Operations Plan
Phases I-VI and the Capacity Expansion Area (Sections 7, 8, and 9)
Southeast County Landfill
Hillsborough County, Florida

Hillsborough County - Public Utilities Department
Solid Waste Management Group (SWMG)
332 N. Falkenburg Road
Tampa, FL 33619

SCS ENGINEERS

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CAPACITY EXPANSION AREA

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Presented To:

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Submitted by:

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K. INTRODUCTION

The Southeast County Facility (Facility) includes the Southeast County Landfill (SCLF), which is permitted by the Florida Department of Environmental Protection (FDEP) as a Class I landfill for Phases I-VI and the Capacity Expansion Area. This Operations Plan includes Phases I-VI and Sections 7, 8, and 9 of the Capacity Expansion Area.

The Facility is the final depository for municipal solid waste (MSW) ash residues, non-processables, and bypass wastes from the Solid Waste Management System of Unincorporated Hillsborough County. The Facility also receives solid waste from the cities of Temple Terrace and Tampa, as well as MSW ash residues and bypass wastes from the Waste-to-Energy Incinerator Facilities of the City of Tampa and Hillsborough County. Hazardous waste will not be accepted at the Facility.

This Operations Plan was prepared in conjunction with an operation permit application; as such, the format follows the requirements of Part K of the Permit Application Form.

K.1 TRAINING

In accordance with Rule 62-701.320(15), Florida Administrative Code (FAC), key supervisory personnel at the Facility have received Landfill Operator Certification training. Operator training includes a 24-hour initial course and 16 hours of continuing education every three years. Spotter training includes an 8-hour initial course and four hours of continuing education every three years. Operator and Spotter training courses are offered by the University of Florida Center for Training, Research and Education for Environmental Occupations (TREEO) and through other FDEP-approved sources. Landfill personnel are encouraged to attend these courses after discussions with the Landfill Manager. The currently available TREEO training courses and schedule are listed in **Appendix A**. The listing is also available at www.treeo.ufl.edu. Documentation demonstrating that the facility operators and spotters have received the required continuing education is presented in Attachment D.15 of the Phases I-VI and Capacity Expansion Area (Sections 7, 8, and 9) Permit Renewal Application dated June 2013.

As required by Rule 62-701.500(1), FAC, a certified Landfill Operator will be on site when waste is received for disposal at the landfill, and a trained spotter will be on site during all times when waste is deposited at the landfill working face to detect any unauthorized wastes. In addition, the equipment operators have sufficient training and knowledge to move waste and soil and to develop the site in accordance with the design and operational standards described in the operation permit application.

K.2 LANDFILL OPERATION PLAN

K.2.a SWMG Organization and Responsibilities

Hillsborough County (County) owns the Facility and is the applicant for the operation permit. A Landfill Contractor (Contractor), currently Waste Management, Inc. of Florida (WMIF), will operate and maintain the Facility in accordance with the permit conditions under the contract that exists between the County and the Contractor.

The following Hillsborough County Public Utilities Department, Solid Waste Management Group (SWMG) and Contractor personnel are currently responsible for the operations at this Facility:

- Larry E. Ruiz, Landfill Operations Manager (SWMG)
- Ernest Ely, District Landfill Manager (Contractor)

In addition, the following positions are maintained at the Facility: scale-house clerks (SWMG), waste monitors (SWMG), equipment operators (Contractor), spotters (Contractor), laborers (Contractor), security personnel (Contractor), and mechanic (Contractor). At least one trained operator familiar with the landfill operations will be on site at all times while the Facility is open in accordance with Rules 62-701.320(15) and 62-701.500(1), FAC.

K.2.b Contingency Plan

The contingency plan for the Facility is based upon addressing two potential emergencies:

- Equipment failure.
- Large influx of material resulting from a natural disaster such as a hurricane, fire, or from a breakdown at local waste-to-energy facilities.

Sufficient backup equipment will be provided on site for equipment breakdowns and downtime for normal routine equipment maintenance. If primary and backup major equipment (i.e., landfill compactor or bulldozer) fail, one or both of the following contingency measures will be implemented:

- Use existing contracts with contractors and rental equipment dealers to furnish rental equipment on short notice (Appendix B).
- Establish arrangements with other County agencies to furnish equipment.

The Contractor will be responsible for providing equipment and a working force of adequate size and skill to maintain the landfill operation in compliance with all applicable federal, state, and local regulations. If sufficient local personnel are not available, the Contractor will relocate from other facilities sufficient personnel with the proper skills to maintain operations.

Given that a large volume of wastes requiring disposal from a natural disaster is non-putrescible, it can be stored on site temporarily (adjacent to the working face) and landfilled after the state of emergency has ended.

In the case of a large fire, bomb threat, or other unforeseen situation requiring specialized emergency response personnel, 911 will be called for the local Fire Department or Sheriff's Department. Waste handling will be suspended and the affected area will be evacuated, if necessary. The landfill will be temporarily closed until the responding Department determines that the landfill is safe for re-entry. If the Facility will remain closed for more than 48 hours, the incoming waste will be diverted to an alternate facility in an adjacent county.

In case of an accidental spill of oil, fuel, leachate, or chemicals, the spill will be minimized by controlling the source immediately (e.g., by closing the valve, turning-off switch, or taking any other necessary action). The affected area will be protected by diverting vehicular traffic. Building a berm, plugging a drain or ditch, or adding absorbent material will control runoff from the affected area. The affected area will be cleaned, and the effectiveness of the cleanup confirmed by sampling, as needed, depending on the nature of the spilled material. For spill countermeasures of secondary containment at the Leachate Treatment and Reclamation Facility (LTRF) and the effluent/leachate storage tank, refer to Section 11.0 of the Leachate Management Plan (LMP).

K.2.c Waste Type Control

The automated accounting system, clerks at the scalehouse, and the site security fence help discourage unauthorized entry and uncontrolled disposal of unauthorized waste. A sign at the entrance states the general regulations including the types of prohibited solid waste.

A minimum of three random load inspections of solid waste per week will be conducted at the active landfill (See Part K.6 and **Appendix C**). As an additional control, the SWMG has one waste monitor and the Contractor has at least one trained spotter at the working face to visually inspect each load of waste as it is unloaded and deposited. If any unauthorized special waste (i.e., lead-acid batteries, used oil, yard trash, white goods, and whole tires) is found at the working face during the random inspection or as part of routine operations, the waste will be segregated and removed from the site for recycling or other processing in accordance with FDEP regulations. Items that may contain liquids or gases will be stored upright, undamaged, and in a container as appropriate. The maximum on-site storage will be as follows:

- 50 batteries in a secondary containment covered tray.
- 20 gallons of used oil placed upright in an undamaged container.
- 40 cubic yards (cy) yard trash in one 40-cy roll-off container.
- 75 white goods and lawnmowers placed upright (on the ground) until all liquids, chlorofluorocarbons (CFCs), and Freon are removed. After the metal recycling contractor removes all liquids, CFCs, and Freon, the white goods are marked with spray paint to indicate that they are ready to be placed in the scrap metal containers.
- Scrap metal in two 40-cy roll-off containers (including processed white goods).

These special wastes will be stored next to the working face and removed from the site within 30 days.

Whole tires will be stored and managed at the on-site Waste Tire Processing Facility (WTPF). Lead-acid batteries will be collected by the SWMG's contracted battery recycler. Scrap metal, including white goods and lawnmowers, will be collected and processed by the SWMG's metals recycling

contractor. Propane tanks will be collected by the recycling contractor. Until the SWMG develops a beneficial use for landfill gas, yard trash will be rejected, required to be reloaded, and directed to be taken to the yard trash processing facility at the South County Transfer Station.

If unauthorized waste (i.e., hazardous, polychlorinated biphenyl's (PCBs), untreated biomedical, or free liquid) is found at the working face, the waste will be isolated and the Landfill Manager will be immediately notified. The Landfill Manager is trained in the proper procedure to follow, including notifying the FDEP. Similarly, if suspect waste is found, the waste will be isolated and the Landfill Manager notified. The Landfill Manager will prepare a suspect waste report and ensure that the waste is properly managed (Appendix C). If hazardous wastes are found, the FDEP will be notified immediately and the waste will be isolated and restricted from access until it is removed from the landfill by a qualified hazardous waste contractor. Hazardous wastes will be removed from the Facility within 24 hours.

K.2.c.1 Waste Profile Program

The Waste Profile Program, administered by the SWMG, establishes policies, procedures, and guidelines for managing waste to comply with federal, state, and local regulations for minimizing risks to the environment, public health, and employees posed by non-hazardous and unregulated waste. The Waste Profile Program includes an internal structured reporting format, guidelines, and procedures to assist customers to comply with waste disposal requirements. The SWMG does not accept unauthorized waste for disposal at the landfill. The following are the objectives of the waste profile program:

- Preclude the entry and disposal of hazardous waste into the Facility.
- Preclude leachate developing hazardous waste characteristics.
- Protect the landfill liner.
- Prevent objectionable odors from becoming a problem.
- Ensure that delivered materials can be handled safely.

K.2.c.2 Motor Vehicles

Motor vehicles will not be accepted at the facility; however, mobile homes will be accepted for disposal in the landfill at the active working face if they cannot be recycled. Appliances (white goods) and waste tires from mobile homes must be removed before being accepted at the facility and processed as stated in Section K.2.c.

K.2.c.3 Shredded Waste

The Facility will accept shredded tires. As provided by Chapter 62-711 FAC, the SWMG will use shredded tires for initial cover since shredded tires are an effective initial cover for controlling disease, vectors, odors, litter, and scavenging.

K.2.c.4 Asbestos Waste

Asbestos waste will be accepted at the Facility. The entire footprint of Phases I-VI and the Capacity Expansion Area (CEA) will be designated as an asbestos disposal area. Before landfilling, the material must be wetted and placed in a leak-tight wrapping. The bags will be placed in a prepared trench at the working face. Materials such as transite paneling and pipe insulation must be wrapped sufficiently to maintain their integrity during disposal. After placement, the bags will be immediately covered with 6 inches of asbestos-free material (i.e., soil or select waste without large or sharp objects that may damage the asbestos packaging). The location, quantity and source of asbestos containing material will be documented. Copies of the asbestos waste shipment records complying with 40 CFR 61-Subpart M will be maintained on site.

K.2.c.5 Wastewater Treatment Biosolids

Biosolids (industrial and domestic sludge) from wastewater treatment systems are accepted for disposal in the landfill. Biosolids will be applied to the working face of the landfill and daily cover applied in accordance with Section K.2.g to control odors. Disposal operations of biosolids will not occur within 50 feet of exterior side slopes

Biosolids from the wastewater treatment facility (WWTF) will be required to pass the paint filter test which will be based on the percent solids of the biosolids produced by the WWTF.

A paint filter test will be initially performed on the biosolids to demonstrate the minimum percent solids content that will pass the paint filter test. Thereafter, the WWTF will be required to provide a report of the percent solids content of the biosolids delivered each day to the Facility. Biosolids from the WWTFs with percent solids content at or above the minimum solids content passing the paint filter test will be accepted at the Facility. In the event the percent solids content from a WWTF is below the minimum solids content, the WWTF must, before disposal at the SCLF, perform and provide documentation that the lower percent solids content passes the paint filter test.

In addition to landfilling, the SWMG operates a Biosolids Composting Facility (BCF) at the Facility. BCF operations are permitted under the Hillsborough County Falkenburg Road Advanced WWTF Domestic Wastewater Facility Permit Number FL0040614 and is managed in accordance with the current *Biosolids Composting Facility Operations and Maintenance Plan,* which is maintained on site. The BCF Building and the Biosolids Receiving Area are curbed to contain residual moisture. Stormwater runoff that enters the BCF Building or the Biosolids Receiving Area will be treated as leachate. The leachate is conveyed to two 25,000-gallon storage tanks located within secondary containment at the BCF. Leachate hauling tankers transport the BCF leachate to a permitted disposal facility.

K.2.d Weighing Incoming Waste

All incoming waste will be weighed before disposal in the landfill. The existing scales are fully automated and computerized, with the capability for data storage and retrieval for daily record keeping and reporting. All customers are issued receipts upon exiting the Facility.

K.2.e Traffic Control

The working face area is the most equipment-intensive area of operation for the Facility. In this area, solid waste transportation vehicles arrive, turn around, back up to the working face, and unload the solid waste. Landfill operation equipment will continually spread and compact the solid waste as it is received. During normal operating conditions, only one working face will be active at any given time, with the solid waste at all other areas within the landfill secured by a minimum of 6 inches of initial cover. The working face may alternate as needed between Phases I-VI to the CEA. It is intended that only one working face will be active at a time at either Phases I-VI or the CEA.

The approach to the working face will be maintained in an accessible condition so that two or more vehicles may safely unload simultaneously side by side. When unloading is complete, the vehicles will immediately leave the working face area. Entrance and exit haul roads will be provided (both temporary and permanent) and maintained to facilitate future unloading operations. Contractor personnel will direct traffic as necessary to expedite safe movement of vehicles and to ensure that all waste transport vehicles unload within the designated area.

K.2.f Method and Sequence of Filling Waste

Each phase will be landfilled as shown in the Operating Sequence Plans provided in **Appendix E**. The lifts in each of the several phases are shown on one sheet to minimize the number of sheets, but each lift is independent of the others.

K.2.f.1 Phases I-VI

One working face will be maintained for the anticipated traffic maneuvering during waste fill operations. Typical lifts consist of two lifts 8 to 10 feet high, to reach the maximum elevation shown on the operating sequence drawings including daily and intermediate cover. Because of the phosphatic clay liner stability in Phases I-VI, at no time shall a lift exceed the maximum height shown on the operating sequence drawings. The initial filling in Phases I-VI was completed in 2010. Waste filling will continue over the existing area as shown on the operating sequence plans. Existing intermediate cover placed over the Phase I-VI area will be removed as landfilling progresses. The remaining air space in Phases I-VI is divided into six lifts (17A, 18A, 18B, 19A, 19B, and 20A) as shown on the drawings.

The Contractor will prepare filling plans in accordance with the sequence drawings 45 days before the development of a new lift. Subsequently, grades for the new lift will be set on grade by a registered engineer, land-surveyor, or by an authorized agent.

Landfilling in Lifts 17A (Sheet 3) begins on the south side of Phase IV and proceeds clockwise over Phases IV, VI, and V until approval of the revised fill sequence.

Landfilling in Lift 18A, (Sheet 4) begins on the west side of Phase II and proceeds counterclockwise over Phase II and III, This lift will fill the crown to increase the slopes to 7.5%.

Landfilling in Lift 18B, (Sheet 5) begins on the west side of Phase II and proceeds counterclockwise over Phase II and III, This lift will fill Phase II and III to the final design elevations.

Landfilling in Lift 19A, (Sheet 6) begins on the north side of Phase V and proceeds counterclockwise over Phase V, VI, and IV. This lift will fill the crown to increase the slopes to 7.5%.

Landfilling in Lift 19B, (Sheet 7) begins on the north side of Phase V and proceeds counterclockwise over Phase V, VI, and IV. This lift will fill Phase V, VI, and IV to the final design elevations.

Landfilling in Lift 20A (Sheet 8) begins on the west side of Phase I and proceeds from east to west over Phase I and VI, to the permitted final grades (Elev 255) of the landfill. Upon completion of filling operations in Lift 20A, final cover will be placed over the entire Phase I-VI area as described in Section K.7.h.

K.2.f.2 Section 7 of the Capacity Expansion Area

The initial filling in Section 7 was complete as of May 2005. The outer sideslopes have not reached their final design 3H:1V slope. The temporary sideslopes of Section 7 will be filled to reach their maximum design slope of 3H:1V during waste filling operations in Section 9.

The east and south sideslopes as well as most of the top of Section 7 have received intermediate cover. Stormwater runoff from the top of Section 7 sheet flows to a downchute on the southeast corner that discharges to a culvert leading to sedimentation basin C (Sed C). Stormwater runoff from the sideslopes of Section 7 drains to the perimeter ditches, eventually flowing to the culvert to Sed C. Any stormwater that does not infiltrate into the ground at Sed C discharges to Pond C for additional attenuation prior to flowing through the on-site stormwater management system described in Section K.10.

K.2.f.3 Section 8 of the Capacity Expansion Area

The initial filling in Section 8 was completed as of May 2007. Similar to Section 7, the outer sideslopes have not reached their final design slope of 3H:1V. The temporary sideslopes of Section 8 will be filled to reach their design slope during waste filling operations in Section 9.

The east and north sideslopes, as well as most of the top of Section 8 have received intermediate cover. Stormwater runoff from the top of Section 8 discharges to Sed C. Stormwater runoff on the east sideslope drains to perimeter ditches, eventually flowing to the culvert to Sed C. Stormwater runoff on the north sideslope of Section 8 flows easterly along perimeter ditches around the CEA eventually discharging through the culvert to Sed C. Any stormwater that does not infiltrate into the ground in Sed C discharges to Pond C for additional attenuation prior to flowing through the on-site stormwater management system described in Section K.10.

K.2.f.4 Section 9 of the Capacity Expansion Area

One working face will be maintained for the anticipated traffic maneuvering during waste fill operations. Typical lifts consist of two lifts 8 to 10 feet high, to reach the maximum elevation shown on the operating sequence drawings including daily and intermediate cover.

The proposed filling sequence for Section 9 is presented in the drawings provided in **Appendix E**. The initial filling in Section 9 was completed as of July 2009.

Waste placement in Section 9 has proceeded against the west sideslopes of Sections 7 and 8 and landfilling of fill sequence 9-15 has been completed (CEA Sheet 6). Waste filling will continue incorporating areas of both Sections 7 and 8. As the Operations Fill Sequence Drawings show, filling will proceed to bring the sideslopes of Sections 7, 8, and 9 to their design slope of 3H:1V slopes as shown on fill sequence 16-18 (CEA Sheets 6 and 7). The filling of Section 7, 8, and 9 areas will bring the combined areas to an approximate elevation of 285 feet as shown on Sheet 8.

K.2.g Waste Compaction and Application of Cover

Waste will be placed at the top or bottom of the working face and spread toward the bottom or top, respectively. Waste will be spread in approximately 2-foot-thick layers and compacted with a minimum of three to five passes of the landfill compactor. The spreading and compacting is intended to be a continuous operation. A minimum in-place waste density of 1,000 pounds/cubic yard (lb/cy) will be achieved.

A minimum of 6 inches of compacted initial cover or tarp will be placed over the waste at the end of each operation day in accordance with 62-701.500(7)(f)1. Auto shredder residue, alone or mixed with soil, recovered screen material street sweepings, screened ditch cleaning soil, and solid waste combustor ash residue may be used as initial cover as allowed by 62-701.500 (7)(e). Before the working face between landfills is moved, the area that will remain inactive will be covered with compacted initial cover, soil, or a mixture of 50 percent unscreened wood mulch and 50 percent soil (no ash), with sufficient thickness (minimum 6 inches) to prevent erosion and the mixing of leachate with stormwater. A minimum of 1 foot of intermediate cover, in addition to the 6-inch initial cover, will be applied and maintained within 7 days of cell completion if additional solid waste will not be deposited within 180 days of cell completion.

When landfilling operations begin again in areas with intermediate cover, the intermediate cover (free of waste) will be stripped from the surface (upper 12 inches) and reused over other areas needing intermediate cover. The stripped intermediate cover will be pushed ahead and used as perimeter berms around the active working face area. The intermediate areas are graded to promote drainage (minimum 2 percent slope) and seeded to prevent erosion.

K.2.h Operation of Leachate, Gas and Stormwater Controls

See Sections K.8, K.9, and K.10 for leachate, gas, and stormwater controls, respectively.

K.2.i Water Quality Monitoring

K.2.i.1 Phases I-VI

Water quality monitoring for Phase I-VI is included in Section L of the Operation Permit Intermediate Modification Application, dated April 2015.

K.2.i.2 Capacity Expansion Area

Water quality monitoring for Sections 7, 8, and 9 is included in Section L of the Operation Permit Intermediate Modification Application, dated April 2015.

K.2.j Leachate Collection and Removal System Maintenance

Refer to the current LMP Report incorporated as part of the current Operation Permit.

K.3 OPERATING RECORD

The operating record will be maintained on site in the Administration Building or at the SWMG office. The operating record will be accessible to the Facility operation personnel and will be available for inspection by FDEP. The records include the following:

- Waste reports
- Operation permits
- Construction and closure permits including any modifications
- Monitoring results, such as water quality testing
- Notifications to FDEP
- Engineering drawings
- Training certifications as required by Chapter 62-701.320(15), FAC

K.4 WASTE RECORDS

K.4.a Amount and Origin of Waste

The amount of solid waste received at the landfill will be weighed and recorded in tons per day in accordance with Rule 62-701.500(4), FAC. Waste reports, including the amount received and county of origin, for the waste types listed in Section K4(b) will be compiled monthly and provided annually to the FDEP.

K.4.b Waste Types

All reports will contain a minimum of the following waste types:

- Class I waste
- Class III waste
- Ash residue
- Other waste

K.4.c Construction and Demolition Debris

If dedicated loads of construction and demolition debris (C&D) are received, an annual report will be submitted to the FDEP as required in subsection 62-701.730(12), FAC and form 62-701.900(7). This report will include tonnage of material types received and recovered based on county of origin.

K.5 ACCESS CONTROLS

The perimeter fence and berms around the Facility prevent the entry of livestock, protect the public from exposure to potential health and safety hazards, and discourage unauthorized entry or uncontrolled disposal of unauthorized materials. 'No trespassing' signs are also posted along the perimeter fence. The SWMG and Contractor personnel will inspect the premises daily. The gate at the Facility entrance and all other gates will be kept locked at all times the landfill is closed, and the Contractor will provide security personnel to guard the Facility during non-operating hours.

K.6 LOAD-CHECKING PROGRAM

The SWMG has established a random-load-checking program as referenced in Part K.2.c to detect and prevent disposal of unauthorized wastes into the landfill. In addition, site access control discourages the disposal of unauthorized and hazardous wastes. A sign at the entrance of the Facility explains the types of waste prohibited at the landfill.

In accordance with Rule 62-701.500(6)(a), FAC, a minimum of three random loads will be checked at the active working face(s) each week. The selected drivers will be directed to discharge their loads at a designated location next to the working face. If any unauthorized special waste (i.e., lead-acid batteries, used oil, yard trash, white goods, and whole tires) is found during the random inspection or as part of routine operations, the waste will be segregated and removed from the site for recycling as described in Part K.2.c. These special wastes will be stored next to the working face and removed from the site within 30 days.

If an unauthorized waste (i.e., hazardous, PCBs, untreated biomedical, or free liquid) is found, the generator of the waste, if known by the driver, will be contacted to determine the waste source. Either the hauling company or the generator of the waste will be directed to remove the unauthorized waste. The random load inspections will be documented on a report from which includes the date and time, name of the hauling company and the driver of the vehicle, the vehicle license number, the source of the waste or generator, and any observations or notes made by the inspector (**Appendix C**).

The inspector will identify and note all unauthorized waste found during the random load inspection, estimated quantity, and the action taken. The inspector will sign the inspection form that will be retained at the Facility.

If the waste owner cannot be identified, the waste will be evaluated by Contractor personnel in charge. The waste will be isolated and contained and will not be moved until the waste is determined to be acceptable. If it is determined that the waste is not suitable for disposal, the SWMG will be notified for additional assessment and testing of the waste. Subsequently, a record of the decision will be placed into the daily operations file for the Facility.

If any regulated hazardous waste is discovered in a random load check or is identified by an operator or spotter, the Landfill Manager and the FDEP will be notified immediately as well as the generator or hauler, if known. The Landfill Manager is trained in the proper procedure to follow including notifications. If the generator or hauler is not known, the SWMG will be responsible for disposing of the hazardous waste at a properly permitted Facility. The hazardous waste will be isolated and restricted from access until it is removed from the landfill by a qualified hazardous waste contractor. Hazardous wastes will be removed from the site within 24 hours.

As required in Rule 62-701.320(15), FAC and discussed in Part K.1, inspectors, scale-house attendants, equipment operators, and landfill spotters will be trained to identify unacceptable wastes and hazardous wastes.

K.7 SPREADING AND COMPACTING WASTE

All loads coming into the Facility, including small-volume containers, will be delivered to the working face daily. To preserve the prepared base area and to protect the leachate collection system, traffic will be prohibited to operate directly on the chipped tires overlying the drainage layer. Traffic will only be allowed to maneuver on top of the compacted and covered waste. Therefore, the initial lift of all new disposal areas will be accessed by vehicles from the top of the working face. The waste will be spread and compacted from the top, keeping all heavy equipment off the prepared base.

For all subsequent lifts, the waste placement will vary depending on field conditions. Some lifts will be built from the bottom of the active working face. At the discretion of the operator, waste will also be placed from the top of the active working face and spread toward the bottom. Waste will be placed against the covered working face of the previous day's waste. The first cell will act as a means of access and as a berm to guide the placement of waste for the remaining cells. See Part K.2.g for additional information on waste compaction.

The following guidelines will provide an efficient and environmentally sound method of operation for the Facility:

- Portable litter fencing will be placed at the working face where needed to reduce windblown litter.

- Cracks or eroded sections in the surface of any filled and covered area will be repaired and a regular maintenance program will be followed to eliminate pockets or depressions that may develop as waste settles.

- If 12 inches of intermediate cover (free of waste) has been placed over a partially filled area, it will be removed, reused, and stockpiled for later use before the placement of a new lift.

- Tire chips, ash residue from incinerated MSW, tarps, soil, or a 50/50 soil/mulch mix may be used for initial cover. Stormwater runoff will not be allowed from waste-filled areas covered with tire chips or ash. Runoff from outside the bermed working face area will be considered stormwater only if the flow passes over areas that have no exposed waste and have been adequately covered with a tarp or at least 6 inches of compacted soil (or a mixture of soil/mulch) which is free of waste and has been stabilized to control erosion.

- Sufficient cover material will be stockpiled near the working face to provide an adequate supply for initial cover operations. In some areas, daily stockpiling may not be necessary because of the proximity of the borrow area.

K.7.a Waste Layer Thickness and Compaction Frequencies

Landfill personnel will direct all incoming waste to be unloaded at the toe or top of the working face. Waste will be spread in approximately 2-foot-thick layers and compacted with a minimum of three to five passes of the landfill compactors. The spreading and compacting is intended to be a continuous operation, and waste will not be placed in a layer until the previous layer is compacted.

K.7.b First Layer Thickness

For Phases I-VI and Sections 7, 8, and 9, the initial waste layer has been placed. To protect the integrity of the leachate collection system of the landfill, traffic and heavy equipment were not allowed directly on the sand drainage layer.

The procedure for filling and compacting the first layer of waste for future permitted sections at the CEA will protect the integrity of the liner and leachate collection system. Traffic directly on the protective layer will be prohibited, and the first lift will be accessed by vehicles from the top of the working face. An initial 4-feet-thick lift of selected waste will be placed over the protective layer. The selected waste will be MSW and ash not containing large rigid objects and will be spread and compacted from the top of the working face.

K.7.c Slopes and Lift Depth

The working face slope will be maintained at a slope no steeper than 3H:1V. Each cell will be constructed in a horizontal lift to an approximate height of 8 to 12 feet, with the maximum height as shown on the Drawings provided separately with the Phases I-VI and the Capacity Expansion Area (Sections 7, 8, and 9) Operation Permit Renewal Application as shown in **Appendix E**.

K.7.d Working Face

Cells will be constructed with slopes no steeper than 3H:1V, and a working face will be maintained to provide unhindered vehicle access to the working face while minimizing exposed areas and unnecessary use of cover material. The working face may alternate as needed between Phases I-VI to the CEA. The working face will be bermed with soil or a 50/50 soil/mulch mix (no ash). The berm will be constructed to prevent the mixing of leachate with stormwater.

K.7.e Initial Cover Controls

At the end of each working day, the waste will be covered with a 6-inch lift of compacted cover material such as soil, a mixture of 50 percent wood mulch and 50 percent soil (or ash), ash, chipped tires, tarps or other materials as approved in 62-701.500(7)(e) FAC, in accordance with 62-701.500(7)(f)1. These cover materials will provide vector control, mitigate windblown litter, reduce the potential for fire, and reduce odors and moisture infiltration into the waste. The initial cover material will be spread over the exposed waste and, with the exception of tarps, compacted by the equipment used to spread the cover (i.e., bulldozer or scraper). The initial cover material will not be removed before placement of successive lifts of waste, with the exception of tarps, which will be removed before placement of successive lifts. Any remaining litter and cleanings from equipment will be placed at the bottom of the completed cell and covered.

Before the working face between landfills is moved, the area that will remain inactive will be covered with compacted cover (free of waste), soil, or a mixture of 50 percent unscreened wood mulch and 50 percent soil (no ash), with sufficient thickness (minimum 6 inches) to prevent erosion and the mixing of leachate with stormwater.

K.7.f Initial Cover Frequency

At the end of each day's operation, the active landfill working face will be thoroughly compacted, and cover material will be spread and compacted to a depth of 6 inches over the day's entire working face and sideslopes in accordance with 62-701.500(7)(f)1. Initial cover material is discussed in Part K.7.e. If needed, the portable barriers that define the working face will be moved to the positions required to define the next day's operation.

The Facility is equipped to excavate and haul cover materials from on-site borrow areas to the working face. Additionally, an elevating scraper is used to excavate and haul cover material from the borrow area to the working face where it can be spread by a scraper or bulldozer.

When using a 50/50 mixture of soil and mulch the following process will be used:

1. The area to be excavated will be identified in advance. The area used for mulch mixing will not be larger than 15 acres.
2. A 4-foot layer of mulch will be placed over the designated excavation area.
3. As the area is excavated, the excavator will take bucket loads of the mulch layer plus 4 feet of soil, mixing the load as it is placed in the dump trucks.
4. The trucks will deliver the load to the working face. As the loads are deposited, additional mixing will occur.
5. The soil/mulch mixture will be spread over the working face using a bull dozer, causing additional mixing.

K.7.g Intermediate Cover

Intermediate cover will be placed and maintained over cells which will not receive additional solid waste or final cover within 180 days as required in Rule 62-701.500(7)(g), FAC. Recovered screen material or a mixture of soil and ground or chipped yard trash provided that soil makes up at least 50 percent by volume of the mixture may be utilized as intermediate cover. The working face will be bermed to reduce stormwater impacts. Sideslopes will be well maintained to minimize erosion. Intermediate cover material will be placed over the landfill surface within 7 days of cell completion if additional waste will not be placed within 180 days. Intermediate cover will be placed to a minimum compacted thickness of 12 inches on top of the 6 inches of compacted initial cover. On-site material will be used for intermediate cover. Specifically, phosphatic waste clays available on site will be mixed with sand and used for intermediate cover.

To conserve the soil/clay mix, a portion of the intermediate cover will be removed immediately before placement of additional solid waste on top of the lift or before placement of additional waste. The soil/clay mix (free of waste) will be stripped and reused as initial or intermediate cover material. The stripped intermediate cover will be pushed ahead as needed for the perimeter interceptor berms constructed around the active working face area. The intermediate cover areas will be graded to promote drainage (minimum 2-percent slope) and seeded to prevent erosion.

K.7.h Final Cover

K.7.h.1 Temporary Final Cover

A temporary final cover consisting of a soil layer will be installed over cells in Phases I-VI and/or the CEA which will not receive additional solid waste. The temporary final cover will consist of a 12-inch layer of soil with a hydraulic conductivity of 1.0×10^{-5} cm/sec. Vegetative cover will be placed on areas which have reached interim final grade in Phases I-VI. These areas will not receive additional waste until the end of the consolidation period before waste can be filled on top of the area. In CEA Sections 7, 8, and 9, the temporary final cover will be installed on the south and east side slopes as shown on the drawings. As required, temporary drainage berms and downchutes will be placed at the working face to control and direct stormwater runoff away from disposal areas.

K.7.h.2 Final Cover

When portions of the Facility are brought to design grades, final cover will be placed over the areas that have attained final elevation within 180 days in accordance with Rule 62-701.500(7)(h), FAC. Vegetative cover will be established. The final cover system and sequence for final cover placement will be submitted with the application for closure at least 90 days before the partial closure of the sideslopes.

K.7.i Scavenging and Salvaging

Except for such operations that are conducted as part of a recycling program, scavenging and salvaging are not permitted at the Facility. If the volume of recyclable goods is sufficient, as determined by the Landfill Manager, those items may be separated from the waste which is to be disposed.

During waste placement on the landfill, recyclable items such as wood, concrete, metals, cardboard, and other recyclables may be manually pulled from the active face, segregated, and placed in the staging area/roll-off containers adjacent to the working face area. With the exception of clean concrete, the remaining materials will be transferred off-site for recycling. The clean concrete will be stored on site until sufficient quantity is stockpiled and used for on-site road base or other on-site uses.

After the recyclable materials have been removed, the remaining materials will be disposed in the active Class I waste disposal area of the landfill.

Any recycling method, other than manual extraction, will only be implemented following review and concurrence by the FDEP.

K.7.j Litter Policing

If necessary, portable litter fences will be placed downwind of the immediate working area to confine most of the windblown material. Litter around the site and the entrance roadways will be collected regularly and picked up within 24 hours, in accordance with Rule 62-701.500(7)(j), FAC.

K.7.k Erosion-Control Procedures

The Facility fill sequence and the drainage facilities have been designed to minimize erosion of landfill sideslopes and washout of adjacent areas. The landfill surface will be inspected daily for cracks, eroded areas, and depressions in the landfill surface. Corrective action will be implemented within 7 days of detection. In areas where standing water develops, the area will be filled, compacted, and graded to provide positive drainage. Where the standing water problem cannot be corrected by proper grading, temporary drainage ditches will be constructed to drain off the standing water. Intermediately covered areas or other areas that discharge to the stormwater management system and which exhibit significant erosion will be repaired as follows:

- If greater than 50 percent of the soil cover material has eroded, the area will be repaired within 7 days.
- If waste or liner is exposed, the area will be repaired by the end of the next working day.

K.8 LEACHATE MANAGEMENT

Please see the current LMP.

K.9 GAS MONITORING AND MANAGEMENT PROGRAM

K.9.a Gas Monitoring

SWMG personnel shall monitor and record landfill gas (LFG) readings quarterly at the perimeter LFG monitoring wells and in the Administration, LTRF, and Maintenance buildings. The locations of the existing LFG monitoring points are included in Appendix F and are summarized in Table K.9.a.1. The ambient air and areas with slab penetration (areas with plumbing for water and drains) will be monitored inside these structures. The monitoring will be conducted for the Lower Explosive Limit (LEL) of methane using a GEM-500 Infrared Landfill Gas Analyzer (or equivalent). The probes will not be purged. Once the GEM is connected to the sampling port, the valve will be opened and the GEM pump will be started. The GEM reading will be observed and the value will be recorded.

When personnel must enter confined spaces or areas where dangerous gases may be present, the SWMG will follow the requirements in the "Code of Federal Regulations Title 29, Part 1910.146 OSHA" and the safety guidelines outlined in "A Compilation of Landfill Gas and Field Practices and Procedures" prepared by the SWANA Landfill Gas Division Health and Safety Task Force.

If methane is detected in concentrations greater than the regulatory limit (100 percent of the lower explosive limit at the property boundary or 25 percent of the lower explosive limit within structures), the SWMG will evaluate potential measures to correct the exceedances. If an unacceptable concentration of methane is detected in a monitoring location (i.e., a well or an on-site structure), the SWMG will immediately take appropriate actions to protect human health. The SWMG will notify FDEP and will re-monitor the location during each of the next 3 days. During this time the SWMG will evaluate potential causes of the exceedance and will implement procedures to remedy the situation if exceedances persist after the third day. Within 7 days of the initial exceedance, the SWMG will submit a remediation plan to FDEP in accordance with Rule 62-701.530(3)(a) FAC.

Table K.9.a.1 Landfill Gas Monitoring Points

I.D.	Probe/Building Location
LFG-1	Property boundary probe: South property boundary
LFG-2	Property boundary probe: Southwest property boundary
LFG-3	Property boundary probe: Northwest property boundary
LFG-4	Property boundary probe: North property boundary
SP-1	Scalehouse/Administration Building
SP-2	Scalehouse/Administration Building
SP-3	Scalehouse/Administration Building
SP-4	Scalehouse/Administration Building
SP-5	Scalehouse/Administration Building
SP-6	Scalehouse/Administration Building
SP-7	Scalehouse/Administration Building
SP-8	Scalehouse/Administration Building
SP-9	Maintenance Building
SP-10	Maintenance Building
SP-11	Maintenance Building
SP-12	Maintenance Building
SP-13	Leachate Treatment Facility Building
SP-14	Leachate Treatment Facility Building
SP-15	Leachate Treatment Facility Building

As described in Part K.7, the SWMG has a program for the placement of cover, which is effective for controlling disease, vectors, objectionable odors, and litter. No objectionable odors have been detected or reported by adjacent property owners. At least quarterly, or more frequently if necessary, qualified personnel from the SWMG will assess the presence of ambient objectionable odors at the perimeter monitoring points shown in **Appendix F**. If objectionable odors are detected at the property line, the SWMG will implement an odor-monitoring program as required by Rule 62-701.530(3)(b) FAC.

K.9.b Landfill Gas Collection System

The design of the Landfill Gas (LFG) collection system and the subsequent operation is in accordance with the federal New Source Performance Standards (NSPS) for municipal solid waste landfills (Subpart WWW) and Subpart AAAA of the National Emission Standards for Hazardous Air Pollutants (NESHAP), which dictates the operational procedures for the gas collection and control system (GCCS).

Landfill gas that is generated in the landfill is currently collected by the GCCS in Phases I-VI and Sections 7, 8, and 9. Permit No. 35435-016-SC/08 details the requirements of the GCCS. The SCLF continues to remain in compliance with the GCCS operation and Title V permit requirements. The repairs and upgrades to the GCCS in the area of the former sinkhole have been completed and were designed to provide landfill gas collection and extraction per the pre-sinkhole conditions and in accordance with the previously permitted GCCS design intent.

The facility maintains all operational and manufacturer procedural documentation for the blower, flare, control devices, and LFG system components on site in the "LFG Specialties User Manual for Utility Flare System Unit 2162", dated September 2009.

For additional information on the GCCS operating and maintenance procedures and safety protocols, refer to the GCCS Design Plan, the Startup, Shutdown and Malfunction Report (SSM), and current Title V Air Operation Permit.

K.10 STORMWATER MANAGEMENT SYSTEM

K.10.a Leachate Reduction

K.10.a.1 Stormwater Diversion

K.10.a.1.1 Site Stormwater System

The stormwater system was designed to transport the maximum expected flows from a 24-hour, 25-year rainfall event and minimize the collection of standing water within the disposal areas. To efficiently collect and transport the stormwater runoff away from the disposal areas, the stormwater system will be maintained in good condition, with the proper slopes and free from obstructions. Erosion control measures and corrective action are described in Part K.7.k of the Operations Plan. In addition, the design maintains conformance with the site's Southwest Florida Water Management District (SWFWMD) Stormwater Permit (a copy was submitted in Volume 3 of the Construction Permit Application for the Capacity Expansion Area, Section 7, September 2002). The major stormwater component designs and operations are as follows:

- Interior Stormwater Separation berms are generally designed to be 3 feet high and 3 feet wide across the top with sideslopes of 3H:1V. The separation berms divide the contributing runoff areas to facilitate the collection and handling of stormwater as well as providing separation from leachate.

- Sideslope swales were designed to convey stormwater flow from the sideslopes to the downchutes as shown on the drawings. Sideslope swales will be constructed where needed and as shown on the sequence drawings provided separately with the Phases I-VI and Capacity Expansion Area (Sections 7, 8, and 9).

- Downchutes constructed on the side slopes of the landfill will transport stormwater flow to the perimeter stormwater ditches.

- The perimeter stormwater ditches collect surface water runoff around the site, prevent offsite drainage from entering the landfill area, and drain runoff to the appropriate stormwater ponds and sedimentation basins located around the site.

K.10.a.1.2 Phases I-VI

The Phases I-VI stormwater collection system directs stormwater runoff from the landfill and surrounding sub-shed areas and into stormwater sedimentation basins and detention ponds. The sedimentation basins are designated A-2, A-3, B, C, 2, 3, 4, and 8. The ponds are designated as Ponds A-1, B, C, D, and E, and an evaporation area. As the Phase I-VI areas are filled with waste,

daily and intermediate cover (clean fill) is applied over the waste which promotes drainage away from the waste material. This minimizes the amount of water that is allowed to infiltrate into the waste. Stormwater that comes in contact with the waste in the active working area is considered leachate and will not be allowed to run off into the stormwater management system. The size of the working area will be kept to a minimum to minimize leachate and berms around the working area will separate stormwater from leachate. The runoff will be directed toward downchutes that will be conveyed to one of the basins.

K.10.a.1.3 **Capacity Expansion Area**

The CEA stormwater collection system directs stormwater runoff from the landfill and surrounding sub-shed areas and into the existing stormwater sedimentation basins and detention ponds. The receiving basins are designated as Sed C and Seds 2, 3, 4, and 8, which flow into Ponds C and D, respectively. As the CEA, currently Sections 7, 8 and 9, is filled with waste, it will then be covered with daily and intermediate cover (clean fill) to allow drainage away from the waste. This minimizes the amount of water that is allowed to infiltrate into the waste. Stormwater that comes in contact with the waste (now considered leachate) in the active working area will not be allowed to run off into the stormwater management system. The size of the working area will be kept to a minimum to minimize leachate. Berms around the working area will separate stormwater from leachate. The runoff will be directed toward downchutes and transported via stormwater ditches to Sed C and Pond C. The undeveloped areas of the CEA will collect and drain stormwater runoff to sedimentation basin D (Sed D) and Pond D.

K.10.a.1.4 **Stormwater Management System Improvements**

Improvements to the Stormwater management System (SWMS) at the SCLF were completed in March 2012, see figure in **Appendix H**. Improvements to the existing SWMS as part of the Stormwater Improvements Project consisted of the following:

1. Conversion of dry retention Basins A, B and C from underdrain systems to wet detention systems (Basin C was converted from dry retention with underdrain system to wet detention system as part of Section 9 construction in April 2008).
2. Restructuring of evaporation areas located north of the scale house and WMIF's maintenance building to increase attenuation with a wet pool design. New Ponds A-1, A-2 and A-3, and existing Basins F and G are interconnected and function as one system that ultimately discharges through modified control structures in Pond B. New Ponds A-2 and A-3 increase retention times of runoff from Phases I-VI with treatment provided in Pond B.
3. Sedimentation ponds between Phases I-VI and the CEA, SED-2, SED-3, SED-4 and SED-8, were constructed provide additional settling areas and reduce sediment transport into Basin D. These sedimentation swales and ponds provide some treatment, but most of the treatment will continue to be provided by the existing Basin D.

K.10.a.1.5 **Other Site Stormwater Basins**

Several other basins located around the site collect stormwater runoff; however, they do not collect runoff from disposal areas. The other basins are mentioned in this plan for informational purposes. Basins E, F and G collect runoff from the scalehouse. Stormwater Detention Basin H collects runoff from the LTRF.

K.10.a.2 Rain Tarps

Rain tarps will be used to cover open areas (areas that have not received waste material yet but are connected to the leachate collection system) to keep stormwater out of the leachate collection system. Water that has collected on top of the rain tarp is considered stormwater and can be pumped to the appropriate stormwater basin that was designed for that area. Before placement of waste, all rain tarps will be removed.

K.10.a.3 Stabilized Slopes

As filling progresses, the top and side slopes that will not receive additional solid waste for 2 or more months will be stabilized. First, compacted fill will be placed over the waste material to keep stormwater from infiltrating into the waste and to promote runoff. The slopes can then be stabilized with vegetative cover, seed, and mulch, or rain tarp covers. Exterior side slopes that are constructed to design grade and interior side slopes that will not receive waste for longer than 180 days will be covered with intermediate cover and either vegetative cover or hydroseed.

K.10.a.4 Closure

As disposal areas reach final elevations as discussed in Part K.7.h, areas may have a final or temporary final cover placed over the waste material that will provide a low permeability cover over the waste and thus minimize long-term infiltration of stormwater into the waste materials as described in Section K.7.h.(1). As stormwater infiltration is cut off, water within the waste will drain to the leachate collection system within the lined area of the landfill. Since infiltration of stormwater will be minimal, the amount of leachate resulting from stormwater infiltration will reduce over time.

The methods described above represent the current plan; however, as operations continue, they may be modified if alternate methods prove more efficient or allow a higher percentage of stormwater runoff, thus resulting in greater leachate minimization.

K.11 EQUIPMENT AND OPERATION

Landfill operation was discussed in Part K.2.

K.11.a Operating Equipment

The landfill is typically operated with the following on-site equipment:

- Steel-wheeled compactors.
- Bulldozers.
- Articulated dump truck.
- Water tank truck.
- Motor grader.
- Excavator.

- Several pickup trucks.
- Other miscellaneous construction and maintenance equipment.

Where appropriate, equipment is fitted with safety cabs and fire extinguishers. The Contractor is required to have back-up equipment available within 24 hours.

K.11.a.1 Equipment Care

Routine preventive maintenance minimizes equipment downtime and increases equipment service life. Therefore, the appropriate operation and maintenance (owner's) manual should be consulted. However, applicable maintenance activities implemented at the site include:

- A routine inspection program;
- Routine lubrication; and,
- Maintenance records up-keep.

Minimal equipment washing using low-volume, high-pressure technique may be performed on lined areas of the landfill that do not have intermediate or final cover. The activity is exempt from industrial wastewater permitting since the wash water is collected by the leachate collection system. Washing will occur within, or adjacent to, the active working face. Runoff will be contained within the limits of the lined landfill and not allowed to comingle with stormwater runoff.

K.11.b Reserve Equipment

Sufficient backup equipment will be provided on site for equipment breakdowns and downtime for normal routine equipment maintenance. Pre-arrangements with contractors and rental equipment dealers will be made to furnish equipment on short notice in the case of a major equipment failure. The Reserve Equipment Agreement is presented in Appendix B.

K.11.c Communications Equipment and Personnel Facilities

Telephones are located at the Administrative and Maintenance Buildings for use in emergencies. Cellular telephones and two-way radios are also used. The Administration Building is equipped with water supply, toilet facilities, emergency first-aid supplies, and electricity. The building also provides shelter for employees in case of inclement weather. The Maintenance Building is equipped with spare parts, tools, equipment, and electrical services for operations and repair.

K.11.d Dust Control

Dust control outside of Phase I-VI and the CEA limits will be provided by applying water sprayed from a water tank truck and will be applied to the unpaved access roads as required to control dust generation. Dust control within the Phase I-VI and the CEA limits will be provided by applying small quantities of leachate as described in Section 8.4 of the LMP. Leachate quantities used for dust control will continue to be reported in the leachate balance report submitted to the FDEP.

K.11.e Fire Protection and Chemical Fires

A charged fire extinguisher is kept at the scalehouse, Administration Building, Maintenance Building, and with all landfill equipment all times. Excavated soil will be used for fire control at the working face.

If a load of waste delivered to the site is smoking or on fire, landfill personnel direct the load to the "hot spot" area (an area within the landfill footprint with at least 12 inches of soil cover) where appropriate fire fighting procedures are followed.

Water for fire protection will be supplied from the fire hydrant and intake structure located east of Phase II. A second fire hydrant and intake structure is located south of the LTRF. If there is a small fire at the working face, waste handling will continue on an alternate working face until the fire is suppressed. If a fire cannot be controlled using materials and personnel already on site, the Fire Department will be immediately contacted and the emergency response plan described in Part K.2.b will be followed. See Part K.2.b for spills and containment of contaminated water such as from fire fighting.

No chemicals will be accepted at the landfill. All waste coming through the scale house will be observed to eliminate unwanted chemicals capable of starting a fire. If a chemical accident does occur, the following steps will be taken:

- Call the local Fire Department (911).
- Contain the fire in a small area until Fire Department arrives. To eliminate inhalation of potentially toxic fumes, fight fire from the upwind side.

K.11.f Litter Control Devices

See Part K.7.j of this Operations Plan.

K.11.g Signs

A sign indicating the hours of operation is located at the Facility entrance. Signs indicating the name of the operating authority, charges for disposal, and identifying the asbestos disposal site are located near the scalehouse area. Traffic flow and speed limit signs are located at various points along the landfill access road.

K.12 ALL-WEATHER ACCESS ROAD

The access roadway enters the site from CR 672. An asphalt paved road travels north from CR 672 and turns east into the Facility. The access road location was selected to minimize impacts to residential and agricultural areas along CR 672. There is a gate on the access roadway at CR 672 and fencing to prevent unauthorized access.

The main access road is a 40-foot-wide roadway with a 24-foot-wide asphalt paved section and 8-foot-wide shoulders constructed within the 100-foot-wide right-of-way. The main access road is paved and extends into the Facility through the property entrance, runs along the south side of the site, and turns north along the east side of the Facility area.

Other on-site roadways will be required on a temporary and permanent basis to serve the borrow area and for maintenance and services of on-site facilities. A stockpile of materials to construct and maintain all-weather roads to the active working face is available on site.

K.13 ADDITIONAL RECORDKEEPING

Operation records, such as permits, plans, inspections and others, are maintained at the Facility and at the SWMG office. The active area of Phases I-VI will be surveyed monthly and the active area of the CEA will be surveyed twice each year to calculate the volume used and to estimate the in-place density.

K.13.a Permit Application Development

The SWMG keeps all information including site investigations, construction records, operation records, inspections, and permits.

K.13.b Monitoring Information Records

The SWMG also keeps all monitoring records on groundwater, surface water, weather, and landfill gas. Copies are regularly submitted to the FDEP and the Environmental Protection Commission of Hillsborough County.

K.13.c Remaining Site Life Estimates

An estimate of the remaining site life for the permitted area will be prepared annually for submission to the FDEP.

K.13.d Archiving and Retrieving Records

Records of the landfill that are more than 3 years old will be available at the Facility.

Appendix A

Training Courses

Solid Waste Management Training Committee
Courses/Training Events Approved in 2019

Courses to Review in December 2019				Event's Total # of Hours	Hours Awarded				
	#	Event Name	Provider	Hours	I III	C&D	TS	MRF	Spotter
1.	**R19-20** ***Denied***	40 Hour Hazwoper Initial Training	Compliance Solutions	40	0	0	0	0	0
2.	**1039**	HAZWOPER 24 Hr Refresher	Greer Enterprises, LLC.	24	6	6	6	6	4

Courses Approved in November 2019				Event's Total # of Hours	Hours Awarded				
	#	Event Name	Provider	Hours	I III	C&D	TS	MRF	Spotter
1.	**1036**	Equipment Issues and Best Practices in a Landfill Application	Caterpillar & Ring Power Equipment	4	4	4	0	0	1
2.	**1037**	Hazardous Waste Regulations for Generators – Online	University of Florida – TREEO	8	4	4	4	4	0
3.	**1038**	Understanding Hazardous Waste in Solid Waste Operations	University of Florida - TREEO	4	4	4	4	4	4

Courses Approved in October 2019				Event's Total # of Hours	Hours Awarded				
	#	Event Name	Provider	Hours	I III	C&D	TS	MRF	Spotter
1.	**1035**	Asbestos Awareness Training for Solid Waste Management Facilities	University of Florida - TREEO	4	4	4	4	4	2

Courses Approved in September 2019			Event's Total # of Hours	Hours Awarded				
#	Event Name	Provider	Hours	I III	C&D	TS	MRF	Spotter

Updated: January 9, 2020

Solid Waste Management Training Committee
Courses/Training Events Approved in 2019

	Meeting Cancelled. No course/events were reviewed.							

Courses Approved in August 2019				**Event's Total # of Hours**	**Hours Awarded**				
	#	**Event Name**	**Provider**	**Hours**	**I III**	**C&D**	**TS**	**MRF**	**Spotter**
1.	**1033** *Renew*	Initial Training Course for Landfill Operators and C&D Sites - 24 Hours (#442)	University of Florida - TREEO	24	24	24	8	8	4
2.	**1034** *Renew*	Initial Training for Transfer Station Operators and Materials Recovery Facilities - 16 Hours (#443)	University of Florida - TREEO	16	12	12	16	16	4
3.	**R19-15** *Defer*	Florida Erosion and Sedimentation Control Inspectors Training Certification Course - Tier I and Tier II	Lunsford Environmental, LLC	14	0	0	0	0	0

Courses Approved in July 2019				**Event's Total # of Hours**	**Hours Awarded**				
	#	**Event Name**	**Provider**	**Hours**	**I III**	**C&D**	**TS**	**MRF**	**Spotter**
1.	**1028**	Initial Training for Operators of Landfills and Waste Processing Facilities - Online	University of Florida - TREEO	24	24	24	16	16	8
2.	**1029**	Initial Training Course for Landfill Operators and C&D	University of Florida - TREEO	24	24	24	8	8	4

Solid Waste Management Training Committee
Courses/Training Events Approved in 2019

		Sites - 24 Hours Online							
3.	**1030**	Initial Training for Transfer Station Operators and Materials Recovery Facilities - 16 Hours Online	University of Florida - TREEO	16	12	12	16	16	4
4.	**1031**	Refresher Training Course for Experienced Solid Waste Operators - 16 Hours Online	University of Florida - TREEO	16	16	16	8	8	4
5.	**1032**	Refresher Training Course for Experienced Solid Waste Operators - 8 Hours	University of Florida - TREEO	8	8	8	8	8	4

Courses Approved in June 2019				**Event's Total # of Hours**	**Hours Awarded**				
	#	**Event Name**	**Provider**	**Hours**	**I III**	**C&D**	**TS**	**MRF**	**Spotter**
1.	**1027**	SWANA FL Summer Conference	Solid Waste Association of North America (SWANA – Florida Chapter)	21	5	5	5	5	0
2.	**R19-08** ***Defer***	Initial Training for Operators of Landfills and Waste Processing Facilities - Online	University of Florida - TREEO	24	0	0	0	0	0
3.	**R19-09** ***Defer***	Initial Training Course for Landfill Operators and C&D	University of Florida - TREEO	24	0	0	0	0	0

Updated: January 9, 2020

Solid Waste Management Training Committee
Courses/Training Events Approved in 2019

		Sites - 24 Hours Online							
4.	**R19-10** ***Defer***	Initial Training for Transfer Station Operators and Materials Recovery Facilities - 16 Hours Online	University of Florida - TREEO	16	0	0	0	0	0
5.	**R19-11** ***Defer***	Refresher Training Course for Experienced Solid Waste Operators - 16 Hours Online	University of Florida - TREEO	16	0	0	0	0	0
6.	**R19-12** ***Defer***	Refresher Training Course for Experienced Solid Waste Operators - 8 Hours Online	University of Florida - TREEO	8	0	0	0	0	0

Courses to Review in May 2019				**Event's Total # of Hours**	**Hours Awarded**				
	#	**Event Name**	**Provider**	**Hours**	**I III**	**C&D**	**TS**	**MRF**	**Spotter**
1.	**1026**	Recycle Florida Today – 2019 Annual Conference & Exhibition	Recycle Florida Today, Inc.	21.5	3	3	3	5	0
2.	**R19-07** ***Defer***	SWANA FL Summer Conference	Solid Waste Association of North America (SWANA – Florida Chapter)	21	0	0	0	0	0

Courses Approved in April 2019			**Event's Total # of Hours**	**Hours Awarded**				
#	**Event Name**	**Provider**	**Hours**	**I III**	**C&D**	**TS**	**MRF**	**Spotter**

Updated: January 9, 2020

Solid Waste Management Training Committee
Courses/Training Events Approved in 2019

	Meeting Cancelled. No course/events were reviewed.							

Courses Approved in March 2019				**Event's Total # of Hours**	**Hours Awarded**				
	#	**Event Name**	**Provider**	**Hours**	**I III**	**C&D**	**TS**	**MRF**	**Spotter**
1.	**1025**	Solid Waste Seminar at the Florida Gulf Coast University	SCS Engineers	3	3	3	1	0	0

Courses Approved in February 2019				**Event's Total # of Hours**	**Hours Awarded**				
	#	**Event Name**	**Provider**	**Hours**	**I III**	**C&D**	**TS**	**MRF**	**Spotter**
1.	**R18-35** ***Denied***	Zero Waste Principles and Practices	Solid Waste Association of North America	24	0	0	0	0	0
2.	**1022**	2019 SWANA FL Safety Symposium	Solid Waste Association of North America (SWANA - Florida Chapter)	10	4	4	4	4	0
3.	**721** ***Renew***	Understanding Hazardous Waste in Solid Waste Operations	University of Florida – TREEO Center	4	4	4	4	4	4
4.	**1023** ***Renew***	Operator Certification for Caterpillar Landfill Equipment Level I	Caterpillar & Ring Power Equipment	8	8	8	4	4	2
5.	**1024** ***Renew***	Operator Certification for Caterpillar Landfill Equipment Level II	Caterpillar & Ring Power Equipment	15	8	8	4	4	2

Courses Approved in January 2019	**Event's Total # of Hours**	**Hours Awarded**

Updated: January 9, 2020

Solid Waste Management Training Committee
Courses/Training Events Approved in 2019

	#	Event Name	Provider	Hours	I III	C&D	TS	MRF	Spotter
		Meeting Cancelled. No course/events were reviewed.							

Updated: January 9, 2020

Appendix B

Reserve Equipment Agreement

Ring Power Corporation
10421 Fern Hill Drive
Riverview, FL 33578

Waste Management Inc. /Southeast Landfill
P.O. Box 627
Balm, FL 33503
Location: Hillsborough County Landfill

2/21/2013

Rental Rates effective through 12/31/13
Waste Management is responsible for maintenance and all damages to rental equipment.
Equipment rental is subject to availability.
Transportation cost quoted upon request.

Make	Model	Description	Day Rate	Week Rate	Month Rate	Cleaning Fee
CAT	D8T	Dozer(w/o waste handling arrangement)	$1,900.00	$5,800.00	$16,400.00	$ 2,400.00
CAT	D6T	Dozer(w/o waste handling arrangement)	$1,100.00	$3,300.00	$ 9,100.00	
CAT	D6N	Dozer(w/o waste handling arrangement)	$ 900.00	$2,700.00	$ 7,400.00	
CAT	D5K	Dozer(w/o waste handling arrangement)	$ 620.00	$1,760.00	$ 5,040.00	
CAT	725	Articulated dump truck 18.8 cyd capacity	$1,100.00	$3,200.00	$ 8,700.00	
CAT	329EL	Hydraulic Excavator 2.5 cyd bucket capacity	$ 900.00	$2,600.00	$ 6,900.00	
CAT	613	Scraper 11 cyd bowl capacity	$1,100.00	$3,200.00	$ 8,700.00	
CAT	12M	Motor Grader 14' mold board	$ 800.00	$2,300.00	$ 6,000.00	
CAT	938K	Wheel Loader 3.05 cyd bucket capacity	$ 700.00	$2,000.00	$ 5,000.00	
CAT	416E	Loader Backhoe	$ 200.00	$ 500.00	$ 1,500.00	
CAT	CS56	Single Drum Roller 84" wide drum	$ 500.00	$1,400.00	$ 3,400.00	

*Plus tax & Insurance

Ring Power guarantees Waste Management a suitable rental machine delivered to Hillsborough County Landfill within 24 hours of their request.

Appendix C

Random Inspection and Violation Report

SOLID WASTE FACILITY INSPECTION / VIOLATION REPORT

REPORT TYPE: ☐ INSPECTION ☐ VIOLATION ☐ LF RANDOM INSPECTION

LOCATION: _____ DATE: _____ TIME: _____

DELIVERING COMPANY: FRANCHISE COLLECTOR: ☐ WMI ☐ EB ☐ KR
OTHER: _____

DRIVER NAME: _____ VEHICLE #: _____

VEHICLE TYPE ☐ FEL ☐ RO ☐ RL ☐ SL ☐ SEMI ☐ DUMP
OTHER: _____

CUSTOMER / GENERATOR: _____ TRANSACTION #: _____

TYPE OF WASTE:

☐ YARD WASTE	☐ INDUSTRIAL	☐ AUTO PARTS	☐ BY PASS WASTE
☐ C & DD	☐ INSULATION	☐ ASH RESIDUE	☐ ANIMAL WASTE
☐ FURNITURE	☐ AG WASTE	☐ ROOFING	☐ SPECIAL WASTE
☐ CARDBOARD	☐ FIELD PLASTIC	☐ METALS	
☐ COMMERCIAL WASTE	☐ HOUSEHOLD GARBAGE		
☐ OTHER: _____			

TYPE OF VIOLATION: ☐ FACILITY ☐ LOAD ☐ SAFETY ☐ CONTAINER

DETAILS: _____

DRIVER COMMENTS: _____

RESULTS: ☐ ACCEPTED ☐ REJECTED ☐ RELOAD ☐ ALREADY IN PIT

INSPECTOR'S SIGNATURE: _____

ADDITIONAL COMMENTS: _____

inspect White Copy: Customer Yellow Copy: Inspector Pink Copy: Office

Appendix D

Not Used

Appendix E

Phases I-VI and Capacity Expansion Area Fill Sequencing Plans

(Fill Sequence Plan sheets originally produced in 24 inches X 34 inches and were reduced in size for incorporation into this report. Sheets not printed in 24 inches x 36 inches will not be to scale. See signed and sealed sheet set for full scale drawings.)

HILLSBOROUGH COUNTY
PUBLIC UTILITIES DEPARTMENT
SOLID WASTE MANAGEMENT DIVISION
SOUTHEAST COUNTY LANDFILL
PHASES I - VI OPERATING SEQUENCE

LITHIA, FLORIDA

JUNE, 2020

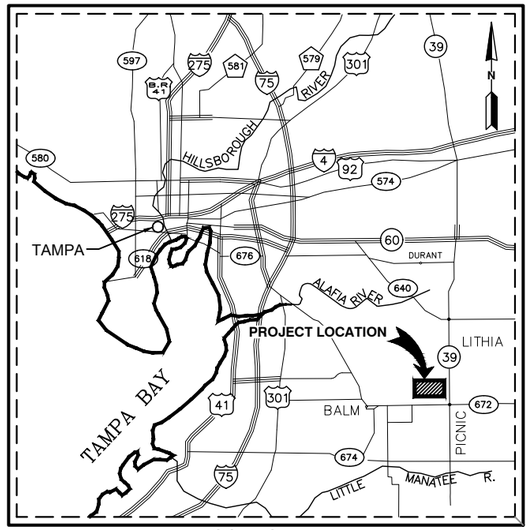
Hillsborough County Florida

EST. 1834

SM

BOARD OF COUNTY COMMISSIONERS

SANDRA L. MURMAN	- DISTRICT 1
KEN HAGAN	- DISTRICT 2
LESLEY MILLER, JR.	- DISTRICT 3
STACY R. WHITE	- DISTRICT 4
MARIELLA SMITH	- DISTRICT 5
PAT KEMP	- DISTRICT 6
KIMBERLY OVERMAN	- DISTRICT 7



LOCATION MAP
NOT TO SCALE

INDEX OF DRAWINGS

Always call 811 two full business days before you dig

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SCS ENGINEERS
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3922 COCONUT PALM DRIVE, SUITE 102
TAMPA, FLORIDA 33619
PH. (813) 621-0080 FAX. (813) 623-6757
FIRM REGISTRATION RY 4892
WWW.SCSENGINEERS.COM

SCS PROJECT NO. 09215600.10

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY KOLLAN LEE SPRADLIN, PE ON THE DATE ADJACENT TO THE SEAL.

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KOLLAN LEE SPRADLIN LICENSE No. 82852 STATE OF FLORIDA PROFESSIONAL ENGINEER

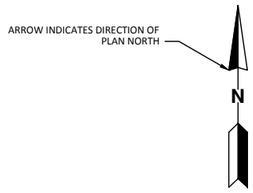
KOLLAN LEE SPRADLIN
FL PE #82852
DATE: 06/15/2020

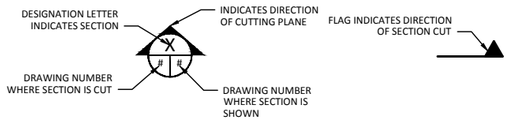
C:\Users\4382kkc\Desktop\WORK FROM HOME COPY\Hillsborough\Alternate Fill Sequence\Drawings\Engineering Drawings\02 LEGEND AND GENERAL NOTES.dwg Jun 12, 2020 - 2:26am Layout Name: LEGEND AND GENERAL NOTES By: 4382kkc

ENGINEERING SYMBOLOGY

- APPROXIMATE LANDFILL LIMITS
- APPROXIMATE PHASE BOUNDARY
- APPROXIMATE LIFT LIMITS
- (A) CELL DESIGNATION
- DAILY PROGRESSION
- Ø DIAMETER
- 150 EXISTING CONTOURS
- FILL PROGRESSION
- ' FOOT
- " INCH
- (14) LIFT NUMBER
- 140 PROJECTED EXISTING CONTOUR
- PROPERTY LINE
- 140 PROPOSED CONTOURS
- PROPOSED DOWNCHUTE
- PROPOSED SWALES WITH FLOW DIRECTION
- PROPOSED TOP SLOPE DITCH WITH FLOW DIRECTION
- STORMWATER STRUCTURE
- APPROXIMATE LIMITS OF EXISTING TEMPORARY FINAL COVER
- APPROXIMATE LIMITS OF ACCELERATED FINAL CLOSURE AREA
- APPROXIMATE LIMITS OF FINAL COVER GEOMEMBRANE AT LANDFILL CLOSURE
- AV-# AIR ISOLATION VALVE/BLOW OFF
- AIR SUPPLY LINE
- BLIND FLANGE
- EW-## CAISSON LFG EXTRACTION WELL
- CO #-# CLEANOUT
- CONDENSATE DRAIN LINE
- CS-## CONDENSATE SUMP WITH PUMP
- CT-# CONDENSATE TRAP-SELF DRAINING
- UT-2 CONDENSATE U-TRAP
- DW-# DEWATERING WELL
- AR-## HEADER ACCESS RISER
- V-## HEADER ISOLATION VALVE
- HEADER/LATERAL PIPE
- HP HIGH POINT
- HC HORIZONTAL COLLECTOR TRENCH
- HC-##R HORIZONTAL COLLECTOR WELL
- LV-## ISOLATION VALVE
- 4" FM LEACHATE FORCE MAIN
- EW-## LFG EXTRACTION WELL
- PIPE CASING AT ROAD CROSSING
- PS-# PUMP STATION
- HC-## REMOTE LFG EXTRACTION WELLHEAD
- EDGE OF WATER BODY
- FENCING LOCATION
- EXISTING STORMWATER PIPE
- 10023 N 1254273.93 E 595105.45 EL 96.12 SURVEY CONTROL POINT
- TRAFFIC ROUTE TO PHASES I-VI

GENERAL SYMBOLOGY





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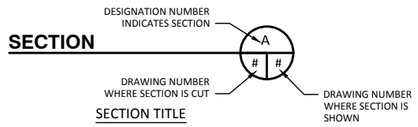
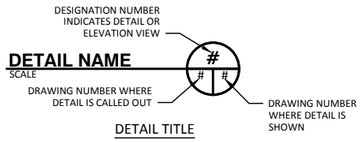


SECTION TITLE

DETAIL MARKER

FOR REFERENCING DETAILS INCLUDED IN DRAWING SET.



DETAIL TITLE

ABBREVIATIONS

#H:#V	HORIZONTAL: VERTICAL
APPROX	APPROXIMATE, APPROXIMATELY
CLB	CLAY BASE LAYER
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CM	CONCRETE MONUMENT
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
CSPE	CHLOROSULFONATED POLYETHLENE
EL	ELEVATION
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE
EXIST	EXISTING
FM	FORCE MAIN
GCL	GEOSYNTHETIC CLAY LINER
GFFR	GROUT FILLED FIBER REVETMENT
GR	GRADE
GDL	GEOSYNTHETIC DRAINAGE LINER
HDPE	HIGH DENSITY POLYETHYLENE
HP	HIGH POINT
IE	INVERT ELEVATION
LBR	LIMEROCK BEARING RATIO
LF	LINEAR FEET
LFG	LANDFILL GAS
LLDPE	LINEAR LOW DENSITY POLYETHYLENE
LTRF	LEACHATE TREATMENT AND RECLAMATION FACILITY
MES	MITERED END SECTION
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MLPS	MAIN LEACHATE PUMP STATION
N/A	NOT APPLICABLE
N/AVAIL	NOT AVAILABLE
NGVD	NATIONAL GEODETIC VERTICAL DATUM
PS	PUMP STATION
RCP	REINFORCED CONCRETE PIPE
SCH	SCHEDULE
SDR	STANDARD DIMENSION RATIO
SED	SEDIMENT
TOC	TOP OF CLAY
TYP	TYPICAL

GENERAL NOTES

1. EXISTING TOPOGRAPHY USED IN THESE PLANS OBTAINED FROM A SURVEY BY PICKETT AND ASSOCIATES PERFORMED JANUARY 6, 2020.
2. THE PROPOSED OPERATING SEQUENCES (LIFTS 18A - 20A) ARE BASED ON THE EXISTING TOPOGRAPHY SHOWN ON THE JANUARY 2020 AERIAL SURVEY COMBINED WITH PROPOSED DESIGN FOR SEQUENCE 16A WHICH WAS UNDER CONSTRUCTION AT THE TIME THESE PLANS WERE ISSUED. ACTUAL OPERATING SEQUENCES MAY NEED TO BE MODIFIED IN THE FIELD TO ALLOW FOR LANDFILL SETTLEMENT AND ACTUAL CONSTRUCTION VARIANCES. REVISED GRADES FOR SEQUENCES 18A AND 19A SHALL MAINTAIN A SLOPE OF 7.5% WHERE SHOWN.
3. THE LANDFILL LINER AND EXISTING DRAINAGE STRUCTURES WERE SURVEYED BY WEIDENER SURVEY AND MAPPING PA ON 2/23/94.

KOLLAN LEE SPRADLIN LICENSE No. 82852 STATE OF FLORIDA PROFESSIONAL ENGINEER

REV	DATE	DESCRIPTION	CHK. BY

SHEET TITLE: LEGEND AND GENERAL NOTES

PROJECT TITLE: SOUTHEAST COUNTY LANDFILL PHASES I - VI OPERATING SEQUENCE

CLIENT: HILLSBOROUGH COUNTY PUBLIC UTILITIES DEPARTMENT SOLID WASTE MANAGEMENT DIVISION TAMPA, FL 33619

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS
3922 COCONUT PALM DRIVE, SUITE 102, TAMPA, FL 33619
PH (813) 621-0080 FAX NO. (813) 623-6757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJ. NO.	DRAWN BY:	Q/A REVW BY:	APP. BY:
0921560.10	KKC	RBC	KLS
DES. BY:	CHK. BY:		
KLS	KLS		

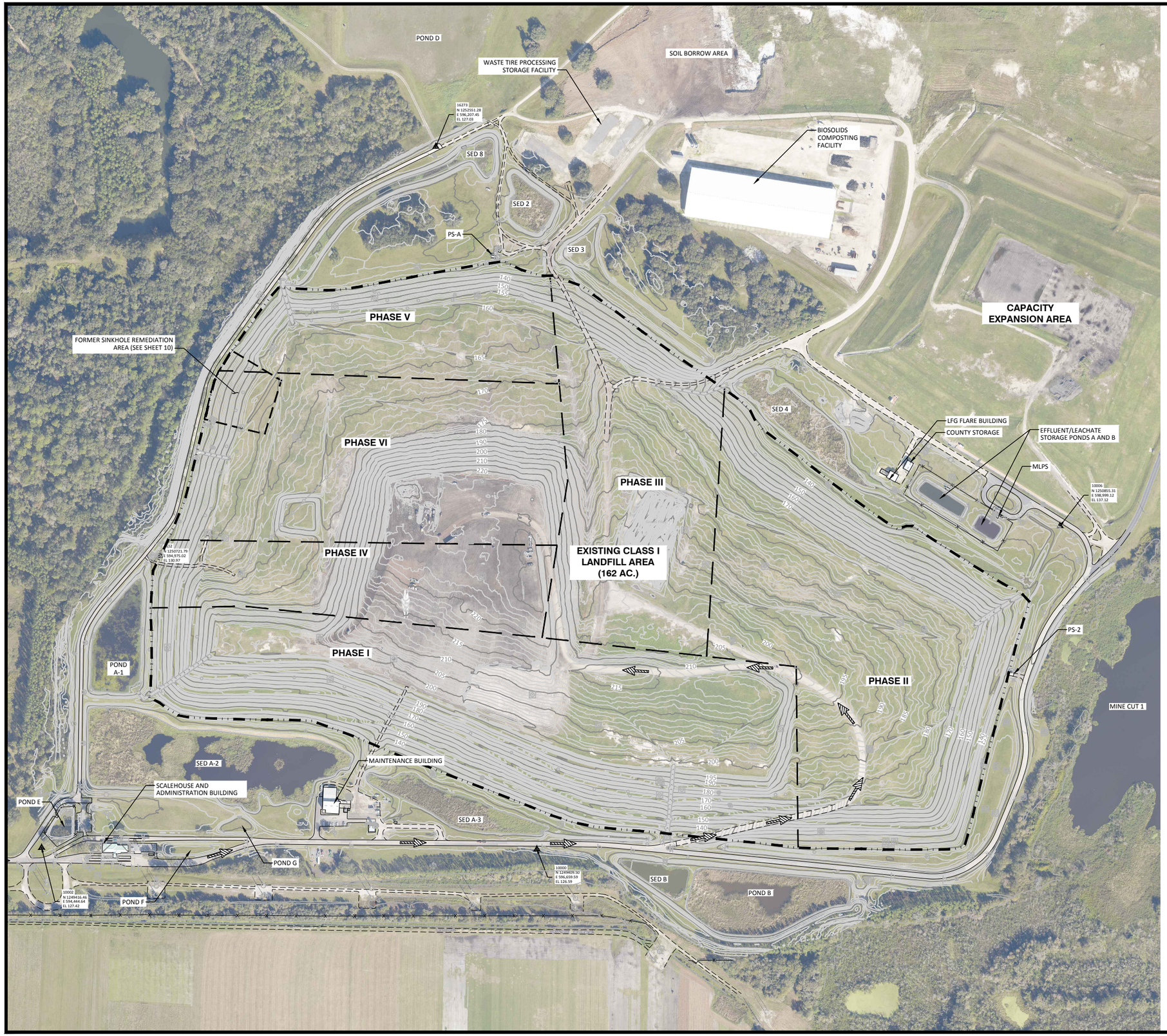
CADD FILE: 02 LEGEND AND GENERAL NOTES

DATE: JUNE 2020

SCALE: AS SHOWN

DRAWING NO. 2

SHEET 2 of 17



AERIAL PHOTOGRAPH AND EXISTING TOPOGRAPHY FROM JANUARY 6, 2020 PICKETT AND ASSOCIATES AERIAL SURVEY. LANDFILL LIMITS FROM FEBRUARY 23, 1994 WEIDENER SURVEY AND MAPPING, PA.

SURVEY CONTROL POINTS				
POINT #	CONTROL #	NORTHING	EASTING	ELEV
1	10019	1254397.27	601089.81	122.83
2	10021	1254421.53	598104.00	114.20
3	16273	1252551.28	596207.45	127.03
4	10023	1254273.93	595105.45	96.12

CLASS 1 LANDFILL PHASES	
DISPOSAL AREA	AREA (ACRES)
PHASE I	44.1
PHASE II	39.2
PHASE III	23.6
PHASE IV	13.8
PHASE V	14.0
PHASE VI	28.0

N

0 100 200 400

1" = 200'

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06/15/2020

KOLLAN LEE SPRADLIN LICENSE No. 82852 STATE OF FLORIDA PROFESSIONAL ENGINEER

REV	DATE	DESCRIPTION	CHK BY

SHEET TITLE: SITE PLAN

PROJECT TITLE: SOUTHEAST COUNTY LANDFILL PHASES I - VI OPERATING SEQUENCE

CLIENT: HILLSBOROUGH COUNTY PUBLIC UTILITIES DEPARTMENT SOLID WASTE MANAGEMENT DIVISION TAMPA, FL 33619

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PH (813) 621-0080 FAX NO. (813) 623-6757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJ. NO. 09215600.10 | DWN. BY: KKC | Q/A REVW BY: RBC | CHK. BY: KLS | APP. BY: KLS

CADD FILE: 03 EXISTING CONDITIONS

DATE: JUNE 2020

SCALE: AS SHOWN

DRAWING NO. 3

SHEET 3 of 17

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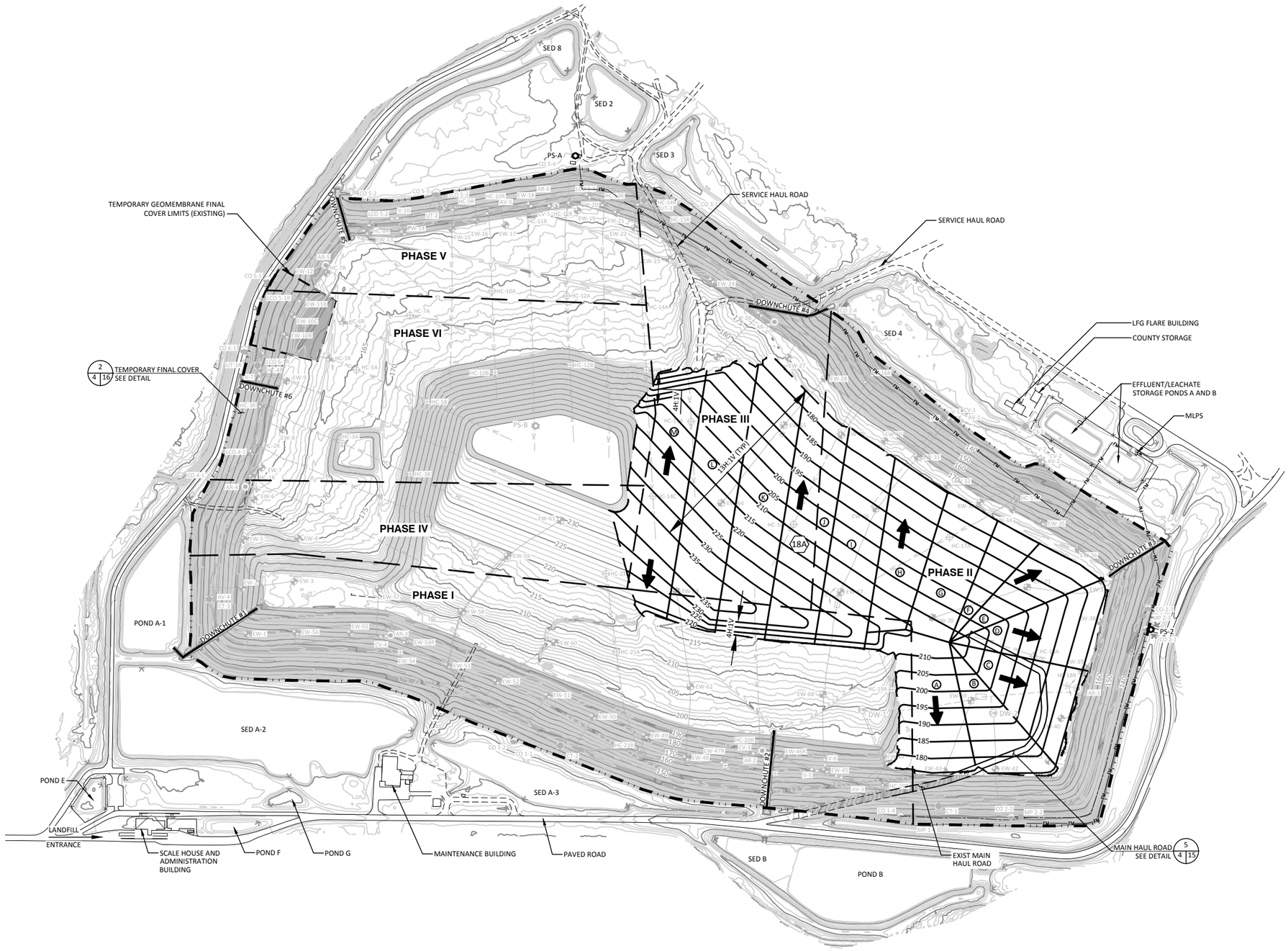

NOTES:

PROGRESSION:

BEGIN LIFT 18A FILL IN CELL "A", SOUTH SIDE OF PHASE II AND CONTINUE COUNTERCLOCKWISE ACROSS PHASES II AND III, TO THE WESTERN LIMIT OF PHASE III.

ACCESS ROADS:

FINAL LOCATION OF MAIN ACCESS AND HAUL ROADS TO BE DETERMINED AS WASTE FILLING PROGRESSES.

KOLLAN LEE SPRADLIN LICENSE No. 82852 STATE OF FLORIDA PROFESSIONAL ENGINEER

REV	DATE	DESCRIPTION	CHK BY

SHEET TITLE: LIFT 18A

PROJECT TITLE: SOUTHEAST COUNTY LANDFILL
PHASES I - VI OPERATING SEQUENCE

CLIENT: HILLSBOROUGH COUNTY
PUBLIC UTILITIES DEPARTMENT
SOLID WASTE MANAGEMENT DIVISION
TAMPA, FL 33619

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DATE	CHK. BY	APP. BY
KLS	KLS	KLS

CADD FILE: 04 LIFT 18A.DWG

DATE: JUNE 2020

SCALE: AS SHOWN

DRAWING NO. 4

SHEET 4 of 17

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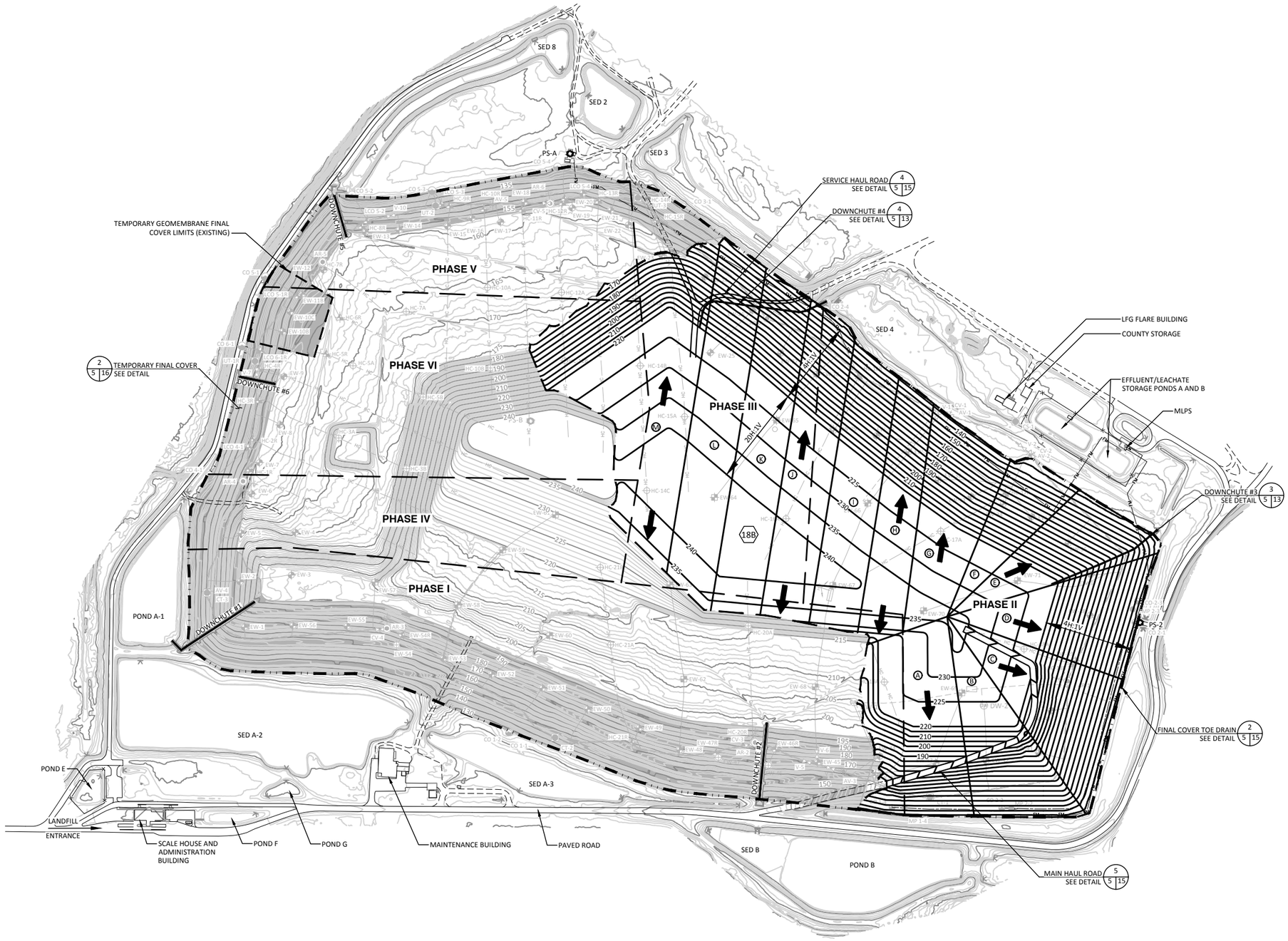

N

0 100 200 400
1" = 200'

NOTES:

PROGRESSION:

BEGIN LIFT 18B FILL IN CELL "A", SOUTH SIDE OF PHASE II AND CONTINUE COUNTERCLOCKWISE ACROSS PHASES II AND III, TO THE WESTERN LIMIT OF PHASE III.

ACCESS ROADS:

FINAL LOCATION OF MAIN ACCESS AND HAUL ROADS TO BE DETERMINED AS WASTE FILLING PROGRESSES.

FINAL COVER

INSTALLATION OF ACCELERATED GEOMEMBRANE FINAL COVER SYSTEM TO BEGIN IN AREA OF LIFT 18B UPON REACHING FINAL GRADE.

KOLLAN LEE SPRADLIN LICENSE No. 82852 STATE OF FLORIDA PROFESSIONAL ENGINEER

REV	DATE	DESCRIPTION	CHK. BY

SHEET TITLE: LIFT 18B

PROJECT TITLE: SOUTHEAST COUNTY LANDFILL
PHASES I - VI OPERATING SEQUENCE

CLIENT: HILLSBOROUGH COUNTY
PUBLIC UTILITIES DEPARTMENT
SOLID WASTE MANAGEMENT DIVISION
TAMPA, FL 33619

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS
3922 COCONUT PALM DRIVE, SUITE 102, TAMPA, FL 33619
PH (813) 621-0080 FAX NO. (813) 623-0757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJ. NO. 092156001.10 | DWN. BY: KKC | QA/REVW BY: RBC
TASK NO. KLS | CHK. BY: KLS | APP. BY: KLS

CADD FILE: 05 LIFT18B.DWG

DATE: JUNE 2020

SCALE: AS SHOWN

DRAWING NO. 5

SHEET 5 of 17

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06/15/2020

KOLLAN LEE SPRADLIN LICENSE No. 82852 STATE OF FLORIDA PROFESSIONAL ENGINEER

N

0 100 200 400
1" = 200'

NOTES:

PROGRESSION:

BEGIN LIFT 19A FILL IN CELL "A", EAST SIDE OF PHASE V AND CONTINUE COUNTERCLOCKWISE ACROSS PHASE V TO THE WESTERN END OF PHASE IV.

ACCESS ROADS:

FINAL LOCATION OF MAIN ACCESS AND HAUL ROADS TO BE DETERMINED AS WASTE FILLING PROGRESSES.

FINAL COVER:

INSTALLATION OF ACCELERATED GEOMEMBRANE FINAL COVER ON LIFT 18B TO BE COMPLETED WHILE OPERATING IN LIFT 19A.

REV	DATE	DESCRIPTION	CHK BY

SHEET TITLE: LIFT 19A

PROJECT TITLE: SOUTHEAST COUNTY LANDFILL
PHASES I - VI OPERATING SEQUENCE

CLIENT: HILLSBOROUGH COUNTY
PUBLIC UTILITIES DEPARTMENT
SOLID WASTE MANAGEMENT DIVISION
TAMPA, FL 33619

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS
3922 COCONUT PALM DRIVE, SUITE 102, TAMPA, FL 33619
PH (813) 621-0080 FAX NO. (813) 623-6757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJ. NO.	DWN. BY:	Q/A REVW BY:	APP. BY:
09215600.10	KKC	RBC	KLS
DATE:	CHK. BY:		
JUNE 2020	KLS		

CADD FILE: 06 LIFT 19A.DWG

DATE: JUNE 2020

SCALE: AS SHOWN

DRAWING NO. 6

SHEET 6 of 17

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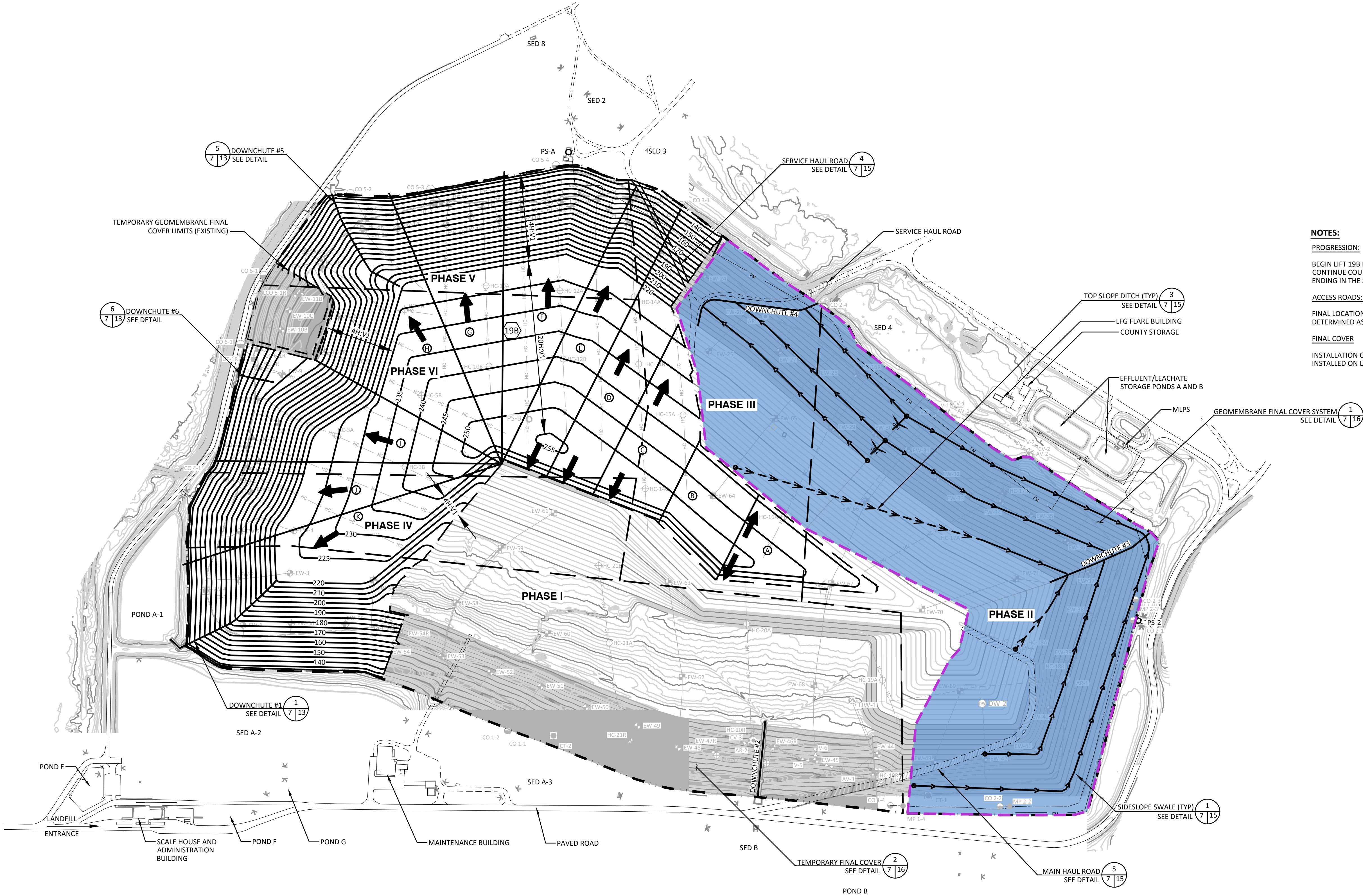

NOTES:

PROGRESSION:

BEGIN LIFT 19B FILL IN CELL "A", ON THE WEST SIDE OF PHASE II, CONTINUE COUNTERCLOCKWISE THROUGH PHASES III, VI, IV AND ENDING IN THE SOUTHWEST CORNER OF PHASE I.

ACCESS ROADS:

FINAL LOCATION OF MAIN ACCESS AND HAUL ROADS TO BE DETERMINED AS WASTE FILLING PROGRESSES.

FINAL COVER

INSTALLATION OF GEOMEMBRANE FINAL COVER SYSTEM TO BE INSTALLED ON LIFT 19B UPON REACHING FINAL GRADES.

REV	DATE	DESCRIPTION	CHK. BY

SHEET TITLE: LIFT 19B

PROJECT TITLE: SOUTHEAST COUNTY LANDFILL PHASES I - VI OPERATING SEQUENCE

CLIENT: HILLSBOROUGH COUNTY PUBLIC UTILITIES DEPARTMENT SOLID WASTE MANAGEMENT DIVISION TAMPA, FL 33619

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS
3922 COCONUT PALM DRIVE, SUITE 102, TAMPA, FL 33619
PH (813) 621-0080 FAX NO. (813) 623-6757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJ. NO. 09215600.10 | DSN. BY: KLS | DWN. BY: KKC | CHK. BY: KLS | Q/A RVW BY: RBC | APP. BY: KLS

CADD FILE: 07 LIFT 19B.DWG

DATE: JUNE 2020

SCALE: AS SHOWN

DRAWING NO. 7

SHEET 7 of 17

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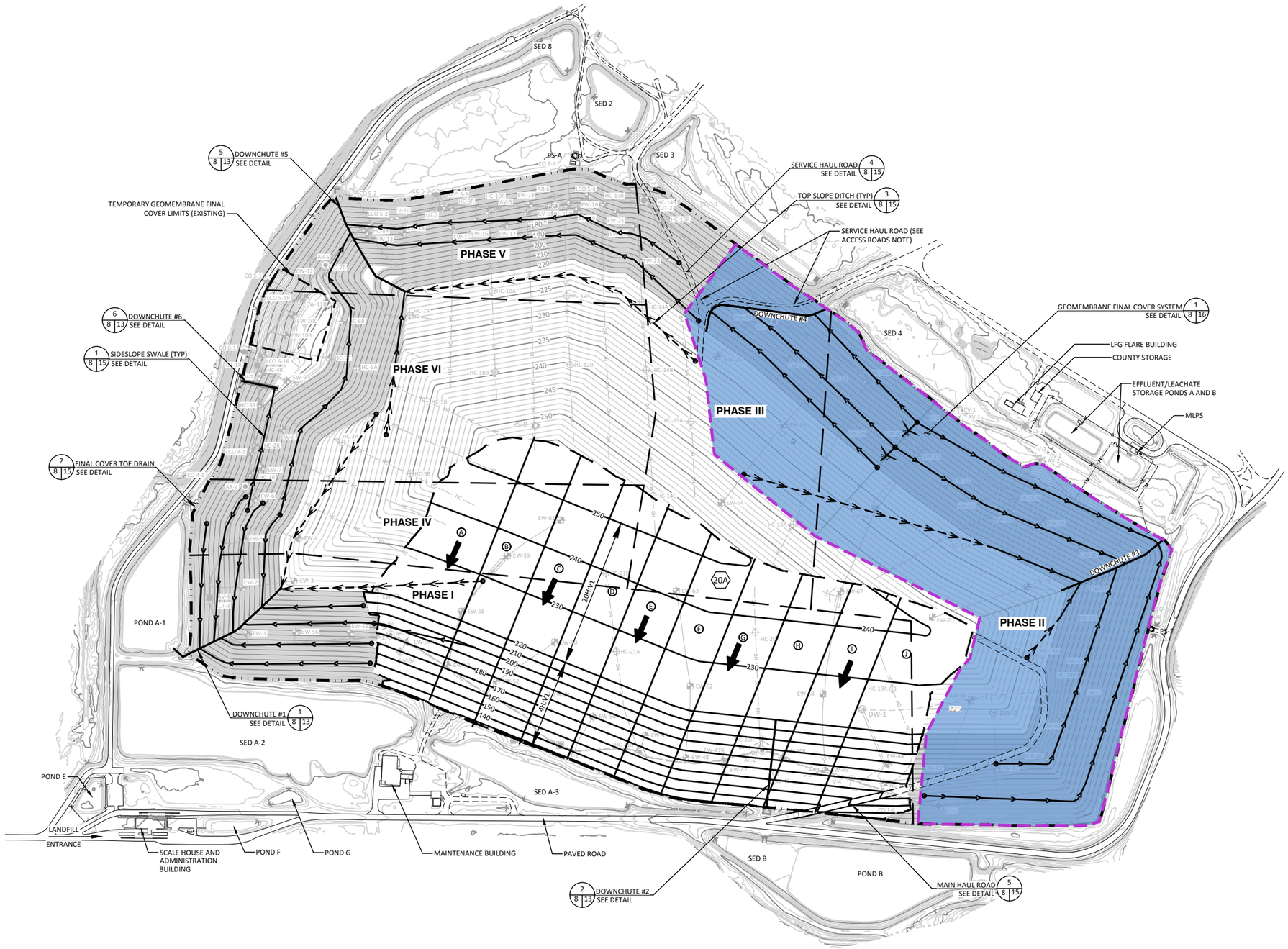

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06/15/2020

KOLLAN LEE SPRADLIN LICENSE No. 82852 STATE OF FLORIDA PROFESSIONAL ENGINEER

N

0 100 200 400
1" = 200'

NOTES:

PROGRESSION:

BEGIN LIFT 20A FILL IN CELL "A", SOUTH SIDE OF PHASE VI DOWN THROUGH PHASE IV AND I, CONTINUE EASTWARD ACROSS PHASE I TO COMPLETE PHASE I-VI FILLING.

ACCESS ROADS:

FINAL LOCATION OF MAIN ACCESS AND HAUL ROADS TO BE DETERMINED AS WASTE FILLING PROGRESSES.

FINAL COVER

INSTALLATION OF GEOMEMBRANE FINAL COVER ON LIFT 20A TO BEGIN UPON REACHING FINAL GRADES.

REV	DATE	DESCRIPTION	CHK BY

SHEET TITLE: LIFT 20A

PROJECT TITLE: SOUTHEAST COUNTY LANDFILL
PHASES I - VI OPERATING SEQUENCE

CLIENT: HILLSBOROUGH COUNTY
PUBLIC UTILITIES DEPARTMENT
SOLID WASTE MANAGEMENT DIVISION
TAMPA, FL 33619

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS
3922 COCONUT PALM DRIVE, SUITE 102, TAMPA, FL 33619
PH (813) 621-0080 FAX NO. (813) 623-0757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJ. NO. 092215600.10 | DWN. BY: KKC | QA R/W BY: RBC
DSN. BY: KLS | CHK. BY: KLS | APP. BY: KLS

CADD FILE: 08 LIFT 20A

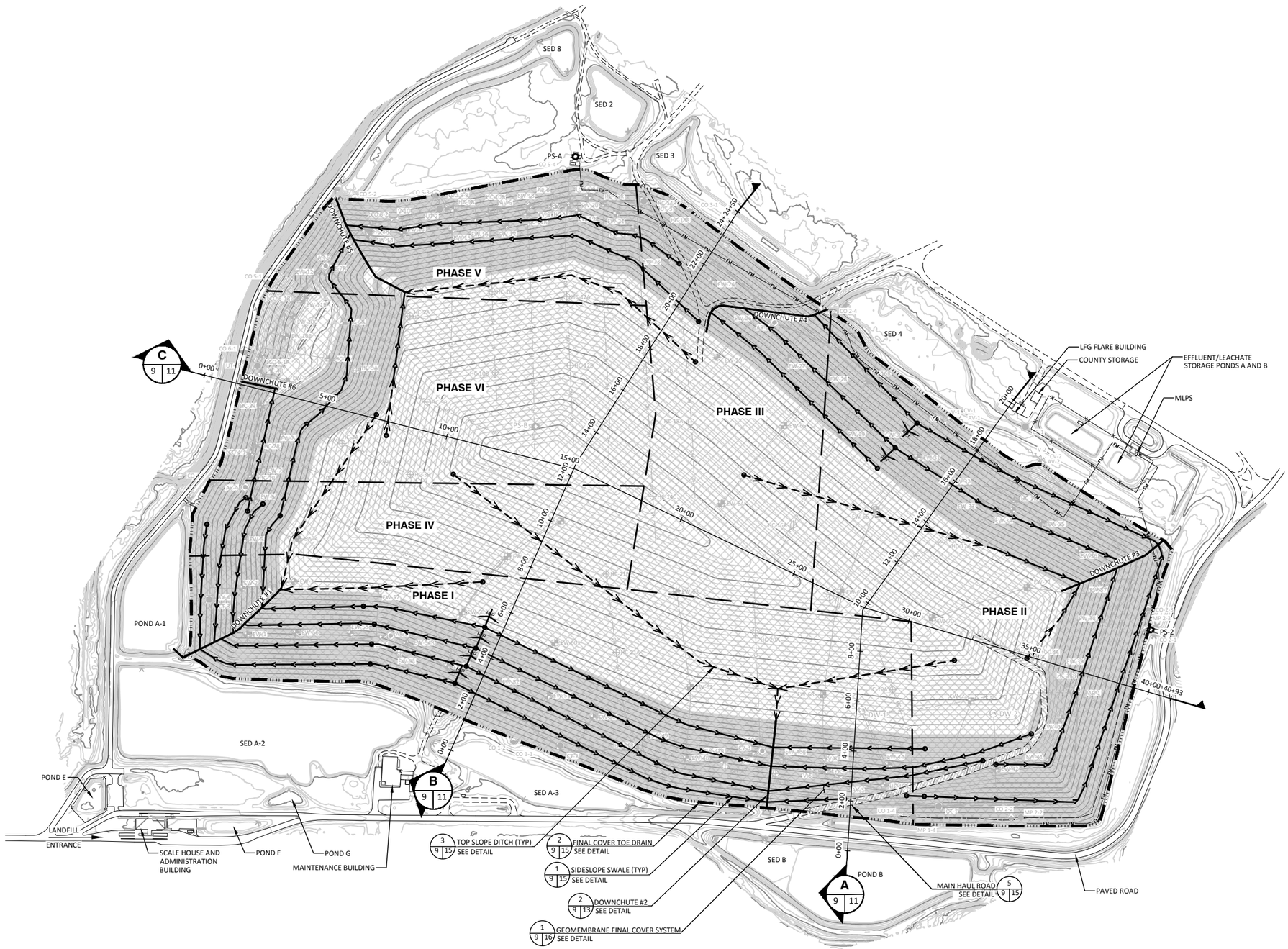
DATE: JUNE 2020

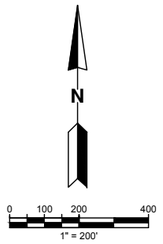
SCALE: AS SHOWN

DRAWING NO. 8

SHEET 8 of 17

C:\Users\4382kkc\Desktop\WORK FROM HOME COPY\Hillsborough\Alternate Fill Sequence\Drawings\Engineering Drawings\08 Lift 20A.dwg Jun 12, 2020 - 2:36am Layout Name: Lift 20A By: 4382kkc





NOTES:

ACCESS ROADS:

FINAL LOCATION OF MAIN ACCESS AND HAUL ROADS TO BE DETERMINED AS WASTE FILLING PROGRESSES.

FINAL COVER

INSTALLATION OF GEOMEMBRANE FINAL COVER SYSTEM TO BE INSTALLED ON LIFT 20A UPON REACHING FINAL GRADES.

KOLLAN LEE SPRADLIN LICENSE No. 82852 STATE OF FLORIDA PROFESSIONAL ENGINEER

REV	DATE	DESCRIPTION	CHK. BY

SHEET TITLE: **FINAL COVER**

PROJECT TITLE: **SOUTHEAST COUNTY LANDFILL PHASES I - VI OPERATING SEQUENCE**

CLIENT: **HILLSBOROUGH COUNTY PUBLIC UTILITIES DEPARTMENT SOLID WASTE MANAGEMENT DIVISION TAMPA, FL 33619**

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS
3922 COCONUT PALM DRIVE, SUITE 102, TAMPA, FL 33619
PH (813) 621-0080 FAX NO. (813) 623-6757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJ. NO. 092215600.10 | DWN. BY: KKC | QA/QC BY: RBC
DOC. NO. | CHK. BY: KLS | APP. BY: KLS

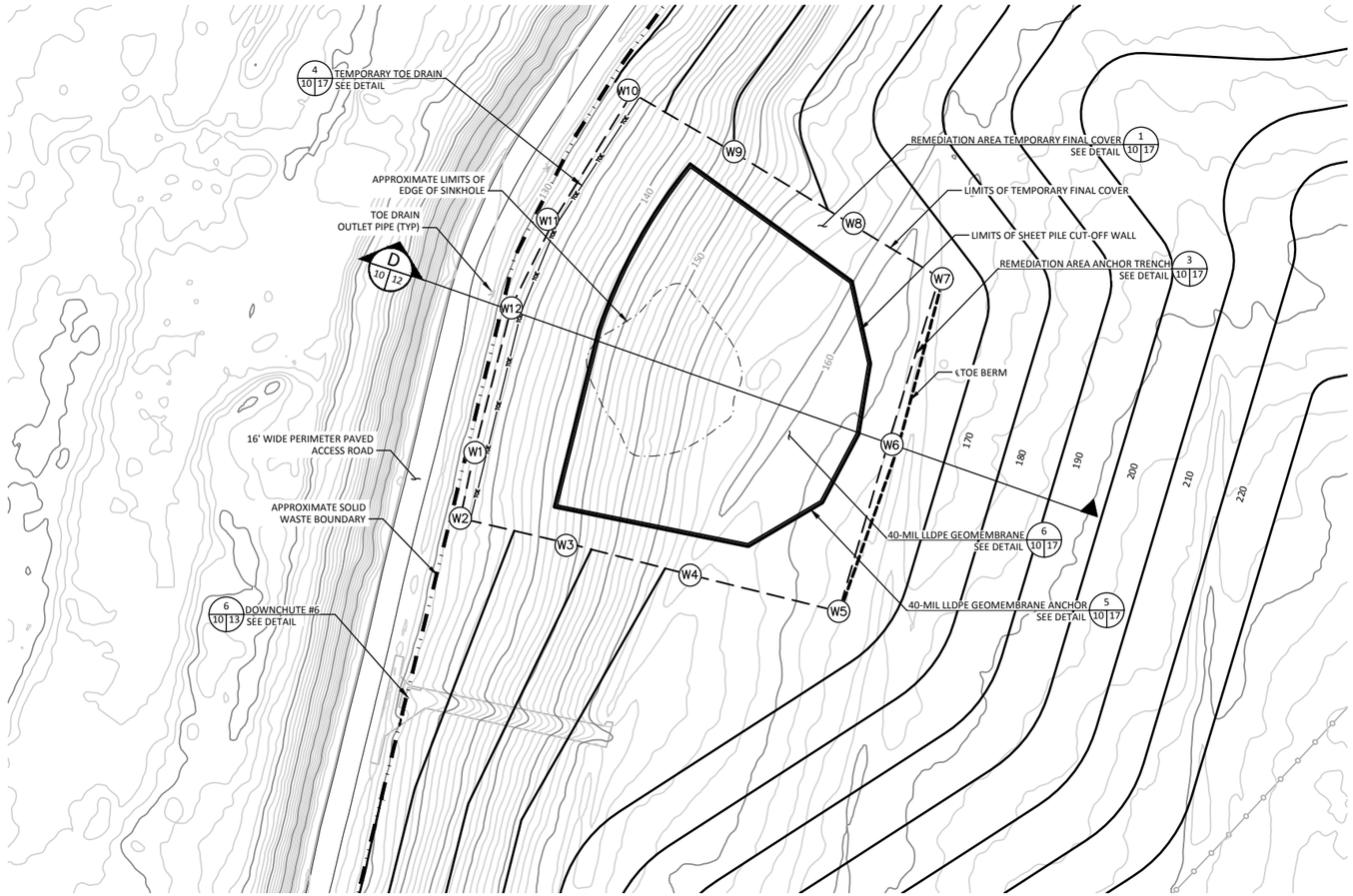
CADD FILE: 09 FINAL COVER

DATE: JUNE 2020

SCALE: AS SHOWN

DRAWING NO. **9**

SHEET **9** of **17**



LIMITS OF FINAL COVER			
DESCRIPTION	NORTHING	EASTING	ELEVATION
W1	1,251,380.1	595,181.34	129.32
W2	1,251,332.6	595,169.56	129.21
W3	1,251,312.3	595,247.07	142.69
W4	1,251,291.4	595,336.55	158.01
W5	1,251,265.5	595,442.88	162.72
W6	1,251,385.8	595,481.43	162.31
W7	1,251,505.8	595,517.36	162.22
W8	1,251,545.4	595,453.35	159.23
W9	1,251,597.7	595,367.51	145.05
W10	1,251,642.4	595,291.38	126.82
W11	1,251,548.6	595,233.61	128.73
W12	1,251,484.4	595,207.36	129.31

REMEDIATION LEGEND

- W1 W2 — WOODEN MARKER POST (LOCATIONS ON TABLE THIS SHEET)
- APPROXIMATE EDGE OF SINKHOLE
- TOE — EXISTING CONTOUR
- 155 — PROPOSED CONTOUR
- 220 — TOE DRAIN

NOTES:

1. EXISTING TOPOGRAPHY PROVIDED BY PICKETT AND ASSOCIATES, INC. FROM AERIAL PHOTOGRAPHY DATED JANUARY 6, 2020
2. LFG SYSTEM NOT SHOWN FOR CLARITY OF DRAWING

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06/15/2020

KOLLAN LEE SPRADLIN * LICENSED * No. 82852 * STATE OF FLORIDA * PROFESSIONAL ENGINEER

REV	DATE	DESCRIPTION	CHK BY

SHEET TITLE
SINKHOLE REMEDIATION PLAN

PROJECT TITLE
SOUTHEAST COUNTY LANDFILL
PHASES I - VI OPERATING SEQUENCE

CLIENT
HILLSBOROUGH COUNTY
PUBLIC UTILITIES DEPARTMENT
SOLID WASTE MANAGEMENT DIVISION
TAMPA, FL 33619

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS
3922 COCONUT PALM DRIVE, SUITE 102, TAMPA, FL 33619
PH (813) 621-0080 FAX NO. (813) 623-6757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJ. NO. 09215600.10
DWN. BY: KKC
CHK. BY: KLS
QA/A RVW BY: RBC
APP. BY: KLS

CADD FILE:
10 SINKHOLE REMEDIATION PLAN

DATE:
JUNE 2020

SCALE:
AS SHOWN

DRAWING NO.
10
SHEET **10** of **17**

C:\Users\k4382kkc\Desktop\WORK FROM HOME COPY\Hillsborough\Alternate Fill Sequence\Drawings\Engineering Drawings\10 SINKHOLE REMEDIATION PLAN.dwg Jun 12, 2020 - 2:39pm Layout Name: SINKHOLE REMEDIATION PLAN By: 4382kkc

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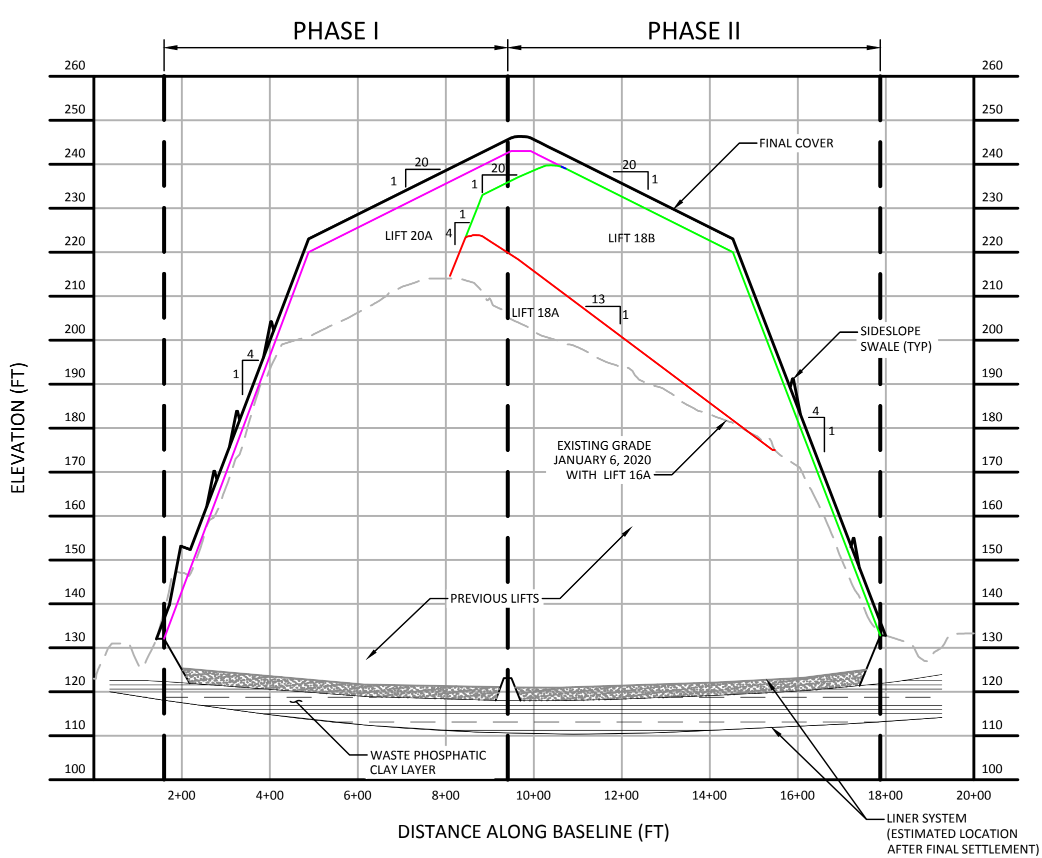
06/15/2020

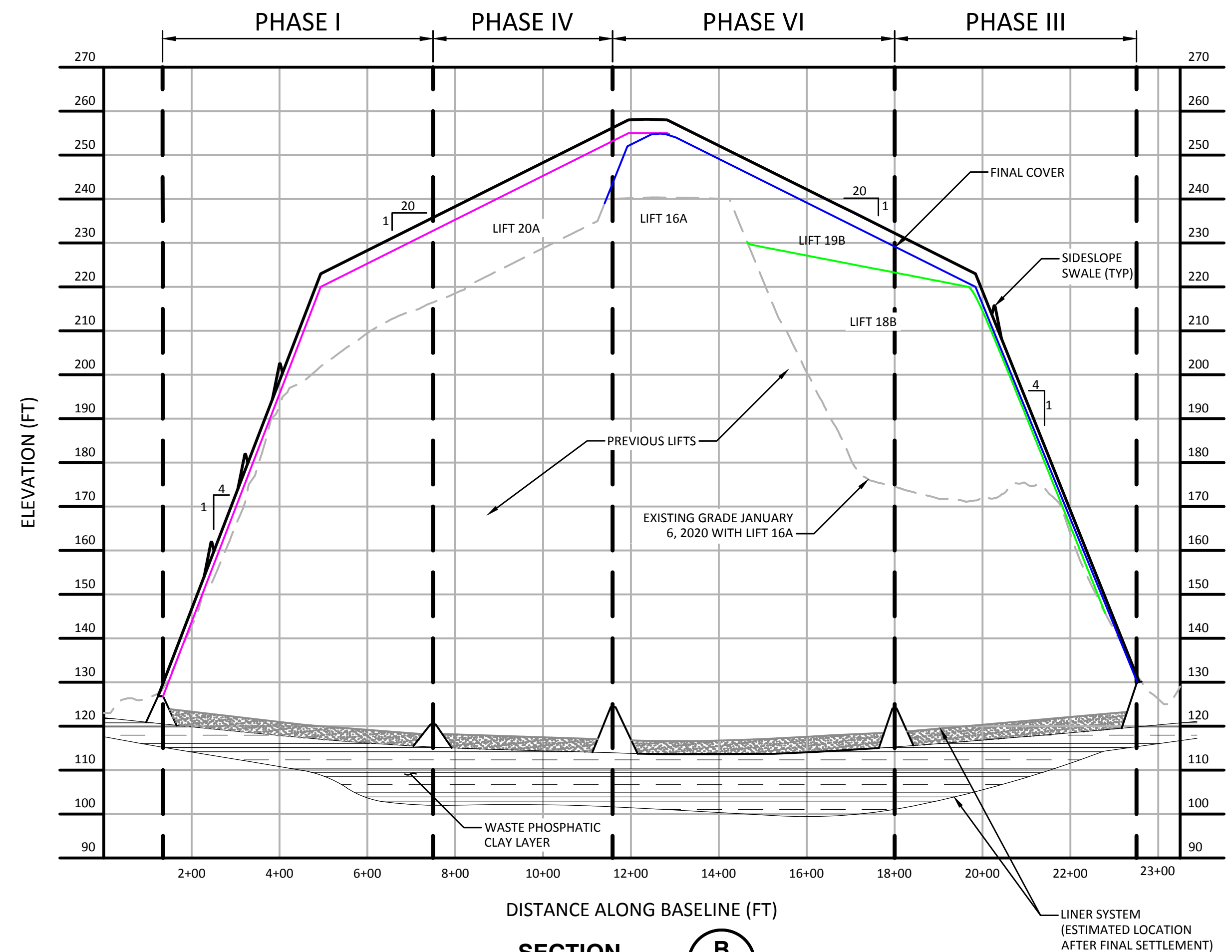
KOLLAN LEE SPRADLIN LICENSE No. 82852 STATE OF FLORIDA PROFESSIONAL ENGINEER

NOTES

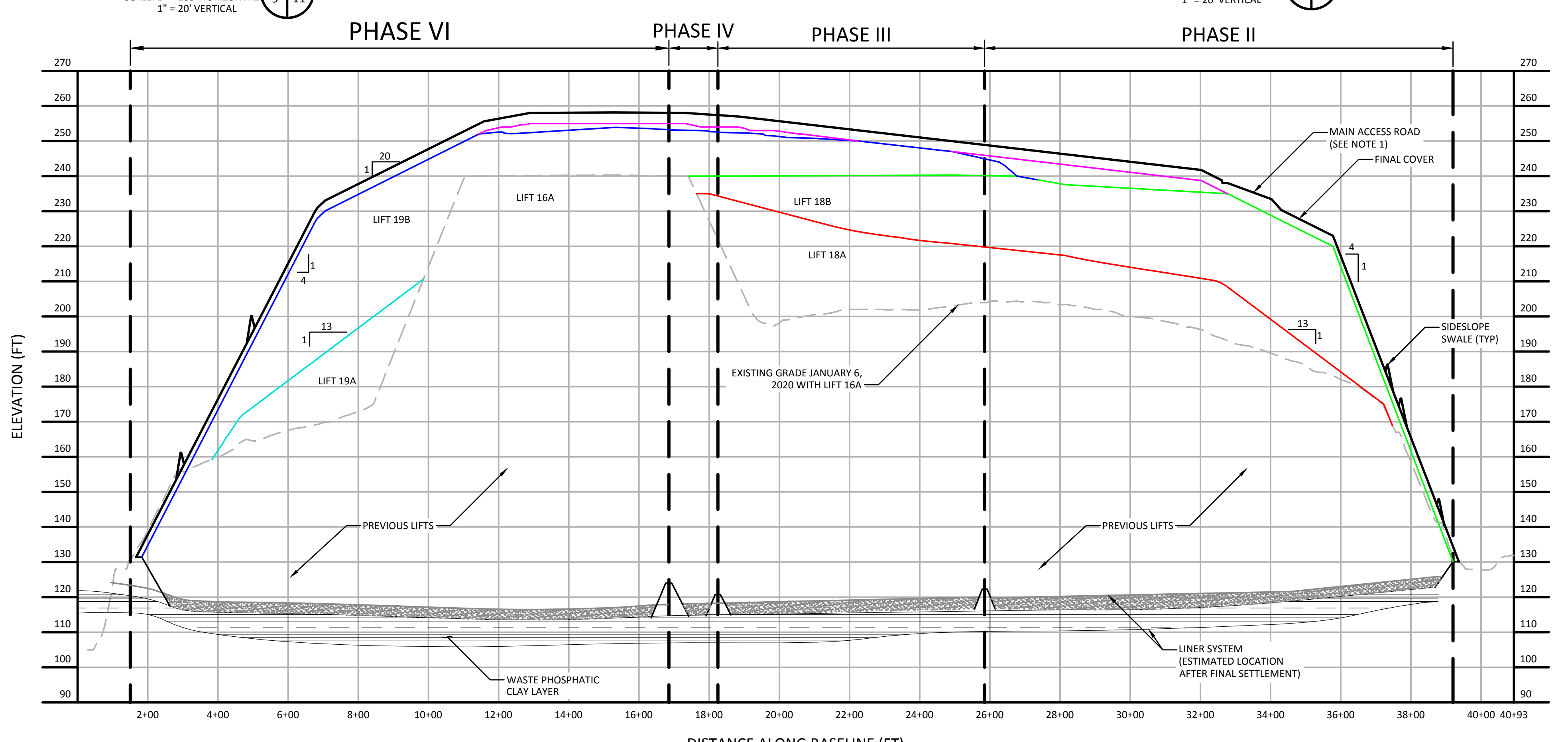
1. FINAL LOCATION OF MAIN ACCESS AND HAUL ROADS TO BE DETERMINED AS WASTE FILLING PROGRESSES.



SECTION A
SCALE: 1" = 200' HORIZONTAL
1" = 20' VERTICAL
9 | 11



SECTION B
SCALE: 1" = 200' HORIZONTAL
1" = 20' VERTICAL
9 | 11



SECTION C
SCALE: 1" = 200' HORIZONTAL
1" = 20' VERTICAL
9 | 11

REV	DATE	DESCRIPTION	CHK. BY

SHEET TITLE
LANDFILL SECTIONS

PROJECT TITLE
SOUTHEAST COUNTY LANDFILL PHASES I - VI OPERATING SEQUENCE

CLIENT
HILLSBOROUGH COUNTY PUBLIC UTILITIES DEPARTMENT SOLID WASTE MANAGEMENT DIVISION TAMPA, FL 33619

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS
3922 COCONUT PALM DRIVE, SUITE 102, TAMPA, FL 33619
PH (813) 621-0080 FAX NO. (813) 623-6757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJ. NO. 09215600.10 | DWN. BY: KKC | Q/A RVW BY: RBC
DSN. BY: KLS | CHK. BY: KLS | APP. BY: KLS

CADD FILE: 11 LANDFILL SECTIONS

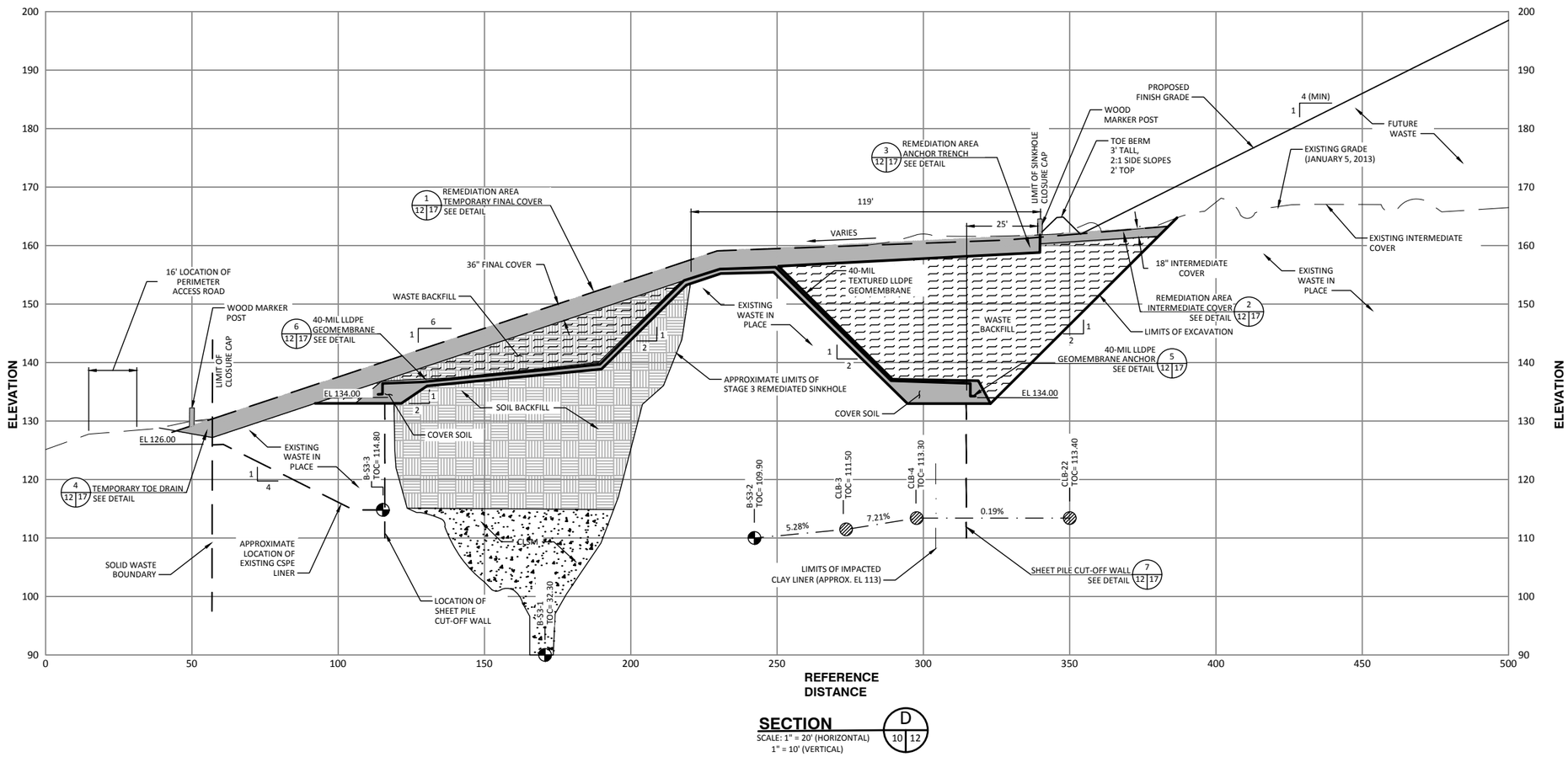
DATE: JUNE 2020

SCALE: AS SHOWN

DRAWING NO. **11**

SHEET 11 of 17

C:\Users\4382kkc\Desktop\WORK FROM HOME COPY\Hillsborough\Alternate Fill Sequence\Drawings\Engineering Drawings\11 LANDFILL SECTIONS.dwg Jun 12, 2020 – 2:40am Layout Name: Layout1 By: 4382kkc



SECTION D

SCALE: 1" = 20' (HORIZONTAL)
1" = 10' (VERTICAL)

LEGEND

- GEOTECHNICAL BORING LOCATION (SDII)
- GEOTECHNICAL BORING LOCATION (TIERRA)
- TOC = TOP OF CLAY ELEVATION
- CLSM = CONTROLLED LOW STRENGTH MATERIAL
- CSPE= CHLOROSULFONATED POLYETHYLENE

REV	DATE	DESCRIPTION	CHK BY

SHEET TITLE: SINKHOLE REMEDIATION CROSS SECTION

PROJECT TITLE: SOUTHEAST COUNTY LANDFILL PHASES I - VI OPERATING SEQUENCE

CLIENT: HILLSBOROUGH COUNTY PUBLIC UTILITIES DEPARTMENT SOLID WASTE MANAGEMENT DIVISION TAMPA, FL 33619

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS
3922 COCONUT PALM DRIVE, SUITE 102, TAMPA, FL 33619
PH (813) 621-0080 FAX NO. (813) 623-6757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJ NO: 09215600.10
TASK #:
DSGN. BY: KKC
CHK. BY: KLS
QA/QC BY: RBC
APP. BY: KLS

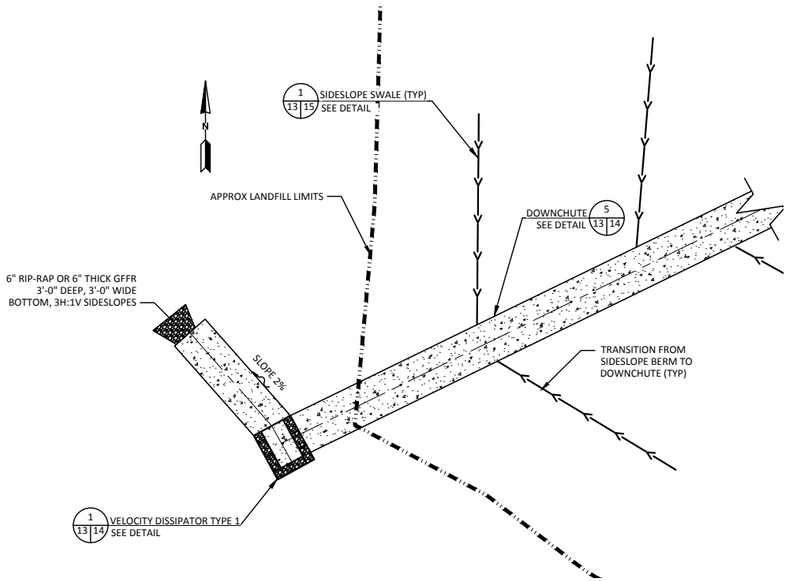
CADD FILE: 12 SINKHOLE REMEDIATION CROSS SECTION

DATE: JUNE 2020

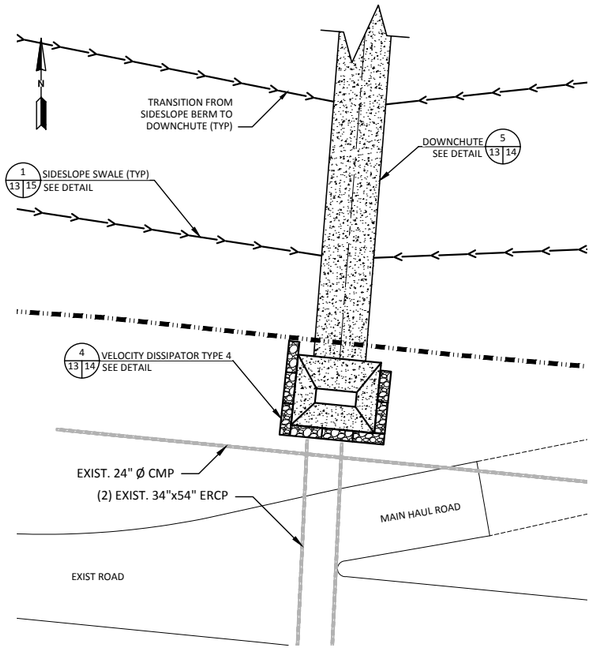
SCALE: AS SHOWN

DRAWING NO. 12

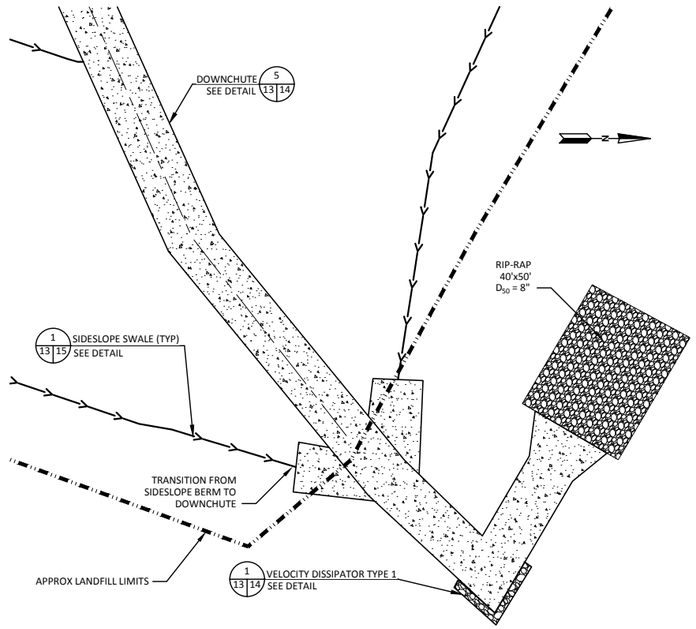
SHEET 13 of 17



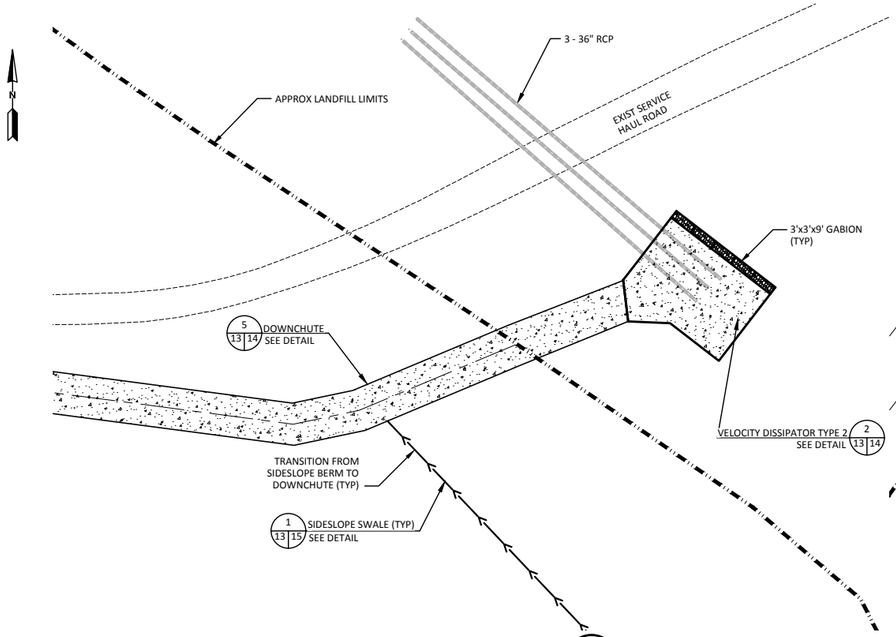
DOWNCHUTE #1 DETAIL 1 13 — NOT TO SCALE — 7,8



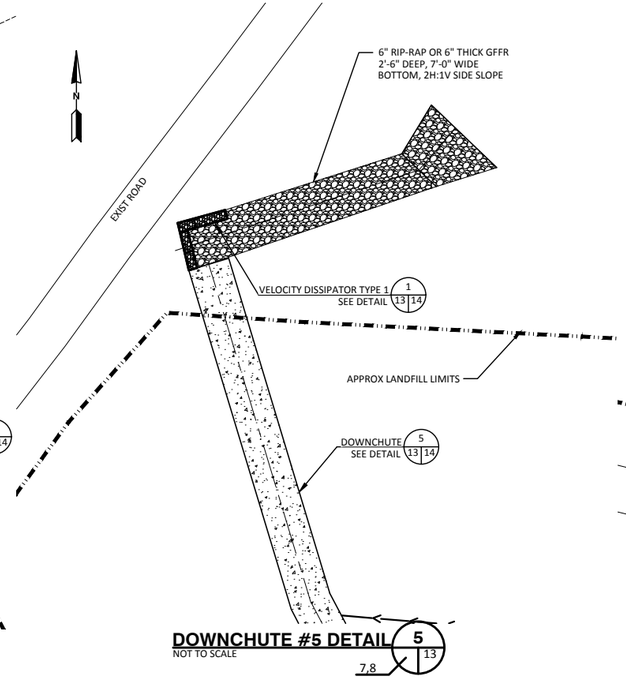
DOWNCHUTE #2 DETAIL 2 13 — NOT TO SCALE — 8,9



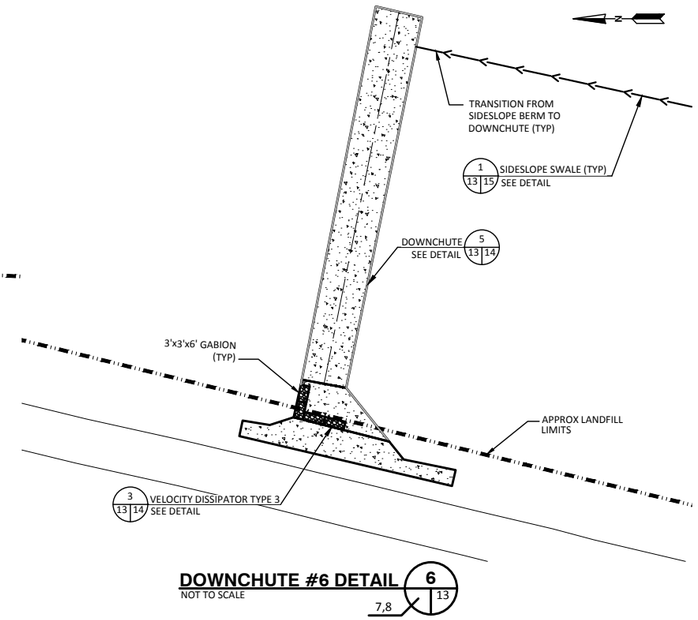
DOWNCHUTE #3 DETAIL 3 13 — NOT TO SCALE — 5,6



DOWNCHUTE #4 DETAIL 4 13 — NOT TO SCALE — 5,6



DOWNCHUTE #5 DETAIL 5 13 — NOT TO SCALE — 7,8



DOWNCHUTE #6 DETAIL 6 13 — NOT TO SCALE — 7,8

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06/15/2020

KOLLAN LEE SPRADLIN LICENSE No. 82852 STATE OF FLORIDA PROFESSIONAL ENGINEER

REV	DATE	DESCRIPTION	CHK BY

SHEET TITLE: **DETAILS 1**

PROJECT TITLE: **SOUTHEAST COUNTY LANDFILL PHASES I - VI OPERATING SEQUENCE**

CLIENT: **HILLSBOROUGH COUNTY PUBLIC UTILITIES DEPARTMENT SOLID WASTE MANAGEMENT DIVISION TAMPA, FL 33619**

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS
3922 COCONUT PALM DRIVE, SUITE 102, TAMPA, FL 33619
PH (813) 621-0080 FAX NO. (813) 623-6757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJ. NO.	DRWN. BY:	Q/A REVW BY:	APP. BY:
09215600.10	KKC	RBC	KLS
DATE	CHK. BY:		
KLS	KLS		

CADD FILE: 13 DETAILS 1

DATE: JUNE 2020

SCALE: AS SHOWN

DRAWING NO. **13**

SHEET **13** of **17**

C:\Users\43826kc\Desktop\WORK FROM HOME COPY\Hillsborough\Alternate Fill Sequence\Drawings\Engineering Drawings\13 DETAILS 1.dwg Jun 12, 2020 - 2:41pm Layout Name: DETAILS 1 By: 43826kc

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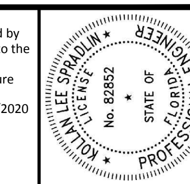
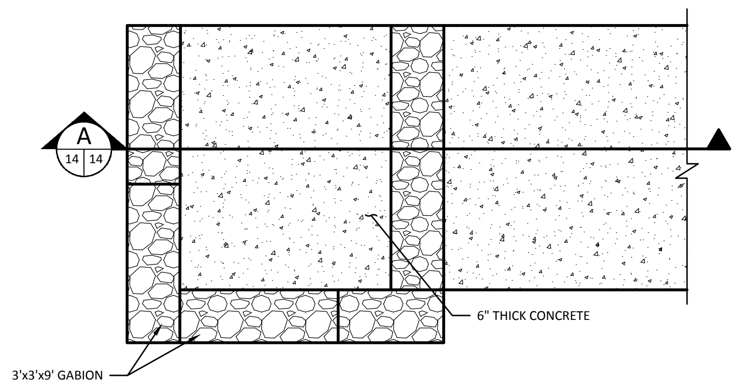
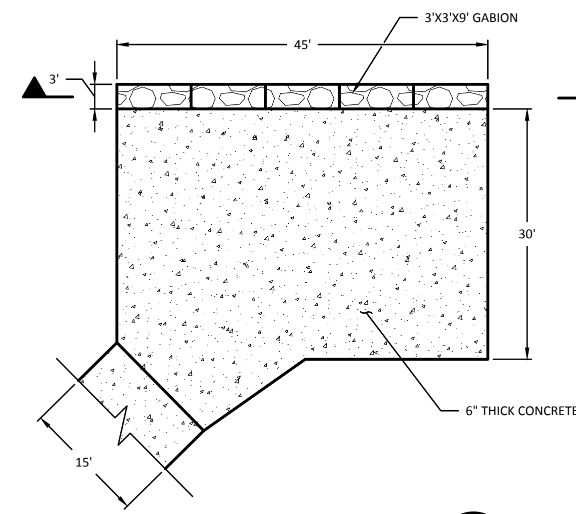
06/15/2020

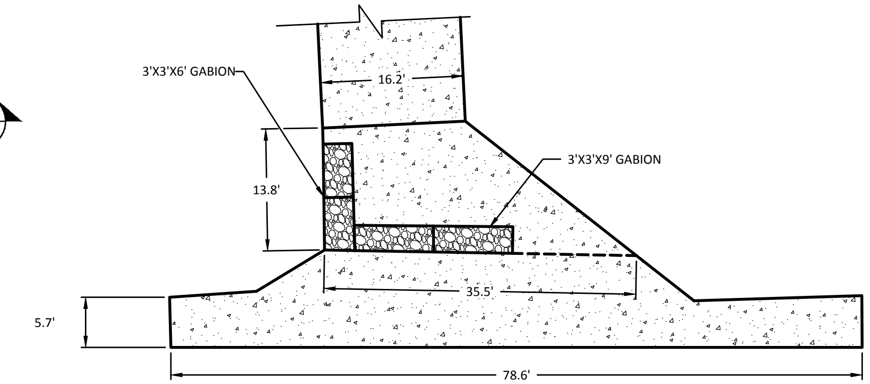




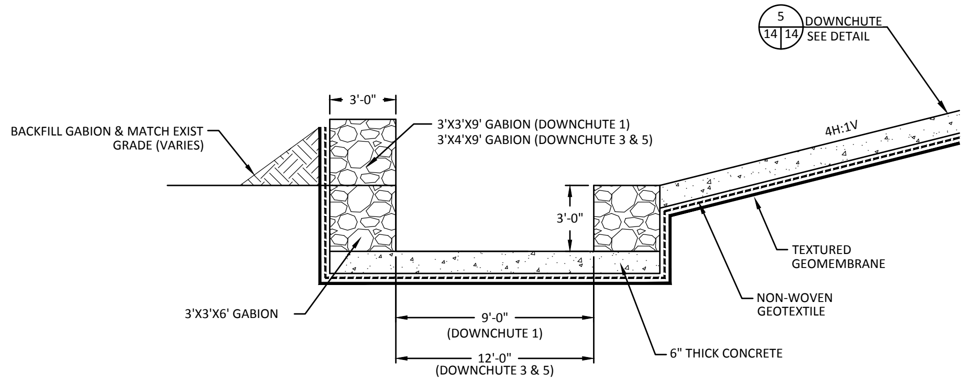
VELOCITY DISSIPATOR TYPE 1 DETAIL (1 — 13 | 14)
NOT TO SCALE



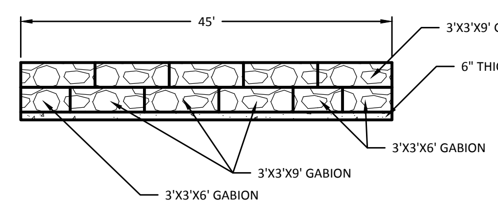
VELOCITY DISSIPATOR TYPE 2 DETAIL (2 — 13 | 14)
NOT TO SCALE



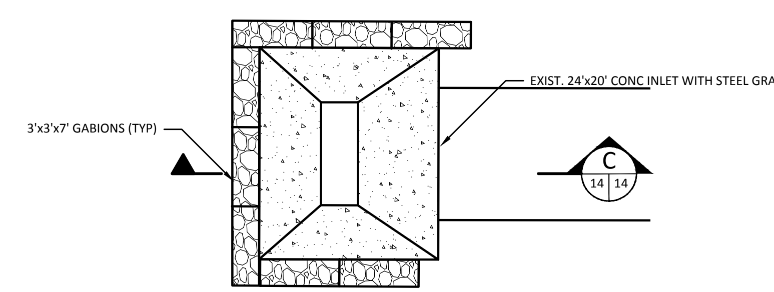
VELOCITY DISSIPATOR TYPE 3 DETAIL (3 — 13 | 14)
NOT TO SCALE



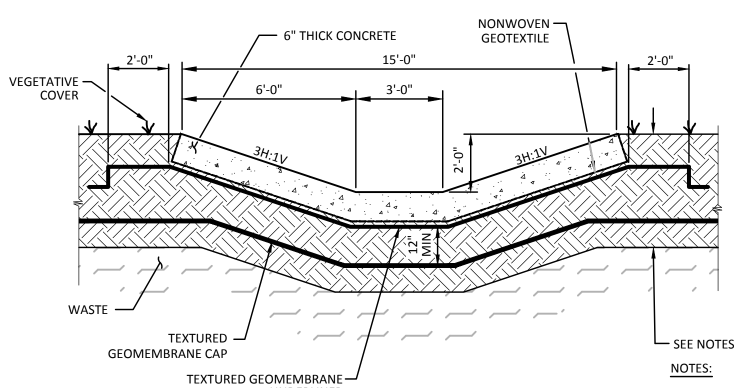
VELOCITY DISSIPATOR TYPE 1 SECTION (A — 14 | 14)
NOT TO SCALE



VELOCITY DISSIPATOR TYPE 2 SECTION (B — 14 | 14)
NOT TO SCALE



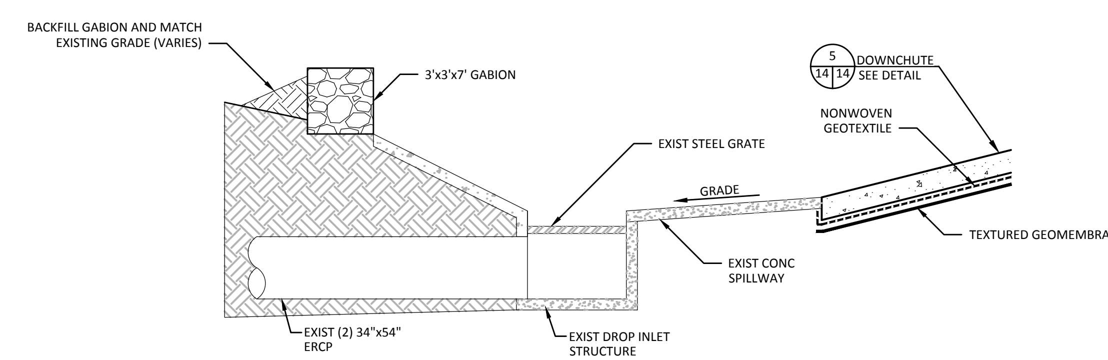
VELOCITY DISSIPATOR TYPE 4 DETAIL (4 — 13 | 14)
NOT TO SCALE



NOTES:

1. GEOMEMBRANE FINAL COVER SYSTEM SHOWN.
2. TYPICAL DOWNCHUTE TO INCLUDE EITHER A TEMPORARY FINAL COVER OR GEOMEMBRANE FINAL COVER SYSTEM. REFER TO SHEETS 4 TO 8 FOR APPLICABLE COVER SYSTEM.

DOWNCHUTE DETAIL (5 — 13,14 | 14)
NOT TO SCALE



VELOCITY DISSIPATOR TYPE 4 SECTION (C — 14 | 14)
NOT TO SCALE

REV	DATE	DESCRIPTION	CHK. BY

SHEET TITLE: DETAILS 2

PROJECT TITLE: SOUTHEAST COUNTY LANDFILL PHASES I - VI OPERATING SEQUENCE

CLIENT: HILLSBOROUGH COUNTY PUBLIC UTILITIES DEPARTMENT SOLID WASTE MANAGEMENT DIVISION TAMPA, FL 33619

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS
3922 COCONUT PALM DRIVE, SUITE 102, TAMPA, FL 33619
PH (813) 621-0080 FAX NO. (813) 623-6757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJ. NO. 09215600.10 | DWN. BY: KKC | Q/A RVW BY: RBC
DSN. BY: KLS | CHK. BY: KLS | APP. BY: KLS

CADD FILE: 14 DETAILS 2

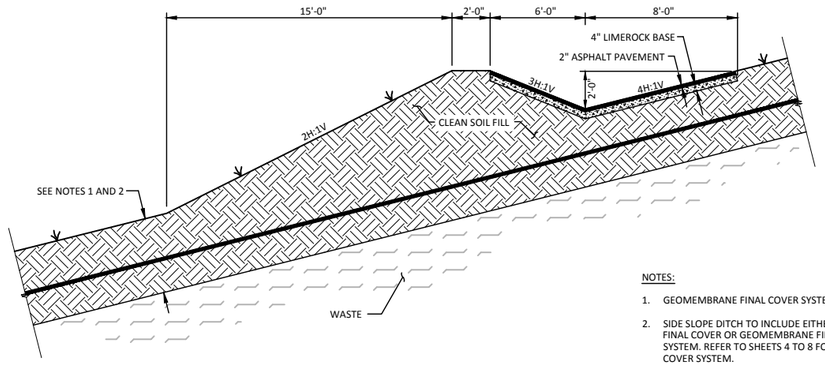
DATE: JUNE 2020

SCALE: AS SHOWN

DRAWING NO. 14

SHEET 14 of 17

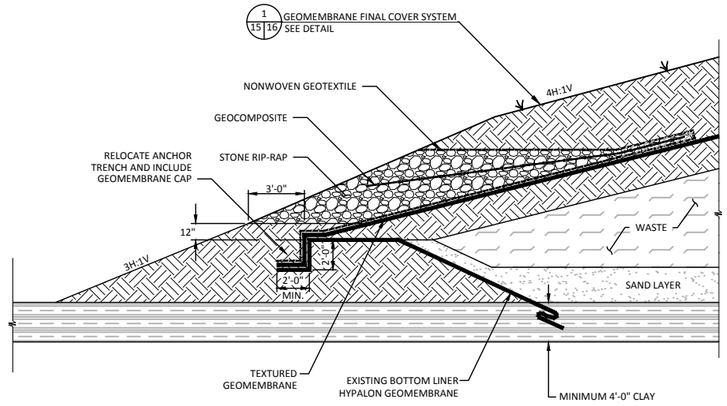
C:\Users\4382kkc\Desktop\WORK FROM HOME COPY\Hillsborough\Alternate Fill Sequence\Drawings\Engineering Drawings\14 DETAILS 2.dwg Jun 12, 2020 – 2:42am Layout Name: DETAILS 2 By: 4382kkc



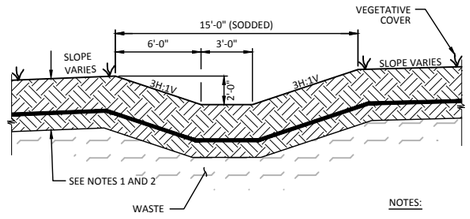
NOTES:

1. GEOMEMBRANE FINAL COVER SYSTEM SHOWN.
2. SIDE SLOPE DITCH TO INCLUDE EITHER A TEMPORARY FINAL COVER OR GEOMEMBRANE FINAL COVER SYSTEM. REFER TO SHEETS 4 TO 8 FOR APPLICABLE COVER SYSTEM.

SIDESLOPE SWALE DETAIL 1
NOT TO SCALE
6,7,8,9 | 15



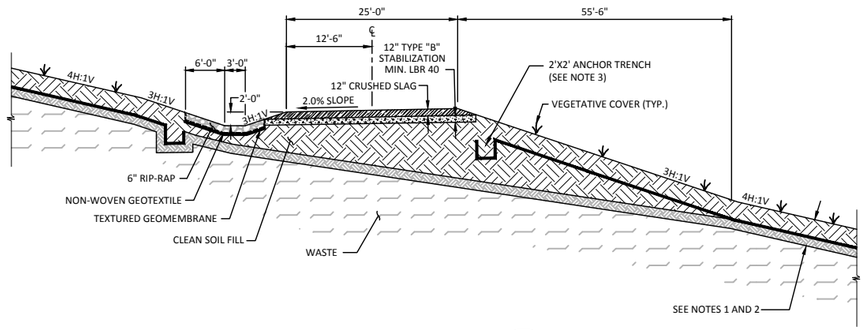
FINAL COVER TOE DRAIN DETAIL 2
NOT TO SCALE
5,6,8,9 | 15



NOTES:

1. GEOMEMBRANE FINAL COVER SYSTEM SHOWN.
2. TOP SLOPE DITCH TO INCLUDE EITHER A TEMPORARY FINAL COVER OR GEOMEMBRANE FINAL COVER SYSTEM. REFER TO SHEETS 4 TO 8 FOR APPLICABLE COVER SYSTEM.

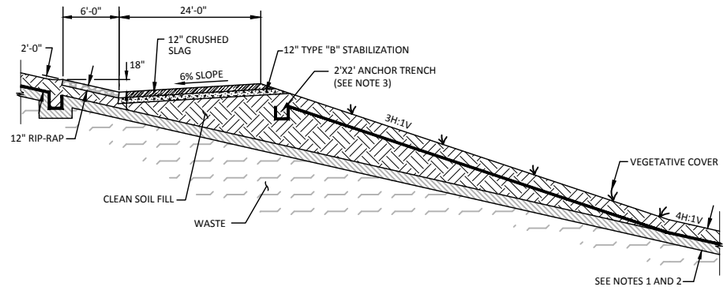
TOP SLOPE DITCH DETAIL 3
NOT TO SCALE
6,7,8,9 | 15



NOTES:

1. GEOMEMBRANE FINAL COVER SYSTEM SHOWN.
2. SERVICE HAUL ROAD TO INCLUDE EITHER A TEMPORARY FINAL COVER OR GEOMEMBRANE FINAL COVER SYSTEM. REFER TO SHEETS 4 TO 8 FOR APPLICABLE COVER SYSTEM.
3. GEOMEMBRANE LINER NOT INSTALLED BELOW ACCESS ROAD.

SERVICE HAUL ROAD DETAIL 4
NOT TO SCALE
5,6,7,8 | 15



NOTES:

1. GEOMEMBRANE FINAL COVER SYSTEM SHOWN.
2. MAIN HAUL ROAD TO INCLUDE EITHER A TEMPORARY FINAL COVER OR GEOMEMBRANE FINAL COVER SYSTEM. REFER TO SHEETS 4 TO 8 FOR APPLICABLE COVER SYSTEM.
3. GEOMEMBRANE LINER NOT INSTALLED UNDERNEATH ACCESS ROAD.

MAIN HAUL ROAD DETAIL 5
NOT TO SCALE
4,5,6,7,8,9 | 15

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06/15/2020

KOLLAN LEE SPRADLIN LICENSED No. 82852 STATE OF FLORIDA PROFESSIONAL ENGINEER

REV	DATE	DESCRIPTION	CHK BY

SHEET TITLE: DETAILS 3

PROJECT TITLE: SOUTHEAST COUNTY LANDFILL
PHASES I - VI OPERATING SEQUENCE

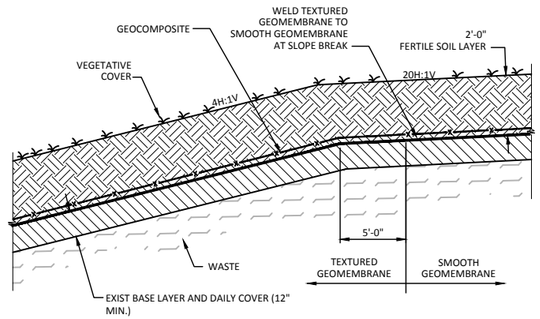
CLIENT: HILLSBOROUGH COUNTY
PUBLIC UTILITIES DEPARTMENT
SOLID WASTE MANAGEMENT DIVISION
TAMPA, FL 33619

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS
3922 COCONUT PALM DRIVE, SUITE 102, TAMPA, FL 33619
PH (813) 621-0080 FAX NO. (813) 623-6757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJ. NO. 09215600.10 | DWN. BY: KKC | QA/QC BY: RBC
DES. BY: KLS | CHK. BY: KLS | APP. BY: KLS

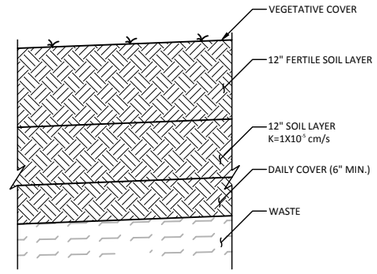
CADD FILE: 15 DETAILS 3
DATE: JUNE 2020
SCALE: AS SHOWN
DRAWING NO. 15
SHEET 15 of 17

C:\Users\k4382kkc\Desktop\WORK FROM HOME COPY\Hillsborough\Alternate Fill Sequence\Drawings\Engineering Drawings\15 DETAILS 3.dwg Jun 12, 2020 - 2:43pm Layout Name: DETAILS 3 By: k4382kkc

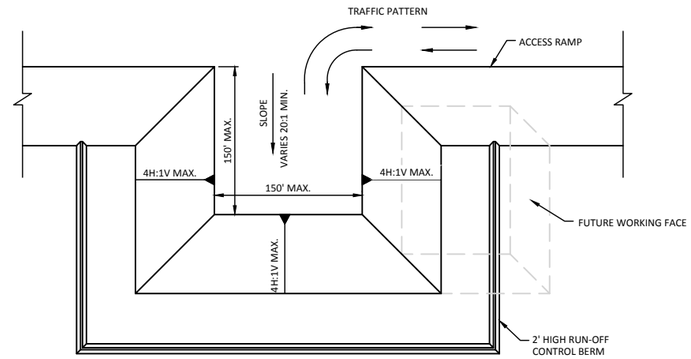


NOTE:
TEXTURED GEOMEMBRANE TO BE INSTALLED ON SLOPES EXCEEDING 20H:1V AND SMOOTH GEOMEMBRANE TO BE INSTALLED ON SLOPES LESS THAN OR EQUAL TO 20H:1V

GEOMEMBRANE FINAL COVER SYSTEM DETAIL 1
NOT TO SCALE
6,7,8,9 | 16



TEMPORARY FINAL COVER DETAIL 2
NOT TO SCALE
4,5,6,7 | 16



NOTE:
SHOWN FOR REFERENCE - NOT CALLED OUT IN PLANS

TYPICAL WORKING FACE CELL DETAIL 3
NOT TO SCALE
N/A | 16

KOLLAN LEE SPRADLIN LICENSE No. 82852 STATE OF FLORIDA PROFESSIONAL ENGINEER

REV	DATE	DESCRIPTION	CHK BY

SHEET TITLE: **DETAILS 4**

PROJECT TITLE: **SOUTHEAST COUNTY LANDFILL PHASES I - VI OPERATING SEQUENCE**

CLIENT: **HILLSBOROUGH COUNTY PUBLIC UTILITIES DEPARTMENT SOLID WASTE MANAGEMENT DIVISION TAMPA, FL 33619**

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS
3922 COCONUT PALM DRIVE, SUITE 102, TAMPA, FL 33619
PH (813) 621-0080 FAX NO. (813) 623-6757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJ. NO. 09215600.10 | DWN. BY: KKC | QA/KWW BY: RBC
DES. BY: KLS | CHK. BY: KLS | APP. BY: KLS

CADD FILE: 16 DETAILS 4

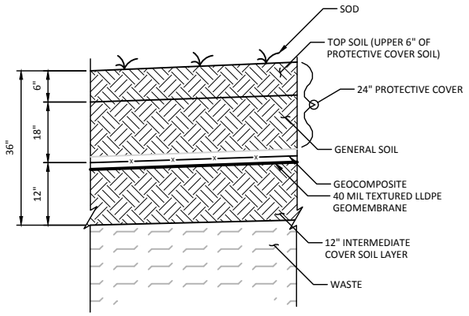
DATE: JUNE 2020

SCALE: AS SHOWN

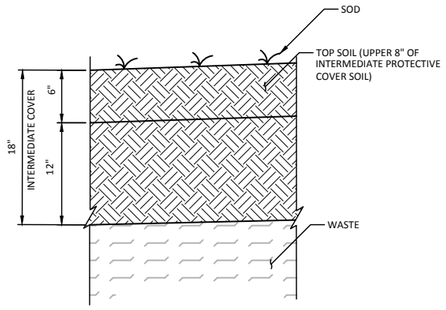
DRAWING NO. **16**

SHEET **16** of **17**

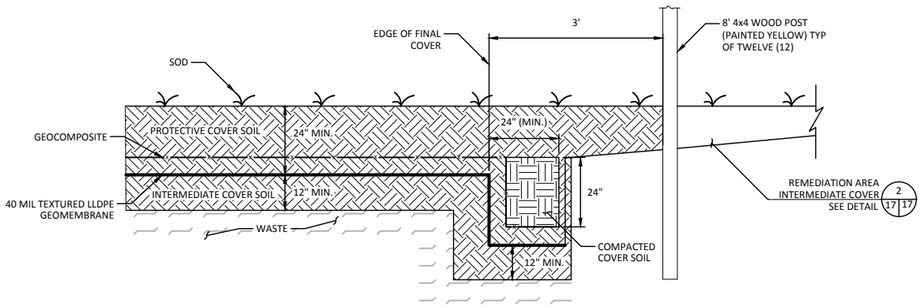
C:\Users\4382kkc\Desktop\WORK FROM HOME COPY\Hillsborough\Alternate Fill Sequence\Drawings\Engineering Drawings\16 DETAILS 4.dwg Jun 12, 2020 - 2:44pm Layout Name: Layout1 By: 4382kkc



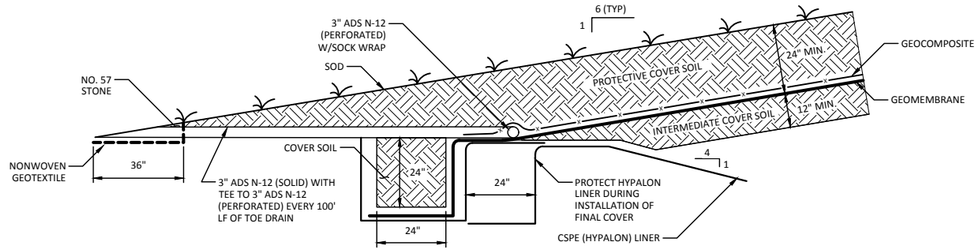
REMEDIATION AREA TEMPORARY FINAL COVER DETAIL 1
NOT TO SCALE
10,12 | 17



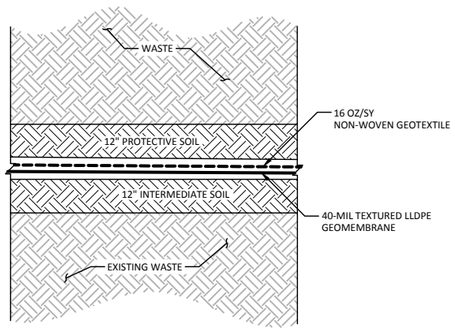
REMEDIATION AREA INTERMEDIATE COVER DETAIL 2
NOT TO SCALE
10,12,17 | 17



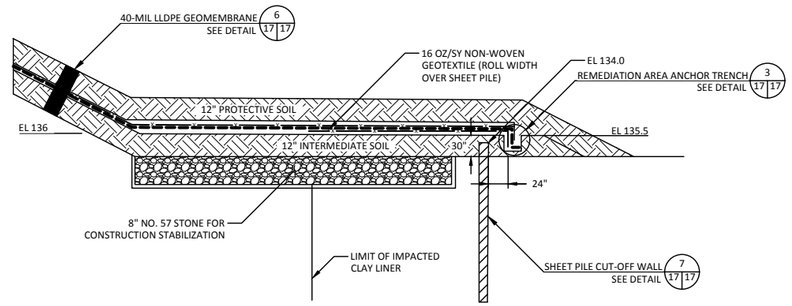
REMEDIATION AREA ANCHOR TRENCH DETAIL 3
NOT TO SCALE
10,12,17 | 17



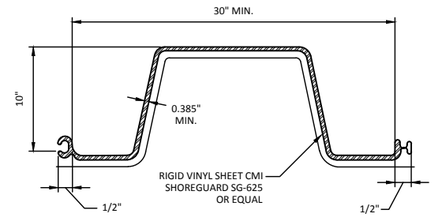
TEMPORARY TOE DRAIN DETAIL 4
NOT TO SCALE
10,12 | 17



40-MIL LLDPE GEOMEMBRANE DETAIL 6
NOT TO SCALE
10,12,17 | 17



40-MIL LLDPE GEOMEMBRANE ANCHOR DETAIL 5
NOT TO SCALE
10,12 | 17



* STEEL GUIDE METAL THICKNESS SUFFICIENT TO PENETRATE THROUGH MATERIALS SHOWN ON BORINGS.

SHEET PILE CUT-OFF WALL DETAIL 7
NOT TO SCALE
10,12,17 | 17

KOLLAN LEE SPRADLIN LICENSE No. 82852 STATE OF FLORIDA PROFESSIONAL ENGINEER

CHK. BY	DESCRIPTION	DATE	REV

SHEET TITLE: **DETAILS 4**

PROJECT TITLE: **SOUTHEAST COUNTY LANDFILL PHASES I - VI OPERATING SEQUENCE**

CLIENT: **HILLSBOROUGH COUNTY PUBLIC UTILITIES DEPARTMENT SOLID WASTE MANAGEMENT DIVISION TAMPA, FL 33619**

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS
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PH (813) 621-0080 FAX NO. (813) 623-6757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJ NO. 09215600.10 | DSN. BY: KKC | QA/KWK BY: RBC
DWN. BY: KLS | CHK. BY: KLS | APP. BY: KLS

CADD FILE: 17 DETAILS – SINKHOLE REMEDIATION

DATE: JUNE 2020

SCALE: AS SHOWN

DRAWING NO. **17**

SHEET **17** of **17**

C:\Users\4382kkc\Desktop\WORK FROM HOME COPY\Hillsborough\Alternate Fill Sequence\Drawings\Engineering Drawings\17 DETAILS – SINKHOLE REMEDIATION.dwg Jun 12, 2020 – 2:44pm Layout Name: DETAILS 4 By: 4382kkc

HILLSBOROUGH COUNTY
PUBLIC UTILITIES DEPARTMENT
SOLID WASTE MANAGEMENT DIVISION
CAPACITY EXPANSION AREA SECTIONS 7, 8, AND 9 OPERATING SEQUENCE

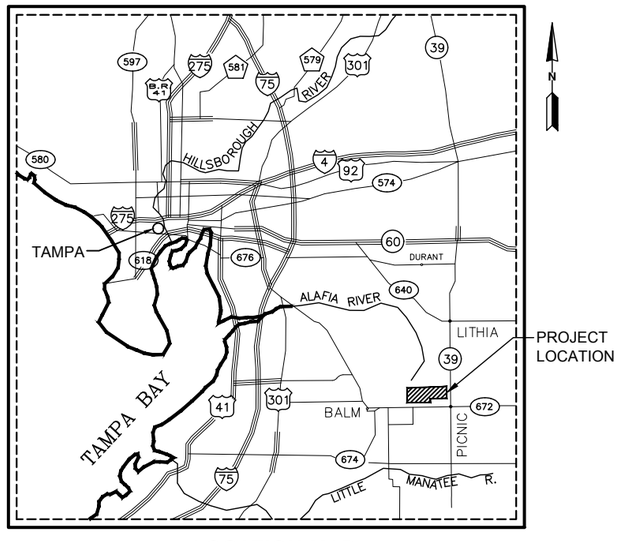
LITHIA, FLORIDA

JUNE, 2020

Hillsborough County Florida

BOARD OF COUNTY COMMISSIONERS

SANDRA L. MURMAN	- DISTRICT 1
KEN HAGAN	- DISTRICT 2
LESLEY MILLER, JR.	- DISTRICT 3
STACY R. WHITE	- DISTRICT 4
MARIELLA SMITH	- DISTRICT 5
PAT KEMP	- DISTRICT 6
KIMBERLY OVERMAN	- DISTRICT 7



LOCATION MAP
NOT TO SCALE

INDEX OF DRAWINGS

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.
3922 COCONUT PALM DRIVE, SUITE 102
TAMPA, FLORIDA 33619
PH. (813) 621-0080 FAX. (813) 623-6757
FIRM REGISTRATION RY 4892
WWW.SCSENGINEERS.COM
SCS PROJECT NO. 09215600.10

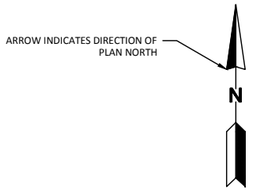
KOLLAN LEE SPRADLIN LICENSE No. 82852 STATE OF FLORIDA PROFESSIONAL ENGINEER

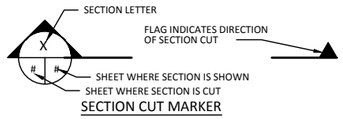
KOLLAN LEE SPRADLIN
FL PE #82852
DATE: 06/15/2020

ENGINEERING SYMBOLOGY

	DRAINAGE FLOW DIRECTION
	APPROXIMATE LIFT LIMITS
	APPROXIMATE LANDFILL LIMITS
	APPROXIMATE PHASE BOUNDARY
	APPROXIMATE LIMITS OF BORROW AREA
	APPROXIMATE TEMPORARY COVER AREA AFTER EACH LIFT
	APPROXIMATE INTERMEDIATE FINAL COVER AREA
	EXISTING SWALE
140	EXISTING CONTOUR
140	PROPOSED CONTOUR
	PROPOSED DOWNCHUTE
BVC	BEGIN VERTICAL CURVE
CTRD	CENTERED
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE
EVC	END VERTICAL CURVE
EXP. JT.	EXPANSION JOINT
INV.	INVERT ELEVATION
LF	LINEAR FEET
LT	LEFT
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENCY
PVI	POINT OF VERTICAL INTERSECTION
RT	RIGHT
TYP.	TYPICAL
	VEGETATION
VC	VERTICAL CURVE
Ø	DIAMETER
'	FOOT
"	INCH
Ⓐ	CELL DESIGNATION
S-21	EXISTING DRAINAGE STRUCTURE
TS-4	TEMPORARY DRAINAGE STRUCTURE
	PROPERTY LINE
	STORMWATER STRUCTURE
	FORCE MAIN PIPE
	LEACHATE COLLECTION PIPE

GENERAL SYMBOLOGY





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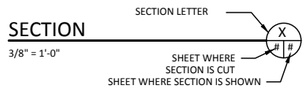
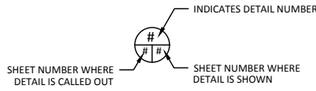
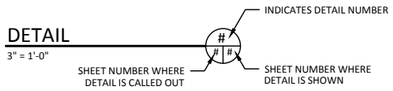


SECTION TITLE



DETAIL MARKER

FOR REFERENCING DETAILS INCLUDED IN DRAWING SET.



DETAIL TITLE

ABBREVIATIONS

APPROX - APPROXIMATE, APPROXIMATELY
BLDG - BUILDING
BTM - BOTTOM
CB - CATCH BASIN
CM - CONCRETE MONUMENT
CMP - CORRUGATED METAL PIPE
CONC - CONCRETE
CONT - CONTINUOUS
CORR - CORRUGATED
DET - DETAIL
DIA - DIAMETER
DIM - DIMENSION
DWG - DRAWING
EA - EACH
EOL - EDGE OF LINER
ETC - ET CETERA
ENCL - ENCLOSE, ENCLOSURE
EL - ELEVATION
EQUIP - EQUIPMENT
EXIST - EXISTING
FDEP - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
FDOT - FLORIDA DEPARTMENT OF TRANSPORTATION
FES - FLARED END SECTION
FIN - FINISHED
FM - FORCE MAIN
GALV - GALVANIZED
GCL - GEOSYNTHETIC CLAY LINER
GFFR - GROUT FILLED FIBER REVETMENT
GR - GRADE
GDL - GEOSYNTHETIC DRAINAGE LINER
GM - GAS MONITORING LOCATION
GP - GAS PROBE
HCSWMG - HILLSBOROUGH COUNTY SOLID WASTE MANAGEMENT GROUP
HDPE - HIGH DENSITY POLYETHYLENE
HP - HIGH POINT
ID - INSIDE DIAMETER
IE - INVERT ELEVATION
LF - LINEAL FEET
LFG - LANDFILL GAS
LLDPE - LINEAR LOW DENSITY POLYETHYLENE
LP - LOW POINT
MES - MITRED END SECTION
MAX - MAXIMUM
MH - MANHOLE
MIN - MINIMUM
MISC - MISCELLANEOUS
MSL - (ABOVE) MEAN SEAL LEVEL
MT - MOUNT
MW - GROUNDWATER MONITORING WELL
N/A - NOT APPLICABLE
N/AVAIL - NOT AVAILABLE
NGVD - NATIONAL GEODETIC VERTICAL DATUM
NIC - NOT IN CONTRACT
No - NUMBER
NTS - NOT TO SCALE
OC - ON CENTER
OD - OUTSIDE DIAMETER
OSHA - OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
PLS - PROFESSIONAL LAND SURVEYOR
PS - PUMP STATION
R - RADIUS
RCP - REINFORCED CONCRETE PIPE
REF - REFERENCE
REQD - REQUIRED
SCH - SCHEDULE
SDR - STANDARD DIMENSION RATIO
SHT - SHEET
SIM - SIMILAR
SS - STAINLESS STEEL
STD - STANDARD
STL - STEEL
STW - STORMWATER MONITORING STATION
TPO - THERMOPLASTIC POLYOLEFIN
TYP - TYPICAL
USC&GS - UNITED STATES COASTAL AND GEODETIC SURVEY
USGS - UNITED STATES GEOLOGICAL SURVEY
WGT - WEIGHT
W.E. - WATER ELEVATION
WWTP - WASTE WATER TREATMENT PLANT

GENERAL NOTES

1. THE EXISTING TOPOGRAPHY, DATED 01/06/2020, WAS OBTAINED FROM DRAWINGS PROVIDED BY PICKETT & ASSOCIATES, INC.
2. THE PROPOSED OPERATING SEQUENCES (LIFTS 15 - 18) ARE BASED ON THE EXISTING TOPOGRAPHY. ACTUAL OPERATING SEQUENCES MAY NEED TO BE MODIFIED IN THE FIELD TO ALLOW FOR LANDFILL SETTLEMENT. REVISED GRADES WILL BE DETERMINED BASED ON THE MAXIMUM DESIGNED 20-FOOT LIFT HEIGHT.

KOLLAN LEE SPRADLIN LICENSED PROFESSIONAL ENGINEER No. 82852 STATE OF FLORIDA

REV	DATE	DESCRIPTION	CHK. BY

SHEET TITLE: INDEX, LEGEND AND GENERAL NOTES

PROJECT TITLE: SOUTHEAST COUNTY LANDFILL CAPACITY EXPANSION AREA SECTIONS 7, 8 AND 9 OPERATING SEQUENCE

CLIENT: HILLSBOROUGH COUNTY PUBLIC UTILITIES DEPARTMENT SOLID WASTE MANAGEMENT DIVISION TAMPA, FL 33619

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS
3922 COCONUT PALM DRIVE, SUITE 102, TAMPA, FL 33619
PH (813) 621-0080 FAX NO. (813) 623-6757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJECT NO. 02215600.10 | DSN. BY: RBC | DWN. BY: KKC | CHK. BY: KLS | QA/AWR: RBC | APP. BY: KLS

CADD FILE: 2-INDEX

DATE: JUNE 2020

SCALE: AS SHOWN

DRAWING NO. 2

SHEET 2 of 9

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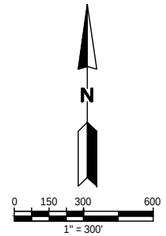
06/15/2020

NOTE:
EXISTING TOPOGRAPHY FROM AERIAL PHOTOGRAPHY PROVIDED BY PICKETT AND ASSOCIATES, INC.
DATED JANUARY 6, 2020



LEGEND

- WASTE LIMITS BOUNDARIES
- PROPERTY LINE
- FENCING LOCATION
- TRAFFIC ROUTE TO CAPACITY EXPANSION AREA

KOLLAN LEE SPRADLIN LICENSE No. 82852 STATE OF FLORIDA PROFESSIONAL ENGINEER

REV	DATE	DESCRIPTION	CHK. BY

SHEET TITLE: **FACILITY SITE PLAN AND EXISTING TOPOGRAPHY**

PROJECT TITLE: **SOUTHEAST COUNTY LANDFILL**
CAPACITY EXPANSION AREA
SECTIONS 7, 8 AND 9
OPERATING SEQUENCE

CLIENT
HILLSBOROUGH COUNTY
PUBLIC UTILITIES DEPARTMENT
SOLID WASTE MANAGEMENT DIVISION
TAMPA, FL 33619

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS
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PH (813) 621-0080 FAX NO. (813) 623-5757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJECT NO.	DSN. BY:	CHK. BY:	QA REVIEW	APP. BY:
09215600.10	KKC	KLS	RBC	KLS
DSN. BY: RBC				

CADD FILE:
3-FACILITY SITE PLAN AND EXISTING TOPOGRAPHY

DATE:
JUNE 2020

SCALE:
AS SHOWN

DRAWING NO.
3

SHEET 3 of 9

C:\Users\43824kc\Desktop\WORK FROM HOME COPY\Hillsborough\CEA\SCS\3-Facility Site Plan and Existing Topography.dwg Jun 14, 2020 - 10:18pm Layout Name: layout By: 43824kc

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06/15/2020

KOLLAN LEE SPRADLIN * LICENSED * No. 82852 * STATE OF FLORIDA * PROFESSIONAL ENGINEER

EXISTING TEMPORARY SEDIMENT BASIN
EXISTING PERIMETER STORMWATER CHANNEL
EXISTING CULVERT (TEMP)
EXISTING CULVERT (TEMP)
TEMP SED POND
0.71%
ACCESS ROAD SEE DETAIL 4 | 4 8
DOWNCHUTE (TYP) SEE DETAIL 2 | 4 9
SECTION 7, 8, AND 9 PROPOSED TOPOGRAPHY
EXISTING BOX CULVERT
POND C
PERIMETER SWALE "A" SEE DETAIL 2 | 4 8
SED C
SED 4
1 | 4 8 PERIMETER STORMWATER CHANNEL (TYP) SEE DETAIL
GUARDRAIL (FDOT DESIGN STANDARDS INDEX 400)
3 | 4 8 ARMORED PERIMETER SWALE "B" (TYP) SEE DETAIL
EXISTING CULVERT

N
0 50 100 200
1" = 100'

REV	DATE	DESCRIPTION	CHK. BY
1			
2			
3			
4			
5			

SHEET TITLE: STORMWATER PLAN

PROJECT TITLE: SOUTHEAST COUNTY LANDFILL CAPACITY EXPANSION AREA SECTIONS 7, 8 AND 9 OPERATING SEQUENCE

CLIENT: HILLSBOROUGH COUNTY PUBLIC UTILITIES DEPARTMENT SOLID WASTE MANAGEMENT DIVISION TAMPA, FL 33619

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS
3922 COCONUT PALM DRIVE, SUITE 102, TAMPA, FL 33619
PH (813) 621-0080 FAX NO. (813) 623-6757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJECT NO. 09215600.10 | DSGN. BY: RBC | DWN. BY: KKC | CHK. BY: KLS | QA/ACW: RBC | APP. BY: KLS

CADD FILE: SECTIONS 7, 8, 9 STORMWATER PLAN

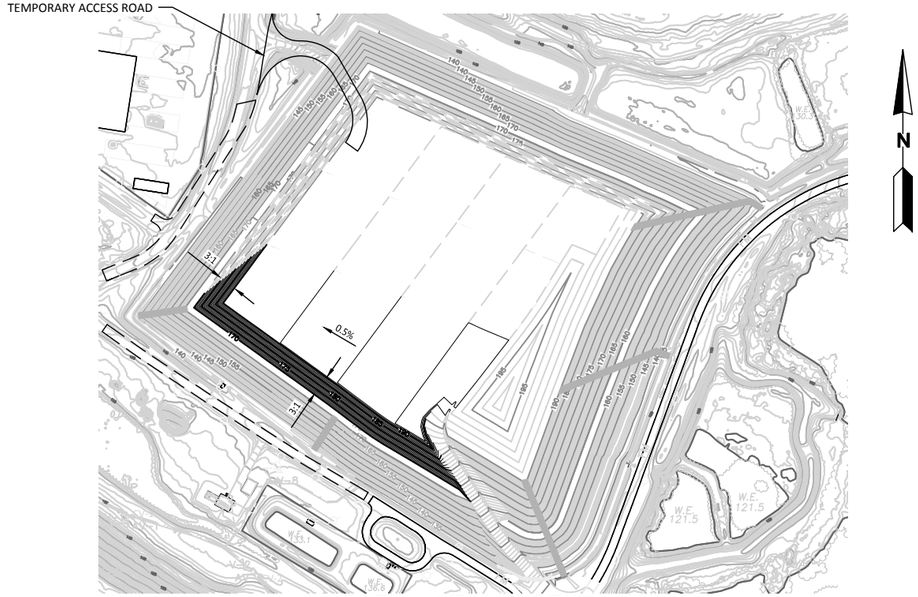
DATE: JUNE 2020

SCALE: AS SHOWN

DRAWING NO. 4

SHEET 4 of 9

C:\Users\4382kkc\Desktop\WORK FROM HOME COPY\Hillsborough\CEA\SCS\4-Sections 7, 8, 9 Stormwater Plan.dwg Jun 13, 2020 - 8:34pm Layout Name: Layout1 By: 4382kkc



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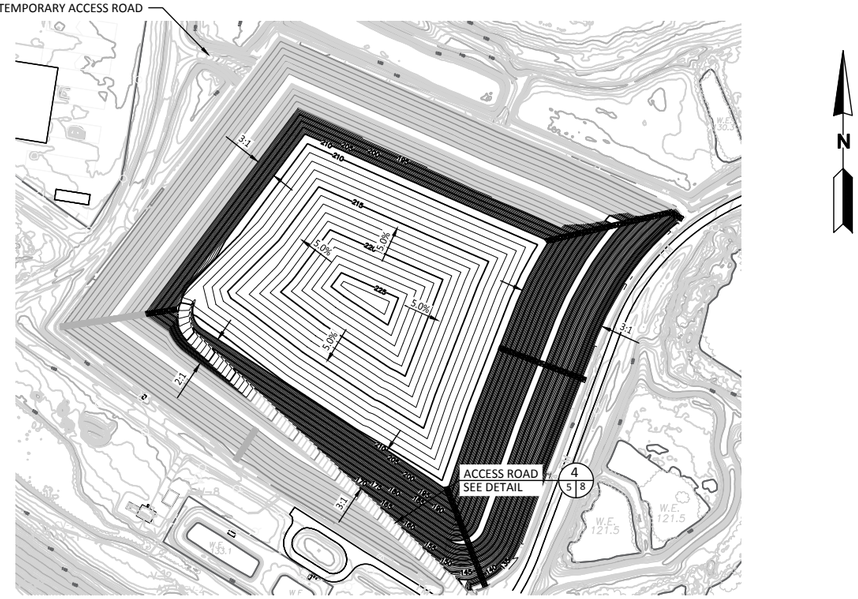

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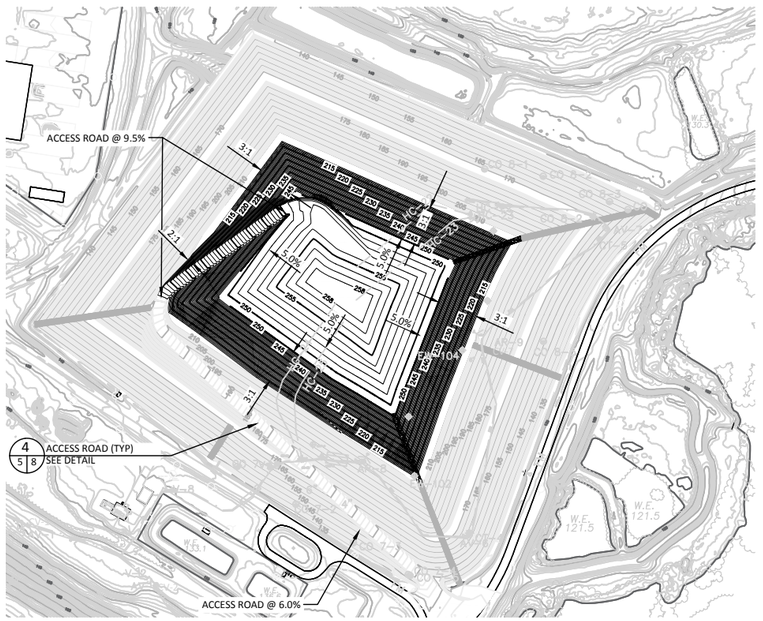

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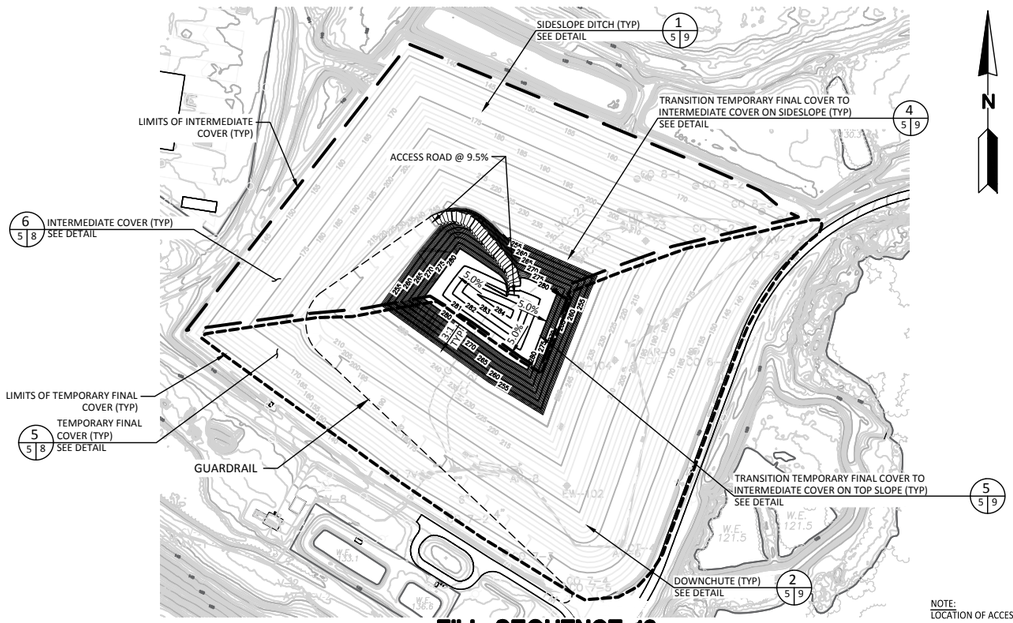

FILL SEQUENCE 18

0 100 200 400
1" = 200'

NOTE:
LOCATION OF ACCESS ROAD TO VARY WITH OPERATIONS

NOTES:
1. TEMPORARY FINAL COVER TO BE PLACED OVER SOUTH AND EAST SLOPES. INTERMEDIATE FINAL COVER TO BE PLACED ON WEST AND NORTH SLOPES TO ALLOW FOR EXPANSION.
2. LOCATION OF ACCESS ROAD TO VARY WITH OPERATIONS.
3. UPON COMPLETION OF FILL SEQUENCE 18, A FINAL COVER WILL BE PLACED ON THE SOUTH AND EAST SLOPES. REFER TO DETAIL 7, SHEET 8.

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06/15/2020

KOLLAN LEE SPRADLIN LICENSED PROFESSIONAL ENGINEER No. 82852 STATE OF FLORIDA

REV	DATE	DESCRIPTION	CHK. BY

SHEET TITLE
OPERATING SEQUENCE FILL SEQUENCES 15 TO 18

PROJECT TITLE
SOUTHEAST COUNTY LANDFILL CAPACITY EXPANSION AREA SECTIONS 7, 8 AND 9 OPERATING SEQUENCE

CLIENT
HILLSBOROUGH COUNTY PUBLIC UTILITIES DEPARTMENT SOLID WASTE MANAGEMENT DIVISION TAMPA, FL 33619

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS
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PH (813) 621-0080 FAX NO. (813) 623-6757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJECT NO: 0215600.10
DSN. BY: KKC
CHK. BY: KLS
DR'N BY: RBC
CK'D BY: RBC
APP'D BY: KLS

CADD FILE: 5-FILL SEQUENCE 15-18

DATE: JUNE 2020

SCALE: AS SHOWN

DRAWING NO. 5

SHEET 5 of 9

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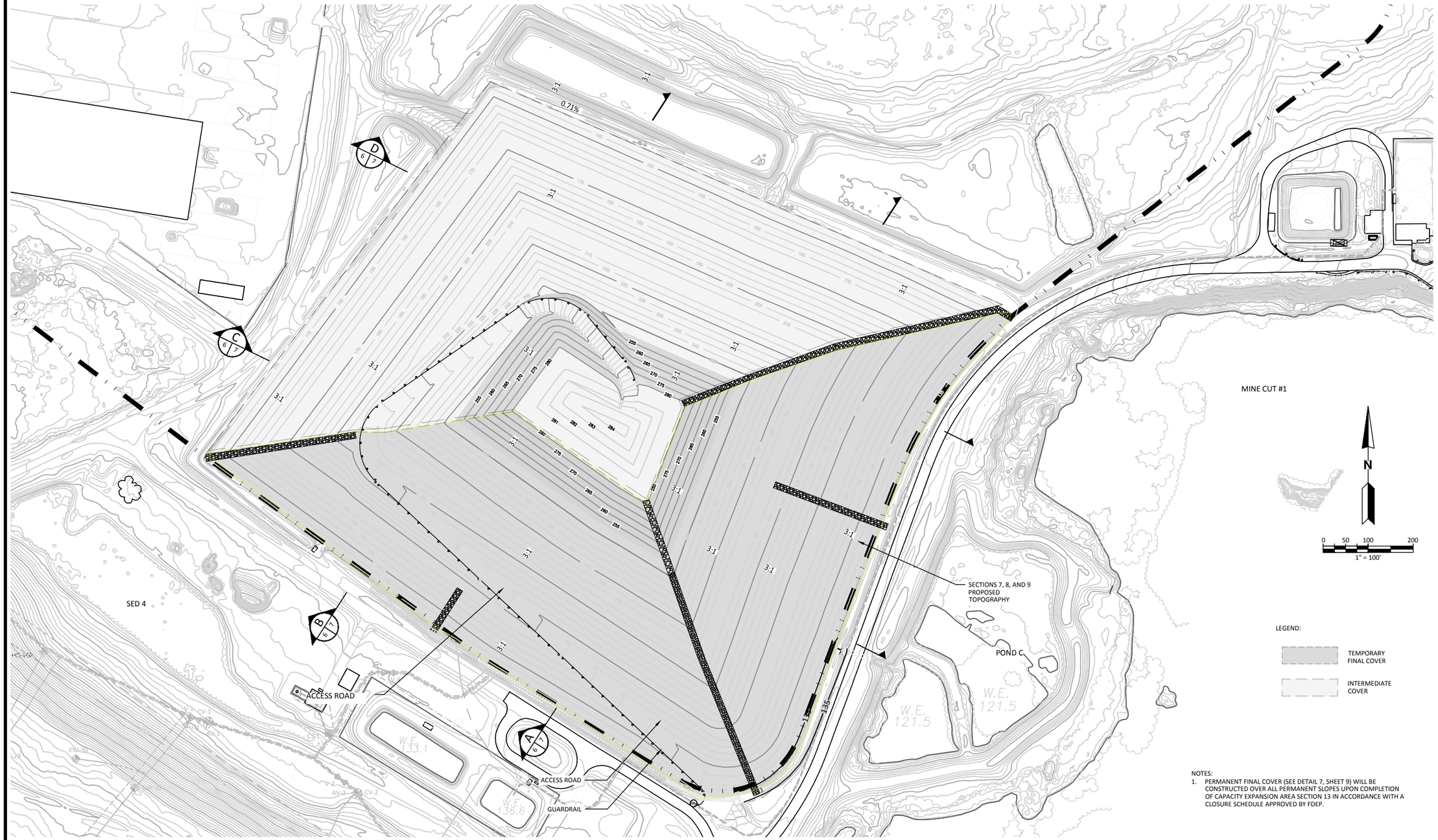
06/15/2020

KOLLAN LEE SPRADLIN * LICENSED * No. 82852 * STATE OF FLORIDA * PROFESSIONAL ENGINEER



NOTES:
1. PERMANENT FINAL COVER (SEE DETAIL 7, SHEET 9) WILL BE CONSTRUCTED OVER ALL PERMANENT SLOPES UPON COMPLETION OF CAPACITY EXPANSION AREA SECTION 13 IN ACCORDANCE WITH A CLOSURE SCHEDULE APPROVED BY FDEP.

REV	DATE	DESCRIPTION	CHK. BY

SHEET TITLE: FINAL GRADING PLAN

PROJECT TITLE: SOUTHEAST COUNTY LANDFILL
CAPACITY EXPANSION AREA
SECTIONS 7, 8 AND 9
OPERATING SEQUENCE

CLIENT: HILLSBOROUGH COUNTY
PUBLIC UTILITIES DEPARTMENT
SOLID WASTE MANAGEMENT DIVISION
TAMPA, FL 33619

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS
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PH (813) 621-0080 FAX NO. (813) 623-6757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJECT NO. 01921560.10 | DSN. BY: RBC | DWN. BY: KKC | QA KWW: RBC | CHK. BY: KLS | APP. BY: KLS

CADD FILE: 6-FINAL GRADING PLAN

DATE: JUNE 2020

SCALE: AS SHOWN

DRAWING NO. 6

SHEET 6 of 9

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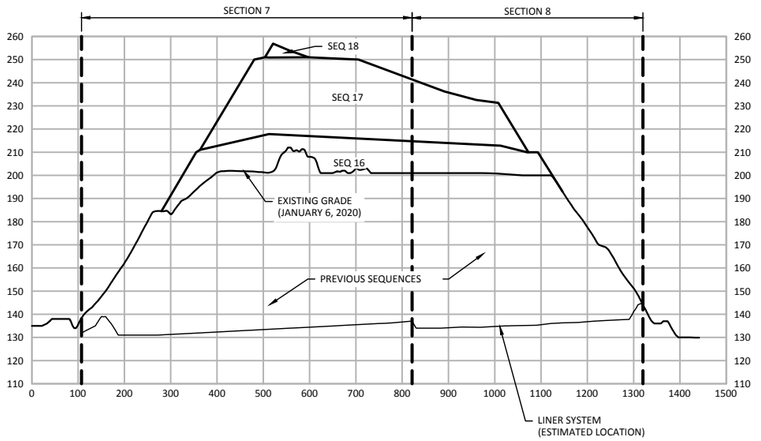

LANDFILL CROSS SECTION A (6 | 7)
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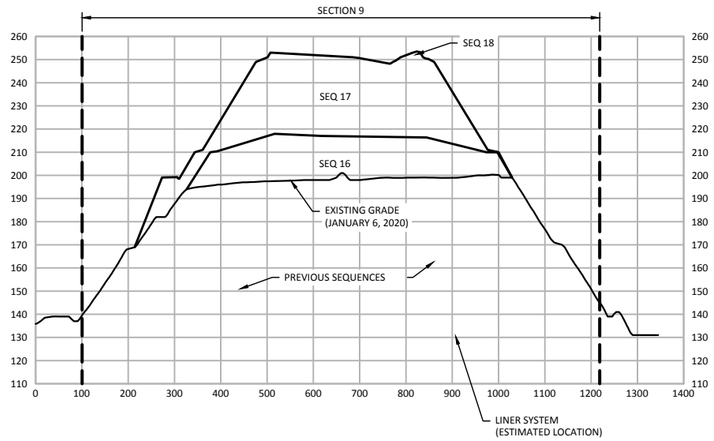

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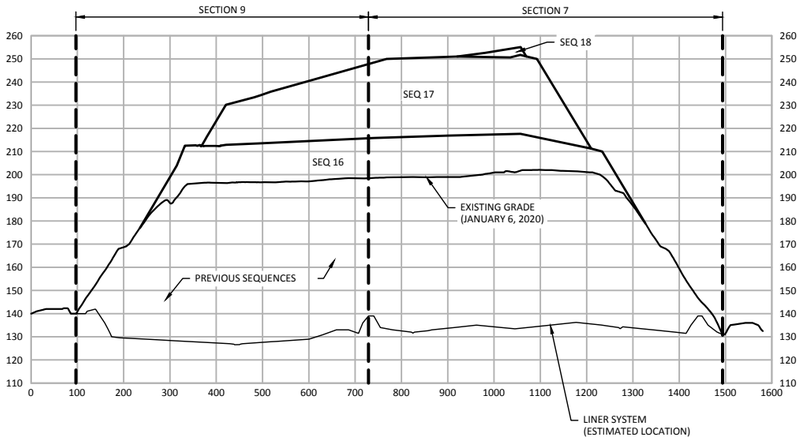

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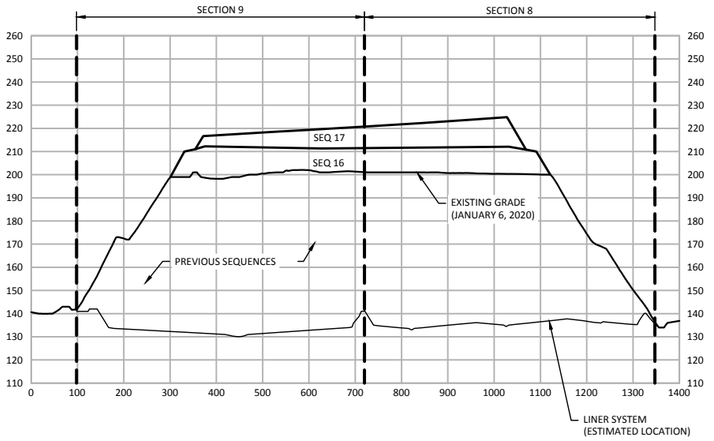

LANDFILL CROSS SECTION D (6 | 7)
NOT TO SCALE

NOTE:
SOME SLOPES AND SEQUENCE SIZE VARY DUE TO SECTION CUT ORIENTATION. SEE SHEET 8 FOR SECTION LOCATIONS.

KOLLAN LEE SPRADLIN * LICENSE No. 82852 * STATE OF FLORIDA * PROFESSIONAL ENGINEER

REV	DATE	DESCRIPTION	CHK. BY

SHEET TITLE: CROSS SECTIONS

PROJECT TITLE: SOUTHEAST COUNTY LANDFILL CAPACITY EXPANSION AREA SECTIONS 7, 8 AND 9 OPERATING SEQUENCE

CLIENT: HILLSBOROUGH COUNTY PUBLIC UTILITIES DEPARTMENT SOLID WASTE MANAGEMENT DIVISION TAMPA, FL 33619

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS
3922 COCONUT PALM DRIVE, SUITE 102, TAMPA, FL 33619
PH (813) 621-0080 FAX NO. (813) 623-6757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJECT NO: 05215600.10
DSN. BY: RBC
DWN. BY: KKC
CHK. BY: KLS
QA/QC BY: RBC
APP. BY: KLS

CADD FILE: 7-SECT 7 8 9 XSECT

DATE: JUNE 2020

SCALE: AS SHOWN

DRAWING NO. 7

SHEET 7 of 9

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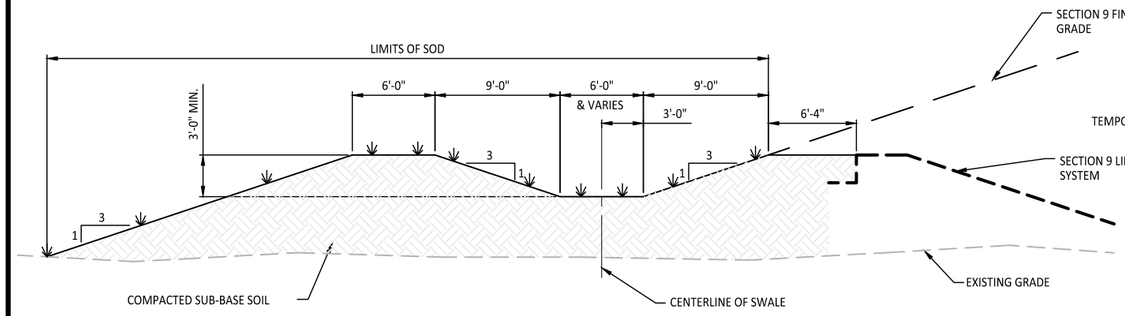

PERIMETER STORMWATER CHANNEL DETAIL 1 (4 | 8)
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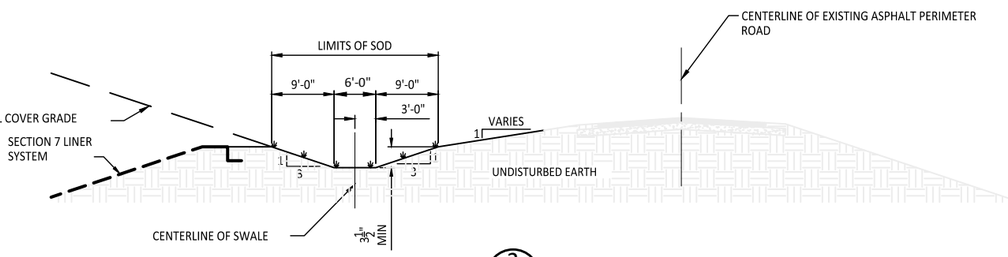

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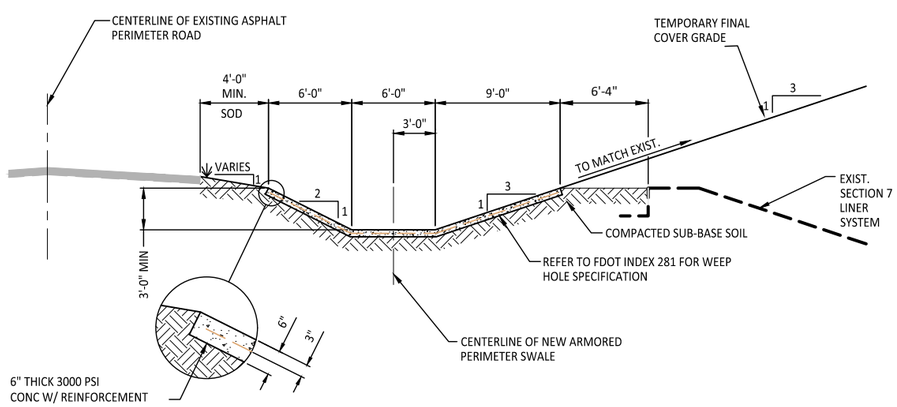

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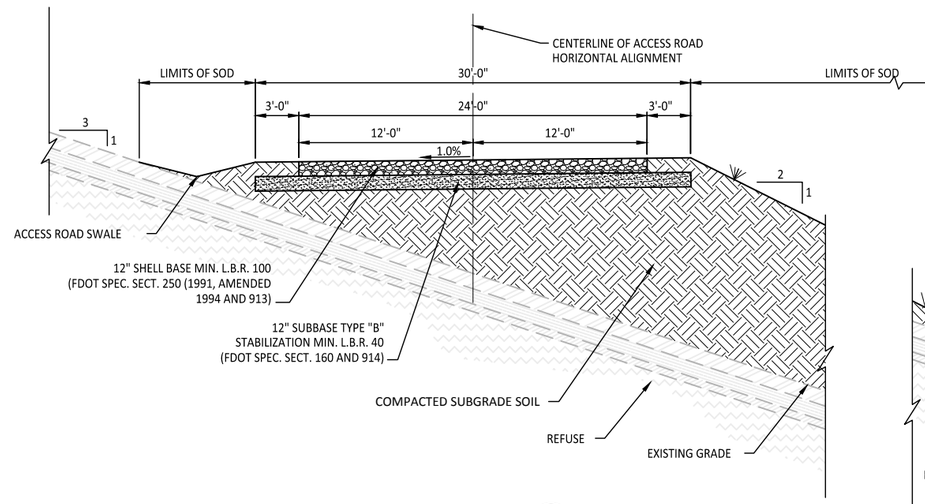

ACCESS ROAD DETAIL 4 (4,5 | 8)
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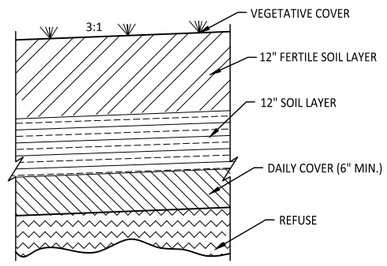

TEMPORARY FINAL COVER DETAIL 5 (5,9 | 8)
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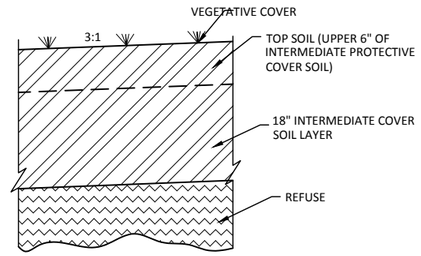

INTERMEDIATE COVER DETAIL 6 (5,9 | 8)
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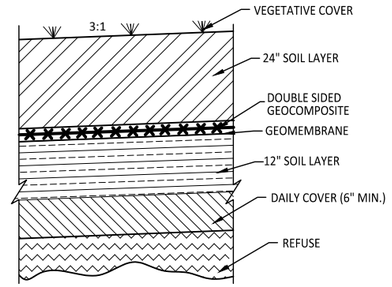


FINAL COVER DETAIL 7 (5 | 8)
NOT TO SCALE

NOT TO SCALE

REV	DATE	DESCRIPTION	CHK. BY

SHEET TITLE: **OPERATING SEQUENCE DETAILS - 1**

PROJECT TITLE: **SOUTHEAST COUNTY LANDFILL CAPACITY EXPANSION AREA SECTIONS 7, 8 AND 9 OPERATING SEQUENCE**

CLIENT: **HILLSBOROUGH COUNTY PUBLIC UTILITIES DEPARTMENT SOLID WASTE MANAGEMENT DIVISION TAMPA, FL 33619**

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS
3922 COCONUT PALM DRIVE, SUITE 102, TAMPA, FL 33619
PH (813) 621-0080 FAX NO. (813) 623-6757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJECT NO. 02215600.10 | DSN. BY: RBC | DWN. BY: KKC | CHK. BY: KLS | QUA. REVIEW: RBC | APP. BY: KLS

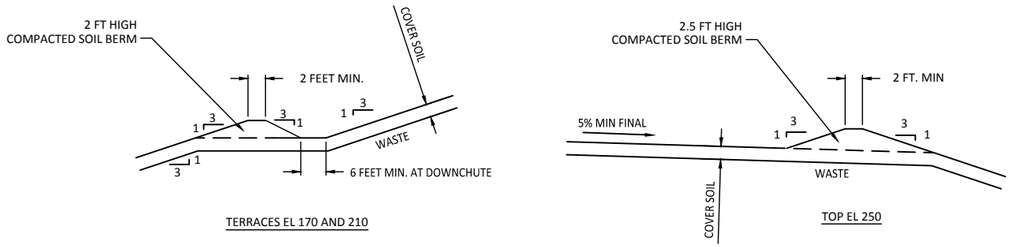
CADD FILE: 8-OPERATING SEQUENCE DETAIL

DATE: JUNE 2020

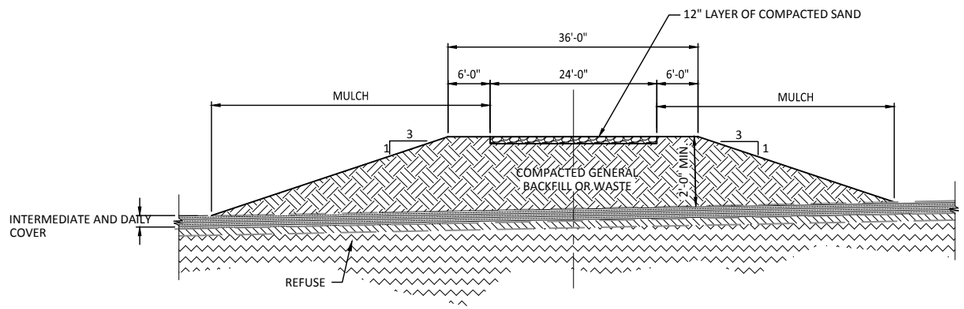
SCALE: AS SHOWN

DRAWING NO. **8**

SHEET **8** of **9**



SIDESLOPE DITCH DETAIL 1 (5|9)
NOT TO SCALE



TEMPORARY ACCESS ROAD DETAIL 3 (5|9)
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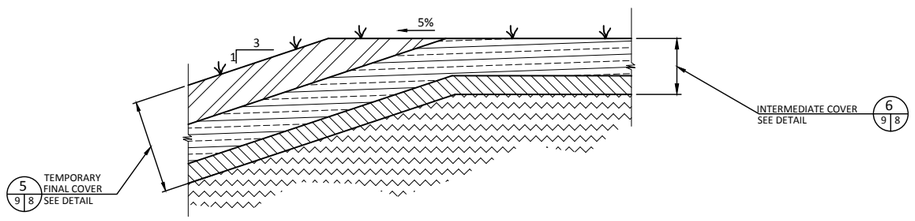

TRANSITION TEMPORARY FINAL COVER TO INTERMEDIATE COVER ON TOP SLOPE DETAIL 5 (#|9)
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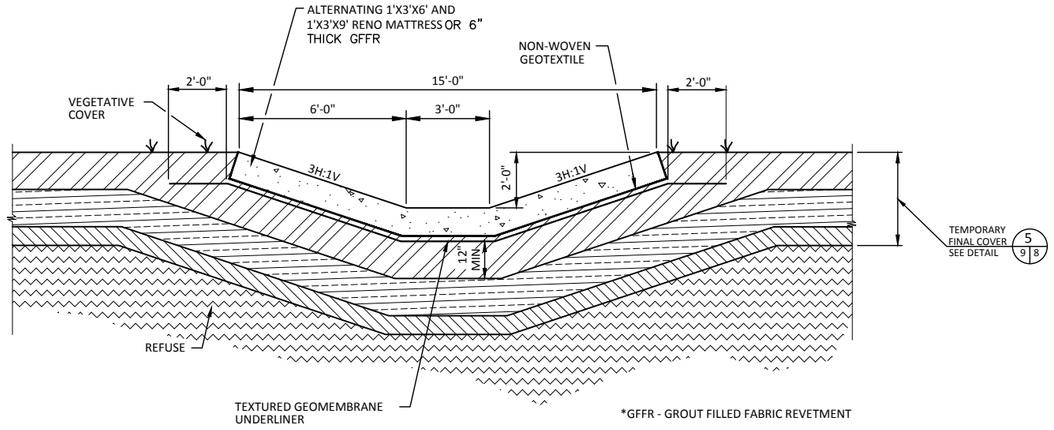

DOWNCHUTE DETAIL 2 (5|9)
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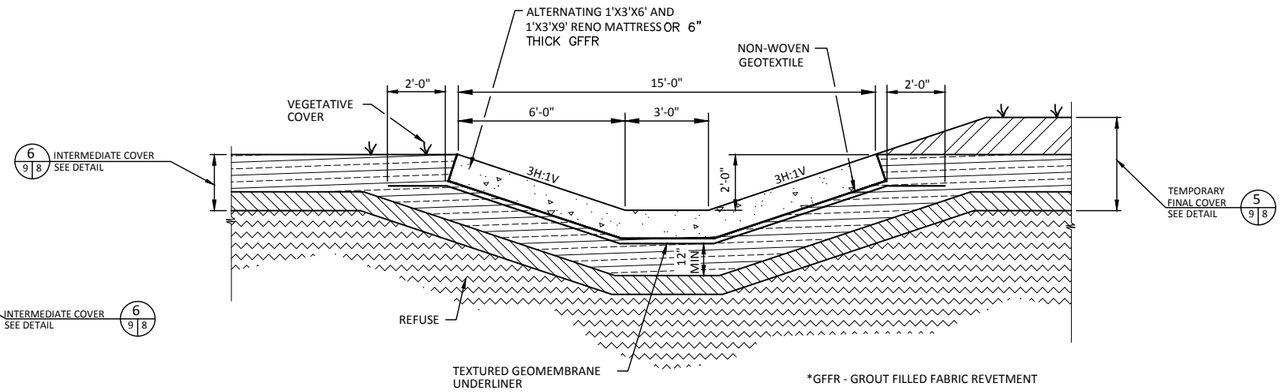


TRANSITION TEMPORARY FINAL COVER TO INTERMEDIATE COVER ON SIDESLOPE DETAIL 4 (5|9)
NOT TO SCALE

REV	DATE	DESCRIPTION	CHK. BY

SHEET TITLE: **OPERATING SEQUENCE DETAILS - 2**

PROJECT TITLE: **SOUTHEAST COUNTY LANDFILL**
CAPACITY EXPANSION AREA
SECTIONS 7, 8 AND 9
OPERATING SEQUENCE

CLIENT
HILLSBOROUGH COUNTY
PUBLIC UTILITIES DEPARTMENT
SOLID WASTE MANAGEMENT DIVISION
TAMPA, FL 33619

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS
3922 COCONUT PALM DRIVE, SUITE 102, TAMPA, FL 33619
PH (813) 621-0080 FAX NO. (813) 623-6757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJECT NO. 09215600.10 | DWN. BY: KKC | QA'D BY: RBC | APP. BY: KLS
SCALE BY: RBC | CHK. BY: KLS

CADD FILE: 9-OPERATING SEQUENCE DETAIL
DATE: JUNE 2020
SCALE: AS SHOWN
DRAWING NO. **9**
SHEET **9** of **9**

Appendix F

Landfill Gas Monitoring Points

HILLSBOROUGH COUNTY SOLID WASTE MANAGEMENT DEPARTMENT
SOUTHEAST COUNTY LANDFILL – LFG READINGS

ADMINISTRATION BUILDING

	Methane Gas	LEL	Carbon Dioxide	Oxygen	Balance Gas
SP-1					
SP-2					
SP-3					
SP-4					
SP-5					
SP-6					
SP-7					
SP-8					

MAINTENANCE BUILDING

	Methane Gas	LEL	Carbon Dioxide	Oxygen	Balance Gas
SP-9					
SP-10					
SP-11					
SP-12					

LEACHATE TREATMENT PLAN

	Methane Gas	LEL	Carbon Dioxide	Oxygen	Balance Gas
SP-13					
SP-14					
SP-15					

LANDFILL GAS PERIMETER MONITORING POINT

	Methane Gas	LEL	Carbon Dioxide	Oxygen	Balance Gas	Objectional Ambient Odor (Y/N)
LFG-1						Y/N
LFG-2						Y/N
LFG-3						Y/N
LFG-4						Y/N

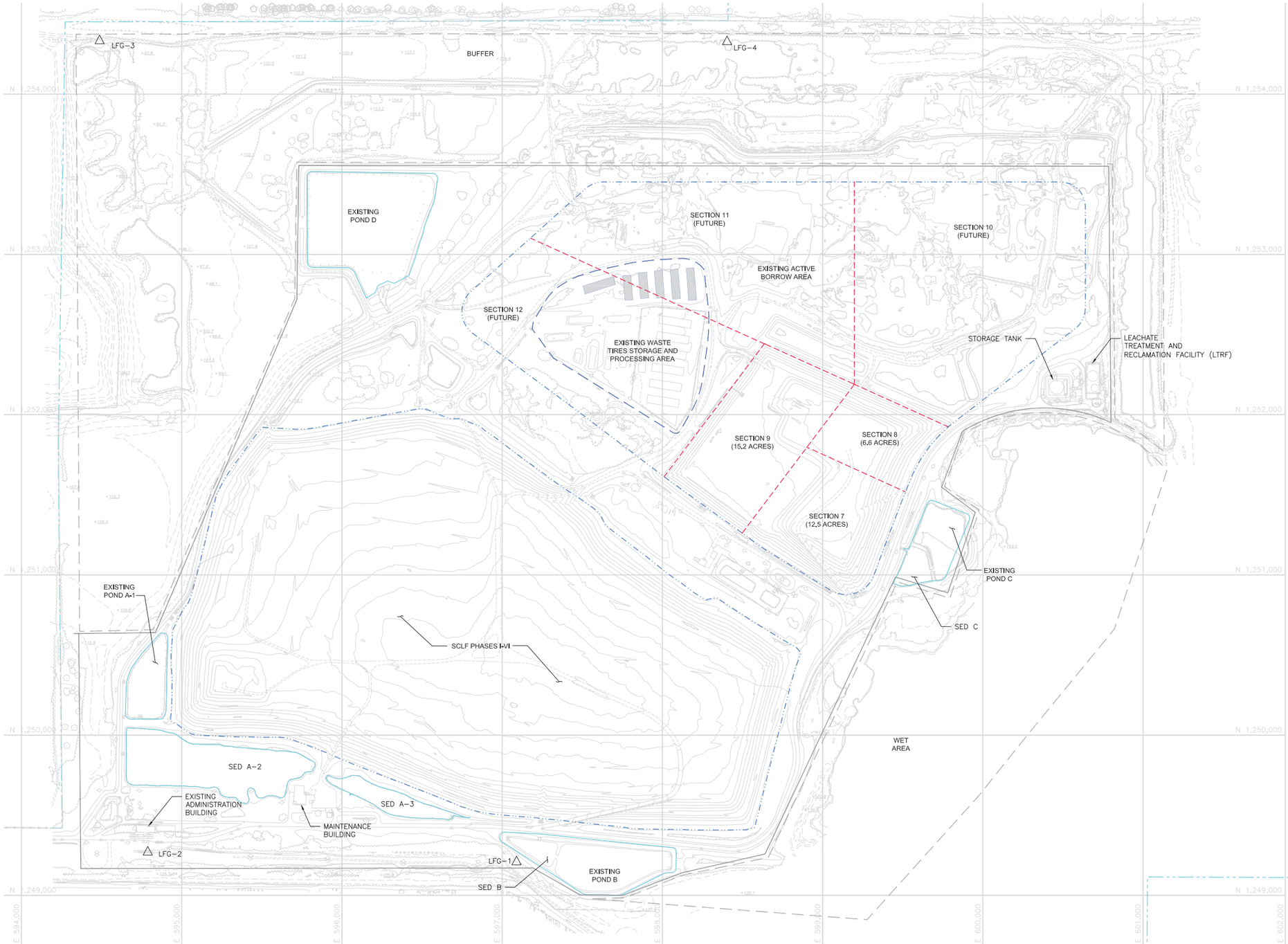
TECHNICIAN SIGNATURE: _____

SUPERVISOR SIGNATURE: _____

DATE: _____

COMMENTS: _____
_____
_____
_____

Legend: SP = Ambient Sample Point



N

NOTE:

1. TOPOGRAPHICAL INFORMATION COMPILED FROM EXISTING CONDITIONS SURVEY PERFORMED BY PICKETT & ASSOCIATES DATE JULY 13, 2012.

LEGEND:

- △ LFG–1 — EXISTING LANDFILL PERIMETER GAS MONITORING WELL LOCATION
- PROPERTY LINE
- SOLID WASTE BOUNDARY
- PHASE/SECTION LIMITS
- EXISTING CLASS I LANDFILL FACILITIES
- LANDFILL FOOTPRINT

300 150 0 300 600

SCALE: 1"=300'

LANDFILL GAS PERIMETER MONITORING WELLS

HILLSBOROUGH COUNTY, FLORIDA

FIGURE F-1

HDR

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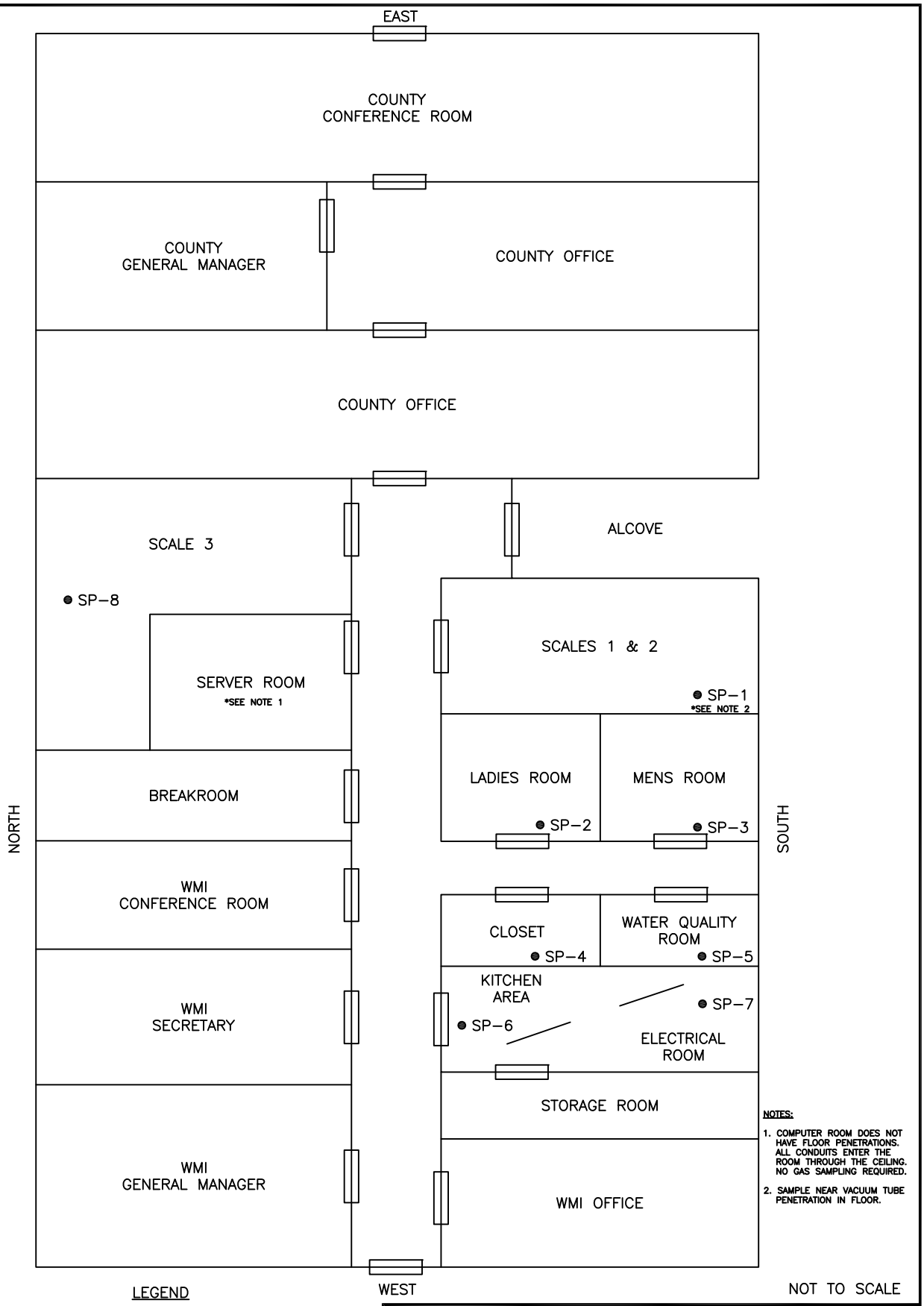

ADMINISTRATION BUILDING
LFG MONITORING POINTS

HILLSBOROUGH COUNTY, FLORIDA

FIGURE F-2

HDR

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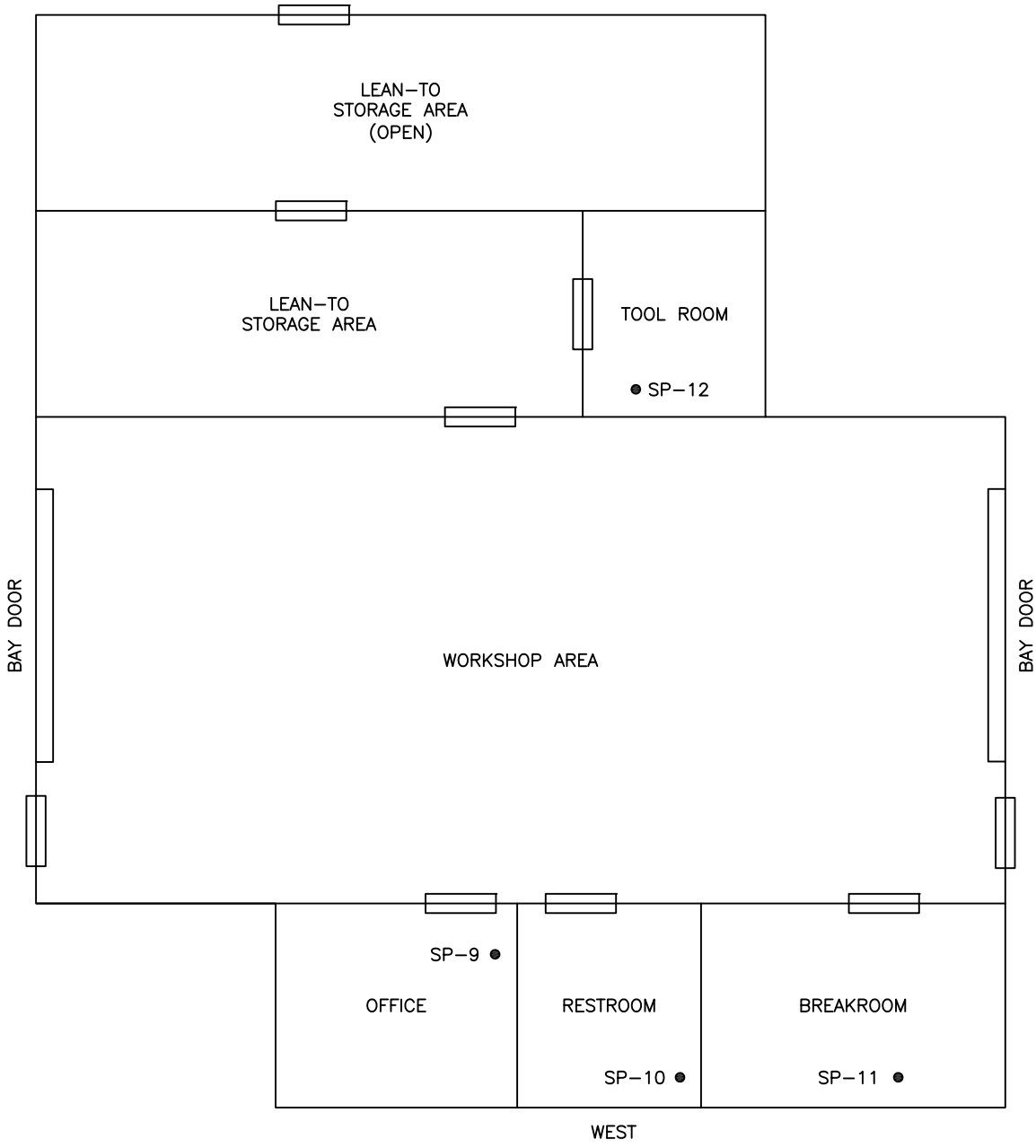

LEGEND

● SP–10 INDICATE GAS SAMPLE POINT

DOORWAY

NOT TO SCALE

MAINTENANCE BUILDING
LFG MONITORING POINTS

HILLSBOROUGH COUNTY, FLORIDA

FIGURE
F-3

HDR

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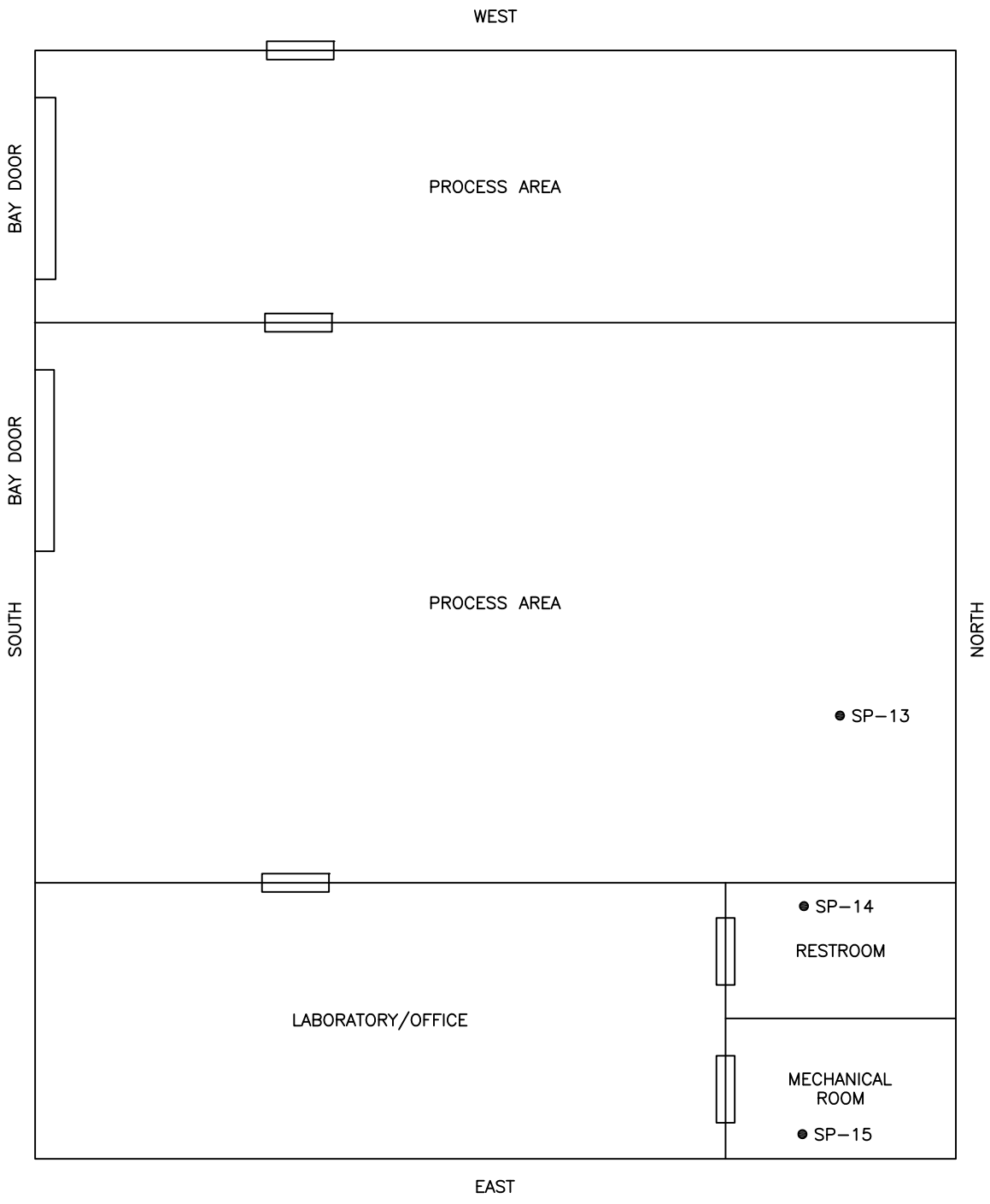

LEGEND

● SP–14 INDICATE GAS SAMPLE POINT

DOORWAY

NOT TO SCALE

LTRF OFFICE
LFG MONITORING POINTS

HILLSBOROUGH COUNTY, FLORIDA

FIGURE F-4

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Appendix G

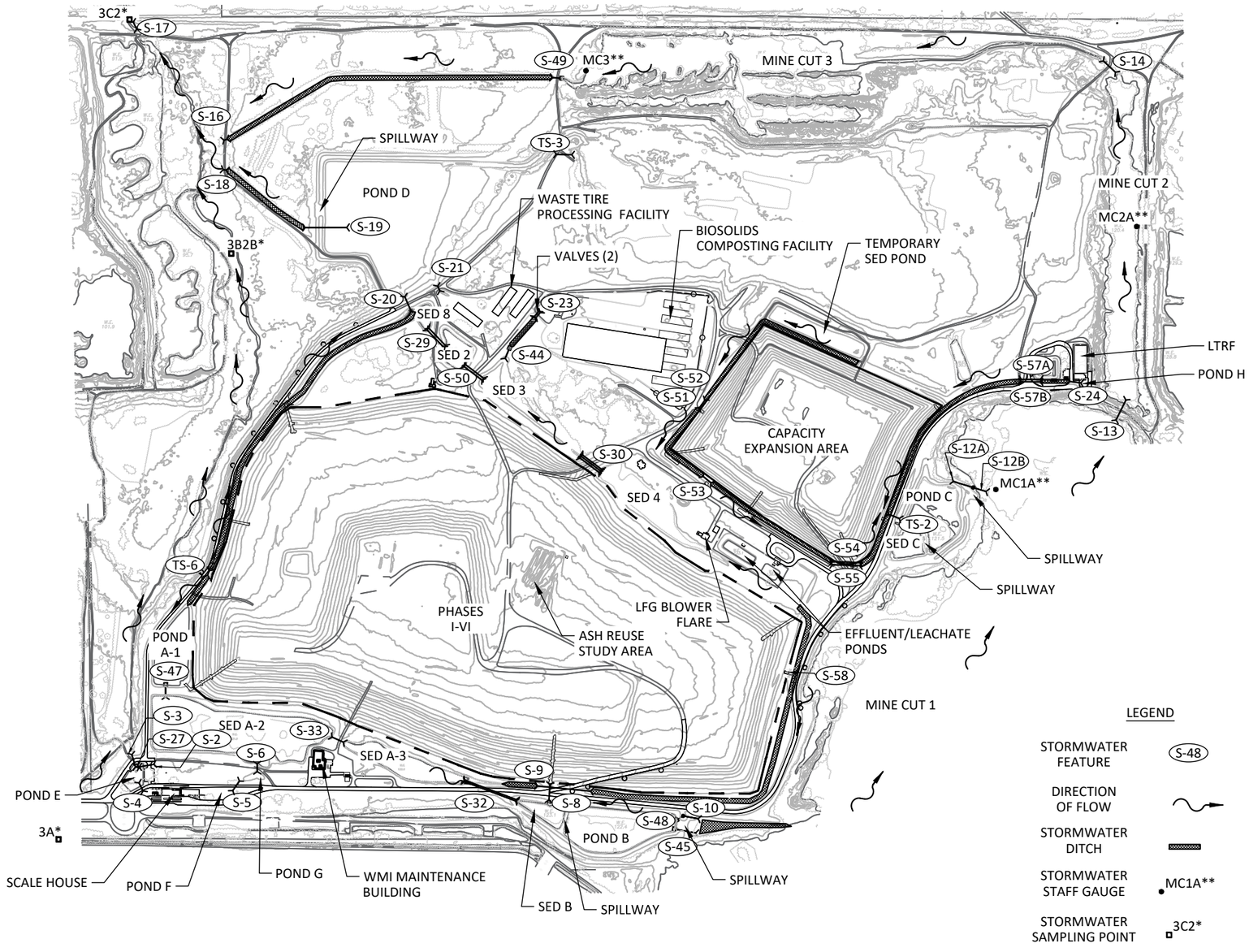
Not Used

Appendix H

Stormwater Management System (SWMS) Plan

F:\PROJECT\Hillsborough\09215600.00\Task 1100 - General Services\6.0 Alternate Procedure\2020 Permit Modification\7_Operations Plan\Updated Appendices\Figure 3 - Stormwater Features Map.dwg Jun 11, 2020 - 2:21pm Layout Name: Layout1 By: 4754tma

EXISTING STORMWATER PIPE DATA TABLE			
STRUCTURE NO	TYPE OF STRUCTURE	DIAMETER (IN)	LENGTH (FT)
S-2	ERCP	14x22	92.38
S-3	CMP	36.00	81.19
S-4	ERCP	14x22	47.87
S-5	ERCP	14x22	73.39
S-6	ERCP	14x22	50
S-8	ERCP	34x54	100.67
	ERCP	34x54	100.39
S-9	CMP	24.00	343.74
S-10	RCP	48.00	100.06
S-12A	RCP	30.00	169.40
S-12B	RCP	48.00	50.37
S-13	RCP	24.00	104.48
	RCP	24.00	104.56
S-14	RCP	24.00	104.90
	RCP	24.00	104.90
S-16	STEEL	24 (W)-21 (E)	22.04
	STEEL (E)-ECMP (W)	21 (E)-22x24 (W)	20.98
S-17	RCP	48.00	50.51
	RCP	48.00	50.71
S-18	CMP	18.00	19.89
S-19	RCP	48.00	161.35
S-20	CMP	48.00	90.98
	CMP	48.00	91.11
S-21	RCP	36.00	34.84
S-23	HDPE	8.00	41.00
	HDPE	8.00	41.00
S-24	ERCP	12x18	91.04
S-27	CMP	18.00	24.15
S-29	RCP	30.00	114.00
	RCP	30.00	114.00
S-30	RCP	36.00	119.00
	RCP	36.00	119.00
	RCP	36.00	119.00
S-32	ERCP	24x38	355.00
	ERCP	24x38	355.00
S-33	RCP	36.00	81.00
S-44	HDPE	8.00	60.00
	HDPE	8.00	60.00
S-45	RCP	36x60	75.00
S-47	RCP	30.00	66.00
S-48	RCP	48.00	29.00
S-49	RCP	42.00	48.00
S-50	RCP	30.00	108.00
	RCP	30.00	108.00
S-51	RCP	36.00	50
S-52	RCP	36.00	50
S-53	RCP	3x6 BOX	27
S-54	HDPE	30.00	175
S-55	HDPE	30.00	175
S-57A	RCP	24.00	136
S-57B	RCP	24.00	136
S-58	CMP	12.00	40.34
	CMP	12.00	40.16
	CMP	12.00	40.27
TS-2	BOX CULVERT	48x96	74.73
TS-3	RCP	18.00	98.07
TS-6	METAL	20.00	29.65
	CMP	36.00	19.59



LEGEND

STORMWATER FEATURE	S-48
DIRECTION OF FLOW	
STORMWATER DITCH	
STORMWATER STAFF GAUGE	MC1A**
STORMWATER SAMPLING POINT	3C2*

ABBREVIATIONS

WMI	WASTE MANAGEMENT INC
SED	SEDIMENT
LTRF	LEACHATE TREATMENT AND RECLAMATION FACILITY
LFG	LANDFILL GAS

SOURCE: TOPOGRAPHIC SURVEY PROVIDED BY PICKETT & ASSOCIATES. JANUARY 6, 2020

SCS ENGINEERS

FIGURE 1. STORMWATER FEATURE MAP
SOUTHEAST COUNTY LANDFILL - LITHIA, FLORIDA