

SWL

APR 13

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details (Includes Erosion Control Plan)
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section No.	8	Structure Plans
Section No.		Computer Earthwork Data
Section No.	9	Cross Sections

TOTAL SHEETS = 124



PROJECT LOCATION

DESIGN DESIGNATION

A.D.T. (2013)	=	305
A.D.T. (2033)	=	365
D.H.V.	=	5.6
D.	=	60/40
T.	=	6.63%
DESIGN SPEED	=	40 MPH
ESALS	=	68,862

CONVENTIONAL SYMBOLS

PLAN

CORPORATE LIMITS	
PROPERTY LINE	
LOT LINE	
LIMITED EASEMENT	
EXISTING RIGHT OF WAY	
PROPOSED OR NEW R/W LINE	
SLOPE INTERCEPT	
REFERENCE LINE	

COMBUSTIBLE FLUIDS

EXISTING CULVERT	
PROPOSED CULVERT (Box or Pipe)	

MARSH AREA

WOODED OR SHRUB AREA

PROFILE

GRADE LINE	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE (To be noted as such)	
SPECIAL DITCH	
GRADE ELEVATION	
CULVERT (Profile View)	
UTILITIES	
GAS	
ELECTRIC	
TELEPHONE	
FIBER OPTIC	
SANITARY SEWER	
STORM SEWER	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

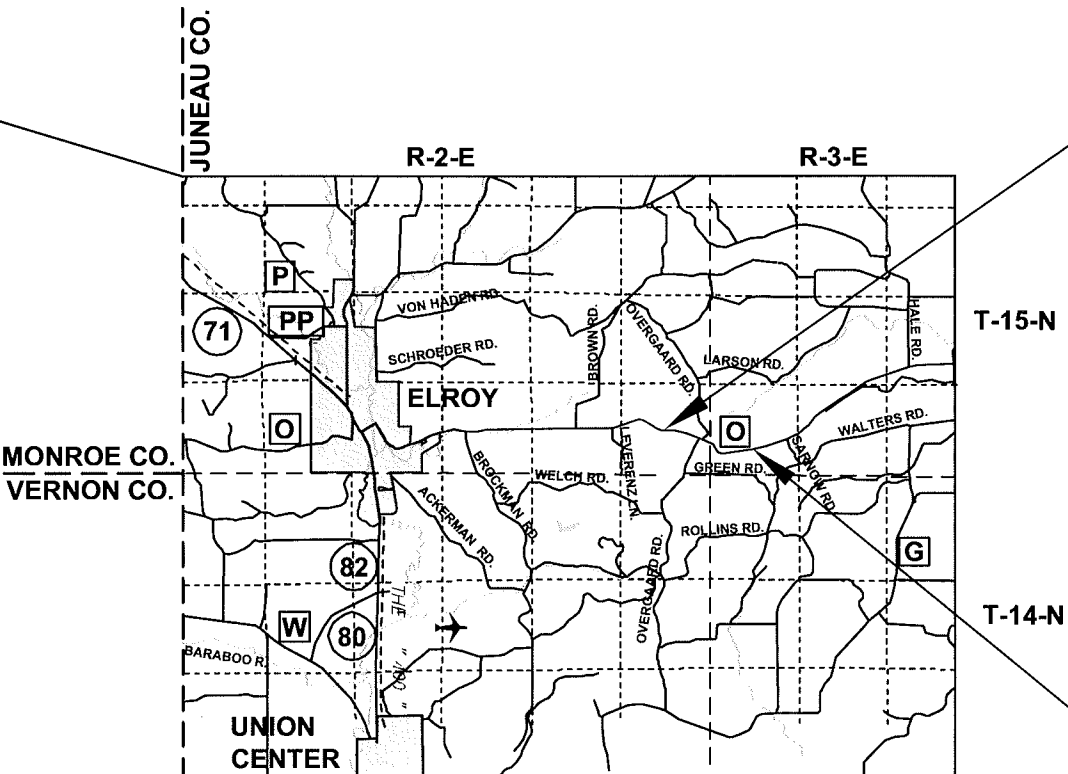
PLAN OF PROPOSED IMPROVEMENT

CITY OF ELROY - CTH G

(LEVERENZ LANE TO SARNOW ROAD)

CTH O
JUNEAU COUNTY

STATE PROJECT NUMBER
5810-00-71



BEGIN PROJECT
STA 40+00

Y = 135683.373
X = 429632.572

END PROJECT
STA 94+00

Y = 134475.249
X = 434747.422

LAYOUT
SCALE 0 1/2 MI. 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 1.02 MI.

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

STATE PROJECT

5810-00-71

FEDERAL PROJECT

PROJECT

WISC 2013210

CONTRACT

1

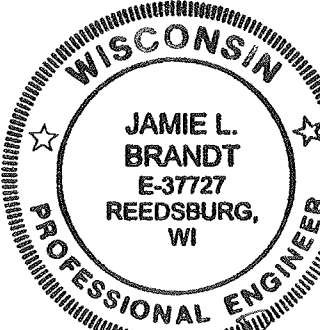
ACCEPTED FOR

COUNTY OF JUNEAU

11/16/2012
(Date) HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY

TEAM
Engineering



11/16/2012
(Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	TEAM ENGINEERING
Designer	TEAM ENGINEERING
Management Consultant	KJOHNSON ENGINEERS, INC.
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

11-30-12
(Date) (Management Consultant Signature)

LIST OF STANDARD ABBREVIATIONS

ABUT.	Abutment	JT	Joint	SEC	Section
AC	Acre	JCT	Junction	SHLDR	Shoulder
AGG.	Aggregate	LHF	Left-Hand Forward	SHR	Shrinkage
AH	Ahead	L	Length of Curve	SW	Sidewalk
<	Angle	LIN FT OR LF	Linear Foot	S	South
ASPH	Asphaltic	LC	Long Chord of Curve	SQ	Square
AVG.	Average	MH	Manhole	SF OR SQ FT	Square feet
A.D.T.	Average Daily Traffic	MB	Mailbox	SY OR SQ YD	Square Yard
BAD	Base Aggregate Dense	ML OR M/L	Match Line	STD	Standard
BK.	Back	N	North	SDD	Standard Detail Drawings
BF	Back Face	Y	North Grid Coordinante	STH	State Trunk Highways
B.M	Bench Mark	OD	Outside Diameter	STA	Station
BR.	Bridge	PLE	Permanent Limited Easement	SS	Storm Sewer
C/L	Center Line	PT	Point	SG	Subgrade
CC	Center to Center	PC	Point of Curvature	SE	Superelevation
CTH	County Trunk Highway	PI	Point of Intersection	SL OR S/L	Survey Line
CR.	Creek	PRC	Point of Reverse Curvature	SV	Septic Vent
CY OR CU YD	Crushed	PT	Point of Tangency	T	Tangent
CP	Cubic Yard	POC	Point on curve	TEL	Telephone
C & G	Culvert Pipe	POT	Point on Tangent	TEMP	Temporary
D	Curb and Gutter	PVC	Polyvinyl Chloride	TI	Temporary Interest
DHV	Degree of Curve	PCC	Portland Cement Concrete	TLE	Temporary Limited Easement
DIA	Design Hour Volume	LB	Pound	t	Ton
E	Diameter	PSI	Pounds Per Square Inch	T OR TN	Town
X	East	PE	Private Entrance	TRANS	Transition
ELEC	East Grid Coordinate	R	Radius	TL OR T/L	Transit Line
EL OR ELEV	Electric	RR	Railroad	T	Trucks (percent of)
ESALS	Elevation	RL OR R/L	Reference Line	TYP	Typical
EBS	Equivalent Single Axle Loads	RP	Reference Point	UNCL	Unclassified
FF	Excavation Below Subgrade	RCCP	Reinforced Concrete Culvert Pipe	UG	Underground Cable
FE	Face to Face	REQD	Required	USH	United States Highway
F	Field Entrance	RES	Residence or Residential	VAR	Variable
FG	Fill	RW	Retaining Wall	V	Velocity or Design Speed
FL OR F/L	Finished Grade	RT	Right	VERT	Vertical
FT	Flow Line	RHF	Right-Hand Forward	VC	Vertical Curve
FTG	Foot	R/W	Right-of-Way	VOL	Volume
GN	Footing	R	River	WM	Water Main
HT	Grid North	RD	Road	WV	Water Valve
CWT	Height	RDWY	Roadway	W	West
HYD	Hundredweight	SALV	Salvaged	WB	Westbound
INL	Hydrant	SAN S	Sanitary Sewer	YD	Yard
ID	Inlet				
INV	Inside Diameter				
IP	Invert				
IRS	Iron Pipe or Pin				
	Iron Rod Set				

GENERAL NOTES

MULCH ALL SLOPES AS DIRECTED BY THE ENGINEER IN THE FIELD.

FINISHING ITEMS SHALL BE PLACED 5 FT. BEYOND THE SLOPE INTERCEPT WITH THE ORIGINAL GROUND AS SHOWN ON THE CROSS SECTIONS AND ON ALL DISTRUBED AREAS.

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE FIRST BEEN INDICATED FOR REMOVAL BY THE ENGINEER IN THE FIELD.

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE AND IS NOT SHOWN ON THE CROSS SECTIONS, BUT IS MEASURED AND PAID FOR AS EXCAVATION COMMON. THE LOCATION OF EBS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

FILL EXPANSION IS ESTIMATED AT 30%.

DISTURBED AREAS SHOWN WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE FERTILIZED (TYPE B), SEEDED (USE SEEDING MIXTURE #20 AND SEEDING TEMPORARY), AND MULCHED AS DIRECTED BY THE ENGINEER IN THE FIELD.

THE LOCATIONS OF SILT FENCE, SALVAGED TOPSOIL, SEEDING MIX #20, SEEDING TEMPORARY, MULCH AND TEMPORARY DITCH CHECKS ARE APPROXIMATE. LOCATIONS ARE TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

REMOVAL OF ASPHALTIC SURFACES WHERE AN ABUTTING ASPHALTIC SURFACE IS TO REMAIN IN PLACE SHALL REQUIRE A SAWCUT MEETING THE APPROVAL OF THE ENGINEER IN THE FIELD.

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

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

BEARINGS ON THE PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, JUNEAU COUNTY.

CURVE DATA IS BASED ON THE ARC DEFINITION.

THE EXACT LOCATION AND WIDTH OF PRIVATE, COMMERCIAL AND FIELD ENTRANCES TO BE DETERMINED BY THE ENGINEER IN THE FIELD. EXISTING DRIVEWAYS WILL BE RESTORED IN KIND AS DIRECTED BY THE ENGINEER IN THE FIELD.

EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO CONSTRUCTION. EROSION CONTROL ITEMS ON THE PLAN ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS AND DIMENSIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD. ALL EROSION CONTROL DEVICES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER IN THE FIELD DEEMS THE DEVICES NO LONGER NECESSARY.

4-INCH HMA PAVEMENT TYPE E-0.3 SHALL BE PLACED WITH A 2 1/4-INCH LOWER LAYER AND A 1 3/4-INCH UPPER LAYER. THE NOMINAL SIZE OF AGGREGATE USED FOR THE LOWER LAYER SHALL BE 19.0 MM AND THE UPPER LAYER SHALL BE 12.5 MM.

THE ITEM SALVAGED TOPSOIL MUST BE USED IN ITS ENTIRETY BEFORE THE ITEM TOPSOIL IS USED THROUGHOUT THE PROJECT LIMITS.

JUNEAU COUNTY HIGHWAY DEPARTMENT WILL BE RESPONSIBLE FOR CLEARING BY MAY 1, 2012 WITHIN THE CONSTRUCTION LIMITS, GRUBBING TO BE DONE BY THE CONTRACTOR.

DESIGNER

TEAM ENGINEERING, INC.
240 MAIN STREET
LOGANVILLE, WI 53943
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PH: (608) 727-2146
jbrandt@teamenginc.com

DNR CONTACT

DEPARTMENT OF NATURAL RESOURCES
473 GRIFFITH AVE.
WISCONSIN RAPIDS, WI 54494
ATTN: MARC HERSHFIELD
ENVIRONMENTAL ANALYSIS & REVIEW SPECIALIST
PH: (715) 421-7867
marc.hershfield@wisconsin.gov

MUNICIPALITY CONTACT

JUNEAU COUNTY HIGHWAY DEPARTMENT
930 EAST STATE STREET
MAUSTON, WI 53948
ATTN: DENNIS WEISS, COMMISSIONER
PH: (608) 847-5874
dweiss@co.juneau.wi.us

UTILITIES

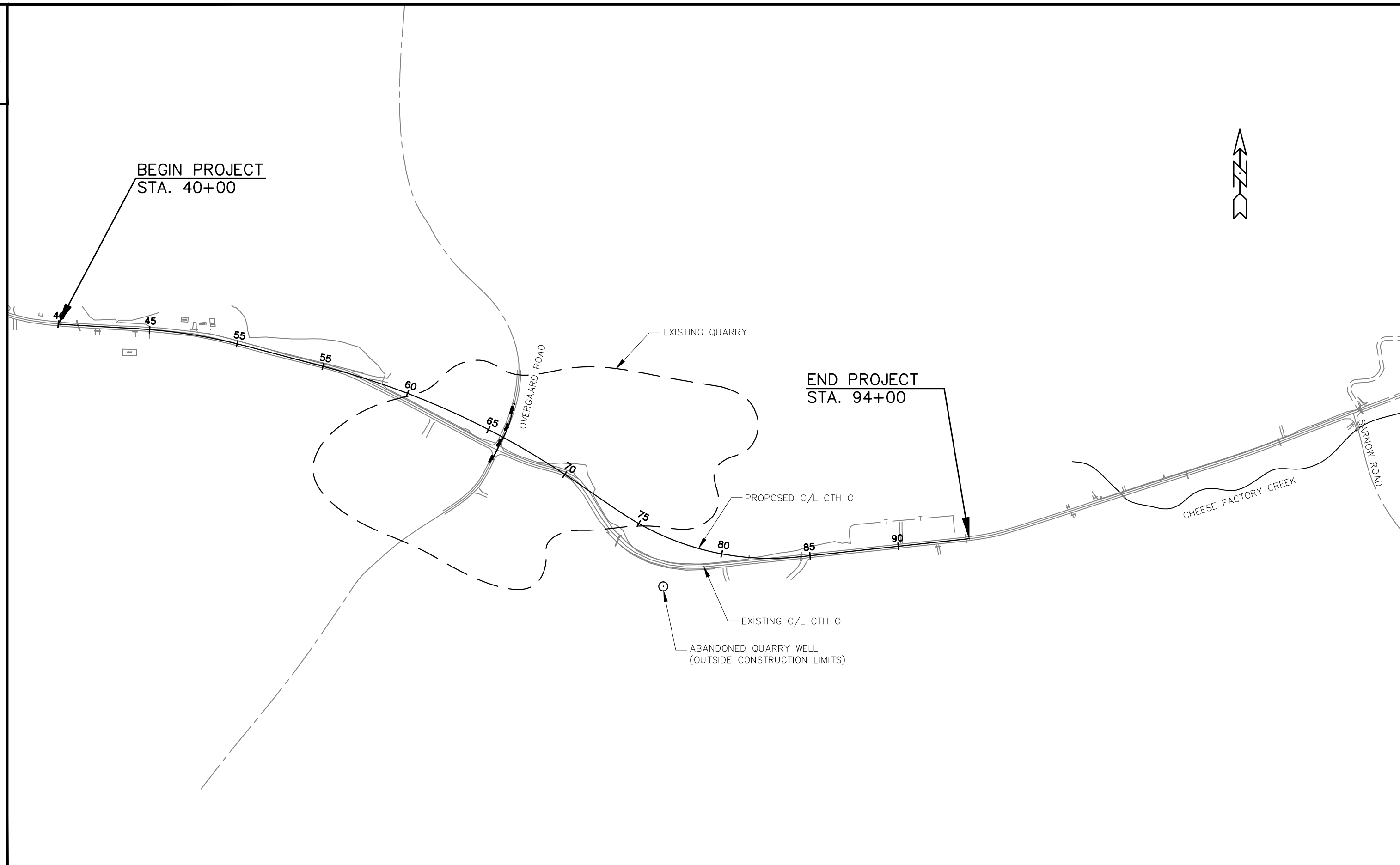
OAKDALE ELECTRIC COOPERATIVE
P.O. BOX 128
OAKDALE, WI 54649
ATTN: SCOTT BROOKMAN
PH: 1-800-241-2468, EXT. 208
sbrookman@oakdalerec.com

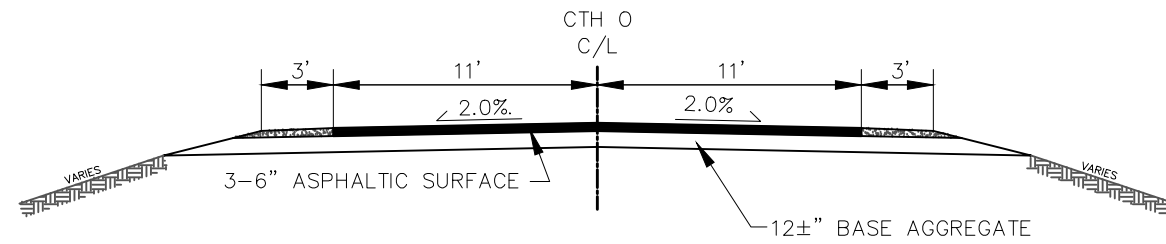
CENTURYLINK
311 SOUTH COURT STREET
P.O. BOX 256
SPARTA, WI 54656
ATTN: RANDY ABBOTT
PH: (608) 269-0819
randy.abbott@centurylink.com

* - NOT A MEMBER OF DIGGER’S HOTLINE.



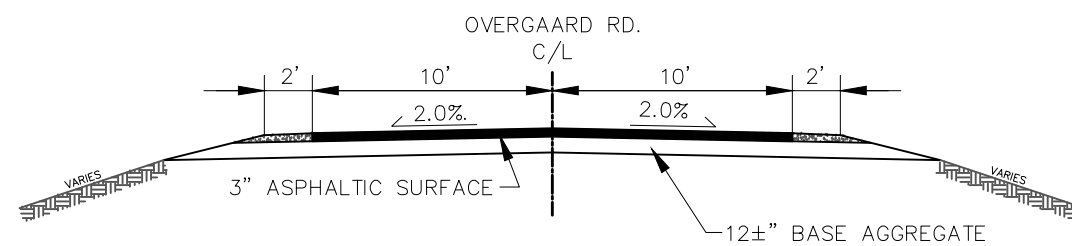
Toll Free (800) 242-8511
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com





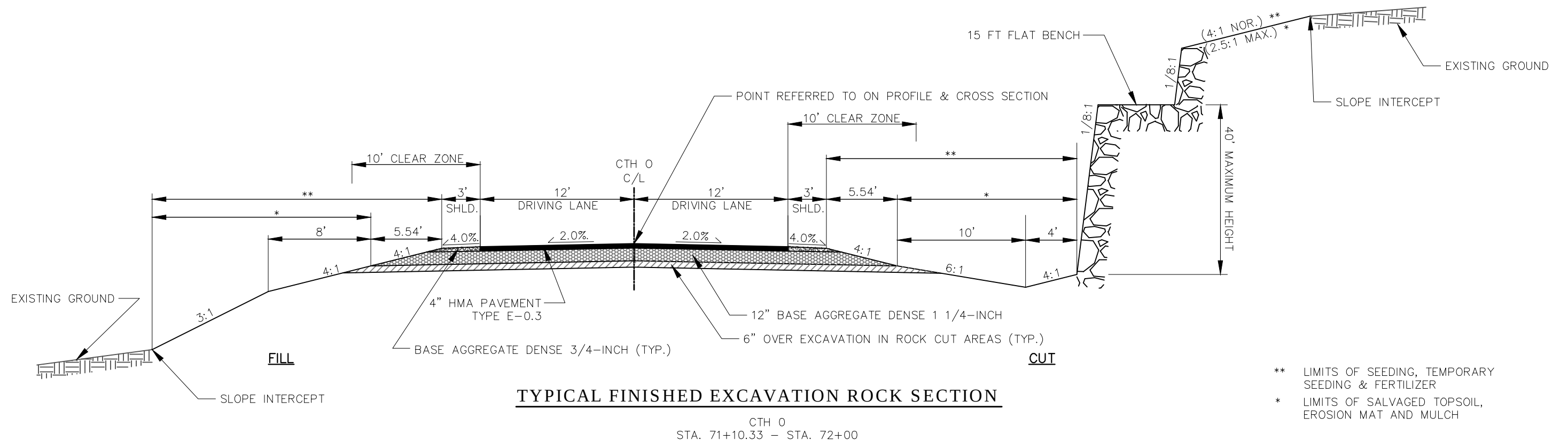
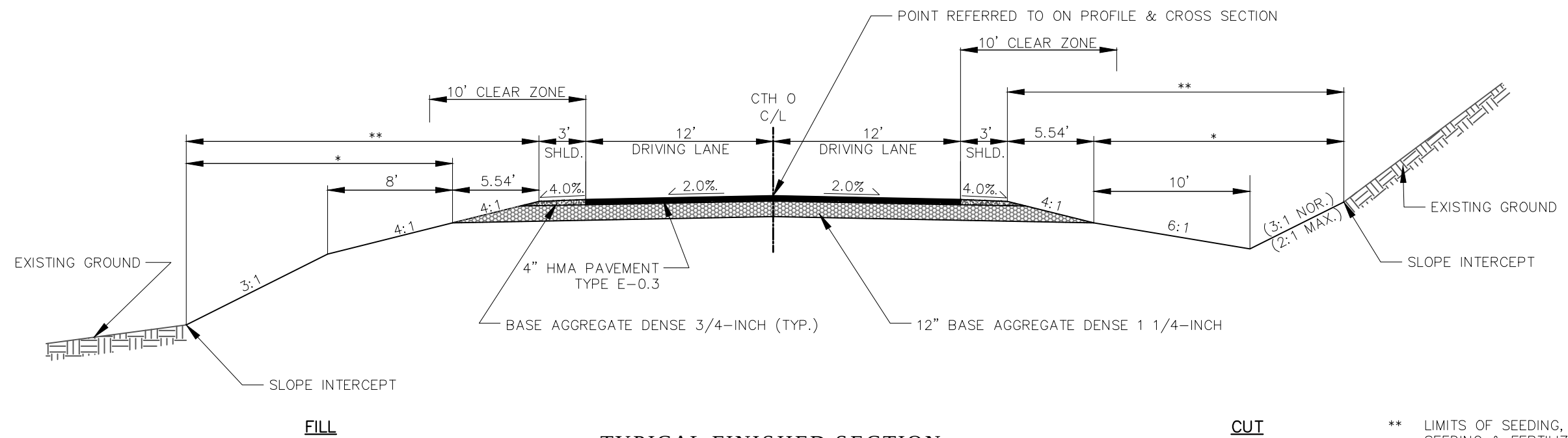
TYPICAL EXISTING SECTION

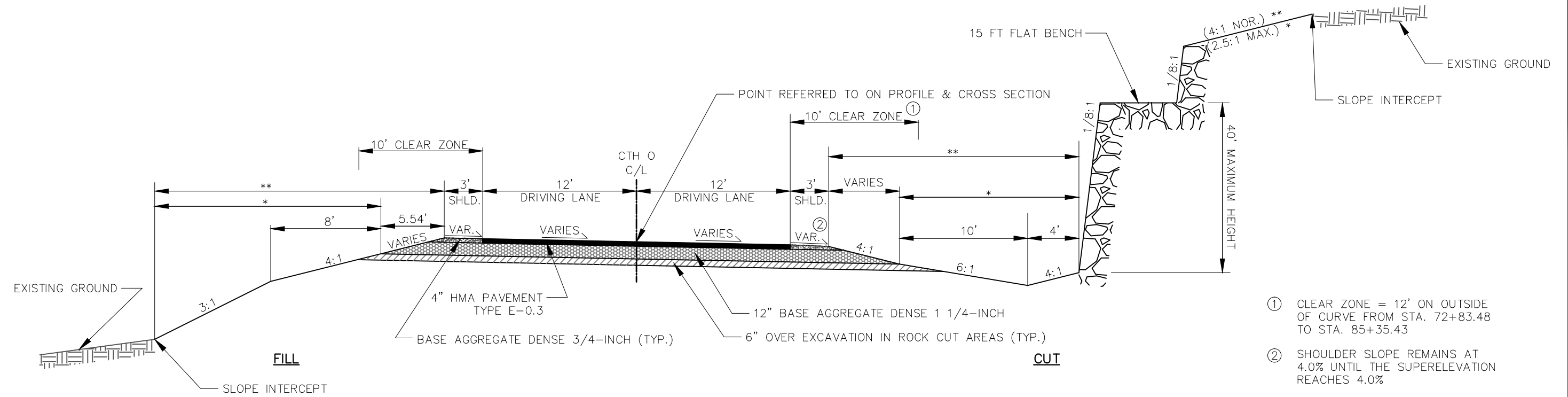
CTH 0



TYPICAL EXISTING SECTION

OVERGAARD ROAD

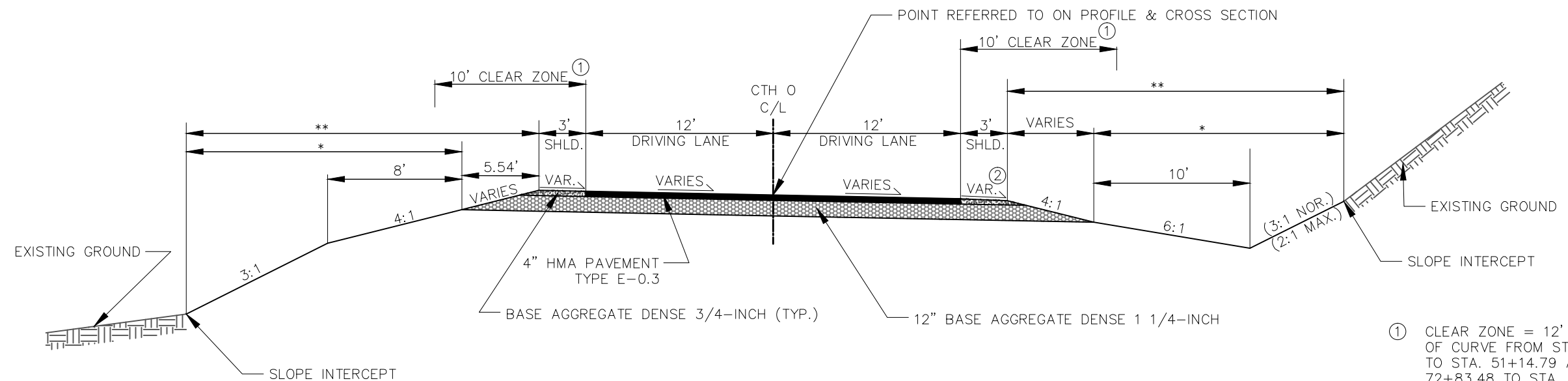




- ① CLEAR ZONE = 12' ON OUTSIDE OF CURVE FROM STA. 72+83.48 TO STA. 85+35.43
- ② SHOULDER SLOPE REMAINS AT 4.0% UNTIL THE SUPERELEVATION REACHES 4.0%
- ** LIMITS OF SEEDING, TEMPORARY SEEDING & FERTILIZER
- * LIMITS OF SALVAGED TOPSOIL, EROSION MAT AND MULCH

TYPICAL FINISHED SUPERELEVATED ROCK EXCAVATION SECTION

CTH 0
STA. 56+75 - STA. 61+50
STA. 68+50 - STA. 71+10.33
STA. 73+50 - STA. 80+00



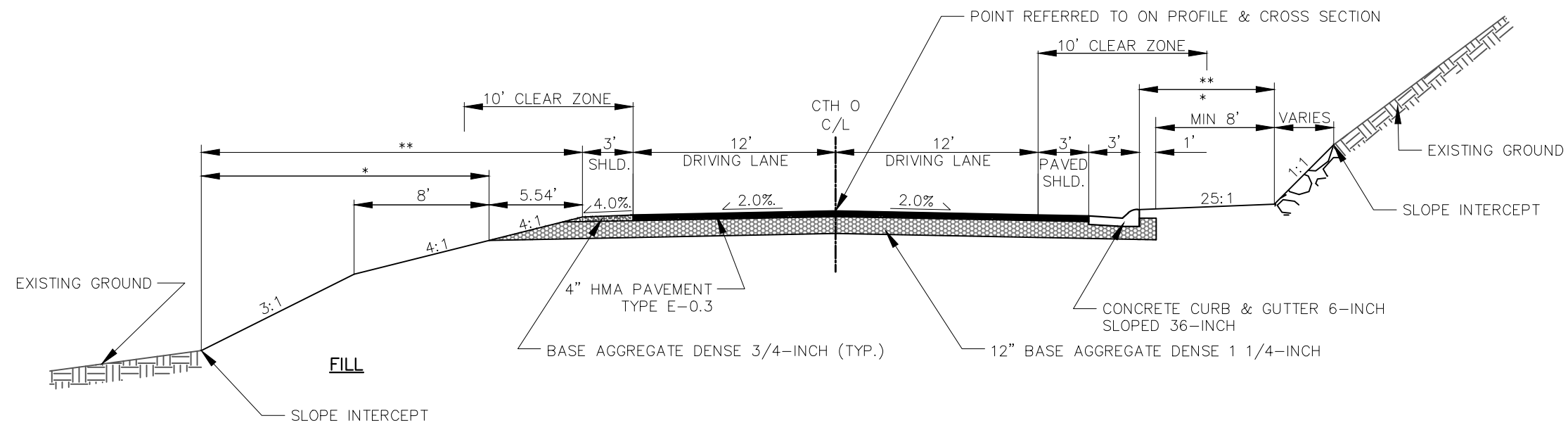
- ① CLEAR ZONE = 12' ON OUTSIDE OF CURVE FROM STA. 43+63.28 TO STA. 51+14.79 AND STA. 72+83.48 TO STA. 85+35.43
- ② SHOULDER SLOPE REMAINS AT 4.0% UNTIL THE SUPERELEVATION REACHES 4.0%
- ** LIMITS OF SEEDING, TEMPORARY SEEDING & FERTILIZER
- * LIMITS OF SALVAGED TOPSOIL, EROSION MAT AND MULCH

FILL

TYPICAL FINISHED SUPERELEVATED SECTION

CUT

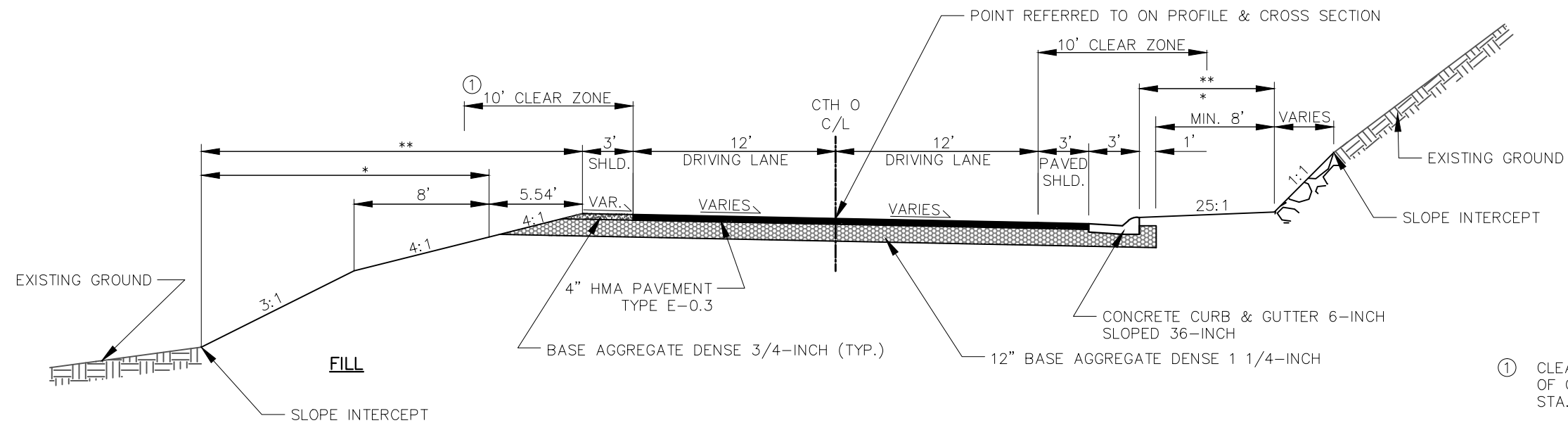
CTH 0
STA. 43+63.28 - STA. 45+75
STA. 61+50 - STA. 68+50
STA. 72+83.48 - STA. 73+50
STA. 80+00 - STA. 85+35.43
STA. 92+48.14 - STA. 94+00



TYPICAL FINISHED SECTION WITH CONCRETE CURB & GUTTER

CTH 0
STA. 51+14.79 - STA. 54+51.69

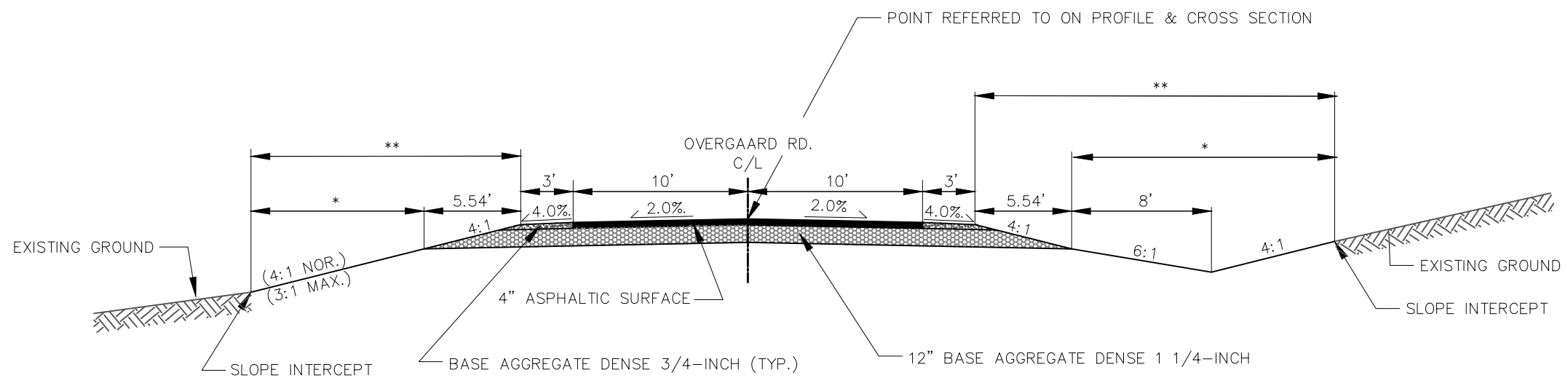
- ** LIMITS OF SEEDING, TEMPORARY SEEDING & FERTILIZER
- * LIMITS OF SALVAGED TOPSOIL, EROSION MAT, MULCH, SEEDING, TEMPORARY SEEDING AND FERTILIZER



TYPICAL FINISHED SUPERELEVATED SECTION WITH CONCRETE CURB & GUTTER

CTH 0
STA. 45+75 - STA. 51+14.79
STA. 54+51.69 - STA. 56+75

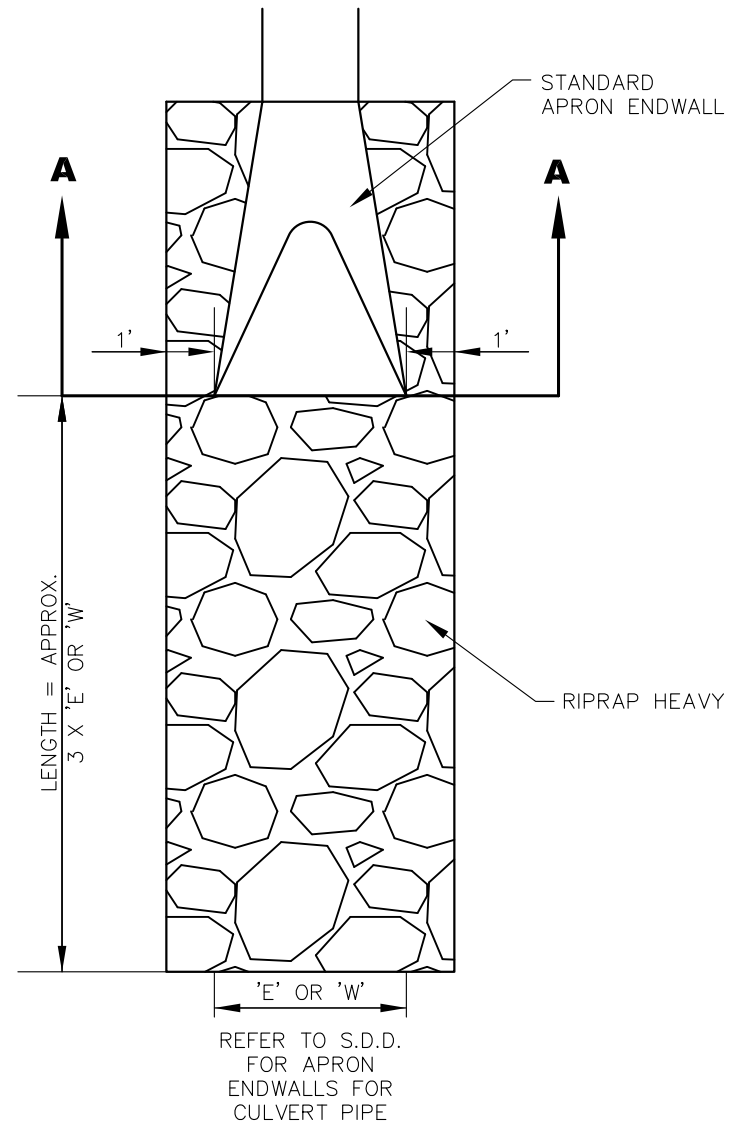
- ① CLEAR ZONE = 12' ON OUTSIDE OF CURVE FROM STA. 46+75 TO STA. 51+14.79.
- ** LIMITS OF SEEDING, TEMPORARY SEEDING & FERTILIZER
- * LIMITS OF SALVAGED TOPSOIL, EROSION MAT, MULCH, SEEDING, TEMPORARY SEEDING AND FERTILIZER



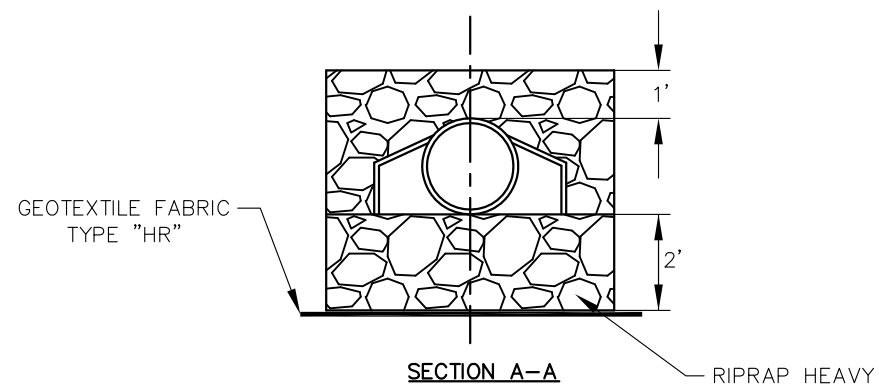
TYPICAL FINISHED SECTION

OVERGAARD RD.
STA. 100+00 - STA. 103+38.11

- ** LIMITS OF SEEDING, TEMPORARY SEEDING & FERTILIZER
- * LIMITS OF SALVAGED TOPSOIL, EROSION MAT AND MULCH



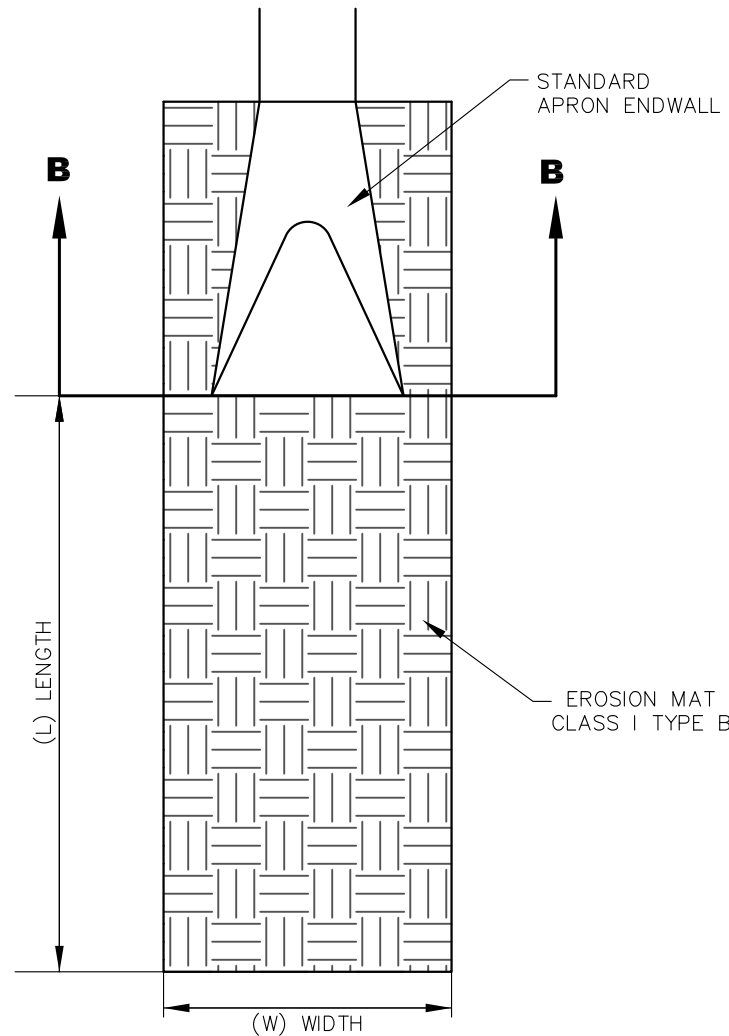
PLAN VIEW



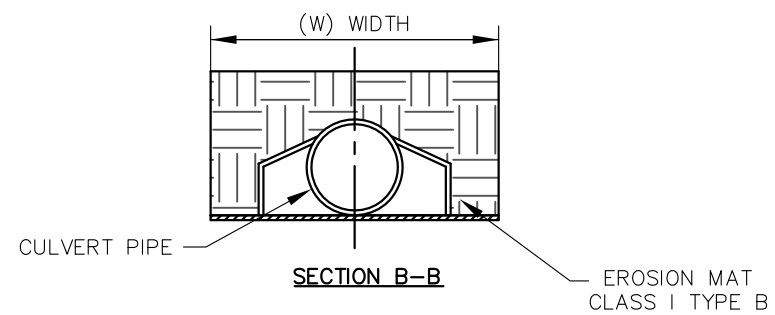
SECTION A-A

RIPRAP HEAVY DISCHARGE APRON

SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS



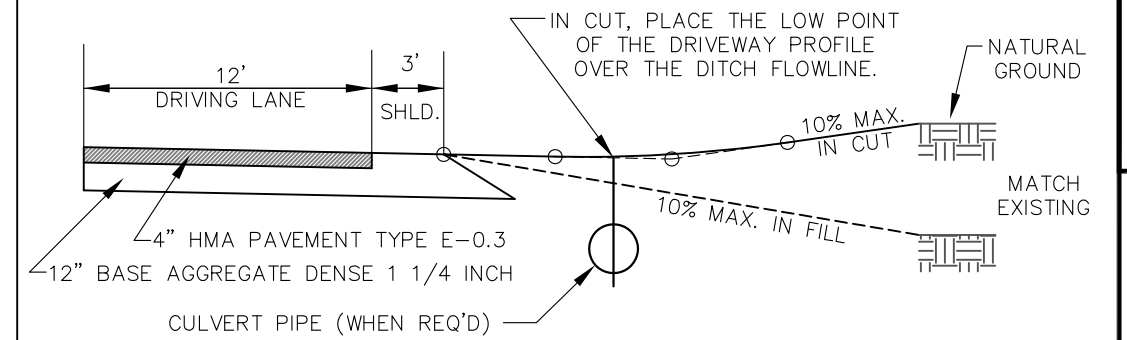
PLAN VIEW



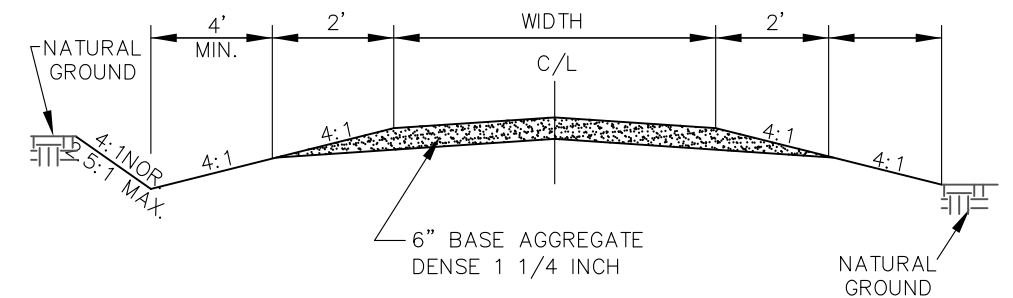
SECTION B-B

EROSION MAT CLASS II TYPE B DISCHARGE APRON

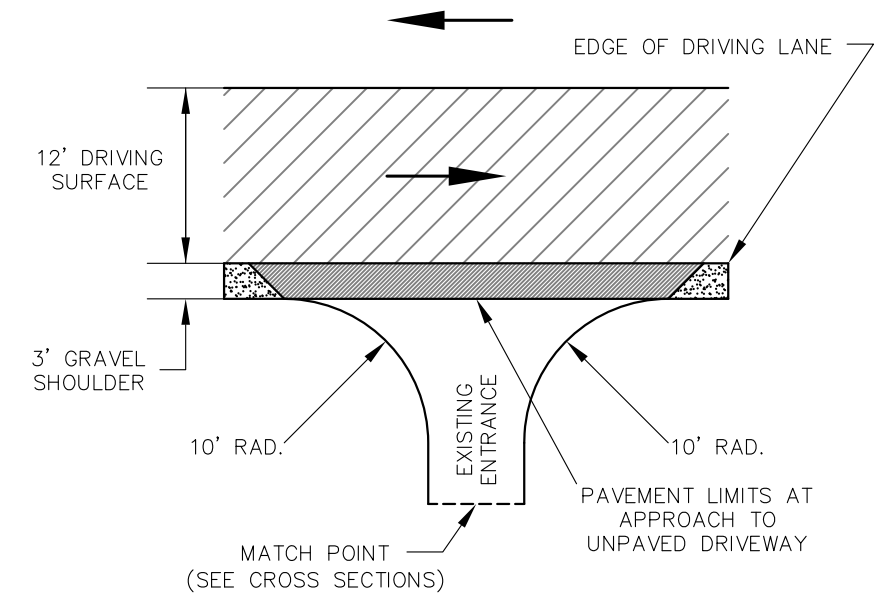
SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS AND DIMENSIONS

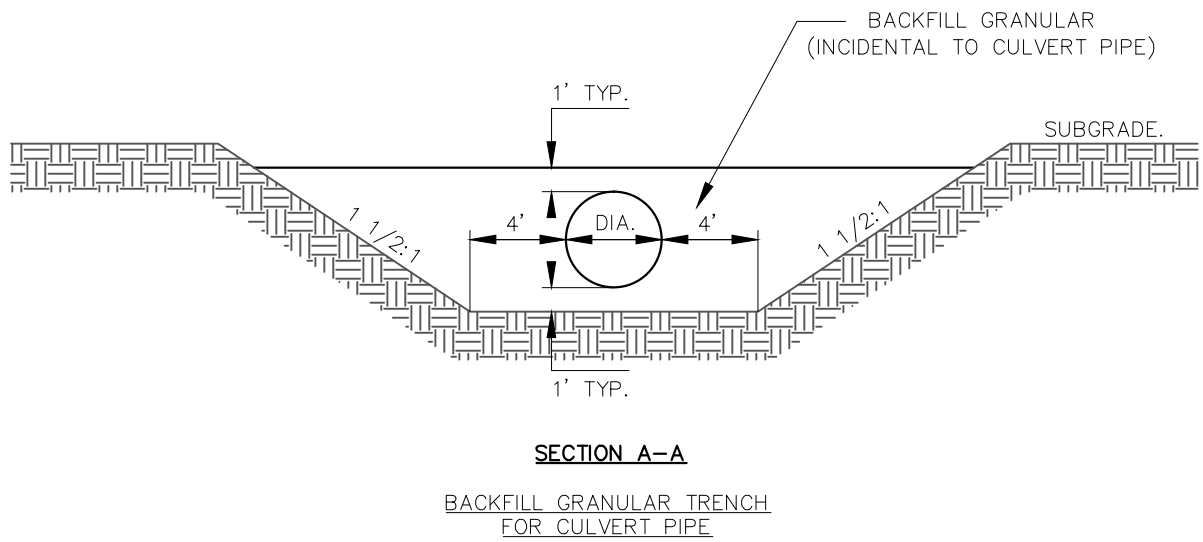
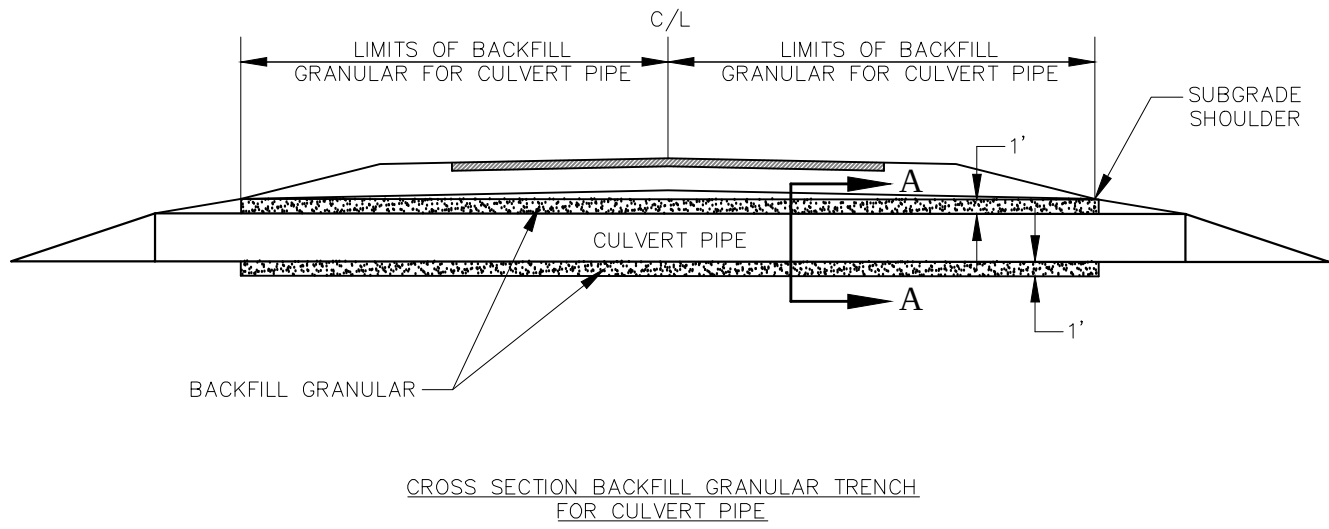


TYPICAL RURAL ENTRANCE PROFILE

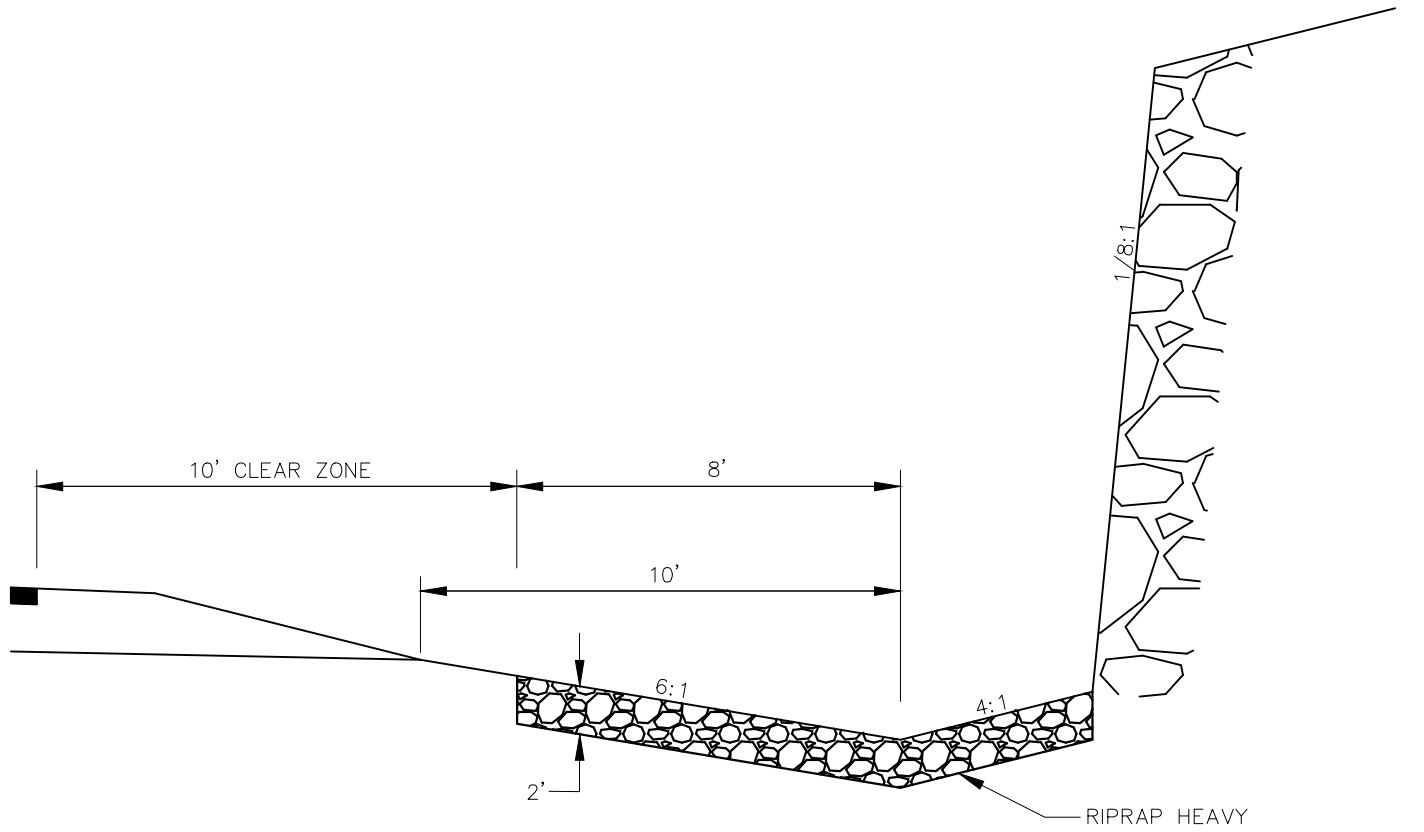


TYPICAL CROSS-SECTION FOR RURAL ENTRANCE

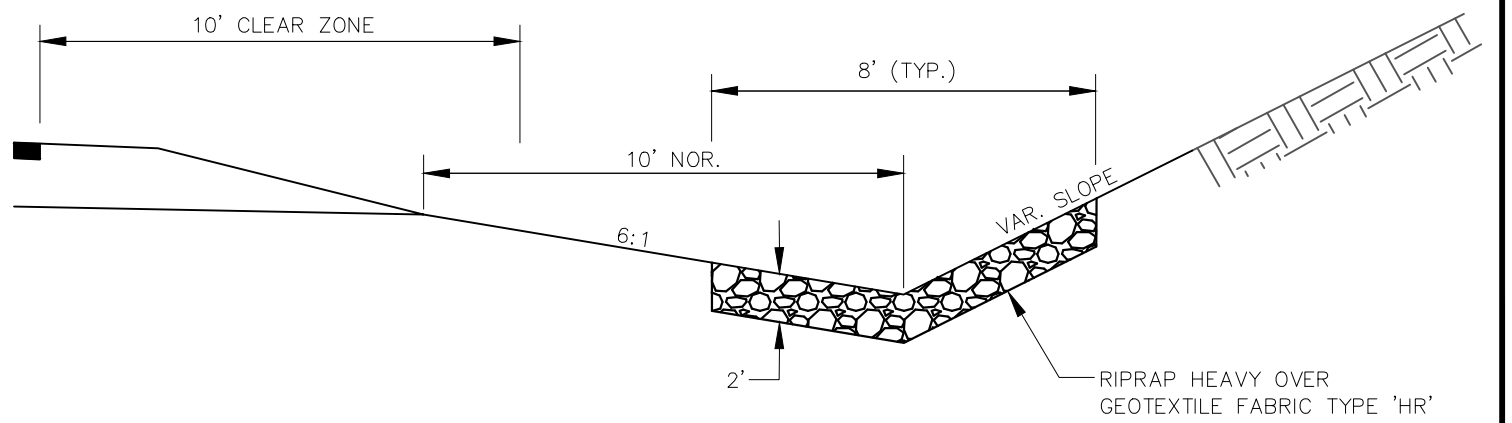
**RURAL ENTRANCE DETAILS**



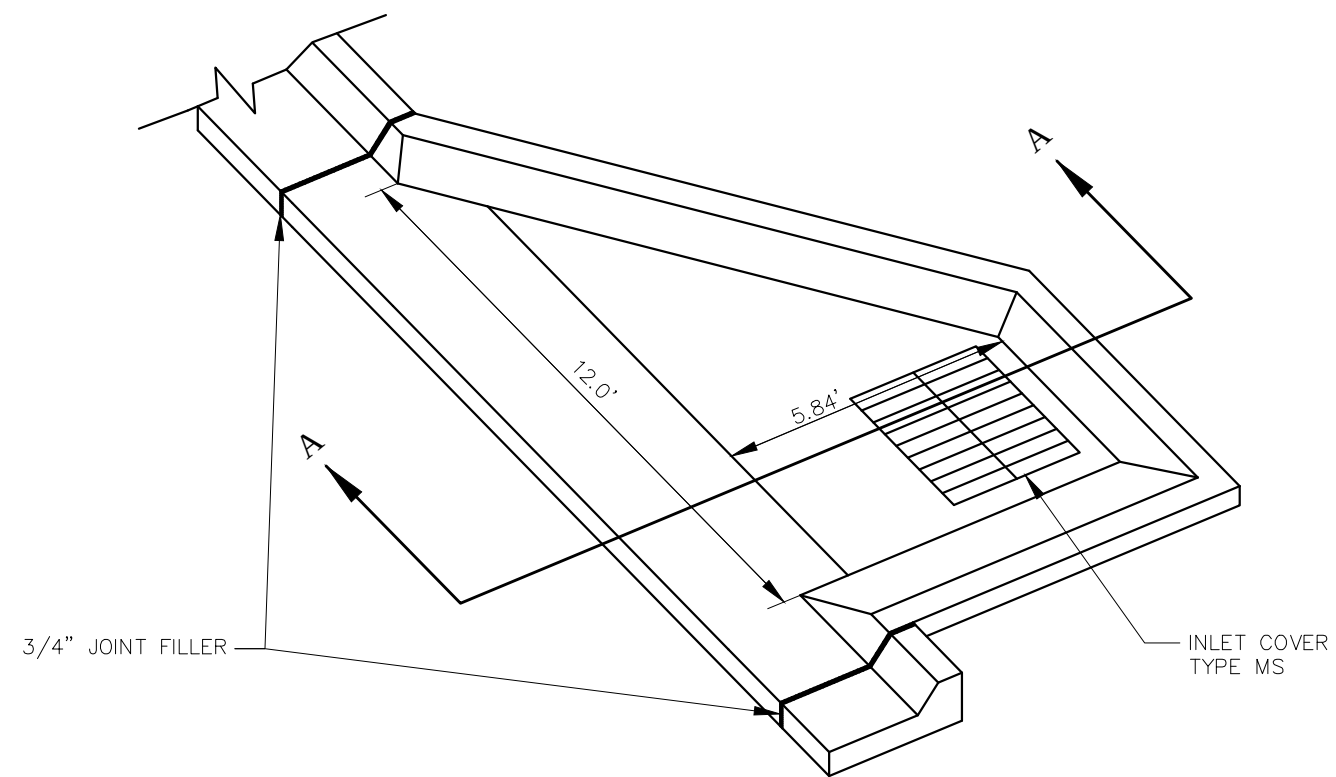
BACKFILL GRANULAR DETAILS



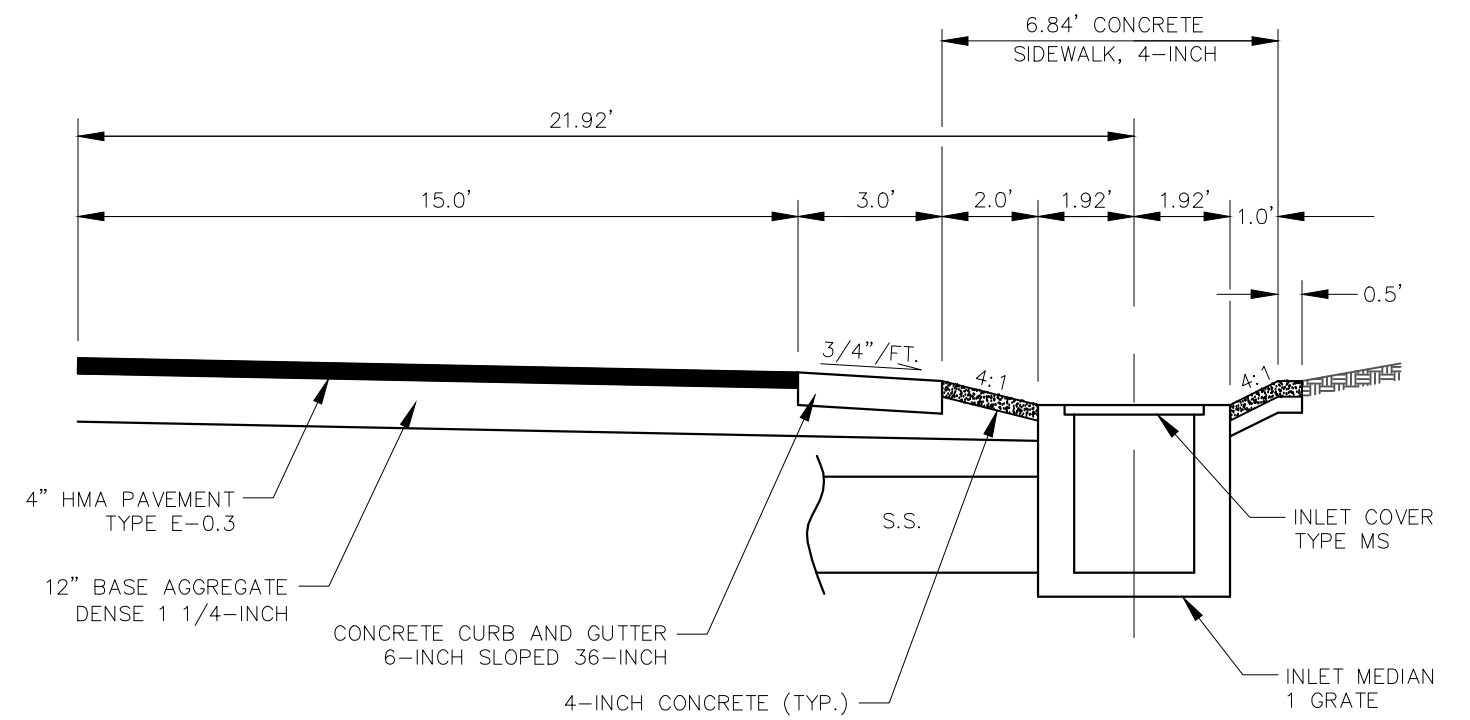
RIPRAP HEAVY DITCH IN ROCK CUT



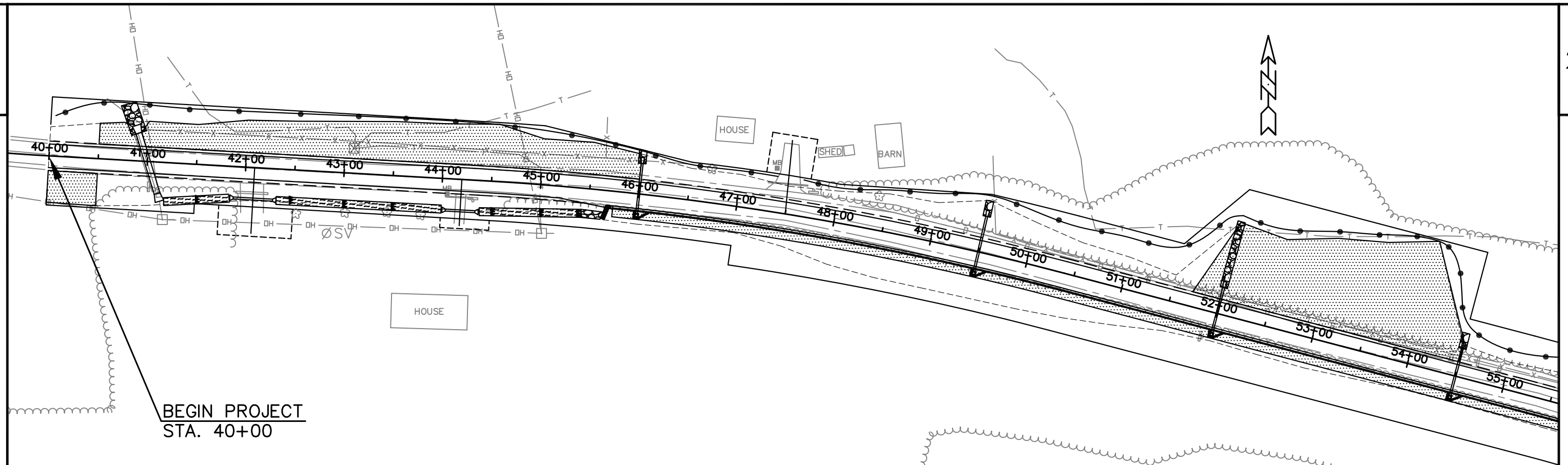
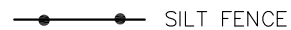
RIPRAP HEAVY DITCH



CONCRETE SURFACE DRAIN DETAIL



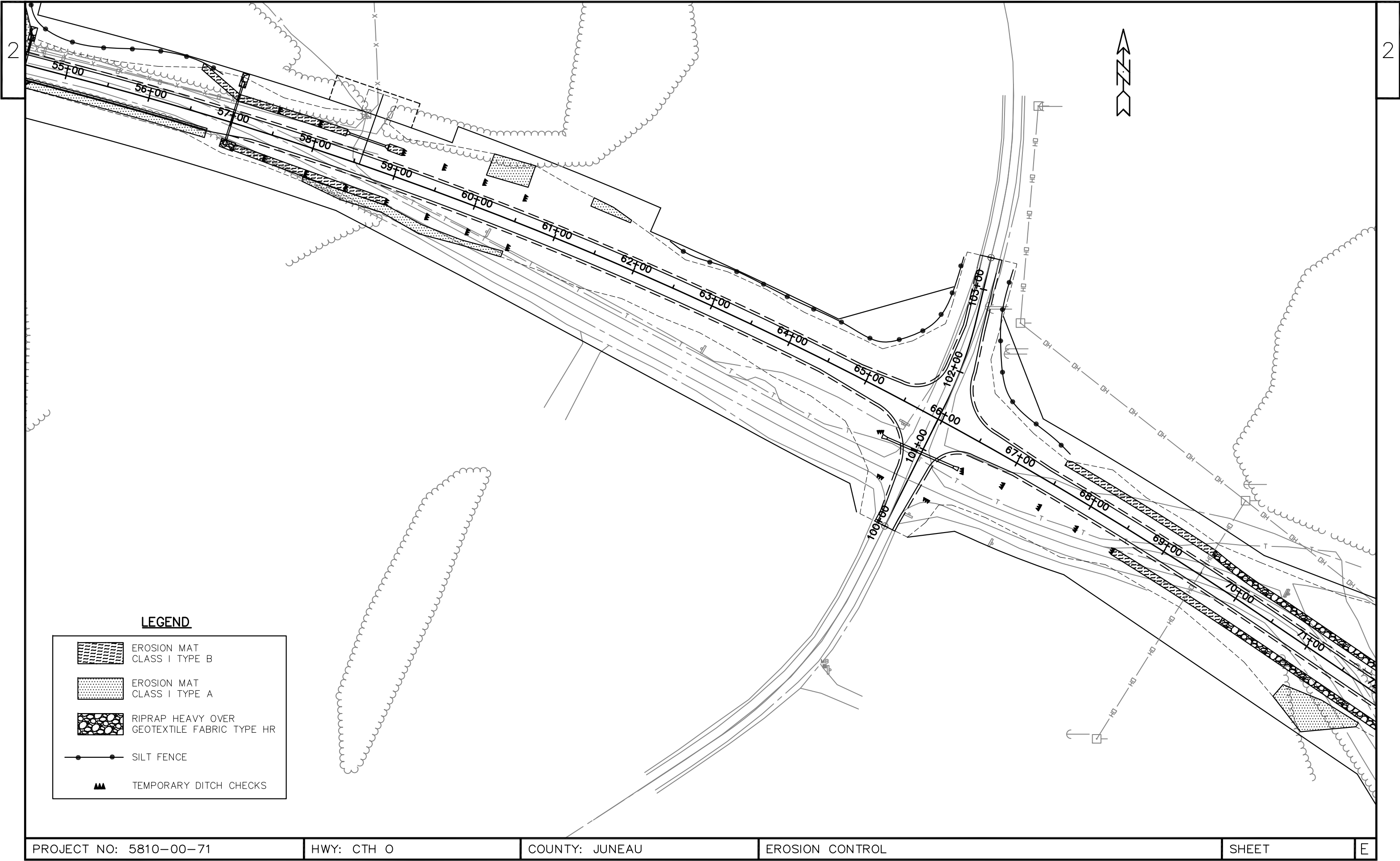
SECTION A-A

**LEGEND**EROSION MAT
CLASS I TYPE BEROSION MAT
CLASS I TYPE ARIPRAP HEAVY OVER
GEOTEXTILE FABRIC TYPE HR

SILT FENCE



TEMPORARY DITCH CHECKS

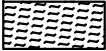


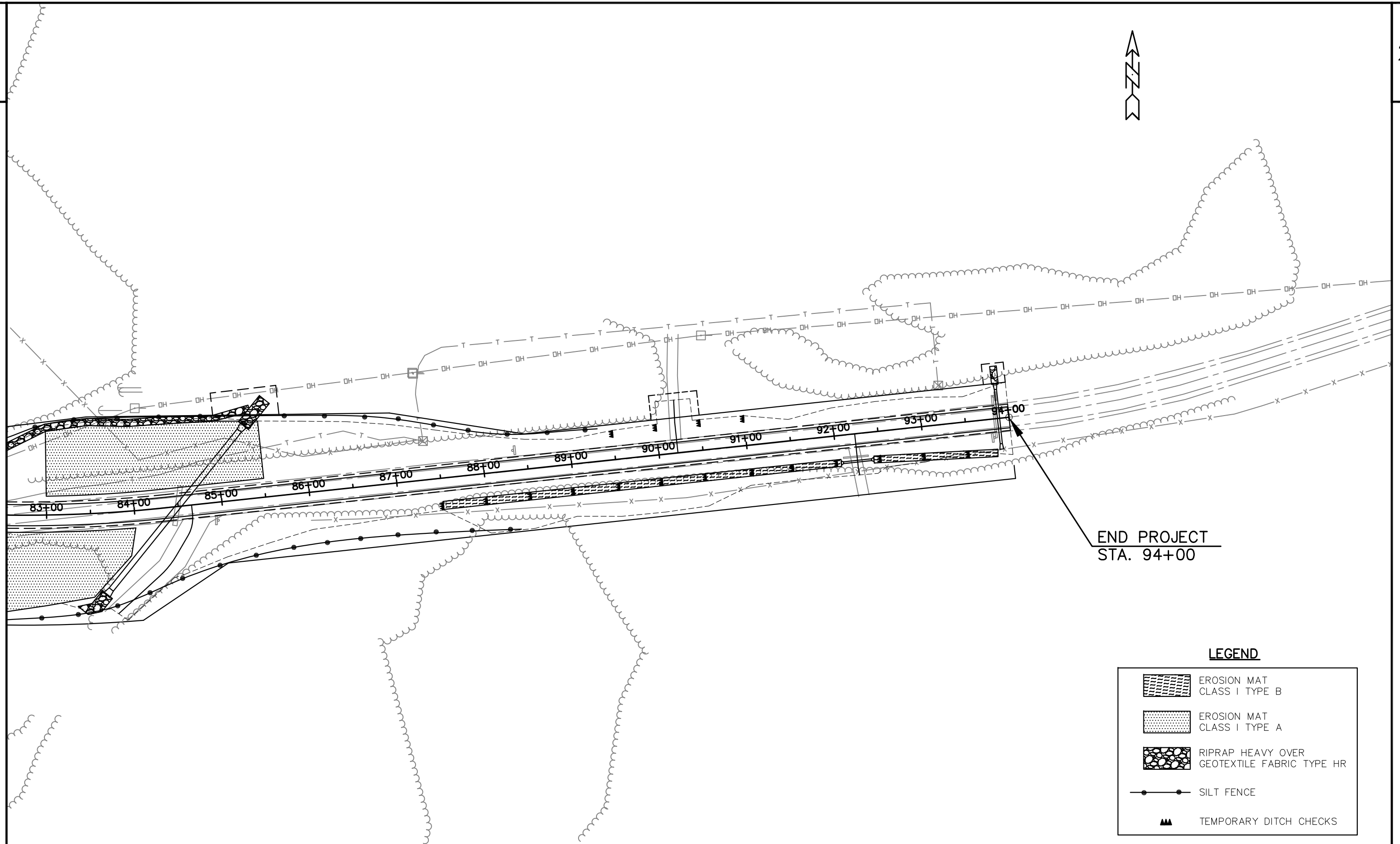
LEGEND

- | | |
|---|--|
|  | EROSION MAT
CLASS I TYPE B |
|  | EROSION MAT
CLASS I TYPE A |
|  | RIPRAP HEAVY OVER
GEOTEXTILE FABRIC TYPE HR |
|  | SILT FENCE |
|  | TEMPORARY DITCH CHECKS |



LEGEND

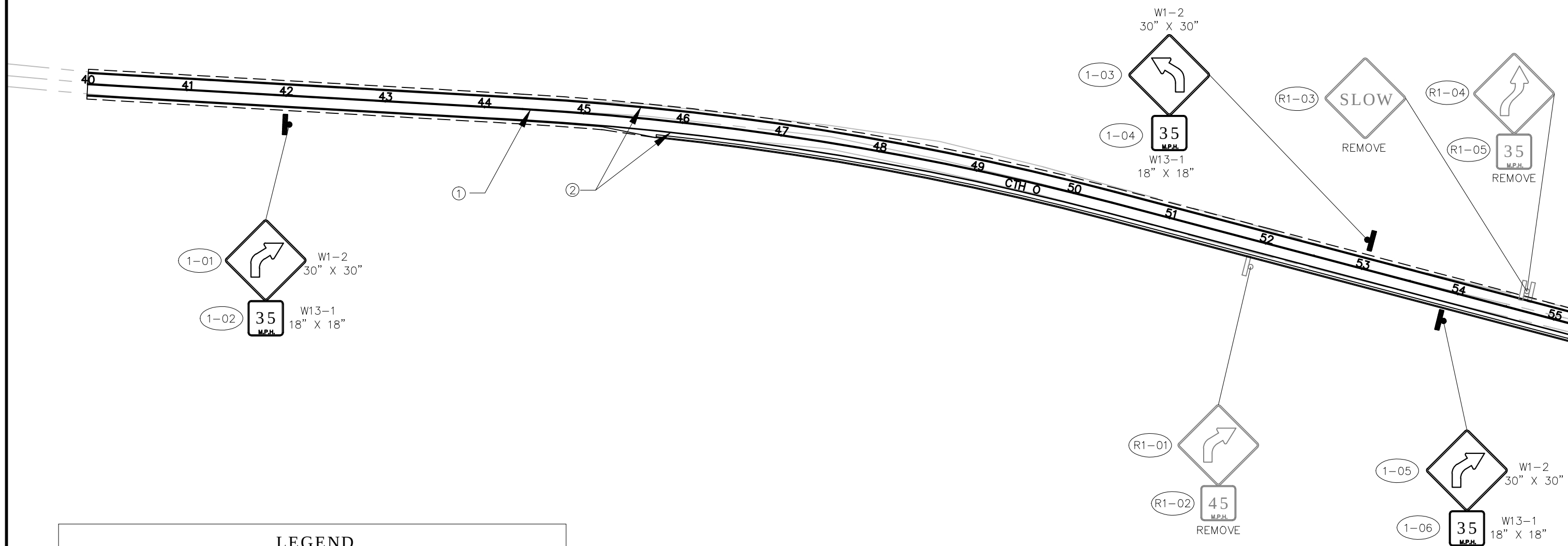
	EROSION MAT CLASS I TYPE B
	EROSION MAT CLASS I TYPE A
	RIPRAP HEAVY OVER GEOTEXTILE FABRIC TYPE HR
	SILT FENCE
	TEMPORARY DITCH CHECKS



END PROJECT
STA. 94+00

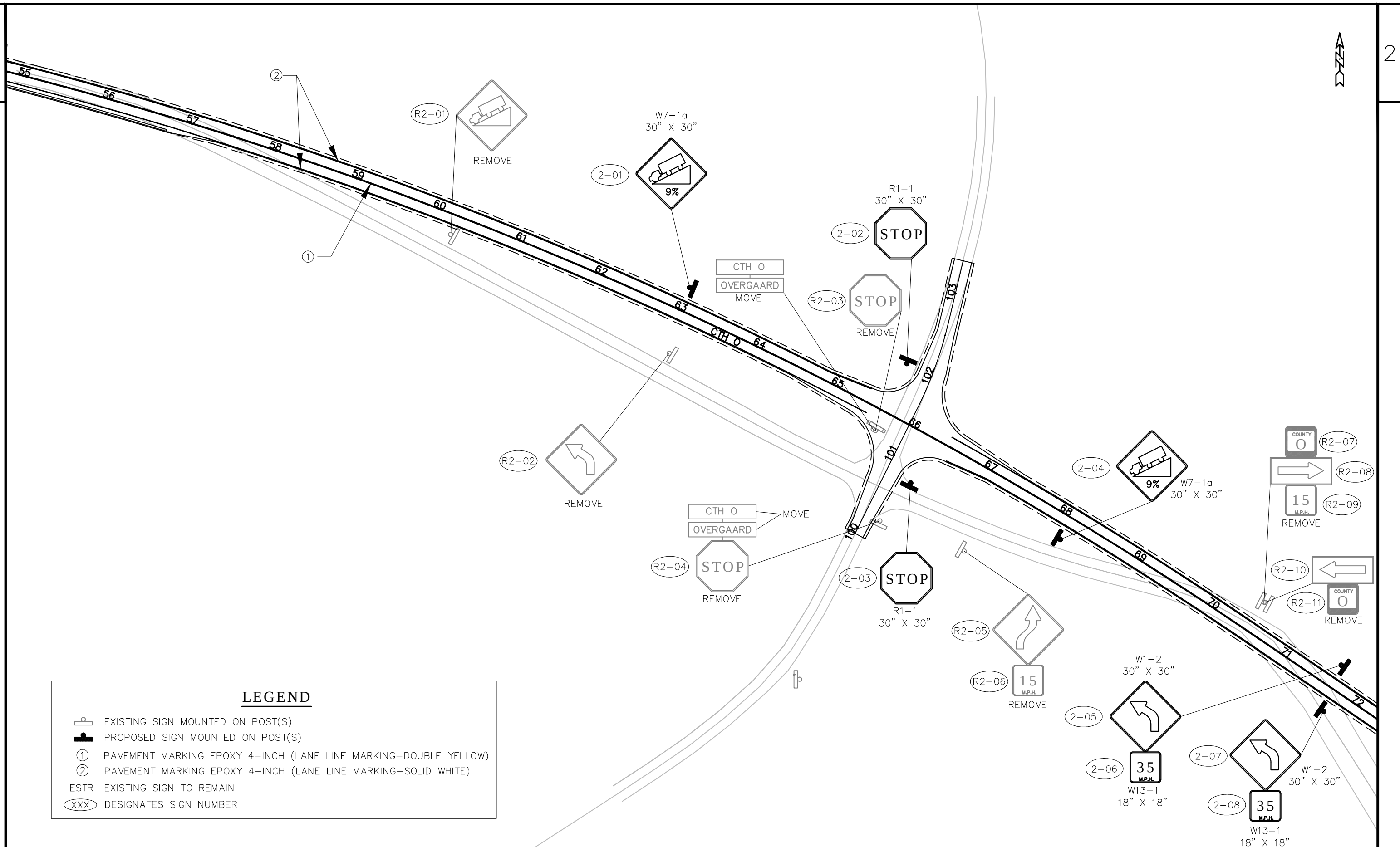
LEGEND

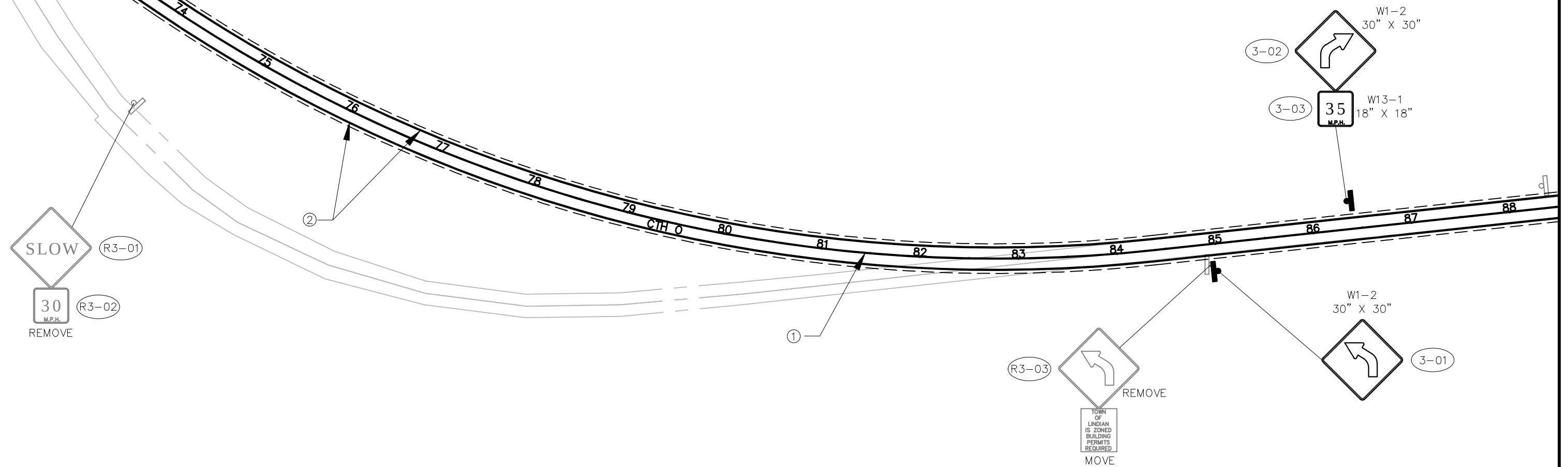
	EROSION MAT CLASS I TYPE B
	EROSION MAT CLASS I TYPE A
	RIPRAP HEAVY OVER GEOTEXTILE FABRIC TYPE HR
	SILT FENCE
	TEMPORARY DITCH CHECKS



LEGEND

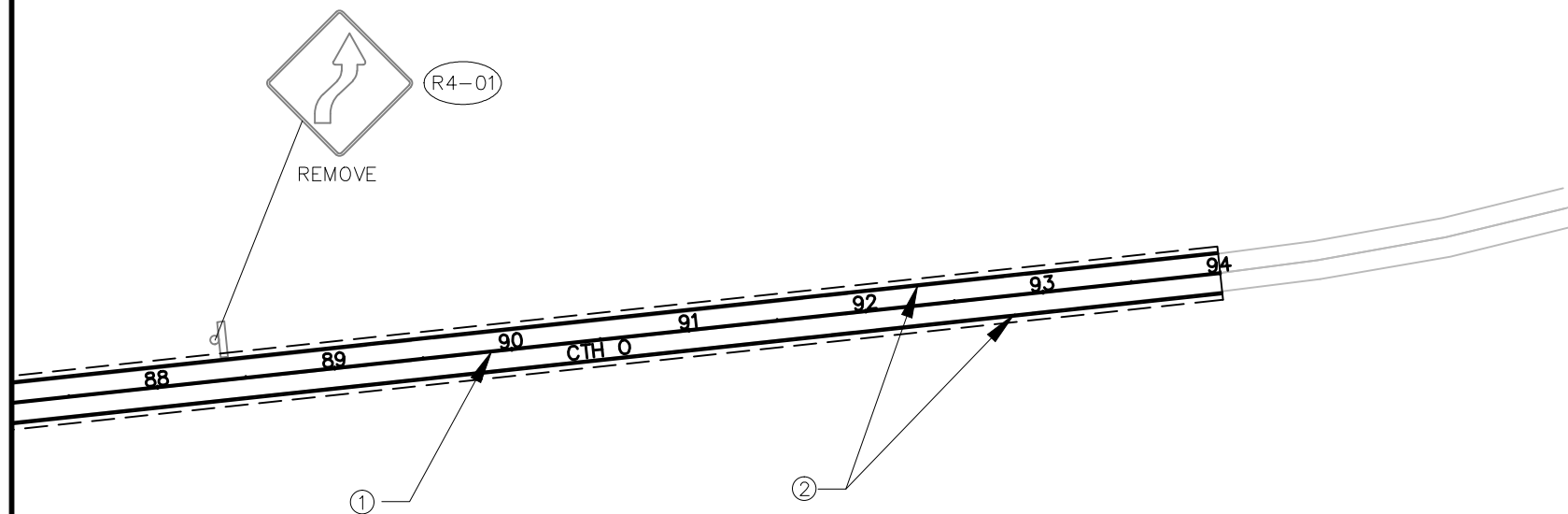
- EXISTING SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON POST(S)
- ① PAVEMENT MARKING EPOXY 4-INCH (LANE LINE MARKING-DOUBLE YELLOW)
- ② PAVEMENT MARKING EPOXY 4-INCH (LANE LINE MARKING-SOLID WHITE)
- ESTR EXISTING SIGN TO REMAIN
- XXX DESIGNATES SIGN NUMBER





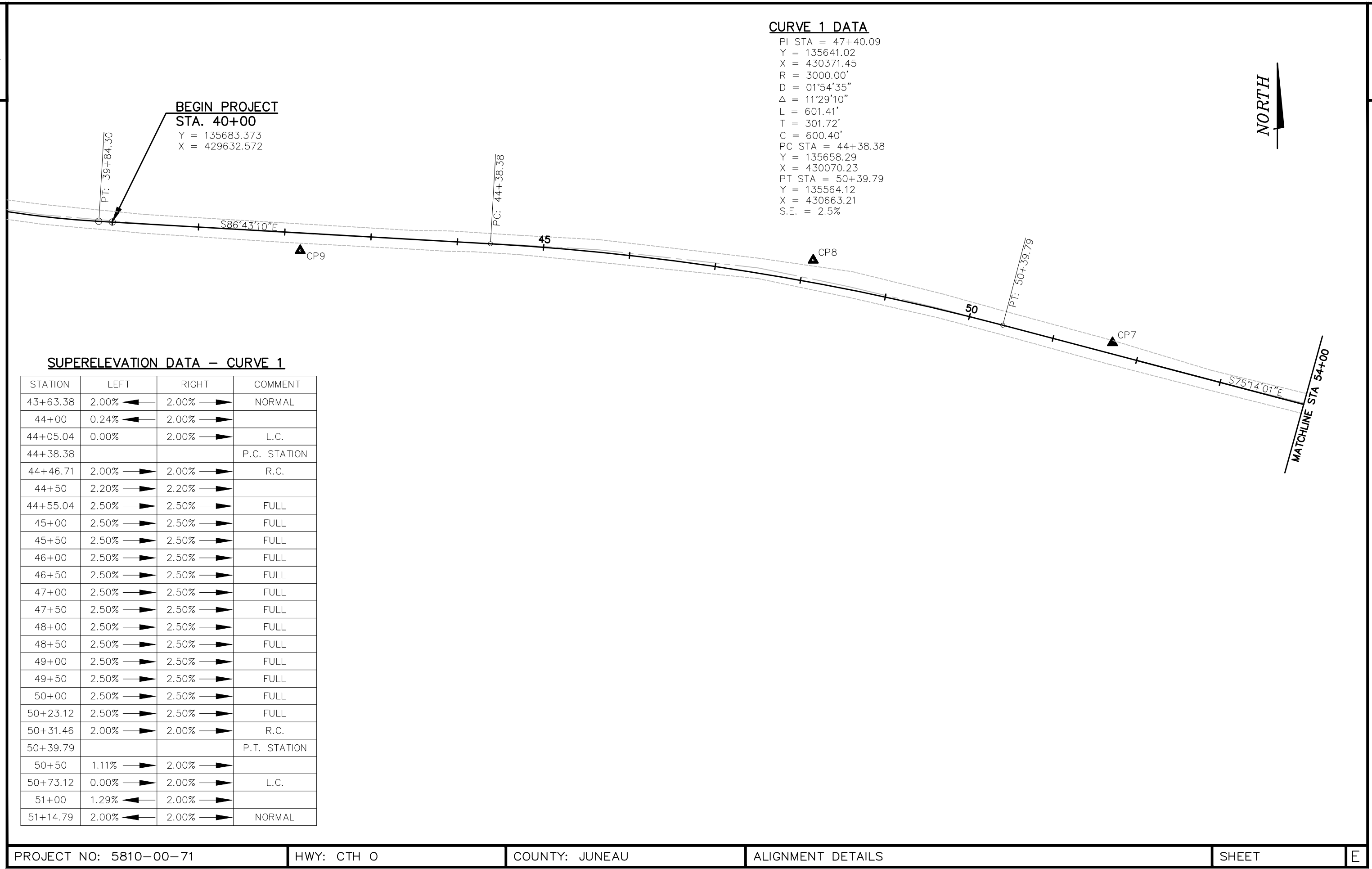
LEGEND

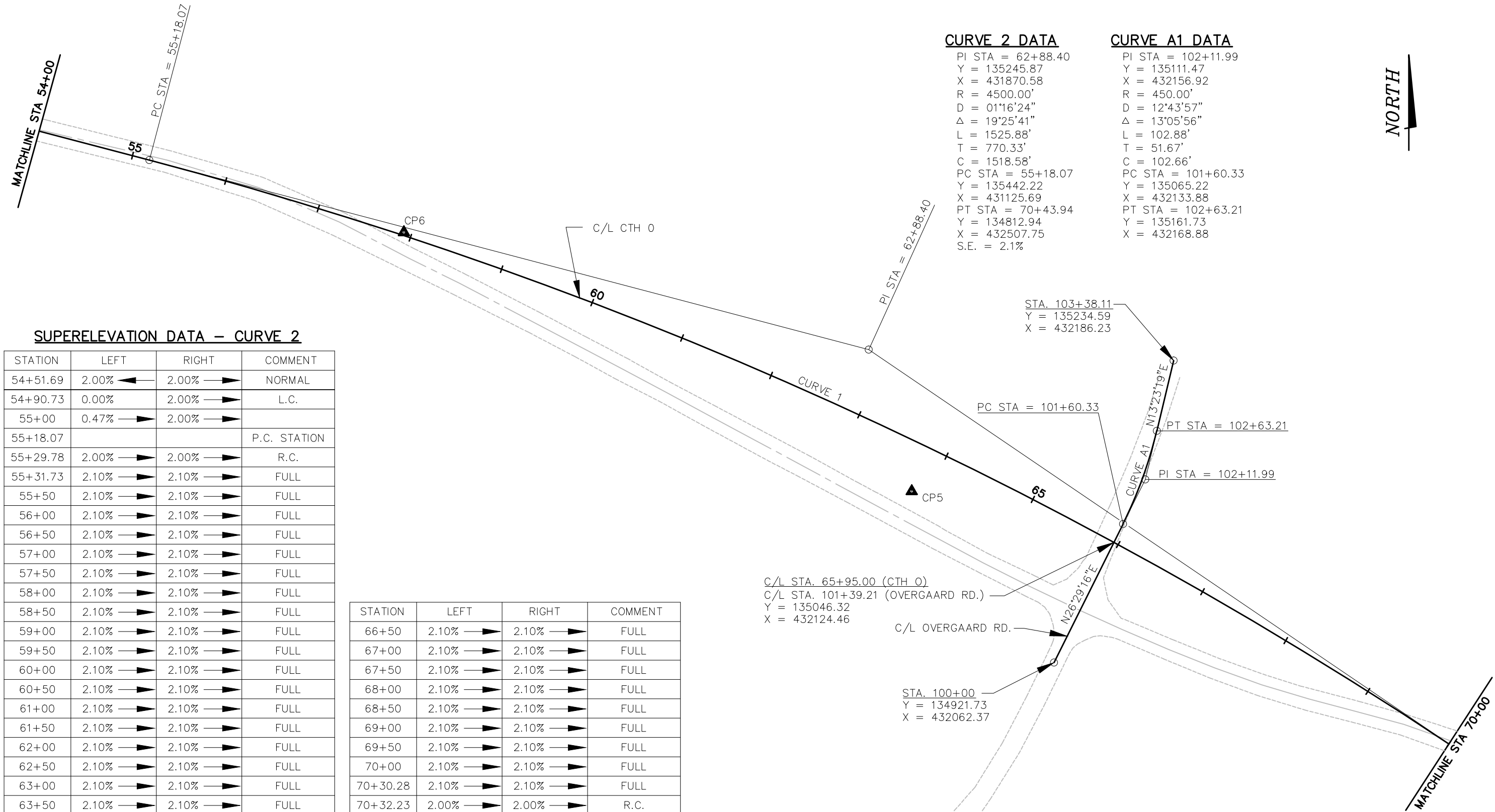
-  EXISTING SIGN MOUNTED ON POST(S)
-  PROPOSED SIGN MOUNTED ON POST(S)
- ① PAVEMENT MARKING EPOXY 4-INCH (LANE LINE MARKING—DOUBLE YELLOW)
- ② PAVEMENT MARKING EPOXY 4-INCH (LANE LINE MARKING—SOLID WHITE)
- ESTR EXISTING SIGN TO REMAIN
- XXX DESIGNATES SIGN NUMBER



LEGEND

-  EXISTING SIGN MOUNTED ON POST(S)
-  PROPOSED SIGN MOUNTED ON POST(S)
- ① PAVEMENT MARKING EPOXY 4-INCH (LANE LINE MARKING—DOUBLE YELLOW)
- ② PAVEMENT MARKING EPOXY 4-INCH (LANE LINE MARKING—SOLID WHITE)
- ESTR EXISTING SIGN TO REMAIN
- ⓧ DESIGNATES SIGN NUMBER





SUPERELEVATION DATA – CURVE 2

STATION	LEFT	RIGHT	COMMENT
54+51.69	2.00% ←	2.00% →	NORMAL
54+90.73	0.00%	2.00% →	L.C.
55+00	0.47% →	2.00% →	
55+18.07			P.C. STATION
55+29.78	2.00% →	2.00% →	R.C.
55+31.73	2.10% →	2.10% →	FULL
55+50	2.10% →	2.10% →	FULL
56+00	2.10% →	2.10% →	FULL
56+50	2.10% →	2.10% →	FULL
57+00	2.10% →	2.10% →	FULL
57+50	2.10% →	2.10% →	FULL
58+00	2.10% →	2.10% →	FULL
58+50	2.10% →	2.10% →	FULL
59+00	2.10% →	2.10% →	FULL
59+50	2.10% →	2.10% →	FULL
60+00	2.10% →	2.10% →	FULL
60+50	2.10% →	2.10% →	FULL
61+00	2.10% →	2.10% →	FULL
61+50	2.10% →	2.10% →	FULL
62+00	2.10% →	2.10% →	FULL
62+50	2.10% →	2.10% →	FULL
63+00	2.10% →	2.10% →	FULL
63+50	2.10% →	2.10% →	FULL
64+00	2.10% →	2.10% →	FULL
64+50	2.10% →	2.10% →	FULL
65+00	2.10% →	2.10% →	FULL
65+50	2.10% →	2.10% →	FULL
66+00	2.10% →	2.10% →	FULL

STATION	LEFT	RIGHT	COMMENT
66+50	2.10% →	2.10% →	FULL
67+00	2.10% →	2.10% →	FULL
67+50	2.10% →	2.10% →	FULL
68+00	2.10% →	2.10% →	FULL
68+50	2.10% →	2.10% →	FULL
69+00	2.10% →	2.10% →	FULL
69+50	2.10% →	2.10% →	FULL
70+00	2.10% →	2.10% →	FULL
70+30.28	2.10% →	2.10% →	FULL
70+32.23	2.00% →	2.00% →	R.C.
70+43.94			P.T. STATION
70+50	1.09% →	2.00% →	
70+71.28	0.00%	2.00% →	L.C.
71+00	1.47% ←	2.00% →	
71+10.33	2.00% ←	2.00% →	NORMAL

CURVE 2 DATA

PI STA = 62+88.40
Y = 135245.87
X = 431870.58
R = 4500.00'
D = 01°16'24"
Δ = 19°25'41"
L = 1525.88'
T = 770.33'
C = 1518.58'
PC STA = 55+18.07
Y = 135442.22
X = 431125.69
PT STA = 70+43.94
Y = 134812.94
X = 432507.75
S.E. = 2.1%

CURVE A1 DATA

PI STA = 102+11.99
Y = 135111.47
X = 432156.92
R = 450.00'
D = 12°43'57"
Δ = 13°05'56"
L = 102.88'
T = 51.67'
C = 102.66'
PC STA = 101+60.33
Y = 135065.22
X = 432133.88
PT STA = 102+63.21
Y = 135161.73
X = 432168.88



CURVE 3 DATA

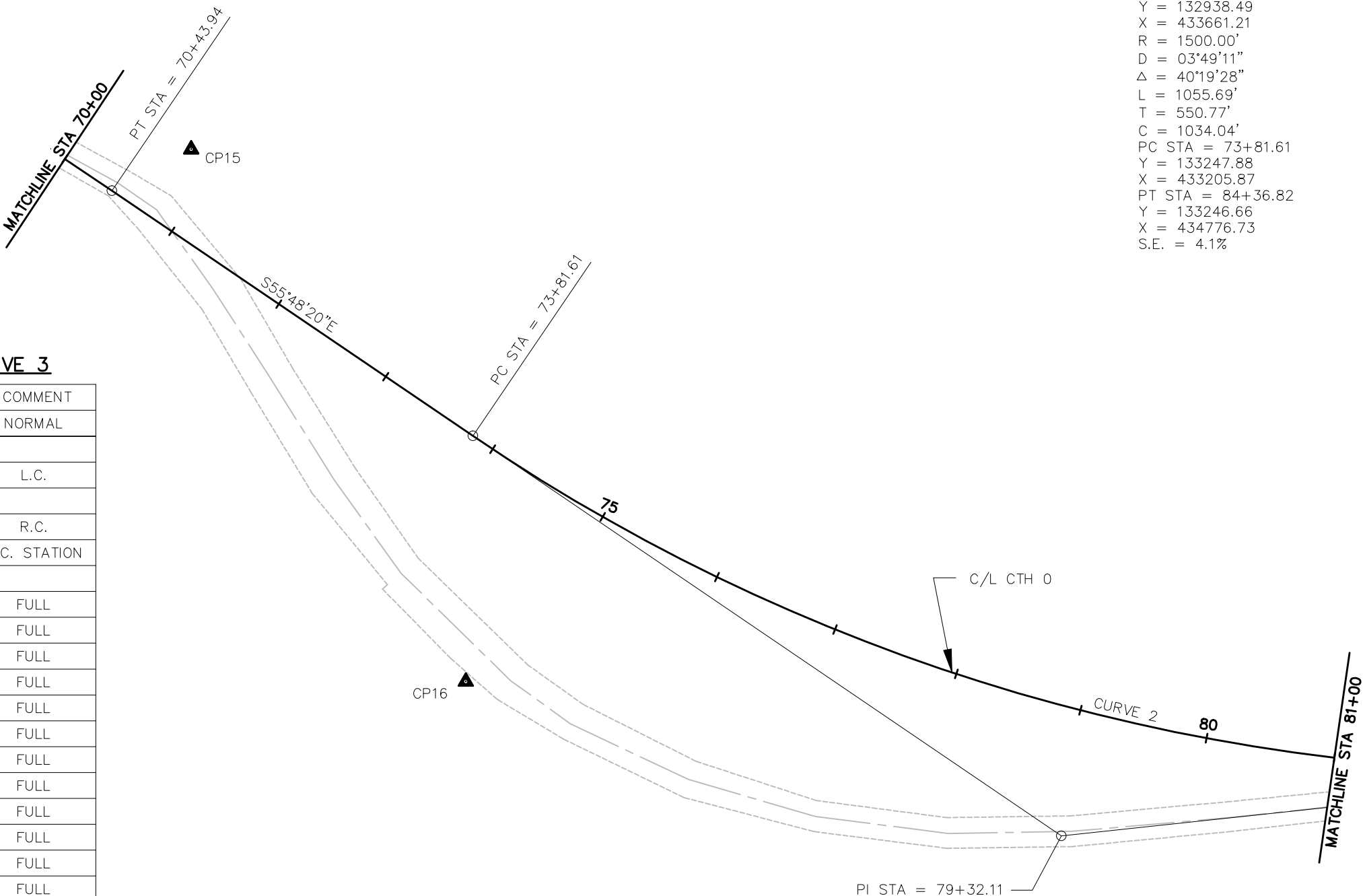
PI STA = 79+32.11
Y = 132938.49
X = 433661.21
R = 1500.00'
D = 03°49'11"
Δ = 40°19'28"
L = 1055.69'
T = 550.77'
C = 1034.04'
PC STA = 73+81.61
Y = 133247.88
X = 433205.87
PT STA = 84+36.82
Y = 133246.66
X = 434776.73
S.E. = 4.1%

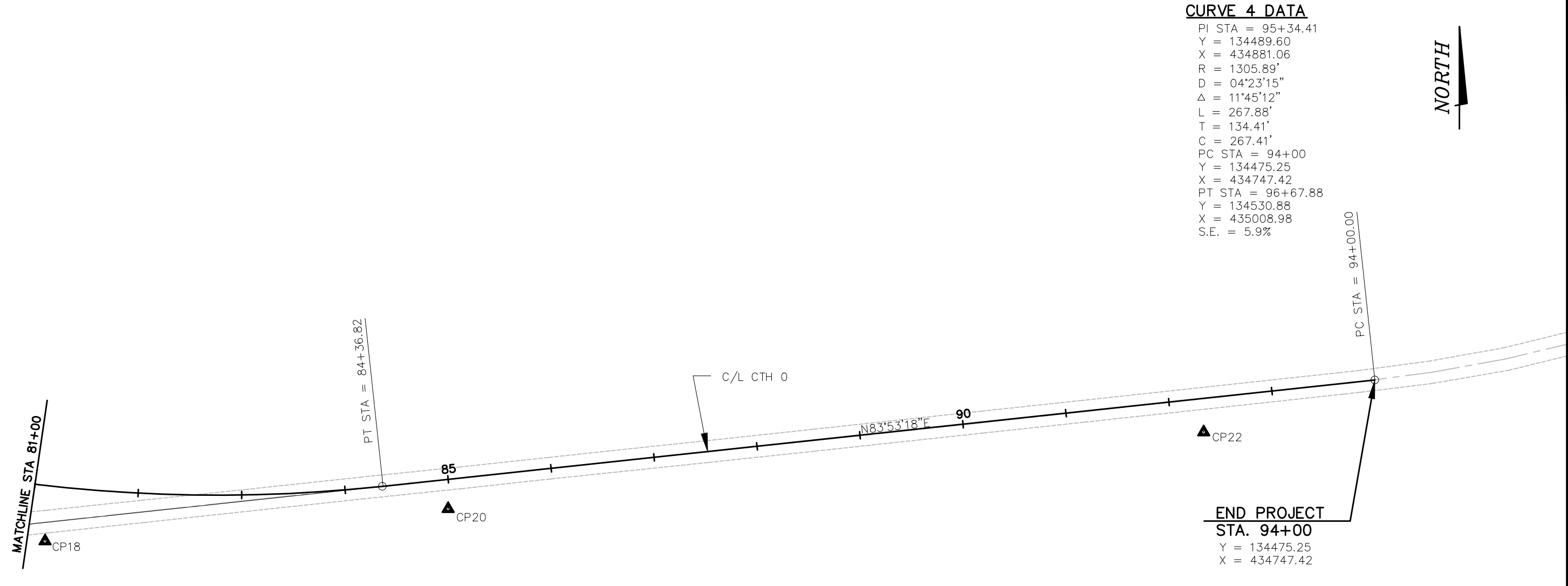


SUPERELEVATION DATA – CURVE 3

STATION	LEFT	RIGHT	COMMENT
72+83.48	2.00% ←	2.00% →	NORMAL
73+00	2.00% ←	1.20% →	
73+24.94	2.00% ←	0.00%	L.C.
73+50	2.00% ←	1.21% ←	
73+66.40	2.00% ←	2.00% ←	R.C.
73+81.61			P.C. STATION
74+00	3.62% ←	3.62% ←	
74+09.94	4.10% ←	4.10% ←	FULL
74+50	4.10% ←	4.10% ←	FULL
75+00	4.10% ←	4.10% ←	FULL
75+50	4.10% ←	4.10% ←	FULL
76+00	4.10% ←	4.10% ←	FULL
76+50	4.10% ←	4.10% ←	FULL
77+00	4.10% ←	4.10% ←	FULL
77+50	4.10% ←	4.10% ←	FULL
78+00	4.10% ←	4.10% ←	FULL
78+50	4.10% ←	4.10% ←	FULL
79+00	4.10% ←	4.10% ←	FULL
79+50	4.10% ←	4.10% ←	FULL
80+00	4.10% ←	4.10% ←	FULL
80+50	4.10% ←	4.10% ←	FULL
81+00	4.10% ←	4.10% ←	FULL
81+50	4.10% ←	4.10% ←	FULL
82+00	4.10% ←	4.10% ←	FULL
82+50	4.10% ←	4.10% ←	FULL
83+00	4.10% ←	4.10% ←	FULL
83+50	4.10% ←	4.10% ←	FULL
83+87.30	4.10% ←	4.10% ←	FULL

STATION	LEFT	RIGHT	COMMENT
84+00	4.10% ←	4.10% ←	FULL
84+08.97	4.10% ←	4.10% ←	FULL
84+37.30			P.T. STATION
84+50	2.12% ←	2.12% ←	
84+52.51	2.00% ←	2.00% ←	R.C.
85+00	2.00% ←	0.29% →	
84+93.97	2.00% ←	0.00%	L.C.
85+35.43	2.00% ←	2.00% →	NORMAL





DATE 06FEB13		E S T I M A T E O F Q U A N T I T I E S			
LINE				5810-00-71	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	201.0205	GRUBBING	STA	36.000	36.000
0020	203.0100	REMOVING SMALL PIPE CULVERTS	EACH	7.000	7.000
0030	203.0200	REMOVING OLD STRUCTURE (STATION) 01.84+50	LS	1.000	1.000
0040	204.0180	REMOVING DELINEATORS AND MARKERS	EACH	2.000	2.000
0050	205.0100	EXCAVATION COMMON	CY	39,400.000	39,400.000
0060	205.0200	EXCAVATION ROCK	CY	85,900.000	85,900.000
0070	213.0100	FINISHING ROADWAY (PROJECT) 01.5810-00-71	EACH	1.000	1.000
0080	214.0100	OBLITERATING OLD ROAD	STA	12.000	12.000
0090	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	850.000	850.000
0100	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	16,200.000	16,200.000
0110	416.1010	CONCRETE SURFACE DRAINS	CY	3.300	3.300
0120	440.4410.S	INCENTIVE IRI RIDE	DOL	4,080.000	4,080.000
0130	455.0105	ASPHALTIC MATERIAL PG58-28	TON	220.000	220.000
0140	455.0605	TACK COAT	GAL	400.000	400.000
0150	460.1100	HMA PAVEMENT TYPE E-0.3	TON	3,610.000	3,610.000
0160	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	2,320.000	2,320.000
0170	465.0315	ASPHALTIC FLUMES	SY	14.000	14.000
0180	520.0118	CULVERT PIPE CLASS III 18-INCH	LF	72.000	72.000
0190	520.0124	CULVERT PIPE CLASS III 24-INCH	LF	62.000	62.000
0200	520.1018	APRON ENDWALLS FOR CULVERT PIPE 18-INCH	EACH	4.000	4.000
0210	520.1024	APRON ENDWALLS FOR CULVERT PIPE 24-INCH	EACH	4.000	4.000
0220	522.0124	CULVERT PIPE REINFORCED CONCRETE CLASS III 24-INCH	LF	146.000	146.000
0230	522.0130	CULVERT PIPE REINFORCED CONCRETE CLASS III 30-INCH	LF	68.000	68.000
0240	522.0160	CULVERT PIPE REINFORCED CONCRETE CLASS III 60-INCH	LF	296.000	296.000
0250	522.1018	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH	EACH	6.000	6.000
0260	522.1024	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH	EACH	4.000	4.000
0270	522.1030	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH	EACH	2.000	2.000
0280	522.1060	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 60-INCH	EACH	4.000	4.000
0290	601.0557	CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D	LF	1,100.000	1,100.000
0300	606.0300	RIPRAP HEAVY	CY	1,620.000	1,620.000
0310	608.0318	STORM SEWER PIPE REINFORCED CONCRETE CLASS III 18-INCH	LF	272.000	272.000
0320	611.0642	INLET COVERS TYPE MS	EACH	4.000	4.000
0330	611.3901	INLETS MEDIAN 1 GRATE	EACH	4.000	4.000
0340	614.0920	SALVAGED RAIL	LF	1,600.000	1,600.000
0350	619.1000	MOBILIZATION	EACH	1.000	1.000
0360	624.0100	WATER	MGAL	130.000	130.000
0370	625.0105	TOPSOIL	CY	2,500.000	2,500.000
0380	625.0500	SALVAGED TOPSOIL	SY	48,200.000	48,200.000
0390	627.0200	MULCHING	SY	26,800.000	26,800.000
0400	628.1504	SILT FENCE	LF	4,910.000	4,910.000
0410	628.1520	SILT FENCE MAINTENANCE	LF	4,910.000	4,910.000
0420	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	3.000	3.000
0430	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	2.000	2.000
0440	628.2002	EROSION MAT CLASS I TYPE A	SY	16,400.000	16,400.000
0450	628.2004	EROSION MAT CLASS I TYPE B	SY	1,550.000	1,550.000

DATE 06FEB13		E S T I M A T E O F Q U A N T I T I E S			
LINE				5810-00-71	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0460	628.7010	INLET PROTECTION TYPE B	EACH	4.000	4.000
0470	628.7504	TEMPORARY DITCH CHECKS	LF	645.000	645.000
0480	629.0210	FERTILIZER TYPE B	CWT	31.000	31.000
0490	630.0120	SEEDING MIXTURE NO. 20	LB	1,300.000	1,300.000
0500	630.0200	SEEDING TEMPORARY	LB	860.000	860.000
0510	633.5100	MARKERS ROW	EACH	56.000	56.000
0520	633.5200	MARKERS CULVERT END	EACH	20.000	20.000
0530	634.0616	POSTS WOOD 4X6-INCH X 16-FT	EACH	11.000	11.000
0540	637.0202	SIGNS REFLECTIVE TYPE II	SF	82.250	82.250
0550	638.2102	MOVING SIGNS TYPE II	EACH	5.000	5.000
0560	638.2602	REMOVING SIGNS TYPE II	EACH	20.000	20.000
0570	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	10.000	10.000
0580	638.4000	MOVING SMALL SIGN SUPPORTS	EACH	2.000	2.000
0590	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
0600	643.0100	TRAFFIC CONTROL (PROJECT) 01. 5810-00-71	EACH	1.000	1.000
0610	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	2,574.000	2,574.000
0620	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	4,212.000	4,212.000
0630	643.0900	TRAFFIC CONTROL SIGNS	DAY	2,574.000	2,574.000
0640	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	1,230.000	1,230.000
0650	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	21,400.000	21,400.000
0660	650.4000	CONSTRUCTION STAKING STORM SEWER	EACH	10.000	10.000
0670	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	5,738.000	5,738.000
0680	650.5000	CONSTRUCTION STAKING BASE	LF	5,738.000	5,738.000
0690	650.5500	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER	LF	1,100.000	1,100.000
0700	650.6000	CONSTRUCTION STAKING PIPE CULVERTS	EACH	9.000	9.000
0710	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 5810-00-71	LS	1.000	1.000
0720	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	5,738.000	5,738.000
0730	690.0150	SAWING ASPHALT	LF	84.000	84.000
0740	999.1000.S	SEISMOGRAPH	LS	1.000	1.000
0750	999.1500.S	CRACK AND DAMAGE SURVEY	LS	1.000	1.000
0760	ASP.1T0A	ON-THE-JOB TRAINING APPRENTICE AT \$5.00/HR	HRS	1,200.000	1,200.000
0770	ASP.1T0G	ON-THE-JOB TRAINING GRADUATE AT \$5.00/HR	HRS	600.000	600.000

3

GRUBBING		
STATION—STATION	LOCATION	(201.0205) GRUBBING (STA)
41+00—42+00	CTH O, RT	1
45+00—48+00	CTH O, RT	3
48+00—59+00	CTH O, LT & RT	11
59+00—60+00	CTH O, LT	1
72+00—80+00	CTH O, LT & RT	8
81+00—83+00	CTH O, RT	2
83+00—88+00	CTH O, LT & RT	5
88+00—93+00	CTH O, RT	5
TOTALS		36

REMOVING DELINEATORS AND MARKERS		
STATION—STATION	LOCATION	(204.0180) (EACH)
93+83	CTH O, LT	1
93+83	CTH O, RT	1
TOTALS		2

OBLITERATING OLD ROAD		
STATION—STATION	LOCATION	(214.0100) (STA)
60+00—65+00	CTH O, RT	5
72+00—79+00	CTH O, RT	7
TOTALS		12

3

REMOVING SMALL PIPE CULVERTS				
STATION	LOCATION	TYPE	LENGTH	(203.0100) (EACH)
41+00	CTH O	48" CP	60'	1
42+09	CTH O, RT	24" CP	32'	1
44+20	CTH O, RT	12" CP	28'	1
47+50	CTH O, LT	12" CP	40'	1
74+50	CTH O	48" CP	66'	1
92+22	CTH O, RT	18" CP	28'	1
93+83	CTH O	24" CP	48'	1
TOTALS				7

EARTHWORK SUMMARY							
STATION—STATION	LOCATION	(205.0100) EXCAVATION COMMON (CY)	(205.0200) EXCAVATION ROCK (CY)	EXPANDED ROCK (10%) (CY)	UNEXPANDED FILL (CY)	EXPANDED FILL (30%) (CY)	WASTE (CY)
40+00—94+00	CTH O	37856	85900	94490	86902	−9864	47720
100+00—103+38	OVERGAARD ROAD	1544	0	0	0	0	1544
TOTALS		39400	85900	94490	86902	−9864	49264
EXPANDED FILL = (UNEXPANDED FILL − ROCK* ROCK FACTOR) * FILL FACTOR							

SALVAGED RAIL		
STATION—STATION	LOCATION	(614.0920) (LF)
48+25—57+27	CTH O, LT	917
73+75—79+75	CTH O, RT	683
TOTALS		1600

BASE AGGREGATE DENSE			
STATION—STATION	LOCATION	(305.0110) 3/4-INCH (TON)	(305.0120) 1 1/4-INCH (TON)
40+00—94+00	CTH O	788	15100
100+00—103+38	OVERGAARD ROAD	62	1100
TOTALS		850	16200

WATER		
STATION—STATION	LOCATION	(624.0100) (MGAL)
40+00—94+00	CTH O	120
100+00—103+38	OVERGAARD ROAD	10
TOTALS		130

CONCRETE SURFACE DRAINS		
STATION	LOCATION	(416.1010) (CY)
46+00	CTH O, RT	0.82
49+50	CTH O, RT	0.82
52+00	CTH O, RT	0.82
54+50	CTH O, RT	0.82
TOTALS		3.3

ASPHALTIC ITEMS					
STATION—STATION	LOCATION	(455.0105) ASPHALTIC MATERIAL PG58—28 (TON)	(455.0600) TACK COAT (GAL)	(460.1100) HMA PAVEMENT TYPE E—0.1 (TON)	(460.2000) INCENTIVE DENSITY HMA PAVEMENT (DOL)
40+00—94+00	CTH O	202	367	3312	2128
100+00—103+38	OVERGAARD ROAD	18	33	298	192
TOTALS		220	400	3610	2320

NOTE: UNLESS NOTED, ALL ITEMS ARE IN CATEGORY 0010.

CULVERT PIPE

STATION	LOCATION	(520.0118) CLASS III 18-INCH (LF)	(520.0124) CLASS III 24-INCH (LF)	(522.0124) REINFORCED CONCRETE CLASS III 24-INCH (LF)	(522.0130) REINFORCED CONCRETE CLASS III 30-INCH (LF)	(522.0160) REINFORCED CONCRETE CLASS III 60-INCH (LF)	(520.1018) APRON ENDWALLS 18-INCH (EACH)	(520.1024) APRON ENDWALLS 24-INCH (EACH)	(522.1024) APRON ENDWALLS REINFORCED CONCRETE 24-INCH (EACH)	(522.1030) APRON ENDWALLS REINFORCED CONCRETE 30-INCH (EACH)	(522.1060) APRON ENDWALLS REINFORCED CONCRETE 60-INCH (EACH)	(633.5200)* MARKERS CULVERT END (EACH)	(650.6000) CONSTRUCTION STAKING PIPE CULVERTS (EACH)
41+00	CTH O	—	—	—	—	64	—	—	—	—	2	2	1
42+09	CTH O, RT	—	32	—	—	—	—	2	—	—	—	—	1
44+20	CTH O, RT	—	30	—	—	—	—	2	—	—	—	—	1
58+57	CTH O, LT	44	—	—	—	—	2	—	—	—	—	—	1
74+50	CTH O	—	—	—	68	—	—	—	—	2	—	2	1
84+50	CTH O	—	—	—	—	232	—	—	—	—	2	2	1
92+23	CTH O, RT	28	—	—	—	—	2	—	—	—	—	—	1
93+88	CTH O	—	—	62	—	—	—	—	2	—	—	2	1
100+95	OVERGAARD ROAD	—	—	84	—	—	—	—	2	—	—	2	1
TOTALS		72	62	146	68	296	4	4	4	2	4	10	9

* ADDITIONAL QUANTITIES LISTED ELSEWHERE

STORM SEWER

STATION	LOCATION	(608.0318) REINFORCED CONCRETE CLASS III 18-INCH (LF)	(522.1018) AE FOR CP REINFORCED CONCRETE 18-INCH (EACH)	(611.3901) INLET MEDIAN 1 GRATE (EACH)	(611.0642) INLET COVER TYPE MS (EACH)	(628.7010) INLET PROTECTION TYPE B (EACH)	(633.5200)* MARKERS CULVERT END (EACH)	(650.4000) CONSTRUCTION STAKING STORM SEWER (EACH)
46+00	CTH O	52	1	1	1	1	2	2
49+50	CTH O	58	1	1	1	1	2	2
52+00	CTH O	48	1	1	1	1	2	2
54+50	CTH O	50	1	1	1	1	2	2
57+00	CTH O	64	2	—	—	—	2	2
TOTALS		272	6	4	4	4	10	10

* ADDITIONAL QUANTITIES LISTED ELSEWHERE

RIPRAP HEAVY & GEOTEXTILE FABRIC TYPE HR

STATION—STATION	LOCATION	WIDTHX LENGTH (FT)	(606.0300) (CY)	(645.0120) (SY)
40+85	CTH O, LT	12X32	29	64
45+45—45+65	CTH O, RT	8X20	12	32
46+00	CTH O, LT	6X16	7	22
49+50	CTH O, LT	6X16	7	22
52+00	CTH O, LT	6X70	31	83
54+50	CTH O, LT	6X16	7	22
57+00	CTH O, LT	6X16	7	22
57+00	CTH O, RT	10X17	13	33
69+50—80+50	CTH O, LT	8X1580	653	—
80+50—85+50	CTH O, LT	8X1580	297	670
70+00—73+50	CTH O, RT	8X350	209	—
74+50	CTH O, RT	7X60	31	78
75+00—79+00	CTH O, RT	8X400	238	—
83+50	CTH O, RT	12X30	27	61
85+50	CTH O, LT	12X45	40	89
93+88	CTH O, LT	8X20	12	32
TOTALS			1620	1230

ASPHALTIC FLUMES

STATION	LOCATION	(465.0315) (SY)
45+75	CTH O, RT	14
TOTALS		14

CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE D
& CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER

STATION—STATION	LOCATION	(601.0557) (LF)	(650.5500) (LF)
45+75—56+75	CTH O, RT	1100	1100
TOTALS		1100	1100

FINISHING ITEMS							
STATION—STATION	LOCATION	(625.0500) SALVAGED TOPSOIL (SY)	(627.0200) MULCHING (SY)	(629.0210) FERTILIZER TYPE B (CWT)	(630.0120) SEEDING MIXTURE NO. 20 (LB)	(630.0200) SEEDING TEMPORARY (LB)	(625.0105) TOPSOIL (CY)
40+00—94+00	CTH O, RT	22140	12310	14	597	300	—
40+00—94+00	CTH O, LT	24667	13715	16	665	340	—
100+00—103+38	OVERGAARD ROAD, RT	724	403	0.5	20	10	—
100+00—100+38	OVERGAARD ROAD, LT	669	372	0.5	18	10	—
	UNDISTRIBUTED	—	—	—	—	200	2500
TOTALS		48200	26800	31	1300	860	2500

SILT FENCE & SILT FENCE MAINTENANCE			
STATION—STATION	LOCATION	(628.1504) (LF)	(628.1520) (LF)
40+00—47+40	CTH O, LT	740	740
47+65—56+75	CTH O, LT	994	994
62+25—65+50	CTH O, LT	426	426
66+00—67+50	CTH O, LT	250	250
73+25—74+80	CTH O, RT	172	172
75+00—88+40	CTH O, RT	1428	1428
80+20—89+35	CTH O, RT	900	900
TOTALS		4910	4910

EROSION MAT CLASS I TYPE A		
STATION—STATION	LOCATION	(628.2002) (SY)
40+00—40+50	CTH O, RT	19
40+50—46+00	CTH O, LT	2023
45+75—56+75	CTH O, RT	980
51+75—54+50	CTH O, LT	2523
57+50—60+50	CTH O, RT	240
60+00—60+50	CTH O, LT	145
61+25—61+75	CTH O, LT	45
71+00—72+00	CTH O, RT	310
72+00—75+00	CTH O, LT	1210
75+50—78+50	CTH O, RT	2123
79+00—84+00	CTH O, RT	4780
83+00—85+50	CTH O, LT	2002
TOTALS		16400

TEMPORARY DITCH CHECKS		
STATION—STATION	LOCATION	(628.7504) (LF)
41+50—45+50	RT	105
57+50—60+50	RT	105
57+50—58+00	LT	30
59+00—60+50	LT	60
65+50—68+50	RT	90
87+50—93+50	RT	195
89+50—91+00	LT	60
TOTALS		645

REMOVING SIGNS TYPE II & REMOVING SMALL SIGN SUPPORTS				
NO.	STATION	LOCATION	(638.2602) (EACH)	(638.3000) (EACH)
R1—01	52+00	RT	1	1
R1—02	52+00	RT	1	—
R1—03	54+70	LT	1	1
R1—04	54+70	LT	1	—
R1—05	54+70	LT	1	—
R2—01	60+25	RT	1	1
R2—02	63+10	RT	1	1
R2—03	65+55	RT	1	1
R2—04	66+10	RT	1	—
R2—05	67+15	RT	1	1
R2—06	67+15	RT	1	—
R2—07	70+50	LT	1	1
R2—08	70+50	LT	1	—
R2—09	70+50	LT	1	—
R2—10	70+50	LT	1	—
R2—11	70+50	LT	1	—
R3—01	74+00	RT	1	1
R3—02	74+00	RT	1	—
R3—03	85+00	RT	1	1
R4—01	88+20	LT	1	1
TOTALS			20	10

EROSION MAT CLASS I TYPE B		
STATION—STATION	LOCATION	(628.2004) (SY)
41+15—41+85	CTH O, RT	60
42+30—44+00	CTH O, RT	150
44+40—45+70	CTH O, RT	119
56+50—58+30	CTH O, LT	166
57+10—59+00	CTH O, RT	166
58+80—59+00	CTH O, LT	18
67+50—69+50	CTH O, LT	178
68+50—70+00	CTH O, RT	133
87+50—92+00	CTH O, RT	432
92+50—93+90	CTH O, RT	128
TOTALS		1550

MOVING SIGNS TYPE II & MOVING SMALL SIGN SUPPORTS				
NO.	STATION	LOCATION	(638.2102) (EACH)	(638.4000) (EACH)
M2—01	65+55	RT	1	1
M2—02	65+55	RT	1	—
M2—03	66+10	RT	1	1
M2—04	66+10	RT	1	—
M3—01	85+00	RT	1	—
TOTALS			5	2

TRAFFIC CONTROL			
LOCATION	(643.0420) BARRICADES TYPE III (DAYS)	(643.0705) WARNING LIGHTS TYPE A (DAYS)	(643.0900) SIGNS (DAYS)
CTH O, CLOSURE	2106	3276	1872
OVERGAARD ROAD, CLOSURE	468	936	702
TOTALS	2574	4212	2574

MARKERS ROW

NO.	STATION	LOCATION	(633.5100) (EACH)
100	40+00.00	32.12', LT	1
101	40+00.00	60.00', LT	1
102	44+38.38	60.00', LT	1
103	45+00.00	60.00', LT	1
104	46+50.00	38.30', LT	1
105	48+00.00	39.14', LT	1
106	49+50.00	60.00', LT	1
107	50+39.79	60.00', LT	1
108	51+50.00	60.00', LT	1
109	52+00.00	130.00', LT	1
110	54+50.00	130.00', LT	1
111	54+50.00	60.00', LT	1
200	40+00.00	33.77', RT	1
201	40+00.00	50.00', RT	1
202	41+50.00	50.00', RT	1
203	41+50.00	40.00', RT	1
204	44+38.38	40.00', RT	1
205	47+00.00	40.00', RT	1
206	47+00.00	60.00', RT	1
207	50+39.79	60.00', RT	1
208	55+18.07	60.00', RT	1
112	55+18.07	60.00', LT	1
113	59+50.00	60.00', LT	1
114	59+50.00	80.00', LT	1
115	62+00.00	80.00', LT	1
116	62+00.00	50.00', LT	1
117	64+39.11	50.00', LT	1
118	65+39.21	144.63', LT	1
119	66+04.66	141.53', LT	1
120	67+00.00	60.00', LT	1
121	70+00.00	60.00', LT	1
209	58+48.70	60.00', RT	1
210	60+16.57	81.85', RT	1
211	63+84.77	111.88', RT	1
212	65+38.95	114.50', RT	1
213	65+62.03	140.29', RT	1
214	66+30.15	137.81', RT	1
215	66+76.16	105.05', RT	1
216	66+94.55	103.21', RT	1
217	68+14.50	84.26', RT	1
122	73+00.00	130.00', LT	1
123	74+00.00	100.00', LT	1
124	82+50.00	100.00', LT	1
125	83+50.00	110.00', LT	1
126	87+00.00	80.00', LT	1
218	72+32.42	90.00', RT	1
219	72+91.80	116.87', RT	1
220	76+39.98	184.96', RT	1
221	79+27.88	125.21', RT	1
222	84+00.00	125.00', RT	1
223	85+00.00	70.00', RT	1
127	88+50.00	40.03', LT	1
128	93+88.24	39.94', LT	1
129	94+00.00	40.00', LT	1
224	94+00.00	70.00', RT	1
225	94+00.00	55.00', RT	1
TOTALS			56

PERMANENT SIGNING

						(634.0616) POSTS WOOD 4X6-INCH X 16-FT (EACH)	(637.0202) SIGNS REFLECTIVE TYPE II (SF)
NO.	STATION	LOCATION	SIGN CODE	SIZE (IN)	DESCRIPTION		
1-01	42+00	RT	W1-2	30"X30"	CURVE	1	6.25
1-02	42+00	RT	W13-1	18"X18"	35 MPH	—	2.25
1-03	53+00	LT	W1-2	30"X30"	CURVE	1	6.25
1-04	53+00	LT	W13-1	18"X18"	35 MPH	—	2.25
1-05	54+00	RT	W1-2	30"X30"	CURVE	1	6.25
1-06	54+00	RT	W13-1	18"X18"	35 MPH	—	2.25
2-01	63+00	LT	W7-1a	30"X30"	9% GRADE	1	6.25
2-02	65+60	LT	R1-1	30"X30"	STOP	1	6.25
2-03	66+30	RT	R1-1	30"X30"	STOP	1	6.25
2-04	68+00	RT	W7-1a	30"X30"	9% GRADE	1	6.25
2-05	71+60	LT	W1-2	30"X30"	CURVE	1	6.25
2-06	71+60	LT	W13-1	18"X18"	35 MPH	—	2.25
2-07	71+70	RT	W1-2	30"X30"	CURVE	1	6.25
2-08	71+70	RT	W13-1	18"X18"	35 MPH	—	2.25
3-01	85+00	RT	W1-2	30"X30"	CURVE	1	6.25
3-02	86+20	LT	W1-2	30"X30"	CURVE	1	6.25
3-03	86+20	LT	W13-1	18"X18"	35 MPH	—	2.25
TOTALS						11	82.25

SAWING ASPHALT

STATION	LOCATION	(690.0150) (LF)
40+00	CTH O	22
94+00	CTH O	22
100+00	OVERGAARD ROAD	20
100+38	OVERGAARD ROAD	20
TOTALS		84

PAVEMENT MARKING

STATION—STATION	LOCATION	EPOXY 4-INCH SOLID WHITE SOLID YELLOW (LF) (LF)	
		(LF)	(LF)
40+00—94+00	CTH O	10600	10800
SUB-TOTALS		10600	10800
PROJECT TOTALS		21400	

CONSTRUCTION STAKING

STATION—STATION	LOCATION	(650.4500) SUBGRADE (LF)	(650.5000) BASE (LF)	(650.9910) SUPPLEMENTAL CONTROL (LS)	(650.9920) SLOPE STAKING (LF)
		(LF)	(LF)	(LS)	(LF)
40+00—94+00	CTH O	5400	5400	1	5400
100+00—100+38	OVERGAARD ROAD	338	338	—	338
TOTALS		5738	5738	1	5738

R/W PROJECT NUMBER 5810-00-01	SHEET NUMBER 4.01	TOTAL SHEETS 7
FEDERAL PROJECT NUMBER		
PLAT OF RIGHT-OF-WAY REQUIRED FOR CITY OF ELROY - CTH G (LEVERENZ LANE TO SARNOV ROAD)		
CTH 0		JUNEAU COUNTY
CONSTRUCTION PROJECT NUMBER 5810-00-71		

CONVENTIONAL ABBREVIATIONS			
ACCESS RIGHTS	AR	REFERENCE LINE	R/L
ACRES	AC.	RELEASE OF RIGHTS	ROR
AND OTHERS	ET. AL.	REMAINING	REM.
CENTERLINE	C/L	RIGHT-OF-WAY	R/W
CERTIFIED SURVEY MAP	CSM	SECTION	SEC.
CORNER	COR.	STATION	STA.
DOCUMENT	DOC.	TEMPORARY LIMITED EASEMENT	TLE
EASEMENT	EASE.	VOLUME	V.
HIGHWAY EASEMENT	H.E.	CURVE DATA	
LAND CONTRACT	LC	LONG CHORD	LCH
MONUMENT	MON.	LONG CHORD BEARING	LCB
PAGE	P.	RADIUS	R
PERMANENT LIMITED EASEMENT	PLE	DEGREE OF CURVE	D
PROPERTY LINE	PL	CENTRAL ANGLE OR DELTA	DELTA
RECORDED AS	(100')	LENGTH OF CURVE	L
		TANGENT	TAN

CONVENTIONAL SYMBOLS			
FOUND IRON PIPE/PIN		PROPOSED R/W LINE	
R/W MONUMENT		EXISTING H.E. LINE	
R/W STANDARD		PROPERTY LINE	
SIGN		LOT & TIE LINES	
SECTION CORNER MONUMENT		SLOPE INTERCEPT	
SECTION CORNER SYMBOL		CORPORATE LIMITS	
FEE (HATCH VARIES)		ACCESS RESTRICTED (BY PREVIOUS ACQUISITION/CONTROL)	
TEMPORARY LIMITED EASEMENT		ACCESS RESTRICTED (BY ACQUISITION/CONTROL)	
PERMANENT LIMITED EASEMENT		NO ACCESS (BY STATUTORY AUTHORITY)	
R/W BOUNDARY POINT		SECTION LINE	
PARCEL NUMBER		QUARTER LINE	
UTILITY INTEREST		SIXTEENTH LINE	
SIGN NUMBER (OFF PREMISE)		EXISTING CENTERLINE	
BUILDING		PROPOSED REFERENCE LINE	
		PARALLEL OFFSET	

CONVENTIONAL UTILITY SYMBOLS

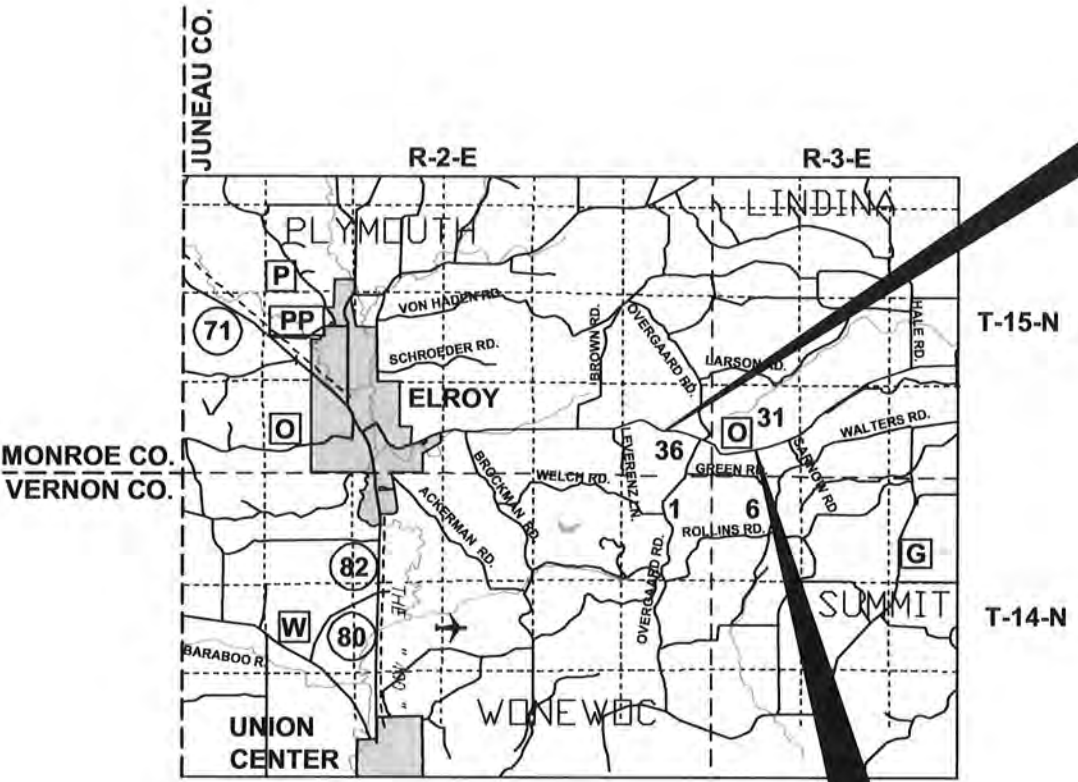
WATER	— W —
GAS	— G —
TELEPHONE	— T —
OVERHEAD	— OH —
TRANSMISSION LINES	— E —
ELECTRIC	— E —
CABLE TELEVISION	— TV —
FIBER OPTIC	— FO —
SANITARY SEWER	— SAN —
STORM SEWER	— SS —

NON COMPENSABLE		COMPENSABLE	
POWER POLE			
TELEPHONE POLE			
TELEPHONE PEDISTAL			
ELECTRIC TOWER			

COORDINATES AND BEARINGS ON THIS PLAT ARE ORIENTED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, JUNEAU COUNTY ZONE, NAD 83 (2007) ADJUSTMENT. THE COORDINATES SHOWN ARE GRID COORDINATES AND ARE TO BE USED AS GRID OF GROUND VALUES ON THIS PLAT.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 MONUMENTS (TYPICALLY 3/4" X 24" REBAR) AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

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.

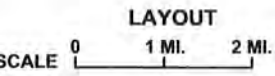


BEGIN RELOCATION ORDER
STA 40+00.00

1.57' SOUTH AND 2698.95' WEST OF
THE EAST QUARTER CORNER OF
SECTION 36, T15N, R2E
Y = 135683.373
X = 429632.572

END RELOCATION ORDER
STA 94+00.00

1206.55' SOUTH AND 2415.91' EAST
OF THE WEST QUARTER CORNER OF
SECTION 31, T15N, R3E
Y = 134475.249
X = 434747.422



TOTAL NET LENGTH OF CENTERLINE = 1.02 MI.

ACCEPTED FOR
COUNTY OF JUNEAU
11/30/12
(Date) HIGHWAY COMMISSIONER

ORIGINAL PLAT PREPARED BY
TEAM Engineering
WISCONSIN
TODD T. RUMMLER
S - 2443
BOAZ
WIS
LAND SURVEYOR

REVISION DATE
NOVEMBER 27, 2012

11/30/12
(Date) (Signature)

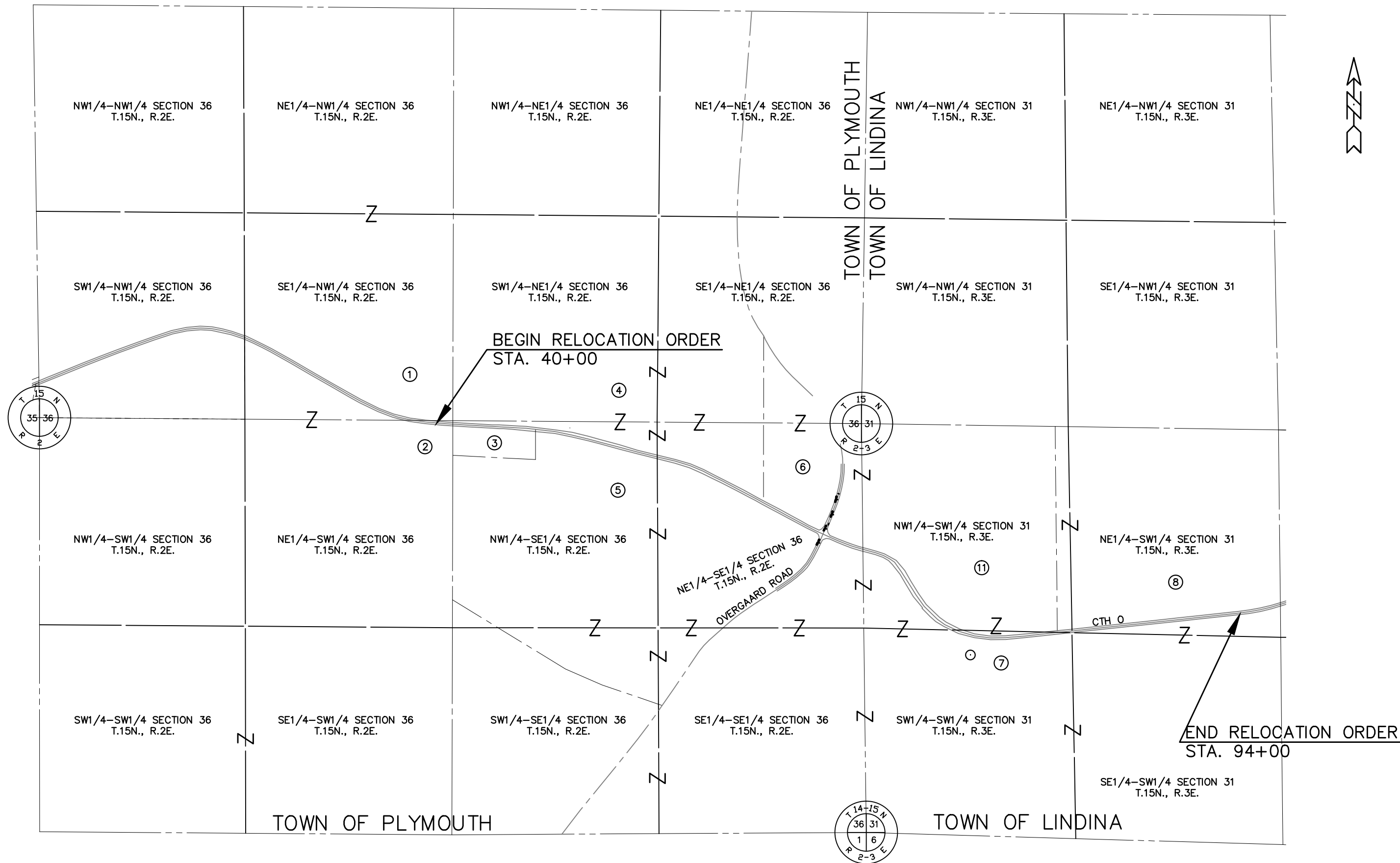
SCHEDULE OF LANDS & INTERESTS REQUIRED

AREAS SHOWN IN THE TOTAL ACRES COLUMN MAY BE APPROXIMATE AND ARE DERIVED FROM TAX ROLLS OR OTHER AVAILABLE SOURCES AND MAY NOT INCLUDE LANDS OF THE OWNER WHICH ARE NOT CONTIGUOUS TO THE AREA TO BE AQUIRED.

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

PARCEL NUMBER	SHEET NUMBER	OWNER	INTEREST REQUIRED	NEW	R/W ACRES REQUIRED EXISTING	TOTAL	TLE ACRES	PLE ACRES
1	4.04	RANDY L. BENDER	FEE	0.06	0.07	0.13	—	—
2	4.04	DENNIS W. & ELISABETH H. WALLICH	FEE	0.04	0.07	0.11	—	—
3	4.04	GARY P. & LAURIE J. JENSEN	FEE & TLE	0.10	0.40	0.50	0.06	—
4	4.04 — 4.05	WILLIAM R. LEVERENZ	FEE & TLE	1.88	1.56	3.44	0.12	—
5	4.04 — 4.05	ERBS PROPERTIES, LLC.	FEE	0.74	1.50	2.24	—	—
6	4.05	WILLIAM J. FABISIAK	FEE	1.09	0.47	1.56	—	—
7	4.05 — 4.07	VINCE M. & JANICE L. KELLEY	FEE	1.29	2.93	4.22	—	—
8	4.06 — 4.07	RANDY L. & BRENDA M. TOTZKE	FEE, PLE, & TLE	0.71	1.08	1.79	0.04	0.06
9	4.04 — 4.06	CENTURYLINK	RELEASE OF RIGHTS	—	—	—	—	—
10	4.04 — 4.06	OAKDALE ELECTRIC CO—OP	RELEASE OF RIGHTS	—	—	—	—	—
11	4.05 — 4.06	DAVID L. & DONNA L. CLARK	FEE	4.87	1.49	6.36	—	—





REVISION DATE NOVEMBER 27, 2012 - CHANGE IN OWNERSHIP FROM PARCEL 6 TO PARCEL 11	DATE: NOVEMBER 12, 2012	SCALE, FEET 0 250 500	HWY: CTH 0	R/W PROJECT NUMBER: 5810-00-01	PLAT SHEET NO: 4.03
GRID FACTOR: N/A			COUNTY: JUNEAU	CONSTRUCTION PROJECT NUMBER: 5810-00-71	PS&E SHEET E

NOTE:
EXISTING HIGHWAY R/W ESTABLISHED FROM CENTERLINE
OF EXISTING PAVEMENT AND COUNTY RECORDS.

R/W CURVE TABLE

COURSE	RADIUS	ARC LENGTH	TANGENT	CHORD LENGTH	CHORD BEARING
102-103	3060.00'	62.79'	31.40'	62.79'	S86°07'54"E
104-105	1973.49'	151.96'	76.02'	151.92'	S81°33'38"E
106-107	3060.00'	91.58'	45.80'	91.58'	S76°05'27"E
204-205	2960.00'	258.13'	129.15'	258.05'	S84°13'17"E
206-207	2940.00'	332.99'	166.68'	332.82'	S78°28'42"E
208-209	4440.00'	326.22'	163.18'	326.14'	S73°07'43"E

R/W COURSE TABLE

COURSE	BEARING	DISTANCE
100-101	S03°16'49"W	27.88'
101-102	S86°43'10"E	438.38'
103-104	S76°00'56"E	154.04'
105-106	S86°10'12"E	153.88'
107-108	S75°14'01"E	110.21'
108-109	N50°18'25"E	86.03'
109-110	S75°14'01"E	250.00'
110-111	S14°45'59"W	70.00'
111-112	S75°14'01"E	68.07'
200-201	N03°16'49"E	16.12'
201-202	S86°43'10"E	150.00'
202-203	N03°16'50"E	10.00'
203-204	S86°43'10"E	288.38'
205-206	S08°16'37"W	20.00'
207-208	S75°14'01"E	478.28'

R/W POINT COORDINATES

POINT NUMBER	Y	X
100	135,715.443	429,634.410
101	135,743.275	429,636.005
102	135,718.189	430,073.666
103	135,713.953	430,136.316
104	135,676.729	430,285.786
105	135,654.432	430,436.064
106	135,644.153	430,589.602
107	135,622.139	430,678.498
108	135,594.048	430,785.070
109	135,648.991	430,851.264
110	135,585.271	431,093.006
111	135,517.583	431,075.165
200	135,649.551	429,630.634
201	135,633.455	429,629.711
202	135,624.871	429,779.465
203	135,634.855	429,780.037
204	135,618.353	430,067.944
205	135,592.370	430,324.683
206	135,572.579	430,321.804
207	135,506.102	430,647.912
208	135,384.197	431,110.400

①
RANDY L. BENDER

SE1/4-NW1/4
SEC. 36

TELEPHONE R/W EASEMENT
DOC. No. 238771(BLANKET)
"THE SE1/4-NW1/4"

BEGIN RELOCATION ORDER

STA. 40+00
Y = 135683.373
X = 429632.572

OAKDALE ELECTRIC CO-OP

CENTURYLINK

PC 44+38.38

GARY P. & LAURIE J. JENSEN

OAKDALE
ELECTRIC CO-OP

②
DENNIS W. &
ELISABETH H. WALLICH

NE1/4-SW1/4
SEC. 36

CURVE 1

PI STA = 47+40.09
Y = 135641.02
X = 430371.45
R = 3000.00'
D = 01°54'35"
Δ = 11°29'10"
L = 601.41'
T = 301.72'
C = 600.40'
PC STA = 44+38.38
PT STA = 50+39.79

ERBS PROPERTIES, LLC.

LOT 13 CSM NO. 3771
V.16, P.156
DOC. NO. 655372

TOWN OF PLYMOUTH

NW1/4-SE1/4
SEC. 36

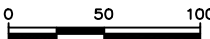
NE1/4-SE1/4
SEC. 36

REVISION DATE
NOVEMBER 27, 2012 - NO CHANGE

DATE: NOVEMBER 12, 2012

GRID FACTOR: N/A

SCALE, FEET



HWY: CTH O

COUNTY: JUNEAU

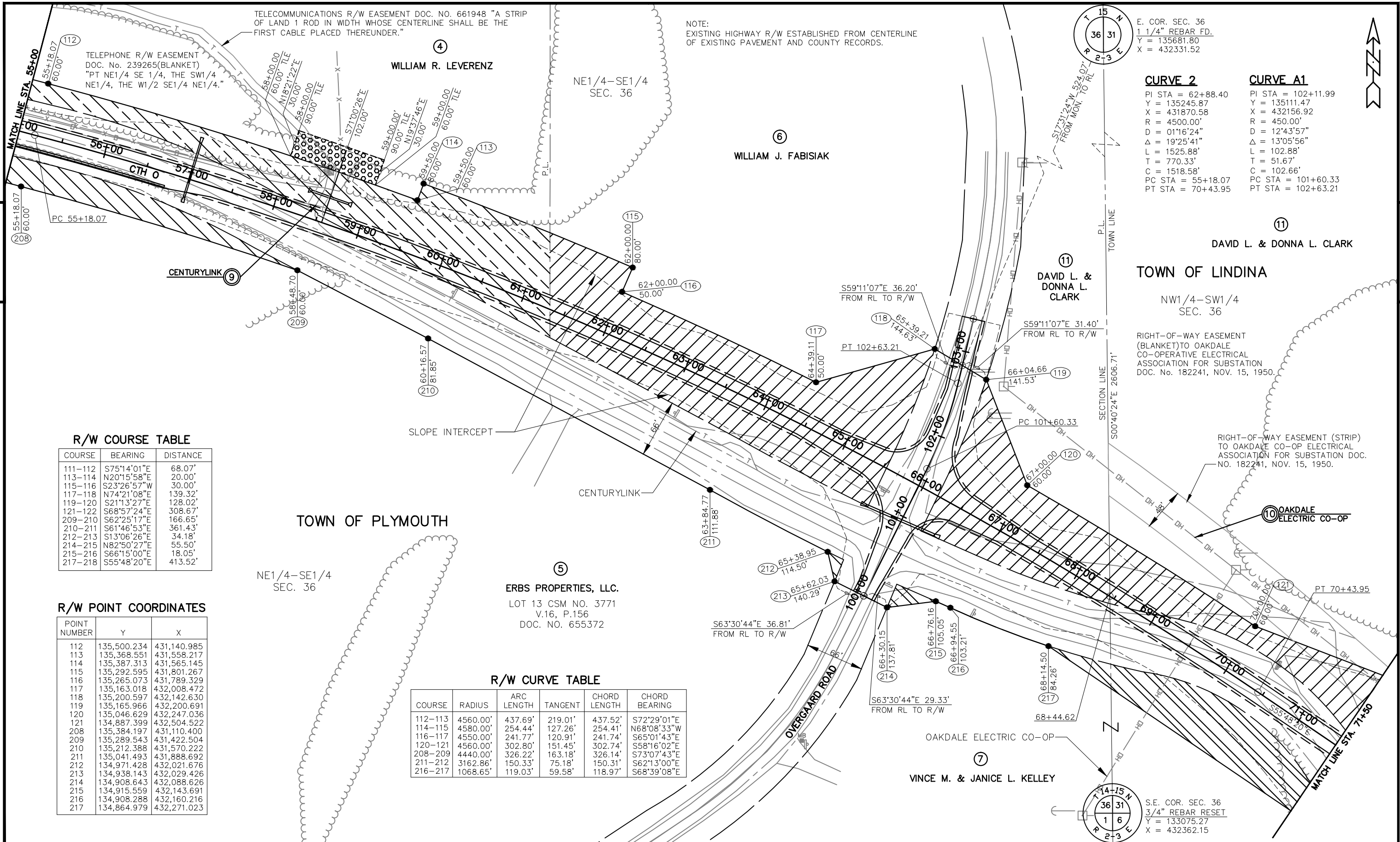
R/W PROJECT NUMBER: 5810-00-01

CONSTRUCTION PROJECT NUMBER: 5810-00-71

PLAT SHEET NO: 4.04

PS&E SHEET

E



R/W COURSE TABLE

COURSE	BEARING	DISTANCE
111-112	S75°14'01"E	68.07'
113-114	N20°15'58"E	20.00'
115-116	S23°26'57"W	30.00'
117-118	N74°21'08"E	139.32'
119-120	S21°13'27"E	128.02'
121-122	S68°57'24"E	308.67'
209-210	S62°25'17"E	166.65'
210-211	S61°46'53"E	361.43'
212-213	S13°06'26"E	34.18'
214-215	N82°50'27"E	55.50'
215-216	S66°15'00"E	18.05'
217-218	S55°48'20"E	413.52'

R/W POINT COORDINATES

POINT NUMBER	Y	X
112	135,500.234	431,140.985
113	135,368.551	431,558.217
114	135,387.313	431,565.145
115	135,292.595	431,801.267
116	135,265.073	431,789.329
117	135,163.018	432,008.472
118	135,200.597	432,142.630
119	135,165.966	432,200.691
120	135,046.629	432,247.036
121	134,887.399	432,504.522
208	135,384.197	431,110.400
209	135,289.543	431,422.504
210	135,212.388	431,570.222
211	135,041.493	431,888.692
212	134,971.428	432,021.676
213	134,938.143	432,029.426
214	134,908.643	432,088.626
215	134,915.559	432,143.691
216	134,908.288	432,160.216
217	134,864.979	432,271.023

R/W CURVE TABLE

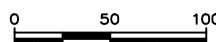
COURSE	RADIUS	ARC LENGTH	TANGENT	CHORD LENGTH	CHORD BEARING
112-113	4560.00'	437.69'	219.01'	437.52'	S72°29'01"E
114-115	4580.00'	254.44'	127.26'	254.41'	N68°08'33"W
116-117	4550.00'	241.77'	120.91'	241.74'	S65°01'43"E
120-121	4560.00'	302.80'	151.45'	302.74'	S58°16'02"E
208-209	4440.00'	326.22'	163.18'	326.14'	S73°07'43"E
211-212	3162.86'	150.33'	75.18'	150.31'	S62°13'00"E
216-217	1068.65'	119.03'	59.58'	118.97'	S68°39'08"E

REVISION DATE
NOVEMBER 27, 2012 — CHANGE IN OWNERSHIP FROM PARCEL 6 TO PARCEL 11

DATE: NOVEMBER 12, 2012

GRID FACTOR: N/A

SCALE, FEET



HWY: CTH 0

COUNTY: JUNEAU

R/W PROJECT NUMBER: 5810-00-01

CONSTRUCTION PROJECT NUMBER: 5810-00-71

PLAT SHEET NO: 4.05

PS&E SHEET

E

NOTE:
EXISTING HIGHWAY R/W ESTABLISHED FROM CENTERLINE
OF EXISTING PAVEMENT AND COUNTY RECORDS.

RIGHT-OF-WAY EASEMENT
(BLANKET) TO OAKDALE
CO-OPERATIVE ELECTRICAL
ASSOCIATION FOR SUBSTATION
DOC. No. 182241, NOV. 15, 1950.

NW1/4-SW1/4
SEC. 31

E. COR. SEC. 36
1 1/4" REBAR FD.
Y = 135681.80
X = 432331.52

11
DAVID L. & DONNA L. CLARK

S.E. COR. SEC. 36
3/4" REBAR RESET
Y = 133075.27
X = 432362.15

NE1/4-SW1/4
SEC. 31

CURVE 3

PI STA = 79+32.11
Y = 132938.49
X = 433661.21
R = 1500.00'
D = 03°49'11"
Δ = 40°19'28"
L = 1055.69'
T = 550.77'
C = 1034.04'
PC STA. = 73+81.61
PT STA. = 84+37.30



8
RANDY L. & BRENDA M. TOTZKE

OAKDALE ELECTRIC CO-OP

OAKDALE
ELECTRIC CO-OP 10

SE1/4-SW1/4
SEC. 31

7
VINCE M. & JANICE L. KELLEY

R/W EASEMENT FOR
RURAL ELECTRIC LINE
DOC. No. 175622
(BLANKET) "SW1/4 SW1/4,
SE1/4 SW1/4".

TOWN OF LINDINA

SW1/4-SW1/4
SEC. 31

R/W COURSE TABLE

COURSE	BEARING	DISTANCE
121-122	S68°57'24"E	308.67'
122-123	S38°57'57"E	103.20'
124-125	S82°58'48"W	93.52'
125-126	N89°15'00"E	345.07'
126-127	S81°12'36"E	155.23'
217-218	S55°48'20"E	413.52'
218-219	S31°28'01"E	64.53'
222-223	N56°00'39"E	116.62'
223-224	N83°52'12"E	900.00'

R/W POINT COORDINATES

POINT NUMBER	Y	X
122	134,776.564	432,792.605
123	134,696.328	432,857.500
124	134,464.097	433,605.018
125	134,475.527	433,697.839
126	134,480.044	434,042.882
218	134,632.580	432,613.059
219	134,577.540	432,646.744
220	134,328.505	432,935.977
221	134,282.492	433,256.077
222	134,244.349	433,763.347
223	134,309.545	433,860.043

R/W CURVE TABLE

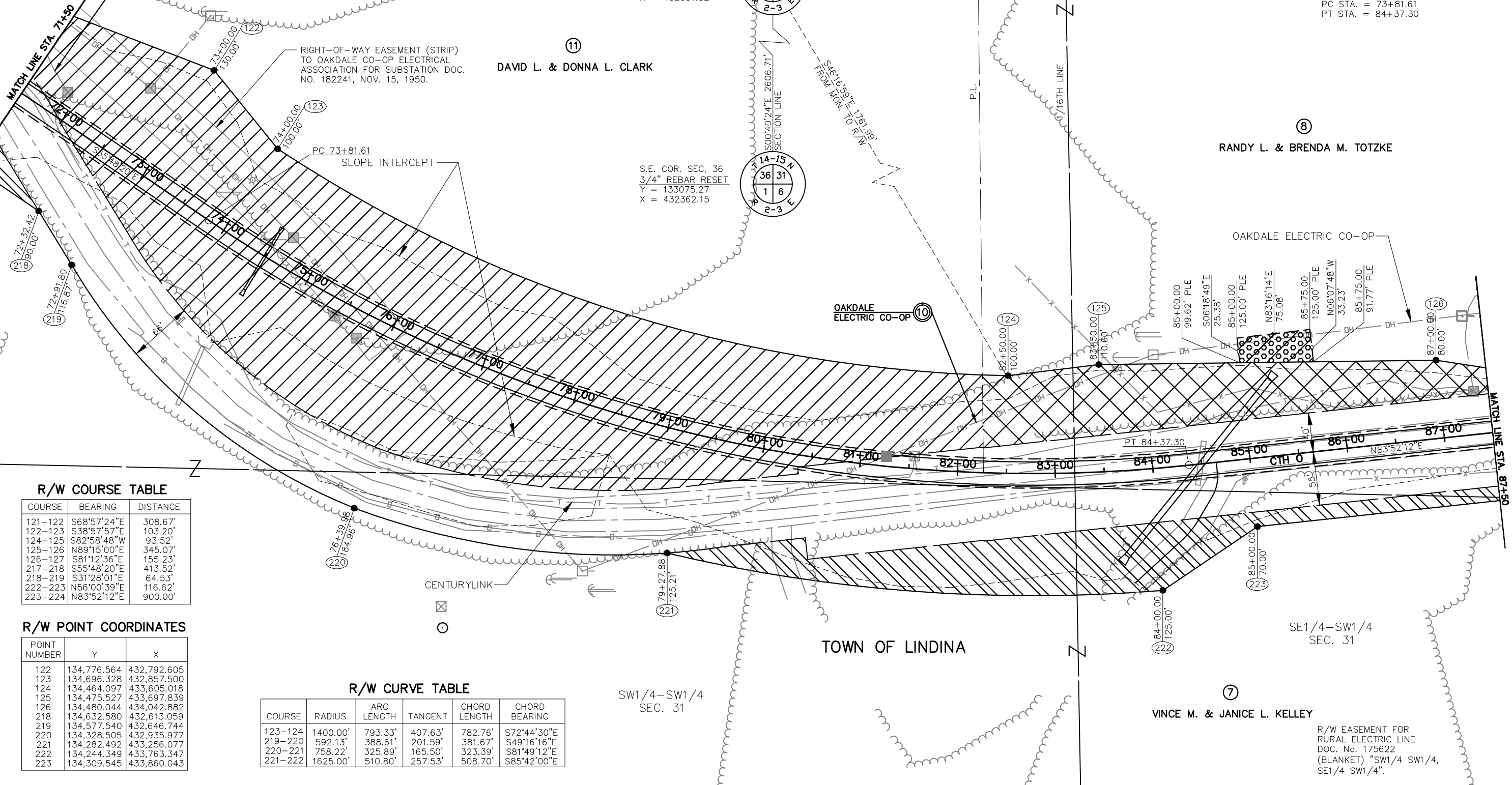
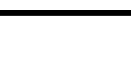
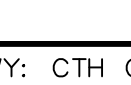
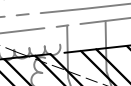
COURSE	RADIUS	ARC LENGTH	TANGENT	CHORD LENGTH	CHORD BEARING
123-124	1400.00'	793.33'	407.63'	782.76'	S72°44'30"E
219-220	592.13'	388.61'	201.59'	381.67'	S49°16'16"E
220-221	758.22'	325.89'	165.50'	323.39'	S81°49'12"E
221-222	1625.00'	510.80'	257.53'	508.70'	S85°42'00"E

9 CENTURYLINK

RIGHT-OF-WAY EASEMENT (STRIP)
TO OAKDALE CO-OP ELECTRICAL
ASSOCIATION FOR SUBSTATION DOC.
NO. 182241, NOV. 15, 1950.

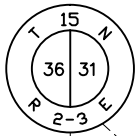
PC 73+81.61
SLOPE INTERCEPT

CENTURYLINK



NOTE:
EXISTING HIGHWAY R/W ESTABLISHED FROM CENTERLINE
OF EXISTING PAVEMENT AND COUNTY RECORDS.

E. COR. SEC. 36
1 1/4" REBAR FD.
Y = 135681.80
X = 432331.52



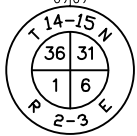
⑧
RANDY L. & BRENDA M. TOTZKE

NE1/4-SW1/4
SEC. 31

CASEY J. & JENNIFER A. FITZRANDOLPH

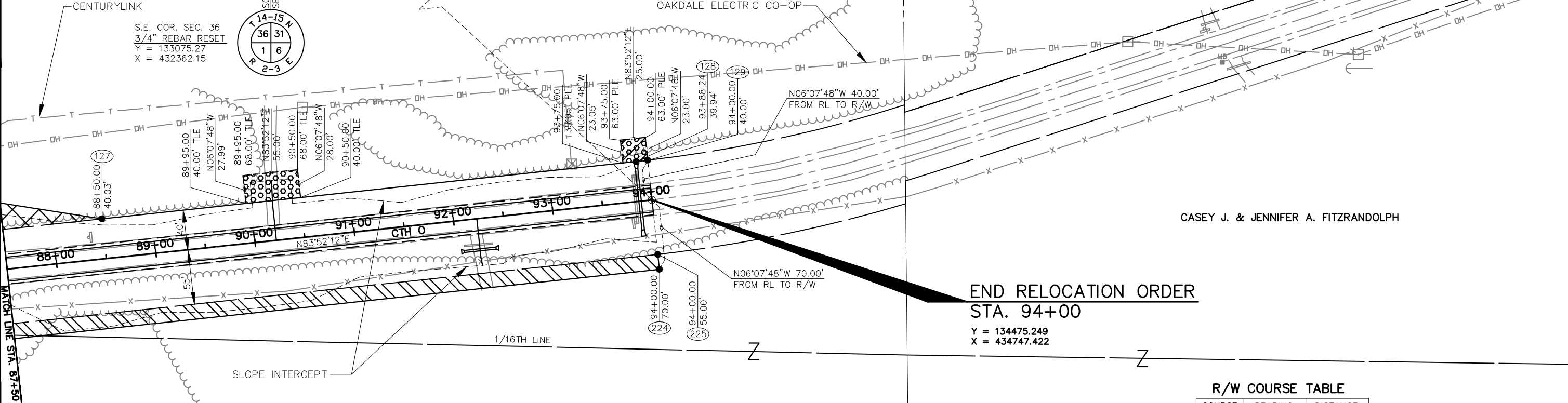
NW1/4-SE1/4
SEC. 31

S.E. COR. SEC. 36
3/4" REBAR RESET
Y = 133075.27
X = 432362.15



4

4



END RELOCATION ORDER
STA. 94+00

Y = 134475.249
X = 434747.422

R/W COURSE TABLE

COURSE	BEARING	DISTANCE
126-127	S81°12'36"E	155.23'
127-128	N83°52'46"E	538.23'
223-224	N83°52'12"E	900.00'
224-225	N06°07'48"W	15.00'

R/W POINT COORDINATES

POINT NUMBER	Y	X
127	134,456.322	434,196.292
128	134,513.708	434,731.450
129	134,515.014	434,743.152
224	134,405.650	434,754.898
225	134,420.542	434,753.187

R/W CURVE TABLE

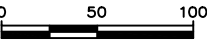
COURSE	RADIUS	ARC LENGTH	TANGENT	CHORD LENGTH	CHORD BEARING
128-129	1360.00'	11.78'	5.89'	11.78'	N83°37'53"E

REVISION DATE
NOVEMBER 27, 2012 - NO CHANGE

DATE: NOVEMBER 12, 2012

GRID FACTOR: N/A

SCALE, FEET



HWY: CTH O

COUNTY: JUNEAU

R/W PROJECT NUMBER: 5810-00-01

CONSTRUCTION PROJECT NUMBER: 5810-00-71

PLAT SHEET NO: 4.07

PS&E SHEET

E

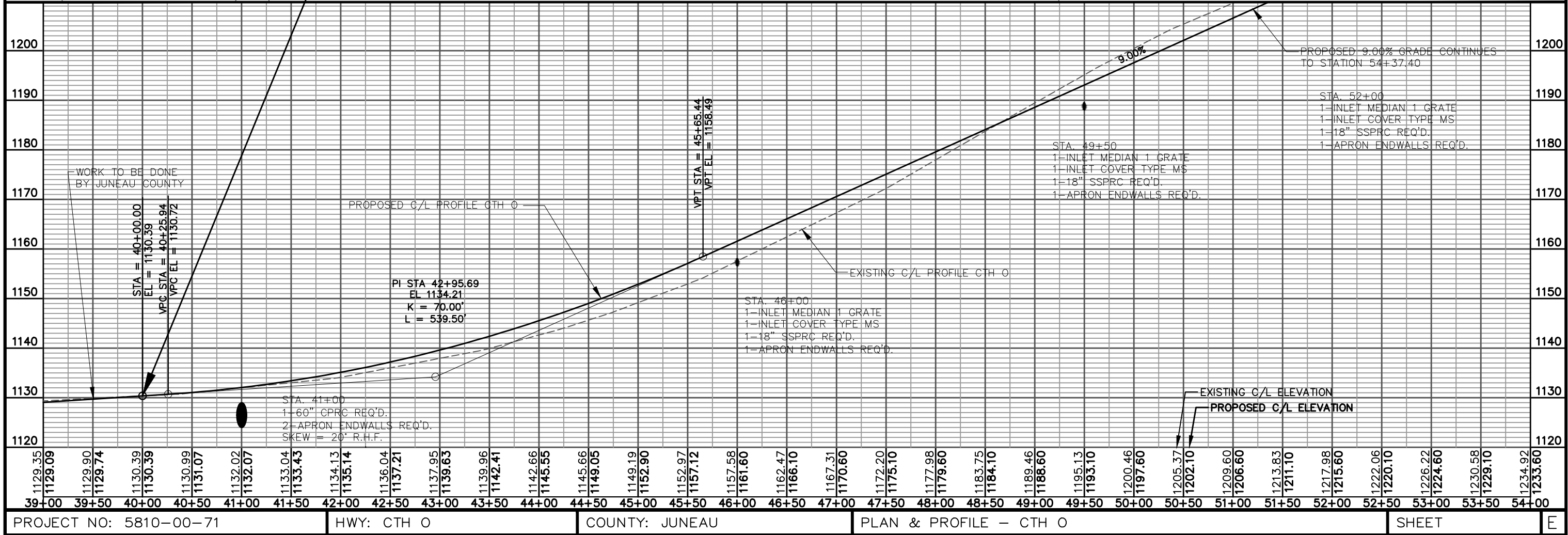
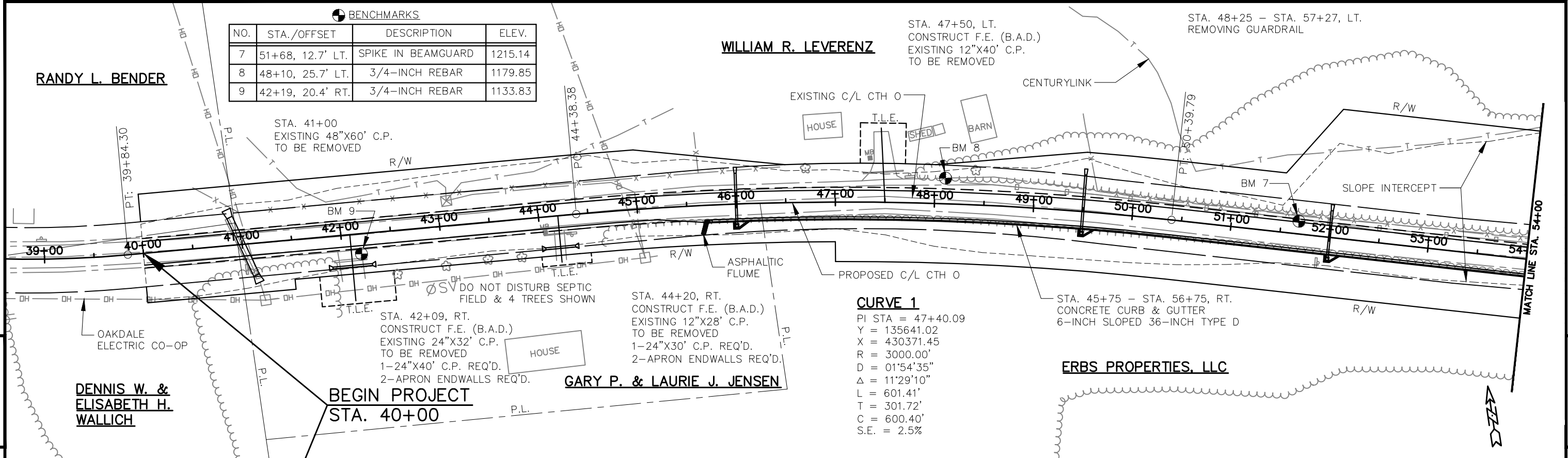
⑦
VINCE M. & JANICE L. KELLEY

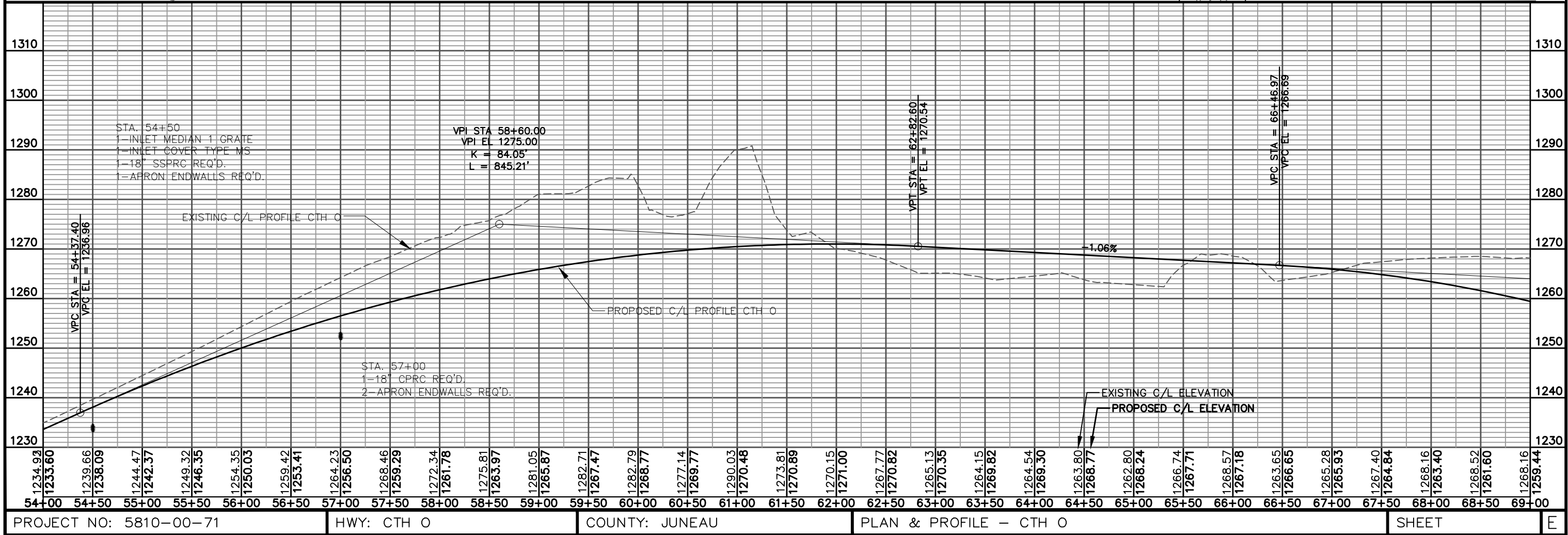
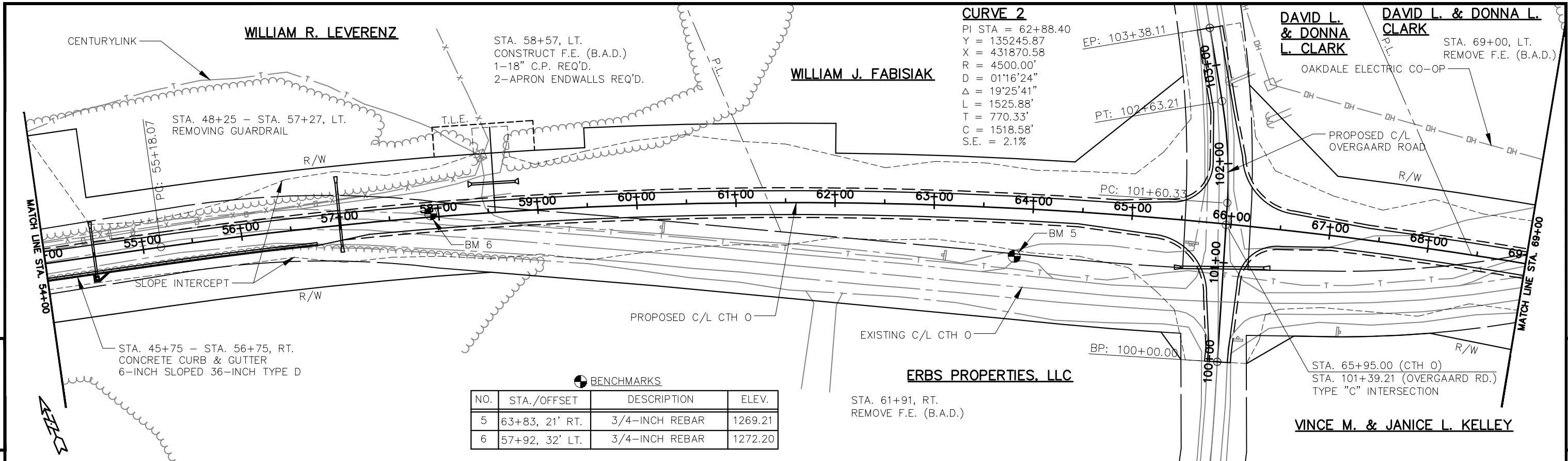
SE1/4-SW1/4
SEC. 31

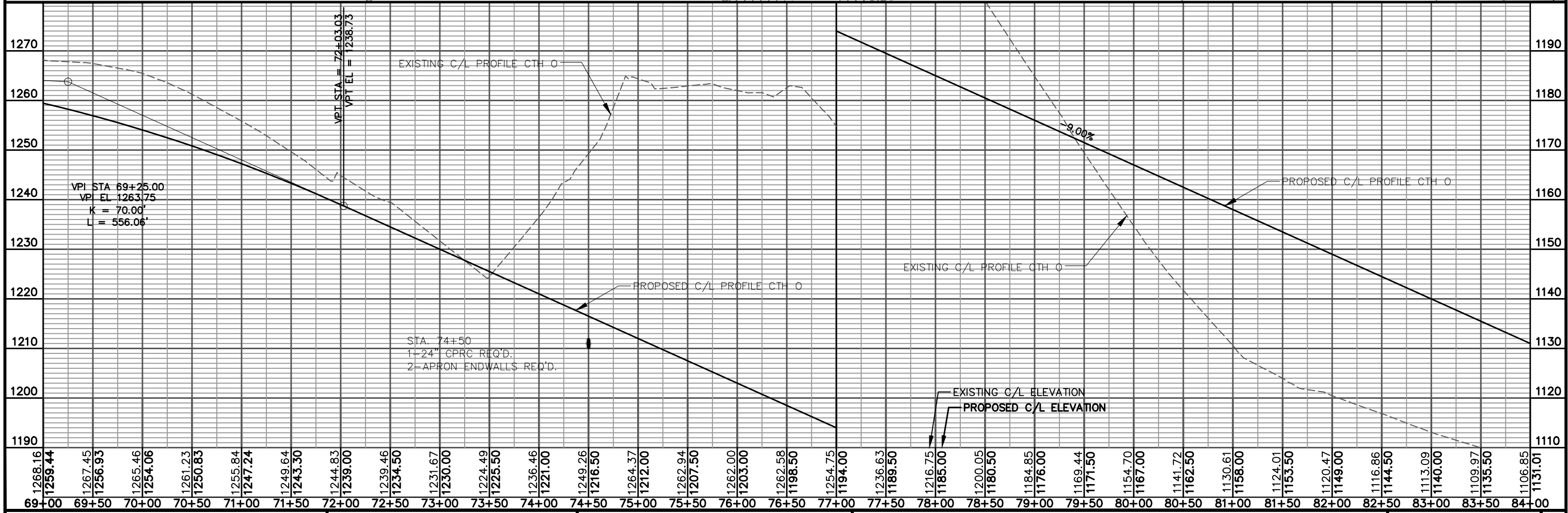
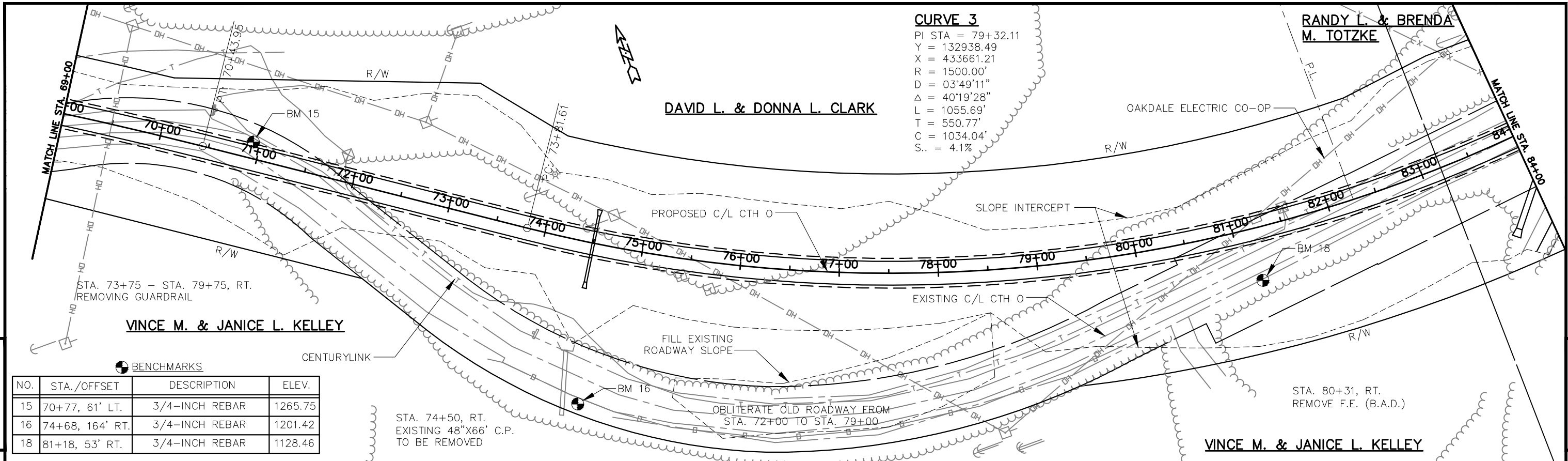
TOWN OF LINDINA

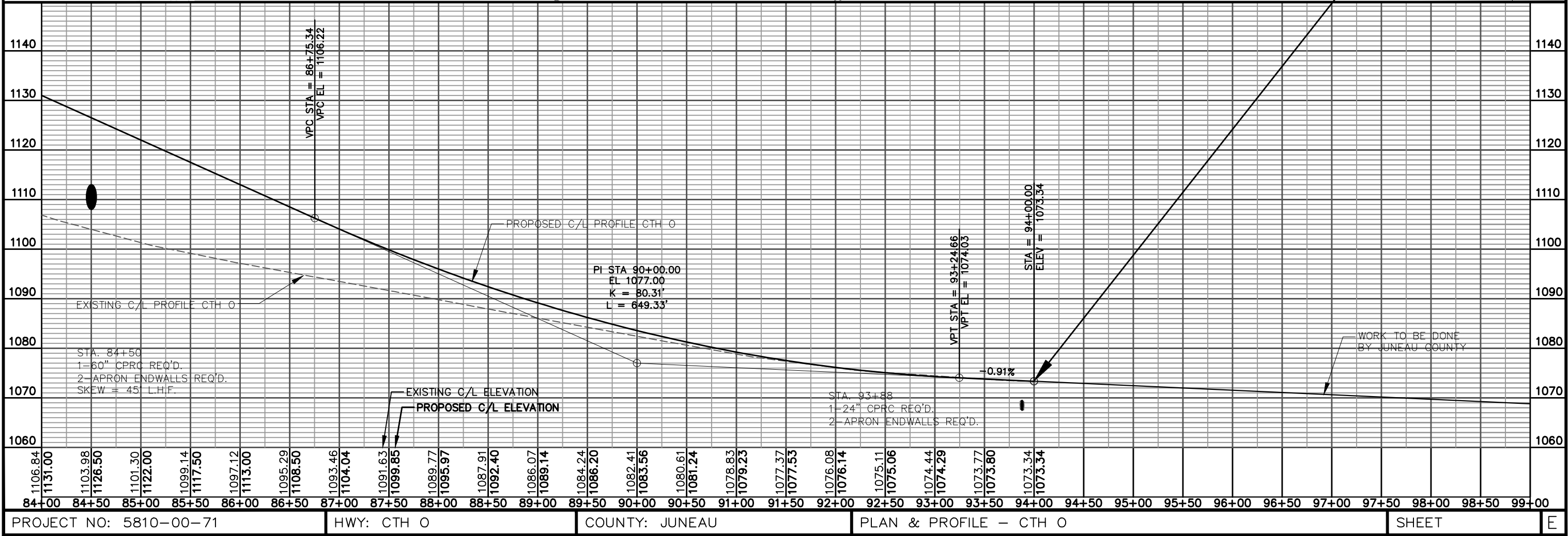
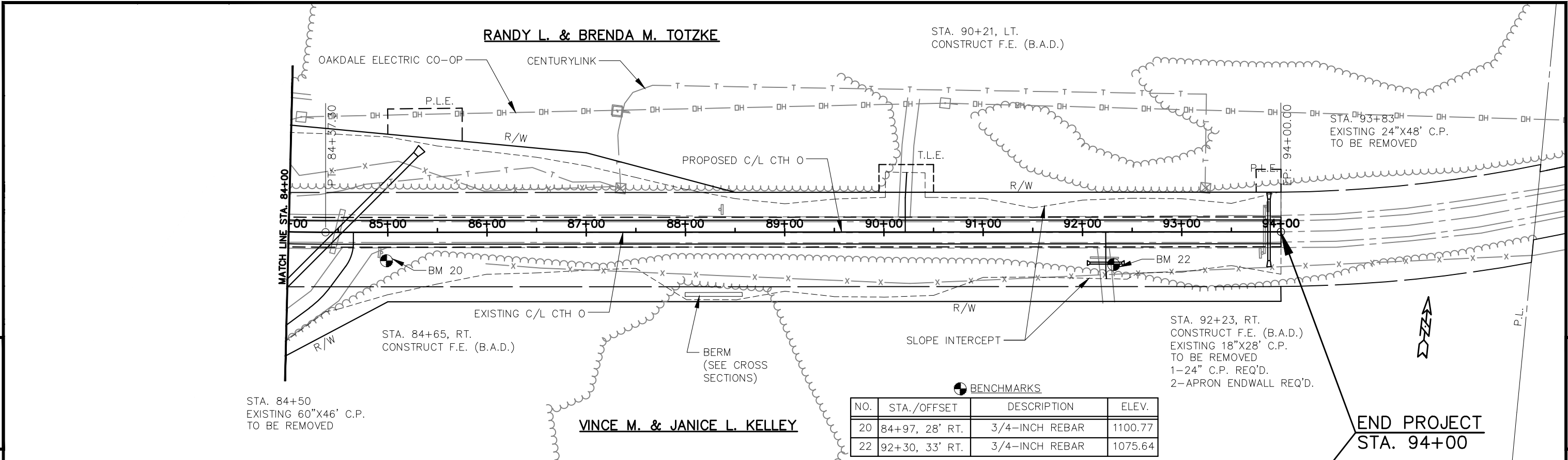
R/W EASEMENT FOR
RURAL ELECTRIC LINE
DOC. No. 175622
(BLANKET) "SW1/4 SW1/4,
SE1/4 SW1/4".

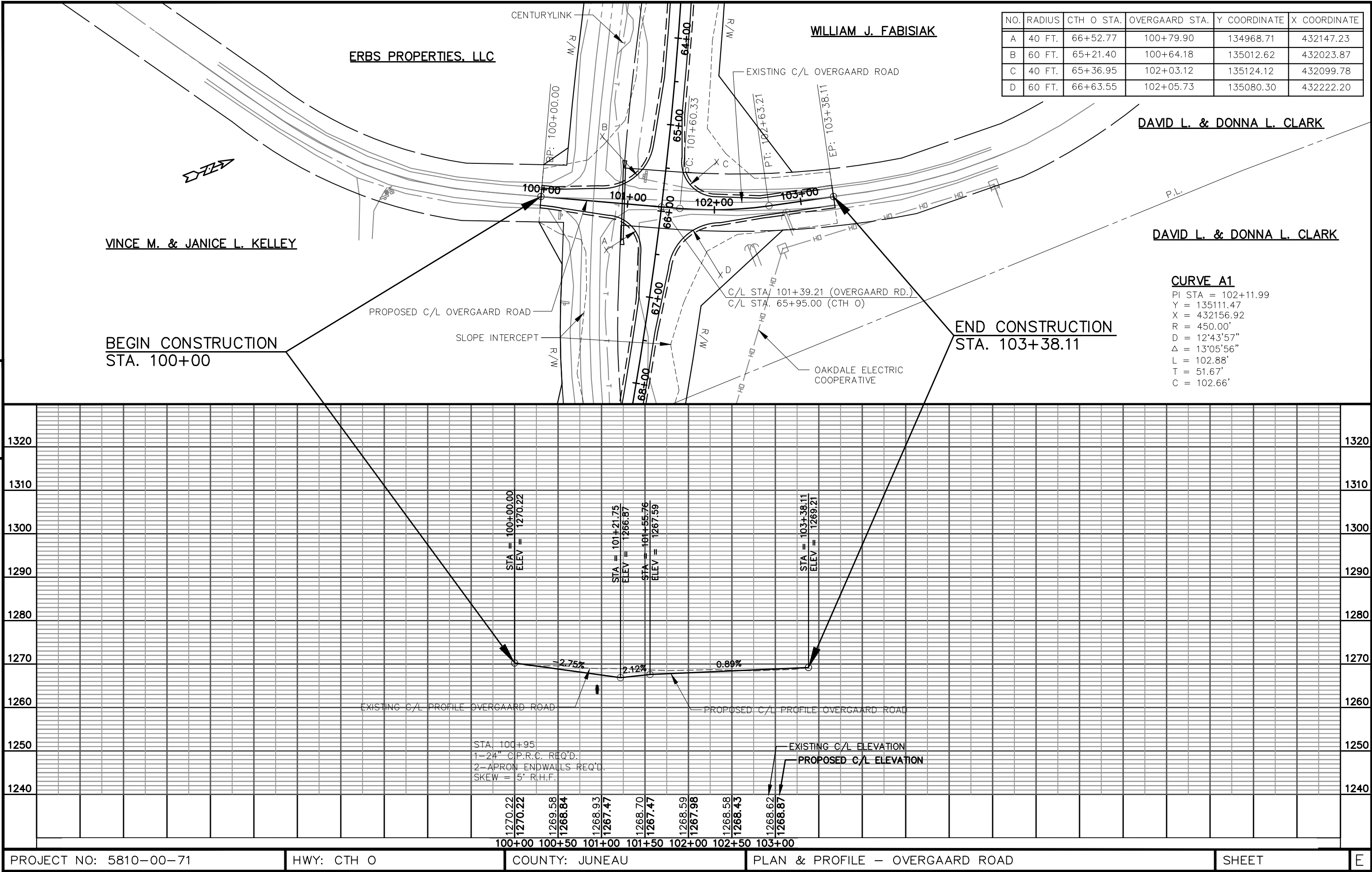
SW1/4-SE1/4
SEC. 31





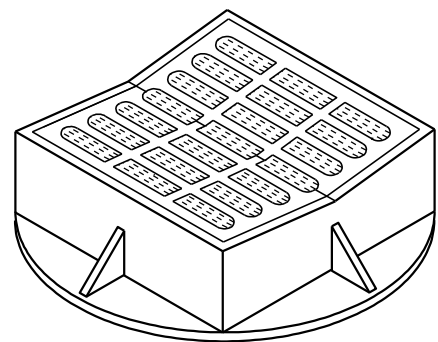
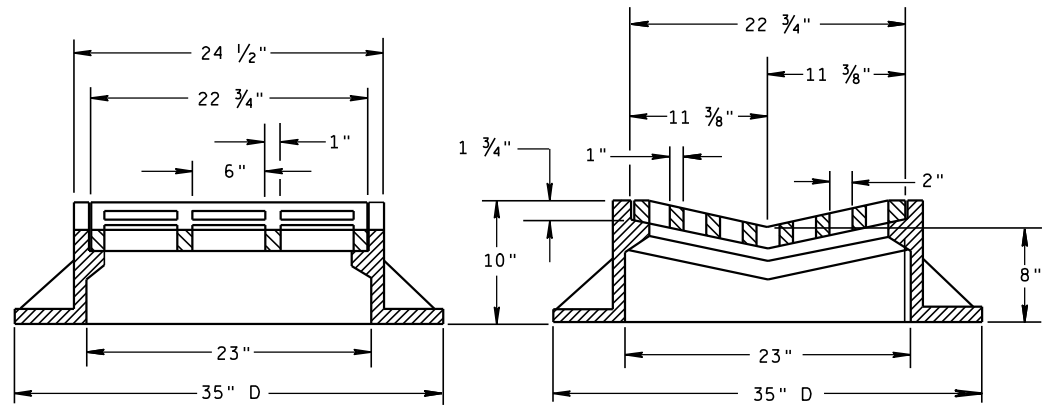




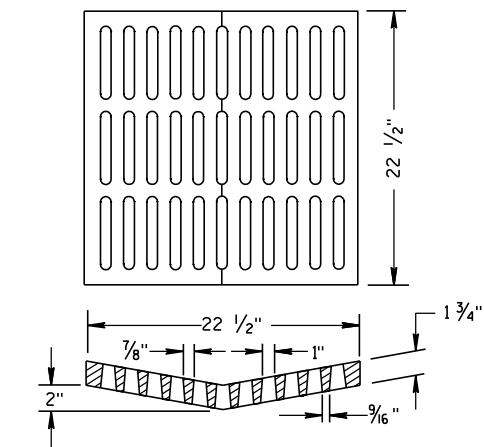


Standard Detail Drawing List

08A05-18B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08C08-01	INLETS MEDIAN 1 AND 2 GRATE
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
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
09A01-12A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
15A01-11	MARKER POST FOR RIGHT-OF-WAY
15A03-01	MARKER POSTS, FLEXIBLE, FOR CULVERT END
15C02-04A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C03-01	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C08-14A	PAVEMENT MARKING (MAINLINE)
15C08-14B	PAVEMENT MARKING (INTERSECTIONS)
15C12-03	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)



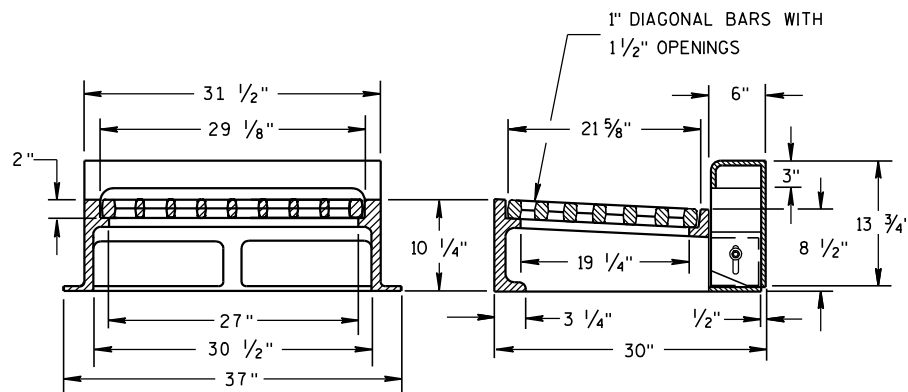
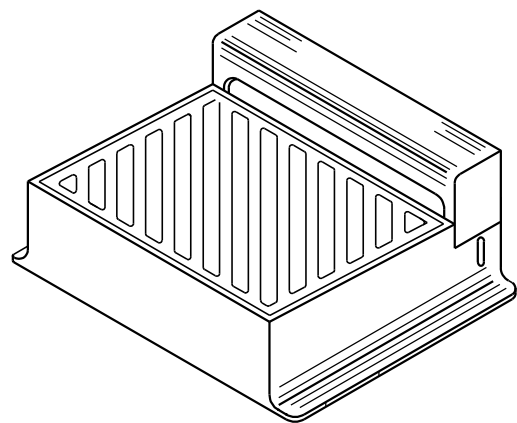
TYPE "B"
(APPROXIMATE WEIGHT 405 LBS.)
FRAME..... 294 LBS.
GRATE..... 111 LBS.



**ALTERNATIVE GRATE FOR
TYPE "B" COVER**

(APPROXIMATE GRATE WEIGHT 134 LBS.)

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS POSSIBLE.
NOTED AS TYPE B-A ON THE DRAINAGE TABLE



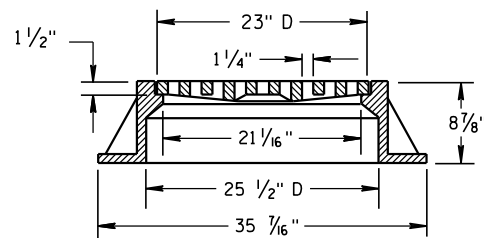
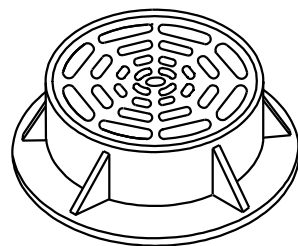
NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"
(APPROXIMATE WEIGHT 648 LBS.)

FRAME..... 355 LBS.
GRATE..... 156 LBS.
CURB BOX..... 137 LBS.

DIAGONAL SLOTS, SHALL BE ORIENTED
TO THE DIRECTION OF FLOW AS ILLUSTRATED.
GRATES ARE MANUFACTURED TO BE REVERSIBLE.

DIRECTION
OF FLOW



TYPE "C"
(APPROXIMATE WEIGHT 259 LBS.)

FRAME..... 152 LBS.
GRATE..... 107 LBS.

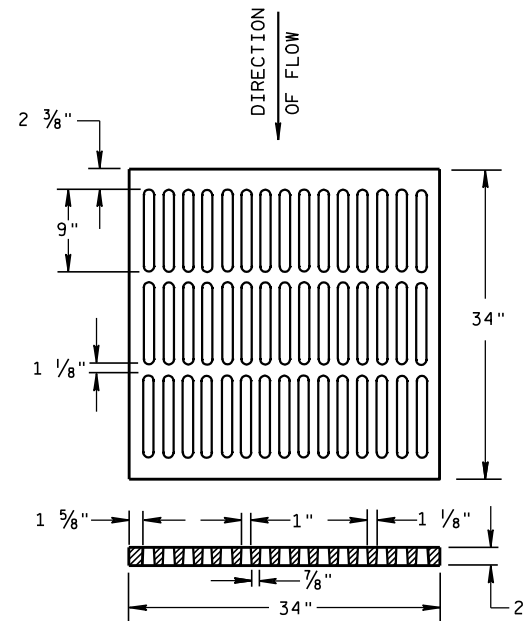
GENERAL NOTES

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.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

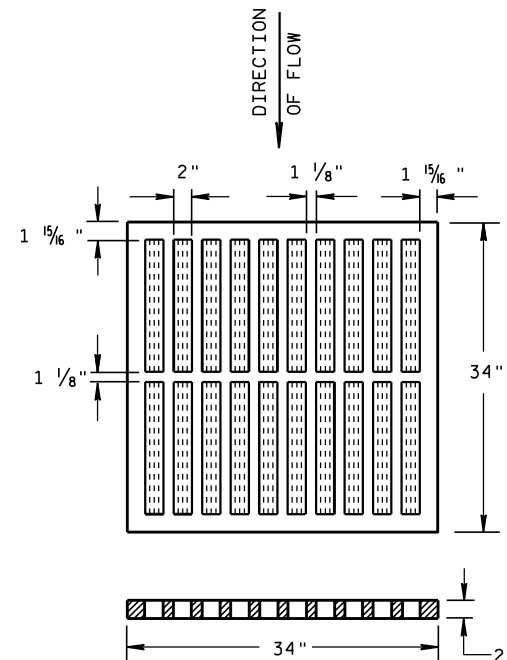
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.



ALTERNATIVE TYPE "MS"
(APPROXIMATE GRATE WEIGHT 329 LBS.)

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS PERMITTED
NOTED AS TYPE MS-A ON THE DRAINAGE TABLE



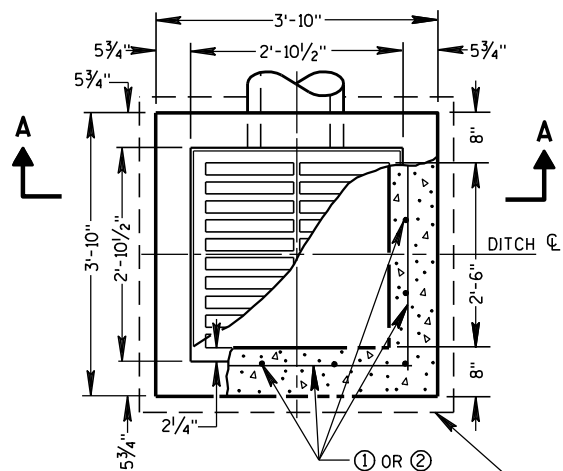
TYPE "MS"
(APPROXIMATE GRATE WEIGHT 268 LBS.)

USE ON FREEWAYS AND EXPRESSWAYS
NOTED AS TYPE MS ON DRAINAGE TABLE

INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM

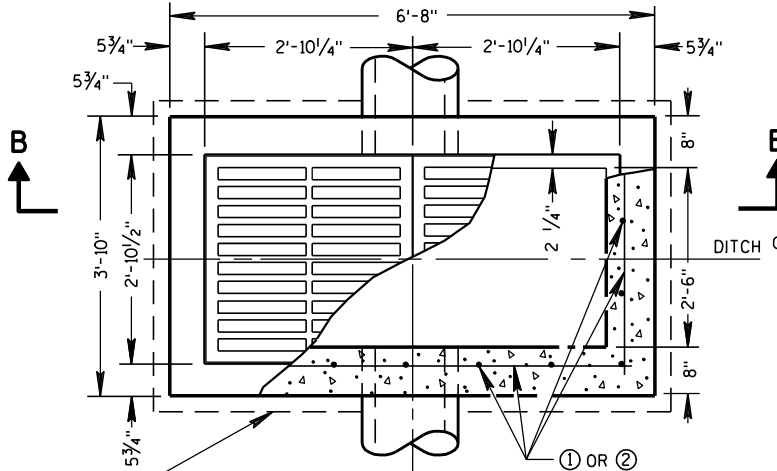
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 DATE /S/ Jerry H. Zogg
FHWA ROADWAY STANDARDS DEVELOPMENT ENGINEER

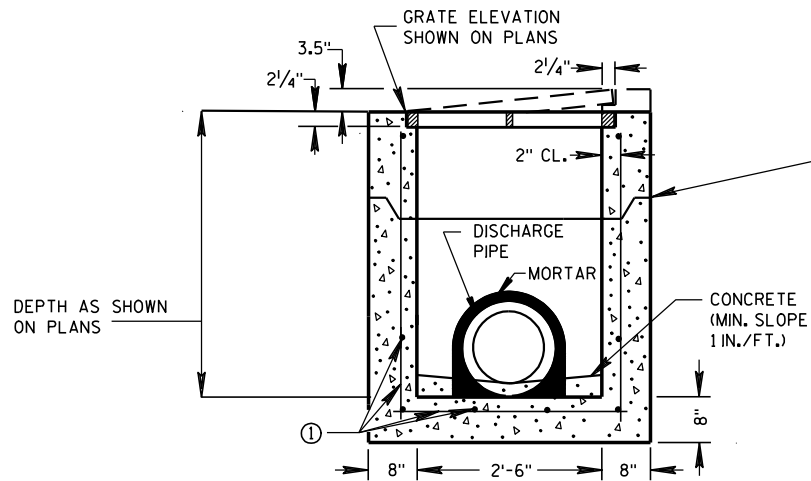


PLAN VIEW

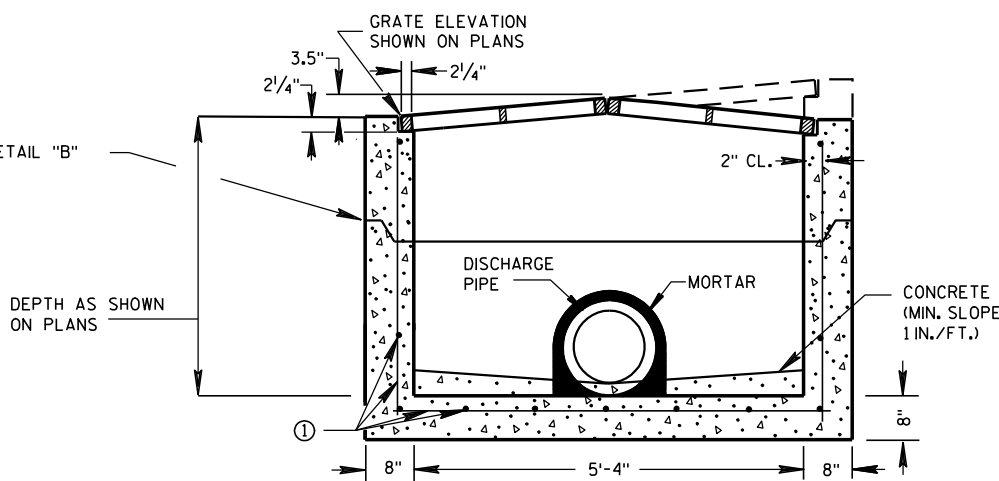
4" OVERHANGING BASE ON REINFORCED CAST-IN-PLACE CONCRETE INLETS



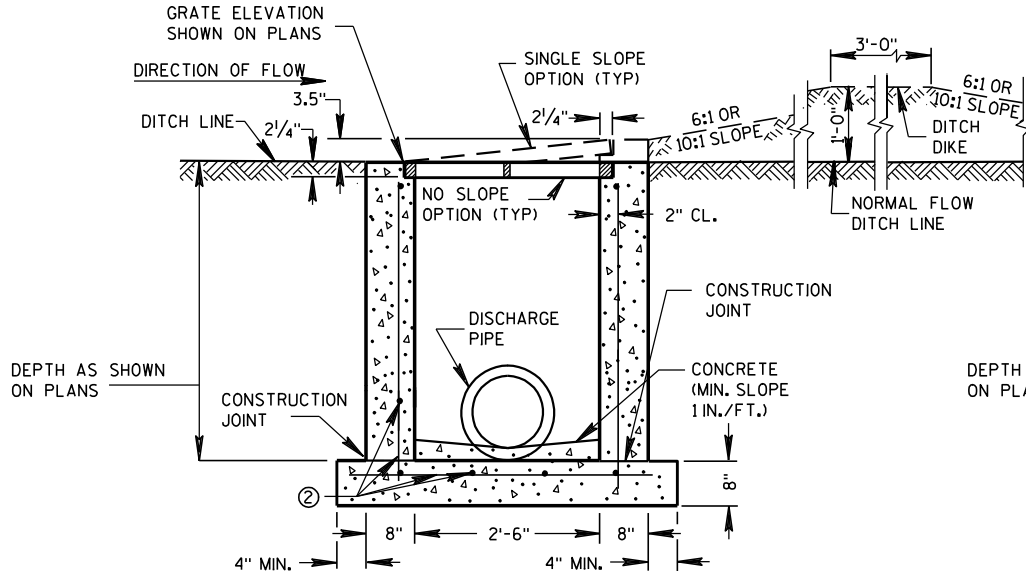
PLAN VIEW



PRECAST REINFORCED CONCRETE SECTION A-A

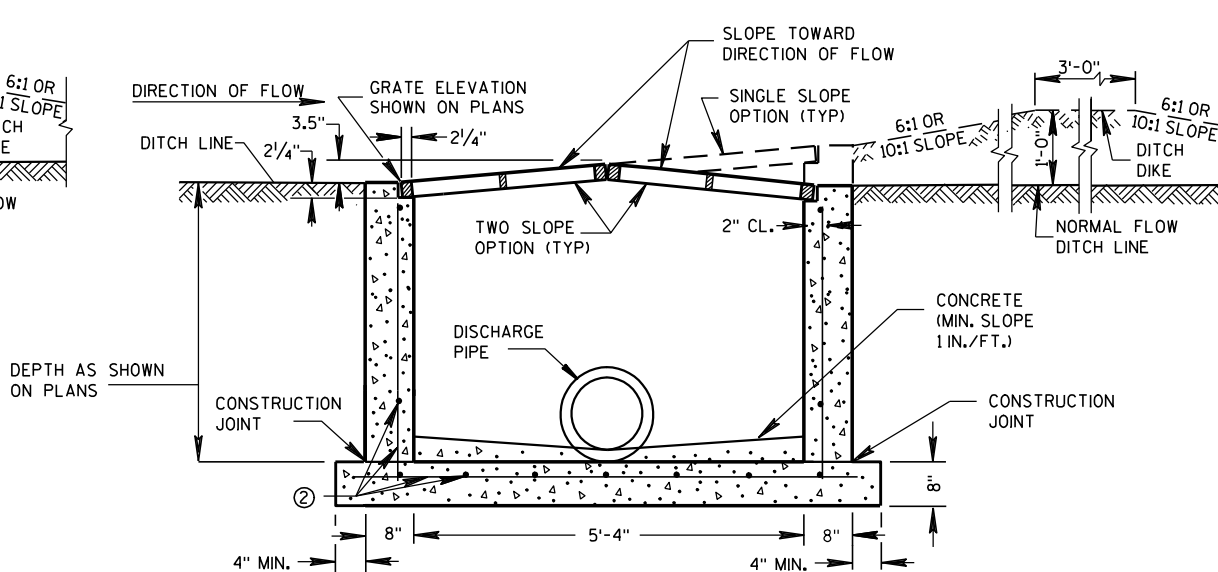


PRECAST REINFORCED CONCRETE SECTION B-B



REINFORCED CAST-IN-PLACE CONCRETE SECTION A-A

INLETS MEDIAN 1 GRATE



REINFORCED CAST-IN-PLACE CONCRETE SECTION B-B

INLETS MEDIAN 2 GRATE

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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLETS WHICH MAY INCLUDE PRECAST REINFORCED CONCRETE INLETS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, IG-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

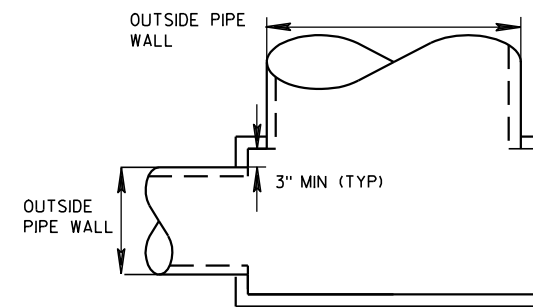
ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

- ① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.
- ② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

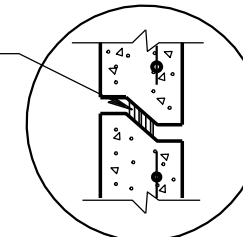
PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
1 GRATE	18	18
2 GRATE	18	42



DETAIL "A"

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



DETAIL "B"

INLETS MEDIAN 1 AND 2 GRATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/5/2012

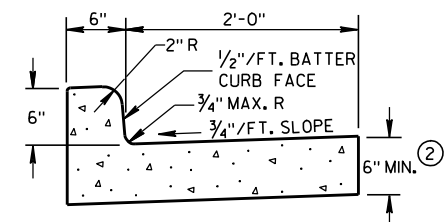
DATE

FHWA

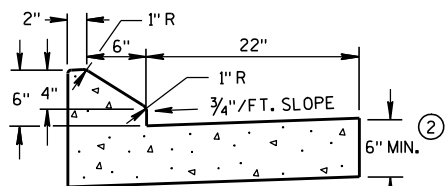
/s/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT

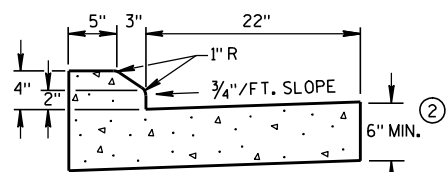
ENGINEER



TYPES A & D ①



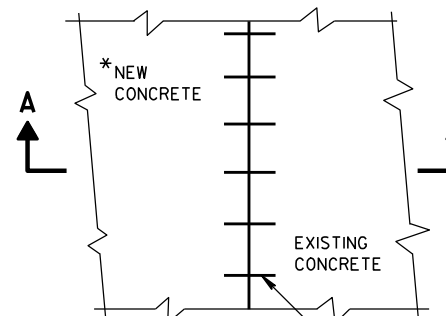
6" SLOPED CURB TYPES G & J ①



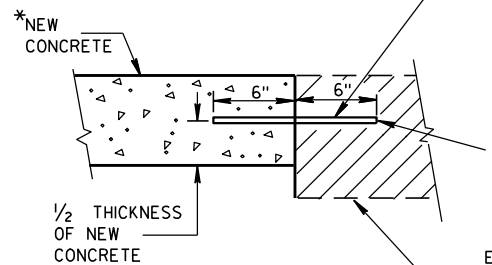
4" SLOPED CURB TYPES G & J ①

CONCRETE CURB & GUTTER 30"

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



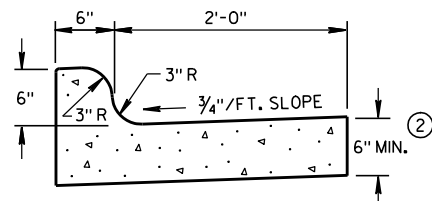
PLAN VIEW

SECTION A-A
TIE BARS DRILLED
INTO EXISTING PAVEMENT

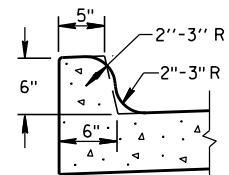
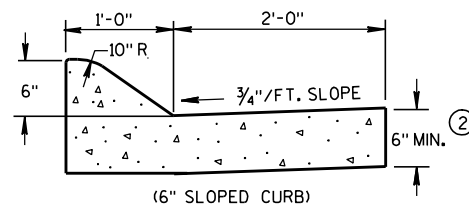
NO. 6 TIE BARS SPACED 2'-6" C-C,
INSTALLED PERPENDICULAR
TO THE LONGITUDINAL JOINT.

MAXIMUM DRILL HOLE
SIZE IS 1/8" GREATER
THAN TIE BAR DIAMETER

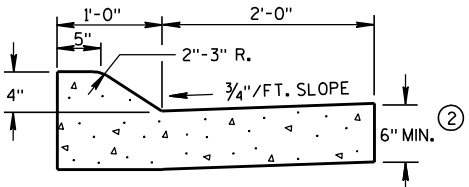
EXISTING
CONCRETE



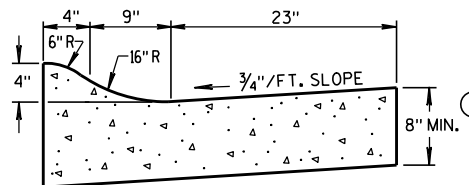
TYPES K & L ①

OPTIONAL CURB SHAPE
FOR TYPES K & L ①

(6" SLOPED CURB)

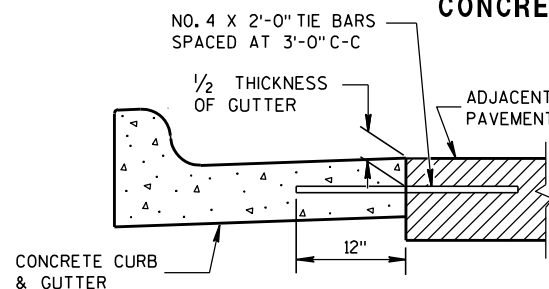


TYPES A & D ①

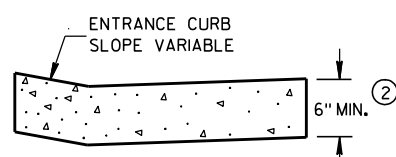


4" SLOPED CURB TYPES R & T ① ④

CONCRETE CURB & GUTTER 36"

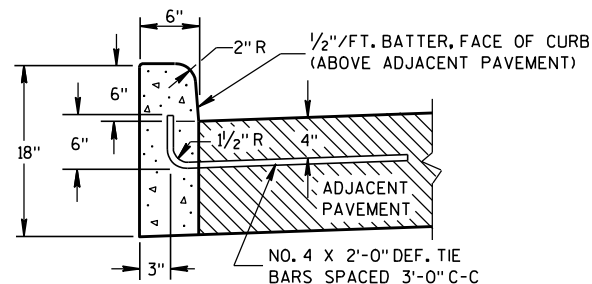


TYPICAL TIE BAR LOCATION ①



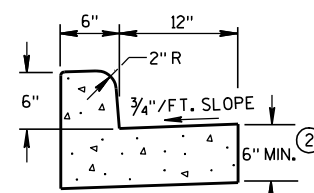
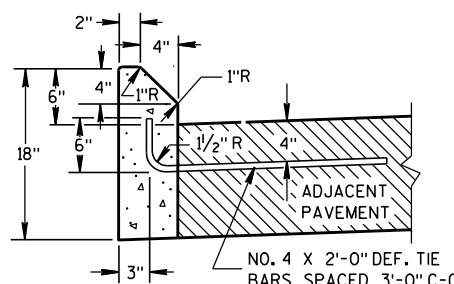
DRIVEWAY ENTRANCE CURB

(WHEN DIRECTED BY THE ENGINEER)



TYPES A & D ①

CONCRETE CURB

TYPES A & D
CONCRETE CURB & GUTTER 18"

TYPES G & J ①

GENERAL NOTES

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

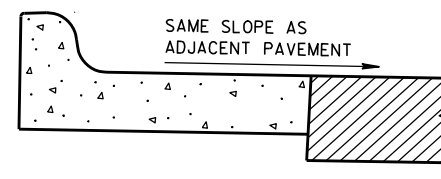
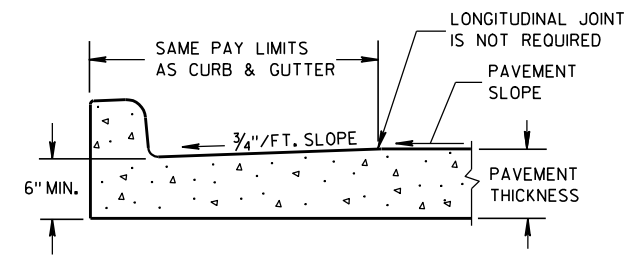
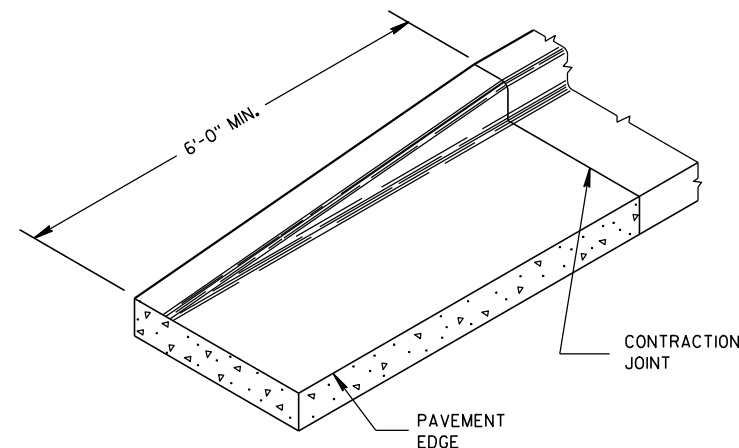
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

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

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

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

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

END SECTION CURB & GUTTER

CONCRETE CURB, CONCRETE
CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/4/08

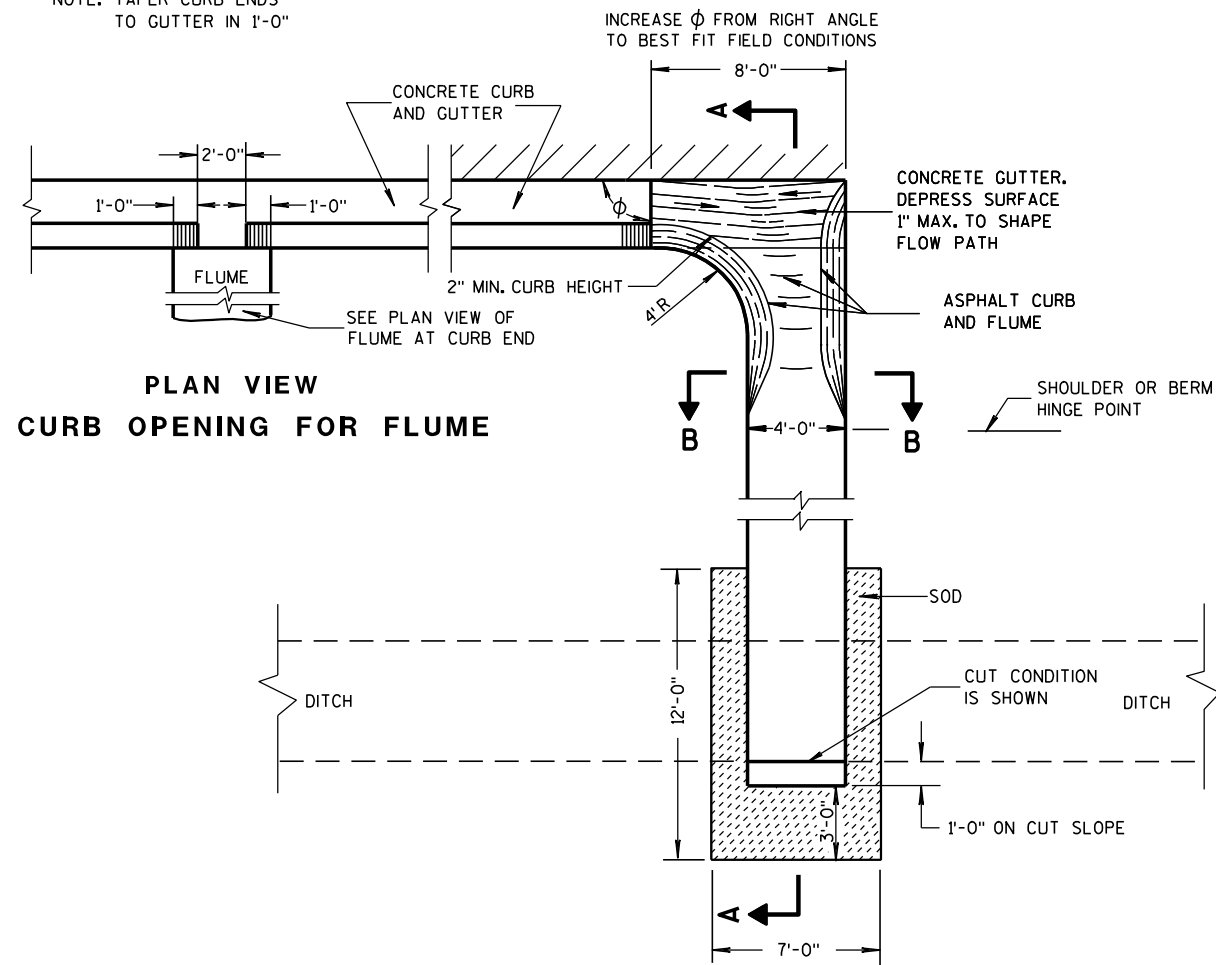
DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

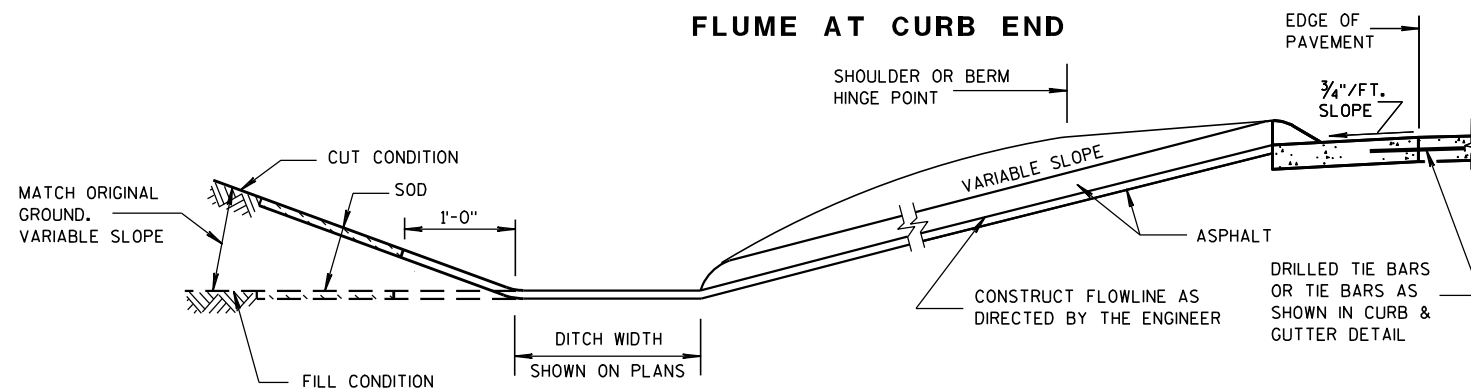
ASPHALTIC FLUME

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

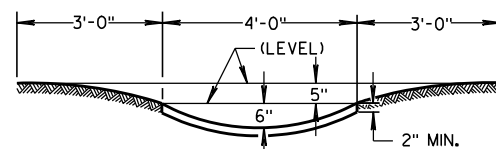


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

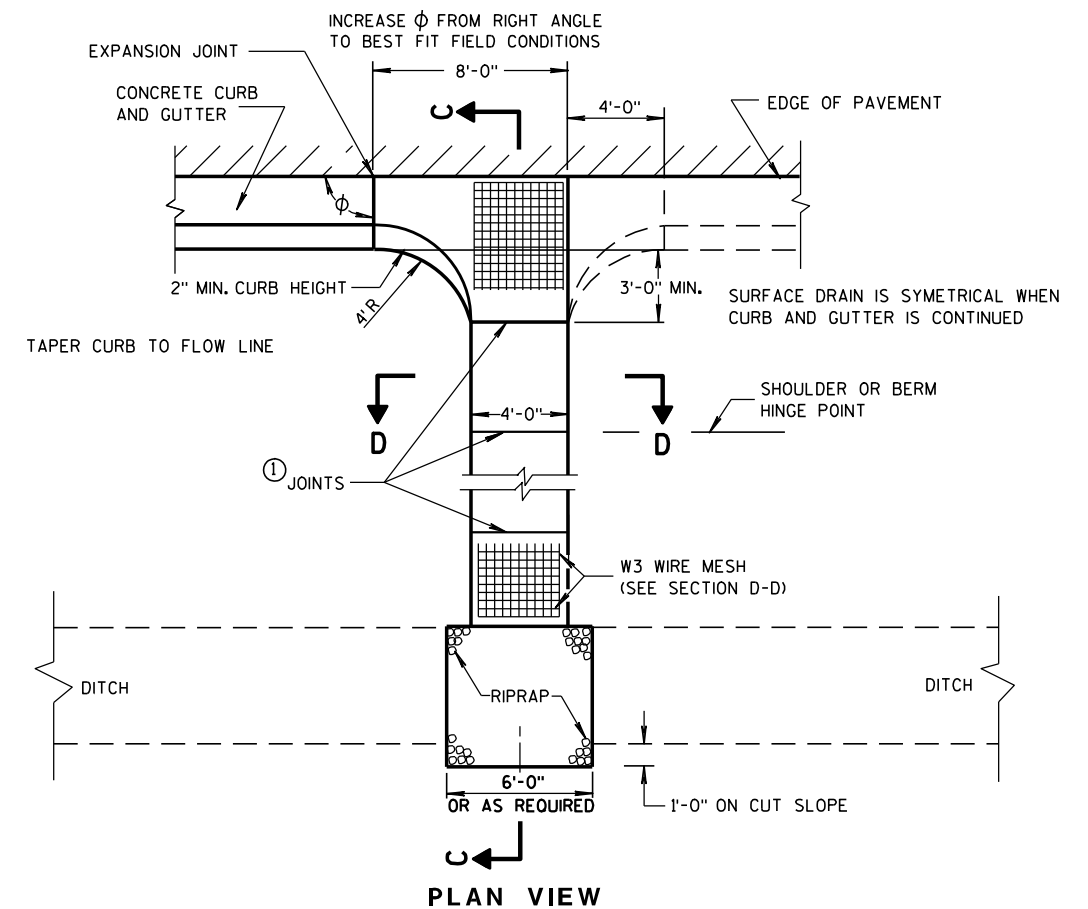
GENERAL NOTES

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

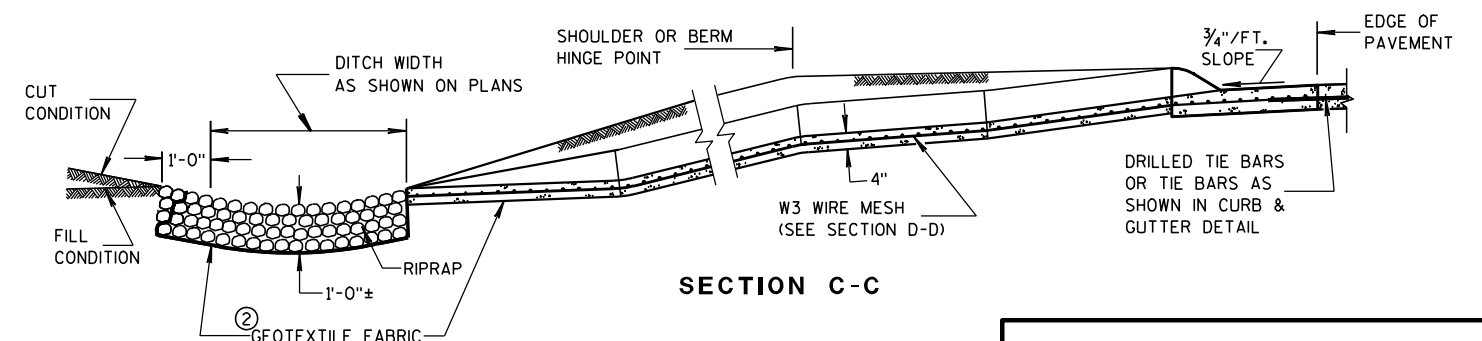
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

- 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

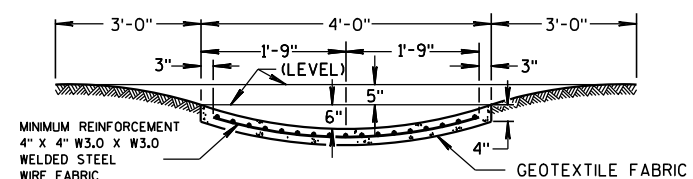
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9-4-08

DATE

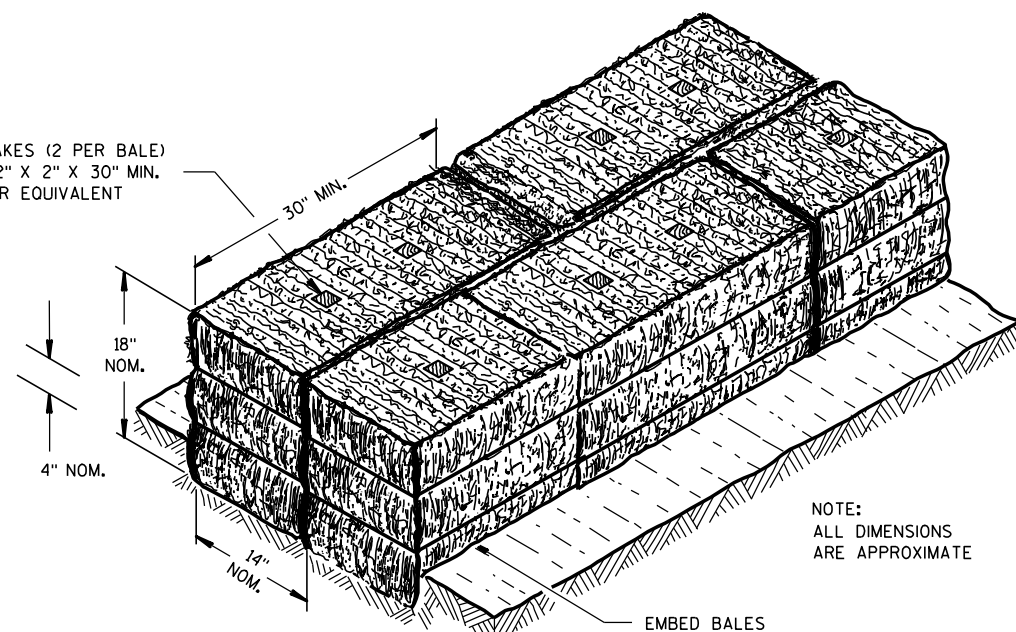
FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT

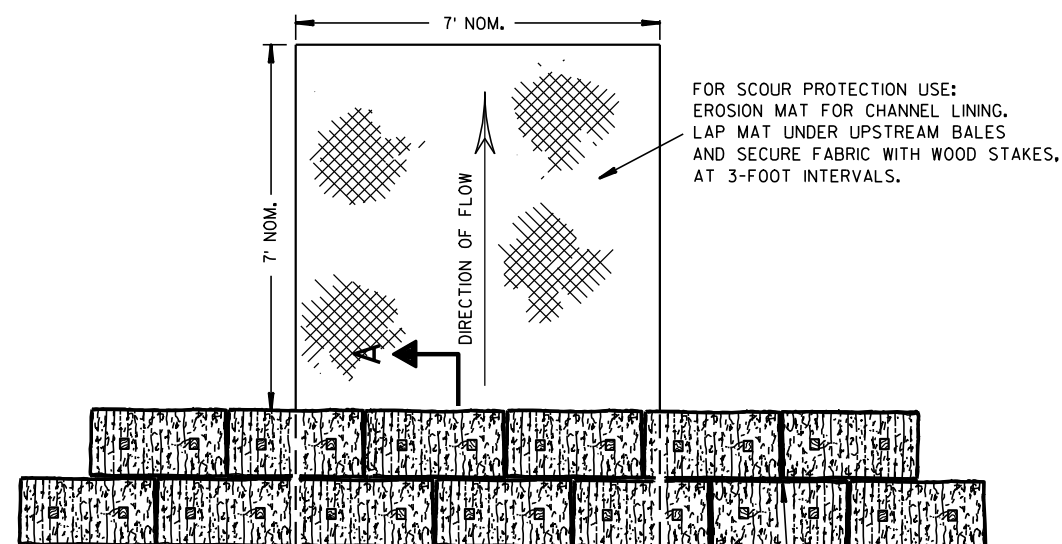
ENGINEER

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

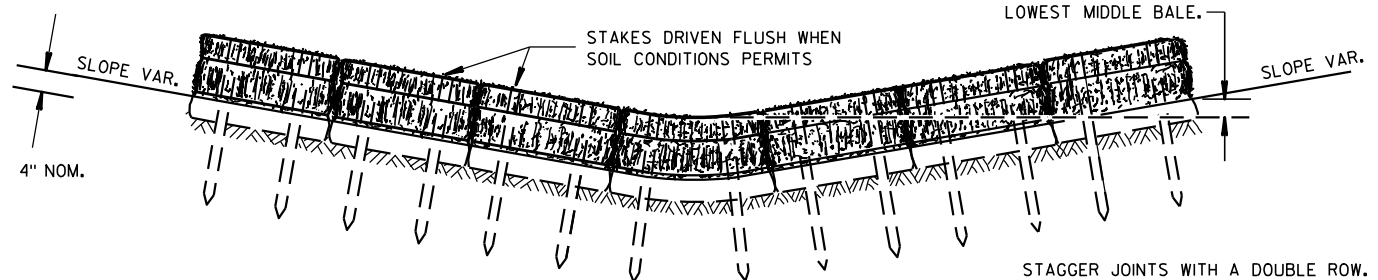


NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

SECTION A-A



PLAN VIEW



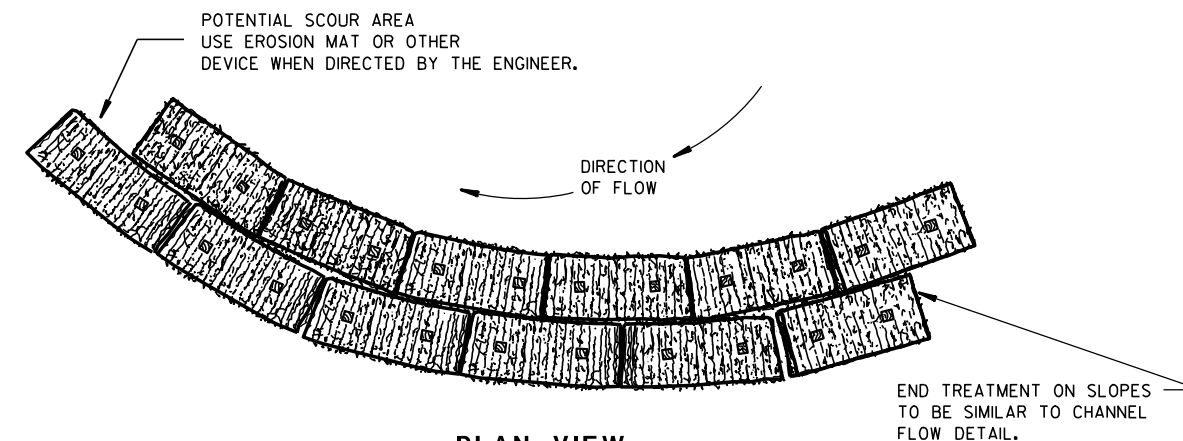
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

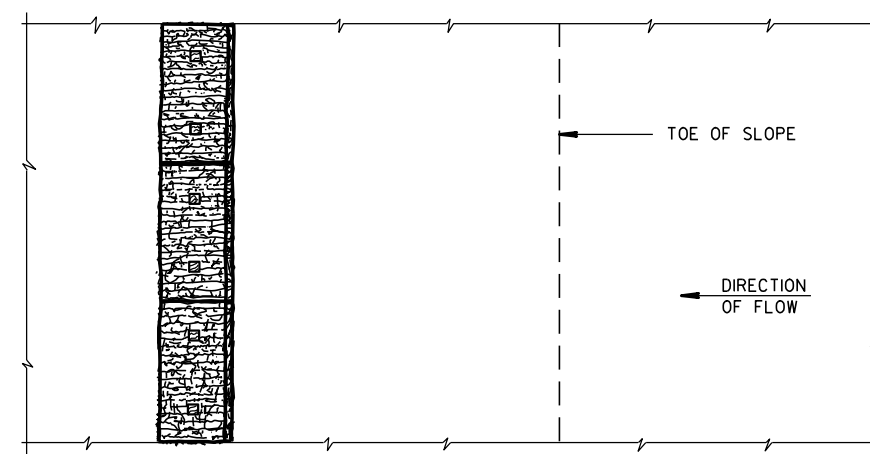
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

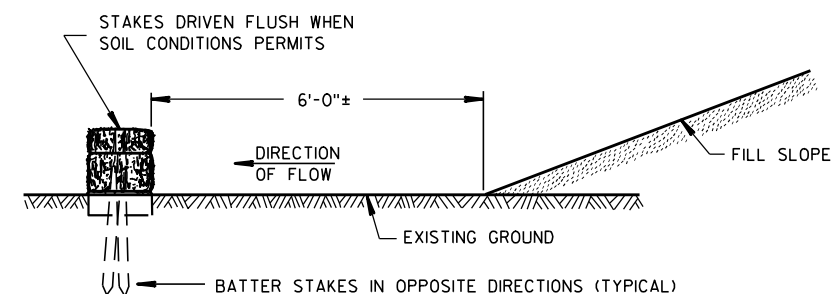


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

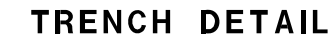
6/04/02
DATE

FHWA

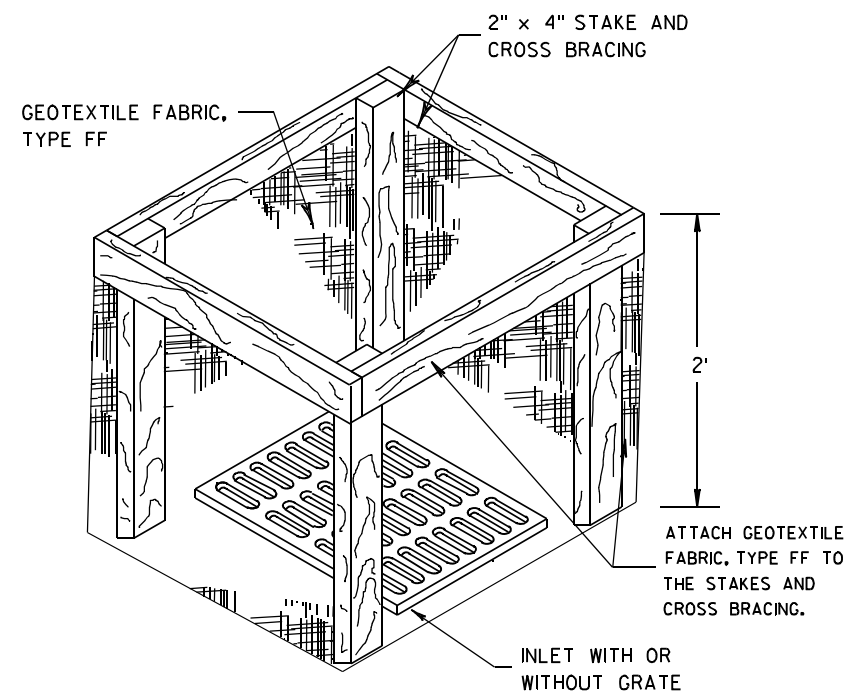
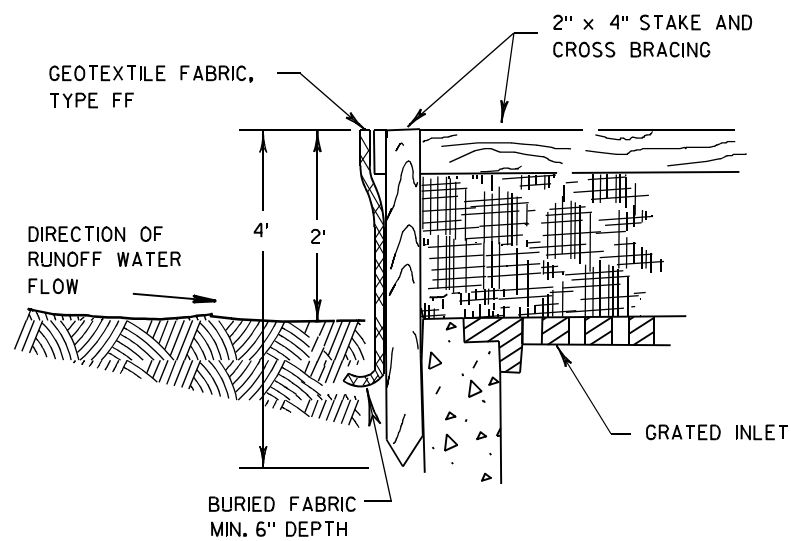
/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



- 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/ <u>Beth Cannestra</u> CHIEF ROADWAY DEVELOPMENT ENGINEER



INLET PROTECTION, TYPE A

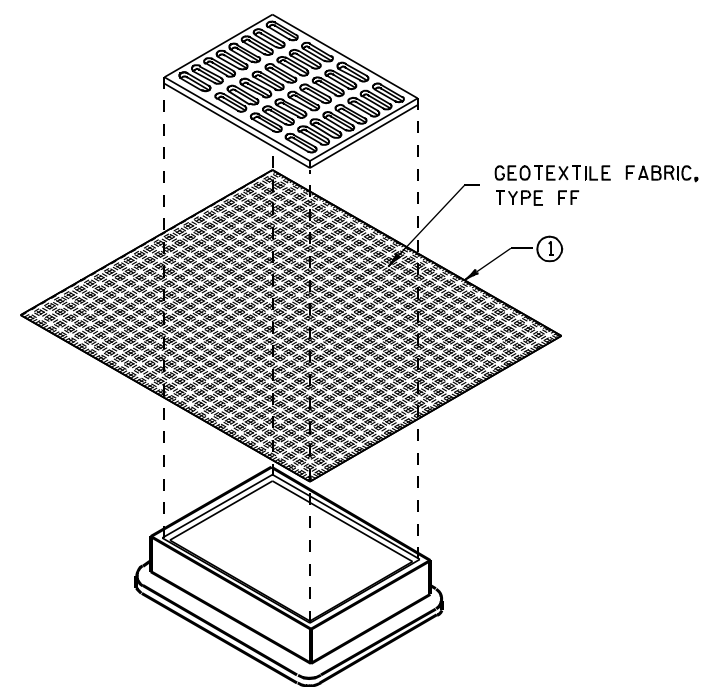
GENERAL NOTES

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.

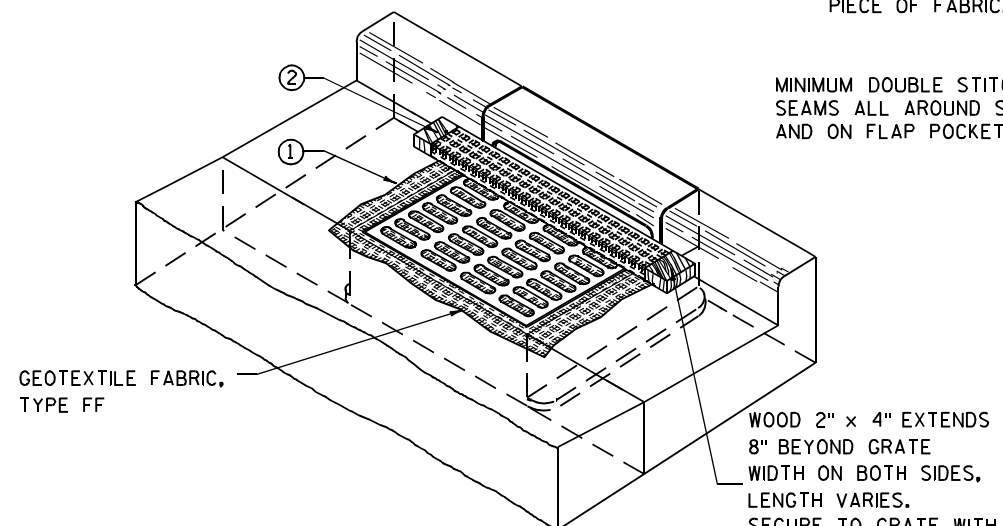
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- 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.

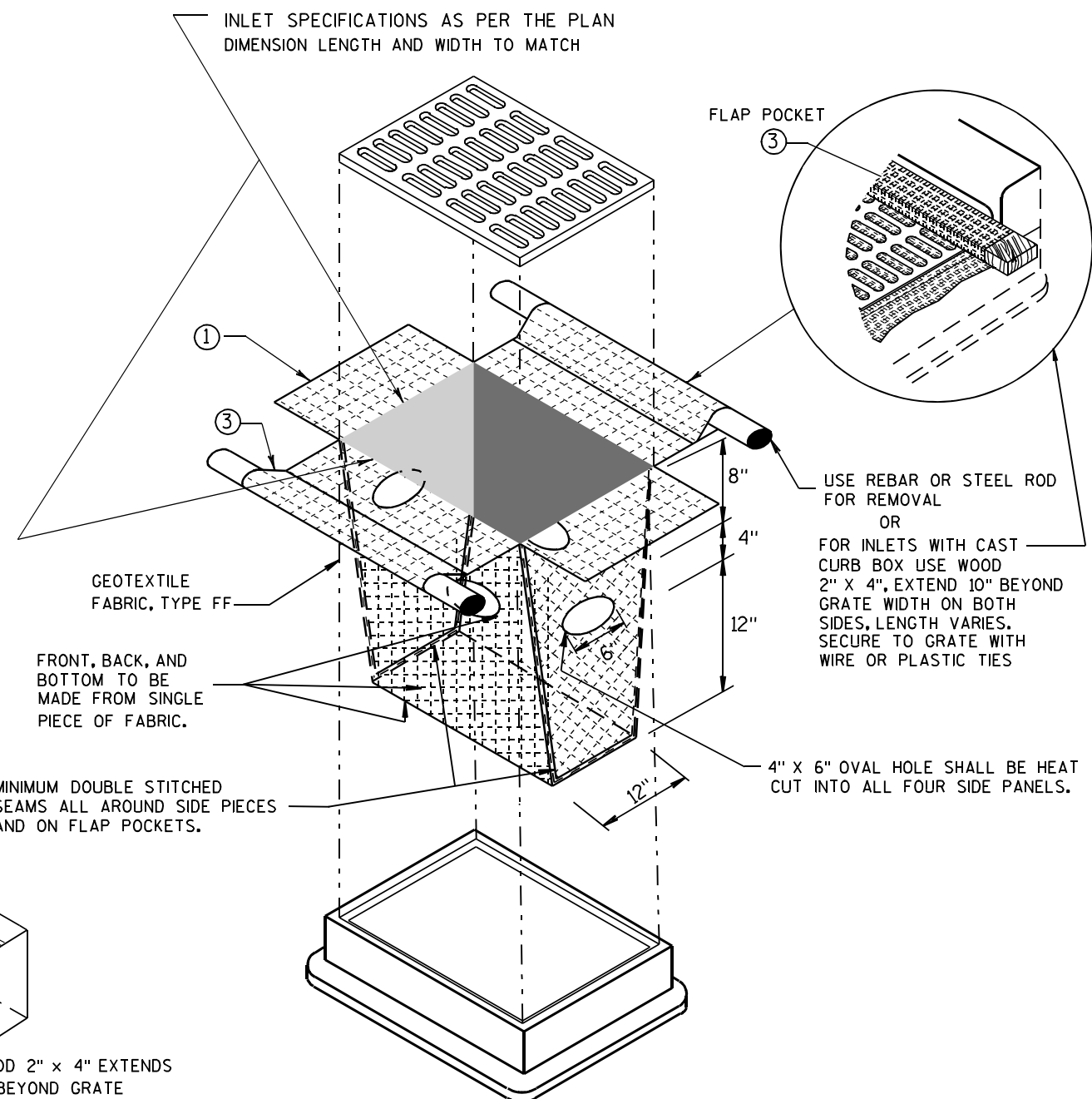
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

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)

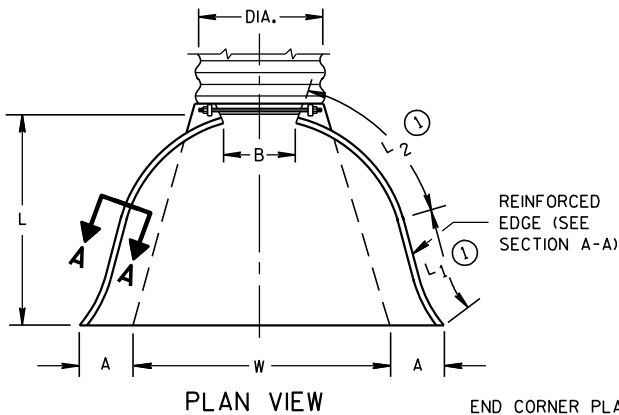
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

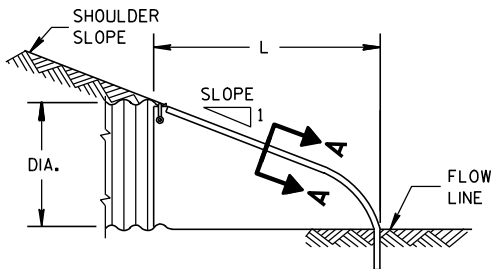
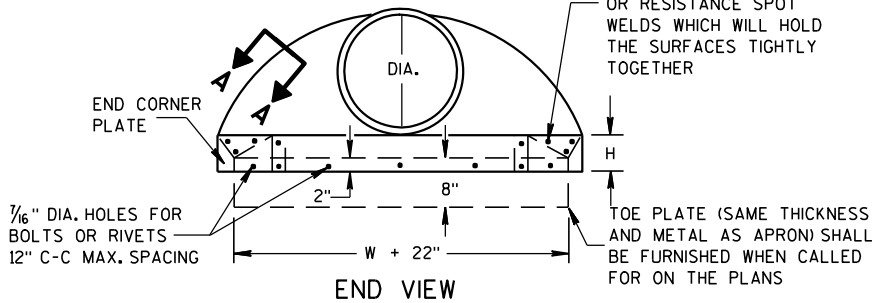
METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)						APPROX. SLOPE	BODY	
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L ₁ ①	L ₂ ①			W (±2")
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	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



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

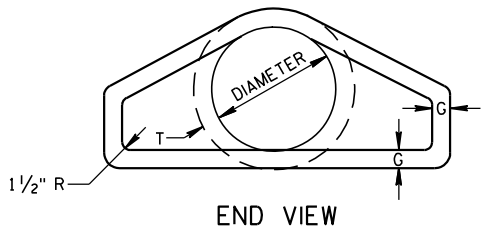
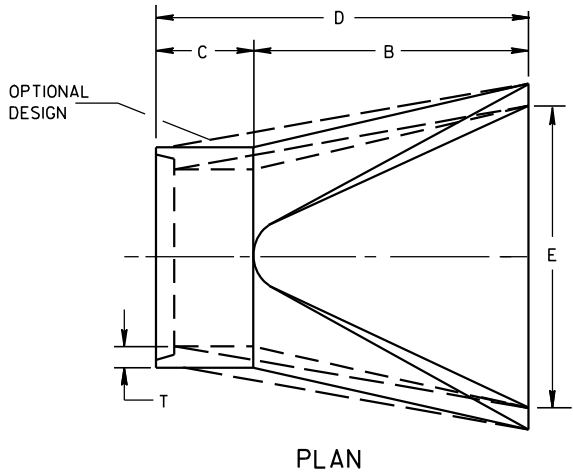
TOE PLATE (SAME THICKNESS AND METAL AS APRON) SHALL BE FURNISHED WHEN CALLED FOR ON THE PLANS



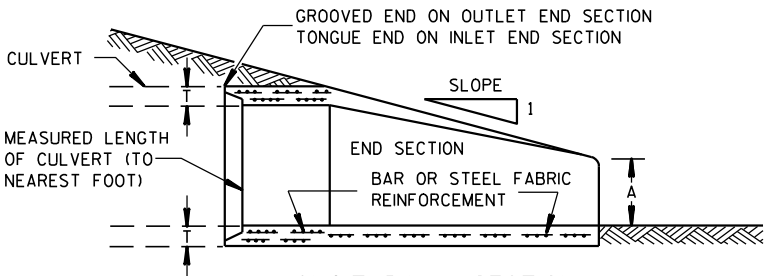
SIDE ELEVATION
METAL ENDWALLS

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

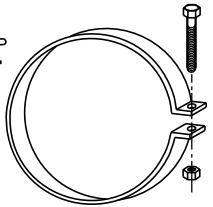
* MINIMUM
** MAXIMUM



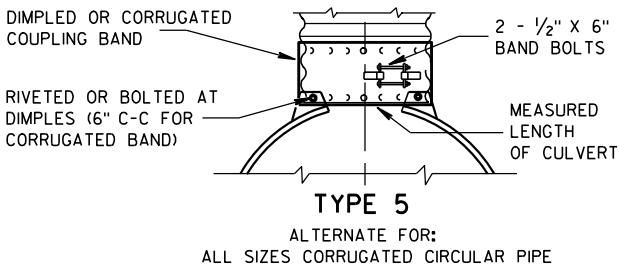
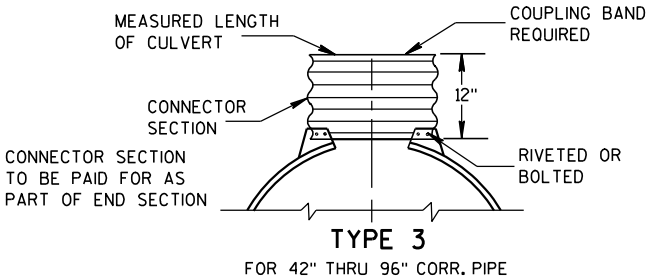
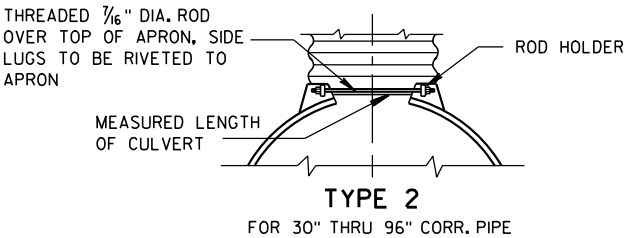
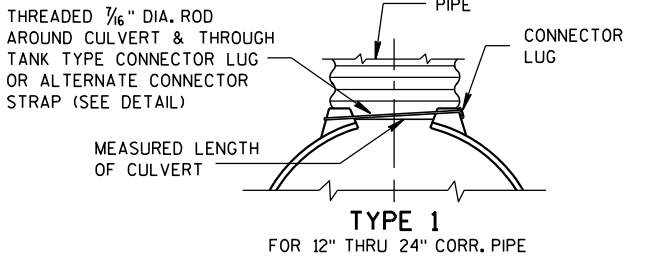
LONGITUDINAL SECTION
CONCRETE ENDWALLS



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



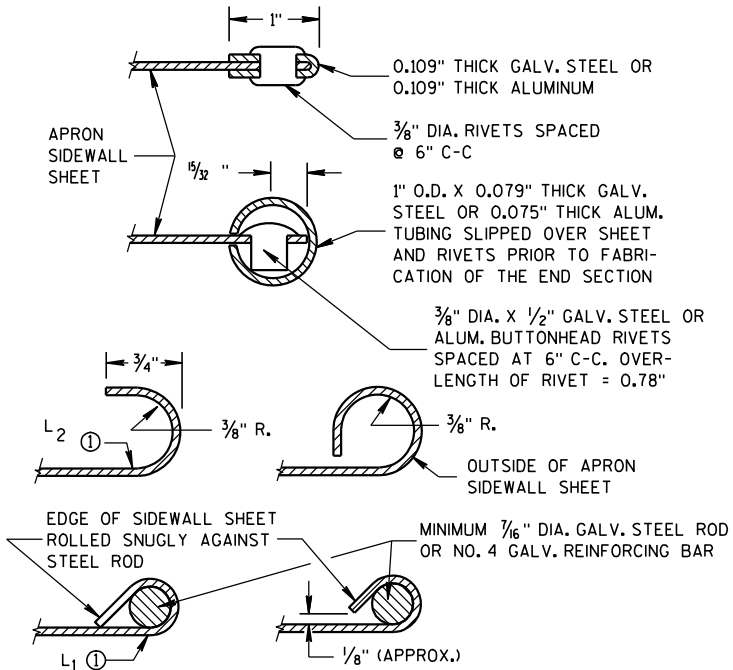
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

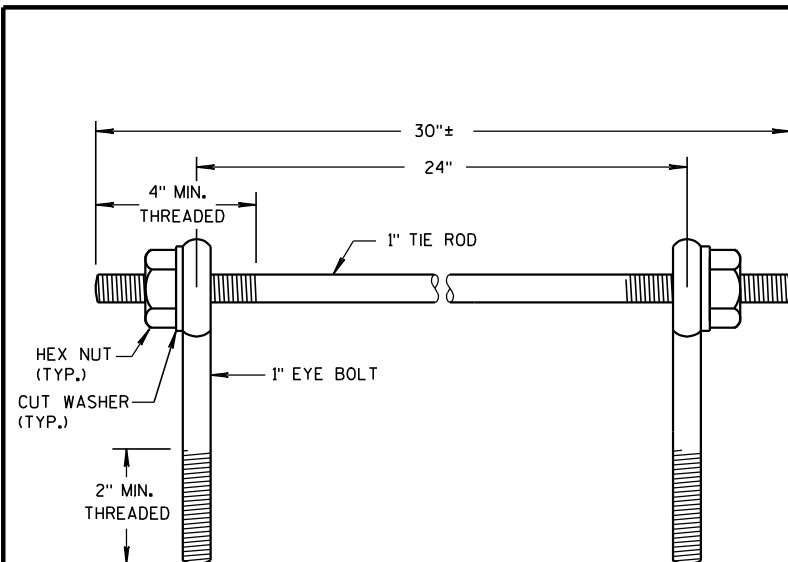
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

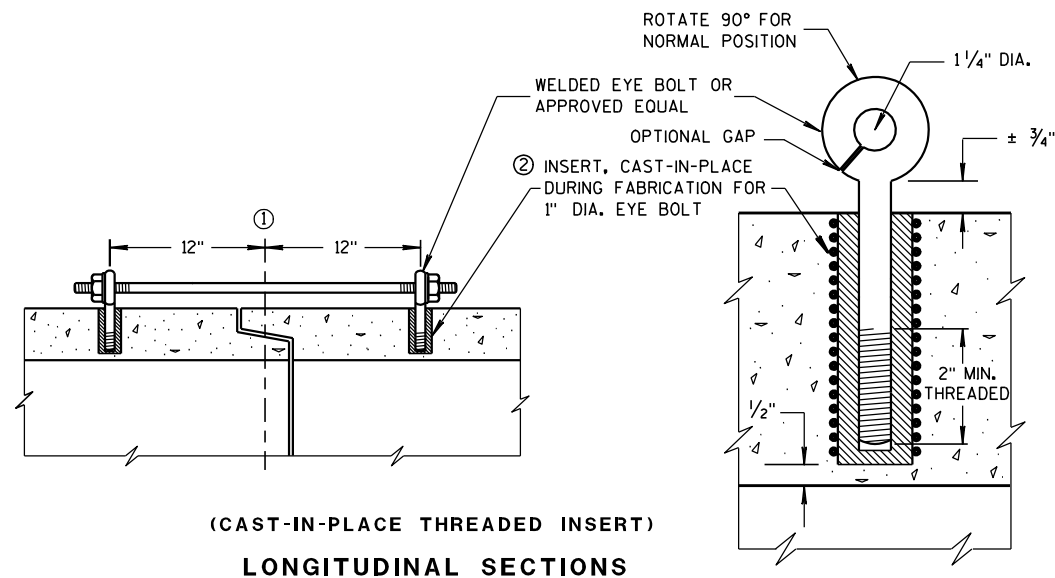
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94
DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



EYE BOLTS AND TIE ROD

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)

(CAST-IN-PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

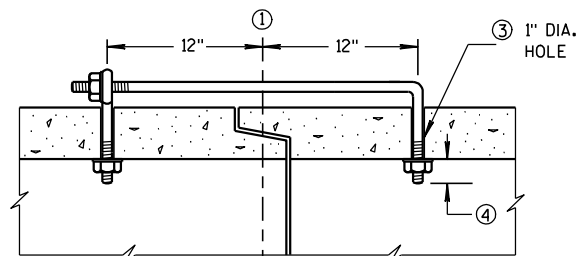
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

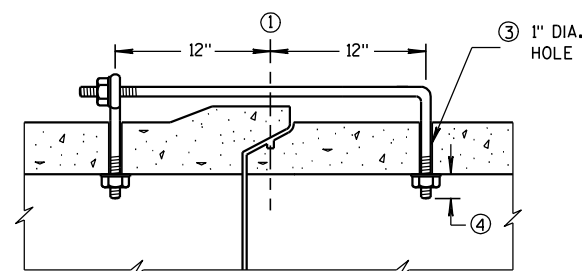
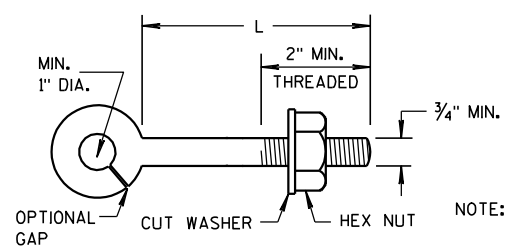
DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- ① ϕ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ϕ OF TONGUE AND GROOVE.
- ④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- ⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- ⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN $\frac{1}{2}$ INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)

(MODIFIED BELL PIPE)
LONGITUDINAL SECTION

EYE BOLT

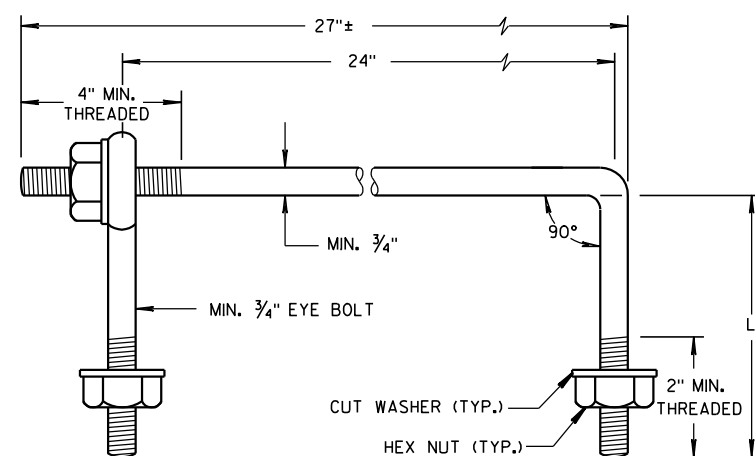
NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.

(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

EYE BOLT DIMENSION TABLE

PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	

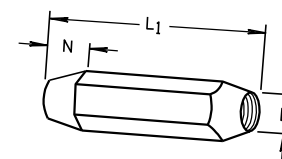


EYE BOLT AND TIE ROD

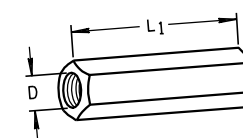
ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L ₁	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

DIMENSIONS SHOWN ARE IN INCHES



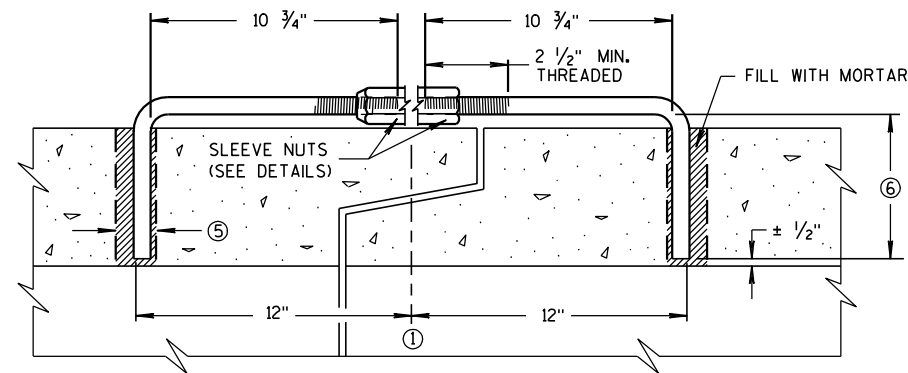
TAPERED



PLAIN

RIGHT AND LEFT THREADS

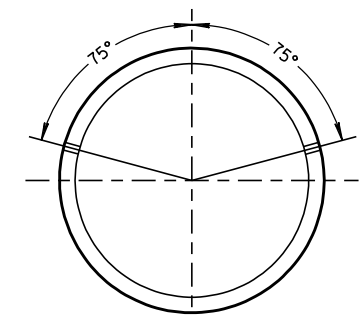
SLEEVE NUTS



LONGITUDINAL SECTION

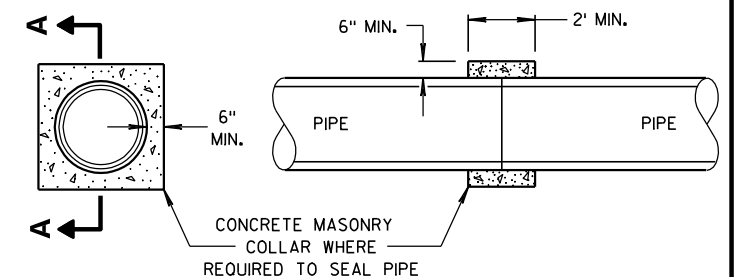
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE
PIPE AND CONCRETE
COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

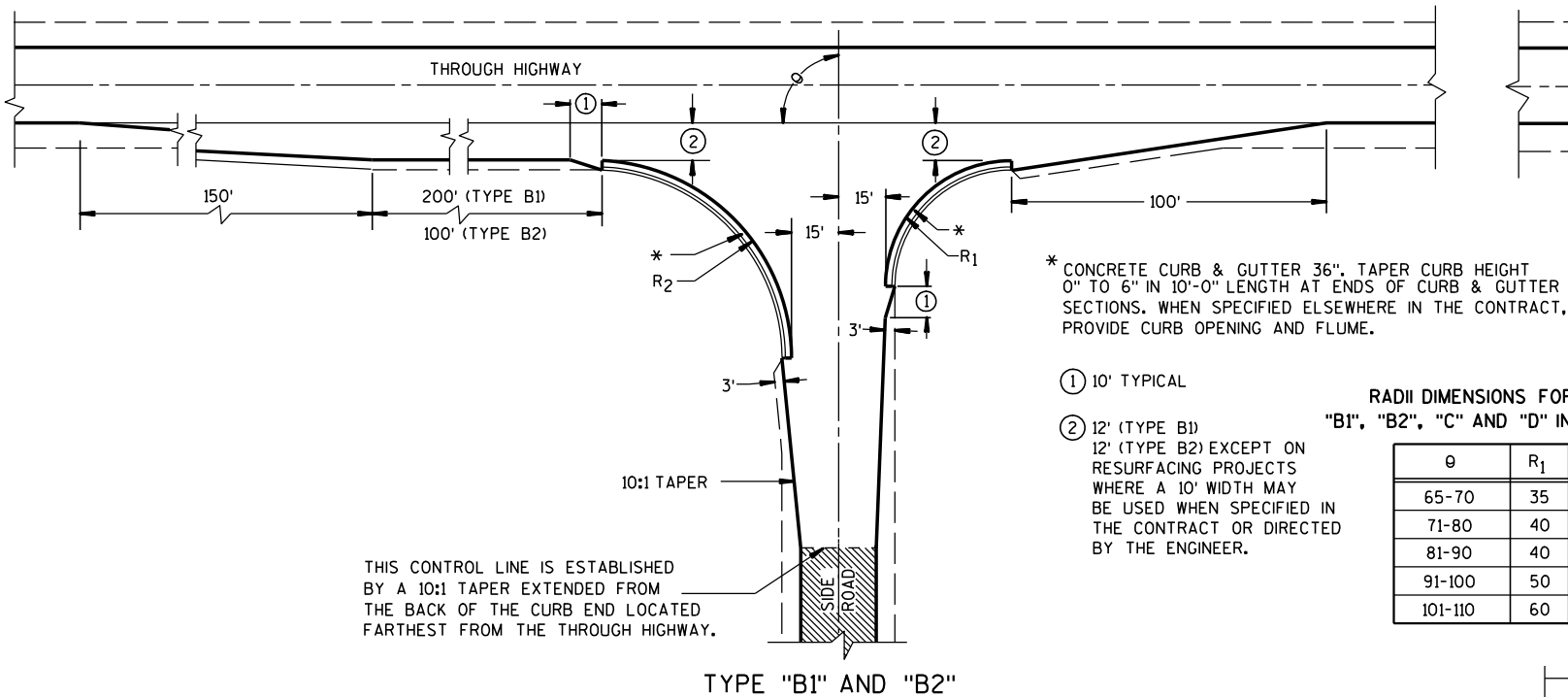
APPROVED

6/5/2012

DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



GENERAL NOTES

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

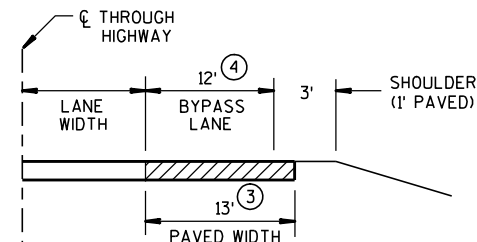
SIDE ROAD SURFACING NOTE

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

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

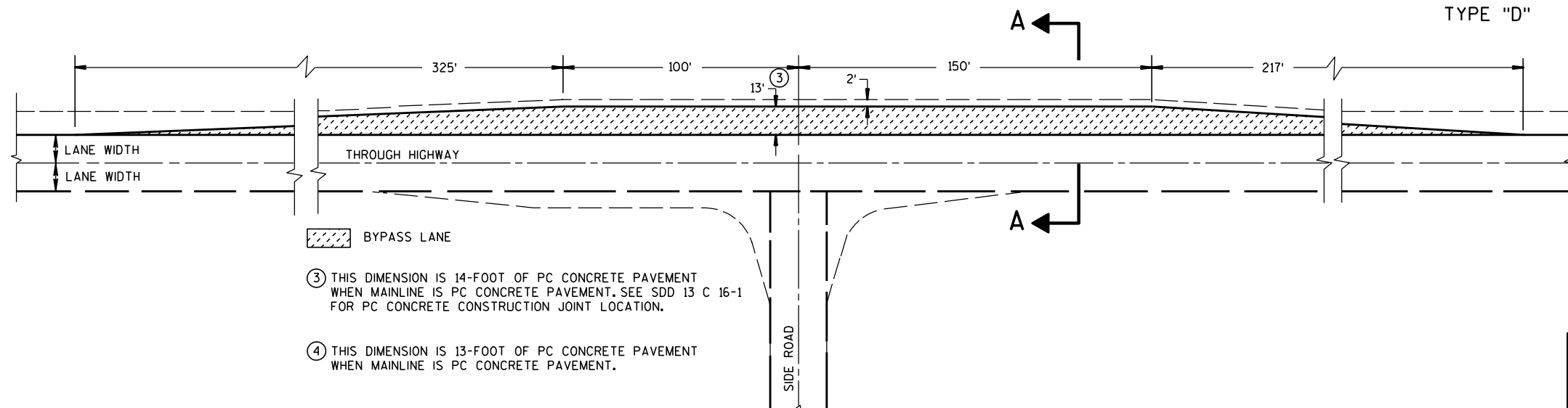
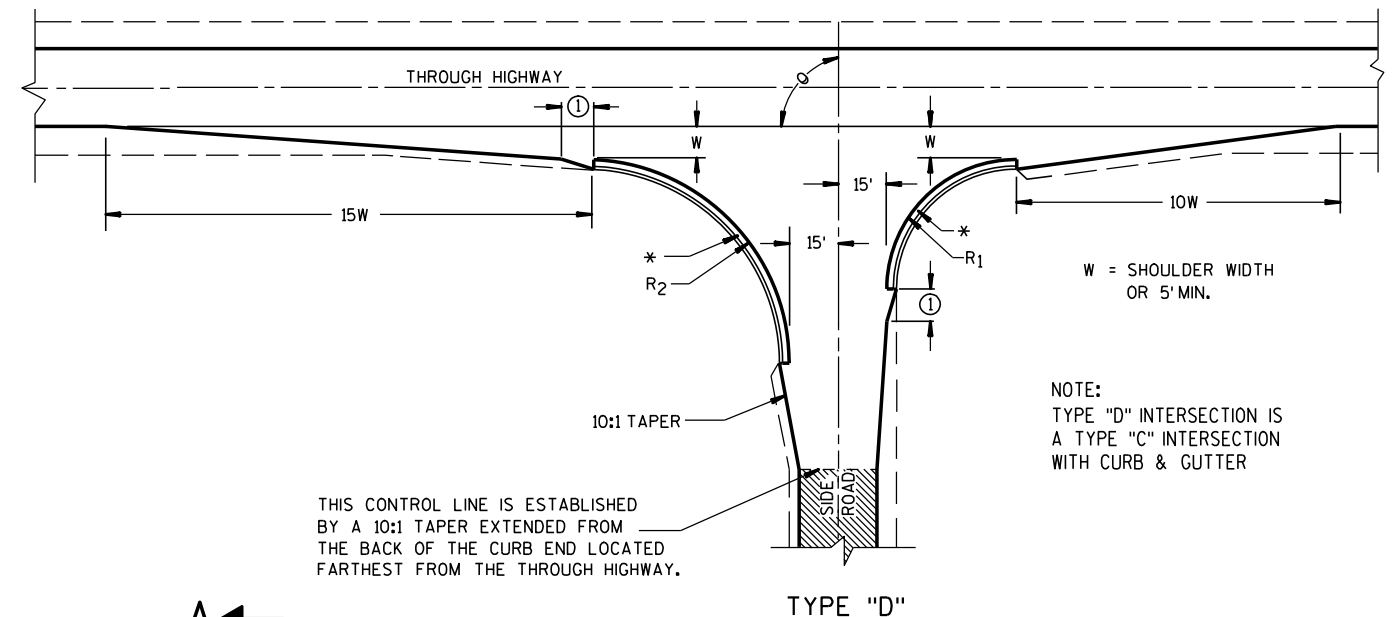
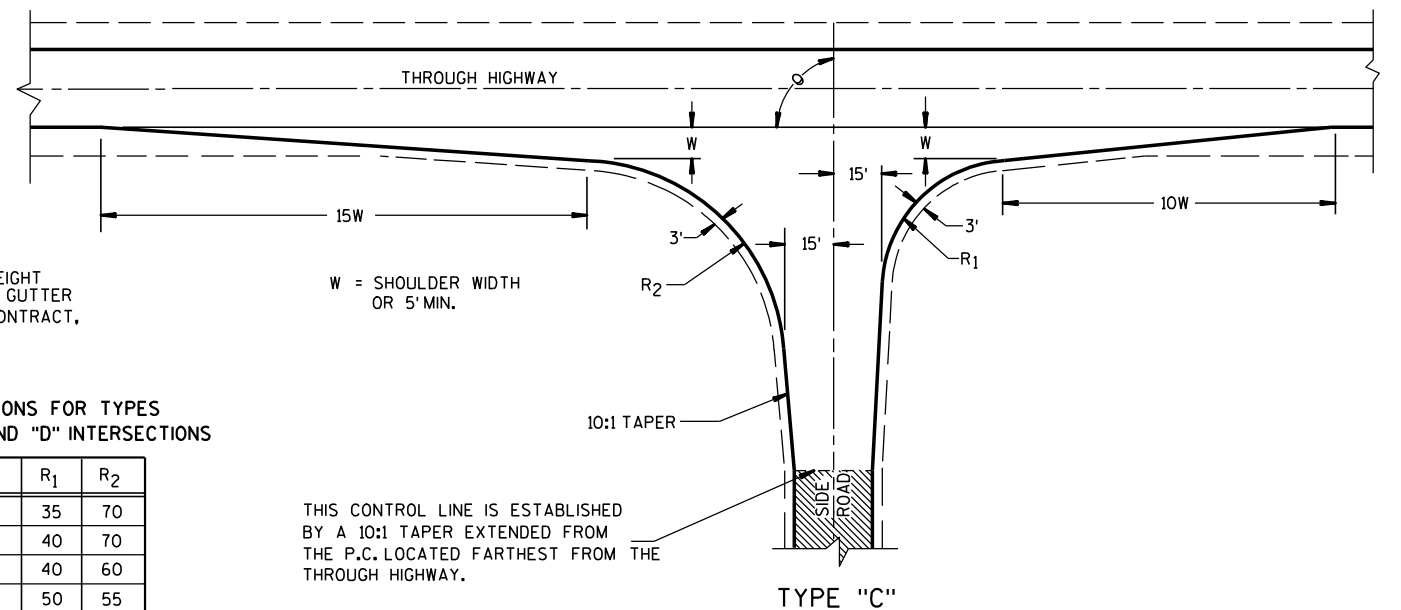
WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

EXISTING SURFACE



SECTION A-A

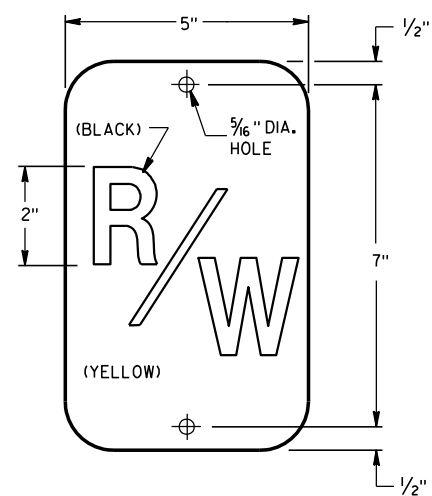
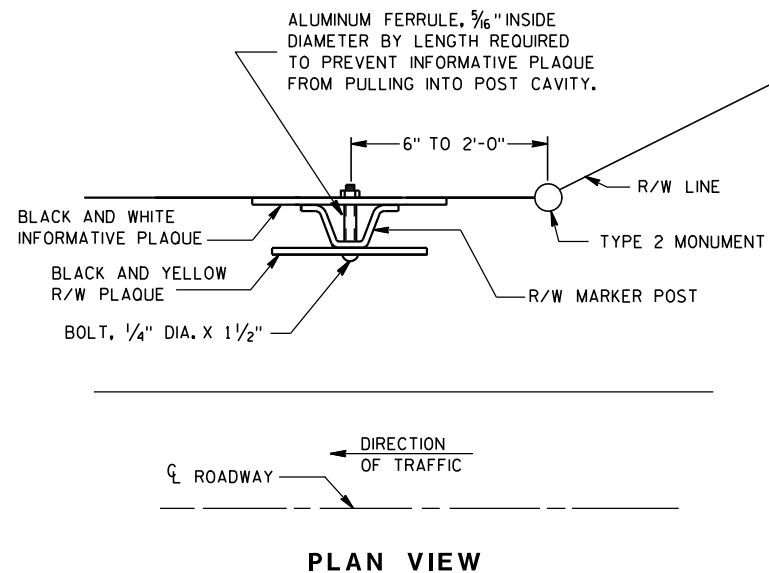
(SHOWING BYPASS LANE AND SHOULDER)



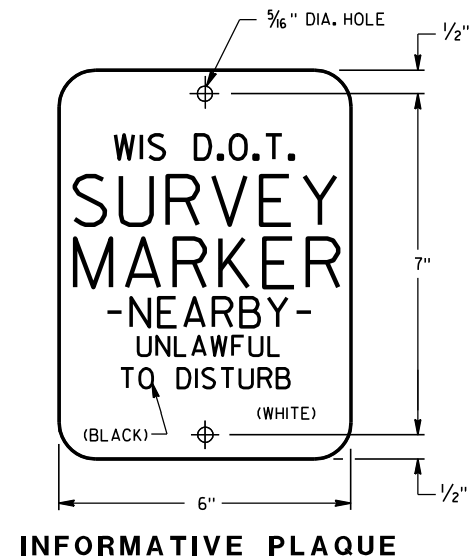
TEE INTERSECTION BYPASS LANE DETAIL

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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



GENERAL NOTES

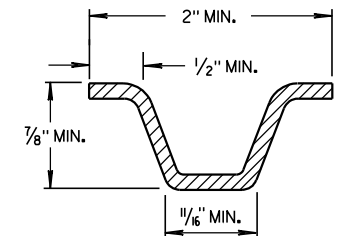
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

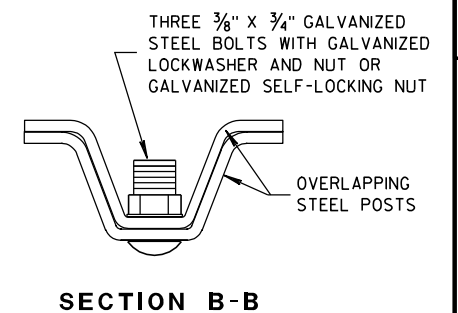
THE "R/W" PLAQUE SHALL FACE THE ROADWAY AND THE INFORMATIVE PLAQUE SHALL FACE AWAY FROM THE ROADWAY. R/W AND INFORMATIVE PLAQUES WILL BE FURNISHED BY THE DEPARTMENT OF TRANSPORTATION.

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

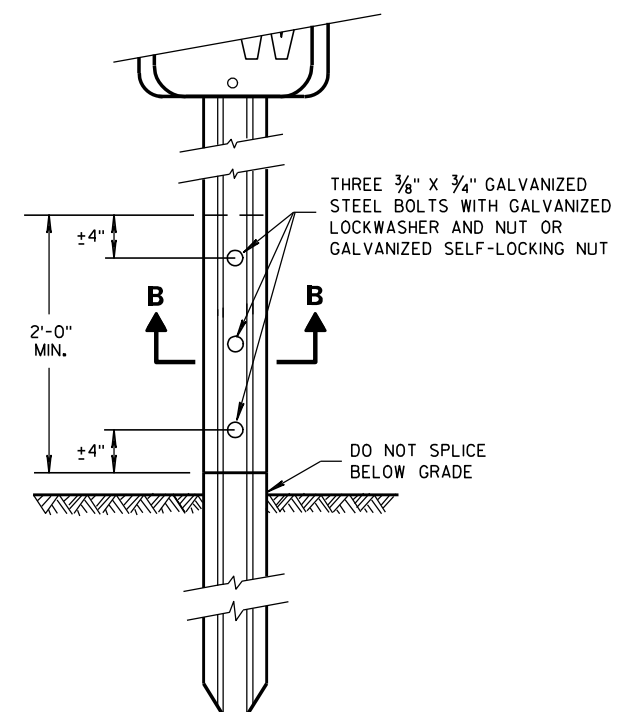
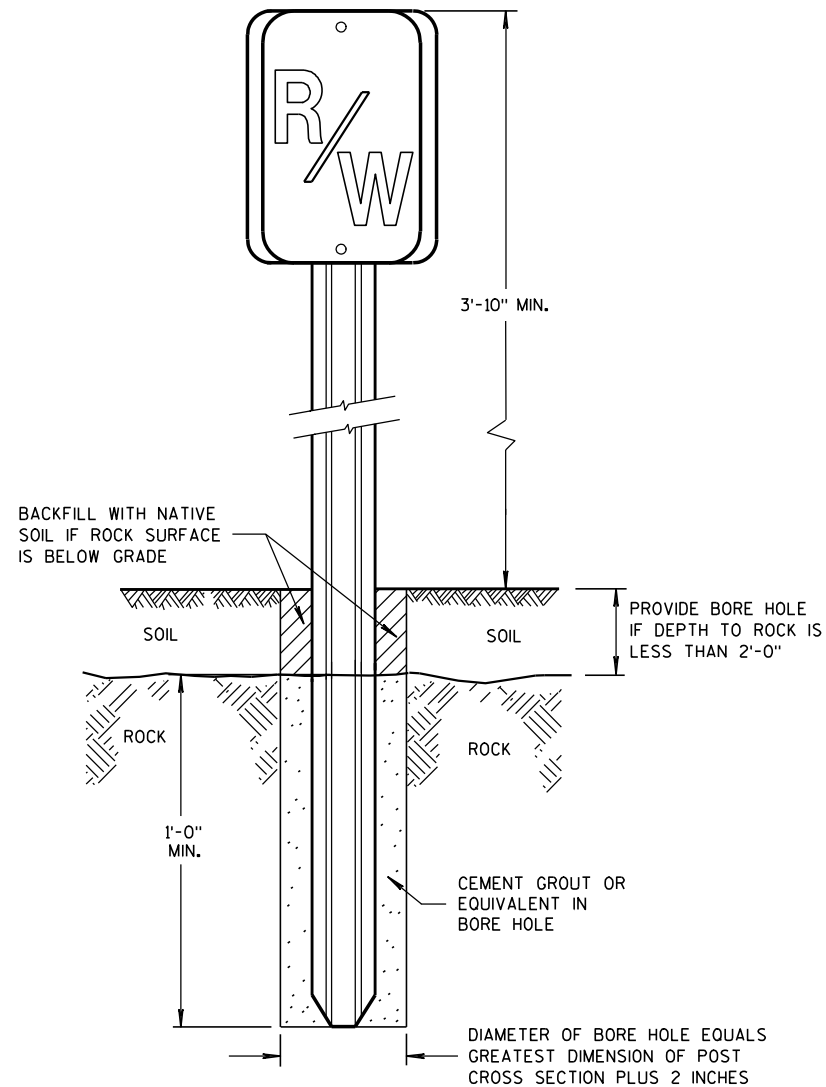
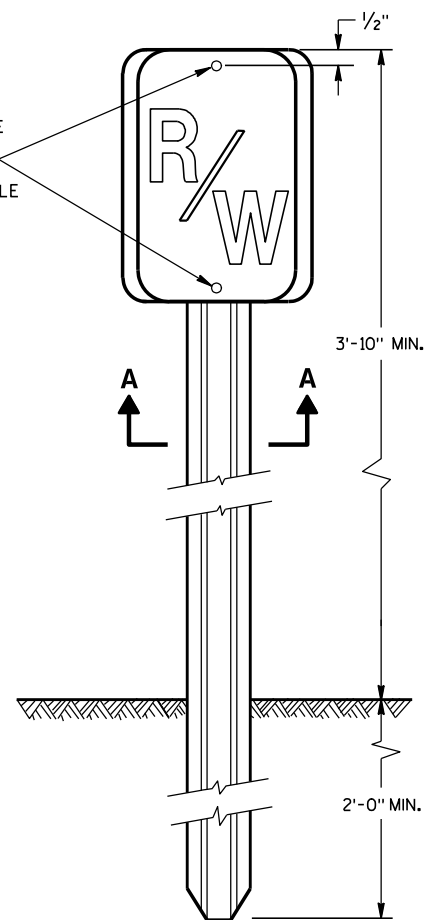
- ① IN AREAS OF SOLID ROCK, DRILL A BORE HOLE 2" GREATER THAN THE WIDEST DIMENSION OF THE POST CROSS SECTION INTO THE ROCK TO A MINIMUM DEPTH OF 12 INCHES. CUT OR SPLICE THE POST SO THAT A MINIMUM LENGTH OF 3'-10" PROTRUDES ABOVE THE GROUND. BLOW OUT THE BORE HOLE IN THE ROCK USING COMPRESSED AIR. FILL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



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



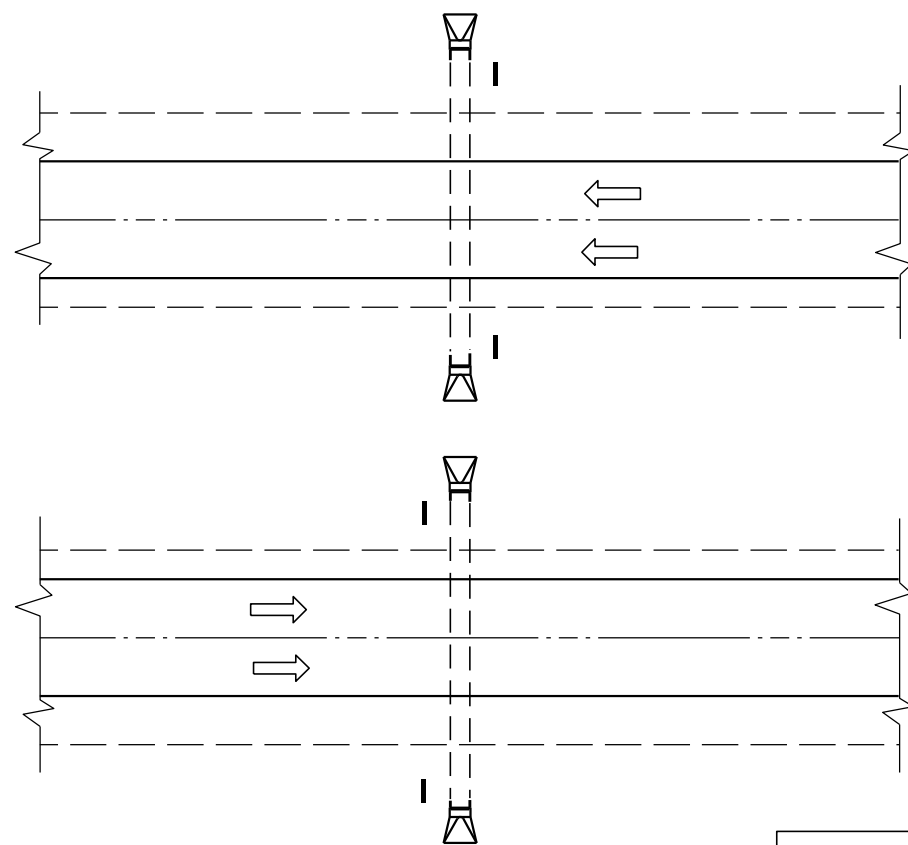
STEEL POSTS SHALL HAVE 2 - $\frac{3}{8}$ " HOLES 7" APART. POST WITH ADDITIONAL HOLES WILL BE ACCEPTABLE



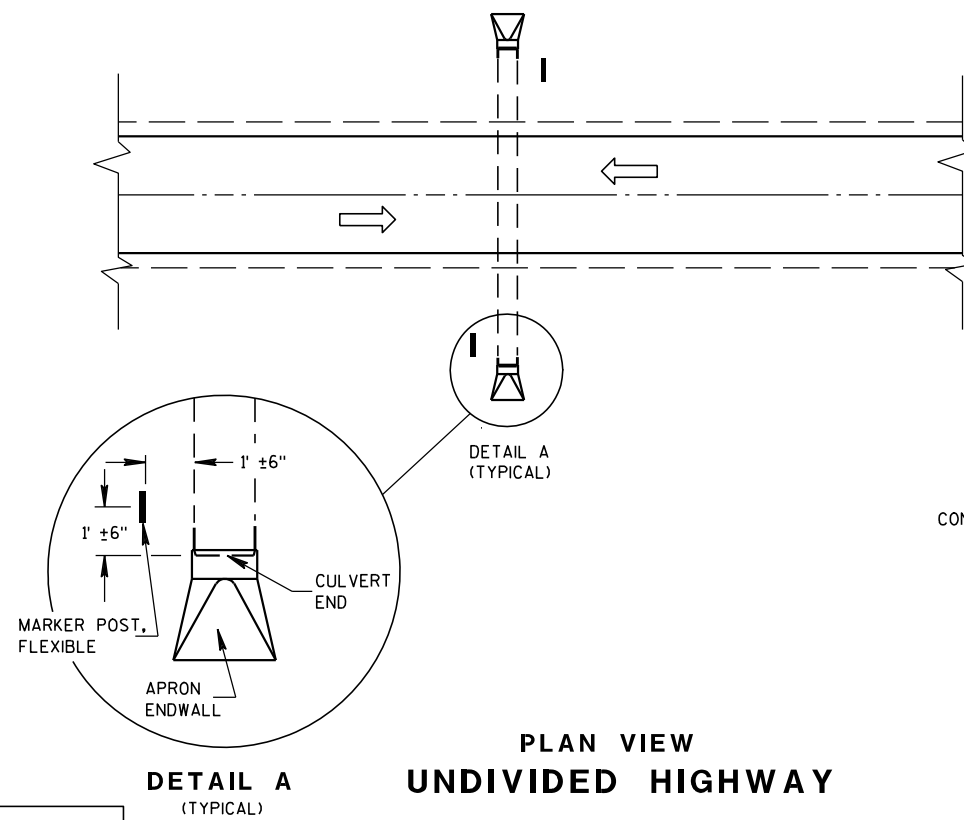
MARKER POST FOR RIGHT-OF-WAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/27/09 /S/ Ray Kumapayi
DATE CHIEF SURVEYING AND MAPPING ENGINEER
FHWA

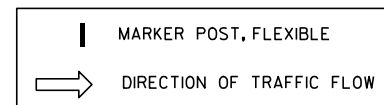


PLAN VIEW
DIVIDED HIGHWAY

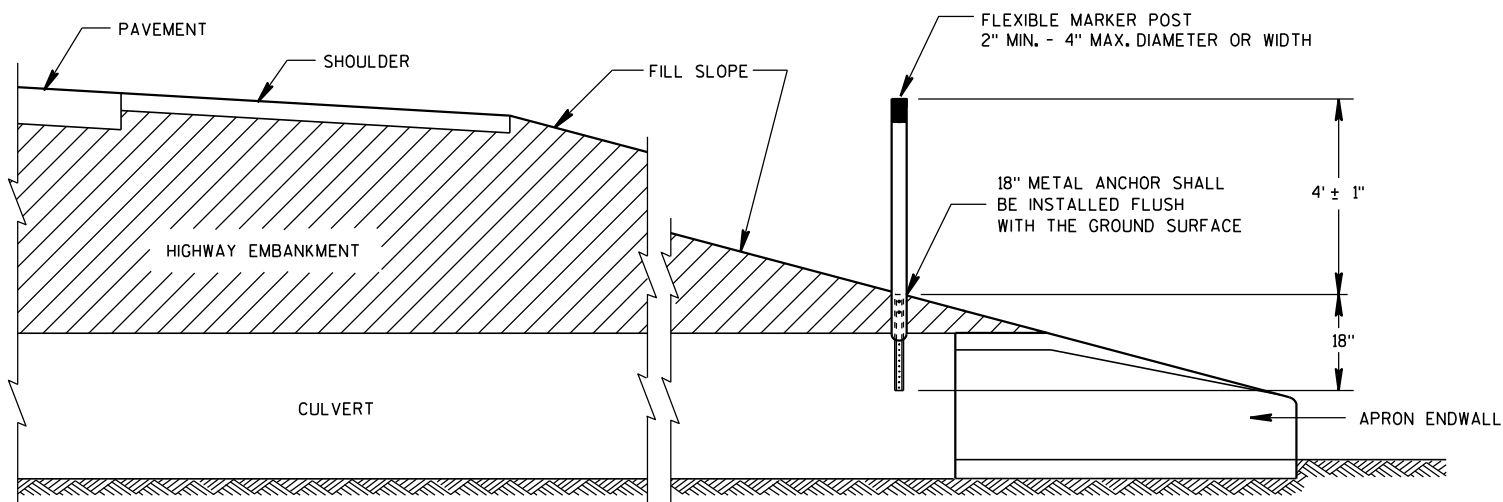


PLAN VIEW
UNDIVIDED HIGHWAY

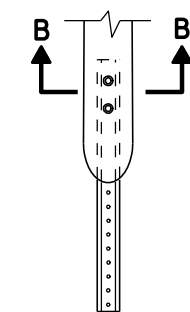
DETAIL A
(TYPICAL)



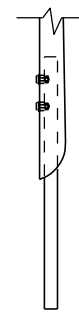
FLEXIBLE MARKER POST LOCATION



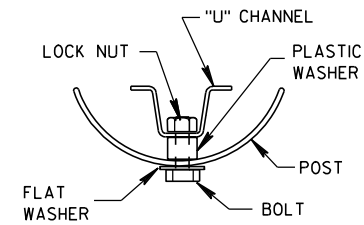
CROSS SECTION
FLEXIBLE MARKER POST



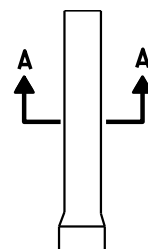
FRONT VIEW
CURVED MARKER



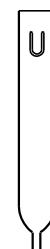
SIDE VIEW
CURVED MARKER



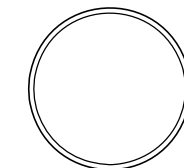
SECTION B-B



FRONT VIEW
ROUND MARKER



SIDE VIEW
ROUND MARKER

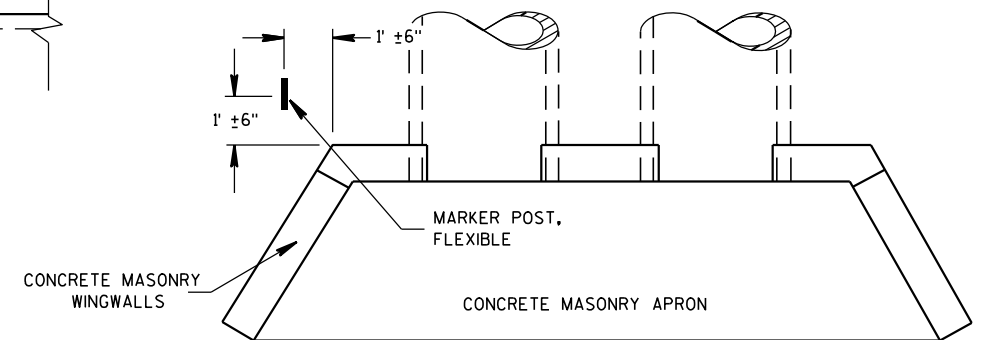


SECTION A-A

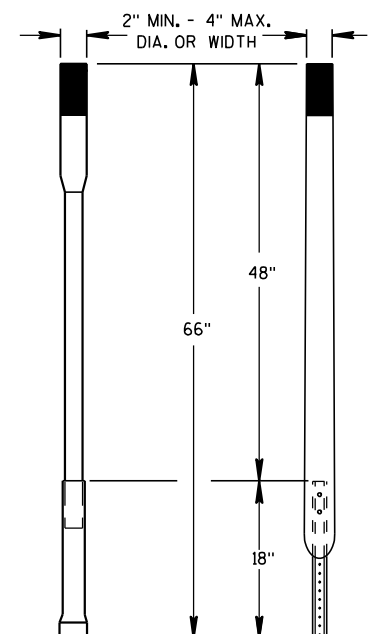
FLEXIBLE MARKER POST ANCHORS

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



ALTERNATE 1 ALTERNATE 2
FLEXIBLE MARKER POST

MARKER POST, FLEXIBLE,
FOR CULVERT END

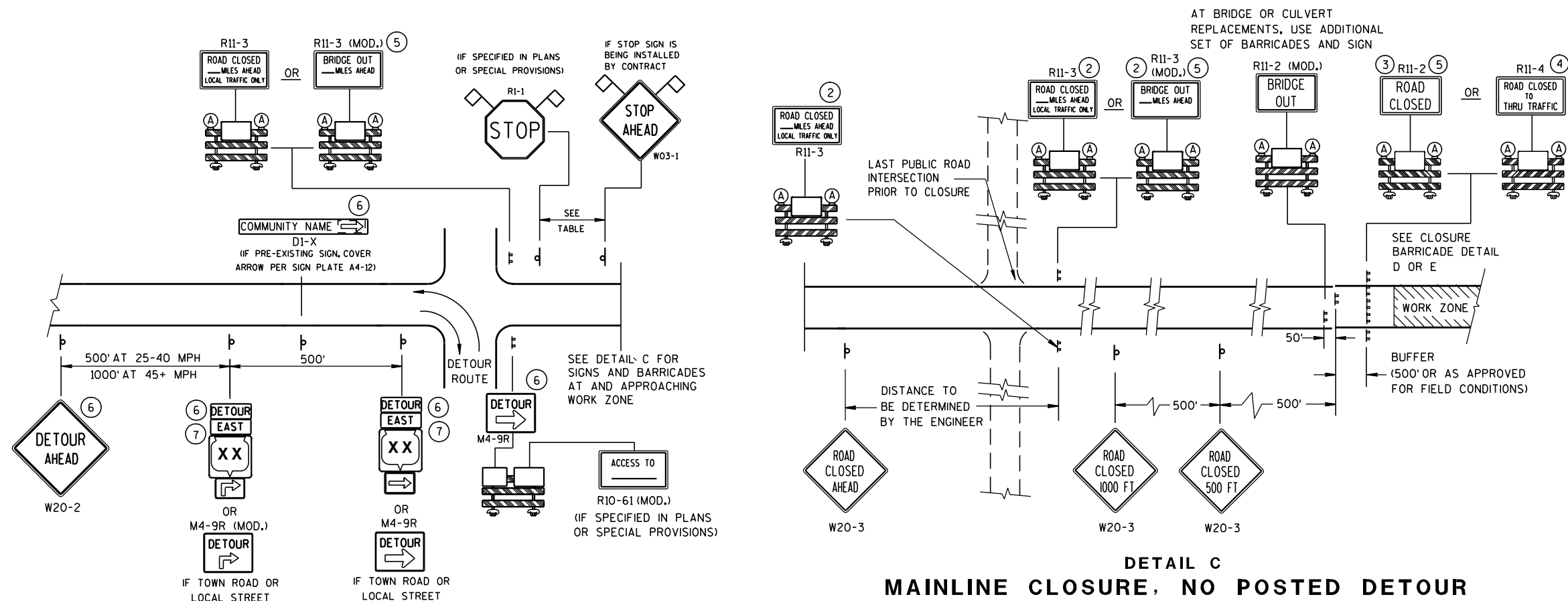
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/1/98
DATE

FHWA

/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER

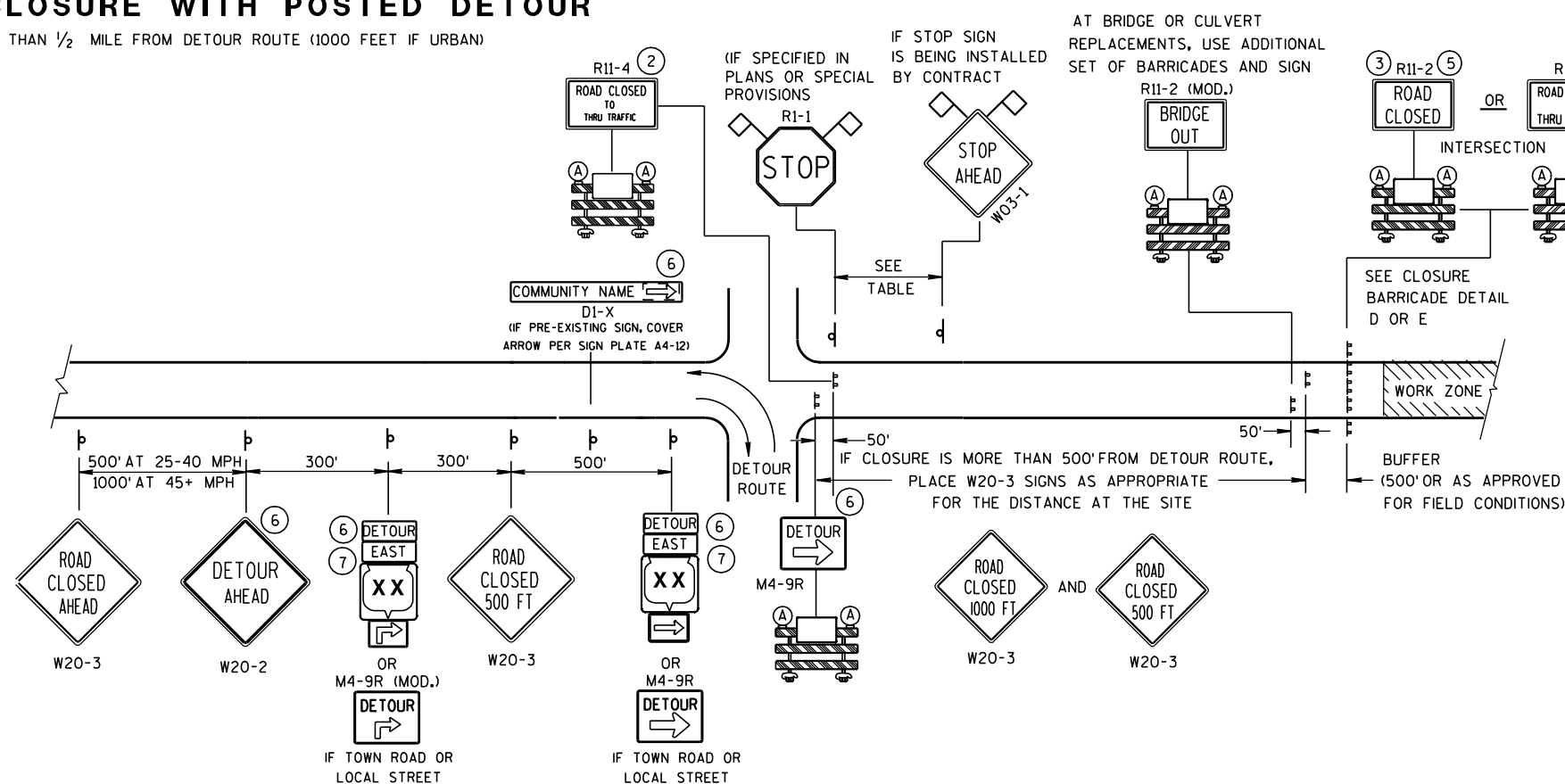


SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

SEE SDD 15C2-4b
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦

DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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



LOCAL STREET LOCAL STREET

DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR

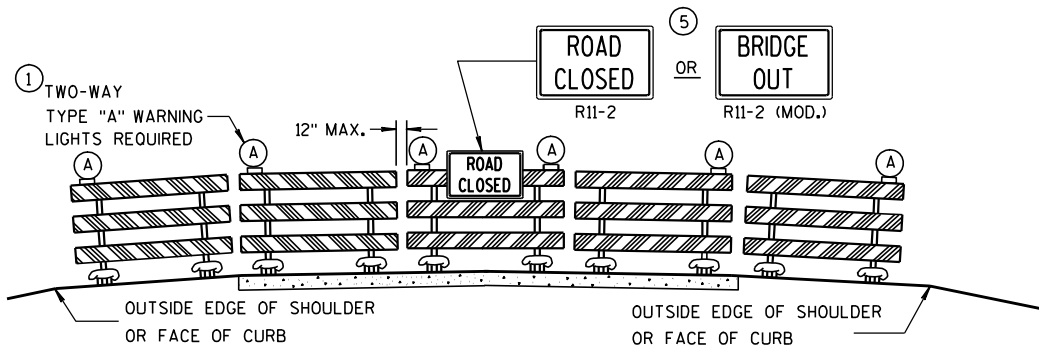
WORK ZONE LESS THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

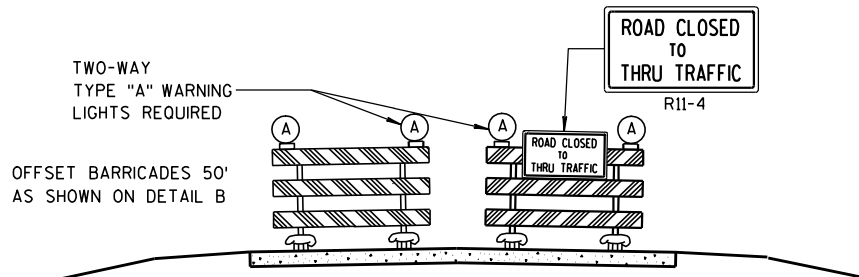
-  POST MOUNTED SIGN
 TYPE III BARRICADES
 (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
 WORK ZONE
 M4-8
 M3-X
 OR  OR 
 M1-4 MI-5A M1-6
 OR 
 M05-1 M06-1
 FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2-4a FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

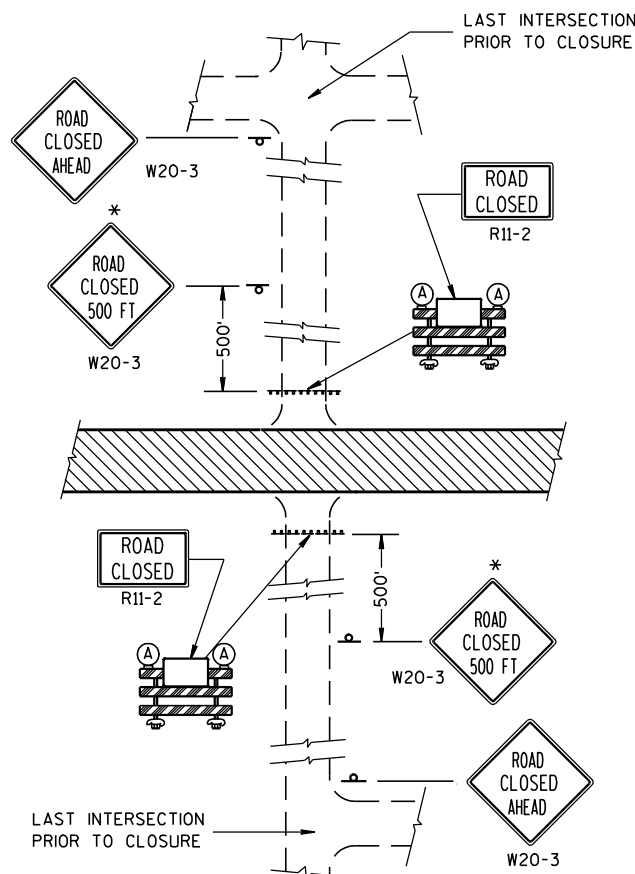
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

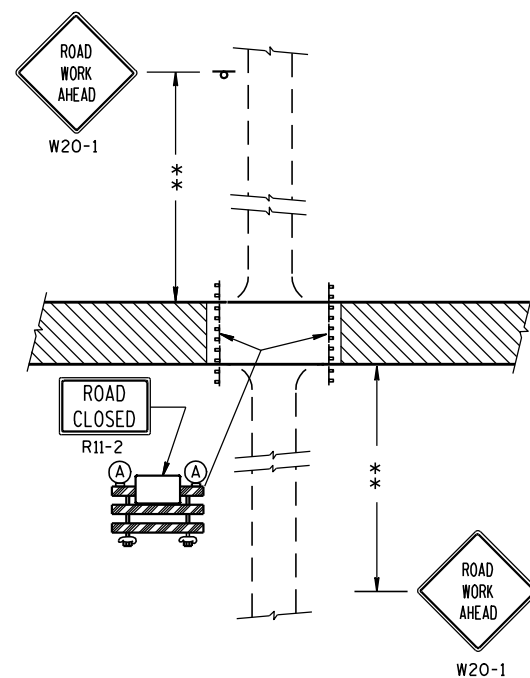
9/16/03
DATE

/S/ Thomas N. Notbohm
CHIEF SIGNS AND MARKING ENGINEER

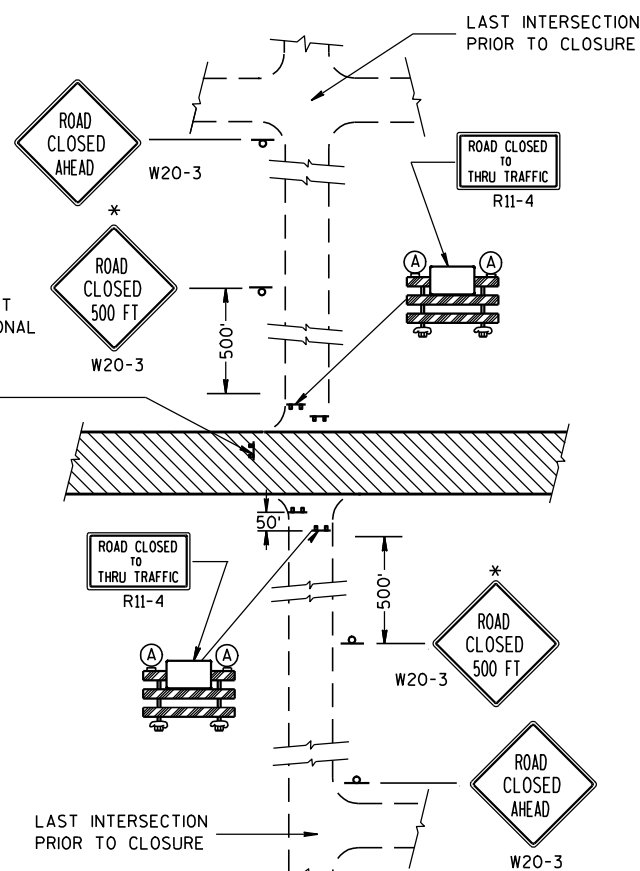
FHWA



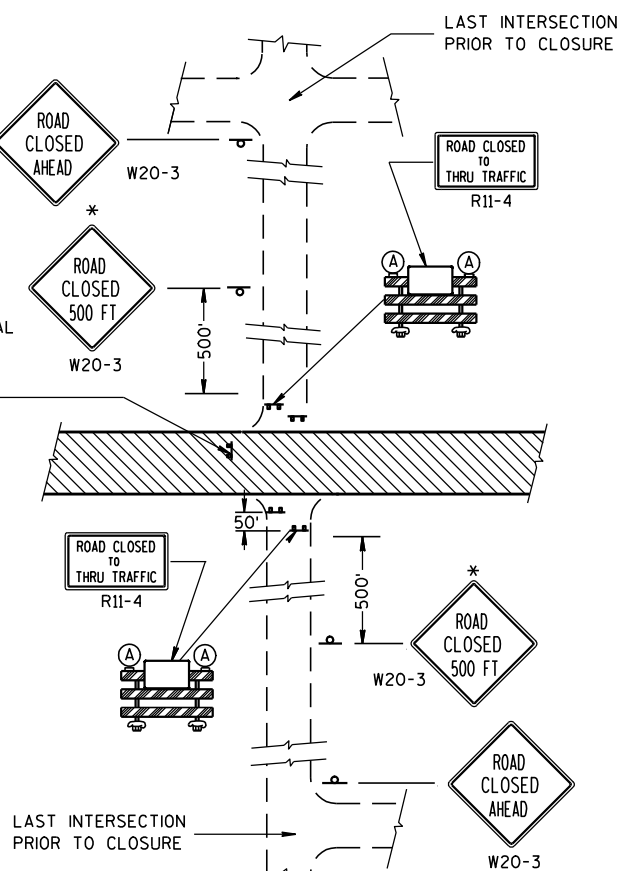
DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT).



DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED, CONTRACTOR,
LOCAL BUSINESS AND RESIDENT ACCESS).



DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

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.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

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 AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

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

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

R11-2 SHALL BE 48" X 30".

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

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

⌋ POST MOUNTED WARNING SIGN

⌋ TYPE III BARRICADES

Ⓐ TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)

▨ WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

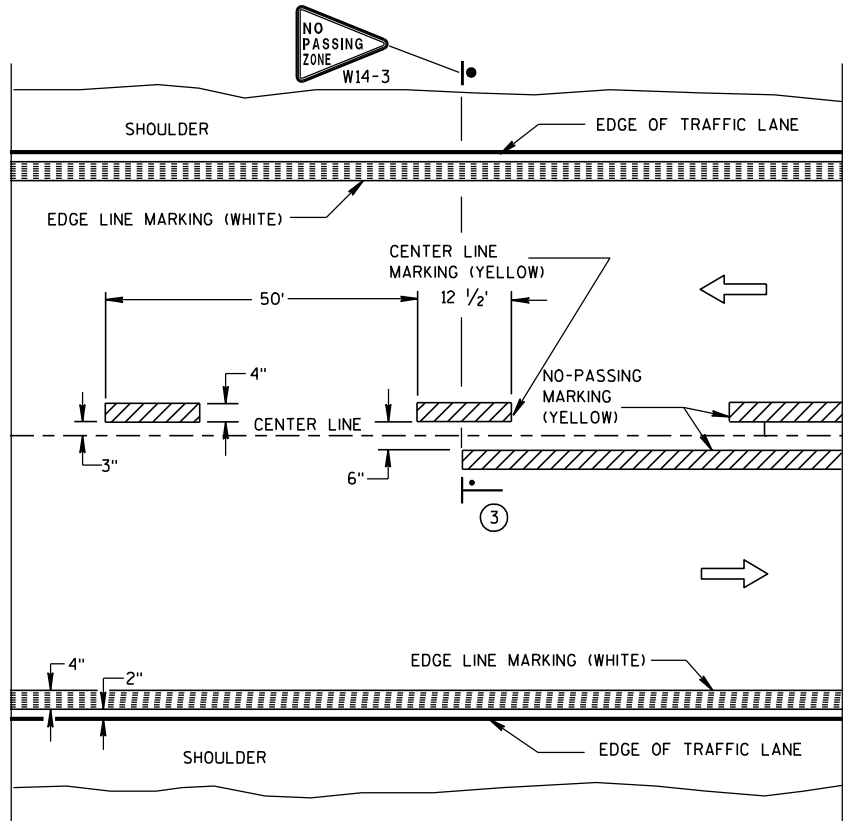
APPROVED

9-16-03

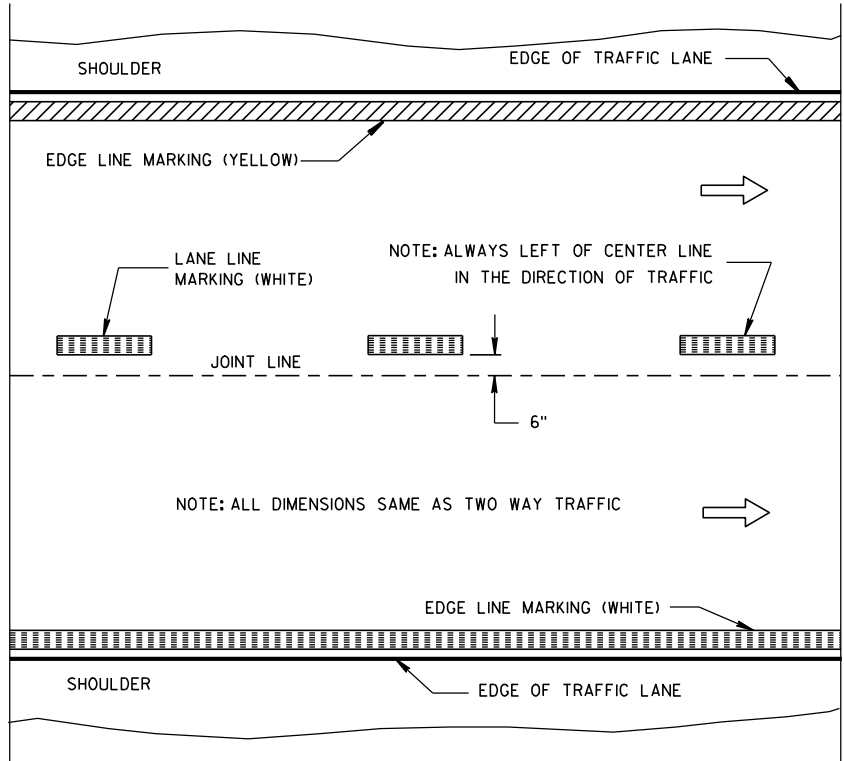
DATE

FWHA

/S/ Thomas N. Notbohm
CHIEF SIGNS AND MARKING ENGINEER

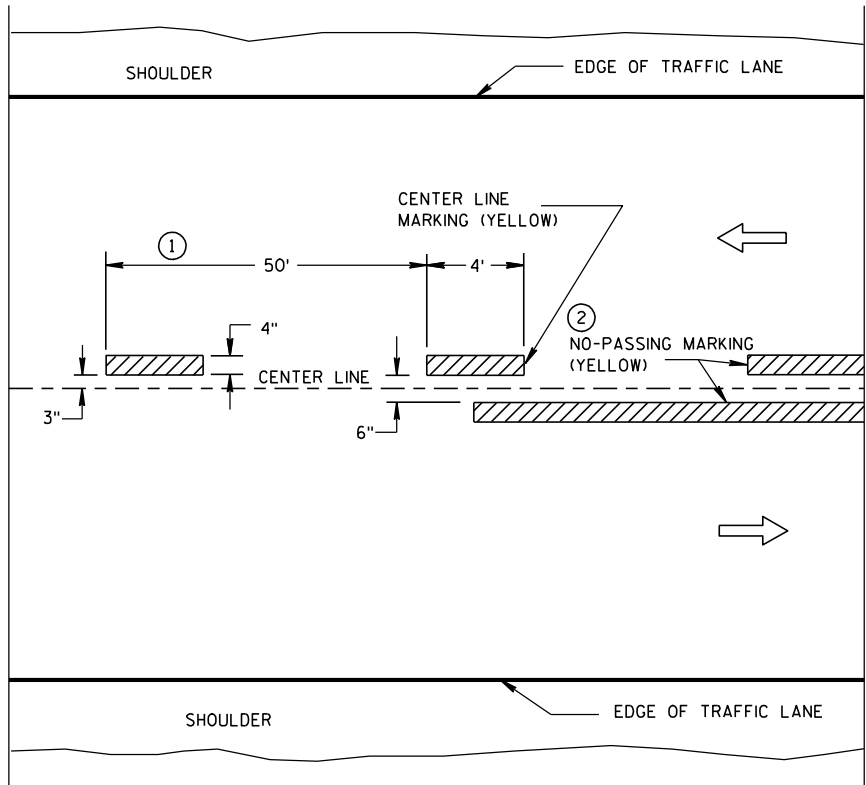


TWO WAY TRAFFIC

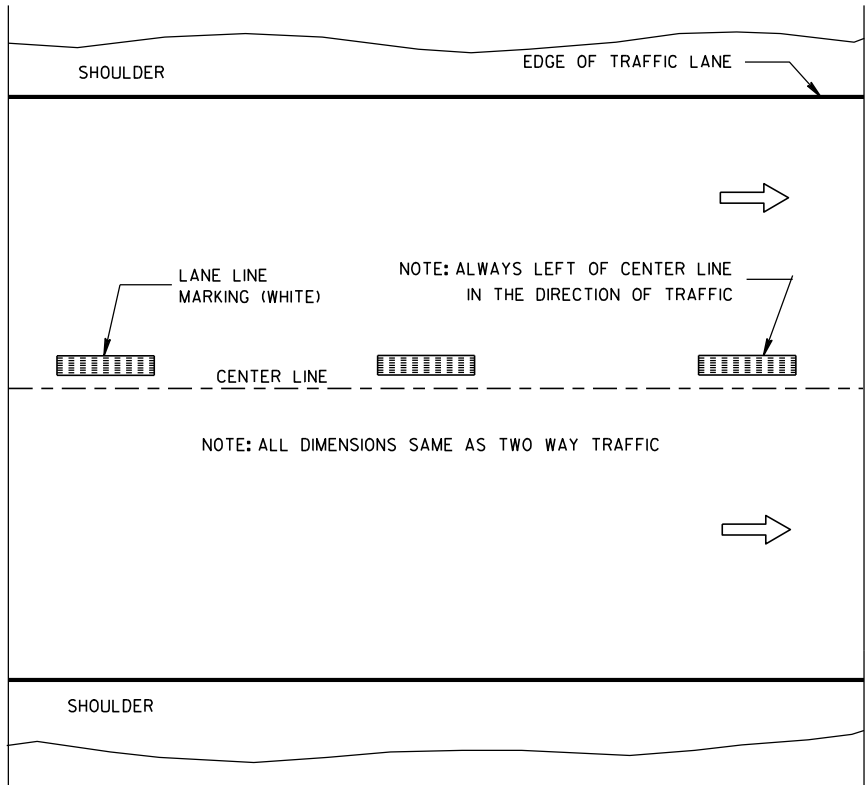


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

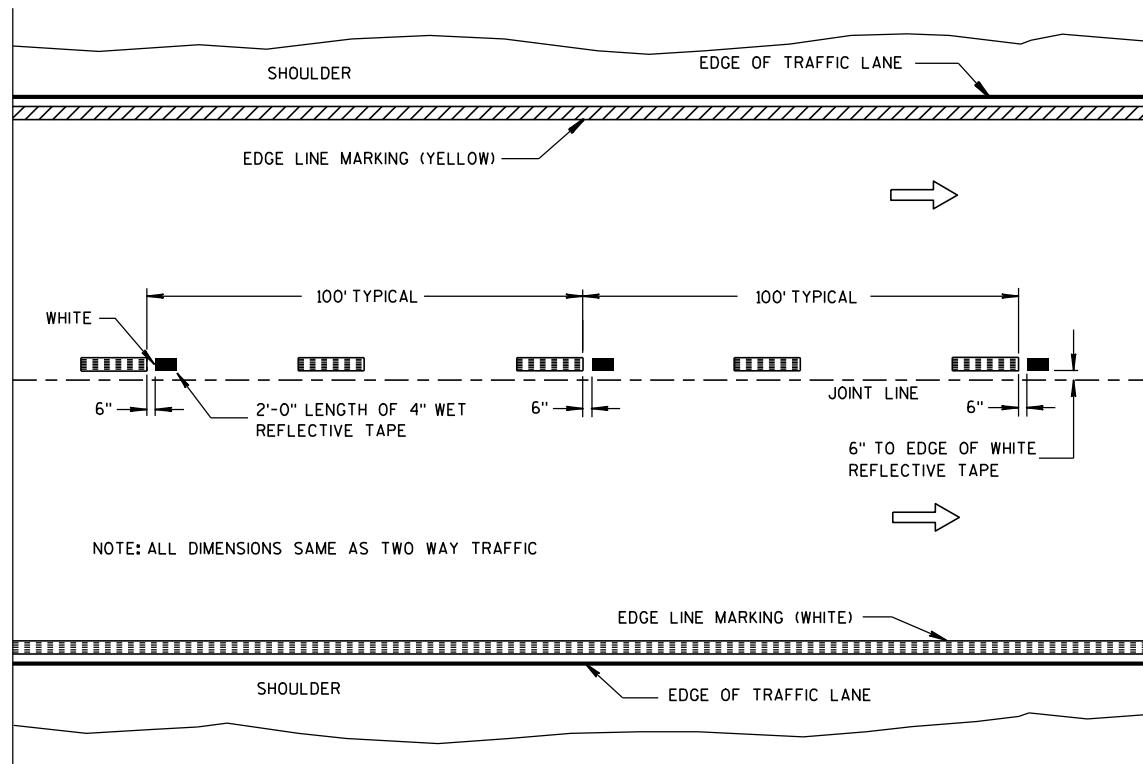
GENERAL NOTES

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.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



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

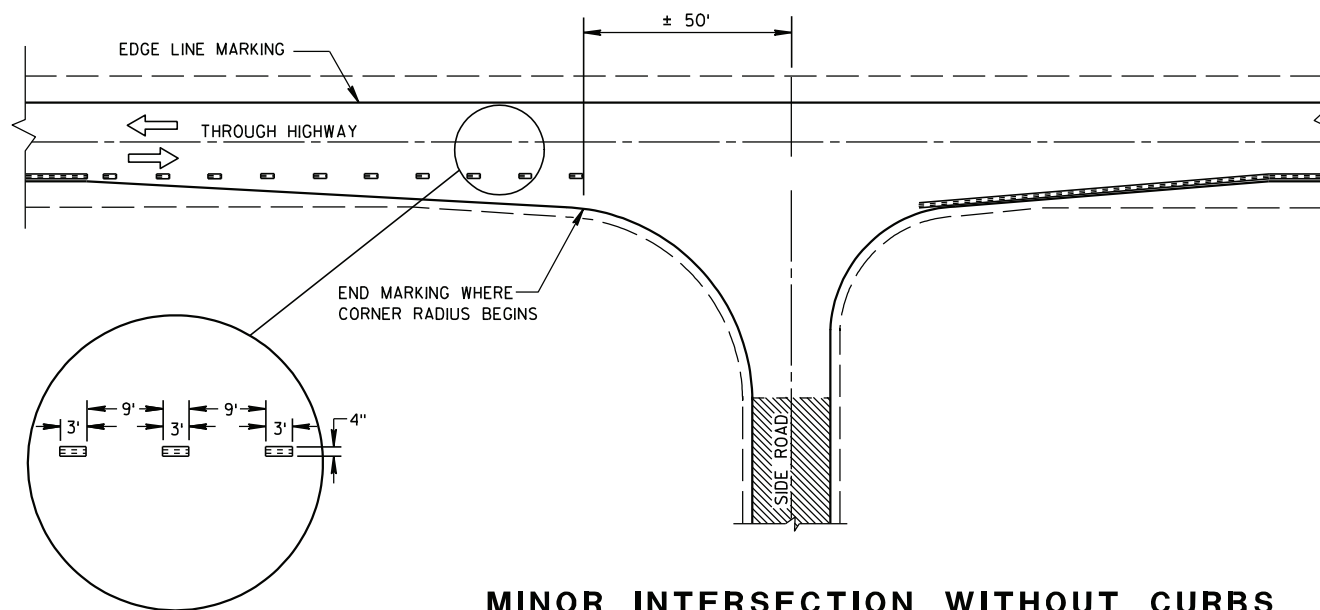
LEGEND

- "T" MARKING
- POST MOUNTED SIGN

PAVEMENT MARKING
(MAINLINE)

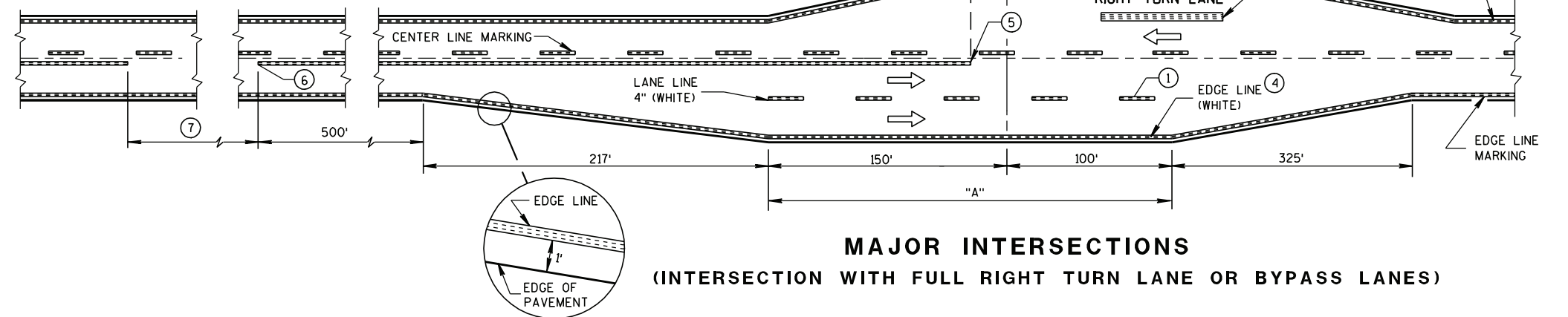
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6-23-11 /S/ Thomas N. Notbohm
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA



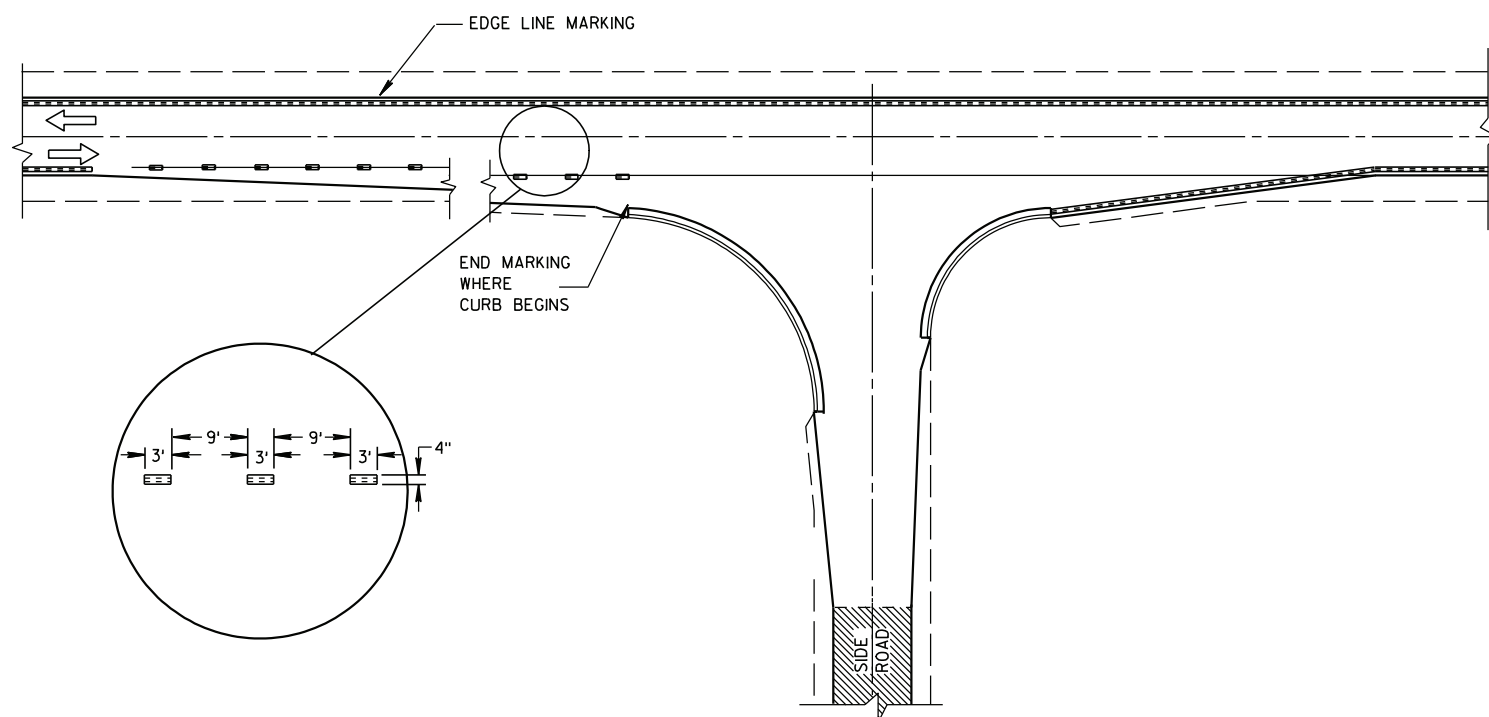
MINOR INTERSECTION WITHOUT CURBS

7	
POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792

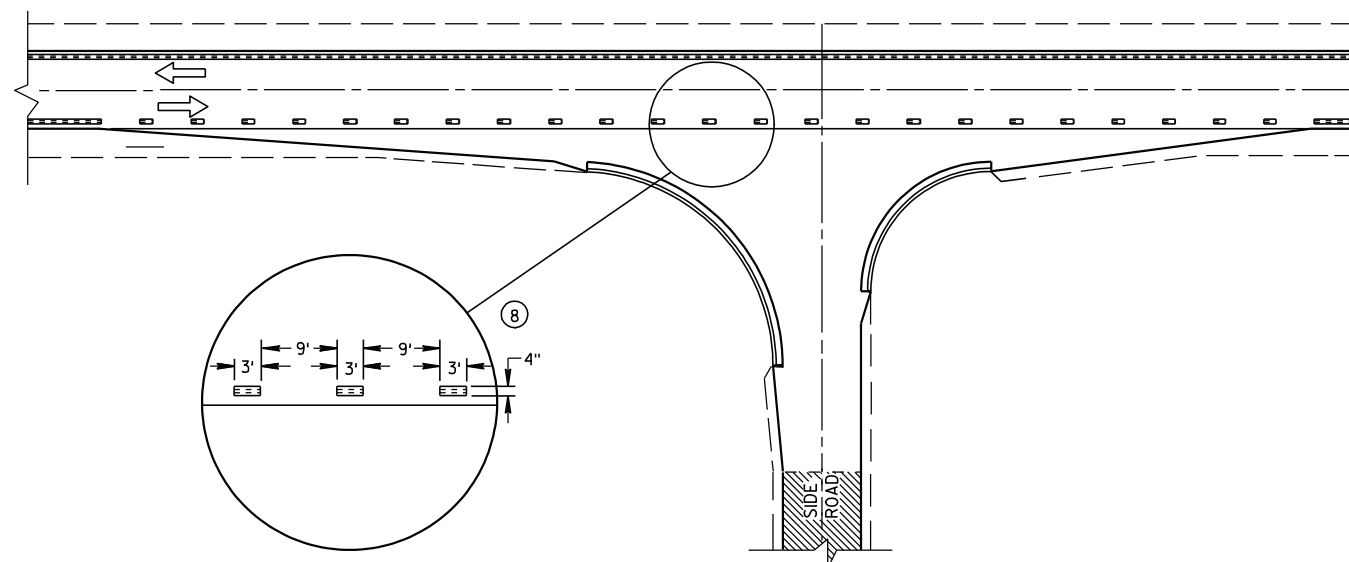


MAJOR INTERSECTIONS

(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)

PAVEMENT MARKING (INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

TWO-LANE ROADWAY

SYMBOLS



WORK AREA



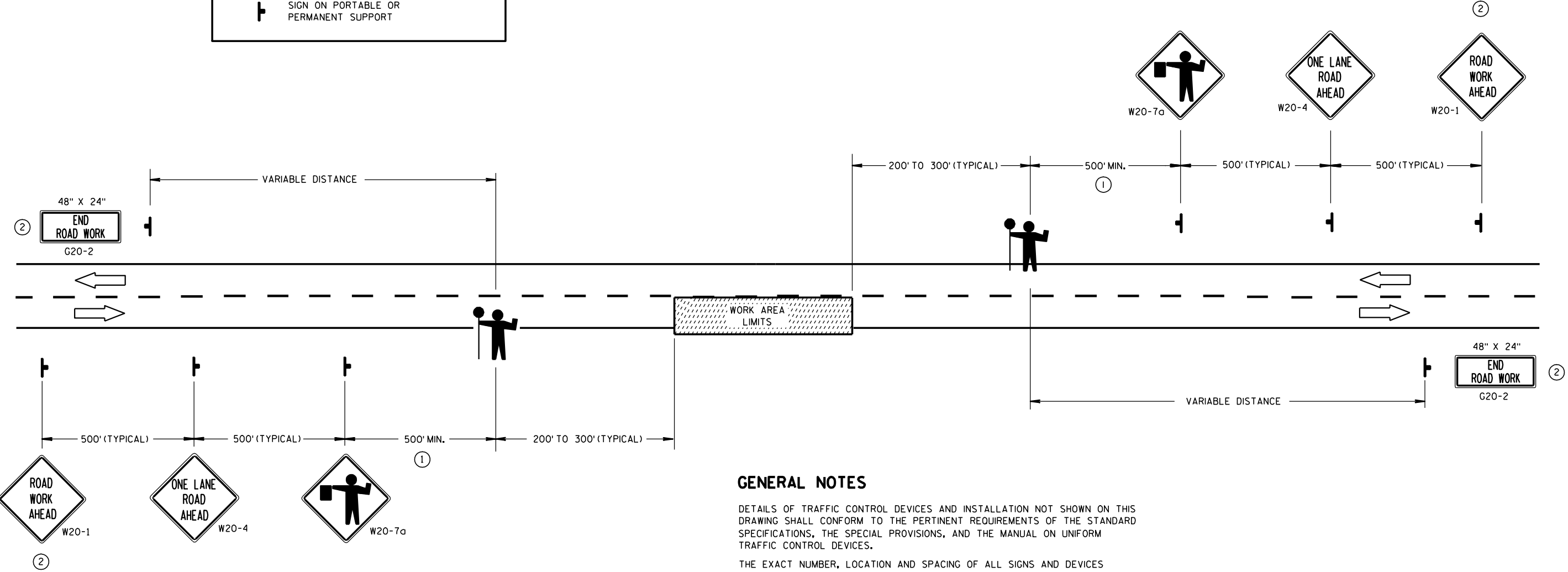
FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF



SIGN ON PORTABLE OR PERMANENT SUPPORT



USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7a AND W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.



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.

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

WHEN A SIDE ROAD OR 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.

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, THE "FLAGGER AHEAD", THE "ROAD WORK AHEAD" AND THE ONE LANE ROAD AHEAD" SIGNS SHALL BE COVERED OR REMOVED AND THE HIGHWAY RESTORED TO NORMAL OPERATION.

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

- ① FOR A MOVING WORK OPERATION, SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

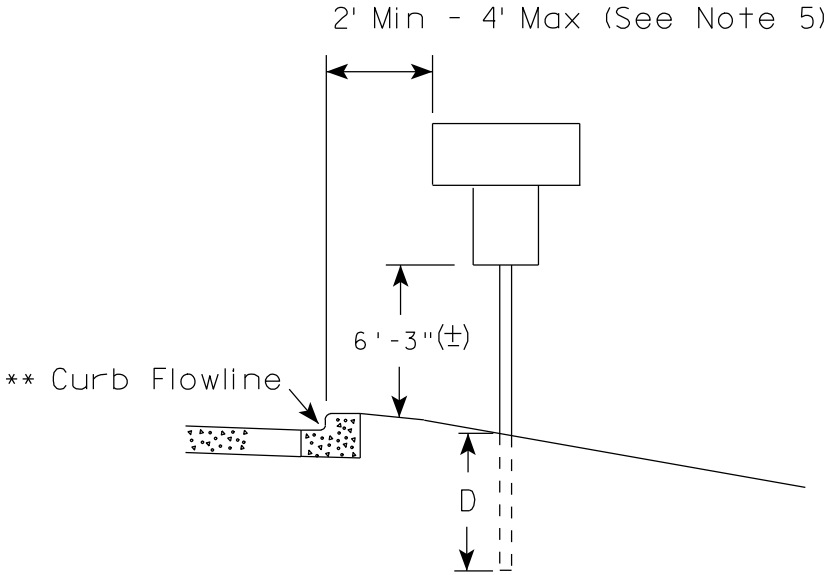
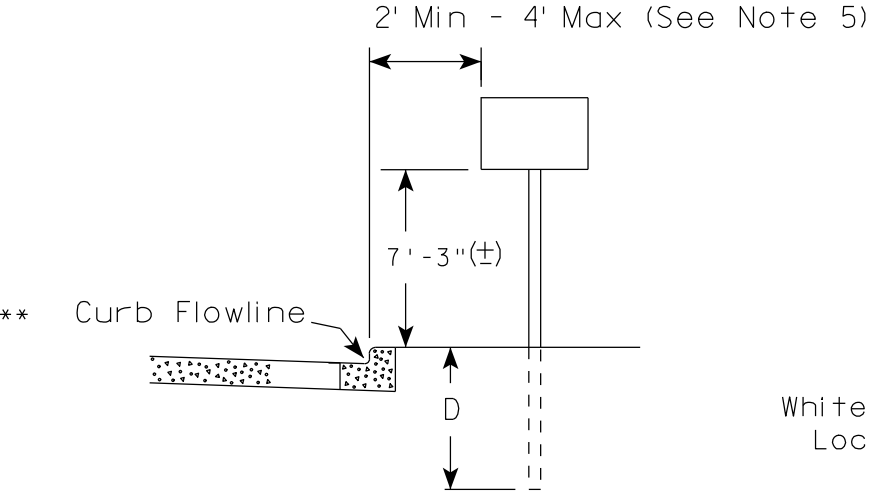
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/5/06
DATE

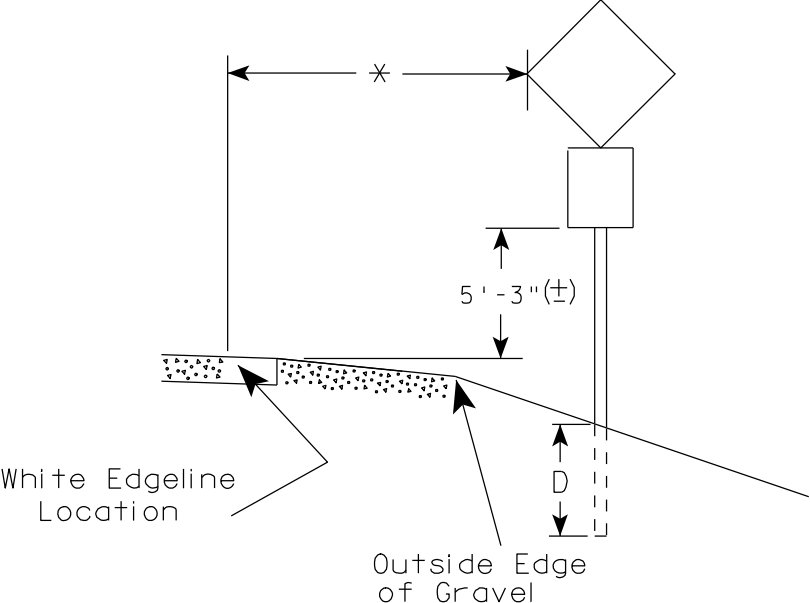
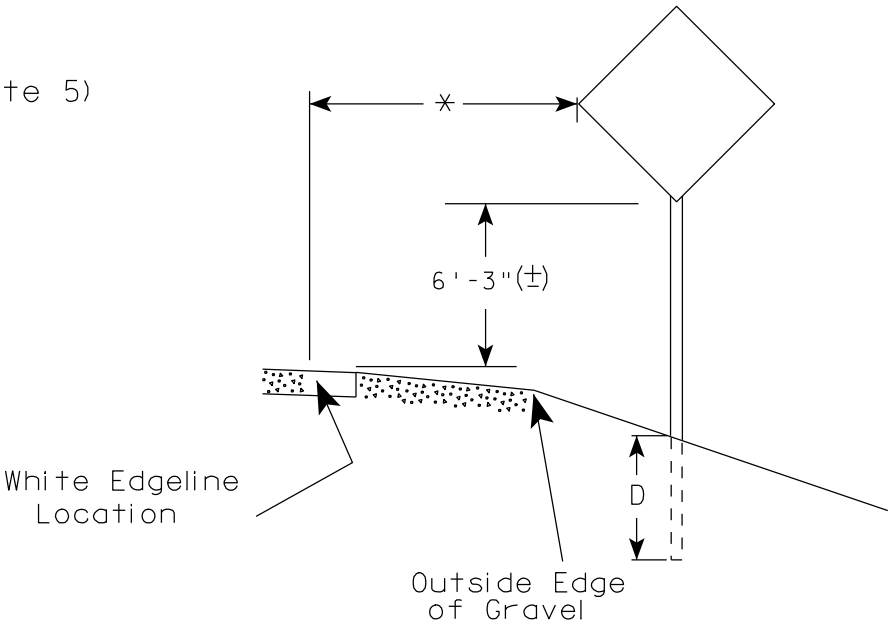
/S/ Thomas N. Notbohm
STATE TRAFFIC ENGINEER OF DESIGN

FHWA

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

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

POST EMBEDMENT DEPTH

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

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

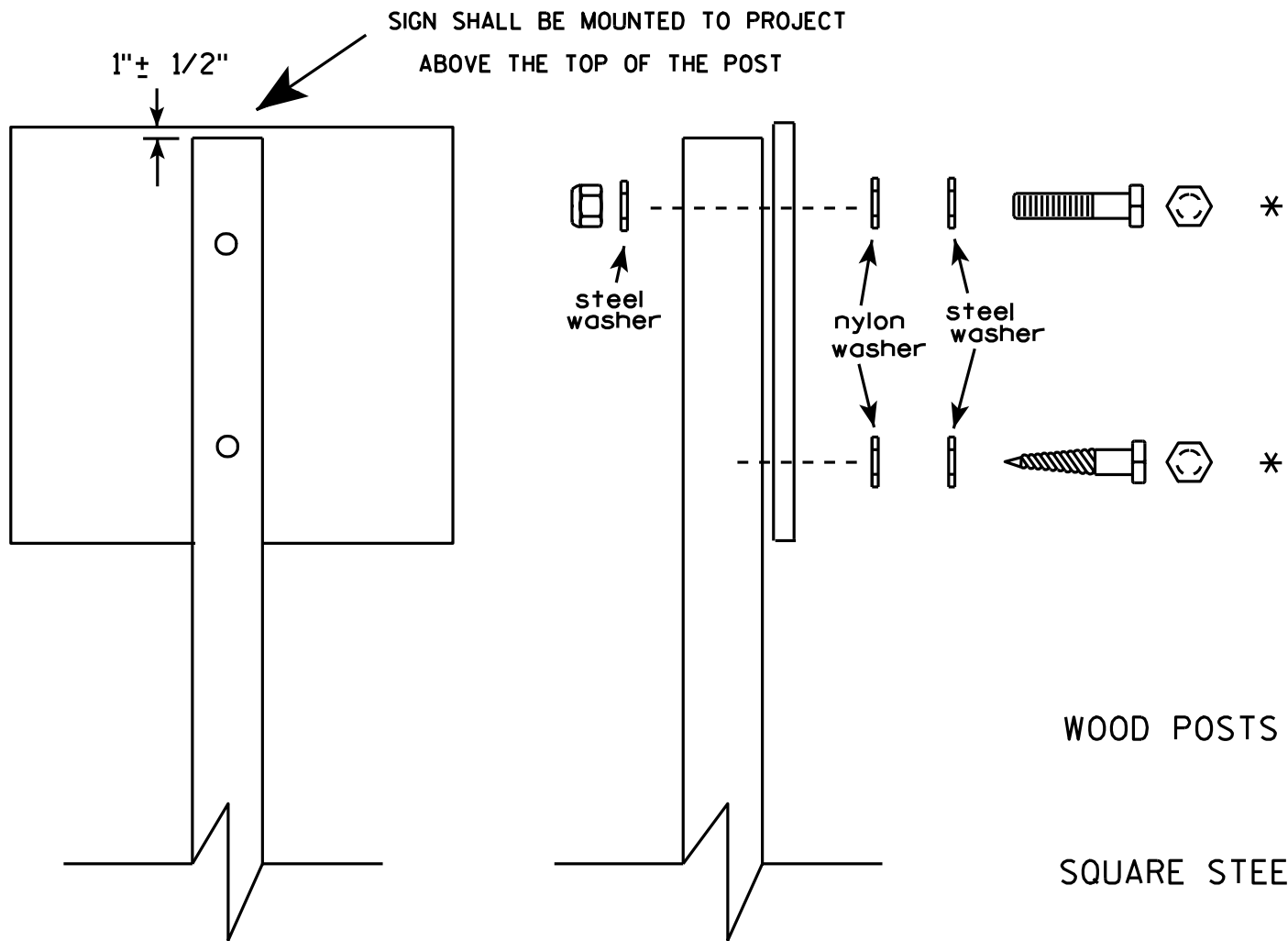
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

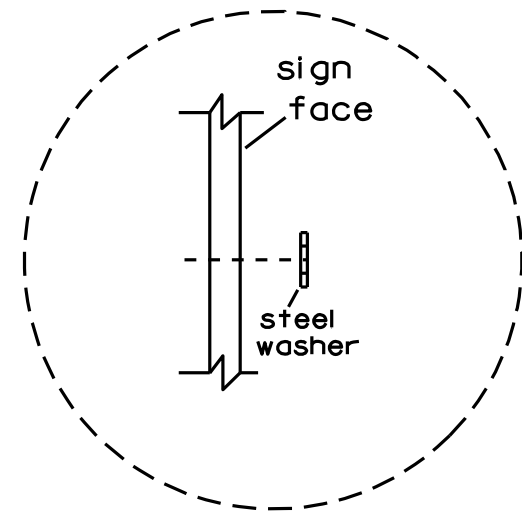


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

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

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

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

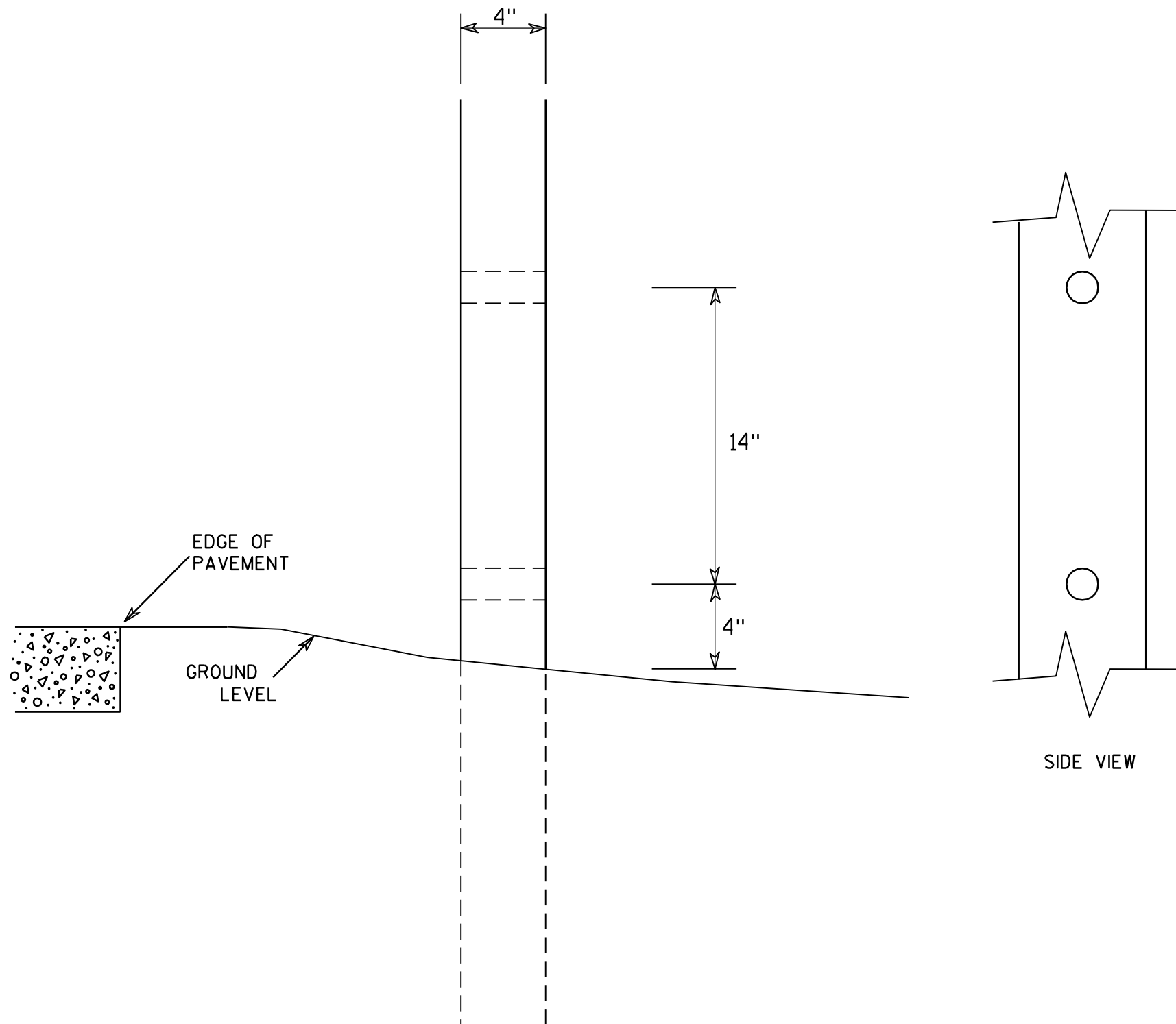


Washer Placement when Sign Has Other Than Type H or Type F Face

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

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

7



GENERAL NOTES

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

7

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

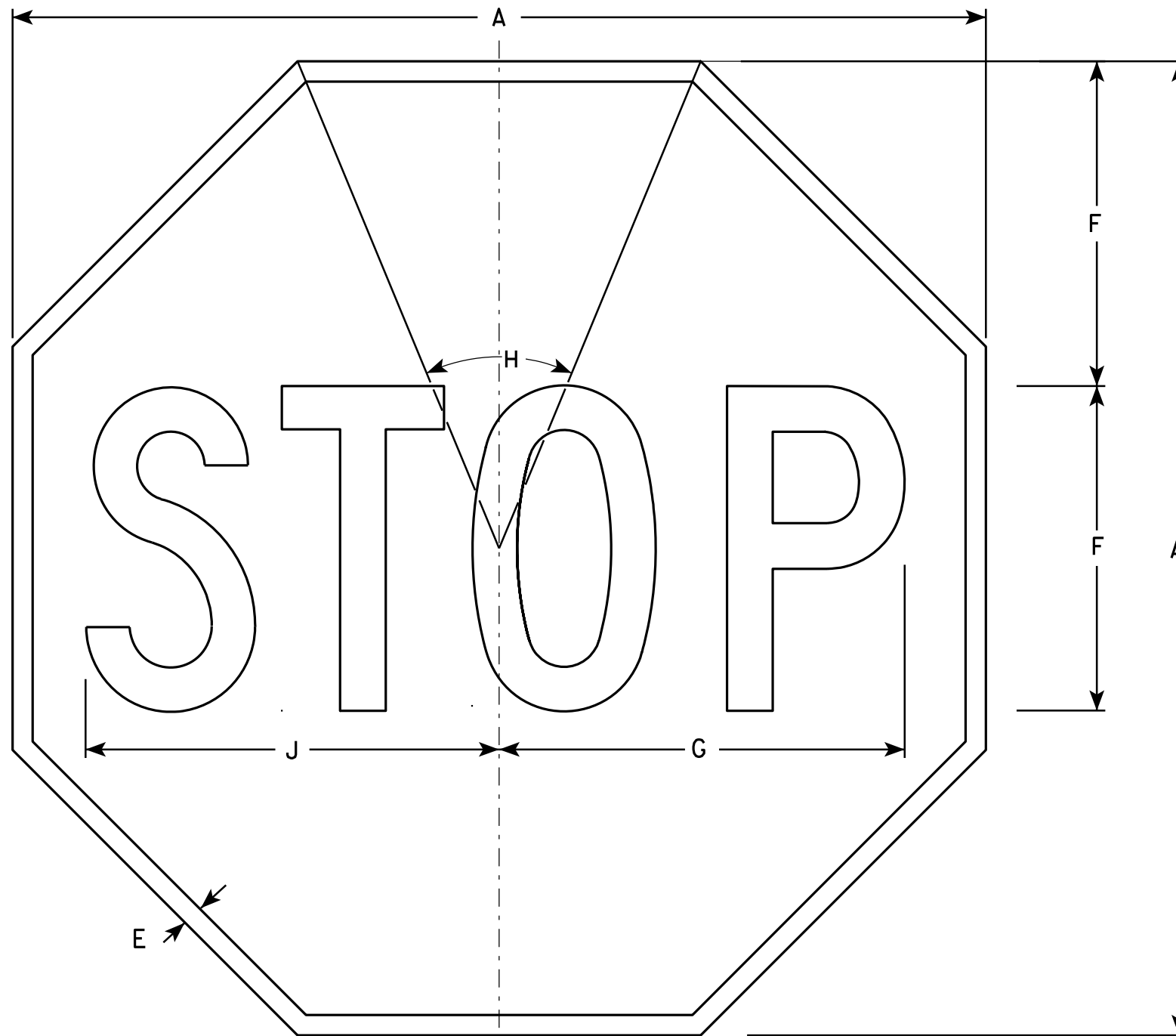
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

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

R1-1

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24				3/8	8	10	45°		10 1/4																	3.31
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

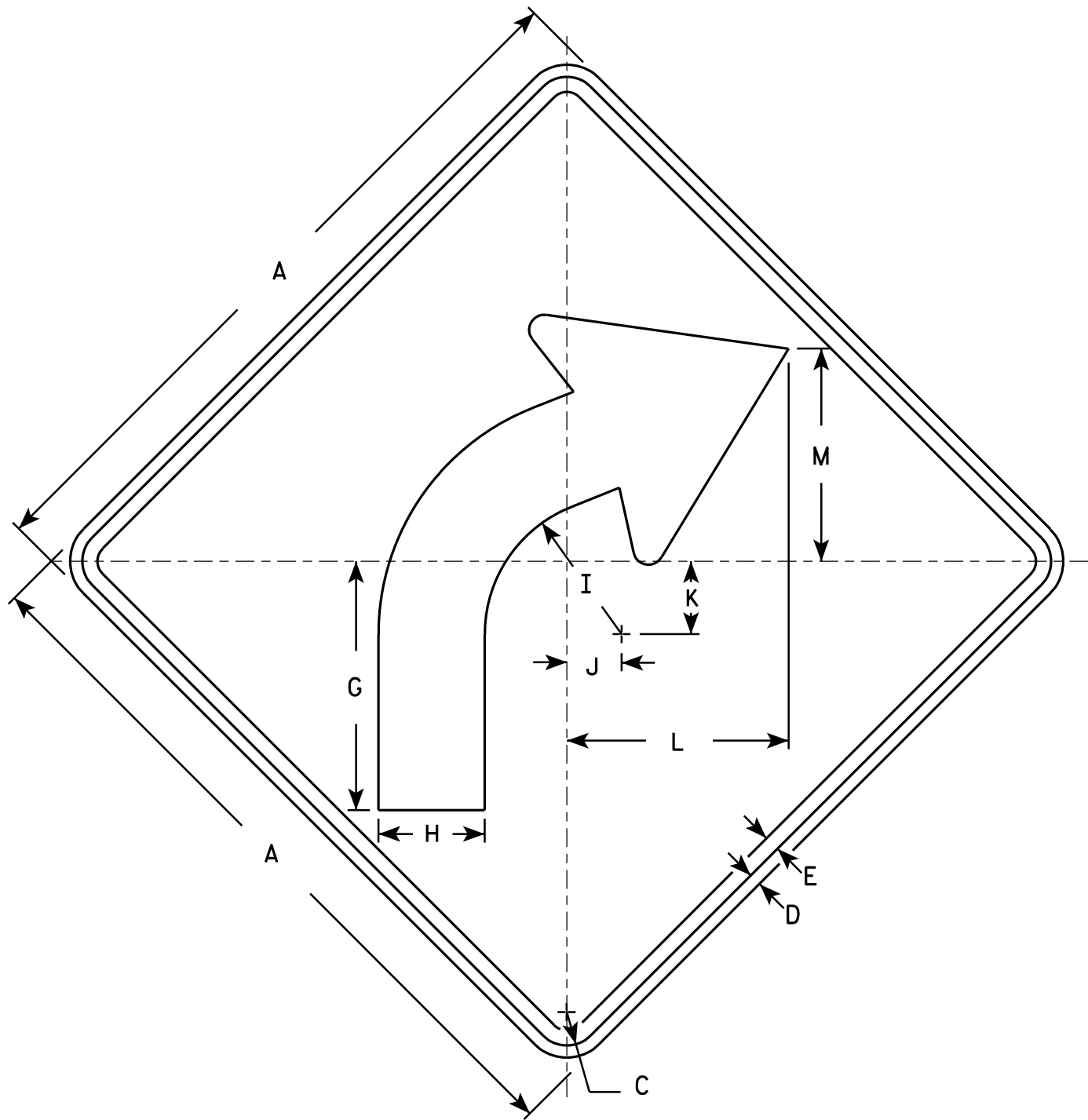
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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NOTES

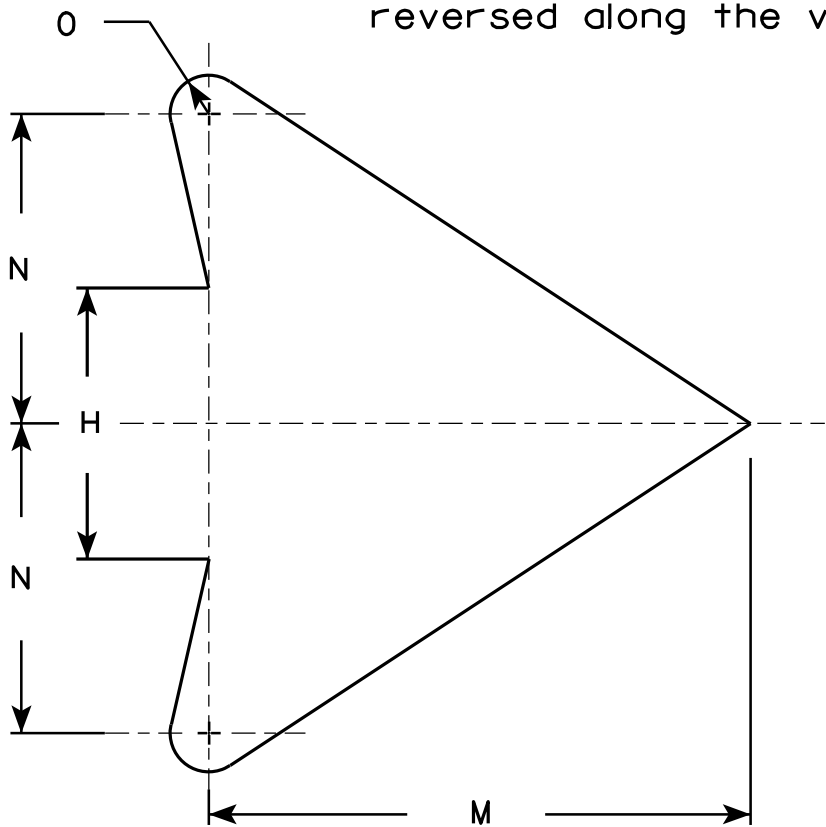
1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:

Background - 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. W1-2L is the same as W1-2R except the arrow is reversed along the vertical centerline.



W1-2R



ARROW DETAIL

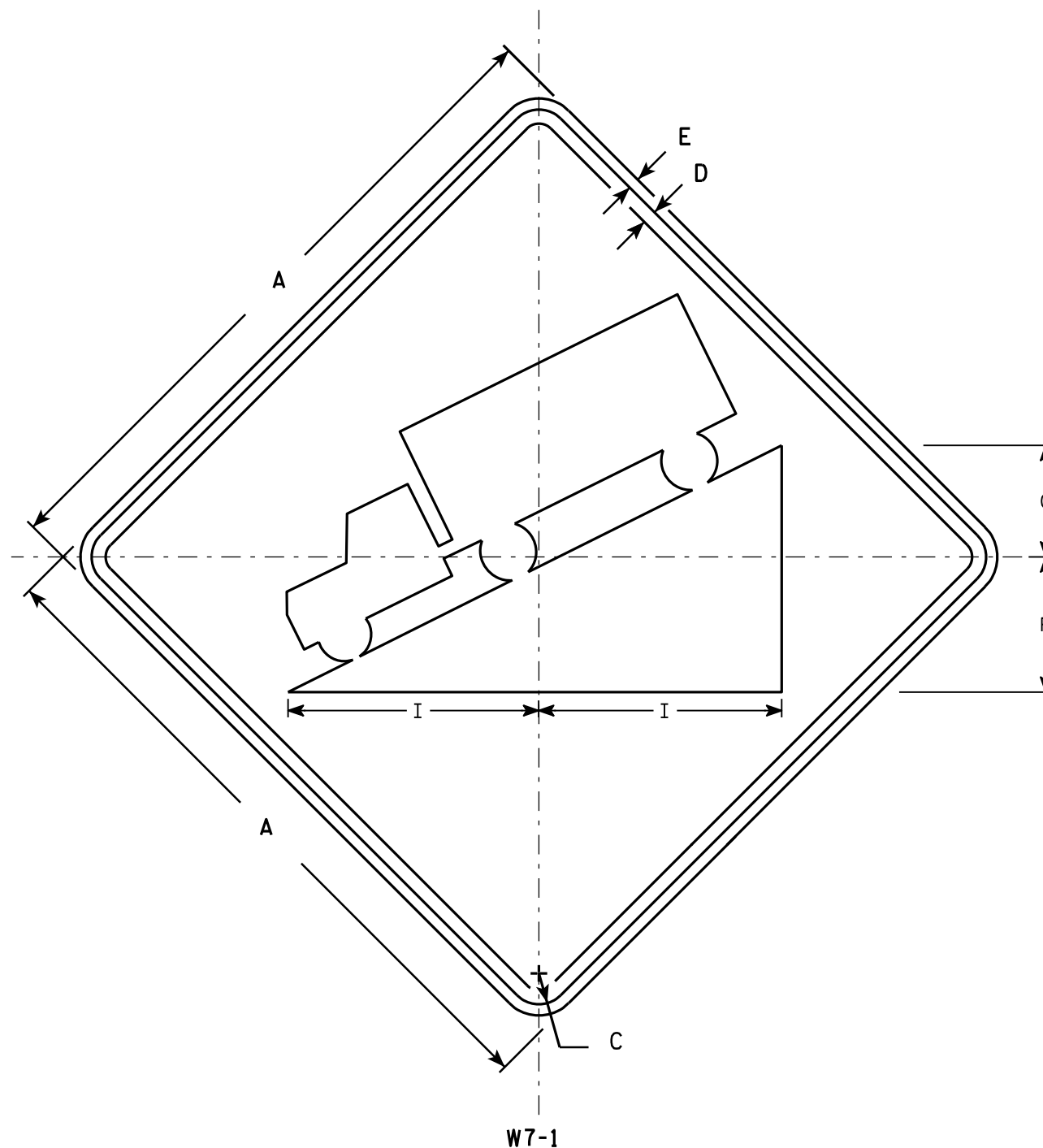
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2		8 1/4	3 1/2	4 1/2	1 3/4	2 3/8	7 1/4	7	4	1/2												4.0
2S	30		1 3/8	1/2	5/8		10 1/4	4 3/8	5 5/8	2 1/4	3	9 1/8	8 3/4	5	5/8												6.25
2M	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
3	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
4	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
5	48		2 1/4	3/4	1		16 1/2	7	9	3 1/2	4 5/8	14 1/2	14	8	1												16.0

STANDARD SIGN
W1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-2.10



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
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.

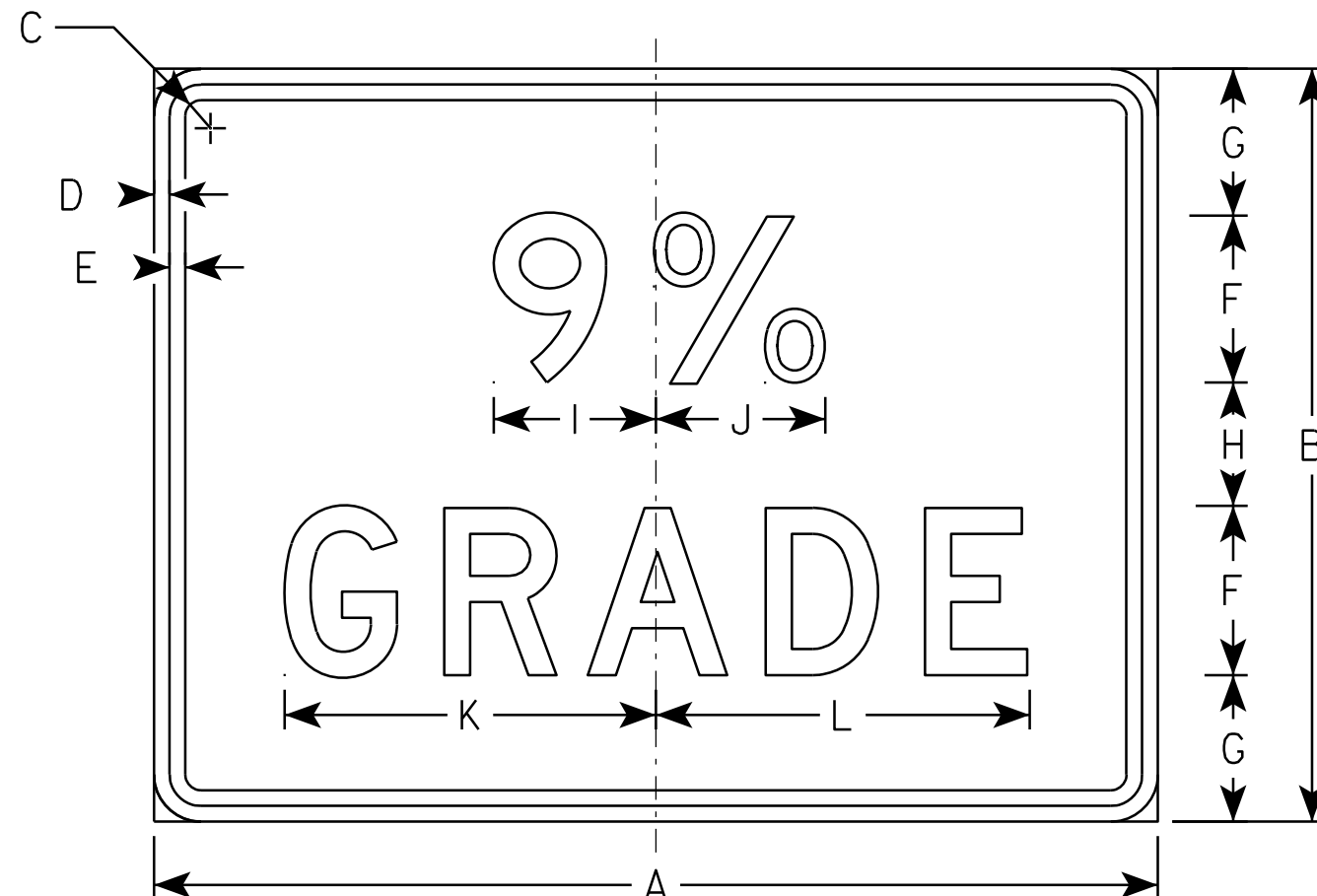
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	3/8	5	4		8 3/4																		4.0
2S	30		1 3/8	1/2	5/8	6	5		11																		6.25
2M	36		1 5/8	5/8	3/4	7 1/4	6		13 1/4																		9.0
3	36		1 5/8	5/8	3/4	7 1/4	6		13 1/4																		9.0
4	36		1 5/8	5/8	3/4	7 1/4	6		13 1/4																		9.0
5	48		2 1/4	3/4	1	9 3/4	8		17 1/2																		16.0

STANDARD SIGN W7-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 4/18/11 PLATE NO. W7-1.12

PROJECT NO: HWY: COUNTY: SHEET NO: E



W7-3

NOTES

1. Sign is Type II - Type H 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. Substitute appropriate numeral and optically adjust spacing to achieve proper balance.

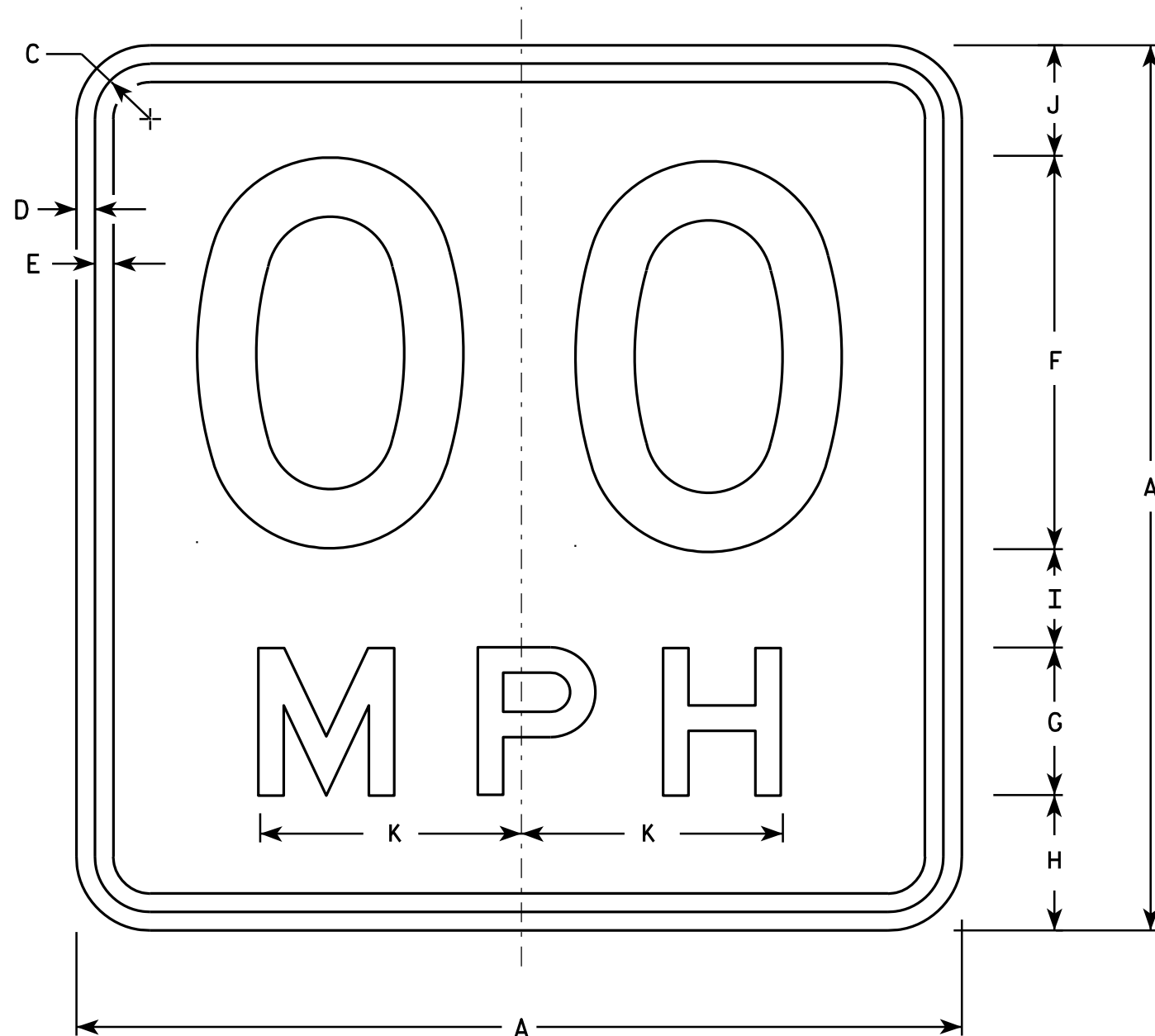
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	18	1 1/8	3/8	3/8	4	3 1/2	3	3 7/8	4	8 7/8	9															3.0
2M	24	18	1 1/8	3/8	3/8	4	3 1/2	3	3 7/8	4	8 7/8	9															3.0
3																											
4																											
5																											

STANDARD SIGN
W7-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/22/11 PLATE NO. W7-3.3



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. Message Series - See Note 6
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
Line 2 is Series E

W13-1

- * For 30" x 30" Warning Signs, use 18" x 18" W13-1 signs.
For 36" x 36" Warning Signs, use 24" x 24" W13-1 signs.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area Sq. Ft.
1	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
* 2S	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
* 2M	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
3	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8																4.00
4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00

STANDARD SIGN

W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-1.16

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

CTH O

STATION	FEET	AREA (SF)		ROCK EXCAVATION		ADJ.	INCREMENTAL VOL (CY)		CUMULATIVE VOL (CY)		MASS HAUL
		COMMON	FILL	SF	CY		COMMON	FILL*	COMMON	FILL	
40+00		156.30	0.00	0.00							
	50.00				0	0	246	31	246	31	215
40+50		109.10	26.00	0.00							
	50.00				0	0	143	121	389	152	237
41+00		45.20	74.60	0.00							
	50.00				0	0	70	156	459	308	151
41+50		30.30	55.00	0.00							
	50.00				0	0	46	161	505	469	36
42+00		19.50	78.90	0.00							
	50.00				0	0	23	241	528	711	-183
42+50		5.30	121.70	0.00							
	50.00				0	0	5	349	533	1060	-527
43+00		0.00	168.30	0.00							
	50.00				0	0	0	428	533	1488	-955
43+50		0.00	187.20	0.00							
	50.00				0	0	0	503	533	1991	-1458
44+00		0.00	230.80	0.00							
	50.00				0	0	0	620	533	2611	-2078
44+50		0.00	284.10	0.00							
	50.00				0	0	0	562	533	3172	-2639
45+00		0.00	182.30	0.00							
	50.00				0	0	0	458	533	3630	-3098
45+50		0.00	198.40	0.00							
	50.00				0	0	0	454	533	4084	-3551
46+00		0.00	178.40	0.00							
	50.00				0	0	0	385	533	4469	-3936
46+50		0.00	141.50	0.00							
	50.00				0	0	0	304	533	4773	-4241
47+00		0.00	111.20	0.00							
	50.00				9	10	0	227	533	5001	-4456
47+50		0.00	77.70	9.60							
	50.00				73	80	7	114	540	5115	-4458
48+00		7.90	17.00	69.10							
	50.00				172	189	82	22	622	5137	-4153
48+50		80.10	1.60	116.70							
	50.00				209	230	187	4	808	5141	-3671
49+00		121.40	1.40	108.90							
	50.00				202	222	273	2	1081	5142	-3111
49+50		173.20	0.00	109.20							
	50.00				183	201	353	0	1434	5142	-2497
50+00		207.70	0.00	88.30							
	50.00				162	178	387	0	1821	5142	-1879
50+50		210.20	0.00	86.20							
	50.00				106	117	376	0	2197	5142	-1351
51+00		196.10	0.00	28.50							
	50.00				30	33	347	0	2544	5142	-962
51+50		178.40	0.00	3.70							
	50.00				5	5	307	306	2851	5449	-955
52+00		153.50	254.60	1.30							
	50.00				6	6	266	564	3116	6013	-1245
52+50		133.20	213.70	5.00							
	50.00				13	14	223	543	3339	6555	-1546
53+00		107.10	237.00	9.20							
	50.00				10	11	200	650	3539	7205	-1982
53+50		108.60	303.20	1.80							
	50.00				2	2	203	771	3742	7976	-2548
54+00		110.50	337.40	0.00							
	50.00				5	6	223	406	3965	8382	-2723
54+50		130.50	0.00	5.70							
	50.00				27	30	262	0	4227	8382	-2422
55+00		152.50	0.00	23.50							

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STATION	FEET	AREA (SF)		ROCK EXCAVATION		ADJ. CY	INCREMENTAL VOL (CY)		CUMULATIVE VOL (CY)		MASS HAUL
		COMMON	FILL	SF	CY		COMMON	FILL*	COMMON	FILL	
	50.00				77	85	318	0	4545	8382	-1994
55+50		191.20	0.00	59.60							
	50.00				119	131	455	0	5000	8382	-1369
56+00		300.20	0.00	68.80							
	50.00				113	125	676	0	5675	8382	-531
56+50		429.30	0.00	53.60							
	50.00				398	438	797	0	6472	8382	835
57+00		431.40	0.00	376.60							
	50.00				532	585	992	0	7464	8382	2588
57+50		640.00	0.00	197.40							
	50.00				798	878	1011	0	8475	8382	4740
58+00		451.80	0.00	664.60							
	50.00				1126	1239	1035	0	9510	8382	7386
58+50		665.90	0.00	551.00							
	50.00				1361	1497	812	0	10322	8382	10144
59+00		210.80	0.00	918.90							
	50.00				1643	1807	574	0	10896	8382	13067
59+50		409.50	0.00	855.10							
	50.00				1344	1478	1010	0	11906	8382	15998
60+00		681.40	0.00	596.50							
	50.00				997	1097	1280	0	13187	8382	18704
60+50		701.20	0.00	480.60							
	50.00				1242	1366	1066	0	14253	8382	21546
61+00		450.50	0.00	860.80							
	50.00				881	969	741	0	14994	8382	23547
61+50		349.90	0.00	91.10							
	50.00				84	92	435	0	15429	8382	24102
62+00		120.20	110.00	0.00							
	50.00				0	0	118	133	15547	8515	24087
62+50		6.80	258.60	0.00							
	50.00				0	0	8	444	15555	8959	23651
63+00		1.90	270.40	0.00							
	50.00				0	0	11	637	15566	9595	23025
63+50		9.80	190.10	0.00							
	50.00				0	0	30	554	15596	10150	22501
64+00		22.60	197.90	0.00							
	50.00				0	0	48	467	15644	10617	22082
64+50		29.60	218.20	0.00							
	50.00				0	0	78	501	15723	11118	21659
65+00		55.10	9.90	0.00							
	50.00				0	0	235	275	15958	11392	21619
65+50		199.00	0.00	0.00							
	50.00				0	0	270	12	16228	11404	21877
66+00		92.40	171.30	0.00							
	50.00				0	0	287	206	16514	11610	21958
66+50		217.00	67.60	0.00							
	50.00				69	76	391	288	16905	11898	22160
67+00		205.00	0.00	74.70							
	50.00				198	218	448	81	17353	11979	22810
67+50		279.00	0.00	139.30							
	50.00				457	503	529	0	17882	11979	23993
68+00		292.50	0.00	354.60							
	50.00				764	840	454	0	18336	11979	25539
68+50		197.30	0.00	470.10							
	50.00				990	1089	360	0	18696	11979	27315
69+00		191.80	0.00	599.30							
	50.00				1267	1394	307	0	19003	11979	29435
69+50		140.10	0.00	768.50							
	50.00				1454	1599	337	0	19340	11979	31851
70+00		223.50	0.00	801.60							

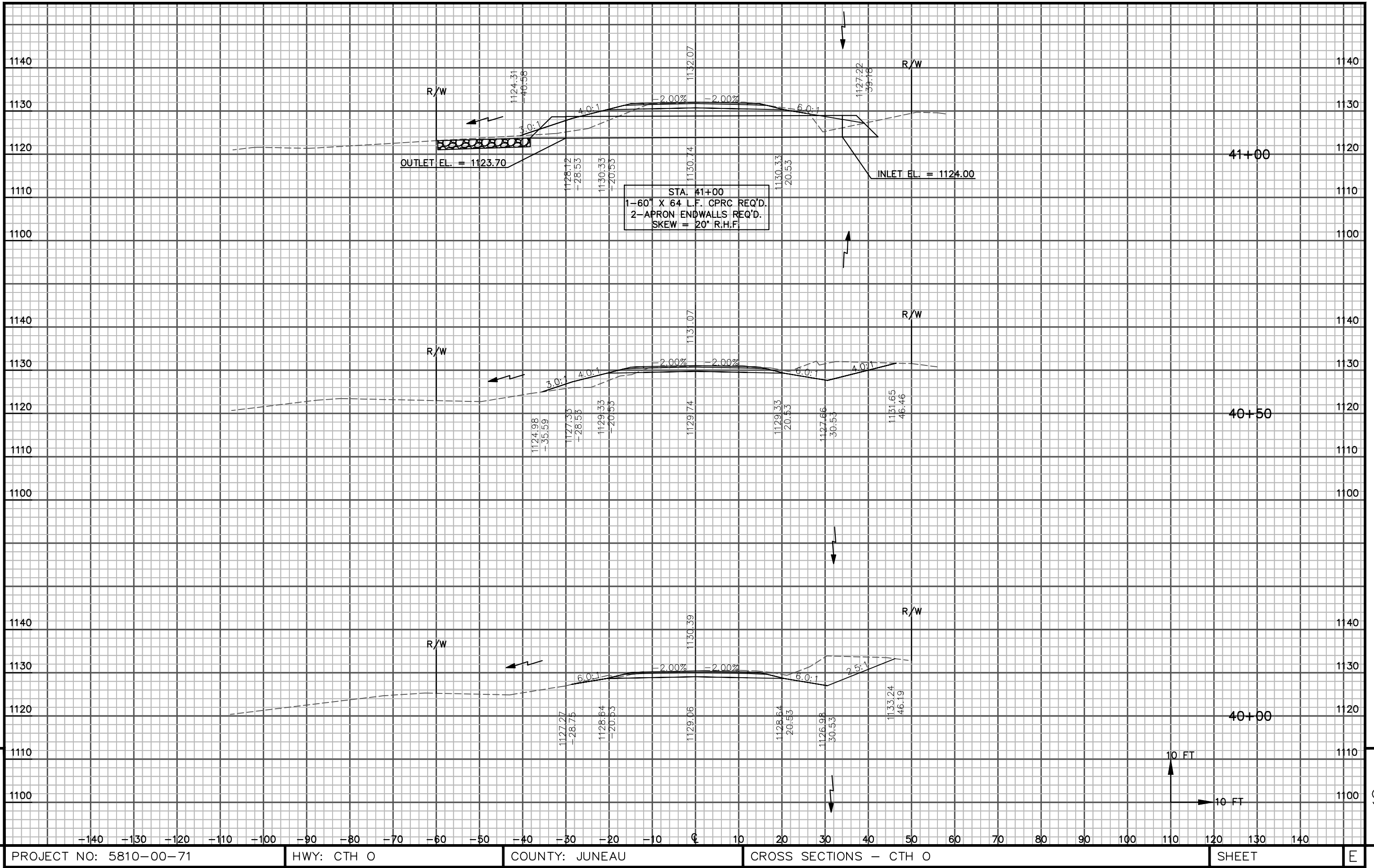
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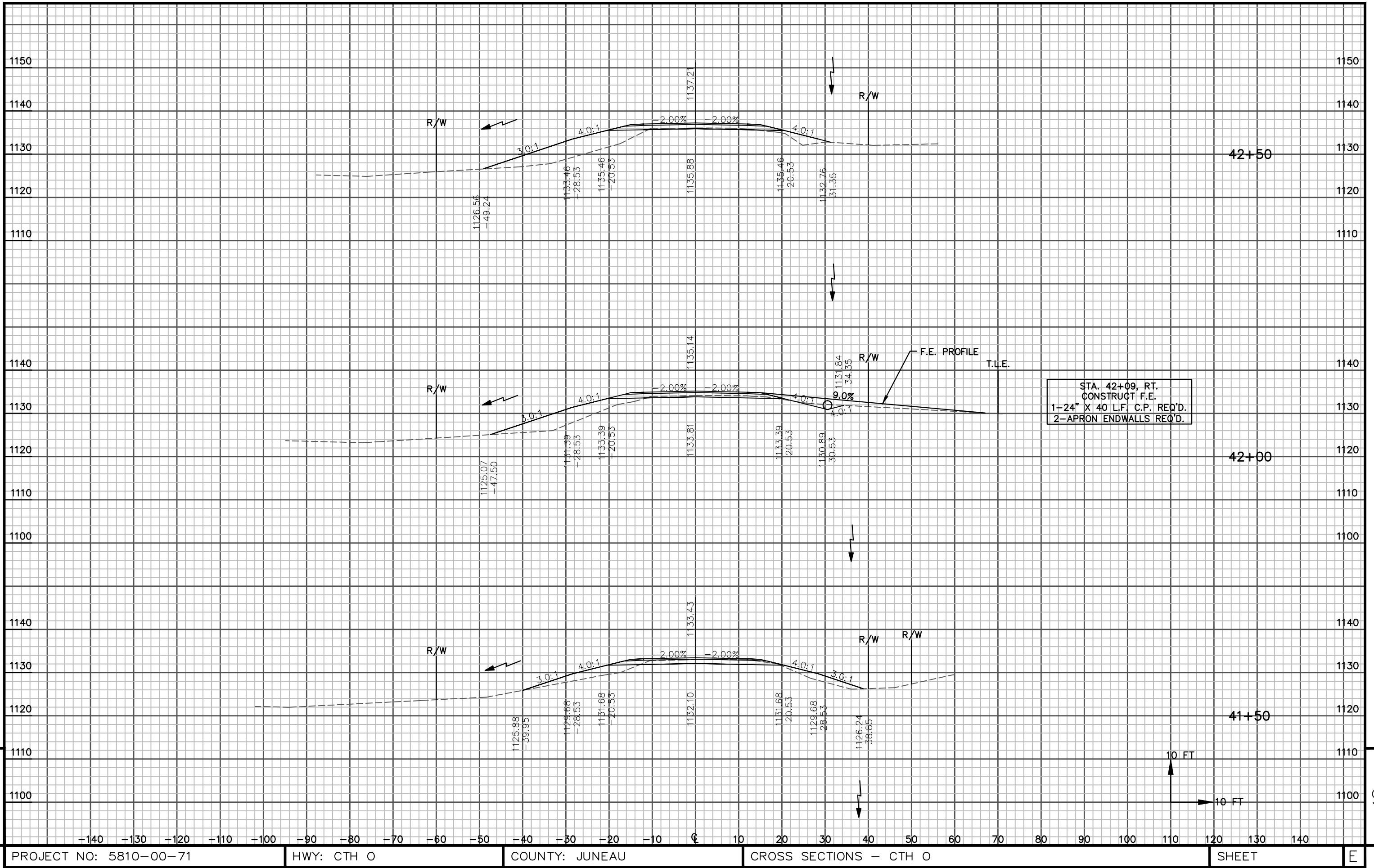
STATION	FEET	AREA (SF)		ROCK EXCAVATION		ADJ.		INCREMENTAL VOL (CY)		CUMULATIVE VOL (CY)		MASS HAUL
		COMMON	FILL	SF	CY	CY	CY	COMMON	FILL *	COMMON	FILL	
	50.00				1400	1540	616	0	19956	11979	34469	
70+50		441.60	0.00	710.40								
	50.00				1157	1273	893	0	20849	11979	37017	
71+00		522.80	0.00	539.20								
	50.00				818	900	1010	0	21859	11979	39197	
71+50		567.90	0.00	344.00								
	50.00				709	780	874	0	22733	11979	41085	
72+00		376.50	0.00	421.40								
	50.00				426	469	1535	0	24268	11979	43230	
72+50		1281.00	0.00	39.10								
	50.00				59	65	2449	0	26716	11979	45764	
73+00		1363.50	0.00	24.80								
	50.00				324	356	2070	160	28787	12140	48137	
73+50		872.40	132.20	325.30								
	50.00				1553	1708	999	160	29786	12300	51196	
74+00		206.40	0.00	1351.60								
	50.00				3476	3824	615	0	30400	12300	56782	
74+50		457.60	0.00	2402.00								
	50.00				5170	5687	981	0	31381	12300	65156	
75+00		601.30	0.00	3181.60								
	50.00				6423	7065	1205	34	32586	12334	75512	
75+50		700.10	28.20	3755.00								
	50.00				7352	8087	1153	533	33739	12866	86645	
76+00		545.20	414.30	4185.30								
	50.00				8155	8971	830	970	34569	13836	98167	
76+50		351.00	391.20	4622.50								
	50.00				8678	9546	588	1010	35157	14846	110155	
77+00		284.50	448.10	4749.40								
	50.00				8303	9133	464	1241	35621	16087	121251	
77+50		216.10	583.00	4217.60								
	50.00				6736	7410	200	1316	35821	17404	129768	
78+00		0.00	510.50	3057.60								
	50.00				4375	4813	0	1112	35821	18515	134913	
78+50		0.00	412.90	1667.20								
	50.00				2290	2519	0	905	35821	19420	137283	
79+00		0.00	338.80	806.20								
	50.00				1008	1109	0	1416	35821	20836	137309	
79+50		0.00	837.40	282.60								
	50.00				296	325	0	2666	35821	23502	135065	
80+00		0.00	1377.60	36.80								
	50.00				34	38	0	4077	35821	27579	131037	
80+50		0.00	2009.30	0.00								
	50.00				0	0	0	5666	35821	33245	125371	
81+00		0.00	2698.00	0.00								
	50.00				0	0	0	7171	35821	40415	118200	
81+50		0.00	3259.10	0.00								
	50.00				0	0	0	8192	35821	48607	110008	
82+00		0.00	3546.30	0.00								
	50.00				0	0	0	8436	35821	57043	101572	
82+50		0.00	3462.10	0.00								
	50.00				0	0	0	8749	35821	65792	92823	
83+00		0.00	3806.10	0.00								
	50.00				0	0	0	8875	35821	74667	83948	
83+50		0.00	3567.10	0.00								
	50.00				0	0	0	8199	35821	82866	75749	
84+00		0.00	3244.00	0.00								
	50.00				0	0	0	7213	35821	90078	68536	
84+50		0.00	2747.90	0.00								
	50.00				0	0	0	5940	35821	96018	62596	
85+00		0.00	2186.90	0.00								

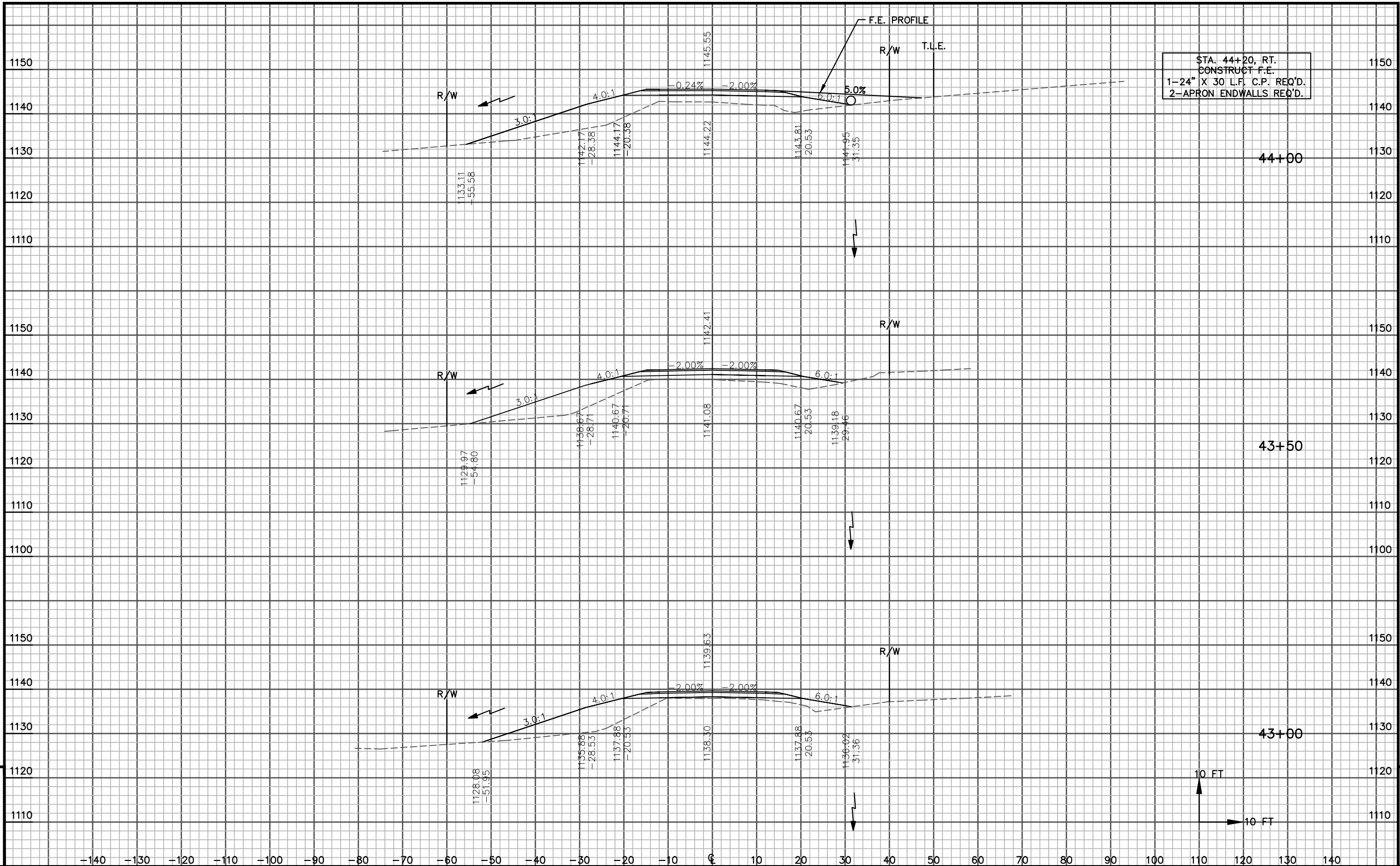
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STATION		AREA (SF)		ROCK EXCAVATION		ADJ.	INCREMENTAL VOL (CY)		CUMULATIVE VOL (CY)		MASS HAUL
	FEET	COMMON	FILL	SF	CY	CY	COMMON	FILL*	COMMON	FILL	
	50.00				0	0	0	4701	35821	100719	57895
85+50		0.00	1718.40	0.00							
	50.00				0	0	0	3726	35821	104445	54169
86+00		0.00	1377.30	0.00							
	50.00				0	0	0	2887	35821	107332	51282
86+50		0.00	1020.70	0.00							
	50.00				0	0	0	2089	35821	109421	49193
87+00		0.00	714.80	0.00							
	50.00				0	0	0	1442	35821	110863	47751
87+50		0.00	483.20	0.00							
	50.00				0	0	0	961	35821	111824	46790
88+00		0.00	315.30	0.00							
	50.00				0	0	40	584	35860	112408	46246
88+50		42.80	169.60	0.00							
	50.00				0	0	105	313	35966	112720	46038
89+00		71.00	90.00	0.00							
	50.00				0	0	151	151	36117	112871	46038
89+50		92.50	35.20	0.00							
	50.00				0	0	195	47	36313	112918	46186
90+00		118.50	3.70	0.00							
	50.00				0	0	321	4	36633	112922	46503
90+50		227.80	0.00	0.00							
	50.00				0	0	311	0	36944	112922	46814
91+00		108.30	0.00	0.00							
	50.00				0	0	160	0	37104	112922	46974
91+50		64.60	0.00	0.00							
	50.00				0	0	146	3	37251	112925	47117
92+00		93.50	2.20	0.00							
	50.00				0	0	185	3	37436	112927	47299
92+50		106.10	0.00	0.00							
	50.00				0	0	179	0	37615	112927	47478
93+00		87.10	0.00	0.00							
	50.00				0	0	136	0	37750	112927	47614
93+50		59.40	0.00	0.00							
	50.00				0	0	106	45	37856	112973	47675
94+00		55.40	37.50	0.00							
					85,868	94,455	37,856	112,973			

OVERGAARD ROAD

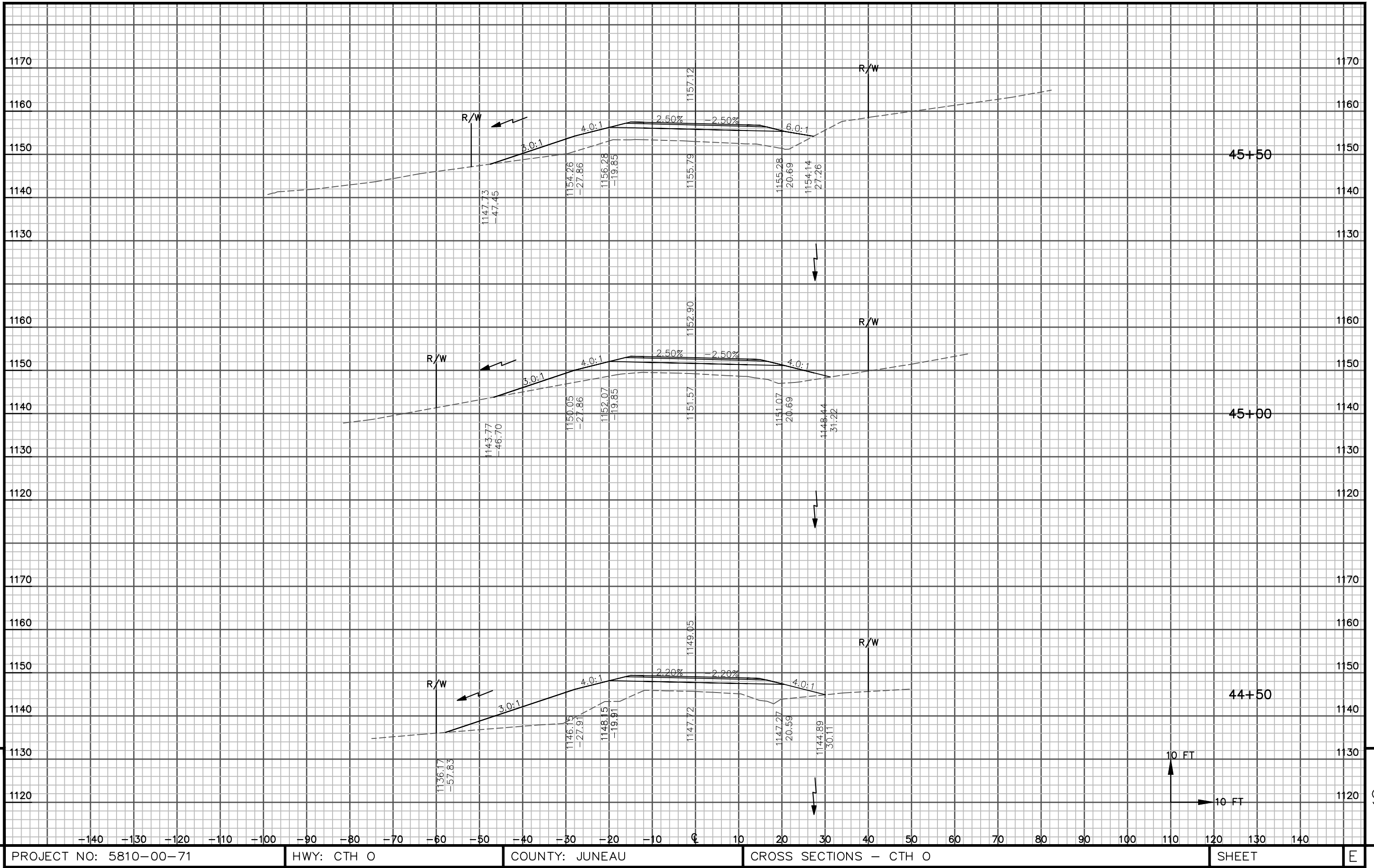
STATION		AREA (SF)		ROCK EXCAVATION		ADJ.	INCREMENTAL VOL (CY)		CUMULATIVE VOL (CY)		MASS HAUL
	FEET	COMMON	FILL	SF	CY	CY	COMMON	FILL*	COMMON	FILL	
100+00		0.00	0.00	0.00							
	50.00				0	0	201	0	201	0	201
100+50		217.1	0.00	0.00							
	50.00				0	0	537	0	738	0	738
101+00		362.3	0.00	0.00							
	22.00				0	0	271	0	1009	0	1009
101+22		302.2	0.00	0.00							
101+56		121.4	0.00	0.00							
	44.00				0	0	194	0	1203	0	1203
102+00		116.9	0.00	0.00							
	50.00				0	0	184	0	1387	0	1387
102+50		81.6	0.00	0.00							
	50.00				0	0	122	0	1509	0	1509
103+00		50.5	0.00	0.00							
	38.00				0	0	36	0	1545	0	1545
103+38		0.00	0.00	0.00							
					0	0	1545	0			

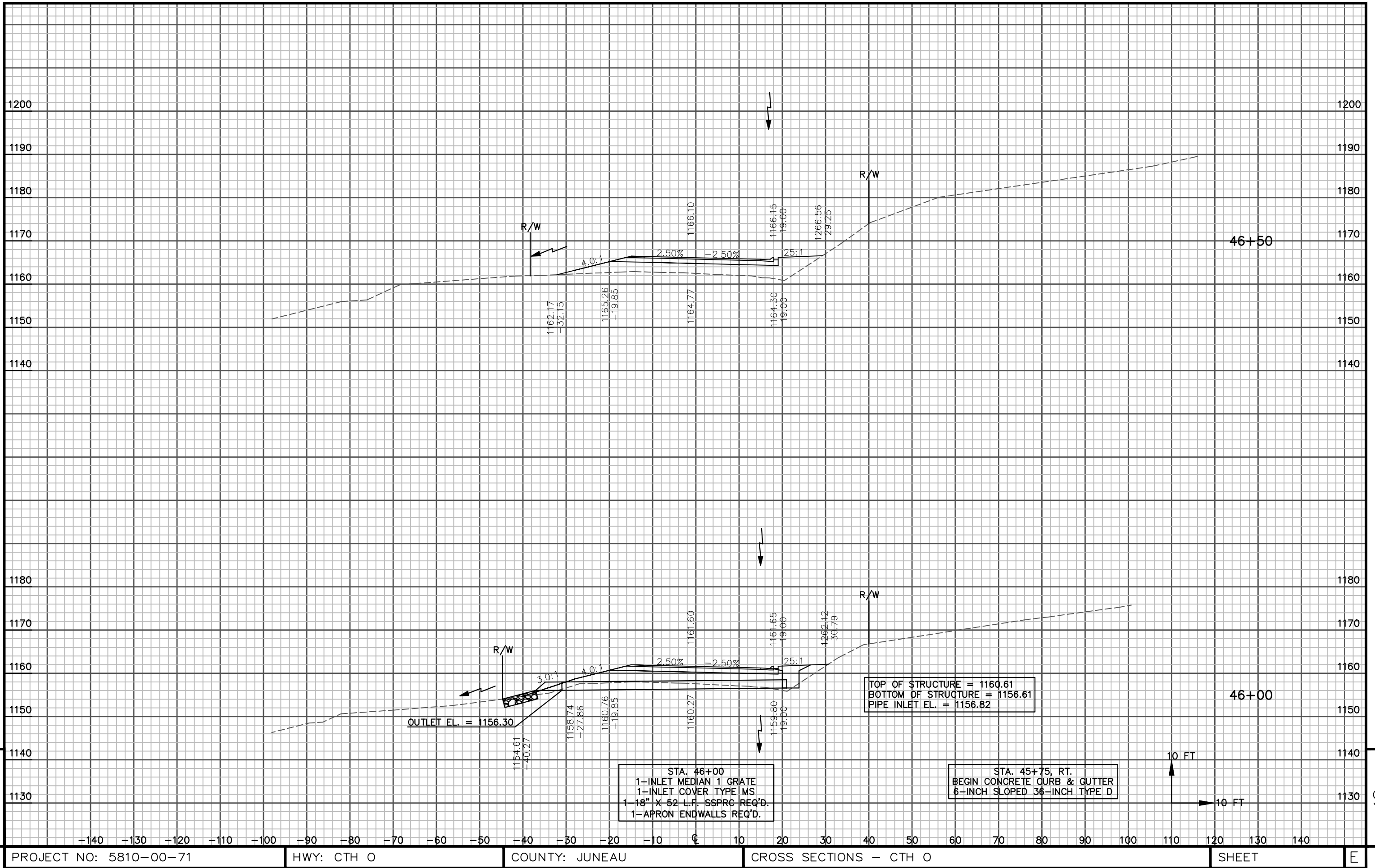


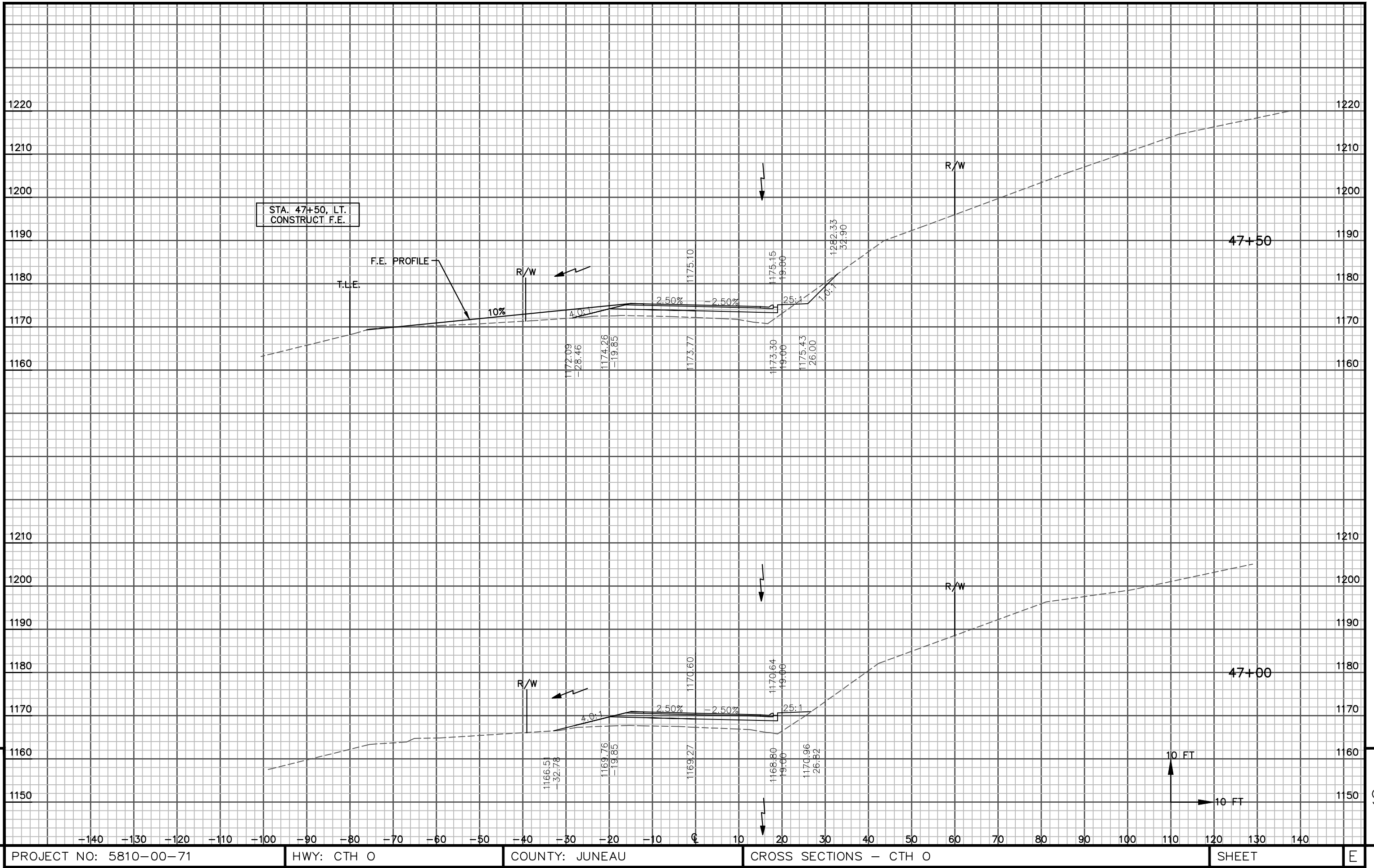


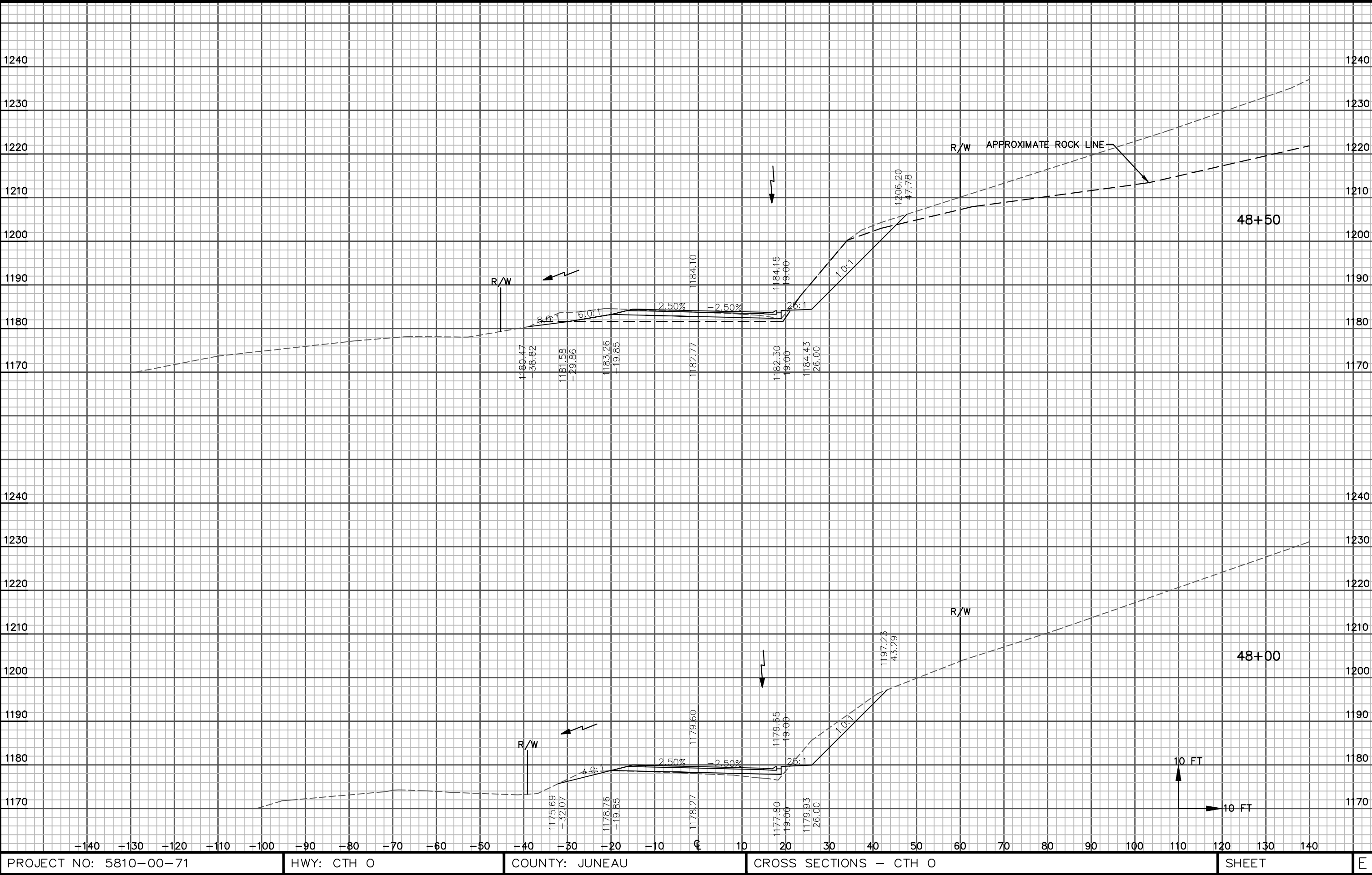


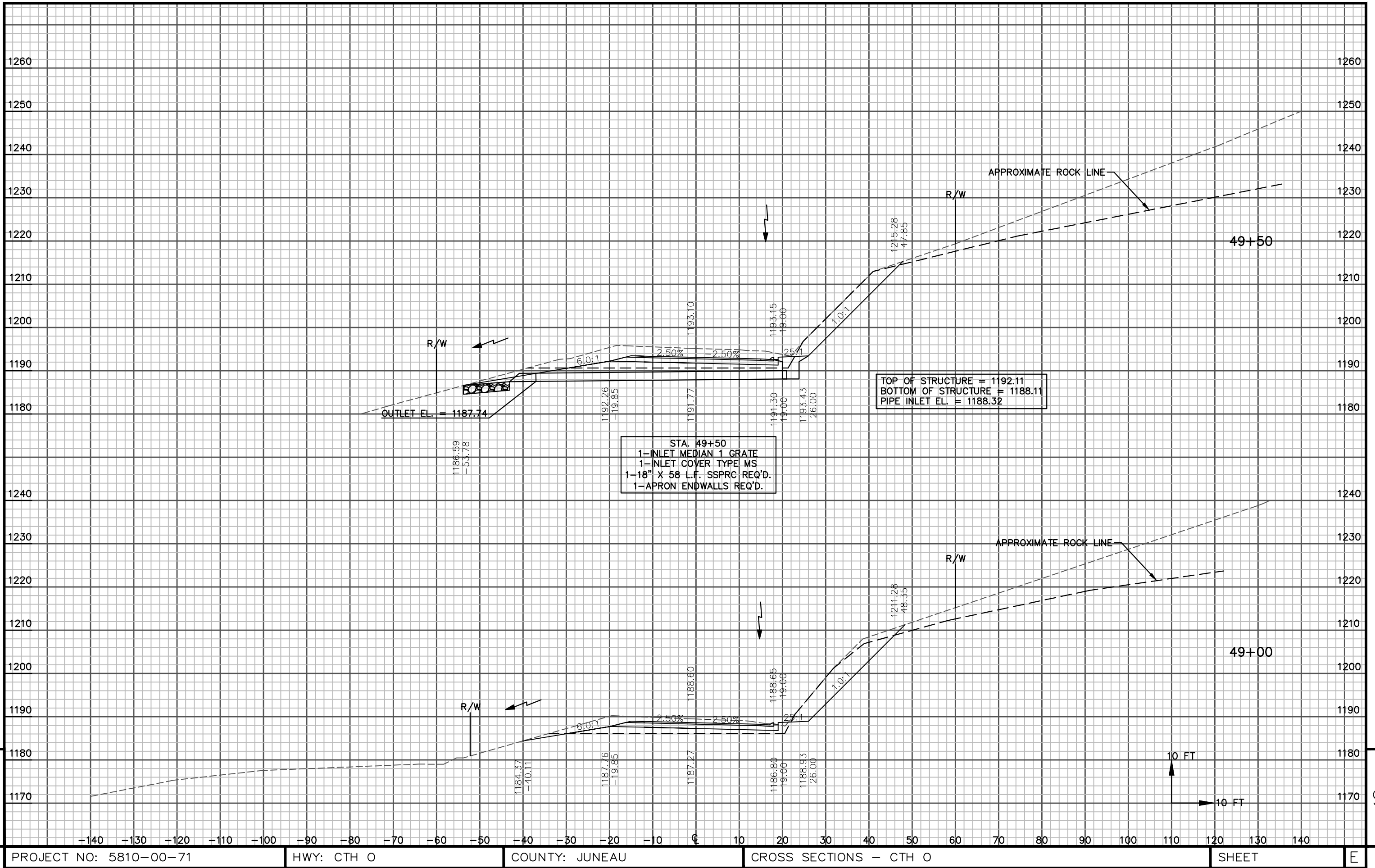
STA. 44+20, RT.
CONSTRUCT F.E.
1-24" X 30 L.F. C.P. REQ'D.
2-APRON ENDWALLS REQ'D.

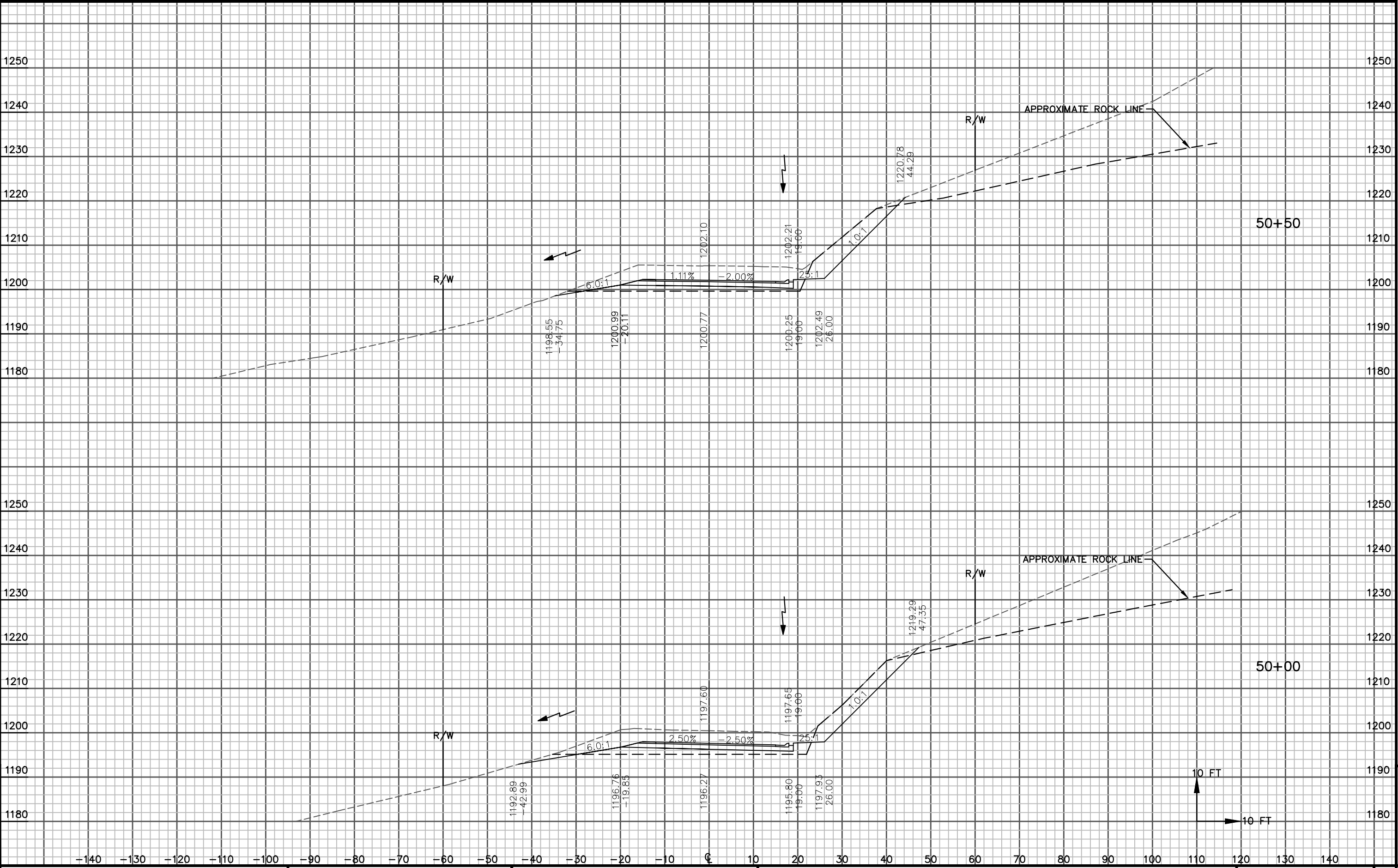


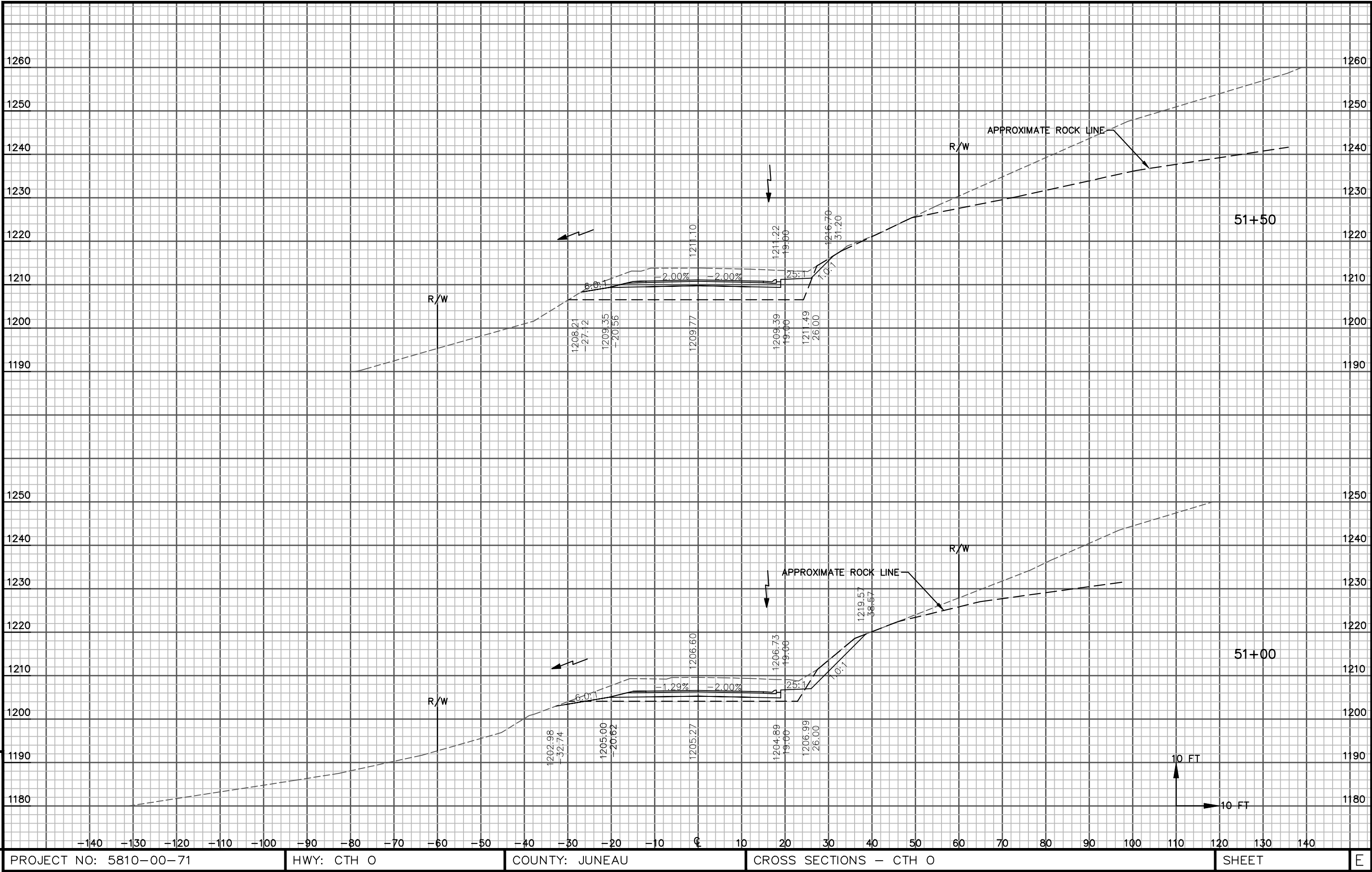


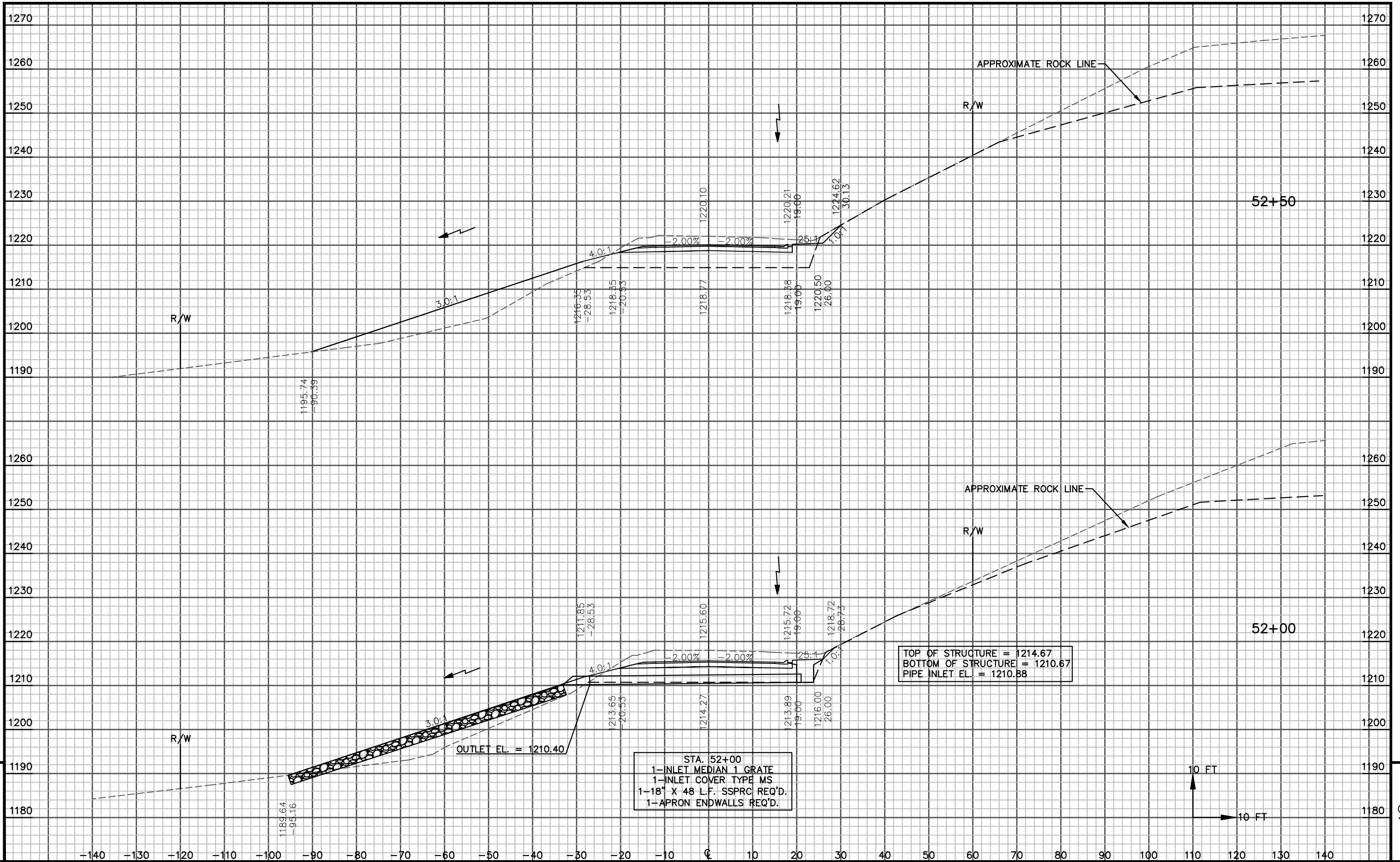


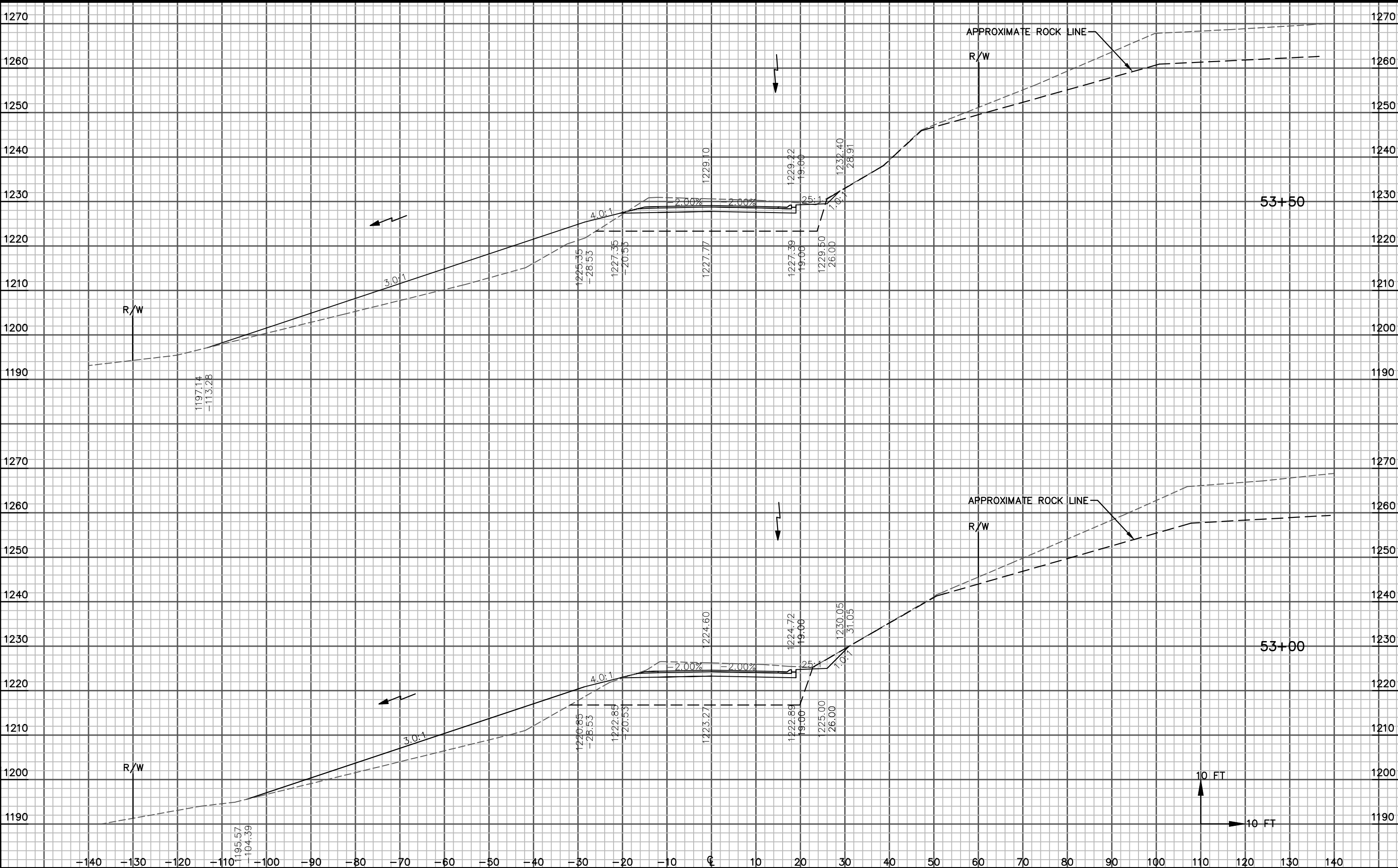


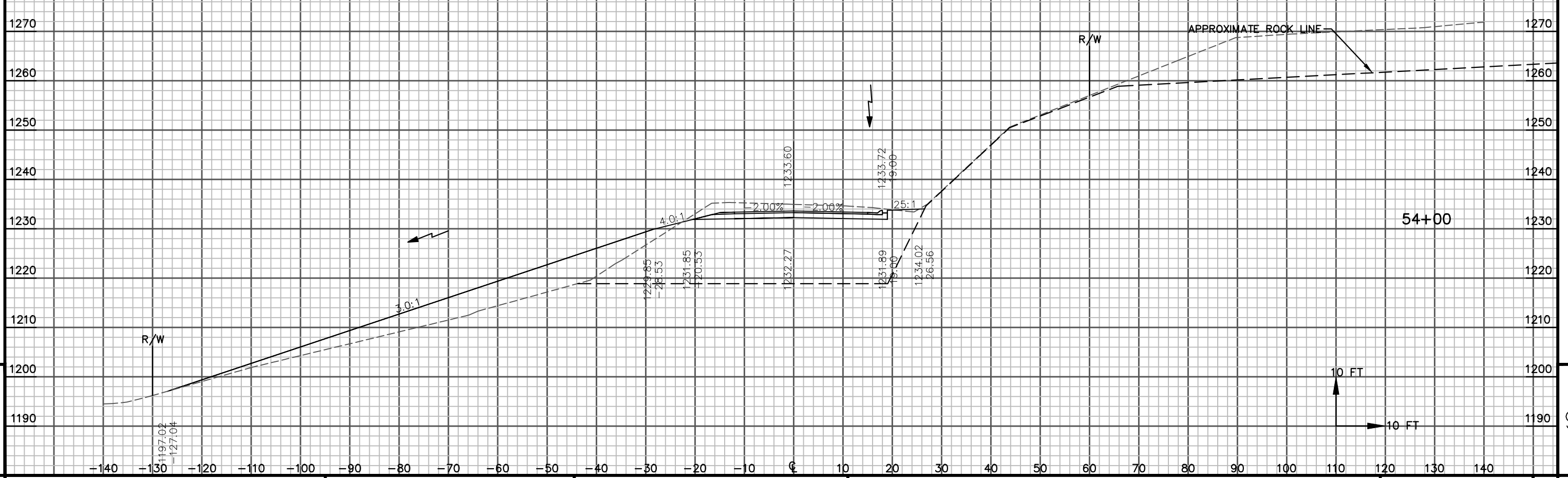
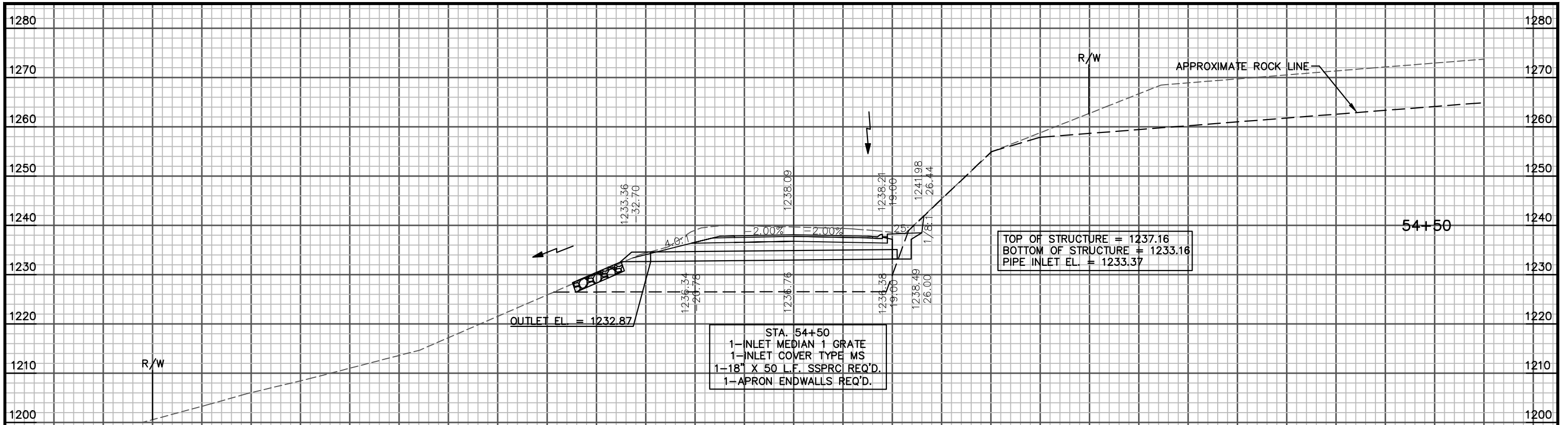


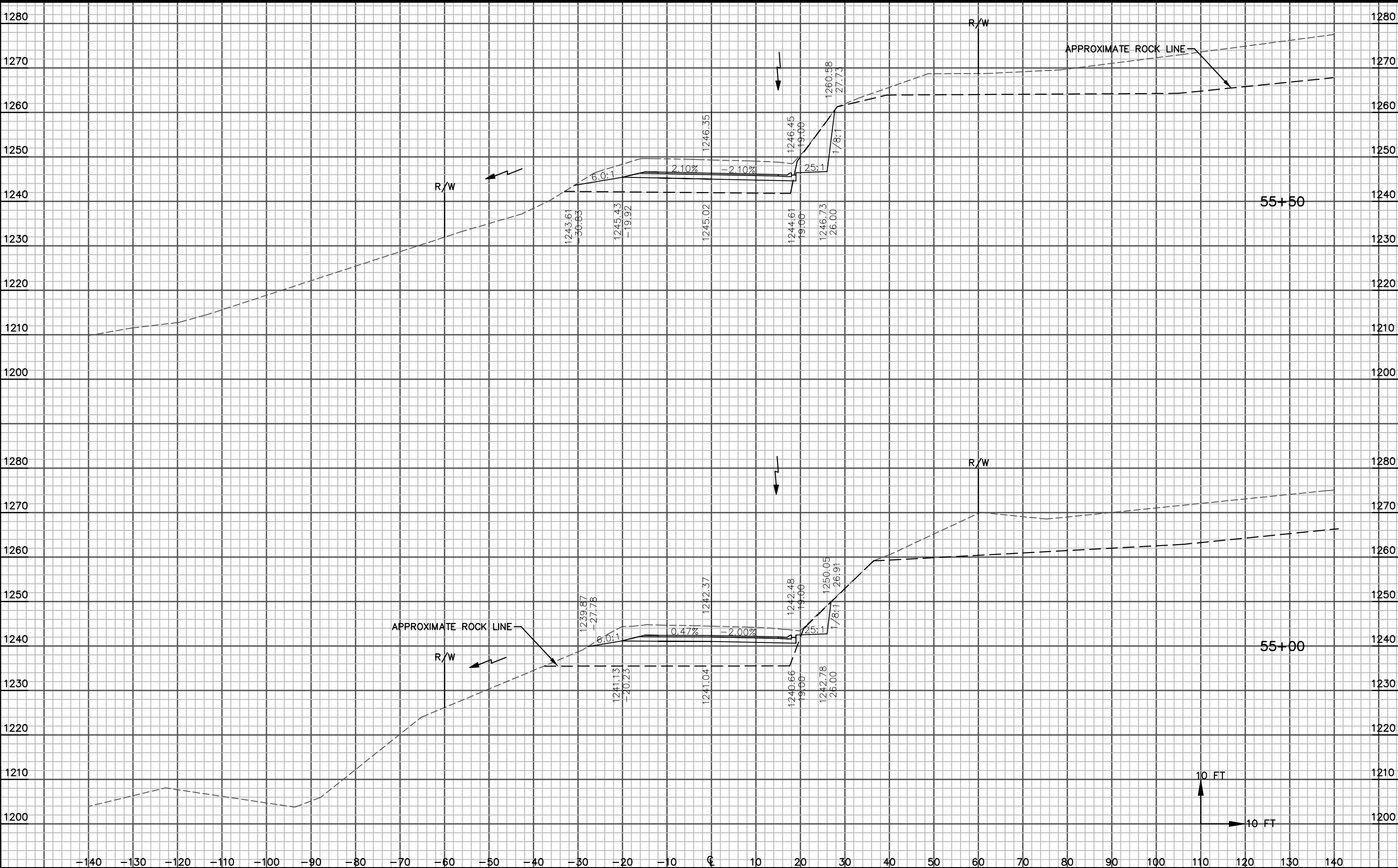


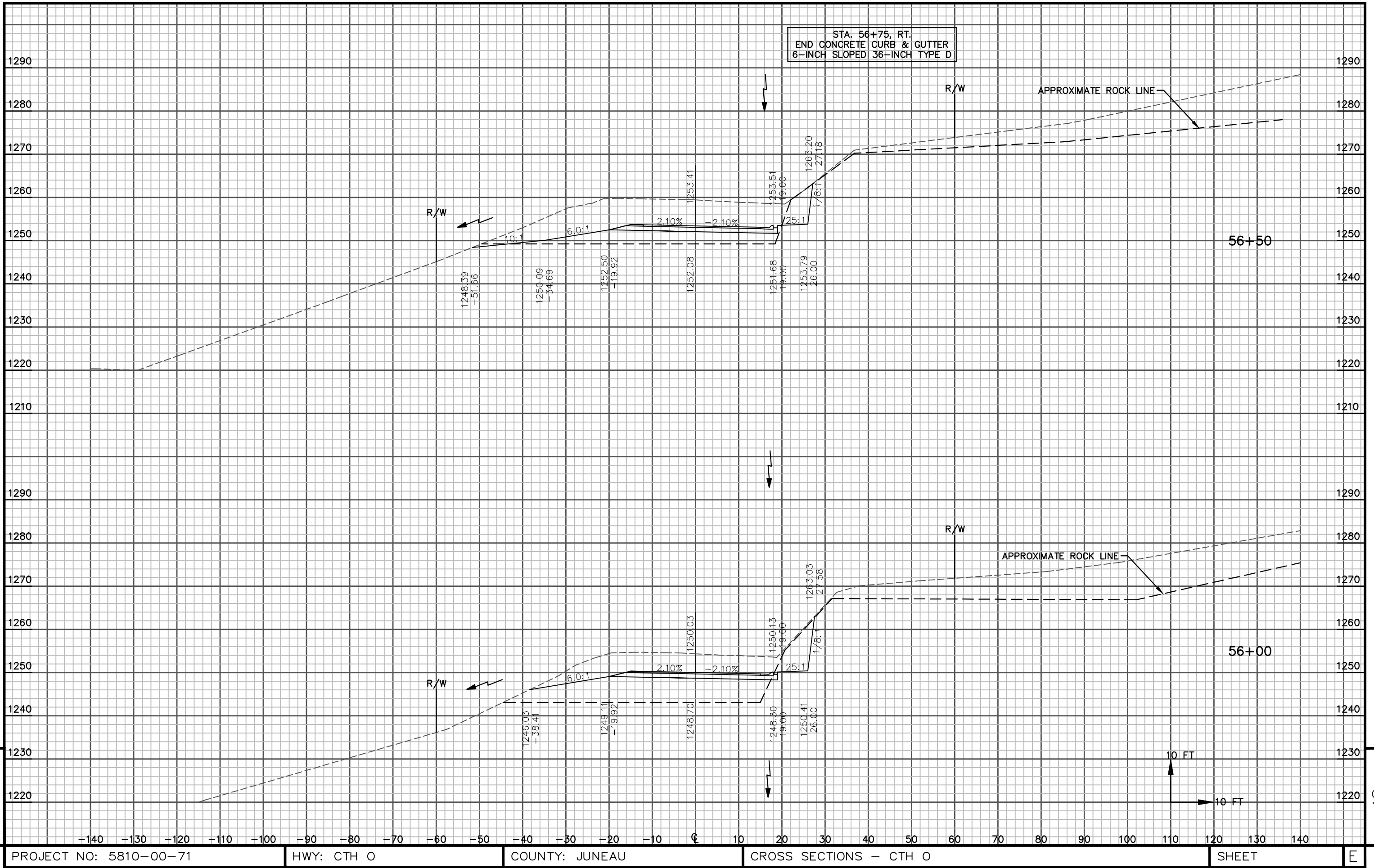


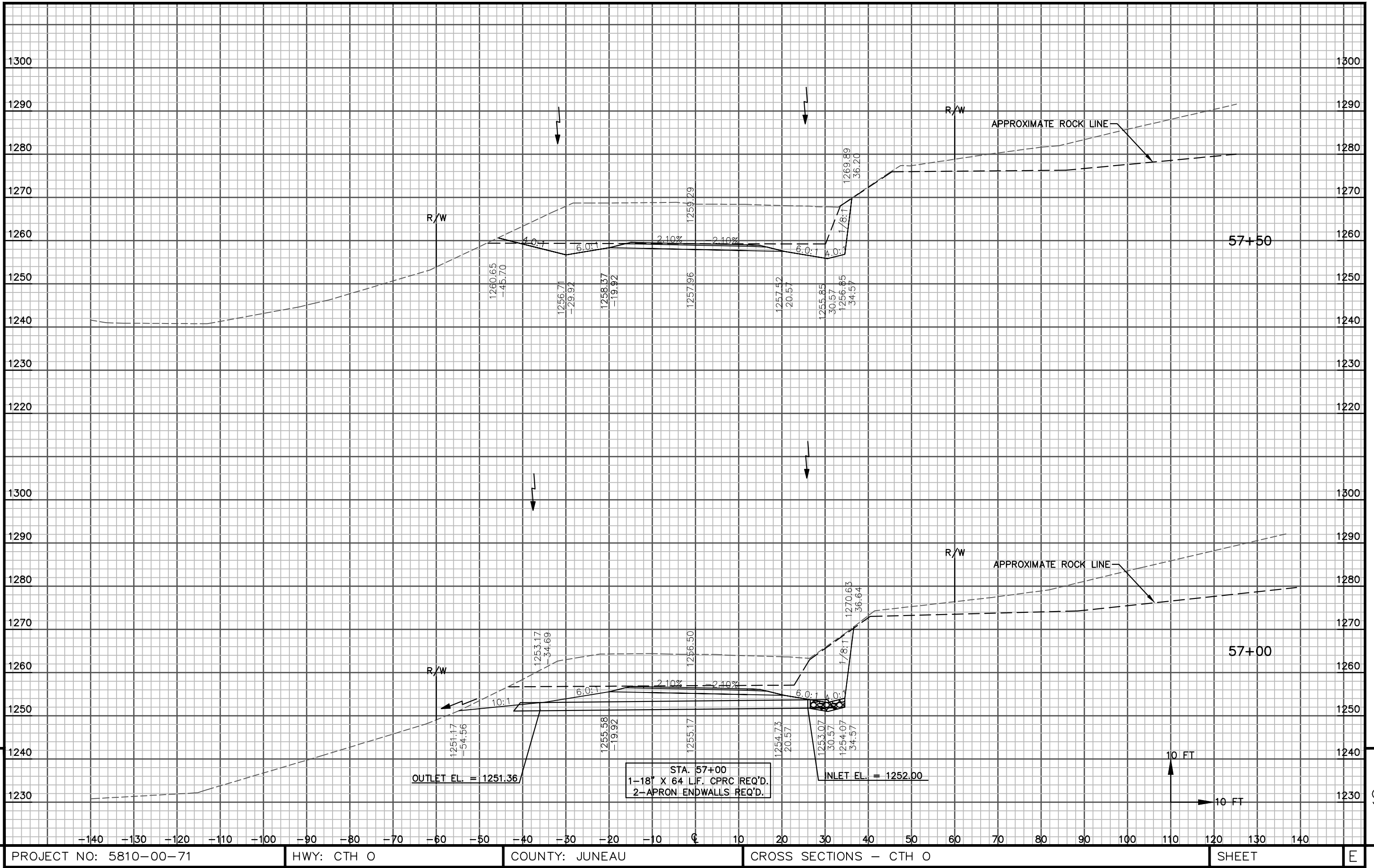


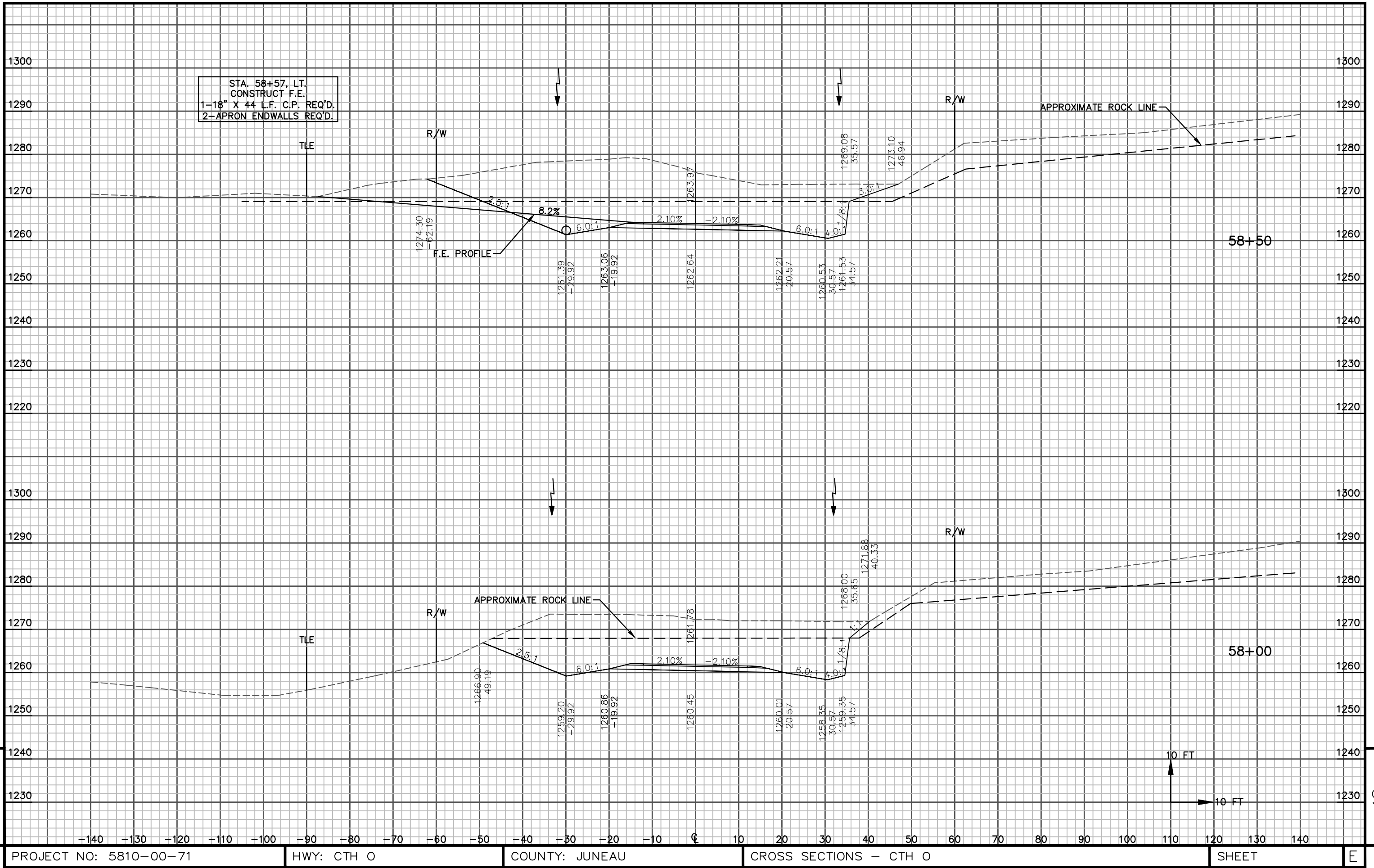


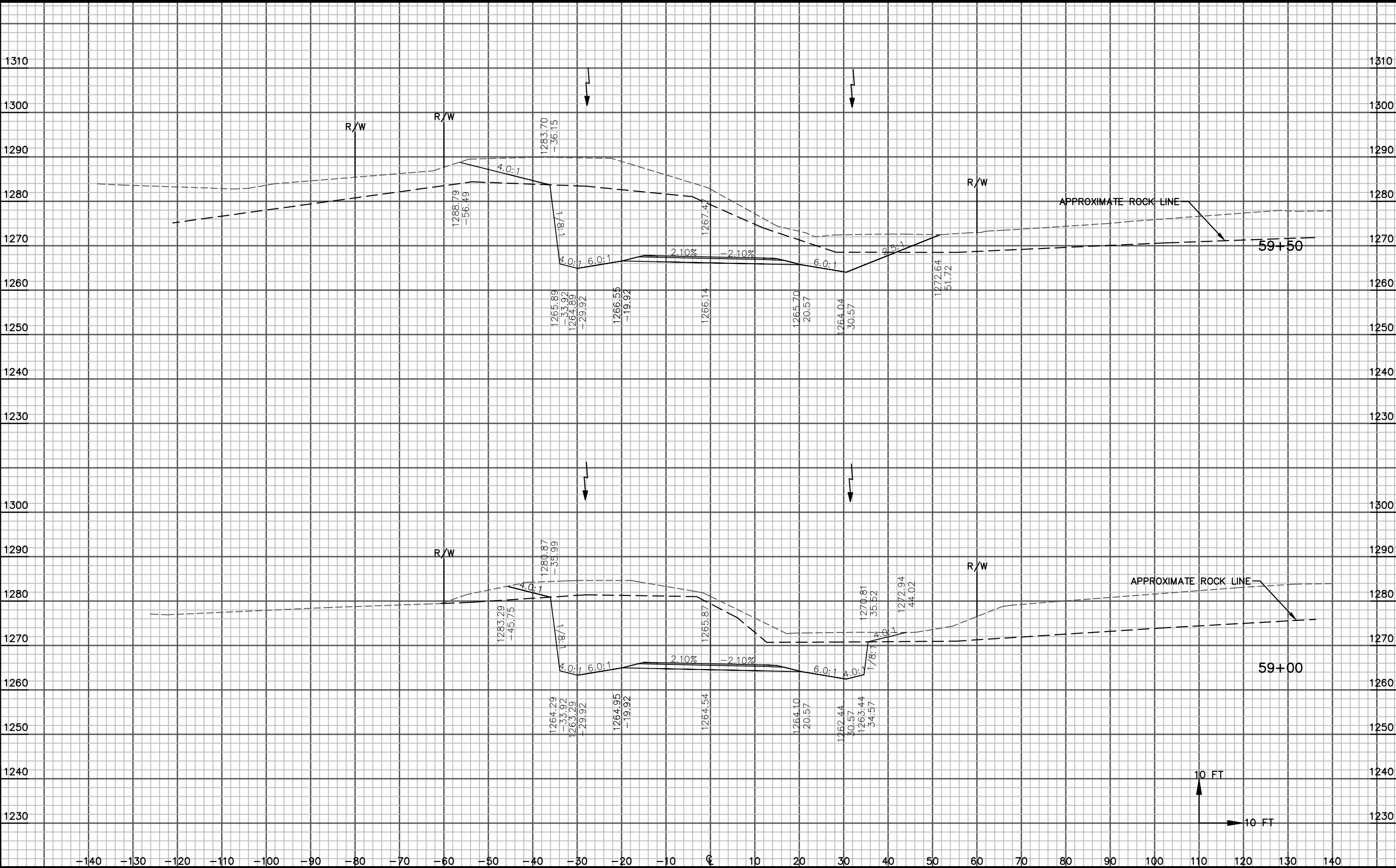


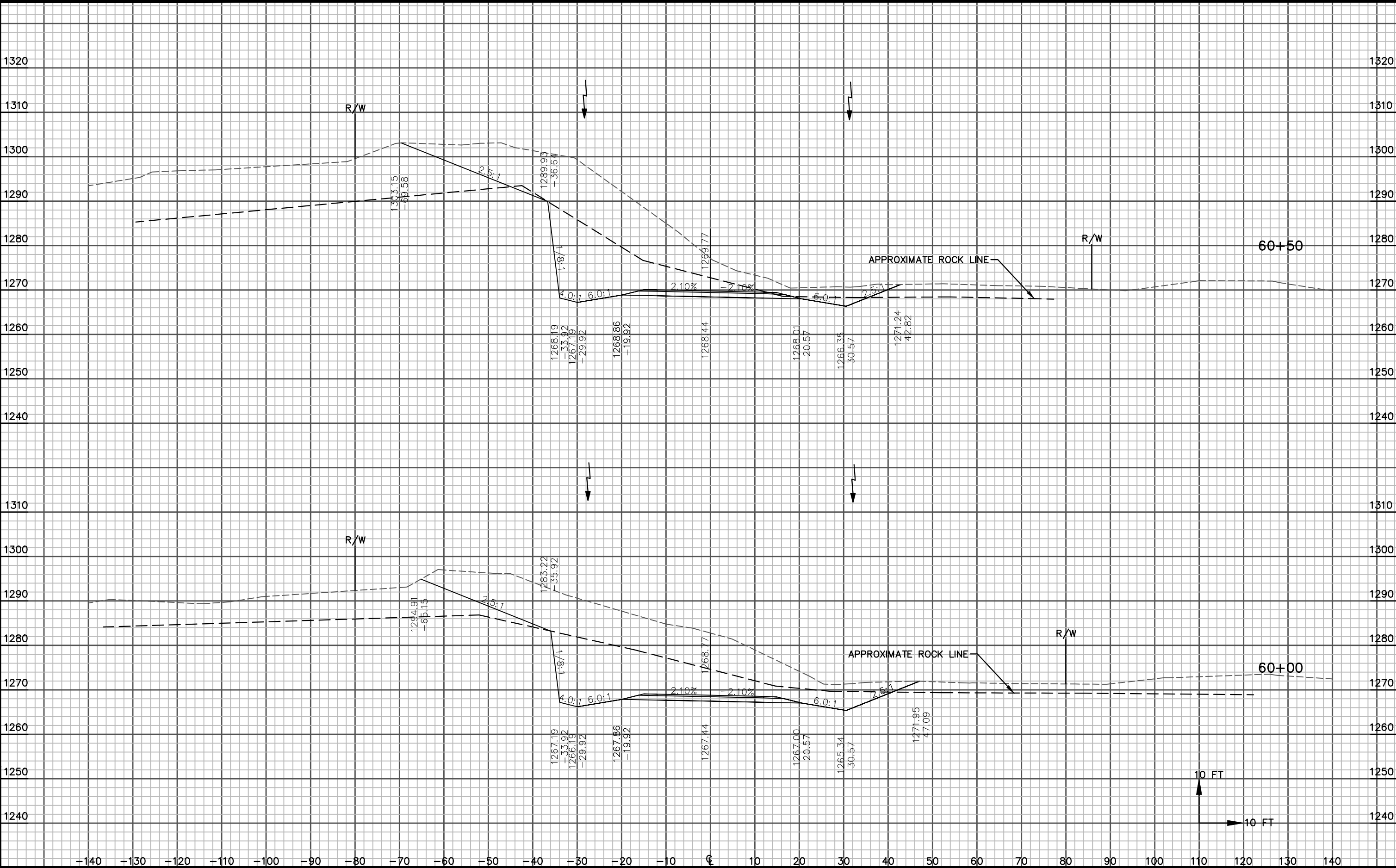


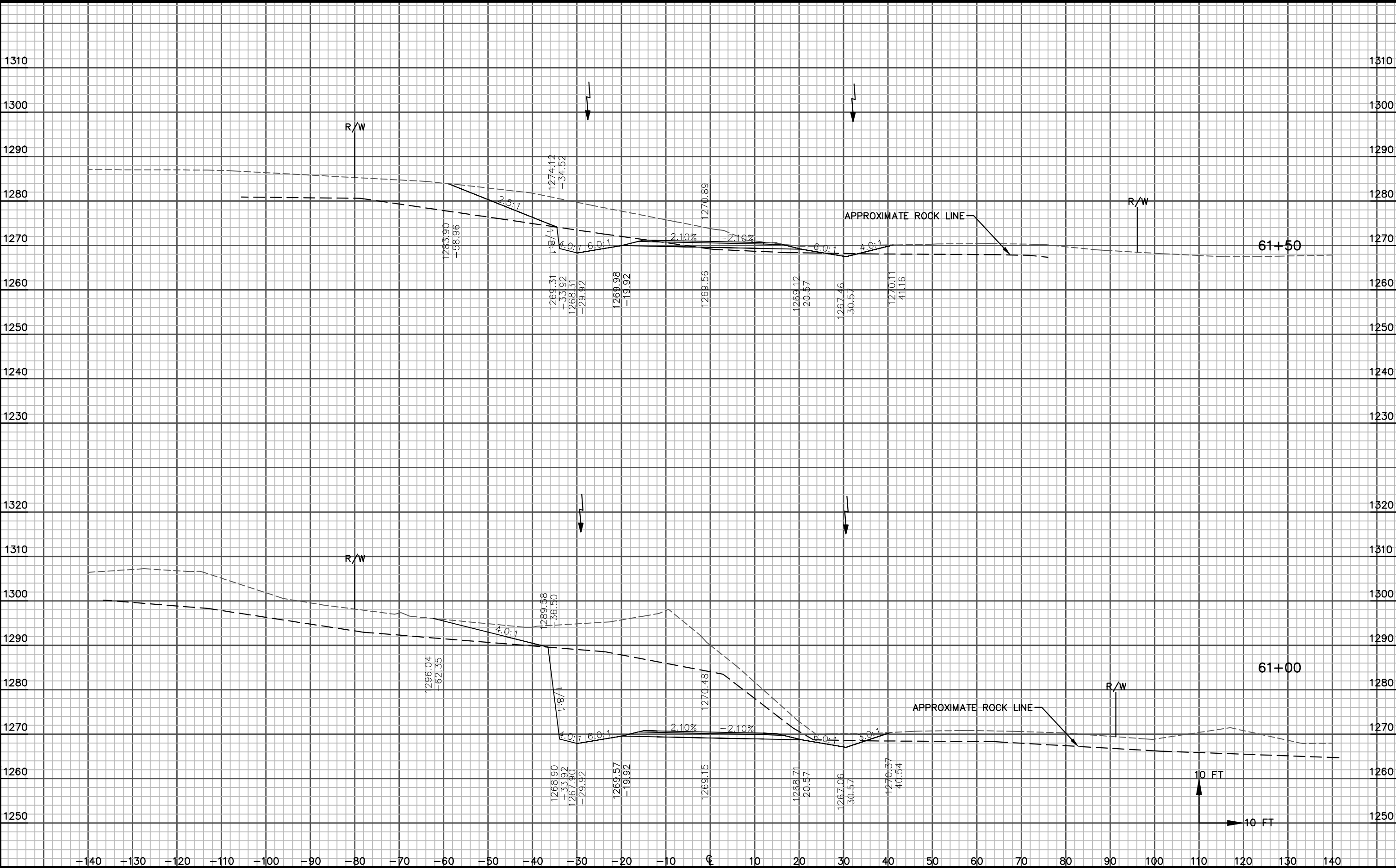


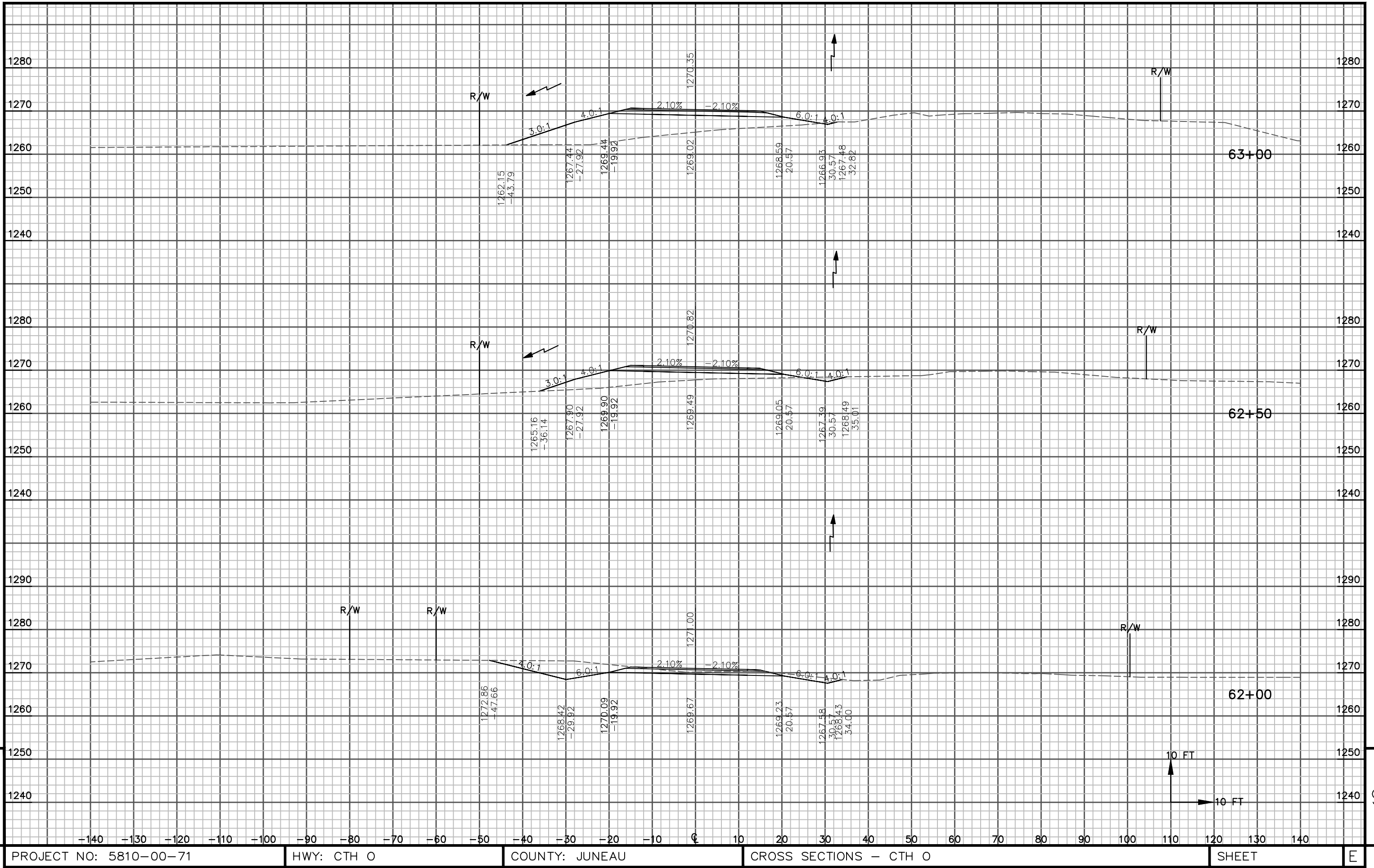


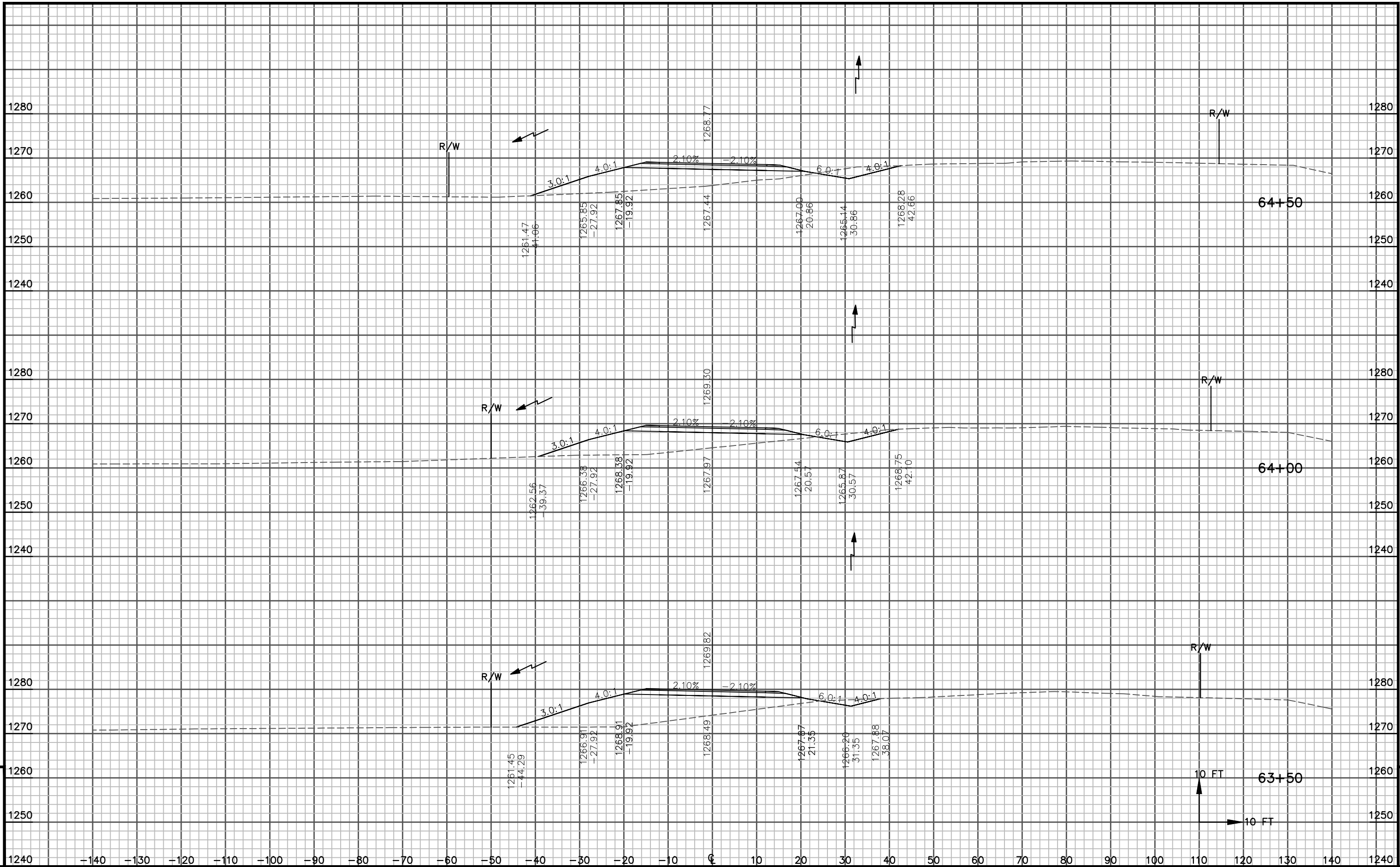


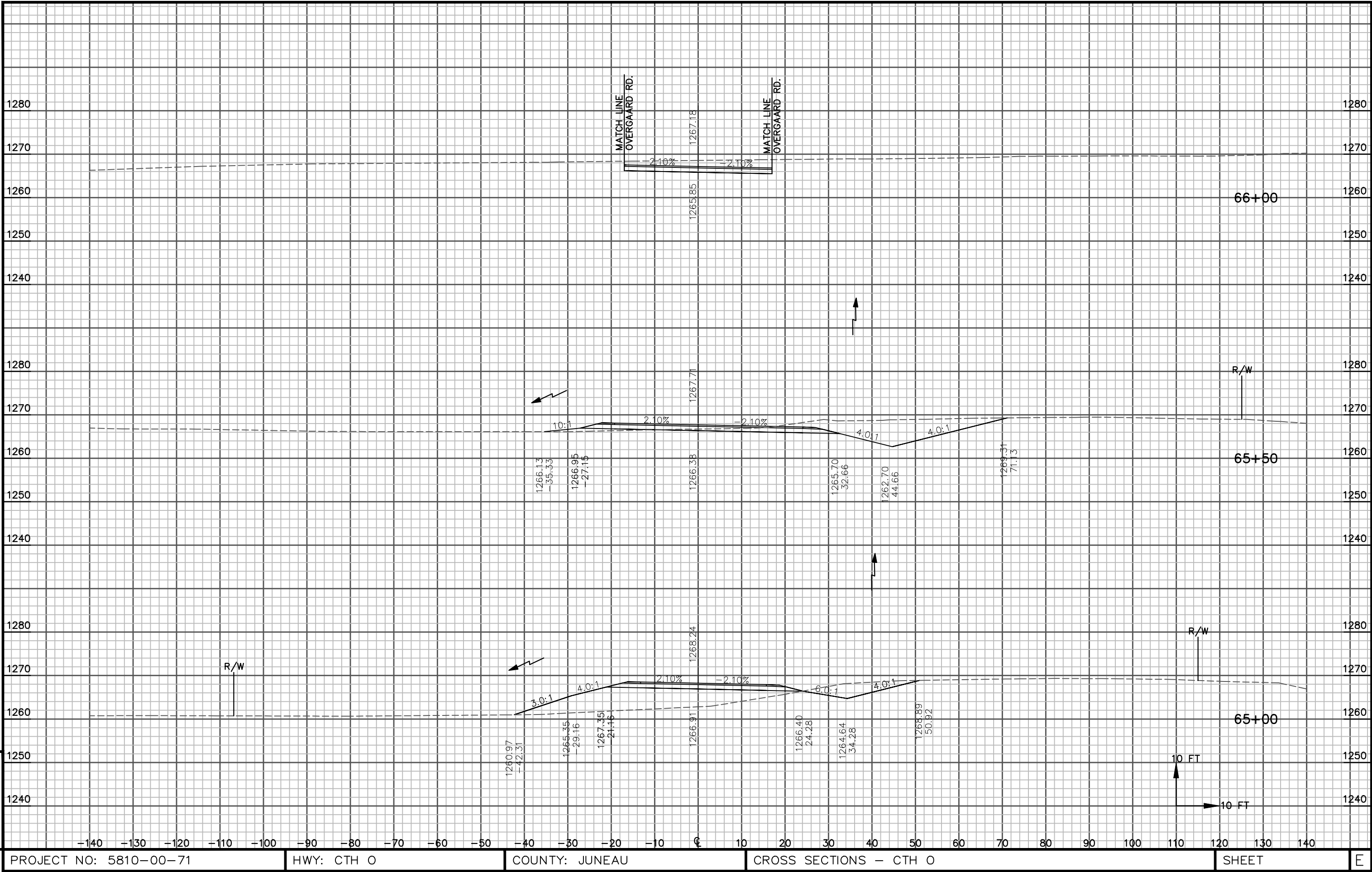


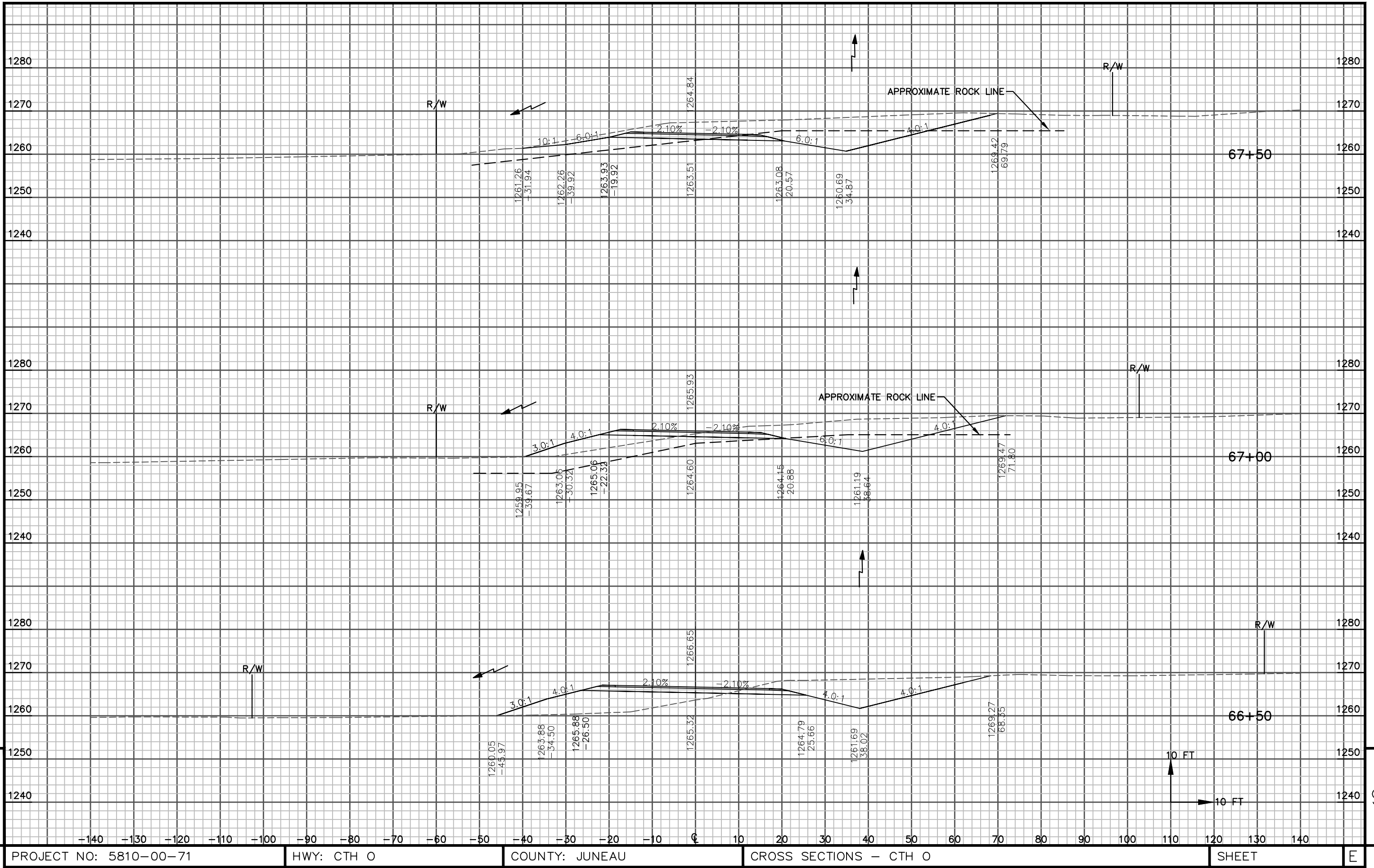


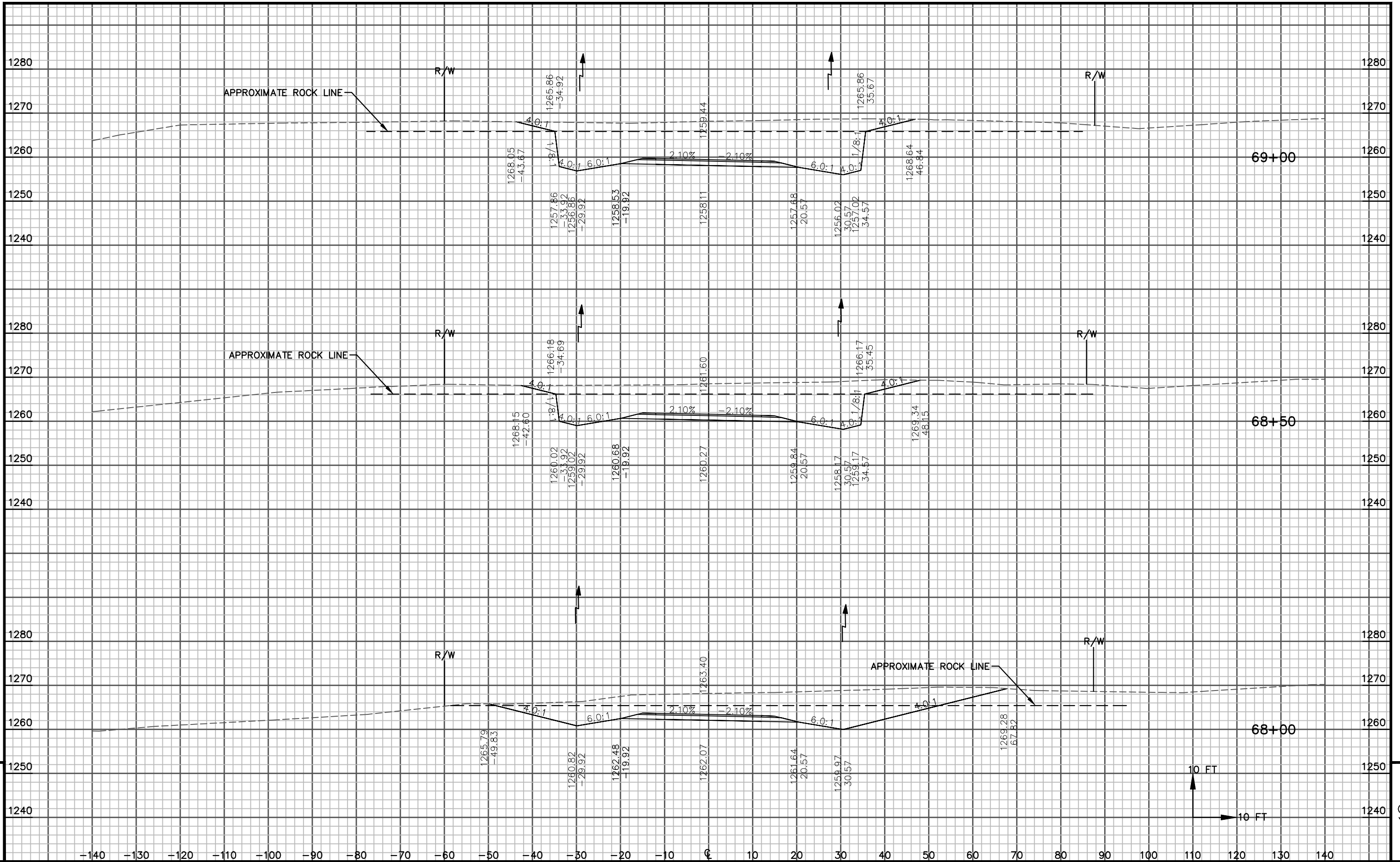


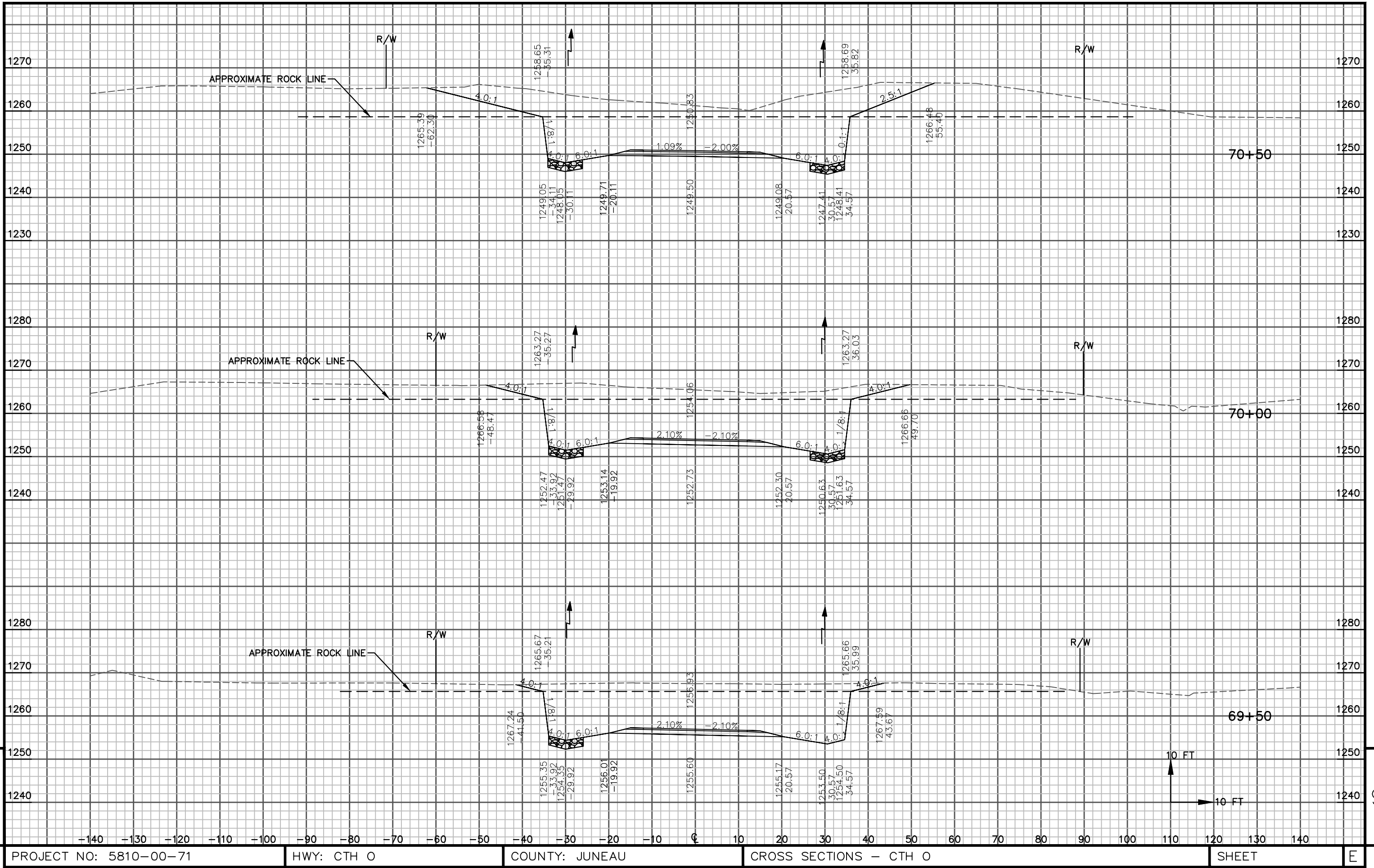


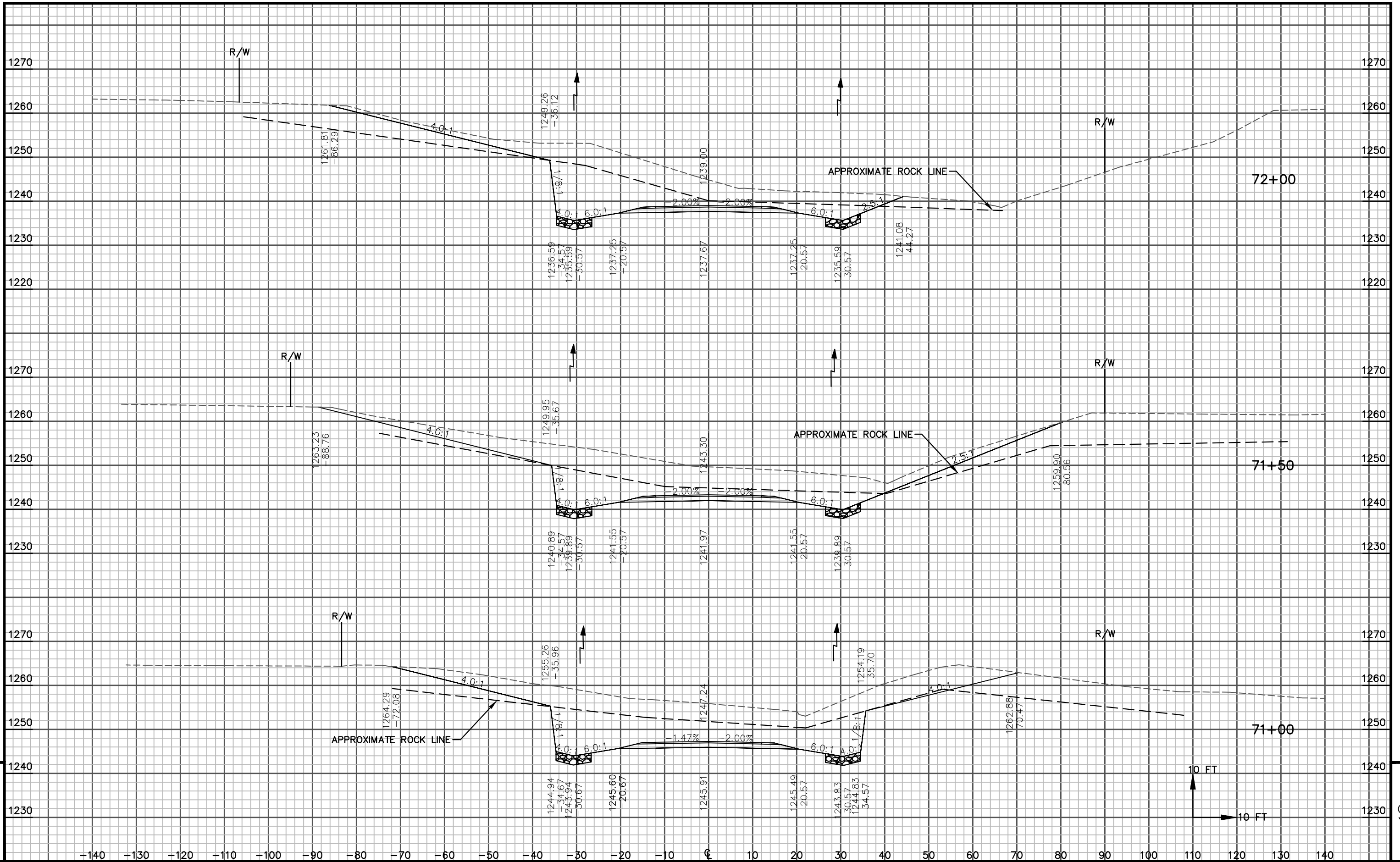


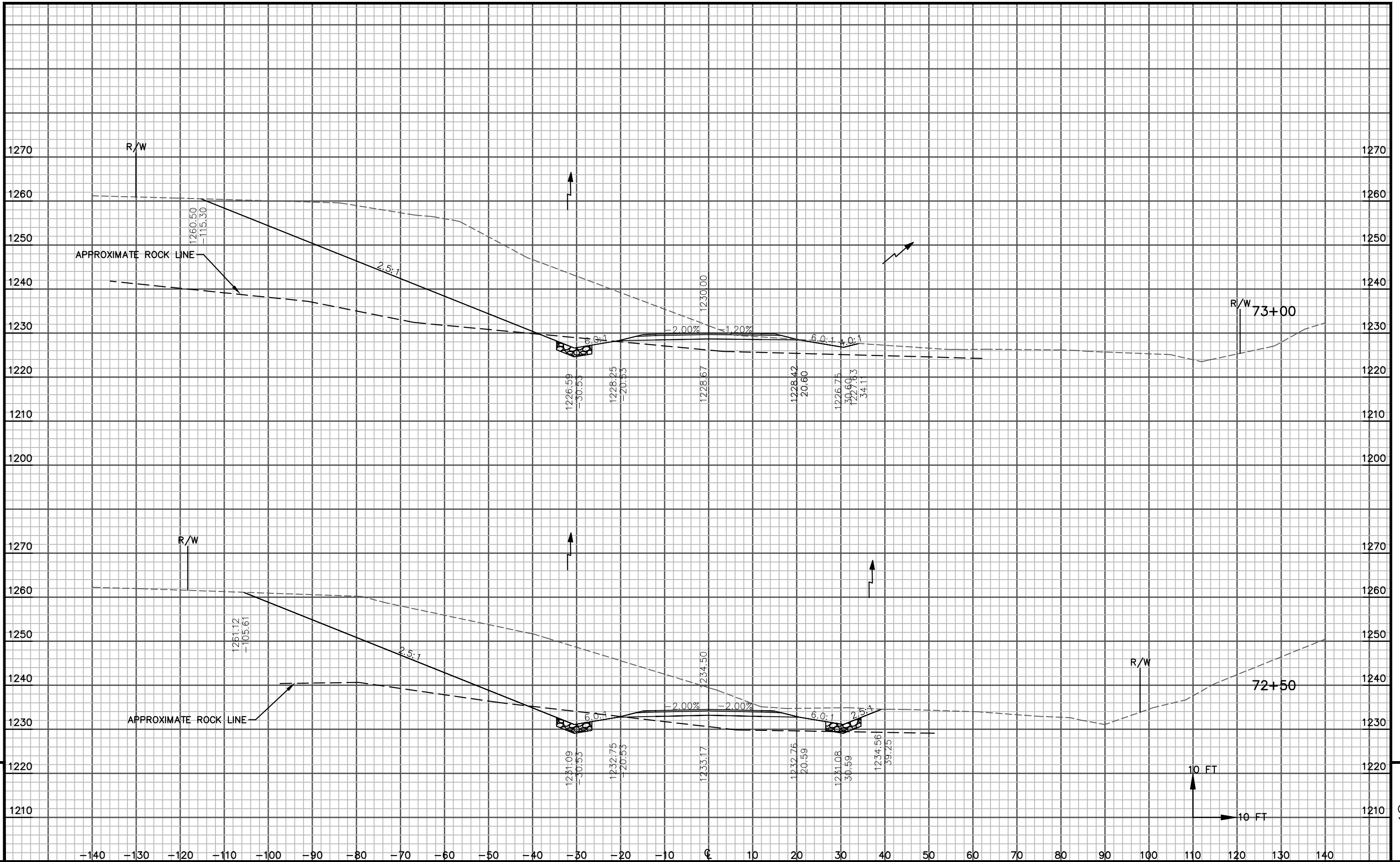


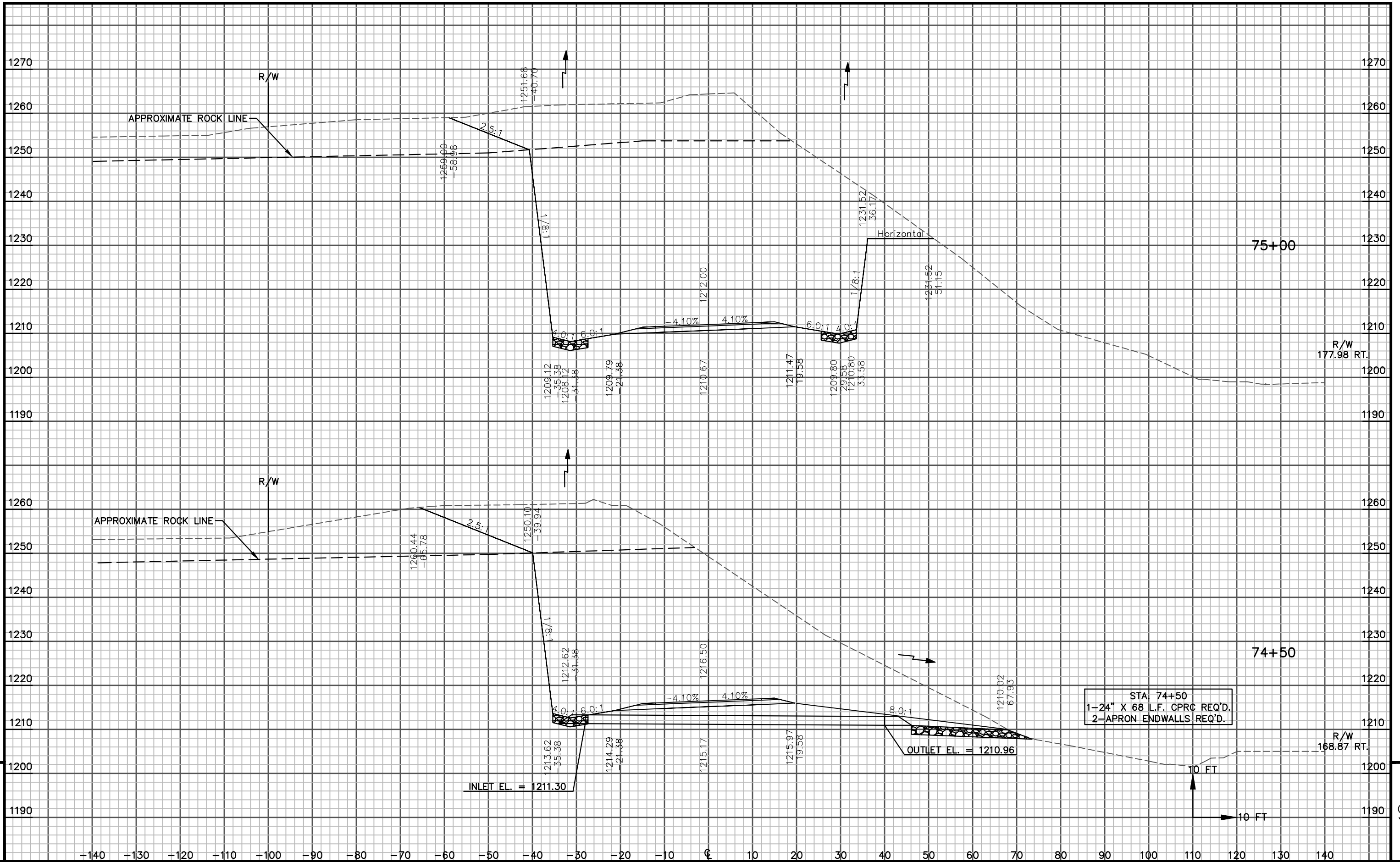


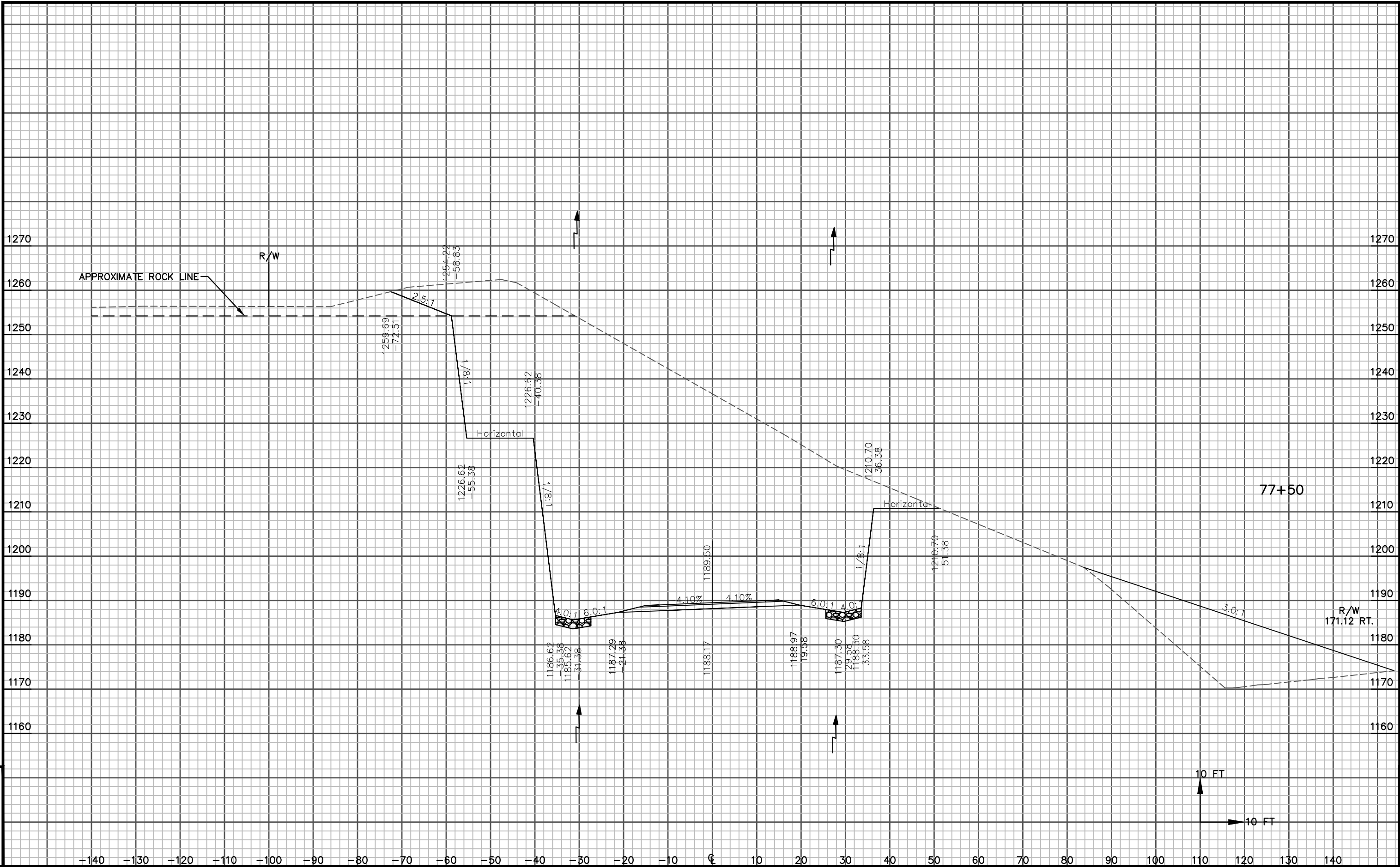


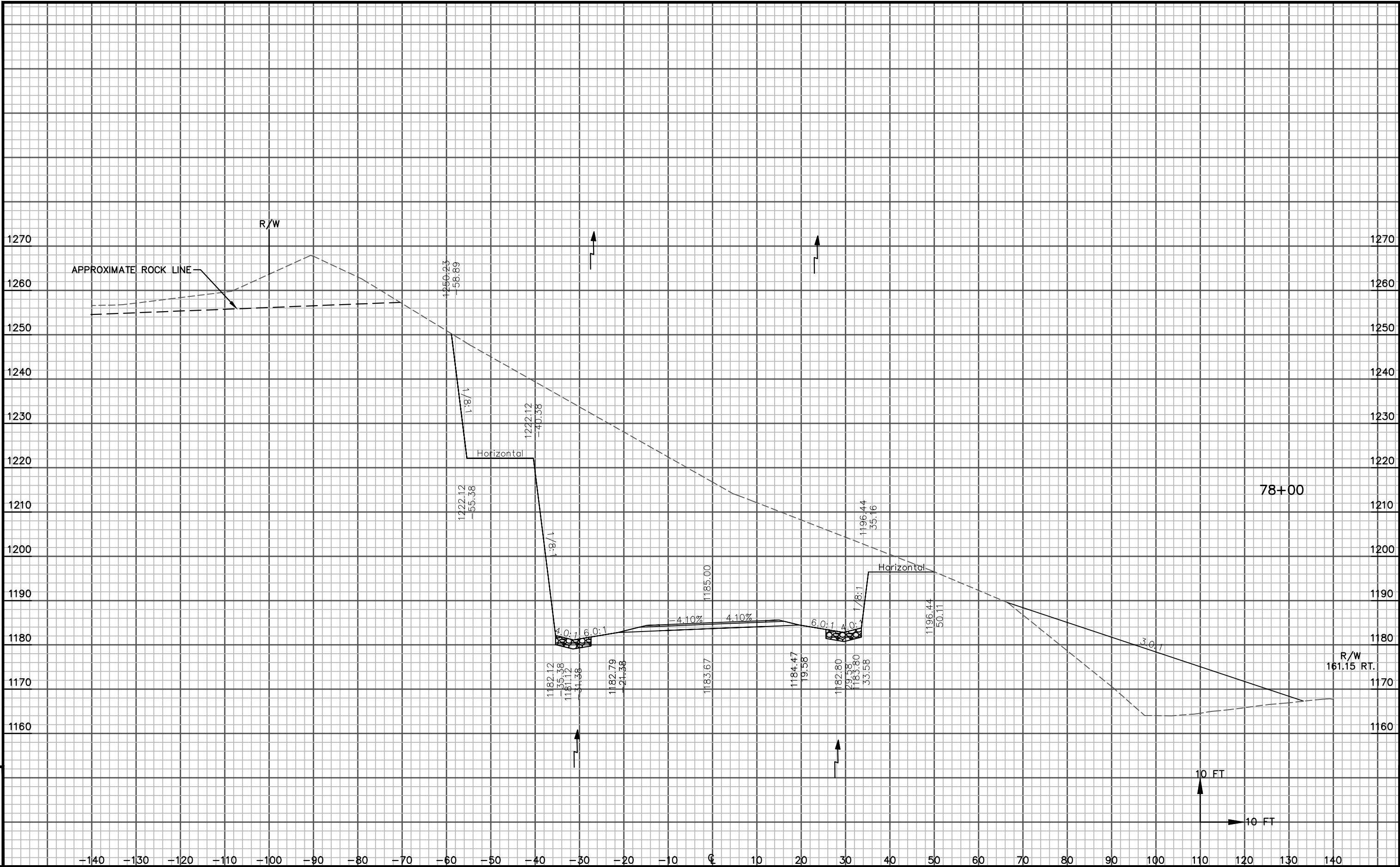


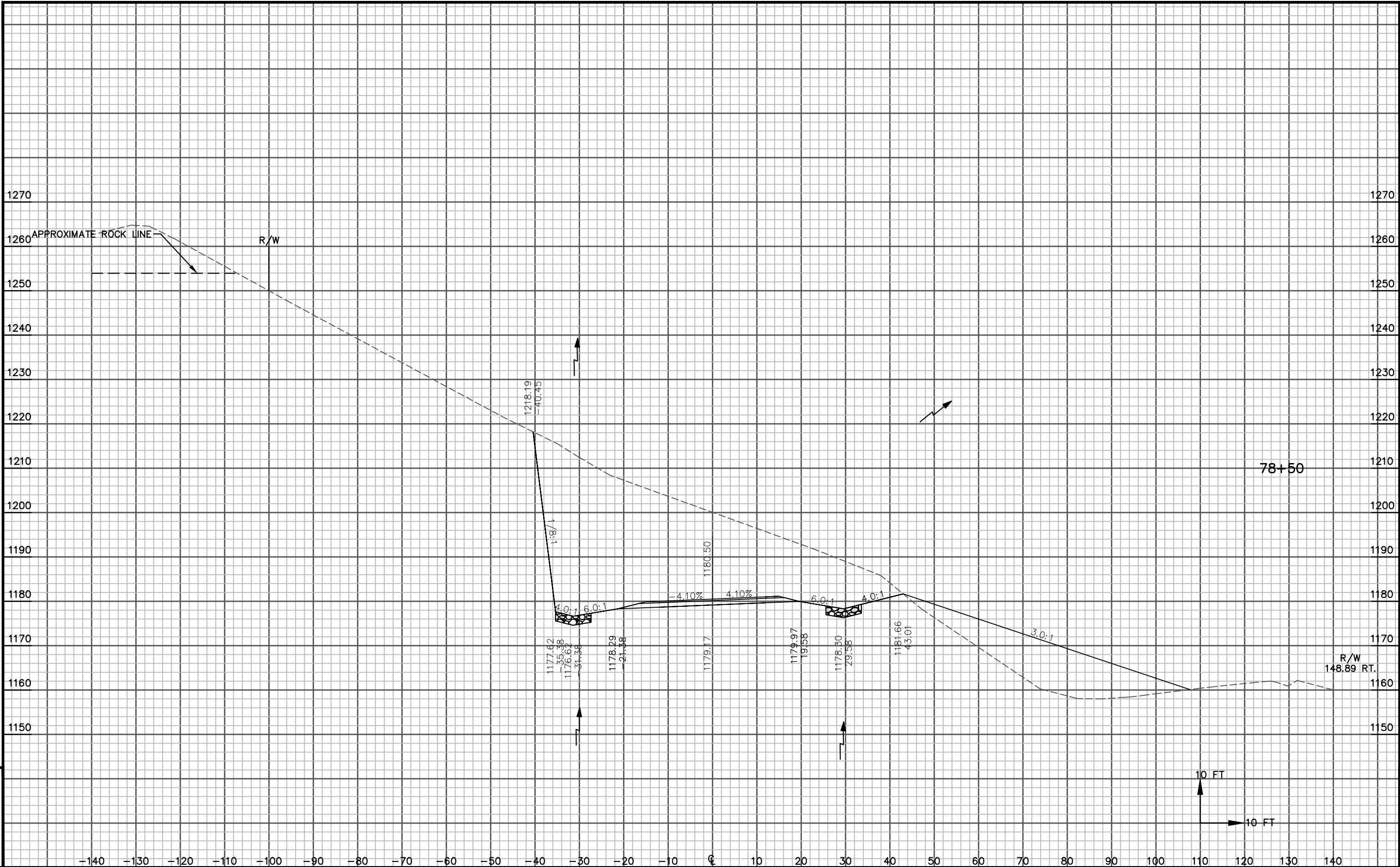






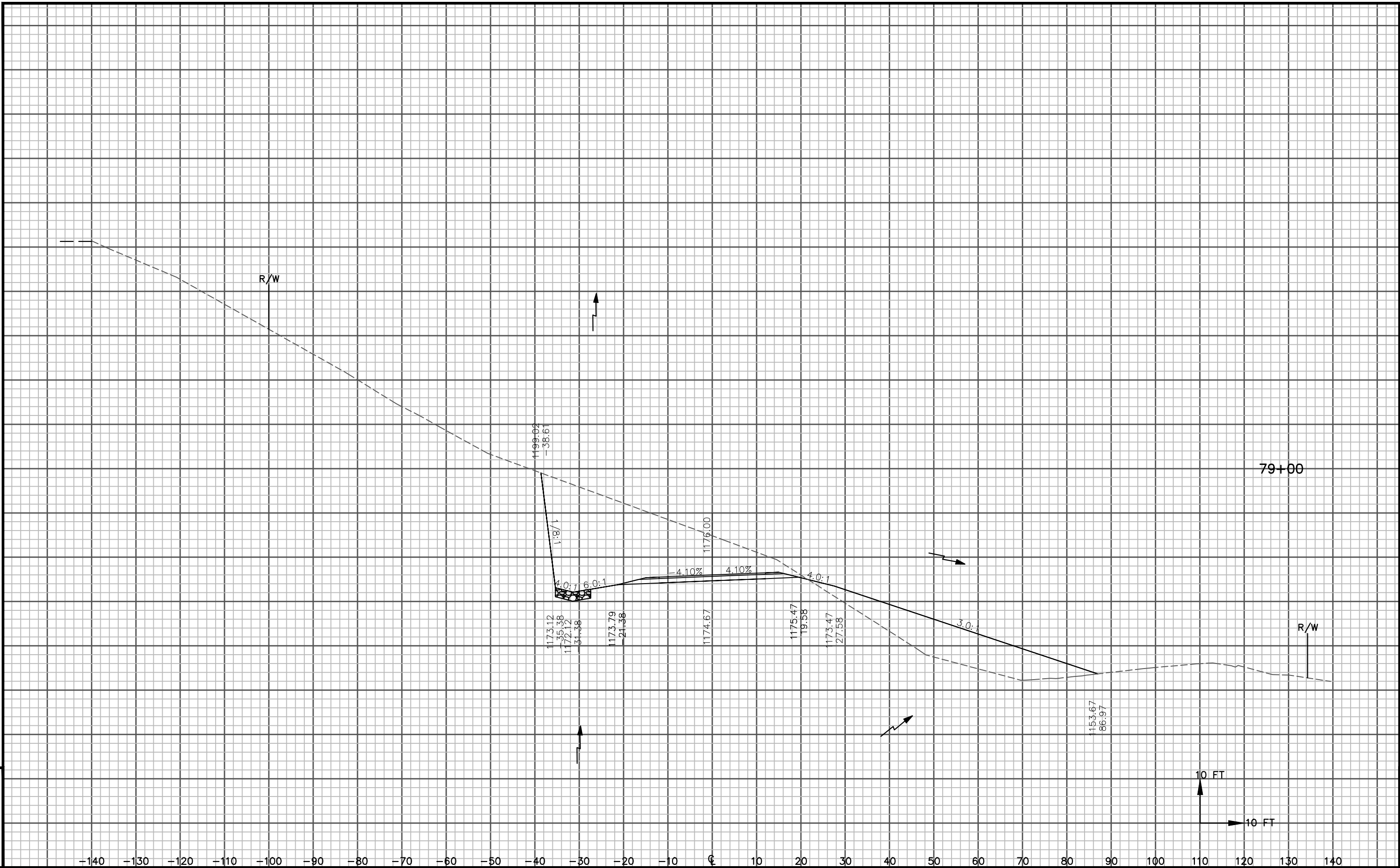


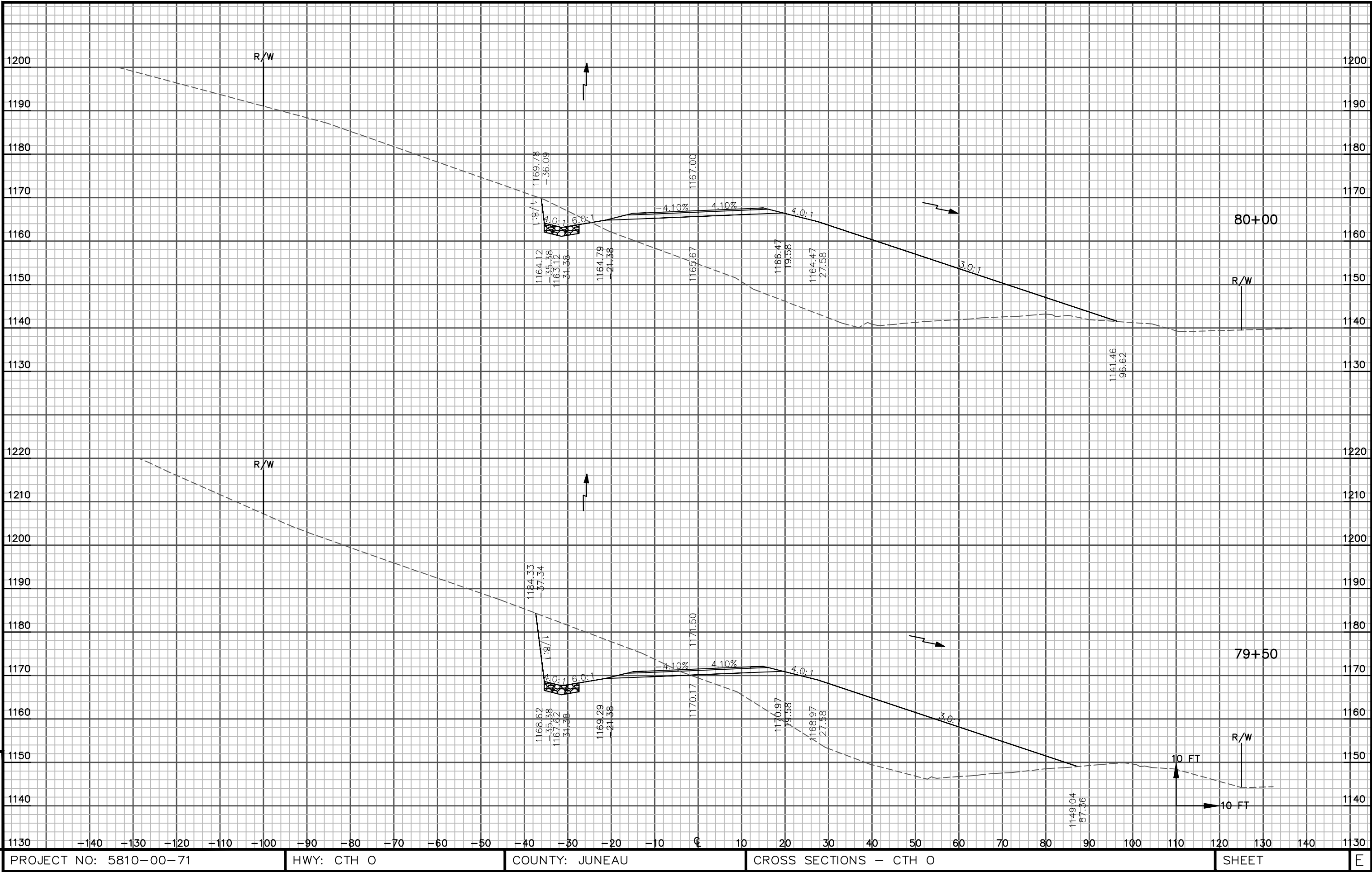


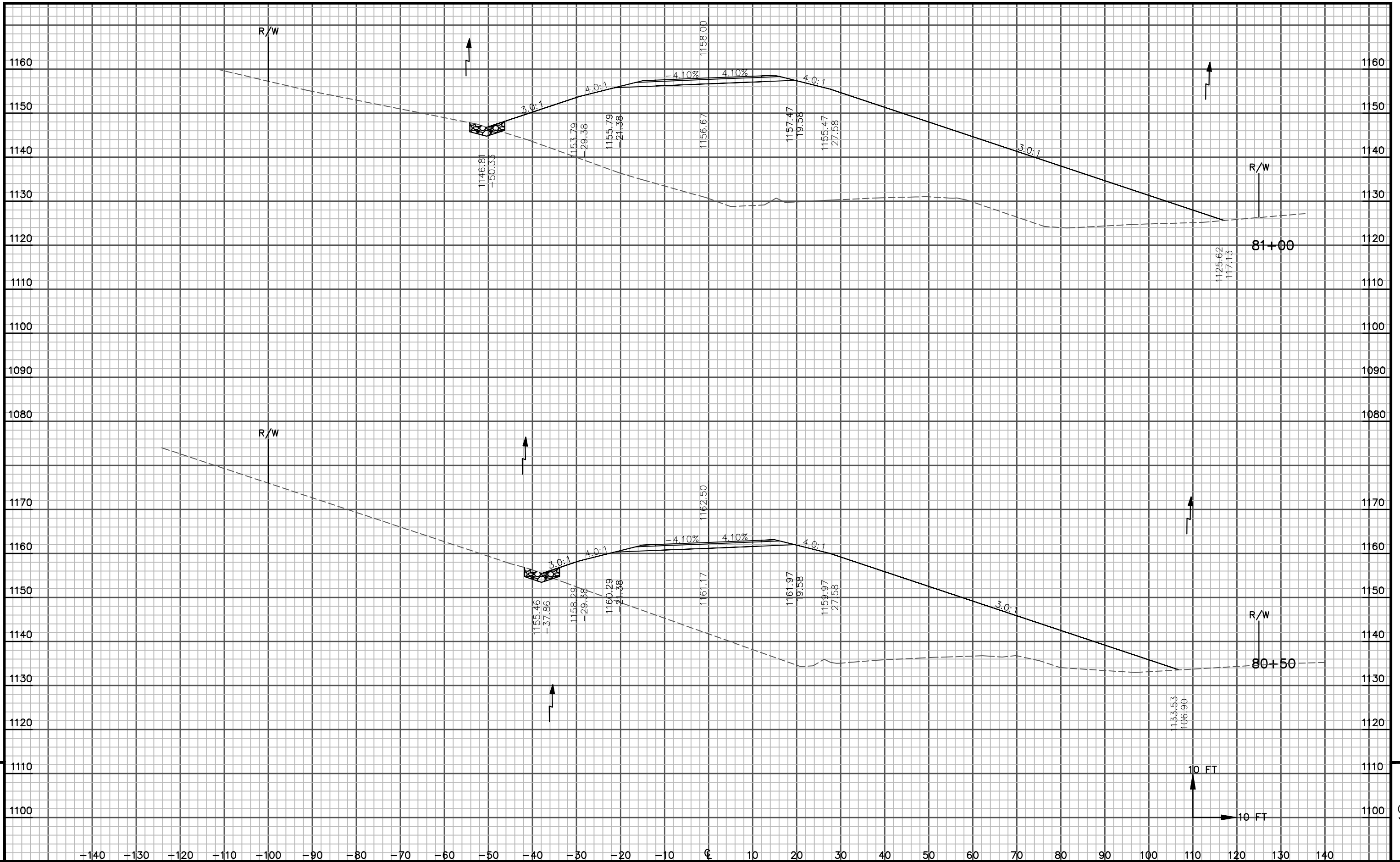


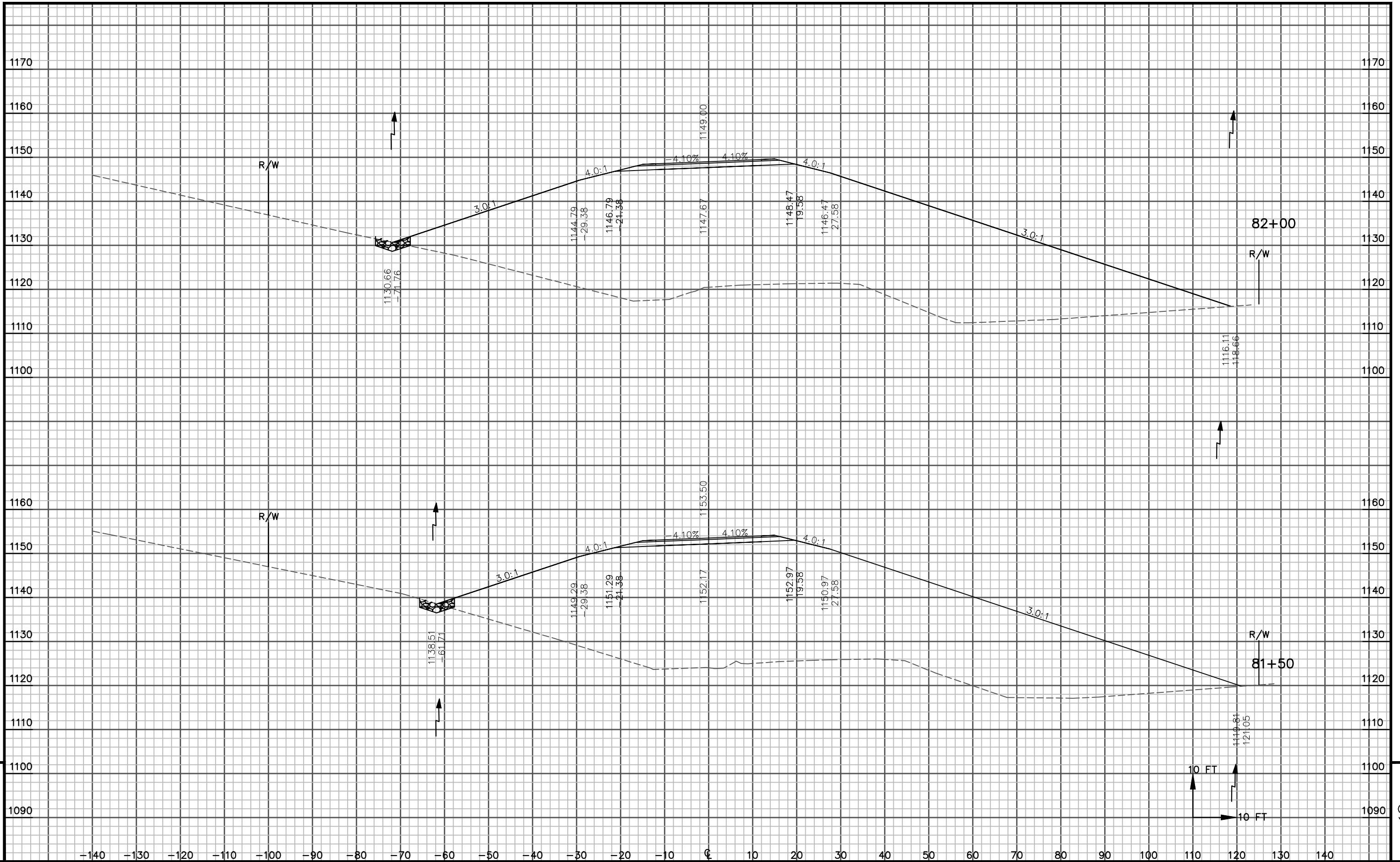
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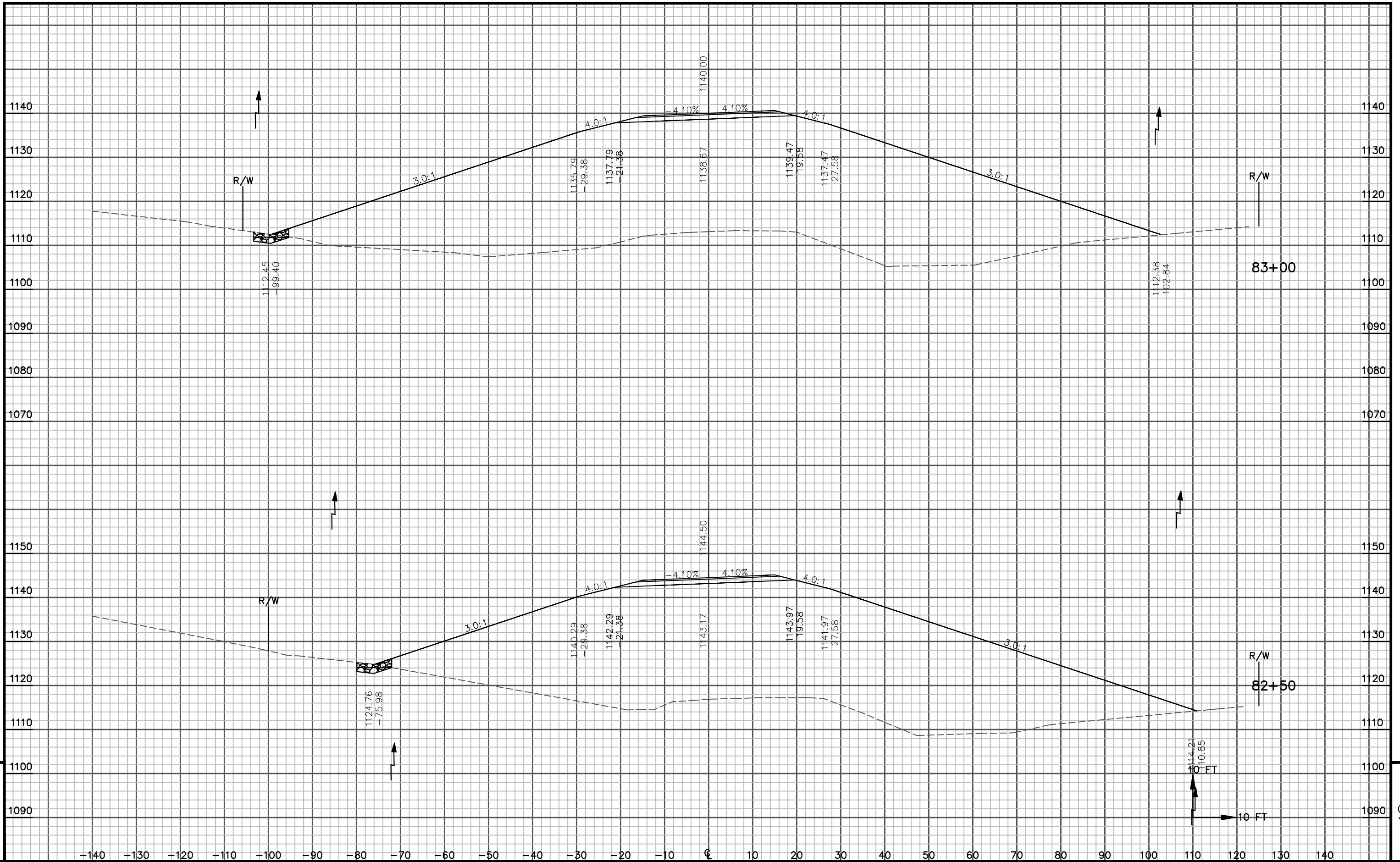
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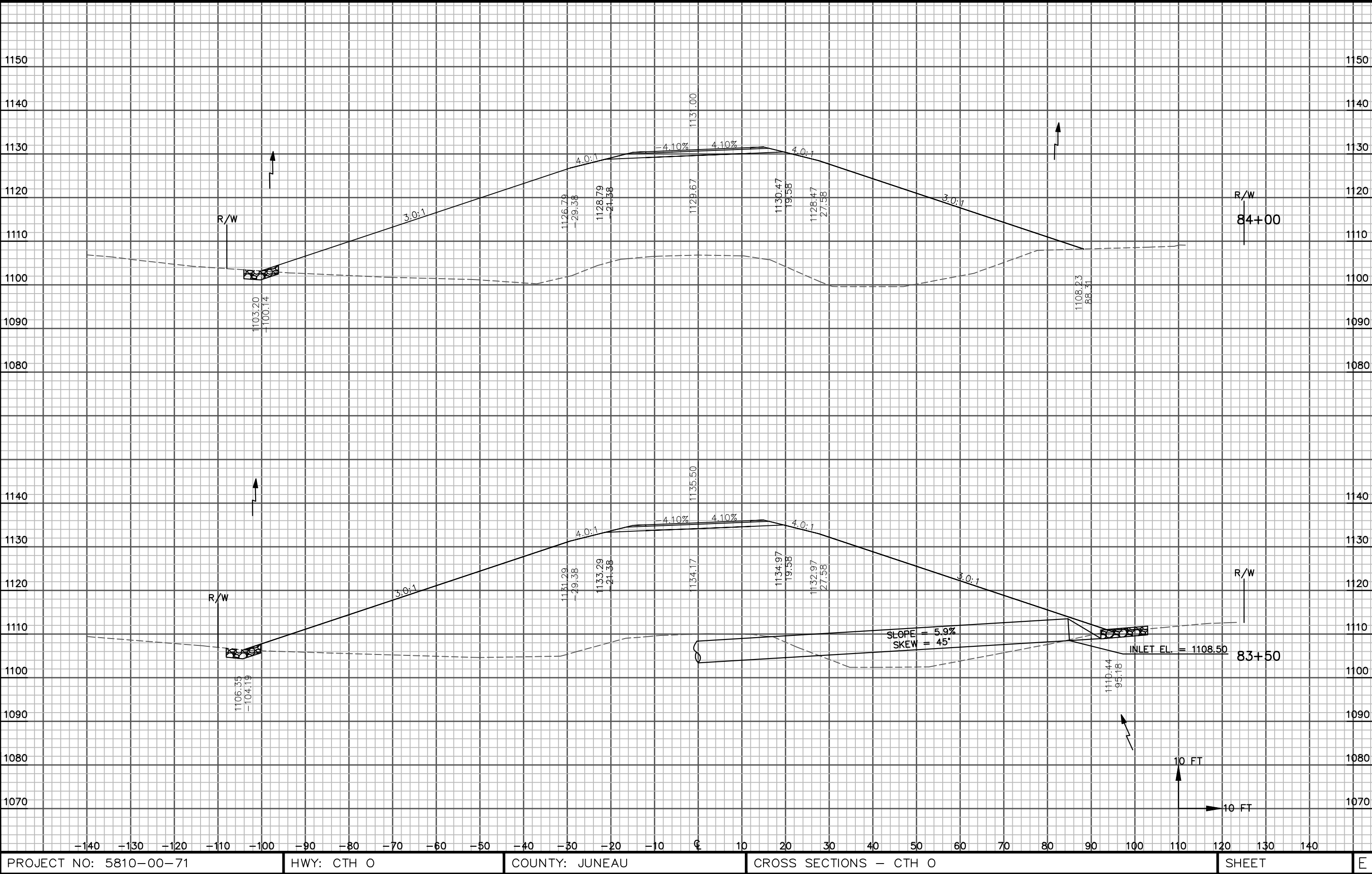


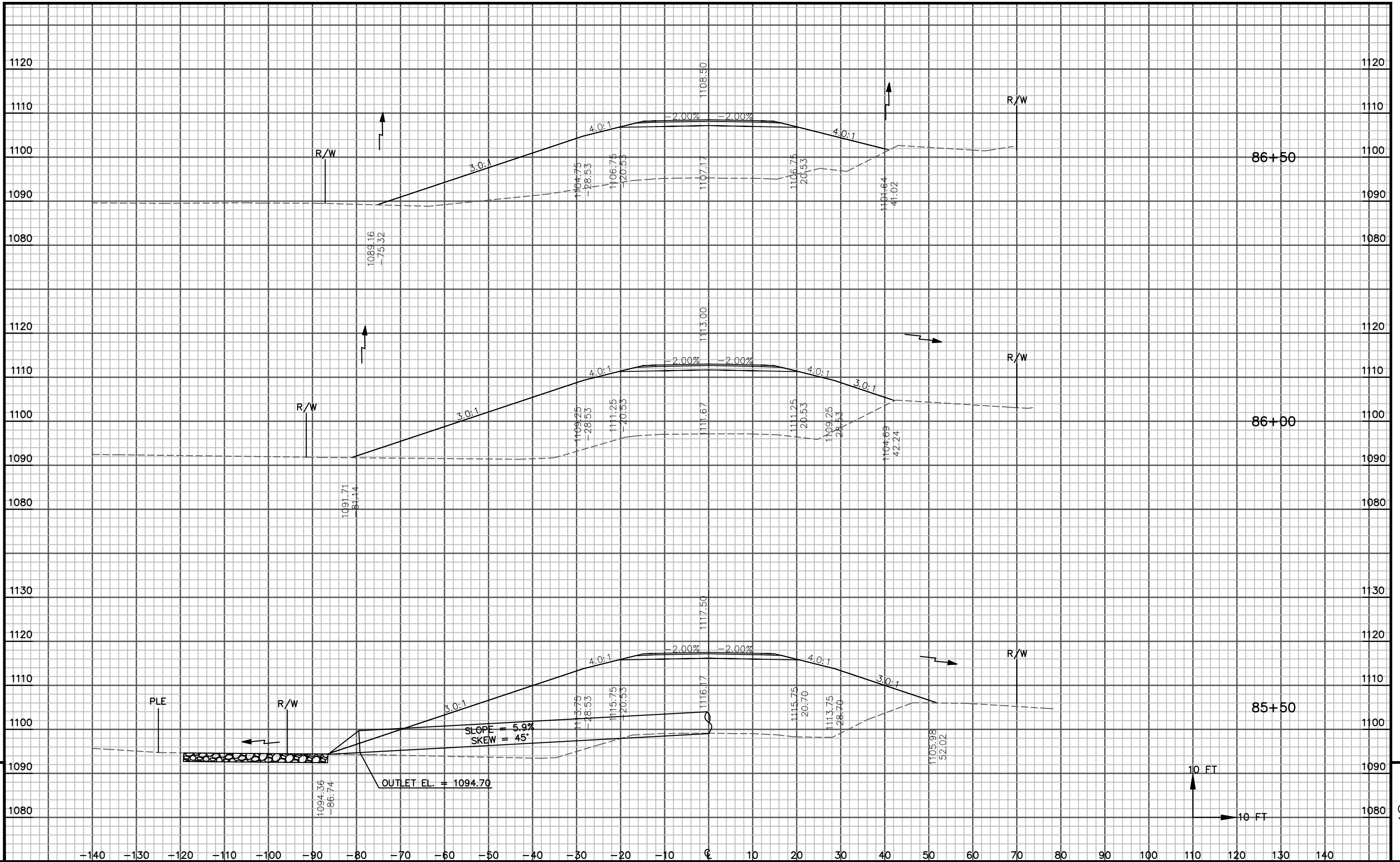


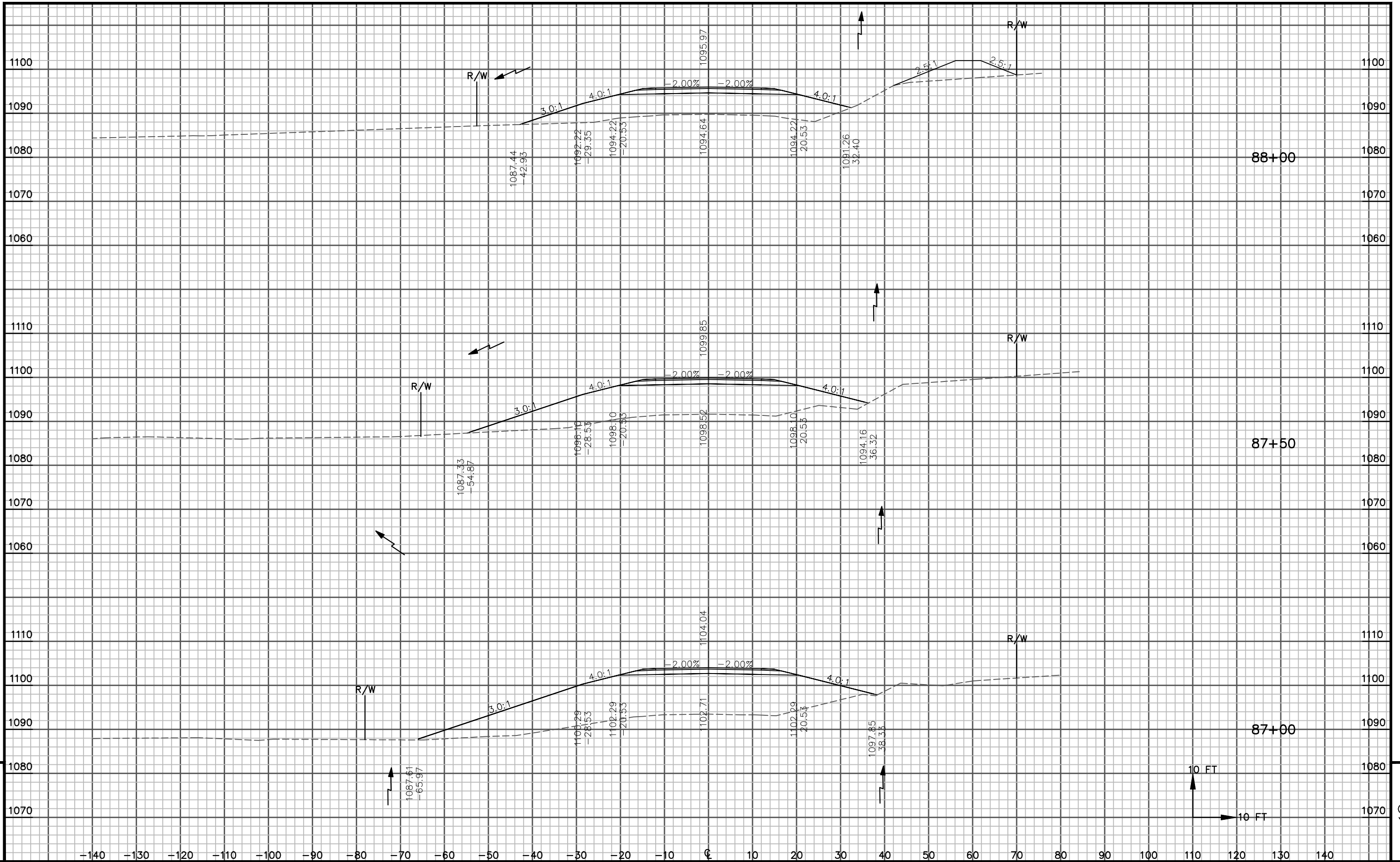


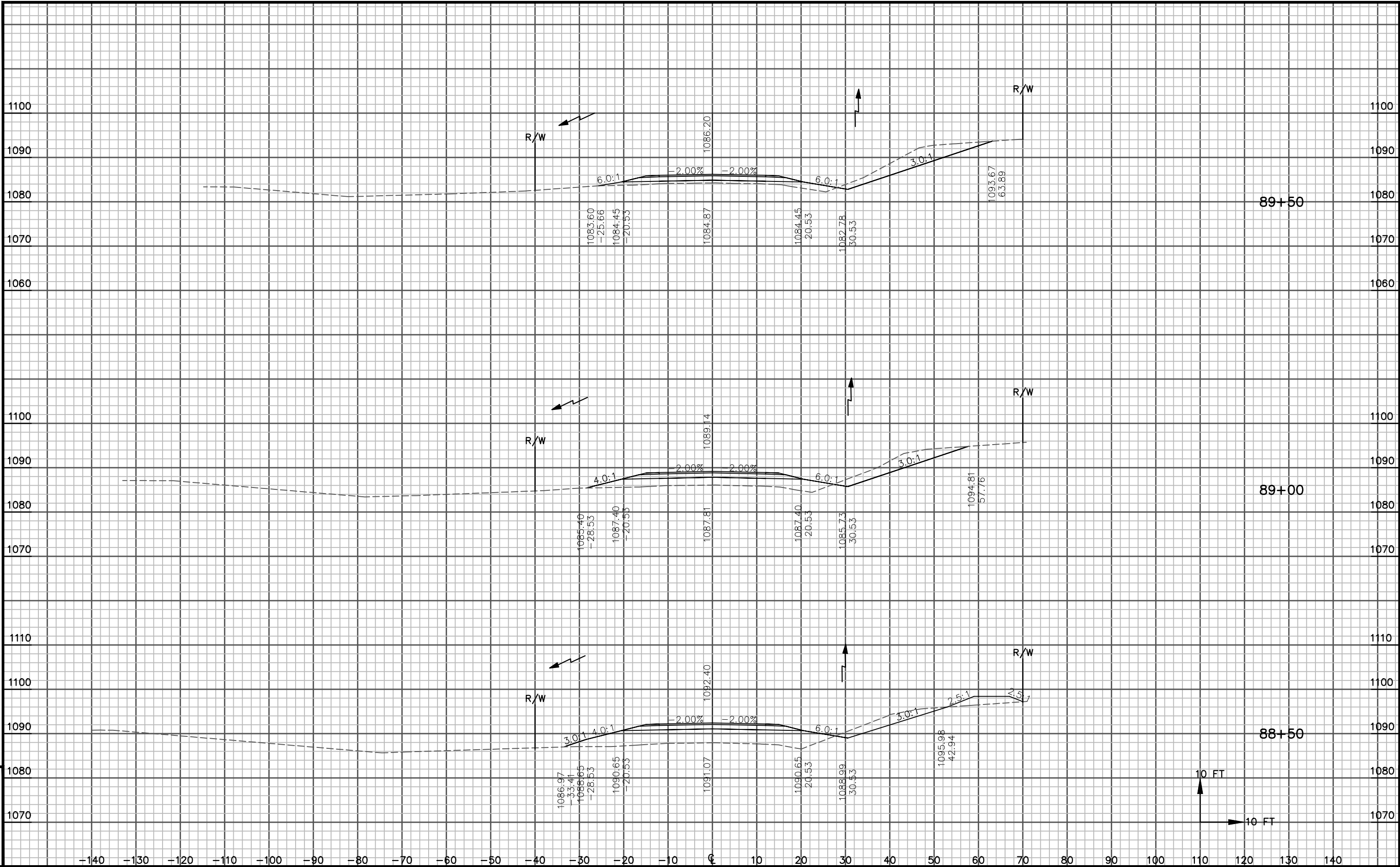


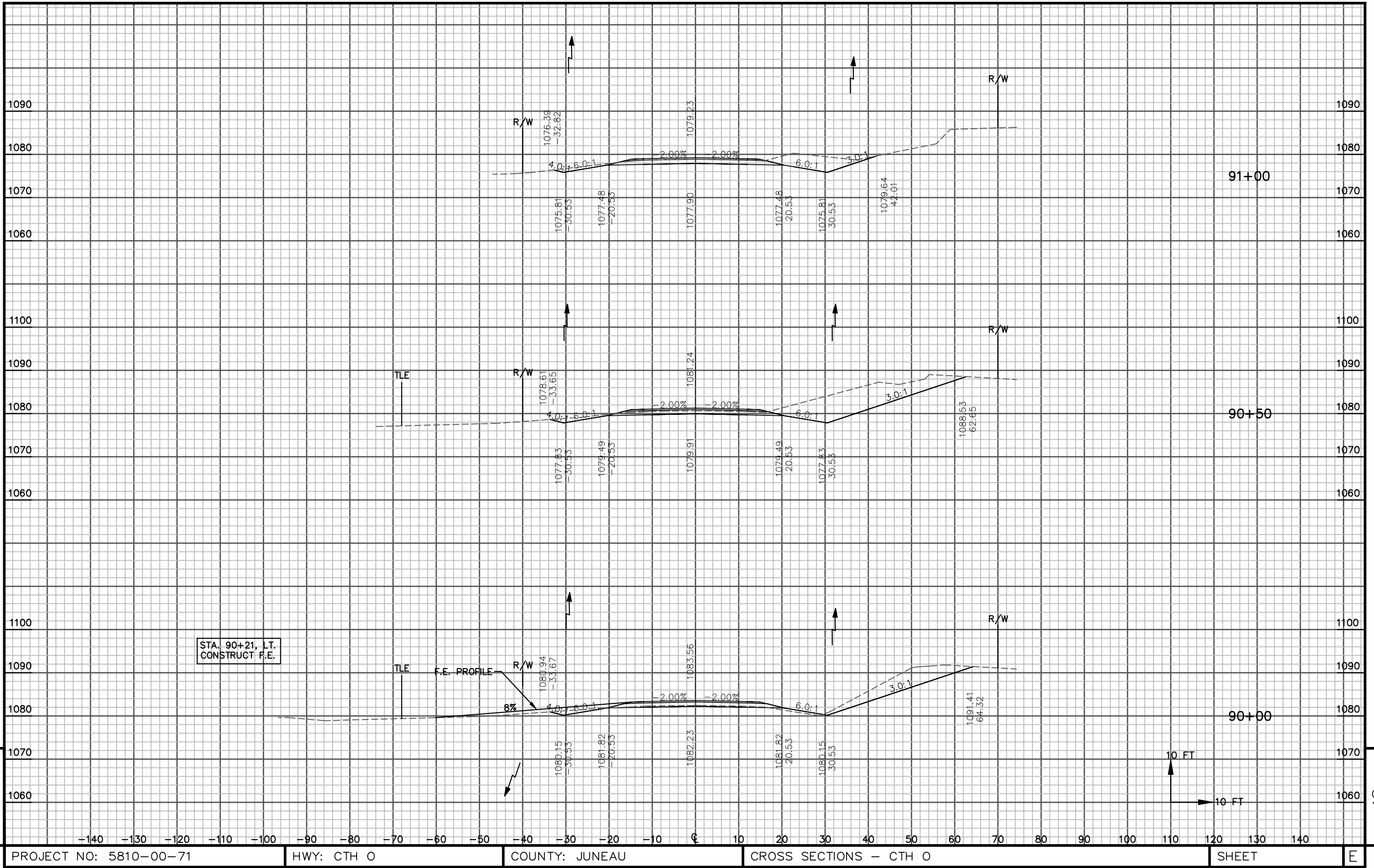


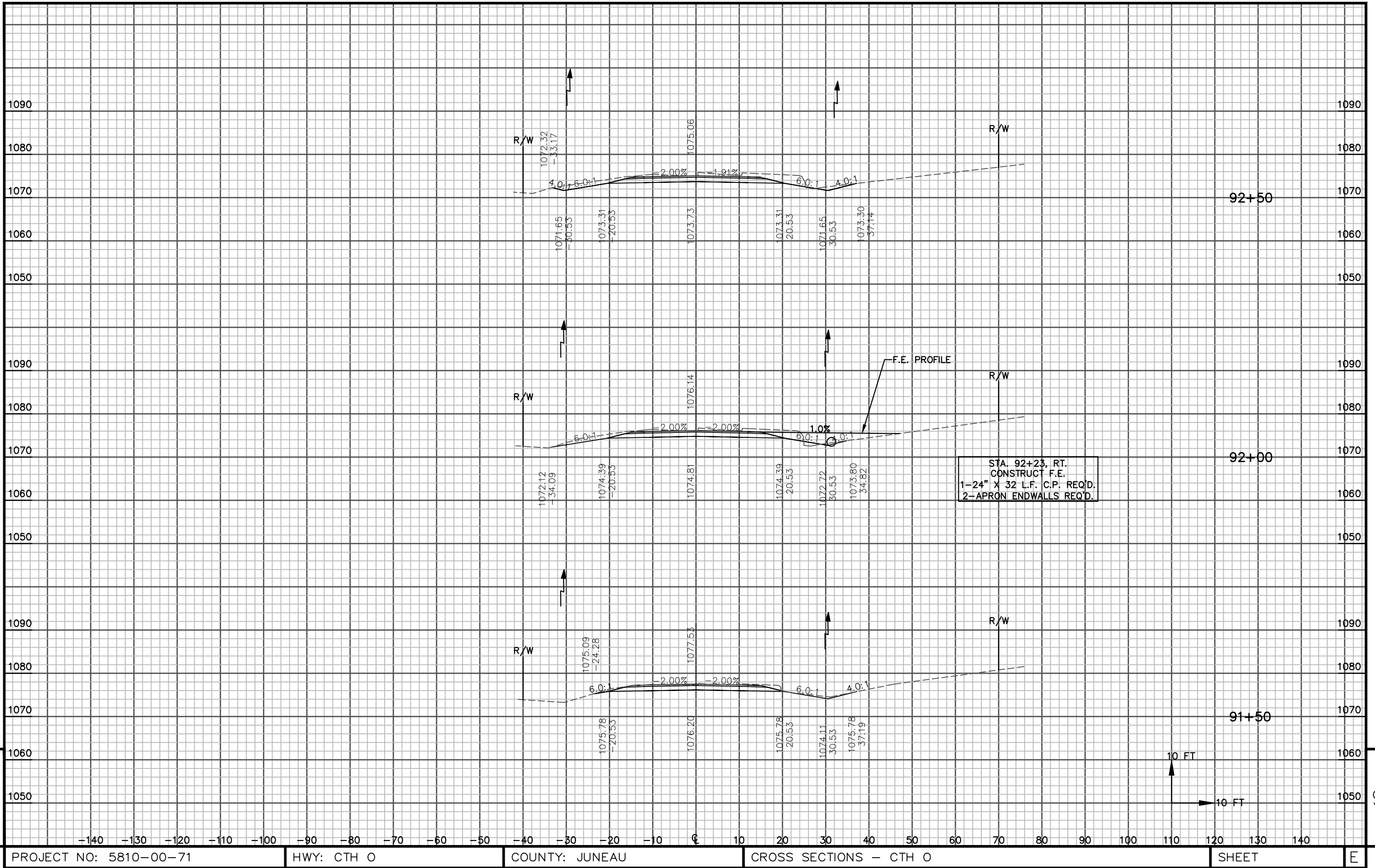


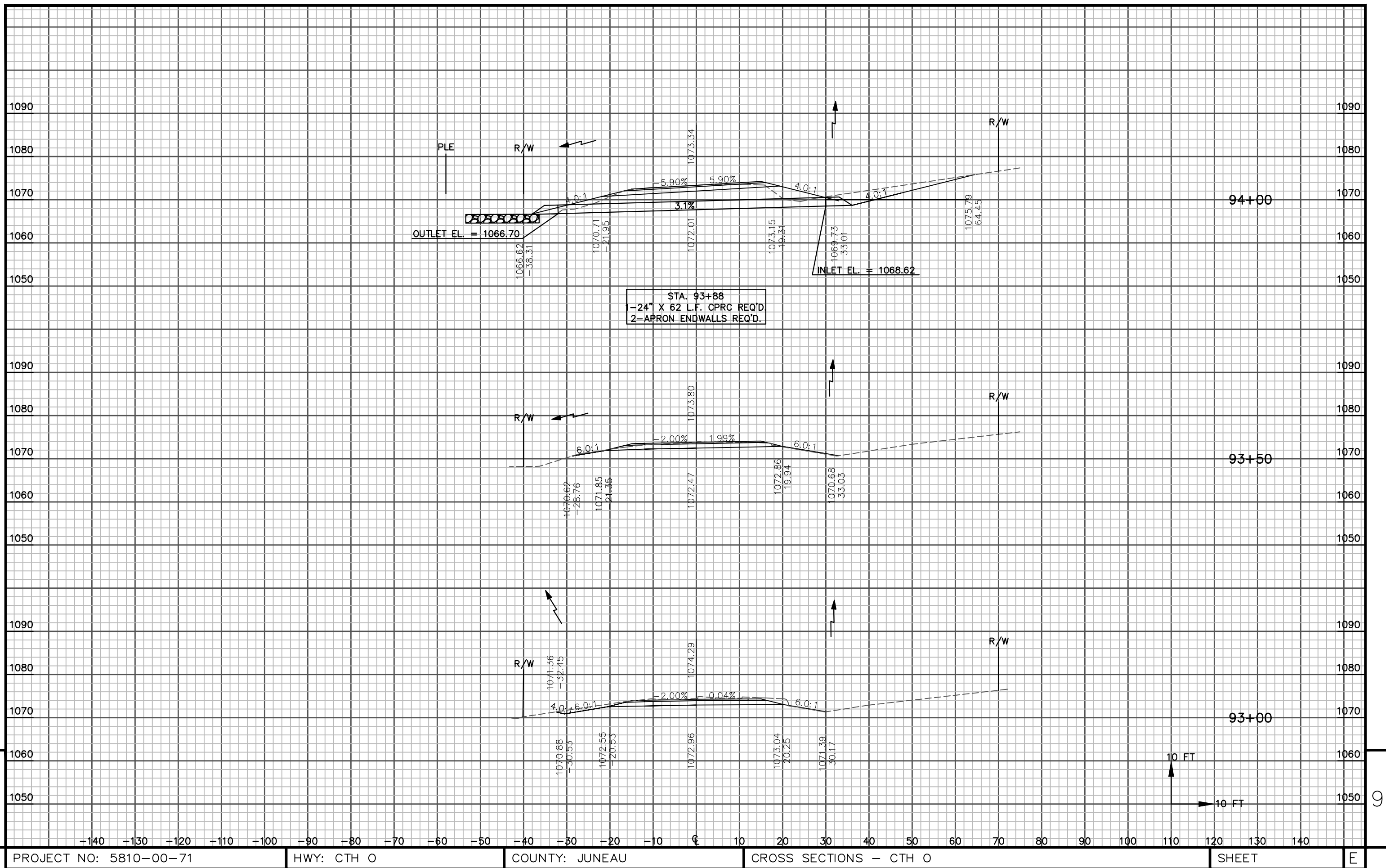


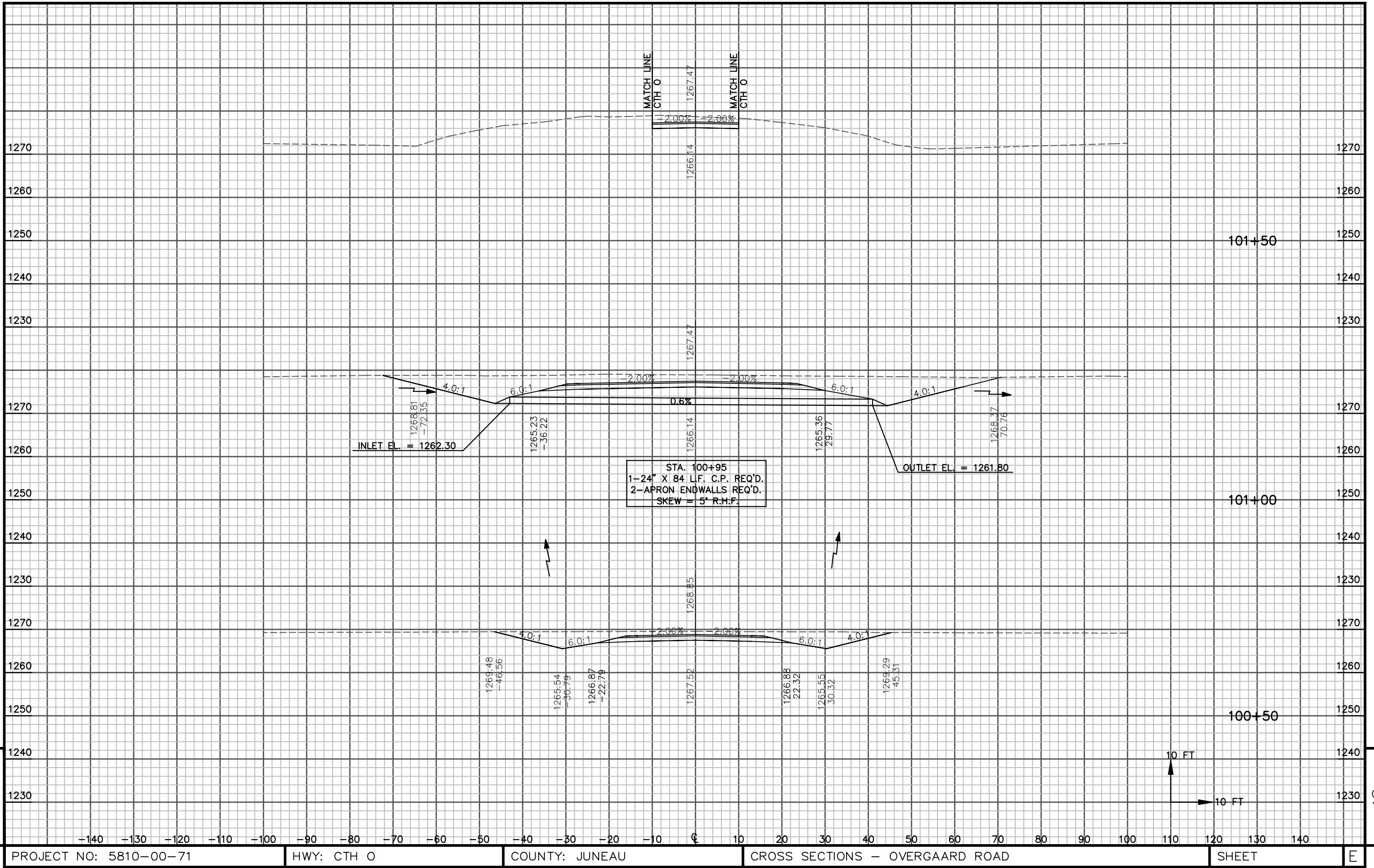


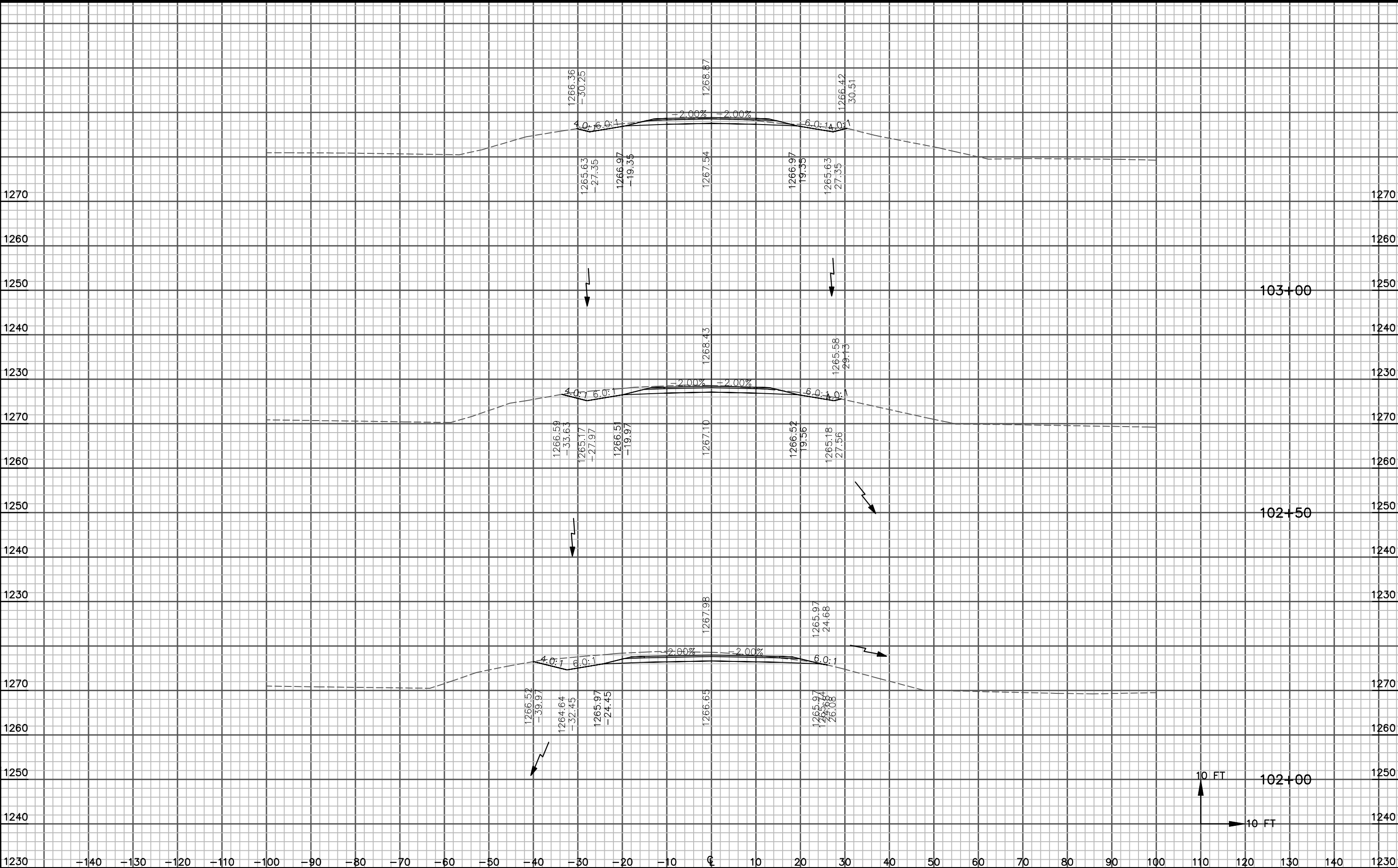


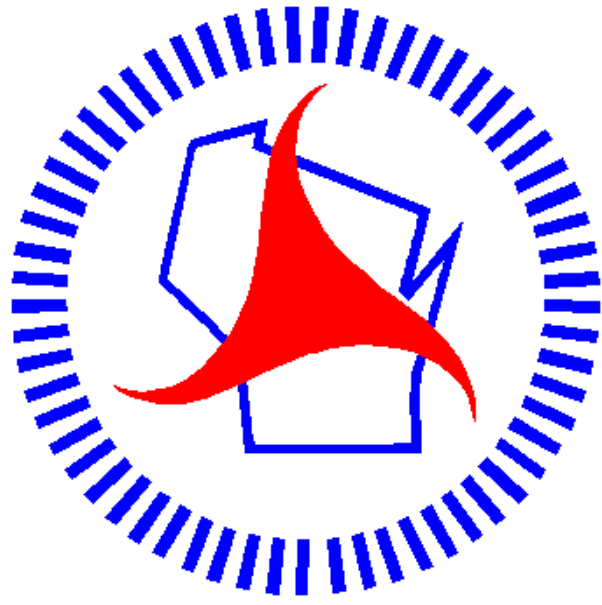












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