



APTIM
12005 Ford Road, Suite 600
Dallas, Texas 75234
Tel: 972.773.8400
Fax: 972.773.8401
www.CBI.com

November 06, 2017

Mr. Dwight Russell, P.E.
Municipal Solid Waste Permits Section – MC 124
Texas Commission on Environmental Quality
12100 Park 35 Circle; Bldg. F
Austin, Texas 78753

Re: Pescadito Environmental Resource Center - Webb County
Municipal Solid Waste (MSW) Permit Application No. 2374
Notice of Deficiency - Technically Complete Permit Application Supplement Number 5
Tracking No. 21876231; CN603835489/RN106119639

Dear Mr. Russell;

APTIM Environmental and Infrastructure, Inc. is in receipt of your letter dated October 23, 2017 in which you are asking for additional information and clarification related to our submittal of August 17, 2017.

Your comments are listed below followed by our responses in italics.

- 1) In accordance with §330.61(d)(8), Part I, Figure 1 should be revised to accurately depict the site entrance roads from public access roads north and south of the facility that are described in Part I, Page 5.

RESPONSE to ITEM 1:

Part I, Figure 1 has been revised as requested. For consistency, Part I, Figure 2 has been revised as well.

- 2) Part II, Figure 4 shows a fence running north/south just east of the gate house/scale area. This fence intersects the buffer zone and there is no perimeter fence tied into the entrance road gate. Please revise Figure 4 to clearly show all fencing and gates that are to provide security per §330.131 and comply with §330.141(b) regarding safe passage for emergency vehicle traffic.

RESPONSE to ITEM 2:

Part II, Figure 4 is not intended to show the site access control features. Access control features are discussed in Part III, Attachment III-B on Page 1 and are shown on Drawing III-B.1-2 in Part III, Appendix III-B.1. That figure has been updated as requested. Additionally, the text in Part II has been modified to

reference the correct drawing and Part II, Figure 4 has been revised to delete the reference to Access Control Fence in the legend.

- 3) No groundwater or gas monitoring wells are shown on Figure 5 as described in Part II, Page 17. Please revise.

RESPONSE to ITEM 3:

Figure 5 in Part II has been revised to include the Groundwater Monitoring Wells and Landfill Gas Monitoring probes.

- 4) Attachment III-C, Appendix III-C.1, Page 11 and 17 state that stormwater conveyance and detention pond discharge structures may be changed at owner's discretion as long as they are equivalent. Please revise these pages to include statements that any revisions to the stormwater management system must receive TCEQ prior approval.

RESPONSE to ITEM 4:

A statement as requested has been added to Pages 11 and 17 in Part III, Appendix III-C.1.

- 5) Attachment III-C, Appendix III-C.1, Page 17 states that the discharge structure for the detention pond consists of three culverts, each 5 feet wide by 3 feet tall. Drawing III.C.2-16 shows the discharge structure as three culverts, each 3 feet wide by 6 feet tall. Please correct as necessary.

RESPONSE to ITEM 5:

Drawing III-C.2-16 has been updated to reflect the correct culvert size. Three culverts 5-feet wide and 3-feet tall are proposed. The text on Page 17 of Appendix III-C.1 is correct.

- 6) Appendix III-D.6, Page 5 states leachate will be stored in "...one or more onsite leachate storage tanks ..." Page 13 also states that at least one 15,000 gallon leachate storage tank will be provided. Please provide information to demonstrate compliance with §330.63(d)(1) to include a discussion and drawing(s) that reflect the maximum number of tanks, their capacity, and secondary containment. In addition, Page 5 discusses "leachate pond(s)." Please clearly identify the number and capacity of the leachate ponds and revise the closure cost for both removal and disposal of the total capacity of the storage tanks and the total capacity of the ponds per §330.505(a)(2).

RESPONSE to ITEM 6:

Part III, Appendix III-D.6 has been modified for clarity regarding the maximum number of tanks and ponds proposed and Part III, Attachment III-J has been updated to include the disposal cost for the maximum amount of contaminated water that may be stored in the tanks and pond.

- 7) Note 6 on the Drawing III-F.1-1 describes monitoring wells MW-15, 16, and 17 to monitor the proposed leachate evaporation pond. The latest revisions to this drawing depict two wells to monitor the leachate pond (MW-A and MW-B. Please revise the drawing to be consistent. If fewer monitoring wells are being proposed

for the leachate evaporation pond, please discuss why the reduced number of wells is now deemed adequate.

RESPONSE to ITEM 7:

MW-C has been added on the west side of the pond location and Page 5 of Part III, Attachment III-F has been updated accordingly. Drawing III-F.1-1 and III-F.1-2 of Appendix III-F.1 have been updated to reflect this. The Closure and Post Closure Care cost estimate has been updated to reflect the additional groundwater monitoring well.

- 8) Page 4 of the Closure Cost Estimate provides a closure cost for the liquid solidification facility of \$40,994. The summary on Page 2 does not appear to include this cost item. Please revise as appropriate.

RESPONSE to ITEM 8:

Page 4 of the Cost Estimate is for closure of the Liquid Solidification Unit and Page 2 is for closure of the Waste Disposal Unit. Page 1 is a summary of the closure and post-closure care costs and includes the liquid solidification unit closure costs. Page 2 has been updated to state that it is for the waste disposal units. All estimates have been updated as discussed in other sections of this response.

The following table lists the specific revisions and how they should be incorporated into the overall application.

Tab ID	Title	Revised Portions
Part I	Figures	Cover, Table of Contents and Figures 1 and 2 have been revised.
Part II	Text and Figures	Cover Page, Table of Contents, Pages 16 and 17 and Figures 4 and 5 have been revised.
Part III, Appendix III-B.1	General Facility Design Figures	Cover Page, Table of Contents and Figure III-B.1-2.
Part III, Appendix III-C.1	Facility Surface Water Drainage Report Narrative	Cover Page, Table of Contents and Pages 11 and 17.
Part III, Appendix III-C.2	Facility Surface Water Drainage Drawings	Cover Page, Table of Contents and Figure III-C.2-16.
Part III, Appendix III-D.6	Leachate and Contaminated Water Plan	Cover Page, Table of Contents and pages 5 and 13.
Part III, Attachment III-F	Groundwater Monitoring Plan	Revised Cover Page, Table of Contents and Pages 5 and 9.
Part III, Appendix III-F.1	Groundwater Monitoring Plan Figures	Revised Cover Page, Table of Contents and Figures F.1-1 and F.1-2.
Part III, Attachment III-J	Cost Estimates for Closure and Post-Closure Care	Revised Cover Page, Table of Contents and pages 3 and 5 and Appendix J-1 (Cost Estimates – pages 1 - 4).

Our submittal is formatted as follows:

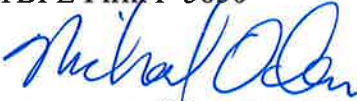
- Attachment A contains a new signature page from the Part 1 form.
- Attachment B contains the original version of the changed pages.
- Attachment C contains a redline / strikeout version of the changed pages.
- Attachment D contains three (3) copies of the original changed pages found in Attachment B for TCEQ use only.

Blue sheets have been inserted between the Attachments. For convenience, orange sheets are included to identify the various Appendices as divided by tabs in the original submittal. The information provided in this submittal is also being sent to the Laredo Public Library and uploaded to the web site at www.pescaditoerc.com. We trust this information is clear and complete; however, should you need additional information, please let us know.

Sincerely,

APTIM Environmental and Infrastructure, Inc.

TBPE Firm F-5650



Michael W. Oden, P.E.

Project Manager

Attachments

- A – Part 1 Form Signature Page
- B – Original Replacement pages
- C – Redline/Strikeout version of changed pages
- D – Three copies of changed pages (TCEQ only)

CC: Mr. Carlos Y. Benavides III
Mr. William W. Thompson

Attachment A
to November 2017 Letter (MSW 2374)

Part I Form Signature Page

Signature Page

I, Carlos Y. Benavides, III, Manager
(Site Operator (Permittee/Registrant)'s Authorized Signatory) (Title)

certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: *Carlos Y. Benavides III* Date: Nov 3, 2017

~~TO BE COMPLETED BY THE OPERATOR IF THE APPLICATION IS SIGNED BY AN AUTHORIZED REPRESENTATIVE FOR THE OPERATOR~~

~~I, _____, hereby designate _____
(Print or Type Operator Name) (Print or Type Representative Name)~~

~~as my representative and hereby authorize said representative to sign any application, submit additional information as may be requested by the Commission; and/or appear for me at any hearing or before the Texas Commission on Environmental Quality in conjunction with this request for a Texas Water Code or Texas Solid Waste Disposal Act permit. I further understand that I am responsible for the contents of this application, for oral statements given by my authorized representative in support of the application, and for compliance with the terms and conditions of any permit which might be issued based upon this application.~~

~~_____
Printed or Typed Name of Operator or Principal Executive Officer~~

~~_____
Signature~~

SUBSCRIBED AND SWORN to before me by the said Alma Ramirez

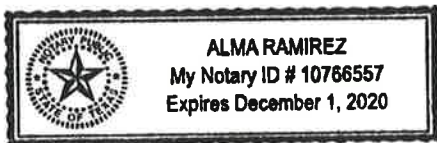
On this 3rd day of November, 2017

My commission expires on the 1st day of December, 2020

Alma Ramirez
Notary Public in and for
Webb

County, Texas

(Note: Application Must Bear Signature & Seal of Notary Public)



Attachment B
to November 2017 Letter (MSW 2374)

Original Replacement Pages

Changed Pages

Part I

PART I

APPLICATION FOR PERMIT TYPE I MUNICIPAL SOLID WASTE FACILITY

MSW PERMIT NO. 2374

PESCADITO ENVIRONMENTAL RESOURCE CENTER SOLID WASTE MANAGEMENT AND DISPOSAL FACILITY

RANCHO VIEJO WASTE MANAGEMENT, LLC
LAREDO, WEBB COUNTY, TEXAS

Originally Prepared By:

TRC Environmental Corporation
TBPE Firm Registration No. 3775

March 28, 2011; Revised May 20, 2011; Revised September 14, 2011; Revised December 14, 2011

Part I was signed by James F. Neyens, P.E. on December 14, 2011 for all changes through that date

Revised on June 12, 2014

April 20, 2015

September 2015

Technically Complete March 11, 2016

Modified November 2016

Modified November 2017 By:



APTIM Environmental & Infrastructure, Inc. (f/k/a CB&I Environmental & Infrastructure, Inc.)
TBPE Firm Registration No. F-5650

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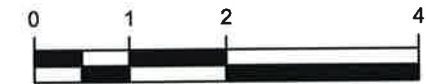
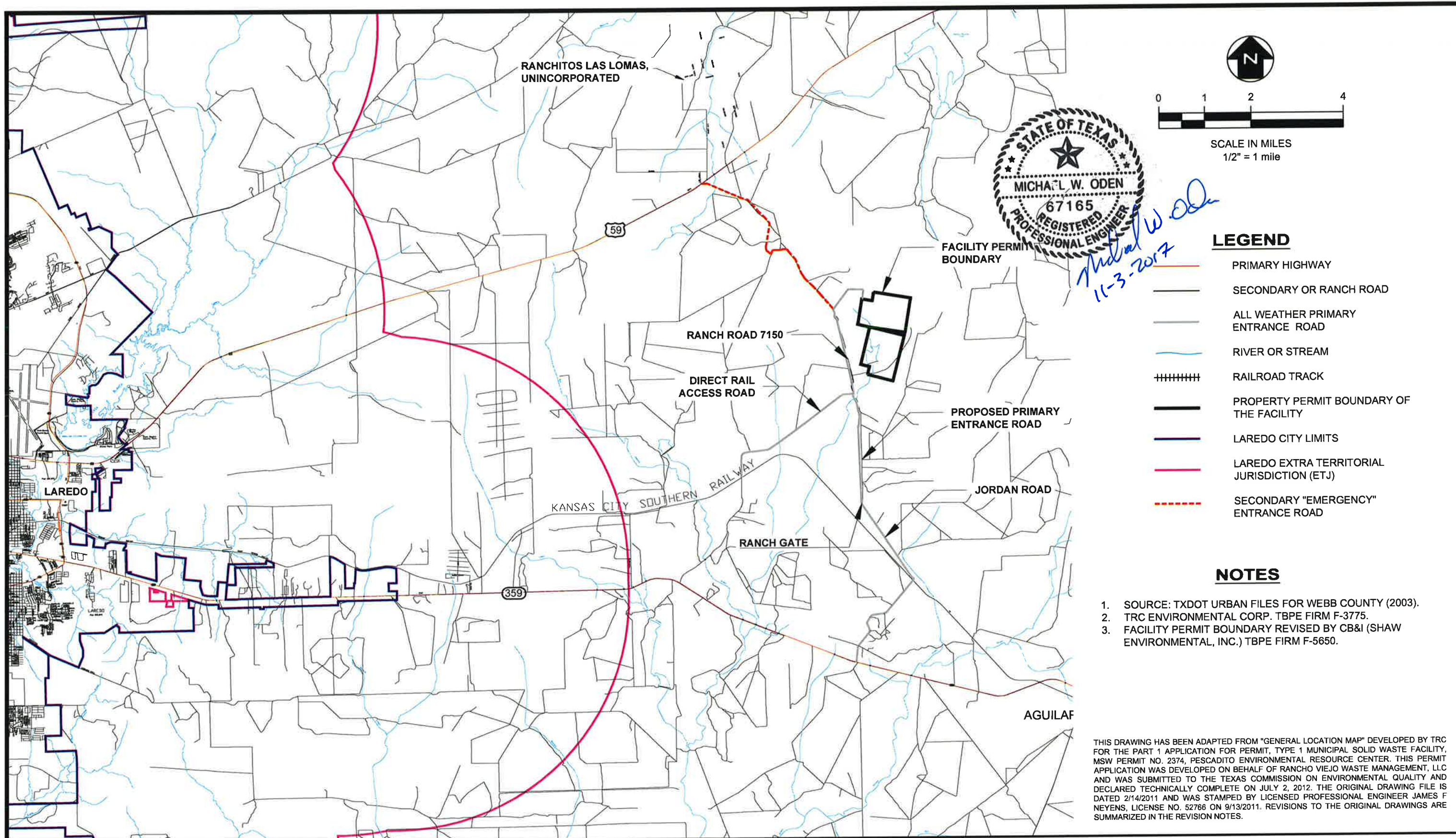
Figure 1	General Location Map
Figure 2	Detailed Location Map
Figure 3	Land Ownership Map
Figure 4	Boundary Survey (Sheets 1 to 4 of 4)
Figure 5	Surface Use Agreement

Attachments

Attachment A	Legal Description
Attachment B	Certificate of Incorporation
Attachment C	Payment Demonstration



FIGURES



SCALE IN MILES
1/2" = 1 mile



LEGEND


- PRIMARY HIGHWAY
- SECONDARY OR RANCH ROAD
- ALL WEATHER PRIMARY ENTRANCE ROAD
- RIVER OR STREAM
- RAILROAD TRACK
- PROPERTY PERMIT BOUNDARY OF THE FACILITY
- LAREDO CITY LIMITS
- LAREDO EXTRA TERRITORIAL JURISDICTION (ETJ)
- SECONDARY "EMERGENCY" ENTRANCE ROAD

NOTES

1. SOURCE: TXDOT URBAN FILES FOR WEBB COUNTY (2003).
2. TRC ENVIRONMENTAL CORP. TBPE FIRM F-3775.
3. FACILITY PERMIT BOUNDARY REVISED BY CB&I (SHAW ENVIRONMENTAL, INC.) TBPE FIRM F-5650.

THIS DRAWING HAS BEEN ADAPTED FROM "GENERAL LOCATION MAP" DEVELOPED BY TRC FOR THE PART 1 APPLICATION FOR PERMIT, TYPE 1 MUNICIPAL SOLID WASTE FACILITY, MSW PERMIT NO. 2374, PESCADITO ENVIRONMENTAL RESOURCE CENTER. THIS PERMIT APPLICATION WAS DEVELOPED ON BEHALF OF RANCHO VIEJO WASTE MANAGEMENT, LLC AND WAS SUBMITTED TO THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AND DECLARED TECHNICALLY COMPLETE ON JULY 2, 2012. THE ORIGINAL DRAWING FILE IS DATED 2/14/2011 AND WAS STAMPED BY LICENSED PROFESSIONAL ENGINEER JAMES F NEYENS, LICENSE NO. 52766 ON 9/13/2011. REVISIONS TO THE ORIGINAL DRAWINGS ARE SUMMARIZED IN THE REVISION NOTES.

REV. NO.	DATE	DESCRIPTION
1	5/22/2014	REVISED FACILITY PERMIT BOUNDARY
2	11/2017	UPDATE ENTRANCE ROADS



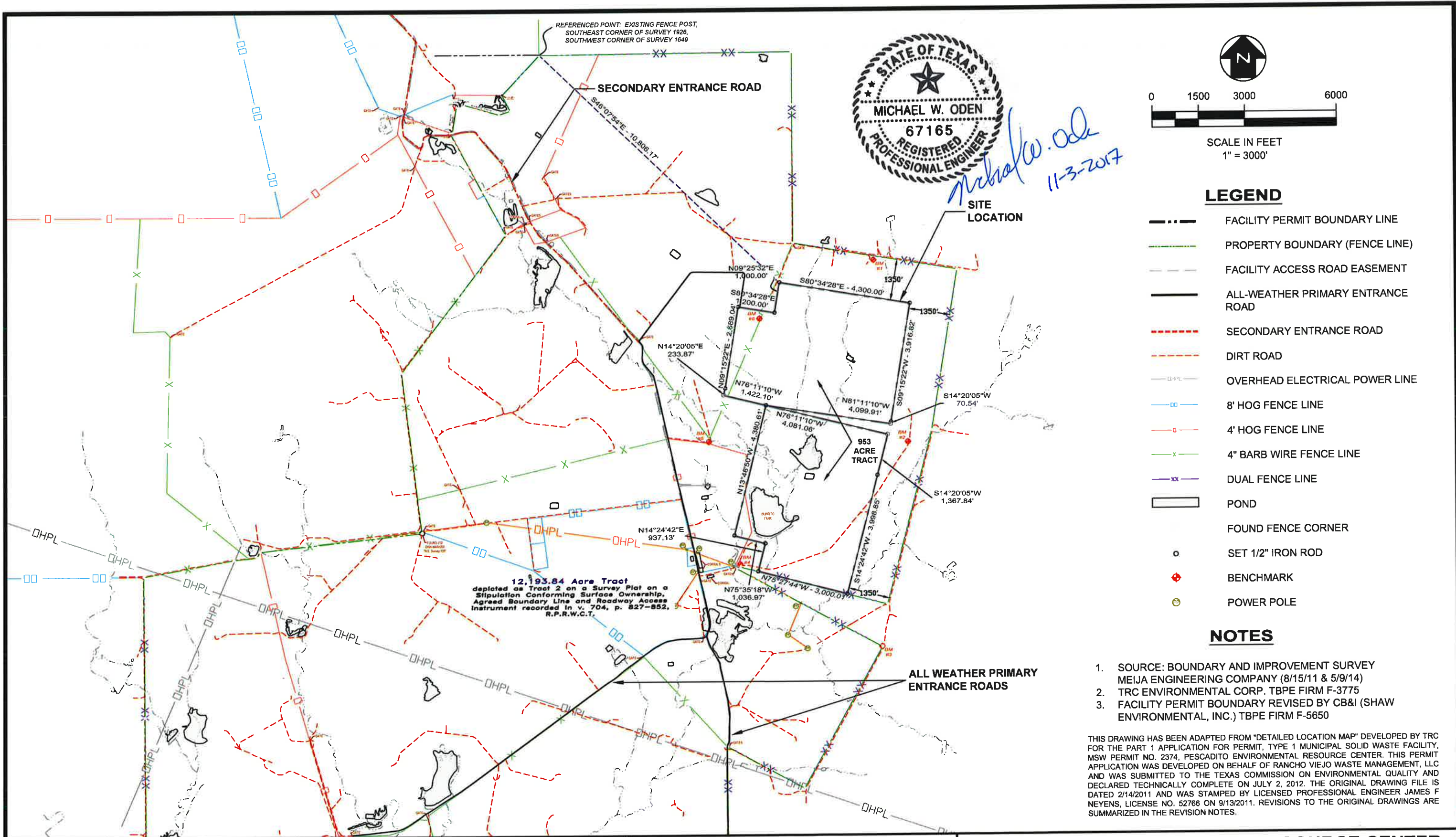
APTIM Environmental & Infrastructure, Inc.
(f/k/a CB&I Environmental & Infrastructure, Inc.)
 TBPE FIRM F-5650
 12005 FORD RD, SUITE 800
 DALLAS, TEXAS 75234
 (972) 773-8400

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**PESCADITO ENVIRONMENTAL RESOURCE CENTER
WEBB COUNTY, TEXAS**

**FIGURE 1 - PART 1
GENERAL LOCATION MAP**

DRAWN BY: MTE	APPROVED BY: MWO	PROJ. NO.: 148866	DATE: MAY 2014
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REV. NO.	DATE	DESCRIPTION
1	5/22/2014	REVISED FACILITY PERMIT BOUNDARY
2	11/2017	UPDATE ENTRANCE ROADS


APTIM Environmental & Infrastructure, Inc.
(f/k/a CB&I Environmental & Infrastructure, Inc.)
 TBPE FIRM F-5650
 12005 FORD RD, SUITE 600
 DALLAS, TEXAS 75234
 (972) 773-8400

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**PESCADITO ENVIRONMENTAL RESOURCE CENTER
WEBB COUNTY, TEXAS**

**FIGURE 2 - PART I
DETAILED LOCATION MAP**

DRAWN BY:	MTE	APPROVED BY:	MWO	PROJ. NO.:	148866	DATE:	MAY 2014
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Changed Pages

Part II

PART II
APPLICATION FOR PERMIT
TYPE I MUNICIPAL SOLID WASTE FACILITY
MSW PERMIT NO. 2374

PESCADITO ENVIRONMENTAL
RESOURCE CENTER

SOLID WASTE MANAGEMENT AND
DISPOSAL FACILITY
RANCHO VIEJO WASTE MANAGEMENT, LLC
LAREDO, WEBB COUNTY, TEXAS

Sections 1.1, 1.2, 2.1.4, 10.1—10.4, 11.1 –
Signed by H.C. Clark, P.G., Ph.D. on Feb. 7,
2012

**Originally
Prepared By:**

TRC Environmental Corporation
TBPE Firm Registration No. 3775

Except for Sections 1.1, 1.2, 2.1.4,
10.1—10.4 and 11.1 – remaining
portions of Part II through February 17,
2012 revisions were signed/sealed by
James F. Neyens, P.E. on February 24,
2012.

March 28, 2011; Revised May 20, 2011; Revised September 14, 2011; Revised December 14, 2011; Revised February 17, 2012

Revised on June 12, 2014 by:

Shaw Environmental, Inc. (a CB&I company)
TBPE Firm Registration No. F-5650
and
H.C. Clark P.G., Ph.D. for Sections 1.2, 2.1.4 and 11.1

Revised July 25, 2014; April 20, 2015; September 2015; Technically Complete March 11, 2016

Modified October 2016, August 2017 and November 2017 By:

APTIM Environmental & Infrastructure, Inc. (f/k/a CB&I Environmental & Infrastructure, Inc.)
TBPE Firm Registration No. F-5650

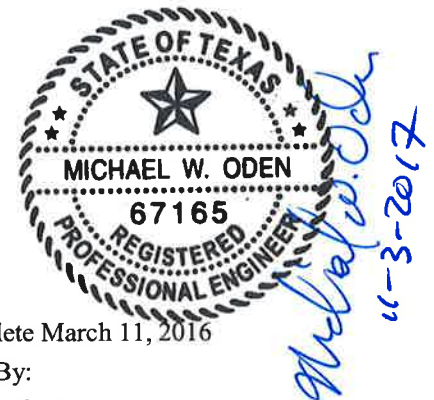


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Sections 1.1, 1.2, 2.1.4, 10.1—10.4,
11.1 – Signed by H.C. Clark, P.G.,
Ph.D. on Feb. 7, 2012

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And

CB&I (Shaw Environmental, Inc.) for other revised pages

Revised July 25, 2014; April 20, 2015; September 2015; Technically Complete March 11, 2016 and
Modified October 2016, August 2017 and **November 2017** by APTIM Environmental & Infrastructure,
Inc. (f/k/a CB&I Environmental & Infrastructure, Inc.)

TBPE Firm F-5650

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Attachment I	Oil Well Affidavit
Attachment J	Webb / Duval Pipeline Information

Sections 1.1, 1.2, 2.1.4, 10.1—10.4,
11.1 – Signed by H.C. Clark, P.G.,
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24, 2012.

Revised June 12, 2014

H.C. Clark P.G., Ph.D. for Sections 1.2, 2.1.4 and 11.1

And

CB&I (Shaw Environmental, Inc.) for other revised pages

Revised July 25, 2014; April 20, 2015; September 2015; Technically Complete March 11, 2016 and
Modified October 2016, August 2017 and **November 2017** by APTIM Environmental & Infrastructure,
Inc. (f/k/a CB&I Environmental & Infrastructure, Inc.)

TBPE Firm F-5650



Facility access control features, including perimeter security fences and lockable gates located around the facility are discussed in Part III, Attachment III-B and are shown on Drawing III-B.1-2 in Appendix III-B.1.

There are no recorded archeological, historical or aesthetic sites within one mile of the facility, so none can be shown.

4.0 FACILITY LAYOUT MAPS [330.61 (d)]

A Facility Layout Map and an Operations Area Layout Map are provided as Figures 3 and 4 of Part II. These maps provide:

The maximum outline of the landfill unit(s);

General locations of main facility access roadways;

General locations of buildings;

Explanatory notes;

Fencing and lockable gates will be provided along the facility boundary, as shown on Figure 4, Part II; and

Natural amenities and plans for screening the facility from public view.

Easements are shown on Figure 4, Sheets 1 to 4, in Part I. These easements will be protected in accordance with TCEQ rules.

The site entrance road can be accessed from public access roads.

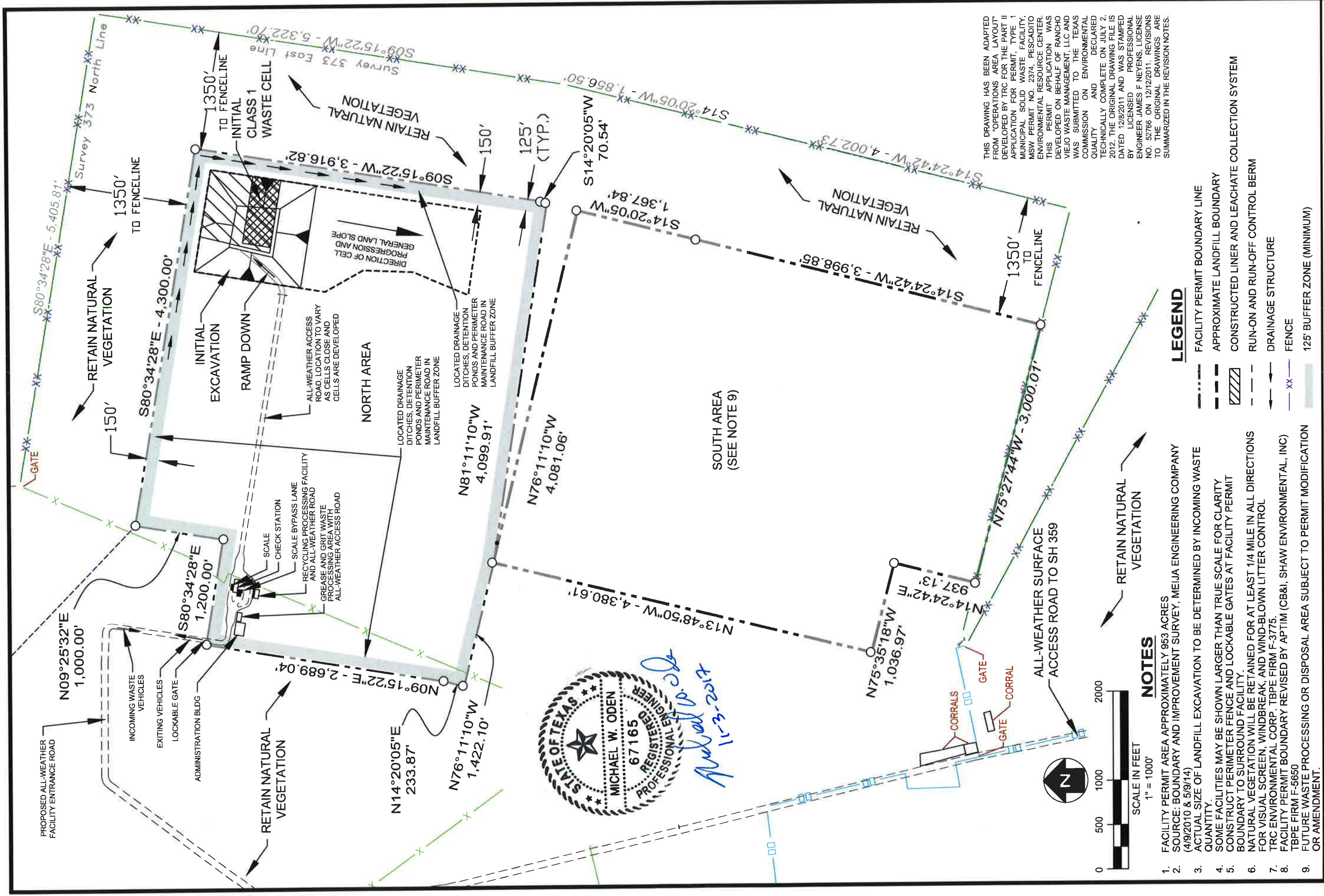
An initial Class I waste cell location is shown on Figure 4. Additional Class I waste cells may be designated and constructed throughout the landfill as future landfill cells are designed. All Class I waste cells will be designed, constructed, and operated in accordance with TCEQ rules.

Locations of monitoring wells are generally shown on the Monitoring System and Cell Layout Plan, Figure 5. In accordance with 30 TAC §330.403(a)(2), default spacing for groundwater monitoring wells is a maximum of 600 feet. Figure III-F.1-1 in Part III shows a total of 14 wells located around the landfill unit perimeter. An additional 3 wells are proposed to monitor the evaporation pond (also shown on Figure III-F.1-1).

Locations of gas monitoring probes are generally shown on Figure 5. In accordance with 30 TAC §330.371(h)(2), permanent gas monitoring probes are required to monitor for subsurface migration of landfill gas. Probes are typically placed at 1,000-foot spacing and this spacing can be accommodated at the location shown on Figure 5. Additional information on spacing is shown on Figure III-G.1-1 in Part III.

The proposed facility is completely isolated from all land use except cattle ranching and oil and gas production, and is provided with an effective separation distance of more than one-quarter mile on all sides.

FIGURES



THIS DRAWING HAS BEEN ADAPTED FROM "OPERATIONS AREA LAYOUT" DEVELOPED BY TRC FOR THE PART II APPLICATION FOR PERMIT, TYPE 1 MUNICIPAL SOLID WASTE FACILITY, MSW PERMIT NO. 2374, PESCADITO ENVIRONMENTAL RESOURCE CENTER. THIS PERMIT APPLICATION WAS DEVELOPED ON BEHALF OF RANCHO VIEJO WASTE MANAGEMENT, LLC AND WAS SUBMITTED TO THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AND DECLARED TECHNICAL COMPLETE ON JULY 2, 2012. THE ORIGINAL DRAWING FILE IS DATED 12/8/2011 AND WAS STAMPED BY LICENSED PROFESSIONAL ENGINEER JAMES F NEYENS, LICENSE NO. 52766 ON 12/12/2011. REVISIONS TO THE ORIGINAL DRAWINGS ARE SUMMARIZED IN THE REVISION NOTES.

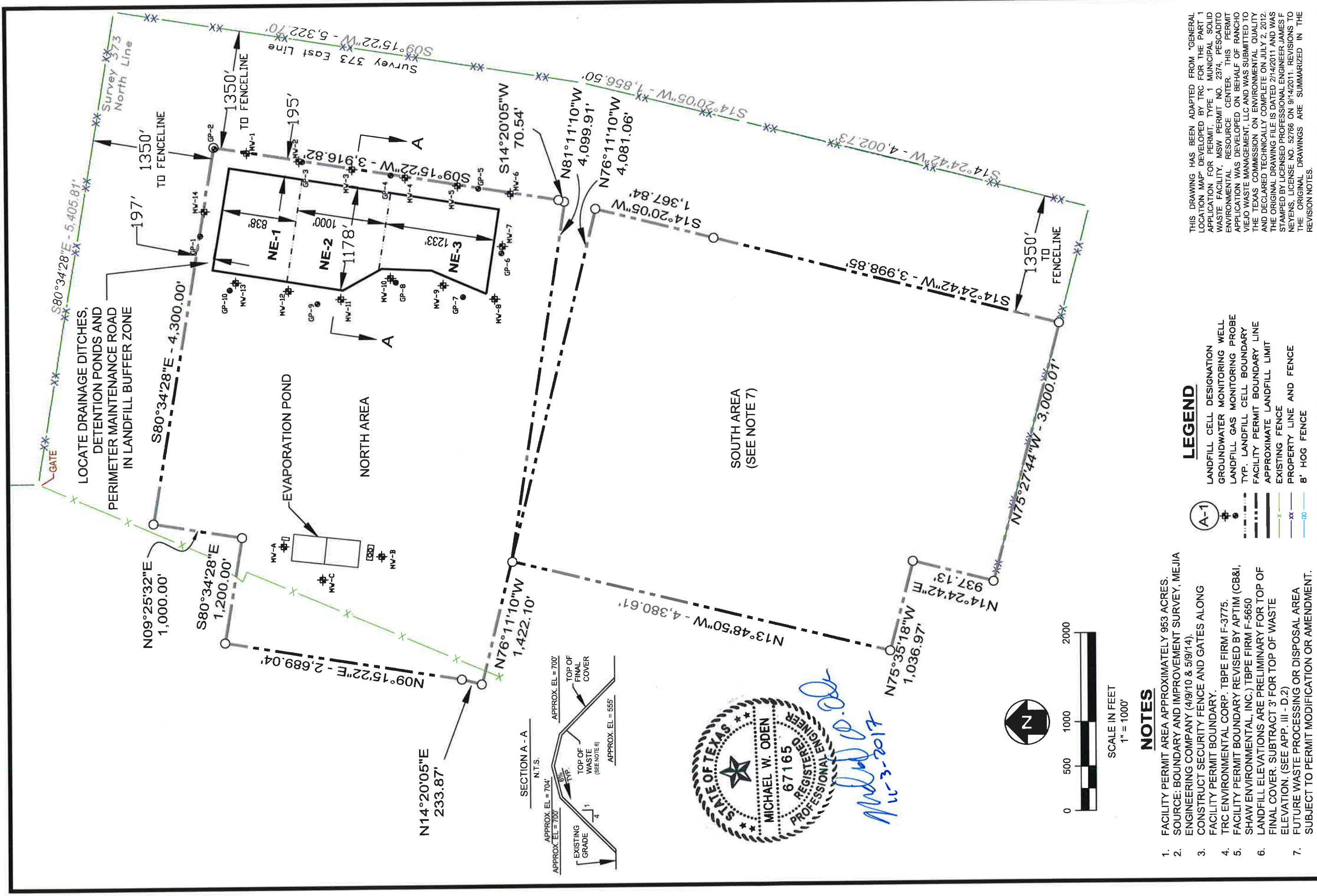
LEGEND

- FACILITY PERMIT BOUNDARY LINE
- APPROXIMATE LANDFILL BOUNDARY
- ▨ CONSTRUCTED LINER AND LEACHATE COLLECTION SYSTEM
- - - RUN-ON AND RUN-OFF CONTROL BERM
- DRAINAGE STRUCTURE
- FENCE
- 125' BUFFER ZONE (MINIMUM)

NOTES

1. FACILITY PERMIT AREA APPROXIMATELY 953 ACRES
2. SOURCE: BOUNDARY AND IMPROVEMENT SURVEY, MEIJA ENGINEERING COMPANY (4/9/2010 & 5/9/14)
3. ACTUAL SIZE OF LANDFILL EXCAVATION TO BE DETERMINED BY INCOMING WASTE QUANTITY.
4. SOME FACILITIES MAY BE SHOWN LARGER THAN TRUE SCALE FOR CLARITY
5. CONSTRUCT PERIMETER FENCE AND LOCKABLE GATES AT FACILITY PERMIT BOUNDARY TO SURROUND FACILITY.
6. NATURAL VEGETATION WILL BE RETAINED FOR AT LEAST 1/4 MILE IN ALL DIRECTIONS FOR VISUAL SCREEN, WINDBREAK, AND WIND-BLOWN LITTER CONTROL
7. TRC ENVIRONMENTAL CORP. TBPE FIRM F-3775.
8. FACILITY PERMIT BOUNDARY REVISED BY APTIM (CB&I, SHAW ENVIRONMENTAL, INC) TBPE FIRM F-5650
9. FUTURE WASTE PROCESSING OR DISPOSAL AREA SUBJECT TO PERMIT MODIFICATION OR AMENDMENT.

<p>APTIM Environmental & Infrastructure, Inc. <small>(fka CB&I Environmental & Infrastructure, Inc.) 12005 FORD RD, SUITE 600 DALLAS, TEXAS 75234 (972) 775-6400 TBPE FIRM F-5650</small></p>	<p>PESCADITO ENVIRONMENTAL RESOURCE CENTER WEBB COUNTY, TEXAS</p>	<p>FIGURE 4 - PART II OPERATIONS AREA LAYOUT</p>
<p>REV 1 5/22/14 - REVISED FACILITY PERMIT BOUNDARY</p>	<p>REV 2 8/2017 - REVISED WASTE BOUNDARY AND ENTRANCE</p>	<p>REV 3 11/2017 - REVISED LEGEND</p>
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- LEGEND**
- (A-1) LANDFILL CELL DESIGNATION
 - ⊕ GROUNDWATER MONITORING WELL
 - ⊕ LANDFILL GAS MONITORING PROBE
 - TYP. LANDFILL CELL BOUNDARY
 - FACILITY PERMIT BOUNDARY LINE
 - APPROXIMATE LANDFILL LIMIT
 - EXISTING FENCE
 - PROPERTY LINE AND FENCE
 - 8' HOG FENCE

- NOTES**
- FACILITY PERMIT AREA APPROXIMATELY 953 ACRES.
 - SOURCE: BOUNDARY AND IMPROVEMENT SURVEY, MEJIA ENGINEERING COMPANY (4/9/10 & 5/9/14).
 - CONSTRUCT SECURITY FENCE AND GATES ALONG FACILITY PERMIT BOUNDARY.
 - TRC ENVIRONMENTAL CORP. TBPE FIRM F-3775.
 - FACILITY PERMIT BOUNDARY REVISED BY APTIM (CB&I, SHAW ENVIRONMENTAL, INC.) TBPE FIRM F-5650
 - LANDFILL ELEVATIONS ARE PRELIMINARY FOR TOP OF FINAL COVER. SUBTRACT 3' FOR TOP OF WASTE ELEVATION. (SEE APP. III - D.2)
 - FUTURE WASTE PROCESSING OR DISPOSAL AREA SUBJECT TO PERMIT MODIFICATION OR AMENDMENT.

THIS DRAWING HAS BEEN ADAPTED FROM "GENERAL LOCATION MAP" DEVELOPED BY TRC FOR THE PART 1 APPLICATION FOR PERMIT, TYPE 1 MUNICIPAL SOLID WASTE FACILITY, MSW PERMIT NO. 2374, PESCADITO ENVIRONMENTAL RESOURCE CENTER. THIS PERMIT APPLICATION WAS DEVELOPED ON BEHALF OF RANCHO VIEJO WASTE MANAGEMENT, LLC AND WAS SUBMITTED TO THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AND DECLARED TECHNICALLY COMPLETE ON JULY 2, 2012. THE ORIGINAL DRAWING FILE IS DATED 2/14/2011 AND WAS STAMPED BY LICENSED PROFESSIONAL ENGINEER JAMES F. NEVENS, LICENSE NO. 52766 ON 9/14/2011. REVISIONS TO THE ORIGINAL DRAWINGS ARE SUMMARIZED IN THE REVISION NOTES.



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<p>REV. 1 - 9/27/14 - REVISED FACILITY PERMIT BOUNDARY</p> <p>REV. 2 - 7/18/14 - ADDED SECTION B - B</p> <p>REV. 3 - 9/29/16 - REVISED CELL LAYOUT</p> <p>REV. 4 9/20/17 - REVISED WASTE BOUNDARY</p> <p>REV. 5 11/20/17 - ADD GW WELLS AND LFG PROBES</p>		

Changed Pages

Part III, Appendix III-B.1

General Facility Design Figures

**Part III
Attachment III-B
Appendix III-B.1**

GENERAL FACILITY DESIGN FIGURES

**Pescadito Environmental Resource Center
MSW No. 2374
Webb County, Texas**

PESCADITO
ENVIRONMENTAL RESOURCE CENTER

**Initial Submittal March 2015
Revised September 2015
Revised November 2015
Technically Complete March 11, 2016
Modified October 2016
Modified November 2016
Modified August 2017
Modified November 2017**

**Prepared for:
Rancho Viejo Waste Management, LLC
1116 Calle del Norte
Laredo, TX 78041**

**Prepared by:
APTIM Environmental &
Infrastructure, Inc.
(f/k/a CB&I Environmental &
Infrastructure, Inc.)**



**12005 Ford Rd, Suite 600
Dallas, TX 75234**

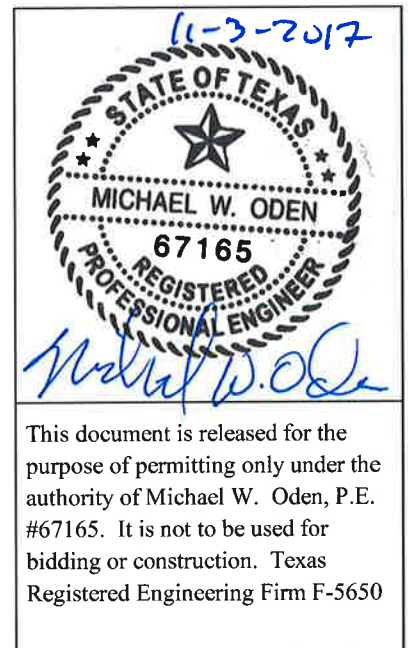



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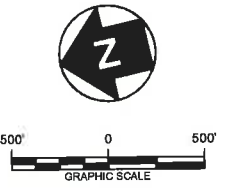
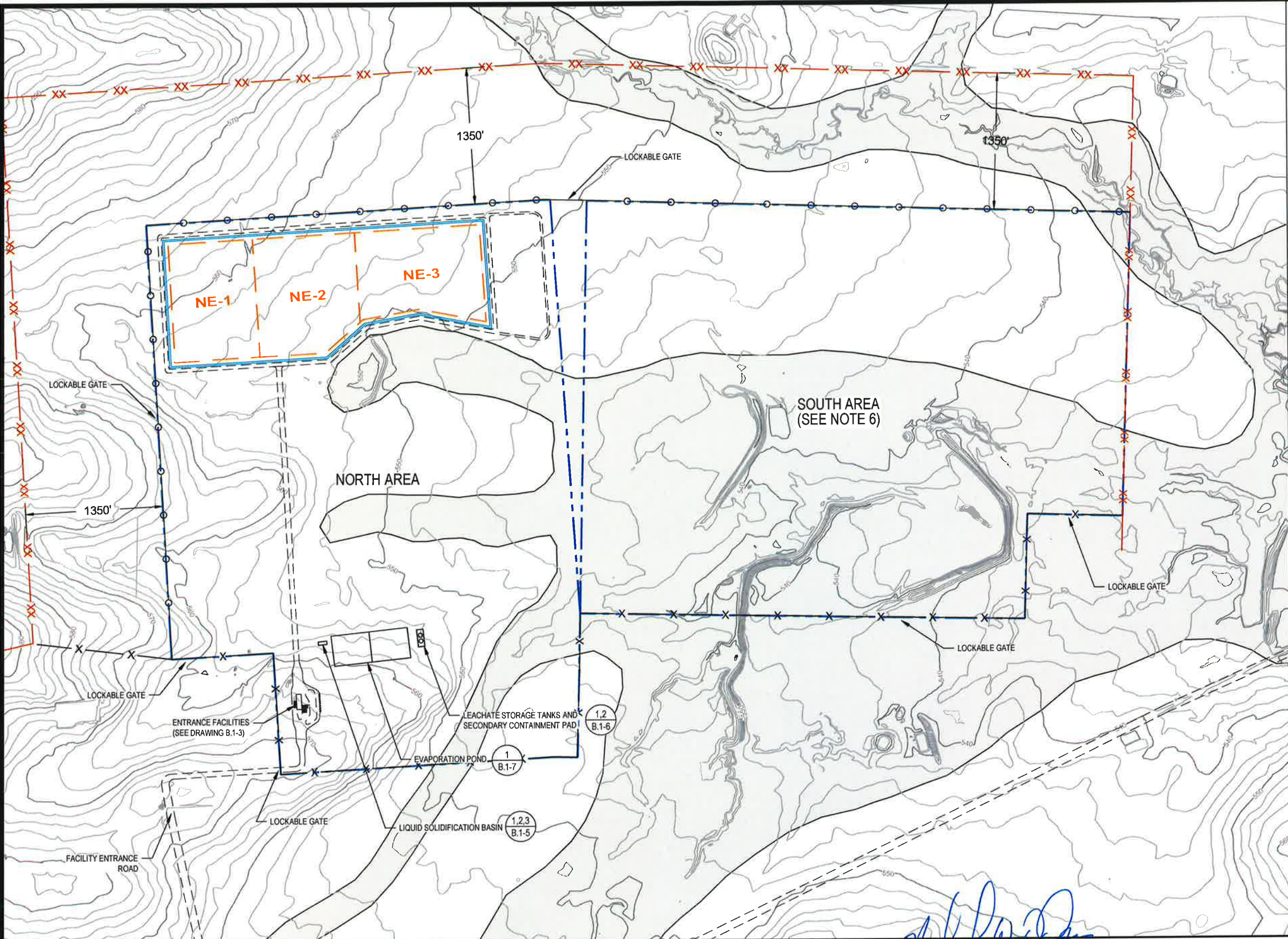
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Michael W. Oden



11-3-2017

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LEGEND

- PERMIT BOUNDARY
- WASTE UNIT BOUNDARY
- PERIMETER ACCESS ROAD
- PERIMETER STORMWATER DITCH
- 100-YEAR FLOODPLAIN (PER FIRM DATED APRIL 2, 2008, SEE NOTE 5)
- XX EXISTING GAME FENCE
- X ACCESS CONTROL FENCE
- FUTURE FENCE (IF NEEDED)

NOTES

1. EXISTING CONTOURS DEVELOPED FROM SITE AERIAL TOPOGRAPHIC SURVEY BY DALLAS AERIAL SURVEYS ON FEBRUARY 15, 2010.
2. BOUNDARY AND IMPROVEMENT SURVEY DEVELOPED BY MEJIA ENGINEERING COMPANY ON AUGUST 15, 2011 AND JUNE 9, 2014.
3. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
4. THE NEED FOR FLEXIBILITY TO ACCOMMODATE ADJUSTMENTS AND MODIFICATIONS IS ANTICIPATED CONSIDERING THE SIZE, COMPLEXITY, AND LIFE OF THE PROJECT..
5. 100-YEAR FLOODPLAIN FROM FLOOD INSURANCE RATE MAP FOR WEBB COUNTY, TEXAS, MAP NO. 48479C1275C, DATED APRIL 2, 2008. A CLOMR THAT WOULD REMOVE A LARGE AREA OF THE 100-YEAR FLOODPLAIN WITHIN THE PERMIT BOUNDARY WAS APPROVED BY FEMA ON NOVEMBER 21, 2014; HOWEVER, THE CLOMR IMPROVEMENTS HAVE NOT BEEN CONSTRUCTED.
6. FUTURE WASTE PROCESSING OR DISPOSAL AREA SUBJECT TO PERMIT MODIFICATION OR AMENDMENT.

REV. NO.	DATE	DESCRIPTION
3	11/2017	REVISED FENCE LOCATION
2	08/2017	REVISED WASTE UNIT BOUNDARY AND ENTRANCE
1	10/2016	ADDED FENCE AND GATE LOCATIONS

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Michael W. Oden
 11-3-2017

PESCADITO ENVIRONMENTAL RESOURCE CENTER
WEBB COUNTY, TEXAS
MSW 2374

WASTE DISPOSAL, PROCESSING, AND STORAGE PLAN

PROJ. NO.:	148866	DATE:	AUGUST 2017
DESIGNED BY:	-	DRAWING NO.:	III
DRAWN BY:	MTE		B.1-2
CHECKED BY:	RDS		
APPROVED BY:	MWO		2 OF 6 SHEETS

Changed Pages

Part III, Appendix III-C.1

Facility Surface Water Drainage Report

**Part III
Attachment III-C
Appendix III-C.1**

FACILITY SURFACE WATER DRAINAGE REPORT NARRATIVE

**Pescadito Environmental Resource Center
MSW No. 2374
Webb County, Texas**

PESCADITO
ENVIRONMENTAL RESOURCE CENTER

**Initial Submittal March 2015
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Updated August 2017
Modified November 2017**

**Prepared for:
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1116 Calle del Norte
Laredo, TX 78041**

**Prepared by:
APTIM Environmental and
Infrastructure, Inc.
(f/k/a CB&I Environmental and
Infrastructure, Inc.)**



**12005 Ford Rd, Suite 600
Dallas, TX 75234**

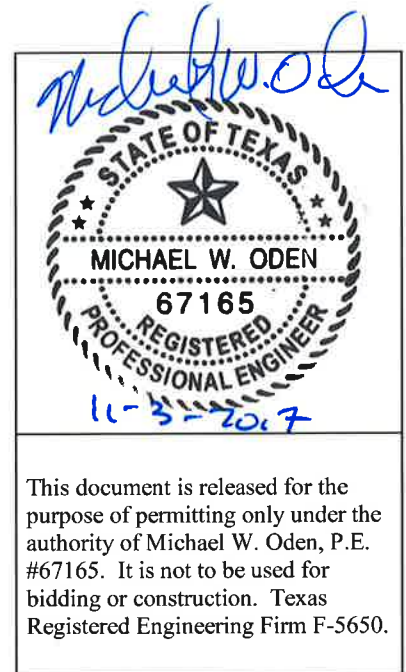
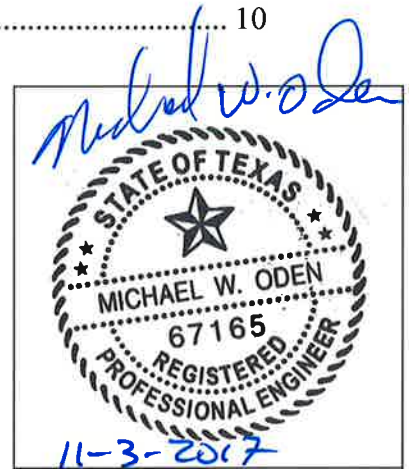


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stormwater off-site. Refer to **Drawing III-C.2-15** and **Drawing III-C.2-16** for details of the proposed outlet structure design.

Additional stormwater conveyance features may be installed at the discretion of the owner and engineer to convey stormwater directly into the San Jaunito Creek tributary system. Please note that the outlet structure design may be changed at the owner/operator's discretion, provided that the revised design provides adequate reinforcement and protection of the outfall and equivalent release rates to the modeled design. However, any revisions to the stormwater management system must receive TCEQ approval prior to implementation.

The outlet structure is designed so that the total release rates from the post-development conditions of the modeled storm events are similar to the corresponding discharge rates for the pre-development conditions, as demonstrated and described in the subsequent modeling text.

4.2.10 Culvert Sizing

The culvert systems between the landfill perimeter channels and Northeast Detention Basin utilize 3-ft. diameter corrugated polyethylene pipes with a Manning's n value of 0.013, and sloped at 0.7%. The culvert systems used to convey stormwater run-on and run-off from the site include the Northeast Detention Basin outlet structure as well as the diversion ditch culvert system. The Northeast Detention Basin outlet structure comprises of three concrete box culverts that are 5-ft. wide and 3-ft. tall, having a Manning's n value of 0.012 and sloping at 0.7%. The diversion ditch culvert system includes two 10-ft. wide by 3-ft. tall concrete box culverts and one 6-ft. wide by 3-ft. tall box culvert. The diversion ditch culvert system has a Manning's n value of 0.012 and slopes at 0.3%.

The locations of the different culvert systems are shown on **Drawing III-C.2-7**. Details of the culvert systems are provided in **Drawing III-C.2-13**, **Drawing III-C.2-15** and **Drawing III-C.2-17**.

4.2.11 Northeast Detention Basin Sizing and Discharge Rates

The Northeast Detention Basin will have one discharge point located approximately at the southwest corner of the basin. The southwest discharge point will consist of three 5-ft. wide by 3-ft. tall box culverts at invert elevation 549ft ft. MSL. The culvert discharge areas will be reinforced with rip-rap or an erosion control alternative to prevent erosion and scour. The basin outlet design may be changed at the owner/operator's discretion, as long as the new design is equivalent. However, any revisions to the stormwater management system must receive TCEQ approval prior to implementation.

A summary of calculated volumes for the Northeast Detention Basin is provided in **Appendix III-C.3-10**. Volumes were calculated using AutoCAD for available stormwater storage volume within the basin. The size, outlet structures, and model results for the proposed stormwater detention basin are provided in **Appendix III-C.3-10**. Design values were calculated using AutoCAD Civil 3D 2016. **Drawing III-C.2-15** and **Drawing III-C.2-16** show the location of the Northeast Detention Basin.

Changed Pages

Part III, Appendix III-C.2

Facility Surface Water Drainage Drawings

**Part III
Attachment III-C
Appendix III-C.2**

FACILITY SURFACE WATER DRAINAGE DRAWINGS

**Pescadito Environmental Resource Center
MSW No. 2374
Webb County, Texas**

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ENVIRONMENTAL RESOURCE CENTER

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Rancho Viejo Waste Management, LLC
1116 Calle del Norte
Laredo, TX 78041**

**Prepared by:
APTIM Environmental and
Infrastructure, Inc.
(f/k/a CB&I Environmental and
Infrastructure, Inc.)**



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Dallas, TX 75234**

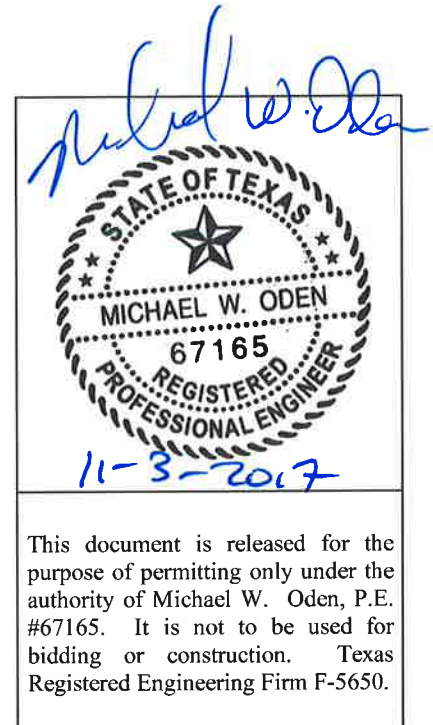
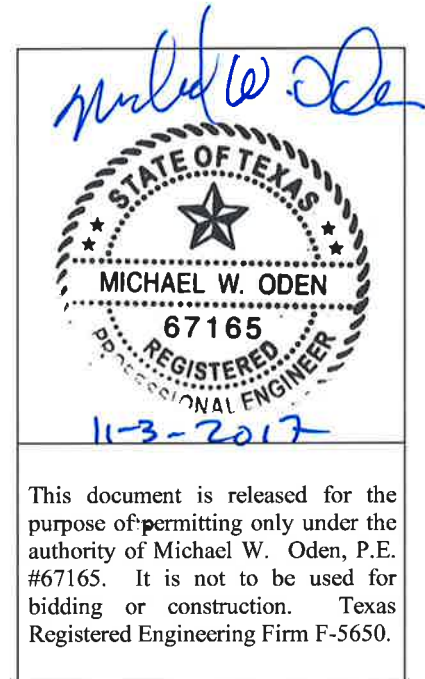
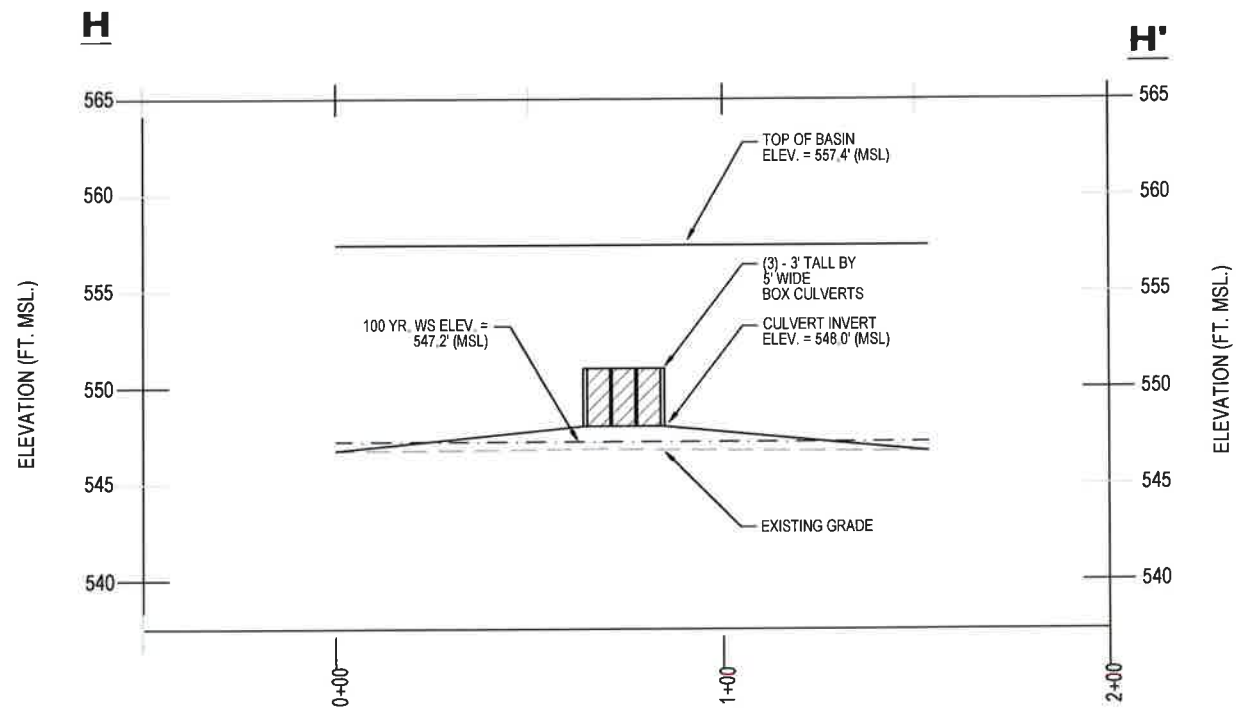


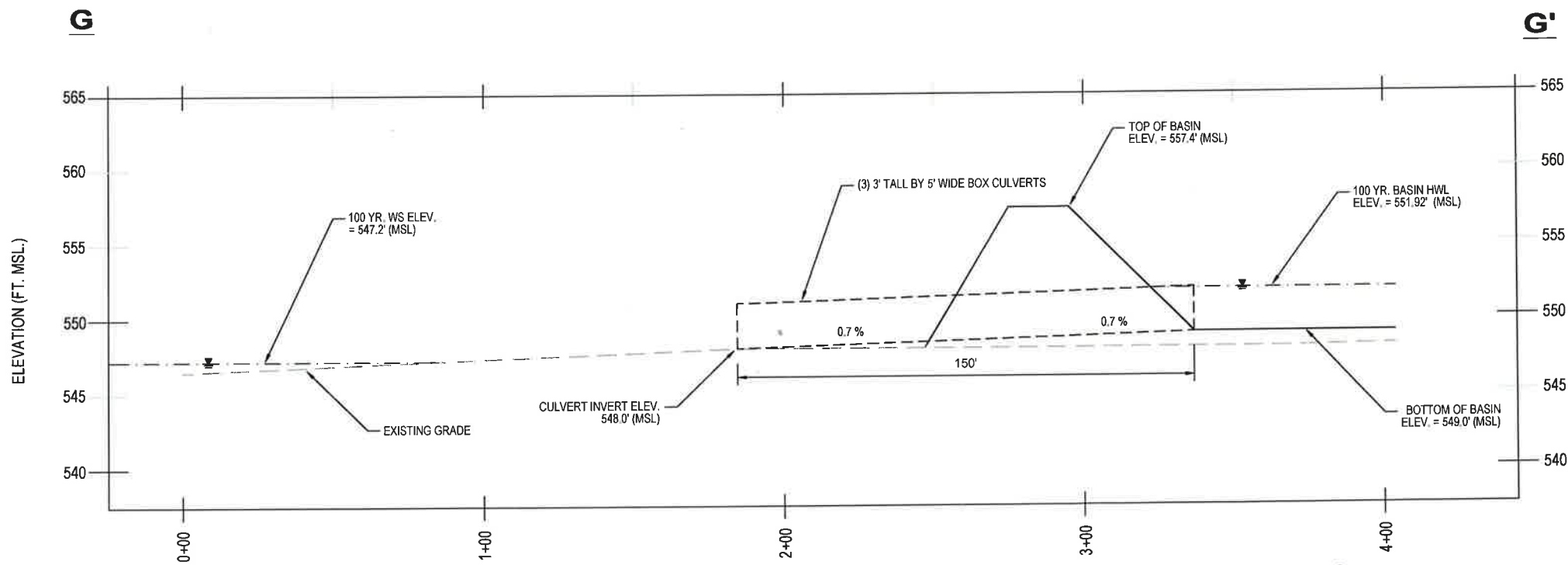
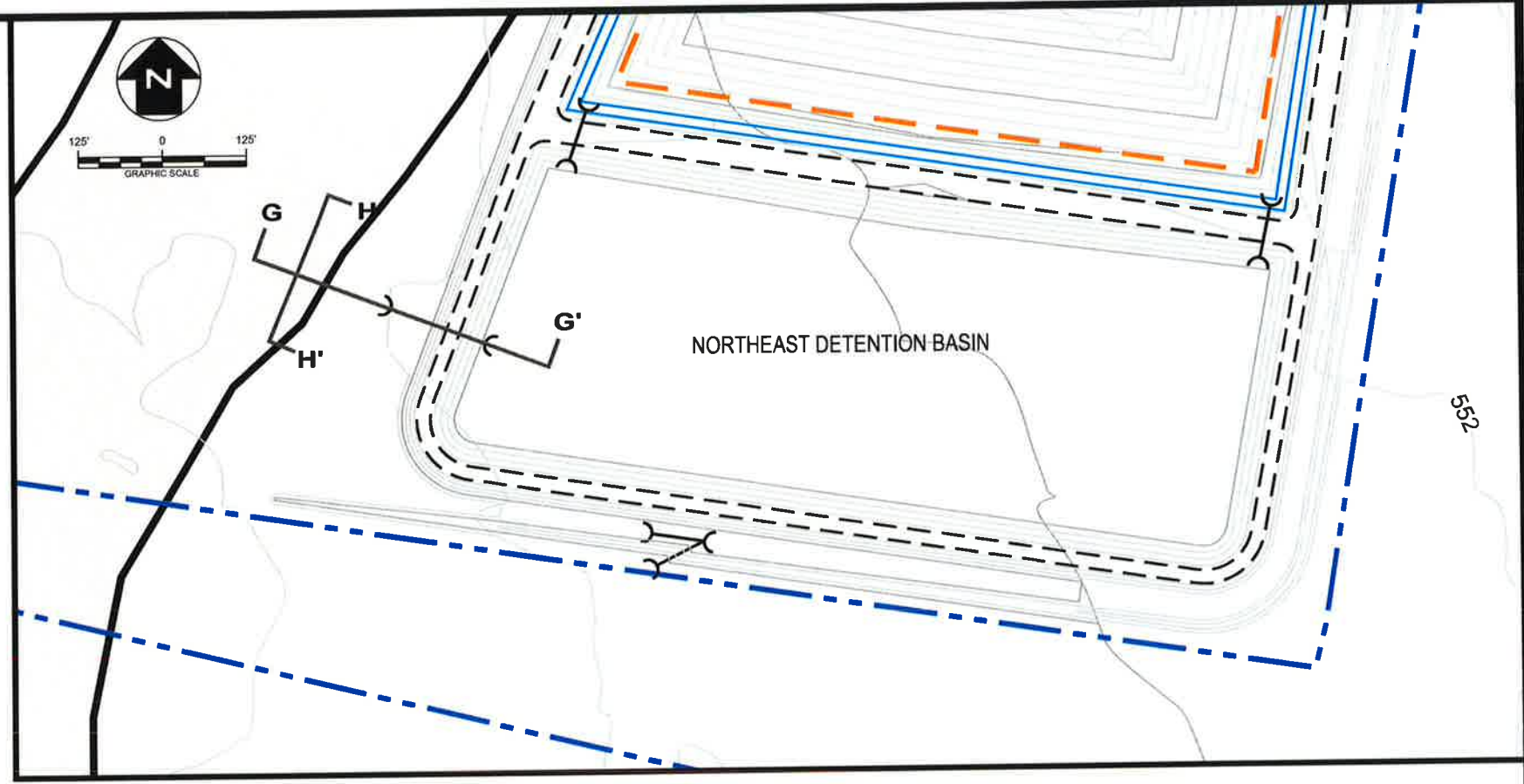
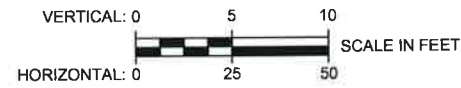
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- III-C.2-18. Erosion Control Details



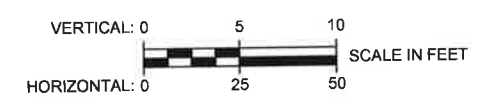


1
C.2-16
**NORTHEAST DETENTION BASIN CULVERT PASSAGE
SECTION VIEW**



2
C.2-16
**NORTHEAST DETENTION BASIN CULVERT PASSAGE
PROFILE VIEW**

- LEGEND**
- PERMIT BOUNDARY
 - WASTE UNIT BOUNDARY
 - PERIMETER ROAD
 - PERIMETER STORMWATER CHANNEL
 - CULVERT



REV. NO.	DATE	DESCRIPTION
1	11/2017	UPDATED CULVERT SIZE

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STATE OF TEXAS
 REGISTERED PROFESSIONAL ENGINEER
 MICHAEL W. ODEN
 67165
 11-3-2017

**PESCADITO ENVIRONMENTAL RESOURCE CENTER
 WEBB COUNTY, TEXAS
 MSW 2374**

**FACILITY SURFACE WATER DRAINAGE REPORT
 DETENTION BASIN PLAN, PROFILE, AND DETAILS**

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DESIGNED BY:	-	DRAWING NO.:	III
DRAWN BY:	NV		C.2-16
CHECKED BY:	RDS		16 OF 18 SHEETS
APPROVED BY:	MWO		

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Part III, Appendix III-D.6

Leachate and Contaminated Water Plan

**Part III
Attachment III-D
Appendix III - D.6**

LEACHATE AND CONTAMINATED WATER PLAN

**Pescadito Environmental Resource Center
MSW-2374
Webb County, Texas**

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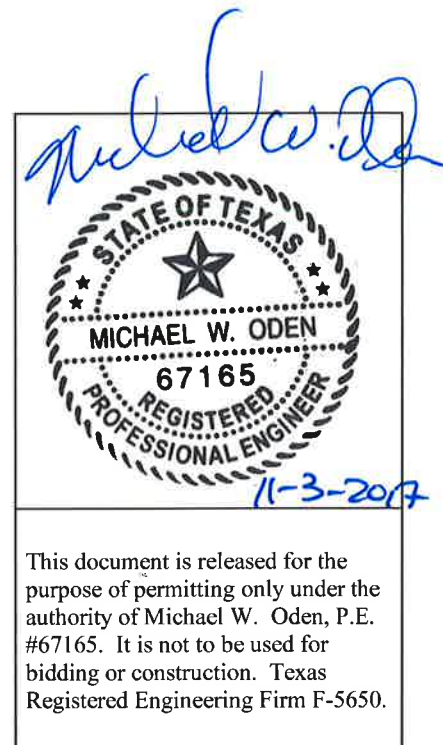
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**Prepared for:
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1116 Calle del Norte
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**Prepared by:
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Infrastructure, Inc.)**



**12005 Ford Rd, Suite 600
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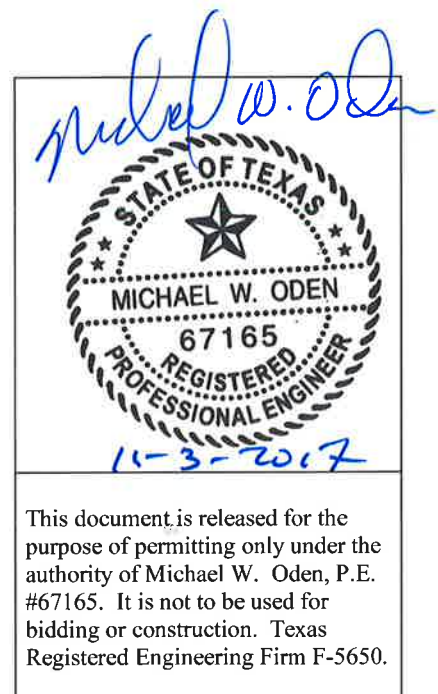
ATTACHMENTS

Attachment A to Appendix III-D.6: Contaminated Water/Leachate Collection System Design Analysis

1. Loads on the Leachate Collection System
2. Ring Deflection of Leachate Pipe
3. Structural Capacity of the Leachate Collection System
4. Compressed Thickness and Hydraulic Conductivity of the Geonet
5. Help Model Analysis
6. Leachate Collection System Flow Rates
7. Geotextile Permittivity
8. Leachate Collection System Design
9. Leachate Tank Size

Attachment B to Appendix D.6: HELP Model Outputs

1. Summary Table of HELP Model Runs
2. Open Conditions
 - a. Leachate Collection System Scenario A
 - b. Leachate Collection System Scenario B
 - c. Leachate Collection System Scenario C
3. Intermediate Conditions
4. Closed Conditions
5. Introduced Contaminated Water Analysis
 - a. Open Conditions – 20 Foot Waste Column
 - b. Intermediate Conditions – 50 Foot Waste Column
 - c. Intermediate Conditions – 100 Foot Waste Column



3.4 Leachate Pump and Riser System

Extraction of leachate from the collection sumps will be accomplished by submersible pumps, which can be operated either manually or automatically. Leachate levels in the collection sumps, will be monitored to maintain a head buildup of no greater than the lowest point of the landfill floor adjacent to the sump in each cell.

Sump riser pipes will be located directly up the sideslopes from the sumps at the disposal area perimeter. Risers will be 18-inch diameter HDPE pipe and provide a means for lowering submersible pumps down the 3:1 sideslope incline into the collection sumps. The lower portion of the riser within the sump is perforated (1/2-inch diameter holes), which will allow leachate to flow to the pumps.

The depth of leachate on the liner will be measured using electronic transducers mounted on the leachate pump. Leachate pumps will be sized appropriately to ensure that leachate levels can be maintained at a depth no greater than the lowest point of the landfill floor adjacent to the sump in each cell, without short-cycling. Pumps will be automatically controlled using liquid level sensors installed at appropriate elevations to activate the pump when the leachate level reaches the lowest point of the landfill floor adjacent to the sump, and deactivate the pump when the leachate level is six inches, or less above the bottom of the sump.

3.5 Conveyance

Leachate will be transferred to storage tank(s) or disposal locations by tanker truck or pipeline. Leachate may be withdrawn from the collection sumps or lines, or storage tank(s)/pond into tanker trucks. Spill containment for truck hose connection and loading will be provided by a portable trough or similar spill containment. Protection will be provided at hose connection locations. Contaminated water will be transported to an authorized and permitted facility, or to the on-site evaporation pond, for treatment and disposal.

3.6 Leachate Storage

Leachate will be stored on-site in one or more (maximum of two as shown on Drawing III-B.1-6) on-site leachate storage tank(s) or evaporation pond prior to transport to a permitted treatment facility. The leachate storage facility will have adequate secondary containment in the event of a

tank failure. Secondary containment will be sized to handle either 110% of the volume in one tank or the volume of one tank plus the rainfall generated from the 100-year, 24-hour storm event. Tanks will include spill containment structures in conformance with TCEQ requirements. The evaporation pond will be monitored so that a minimum of one foot of freeboard is available at all times to handle the 100-year, 24-hour storm event of 9.8 inches. Should the liquid level in the pond be such that one foot of freeboard is not available, contaminated water will be removed to the storage tanks or hauled off to an authorized and permitted facility.

The capacity of the evaporation pond as shown on Drawing III-B.1-7 is 1,403,000 gallons at one-foot of liquid depth. Any modifications to the number of tanks to be utilized and/or pond sizing will receive TCEQ approval prior to construction.

which equates to 0.0026 cfs when considering a 26 acre cell. This peak daily leachate generation rate is based on open conditions, and is the same whether or not leachate is introduced (see discussion in Section 4.3.4).

Based on the design configuration and parameters for the leachate collection pipe and aggregate, it has been determined that they are appropriately sized to handle these peak flows. Demonstration is provided in **III-D.6A**.

4.3.7 Leachate Tank Sizing

At least one 15,000 gallon tank, with a maximum of two, will be located at the facility to store leachate that has been extracted from the landfill. This size of tank is appropriately sized to store one week's worth of leachate based on the maximum leachate generation rate determined from the HELP model runs and assumes no leachate recirculation. Secondary containment is provided for 110% or more of the total tank volume including the 100-year, 24-hour storm without overtopping. Larger and/or additional tanks may be used as long as the proper containment is provided and TCEQ approval is obtained in advance. Demonstration is provided in **III-D.6A.B**. It is noted that an evaporation pond may also be available for leachate storage, if needed.

Changed Pages
Part III, Attachment III-F
Groundwater Monitoring Plan

**Part III
Attachment III-F**

GROUNDWATER MONITORING PLAN

**Pescadito Environmental Resource Center
MSW No. 2374
Webb County, Texas**

PESCADITO
ENVIRONMENTAL RESOURCE CENTER

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Revised September 2015
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Laredo, TX 78041**

**Prepared by:
APTIM Environmental &
Infrastructure, Inc.
(f/k/a CB&I Environmental &
Infrastructure, Inc.)**



**12005 Ford Rd, Suite 600
Dallas, TX 75234**

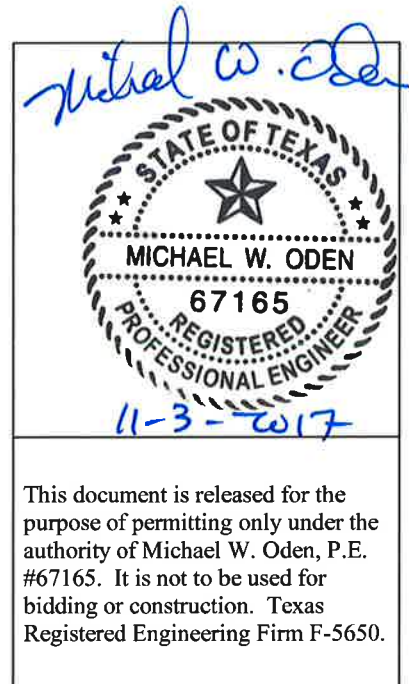
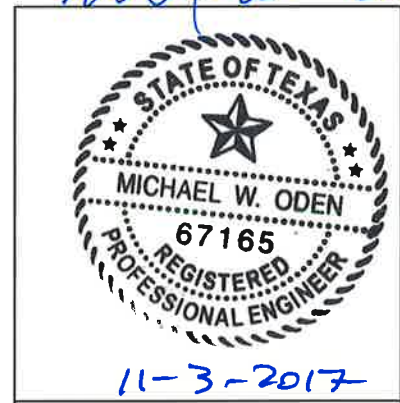


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Appendix III-F.1 – Figures

Appendix III-F.2 – Groundwater Sampling and Analysis Plan



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designed to detect a possible release from the landfill based on site specific conditions. As detailed above the “uppermost aquifer” for groundwater monitoring purposes is the contact zone at the base of R-P and extending down into the Y-J to a depth of 60 feet bgs. Groundwater flow rate is on the order of 1 to 2 feet per year to the south to southwest and is not affected by seasonal fluctuations based on data presented in Appendix III-E.2. The Y-J beneath the contact zone (Stratum III, III and IV) is predominately clay (95% clay per III-E.3) to great depths. Construction of the landfill may divert water around the facility but the overall direction will remain to the south to southwest. Therefore, no provisions are needed in the monitoring program to account for this.

If a release from the landfill were to occur, the highest probability is association with one of the leachate sumps. To ensure earliest possible detection of such a release, the groundwater monitoring system will consist of groundwater monitoring wells which will be installed to, or below, the deepest sump excavation elevation depth nearest the well. To determine monitor well depths, the excavation elevation of the nearest sump to the monitor well location will be used and will assume a 3-foot thick compacted soil liner. In general, the monitored interval will extend from the deepest sump excavation elevation depth nearest the well to within nine (9) feet of the surface for the landfill unit as shown on Drawing III-F.1-2. Three monitoring wells (MW-A, MW-B and MW-C) will be installed to monitor the evaporation pond when it is constructed. The monitored interval for these wells will be 20-feet (i.e. 9 to 29 feet bgs).

The Groundwater Monitoring Program for the Pescadito Environmental Resource Center (MSW 2374) has been prepared to meet the requirements of 30TAC330.403. The landfill compliance monitoring wells will be installed along the POC as shown on Figure III-F.1-1. Well spacing will be a maximum of 600-feet and will consist of a minimum of 14 wells. However, in the event that a transmissive sand zone containing perched water is encountered in the sidewall of the excavation within approximately fifty feet of the bottom of the excavation, the next well along the POC boundary will be relocated to that area, with depths determined as outlined above, and the 600-foot spacing will be re-started. That specific groundwater monitoring well will be screened across the transmissive sand zone using the installation detail previously provided. Monitoring well installation will be performed so that there is always a well along the POC a minimum of 600-feet downgradient from the most recent cell constructed.

Note that the POC well locations were selected based on the potential flow direction in the

5.0 Groundwater Monitoring System Certification

330.403(e)

General Site Information:

Pescadito Environmental Resource Center
Webb County, Texas
MSW Permit Application No.: 2374

Qualified Groundwater Scientist Statement

I, Michael W. Oden, am a registered professional engineer in the State of Texas and a qualified groundwater scientist as defined in 30 TAC §330.3. I have reviewed the groundwater monitoring system and supporting data contained in the permit documents. In my professional opinion, the groundwater monitoring system is in compliance with the groundwater monitoring requirements specified in 30 TAC §330.401 through §330.421. This system has been designed specifically for the Pescadito Environmental Resource Center (Permit Application No. MSW No. 2374). The only warranty made by me in connection with this document is that I have used that degree of care and skill ordinarily exercised under similar conditions by reputable members of my profession, practicing in the same or similar locality. No other warranty, expressed or implied, is made or intended.

Firm/Address: APTIM Environmental & Infrastructure, Inc.
12005 Ford Road; Suite 600
Dallas, Texas 75234
TBPE Firm Registration F-5650

Signature: _____

Michael W. Oden

Date: _____

11-3-2017



Changed Pages
Part III, Appendix III-F.1
Groundwater Monitoring Plan Figures

**Part III
Attachment III-F
Appendix III-F.1**

GROUNDWATER MONITORING PLAN FIGURES

**Pescadito Environmental Resource Center
MSW No. 2374
Webb County, Texas**

PESCADITO
ENVIRONMENTAL RESOURCE CENTER

Initial Submittal March 2015
Revised September 2015
Revised November 2015
Revised January 2016
Technically Complete March 11, 2016
Modified October 2016
Modified November 2016
Modified August 2017
Modified November 2017

Prepared for:
Rancho Viejo Waste Management, LLC
1116 Calle del Norte
Laredo, TX 78041

Prepared by:
APTIM Environmental &
Infrastructure, Inc.
(f/k/a CB&I Environmental &
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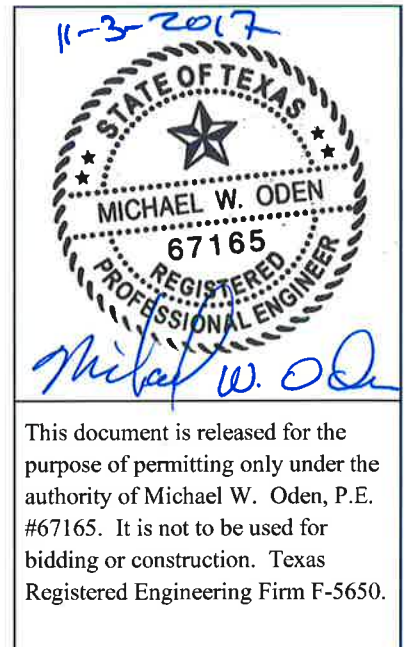
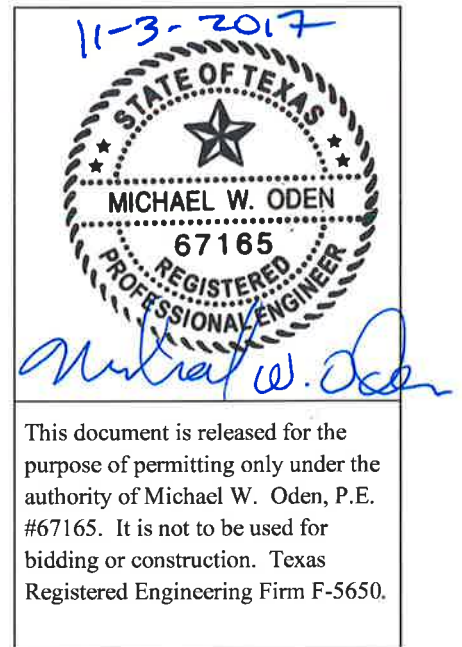
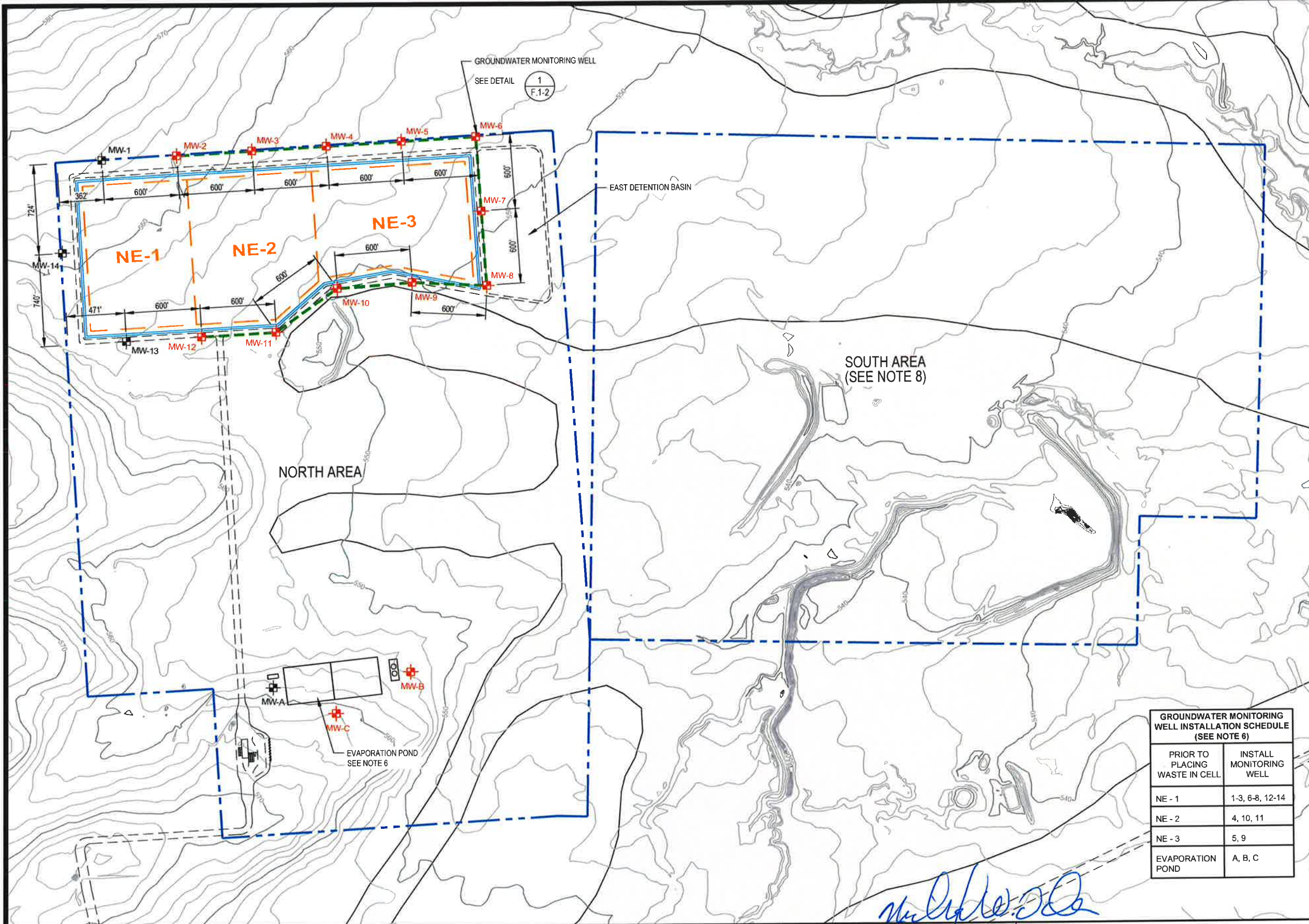


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LEGEND

- PERMIT BOUNDARY
- WASTE UNIT BOUNDARY
- PERIMETER DITCH
- PERIMETER ACCESS ROAD
- + MW-1 GROUNDWATER MONITORING WELL (UPGRADIENT)
- + MW-10 GROUNDWATER MONITORING WELL (DOWNGRADIENT)
- 100-YEAR FLOODPLAIN (PER FIRM DATED APRIL 2, 2008, SEE NOTE 7)
- POINT OF COMPLIANCE (P.O.C.)

NOTES

1. EXISTING CONTOURS DEVELOPED FROM SITE AERIAL TOPOGRAPHIC SURVEY BY DALLAS AERIAL SURVEYS ON FEBRUARY 15, 2010.
2. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
3. THE NEED FOR FLEXIBILITY TO ACCOMMODATE ADJUSTMENTS AND MODIFICATIONS IS ANTICIPATED CONSIDERING THE SIZE, COMPLEXITY, AND LIFE OF THE PROJECT.
4. MW-2 TO MW-12 ARE DOWNGRADIENT ALONG P.O.C.
5. MW-1, MW-13, AND MW-14 ARE UPGRADIENT.
6. MW-A, MW-B, AND MW-C TO BE INSTALLED PRIOR TO OR AT THE TIME OF THE EVAPORATION POND CONSTRUCTION.
7. 100-YEAR FLOODPLAIN FROM FLOOD INSURANCE RATE MAP FOR WEBB COUNTY, TEXAS, MAP NO. 48479C1275C, DATED APRIL 2, 2008. A CLOMR THAT WOULD REMOVE A LARGE AREA OF THE 100-YEAR FLOODPLAIN WITHIN THE PERMIT BOUNDARY WAS APPROVED BY FEMA ON NOVEMBER 21, 2014; HOWEVER, THE CLOMR IMPROVEMENTS HAVE NOT BEEN CONSTRUCTED.
8. FUTURE WASTE PROCESSING OR DISPOSAL AREA SUBJECT TO PERMIT MODIFICATION OR AMENDMENT.

GROUNDWATER MONITORING WELL INSTALLATION SCHEDULE (SEE NOTE 6)

PRIOR TO PLACING WASTE IN CELL	INSTALL MONITORING WELL
NE - 1	1-3, 6-8, 12-14
NE - 2	4, 10, 11
NE - 3	5, 9
EVAPORATION POND	A, B, C

Michael W. Oden

REV. NO.	DATE	DESCRIPTION
6	11/2017	REVISED NOTE 6, ADD MW-C
5	06/2017	REVISED WASTE UNIT BOUNDARY AND WELLS
4	11/2016	REVISED SCHEDULE FOR MW-15, MW-16 & MW-17
3	10/2016	REVISED WELL LAYOUT / ADDED INSTALLATION SCHEDULE
2	11/2015	NOD 2
1	9/2015	NOD 1

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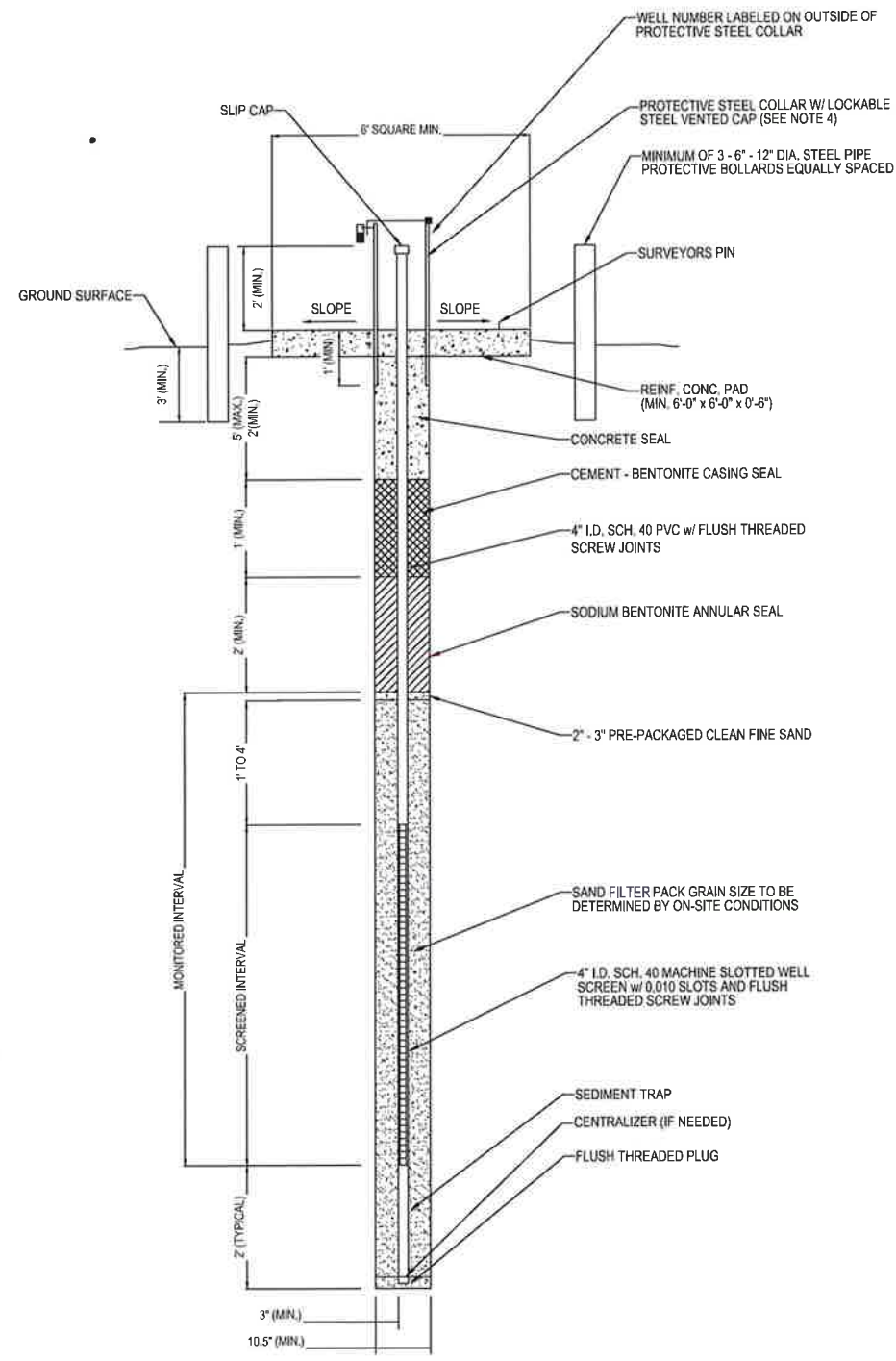
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11-3-2017

**PESCADITO ENVIRONMENTAL RESOURCE CENTER
 WEBB COUNTY, TEXAS
 MSW 2374**

GROUNDWATER MONITORING SYSTEM PLAN

PROJ. NO.:	148866	DATE:	AUGUST 2017
DESIGNED BY:	-	DRAWING NO.:	III
DRAWN BY:	MTE		F.1-1
CHECKED BY:	RDS		1 OF 2 SHEETS
APPROVED BY:	MWO		



1
F.1-2
TYPICAL GROUNDWATER MONITORING WELL
NOT TO SCALE

NOTES:

- MONITORING WELL INSTALLATION SHALL CONFORM TO METHODS AND MATERIALS DESCRIBED IN APPLICABLE REGULATIONS OF TCEQ.
- PTFE TAPE OR O-RINGS ON ALL JOINTS.
- MONITORED INTERVAL TO BE FROM 9' BELOW GROUND SURFACE TO THE DEEPEST SUMP EXCAVATION ELEVATION NEAREST TO THE WELL, ASSUMING THREE FOOT LINER.
- PROTECTIVE COLLAR AND CAP MAY BE STEEL OR ALUMINUM.
- MW-A (UPGRADIENT) AND MW-B AND MW-C (COMPLIANCE) MONITOR THE EVAPORATION POND AND WILL HAVE A MONITORED INTERVAL OF 20-FEET.

Michael W. Oden
11-3-2017

STATE OF TEXAS
MICHAEL W. ODEN
67165
REGISTERED PROFESSIONAL ENGINEER

GROUNDWATER MONITORING WELL SUMMARY TABLE

Well Name	Northing	Easting	Ground Surface Elevation (ft MSL)	Nearest Sump	Bottom Sump Elevation (ft. MSL)	Liner Excavation Elevation (see note 3)
MW-01	17098825.17	773873.65	565.46	NE-1	454	451
MW-02	17098233.12	773776.30	562.04	NE-1	454	451
MW-03	17097641.07	773678.94	558.80	NE-2	451	448
MW-04	17097049.02	773581.58	556.23	NE-3	449	446
MW-05	17096456.97	773484.23	554.48	NE-3	449	446
MW-06	17095864.93	773386.85	552.34	NE-3	449	446
MW-07	17095956.86	772793.93	550.58	NE-3	449	446
MW-08	17096048.80	772201.02	548.76	NE-3	449	446
MW-09	17096627.00	772361.29	549.76	NE-3	449	446
MW-10	17097220.75	772447.66	549.99	NE-3	449	446
MW-11	17097773.80	772215.00	552.17	NE-2	451	448
MW-12	17098365.70	772313.23	554.45	NE-2	451	448
MW-13	17098957.60	772411.47	556.00	NE-1	454	451
MW-14	17099300.80	773218.57	561.01	NE-1	454	451
MW-A	17098438.20	769433.51	558.50	N/A	N/A	SEE NOTE 5
MW-B	17097340.81	769312.15	553.72	N/A	N/A	SEE NOTE 5
MW-C	17097994.82	769119.74	562.00	N/A	N/A	SEE NOTE 5

REV. NO.	DATE	DESCRIPTION
5	11/2017	ADDED MW-C
4	08/2017	REVISED SUMMARY TABLE, ADDED NOTE 5
3	10/2016	REVISED MONITORING WELL SYSTEM
2	12/2015	NOD 2 SUPPLEMENT
1	11/2015	NOD 2

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**PESCADITO ENVIRONMENTAL RESOURCE CENTER
WEBB COUNTY, TEXAS
MSW 2374**

TYPICAL GROUNDWATER MONITORING WELL DETAIL

PROJ. NO.: 148866	DATE: AUGUST 2017
DESIGNED BY: -	DRAWING NO. III
DRAWN BY: MTE	F.1-2
CHECKED BY: RDS	2 OF 2 SHEETS
APPROVED BY: MWO	

Changed Pages

Part III, Attachment III-J

Cost Estimates for Closure and Post-Closure Care

**Part III
Attachment III-J**

COST ESTIMATES FOR CLOSURE AND POST-CLOSURE CARE

**Pescadito Environmental Resource Center
MSW No. 2374
Webb County, Texas**

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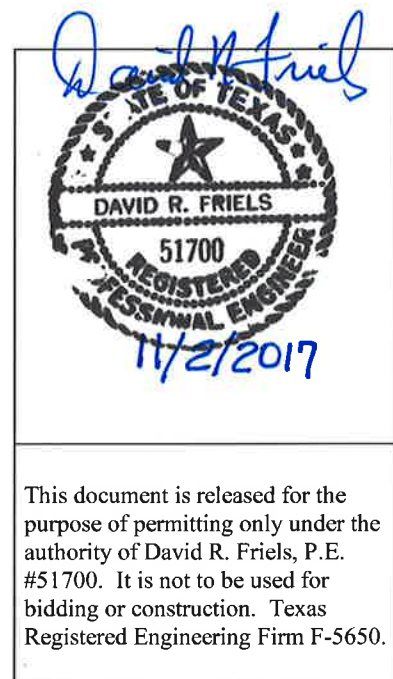
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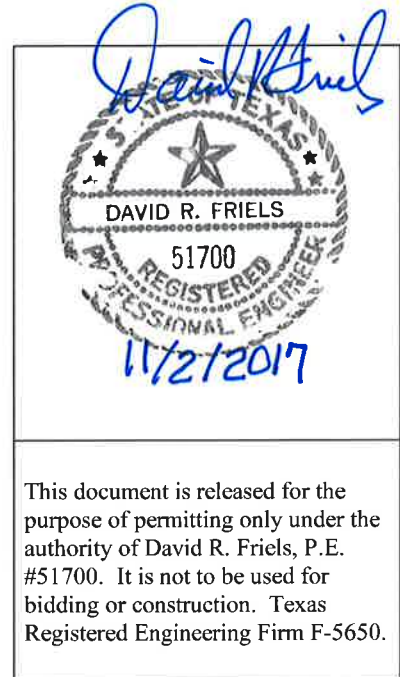
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APPENDIX III-J.1

Closure and Post-Closure Care Cost Estimates



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2.0 CLOSURE AND POST-CLOSURE CARE COSTS

2.1 Closure Costs

The requirements for a closure cost estimate are provided in §330.503 (related to landfills) and §330.505 (related to storage and processing units). A detailed written cost estimate, in current dollars, showing the cost of hiring a third party to close the largest area of the landfill ever requiring a final closure at any time during the active life of the facility has been prepared and is included in Appendix A. Based on the current closure schedule, the largest area that would require final closure is projected to not exceed 73 acres. In addition to costs to close the solid waste landfill, closure costs include estimated costs to close the liquid solidification unit and the citizen's convenience center. The closure costs are based on completing the requirements outlined in the approved Closure Plan, Attachment III-H to the SDP. Contingency costs have been included for changes in costs, changes in monitoring, etc.; however, no costs for corrective action have been included. Should corrective action be required at a later date, the cost estimate will be prepared in accordance with §330.509.

2.2 Post-Closure Costs

The requirements for a post-closure care cost estimate are provided in §330.507. The post-closure care period has been established by RCRA Subtitle D to be 30 years. During this period, maintenance must be ongoing to assure the integrity and effectiveness of the final cover system, monitoring systems, leachate collection system, landfill gas management system, drainage system, and erosion protection facilities. The post-closure care cost estimate provides a cost for the routine maintenance and monitoring of the final cover system and re-establishment of vegetation or other erosion controls. Costs are included for annual engineering inspections and design of repairs. PERC will retain the right of entry and maintain all rights-of-way to the closed landfill in order to conduct site maintenance, maintain final cover, vegetation, drainage and perform corrective action and

3.0 CLOSURE AND POST-CLOSURE CARE COST ESTIMATES

Closure and Post-Closure Care Cost Estimates were prepared consistent with §330.503, §330.505, and §330.507 and are presented in Appendix A. The cost estimates are based closing the maximum area of 72.33 acres of waste fill (i.e., the projected maximum area with waste in place that has not received final cover). Additionally, costs are included to close the liquid waste solidification unit, citizen convenience center, and contaminated water storage facility. The landfill is assumed to be closed using the approved alternate final cover system with LLDPE geomembrane for the closure cost estimate.

The cost estimates include the assumption that all the required groundwater monitoring wells and the landfill gas monitoring probes have been installed. The total number of groundwater monitoring wells required is 17, and landfill gas management plan includes 10 landfill gas monitoring probes. It is assumed that leachate may be generated during the first five years of post-closure; therefore, leachate collection and treatment for 5 years is included in the cost estimate. At the end of the 5-year period or once no longer needed, the contaminated water storage facility will be closed and decommissioned. Items have also been included for surveying, engineering, and contingency.

The post-closure care costs include projected costs to provide the required maintenance and monitoring for the entire facility for the specified post-closure care period of 30 years.

APPENDIX III-J.1

CLOSURE AND POST-CLOSURE CARE COST ESTIMATES

INITIAL SUBMITTAL MARCH 2015

REVISED SEPTEMBER 2015

TECHNICALLY COMPLETE MARCH 11, 2016

REVISED AUGUST 2016

REVISED AUGUST 2017

REVISED NOVEMBER 2017



TOTAL CLOSURE AND POST-CLOSURE CARE COSTS			
	Closure	Post-Closure	Total
Landfill Unit	\$8,238,154	\$4,211,400	\$12,449,554
Liquid Solidification Unit and Citizens Convenience Center	\$40,994		
TOTAL:	\$8,279,148	\$4,211,400	\$12,490,548

Note: All calculations are carried to full decimal values but numbers are shown rounded.

**Closure Costs - Waste Disposal Unit
Pescadito Environmental Resource Center**

Permitted Waste Area: Acres = 72.33 Square Feet = 3,150,695
 Largest Area to be closed: Acres = 72.33 Square Feet = 3,150,695

Item Description	Unit	Unit Cost	Quantity	Cost
Engineering				
Surveying Permitted Area, 72.33 Acres	acre	\$ 45.00	72.33	\$ 3,255
Evaluations, Plans, and Specifications	acre	\$ 310	72.33	\$ 22,422
CQA (survey, inspection & testing)	acre	\$ 5,500	72.33	\$ 397,815
Closure Certification, per event	LS	\$ 9,500	1	\$ 9,500
Total Engineering Costs				\$ 432,992
Construction				
7" Erosion Layer, complete in place	cy	\$ 5.00	68,071	\$ 340,353
30" Infiltration Layer, complete in place	cy	\$ 3.00	291,731	\$ 875,193
40 Mil LLDPE Textured	SF	\$ 0.50	3,150,695	\$ 1,575,347
Geosynthetic Drainage Layer	SF	\$ 0.60	3,150,695	\$ 1,890,417
General Fill, 1 foot, complete in place	cy	\$ 3.00	116,692	\$ 350,077
Seeding & Vegetation	acre	\$ 1,750.00	72.33	\$ 126,578
Drainage and Storm Water Control	acre	\$ 2,600.00	72.33	\$ 188,058
LFG Control System	acre	\$ 15,000.00	72.33	\$ 1,084,950
Liquid Solidification & Transport	cy	\$ 18.50	1,800	\$ 33,300
Backfill Liquid Solidification Unit	cy	\$ 3.00	1,800	\$ 5,400
Loading & Disposing Materials from Convenience Center at Landfill	Trip	\$ 165.00	10	\$ 1,650
Steam Cleaning Convenience Center	LS	\$ 1,000.00	1	\$ 1,000
Removal and Disposal of maximum amount Contaminated Water in tanks and pond	Gallons	\$ 0.30	1,433,000	\$ 429,900
Close Contaminated Water Storage	LS	\$ 5,000.00	1	\$ 5,000
Sub-Total Construction Costs				\$ 6,907,223
Contingency		10%		\$ 690,722
Contract Performance Bond		2%		\$ 138,144
TCEQ Contract Admin/Legal Fees		1%		\$ 69,072
Sub-Total Contingency & Admin Costs				\$ 897,939
Total Construction Costs				\$ 7,805,162
TOTAL CLOSURE COSTS:				\$ 8,238,154

Notes:

1. Surveying is based on permit area which is equal to largest closure area.
2. Geomembrane and geosynthetic drain will be used only over Class 1 cells. Cover will utilize onsite soil.
3. Vegetation includes watering until vegetation is established.
4. Storm Water Control includes construction of storm water storage pond.
5. Assume materials from liquid stabilization and citizen convenience center will be disposed in landfill.
6. Contaminated water storage will be closed and decommissioned during post-closure period.

Post-Closure Care Cost Estimate
Pescadito Environmental Resource Center

Assume Closed Area = Permit Area: 72.33 Acres
 Post-Closure Care Period Will Be: 30 Years
 Number of GW Monitoring Wells: 17 Wells

No.	Item Description	Unit	Unit Cost	Quantity	Cost (30 yr)
1	Site Inspections by Engineer	Each	\$ 3,000	45	\$ 135,000
2	Engineering - Review of Monitoring Results and Correctional Plans	yr	\$ 7,650	30	\$ 229,500
3	Maintain Slopes	yr	\$ 24,200	30	\$ 726,000
4	Re-establish surface vegetation/cover	yr	\$ 35,000	30	\$ 1,050,000
5	GW Sampling & Analysis	well-event	\$ 1,200	1,020	\$ 1,224,000
6	Methane Monitoring	yr	\$ 4,000	30	\$ 120,000
7	Leachate Treatment for 5 years (onsite)	gal/yr	\$ 0.10	50,000	\$ 25,000
	Sub-total				\$ 3,509,500
	Contingency		10%		\$ 350,950
	Administration		10%		\$ 350,950
	Post-Closure Care Costs				\$ 4,211,400

Assumptions:

- 1 Site Inspections - quarterly for 5 years and annually thereafter at an average cost of \$3000 per trip
- 2 An engineer will review inspection and monitoring reports & prepare corrective action plans
- 3 Maintain slopes includes minor filling and grading for 10 acres per year at \$2420 per acre
- 4 Approximately 20 acres of vegetation will be re-established each year at \$1750 per Acre
- 5 GW sampling and analysis will be conducted semi-annually at \$1200 per well per event
 17 wells x 2 events per year x 30 years = 1020 well-events
- 6 Methane monitoring will be conducted quarterly at \$1,000-per event, \$4000 per year
- 7 Leachate treatment will include treating an average of 50,000 gal/yr for 5 years

Closure Cost Estimate
Liquid Stabilization Unit and Citizen's Convenience Center
Pescadito Environmental Resource Center

Facility Area, Acres: 1.1 Liquid Volume: 354,600 Gallons

ITEM DESCRIPTION	UNIT	UNIT COST	QUANTITY	COST
Surveying	LS	\$ 1,000.00	1	\$ 1,000
Engineering	LS	\$ 1,000.00	1	\$ 1,000
Loading and hauling soil for processing	cy	\$ 1.00	800	\$ 800
Processing liquid waste	hr	\$ 60.00	24	\$ 1,440
Loading and hauling solidified Waste	cy	\$ 1.00	800	\$ 800
Steam Cleaning of Concrete	LS	\$ 500.00	1	\$ 500
Excavating, filling and grading	cy	\$ 1.60	18,000	\$ 28,800
Seeding	acre	\$ 731.82	4.0	\$ 2,927
Sub-total				\$ 37,267.28
Contingency			10%	\$ 3,726.73
TOTAL CLOSURE COSTS:				\$ 40,994

Assumptions:

1. Processing soil requirement is approximately one-half of liquid capacity.
2. Approximately one-half of capacity will be processed and hauled to active disposal area.
3. Average cuts and fills for final grading will be approximately 3 feet.

Attachment C
to November 2017 Letter (MSW 2374)

Redline Version of Changed Pages

Redline / Strikeout Version

Part I

PART I

APPLICATION FOR PERMIT TYPE I MUNICIPAL SOLID WASTE FACILITY

MSW PERMIT NO. 2374

PESCADITO ENVIRONMENTAL RESOURCE CENTER SOLID WASTE MANAGEMENT AND DISPOSAL FACILITY

RANCHO VIEJO WASTE MANAGEMENT, LLC
LAREDO, WEBB COUNTY, TEXAS

Originally Prepared By:

TRC Environmental Corporation

TBPE Firm Registration No. 3775

March 28, 2011; Revised May 20, 2011; Revised September 14, 2011; Revised December 14, 2011

Part I was signed by James F. Neyens, P.E. on December 14, 2011 for all changes through that date

Revised on June 12, 2014

April 20, 2015

September 2015

Technically Complete March 11, 2016

Modified November 2016

Modified November 2017 By:



APTIM Environmental & Infrastructure, Inc. (f/k/a CB&I Environmental & Infrastructure, Inc.)

TBPE Firm Registration No. F-5650

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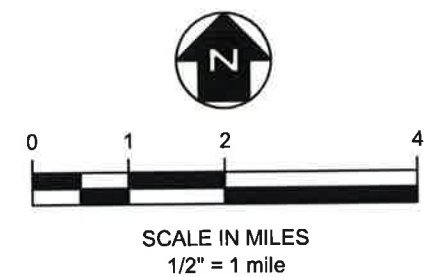
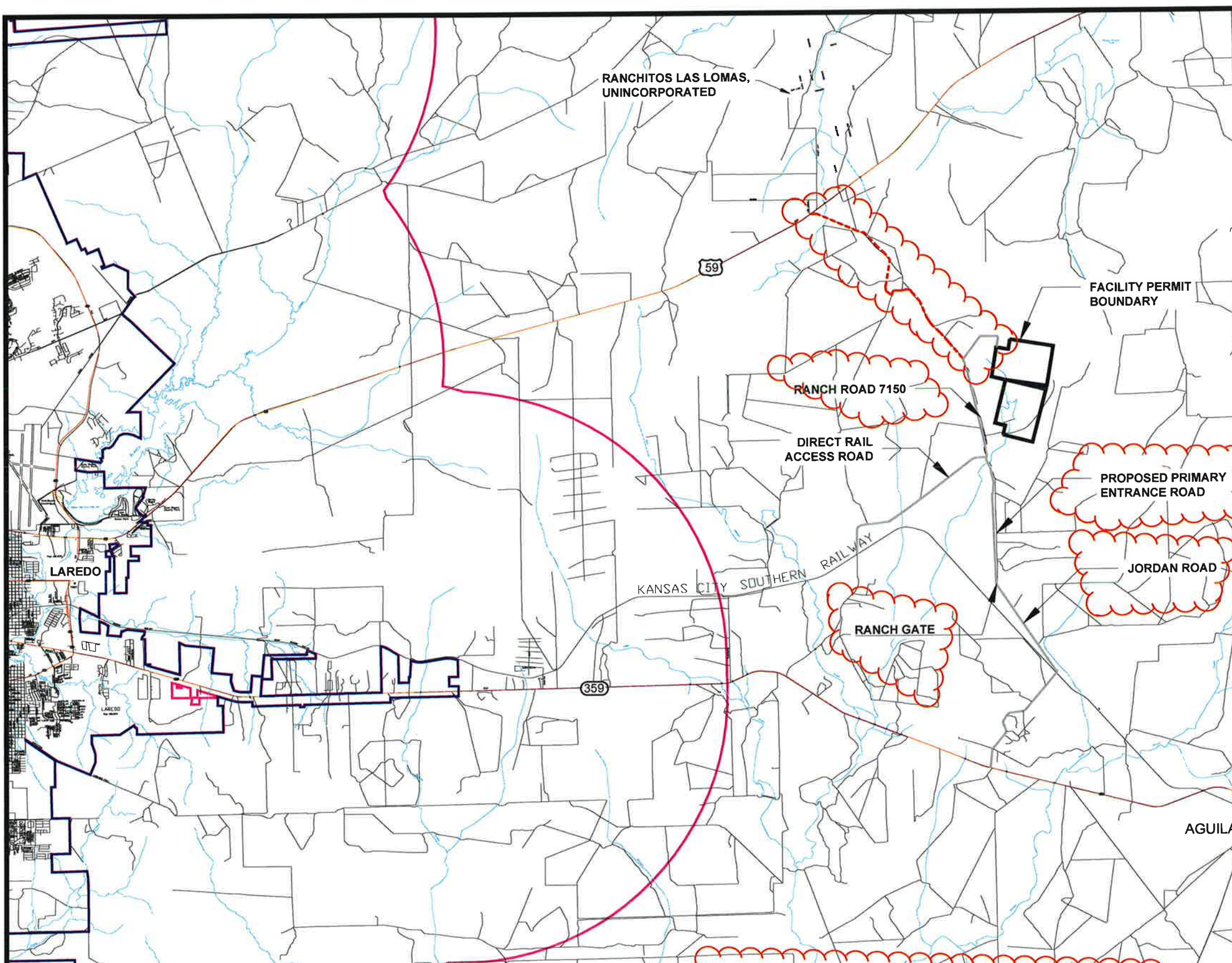
Figures

Figure 1	General Location Map
Figure 2	Detailed Location Map
Figure 3	Land Ownership Map
Figure 4	Boundary Survey (Sheets 1 to 4 of 4)
Figure 5	Surface Use Agreement

Attachments

Attachment A	Legal Description
Attachment B	Certificate of Incorporation
Attachment C	Payment Demonstration

FIGURES



LEGEND

- PRIMARY HIGHWAY
- SECONDARY OR RANCH ROAD
- ALL WEATHER PRIMARY ENTRANCE ROAD
- RIVER OR STREAM
- RAILROAD TRACK
- PROPERTY PERMIT BOUNDARY OF THE FACILITY
- LAREDO CITY LIMITS
- LAREDO EXTRA TERRITORIAL JURISDICTION (ETJ)
- SECONDARY "EMERGENCY" ENTRANCE ROAD

NOTES

1. SOURCE: TXDOT URBAN FILES FOR WEBB COUNTY (2003).
2. TRC ENVIRONMENTAL CORP. TBPE FIRM F-3775.
3. FACILITY BOUNDARY REVISED BY CB&I (SHAW ENVIRONMENTAL, INC.) TBPE FIRM F-5650.

THIS DRAWING HAS BEEN ADAPTED FROM "GENERAL LOCATION MAP" DEVELOPED BY TRC FOR THE PART 1 APPLICATION FOR PERMIT, TYPE 1 MUNICIPAL SOLID WASTE FACILITY, MSW PERMIT NO. 2374, PESCADITO ENVIRONMENTAL RESOURCE CENTER. THIS PERMIT APPLICATION WAS DEVELOPED ON BEHALF OF RANCHO VIEJO WASTE MANAGEMENT, LLC AND WAS SUBMITTED TO THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AND DECLARED TECHNICALLY COMPLETE ON JULY 2, 2012. THE ORIGINAL DRAWING FILE IS DATED 2/14/2011 AND WAS STAMPED BY LICENSED PROFESSIONAL ENGINEER JAMES F NEYENS, LICENSE NO. 52766 ON 9/13/2011. REVISIONS TO THE ORIGINAL DRAWINGS ARE SUMMARIZED IN THE REVISION NOTES.

REV. NO.	DATE	DESCRIPTION
2	11/2017	UPDATE ENTRANCE ROADS

REDLINE VERSION

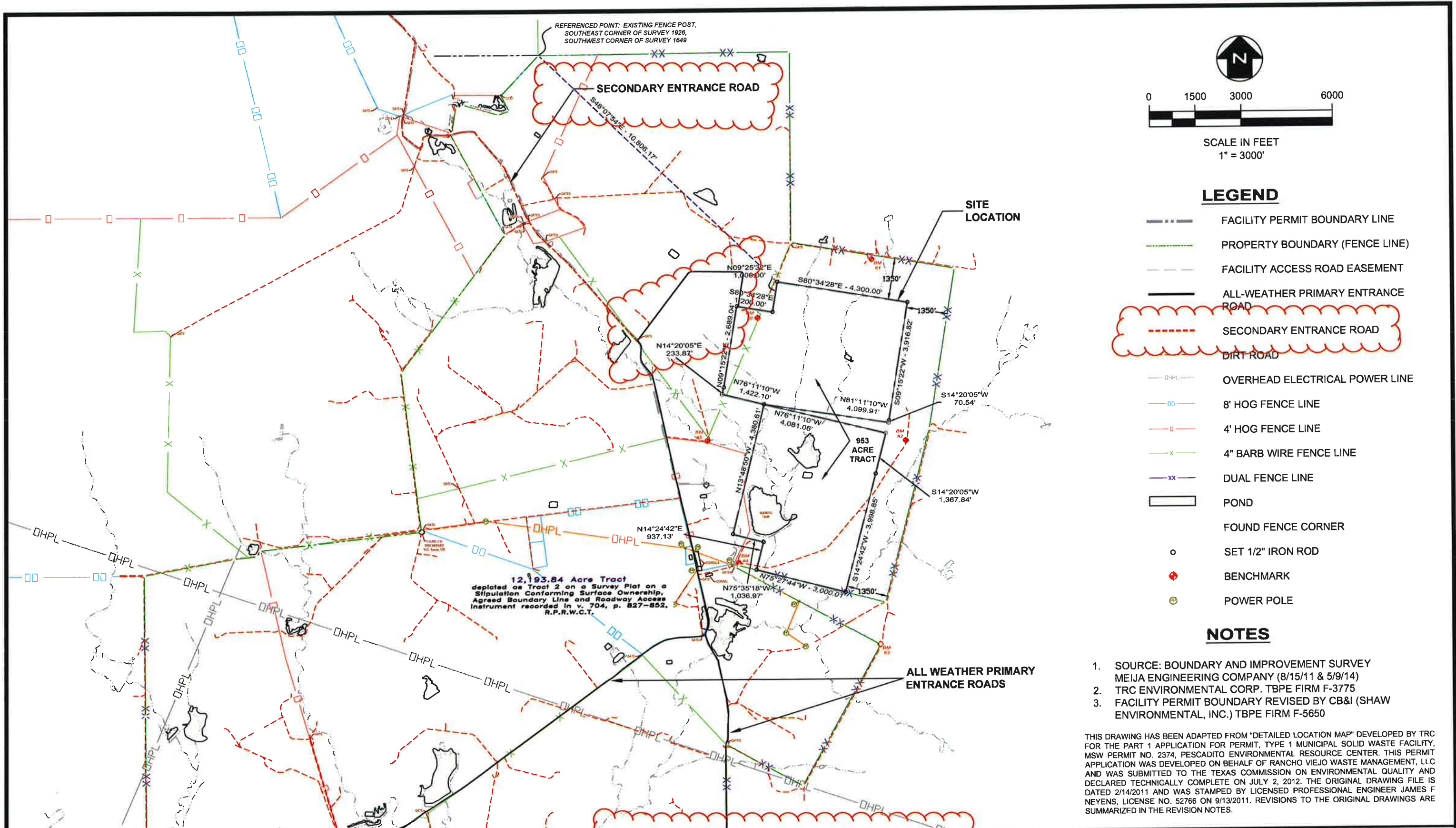
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 TBPE FIRM F-5650
 12005 FORD RD, SUITE 600
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 (972) 773-8400

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**PESCADITO ENVIRONMENTAL RESOURCE CENTER
WEBB COUNTY, TEXAS**

**FIGURE 1 - PART 1
GENERAL LOCATION MAP**

DRAWN BY:	MTE	APPROVED BY:	MWO	PROJ. NO.:	148866	DATE:	MAY 2014
-----------	-----	--------------	-----	------------	--------	-------	----------



REV. NO.	DATE	DESCRIPTION
1	5/22/2014	REVISED FACILITY PERMIT BOUNDARY
2	11/2017	UPDATE ENTRANCE ROADS


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WEBB COUNTY, TEXAS**

**FIGURE 2 - PART I
DETAILED LOCATION MAP**

DRAWN BY: MTE APPROVED BY: MWO PROJ. NO.: 148866 DATE: MAY 2014

Redline / Strikeout Version

Part II

PART II
APPLICATION FOR PERMIT
TYPE I MUNICIPAL SOLID WASTE FACILITY
MSW PERMIT NO. 2374

PESCADITO ENVIRONMENTAL
RESOURCE CENTER

SOLID WASTE MANAGEMENT AND
DISPOSAL FACILITY
RANCHO VIEJO WASTE MANAGEMENT, LLC
LAREDO, WEBB COUNTY, TEXAS

Sections 1.1, 1.2, 2.1.4, 10.1—10.4, 11.1 –
Signed by H.C. Clark, P.G., Ph.D. on Feb. 7,
2012

Originally
Prepared By:

TRC Environmental Corporation
TBPE Firm Registration No. 3775

Except for Sections 1.1, 1.2, 2.1.4,
10.1—10.4 and 11.1 – remaining
portions of Part II through February 17,
2012 revisions were signed/sealed by
James F. Neyens, P.E. on February 24,
2012.

March 28, 2011; Revised May 20, 2011; Revised September 14, 2011; Revised December 14, 2011; Revised February 17, 2012

Revised on June 12, 2014 by:

Shaw Environmental, Inc. (a CB&I company)
TBPE Firm Registration No. F-5650
and
H.C. Clark P.G., Ph.D. for Sections 1.2, 2.1.4 and 11.1

Revised July 25, 2014; April 20, 2015; September 2015; Technically Complete March 11, 2016

Modified October 2016, ~~and August 2017~~ and November 2017 By:

APTIM Environmental & Infrastructure, Inc. (f/k/a CB&I Environmental & Infrastructure, Inc.)
TBPE Firm Registration No. F-5650

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Sections 1.1, 1.2, 2.1.4, 10.1—10.4,
11.1 – Signed by H.C. Clark, P.G.,
Ph.D. on Feb. 7, 2012

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by James F. Neyens, P.E. on
February 24, 2012.

Revised June 12, 2014

H.C. Clark P.G., Ph.D. for Sections 1.2, 2.1.4 and 11.1

And

CB&I (Shaw Environmental, Inc.) for other revised pages

Revised July 25, 2014; April 20, 2015; September 2015; Technically Complete March 11, 2016 and
Modified October 2016, ~~and~~ August 2017 and November 2017 by APTIM Environmental &
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Figures

Figure 1	General Location Map
Figure 2	Wind Rose Map
Figure 3	Facility Layout Map
Figure 4	Operations Area Layout Map
Figure 5	Future Operations Area Layout Map
Figure 6	General Topographic Map
Figure 7	Aerial Photograph
Figure 8	Land Use Map
Figure 9	Supplemental Land Use Map
Figure 10	USGS Seismic Hazard Map
Figure 11	Flood Insurance Rate Map

Attachments

Attachment A	T&E Species and Wetlands Assessment
Attachment B	TxDOT Coordination
Attachment C	Texas Historical Commission Review
Attachment D	Cultural Resources Review
Attachment E	Local Agency Coordination
Attachment F	Federal Aviation Administration Coordination
Attachment G	100-Year Floodplain Coordination
Attachment H	TPDES Certification
Attachment I	Oil Well Affidavit
Attachment J	Webb / Duval Pipeline Information

Sections 1.1, 1.2, 2.1.4, 10.1—10.4,
11.1 – Signed by H.C. Clark, P.G.,
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by James F. Neyens, P.E. on February
24, 2012.

Revised June 12, 2014

H.C. Clark P.G., Ph.D. for Sections 1.2, 2.1.4 and 11.1

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Facility access control features, including ~~a~~ perimeter security fences and lockable gates located around the facility ~~along the facility boundary line and at least one lockable gate,~~ are discussed in Part III, Attachment III-B and are shown on Drawing III-B.1-2 in Appendix III-B.1 ~~Figure 4, Part II.~~

There are no recorded archeological, historical or aesthetic sites within one mile of the facility, so none can be shown.

4.0 FACILITY LAYOUT MAPS [330.61 (d)]

A Facility Layout Map and an Operations Area Layout Map are provided as Figures 3 and 4 of Part II. These maps provide:

The maximum outline of the landfill unit(s);

General locations of main facility access roadways;

General locations of buildings;

Explanatory notes;

Fencing and lockable gates will be provided along the facility boundary, as shown on Figure 4, Part II; and

Natural amenities and plans for screening the facility from public view.

Easements are shown on Figure 4, Sheets 1 to 4, in Part I. These easements will be protected in accordance with TCEQ rules.

The site entrance road can be accessed from public access roads.

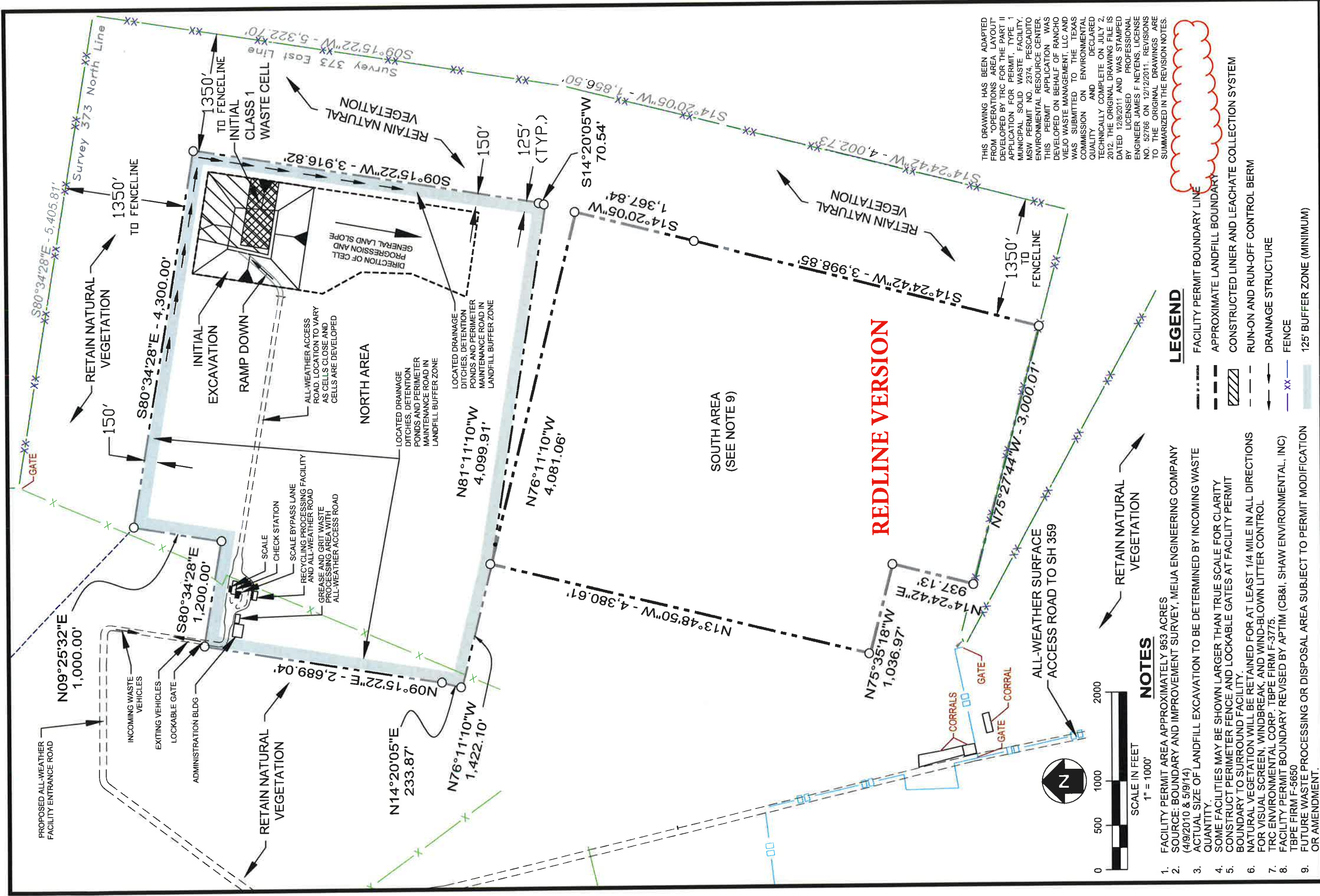
An initial Class I waste cell location is shown on Figure 4. Additional Class I waste cells may be designated and constructed throughout the landfill as future landfill cells are designed. All Class I waste cells will be designed, constructed, and operated in accordance with TCEQ rules.

Locations of monitoring wells are generally shown on the Monitoring System and Cell Layout Plan, Figure 5. In accordance with 30 TAC §330.403(a)(2), default spacing for groundwater monitoring wells is a maximum of 600 feet. Figure III-F.1-1 in Part III shows a total of 14 wells located around the landfill unit perimeter. An additional ~~32~~ wells are proposed to monitor the evaporation pond (also shown on Figure III-F.1-1).

Locations of gas monitoring probes are generally shown on Figure 5. In accordance with 30 TAC §330.371(h)(2), permanent gas monitoring probes are required to monitor for subsurface migration of landfill gas. Probes are typically placed at 1,000-foot spacing and this spacing can be accommodated at the location shown on Figure 5. Additional information on spacing is shown on Figure III-G.1-1 in Part III.

The proposed facility is completely isolated from all land use except cattle ranching and oil and gas production, and is provided with an effective separation distance of more than one-quarter mile on all sides.

FIGURES



REDLINE VERSION

THIS DRAWING HAS BEEN ADAPTED FROM "OPERATIONS AREA LAYOUT" DEVELOPED BY TRC FOR THE PART II APPLICATION FOR PERMIT, TYPE 1 MUNICIPAL SOLID WASTE FACILITY, MSW PERMIT NO. 2374, PESCADITO ENVIRONMENTAL RESOURCE CENTER. THIS PERMIT APPLICATION WAS DEVELOPED ON BEHALF OF RANCHO VEJO WASTE MANAGEMENT, LLC AND WAS SUBMITTED TO THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AND DECLARED TECHNICALLY COMPLETE ON JULY 2, 2012. THE ORIGINAL DRAWING FILE IS DATED 12/8/2011, AND WAS STAMPED BY LICENSED PROFESSIONAL ENGINEER JAMES F NEYENS, LICENSE NO. 52766 ON 12/12/2011. REVISIONS TO THE ORIGINAL DRAWINGS ARE SUMMARIZED IN THE REVISION NOTES.

LEGEND

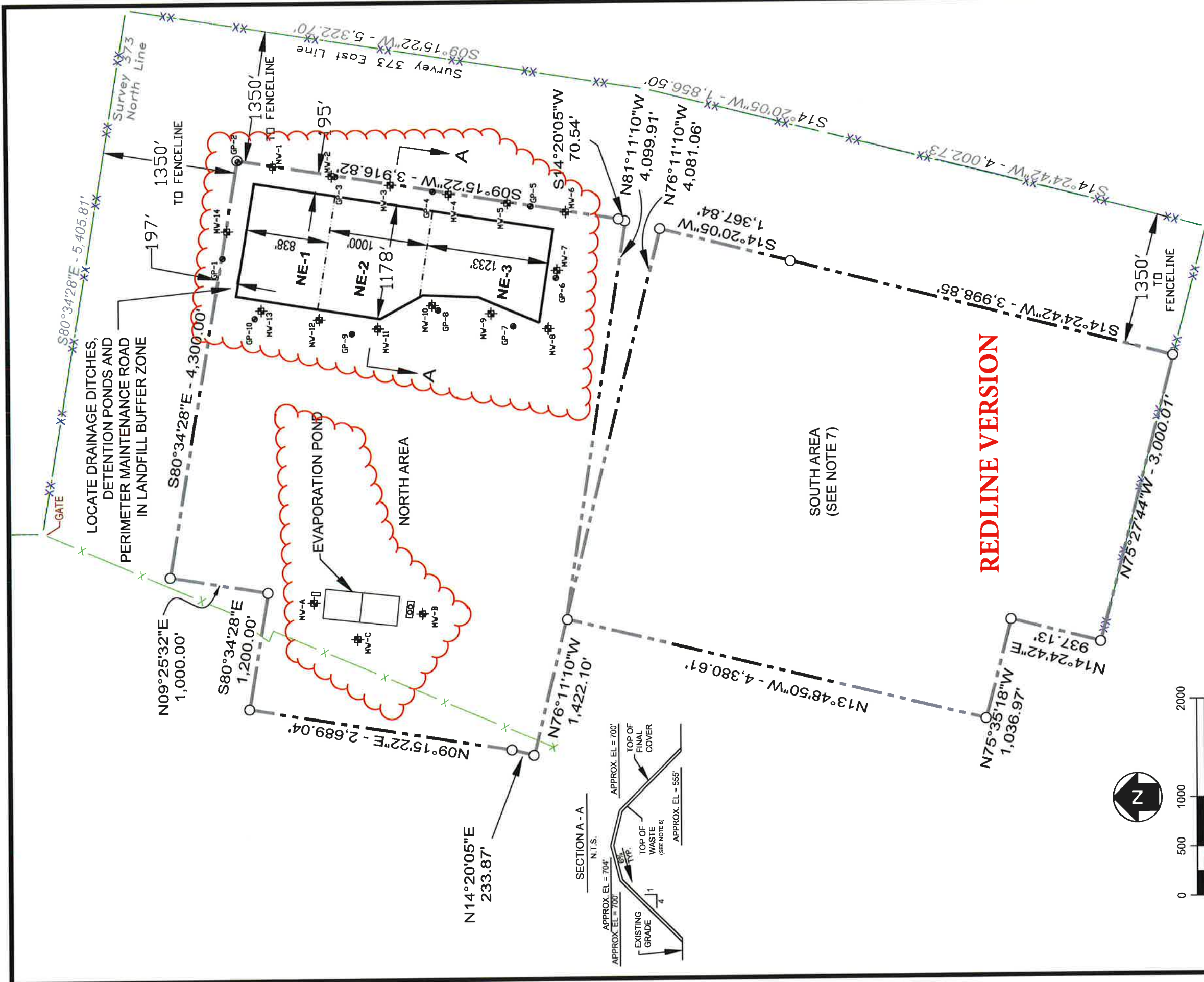
- FACILITY PERMIT BOUNDARY LINE
- - - APPROXIMATE LANDFILL BOUNDARY
- ▨ CONSTRUCTED LINER AND LEACHATE COLLECTION SYSTEM
- - - RUN-ON AND RUN-OFF CONTROL BERM
- DRAINAGE STRUCTURE
- FENCE
- 125' BUFFER ZONE (MINIMUM)

NOTES

1. FACILITY PERMIT AREA APPROXIMATELY 953 ACRES
2. SOURCE: BOUNDARY AND IMPROVEMENT SURVEY, MEIJA ENGINEERING COMPANY (4/9/2010 & 5/9/14)
3. ACTUAL SIZE OF LANDFILL EXCAVATION TO BE DETERMINED BY INCOMING WASTE QUANTITY.
4. SOME FACILITIES MAY BE SHOWN LARGER THAN TRUE SCALE FOR CLARITY
5. CONSTRUCT PERIMETER FENCE AND LOCKABLE GATES AT FACILITY PERMIT BOUNDARY TO SURROUND FACILITY.
6. NATURAL VEGETATION WILL BE RETAINED FOR AT LEAST 1/4 MILE IN ALL DIRECTIONS FOR VISUAL SCREEN, WINDBREAK, AND WIND-BLOWN LITTER CONTROL
7. TRC ENVIRONMENTAL CORP. TBPE FIRM F-3775.
8. FACILITY PERMIT BOUNDARY REVISED BY APTIM (CB&I, SHAW ENVIRONMENTAL, INC) TBPE FIRM F-5650
9. FUTURE WASTE PROCESSING OR DISPOSAL AREA SUBJECT TO PERMIT MODIFICATION OR AMENDMENT.



<p>REV. 1 9/22/14 - REVISED FACILITY PERMIT BOUNDARY</p> <p>REV. 3 11/2017 - REVISED LEGEND</p>	<p>APTIM Environmental & Infrastructure, Inc. <small>(fka CB&I Environmental & Infrastructure, Inc.) 12005 FORD RD, SUITE 600 DALLAS, TEXAS 75234 (972) 773-8400 TBPE FIRM F-5650</small></p>	<p>REV. 1 9/22/14 - REVISED FACILITY PERMIT BOUNDARY</p> <p>REV. 3 11/2017 - REVISED LEGEND</p>
<p>PESCADITO ENVIRONMENTAL RESOURCE CENTER WEBB COUNTY, TEXAS</p>		
<p>FIGURE 4 - PART II OPERATIONS AREA LAYOUT</p>		
DRAWN BY: MTE	APPROVED BY: MWO	PROJ. NO.: 148866
		DATE: AUGUST 2017



REDLINE VERSION



NOTES

1. FACILITY PERMIT AREA APPROXIMATELY 953 ACRES.
2. SOURCE: BOUNDARY AND IMPROVEMENT SURVEY, MEJIA ENGINEERING COMPANY (4/9/10 & 5/9/14).
3. CONSTRUCT SECURITY FENCE AND GATES ALONG FACILITY PERMIT BOUNDARY.
4. TRC ENVIRONMENTAL CORP. TBPE FIRM F-3775.
5. FACILITY PERMIT BOUNDARY REVISED BY APTIM (CB&I, SHAW ENVIRONMENTAL, INC.) TBPE FIRM F-5650
6. LANDFILL ELEVATIONS ARE PRELIMINARY FOR TOP OF FINAL COVER. SUBTRACT 3' FOR TOP OF WASTE ELEVATION. (SEE APP. III - D.2)
7. FUTURE WASTE PROCESSING OR DISPOSAL AREA SUBJECT TO PERMIT MODIFICATION OR AMENDMENT.

LEGEND

- (A-1) LANDFILL CELL DESIGNATION
- ⊕ GROUNDWATER MONITORING WELL
- ⊕ LANDFILL GAS MONITORING PROBE
- - - TYP. LANDFILL CELL BOUNDARY
- - - FACILITY PERMIT BOUNDARY LINE
- - - APPROXIMATE LANDFILL LIMIT
- - - EXISTING FENCE
- - - PROPERTY LINE AND FENCE
- - - 8' HOG FENCE

THIS DRAWING HAS BEEN ADAPTED FROM "GENERAL LOCATION MAP" DEVELOPED BY TRC FOR THE PART 1 APPLICATION FOR PERMIT, TYPE 1 MUNICIPAL SOLID WASTE FACILITY, MSW PERMIT NO. 2374, PESCADITO ENVIRONMENTAL RESOURCE CENTER. THIS PERMIT APPLICATION WAS DEVELOPED ON BEHALF OF RANCHO VIEJO WASTE MANAGEMENT, LLC AND WAS SUBMITTED TO THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AND DECLARED TECHNICALLY COMPLETE ON JULY 2, 2012. THE ORIGINAL DRAWING FILE IS DATED 2/14/2011 AND WAS STAMPED BY LICENSED PROFESSIONAL ENGINEER JAMES F. NEYENS, LICENSE NO. 52766 ON 9/14/2011. REVISIONS TO THE ORIGINAL DRAWINGS ARE SUMMARIZED IN THE REVISION NOTES.

<p>REV. 1 - 02/21/14 - REVISED FACILITY PERMIT BOUNDARY</p> <p>REV. 2 - 7/18/14 - ADDED SECTION B - B</p> <p>REV. 3 - 02/26/16 - REVISED CELL LAYOUT</p> <p>REV. 4 8/21/17 - REVISED MONITORING SYSTEM</p> <p>REV. 5 11/20/17 - ADD GW WELLS AND LPG PROBES</p>	<p>APTIM</p>	<p>APTIM Environmental & Infrastructure, Inc. (KVA CB&I Environmental & Infrastructure, Inc.) 12005 FORD RD, SUITE 600 DALLAS, TEXAS 75234 (972) 773-8400 TBPE FIRM F-5650</p> <p><small>APTIM Environmental & Infrastructure, Inc. has prepared this document for a specific project and site. It is not to be used for any other project or site without the prior written consent of APTIM Environmental & Infrastructure, Inc. This document may not be used or copied, in part or in whole, for any other project or site without the prior written consent of APTIM Environmental & Infrastructure, Inc.</small></p>	<p>PESCADITO ENVIRONMENTAL RESOURCE CENTER WEBB COUNTY, TEXAS</p> <p>FIGURE 5 - PART II MONITORING SYSTEM AND CELL LAYOUT PLAN</p>
<p>DRAWN BY: MTE APPROVED BY: MWO PROJ. NO.: 148966 DATE: AUGUST 2017</p>			

Redline / Strikeout Version
Part III, Appendix III-B.1
General Facility Design Figures

**Part III
Attachment III-B
Appendix III-B.1**

GENERAL FACILITY DESIGN FIGURES

**Pescadito Environmental Resource Center
MSW No. 2374
Webb County, Texas**

PESCADITO
ENVIRONMENTAL RESOURCE CENTER

Initial Submittal March 2015
Revised September 2015
Revised November 2015
Technically Complete March 11, 2016
Modified October 2016
Modified November 2016
Modified August 2017
Modified November 2017

Prepared for:
Rancho Viejo Waste Management, LLC
1116 Calle del Norte
Laredo, TX 78041

Prepared by:
**APTIM Environmental &
Infrastructure, Inc.**
(f/k/a CB&I Environmental &
Infrastructure, Inc.)



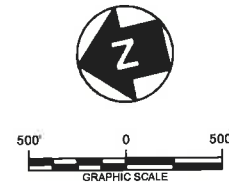
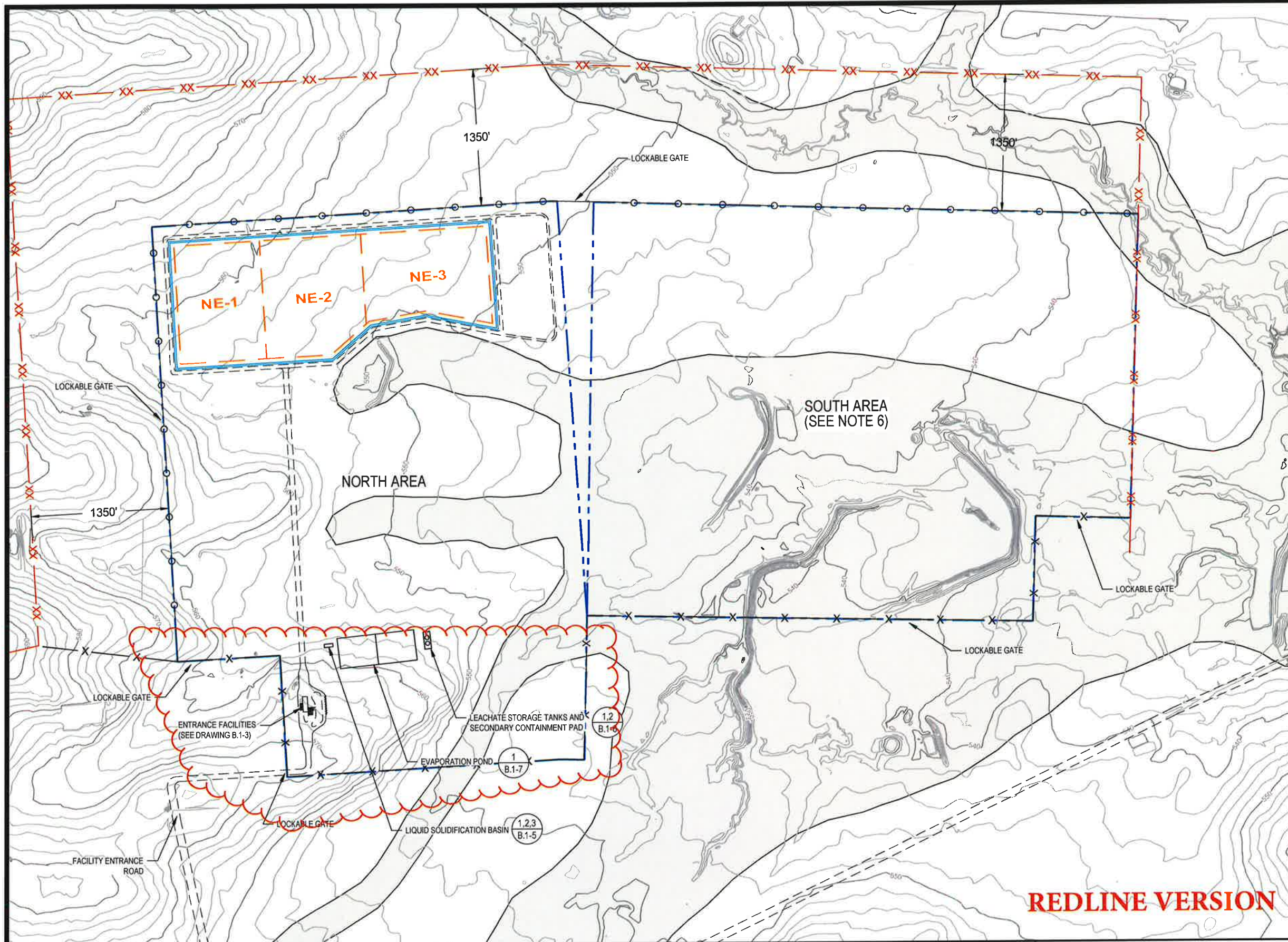
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LEGEND

- PERMIT BOUNDARY
- WASTE UNIT BOUNDARY
- PERIMETER ACCESS ROAD
- PERIMETER STORMWATER DITCH
- 100-YEAR FLOODPLAIN (PER FIRM DATED APRIL 2, 2008, SEE NOTE 5)
- XX EXISTING GAME FENCE
- X ACCESS CONTROL FENCE
- FUTURE FENCE (IF NEEDED)

NOTES

1. EXISTING CONTOURS DEVELOPED FROM SITE AERIAL TOPOGRAPHIC SURVEY BY DALLAS AERIAL SURVEYS ON FEBRUARY 15, 2010.
2. BOUNDARY AND IMPROVEMENT SURVEY DEVELOPED BY MEJIA ENGINEERING COMPANY ON AUGUST 15, 2011 AND JUNE 9, 2014.
3. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
4. THE NEED FOR FLEXIBILITY TO ACCOMMODATE ADJUSTMENTS AND MODIFICATIONS IS ANTICIPATED CONSIDERING THE SIZE, COMPLEXITY, AND LIFE OF THE PROJECT..
5. 100-YEAR FLOODPLAIN FROM FLOOD INSURANCE RATE MAP FOR WEBB COUNTY, TEXAS, MAP NO. 48479C1275C, DATED APRIL 2, 2008. A CLOMR THAT WOULD REMOVE A LARGE AREA OF THE 100-YEAR FLOODPLAIN WITHIN THE PERMIT BOUNDARY WAS APPROVED BY FEMA ON NOVEMBER 21, 2014; HOWEVER, THE CLOMR IMPROVEMENTS HAVE NOT BEEN CONSTRUCTED.
6. FUTURE WASTE PROCESSING OR DISPOSAL AREA SUBJECT TO PERMIT MODIFICATION OR AMENDMENT.

REDLINE VERSION

REV. NO.	DATE	DESCRIPTION
3	11/2017	REVISED FENCE LOCATION
2	06/2017	REVISED WASTE UNIT BOUNDARY AND ENTRANCE
1	10/2016	ADDED FENCE AND GATE LOCATIONS

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 TBPE FIRM F-5650

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STATE OF TEXAS
 MICHAEL W. ODEN
 67165
 PROFESSIONAL ENGINEER

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PESCADITO ENVIRONMENTAL RESOURCE CENTER
WEBB COUNTY, TEXAS
MSW 2374

WASTE DISPOSAL, PROCESSING, AND STORAGE PLAN

PROJ. NO.:	148066	DATE:	AUGUST 2017
DESIGNED BY:	-	DRAWING NO.:	III
DRAWN BY:	MTE		B.1-2
CHECKED BY:	RDS		
APPROVED BY:	MWO		2 OF 6 SHEETS

Redline / Strikeout Version
Part III, Appendix III-C.1
Facility Surface Water Drainage Report

Part III
Attachment III-C
Appendix III-C.1

FACILITY SURFACE WATER DRAINAGE REPORT NARRATIVE

Pescadito Environmental Resource Center
MSW No. 2374
Webb County, Texas

PESCADITO
ENVIRONMENTAL RESOURCE CENTER

Initial Submittal March 2015
Supplement April 2015
Revised September 2015
Revised November 2015
Technically Complete March 11, 2016
Modified November 2016
Modified January 2016
Updated August 2017
Modified November 2017

Prepared for:
Rancho Viejo Waste Management, LLC
1116 Calle del Norte
Laredo, TX 78041

Prepared by:
APTIM Environmental and
Infrastructure, Inc.
(f/k/a CB&I Environmental and
Infrastructure, Inc.)



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Dallas, TX 75234

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stormwater off-site. Refer to **Drawing III-C.2-15** and **Drawing III-C.2-16** for details of the proposed outlet structure design.

Additional stormwater conveyance features may be installed at the discretion of the owner and engineer to convey stormwater directly into the San Jaunito Creek tributary system. Please note that the outlet structure design may be changed at the owner/operator's discretion, provided that the revised design provides adequate reinforcement and protection of the outfall and equivalent release rates to the modeled design. [However, any revisions to the stormwater management system must receive TCEQ approval prior to implementation.](#)

The outlet structure is designed so that the total release rates from the post-development conditions of the modeled storm events are similar to the corresponding discharge rates for the pre-development conditions, as demonstrated and described in the subsequent modeling text.

4.2.10 Culvert Sizing

The culvert systems between the landfill perimeter channels and Northeast Detention Basin utilize 3-ft. diameter corrugated polyethylene pipes with a Manning's n value of 0.013, and sloped at 0.7%. The culvert systems used to convey stormwater run-on and run-off from the site include the Northeast Detention Basin outlet structure as well as the diversion ditch culvert system. The Northeast Detention Basin outlet structure comprises of three concrete box culverts that are 5-ft. wide and 3-ft. tall, having a Manning's n value of 0.012 and sloping at 0.7%. The diversion ditch culvert system includes two 10-ft. wide by 3-ft. tall concrete box culverts and one 6-ft. wide by 3-ft. tall box culvert. The diversion ditch culvert system has a Manning's n value of 0.012 and slopes at 0.3%.

The locations of the different culvert systems are shown on **Drawing III-C.2-7**. Details of the culvert systems are provided in **Drawing III-C.2-13**, **Drawing III-C.2-15** and **Drawing III-C.2-17**.

4.2.11 Northeast Detention Basin Sizing and Discharge Rates

The Northeast Detention Basin will have one discharge point located approximately at the southwest corner of the basin. The southwest discharge point will consist of three 5-ft. wide by 3-ft. tall box culverts at invert elevation 549ft ft. MSL. The culvert discharge areas will be reinforced with rip-rap or an erosion control alternative to prevent erosion and scour. The basin outlet design may be changed at the owner/operator's discretion, as long as the new design is equivalent. [However, any revisions to the stormwater management system must receive TCEQ approval prior to implementation.](#)

A summary of calculated volumes for the Northeast Detention Basin is provided in **Appendix III-C.3-10**. Volumes were calculated using AutoCAD for available stormwater storage volume within the basin. The size, outlet structures, and model results for the proposed stormwater detention basin are provided in **Appendix III-C.3-10**. Design values were calculated using AutoCAD Civil 3D 2016. **Drawing III-C.2-15** and **Drawing III-C.2-16** show the location of the Northeast Detention Basin.

Redline / Strikeout Version

Part III, Appendix III-C.2

Facility Surface Water Drainage Drawings

**Part III
Attachment III-C
Appendix III-C.2**

FACILITY SURFACE WATER DRAINAGE DRAWINGS

**Pescadito Environmental Resource Center
MSW No. 2374
Webb County, Texas**

PESCADITO
ENVIRONMENTAL RESOURCE CENTER

Initial Submittal March 2015
Supplement April 2015
Revised September 2015
Technically Complete March 11, 2016
Modified August 2016
Modified November 2016
Updated August 2017

Modified November 2017

**Prepared for:
Rancho Viejo Waste Management, LLC
1116 Calle del Norte
Laredo, TX 78041**

**Prepared by:
APTIM Environmental and
Infrastructure, Inc.
(f/k/a CB&I Environmental and
Infrastructure, Inc.)**



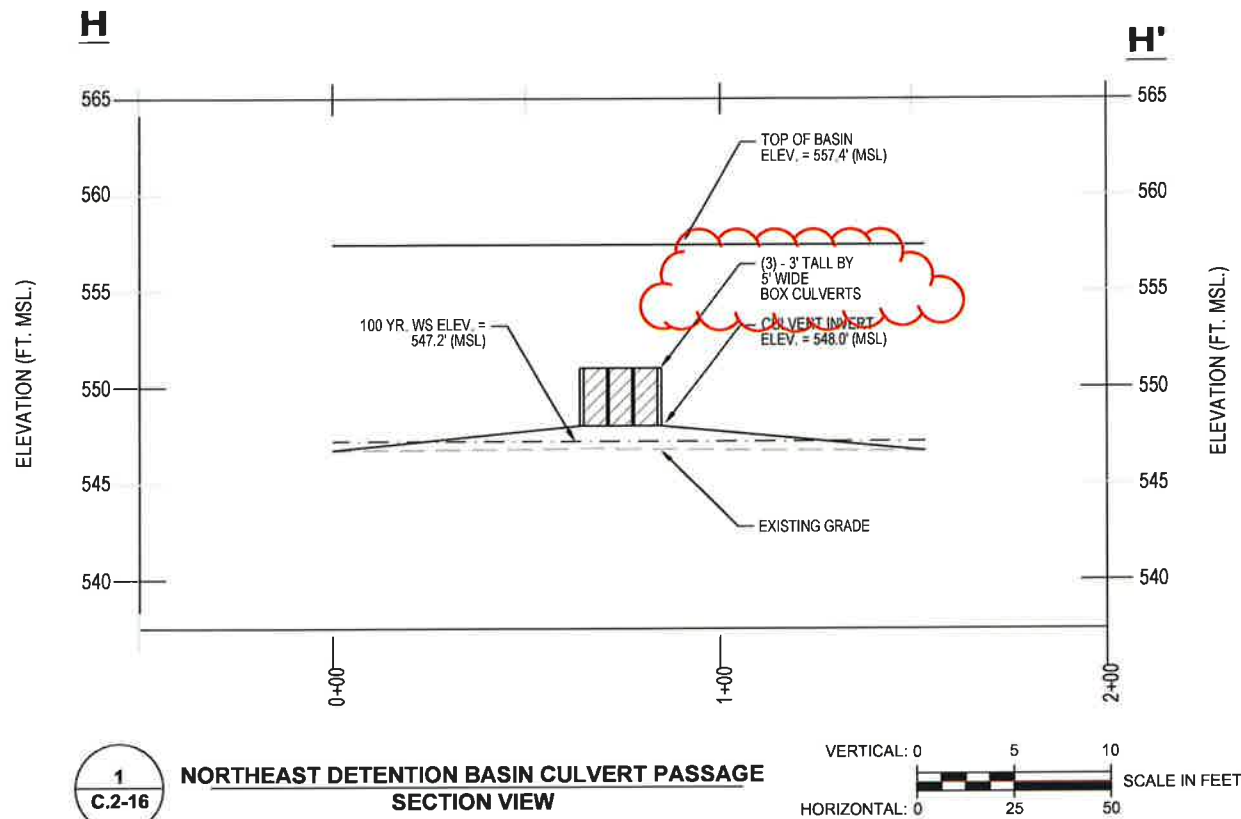
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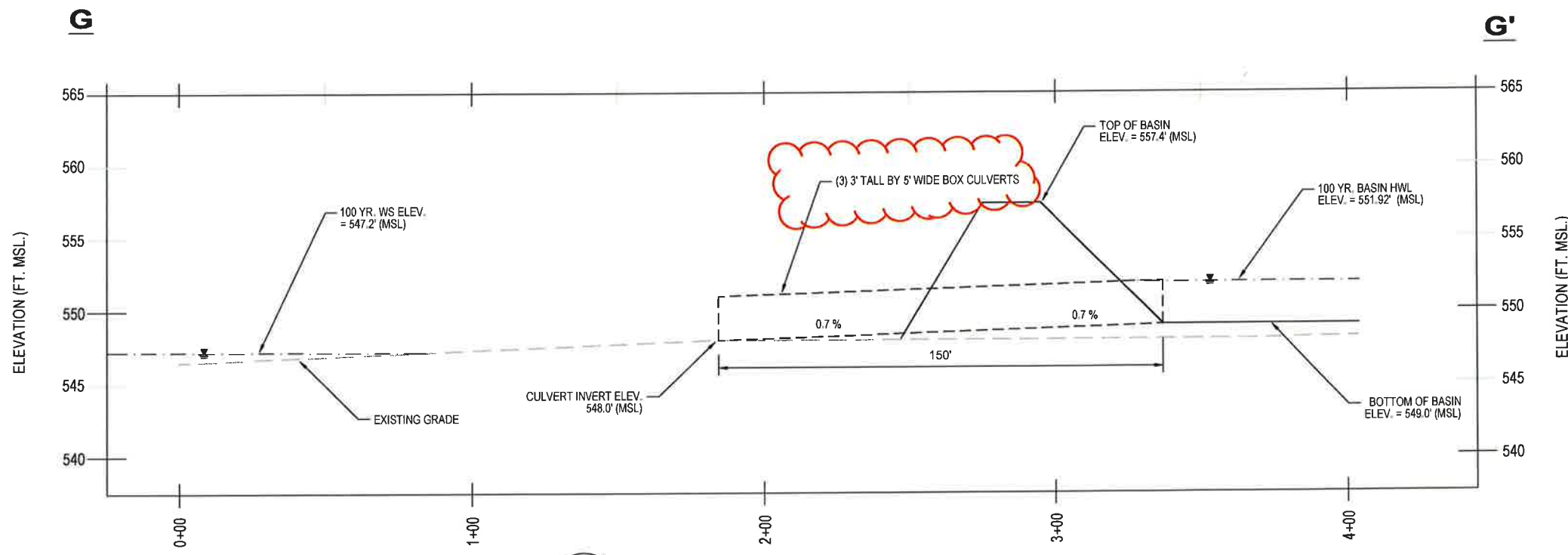
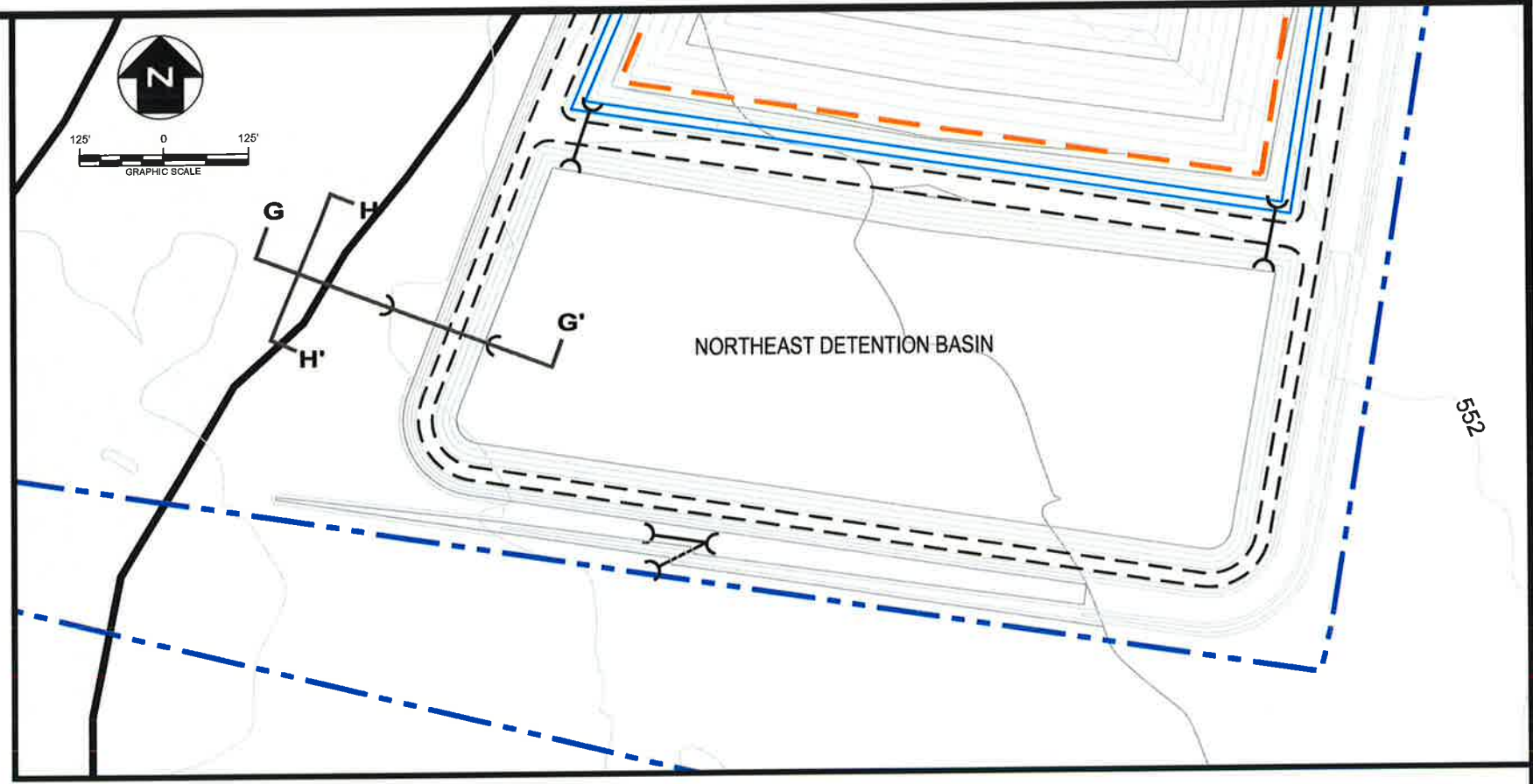
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- III-C.2-2. Pre-Development Conditions – North Area – Run-on Subcatchments
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- III-C.2-7. Post-Development Conditions – Proposed Landfill Drainage Features
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- III-C.2-18. Erosion Control Details

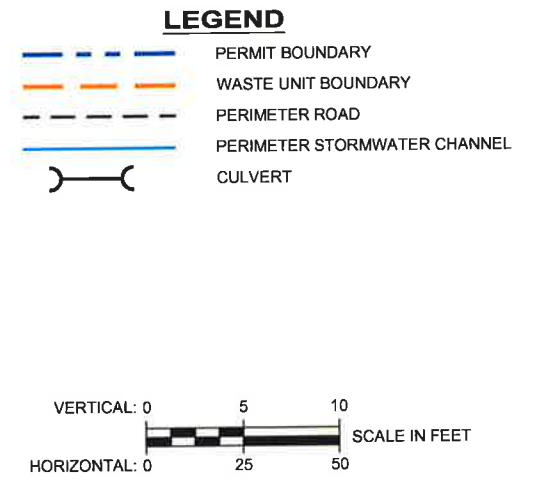
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1
C.2-16
NORTHEAST DETENTION BASIN CULVERT PASSAGE SECTION VIEW



2
C.2-16
NORTHEAST DETENTION BASIN CULVERT PASSAGE PROFILE VIEW



REDLINE VERSION

REV. NO.	DATE	DESCRIPTION
1	11/2017	UPDATED CULVERT SIZE

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**PESCADITO ENVIRONMENTAL RESOURCE CENTER
 WEBB COUNTY, TEXAS
 MSW 2374**

**FACILITY SURFACE WATER DRAINAGE REPORT
 DETENTION BASIN PLAN, PROFILE, AND DETAILS**

PROJ. NO.: 155145	DATE: AUGUST 2017
DESIGNED BY: -	DRAWING NO. III
DRAWN BY: NV	C.2-16
CHECKED BY: RDS	16 OF 18 SHEETS
APPROVED BY: MWO	

Redline / Strikeout Version

Part III, Appendix III-D.6

Leachate and Contaminated Water Plan

**Part III
Attachment III-D
Appendix III - D.6**

LEACHATE AND CONTAMINATED WATER PLAN

**Pescadito Environmental Resource Center
MSW-2374
Webb County, Texas**

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**Initial Submittal March 2015
Revised September 2015
Technically Complete March 11, 2016
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Modified November 2017**

**Prepared for:
Rancho Viejo Waste Management, LLC
1116 Calle del Norte
Laredo, TX 78041**

**Prepared by:
APTIM Environmental and
Infrastructure, Inc.
(f/k/a CB&I Environmental &
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Attachment A to Appendix III-D.6: Contaminated Water/Leachate Collection System Design Analysis

1. Loads on the Leachate Collection System
2. Ring Deflection of Leachate Pipe
3. Structural Capacity of the Leachate Collection System
4. Compressed Thickness and Hydraulic Conductivity of the Geonet
5. Help Model Analysis
6. Leachate Collection System Flow Rates
7. Geotextile Permittivity
8. Leachate Collection System Design
9. Leachate Tank Size

Attachment B to Appendix D.6: HELP Model Outputs

1. Summary Table of HELP Model Runs
2. Open Conditions
 - a. Leachate Collection System Scenario A
 - b. Leachate Collection System Scenario B
 - c. Leachate Collection System Scenario C
3. Intermediate Conditions
4. Closed Conditions
5. Introduced Contaminated Water Analysis
 - a. Open Conditions – 20 Foot Waste Column
 - b. Intermediate Conditions – 50 Foot Waste Column
 - c. Intermediate Conditions – 100 Foot Waste Column

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3.4 Leachate Pump and Riser System

Extraction of leachate from the collection sumps will be accomplished by submersible pumps, which can be operated either manually or automatically. Leachate levels in the collection sumps, will be monitored to maintain a head buildup of no greater than the lowest point of the landfill floor adjacent to the sump in each cell.

Sump riser pipes will be located directly up the sideslopes from the sumps at the disposal area perimeter. Risers will be 18-inch diameter HDPE pipe and provide a means for lowering submersible pumps down the 3:1 sideslope incline into the collection sumps. The lower portion of the riser within the sump is perforated (1/2-inch diameter holes), which will allow leachate to flow to the pumps.

The depth of leachate on the liner will be measured using electronic transducers mounted on the leachate pump. Leachate pumps will be sized appropriately to ensure that leachate levels can be maintained at a depth no greater than the lowest point of the landfill floor adjacent to the sump in each cell, without short-cycling. Pumps will be automatically controlled using liquid level sensors installed at appropriate elevations to activate the pump when the leachate level reaches the lowest point of the landfill floor adjacent to the sump, and deactivate the pump when the leachate level is six inches, or less above the bottom of the sump.

3.5 Conveyance

Leachate will be transferred to storage tank(s) or disposal locations by tanker truck or pipeline. Leachate may be withdrawn from the collection sumps or lines, or storage tank(s)/ponds into tanker trucks. Spill containment for truck hose connection and loading will be provided by a portable trough or similar spill containment. Protection will be provided at hose connection locations. Contaminated water will be transported to an authorized and permitted facility, or to the on-site evaporation pond, for treatment and disposal.

3.6 Leachate Storage

Leachate will be stored on-site in one or more (maximum of two as shown on Drawing III-B.1-6) on-site leachate storage tank(s) or evaporation pond prior to transport to a permitted treatment facility. The leachate storage facility will have adequate secondary containment in the event of a

tank failure. Secondary containment will be sized to handle either 110% of the volume in ~~one~~the tank or the volume of ~~one~~the tank plus the rainfall generated from the 100-year, 24-hour storm event. Tanks will include spill containment structures in conformance with TCEQ requirements. ~~The e~~Evaporation ponds will be monitored so that a minimum of one foot of freeboard is available at all times to handle the 100-year, 24-hour storm event of 9.8 inches. Should the liquid level in the pond(s) be such that one foot of freeboard is not available, contaminated water will be removed to the storage tanks or hauled off to an authorized and permitted facility.

The capacity of the evaporation pond as shown on Drawing III-B.1-7 is 1,403,000 gallons at one-foot of liquid depth. Any modifications to the number of tanks to be utilized and/or pond sizing will receive TCEQ approval prior to construction.

which equates to 0.0026 cfs when considering a 26 acre cell. This peak daily leachate generation rate is based on open conditions, and is the same whether or not leachate is introduced (see discussion in Section 4.3.4).

Based on the design configuration and parameters for the leachate collection pipe and aggregate, it has been determined that they are appropriately sized to handle these peak flows. Demonstration is provided in **III-D.6A**.

4.3.7 Leachate Tank Sizing

At least one 15,000 gallon tank, with a maximum of two, will be located at the facility to store leachate that has been extracted from the landfill. This size of tank is appropriately sized to store one week's worth of leachate based on the maximum leachate generation rate determined from the HELP model runs and assumes no leachate recirculation. Secondary containment is provided for 110% or more of the total tank volume including the 100-year, 24-hour storm without overtopping. Larger and/or additional tanks may be used as long as the proper containment is provided and TCEQ approval is obtained in advance. Demonstration is provided in **III-D.6A.B**. It is noted that an evaporation pond may also be available for leachate storage, if needed.

Redline / Strikeout Version
Part III, Attachment III-F
Groundwater Monitoring Plan

Part III
Attachment III-F

GROUNDWATER MONITORING PLAN

Pescadito Environmental Resource Center
MSW No. 2374
Webb County, Texas

PESCADITO
ENVIRONMENTAL RESOURCE CENTER

Initial Submittal March 2015
Revised September 2015
Revised November 2015
Technically Complete March 11, 2016
Revised January 2016
Modified August 2017
Modified November 2017

Prepared for:
Rancho Viejo Waste Management, LLC
1116 Calle del Norte
Laredo, TX 78041

Prepared by:
APTIM Environmental &
Infrastructure, Inc.
(f/k/a CB&I Environmental &
Infrastructure, Inc.)



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Appendix III-F.1 – Figures

Appendix III-F.2 – Groundwater Sampling and Analysis Plan

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designed to detect a possible release from the landfill based on site specific conditions. As detailed above the “uppermost aquifer” for groundwater monitoring purposes is the contact zone at the base of R-P and extending down into the Y-J to a depth of 60 feet bgs. Groundwater flow rate is on the order of 1 to 2 feet per year to the south to southwest and is not affected by seasonal fluctuations based on data presented in Appendix III-E.2. The Y-J beneath the contact zone (Stratum III, III and IV) is predominately clay (95% clay per III-E.3) to great depths. Construction of the landfill may divert water around the facility but the overall direction will remain to the south to southwest. Therefore, no provisions are needed in the monitoring program to account for this.

If a release from the landfill were to occur, the highest probability is association with one of the leachate sumps. To ensure earliest possible detection of such a release, the groundwater monitoring system will consist of groundwater monitoring wells which will be installed to, or below, the deepest sump excavation elevation depth nearest the well. To determine monitor well depths, the excavation elevation of the nearest sump to the monitor well location will be used and will assume a 3-foot thick compacted soil liner. In general, the monitored interval will extend from the deepest sump excavation elevation depth nearest the well to within nine (9) feet of the surface for the landfill unit as shown on Drawing III-F.1-2. ~~Three~~ monitoring wells (MW-A, ~~and~~ MW-B ~~and~~ MW-C) will be installed to monitor the evaporation pond when it is constructed. The monitored interval for these wells will be 20-feet (i.e. 9 to 29 feet bgs)-.

The Groundwater Monitoring Program for the Pescadito Environmental Resource Center (MSW 2374) has been prepared to meet the requirements of 30TAC330.403. The landfill compliance monitoring wells will be installed along the POC as shown on Figure III-F.1-1. Well spacing will be a maximum of 600-feet and will consist of a minimum of 14 wells. However, in the event that a transmissive sand zone containing perched water is encountered in the sidewall of the excavation within approximately fifty feet of the bottom of the excavation, the next well along the POC boundary will be relocated to that area, with depths determined as outlined above, and the 600-foot spacing will be re-started. That specific groundwater monitoring well will be screened across the transmissive sand zone using the installation detail previously provided. Monitoring well installation will be performed so that there is always a well along the POC a minimum of 600-feet downgradient from the most recent cell constructed.

Note that the POC well locations were selected based on the potential flow direction in the

5.0 Groundwater Monitoring System Certification 330.403(e)

General Site Information:

Pescadito Environmental Resource Center
Webb County, Texas
MSW Permit Application No.: 2374

Qualified Groundwater Scientist Statement

I, Michael W. Oden, am a registered professional engineer in the State of Texas and a qualified groundwater scientist as defined in 30 TAC §330.3. I have reviewed the groundwater monitoring system and supporting data contained in the permit documents. In my professional opinion, the groundwater monitoring system is in compliance with the groundwater monitoring requirements specified in 30 TAC §330.401 through §330.421. This system has been designed specifically for the Pescadito Environmental Resource Center (Permit Application No. MSW No. 2374). The only warranty made by me in connection with this document is that I have used that degree of care and skill ordinarily exercised under similar conditions by reputable members of my profession, practicing in the same or similar locality. No other warranty, expressed or implied, is made or intended.

Firm/Address: APTIM Environmental & Infrastructure, Inc.
12005 Ford Road; Suite 600
Dallas, Texas 75234
TBPE Firm Registration F-5650

Signature: _____

Date: _____

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Part III, Appendix III-F.1
Groundwater Monitoring Plan Figures

**Part III
Attachment III-F
Appendix III-F.1**

GROUNDWATER MONITORING PLAN FIGURES

**Pescadito Environmental Resource Center
MSW No. 2374
Webb County, Texas**

PESCADITO
ENVIRONMENTAL RESOURCE CENTER

**Initial Submittal March 2015
Revised September 2015
Revised November 2015
Revised January 2016
Technically Complete March 11, 2016
Modified October 2016
Modified November 2016
Modified August 2017
Modified November 2017**

**Prepared for:
Rancho Viejo Waste Management, LLC
1116 Calle del Norte
Laredo, TX 78041**

**Prepared by:
APTIM Environmental &
Infrastructure, Inc.
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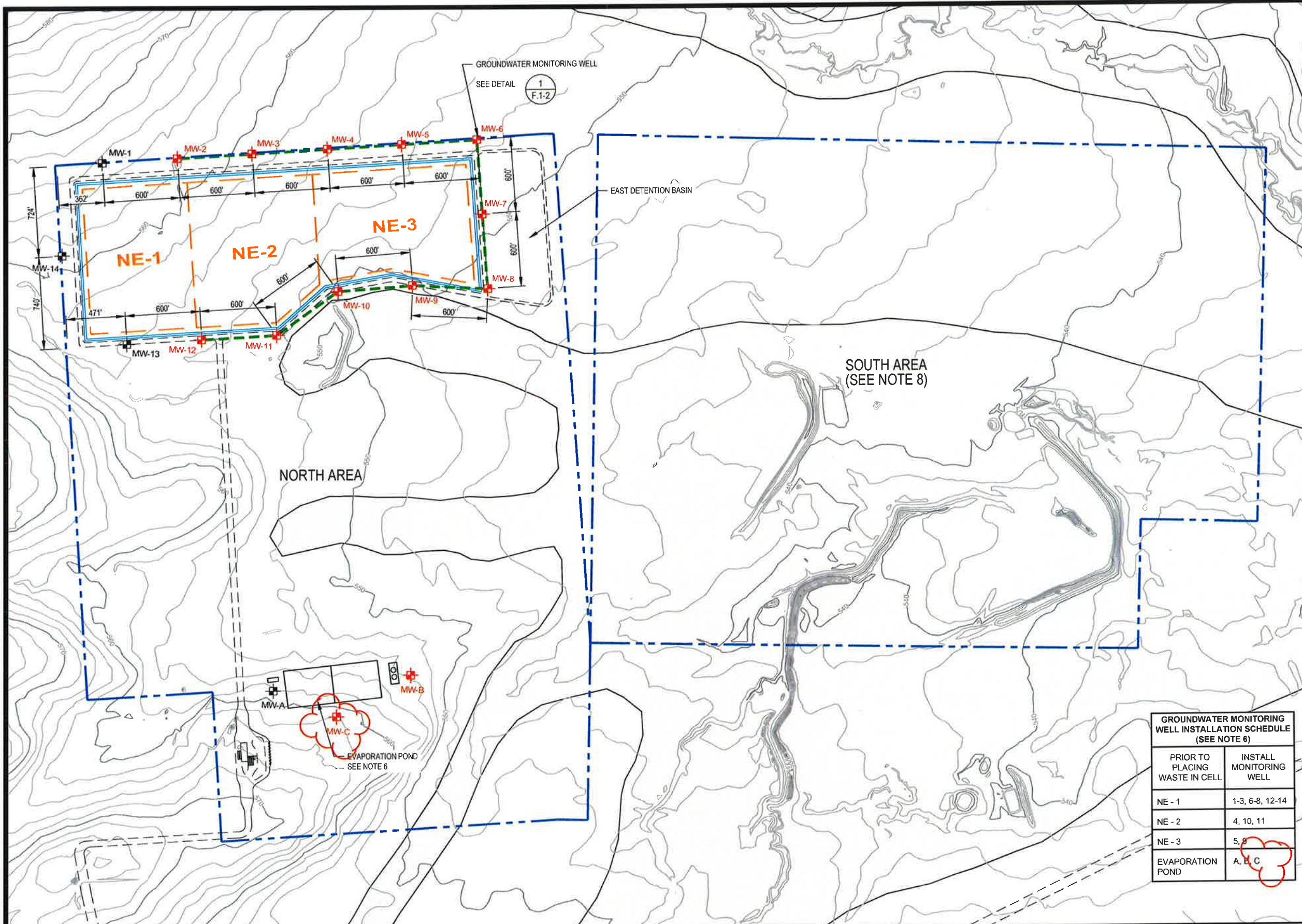
LEGEND

- PERMIT BOUNDARY
- WASTE UNIT BOUNDARY
- PERIMETER DITCH
- PERIMETER ACCESS ROAD
- + MW-1 GROUNDWATER MONITORING WELL (UPGRADIENT)
- + MW-10 GROUNDWATER MONITORING WELL (DOWNGRADIENT)
- 100-YEAR FLOODPLAIN (PER FIRM DATED APRIL 2, 2008, SEE NOTE 7)
- POINT OF COMPLIANCE (P.O.C.)

NOTES

1. EXISTING CONTOURS DEVELOPED FROM SITE AERIAL TOPOGRAPHIC SURVEY BY DALLAS AERIAL SURVEYS ON FEBRUARY 15, 2010.
2. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
3. THE NEED FOR FLEXIBILITY TO ACCOMMODATE ADJUSTMENTS AND MODIFICATIONS IS ANTICIPATED CONSIDERING THE SIZE, COMPLEXITY, AND LIFE OF THE PROJECT.
4. MW-2 TO MW-12 ARE DOWNGRADIENT ALONG P.O.C.
5. MW-1, MW-13, AND MW-14 ARE UPGRADIENT.
6. MW-A, MW-B, AND MW-C TO BE INSTALLED PRIOR TO OR AT THE TIME OF THE EVAPORATION POND CONSTRUCTION.
7. 100-YEAR FLOODPLAIN FROM FLOOD INSURANCE RATE MAP FOR WEBB COUNTY, TEXAS, MAP NO. 48479C1275C, DATED APRIL 2, 2008. A CLOMR THAT WOULD REMOVE A LARGE AREA OF THE 100-YEAR FLOODPLAIN WITHIN THE PERMIT BOUNDARY WAS APPROVED BY FEMA ON NOVEMBER 21, 2014; HOWEVER, THE CLOMR IMPROVEMENTS HAVE NOT BEEN CONSTRUCTED.
8. FUTURE WASTE PROCESSING OR DISPOSAL AREA SUBJECT TO PERMIT MODIFICATION OR AMENDMENT.

GROUNDWATER MONITORING WELL INSTALLATION SCHEDULE (SEE NOTE 6)	
PRIOR TO PLACING WASTE IN CELL	INSTALL MONITORING WELL
NE - 1	1-3, 6-8, 12-14
NE - 2	4, 10, 11
NE - 3	5, 9
EVAPORATION POND	A, B, C



REV. NO.	DATE	DESCRIPTION
6	11/2017	REVISED NOTE 6, ADD MW-C
5	08/2017	REVISED WASTE UNIT BOUNDARY AND WELLS
4	11/2016	REVISED SCHEDULE FOR MW-15, MW-16 & MW-17
3	10/2016	REVISED WELL LAYOUT / ADDED INSTALLATION SCHEDULE
2	11/2015	NOD 2
1	9/2015	NOD 1

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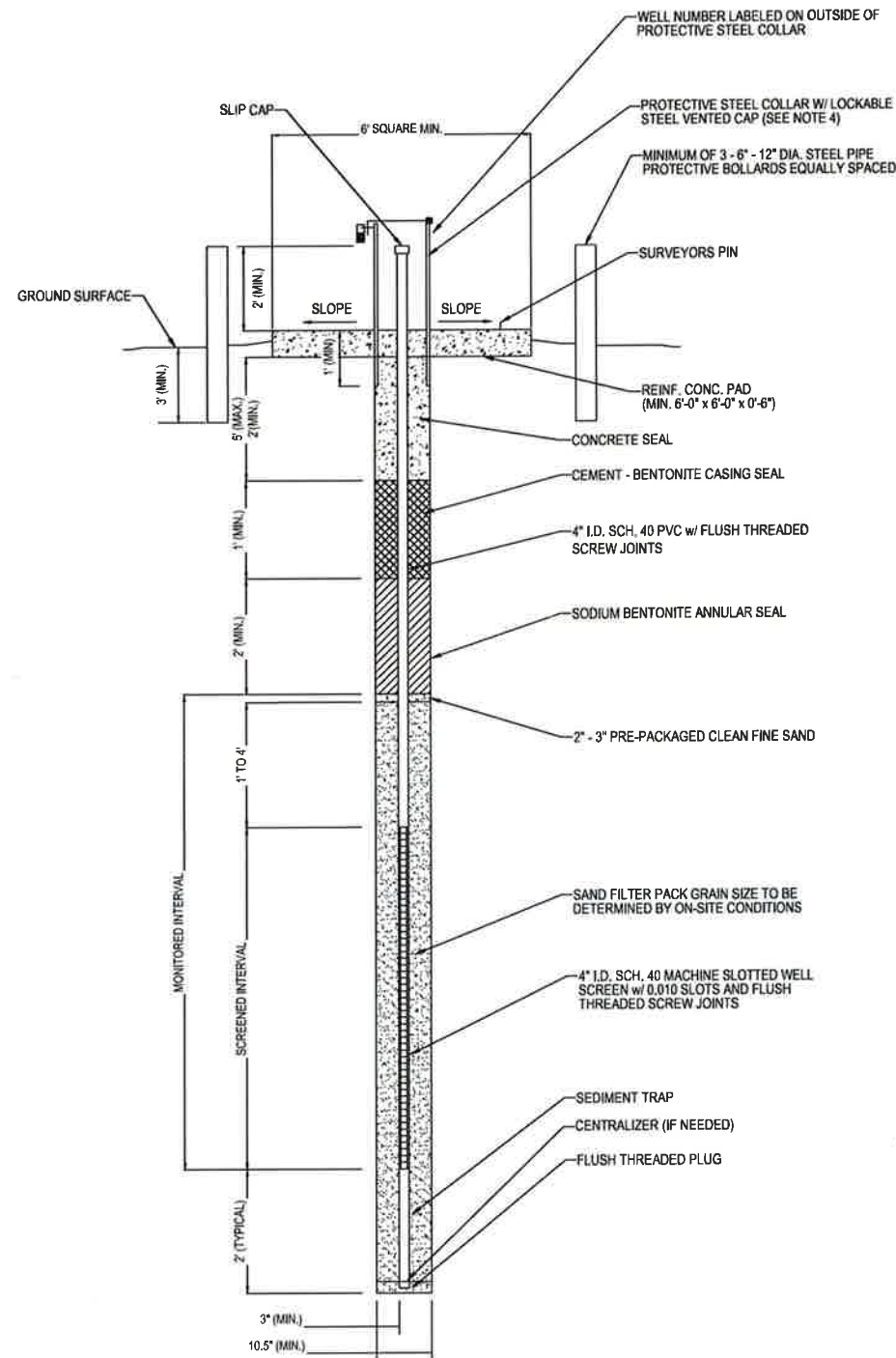
PROJECT NO. 148866
 DATE: AUGUST 2017

**PESCADITO ENVIRONMENTAL RESOURCE CENTER
 WEBB COUNTY, TEXAS
 MSW 2374**

GROUNDWATER MONITORING SYSTEM PLAN

DESIGNED BY: -
 DRAWN BY: MTE
 CHECKED BY: RDS
 APPROVED BY: MWO

DATE: AUGUST 2017
 DRAWING NO. III
F.1-1
 1 OF 2 SHEETS



1
F.1-2
TYPICAL GROUNDWATER MONITORING WELL
NOT TO SCALE

GROUNDWATER MONITORING WELL SUMMARY TABLE

Well Name	Northing	Easting	Ground Surface Elevation (ft MSL)	Nearest Sump	Bottom Sump Elevation (ft. MSL)	Liner Excavation Elevation (see note 3)
MW-01	17098825.17	773873.65	565.46	NE-1	454	451
MW-02	17098233.12	773776.30	562.04	NE-1	454	451
MW-03	17097641.07	773678.94	558.80	NE-2	451	448
MW-04	17097049.02	773581.58	556.23	NE-3	449	446
MW-05	17096456.97	773484.23	554.48	NE-3	449	446
MW-06	17095864.93	773386.85	552.34	NE-3	449	446
MW-07	17095956.86	772793.93	550.58	NE-3	449	446
MW-08	17096048.80	772201.02	548.76	NE-3	449	446
MW-09	17096627.00	772361.29	549.76	NE-3	449	446
MW-10	17097220.75	772447.66	549.99	NE-3	449	446
MW-11	17097773.80	772215.00	552.17	NE-2	451	448
MW-12	17098365.70	772313.23	554.45	NE-2	451	448
MW-13	17098957.60	772411.47	556.00	NE-1	454	451
MW-14	17099300.80	773218.57	561.01	NE-1	454	451
MW-A	17098438.20	769433.51	558.50	N/A	N/A	SEE NOTE 5
MW-B	17097340.61	769512.40	563.72	N/A	N/A	SEE NOTE 5
MW-C	17097994.82	769119.74	562.00	N/A	N/A	SEE NOTE 5

NOTES:

- MONITORING WELL INSTALLATION SHALL CONFORM TO METHODS AND MATERIALS DESCRIBED IN APPLICABLE REGULATIONS OF TCEQ.
- PTFE TAPE OR O-RINGS ON ALL JOINTS.
- MONITORED INTERVAL TO BE FROM 9' BELOW GROUND SURFACE TO THE DEEPEST SUMP EXCAVATION ELEVATION NEAREST TO THE WELL, ASSUMING THREE FOOT LINER.
- PROTECTIVE COLLAR AND CAP MAY BE STEEL OR ALUMINUM.
- MW-A (UPGRADIENT) AND MW-B AND MW-C (COMPLIANCE) MONITOR THE EVAPORATION POND AND WILL HAVE A MONITORED INTERVAL OF 20-FEET.

REDLINE VERSION

REV. NO.	DATE	DESCRIPTION
5	11/2017	ADDED MW-C
4	08/2017	REVISED SUMMARY TABLE, ADDED NOTE 5
3	10/2016	REVISED MONITORING WELL SYSTEM
2	12/2015	NOD 2 SUPPLEMENT
1	11/2015	NOD 2



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 WEBB COUNTY, TEXAS
 MSW 2374**

TYPICAL GROUNDWATER MONITORING WELL DETAIL

PROJ. NO.:	148866	DATE:	AUGUST 2017
DESIGNED BY:	-	DRAWING NO.:	III
DRAWN BY:	MTE		F.1-2
CHECKED BY:	RDS		2 OF 2 SHEETS
APPROVED BY:	MWO		

Redline / Strikeout Version

Part III, Attachment III-J

Cost Estimates for Closure and Post-Closure Care

Part III
Attachment III-J

COST ESTIMATES FOR CLOSURE AND POST-CLOSURE CARE

Pescadito Environmental Resource Center
MSW No. 2374
Webb County, Texas

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Infrastructure, Inc.
(f/k/a CB&I Environmental &
Infrastructure, Inc.)



12005 Ford Rd, Suite 600
Dallas, TX 75234

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APPENDIX III-J.1

Closure and Post-Closure Care Cost Estimates

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2.0 CLOSURE AND POST-CLOSURE CARE COSTS

2.1 Closure Costs

The requirements for a closure cost estimate are provided in §330.503 (related to landfills) and §330.505 (related to storage and processing units). A detailed written cost estimate, in current dollars, showing the cost of hiring a third party to close the largest area of the landfill ever requiring a final closure at any time during the active life of the facility has been prepared and is included in Appendix A. Based on the current closure schedule, the largest area that would require final closure is projected to not exceed ~~73~~⁸⁸ acres. In addition to costs to close the solid waste landfill, closure costs include estimated costs to close the liquid solidification unit and the citizen's convenience center. The closure costs are based on completing the requirements outlined in the approved Closure Plan, Attachment III-H to the SDP. Contingency costs have been included for changes in costs, changes in monitoring, etc.; however, no costs for corrective action have been included. Should corrective action be required at a later date, the cost estimate will be prepared in accordance with §330.509.

2.2 Post-Closure Costs

The requirements for a post-closure care cost estimate are provided in §330.507. The post-closure care period has been established by RCRA Subtitle D to be 30 years. During this period, maintenance must be ongoing to assure the integrity and effectiveness of the final cover system, monitoring systems, leachate collection system, landfill gas management system, drainage system, and erosion protection facilities. The post-closure care cost estimate provides a cost for the routine maintenance and monitoring of the final cover system and re-establishment of vegetation or other erosion controls. Costs are included for annual engineering inspections and design of repairs. PERC will retain the right of entry and maintain all rights-of-way to the closed landfill in order to conduct site maintenance, maintain final cover, vegetation, drainage and perform corrective action and

3.0 CLOSURE AND POST-CLOSURE CARE COST ESTIMATES

Closure and Post-Closure Care Cost Estimates were prepared consistent with §330.503, §330.505, and §330.507 and are presented in Appendix A. The cost estimates are based closing the maximum area of 72.33 acres of waste fill (i.e., the projected maximum area with waste in place that has not received final cover). Additionally, costs are included to close the liquid waste solidification unit, citizen convenience center, and contaminated water storage facility. The landfill is assumed to be closed using the approved alternate final cover system with LLDPE geomembrane for the closure cost estimate.

The cost estimates include the assumption that all the required groundwater monitoring wells and the landfill gas monitoring probes have been installed. The total number of groundwater monitoring wells required is 176, and landfill gas management plan includes 10 landfill gas monitoring probes. It is assumed that leachate may be generated during the first five years of post-closure; therefore, leachate collection and treatment for 5 years is included in the cost estimate. At the end of the 5-year period or once no longer needed, the contaminated water storage facility will be closed and decommissioned. Items have also been included for surveying, engineering, and contingency.

The post-closure care costs include projected costs to provide the required maintenance and monitoring for the entire facility for the specified post-closure care period of 30 years.

APPENDIX III-J.1

CLOSURE AND POST-CLOSURE CARE COST ESTIMATES

INITIAL SUBMITTAL MARCH 2015

REVISED SEPTEMBER 2015

TECHNICALLY COMPLETE MARCH 11, 2016

REVISED AUGUST 2016

REVISED AUGUST 2017

REVISED NOVEMBER 2017

TOTAL CLOSURE AND POST-CLOSURE CARE COSTS			
	Closure	Post-Closure	Total
Landfill Unit	\$8,238,154	\$4,211,400	\$12,449,554
Liquid Solidification Unit and Citizens Convenience Center	\$40,994		
TOTAL:	\$8,279,148	\$4,211,400	\$12,490,548

Note: All calculations are carried to full decimal values but numbers are shown rounded.

Closure Costs - Waste Disposal Unit
Pescadito Environmental Resource Center

Permitted Waste Area: Acres = 72.33 Square Feet = 3,150,695
 Largest Area to be closed: Acres = 72.33 Square Feet = 3,150,695

Item Description	Unit	Unit Cost	Quantity	Cost
Engineering				
Surveying Permitted Area, 72.33 Acres	acre	\$ 45.00	72.33	\$ 3,255
Evaluations, Plans, and Specifications	acre	\$ 310	72.33	\$ 22,422
CQA (survey, inspection & testing)	acre	\$ 5,500	72.33	\$ 397,815
Closure Certification, per event	LS	\$ 9,500	1	\$ 9,500
Total Engineering Costs				\$ 432,992
Construction				
7" Erosion Layer, complete in place	cy	\$ 5.00	68,071	\$ 340,353
30" Infiltration Layer, complete in place	cy	\$ 3.00	291,731	\$ 875,193
40 Mil LLDPE Textured	SF	\$ 0.50	3,150,695	\$ 1,575,347
Geosynthetic Drainage Layer	SF	\$ 0.60	3,150,695	\$ 1,890,417
General Fill, 1 foot, complete in place	cy	\$ 3.00	116,692	\$ 350,077
Seeding & Vegetation	acre	\$ 1,750.00	72.33	\$ 126,578
Drainage and Storm Water Control	acre	\$ 2,600.00	72.33	\$ 188,058
LFG Control System	acre	\$ 15,000.00	72.33	\$ 1,084,950
Liquid Solidification & Transport	cy	\$ 18.50	1,800	\$ 33,300
Backfill Liquid Solidification Unit	cy	\$ 3.00	1,800	\$ 5,400
Loading & Disposing Materials from Convenience Center at Landfill	Trip	\$ 165.00	10	\$ 1,650
Steam Cleaning Convenience Center	LS	\$ 1,000.00	1	\$ 1,000
<u>Removal and Disposal of maximum amount Contaminated Water in tanks and pond</u>	Gallons	\$ 0.30	1,433,000	\$ 429,900
Close Contaminated Water Storage	LS	\$ 5,000.00	1	\$ 5,000
Sub-Total Construction Costs				\$ 6,907,223
Contingency		10%		\$ 690,722
Contract Performance Bond		2%		\$ 138,144
TCEQ Contract Admin/Legal Fees		1%		\$ 69,072
Sub-Total Contingency & Admin Costs				\$ 897,939
Total Construction Costs				\$ 7,805,162
TOTAL CLOSURE COSTS:				\$ 8,238,154

Notes:

1. Surveying is based on permit area which is equal to largest closure area.
2. Geomembrane and geosynthetic drain will be used only over Class 1 cells. Cover will utilize onsite soil.
3. Vegetation includes watering until vegetation is established.
4. Storm Water Control includes construction of storm water storage pond.
5. Assume materials from liquid stabilization and citizen convenience center will be disposed in landfill.
6. Contaminated water storage will be closed and decommissioned during post-closure period.

Post-Closure Care Cost Estimate
Pescadito Environmental Resource Center

Assume Closed Area = Permit Area: 72.33 Acres
 Post-Closure Care Period Will Be: 30 Years
 Number of GW Monitoring Wells: 17 Wells

No.	Item Description	Unit	Unit Cost	Quantity	Cost (30 yr)
1	Site Inspections by Engineer	Each	\$ 3,000	45	\$ 135,000
2	Engineering - Review of Monitoring Results and Correctional Plans	yr	\$ 7,650	30	\$ 229,500
3	Maintain Slopes	yr	\$ 24,200	30	\$ 726,000
4	Re-establish surface vegetation/cover	yr	\$ 35,000	30	\$ 1,050,000
5	GW Sampling & Analysis	well-event	\$ 1,200	<u>1,020</u>	<u>\$ 1,224,000</u>
6	Methane Monitoring	yr	\$ 4,000	30	\$ 120,000
7	Leachate Treatment for 5 years <u>(onsite)</u>	gal/yr	\$ 0.10	50,000	\$ 25,000
	Sub-total				<u>\$ 3,509,500</u>
	Contingency		10%		<u>\$ 350,950</u>
	Administration		10%		<u>\$ 350,950</u>
	Post-Closure Care Costs				<u>\$ 4,211,400</u>

Assumptions:

- 1 Site Inspections - quarterly for 5 years and annually thereafter at an average cost of \$3000 per trip
- 2 An engineer will review inspection and monitoring reports & prepare corrective action plans
- 3 Maintain slopes includes minor filling and grading for 10 acres per year at \$2420 per acre
- 4 Approximately 20 acres of vegetation will be re-established each year at \$1750 per Acre
- 5 GW sampling and analysis will be conducted semi-annually at \$1200 per well per event
~~16~~7 wells x 2 events per year x 30 years = ~~960~~1020 well-events
- 6 Methane monitoring will be conducted quarterly at \$1,000-per event, \$4000 per year
- 7 Leachate treatment will include treating an average of 50,000 gal/yr for 5 years

Closure Cost Estimate
Liquid Stabilization Unit and Citizen's Convenience Center
Pescadito Environmental Resource Center

Facility Area, Acres: 1.1 Liquid Volume: 354,600 Gallons

ITEM DESCRIPTION	UNIT	UNIT COST	QUANTITY	COST
Surveying	LS	\$ 1,000.00	1	\$ 1,000
Engineering	LS	\$ 1,000.00	1	\$ 1,000
Loading and hauling soil for processing	cy	\$ 1.00	800	\$ 800
Processing liquid waste	hr	\$ 60.00	24	\$ 1,440
Loading and hauling solidified Waste	cy	\$ 1.00	800	\$ 800
Steam Cleaning of Concrete	LS	\$ 500.00	1	\$ 500
Excavating, filling and grading	cy	\$ 1.60	18,000	\$ 28,800
Seeding	acre	\$ 731.82	4.0	\$ 2,927
Sub-total				\$ 37,267.28
Contingency			10%	\$ 3,726.73
TOTAL CLOSURE COSTS:				\$ 40,994

Assumptions:

1. Processing soil requirement is approximately one-half of liquid capacity.
2. Approximately one-half of capacity will be processed and hauled to active disposal area.
3. Average cuts and fills for final grading will be approximately 3 feet.

Attachment D
to November 2017 Letter (MSW 2374)

Three copies of Changed Pages (TCEQ Only)