October 2016 Project No. 1648164

Luminant
1601 Bryan Street
Dallas, TX 75201

RE: CERTIFICATION OF LINED CONSTRUCTION
CCR SURFACE IMPOUNDMENTS, OAK GROVE SES
ROBERTSON COUNTY, TX

1.0 INTRODUCTION

The "Disposal of Coal Combustion Residuals (CCR) from Electric Utilities rule" (40 Code of Federal Regulations (CFR) Part 257), effective October 19, 2015, requires a certification attesting that existing CCR units meet the requirements of §257.71(a). This certification must be included in the Operating Record and posted to a publicly accessible internet site by October 17, 2016.

Pursuant to 40 CFR §257.71(b), this letter provides documentation and certification that existing surface impoundments at the Oak Grove Steam Electric Station (OGSES) were constructed with liner systems that meet the requirements in §257.71(a).

2.0 REGULATION REQUIREMENT

40 CFR §257.71(a)(1)(i)-(iii) requires documentation that each existing CCR surface impoundment is constructed with one of the following liner systems:

- (i) A liner consisting of a minimum 2 feet of compacted soil with a hydraulic conductivity (k) ≤ 1 x 10^{-7} centimeters per second (cm/sec);
- (ii) A composite liner that meets the requirements of §257.70(b), which consists of:
  - A 30-mil geomembrane (GM) or 60-mil if using high density polyethylene (HDPE), in direct and uniform contact with the underlying layer; and
  - A minimum 2-foot thick layer of compacted clay liner with a hydraulic conductivity less than or equal to 1x10^{-7} cm/sec;
- (iii) An equivalent alternative composite liner that meets the requirements of §257.70(c), which allows replacement of the compacted clay layer with a layer with a leakage rate no greater than the 2 feet of clay with a hydraulic conductivity of 1 x 10^{-7} cm/sec.

3.0 OAK GROVE SURFACE IMPOUNDEMENTS

Coal combustion byproducts such as fly ash, bottom ash, gypsum/scrubber sludge, and process wastewater are being generated during operation of the OGSES. Gypsum/scrubber sludge that cannot be recycled, and selected process wastewaters are currently managed in FGD-A, FGD-B, and FGD-C Ponds.

Golder Associates Inc. (Golder) provided construction quality assurance (CQA) services during construction of the liner systems within the FGD-A, FGD-B, and FGD-C Ponds. Golder prepared CQA reports summarizing the liner system installation for each of the ponds documenting that they were constructed with liner systems in compliance with the CCR Rule.

Golder Associates Inc.
500 Century Plaza Drive, Suite 190
Houston, TX 77073 USA
Tel: (281) 821-6868 Fax: (281) 821-6870 www.golder.com

3.1 FGD-A Pond

Golder was retained by Fluor Enterprises, Inc. (Fluor) to provide third party CQA monitoring and testing services during the construction of the clay liner for FGD-A, previously referred to as the 'FGD Blowdown Pond'. Construction of the FGD Blowdown Pond clay liner system took place from August 28 to October 18, 2008. The following documents were referred to for guidance in the construction and quality assurance of the subgrade and clay liner:

- Contractor's Quality Assurance/Quality Control Plan, Oak Grove Project, Waste Containment Units, FGD Impoundment, Fluor Enterprises, June 2008.

After completion of construction, on November 17, 2008, Golder submitted a report titled *FGD Pond Soil Liner Evaluation Report* to Fluor summarizing the CQA monitoring activities, observations, and the results of the tests conducted during the preparation of the subgrade and construction of the clay liner. Field test sample location maps and a clay liner thickness verification map were included in this report.

FGD-A Pond's liner consists of a minimum 3-foot thick clay liner with a hydraulic conductivity of no greater than 1.0×10^{-7} cm/sec. The surveyed clay liner thickness verification drawing was provided by Survey and Mapping, Inc. (SAM) of Austin, Texas and is included as Figure 10 in the *FGD Pond Soil Liner Evaluation Report*. This figure is included in Attachment 1.

Hydraulic conductivity samples were collected from each 6-inch lift at least once every 40,000 square feet of the compacted clay liner. The compacted clay samples were sent to and tested at either Golder's Atlanta, Georgia or Houston, Texas soils testing laboratories. The hydraulic conductivity was determined according to ASTM D5084, Method D in Atlanta and Method F in Houston. Sixty-two samples of the FGD-A Pond's clay liner were tested for saturated hydraulic conductivity. The results indicate that the maximum measured hydraulic conductivity was 9.9×10^{-7} cm/sec; the minimum value was 1.5×10^{-9} cm/sec; and the geometric mean was 2.14×10^{-8} cm/sec.

The liner system in FGD-A Pond meets the liner design criteria in §257.71(a)(1)(i) and the testing requirements in §257.71(a)(2).

3.2 FGD-B Pond

Golder was retained by Luminant to provide third party CQA monitoring and testing services during the construction of the composite liner for the FGD-B Pond. Construction of the FGD-B Pond composite liner system took place from October 7 to November 9, 2011. The following documents were referred to for guidance in the construction and quality assurance of the subgrade, clay, and geomembrane liner:

- Golder Associates Inc. (March 2011). Soil Liner Quality Control Plan, Oak Grove Steam Electric Station, Robertson County, TX.
- Golder Associates Inc. (October 2011). Geomembrane Liner Quality Control Plan, Oak Grove Steam Electric Station, Robertson County, TX.

After completion of construction in January 2012, Golder submitted a report titled *Liner Evaluation Report, Oak Grove SES, FGD-B Pond* to Luminant summarizing the CQA monitoring activities, observations, and the results of the tests conducted during the preparation of the subgrade and construction of the clay liner. Field testing location maps, a clay liner thickness verification map, and geomembrane panel layout and testing maps were included in this report. Excerpts from this report, showing the liner details and as-built elevations, are included in Attachment 2 to this letter.

FGD-B Pond was constructed with a minimum 2-foot thick compacted clay liner directly overlain by a textured 60-mil HDPE geomembrane liner. A 1-foot thick layer of protective soil cover was placed over the geomembrane.

Hydraulic conductivity testing was performed at least once every 40,000 square feet of compacted clay liner, for each 6-inch (compacted) lift. Soil samples were sent to and tested at Golder's Atlanta, Georgia or Houston, Texas geotechnical laboratory. The coefficient of hydraulic conductivity was determined according to ASTM D5084, Method D in Atlanta or Method F in Houston. Fifty-two samples of the FGD-B Pond's clay liner were tested for saturated hydraulic conductivity. The results indicate that the maximum measured hydraulic conductivity was 8.80×10^{-7} cm/sec; the minimum value was 4.3×10^{-9} cm/sec; and the geometric mean was 1.92×10^{-8} cm/sec.

The liner system in FGD-B Pond meets the liner design criteria in §257.70(a)(1)(ii) and the testing requirements in §257.71(a)(2).

3.3 FGD-C Pond

Golder was retained by Luminant to provide third party CQA monitoring and testing services during the construction of the composite liner system in FGD-C Pond. Placement of the FGD-C Pond composite liner began on August 21, 2015. The protective cover placement was completed in August 2016.

The following documents were referred to for guidance in the construction and quality assurance of the subgrade, clay, and geomembrane liner:

- Golder Associates Inc. (June 2015). Soil Liner Quality Control Plan, Oak Grove Steam Electric Station, Robertson County, TX.
- Golder Associates Inc. (June 2015). Geomembrane Liner Quality Control Plan, Oak Grove Steam Electric Station, Robertson County, TX

A report titled *FGD-C Pond Liner Evaluation Report* summarizing the CQA monitoring activities, observations and the results of the tests conducted by Golder during the preparation of the subgrade and installation of the clay and geomembrane liners was submitted to Luminant in October 2016. Field testing location maps, a clay liner thickness verification map, and geomembrane panel layout and testing maps were included in this report. Attachment 3 contains excerpts from this report.

FGD-C pond composite liner system comprises a 2-foot thick clay liner overlain by a textured 60-mil HDPE geomembrane and a 2-foot thick ash protective cover layer.

Hydraulic conductivity testing was performed at least once every 40,000 square feet of compacted clay liner, for each 6-inch (compacted) lift. Soil samples were sent to and tested at Golder's Houston, Texas geotechnical laboratory. The coefficient of hydraulic conductivity was determined according to ASTM D5084, Method F. Eighty-three samples of the FGD-C Pond's clay liner were tested for saturated hydraulic conductivity. The results indicate that the maximum measured hydraulic conductivity was 9.48×10^{-7} cm/sec; the minimum value was 1.26×10^{-8} cm/sec; and the geometric mean was 3.55×10^{-8} cm/sec.

The liner system in FGD-C Pond meets the liner design criteria in §257.70(a)(1)(ii) and the testing requirements in §257.71(a)(2).

4.0 CONCLUSION

Based on a review of the CQA reports for the liner systems in FGD-A Pond, FGD-B Pond, and FGD-C Pond, Golder certifies that the existing surface impoundments at OGSES meet the requirements of §257.71(a) and classify as lined CCR surface impoundments.

If further information is required, please call the undersigned at (281) 821-6868.

Sincerely,

GOLDER ASSOCIATES INC.

Varenya Kumar
Staff Engineer

Jeffrey B. Fassett, PE
Senior Consultant and Associate

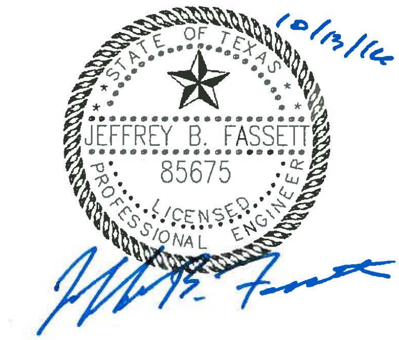
VK/JBF/kc

Attachments:

Attachment 1 – FGD-A Liner Information
Attachment 2 – FGD-A Liner Information
Attachment 3 – FGC-C Liner Information

CERTIFICATION

I hereby certify that the documentation as to whether the existing CCR units at the Oak Grove Steam Electric Station meets the requirements of §257.71(a) is accurate and that I am a duly Licensed Professional Engineer under the laws of the state of Texas.

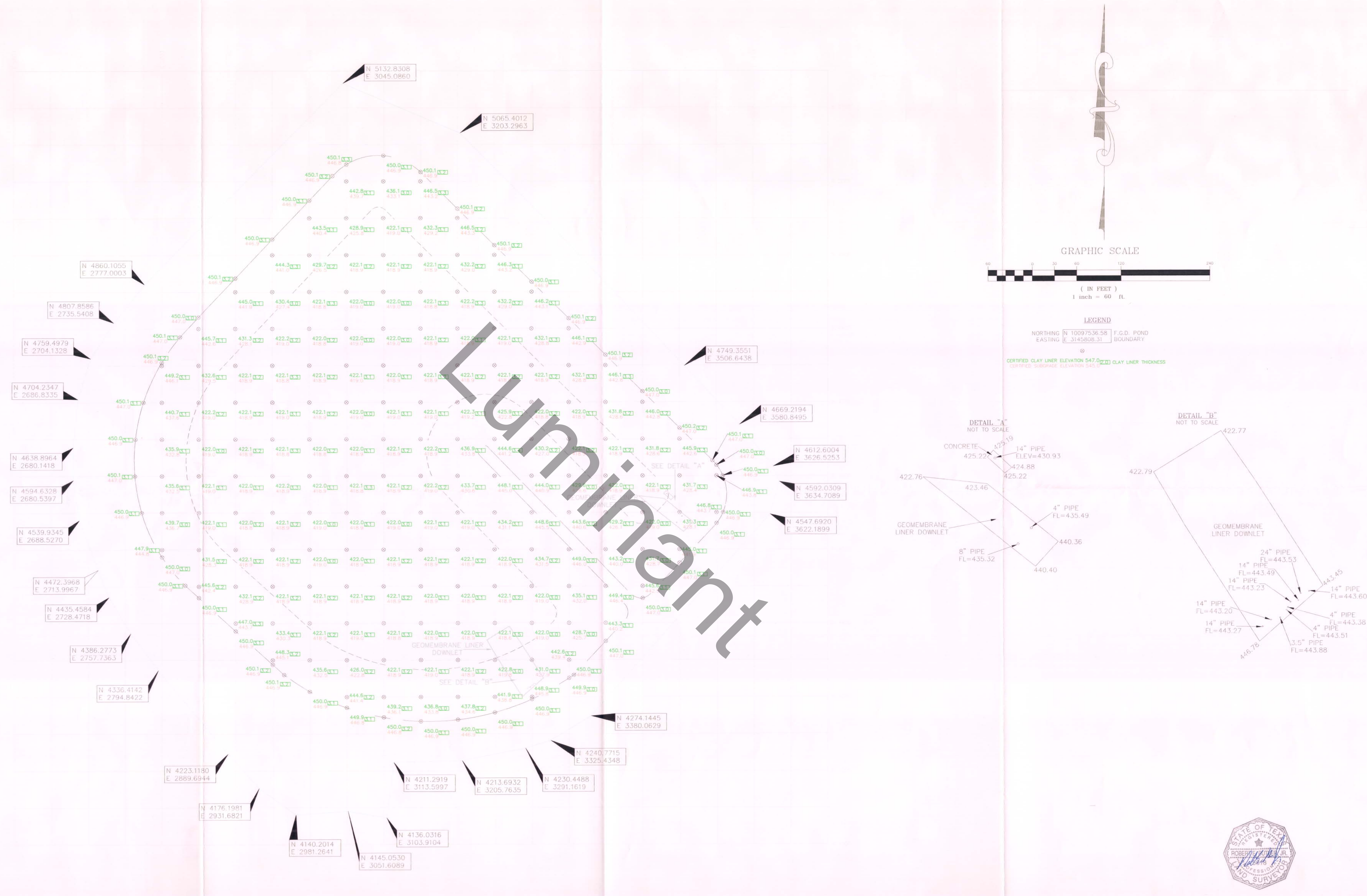


Jeffrey B. Fassett, PE
Golder Associates Inc.
Firm Registration Number F-2578

5.0 REFERENCES:

- Fluor Enterprises, Inc. (June 2008). Contractor's Quality Assurance/Quality Control Plan, Oak Grove Project, Waste Containment Units.
- Golder Associates Inc. (November 2008). FGD Pond Soil Liner Evaluation Report.
- Golder Associates Inc. (March 2011). Soil Liner Quality Control Plan (Oak Grove Steam Electric Station).
- Golder Associates Inc. (October 2011). Geomembrane Liner Quality Control Plan (Oak Grove Steam Electric Station).
- Golder Associates Inc. (January 2012). Liner Evaluation Report, Oak Grove SES, FGD-B Pond.
- Golder Associates Inc. (June 2015). Soil Liner Quality Control Plan, Oak Grove Steam Electric Station, Robertson County, TX.
- Golder Associates Inc. (June 2015). Geomembrane Liner Quality Control Plan, Oak Grove Steam Electric Station, Robertson County, TX.
- Golder Associates Inc. (October 2016). FGD-C Pond Liner Evaluation Report.

ATTACHMENT 1
FGD-A LINER INFORMATION



STATE OF TEXAS REGISTERED ROBERT E. RUTHER JR. PROFESSIONAL LAND SURVEYOR

NO.	REVISIONS	BY	DATE

PROJECT: JAMES CONSTRUCTION OAK GROVE FGD POND
JOB NUMBER: 28172-09
DATE: NOVEMBER 19, 2008
SCALE: 1" = 60'
SURVEYOR: R.E.B.
TECHNICIAN: G.HANSON
DRAWING: OAK GROVE POND.DWG
FIELDNOTES: N/A
PARTYCHIEF: J.SANDOVAL
FIELDBOOKS: 6293

SAM INC.
SURVEYING•AERIAL MAPPING•ENGINEERING
5508 WEST HIGHWAY 290
BUILDING B
AUSTIN TEXAS, 78735
(512) 447-0575
FAX: (512) 326-3029
EMAIL: SAM@SAMINC.BIZ

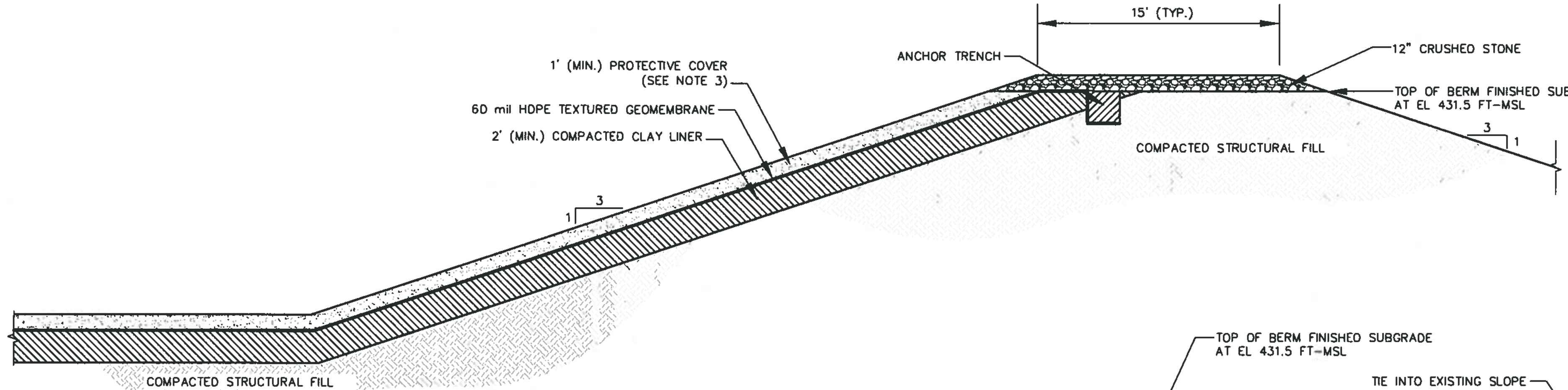
SUBGRADE AND CLAY LINER ELEVATIONS AS OF OCTOBER 23, 2008
OAK GROVE POWER PLANT – F.G.D. POND
ROBERTSON COUNTY, TEXAS

SHEET 1 OF 1

DWG. NO.:

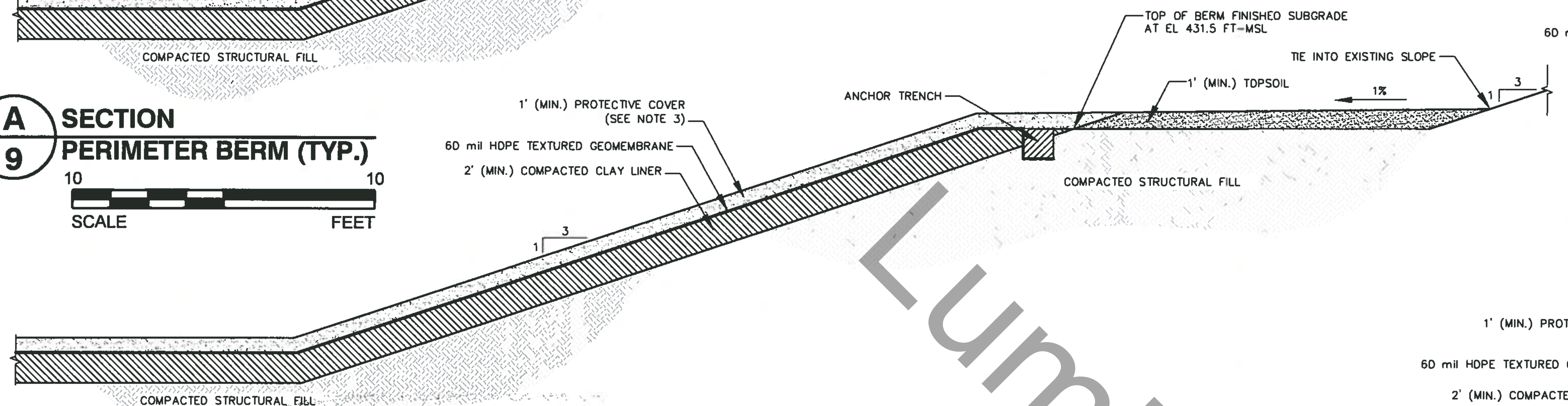
NOVEMBER 19, 2008

ATTACHMENT 2
FGD-B LINER INFORMATION



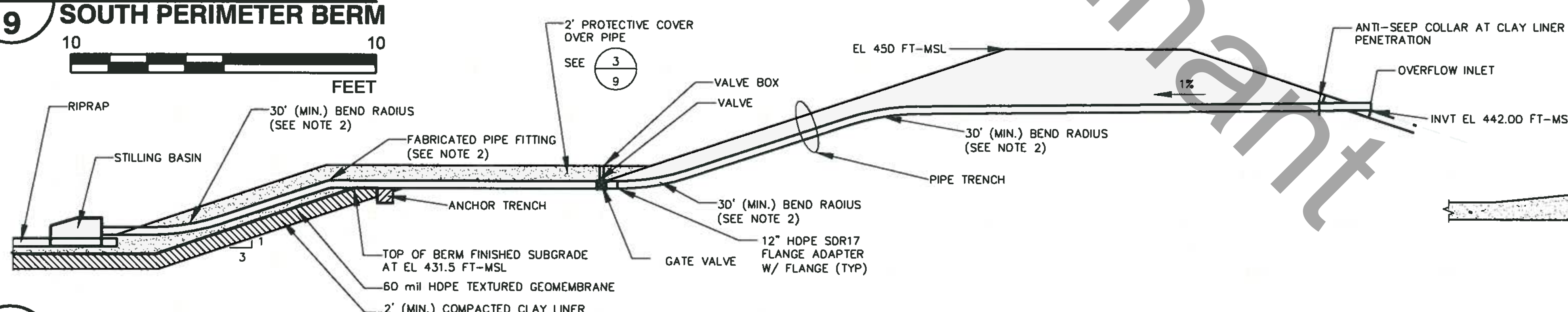
A/9 SECTION PERIMETER BERM (TYP.)

SCALE 10 10 FEET



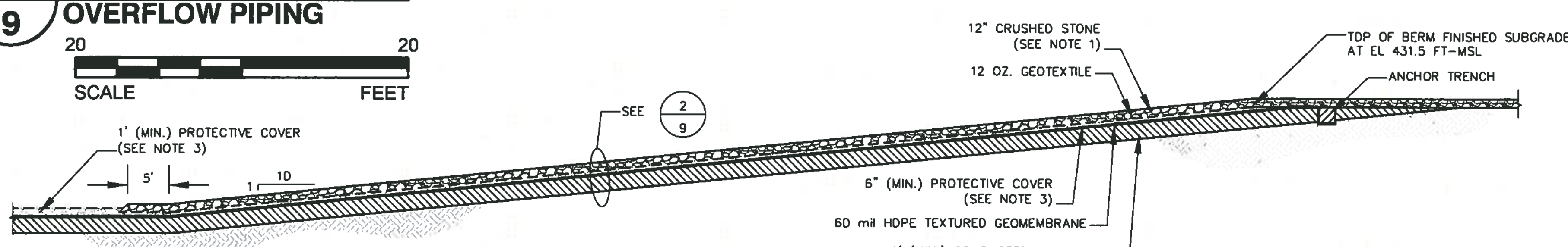
B/9 SECTION SOUTH PERIMETER BERM

10 10 FEET



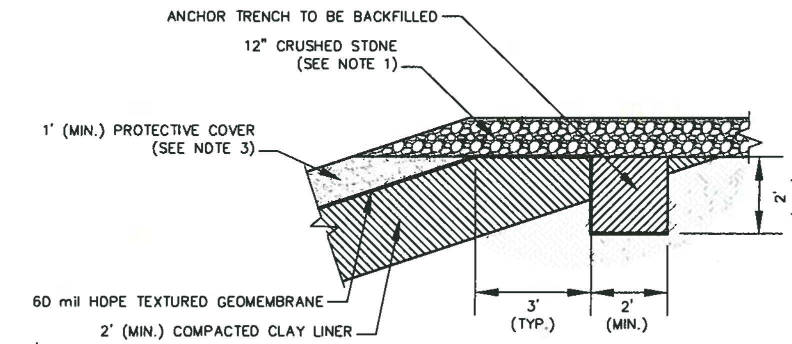
C/9 SECTION OVERFLOW PIPING

SCALE 20 20 FEET



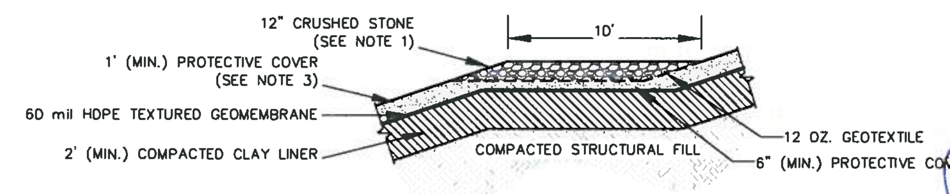
D/9 SECTION ACCESS ROAD

20 20 SCALE FEET



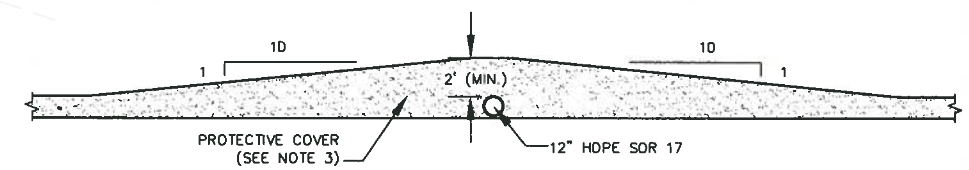
1/9 DETAIL ANCHOR TRENCH

5 5 SCALE FEET



2/9 DETAIL ACCESS ROAD

10 10 SCALE FEET



3/9 SECTION OVERFLOW PIPE COVER

10 10 SCALE FEET

NOTES

1. COMPACTED CRUSHED STONE ROAD BASE.
2. USE FABRICATED PIPE FITTINGS WHERE 30' (MIN.) BEND RADIUS IS EXCEEDED.
3. PROTECTIVE COVER WILL CONSIST OF ONSITE SOILS.

Golder Associates

REV	DATE	DES	REVISION DESCRIPTION	CADD	CED	CHK	RVW
1	04/2011		South Berm Realignment				

STATE OF TEXAS CHARLES FRED RICKERT 62392 LICENSED PROFESSIONAL ENGINEER

GOLDER ASSOCIATES INC. F-2578

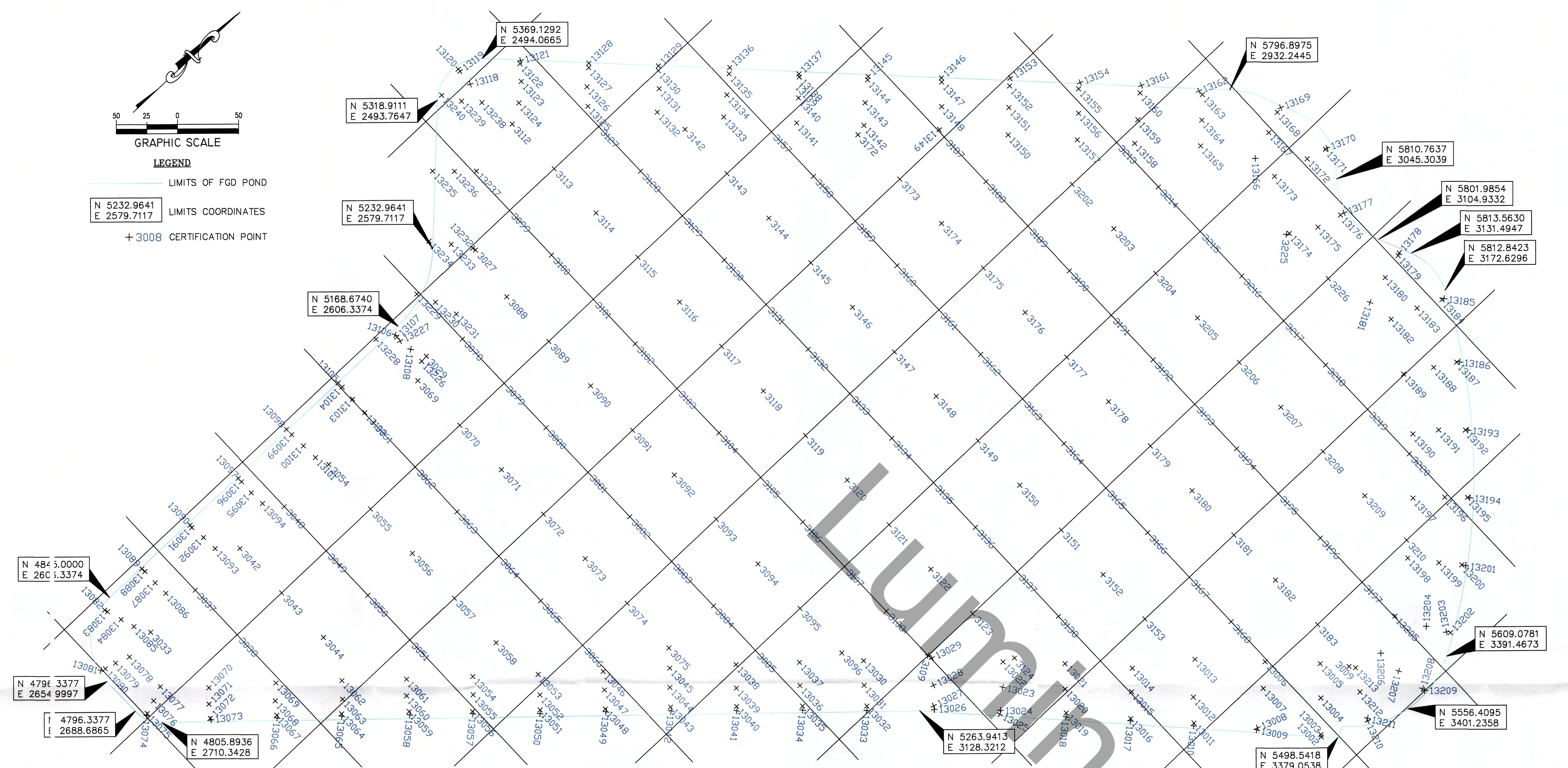
PROJECT
LUMINANT
OAK GROVE SES
FGD - B POND CONSTRUCTION
ROBERTSON COUNTY, TEXAS

TITLE
LINER DETAILS

PROJECT No.		113-94788.01
FILE No.		113947886009
SCALE		AS SHOWN
DESIGN	CEI	08/2011
CADD	VJE	09/2011
CHECK	CFR	09/2011
REVIEW		09/2011

9

Drawing File: J:_2011\113-94788 - Oak Grove_G - SLER - FGD-B Pond \ 113947886009.dwg | Layout: 11x17 | Modified: 1/24/2012 2:35:07 PM Miaskowski | Plotted: Tuesday, January 24, 2012 2:35:21 PM Miaskowski



POINT	NORTHING	EASTING	CERT SG	CERT CLAY	CLAY THICK	CERT COVER	COVER THICK
3009	554[illegible].05	3342.82	413.0	415.2	2.2	416.1	1.0
3027	525[illegible].61	2604.36	417.5	420.0	2.4	421.0	1.0
3029	516[illegible].67	2640.27	418.0	420.2	2.3	421.3	1.0
3033	4850.00	2650.00	419.7	422.0	2.3	423.0	1.0
3037	4900.00	2650.00	419.4	421.6	2.2	422.7	1.1
3038	4900.00	2700.00	419.2	421.3	2.1	422.4	1.2
3042	4950.00	2650.00	419.2	421.4	2.2	422.4	1.0
3043	4950.00	2700.00	419.0	421.1	2.1	422.2	1.1
3044	4950.00	2750.00	418.7	420.8	2.1	421.9	1.0
3048	5000.00	2650.00	418.9	421.1	2.2	422.1	1.1
3049	5000.00	2700.00	418.6	420.9	2.3	421.9	1.0
3050	5000.00	2750.00	418.2	420.6	2.3	421.6	1.0
3051	5000.00	2800.00	418.0	420.2	2.2	421.4	1.2
3054	5050.00	2650.00	418.4	420.8	2.4	421.9	1.0
3055	5050.00	2700.00	418.3	420.5	2.2	421.5	1.0
3056	5050.00	2750.00	418.1	420.2	2.1	421.4	1.2
3057	5050.00	2800.00	417.9	420.0	2.1	421.0	1.0
3058	5050.00	2850.00	417.5	419.7	2.2	420.9	1.1
3061	5100.00	2650.00	418.4	420.5	2.1	421.5	1.0
3062	5100.00	2700.00	417.9	420.1	2.3	421.3	1.2
3063	5100.00	2750.00	417.7	420.0	2.2	421.0	1.0
3064	5100.00	2800.00	417.4	419.7	2.4	420.9	1.2
3065	5100.00	2850.00	417.2	419.4	2.2	420.5	1.2
3066	5100.00	2900.00	416.9	419.1	2.3	420.2	1.0
3069	5150.00	2650.00	418.1	420.4	2.3	421.4	1.0
3070	5150.00	2700.00	417.7	419.9	2.2	421.1	1.1
3071	5150.00	2750.00	417.5	419.6	2.2	420.7	1.1
3072	5150.00	2800.00	417.3	419.5	2.2	420.5	1.0
3073	5150.00	2850.00	417.0	419.1	2.1	420.3	1.2
3074	5150.00	2900.00	416.8	418.8	2.0	419.9	1.1
3075	5150.00	2950.00	416.6	418.6	2.1	419.8	1.1
3078	5200.00	2650.00	417.7	419.9	2.2	421.1	1.2
3079	5200.00	2700.00	417.4	419.6	2.2	420.6	1.0
3080	5200.00	2750.00	417.1	419.4	2.3	420.5	1.2
3081	5200.00	2800.00	416.8	419.1	2.3	420.1	1.0
3082	5200.00	2850.00	416.7	418.9	2.2	419.9	1.1
3083	5200.00	2900.00	416.5	418.6	2.1	419.6	1.0
3084	5200.00	2950.00	416.1	418.4	2.3	419.5	1.1
3085	5200.00	3000.00	416.0	418.1	2.1	419.1	1.0
3088	5250.00	2650.00	417.4	419.7	2.3	420.8	1.0
3089	5250.00	2700.00	417.3	419.5	2.2	420.5	1.0
3090	5250.00	2750.00	417.0	419.1	2.1	420.1	1.0
3091	5250.00	2800.00	416.6	418.9	2.3	419.9	1.0
3092	5250.00	2850.00	416.3	418.6	2.3	419.6	1.0
3093	5250.00	2900.00	416.2	418.3	2.0	419.3	1.1
3094	5250.00	2950.00	415.8	418.1	2.3	419.1	1.1
3095	5250.00	3000.00	415.7	417.8	2.1	419.0	1.2
3096	5250.00	3050.00	415.5	417.6	2.1	419.0	1.4
3099	5300.00	2600.00	417.5	419.6	2.0	420.8	1.2
3100	5300.00	2650.00	417.2	419.5	2.3	420.4	1.0
3101	5300.00	2700.00	417.0	419.2	2.2	420.2	1.0
3102	5300.00	2750.00	416.8	418.9	2.1	419.9	1.0
3103	5300.00	2800.00	416.5	418.6	2.1	419.7	1.1
3104	5300.00	2850.00	416.1	418.3	2.2	419.6	1.3
3105	5300.00	2900.00	415.9	418.1	2.3	419.2	1.1
3106	5300.00	2950.00	415.5	417.8	2.2	418.7	1.0
3107	5300.00	3000.00	415.3	417.7	2.4	418.7	1.0
3108	5300.00	3050.00	415.2	417.3	2.0	418.3	1.1
3109	5300.00	3100.00	414.9	417.0	2.1	418.5	1.4
3112	5350.00	2550.00	417.3	419.6	2.3	420.8	1.2
3113	5350.00	2600.00	417.3	419.5	2.3	420.5	1.0

POINT	NORTHING	EASTING	CERT SG	CERT CLAY	CLAY THICK	CERT COVER	COVER THICK
3114	5350.00	2650.00	416.9	419.3	2.4	420.2	1.0
3115	5350.00	2700.00	416.6	418.9	2.3	419.9	1.1
3116	5350.00	2750.00	416.3	418.6	2.4	419.6	1.0
3117	5350.00	2800.00	416.2	418.3	2.0	419.3	1.0
3118	5350.00	2850.00	415.8	418.1	2.3	419.2	1.1
3119	5350.00	2900.00	415.6	417.9	2.3	418.9	1.0
3120	5350.00	2950.00	415.4	417.5	2.1	418.6	1.1
3121	5350.00	3000.00	415.0	417.4	2.3	418.3	1.0
3122	5350.00	3050.00	414.8	417.1	2.3	418.2	1.0
3123	5350.00	3100.00	414.7	416.8	2.1	417.8	1.0
3124	5350.00	3150.00	414.3	416.7	2.4	417.8	1.2
3127	5400.00	2600.00	416.9	419.1	2.2	420.1	1.0
3128	5400.00	2650.00	416.6	418.9	2.3	419.9	1.0
3129	5400.00	2700.00	416.2	418.6	2.4	419.6	1.0
3130	5400.00	2750.00	416.0	418.3	2.4	419.4	1.0
3131	5400.00	2800.00	415.8	418.1	2.3	419.1	1.0
3132	5400.00	2850.00	415.7	417.8	2.1	418.8	1.0
3133	5400.00	2900.00	415.3	417.6	2.3	418.6	1.0
3134	5400.00	2950.00	415.0	417.3	2.3	418.4	1.1
3135	5400.00	3000.00	414.9	417.0	2.1	418.0	1.0
3136	5400.00	3050.00	414.5	416.8	2.3	417.7	1.0
3137	5400.00	3100.00	414.3	416.4	2.2	417.5	1.1
3138	5400.00	3150.00	413.9	416.3	2.3	417.2	1.0
3142	5450.00	2650.00	416.4	418.6	2.2	419.7	1.1
3143	5450.00	2700.00	416.0	418.4	2.4	419.4	1.1
3144	5450.00	2750.00	415.9	418.0	2.1	419.1	1.2
3145	5450.00	2800.00	415.6	417.8	2.2	418.8	1.1
3146	5450.00	2850.00	415.2	417.5	2.3	418.5	1.0
3147	5450.00	2900.00	414.9	417.2	2.3	418.2	1.0
3148	5450.00	2950.00	414.8	417.0	2.2	418.0	1.0
3149	5450.00	3000.00	414.5	416.7	2.2	417.9	1.2
3150	5450.00	3050.00	414.2	416.5	2.4	417.7	1.2
3151	5450.00	3100.00	414.0	416.3	2.3	417.3	1.0
3152	5450.00	3150.00	413.7	415.9	2.2	417.1	1.2
3153	5450.00	3200.00	413.4	415.9	2.5	417.0	1.1
3157	5500.00	2700.00	415.8	418.1	2.3	419.2	1.0
3158	5500.00	2750.00	415.5	417.7	2.2	418.8	1.1
3159	5500.00	2800.00	415.4	417.5	2.1	418.6	1.2
3160	5500.00	2850.00	415.0	417.2	2.2	418.2	1.0
3161	5500.00	2900.00	414.7	417.1	2.4	418.1	1.0
3162	5500.00	2950.00	414.6	416.7	2.1	417.8	1.1
3163	5500.00	3000.00	414.2	416.5	2.3	417.4	1.0
3164	5500.00	3050.00	414.0	416.3	2.3	417.3	1.0
3165	5500.00	3100.00	413.8	415.9	2.1	417.0	1.1
3166	5500.00	3150.00	413.5	415.7	2.3	416.7	1.0
3167	5500.00	3200.00	413.1	415.4	2.3	416.5	1.1
3168	5500.00	3250.00	412.9	415.5	2.6	416.5	1.0
3172	5550.00	2750.00	415.3	417.6	2.3	418.5	1.0
3173	5550.00	2800.00	415.0	417.2	2.2	418.2	1.1
3174	5550.00	2850.00	414.7	416.9	2.2	418.0	1.1
3175	5550.00	2900.00	414.6	416.8	2.2	417.8	1.0
3176	5550.00	2950.00	414.1	416.4	2.3	417.5	1.1
3177	5550.00	3000.00	414.0	416.3	2.3	417.3	1.0
3178	5550.00	3050.00	413.8	416.0	2.1	417.0	1.0
3179	5550.00	3100.00	413.5	415.7	2.2	416.8	1.1
3180	5550.00	3150.00	413.2	415.4	2.2	416.4	1.0
3181	5550.00	3200.00	413.0	415.2	2.3	416.4	1.2
3182	5550.00	3250.00	412.8	415.1	2.3	416.1	1.0
3183	5550.00	3300.00	412.7	415.2	2.4	416.2	1.0
3187	5600.00	2800.00	414.7	417.0	2.3	418.1	1.1
3188	5600.00	2850.00	414.6	416.9	2.3	417.8	1.0

POINT	NORTHING	EASTING	CERT SG	CERT CLAY	CLAY THICK	CERT COVER	COVER THICK
3189	5600.00	2900.00	414.2	416.6	2.4	417.7	1.1
3190	5600.00	2950.00	413.9	416.2	2.2	417.2	1.1
3191	5600.00	3000.00	413.7	415.9	2.2	416.9	1.1
3192	5600.00	3050.00	413.4	415.6	2.3	416.6	1.0
3193	5600.00	3100.00	413.2	415.4	2.3	416.5	1.0
3194	5600.00	3150.00	413.1	415.2	2.1	416.2	1.0
3195	5600.00	3200.00	412.8	415.0	2.2	416.0	1.0
3196	5600.00	3250.00	412.9	415.1	2.2	416.1	1.0
3197	5600.00	3300.00	412.7	415.1	2.4	416.0	1.0
3202	5650.00	2900.00	413.9	416.2	2.2	417.2	1.0
3203	5650.00	2950.00	413.8	415.8	2.0	417.0	1.1
3204	5650.00	3000.00	413.4	415.6	2.2	416.6	1.0
3205	5650.00	3050.00	413.1	415.3	2.3	416.5	1.2
3206	5650.00	3100.00	412.9	415.1	2.3	416.2	1.0
3207	5650.00	3150.00	412.8	415.0	2.2	416.1	1.1
3208	5650.00	3200.00	412.9	415.1	2.1	416.1	1.0
3209	5650.00	3250.00	412.8	415.1	2.3	416.1	1.0
3210	5650.00	3300.00	412.8	415.0	2.3	416.1	1.0
3213	5700.00	2900.00	413.7	415.9	2.3	417.2	1.3
3214	5700.00	2950.00	413.3	415.7	2.4	416.7	1.0
3215	5700.00	3000.00	413.0	415.4	2.3	416.4	1.0
3216	5700.00	3050.00	412.8	415.1	2.3	416.2	1.0
3217	5700.00	3100.00	412.7	415.3	2.6	416.3	1.0
3218	5700.00	3150.00	412.9	415.0	2.1	416.1	1.1
3219	5700.00	3200.00	412.7	415.1	2.4	416.1	1.1
3220	5700.00	3250.00	412.9	415.0	2.1	416.0	1.0
3225	5750.00	3050.00	412.8	415.1	2.3	416.1	1.0
3226	5750.00	3100.00	412.8	415.2	2.4	416.2	1.0
13002	5489.11	3369.27	430.7	432.7	2.0	433.7	1.0
13003	5490.24	3367.64	428.3	430.4	2.1	431.7	1.3
13004	5510.72	3345.80	421.5	423.7	2.2	425.0	1.3
13005	5529.63	3324.87	412.9	415.0	2.1	416.2	1.3
13006	5498.03	3292.96	412.8	414.9	2.1	416.1	1.3
13007	5481.89	3307.88	419.8	422.1	2.3	423.6	1.6
13008	5456.25	3328.36	428.0	430.0	2.0	431.2	1.2
13009	5454.65	3329.13	N/A	430.6	N/A	431.7	1.1
13010	5419.19	3291.37	N/A	430.6	N/A	431.8	1.3
13011	5420.90	3289.73	427.8	429.9	2.1	431.0	1.1
13012	5435.08	3273.99	420.4	422.6	2.2	423.9	1.3
13013	5457.37	3252.18	413.3	415.5	2.2	417.0	1.5
13014	5414.87	3222.38	413.8	416.0	2.2	417.6	1.6
13015	5401.27	3236.12	420.1	422.1	2.0	423.7	1.6
13016	5385.62	3251.66	427.7	429.7	2.0	431.0	1.2
13017	5384.27	3252.95	N/A	430.3	N/A	431.4	1.2
13018	5348.17	3214.35	N/A	430.5	N/A	431.6	1.1
13019	5350.37	3211.99	426.8	429.0	2.2	430.7	1.8
13020	5363.21	3197.15	420.4	422.6	2.2	424.0	1.3
13021	5377.39	3181.89	414.2	416.2	2.0	417.7	1.6
13022	5341.06	3145.94	414.6	416.6	2.0	418.2	1.6
13023	5326.64	3160.93	421.1	423.1	2.0	424.8	1.8
13024	5312.32	3173.36	427.0	429.2	2.2	431.1	1.9
13025	5309.86	3175.27	N/A	431.1	N/A	432.1	1.0
13026	5273.20	3135.80	N/A	430.7	N/A	432.0	1.3
13027	5275.08	3133.23	427.0	429.2	2.2	431.0	1.8
13028	5286.48	3120.85	421.7	423.9	2.2	425.5	1.5
13029	5300.91	3103.69	415.1	417.1	2.0	418.7	1.6
13030	5258.72	3066.82	415.4	417.4	2.0	419.4	2.0
13031	5245.19	3081.78	421.7	423.8	2.1	425.2	1.5
13032	5235.16	3095.73	427.0	429.2	2.2	430.9	1.7
13033	5232.74	3098.31	N/A	431.0	N/A	432.1	1.1
13034	5194.57	3062.14	N/A	430.8	N/A	432.0	1.2

POINT	NORTHING	EASTING	CERT SG	CERT CLAY	CLAY THICK	CERT COVER	COVER THICK
13035	5196.60	3059.64	427.1	429.3	2.2	430.6	1.3
13036	5206.58	3046.01	421.4	423.5	2.1	424.8	1.3
13037	5219.37	3031.85	415.7	417.8	2.1	419.3	1.4
13038	5180.48	2997.71	416.1	418.3	2.2	419.6	1.3
13039	5167.40	3012.03	421.9	423.9	2.0	425.4	1.5
13040	5157.16	3023.08	426.8	429.0	2.2	430.4	1.4
13041	5154.94	3025.79	N/A	430.6	N/A	431.6	1.0
13042	5115.85	2988.94	N/A	430.4	N/A	431.5	1.0
13043	5117.68	2986.29	426.7	428.9	2.2	430.0	1.1
13044	5128.34	2974.26	421.3	423.5	2.2	424.9	1.4
13045	5139.19	2962.55	416.7	418.8	2.1	420.2	1.4
13046	5097.50	2927.25	417.0	419.2	2.2	420.3	1.1
13047	5087.79	2939.10	422.0	424.1	2.1	425.1	1.0
13048	5077.50	2950.93	427.0	429.1	2.1	430.7	1.6
13049	5076.49	2953.06	N/A	430.2	N/A	431.4	1.2
13050	5036.25	2917.19	N/A	430.7	N/A	431.7	1.1
13051	5038.30	2914.90	427.0	429.2	2.2	430.5	1.3
13052	5046.60	2905.90	423.0	425.2	2.2	426.4	1.2
13053	5057.12	2892.57	417.5	419.7	2.2	420.8	1.1
13054	5017.04	2857.04	417.8	420.1	2.3	421.3	1.3
13055	5007.05	2868.20	422.7	424.8	2.1	426.1	1.3
13056	4997.15	2877.75	427.2	429.4	2.2	431.0	1.6
13057	4996.21	2879.44	N/A	430.3	N/A	431.5	1.1
13058	4957.90	2845.02	N/A	430.5	N/A	431.4	1.0
13059	4959.30	2842.65	427.1	429.3	2.2	430.5	1.2
13060	4966.61	2831.80	422.8	424.9	2.1	426.2	1.2
13061	4976.05	2821.67	418.4	420.4	2.0	421.9	1.4
13062	4936.82	2786.19	418.5	420.6	2.1	422.1	1.5
13063	4926.59	2797.85	423.5	425.5	2.0	426.8	1.3
13064	4917.75	2806.02	427.4	429.6	2.0	431.1	1.5
13065	4916.68	2807.61	N/A	430.5	N/A	431.7	1.2
13066	4877.13	2772.34	N/A	430.8	N/A	431.9	1.0
13067	4878.40	2770.40	427.6	429.8	2.2	430.9	1.1
13068	4885.56	2761.00	423.5	425.6	2.1	427.0	1.5
13069	4896.14	2750.49	418.8	421.0	2.2	422.7	1.7
13070	4853.36	2715.90	418.9	421.1	2.2	423.8	2.6
13071	4844.19	2725.82	424.2	426.4	2.2	427.6	1.3
13072	4837.08	2735.05	427.9	430.1	2.2	431.6	1.6
13073	4836.35	2736.19	N/A	431.1	N/A	432.1	1.0
13074	4800.76	2697.82	N/A	430.8	N/A	431.8	1.0
13075	4802.14	2696.77	427.6	429.6	2.0	431.0	1.4
13076	4813.12	2692.83	423.5	425.7	2.2	427.2	1.5
13077	4825.16	2687.88	419.7	421.8	2.1	423.4	1.6
13078	4823.40	2652.82	420.4	422.4	2.0	423.7	1.3
13079	4811.75	2648.80	424.2	426.3	2.1	427.3	1.0
13080	4802.51	2646.35	427.2	429.4	2.2	430.8	1.5
13081	4798.79	2645.02	N/A	431.2	N/A	432.3	1.1
13082	4834.90	2611.00	N/A	430.5	N/A	431.5	1.0
13083	4835.68	2613.60	427.0	429.0	2.0	430.2	1.2
13084	4839.50	2625.88	422.6	424.7	2.1	426.1	1.4
13085	4843.14	2637.32	419.7	421.7	2.0	423.2	1.5
13086	4880.85	2635.29	419.5	421.7	2.2	423.1	1.4
13087	4880.37	2623.03	423.3	425.4	2.1	426.7	1.3
13088	4880.67	2610.56	427.6	429.8	2.2	430.9	1.1
13089	4880.21	2607.31	N/A	431.3	N/A	432.4	1.0
13090	4933.24	2608.28	N/A	431.0	N/A	432.1	1.0
13091	4933.03	2610.71	427.6	429.8	2.2	430.9	1.1
13092	4934.46	2623.14	423.7	425.7	2.0	426.8	1.1
13093	4935.15	2636.33	419.3	421.5	2.2	422.8	1.3
13094	4988.73	2635.89	419.4	421.5	2.1	422.7	1.2
13095	4988.09	2623.28	423.5	425.7	2.2	426.8	1.0

POINT	NORTHING	EASTING	CERT SG	CERT CLAY	CLAY THICK	CERT COVER	COVER THICK
13096	4988.43	2611.19	427.4	429.5	2.1	430.6	1.0
13097	4988.23	2607.41	N/A	431.2	N/A	432.2	1.0
13098	5044.42	2605.21	N/A	432.0	N/A	433.0	1.0
13099	5044.63	2611.31	427.3	429.3	2.0	430.8	1.4
13100	5045.26	2624.68	423.0	425.2	2.2	426.2	1.0
13101	5045.91	2638.39	418.8	421.0	2.2	422.1	1.1
13102	5100.54	2639.32	418.3	420.6	2.3	421.7	1.1
13103	5100.82	2624.34	423.0	425.0	2.0	426.1	1.1
13104	5101.38	2611.26	427.3	429.5	2.2	430.8	1.2
13105	5101.25	2606.63	N/A	431.4	N/A	432.4	1.0
13106	5162.12	2609.85	428.8	431.0	2.2	432.1	1.1
13107	5161.87	2612.30	426.9	429.1	2.2	430.4	1.3
13108	5163.35	2627.32	421.9	423.9	2.0	425.1	1.3
13118	5347.43	2502.58	422.6	424.8	2.2	426.2	1.4
13119	5348.58	2489.08	427.6	429.7	2.1	430.8	1.1
13120	5348.60	2486.78	N/A	430.2	N/A	431.3	1.1
13121	5390.59	2516.83	N/A	430.8	N/A	432.2	1.4
13122	5388.53	2518.46	428.0	430.1	2.1	431.3	1.2
13123	5379.27	2529.72	423.2	425.3	2.1	426.6	1.3
13124	5365.84	2541.20	417.7	419.9	2.2	421.3	1.4
13125	5404.94	2581.86	417.3	419.4	2.1	420.5	1.1
13126	5415.38	2569.66	422.6	424.7	2.1	425.8	1.1
13127	5427.07	2559.25	427.7	429.8	2.1	430.9	1.1
13128	5429.65	2556.66	N/A	431.1	N/A	432.1	1.0
13129	5469.68	2597.22	N/A	431.0	N/A	432.3	1.3
13130	5467.02	2599.97	427.6	429.7	2.1	431.0	1.2
13131	5457.39	2611.19	422.8	425.0	2.2	426.1	1.2
13132	5443.05	2624.17	416.6	418.8	2.2	419.9	1.1
13133	5479.76	2664.50	416.1	418.2	2.1	419.7	1.5
13134	5494.02	2653.10	421.8	423.9	2.1	425.2	1.3
13135	5507.16	2641.77	427.4	429.8	2.4	431.0	1.2
13136	5511.05	2638.36	N/A	431.2	N/A	432.3	1.1
13137	5548.52	2680.81	N/A	430.7	N/A	431.8	1.1
13138	5547.16	2682.84	427.3	429.6	2.3	431.0	1.4
13139	5547.11	2682.87	427.3	429.5	2.2	430.5	1.0
13140	5534.95	2694.88	421.9	424.0	2.1	425.2	1.3
13141	5519.94	2708.72	415.6	417.8	2.2	419.2	1.4
13142	5558.79	2747.85	415.4	417.4	2.0	418.7	1.3
13143	5572.25	2735.09	421.3	423.4	2.1	424.7	1.3
13144	5586.44	2722.79	427.5	429.6	2.1	430.9	1.3
13145	5588.58	2721.17	N/A	430.7	N/A	431.9	1.2
13146	5631.45	2763.20	N/A	430.9	N/A	432.2	1.4
13147	5629.27	2765.82	427.7	429.8	2.1	431.2	1.4
13148	5615.51	2780.42	420.9	423.1	2.2	424.5	1.4
13149	5601.22	2792.82	415.1	417.2	2.1	418.4	1.3
13150	5639.31	2834.64	414.5	416.5	2.0	417.9	1.4
13151	5654.98	2818.73	421.5	423.5	2.0	425.1	1.6
13152	5667.55	2806.33	427.3	429.3	2.0	430.9	1.6
13153	5672.32	2802.02	N/A	431.5	N/A	432.5	1.0
13154	5711.74	2843.81	N/A	431.5	N/A	432.5	1.0
13155	5707.37	2846.62	427.6	429.8	2.2	430.9	1.1
13156	5693.63	2861.24	421.0	423.1	2.1	424.2	1.1
13157	5678.04	2876.30	413.9	416.0	2.1	417.6	1.5
13158	5710.24	2910.70	413.6	415.8	2.2	417.1	1.3
13159	5725.27	2898.42	419.9	422.1	2.2	423.1	1.0
13160	5741.64	2883.69	427.1	429.2	2.1	430.4	1.3
13161	5746.66	2879.91	N/A	431.3	N/A	432.3	1.0
13162	5777.91	2915.60	N/A	430.6	N/A	431.8	1.3
13163	5778.03	2919.63	427.6	429.7	2.1	430.9	1.2
13164	5763.30	2934.55	420.7	422.7	2.0	423.8	1.1
13165	5748.21	2949.21	413.6	415.7	2.1	416.9	1.1
13166	5773.93	2987.40	412.8	414.9	2.1	416.6	1.6
13167	5796.64	2979.39	420.9	423.1	2.2	424.2	1.1
13168	5813.05	2972.08	427.2	429.4	2.2	430.3	1.0
13169	5817.66	2971.18	N/A	430.9	N/A	431.9	1.1
13170	5822.28	3021.53	N/A	429.7	N/A	431.3	1.6
13171	5820.84	3021.23	427.3	429.3	2.0	430.7	1.4
13172	5804.69	3016.51	421.6	423.6	2.0	425.2	1.6
13173	5775.44	3008.75	412.7	414.8	2.1	416.0	1.2
13174	5752.32	3051.07	412.7	414.9	2.2	416.2	1.3
13175	5772.74	3063.42	420.1	422.3	2.2	423.5	1.2
13176	5792.83	3068.98	427.0	429.2	2.2	430.4	1.2
13177	5796.14	3069.75	N/A	430.3	N/A	431.7	1.4
13178	5806.63	3124.66	N/A	430.0	N/A	431.2	1.2
13179	5804.34	3125.62	426.5	428.7	2.2	430.3	1.6
13180	5784.37	3131.51	420.2	422.2	2.0	423.4	1.2
13181	5761.42	3137.74	412.7	414.8	2.1	416.0	1.3
13182	5764.51	3159.55	412.9	415.1	2.2	416.1	1.0
13183	5786.13	3167.58	420.4	422.5	2.1	423.5	1.1
13184	5805.70	3176.50	427.3	429.4	2.1	430.8	1.4
13185	5807.57	3176.92	N/A	430.3	N/A	431.4	1.1
13186	5781.48	3223.31	N/A	430.1	N/A	431.4	1.3
13187	5779.47	3221.89	427.2	429.4	2.2	430.4	1.0
13188	5762.80	3212.20	421.0	423.0	2.0	424.1	1.1
13189	5741.18	3199.21	413.0	415.0	2.0	416.2	1.2
13190	5713.21	3240.19	412.9	415.0	2.1	416.7	1.7
13191	5730.81	3252.25	420.1	422.2	2.1	423.3	1.1
13192	5746.68	3267.31	426.8	428.9	2.1	430.7	1.7
13193	5748.35	3268.57	N/A	430.2	N/A	431.3	1.2
13194	5711.71	3309.87	N/A	430.3	N/A	431.5	1.2
13195	5710.27	3308.52	427.3	429.3	2.0	430.7	1.4
13196	5696.79	3295.75	421.4	423.6	2.2	424.6	1.0
13197	5677.41	3278.50	413.0	415.1	2.1	416.2	1.1
13198	5640.71	3311.27	412.8	415.0	2.2	416.1	1.2
13199	5656.58	3331.57	421.4	423.4	2.0	424.5	1.0
13200	5669.13	3345.56	427.2	429.2	2.0	430.9	1.7
13201	5671.09	3348.08	N/A	430.8	N/A	432.1	1.3
13202	5624.46	3379.57	N/A	430.6	N/A	431.6	1.0
13203	5622.49	3376.88	427.0	429.0	2.0	430.6	1.6
13204	5613.58	3362.23	421.5	423.5	2.0	424.7	1.1
13205	5600.72	3338.61	413.0	415.1	2.1	416.6	1.5
13206	5571.55	3352.81	412.9	415.0	2.1	416.7	1.7
13207	5572.02	3373.54	419.4	421.5	2.1	423.0	1.5
13208	5576.14	3397.52	427.4	429.5	2.1	431.0	1.5
13209	5576.49	3399.84	N/A	430.7	N/A	432.0	1.2
13210	5525.78	3386.03	N/A	430.5	N/A	431.5	1.0
13211	5526.93	3384.18	427.0	429.1	2.1	430.8	1.7
13212	5537.22	3364.36	419.6	421.8	2.2	423.1	1.3
13213	5548.26	3347.30	413.0	415.2	2.2	416.7	1.5
13226	5163.15	2640.63	419.7	421.8	2.1	422.8	1.0
13227	5161.70	2616.41	425.7	428.0	2.3	428.9	1.0
13228	5148.26	2601.86	430.1	432.1	2.0	433.1	1.0
13229	5197.99	2597.84	430.2	432.2	2.0	434.0	1.9
13230	5204.41	2613.15	424.9	427.1	2.2	428.1	1.0
13231	5210.27	2631.75	418.4	420.5	2.1	421.6	1.1
13232	5256.92	2601.58	418.3	420.4	2.1	422.0	1.6
13233	5246.25	2587.35	424.1	426.1	2.0	427.5	1.4
13234	5234.91	2573.04	430.2	432.3	2.1	433.3	1.0
13235	5276.18	2533.37	429.8	431.9	2.1	432.8	1.0
13236	5289.13	2545.58	424.0	426.0	2.0	427.4	1.4
13237	5302.35	2557.77	418.8	420.8	2.0	421.8	1.0
13238	5344.11	2520.06	419.8	422.1	2.3	423.2	1.1
13239	5332.64	2507.73	425.2	427.2	2.0	428.2	1.0
13240	5324.14	2493.17	N/A	430.7	N/A	432.0	1.3

STATE OF TEXAS
REGISTERED
S. KEVIN WENDELL
5600
PROFESSIONAL
LAND SURVEYOR

Figure 12

NO.	REVISIONS	BY	DATE

PROJECT: GOLDER ASSOCIATES
OAK GROVE FGD POND
JOB NUMBER: 31100-09
DATE: JANUARY 13, 2012
SCALE: 1" = 50'
SURVEYOR: G.VEDRO
TECHNICIAN: G.HANSON
DRAWING: FGD POND.DWG
FIELDNOTES: N/A
PARTYCHIEF: A.MANCERA
FIELDBOOKS: 811

SAM® INC.
SURVEYING•AERIAL MAPPING•ENGINEERING
4801 SOUTHWEST PARKWAY
PARKWAY TWO, SUITE 100
AUSTIN TEXAS, 78735
(512) 447-0575
FAX: (512) 326-3029
EMAIL: SAM@SAMINC.BIZ

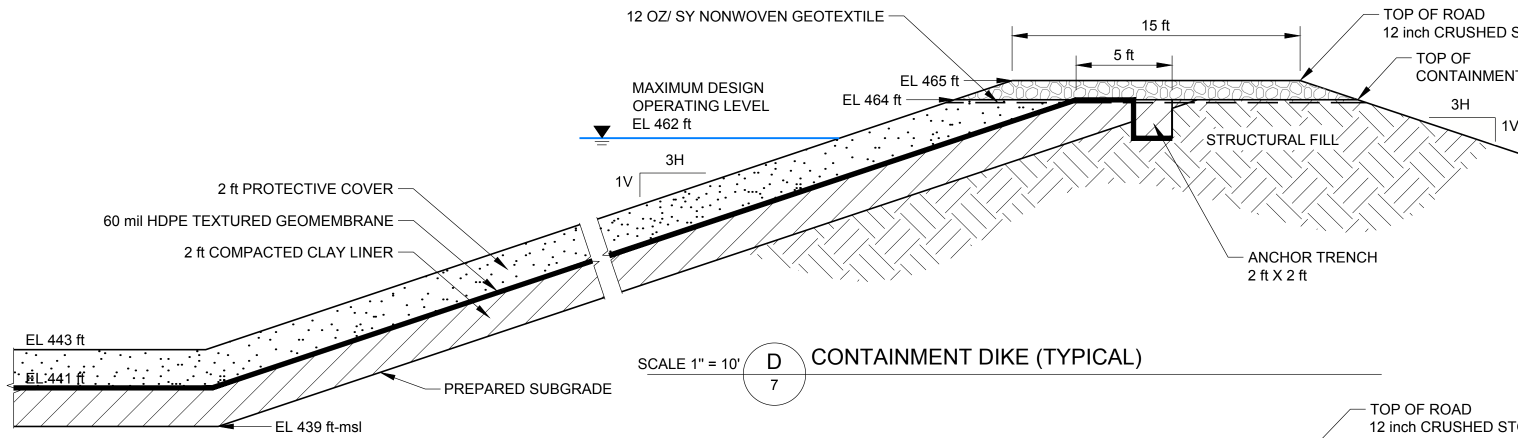
SUBGRADE, CLAY LINER, AND PROTECTIVE COVER ELEVATIONS AS OF DECEMBER 7, 2011
OAK GROVE POWER PLANT
FGD POND
ROBERTSON COUNTY, TEXAS

SHEET 1 OF 1

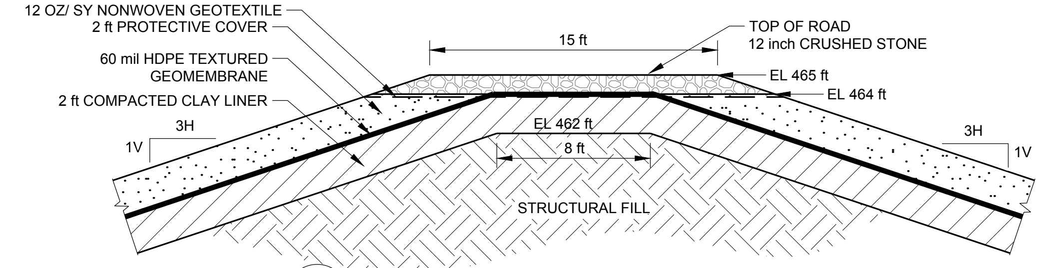
DWG. NO.: G034-31100-09

JANUARY 13, 2012

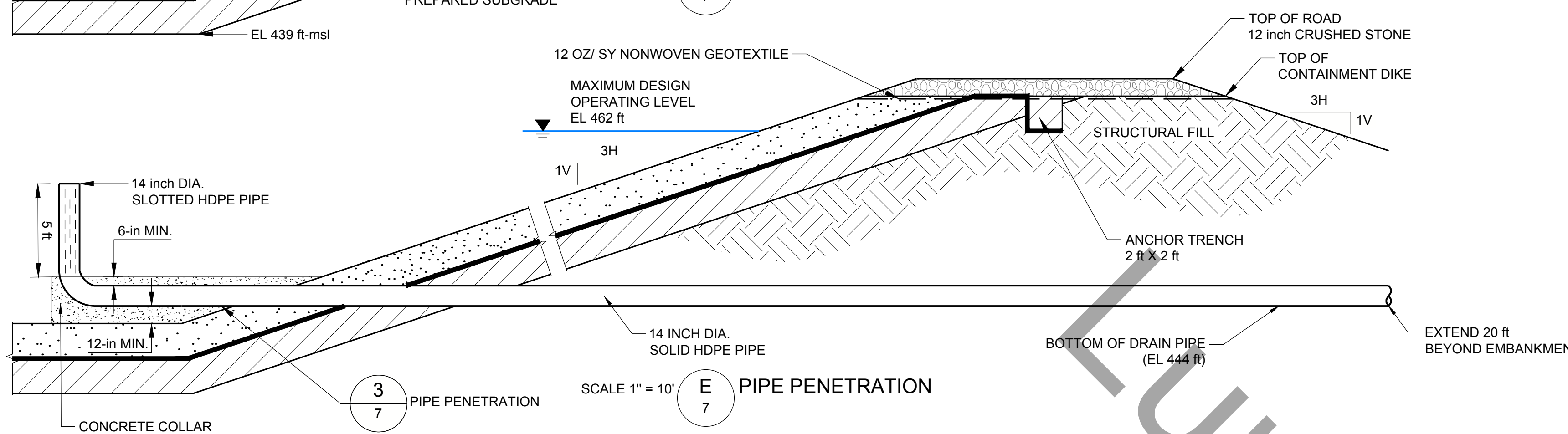
ATTACHMENT 3
FGD-C LINER INFORMATION



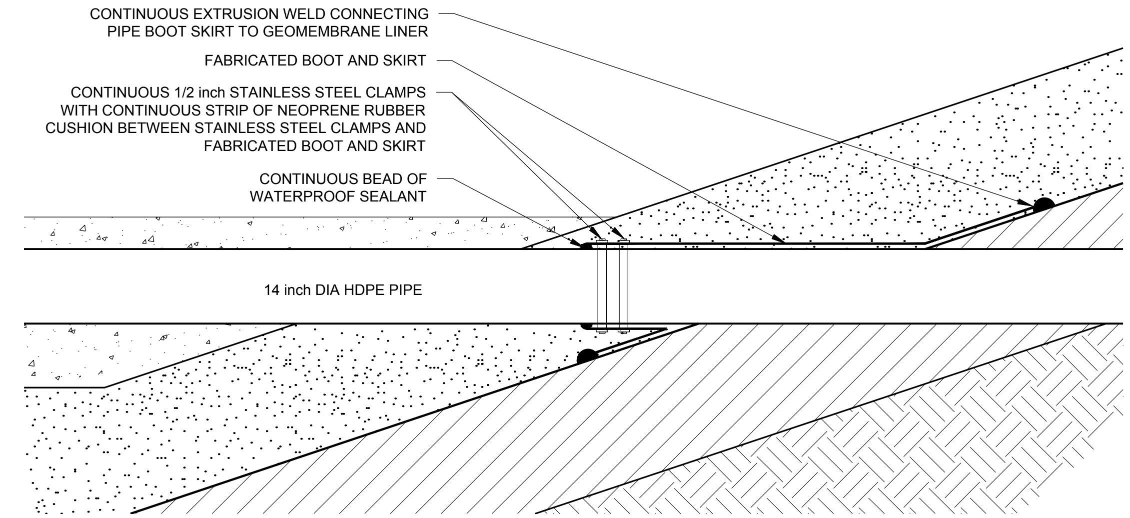
SCALE 1" = 10' D 7 CONTAINMENT DIKE (TYPICAL)



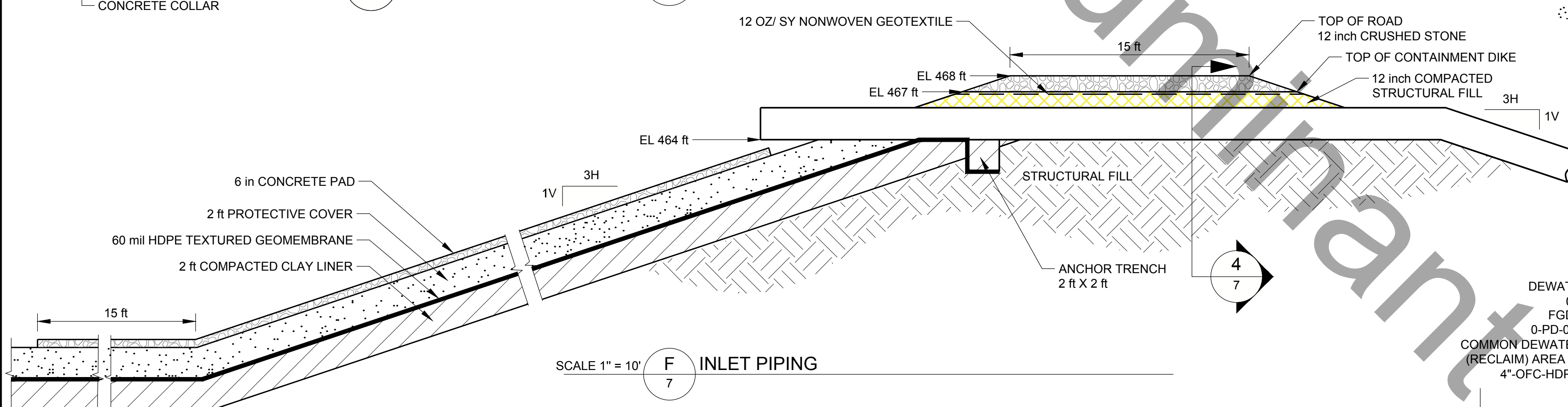
SCALE 1" = 10' G 7 INTERBERM



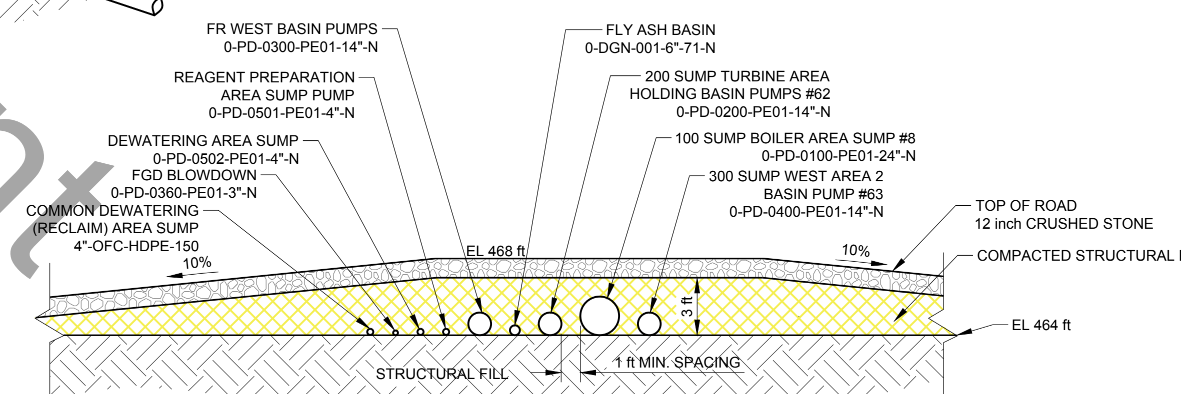
SCALE 1" = 10' E 7 PIPE PENETRATION



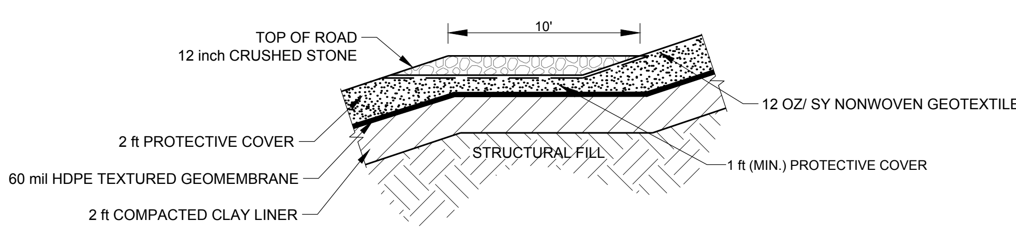
SCALE 1" = 3' 3 7 PIPE PENETRATION DETAIL



SCALE 1" = 10' F 7 INLET PIPING



SCALE 1" = 10' 4 7 INLET PIPING



SCALE 1" = 10' 2 7 ACCESS RAMP

0 1.5 3
SCALE FEET

0 5 10
SCALE FEET

Rev.	YYYY-MM-DD	DESCRIPTION	PREPARED	DESIGN	REVIEW	APPROVED
0	2015-04-29	ISSUED FOR CONSTRUCTION	AA	CEI	CEI	JBF
B	2015-04-23	ISSUED FOR CLIENT REVIEW	AA	CEI	CEI	JBF
A	2015-03-30	ISSUED FOR CLIENT REVIEW	AA	CEI	CEI	JBF

SEAL

STATE OF TEXAS
JEFFREY B. FASSETT
85675
LICENSED
PROFESSIONAL ENGINEER

GOLDER ASSOCIATES INC.
TEXAS REGISTRATION F-2578

CLIENT

Luminant

CONSULTANT

Golder Associates

HOUSTON OFFICE
500 CENTURY PLAZA DR
HOUSTON, TEXAS 77073
USA
(281) 821-6868
www.golder.com

PROJECT
OAK GROVE STEAM ELECTRIC STATION
FGD-C POND
ROBERTSON COUNTY, TEXAS

TITLE
DETAILS

PROJECT No.	LUMINANT DRAWING NO	Rev.	7 of 7	FIGURE
1406296	A2YF00-0-CV-0-SW.PL-07	0		7

NO.	REVISIONS	BY	DATE

PROJECT: GOLDER ASSOCIATES
OAK GROVE FGD POND C

JOB NUMBER: 35813-09
DATE: AUGUST 18, 2016
SCALE: 1"=50'
SURVEYOR: S.K.W.
TECHNICIAN: W.G.H.
DRAWING: 35813 FGD POND C.DWG
FIELDNOTES: N/A
PARTYCHIEF: J.SANDOVAL
FIELDBOOKS: 9999

SAM
SURVEYING•AERIAL MAPPING•ENGINEERING
7101 ENVOY COURT
DALLAS, TEXAS 75247
(214) 631-7888
FAX: (214) 631-7103
EMAIL: SAM@SAM.BIZ

SUBGRADE AND CLAY LINER ELEVATIONS
AS OF SEPTEMBER 29, 2015
FGD POND C
OAK GROVE POWER PLANT
ROBERTSON COUNTY, TEXAS

SHEET 1 OF 2

DWG. NO.:35813-09

POINT No.	NORTHING	EASTING	CERT SG	CERT CLAY	CLAY THICK	CERT COVER	CERT THICK
1000	5278.62	1329.42	461.7	464.0	2.3	464.1	0.1
1001	5300.00	1362.10	461.8	464.1	2.3	464.1	0.0
1002	5350.00	1438.54	462.0	464.1	2.1	464.1	0.0
1003	5400.00	1514.99	461.7	464.0	2.4	464.1	0.1
1004	5450.00	1591.43	461.7	464.0	2.4	464.1	0.1
1005	5500.00	1667.88	461.8	464.1	2.3	464.1	0.0
1006	5514.74	1690.41	461.8	464.1	2.3	464.1	0.0
1007	5522.71	1749.59	461.7	464.0	2.3	464.1	0.1
1008	5500.00	1781.41	461.9	464.1	2.2	464.1	0.0
1009	5450.00	1815.59	461.8	464.1	2.3	464.1	0.0
1010	5400.00	1848.29	461.9	464.0	2.2	464.1	0.1
1011	5350.00	1880.99	461.7	464.1	2.4	464.1	0.0
1012	5300.00	1913.70	461.7	464.1	2.3	464.1	0.1
1013	5250.00	1946.40	461.8	464.0	2.3	464.1	0.1
1014	5200.00	1979.11	461.8	464.1	2.3	464.1	0.1
1015	5150.00	2011.81	461.8	464.0	2.3	464.1	0.1
1016	5100.00	2044.51	461.9	464.0	2.2	464.1	0.1
1017	5050.00	2071.01	461.8	464.1	2.3	464.1	0.0
1018	5000.00	2088.08	461.8	464.0	2.3	464.1	0.1
1019	4950.00	2096.34	461.8	464.0	2.2	464.1	0.1
1020	4900.00	2096.53	461.7	464.1	2.3	464.1	0.0
1021	4850.00	2088.74	461.8	464.1	2.4	464.1	0.0
1022	4800.00	2072.44	461.7	464.1	2.4	464.1	0.0
1023	4750.00	2050.70	462.0	464.1	2.1	464.1	0.0
1024	5220.61	1367.36	439.0	441.1	2.1	444.8	3.7
1025	4693.29	2025.51	461.8	464.0	2.2	464.1	0.1
1026	4650.00	1989.13	461.8	464.0	2.2	464.1	0.1
1027	4600.00	1984.07	461.9	464.1	2.1	464.1	0.1
1028	4550.00	1961.86	462.0	464.2	2.2	464.2	0.0
1029	4500.00	1939.65	461.9	464.0	2.1	464.1	0.1
1030	4450.00	1917.44	462.0	464.1	2.1	464.1	0.0
1031	4400.00	1895.23	461.7	464.1	2.3	464.1	0.0
1032	4350.00	1873.02	461.7	464.1	2.3	464.1	0.0
1033	4300.00	1850.81	461.9	464.0	2.1	464.1	0.1
1034	4250.00	1828.60	462.0	464.1	2.1	464.1	0.0
1035	4200.00	1806.31	461.9	464.3	2.4	464.3	0.0
1036	4161.78	1761.27	462.0	464.1	2.1	464.1	0.0
1037	4165.38	1715.16	461.9	464.0	2.1	464.1	0.1
1038	4200.00	1637.23	461.8	464.1	2.3	464.1	0.0
1039	4250.00	1524.67	461.9	464.0	2.2	464.1	0.1
1040	4300.00	1412.11	461.9	464.1	2.2	464.1	0.0
1041	4313.95	1380.70	461.8	464.0	2.2	464.1	0.1
1042	4350.00	1346.19	462.0	464.0	2.1	466.4	2.4
1043	4400.00	1344.10	462.0	464.0	2.1	466.1	2.1
1044	5250.00	1412.30	439.0	441.1	2.1	444.7	3.7
1045	4422.89	1353.23	462.0	464.1	2.2	466.2	2.0
1046	4432.81	1341.98	462.0	464.1	2.1	464.1	0.0
1047	4450.00	1349.62	461.8	464.2	2.3	464.2	0.0
1048	4500.00	1371.83	461.8	464.1	2.2	464.1	0.1
1049	4550.00	1394.04	461.8	464.2	2.4	464.2	0.0
1050	4600.00	1416.25	461.7	464.1	2.4	464.1	0.0
1051	4650.00	1438.46	461.8	464.1	2.3	464.1	0.0
1052	4700.00	1460.67	461.7	464.0	2.3	464.1	0.1
1053	4750.00	1482.88	461.7	464.0	2.3	464.1	0.1
1054	4800.00	1505.09	461.7	464.0	2.3	464.1	0.1
1055	4813.47	1511.06	461.7	464.0	2.3	464.1	0.1
1056	4850.00	1516.68	461.7	464.1	2.4	464.1	0.0
1057	4883.85	1504.79	461.7	464.0	2.4	464.1	0.1
1058	4900.00	1494.23	461.8	464.1	2.3	464.1	0.0
1059	4950.00	1461.52	461.8	464.0	2.2	464.1	0.1
1060	5000.00	1428.82	461.7	464.1	2.4	464.1	0.0
1061	5050.00	1396.12	461.8	464.1	2.3	464.1	0.1
1062	5100.00	1363.41	461.7	464.2	2.5	464.2	0.0
1063	5150.00	1330.71	461.8	464.0	2.2	464.1	0.1
1064	5182.66	1309.35	461.8	464.1	2.3	464.1	0.0
1065	5200.00	1301.82	461.8	464.1	2.3	464.1	0.0
1066	5250.00	1305.63	461.7	464.2	2.5	464.2	0.0
1067	5500.00	1700.00	456.1	458.3	2.2	460.6	2.3
1068	5500.00	1750.00	455.2	457.3	2.2	459.6	2.3
1069	5450.00	1600.00	460.2	462.5	2.3	464.7	2.2
1070	5450.00	1650.00	451.3	453.5	2.1	456.1	2.7
1071	5450.00	1700.00	442.2	444.3	2.1	447.7	3.4
1072	5450.00	1750.00	443.2	445.4	2.2	448.8	3.5
1073	5450.00	1800.00	457.6	459.7	2.1	461.7	2.0
1074	5400.00	1550.00	455.6	457.8	2.2	460.1	2.4
1075	5400.00	1600.00	446.5	448.6	2.1	451.9	3.3
1076	5400.00	1650.00	439.0	441.1	2.1	443.7	2.6
1077	5400.00	1700.00	439.0	441.1	2.1	443.3	2.2
1078	5400.00	1750.00	438.9	441.0	2.1	443.0	2.0
1079	5400.00	1800.00	448.5	450.7	2.2	453.2	2.5
1080	5350.00	1450.00	459.9	462.0	2.1	464.3	2.3
1081	5350.00	1500.00	450.8	453.0	2.2	455.8	2.8
1082	5350.00	1550.00	441.7	443.8	2.1	447.4	3.6
1083	5350.00	1600.00	438.9	441.0	2.1	443.3	2.3
1084	5350.00	1650.00	439.0	441.2	2.3	443.4	2.2
1085	5350.00	1700.00	438.9	441.2	2.2	443.2	2.1
1086	5350.00	1750.00	439.0	441.2	2.2	443.2	2.1
1087	5350.00	1800.00	439.4	441.6	2.2	444.9	3.3
1088	5350.00	1850.00	453.4	455.5	2.1	458.1	2.6
1089	5300.00	1400.00	455.1	457.1	2.0	459.9	2.7
1090	5300.00	1450.00	446.0	448.2	2.2	451.4	3.3
1091	5300.00	1500.00	439.0	441.2	2.2	443.4	2.2
1092	5300.00	1550.00	439.0	441.0	2.1	443.7	2.7
1093	5300.00	1600.00	439.0	441.1	2.2	444.3	3.2
1094	5300.00	1650.00	439.0	441.1	2.1	443.6	2.5
1095	5300.00	1700.00	439.0	441.2	2.2	444.0	2.8
1096	5300.00	1750.00	438.9	441.1	2.2	443.8	2.8
1097	5300.00	1800.00	438.9	441.0	2.2	443.3	2.3
1098	5300.00	1850.00	444.2	446.4	2.1	449.7	3.3
1099	5300.00	1900.00	458.2	460.4	2.2	462.7	2.3
1100	5250.00	1350.00	450.3	452.4	2.1	455.0	2.6
1101	5250.00	1400.00	441.2	443.5	2.3	446.7	3.3
1102	5250.00	1450.00	439.0	441.2	2.3	443.4	2.2
1103	5250.00	1500.00	439.0	441.2	2.2	443.6	2.4
1104	5250.00	1550.00	438.9	441.1	2.2	443.9	2.8
1105	5250.00	1600.00	444.4	446.8	2.4	450.7	3.9
1107	5250.00	1700.00	441.8	444.0	2.2	447.3	3.3
1108	5250.00	1750.00	439.0	441.1	2.1	443.3	2.2
1109	5250.00	1800.00	439.0	441.1	2.1	444.1	3.0
1110	5250.00	1850.00	438.9	441.1	2.2	443.2	2.1
1111	5250.00	1900.00	449.1	451.2	2.1	454.3	3.0
1112	5200.00	1350.00	447.5	449.7	2.2	452.9	3.2
1113	5200.00	1400.00	439.0	441.1	2.1	443.2	2.1
1114	5200.00	1450.00	438.9	441.0	2.1	443.5	2.5
1115	5200.00	1500.00	439.0	441.0	2.1	443.8	2.8
1116	5200.00	1550.00	439.0	441.2	2.2	443.6	2.5
1117	5200.00	1600.00	453.7	456.0	2.3	458.0	2.0
1118	5200.00	1650.00	461.9	464.0	2.1	464.1	0.1
1119	5200.00	1700.00	449.9	452.1	2.2	455.2	3.1
1120	5200.00	1750.00	438.9	441.1	2.1	443.2	2.2
1121	5200.00	1800.00	439.0	441.1	2.2	443.3	2.2
1122	5200.00	1850.00	438.9	441.1	2.2	443.6	2.5

POINT No.	NORTHING	EASTING	CERT SG	CERT CLAY	CLAY THICK	CERT COVER	CERT THICK
1123	5200.00	1900.00	439.9	442.0	2.1	445.7	3.7
1124	5200.00	1950.00	453.9	456.1	2.2	459.0	2.9
1125	5150.00	1350.00	456.6	458.9	2.3	461.4	2.5
1126	5150.00	1400.00	442.7	444.9	2.2	448.1	3.2
1127	5150.00	1450.00	438.9	441.1	2.1	443.3	2.2
1128	5150.00	1500.00	439.0	441.0	2.1	443.6	2.6
1129	5150.00	1550.00	439.0	441.1	2.1	443.6	2.5
1131	5150.00	1650.00	458.3	460.5	2.2	463.5	3.0
1132	5150.00	1700.00	455.5	457.6	2.1	460.5	2.9
1133	5150.00	1750.00	441.5	443.6	2.1	447.4	3.8
1134	5150.00	1800.00	438.9	441.2	2.2	443.4	2.3
1135	5150.00	1850.00	438.9	441.1	2.2	443.9	2.8
1136	5150.00	1900.00	438.9	441.0	2.1	443.3	2.3
1137	5150.00	1950.00	444.8	447.0	2.2	450.4	3.4
1138	5150.00	2000.00	458.7	460.7	2.0	463.5	2.7
1139	5100.00	1400.00	451.8	454.0	2.1	456.7	2.8
1140	5100.00	1450.00	439.0	441.2	2.2	443.8	2.7
1141	5100.00	1500.00	438.9	441.1	2.1	443.2	2.1
1142	5100.00	1550.00	439.0	441.1	2.1	444.1	3.0
1143	5100.00	1600.00	438.9	441.1	2.2	443.3	2.2
1144	5100.00	1650.00	448.4	450.7	2.3	454.6	3.9
1145	5100.00	1700.00	462.0	464.1	2.1	464.1	0.0
1146	5100.00	1750.00	450.6	452.8	2.1	456.2	3.4
1147	5100.00	1800.00	439.0	441.2	2.2	443.4	2.2
1148	5100.00	1850.00	438.9	441.1	2.1	443.1	2.1
1149	5100.00	1900.00	439.0	441.1	2.1	444.1	3.1
1150	5100.00	1950.00	438.9	441.1	2.1	443.3	2.2
1151	5100.00	2000.00	449.6	451.9	2.2	455.2	3.3
1152	5050.00	1400.00	460.9	463.0	2.1	464.1	1.1
1153	5050.00	1450.00	447.0	449.2	2.2	452.0	2.9
1154	5050.00	1500.00	439.0	441.2	2.3	443.4	2.2
1155	5050.00	1550.00	439.0	441.2	2.2	443.3	2.1
1156	5050.00	1600.00	439.0	441.1	2.1	444.0	2.9
1157	5050.00	1650.00	439.3	441.6	2.3	446.2	4.5
1158	5050.00	1700.00	453.2	455.4	2.2	459.1	3.6
1159	5050.00	1750.00	459.7	461.8	2.1	464.0	2.2
1160	5050.00	1800.00	445.8	448.0	2.2	451.8	3.8
1161	5050.00	1850.00	439.0	441.0	2.1	443.2	2.2
1162	5050.00	1900.00	439.0	441.1	2.1	443.5	2.4
1163	5050.00	1950.00	439.0	441.1	2.1	443.6	2.6
1164	5050.00	2000.00	440.7	442.8	2.1	447.0	4.2
1165	5050.00	2050.00	455.6	457.7	2.1	460.6	3.0
1166	5000.00	1450.00	456.1	458.3	2.2	460.5	2.3
1167	5000.00	1500.00	442.2	444.3	2.2	447.4	3.0
1168	5000.00	1550.00	439.0	441.1	2.1	443.5	2.3
1169	5000.00	1600.00	438.9	441.2	2.3	443.7	2.5
1170	5000.00	1650.00	438.9	441.1	2.1	443.4	2.3
1171	5000.00	1700.00	444.1	446.3	2.2	450.8	4.5
1172	5000.00	1750.00	457.9	460.4	2.4	462.5	2.2
1173	5000.00	1800.00	454.9	457.1	2.2	460.0	2.9
1174	5000.00	1850.00	441.0	443.2	2.2	447.1	4.0
1175	5000.00	1900.00	439.0	441.1	2.2	443.4	2.3
1176	5000.00	1950.00	439.0	441.0	2.0	444.0	3.0
1177	5000.00	2000.00	438.9	441.0	2.1	443.3	2.3
1178	5000.00	2050.00	449.6	451.8	2.2	455.3	3.4
1179	4950.00	1500.00	451.3	453.6	2.3	455.9	2.3
1180	4950.00	1550.00	439.0	441.2	2.2	443.2	2.1
1181	4950.00	1600.00	439.0	441.1	2.1	443.1	2.0
1182	4950.00	1650.00	438.9	441.1	2.2	444.0	2.8
1183	4950.00	1700.00	439.0	441.1	2.1	443.3	2.2
1184	4950.00	1750.00	448.9	451.1	2.2	455.1	3.9
1185	4950.00	1800.00	461.9	464.0	2.1	464.1	0.1
1186	4950.00	1850.00	450.1	452.2	2.1	455.5	3.3
1187	4950.00	1900.00	439.0	441.1	2.2	443.3	2.2
1188	4950.00	1950.00	438.9	441.1	2.1	444.2	3.1
1189	4950.00	2000.00	438.9	441.1	2.2	443.3	2.2
1190	4950.00	2050.00	446.5	448.7	2.2	452.1	3.4
1191	5300.00	1488.75	439.0	441.1	2.2	445.0	3.9
1192	4900.00	1550.00	446.1	448.5	2.5	450.9	2.4
1193	4900.00	1600.00	438.9	441.2	2.2	443.2	2.0
1194	4900.00	1650.00	439.0	441.2	2.2	443.4	2.2
1195	4900.00	1700.00	438.9	441.1	2.2	443.1	2.0
1196	4900.00	1750.00	439.9	442.1	2.2	446.4	4.3
1197	4900.00	1800.00	453.7	455.9	2.2	459.5	3.5
1198	4900.00	1850.00	459.2	461.3	2.1	463.9	2.5
1199	4900.00	1900.00	445.3	447.5	2.2	451.0	3.6
1200	4900.00	1950.00	438.9	441.0	2.1	443.5	2.5
1201	4900.00	2000.00	439.0	441.2	2.2	443.8	2.6
1202	4900.00	2050.00	446.5	448.6	2.1	452.0	3.4
1203	4850.00	1550.00	450.7	453.1	2.3	455.5	2.4
1204	4850.00	1600.00	439.0	441.2	2.2	443.4	2.1
1205	4850.00	1650.00	439.0	441.2	2.2	443.3	2.1
1206	4850.00	1700.00	439.0	441.2	2.2	443.9	2.8
1207	4850.00	1750.00	439.0	441.2	2.2	443.4	2.3
1208	4850.00	1800.00	444.6	446.9	2.3	450.8	4.0
1209	4850.00	1850.00	458.6	460.8	2.3	463.9	3.1
1210	4850.00	1900.00	454.3	456.6	2.3	459.6	3.0
1211	4850.00	1950.00	440.4	442.7	2.3	446.4	3.7
1212	4850.00	2000.00	439.0	441.1	2.1	443.2	2.1
1213	4850.00	2050.00	449.5	451.6	2.2	454.3	2.7
1214	4800.00	1550.00	448.3	450.5	2.2	453.3	2.8
1215	4800.00	1600.00	438.9	441.2	2.3	443.3	2.1
1216	4800.00	1650.00	439.0	441.2	2.2	443.3	2.1
1217	4800.00	1700.00	438.9	441.2	2.3	443.9	2.7
1218	4800.00	1750.00	438.9	441.1	2.2	443.3	2.1
1219	4800.00	1800.00	438.9	441.2	2.3	443.3	2.1
1220	4800.00	1850.00	449.4	451.6	2.2	455.3	3.7
1221	4800.00	1900.00	461.9	464.1	2.2	464.1	0.0
1222	4800.00	1950.00	449.4	451.8	2.3	454.7	2.9
1223	4800.00	2000.00	439.9	442.0	2.1	446.0	4.0
1224	4800.00	2050.00	455.1	457.3	2.2	459.5	2.3
1225	4750.00	1500.00	456.8	458.9	2.1	461.0	2.0
1226	4750.00	1550.00	441.6	443.9	2.2	446.8	2.9
1227	4750.00	1600.00	439.0	441.2	2.2	443.3	2.1
1228	4750.00	1650.00	439.0	441.2	2.2	443.3	2.1
1229	4750.00	1700.00	439.0	441.2	2.2	443.9	2.6
1230	4750.00	1750.00	438.9	441.1	2.2	443.3	2.2
1231	4750.00	1800.00	438.9	441.1	2.1	443.4	2.3
1232	4750.00	1850.00	440.4	442.5	2.1	446.7	4.1
1233	4750.00	1900.00	454.3	456.5	2.2	459.7	3.1
1234	4750.00	1950.00	458.6	460.9	2.2	463.5	2.6
1235	4750.00	2000.00	447.6	449.8	2.2	455.2	5.4
1236	4700.00	1500.00	450.1	452.2	2.1	454.8	2.6
1237	4700.00	1550.00	439.0	441.2	2.3	443.3	2.1
1238	4700.00	1600.00	438.9	441.2	2.3	443.3	2.1
1239	4700.00	1650.00	438.9	441.2	2.3	443.4	2.2
1240	4700.00	1700.00	439.0	441.2	2.2	444.1	2.9
1241	4700.00	1750.00	439.0	441.2	2.2	443.3	2.1
1242	4700.00	1800.00	439.0	441.1	2.1	443.4	2.3
1243	4700.00	1850.00	439.0	441.1	2.1	443.5	2.4
1244	4700.00	1900.00	445.2	447.5	2.3	451.2	3.7
1245	4700.00	1950.00	459.1	461.4	2.3	463.9	2.6

POINT No.	NORTHING	EASTING	CERT SG	CERT CLAY	CLAY THICK	CERT COVER	CERT THICK
1246	4700.00	2000.00	457.4	459.7	2.3	463.3	3.6
1247	4650.00	1450.00	458.5	460.7	2.3	462.8	2.0
1248	4650.00	1500.00	443.3	445.5	2.2	448.4	2.9
1249	4650.00	1550.00	439.0	441.2	2.2	443.3	2.2
1250	4650.00	1600.00	439.0	441.1	2.2	443.1	2.0
1251	4650.00	1650.00	439.0	441.1	2.1	443.3	2.2
1252	4650.00	1700.00	438.9	441.1	2.2	443.8	2.7
1253	4650.00	1750.00	439.0	441.1	2.1	443.4	2.3
1254	4650.00	1800.00	439.0	441.1	2.2	443.2	2.1
1255	4650.00	1850.00	439.0	441.2	2.2	443.2	2.1
1256	4650.00	1900.00	438.9	441.1	2.2	443.6	2.4
1257	4650.00	1950.00	450.0	452.2	2.2	455.9	3.7
1258	4600.00	1450.00	451.7	453.9	2.2	456.0	2.1
1259	4600.00	1500.00	439.0	441.2	2.2	444.9	3.7
1260	4600.00	1550.00	439.0	441.1	2.1	443.3	2.2
1261	4600.00	1600.00	438.9	441.1	2.2	443.3	2.2
1262	4600.00	1650.00	438.9	441.0	2.1	443.1	2.1
1263	4600.00	1700.00	439.0	441.1	2.1	443.4	2.3
1264	4600.00	1750.00	439.0	441.2	2.2	443.2	2.0
1265	4600.00	1800.00	439.0	441.1	2.2	443.2	2.1
1266	4600.00	1850.00	439.0	441.2	2.2	443.3	2.1
1267	4600.00	1900.00	439.0	441.1	2.1	443.2	2.1
1268	4600.00	1950.00	451.6	453.8	2.2	456.2	2.4
1269	4550.00	1400.00	460.0	462.2	2.3	464.1	1.9
1270	4550.00	1450.00	446.1	448.4	2.3	451.5	3.1
1271	4550.00	1500.00	438.9	441.2	2.3	443.5	2.2
1272	4550.00	1550.00	438.9	441.1	2.1	443.1	2.1
1273	4550.00	1600.00	439.0	441.2	2.2	443.2	2.0
1274	4550.00	1650.00	439.0	441.1	2.1	443.4	2.3
1275	4550.00	1700.00	439.0	441.2	2.2	443.2	2.0
1276	4550.00	1750.00	438.9	441.1	2.2	443.2	2.1
1277	4550.00	1800.00	439.0	441.1	2.1	443.4	2.3
1278	4550.00	1850.00	439.0	441.1	2.1	443.6	2.4
1279	4550.00	1899.14	442.9	445.3	2.3	448.5	3.3
1280	4550.00	1950.00	458.4	460.5	2.2	462.6	2.1
1281	4500.00	1400.00	453.4	455.7	2.3	458.6	2.9
1282	4500.00	1450.32	443.0	445.4	2.4	448.3	2.9
1283	4500.00	1500.00	439.0	441.2	2.2	443.5	2.3
1284	4500.00	1550.00	439.0	441.1	2.1	443.3	2.2
1285	4500.00	1600.00	439.0	441.1	2.1	444.5	3.4
1286	4500.00	1650.00	438.9	441.1	2.2	443.8	2.7
1287	4500.00	1700.00	438.9	441.1	2.1	443.2	2.1
1288	4500.00	1750.00	438.9	441.2	2.2	443.3	2.1
1289	4500.00	1800.00	438.9	441.1	2.2	443.3	2.1
1290	4500.00	1850.00	439.0	441.1	2.1	443.1	2.0
1291	4500.00	1900.00	449.9	452.2	2.2	455.0	2.8
1292	4450.00	1400.00	451.4	453.6	2.2	456.2	2.7
1293	4450.00	1450.00	438.9	441.1	2.2	451.6	10.5
1294	4450.00	1500.00	439.0	441.2	2.2	452.3	11.1
1295	4450.00	1550.00	438.9	441.1	2.2	450.2	9.0
1296	4450.00	1600.00	439.0	441.1	2.1	445.1	4.1
1297	4450.00	1650.00	438.9	441.2	2.2	443.3	2.1
1298	4450.00	1700.00	439.0	441.1	2.1	443.1	2.1
1299	4450.00	1750.00	439.0	441.1	2.2	443.2	2.1
1300	4450.00	1800.00	439.0	441.1	2.1	443.1	2.0
1301	4450.00	1850.00	441.5	443.8	2.2	446.8	3.1
1302	4450.00	1900.00	456.7	458.9	2.2	461.2	2.3
1303	5350.00	1565.19	439.0	441.1	2.2	444.8	3.7
1304	4400.00	1400.00	444.6	446.9	2.2	461.6	14.8
1305	4400.00	1450.00	439.0	441.2	2.2	457.8	16.6
1306	4400.00	1500.00	439.0	441.1	2.2	451.7	10.6
1307	4400.00	1550.00	439.0	441.2	2.1	444.4	3.3
1308	4400.00	1600.00	439.0	441.2	2.2	443.5	2.3
1309	4400.00	1650.00	438.9	441.1	2.2	443.2	2.1
1310	4400.00	1700.00	439.0	441.1	2.1	443.2	2.1
1311	4400.00	1750.00	438.9	441.0	2.1	443.3	2.3
1312	4400.00	1800.00	439.0	441.0	2.0	443.4	2.4
1313	4400.00	1850.00	448.2	450.5	2.3	453.1	2.6
1314	5400.00	1641.64	439.0	441.1	2.2	444.9	3.8
1315	4350.00	1400.00	448.4	450.7	2.3	459.7	9.0
1316	4350.00	1450.00	441.7	443.9	2.2	449.8	5.9
1317	4350.00	1500.00	439.0	441.2	2.2	443.3	2.1
1318	4350.00	1550.00	438.9	441.1	2.1	443.5	2.5
1319	4350.00	1600.00	438.9	441.2	2.3	443.3	2.1
1320	4350.00	1650.00	439.0	441.1	2.2	443.2	2.1
1321	4350.00	1700.00	439.0	441.2	2.2	443.5	2.4
1322	4350.00	1750.00	439.0	441.0	2.1	443.2	2.2
1323	4350.00	1800.00	439.8	442.1	2.3	445.6	3.5
1324	4350.00	1849.69	454.9	457.1	2.2	459.4	2.3
1325	4300.00	1450.00	456.8	459.1	2.2	461.4	2.4
1326	4300.00	1500.00	450.1	452.3	2.2	455.0	2.8
1327	4300.00	1550.00	443.3	445.6	2.3	448.8	3.3
1328	4300.00	1600.00	439.0	441.2	2.3	443.3	2.1
1329	4300.00	1650.00	439.0	441.1	2.1	443.3	2.2
1330	4300.00	1700.00	439.0	441.2	2.2	443.2	2.1
1331	4300.00	1750.00	439.0	441.2	2.2	443.3	2.1
1332	4300.00	1800.00	446.5	448.8	2.3	451.5	2.8
1333	4250.00	1550.00	458.6	460.8	2.2	463.2	2.4
1334	4250.00	1600.00	451.8	454.0	2.2	456.1	2.1
1337	4250.00	1650.00	445.1	447.4	2.3	450.4	3.0
1338	4250.00	1700.00	439.0	441.2	2.3	444.0	2.7
1339	4250.00	1750.00	439.0	441.2	2.2	444.4	3.2
1340	4250.00	1800.00	453.3	455.6	2.3	458.1	2.5
1342	4200.00	1700.00	453.5	455.7	2.2	458.0	2.3
1343	4200.00	1750.00	448.8	451.0	2.2	454.1	3.1
1345	5456.72	1728.35	438.9	441.1	2.2	445.1	4.0
1346	5450.00	1732.75	438.9	441.1	2.2	444.4	3.3
1347	5400.00	1765.45	438.9	441.2	2.3	444.1	3.0
1348	5350.00	1798.16	438.9	441.1	2.2	444.5	3.3
1349	5300.00	1830.86	438.9	441.1	2.2	444.7	3.6
1350	5250.00	1863.57	438.9	441.1	2.2	444.6	3.5
1351	5200.00	1896.27	438.9	441.2	2.3	444.9	3.8
1352	5150.00	1928.97	438.9	441.1	2.2	445.0	3.9
1353	5100.00	1961.68	438.9	441.1	2.2	445.1	4.0
1354	5050.00	1994.08	439.0	441.2	2.2	445.2	4.0
1355	5000.00	2016.61	439.0	441.2	2.2	445.1	3.9
1356	4950.00	2027.23	439.0	441.2	2.2	445.0	3.8
1357	4900.00	2027.50	439.1	441.2	2.1	445.4	4.2
1358	4850.00	2017.43	439.4	441.6	2.2	445.0	3.5
1359	4791.92	1993.47	439.0	441.1	2.1	446.0	4.9
1360	4800.00	1988.18	438.9	441.1	2.2	445.4	4.3
1361	4850.00	1955.48	438.9	441.1	2.2	445.1	4.1
1362	4900.00	1922.77	438.9	441.0	2.1	445.2	4.1
1363	4950.00	1890.07	438.9	441.1	2.2	445.3	4.2
1364	5000.00	1857.37	438.9	441.1	2.1	445.3	4.2
1365	5050.00	1824.66	438.9	441.1	2.2	445.2	4.1
1366	5100.00	1791.96	439.0	441.1	2.2	445.0	3.9
1367	5150.00	1759.26	438.9	441.1	2.2	445.2	4.1
1368	5188.63	1733.99	439.0	441.1	2.1	445.4	4.3
1369	5200.00	1733.65	439.0	441.1	2.2	444.9	3.8
1370	5250.00	1712.52	438.9	441.2	2.3	445.0	3.9
1371	5281.40	1650.00	439.0	441.1	2.1	445.8	4.7

POINT No.	NORTHING	EASTING	CERT SG	CERT CLAY	CLAY THICK	CERT COVER	CERT THICK
1371	5281.40	1650.00	439.0	441.1	2.1	445.8	4.7
1372	5270.09	1600.00	439.0	441.1	2.2	446.3	5.2
1373	5250.00	1575.56	439.0	441.1	2.1	445.3	4.2
1374	5200.00	1554.43	438.9	441.1	2.1	444.5	3.4
1375	5150.00	1564.23	438.9	441.1	2.2	443.8	2.7
1376	5113.11	1600.00	438.9	441.1	2.2	445.7	4.6
1377	5108.00	1610.72	438.9	441.1	2.2	445.9	4.9
1378	5100.00	1615.95	438.9	441.1	2.2	445.8	4.7
1379	5050.00	1648.65	438.9	441.2	2.3	445.6	4.5
1380	5000.00	1681.36	438.9	441.1	2.2	445.6	4.5
1381	4950.00	1714.06	438.9	441.1	2.2	445.7	4.6
1382	4900.00	1746.77	438.9	441.1	2.2	445.8	4.7
1383	4850.00	1779.47	438.9	441.1	2.2	445.9	4.8
1384	4800.00	1812.17	438.9	441.1	2.2	445.4	4.3
1385	4750.00	1844.88	438.9	441.1	2.2	445.4	4.3
1386	4700.00	1877.58	438.9	441.1	2.2	445.1	4.0
1387	4650.00	1910.28	438.9	441.1	2.2	445.2	4.1
1388	4631.66	1922.28	438.9	441.2	2.3	447.6	6.5
1389	4600.00	1908.22	438.9	441.1	2.2	443.2	2.1
1390	4550.00	1886.01	438.9	441.1	2.2	444.7	3.6
1391	4500.00	1863.80	438.9	441.1	2.2	444.7	3.6
1392	4450.00	1841.59	438.9	441.1	2.2	444.4	3.4
1393	4400.00	1819.38	438.9	441.1	2.2	444.6	3.5
1394	4350.00	1797.17	438.9	441.1	2.2	444.8	3.6
1395	4300.00	1774.96	438.9	441.1	2.1	444.3	3.2
1396	4250.00	1752.75	438.9	441.1	2.2	444.7	3.6
1397	4228.74	1743.30	438.9	441.2	2.2	445.5	4.4
1398	4250.00	1695.44	438.9	441.1	2.1	444.6	3.5
1399	4270.18	1650.00	438.9	441.1	2.2	444.6	3.4
1400	4292.39	1600.00	438.9	441.1	2.1	445.0	3.9
1401	4314.60	1550.00	438.9	441.1	2.1	444.8	3.7
1402	4336.81	1500.00	438.9	441.1	2.2	445.0	3.8
1403	4359.02	1450.00	438.9	441.1	2.2	451.6	10.4
1404	4377.31	1408.84	438.9	441.1	2.1	461.5	20.5
1405	4400.00	1418.92	438.9	441.1	2.2	461.0	19.9
1406	4450.00	1441.13	438.9	441.2	2.2	451.3	10.1
1407	4500.00	1463.34	438.9	441.1	2.1	444.4	3.4
1408	4550.00	1485.55	438.9	441.1	2.2	444.3	3.1
1409	4595.26	1505.66	438.9	441.1	2.1	444.5	3.4
1410	4605.18	1494.40	438.9	441.0	2.1	445.2	4.1
1411	4650.00	1514.31	438.9	441.1	2.2	444.3	3.2
1412	4700.00	1536.53	438.9	441.1	2.2	444.4	3.2
1413	4750.00	1558.74	438.9	441.1	2.1	444.8	3.7
1414	4800.00	1579.86	438.9	441.1	2.2	444.1	3.0
1415	4850.00	1586.17	438.9	441.2	2.2	444.4	3.3
1416	4900.00	1574.53	438.9	441.1	2.1	444.0	2.9
1417	4950.00	1544.36	438.9	441.1	2.2	444.3	3.1
1418	5000.00	1511.66	438.9	441.1	2.1	444.4	3.4
1419	5050.00	1478.95	438.9	441.1	2.1	444.5	3.5
1420	5100.00	1446.25	438.9	441.1	2.2	444.6	3.5
1421	5150.00	1413.55	438.9	441.1	2.2	444.6	3.5
1422	5200.00	1380.84	438.9	441.1	2.2	444.9	3.9
1423	4532.15	1450.00	447.3	449.5	2.2	451.6	2.1
1424	4554.83	1450.00	445.5	447.8	2.3	451.4	3.6
1425	4475.46	1400.00	454.8	457.0	2.2	459.1	2.1
1426	4498.13	1400.00	453.2	455.4	2.3	458.6	3.1
1427	4437.89	1366.61	459.9	462.0	2.1	464.1	2.1
1428	4447.68	1355.51	459.9	462.1	2.2	465.3	3.2
1429	4689.42	1977.67	461.9	464.1	2.2	464.1	0.0
1430	4669.61	1980.30	462.0	464.1	2.1	464.1	0.0
1431	4715.93	1950.00	461.9	464.1	2.2	464.1	0.0
1432	4731.73	1950.00	461.9	464.1	2.2	464.1	0.0
1433	4792.37	1900.00	461.9	464.2	2.3	464.2	0.2
1434	4808.17	1900.00	461.9	464.1	2.2	464.1	0.0
1435	4868.81	1850.00	462.0	464.2	2.2	464.2	0.0
1436	4884.62	1850.00	461.9	464.0	2.1	464.1	0.1
1437	4945.26	1800.00	461.9	464.1	2.2	464.1	0.0
1438	4961.06	1800.00	461.9	464.1	2.2	464.1	0.0
1439	5021.70	1750.00	461.9	464.2	2.3	464.2	0.0
1440	5037.50	1750.00	461.9	464.1	2.2	464.1	0.0
1441	5098.15	1700.00	461.9	464.0	2.1	464.1	0.1
1442	5113.95	1700.00	461.9	464.1	2.2	464.1	0.0
1443	5150.00	1665.87	462.0	464.0	2.1	464.1	0.1
1444	5150.00	1676.42	461.9	464.0	2.1	464.1	0.1
1445	5172.40	1636.39	461.9	464.1	2.2	464.1	0.0
1446	5200.00	1625.15	461.9	464.1	2.2	464.1	0.0
1447	5208.90	1632.72	461.9	464.1	2.2	464.1	0.0
1448	5211.40	1650.00	461.9	464.1	2.2	464.1	0.0
1449	5200.00	1662.93	461.9	464.2	2.3	464.2	0.0
1450	5190.92	1664.71	461.9	464.1	2.2	464.1	0.0
1451	5169.93	1667.24	461.9	464.1	2.2	464.1	0.0
1452	5161.67	1654.60	461.9	464.1	2.2	464.1	0.0

NO.	REVISIONS	BY	DATE

PROJECT: GOLDER ASSOCIATES
OAK GROVE FGD POND C
JOB NUMBER: 35813-09
DATE: AUGUST 18, 2016
SCALE: 1"=50'
SURVEYOR: S.K.W.
TECHNICIAN: W.G.H.
DRAWING: 35813 FGD POND C.DWG
FIELDNOTES: N/A
PARTYCHIEF: J.SANDOVAL
FIELDBOOKS: 9999

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SUBGRADE AND CLAY LINER ELEVATIONS AS OF SEPTEMBER 29, 2015
FGD POND C
OAK GROVE POWER PLANT
ROBERTSON COUNTY, TEXAS

DWG. NO.:35813-09