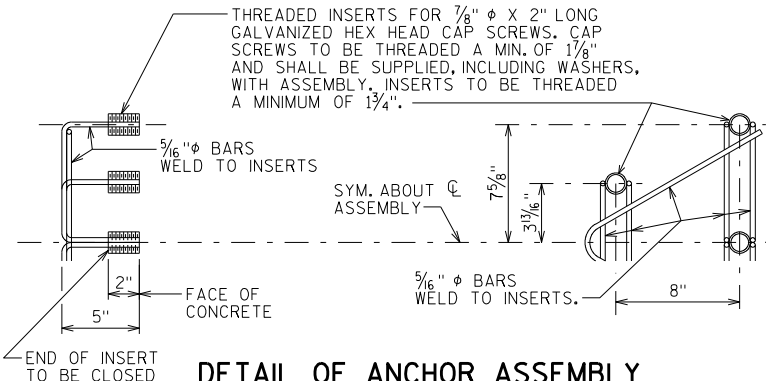
S525



S526



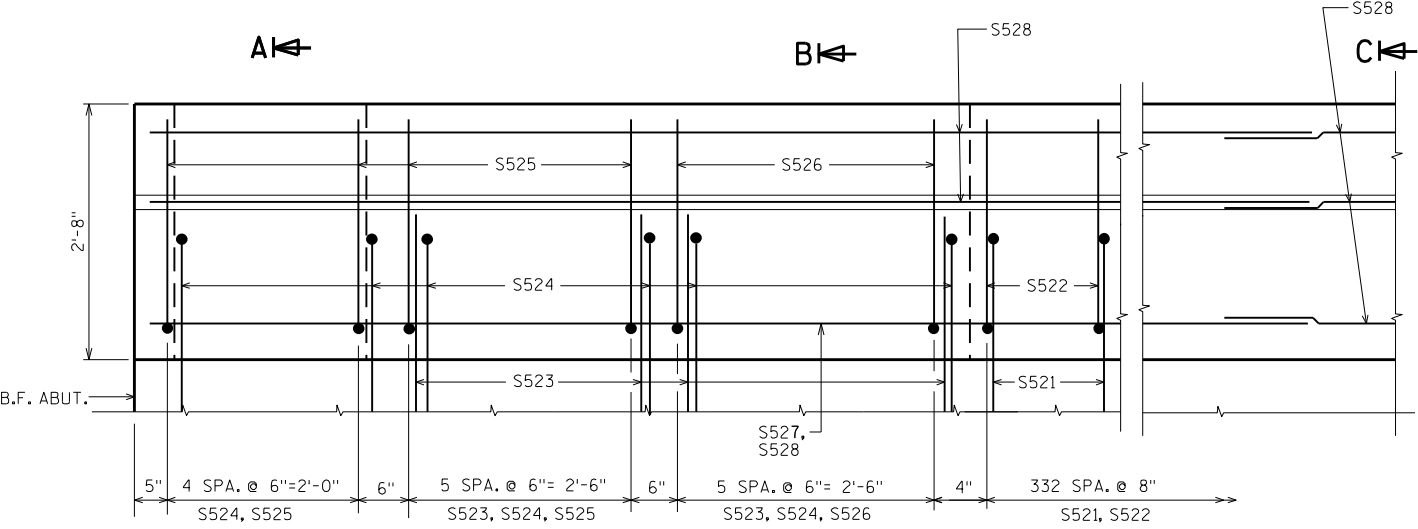
S527



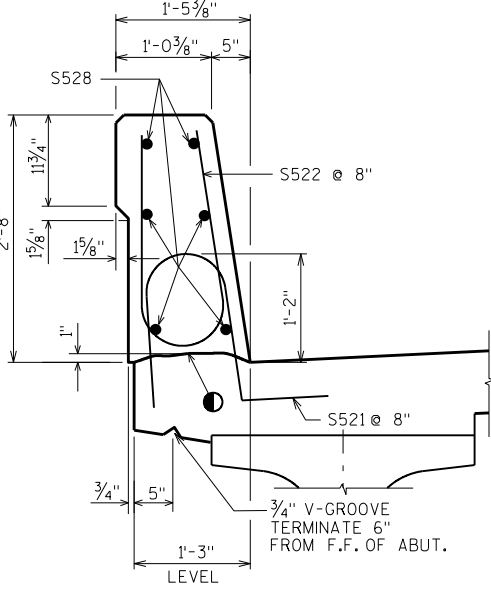
DETAIL OF ANCHOR ASSEMBLY

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

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



OUTSIDE ELEVATION



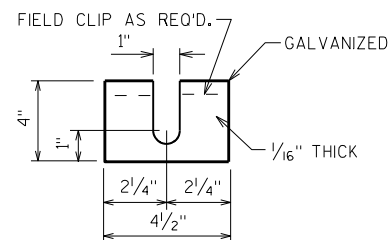
SECTION C

CONST. JOINT - STRIKE OFF AS SHOWN.

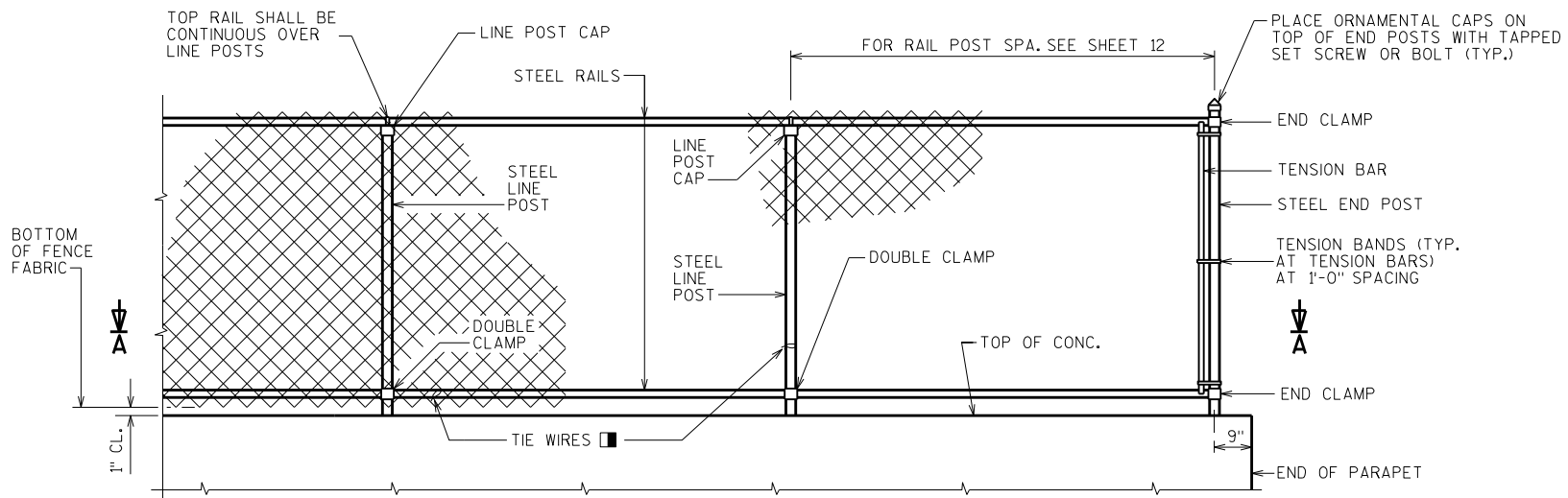
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-55-261			
DRAWN BY		SAD	PLANS CK'D. APC
SINGLE SLOPE PARAPET 32SS			SHEET 14
			126

**FENCE MEMBER
SIZE & WEIGHT**

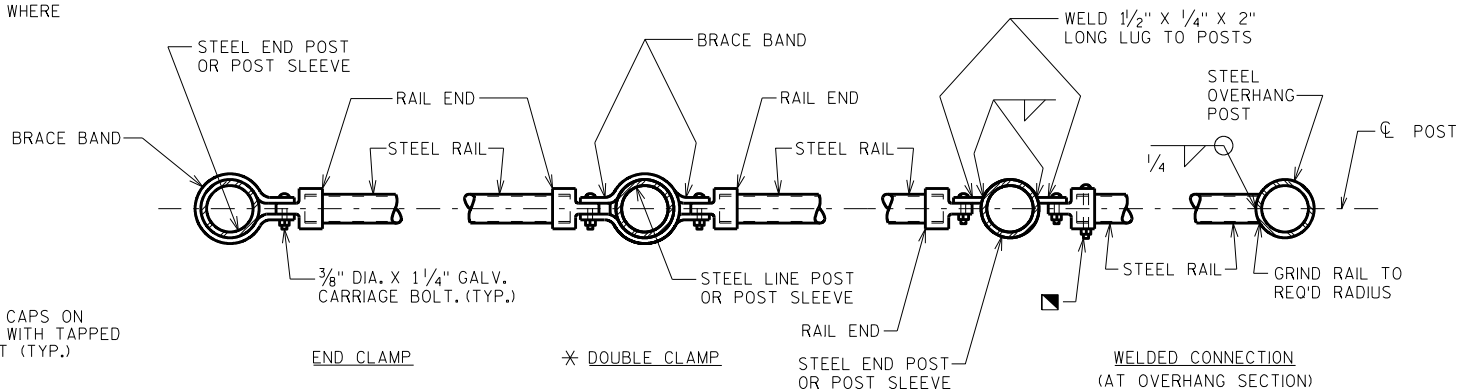
STEEL FENCE MEMBER	OUTSIDE DIAMETER (INCHES)	WEIGHT (LB/FT)
RAILS	1.660	2.27
END POST	2.875	5.80
OVERHANG POST	2.875	5.80
LINE POST	2.375	3.65
POST SLEEVE	4.000	9.12

**POST SHIM DETAILS**

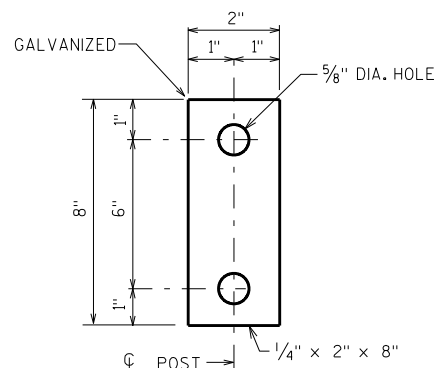
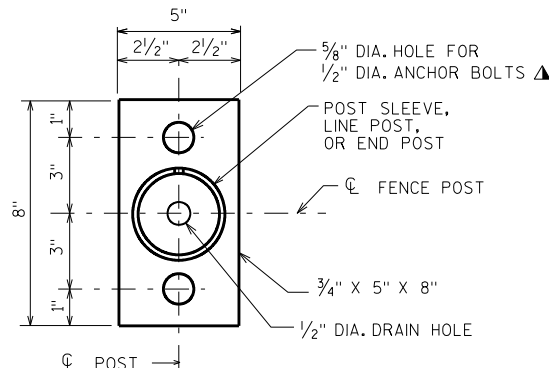
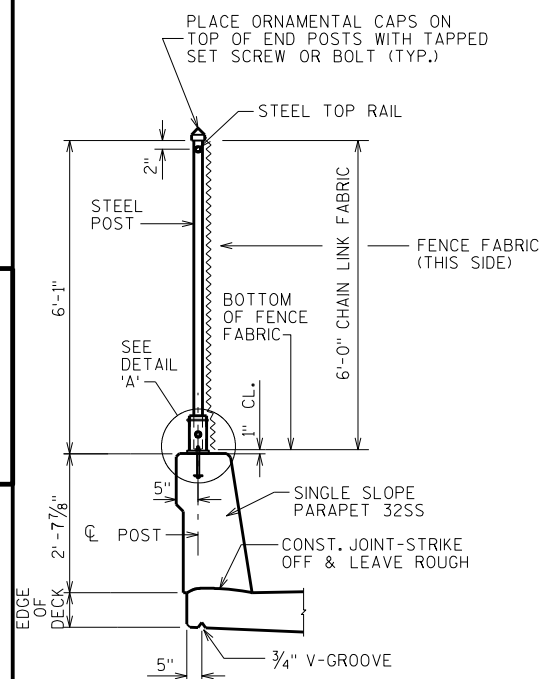
SHIMS REQUIRED ONLY WHEN END POSTS AND LINE POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST. USE WHERE REQUIRED FOR ALIGNMENT.

**FENCE PART ELEVATION**

VIEWING FABRIC SIDE

**SECTION A-A**

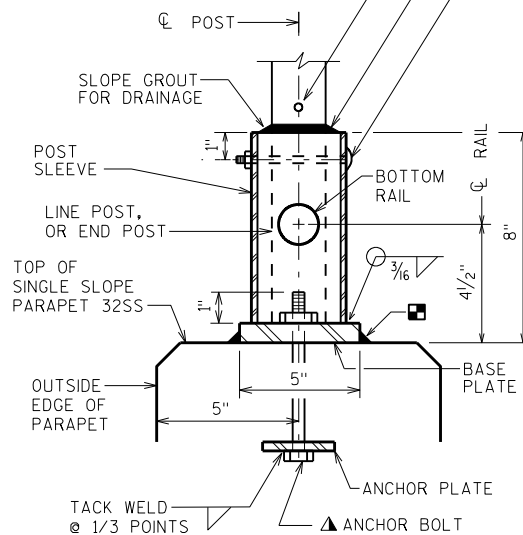
NOTE: PLACE ALL BOLT HEADS ON SIDE OF FENCE ADJACENT TO PEDESTRIANS

**ANCHOR PLATE****BASE PLATE****SECTION THRU FENCE**

3/8" DIA. GALV. CARRIAGE BOLT WITH LOCKING NUT. (TO BE SUPPLIED WITH ASSEMBLY)

FILL SLEEVE AND BEVEL AWAY FROM POST WITH NON-SHRINK GROUT AFTER SETTING POST. (LEAVE NO VOIDS)

DRILL 3/16" DIA. DRAIN HOLE PARALLEL TO ROADWAY IMMEDIATELY ABOVE GROUT IN POST. SLEEVE LOCATIONS ONLY.

**DETAIL 'A'**

UNIT SHALL BE GALVANIZED AFTER FABRICATION

NOTE: IN LIEU OF USING THE POST SLEEVE, THE FENCE POST MAY BE WELDED TO THE BASE PLATE.

NOTES

POSTS ARE TO BE SET VERTICAL.

ALL FENCE COMPONENTS SHALL BE GALVANIZED STEEL WITH A COLORED POLYMER-COATING ON THE OUTSIDE.

FABRIC SHALL CONFORM TO ASTM F668, CLASS 2B. STEEL RAILS, POSTS AND POST SLEEVES SHALL CONFORM TO ASTM F1083, STANDARD WEIGHT PIPE (SCHEDULE 40). FITTINGS SHALL CONFORM TO ASTM F626. SEE THE "BRIDGE SPECIAL PROVISIONS" FOR ADDITIONAL DETAILS.

THE COLOR OF POLYMER-COATING FOR THIS STRUCTURE SHALL BE BLACK IN ACCORDANCE WITH ASTM F934.

THE BID ITEM SHALL BE "FENCE CHAIN LINK POLYMER-COATED 6- FT.", LF.

COMPLETE ANY REQUIRED WELDING OF COMPONENTS BEFORE GALVANIZING.

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.

BASE PLATES, ANCHOR PLATES AND SHIMS SHALL BE ASTM A709, GRADE 36.

ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG THE C/L OF THE POST.

CAULK AROUND PERIMETER OF BASE PLATE AND FILL PORTION OF SLOTTED HOLE AROUND ANCHOR BOLT IN SHIM WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ALTERNATE TO DOUBLE CLAMP: USE LINE RAIL CLAMP (BOULEVARD) OR 180° BRACE BAND, WHICH MAY BE USED WHEN THE POSTS ARE EITHER BOLTED TO THE POST SLEEVES OR DIRECTLY WELDED TO THE BASE PLATE.

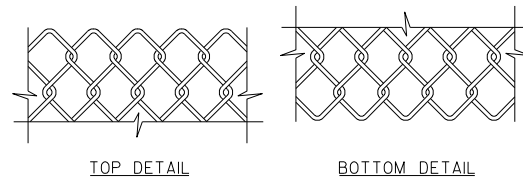
1/2" DIA. X 6 7/8" LONG GALVANIZED HEX BOLT WITH NUT & WASHER, TYPE "S", 1/2" DIA. CONCRETE MASONRY ANCHORS MAY BE SUBSTITUTED FOR 1/2" DIA. BOLTS. ANCHOR PLATE NOT REQUIRED WHEN TYPE "S" ANCHORS ARE USED. SEE ★

MASONRY ANCHOR TYPE S 1/2-INCH. EMBED 6" IN CONCRETE. ANCHOR, WASHER, AND NUT SHALL BE GALVANIZED.

ATTACH FABRIC TO RAILS, AND TO POSTS WITHOUT TENSION BANDS, WITH TIE WIRES (ROUND, 9-GAGE) SPACED AT 1'-0".

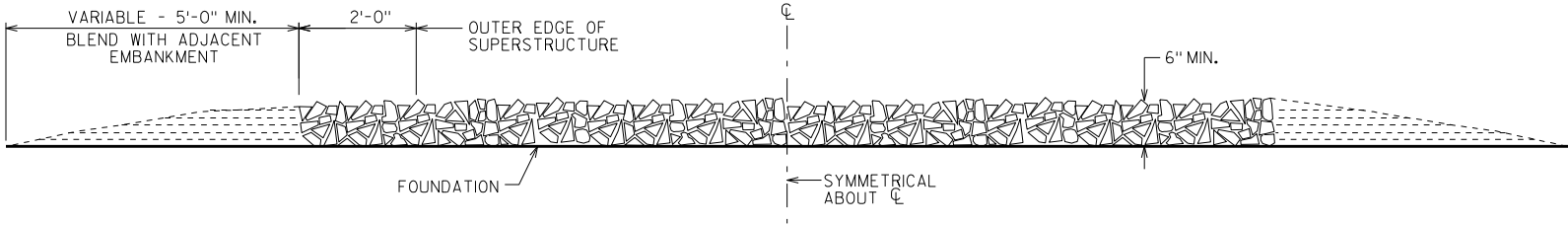
BOLT RAIL TO RAIL END TO SECURE OVERHANG SECTION. ALTERNATE IS TO WELD RAIL DIRECTLY TO END POST.

MINIMUM LENGTH OF TOP RAIL BETWEEN SPLICES SHALL BE 20'-0". LOCATE SPLICES NEAR 1/4 POINT OF POST SPACING.

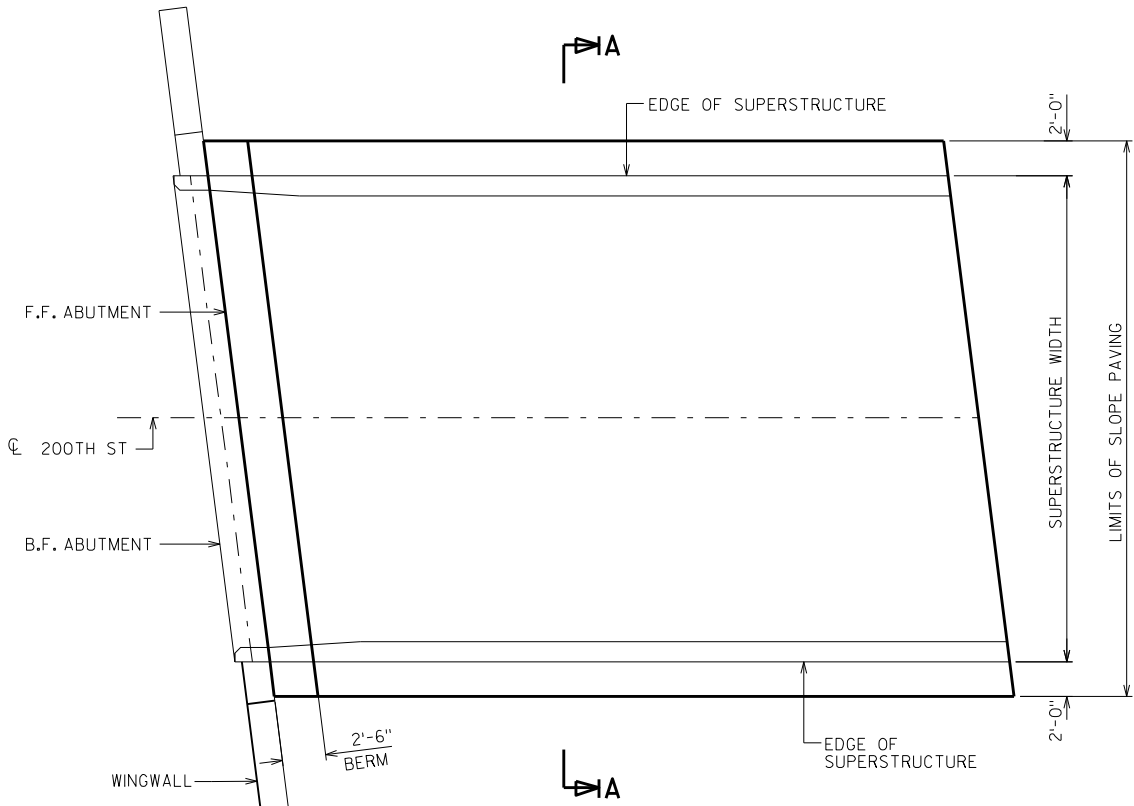
**FENCE FABRIC**

FENCE FABRIC WOVEN OF 9-GAGE WIRE IN 2" DIAMOND PATTERN MESH WITH BOTH THE TOP AND BOTTOM SELVAGES KNUCKLED.

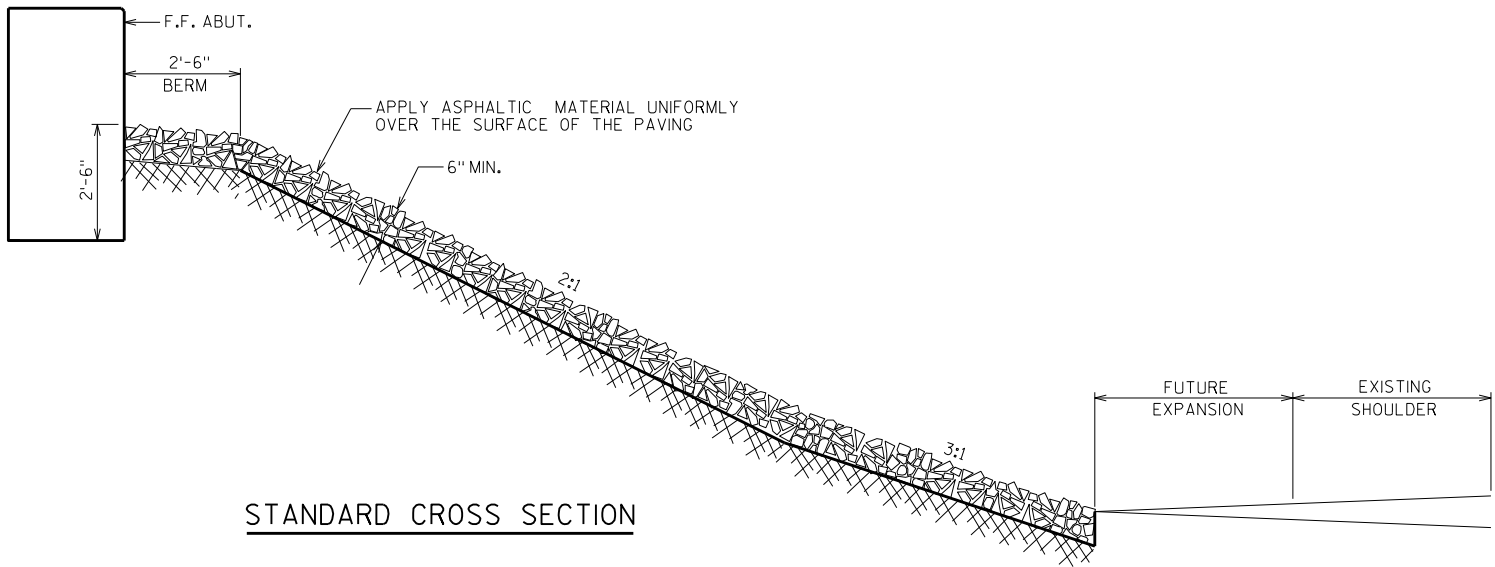
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-55-261			
DRAWN BY		SAD	PLANS CKD. APC
FENCING DETAILS			SHEET 15
			127



SECTION A-A



PLAN



STANDARD CROSS SECTION

GENERAL NOTES

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

WOOD FORMS MAY BE LEFT IN PLACE WHEN OF A QUALITY ACCEPTABLE TO THE ENGINEER.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-55-261			
DRAWN BY		SAD	PLANS CK'D. APC
SLOPE PAVING CRUSHED AGGREGATE		SHEET 16	
		128	

Alignment: ALIPROF-200TH-EXIST-N2S Start Sta: 42+00.000 End Sta: 60+50.000 Fill Factor = 1.3									
Station	Cut Area (Sq.ft.)	Cut Volume (Cu.yd.)	Reusable Volume (Cu.yd.)	Fill Area (Sq.ft.)	Fill Volume (Cu.yd.)	Cum. Cut Vol. (Cu.yd.)	Cum. Reusable Vol. (Cu.yd.)	Cum. Fill Vol. (Cu.yd.)	Cum. Net Vol. (Cu.yd.)
42+00.000	35.91	0	0	0	0	0	0	0	0
42+50.000	29.41	60.48	60.48	26.26	31.61	60.48	60.48	31.61	28.86
43+00.000	16.2	42.23	42.23	53.93	96.53	102.71	102.71	128.15	-25.44
43+50.000	5.82	20.39	20.39	98.97	184.05	123.1	123.1	312.2	-189.1
44+00.000	0.12	5.5	5.5	140.61	288.39	128.6	128.6	600.59	-471.99
44+37.147	0	0.08	0.08	203.55	307.78	128.67	128.67	908.37	-779.69
44+50.000	0	0	0	114.81	98.51	128.67	128.67	1006.87	-878.2
45+00.000	0	0	0	125.47	289.23	128.67	128.67	1296.1	-1167.43
45+50.000	0	0	0	246.25	447.44	128.67	128.67	1743.54	-1614.86
45+67.120	29.69	9.41	9.41	305.55	227.42	138.09	138.09	1970.95	-1832.87
46+00.000	0	18.08	18.08	378.19	541.23	156.17	156.17	2512.18	-2356.01
46+50.000	0	0	0	555.14	1123.46	156.17	156.17	3635.64	-3479.47
47+00.000	0	0	0	712.95	1526.41	156.17	156.17	5162.05	-5005.88
47+25.000	0	0	0	672.05	833.57	156.17	156.17	5995.62	-5839.45
47+50.000	0	0	0	566.63	745.5	156.17	156.17	6741.12	-6584.95
48+00.000	0	0	0	579.02	1379.03	156.17	156.17	8120.15	-7963.98
48+45.950	0.05	0.04	0.04	684.24	1397.43	156.21	156.21	9517.58	-9361.37
Bridge									
50+83.480	0	0	0	1064.57	0	0	0	0	0
51+00.000	0	0	0	993.55	629.63	0.00	0.00	629.63	-629.63
51+50.000	0	0	0	919.13	1771.00	0.00	0.00	2400.63	-2400.63
51+74.996	0	0	0	983.56	880.73	0.00	0.00	3281.37	-3281.37
52+00.000	0	0	0	980.93	909.63	0.00	0.00	4191.00	-4191.00
52+50.000	0	0	0	783.82	1634.03	0.00	0.00	5825.03	-5825.03
53+00.000	0	0	0	581.37	1264.06	0.00	0.00	7089.09	-7089.09
53+50.000	0.39	0.36	0.36	460.78	964.95	0.33	0.33	8054.04	-8053.71
54+00.000	3.07	3.2	3.2	350.24	750.94	3.27	3.27	8804.99	-8801.72
54+50.000	6.65	9	9	322.65	623.05	11.36	11.36	9428.03	-9416.67
55+00.000	3.38	9.28	9.28	252.6	532.64	19.11	19.11	9960.67	-9941.56
55+50.000	0	3.13	3.13	113.13	338.64	20.60	20.60	10299.31	-10278.72
55+75.000	7.6	3.52	3.52	97.92	97.71	11.16	11.16	10397.02	-10385.86
56+00.000	7.3	6.89	6.89	49.78	68.38	8.36	8.36	10465.40	-10457.04
56+34.000	4.51	7.43	7.43	39.55	56.24	9.94	9.94	10521.65	-10511.70
56+50.000	11.93	4.87	4.87	45.75	25.27	4.39	4.39	10546.92	-10542.53
57+00.000	0.36	11.38	11.38	63.58	101.23	14.60	14.60	10648.15	-10633.55
57+50.000	4.97	4.93	4.93	66.61	120.55	18.08	18.08	10768.70	-10750.61
58+00.000	10.13	13.97	13.97	65.17	122.02	29.68	29.68	10890.72	-10861.04
58+40.000	15.05	18.65	18.65	80.34	107.79	35.80	35.80	10998.50	-10962.70
58+50.000	20.77	6.63	6.63	72.03	28.22	7.86	7.86	11026.72	-11018.86
59+00.000	21.45	39.08	39.08	24.71	89.57	43.46	43.46	11116.29	-11072.83
59+50.000	21.65	39.9	39.9	55.09	73.89	77.19	77.19	11190.18	-11113.00
60+00.000	26.29	44.39	44.39	41.82	89.73	112.57	112.57	11279.91	-11167.34
60+50.000	36.58	58.21	58.21	0	38.72	158.13	158.13	11318.63	-11160.50
Total						314	314	20836	-20522
PROJECT NO: 1021-01-73 HWY: IH 94 COUNTY: ST. CROIX EARTHWORK TABULATIONS SHEET: 129 E									

Alignment: ALIPROF-55TH

Start Sta: 6+00.000

Fill Factor = 1.3

End Sta: 9+23.105

Station	Cut Area (Sq.ft.)	Cut Volume (Cu.yd.)	Reusable Volume (Cu.yd.)	Fill Area (Sq.ft.)	Fill Volume (Cu.yd.)	Cum. Cut Vol. (Cu.yd.)	Cum. Reusable Vol. (Cu.yd.)	Cum. Fill Vol. (Cu.yd.)	Cum. Net Vol. (Cu.yd.)
6+00.000	18.72	0	0	0	0	0	0	0	0
6+50.000	16.58	32.68	32.68	18.7	22.51	32.68	32.68	22.51	10.18
7+00.000	10.47	25.05	25.05	36.1	65.96	57.73	57.73	88.47	-30.74
7+50.000	4.17	13.56	13.56	83.66	144.15	71.29	71.29	232.62	-161.32
8+00.000	11.36	14.38	14.38	159.64	292.86	85.68	85.68	525.48	-439.8
8+50.000	12.8	22.37	22.37	249.41	492.38	108.05	108.05	1017.86	-909.81
8+73.041	12.34	10.73	10.73	299.54	304.5	118.78	118.78	1322.36	-1203.59
9+00.000	21.3	16.8	16.8	394.78	450.63	135.57	135.57	1772.99	-1637.42
9+23.105	13.88	15.05	15.05	554.32	527.91	150.62	150.62	2300.9	-2150.27
Total						151	151	2301	-2150

Alignment: 55th Ave - Lt Pvmnt Edge

Start Sta: 9+23.372

Fill Factor = 1.3

End Sta: 10+17.536

Station	Cut Area (Sq.ft.)	Cut Volume (Cu.yd.)	Reusable Volume (Cu.yd.)	Fill Area (Sq.ft.)	Fill Volume (Cu.yd.)	Cum. Cut Vol. (Cu.yd.)	Cum. Reusable Vol. (Cu.yd.)	Cum. Fill Vol. (Cu.yd.)	Cum. Net Vol. (Cu.yd.)
9+23.376	7.8	0	0	230.44	0	0	0	0	0
9+25.000	7.68	0.15	0.15	231.48	15.63	0.15	0.15	15.63	-15.48
9+30.000	6.73	0.43	0.43	236.11	48.54	0.58	0.58	64.17	-63.6
9+35.000	5.72	0.36	0.36	243.45	49.64	0.94	0.94	113.81	-112.88
9+40.000	4.89	0.3	0.3	253.65	51.36	1.23	1.23	165.18	-163.95
9+45.000	4.19	0.25	0.25	266.9	53.79	1.48	1.48	218.96	-217.48
9+50.000	3.6	0.21	0.21	282.32	56.97	1.69	1.69	275.93	-274.24
9+55.000	3.09	0.18	0.18	296.99	60.73	1.87	1.87	336.66	-334.79
9+60.000	2.63	0.16	0.16	311.51	64.97	2.03	2.03	401.63	-399.6
9+65.000	2.23	0.13	0.13	316.28	67.9	2.16	2.16	469.54	-467.37
9+70.000	1.86	0.11	0.11	296.95	65.19	2.28	2.28	534.73	-532.45
9+75.000	1.54	0.1	0.1	281.9	59.51	2.37	2.37	594.24	-591.87
9+80.000	1.27	0.08	0.08	264.65	54.91	2.45	2.45	649.14	-646.69
9+85.000	1.08	0.07	0.07	230.86	48.54	2.52	2.52	697.68	-695.16
9+90.000	0.85	0.06	0.06	197.61	40.74	2.58	2.58	738.42	-735.84
9+95.000	0.61	0.05	0.05	166.93	33.77	2.63	2.63	772.19	-769.56
10+00.000	0.38	0.03	0.03	138.77	27.79	2.66	2.66	799.98	-797.32
10+05.000	0.19	0.02	0.02	116.97	23	2.69	2.69	822.98	-820.3
10+10.000	0.08	0.01	0.01	101.01	19.57	2.7	2.7	842.56	-839.86
10+15.000	0.1	0.02	0.02	90.72	17.29	2.71	2.71	859.85	-857.14
10+17.536	0.13	0.01	0.01	85.51	8.1	2.73	2.73	867.96	-865.23
Total						3	3	868	-865

Alignment: 55th Ave - Rt Pvmnt Edge

Start Sta: 9+23.664

End Sta: 10+06.608

Fill Factor = 1.3

Station	Cut Area (Sq.ft.)	Cut Volume (Cu.yd.)	Reusable Volume (Cu.yd.)	Fill Area (Sq.ft.)	Fill Volume (Cu.yd.)	Cum. Cut Vol. (Cu.yd.)	Cum. Reusable Vol. (Cu.yd.)	Cum. Fill Vol. (Cu.yd.)	Cum. Net Vol. (Cu.yd.)
9+22.695	5.52	0	0	237.79	0	0	0	0	0
9+25.000	3.99	0.41	0.41	241.89	26.62	0.41	0.41	26.62	-26.21
9+30.000	0.75	0.44	0.44	249.41	59.14	0.85	0.85	85.76	-84.91
9+35.000	0	0.07	0.07	263.46	61.73	0.91	0.91	147.49	-146.58
9+40.000	0	0	0	274.58	64.76	0.92	0.92	212.26	-211.34
9+45.000	0	0	0	297.59	75.24	0.92	0.92	287.5	-286.58
9+50.000	0	0	0	297.58	46.14	0.92	0.92	333.64	-332.72
9+55.000	0	0	0	301.19	45.98	0.92	0.92	379.61	-378.7
9+60.000	0	0	0	307.32	46.54	0.92	0.92	426.15	-425.24
9+65.000	0	0	0	303.65	46.85	0.92	0.92	473	-472.09
9+70.000	0	0	0	280.69	44.31	0.92	0.92	517.32	-516.4
9+75.000	0	0	0	222	36.23	0.92	0.92	553.55	-552.63
9+80.000	0	0	0	191.54	27.61	0.92	0.92	581.16	-580.25
9+85.000	0	0	0	170.8	22.8	0.92	0.92	603.96	-603.05
9+90.000	0	0	0	149.52	19.06	0.92	0.92	623.03	-622.11
9+95.000	0	0	0	136.44	16.13	0.92	0.92	639.15	-638.24
10+00.000	0	0	0	129.27	14.47	0.92	0.92	653.62	-652.71
10+05.000	0	0	0	124.89	13.57	0.92	0.92	667.19	-666.27
10+06.421	0.05	0	0	118.54	3.6	0.92	0.92	670.79	-669.87
Total						1	1	671	-670

Alignment: ALIPROF-I94EB

Start Sta: 946+25.000

End Sta: 947+25.000

Fill Factor = 1.3

Station	Cut Area (Sq.ft.)	Cut Volume (Cu.yd.)	Reusable Volume (Cu.yd.)	Fill Area (Sq.ft.)	Fill Volume (Cu.yd.)	Cum. Cut Vol. (Cu.yd.)	Cum. Reusable Vol. (Cu.yd.)	Cum. Fill Vol. (Cu.yd.)	Cum. Net Vol. (Cu.yd.)
946+25.00	3.52	0	0	0.97	0	0	0	0	0
946+50.00	67.76	33.01	33.01	0.17	0.69	33.01	33.01	0.69	32.32
946+75.00	87.53	71.89	71.89	0.33	0.30	104.9	104.9	0.99	103.91
947+00.00	89.3	81.87	81.87	0.15	0.29	186.77	186.77	1.27	185.50
947+25.00	20.58	50.87	50.87	0.15	0.18	237.64	237.64	1.46	236.18
Total						238	238	1	236

Alignment: ALIPROF-I94EB

Start Sta: 945+75.000

Fill Factor = 1.3

End Sta: 947+75.000

Station	Cut Area (Sq.ft.)	Cut Volume (Cu.yd.)	Reusable Volume (Cu.yd.)	Fill Area (Sq.ft.)	Fill Volume (Cu.yd.)	Cum. Cut Vol. (Cu.yd.)	Cum. Reusable Vol. (Cu.yd.)	Cum. Fill Vol. (Cu.yd.)	Cum. Net Vol. (Cu.yd.)
945+75.000	1.77	0	0	0.15	0	0	0	0	0
946+00.000	0.6	1.1	1.1	41.29	24.94	1.1	1.1	24.94	-23.84
946+24.990	8.73	4.32	4.32	0.98	25.43	5.41	5.41	50.37	-44.95
946+50.000	426.29	201.48	201.48	0.17	0.69	206.89	206.89	51.06	155.83
946+75.000	605.85	477.84	477.84	0.33	0.3	684.74	684.74	51.36	633.38
947+00.000	472.3	499.15	499.15	0.15	0.29	1183.88	1183.88	51.65	1132.24
947+25.000	36.72	235.66	235.66	0.16	0.19	1419.54	1419.54	51.83	1367.71
947+50.000	6.92	20.21	20.21	37.01	22.37	1439.75	1439.75	74.2	1365.55
947+75.000	0.58	3.47	3.47	0	22.27	1443.22	1443.22	96.47	1346.75
Total						1443	1443	96	1347
									-236
								[Excavation Structure]	1111

Alignment: ALIPROF-I94WB

Start Sta: 946+50.000

Fill Factor = 1.3

End Sta: 947+50.000

Station	Cut Area (Sq.ft.)	Cut Volume (Cu.yd.)	Reusable Volume (Cu.yd.)	Fill Area (Sq.ft.)	Fill Volume (Cu.yd.)	Cum. Cut Vol. (Cu.yd.)	Cum. Reusable Vol. (Cu.yd.)	Cum. Fill Vol. (Cu.yd.)	Cum. Net Vol. (Cu.yd.)
946+50.00	29.19	0	0	0.89	0	0	0	0	0
946+75.00	49.23	36.3	36.3	0.57	0.88	36.3	36.3	0.88	35.42
947+00.00	62.48	51.72	51.72	0.55	0.68	88.02	88.02	1.56	86.46
947+25.00	42.26	48.49	48.49	0.39	0.57	136.51	136.51	2.13	134.38
947+50.00	1.6	20.3	20.3	15.92	9.82	156.81	156.81	11.95	144.86
Total						157	157	12	145

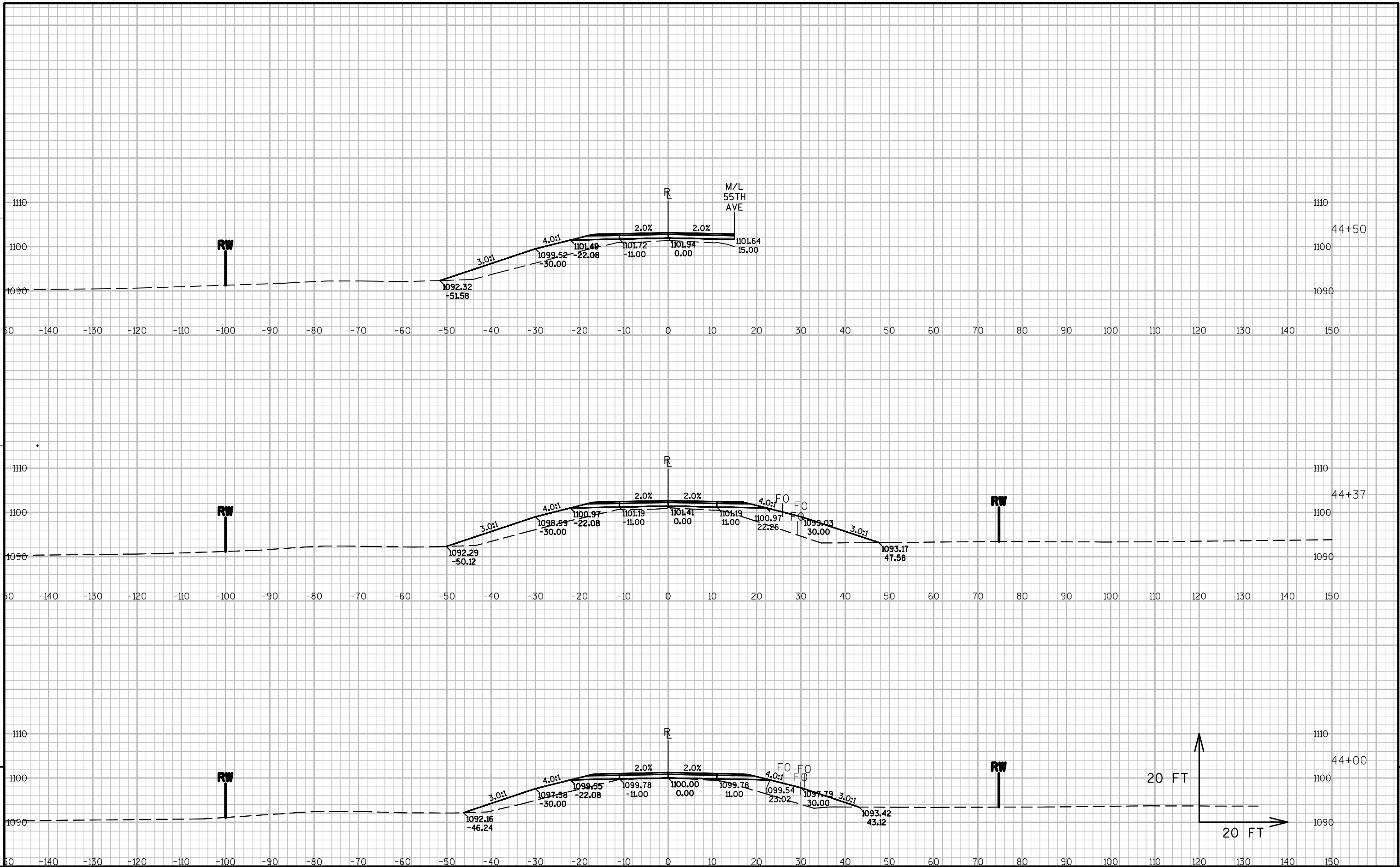
Alignment: ALIPROF-I94WB

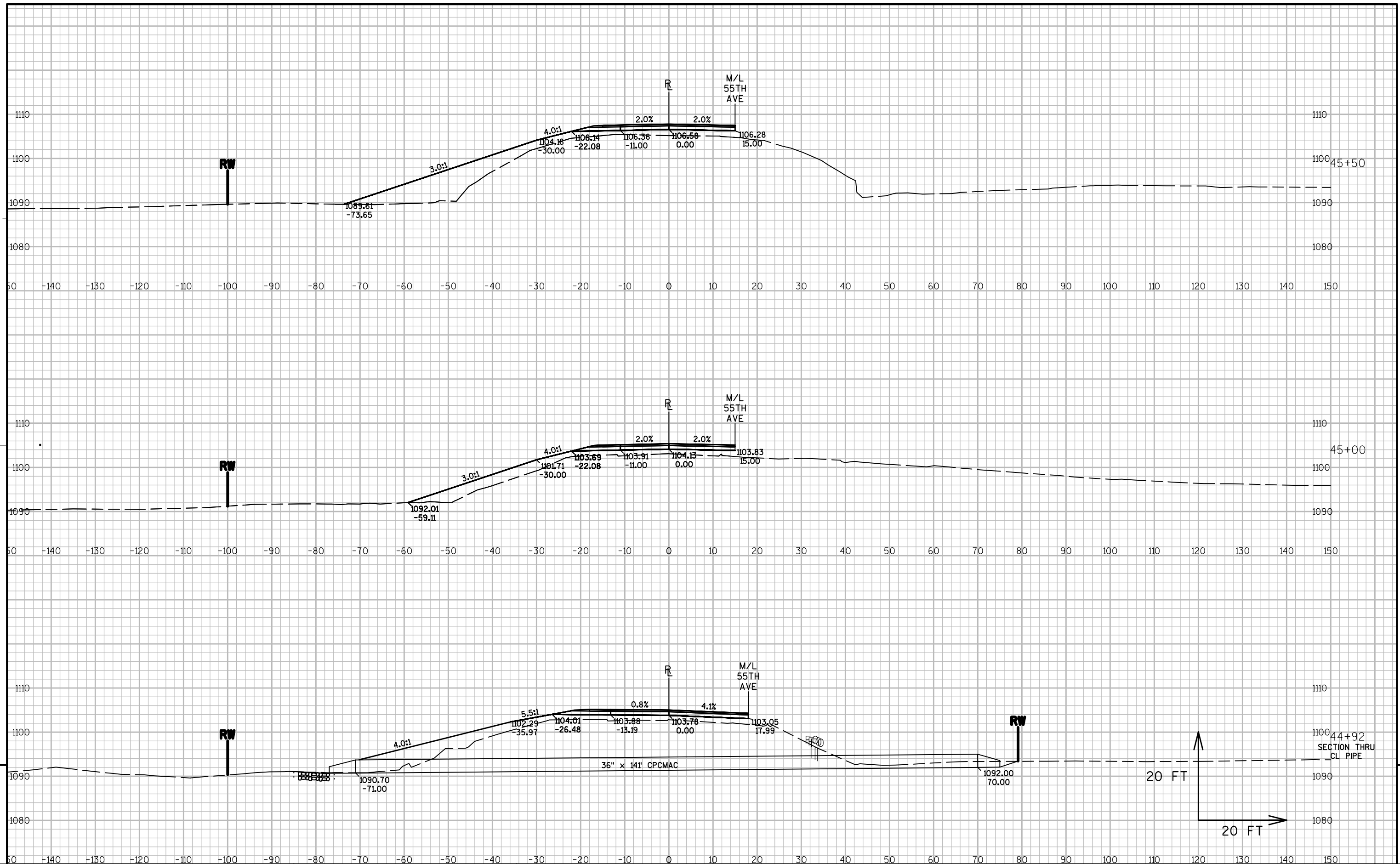
Start Sta: 946+00.000

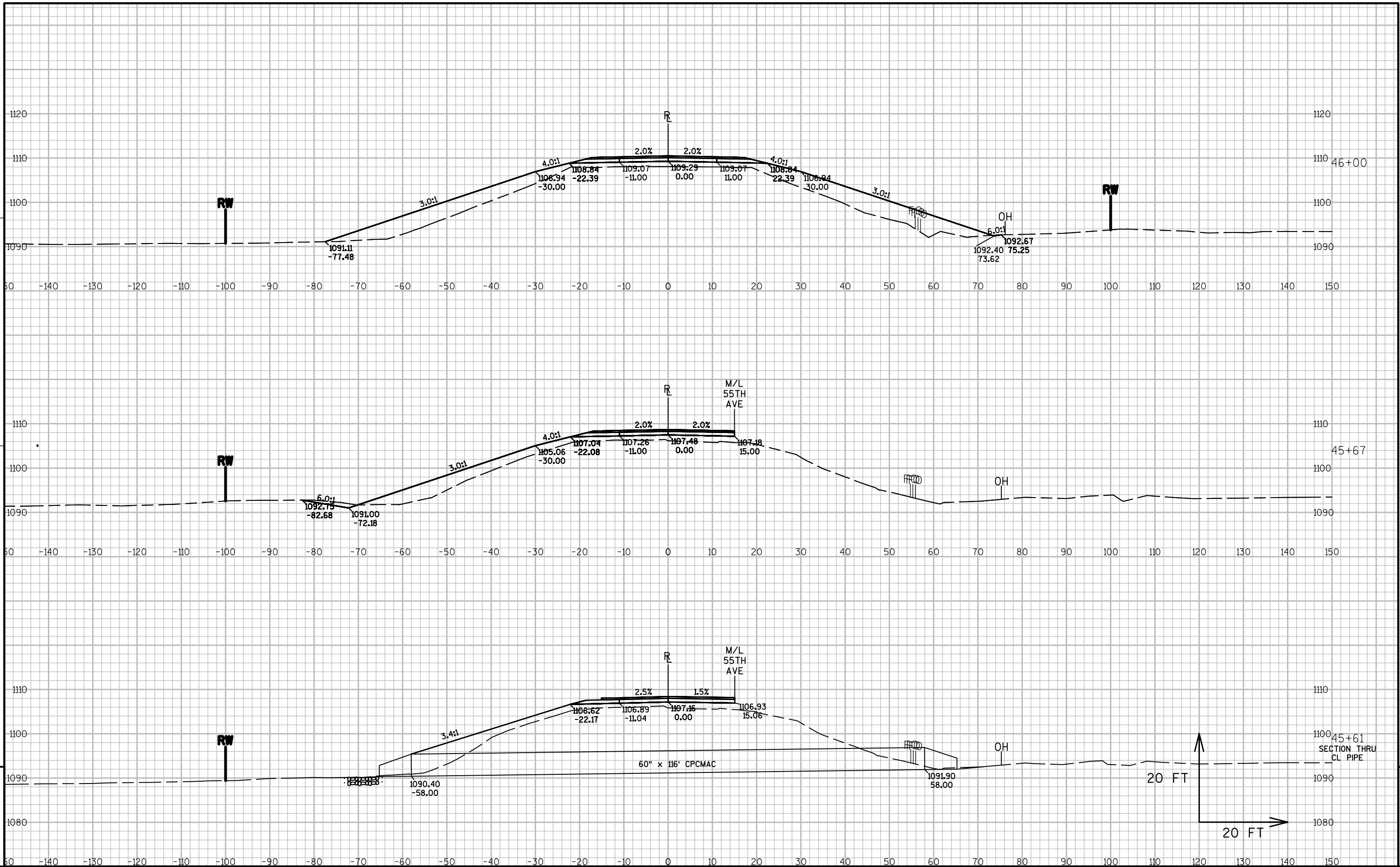
Fill Factor = 1.3

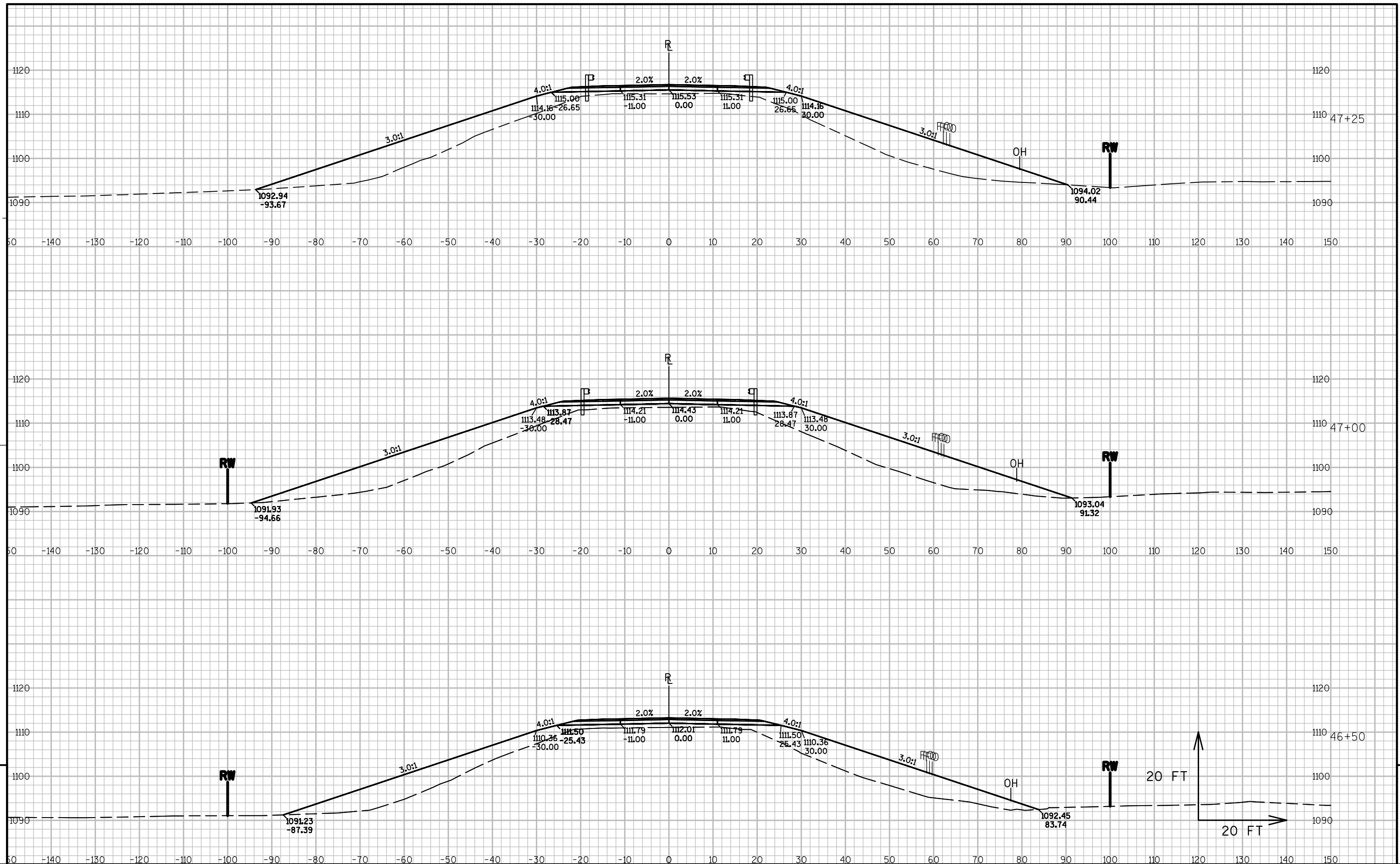
End Sta: 948+00.000

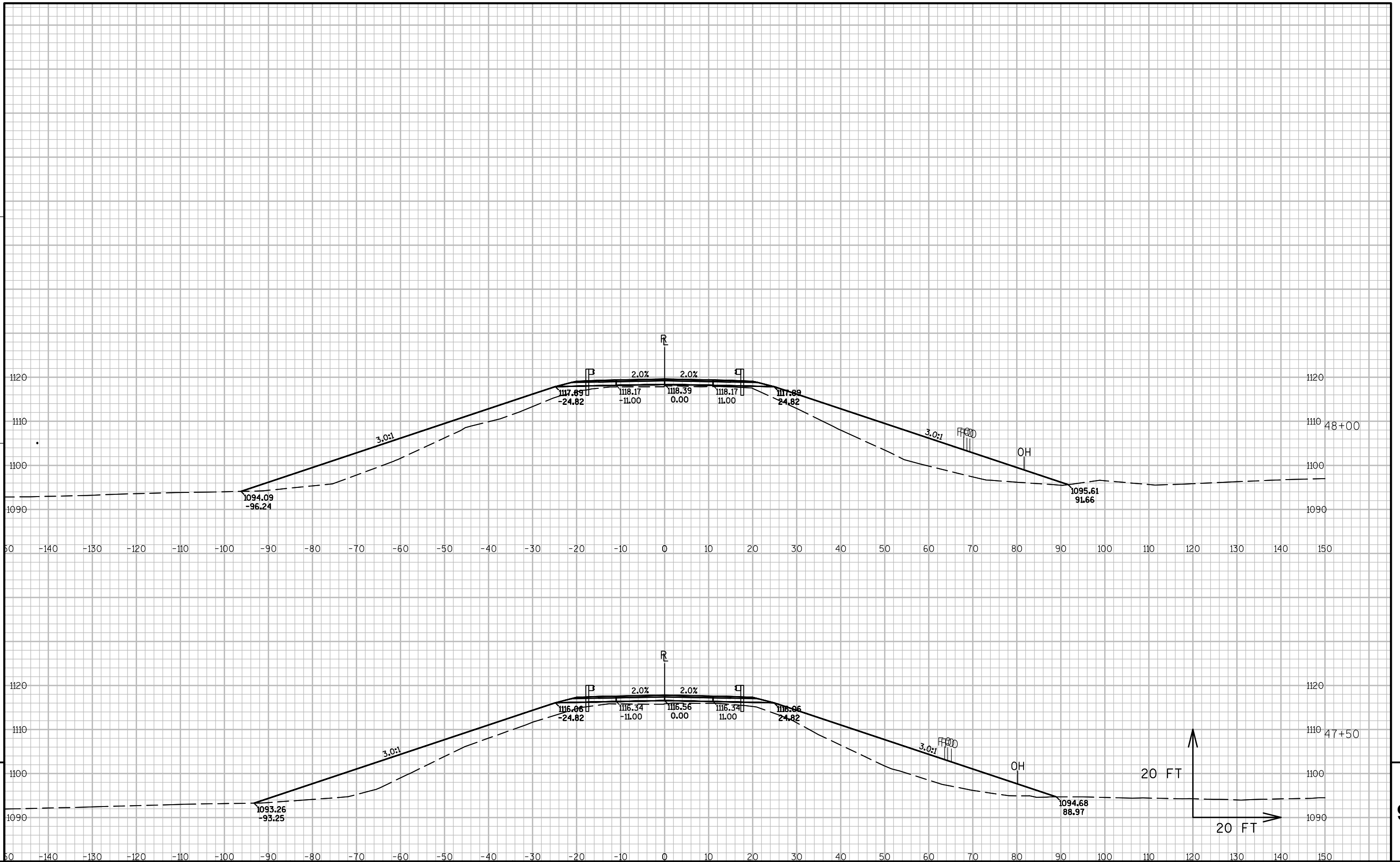
Station	Cut Area (Sq.ft.)	Cut Volume (Cu.yd.)	Reusable Volume (Cu.yd.)	Fill Area (Sq.ft.)	Fill Volume (Cu.yd.)	Cum. Cut Vol. (Cu.yd.)	Cum. Reusable Vol. (Cu.yd.)	Cum. Fill Vol. (Cu.yd.)	Cum. Net Vol. (Cu.yd.)
946+00.000	1.16	0	0	4.91	0	0	0	0	0
946+25.000	0.85	0.93	0.93	11.98	10.17	0.93	0.93	10.17	-9.24
946+50.000	106.79	49.83	49.83	0.89	7.75	50.76	50.76	17.92	32.85
946+75.000	404.27	236.6	236.6	0.57	0.88	287.37	287.37	18.8	268.57
947+00.000	447.64	394.4	394.4	0.55	0.67	681.77	681.77	19.47	662.3
947+25.000	199.28	299.5	299.5	0.39	0.57	981.27	981.27	20.04	961.23
947+50.000	60.27	120.16	120.16	17.47	10.75	1101.43	1101.43	30.79	1070.64
947+75.000	1.11	28.42	28.42	32.38	30.01	1129.85	1129.85	60.79	1069.05
948+00.000	0.44	0.72	0.72	0.03	19.51	1130.56	1130.56	80.3	1050.27
Total						1131	1131	80	1050
									-145
								[Excavation Structure]	905

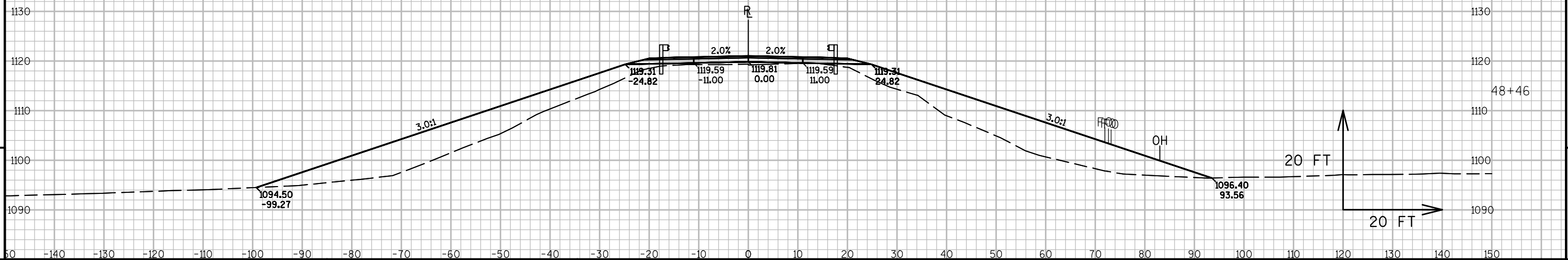
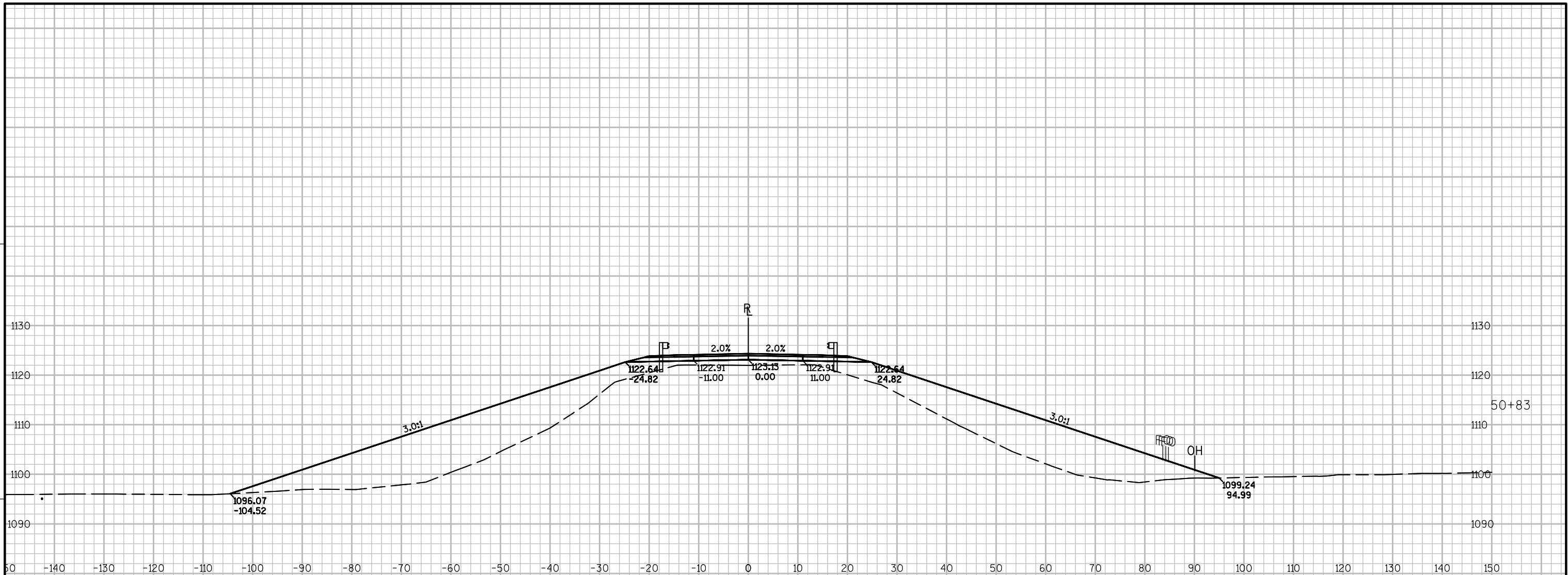


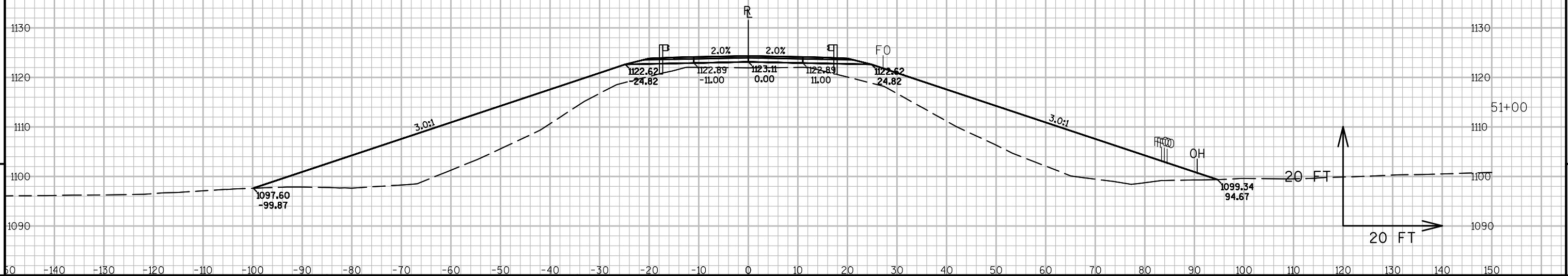
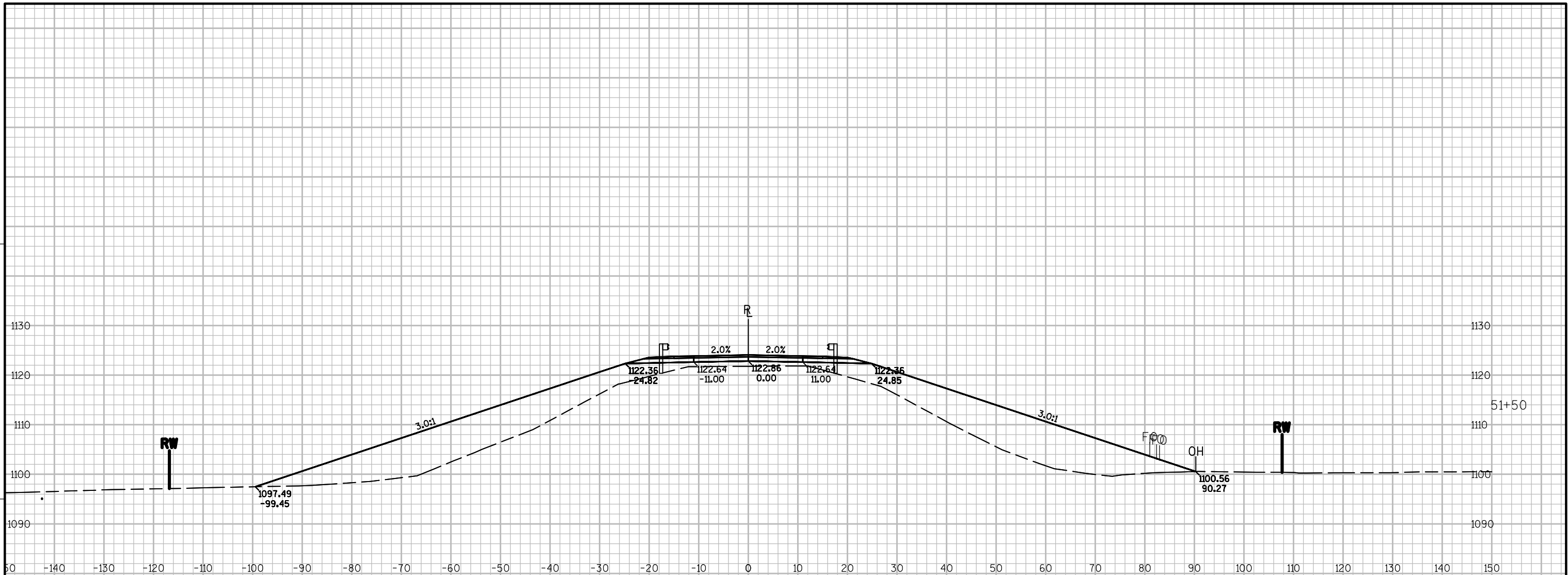


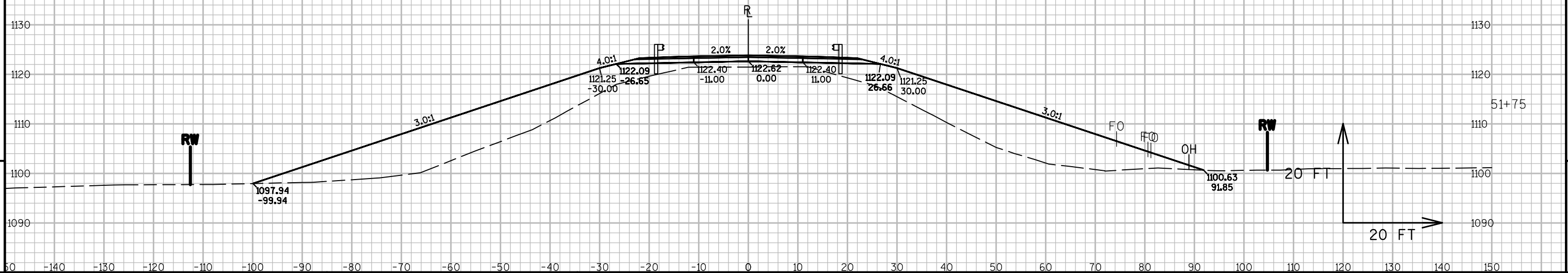
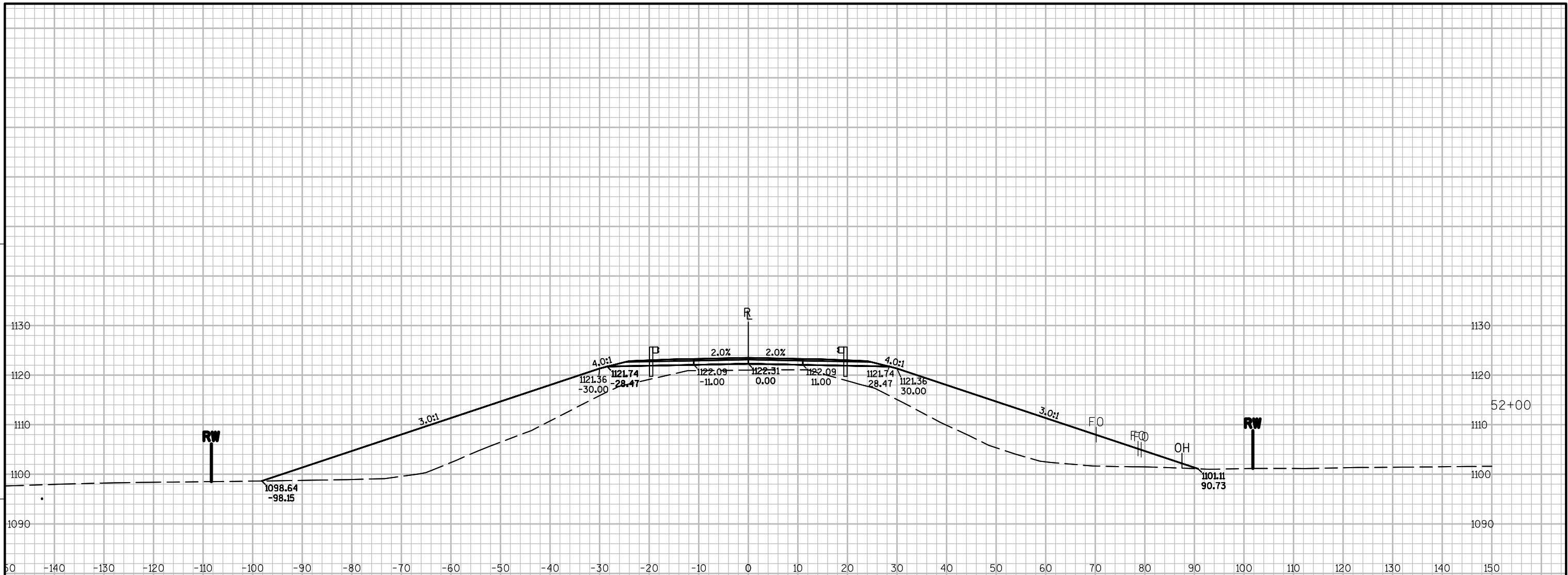


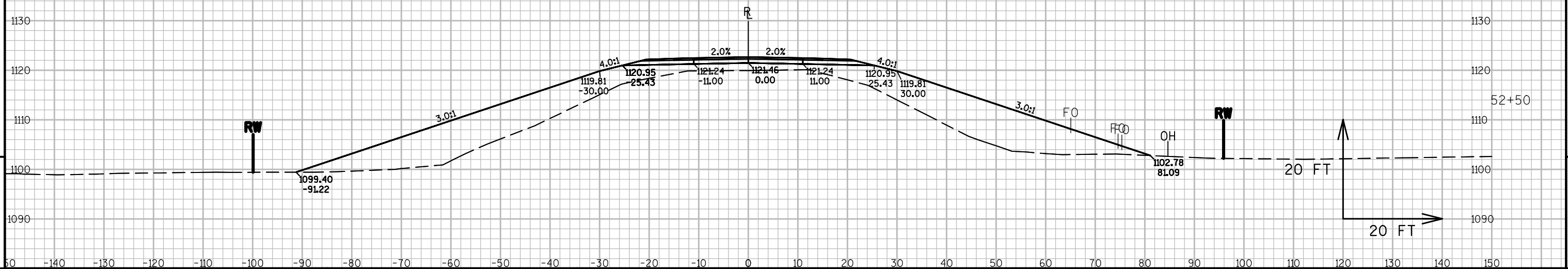
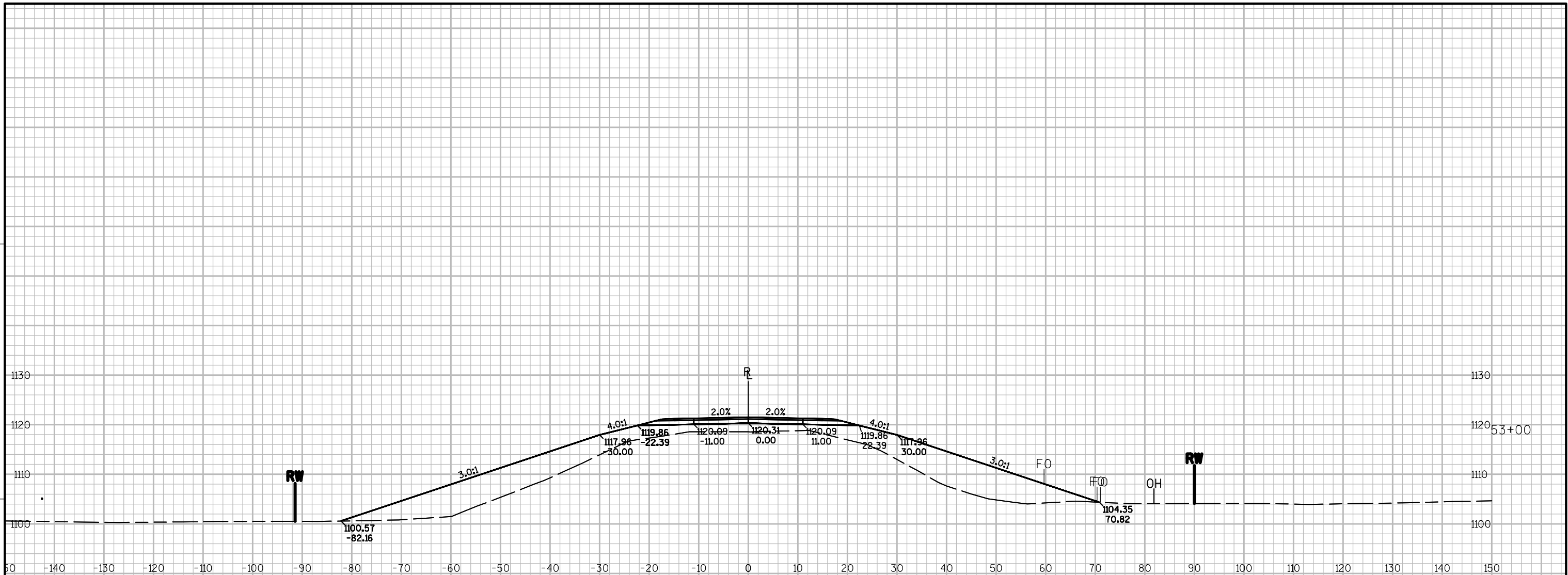


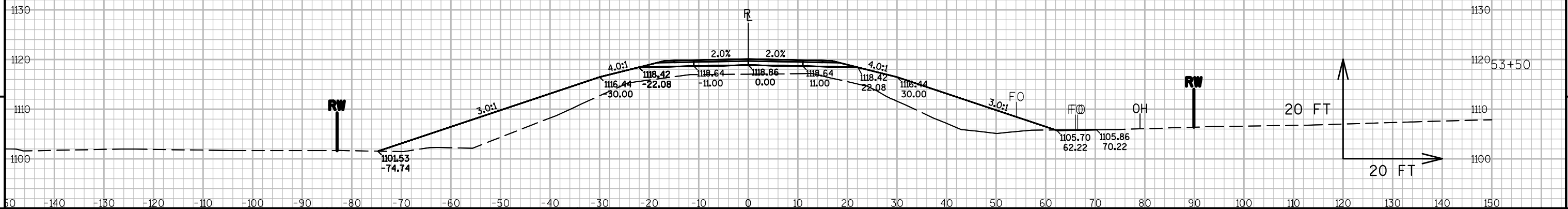
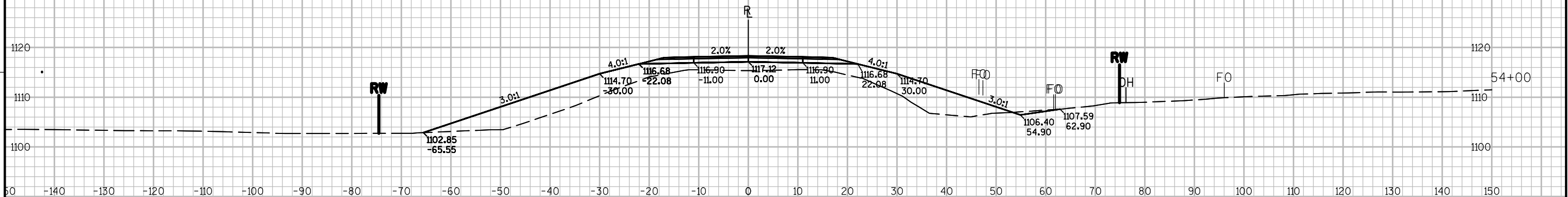
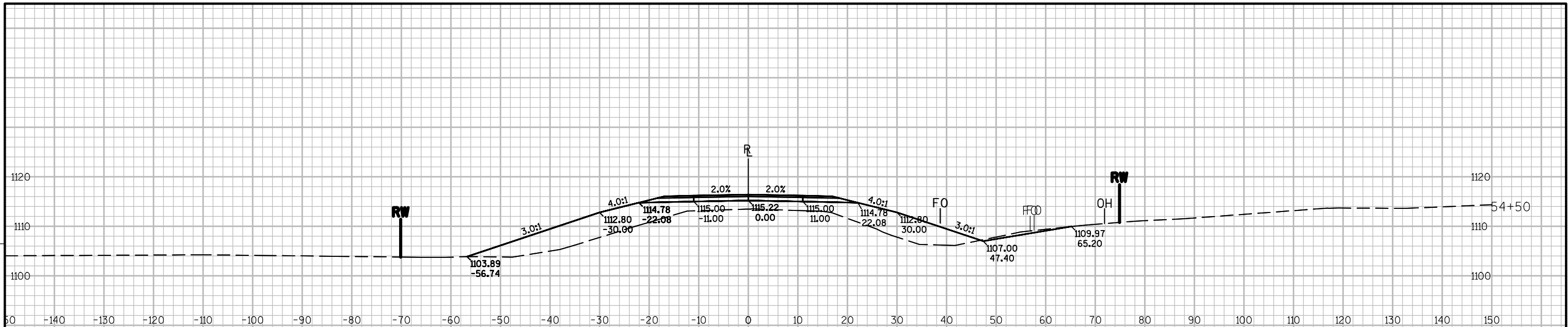


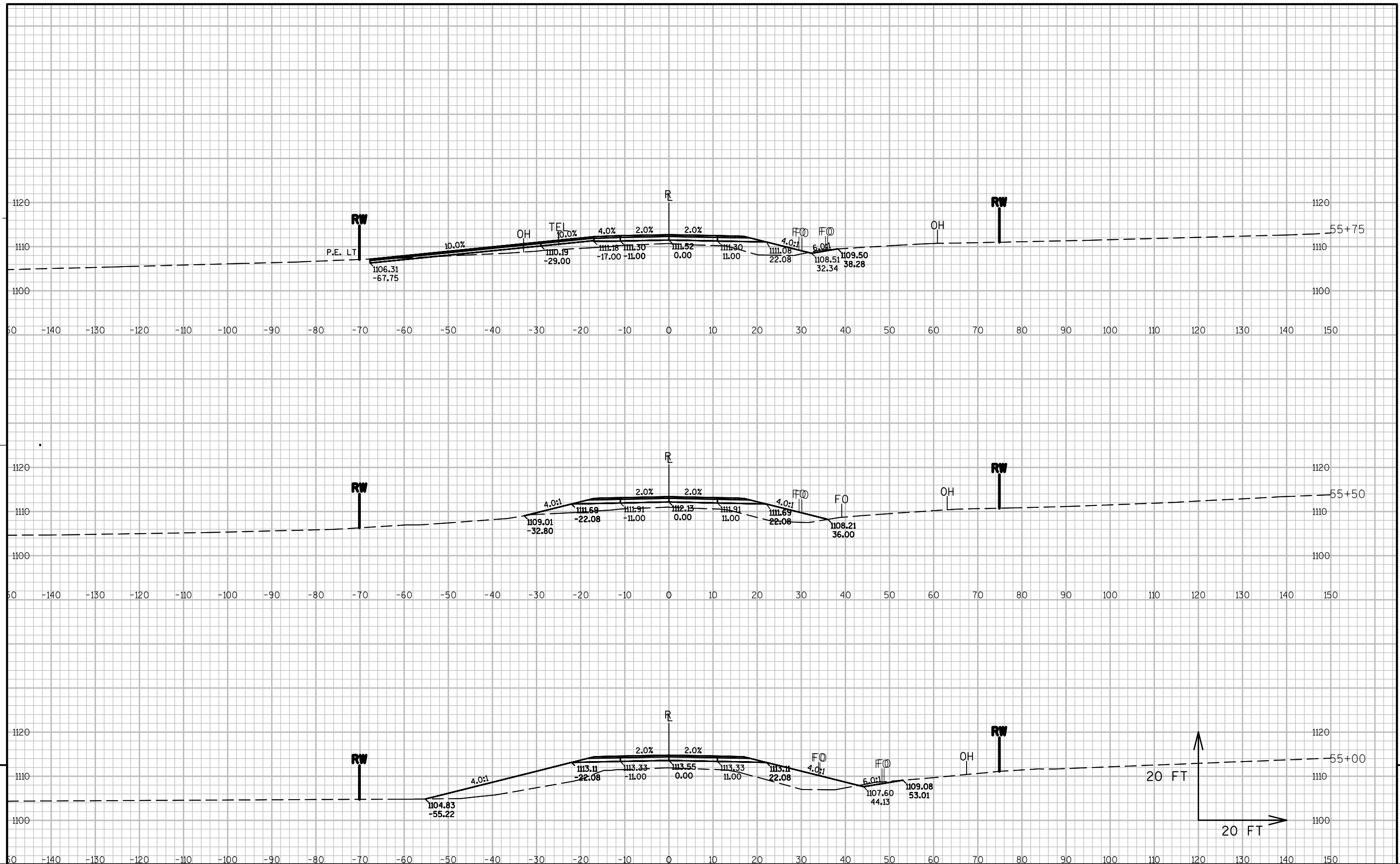


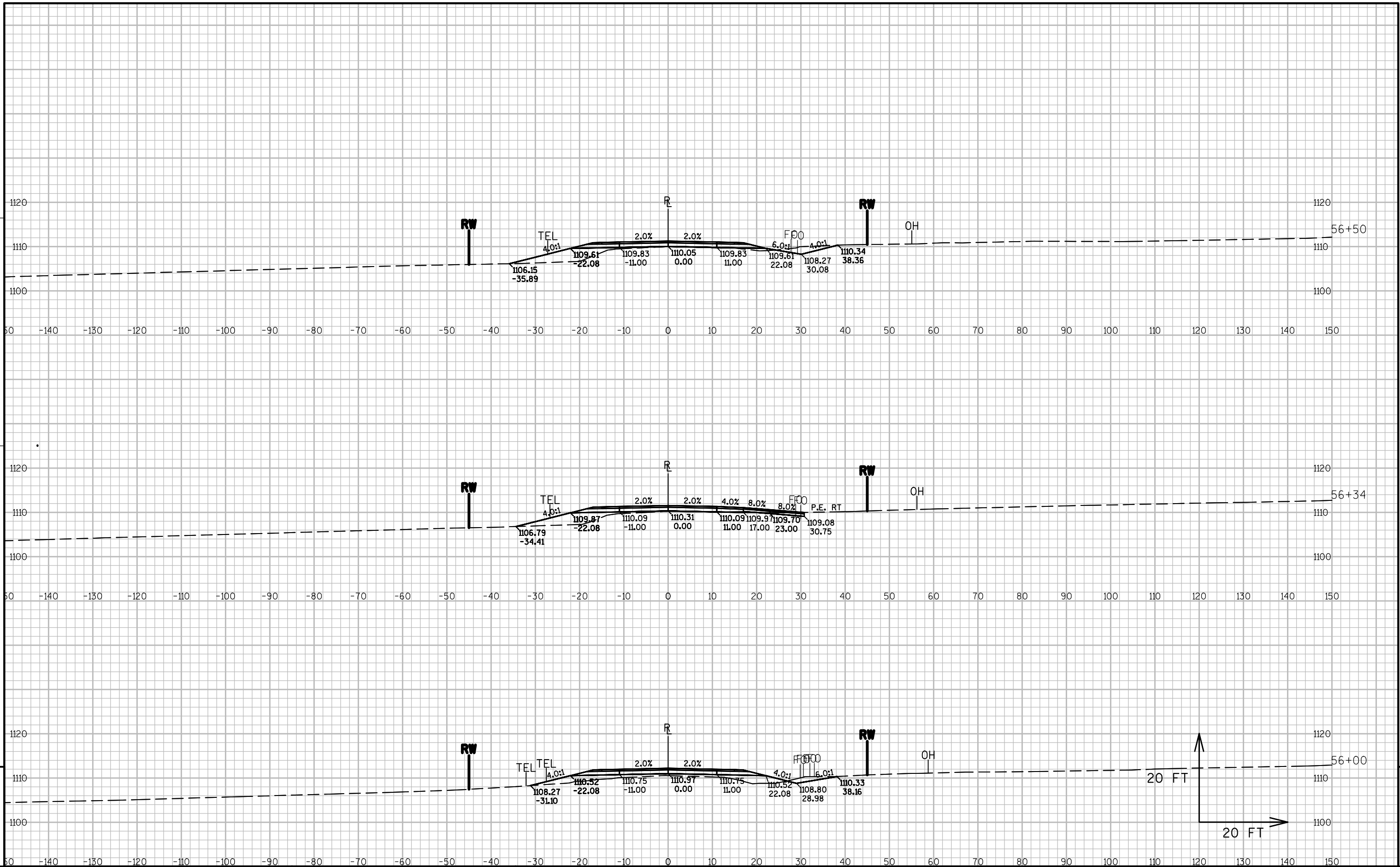


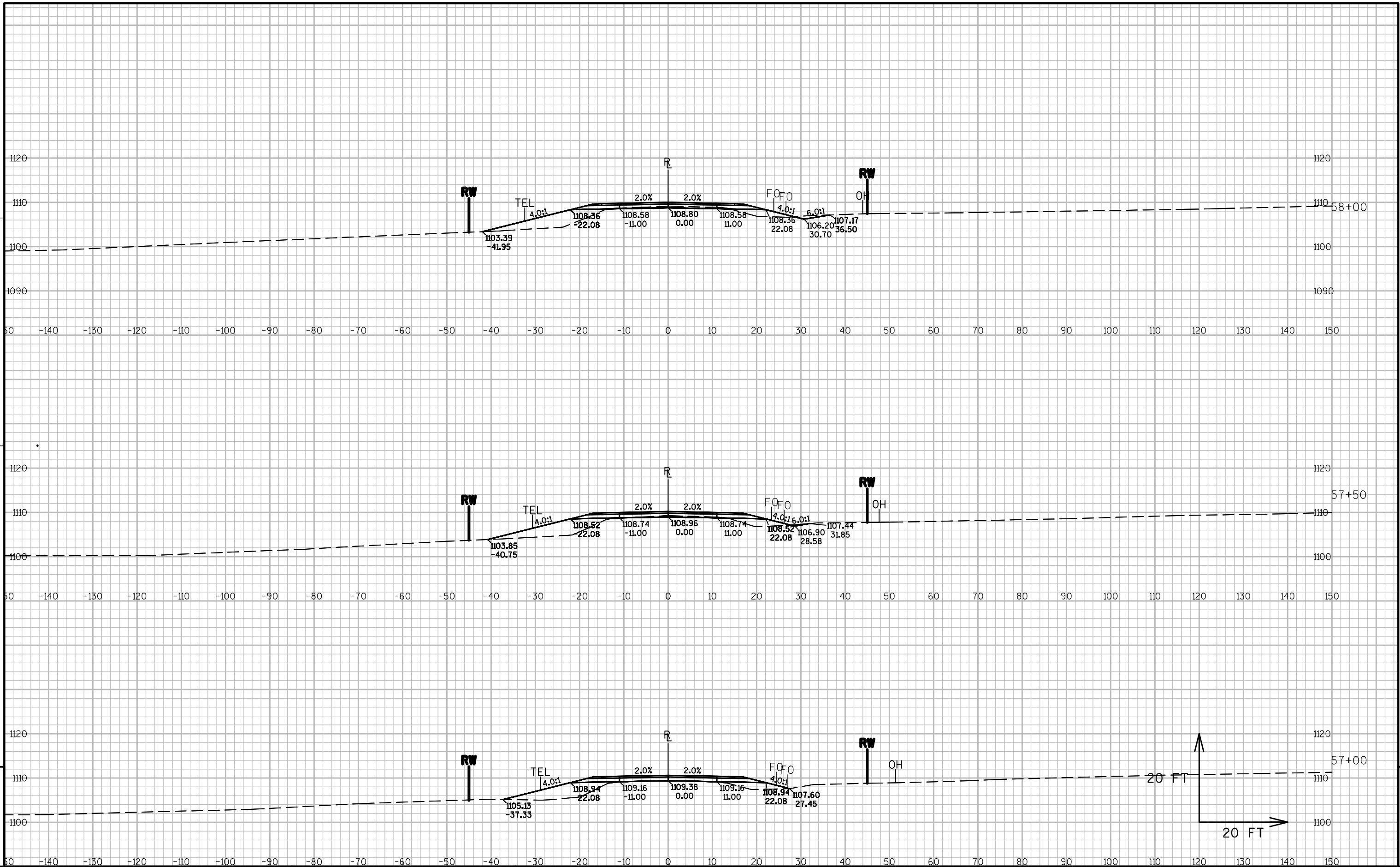


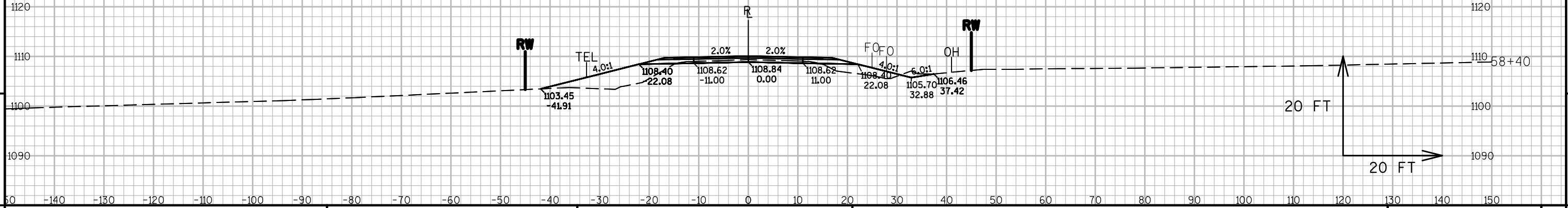
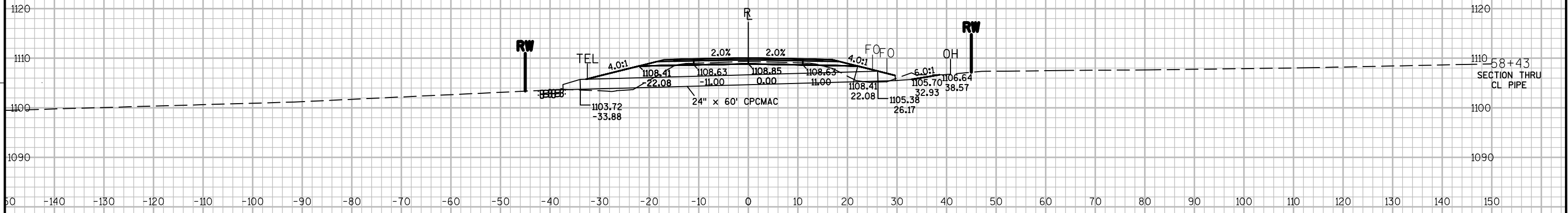
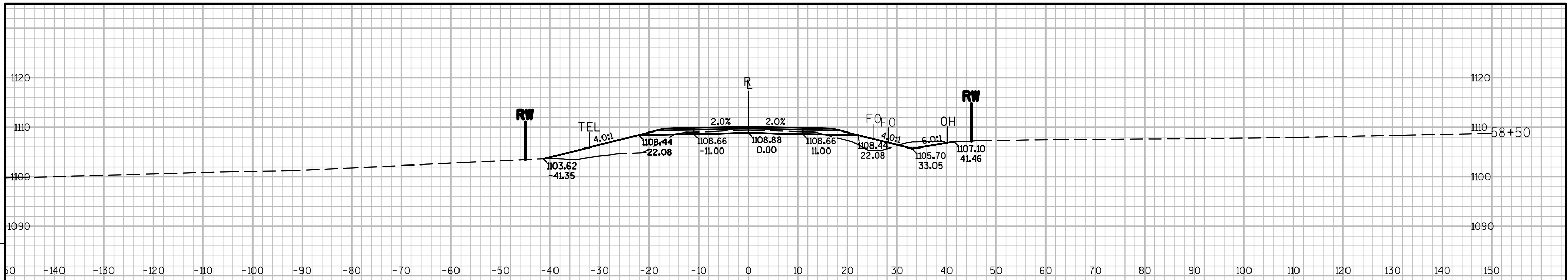


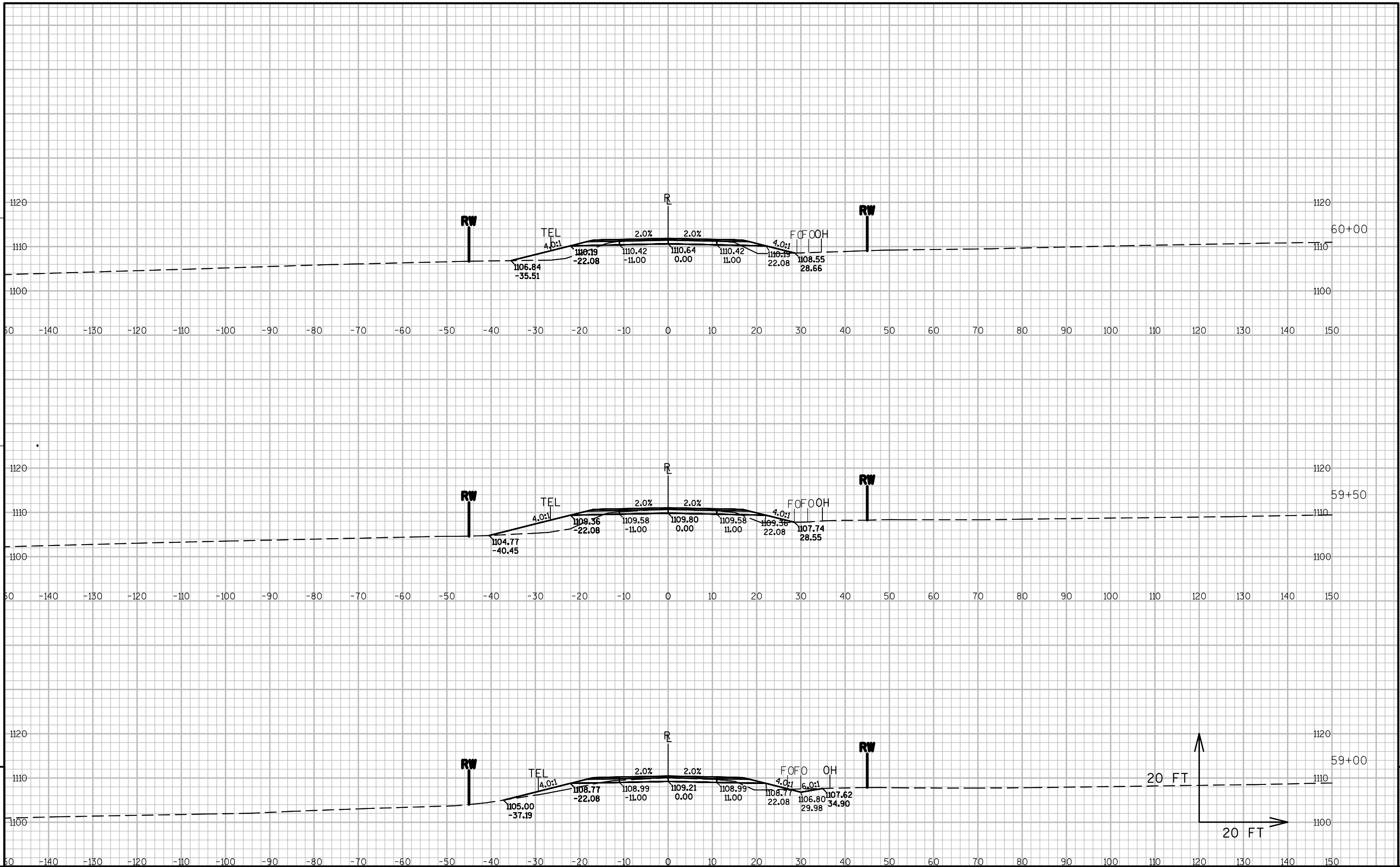


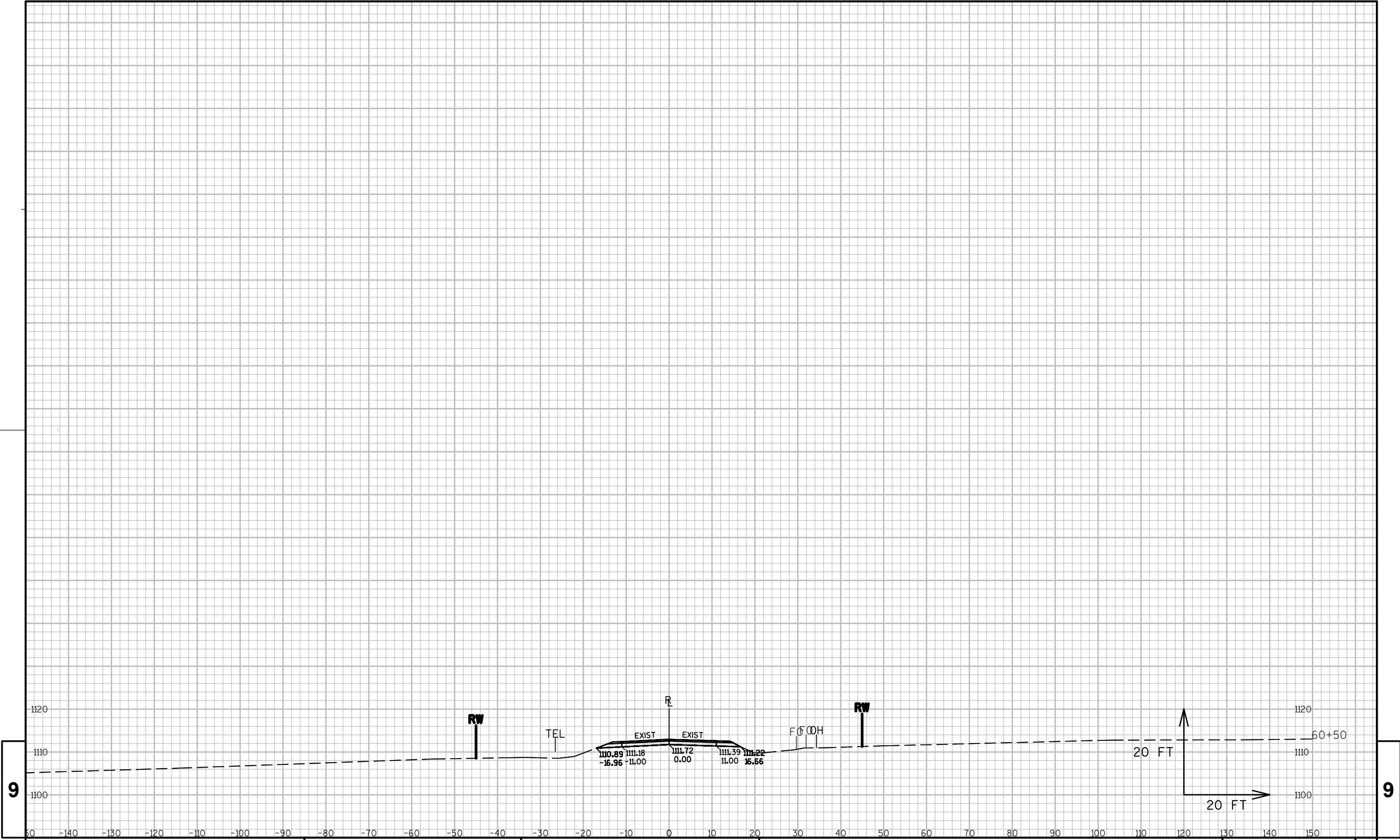


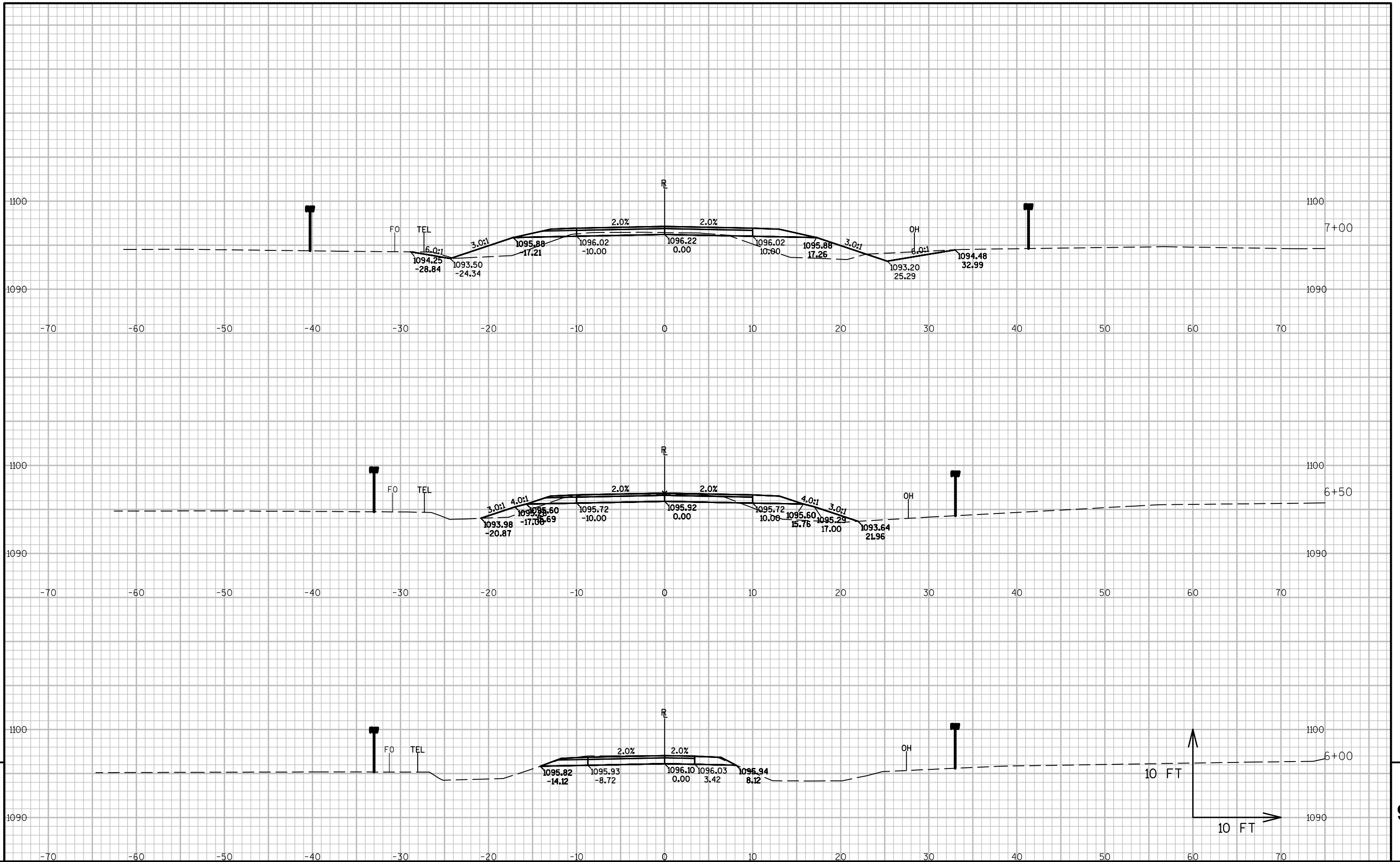


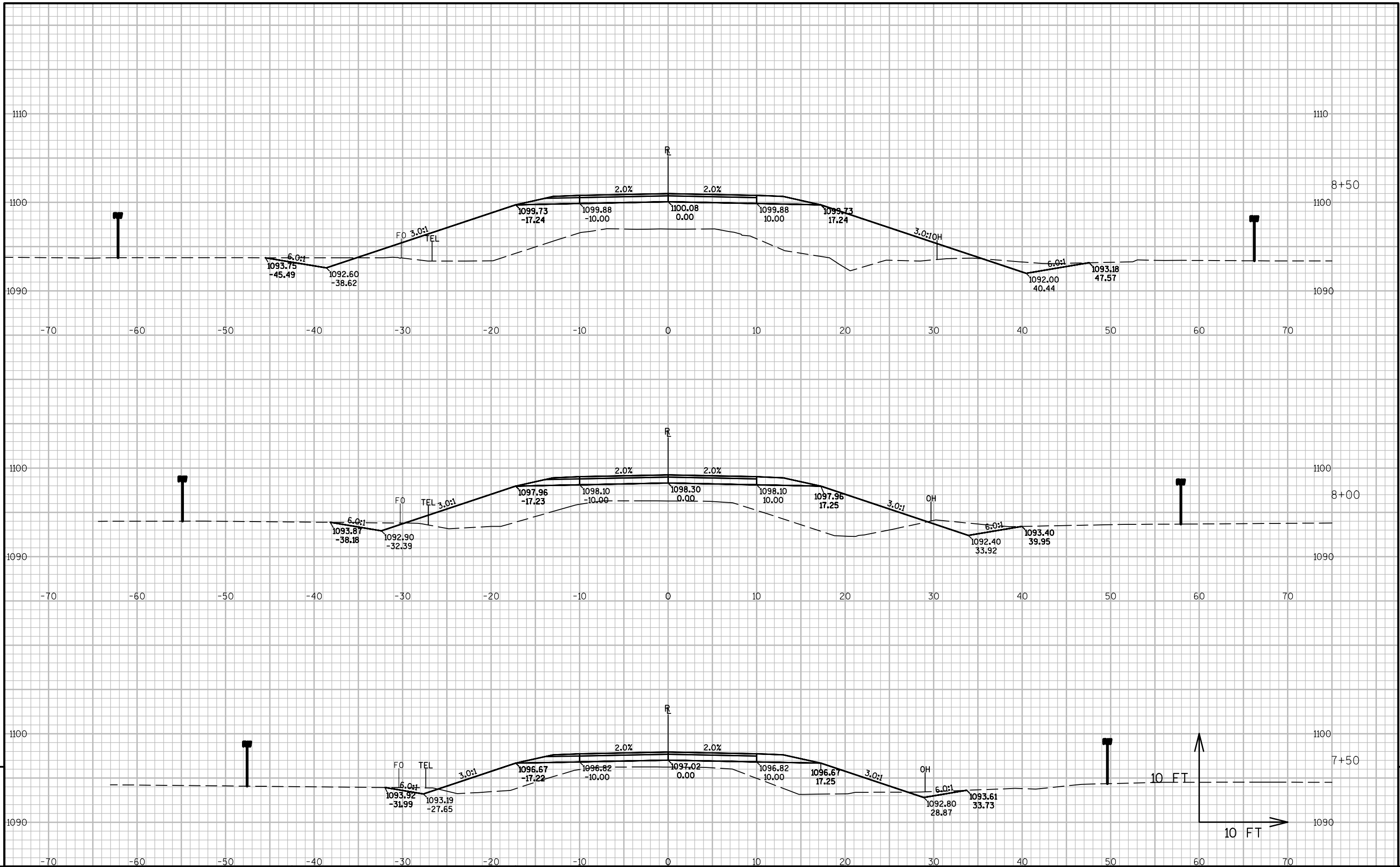


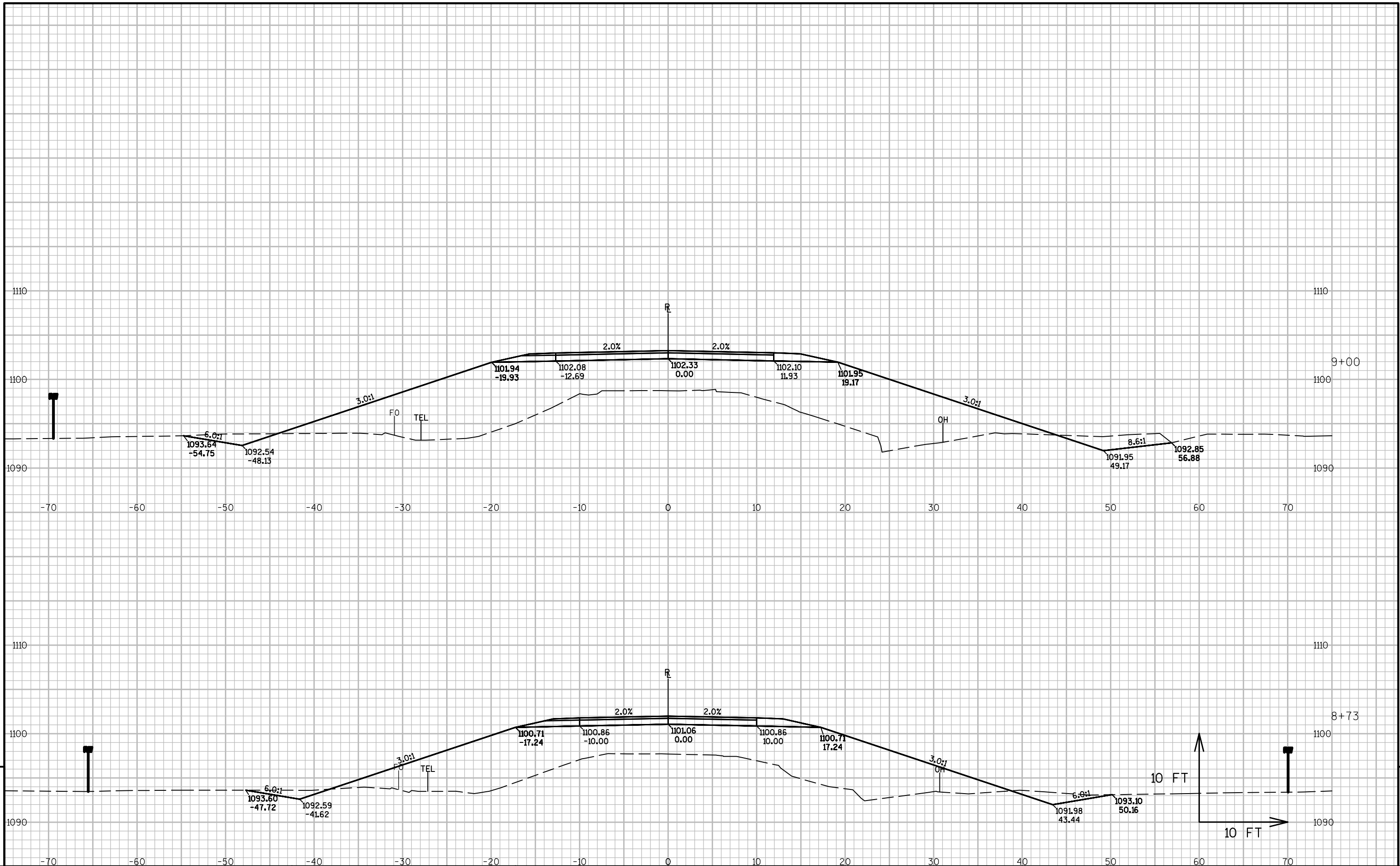


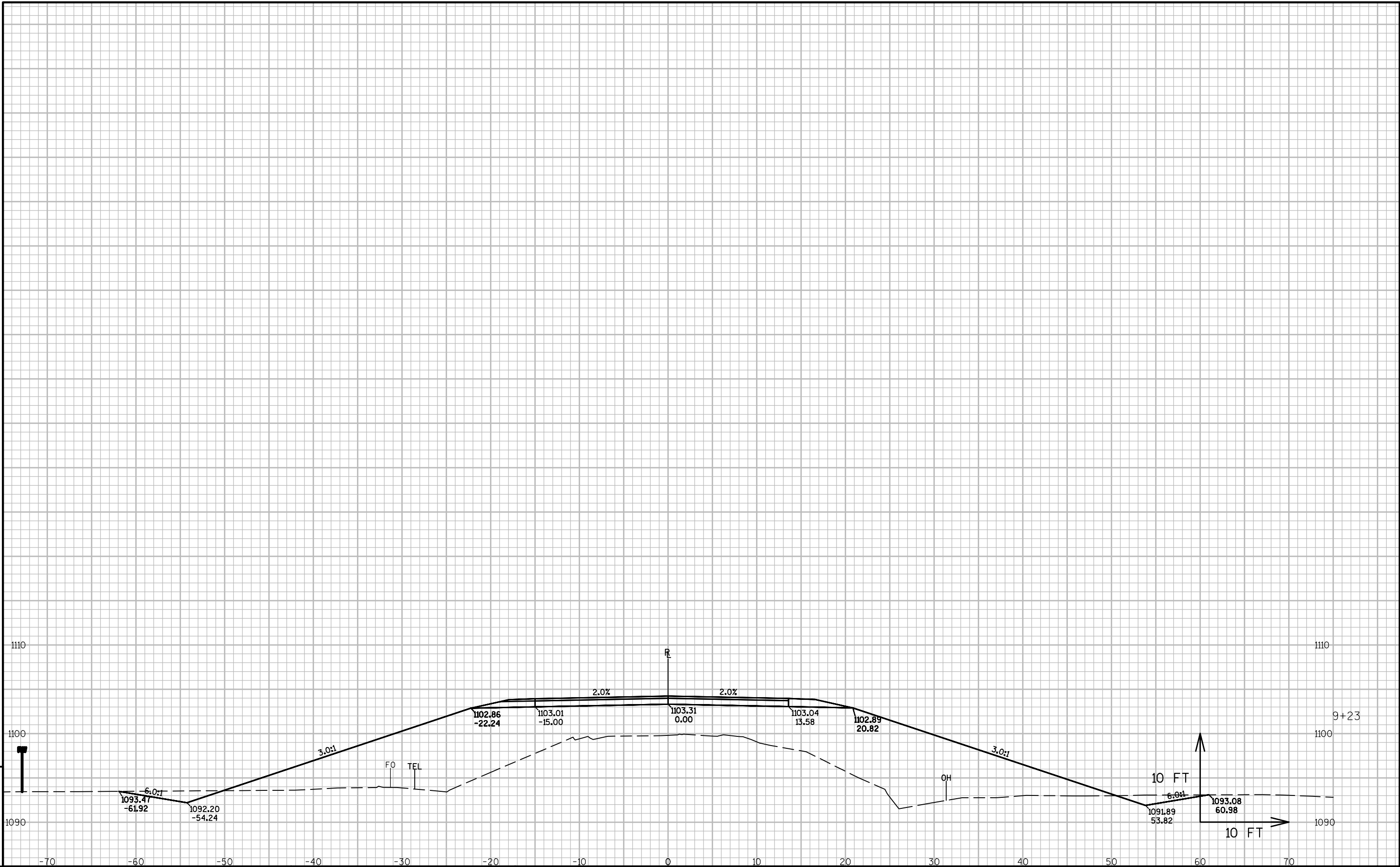


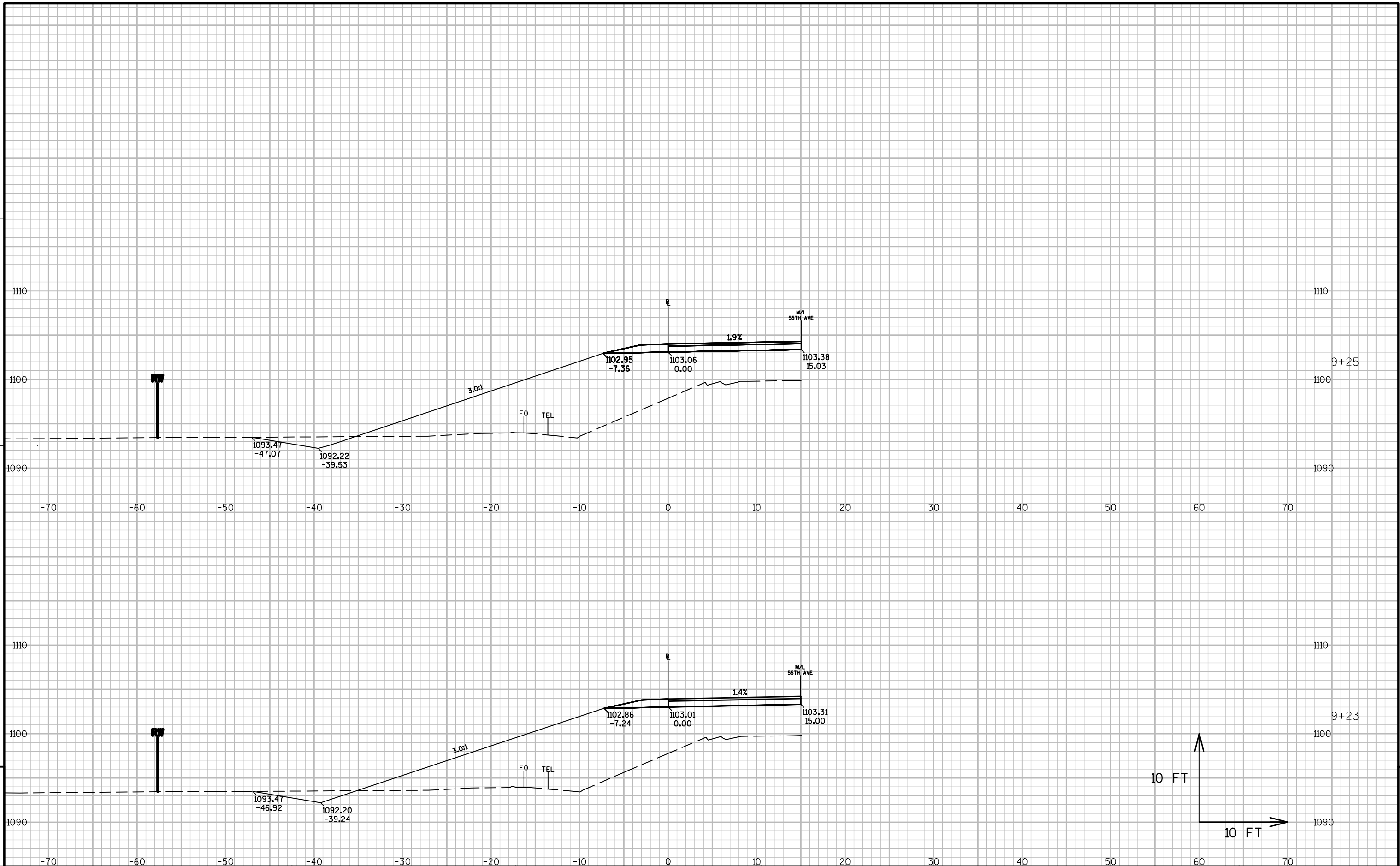


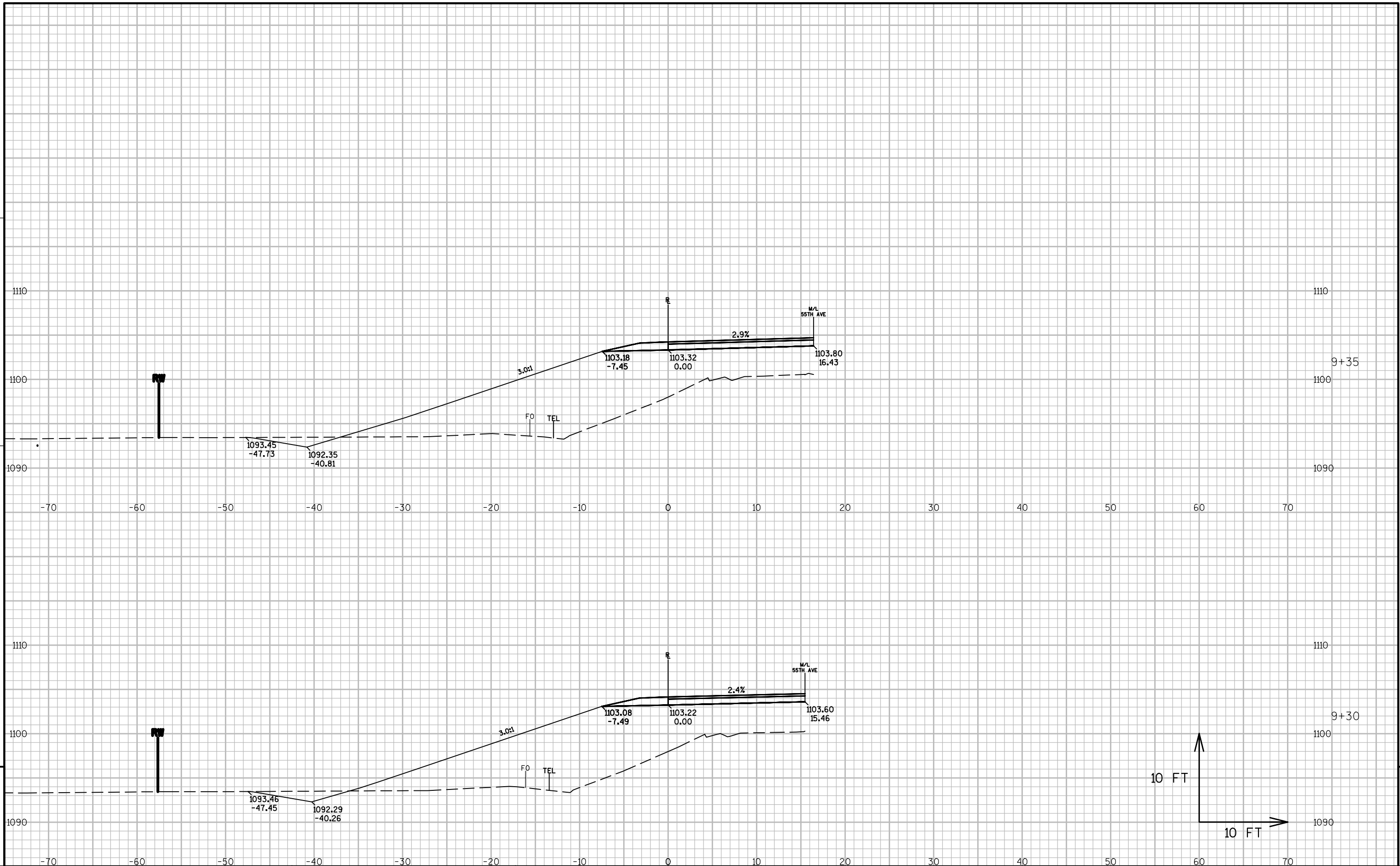


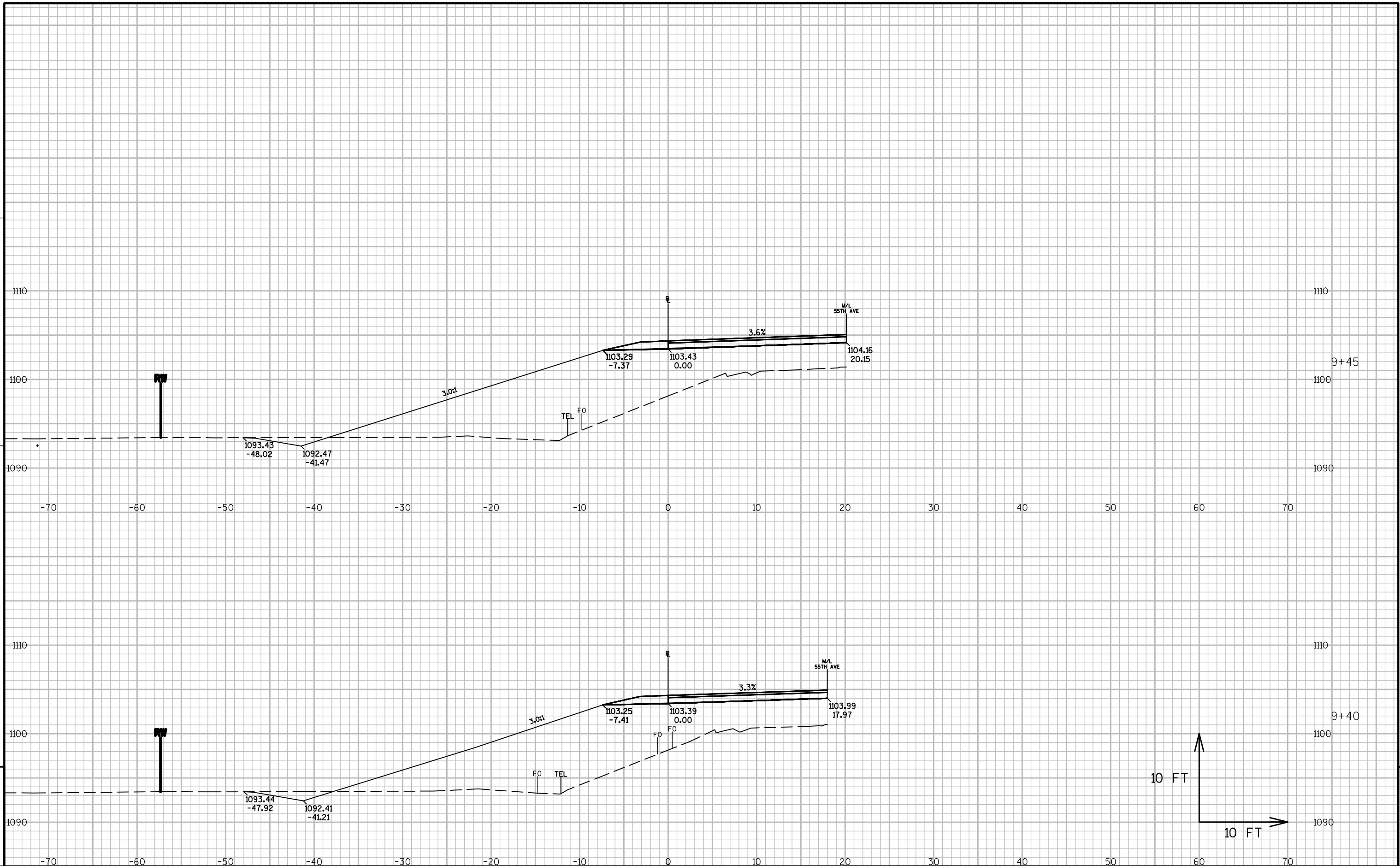


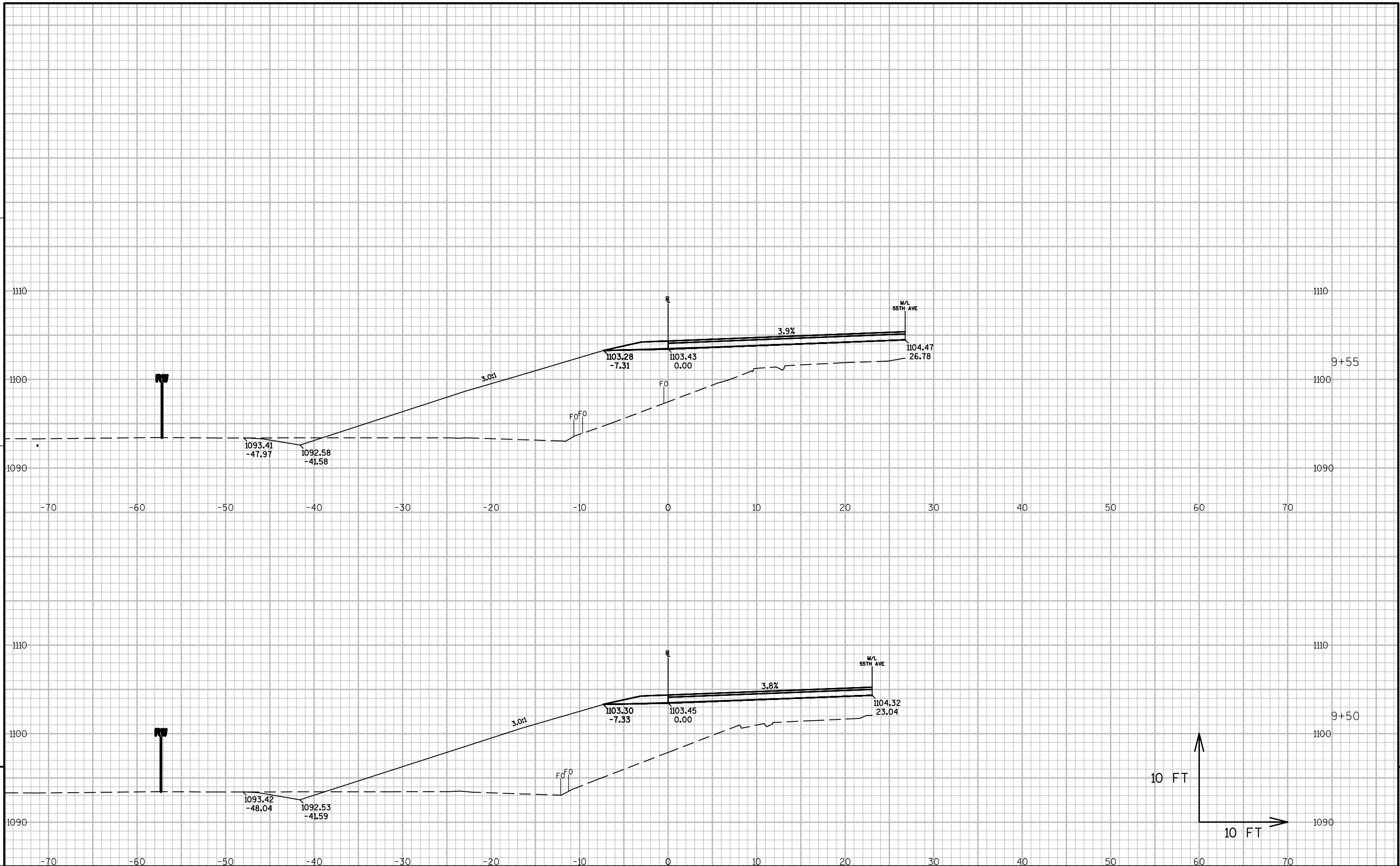


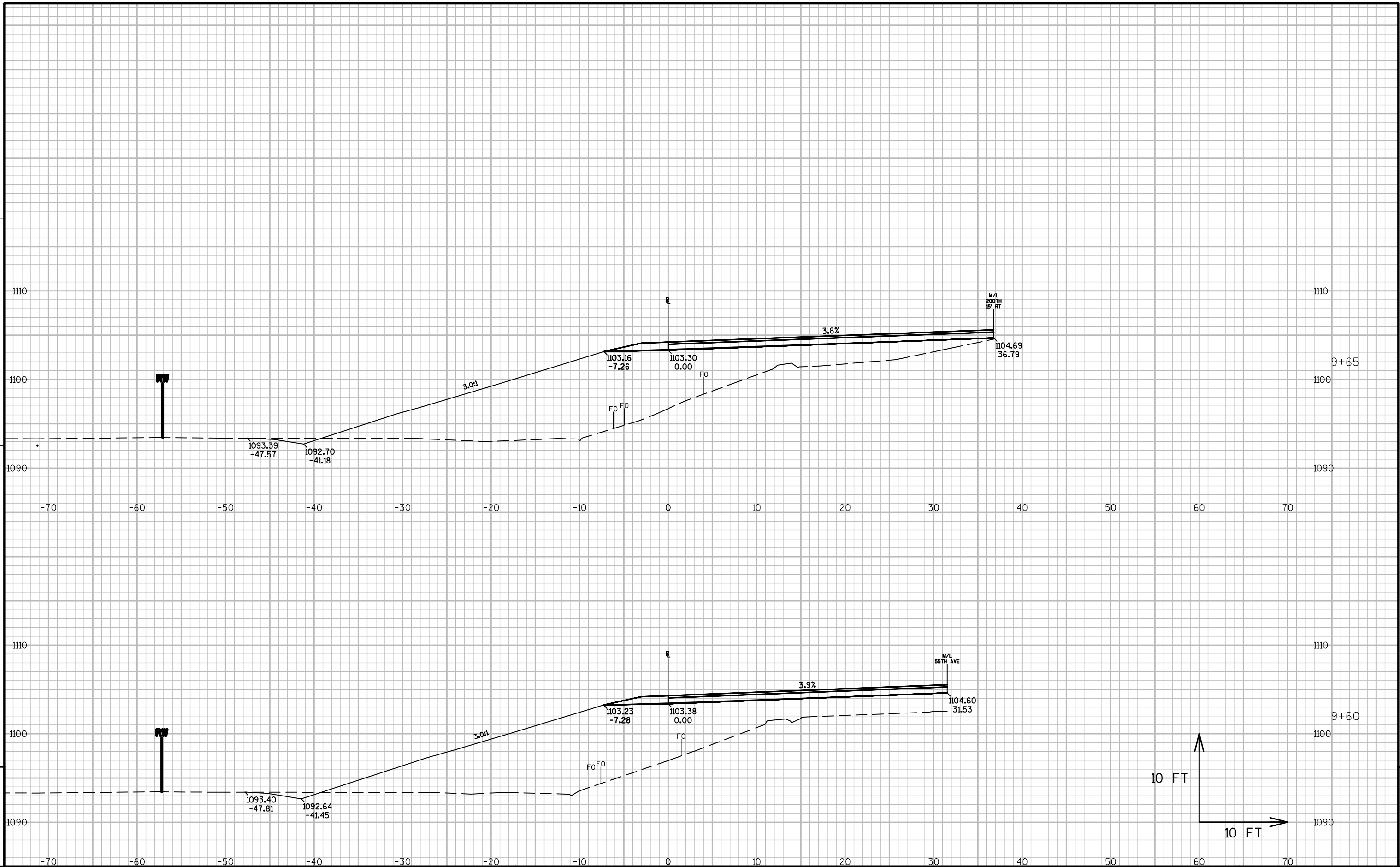


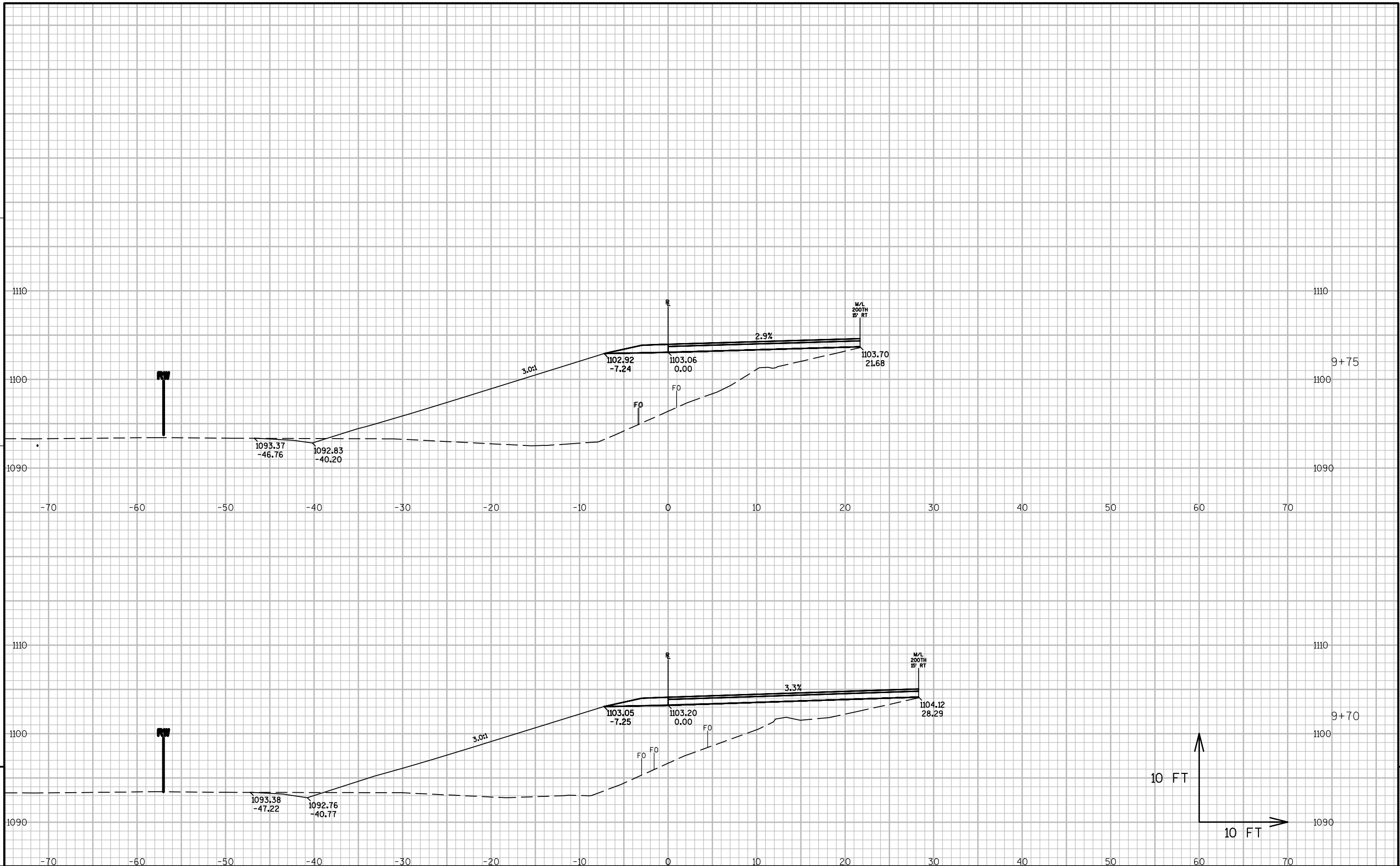


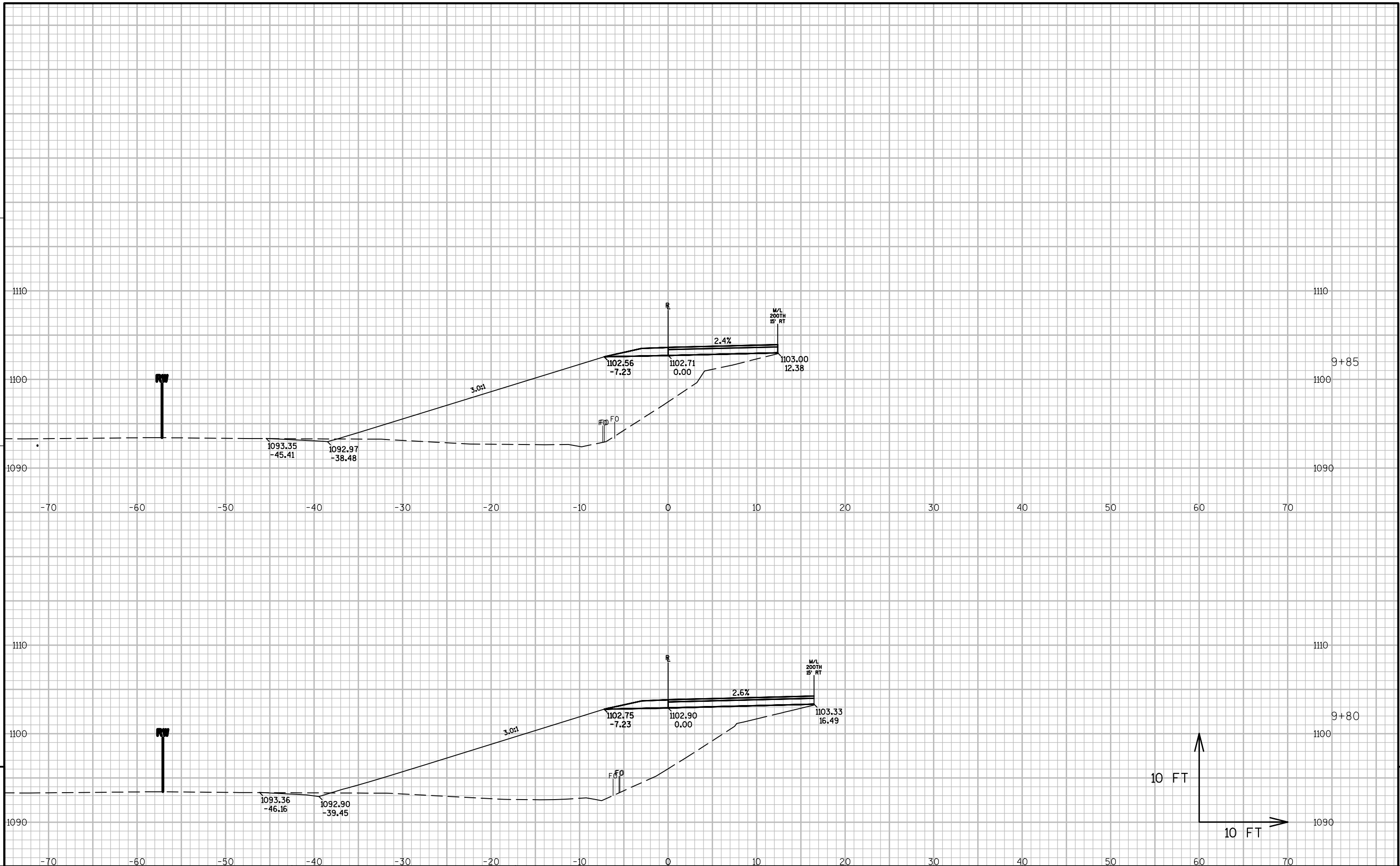


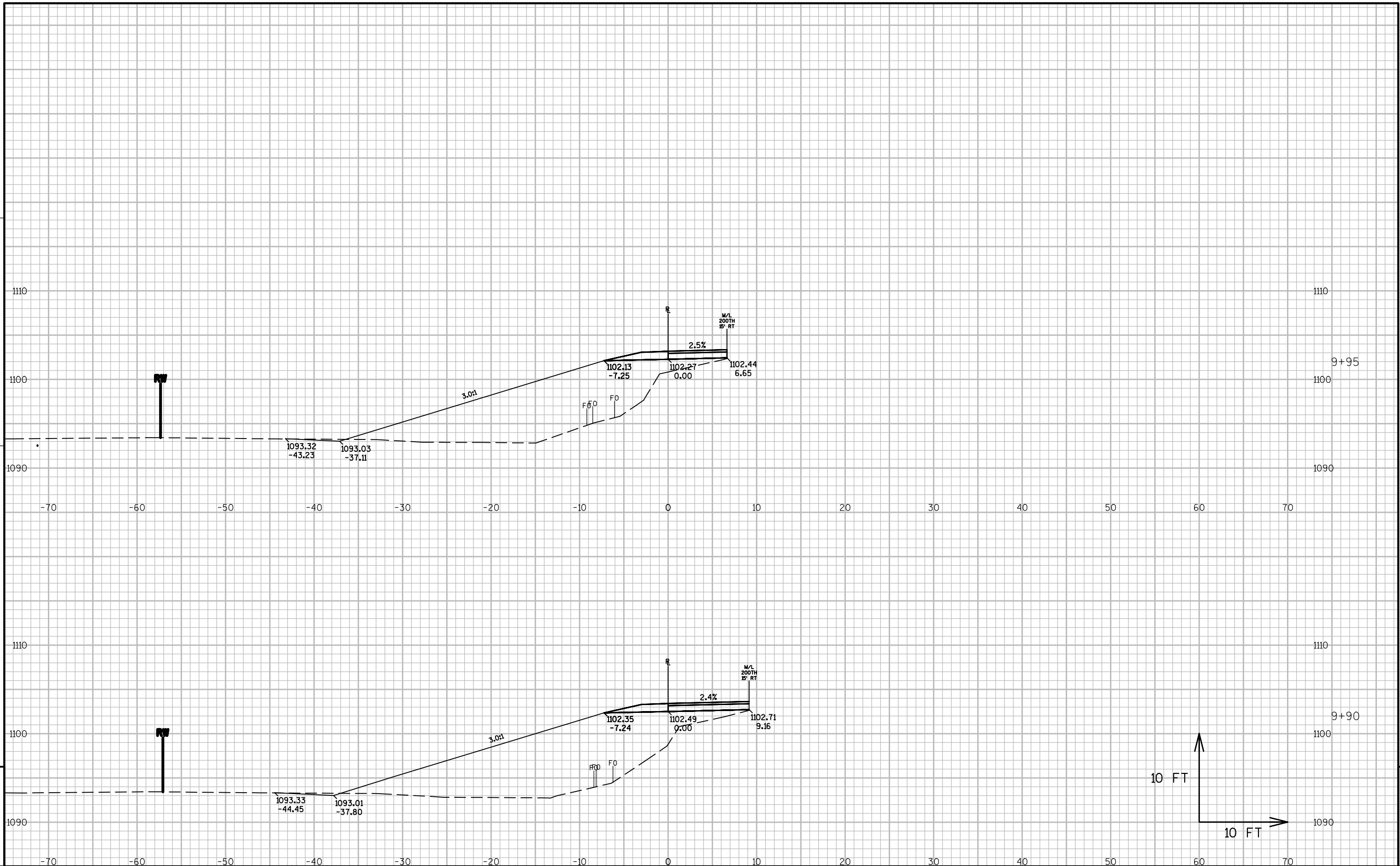


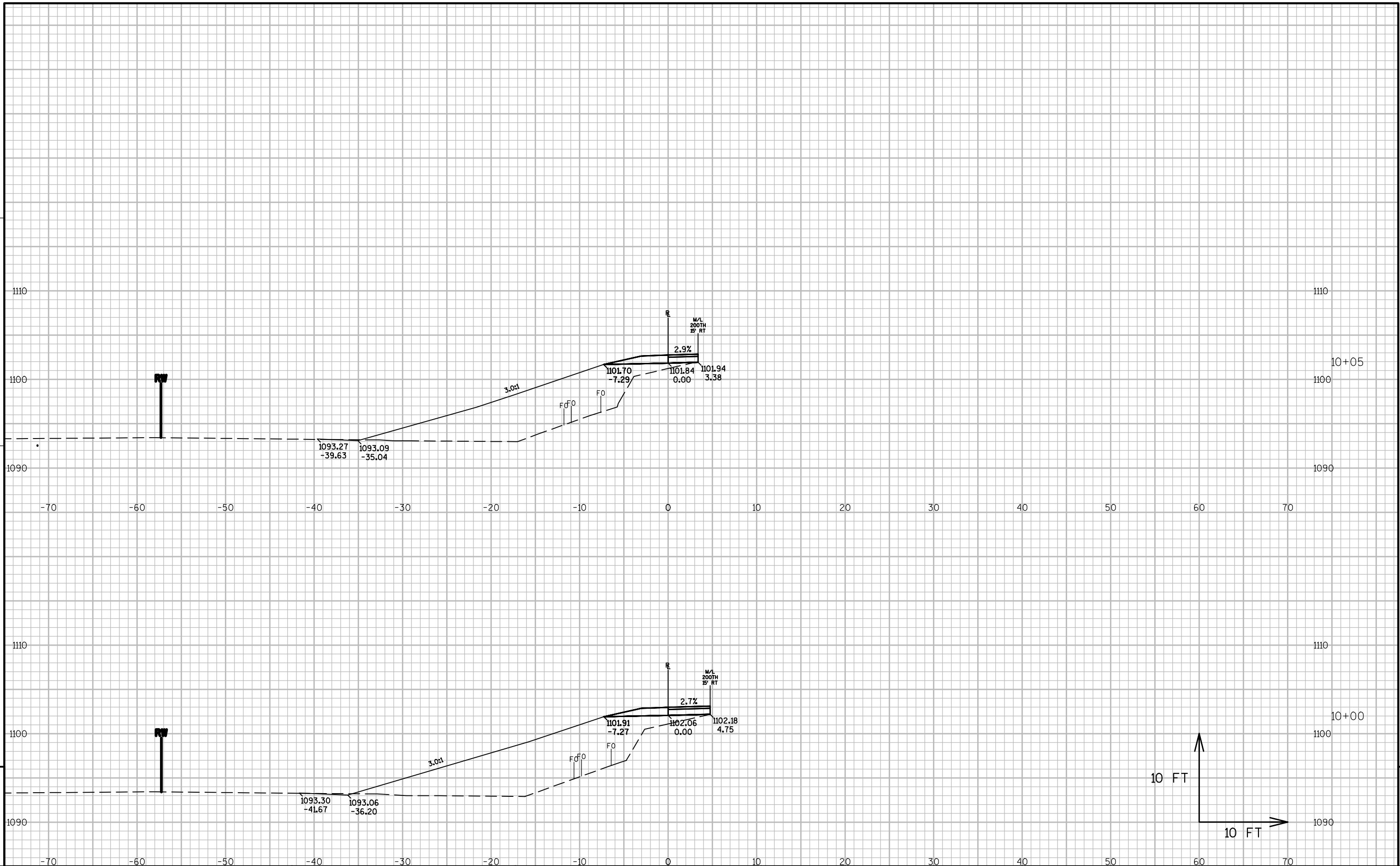


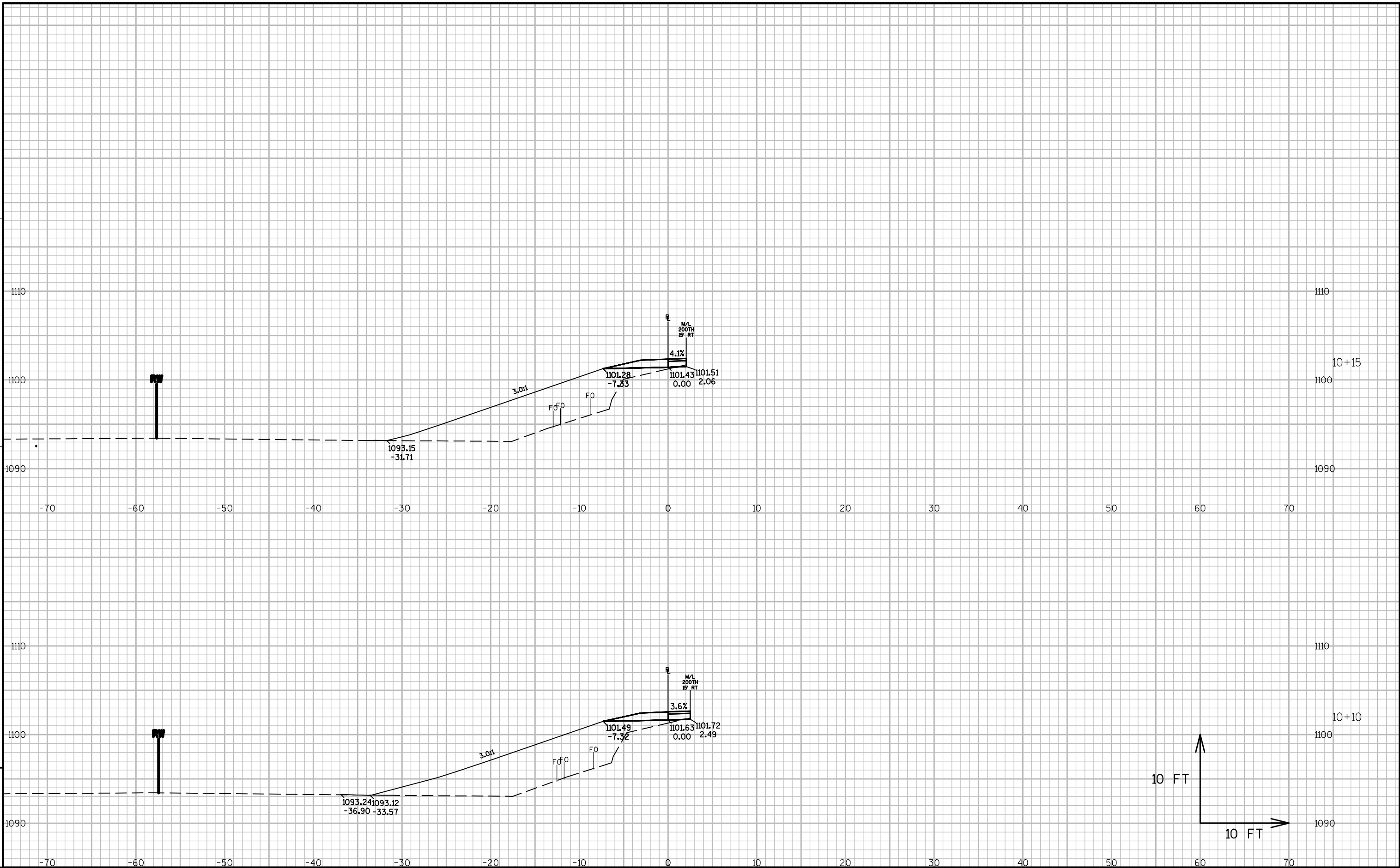


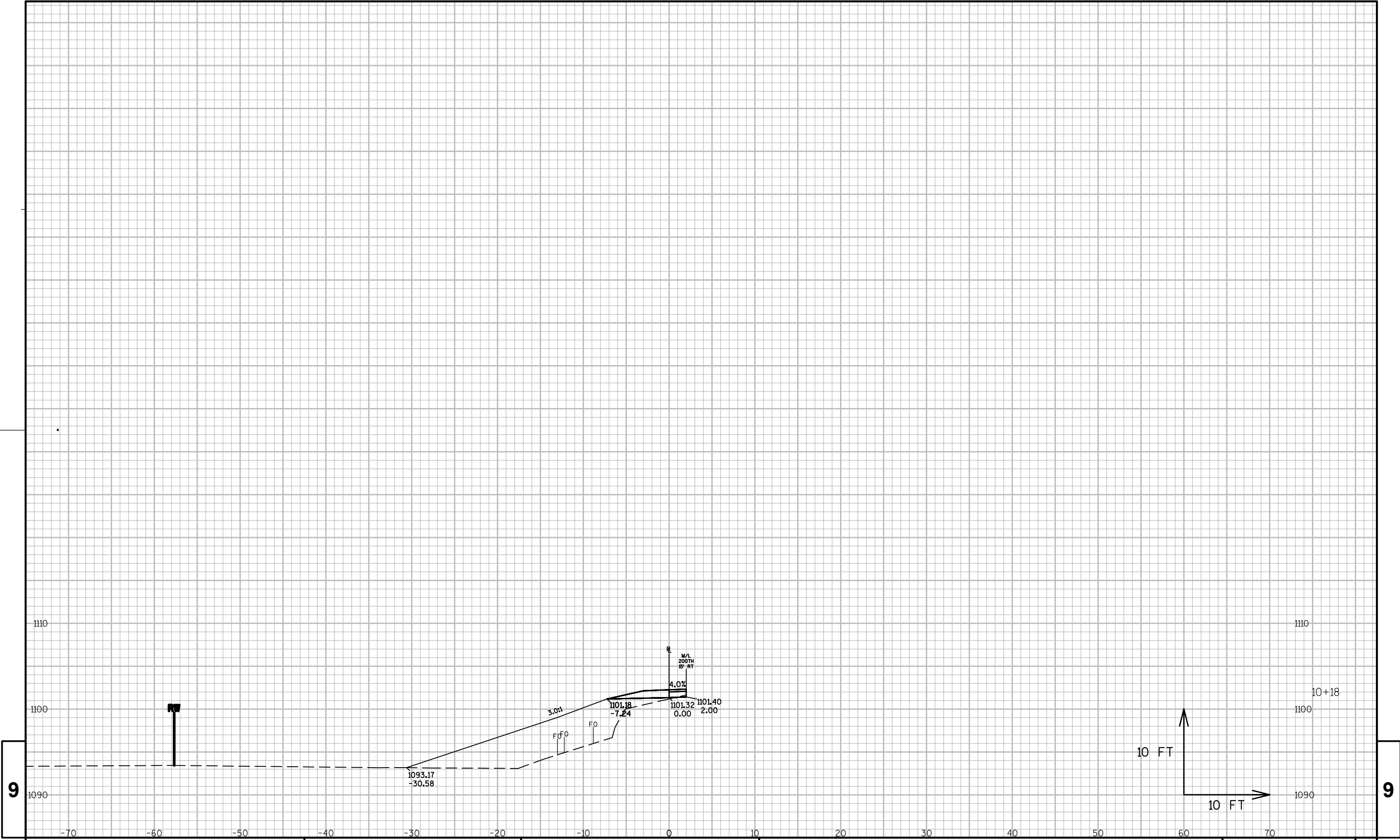






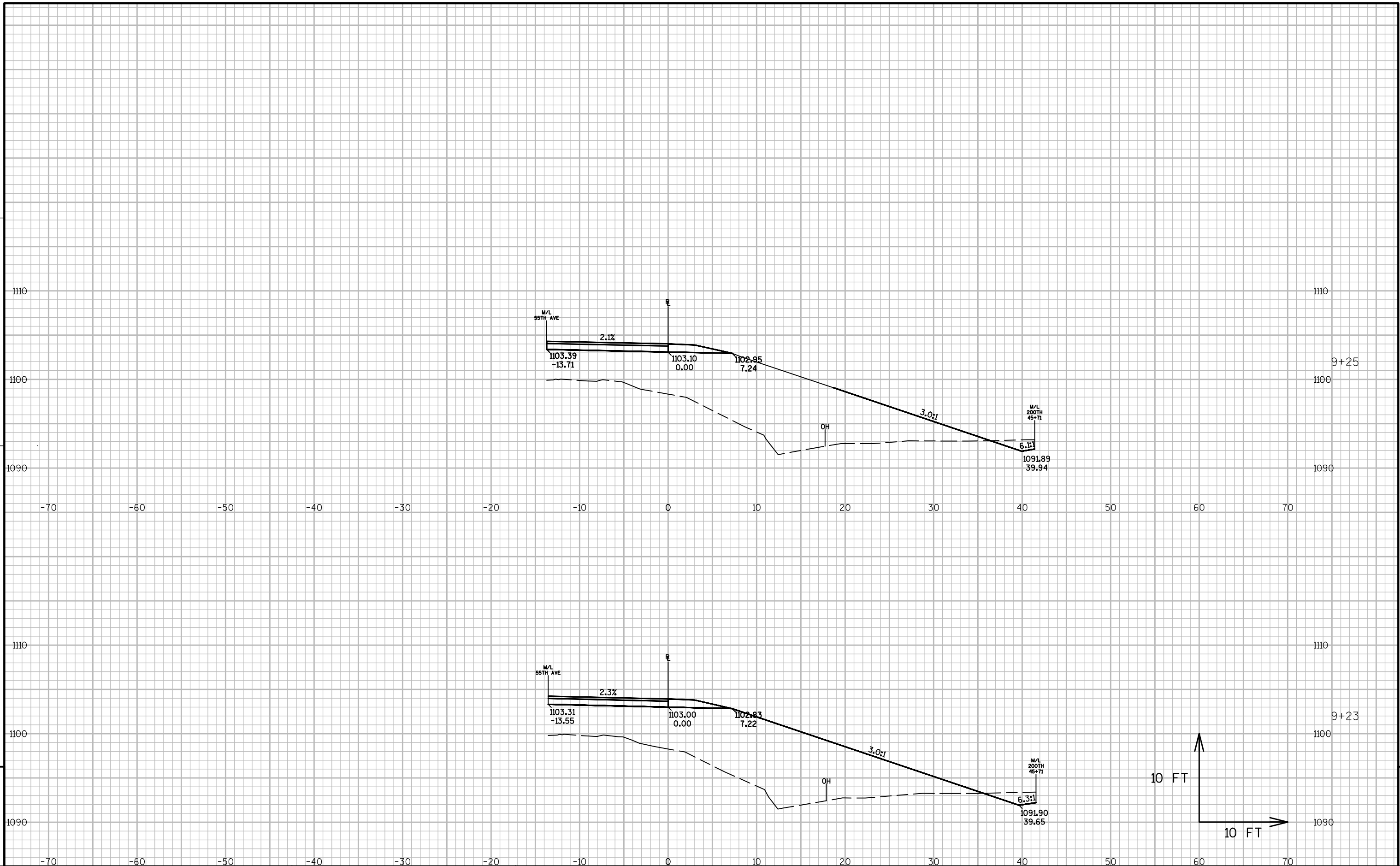


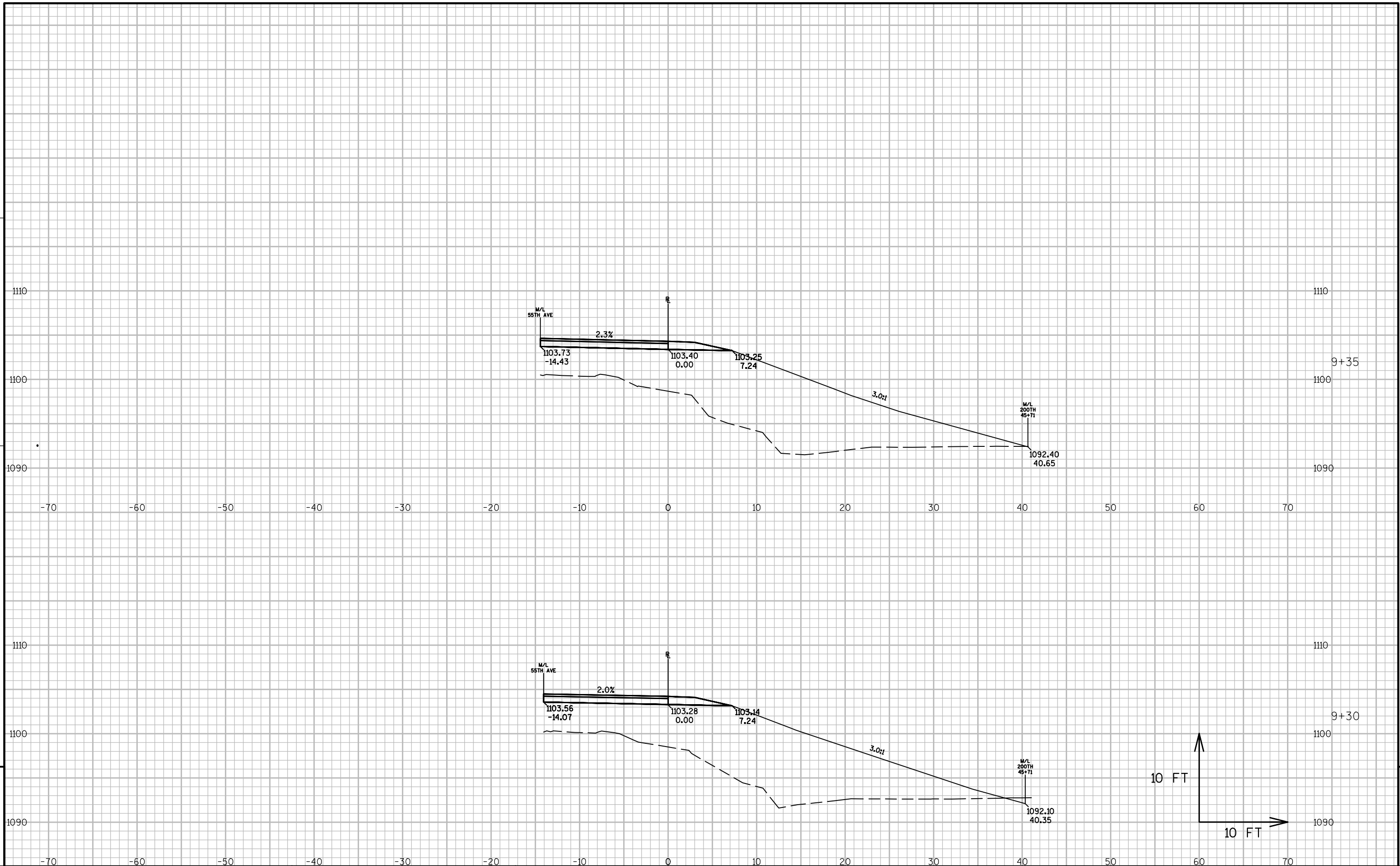


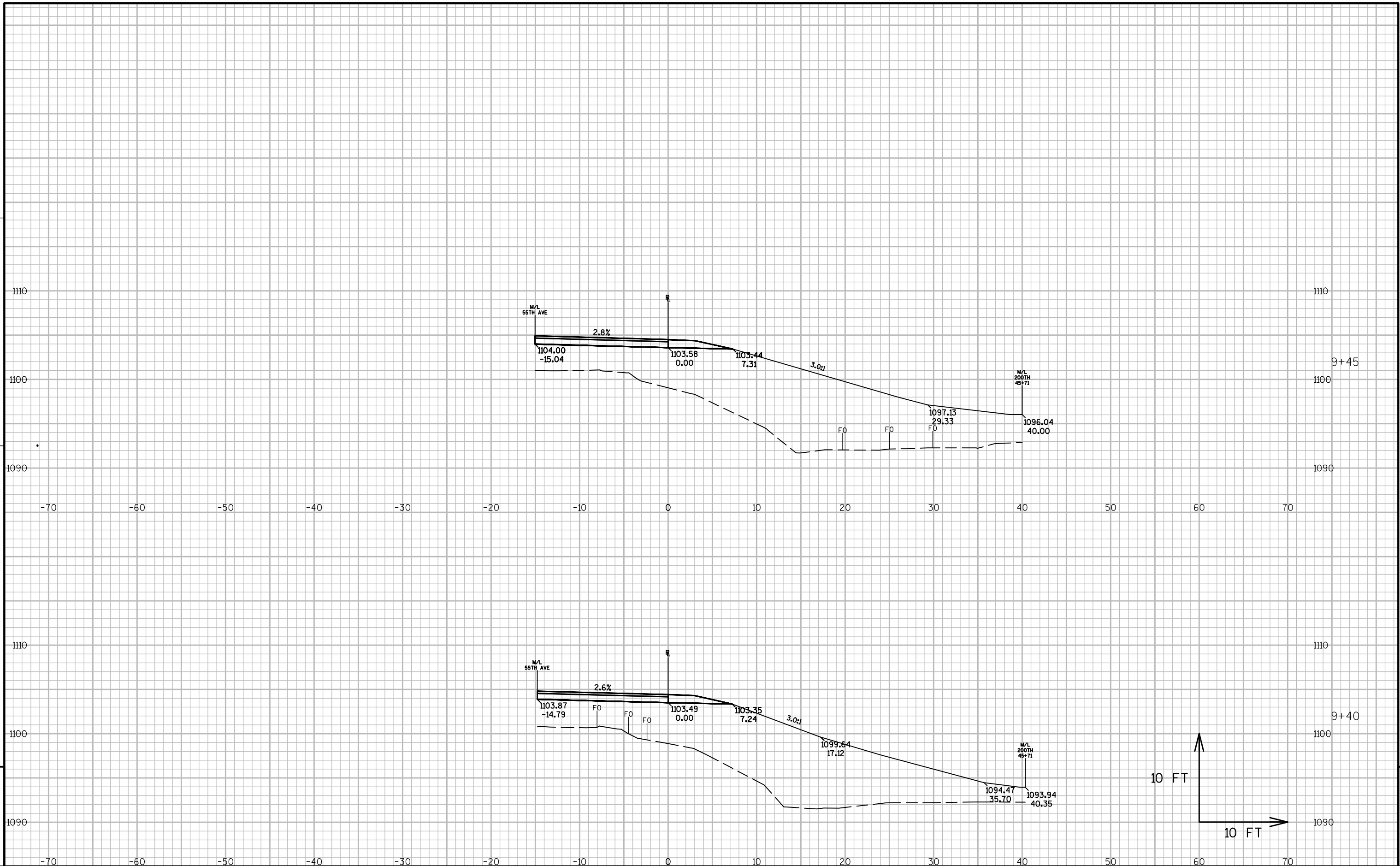


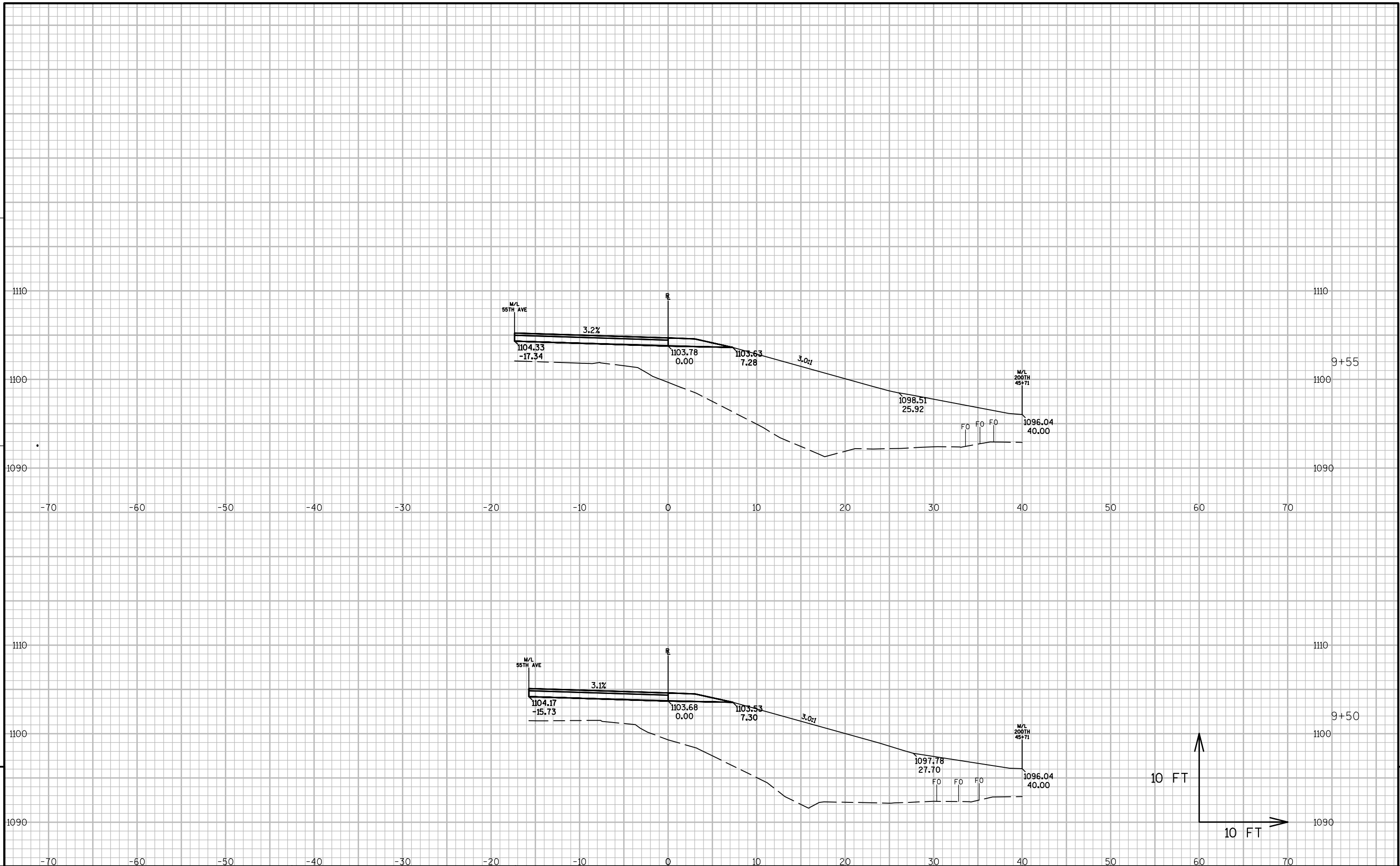
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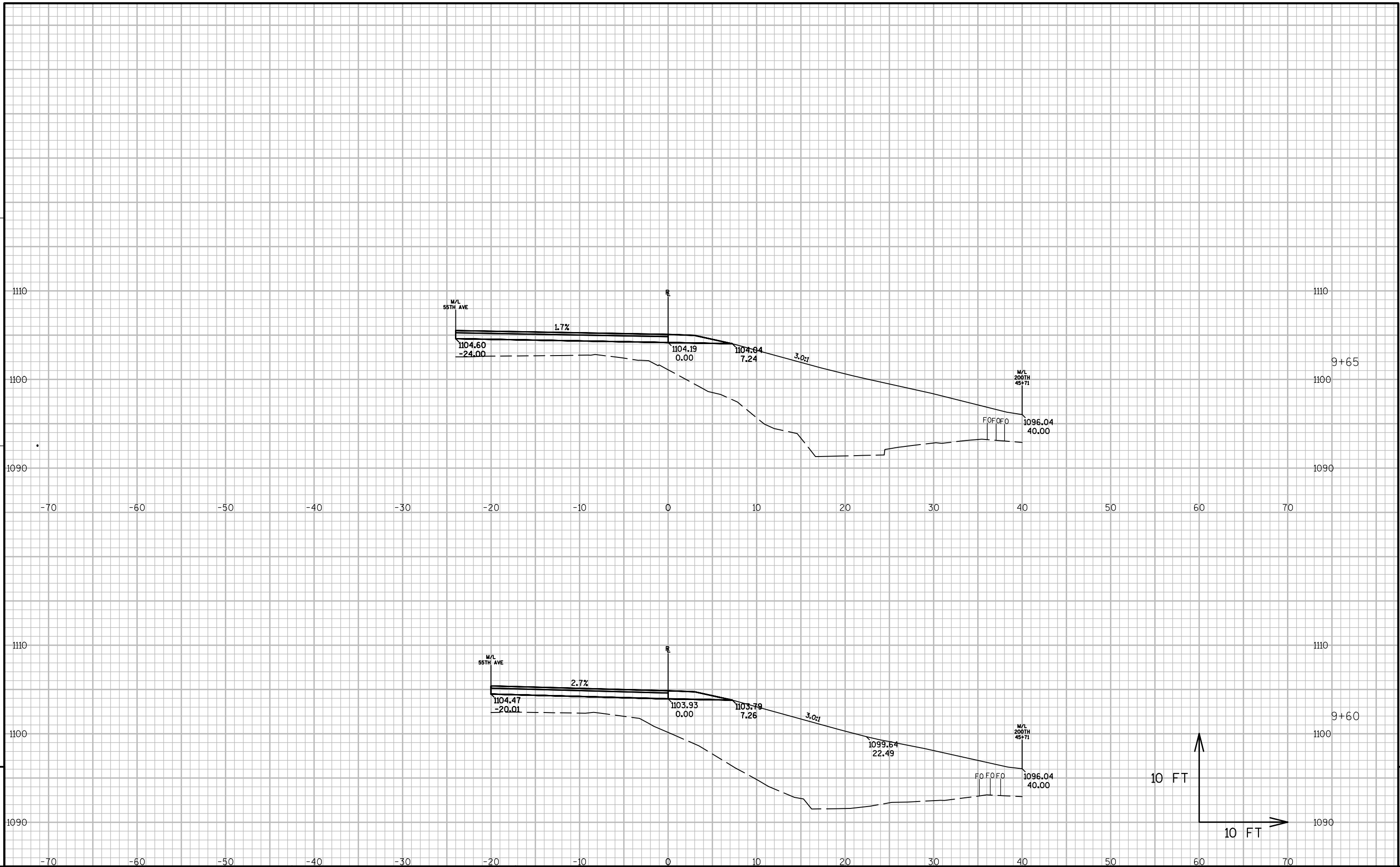
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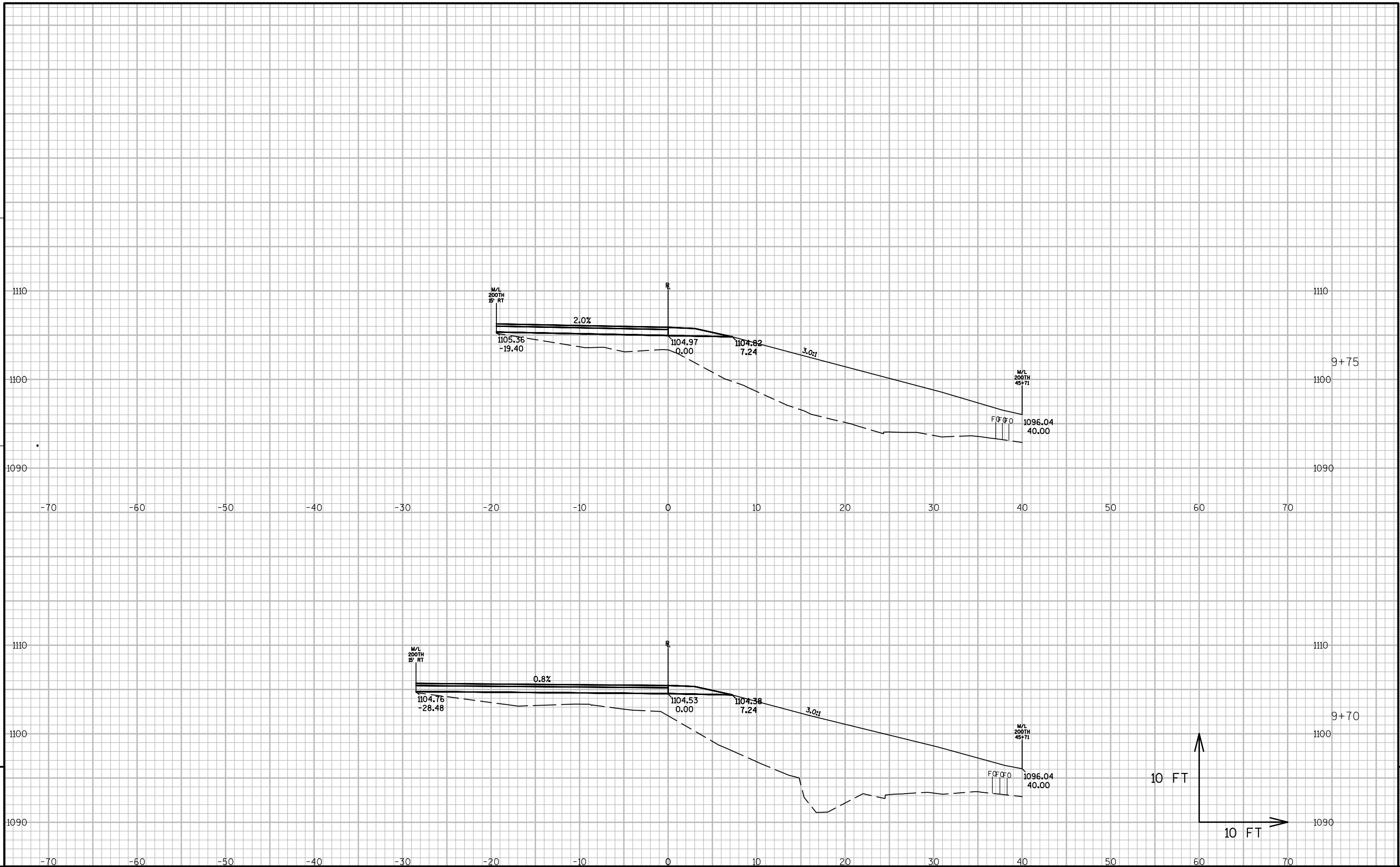


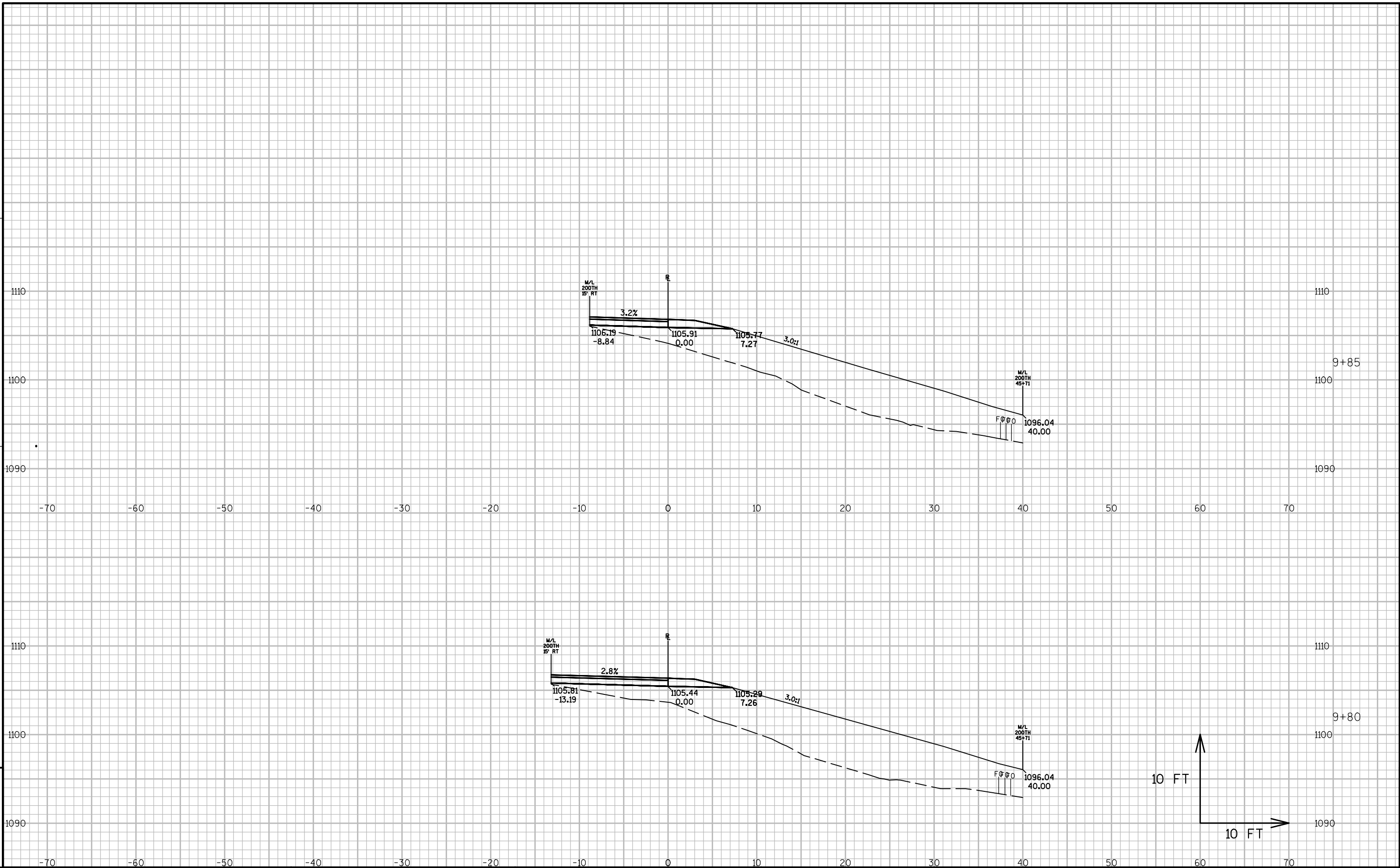


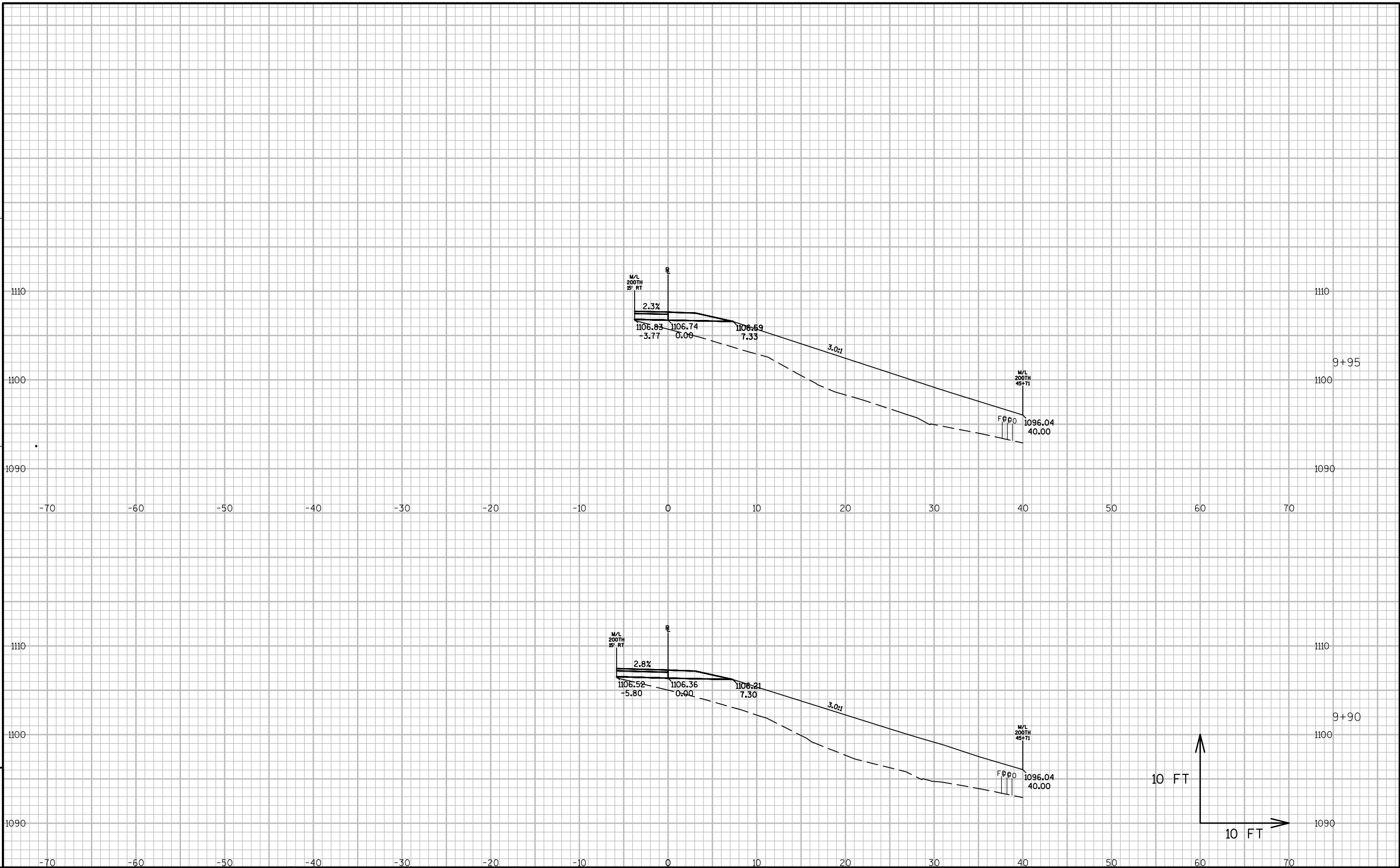


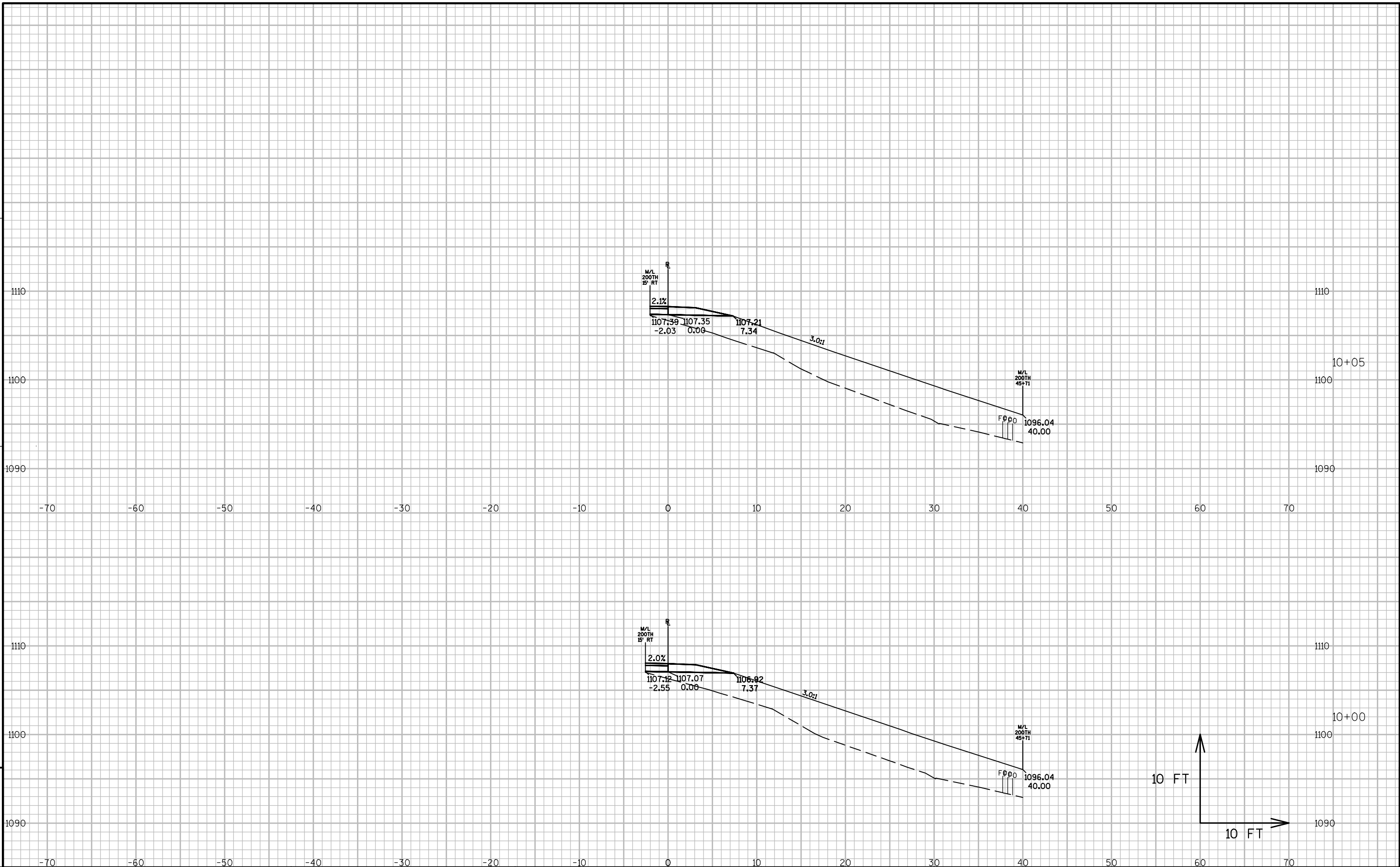


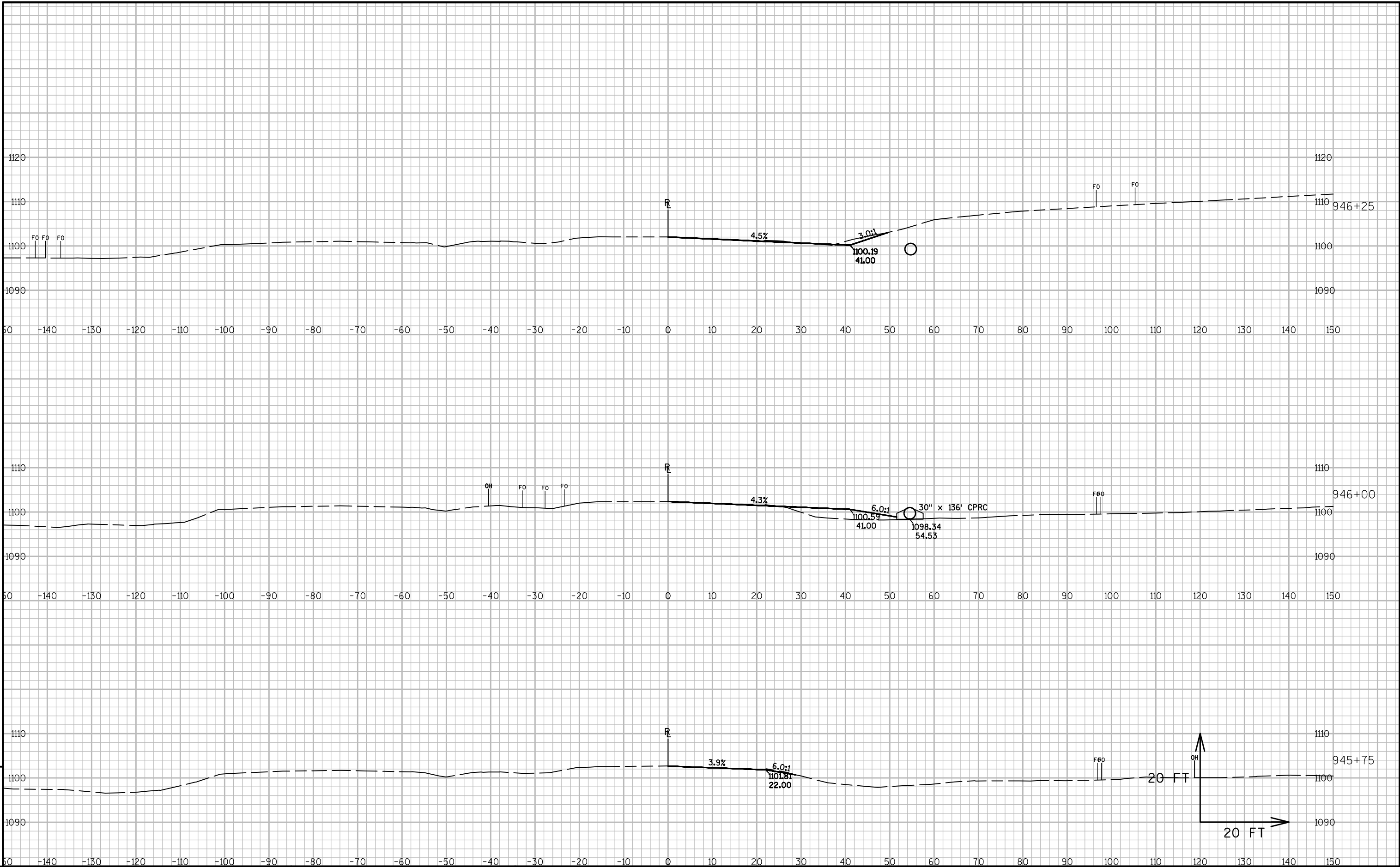


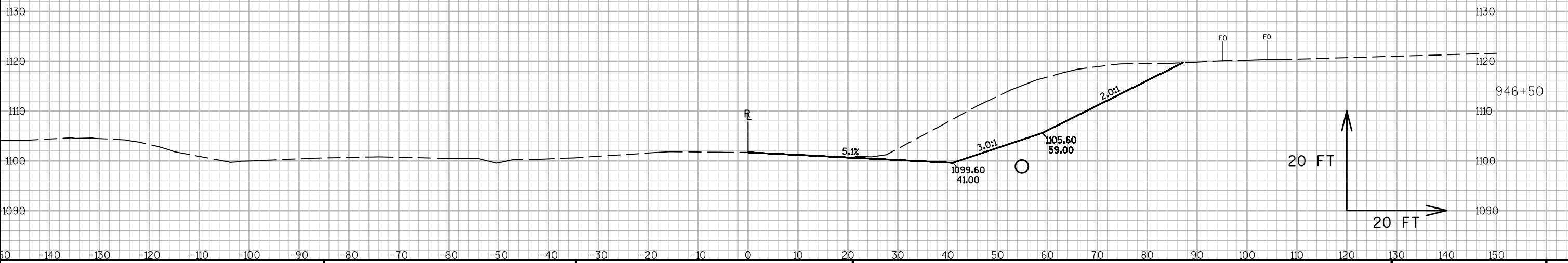
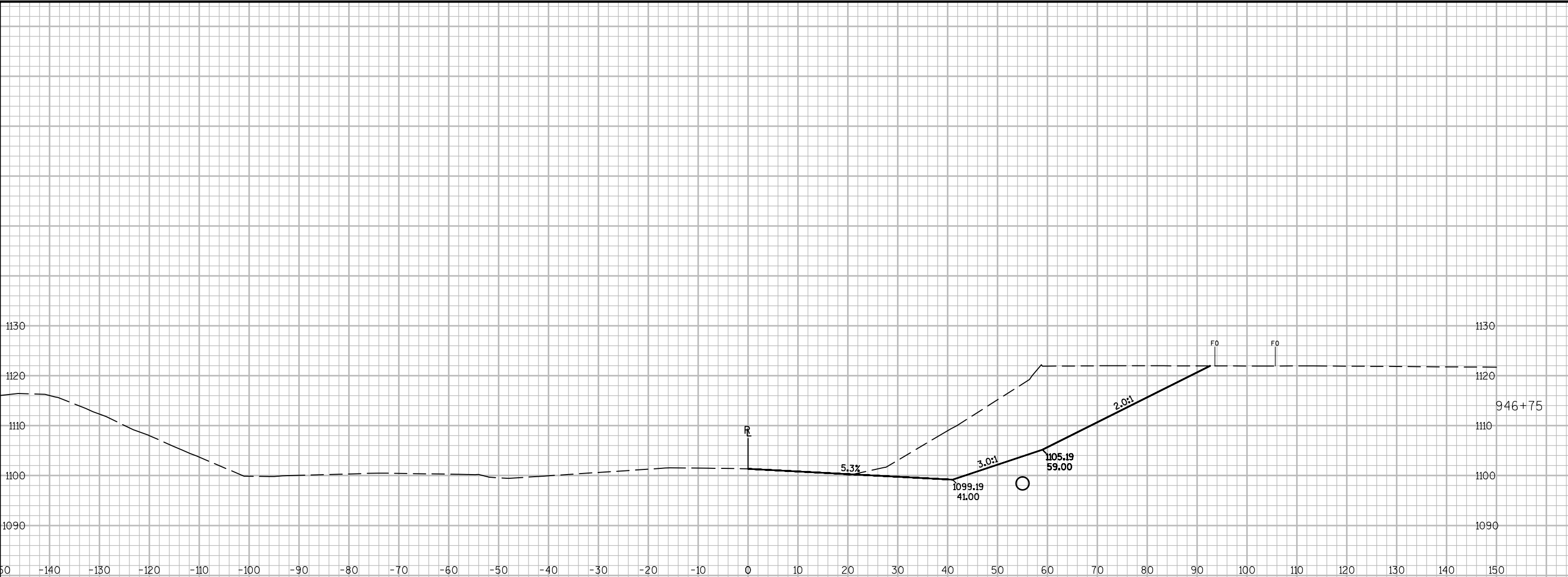


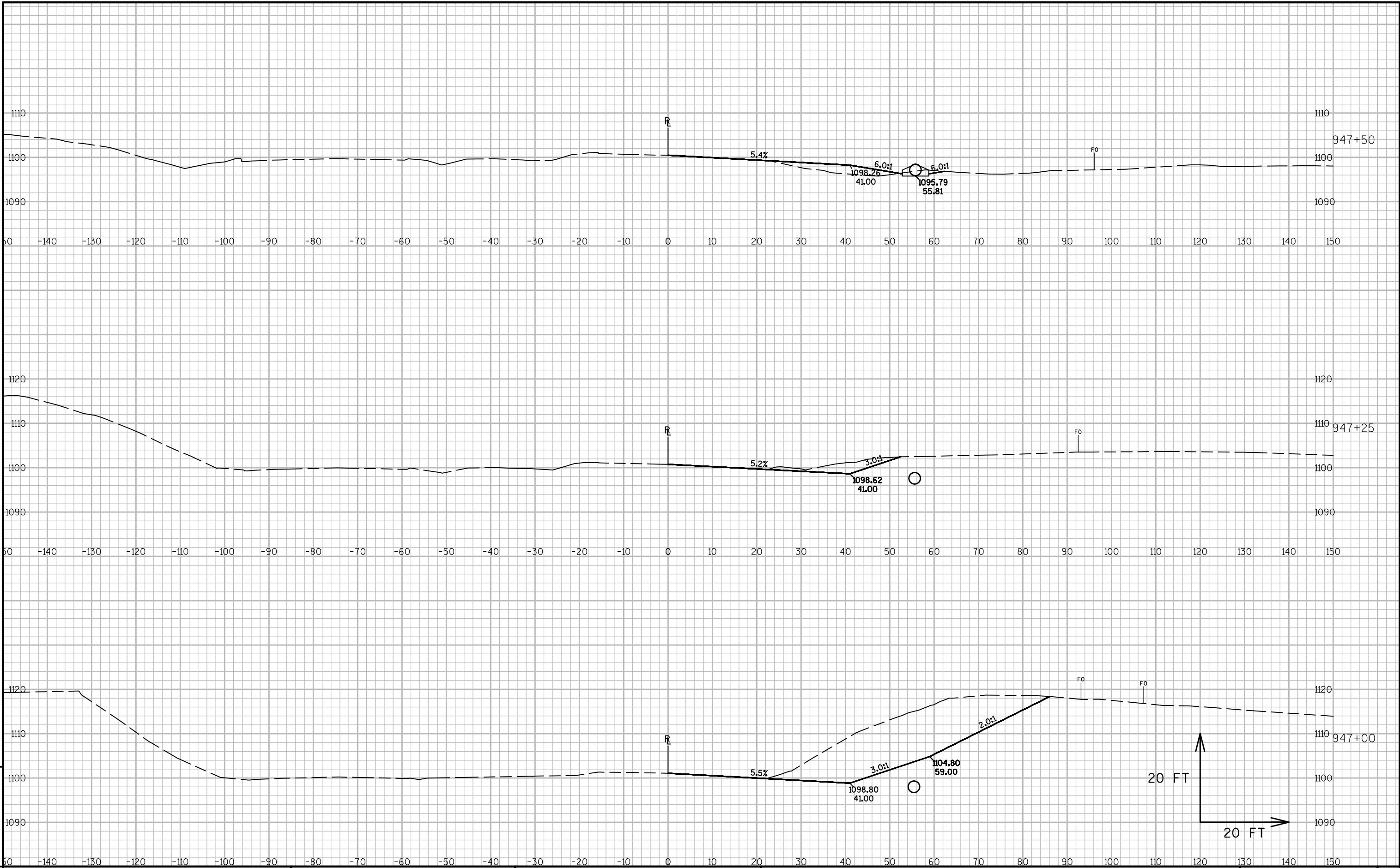


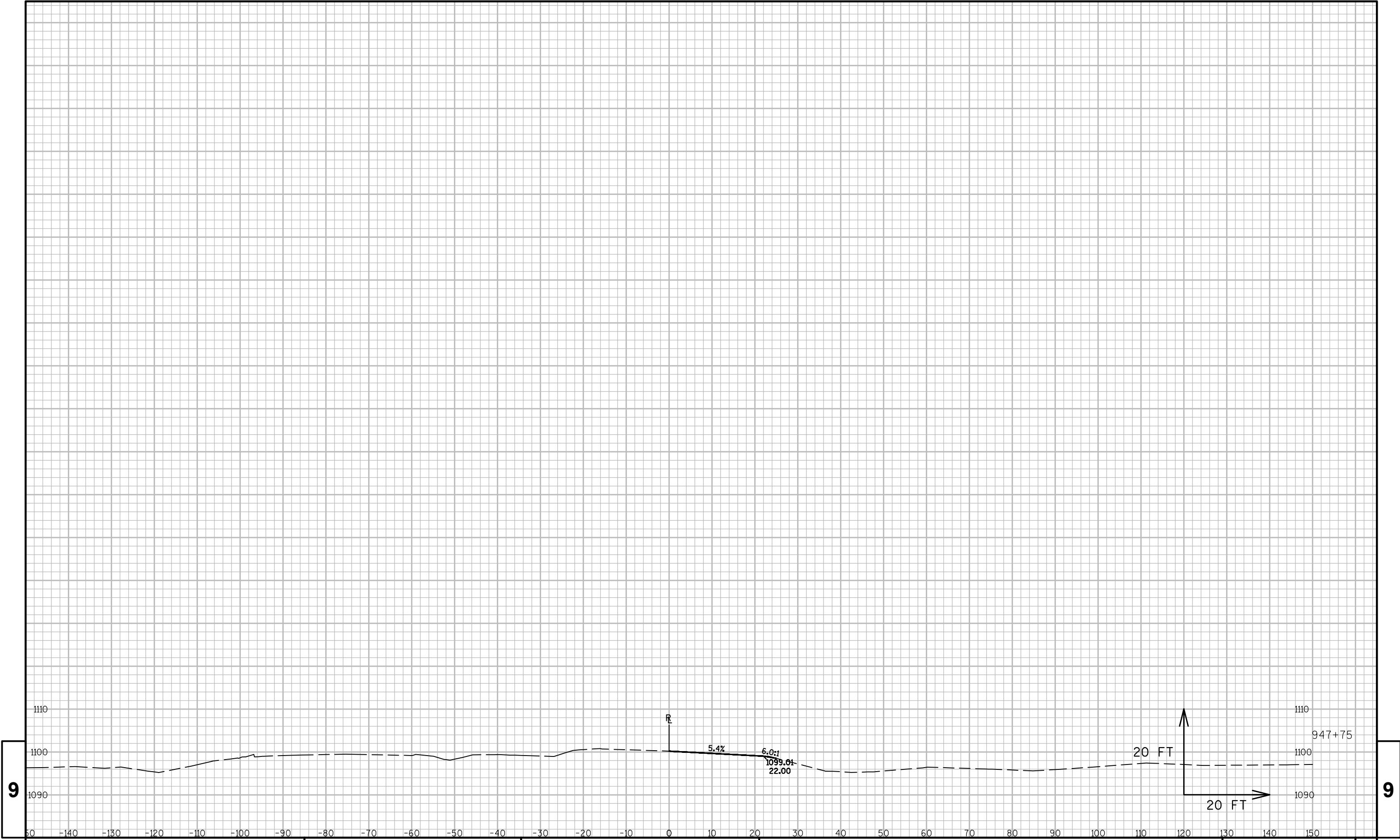


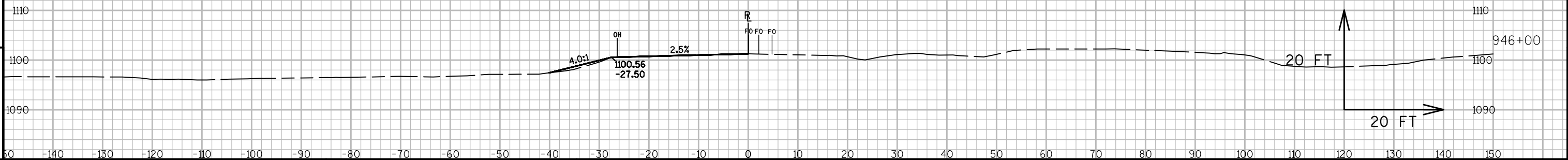


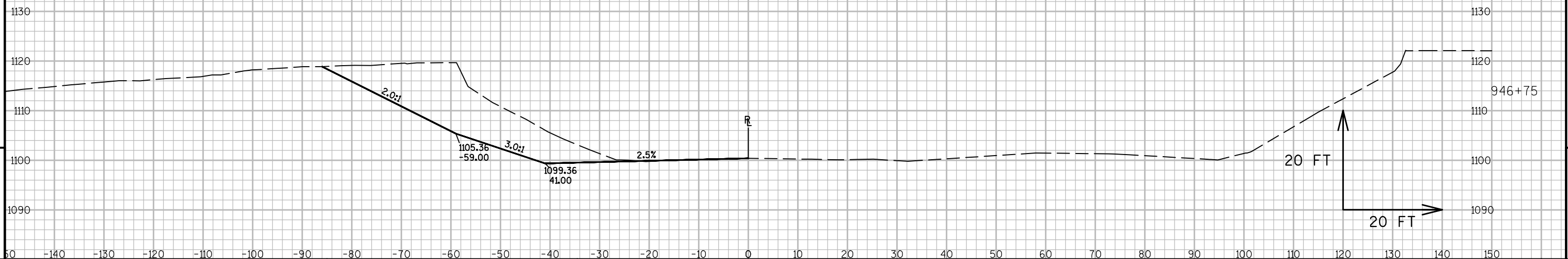
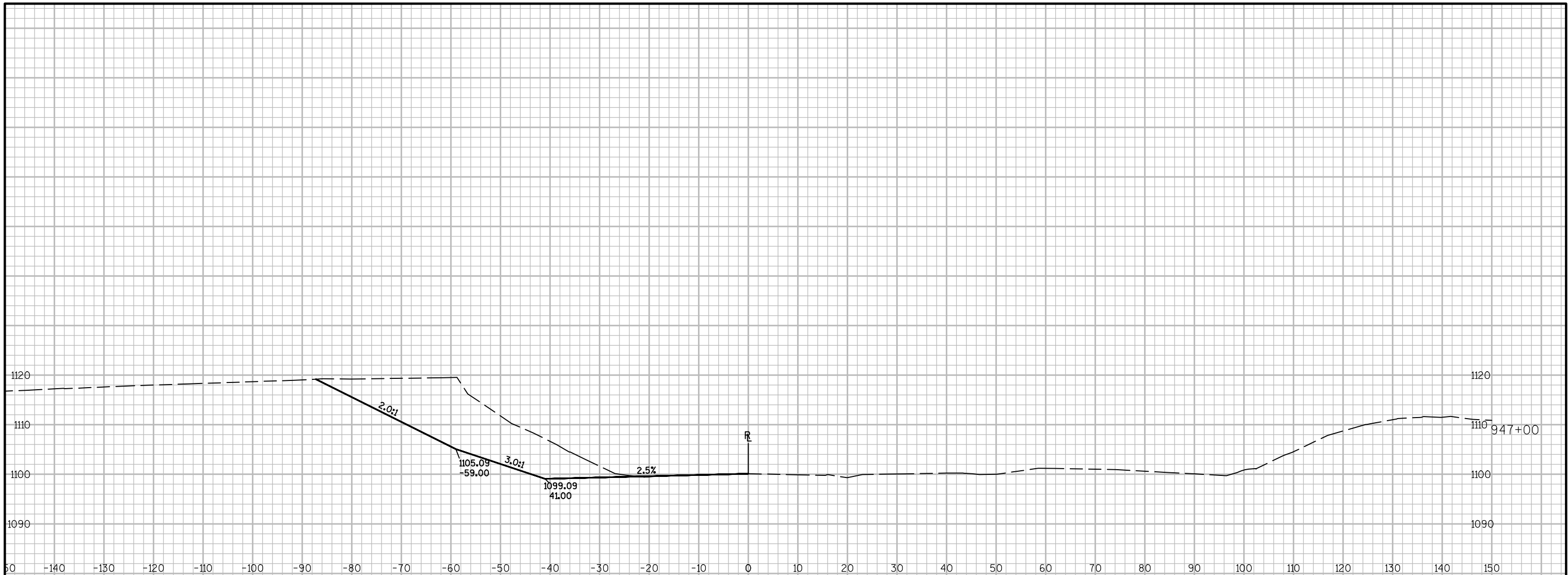


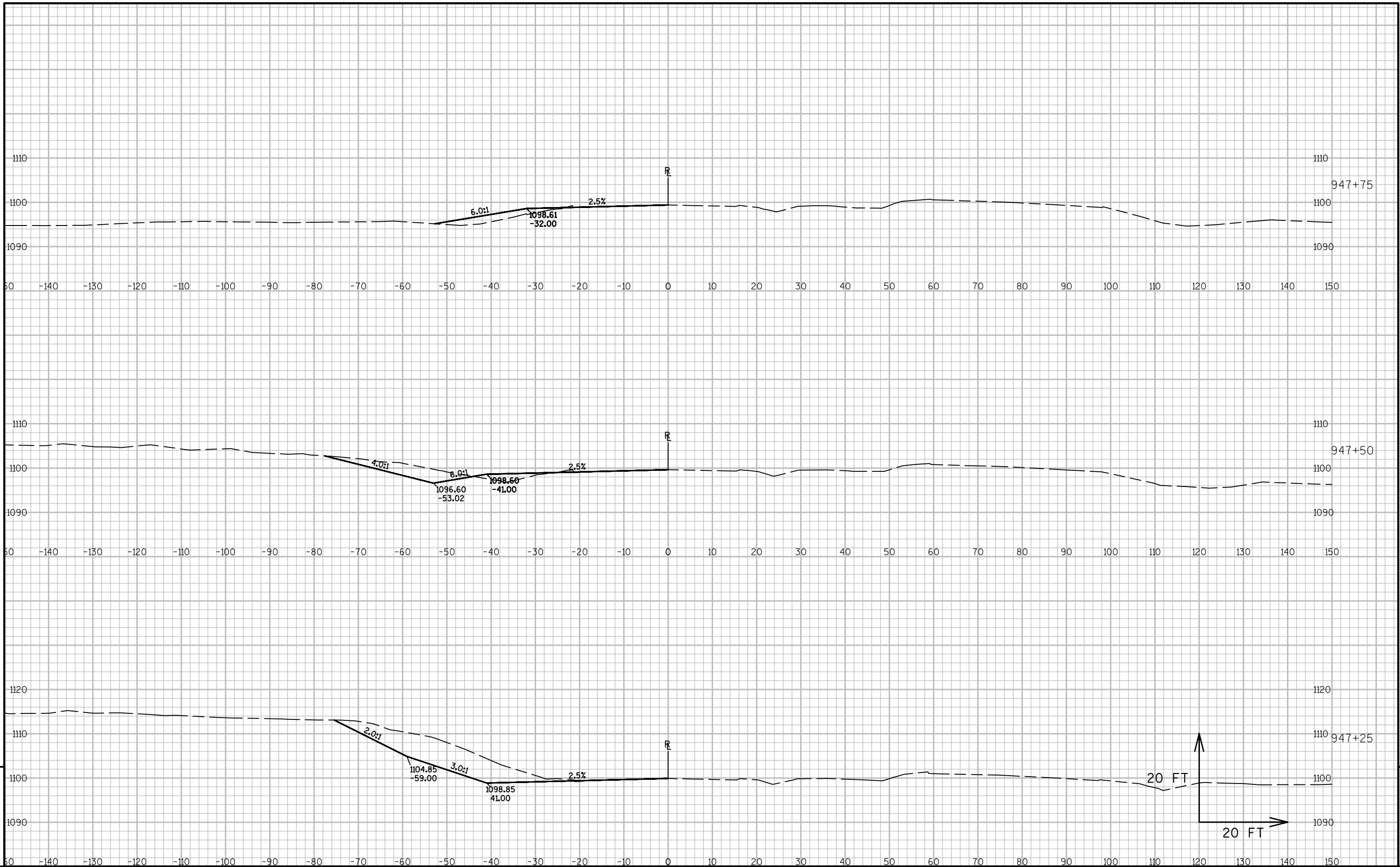


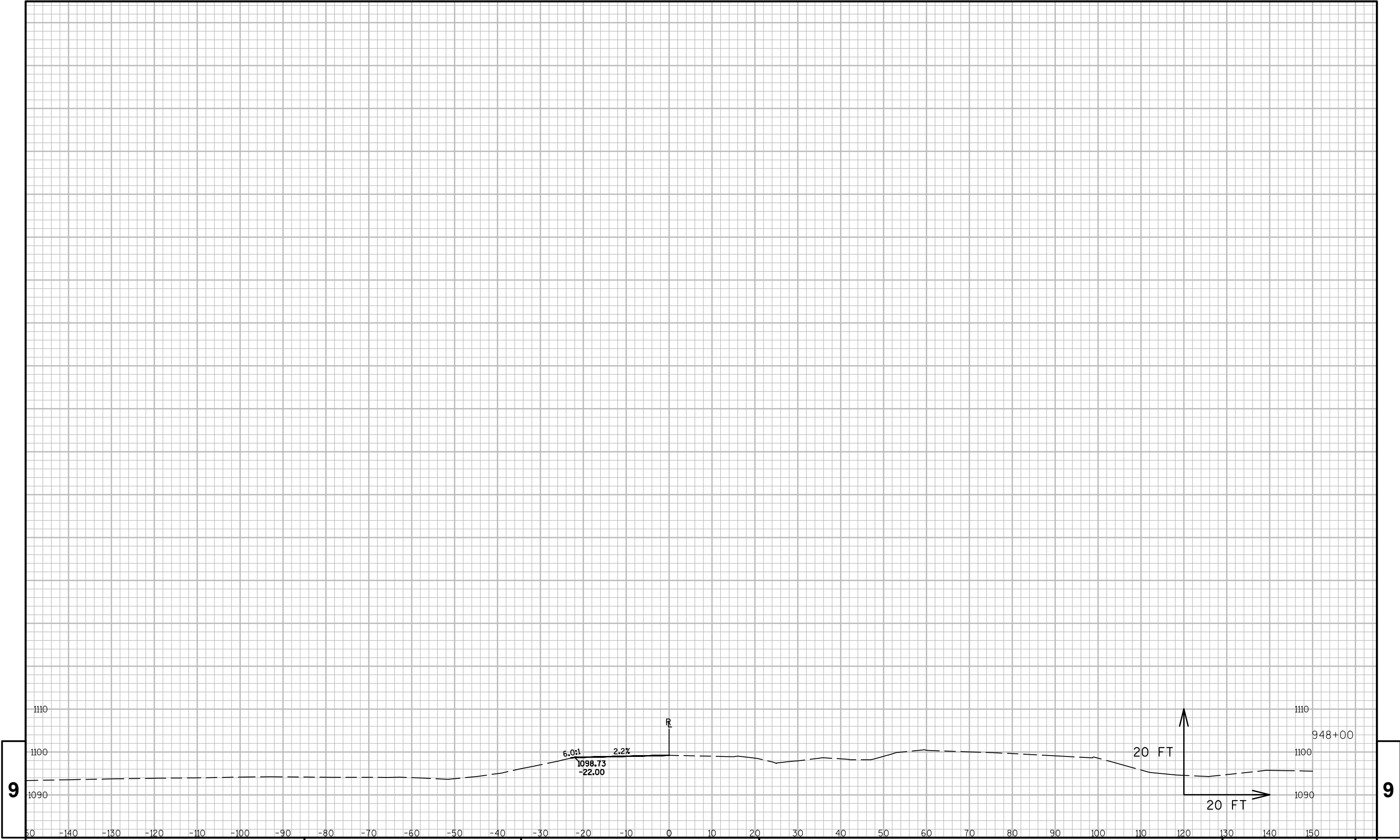


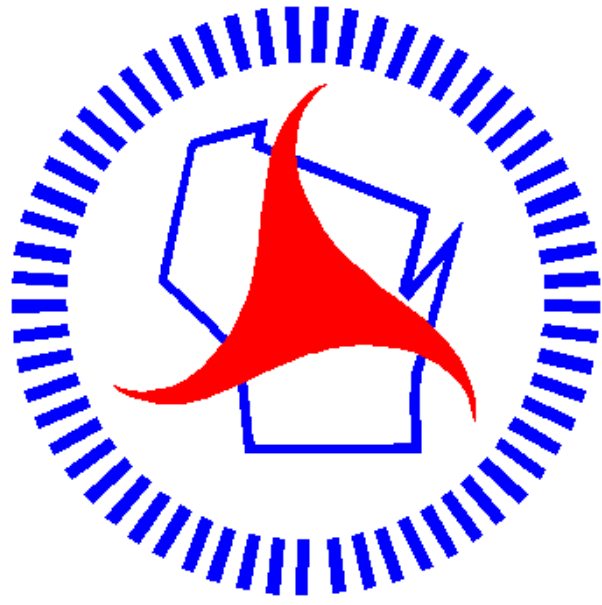












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