

**NEW BOSTON LANDFILL  
BOWIE COUNTY, TEXAS  
TCEQ PERMIT APPLICATION NO. MSW 576C**

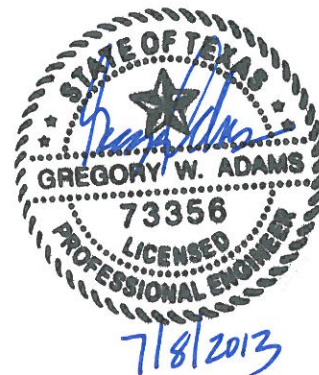
**PERMIT AMENDMENT APPLICATION**

**PART III – FACILITY INVESTIGATION AND DESIGN  
ATTACHMENT D3  
CONSTRUCTION DESIGN DETAILS**

Prepared for

**Waste Management of Texas, Inc.**

July 2013



Prepared by

**BIGGS & MATHEWS ENVIRONMENTAL**

1700 Robert Road, Suite 100 ♦ Mansfield, Texas 76063 ♦ 817-563-1144

TEXAS BOARD OF PROFESSIONAL ENGINEERS  
FIRM REGISTRATION No. F-256

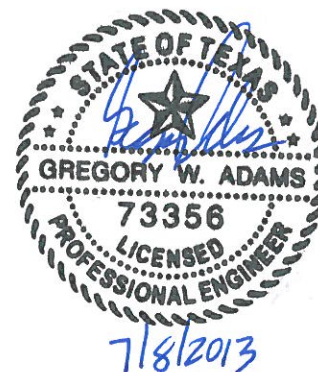
TEXAS BOARD OF PROFESSIONAL GEOSCIENTISTS  
FIRM REGISTRATION No. 50222

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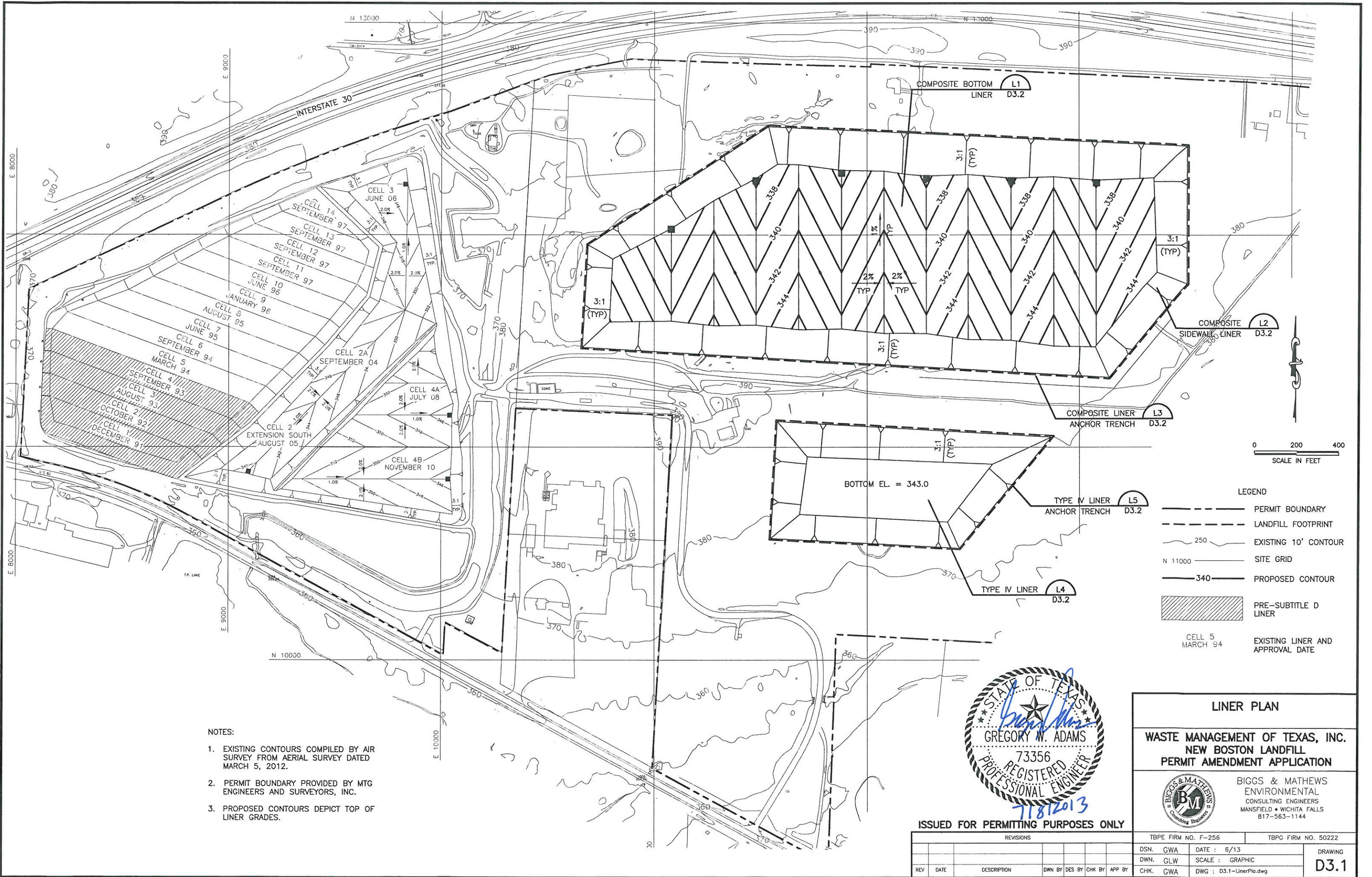
30 TAC §330.63(d)(4)(F)

- D3.1 – Liner Plan
- D3.2 – Liner Details
- D3.3 – Leachate Collection System Plan
- D3.4 – Leachate Collection System Details
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- D3.11 – Final Cover Plan South Disposal Area
- D3.12 – Final Cover Details
- D3.13 – Final Cover Details





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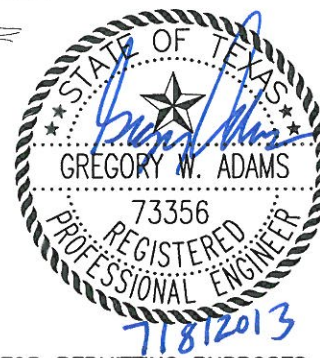


NOTES:

1. EXISTING CONTOURS COMPILED BY AIR SURVEY FROM AERIAL SURVEY DATED MARCH 5, 2012.
2. PERMIT BOUNDARY PROVIDED BY MTG ENGINEERS AND SURVEYORS, INC.
3. PROPOSED CONTOURS DEPICT TOP OF LINER GRADES.

LEGEND

	PERMIT BOUNDARY
	LANDFILL FOOTPRINT
	250 EXISTING 10' CONTOUR
	N 11000 SITE GRID
	340 PROPOSED CONTOUR
	PRE-SUBTITLE D LINER
	CELL 5 MARCH 94 EXISTING LINER AND APPROVAL DATE



**LINER PLAN**

**WASTE MANAGEMENT OF TEXAS, INC.  
NEW BOSTON LANDFILL  
PERMIT AMENDMENT APPLICATION**

**BIGGS & MATHEWS**  
 ENVIRONMENTAL  
 CONSULTING ENGINEERS  
 MANSFIELD • WICHITA FALLS  
 817-563-1144

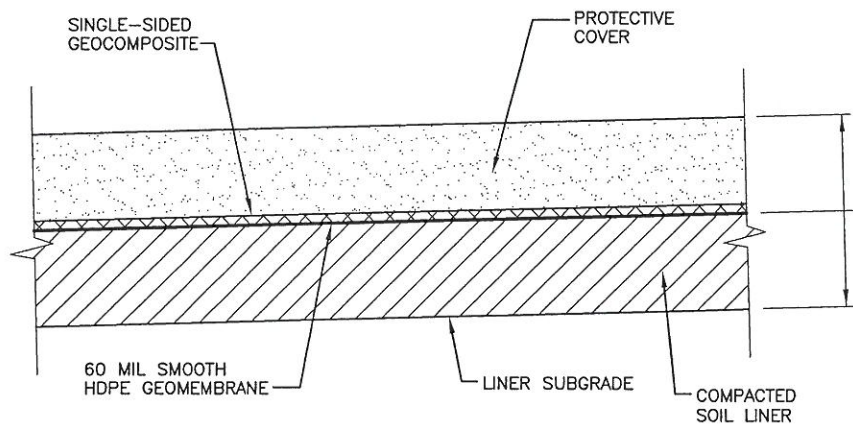
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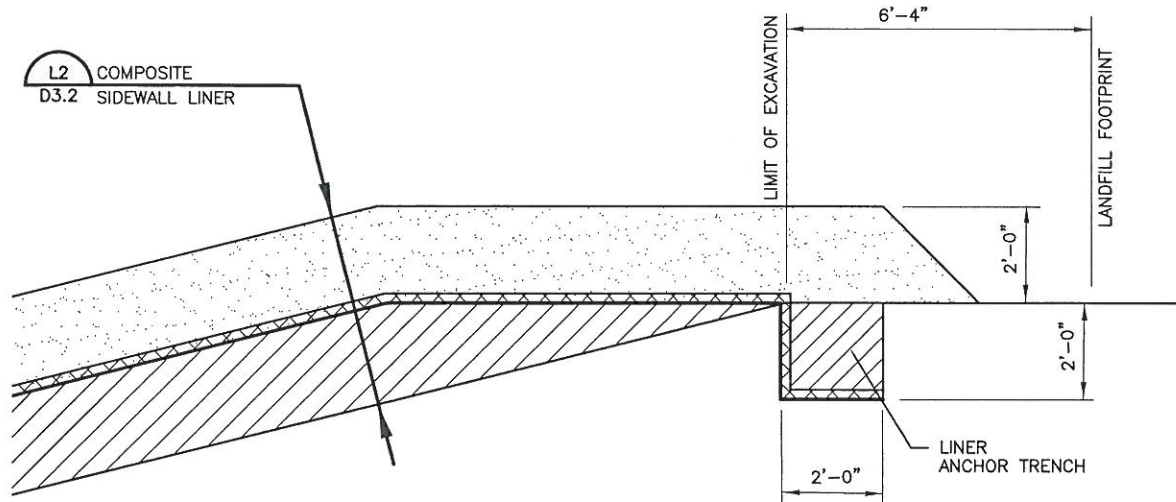
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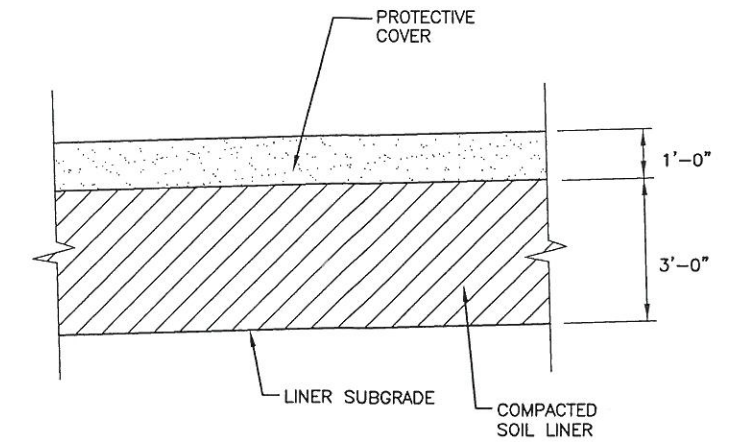
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**COMPOSITE BOTTOM LINER** L1  
D3.2  
SCALE IN FEET



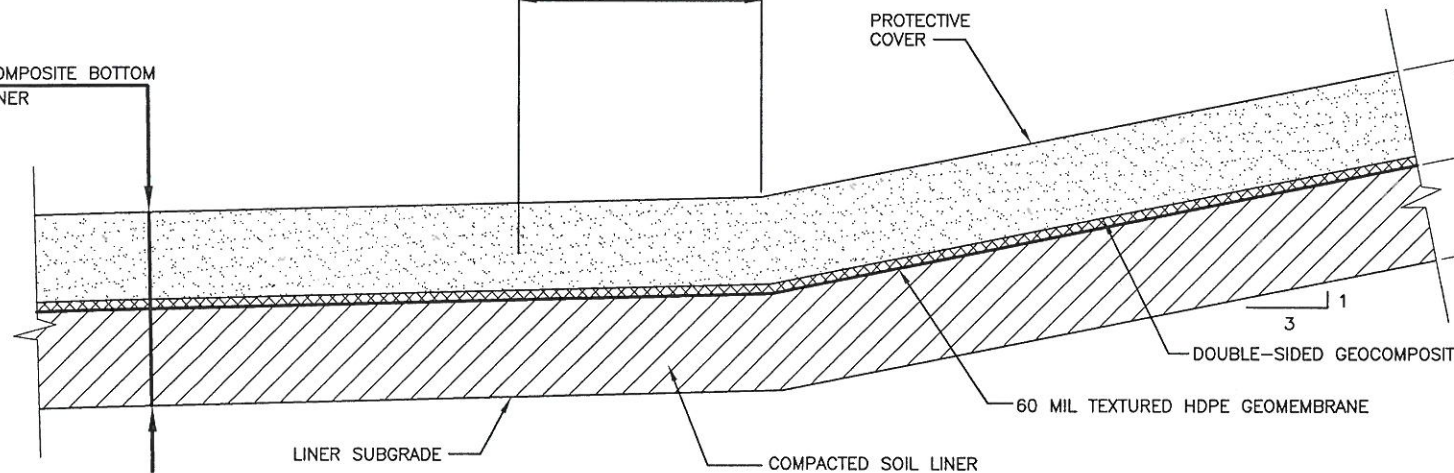
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SCALE IN FEET



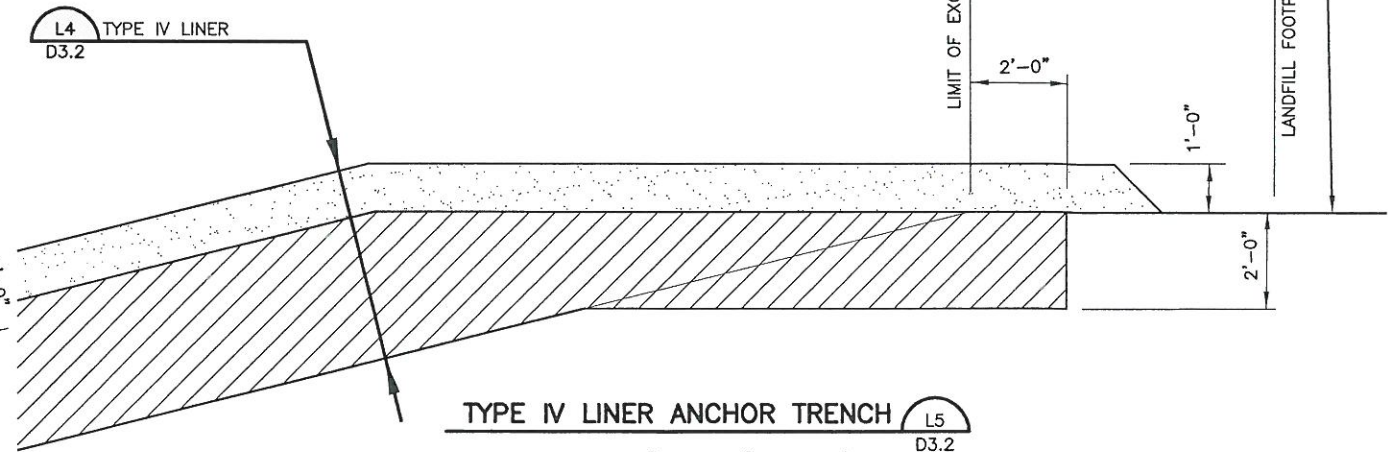
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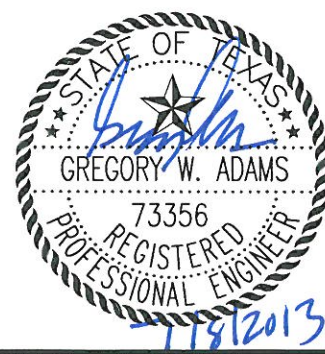
L1 COMPOSITE BOTTOM LINER  
D3.2



**COMPOSITE SIDEWALL LINER** L2  
D3.2  
SCALE IN FEET



**TYPE IV LINER ANCHOR TRENCH** L5  
D3.2  
SCALE IN FEET



**NOTES:**

1. REFER TO ATTACHMENT D7 FOR LINER INSTALLATION AND MATERIAL REQUIREMENTS.

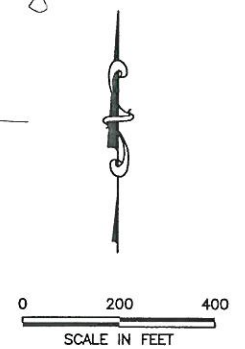
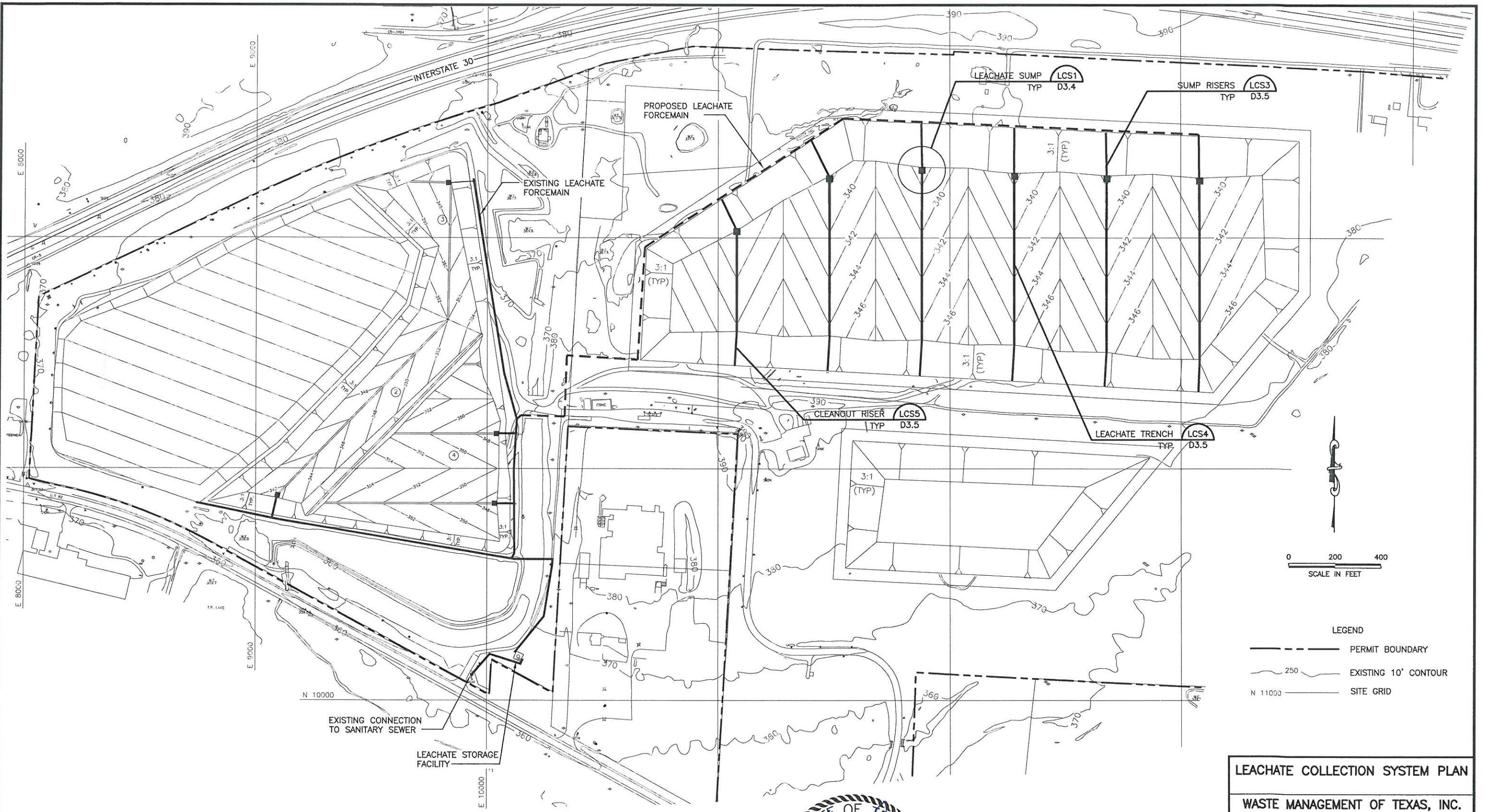
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<b>LINER DETAILS</b>			
<b>WASTE MANAGEMENT OF TEXAS, INC. NEW BOSTON LANDFILL PERMIT AMENDMENT APPLICATION</b>			
		BIGGS & MATHEWS ENVIRONMENTAL CONSULTING ENGINEERS MANSFIELD • WICHITA FALLS 817-563-1144	
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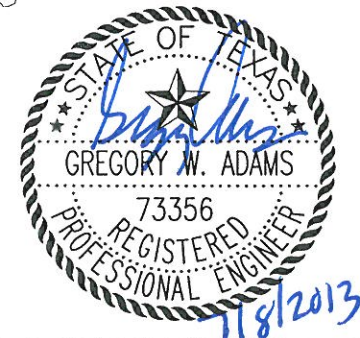


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- LEGEND**
- PERMIT BOUNDARY
  - - - 250 EXISTING 10' CONTOUR
  - N 11000 SITE GRID

- NOTES:**
- EXISTING CONTOURS COMPILED BY AIR SURVEY FROM AERIAL SURVEY DATED MARCH 5, 2012.
  - PERMIT BOUNDARY PROVIDED BY MTG ENGINEERS AND SURVEYORS, INC.
  - PROPOSED CONTOURS DEPICT TOP OF PROTECTIVE COVER GRADES.



**LEACHATE COLLECTION SYSTEM PLAN**  
**WASTE MANAGEMENT OF TEXAS, INC.**  
**NEW BOSTON LANDFILL**  
**PERMIT AMENDMENT APPLICATION**



**BIGGS & MATHEWS**  
ENVIRONMENTAL  
CONSULTING ENGINEERS  
MANSFIELD • WICHITA FALLS  
817-563-1144

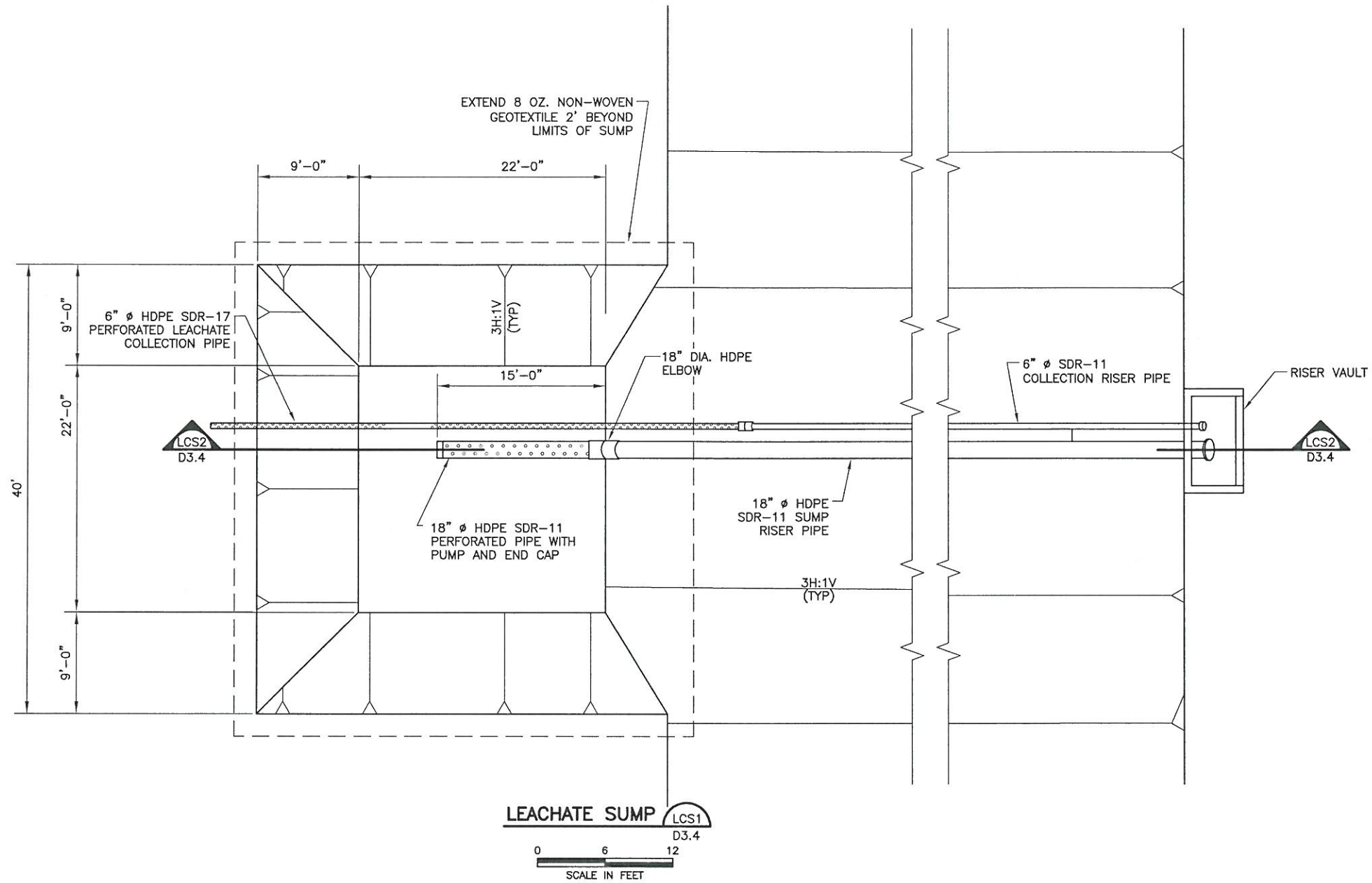
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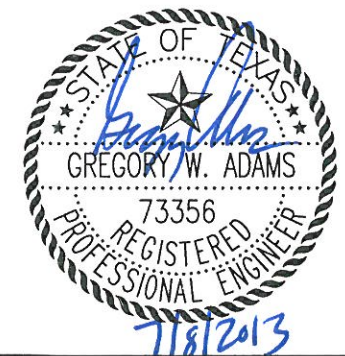
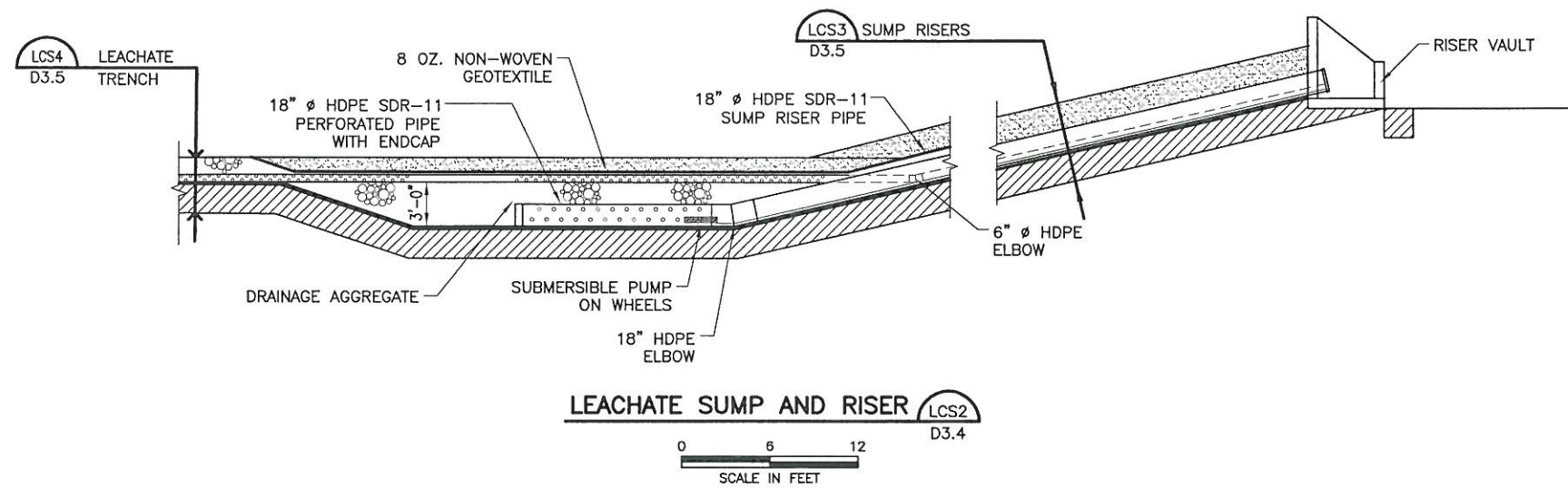
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WEST DISPOSAL AREA SUMPS		
CELL NO.	SIZE	DEPTH
2	25x25	3
3	25x25	4
4A	22x22	3.5
4B	22x22	3.5

**NOTES:**

1. DRAINAGE AGGREGATE NOT SHOWN FOR CLARITY.
2. REFER TO ATTACHMENTS D6 AND D7 FOR INSTALLATION AND MATERIAL REQUIREMENTS.
3. REFER TO ATTACHMENT D6, APPENDIX D6-A FOR LEACHATE SUMP DESIGN CALCULATIONS.



**LEACHATE COLLECTION SYSTEM DETAILS**  
**WASTE MANAGEMENT OF TEXAS, INC.**  
**NEW BOSTON LANDFILL**  
**PERMIT AMENDMENT APPLICATION**



**BIGGS & MATHEWS**  
**ENVIRONMENTAL**  
**CONSULTING ENGINEERS**  
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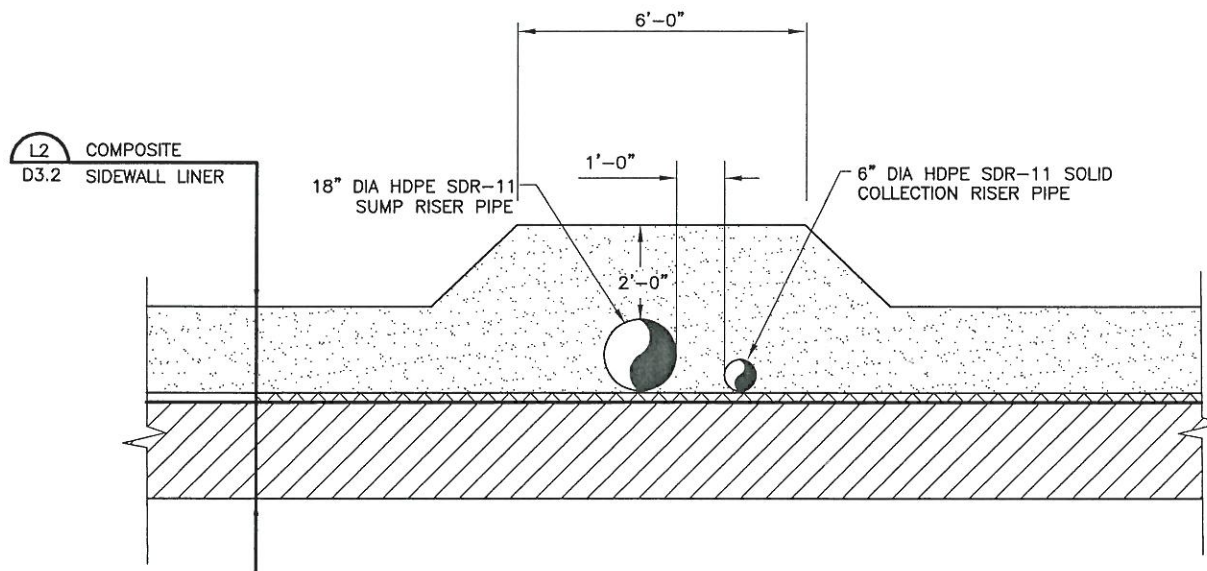
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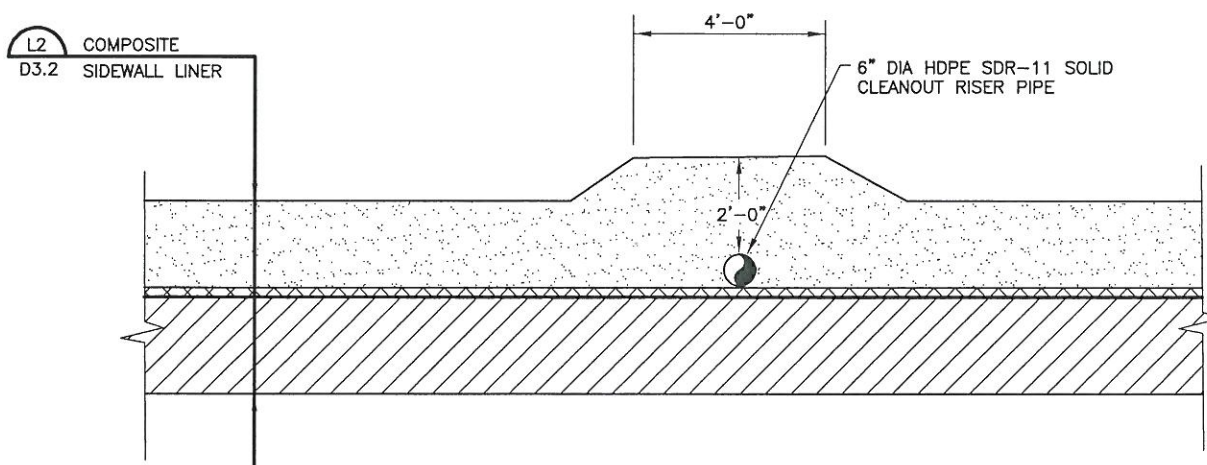
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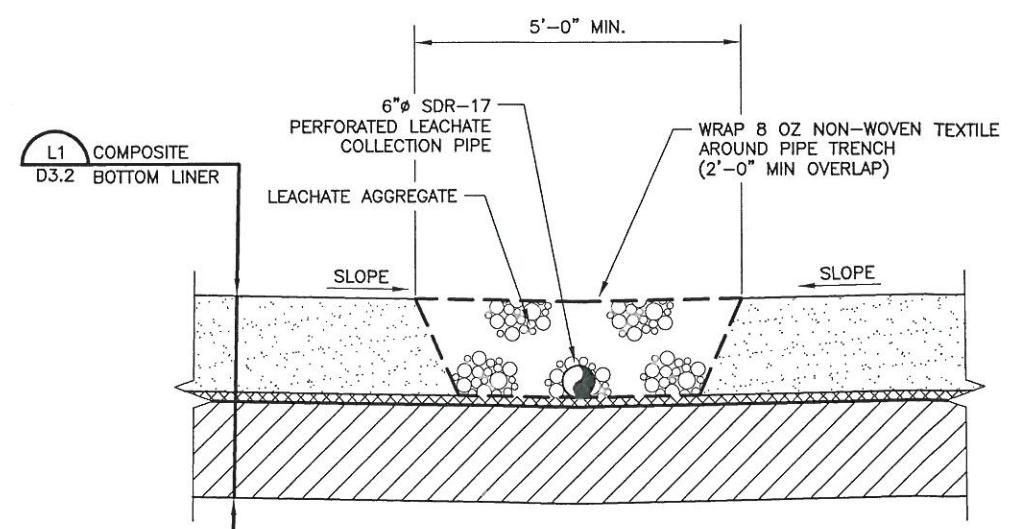


**SUMP RISERS** LCS3  
D3.5  
0 2 4  
SCALE IN FEET

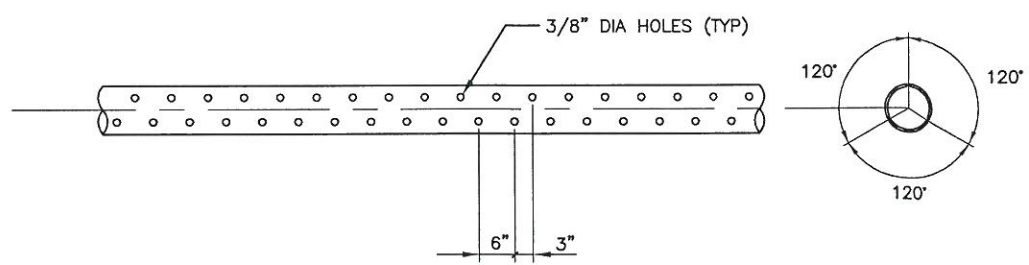


**CLEANOUT RISER** LCS5  
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0 2 4  
SCALE IN FEET

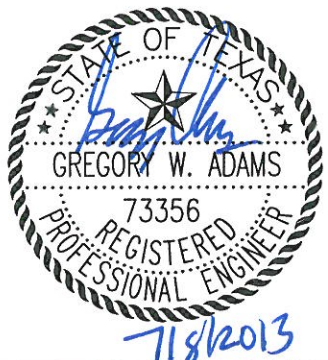
NOTES:  
1. REFER TO ATTACHMENTS D6 AND D7 FOR INSTALLATION AND MATERIAL REQUIREMENTS.



**LEACHATE TRENCH** LCS4  
D3.5  
0 2 4  
SCALE IN FEET



**PERFORATED PIPE** LCS6  
D3.5  
NTS



**LEACHATE COLLECTION SYSTEM DETAILS**  
WASTE MANAGEMENT OF TEXAS, INC.  
NEW BOSTON LANDFILL  
PERMIT AMENDMENT APPLICATION



BIGGS & MATHEWS ENVIRONMENTAL CONSULTING ENGINEERS  
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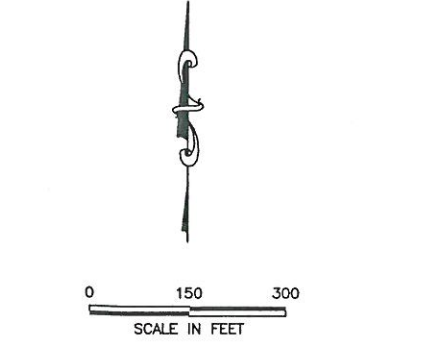
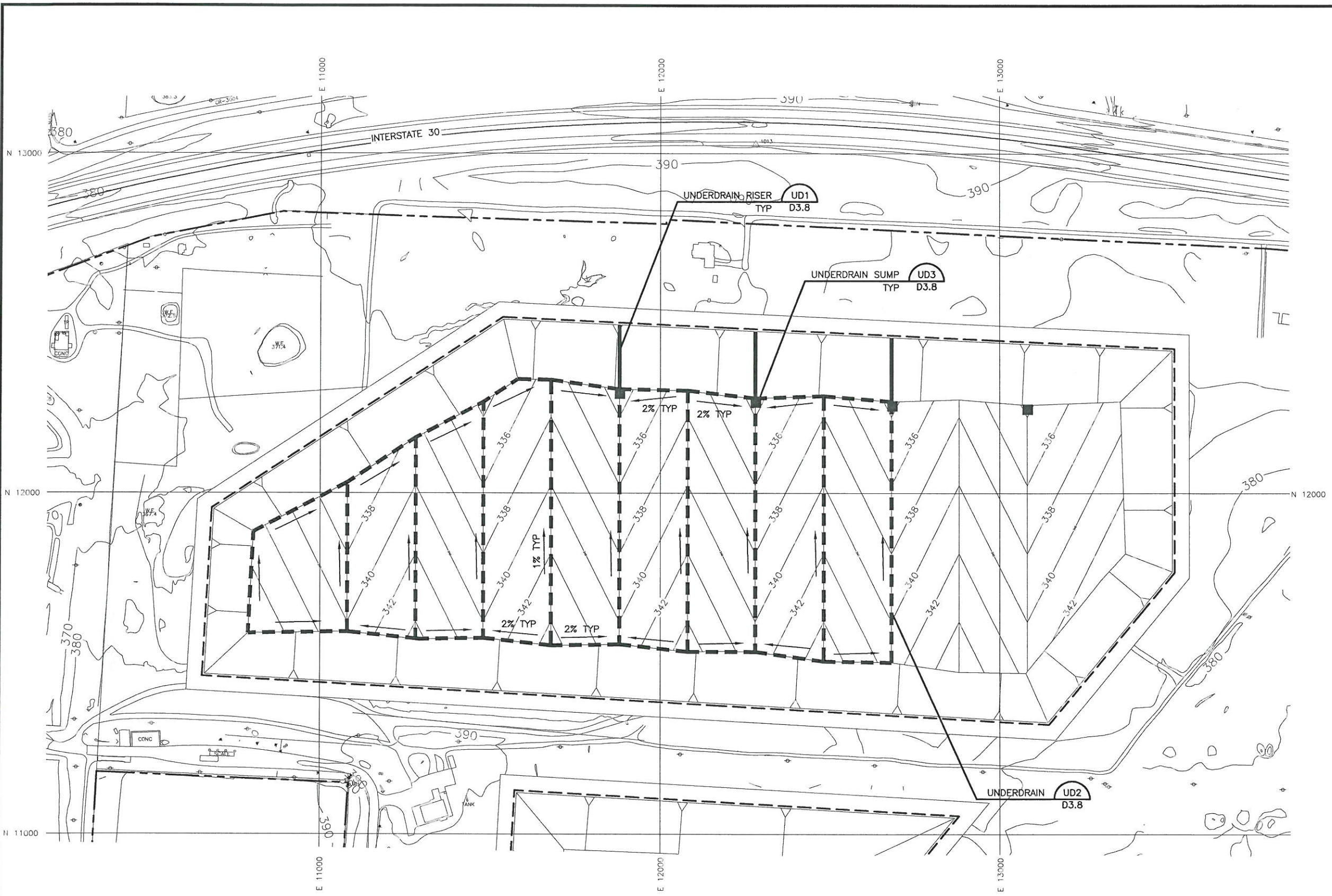
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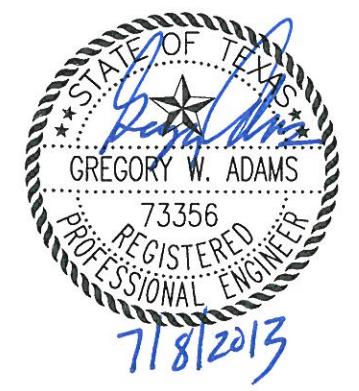


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- LEGEND**
- PERMIT BOUNDARY
  - LANDFILL FOOTPRINT
  - ~ 250 ~ EXISTING 10' CONTOUR
  - N 11000 SITE GRID
  - 340 — PROPOSED CONTOUR

- NOTES:**
1. EXISTING CONTOURS COMPILED BY AIR SURVEY FROM AERIAL SURVEY DATED MARCH 5, 2012.
  2. PERMIT BOUNDARY PROVIDED BY MTG ENGINEERS AND SURVEYORS, INC.
  3. PROPOSED CONTOURS DEPICT LINER SUBGRADE (EXCAVATION) GRADES.



**UNDERDRAIN PLAN  
NORTH DISPOSAL AREA**

**WASTE MANAGEMENT OF TEXAS, INC.  
NEW BOSTON LANDFILL  
PERMIT AMENDMENT APPLICATION**


**BIGGS & MATHEWS**  
 ENVIRONMENTAL  
 CONSULTING ENGINEERS  
 MANSFIELD • WICHITA FALLS  
 817-563-1144

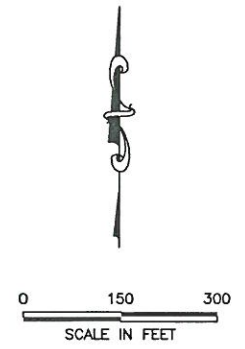
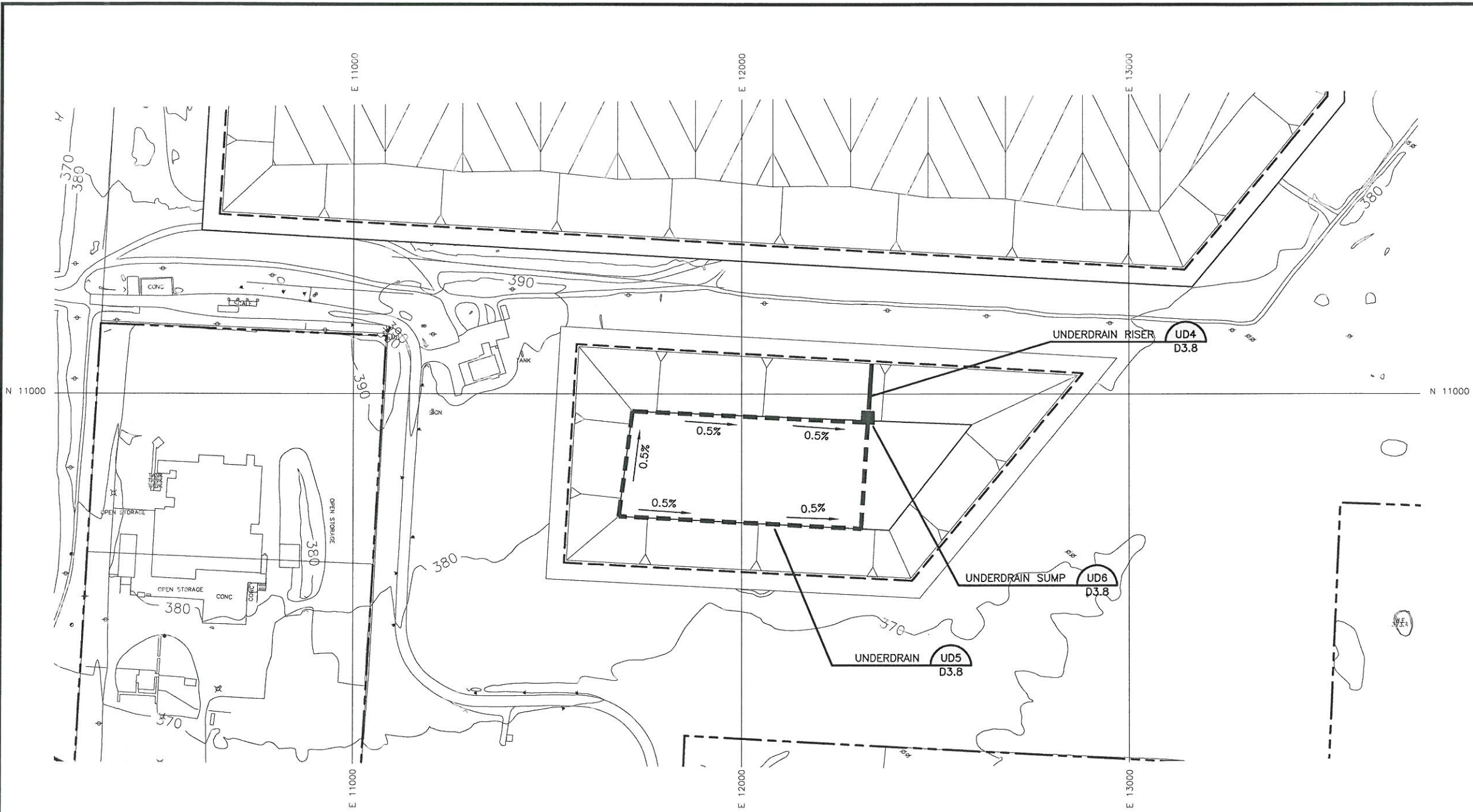
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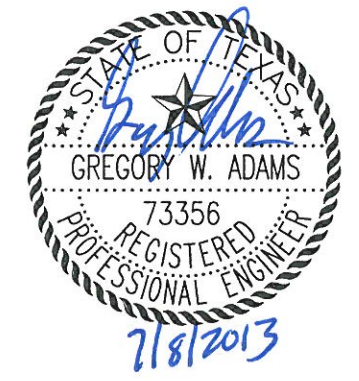


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- LEGEND**
- PERMIT BOUNDARY
  - ..... LANDFILL FOOTPRINT
  - 250 —— EXISTING 10' CONTOUR
  - N 11000 ——— SITE GRID

- NOTES:**
1. EXISTING CONTOURS COMPILED BY AIR SURVEY FROM AERIAL SURVEY DATED MARCH 5, 2012.
  2. PERMIT BOUNDARY PROVIDED BY MTG ENGINEERS AND SURVEYORS, INC.
  3. PROPOSED CONTOURS DEPICT LINER SUBGRADE (EXCAVATION) GRADES.



**UNDERDRAIN PLAN  
SOUTH DISPOSAL AREA**

**WASTE MANAGEMENT OF TEXAS, INC.  
NEW BOSTON LANDFILL  
PERMIT AMENDMENT APPLICATION**



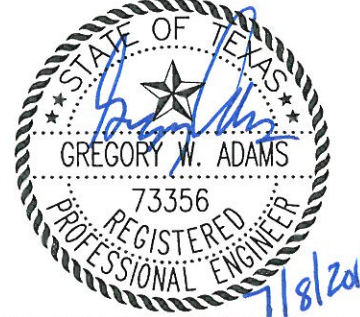
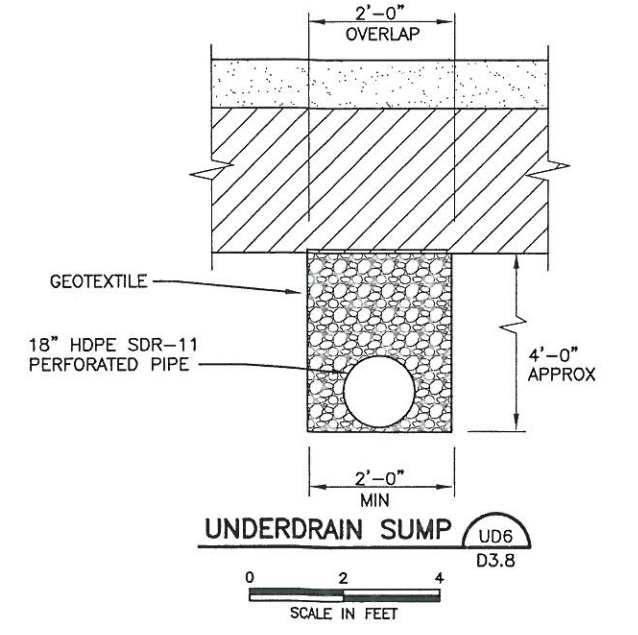
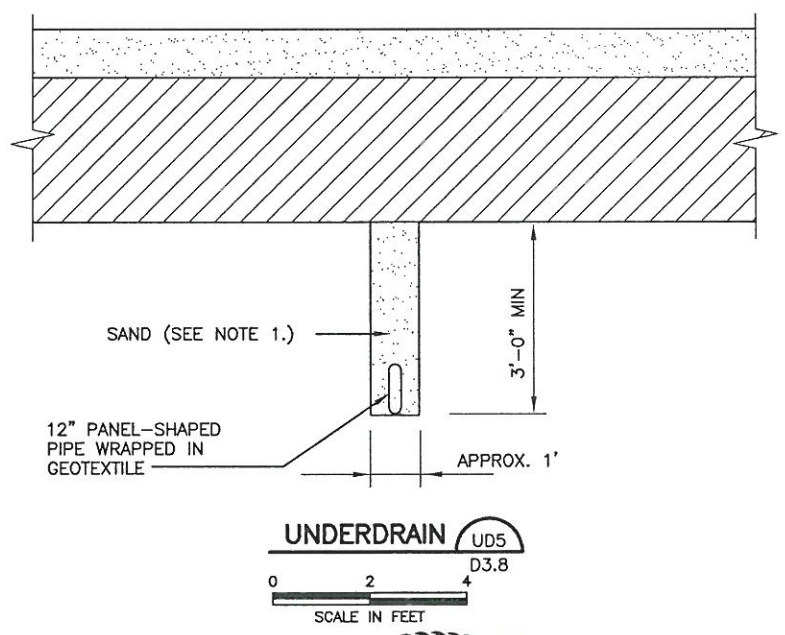
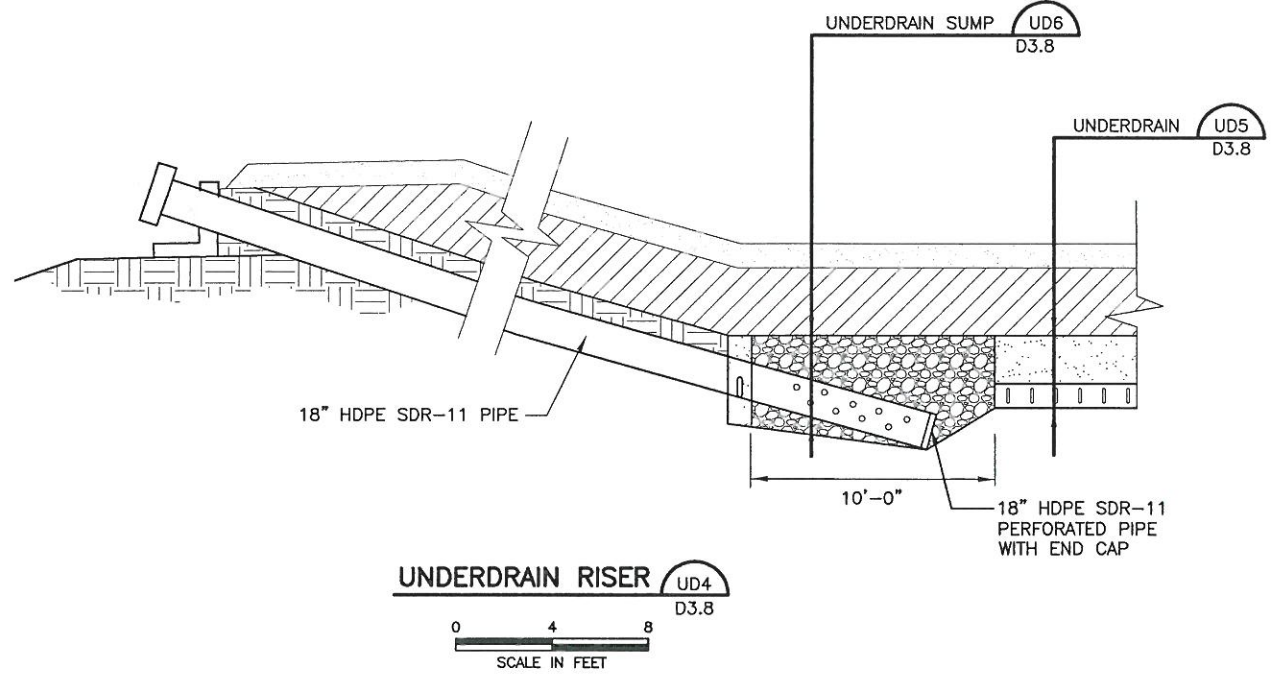
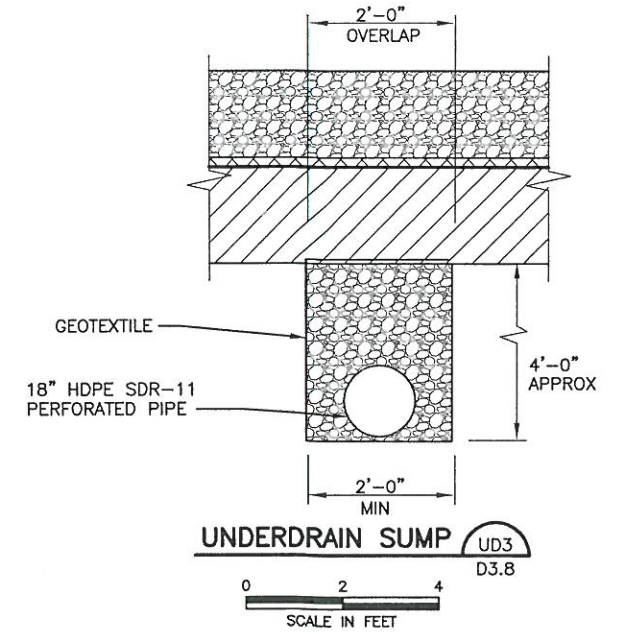
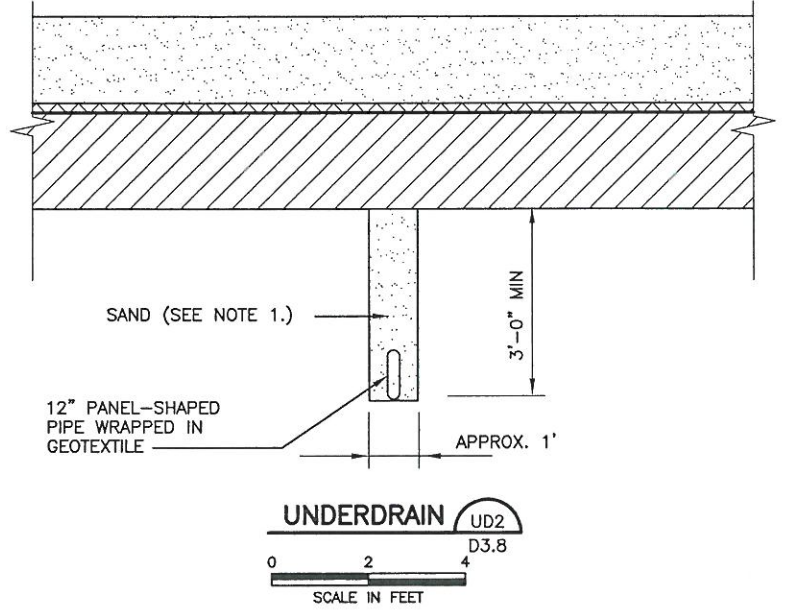
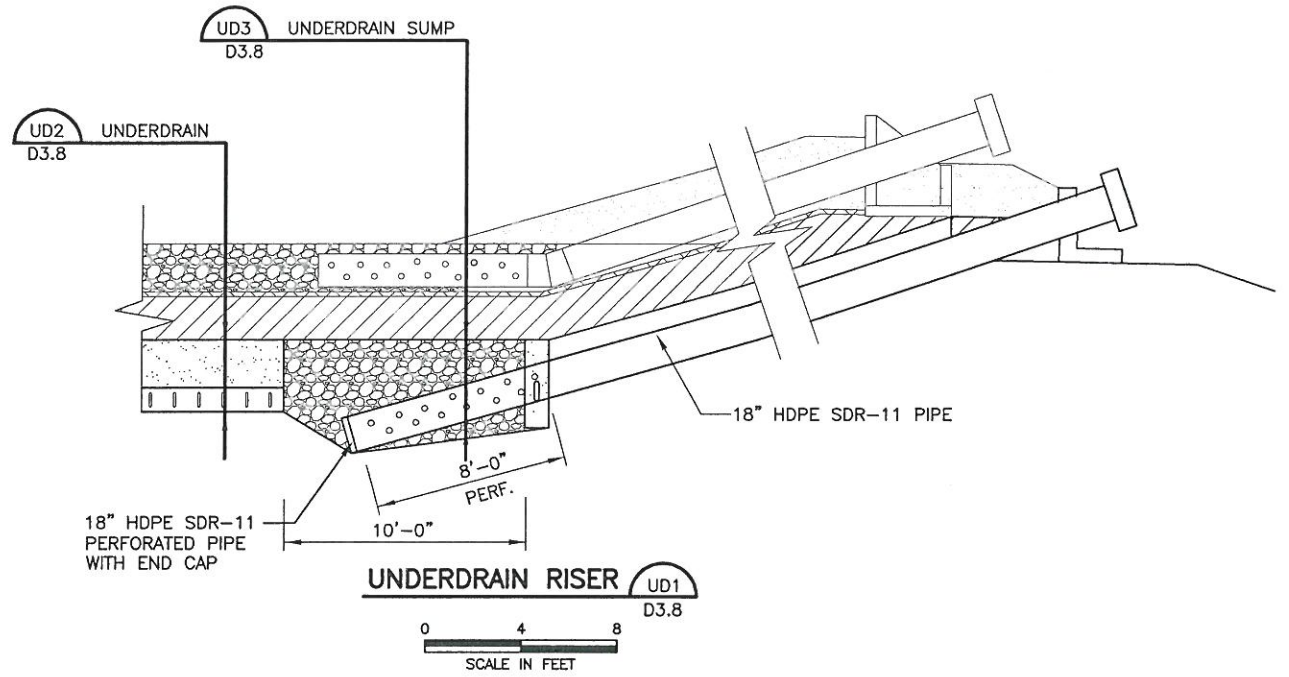
**BIGGS & MATHEWS**  
ENVIRONMENTAL  
CONSULTING ENGINEERS  
MANSFIELD • WICHITA FALLS  
817-563-1144

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NOTE:  
1. UNDERDRAIN SAND BACKFILL SHALL HAVE A PERMEABILITY OF  $1 \times 10^{-4}$  cm/sec. OR GREATER

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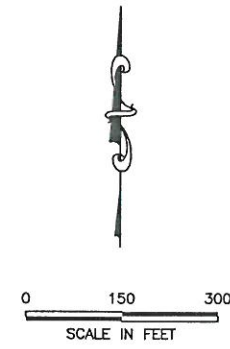
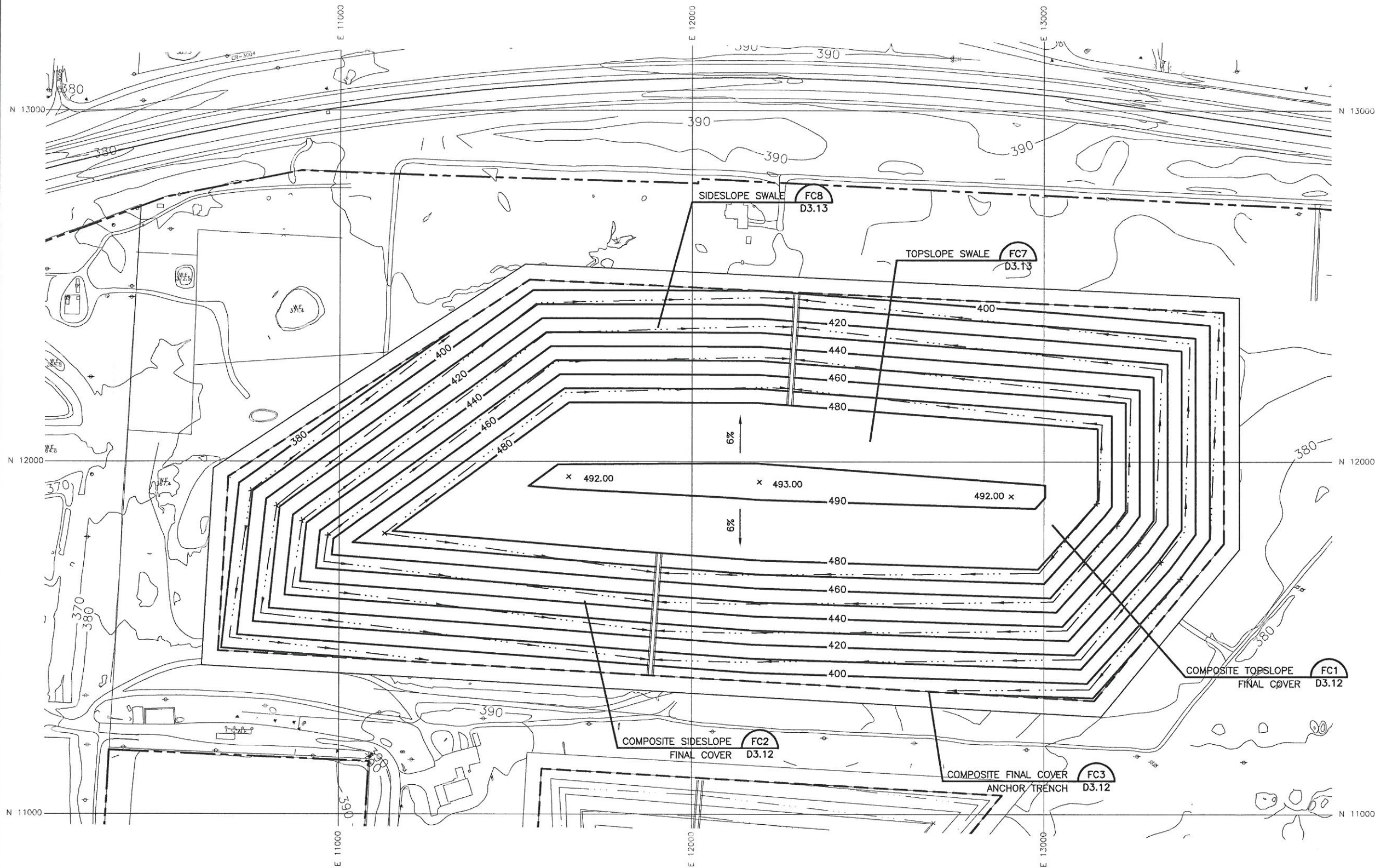
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<b>WASTE MANAGEMENT OF TEXAS, INC. NEW BOSTON LANDFILL PERMIT AMENDMENT APPLICATION</b>	
	<b>BIGGS &amp; MATHEWS ENVIRONMENTAL CONSULTING ENGINEERS MANSFIELD • WICHITA FALLS 817-563-1144</b>
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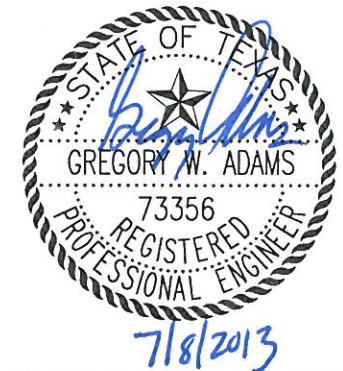


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- LEGEND**
- PERMIT BOUNDARY
  - LANDFILL FOOTPRINT
  - 250 EXISTING 10' CONTOUR
  - N 11000 SITE GRID
  - 420 PROPOSED CONTOUR
  - SWALE
  - ==== LETDOWN CHUTE

- NOTES:**
1. EXISTING CONTOURS COMPILED BY AIR SURVEY FROM AERIAL SURVEY DATED MARCH 5, 2012.
  2. PERMIT BOUNDARY PROVIDED BY MTG ENGINEERS AND SURVEYORS, INC.
  3. PROPOSED CONTOURS DEPICT TOP OF FINAL COVER GRADES.



**FINAL COVER PLAN  
NORTH DISPOSAL AREA  
WASTE MANAGEMENT OF TEXAS, INC.  
NEW BOSTON LANDFILL  
PERMIT AMENDMENT APPLICATION**



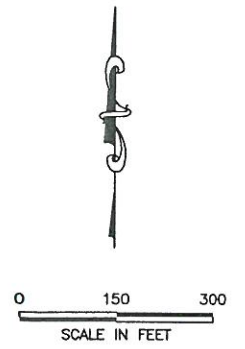
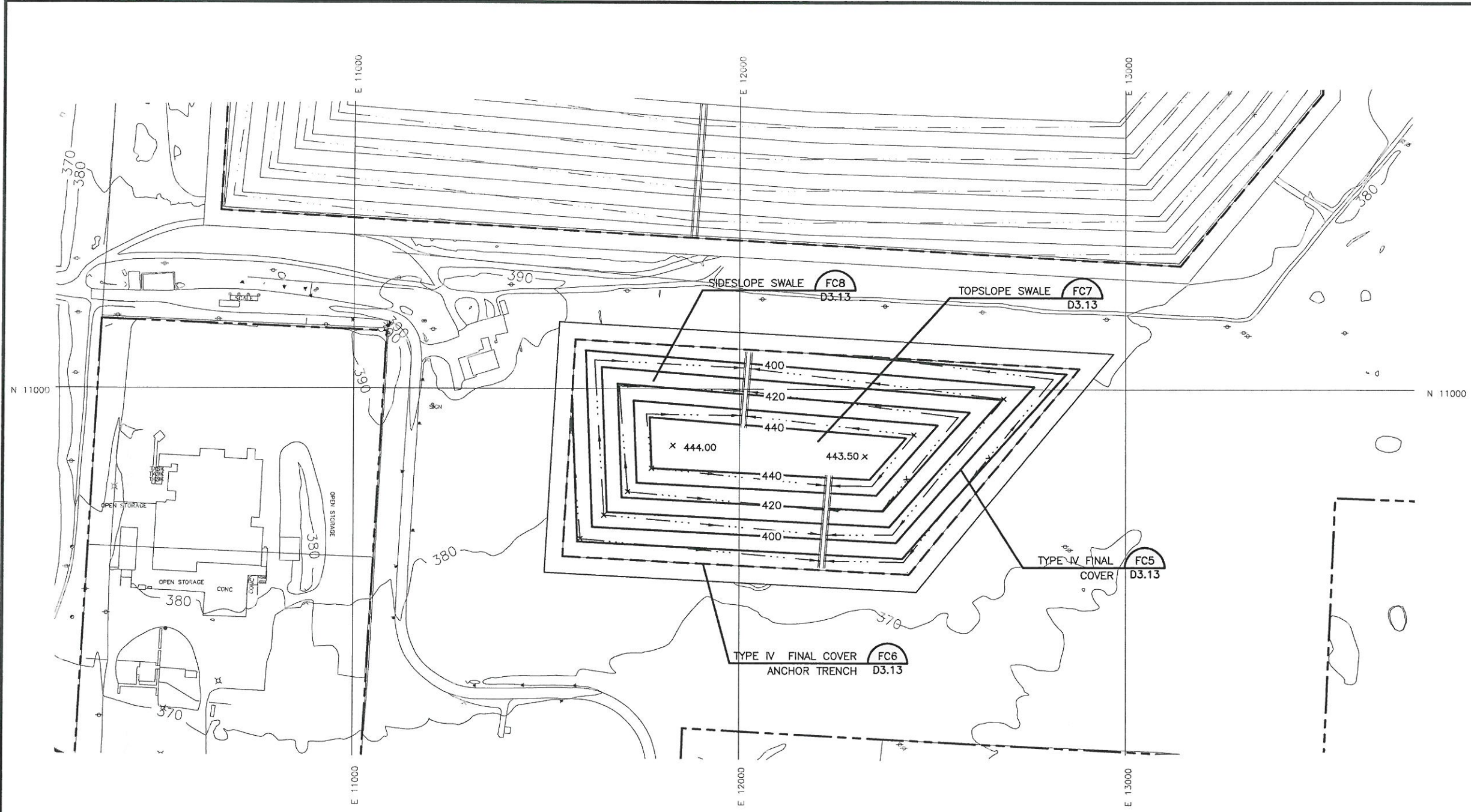
**BIGGS & MATHEWS  
ENVIRONMENTAL  
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MANSFIELD • WICHITA FALLS  
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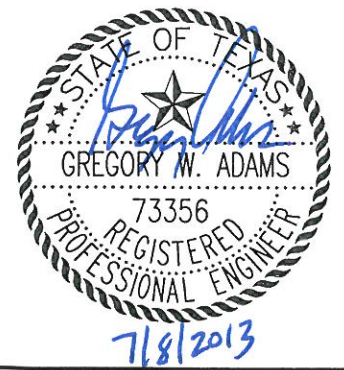


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- LEGEND**
- PERMIT BOUNDARY
  - LANDFILL FOOTPRINT
  - 250 EXISTING 10' CONTOUR
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  - 420 PROPOSED CONTOUR
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- NOTES:**
1. EXISTING CONTOURS COMPILED BY AIR SURVEY FROM AERIAL SURVEY DATED MARCH 5, 2012.
  2. PERMIT BOUNDARY PROVIDED BY MTG ENGINEERS AND SURVEYORS, INC.
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**FINAL COVER PLAN  
SOUTH DISPOSAL AREA**  
**WASTE MANAGEMENT OF TEXAS, INC.**  
**NEW BOSTON LANDFILL**  
**PERMIT AMENDMENT APPLICATION**



BIGGS & MATHEWS  
 ENVIRONMENTAL  
 CONSULTING ENGINEERS  
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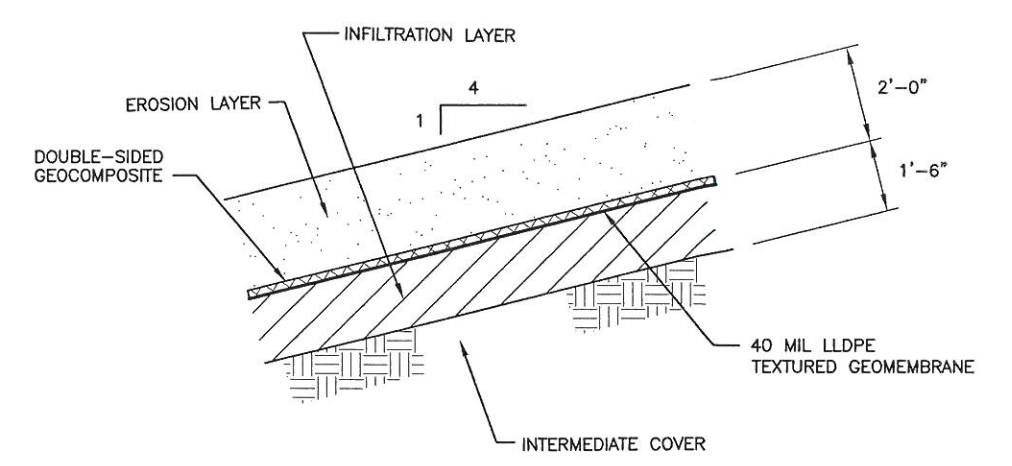
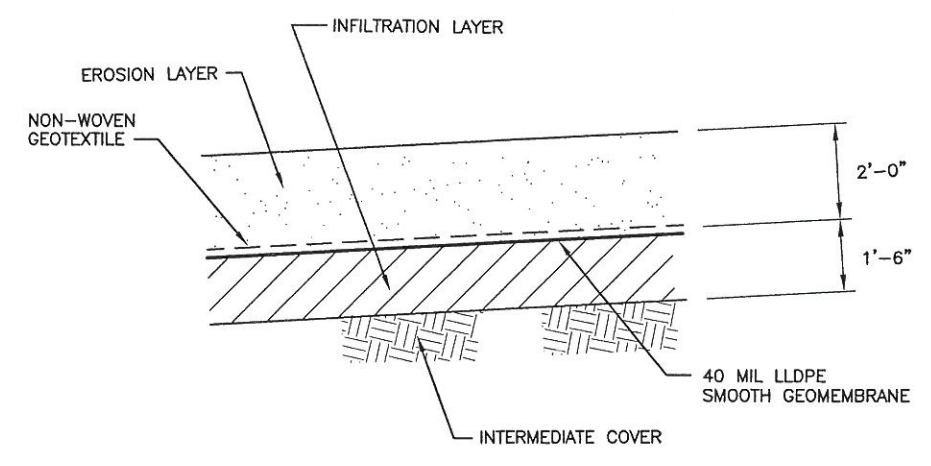
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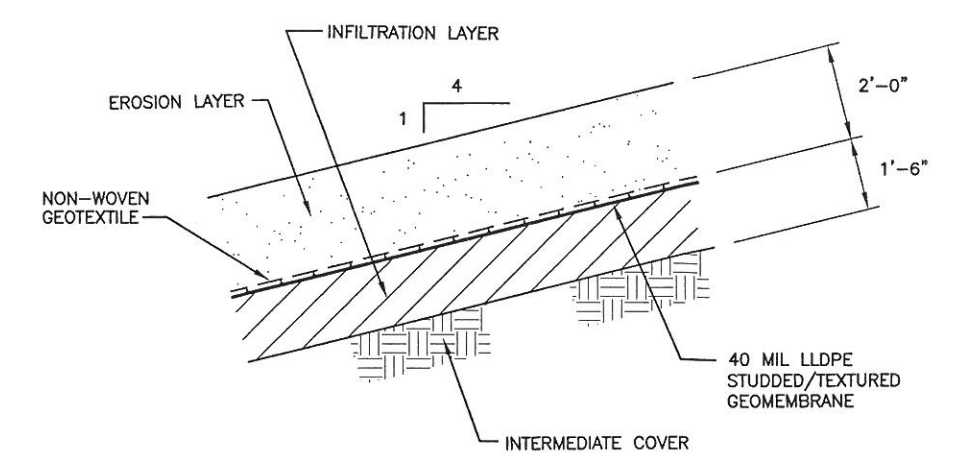
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**D3.11**



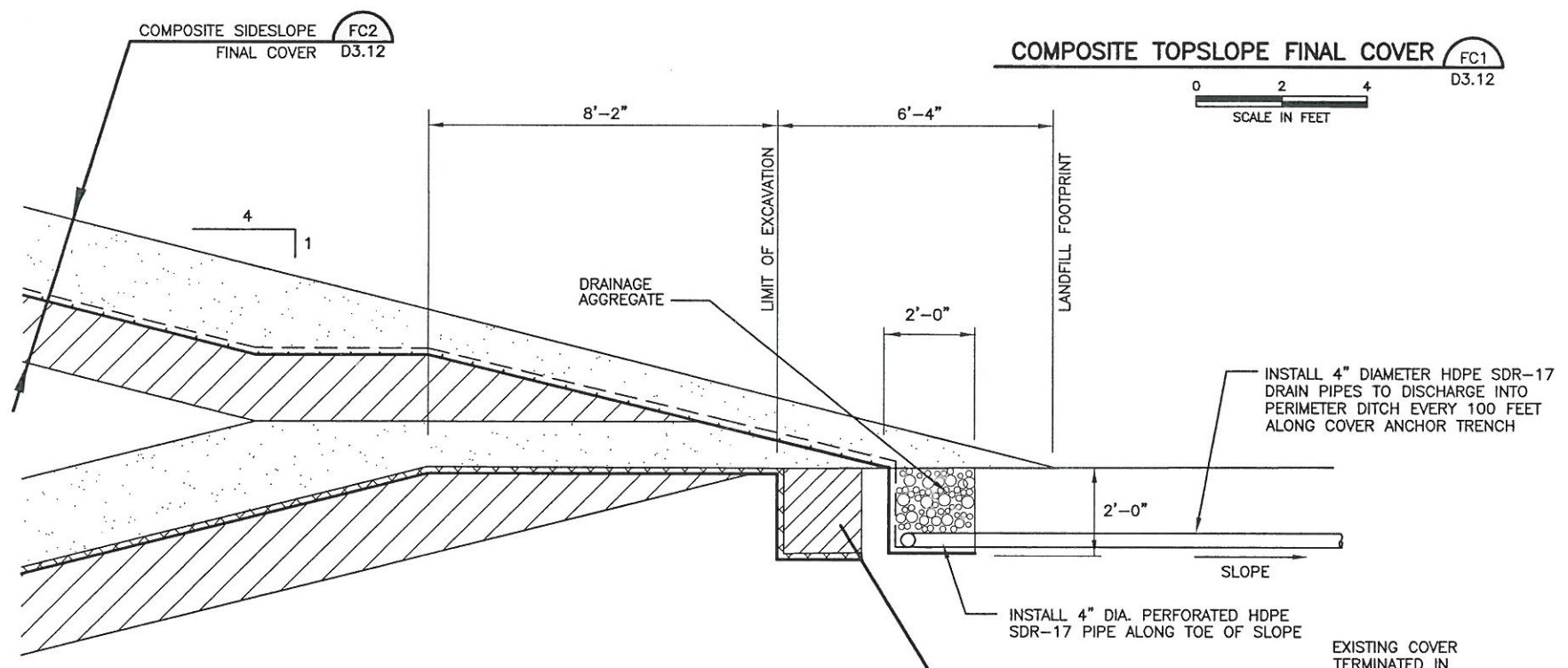
J:\101\05\112\Alt D3\03.12-Covdets.dwg Layout: D3.12 User: gwhite



**OPTION A**



**OPTION B**

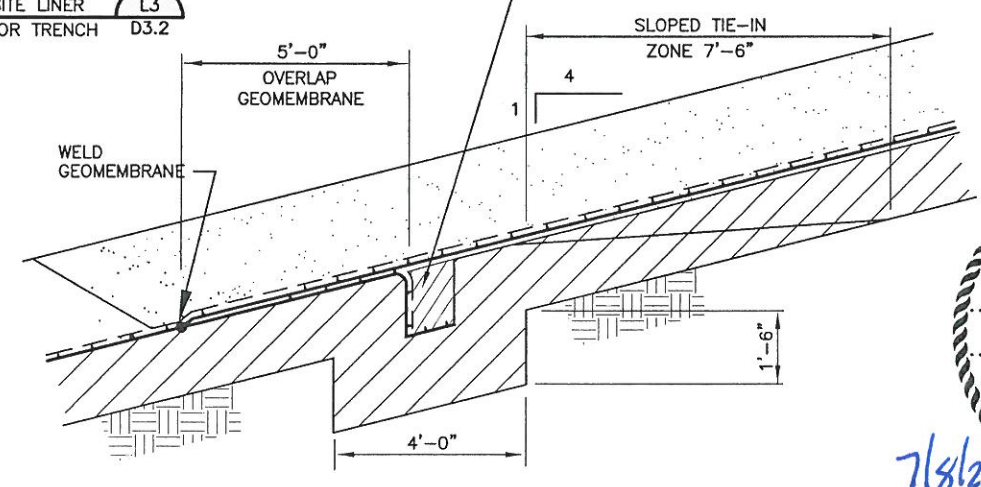


**COMPOSITE TOPSLOPE FINAL COVER FC1**  
D3.12

**COMPOSITE SIDESLOPE FINAL COVER FC2**  
D3.12

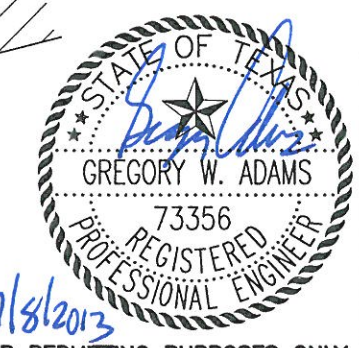
**COMPOSITE FINAL COVER ANCHOR TRENCH FC3**  
D3.12

**COMPOSITE LINER ANCHOR TRENCH L3**  
D3.2



**COMPOSITE EXISTING SIDESLOPE FINAL COVER TIE-IN FC4**  
D3.12

NOTE:  
1. REFER TO ATTACHMENT DB FOR COVER INSTALLATION AND MATERIAL REQUIREMENTS.



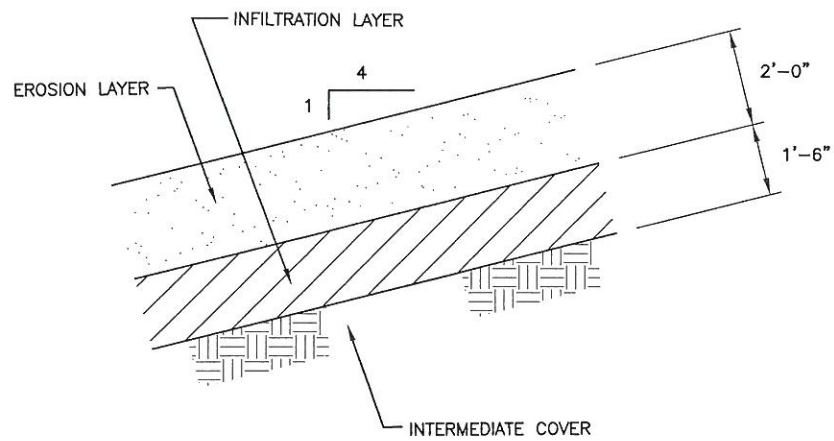
ISSUED FOR PERMITTING PURPOSES ONLY

<b>FINAL COVER DETAILS</b>	
WASTE MANAGEMENT OF TEXAS, INC. NEW BOSTON LANDFILL PERMIT AMENDMENT APPLICATION	
	BIGGS & MATHEWS ENVIRONMENTAL CONSULTING ENGINEERS MANSFIELD • WICHITA FALLS 817-563-1144
TBPE FIRM NO. F-256	TBPG FIRM NO. 50222
DSN. GWA	DATE : 6/13
DWN. GLW	SCALE : GRAPHIC
CHK. GWA	DWG : D3.12-Covdets.dwg

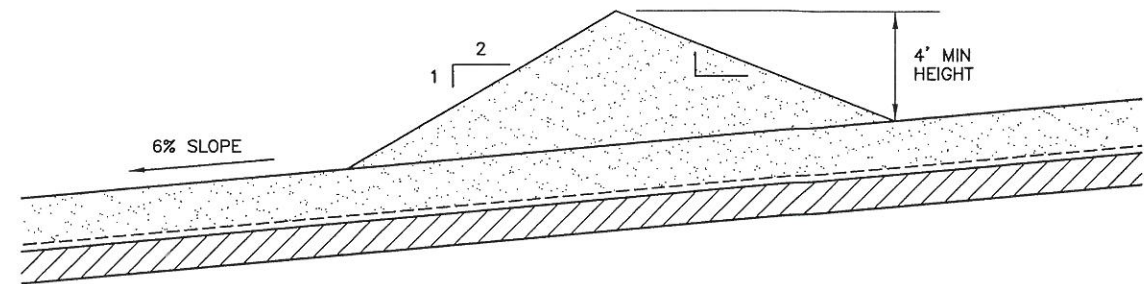
REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

D3.12

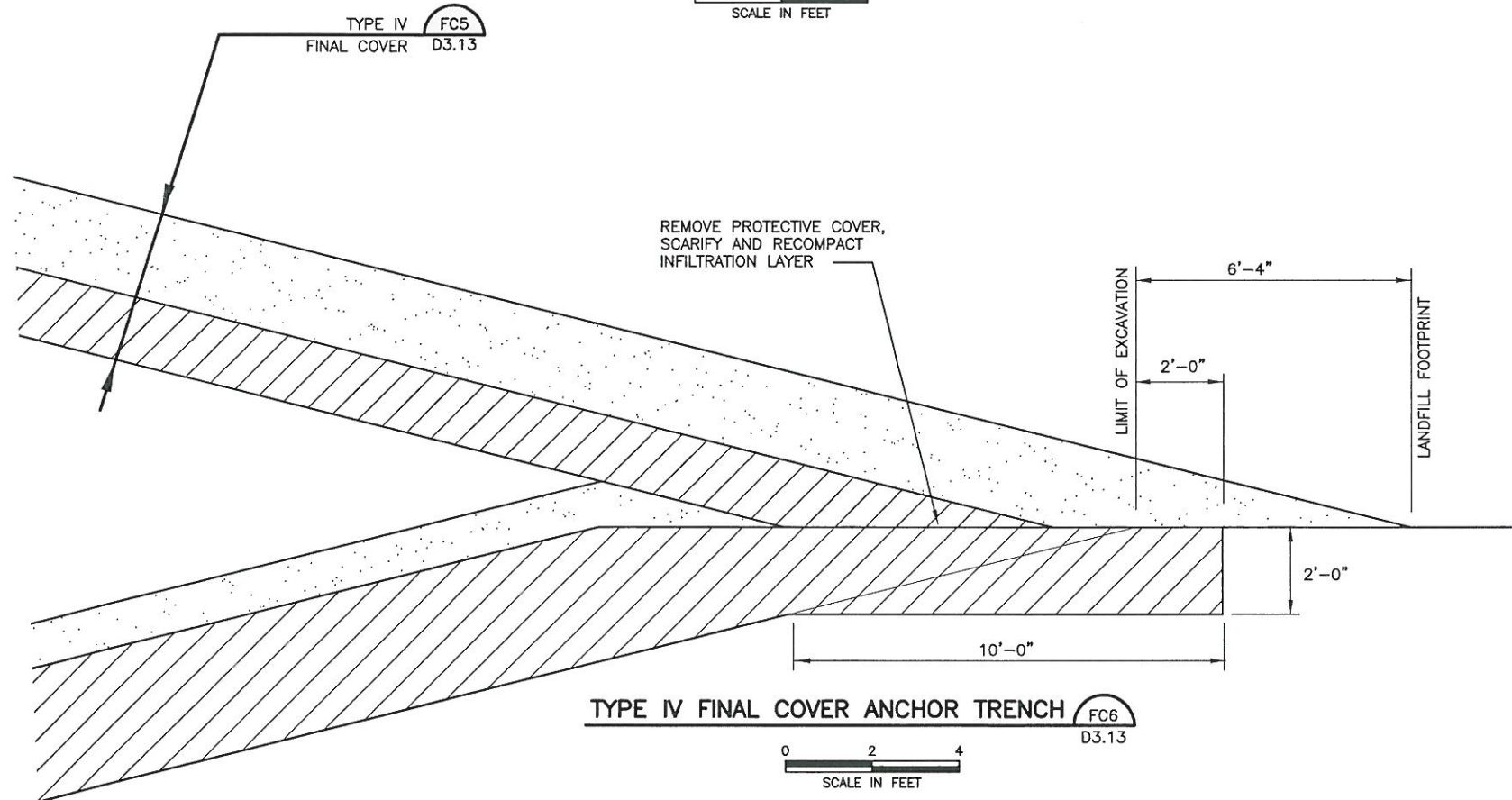




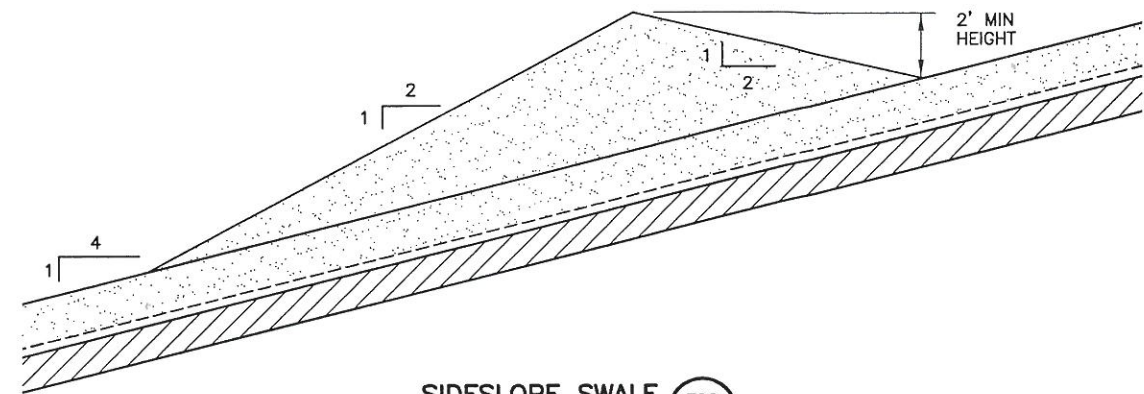
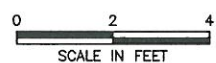
**TYPE IV FINAL COVER** (FC5) D3.13



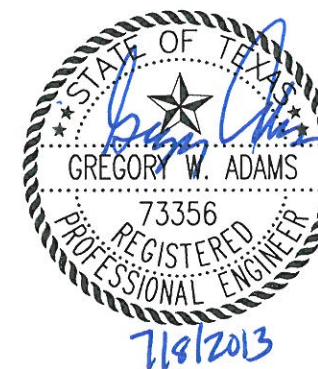
**TOPSLOPE SWALE** (FC7) D3.13



**TYPE IV FINAL COVER ANCHOR TRENCH** (FC6) D3.13



**SIDESLOPE SWALE** (FC8) D3.13



**FINAL COVER DETAILS**

**WASTE MANAGEMENT OF TEXAS, INC.  
NEW BOSTON LANDFILL  
PERMIT AMENDMENT APPLICATION**



**BIGGS & MATHEWS  
ENVIRONMENTAL  
CONSULTING ENGINEERS  
MANSFIELD • WICHITA FALLS  
817-563-1144**

**ISSUED FOR PERMITTING PURPOSES ONLY**

REVISIONS						TBPE FIRM NO. F-256	TBPG FIRM NO. 50222
REV	DATE	DESCRIPTION	OWN BY	DES BY	CHK BY	APP BY	DSN. GWA DATE : 6/13 DWN. GLW SCALE : GRAPHIC CHK. GWA DWG : D3.12-Covdets.dwg

**D3.13**