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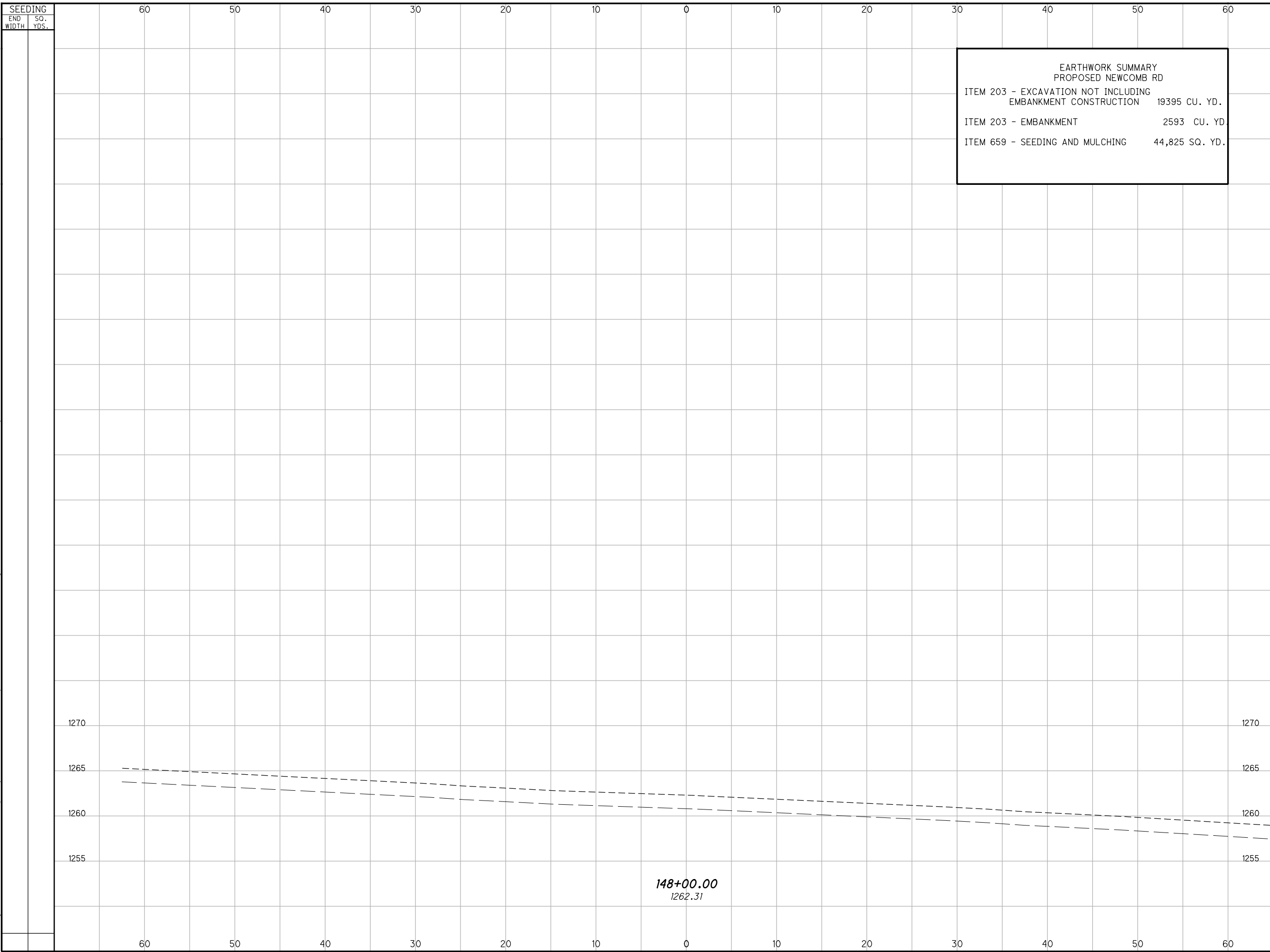
STATION TO STATION	SIDE	LENGTH "L"	AVERAGE WIDTH "W"	SURFACE AREA "A" A=LxW	CAD MEASURED AREA "A" (SF)	203	203	204	254	301	304	407	407	424	441	441	617	
						EXCAVATION	EMBANKMENT	SUBGRADE COMPACTION	PAVEMENT PLANING, AS PER PLAN, VARIABLE WIDTH VARIABLE DEPTH	ASPHALT CONCRETE BASE	AGGREGATE BASE	TACK COAT	TACK COAT	FINE GRADED POLYMER ASPHALT CONCRETE, TYPE B	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448), AS PER PLAN (VARIABLE DEPTH)	COMPACTED AGGREGATE	
						CU YD	CU YD	SQ YD	SQ YD	CU YD	CU YD	GAL	GAL	CU YD	CU YD	CU YD	CU YD	
MUMFORD ROAD								A/9	20%	T=6"	T=6"	0.055/SY	0.085/SY	T=1"	T=2"	AVG T=1"	T=6"	
WIDENING									0.2xA/9	(6/12)xA/27	(6/12)xA/27	0.055xA/9	0.085xA/9	(1/12)xA/27	(2/12)xA/27	(1/12)xA/27	(6/12)xA/27	
220+70	227+34	RT	663.63		2015							12			12			
220+94	285+50	LT	6455.72		21255							130			131			
227+53	284+65	RT	5712.24		16514							101			102			
220+70	227+34	RT	663.63		2236					41								
220+94	285+50	LT	6455.72		23407					433								
227+53	284+65	RT	5712.24		18418					341								
220+70	227+34	RT	663.63		2568			285			48							
220+94	285+50	LT	6455.72		26635			2959			493							
227+53	284+65	RT	5712.24		21274			2364			394							
220+70	227+34	RT	663.63	1	663.63												12	
220+94	285+50	LT	6455.72	1	6455.72												120	
227+53	284+65	RT	5712.24	1	5712.24												106	
TRENCH REPAIR																		
231+75	231+85	R/L	10.00	22	220			24		4	4	3			1.4			
253+95	254+32	R/L	37.00	22	814			90		15	15	10			5.0			
265+06	265+16	R/L	10.00	22	220			24		4	4	3			1.4			
284+67	285+13	R/L				249		28		5	5	3			1.5			
OVERLAY																		
PATCH RD (SOUTH) 221+00	INTERSECTION 284+50	R/L	6350.00	28	177800	2256						21	7					
PATCH RD (NORTH) SR 168	INTERSECTION	R/L				770						1679	549					
	INTERSECTION	R/L				2448						7	2					
												23	8					
SPOT MILLING (TO BE DETERMINED IN THE FIELD)													346			113		
EARTHWORK																		
FROM SHEET	154					19395	2593											
FROM SHEET	157					299	98											
FROM SHEET	199					3103	1914											
FROM SHEET	267					4546	2693											
TOTALS						27343	7298	5774	4073	843	963	262	2076	2338	566	255	113	238

PAVEMENT CALCULATIONS - MUMFORD RD

GEA-COUNTY
WIDE SAFETY

CALCULATED
LDW
CHECKED
JWB

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SEEDING		END AREA		VOLUME		CALCULATED	
END WIDTH	SO. YDS.	CUT	FILL	CUT	FILL	LDW	CHECKED
		0	0	0	0		JWB

**CROSS SECTION - NEWCOMB RD
148+00.00 TO 148+00.00**

**GEA-COUNTY
WIDE SAFETY**

154
425

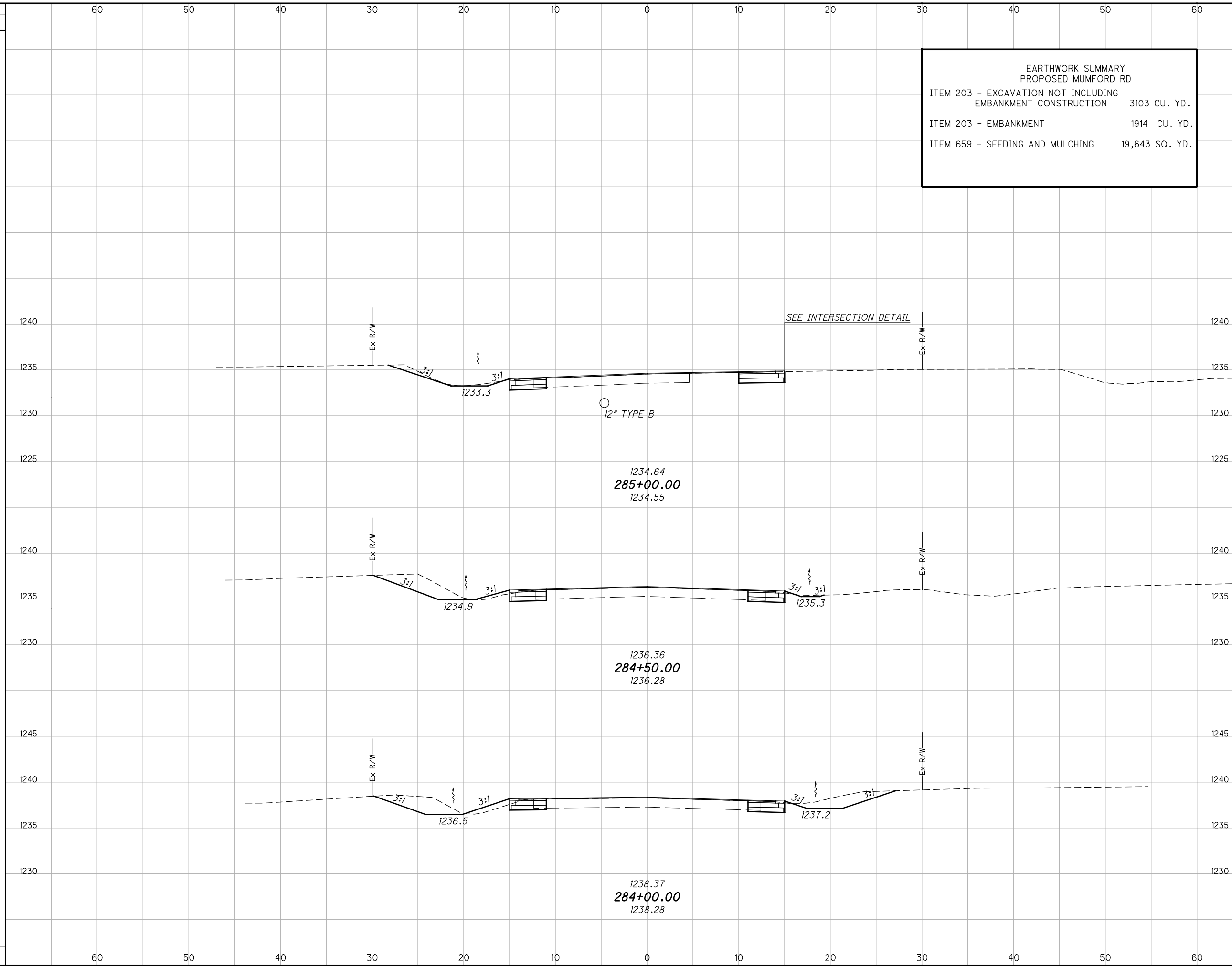
148+00.00
1262.31

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SEEDING
END SO.
WIDTH YDS.

END AREA
CUT FILL
VOLUME
CUT FILL
CALCULATED
LDW
CHECKED
JWB

EARTHWORK SUMMARY
PROPOSED MUMFORD RD
ITEM 203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION 3103 CU. YD.
ITEM 203 - EMBANKMENT 1914 CU. YD.
ITEM 659 - SEEDING AND MULCHING 19,643 SQ. YD.



STATION	END AREA		VOLUME		CALCULATED LDW	CHECKED JWB
	CUT	FILL	CUT	FILL		
285+00.00	12	0	0	0		
284+50.00	17	1	39	3		
284+00.00	25	2	36	2		
TOTAL	54	3	75	5		

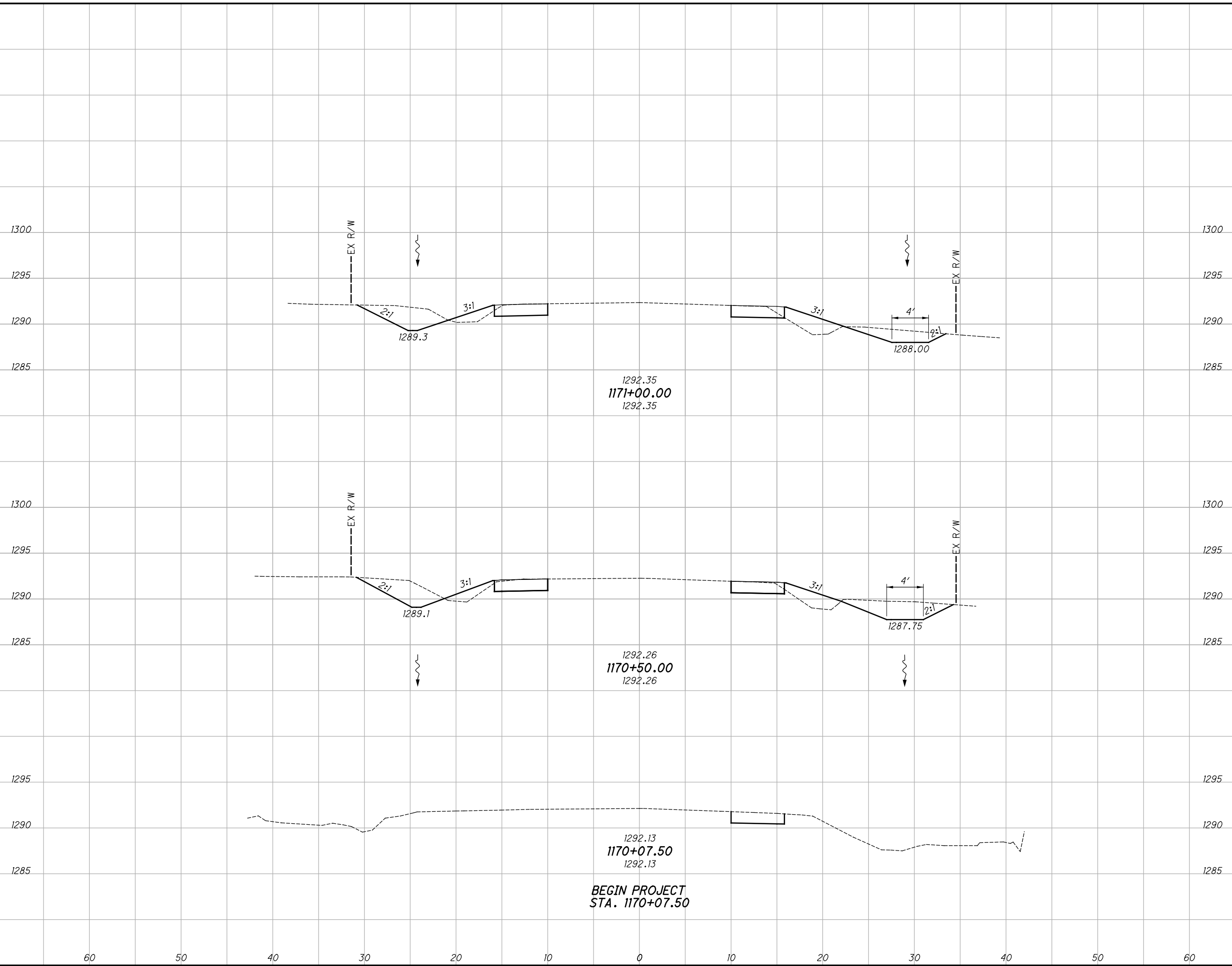
**CROSS SECTION - MUMFORD RD
284+00.00 TO 285+00.00**

**GEA-COUNTY
WIDE SAFETY**

199
425

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SEEDING	
END WIDTH	SO. YDS.
354	
60	
50	
40	
30	
20	
10	
0	
10	
20	
30	
40	
50	
60	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
34	13	68	23
39	12	34	9
		102	32

CROSS SECTIONS - S.R. 168
STA. 1170+00.00 TO STA. 1171+00.00

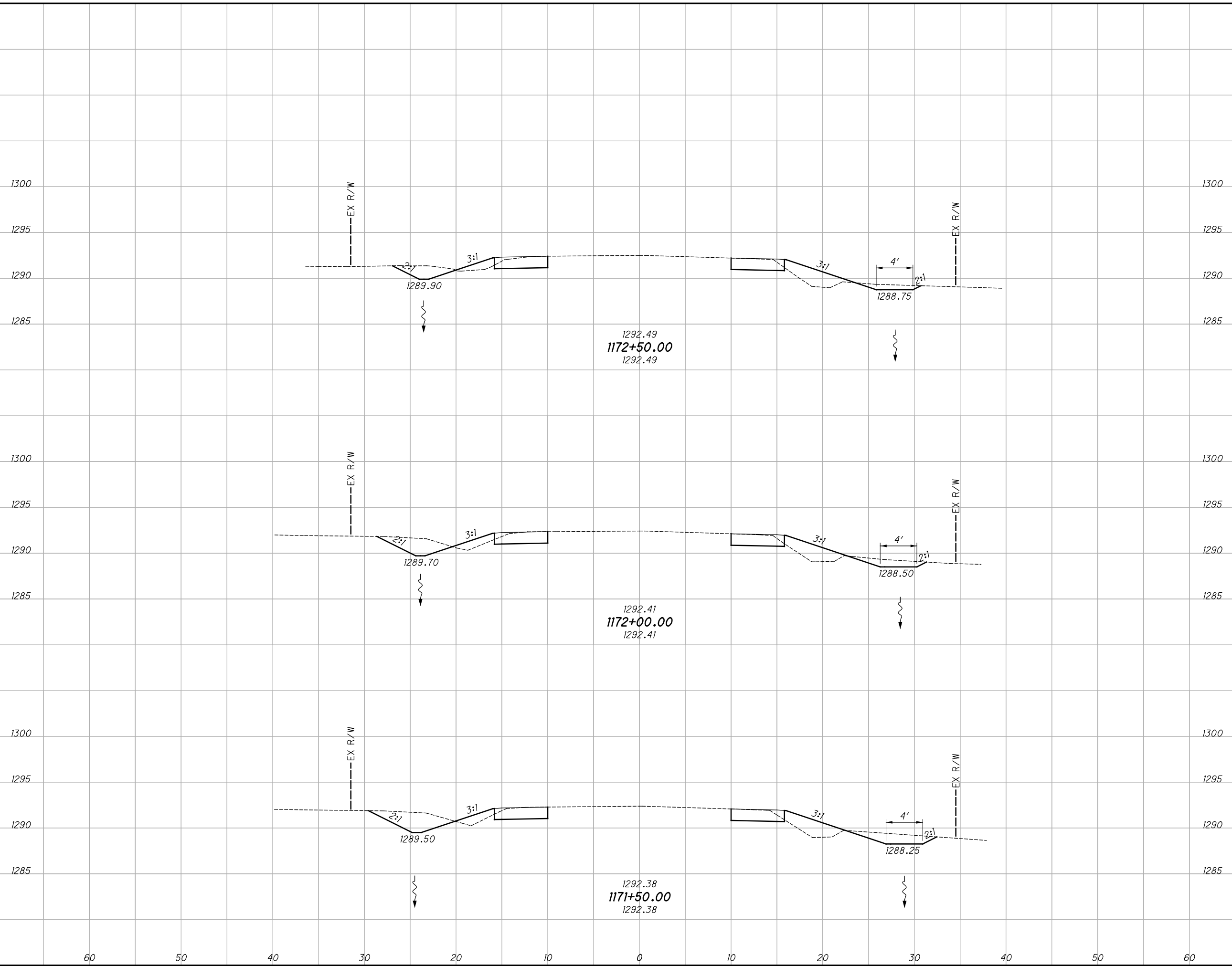
GEA-COUNTY
WIDE SAFETY

CALCULATED JRE
 CHECKED DLT

213
425

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SEEDING	
END WIDTH	SO. YDS.
678	239
60	41
50	228
40	39
30	211
20	35



END AREA	VOLUME	CALCULATED	
		CUT	FILL
18	12	36	22
21	12	45	22
28	12	58	23
139	67		

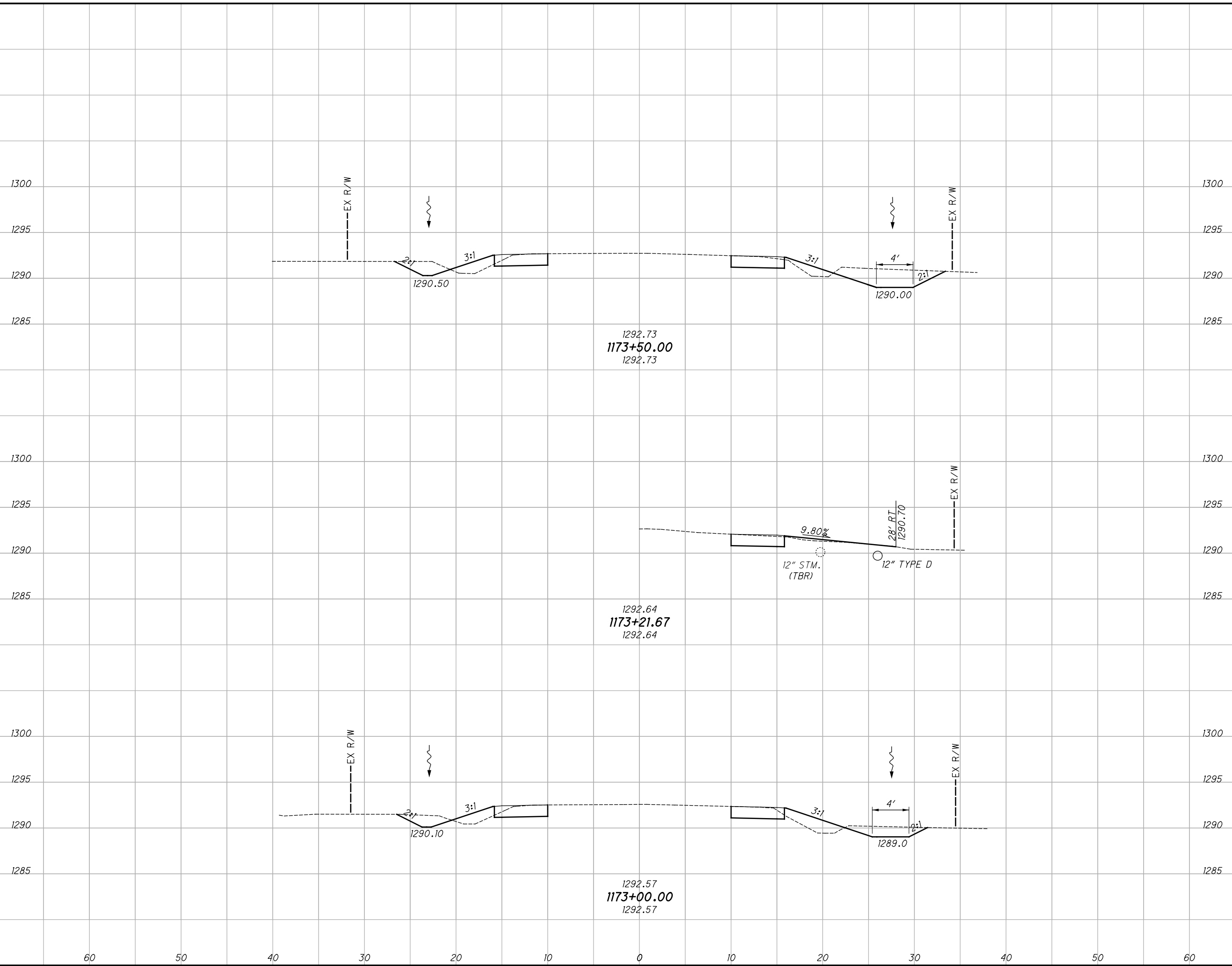
**GEA-COUNTY
WIDE SAFETY**

**CROSS SECTIONS - S.R. 168
STA. 1171+50.00 TO STA. 1172+50.00**

214
425

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SEEDING	
END WIDTH	SO. YDS.
42	217
36	200
417	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
31	8	48	18
21	11	36	21
84	39		

**GEA-COUNTY
WIDE SAFETY**

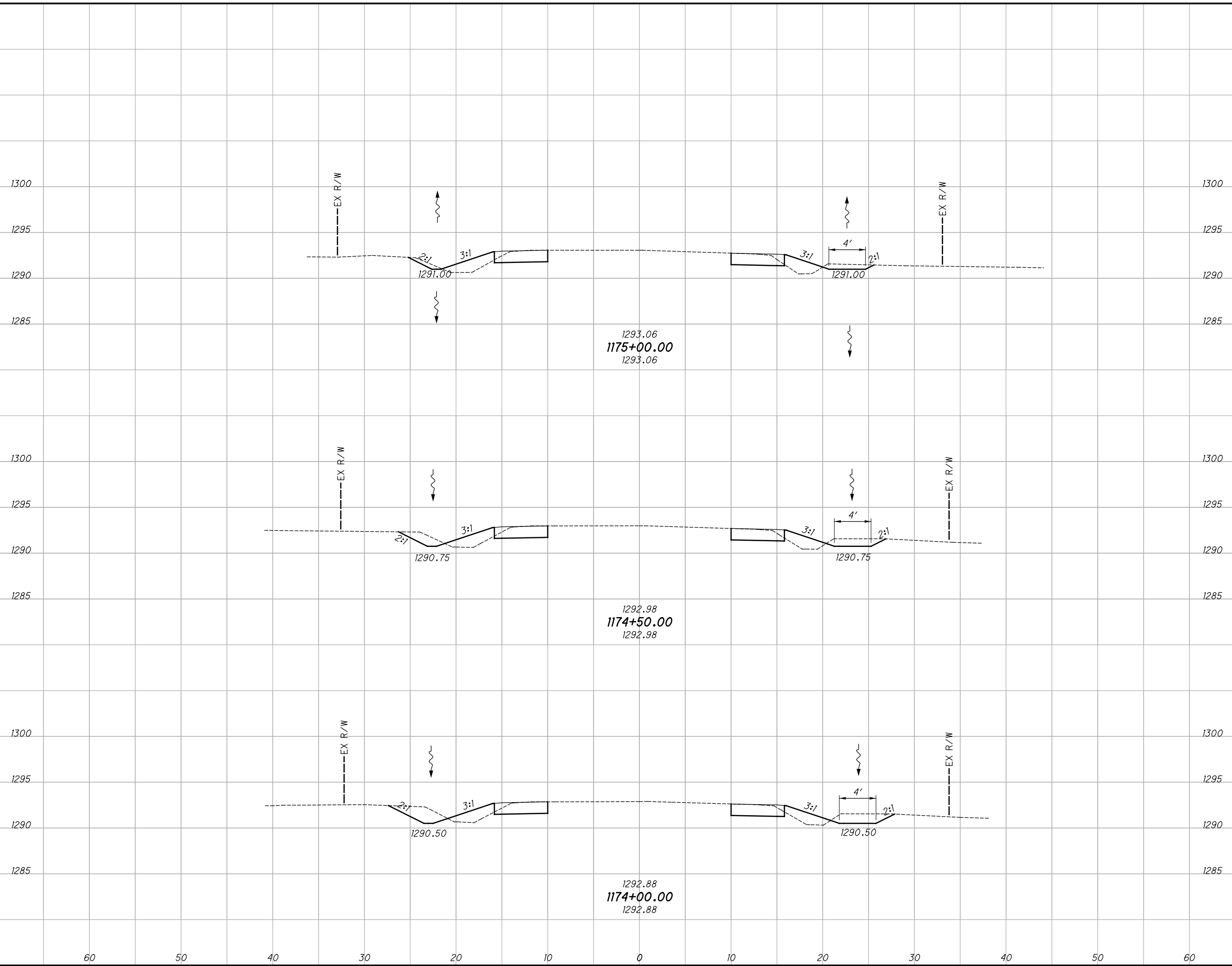
**CROSS SECTIONS - S.R. 168
STA. 1173+00.00 TO STA. 1173+50.00**

CALCULATED JRE
CHECKED DLT

215
425

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SEEDING	
END WIDTH	SO. YDS.
555	
27	161
31	183
33	211



END STA	AREA		VOLUME	
	CUT	FILL	CUT	FILL
1175+00.00	12	11	27	19
1174+50.00	17	10	35	19
1174+00.00	21	10	48	17
TOTAL	50	31	110	55

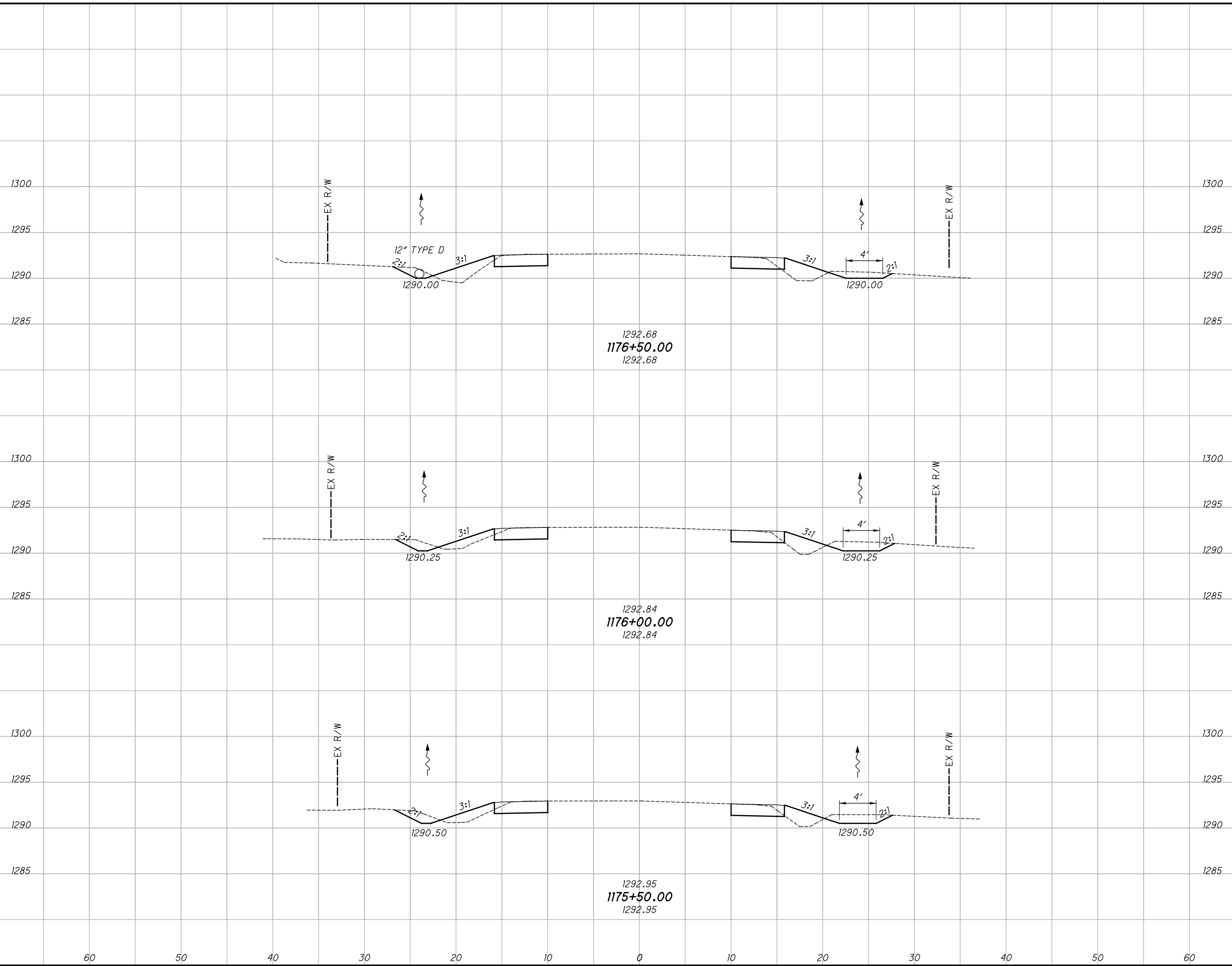
CROSS SECTIONS - S.R. 168
STA. 1174+00.00 TO STA. 1175+00.00

GEA-COUNTY
WIDE SAFETY

216
425

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SEEDING	
END WIDTH	SO. YDS.
32	178
32	178
32	166
522	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
14	14	29	22
17	10	32	19
18	10	28	19
		89	60

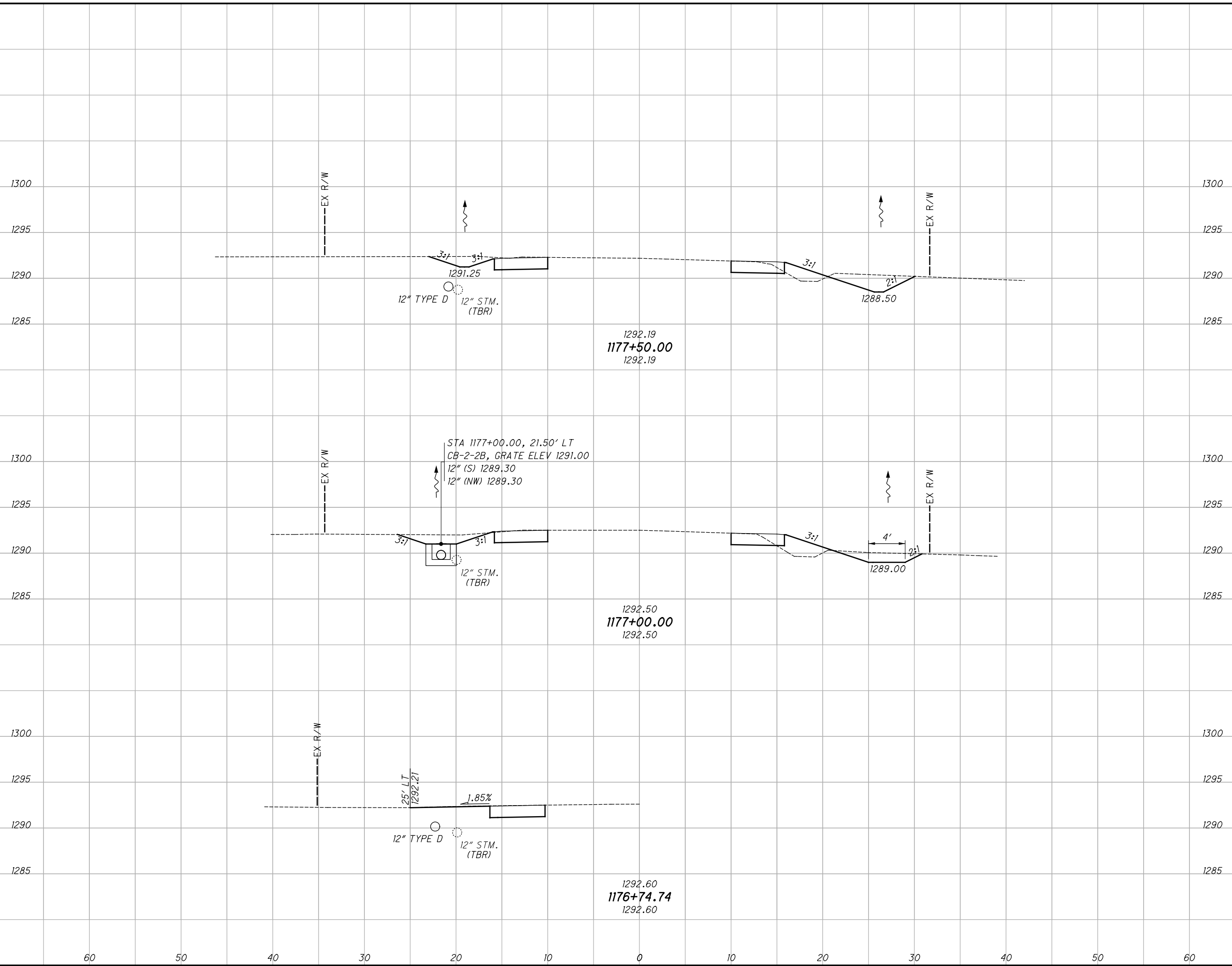
CROSS SECTIONS - S.R. 168
STA. 1175+50.00 TO STA. 1176+50.00

GEA-COUNTY
WIDE SAFETY

217
425

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SEEDING	
END WIDTH	SO. YDS.
31	194
37	192
386	



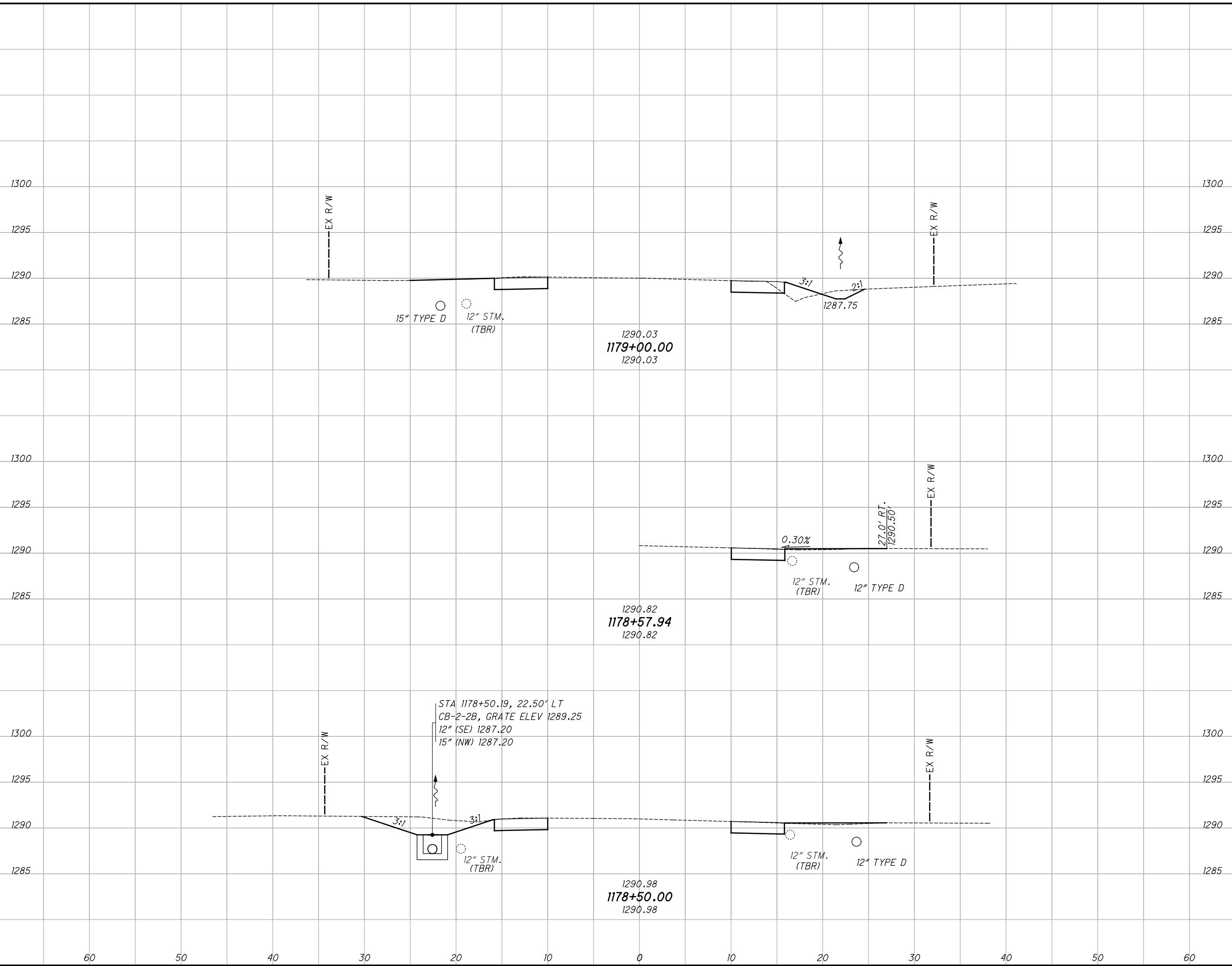
END	AREA		VOLUME	
	CUT	FILL	CUT	FILL
31	24	5	40	11
37	19	7		
386			31	19
			71	30

CROSS SECTIONS - S.R. 168
STA. 1176+74.74 TO STA. 1177+50.00
GEA-COUNTY
WIDE SAFETY

CALCULATED JRE
 CHECKED DLT
 218
 425

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SEEDING	
END WIDTH	SO. YDS.
360	25
172	172
37	37
188	188
360	360



END AREA		VOLUME	
CUT	FILL	CUT	FILL
10	4	32	5
25	1	44	5
		76	10

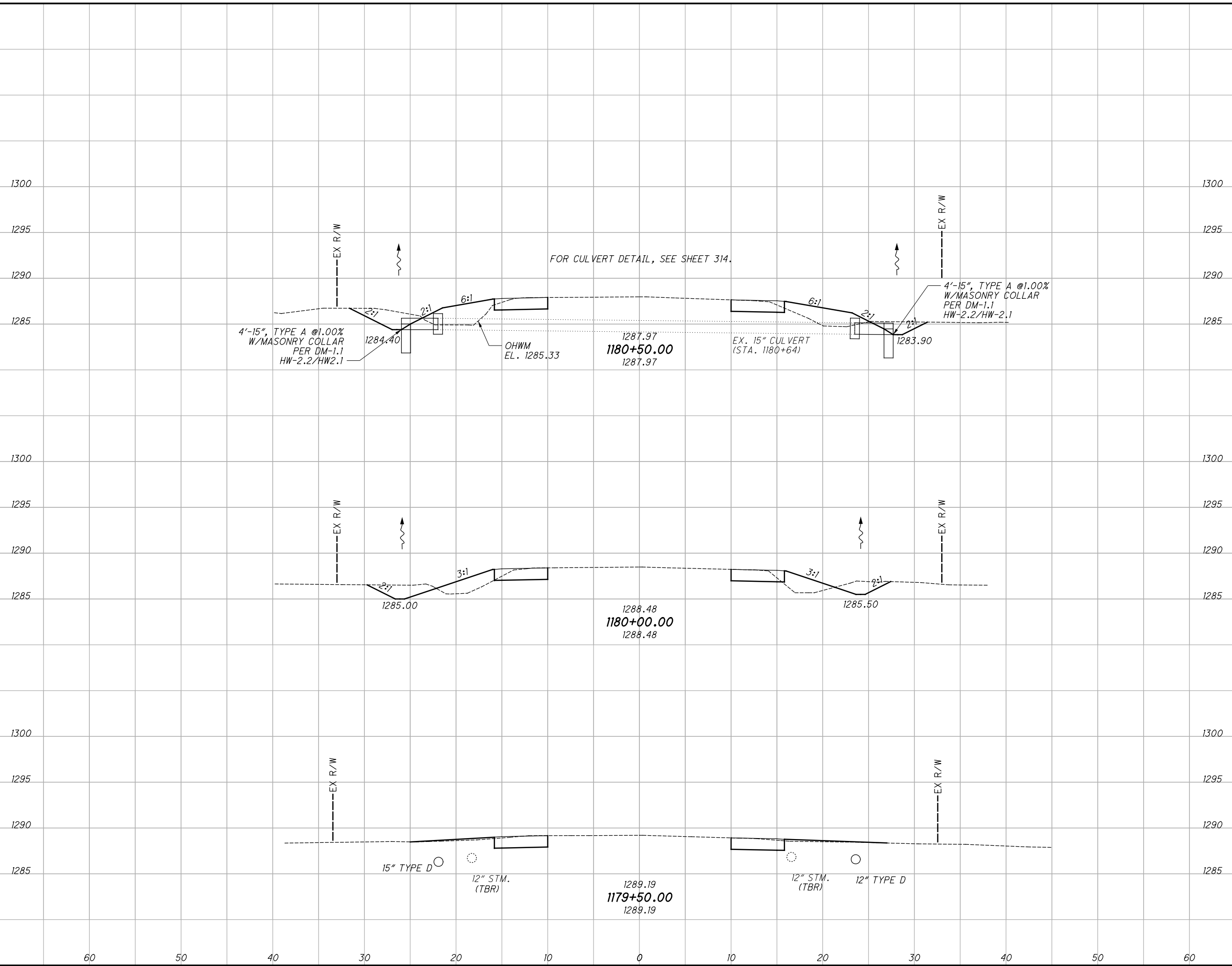
CROSS SECTIONS - S.R. 168
STA. 1178+50.00 TO STA. 1179+00.00

GEA-COUNTY
WIDE SAFETY

220
425

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SEEDING	
END WIDTH	SO. YDS.
43	223
36	178
26	142
543	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
23	26	40	38
20	15	24	16
6	2	15	6
		79	60

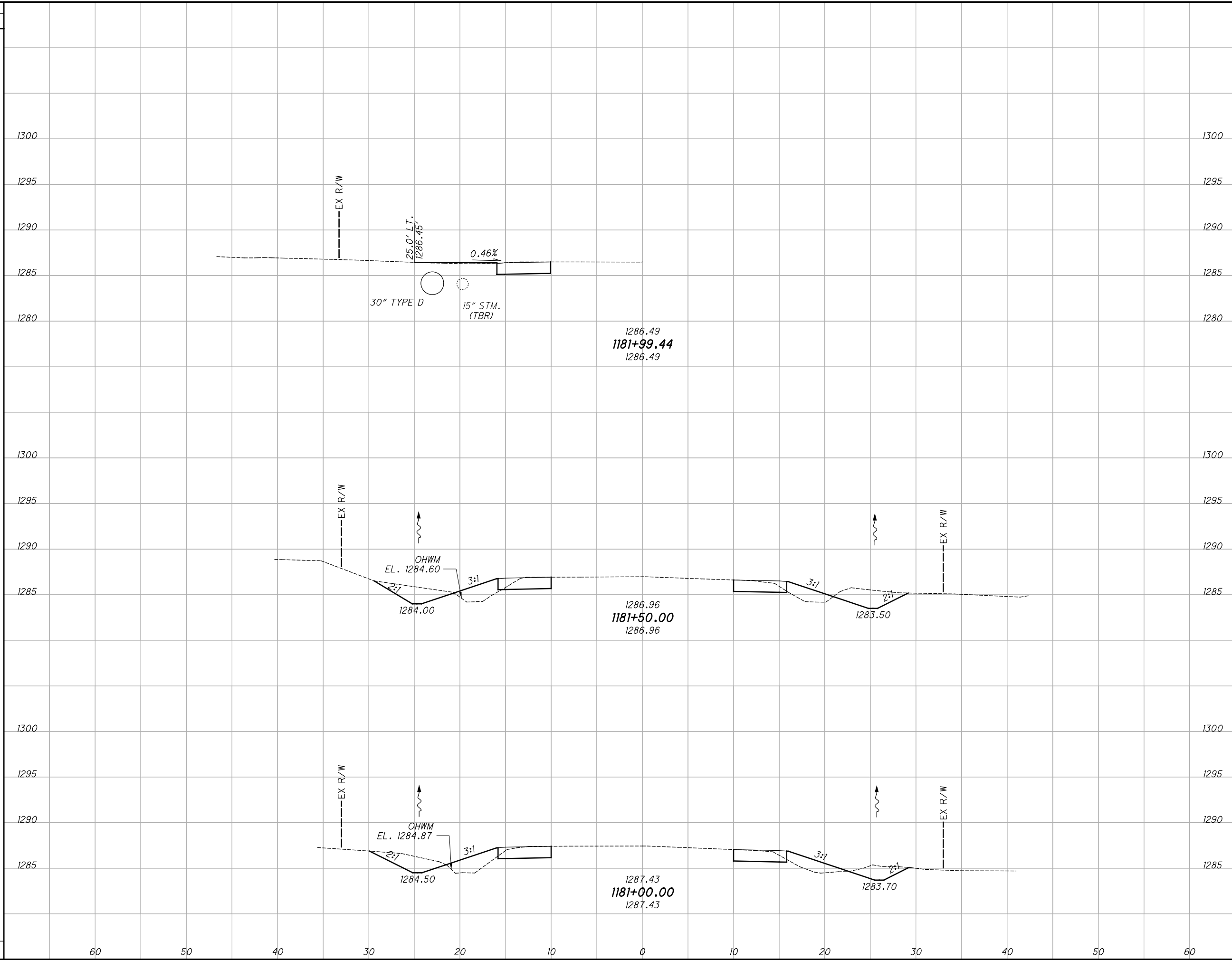
**CROSS SECTIONS - S.R. 168
STA. 1179+50.00 TO STA. 1180+50.00**

**GEA-COUNTY
WIDE SAFETY**

222
425

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SEEDING	
END WIDTH	SO. YDS.
445	
228	
38	
217	39



END AREA		VOLUME	
CUT	FILL	CUT	FILL
27	13	46	25
23	14	43	37
		93	62

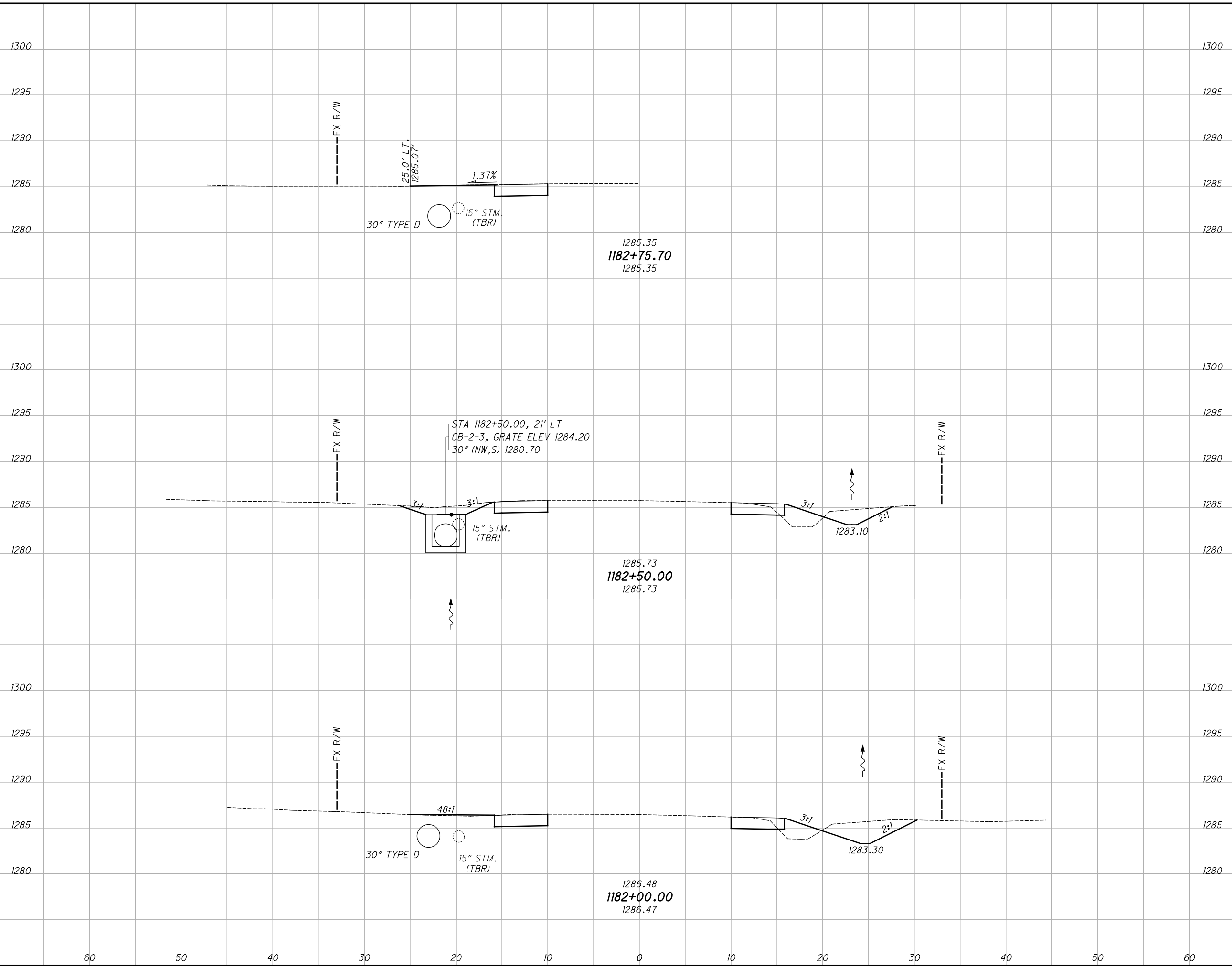
**GEA-COUNTY
WIDE SAFETY**

**CROSS SECTIONS - S.R. 168
STA. 1181+00.00 TO STA. 1181+99.44**

223
425

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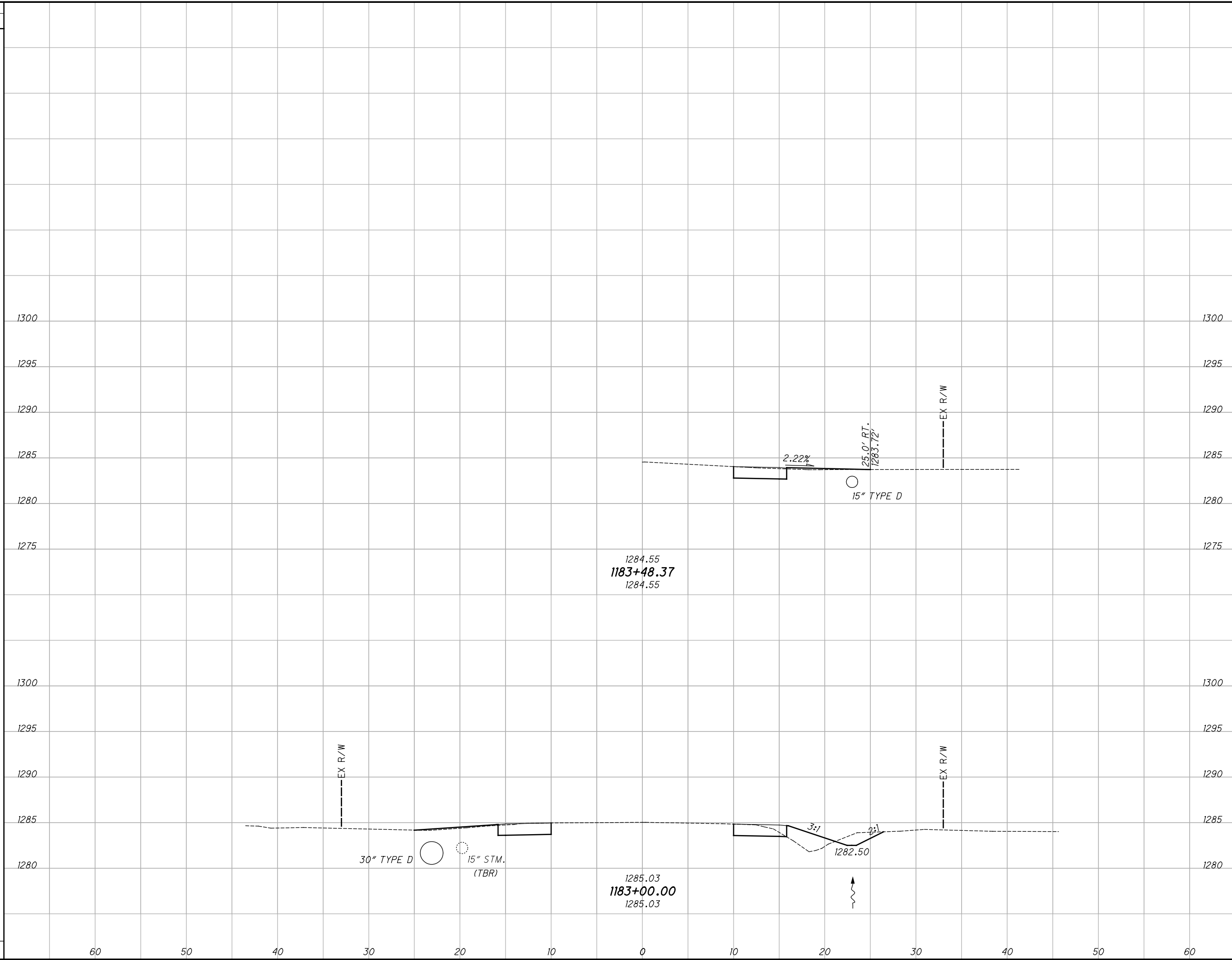
SEEDING	
END WIDTH	SO. YDS.
403	
197	
32	
206	
41	



END STA.	AREA		VOLUME	
	CUT	FILL	CUT	FILL
1300				
1295				
1290				
1285				
1280				
1300				
1295				
1290	21	7		
1285				
1280			41	13
1300				
1295				
1290	23	7		
1285				
1280			46	19
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SEEDING	
END WIDTH	SO. YDS.
56	
56	



END AREA		VOLUME		CALCULATED JRE	CHECKED DLT
CUT	FILL	CUT	FILL		
10	8	29	14		

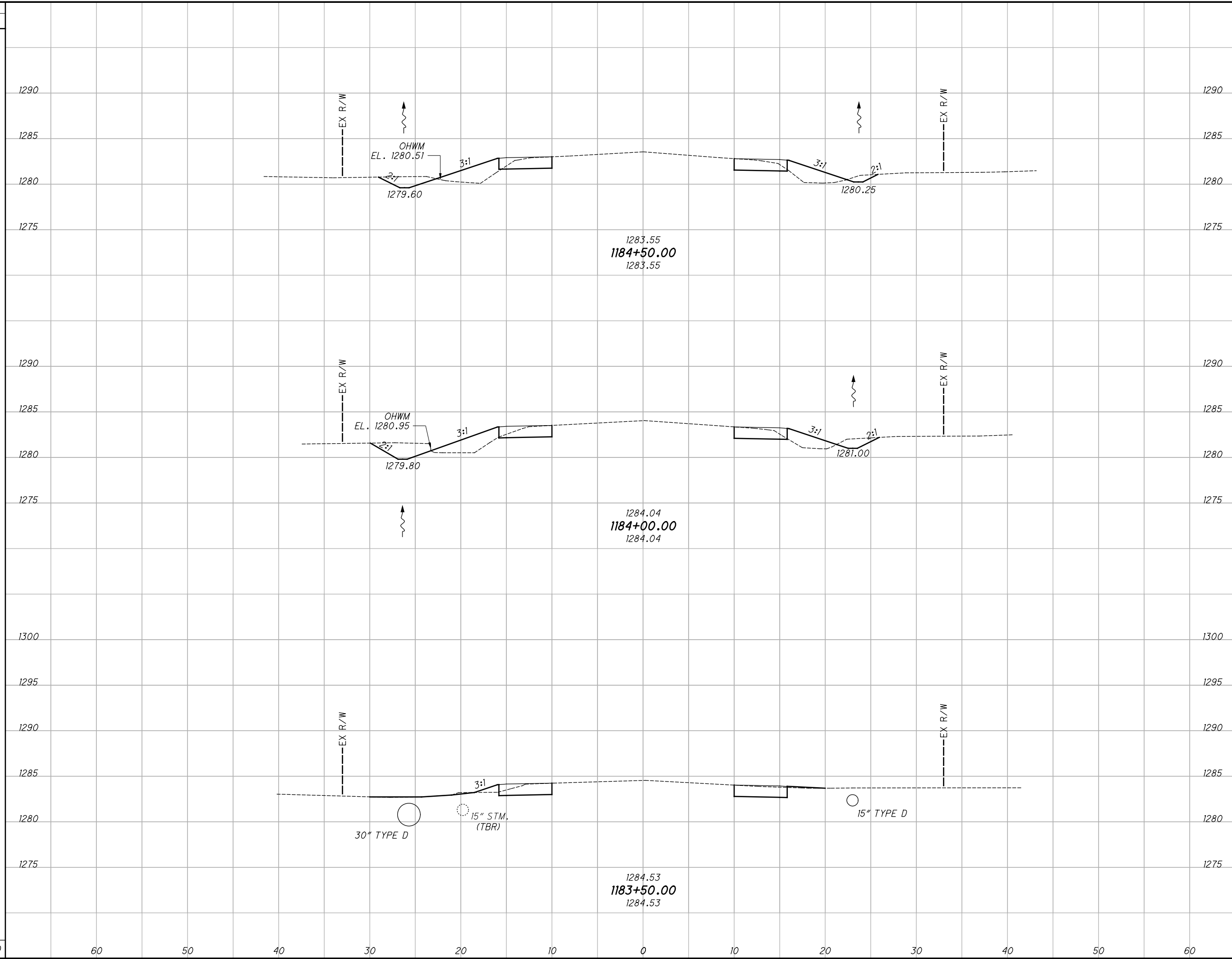
CROSS SECTIONS - S.R. 168
STA. 1183+00.00 TO STA. 1183+48.37

GEA-COUNTY
WIDE SAFETY

225
425

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SEEDING	
END WIDTH	SO. YDS.
500	
60	
50	
40	
30	
20	
10	
0	
10	
20	
30	
40	
50	
60	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
13	17	26	30
15	15	19	16
5	2	13	9
		58	55

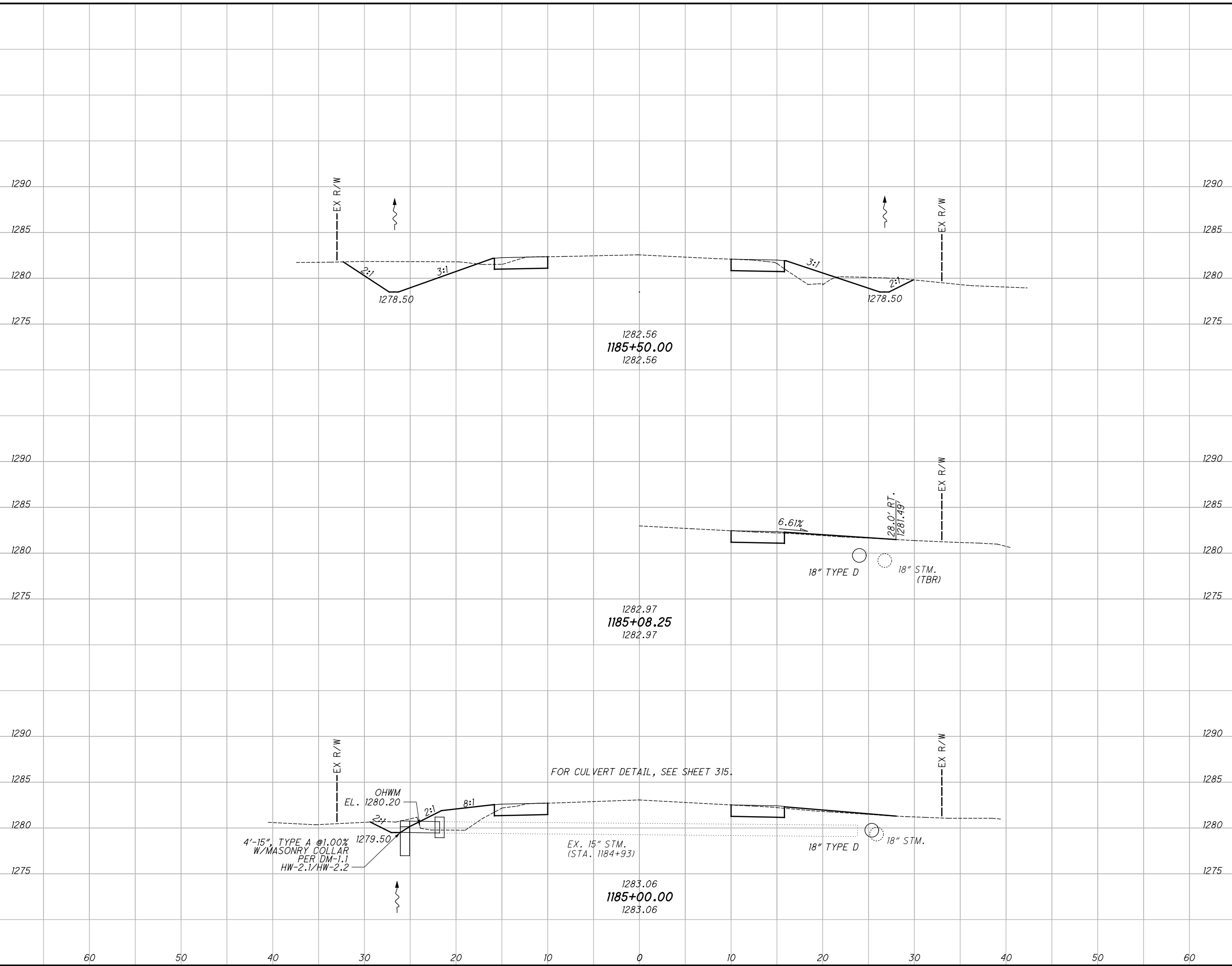
CROSS SECTIONS - S.R. 168
STA. 1183+50.00 TO STA. 1184+50.00

GEA-COUNTY
WIDE SAFETY

226
425

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SEEDING	
END WIDTH	SO. YDS.
42	208
33	183
391	

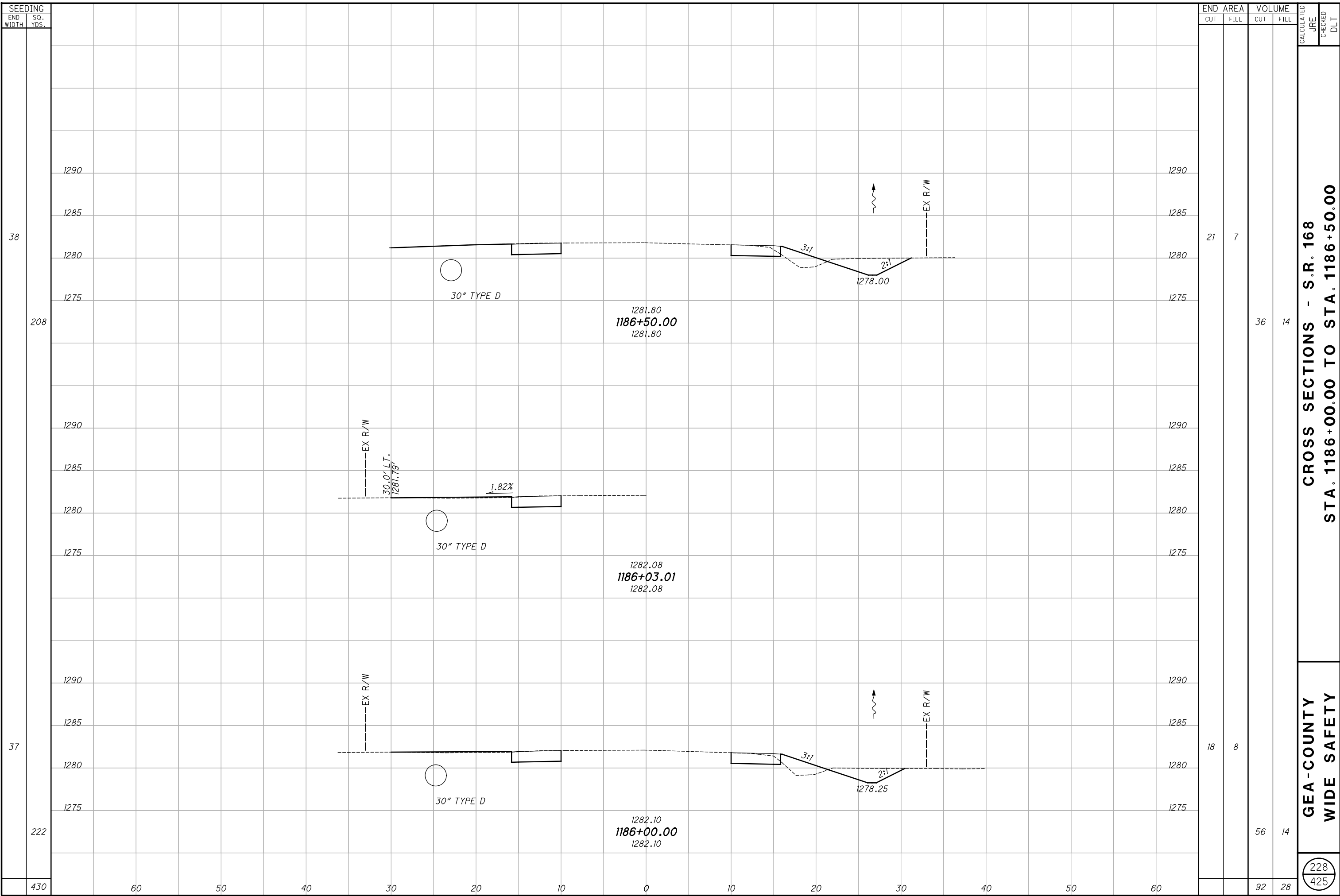


END AREA		VOLUME	
CUT	FILL	CUT	FILL
42	7	51	21
13	16	24	31
		75	52

CROSS SECTIONS - S.R. 168
STA. 1185+00.00 TO STA. 1185+50.00
GEA-COUNTY
WIDE SAFETY

CALCULATED JRE
 CHECKED DLT
 227
 425

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SEEDING	
END WIDTH	SO. YDS.
38	208
37	222
430	

END AREA		VOLUME		CALCULATED	
CUT	FILL	CUT	FILL	JRE	DLT
21	7	36	14		
18	8	56	14		
		92	28		

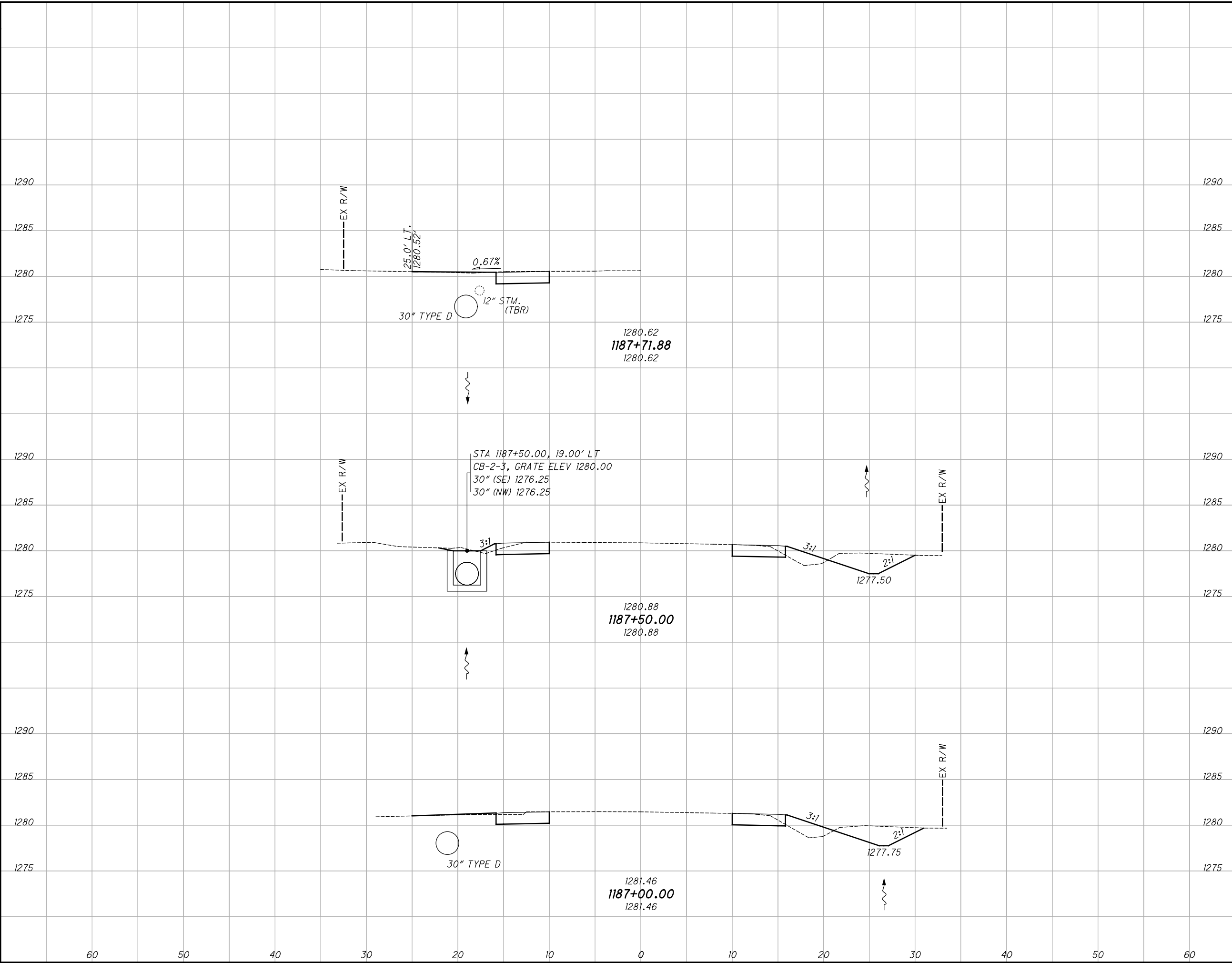
CROSS SECTIONS - S.R. 168
STA. 1186+00.00 TO STA. 1186+50.00

GEA-COUNTY
WIDE SAFETY

228
425

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SEEDING	
END WIDTH	SO. YDS.
406	
200	
33	
206	
39	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
22	6	40	12
21	7	39	13
		79	25

CROSS SECTIONS - S.R. 168
STA. 1187+00.00 TO STA. 1187+71.88

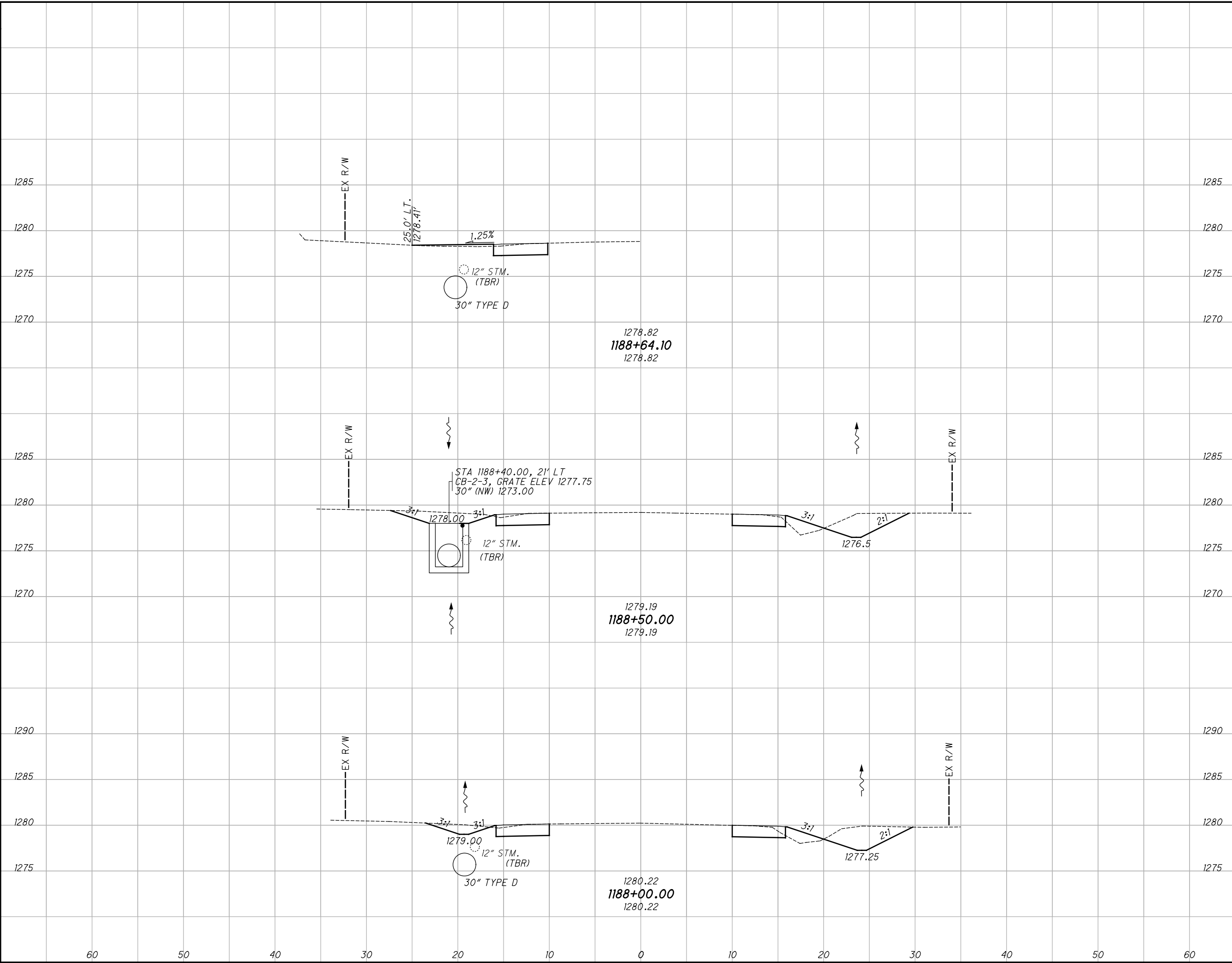
GEA-COUNTY
WIDE SAFETY

229
425

C:\Users\Rotella\Desktop\ProjectData\10164_SRI68\Design\Roadway\Sheets\10164_X5001.dgn XS_SHEET_temporary_model_name_18 10/22/2020 9:54:33 PM Rotella

SEEDING
END SO.
WIDTH YDS.

397	
197	
32	
200	
38	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
31	4	54	7
27	4	45	9
		99	16

CALCULATED
JRE
CHECKED
DLT

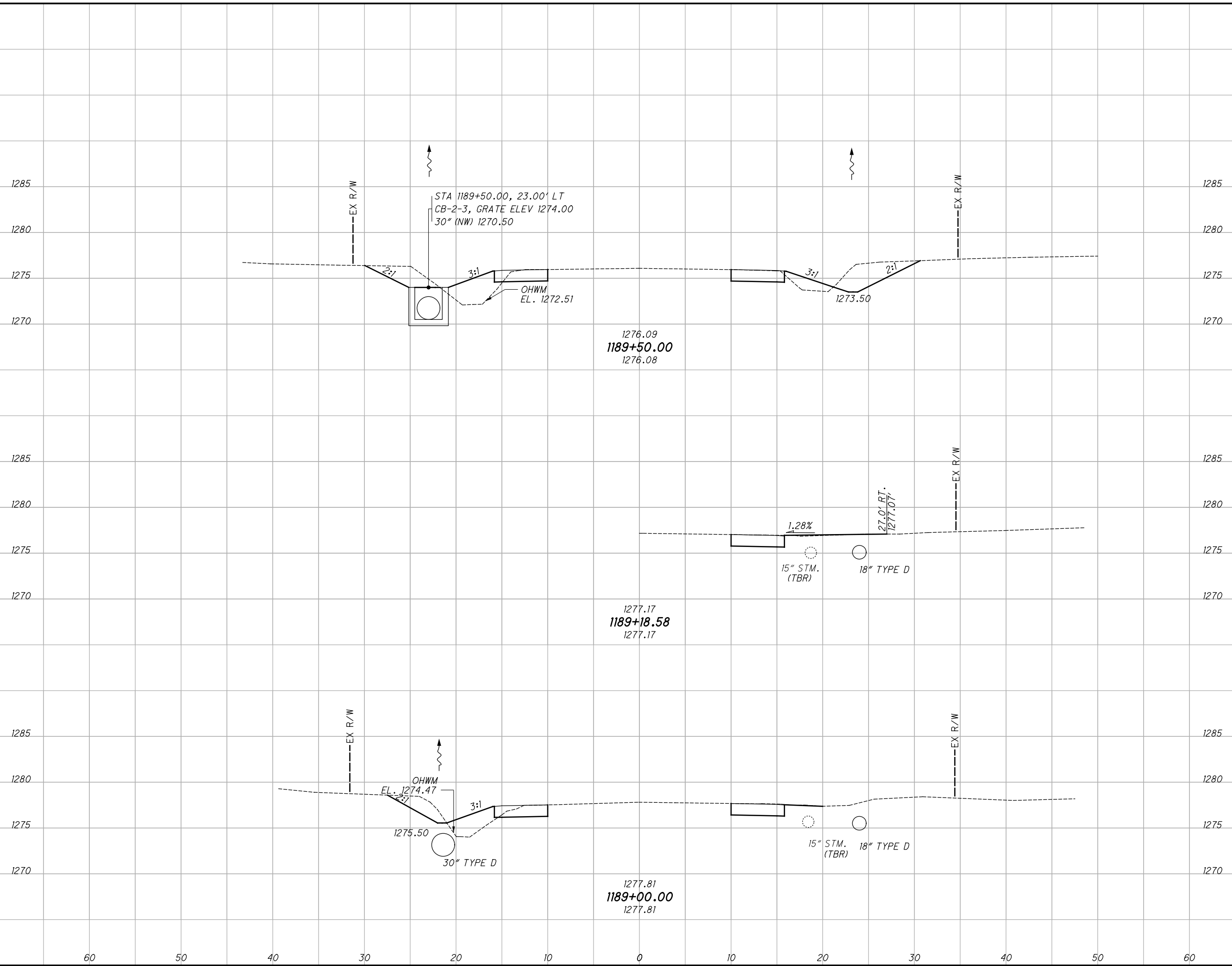
**CROSS SECTIONS - S.R. 168
STA. 1188+00.00 TO STA. 1188+64.10**

**GEA-COUNTY
WIDE SAFETY**

230
425

C:\Users\rotella\Desktop\ProjectData\10164_SRI68\Design\Roadway\Sheets\10164_X500.dgn XS_SHEET_temporary_model_name_19 10/22/2020 9:54:35 PM rotella

SEEDING	
END WIDTH	SO. YDS.
290	175
25	115
49	49



END AREA		VOLUME	
CUT	FILL	CUT	FILL
33	18	44	25
15	9	43	12
		87	37

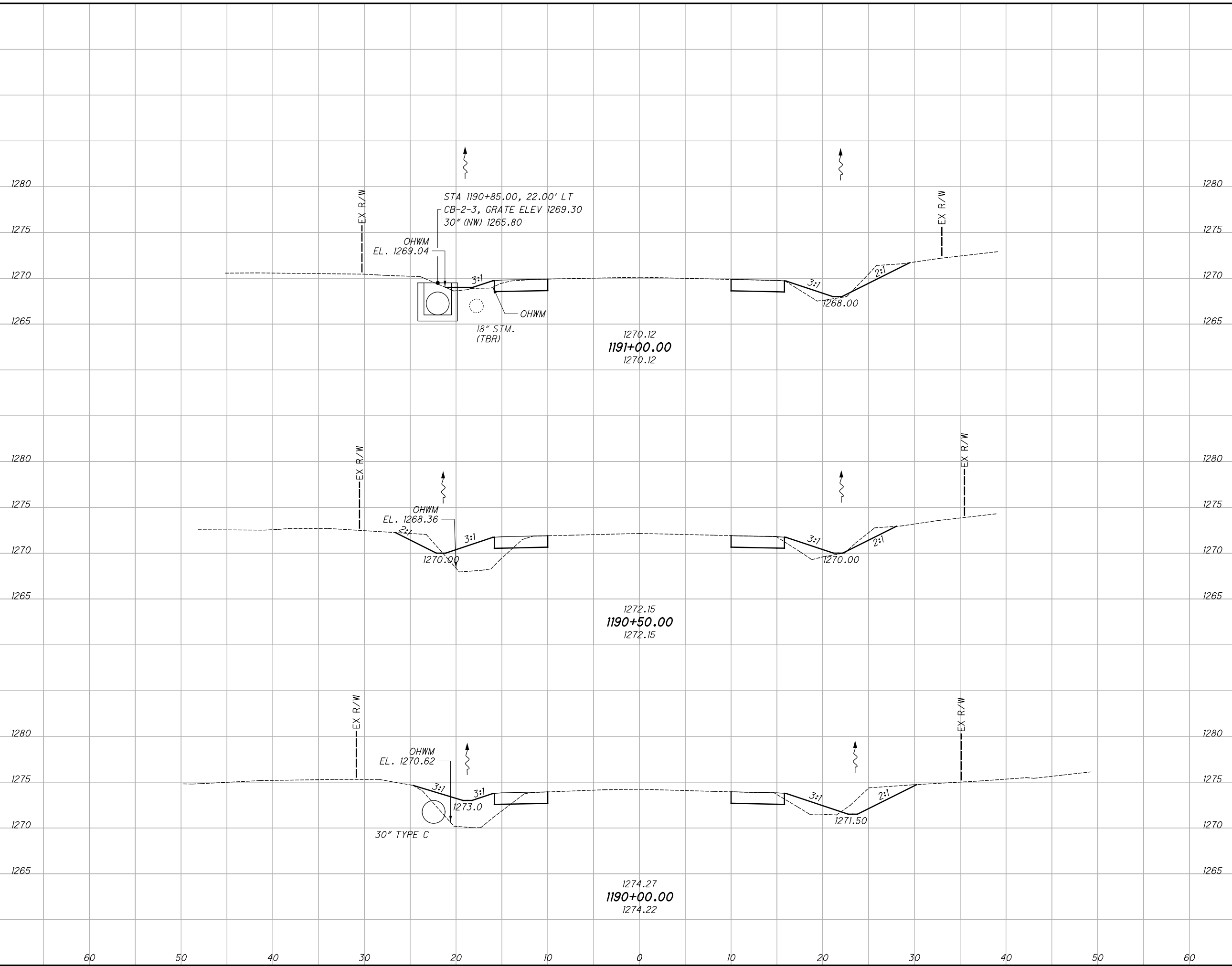
GEA-COUNTY
WIDE SAFETY
CROSS SECTIONS - S.R. 168
STA. 1189+00.00 TO STA. 1189+50.00

CALCULATED
 JRE
 CHECKED
 DLT

231
 425

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SEEDING	
END WIDTH	SO. YDS.
567	228
60	32
161	32
26	161



END AREA	VOLUME	CALCULATED	
		JRE	DLT
CUT	FILL	CUT	FILL
14	5	26	24
14	21	29	44
17	26	46	41
		101	109

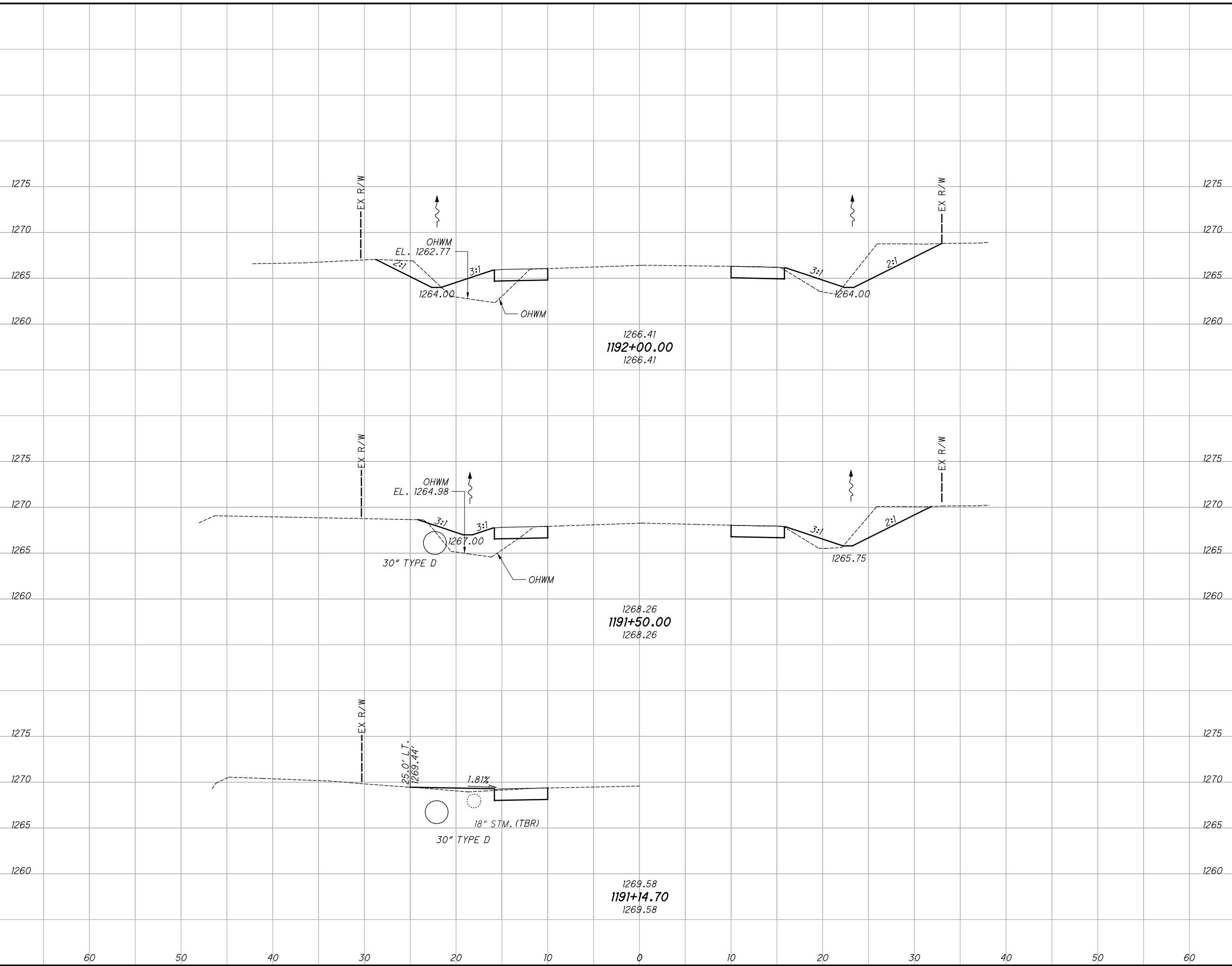
GEA-COUNTY
WIDE SAFETY

CROSS SECTIONS - S.R. 168
STA. 1190+00.00 TO STA. 1191+00.00

232
425

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SEEDING	
END WIDTH	SO. YDS.
42	217
34	167
384	60



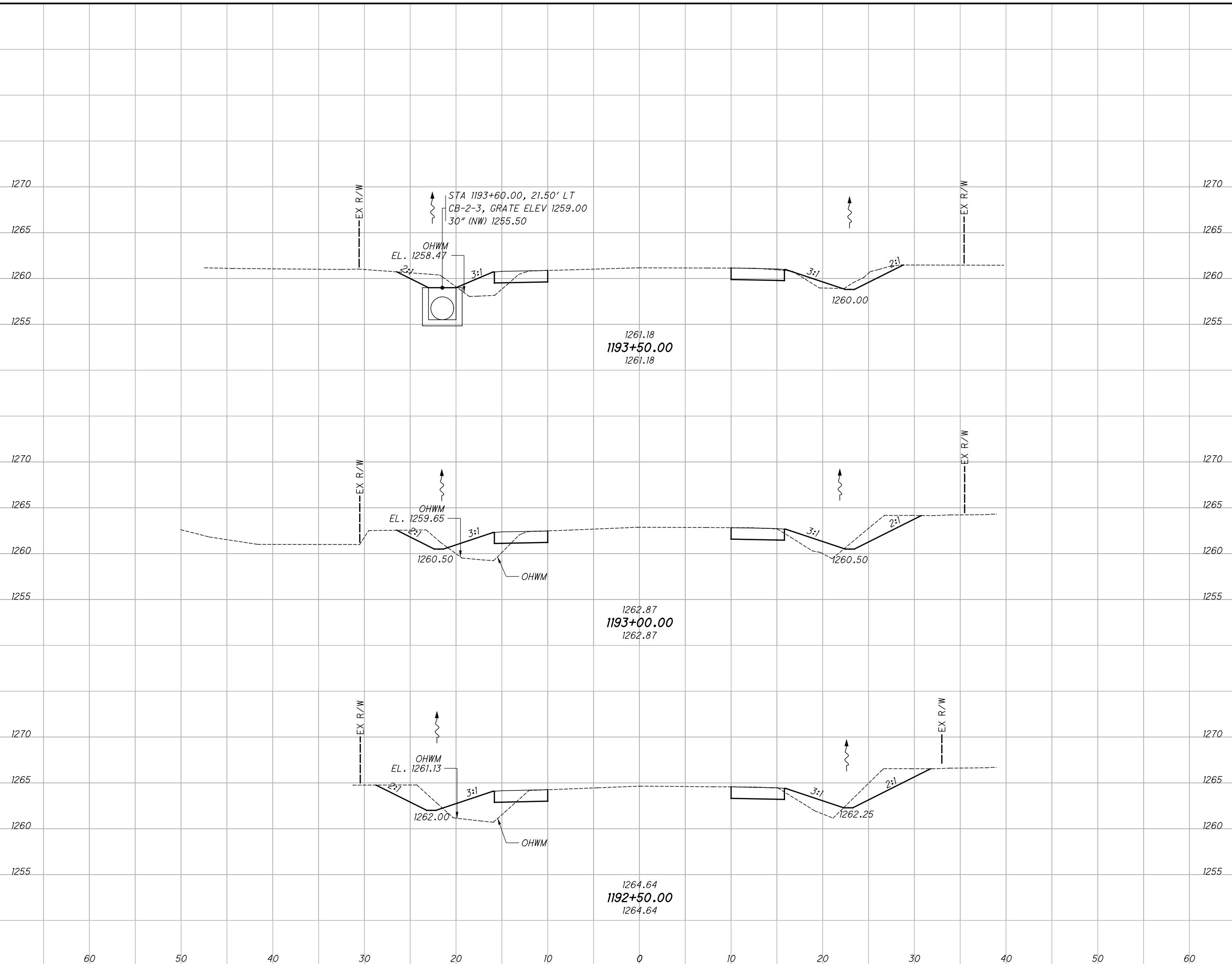
END AREA		VOLUME	
CUT	FILL	CUT	FILL
33	21	46	39
17	21	29	24
75	63		

GEA-COUNTY
WIDE SAFETY
CROSS SECTIONS - S.R. 168
STA. 1191+14.70 TO STA. 1192+00.00

CALCULATED JRE
 CHECKED DLT
 233
 425

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SEEDING	
END WIDTH	SO. YDS.
684	44
60	228
50	37
40	222
30	41
20	234
10	
0	
10	
20	
30	
40	
50	
60	



END AREA	VOLUME	CALCULATED	
		CUT	FILL
17	10	36	26
22	18	46	36
28	21	56	39
		138	101

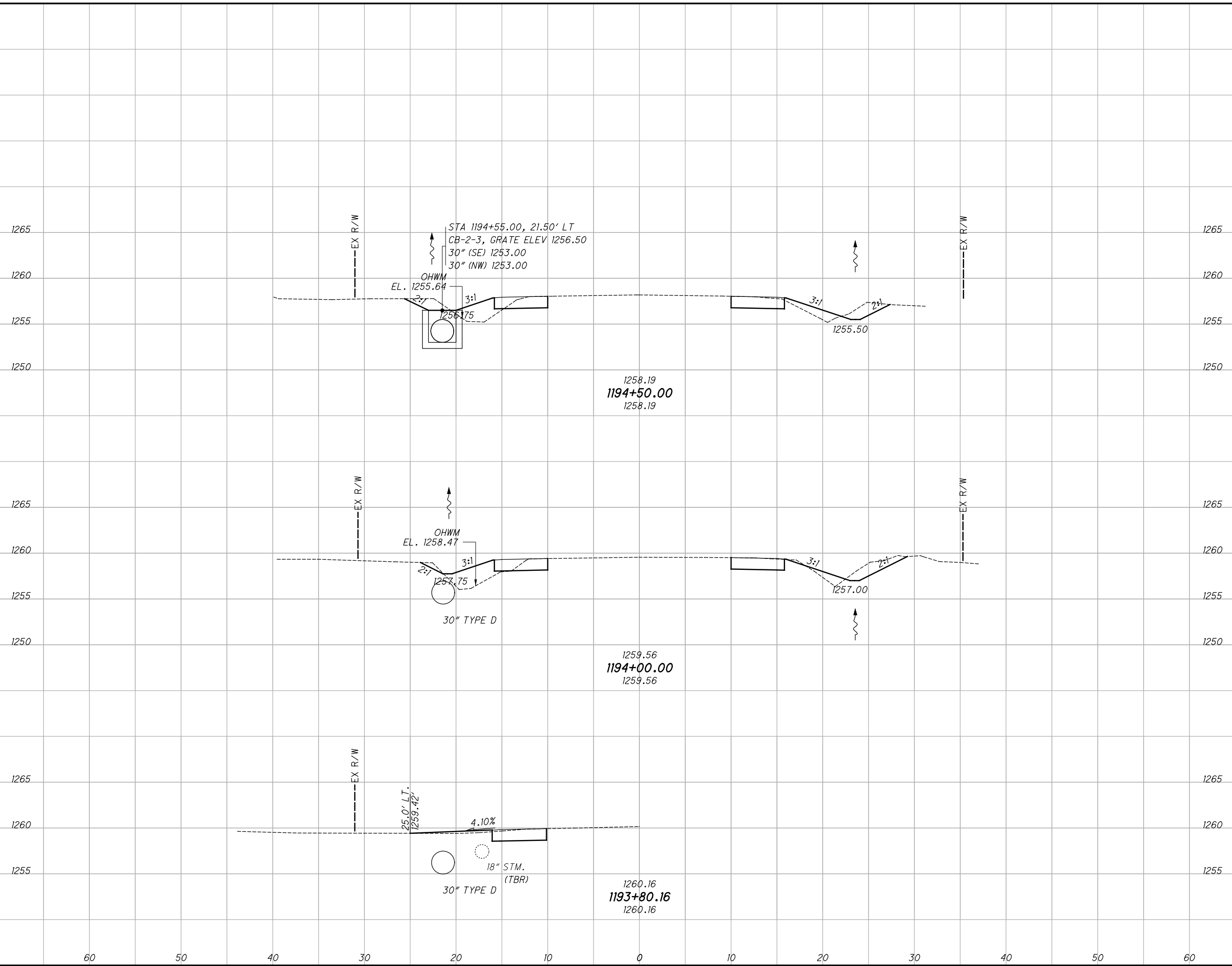
**GEA-COUNTY
WIDE SAFETY**

**CROSS SECTIONS - S.R. 168
STA. 1192+50.00 TO STA. 1193+50.00**

234
425

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SEEDING	
END WIDTH	SO. YDS.
31	178
32	211
389	60



END AREA		VOLUME	
CUT	FILL	CUT	FILL
16	12	26	22
12	12	27	20
		53	42

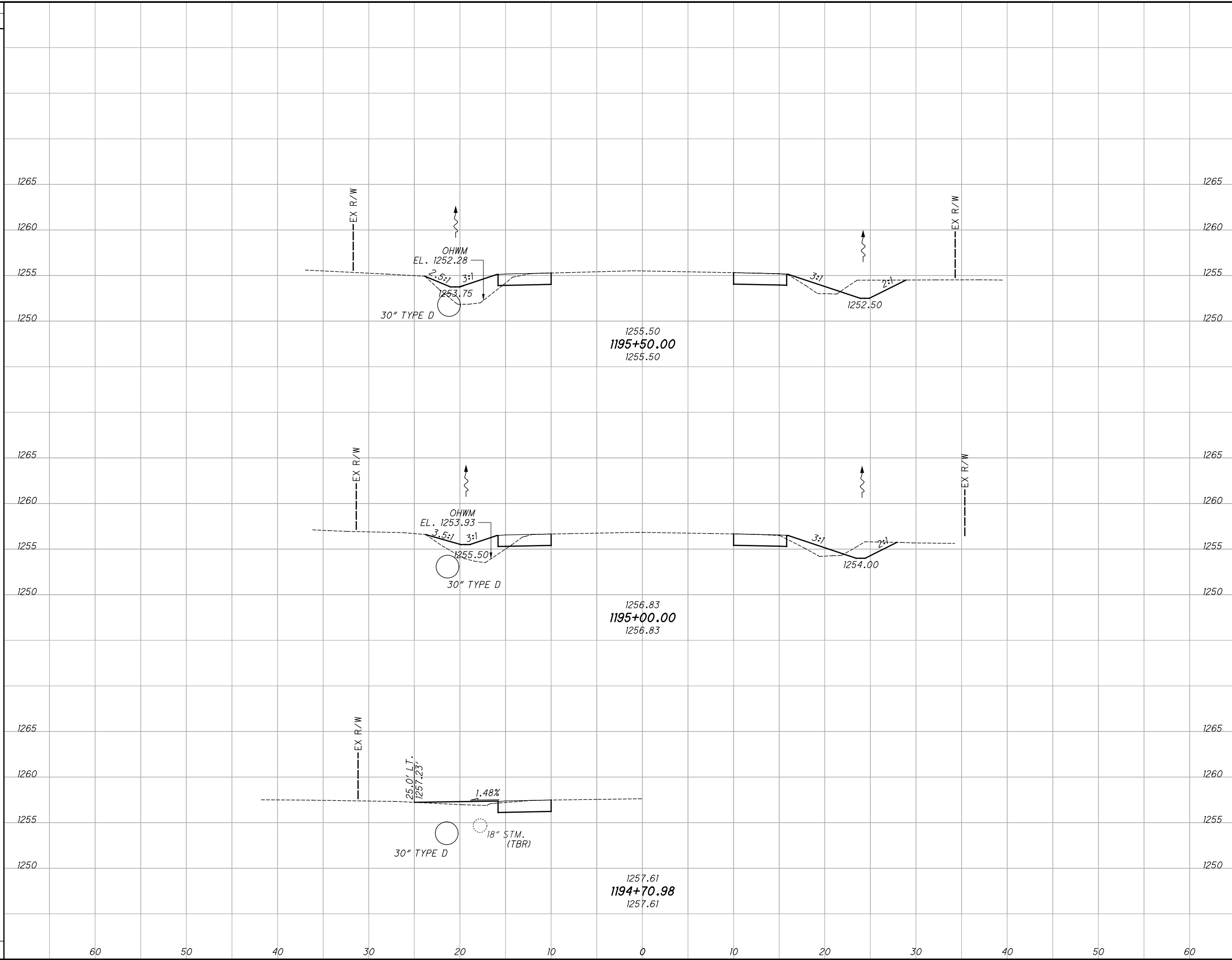
CROSS SECTIONS - S.R. 168
STA. 1193+80.16 TO STA. 1194+50.00

GEA-COUNTY
WIDE SAFETY

235
425

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SEEDING	
END WIDTH	SO. YDS.
32	167
28	164
331	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
17	16	25	30
10	16	24	26
		49	56

**GEA-COUNTY
WIDE SAFETY**

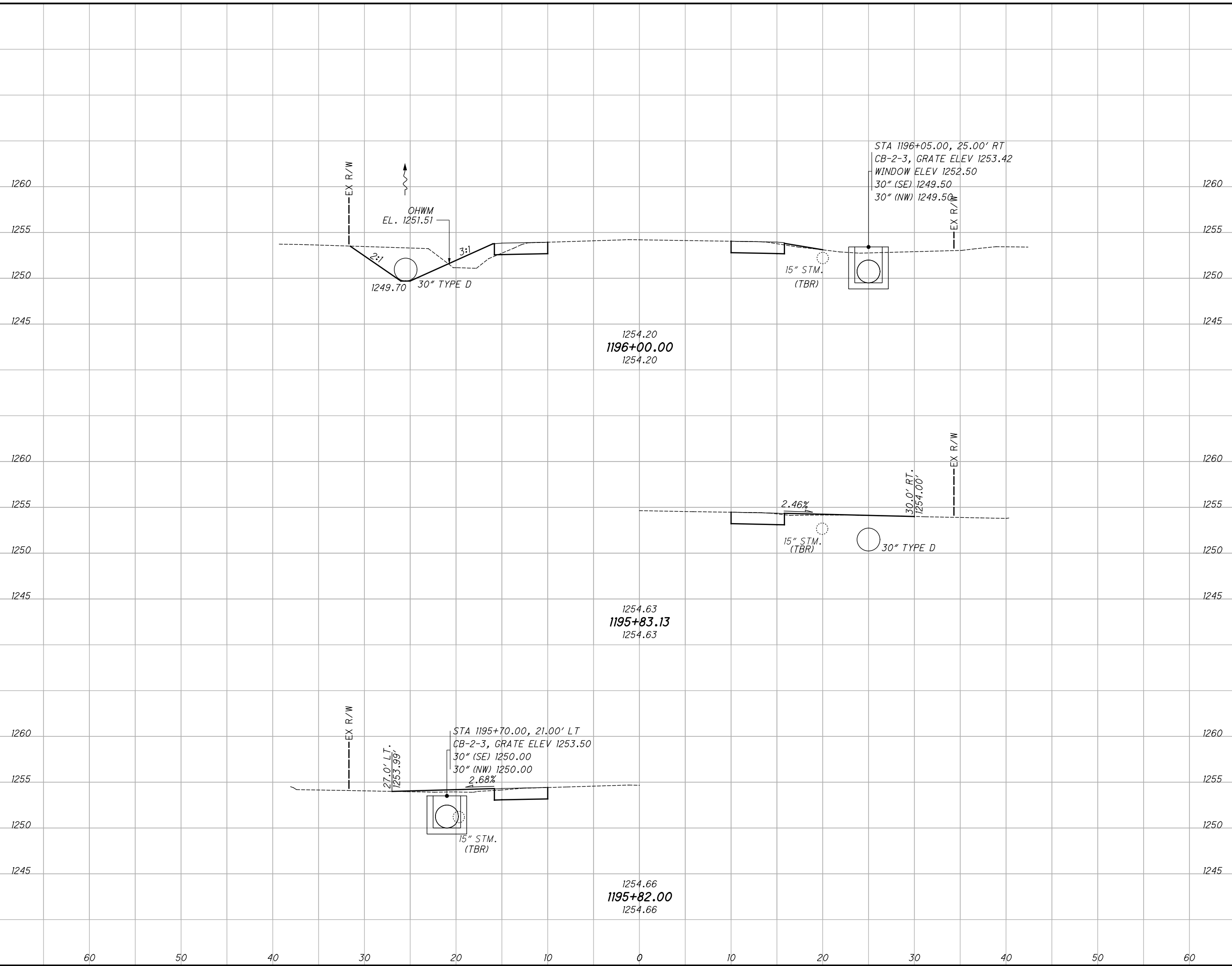
**CROSS SECTIONS - S.R. 168
STA. 1194+70.98 TO STA. 1195+50.00**

CALCULATED	JRE
CHECKED	DLT

236
425

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SEEDING	
END WIDTH	SO. YDS.
30	172
172	172



END AREA		VOLUME	
CUT	FILL	CUT	FILL
28	7	42	21

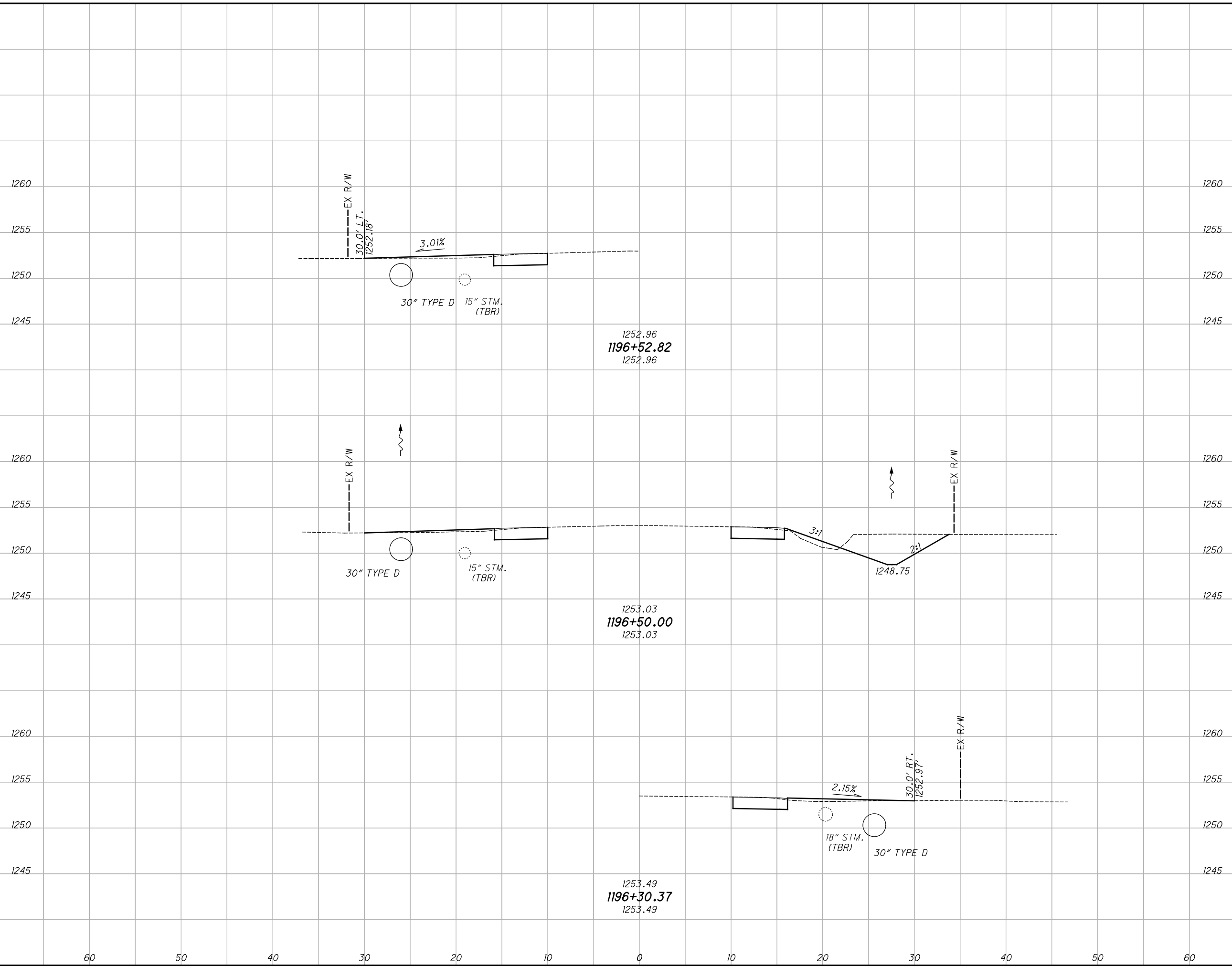
**GEA-COUNTY
WIDE SAFETY**

**CROSS SECTIONS - S.R. 168
STA. 1195+82.00 TO STA. 1196+00.00**

237
425

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SEEDING	
END WIDTH	SO. YDS.
197	60
197	50
197	40
197	30
197	20
197	10
197	0
197	10
197	20
197	30
197	40
197	50
197	60



END AREA		VOLUME	
CUT	FILL	CUT	FILL
		33	5
		56	11

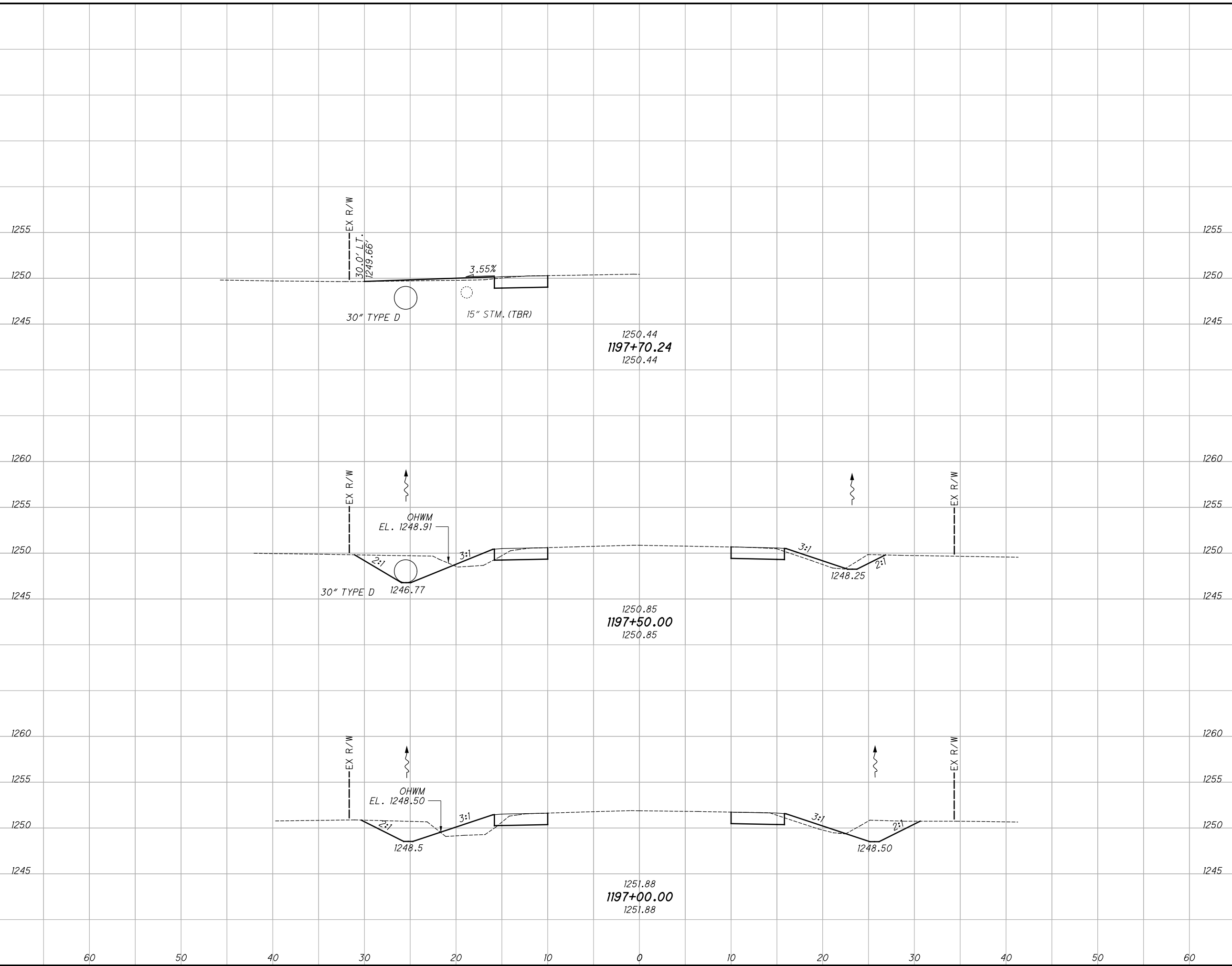
GEA-COUNTY
WIDE SAFETY

CROSS SECTIONS - S.R. 168
STA. 1196+30.37 TO STA. 1196+52.82

238
425

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SEEDING	
END WIDTH	SO. YDS.
451	
60	
50	
40	
30	
20	
10	
0	
10	
20	
30	
40	
50	
60	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
30	6	55	15
29	10	57	14
		112	29

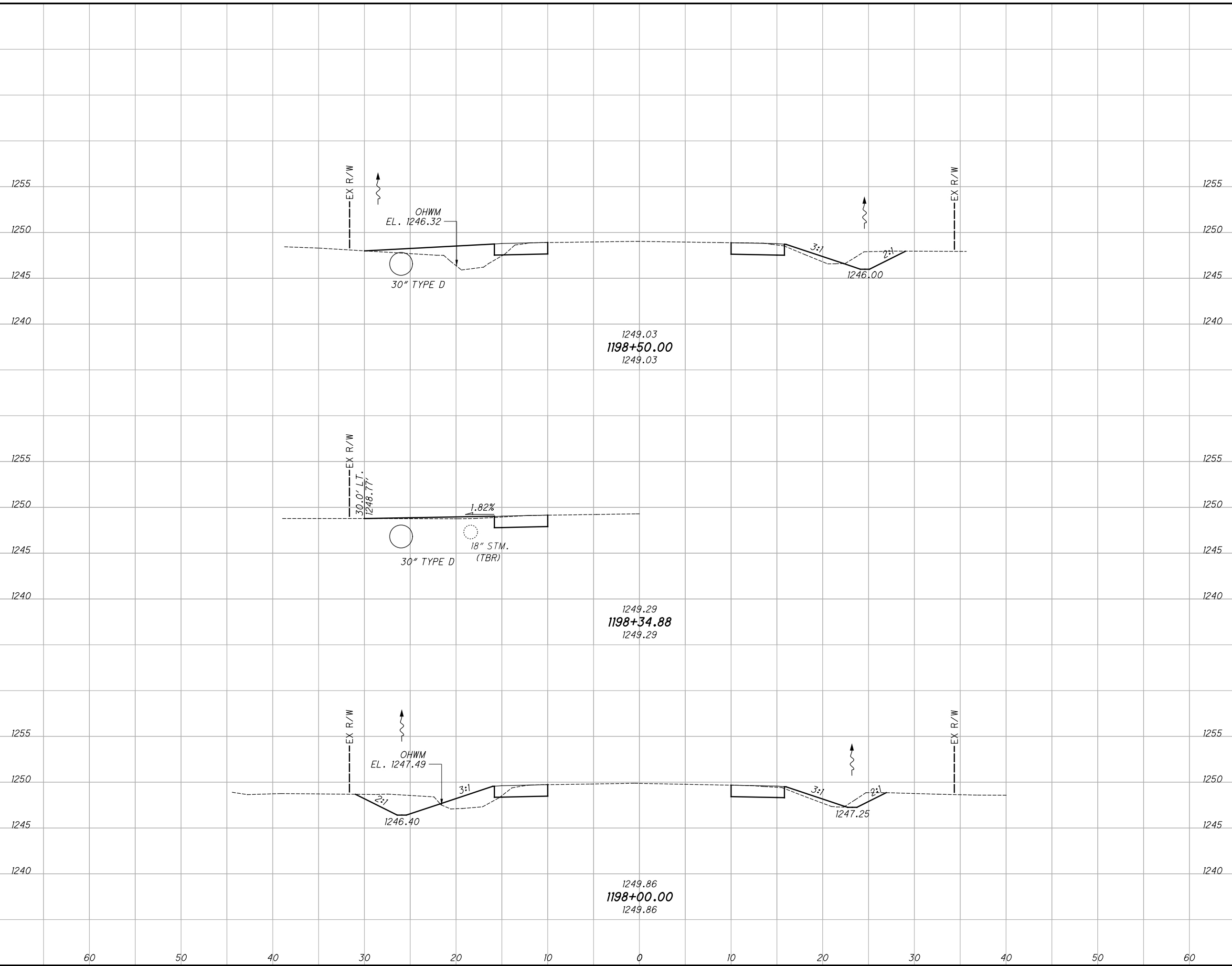
CROSS SECTIONS - S.R. 168
STA. 1197+00.00 TO STA. 1197+70.24

GEA-COUNTY
WIDE SAFETY

239
425

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SEEDING	
END WIDTH	SO. YDS.
36	203
37	208
411	



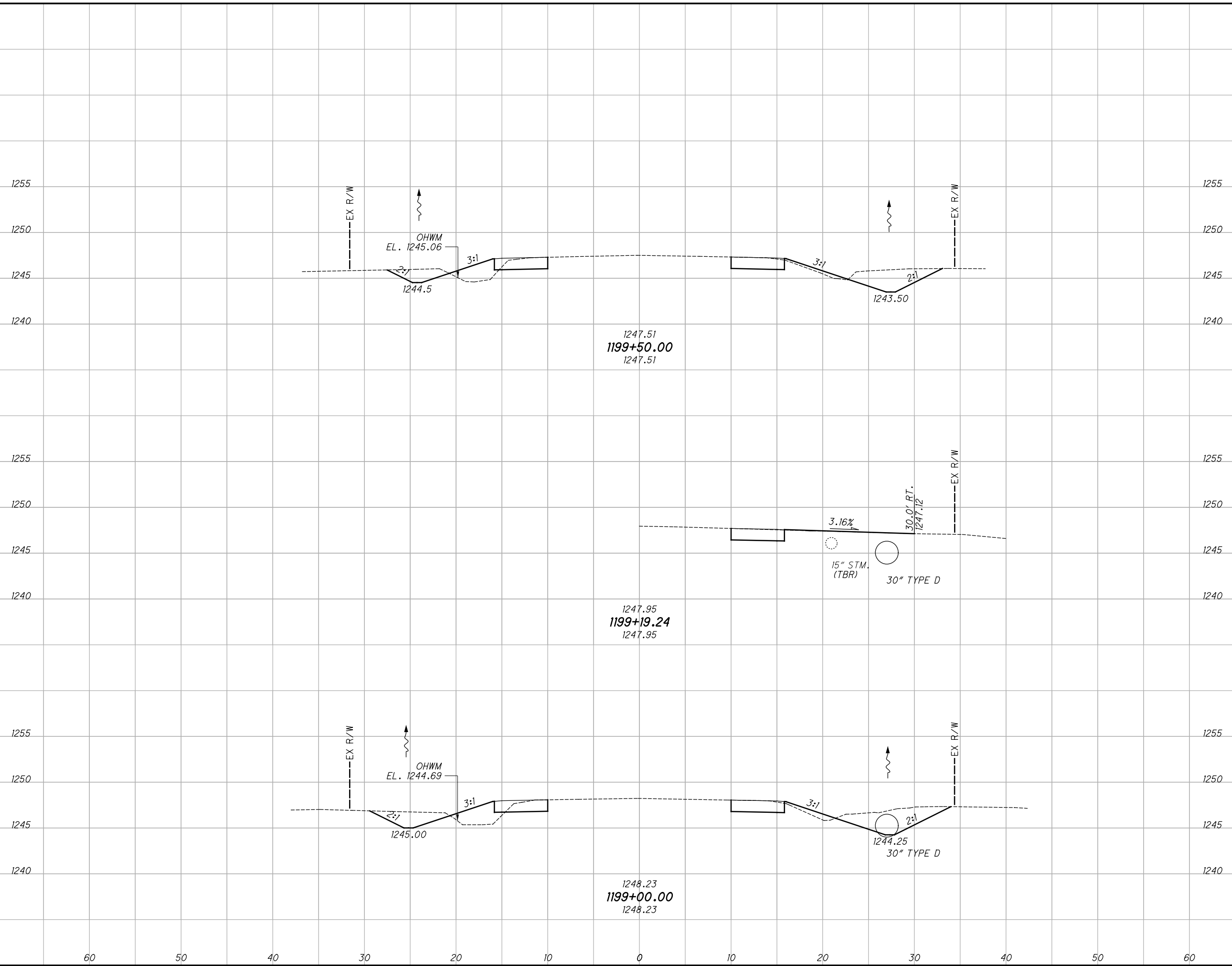
END	AREA		VOLUME	
	CUT	FILL	CUT	FILL
36	13	19		
203			32	6
37	22	10		
208			48	15
411			80	21

CROSS SECTIONS - S.R. 168
STA. 1198+00.00 TO STA. 1198+50.00
GEA-COUNTY
WIDE SAFETY

CALCULATED JRE
 CHECKED DLT
 240
 425

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SEEDING	
END WIDTH	SO. YDS.
40	231
43	222
453	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
26	9	56	19
35	11	44	28
		100	47

**GEA-COUNTY
WIDE SAFETY**

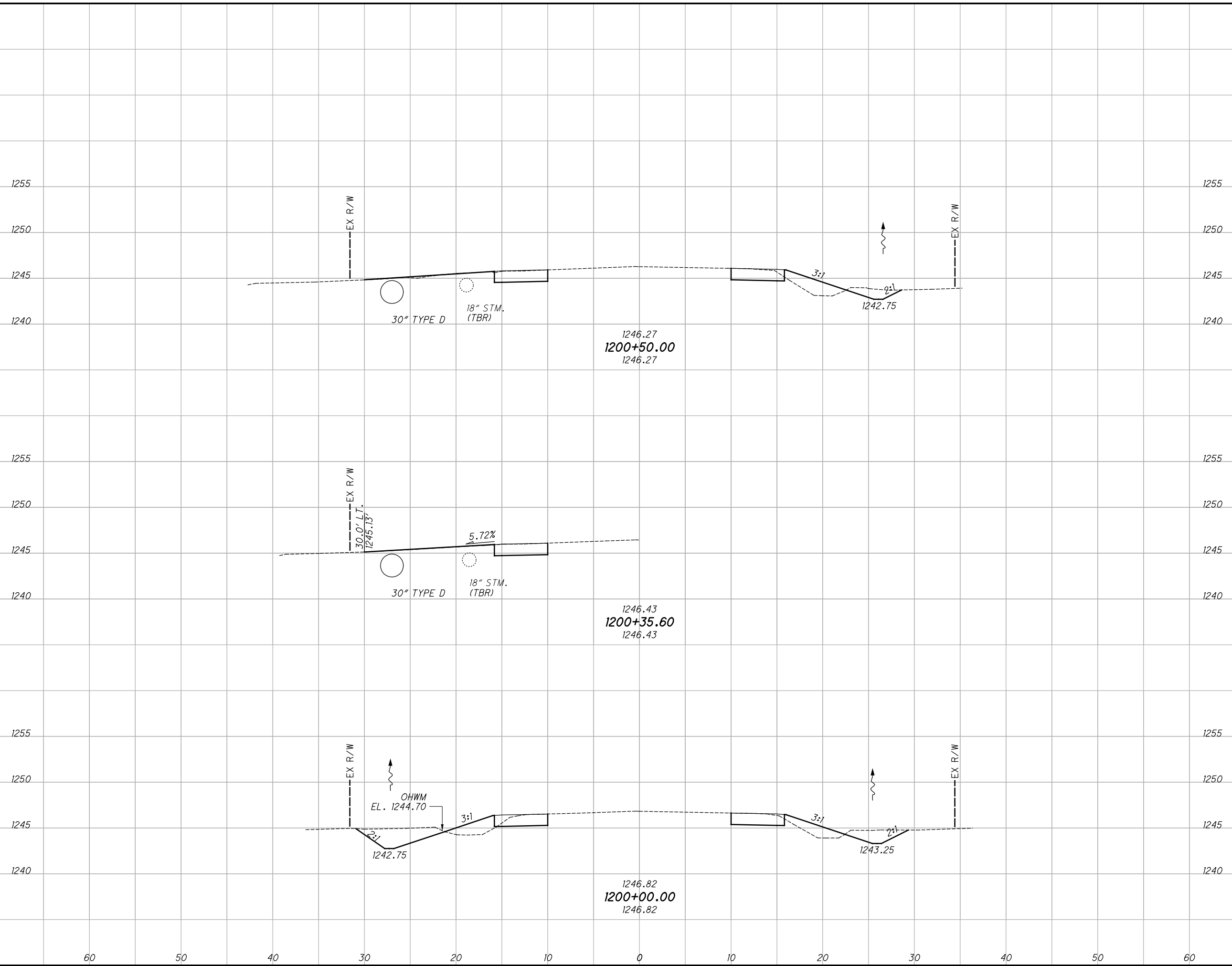
**CROSS SECTIONS - S.R. 168
STA. 1199+00.00 TO STA. 1199+50.00**

CALCULATED JRE
CHECKED DLT

241
425

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SEEDING	
END WIDTH	SO. YDS.
34	206
40	223
429	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
12	8	34	19
25	12	47	19
		81	38

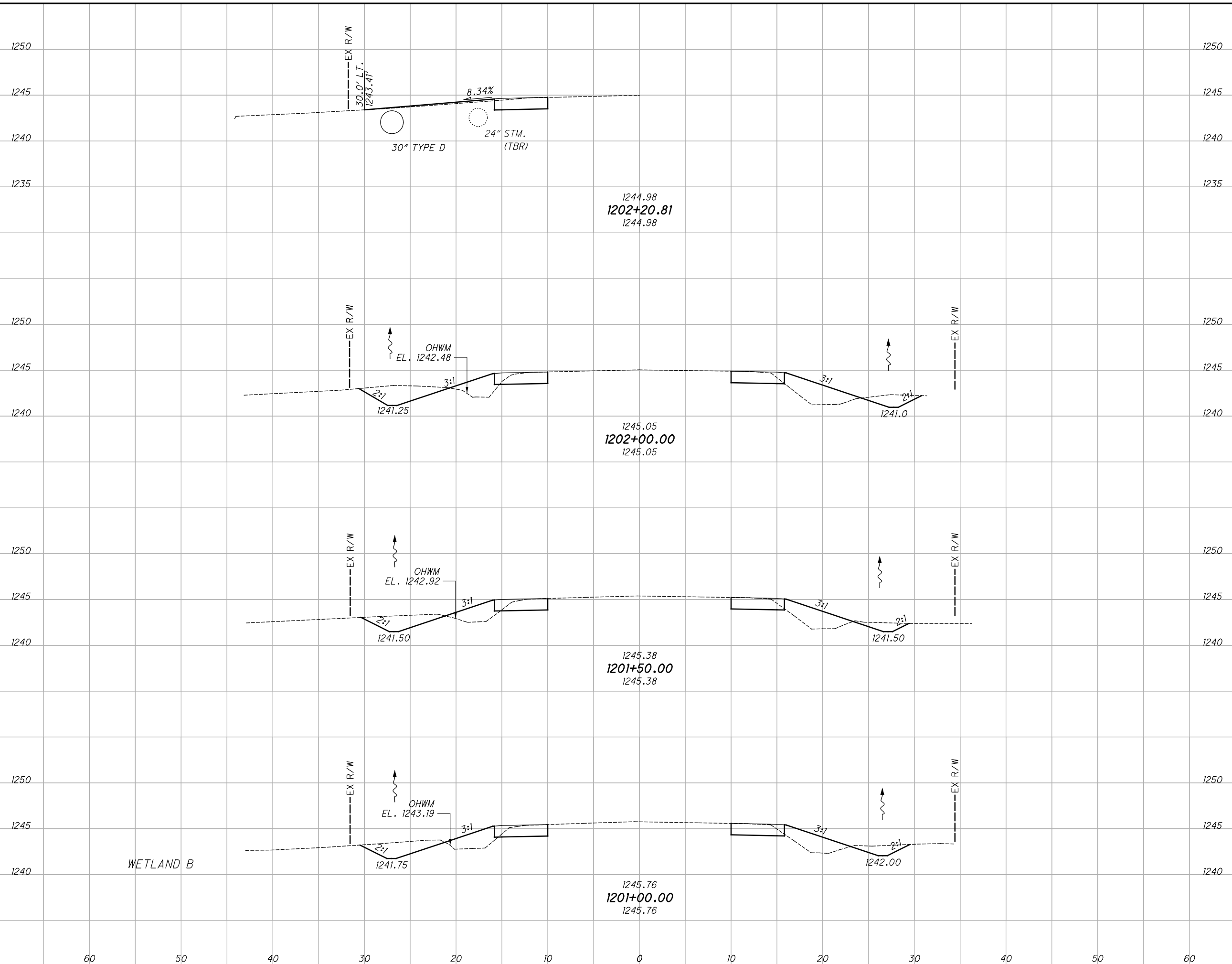
CROSS SECTIONS - S.R. 168
STA. 1200+00.00 TO STA. 1200+50.00

GEA-COUNTY
WIDE SAFETY

242
425

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SEEDING	END		SO.	VOLUME	CALCULATED	CHECKED	DLT
	WIDTH	YDS.					
	60	50					
	41	223		25	21		
	38	217		20	19		
	39	206		22	18		
	646			112	95		



END AREA		VOLUME		CALCULATED	CHECKED	DLT
CUT	FILL	CUT	FILL			
25	21	42	37			
20	19	39	34			
22	18	31	24			
		112	95			

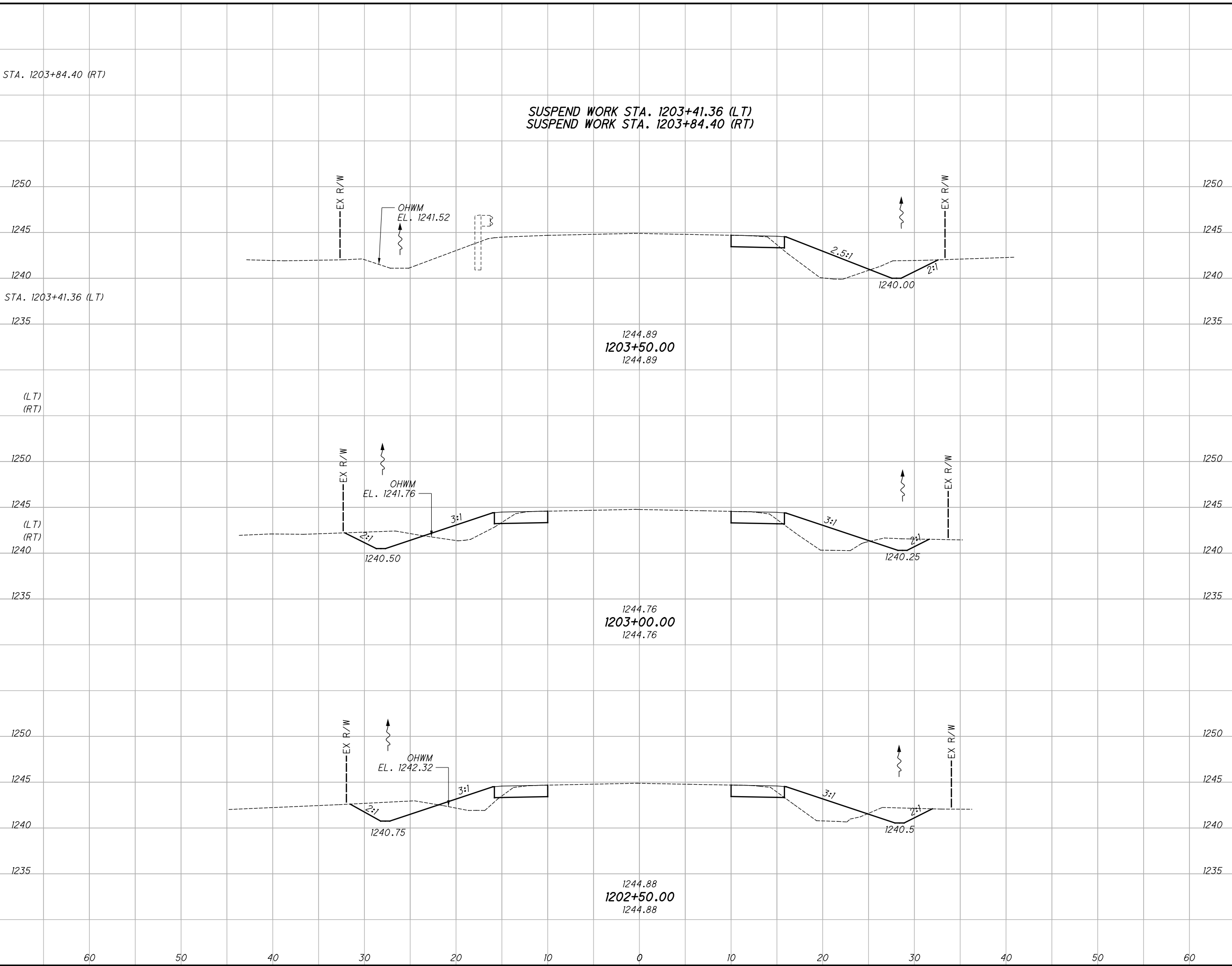
**CROSS SECTIONS - S.R. 168
STA. 1201+00.00 TO STA. 1202+20.81**

**GEA-COUNTY
WIDE SAFETY**

243
425

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SEEDING	
END WIDTH	SO. YDS.
18	
69	
18	
20	
92	
114	
20	
23	
244	
43	
233	
752	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
11	11		
22	29	31	37
44	48		
26	24		
		47	42
		122	165

CROSS SECTIONS - S.R. 168
STA. 1202+50.00 TO STA. 1203+50.00

GEA-COUNTY
WIDE SAFETY

244
425

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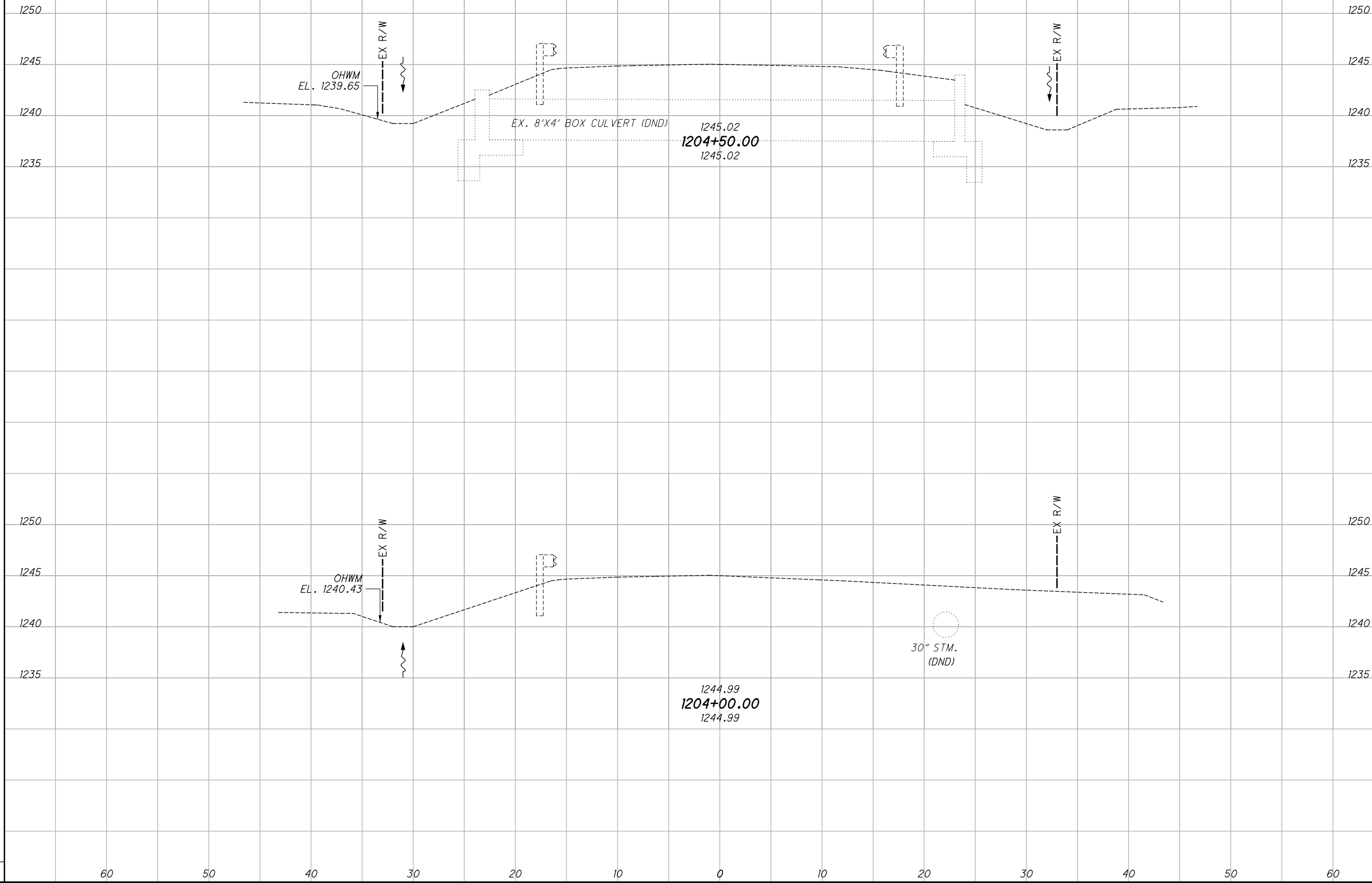
SEEDING

END SO.
WIDTH YDS.

END AREA
CUT FILL

VOLUME
CUT FILL

CALCULATED
JRE
CHECKED
DLT



END AREA		VOLUME	
CUT	FILL	CUT	FILL
11	19	14	19

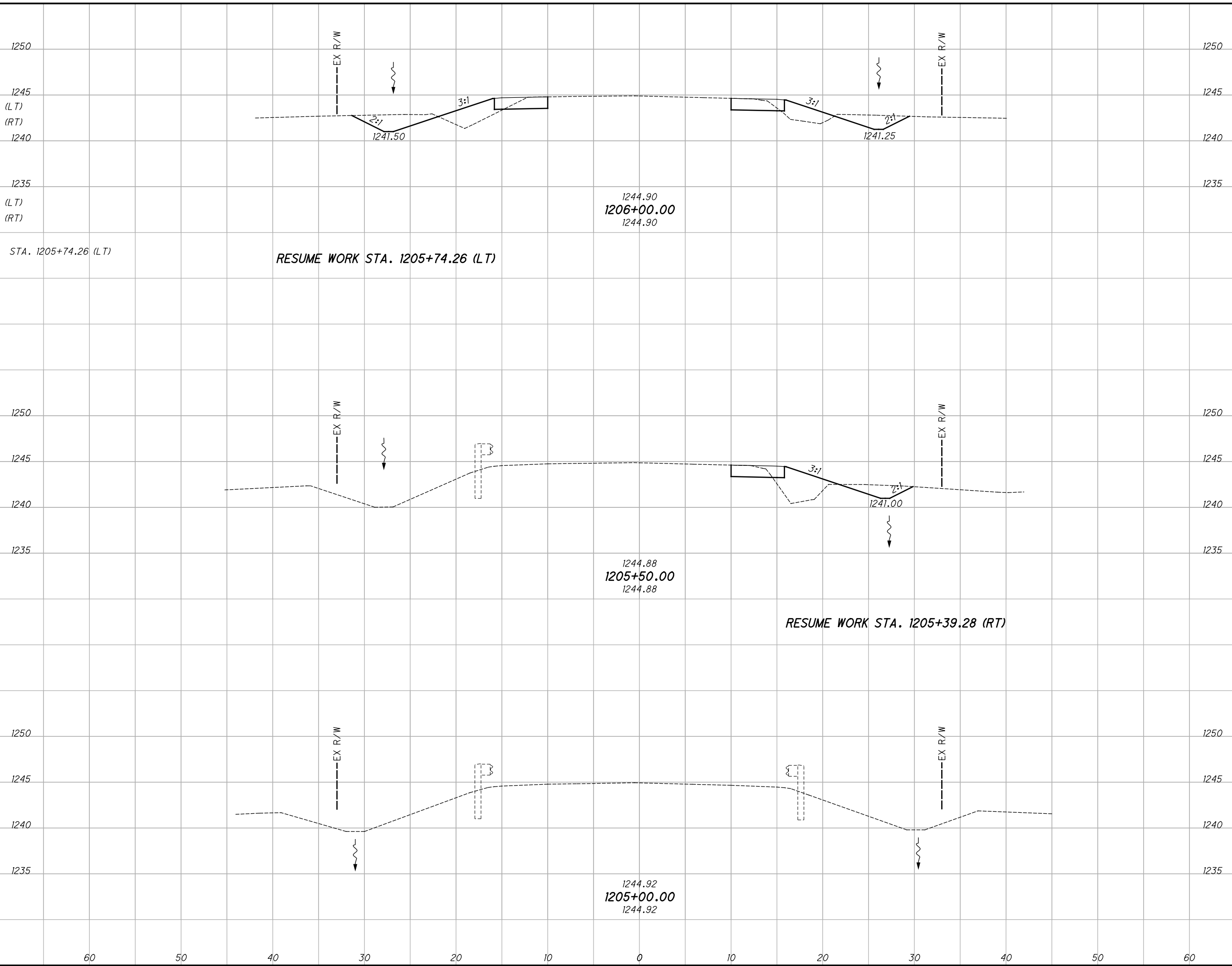
CROSS SECTIONS - S.R. 168
STA. 1204+00.00 TO STA. 1204+50.00

GEA-COUNTY
WIDE SAFETY

245
425

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SEEDING	
END WIDTH	SO. YDS.
22	24
68	120
21	21
188	



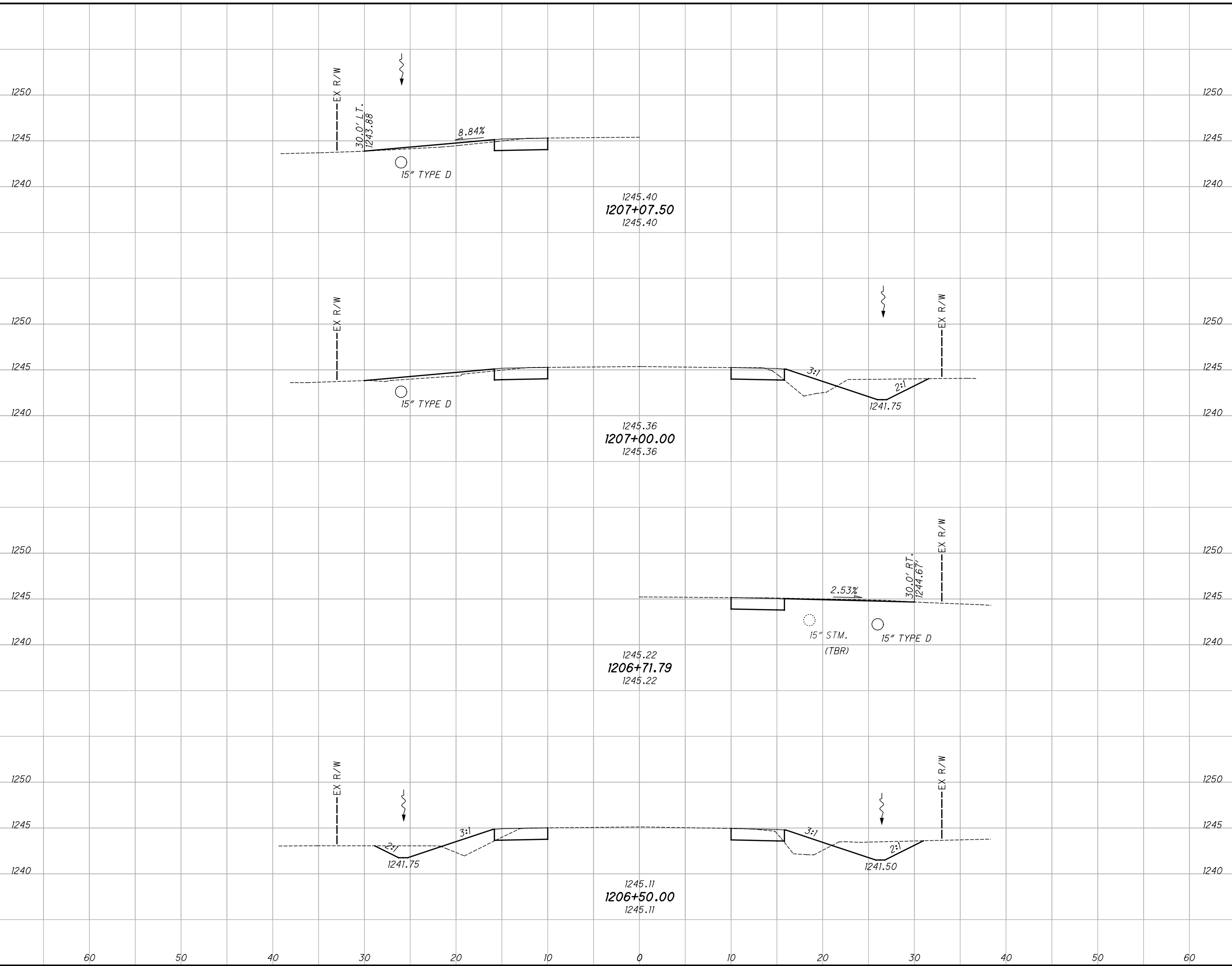
END AREA		VOLUME	
CUT	FILL	CUT	FILL
28	18	34	29
9	14	4	6
		38	35

CALCULATED JRE
 CHECKED DLT
CROSS SECTIONS - S.R. 168
STA. 1205+00.00 TO STA. 1206+00.00
GEA-COUNTY
WIDE SAFETY

246
425

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SEEDING	
END WIDTH	SO. YDS.
453	60
236	50
39	40
217	30
39	20
217	10
39	0
217	10
39	20
217	30
39	40
217	50
39	60



END CUT	AREA FILL	VOLUME	
		CUT	FILL
22	12	44	26
25	16	49	31
93	57		

**GEA-COUNTY
WIDE SAFETY**

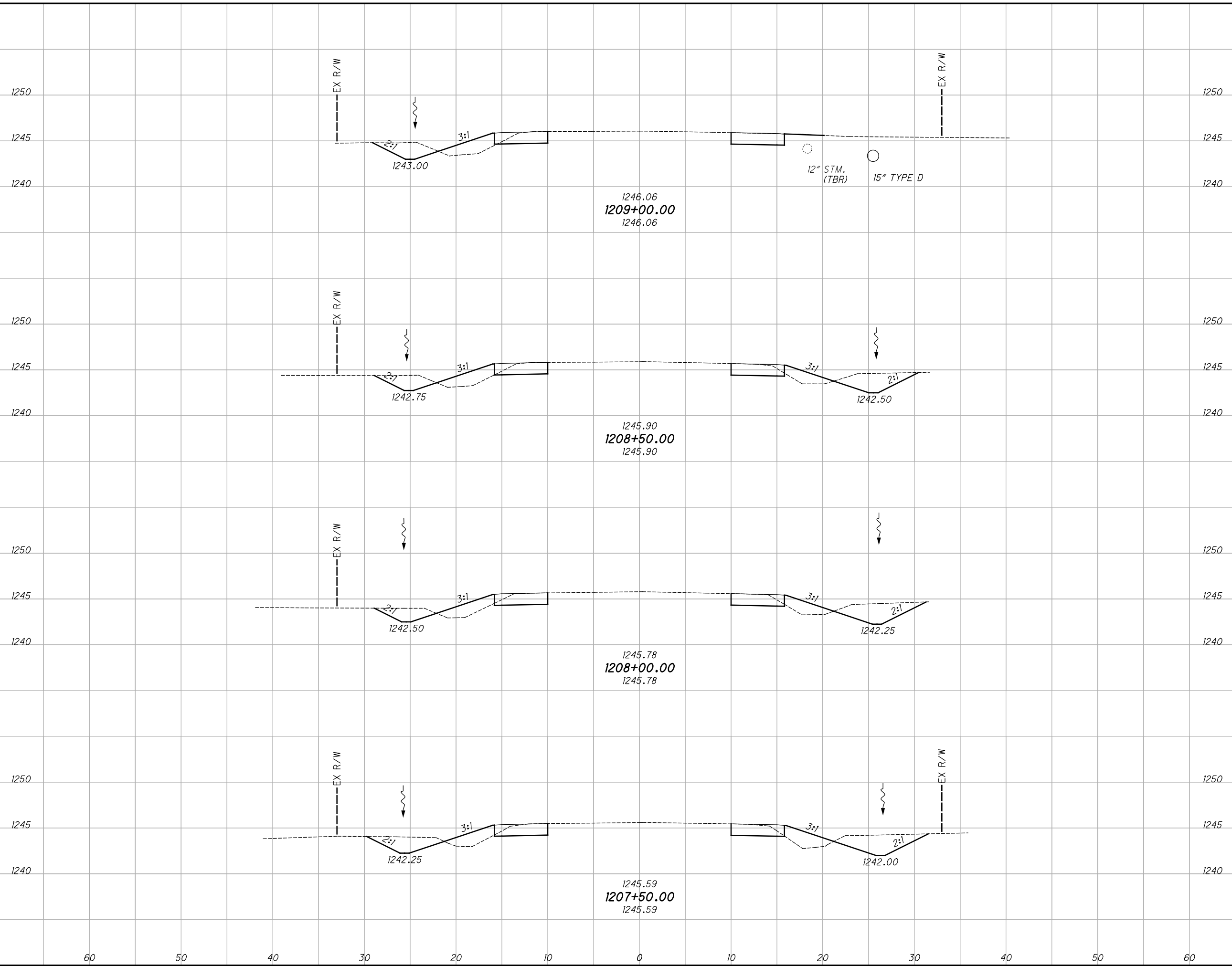
**CROSS SECTIONS - S.R. 168
STA. 1206+50.00 TO STA. 1207+07.50**

CALCULATED	JRE
CHECKED	DLT

247
425

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SEEDING	
END WIDTH	SO. YDS.
26	184
38	217
39	228
42	225
854	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
14	7	37	19
26	13	50	23
28	12	54	23
30	13	48	23
		189	88

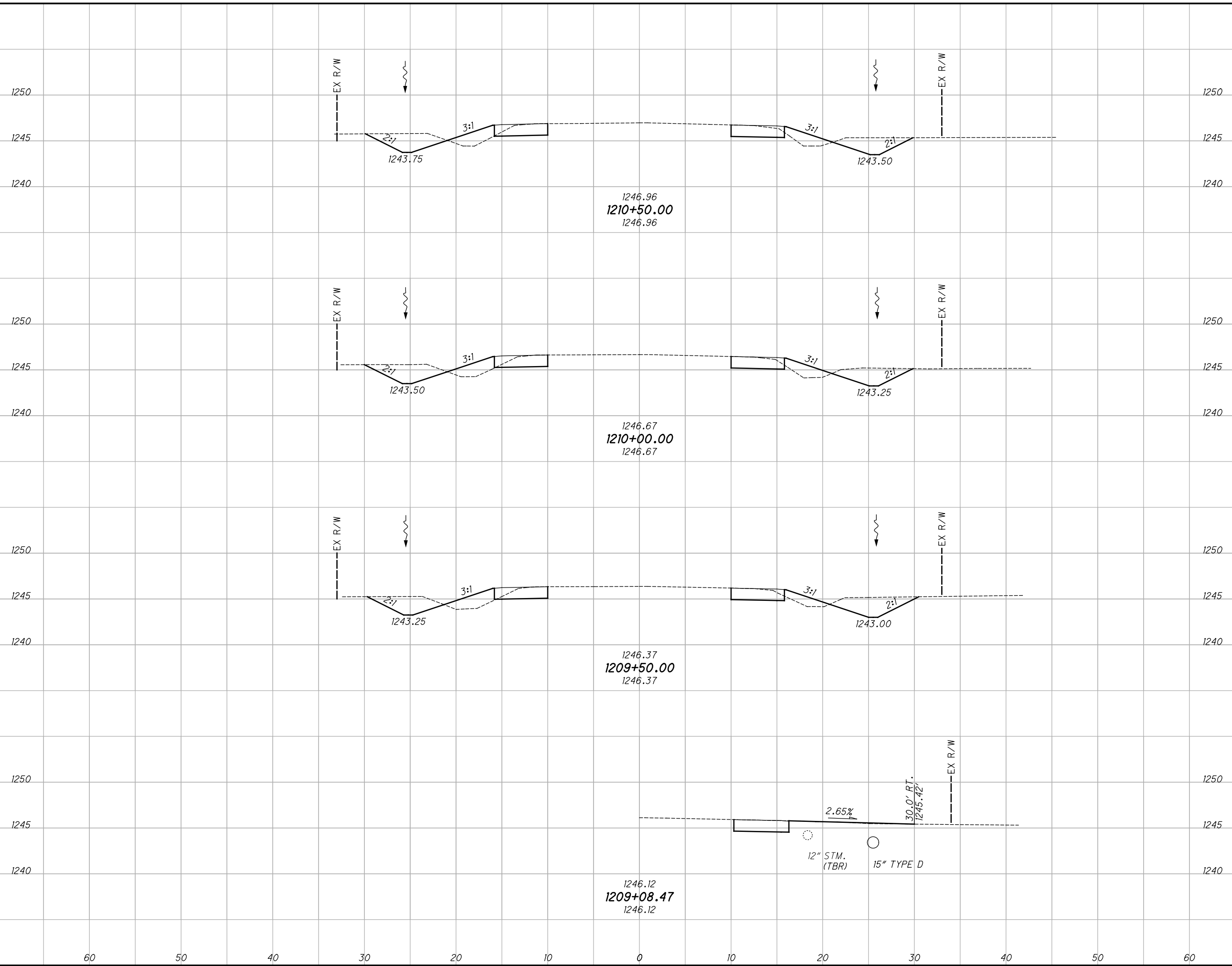
CROSS SECTIONS - S.R. 168
STA. 1207+50.00 TO STA. 1209+00.00

GEA-COUNTY
WIDE SAFETY

248
425

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SEEDING	
END WIDTH	SO. YDS.
60	40
50	40
40	40
30	40
20	40
10	40
0	40
10	40
20	40
30	40
40	40
50	40
60	40
627	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
30	11	56	20
30	11	54	19
28	10	39	16
		149	55

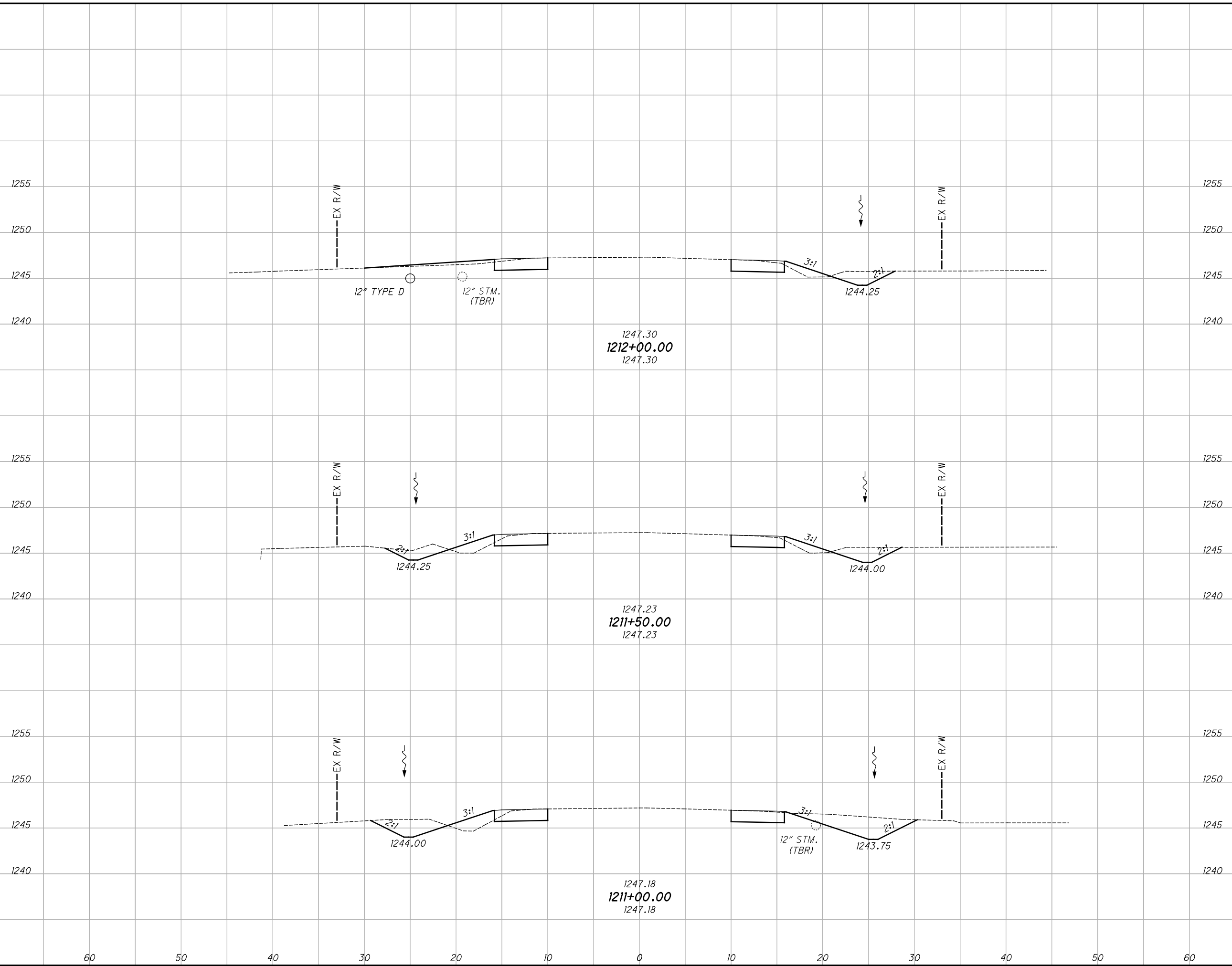
CROSS SECTIONS - S.R. 168
STA. 1209+08.47 TO STA. 1210+50.00

GEA-COUNTY
WIDE SAFETY

249
425

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SEEDING	
END WIDTH	SO. YDS.
611	222
60	39
50	206
40	35
30	183
20	29



END AREA		VOLUME	
CUT	FILL	CUT	FILL
16	5	35	11
22	7	55	11
37	5	62	15
		152	37

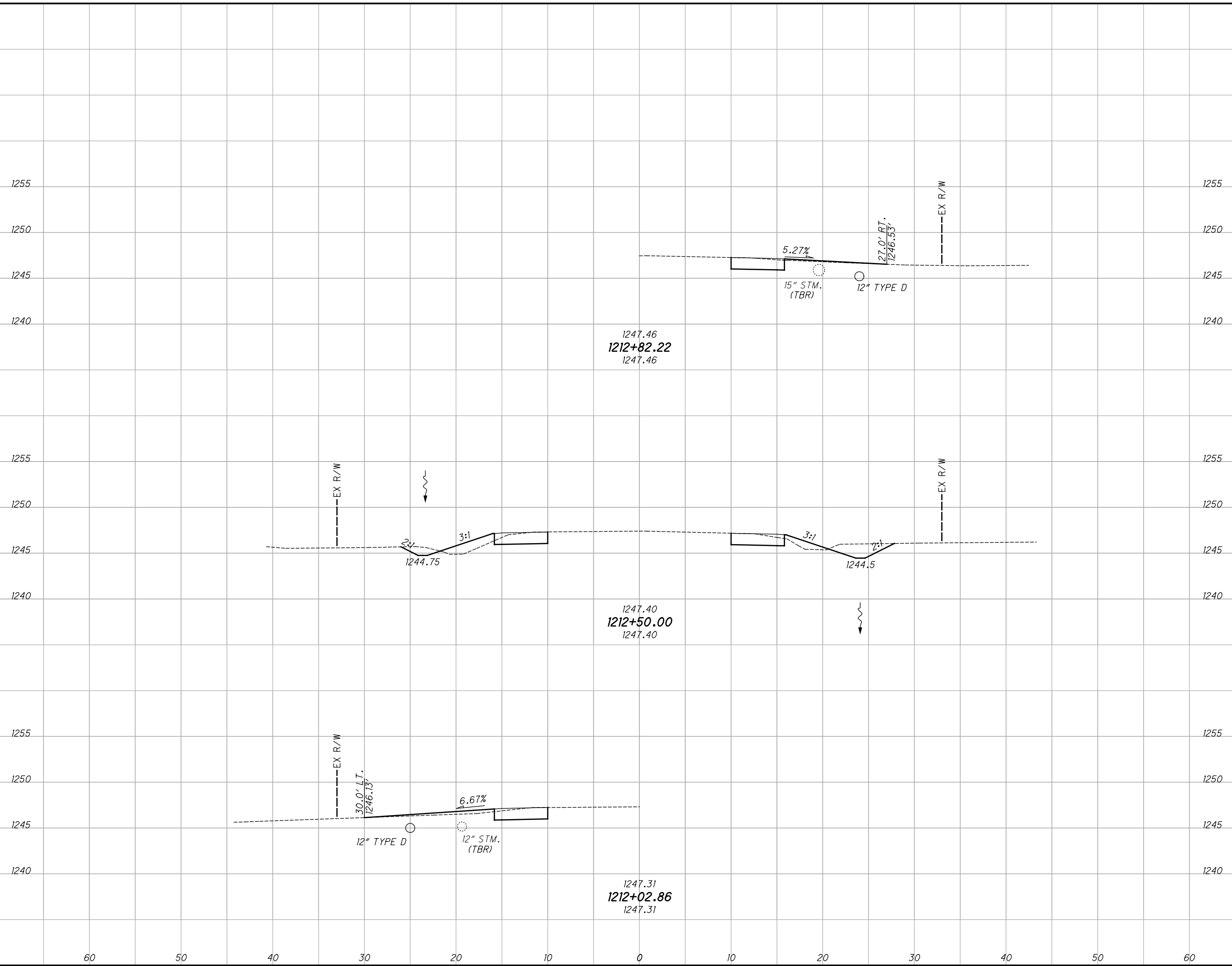
CROSS SECTIONS - S.R. 168
STA. 1211+00.00 TO STA. 1212+00.00

GEA-COUNTY
WIDE SAFETY

(250)
425

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SEEDING	
END WIDTH	SO. YDS.
169	32



END AREA		VOLUME	
CUT	FILL	CUT	FILL
18	8	31	12

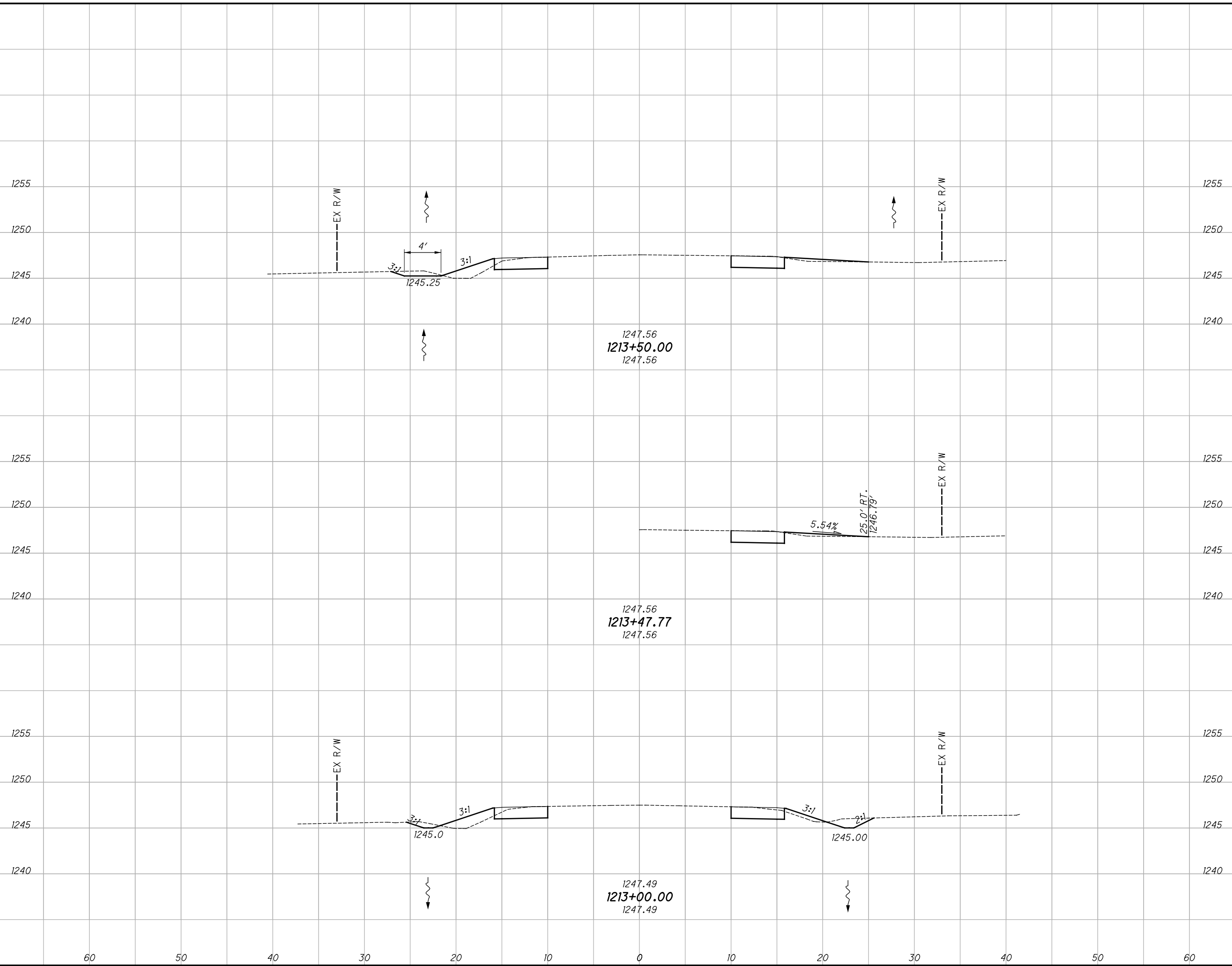
GEA-COUNTY
WIDE SAFETY

CROSS SECTIONS - S.R. 168
STA. 1212+02.86 TO STA. 1212+82.22

251
425

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SEEDING	
END WIDTH	SO. YDS.
27	150
27	164
314	



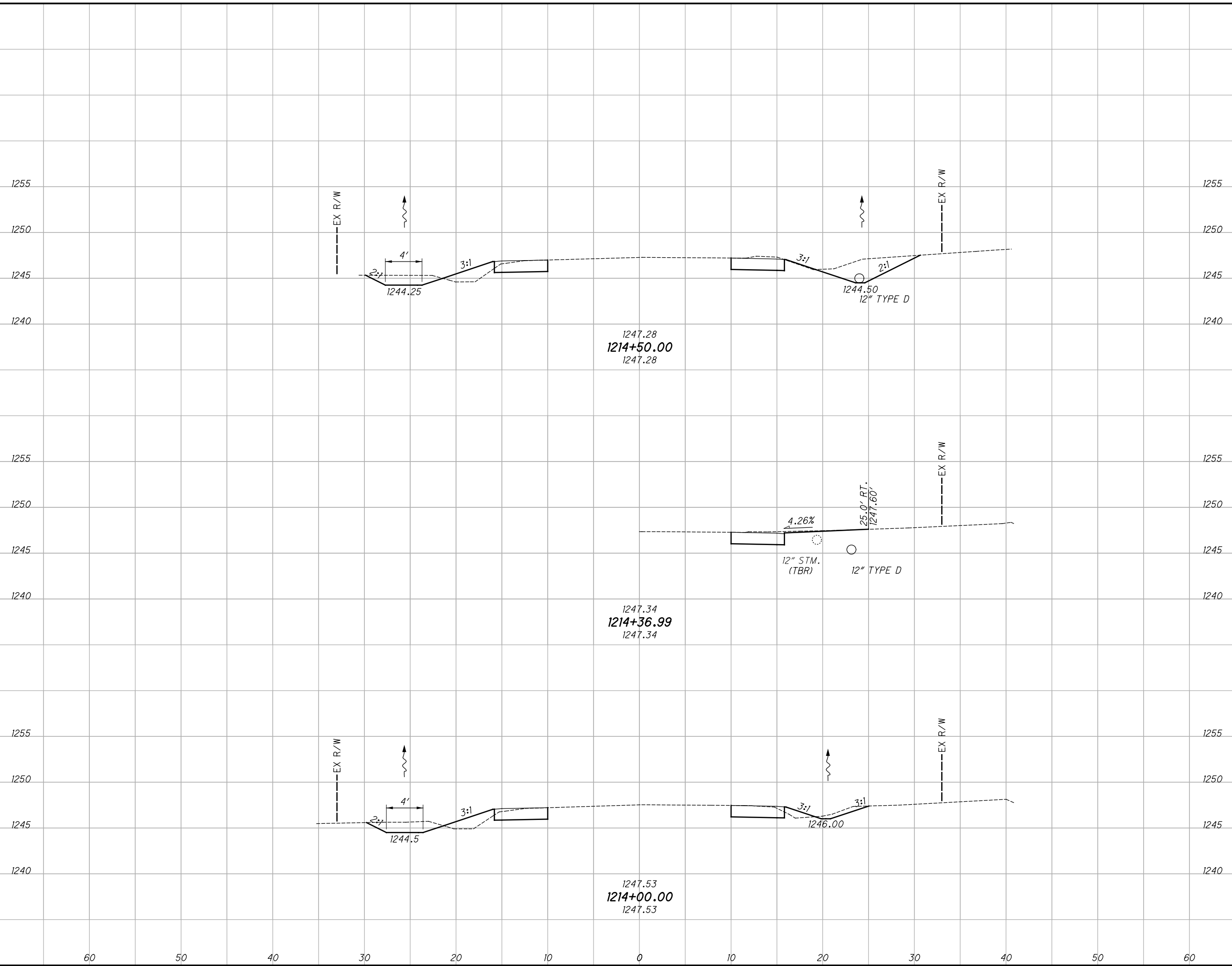
END AREA		VOLUME	
CUT	FILL	CUT	FILL
12	7	23	14
13	7	29	14
		52	28

GEA-COUNTY
WIDE SAFETY
CROSS SECTIONS - S.R. 168
STA. 1213+00.00 TO STA. 1213+50.00

CALCULATED JRE
 CHECKED DLT
 252
 425

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SEEDING	
END WIDTH	SO. YDS.
40	203
33	166
369	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
32	6	47	12
19	7	29	13
		76	25

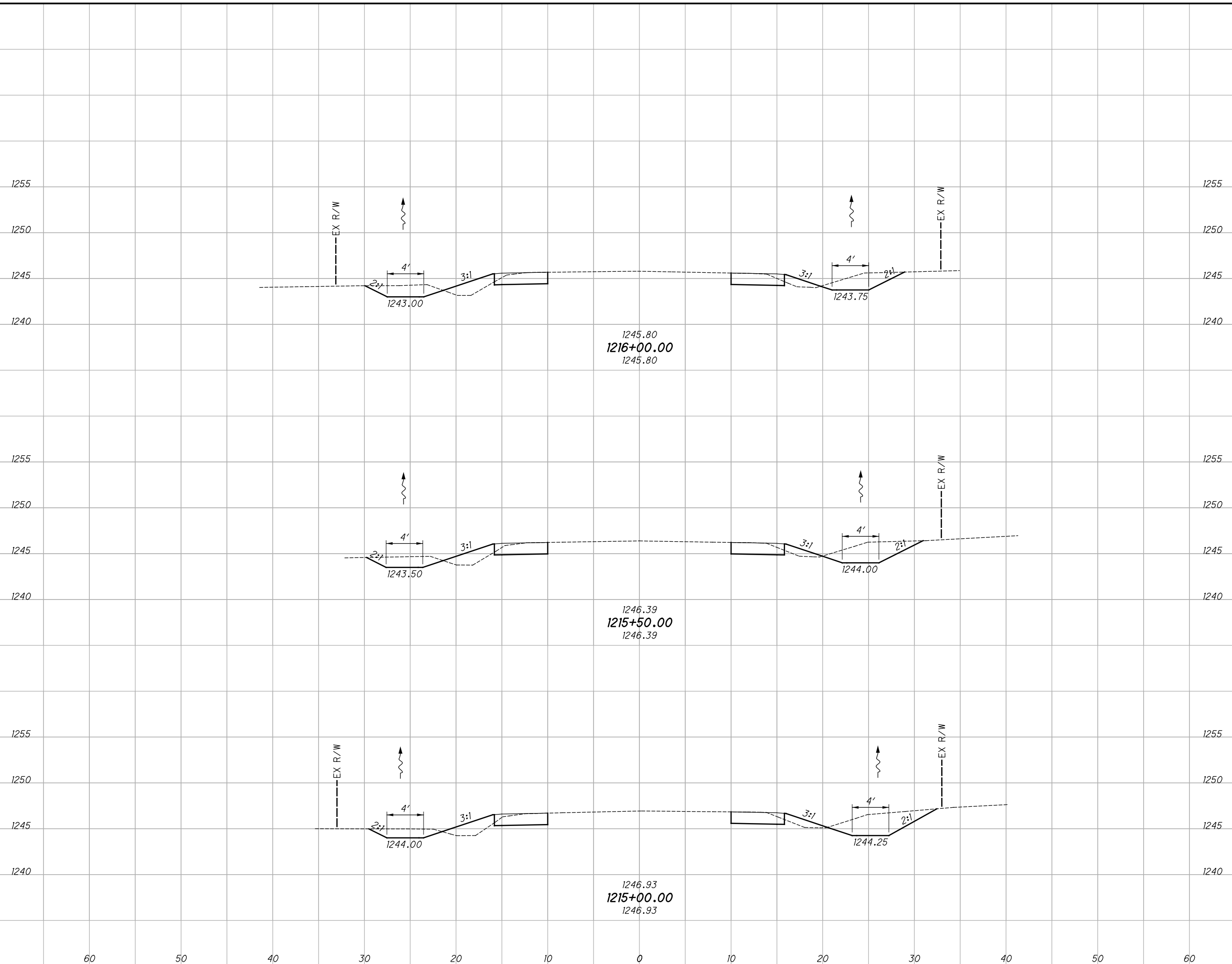
CROSS SECTIONS - S.R. 168
STA. 1214+00.00 TO STA. 1214+50.00

GEA-COUNTY
WIDE SAFETY

253
425

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SEEDING	
END WIDTH	SO. YDS.
38	217
40	228
41	228
673	



END	AREA		VOLUME	
	CUT	FILL	CUT	FILL
26		8		
53		15		
31		8		
59		16		
33		9		
60		14		
172		45		

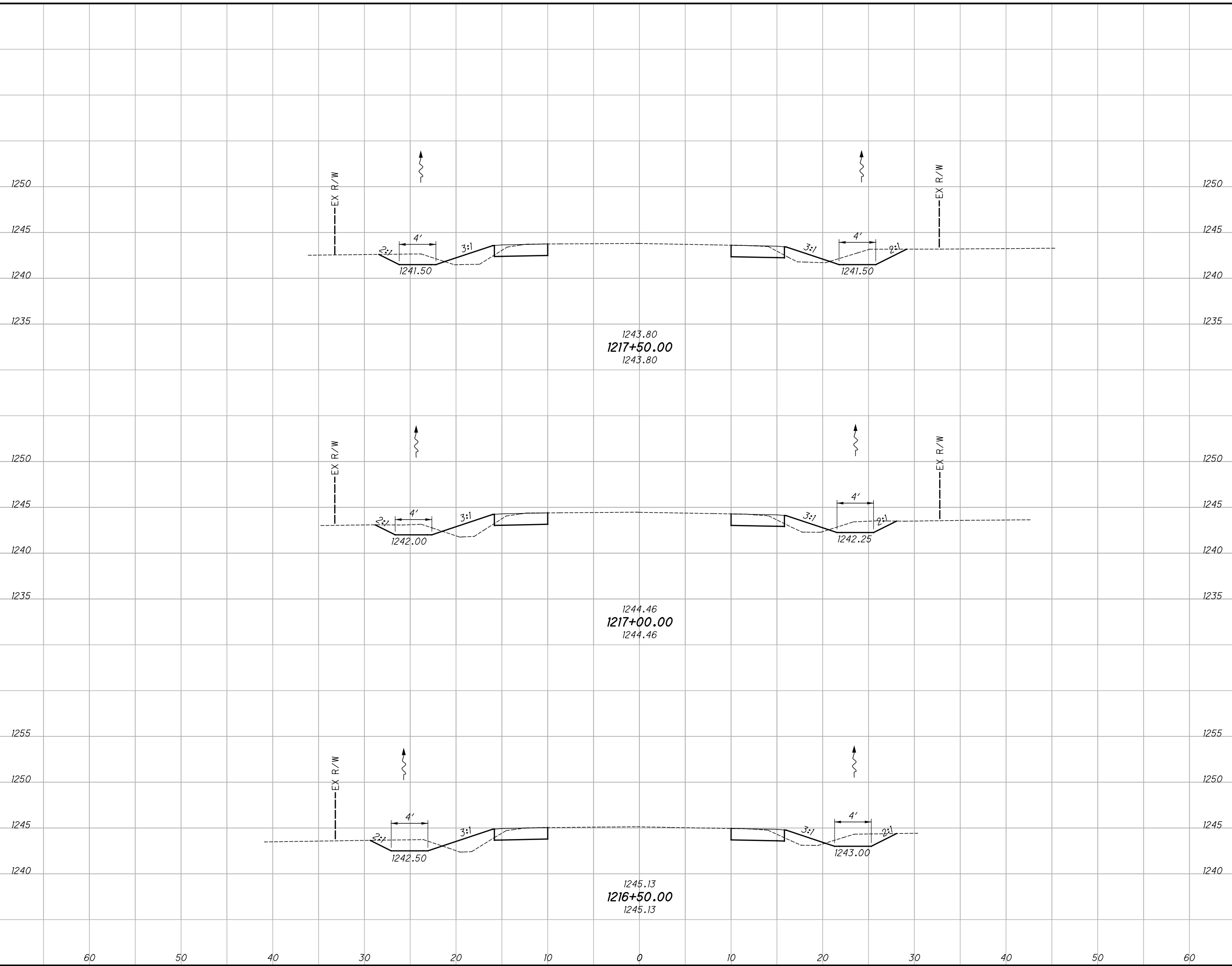
CROSS SECTIONS - S.R. 168
STA. 1215+00.00 TO STA. 1216+00.00

GEA-COUNTY
WIDE SAFETY

254
425

C:\Users\rotella\Desktop\ProjectData\10164_SRI68\Design\Roadway\Sheets\10164_X5001.dgn XS_SHEET_temporary_model_name_43 10/22/2020 9:55:10 PM rotella

SEEDING	
END WIDTH	SO. YDS.
36	200
35	194
35	206
600	



END AREA	VOLUME	CALCULATED	
		CUT	FILL
22	10	39	19
20	11	39	19
22	10	44	17
122	55		

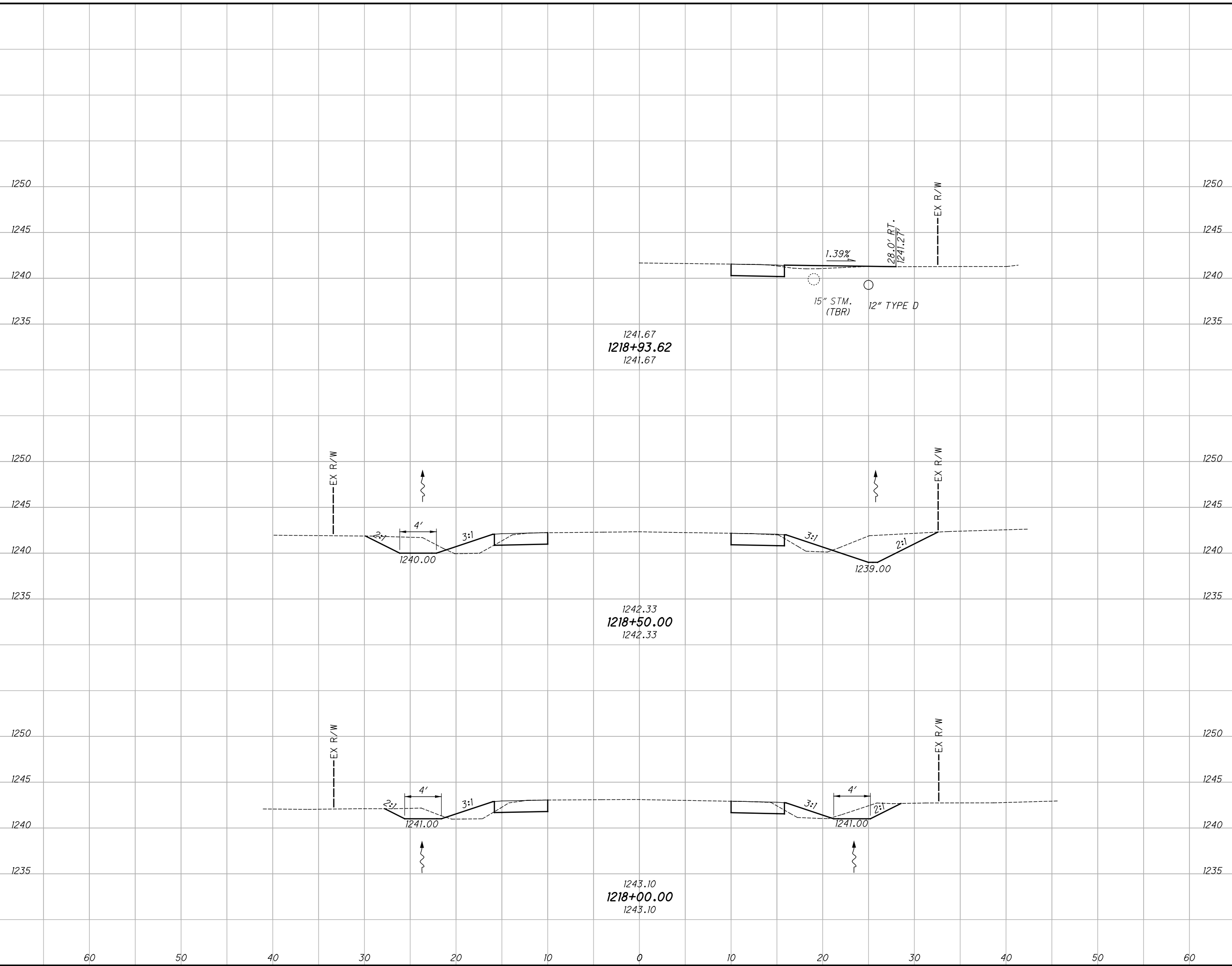
CROSS SECTIONS - S.R. 168
STA. 1216+50.00 TO STA. 1217+50.00

GEA-COUNTY
WIDE SAFETY

255
425

C:\Users\rotella\Desktop\ProjectData\10164_SRI68\Design\Roadway\Sheets\10164_X5001.dgn XS_SHEET_temporary_model_name_44 10/22/2020 9:55:11PM rotella

SEEDING	
END WIDTH	SO. YDS.
60	1250
50	1245
40	1240
30	1235
20	1230
10	1225
0	1220
10	1215
20	1210
30	1205
40	1200
50	1195
60	1190



END AREA		VOLUME	
CUT	FILL	CUT	FILL
37	9	53	17
20	9	39	18
92	44		

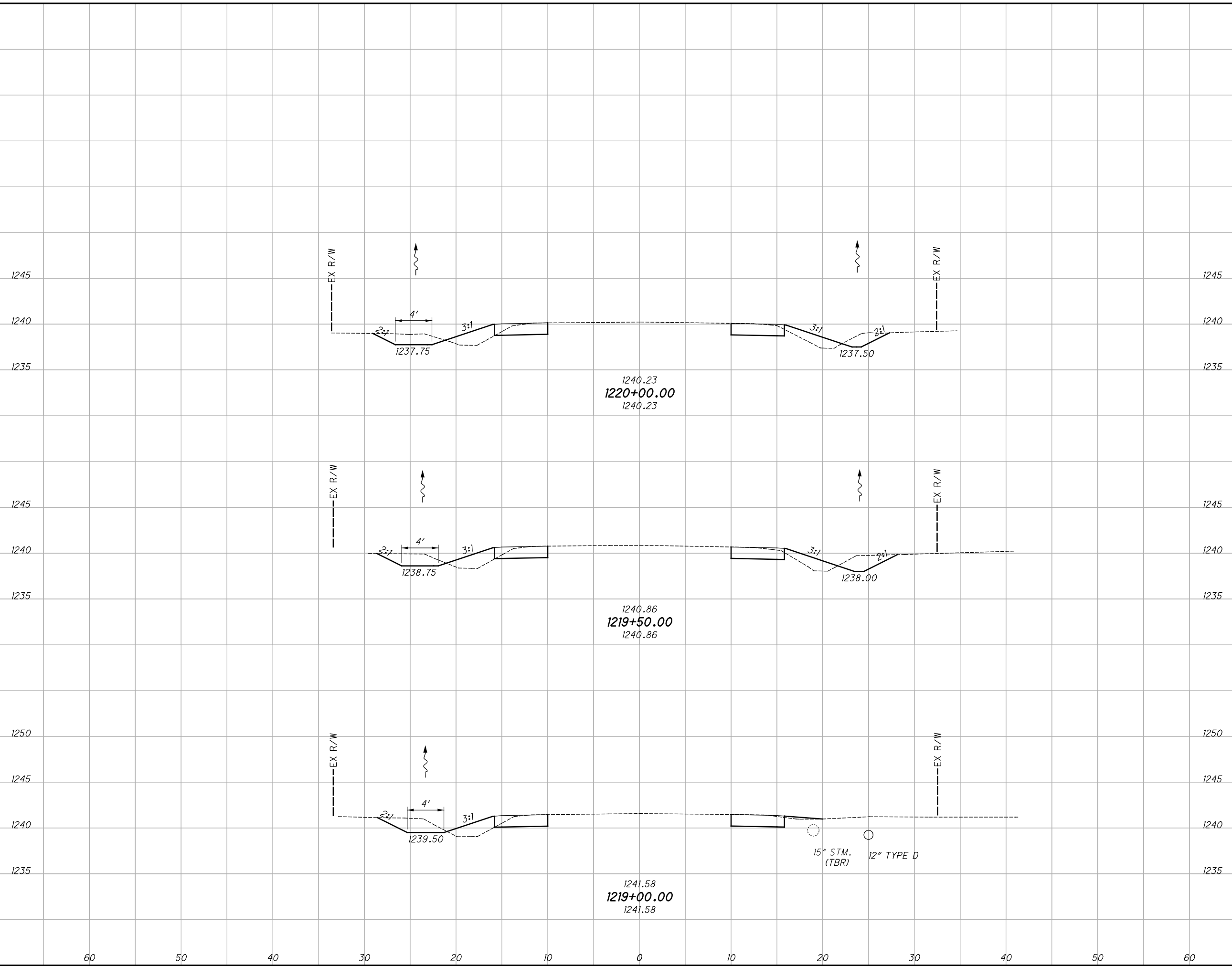
CROSS SECTIONS - S.R. 168
STA. 1218+00.00 TO STA. 1218+93.62

GEA-COUNTY
WIDE SAFETY

256
425

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SEEDING	
END WIDTH	SO. YDS.
561	
25	189
36	172
35	200



END AREA		VOLUME	
CUT	FILL	CUT	FILL
19	12	37	21
21	11	34	17
16	7	49	15
		120	53

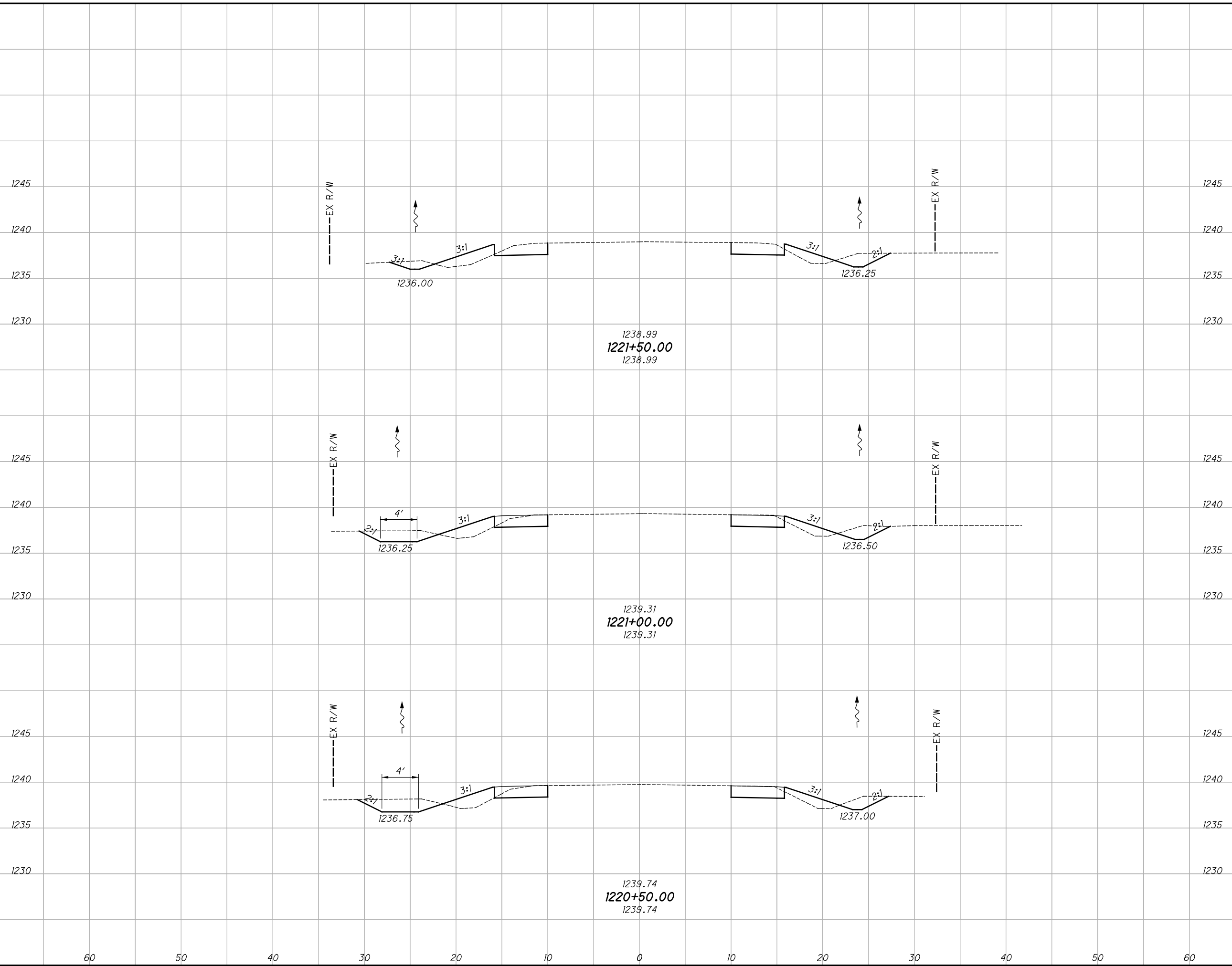
**GEA-COUNTY
WIDE SAFETY**

**CROSS SECTIONS - S.R. 168
STA. 1219+00.00 TO STA. 1220+00.00**

257
425

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SEEDING	
END WIDTH	SO. YDS.
580	200
60	36
175	27



END AREA	VOLUME	CALCULATED	
		CUT	FILL
17	11	35	21
21	11	40	20
22	11	38	21
113	62		

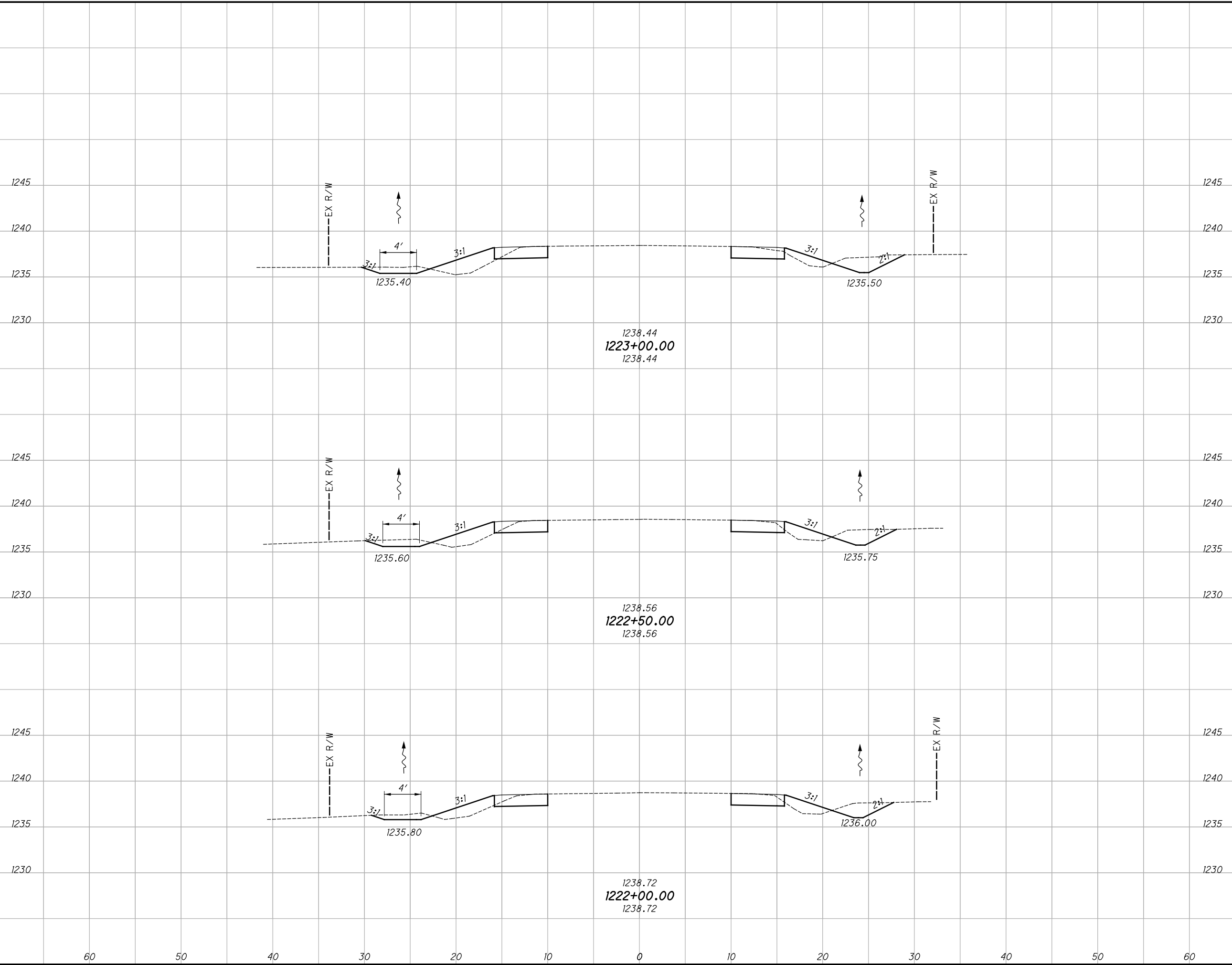
**GEA-COUNTY
WIDE SAFETY**

**CROSS SECTIONS - S.R. 168
STA. 1220+50.00 TO STA. 1221+50.00**

258
425

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SEEDING	
END WIDTH	SO. YDS.
582	170
34	200
36	212
38	212



END AREA		VOLUME	
CUT	FILL	CUT	FILL
20	13	36	24
19	13	34	23
18	12	32	22
		102	69

**GEA-COUNTY
WIDE SAFETY**

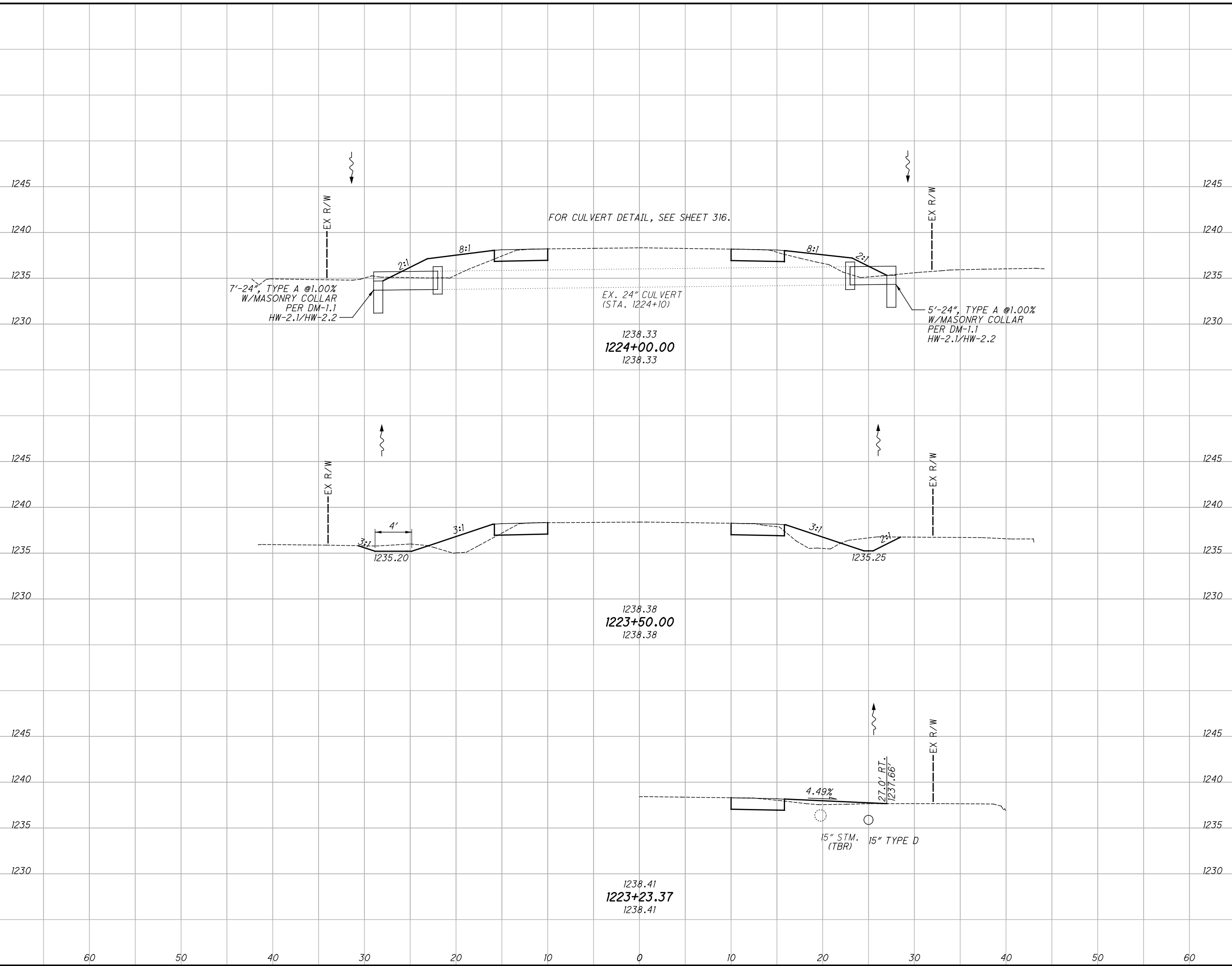
**CROSS SECTIONS - S.R. 168
STA. 1222+00.00 TO STA. 1223+00.00**

CALCULATED JRE
CHECKED DLT

259
425

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SEEDING	
END WIDTH	SO. YDS.
33	195
37	208
403	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
10	29	25	44
17	18	34	29
		59	73

**GEA-COUNTY
WIDE SAFETY**

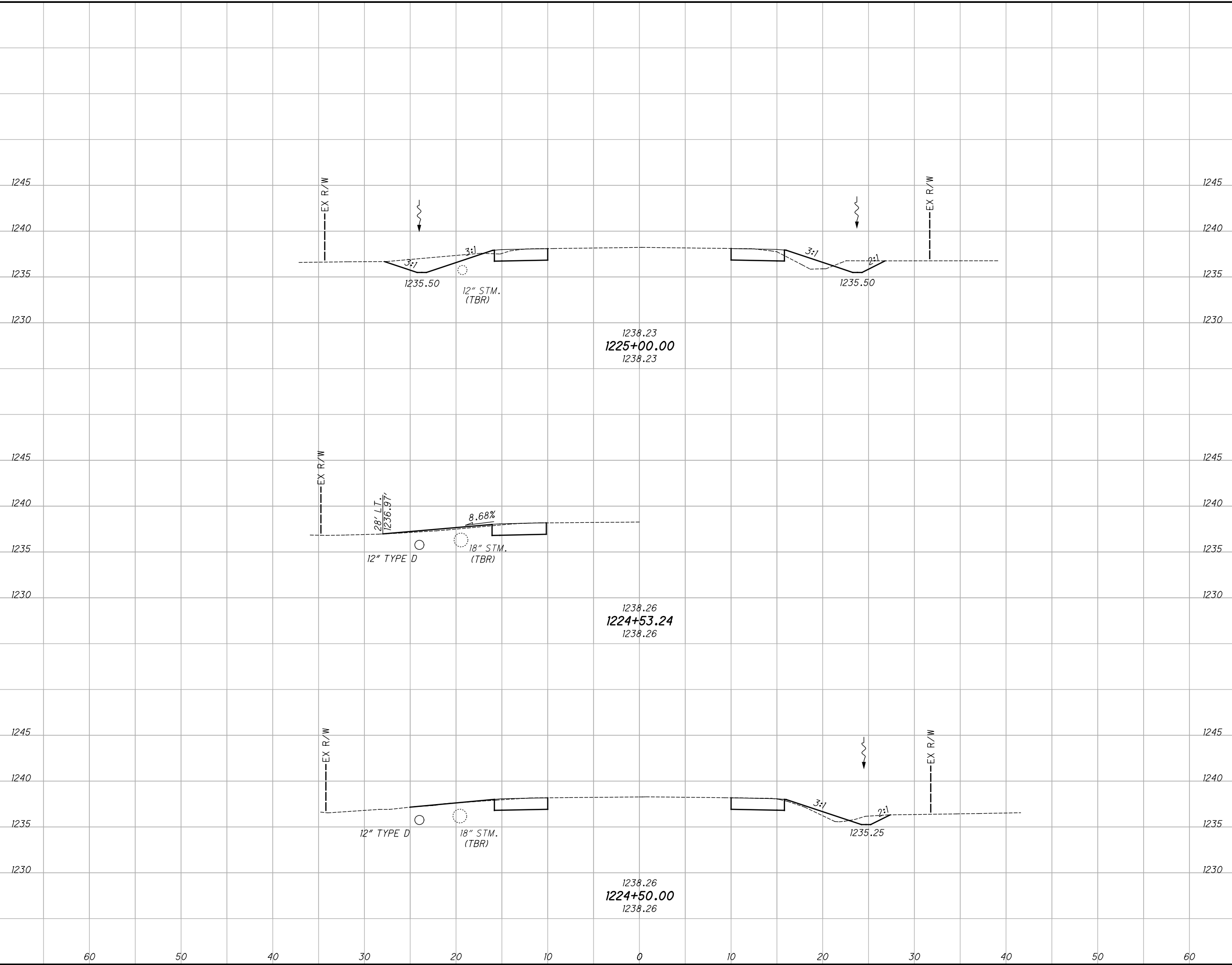
**CROSS SECTIONS - S.R. 168
STA. 1223+23.37 TO STA. 1224+00.00**

CALCULATED	JRE
CHECKED	DLT

260
425

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SEEDING	
END WIDTH	SO. YDS.
33	169
28	172
341	60
	50
	40
	30
	20
	10
	0
	10
	20
	30
	40
	50
	60



END AREA		VOLUME	
CUT	FILL	CUT	FILL
22	5	32	7
13	3	22	30
		54	37

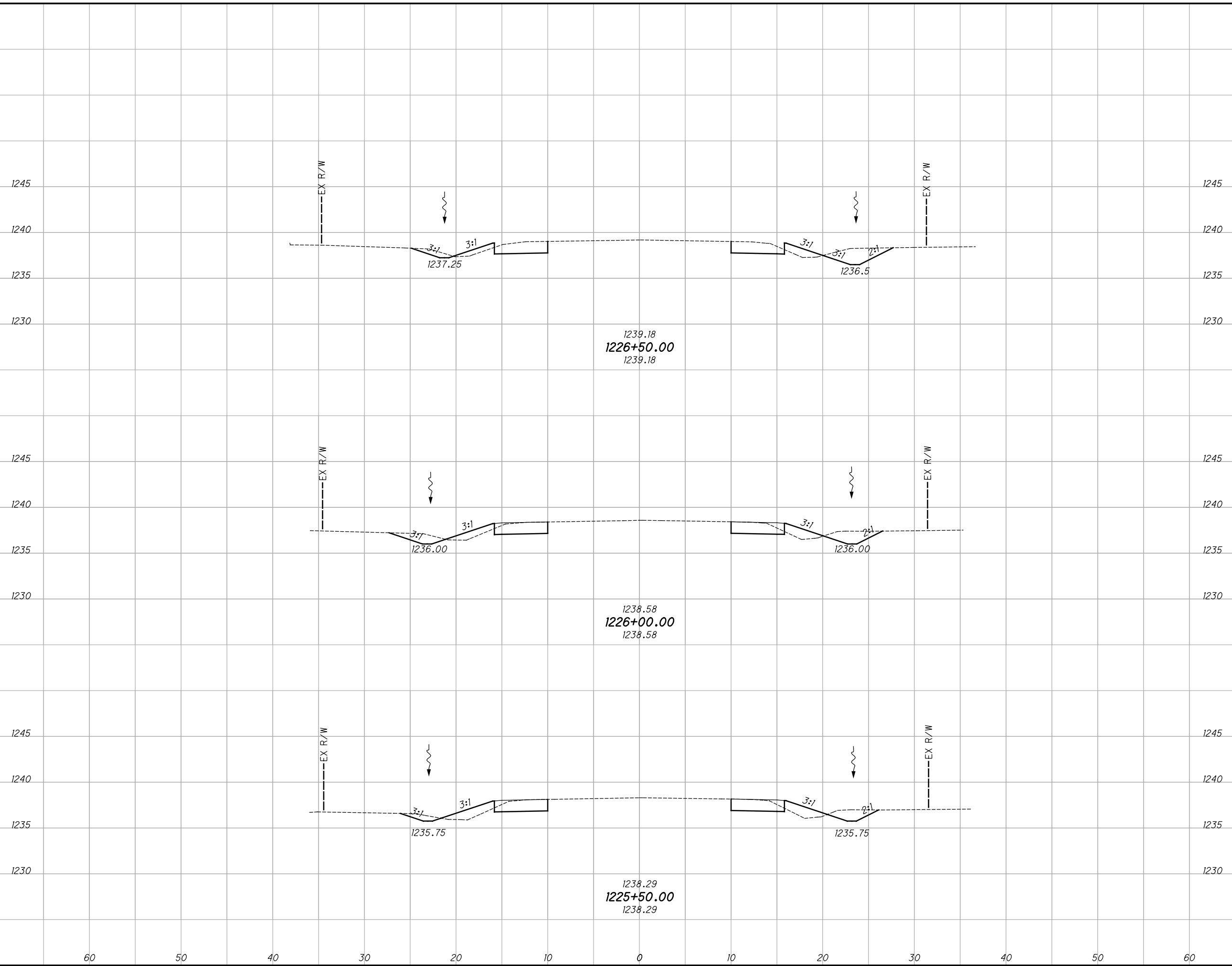
CROSS SECTIONS - S.R. 168
STA. 1224+50.00 TO STA. 1225+00.00

GEA-COUNTY
WIDE SAFETY

261
425

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SEEDING	
END WIDTH	SO. YDS.
516	
178	
29	
172	
32	
164	
27	



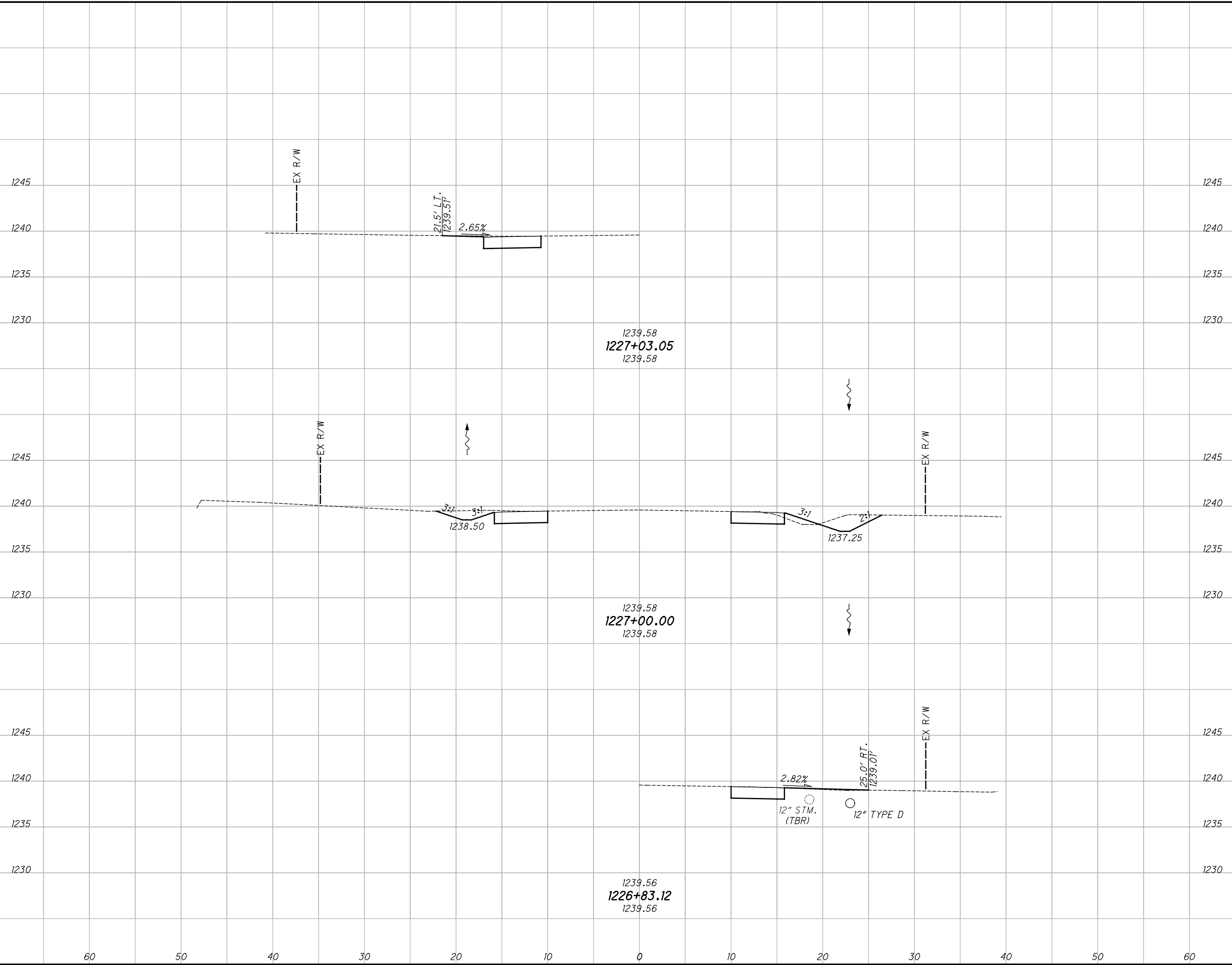
END AREA	VOLUME	CALCULATED	
		CUT	FILL
19	5	34	12
18	7	31	15
15	9	34	13
		99	40

GEA-COUNTY
WIDE SAFETY
CROSS SECTIONS - S.R. 168
STA. 1225+50.00 TO STA. 1226+50.00

262
425

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SEEDING	
END WIDTH	SO. YDS.
147	60
147	50
147	40
147	30
147	20
147	10
147	0
147	10
147	20
147	30
147	40
147	50
147	60



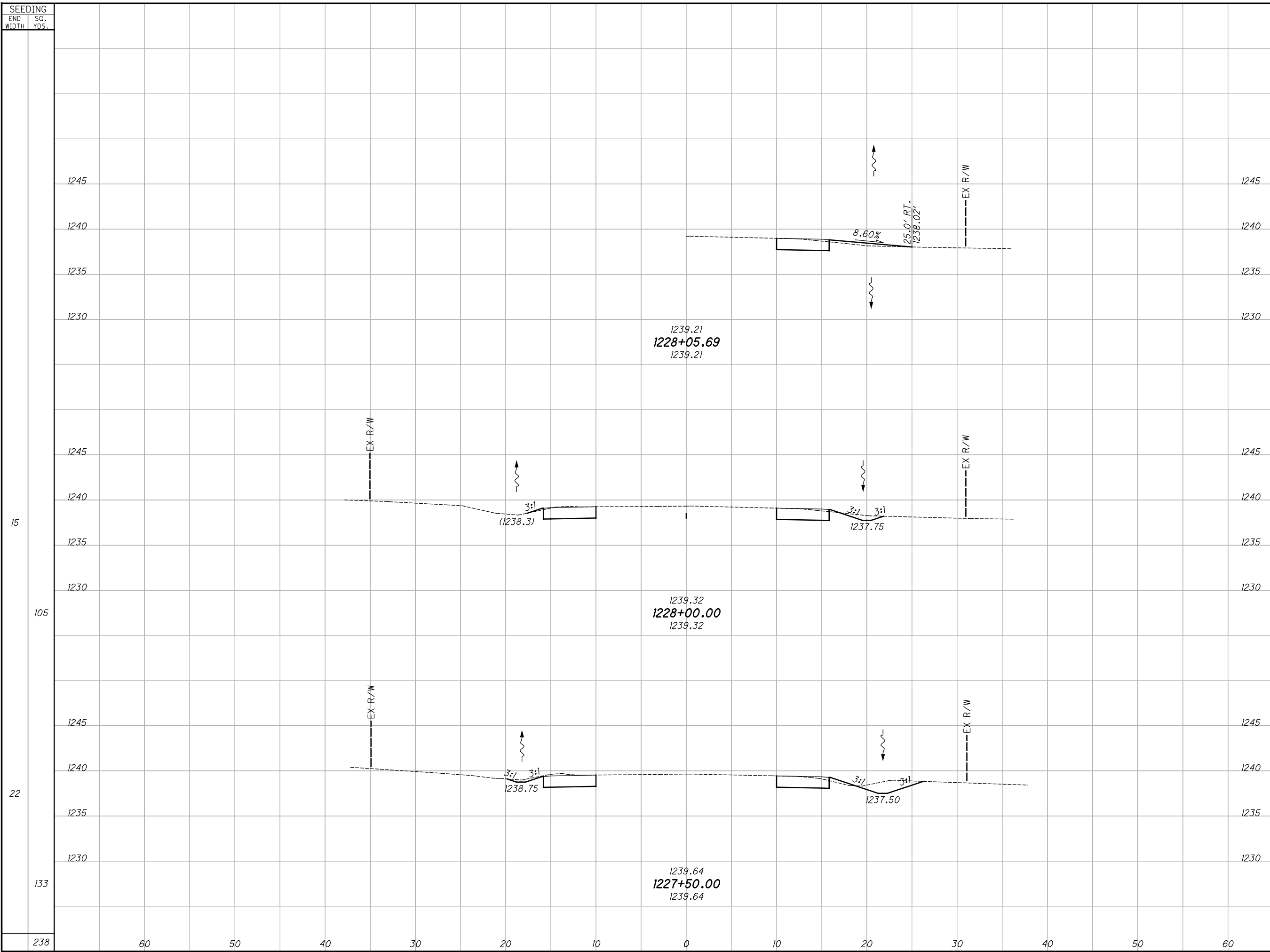
END AREA		VOLUME	
CUT	FILL	CUT	FILL
21	2	37	6

GEA-COUNTY
WIDE SAFETY

CROSS SECTIONS - S.R. 168
STA. 1226+83.12 TO STA. 1227+03.05

263
425

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SEEDING		END AREA		VOLUME		CALCULATED	
END WIDTH	SO. YDS.	CUT	FILL	CUT	FILL	JRE	DLT
15		12	0				
105				27	1		
22		17	1				
133				35	3		
238		60		62	4		

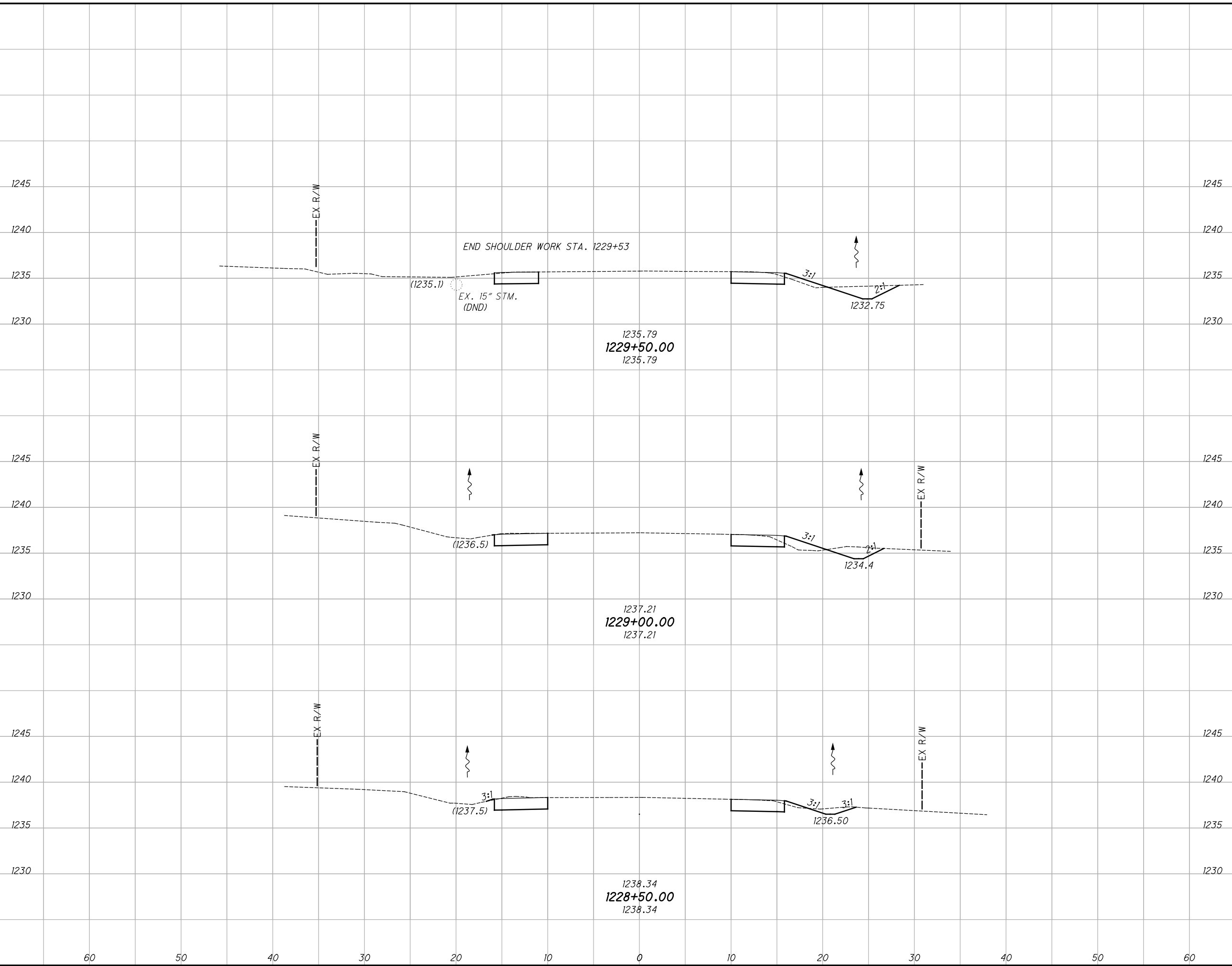
CROSS SECTIONS - S.R. 168
STA. 1227+50.00 TO STA. 1228+05.69

GEA-COUNTY
WIDE SAFETY

264
425

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SEEDING	
END WIDTH	SO. YDS.
297	86
160	16
100	100
180	18
200	111



END AREA		VOLUME	
CUT	FILL	CUT	FILL
9	2	22	5
15	3	26	4
13	1	23	1
		71	10

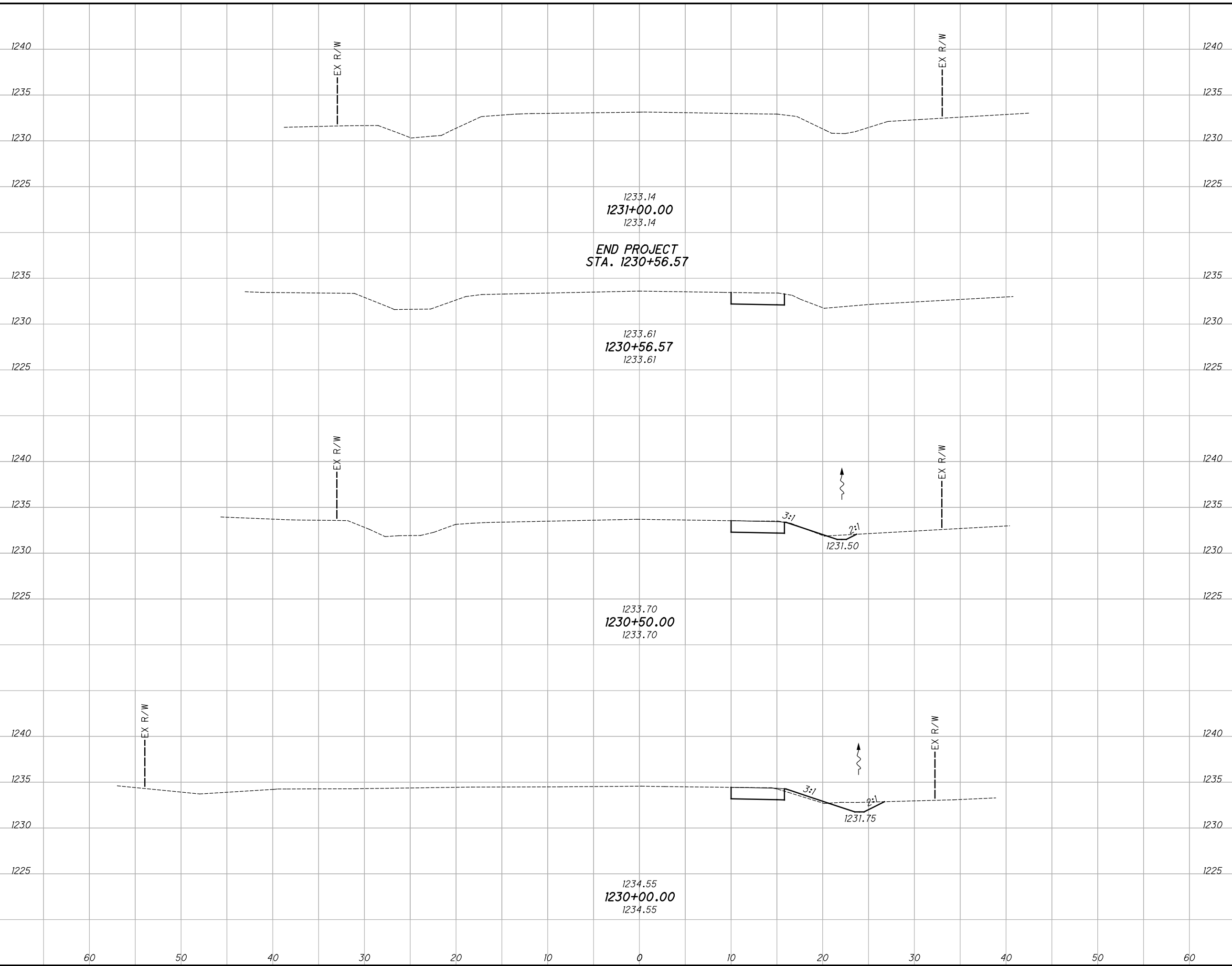
CROSS SECTIONS - S.R. 168
STA. 1228+50.00 TO STA. 1229+50.00

GEA-COUNTY
WIDE SAFETY

265
425

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SEEDING	
END WIDTH	SO. YDS.
194	
105	
18	
14	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
6	0	14	1
9	1	17	3
		31	4

CROSS SECTIONS - S.R. 168
STA. 1230+00.00 TO STA. 1231+00.00

GEA-COUNTY
WIDE SAFETY

266
425

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SEEDING
END SO.
WIDTH YDS.

21,270 SEEDING QUANTITIES CARRIED TO GENERAL NOTES

EARTHWORK QUANTITIES CARRIED TO GENERAL SUMMARY

END AREA
CUT FILL
VOLUME
CUT FILL
CALCULATED
JRE
CHECKED
DLT

4546 2693

1240 1240

1235 1235

1230 1230

1225 1225

1232.74
1232+50.00
1232.74

12" TYPE D

1240 1240

1235 1235

1230 1230

1225 1225

1232.74
1232+00.00
1232.74

15" STM.

1240 1240

1235 1235

1230 1230

1225 1225

1232.85
1231+50.00
1232.85

60 50 40 30 20 10 0 10 20 30 40 50 60

CROSS SECTIONS - S.R. 168
STA. 1231+50.00 TO STA. 1232+50.00

GEA-COUNTY
WIDE SAFETY

267
425

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE OMTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP). IN GENERAL, LEOS SHOULD BE POSITIONED AT THE POINT OF LANE RESTRICTION OR ROAD CLOSURE AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH INTERSECTIONS IN WORK ZONES.

WHEN CONSTRUCTION VEHICLES ARE ENTERING/EXITING THE ZONE DIRECTLY FROM/INTO AN OPEN LANE OF TRAFFIC. IF A LANE HAS BEEN CLOSED TO PROVIDE AN ACCELERATION/DECELERATION LANE FOR THE VEHICLE, THE LEO WILL NOT BE REQUIRED.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. ONCE THE LEO HAS COMPLETED THE DUTIES DESCRIBED ABOVE AND STILL HAS TIME REMAINING ON HIS/HER SHIFT, THE LEO MAY BE ASKED TO PATROL THROUGH THE WORK ZONE (WITH FLASHING LIGHTS OFF) OR BE PLACED AT A LOCATION TO DETER MOTORISTS FROM SPEEDING. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 120 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF AN LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

ITEM 614, DETOUR SIGNING, AS PER PLAN

ADVANCE TRAFFIC SIGNING AND SUPPORTS, INCLUDING DETOUR SIGNING, CONSTRUCTION WORK ZONE APPROACH SIGNING, BARRICADES AND SIGNS ON BARRICADES SHOWN ON THE PLANS BEYOND THE WORK LIMITS SHALL BE FURNISHED, ERECTED, MAINTAINED, AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR UNDER THE LUMP SUM BID FOR ITEM 614, DETOUR SIGNING, AS PER PLAN.

FLOURESCENT ORANGE TYPE G SIGN SHEETING SHALL BE USED FOR ALL DETOUR AND CONSTRUCTION WARNING SIGNS.

FOR INFORMATION ONLY

DETOUR SIGNS																				
S.R. 87	M1-5-24	M3-2-24	M3-4-24	M4-8-24	M4-8a-24	M4-10R-48	M4-10L-48	M5-1R-21	M5-1L-21	M6-1R-21	M6-1L-21	M6-3-21	R11-3-66 SPECIAL	R11-3A-60	W20-2-36	W20-3-36	TYPE A WARNING LIGHT	TYPE B WARNING LIGHT	TYPE III BARRICADE	PORTABLE CHANGEABLE MESSAGE SIGN
	67	31	36	45	2	1	1	5	6	6	2	2	2	3	11	11		7	7	2

FOR INFORMATION ONLY

WORK ZONE SIGNS																				
STAGE/PHASE	R1-1-30	R11-2-48	R11-3-66	W1-4L-36	W3-1a-36	W3-1P-24	W20-1-36	W20-3-36	W20-4-36								TYPE III BARRICADE	TYPE A WARNING LIGHT	TYPE B WARNING LIGHT	
STAGE 1/PHASE 1		1					1											1		
STAGE 1/PHASE 2	3						2	4	2									11		
STAGE 1/PHASE 3	1	2																2	4	2
STAGE 2/PHASE 1	2	1	2	4	4													2	4	2
STAGE 2/PHASE 2	2	2	2	2	2													2	4	2
TOTAL	8	1	7	6	2	6	3	4	2									6	20	6

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ODOT PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT, AND TO REVISE SIGN MESSAGES, IF NECESSARY.

(THE CONTRACTOR SHALL IMPLEMENT A SYSTEM WHEREBY CHANGEABLE MESSAGES WILL BE IMPLEMENTED WITHIN _____ HOURS FOLLOWING TELEPHONE NOTIFICATION FROM THE PROJECT ENGINEER TO A DESIGNATED PHONE.)

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE ENGINEER. A LIST OF ALL REQUIRED PRE-PROGRAMMED MESSAGES WILL BE GIVEN TO THE CONTRACTOR AT THE PROJECT PRE-CONSTRUCTION CONFERENCE. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE. THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DEACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK.

(THE PCMS SHALL CONTAIN A CELLULAR TELEPHONE DATA LINK WHICH WILL (IN ACTIVE CELLULAR PHONE AREAS) ALLOW REMOTE SIGN ACTIVATION, MESSAGE CHANGES, MESSAGE ADDITIONS AND REVISIONS TO TIME OF DAY PROGRAMS. THE SYSTEM SHALL ALSO PERMIT VERIFICATION OF CURRENT AND PROGRAMMED MESSAGES. ONE REMOTE DATA INPUT DEVICE (LAPTOP COMPUTER PLUS MODEM OR EQUIVALENT) SHALL BE FURNISHED FOR USE BY THE DISTRICT TRAFFIC ENGINEER, OR EQUIVALENT, AND SHALL BE INSURED AGAINST THEFT.)

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF C&MS 614.07. THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS, WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS, TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS, INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC. THE ENTIRE COST TO CONTROL TRAFFIC, ACCRUED BY THE DEPARTMENT DUE TO THE CONTRACTOR'S NONCOMPLIANCE, WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24-HOUR-PER-DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN 24 SIGN MONTH

ASSUMING 2 PCMS SIGNS FOR 12 MONTHS

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS AVAILABLE ON THE (OFFICE OF MATERIALS MANAGEMENT WEB PAGE). THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 800 FEET AND 650 FEET, RESPECTIVELY.

EACH SIGN SHALL BE TRAILER-MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM, TO DIM THE SIGN DURING DARKNESS, AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. THE PCMS SHALL BE DELINEATED IN ACCORDANCE WITH C&MS 614.03.

THE PROBABLE PCMS LOCATIONS AND WORK LIMITS FOR THOSE LOCATIONS ARE SHOWN ON SHEET(S) OF THE PLAN. PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED AWAY FROM ALL TRAFFIC.

ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A

THE FOLLOWING ESTIMATED EARTHWORK QUANTITIES ARE PROVIDED FOR INFORMATION ONLY FOR CONSTRUCTION OF TEMPORARY PAVEMENT:

ITEM 203, EXCAVATION	3,200 CY
ITEM 203, EMBANKEMENT	200 CY

CALCULATED
MRC
CHECKED
DTB

MAINTENANCE OF TRAFFIC GENERAL NOTES

GEA-87-19.75
PART 2

10
125

F:\Jobs\720\23733\mot\sheet\23733\MN003.dgn Sheet 10/27/2020 12:00:14 PM anchnucray

F:\Jobs\720\23733\roadway\sheet\23733GG001.dgn Sheet 10/27/2020 11:43:43 AM anchucray

SHEET NUM.											PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.	
5-6	21B	22	23	73	77	78	82	83	91	92	OFFICE CALCS	02/SAF/PV	EXT	TOTAL				
ROADWAY																		
LS												LS	201	11000	LS		CLEARING AND GRUBBING	5
					2	2	2					6	202	20010	6	EACH	HEADWALL REMOVED	
				431							5,273	5,704	202	23000	5,704	SY	PAVEMENT REMOVED	
	59											59	202	30000	59	SF	WALK REMOVED	
	1,256				40	41		40				1,377	202	35100	1,377	FT	PIPE REMOVED, 24" AND UNDER	
	1,703											1,703	202	75000	1,703	FT	FENCE REMOVED	
	3											3	202	75250	3	EACH	GATE REMOVED	
	20											20	202	98100	20	EACH	REMOVAL MISC.: 24" ROCK AND OVER	7
	2											2	202	98100	2	EACH	REMOVAL MISC.: LIGHTS	7
	5											5	202	98100	5	EACH	REMOVAL MISC.: 6" STEEL BOLLARD	7
	1											1	202	98100	1	EACH	REMOVAL MISC.: CLEANOUT	7
	3											3	202	98100	3	EACH	REMOVAL MISC.: WOOD POST	7
	2											2	202	98100	2	EACH	REMOVAL MISC.: STONE HEADWALL	7
	54											54	202	98200	54	FT	REMOVAL MISC.: RAILROAD TIES	7
	16											16	202	98200	16	FT	REMOVAL MISC.: 24" STONE WALLS WITH LIGHT FIXTURES	7
	20											20	202	98400	20	SF	REMOVAL MISC.: FOOT BRIDGE	7
	11											11	202	98400	11	SF	REMOVAL MISC.: WOOD BRIDGE	7
		12,845			589							13,434	203	10000	13,434	CY	EXCAVATION	
		1,920										1,920	203	20000	1,920	CY	EMBANKMENT	
					2,900							14,448	204	10000	17,348	SY	SUBGRADE COMPACTION	
100												100	204	13000	100	CY	EXCAVATION OF SUBGRADE	
100												100	204	30010	100	CY	GRANULAR MATERIAL, TYPE B	
		8										8	204	45000	8	HOUR	PROOF ROLLING	
	4											4	209	60201	4	STA	LINEAR GRADING, AS PER PLAN	6
	400											400	606	15100	400	FT	GUARDRAIL, TYPE MGS WITH LONG POSTS	
	3											3	606	26150	3	EACH	ANCHOR ASSEMBLY, MGS TYPE E (NCHRP 350)	
	5											5	606	26550	5	EACH	ANCHOR ASSEMBLY, MGS TYPE T	
	88											88	608	10000	88	SF	4" CONCRETE WALK	
									22			22	623	12000	22	EACH	PRIMARY PROJECT CONTROL MONUMENT, TYPE A	
										32		32	623	40000	32	EACH	MONUMENT ASSEMBLY REMOVED AND RESET	
	22											22	SPECIAL	69050100	22	EACH	MAILBOX SUPPORT SYSTEM, SINGLE	6
	2											2	SPECIAL	69050200	2	EACH	MAILBOX SUPPORT SYSTEM, DOUBLE	6
	1											1	SPECIAL	69050300	1	EACH	MAILBOX SUPPORT SYSTEM, MULTIPLE	6
EROSION CONTROL																		
5	3				1	1	46	3				59	601	32210	59	CY	ROCK CHANNEL PROTECTION, TYPE C WITH AGGREGATE FILTER	
	2											2	659	00100	2	EACH	SOIL ANALYSIS TEST	
2,483												2,483	659	00300	2,483	CY	TOPSOIL	
22,370												22,370	659	10000	22,370	SY	SEEDING AND MULCHING	
1,119												1,119	659	14000	1,119	SY	REPAIR SEEDING AND MULCHING	
1,119												1,119	659	15000	1,119	SY	INTER-SEEDING	
	3.12											3.12	659	20000	3.12	TON	COMMERCIAL FERTILIZER	
	4.62											4.62	659	31000	4.62	ACRE	LIME	
	124											124	659	35000	124	MGAL	WATER	
	50											50	659	40000	50	MSF	MOWING	
	3,034											3,034	670	00700	3,034	SY	DITCH EROSION PROTECTION	
												LS	832	15000	LS		STORM WATER POLLUTION PREVENTION PLAN	
												LS	832	15002	LS		STORM WATER POLLUTION PREVENTION INSPECTIONS	
												LS	832	15010	LS		STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE	
												108,327	832	30000	108,327	EACH	EROSION CONTROL	
	1,220											1,220	836	10000	1,220	SY	SEEDING AND EROSION CONTROL WITH TURF REINFORCING MAT, TYPE 1	
	12											12	836	10020	12	SY	SEEDING AND EROSION CONTROL WITH TURF REINFORCING MAT, TYPE 2	
	35											35	836	10030	35	SY	SEEDING AND EROSION CONTROL WITH TURF REINFORCING MAT, TYPE 3	

GENERAL SUMMARY

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PART 2
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SHEET NUM.											PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	CALCULATED COM	CHECKED ANC
6	7	21B	73	77	78	82	83	85	86	87	OFFICE CALCS	02/SAF/PV								
				0.74	0.58		0.98					2.30		602	20000	2.30	CY	CONCRETE MASONRY		
	1,410											1,410		605	31100	1,410	FT	AGGREGATE DRAINS		
		155										155		611	00200	155	FT	4" CONDUIT, TYPE C		
100		14										114		611	01100	114	FT	6" CONDUIT, TYPE C		
100												100		611	01400	100	FT	6" CONDUIT, TYPE E		
		799										799		611	04900	799	FT	12" CONDUIT, TYPE D		
		616										616		611	06400	616	FT	15" CONDUIT, TYPE D		
												372		611	07900	372	FT	18" CONDUIT, TYPE D		
				65								65		611	08700	65	FT	21" CONDUIT, TYPE A		
												130		611	10900	130	FT	24" CONDUIT, TYPE D		
							39					39		611	11700	39	FT	27" CONDUIT, TYPE A		
					62							62		611	52200	62	FT	14" X 23" CONDUIT, TYPE A, 706.04		
						54						54		611	94800	54	FT	8' X 4' CONDUIT, TYPE A, 706.05		
		1										1		611	98510	1	EACH	CATCH BASIN, NO. 2-3		
10		15										25		611	99710	25	EACH	PRECAST REINFORCED CONCRETE OUTLET		
												10,159	10,159	254	01000	10,159	SY	PAVEMENT PLANING, ASPHALT CONCRETE, 1-1/2"		
												2,187	2,187	301	46000	2,187	CY	ASPHALT CONCRETE BASE, PG64-22		
			501									2,284	2,785	304	20000	2,785	CY	AGGREGATE BASE		
												2,660	2,660	407	20000	2,660	GAL	NON-TRACKING TACK COAT		
												170		408	10000	170	GAL	PRIME COAT		
												91		441	50000	91	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22		
												950	950	441	50101	950	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN, PG70-22M		7
												621	645	441	50300	645	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)		
		11										11		441	50701	11	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), (UNDER GUARDRAIL), AS PER PLAN		6
												100		452	10010	100	SY	6" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P		
												189		452	12010	189	SY	8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P		
												237	237	609	26000	237	FT	CURB, TYPE 6		
	0.96											0.96		618	43000	0.96	MILE	RUMBLE STRIPES, CENTER LINE (ASPHALT CONCRETE)		
	65											65		621	00100	65	EACH	RPM		
	60											60		621	54000	60	EACH	RAISED PAVEMENT MARKER REMOVED		
	5,090											5,090		874	20000	5,090	FT	LONGITUDINAL JOINT PREPARATION		
												10		626	00102	10	EACH	BARRIER REFLECTOR, TYPE 1 (BIDIRECTIONAL)		
									87.5	66.5		154		630	02100	154	FT	GROUND MOUNTED SUPPORT, NO. 2 POST		
									65.5	118.5		184		630	03100	184	FT	GROUND MOUNTED SUPPORT, NO. 3 POST		
										10.5		10.5		630	08520	10.5	FT	STREET NAME SIGN SUPPORT, NO. 3 POST		
										1		1		630	08600	1	EACH	SIGN POST REFLECTOR		
										51.25	107.5	158.75		630	80100	158.75	SF	SIGN, FLAT SHEET		
										1		1		630	80500	1	EACH	SIGN, DOUBLE FACED, STREET NAME		
										2		2		630	80510	2	EACH	SIGN, STREET NAME		
										15	13	28		630	84900	28	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL		
										11	16	27		630	85001	27	EACH	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE, AS PER PLAN		88
										2		2		630	85100	2	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION		
										14	11	25		630	86002	25	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL		
										11	12	23		630	86007	23	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND STORAGE, AS PER PLAN		88
										2		2		630	86271	2	EACH	REMOVAL OF GROUND MOUNTED PIPE SUPPORT AND STORAGE, AS PER PLAN		88
										7	1	8		630	87511	8	EACH	REMOVAL OF POLE MOUNTED SIGN AND STORAGE, AS PER PLAN		88
										2		2		630	97700	2	EACH	SIGNING, MISC.: REMOVAL OF GROUND MOUNTED SIGN, SOLAR PANEL AND DELIVERY		88
										1.94		1.94		646	10010	1.94	MILE	EDGE LINE, 6"		
										0.96		0.96		646	10200	0.96	MILE	CENTER LINE (SOLID DOUBLE)		

GENERAL SUMMARY

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PART 2

SHEET NUM.											PART.		ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.	
8	9	10	11	82							02/SAF/PV		EXT	TOTAL					
				LUMP								LS	202	11000	LS	STRUCTURE REMOVED			
				55								55	503	21104	55	CY	UNCLASSIFIED EXCAVATION, INCLUDING ROCK		
				2,734								2,734	509	10000	2,734	LB	EPOXY COATED REINFORCING STEEL		
				20								20	510	10000	20	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT		
				38								38	511	46610	38	CY	CLASS QC1 CONCRETE, HEADWALL		
				30								30	512	10100	30	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)		
				30								30	516	13600	30	SF	1" PREFORMED EXPANSION JOINT FILLER		
				18								18	518	21200	18	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC		
																	MAINTENANCE OF TRAFFIC		
150	500											650	410	12000	650	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B		
100												100	410	13000	100	CY	TRAFFIC COMPACTED SURFACE, TYPE C		
		120										120	614	11110	120	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE		
		LUMP	5									5	614	12380	5	EACH	WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL)		
													614	12421		LS	DETOUR SIGNING, AS PER PLAN	10	
10												10	614	12500	10	EACH	REPLACEMENT SIGN		
250												250	614	13000	250	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC		
	22											22	614	13310	22	EACH	BARRIER REFLECTOR, TYPE 1 (BIDIRECTIONAL)		
	22											22	614	13350	22	EACH	OBJECT MARKER, ONE WAY		
		24										24	614	18601	24	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	10	
			2.87									2.87	614	21100	2.87	MILE	WORK ZONE CENTER LINE, CLASS I, 642 PAINT		
			5.76									5.76	614	22100	5.76	MILE	WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT		
			146									146	614	24400	146	FT	WORK ZONE DOTTED LINE, CLASS I, 4", 740.06, TYPE I		
				98								98	614	26400	98	FT	WORK ZONE STOP LINE, CLASS I, 740.06, TYPE I		
	LUMP											LS	615	10000	LS		ROADS FOR MAINTAINING TRAFFIC	9	
			3,956									3,956	615	20000	3,956	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A		
35	10											45	616	10000	45	MGAL	WATER		
			1,340									1,340	622	41100	1,340	FT	PORTABLE BARRIER, UNANCHORED	10	
																	INCIDENTALS		
												LS	614	11000	LS		MAINTAINING TRAFFIC		
												LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING		
												LS	624	10000	LS		MOBILIZATION		

GENERAL SUMMARY

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PART 2

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SHEET NO.	202														601	606			608	611			
	WALK REMOVED SF	PIPE REMOVED, 24" & UNDER FT	FENCE REMOVED FT	GATE REMOVED EA	REMOVAL MISC.: ROCK, 24" AND OVER EA	REMOVAL MISC.: LIGHTS EA	REMOVAL MISC.: 6" STEEL BOLLARD EA	REMOVAL MISC.: CLEANOUT EA	REMOVAL MISC.: WOOD POST EA	REMOVAL MISC.: STONE HEADWALL EA	REMOVAL MISC.: RAILROAD TIES FT	REMOVAL MISC.: 24" STONE WALLS WITH LIGHT FIXTURES FT	REMOVAL MISC.: FOOT BRIDGE SF	REMOVAL MISC.: WOOD BRIDGE SF	ROCK CHANNEL PROTECTION, TYPE C, 18" THICK WITH AGGREGATE FILTER CY	GUARDRAIL, TYPE MGS WITH LONG POSTS FT	ANCHOR ASSEMBLY, MGS TYPE E (NCHRP 350) EA	ANCHOR ASSEMBLY, MGS TYPE T EA	4" CONCRETE WALK SF	4" CONDUIT, TYPE C FT	6" CONDUIT, TYPE C FT	12" CONDUIT, TYPE D FT	15" CONDUIT, TYPE D FT
26	.	211	.	.	3	2	3	.	.	2	.	.	.	.	.	.	.	.	.	.	.	194	.
29	.	164	302	.	4	.	.	.	.	.	39	.	.	.	.	.	.	.	.	121	4	264	37
32	.	140	843	1	3	.	.	1	.	.	.	.	11	.	.	.	.	.	.	.	.	231	.
35	59	204	457	.	1	.	.	.	1	.	.	20	.	.	.	.	.	.	88	12	4	74	61
38	.	345	101	1	4	.	.	.	2	.	15	16	.	.	.	.	.	.	.	22	6	36	276
40	.	192	.	1	5	.	2	.	.	.	.	.	.	.	3	400	3	5	.	.	.	.	242
TOTALS CARRIED TO GENERAL SUMMARY																							
	59	1256	1703	3	20	2	5	1	3	2	54	16	20	11	3	400	3	5	88	155	14	799	616

SHEET NO.	611				626	670	690			836			209	441										
	18" CONDUIT, TYPE D FT	24" CONDUIT, TYPE D FT	CATCH BASIN, NO. 2-3 EA	PRECAST REINFORCED CONCRETE OUTLET EA	BARRIER REFLECTOR, TYPE 2 (BIDIRECTIONAL) EA	DITCH EROSION PROTECTION SY	SPECIAL: MAILBOX SUPPORT SYSTEM, SINGLE EA	SPECIAL: MAILBOX SUPPORT SYSTEM, DOUBLE EA	SPECIAL: MAILBOX SUPPORT SYSTEM, MULTIPLE EA	SEEDING & EROSION CONTROL W/ TURF REINFORCING MAT, TYPE 1 SY	SEEDING & EROSION CONTROL W/ TURF REINFORCING MAT, TYPE 2 SY	SEEDING & EROSION CONTROL W/ TURF REINFORCING MAT, TYPE 3 SY	LINEAR GRADING, AS PER PLAN STATION	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1 (448) UNDER GUARDRAIL, AS PER PLAN CY										
26	.	.	.	.	.	418	6	.	.	141	.	.	.	.	.	.	.	.	.	.	.	.	.
29	.	.	.	6	.	42	6	1	.	32	.	.	.	.	.	.	.	.	.	.	.	.	.
32	.	.	.	.	.	1166	3	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
35	111	.	.	4	.	848	3	.	.	143	.	.	.	.	.	.	.	.	.	.	.	.	.
38	261	.	.	5	.	387	4	.	.	854	.	.	.	.	.	.	.	.	.	.	.	.	.
40	.	130	1	.	10	173	.	.	.	50	12	35	4	11	.	.	.	.	.	.	.	.	.
TOTALS CARRIED TO GENERAL SUMMARY																								
	372	130	1	15	10	3034	22	2	1	1220	12	35	4	11	.	.	.	.	.	.	.	.	.

S.R. 87 CROSS SECTIONS EARTHWORK AND SEEDING QUANTITIES					
STATION		SHEET NO.	ITEM 203 EMBANKMENT C.Y.	ITEM 203 EXCAVATION C.Y.	ITEM 659 SEEDING AND MULCHING S.Y.
FROM	TO				
S.R. 87					
113+00	114+00	41	53	238	555
114+50	115+50	42	35	980	1052
116+00	117+00	43	26	1246	1056
117+50	118+50	44	41	635	956
119+00	120+00	45	48	328	948
120+50	121+50	46	109	168	669
122+00	123+00	47	95	201	964
123+50	124+50	48	36	342	859
125+00	126+00	49	62	216	705
126+50	127+50	50	40	166	723
128+00	129+00	51	29	216	687
129+50	130+50	52	87	169	683
131+00	132+00	53	102	169	875
132+50	133+50	54	68	110	572
134+00	135+00	55	28	229	755
135+50	136+50	56	13	322	695
137+00	138+00	57	17	496	967
138+50	140+00	58	25	637	1375
140+50	142+00	59	65	455	1114
142+50	144+00	60	75	438	1097
144+50	146+00	61	67	514	1347
146+50	148+00	62	85	527	1148
148+50	150+00	63	124	650	1252
150+50	152+00	64	76	654	1336
152+50	154+00	65	67	631	1233
154+50	156+00	66	59	448	1077
156+50	158+00	67	78	433	1183
158+50	160+00	68	116	337	1053
160+50	162+00	69	72	453	1170
162+50	164+00	70	103	313	1050
164+50	165+00	71	14	78	144
SUBTOTAL (ITEM 659)					29,300
DEDUCT FOR DRIVES					-2,746
DEDUCT FOR EROSION MATS					-4,306
SUBTOTAL (S.R. 87)			1,915	12,799	22,248
SUBTOTAL (SIDE ROADS)			5	46	122
TOTAL USED FOR EROSION CONTROL CALCULATIONS					22,370
TOTAL CARRIED TO GENERAL SUMMARY			1,920	12,845	

SIDE ROAD CROSS SECTIONS EARTHWORK AND SEEDING QUANTITIES					
STATION		SHEET NO.	ITEM 203 EMBANKMENT C.Y.	ITEM 203 EXCAVATION C.Y.	ITEM 659 SEEDING AND MULCHING S.Y.
FROM	TO				
HAYES ROAD					
20+50.00	21+00.00	84	5	46	122
SUBTOTAL (SIDEROADS)			5	46	122

ITEM 204 - PROOF ROLLING	
LOCATION	SUBGRADE COMPACTION
S.R. 87	13,646 SY
S.R. 87 DRIVEWAYS	2,746 SY
TOTAL	16,392
ITEM 204 - PROOF ROLLING	16,392 SY X 1 HR/ 2000 SY = 8 HR
TOTAL CARRIED TO SHEET 20 X = 8 HR	

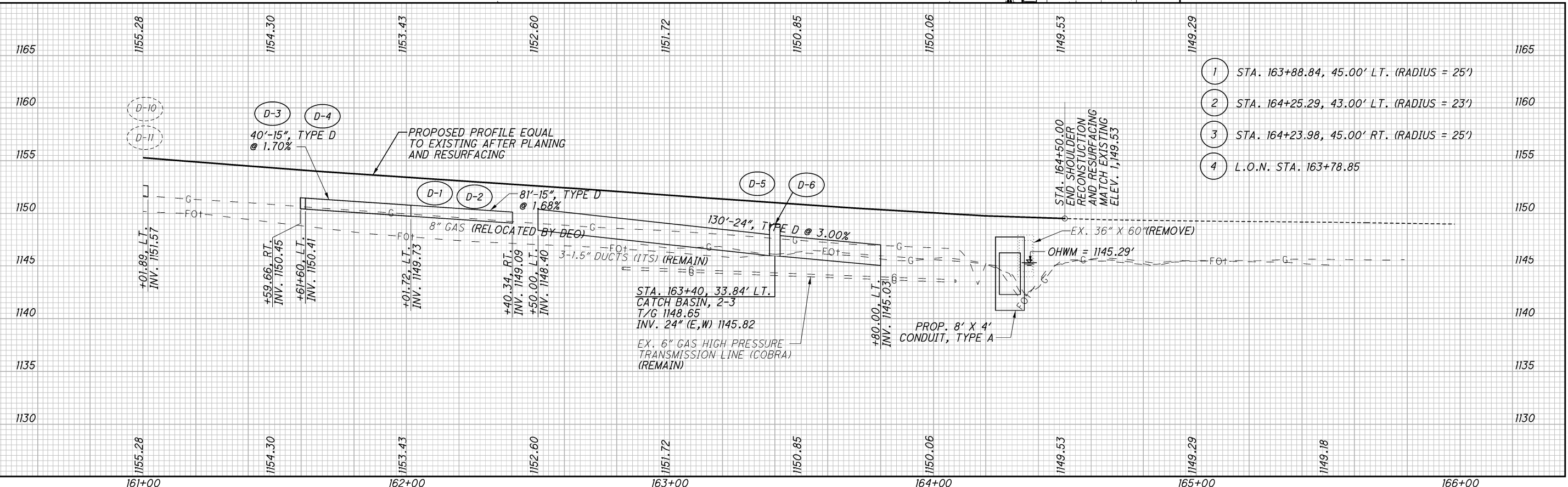
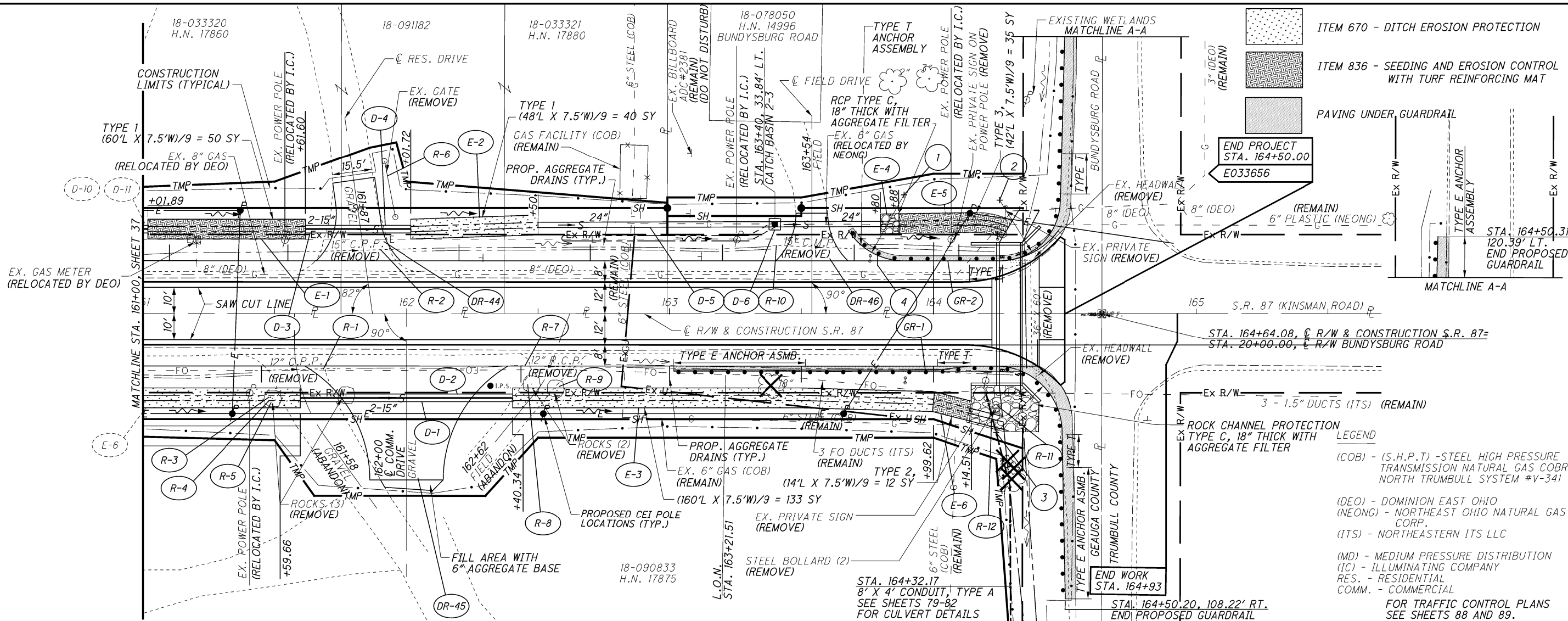
ITEM 659 - EROSION CONTROL QUANTITIES		
SOIL ANALYSIS TESTS	$\frac{1 \text{ EA.}}{10000 \text{ C.Y. OF TOPSOIL}} \times 2,483 \text{ C.Y.} = 0.25 \text{ EA.}, \text{ USE MIN OF 2 TESTS}$	2 EACH
TOPSOIL	$\frac{111 \text{ C.Y.}}{1000 \text{ S.Y. OF SEEDING}} \times 22,370 \text{ S.Y.}$	2,483 C.Y.
COMMERCIAL FERTILIZER	$\frac{1 \text{ TON}}{7410 \text{ S.Y. OF SEEDING}} \times 22,370 \text{ S.Y.} + \frac{1 \text{ TON}}{11,110 \text{ S.Y. OF INTER-SEEDING}} \times 1,119 \text{ S.Y.}$	3.12 TON
LIME	$\frac{9}{43560} \times 22,370 \text{ S.Y.}$	4.62 ACRE
REPAIR SEEDING AND MULCHING	$\frac{5}{100} \times 22,370 \text{ S.Y.}$	1,119 S.Y.
INTER-SEEDING	$\frac{5}{100} \times 22,370 \text{ S.Y.}$	1,119 S.Y.
WATER	$\frac{2 \times .0027 \text{ M GAL}}{1 \text{ S.Y. OF SEEDING}} \times 22,370 \text{ S.Y.} + \frac{.0027 \text{ M GAL}}{1 \text{ S.Y. OF INTER-SEEDING}} \times 1,119 \text{ S.Y.}$	124 M GAL
MOWING	$0.25 \times 22,370 \text{ S.Y.} \times \frac{9 \text{ S.F.}}{1 \text{ S.Y.}} \times \frac{1 \text{ M S.F.}}{1,000 \text{ S.F.}}$	50 M S.F.
QUANTITIES CARRIED TO GENERAL NOTES SHEET NO. 6		

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REF NO.	SHEET NO.	STATION		SIDE	202				611					670	690		836
					PIPE REMOVED, 24" & UNDER	REMOVAL MISC.: ROCK, 24" AND OVER	FENCE REMOVED	REMOVAL MISC.: RAILROAD TIES	4" CONDUIT, TYPE C	6" CONDUIT, TYPE C	12" CONDUIT, TYPE D	15" CONDUIT, TYPE D	PRECAST REINFORCED CONCRETE OUTLET	DITCH EROSION PROTECTION	SPECIAL: MAILBOX SUPPORT SYSTEM, SINGLE	SPECIAL: MAILBOX SUPPORT SYSTEM, DOUBLE	SEEDING & EROSION CONTROL W/ TURF REINFORCING MAT, TYPE 1
		FROM	TO		FT	EA	FT	FT	FT	FT	EA	SY	EA	EA	SY		
QUANTITIES FROM SHEET 27																	
D-1	27	121+94.28	122+63.85	RT							70						
D-2	27	122+99.75	122+36.92	LT								37					
D-3	27	123+45.65	123+82.85	LT													
D-4	27	123+62.98	124+07.69	RT							45						
D-5	27	124+20		LT					4				1				
D-6	27	125+72.23	126+09.08	RT							37						
D-7	27	125+75		LT						4			1				
D-8	27	124+98	125+36	LT							38						
E-1	27	121+12.52	121+50.34	LT												32	
E-2	27	121+49.80	121+99.75	LT									42				
R-1	27	122+05	122+19	RT	14												
R-2	27	122+22		RT											1		
R-3	27	122+60		RT												1	
R-4	27	123+63		RT											1		
R-5	27	123+69	124+02	RT	33												
R-6	27	123+70		RT		1											
R-7	27	123+72		RT		1											
R-8	27	123+72		RT		1											
R-9	27	125+07	125+28	LT	20												
R-10	27	125+58	126+00	LT			52										
R-11	27	124+20		LT	20												
R-12	27	125+75		LT	18												
QUANTITIES FROM SHEET 28																	
D-1	28	126+25	126+53	LT					30				1				
D-2	28	127+98	128+66.33	LT					79				1				
D-3	28	129+20.48	129+57.19	LT							37						
D-4	28	129+71		LT					4				1				
D-5	28	129+75		LT					4				1				
R-1	28	126+00	126+70	LT			76										
R-2	28	126+06		RT										1			
R-3	28	127+48		RT										1			
R-4	28	127+83		RT		1											
R-5	28	128+25	128+35	LT			39										
R-6	28	128+26		RT										1			
R-7	28	129+23	130+60	RT			138										
R-8	28	129+29		RT										1			
R-9	28	130+50	130+80	LT			36										
R-10	28	126+25		LT	4												
R-11	28	127+98		LT	21												
R-12	28	129+71		LT	17												
R-13	28	129+75		LT	17												
TOTALS CARRIED TO SUB-SUMMARY					164	4	302	39	121	4	264	37	6	42	6	1	32

ESTIMATED QUANTITIES - S.R. 87
 STA. 121+00.00 TO STA. 130+80.00
 GEA-87-19.75
 PART 2
 CALCULATED COM CHECKED ANC
 29
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ITEM 670 - DITCH EROSION PROTECTION

ITEM 836 - SEEDING AND EROSION CONTROL WITH TURF REINFORCING MAT

PAVING UNDER GUARDRAIL

END PROJECT STA. 164+50.00 E033656

END WORK STA. 164+93

LEGEND

(COB) - (S.H.P.T) - STEEL HIGH PRESSURE TRANSMISSION NATURAL GAS COBRA NORTH TRUMBULL SYSTEM #V-341

(DEO) - DOMINION EAST OHIO

(NEONG) - NORTHEAST OHIO NATURAL GAS CORP.

(ITS) - NORTHEASTERN ITS LLC

(MD) - MEDIUM PRESSURE DISTRIBUTION

(IC) - ILLUMINATING COMPANY

RES. - RESIDENTIAL

COMM. - COMMERCIAL

FOR TRAFFIC CONTROL PLANS SEE SHEETS 88 AND 89.

CALCULATED MRC CHECKED DTB

0 10 20 HORIZONTAL SCALE IN FEET

PLAN AND PROFILE

STA. 161+00 TO STA. 166+00

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PART 2

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F:\Jobs\720\23733\roadway\sheets\23733G0006.dgn Sheet 10/15/2020 2:32:29 PM onchucray

REF SHEET NO.	STATION	SIDE	202				209	601	606	606	606	611			626	670	836			441
			FROM	TO	PIPE REMOVED, 24" & UNDER	REMOVAL MISC.: 6" STEEL BOLLARD	REMOVAL MISC.: ROCK, 24" AND OVER	GATE REMOVED	LINEAR GRADING, AS PER PLAN	ROCK CHANNEL PROTECTION, TYPE C, 18" THICK WITH AGGREGATE FILLER	GUARDRAIL, TYPE MGS WITH LONG POSTS	ANCHOR ASSEMBLY, MGS TYPE E (NCHRP 350)	ANCHOR ASSEMBLY, MGS TYPE T	15" CONDUIT, TYPE D	24" CONDUIT, TYPE D	CATCH BASIN, NO. 2-3	BARRIER REFLECTORS, TYPE 2 (BIDIRECTIONAL)	DITCH EROSION PROTECTION	SEEDING & EROSION CONTROL W/ TURF REINFORCING MAT, TYPE 1	SEEDING & EROSION CONTROL W/ TURF REINFORCING MAT, TYPE 2	SEEDING & EROSION CONTROL W/ TURF REINFORCING MAT, TYPE 3	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), UNDER GUARDRAIL, AS PER PLAN
			FT	EA	EA	EA	STATION	CY	FT	EA	EA	FT	FT	EA	EA	SY	SY	SY	SY	CY
QUANTITIES FROM SHEET 37																				
R-14	37	158+20																		
R-15	37	159+13																		
R-16	37	159+96																		
QUANTITIES FROM SHEET 39																				
D-1	39	161+59.66	162+40.34	RT								81								
D-2	39	161+59.66	162+40.34	RT								81								
D-3	39	161+61.60	162+01.72	LT								40								
D-4	39	161+61.60	162+01.72	LT								40								
D-5	39	162+50.00	163+80.00	LT									130							
D-6	39	163+40		LT										1						
E-1	39	161+01.89	161+61.60	LT													50			
E-2	39	162+01.72	162+50.00	LT													40			
E-3	39	162+40.34	164+00.00	RT													133			
E-4	39	163+80.06	163+88.00	LT																
E-5	39	163+88.00	164+30.06	LT																35
E-6	39	163+99.62	164+14.51	RT															12	
R-1	39	161+42	161+73	RT	31															
R-2	39	161+61	162+02	LT	41															
R-3	39	161+49		RT																
R-4	39	161+49		RT																
R-5	39	161+49		RT																
R-6	29	161+91	161+97	LT																
R-7	39	162+43	162+67	RT	24															
R-8	39	162+48		RT																
R-9	39	162+57		RT																
R-10	39	163+39	163+69	LT	30															
R-11	39	164+24		RT																
R-12	39	164+24		RT																
GR-1	39	163+01.57	164+50.20	RT																6.25
GR-2	39	163+67.85	164+50.36	LT																5.18
TOTALS CARRIED TO SUB-SUMMARY																				
			192	2	5	1	4	3	400	3	5	242	130	1	10	173	50	12	35	11

ESTIMATED QUANTITIES - S.R. 87
STA. 161+00.00 TO STA. 166+00.00

GEA-87-19.75
PART 2

CALCULATED
COM
CHECKED
ANC

40
125



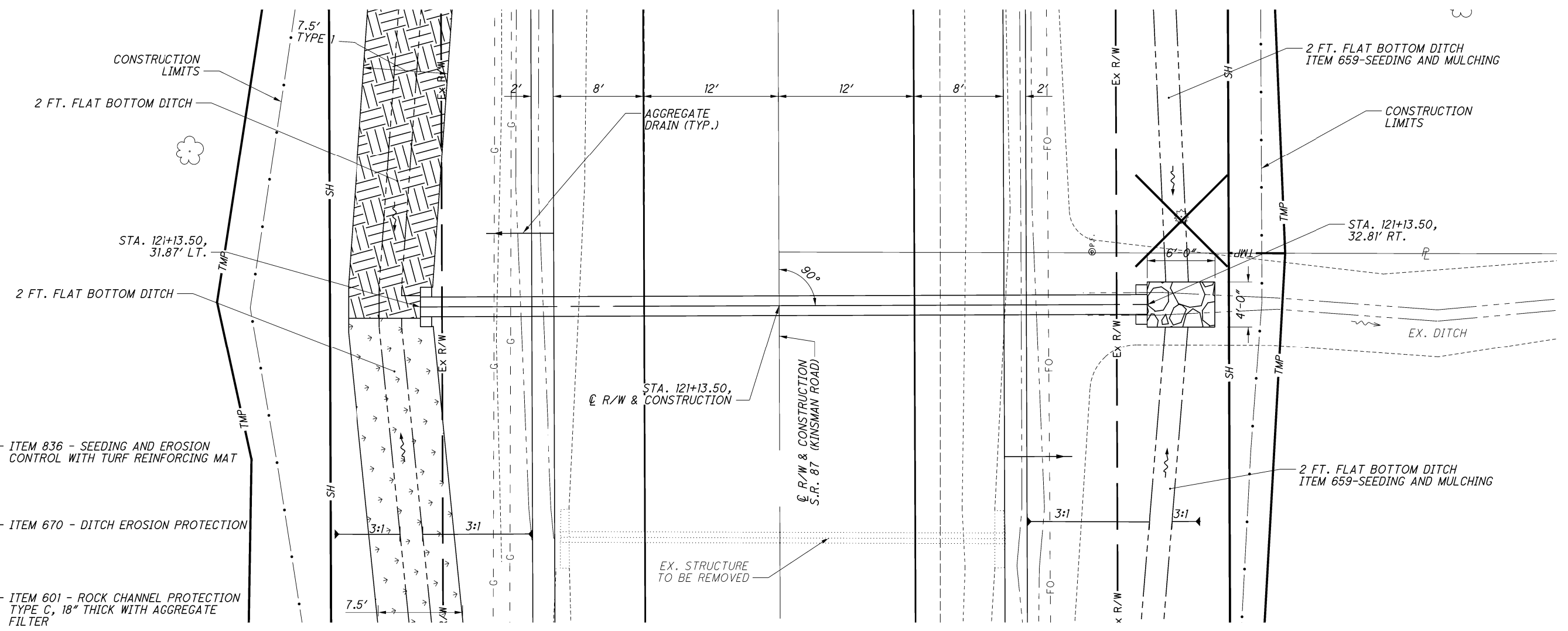
0 5 10
2.5' HORIZONTAL SCALE IN FEET

CALCULATED ANC
CHECKED JLN

CULVERT DETAIL
S.R. 87 STA. 121+13.50

GEA-87-19.75
PART 2

77
125



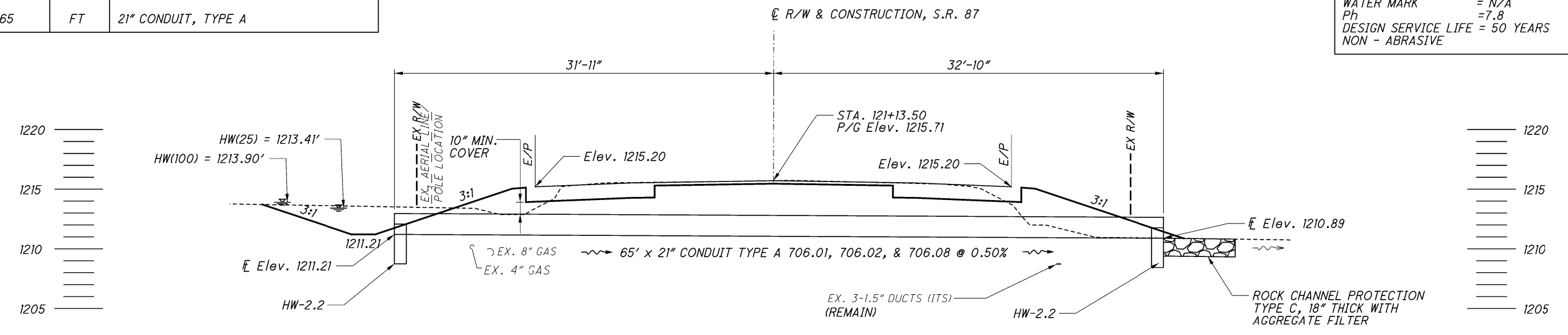
LEGEND

- ITEM 836 - SEEDING AND EROSION CONTROL WITH TURF REINFORCING MAT
- ITEM 670 - DITCH EROSION PROTECTION
- ITEM 601 - ROCK CHANNEL PROTECTION TYPE C, 18" THICK WITH AGGREGATE FILTER

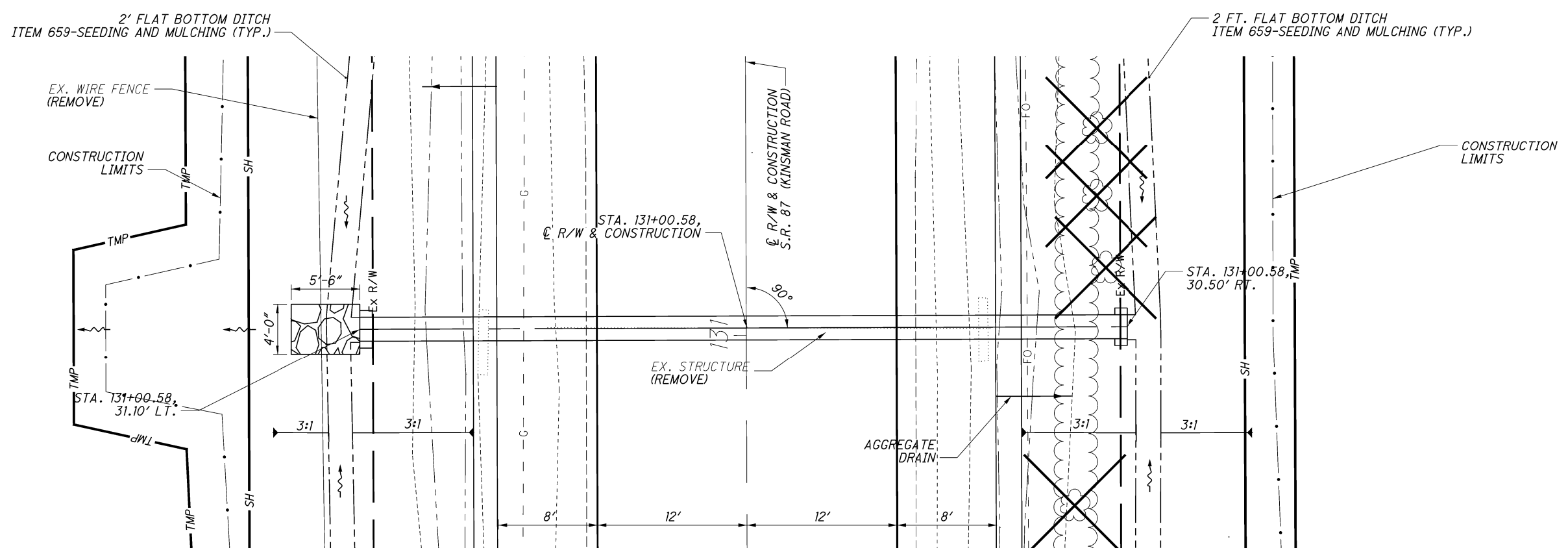
ESTIMATED QUANTITIES			
ITEM	QUANTITY	UNIT	DESCRIPTION
202	40	FT	PIPE REMOVED, 24" AND UNDER
202	2	EA	HEADWALL REMOVED
601	1	CY	ROCK CHANNEL PROTECTION, TYPE C WITH AGGREGATE FILTER
602	0.74	CY	CONCRETE MASONRY
611	65	FT	21" CONDUIT, TYPE A

EXISTING STRUCTURE
EX. CFN: 1810481 TYPE: REINFORCED CONCRETE PIPE SIZE: 12" LENGTH: 40 FT OUTLET SOURCE: FULL HEIGHT HEADWALLS

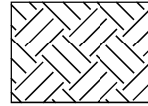
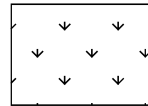
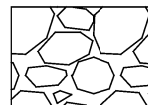
HYDRAULIC DESIGN DATA	
PROP. CFN: 1972054	
DRAINAGE AREA= 10.00 AC.	
Q(25)	= 13.4 CFS
Q(100)	= 16.1 CFS
HW(25)	= 1213.41'
HW(100)	= 1213.90'
V(25)	= 6.67 FPS
V(100)	= 7.42 FPS
ORDINARY HIGH WATER MARK	= N/A
Ph	= 7.8
DESIGN SERVICE LIFE = 50 YEARS NON - ABRASIVE	



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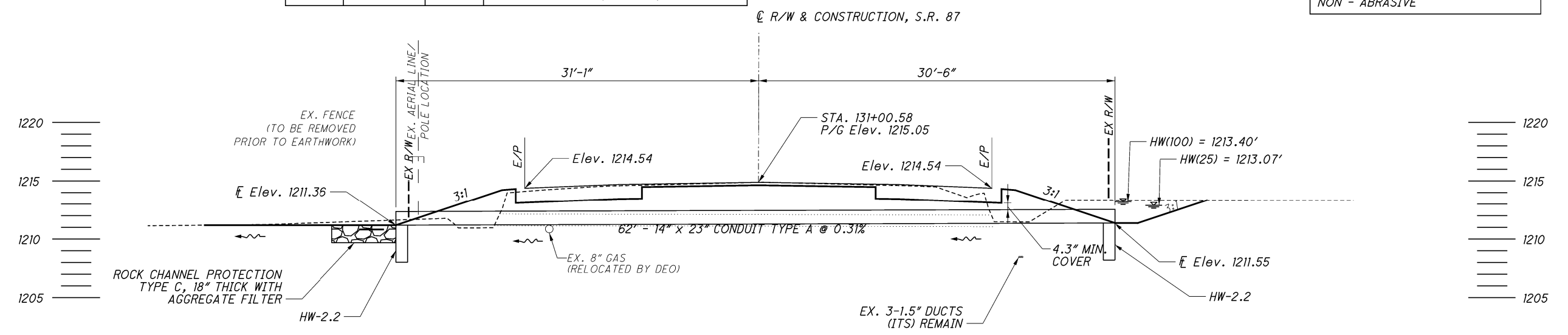
LEGEND

- 
 - ITEM 836 - SEEDING AND EROSION CONTROL WITH TURF REINFORCING MAT
- 
 - ITEM 670 - DITCH EROSION PROTECTION
- 
 - ITEM 601 - ROCK CHANNEL PROTECTION TYPE C, 18" THICK WITH AGGREGATE FILTER

ESTIMATED QUANTITIES			
ITEM	QUANTITY	UNIT	DESCRIPTION
202	41	FT	PIPE REMOVED, 24" AND UNDER
202	2	EA	HEADWALL REMOVED
601	1	CY	ROCK CHANNEL PROTECTION, TYPE C WITH AGGREGATE FILTER
602	0.58	CY	CONCRETE MASONRY
611	62	FT	14" x 23" CONDUIT, TYPE A, 706.04

EXISTING STRUCTURE
 EX. CFN: 1819285
 TYPE: REINFORCED CONCRETE PIPE/
 VITRIFIED CLAY PIPE
 SIZE: 12"
 LENGTH: 41 FT
 OUTLET SOURCE: FULL HEIGHT
 HEADWALLS

HYDRAULIC DESIGN DATA
 PROP. CFN: 1972057
 DRAINAGE AREA = 5.48 AC.
 Q(25) = 8.2 CFS
 Q(100) = 9.8 CFS
 HW(25) = 1213.07'
 HW(100) = 1213.40'
 V(25) = 5.42 FPS
 V(100) = 5.99 FPS
 ORDINARY HIGH
 WATER MARK = N/A
 Ph = 7.8
 DESIGN SERVICE LIFE = 50 YEARS
 NON - ABRASIVE

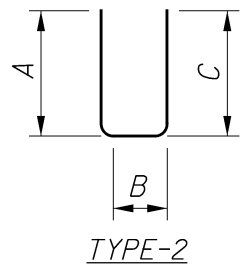
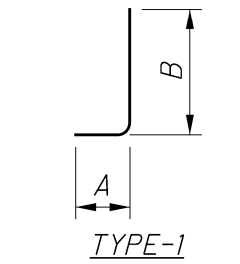


WATERPROOFING:

TYPE 2 WATERPROOFING, PER CMS 512.09 AND 711.25, SHALL EXTEND VERTICALLY DOWN THE ENTIRE SIDES OF THE PRECAST AND CAST IN PLACE CULVERT SECTIONS FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE INCLUDED IN THE CONTRACT PRICE BID PER FOOT FOR THE RESPECTIVE ITEM 611 - CONDUIT.

IF PAVEMENT IS NOT PLACED DIRECTLY ON TOP OF THE CULVERT, TYPE 2 WATERPROOFING, PER CMS 512.09 AND 711.25 SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE PRECAST AND CAST IN PLACE CULVERT SECTIONS AND SHALL EXTEND ONE FOOT VERTICALLY DOWN THE SIDES FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE INCLUDED IN THE CONTRACT PRICE BID PER FOOT FOR THE RESPECTIVE ITEM 611 - CONDUIT.

BENDING DIAGRAMS



NOTE:

ALL REINFORCING STEEL SHALL BE EPOXY COATED.

ESTIMATED QUANTITIES

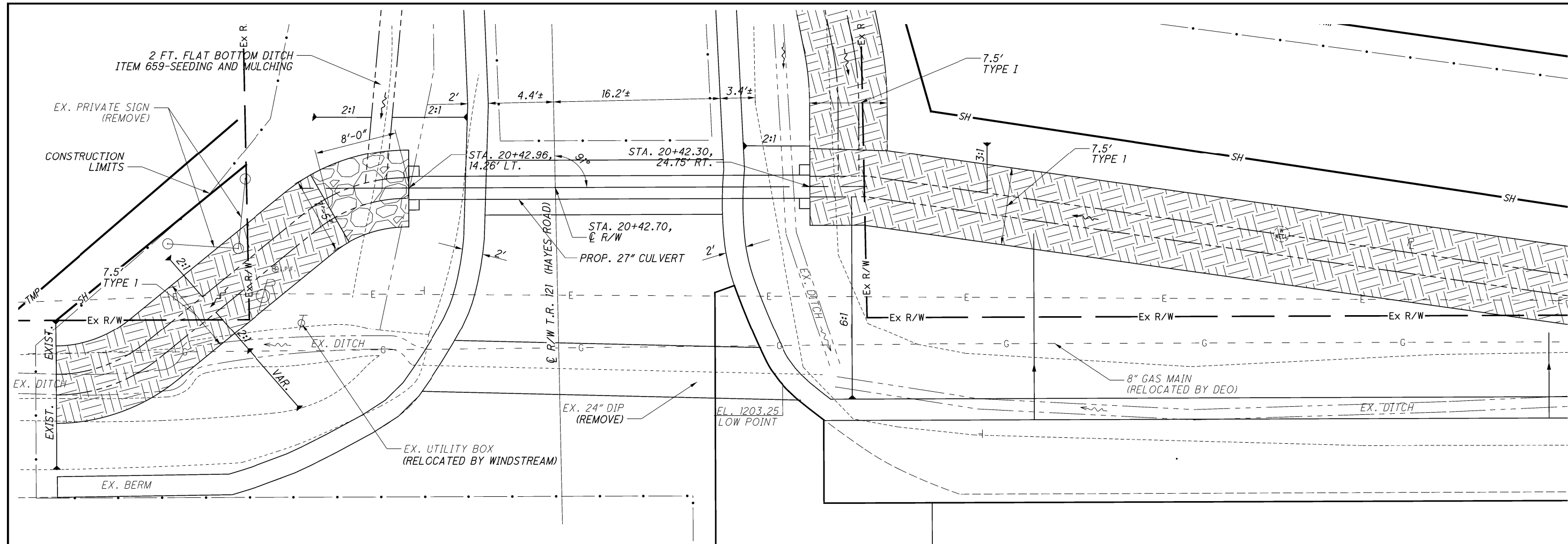
ITEM	DESCRIPTION	UNIT	TOTAL	CARRIED TO GENERAL SUMMARY SHEETS 21-21A
202	STRUCTURE REMOVED	LUMP	1	21
202	HEADWALL REMOVED	EA	2	21
503	UNCLASSIFIED EXCAVATION, INCLUDING ROCK	CY	55	21
509	EPOXY COATED REINFORCING STEEL	LB	2734	21
510	DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT	EACH	20	21
511	CLASS QC1 CONCRETE, HEADWALL	CY	38	21
512	SEALING OF CONCRETE SURFACES (EPOXY URETHANE)	SY	30	21
516	1" PREFORMED EXPANSION JOINT FILLER	SF	30	21
518	POROUS BACKFILL WITH GEOTEXTILE FABRIC	CY	18	21
601	ROCK CHANNEL PROTECTION, TYPE C, WITH AGGREGATE FILTER	CY	46	21
611	8' X 4' CONDUIT, TYPE A	FT	54	21

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS					
	INLET	OUTLET	TOTAL				A	B	C	D	E	R	INC
HEADWALL - CULVERT AT STATION 164+35												
	1		1	6'-4"								
H401	SER. OF		SER. OF		35	STR						
	7		7	8'-5"								
H402	7		7	8'-5"	40	STR						
H403		7	7	8'-0"	38	STR						
		1	1	6'-3"								
H404	SER. OF	SER. OF	SER. OF		34	STR						
	7	7	7	8'-0"								
H501	4	4	8	8'-3"	70	STR						
H502	4	4	8	18'-9"	156	STR						
H503	19	19	38	7'-9"	307	2	3'-6"	1'-0"	3'-6"			
H504	38	38	76	5'-3"	415	STR						
H505	6	6	12	5'-5"	68	STR						
	2	2	4	8'-3"								
H506	SER. OF	SER. OF	SER. OF		190	STR						5.25"
	5	5	5	10'-0"								
	2	2	4	18'-6"								
H507	SER. OF	SER. OF	SER. OF		408	STR						6.75"
	5	5	5	20'-9"								
H508	14		14	9'-3"	135	1	1'-0"	8'-5"				
H509	6	6	12	9'-6"	119	STR						
	1			7'-2"				6'-4"				
H510	SER. OF				112	1	1'-0"					2"
	13			9'-3"				8'-5"				
H511	4	4	8	9'-0"	75	STR						
H512	1			8'-0"	8	STR						
H513	1			9'-3"	10	STR						
H514	10			2'-1"	22	STR						
H515	4	4	8	8'-10"	74							
H516		14	14	8'-11"	130	1	1'-0"	8'-0"				
		1	1	7'-2"				6'-3"				
H517		SER. OF	SER. OF		109	1	1'-0"					1.25"
		13	13	8'-11"				8'-0"				
H518		1	1	9'-4"	10	STR						
H519		10		1'-9"	19	STR						
H520	9	9	18	2'-9"	52	2	2'-0"	1'-0"	2'-0"			
H521	16	16	32	2'-11"	98	2	1'-3"	8"	1'-3"			
TOTAL					2734							

CALCULATED
AJM
CHECKED
MMP

REINFORCEMENT SCHEDULE FOR CULVERT AT STA. 164+32.17

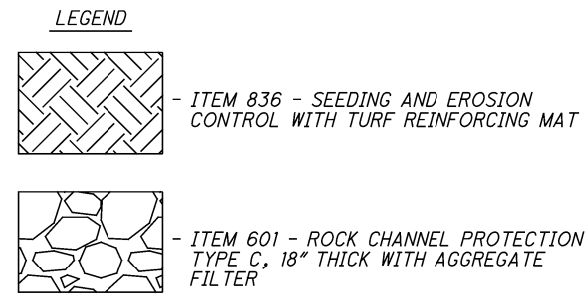
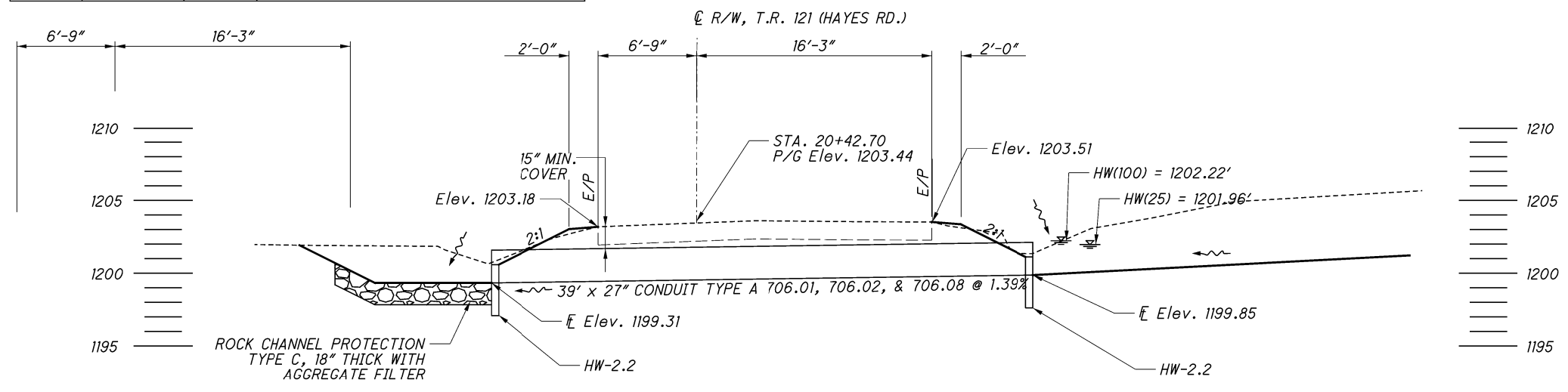
GEA-87-19.75 PART 2



ESTIMATED QUANTITIES			
ITEM	QUANTITY	UNIT	DESCRIPTION
202	40	FT	PIPE REMOVED, 24" AND UNDER
601	3	CY	ROCK CHANNEL PROTECTION, TYPE C WITH AGGREGATE FILTER
602	0.98	CY	CONCRETE MASONRY
611	39	FT	27" CONDUIT, TYPE A

EXISTING STRUCTURE
EX. CFN: TYPE: DUCTILE IRON PIPE SIZE: 24" LENGTH: 40 FT OUTLET SOURCE: NONE

HYDRAULIC DESIGN DATA
PROP. CFN: DRAINAGE AREA= 8.33 AC. Q(25) = 16.9 CFS Q(100) = 20.2 CFS HW(25) = 1202.40' HW(100) = 1202.77' V(25) = 9.56 FPS V(100) = 9.95 FPS ORDINARY HIGH WATER MARK = N/A Ph = 7.8 DESIGN SERVICE LIFE = 50 YEARS NON-ABRASIVE



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