

ATTACHMENT 1

PIONEER PRIME – DIESEL-DRIVEN SPECIFICATION SHEET



PIONEER PUMP INC.

Specification Sheet for Pioneer Prime Pump Series

Pioneer Prime Pump Model: PP66S12L71-TD2.9 L4
DOT Trailer Mounted Diesel Pump Package

The unit described by this specification is the manufacturer's latest production model for the year solicited and is equipped with all the standard equipment in accordance with the manufacturer's pertinent literature. A copy of the literature shall accompany the bid along with any applicable information necessary to verify the unit either meets or exceeds each of the following specifications.

Delivery

The unit will be delivered complete, assembled accordingly, serviced and ready for operation.

Pioneer Prime DOT Trailer Mounted Pump Package

Package model is a PP66S12L71-TD2.9, manufactured by Pioneer Pump Inc.

Design Requirements:

| | |
|-------------------------------------|-------------|
| Maximum Operating Speed: | 2200 RPM |
| Minimum Solids Handling Capability: | 3.00 Inches |
| Suction Size: | 6.00 Inches |
| Discharge Size: | 6.00 Inches |
| Maximum Suction Lift: | 19 Feet |
| Pump Maximum Flow @ Runout: | 3400 GPM |
| Pump Maximum Head @ Shutoff: | 230 Feet |

Pioneer Prime DOT Trailer Mounted Pump Specifications:

Pump Details:

Model: PP66S12L71-TD2.9 L4

The heavy duty, high performance, end suction centrifugal pump shall be equal to the Model PP66S12L71 manufactured by Pioneer Pump Inc. It shall be of the solids handling type with a

continually rising performance curve to shut-off. 3.0-inch minimum spherical solids handling capability. The pump casing is of back pull-out and suction cover design for ease of maintenance with heavy wall sections to provide long life under abrasive and corrosive conditions.

Suction Spool

The suction spool is constructed of heavy section ASTM A536 Grade 65-45-12 Ductile Iron. The suction spool flanges are ANSI Class 150 and is sealed to the suction cover with a Viton O-ring.

Suction Cover

The suction cover is constructed of heavy section ASTM A536 Grade 65-45-12 Ductile Iron. The suction cover flange is ANSI Class 150 and houses the pump suction wear ring. The suction cover is sealed to the volute with a Viton O-ring.

Volute

The volute is constructed of heavy section ASTM A536 Grade 65-45-12 Ductile Iron. The volute flange is ANSI Class 150. The volute contains a contoured cleanout cover and is sealed with a Viton O-ring. The volute is sealed to suction cover and back plate with Viton O-rings.

Impeller

The impeller is constructed of heavy section ASTM A744 CA6NM Stainless Steel. The impeller is to be fully enclosed, non-clog type with back vanes to reduce axial thrust and lower stuffing box pressure. Semi-open or open impellers will not be accepted as equal. The internal vane edges will be well rounded to present smooth flow. The impeller is to be balanced, with a straight, non-tapered bore and will be keyed to the shaft and secured with a Stainless-Steel impeller lock screw. The impeller is to handle a maximum 3.0 inch spherical solid.

Suction Wear Ring

A single suction wear ring located in the suction cover is of a peripheral type requiring no adjustment. The wear ring is to be press fit into position and replaceable in the field. The wear ring is to be constructed of ASTM-A48, Class 40 Gray Iron.

Back Plate

The back plate is constructed of heavy section ASTM A536 Grade 65-45-12 Ductile Iron. The back plate is dished style and houses the mechanical seal's stationary seat. The back plate is sealed to the volute and bracket with Buna-N O-rings.

Bracket

The bracket is constructed of heavy section ASTM A48 Class 30/35 Cast Iron. The bracket is of the enclosed design and contains oil for mechanical seal lubrication when pump is running dry. The oil bracket capacity is to be minimum of ½ gallon. The bracket is sealed to the back plate with Viton O-rings.

Seal Assembly

The mechanical seal is a single seal design incorporated with a dished style back plate. The mechanical seal is a run-dry design with an oil-filled enclosed style bracket for seal lubrication. The mechanical seal faces are Silicon Carbide rotating and Tungsten Carbide stationary. All seal elastomers are Viton. The seal retainer and spring are to be constructed of Stainless Steel.

Bearing Frame and Bearings

The bearing frame is to be constructed of an ASTM A48 Class 30/35 Gray Iron. The bearings are to be of sufficient size to withstand the radial and axial thrust loads incurred during service. Bearings have a minimum B-10 bearing life of 100,000 hours. The bearings are protected from infiltration of liquid and contaminants by use of a cassette seal located at each end of the bearing frame.

Shaft

The pump shaft shall be constructed of ASTM A747 17-4 Stainless Steel.

SAE Housing and Drive

The pump is to be coupled to engine with an S.A.E. #3 style direct mounted housing and a 11.5-inch rubber disc drive style coupling. The rubber disc drive coupling is to be self aligning and sized to handle full load driver horsepower and speed. The bracket is constructed of ASTM A48 Class 30/35 Gray Iron.

Discharge Check Valve

The pump is to have a full-opening, non-return discharge style check valve. The valve body is constructed of ASTM A126 Class B Cast Iron. The disc is constructed of Buna-N with Alloy Steel and Nylon reinforcement. The Cover Gasket is constructed of Buna-N or Compressed Non-Asbestos Fiber.

Priming System Specification

The vacuum pump is a mechanically driven, diaphragm style vacuum pump that requires no cooling liquid for operation of unit. The vacuum pump is capable of delivering up to 50 CFM of air handling ability. The priming system incorporates a positive sealing float system to insure separation of air and liquid during the priming cycle. The vacuum pump body is constructed of corrosion resistant aluminum, as is the actuator. The crankcase body is constructed of ASTM A48 Class 30 Cast Iron. Elastomers are

of Buna-N and Viton. The float/separator chamber is constructed of steel. The float rod assembly and strainer are constructed of Stainless Steel. The pumping unit is capable of fully dry-priming from a start-up mode. The system can handle large volumes of air and liquid, in addition to intermittent flow conditions. The unit is capable of automatic priming and re-priming throughout its operation.

Engine

The engine shall be a four-cylinder, four cycle, liquid cooled, turbocharged diesel engine equal to a Deutz Model TD2.9L4 with a continuous duty rating of 58 HP @ 1800 RPM. The package shall include all necessary hardware and accessories to include, but not limited to electronic governor, 12-volt electric start and heavy-duty air cleaner. The instrument panel includes temperature & oil pressure gauges, ammeter, hour meter & tachometer. The instrument panel also includes automatic turn-on and shutdown for high and low level pumpage. The engine is fitted with a muffler with rain cap and battery. The engine shall utilize a DOC (Diesel Oxidation Catalyst) to reduce the level of particulates and nitrogen oxides. Engines that utilize a DPF (Diesel Particulate Filter), which require the engine to shut down during a regeneration cycle shall not be accepted.

Engine Specifications:

Manufacturer: Deutz

Model: TD2.4 L4

Type: Water Cooled, Diesel, In-Line, 4 Cycle, Direct Injection

Number of Cylinders: Four

Aspiration: Turbocharged

Bore and Stroke: 3.60" x 4.30"

Displacement: 177 Cubic Inches (2.9 L)

Governor: Electronic

EPA Compliance: Final Tier

Engine Control Panel

The engine panel manufacturer is LOFA, model: CP-750E. The LOFA CP-750E controller is an advanced engine control panel. It includes auto-start and manual operation capability to provide complete engine control, monitoring, and protection for both electronically and mechanically governed engines. It is compliant with tier 4F and Euro stage IV. The panel has multi-level PIN based menu access and an intuitive auto-start mode.

Panel Specifications:

- Housing: IP67 rated, powder coated Aluflex extruded aluminum with heavy-duty bracket and isolation mounts
- Display: 4.25" high resolution LCD with an LED variable backlight for viewing in direct sunlight or total darkness
- Keypad: 5 sealed push buttons

- Key switch: IP64 rated with booted key and mechanical lockout to prevent restart attempts while engine is running
- LEDs: (4) indicating auto standby, Preheat, Stop, and Warning
- Throttle control: Ramp throttle adjustment available via momentary rocker switch
- Connectors: Sealed dual auto-start float switch connector, Sealed M12 transducer connector, industry standard 21-pin sealed engine harness connector

Inputs and Outputs:

- SAE J1939 Bus (CANbus 2.0B)
- ECU/Solenoid Control Output (10 A continuous)
- Starter Solenoid Output (70A 1 second, 10 A continuous)
- Auxiliary Multipurpose Output (1 A continuous)
- Alarm Output (1 A continuous)
- 2 Auto-start Switch Inputs
- Transducer Auto-start Input (4-20 mA or optional 0-5VDC)
- 2 Auxiliary Shutdown Switch Inputs
- Fuel Sender Analog Input
- RS485 Serial Interface for Auxiliary Equipment

Frame and Trailer

The package is our Greenline which includes a heavy-duty fabricated steel frame with a lower rail that allows the axle to be adjusted horizontally on the skid and mounting slots on the top rail that give adjustability to engine and pump location. Top rail includes cut-outs in the slots for carriage bolt or isolator installation. Includes an integral 75-gallon fuel tank with fuel gauge, leak proof fuel cap, and one 1" NPT clean-out/drain plug. Skid is designed to be fully modular. Pump, engine, axle, bail, and support brackets are all bolt-on and able to be removed/adjusted quickly and easily.

The trailer will feature a center-point lifting bail, pintle hitch/adjustable towing bar, safety chains, lights, plastic fenders, removable front and rear jack mounts, and a 5200# single torsion-flex axle with heavy-duty tires/wheels.

Factory Painting

Pumps and exposed steel framework shall be cleaned prior to painting. Exposed surfaces to be coated with one coat gray W.R. non-lift primer and one coat Pioneer Green (RAL: OC-00D034). The finish coat shall be 1.0 to 1.5 MIL dry film thickness (minimum). The factory finish shall allow for over-coating and touch up after final installation.



Warranty

The products purchased are to be free from defects in workmanship and material for 24 months after shipment.

ATTACHMENT 2.a

**REVISED DRAWINGS G2, G4, C5, C6, C8,
AND C20**

ABBREVIATIONS

| | | | | | | | |
|--------|--|----------|--|----------|---|---------|---------------------------------|
| & | AND | FAC | FLORIDA ADMINISTRATIVE CODE | NIC | NOT IN CONTRACT | USGS | UNITED STATES GEOLOGICAL SURVEY |
| @ | AT | FCA | FLANGED COUPLING ADAPTER | No | NUMBER | V, VERT | VERTICAL |
| ACM | ASBESTOS CONTAINING MATERIAL | FCV | FLOW CONTROL VALVE | NON-PERF | NONPERFORATED | W | WEST |
| ADA | AMERICANS WITH DISABILITIES ACT | FDEP | FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION | NOM | NOMINAL | WJ | WELDED JOINT |
| ADJ | ADJUSTABLE | FDOT | FLORIDA DEPARTMENT OF TRANSPORTATION | NPT | AMERICAN STANDARD TAPER PIPE THREAD | WM | WATER MAIN |
| AFF | ABOVE FINISHED FLOOR | FG | FIBERGLASS | NSF | NATIONAL SANITATION FOUNDATION | WSWT | WET SEASON WATER TABLE |
| ALT | ALTERNATIVE | FH | FIRE HYDRANT | NTS | NOT TO SCALE | WWF | WELDED WIRE FABRIC |
| ALUM | ALUMINUM | FIN | FINISHED | NW | NORTHWEST | WGT | WEIGHT |
| AMPS | AMPERES | FJ | FINISHED JOINT | | | W/ | WITH |
| ANSI | AMERICAN NATIONAL STANDARDS INSTITUTE | FLG | FLANGE | OC | ON CENTER | △ | DELTA, ANGULAR CHANGE |
| APPROX | APPROXIMATE, APPROXIMATELY | FM | FORCE MAIN | OD | OUTSIDE DIAMETER | | |
| AR | AIR RELEASE | FND | FOUNDATION | OSHA | OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION | | |
| ARV | AIR RELEASE VALVE | FNPT | FEMALE NATIONAL PIPE THREAD | | | | |
| ASTM | AMERICAN SOCIETY FOR TESTING AND MATERIALS | FRP | FIBERGLASS REINFORCED PLASTIC | | | | |
| AV | AIR VACUUM | FT | FOOT | | | | |
| AVG | AVERAGE | FW | FINISHED WATER | | | | |
| AWWA | AMERICAN WATER WORKS ASSOCIATION | | | | | | |
| | | GALV | GALVANIZED | PC | POINT OF CURVE | | |
| BCCMP | BITUMINOUS COATED CORRUGATED METAL PIPE | GCL | GEOSYNTHETIC CLAY LINER | PE | PLAIN END | | |
| BLD | BLIND | GFFR | GROUT FILLED FIBER REVETMENT | PERF | PERFORATED | | |
| BLDG | BUILDING | GPM | GALLONS PER MINUTE | PLS | PROFESSIONAL LAND SURVEYOR | | |
| BF | BLIND FLANGE | GR | GRADE | # | POUND | | |
| BFP | BACKFLOW PREVENTOR | GS | GALVANIZED STEEL | PI | PRESSURE INDICATOR/GAUGE | | |
| BFV | BUTTERFLY VALVE | GV | GATE VALVE | PID | PROPERTY IDENTIFICATION NUMBER | | |
| B/L | BASE LINE | GMW | GROUNDWATER MONITORING WELL | PL | PLATE | | |
| BO | BLOW-OFF | | | P/L | PROPERTY LINE | | |
| BPZ | PIEZOMETER | HCSWMC | HIGHLANDS COUNTY SOLID WASTE MANAGEMENT CENTER | PP | POWER POLE | | |
| BTM | BOTTOM | HDPE | HIGH DENSITY POLYETHYLENE | PS | PUMP STATION | | |
| BV | BALL VALVE | HP | HIGH POINT | PSI | POUND PER SQUARE INCH | | |
| BWJ | BUTT-WELDED JOINT | H, HORIZ | HORIZONTAL | PT | PRESSURE TREATED | | |
| BYP | BY-PASS | HP | HIGH POINT/HORSE POWER | PV | PLUG VALVE | | |
| | | HWA | HIGH WATER ALARM | PVC | POLYVINYL CHLORIDE | | |
| | | HWL | HIGH WATER LEVEL | | | | |
| C | CELSIUS | ID | IDENTIFICATION, INSIDE DIAMETER | R | RADIUS | | |
| CA | COMPRESSED AIR | IE | INVERT ELEVATION | R/W, ROW | RIGHT OF WAY | | |
| CAP | CORRUGATED ALUMINUM PIPE | IF | INSULATED FLANGE | RCP | REINFORCED CONCRETE PIPE | | |
| CAT | CATALOGUE | IN | INCHES | RED | REDUCER | | |
| CB | CATCH BASIN | INV | INVERT | REF | REFERENCE | | |
| CHDPE | CORRUGATED HIGH DENSITY POLYETHYLENE | IPS | IRON PIPE SIZE | REINF | REINFORCED | | |
| CI | CAST IRON | | | REQD | REQUIRED | | |
| CIP | CAST IRON PIPE | K | HYDRAULIC CONDUCTIVITY | RJ | RESTRAINED JOINT | | |
| C/L | CENTERLINE | | | RPOJ | RESTRAINED PUSH ON JOINT | | |
| CLR | CLEAR | | | RT | RIGHT | | |
| CM | CONCRETE MONUMENT, CENTIMETER | | | RW | RAW WATER | | |
| CMP | CORRUGATED METAL PIPE | L | LENGTH | S | SOUTH | | |
| CO | COMPANY/CLEANOUT | LBR | LIMEROCK BEARING RATIO | SAN | SANITARY | | |
| CON | CONCENTRIC | LBS | POUNDS | SCH | SCHEDULE | | |
| CONC | CONCRETE | LCS | LEACHATE COLLECTION SYSTEM | SEC | SECOND | | |
| CONT | CONTINUOUS | LCS | LEACHATE COLLECTION AND REMOVAL SYSTEM | SDR | STANDARD DIMENSION RATIO | | |
| CORR | CORRUGATED | LDS | LEAK DETECTION SYSTEM | SECT | SECTION | | |
| CORP | CORPORATION | LF | LINEAR FEET | SF | SQUARE FEET | | |
| CPT | CONE PENETRATION TEST | LFG | LANDFILL GAS HEADER | SG | STAFF GAUGE | | |
| CS | CARBON STEEL | LFGCCS | LANDFILL GAS COLLECTION AND CONTROL SYSTEM | SHWT | SEASONAL HIGH WATER TABLE | | |
| CV | CHECK VALVE | | | SIM | SIMILAR | | |
| CY | CUBIC YARDS | | | SPEC | SPECIFICATION | | |
| | | LFGTE | LANDFILL GAS TO ENERGY PLANT | SPT | STANDARD PENETRATION TEST | | |
| | | LFM | LEACHATE FORCE MAIN | SQ | SQUARE | | |
| | | LR | LONG RADIUS | SR | STATE ROAD | | |
| | | LRL | LEACHATE RECIRCULATION LINE | SS | STAINLESS STEEL | | |
| | | LT | LEFT | SSHHMB | STAINLESS STEEL HEX HEAD MACHINE BOLT | | |
| | | LWA | LOW WATER ALARM | SSRHMS | STAINLESS STEEL ROUND HEAD MACHINE SCREW | | |
| | | LWL | LOW WATER LEVEL | | | | |
| | | | | STA | STATION | | |
| | | MAG | MAGNETIC | STD | STANDARD | | |
| | | MAX | MAXIMUM | STL | STEEL | | |
| | | MES | MITERED END SECTION | SW | STORMWATER/SOUTHWEST | | |
| | | MFR | MANUFACTURER | SFWM | SOUTH FLORIDA WATER MANAGEMENT DISTRICT | | |
| | | MH | MANHOLE | | | | |
| | | MIL | THOUSANDTHS OF AN INCH | SWJ | SOLVENT WELD JOINT | | |
| | | MIN | MINIMUM | | | | |
| | | MISC | MISCELLANEOUS | T | TANGENT | | |
| | | MJ | MECHANICAL JOINT | T/ | TOP OF | | |
| | | MSL | MEAN SEA LEVEL | TBM | TURNING BENCH MARK | | |
| | | MNPT | MALE NATIONAL PIPE THREAD | TGS | THREADED GALVANIZED STEEL | | |
| | | MT | MOUNT | TGSP | THREADED GALVANIZED STEEL PIPE | | |
| | | MUTCD | MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES | TH | TEST HOLE | | |
| | | | | THD | THREADED | | |
| | | | | THK | THICK | | |
| | | MW | MONITORING WELL | TRC | TOTAL RESIDUAL CHLORINE | | |
| | | | | TS | TUBE STEEL | | |
| | | | | TYP | TYPICAL | | |
| | | N | NORTH | ULC | ULTRASONIC LEVEL CONTROLLER | | |
| | | NAVD | NORTH AMERICAN VERTICAL DATUM | UNO | UNLESS NOTED OTHERWISE | | |
| | | N/A | NOT APPLICABLE | USC&GS | UNITED STATES COASTAL AND GEODETIC SURVEY | | |
| | | N/AVAIL | NOT AVAILABLE | | | | |
| | | NC | NORMALLY CLOSED | | | | |
| | | NEC | NATIONAL ELECTRIC CODE | | | | |
| | | NGVD | NATIONAL GEODETIC VERTICAL DATUM | | | | |

| DRAWING INDEX | |
|-----------------|--|
| DWG | DESCRIPTION |
| GENERAL | |
| G1 | COVER |
| G2 | DRAWING INDEX AND ABBREVIATIONS |
| G3 | LEGENDS |
| G4 | GENERAL NOTES |
| G5 | COORDINATE TABLES |
| CIVIL | |
| C1 | SITE PLAN |
| C2 | PROJECT SITE PLAN AND KEY MAP |
| C3 | WELL AND BORING PLAN |
| C4 | TOPOGRAPHIC SURVEY |
| C5 | PROPOSED EARTHWORK LOCATION KEY MAP |
| C6 | PROPOSED GEOSYNTHETICS LOCATION KEY MAP |
| C7 | DEMOLITION PLAN |
| C8 | DEWATERING MONITORING PLAN |
| C9 | DEWATERING INFILTRATION AREA PLAN |
| C10 | LEACHATE COLLECTION SYSTEM PLAN |
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| C17 | LANDFILL ROAD AND SWALE SECTIONS |
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| C19 | LINER DETAILS |
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| C21 | LEACHATE SUMP DETAILS |
| C22 | LEACHATE SUMP DETAILS |
| C23 | LINER SYSTEM DETAILS |
| C24 | LANDFILL DETAILS |
| C25 | LANDFILL DETAILS |
| C26 | LANDFILL DETAILS |
| C27 | LANDFILL DETAILS |
| C28 | LANDFILL DETAILS |
| C29 | LANDFILL DETAILS |
| STRUCTURAL | |
| S1 | STRUCTURAL NOTES AND ABBREVIATIONS |
| S2 | STRUCTURAL PLAN |
| S3 | STRUCTURAL SECTION AND DETAILS |
| S4 | STRUCTURAL DETAILS |
| *MECHANICAL | |
| M1 | MECHANICAL NOTES AND LEGENDS |
| M2 | LEACHATE PUMP STATION MECHANICAL PLAN |
| M3 | MECHANICAL SECTIONS |
| M4 | MECHANICAL DETAILS |
| M5 | MECHANICAL DETAILS |
| M6 | MECHANICAL DETAILS |
| M7 | MECHANICAL DETAILS |
| M8 | MECHANICAL DETAILS |
| M9 | MECHANICAL DETAILS |
| ELECTRICAL | |
| E1 | ELECTRICAL LEGENDS, ABBREVIATIONS, AND GENERAL NOTES |
| E2 | ELECTRICAL SITE PLAN |
| E3 | TYPICAL PUMP STATION ELECTRICAL PLAN |
| E4 | ELECTRICAL ONE-LINE DIAGRAM |
| E5 | ELECTRICAL DETAILS |
| E6 | ELECTRICAL DETAILS |
| E7 | ELECTRICAL WIRING SCHEDULE |
| EROSION CONTROL | |
| EC1 | EROSION AND SEDIMENT CONTROL REQUIREMENTS |
| EC2 | STORMWATER POLLUTION PREVENTION PLAN |
| EC3 | EROSION CONTROL DETAILS |

▽ * 1. DELETED M10 FROM DRAWING SET.

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 3/22/2024 3:35 PM PUPSTILL

BID DOCUMENTS

| | |
|-----------|-----------|
| DESIGNED | GREINHART |
| DRAWN | PUPSTILL |
| CHECKED | TMCKNIGHT |
| DATE | 03/2024 |
| ADDENDUM | 3 |
| BY | AJT |
| APPRD. | GAR |
| REVISIONS | |



HIGHLANDS COUNTY SOLID WASTE MANAGEMENT CENTER
CELL 5 LANDFILL EXPANSION
HIGHLANDS COUNTY, FLORIDA

DRAWING INDEX AND ABBREVIATIONS

| | | |
|---|-----------------------------|-------------------|
| GEORGE A. REINHART, III, PHD, PE, STATE OF FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. 66516 THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY GEORGE A. REINHART III, PHD, PE, ON THE DATE INDICATED ON COVER PAGE (G1). PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES. | PROJECT NO: 08345-045-01 | DATE: SEP 2023 |
| | INDEX NO: G2 | DWG NO: G2 |

GENERAL NOTES

HEALTH AND SAFETY NOTES

- THE BEARINGS SHOWN HEREON ARE BASED ON GRID NORTH AND ARE REFERENCED TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983/2011. HORIZONTAL COORDINATES VALUES WHERE ESTABLISHED USING GEODETIC GRADE GPS AND THE FLORIDA'S DEPARTMENT OF TRANSPORTATION, FLORIDA PERMANENT REFERENCE NETWORK CORRECTION SERVICE.
- ALL ELEVATIONS SURVEYED WITHIN THE LIMITS OF CONSTRUCTION ARE PROVIDED BY WGI, INC. DATED DECEMBER 20, 2022 AND ARE REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929. ELEVATIONS WERE ESTABLISHED BASED ON THE VERTICAL DATUM MONUMENT WITHIN THE LIMITS OF CONSTRUCTION WHICH IS TO BE PROTECTED. IF IN DANGER OF DAMAGE, THE COUNTY SHALL NOTIFY:

REGIONAL GEODETIC ADVISOR

GULF COAST REGIONAL GEODETIC ADVISOR
DENIS RIORDAN, NOAA
C/O MDOT
1109 SOUTH MARION AVENUE
MS 2022
LAKE CITY FL 32025-5874
GOOGLE: (386) 243-0769
MOBILE: (240) 678-2107
E-MAIL: DENIS.RIORDAN@NOAA.GOV
- CONSTRUCTION MONUMENTS FOR VERTICAL AND HORIZONTAL CONTROL HAVE BEEN PROVIDED AT THE PROJECT SITE. THE CONTRACTOR SHALL VERIFY THE ACCURACY OF THESE MONUMENTS TO THEIR OWN SATISFACTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROPER VERTICAL AND HORIZONTAL ALIGNMENT OF CONSTRUCTED FACILITIES AND FINISHED GRADE.
- THE CONTRACTOR SHALL PROVIDE A PROFESSIONAL SURVEYOR AND MAPPER LICENSED IN FLORIDA TO ESTABLISH THE CONSTRUCTION SITE LAYOUT, PERFORM TOPOGRAPHIC SURVEYS, AND PERFORM ALL OTHER REQUIRED SURVEYING SERVICES.
- LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARING THESE PLANS. BEFORE CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES (WHETHER OR NOT SHOWN ON THE PLANS) AFFECTING THEIR OWN WORK.
- THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF THE CONDITIONS THAT MAY BE ENCOUNTERED DURING THE COURSE OF WORK. BEFORE BIDDING, ALL CONTRACTORS ARE DIRECTED TO CONDUCT WHATEVER INVESTIGATIONS THEY MAY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSIONS REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH THEIR BIDS SHALL BE BASED.
- THE CONTRACTOR SHALL BE AWARE THAT SOME UTILITY CONFLICTS MAY EXIST. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ANY AND ALL EXISTING UTILITIES ON THIS PROJECT WITHOUT INCREASE IN THE CONTRACT PRICE OR TIME.
- FIELD CONDITIONS MAY NECESSITATE SLIGHT ALIGNMENT AND GRADE DEVIATION OF THE PROPOSED CONSTRUCTION TO AVOID OBSTACLES, AS ORDERED BY THE ENGINEER. THE CONTRACTOR SHALL CONSTRUCT THE PROPOSED FACILITIES TO THE ORDERED DEVIATION WITHOUT INCREASE IN THE CONTRACT PRICE OR TIME.
- THE CONTRACTOR SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE VARIOUS UTILITY COMPANIES TO PERMIT THE LOCATION OF EXISTING UNDERGROUND UTILITIES IN ADVANCE OF CONSTRUCTION. CONTACT UTILITIES NOTIFICATION CENTER AT 811 OR 1-800-432-4770.
- THE CONTRACTOR SHALL REPLACE ALL EXISTING PAVING, STABILIZED EARTH, FENCES, GRASSING, SIGNS, AND OTHER IMPROVEMENTS WITH THE SAME TYPE OF MATERIAL THAT WAS REMOVED DURING CONSTRUCTION OR AS DIRECTED BY THE ENGINEER WITHOUT INCREASE IN THE CONTRACT PRICE OR TIME.
- THE CONTRACTOR SHALL PROVIDE WARNING SIGNALS, SIGNS, LIGHTS, BARRICADES, FLAGMEN, ETC. IN ACCORDANCE WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT), AND OTHER

- APPLICABLE REGULATORY REQUIREMENTS AND AS OTHERWISE NECESSARY TO PROVIDE FOR SITE SAFETY DURING CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY WHEN CONFLICTS BETWEEN THE DRAWINGS AND ACTUAL CONDITIONS ARE DISCOVERED.
 - ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH EXISTING COUNTY DESIGN AND CONSTRUCTION STANDARDS UNLESS THOSE STANDARDS CONFLICT WITH THESE CONTRACT DOCUMENTS IN WHICH CASE THESE CONTRACT DOCUMENTS SHALL GOVERN. SUCH CONFLICTS SHALL IMMEDIATELY BE BROUGHT TO THE ENGINEER'S ATTENTION.
 - ALL PIPING SHALL HAVE A MINIMUM COVER OF 36 INCHES BELOW FINAL GRADE UNLESS OTHERWISE NOTED.
 - WHERE DEFLECTION OF PRESSURE PIPE EITHER HORIZONTALLY OR VERTICALLY IS NECESSARY, PIPE DEFLECTION SHALL NOT EXCEED 75 PERCENT OF THE MANUFACTURER'S RECOMMENDED DEFLECTION ANGLE. THE MINIMUM PIPE RADIUS SHALL BE 25 PERCENT IN EXCESS OF THE MANUFACTURER'S RECOMMENDED MINIMUM RADIUS.
 - THE CONTRACTOR SHALL PREVENT DISTURBANCE TO AND UNDERMINING OF ADJACENT STRUCTURES, SLABS, PIPING, AND OTHER UTILITIES OR FACILITIES DURING CONSTRUCTION.
 - THE CONTRACTOR SHALL VERIFY ALL CLEARANCES BEFORE CONSTRUCTION.
 - ALL PIPING SHALL BE PROPERLY SUPPORTED. ALL PIPING THAT WILL BE PRESSURIZED DURING OPERATION SHALL BE PROPERLY RESTRAINED.
 - FACILITIES PROVIDED UNDER THIS PROJECT SHALL BE CLEANED AT THE CLOSE OF CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
 - THE CONTRACTOR SHALL PROVIDE A PROFESSIONAL LAND SURVEYOR LICENSED IN FLORIDA TO ESTABLISH THE CONSTRUCTION SITE LAYOUT, PERFORM TOPOGRAPHIC SURVEYS, AND PERFORM ALL OTHER REQUIRED SURVEYING SERVICES.
 - THE CONTRACTOR SHALL TAKE WHATEVER MEANS NECESSARY TO PROTECT MONITORING WELLS FROM DAMAGE DURING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR OR REPLACE MONITORING WELLS DAMAGED DURING CONSTRUCTION WITH LIKE MATERIALS AND CONSTRUCTION METHODS AS APPROVED BY THE ENGINEER AND THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) WITHOUT INCREASE IN THE CONTRACT PRICE OR TIME. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SHOULD DAMAGE OCCUR TO ANY MONITORING WELLS.
 - THE CONTRACTOR SHALL COMPLY WITH ALL TERMS, CONDITIONS, AND REQUIREMENTS OF ALL APPLICABLE PERMITS, INCLUDING BUT NOT LIMITED TO FDEP AND WATER MANAGEMENT DISTRICT PERMITS FOR THE SITE.
 - THE CONTRACTOR SHALL PREVENT DAMAGE TO THE EXISTING GEOMEMBRANE. CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SHOULD DAMAGE OCCUR AND PERFORM REPAIRS AS DIRECTED BY THE ENGINEER WITHOUT INCREASE IN THE CONTRACT PRICE OR TIME.
 - THE CONTRACTOR SHALL NOT INTERFERE WITH FACILITY OPERATIONS. THE CONTRACTOR SHALL COORDINATE WITH AND NOTIFY THE OWNER A MINIMUM OF 48 HOURS IN ADVANCE OF ALL PLANNED UTILITY OUTAGES AND ROAD CROSSINGS.
 - BEFORE BEGINNING WORK, THE CONTRACTOR SHALL PROVIDE STORMWATER AND EROSION CONTROL PLANS TO PREVENT PONDING AND CONTROL EROSION AND RUNOFF. NO PONDING OF WATER SHALL BE ALLOWED. THE CONTRACTOR SHALL USE WHATEVER MEANS NECESSARY TO PREVENT EROSION AND SHALL BE RESPONSIBLE FOR ALL WORK, INCLUDING PROVIDING EQUIPMENT, LABOR, FILL, ETC NECESSARY TO REMEDIATE AND/OR RESTORE ALL AREAS IMPACTED BY EROSION.
 - , C/L, & ● ARE EXAMPLES OF DRAWING ELEMENTS THAT HAVE BEEN SCREENED/SHADOWED TO INDICATE EXISTING CONDITIONS THAT WERE PREVIOUSLY PERMITTED AND/OR CONSTRUCTED.

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING STORMWATER RUNOFF, SOLID WASTE, LANDFILL GAS, AND LEACHATE FROM ENTERING OR IMPACTING THE AREAS OF THE WORK. THE CONTRACTOR SHALL INSTALL AND MAINTAIN MANAGEMENT AND CONTROL DEVICES INCLUDING DIVERSION/COLLECTION BERMS, DITCHES, PUMPING STATIONS, WALLS, LINERS, ETC. TO COMPLY WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS WITHOUT INCREASE IN THE CONTRACT PRICE OR TIME.
- THE CONTRACTOR SHALL MAINTAIN A CLEAR PATH FOR ALL SURFACE WATER DRAINAGE STRUCTURES AND DITCHES DURING ALL PHASES OF CONSTRUCTION AND SHALL USE WHATEVER MEANS NECESSARY TO MANAGE STORMWATER SUCH THAT THE IMPACT TO CONSTRUCTION IS MINIMIZED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OF DAMAGE DUE TO STORMWATER.
- THE CONTRACTOR SHALL BE AWARE THAT BURIED WASTE AND/OR OTHER BURIED DEBRIS MAY BE ENCOUNTERED DURING THE COURSE OF CONSTRUCTION. THE CONTRACTOR SHALL EXCAVATE DISCOVERED WASTE AND OTHER UNSUITABLE MATERIALS AND DISPOSE OF THEM IN THE LINED PORTIONS OF THE LANDFILL AS REQUIRED TO CONSTRUCT THE FACILITIES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS WITHOUT INCREASE IN CONTRACT PRICE OR TIME. THE CONTRACTOR SHALL ASSUME THAT UP TO 50 BANK CUBIC YARDS OF WASTE WILL BE ENCOUNTERED IN THE PROJECT AREA (EXCLUDING WASTE EXCAVATED DURING GCCS INSTALLATION/MODIFICATIONS) DURING CONSTRUCTION THAT WILL REQUIRE DISPOSAL IN THE LINED PORTIONS OF THE LANDFILL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING AND PROTECTING THE GEOMEMBRANE AT ALL TIMES. WIND BLOWN GEOMEMBRANE SHALL BE CONSIDERED DAMAGED AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ENVIRONMENTAL PROTECTION DURING THE TERM OF THE CONTRACT, INCLUDING THE WARRANTY PERIOD, FOR THE PERMANENT FEATURES OF THE PROJECT. THE CONTRACTOR'S OPERATIONS SHALL COMPLY WITH FEDERAL, STATE, AND LOCAL REGULATIONS, INCLUDING BUT NOT LIMITED TO THOSE PERTAINING TO WATER, AIR, SOLID WASTE, HAZARDOUS WASTE MATERIALS, OILY SUBSTANCES, AND NOISE POLLUTION. THE CONTRACTOR SHALL IMPLEMENT EROSION AND SEDIMENTATION CONTROL MEASURES AS NECESSARY TO COMPLY WITH THESE REGULATIONS FOR BOTH TEMPORARY AND PERMANENT CONSTRUCTION.
- UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS, PIPING AND FITTINGS 4" OR GREATER IN DIAMETER SHALL BE HIGH-DENSITY POLYETHYLENE (HDPE) STANDARD DIMENSION RATIO (SDR) 11; PIPING AND FITTINGS LESS THAN 4" IN DIAMETER SHALL BE 200 PSI SDR9.
- ALL HDPE PIPING AND FITTINGS SHALL BE IRON PIPE SIZE (IPS) UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS.
- ALL HARDWARE (E.G., NUTS, BOLTS, WASHERS, ETC) SHALL BE STAINLESS STEEL, UNLESS OTHERWISE NOTED IN PLANS OR SPECIFICATIONS.
- SOLID WASTE GENERATED BY THE CONTRACTOR DURING CONSTRUCTION MUST BE LOADED AND HAULED TO THE SCALE HOUSE WHERE IT WILL BE WEIGHED BEFORE HAULING TO THE LANDFILL WORKING FACE FOR DISPOSAL. CONTRACTOR SHALL PAY THE DISPOSAL FEE FOR ALL SOLID WASTE GENERATED.
- CONTRACTOR MAY SUBSTITUTE OPTION BASE GROUP 11 MATERIALS LIMITED TO CEMENTED COQUINA LBR 100, SHELL ROCK LBR 100, AND BANK RUN SHELL LBR 100, AS WELL AS CRUSHED CONCRETE BASE GROUP EQUIVALENT, AT NO EXTRA COST TO THE COUNTY.
- CONTRACTOR SHALL ASSUME THE UP TO 20 CY OF WASTE WILL BE ENCOUNTERED DURING EXCAVATION REQUIRING HANDLING AND ONSITE DISPOSAL AND INCLUDE THE COST IN ITEM 11. EARTHWORK - EXCAVATE TO BACKFILL AND STOCKPILE.

- THIS PROJECT INVOLVES WORK IN AND AROUND AN ACTIVE CLASS I LANDFILL. THE CONTRACTOR SHALL PROTECT ALL PERSONNEL FROM ALL HAZARDS ASSOCIATED WITH WORKING AT A LANDFILL, INCLUDING CONTACT WITH LEACHATE AND OTHER CONTAMINATED MEDIA, LANDFILL GASES, MICROBIOLOGICAL AIRBORNE CONTAMINANTS, DANGEROUS CHEMICALS, SHARP OBJECTS, AND OTHER HAZARDS (CHEMICAL, PHYSICAL, AND RADIOLOGICAL, ETC.). AT A MINIMUM, THE CONTRACTOR SHALL COMPLY WITH THE BEST MANAGEMENT PRACTICES (MARCH 1992) AVAILABLE FROM THE SOLID WASTE ASSOCIATION OF NORTH AMERICA (SWANA). THE CONTRACTOR SHALL TAKE PRECAUTIONS NECESSARY TO ENSURE WORKER HEALTH AND SAFETY IN COMPLIANCE WITH OSHA CHAPTERS 1910 AND 1926 (SPECIFICALLY WITH 1910.120), AND OTHER APPLICABLE REGULATIONS. A HEALTH AND SAFETY PLAN SHALL BE PREPARED AND APPROVED BY THE CONTRACTOR'S DESIGNATED HEALTH AND SAFETY OFFICER BEFORE ANY WORK ON-SITE.
- THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT PERSONNEL FROM ASPHYXIATION, POISONING, EXPLOSION, AND/OR OTHER HAZARDS DUE TO THE PRESENCE OF LANDFILL GASES, LEACHATE, WASTE, ETC.
- THE CONTRACTOR IS RESPONSIBLE FOR BECOMING FAMILIAR WITH THE OSHA EXCAVATION SAFETY STANDARDS AND ABIDING BY THEM AS COVERED UNDER THE FLORIDA TRENCH SAFETY ACT (LAWS OF FLORIDA 90-96) EFFECTIVE OCTOBER 1, 1990.
- A SITE-SPECIFIC HEALTH AND SAFETY PLAN SHALL BE PREPARED BY THE CONTRACTOR BEFORE ANY WORK ON-SITE.
- THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A WRITTEN STATEMENT BEFORE BEGINNING WORK THAT HE/SHE WILL COMPLY WITH APPLICABLE TRENCH SAFETY STANDARDS.

DEWATERING NOTES

- THE CONTRACTOR SHALL OPERATE THE DEWATERING SYSTEM IN ACCORDANCE WITH THE PERMIT, PLANS, AND SPECIFICATION UNTIL ALL PROTECTIVE COVER SOIL IS INSTALLED AND IS VERIFIED BY RECORD SURVEY.
- DEWATERING SHALL BE PERFORMED BY THE CONTRACTOR TO INSTALL AND CONSTRUCT THE WORK IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. DEWATERING DISCHARGE SHALL BE IN ACCORDANCE WITH APPLICABLE REGULATIONS AND REQUIREMENTS OF AGENCIES WITH JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING A DEWATERING PLAN AND OBTAINING ALL NECESSARY PERMITS WITHOUT INCREASE IN CONTRACT PRICE OR TIME.
- CONTRACTOR SHALL DISCHARGE DEWATERING WATER IN A MANNER THAT PREVENTS EROSION AND THE TRANSPORTATION OF SUSPENDED SOLIDS.
- CONTRACTOR SHALL MONITOR GROUNDWATER LEVELS WITHIN THE VICINITY OF BOTTOM LINER DEWATERING ACTIVITIES FOR A MINIMUM OF 1 MONTH BEFORE DEWATERING COMMENCES AND SHALL CONTINUE TO MONITOR THROUGHOUT THE DURATION OF DEWATERING.

SURVEYOR'S NOTES

- THE LAST DATE OF FIELD SURVEY WAS DECEMBER 20, 2022.
- THIS SURVEY WAS PREPARED IN ACCORDANCE WITH THE "STANDARDS OF PRACTICE", AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN RULE 5J-17.050 THROUGH 5J-17.053, OF THE FLORIDA ADMINISTRATIVE CODE.
- ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.
- THE BEARINGS SHOWN HEREON ARE BASED ON GRID NORTH AND ARE REFERENCED TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983/2011. HORIZONTAL COORDINATES VALUES WHERE ESTABLISHED USING GEODETIC GRADE GPS AND THE FLORIDA'S DEPARTMENT OF TRANSPORTATION, FLORIDA PERMANENT REFERENCE NETWORK CORRECTION SERVICE.
- ELEVATIONS SHOWN HEREON ARE REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929. ELEVATIONS WHERE ESTABLISHED USING GEODETIC GRADE GPS AND THE FLORIDA'S DEPARTMENT OF TRANSPORTATION, FLORIDA PERMANENT REFERENCE NETWORK CORRECTION SERVICE.
- ALL DISTANCES SHOWN HEREON ARE IN U.S. SURVEY FEET.
- UNDERGROUND IMPROVEMENTS, IF ANY, WERE NOT LOCATED EXCEPT AS SHOWN.
- INTERIOR IMPROVEMENTS, IF ANY, WERE NOT LOCATED EXCEPT AS SHOWN.
- SYMBOLS SHOWN HEREON ARE NOT TO SCALE.

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BID DOCUMENTS

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| DESIGNED | GREINHART |
| DRAWN | PUPSTILL |
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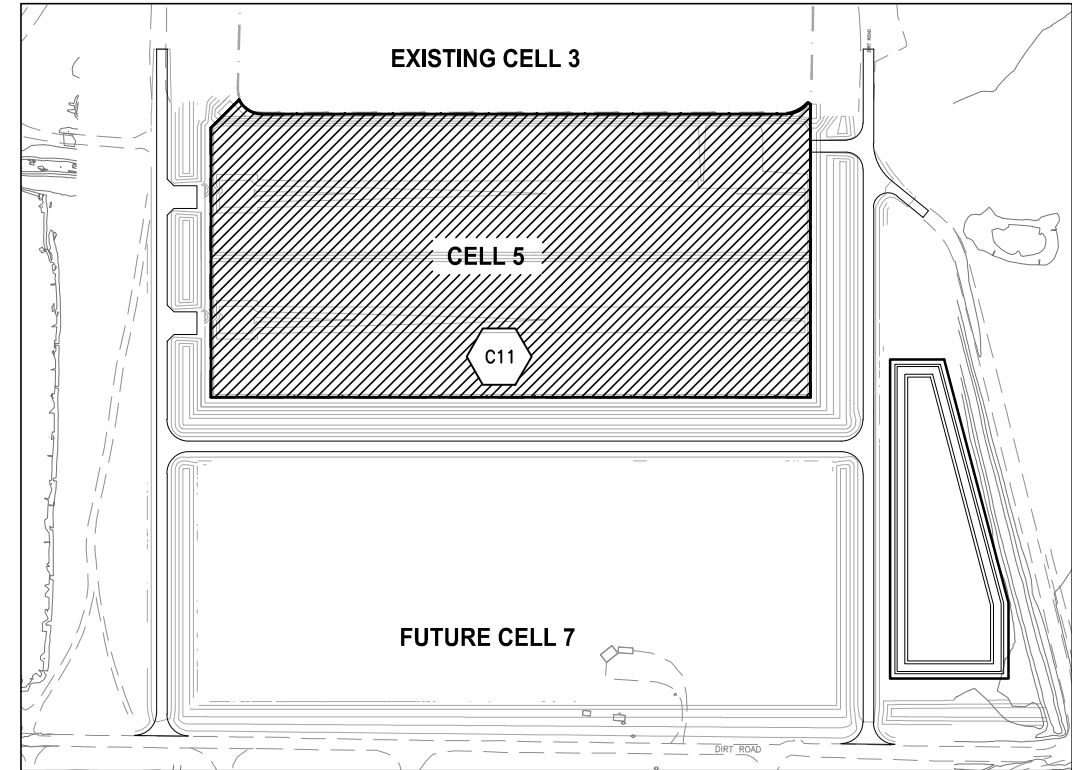
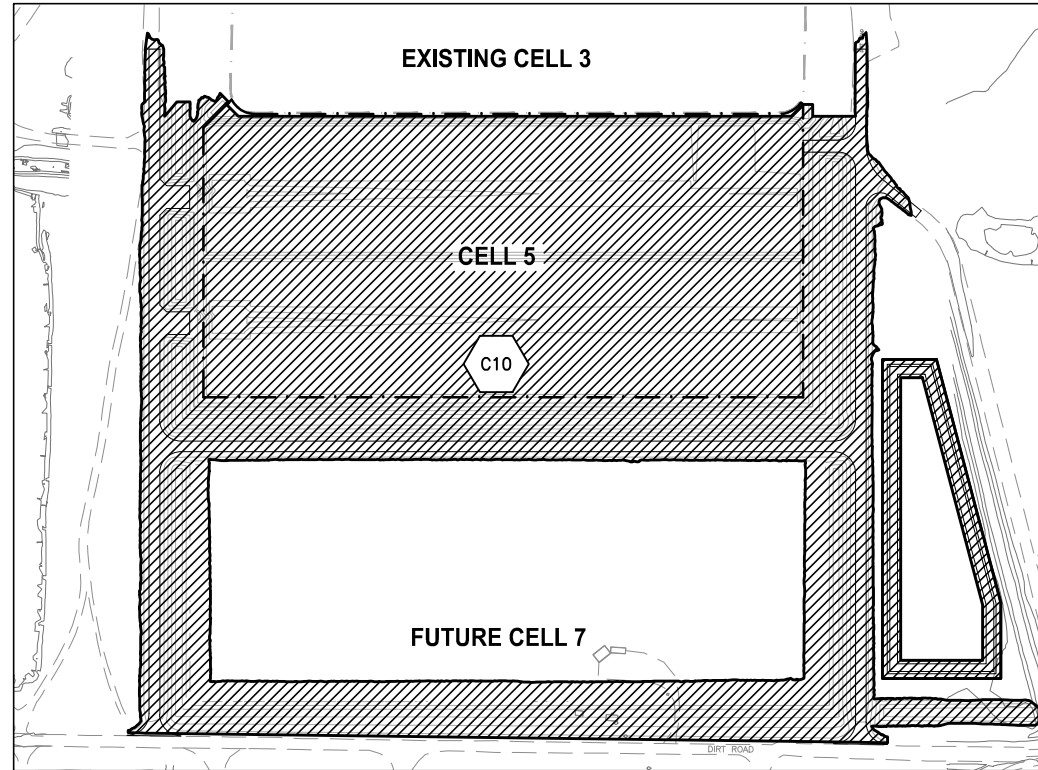
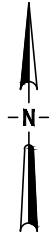


**HIGHLANDS COUNTY SOLID WASTE
MANAGEMENT CENTER
CELL 5 LANDFILL EXPANSION
HIGHLANDS COUNTY, FLORIDA**

GENERAL NOTES

GEORGE A. REINHART, III, PHD, PE, STATE OF FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. 66516
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| PROJECT NO: | 08345-045-01 | DATE: | SEP 2023 |
| INDEX NO: | | DWG NO: | G4 |



- NOTES:**
1. CLEARING, GRUBBING AND STRIPPING FOR SOME IMPROVEMENTS SUCH AS STORMWATER IMPROVEMENTS, FORCE MAIN PIPING IS NOT SHOWN. THE CONTRACTOR SHALL INCLUDE THIS EFFORT IN THE APPLICABLE BID ITEM.

PROPOSED CLEARING, GRUBBING, AND STRIPPING LIMITS LOCATION KEY MAP

NTS

PROPOSED DRAINAGE SOIL LOCATION KEY MAP

NTS

LEGEND

 AREA INCLUDED IN WORK ITEM

- GENERAL NOTES:**
1. DO NOT SCALE OFF DRAWING. THIS DRAWING IS INTENDED TO GENERALLY REPRESENT THE NATURE OF THE WORK. REFER TO THE REFERENCED DRAWINGS AND ASSOCIATED DETAILS FOR SPECIFICS OF THE WORK AND FOR USE IN QUANTITY DETERMINATION.

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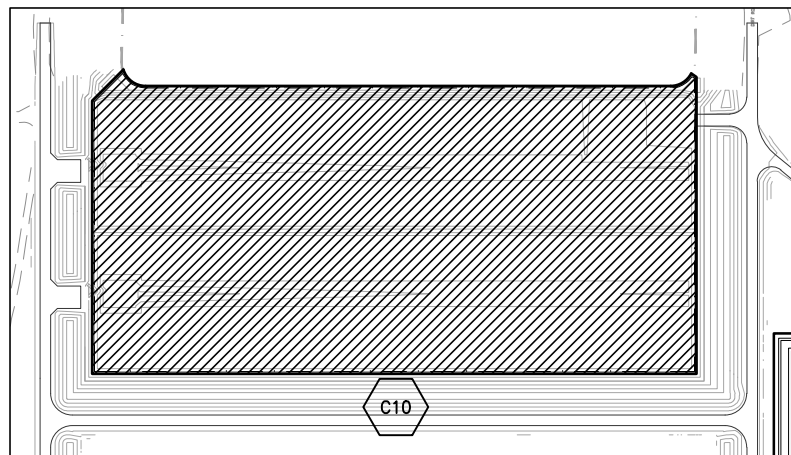

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PROPOSED EARTHWORK LOCATION KEY MAP

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| INDEX NO: | | DWG NO: | C5 |



- NOTES:**
- LIMITS OF GCL SHOWN ONLY EXTEND TO THE EDGE OF LINER AS INDICATED ON THE PLAN SHEETS. ADDITIONAL GCL MATERIAL REQUIRED IN SOME LOCATIONS WHICH THE CONTRACTOR SHALL QUANTIFY AND ACCOUNT FOR IN THEIR MATERIAL QUANTITY ESTIMATES AS FOLLOWS:
 - EXTENDING FROM THE EDGE OF LINER AS SHOWN ON THE PLAN SHEETS TO THE TIE IN WITH EXISTING LINER SYSTEMS.
 - EXTENDING FROM THE EDGE OF LINER AS SHOWN ON THE PLAN SHEETS TO THE TERMINATION POINT WITHIN THE ANCHOR TRENCH.

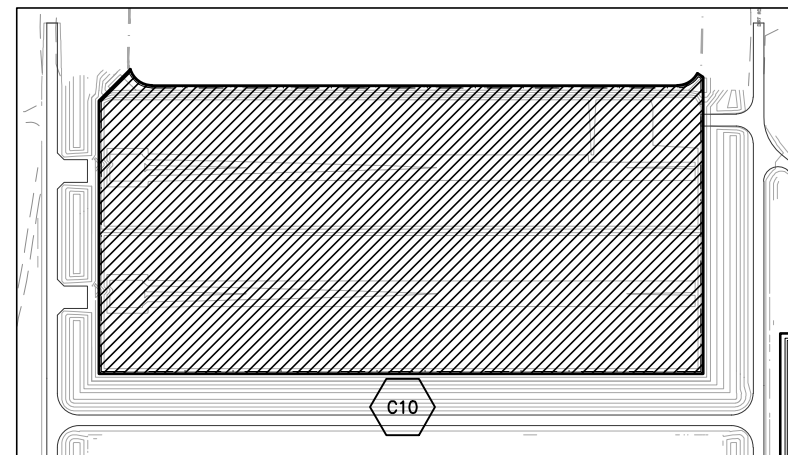
PROPOSED GCL LOCATION KEY MAP

NTS

- NOTES:**
- LIMITS OF SECONDARY GEOMEMBRANE SHOWN ONLY EXTEND TO THE EDGE OF LINER AS INDICATED ON THE PLAN SHEETS. ADDITIONAL SECONDARY GEOMEMBRANE MATERIAL REQUIRED IN SOME LOCATIONS WHICH THE CONTRACTOR SHALL QUANTIFY AND ACCOUNT FOR IN THEIR MATERIAL QUANTITY ESTIMATES AS FOLLOWS:
 - EXTENDING FROM THE EDGE OF LINER AS SHOWN ON THE PLAN SHEETS TO THE TIE IN WITH EXISTING LINER SYSTEMS.
 - EXTENDING FROM THE EDGE OF LINER AS SHOWN ON THE PLAN SHEETS TO THE TERMINATION POINT WITHIN THE ANCHOR TRENCH.

PROPOSED SECONDARY GEOMEMBRANE LOCATION KEY MAP

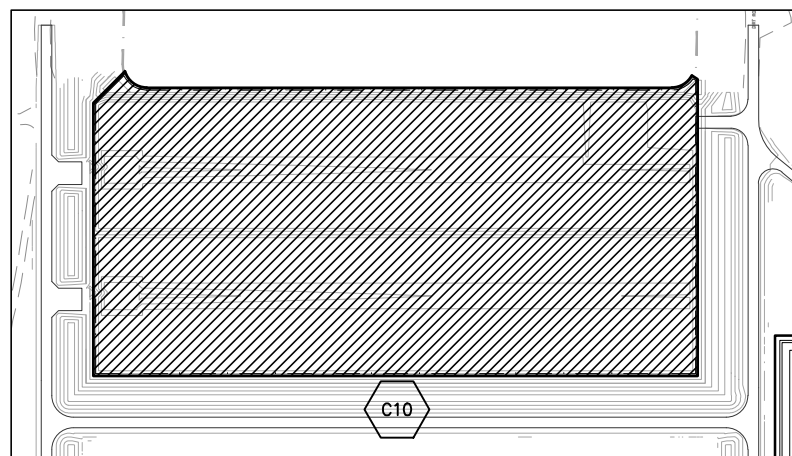
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- NOTES:**
- LIMITS OF SECONDARY GEOCOMPOSITE SHOWN ONLY EXTEND TO THE EDGE OF LINER AS INDICATED ON THE PLAN SHEETS. ADDITIONAL SECONDARY GEOCOMPOSITE MATERIAL REQUIRED IN SOME LOCATIONS WHICH THE CONTRACTOR SHALL QUANTIFY AND ACCOUNT FOR IN THEIR MATERIAL QUANTITY ESTIMATES AS FOLLOWS:
 - EXTENDING FROM THE EDGE OF LINER AS SHOWN ON THE PLAN SHEETS TO THE TIE IN WITH EXISTING LINER SYSTEMS.
 - EXTENDING FROM THE EDGE OF LINER AS SHOWN ON THE PLAN SHEETS TO THE TERMINATION POINT WITHIN THE ANCHOR TRENCH.
 - ADDITIONAL SECONDARY GEOCOMPOSITE LAYERS REQUIRED IN SOME LOCATIONS AS FOLLOWS:
 - TWO LAYERS OF SECONDARY GEOCOMPOSITE ARE REQUIRED IN THE LEACHATE COLLECTION TRENCH LEAK DETECTION LAYER.
 - TWO LAYERS OF SECONDARY GEOCOMPOSITE ARE REQUIRED IN THE LEAK DETECTION SUMP.

PROPOSED SECONDARY GEOCOMPOSITE LOCATION KEY MAP

NTS



- NOTES:**
- LIMITS OF PRIMARY GEOMEMBRANE SHOWN ONLY EXTEND TO THE EDGE OF LINER AS INDICATED ON THE PLAN SHEETS. ADDITIONAL PRIMARY GEOMEMBRANE MATERIAL REQUIRED IN SOME LOCATIONS WHICH THE CONTRACTOR SHALL QUANTIFY AND ACCOUNT FOR IN THEIR MATERIAL QUANTITY ESTIMATES AS FOLLOWS:
 - EXTENDING FROM THE EDGE OF LINER AS SHOWN ON THE PLAN SHEETS TO THE TIE IN WITH EXISTING LINER SYSTEMS.
 - EXTENDING FROM THE EDGE OF LINER AS SHOWN ON THE PLAN SHEETS TO THE TERMINATION POINT WITHIN THE ANCHOR TRENCH.

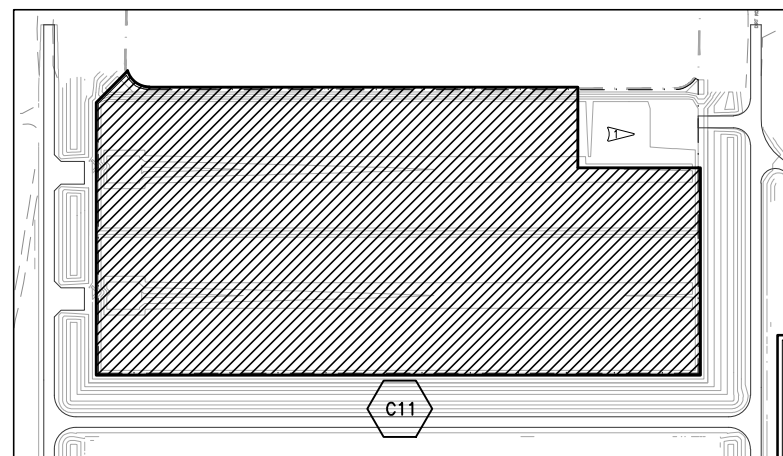
PROPOSED PRIMARY GEOMEMBRANE LOCATION KEY MAP

NTS

- NOTES:**
- LIMITS OF PRIMARY GEOCOMPOSITE SHOWN ONLY EXTEND TO THE EDGE OF LINER AS INDICATED ON THE PLAN SHEETS. ADDITIONAL PRIMARY GEOCOMPOSITE MATERIAL REQUIRED IN SOME LOCATIONS WHICH THE CONTRACTOR SHALL QUANTIFY AND ACCOUNT FOR IN THEIR MATERIAL QUANTITY ESTIMATES AS FOLLOWS:
 - EXTENDING FROM THE EDGE OF LINER AS SHOWN ON THE PLAN SHEETS TO THE TIE IN WITH EXISTING LINER SYSTEMS.

PROPOSED PRIMARY GEOCOMPOSITE LOCATION KEY MAP

NTS



PROPOSED RAIN TARP KEY MAP

NTS

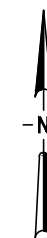
PROPOSED SAND BAG LOCATION KEY MAP

NTS

- GENERAL NOTES:**
- DO NOT SCALE OFF DRAWING. THIS DRAWING IS INTENDED TO GENERALLY REPRESENT THE NATURE OF THE WORK. REFER TO THE REFERENCED DRAWINGS AND ASSOCIATED DETAILS FOR SPECIFICS OF THE WORK AND FOR USE IN QUANTITY DETERMINATION.

PROPOSED GEOSYNTHETICS LOCATION KEY MAP

LEGEND



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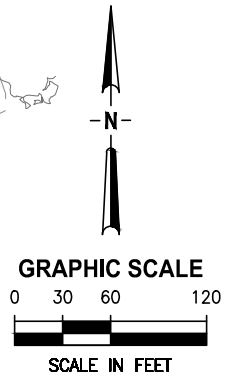
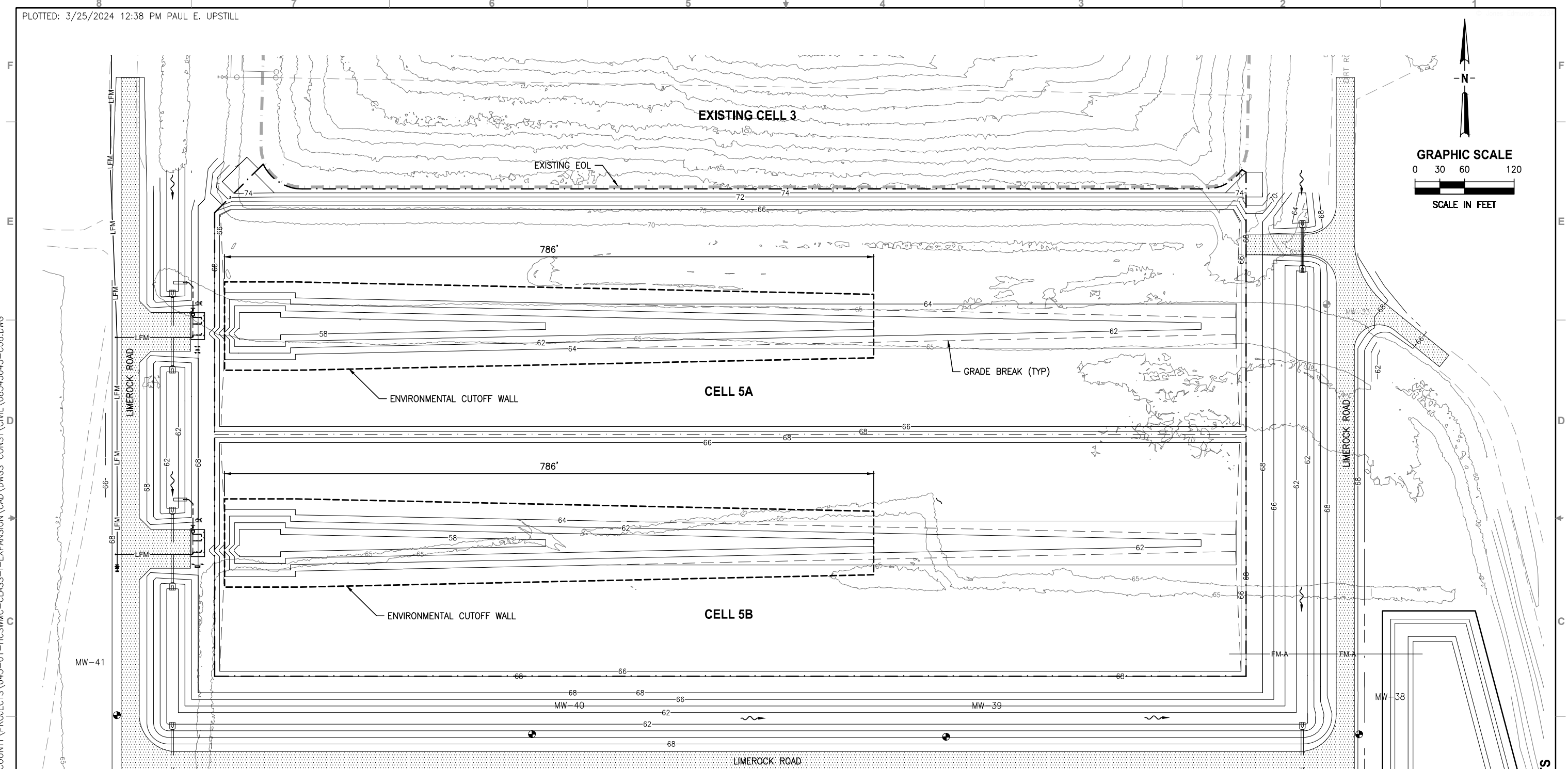
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HIGHLANDS COUNTY, FLORIDA

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NOTES

1. CONTRACTOR SHALL INSTALL DEWATERING MONITORING PIEZOMETERS WITHIN THE CELL 5 PROJECT AREA TO MONITOR GROUNDWATER LEVELS AND DEWATERING SYSTEM PERFORMANCE.
2. ELEVATIONS SHOWN WITHIN THE EOL REPRESENT TOP OF SUBGRADE.
3. ALL WELLS AND PIEZOMETERS ABANDONED BY THE CONTRACTOR SHALL BE DEMOLISHED TO A MINIMUM OF 5 FEET BELOW THE PROPOSED LANDFILL BOTTOM LINER GRADES.
4. CONTRACTOR SHALL ABANDON PIEZOMETERS IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. THE TIMING OF THE ABANDONMENT OF THESE PIEZOMETERS SHALL BE SPECIFIED IN THE DEWATERING PLAN SINCE THESE PIEZOMETERS SHALL BE USED TO MONITOR THE EFFECTIVENESS OF THE DEWATERING SYSTEM.
5. LIMITS OF ENVIRONMENTAL CUTOFF WALL SHOWN REPRESENT THE MINIMUM INSTALLATION REQUIRED. THE CONTRACTOR SHALL EVALUATE DEWATERING REQUIREMENTS. ANY ADDITIONAL ENVIRONMENTAL CUTOFF WALL REQUIRED SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE FOR THIS BID ITEM. NO CHANGE IN CONTRACT TIME OR PRICE WILL BE CONSIDERED FOR ADDITIONAL ENVIRONMENTAL CUTOFF WALL DURING CONSTRUCTION.
6. ENVIRONMENTAL CUTOFF WALL SHALL BE INSTALLED TO A BASE DEPTH OF EL 47 NGVD.

FUTURE CELL 7 EXPANSION

DEWATERING INFILTRATION AREA
(SEE PLAN)

BID DOCUMENTS

| LT. | DATE | REVISIONS | BY | APPRD. |
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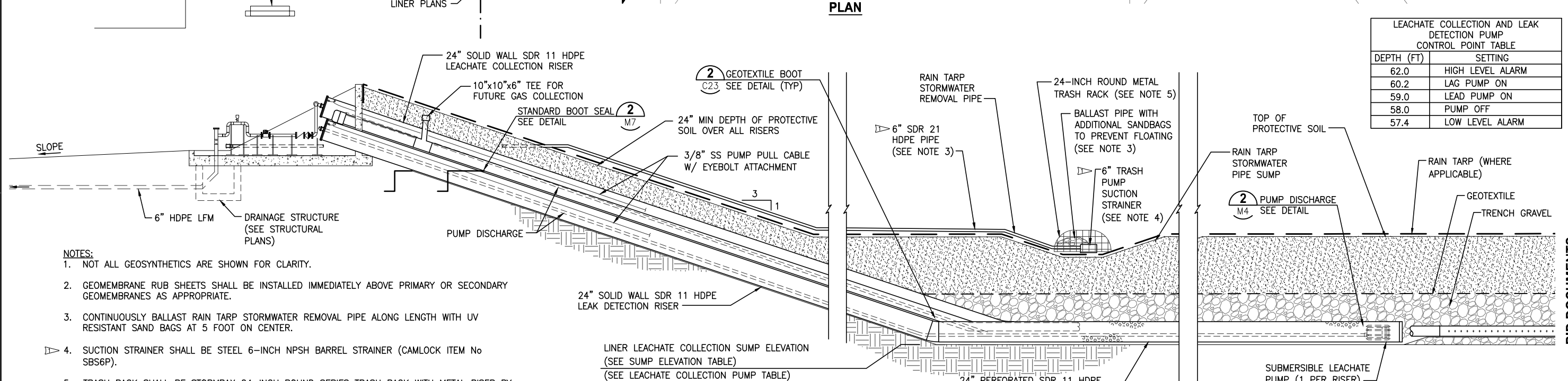
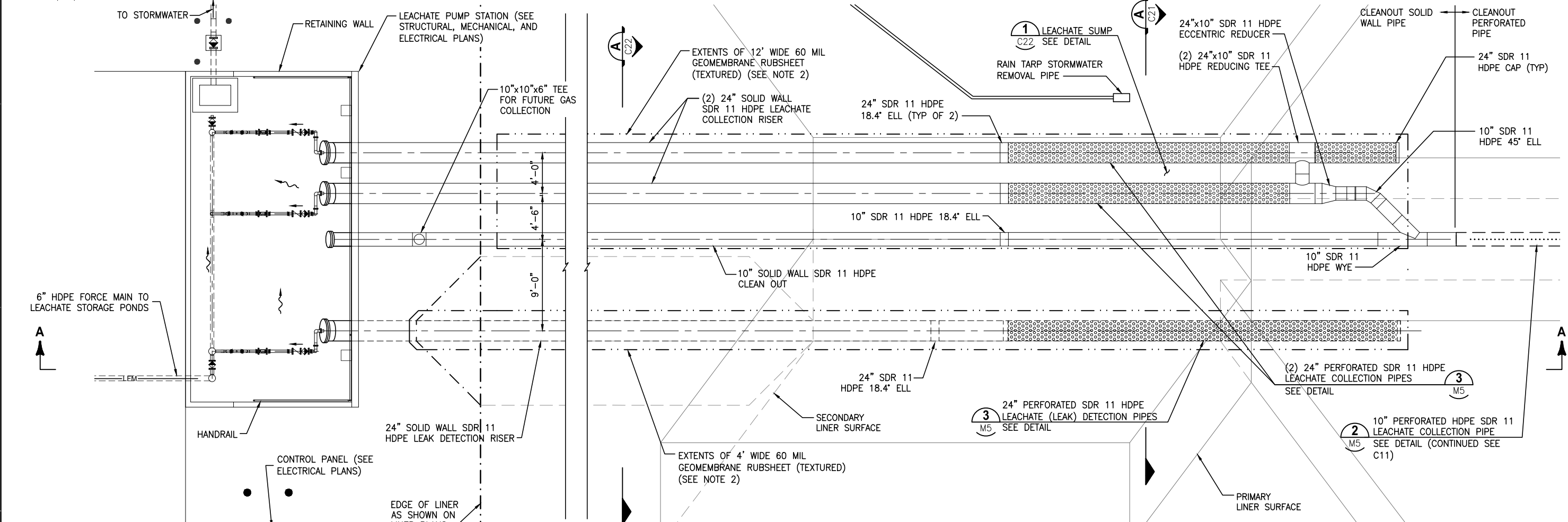
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CELL 5 LANDFILL EXPANSION
HIGHLANDS COUNTY, FLORIDA

DEWATERING MONITORING PLAN

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- NOTES:**
- NOT ALL GEOSYNTHETICS ARE SHOWN FOR CLARITY.
 - GEOMEMBRANE RUB SHEETS SHALL BE INSTALLED IMMEDIATELY ABOVE PRIMARY OR SECONDARY GEOMEMBRANES AS APPROPRIATE.
 - CONTINUOUSLY BALLAST RAIN TARP STORMWATER REMOVAL PIPE ALONG LENGTH WITH UV RESISTANT SAND BAGS AT 5 FOOT ON CENTER.
 - SUCTION STRAINER SHALL BE STEEL 6-INCH NPSH BARREL STRAINER (CAMLOCK ITEM No SBS6P).
 - TRASH RACK SHALL BE STORMRAX 24-INCH ROUND SERIES TRASH RACK WITH METAL RISER BY PLASTIC SOLUTIONS, INC. (PART No RSP-24) OR ENGINEER APPROVED EQUAL.
 - CONTRACTOR SHALL LABEL COLLECTION AND DETECTION PIPES IN ACCORDANCE WITH CONTROL PANEL NOMENCLATURE. CONTRACTOR SHALL COORDINATE LETTERING LAYOUT AND MATERIAL TYPE WITH THE ENGINEER AND PIPE SUPPLIER PRIOR TO INSTALLATION.

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**HIGHLANDS COUNTY SOLID WASTE MANAGEMENT CENTER
 CELL 5 LANDFILL EXPANSION
 HIGHLANDS COUNTY, FLORIDA**

LEACHATE SUMP DETAIL

| | | |
|-----------------------|---|-------------------|
| DESIGNED GREINHART | PROJECT NO: 08345-045-01 | DATE: SEP 2023 |
| DRAWN PUPSTILL | INDEX NO: | DWG NO: C20 |
| CHECKED TMCKNIGHT | GEORGE A. REINHART, III, PH.D., PE, STATE OF FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. 66516 THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY GEORGE A. REINHART III, PH.D., PE, ON THE DATE INDICATED ON COVER PAGE (G1). PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES. | |

BID DOCUMENTS

ATTACHMENT 2.b

**REDLINE MARKUPS TO DRAWINGS G2, G4,
C5, C6, C8, C20, AND M10**

ABBREVIATIONS

| | | | | | | | |
|--------|--|----------|--|----------|---|---------|---------------------------------|
| & | AND | FAC | FLORIDA ADMINISTRATIVE CODE | NIC | NOT IN CONTRACT | USGS | UNITED STATES GEOLOGICAL SURVEY |
| @ | AT | FCA | FLANGED COUPLING ADAPTER | No | NUMBER | V, VERT | VERTICAL |
| ACM | ASBESTOS CONTAINING MATERIAL | FCV | FLOW CONTROL VALVE | NON-PERF | NONPERFORATED | W | WEST |
| ADA | AMERICANS WITH DISABILITIES ACT | FDEP | FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION | NOM | NOMINAL | WJ | WELDED JOINT |
| ADJ | ADJUSTABLE | FDOT | FLORIDA DEPARTMENT OF TRANSPORTATION | NPT | AMERICAN STANDARD TAPER PIPE THREAD | WM | WATER MAIN |
| AFF | ABOVE FINISHED FLOOR | FG | FIBERGLASS | NSF | NATIONAL SANITATION FOUNDATION | WSWT | WET SEASON WATER TABLE |
| ALT | ALTERNATIVE | FH | FIRE HYDRANT | NTS | NOT TO SCALE | WWF | WELDED WIRE FABRIC |
| ALUM | ALUMINUM | FIN | FINISHED | NW | NORTHWEST | WGT | WEIGHT |
| AMPS | AMPERES | FJ | FINISHED JOINT | OC | ON CENTER | W/ | WITH |
| ANSI | AMERICAN NATIONAL STANDARDS INSTITUTE | FLG | FLANGE | OD | OUTSIDE DIAMETER | △ | DELTA, ANGULAR CHANGE |
| APPROX | APPROXIMATE, APPROXIMATELY | FM | FORCE MAIN | OSHA | OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION | | |
| AR | AIR RELEASE | FND | FOUNDATION | | | | |
| ARV | AIR RELEASE VALVE | FNPT | FEMALE NATIONAL PIPE THREAD | | | | |
| ASTM | AMERICAN SOCIETY FOR TESTING AND MATERIALS | FRP | FIBERGLASS REINFORCED PLASTIC | | | | |
| AV | AIR VACUUM | FT | FOOT | | | | |
| AVG | AVERAGE | FW | FINISHED WATER | | | | |
| AWWA | AMERICAN WATER WORKS ASSOCIATION | | | | | | |
| | | GALV | GALVANIZED | | | | |
| BCCMP | BITUMINOUS COATED CORRUGATED METAL PIPE | GCL | GEOSYNTHETIC CLAY LINER | PC | POINT OF CURVE | | |
| BLD | BLIND | GFFR | GROUT FILLED FIBER REVETMENT | PE | PLAIN END | | |
| BLDG | BUILDING | GPM | GALLONS PER MINUTE | PERF | PERFORATED | | |
| BF | BLIND FLANGE | GR | GRADE | PLS | PROFESSIONAL LAND SURVEYOR | | |
| BFP | BACKFLOW PREVENTOR | GS | GALVANIZED STEEL | # | POUND | | |
| BFV | BUTTERFLY VALVE | GV | GATE VALVE | PI | PRESSURE INDICATOR/GAUGE | | |
| B/L | BASE LINE | GMW | GROUNDWATER MONITORING WELL | PID | PROPERTY IDENTIFICATION NUMBER | | |
| BO | BLOW-OFF | | | PL | PLATE | | |
| BPZ | PIEZOMETER | HCSWMC | HIGHLANDS COUNTY SOLID WASTE MANAGEMENT CENTER | P/L | PROPERTY LINE | | |
| BTM | BOTTOM | | | PP | POWER POLE | | |
| BV | BALL VALVE | HDPE | HIGH DENSITY POLYETHYLENE | PS | PUMP STATION | | |
| BWJ | BUTT-WELDED JOINT | HP | HIGH POINT | PSI | POUND PER SQUARE INCH | | |
| BYP | BY-PASS | H, HORIZ | HORIZONTAL | PT | PRESSURE TREATED | | |
| | | HP | HIGH POINT/HORSE POWER | PV | PLUG VALVE | | |
| C | CELSIUS | HWA | HIGH WATER ALARM | PVC | POLYVINYL CHLORIDE | | |
| CA | COMPRESSED AIR | HWL | HIGH WATER LEVEL | | | | |
| CAP | CORRUGATED ALUMINUM PIPE | | | R | RADIUS | | |
| CAT | CATALOGUE | ID | IDENTIFICATION, INSIDE DIAMETER | R/W, ROW | RIGHT OF WAY | | |
| CB | CATCH BASIN | IE | INVERT ELEVATION | RCP | REINFORCED CONCRETE PIPE | | |
| CHDPE | CORRUGATED HIGH DENSITY POLYETHYLENE | IF | INSULATED FLANGE | RED | REDUCER | | |
| CI | CAST IRON | IN | INCHES | REF | REFERENCE | | |
| CIP | CAST IRON PIPE | INV | INVERT | REINF | REINFORCED | | |
| C/L | CENTERLINE | IPS | IRON PIPE SIZE | REQD | REQUIRED | | |
| CLR | CLEAR | | | RJ | RESTRAINED JOINT | | |
| CM | CONCRETE MONUMENT, CENTIMETER | K | HYDRAULIC CONDUCTIVITY | RPOJ | RESTRAINED PUSH ON JOINT | | |
| CMP | CORRUGATED METAL PIPE | | | RT | RIGHT | | |
| CO | COMPANY/CLEANOUT | L | LENGTH | RW | RAW WATER | | |
| CON | CONCENTRIC | LBR | LIMEROCK BEARING RATIO | S | SOUTH | | |
| CONC | CONCRETE | LBS | POUNDS | SAN | SANITARY | | |
| CONT | CONTINUOUS | LCS | LEACHATE COLLECTION SYSTEM | SCH | SCHEDULE | | |
| CORR | CORRUGATED | LCS | LEACHATE COLLECTION AND REMOVAL SYSTEM | SEC | SECOND | | |
| CORP | CORPORATION | LDS | LEAK DETECTION SYSTEM | SDR | STANDARD DIMENSION RATIO | | |
| CPT | CONE PENETRATION TEST | LF | LINEAR FEET | SECT | SECTION | | |
| CS | CARBON STEEL | LFG | LANDFILL GAS HEADER | SF | SQUARE FEET | | |
| CV | CHECK VALVE | LFGCCS | LANDFILL GAS COLLECTION AND CONTROL SYSTEM | SG | STAFF GAUGE | | |
| CY | CUBIC YARDS | LFGTE | LANDFILL GAS TO ENERGY PLANT | SHWT | SEASONAL HIGH WATER TABLE | | |
| | | LFM | LEACHATE FORCE MAIN | SIM | SIMILAR | | |
| DBI | DITCH BOTTOM INLET | LR | LONG RADIUS | SPEC | SPECIFICATION | | |
| DBL | DOUBLE | LRL | LEACHATE RECIRCULATION LINE | SPT | STANDARD PENETRATION TEST | | |
| DET | DETAIL | LT | LEFT | SQ | SQUARE | | |
| DI | DUCTILE IRON | LWA | LOW WATER ALARM | SR | STATE ROAD | | |
| DIP | DUCTILE IRON PIPE | LWL | LOW WATER LEVEL | SS | STAINLESS STEEL | | |
| DIA | DIAMETER | | | SSHHMB | STAINLESS STEEL HEX HEAD MACHINE BOLT | | |
| ∅ | DIAMETER | | | SSRHMS | STAINLESS STEEL ROUND HEAD MACHINE SCREW | | |
| DIM | DIMENSION | MAG | MAGNETIC | STA | STATION | | |
| DIV | DIVISION | MAX | MAXIMUM | STD | STANDARD | | |
| DS | DROP STRUCTURE | MES | MITERED END SECTION | STL | STEEL | | |
| DW | DEEP WELL | MFR | MANUFACTURER | SW | STORMWATER/SOUTHWEST | | |
| DWG | DRAWING | MH | MANHOLE | SFWM | SOUTH FLORIDA WATER MANAGEMENT DISTRICT | | |
| | | MIL | THOUSANDTHS OF AN INCH | SWJ | SOLVENT WELD JOINT | | |
| E | EAST | MIN | MINIMUM | | | | |
| ECC | ECCENTRIC | MISC | MISCELLANEOUS | T | TANGENT | | |
| EA | EACH | MJ | MECHANICAL JOINT | T/ | TOP OF | | |
| EF | EACH FACE | MSL | MEAN SEA LEVEL | TBM | TURNING BENCH MARK | | |
| EL | ELEVATION | MNPT | MALE NATIONAL PIPE THREAD | TGS | THREADED GALVANIZED STEEL | | |
| ELL | ELBOW | MT | MOUNT | TGSP | THREADED GALVANIZED STEEL PIPE | | |
| ENCL | ENCLOSE, ENCLOSURE | MUTCD | MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES | TH | TEST HOLE | | |
| EOL | EDGE OF LINER | | | THD | THREADED | | |
| EOP | EDGE OF PAVEMENT | | | THK | THICK | | |
| ETC | ET CETERA | MW | MONITORING WELL | TRC | TOTAL RESIDUAL CHLORINE | | |
| EQ | EQUAL | | | TS | TUBE STEEL | | |
| EQUIP | EQUIPMENT | N | NORTH | TYP | TYPICAL | | |
| EW | EACH WAY | NAV | NORTH AMERICAN VERTICAL DATUM | | | | |
| EXIST | EXISTING | N/A | NOT APPLICABLE | ULC | ULTRASONIC LEVEL CONTROLLER | | |
| EXP | EXPANSION | N/AVAIL | NOT AVAILABLE | UNO | UNLESS NOTED OTHERWISE | | |
| | | NC | NORMALLY CLOSED | USC&GS | UNITED STATES COASTAL AND GEODETIC SURVEY | | |
| FAB | FABRICATION | NEC | NATIONAL ELECTRIC CODE | | | | |
| | | NGVD | NATIONAL GEODETIC VERTICAL DATUM | | | | |

DRAWING INDEX

| DWG | DESCRIPTION |
|-----------------|--|
| GENERAL | |
| G1 | COVER |
| G2 | DRAWING INDEX AND ABBREVIATIONS |
| G3 | LEGENDS |
| G4 | GENERAL NOTES |
| G5 | COORDINATE TABLES |
| CIVIL | |
| C1 | SITE PLAN |
| C2 | PROJECT SITE PLAN AND KEY MAP |
| C3 | WELL AND BORING PLAN |
| C4 | TOPOGRAPHIC SURVEY |
| C5 | PROPOSED EARTHWORK LOCATION KEY MAP |
| C6 | PROPOSED GEOSYNTHETICS LOCATION KEY MAP |
| C7 | DEMOLITION PLAN |
| C8 | DEWATERING MONITORING PLAN |
| C9 | DEWATERING INFILTRATION AREA PLAN |
| C10 | LEACHATE COLLECTION SYSTEM PLAN |
| C11 | PROTECTIVE COVER SOIL SYSTEM PLAN |
| C12 | FORCE MAIN ROUTING PLAN |
| C13 | FORCE MAIN ROUTING PLAN |
| C14 | LEACHATE STORAGE PONDS PLAN |
| C15 | LANDFILL SECTIONS |
| C16 | LANDFILL PERIMETER BERM AND SWALE SECTIONS |
| C17 | LANDFILL ROAD AND SWALE SECTIONS |
| C18 | LINER DETAILS |
| C19 | LINER DETAILS |
| C20 | LEACHATE SUMP DETAIL |
| C21 | LEACHATE SUMP DETAILS |
| C22 | LEACHATE SUMP DETAILS |
| C23 | LINER SYSTEM DETAILS |
| C24 | LANDFILL DETAILS |
| C25 | LANDFILL DETAILS |
| C26 | LANDFILL DETAILS |
| C27 | LANDFILL DETAILS |
| C28 | LANDFILL DETAILS |
| C29 | LANDFILL DETAILS |
| STRUCTURAL | |
| S1 | STRUCTURAL NOTES AND ABBREVIATIONS |
| S2 | STRUCTURAL PLAN |
| S3 | STRUCTURAL SECTION AND DETAILS |
| S4 | STRUCTURAL DETAILS |
| MECHANICAL | |
| M1 | MECHANICAL NOTES AND LEGENDS |
| M2 | LEACHATE PUMP STATION MECHANICAL PLAN |
| M3 | MECHANICAL SECTIONS |
| M4 | MECHANICAL DETAILS |
| M5 | MECHANICAL DETAILS |
| M6 | MECHANICAL DETAILS |
| M7 | MECHANICAL DETAILS |
| M8 | MECHANICAL DETAILS |
| M9 | MECHANICAL DETAILS |
| M10 | MECHANICAL DETAILS |
| ELECTRICAL | |
| E1 | ELECTRICAL LEGENDS, ABBREVIATIONS, AND GENERAL NOTES |
| E2 | ELECTRICAL SITE PLAN |
| E3 | TYPICAL PUMP STATION ELECTRICAL PLAN |
| E4 | ELECTRICAL ONE-LINE DIAGRAM |
| E5 | ELECTRICAL DETAILS |
| E6 | ELECTRICAL DETAILS |
| E7 | ELECTRICAL WIRING SCHEDULE |
| EROSION CONTROL | |
| EC1 | EROSION AND SEDIMENT CONTROL REQUIREMENTS |
| EC2 | STORMWATER POLLUTION PREVENTION PLAN |
| EC3 | EROSION CONTROL DETAILS |

Delete Drawing. Work has been deleted from project.

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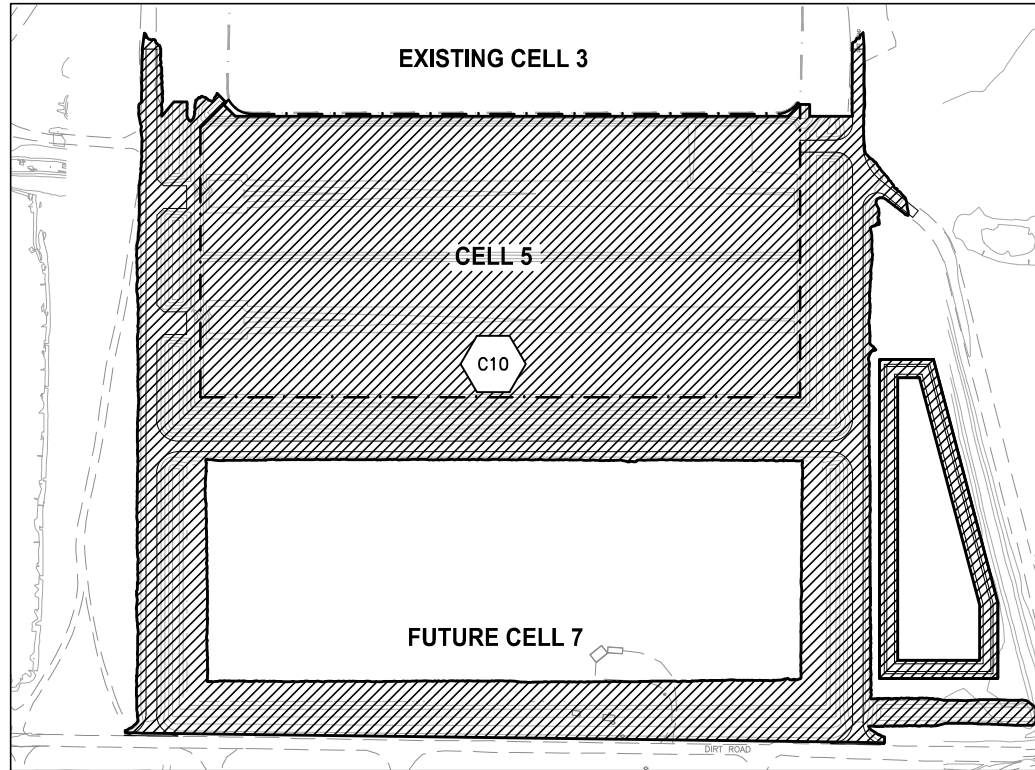
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| DESIGNED | GREINHART |
| DRAWN | PUPSTILL |
| CHECKED | TMCKNIGHT |
| BY | |
| APPRD. | |



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 CELL 5 LANDFILL EXPANSION
 HIGHLANDS COUNTY, FLORIDA**

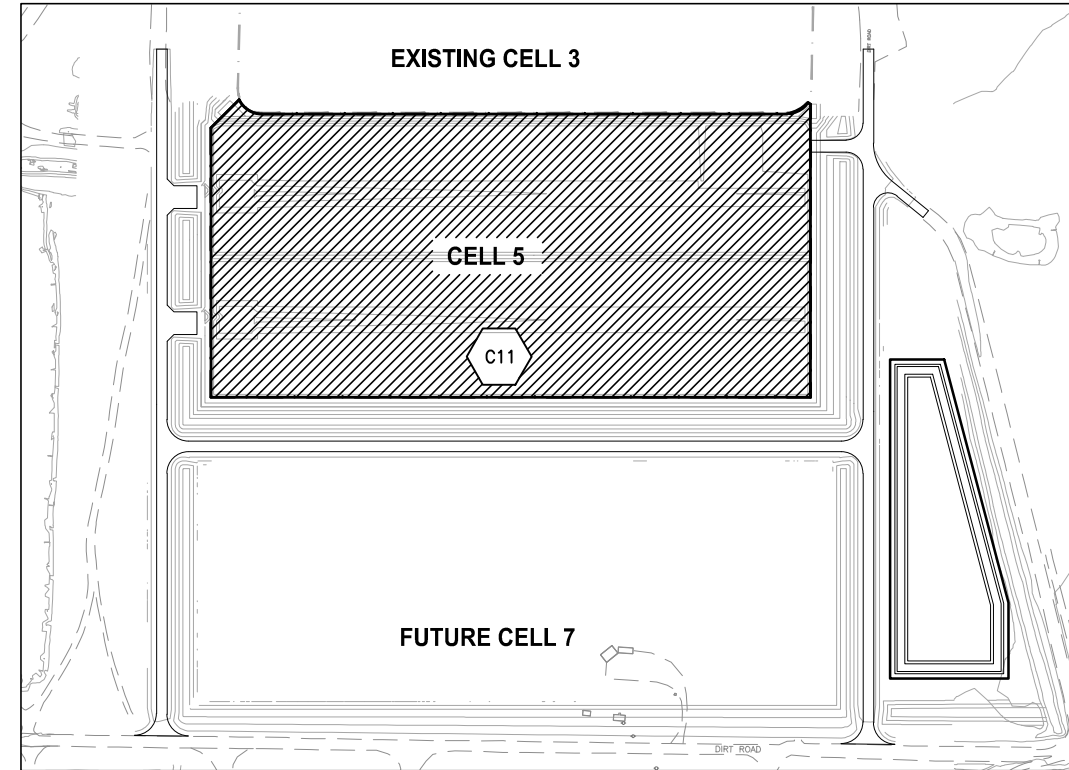
DRAWING INDEX AND ABBREVIATIONS

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| | INDEX NO: | DWG NO: G2 |



NOTES:
 1. CLEARING, GRUBBING AND STRIPPING FOR SOME IMPROVEMENTS SUCH AS STORMWATER IMPROVEMENTS, FORCEMAIN PIPING AND GCGS-PIPING IS NOT SHOWN. THE CONTRACTOR SHALL INCLUDE THIS EFFORT IN THE APPLICABLE BID ITEM.

PROPOSED CLEARING, GRUBBING, AND STRIPPING LIMITS LOCATION KEY MAP
 NTS

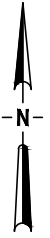


PROPOSED DRAINAGE SOIL LOCATION KEY MAP
 NTS

LEGEND

 AREA INCLUDED IN WORK ITEM

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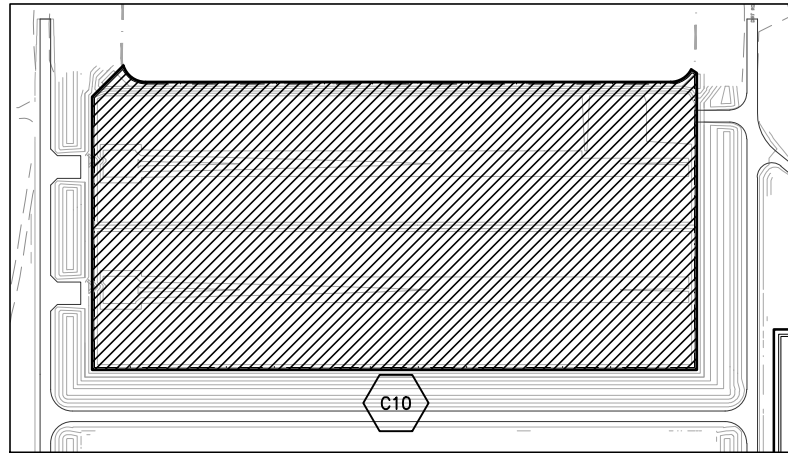
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PROPOSED EARTHWORK LOCATION KEY MAP

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| INDEX NO: | | DWG NO: | C5 |



- NOTES:**
- LIMITS OF GCL SHOWN ONLY EXTEND TO THE EDGE OF LINER AS INDICATED ON THE PLAN SHEETS. ADDITIONAL GCL MATERIAL REQUIRED IN SOME LOCATIONS WHICH THE CONTRACTOR SHALL QUANTIFY AND ACCOUNT FOR IN THEIR MATERIAL QUANTITY ESTIMATES AS FOLLOWS:
 - EXTENDING FROM THE EDGE OF LINER AS SHOWN ON THE PLAN SHEETS TO THE TIE IN WITH EXISTING LINER SYSTEMS.
 - EXTENDING FROM THE EDGE OF LINER AS SHOWN ON THE PLAN SHEETS TO THE TERMINATION POINT WITHIN THE ANCHOR TRENCH.

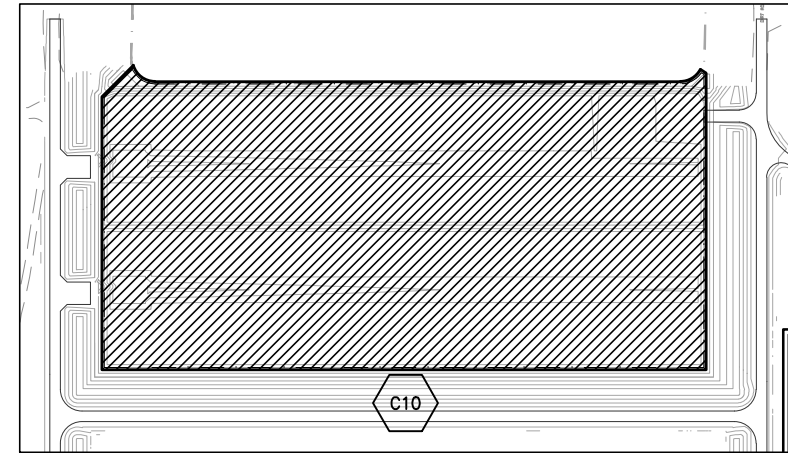
PROPOSED GCL LOCATION KEY MAP

NTS

- NOTES:**
- LIMITS OF SECONDARY GEOMEMBRANE SHOWN ONLY EXTEND TO THE EDGE OF LINER AS INDICATED ON THE PLAN SHEETS. ADDITIONAL SECONDARY GEOMEMBRANE MATERIAL REQUIRED IN SOME LOCATIONS WHICH THE CONTRACTOR SHALL QUANTIFY AND ACCOUNT FOR IN THEIR MATERIAL QUANTITY ESTIMATES AS FOLLOWS:
 - EXTENDING FROM THE EDGE OF LINER AS SHOWN ON THE PLAN SHEETS TO THE TIE IN WITH EXISTING LINER SYSTEMS.
 - EXTENDING FROM THE EDGE OF LINER AS SHOWN ON THE PLAN SHEETS TO THE TERMINATION POINT WITHIN THE ANCHOR TRENCH.

PROPOSED SECONDARY GEOMEMBRANE LOCATION KEY MAP

NTS

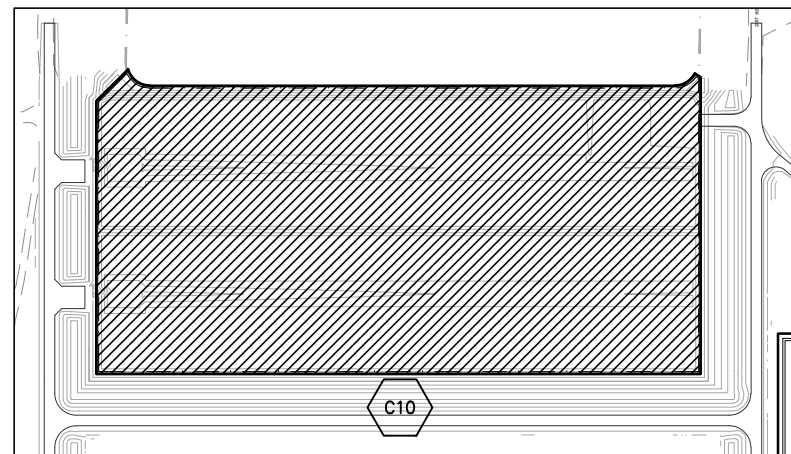


- NOTES:**
- LIMITS OF SECONDARY GEOCOMPOSITE SHOWN ONLY EXTEND TO THE EDGE OF LINER AS INDICATED ON THE PLAN SHEETS. ADDITIONAL SECONDARY GEOCOMPOSITE MATERIAL REQUIRED IN SOME LOCATIONS WHICH THE CONTRACTOR SHALL QUANTIFY AND ACCOUNT FOR IN THEIR MATERIAL QUANTITY ESTIMATES AS FOLLOWS:
 - EXTENDING FROM THE EDGE OF LINER AS SHOWN ON THE PLAN SHEETS TO THE TIE IN WITH EXISTING LINER SYSTEMS.
 - EXTENDING FROM THE EDGE OF LINER AS SHOWN ON THE PLAN SHEETS TO THE TERMINATION POINT WITHIN THE ANCHOR TRENCH.
 - ADDITIONAL SECONDARY GEOCOMPOSITE LAYERS REQUIRED IN SOME LOCATIONS AS FOLLOWS:
 - TWO LAYERS OF SECONDARY GEOCOMPOSITE ARE REQUIRED IN THE LEACHATE COLLECTION TRENCH LEAK DETECTION LAYER.
 - TWO LAYERS OF SECONDARY GEOCOMPOSITE ARE REQUIRED IN THE LEAK DETECTION SUMP.

~~C. THREE LAYERS OF SECONDARY GEOCOMPOSITE ARE REQUIRED AT THE NORTHERN TIE IN TO THE PHASE I LINER SYSTEM. THE ADDITIONAL LAYERS ARE 9 FEET IN WIDTH (NORTH TO SOUTH) AND EXTEND FOR THE ENTIRE LENGTH (EAST TO WEST) OF THE NORTHERN LINER SYSTEM TIE IN.~~

PROPOSED SECONDARY GEOCOMPOSITE LOCATION KEY MAP

NTS



- NOTES:**
- LIMITS OF PRIMARY GEOMEMBRANE SHOWN ONLY EXTEND TO THE EDGE OF LINER AS INDICATED ON THE PLAN SHEETS. ADDITIONAL PRIMARY GEOMEMBRANE MATERIAL REQUIRED IN SOME LOCATIONS WHICH THE CONTRACTOR SHALL QUANTIFY AND ACCOUNT FOR IN THEIR MATERIAL QUANTITY ESTIMATES AS FOLLOWS:
 - EXTENDING FROM THE EDGE OF LINER AS SHOWN ON THE PLAN SHEETS TO THE TIE IN WITH EXISTING LINER SYSTEMS.
 - EXTENDING FROM THE EDGE OF LINER AS SHOWN ON THE PLAN SHEETS TO THE TERMINATION POINT WITHIN THE ANCHOR TRENCH.

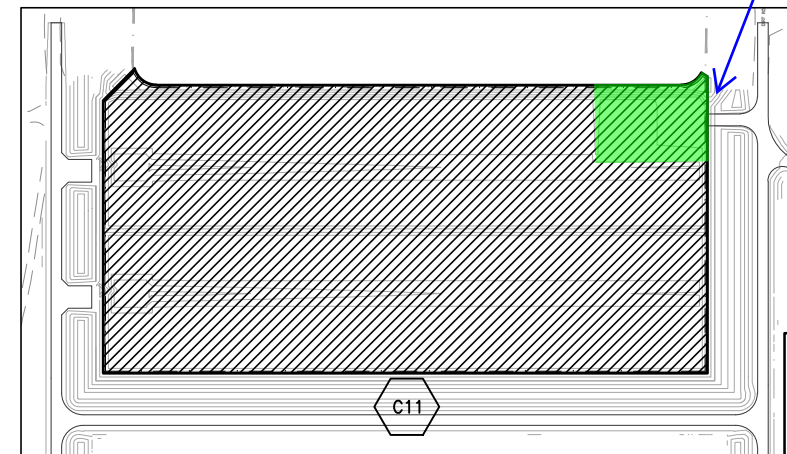
PROPOSED PRIMARY GEOMEMBRANE LOCATION KEY MAP

NTS

- NOTES:**
- LIMITS OF PRIMARY GEOCOMPOSITE SHOWN ONLY EXTEND TO THE EDGE OF LINER AS INDICATED ON THE PLAN SHEETS. ADDITIONAL PRIMARY GEOCOMPOSITE MATERIAL REQUIRED IN SOME LOCATIONS WHICH THE CONTRACTOR SHALL QUANTIFY AND ACCOUNT FOR IN THEIR MATERIAL QUANTITY ESTIMATES AS FOLLOWS:
 - EXTENDING FROM THE EDGE OF LINER AS SHOWN ON THE PLAN SHEETS TO THE TIE IN WITH EXISTING LINER SYSTEMS.

PROPOSED PRIMARY GEOCOMPOSITE LOCATION KEY MAP

NTS



PROPOSED RAIN TARP KEY MAP

NTS

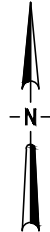
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PROPOSED SAND BAG LOCATION KEY MAP

NTS

Revise to correct extents of rain tarp as shown on C11

LEGEND



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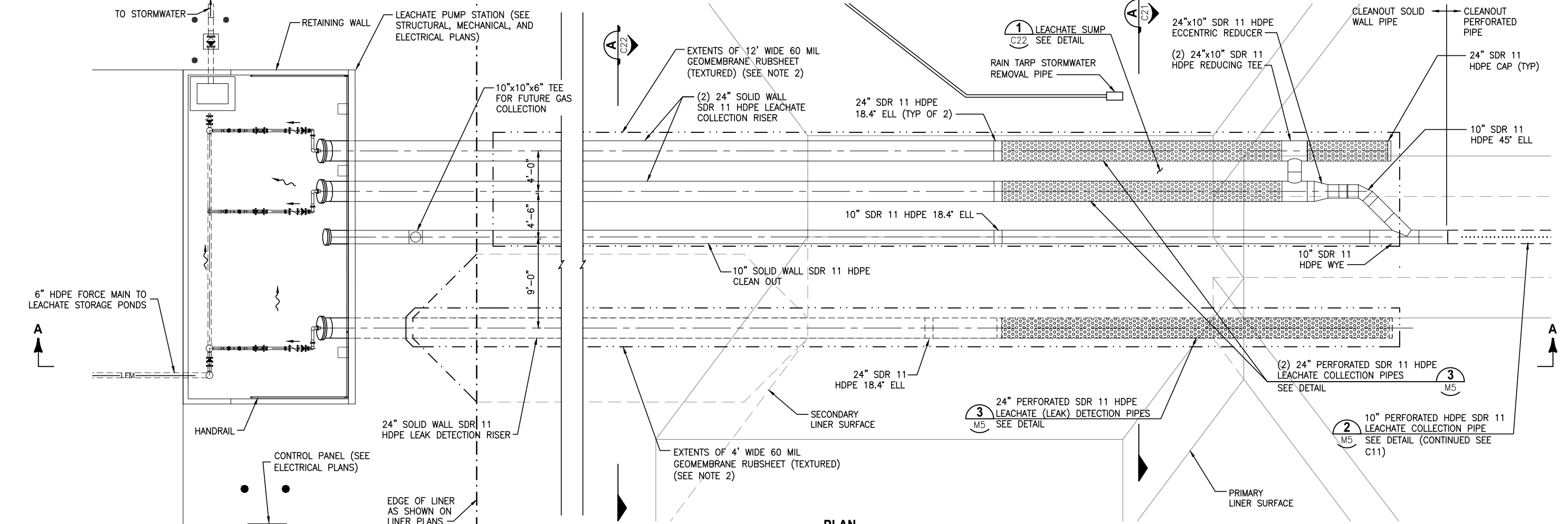
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 CELL 5 LANDFILL EXPANSION
 HIGHLANDS COUNTY, FLORIDA

PROPOSED GEOSYNTHETICS LOCATION KEY MAP

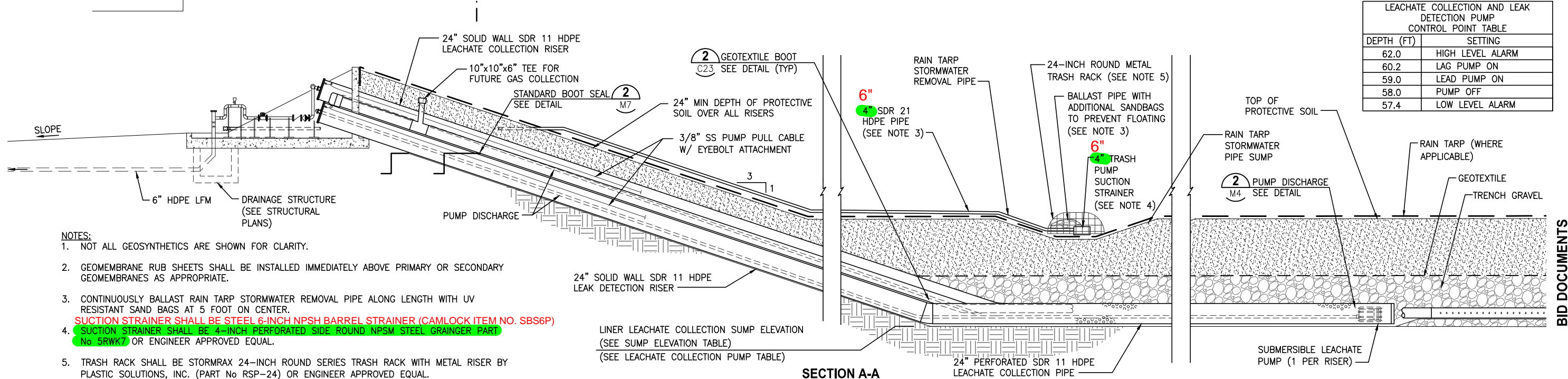
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PLAN



| DEPTH (FT) | SETTING |
|------------|------------------|
| 62.0 | HIGH LEVEL ALARM |
| 60.2 | LAG PUMP ON |
| 59.0 | LEAD PUMP ON |
| 58.0 | PUMP OFF |
| 57.4 | LOW LEVEL ALARM |

SECTION A-A

LEACHATE COLLECTION SYSTEM DETAIL 1

- NOTES:**
- NOT ALL GEOSYNTHETICS ARE SHOWN FOR CLARITY.
 - GEOMEMBRANE RUB SHEETS SHALL BE INSTALLED IMMEDIATELY ABOVE PRIMARY OR SECONDARY GEOMEMBRANES AS APPROPRIATE.
 - CONTINUOUSLY BALLAST RAIN TARP STORMWATER REMOVAL PIPE ALONG LENGTH WITH UV RESISTANT SAND BAGS AT 5 FOOT ON CENTER.
SUCTION STRAINER SHALL BE STEEL 6-INCH NPSH BARREL STRAINER (CAMLOCK ITEM NO. SBS6P)
 - SUCTION STRAINER SHALL BE 4-INCH PERFORATED SIDE ROUND NPSM STEEL GRAINGER PART No 5RWK7 OR ENGINEER APPROVED EQUAL.**
 - TRASH RACK SHALL BE STORMRAX 24-INCH ROUND SERIES TRASH RACK WITH METAL RISER BY PLASTIC SOLUTIONS, INC. (PART No RSP-24) OR ENGINEER APPROVED EQUAL.
 - CONTRACTOR SHALL LABEL COLLECTION AND DETECTION PIPES IN ACCORDANCE WITH CONTROL PANEL NOMENCLATURE. CONTRACTOR SHALL COORDINATE LETTERING LAYOUT AND MATERIAL TYPE WITH THE ENGINEER AND PIPE SUPPLIER PRIOR TO INSTALLATION.

| | |
|----------|-----------|
| DESIGNED | GREINHART |
| DRAWN | PUPSTILL |
| CHECKED | TMCKNIGHT |

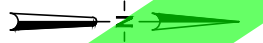
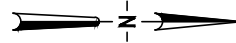
JonesEdmunds
 730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821

**HIGHLANDS COUNTY SOLID WASTE MANAGEMENT CENTER
 CELL 5 LANDFILL EXPANSION
 HIGHLANDS COUNTY, FLORIDA**

LEACHATE SUMP DETAIL

| | | |
|--|-----------------------------|-------------------|
| GEORGE A. REINHART, III, PH.D., P.E., STATE OF FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. 66516 THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY GEORGE A. REINHART III, PH.D., P.E. ON THE DATE INDICATED ON COVER PAGE (G1). PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES. | PROJECT NO: 08345-045-01 | DATE: SEP 2023 |
| | INDEX NO: 1 | DWG NO: C20 |

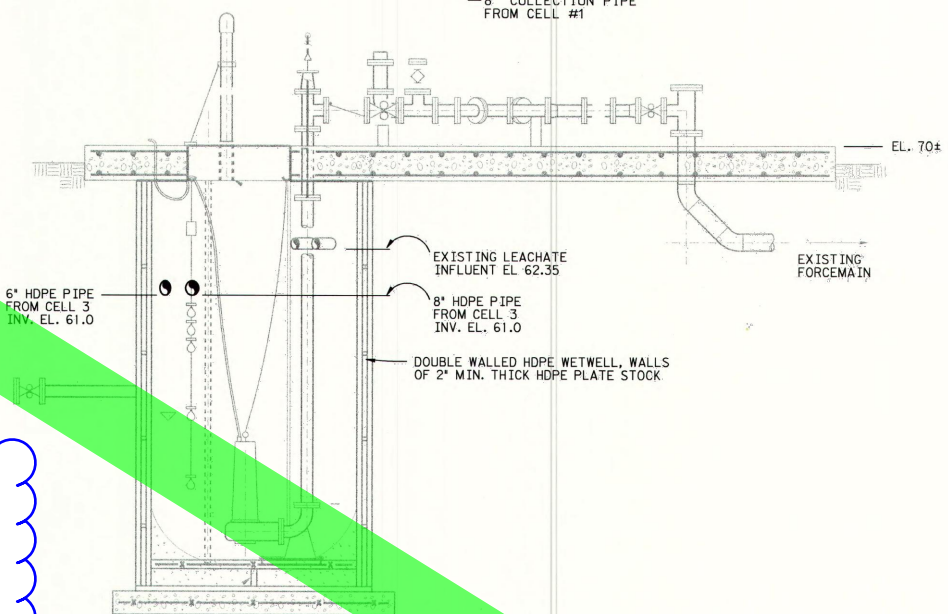
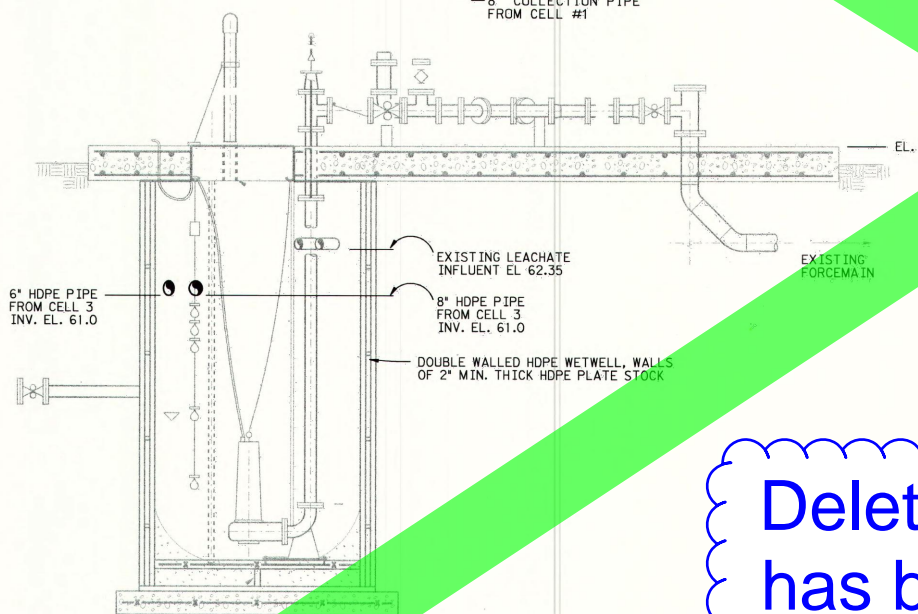
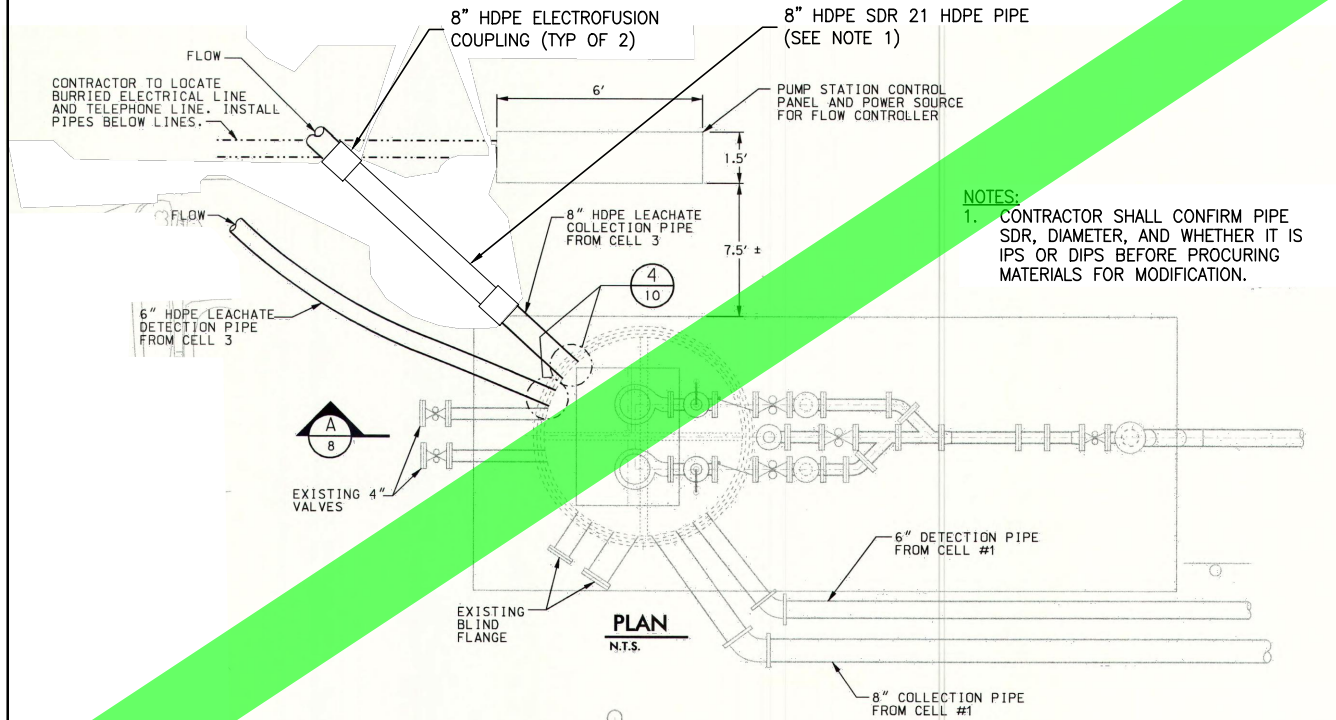
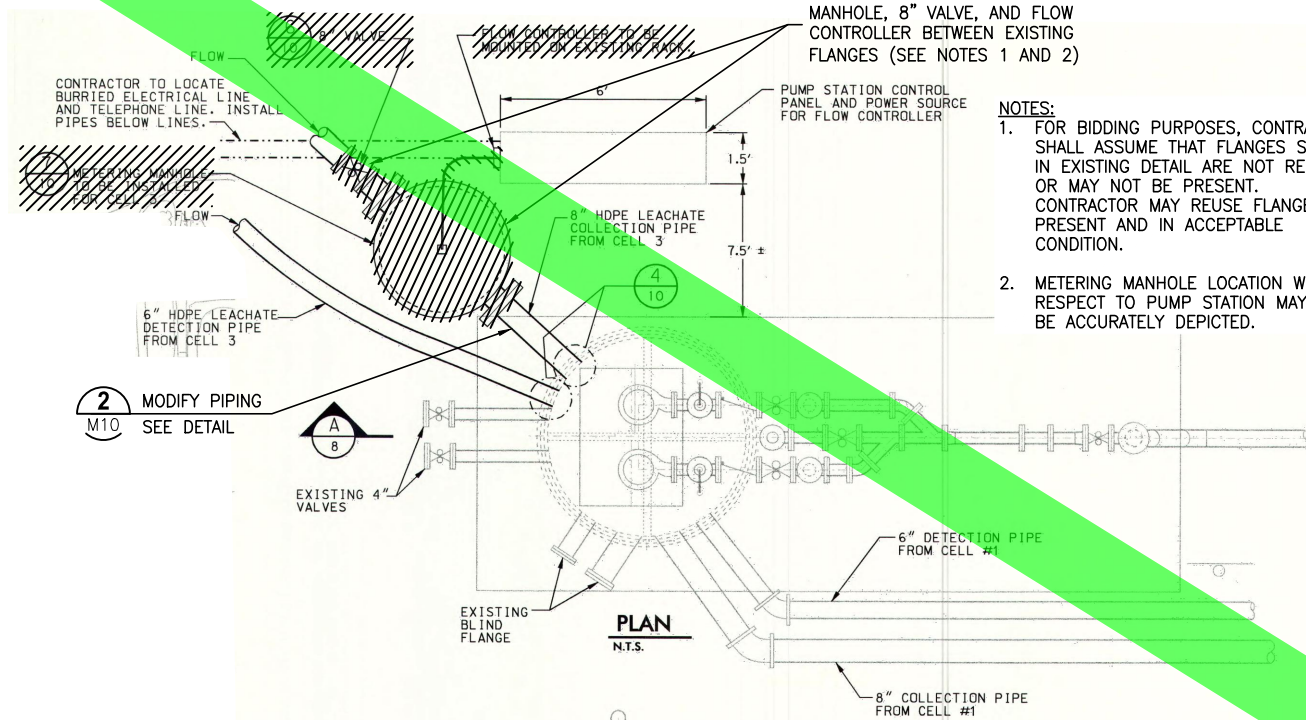
BID DOCUMENTS



DEMOLISH AND DISPOSE OF METERING MANHOLE, 8" VALVE, AND FLOW CONTROLLER BETWEEN EXISTING FLANGES (SEE NOTES 1 AND 2)

- NOTES:**
1. FOR BIDDING PURPOSES, CONTRACTOR SHALL ASSUME THAT FLANGES SHOWN IN EXISTING DETAIL ARE NOT REUSABLE OR MAY NOT BE PRESENT. CONTRACTOR MAY REUSE FLANGES IF PRESENT AND IN ACCEPTABLE CONDITION.
 2. METERING MANHOLE LOCATION WITH RESPECT TO PUMP STATION MAY NOT BE ACCURATELY DEPICTED.

- NOTES:**
1. CONTRACTOR SHALL CONFIRM PIPE SDR, DIAMETER, AND WHETHER IT IS IPS OR DIPS BEFORE PROCURING MATERIALS FOR MODIFICATION.



Delete Drawing. Work has been deleted from project.

METERING MANHOLE DEMOLITION DETAIL 1
NTS C13,M9

MODIFY PIPING DETAIL 2
NTS M10

EXISTING PUMP STATION

EXISTING PUMP STATION

| DATE | REVISIONS | BY | APPRD. |
|------|-----------|----|--------|
| | | | |

| | |
|----------|-----------|
| DESIGNED | GREINHART |
| DRAWN | PUPSTILL |
| CHECKED | TMCKNIGHT |



HIGHLANDS COUNTY SOLID WASTE MANAGEMENT CENTER
CELL 5 LANDFILL EXPANSION
HIGHLANDS COUNTY, FLORIDA

MECHANICAL DETAILS

GEORGE A. REINHART, III, PH.D., PE, STATE OF FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. 66516
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| | | | |
|-------------|--------------|---------|----------|
| PROJECT NO: | 08345-045-01 | DATE: | SEP 2023 |
| INDEX NO: | | DWG NO: | M10 |

BID DOCUMENTS

Y:\08345-HIGHLANDS COUNTY\PROJECTS\045-01-HCSWMC-CLASS-I-EXPANSION\CAD\DWGS\CONSTR\MCHANICAL\08345045-M10.DWG

ATTACHMENT 3

**REVISED BID FORM AND
SPECIFICATION SECTION 01200**

Utilize
A3-2 Itemized Bid Form to submit
pricing

SECTION 01200
MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. This Section covers methods of measurement and payment for items of work under this Contract.
- B. The total Contract Price shall cover all work required by the Contract Documents. All cost in connection with the proper and successful completion of the work including furnishing all materials, equipment, and tools and performing all necessary labor and supervision to fully complete the work, shall be included in the unit price and lump-sum Bid prices. All work not specifically set forth as a pay item in the Bid Form or Bid Schedule shall be considered a subsidiary/ ancillary obligation of the Contractor and all costs in connection with these subsidiary/ancillary obligations shall be included in the Bid(s) to provide a complete and functional Project.

1.02 EXCAVATION, TRENCHING, AND CLEARING

- A. Except where otherwise specified, the unit price or lump-sum price bid for each item of work which involves excavation, trenching, clearing, grubbing, or disposal of cleared and grubbed materials shall include all costs for such work. No direct payment shall be made for clearing, grubbing, disposal of cleared or grubbed materials, excavation, trenching, disposal of surplus excavated material, handling water (and groundwater), and purchasing and hauling of required fill material. All excavation and trenching shall be unclassified as to materials which may be encountered; in addition, trenches shall be unclassified as to depth, unless otherwise stated.

1.03 LUMP SUM

- A. For lump-sum items, payments shall be made to the Contractor in accordance with an accepted Progress Schedule of Values on the basis of actual work completed and accepted by the Owner at the final completion of the Project.

1.04 UNIT PRICE

- A. For unit price items, payment shall be made based on the actual amount of work accepted by the Engineer and for the actual amount of materials in place at the final completion of the Project, as confirmed by the final measurements.

- B. After the work is completed and before final payment is made, the Engineer will make final measurements, with all required assistance from the Contractor, to determine the quantities of various items of work accepted as the basis for the final unit price payment.

1.05 PAYMENT FOR INCREASED OR DECREASED QUANTITIES

- A. When alterations in the quantities of unit price work not requiring a Change Order(s), as herein provided for, are ordered and performed, the Contractor shall accept payment in full at the Contract unit price multiplied by the actual quantities of work constructed and accepted by the Engineer at the completion of the project.
- B. The actual percentage of each lump-sum bid item completed by the Contractor and accepted by the Engineer at the final completion of the Project will be paid to the Contractor.

1.06 DELETED ITEMS

- A. The Engineer may at any time order deletions or revisions in the work. This action shall in no way invalidate the Contract and no financial allowance or compensating payment for anticipated profit, overhead, etc., will be made for items so eliminated in making final payment to the Contractor.

1.07 PARTIAL PAYMENTS

- A. Partial payments shall be made monthly as the work progresses. Partial payment shall be made subject to the provisions of the Part B, Conditions of the Contract.

1.08 PAYMENT FOR STORED MATERIAL DELIVERED TO THE PROJECT

- A. When requested by the Contractor and at the discretion of the Owner and Engineer, payment may be made for all or part of the value of acceptable materials and equipment to be incorporated into bid items, which have not been used, and which have been delivered to the construction site or placed in storage places acceptable to the Engineer. The Contractor shall provide receipts for all stored material items requested for reimbursement which clearly identify the stored material item, where it is to be constructed, the unit cost of the item, as well as the total cost of the delivered item(s), the quantity of the item, the brand name of the item, and the supplier. Note that there are additional documentation requirements and storage requirements within the Contract Documents that must also be met before the Contractor can be reimbursed for these stored materials.

- B. No payment shall be made for fuels, supplies, installation or connection hardware, lumber, false work, or other similar materials or on temporary structures or other work (items) of any kind which are not a permanent part of the Contract. Items having a value of less than \$2,500 shall not be compensated for as a stored material item.

1.09 FINAL PAYMENT

- A. If requested by the Engineer, the Contractor shall field verify all quantities in dispute by using visual observation, taped measurements, or other methods designated by the Engineer. The field verification shall be made in the presence of the Engineer and agreed to by both the Engineer and the Contractor. The Engineer will prepare a final adjusting Change Order that will adjust the final quantities of the project Bid Schedule to reflect the actual work accepted by the Engineer and for which the Contractor will be compensated.

1.10 SCHEDULE OF VALUES

- A. A schedule of values for the lump-sum bid items and some of the unit-price bid items as required by the Engineer shall be submitted and accepted before the Notice to Proceed. The schedule of values shall be based on the prices bid in the Bid Schedule(s). Prices bid in the Bid Schedule(s) cannot be changed in the schedule of values; they can only be broken down into more detail so that the Engineer can more accurately review and approve the Contractor's pay application for the completed work.

1.11 MISCELLANEOUS CONSTRUCTION ITEMS

- A. The Contractor shall take all precautions necessary to protect existing utilities, roads, and miscellaneous items from damage during construction.
- B. The Contractor shall repair, relocate, or replace existing utilities, roadways, and miscellaneous items to pre-construction conditions. The repair of asphalt roads includes but is not limited to supplying, hauling, and placing stabilized subgrade, asphalt, limerock, traffic signs, and roadway markings.
- C. All repairs, relocations, and replacements necessary are considered incidental to the work and will be at the Contractor's cost, with no cost to the Owner.
- D. The lump-sum bid items for all pipe items shall constitute full compensation for furnishing, laying, jointing, and testing of pipe; dewatering; excavation and backfill; and cleanup.

PART 2 PAY ITEM DESCRIPTIONS

2.01 BID

The descriptions provided in the following Paragraphs are to be used by the Bidder in preparing the Bid Schedule(s). They generally indicate how the major workscope items and their respective costs are to be separated into the line items listed in the Bid Schedule(s). These descriptions are not fully representative nor all-inclusive of the work required to complete the project in accordance with the Contract Documents. It is the Bidder's responsibility to include all required costs within the most appropriate line item(s).

GENERAL

Item 1. Mobilization and Demobilization

- a. This item includes all costs for construction preparatory operations including but not limited to moving personnel and equipment to and from the site, field offices, sanitary facilities, project administration and management, insurance, bonds, Owner and Engineer indemnification, temporary utilities, permits related to construction, and all other similar activities and facilities necessary for executing this project.
- b. This item also includes all costs for establishing, maintaining, and monitoring a complete and comprehensive site health and safety program during the execution of the Contract that complies with all local, state, and federal safety guidelines and laws.
- c. This item shall not exceed 5% of the total Contract Amount.
- d. This item is lump sum.
- e. The Contractor will be paid 40% of this item on completing mobilization and 10% on demobilization; the remainder will be paid on a prorated basis equally over the remaining scheduled construction duration.

Item 2. Environmental Protection

- a. This item includes but is not limited to:
 - i. All costs for providing and implementing a comprehensive environmental protection program for the project site and areas affected by the construction whether or not it is specifically delineated in the Drawings and stated in the Specifications.
 - ii. Providing all labor, equipment, and materials necessary to prevent environmental damage to the soil, water, and air in conformance with all local, state, and federal laws.

- iii. Examples include controlling stormwater, erodible soils, noise, dust, pollutants, trash, waste, pumping discharge, and any other substance or activity that may adversely impact the environment.
- iv. Performing and obtaining required permits identified by the Contractor, monitoring, maintaining, and restoring the site.
- b. This item is lump sum.
- c. The Contractor will be paid 30% of this item upon Environmental Protection and Dewatering Plan(s) approval, establishing environmental protection as determined by the Engineer, and submitting the Florida Department of Environmental Protection (FDEP) National Pollutant Discharge Elimination System (NPDES) Construction General Permit Notice of Intent, and the remainder will be paid on a prorated basis equally over the remaining construction duration.

Item 3. Construction Surveying and Record Drawings

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services necessary to perform construction surveying and provide Record Surveys and Record Drawings.
 - ii. Establishing vertical control and horizontal control, staking out and re-staking construction, and performing record surveying throughout the construction duration.
 - iii. Updating the electronic copy of the Record Drawings, identifying items that were revised during the project, and providing electronic (.pdf and .dwg) and paper copies.
 - iv. Providing all required surveys signed and sealed by a Florida-licensed professional engineer or professional surveyor and mapper, in electronic (.pdf and .dwg) and paper formats.
 - v. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.
- b. This item is lump sum.
- c. A maximum of 60% of this item will be paid on a prorated basis equally over the construction duration. Once the Record Drawings and Record Surveys have been determined to be complete by the Engineer in accordance with the requirements of the Specifications, the entire lump sum will be paid to the Contractor.

Item 4. Clearing, Grubbing, and Stripping

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services necessary to clear, grub, and strip the limits of clearing, grubbing, and stripping.
 - ii. Clearing vegetation, grubbing soil, stripping topsoil, stripping mulch, and loading, hauling, and unloading material at a location designated by the Engineer.

- iii. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.
- b. This item is lump sum.
- c. Partial payments will be paid based on the percentage of clearing, grubbing, and stripping completed and accepted as determined by the Engineer.

Item 5. Site Demolition

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services necessary to demolish existing site infrastructure and roadways within the project limits.
 - ii. Demolishing, excavating, loading, hauling, stockpiling, and disposing.
 - iii. Performing all related work as shown on the Drawings, stated in the Specifications, and as can be reasonably determined based on the scope and nature of the proposed construction work.
- b. This item is lump sum.
- c. Partial payments will be paid based on the percentage of demolition completed and accepted as determined by the Engineer:
 - i. Earthwork required for site demolition shall be considered incidental to the work and payment for this earthwork shall not be made under any other pay item.

Item 6. Stormwater Management System

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services necessary to construct the stormwater management system.
 - ii. Furnishing and installing drainage structures, drainage pipe, mitered end sections, concrete ditch pavement, and riprap with bedding stone and filter fabric.
 - iii. Excavating, installing, and compacting backfill for drainage improvements; and furnishing and installing all appurtenances, fittings, and fasteners to complete the work.
 - iv. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.
- b. This item is lump sum.
- c. Partial payments will be paid based on materials stored and the percentage of work completed and accepted as determined by the Engineer.

Item 7. Seeding and Sodding

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services required to furnish and install sod and to mulch and seed.

- ii. Preparing topsoil (excluding the drainage soil stockpiles) and fertilizing, watering, and mowing until established.
- iii. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.
- b. This item is lump sum.
- c. Partial payments will be paid based on the percentage of work completed and accepted as determined by the Engineer.

Item 8. Dewatering

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services necessary to permit, design, construct, implement, maintain, and operate a dewatering system and surface-water management system.
 - ii. Developing dewatering and effluent disposal plans and surface-water management plans, constructing the systems, operating and maintaining the systems, and preventing surface-water discharge from other locations onto the project site.
 - iii. Obtaining permits, including applicable permit fees, from all regulatory agencies with jurisdiction to operate and maintain the dewatering system and discharge dewatering effluent as required.
 - iv. Field monitoring and testing of the dewatering discharge/effluent related to permit and regulatory requirements as needed.
 - v. Evaluating the depth to the cemented silt layer into which the environmental cutoff wall will be keyed.
 - vi. All piping, fittings, pumps, connections, and associated infrastructure required to pump the dewatering effluent to the leachate storage tank for disposal by the Owner.
 - vii. Producing required documentation and performing all related work as shown on the Drawings and as stated in the Specifications.
- b. This item does not include:
 - i. The cost for off-site disposal of the dewatering effluent requiring off-site disposal from the point that the Contractor delivers the effluent to the leachate storage tanks. This disposal cost shall be borne by the Owner.
 - ii. The cost for installing the environmental cutoff wall.
- c. This item is lump sum.
- d. The Contractor will be paid 60% of this item upon installing and starting up an approved dewatering system, surface-water management system, and dewatering effluent requiring an off-site disposal system and 10% upon removing dewatering equipment including abandoning associated components and removing the temporary portions of the surface-water management system as determined by the Engineer. The remainder will be paid on a prorated basis equally over the duration of construction.

Item 9. Bentonite Slurry Wall

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services associated with installing the environmental cutoff wall and reinforcing the bridging layer above the wall.
 - ii. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.
- b. This item is lump sum.
- c. Partial payments will be paid based on the percentage of work completed and accepted as determined by the Engineer.

Item 10. Groundwater Monitoring Wells and Gas Probes

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services required to furnish and install the groundwater monitoring wells and gas probes.
 - ii. Supplying, installing, constructing, and developing the monitoring wells, drilling, surveying, permitting, and providing concrete pads, bollards, and signage.
 - iii. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.
- b. This item is lump sum.
- c. The Contractor will be paid 100% of this item upon installing, developing, and completing the groundwater monitoring wells and gas probes as determined by the Engineer.

~~Item 11.~~ Item 11.a. Earthwork – Excavate to Backfill and to Stockpile

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services associated with excavating the project subgrade, backfilling to construct the project subgrade, and stockpiling the remaining material where directed by the Owner, including preparing the subgrade for installing the geosynthetic clay liner (GCL), all aspects of the bottom-liner systems and stormwater systems, and all earthwork not included under other pay items as presented in the Contract Documents or as directed by the Engineer.
 - ii. Excavating, loading, hauling, unloading, and stockpiling, compacting, grading, quality-control (QC) testing, reworking and retesting, maintaining, and protecting the completed earthwork; correcting wind and stormwater impacts; and assisting with manufacturer's quality assurance (MQA) and Contractor's quality assurance (CQA) testing and retesting.
 - iii. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.

- b. This item is lump sum.
- c. Partial payments will be paid based on the percentage of area of project work completed, tested, and approved as determined by the Engineer.

Item 11.b. Earthwork – Excavate from Borrow Area and Backfill

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services associated with excavating soil from the borrow area identified as Future Borrow Pit Area on Drawing C3, and backfilling to construct the project subgrade if insufficient soil is available to construct the subgrade due to unsuitable soils in the subgrade or the use of excavated subgrade soils for the sand drainage layer.
 - ii. Excavating, loading, hauling, unloading and stockpiling, compacting, grading, quality-control (QC) testing, reworking and retesting, maintaining, and protecting the completed earthwork; correcting wind and stormwater impacts; and assisting with the manufacturer’s quality assurance (MQA) and Contractor’s quality assurance (CQA) testing and retesting.
 - iii. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.
- b. This item is unit price and shall only be used for construction purposes on approval by the Engineer.
- c. Partial payments will be paid based on the quantity of material excavated, backfilled to construct the subgrade, tested, and approved as determined by the Engineer.

Item 12. Earthwork – Supply and Install Drainage Soil

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services associated with supplying and installing drainage soil for the drainage soil layer from the Contractor’s source.
 - ii. Excavating from the Contractor’s source, loading, hauling, unloading, placing, installing, compacting, grading, QC testing, reworking and retesting, maintaining, and protecting the completed earthwork; correcting wind and stormwater impacts; and assisting with MQA and CQA testing and retesting.
 - iii. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.
- b. This item is lump sum.
- c. Partial payments will be paid based on the percentage of area of the drainage soil layer completed, tested, and approved as determined by the Engineer.

Item 13. Geosynthetic Clay Liner

- a. This item includes but is not limited to:
 - i. All labor, equipment, incidental materials, and services necessary to furnish and install the GCL.
 - ii. Procuring, testing, transporting, unloading, storing, handling, and installing the GCL.
 - iii. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.
- b. This item is lump sum.
- c. Partial payments will be paid based on the percentage of the area of the GCL completed, tested, and approved for overlying geomembrane placement as determined by the Engineer.
- d. This item does not include procuring the GCL material or loading, transporting, unloading, and storing the GCL material at the project site.

Item 14. Secondary Geomembrane

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services necessary to furnish and install the secondary geomembrane.
 - ii. Procuring, testing, transporting, unloading, storing, handling, uncovering existing geomembrane at tie-in locations, and installing.
 - iii. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.
- b. This item is lump sum.
- c. Partial payments will be paid based on the percentage of area of the secondary geomembrane completed, tested, and approved for overlying the secondary geocomposite placement as determined by the Engineer.
- d. The quantity of secondary geomembrane required for testing, overlapping, tying-in, anchoring, and waste shall be incidental to this work.

Item 15. Secondary Geocomposite

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services necessary to furnish and install the secondary geocomposite.
 - ii. Procuring, testing, transporting, unloading, storing, handling, and installing the secondary geocomposite.
 - iii. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.
- b. This item is lump sum.

- c. Partial payments will be paid based on the percentage of area of the secondary geocomposite completed, tested, and approved for overlying the primary geomembrane placement as determined by the Engineer.
- d. The quantity of secondary geocomposite required for testing, overlapping, tying-in, anchoring, and waste shall be incidental to this work.

Item 16. Primary Geomembrane

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services necessary to furnish and install the primary geomembrane.
 - ii. Procuring, testing, transporting, unloading, storing, handling, uncovering existing geomembrane at tie-in locations, and installing the primary geomembrane.
 - iii. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.
- b. This item is lump sum.
- c. Partial payments will be paid based on the percentage of area of the primary geomembrane completed, tested, and approved for overlying the primary geocomposite placement as determined by the Engineer.
- d. The quantity of primary geomembrane required for testing, overlapping, tying-in, anchoring, and waste shall be incidental to this work.

Item 17. Primary Geocomposite

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services necessary to furnish and install the primary geocomposite.
 - ii. Procuring, testing, transporting, unloading, storing, handling, and installing the primary geocomposite.
 - iii. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.
- b. This item is lump sum.
- c. Partial payments will be paid based on the percentage of area of the primary geocomposite completed, tested, and approved for overlying the drainage soil layer placement as determined by the Engineer.
- d. The quantity of primary geocomposite required for testing, overlapping, tying-in, anchoring, and waste shall be incidental to this work.

Item 18. Rain Tarp

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services necessary to furnish and install the rain tarp.

- ii. Procuring, testing, transporting, unloading, storing, handling, installing, and ballasting the rain tarp.
 - iii. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.
- b. This item is lump sum.
- c. Partial payments will be paid based on the percentage of area of the rain tarp completed, tested, and approved as determined by the Engineer.
- d. The quantity of rain tarp required for testing, overlapping, tying-in, anchoring, and waste shall be incidental to this work.

Item 19. Anchor Trenches

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services necessary to construct the landfill anchor trenches and supply and install the edge-of-liner markers.
 - ii. Excavating, loading, hauling, placing, compacting, grading, QC testing, reworking and retesting, maintaining, and protecting the completed earthwork; correcting wind and stormwater impacts; and assisting with MQA and CQA testing and retesting.
 - iii. Procuring, testing, transporting, unloading, storing, handling, and installing the anchor trench materials.
 - iv. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.
- b. This item is lump sum.
- c. Partial payments will be paid based on the percentage of the anchor trench completed, tested, and approved as determined by the Engineer.
- d. The quantity of materials required for testing, overlapping, and waste shall be incidental to this work.

Item 20. Leachate-Collection and Leak-Detection Trenches

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services necessary to construct the leachate collection and leak-detection trenches.
 - ii. Procuring, testing, transporting, installing, and inspecting the separation geotextile, cushioning geotextile, trench gravel, perforated high-density polyethylene (HDPE) pipe, solid-walled HDPE pipe, clean-outs, and boots.
 - iii. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.
- b. This item is lump sum.
- c. Partial payments will be paid based on the linear feet of trench completed, tested, and approved as determined by the Engineer.

Item 21. Leachate Pump Stations

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services associated with the leachate pump stations, sumps, and side-slope riser systems.
 - ii. Supplying, loading, transporting, unloading, fabricating, excavating, backfilling, and testing the leachate pump stations and side-slope riser systems, concrete slabs and subgrade, asphalt paving with stabilized subgrade and limerock base, bollards, piping, fittings, control panels, riser pipes, gravel sumps, and appurtenances.
 - iii. Furnishing and installing the leachate-removal pumping systems, controls, and associated work, pumps, discharge line, pull cable; connecting to the blind flange adaptor, control panel, junction boxes, power transfer switch; providing electrical power to the control panel, electrical services; installing conduit, valves, meters, level sensors, and piping; and testing, startup, and training.
 - iv. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.
- b. This item is lump sum.
- c. Partial payments for this item will be paid based on the percentage of completed and approved work as determined by the Engineer.
- d. The maximum amount paid will be 80% of the lump-sum price until the pump stations are demonstrated to be fully functional, Record Documents are approved, startup is completed, and all work for this item is accepted as determined by the Engineer.

Item 22. Leachate Force Main

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services necessary to supply, install, and construct the leachate force main and discharges to the existing leachate storage ponds.
 - ii. Excavating, backfilling, road crossings, pipe testing, and providing and installing all piping, fittings, valves, and appurtenances including tank discharges.
 - iii. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.
- b. This item is lump sum.
- c. Partial payments for this item will be paid based on the percentage completed and approved as determined by the Engineer.

Item 23. Stormwater Pump

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services associated with the stormwater pump, hoses, piping, strainer, trash rack, and appurtenances.
 - ii. Supplying, loading, transporting, unloading, fabricating, installing, and testing the stormwater pumping system, bollards, piping, fittings, and appurtenances.
 - iii. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.
- b. This item is lump sum.
- c. Partial payments for this item will be paid based on the percentage of completed and approved work as determined by the Engineer.
- d. The maximum amount paid will be 80% of the lump-sum price until the pumping system is demonstrated to be fully functional, Record Documents are approved, startup is completed, and all work for this item is accepted as determined by the Engineer.

~~Item 23. Cell 3 Piping Modifications~~

- ~~a. This item includes but is not limited to:~~
 - ~~i. All labor, equipment, materials, and services necessary to supply, install, and construct the modifications to the Cell 3 piping discharging to the Cell 1B pump station.~~
 - ~~ii. Demolishing the existing metering system, excavating, backfilling, pipe testing, and providing and installing all piping, fittings, valves, and appurtenances.~~
 - ~~iii. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.~~
- ~~b. This item is lump sum.~~
- ~~c. Partial payments for this item will be paid based on the percentage completed and approved as determined by the Engineer.~~

Item 24. Paved and Unpaved Site Roads

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services necessary to construct stabilized subgrade, limerock base, and paved surface where applicable for the paved and unpaved site roads.
 - ii. Excavating from the Contractor's source, loading, hauling, installing, grading, and testing.
 - iii. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.

- b. This item is lump sum.
- c. Partial payments will be paid based on the percentage of completed and approved work on a square-yard basis as determined by the Engineer.

DEDUCTIVE ALTERNATE

Item 25. Earthwork – Excavate Drainage Soil from On ~~s~~Site and Install

- a. This item includes but is not limited to:
 - i. All labor, equipment, materials, and services related to earthwork necessary to excavate sand drainage layer material onsite from the stockpiled material excavated for landfill construction or from the proposed borrow area if the material meets the requirements of the Technical Specifications and installing to construct the drainage sand layer including the diversion berms within the lined cell limits and all other earthwork above the liner system.
 - ii. Excavating on site, loading, hauling, stockpiling, placing, compacting, grading, QC testing, reworking and retesting, maintaining, and protecting the completed earthwork; correcting wind and stormwater impacts; and assisting with MQA and CQA testing and retesting.
 - iii. Producing required documentation and performing all related work as shown on the Drawings and stated in the Specifications.
- b. This item is lump sum.
- c. Partial payments will be based on the percentage of completed, installed, tested, and approved drainage soil as determined by the Engineer.
- d. This item replaces all work specified under *Item 12: Earthwork – Supply and Install Drainage Soil*.

END OF SECTION