41193

May 13, 2011

Ms. Susan Pelz, P.E.
Program Manager, Solid Waste
Department of Environmental Protection
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926

RE: **Stage 2 – Cut/Fill and Waste Relocation Plan**
Sinkhole Action Plan
Hillsborough County Southeast County Landfill
FDEP Permit No. 35435-014-SO/01

Dept. Of Environmental Protection
MAY 13 2011
Southwest District

Dear Ms. Pelz:

On behalf of Hillsborough County Public Utilities Department, Solid Waste Management Group (SWMG), HDR Engineering, Inc. (HDR) has prepared the attached Stage 2 - Sinkhole Cut/Fill and Waste Relocation Plan (Stage 2 Plan) for the sinkhole at Southeast County Landfill (SCLF). The attached Stage 2 Plan and the enclosed drawings are in general accordance with the Sinkhole Action Plan (SAP), dated December 22, 2010, submitted to and accepted by the Florida Department of Environmental Protection - Southwest District (FDEP).

The SWMG is finalizing the selection of a contractor for performing the work associated with the Stage 2 Plan. Therefore, the SWMG would appreciate your prompt review and acceptance of the Stage 2 Plan to expedite construction prior to the upcoming summer rain events.

Please let us know if you have any questions or require additional information.

Sincerely,

Carlos A. Restrepo, P.E.
Senior Project Engineer

Richard Siemering
Solid Waste Section Manager

Attachment/Enclosure

cc: Patricia Berry, PUD
Larry Ruiz, PUD
Ron Cope, EPC

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Hillsborough County
Florida

Hillsborough County
Public Utilities Department
Solid Waste Management Group

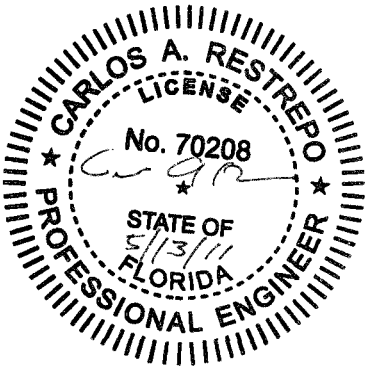
Southeast County Landfill
Sinkhole Action Plan
Stage 2 - Cut/Fill and Waste Relocation Plan

May 2011

Prepared for:
Hillsborough County Public Utilities Department
Solid Waste Management Group
925 East Twiggs Street
Tampa, Florida 33602

Prepared by:
HDR Engineering, Inc.
5426 Bay Center Drive, Suite 400
Tampa, Florida 33609-3444
(813) 282-2300

HDR Project No. 096-160539
Florida Certificate of Authorization No. 00004213



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ATTACHMENTS

1.0 INTRODUCTION

On behalf of Hillsborough County Public Utilities Department, Solid Waste Management Group (SWMG), HDR Engineering, Inc. (HDR) has prepared the following Stage 2 - Sinkhole Cut/Fill and Waste Relocation Plan (Stage 2 Plan) for the Southeast County Landfill (SCLF). The Stage 2 Plan as presented herein and in the drawings (see Attachment A) is in general accordance with the Sinkhole Action Plan (SAP), dated December 22, 2010, submitted to and accepted by the Florida Department of Environmental Protection - Southwest District (FDEP).

Work associated with the Stage 1 – Sinkhole Stabilization Plan was completed in April 2011. In accordance with the Stage 1 Summary Report recommendations date May 6, 2011, the objective of the Stage 2 Plan is to further stabilize the sinkhole, backfill the sinkhole with soil, and flatten the existing landfill side slopes north and south of the sinkhole to allow for equipment and personnel to access the side slope as part of the Stage 3 – Geotechnical/Geophysical Investigation. The construction steps to the Stage 2 Plan are as follows:

- Prepare an access ramp west of the sinkhole for use by a pump truck for conveying Controlled Low Strength Material (CLSM) into the sinkhole.
- Pump CLSM into the sinkhole to an elevation of 115 feet NGVD. The CLSM "plug" will provide for additional stabilization during the soil backfilling of the sinkhole and the Stage 3 investigation.
- Beginning from the west side of the sinkhole, backfill the sinkhole with soil to a final slope of 6(H):1(V).
- Re-grade the existing west side slope within Phase VI to a 6(H):1(V) slope. The extent of the re-grading of the west side slope will extend approximately 100 feet north and 150 feet south of the sinkhole.
- Sod or hydroseed all disturbed areas.

Provided below are details of the above construction steps to the Stage 2 Plan.

2.0 ACCESS RAMP

In order to provide a relatively flat area for the pump truck to place the CLSM into the sinkhole, an access ramp west of the sinkhole will be constructed. The location of the ramp area, west of the sinkhole and adjacent to the existing paved road, has several advantages including: 1) an accessible paved road for use by delivery trucks to supply the CLSM; 2) a continuous paved

road for the 45-foot long pump truck; 3) the vertical shear wall of the sinkhole is lowest on the west side of the sinkhole, and; 4) the presence of larger and more pronounced tension cracks on the upper eastern side of the sinkhole limits accessibility from the east.

As shown on the plans, an access ramp and a 65-foot wide working platform will be constructed on the west side of the sinkhole. The access ramp will be developed by filling across the swale adjacent to and along the east side of the existing paved road. The access ramp will be graded at a 3 percent slope which will provide sufficient cover over the existing Phase VI side slope liner.

Construction of the access ramp will require fill and minor excavation of the existing slope. Waste material excavated, if any, will be transported to the onsite disposal area (e.g., active working face). The areas requiring excavation will be over excavated by a minimum of 18-inches to allow for the re-installation of the intermediate cover system (e.g., 6-inch thick daily cover soil layer and 12-inch thick intermediate cover soil layer). Given that the access ramp will be for construction operations only, the grades as shown on the plans for the access ramp are not permanent. The access ramp grading will transition to existing grades to the north and south using 2(H):1(V) slopes and to the east using a 1(H):1(V) slope. All general fill will be proof-rolled to minimize rutting and erosion. In addition, the stormwater swale along the paved road will be re-graded to provide positive drainage to the south.

Once the ramp has been constructed, the pump truck will be located on the ramp to allow for the full reach of the hydraulic pump arm (capable of extending 100 feet beyond the truck) for pumping the CLSM into the sinkhole. The loading hopper for the pump truck will be in the rear of the vehicle allowing the existing paved road to serve as the staging area for delivery trucks to off-load the CLSM into the hopper.

3.0 PLACEMENT OF CONTROLLED LOW STRENGTH MATERIAL

Based on the Stage 1 Summary Report recommendations and in response to the additional subsidence of the sinkhole that occurred on March 22, 2011, CLSM will be placed in the sinkhole prior to soil backfilling. The CLSM will be installed in the sinkhole to an elevation of 115 feet NGVD. The purpose of the CLSM is to provide for additional stability of the sinkhole thereby decreasing the potential for significant settlement during and after backfilling the sinkhole with soil. Benefits of installing the CLSM in the sinkhole before soil backfilling include:

- Provides a large mass of low-strength material that will be difficult to move or displace;

- Stabilizes and compacts loose material above the upper row of grout holes (GH-1 through GH-5). This should reduce the potential for additional settlement;

- Provides a substantial barrier to surface water infiltration and potentially leachate into the lower levels of the sinkhole; and

- Reduces the possibility of a sudden downward movement that could potentially threaten personnel and/or equipment.

The CLSM is a flowable mixture that can be pumped from a standard typical concrete pump truck. CLSM is composed of water, Portland cement, aggregate, and fly ash. The CLSM has typical slump of 8 inches to 10 inches. A technical specification for the CLSM is contained in Attachment B.

The CLSM will be pumped toward the center and base of the sinkhole depression and filled to an approximate elevation 115 feet NGVD. HDR estimates that approximately 790 cubic yards (cy) of CLSM will be pumped into the sinkhole. A compressive strength of no less than 300 pounds per square inch (psi) is specified. Given the 300 psi strength of the CLSM and that the thickness of the CLSM "Plug" will be approximately 23 feet thick (measured from the estimated bottom of the sinkhole at elevation 92 to top of the CLSM at elevation 115), the CLSM will provide for additional stability and as an additional safety measure prior to beginning the soil backfill activities as part of the Stage 2 work.

During placement of the CLSM, a manlift will be available onsite to safely position an observer over the sinkhole area to oversee and direct the placement of the CLSM into the sinkhole. During the placement of the CLSM, the quantity of CLSM loss into the surrounding porous waste material will be observed. Based on the quantity of CLSM loss into the porous material during the initial placement of the CLSM, placement of additional CLSM may be delayed for a day or two to allow for the initially placed CLSM to set in order to minimize further infiltration (loss) of CLSM into the porous material. Several layers or lifts of CLSM placement are anticipated until the final top of CLSM (elevation 115 NGVD) is achieved.

4.0 PLACEMENT OF SOIL BACKFILL IN SINKHOLE

Given high/steep vertical shear walls and large surface tension cracks on the east side of the sinkhole, the most viable and safest approach to backfilling the sinkhole with soil is to begin the backfilling operations from the west side of the sinkhole with fill progression to the east. The backfill soils will be excavated from onsite borrow areas and transported to the access ramp. For safety reasons, the backfilling will begin by using an extended reach hydraulic excavator.

According to CAT/Ringpower in Riverview, a CAT 330D L with an attachment can extend to a reach of approximately 69 feet with a 3-cy bucket. From the access ramp, the excavator can collect backfill soil from the access ramp and swing out and over the west side of the sinkhole to unload soils directly behind the lower western vertical shear wall while maintaining a safe distance from the edge of the sinkhole. Although the soil will be placed in loose lifts, the sandy/clayey soil will densify with subsequent impacts from dropped soil loads and vibrations. In addition, the excavator can reach, to a limited extent, into the sinkhole to tamp down the soils with the bucket. The backfilled soils will be compacted sufficiently to allow construction equipment access directly above the sinkhole during the progression of soil backfilling.

Once the west side of the sinkhole is backfilled with soil, dozers can begin pushing backfill further east into the sinkhole. Every subsequent push will allow backfill to fill the lower areas in sinkhole. Once the backfill soils are within 10 feet of the top of the outer edges of the sinkhole walls, the excavator can then backfill adjacent to the east and south sidewalls. Soil backfilling will continue until the grades reach approximately a 6(H):1(V) slope measured from west to east, beginning at the western toe of slope of Phase VI. The fill progression and final grades are shown on the plans in Attachment A.

5.0 RE-GRADE PHASE VI WEST SIDE SLOPE

The Phase VI west side slope, within the proximity of the sinkhole area, will be re-graded to a 6(H):1(V) slope. This provides for an acceptable working platform for the Stage 3 geotechnical and geophysical investigations (e.g., geotechnical drill rigs, geophysical instrumentation, vehicles, and personnel). The re-grading along the west side slope will extend approximately 100 feet north of the sinkhole and 150 feet south of the sinkhole. Intermediate cover will be maintained over the waste and replaced if erosion occurs. The western side slope will be graded to the elevations and grades shown on the plans contained in Attachment A.

Several grading options for the side slope were considered before the selection of a 6(H):1(V) side slope. In summary, the considerations were as follows:

- Erosion control - The 6(H):1(V) slopes are more resistant to channeling and erosion of side slope soils.

- Maintaining similar stormwater collection patterns – The selected slope and re-grading plan closely matches the pre-sinkhole stormwater collection patterns and thus require no changes to the Facility's ERP/NPDES permits.

- Stability (surficial, deep) – Current FDEP regulation allow up to a 3(H):1(V) slope on landfill areas. Since the time needed to complete Stage 2 is variable, the maximum long-term slopes considered were the maximum allowed by regulation. In addition, the current permit only allows a 4(H):1(V) slope. By making the slopes shallower at 6(H):1(V), the issue of slope stability, with the underlying waste phosphatic clays, is not an issue.

- Access for slope maintenance – A major consideration for the selection of the 6(H):1(V) slope was to allow equipment and vehicle access on the Phase VI west side slope within the required area of investigation as part of the Stage 3 work. Since the actual lateral extent of the sinkhole is not know at this time, it is important to allow for a larger, relatively flat area on the west side slope to allow access for equipment and personnel during the Stage 3 geotechnical and geophysical investigation. Other steeper slopes or scenarios would potentially limit the required investigation area.

Upon installation of the CLSM and soils in the sinkhole, the stormwater swale will be re-established at the west toe of slope. Excess material (soil and piping) that was installed within the swale will be removed and the swale re-graded to pre-Stage 2 activity elevations to allow for positive drainage.

The grading along the west side slope of Phase VI is designed at a 6(H):1(V) slope as shown on the plans in Attachment A. Existing intermediate cover will be removed and stockpiled, free of waste debris, for re-use on the re-graded slopes. Waste material excavated from the side slope during re-grading will be transported to the current working face for disposal. The side slope will be over excavated a minimum of 18-inches to allow for the placement of clean fill over the waste (e.g., intermediate cover).

Landfill gas (LFG) header piping, lateral piping, horizontal collector piping, and leachate cleanout lines of the existing LFG Collection and Control System (LFGCCS) within the area impacted by the sinkhole will not be repaired during Stage 2. Currently, the LFG piping has been isolated from Header Isolation Valve V-7 (adjacent to Extraction Well EW-9) to Header Isolation Valve V-10 (adjacent to EW-13)

The contractor will be required to exercise extreme caution around the existing LFGCCS including the extraction wells, headers, condensate lines, valves, and any other LFG component, to prevent damage to the isolated LFG system. In the event that any portion of the LFGCCS is damaged, the components will be replaced with the same materials and at the same elevations as originally installed. FDEP will be notified of any damage or replacement activities. As-builts of repairs will be kept and submitted to FDEP to document the system repairs.

Once cut and fill activities are complete and confirmed by survey, the area will be stabilized with sod or hydroseeded depending upon the long-term forecast for rain events. Stormwater will be diverted along the top of the side slope and diverted toward the existing stormwater downchute located south of the sinkhole within Phase VI. Silt fencing and sediment traps will be installed and maintained until the vegetation is established.

6.0 SUMMARY

The Stage 2 – Cut/Fill and Waste Relocation Plan as described herein and as shown on the plans in Attachment A will provide for a suitable working platform during the Stage 3 geotechnical and geophysical investigation. Once the contractor has received Notice to Proceed from the County, the construction duration is estimated to be approximately 4 weeks. The County will notify the FDEP 2 weeks in advance prior to beginning the Stage 2 work. In addition, a summary report will be provided to the FDEP once the Stage 2 work has been completed.

ATTACHMENT A

CONSTRUCTION DRAWINGS FOR
SINKHOLE CUT/FILL AND
WASTE RELOCATION PLAN
MAY 2011

(UNDER SEPARATE COVER)

ATTACHMENT B

CONTROLLED LOW STRENGTH MATERIAL
TECHNICAL SPECIFICATION

SECTION 03002
CONTROLLED LOW STRENGTH MATERIAL (CLSM)

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Controlled Low Strength Material (CLSM) placement
   2. CLSM mixes, proportioning, and source quality control

1.2 QUALITY ASSURANCE

A. Referenced Standards:
   1. American Concrete Institute (ACI):
      a. 116R, Cement and Concrete Terminology.
      b. 212.3R, Chemical Admixtures for Concrete.
      c. 304R, Guide for Measuring, Mixing, Transporting, and Placing Concrete.
      d. 304.2R, Placing Concrete by Pumping Methods.
      e. 305R, Hot Weather Concreting.
      f. 306R, Cold Weather Concreting.
      g. 318, Building Code Requirements for Structural Concrete.
   2. ASTM International (ASTM):
      a. C31, Standard Practice for Making and Curing Concrete Test Specimens in the Field.
      b. C39, Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
      c. C94, Standard Specification for Ready-Mixed Concrete.
      d. C138, Standard Method of Test for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete.
      e. C143, Standard Test Method for Slump of Hydraulic Cement Concrete.
      f. C150, Standard Specification for Portland Cement.
      g. C172, Standard Practice for Sampling Freshly Mixed Concrete.
      h. C173, Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
      i. C231, Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
      j. C260, Standard Specification for Air-Entraining Admixtures for Concrete.
      k. C494, Standard Specification for Chemical Admixtures for Concrete.
      l. C618, Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
      E329, Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction.
   3. Florida Building Code, current edition.
   4. Florida Department of Transportation, 2010:
      a. Section 902 – Fine Aggregate

B. Quality Control:
   1. CLSM testing agency:
      a. Contractor to employ and pay for services of an independent testing laboratory to:
         1) Perform materials evaluation.
         2) Design CLSM mixes.
      b. Concrete testing agency to meet requirements of ASTM E329.
   2. Do not begin CLSM production until proposed CLSM mix design has been approved by Engineer.
      a. Approval of CLSM mix design by Engineer does not relieve Contractor of his responsibility to provide CLSM that meets the requirements of this Specification.

3. Adjust CLSM mix designs when material characteristics, job conditions, weather, strength test results or other circumstances warrant.
    a. All adjustments to be properly documented by Contractor
    b. Do not use revised CLSM mixes until submitted to and approved by Engineer.

C. Qualifications:
1. Ready mixed concrete batch plant certified by National Ready Mix Concrete Association.

1.3 DEFINITIONS

A. Per ACI 116R except as modified herein:
1. CLSM Testing Agency: Testing agency employed to perform materials evaluation, design of CLSM mixes or testing of CLSM placed during construction.
2. Indicated: Indicated by Contract Documents.
3. Required: Required by Contract Documents.
4. Specified strength: Specified compressive strength at 28 days.
5. Submitted: Submitted to Engineer.

1.4 SUBMITTALS

A. Shop Drawings:
1. Equipment to be utilized to include:
    a. Injection pump and attachments
    b. Boom pump truck
2. CLSM mix designs proposed for use.
    a. CLSM mix design submittal to include the following information:
        1) Sieve analysis and source of fine aggregates.
        2) Test for aggregate organic impurities.
        3) Test for deleterious aggregate per ASTM C289.
        4) Proportioning of all materials.
        5) Type of cement with mill certificate for cement.
        6) Type of fly ash with certificate of conformance to specification requirements.
        7) Slump.
        8) Air content.
        9) Brand, type, ASTM designation, and quantity of each admixture proposed for use.
        10) 7, and 28-day cylinder compressive test results of trial mixes per ACI 318 and as indicated herein.
        11) Standard deviation value for concrete production facility.
3. Strength test results of in place CLSM including slump, air content and concrete temperature.
4. Delivery:
    a. Prepare a delivery ticket for each load of CLSM.
    b. Truck operator shall hand ticket to Construction Administrator at the time of delivery.
    c. Ticket to show:
        1) Mix identification mark
        2) Quantity delivered
        3) Amount of each material in batch
        4) Outdoor temperature in the shade
        5) Time at which CLSM was placed
        6) Numerical sequence of the delivery
        7) Approved amount of water (if any) added
        8) Time of completion of unloading

PART 2 - PRODUCTS

2.1 MATERIALS

A. Portland Cement: Conform to ASTM C150 Type I and Type II.

B. Fly Ash:
   1. ASTM C618, Class F or Class C.
   2. Nonstaining.
      a. Hardened concrete containing fly ash to be uniform light gray color.
   3. Maximum loss on ignition: 4 percent.
   4. Compatible with other concrete ingredients.
   5. Obtain proposed fly ash from a source approved by the State Highway Department in the state where the Project is located for use in concrete for bridges.

C. Admixtures:
   1. Air entraining admixtures: ASTM C260.
   2. Water reducing, retarding, and accelerating admixtures:
      a. ASTM C494 Type A through E.
      b. Conform to provisions of ACI 212.3R.
      c. Do not use retarding or accelerating admixtures unless specifically approved in writing by Engineer and at no cost to Owner.
      d. Follow manufacturer's instructions.
      e. Use chloride free admixtures only.
   3. Maximum total water soluble chloride ion content contributed from all ingredients of concrete including water, aggregates, cementitious materials and admixtures by weight percent of cement:
      a. 0.10 all concrete.
   4. Do not use calcium chloride.
   5. Provide admixtures of same type, manufacturer and quantity as used in establishing required concrete proportions in the mix design.

D. Water: To be supplied by Hillsborough County.

E. Aggregates:
   1. Fine aggregate:
      a. Clean natural silica sand.
      b. No manufactured or artificial sand.
      c. FDOT specification code F01 fine aggregate sand.

2.2 CONCRETE MIXES

A. General:
   1. All concrete to be ready mixed concrete conforming to ASTM C94 with all components and additives blended at the plant, unless otherwise approved.
   2. Provide concrete of specified quality capable of being placed without segregation and, when cured, of developing all properties required.
   3. All concrete to be normal weight concrete.
   4. Mix shall contain fly ash.

B. Strength:
   1. Provide specified strength for CLSM as follows:

AREA	WEIGHT	SPECIFIED STRENGTH*
Sinkhole Area	Normal weight	300 psi

* Minimum 28-day compressive strength.

C. Air Entrainment:
   1. Provide air entrainment in all concrete resulting in a total air content percent by volume as follows:

TOTAL AIR CONTENT PERCENT
5 % to 1 ½ %

2. Air content to be measured in accordance with ASTM C231, ASTM C173, or ASTM C138.

D. Slump - 10 IN maximum, 8 IN minimum:
   1. Measured at point of discharge of the CLSM into the hopper.
   2. Pumped CLSM:
      a. Provide additional water at batch plant to allow for slump loss due to pumping.
      b. Provide only enough additional water so that slump of concrete at discharge end of pump hose does not exceed maximum slump specified above.
   3. Determine slump per ASTM C143.

PART 3 - EXECUTION

3.1 PLACEMENT OF CONTROLLED LOW STRENGTH MATERIAL

A. General:
   1. CLSM placing shall be performed using a 42 meter boom reach pump truck equipped with the following:
      a. 123 feet of horizontal hose and 20 feet of vertical hose.
   2. Contractor is responsible for placement equipment
   3. Flushing system to be capable of utilizing air or water

B. Placing CLSM:
   1. Place in a continuous operation
   2. Approximately 395 cy will be placed during the fist batch. CLSM to let cure for 2 days before placing remaining 395 cy batch.
   3. CLSM to be placed evenly within the sinkhole area.
   4. Consolidation not required.

3.2 FIELD QUALITY CONTROL

A. Contractor will employ and pay for services of a concrete testing laboratory to perform testing of CLSM placed during construction.
   1. Contractor to provide Owner with test results as soon as results are available.

B. Tests During Construction:
   1. Strength test - procedure:
      a. Three cylinders, 3 IN DIA x 6 IN high, will be taken from each sample per ASTM C172 and ASTM C31.
      b. Cylinders will be tested per ASTM C39:
         1) One at 7 days.
         2) Two at 28 days.
   2. Strength test - frequency:
      a. Not less than one test each day CLSM placed.
      b. Not less than one test for each 50 CY or major fraction thereof placed in one day.
      c. Not less than one test for each type of CLSM poured.
      d. Not less than one test for each delivery where water addition has been approved at the jobsite.
   3. Slump test:
      a. Per ASTM C143.
      b. Determined for each strength test sample.
      c. Additional slump tests may be taken.
   4. Air content:
      a. Per ASTM C231, ASTM C173, and ASTM C138.

b. Determined for each strength test sample.

5. Temperature: Determined for each strength test sample.

C. Evaluation of Tests:

1. Strength test results:

a. Average of 28-day strength of two cylinders from each sample.

1) If one cylinder manifests evidence of improper sampling, molding, handling, curing or testing, strength of remaining cylinder will be test result.

2) If both cylinders show any of above defects, test will be discarded.

D. Acceptance of CLSM:

1. Strength level of each type of CLSM shall be considered satisfactory if both of the following requirements are met:

a. Average of all sets of three consecutive strength tests equals or exceeds the required specified 28-day compressive strength.

b. No individual strength test falls below the required specified 28-day compressive strength by more than 30 psi.

2. If tests fail to indicate satisfactory strength level, perform additional tests and/or corrective measures as directed by Engineer.

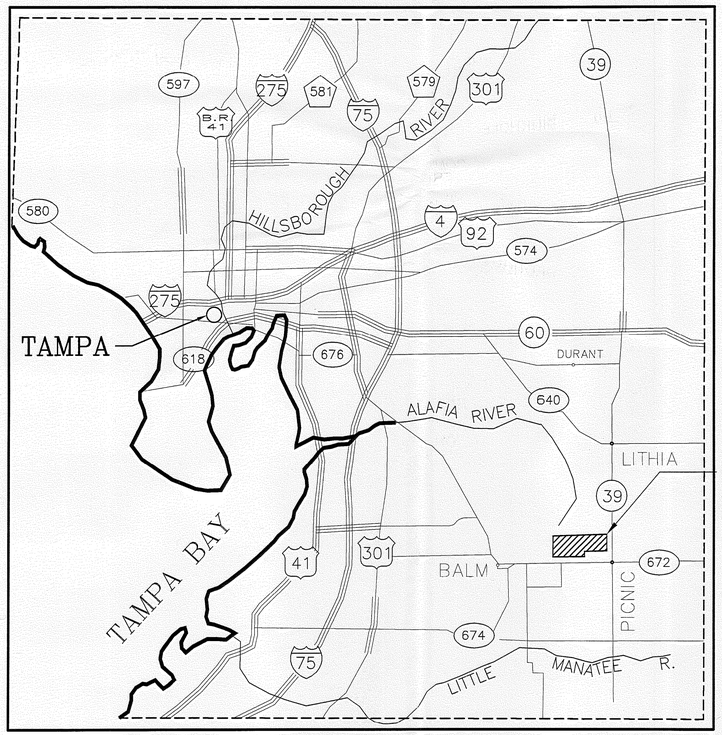
a. Perform additional tests and/or corrective measures at no additional cost to Owner.

END OF SECTION

Hillsborough County
Florida

HDR

HDR Engineering, Inc.
5426 Bay Center Drive
Suite 400
Tampa, FL 33609-3444
HDR CA# 4213



NOT TO SCALE

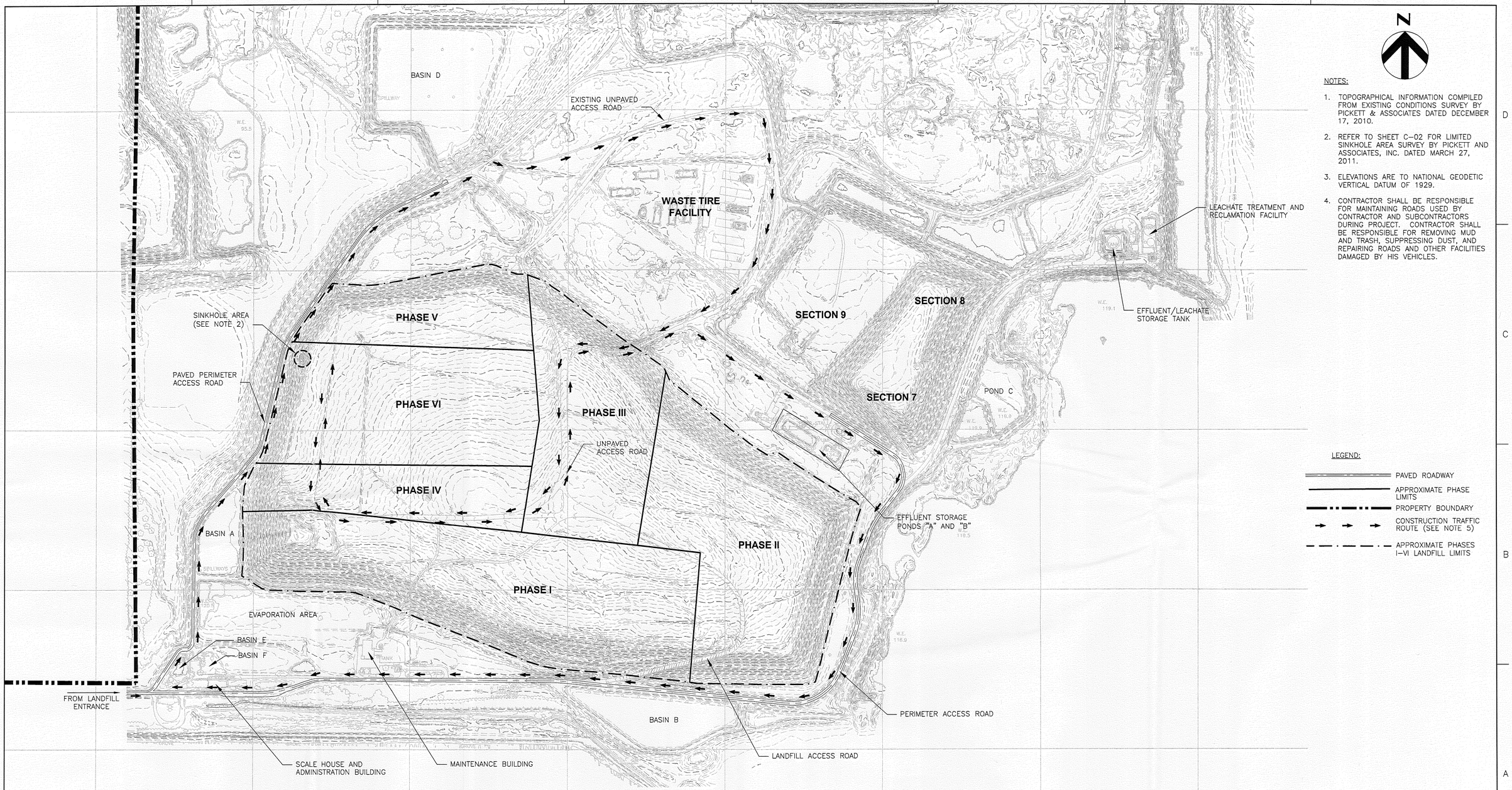
Construction Drawings For

SINKHOLE CUT/FILL AND WASTE RELOCATION PLAN

Project No.
096-160539-001

LITHIA, FLORIDA
MAY 2011

INDEX OF DRAWINGS



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NOTES:

1. TOPOGRAPHICAL INFORMATION COMPILED FROM EXISTING CONDITIONS SURVEY BY PICKETT & ASSOCIATES DATED DECEMBER 17, 2010.
2. REFER TO SHEET C-02 FOR LIMITED SINKHOLE AREA SURVEY BY PICKETT AND ASSOCIATES, INC. DATED MARCH 27, 2011.
3. ELEVATIONS ARE TO NATIONAL GEODETIC VERTICAL DATUM OF 1929.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ROADS USED BY CONTRACTOR AND SUBCONTRACTORS DURING PROJECT. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING MUD AND TRASH, SUPPRESSING DUST, AND REPAIRING ROADS AND OTHER FACILITIES DAMAGED BY HIS VEHICLES.

LEGEND:

- PAVED ROADWAY
- APPROXIMATE PHASE LIMITS
- PROPERTY BOUNDARY
- CONSTRUCTION TRAFFIC ROUTE (SEE NOTE 5)
- APPROXIMATE PHASES I–VI LANDFILL LIMITS

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
MAY 13 2011
SOUTHWEST DISTRICT TAMPA

HDR
HDR Engineering, Inc.
5426 Bay Center Drive
Suite 400
Tampa, FL 33609-3444
HDR C#A# 4213

ISSUE	DATE	DESCRIPTION
A	05/2011	ISSUED FOR REVIEW

PROJECT MANAGER	R. SIEMERING
REVIEWED BY	B. MEYER
CIVIL DESIGN BY	C. RESTREPO
CIVIL DESIGN BY	J. O'NEILL
DRAWN BY	B. JOHNSON
PROJECT NUMBER	0096-160539-001

CARLOS A. RESTREPO, P.E.
CERTIFICATE NO. 70208

Hillsborough County Florida

SINKHOLE CUT/FILL AND WASTE RELOCATION PLAN SOUTHEAST COUNTY LANDFILL HILLSBOROUGH COUNTY, FLORIDA

OVERALL SITE PLAN

0 1" 2"

FILENAME	00C-01.DWG
SCALE	1"=300'

SHEET C-01

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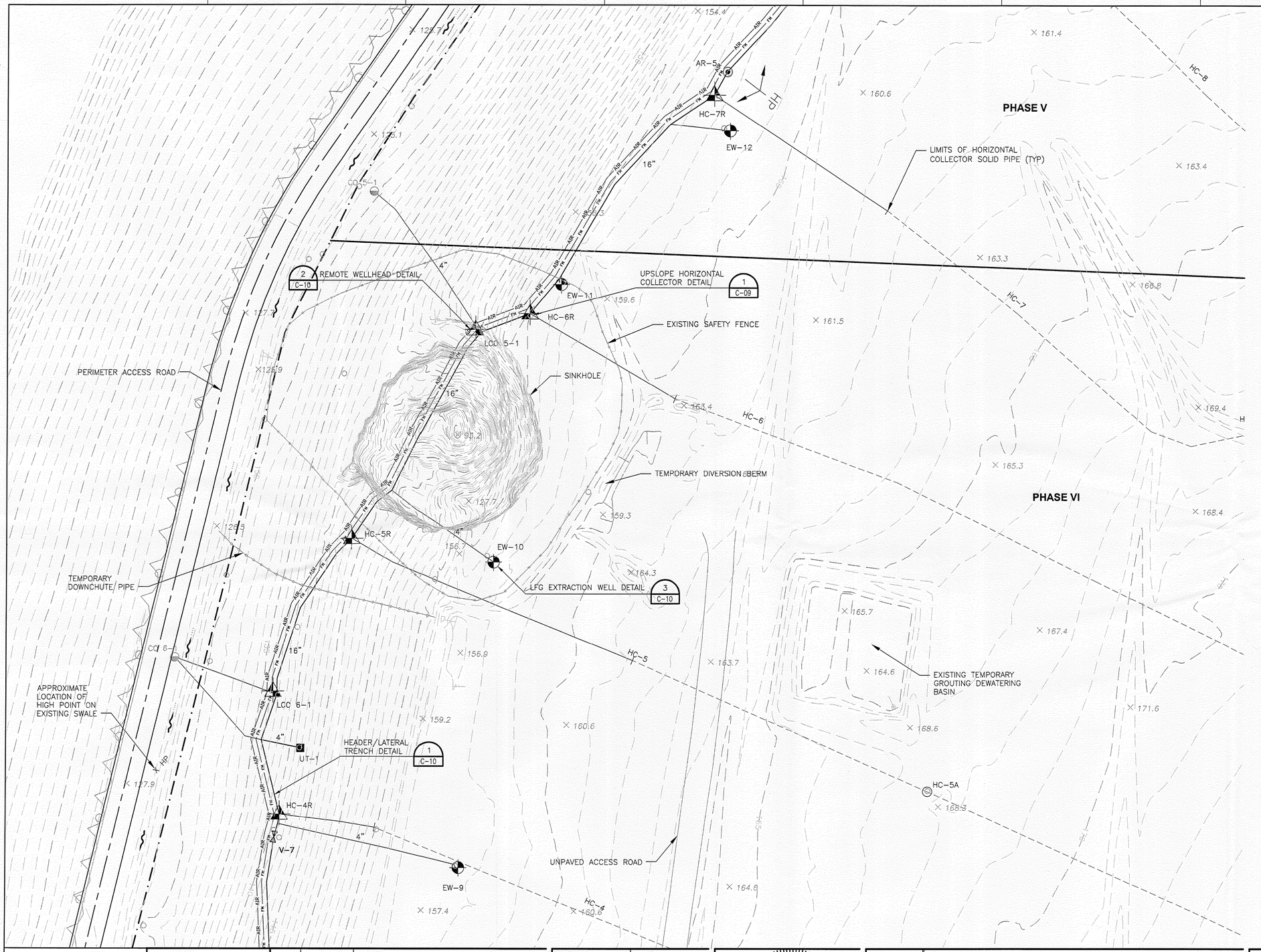


NOTES:

1. TOPOGRAPHICAL INFORMATION COMPILED FROM SINKHOLE AREA SURVEY BY PICKETT & ASSOCIATES, INC. DATED MARCH 27, 2011.
2. ELEVATIONS ARE TO NATIONAL GEODETIC VERTICAL DATUM OF 1929.
3. APPROXIMATE LOCATION OF LANDFILL GAS COLLECTION AND CONTROL SYSTEM OBTAINED FROM RECORD DRAWINGS BY SCS ENGINEERS APRIL 15, 2010. VERIFY LOCATION IN FIELD.
4. CONTOURS WITHIN PHASES I–VI AREA REPRESENT INTERMEDIATE COVER.

LEGEND:

HC–1A	HORIZONTAL COLLECTOR VERTICAL BORING
EW–10	LFG EXTRACTION WELL
UT–2	SLOPED CONDENSATE U–TRAP
HC–18R	UPSLOPE HORIZONTAL COLLECTOR WELLHEAD
LCO 6–1	REMOTE WELLHEAD
V–7	HEADER ISOLATION VALVE
AR–24	HEADER ACCESS RISER
10"	HEADER/LATERAL DIAMETER
HP	HIGH POINT
CO 4–1	EXISTING LEACHATE COLLECTION SYSTEM CLEANOUT
	HEADER/LATERAL PIPE
AIR AIR AIR AIR	AIR SUPPLY LINE
FM FM FM	CONDENSATE DRAIN LINE/LEACHATE DEWATERING LINE
	APPROXIMATE LANDFILL LIMITS
	LFG HORIZONTAL COLLECTOR PERFORATED PIPE
	PAVED ROADWAY
	APPROXIMATE PHASES I–VI LIMITS

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
MAY 13 2011
SOUTHWEST DISTRICT TAMPA

HDR
HDR Engineering, Inc.
5426 Bay Center Drive
Suite 400
Tampa, FL 33609-3444
HDR CA# 4213

ISSUE	DATE	DESCRIPTION
A	05/2011	ISSUED FOR REVIEW

PROJECT MANAGER	R. SIEMERING
REVIEWED BY	B. MEYER
CIVIL DESIGN BY	C. RESTREPO
CIVIL DESIGN BY	J. O'NEILL
DRAWN BY	B. JOHNSON
PROJECT NUMBER	0096–160539–001

CARLOS A. RESTREPO, P.E.
CERTIFICATE NO. 70208

Hillsborough County Florida

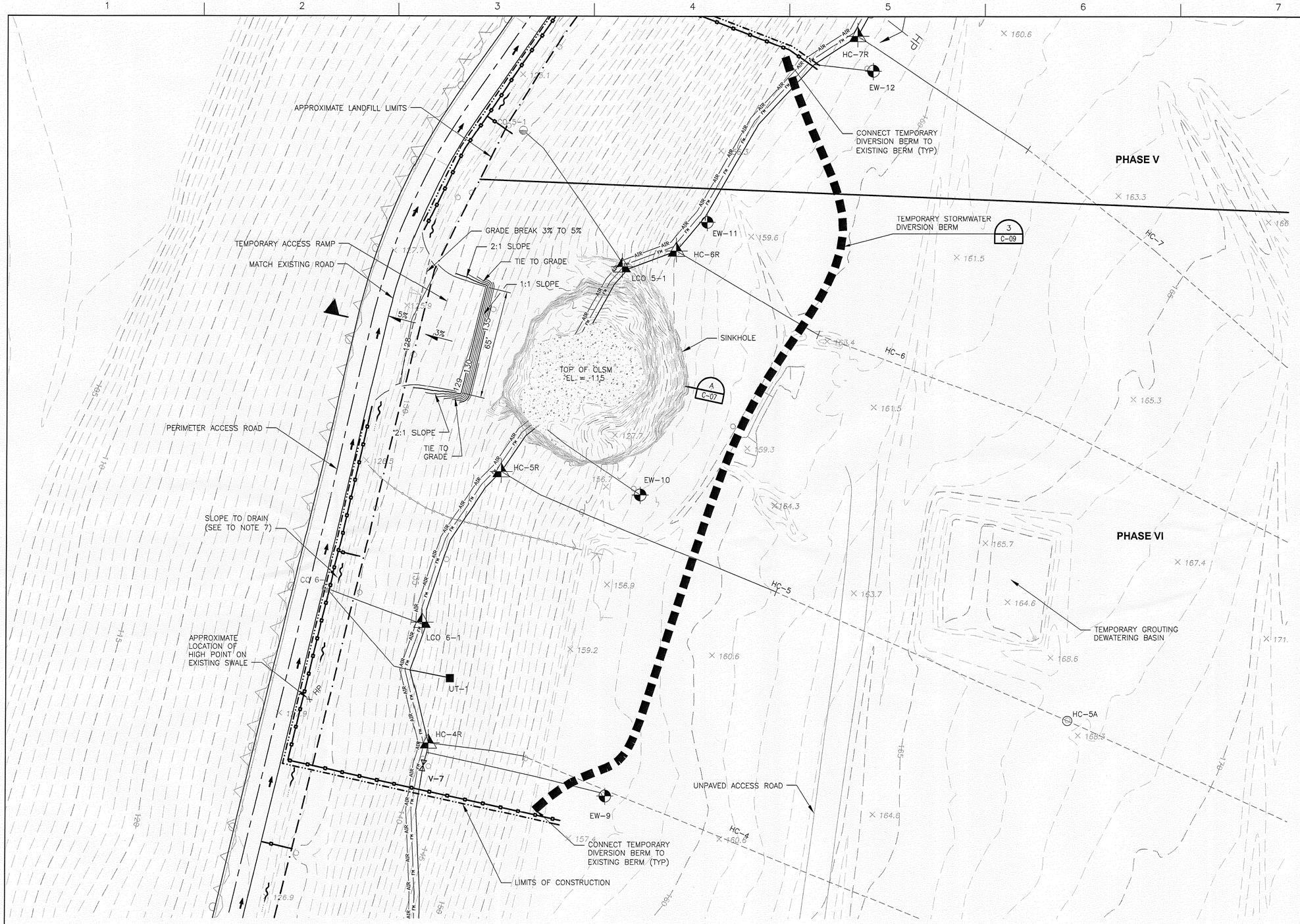
SINKHOLE CUT/FILL AND WASTE RELOCATION PLAN SOUTHEAST COUNTY LANDFILL HILLSBOROUGH COUNTY, FLORIDA

SINKHOLE - EXISTING CONDITIONS

0 1" 2"

FILENAME	00C–02.DWG
SCALE	1"=30'

SHEET C-02



N

NOTES:

1. TOPOGRAPHICAL INFORMATION COMPILED FROM SINKHOLE AREA SURVEY BY PICKETT & ASSOCIATES DATED MARCH 27, 2011.
2. ELEVATIONS ARE TO NATIONAL GEODETIC VERTICAL DATUM OF 1929.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ROADS USED BY CONTRACTOR AND SUBCONTRACTORS DURING PROJECT. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING MUD AND TRASH, SUPPRESSING DUST, AND REPAIRING ROADS AND OTHER FACILITIES DAMAGED BY HIS VEHICLES.
4. APPROXIMATE LOCATION OF LANDFILL GAS COLLECTION AND CONTROL SYSTEM OBTAINED FROM RECORD DRAWINGS BY SCS ENGINEERS APRIL 15, 2010. VERIFY LOCATION IN FIELD.
5. CONTOURS WITHIN PHASES I–VI AREA REPRESENT INTERMEDIATE COVER.
6. TEMPORARY ACCESS RAMP AT TOE OF SIDE SLOPE TO INCLUDE 18 INCHES OF BACKFILL COVER.
7. EXISTING SWALE TO BE SLOPED TO DRAIN STARTING AT THE SOUTH SIDE OF TEMPORARY ACCESS RAMP HEADING SOUTH TOWARDS THE HIGH POINT. APPROXIMATE LOCATION SHOWN ON THIS SHEET. FOLLOWING COMPLETION OF THE PROJECT, CONTRACTOR SHALL RESTORE SWALE TO ORIGINAL DRAINAGE PATTERN. FOR ADDITIONAL SEDIMENTATION AND EROSION CONTROL NOTES SEE SHEET C–11

LEGEND:

CLSM	CONTROLLED LOW STRENGTH MATERIAL
HC–1A	HORIZONTAL COLLECTOR VERTICAL BORING
EW–10	LFG EXTRACTION WELL
UT–2	SLOPED CONDENSATE U–TRAP
HC–18R	UPSLOPE HORIZONTAL COLLECTOR WELLHEAD
LCO 6–1	REMOTE WELLHEAD
V–7	HEADER ISOLATION VALVE
AR–24	HEADER ACCESS RISER
10"	HEADER/LATERAL DIAMETER
HP	HIGH POINT
CO 4–1	EXISTING LEACHATE COLLECTION SYSTEM CLEANOUT
	HEADER/LATERAL PIPE
AIR AIR AIR AIR	AIR SUPPLY LINE
FM FM FM	CONDENSATE DRAIN LINE/LEACHATE DEWATERING LINE
	APPROXIMATE LANDFILL LIMITS
	LFG HORIZONTAL COLLECTOR PERFORATED PIPE
	APPROXIMATE PHASES I–VI LIMITS
	CONSTRUCTION TRAFFIC ROUTE (SEE NOTE 4)
	LIMITS OF CONSTRUCTION
	SILT FENCE

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DRAWN BY	B. JOHNSON
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CARLOS A. RESTREPO, P.E.
CERTIFICATE NO. 70208

Hillsborough County Florida

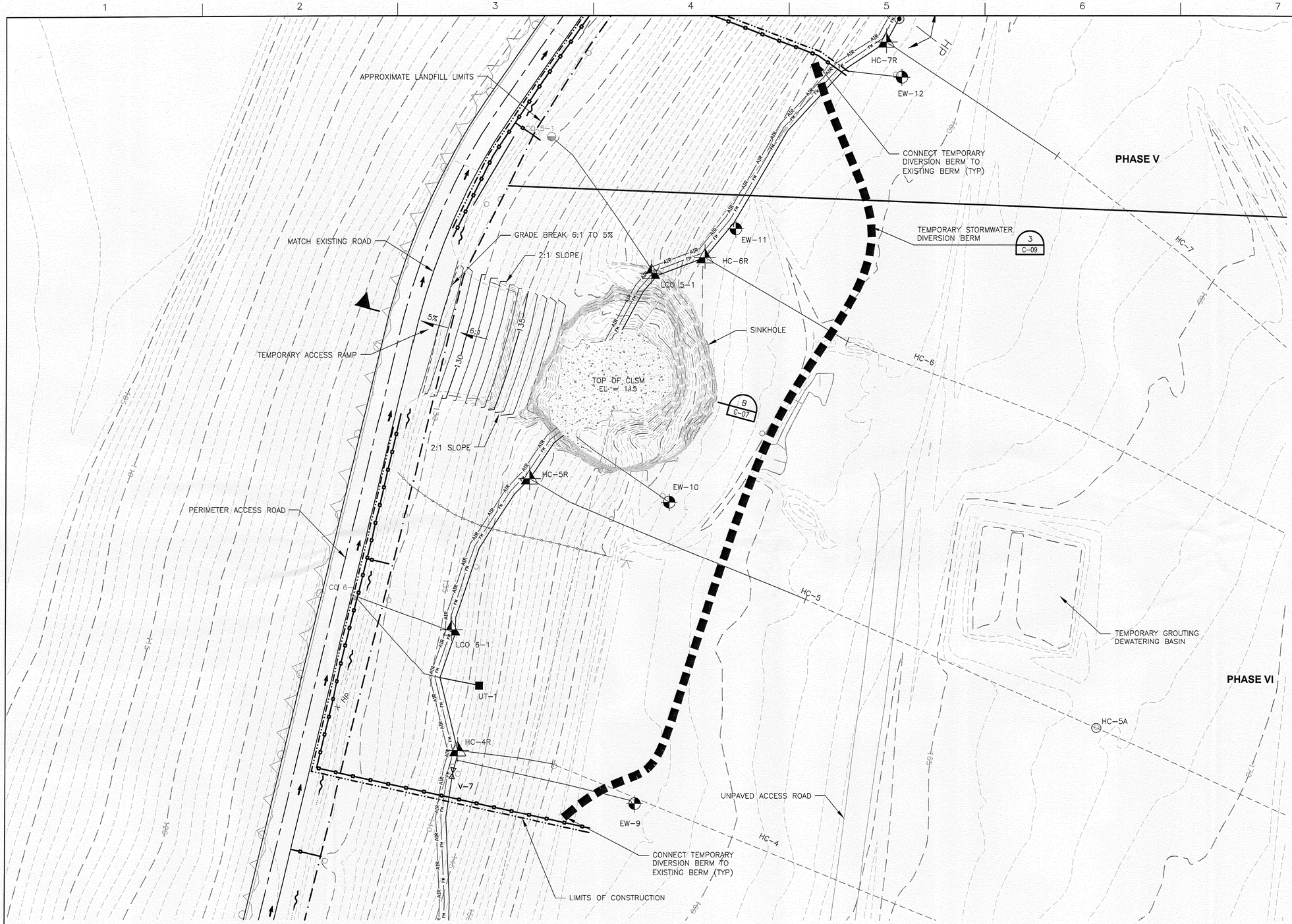
SINKHOLE CUT/FILL AND WASTE RELOCATION PLAN SOUTHEAST COUNTY LANDFILL HILLSBOROUGH COUNTY, FLORIDA

STEP 1 - CONTROLLED LOW STRENGTH MATERIAL (CLSM) PLACEMENT

0 1" 2"

FILENAME	00C–03.DWG
SCALE	1"=30'

SHEET C-03



N

NOTES:

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5. CONTOURS WITHIN PHASES I-VI AREA REPRESENT INTERMEDIATE COVER.

LEGEND:

- HC-1A — HORIZONTAL COLLECTOR VERTICAL BORING
- EW-10 — LFG EXTRACTION WELL
- UT-2 — SLOPED CONDENSATE U-TRAP
- HC-18R — UPSLOPE HORIZONTAL COLLECTOR WELLHEAD
- LCO 6-1 — REMOTE WELLHEAD
- V-7 — HEADER ISOLATION VALVE
- AR-24 — HEADER ACCESS RISER
- 10" — HEADER/LATERAL DIAMETER
- HP — HIGH POINT
- CO 4-1 — EXISTING LEACHATE COLLECTION SYSTEM CLEANOUT
- HEADER/LATERAL PIPE
- AIR SUPPLY LINE
- CONDENSATE DRAIN LINE/LEACHATE DEWATERING LINE
- LIMIT OF LANDFILL
- LFG HORIZONTAL COLLECTOR PERFORATED PIPE
- APPROXIMATE PHASES I-VI LIMITS
- CONSTRUCTION TRAFFIC ROUTE (SEE NOTE 4)
- LIMITS OF CONSTRUCTION

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PROJECT NUMBER	0096-160539-001

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CERTIFICATE NO. 70208

Hillsborough County Florida

SINKHOLE CUT/FILL AND WASTE RELOCATION PLAN SOUTHEAST COUNTY LANDFILL HILLSBOROUGH COUNTY, FLORIDA

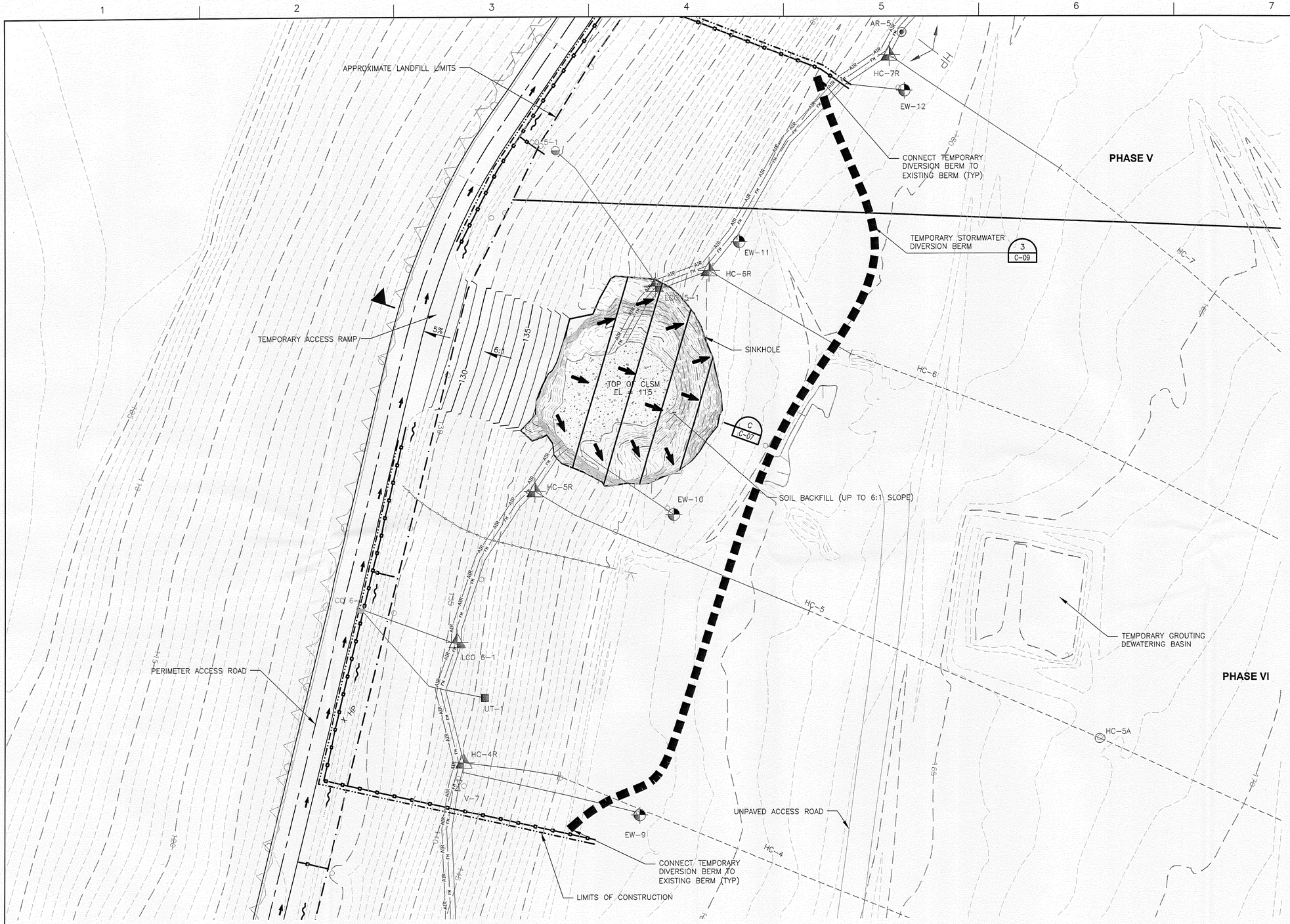
STEP 2 - WEST WALL STABILIZATION

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
MAY 13 2011
SOUTHWEST DISTRICT TAMPA

0 1" 2"

FILENAME	00C-04.DWG
SCALE	1"=30'

SHEET C-04



N

NOTES:

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5. CONTOURS WITHIN PHASES I–VI AREA REPRESENT INTERMEDIATE COVER.

LEGEND:

HC-1A	HORIZONTAL COLLECTOR VERTICAL BORING
EW-10	LFG EXTRACTION WELL
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HC-18R	UPSLOPE HORIZONTAL COLLECTOR WELLHEAD
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AR-24	HEADER ACCESS RISER
10"	HEADER/LATERAL DIAMETER
HP	HIGH POINT
CO 4-1	EXISTING LEACHATE COLLECTION SYSTEM CLEANOUT
	HEADER/LATERAL PIPE
AIR AIR AIR AIR	AIR SUPPLY LINE
FM FM FM	CONDENSATE DRAIN LINE/LEACHATE DEWATERING LINE
	APPROXIMATE LANDFILL LIMITS
	LFG HORIZONTAL COLLECTOR PERFORATED PIPE
	APPROXIMATE PHASES I–VI LIMITS
	CONSTRUCTION TRAFFIC ROUTE (SEE NOTE 4)
	LIMITS OF CONSTRUCTION
	BACKFILL PROGRESSION

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CIVIL DESIGN BY	J. O'NEILL
DRAWN BY	B. JOHNSON
PROJECT NUMBER	0096-160539-001

CARLOS A. RESTREPO, P.E.
CERTIFICATE NO. 70208

Hillsborough County Florida

SINKHOLE CUT/FILL AND WASTE RELOCATION PLAN SOUTHEAST COUNTY LANDFILL HILLSBOROUGH COUNTY, FLORIDA

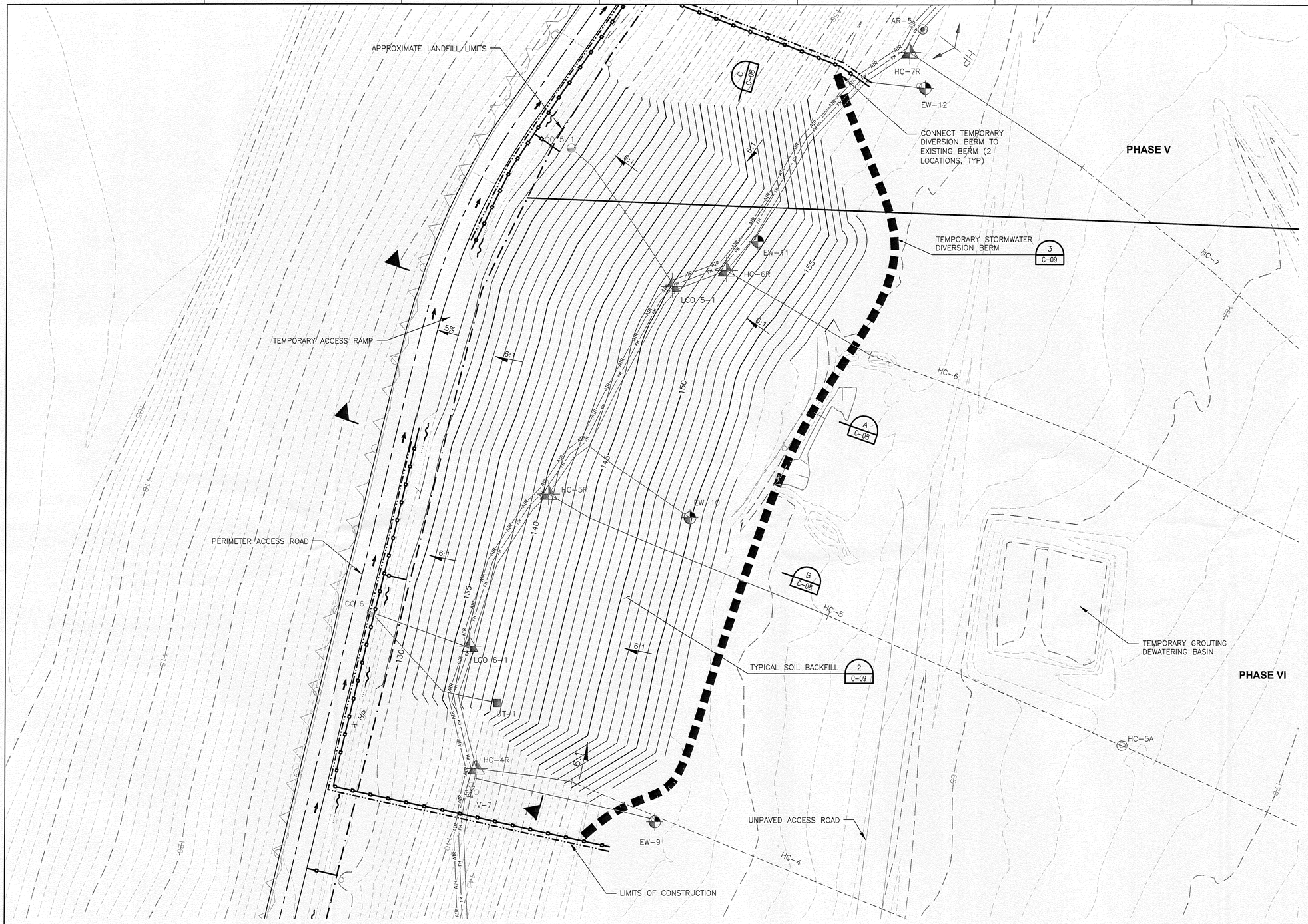
STEP 3 - SINKHOLE BACKFILL SEQUENCE

RECEIVED DEPARTMENT OF ENVIRONMENTAL PROTECTION MAY 13 2011 SOUTHWEST DISTRICT TAMPA

0 1" 2"

FILENAME	00C-05.DWG
SCALE	1"=30'

SHEET C-05



N

NOTES:

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6. SIDE SLOPE AND PROPOSED CONTOURS TO INCLUDE 18 INCHES OF BACKFILL COVER.

LEGEND:

- HC–1A — HORIZONTAL COLLECTOR VERTICAL BORING
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- HC–18R — UPSLOPE HORIZONTAL COLLECTOR WELLHEAD
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- AR–24 — HEADER ACCESS RISER
- 10" — HEADER/LATERAL DIAMETER
- HP — HIGH POINT
- CO 4–1 — EXISTING LEACHATE COLLECTION SYSTEM CLEANOUT
- HEADER/LATERAL PIPE
- AIR AIR AIR AIR — AIR SUPPLY LINE
- FM FM FM — CONDENSATE DRAIN LINE/LEACHATE DEWATERING LINE
- LIMIT OF LANDFILL
- LFG HORIZONTAL COLLECTOR PERFORATED PIPE
- APPROXIMATE PHASES I–VI LIMITS
- CONSTRUCTION TRAFFIC ROUTE (SEE NOTE 5)
- LIMITS OF CONSTRUCTION

HDR Engineering, Inc.
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A	05/2011	ISSUED FOR REVIEW

PROJECT MANAGER	R. SIEMERING
REVIEWED BY	B. MEYER
CIVIL DESIGN BY	C. RESTREPO
CIVIL DESIGN BY	J. O'NEILL
DRAWN BY	B. JOHNSON
PROJECT NUMBER	0096–160539–001

CARLOS A. RESTREPO, P.E.
CERTIFICATE NO. 70208

Hillsborough County Florida

SINKHOLE CUT/FILL AND WASTE RELOCATION PLAN SOUTHEAST COUNTY LANDFILL HILLSBOROUGH COUNTY, FLORIDA

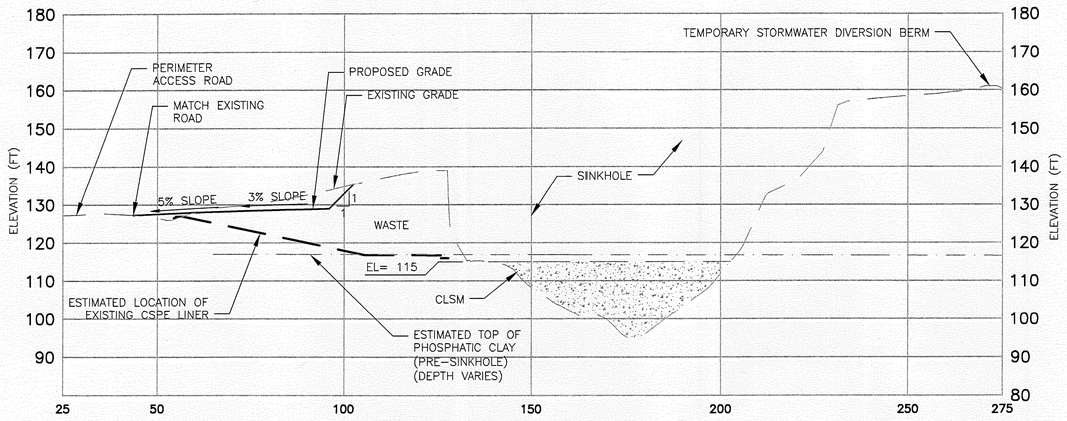
STEP 4 - TEMPORARY SIDE SLOPE GRADING PLAN

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
MAY 13 2011
SOUTHWEST DISTRICT TAMPA

0 1" 2"

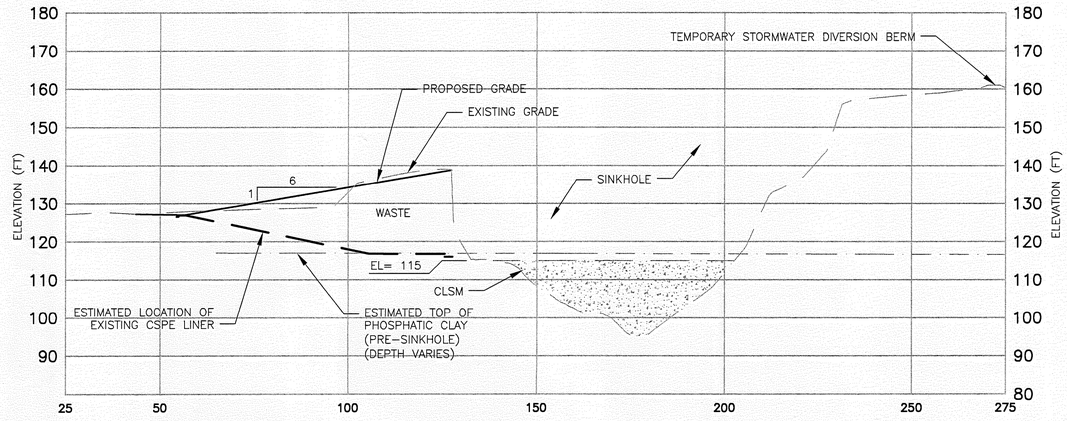
FILENAME	00C–06.DWG
SCALE	1"=30'

SHEET C-06



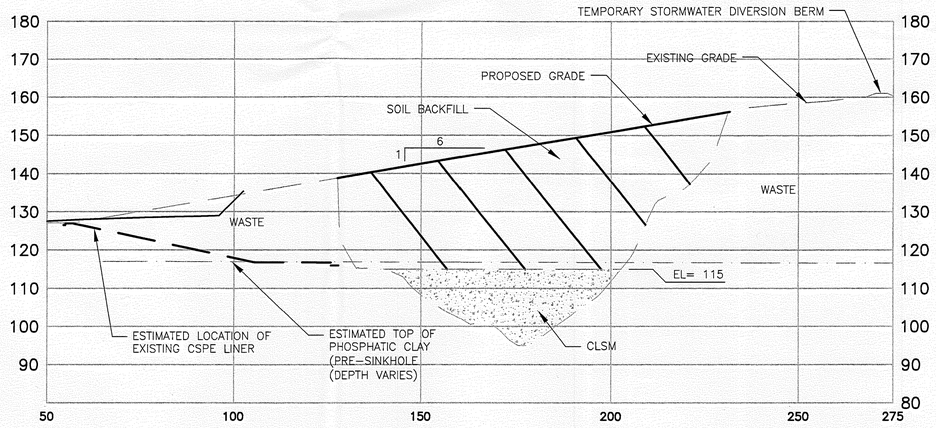
STEP 1 – GRADING FOR CLSM PLACEMENT (A / C-03)

SCALE: 1"=20' HORIZ.
1"=20' VERT.



STEP 2 – WEST WALL STABILIZATION (B / C-04)

SCALE: 1"=20' HORIZ.
1"=20' VERT.



STEP 3 – SINKHOLE BACKFILL SEQUENCE (C / C-05)

SCALE: 1"=20' HORIZ.
1"=20' VERT.

NOTES:

1. TOPOGRAPHICAL INFORMATION COMPILED FROM SINKHOLE AREA SURVEY BY PICKETT & ASSOCIATES, INC. DATED MARCH 27, 2011.
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FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
MAY 13 2011
SOUTHWEST DISTRICT TAMPA

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PROJECT NUMBER	0096–160539–001

CARLOS A. RESTREPO, P.E.
CERTIFICATE NO. 70208

Hillsborough County Florida

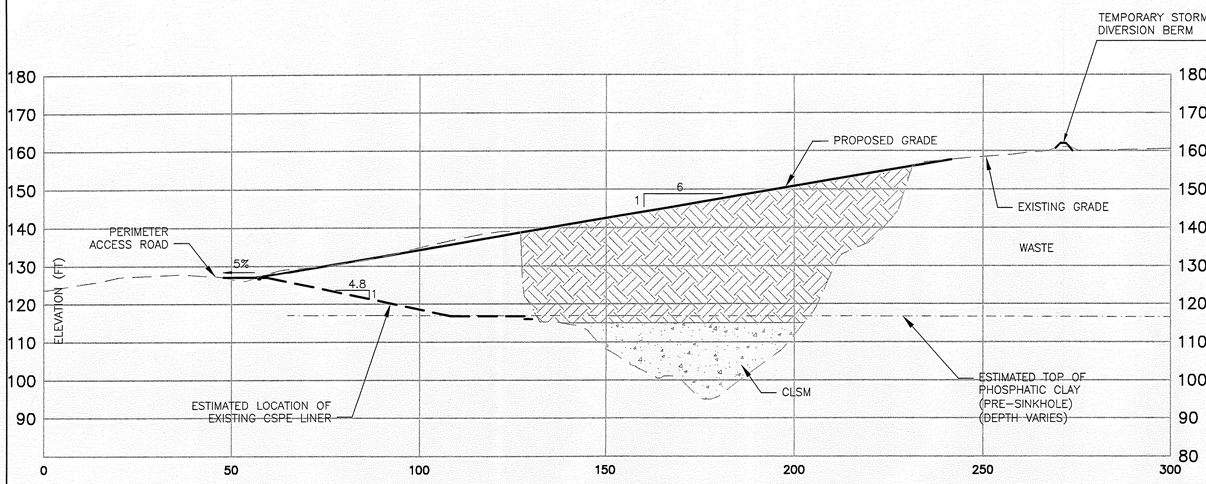
SINKHOLE CUT/FILL AND WASTE RELOCATION PLAN
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA

SECTIONS

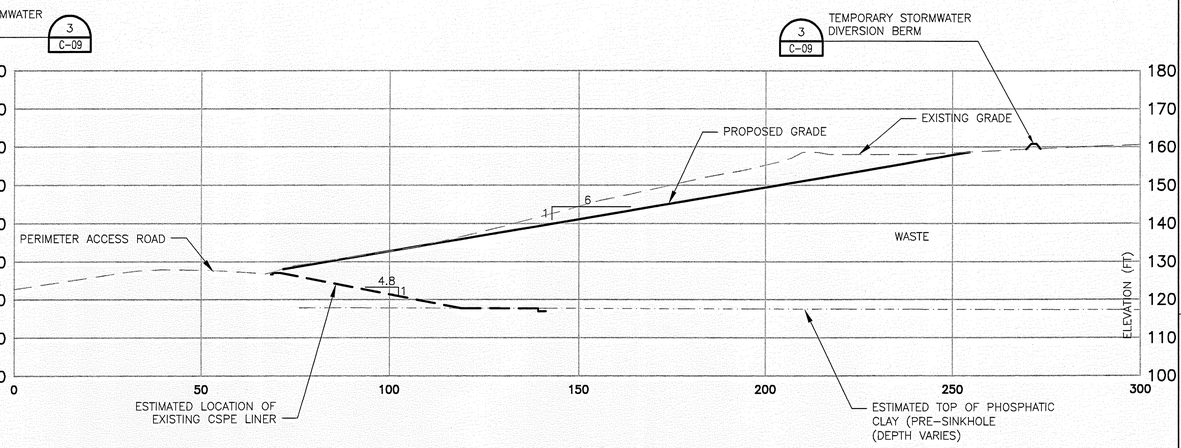
0 1" 2"

FILENAME	00C–07.DWG
SCALE	1"=20' HORIZ. 1"=20' VERT.

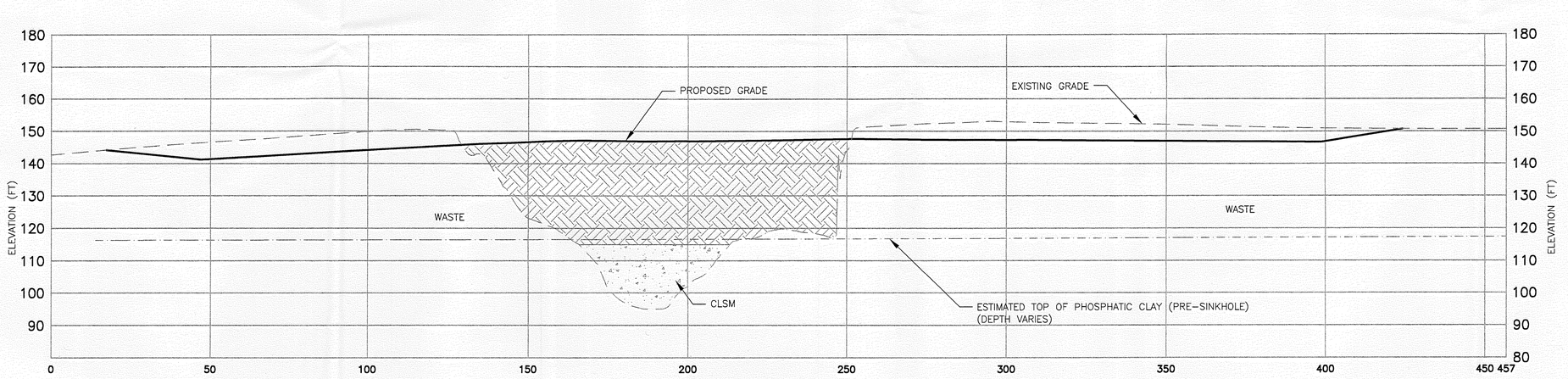
SHEET C-07



SECTION A C-06
SCALE: 1"=20' HORIZ.
1"=20' VERT.



SECTION B C-06
SCALE: 1"=20' HORIZ.
1"=20' VERT.



SECTION C C-06
SCALE: 1"=20' HORIZ.
1"=20' VERT.

NOTES:

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FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
MAY 13 2011
SOUTHWEST DISTRICT TAMPA

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Hillsborough County Florida

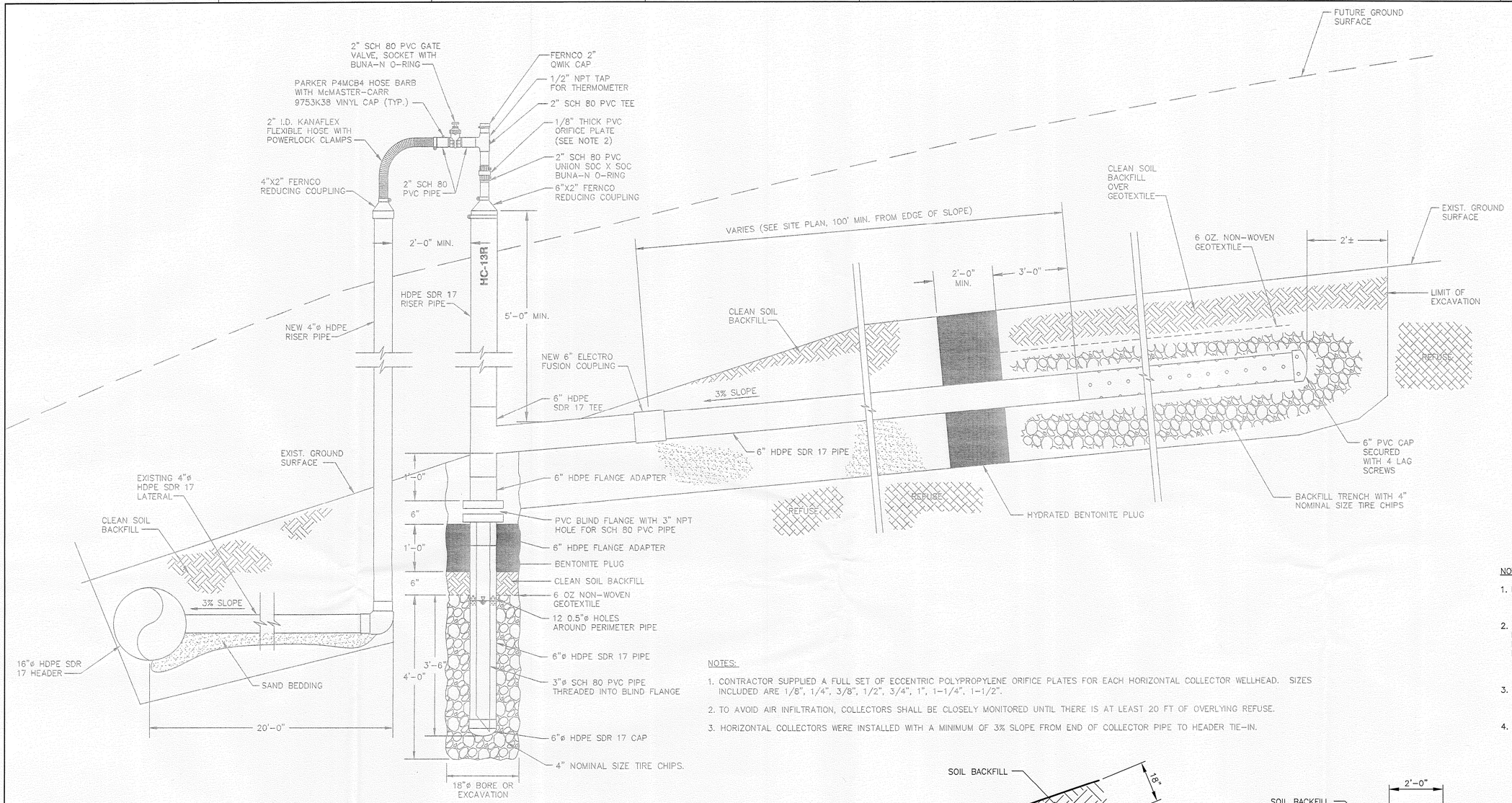
SINKHOLE CUT/FILL AND WASTE RELOCATION PLAN
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA

SECTIONS

0 1" 2"

FILENAME	00C-08.DWG
SCALE	1"=20' HORIZ. 1"=20' VERT.

SHEET
C-08



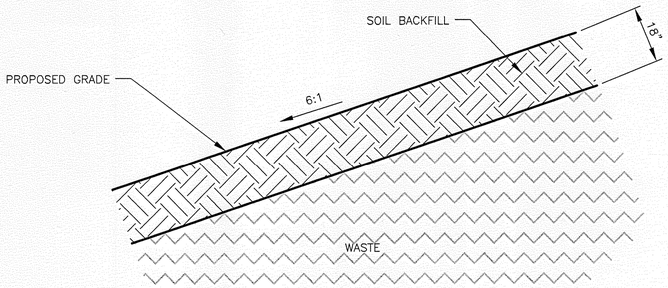
UPSLOPE HORIZONTAL COLLECTOR DETAIL

1 / C-02

NOT TO SCALE

NOTES:

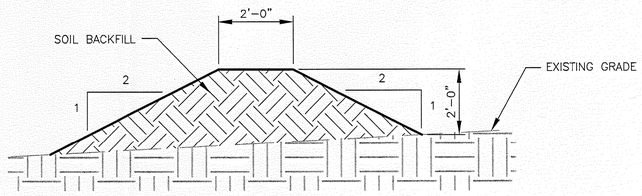
1. CONTRACTOR SUPPLIED A FULL SET OF ECCENTRIC POLYPROPYLENE ORIFICE PLATES FOR EACH HORIZONTAL COLLECTOR WELLHEAD. SIZES INCLUDED ARE 1/8", 1/4", 3/8", 1/2", 3/4", 1", 1-1/4", 1-1/2".
2. TO AVOID AIR INFILTRATION, COLLECTORS SHALL BE CLOSELY MONITORED UNTIL THERE IS AT LEAST 20 FT OF OVERLYING REFUSE.
3. HORIZONTAL COLLECTORS WERE INSTALLED WITH A MINIMUM OF 3% SLOPE FROM END OF COLLECTOR PIPE TO HEADER TIE-IN.



TYPICAL SOIL BACKFILL DETAIL

2 / C-06

NOT TO SCALE



TEMPORARY STORMWATER DIVERSION BERM

3 / C-03, C-04, C-05, C-06, C-07

NOT TO SCALE

NOTES:

1. DETAILS SCREENED BACK WERE PREPARED, SIGNED, SEALED AND SUBMITTED TO FDEP BY SCS ENGINEERS APRIL 16, 2010.
2. ALL LINEWORK AND DESIGN DATA SHOWN IN BOLD IS PROPOSED BY HDR ENGINEERING, INC., AND AS SUCH IS THE ONLY DESIGN INFORMATION THAT IS BEING SIGNED, SEALED AND SUBMITTED TO FDEP BY THE ENGINEER OF RECORD.
3. FIELD VERIFY LOCATION OF LFG HEADER, LATERAL PIPES, AND LEACHATE CLEANOUTS BEFORE EXCAVATION.
4. LFG DETAILS PROVIDED FOR INFORMATION PURPOSES ONLY.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
MAY 13 2011
SOUTHWEST DISTRICT TAMPA

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Hillsborough County Florida

SINKHOLE CUT/FILL AND WASTE RELOCATION PLAN SOUTHEAST COUNTY LANDFILL HILLSBOROUGH COUNTY, FLORIDA

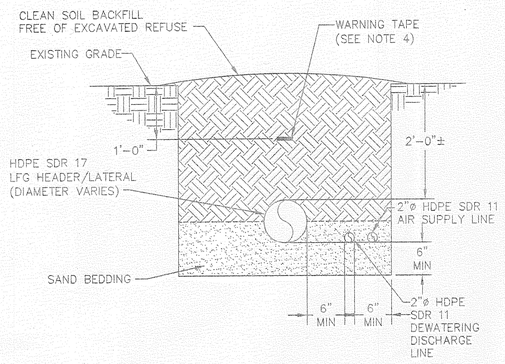
DETAILS

0 1" 2"

FILENAME	00C-09.DWG
SCALE	AS SHOWN

SHEET C-09

c:\pwworking\pwb02\d0913\300C-09.dwg, Plot, 5/13/2011 9:46:15 AM, BradJohn



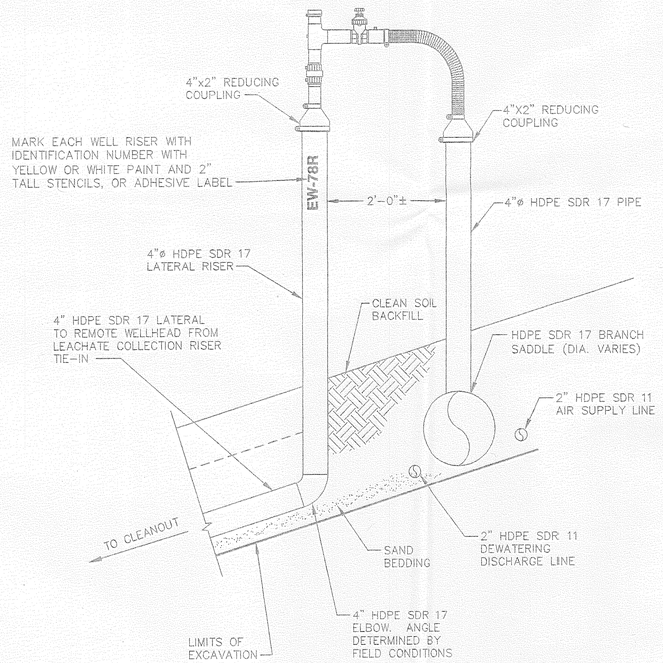
NOTES:

1. HEADER SHALL BE HDPE SDR 17, WITH THE DIAMETERS AND SLOPES AS SHOWN ON THE PLANS.
2. LFG LATERALS SHALL BE SDR 17 WITH THE DIAMETERS SHOWN ON THE PLANS, AND INSTALLED WITH MINIMUM 3% SLOPE.
3. DEWATERING DISCHARGE LINE AND AIR SUPPLY LINE SHALL BE 2"ø HDPE SDR 11.
4. WARNING TAPE FOR HEADER/LATERALS SHALL BE MIN. 3" WIDE AND IMPRINTED WITH "GAS LINE BURIED BELOW".

HEADER/LATERAL TRENCH DETAIL

NOT TO SCALE

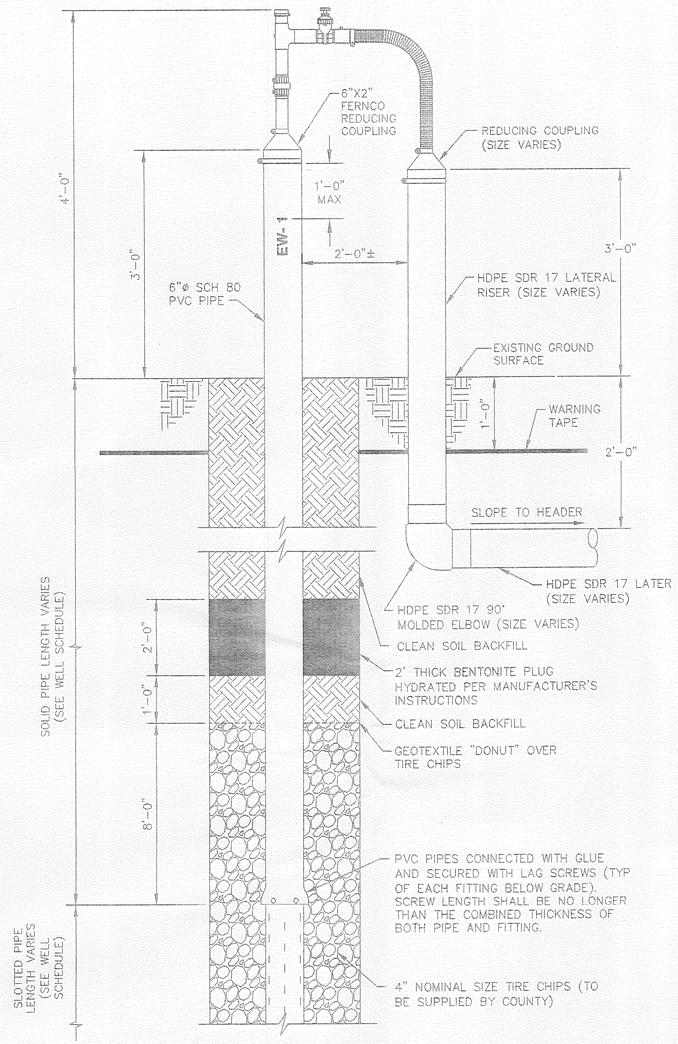
1 / C-02



REMOTE WELLHEAD DETAIL

NOT TO SCALE

2 / C-02



LFG EXTRACTION WELL DETAIL

NOT TO SCALE

3 / C-02

NOTES:

1. DETAILS SCREENED BACK WERE PREPARED, SIGNED, SEALED AND SUBMITTED TO FDEP BY SCS ENGINEERS APRIL 16, 2010.
2. ALL LINEWORK AND DESIGN DATA SHOWN IN BOLD IS PROPOSED BY HDR ENGINEERING, INC., AND AS SUCH IS THE ONLY DESIGN INFORMATION THAT IS BEING SIGNED, SEALED AND SUBMITTED TO FDEP BY THE ENGINEER OF RECORD.
3. AS-BUILT SURVEY INFORMATION FOR WELL SCHEDULE CONDUCTED BY SOUTHEASTERN SURVEY, INC., DECEMBER 16, 2010.
4. FIELD VERIFY LOCATION OF LFG HEADER, LATERAL PIPES, AND LEACHATE CLEANOUTS BEFORE EXCAVATION.
5. LFG DETAILS PROVIDED FOR INFORMATION PURPOSES ONLY.

WELL SCHEDULE

Well ID	Northing	Easting	Ground Surface Elev.	Approx. Depth of Refuse	Well Depth	Slotted Pipe Length	Solid Pipe Length Below Grade	Solid Pipe Length Above Grade	Thickness of Tire Chips
			(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
EW-10	1,251,369	595,339	150.1	30	30	14	15	3	22
EW-11	1,251,531	595,379	148.7	29	29	13	15	3	22

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
MAY 13 2011
SOUTHWEST DISTRICT TAMPA

HDR Engineering, Inc.
5426 Bay Center Drive
Suite 400
Tampa, FL 33609-3444
HDR C# 4213

ISSUE	DATE	DESCRIPTION
A	05/2011	ISSUED FOR REVIEW

PROJECT MANAGER	R. SIEMERING
REVIEWED BY	B. MEYER
CIVIL DESIGN BY	C. RESTREPO
CIVIL DESIGN BY	J. O'NEILL
DRAWN BY	B. JOHNSON
PROJECT NUMBER	0096-160539-001

CARLOS A. RESTREPO, P.E.
CERTIFICATE NO. 70208

Hillsborough County Florida

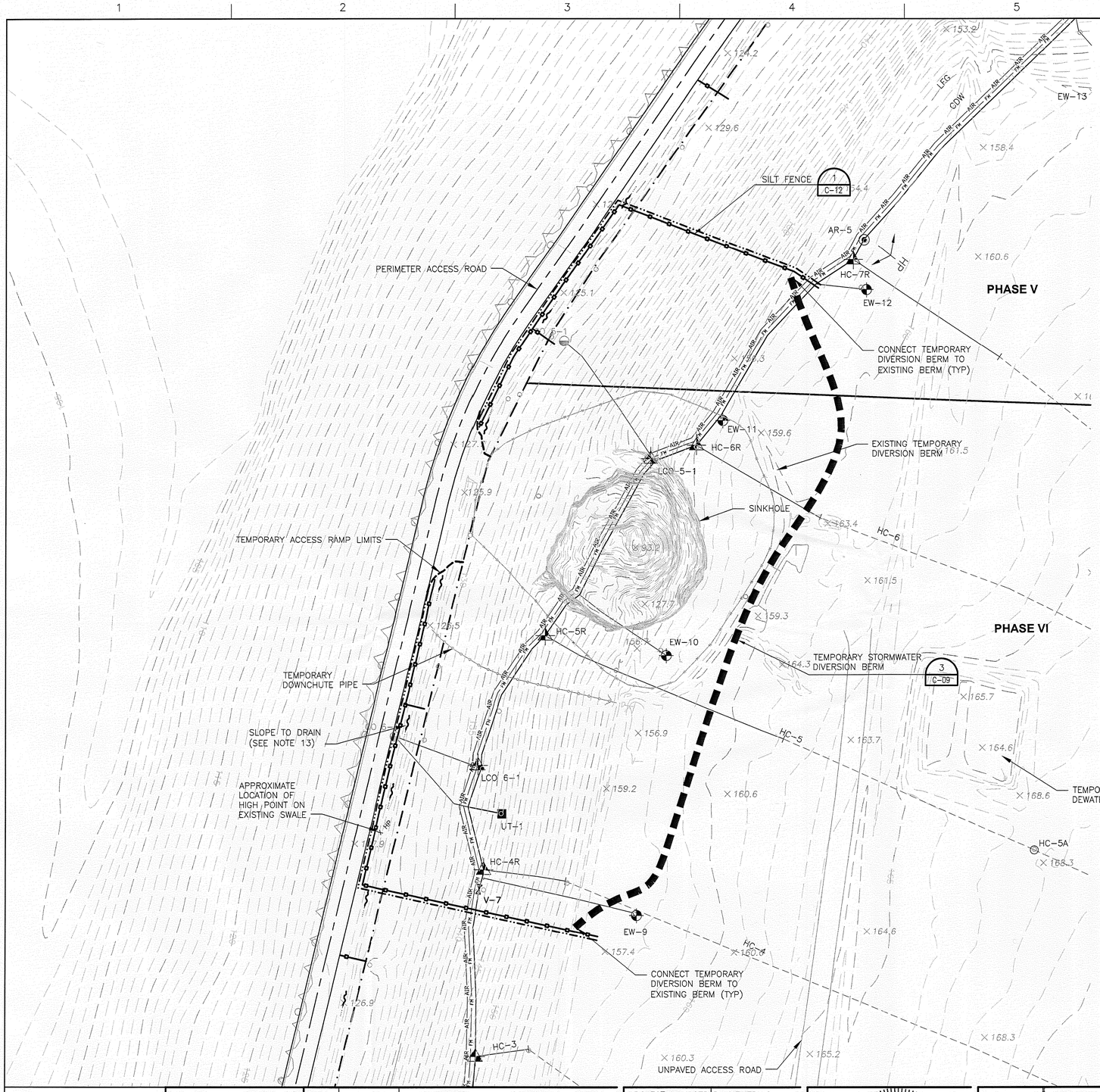
SINKHOLE CUT/FILL AND WASTE RELOCATION PLAN SOUTHEAST COUNTY LANDFILL HILLSBOROUGH COUNTY, FLORIDA

DETAILS

0 1" 2"

FILENAME	00C-10.DWG
SCALE	AS SHOWN

SHEET C-10



SEDIMENT AND EROSION CONTROL NOTES

1. SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED IN STRICT ACCORDANCE WITH STANDARDS IN THE CONSTRUCTION DOCUMENTS AND APPLICABLE ENVIRONMENTAL REGULATIONS.
2. ALL STORM WATER MANAGEMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED AND MADE OPERATIONAL PRIOR TO COMMENCEMENT OF EARTHWORK ACTIVITIES.
3. CONTRACTOR, OWNER AND ENGINEER WILL EVALUATE THE EXISTING CONDITION OF THE PERIMETER DRAINAGE SWALES AT START OF WORK. CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING THE SWALES AND PONDS AND RESTORING THEM TO THE ORIGINAL CONDITION AT START OF WORK PRIOR TO DEMOBILIZING.
4. EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED TO THE SATISFACTION OF THE ENGINEER. FAILURE TO DO SO WILL RESULT IN STOPPAGE OF ALL OTHER WORK UNTIL SAID MEASURES COMPLY WITH ACCEPTABLE STANDARDS.
5. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 3 WEEKS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED, UNLESS ACTIVITY IN THAT PORTION OF THE SITE WILL RESUME WITHIN 4 WEEKS.
6. ALL SEDIMENT CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND AFTER ANY STORM EVENT OF GREATER THAN ONE-HALF INCH OF PRECIPITATION DURING ANY 24 HOUR PERIOD. ALL SEDIMENT CONTROL FEATURES SHALL BE MAINTAINED UNTIL FINAL STABILIZATION HAS BEEN OBTAINED.
7. RESTORE AND STABILIZE ALL DISTURBED AREAS INCLUDING STOCKPILES AND STORAGE AREAS. PERFORM PERMANENT SEEDING IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
8. BETWEEN SUBSTANTIAL COMPLETION AND FINAL COMPLETION OF THE WORK, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT FROM THE EROSION CONTROL MEASURES THAT RECEIVED DRAINAGE DURING CONSTRUCTION UNLESS OTHERWISE DIRECTED BY OWNER.
9. ANY ERODED MATERIALS SHALL BE PROMPTLY REMOVED FROM ROADWAYS, DRIVES, WALKS, SWALES, WATER COURSES, DRAINAGE CULVERTS, AND/OR STRUCTURES.
10. SILT FENCE, STRAW BALE BARRIERS, ETC. SHALL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION. CONTRACTOR SHALL REPLACE AS REQUIRED.
11. ALL TEMPORARY EROSION CONTROL AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED UPON SATISFACTORY COMPLETION OF WORK AND SITE STABILIZATION.
12. MINIMUM REQUIRED EROSION AND SEDIMENTATION CONTROLS ARE SHOWN ON THIS SHEET. ADDITIONAL CONTROLS MAY BE REQUIRED BASED ON ACTUAL SITE CONDITIONS. THE CONTRACTOR SHALL INSTALL AND MAINTAIN ADDITIONAL EROSION AND SEDIMENTATION CONTROL MEASURES AS NECESSARY OR AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.
13. EXISTING SWALE TO BE SLOPED TO DRAIN STARTING AT THE SOUTH SIDE OF TEMPORARY ACCESS RAMP HEADING SOUTH TOWARDS THE HIGH POINT. APPROXIMATE LOCATION SHOWN ON THIS SHEET. FOLLOWING COMPLETION OF THE PROJECT, CONTRACTOR SHALL RESTORE SWALE TO ORIGINAL DRAINAGE PATTERN.

N

NOTES:

1. TOPOGRAPHICAL INFORMATION COMPILED FROM SINKHOLE AREA SURVEY BY PICKETT & ASSOCIATES, INC. DATED MARCH 27, 2011.
2. ELEVATIONS ARE TO NATIONAL GEODETIC VERTICAL DATUM OF 1929.
3. APPROXIMATE LOCATION OF LANDFILL GAS COLLECTION AND CONTROL SYSTEM OBTAINED FROM RECORD DRAWINGS BY SCS ENGINEERS APRIL 15, 2010. VERIFY LOCATION IN FIELD.
4. CONTOURS WITHIN PHASES I-VI AREA REPRESENT INTERMEDIATE COVER.

LEGEND:

- HC-1A — HORIZONTAL COLLECTOR VERTICAL BORING
- EW-10 — LFG EXTRACTION WELL
- UT-2 — SLOPED CONDENSATE U-TRAP
- HC-18R — UPSLOPE HORIZONTAL COLLECTOR WELLHEAD
- LCO 6-1 — REMOTE WELLHEAD
- V-7 — HEADER ISOLATION VALVE
- AR-24 — HEADER ACCESS RISER
- 10" — HEADER/LATERAL DIAMETER
- HP — HIGH POINT
- CO 4-1 — EXISTING LEACHATE COLLECTION SYSTEM CLEANOUT
- HEADER/LATERAL PIPE
- AIR — AIR SUPPLY LINE
- FM — CONDENSATE DRAIN LINE/LEACHATE DEWATERING LINE
- APPROXIMATE LANDFILL LIMITS
- LFG HORIZONTAL COLLECTOR PERFORATED PIPE
- LEACHATE COLLECTION SYSTEM CHIPPED TIRE TRENCH
- LEACHATE COLLECTION SYSTEM PIPE
- EXISTING ROADWAY
- APPROXIMATE PHASES I-VI LIMITS
- LIMITS OF CONSTRUCTION
- SILT FENCE
- PAVED ROADWAY

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CARLOS A. RESTREPO License No. 70208 STATE OF FLORIDA PROFESSIONAL ENGINEER
CARLOS A. RESTREPO, P.E.
CERTIFICATE NO. 70208

Hillsborough County Florida

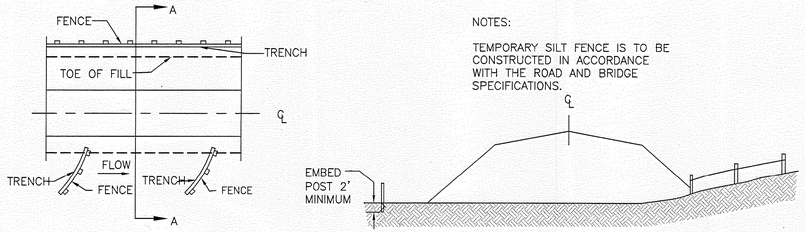
SINKHOLE CUT/FILL AND WASTE RELOCATION PLAN SOUTHEAST COUNTY LANDFILL HILLSBOROUGH COUNTY, FLORIDA

SEDIMENTATION AND EROSION CONTROL PLAN

0 1" 2"

FILENAME	00C-11.DWG
SCALE	1"=40'

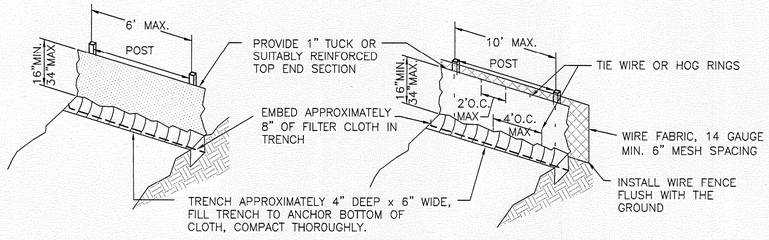
SHEET C-11



NOTES:

TEMPORARY SILT FENCE IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE ROAD AND BRIDGE SPECIFICATIONS.

SECTION A–A



EXTRA STRENGTH FILTER CLOTH FABRIC
(WITHOUT WIRE)

STANDARD STRENGTH FILTER CLOTH FABRIC

CONSTRUCTION SPECIFICATIONS

MATERIALS

1. SYNTHETIC FILTER FABRIC SHALL BE A PERVIOUS SHEET OF POLYPROPYLENE, NYLON PLOYESTER, OR ETHYLENE YARN AND SHALL BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE FOLLOWING REQUIREMENTS:

PHYSICAL PROPERTY	TEST	REQUIREMENTS
FILTERING EFFICIENCY	ASTM D–5141	75% (MIN)
TENSILE STRENGTH AT 20% (MAX.) ELONGATION*	VTM–52	EXTRA STRENGTH– 50 LBS./LIN. IN. (MIN.) STANDARD STRENGTH– 30 LBS./LIN. IN. (MIN.)
FLOW RATE	ASTM D–5141	0.3 GAL./SQ. FT./MIN.
ULTRAVIOLET RADIATION	ASTM D–4355 AND G–28	90% (MIN.)

* REQUIREMENTS REDUCED BY 50% AFTER 6 MONTHS OF INSTALLATION.

2. SYNTHETIC FILTER FABRIC SHALL CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 F TO 120 F.

SILT FENCE (1 / C–11)
NOT TO SCALE

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SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA

SEDIMENTATION AND EROSION CONTROL DETAILS

0 1" 2"

FILENAME	00C–12.DWG
SCALE	AS SHOWN

SHEET C-12

c:\pwworking\tpa\d0269413\00C-12.dwg, Plot, 5/13/2011 9:46:37 AM, BradJahn