



# RAILROAD COMMISSION OF TEXAS

## OIL AND GAS DIVISION

PERMIT TO RECEIVE, STORE, HANDLE, TREAT, RECLAIM AND DISPOSE OF  
CERTAIN NONHAZARDOUS OIL AND GAS WASTES

**AMENDED, RENEWED and TRANSFERRED**  
From Tervita, LLC (844072)  
To Republic EES, LLC (702639)  
Permit Nos. **STF-089, R9 08-3832A,**  
**P011308A, P011308B, P011308C, P011308D,**  
**P011426B, P011427, P011428, P011429,**  
**P011430, P011431, P011558, P011563,**  
**P011704, P012080, P012315A, P012315B,**  
**P012315C, P012316A, P012316B and**  
**P012316C**  
Supersedes Permit issued July 1, 2015

REPUBLIC EES, LLC  
10613 W SAM HOUSTON PKWY STE 300  
HOUSTON, TX 77064

Based on information contained in the consolidation/transfer request applications from Tervita, LLC received October 16, 2014, the transfer request from Republic EEC, LLC received May 2, 2019 and subsequent information received to date, you are hereby authorized to receive, store, handle, treat, reclaim, and dispose of certain non-hazardous oil and gas wastes and reclaim oilfield related hydrocarbons as specified below at the following facility:

**Commercial Stationary Treatment Facility**  
Odessa Treatment, Recovery & Disposal (TRD) Facility  
Latitude, Longitude: 31.772270°, -102.542218°  
Ector County, Texas  
RRC District 08, Midland

### NARRATIVE DESCRIPTION OF PROCESS:

Incoming oil and gas wastes are directed to either the water-based Collecting Pits (**P011427, P011428, P011429, P011430 and P011431**), or to the oil-based Collecting Pits (**P011308D, P011426B, P011558 and P011563**) where it is offloaded for processing and separation. The waste from the water-based pits is processed through shakers and

centrifuges. The waste from the oil-based pits is separated by clarifiers, chemicals and heat treatments. The separated liquid wastes are conveyed to tanks (East and North Tank Batteries) or pumped to the Collecting Pits (**P011308A, P011308B and P011308C**) for further separation and then piped to the Collecting/Evaporation Ponds (**P012315A, P012315B, P012315C, P012316A, P012316B and P012316C**) or piped to an off-site Class II injection well for disposal. Solids from the centrifuges are conveyed to the Collecting Pit/Pad (**P011704**) for solidification prior to interment in Disposal Pit (**P012080**). The hydrocarbons that are recovered are stored in above ground tanks prior to being sold.

Authority is granted by the Railroad Commission of Texas (RRC) to receive, store, handle, treat, reclaim, and dispose of certain nonhazardous oil and gas wastes and reclaim oilfield related hydrocarbons in accordance with Texas Administrative Code (TAC) Title 16, Part 1, Chapter 3.8 (Statewide Rule 8) and Chapter 3.57 (Statewide Rule 57) and is subject to the following conditions:

#### **I. General Permit Conditions**

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- A. The effective date of this permit is **October 4, 2019** and expires on **October 3, 2024**.
- B. In accordance with 16 TAC § 3.78 the permittee must maintain financial security in the amount of \$ **4,728,444.00**, until this facility and all of the referenced Permit Nos, have been closed in accordance with this permit and all of the referenced equipment and storage tanks have been emptied and removed. Technical Permitting reserves the right to revise this amount, as necessary. Prior to any modification or expansion of this facility that would require increased financial security, an updated closure cost estimate must be submitted to Technical Permitting in Austin, and any additional financial security must be filed with and approved by the RRC prior to making that modification.
- C. A copy of the site-specific Spill Control Plan that details means and methods of waste management and containment in the event of a release or discharge must be maintained on-site and made available to RRC staff for review and inspection upon request.
- D. The facility's Stormwater Management Plan must be maintained on-site and made available upon request of the RRC.
- E. This permit does not authorize the discharge from the facility of any oil and gas waste, including contaminated or contact stormwater.
- F. The permittee may not receive, store, handle, treat, reclaim, or dispose of oil and gas waste at the facility until all necessary air permits (if any) are obtained from the Texas Commission on Environmental Quality (TCEQ).
- G. Technical Permitting in Austin and the Midland District Office must be notified in writing when construction of the facility is initiated and with the completion of each disposal pit.
- H. Unless otherwise required by conditions of this permit, construction, use, and maintenance of the facility must be in accordance with the information represented in

the permit application and attachments thereto. When construction of the facility is completed, submit the "*as-built*" plans to be incorporated as part of the permit application.

- I. The "*Application For Permit To Operate A Reclamation Plant*" (Form R-9), which is attached as **Permit Appendix A**, grants authority for the **active** reclaiming of oil field related hydrocarbons and does not cover reclamation of any refined products. Commingling or blending of refined products with crude oil or condensate is not permitted unless written authority is granted by the RRC's Director of Field Operations following a formal written request for such blending by the Reclamation Plant operator. Any deliveries made containing products or crude blended with products must be clearly identified on the RRC Form R-2 as "*Products*" or "*Crude Blended with Products.*"
- J. The removal of tank bottoms or other hydrocarbon wastes from the facility for which monthly reports are not filed with the RRC must be authorized in writing by the RRC prior to such removal. A written request for such authorization must be sent to Technical Permitting, and must detail the location, description, estimated volume, and specific origin of the material removed, as well as the name of the reclaimer and intended destination of the material.
- K. The receipt of any tank bottoms or other hydrocarbon wastes from outside the State of Texas must be authorized in writing by the RRC prior to such receipt. Written approval from the RRC is not required if another regulatory agency indicated, in the appropriate monthly report, a corresponding delivery of the same material.
- L. An On-Site Sewage Facility (OSSF) may be constructed, operated, and maintained within the boundaries of the subject facility without an additional permit from the Commission if: (1) the OSSF waste is not commingled with any other oil and gas waste; (2) the system is designed by a Texas registered Professional Engineer or a sewage system installer licensed in the state of Texas; and (3) the construction, operation, and maintenance of the OSSF complies with all applicable local, county, and state requirements.
- M. Any deviation from this permit must be approved by amendment from Technical Permitting before implementation.
- N. Any soil additives, bio-accelerates or treatment chemicals must be approved by Technical Permitting prior to use at the facility.
- O. Safety Data Sheets (SDS) must be submitted to Technical Permitting for any chemical or compound proposed to be used in the treatment of waste at the facility. Use of the chemical is contingent upon RRC approval. All chemicals must be stored according to the manufacturer's specifications.
- P. All chemical laboratory analyses required by this permit must be performed using appropriate Environmental Protection Agency (EPA) methods or Standard Methods by an independent, National Environmental Laboratory Accreditation Program (NELAP) certified laboratory neither owned nor operated by the permittee. Any sample collected for laboratory analysis must be collected and preserved in a manner appropriate for that analytical method as specified by 40 CFR, Part 136. All geotechnical testing is to be performed utilizing tests standardized by the American

Society for Testing and Materials (ASTM) and certified by a Texas licensed Professional Engineer.

- Q. The permittee must make all records required by this permit available for review and copying during normal business hours upon request of RRC personnel.
- R. The permit to operate a Reclamation Plant (**R9 08-3832A**) must remain in effect until canceled at the request of the operator, the permitted facility has been inactive for 12 months, or there has been a violation, or a violation is threatened, of any provision of the permit, the conservation laws of the state, or rules or orders of Statewide Rule 57 (c)(7).
- S. The permit to operate a Stationary Treatment Facility (**STF-089**) and associated pits may be considered for administrative renewal upon review by the RRC. Any application for renewal should be received at least **60 days** prior to the permit expiration date.
- T. The permit to operate a Stationary Treatment Facility (**STF-089**) and associated pits are **not transferable** without the consent of the RRC. Any request for transfer of this permit must be filed with Technical Permitting at **least 60 days** before the permittee wishes the transfer to take place. The Reclamation Plant permit is nontransferable by Statewide Rule 57 (c) (9). A new permit must be obtained by the new operator.
- U. The permittee must submit a **Quarterly Report** according to the following:
  - 1. The report must contain applicable information as required in Permit Conditions III.J, IV.K, IV.L, IV.M, VIII.E, VIII.L, XI.C and XIII.G.
  - 2. The quarterly reporting periods must be January 1 through March 31, April 1 through June 30, July 1 through September 30, and October 1 through December 31 of each year.
  - 3. The reports must be submitted to Technical Permitting and the Midland District Office no later than the 30th day of the month following each reporting period, or each April 30th, July 30th, October 30th, and January 30th, respectively.
  - 4. An Executive Summary must be included that describes facility operations and relevant activities that occurred during the specific quarter.
  - 5. Data tables presenting volumes or amounts of treated waste must be included.
  - 6. The laboratory analytical reports and the corresponding chain of custody must be provided for all chemical analyses performed.
- V. Failure to comply with any provision of this permit shall be cause for modification, suspension, termination or cancellation of this permit if Technical Permitting determines that the permittee is in violation of Statewide Rule 8 (d)(6)(E) or Statewide Rule 57 (c)(7).

## II. **Authorized Wastes**

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- A. Only oil and gas wastes subject to the jurisdiction of the RRC that are exempt and non-hazardous according to Subtitle C (Resource Conservation and Recovery Act

(RCRA)) may be received. You may receive, store, handle, treat, reclaim, and dispose of only the following oil and gas wastes:

1. Water-based drilling fluids and associated cuttings
  2. Oil-based drilling fluids and associated cuttings
  3. Tank bottoms from gas plants, crude oil Reclamation Plants, crude oil separation facilities, and crude oil production facilities, which do not exceed 7% in oil content as determined by Standard American Petroleum Institute (API) "shake out" test. Tank bottoms exceeding 7% in oil content may be accepted if they first undergo on-site active reclamation prior to being interred within a disposal pit
  4. Hydraulic fracturing flow back water
  5. Formation sands and other solids from saltwater storage tanks or vessels
  6. Soils contaminated with produced water, crude oil, or condensate
  7. Pigging wastes from gathering lines
  8. Hydrocarbon, solids, sands and emulsion generated from separators, fluid treatment vessels, and production impoundments
  9. Spent filters, filter media, and back wash from produced water
  10. Liners from reserve and washout pits
  11. Fluids and associated solids including sand from flowback of oil and gas wells
  12. Other non-hazardous wastes generated in association with the exploration, development, and production of oil and gas resources subject to the jurisdiction of the RRC
- B. No other waste may be accepted at this facility.
- C. RCRA **non-exempt** wastes under the jurisdiction of the RRC may be accepted and processed at the facility if analytical results demonstrate that the waste is characteristically non-hazardous. See Permit Condition III.F.
- D. No oil and gas Naturally Occurring Radioactive Material (NORM) waste, as defined in 16 TAC §4.603, or waste from a facility that is licensed by the Texas Department of State Health Services (DSHS) to process or treat oil and gas NORM waste may be received at this facility.
- E. No asbestos-containing material regulated under the Clean Air Act or polychlorinated biphenyls (PCB) material regulated under the Toxic Substances Control Act may be accepted for processing at this facility.
- F. All waste haulers received at the facility must be currently permitted RRC Oil and Gas Waste Haulers and must have the subject facility listed as an authorized disposal facility on their "*Oil and Gas Waste Hauler's Authority to use Approved Disposal/Injection System*", (Form WH-3).

### III. Waste Testing and Record Keeping Requirements

- A. For the purposes of this permit, a representative sample of incoming waste is defined as a composite sample composed of one grab sample from each 50 cubic yards of waste material from each job (e.g., from each well, pit, spill location).
- B. Each load of incoming waste, other than water-based drilling fluids and associated cuttings, or oil-based drilling fluid and associated cuttings, must be scanned for the presence of NORM using a scintillation meter with a sodium iodide detector or other equivalent devices that complies with 25 TAC §289.259, Texas Regulations for Control of Radiation (TRCR Part 46). Manufacturer's specifications must be submitted to Technical Permitting for equivalent devices used for NORM detection. Any load with a reading of 50 microrentgens per hour or greater may not be unloaded or processed at the facility unless further analysis of the waste demonstrates that the waste does not exceed 30 picocuries per gram of Radium-226 **combined** with Radium-228, or 150 picocuries per gram of any other radionuclide. Current calibration records of all NORM screening devices must be maintained on-site and made available to RRC personnel upon request.
- C. The operator of the reclamation plant (**R9 08-3832A**) must conduct a shakeout test on all tank bottoms or other hydrocarbon wastes upon removal from any producing lease tank, pipeline storage tank, or other production facility, to determine crude oil content and lease condensate thereof. The shakeout test must be conducted in accordance with the most current American Petroleum Institute (API) or ASTM International method.
- D. All waste must pass a Paint Filter Test (EPA Method 9095) prior to interment into a disposal pit. Test results from each Paint Filter Test must be maintained and submitted to Technical Permitting upon request.
- E. **Prior** to receipt at the site, representative samples of waste from **commercial** oil and gas facilities must be analyzed for either of the parameters listed below and may not exceed the limitation for the respective parameters:

<u>PARAMETER</u>	<u>LIMITATION</u>
Total Organic Halides (TOX) (EPA Method 9020B)	100 mg/L
or	
Extractable Organic Halides (EOX) (EPA Method 9023)	100 mg/kg

Special authorization for disposal of waste with a TOX/EOX > 100 parts per million may be considered. Authority must be obtained from Technical Permitting prior to receipt of waste.

- F. **Prior** to receipt at the site, a representative sample of any RCRA **non-exempt** waste or any **international** waste must be analyzed and may not exceed the limit for the following parameters:

<u>PARAMETER</u>	<u>LIMITATION</u>
Corrosivity EPA method 1110A	2.0 – 12.5 standard units (s.u.)
Reactivity	No materials exhibiting the characteristics of reactivity as defined by RCRA
Ignitability EPA method 1010A/ 1020B/ 1030A	Flash point < 60° C or <140° F
Toxicity EPA Method 1311, Toxicity Characteristic Leaching Procedure (TCLP)	No materials exhibiting the characteristics of toxicity as defined by RCRA
Benzene (TCLP) EPA Method 1311/8260B/ 8021	< 0.5 mg/L
Metals (TCLP) EPA Method 1311/6010/ 6020/ 7470/ 7471	
Arsenic	< 5.0 mg/L
Barium	< 100.0 mg/L
Cadmium	< 1.0 mg/L
Chromium	< 5.0 mg/L
Lead	< 5.0 mg/L
Mercury	< 0.2 mg/L
Selenium	< 1.0 mg/L
Silver	< 5.0 mg/L

- G. Details of receipts of deliveries for incoming waste to be processed at the Reclamation Plant (**R9 08-3832A**) and the stock on hand (available for re-sale) must be reported monthly on the Form R-2, "Monthly Report for Reclaiming and Treating Plants". Submit the original Form R-2 directly to Technical Permitting in Austin and a copy of the report to the Midland District Office by the 15th day of the calendar month following the month of the report. Form R-2 must be completed in accordance with Statewide Rule 57.
- H. The permittee must maintain the following records on each load of waste **received** at the facility for a period of three (3) years from the date of receipt:
1. Description of the site where the waste was generated, including:
    - a. Generator name
    - b. Lease name and number and well number(s), or gas ID number(s), or API well number(s); or latitude and longitude coordinates in decimal degrees if waste was not generated on a lease
    - c. County
  2. Name and RRC permit number of the transporter

3. Volume of waste material received (specify units)
  4. Detailed description of the type of waste, including any analysis required by Permit Conditions III.B, III.C, III.E. and III.F. above.
- I. The permittee must maintain the following records on each load of waste **removed** from the facility for a period of three (3) years from the date of receipt:
    1. Date waste is removed and hauled to a disposal facility
    2. Name and RRC permit number of the transporter
    3. Volume (specify units) of each shipment of waste hauled to a disposal facility
    4. Type of waste (basic sediment, water, water-based mud, etc.)
    5. Name and permit number of the facility to which the waste was hauled to for disposal
  - J. A report must be submitted to Technical Permitting in Austin and the Midland District Office as part of the **Quarterly Report** required in Permit Condition I.U. and must include the following information:
    1. A table summarizing all incoming waste, including the following:
      - a. Generator name
      - b. Lease name and number and well number(s), or gas ID number(s), or American Petroleum Institute (API) well number(s); or latitude and longitude coordinates in decimal degrees if the waste was not generated on a lease
      - c. County
      - d. Name and RRC permit number(s) of the transporter(s)
      - e. Description and **total volume** (specify units) of waste from each job (for which Permit Conditions III.H.1.a, III.H.1.b., and III.H.1.c are the same)
      - f. The total volume of each type of waste material received during the quarter
    2. A table summarizing all waste removed from the facility, including the following:
      - a. Name and permit number of the disposal facility
      - b. Name and RRC permit number(s) of the transporter(s)
      - c. Description and **total volume** (specify units) of waste hauled to the disposal facility
      - d. The total volume of each type of waste that leaves the facility for disposal or final disposition during the quarter
    3. Copies of all analyses required by Permit Conditions III.B., III.C., III.E., and III.F. above



#### **IV. General Facility Design and Maintenance Requirements**

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- A. The general layout and arrangement of the facility must be consistent with the "*Site Plan*" (Drawing 2-1) schematic, received May 2, 2019, which is attached as **Permit Appendix B**.
- B. A sign must be posted at each entrance to the facility. The sign must be readily visible and show the operator name, facility name, and permit number in letters and numerals at least three (3) inches in height.
- C. The entire facility must consist of, and is defined by, the following waste management unit designations:
  1. Water-Based Separation Processing Area:
    - a. One (1) 400-bbl shaker tank
    - b. One (1) centrifuge
    - c. Three (3) 500-bbl produced water tanks
    - d. One (1) 300-bbl freshwater tank
    - e. One (1) 500-bbl freshwater tank
    - f. Two (2) 1,200-gallon fuel tank
    - g. Five (5) Collecting Pits (**P011427, P011428, P011429, P011430 and P011431**)
  2. Oil-Based Separation and Reclamation Plant Area (**R9 08-3832A**):
    - a. Two (2) 220-bbl clarifiers
    - b. One (1) mixing tank
    - c. One (1) heater
    - d. Two (2) 500-bbl produced water tanks
    - e. Seven (7) Collecting Pits (**P011308A, P011308B, P011308C, P011308D, P011426B, P011563 and P011558**)
    - f. Two (2) 210-bbl crude oil tanks
    - g. One (1) 1000-bbl storage tank
    - h. One (1) 300-bbl storage tank
    - i. One (1) 300-bbl crude oil tank
    - j. One (1) 500-bbl storage tank
    - k. Five (5) 500-bbl crude oil tanks
    - l. One (1) 1,000 -bbl gun barrel
    - m. One (1) 700-bbl sand tank
    - n. Two (2) 500-bbl oil tanks
    - o. Two (2) 500-bbl settling tanks

3. Collecting Pit/Pad Area
  - a. One (1) 170-bbl mixing tank
  - b. Two (2) centrifuges
  - c. One (1) 300-bbl freshwater tank
  - d. Two (2) 500-bbl storage tanks
  - e. One (1) Collecting Pit/Pad (**P011704**)
4. Six (6) Collecting/Evaporation Pits (**P012315A, P012315B, P012315C, P012316A, P012316B and P012316C**)
5. One (1) Disposal Pit (**P012080**)
- D. No waste, treated or untreated, may be placed directly on the ground.
- E. All storage tanks, equipment and roll-off boxes must be maintained in a leak-free condition. If inspection of a tank reveals deterioration or leaks, the tank must be repaired before resuming use of the tank.
- F. Any spill of waste, chemical, or any other material must be collected and cleaned up within 24 hours and processed or disposed of in an authorized manner.
- G. Any chemical used in the treatment process must be stored in vessels designed for the safe storage of the particular chemical and these vessels must be maintained in a leak free condition.
- H. Dikes or containment structures must be constructed around all waste management units. All earthen dikes surrounding pits and constructed as perimeter berms must be compacted or constructed of material that meets 95% Standard Proctor (ASTM D698) or 90-92% Modified Proctor (ASTM D1557) density and meet a permeability of  $1 \times 10^{-7}$  cm/sec or less when compacted. During construction, successive lifts should not exceed nine inches in thickness, and the surface between lifts should be scarified to achieve a good seal. Each berm must maintain a slope no steeper than a one to three (vertical to horizontal) ratio, unless constructed of concrete or equivalent material (firewalls). These structures must be used to divert non-contact storm water around the waste management areas and contain and isolate contact storm water within the waste management units. Refer to the stormwater management requirements specified in Permit Condition X.
- I. The facility must maintain security to prevent unauthorized access. Access must be maintained by a 24-hour attendant or a six-foot-high security fence and locked gate when unattended. Fencing must be required unless terrain or vegetation prevents vehicle or livestock access except through entrances with lockable gates.
- J. No oil may be allowed to accumulate on top of the water or wastes stored in the pits. Any oil on top of any waste liquids must be skimmed off and handled in accordance with RRC rules. Any recovered oil must be recorded and filed as either a Skim Oil/Condensate Report (Form P-18) or a "Letter of Authority Request for Oil Movement" (Form T-1) Letter:
  1. A Skim Oil/Condensate Report (Form P-18) must be filed with the RRC every month to record skim oil volumes recovered and sold during the operation of this

facility. If no skim oil is recovered for a given month, a (Form P-18) should still be filed with the RRC.

**OR**

2. An original signed "*Letter of Authority Request for Oil Movement*" (Form T-1) must initially be submitted on letterhead to Field Operations, Austin, TX, Oil and Gas Division, for every event in which sellable skim oil is recovered and intended to be sold during the operation of this facility. Filing frequency requirements may be redefined after the initial oil movement request has been processed. The request must include:
  - a. The time period for which oil movement authority is requested.
  - b. The name of the applicant requesting to move the oil.
  - c. Volume (barrels) of oil to be moved.
  - d. Name and location of the facility which oil will be moved.
  - e. Name, address, telephone, and fax number of facility buying the oil to be moved.
  - f. Contact person, T-1 permit number, and P-5 Operator Number of the oil buyer.
  - g. A description of the source(s) of the oil at the facility.
- K. Each month an inspection of the entire facility must be performed on all concrete slabs, processing equipment, containment berms, and aboveground storage tanks or vessels for deterioration, leaks and spills. The records of each inspection must be kept on-site and maintained for a period of three (3) years from the date of the inspection. The following must be included in the inspection report and submitted as part of the **Quarterly Report** required by Permit Condition I.U.:
  1. The results of the monthly inspection of concrete slabs within the facility for evidence of deterioration, leakage, or storm water run-on, and a description of corrective action taken, if any.
  2. The results of the monthly inspection of process equipment, tanks, and roll-off boxes for evidence of deterioration or leakage, and a description of corrective action taken, if any.
  3. The results of the monthly inspection of waste levels within the storage areas, tanks, and roll-off boxes, and a description of corrective action taken, if any.
  4. The results of the monthly inspections of the silt fencing/rock filter dams installed to control and modulate run-off to surface waters and indicate whether debris has been removed.
- L. Any permitted pit or cell not equipped with a Leak Detection System (LDS) must be emptied and visually inspected **annually** for deterioration and leaks. A record of each inspection and photographs of the interior of each pit must be maintained for the life of the pit and must be submitted to Technical Permitting in Austin as part of the **Quarterly Report** required in Permit Condition I.U. The Midland District Office must be notified by phone or email at least 48 hours before emptying the pit for

inspection. The permittee must maintain a record of when each pit is inspected and the results of the inspection. This record must be maintained by the permittee for the life of the pit.

- M. All pits equipped with an LDS must be monitored daily, and the highest volume removed from the LDS during the seven-day period must be reported. The permittee must maintain a record of when the liner, containment berm, and the LDS are inspected and the results of each inspection. Records of LDS monitoring must be submitted in table form within the **Quarterly Report** required in Permit Condition I.U. The physical record must be maintained by the permittee for the life of the pit. The physical record must be filed with the RRC upon request. The record must include:
  - 1. The date of fluid level measuring
  - 2. The fluid level or volume
  - 3. The volume of fluid removed
  - 4. The electrical conductivity
  - 5. The chloride concentration of the fluids removed
- N. The fluid removed from the LDS will be compared to the appropriate allowable volume for each pit, as noted in Permit Conditions VI.L.1 and VIII.M.1.
- O. If the LDS indicates a liner system failure or if a crack or other failure is detected during inspection, no waste may be added to the pit. The affected component must be replaced or repaired and inspected by the Midland District Office before use of the pit is resumed.
- P. The liner systems must be inspected whenever evidence of a liner leakage arises. If inspection of the liner reveals cracking, a leak or other loss of integrity, the pit must have all waste immediately removed. No waste may be added to the affected pit until the liner has been replaced or repaired and re-inspected by RRC personnel before resuming use of the pit.

**V. Water-Based Separation Processing Area, Oil-Based Separation Processing Area, Reclamation Plant Area, Collecting Pit/Pad (P011704) and Collecting Pits (P011427, P011428, P011429, P011430, P011431, P011308A, P011308B, P011308C, P011308D, P011426B, P011558 and P011563) Construction and Operation**

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- A. The general layout and arrangement of the Water-Based Separation Processing Area, Oil-Based Separation Processing Area, Reclamation Plant Area, Collecting Pit/Pad (P011704) and Collecting Pits (P011427, P011428, P011429, P011430, P011431, P011308A, P011308B, P011308C, P011308D, P011426B, P011558 and P011563) must be consistent with the "*Facility Layout*" (Figure 2) schematic, received December 29, 2014, which is attached as **Permit Appendix C**.
- B. A sign must be posted at each pit identifying each pit permit number in letters and numerals at least three (3) inches in height.

- C. Spills within the secondary containment areas shall be containerized immediately and contact stormwater must be managed as waste and disposed of in an authorized manner.
- D. Liquid waste accumulated within the pits must be removed as needed to maintain freeboard and conveyed to the Collecting/Evaporation Pits (**P012315A, P012315B, P012315C, P012316A, P012316B and P012316C**) or disposed of in an authorized Class II injection well.
- E. The ground surface and any concrete aprons surrounding the pits must be graded such that all surfaces slope away from the pit to prevent surface flow stormwater from entering.
- F. The liner systems must be installed and maintained in accordance with the application, best management and sound engineering practices.
- G. The liner systems must be inspected whenever evidence of liner leakage arises. If inspection of the liner reveals cracking, a leak or other loss of integrity, the pit must have all waste must be immediately removed. No waste may be added to the affected pit until the liner has been replaced or repaired and re-inspected by RRC personnel before resuming use of the pit.
- H. Unless otherwise required by conditions of this permit, construction, use, and maintenance of the pits must be in accordance with information represented on the application (Form H-11) and attachments thereto.
- I. COLLECTING PITS (P011427, P011428, P011429, P011430, P011431, P011308A, P011308B, P011308C, P011308D, P011426B, P011558 and P011563)
  - 1. The construction of the Collecting Pits (**P011427, P011428, P011429, P011430, P011431, P011308A, P011308B, P011308C, P011308D, P011426B, P011558 and P011563**) must be consistent with the “*Collecting Pits (Water-Based Wastes) and East Tank Battery*” (Figure 7), the “*Collecting Pits (Oil-Based Wastes) and Equipment #1*” (Figure 3) schematics, dated December 29, 2014; and the “*Oil-Based Collecting Pits, Reclamation Plant and North Tank Battery*” (Drawing 5-3) schematics, received May 2, 2019, which are attached as **Permit Appendix D**.
  - 2. Use of the pits is limited to the collection of non-hazardous oil and gas wastes as specified in Permit Condition II. No other oil field fluids or oil and gas wastes may be stored or staged in the pits.
  - 3. At least one (1) foot of freeboard must be maintained between the fluid level in the pits and the top of the pit walls.
  - 4. The capacity and dimensions of each pit must not exceed the following:

<u>PERMIT NO.</u>	<u>LENGTH (ft)</u>	<u>WIDTH (ft)</u>	<u>DEPTH (ft)</u>	<u>VOLUME (bbl)</u>
<b>P011427 – P011431</b>	42	16	5	447
<b>P011308A – P011308C</b>	72	16	5	492
<b>P011308D</b>	18	6	6	95
<b>P011426B</b>	15	10	5	107

<u>PERMIT NO.</u>	<u>LENGTH (ft)</u>	<u>WIDTH (ft)</u>	<u>DEPTH (ft)</u>	<u>VOLUME (bbl)</u>
<b>P011563</b>	89.3	33.7	5	1065
<b>P011588</b>	79.3	23.6	5	645

5. The pits must be constructed in accordance with the liner system installation methods included in the application and consist of reinforced concrete of at least eight (8) inches at the walls, floors and aprons.
6. Solid waste that accumulates at the bottom of the pits must be removed regularly to maintain freeboard.

J. COLLECTING PIT/PAD (P011704)

1. The construction of the Collecting Pit/Pad (**P011704**) must be consistent with the "Stabilization Pit #9/P011704" (Figure 6) schematic, dated December 29, 2014, which is attached as **Permit Appendix E**.
2. Use of the pit is limited to the collection of non-hazardous oil and gas wastes as specified in Permit Condition II for the processing and stabilization of solid wastes prior to interment in the active disposal pit. No other oil field fluids or oil and gas wastes may be stored or staged in the pit.
3. The pit must be no greater than 450 feet by 275 feet by 8.65 feet deep with concrete dikes at least one (1) foot in height and a permitted usable capacity not to exceed 54,950 bbl of waste.
4. The pit must be constructed in accordance with the liner system installation methods included in the application and consist of reinforced concrete of at least eight (8) inches at the pit walls, floor and dikes.
5. The pit must be sloped to collect fluids at the trench on the north side of the pit. Fluids in the pit must not contain a visible oil sheen at any time.
6. A buffer of 10 feet must be maintained between the bottom edge of the staged waste in the pit and the surrounding concrete dikes.

VI. **Collecting/Evaporation Pits (P012315A, P012315B, P012315C, P012316A, P012316B and P012316C) Construction and Operation**

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- A. The construction of the Collecting/Evaporation Pits (**P012315A, P012315B, P012315C, P012316A, P012316B and P012316C**) must be consistent with the "10.2 Acre Evaporation Pond A Layout" (Drawing 2), "7.4 Acre Evaporation Pond B Layout" (Drawing 3) and "Pond Sections" (Drawing 4) schematics, received June 4, 2015, which are attached as **Permit Appendix F**.
- B. Use of the pits is limited to the collection of non-hazardous oil and gas wastes as specified in Permit Condition II and the collection of contact stormwater for processing, staging, evaporation or disposal by injection in a Class II disposal well. No other oil field fluids or oil and gas wastes may be stored or staged in the pit.

- C. A sign must be posted at each pit identifying each pit permit number in letters and numerals at least three (3) inches in height.
- D. The capacity of each pit must not exceed the following:

<u>PERMIT NO.</u>	<u>CAPACITY (bbls)</u>	<u>SIZE (acres)</u>
<b>P012315A</b>	154,272	3.6
<b>P012315B</b>	184,385	3.6
<b>P012315C</b>	171,060	3.0
<b>P012316A</b>	99,592	2.7
<b>P012316B</b>	62,573	2.8
<b>P012316C</b>	17,983	1.9

- E. At least two (2) feet of freeboard must be maintained between the top of the waste in the pits and the top of the pit berms.
- F. Berms must be constructed to completely surround the pits or and must meet the criteria specified in Permit Condition IV.H.
- G. The pit must be constructed in accordance with the liner installation methods included in the application and consist of a 60-mil high-density polyethylene (HDPE) primary liner and a 40-mil HDPE secondary liner. A liner anchor trench must be used to key the liner system into the adjacent berm.
- H. The pit must be equipped with an LDS, including a 200-mil HDPE drainage layer with that extends over the entire pit between the primary and secondary liners to collect any leakage from the primary liner.
- I. The liner and the LDS must be installed in accordance with the application, the liner manufacturer's specifications and sound engineering practices.
- J. The land surface must be graded such that all surfaces slope away from the pits to eliminate any surface flow stormwater from entering the pits.
- K. The floor of the pit must have at least a 1% slope to allow fluids to drain to the leak detection sump.
- L. The LDS must be monitored as required by Permit Condition IV.M. **The Midland District Office must be notified by phone or email within 24 hours of the initial detection of the failure. No additional waste may be added to the pit in the event of a failure.** After inspection, the identified failed component must be replaced or repaired and re-inspected by RRC personnel before resuming use of the pit. A liner system failure is defined as any of the following:
  - 1. A volume withdrawn from the LDS that is greater than the following:

<u>PERMIT NO.</u>	<u>VOLUME (GPD)</u>
<b>P012315A</b>	3,610 gallons
<b>P012315B</b>	3,600 gallons

<u>PERMIT NO.</u>	<u>VOLUME (GPD)</u>
<b>P012315C</b>	2,950 gallons
<b>P012316A</b>	2,740 gallons
<b>P012316B</b>	2,750 gallons
<b>P012316C</b>	1,880 gallons

2. Any failure in the leak detection and return system or any component thereof
  3. Any detected damage to or leakage from the secondary liner
- M. If the volume withdrawn from the LDS exceeds the volume stated in Permit Condition VI.L. for 15 consecutive days or the weekly reported volume exceeds the volume stated in Permit Condition VI.L. at least once a month for three consecutive months, the Midland District Office and Technical Permitting in Austin must be notified by phone or email within 24 hours of detection of the liner system failure. The operator must **immediately** initiate the removal of wastes from the pit. When removal of the waste is complete, the operator must notify Technical Permitting in Austin and the Midland District Office in writing.
- N. Unless otherwise required by conditions of this permit, construction, use, and maintenance of each pit must be in accordance with the information represented on the applications (Form H-11) and attachments thereto.

## **VII. Disposal Pit (P012080) Construction**

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- A. The general layout and phased construction of the Disposal Pit (**P012080**) must be consistent with the "*Disposal Pit Excavation Plan*" (Drawing 4), "*Typical Interim Drainage Condition Phase I*" (Figure 2.1), "*Typical Interim Drainage Condition Phase I Sections*" (Figure 2.1A), "*Typical Interim Drainage Condition Phase II*" (Figure 2.2), "*Typical Interim Drainage Condition Phase II Sections*" (Figure 2.2A), "*Typical Interim Drainage Condition Phase III*" (Figure 2.3), "*Typical Interim Drainage Condition Phase III Sections*" (Figure 2.3A), "*Typical Interim Drainage Condition Phase IV*" (Figure 2.4), "*Typical Interim Drainage Condition Phase IV Sections*" (Figure 2.4A), "*Typical Interim Drainage Condition Phase V*" (Figure 2.5) and "*Typical Interim Drainage Condition Phase V Sections*" (Figure 2.5A) schematics received July 7, 2016, which are attached as **Permit Appendix G**.
- B. Technical Permitting and the Midland District Office must be notified upon final completion of construction of each disposal pit cell. The permittee may not begin using a disposal pit cell until the District Office has completed an inspection of the pit and provided verification that the pit is constructed in accordance with the application and permit.
- C. A sign must be posted identifying each Disposal Pit by name and permit number using letters and numerals at least (3) three inches in height.



- D. Berms at least three (3) feet in height must be constructed and maintained on all sides of the Disposal Pits with a slope no steeper than a one to three (vertical to horizontal) ratio and meet compaction criteria specified in Permit Condition IV.H.
1. A perimeter berm with access roads must be constructed on the north, south and west sides of the Disposal Pit Phases that have reached capacity, are under construction, have been constructed, or have been capped with the intermediate cover system. All perimeter berms must meet compaction criteria specified in Permit Condition IV.H.
  2. A temporary containment berm must be constructed on the east side of the Disposal Pit as additional Phases are constructed.
- E. The capacity and dimensions of the disposal pits may not exceed the following:

<u>PHASE NO.</u>	<u>TOTAL VOLUME (bbbl)</u>	<u>TOTAL VOLUME (cu yd)</u>	<u>DEPTH BELOW GRADE (ft)</u>	<u>HEIGHT ABOVE GRADE (ft)</u>
<b>Phase 1</b>	5,010,600	1,041,943	18	137
<b>Phase 2</b>	5,008,041	1,041,411	22	128
<b>Phase 3</b>	4,191,380	871,588	9	177
<b>Phase 4</b>	2,930,722	609,437	18	168
<b>Phase 5</b>	7,402,349	1,539,302	9	177
<b>Phase 6</b>	6,929,966	1,441,071	19	174
<b>Phase 7</b>	6,675,085	1,388,069	9	173
<b>Phase 8</b>	7,423,937	1,543,791	16	68
<b>Total</b>	<b>45,572,080</b>	<b>9,476,612</b>		

F. LINER, LEAK DETECTION AND LEACHATE COLLECTION SYSTEMS FOR DISPOSAL PITS

1. The Disposal Pit must be constructed in accordance with the liner system installation methods included in the application and consist of (from bottom-to-top) a prepared subgrade, overlain with a 60-mil high-density polyethylene (HDPE) secondary liner, overlain with a 60-mil HDPE primary liner.
2. Each pit must be equipped with a Leachate Collection System (LCS), including 270-mil HDPE geonet that covers the entire pit area on top of the primary liner.
3. Each pit must be equipped with a LDS, including a 270-mil thick HDPE drainage layer that extends over the entire pit between the primary and secondary liners.
4. The liner system, the LCS and the LDS must be consistent with the "Disposal Pit Liner Details" (Drawing 8) schematic received July 7, 2016, which is attached as **Permit Appendix H**.

5. The liners, the LCS and the LDS must be installed in accordance with the application, the material manufacturer's specifications and sound engineering practices.
  6. The floor of each disposal pit must have at least a one percent (2.5%) slope to allow fluids to drain to the sump located at the low end of the pit.
- G. A liner anchor trench must be used to key the synthetic liners for each pit to their respective berms. The liners must be welded together to create a continuous liner system when the next disposal pit is constructed. All seams and tie-ins must be consistent with the "*Disposal Pit Liner Details*" (Drawing 7) schematic received on July 7, 2016, which is attached as **Permit Appendix I**.
- H. Mixing Basins (steel containers) may be placed within the Disposal Pit over the liner system and **must have a minimum of three (3) feet of stabilized material between the bottom of the Mixing Basin and the liner system**. The top of the Mixing Basins must be one (1) foot above the surrounding wastes at all times.
- I. A permanent liner boundary marker must be installed and maintained on all four sides of the pit that clearly identifies the subsurface liner system weld locations at the land surface.
- J. The area surrounding the pits must be graded such that all surfaces slope away from the pits, to prevent surface flow storm water from entering the pits.
- K. Unless otherwise required by the conditions of this permit, construction, use, maintenance, and closure of the disposal pits must be in accordance with the information represented on the permit application and the attachments thereto.

#### **VIII. Disposal Pit (P012080) Operation**

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- A. Only one (1) Disposal Pit Phase may be considered active and accept oil and gas waste at any time.
- B. The permittee must not construct or use any Disposal Pit in a manner that could exceed the financial security required by Permit Condition I.B.
- C. The Permittee must contact the Midland District Office to proceed with construction of each disposal pit in the sequence and may not begin accepting waste until;
  1. The Permittee has received approval from the District Office to begin accepting waste in next Disposal Pit in the sequence.
  2. Waste is no longer being accepted in the previous Disposal Pit Phase and the interim cover is almost completed.
- D. Before the Permittee may begin excavation of the next Disposal Pit Phase in the sequence, the previous Disposal Pit Phase must be filled with waste to almost final grade height, and the exposed side abutting the next pit in the construction sequence must be properly graded and prepared to receive waste. Intermediate cover must be installed over the final outside slopes of each disposal cell as the next cell is opened. The intermediate cover must consist of one (1) foot of compacted screened caliche material that is free of debris and rocks greater than two (2) inches

and other organics. The intermediate cover must meet a hydraulic conductivity of  $1 \times 10^{-7}$  centimeters per second or less and has been compacted to 95% Standard Proctor (ASTM D698) or 90-92% Modified Proctor (ASTM D1557) density, and must be graded to prevent pooling on top of the cover and inhibit infiltration of liquids into the wastes below.

- E. After the intermediate cover has been constructed it must be inspected every quarter for erosion, slope stability, and thickness of the cover. The results of each inspection must be submitted as part of the **Quarterly Report** required in Permit Condition I.U. The physical record must be maintained by the permittee for the life of the pit.
- F. The intermediate cover must be inspected after each storm event and re-compacted as needed to meet the requirements specified in Permit Condition VIII.D.
- G. At least two (2) feet of freeboard must be maintained between the top of the waste in the active disposal pit and the top of the pit dikes.
- H. Prior to the Disposal Pit Phase accepting waste above grade, the waste collected below grade must be stabilized, compacted and maintained to prevent collapse of the structure, and must not have side slopes steeper than a one-to-three (vertical to horizontal) ratio.
- I. Once the Disposal Pit Phase begins to accept waste above grade, the pit freeboard (buffer) must be constructed and maintained to contain all contact stormwater that may be generated during a 25-year, 24-hour storm event for Ector County.
- J. Once the waste height exceeds 50 feet, the side slopes may not exceed a one-to-four (vertical-to-horizontal) ratio.
- K. No freestanding fluids may accumulate in any Disposal Pit. Any fluids must be removed within 72 hours of discovery and disposed of in an authorized manner.
- L. The LDS must be monitored as required by Permit Condition IV.M. Records of LDS monitoring must be submitted in table form within the **Quarterly Report** required in Permit Condition I.U. The physical record must be maintained by the permittee for the life of the pit. The physical record must be filed with the RRC upon request.
- M. If the LDS indicates a possible liner system failure, the liner system must be inspected for deterioration and leaks within five days of the detection of the failure. **The Midland District Office must be notified by phone or email within 24 hours of detection of the failure. No additional waste may be added to the affected Disposal Pit(s) in the event of a failure.** After inspection, the identified failed component must be replaced or repaired and re-inspected by RRC personnel before resuming use of the pit(s). A liner system failure is defined as any of the following:

1. A volume withdrawn from the LDS that is greater than:

<u>Phase No.</u>	<u>Total Acres</u>	<u>Volume (GPD)</u>
<b>Phase 1</b>	8.9	890
<b>Phase 2</b>	6.5	650
<b>Phase 3</b>	6.9	690
<b>Phase 4</b>	5.2	520

<u>Phase No.</u>	<u>Total Acres</u>	<u>Volume (GPD)</u>
<b>Phase 5</b>	10.8	1,080
<b>Phase 6</b>	10.5	1,050
<b>Phase 7</b>	10.3	1,030
<b>Phase 8</b>	15.2	1,520
<i>Total</i>	<b>74.3</b>	

2. Any failure in the leak detection and return system or any component thereof.
  3. Any detected damage to or leakage from the secondary liner.
- N. Leachate collected in the leachate collection sump must be removed through the leachate removal pipe and disposed of in an authorized manner.
- O. The RRC reserves the right to require necessary design modifications prior to capping and closure to ensure that the waste is stabilized above grade. Prior to receiving waste at 50-foot intervals above grade, a stabilization geotextile may be required to provide increased tensile strength to stabilize the compacted waste.
- P. The permittee must notify the Midland District Office and Technical permitting in Austin each time the waste height exceeds the 50-foot interval above grade.
- Q. Unless otherwise required by conditions of this permit, construction, use, and maintenance of each pit must be in accordance with the information represented on the applications (Form H-11's) and attachments thereto.

#### **IX. Disposal Pit (P012080) Closure and Capping**

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- A. Final closure and capping for the Disposal Pit must be consistent with the application details and the "*Disposal Pit Final Cover Plan*" (Drawing 5), "*Disposal Pit Cross Sections*" (Drawing 6) and "*Disposal Pit Final Cover Details*" (Drawing 10) schematics received July 7, 2016, which are attached as **Permit Appendix J**.
- B. Once all the Disposal Pits have reached permitted capacity:
1. Waste material in the Disposal Pit must be compacted and stabilized, so that the structure will not fail, slump or erode. The RRC reserves the right to require necessary design modifications to increase tensile strength prior to capping and closure to ensure that the waste is stabilized above grade.
  2. Waste material in the Disposal Pit must be graded, stabilized, compacted and contoured so that rainwater will not collect on top of the pit.
  3. The final cap must consist of a minimum six-inch thick compacted clay layer placed on top of the compacted interim cover, overlain by a 40-mil linear low-density polyethylene (LLDPE) liner, overlain by a 200-mil double sided geocomposite layer. This must be covered with a minimum of 16 inches of on-site fill material that is compacted to at least 95% Standard Proctor (ASTM D698) or 90-92% Modified Proctor (ASTM D1557) density, overlain by 6 inches of topsoil seeded with appropriate vegetation for the geologic region.

- C. Unless otherwise required by conditions of this permit, final closure of the Disposal Pit Phases must be consistent with the details as presented in the application. Any modification to the closure or final capping for the Disposal Pit must be submitted and approved by Technical Permitting prior to the modification occurring.

## **X. Stormwater Control**

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- A. The facility and all waste management units must be designed and constructed to contain and isolate contact stormwater and prevent run-on of non-contact stormwater. Non-contact stormwater structures are to be constructed as shown on the "*Stormwater Drainage Plan*" (Figure 1), "*Proposed Drainage Structure Plan*" (Drawing I-2), "*Closure Drainage Details*" (Drawing I-3), "*Drainage Channel Sections*" (Drawing I-4), "*Stormwater Pond Section*" (Drawing I-5), "*North Perimeter Channel Profile*" (Drawing I-6), "*South Perimeter Channel Profile*" (Drawing I-7), "*South Culvert Cross Sections*" (Drawing I-8) and "*North Culvert Cross Sections*" (Drawing I-9) schematics received July 7, 2016, which are attached as **Permit Appendix K**.
- B. All above-ground storage tanks must be contained within dikes. Dikes must be constructed and maintained at a minimum to contain the largest tank's maximum capacity, plus freeboard to contain a 25-year, 24-hour storm event volume for Ector County.
- C. Berms and other containment structures must be constructed around all waste management units and storage areas. These structures must be used to divert non-contact stormwater around the waste management areas, and isolate and contain contact stormwater within the waste management units.
- D. If contact storm water enters a Storm Water Retention Pond the permittee must submit a written report detailing the event to Technical Permitting in Austin before disposing of the contents of the pond. Contact storm water must be removed and disposed of in an authorized manner.
- E. The Stormwater Management Plan will be implemented in phases to correspond to facility construction and is designed to manage upland drainage, on-site contact stormwater, and non-contact stormwater through a network of diversion channels, berms, retention, detention, and evaporation ponds as detailed in **Permit Appendix K**.
- F. A discharge permit from the EPA may be required for non-contact stormwater discharges. If required, the permit from the EPA must be in place prior to commencement of discharge operations.

## **XI. Groundwater Monitoring**

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- A. At least three (3) monitor wells must be installed, maintained and routinely sampled at the facility. The monitor wells are to be installed at the locations designated on the "*Groundwater Elevations-February 2015*" (Figure 4) schematic received on April 6, 2015, which is attached as **Permit Appendix L**. The following provisions must be met for each well:

1. The wells must be completed by a certified water well driller in accordance with 16 TAC Part 4, Chapter 76 (Water Well Drillers and Water Well Pump Installers).
2. The wells must be completed and penetrate the shallowest groundwater zone, and the completion must isolate that zone from any deeper groundwater zone.
3. The screened interval of the wells must be designed to intercept at least five feet of groundwater.
4. Provision must be made to protect the well heads from damage by vehicles and heavy equipment.
5. The wells must be watertight at the surface and fitted with a lockable watertight expansion cap.
6. The groundwater monitor wells must be able to provide a sample that is representative of the groundwater underlying the site for the duration of facility operations. If a monitor well is not capable of providing a representative sample, the permittee must notify Technical Permitting in Austin and install a replacement monitor well that is acceptable to the RRC. Additional groundwater monitoring wells may be required with future site development.
7. The following information must be submitted after the wells are completed:
  - a. A soil boring lithologic log for the well, with the soils described using the Unified Soil Classification System (equivalent to ASTM D 2487 and 2488). The log must also include the method of drilling, well specifications, slot size, riser and screen length, bentonite and cement intervals, total depth, and the top of the first encountered water or saturated soils. The sand pack size should be compatible with well screen and slot size, as well as the local lithology.
  - b. A well installation diagram for each well detailing construction specifications for each well, including riser and screen length, screen slot size, bentonite and cement intervals. The sand pack size should be compatible with the well screen slot size and the local lithology.
  - c. A survey elevation for each well head reference point (top of casing) relative to a real or arbitrary on-site benchmark and relative to mean sea level.
  - d. A potentiometric contour map showing static water levels and the estimated direction of groundwater flow and the calculated gradient.
- B. The groundwater monitor wells must be sampled or monitored for the following parameters after installation and quarterly thereafter:

<u>PARAMETER</u>	<u>UNITS</u>
Static Water Level	Feet (ft)
Total Depth	ft

<u>PARAMETER</u>	<u>UNITS</u>
pH	s.u.
<i>EPA Method 150.1, 150.2, or equivalent</i>	
Total Dissolved Solids (TDS)	mg/L
<i>Standard Method 160.1 or equivalent</i>	
TPH	mg/L
<i>Method TX1005</i>	
Benzene	mg/L
<i>EPA Method 8260/8021B or equivalent</i>	
Soluble Cations:	
Calcium, Magnesium, Potassium, and Sodium	mg/L
<i>EPA Method 6010/6020 or equivalent</i>	
Soluble Anions:	mg/L
Bromides, Carbonates, Chlorides, Nitrates, and Sulfates	
<i>EPA Method 300/9056 or equivalent</i>	

- C. Copies of the monitoring-well gauging and sampling event data must be filed quarterly with Technical Permitting and the Midland District Office as part of the **Quarterly Report** required in Permit Condition I.U. The laboratory analytical reports and the corresponding chain of custody must be provided for all chemical analyses performed.

**XII. Facility Closure**

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- A. Technical Permitting and the Midland District Office must be notified in writing at least 45 days prior to commencement of all facility closure activities. Technical Permitting must be notified if any changes will be made to the closure plan.
- B. Unless otherwise specified by this permit, all waste, chemicals, and waste-related materials must be processed and removed from the facility and disposed of in an authorized manner.
- C. All processing equipment, above-ground storage tanks, and any other non-maintenance related equipment must be cleaned and removed from the facility. The contents of all tanks, vessels, pits, or other containers must be disposed of in an authorized manner.
- D. All concrete pads must be steam cleaned and demolished and the rubble and wash water disposed of in an authorized manner.

- E. Affected soils underlying the concrete pads must be removed and disposed of in an authorized manner.
- F. Excluding the Disposal Pits and the Non-Contact Stormwater Retention Ponds, the entire facility must be backfilled as necessary, contoured to original grade and re-vegetated as appropriate for the geographic region.
- G. Closure of the Water-Based Separation Process Area and Collecting Pits (**P011427, P011428, P011429, P011430 and P011431**) must be as follows:
  - 1. The pits must be dewatered, emptied, demolished, backfilled, compacted, and properly closed. All wastes, including clay or synthetic liners, must be removed and disposed of in an authorized manner.
  - 2. The concrete areas, pits, concrete pads, washout bays and access roads must be cleaned and demolished, and the concrete rubble and wash-water must be disposed of in an authorized manner. All visually contaminated soils must be excavated and removed. The contaminated soil must be disposed of in an authorized manner
  - 3. Once waste removal is completed, a soil sampling plan must be submitted to Technical Permitting to characterize the scope of contamination (if any) at the facility. After the removal of wastes, composite soil samples must be taken comprised of a minimum of five (5) representative soil samples per former pit location, and five (5) representative soil samples from the former concrete apron area.
  - 4. Soil samples must be analyzed for the parameters listed in Permit Condition XII.L., and the specified limitations must not be exceeded.
  - 5. Any soil sample that exceeds the parameter limitations specified in Permit Condition XII.L. is considered waste and must be disposed of at an authorized disposal facility.
- H. Closure of the Oil-Based Separation Process Area and Collecting Pits (**P011308A, P011308B, P011308C, P011308D, P011426B, P011558 and P011563**) must be as follows:
  - 1. The pits must be dewatered, emptied, demolished, backfilled, compacted, and properly closed. All wastes, including clay or synthetic liners, must be removed and disposed of in an authorized manner.
  - 2. The concrete areas, pits, concrete pads, washout bays and access roads must be cleaned and demolished, and the concrete rubble and wash-water must be disposed of in an authorized manner. All visually contaminated soils must be excavated and removed. The contaminated soil must be disposed of in an authorized manner
  - 3. Once waste removal is completed, a soil sampling plan must be submitted to Technical Permitting to characterize the scope of contamination (if any) at the facility. After the removal of wastes, composite soil samples must be taken comprised of a minimum of nine (9) representative soil samples per former pit location, and three (3) representative soil samples from the former concrete apron area.



4. Soil samples must be analyzed for the parameters listed in Permit Condition XII.L., and the specified limitations must not be exceeded.
  5. Any soil sample that exceeds the parameter limitations specified in Permit Condition XII.L. is considered waste and must be disposed of at an authorized disposal facility.
- I. Closure of the Collecting Pit/Pad (**P011704**) must be as follows:
1. The pit must be dewatered, emptied, demolished, backfilled, compacted, and properly closed. All wastes, including clay or synthetic liners, must be removed and disposed of in an authorized manner.
  2. The concrete areas, pit, concrete pads, washout bays and access roads must be cleaned and demolished, and the concrete rubble and wash-water must be disposed of in an authorized manner. All visually contaminated soils must be excavated and removed. The contaminated soil must be disposed of in an authorized manner
  3. Once waste removal is completed, a soil sampling plan must be submitted to Technical Permitting to characterize the scope of contamination (if any) at the facility. After the removal of wastes, composite soil samples must be taken comprised of a minimum of 10 representative soil samples from the former Collecting Pit/Pad area.
  4. Soil samples must be analyzed for the parameters listed in Permit Condition XII.L., and the specified limitations must not be exceeded.
  5. Any soil sample that exceeds the parameter limitations specified in Permit Condition XII.L. is considered waste and must be disposed of at an authorized disposal facility.
- J. Closure of the Reclamation Plant, East and North Tank Battery Areas must be as follows:
1. The concrete areas, pit, concrete pads, washout bays and access roads must be cleaned and demolished, and the concrete rubble and wash-water must be disposed of in an authorized manner. All visually contaminated soils must be excavated and removed. 18 inches of soil from beneath the storage tanks and frac tanks must be excavated and removed. The contaminated soil must be disposed of in an authorized manner.
  2. Once waste removal is completed, a soil sampling plan must be submitted to Technical Permitting to characterize the scope of contamination (if any) at the facility. After the removal of wastes, representative composite soil samples must be taken from the former Reclamation and Tank Battery areas.
  3. Soil samples must be analyzed for the parameters listed in Permit Condition XII.L., and the specified limitations must not be exceeded.
  4. Any soil sample that exceeds the parameter limitations specified in Permit Condition XII.L. is considered waste and must be disposed of at an authorized disposal facility.
  5. All earthen berms must be leveled and contoured.

- K. Closure of the Evaporation/Collecting Pits (**P012315A, P012315B, P012315C, P012316A, P012316B and P012316C**) must be as follows:
1. The pits must be dewatered, emptied, demolished, backfilled, compacted, and properly closed. All wastes, including clay or synthetic liners, must be removed and disposed of in an authorized manner.
  2. Once waste removal is completed, a soil sampling plan must be submitted to Technical Permitting to characterize the scope of contamination (if any) at the facility. After the removal of wastes, representative composite soil samples must be taken from the former pit areas.
  3. Soil samples must be analyzed for the parameters listed in Permit Condition XII.L., and the specified limitations must not be exceeded.
  4. Any soil sample that exceeds the parameter limitations specified in Permit Condition XII.L. is considered waste and must be disposed of at an authorized disposal facility.
  5. All earthen berms must be leveled and contoured.
- L. Soil samples required by Permit Condition XII.G.4, XII.H.4, XII.I.4, XII.J.3 and XII.K.3 must be analyzed for the following parameters and not exceed the corresponding constituent limitations:

<u>PARAMETER</u>	<u>LIMITATION</u>
pH <i>EPA Method 9045C</i>	6 to 10 standard units
Electrical Conductivity (EC) <i>Louisiana Dept. of Natural Resources Lab Procedures for Analysis of Exploration &amp; Production Waste or equivalent</i>	≤ 4.0 mmhos/cm or background, if established
Total Petroleum Hydrocarbon (TPH) <i>Method 5035A/TX1005</i>	≤ 10,000 mg/kg or 1% by weight
Total Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) <i>EPA Method 5035A/8021/8260B</i>	≤ 30 mg/kg
Metals (Total) <i>EPA Method 6010/6020/7471A</i>	
Arsenic	≤ 10 mg/kg
Barium	≤ 10,000 mg/kg
Cadmium	≤ 10 mg/kg
Chromium	≤ 100 mg/kg
Lead	≤ 200 mg/kg
Mercury	≤ 10 mg/kg
Selenium	≤ 10 mg/kg
Silver	≤ 200 mg/kg

- M. A summary of the soil sampling required by Permit Condition XII. must include:

1. A map drawn to scale with coordinates of the sampling locations
  2. A table indicating the results of the parameters sampled
  3. The date of sampling
  4. The approximate depth of the sample below land surface
  5. Copies of the laboratory analytical reports and chain of custody
- N. Once the results of the closure activities have been approved by the RRC, all pits, excluding the Disposal Pit and Non-Contact Stormwater Retention Ponds, must be dewatered, emptied, demolished, backfilled and compacted within 120 days of final cessation of use of each pit. Final surface grading of the pits and the storage tank battery areas must be accomplished in such a manner that rainfall will not collect at these former locations. Upon final closure, the Midland District Office and Technical Permitting in Austin must be notified in writing.

### **XIII. Post-Closure Care and Monitoring**

---

- A. In accordance with 16 TAC § 3.78 the permittee must maintain financial security in the amount of **\$4,728,444.00** after the facility has stopped receiving waste and met all specified closure requirements. Technical Permitting reserves the right to revise this amount, as necessary. Prior to closure, an updated post-closure cost estimate must be submitted to Technical Permitting in Austin, and any additional financial security must be filed with and approved by the RRC before the operating financial security referenced in Permit Condition I.B. will be released.
- B. The site will be monitored for a period of no less than five years after closure of the facility.
- C. Any areas showing signs of erosion or instability must be repaired, contoured, backfilled, and reseeded as necessary.
- D. Once the facility is no longer in operation, the stormwater must be handled in a manner that is consistent with the information submitted with the application.
- E. Post-closure care must include quarterly inspections of the entire facility by a Texas registered Professional Engineer for signs of deterioration and erosion.
- F. The LDS and the LCS for the Disposal Pits must be maintained and monitored at least quarterly. Any leachate detected must be removed and disposed of in an authorized manner.
- G. A summary of the results of the post-closure monitoring activities must be submitted to Technical Permitting in Austin as part of a **Quarterly Report** required in Permit Condition I.U.
- H. The permittee must request in writing permission to cease post-closure monitoring. Post-closure monitoring requirements may be extended by Technical Permitting based on the monitoring results.

This authorization is granted subject to review and cancellation should investigation show that such authorization is being abused.

APPROVED AND ISSUED ON October 4, 2019



Tiffany Humberson, Manager  
Environmental Permits & Support  
Technical Permitting

**Attachments:** Appendices A through L

**Notes:**

1. Transferred authority from Tervita, LLC (#844072) to Republic EES, LLC (#702639)
2. Increased required financial security \$2,734,470.00 from to \$4,728,444.00
3. Incorporated Disposal Pit Permit No. P012080
4. Renewed permit with updated expiration date of September 26, 2019
5. Updated Narrative Description to remove Disposal Pits P011501 and P011801. The pits no longer receive waste and are undergoing closure
6. Formatting changes for consistency with standard permit language

cc: RRC District 08, Midland  
RRC Product Audit, Austin

## PERMIT APPENDIX A

Application For Permit To Operate A Reclamation Plant  
(Form R-9)

DRAFT

R9 08-3832

READ INSTRUCTIONS ON BACK

1. OPERATOR NAME, exactly as shown on P-5, Organization Report Republic EES, LLC	2. OPERATOR P-5 NO. 702639	3. RRC DISTRICT NO. 08	4. COUNTY OF PLANT LOCATION Ector
5. OPERATOR ADDRESS, including city, state, and zip code 10613 W Sam Houston Pkwy N, Ste 300 Houston, TX 77064	6. PURPOSE OF FILING <input type="checkbox"/> New permit for new facility. Estimated completion date: _____ <input checked="" type="checkbox"/> New permit for existing facility. Name of previous operator: Tervita, LLC <input type="checkbox"/> One-time renewal of existing permit serial/registration (R-2) no. _____		
7. TYPE OF FACILITY <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Portable	8. Driving directions from the nearest town (identify town). East of Penwell on IH-20 to FM 866, then 1/2 mile north.		
9. Brief description of treating process. Separation to be accomplished through a system of gravity separation, brine water wash, heat application with addition of chemicals as needed.			
10. Material transported to plant in: (see Inst. No. 6) <input type="checkbox"/> vehicles owned by applicant <input checked="" type="checkbox"/> for-hire vehicles <input type="checkbox"/> both applicant's and for-hire vehicles			
11. Identify all oil and/or gas-related facilities located within 100 yards of facility. (example: well, pipeline, saltwater disposal facility, tank battery, etc.)			
<u>TYPE OF FACILITY</u>	<u>OPERATOR</u>	<u>TYPE OF FACILITY</u>	<u>OPERATOR</u>
Product pipeline	Sid Richardson Energy Services		
CERTIFICATION. I certify under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this report, that it was prepared by me or under my supervision and direction, and that the data and facts stated herein are true, correct, and complete to the best of my knowledge.		1. <u>Gary McCuiston</u> SIGNATURE Gary McCuiston NAME (print or type)	
		Division Vice President TITLE (832) 399-4516 PHONE 9-9-19 DATE	

**TO BE COMPLETED BY RAILROAD COMMISSION PERSONNEL**

This permit is valid until cancellation under either of the following conditions:

- The above named operator requests cancellation in writing.
- The commission cancels the permit after notice and opportunity for hearing because
  - the permit facility has been inactive for 12 months, or
  - there has been a violation or a violation is threatened of any provision of the permit, the conservation laws of the state, or rules or orders of the Commission.

This permit is non-transferable. The financial assurance filed in support of this application shall be renewed and continued in effect until its conditions have been met or release is authorized by the Commission. The facility schematic diagram is to be kept with this permit. Permit and diagram are to be kept at facility.

Serial/registration no. R9 08-3832 issued/renewed effective October 4, 2019 (date)

by [Signature] Signature of RRC representative Name (type or print) Tiffany Humberson Phone No. 512-463-4354

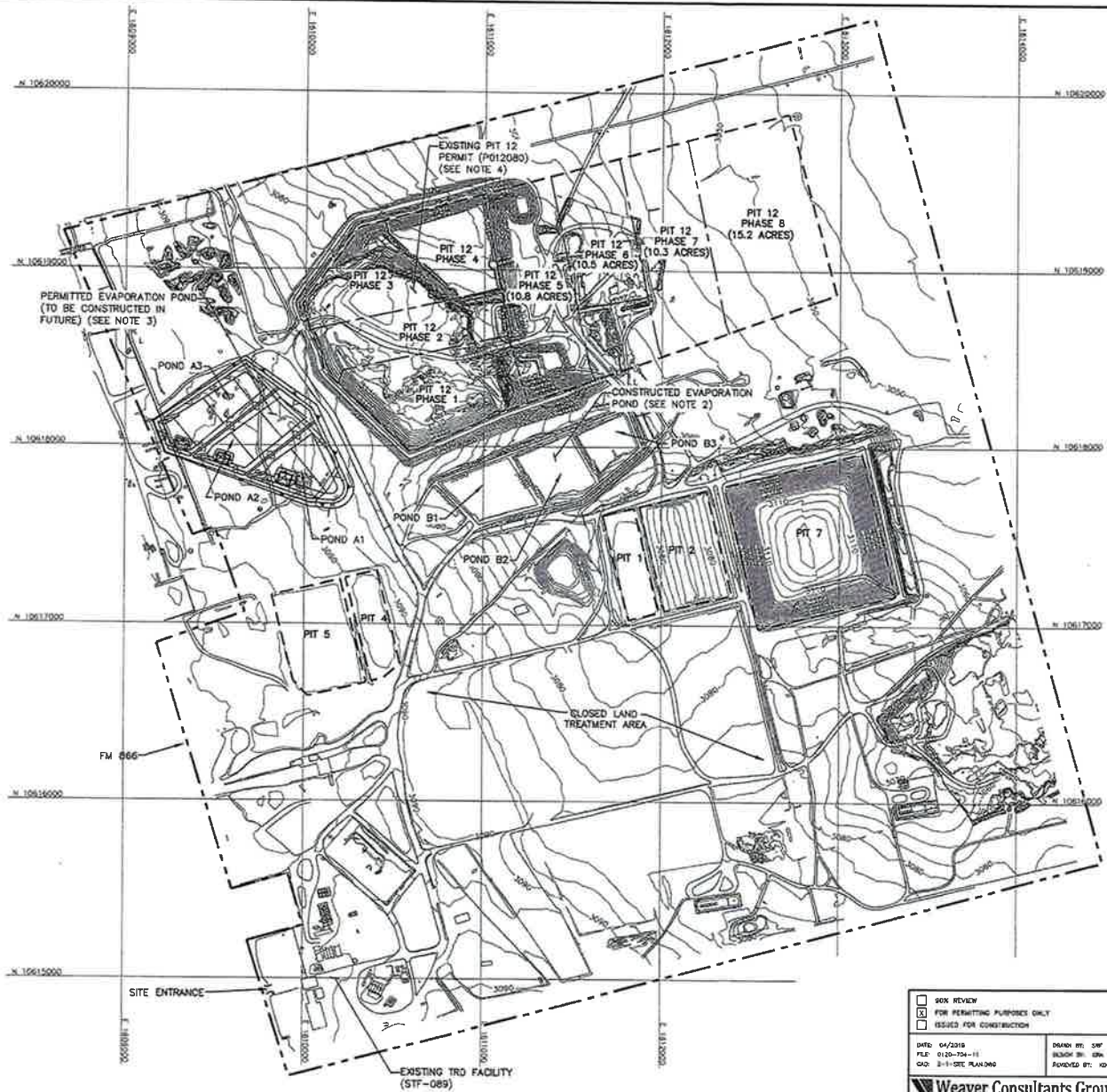
ALL WASTES GENERATED BY RECLAIMING OPERATIONS SHALL BE DISPOSED OF IN ACCORDANCE WITH STATEWIDE RULES, 8, 9, AND 46 (RELATING TO WATER PROTECTION, DISPOSAL WELLS, AND FLUID INJECTION)

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**SEP 11 2019**  
**O & G**  
**AUSTIN, TX**

# PERMIT APPENDIX B

Site Plan (Drawing 2-1)

D:\M\2019\12\1-SITE PLAN.dwg, iter-d, 12



0 300 600  
SCALE IN FEET

**LEGEND**

- SITE BOUNDARY
- - - PERMITTED LIMIT OF WASTE
- - - CONSTRUCTED LIMIT OF WASTE
- N 10616500 STATE PLANE COORDINATE SYSTEM
- 1:600 EXISTING CONTOUR (SEE NOTE 1)
- PHASE BOUNDARY

- NOTES:**
- EXISTING CONTOURS AND ELEVATIONS DEVELOPED BY COOPER AERIAL SURVEYS, CO FROM AERIAL PHOTOGRAPHY FLOWN 11-15-2018. ELEVATIONS ARE BASED ON NAVD 88 VERTICAL DATUM. GRID SYSTEM IS TIED TO TEXAS STATE PLANE COORDINATE SYSTEM, ZONE 4203 NAD 83.
  - THE CONSTRUCTED EVAPORATION POND INCLUDES POND B1 (2.7 ACRES), POND B2 (2.8 ACRES), AND POND B3 (1.8 ACRES). THE PIT PERMITS ASSOCIATED WITH POND A1, B2, AND B3 ARE P012316A, P012316B, AND P012316C, RESPECTIVELY.
  - THE PERMITTED EVAPORATION POND INCLUDES POND A1 (3.0 ACRES), POND A2 (3.6 ACRES), AND POND A3 (3.6 ACRES). THE PIT PERMITS ASSOCIATED WITH POND A1, A2, AND A3 ARE P012315C, P012315B, AND P012315A, RESPECTIVELY. THE PERMITTED EVAPORATION POND WILL BE CONSTRUCTED IN THE FUTURE.
  - PIT 12 INCLUDES PHASES 1 THROUGH 8. CURRENTLY PHASES 1 THROUGH 4 ARE CONSTRUCTED AND PHASES 5 THROUGH 8 WILL BE CONSTRUCTED IN THE FUTURE.

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**AUSTIN, TX**

<input type="checkbox"/> SOX REVIEW <input checked="" type="checkbox"/> FOR PERMITTING PURPOSES ONLY <input type="checkbox"/> ISSUED FOR CONSTRUCTION	PREPARED FOR <b>REPUBLIC EES, LLC</b>	<b>RRC PERMIT APPLICATION</b> <b>SITE PLAN</b>															
DATE: 04/23/18 PLOT: 0120-704-11 QID: 3-11 SITE PLAN.DWG	DRAWN BY: DMF CHECKED BY: GMA PROVIDED BY: KGG	ODESSA TRD FACILITY ECTOR COUNTY, TEXAS															
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NO.	DATE	DESCRIPTION															



## PERMIT APPENDIX C

Facility Layout (Figure 2)

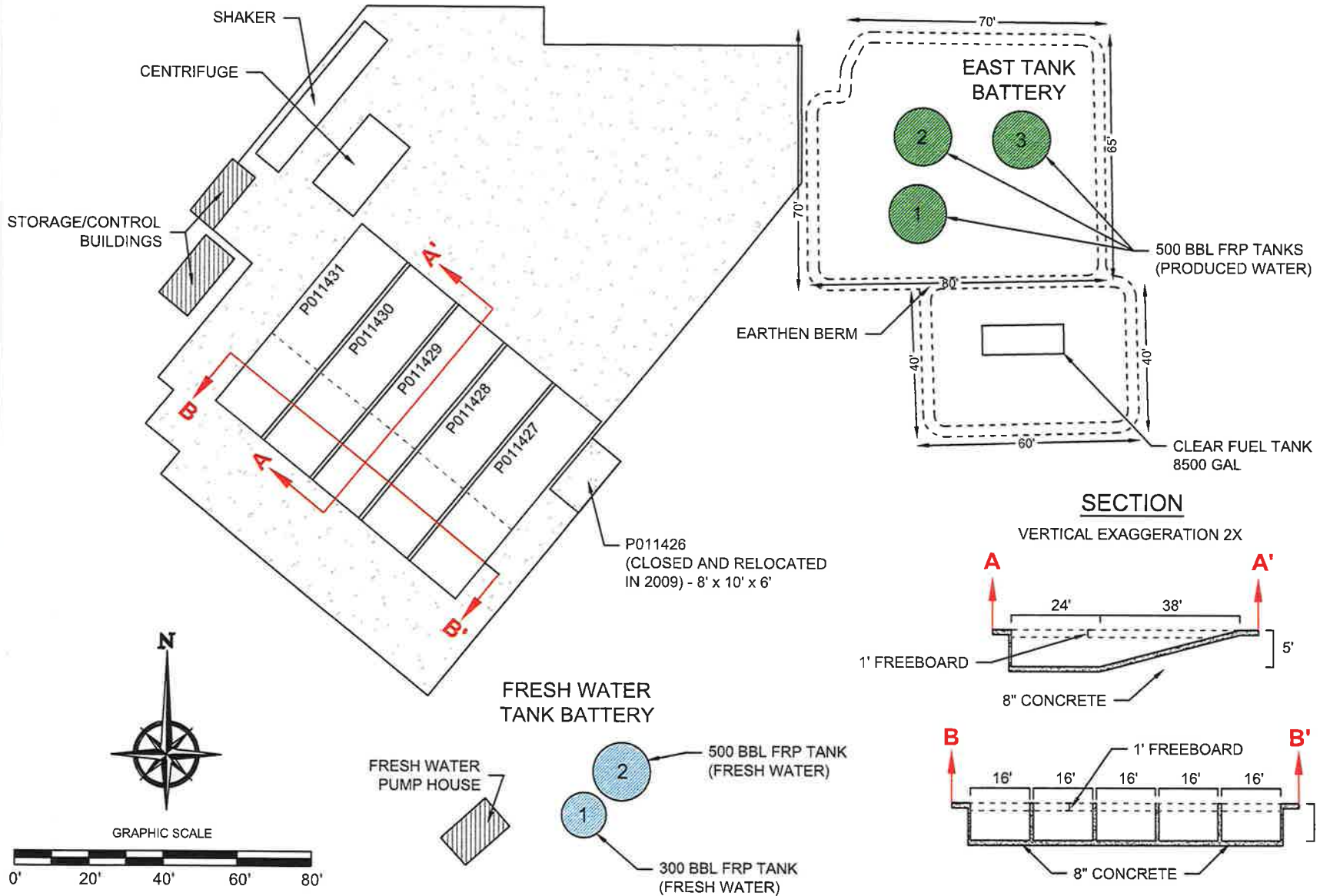


## PERMIT APPENDIX D

Collecting Pits (Water-Based Wastes) and East Tank Battery  
(Figure 7)

Collecting Pits (Oil-Based Wastes) and Equipment #1 (Figure 3)

Oil-Based Collecting Pits, Reclamation Plant and North Tank  
Battery (Drawing 5-3)



**FIGURE 7**

**COLLECTING PITS (WATER-BASED WASTES) AND EAST TANK BATTERY**

TERVITA ODESSA TRD  
 3001 FM 866  
 ODESSA, ECTOR COUNTY, TEXAS

DESIGNED BY: GR	DETAILED BY: GR	CHECKED BY: GR
FILE NAME: Figs 3-7.dwg		
DATE: 12/29/14	PROJECT NO.: 492-26	PLOT SCALE: N.T.S.
DRAWING NO.: TEI-0000	REVISION: 1	FIGURE: 7

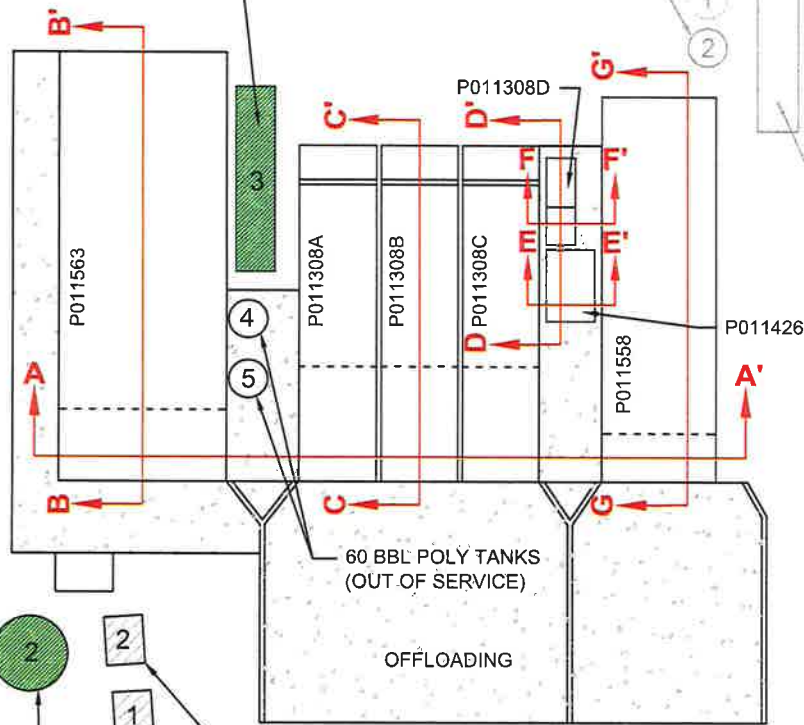


**Apex TITAN, Inc.**  
 2801 Network Boulevard, Suite 200  
 Frisco, Texas 75034  
 Phone: (469) 365-1100 • Fax: (469) 365-1199  
[www.apexcos.com](http://www.apexcos.com)  
 A Subsidiary of Apex Companies, LLC



FRAC TANK  
(PRODUCED WATER)

100 BBL POLY TANK  
(OUT OF SERVICE)  
CLARIFIERS



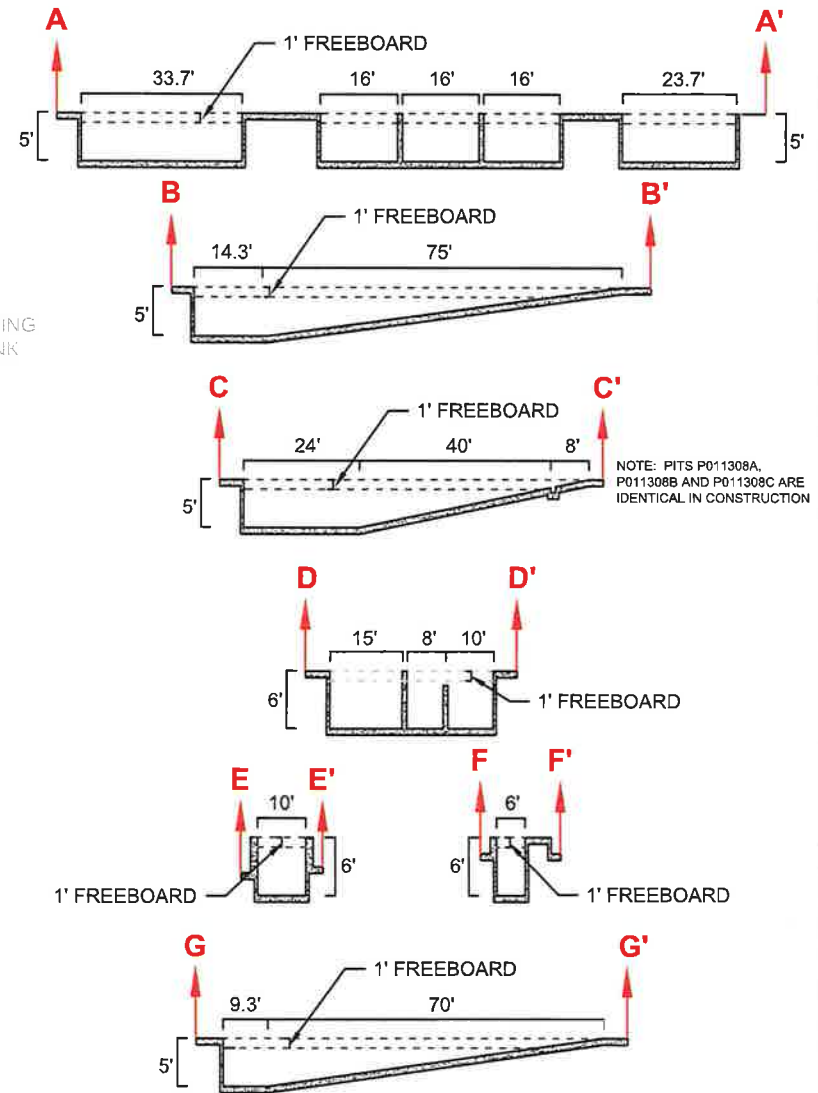
PUMP HOUSES

500 BBL FRP TANKS  
(WASH OUT - PRODUCED WATER)

GRAPHIC SCALE



**SECTION**  
VERTICAL EXAGGERATION 2X



**FIGURE 3**

**COLLECTING PITS (OIL-BASED WASTES) AND EQUIPMENT #1**

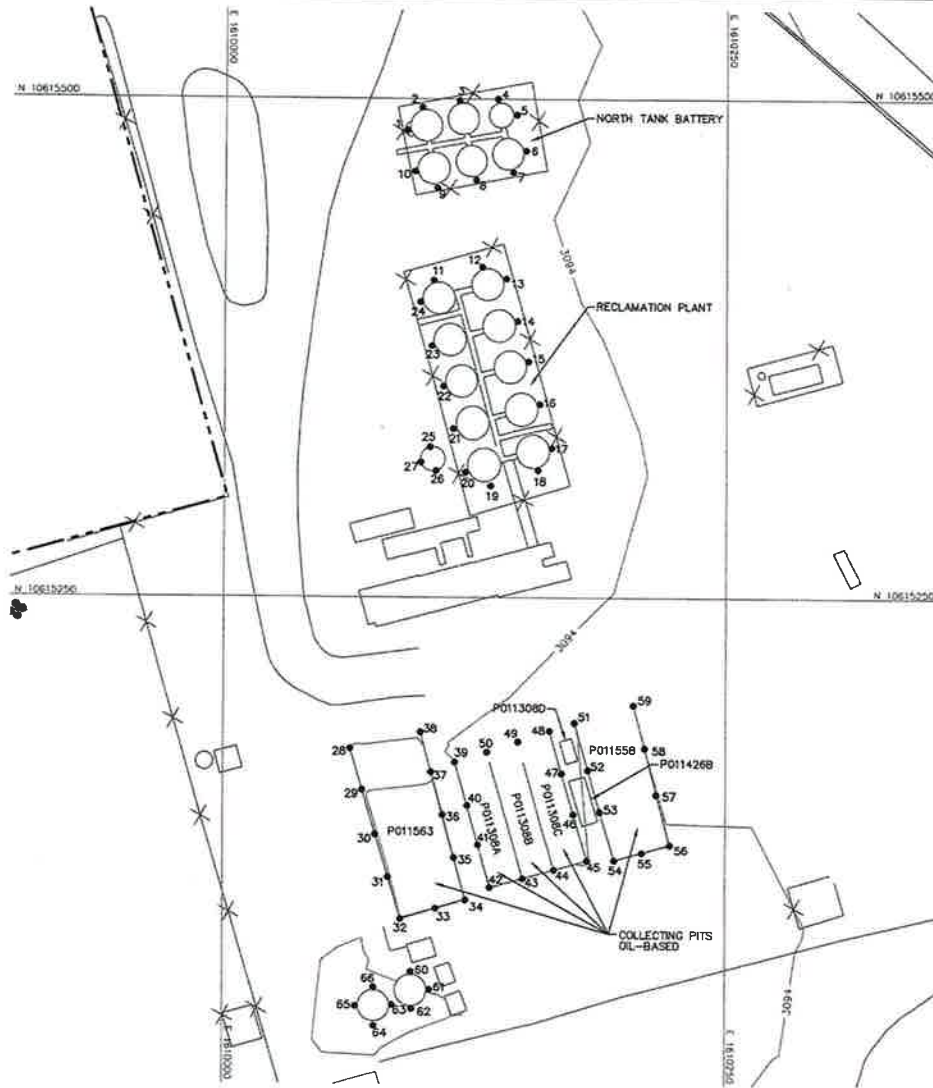
TERVITA ODESSA TRD  
3001 FM 866  
ODESSA, ECTOR COUNTY, TEXAS

DESIGNED BY: GR	DETAILED BY: GR	CHECKED BY: GR
FILE NAME: Figs 3-7.dwg		
DATE: 12/29/14	PROJECT NO.: 492-26	PLOT SCALE: N.T.S.
DRAWING NO.: TEI-0000	REVISION: 1	FIGURE: 3



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Frisco, Texas 75034  
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S:\PROJECTS\16-0001\16-0001.dwg, 4/10/11, 11:22



- LEGEND**
- SITE BOUNDARY
  - N 10615500 STATE PLANE COORDINATE SYSTEM
  - 3094 EXISTING CONTOUR (SEE NOTE 1)
  - 1 NORM SURVEY READING LOCATIONS (SEE NOTE 2)

- NOTES:**
- EXISTING CONTOURS AND ELEVATIONS DEVELOPED BY COOPER AERIAL SURVEYS, CO. FROM AERIAL PHOTOGRAPHY FLOWN 11-15-2018. ELEVATIONS ARE BASED ON NAVD 83 VERTICAL DATUM. GRID SYSTEM IS TIED TO TEXAS STATE PLANE COORDINATE SYSTEM, ZONE 4203 NAD 83.
  - NORM SURVEY READING LOCATIONS CORRESPOND WITH THE NORM READINGS PRESENTED ON TABLE 5-1.

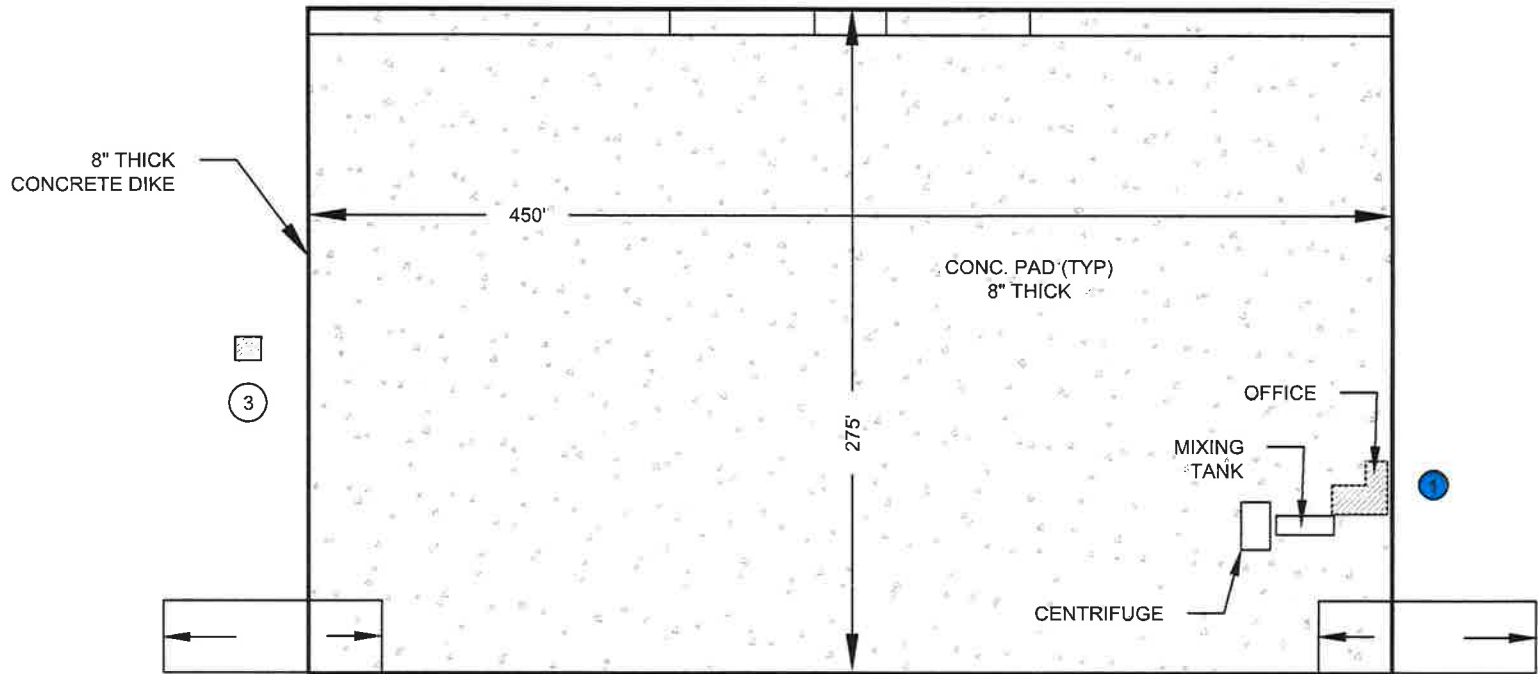
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<input type="checkbox"/> BOX REVIEW <input type="checkbox"/> FOR PERMITTING PURPOSES ONLY <input type="checkbox"/> ISSUED FOR CONSTRUCTION	PREPARED FOR <b>REPUBLIC EES, LLC</b>	<b>RRC PERMIT APPLICATION          NORM SURVEY          OIL-BASED COLLECTING PITS,          RECLAMATION PLANT AND NORTH          TANK BATTERY          ODESSA TRD FACILITY          ECTOR COUNTY, TEXAS</b>															
	DATE: 04/20/11 PLO: 6120-204-11 CAR: 1-2-08, WASTE WATER PIPING		DRAWN BY: JBT DESIGN BY: GJA REVIEWED BY: KSB	REVIEWER <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	NO.	DATE	DESCRIPTION										
NO.	DATE	DESCRIPTION															
<b>Weaver Consultants Group</b> TBPE REGISTRATION NO. P-3727		WWW.WCGRP.COM    DRAWING 5-3															

## PERMIT APPENDIX E

Stabilization Pit #9/P011704 (Figure 6)

TANK ID	CAPACITY (BBL)	CONTENTS
1	300 STEEL	FRESH WATER
2	500 STEEL	OUT OF SERVICE
3	500 STEEL	OUT OF SERVICE



GRAPHIC SCALE



**FIGURE 6**

**STABILIZATION PIT #9 / P011704**

TERVITA ODESSA TRD  
3001 FM 866  
ODESSA, ECTOR COUNTY, TEXAS

DESIGNED BY: GR	DETAILED BY: GR	CHECKED BY: GR
FILE NAME: Figs 3-7.dwg		
DATE: 12/29/14	PROJECT NO.: 492-26	PLOT SCALE: N.T.S.
DRAWING NO.: TEI-0000	REVISION: 1	FIGURE: 6



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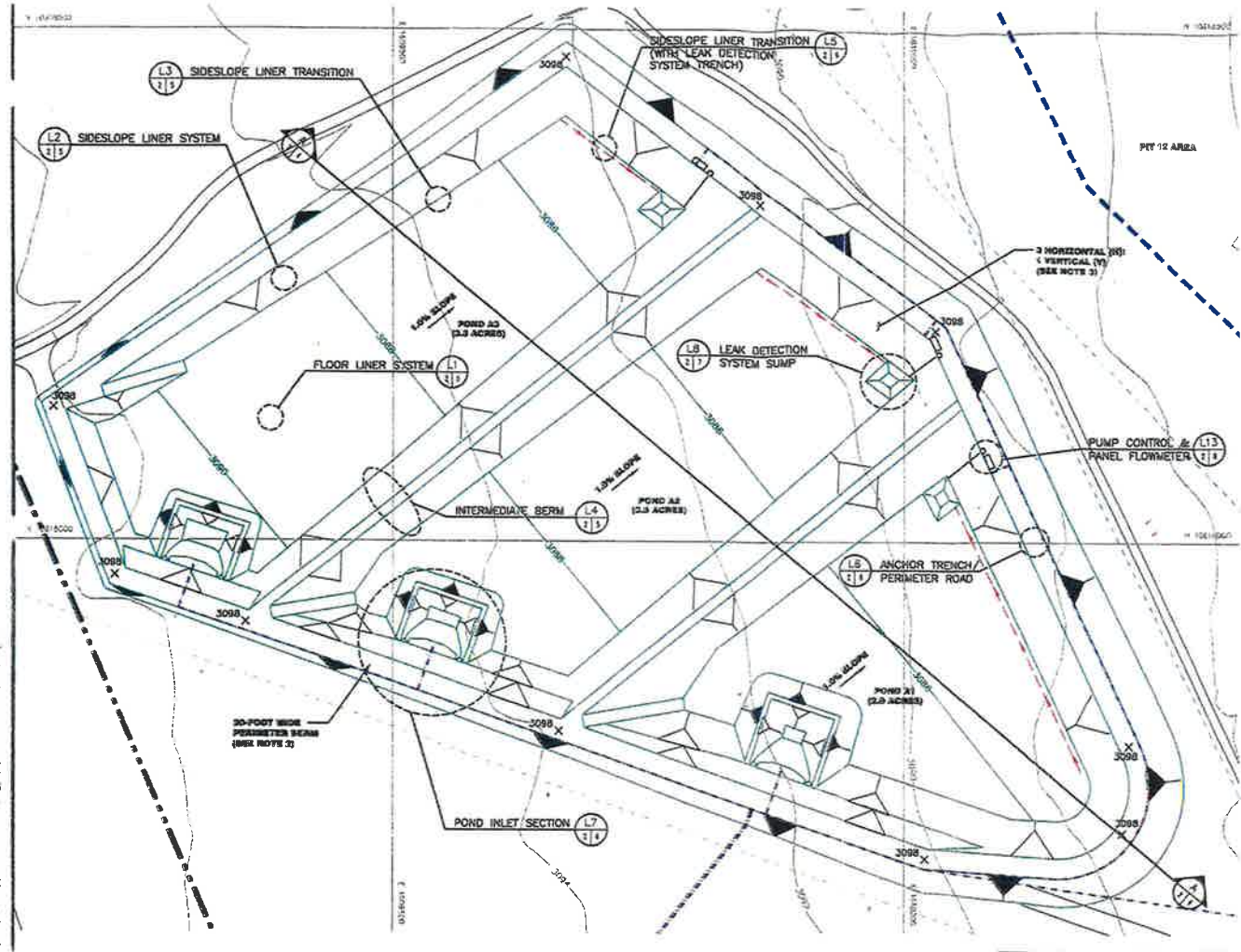


## PERMIT APPENDIX F

10.2 Acre Evaporation Pond A Layout (Drawing 2)

7.4 Acre Evaporation Pond B Layout (Drawing 3)

Pond Sections (Drawing 4)



0 50 100  
SCALE IN FEET

LEGEND

- SITE BOUNDARY
- - - - - LIMIT OF PIT 12
- 13617220 STATE PLANE COORDINATE
- 3084 PROPOSED EXCAVATION CONTOUR (SEE NOTE 4)
- 3092 EXISTING CONTOUR
- - - - - ELECTRIC LINE
- - - - - PIPELINE
- - - - - GUN BARREL PIPING
- - - - - LEAK DETECTION SYSTEM TRENCH
- LEAK DETECTION SYSTEM RISER PIPE

- NOTES:
1. AERIAL PHOTOGRAPHY PROVIDED BY METROPOLITAN AERIAL SURVEYS, CO. FROM AERIAL PHOTOGRAPHY FLWIR 9-29-2014.
  2. AREA SURROUNDING EXTERIOR OF EVAPORATION POND WILL BE RE-GRADED PRIOR TO EVAPORATION POND CONSTRUCTION TO PROVIDE A MINIMUM DISTANCE OF 5 FEET BETWEEN TOP OF PERIMETER BERM/DIKE AND GROUND SURFACE.
  3. ALL SIDE SLOPES SHOWN ARE 3H:1V.
  4. A MINIMUM FREEBOARD OF 2 FEET WILL BE PROVIDED BETWEEN THE TOP OF PERIMETER BERM/DIKE AND THE MAXIMUM ALLOWABLE LEVEL OF LIQUIDS, AS SHOWN ON DRAWING 4.



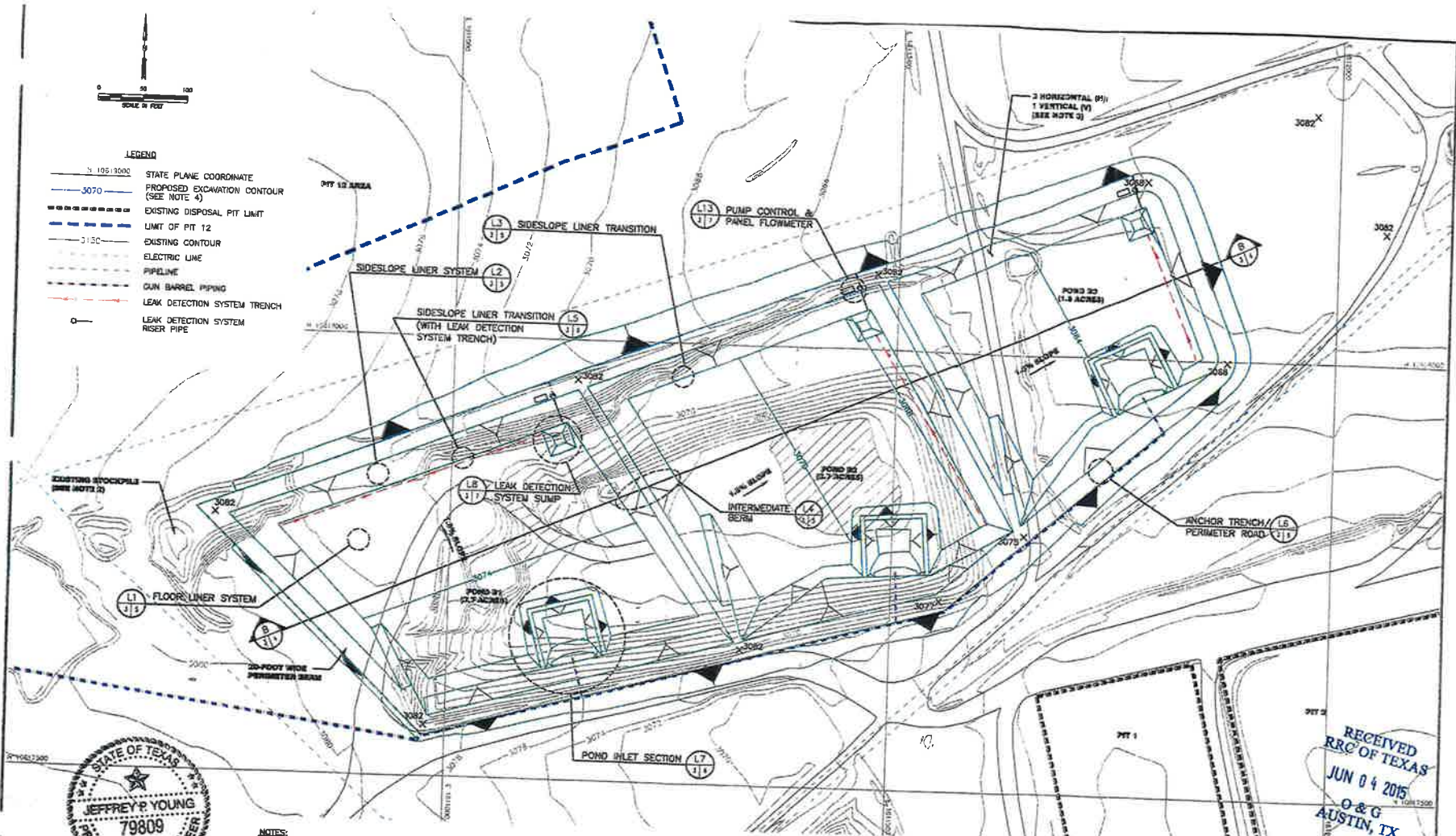
\PBC (06-2015)\PBC-POND A LAYOUT.dwg, 07/2015 4:13:37 PM, cadwall, 12  
 0:\G08\1011\REV1

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<input type="checkbox"/> DRAFT <input type="checkbox"/> FOR PERMITTING PURPOSES ONLY <input type="checkbox"/> READY FOR CONSTRUCTION	PREPARED FOR <b>TERVITA, LLC</b>	10.2 ACRE EVAPORATION POND A LAYOUT  ODESSA STP FACILITY ECTOR COUNTY, TEXAS
	DATE: 04/2015 DESIGNED BY: JAY CHECKED BY: JAY	
WEAVER CONSULTANTS GROUP 1806 REGISTRATION NO. 7-2727	WWW.WCGRP.COM	DRAWING 2



- LEGEND**
- 310513000 STATE PLANE COORDINATE
  - 3070 PROPOSED EXCAVATION CONTOUR (SEE NOTE 4)
  - EXISTING DISPOSAL PIT LIMIT
  - LIMIT OF PIT 12
  - EXISTING CONTOUR
  - ELECTRIC LINE
  - PIPELINE
  - GUN BARREL PIPING
  - LEAK DETECTION SYSTEM TRENCH
  - LEAK DETECTION SYSTEM RISER PIPE



VARS: 06-201013-2000 B LAYOUT, 6/17/2015 01:04:38 PM, WATER, L2  
 C:\VAR\301\WVP



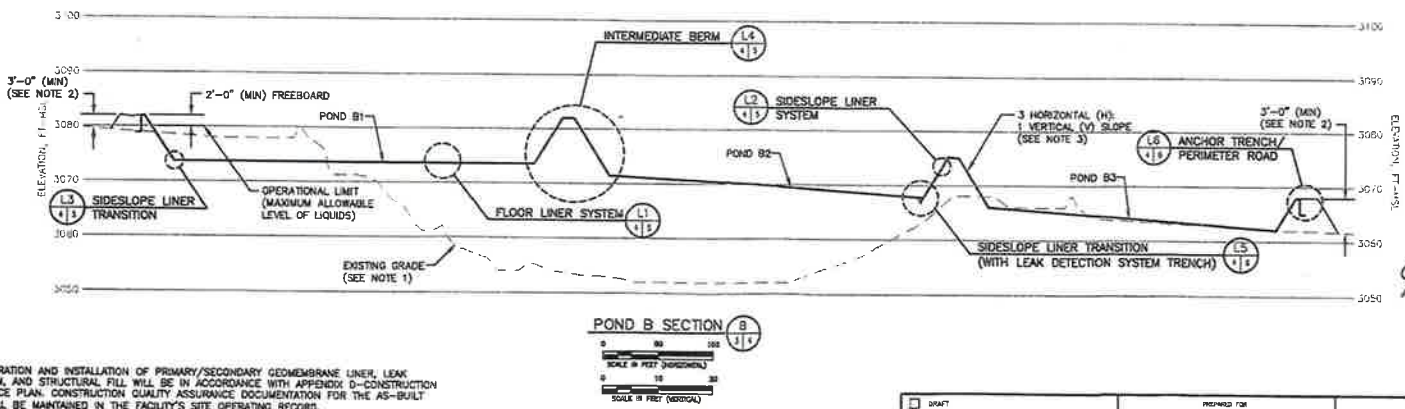
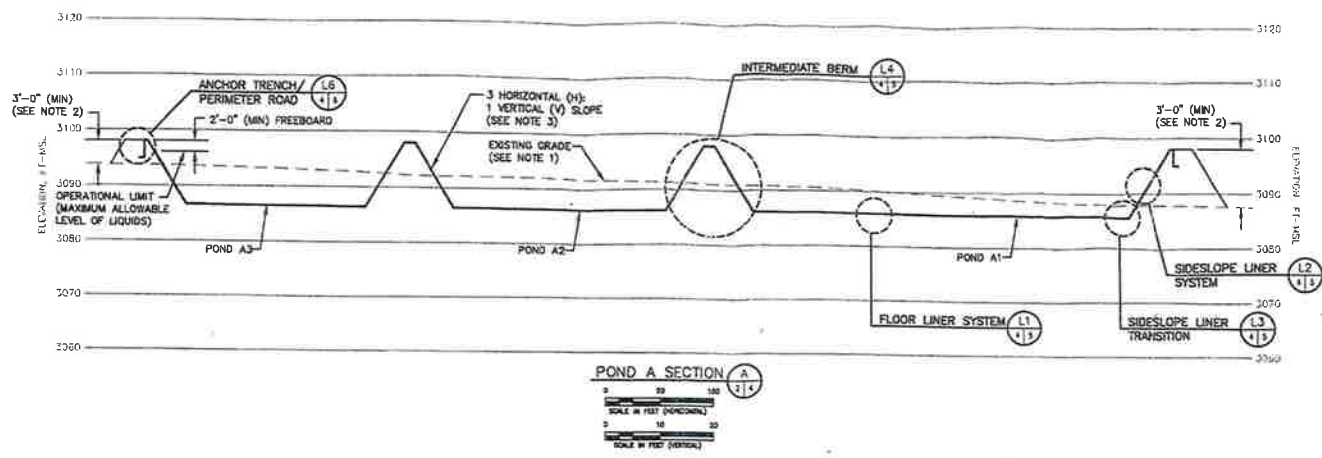
*J.P. Young*  
6-3-15

**NOTES:**

1. AERIAL PHOTOGRAPHY PROVIDED BY METROPOLITAN AERIAL SURVEYS, CO. FROM AERIAL PHOTOGRAPHY FLOWN 9-20-2014.
2. AREA SURROUNDING EXTERIOR OF EVAPORATION POND WILL BE RE-GRADED PRIOR TO EVAPORATION POND CONSTRUCTION TO PROVIDE A MINIMUM DISTANCE OF 3 FEET BETWEEN TOP OF PERIMETER BEAM/DIKE AND GROUND SURFACE.
3. ALL SIDE SLOPES SHOWN ARE 3H:1V.
4. A MINIMUM FREEBOARD OF 2 FEET WILL BE PROVIDED BETWEEN THE TOP OF PERIMETER BEAM/DIKE AND THE MAXIMUM ALLOWABLE LEVEL OF LIQUIDS, AS SHOWN ON DRAWING 4.

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<input type="checkbox"/> SHEET <input type="checkbox"/> FOR PERMITTING PURPOSES ONLY <input type="checkbox"/> ISSUED FOR CONSTRUCTION	PREPARED FOR <b>TERVITA, LLC</b>	<b>7.4 ACRE EVAPORATION POND B LAYOUT</b> ODESSA STP FACILITY ECTOR COUNTY, TEXAS
DATE: 06/15/15 PLO: 0000-2011-11 DWO: 31-1010 8 LAYOUTING	DRAWN BY: VWS 3000 PM CIV REVIEWED BY: JPT	NO. SHEET: _____ SECTION: _____
<b>Weaver Consultants Group</b> TDEC REGISTRATION NO. 7-3737		WWW.WCGRP.COM      DRAWING 3



- NOTES:**
- SUBGRADE PREPARATION AND INSTALLATION OF PRIMARY/SECONDARY GEOMEMBRANE LINER, LEAK DETECTION SYSTEM, AND STRUCTURAL FILL WILL BE IN ACCORDANCE WITH APPENDIX D-CONSTRUCTION QUALITY ASSURANCE PLAN. CONSTRUCTION QUALITY ASSURANCE DOCUMENTATION FOR THE AS-BUILT LINER SYSTEM WILL BE MAINTAINED IN THE FACILITY'S SITE OPERATING RECORD.
  - AREA SURROUNDING EXTERIOR OF EVAPORATION POND WILL BE RE-GRADED PRIOR TO EVAPORATION POND CONSTRUCTION TO PROVIDE A MINIMUM DISTANCE OF 3 FEET BETWEEN TOP OF PERIMETER BERM/DIKE AND GROUND SURFACE.
  - ALL SIDE SLOPES SHOWN ARE 3H:1V.



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AUSTIN, TX

<input type="checkbox"/> DRAFT <input type="checkbox"/> FOR INTERNATIONAL PURCHASED ONLY <input type="checkbox"/> ISSUED FOR CONSTRUCTION	PREPARED FOR <b>TERVITA, LLC</b>	<b>POND SECTIONS</b>  ODESSA STP FACILITY ECTOR COUNTY, TEXAS															
DATE: 04/20/15 FILED: 05/08/15-11 DWG: 6-SECTIONS.DWG	DRAWN BY: VHS CHECKED BY: JPT REVIEWED BY: JPT																
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NO.	DATE	DESCRIPTION															

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 05-2015(15)-SECTIONS.dwg, 01/1/2015 04:17:07 PM, c:\nhara, 112

## PERMIT APPENDIX G

Disposal Pit Excavation Plan (Drawing 4)

Typical Interim Drainage Condition Phase I (Figure 2.1)

Typical Interim Drainage Condition Phase I Sections (Figure 2.1A)

Typical Interim Drainage Condition Phase II (Figure 2.2)

Typical Interim Drainage Condition Phase II Sections (Figure 2.2A)

Typical Interim Drainage Condition Phase III (Figure 2.3)

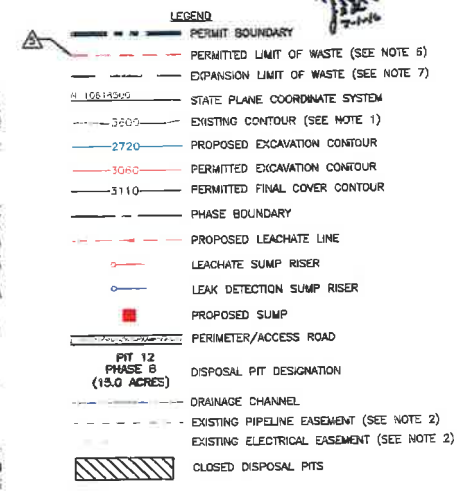
Typical Interim Drainage Condition Phase III Sections (Figure 2.3A)

Typical Interim Drainage Condition Phase IV (Figure 2.4)

Typical Interim Drainage Condition Phase IV Sections (Figure 2.4A)

Typical Interim Drainage Condition Phase V (Figure 2.5)

Typical Interim Drainage Condition Phase V Sections (Figure 2.5A)



- NOTES:**
- EXISTING CONTOURS AND ELEVATIONS DEVELOPED BY METROPOLITAN AERIAL SURVEYS, CO. FROM AERIAL PHOTOGRAPHY FLOWN 09-01-2015. ELEVATIONS ARE BASED ON NAVD 88 VERTICAL DATUM. GRID SYSTEM IS TIED TO TEXAS STATE PLANE COORDINATE SYSTEM, ZONE 4203 NAD 83.
  - PIPELINE AND ELECTRICAL LOCATIONS REPRODUCED FROM JANUARY 2012 SURVEY DRAWING PREPARED BY STARK SURVEYING, LLC FOR SOUTHWEST DISPOSAL SERVICES, INC.
  - A MINIMUM FREEBOARD OF 2 FEET WILL BE PROVIDED BETWEEN THE TOP OF PERIMETER BERM/DIKE AT THE MAXIMUM ALLOWABLE LEVEL OF WASTE. REFER TO APPENDIX 1 FOR THE STORMWATER DRAINAGE SYSTEM DESIGN.
  - DISPOSAL PIT CONTAINMENT SYSTEM DESIGN IS PROVIDED IN APPENDIX D.
  - LINER CONSTRUCTION QUALITY ASSURANCE PLAN IS PROVIDED IN APPENDIX 1.
  - PIT 12-PHASE 1 WAS CONSTRUCTED IN JULY 2015. PIT 12-PHASE 2 WAS CONSTRUCTED IN MAY 2016.
  - THE PIT 12 EXPANSION AREA MAY BE CONSTRUCTED IN SUB-PHASES (I.E., PIT 12-PHASES 3A AND 3B) DEPENDING UPON THE NEEDS OF THE FACILITY.



- LIST OF REVISIONS:**
- UPDATED PERMIT BOUNDARY.
  - UPDATED LIMIT OF WASTE AND CORRESPONDING PIT AREAS WITHIN LIMIT OF WASTE AND EXCAVATION GRADES.
  - UPDATED LOCATION OF STORMWATER RETENTION POND AND EXTENDED PERIMETER DRAINAGE SYSTEM.
  - UPDATED PIT CAPACITY SUMMARY TABLE.
  - UPDATED DESIGNATION OF LINE TYPE FROM "CONSTRUCTED LIMIT OF WASTE" TO "PERMITTED LIMIT OF WASTE" SINCE ALL PERMITTED PITS ARE NOW CONSTRUCTED.
  - UPDATED NOTE TO CLARIFY THAT PIT 12-PHASE 2 WAS CONSTRUCTED IN MAY 2016.
  - ADDED PHASE BOUNDARY LINE TYPE BETWEEN PIT 12-PHASES 1 AND 2.

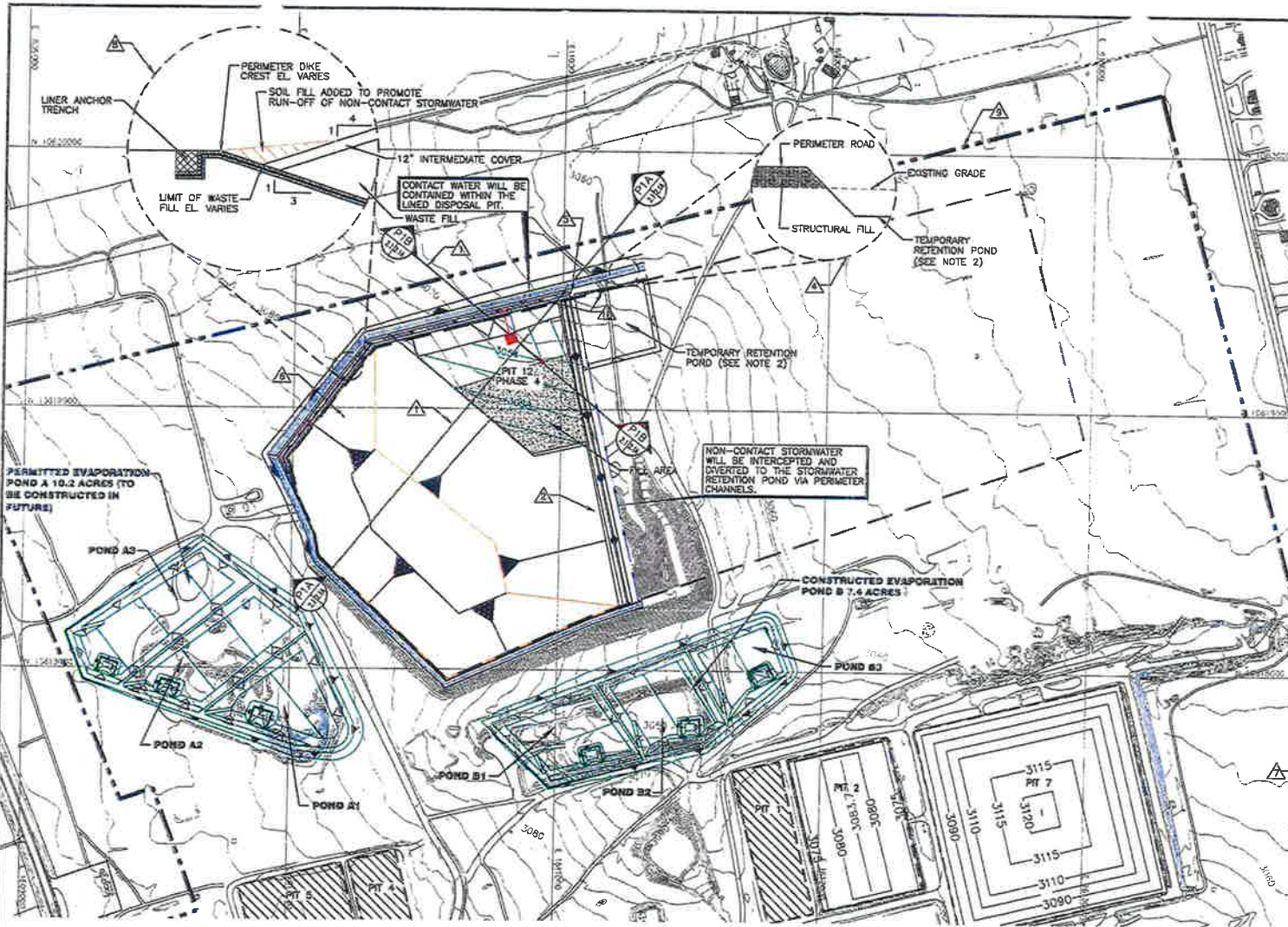
PIT CAPACITY SUMMARY		
DISPOSAL PIT	AREA	CAPACITY
PIT 12 - PHASE 1	8.9 ACRES	1,041,943 CY
PIT 12 - PHASE 2	6.5 ACRES	1,041,411 CY
PIT 12 - PHASE 3	6.9 ACRES	871,568 CY
PIT 12 - PHASE 4	5.2 ACRES	609,437 CY
PIT 12 - PHASE 5	10.8 ACRES	1,539,302 CY
PIT 12 - PHASE 6	10.5 ACRES	1,441,071 CY
PIT 12 - PHASE 7	10.3 ACRES	1,388,069 CY
PIT 12 - PHASE 8	15.2 ACRES	1,543,791 CY
<b>TOTAL</b>	<b>74.3 ACRES</b>	<b>9,476,612 CY</b>

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 AUSTIN, TX

<input type="checkbox"/> DRAFT <input checked="" type="checkbox"/> FOR PERMITTING PURPOSES ONLY <input type="checkbox"/> ISSUED FOR CONSTRUCTION	PREPARED FOR <b>TERVITA, LLC</b>	<b>DISPOSAL PIT EXCAVATION PLAN</b>							
	DATE: 05/2016 FILE: 2009-05-11 CDD: 4-00-CDDA04.DWG	DRAWN BY: JZJ CHECKED BY: JZJ REVISION DTL: JPT	<table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>07/2014</td> <td>SEE LIST OF REVISIONS</td> </tr> </tbody> </table>		NO.	DATE	DESCRIPTION	1	07/2014
NO.	DATE	DESCRIPTION							
1	07/2014	SEE LIST OF REVISIONS							
<b>Weaver Consultants Group</b> TEXAS REGISTRATION NO. F-3727		www.wcgrp.com	<b>DRAWING 4</b>						

C:\G0814\05\APPENDIX C\EXCAVATION PLAN.dwg, revision: 12  
 JASON EDWARDS

D:\GARD\311\APPENDIX 1\2.1 INTERIM DRAINAGE.dwg, jwilson, 1:2



- LEGEND**
- PERMIT BOUNDARY
  - EXPANSION LIMIT OF WASTE
  - STATE PLANE COORDINATE SYSTEM
  - EXISTING CONTOUR (SEE NOTE 1)
  - PROPOSED EXCAVATION CONTOUR
  - PHASE BOUNDARY
  - PROPOSED LEACHATE LINE
  - LEACHATE SUMP RISER
  - LEAK DETECTION SUMP RISER
  - PROPOSED SUMP
  - PERIMETER/ACCESS ROAD
  - PIT 12  
PHASE 5 DISPOSAL PIT DESIGNATION
  - DRAINAGE CHANNEL
  - AREA WITH INTERMEDIATE COVER (SEE NOTE 4)
  - CLOSED DISPOSAL PITS
  - ▲ INDICATES REVISION (SEE LIST OF REVISIONS)

- NOTES:**
1. EXISTING CONTOURS AND ELEVATIONS DEVELOPED BY METROPOLITAN AERIAL SURVEYS, CO. FROM AERIAL PHOTOGRAPHY FLOWN 09-01-2015. ELEVATIONS ARE BASED ON NAVD 83 VERTICAL DATUM. GRID SYSTEM IS TIED TO TEXAS STATE PLANE COORDINATE SYSTEM, ZONE 4203 NAD 83.
  2. PERIMETER DRAINAGE STRUCTURES INCLUDING CHANNELS AND RETENTION POND WILL BE CONSTRUCTED IN PHASES. SURFACE WATER CALCULATIONS FOR EACH PHASE WILL BE MAINTAINED IN THE SITE OPERATING RECORD.
  3. THE DEVELOPMENT SHOWN ON THIS DRAWING SHOWS THE GENERAL SEQUENCE OF FILLING OPERATIONS.
  4. INTERMEDIATE COVER TO BE INSTALLED CONSISTENT WITH SECTION 2.4 IN APPENDIX I.

**DISPOSAL PIT CONTAINMENT EXAMPLE CALCULATION**

FILL AREA (FT. <sup>2</sup> )	CONTAINMENT AREA (FT. <sup>2</sup> )	25-YR REQUIRED STORAGE VOLUME (FT. <sup>3</sup> )	25-YR PROVIDED CONTAINMENT VOLUME (FT. <sup>3</sup> )
876,587	75,000	292,954	300,000

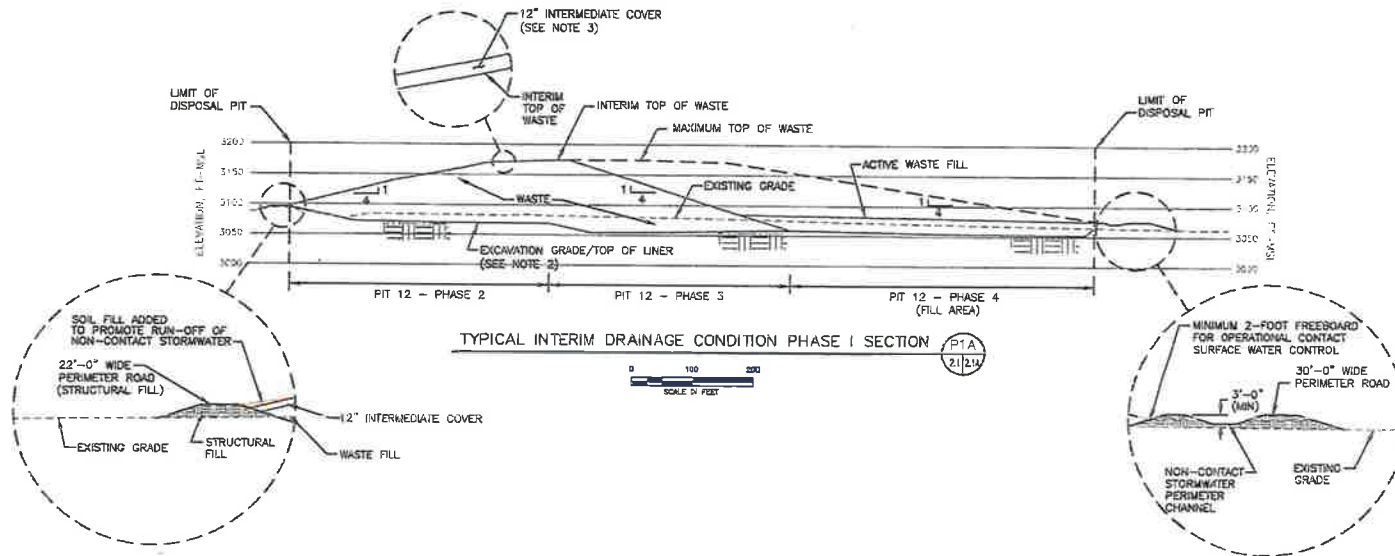
PROPOSED  
ENCLOSURE TEXAS  
07-13-14  
ALC

- LIST OF REVISIONS:**
1. ADDED SECTION LOCATIONS.
  2. UPDATED INTERIM CONDITION TO REFLECT ANTICIPATED WASTE FILL SEQUENCE AND PIT DEVELOPMENT.
  3. ADDED EXAMPLE CONTAINMENT CALCULATIONS.
  4. ADDED CROSS-SECTIONAL DIAGRAM.
  5. ADDED PERIMETER CHANNEL TIE-IN WITH TEMPORARY RETENTION POND.
  6. ADDED AREA WITH INTERMEDIATE COVER.
  7. ADDED NOTE 4.
  8. UPDATED CROSS-SECTIONAL DIAGRAM.
  9. UPDATED PERMIT BOUNDARY.
  10. UPDATED LIMIT OF WASTE AND EXCAVATION GRADES.

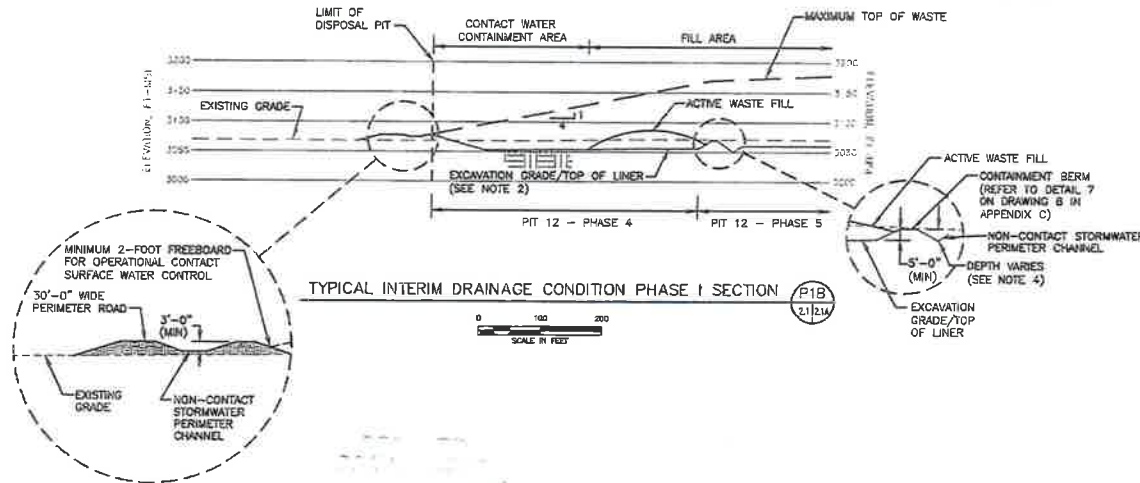
<input type="checkbox"/> DRAFT <input type="checkbox"/> FOR PERMITTING PURPOSES ONLY <input type="checkbox"/> ISSUED FOR CONSTRUCTION	PREPARED FOR <b>TERVITA, LLC</b>	REVISIONS <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">07/2014</td> <td>SEE LIST OF REVISIONS</td> </tr> </tbody> </table>	NO.	DATE	DESCRIPTION	1	07/2014	SEE LIST OF REVISIONS	<b>TYPICAL INTERIM DRAINAGE CONDITION PHASE I</b>  ODESSA TRD FACILITY ECTOR COUNTY, TEXAS  WWW.WCGRP.COM
NO.	DATE	DESCRIPTION							
1	07/2014	SEE LIST OF REVISIONS							
DATED: 07/2014 FILE: 3000-331-11 CAD: D:\GARD\311\APPENDIX 1\2.1 INTERIM DRAINAGE.DWG	DRAWN BY: JAW DESIGNED BY: MWM REVIEWED BY: CSM	<b>Weaver Consultants Group</b> TIME REGISTRATION NO. F-3727	<b>FIGURE 2.1</b>						

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MAXIMUM WASTE THICKNESS SUMMARY	
DISPOSAL PIT	MAXIMUM WASTE THICKNESS
PIT 12 - PHASE 1	120 FEET
PIT 12 - PHASE 2	128 FEET
PIT 12 - PHASE 3	121 FEET
PIT 12 - PHASE 4	117 FEET
PIT 12 - PHASE 5	128 FEET
PIT 12 - PHASE 6	128 FEET
PIT 12 - PHASE 7	130 FEET
PIT 12 - PHASE 8	128 FEET



**NOTES:**

- EXISTING CONTOURS AND ELEVATIONS DEVELOPED BY METROPOLITAN AERIAL SURVEYS, CO. FROM AERIAL PHOTOGRAPHY FLOWN 09-01-2015. ELEVATIONS ARE BASED ON NAVD 88 VERTICAL DATUM. GRID SYSTEM IS TIED TO TEXAS STATE PLANE COORDINATE SYSTEM, ZONE 4203 NAD 83.
- LINER DETAILS ARE INCLUDED ON DRAWINGS 7 THROUGH 9 IN APPENDIX C.
- INTERMEDIATE COVER TO BE INSTALLED CONSISTENT WITH SECTION 2.4 IN APPENDIX I.
- PERIMETER DRAINAGE STRUCTURES INCLUDING CHANNELS AND RETENTION POND WILL BE CONSTRUCTED IN PHASES. SURFACE WATER CALCULATIONS FOR EACH PHASE WILL BE MAINTAINED IN THE SITE OPERATING RECORD.

△ INDICATES REVISION (SEE LIST OF REVISIONS)

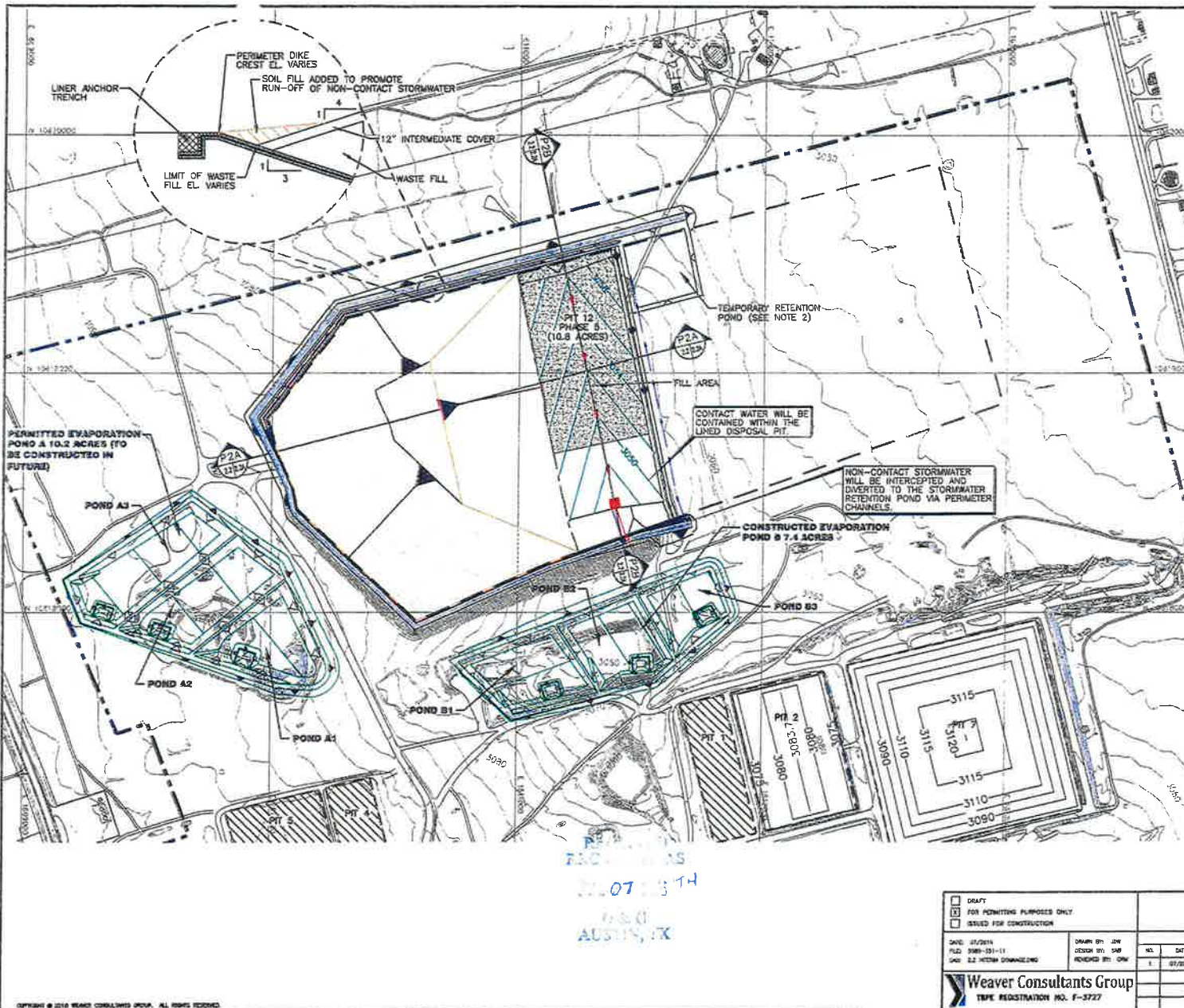
**LIST OF REVISIONS:**  
1. NEW DRAWING ADDED.

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AUSTIN, TX

<input type="checkbox"/> DRAFT <input checked="" type="checkbox"/> FOR PERMITTING PURPOSES ONLY <input type="checkbox"/> ISSUED FOR CONSTRUCTION		PREPARED FOR <b>TERVITA, LLC</b>		<b>TYPICAL INTERIM DRAINAGE CONDITION PHASE I SECTIONS</b>	
DATE: 05/20/16 P.L.C.: 2009-351-11 C.A.C.: 2.1A SECTIONS.DWG	DRAWN BY: DAB REVISION BY: DAB	REVISIONS		ODESSA TRD FACILITY ECTOR COUNTY, TEXAS	
<b>Weaver Consultants Group</b> <small>TYPE REGISTRATION NO. F-3727</small>		NO. 1 DATE: 07/2016 DESCRIPTION: REV LIST OF REVISIONS	WWW.WCGRP.COM   FIGURE 2.1A		



D:\000\301\VT - DESIGN (2015)\APPENDIX I\2.2 INTERIM DRAINAGE.dwg, 7/5/2016 8:07:03 AM, ralters, 1:2



**LEGEND**

- PERMIT BOUNDARY
- EXPANSION LIMIT OF WASTE
- STATE PLANE COORDINATE SYSTEM
- 3000 EXISTING CONTOUR (SEE NOTE 1)
- 2720 PROPOSED EXCAVATION CONTOUR
- PHASE BOUNDARY
- - - PROPOSED LEACHATE LINE
- LEACHATE SUMP RISER
- LEAK DETECTION SUMP RISER
- PROPOSED SUMP
- PERIMETER/ACCESS ROAD
- PIT 12 PHASE 6 DISPOSAL PIT DESIGNATION
- DRAINAGE CHANNEL
- ▨ AREA WITH INTERMEDIATE COVER (SEE NOTE 4)
- ▨ CLOSED DISPOSAL PITS
- △ INDICATES REVISION (SEE LIST OF REVISIONS)

- NOTES:**
- EXISTING CONTOURS AND ELEVATIONS DEVELOPED BY METROPOLITAN AERIAL SURVEYS, CO. FROM AERIAL PHOTOGRAPHY FLOWN 09-01-2015. ELEVATIONS ARE BASED ON NAVD 88 VERTICAL DATUM. GRID SYSTEM IS TIED TO TEXAS STATE PLANE COORDINATE SYSTEM, ZONE 4203 NAD 83.
  - PERIMETER DRAINAGE STRUCTURES INCLUDING CHANNELS AND RETENTION POND WILL BE CONSTRUCTED IN PHASES. SURFACE WATER CALCULATIONS FOR EACH PHASE WILL BE MAINTAINED IN THE SITE OPERATING RECORD.
  - THE DEVELOPMENT SHOWN ON THIS DRAWING SHOWS THE GENERAL SEQUENCE OF FILLING OPERATIONS.
  - INTERMEDIATE COVER TO BE INSTALLED CONSISTENT WITH SECTION 2.4 IN APPENDIX I.

**DISPOSAL PIT CONTAINMENT EXAMPLE CALCULATION**

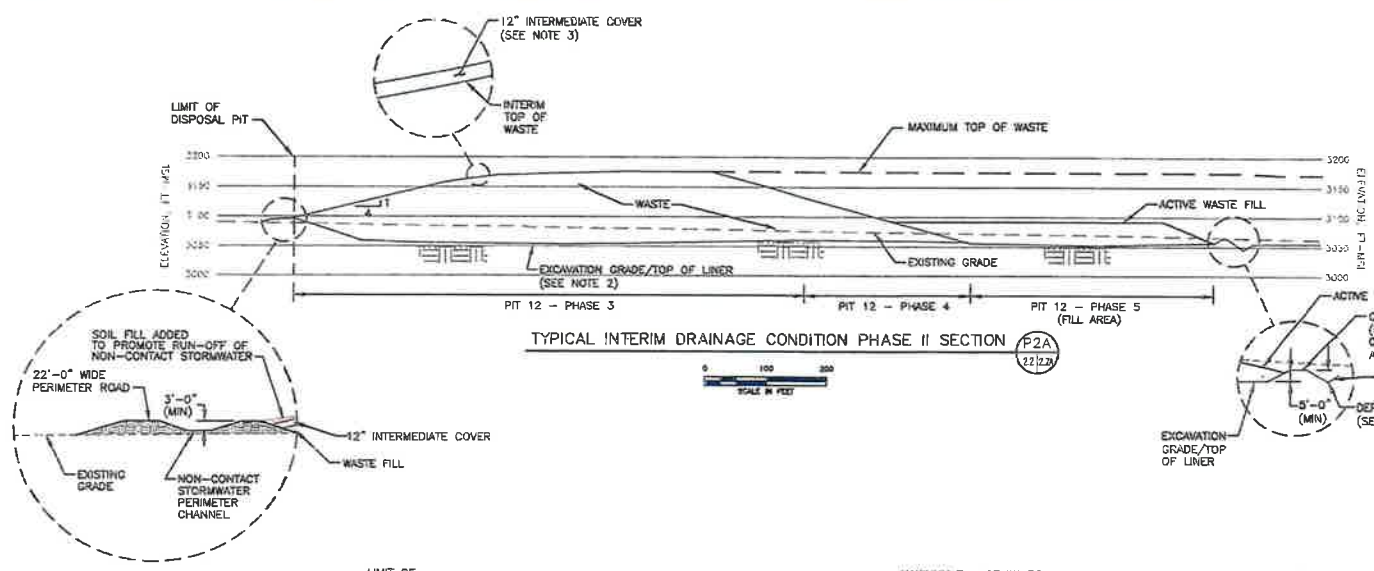
FILL AREA (FT. <sup>2</sup> )	CONTAINMENT AREA (FT. <sup>2</sup> )	25-YR. REQUIRED STORAGE VOLUME (FT. <sup>3</sup> )	25-YR. PROVIDED CONTAINMENT VOLUME (FT. <sup>3</sup> )
845,298	113,004	366,014	452,016

- LIST OF REVISIONS:**
- NEW DRAWING ADDED.

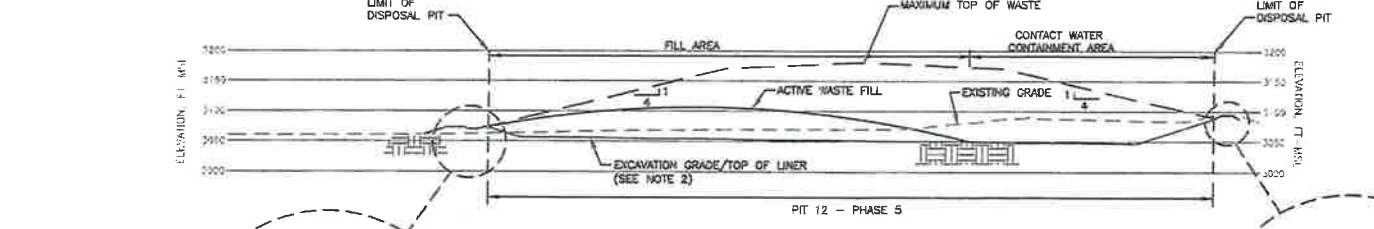
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2017.03.14  
R&D  
AUSTIN, TX

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	ODESSA TRD FACILITY ECTOR COUNTY, TEXAS			
DATE: 07/2016 PLOT: 000-101-11 SNO: 0.2 INTERIM DRAINAGE	DRAWN BY: JMW CHECKED BY: JMB REVIEWED BY: JMW	<b>REVISIONS</b>		
		NO.	DATE	DESCRIPTION
		1.	07/2016	SEE LIST OF REVISIONS
<b>Weaver Consultants Group</b> TEXAS REGISTRATION NO. F-3727		WWW.WCGRP.COM   <b>FIGURE 2.2</b>		

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TYPICAL INTERIM DRAINAGE CONDITION PHASE II SECTION (P2A)



TYPICAL INTERIM DRAINAGE CONDITION PHASE II SECTION (P2B)



- NOTES:**
- EXISTING CONTOURS AND ELEVATIONS DEVELOPED BY METROPOLITAN AERIAL SURVEYS, CO. FROM AERIAL PHOTOGRAPHY FLOWN 09-01-2015. ELEVATIONS ARE BASED ON NAVD 88 VERTICAL DATUM. GRID SYSTEM IS TIED TO TEXAS STATE PLANE COORDINATE SYSTEM, ZONE 4203 NAD 83.
  - LINER DETAILS ARE INCLUDED ON DRAWINGS 7 THROUGH 9 IN APPENDIX C.
  - INTERMEDIATE COVER TO BE INSTALLED CONSISTENT WITH SECTION 2.4 IN APPENDIX L.
  - PERIMETER DRAINAGE STRUCTURES INCLUDING CHANNELS AND RETENTION POND WILL BE CONSTRUCTED IN PHASES. SURFACE WATER CALCULATIONS FOR EACH PHASE WILL BE MAINTAINED IN THE SITE OPERATING RECORD.



MAXIMUM WASTE THICKNESS SUMMARY	
DISPOSAL PIT	MAXIMUM WASTE THICKNESS
PIT 12 - PHASE 1	120 FEET
PIT 12 - PHASE 2	126 FEET
PIT 12 - PHASE 3	121 FEET
PIT 12 - PHASE 4	117 FEET
PIT 12 - PHASE 5	128 FEET
PIT 12 - PHASE 6	129 FEET
PIT 12 - PHASE 7	130 FEET
PIT 12 - PHASE 8	128 FEET

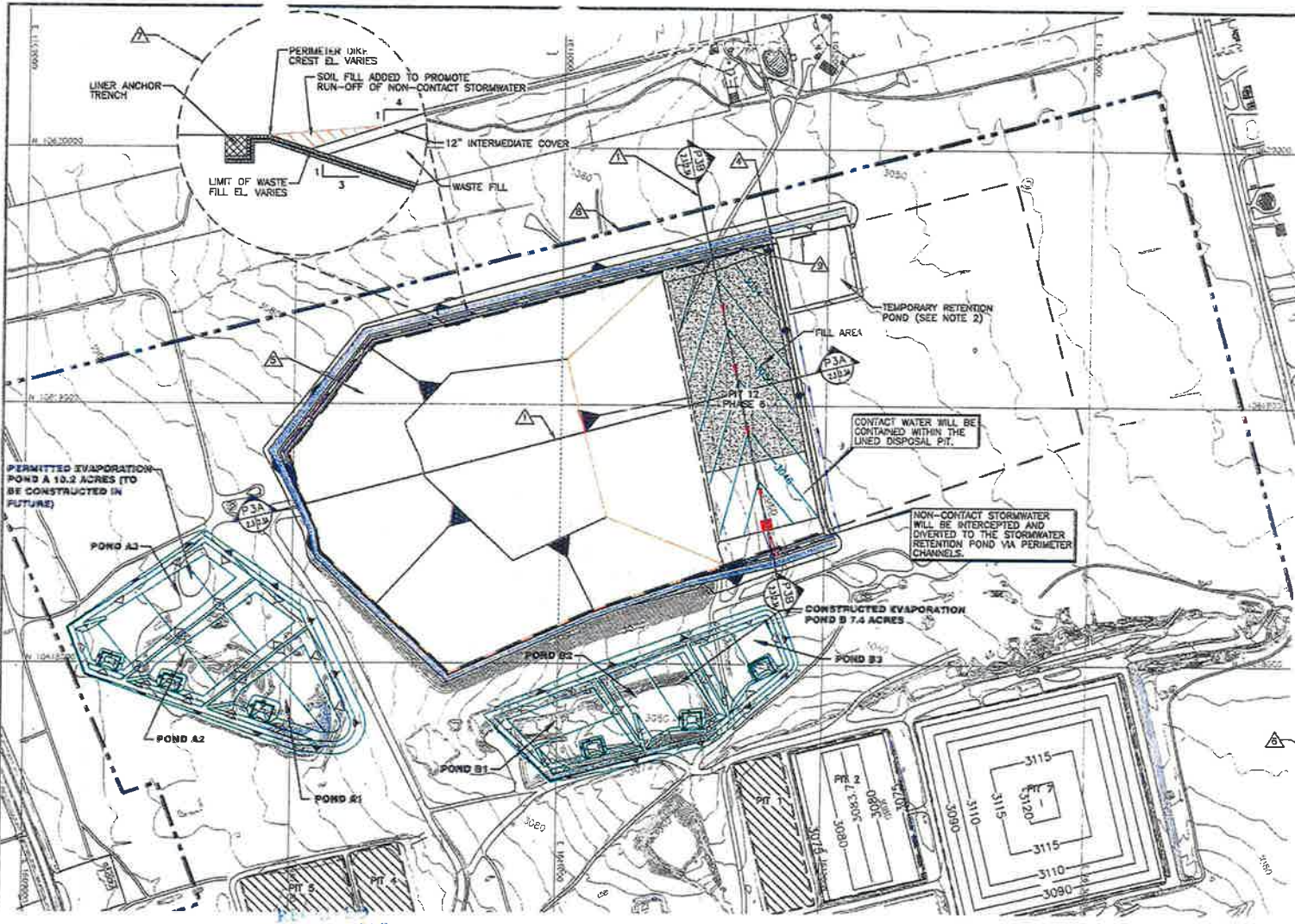
INDICATES REVISION (SEE LIST OF REVISIONS)

**LIST OF REVISIONS:**  
1. NEW DRAWING ADDED.

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DATE: 06/2018 PLO: 2008-281-11 CAD: 2.5A SECTION.DWG		DRAWN BY: JSM CHECKED BY: JSM REVISION BY: JSM		REVISIONS ALL DATE DESCRIPTION 1 07/2018 SEE LIST OF REVISIONS	
<b>Weaver Consultants Group</b> TPE REGISTRATION NO. F-3727		ODESSA TRD FACILITY ECTOR COUNTY, TEXAS		WWW.WCGRP.COM FIGURE 2.2A	

C:\WORK\351\PT AND/OR (06/13)APPENDIX 1\23 INTERIM DRAINAGE.dwg, jmlam, 12



- SCALE IN FEET  
0 200 400
- LEGEND**
- PERMIT BOUNDARY
  - EXPANSION LIMIT OF WASTE
  - STATE PLANE COORDINATE SYSTEM
  - EXISTING CONTOUR (SEE NOTE 1)
  - 3600
  - 2720
  - PROPOSED EXCAVATION CONTOUR
  - PHASE BOUNDARY
  - PROPOSED LEACHATE LINE
  - LEACHATE SUMP RISER
  - LEAK DETECTION SUMP RISER
  - PROPOSED SUMP
  - PERIMETER/ACCESS ROAD
  - PIT 12 PHASE 6
  - DISPOSAL PIT DESIGNATION
  - DRAINAGE CHANNEL
  - AREA WITH INTERMEDIATE COVER (SEE NOTE 4)
  - CLOSED DISPOSAL PITS
  - △ INDICATES REVISION (SEE LIST OF REVISIONS)

- NOTES:**
- EXISTING CONTOURS AND ELEVATIONS DEVELOPED BY METROPOLITAN AERIAL SURVEYS, CO. FROM AERIAL PHOTOGRAPHY FLOWN 08-01-2015. ELEVATIONS ARE BASED ON NAVD 88 VERTICAL DATUM. GRID SYSTEM IS TIED TO TEXAS STATE PLANE COORDINATE SYSTEM, ZONE 4203 NAD 83.
  - PERIMETER DRAINAGE STRUCTURES INCLUDING CHANNELS AND RETENTION POND WILL BE CONSTRUCTED IN PHASES. SURFACE WATER CALCULATIONS FOR EACH PHASE WILL BE MAINTAINED IN THE SITE OPERATING RECORD.
  - THE DEVELOPMENT SHOWN ON THIS DRAWING SHOWS THE GENERAL SEQUENCE OF FILLING OPERATIONS.
  - INTERMEDIATE COVER TO BE INSTALLED CONSISTENT WITH SECTION 2.4 IN APPENDIX I.

**DISPOSAL PIT CONTAINMENT EXAMPLE CALCULATION**

FILL AREA (FT. <sup>2</sup> )	CONTAINMENT AREA (FT. <sup>2</sup> )	25-YR. REQUIRED STORAGE VOLUME (FT. <sup>3</sup> )	25-YR. PROVIDED CONTAINMENT VOLUME (FT. <sup>3</sup> )
817,334	103,047	353,906	412,188

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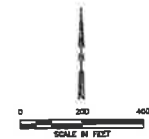
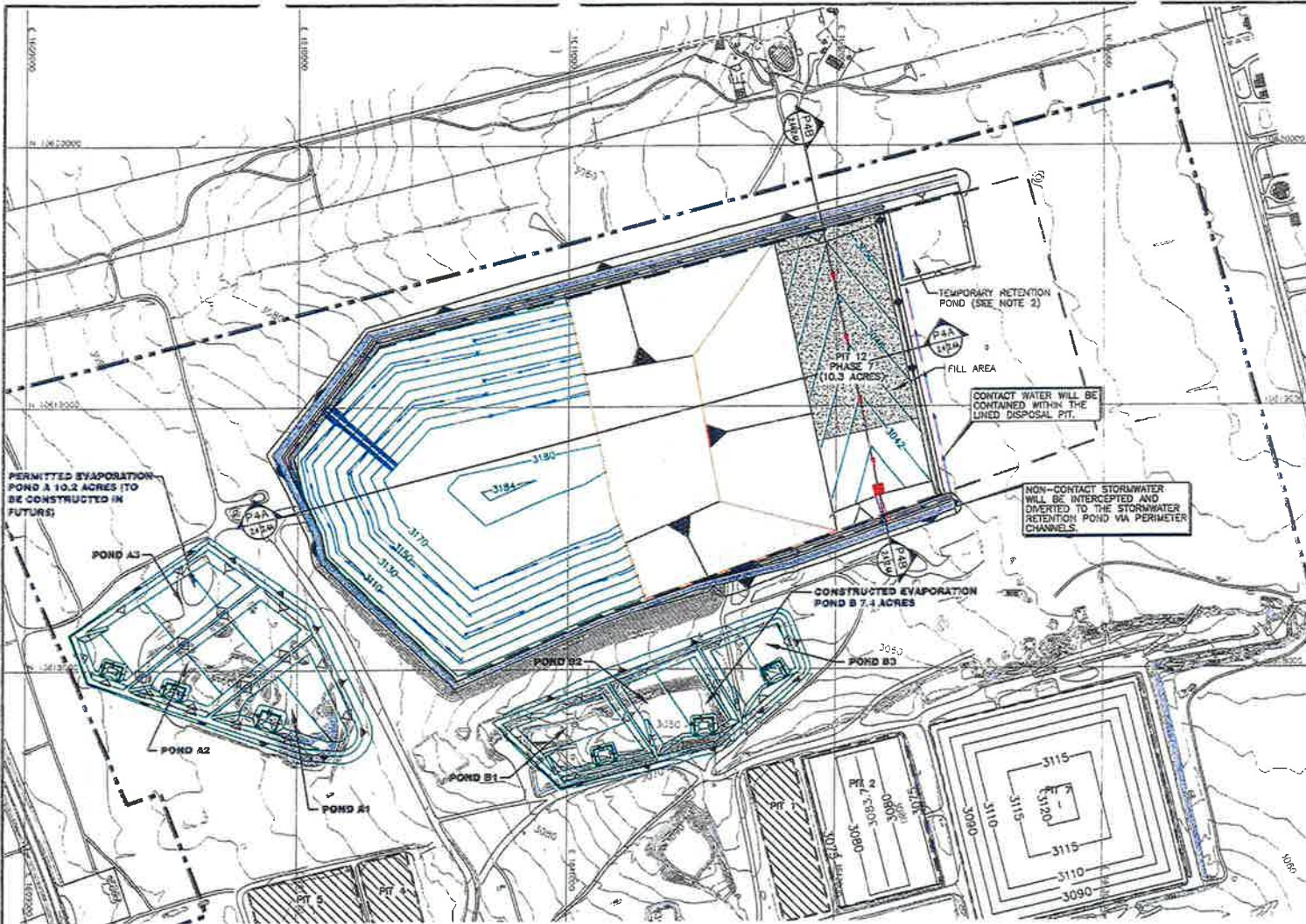
- LIST OF REVISIONS:**
- ADDED SECTION LOCATIONS.
  - RENAMED DRAWING.
  - ADDED EXAMPLE CONTAINMENT CALCULATIONS.
  - ADDED PERIMETER CHANNEL TIE-IN WITH TEMPORARY RETENTION POND.
  - ADDED AREA WITH INTERMEDIATE COVER.
  - ADDED NOTE 4.
  - UPDATED CROSS-SECTIONAL DIAGRAM.
  - UPDATED PERMIT BOUNDARY.
  - UPDATED LIMIT OF WASTE AND EXCAVATION GRADES.

<input type="checkbox"/> DWG <input checked="" type="checkbox"/> FOR PERMITTING PURPOSES ONLY <input type="checkbox"/> ISSUED FOR CONSTRUCTION		PREPARED FOR <b>TERVITA, LLC</b>		PROJECT <b>TYPICAL INTERIM DRAINAGE CONDITION PHASE III</b>	
DATE: 07/2018 FILE: 1008-351-11 CADD: 2.3 INTERIM DRAINAGE		DRAWN BY: JMW CHECKED BY: CMB REVISION BY: CMB		NO. DATE DESCRIPTION 1 07/2018 SEE LIST OF REVISIONS	
<b>Weaver Consultants Group</b> TPEE REGISTRATION NO. F-3727			WWW.WCGRP.COM		

FIGURE 2.3



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- LEGEND**
- PERMIT BOUNDARY
  - EXPANSION LIMIT OF WASTE
  - STATE PLANE COORDINATE SYSTEM
  - 10000 EXISTING CONTOUR (SEE NOTE 1)
  - 2720 PROPOSED EXCAVATION CONTOUR
  - PHASE BOUNDARY
  - PROPOSED LEACHATE LINE
  - LEACHATE SUMP RISER
  - LEAK DETECTION SUMP RISER
  - PROPOSED SUMP
  - PERIMETER/ACCESS ROAD
  - PIT 12 PHASE 6 DISPOSAL PIT DESIGNATION
  - DRAINAGE CHANNEL
  - AREA WITH INTERMEDIATE COVER (SEE NOTE 4)
  - CLOSED DISPOSAL PITS
  - ▲ INDICATES REVISION (SEE LIST OF REVISIONS)

- NOTES:**
1. EXISTING CONTOURS AND ELEVATIONS DEVELOPED BY METROPOLITAN AERIAL SURVEYS, CO. FROM AERIAL PHOTOGRAPHY FLWV 09-01-2015. ELEVATIONS ARE BASED ON NAVD 89 VERTICAL DATUM. GRID SYSTEM IS TIED TO TEXAS STATE PLANE COORDINATE SYSTEM, ZONE 4203 NAD 83.
  2. PERIMETER DRAINAGE STRUCTURES INCLUDING CHANNELS AND RETENTION POND WILL BE CONSTRUCTED IN PHASES. SURFACE WATER CALCULATIONS FOR EACH PHASE WILL BE MAINTAINED IN THE SITE OPERATING RECORD.
  3. THE DEVELOPMENT SHOWN ON THIS DRAWING SHOWS THE GENERAL SEQUENCE OF FILLING OPERATIONS.
  4. INTERMEDIATE COVER TO BE INSTALLED CONSISTENT WITH SECTION 2.4 IN APPENDIX I.

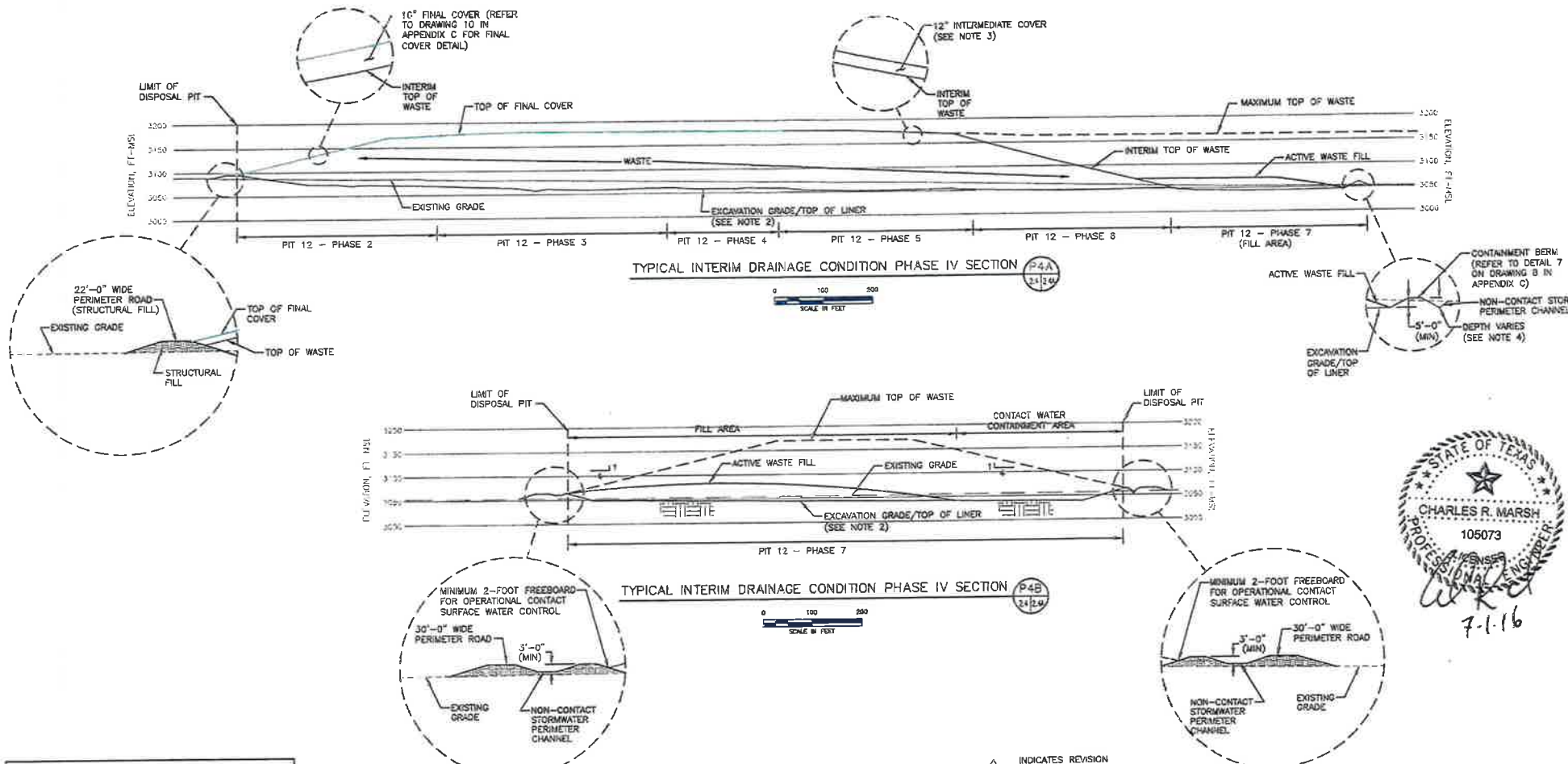
**DISPOSAL PIT CONTAINMENT EXAMPLE CALCULATION**

FILL AREA (FT. <sup>2</sup> )	CONTAINMENT AREA (FT. <sup>2</sup> )	25-YR REQUIRED STORAGE VOLUME (FT. <sup>3</sup> )	25-YR PROVIDED CONTAINMENT VOLUME (FT. <sup>3</sup> )
773,852	100,013	335,078	400,052

- LIST OF REVISIONS:**
1. NEW DRAWING ADDED.

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<input type="checkbox"/> DRAFT <input checked="" type="checkbox"/> FOR PERMITTING PURPOSES ONLY <input type="checkbox"/> ISSUED FOR CONSTRUCTION	PREPARED FOR <b>TERVITA, LLC</b>	<b>TYPICAL INTERIM DRAINAGE CONDITION PHASE IV</b>	
	DATE: 07/2015 FILE: 2008-231-11 CAD: 2.4 INTERIM DRAINAGE.DWG	DRAWN BY: JOM DESIGN BY: MCH CHECKED BY: CSM	NO. DATE 1 07/2015
<b>Weaver Consultants Group</b> TYPE REGISTRATION NO. F-2727		ODESSA TRD FACILITY ECTOR COUNTY, TEXAS	
		<a href="http://WWW.WCCRP.COM">WWW.WCCRP.COM</a>	<b>FIGURE 2.4</b>



MAXIMUM WASTE THICKNESS SUMMARY	
DISPOSAL PIT	MAXIMUM WASTE THICKNESS
PIT 12 - PHASE 1	120 FEET
PIT 12 - PHASE 2	126 FEET
PIT 12 - PHASE 3	121 FEET
PIT 12 - PHASE 4	117 FEET
PIT 12 - PHASE 5	128 FEET
PIT 12 - PHASE 6	128 FEET
PIT 12 - PHASE 7	130 FEET
PIT 12 - PHASE 8	128 FEET

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 BAC OF TEXAS  
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 1:08 PM  
 ALLIANCE

- NOTES:**
- EXISTING CONTOURS AND ELEVATIONS DEVELOPED BY METROPOLITAN AERIAL SURVEYS, CO. FROM AERIAL PHOTOGRAPHY FLWIR 09-01-2015. ELEVATIONS ARE BASED ON NAVD 83 VERTICAL DATUM. GRID SYSTEM IS TIED TO TEXAS STATE PLANE COORDINATE SYSTEM, ZONE 4203 NAD 83.
  - LINER DETAILS ARE INCLUDED ON DRAWINGS 7 THROUGH 9 IN APPENDIX C.
  - INTERMEDIATE COVER TO BE INSTALLED CONSISTENT WITH SECTION 2.4 IN APPENDIX I.
  - PERIMETER DRAINAGE STRUCTURES INCLUDING CHANNELS AND RETENTION POND WILL BE CONSTRUCTED IN PHASES. SURFACE WATER CALCULATIONS FOR EACH PHASE WILL BE MAINTAINED IN THE SITE OPERATING RECORD.

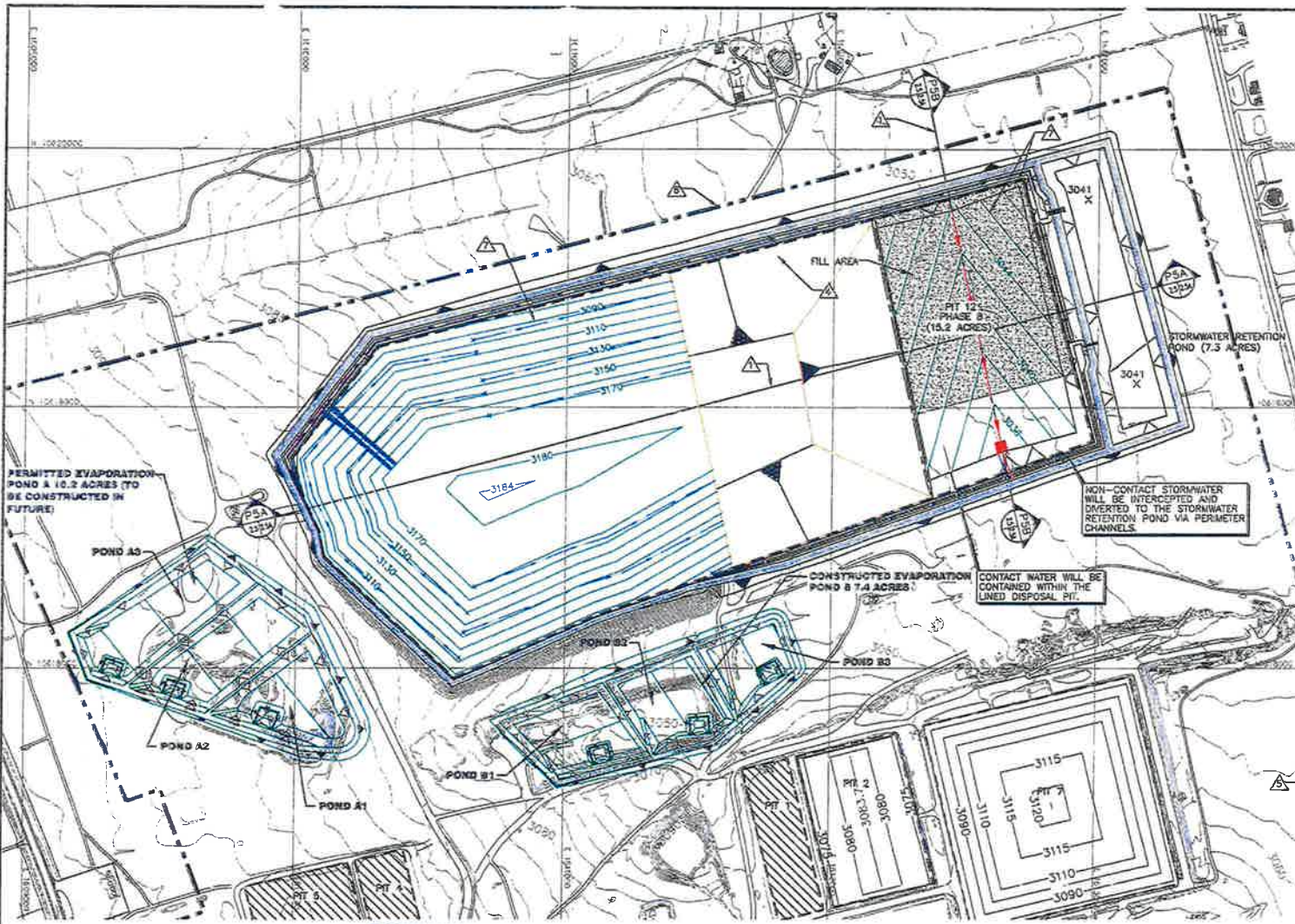
▲ INDICATES REVISION  
 (SEE LIST OF REVISIONS)

- LIST OF REVISIONS:**
- NEW DRAWING ADDED.

STATE OF TEXAS  
 CHARLES R. MARSH  
 PROFESSIONAL ENGINEER  
 105073  
 7-1-16

<input type="checkbox"/> DRAFT <input checked="" type="checkbox"/> FOR PERMITTING PURPOSES ONLY <input type="checkbox"/> ISSUES FOR CONSTRUCTION		PREPARED FOR <b>TERVITA, LLC</b>		<b>TYPICAL INTERIM DRAINAGE                  CONDITION PHASE IV SECTIONS</b>	
DATE: 05/2018 FILE: 2018-05-11 DOC: 2.4A SECTIONS.DWG		DRAWN BY: JMW CHECKED BY: SHM REVIEWED BY: CHN		REVISIONS NO. DATE DESCRIPTION 1 05/2018 SEE LIST OF REVISIONS	
<b>Weaver Consultants Group</b> TCEQ REGISTRATION NO. F-3727			WWW.WCGRP.COM		ODESSA TRD FACILITY ECTOR COUNTY, TEXAS <b>FIGURE 2.4A</b>

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0:50:09 AM 1/21/2016



- LEGEND**
- PERMIT BOUNDARY
  - EXPANSION LIMIT OF WASTE
  - STATE PLANE COORDINATE SYSTEM
  - EXISTING CONTOUR (SEE NOTE 1)
  - PROPOSED EXCAVATION CONTOUR
  - PROPOSED FINAL COVER CONTOUR
  - PHASE BOUNDARY
  - PROPOSED LEACHATE LINE
  - LEACHATE SUMP RISER
  - LEAK DETECTION SUMP RISER
  - PROPOSED SUMP
  - PERIMETER/ACCESS ROAD
  - PIT 12 PHASE 3 DISPOSAL PIT DESIGNATION
  - DRAINAGE CHANNEL
  - PROPOSED DRAINAGE SWALE
  - PROPOSED DRAINAGE CHUTE
  - AREA WITH INTERMEDIATE COVER (SEE NOTE 4)
  - CLOSED DISPOSAL PITS
  - ▲ INDICATES REVISION (SEE LIST OF REVISIONS)

- NOTES:**
- EXISTING CONTOURS AND ELEVATIONS DEVELOPED BY METROPOLITAN AERIAL SURVEYS, CO. FROM AERIAL PHOTOGRAPHY FLOWN 09-01-2015. ELEVATIONS ARE BASED ON NAVD 88 VERTICAL DATUM. GRID SYSTEM IS TIED TO TEXAS STATE PLANE COORDINATE SYSTEM, ZONE 4203 NAD 83.
  - PERIMETER DRAINAGE STRUCTURES INCLUDING CHANNELS AND RETENTION POND WILL BE CONSTRUCTED IN PHASES. SURFACE WATER CALCULATIONS FOR EACH PHASE WILL BE MAINTAINED IN THE SITE OPERATING RECORD.
  - THE DEVELOPMENT SHOWN ON THIS DRAWING SHOWS THE GENERAL SEQUENCE OF FILLING OPERATIONS.
  - INTERMEDIATE COVER TO BE INSTALLED CONSISTENT WITH SECTION 2.4 IN APPENDIX L.

**DISPOSAL PIT CONTAINMENT EXAMPLE CALCULATION**

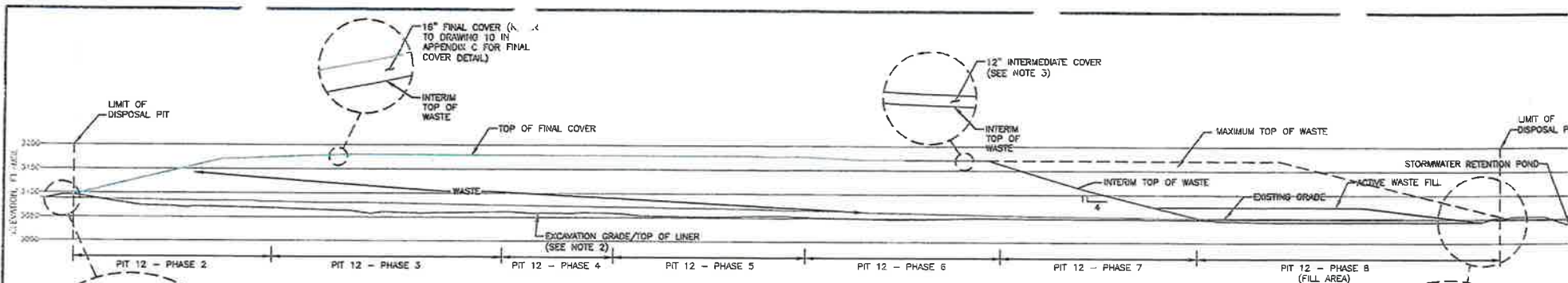
FILL AREA (FT. <sup>2</sup> )	CONTAINMENT AREA (FT. <sup>2</sup> )	25-YR REQUIRED STORAGE VOLUME (FT. <sup>3</sup> )	25-YR PROVIDED CONTAINMENT VOLUME (FT. <sup>3</sup> )
954,451	134,713	413,227	538,852

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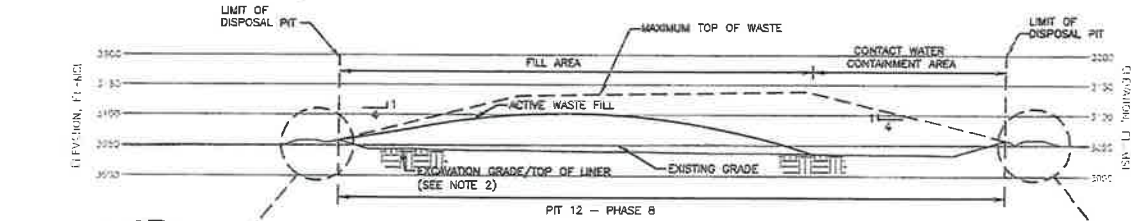
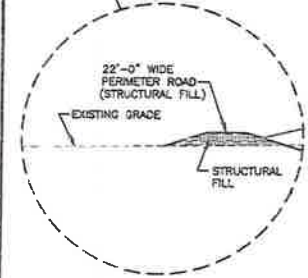
- LIST OF REVISIONS:**
- ADDED SECTION LOCATIONS.
  - RENAMED DRAWING.
  - ADDED EXAMPLE CONTAINMENT CALCULATIONS.
  - ADDED AREA WITH INTERMEDIATE COVER.
  - ADDED NOTE 4.
  - UPDATED PERMIT BOUNDARY.
  - UPDATED LIMIT OF WASTE/FINAL COVER GRADES, AND EXCAVATION GRADES.

<input type="checkbox"/> DRAFT <input checked="" type="checkbox"/> FOR PERMITTING PURPOSES ONLY <input type="checkbox"/> ISSUED FOR CONSTRUCTION	PREPARED FOR <b>TERVITA, LLC</b>	<b>TYPICAL INTERIM DRAINAGE CONDITION PHASE V</b>							
	DATE: 01/20/16 FILE: 5006-25-111 CAD: 2.5 INTERIM DRAINAGE.DWG	DRAWN BY: JCH DESIGN BY: JCH CHECKED BY: JCH	REVISIONS <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>01/20/16</td> <td>SEE LIST OF REVISIONS</td> </tr> </tbody> </table>		NO.	DATE	DESCRIPTION	1	01/20/16
NO.	DATE	DESCRIPTION							
1	01/20/16	SEE LIST OF REVISIONS							
<b>Weaver Consultants Group</b> <small>TIME REGISTRATION NO. F-3727</small>		ODESSA TRD FACILITY ECTOR COUNTY, TEXAS WWW.WCGRP.COM <b>FIGURE 2.5</b>							

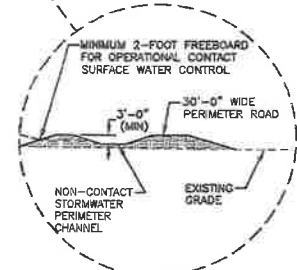
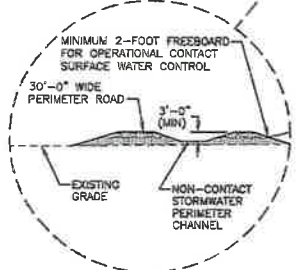
W:\0000\051\PT VISION (2015)\APPENDIX 1\2.5A SECTION5.dwg, Johnson, 12



TYPICAL INTERIM DRAINAGE CONDITION PHASE V SECTION (PSA)



TYPICAL INTERIM DRAINAGE CONDITION PHASE V SECTION (PSB)



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△ INDICATES REVISION  
 (SEE LIST OF REVISIONS)

LIST OF REVISIONS:  
 1. NEW DRAWING ADDED.

MAXIMUM WASTE THICKNESS SUMMARY	
DISPOSAL PIT	MAXIMUM WASTE THICKNESS
PIT 12 - PHASE 1	120 FEET
PIT 12 - PHASE 2	126 FEET
PIT 12 - PHASE 3	121 FEET
PIT 12 - PHASE 4	117 FEET
PIT 12 - PHASE 5	128 FEET
PIT 12 - PHASE 6	129 FEET
PIT 12 - PHASE 7	130 FEET
PIT 12 - PHASE 8	128 FEET

- NOTES:**
- EXISTING CONTOURS AND ELEVATIONS DEVELOPED BY METROPOLITAN AERIAL SURVEYS, CO. FROM AERIAL PHOTOGRAPHY FLOWN 09-01-2015. ELEVATIONS ARE BASED ON NAVD 88 VERTICAL DATUM. GRID SYSTEM IS TIED TO TEXAS STATE PLANE COORDINATE SYSTEM, ZONE 4203 NAD 85.
  - LINER DETAILS ARE INCLUDED ON DRAWINGS 7 THROUGH 9 IN APPENDIX C.
  - INTERMEDIATE COVER TO BE INSTALLED CONSISTENT WITH SECTION 2.4 IN APPENDIX I.
  - PERIMETER DRAINAGE STRUCTURES INCLUDING CHANNELS AND RETENTION POND WILL BE CONSTRUCTED IN PHASES. SURFACE WATER CALCULATIONS FOR EACH PHASE WILL BE MAINTAINED IN THE SITE OPERATING RECORD.

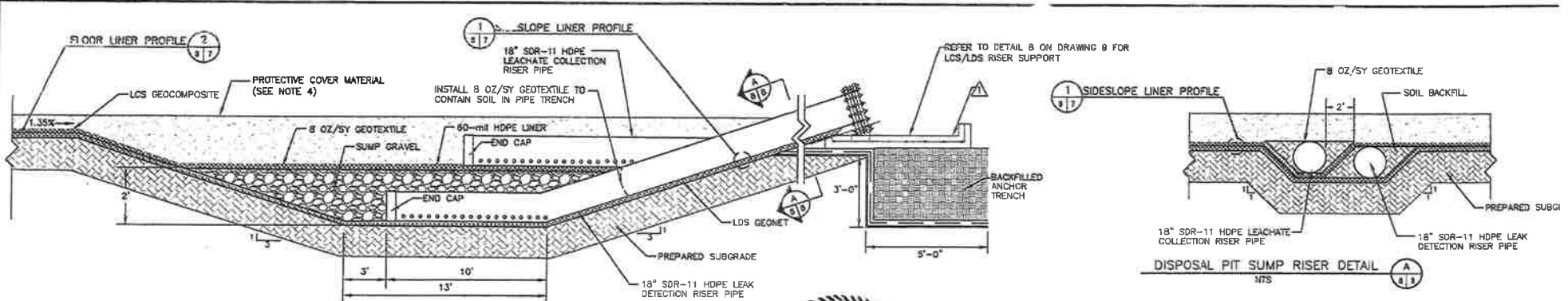
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DATE: 06/20/16 PLOT: 2004-105-11 CDD: 25A SECTION5.DWG	DRAWN BY: JOW CHECKED BY: SHS REVIEWED BY: GJM	NO. 1 DATE 06/20/16 SEE LIST OF REVISIONS	ODESSA TRD FACILITY ECTOR COUNTY, TEXAS		
<b>Weaver Consultants Group</b> TPEE REGISTRATION NO. F-3732		WWW.WCGRP.COM <b>FIGURE 2.5A</b>			



## PERMIT APPENDIX H

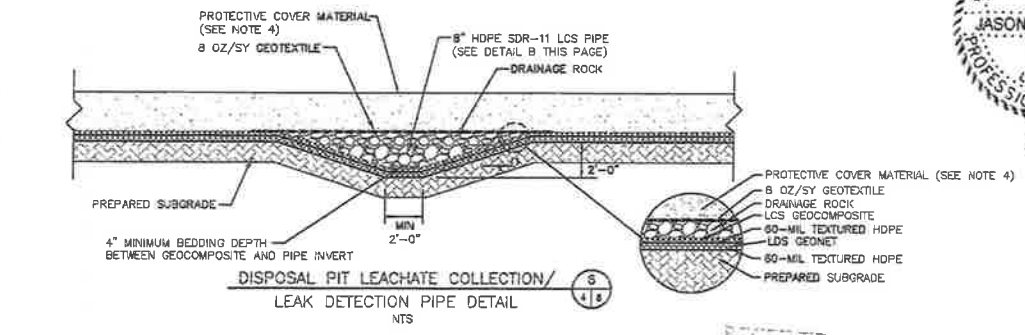
Disposal Pit Liner Details (Drawing 8)

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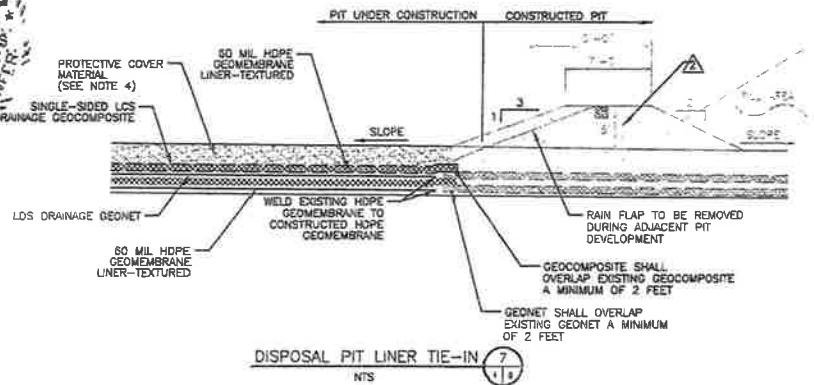


DISPOSAL PIT SUMP SECTION  
NTS

DISPOSAL PIT SUMP RISER DETAIL  
NTS



DISPOSAL PIT LEACHATE COLLECTION/  
LEAK DETECTION PIPE DETAIL  
NTS



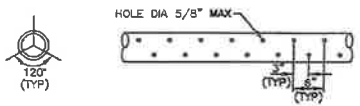
DISPOSAL PIT LINER TIE-IN  
NTS

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ACT. OF TEXAS  
07/03/14  
O & G  
AUSTIN, TX

LEAK DETECTION SYSTEM ACTION LIMITS

DISPOSAL PIT	AREA	ACTION LIMIT (GAL/DAY)
PIT 12 - PHASE 1	8.9 ACRES	890
PIT 12 - PHASE 2	6.5 ACRES	650
PIT 12 - PHASE 3	6.9 ACRES	690
PIT 12 - PHASE 4	5.2 ACRES	520
PIT 12 - PHASE 5	10.8 ACRES	1,080
PIT 12 - PHASE 6	10.5 ACRES	1,050
PIT 12 - PHASE 7	10.3 ACRES	1,030
PIT 12 - PHASE 8	15.2 ACRES	1,520

- NOTES:
- SUMP PUMPS WILL BE AVAILABLE TO EVACUATE LEAK IN SUMPS.
  - WHERE GEOCOMPOSITE MEETS 8 OZ/SY GEOTEXTILE IN SUMP BOTTOM, OVERLAP GEOCOMPOSITE A MINIMUM OF 2' ON TOP OF 8 OZ/SY GEOTEXTILE.
  - INSIDE OF SUMP RISER PIPE TO BE DEBEADED.
  - PROTECTIVE COVER MATERIAL MAY CONSIST OF 8-INCHES OF SOIL (RANGING FROM ON-SITE SOIL TO DRAINAGE AGGREGATE) OF 2 FEET OF WASTE THAT DOES NOT CONTAIN ANY DELETERIOUS MATERIAL CAPABLE OF DAMAGING THE UNDERLYING GEOSYNTHETICS.



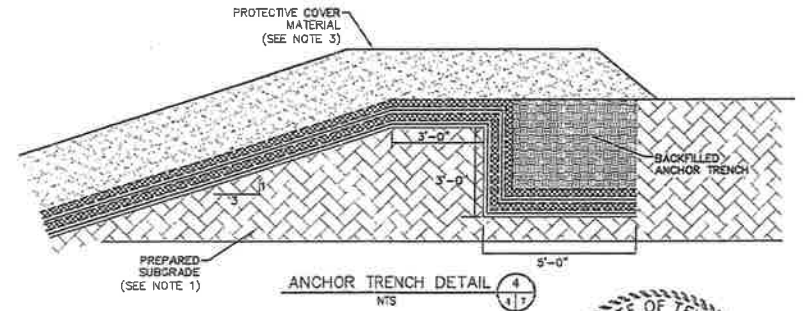
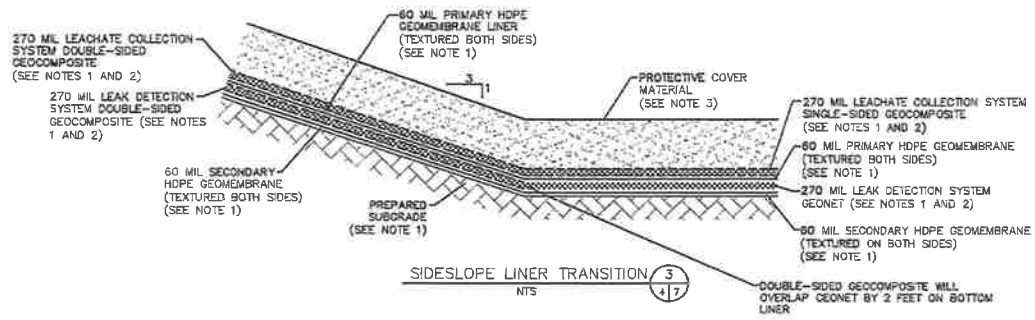
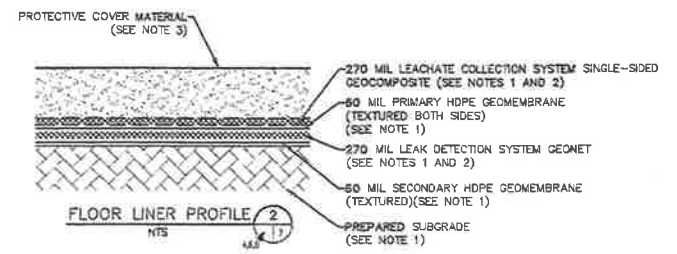
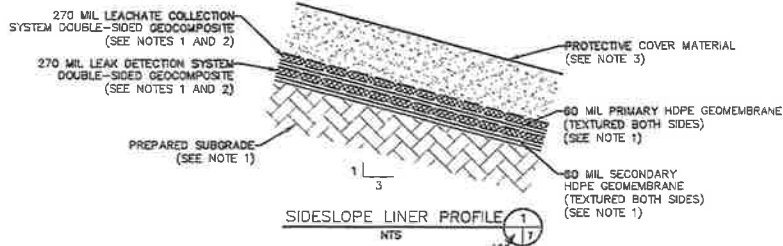
PERFORATED PIPE  
NTS

- LIST OF REVISIONS:
- REVISED LCS/LDS RISER SUPPORT DETAIL.
  - INCREASED BERM HEIGHT.
  - UPDATED TABLE.

<input type="checkbox"/> DRAFT	PROJECT FOR	TERVITA, LLC	REVISIONS	
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<input type="checkbox"/> ISSUED FOR CONSTRUCTION				
DATE: 02/23/18	DRAWN BY: JCH			
FILE: 0120-104-11	DESIGN BY: GAE			
DWG: 8-00145L08	REVISION BY: JCH	1	07/2018	SEE LIST OF REVISIONS
<b>Weaver Consultants Group</b>				
TYPE REGISTRATION NO. F-3727				
		<b>DISPOSAL PIT LINER DETAILS</b>		
		ODESSA TRD FACILITY ECTOR COUNTY, TEXAS		
		WWW.WCGRP.COM   DRAWING 8		

# PERMIT APPENDIX I

Disposal Pit Liner Details (Drawing 7)



- NOTES:**
- SUBGRADE PREPARATION AND INSTALLATION OF PRIMARY/SECONDARY GEOMEMBRANE LINER, LEACHATE COLLECTION SYSTEM, LEAK DETECTION SYSTEM, AND STRUCTURAL FILL WILL BE IN ACCORDANCE WITH APPENDIX G-LINER CONSTRUCTION QUALITY ASSURANCE PLAN. CONSTRUCTION QUALITY ASSURANCE DOCUMENTATION FOR THE AS-BUILT LINER SYSTEM WILL BE MAINTAINED IN THE FACILITY'S SITE OPERATING RECORD.
  - DESIGN INFORMATION FOR THE LEACHATE COLLECTION SYSTEM (LCS) COMPONENTS AND LEAK DETECTION SYSTEM (LDS) COMPONENTS ARE INCLUDED IN APPENDIX E-DISPOSAL PIT CONTAINMENT SYSTEM DESIGN. THE GEOCOMPOSITE FOR THE LCS CONSISTS OF A 270-MIL GEONET WITH A 6 OZ/SY GEOTEXTILE HEAT BONDED ON THE TOP SIDE FOR BOTTOM LINER AND HEAT BONDED ON BOTH SIDES FOR 3H:1V SIDESLOPES. THE LDS CONSISTS OF A 270-MIL GEONET FOR BOTTOM LINER AND GEOCOMPOSITE WITH 270-MIL GEONET WITH A 6 OZ/SY GEOTEXTILE HEAT BONDED ON BOTH SIDES FOR 3H:1V SIDESLOPES.
  - PROTECTIVE COVER MATERIAL MAY CONSIST OF 8-INCHES OF SOIL (RANGING FROM ON-SITE SOIL TO DRAINAGE AGGREGATE) OR 2 FEET OF WASTE THAT DOES NOT CONTAIN ANY DELETERIOUS MATERIAL CAPABLE OF DAMAGING THE UNDERLYING GEOSYNTHETICS.

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<input type="checkbox"/> DRAFT <input type="checkbox"/> FOR PERMITTING PURPOSES ONLY <input type="checkbox"/> ISSUED FOR CONSTRUCTION	PREPARED FOR <b>TERVITA, LLC</b>	<b>DISPOSAL PIT LINER DETAILS</b>  ODESSA TRD FACILITY ECTOR COUNTY, TEXAS					
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NO.	DATE	DESCRIPTION					
<b>Weaver Consultants Group</b> TExAS REGISTRATION NO. F-3737		WWW.WCGRP.COM   DRAWING 7					

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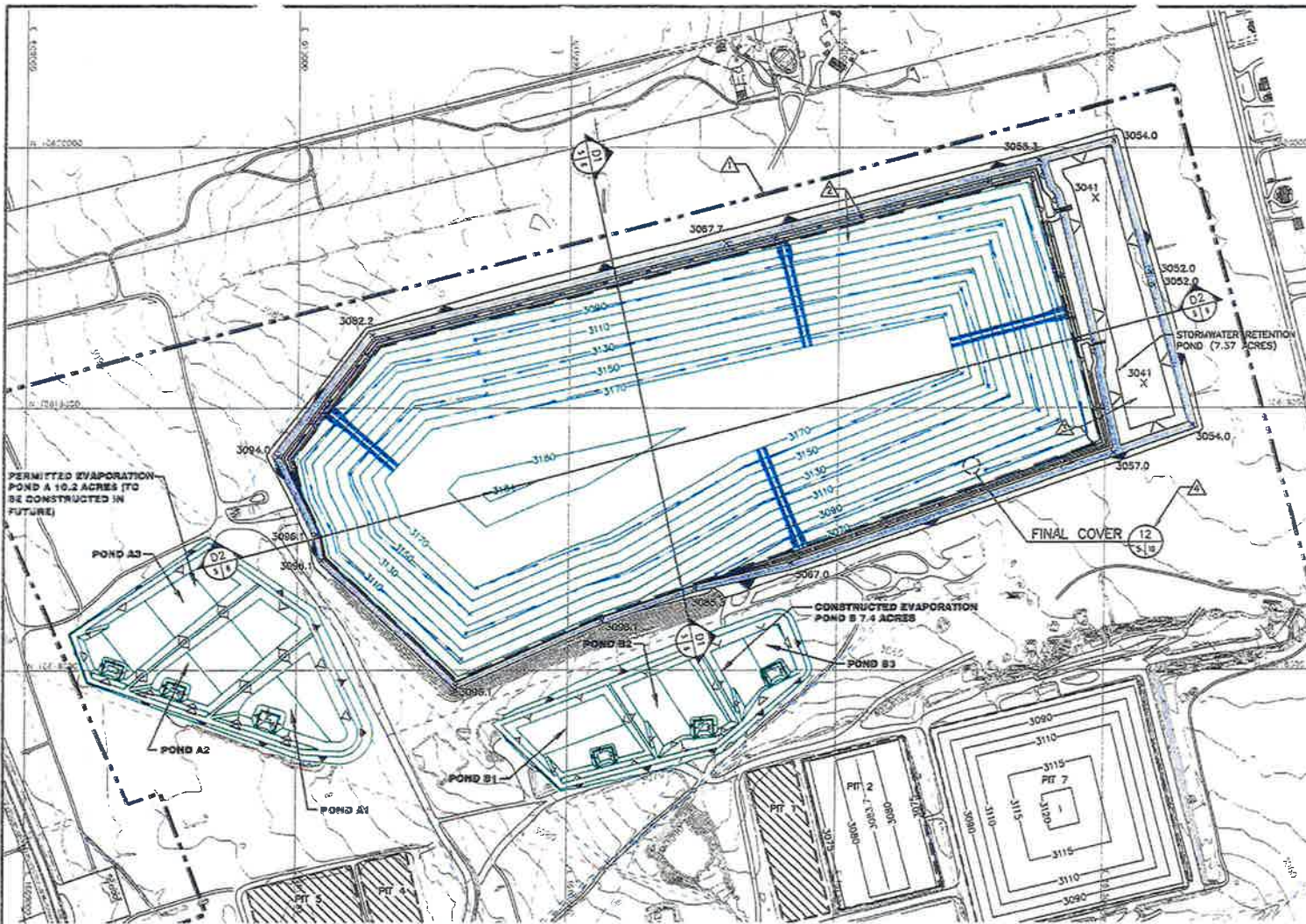
## PERMIT APPENDIX J

Disposal Pit Final Cover Plan (Drawing 5)

Disposal Pit Cross Sections (Drawing 6)

Disposal Pit Final Cover Details (Drawing 10)

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- LEGEND**
- PERMIT BOUNDARY
  - EXPANSION AREA LIMIT OF WASTE
  - STATE PLANE COORDINATE SYSTEM
  - EXISTING CONTOUR (SEE NOTE 1)
  - EXISTING PIPELINE EASEMENT (SEE NOTE 2)
  - EXISTING ELECTRICAL EASEMENT (SEE NOTE 2)
  - 2780 PROPOSED FINAL COVER CONTOUR
  - 3110 PERMITTED FINAL COVER CONTOUR
  - DRAINAGE CHANNEL
  - PERIMETER/ACCESS ROAD
  - DRAINAGE SWALE
  - DRAINAGE CHUTE
  - CLOSED DISPOSAL PITS
  - △ INDICATES REVISION (SEE LIST OF REVISIONS)

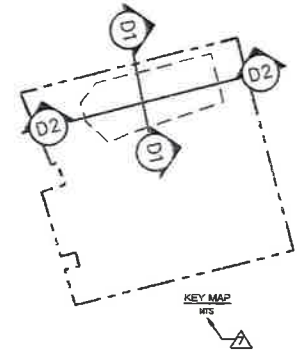
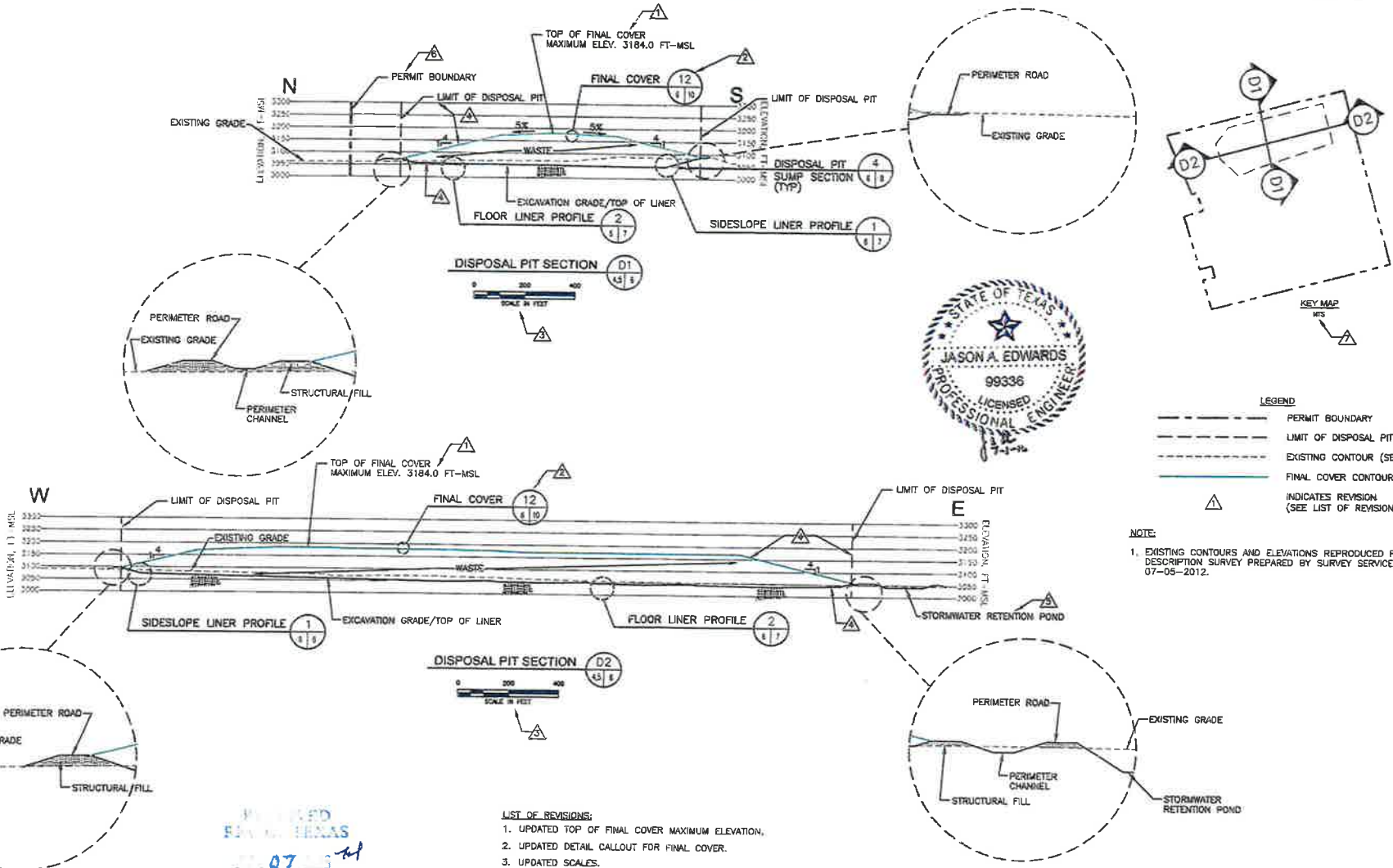
- NOTES:**
- EXISTING CONTOURS AND ELEVATIONS DEVELOPED BY METROPOLITAN AERIAL SURVEYS, CO FROM AERIAL PHOTOGRAPHY FLOWN 09-01-2015. ELEVATIONS ARE BASED ON NAVD 88 VERTICAL DATUM. GRID SYSTEM IS TIED TO TEXAS STATE PLANE COORDINATE SYSTEM, ZONE 4203 NAD 83.
  - PIPELINE AND ELECTRICAL LOCATIONS REPRODUCED FROM JANUARY 2012 SURVEY DRAWING PREPARED BY STARK SURVEYING, LLC FOR SOUTHWEST DISPOSAL SERVICES, INC.
  - DISPOSAL PIT CONTAINMENT SYSTEM DESIGN IS PROVIDED IN APPENDIX E.
  - FINAL COVER CONSTRUCTION QUALITY ASSURANCE PLAN IS PROVIDED IN APPENDIX H.
  - SURFACE WATER MANAGEMENT SYSTEM DESIGN INFORMATION IS PROVIDED IN APPENDIX I.

- LIST OF REVISIONS:**
- UPDATED PERMIT BOUNDARY.
  - UPDATED LIMIT OF WASTE AND CORRESPONDING PIT AREAS WITHIN LIMIT OF WASTE AND FINAL COVER GRADES.
  - UPDATED LOCATION OF STORMWATER RETENTION POND AND EXTENDED PERIMETER DRAINAGE SYSTEM.
  - UPDATED DETAIL CALLOUT FOR FINAL COVER.

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<input type="checkbox"/> DRAFT <input checked="" type="checkbox"/> FOR PERMITTING PURPOSES ONLY <input type="checkbox"/> ISSUED FOR CONSTRUCTION		PREPARED FOR <b>TERVITA, LLC</b>		<b>DISPOSAL PIT FINAL COVER PLAN</b>							
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1	02/2018	SEE LIST OF REVISIONS									
<b>Weaver Consultants Group</b> TSP# REGISTRATION NO. #-2727				ODESSA TRD FACILITY ECTOR COUNTY, TEXAS WWW.WCCRP.COM      DRAWING 5							

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- LEGEND**
- PERMIT BOUNDARY
  - LIMIT OF DISPOSAL PIT
  - - - - - EXISTING CONTOUR (SEE NOTE 1)
  - FINAL COVER CONTOUR
  - △ INDICATES REVISION (SEE LIST OF REVISIONS)

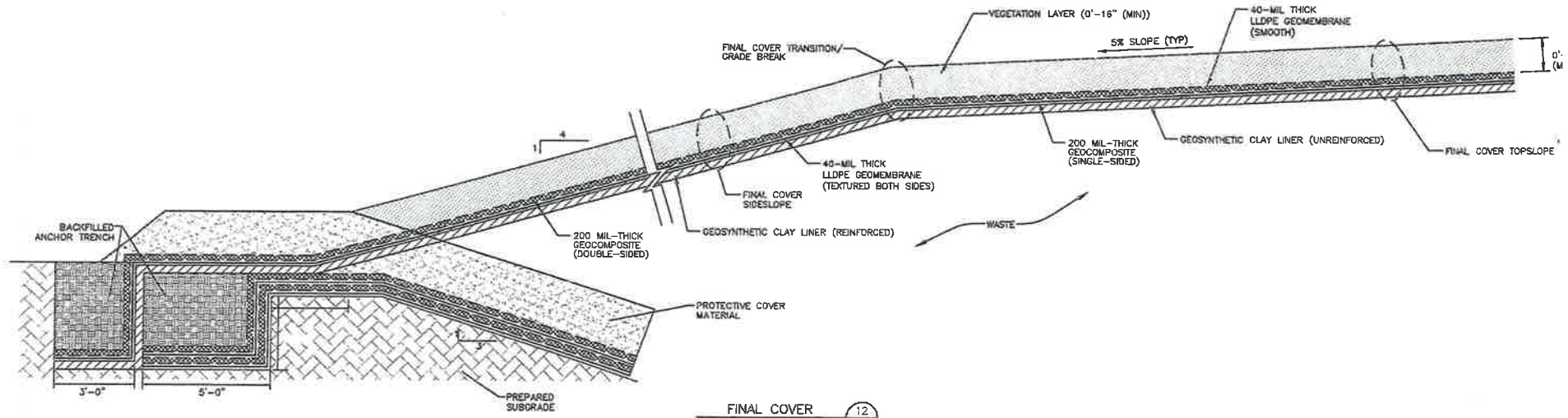
**NOTE:**  
 1. EXISTING CONTOURS AND ELEVATIONS REPRODUCED FROM LEGAL DESCRIPTION SURVEY PREPARED BY SURVEY SERVICES, INC. ON 07-05-2012.

- LIST OF REVISIONS:**
1. UPDATED TOP OF FINAL COVER MAXIMUM ELEVATION.
  2. UPDATED DETAIL CALLOUT FOR FINAL COVER.
  3. UPDATED SCALES.
  4. UPDATED LIMIT OF DISPOSAL PIT, FINAL COVER GRADES, AND EXCAVATION GRADES.
  5. UPDATED LOCATION OF STORMWATER RETENTION POND.
  6. ADDED PERMIT BOUNDARY.
  7. UPDATED KEY MAP.

APPROVED  
 JASON A. EDWARDS  
 07/23/16

<input type="checkbox"/> DRAFT <input type="checkbox"/> FOR PERMITTING PURPOSES ONLY <input checked="" type="checkbox"/> ISSUED FOR CONSTRUCTION	PREPARED FOR <b>TERVITA, LLC</b>		<b>DISPOSAL PIT CROSS SECTIONS</b>							
	ODESSA TRD FACILITY ECTOR COUNTY, TEXAS									
DATE: 02/2016 FILE: 111616-111 DSD: 4-RECCOLONG	DRAWN BY: JAW CHECKED BY: SAE REVISIONS BY: JPY	REVISIONS <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>06/2016</td> <td>SEE LIST OF REVISIONS</td> </tr> </tbody> </table>			NO.	DATE	DESCRIPTION	1	06/2016	SEE LIST OF REVISIONS
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<b>Weaver Consultants Group</b> TWC# REGISTRATION NO. F-3727		WWW.WCGRP.COM   DRAWING 6								

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FINAL COVER (SEE NOTE 1 AND 2) 12  
SCALE IN FEET



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07/25/16  
JACB

INDICATES REVISION (SEE LIST OF REVISIONS)

- LIST OF REVISIONS:  
1. NEW DRAWING ADDED.

- NOTES:  
1. CONSTRUCTION QUALITY ASSURANCE PROCEDURES FOR WATER BALANCE FINAL COVER CONSTRUCTION IS INCLUDED IN APPENDIX H.  
2. REFER TO DRAWING 10A FOR WATER BALANCE FINAL COVER OPTION.

<input type="checkbox"/> DRAFT <input checked="" type="checkbox"/> FOR PERMITTING PURPOSES ONLY <input type="checkbox"/> ISSUED FOR CONSTRUCTION		PREPARED FOR <b>TERVITA, LLC</b>		<b>DISPOSAL PIT FINAL COVER DETAILS</b>							
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1	07/2016	SEE LIST OF REVISIONS									
<b>Weaver Consultants Group</b> TPEE REGISTRATION NO. F-3727				ODESSA TRD FACILITY ECTOR COUNTY, TEXAS WWW.WCGRP.COM      DRAWING 10							



## PERMIT APPENDIX K

Stormwater Drainage Plan (Figure 1)

Proposed Drainage Conditions (Drawing I-2)

Closure Drainage Details (Drawing I-3)

Drainage Channel Sections (Drawing I-4)

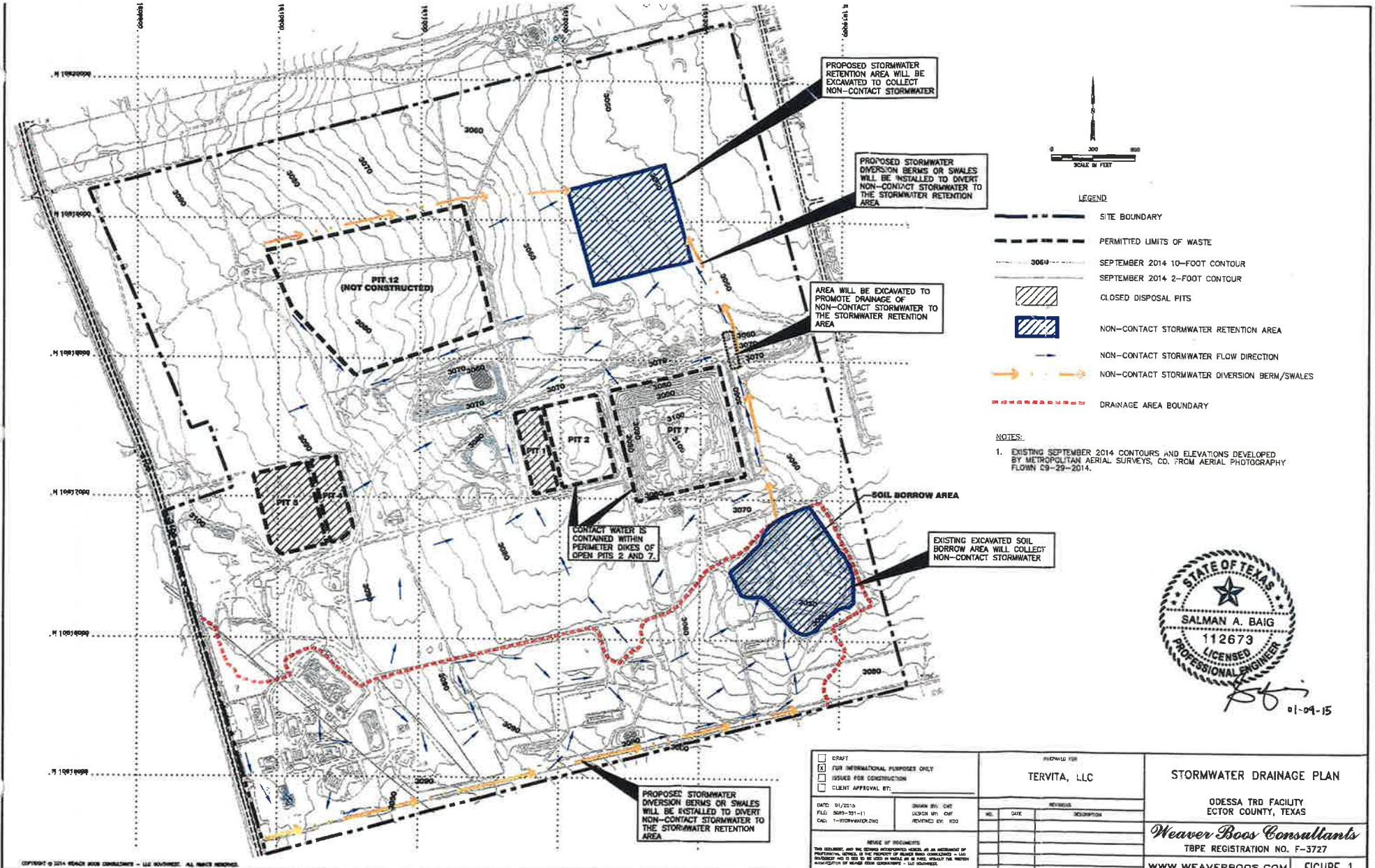
Stormwater Pond Section (Drawing I-5)

North Perimeter Channel Profile (Drawing I-6)

South Perimeter Channel Profile (Drawing I-7)

South Culvert Cross Sections (Drawing I-8)

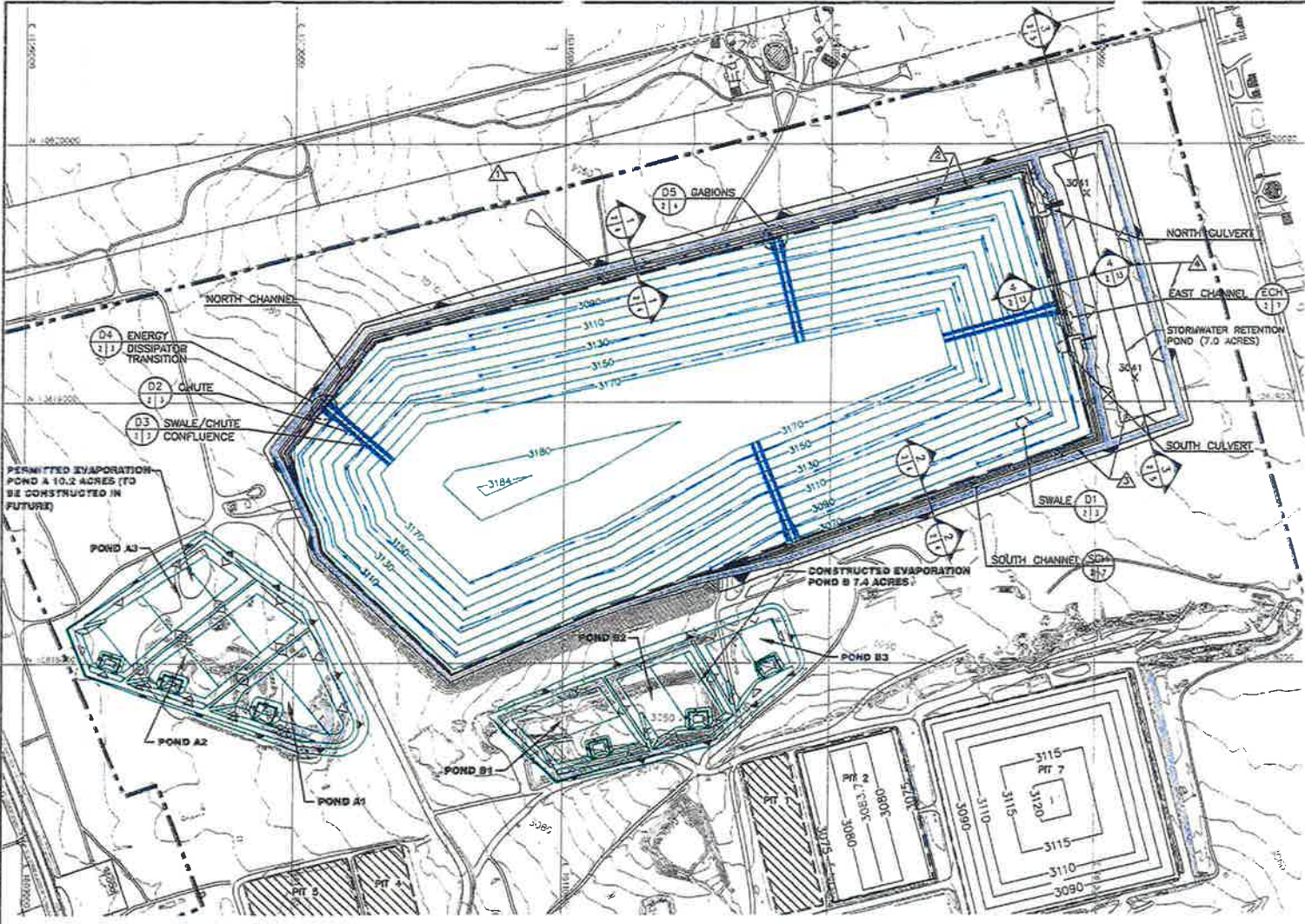
North Culvert Cross Sections (Drawing I-9)



*SB*  
01-04-15

<input type="checkbox"/> DRAFT <input checked="" type="checkbox"/> FOR INFORMATIONAL PURPOSES ONLY <input type="checkbox"/> ISSUES FOR CONSTRUCTION <input type="checkbox"/> CLIENT APPROVAL ET.	PREPARED FOR <b>TERVITA, LLC</b>	<b>STORMWATER DRAINAGE PLAN</b>  ODESSA TRD FACILITY ECTOR COUNTY, TEXAS  <i>Weaver Boos Consultants</i> TBPE REGISTRATION NO. F-3727 WWW.WEAVERBOOS.COM												
	DATE: 01/22/15 FILE: 3089-101-11 CDR: T-STORMWATER.DWG		DESIGN BY: CHE DESIGN BY: CHE REVIEWED BY: KDD											
NOTICE OF RECORDS THIS DRAWING AND THE DESIGN ACCOMPANYING HEREON ARE AN INSTRUMENT OF PROFESSIONAL SERVICE AS THE PROPERTY OF WEAVER BOOS CONSULTANTS - L.L.C. AND SHALL NOT BE USED IN WHOLE OR IN PART, WITHOUT THE WRITTEN AUTHORIZATION OF WEAVER BOOS CONSULTANTS - L.L.C.		REVISIONS <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NO.	DATE	DESCRIPTION									
NO.	DATE	DESCRIPTION												
FIGURE 1														

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SCALE IN FEET

**LEGEND**

- PERMIT BOUNDARY
- EXPANSION AREA LIMIT OF WASTE
- STATE PLANE COORDINATE SYSTEM
- 2670 EXISTING CONTOUR (SEE NOTE 1)
- 2760 PROPOSED FINAL COVER CONTOUR
- 3110 PERMITTED FINAL COVER CONTOUR
- DRAINAGE CHANNEL
- PERIMETER/ACCESS ROAD
- DRAINAGE SWALE
- DRAINAGE CHUTE
- CLOSED DISPOSAL PITS
- GABIONS
- INDICATES REVISION (SEE LIST OF REVISIONS)

**NOTES:**

- EXISTING CONTOURS AND ELEVATIONS DEVELOPED BY METROPOLITAN AERIAL SURVEYS. CO. FROM AERIAL PHOTOGRAPHY FLOWN 09-01-2015. ELEVATIONS ARE BASED ON NAVD 88 VERTICAL DATUM. GRID SYSTEM IS TIED TO TEXAS STATE PLANE COORDINATE SYSTEM, ZONE 4203 NAD 83.



- LIST OF REVISIONS:**
- UPDATED PERMIT BOUNDARY.
  - UPDATED LIMIT OF WASTE AND FINAL COVER GRADES.
  - UPDATED LOCATION OF STORMWATER RETENTION POND AND EXTENDED PERIMETER DRAINAGE SYSTEM.
  - ADDED EAST CHANNEL SECTIONS.

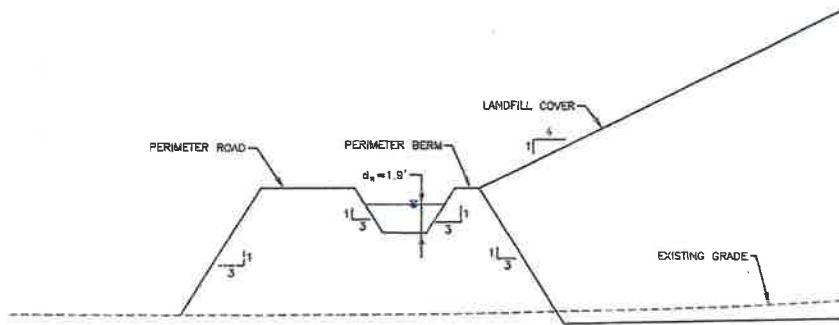
PROPOSED  
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 JAST

<input type="checkbox"/> DRAFT <input checked="" type="checkbox"/> FOR PERMITTING PURPOSES ONLY <input type="checkbox"/> ISSUES FOR CONSTRUCTION	PREPARED FOR <b>TERVITA, LLC</b>	<b>PROPOSED DRAINAGE STRUCTURE PLAN</b>						
DATE: 02/2016 FILE: 010-020-11 QD: 1-1 CHANGE.DWG	DRAWN BY: JAV CHECKED BY: JAV REVIEWED BY: JAV	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">NO.</th> <th style="width: 10%;">DATE</th> <th style="width: 80%;">DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>07/2016</td> <td>SEE LIST OF REVISIONS</td> </tr> </tbody> </table>	NO.	DATE	DESCRIPTION	1	07/2016	SEE LIST OF REVISIONS
NO.	DATE	DESCRIPTION						
1	07/2016	SEE LIST OF REVISIONS						
 WEVER CONSULTANTS GROUP <small>TEXAS REGISTRATION NO. F-3727</small>	ODESSA TRD FACILITY ECTOR COUNTY, TEXAS							
		WWW.WCCRP.COM      DRAWING 1-2						

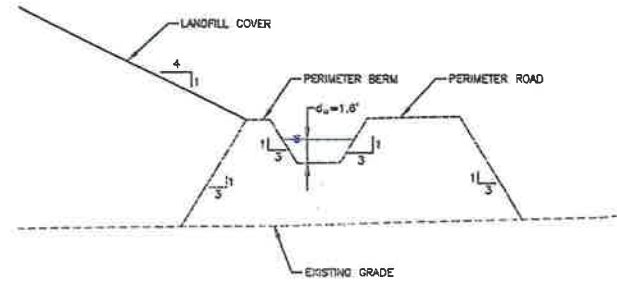
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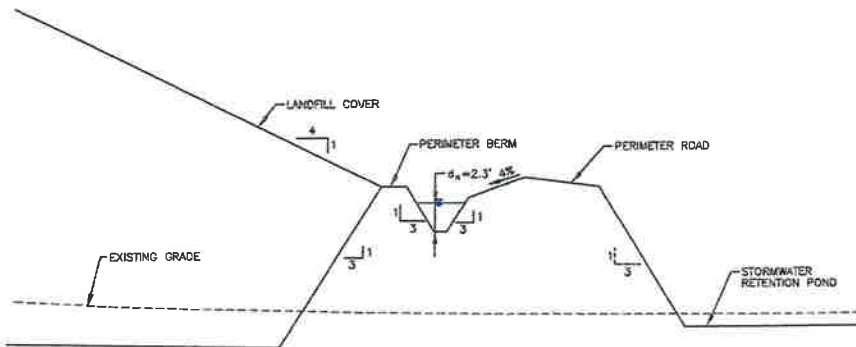
D:\vms\1351\1351\_VTE ABBISON (0415) APPROPRIATE IV-4 DRAINAGE CHANNEL SECTIONS.dwg, pmlsun, 1:2



**NORTH CHANNEL** (1)  
 0 20 40  
 HORIZONTAL SCALE IN FEET  
 0 10 20  
 VERTICAL SCALE IN FEET



**SOUTH CHANNEL** (2)  
 0 20 40  
 HORIZONTAL SCALE IN FEET  
 0 10 20  
 VERTICAL SCALE IN FEET



**EAST CHANNEL** (4)  
 0 20 40  
 HORIZONTAL SCALE IN FEET  
 0 10 20  
 VERTICAL SCALE IN FEET

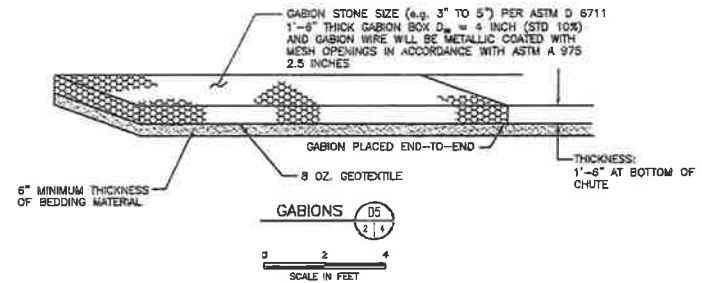
RECEIVED  
 P.E. OF TEXAS  
 JUL 07 2016  
 DWS  
 ABBISON

**NOTE:**

- EXISTING CONTOURS AND ELEVATIONS DEVELOPED BY METROPOLITAN AERIAL SURVEYS, CO. FROM AERIAL PHOTOGRAPHY FLOWN 09-01-2015. ELEVATIONS ARE BASED ON NAVD 88 VERTICAL DATUM. GRID SYSTEM IS TIED TO TEXAS STATE PLANE COORDINATE SYSTEM, ZONE 4203 NAD 83.

INDICATES REVISION (SEE LIST OF REVISIONS)

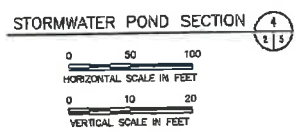
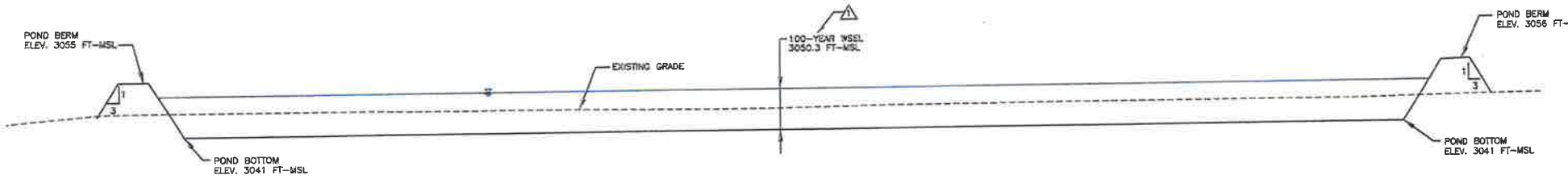
- LIST OF REVISIONS:**
- ADDED EAST CHANNEL INFORMATION.



**GABIONS** (05)  
 0 2 4  
 SCALE IN FEET

<input type="checkbox"/> DRAFT <input type="checkbox"/> FOR PERMITTING PURPOSES ONLY <input type="checkbox"/> ISSUED FOR CONSTRUCTION	PREPARED FOR <b>TERVITA, LLC</b>		<b>DRAINAGE CHANNEL SECTIONS</b>
	SHEET: 24/2014 FILE: 1125-712-11 DATE: 11-14-2014 DRAINAGE CHANNEL SECTIONS		
DRAWN BY: JOW DESIGN BY: TM CHECKED BY: JSM	REVISIONS		ODESSA TRD FACILITY ECTOR COUNTY, TEXAS
	NO. 1 DATE: 07/2016	DESCRIPTION SEE LIST OF REVISIONS	
<b>Weaver Consultants Group</b> TPEE REGISTRATION NO. 7-3727			WWW.WCGRP.COM DRAWING 1-4

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**NOTE:**  
 1. EXISTING CONTOURS AND ELEVATIONS DEVELOPED BY METROPOLITAN AERIAL SURVEYS, CO. FROM AERIAL PHOTOGRAPHY FLOWN 09-01-2015. ELEVATIONS ARE BASED ON NAVD 83 VERTICAL DATUM. GRID SYSTEM IS TIED TO TEXAS STATE PLANE COORDINATE SYSTEM, ZONE 4203 NAD 83.



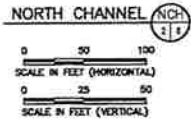
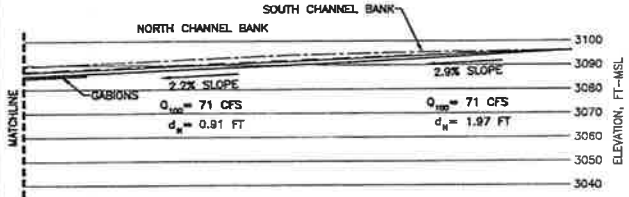
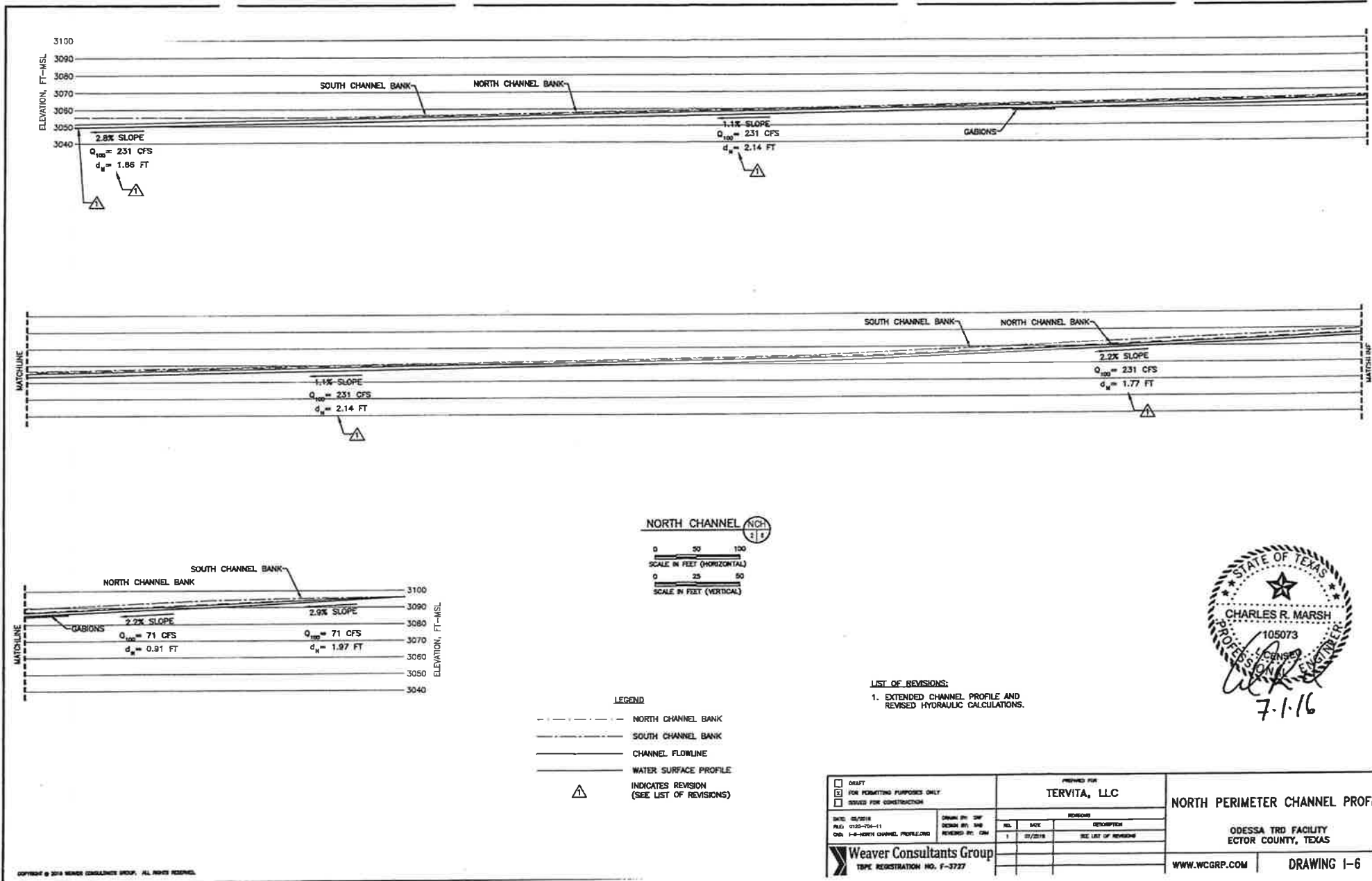
△ INDICATES REVISION  
 (SEE LIST OF REVISIONS)

**LIST OF REVISIONS:**  
 1. REVISED 100-YEAR WATER SURFACE IN POND.

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DATE: 07/2018 FILE: 2100-712-11 SHEET: 1-3-POND SECTION(S)		ORDER BY: JON QUOTE BY: TM PURCH BY: GJM		REVISIONS <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>07/2018</td> <td>SEE LIST OF REVISIONS</td> </tr> </tbody> </table>		NO.	DATE	DESCRIPTION	1	07/2018	SEE LIST OF REVISIONS
NO.	DATE	DESCRIPTION									
1	07/2018	SEE LIST OF REVISIONS									
<b>Weaver Consultants Group</b> TYPE REGISTRATION NO. F-3727				ODESSA TRD FACILITY ECTOR COUNTY, TEXAS							
				WWW.WCGRP.COM   DRAWING I-5							

D:\0601\0301\PT ANSDOR (0301)\APPENDIX I-5-DRAINAGE CHANNEL SECTION.dwg, Jellison, L2

C:\data\usa\pvt ANSON (2015)\APPENDIX 1\1-6-NORTH CHANNEL PROFILE.dwg, July 16, 12



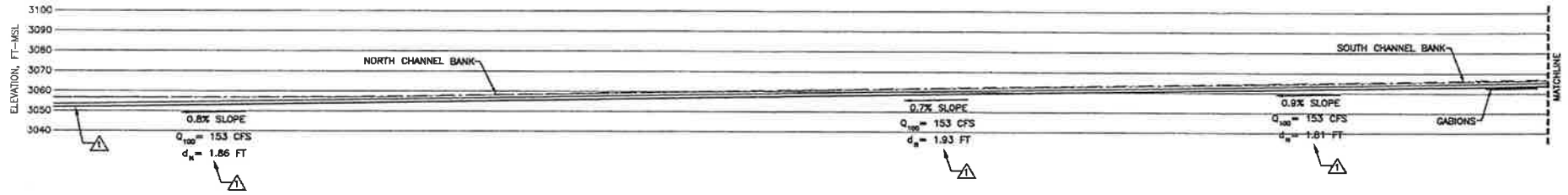
- LEGEND**
- NORTH CHANNEL BANK
  - SOUTH CHANNEL BANK
  - CHANNEL FLOWLINE
  - WATER SURFACE PROFILE
  - △ INDICATES REVISION (SEE LIST OF REVISIONS)

- LIST OF REVISIONS:**
- EXTENDED CHANNEL PROFILE AND REVISED HYDRAULIC CALCULATIONS.

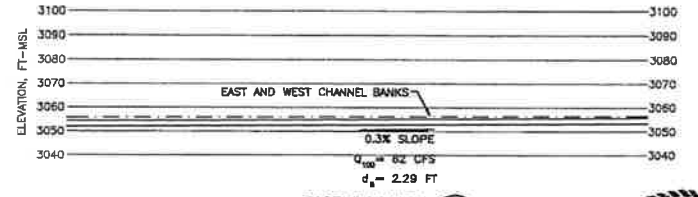
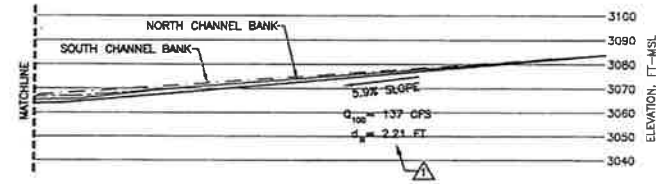
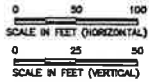


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	DATE: 05/2018 FILED: 030-704-11 CD: 1-6-NORTH CHANNEL PROFILE.DWG		
DRAWN BY: DMF DESIGN BY: DMF REVISION BY: DMF	REVISIONS		WWW.WCGRP.COM   DRAWING 1-6
	NO. 1 DATE: 07/2018	DESCRIPTION SEE LIST OF REVISIONS	
<b>Weaver Consultants Group</b> TSPC REGISTRATION NO. F-3727			

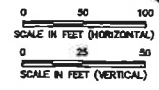
C:\PROGRA~1\WEAVER\PROJECTS\13-7-SOUTH CHANNEL PROFILE.dwg, July 16, 2016



**SOUTH CHANNEL (SCH 17)**



**EAST CHANNEL (ECH 17)**



**LEGEND**

- NORTH/EAST CHANNEL BANK
- SOUTH/WEST CHANNEL BANK
- CHANNEL FLOWLINE
- WATER SURFACE PROFILE
- △ INDICATES REVISION (SEE LIST OF REVISIONS)

**LIST OF REVISIONS:**

1. EXTENDED CHANNEL PROFILE AND REVISED HYDRAULIC CALCULATIONS.
2. ADDED EAST CHANNEL INFORMATION.

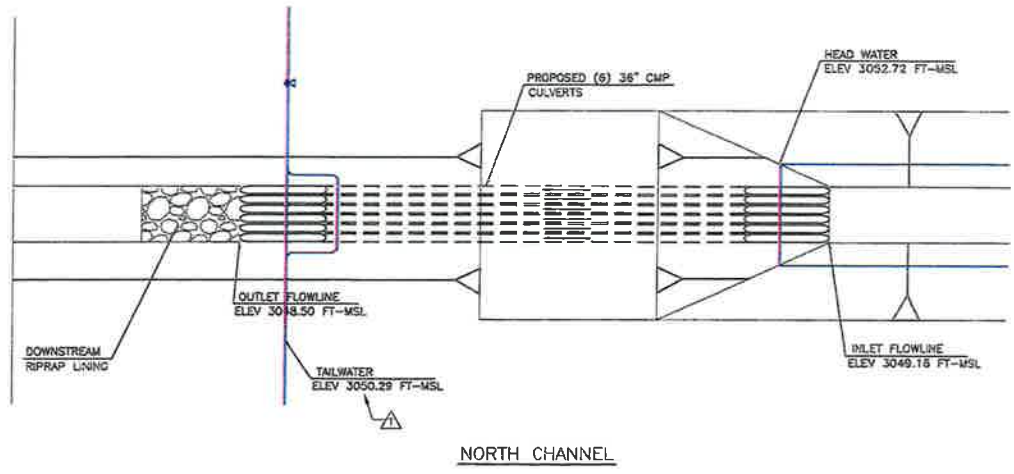
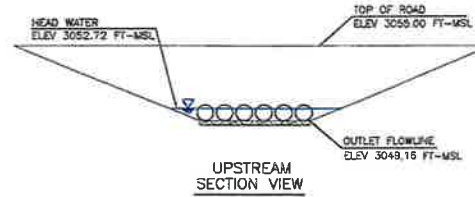
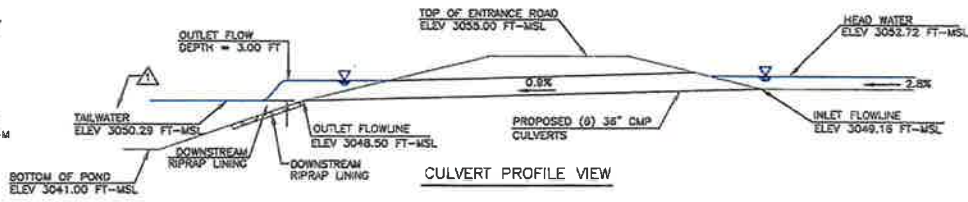
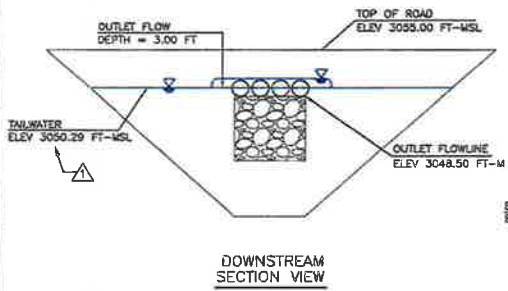


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	REVISIONS		
DATE: 02/2016 FILE: 13-7-SOUTH CHANNEL PROFILE.DWG CDR: 1-3-SOUTH CHANNEL PROFILE.DWG	DRAWN BY: DWF CHECK BY: DSB REVISION BY: DWF	NO. 1 DATE 02/2016 DESCRIPTION SEE LIST OF REVISIONS	www.wcgrp.com DRAWING 1-7
<b>Weaver Consultants Group</b> TYPE REGISTRATION NO. F-3727			





MISSION (2015)APPENDIX IV-4-NORTH CULVERT SECTION.dwg, InVision, L2



- LEGEND**
- FLOW DIRECTION
  - RIPRAP
  - DESIGN WATER SURFACE
  - INDICATES REVISION (SEE LIST OF REVISIONS)

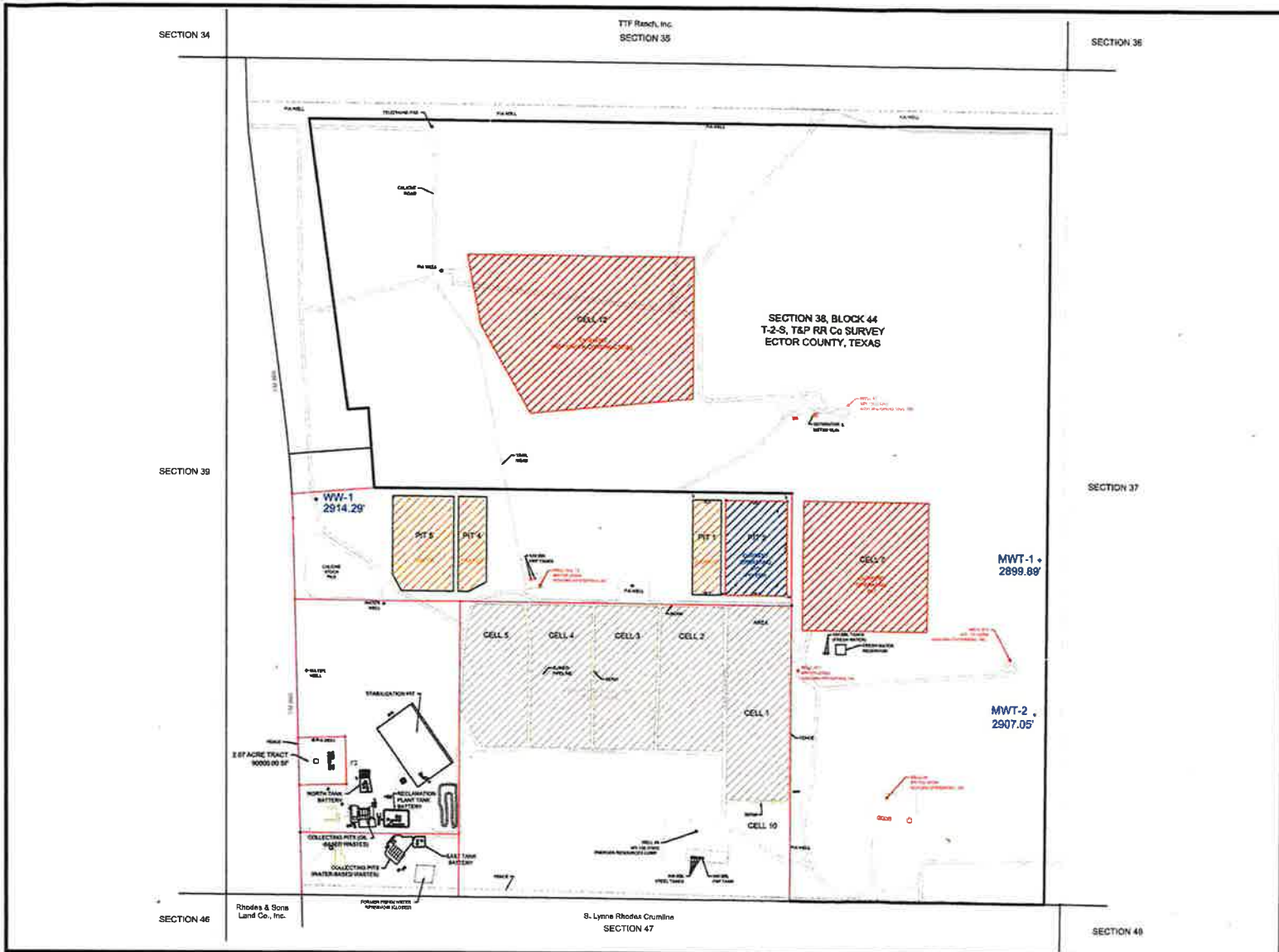
- LIST OF REVISIONS:**
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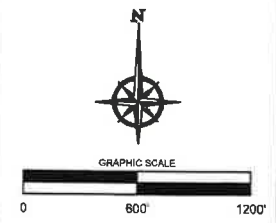
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	DATE: 02/2016 FILE: 0100-704-11 DWG: 1-4-SHARPEY CROSS SECTION.DWG	DRAWN BY: SWP DESIGN BY: CHM CHECKED BY: HSC	ODESSA TRD FACILITY ECTOR COUNTY, TEXAS
	REVISIONS		WWW.WCGRP.COM
	NO. 1 DATE: 07/2016 DESCRIPTION: SEE LIST OF REVISIONS	DRAWING 1-9	

## PERMIT APPENDIX L

Groundwater Elevations-February 2015 (Figure 4)



**Notes:**  
Groundwater elevations shown for wells WW-1, MWT-1 and MWT-2 determined from water level measurements collected on 1/23/15 and 1/26/15.



**Apex TITAN, Inc.**  
2501 Hubbard Boulevard, Suite 200  
Frisco, Texas 75034  
Phone: (480) 366-1100 - Fax: (480) 366-1199  
www.apextitan.com  
A Subsidiary of Apex Companies, LLC

**FIGURE 4 - GROUNDWATER ELEVATIONS - FEBRUARY 2015**

ODESSA TRD  
3001 FM 866  
ODESSA, ECTOR COUNTY, TEXAS

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RRC OF TEXAS  
APR 06 2015  
O & G  
AUSTIN, TX

DESIGNED BY: GR	DETAILED BY: GR	CHECKED BY: GR
FILE NAME: Odessa_MWs_SiteMap.dwg		
DATE: 03/19/15	PROJECT NO.: 492-34	PLOT SCALE: 1"=600'
DRAWING NO.: TEI-0000	REVISION: 0	FIGURE: 4