



L:\GeaugeCO\19060009-00\_SafetyProjects\110164\_Roadway\Sheets\110164\_GCO02.dgn 10/23/2020 8:28:43 AM jbarbour

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 INTERSECTION	R/L				770						1679		549				
		R/L				2448						7		2				
		R/L										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

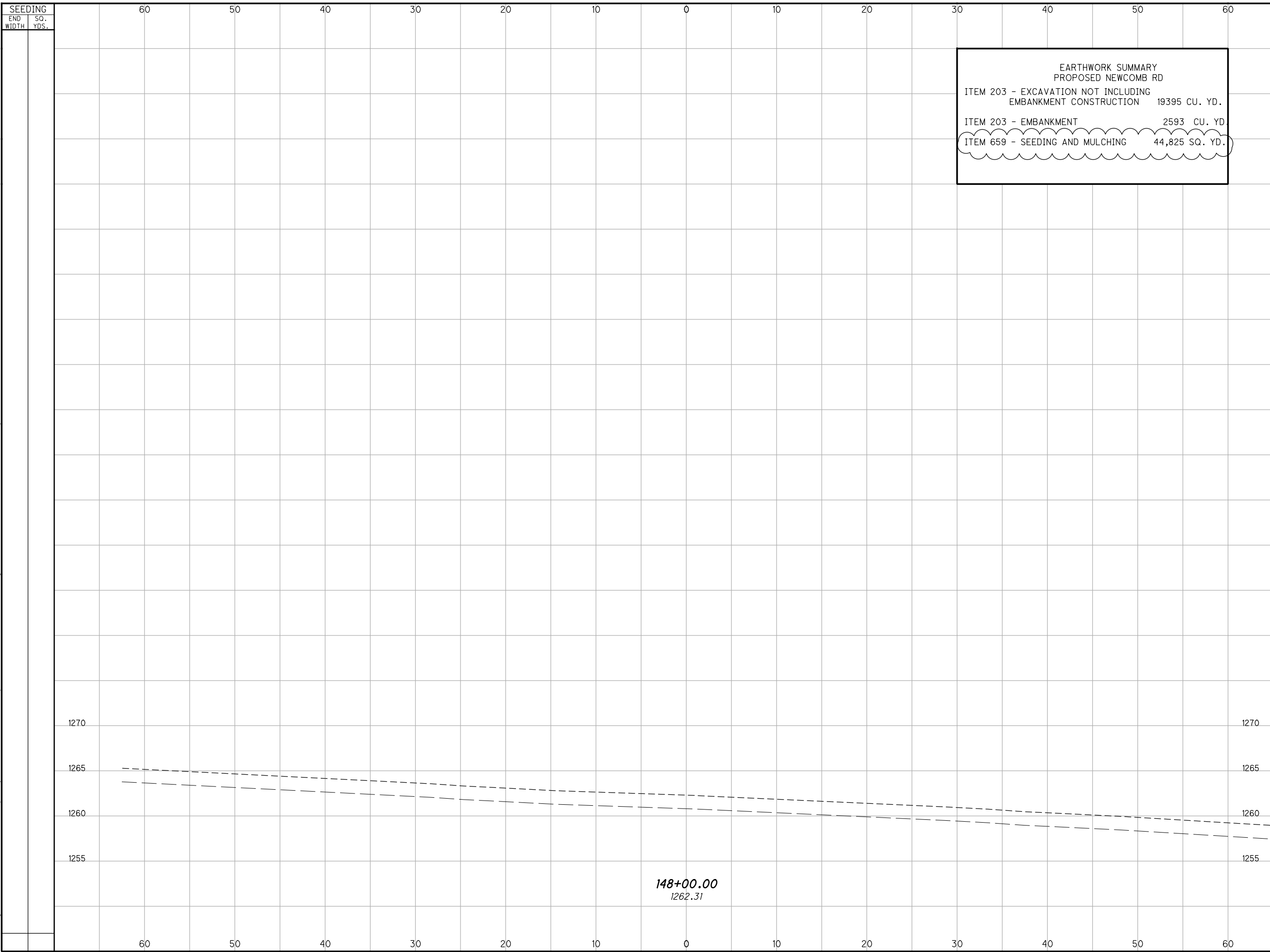
42  
425

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STATION TO STATION	SIDE	LENGTH L	AVERAGE WIDTH W	SURFACE AREA A A=LxW	PLANIMETERED AREAS	202	204	301	304	407	441	441						
						PAVEMENT REMOVED, ASPHALT SY	SUBGRADE COMPACTION SY	ASPHALT CONCRETE BASE, PG64-22 CY	AGGREGATE BASE CY	TACK COAT GAL	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448) PG64-22 CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448) CY						
S.R. 168																		
1170+20.40	L	3320.96	5	16604.8		1006	2335.74	218.53	358.54	101.47	76.87	89.69						
1170+07.50	R	3376.9	5	16884.5		1013	2375.09	222.21	364.58	103.18	78.17	91.20						
1205+74.26	L	2378.74	5	11893.7		510	1673.05	156.53	256.82	72.68	55.06	64.24						
1205+39.28	R	2517.29	5	12586.45		686	1770.49	165.64	271.77	76.92	58.27	67.98						
SUBTOTALS						3215.00	8154.37	762.91	1251.71	354.26	268.38	313.11						
TOTALS TO GENERAL SUMMARY						3215	8200	765	1255	355	270	315						

CALCULATED	JRE
	CHECKED
DLT	
GEA - COUNTY	
WIDE SAFETY	
PAVEMENT CALCULATION - S.R. 168	
46	425

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EARTHWORK SUMMARY  
 PROPOSED NEWCOMB RD  
 ITEM 203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION 19395 CU. YD.  
 ITEM 203 - EMBANKMENT 2593 CU. YD.  
 ITEM 659 - SEEDING AND MULCHING 44,825 SQ. YD.

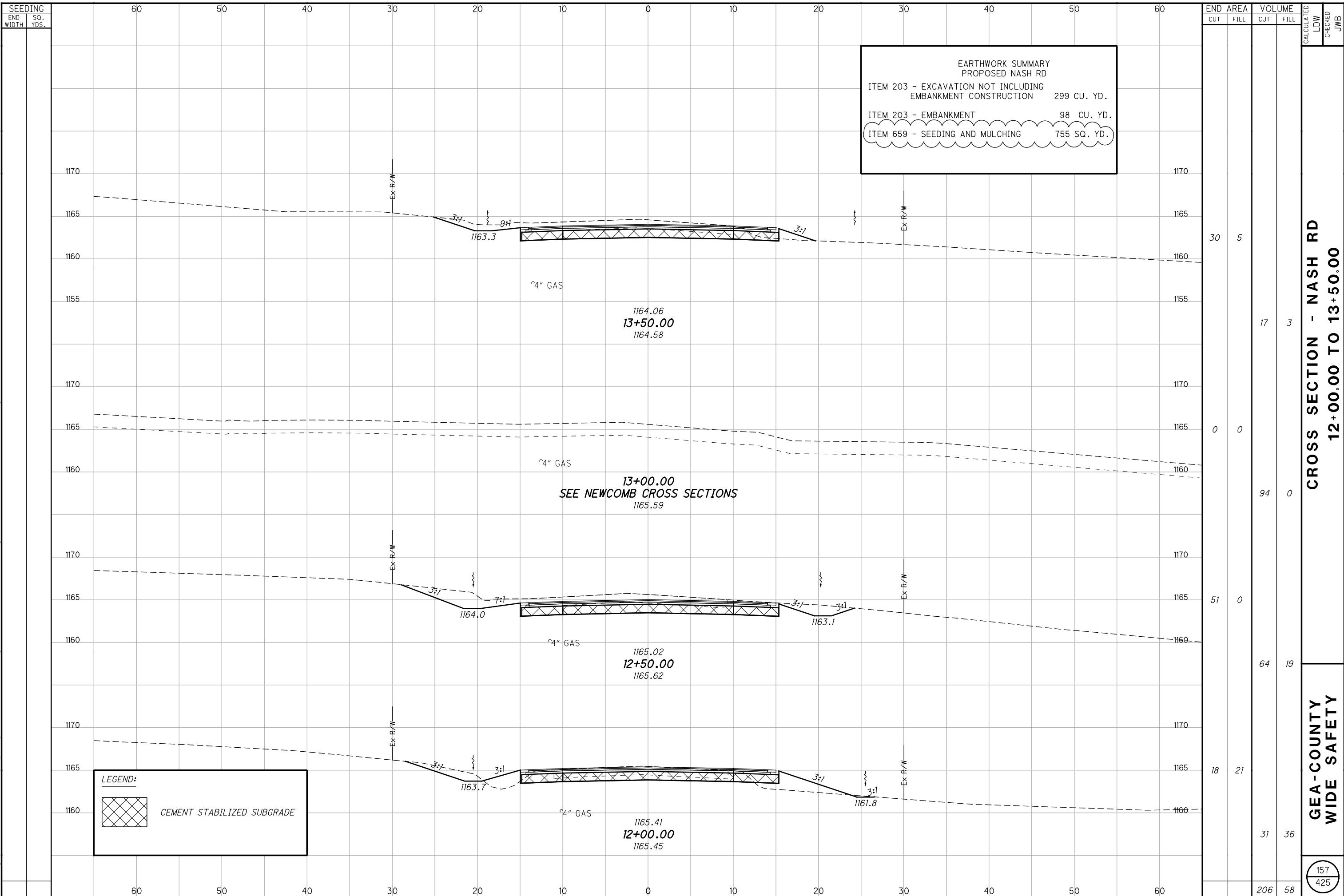
SEEDING		END AREA		VOLUME		CALCULATED	
END WIDTH	SO. YDS.	CUT	FILL	CUT	FILL	LDW	CHECKED
		0	0	0	0	154	JWB
				0	0	425	

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

**GEA-COUNTY**  
**WIDE SAFETY**

154  
425

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**EARTHWORK SUMMARY  
PROPOSED NASH RD**

ITEM 203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION 299 CU. YD.

ITEM 203 - EMBANKMENT 98 CU. YD.

ITEM 659 - SEEDING AND MULCHING 755 SQ. YD.

**LEGEND:**

 CEMENT STABILIZED SUBGRADE

END AREA	VOLUME	CALCULATED		CHECKED	JWB
		CUT	FILL		
30	5				
0	0				
51	0				
18	21				
		206	58		

**CROSS SECTION - NASH RD  
12+00.00 TO 13+50.00**

**GEA-COUNTY  
WIDE SAFETY**

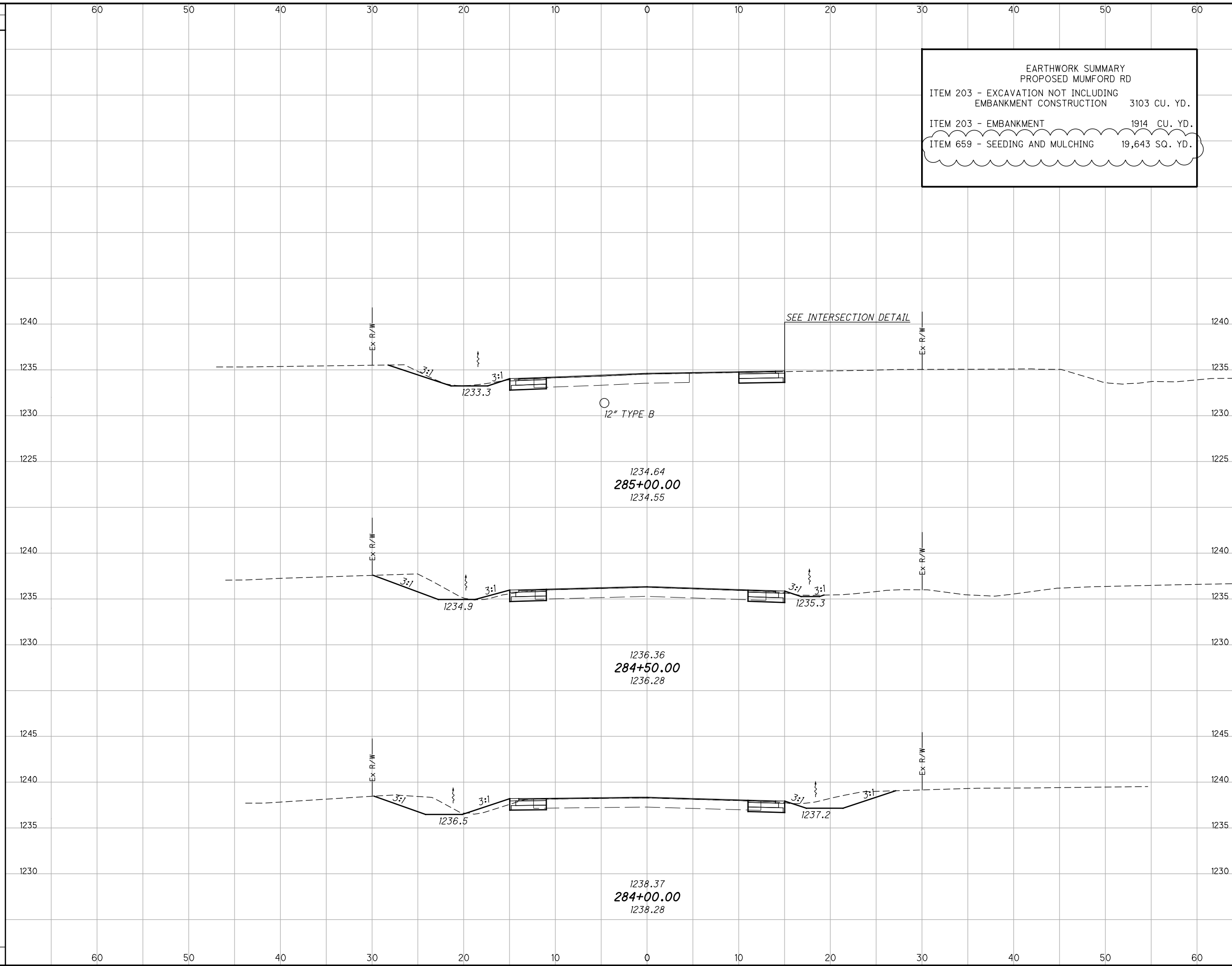
157  
425

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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.



END AREA	VOLUME	CALCULATED	CHECKED
CUT	FILL	CUT	FILL
12	0		
17	1	27	1
25	2	39	3
		36	2
		102	6

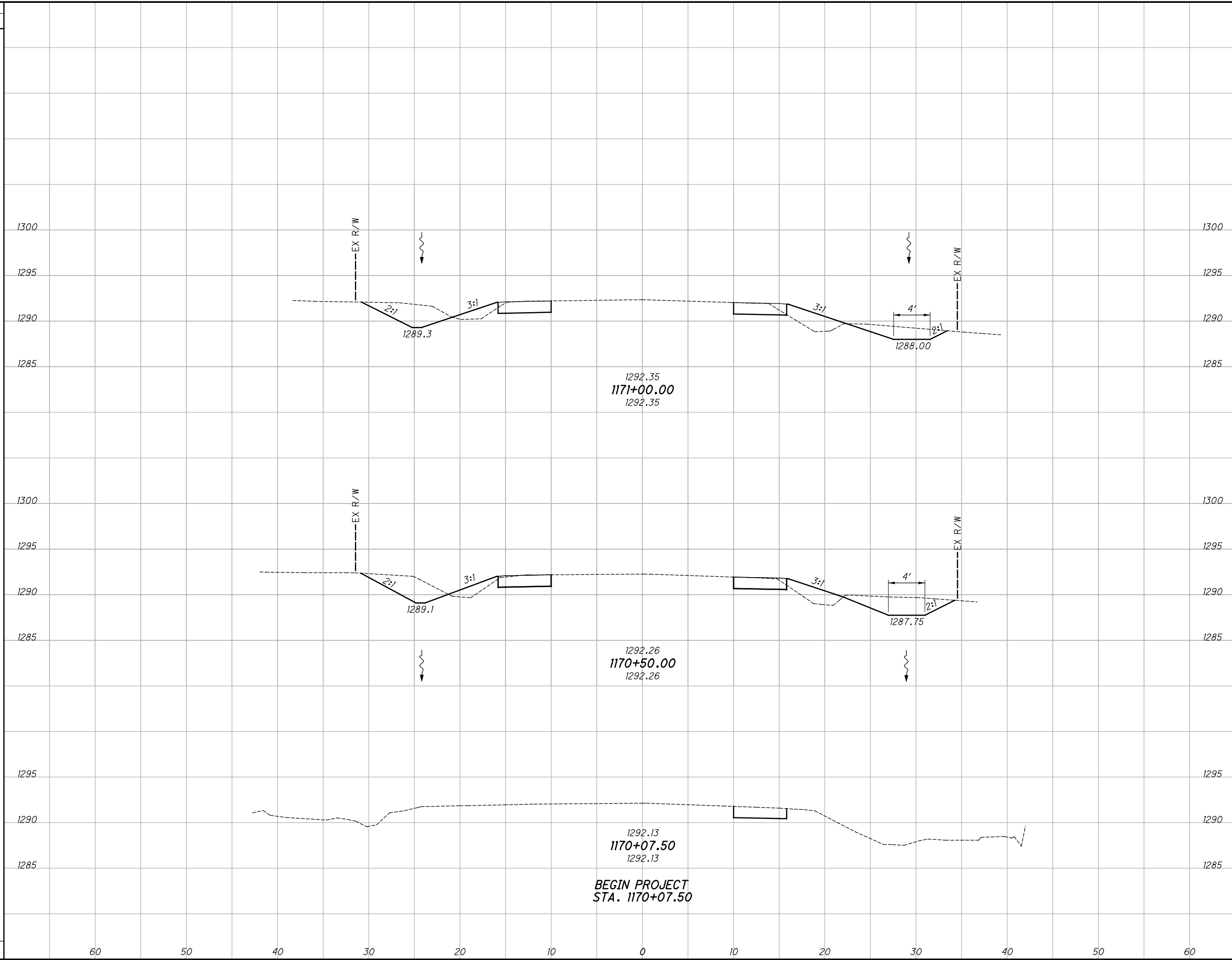
**CROSS SECTION - MUMFORD RD**  
**284+00.00 TO 285+00.00**

**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		
39	12	68	23
34	9		
102	32		

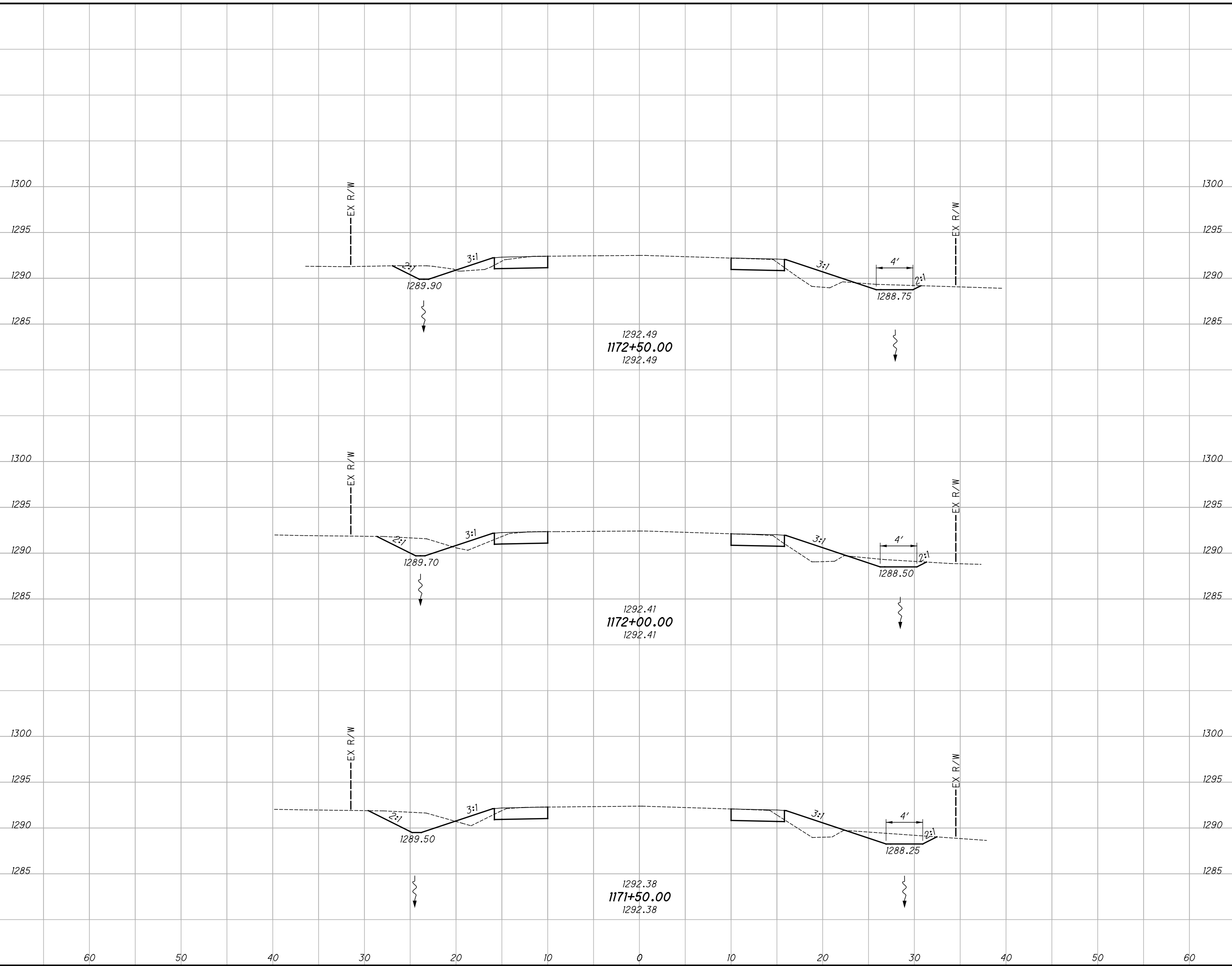
**GEA-COUNTY  
 WIDE SAFETY**

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

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	
CUT	FILL	CUT	FILL
18	12	36	22
21	12	45	22
28	12	58	23
139	67	214	425

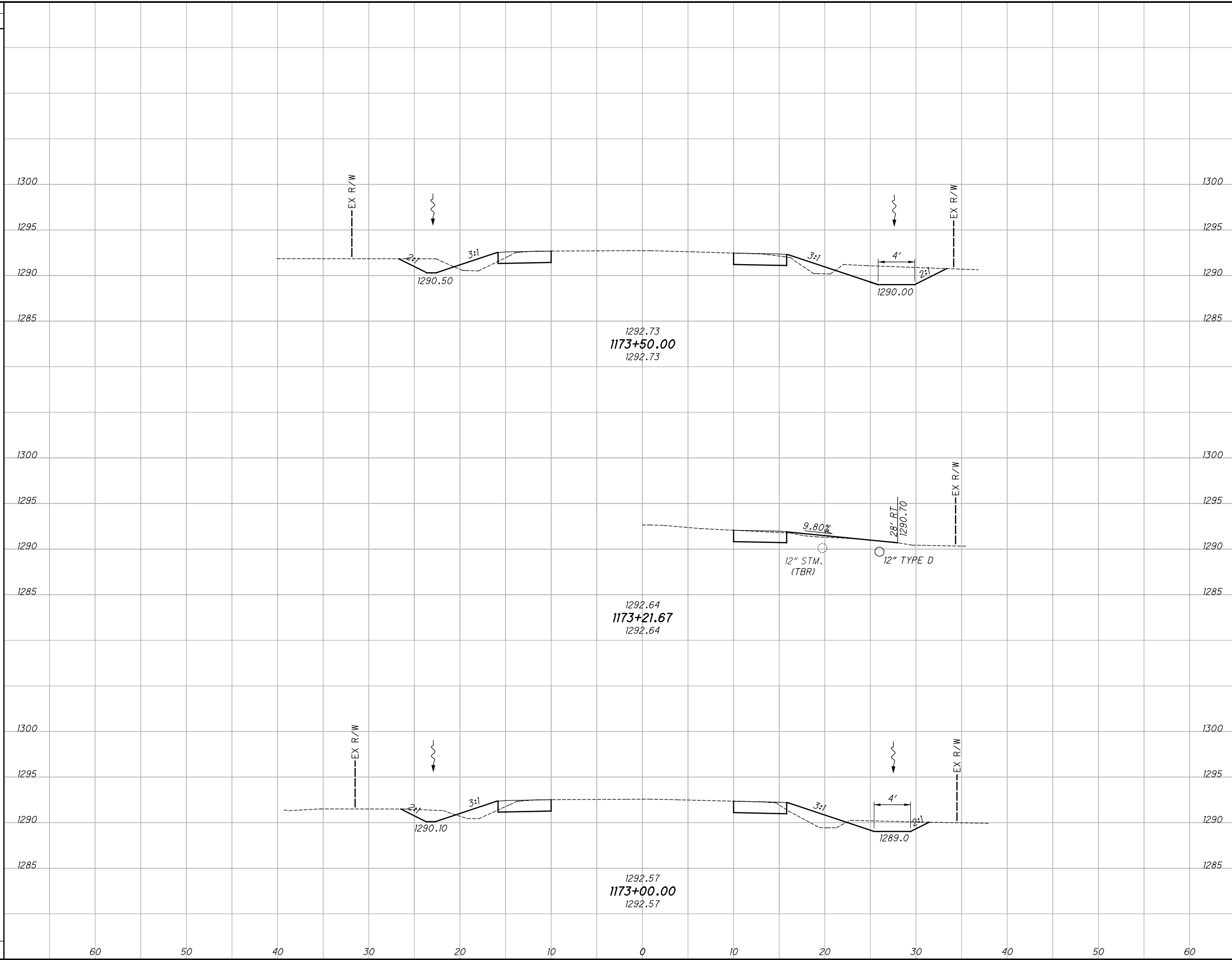
**CROSS SECTIONS - S.R. 168**  
**STA. 1171+50.00 TO STA. 1172+50.00**

**GEA-COUNTY**  
**WIDE SAFETY**



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



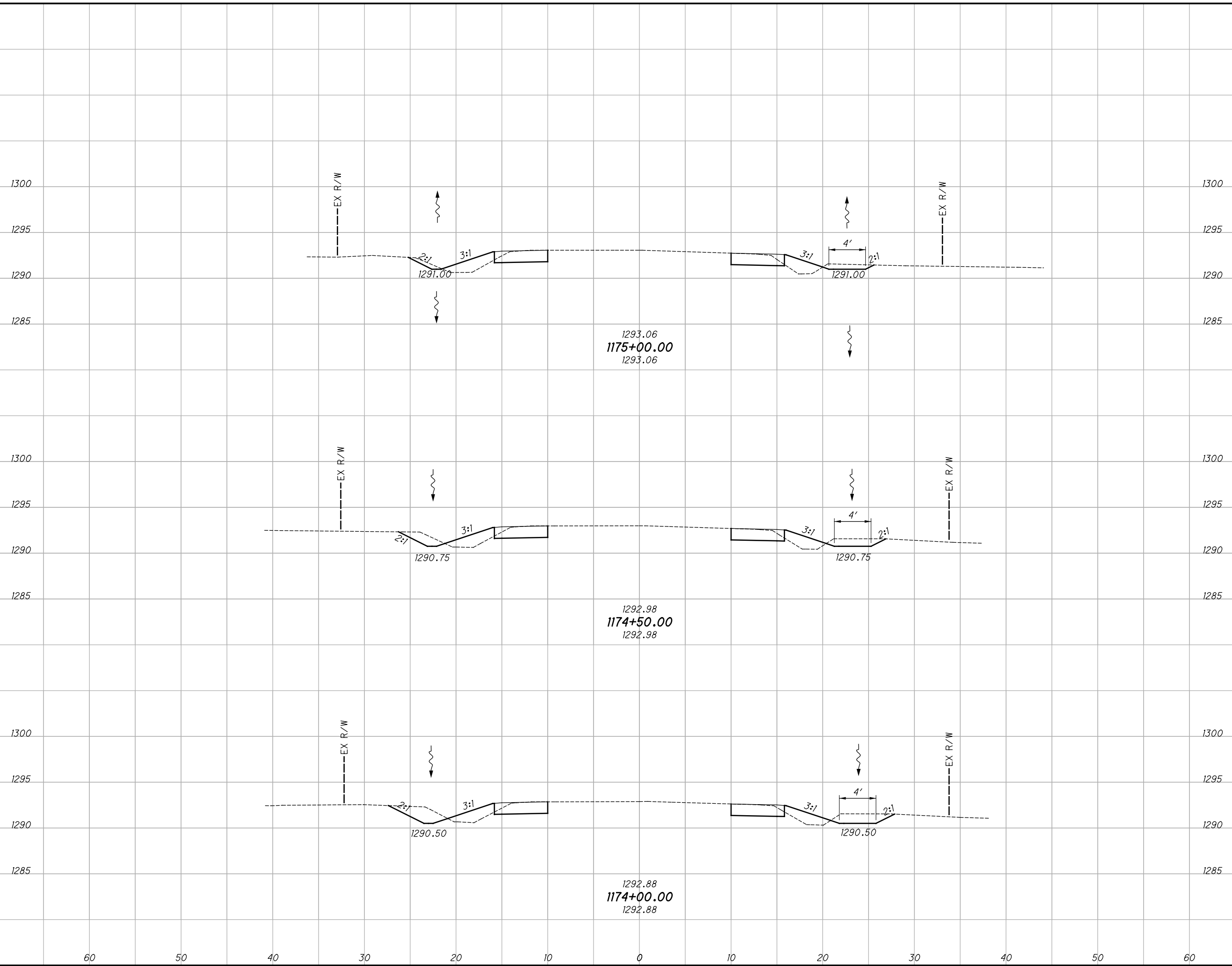
END AREA		VOLUME		CALCULATED JRE	CHECKED DLT
CUT	FILL	CUT	FILL		
31	8	48	18		
21	11	36	21		
84	39	215	425		

**GEA-COUNTY  
WIDE SAFETY**

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

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SEEDING	
END WIDTH	SO. YDS.
555	27
60	161
50	31
40	183
30	33
20	211



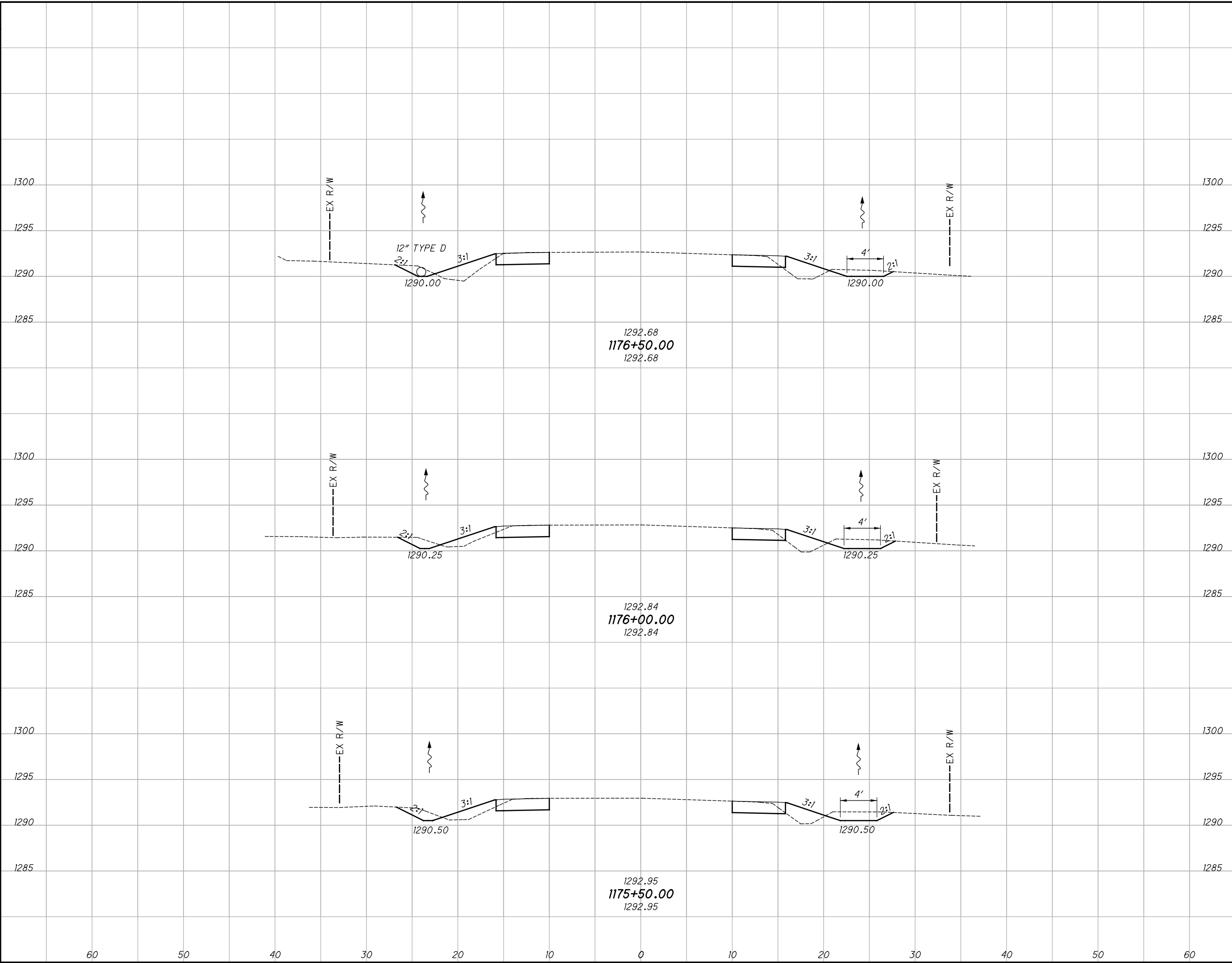
END AREA	VOLUME	CALCULATED	CHECKED	DLT
12	11			
17	10			
21	10			
216	55			

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

**GEA-COUNTY**  
**WIDE SAFETY**

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



END AREA	VOLUME	CALCULATED	CHECKED	DLT
14	14			
17	10			
18	10			
29	22			
32	19			
28	19			
89	60			

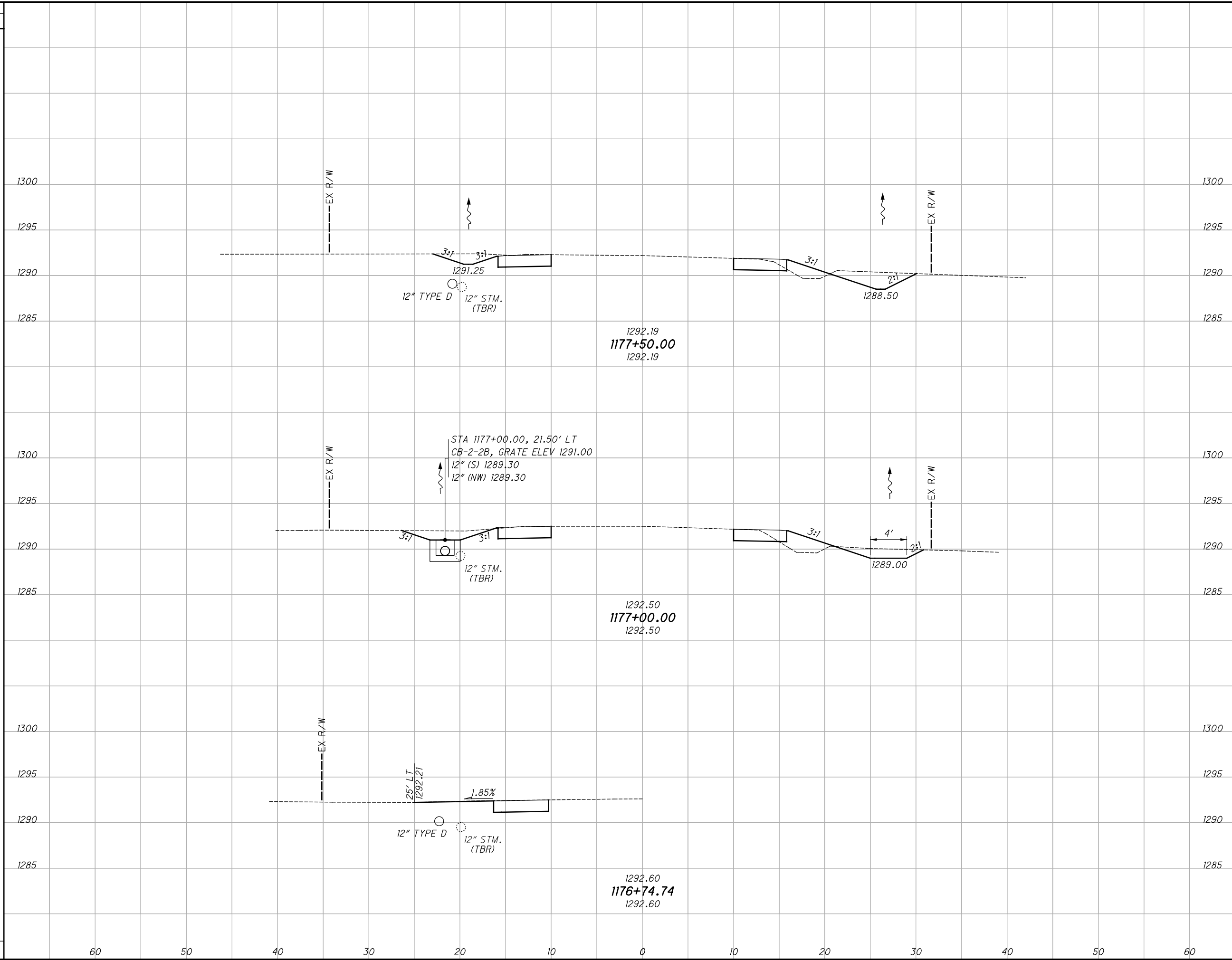
**CROSS SECTIONS - S.R. 168**  
**STA. 1175+50.00 TO STA. 1176+50.00**

**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
24	5	40	11
19	7	31	19
71	30		

**CROSS SECTIONS - S.R. 168**  
**STA. 1176+74.74 TO STA. 1177+50.00**

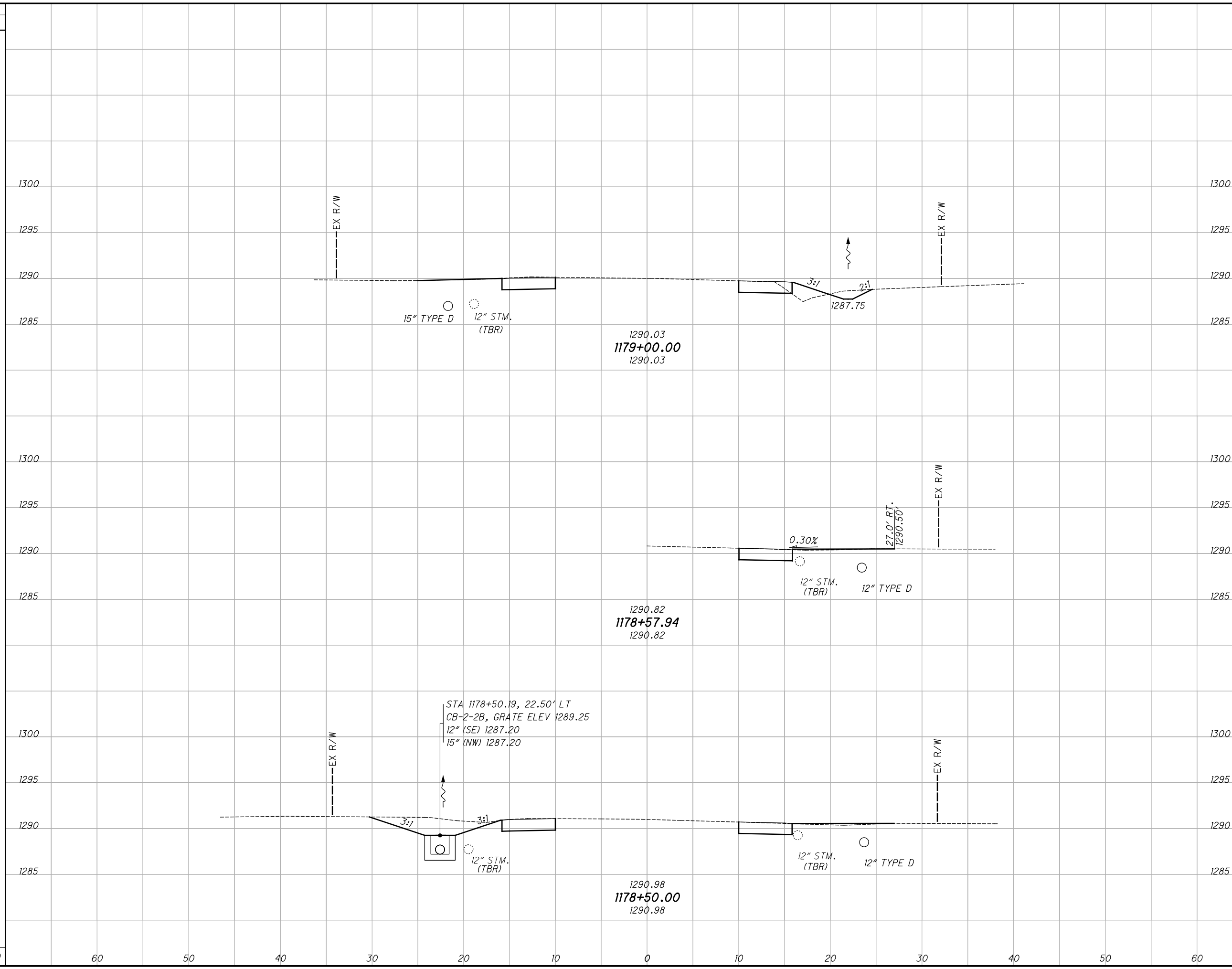
**GEA-COUNTY**  
**WIDE SAFETY**

218  
425



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SEEDING	
END WIDTH	SO. YDS.
60	25
50	172
40	
30	
20	
10	
0	
10	
20	
30	
40	
50	
60	37
70	188
80	
90	
100	
110	
120	
130	
140	
150	
160	
170	
180	
190	
200	
210	
220	
230	
240	
250	
260	
270	
280	
290	
300	
310	
320	
330	
340	
350	
360	



END AREA		VOLUME		CALCULATED JRE	CHECKED DLT
CUT	FILL	CUT	FILL		
10	4				
32	5				
25	1				
44	5				
76	10				

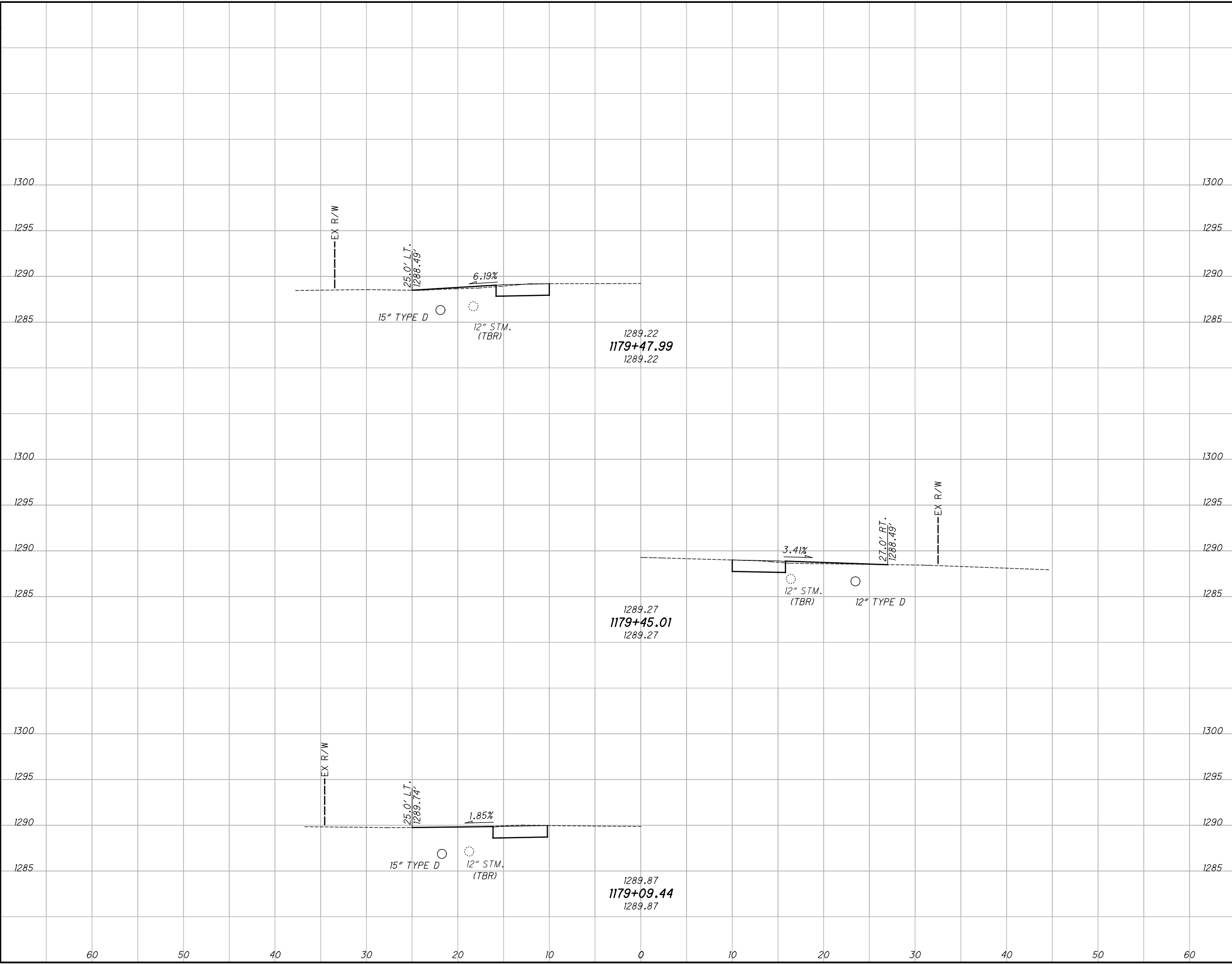
**GEA-COUNTY  
WIDE SAFETY**

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

220  
425

SEEDING	
END WIDTH	SO. YDS.

END AREA		VOLUME		CALCULATED	
CUT	FILL	CUT	FILL	JRE	DLT



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

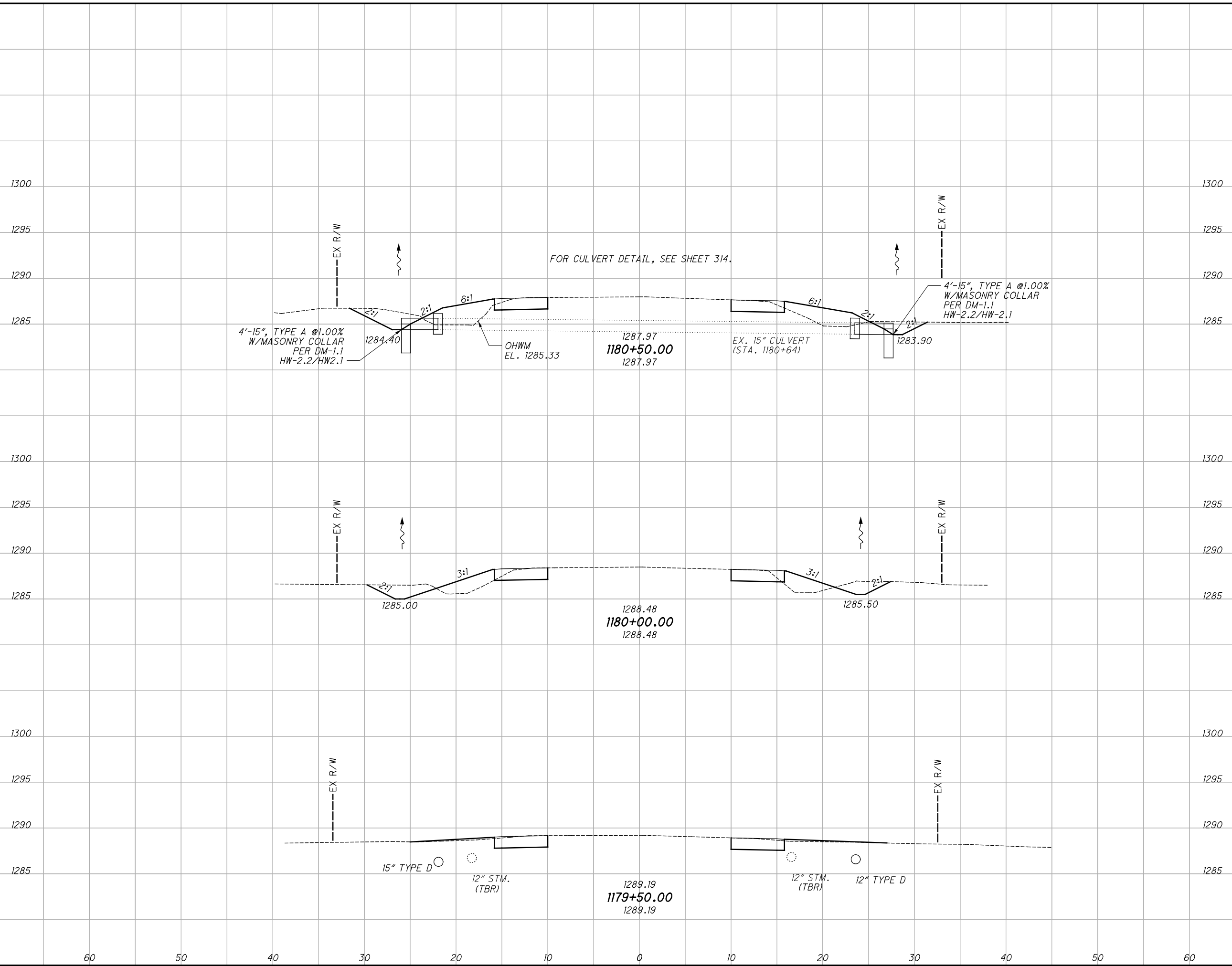
**CROSS SECTIONS - S.R. 168  
STA. 1179+09.44 TO STA. 1179+47.99**

**GEA-COUNTY  
WIDE SAFETY**

221  
425

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



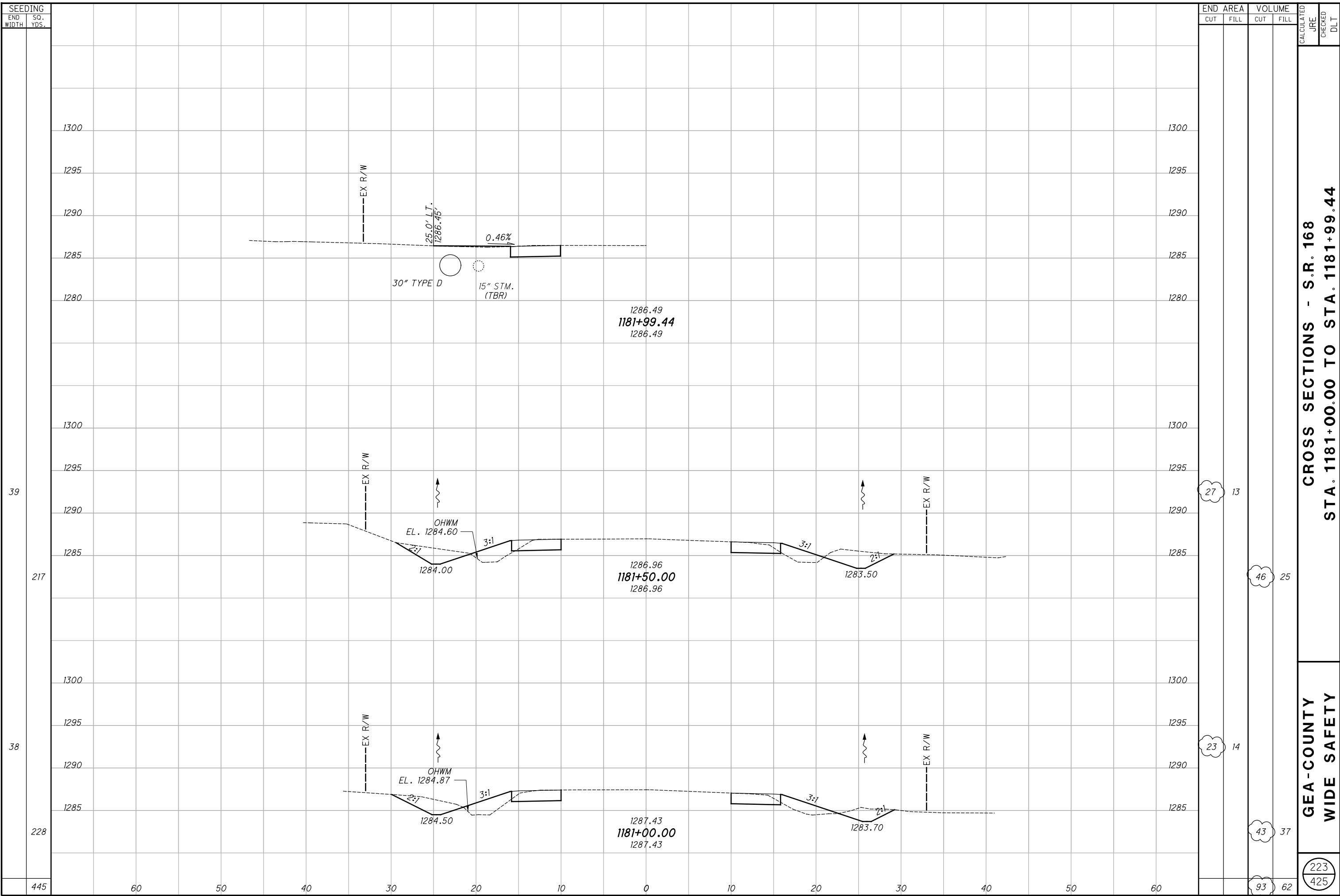
END AREA		VOLUME	
CUT	FILL	CUT	FILL
23	26	40	38
20	15	24	16
6	2	15	6
79	60	222	425

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

**GEA-COUNTY**  
**WIDE SAFETY**



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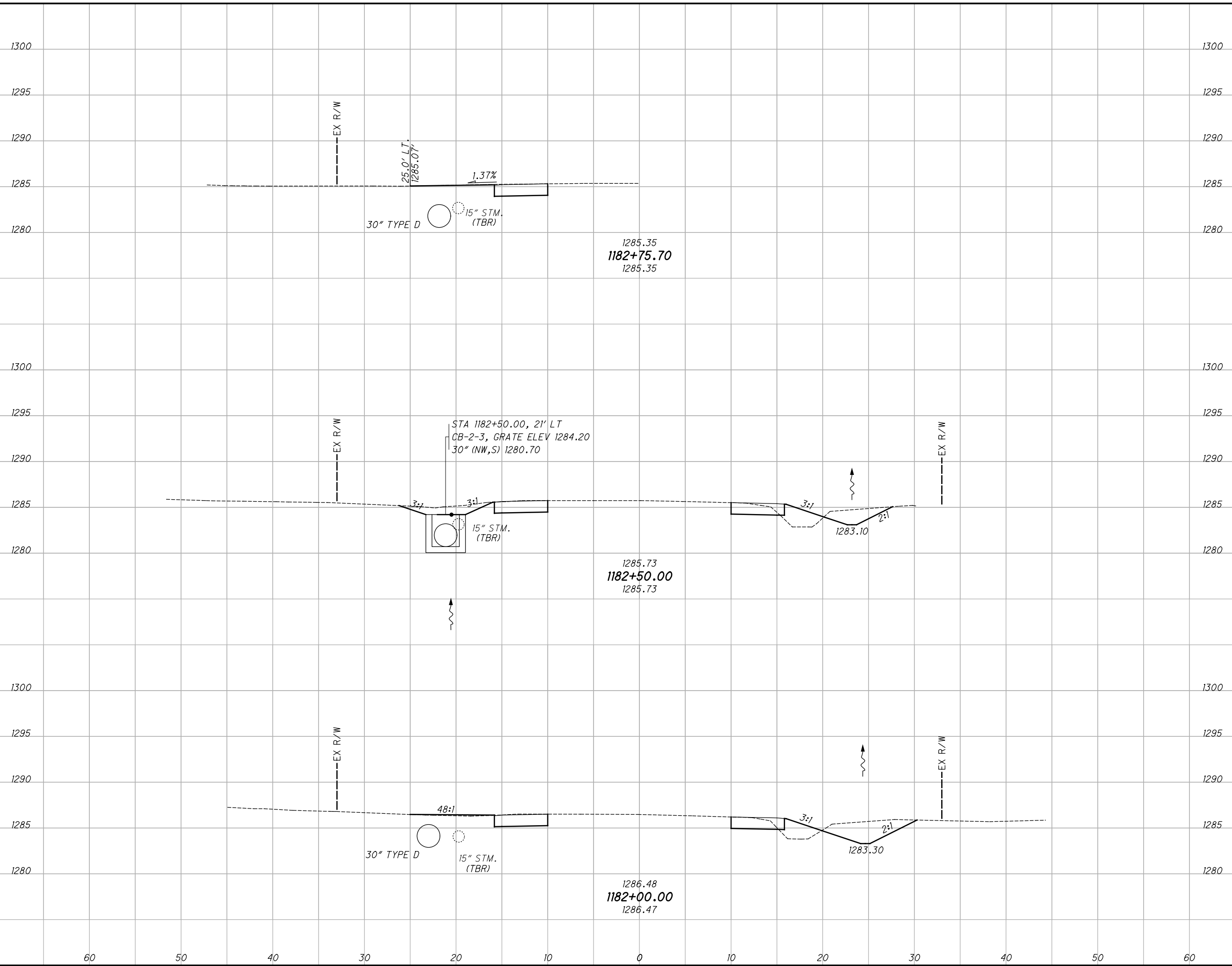
**GEA-COUNTY  
WIDE SAFETY**

**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
1182+00.00				
1182+23.00				
1182+41.00				
1182+75.70				

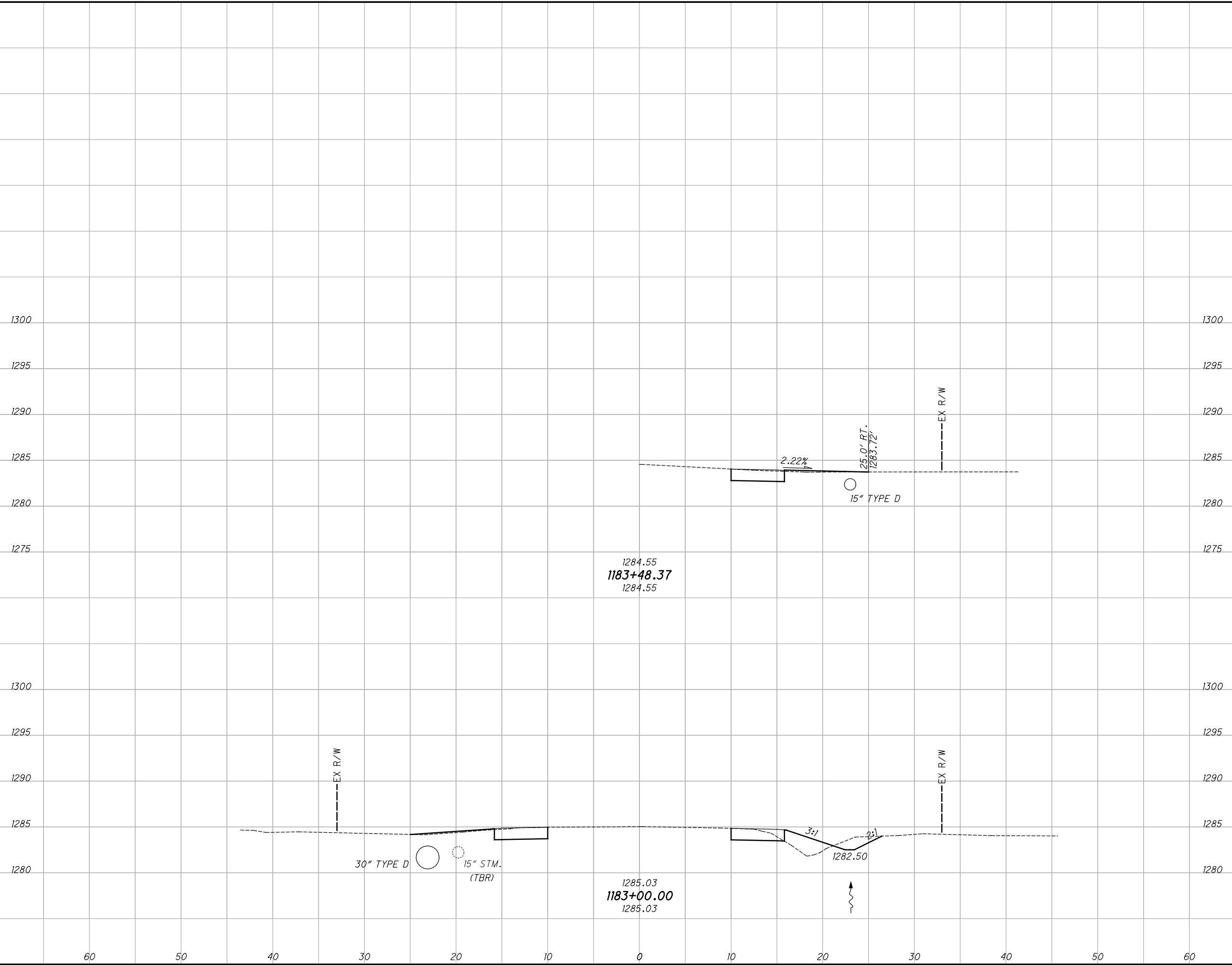
**GEA-COUNTY  
WIDE SAFETY**

**CROSS SECTIONS - S.R. 168  
STA. 1182+00.00 TO STA. 1182+75.70**

224  
425

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SEEDING	
END WIDTH	SO. YDS.
56	
56	

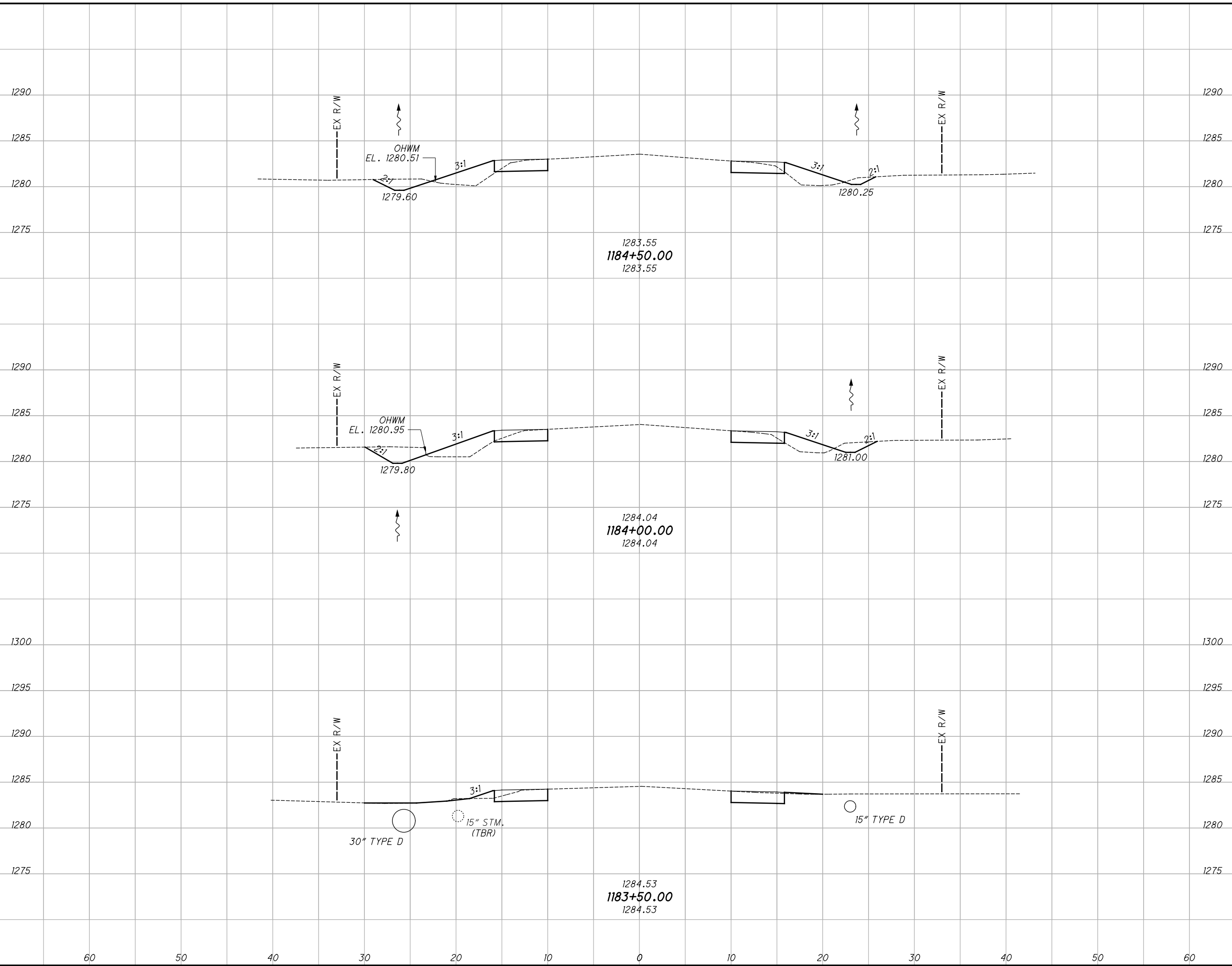


END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED	CHECKED	DLT		
<b>CROSS SECTIONS - S.R. 168</b>				
<b>STA. 1183+00.00 TO STA. 1183+48.37</b>				
<b>GEA-COUNTY WIDE SAFETY</b>				
<table border="1"> <tr> <td>225</td> <td>425</td> </tr> </table>			225	425
225	425			

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SEEDING	
END WIDTH	SO. YDS.
32	189
35	167
24	144
500	



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**

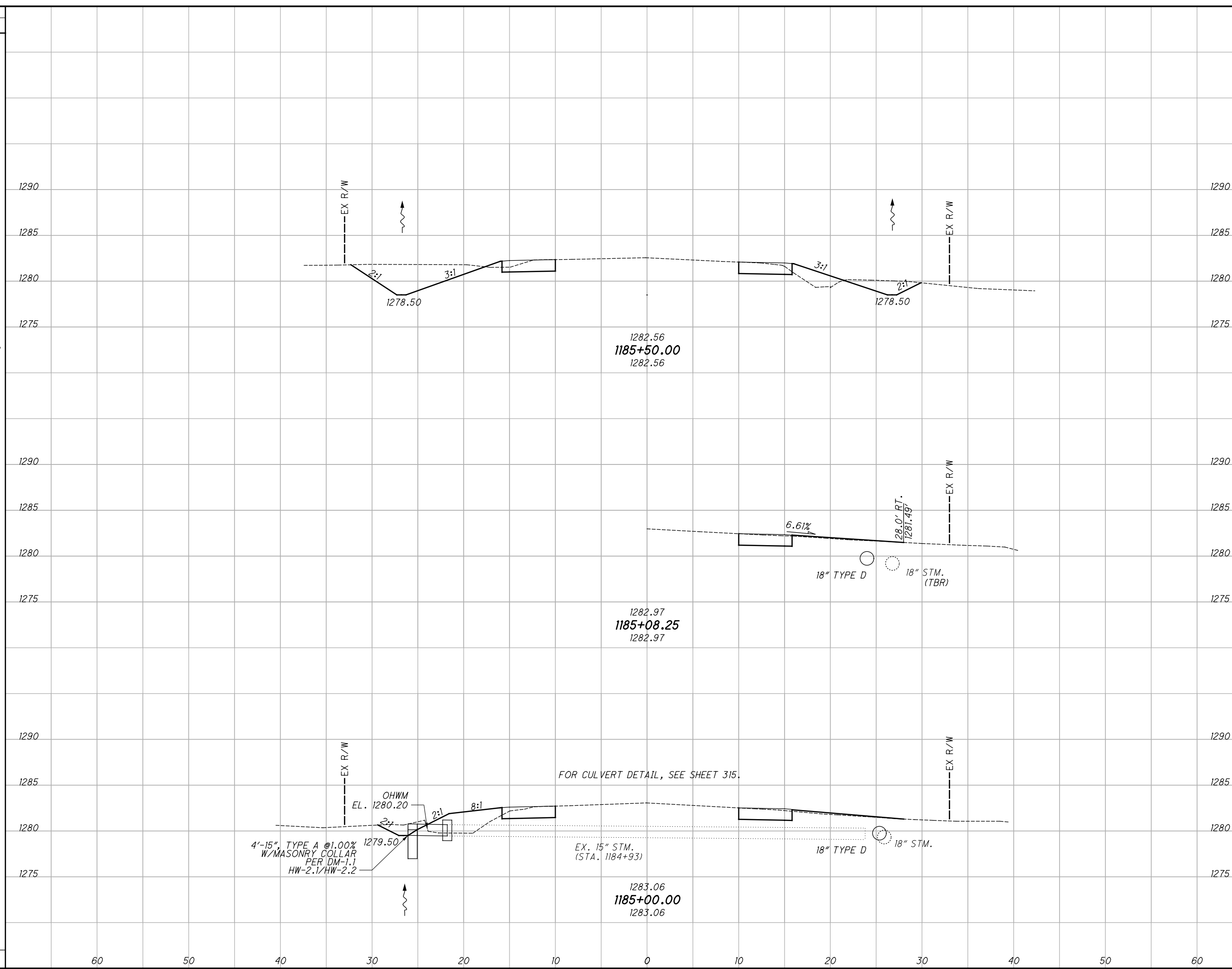
226  
425

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

END AREA		VOLUME		CALCULATED JRE	CHECKED DLT
CUT	FILL	CUT	FILL		
42	7				
51	21				
13	16				
24	31				
75	52				

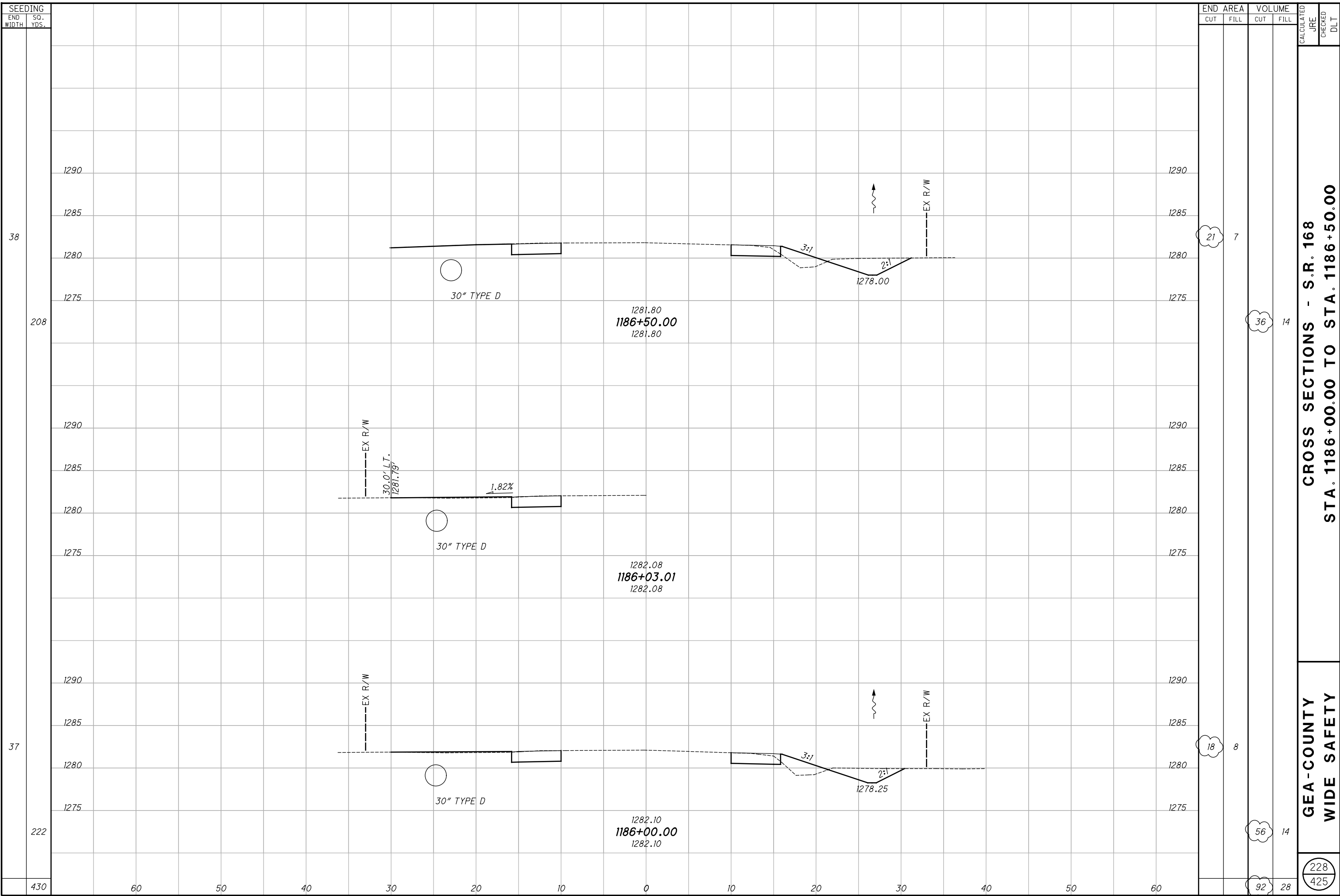
**CROSS SECTIONS - S.R. 168**  
**STA. 1185+00.00 TO STA. 1185+50.00**  
**GEA-COUNTY**  
**WIDE SAFETY**

227  
 425



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

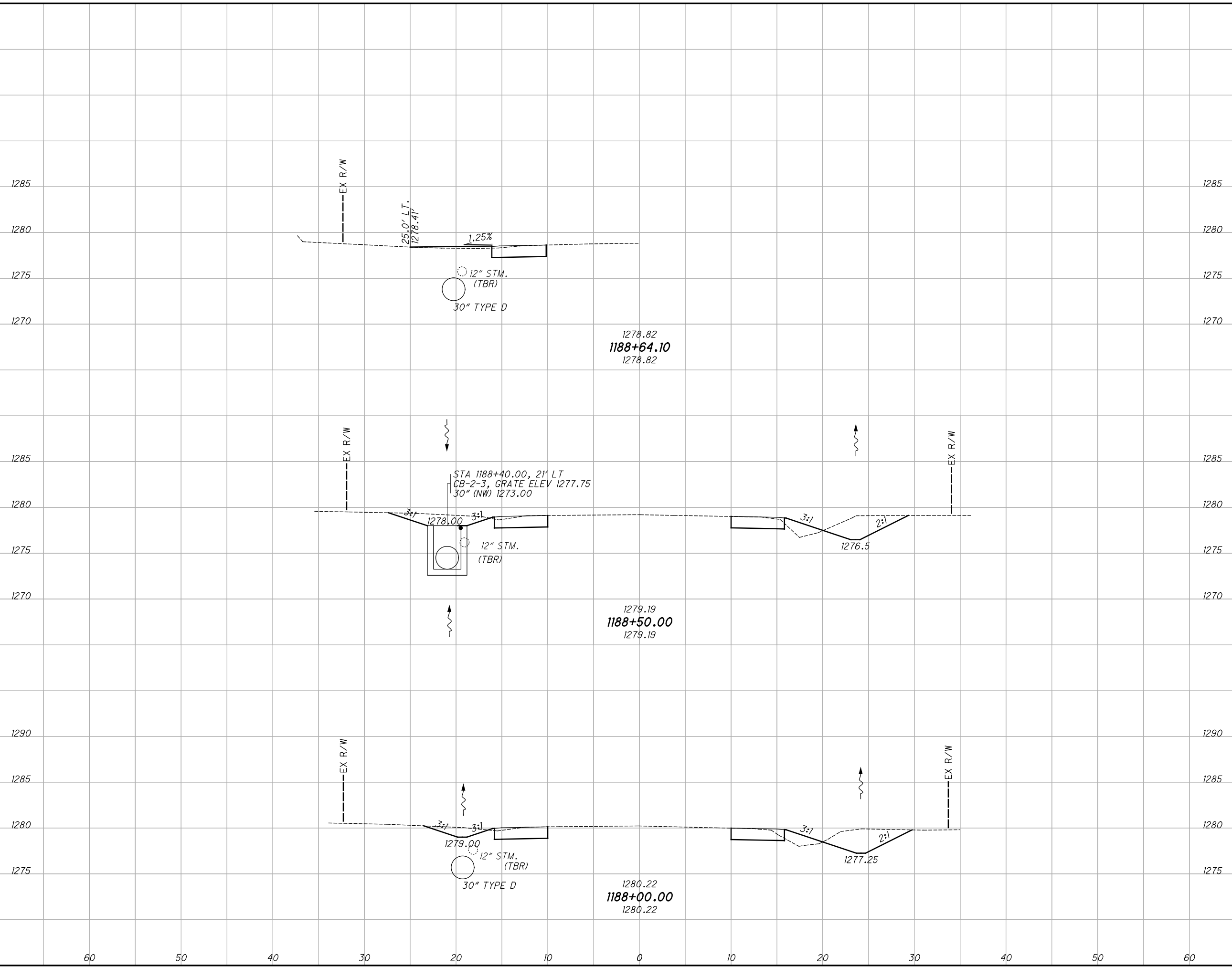
**GEA-COUNTY**  
**WIDE SAFETY**

228  
425



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SEEDING	
END WIDTH	SO. YDS.
397	
197	
32	
200	
38	



END AREA	VOLUME	CALCULATED	CHECKED	DLT						
					CUT	FILL	CUT	FILL	JRE	DLT
					31	4				
					54	7				
					27	4				
					45	9				
					99	16				

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

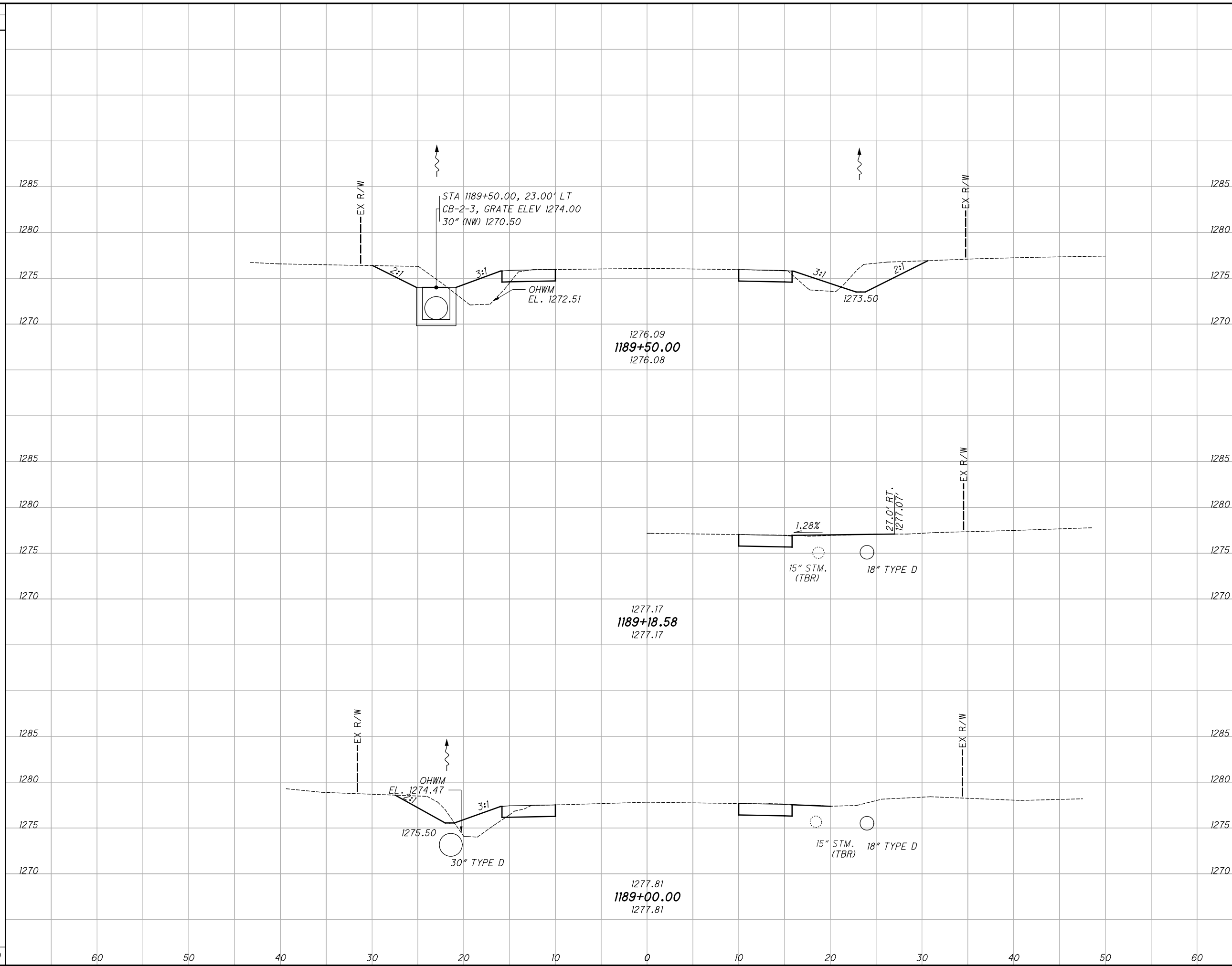
**GEA-COUNTY**  
**WIDE SAFETY**

230  
425



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



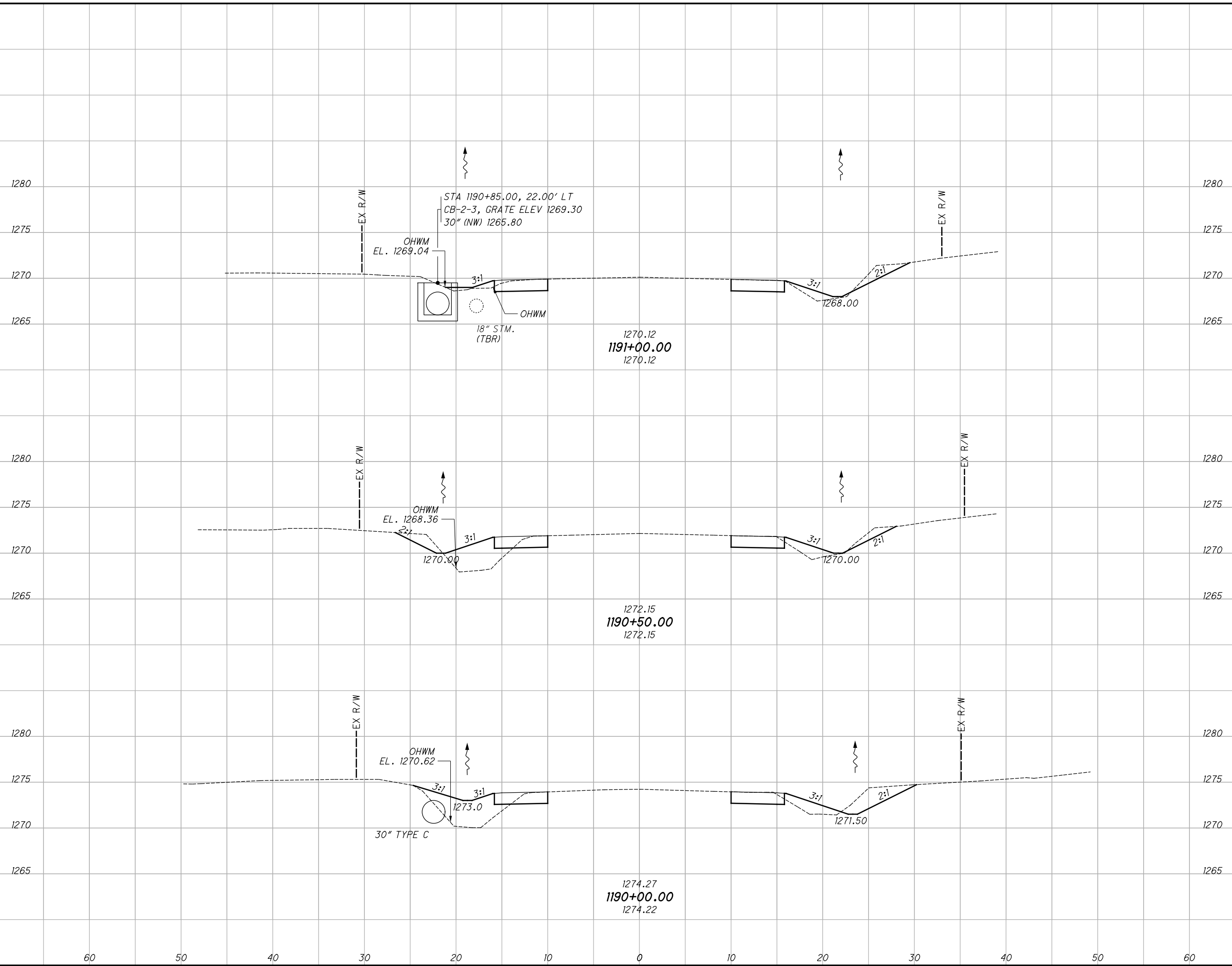
END AREA		VOLUME	
CUT	FILL	CUT	FILL
33	18	44	25
15	9	43	12
87	37	231	425

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

231	425
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SEEDING	
END WIDTH	SO. YDS.
567	228
60	32
150	178
210	32
270	161
330	26



END AREA		VOLUME	
CUT	FILL	CUT	FILL
14	5	26	24
14	21	29	44
17	26	46	41
101	109	232	425

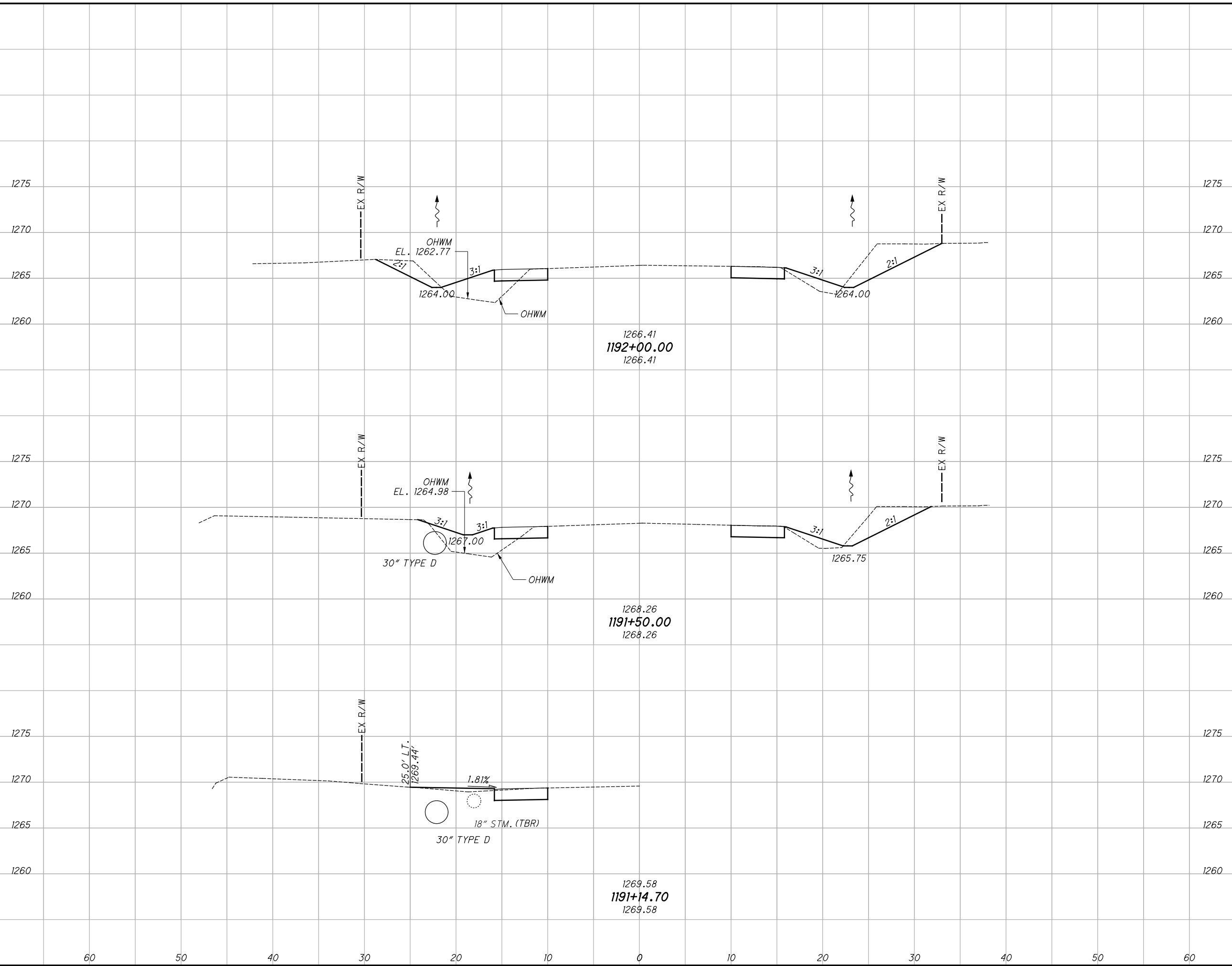
**GEA-COUNTY  
WIDE SAFETY**

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

CALCULATED JRE  
CHECKED DLT

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



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

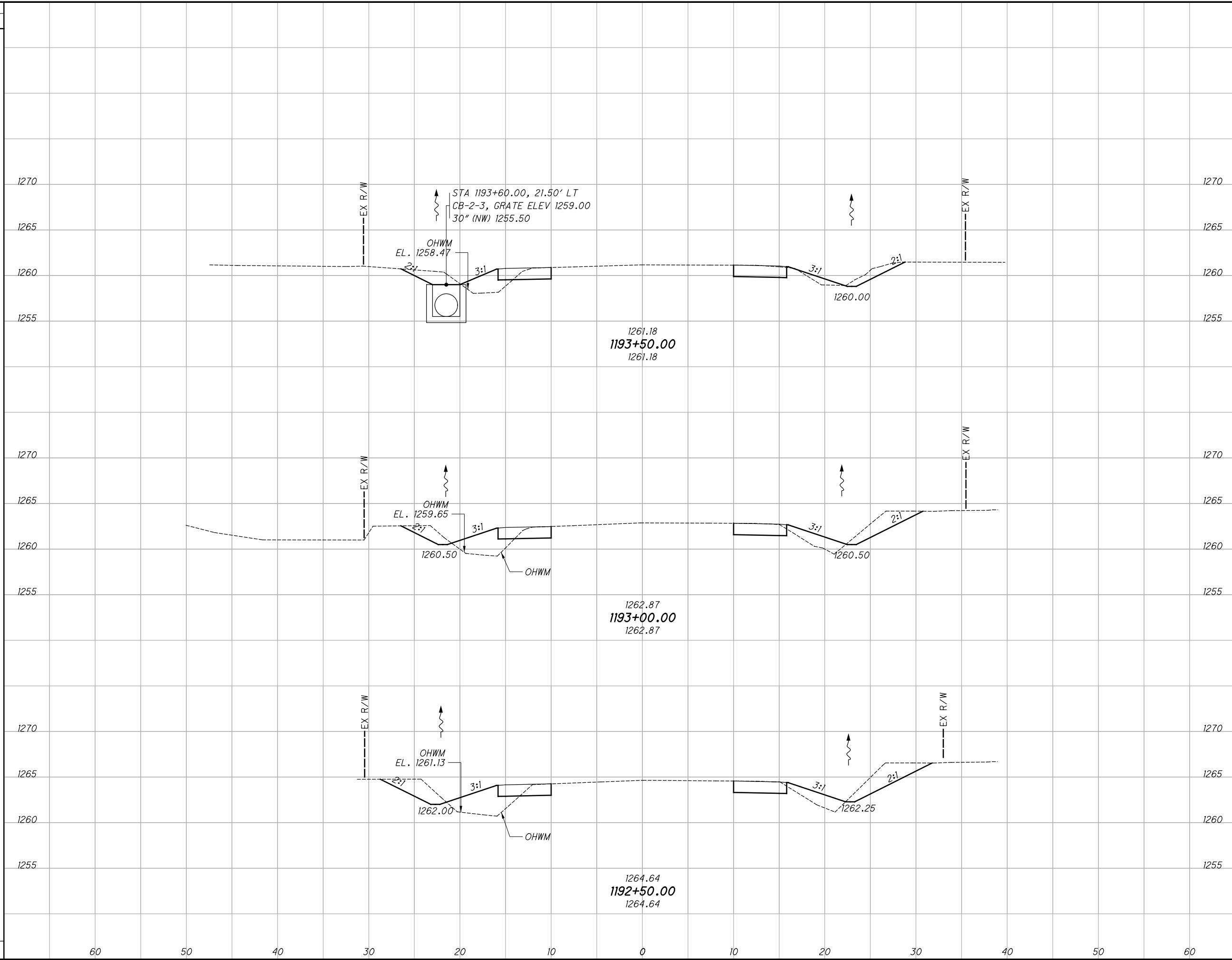
**CROSS SECTIONS - S.R. 168**  
**STA. 1191+14.70 TO STA. 1192+00.00**

**GEA-COUNTY**  
**WIDE SAFETY**

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	CHECKED	DLT	
					CUT
17	10				
22	18				
28	21				
36	26				
46	36				
56	39				
138	101				

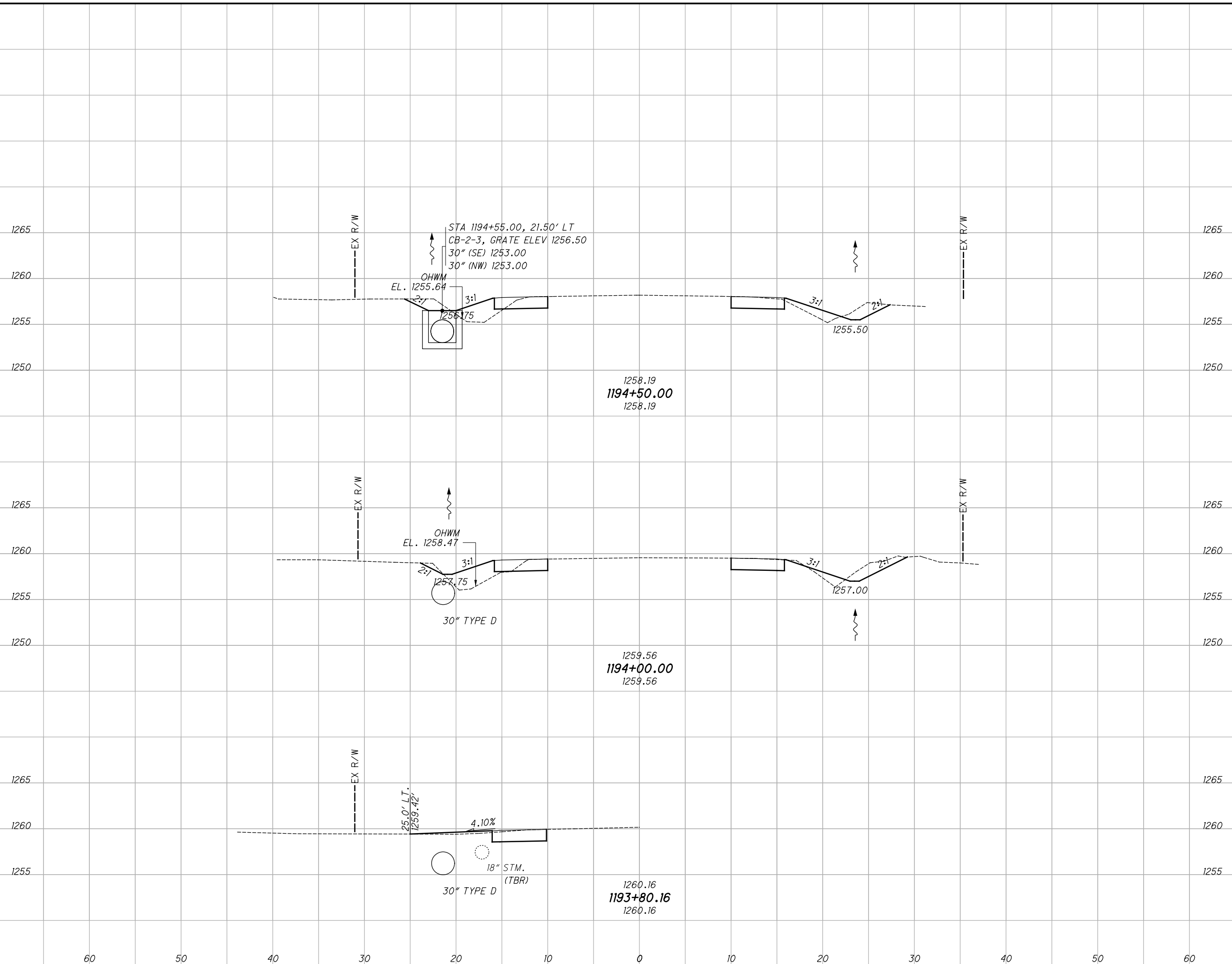
**GEA-COUNTY  
WIDE SAFETY**

**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



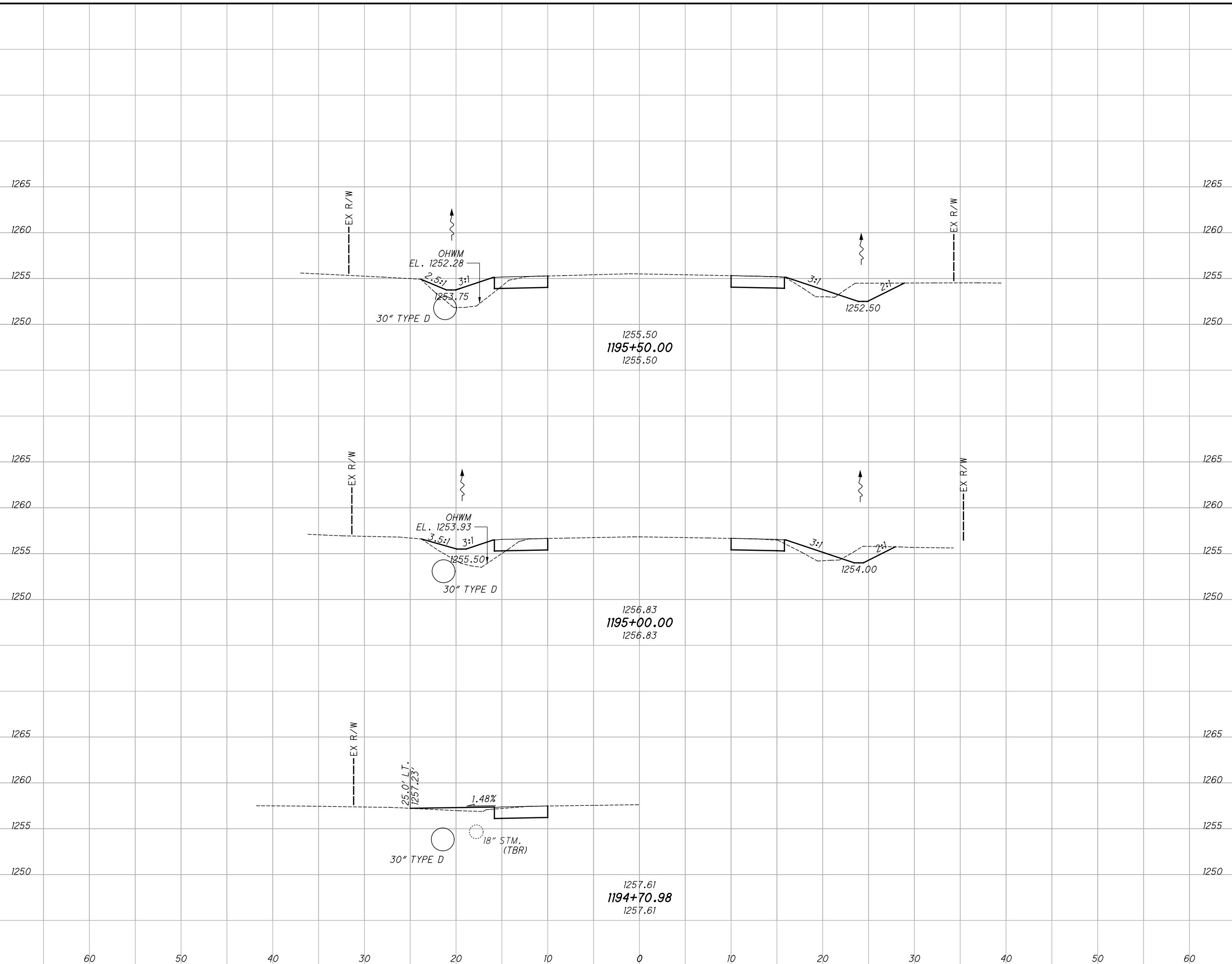
END AREA		VOLUME	
CUT	FILL	CUT	FILL
12	12	12	12
12	12	22	22
12	12	20	20
53	42	235	425

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

**GEA-COUNTY**  
**WIDE SAFETY**

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

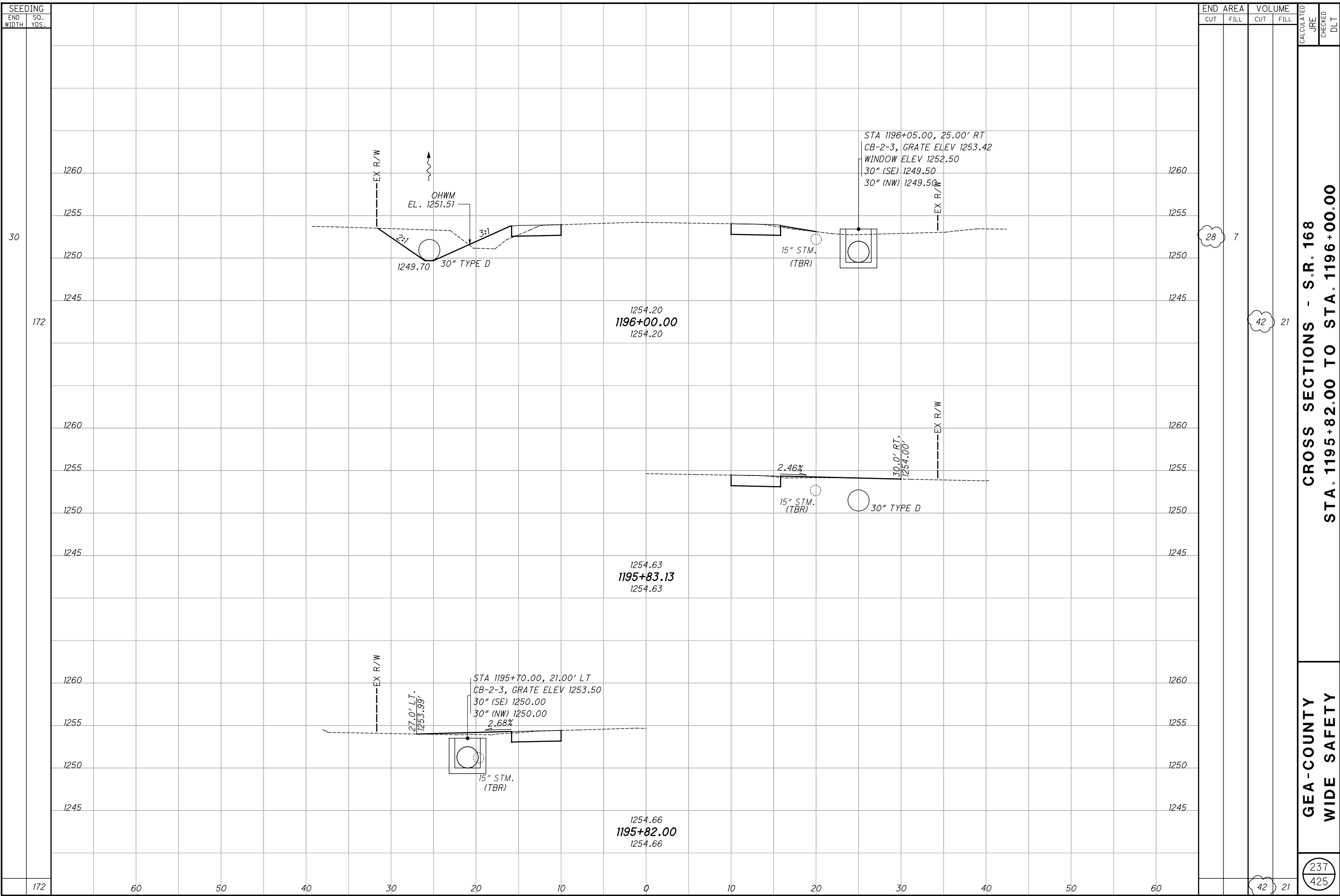


END AREA		VOLUME	
CUT	FILL	CUT	FILL
17	16	25	30
10	16	24	26
49	56	236	425

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

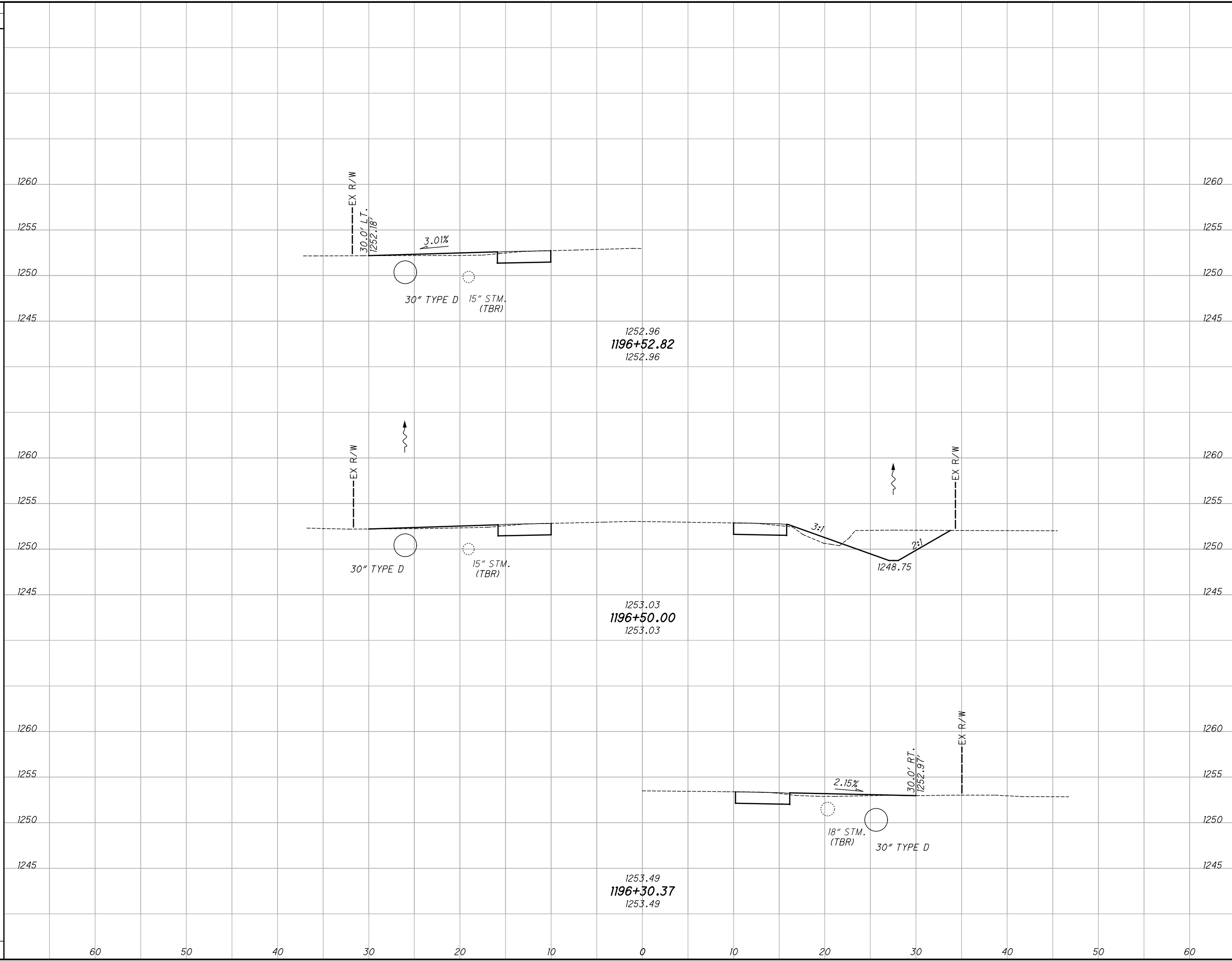
**GEA-COUNTY**  
**WIDE SAFETY**

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SEEDING	
END WIDTH	SO. YDS.
	197
	197
	41
	197
	197



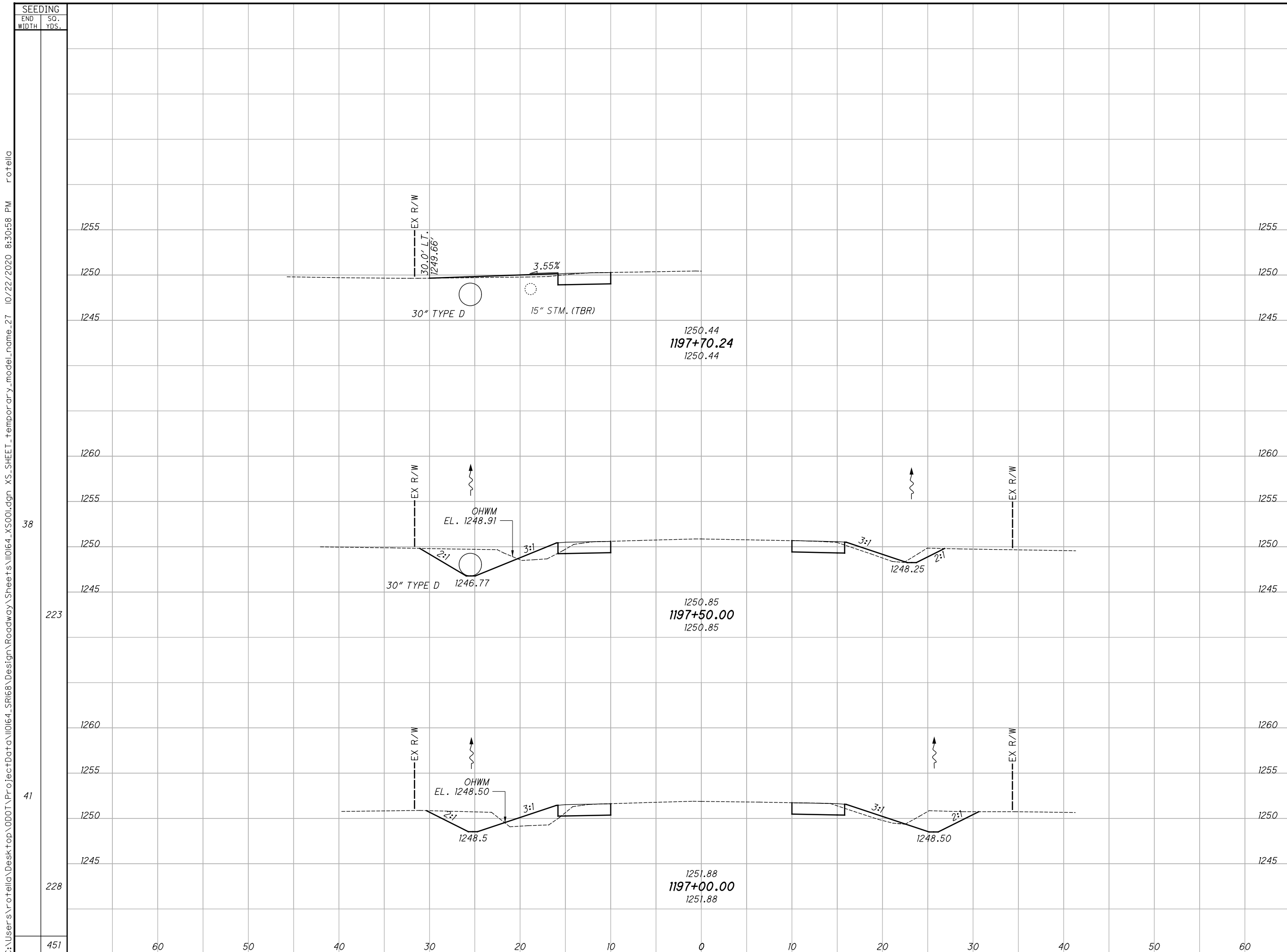
END AREA	VOLUME	CALCULATED	CHECKED	DLT					
					CUT	FILL	CUT	FILL	JRE
					33	5			
					56	11			
					56	11			

**GEA-COUNTY**  
**WIDE SAFETY**  
**CROSS SECTIONS - S.R. 168**  
**STA. 1196+30.37 TO STA. 1196+52.82**

238  
425



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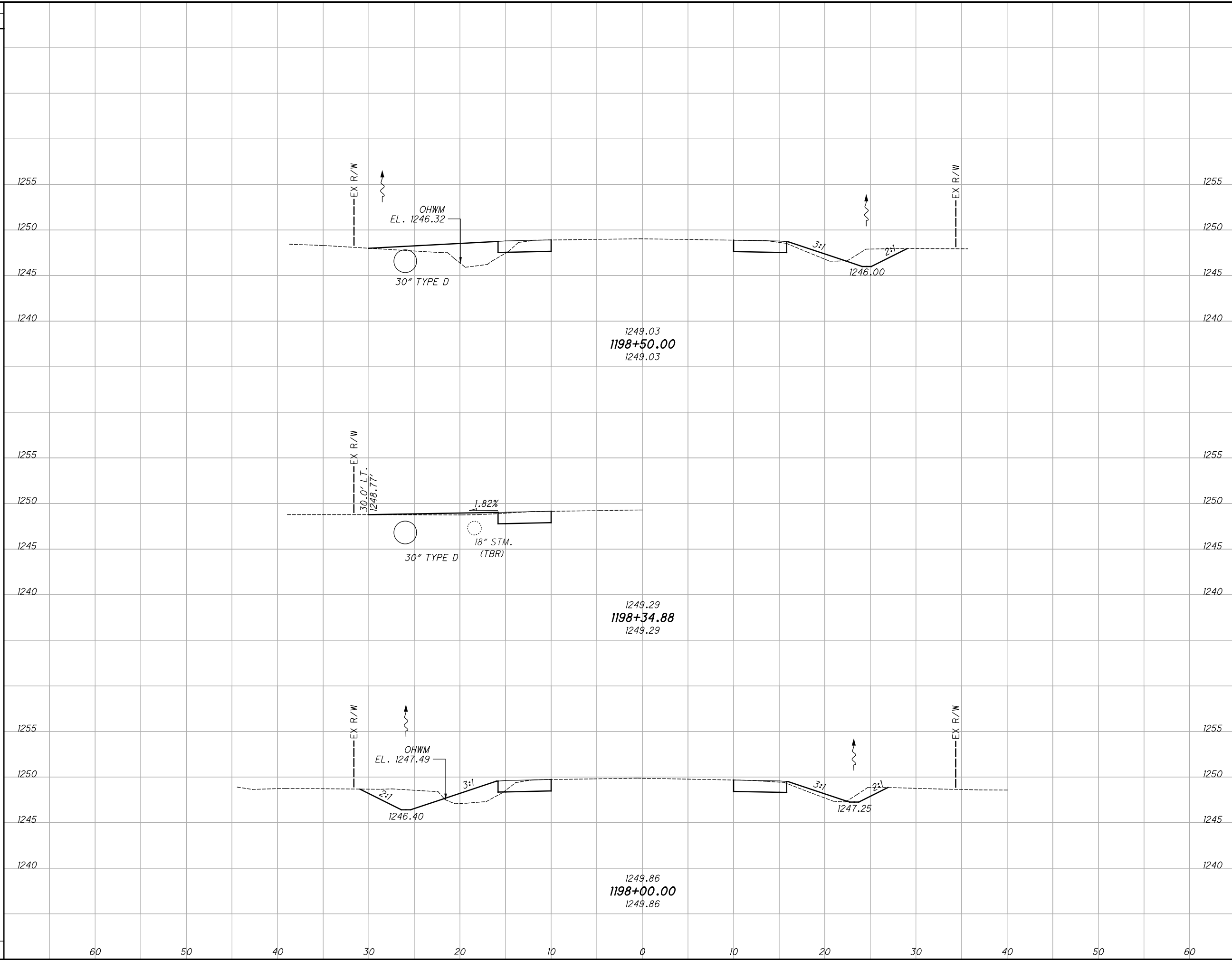


**CROSS SECTIONS - S.R. 168**  
**STA. 1197+00.00 TO STA. 1197+70.24**

**GEA-COUNTY**  
**WIDE SAFETY**

C:\Users\rotella\Desktop\ProjectData\10164\_SRI68\Design\Roadway\Sheets\10164\_X5001.dgn XS\_SHEET\_temporary\_model\_name\_28 10/22/2020 8:30:59 PM rotella

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



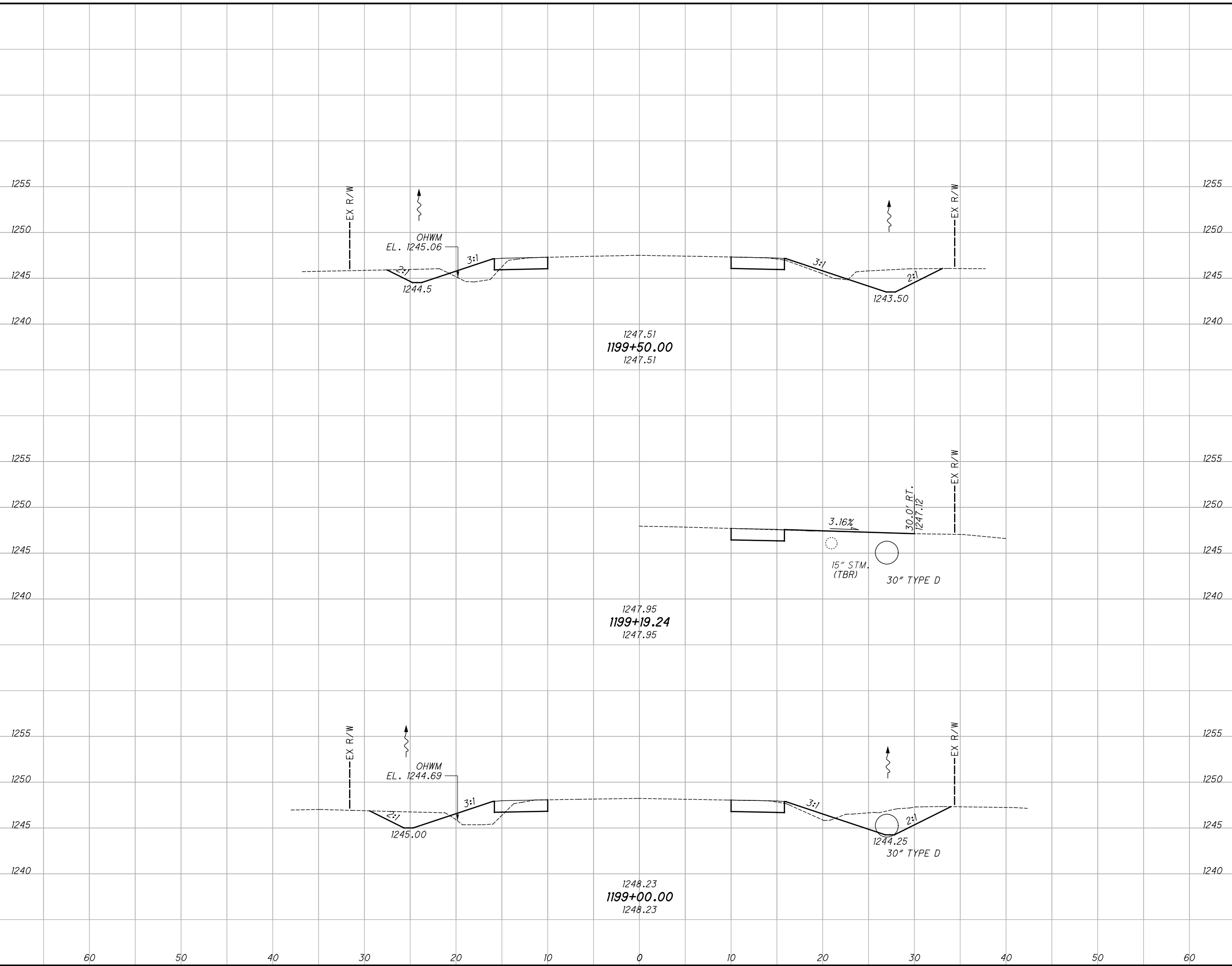
END AREA		VOLUME		CALCULATED	
CUT	FILL	CUT	FILL	JRE	DLT
13	19	32	6		
22	10	48	15		
80	21	240	425		

**GEA-COUNTY  
WIDE SAFETY**

**CROSS SECTIONS - S.R. 168  
STA. 1198+00.00 TO STA. 1198+50.00**

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



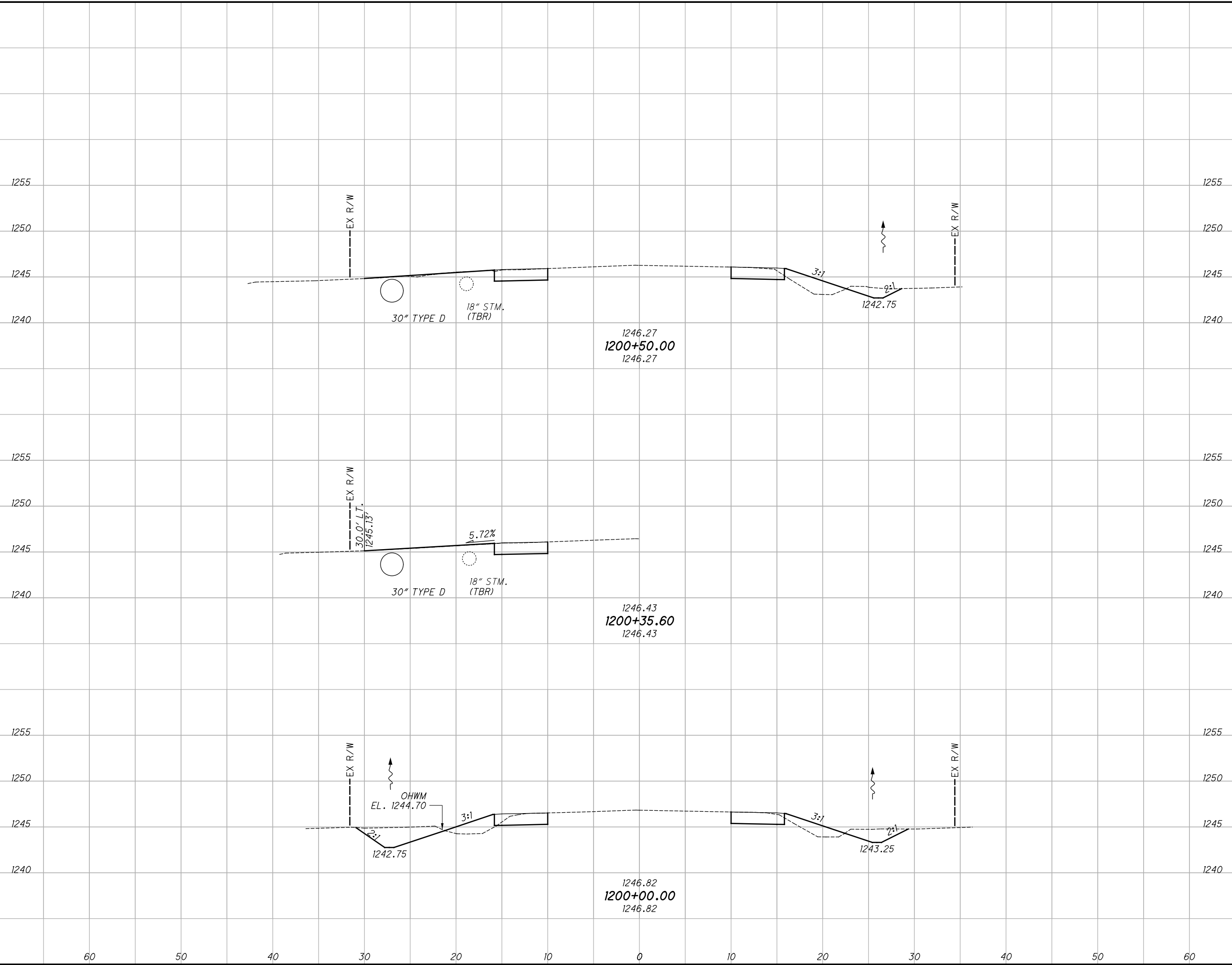
END AREA		VOLUME	
CUT	FILL	CUT	FILL
26	9	56	19
35	11	44	28
100	47	241	425

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

**GEA-COUNTY**  
**WIDE SAFETY**

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

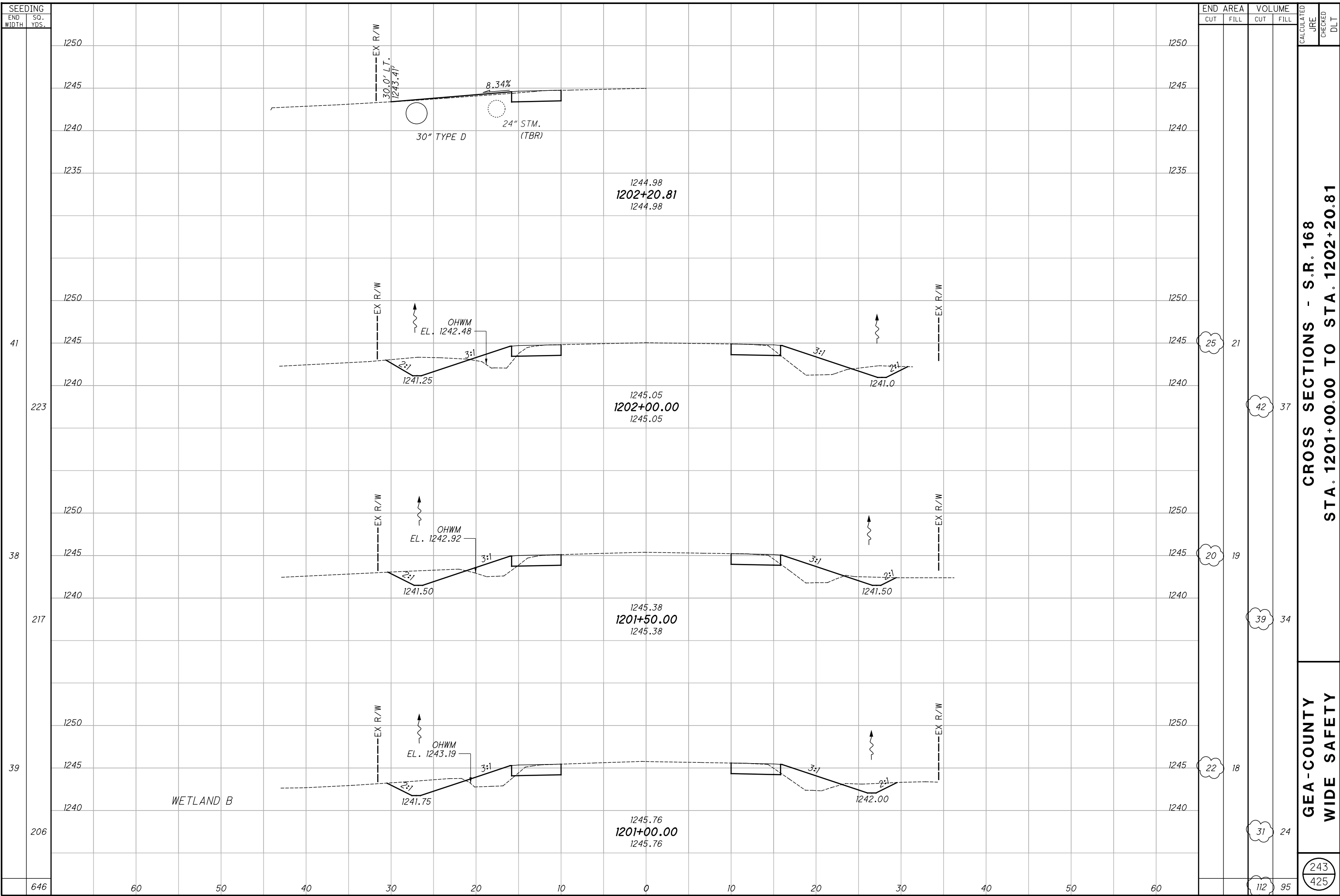


END AREA		VOLUME		CALCULATED	
CUT	FILL	CUT	FILL	JRE	DLT
12	8	34	19		
25	12	47	19		
81	38	242	425		

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

**GEA-COUNTY**  
**WIDE SAFETY**

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**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	

STA. 1203+84.40 (RT)

SUSPEND WORK STA. 1203+41.36 (LT)  
SUSPEND WORK STA. 1203+84.40 (RT)

1250

1245

1240

STA. 1203+41.36 (LT)

1235

(LT)

(RT)

1250

1245

(LT)

(RT)

1240

1235

244

1250

1245

1240

1235

233

60

50

40

30

20

10

0

10

20

30

40

50

60

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

1244.89  
1203+50.00  
1244.89

1244.76  
1203+00.00  
1244.76

1244.88  
1202+50.00  
1244.88

OHWM  
EL. 1241.52

OHWM  
EL. 1241.76

OHWM  
EL. 1242.32

EX R/W

EX R/W

EX R/W

EX R/W

EX R/W

EX R/W

2.5:1

1240.00

2:1

3:1

1240.50

3:1

1240.25

2:1

3:1

1240.75

3:1

1240.5

2:1

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

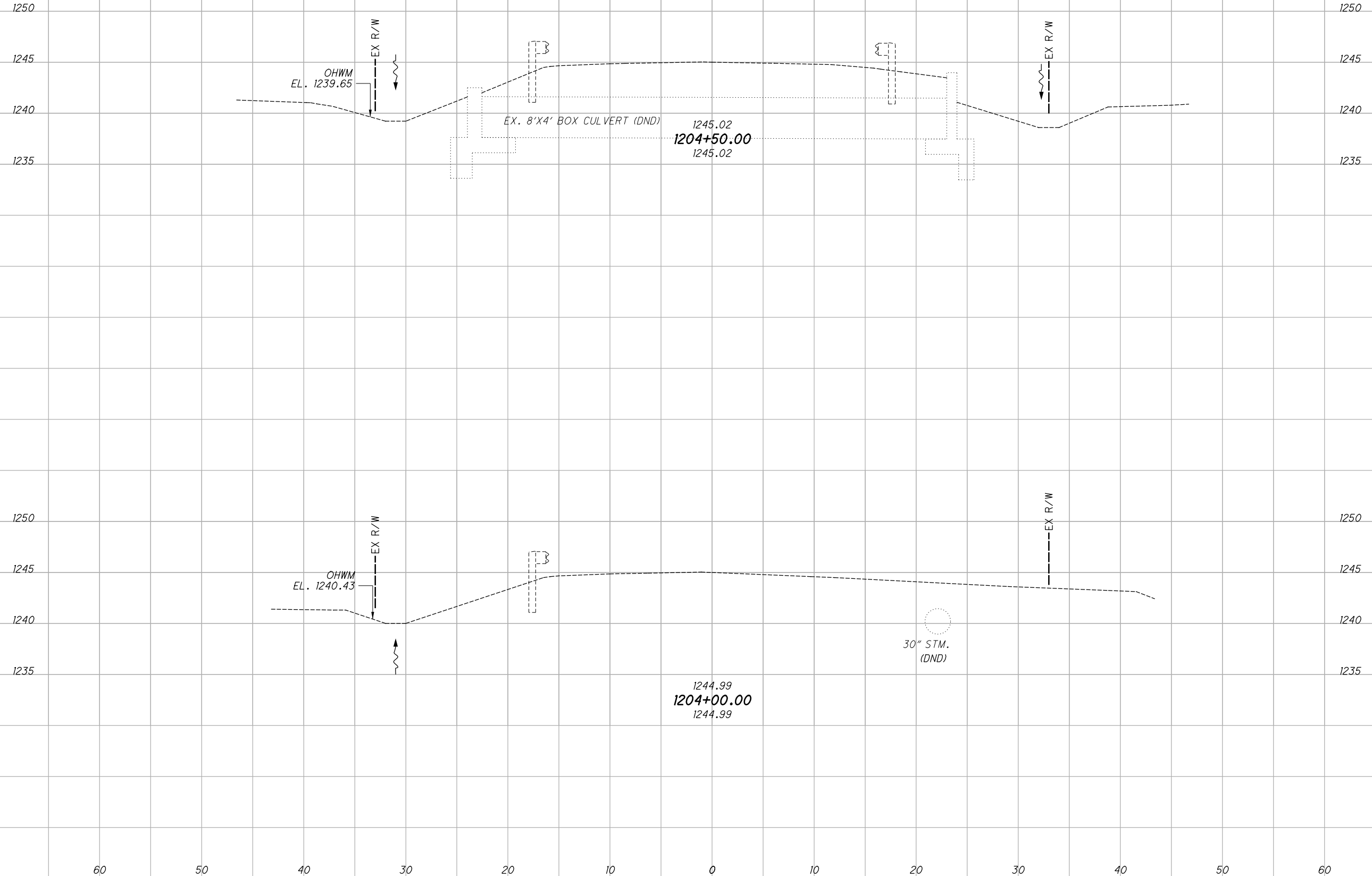
GEA-COUNTY  
WIDE SAFETY

244  
425

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SEEDING  
END SO.  
WIDTH YDS.

END AREA  
CUT FILL  
VOLUME  
CUT FILL  
CALCULATED  
JRE  
CHECKED  
DLT



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

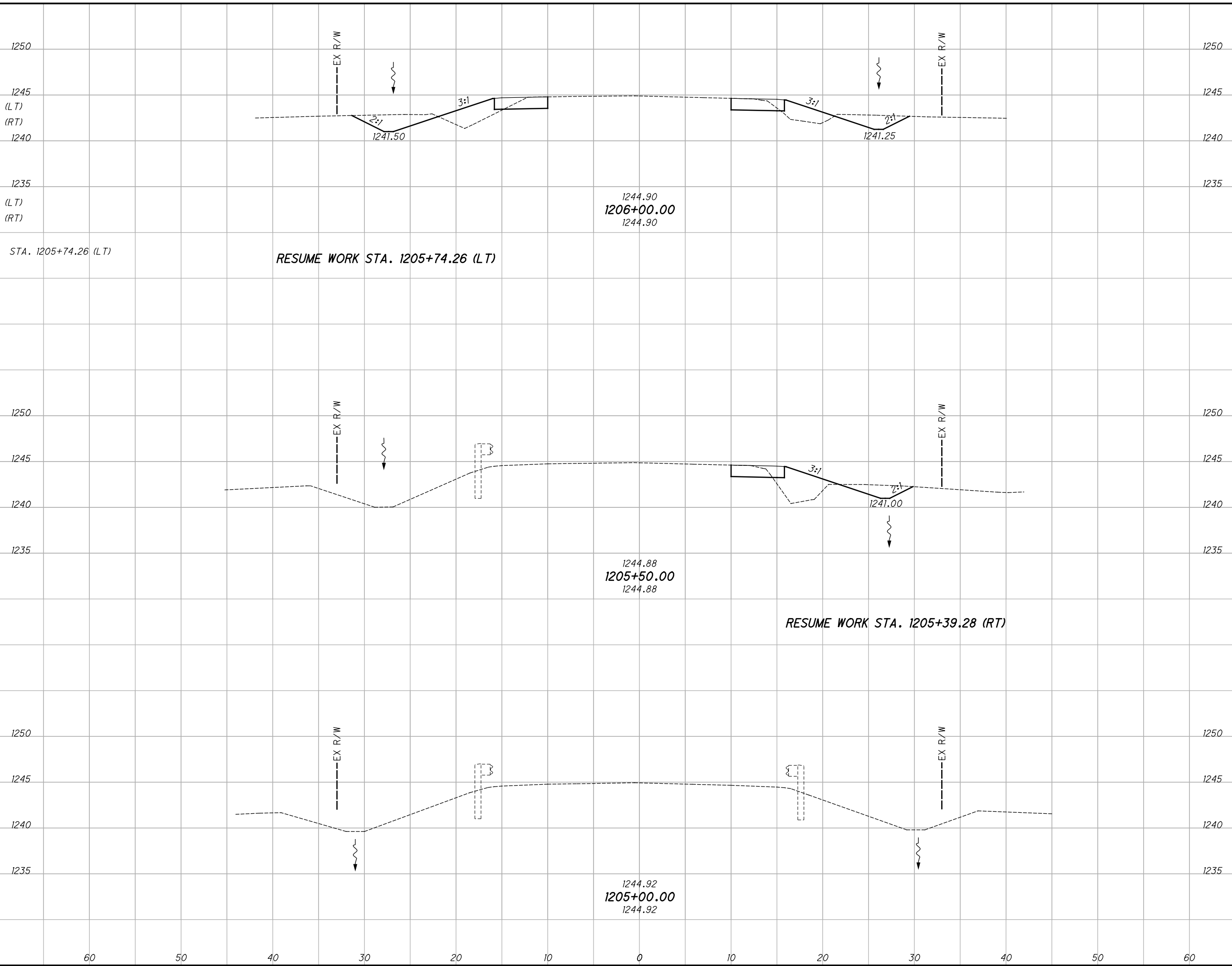
**GEA-COUNTY**  
**WIDE SAFETY**

245  
425

11 19  
14 19  
14 19

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SEEDING	
END WIDTH	SO. YDS.
22	24
68	120
25	
21	
188	



END AREA	VOLUME	CALCULATED	CHECKED	DLT	
					CUT
28	18				
34	29				
9	14				
4	6				
38	35				

**GEA-COUNTY  
WIDE SAFETY**

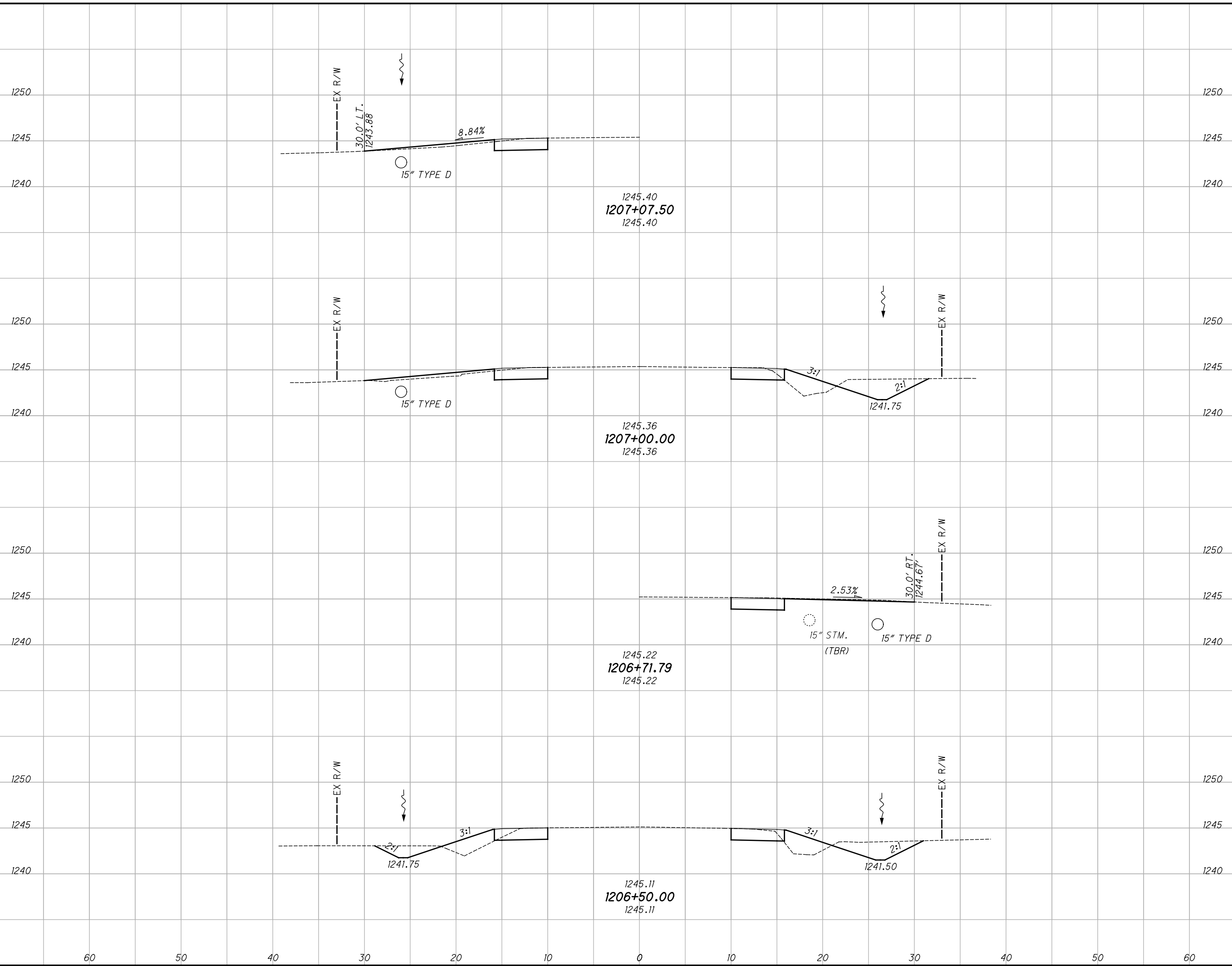
**CROSS SECTIONS - S.R. 168  
STA. 1205+00.00 TO STA. 1206+00.00**

246  
425



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



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

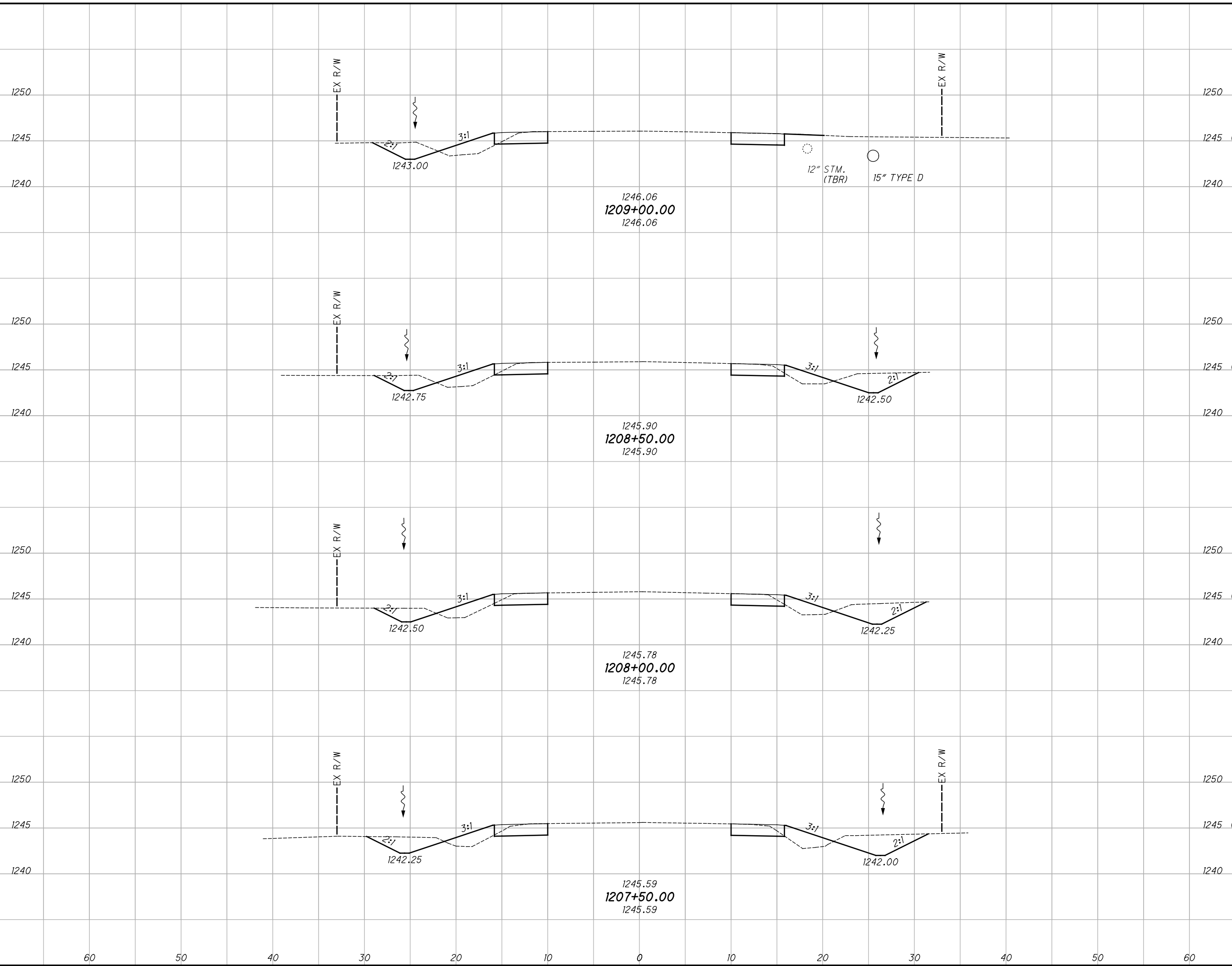
**CROSS SECTIONS - S.R. 168**  
**STA. 1206+50.00 TO STA. 1207+07.50**

**GEA-COUNTY**  
**WIDE SAFETY**

247  
425

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



END AREA	VOLUME	CALCULATED JRE	CHECKED DLT
14	7		
37	19		
26	13		
50	23		
28	12		
54	23		
30	13		
48	23		
189	88		

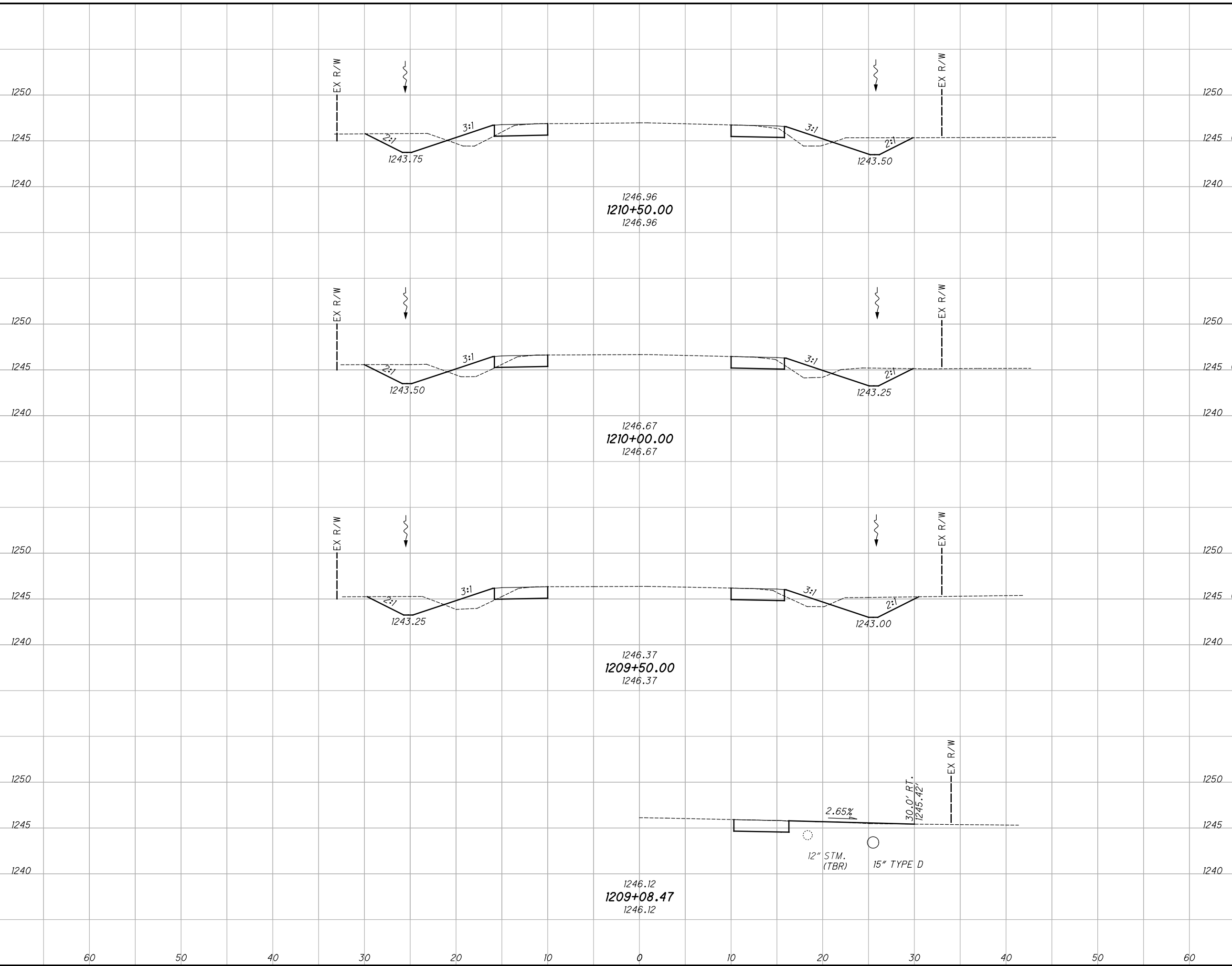
**CROSS SECTIONS - S.R. 168**  
**STA. 1207+50.00 TO STA. 1209+00.00**

**GEA-COUNTY**  
**WIDE SAFETY**

248  
425

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SEEDING	
END WIDTH	SO. YDS.
60	40
50	222
40	222
30	183
20	40
10	627



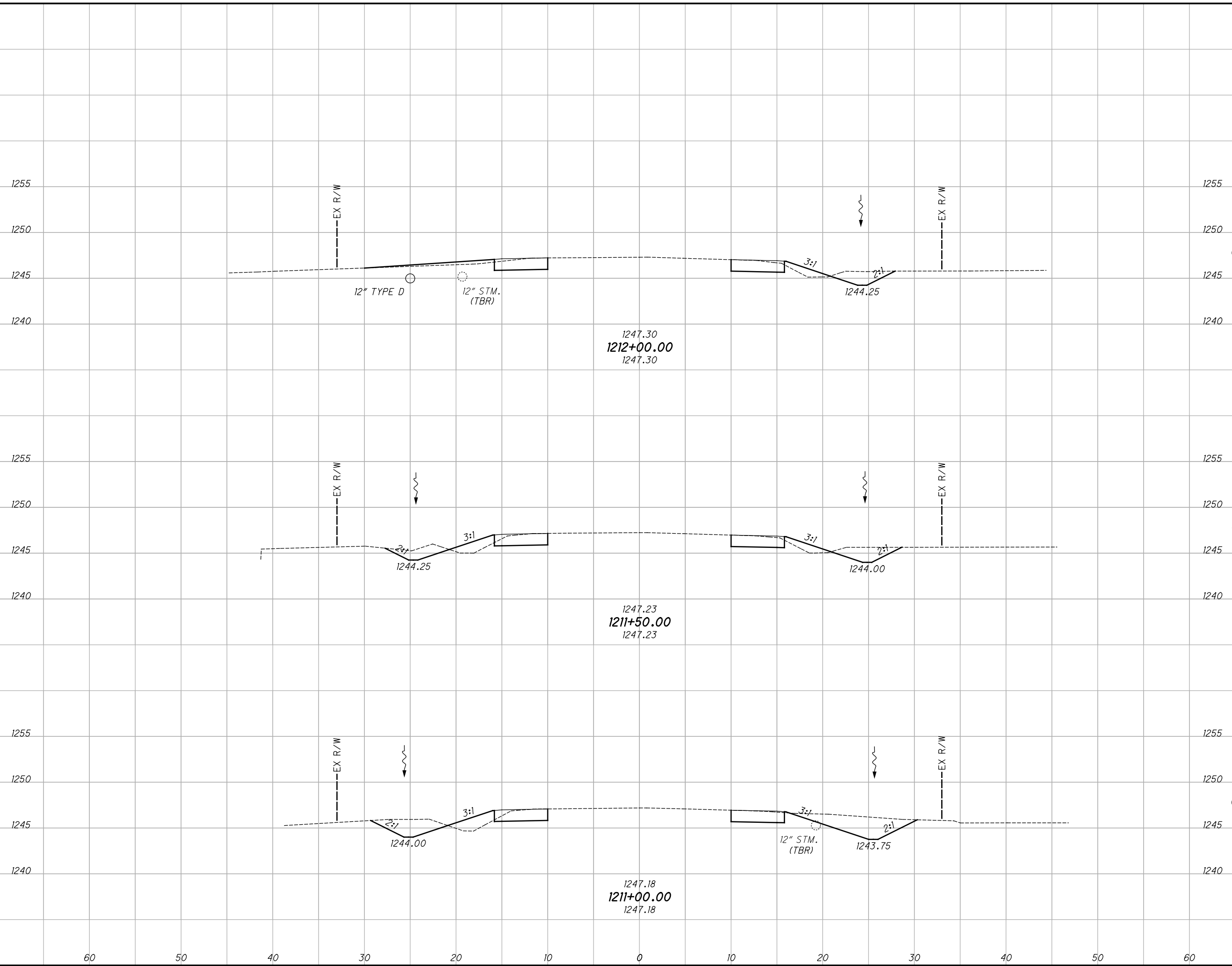
END AREA		VOLUME	
CUT	FILL	CUT	FILL
30	11	56	20
30	11	54	19
28	10	39	16
149	55	249	425

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

**GEA-COUNTY**  
**WIDE SAFETY**

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SEEDING	
END WIDTH	SO. YDS.
611	29
60	183
60	35
60	206
60	39
611	222



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

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

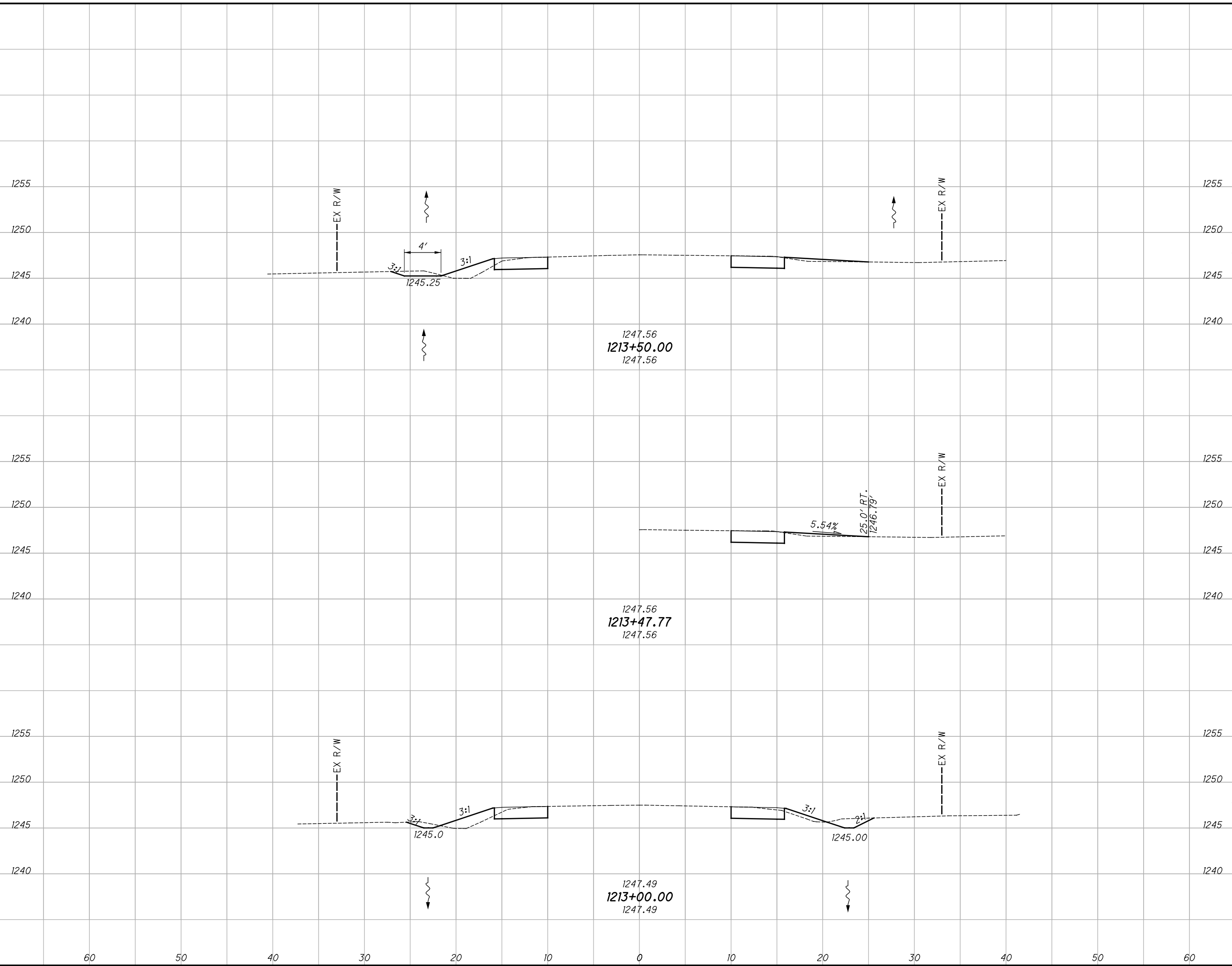
**GEA-COUNTY**  
**WIDE SAFETY**

250  
425



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SEEDING	
END WIDTH	SO. YDS.
27	150
27	164
314	60
	50
	40
	30
	20
	10
	0
	10
	20
	30
	40
	50
	60



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

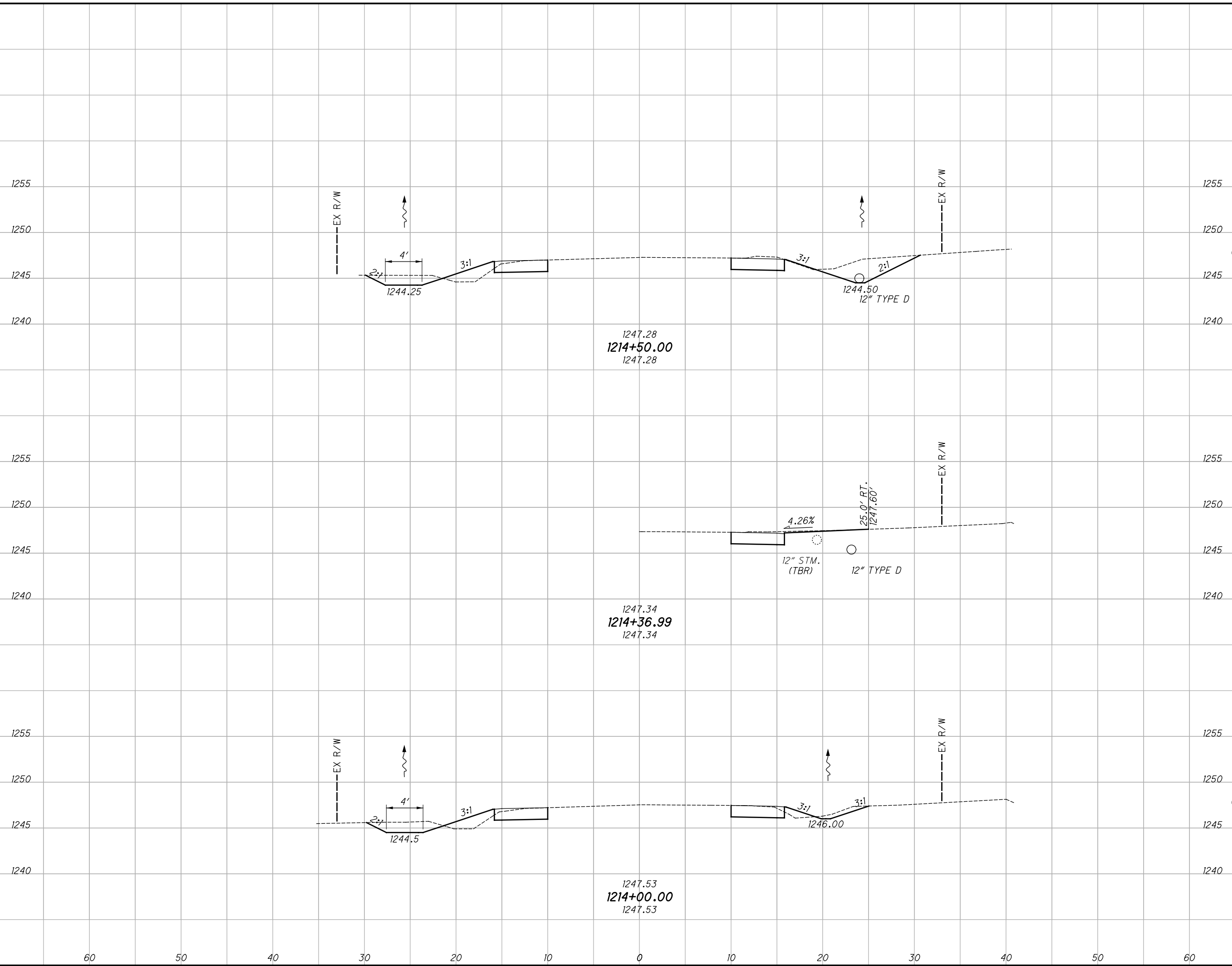
**CROSS SECTIONS - S.R. 168**  
**STA. 1213+00.00 TO STA. 1213+50.00**

**GEA-COUNTY**  
**WIDE SAFETY**

252  
425

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



END AREA		VOLUME		CALCULATED JRE	CHECKED DLT
CUT	FILL	CUT	FILL		
		32	6		
		47	12		
		19	7		
		29	13		
		76	25		

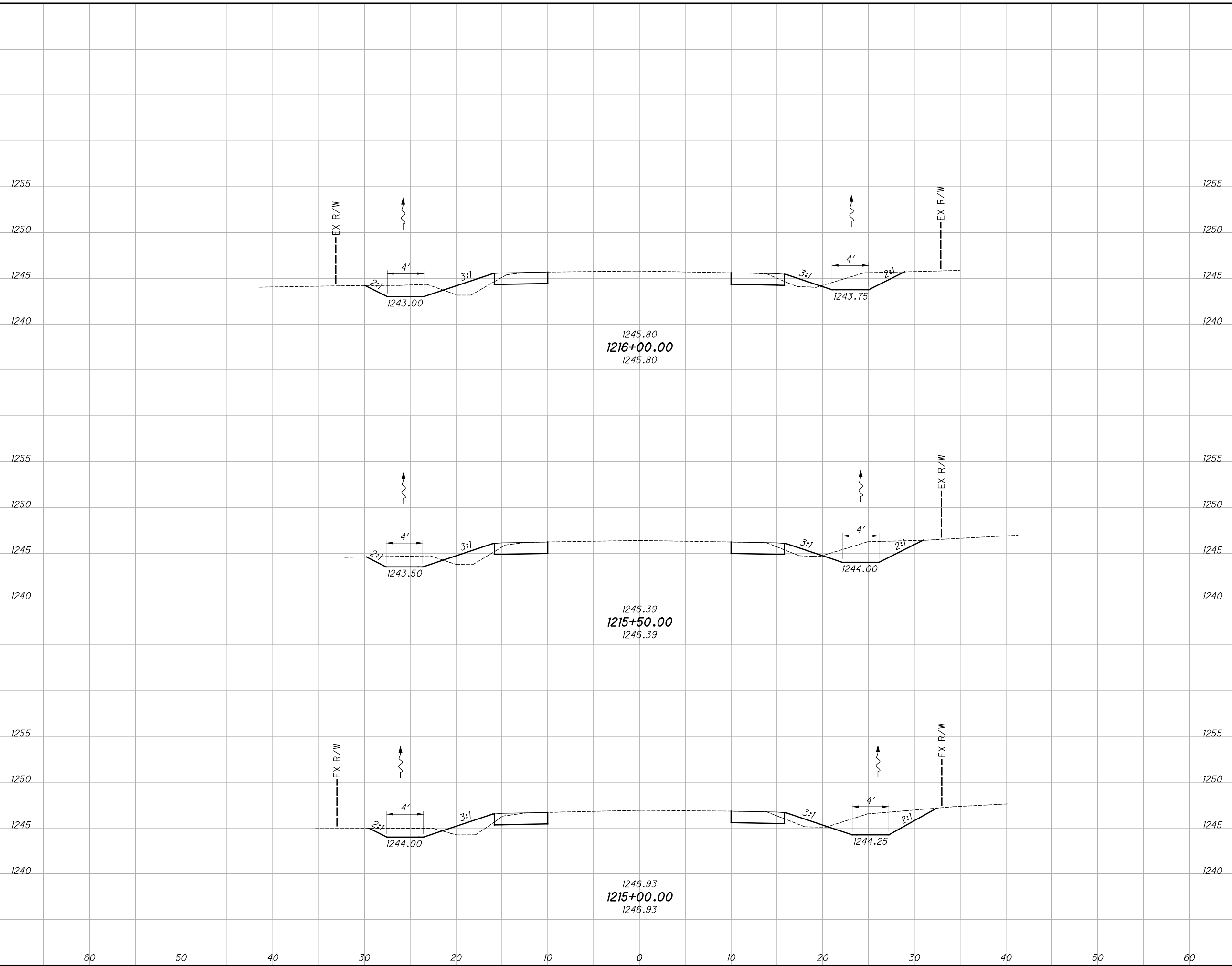
**GEA-COUNTY  
WIDE SAFETY**

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

253  
425

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SEEDING	
END WIDTH	SO. YDS.
60	38
60	217
60	40
60	228
60	41
60	228
673	



END AREA	VOLUME	CALCULATED	CHECKED		
				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**

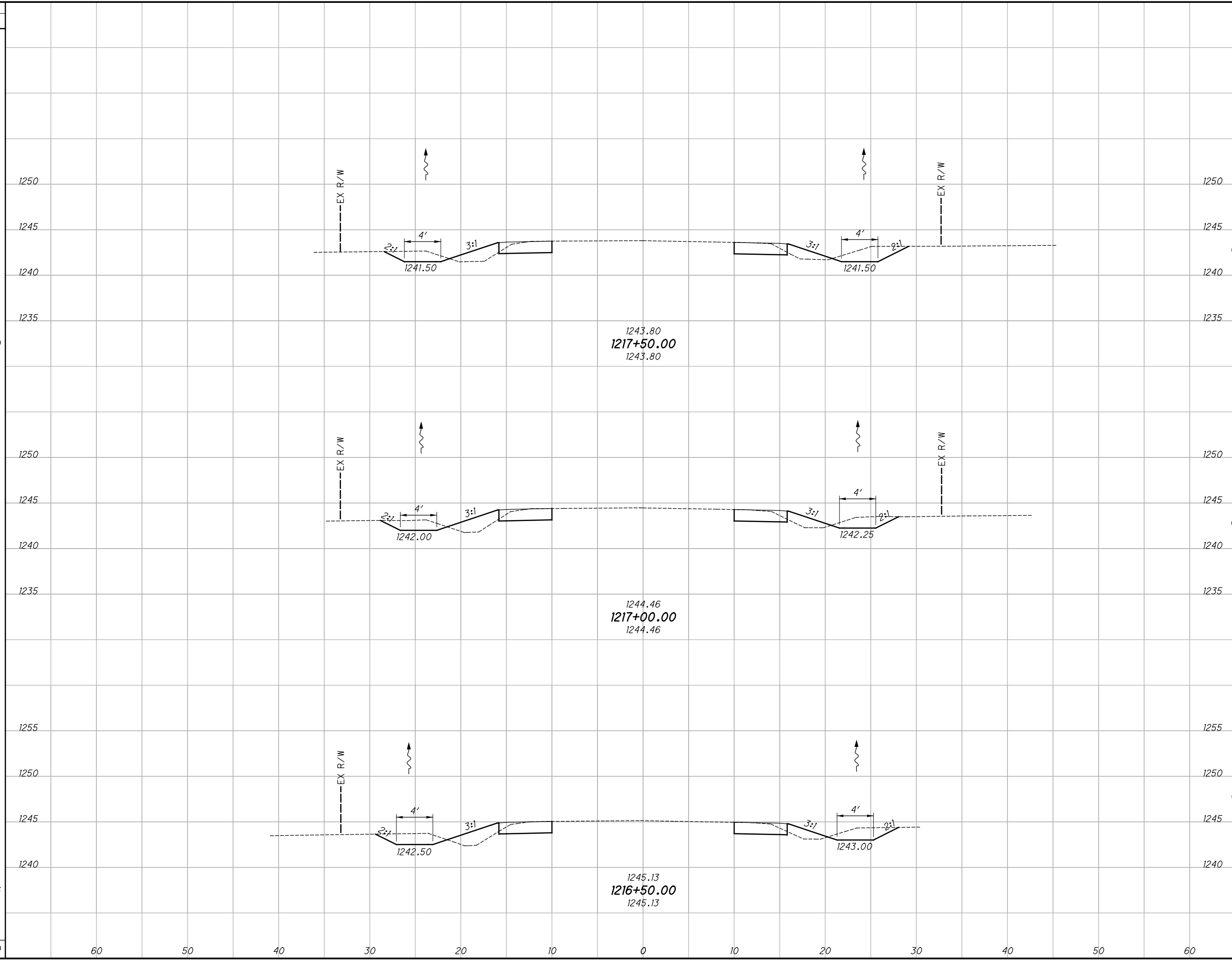
**GEA-COUNTY**  
**WIDE SAFETY**

254  
425



C:\Users\rotella\Desktop\ProjectData\10164\_SRI68\Design\Roadway\Sheets\10164\_X5001.dgn XS\_SHEET\_temporary\_model\_name\_43 10/22/2020 8:34:24 PM rotella

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



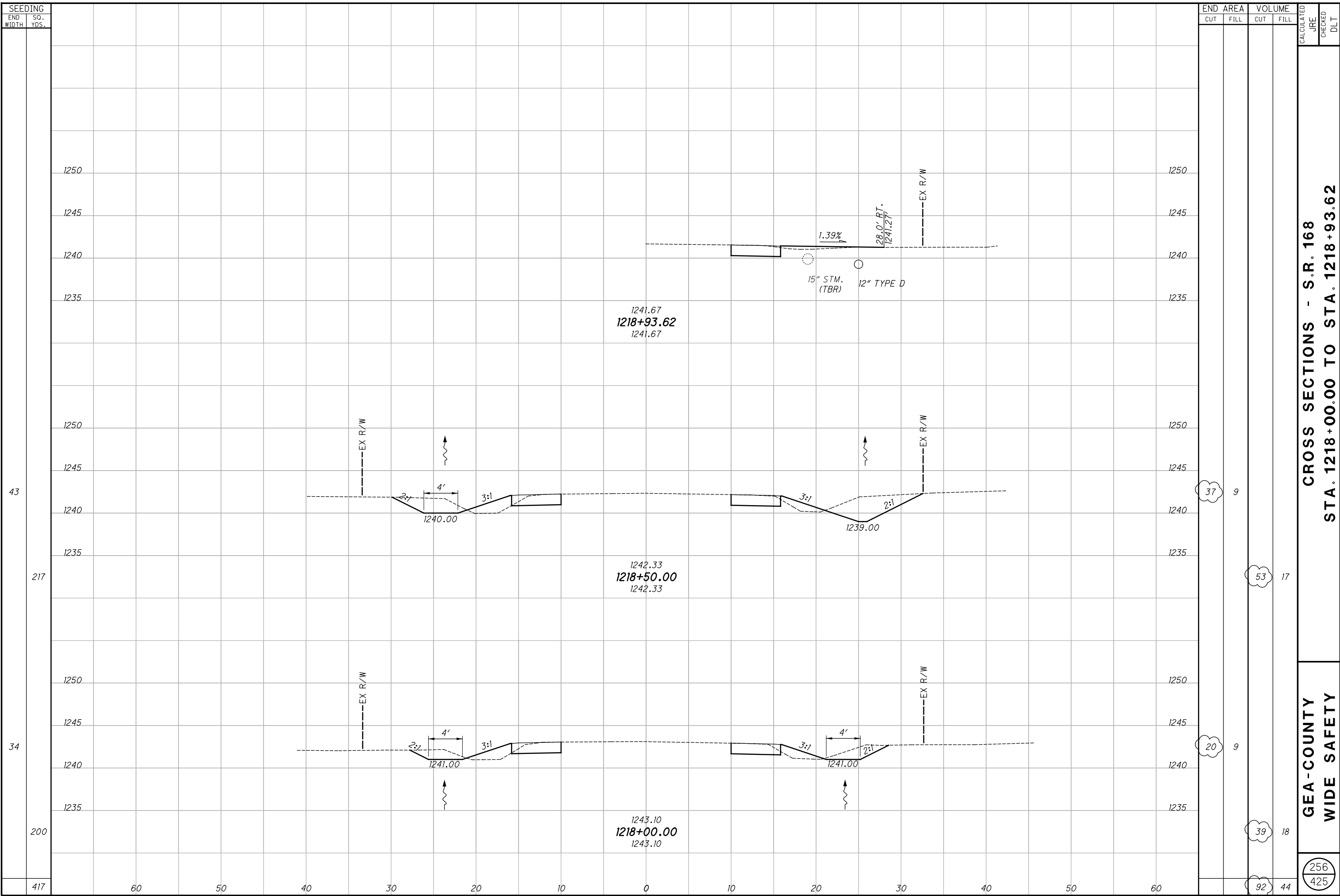
END AREA	VOLUME	CALCULATED	CHECKED		
				CUT	FILL
22	10				
39	19				
20	11				
39	19				
22	10				
44	17				
122	55				

**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 8:34:26 PM rotella



SEEDING		END AREA		VOLUME		CALCULATED		
END WIDTH	SO. YDS.	CUT	FILL	CUT	FILL	JRE	CHECKED	DLT
60								
50								
40								
30								
20								
10								
0								
10								
20								
30								
40								
50								
60								
43				37	9			
217				53	17			
34				20	9			
200				39	18			
417				92	44			

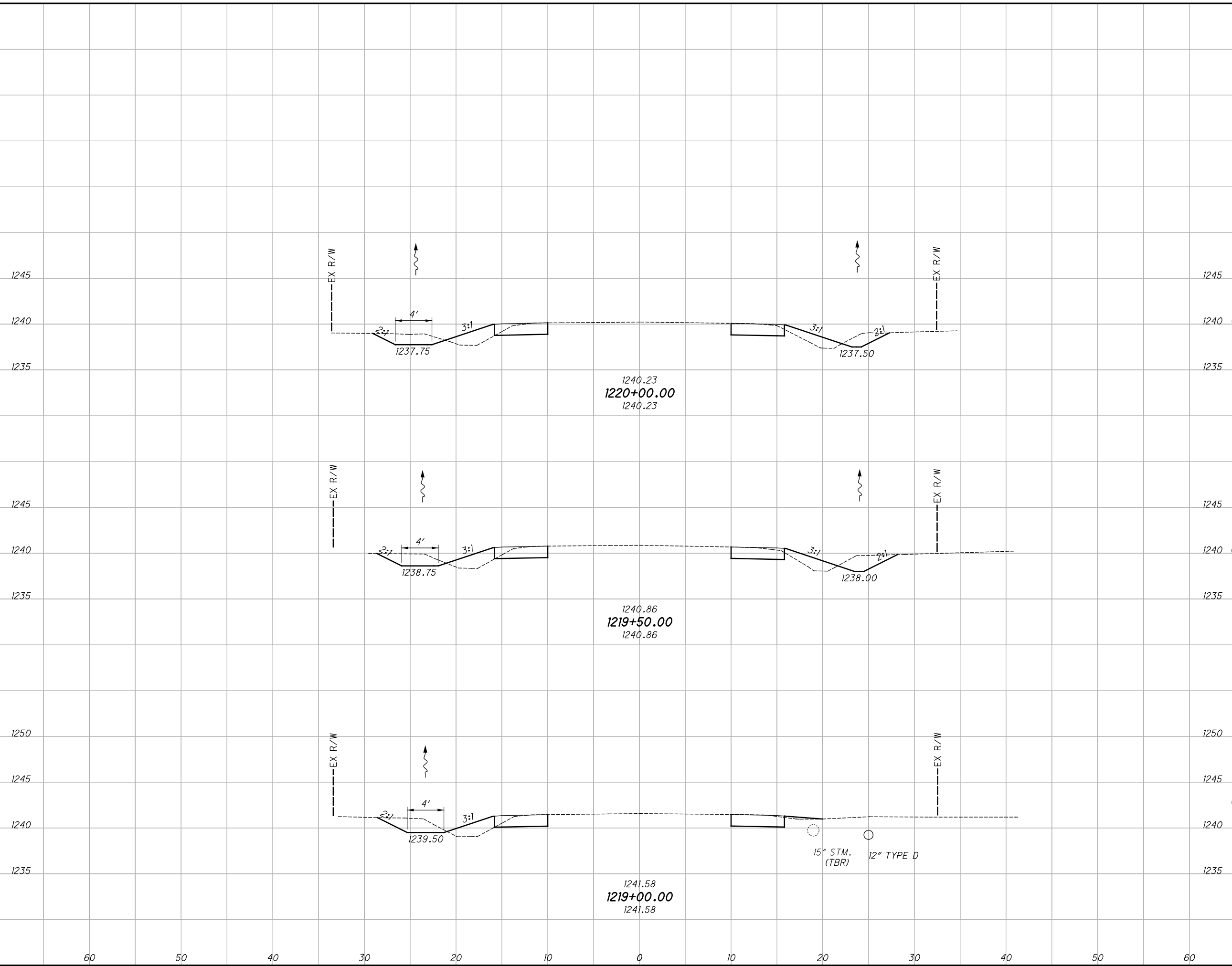
**CROSS SECTIONS - S.R. 168**  
**STA. 1218+00.00 TO STA. 1218+93.62**

**GEA-COUNTY**  
**WIDE SAFETY**

256  
425

C:\Users\rotella\Desktop\ProjectData\10164\_SRI68\Design\Roadway\Sheets\10164\_X5001.dgn XS\_SHEET\_temporary\_model\_name\_45 10/22/2020 8:34:27 PM rotella

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



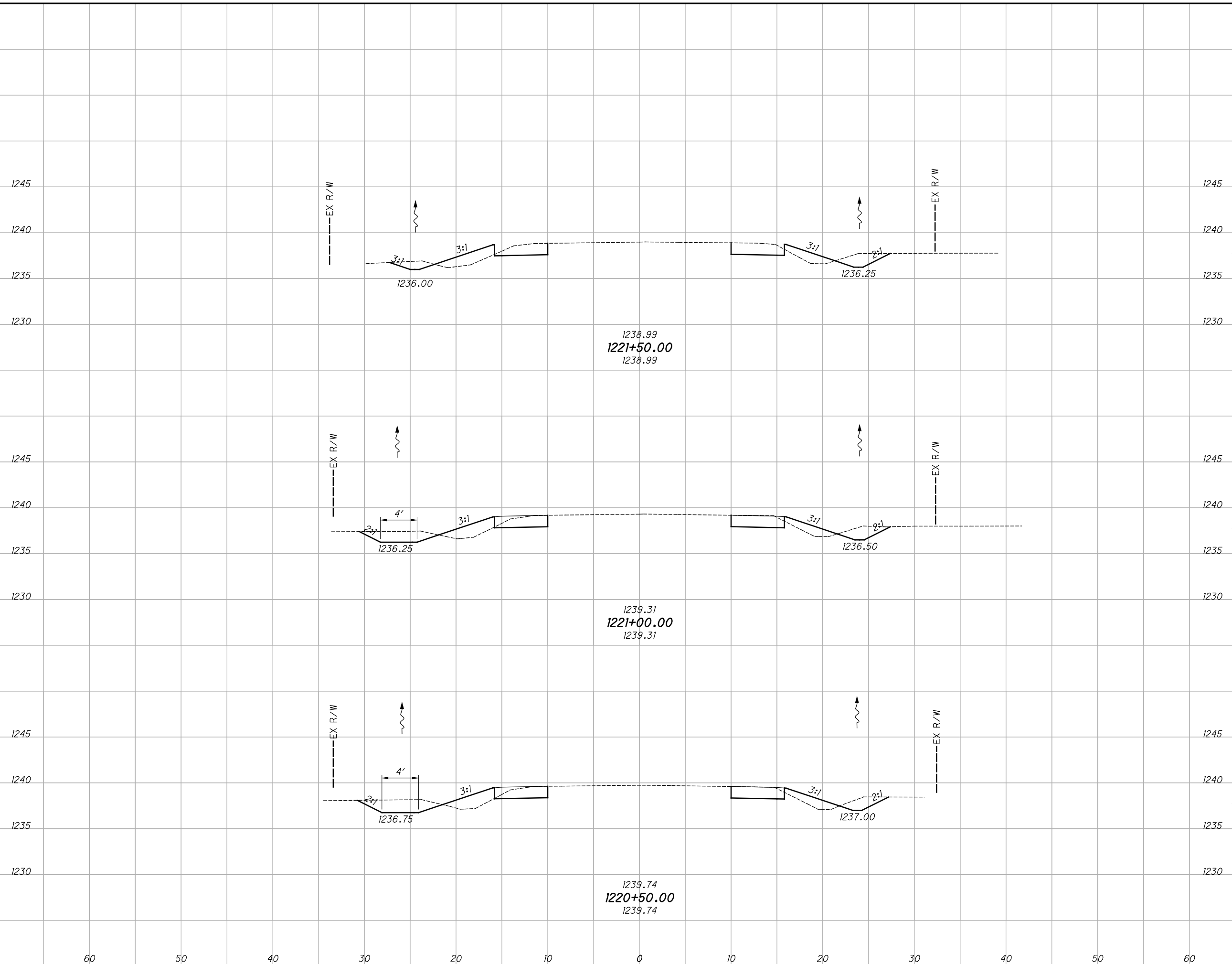
END AREA	VOLUME	CALCULATED	CHECKED	DLT
120	53	257	425	
16	7			
21	11			
34	17			
37	21			
19	12			

**GEA-COUNTY  
WIDE SAFETY**

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

C:\Users\rotella\Desktop\ProjectData\10164\_SRI68\_Design\Roadway\Sheets\10164\_X5001.dgn XS\_SHEET\_temporary\_model\_name\_46 10/22/2020 8:34:29 PM rotella

SEEDING	
END WIDTH	SO. YDS.
580	27
60	175
60	36
60	205
60	36
60	200



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

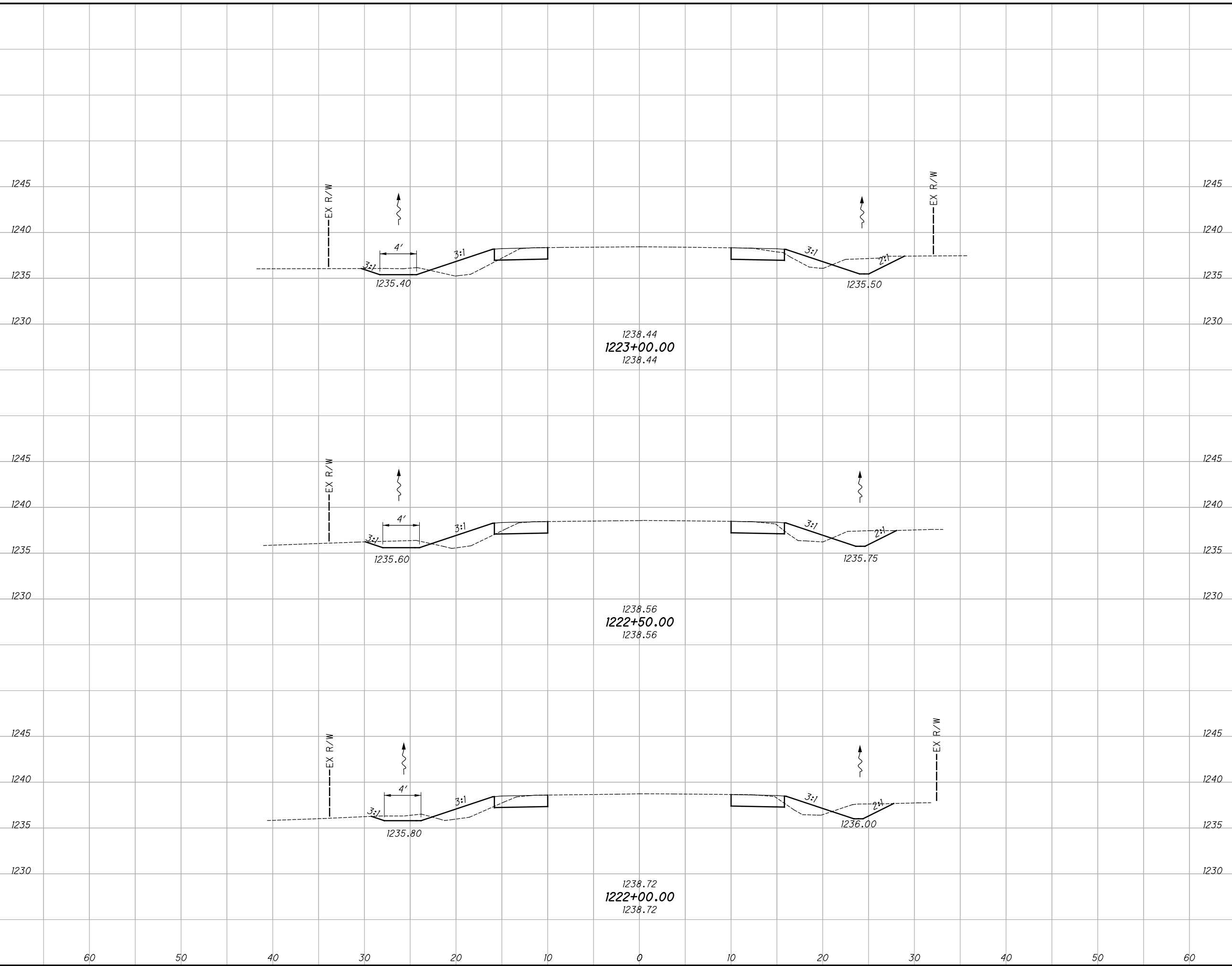
**CROSS SECTIONS - S.R. 168**  
**STA. 1220+50.00 TO STA. 1221+50.00**

**GEA-COUNTY**  
**WIDE SAFETY**

258  
425

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



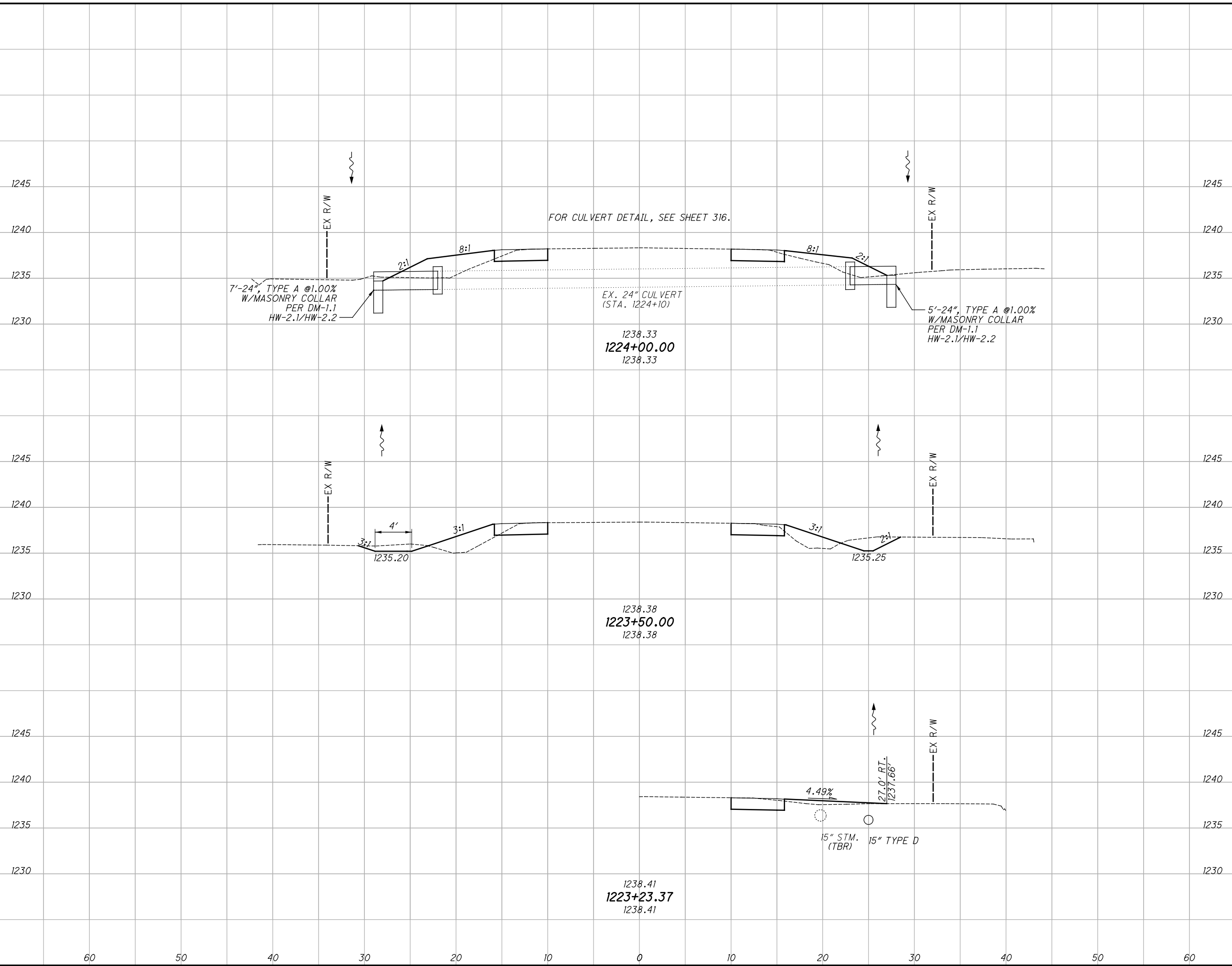
END AREA	VOLUME	CALCULATED	CHECKED	DLT
20	13	36	24	
19	13	34	23	
18	12	32	22	
102	69	259	425	

**GEA-COUNTY  
WIDE SAFETY**

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

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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	260	425

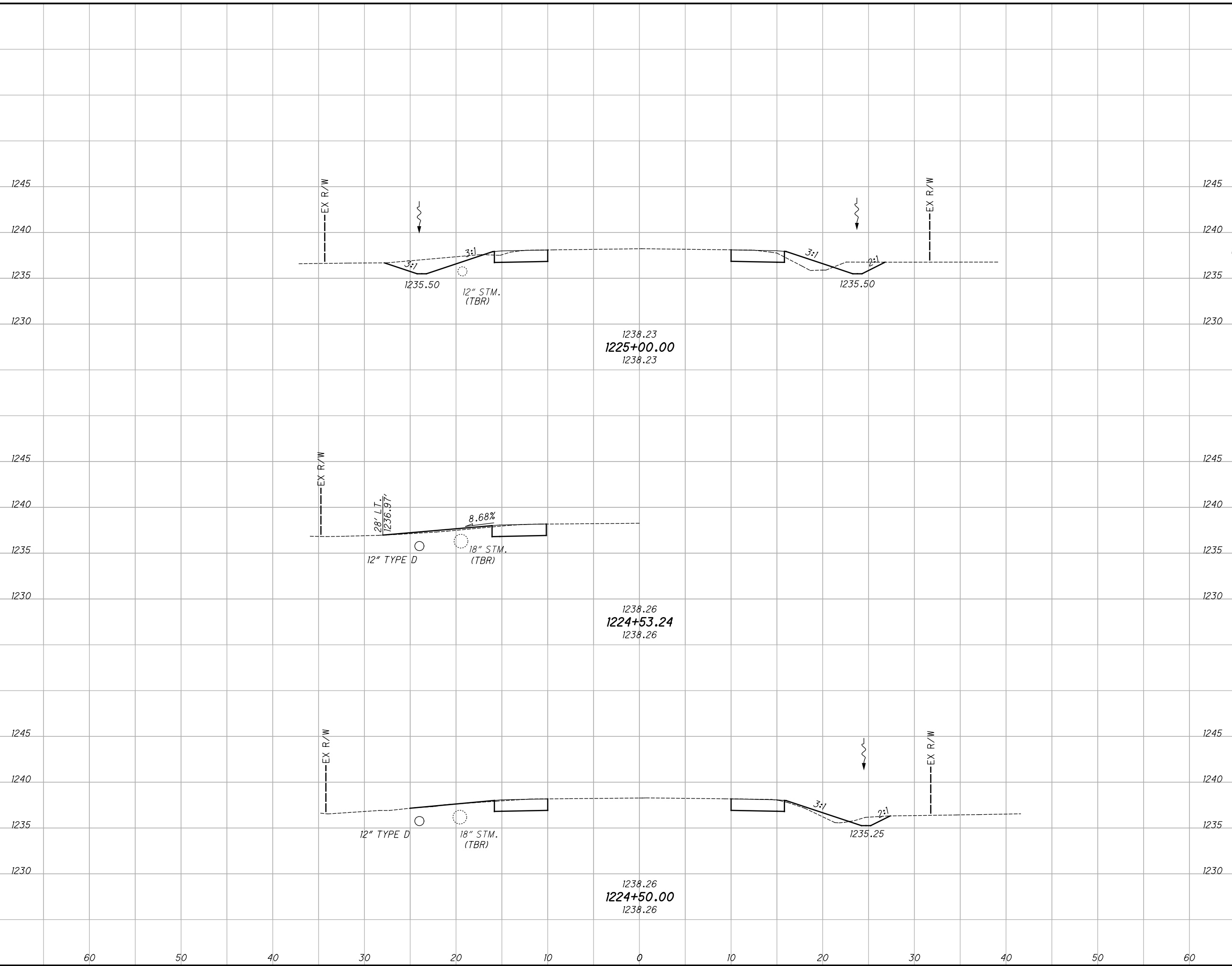
**GEA-COUNTY  
WIDE SAFETY**

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

CALCULATED JRE  
CHECKED DLT

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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		CALCULATED	
CUT	FILL	CUT	FILL	JRE	DLT
		22	5		
		32	7		
		13	3		
		22	30		
		54	37		

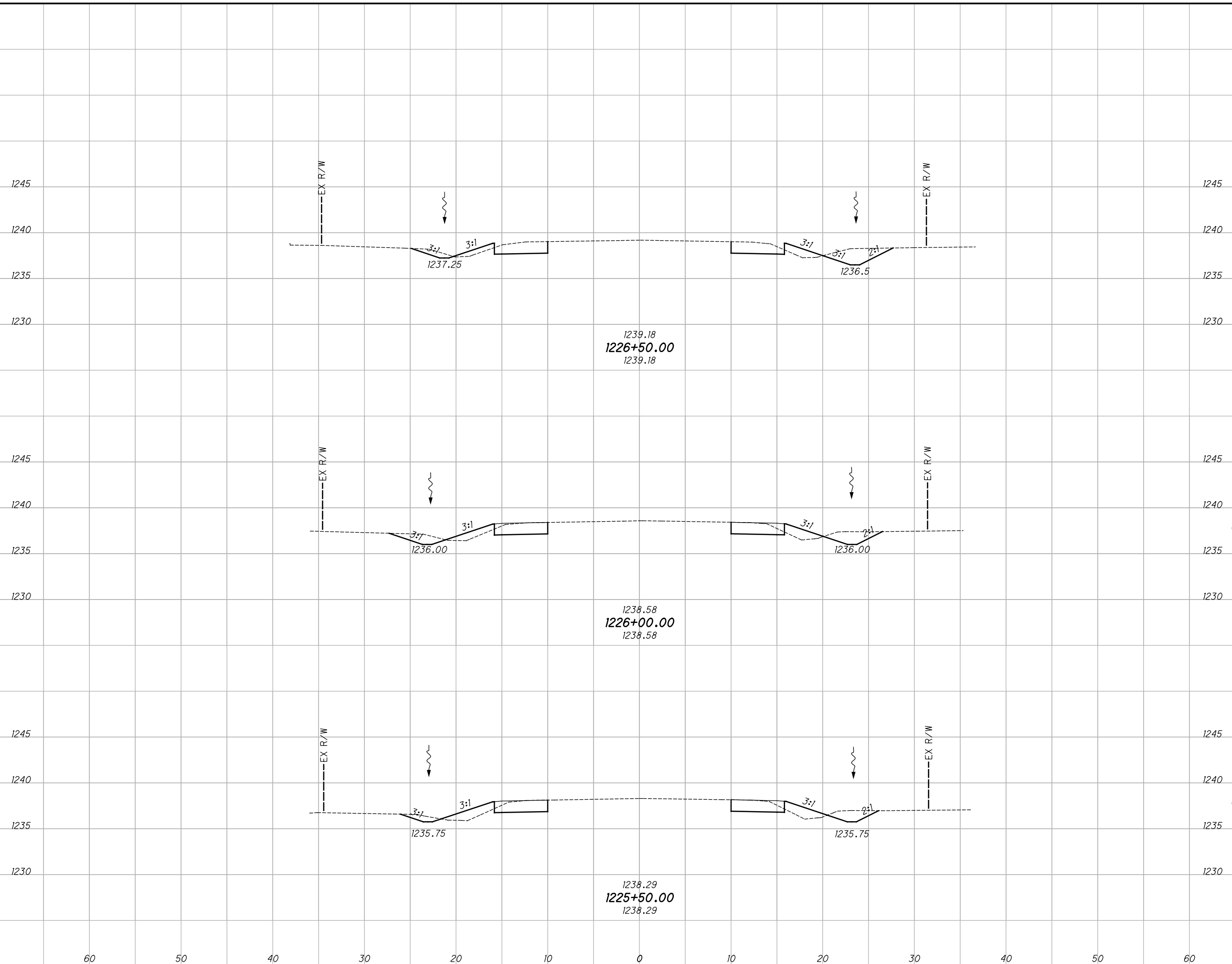
**GEA-COUNTY  
WIDE SAFETY**

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

261  
425

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SEEDING	
END WIDTH	SO. YDS.
516	178
60	29
164	32
27	164



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

**GEA-COUNTY  
WIDE SAFETY**

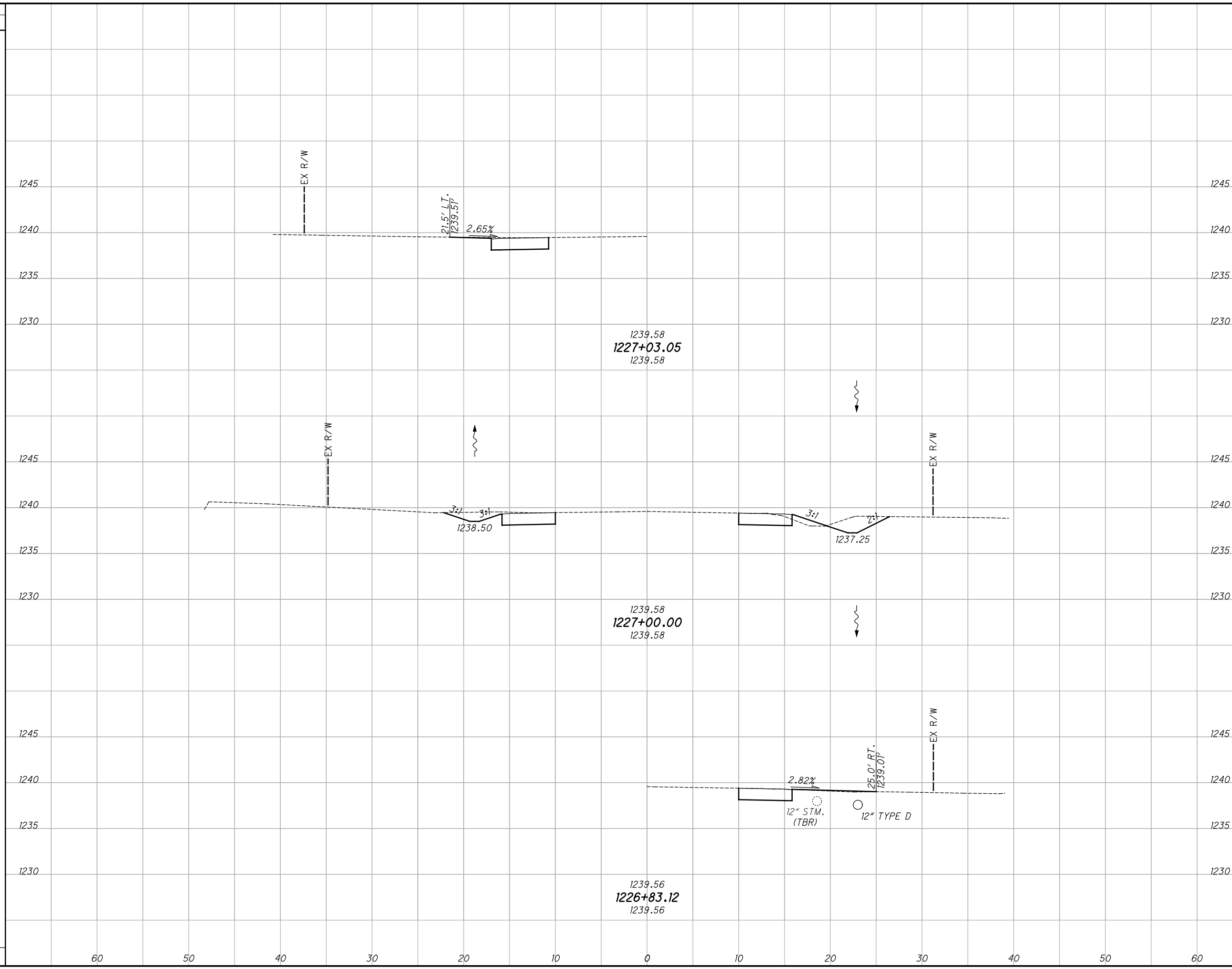
**CROSS SECTIONS - S.R. 168  
STA. 1225+50.00 TO STA. 1226+50.00**

262  
425



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SEEDING		STATION	ELEVATION	CROSS SECTION	ELEVATION	END AREA		VOLUME		CALCULATED JRE	CHECKED DLT
END WIDTH	SO. YDS.					CUT	FILL	CUT	FILL		
147											
26		1227+03.05	1239.58			21	2				
147		1227+00.00	1239.58			37	6				
147		1226+83.12	1239.56			37	6				



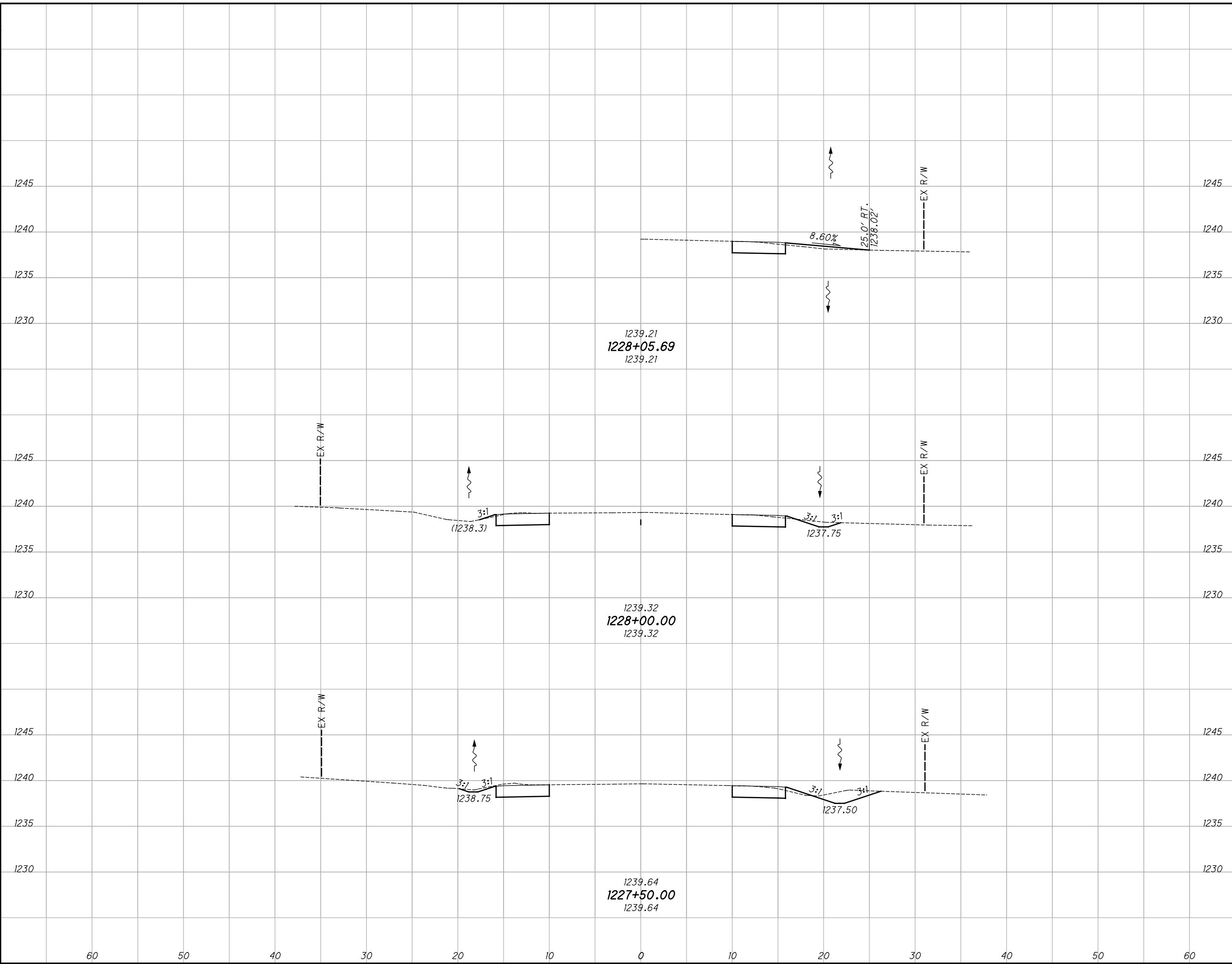
STATION	END AREA		VOLUME		CALCULATED JRE	CHECKED DLT
	CUT	FILL	CUT	FILL		
1227+03.05	21	2				
1227+00.00	37	6				
1226+83.12	37	6				

**GEA-COUNTY  
WIDE SAFETY**

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

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SEEDING	
END WIDTH	SO. YDS.
238	133
15	105
60	60



END AREA		VOLUME		CALCULATED JRE	CHECKED DLT
CUT	FILL	CUT	FILL		
		12	0		
		27	1		
		17	1		
		35	3		
		62	4		

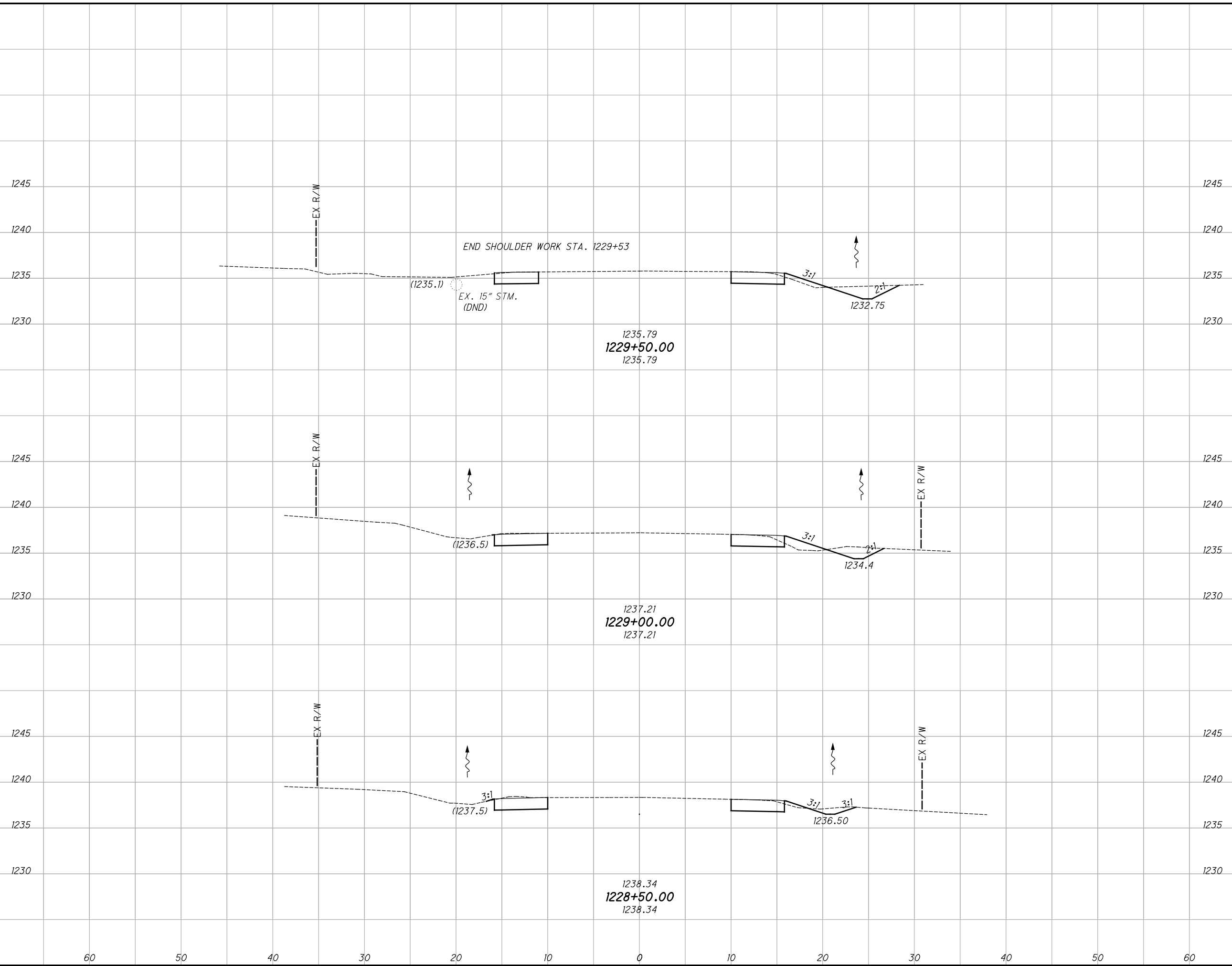
**CROSS SECTIONS - S.R. 168  
STA. 1227+50.00 TO STA. 1228+05.69**

**GEA-COUNTY  
WIDE SAFETY**

264  
425

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SEEDING	
END WIDTH	SO. YDS.
297	86
60	16
50	100
40	18
30	111
20	20



END AREA		VOLUME	
CUT	FILL	CUT	FILL
9	2	22	5
15	3	26	4
13	1	23	1
71	10	265	425

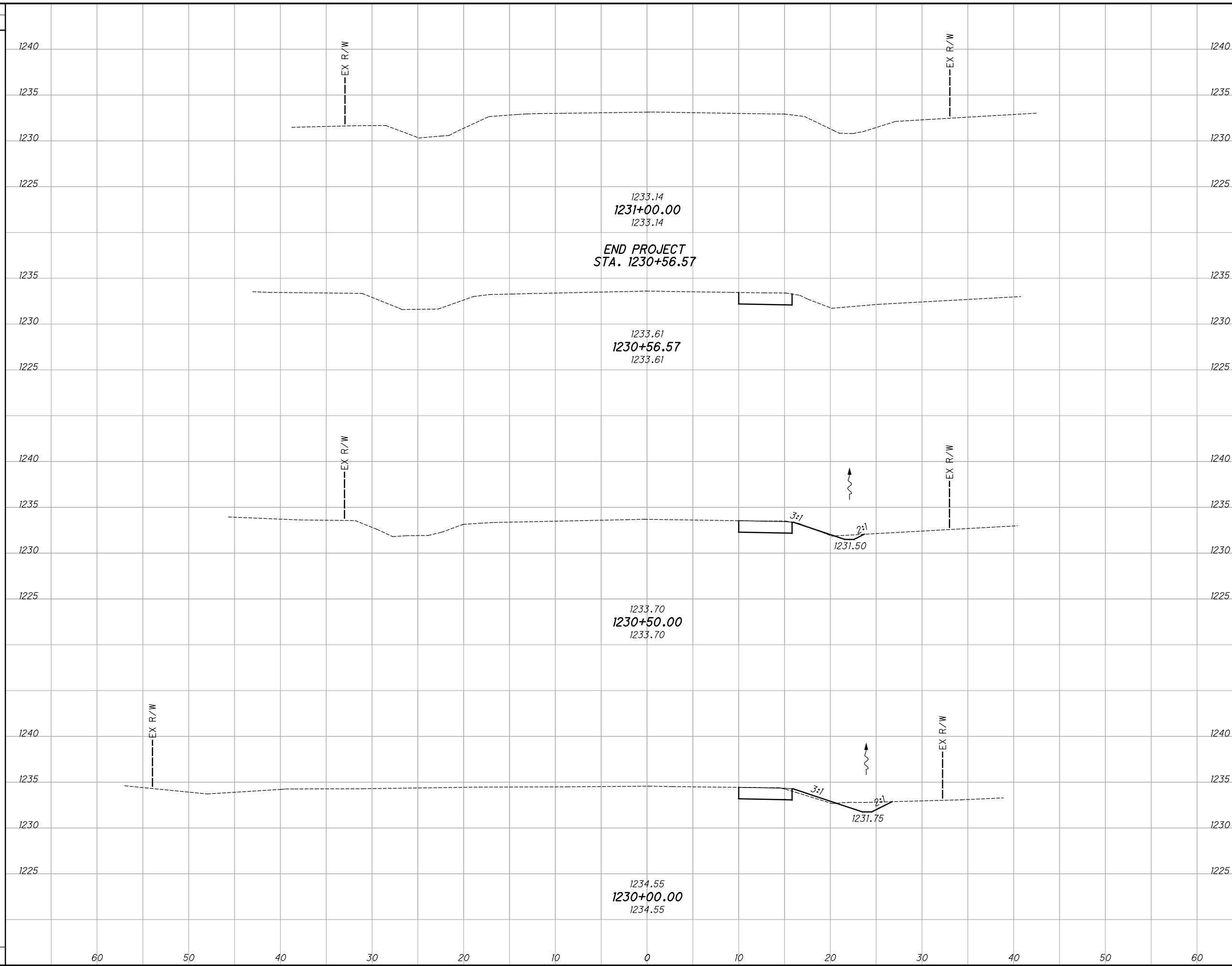
**CROSS SECTIONS - S.R. 168**  
**STA. 1228+50.00 TO STA. 1229+50.00**

**GEA-COUNTY**  
**WIDE SAFETY**

CALCULATED JRE  
 CHECKED DLT

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SEEDING	
END WIDTH	SO. YDS.
194	
105	
18	
14	



END AREA	VOLUME	CALCULATED	CHECKED	DLT
		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

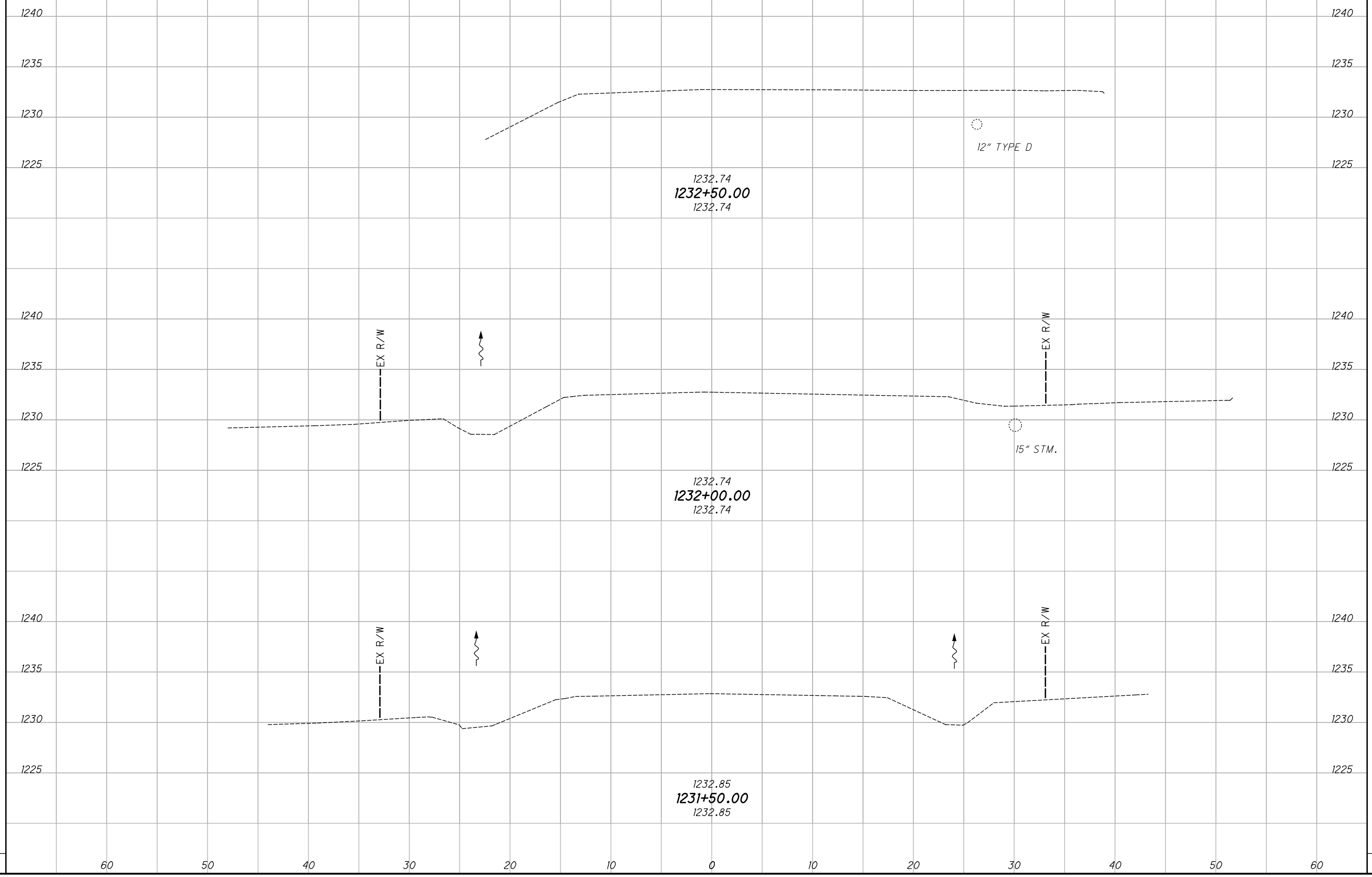
END AREA  
CUT FILL  
VOLUME  
CUT FILL  
CALCULATED  
JRE  
CHECKED  
DLT

(4546) 2693

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	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 TO 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

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

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**GENERAL SUMMARY**

**GEA-87-19.75  
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	.	.	.	.	H	.	.	.	.	.	.	.	.	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	H	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	H1	.	.	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	ITEM 203	ITEM 659
FROM	TO		EMBANKMENT	EXCAVATION	SEEDING AND MULCHING
			C.Y.	C.Y.	S.Y.
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	ITEM 203	ITEM 659
FROM	TO		EMBANKMENT	EXCAVATION	SEEDING AND MULCHING
			C.Y.	C.Y.	S.Y.
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		

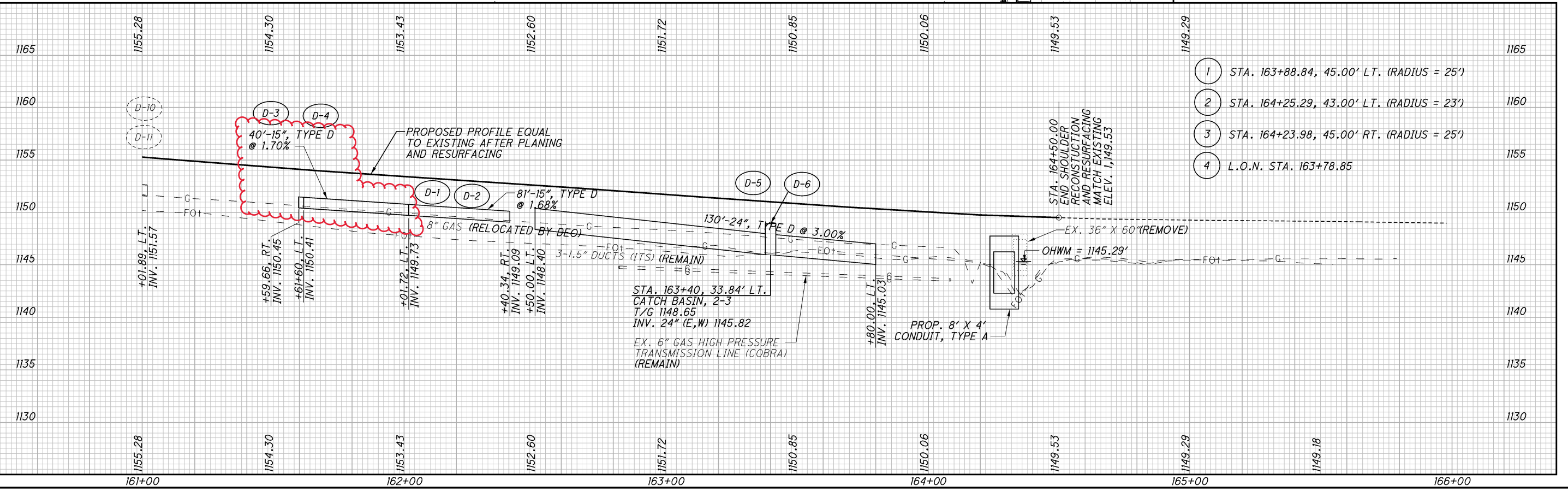
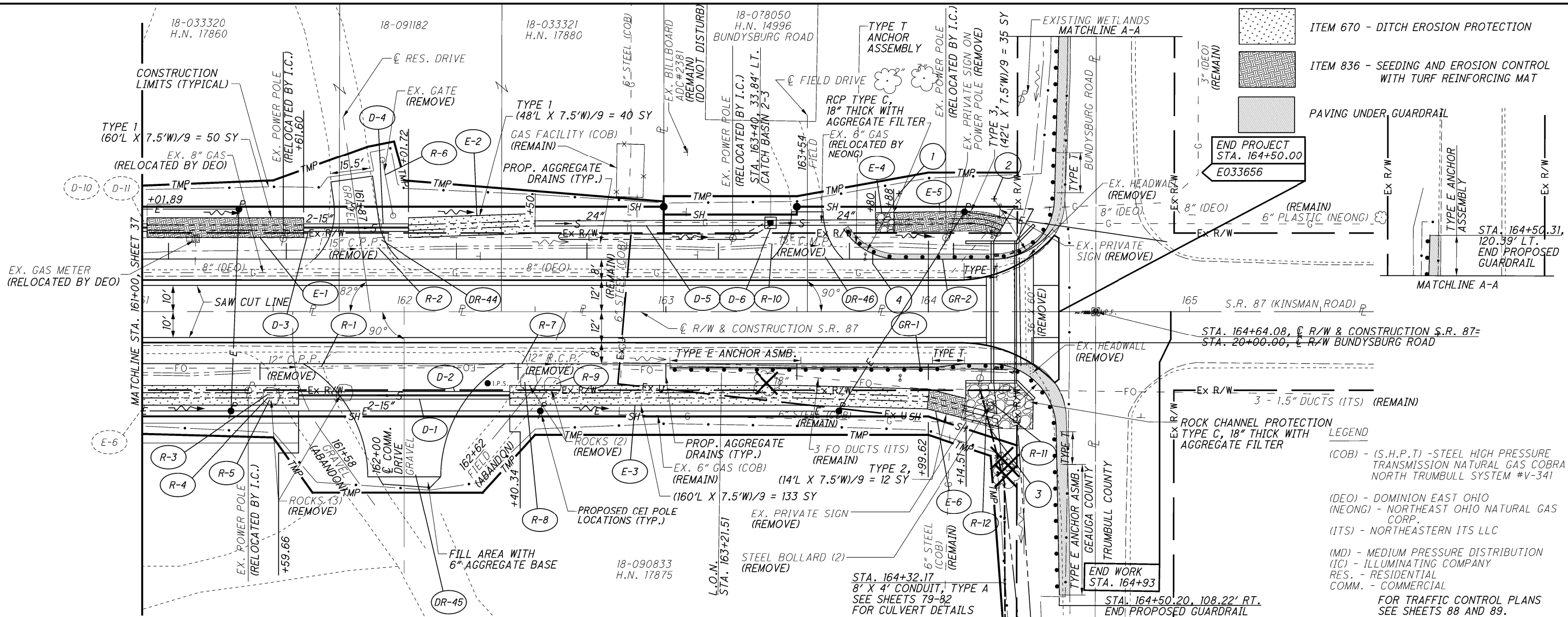
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REF SHEET NO.	SHEET NO.	STATION		SIDE	202				611					670	690		836
		FROM	TO		PIPE REMOVED, 24" & UNDER	REMOVAL MISC.: ROCK, 24" AND OVER	FENCE REMOVED	REMOVAL MISC.: RAILROAD TIES	4" CONDUIT, TYPE C	6" CONDUIT, TYPE C	12" CONDUIT, TYPE D	15" CONDUIT, 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
					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													
D-3	27	123+45.65	123+82.85	LT													
D-4	27	123+62.98	124+07.69	RT													
D-5	27	124+20		LT					4				1				
D-6	27	125+72.23	126+09.08	RT													
D-7	27	125+75		LT													
D-8	27	124+98	125+36	LT													
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													
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												
<b>TOTALS CARRIED TO SUB-SUMMARY</b>					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  
 125

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- 1 STA. 163+88.84, 45.00' LT. (RADIUS = 25')
- 2 STA. 164+25.29, 43.00' LT. (RADIUS = 23')
- 3 STA. 164+23.98, 45.00' RT. (RADIUS = 25')
- 4 L.O.N. STA. 163+78.85

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

STA. 164+50.20, 108.22' RT. END PROPOSED GUARDRAIL

STA. 164+64.08, C R/W & CONSTRUCTION S.R. 87= STA. 20+00.00, C R/W BUNDYSBURG ROAD

STA. 164+32.17 8' X 4' CONDUIT, TYPE A SEE SHEETS 79-82 FOR CULVERT DETAILS

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.

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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
			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						3										
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				1												
R-4	39	161+49		RT				1												
R-5	39	161+49		RT				1												
R-6	29	161+91	161+97	LT					1											
R-7	39	162+43	162+67	RT	24															
R-8	39	162+48		RT					1											
R-9	39	162+57		RT					1											
R-10	39	163+39	163+69	LT	30															
R-11	39	164+24		RT					1											
R-12	39	164+24		RT					1											
GR-1	39	163+01.57	164+50.20	RT			2.25		225	2	2				5					6.25
GR-2	39	163+67.85	164+50.36	LT			1.75		175	1	3				5					5.18
<b>TOTALS CARRIED TO SUB-SUMMARY</b>																				
			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

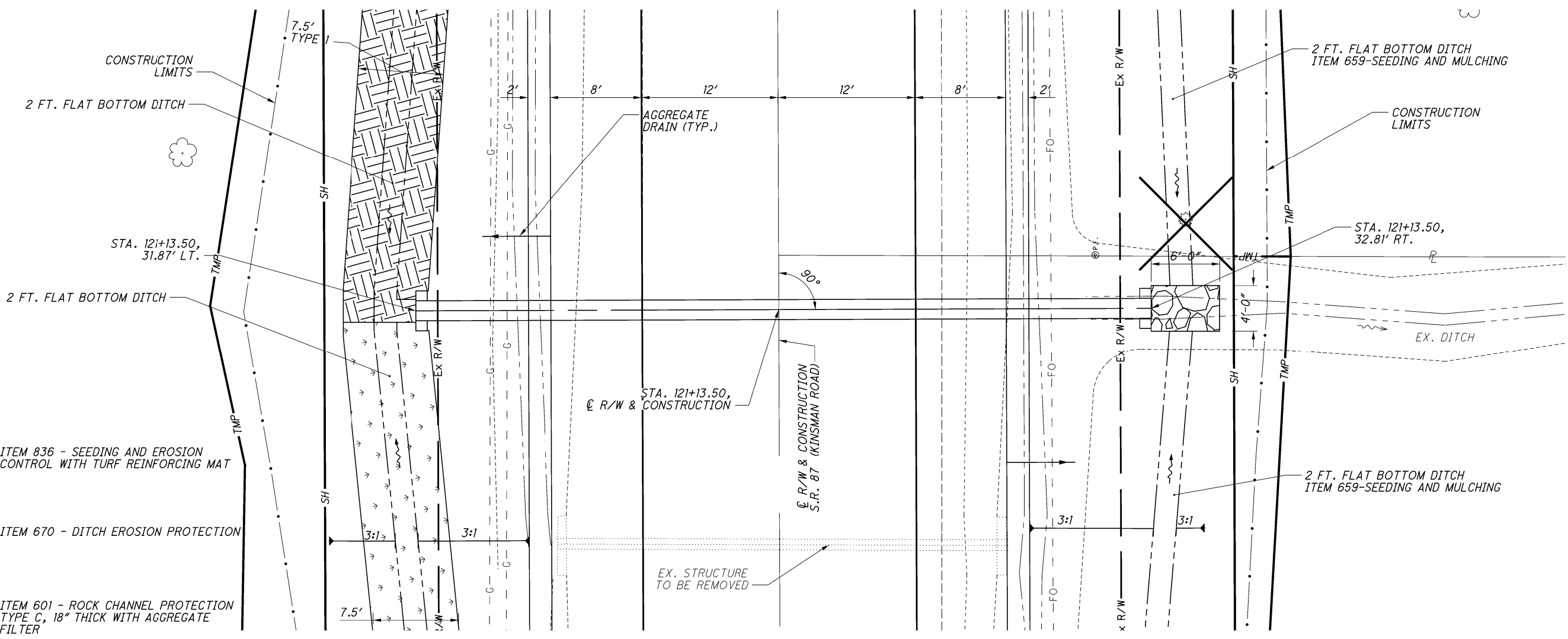


0 5 10  
2.5  
HORIZONTAL  
SCALE IN FEET

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

**GEA-87-19.75**  
**PART 2**

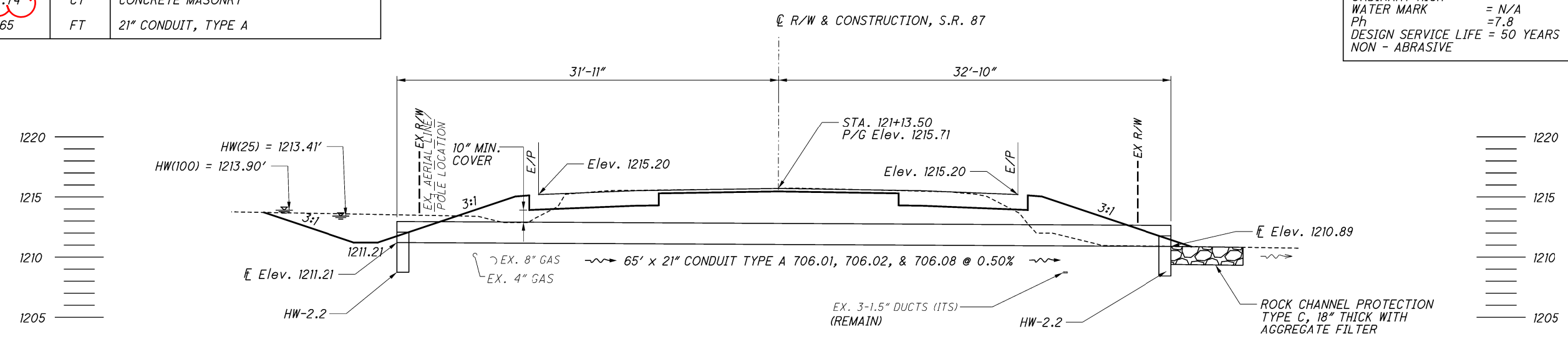


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ESTIMATED QUANTITIES			
ITEM	QUANTITY	UNIT	DESCRIPTION
202	40	FT	PIPE REMOVED, 24" AND UNDER
202	2	EA	HEADWALL REMOVED
601	1	CY	ROCK CHANNEL PROTECTION, TYPE C WITH AGGREGATE FILTER
602	0.74	CY	CONCRETE MASONRY
611	65	FT	21" CONDUIT, TYPE A

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	





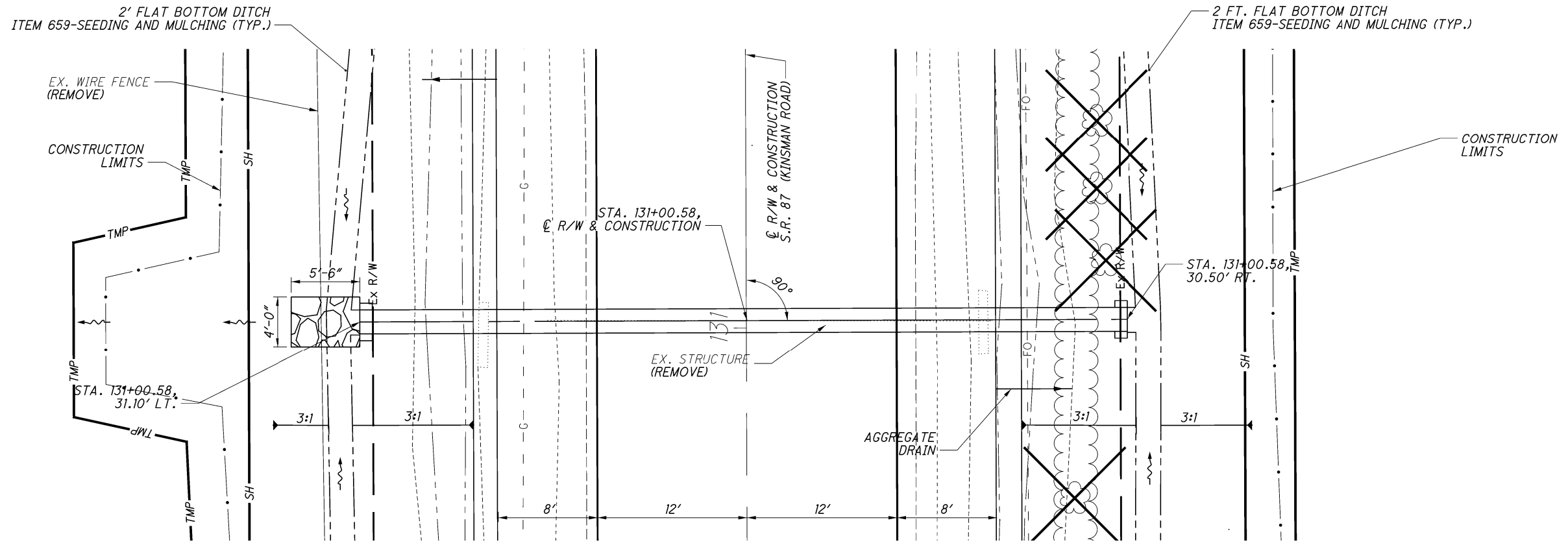
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SCALE IN FEET

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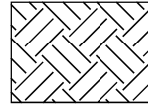
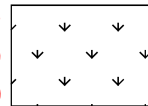
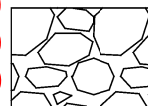
CULVERT DETAIL  
S.R. 87 STA. 131+00.58

GEA-87-19.75  
PART 2

78  
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

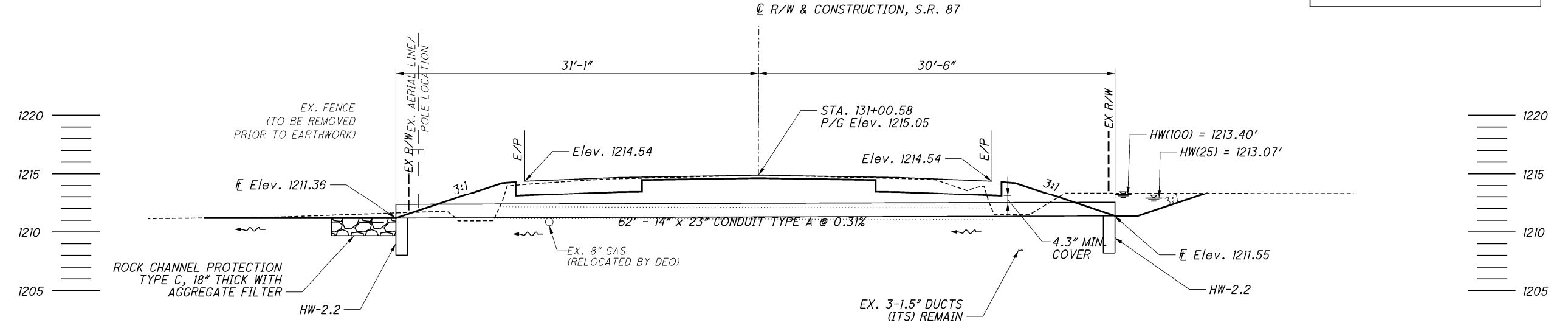
ESTIMATED QUANTITIES			
ITEM	QUANTITY	UNIT	DESCRIPTION
202	41	FT	PIPE REMOVED, 24" AND UNDER
202	2	EA	HEADWALL REMOVED
601	1	CY	ROCK CHANNEL PROTECTION, TYPE C WITH AGGREGATE FILTER
602	0.58	CY	CONCRETE MASONRY
611	62	FT	14" x 23" CONDUIT, TYPE A, 706.04

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



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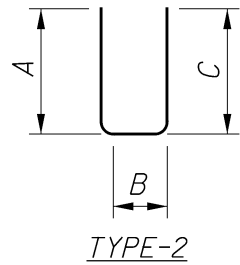
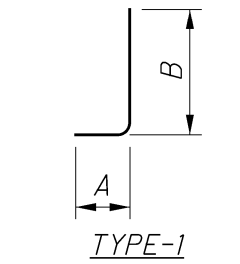


**WATERPROOFING:**

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

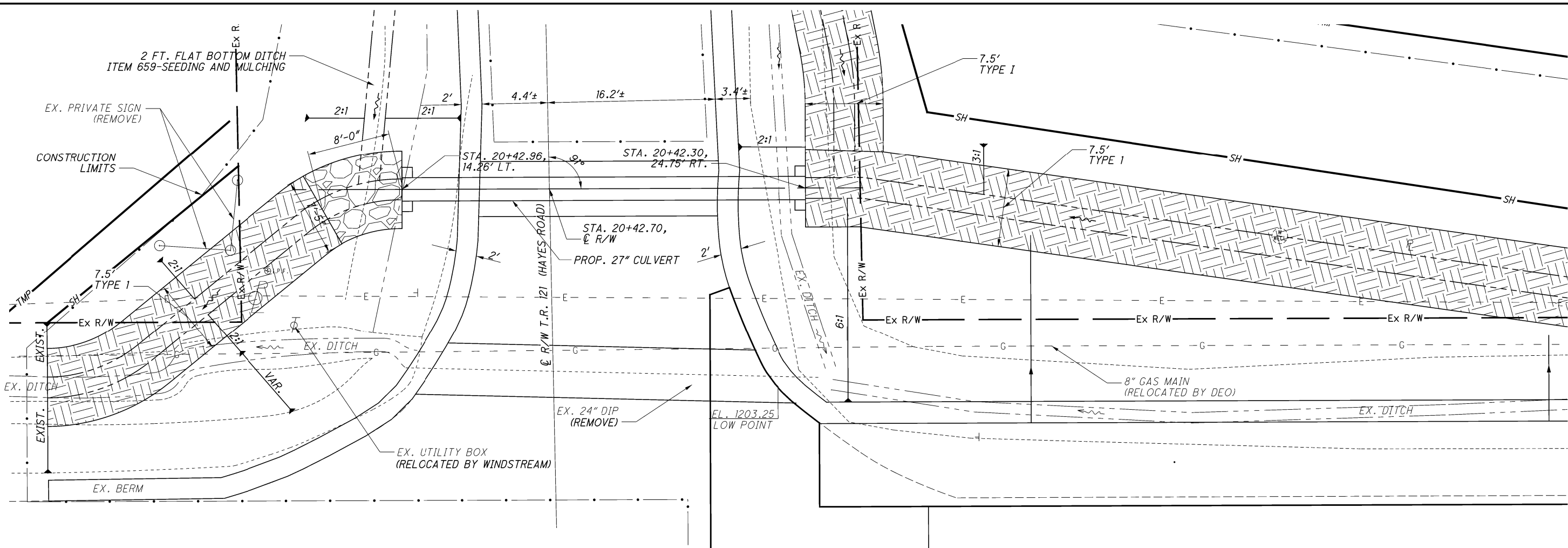
MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS					
	INLET	OUTLET	TOTAL				A	B	C	D	E	R
<b>HEADWALL - CULVERT AT STATION 164+35</b>												
	1		1	6'-4"								
H401	SER. OF		SER. OF		35	STR						
	7		7	8'-5"								
H402	7		7	8'-5"	40	STR						
H403		7	7	8'-0"	38	STR						
		1	1	6'-3"								
H404	SER. 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"			
<b>TOTAL</b>					<b>2734</b>							

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CALCULATED  
AJM  
CHECKED  
MMP

**REINFORCEMENT SCHEDULE FOR CULVERT AT STA. 164+32.17**

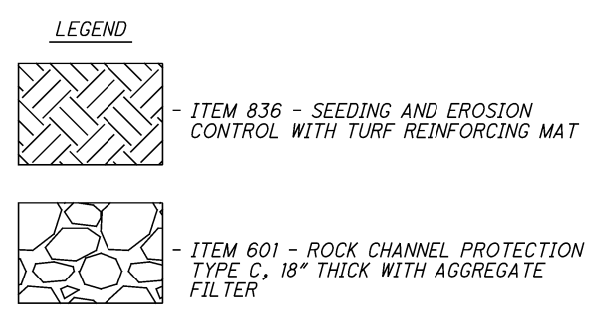
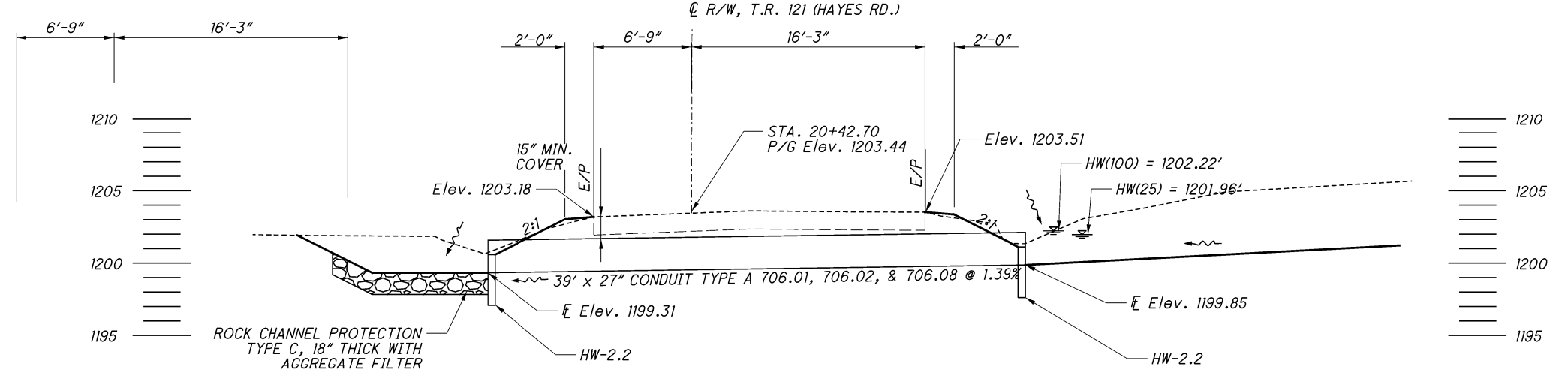
**GEA-87-19.75 PART 2**



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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