

ISSUED FOR CONSTRUCTION

AECOM

PROJECT

CHAMBERS RESERVOIR
REMEDATION DESIGN
(PHASE I)
9165 S. CHAMBERS ROAD,
PARKER, CO 80134

CLIENT

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AECOM
804 COLORADO AVE.
Suite 201
GLENWOOD SPRINGS, CO. 81601

www.aecom.com

CONSULTANTS

REGISTRATION

ISSUE/REVISION

NO.	DATE	DESCRIPTION
1	07/15/2019	ISSUED FOR CONSTRUCTION

KEY PLAN

PROJECT NUMBER

60567161

SHEET TITLE

DOUGLAS COUNTY
STORM DRAIN DETAILS
SHEET 1 OF 3
SHEET NUMBER

C-19

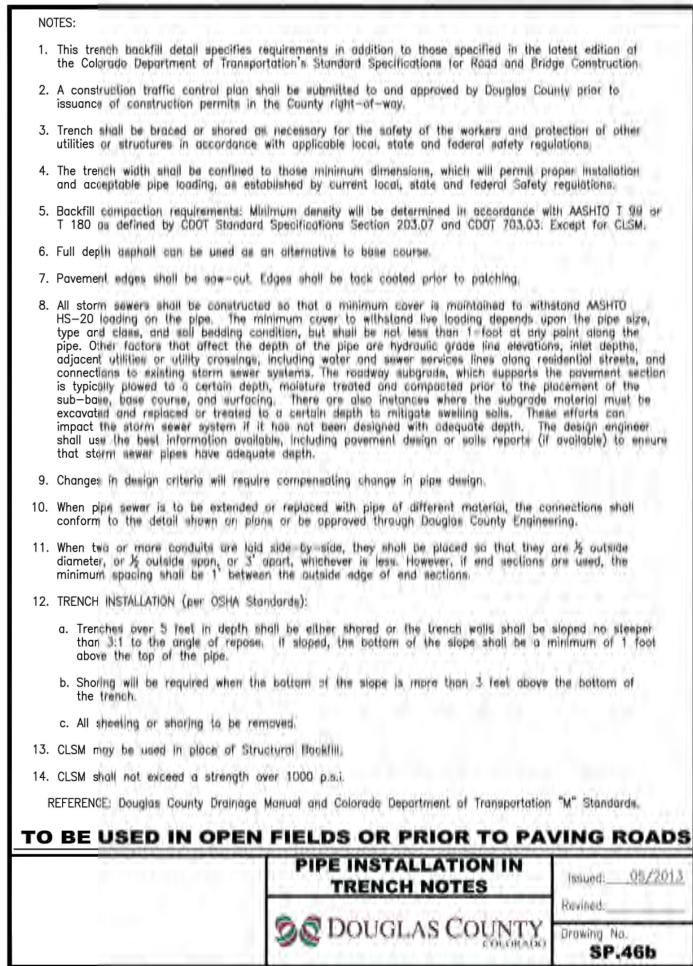
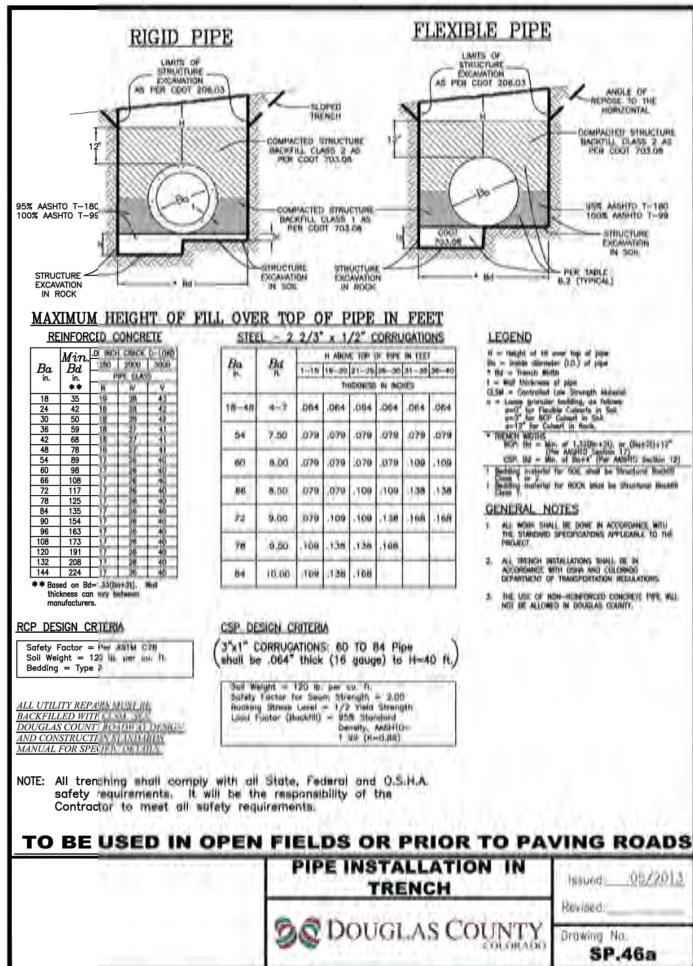
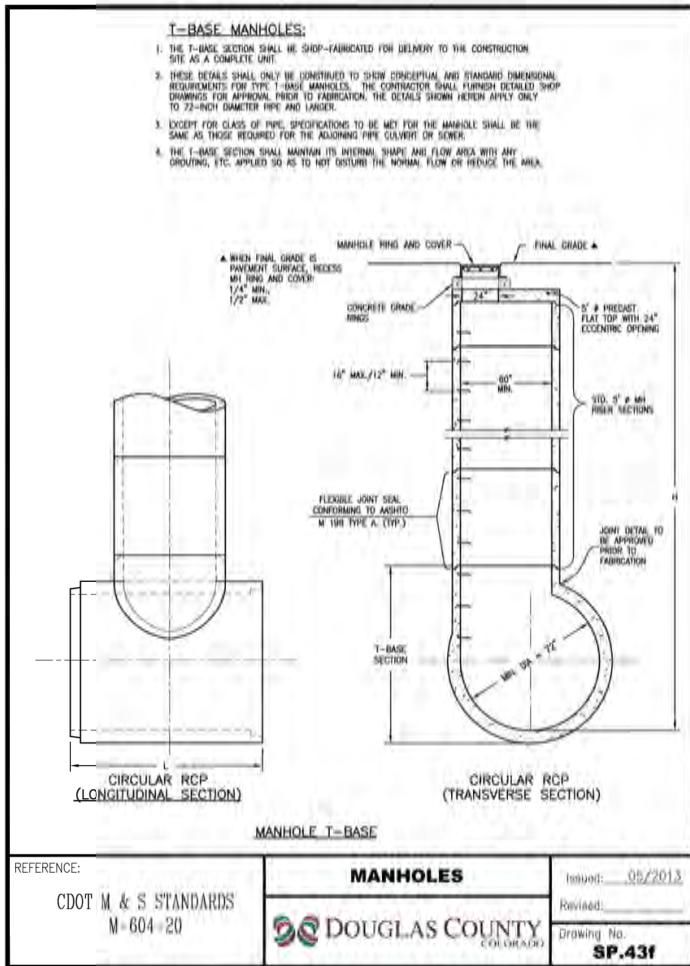
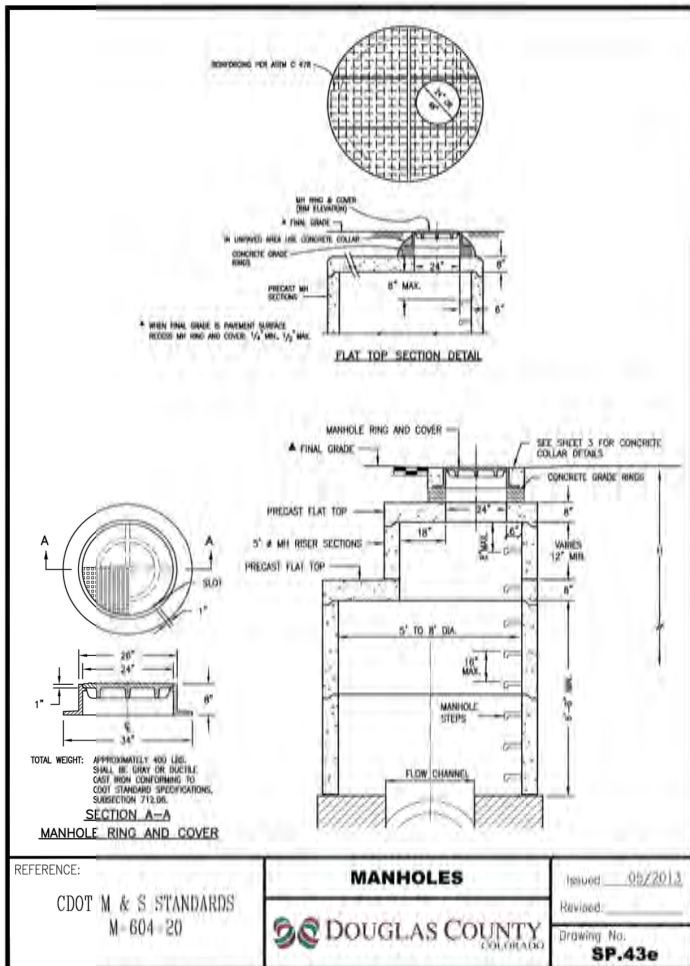


FIGURE 8-34 (UDFCD CRITERIA MANUAL VOLUME 1 CHAPTER 8) SOIL RIPRAP
PLACEMENT AND GRADATION

RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	D ₅₀ * (INCHES)
TYPE VL	70-100	12	6
	50-70	9	
	35-50	6	
	2-10	2	
TYPE L	70-100	15	9
	50-70	12	
	35-50	9	
	2-10	3	
TYPE M	70-100	21	12
	50-70	18	
	35-50	12	
	2-10	4	
TYPE H	70-100	30	18
	50-70	24	
	35-50	18	
	2-10	6	

*D₅₀ = MEAN ROCK SIZE

SOIL RIPRAP NOTES:

1. ELEVATION TOLERANCES FOR THE SOIL RIPRAP SHALL BE 0.10 FEET. THICKNESS OF SOIL RIPRAP SHALL BE NOT LESS THAN THICKNESS SHOWN AND NO MORE THAN 2" GREATER THAN THICKNESS SHOWN.
2. FOR SOIL RIPRAP, RIPRAP VOIDS ARE TO BE FILLED WITH NATIVE SOIL. THE RIPRAP SHALL BE PREMIXED WITH THE NATIVE SOIL AT THE FOLLOWING PROPORTIONS BY VOLUME: 65% RIPRAP AND 35% SOIL. THE SOIL USED FOR MIXING SHALL BE THE NATIVE TOPSOIL AND SHALL HAVE A MINIMUM FINES CONTENT OF 15%. THE SOIL RIPRAP SHALL BE INSTALLED IN A MANNER THAT RESULTS IN A DENSE, INTERLOCKED LAYER OF RIPRAP WITH RIPRAP VOIDS FILLED COMPLETELY WITH SOIL. SEGREGATION OF MATERIALS SHALL BE AVOIDED AND IN NO CASE SHALL THE COMBINED MATERIAL CONSIST PRIMARILY OF SOIL. THE DENSITY AND INTERLOCKING NATURE OF RIPRAP IN THE MIXED MATERIAL SHALL ESSENTIALLY BE THE SAME AS IF THE RIPRAP WAS PLACED WITHOUT SOIL.
3. BURIED SOIL RIPRAP WILL HAVE A SURFACE LAYER OF TOPSOIL PLACED OVER THE RIPRAP OF 6". THE TOPSOIL SURFACE LAYER SHALL BE COMPACTED TO APPROXIMATELY 85% OF MAXIMUM DENSITY AND WITH TWO PERCENTAGE POINTS OF OPTIMUM MOISTURE IN ACCORDANCE WITH ASTM D698. TOPSOIL SHALL BE ADDED TO ANY AREAS THAT SETTLE.
4. ALL SOIL RIPRAP THAT IS BURIED WITH TOPSOIL SHALL BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO ANY TOPSOIL REPLACEMENT.

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DOUGLAS COUNTY
STORM DRAIN DETAILS
SHEET 2 OF 3

SHEET NUMBER

C-20

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CONSTRUCTION

GENERAL NOTES

1. DIMENSIONS OF END SECTIONS MAY VARY SLIGHTLY FROM THOSE SHOWN ON THE TABLE DUE TO DIFFERENT MANUFACTURER'S VARIATIONS.

2. CONCRETE END SECTIONS ARE TO BE FURNISHED WITH TONGUE OR GROOVE AS REQUIRED.

3. LENGTH OF CURVE OF THE DRAIN IS BASED ON LENGTH OF END SECTION SHOWN IN PLAN AND RISES ARE TO BE ADJUSTED TO PROVIDE THE DESIRED LENGTH SHOWN IN PLAN BY ADDING TO THE LENGTH OF THE CONSTRUCTION.

4. RISE CONFIGURATION AND JOINT OF CONCRETE END SECTION AND PIPE SHALL MATCH.

5. END SECTIONS FOR CAST-IRON DRAIN SHALL MATCH THE DIMENSIONS OF THE DRAIN SHOWN ON THE PLAN.

6. UNARMED STEEL PLATE END SECTIONS WILL BE REQUIRED ON END SECTIONS FOR CORRUGATED STEEL PIPE AND SHALL BE IN SAME PROPORTION AS END SECTIONS FOR PLATE SHALL BE WELDED TO END SECTIONS WITH AN APPROVED WELDING METHOD.

7. GALVANIZED STEEL SHALL BE IN CONFORMANCE WITH ASTM A 111, W 314 OR W 313.

8. FOR TYPE 50 END SECTIONS, WORK SHALL BE SUBMITTED FROM THE 1/2" GALVANIZED STEEL SCHEDULE 40 PIPE WHICH SHALL BE IN CONFORMANCE WITH ASTM A 133.

9. FOR A PIPE TO END SECTION, THE INSTALLATION OF ALTERNATIVE 1 OR ALTERNATIVE 2 END SECTION SHALL BE THE CONTRACTOR'S OPTION.

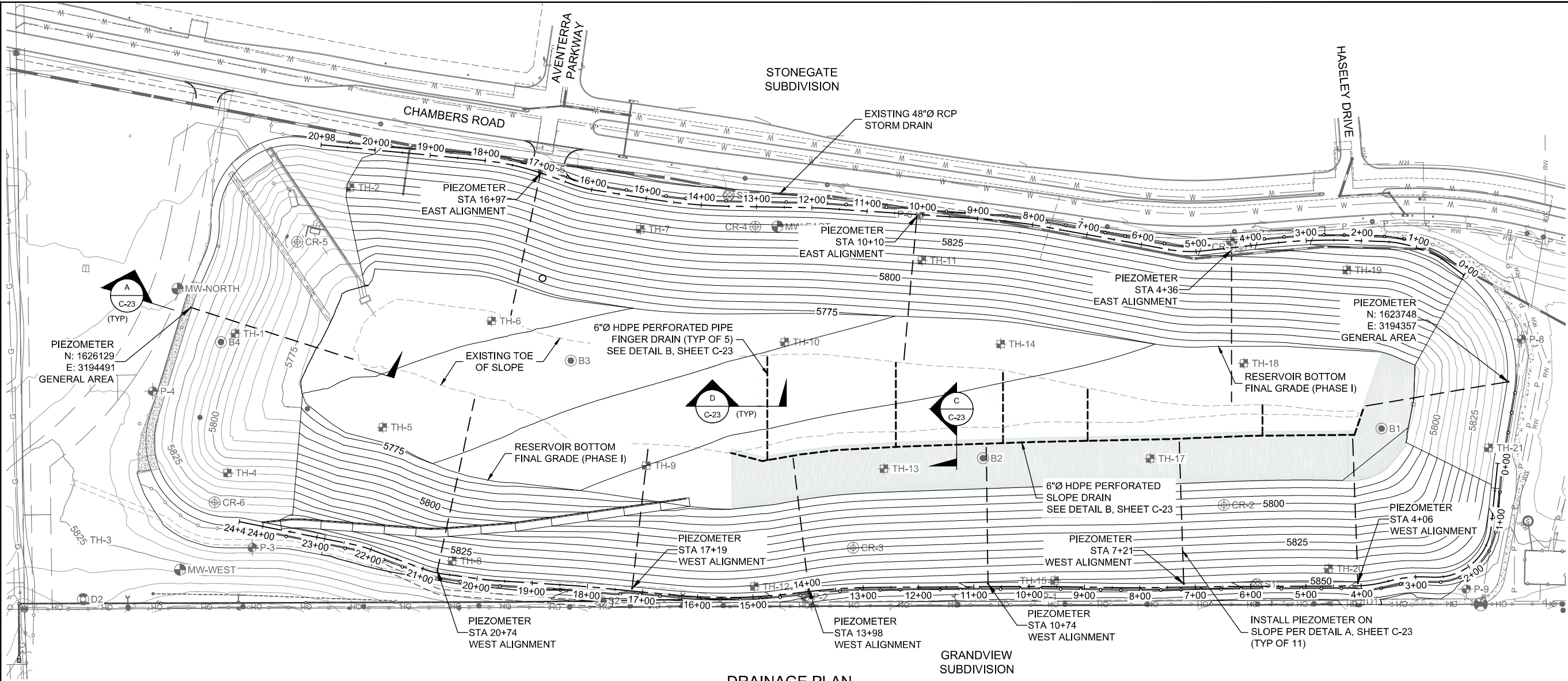
10. CONCRETE END JOINT FASTENERS SHALL BE INSTALLED AT THE FLARED END SECTION AND (SEE TWO PIPE JOINTS OF ALL NEW INSTALLATIONS).

11. CONNECTIONS OF METAL END SECTIONS TO PLASTIC PIPE SHALL BE APPROVED BY THE ENGINEER.

12. CLASS B CONCRETE FOR WALLS ARE REQUIRED AT THE ENDS OF ALL FLARED END SECTIONS.

REINFORCED CONCRETE PIPE

PIPE DIA. (INCHES)	THICKNESS (INCHES)	A (INCHES)	C (INCHES)	L (INCHES)	E (INCHES)
15	0.064	6	6	21	34
18	0.064	6	6	24	38
21	0.064	6	6	27	42
24	0.064	6	6	30	46
27	0.064	6	6	33	50
30	0.064	6	6	36	54
33	0.064	6	6	39	58
36	0.064	6	6	42	62
39	0.064	6	6	45	66
42	0.064	6	6	48	70
45	0.064	6	6	51	74
48	0.064	6	6	54	78
51	0.064	6	6	57	82
54	0.064	6	6	60	86
57	0.064	6	6	63	90
60	0.064	6	6	66	94
63	0.064	6	6	69	98
66	0.064	6	6	72	102
69	0.064	6	6	75	106
72	0.064	6	6	78	110
75	0.064	6	6	81	114
78	0.064	6	6	84	118
81	0.064	6	6	87	122
84	0.064	6	6	90	126
87	0.064	6	6	93	130
90	0.064	6	6	96	134
93	0.064	6	6	99	138
96	0.064	6	6	102	142
99	0.064	6	6	105	146
102	0.064	6	6	108	150
105	0.064	6	6	111	154
108	0.064	6	6	114	158
111	0.064	6	6	117	162
114	0.064	6	6	120	166
117	0.064	6	6	123	170
120	0.064	6	6	126	174
123	0.064	6	6	129	178
126	0.064	6	6	132	182
129	0.064	6	6	135	186
132	0.064	6	6	138	190
135	0.064	6	6	141	194
138	0.064	6	6	144	198
141	0.064	6	6	147	202
144	0.064	6	6	150	206
147	0.064	6	6	153	210
150	0.064	6	6	156	214
153	0.064	6	6	159	218
156	0.064	6	6	162	222
159	0.064	6	6	165	226
162	0.064	6	6	168	230
165	0.064	6	6	171	234
168	0.064	6	6	174	238
171	0.064	6	6	177	242
174	0.064	6	6	180	246
177	0.064	6	6	183	250
180	0.064	6	6	186	254
183	0.064	6	6	189	258
186	0.064	6	6	192	262
189	0.064	6	6	195	266
192	0.064	6	6	198	270
195	0.064	6	6	201	274
198	0.064	6	6	204	278
201	0.064	6	6	207	282
204	0.064	6	6	210	286
207	0.064	6	6	213	290
210	0.064	6	6	216	294
213	0.064	6	6	219	298
216	0.064	6	6	222	302
219	0.064	6	6	225	306
222	0.064	6	6	228	310
225	0.064	6	6	231	314
228	0.064	6	6	234	318
231	0.064	6	6	237	322
234	0.064	6	6	240	326
237	0.064	6	6	243	330
240	0.064	6	6	246	334
243	0.064	6	6	249	338
246	0.064	6	6	252	342
249	0.064	6	6	255	346
252	0.064	6	6	258	350
255	0.064	6	6	261	354
258	0.064	6	6	264	358
261	0.064	6	6	267	362
264	0.064	6	6	270	366
267	0.064	6	6	273	370
270	0.064	6	6	276	374
273	0.064	6	6	279	378
276	0.064	6	6	282	382
279	0.064	6	6	285	386
282	0.064	6	6	288	390
285	0.064	6	6	291	394
288	0.064	6	6	294	398
291	0.064	6	6	297	402
294	0.064	6	6	300	406
297	0.064	6	6	303	410
300	0.064	6	6	306	414
303	0.064	6	6	309	418
306	0.064	6	6	312	422
309	0.064	6	6	315	426
312	0.064	6	6	318	430
315	0.064	6	6	321	434
318	0.064	6	6	324	438
321	0.064	6	6	327	442
324	0.064	6	6	330	446
327	0.064	6	6	333	450
330	0.064	6	6	336	454
333	0.064	6	6	339	458
336	0.064	6	6	342	462
339	0.064	6	6	345	466
342	0.064	6	6	348	470
345	0.064	6	6	351	474
348	0.064	6	6	354	478
351	0.064	6	6	357	482
354	0.064	6	6	360	486
357	0.064	6	6	363	490
360	0.064	6	6	366	494
363	0.064	6	6	369	498
366	0.064	6	6	372	502
369	0.064	6	6	375	506
372	0.064	6	6	378	510
375	0.064	6	6	381	514
378	0.064	6	6	384	518
381	0.064	6	6	387	522
384	0.064	6	6	390	526
387	0.064	6	6	393	530
390	0.064	6	6	396	534
393	0.064	6	6	399	538
396	0.064	6	6	402	542
399	0.064	6	6	405	546
402	0.064	6	6	408	550
405	0.064	6	6	411	554
408	0.064	6	6	414	558
411	0.064	6	6	417	562
414	0.064	6	6	420	566
417	0.064	6	6	423	570
420	0.064	6	6	426	574
423	0.064	6	6	429	578
426	0.064	6	6	432	582
429	0.064	6	6	435	586
432	0.064	6	6	438	590
435	0.064	6	6	441	594
438	0.064	6	6	444	598
441	0.064	6	6	447	602
444	0.064	6	6	450	606
447	0.064	6	6	453	610
450	0.064	6	6	456	614
453	0.064	6	6	459	618
456	0.064	6	6	462	622
459	0.064	6	6	465	626
462	0.064	6	6	468	630
465	0.064	6	6	471	634
468	0.064	6	6	474	638
471	0.064	6	6	477	642
474	0.064	6	6	480	646
477	0.064	6	6	483	650
480	0.064	6	6	486	654
483	0.064	6	6	489	658
486	0.064	6	6	492	662
489	0.064	6	6	495	666
492	0.064	6	6	498	670
495	0.064	6	6	501	674
498	0.064	6	6	504	678
501	0.064	6	6	507	682
504	0.064	6	6	510	686
507	0.064	6	6	513	690
510	0.064	6	6	516	694
513	0.064	6	6	519	698
516	0.064	6	6	522	702
519	0.064	6	6	525	706
522	0.064	6	6	528	710
525	0.064	6	6	531	714
528	0.064	6	6	534	718
531	0.064	6	6	537	722
534	0.064	6	6	540	726
537	0.064	6	6	543	730
540	0.064	6	6	546	734
543	0.064	6	6	549	738
546	0.064	6	6	552	742
549	0.064	6	6	555	746
552	0.064	6	6	558	750
555	0.064	6	6	561	754
558	0.064	6	6	564	758
561	0.064	6	6	567	762
564	0.064	6	6	570	766
567	0.064	6	6	573	770
570	0.064	6	6	576	774
573	0.064	6	6	579	778
576	0.064	6	6	582	782
579	0.064	6	6	585	786
582	0.064	6	6	588	790
585	0.064	6	6	591	794
588	0.064	6	6	594	798
591	0.064	6	6	597	802
594	0.064	6	6	600	806
597	0.064	6	6	603	810
600	0.064	6	6	606	814
603	0.064	6	6	609	818
606	0.064	6	6	612	822
609	0.064	6	6	615	826
612	0.064	6	6	618	830
615	0.064	6	6	621	834
618	0.064	6	6	624	838
621	0.064	6	6	627	842
624	0.064	6	6	630	846
627	0.064	6	6	633	850
630	0.064	6	6	636	854
633	0.064	6	6	639	858
636	0.064	6	6	642	862
639	0.064	6	6	645	866
642	0.064	6	6	648	870
645	0.064	6	6	651	874
648	0.064	6	6	654	878
651	0.064	6	6	657	882
654	0.064	6	6	660	886
657	0.064	6	6	663	890
660	0.064	6	6	666	894
663	0.064	6	6	669	898
666	0.064	6	6	672	902
669	0.064	6	6	675	906
672	0.064	6	6	678	910
675	0.064	6	6	681	914
678	0.064	6	6	684	918
681	0.064	6	6	687	922
684	0.064	6	6	690	926
687	0.064	6	6	693	930
690	0.064	6	6	696	934
693	0.064	6	6	699	938
696	0.064	6	6	702	942
699	0.064	6	6	705	946
702	0.064	6	6	708	950
705	0.064	6	6	711	954
708	0.064	6	6	714	958
711	0.064	6	6	717	



LEGEND

- 5850 — EXISTING MAJOR CONTOUR (25' INTERVAL)
- 5850 — EXISTING MINOR CONTOUR (5' INTERVAL)
- 5850 — PROPOSED MAJOR CONTOUR (25' INTERVAL)
- 5850 — PROPOSED MINOR CONTOUR (5' INTERVAL)
- - - - - PROPOSED SLOPE PIEZOMETER
- - - - - PROPOSED DRAIN PIPE AS NOTED
- - - - - TOE OF EXISTING EMBANKMENT
- [Shaded Area] LIMIT OF SLOPE DRAIN
- [Circle with Cross] MW-EAST MONUMENT WELL OR MOVEMENT MARKER
- [Square with Cross] TH-1 TEST HOLE
- [Circle with Dot] BH-1 BORE HOLE
- [Circle with Cross] CR-1 TEST HOLE
- [Circle with Dot] D-1 TEST HOLE WITH PIEZOMETER
- [Circle with Cross] S-1 TEST HOLE WITH PIEZOMETER
- [Circle with Dot] P-1 TEST HOLE WITH PIEZOMETER



DRAINAGE NOTES:

- FOR DRAINAGE DETAILS AND TYPICAL SECTIONS SEE SHEET C-23.
- FINGER DRAINS AND SLOPE DRAINS ARE BELOW THE FINAL GRADE OF PHASE I.
- FOR LAYOUT OF EAST AND WEST PERIMETER ROAD ALIGNMENTS SEE SHEET C-07.

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

THESE CONSTRUCTION DRAWINGS HAVE BEEN REVIEWED BY DOUGLAS COUNTY FOR GRADING EROSION AND SEDIMENT CONTROL IMPROVEMENTS.

ENGINEERING DIVISION ACCEPTANCE BLOCK

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SHEET TITLE
DRAINAGE LAYOUT
SHEET NUMBER
C-22

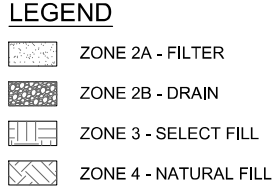
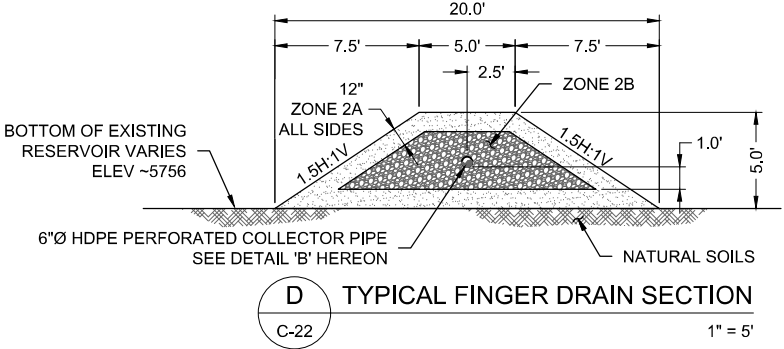
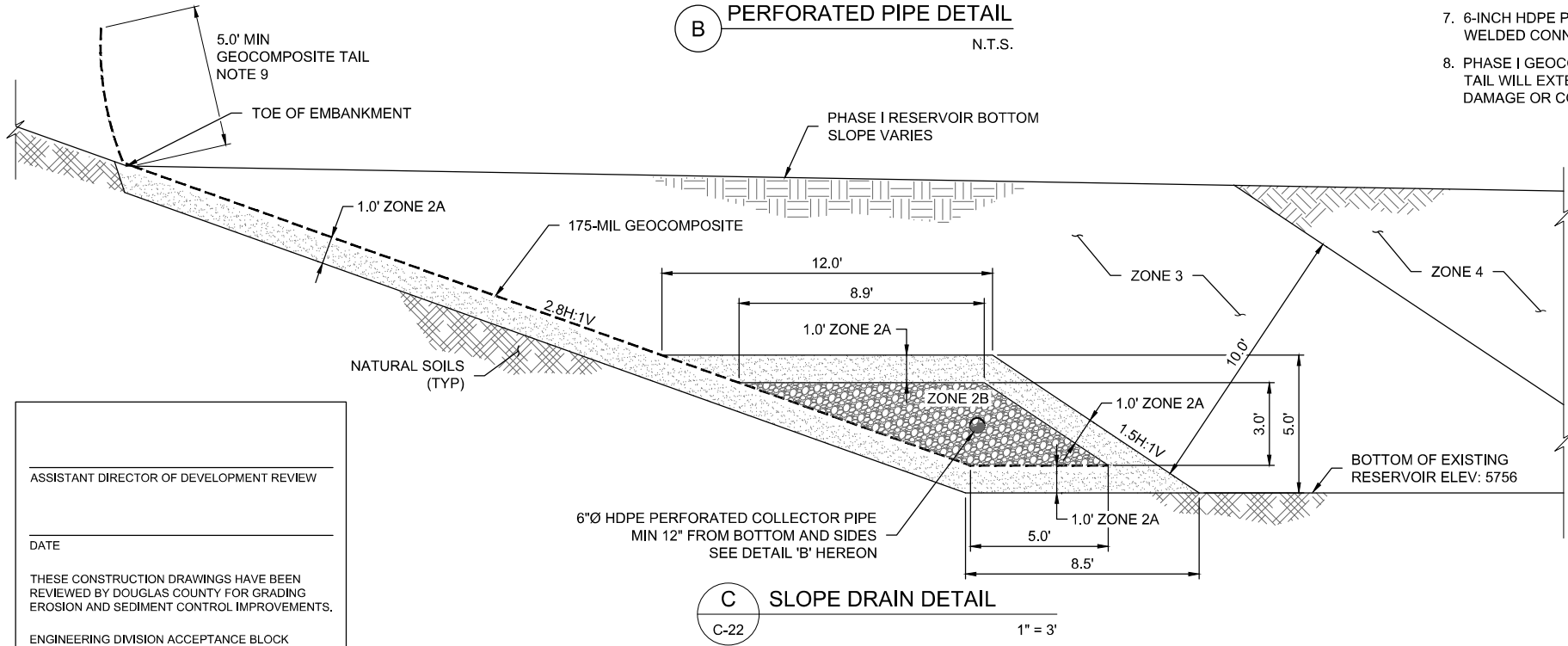
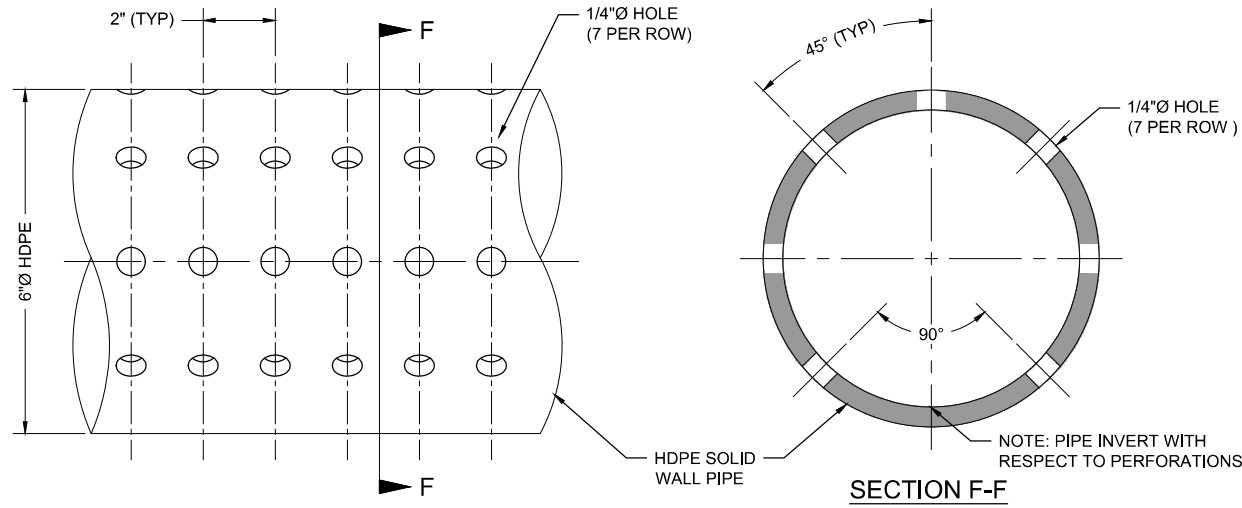
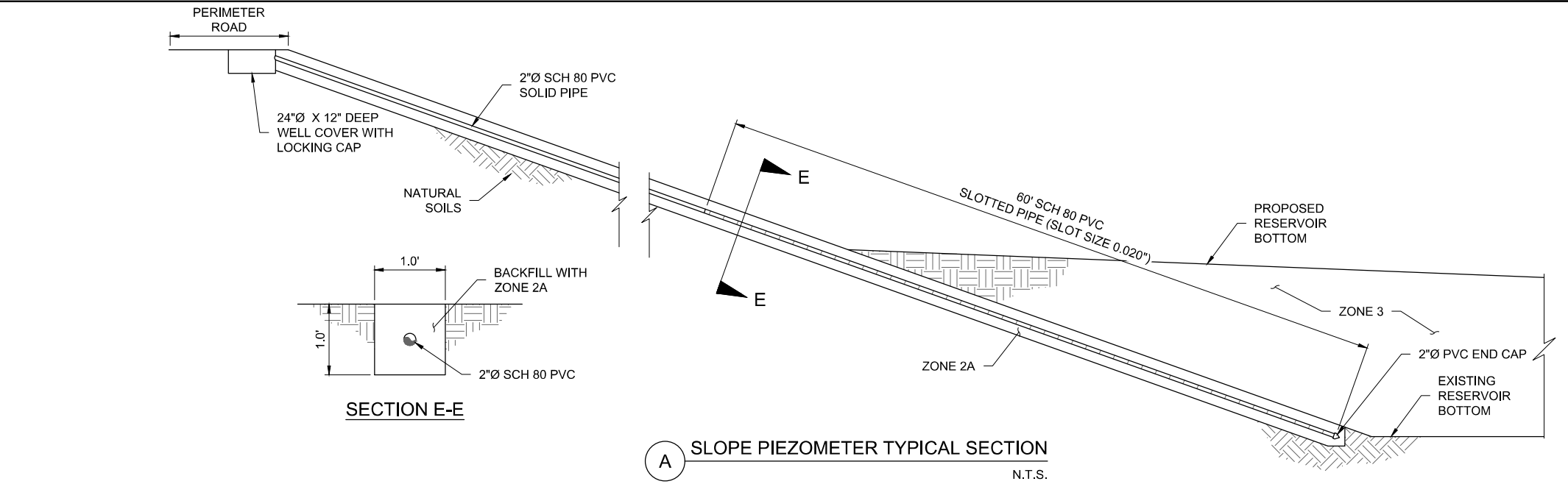


TABLE 1 GRADATION REQUIREMENTS (ZONE 2A - FILTER)	
SIEVE SIZE	PERCENT PASSING
3/4 INCH (19 mm)	100
3/8 INCH (9.5mm)	90 TO 100
No. 4 (4.75mm)	75 TO 100
No. 8 (2.38mm)	60 TO 100
No. 16 (1.19mm)	40 TO 85
No. 30 (0.6mm)	20 TO 65
No. 50 (0.3mm)	0 TO 45
No. 140 (0.1mm)	0 TO 17
No. 200 (0.075mm)	0 TO 15

TABLE 2 GRADATION REQUIREMENTS (ZONE 2B - DRAIN)	
SIEVE SIZE	PERCENT PASSING
1.5 INCH (37.5 mm)	100
3/4 INCH (19 mm)	95 TO 100
3/8 INCH (9.5mm)	60 TO 100
No. 4 (4.75mm)	15 TO 55
No. 8 (2.38mm)	0 TO 30
No. 16 (1.19mm)	0 TO 10
No. 30 (0.6mm)	0 TO 8
No. 50 (0.3mm)	0 TO 5

DRAINAGE GENERAL NOTES:

1. TEST PITTING OR TEST TRENCHING MAYBE REQUIRED TO DEFINE THE LATERAL EXTENDS OF THE CCL. TEST PITTING OR TEST TRENCHING MAY ALSO BE REQUIRED TO DISTINGUISH THE DIFFERENCE BETWEEN CCL AND NATURAL SILTY/CLAYEY SOILS. FULL TIME GEOTECHNICAL ENGINEERS OR GEOLOGISTS SHALL BE ON-SITE DURING EXCAVATION OF THE CCL AND WILL APPROVE THE FOUNDATION SURFACE PRIOR TO PLACEMENT OF ANY DRAIN MATERIALS.
2. 6-INCH DIAMETER HDPE PIPE WITH 1/4-INCH DIAMETER PERFORATIONS DRILLED 7 PER ROW SPACED 2" O.C. ALL JOINTS WILL BE WELDED.
3. ZONE 2A - FILTER SHALL CONSIST OF A NATURAL OR MANUFACTURED SAND. THE GRADING REQUIREMENTS OF ZONE 2A - FILTER ARE LISTED IN TABLE 1.
4. ZONE 2B - DRAIN SHALL CONSIST OF A GRAVEL, CRUSHED GRAVEL, CRUSHED STONE, OR GRAVELLY SAND. THE GRADING REQUIREMENTS OF ZONE 2B - DRAIN ARE LISTED IN TABLE 2.
5. ZONE 2A, ZONE 2B, AND ZONE 3 MATERIALS SHALL BE COMPACTED TO 70% RELATIVE COMPACTION. MAXIMUM LIFT HEIGHT IS 12-INCHES.
6. THE MINIMUM THICKNESS OF ZONE 2A MATERIAL IS 12-INCHES MEASURED PERPENDICULAR TO THE SLOPE.
7. 6-INCH HDPE PREFABRICATED JOINTS CONSIST OF 90 DEGREE BENDS. ALL PREFABRICATED JOINTS WILL USE WELDED CONNECTIONS.
8. PHASE I GEOCOMPOSITE TAIL WILL OVERLAP AND CONNECT TO PHASE II GEOCOMPOSITE. GEOCOMPOSITE TAIL WILL EXTEND 5.0' MINIMUM ABOVE PHASE I RESERVOIR BOTTOM AND SHALL BE PROTECTED FROM DAMAGE OR CONTAMINATION DURING CONSTRUCTION.



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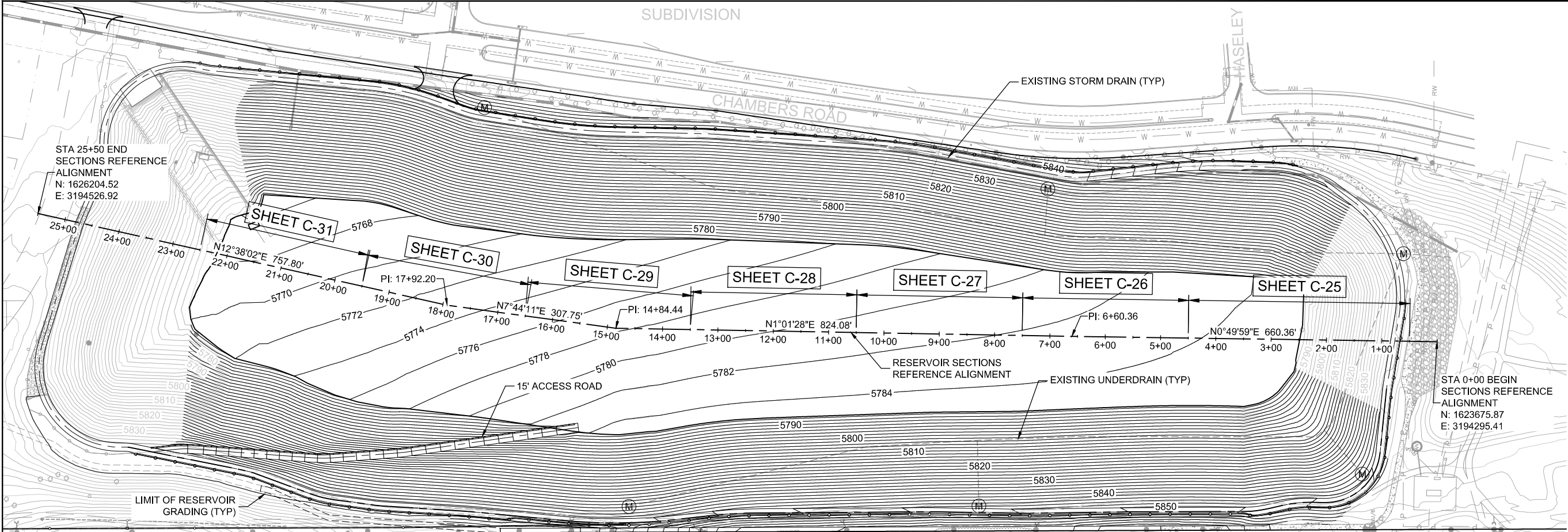
DRAINAGE DETAILS

SHEET NUMBER

C-23

ISSUED FOR
CONSTRUCTION

Project Management Initials: _____ Designer: _____ Checked: _____ Approved: _____ ANS I D 22" x 34"



OVERALL REFERENCE PLAN



CONTOUR INTERVAL: MINOR 2 FOOT
MAJOR 10 FOOT

GENERAL NOTES:

1. CONTOURS AND ELEVATIONS SHOWN HERE ARE FINISHED GRADE FOR PHASE I. FOR BOTTOM LINER FINISHED GRADE SEE PHASE II DRAWINGS.
2. FOR TEMPORARY EAST ACCESS GRADING SEE SHEET C-15.

LEGEND

— 5850 —	EXISTING MAJOR CONTOUR (25' INTERVAL)
— 5850 —	EXISTING MINOR CONTOUR (5' INTERVAL)
— 5850 —	PROPOSED MAJOR CONTOUR (25' INTERVAL)
— 5850 —	PROPOSED MINOR CONTOUR (5' INTERVAL)

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

THESE CONSTRUCTION DRAWINGS HAVE BEEN REVIEWED BY DOUGLAS COUNTY FOR GRADING EROSION AND SEDIMENT CONTROL IMPROVEMENTS.

ENGINEERING DIVISION ACCEPTANCE BLOCK

ISSUED FOR
CONSTRUCTION

AECOM

PROJECT

CHAMBERS RESERVOIR
REMEDATION DESIGN
(PHASE I)
9165 S. CHAMBERS ROAD,
PARKER, CO 80134

CLIENT

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CONSULTANT

AECOM
804 COLORADO AVE.
Suite 201
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www.aecom.com

CONSULTANTS

REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	07/15/2019	ISSUED FOR CONSTRUCTION

KEY PLAN

PROJECT NUMBER

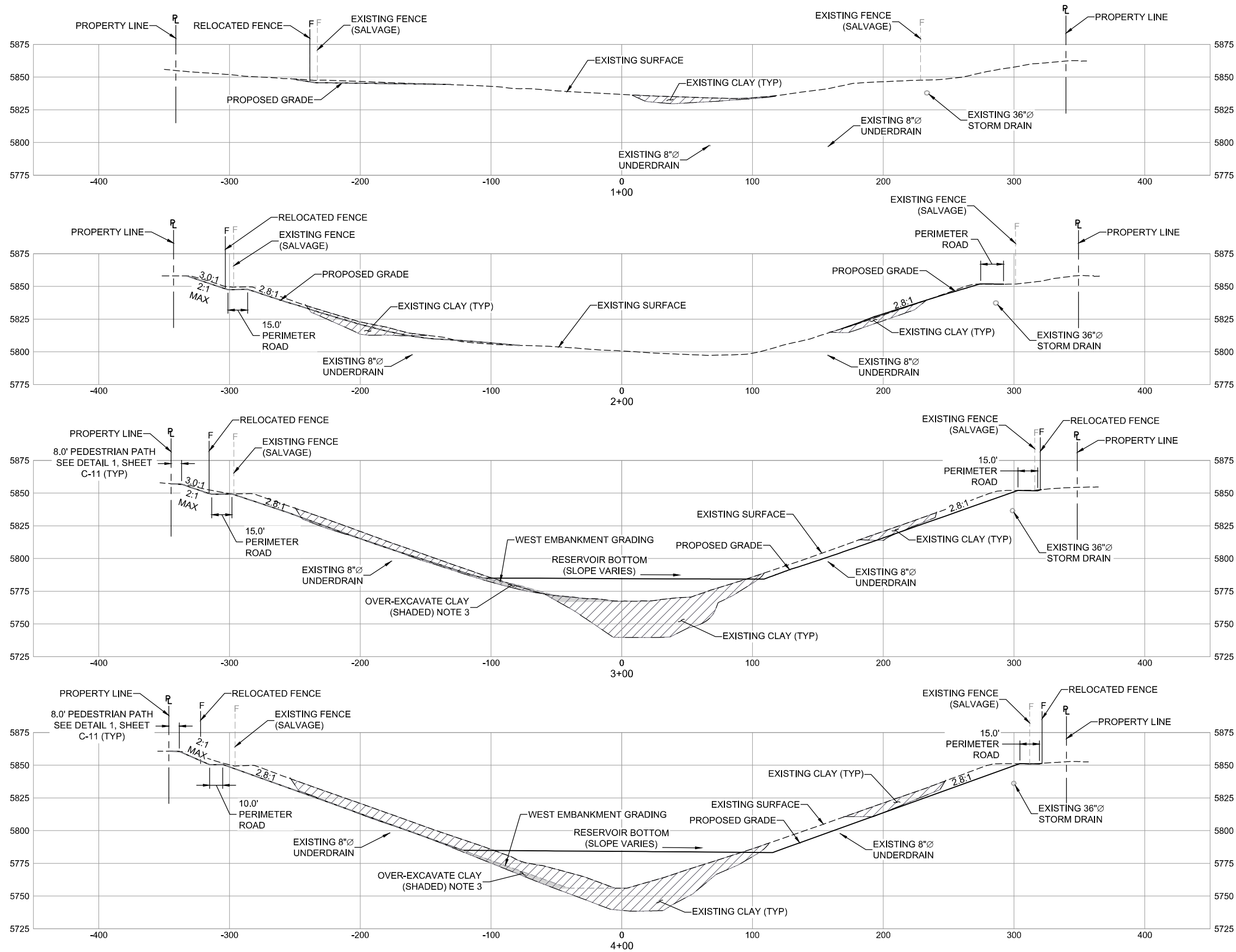
60567161

SHEET TITLE

SECTIONS REFERENCE PLAN

SHEET NUMBER

C-24



SECTION NOTES:

1. PROPOSED GRADE SHOWN IS THE FINISHED GRADE FOR PHASE I. FOR BOTTOM LINER FINISHED GRADE ELEVATIONS SEE PHASE II DRAWINGS.
2. SEE SHEET C-24 FOR OVERALL SECTIONS REFERENCE.
3. OVER-EXCAVATION CLAY SHOWN TO BE REMOVED PER THE ENGINEER'S DIRECTION. SEE SHEET C-07 FOR OVER-EXCAVATION LIMITS.

ISSUED FOR
CONSTRUCTION

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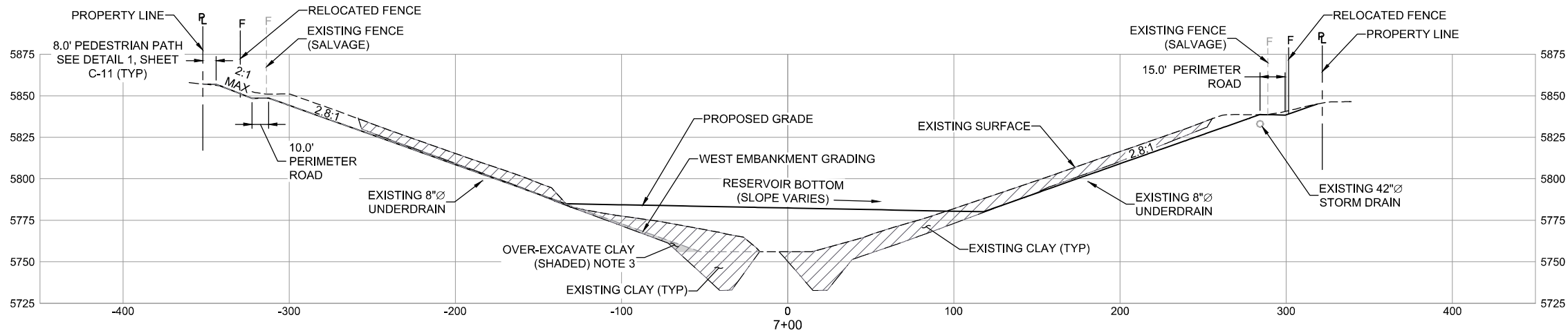
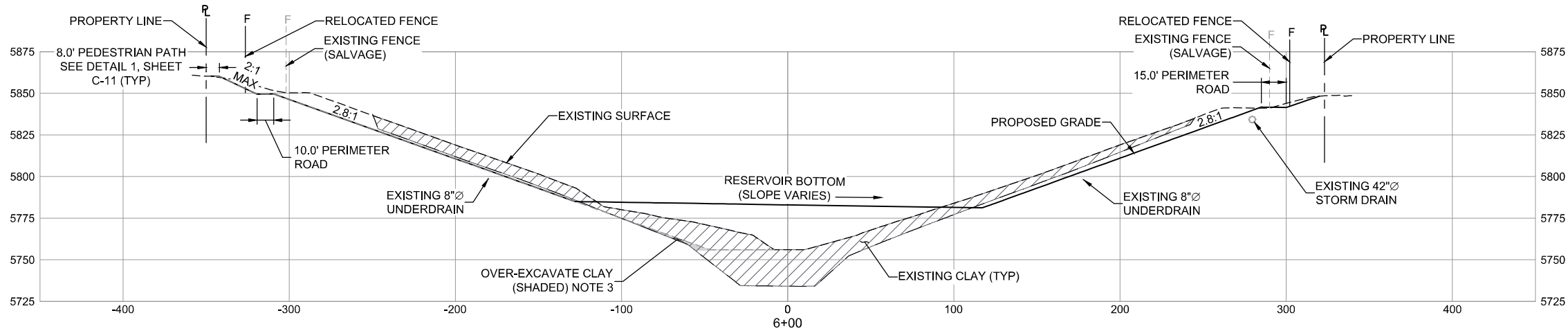
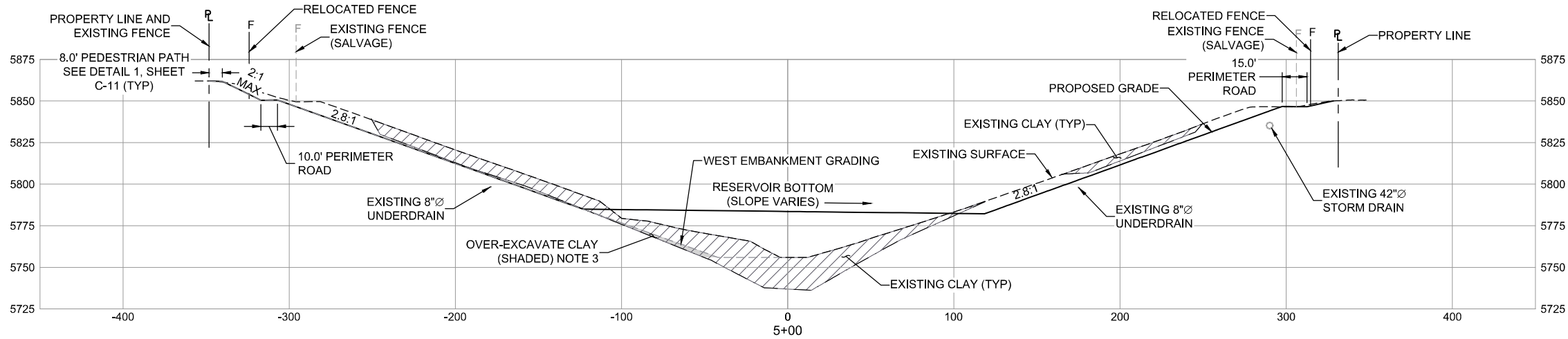
60567161

SHEET TITLE

SECTIONS STA 1+00 TO 4+00
SHEET 1 OF 7

SHEET NUMBER

C-25



- SECTION NOTES:**
1. PROPOSED GRADE SHOWN IS THE FINISHED GRADE FOR PHASE I. FOR BOTTOM LINER FINISHED GRADE ELEVATIONS SEE PHASE II DRAWINGS.
 2. SEE SHEET C-24 FOR OVERALL SECTIONS REFERENCE.
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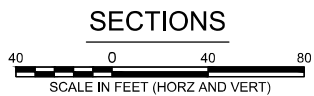
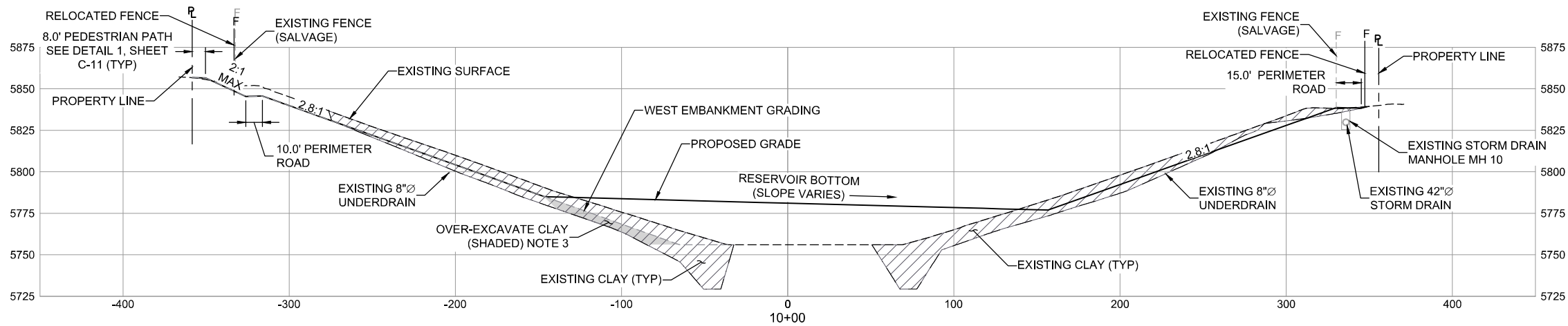
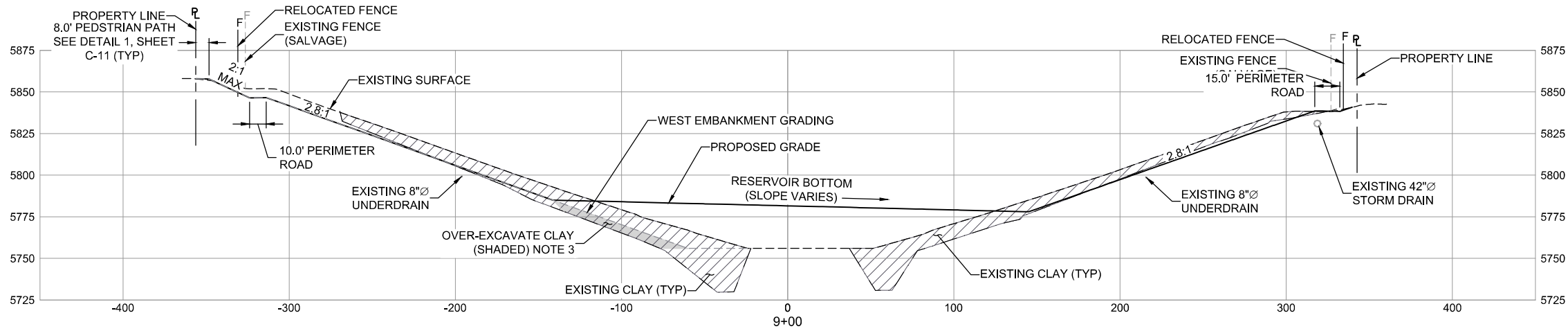
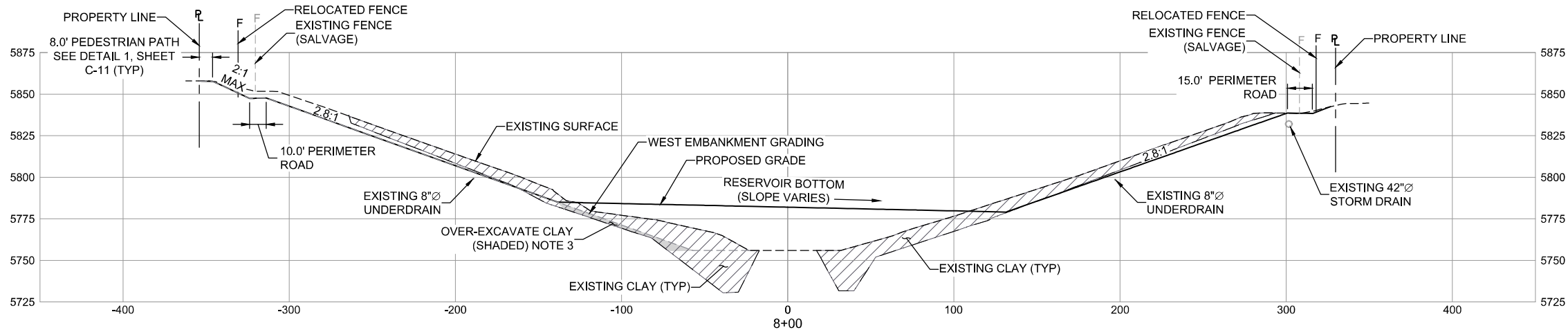
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I/R	DATE	DESCRIPTION

KEY PLAN

PROJECT NUMBER
60567161
SHEET TITLE
SECTIONS STA 5+00 TO 7+00
SHEET 2 OF 7
SHEET NUMBER
C-26



SECTION NOTES:

1. PROPOSED GRADE SHOWN IS THE FINISHED GRADE FOR PHASE I. FOR BOTTOM LINER FINISHED GRADE ELEVATIONS SEE PHASE II DRAWINGS.
2. SEE SHEET C-24 FOR OVERALL SECTIONS REFERENCE.
3. OVER-EXCAVATION CLAY SHOWN TO BE REMOVED PER THE ENGINEER'S DIRECTION. SEE SHEET C-07 FOR OVER-EXCAVATION LIMITS.

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PROJECT NUMBER

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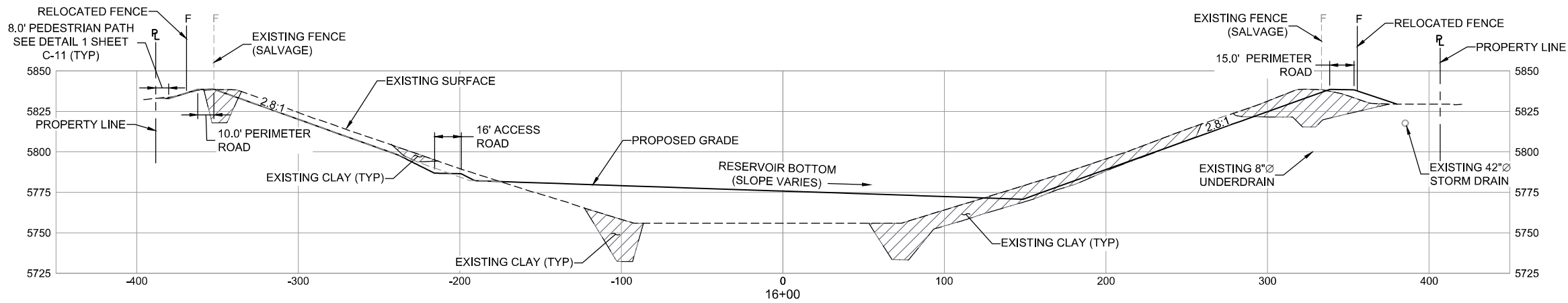
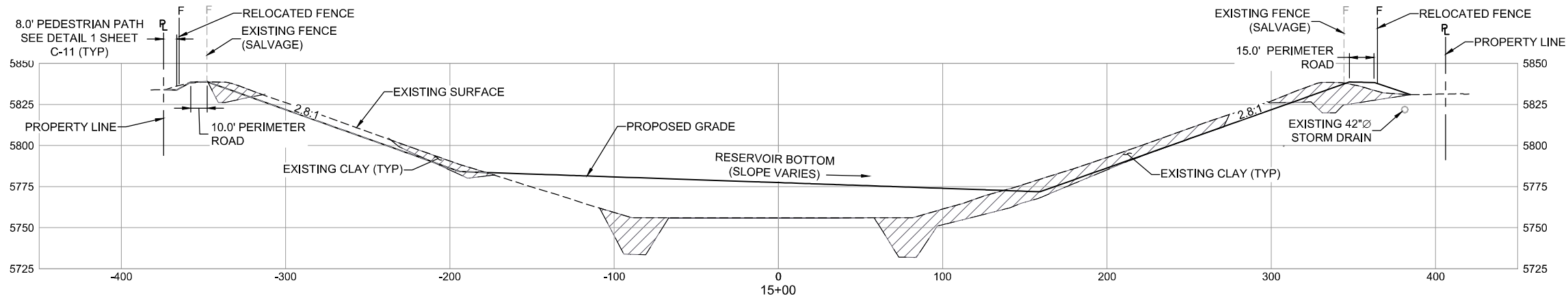
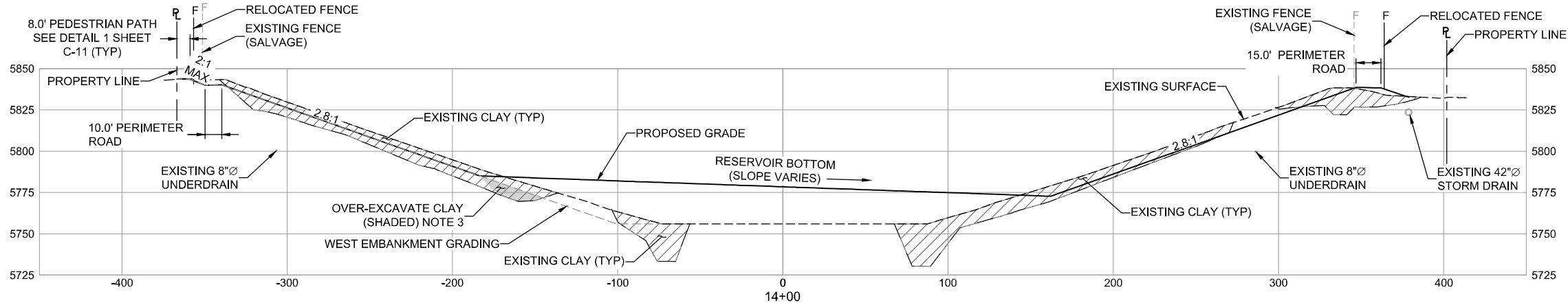
SHEET TITLE

SECTIONS STA 8+00 TO 10+00
SHEET 3 OF 7

SHEET NUMBER

C-27

C-28



SECTION NOTES:

1. PROPOSED GRADE SHOWN IS THE FINISHED GRADE FOR PHASE I. FOR BOTTOM LINER FINISHED GRADE ELEVATIONS SEE PHASE II DRAWINGS.
2. SEE SHEET C-24 FOR OVERALL SECTIONS REFERENCE.
3. OVER-EXCAVATION CLAY SHOWN TO BE REMOVED PER THE ENGINEER'S DIRECTION. SEE SHEET C-07 FOR OVER-EXCAVATION LIMITS.

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PROJECT NUMBER

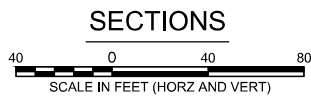
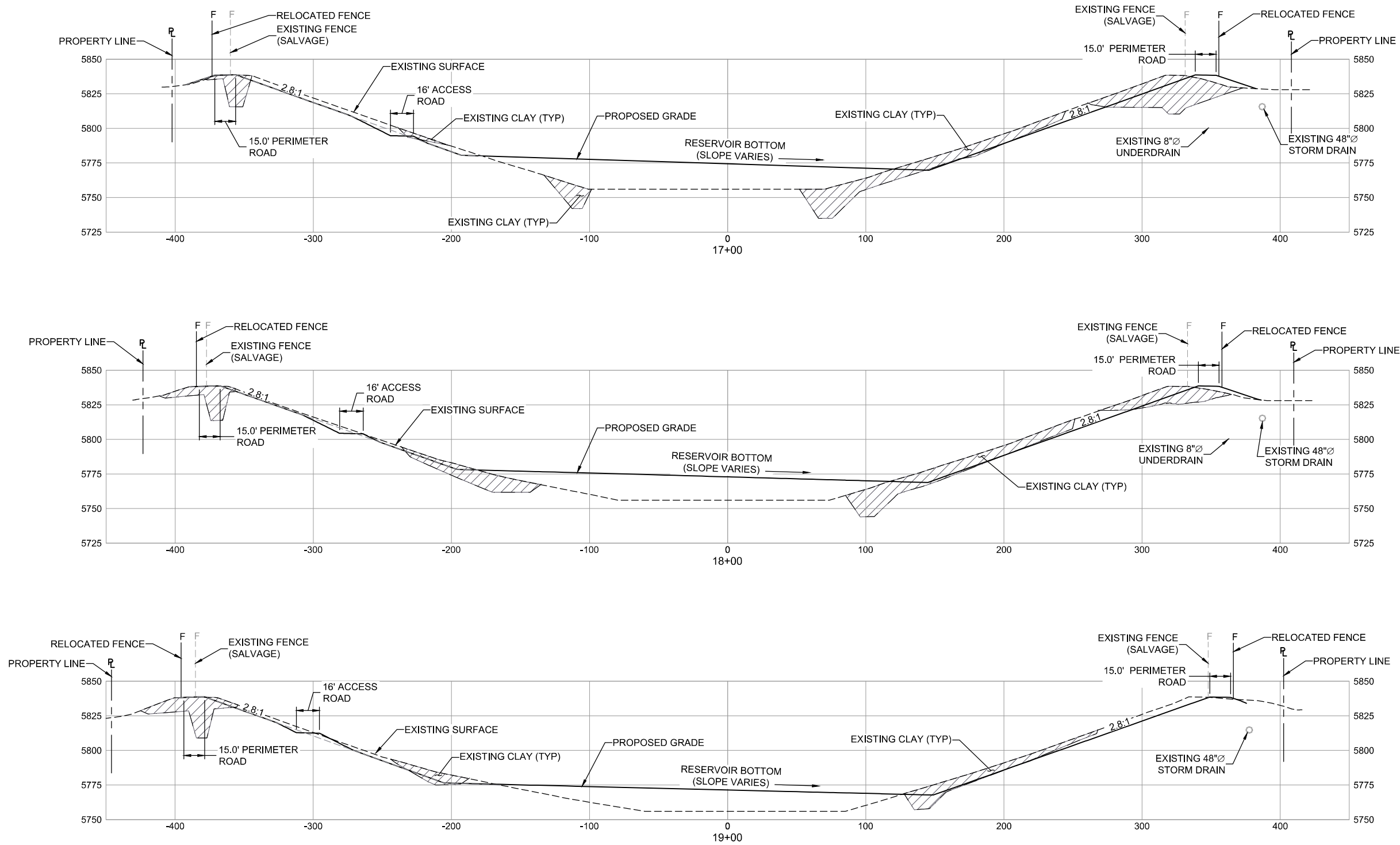
60567161

SHEET TITLE

SECTIONS STA 14+00 TO 16+00
SHEET 5 OF 7

SHEET NUMBER

C-29



SECTION NOTES:

1. PROPOSED GRADE SHOWN IS THE FINISHED GRADE FOR PHASE I. FOR BOTTOM LINER FINISHED GRADE ELEVATIONS SEE PHASE II DRAWINGS.
2. SEE SHEET C-24 FOR OVERALL SECTIONS REFERENCE.
3. OVER-EXCAVATION CLAY SHOWN TO BE REMOVED PER THE ENGINEER'S DIRECTION. SEE SHEET C-07 FOR OVER-EXCAVATION LIMITS.

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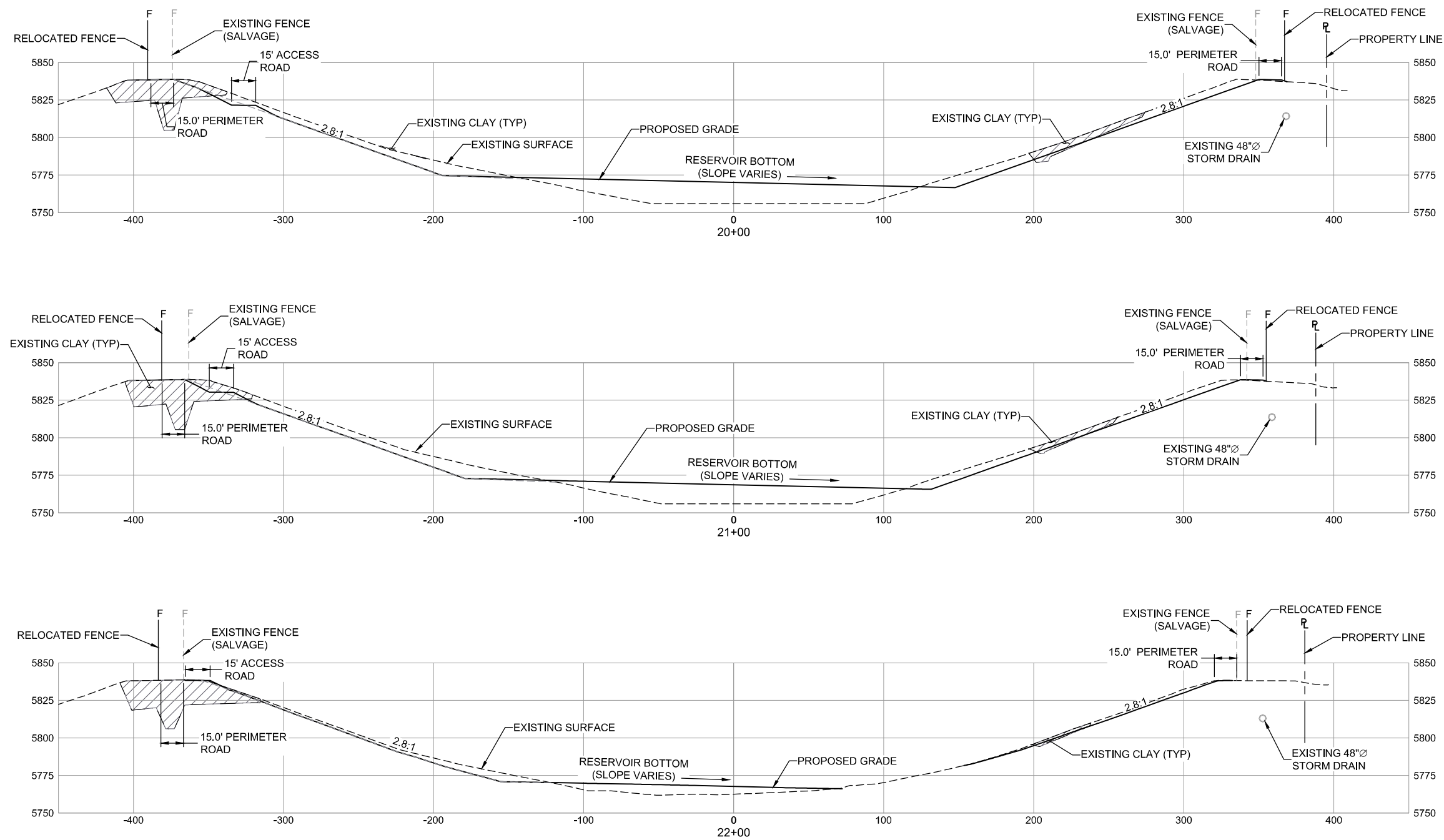
60567161

SHEET TITLE

SECTIONS STA 17+00 TO 19+00
SHEET 6 OF 7

SHEET NUMBER

C-30



SECTIONS



SECTION NOTES:

1. PROPOSED GRADE SHOWN IS THE FINISHED GRADE FOR PHASE I. FOR BOTTOM LINER FINISHED GRADE ELEVATIONS SEE PHASE II DRAWINGS.
2. SEE SHEET C-24 FOR OVERALL SECTIONS REFERENCE.
3. OVER-EXCAVATION CLAY SHOWN TO BE REMOVED PER THE ENGINEER'S DIRECTION. SEE SHEET C-07 FOR OVER-EXCAVATION LIMITS.

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PROJECT NUMBER

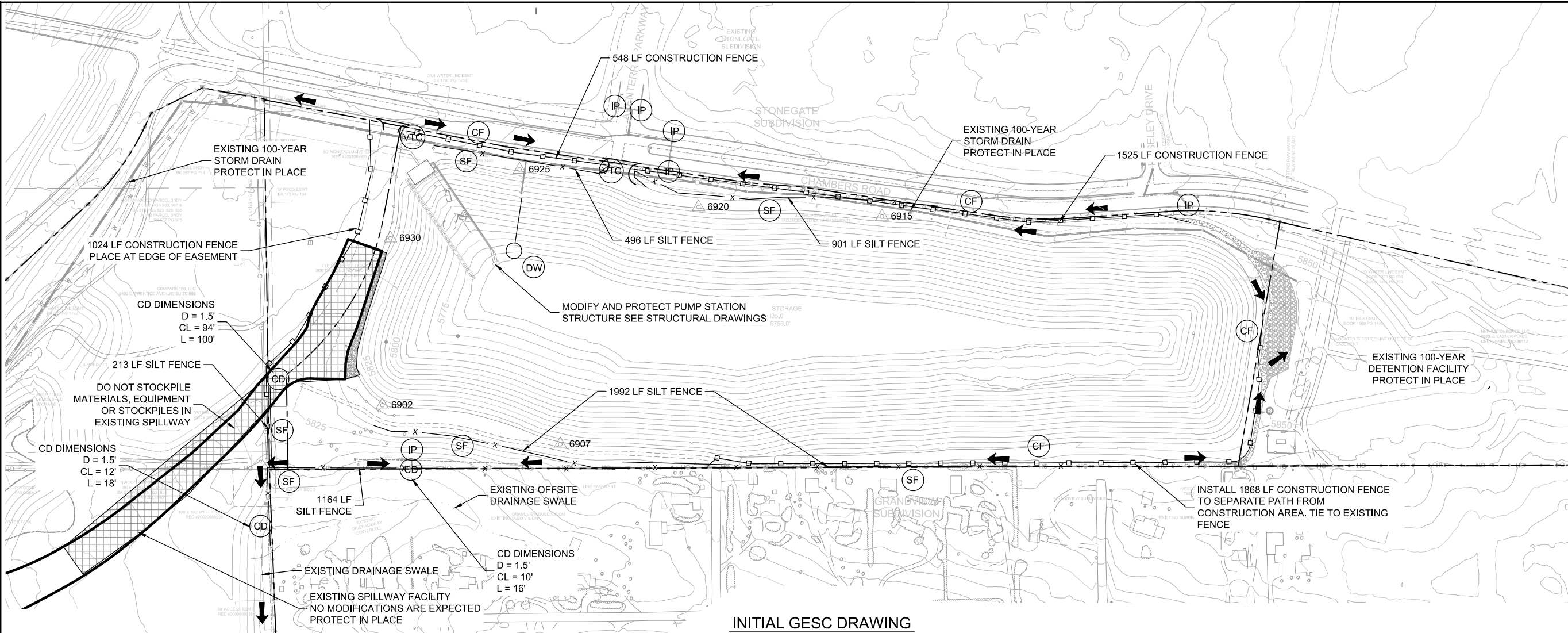
60567161

SHEET TITLE

SECTIONS STA 20+00 TO 22+00
SHEET 7 OF 7

SHEET NUMBER

C-31



INITIAL GESC DRAWING



CONTOUR INTERVAL: MINOR 5 FOOT
MAJOR 25 FOOT

PLAN NOTES

- CD CHECK DAM SEE GESC PLAN STANDARD NOTES AND DETAILS SHEET 2 OF 14
- CWA CONCRETE WASHOUT AREA SEE GESC PLAN STANDARD NOTES AND DETAILS SHEET 3 OF 14
- CF CONSTRUCTION FENCE SEE GESC PLAN STANDARD NOTES AND DETAILS SHEET 3 OF 14
- DW DEWATERING SEE GESC PLAN STANDARD NOTES AND DETAILS SHEET 4 OF 14. CONTRACTOR TO OBTAIN ALL DEWATERING PERMITS FROM COUNTY AND STATE
- ECB EROSION CONTROL BLANKET SEE GESC PLAN STANDARD NOTES AND DETAILS SHEET 5 OF 14
- IP INLET PROTECTION SEE GESC PLAN STANDARD NOTES AND DETAILS SHEET 6 OF 14
- RRC REINFORCED ROCK BERM FOR CULVERT PROTECTION SEE GESC PLAN STANDARD NOTES AND DETAILS SHEET 7 OF 14
- SM SEEDING & MULCHING SEE GESC PLAN STANDARD NOTES AND DETAILS SHEET 10 OF 14
- SF SILT FENCE SEE GESC PLAN STANDARD NOTES AND DETAILS SHEET 11 OF 14
- SR SURFACE ROUGHENING SEE GESC PLAN STANDARD NOTES AND DETAILS SHEET 11 OF 14
- SSA STABILIZED STAGING AREA SEE GESC PLAN STANDARD NOTES AND DETAILS SHEET 11 OF 14
- VTC VEHICLE TRACKING CONTROL SEE GESC PLAN STANDARD NOTES AND DETAILS SHEET 13 OF 14

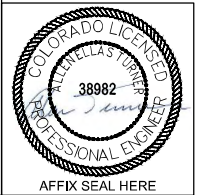
PROJECT BENCHMARK:

THE CONTROL POINT FOR THIS SURVEY IS NATIONAL GEODETIC SURVEY "NGS" HIGH ACCURACY REFERENCE NETWORK "HARN" POINT "CRAIN". SAID POINT BEARS A SPECIFIC PID#AA3411.

THE LAT., LONG. AND ELEV. OF THE POINT ARE AS FOLLOWS.
LAT. 39°33'55.77804"N
LONG. 104°47'06.15278"W
ELEV. 5734.25 NAVD 88

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW
DATE
THESE CONSTRUCTION DRAWINGS HAVE BEEN REVIEWED BY DOUGLAS COUNTY FOR GRADING EROSION AND SEDIMENT CONTROL IMPROVEMENTS.
ENGINEERING DIVISION ACCEPTANCE BLOCK

THE GRADING, EROSION AND SEDIMENT CONTROL (GESC) PLAN INCLUDED HEREIN HAS BEEN PREPARED UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH THE REQUIREMENTS OF THE GRADING, EROSION, AND SEDIMENT CONTROL (GESC) CRITERIA MANUAL OF DOUGLAS COUNTY, AS AMENDED.
GESC DESIGN ENGINEER CO LICENSE 38982
JULY 18, 2019
DATE



STORM WATER MANAGEMENT NOTES:

- PHASE I GRADING WILL INCLUDE ROUGH GRADING OF ENTIRE PROJECT SITE..
- REVEGETATE PER SEEDING SHOWN ON SHEET SWMP-3.
- PLACEMENT OF EXPANSIVE AND COLLAPSIBLE SOILS BOTH IN AND OUT OF PUBLIC RIGHT OF WAY SHALL BE AS-BUILT ON THE RECORD DRAWINGS.
- CONSTRUCTION FENCE TO BE ADDED IN AREAS WHERE PERMANENT FENCING IS REMOVED FOR CONSTRUCTION PURPOSES TO SECURE SITE
- BORROW MATERIAL WILL COME FROM A PROPERTY LOCATED AT E. EASTER AVE. AND S. REVERE PARKWAY.
- RIPRAP WILL BE HAULED TO SHEA CANYONS PROJECT LOCATED SOUTH OF HESS ROAD AND I-25.

LEGEND

- 5850— EXISTING MAJOR CONTOUR (25' INTERVAL)
- 5850— EXISTING MINOR CONTOUR (5' INTERVAL)
- 5850— PROPOSED MAJOR CONTOUR (25' INTERVAL)
- 5850— PROPOSED MINOR CONTOUR (5' INTERVAL)
- x PROPOSED SILT FENCE
- PROPOSED CONSTRUCTION FENCE
- SURFACE WATER FLOW DIRECTION

ISSUED FOR
CONSTRUCTION

AECOM

PROJECT

CHAMBERS RESERVOIR
REMEDATION DESIGN
(PHASE I)
9165 S. CHAMBERS ROAD,
PARKER, CO 80134

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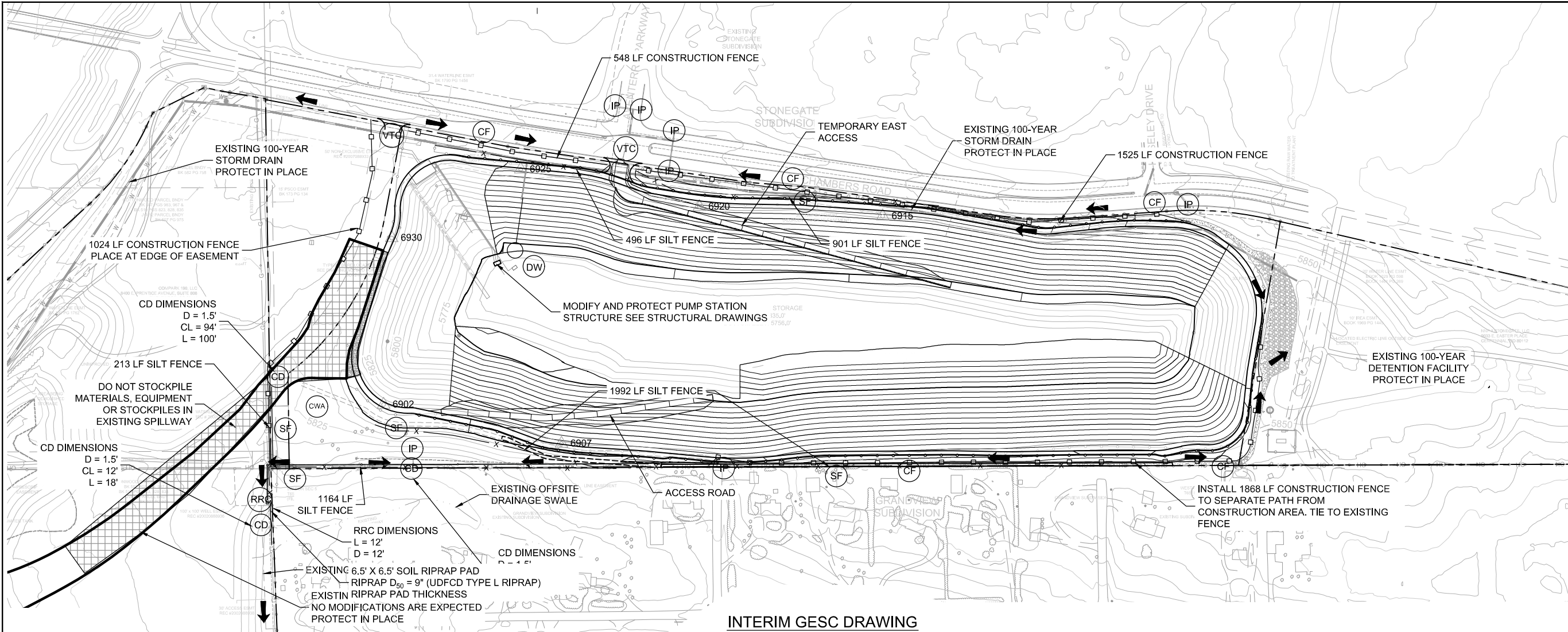
60567161

SHEET TITLE

STORM WATER
MANAGEMENT PLAN
INITIAL DRAWING

SHEET NUMBER

C-32



INTERIM GESC DRAWING



CONTOUR INTERVAL: MINOR 5 FOOT
MAJOR 25 FOOT

PLAN NOTES

- CD CHECK DAM SEE GESC PLAN STANDARD NOTES AND DETAILS SHEET 2 OF 14
- CWA CONCRETE WASHOUT AREA SEE GESC PLAN STANDARD NOTES AND DETAILS SHEET 3 OF 14
- CF CONSTRUCTION FENCE SEE GESC PLAN STANDARD NOTES AND DETAILS SHEET 3 OF 14
- DW DEWATERING SEE GESC PLAN STANDARD NOTES AND DETAILS SHEET 4 OF 14. CONTRACTOR TO OBTAIN ALL DEWATERING PERMITS FROM COUNTY AND STATE
- ECB EROSION CONTROL BLANKET SEE GESC PLAN STANDARD NOTES AND DETAILS SHEET 5 OF 14
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- SM SEEDING & MULCHING SEE GESC PLAN STANDARD NOTES AND DETAILS SHEET 10 OF 14
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- SSA STABILIZED STAGING AREA SEE GESC PLAN STANDARD NOTES AND DETAILS SHEET 11 OF 14
- VTC VEHICLE TRACKING CONTROL SEE GESC PLAN STANDARD NOTES AND DETAILS SHEET 13 OF 14

STORM WATER MANAGEMENT NOTES:

- PHASE I GRADING WILL INCLUDE ROUGH GRADING OF ENTIRE PROJECT SITE..
- REVEGETATE PER SEEDING SHOWN ON SHEET SWMP-3.
- PLACEMENT OF EXPANSIVE AND COLLAPSIBLE SOILS BOTH IN AND OUT OF PUBLIC RIGHT OF WAY SHALL BE AS-BUILT ON THE RECORD DRAWINGS.
- CONSTRUCTION FENCE TO BE ADDED IN AREAS WHERE PERMANENT FENCING IS REMOVED FOR CONSTRUCTION PURPOSES TO SECURE SITE.
- SEE COVER SHEET OF DOUGLAS COUNTY GESC STANDARD NOTES AND DETAILS (SHEET 1) FOR LEGEND OF BMP NAMES AND SYMBOLS.
- SHADED BMPs WERE INSTALLED IN INITIAL STAGE AND SHALL BE LEFT IN PLACE IN INTERIM STAGE UNLESS OTHERWISE NOTED.
- ALL INTERIM EROSION AND SEDIMENT CONTROL BMPs INCLUDING DRILL SEEDING AND CRIMP MULCHING OF DISTURBED AREAS, MUST BE INSTALLED, INSPECTED, AND APPROVED BY THE COUNTY PRIOR TO THE ISSUANCE OF A RIGHT-OF-WAY USE AND CONSTRUCTION PERMIT FOR THE PURPOSE OF PAVING OR INSTALLATION OF CURB AND GUTTER.
- SEE CONSTRUCTION PLANS FOR DETAILS OF PERMANENT DRAINAGE FACILITIES SUCH AS DETENTION FACILITIES, WATER QUALITY FACILITIES, CULVERTS, STORM DRAINS, AND OUTLET PROTECTION.

LEGEND

- 5850 EXISTING MAJOR CONTOUR (25' INTERVAL)
- 5850 EXISTING MINOR CONTOUR (5' INTERVAL)
- 5850 PROPOSED MAJOR CONTOUR (25' INTERVAL)
- 5850 PROPOSED MINOR CONTOUR (5' INTERVAL)
- x PROPOSED SILT FENCE
- PROPOSED CONSTRUCTION FENCE
- ➔ SURFACE WATER FLOW DIRECTION

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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ENGINEERING DIVISION ACCEPTANCE BLOCK

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Alan Turner

GESC DESIGN ENGINEER
CO LICENSE 38982

JULY 18, 2019

DATE



ISSUED FOR
CONSTRUCTION

AECOM

PROJECT

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KEY PLAN

PROJECT NUMBER

60567161

SHEET TITLE

STORMWATER
MANAGEMENT PLAN
INTERIM DRAWING

SHEET NUMBER

C-33