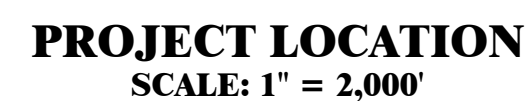


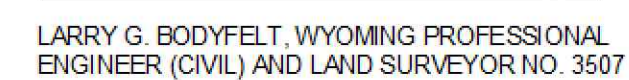
***SECTION 5, TOWNSHIP 7 SOUTH, RANGE 97
WEST, 6TH P.M., GARFIELD COUNTY, COLORADO***






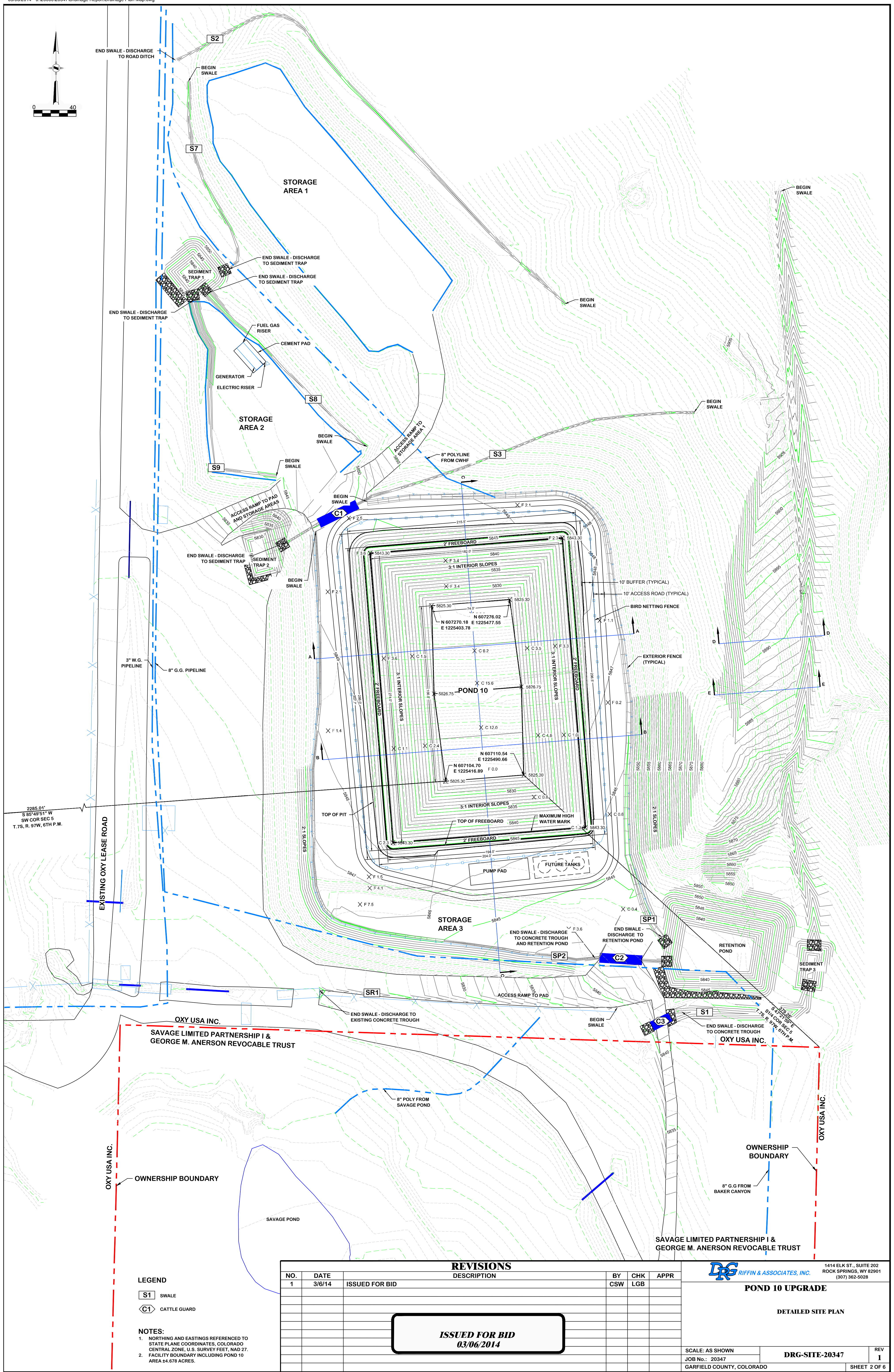
ENGINEER'S CERTIFICATION

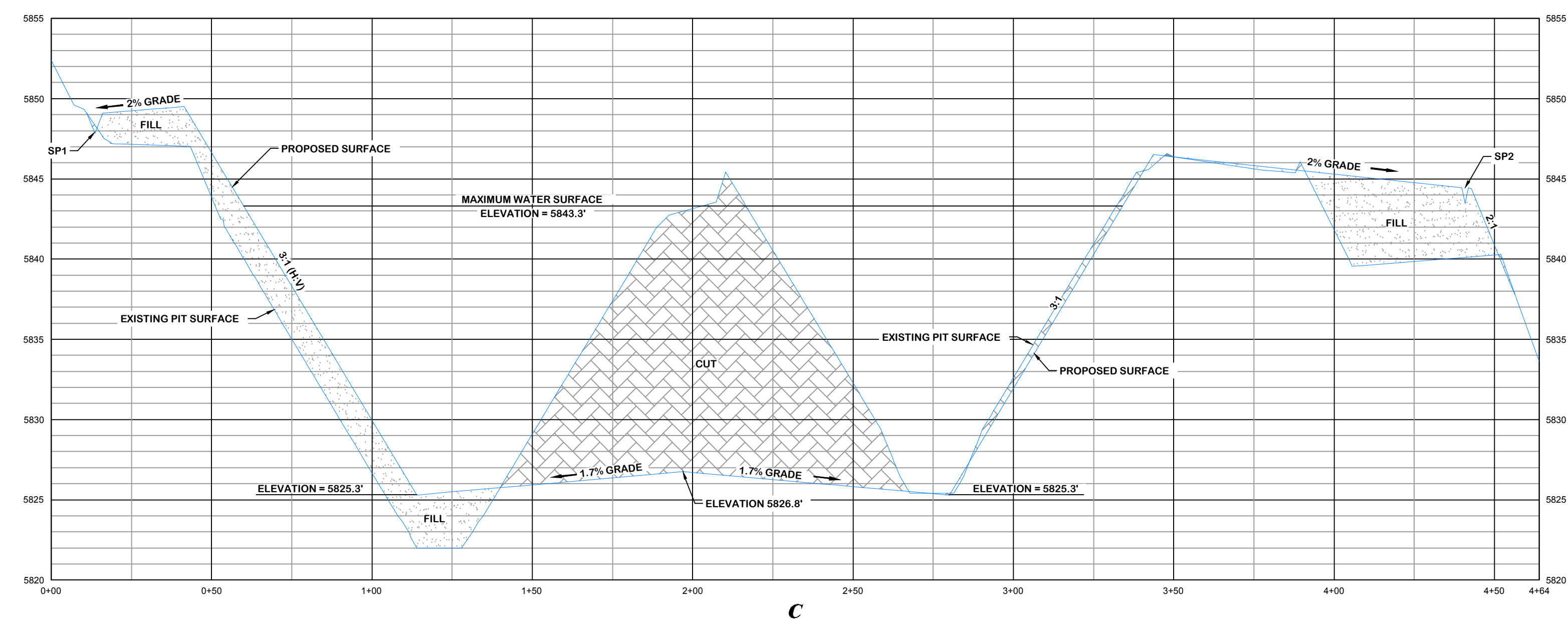
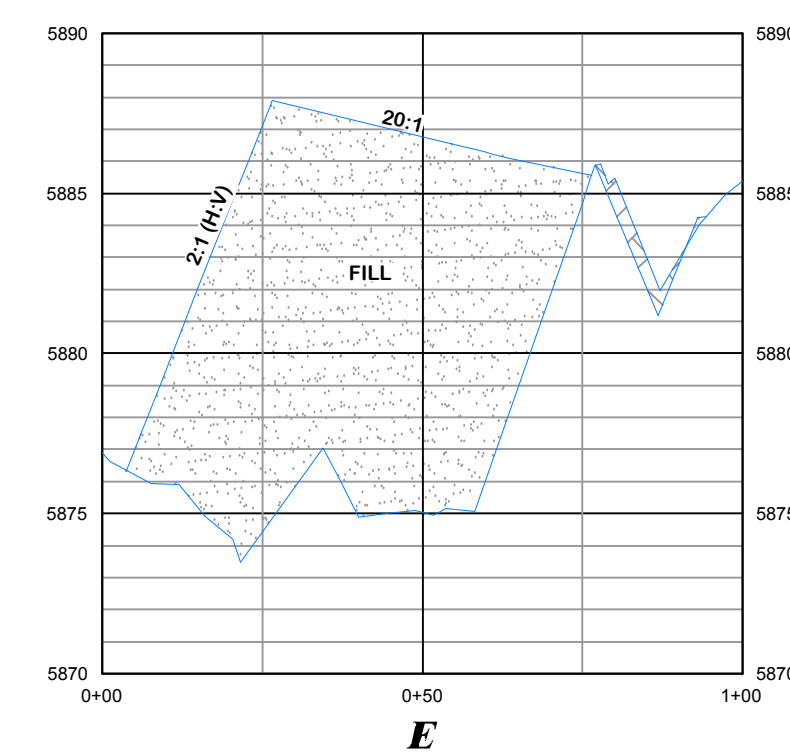
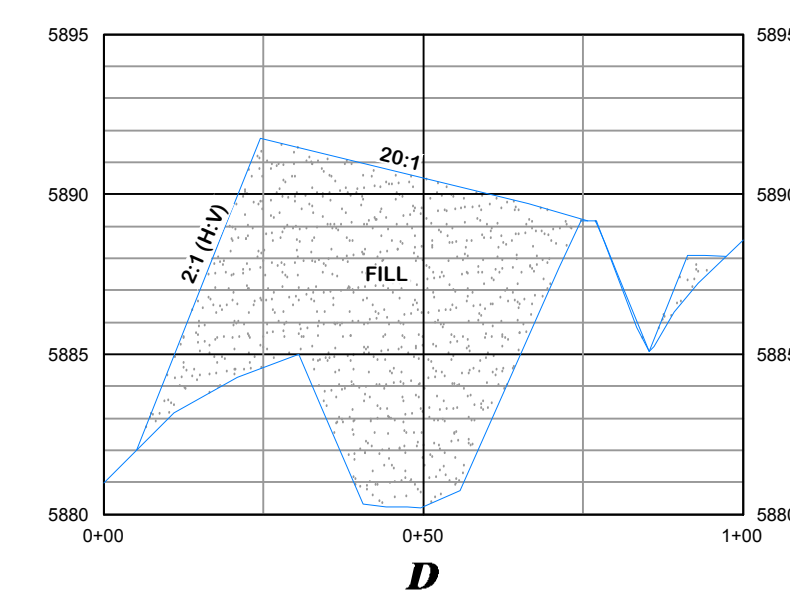
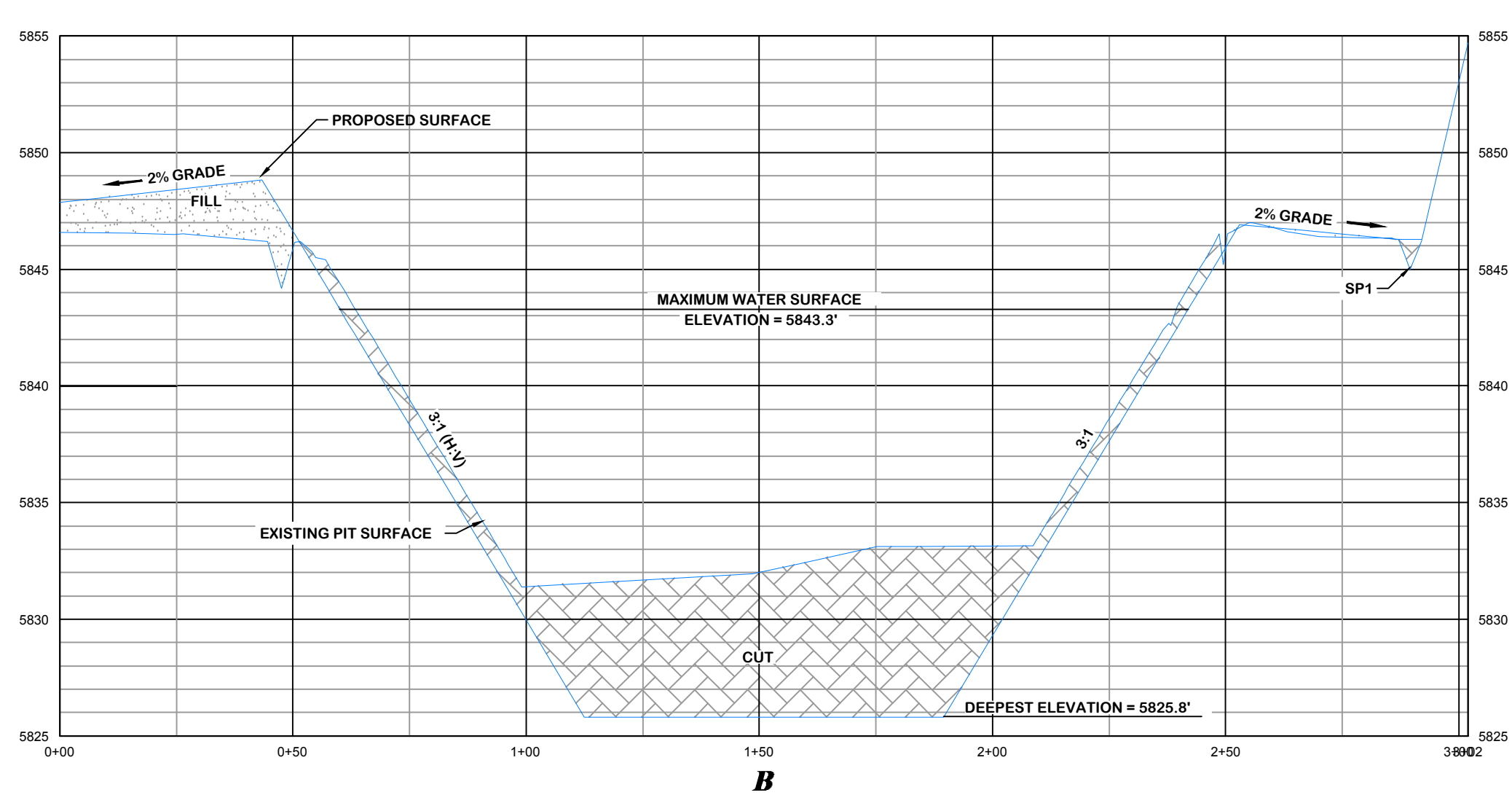
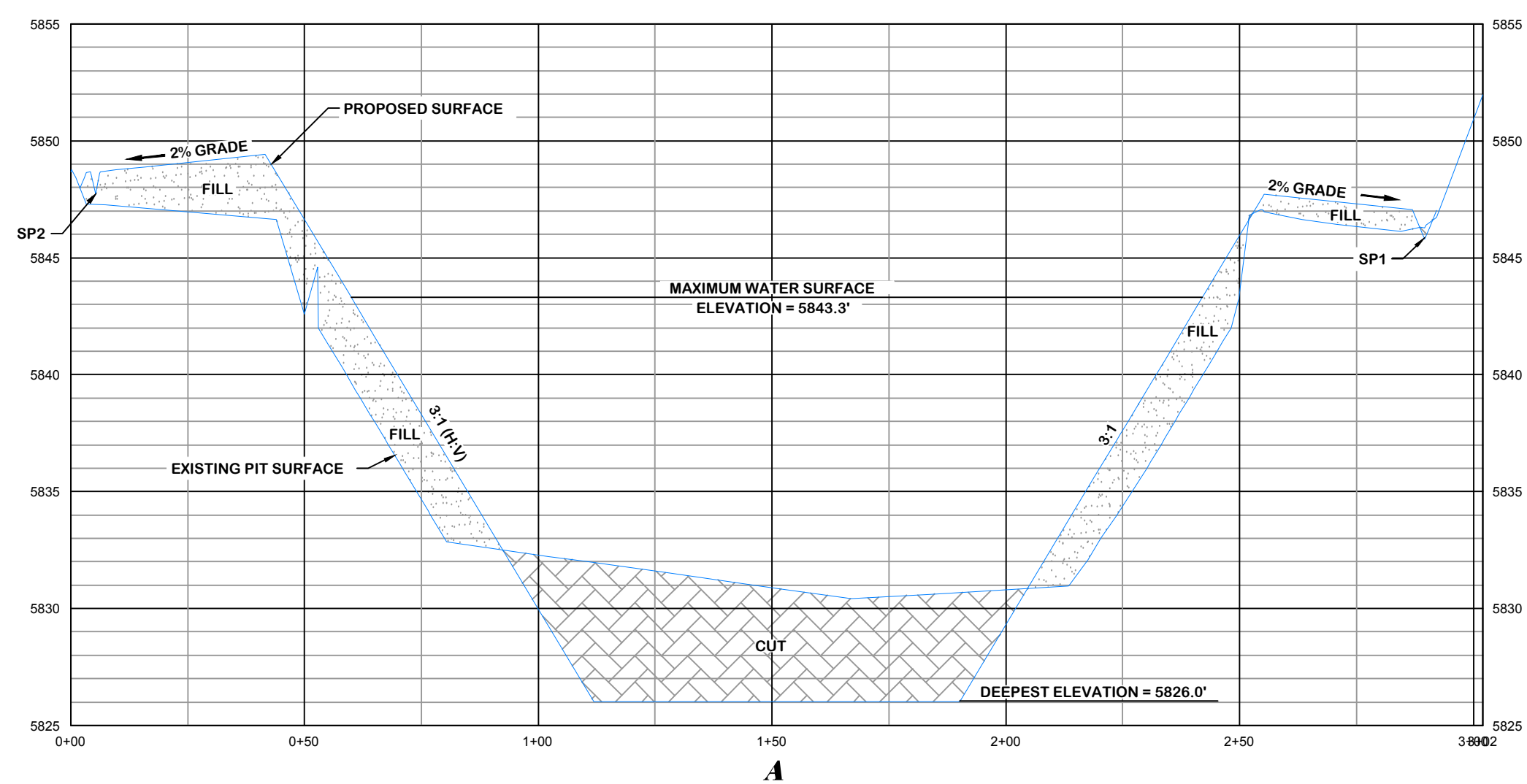
LARRY G. BODYFELT STATES THAT I AM BY OCCUPATION A PROFESSIONAL ENGINEER (CIVIL) AND LAND SURVEYOR EMPLOYED BY OXY USA TO PREPARE DRAWINGS FOR THE POND 10 UPGRADE PROJECT AS LISTED IN THE TABLE OF CONTENTS OF THIS BID PLAN SET, AND THAT THE WORK WAS DONE UNDER MY AUTHORITY AND SUPERVISION COMMENCING JANUARY 6, 2014. I ALSO STATE THAT THE DESIGN IS NORMAL AND CUSTOMARY FOR THIS TYPE OF WORK.

REVIEWED AND APPROVED BY:



REVISIONS						 DRS RIFFIN & ASSOCIATES, INC.		1414 ELK ST., SUITE 202 ROCK SPRINGS, WY 82901 (307) 362-5028	
NO.	DATE	DESCRIPTION	BY	CHK	APPR	 POND 10 UPGRADE COVER SHEET			
1	3/6/14	ISSUED FOR BID	CSW	LGB					
									
						SCALE: AS SHOWN		DRG-COVER-20347	
						JOB No.: 20347			
						GARFIELD COUNTY, COLORADO			
								SHEET 1 OF 6	

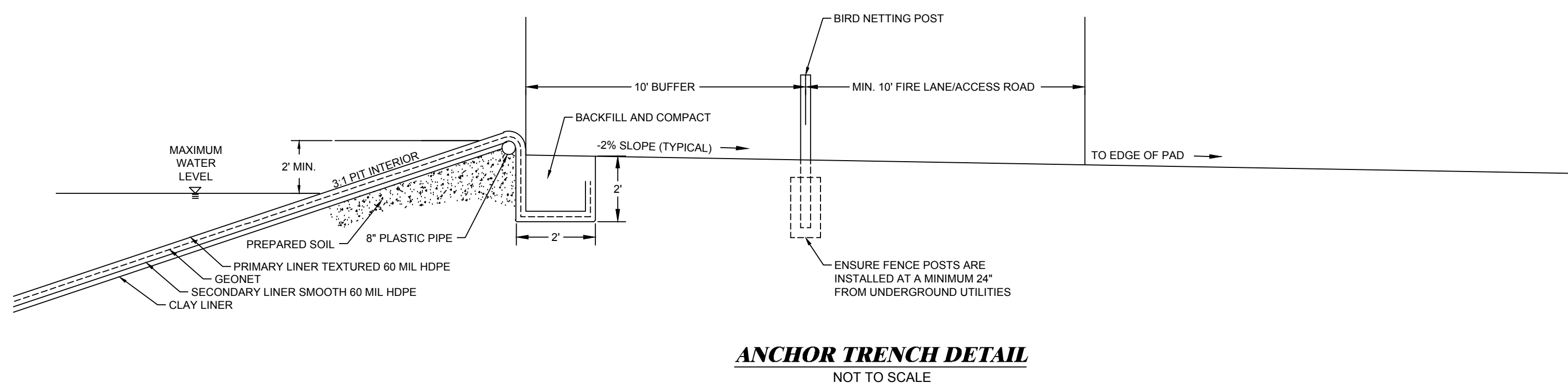




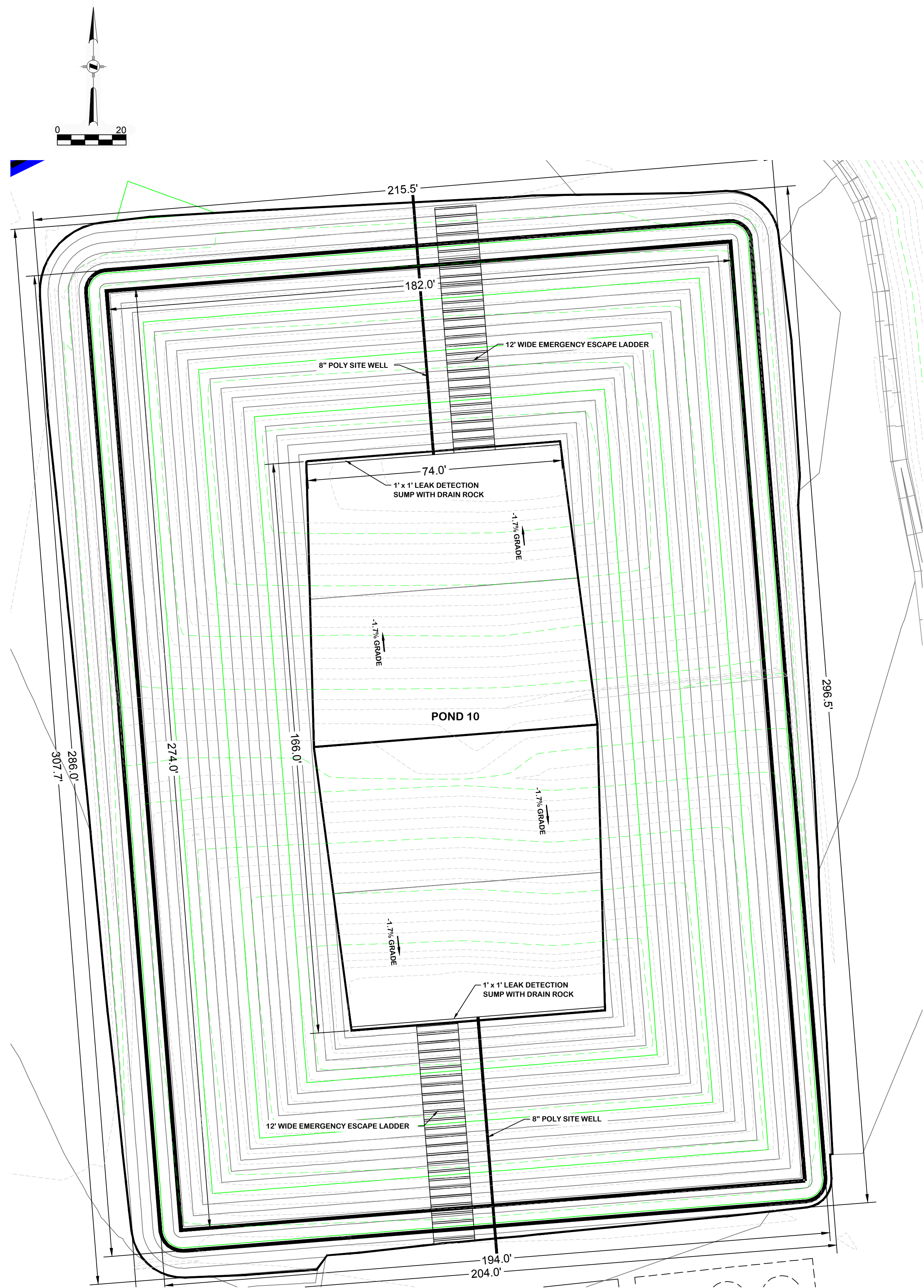
VERTICAL EXAGGERATION: 5 (= HOR/VERT SCALE)

NOTES:

1. PRIMARY AND SECONDARY GEOMEMBRANE PIT LINERS SHALL BE 60 MIL THICK HDPE OR OTHER AS APPROVED BY STATE OF COLORADO OIL & GAS CONSERVATION COMMISSION.
2. GSE BENTONITOLINER NUL GEOSYNTHETIC CLAY LINER OR APPROVED EQUIV. SHALL BE PLACED UNDER PRIMARY AND SECONDARY PIT LINERS. INSTALLATION OF CLAY LINER SHALL BE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
3. PIT LINERS SHALL BE INSTALLED PER MANUFACTURERS INSTRUCTIONS. BEDDING FOR LINER SHALL MEET MANUFACTURERS SPECIFICATIONS. IF NO BEDDING SPECIFICATIONS ARE GIVEN, BEDDING SHALL BE EVENLY COMPACTED TO NOT LESS THAN 95% STANDARD PROCTOR DENSITY AS DETERMINED BY ASTM D1556 OR ASTM D4914 PROVIDED A MOISTURE CONTENT OF 9-13% OF OPTIMUM IS MAINTAINED. IF FIELD TESTED SPECIMENS ARE NOT REASONABLY CLOSE TO THE STANDARD PROCTOR DENSITY SPECIMEN, ADDITIONAL STANDARD PROCTOR DENSITY TESTING SHALL BE CONDUCTED.
4. SOIL DIRECTLY UNDER THE GEOSYNTHETIC CLAY LINER SHALL BE A CLEAN, REGULAR SURFACE WITHOUT AGGRESSIVE ANGLE CHANGES, RUTS, CAVITIES, LOOSE ROCKS OR STONES IN EXCESS OF 3/32" IN LARGEST DIMENSION. MATERIALS WITH AGGRESSIVE ANGLE CHANGES OR UNFLATTENED FACES CAPABLE OF PUNCTURING THE LINER SYSTEM. ORGANIC MATERIAL WILL NOT BE ALLOWED UNDER PIT LINING OR IN BERMS. GEOTEXTILE FABRIC MAY BE USED FOR BEDDING MATERIAL IF ALLOWED BY MANUFACTURER.
5. SUBGRADE BELOW PROPOSED PUMP PAD AND FUTURE TANKS SHALL BE COMPACTED PER BEDDING SPECIFICATIONS GIVEN ABOVE.
6. ALL BERM, FILL AND SUBGRADE MATERIAL SHALL BE COMPACTED TO NOT LESS THAN 90% STANDARD PROCTOR DENSITY AS DETERMINED BY ASTM D698 AT A MOISTURE CONTENT FROM -4% TO +2% OF OPTIMUM IN COMPACTION. ADDITIONAL STANDARD PROCTOR DENSITY TESTING SHALL BE CONDUCTED TO VERIFY FIELD DENSITY AS DETERMINED BY ASTM D1556 OR ASTM D4914 PROVIDED IN SITU SOILS ARE REASONABLY CLOSE TO THE STANDARD PROCTOR DENSITY SPECIMEN AS DETERMINED BY QUALIFIED PERSONNEL. IF FIELD TESTED SPECIMENS ARE NOT REASONABLY CLOSE TO THE STANDARD PROCTOR DENSITY SPECIMEN, ADDITIONAL STANDARD PROCTOR DENSITY TESTING SHALL BE CONDUCTED. IF COMPACTION REQUIREMENTS CANNOT BE MET WITH 8" LIFT, LIFT THICKNESS SHALL BE REDUCED UNTIL COMPACTION REQUIREMENTS CAN BE MET.
7. DRAIN ROCK PLACED IN EACH SUMP ON THE NORTH AND SOUTH ROUNDS OF THE POND SHALL BE EQUIVALENT TO PREVENT LINER PUNCTURE. GRADING OF THE DRAIN ROCK SHALL BE 100% PASSING THE 1 1/2" SIEVE AND 0% PASSING THE 1/2" SIEVE.

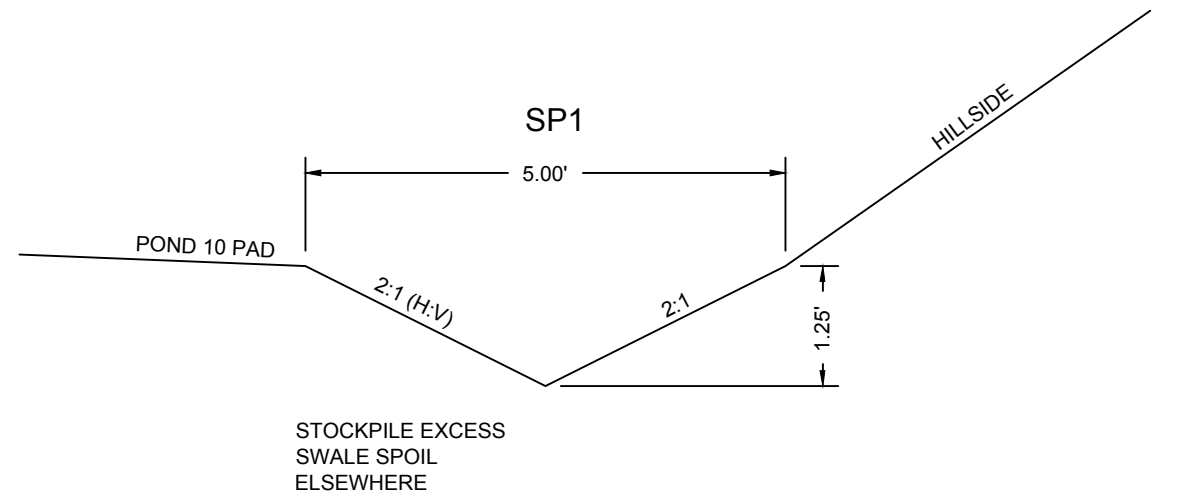
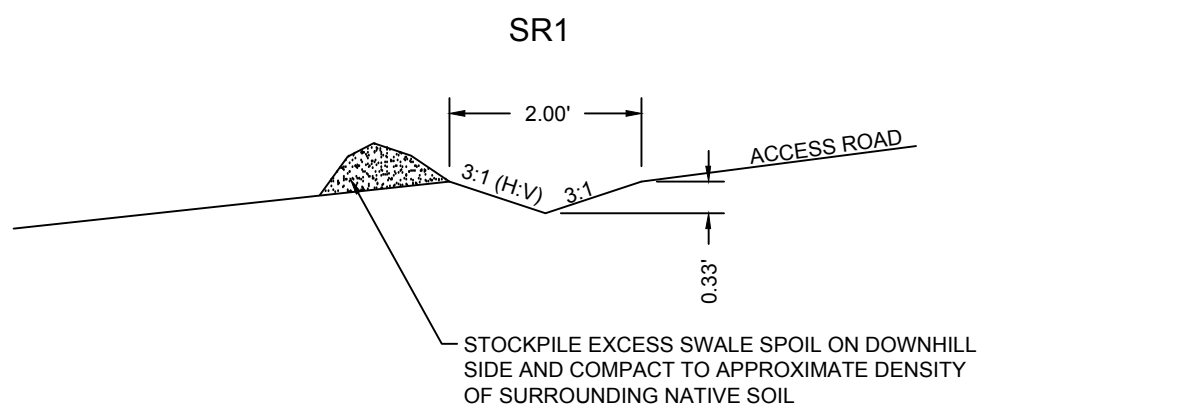
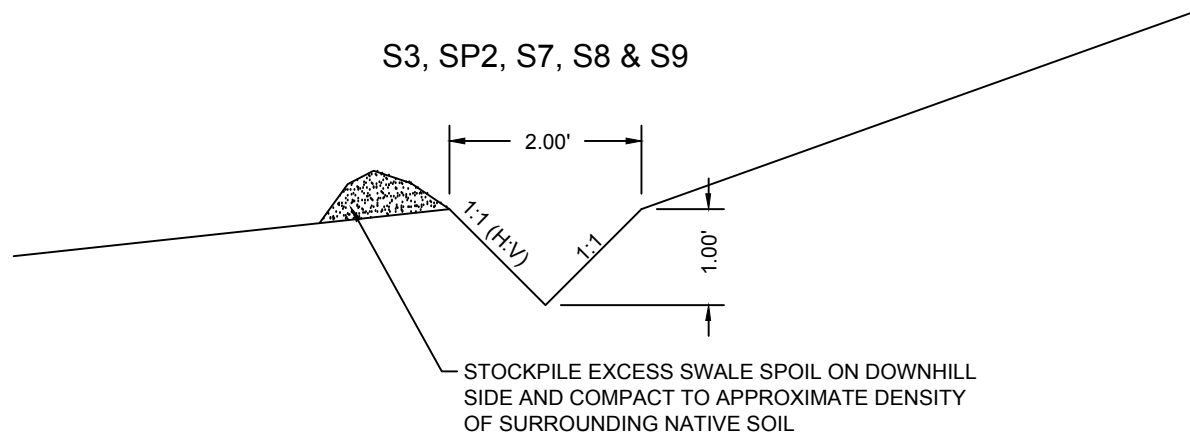
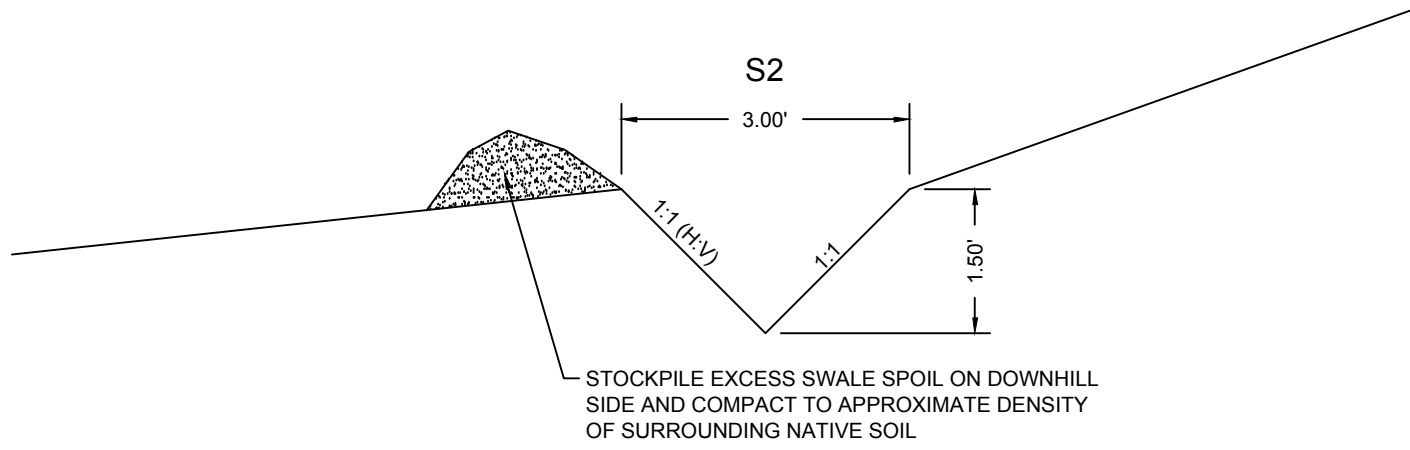
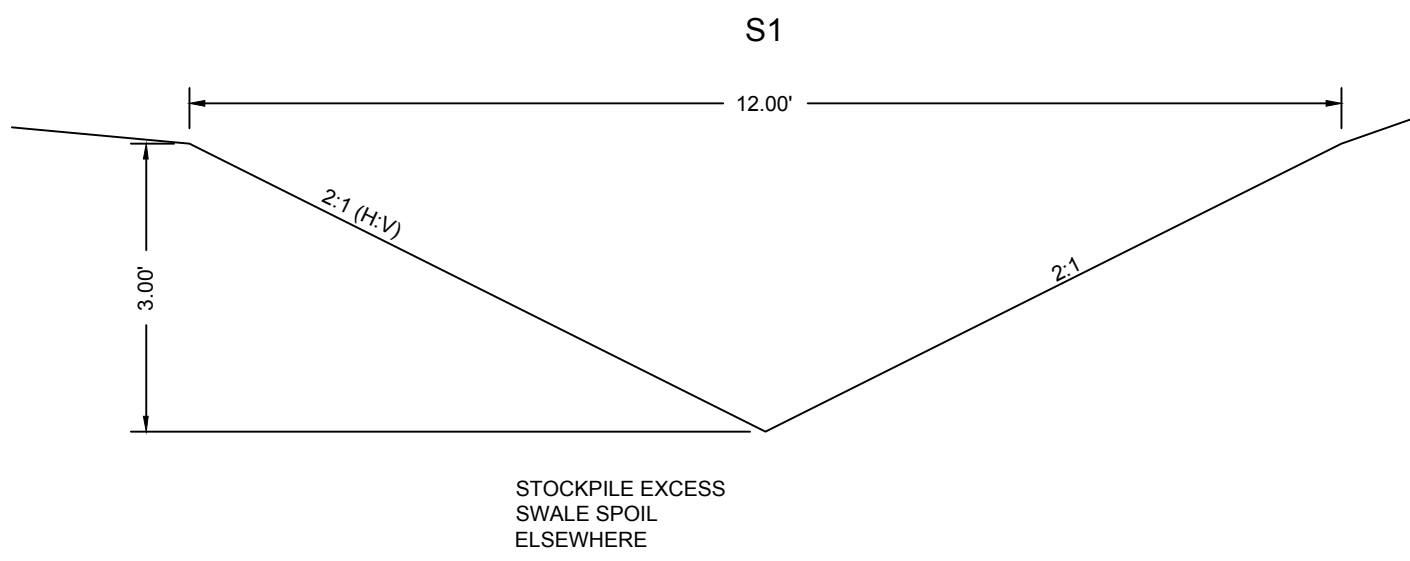
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J:\20347\Drainage Report\Drainage Plan Map.dwg
03/06/2014 - J:\20347\Drainage Report\Drainage Plan Map.dwg



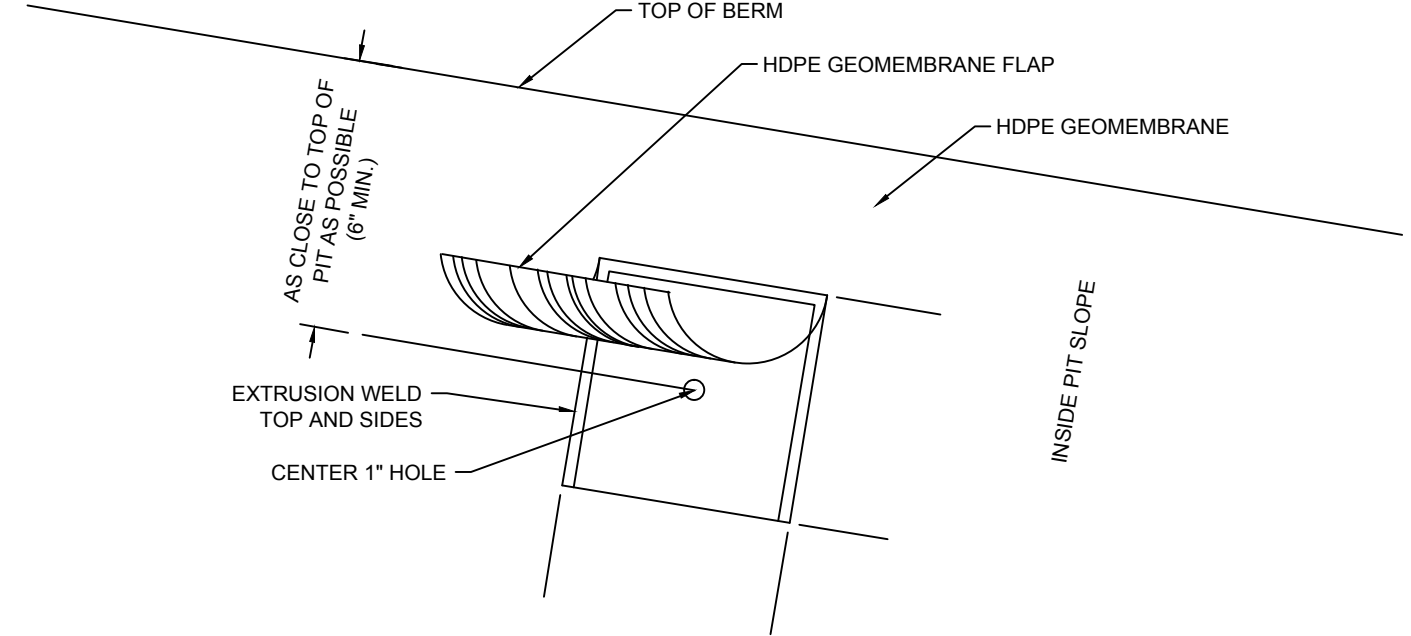
LEAK DETECTION SITE PLAN
SCALE: 1" = 20'

NOTE:
EMERGENCY ESCAPE LADDER SYSTEM SHALL BE INSTALLED ON THE INSIDE SLOPES OF THE PIT. THEY SHALL CONSIST OF 12" WIDE 2" RUNGS EXTRUSION WELDED HORIZONTALLY TO THE PRIMARY PIT LINER WITH THE RUNGS FACING OUT. SPACING BETWEEN RUNGS SHALL BE 24" O/C AND ONE LADDER SHALL BE INSTALLED AT EACH END OF POND 10.



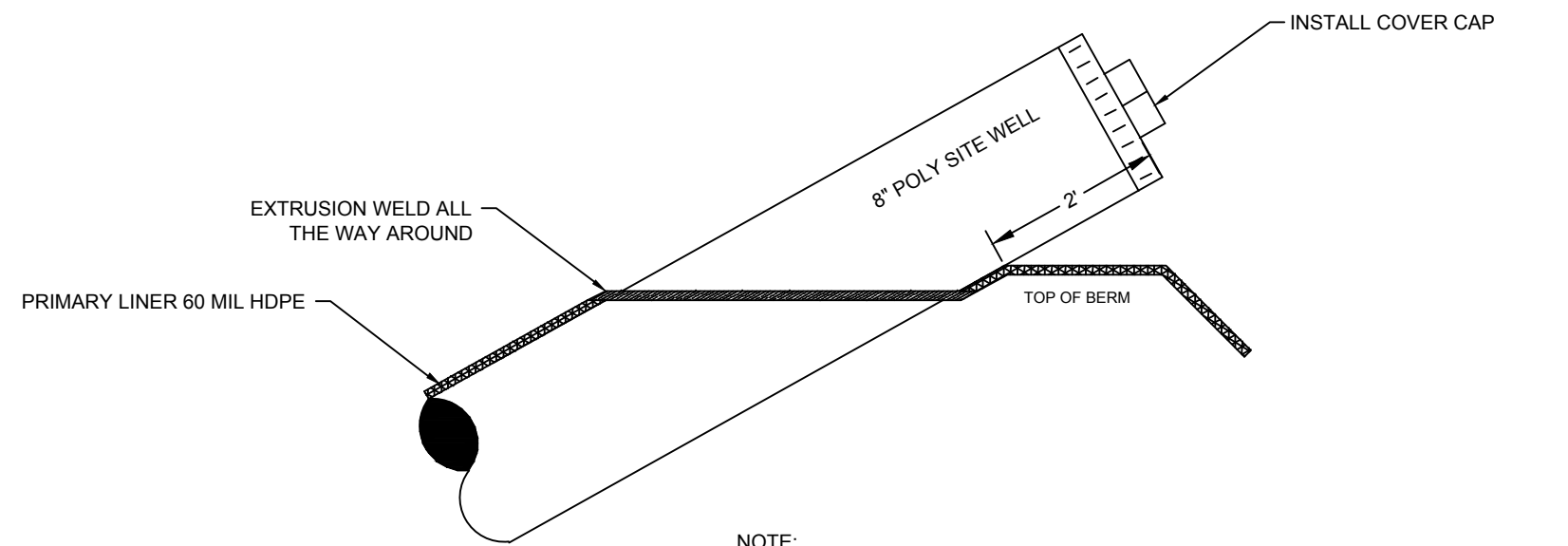
NOTE:
MAINTENANCE AND CLEANING OF ALL SWALES WILL BE REQUIRED ON A REGULAR BASIS AND AFTER EACH SIGNIFICANT STORM.

SWALE DETAIL
SCALE: 1" = 2'



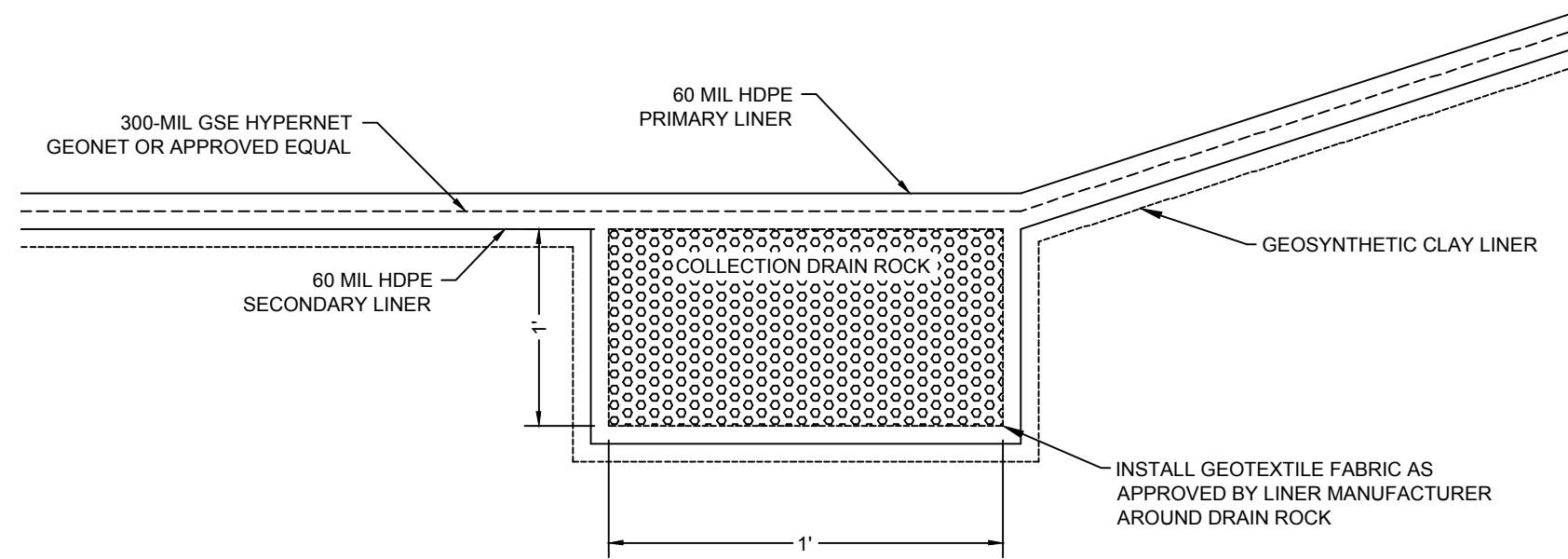
NOTES:
1. VENT HOLE SHALL PENETRATE PRIMARY LINER ONLY.
2. VENTS SHALL BE INSTALLED AT 50' O/C ALONG THE TOP INSIDE PERIMETER OF THE PIT LINER.

VENT DETAIL
NOT TO SCALE




NOTE:
THE PRIMARY LINER SHALL BE FUSED DIRECTLY TO THE 8\"/>

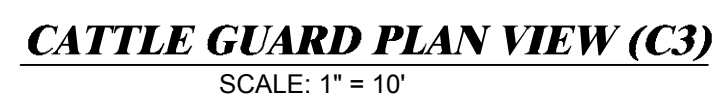
PRIMARY LINER PIPE PENETRATION
NOT TO SCALE




NOTE:
COLLECTION DRAIN ROCK SHALL BE ROUNDED TO PREVENT LINER PUNCTURE. GRADING OF THE DRAIN ROCK SHALL BE 100% PASSING THE 1 1/2\"/>

LEAK DETECTION COLLECTION TRENCH DETAIL
NOT TO SCALE

REVISIONS						 RIFFIN & ASSOCIATES, INC.			1414 ELK ST., SUITE 202 ROCK SPRINGS, WY 82901 (307) 362-5028						
NO.	DATE	DESCRIPTION	BY	CHK	APPR	<div>POND 10 UPGRADE</div> <div>LEAK DETECTION, LINER, AND SWALE DETAIL</div>									
1	3/6/14	ISSUED FOR BID	CSW	LGB											
<div>ISSUED FOR BID</div> <div>03/06/2014</div>						SCALE: AS SHOWN			DRG-LEAKDET-20347			REV 1			
						JOB No.: 20347									
						GARFIELD COUNTY, COLORADO									SHEET 5 OF 6



- | ESTIMATED MATERIALS FOR CATTLE GUARDS | | | | |
|---------------------------------------|---------------------------------------|-----------------------------------|------------------------------|---------------|
| ITEM | DETAIL | AMOUNT EACH 20' SECTION (C1 & C2) | AMOUNT EACH 20' SECTION (C3) | TOTAL AMOUNTS |
| CONCRETE | 3500 PSI | 5.93 CY | 9.74 CY | 33.46 CY |
| ANCHOR-BOLT | 3/4" X 12" W/ MATCHING WASHER AND NUT | 4 EA | 4 EA | 20 EA |
| REINFORCING BAR | #4 GRADE 40 STEEL REBAR | 240 LF | 872 LF | 1832 LF |
| CATTLE GUARD | 8' x 20" HEAVY DUTY HINGED | 1 EA | 1 EA | 5 EA |

REVISIONS						 DRG RIFFIN & ASSOCIATES, INC. 1414 ELK ST., SUITE 202 ROCK SPRINGS, WY 82901 (307) 362-5028	
NO.	DATE	DESCRIPTION	BY	CHK	APPR		
1	3/6/14	ISSUED FOR BID	CSW	LGB		POND 10 UPGRADE CATTLE GUARD DETAILS	
<div style="border: 2px solid black; border-radius: 15px; padding: 10px; display: inline-block;"> ISSUED FOR BID 03/06/2014 </div>							
						SCALE: AS SHOWN	
						JOB No.: 20347	
						DRG-CATTLEG-20347	
						GARFIELD COUNTY, COLORADO	
						SHEET 6 OF 6	