HIGHLANDS COUNTY BOARD OF COUNTY COMMISSIONERS (HCBCC)
PURCHASING DIVISION
600 S. Commerce Ave
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DATE: April 3, 2024

BID NO. 23-030-KSB ADDENDUM No. 4

Project.: Highlands County Solid Waste Management Center Class I Cell 5 Landfill Expansion Highlands County Project No. 21078

The following represents clarification, additions, deletions, and/or modifications to the above referenced solicitation. This addendum shall hereafter be regarded as part of the solicitation. Items not referenced herein remain unchanged. Words, phrases or sentences with a strikethrough represent deletions to the original solicitation. Underlined words and bolded, phrases or sentences represent additions to the original solicitation, as applicable.

Questions and Answers

	REMAINING QUESTION FROM ADDENDUM 3
Q16	Detail 2 on page C18 shows 12" of structural fill on top of Subgrade but elevations on page C8 top of subgrade and C10 top of secondary liner appear to be the same elevation. Is this 12" of structural fill required? Where is it to be paid?
A16	**The elevations shown on Drawings C8 and C10 represent the elevation of the top of the subgrade, which is also the top of the structural fill layer. Structural fill material is the same material as General Fill with a smaller allowable maximum particle size. The onsite material is expected to be acceptable for use as the structural fill material. Over excavating and backfilling are not necessary to construct the structural fill layer where the top of this layer lies below the existing grade as long as it meets the requirements for structural fill. This work is paid for under Bid Item 11.a., Earthwork – Excavate to Backfill and to Stockpile.** **If over excavation and replacement were required to construct the structural fill layer, as directed by the Engineer, the work will be paid for under Bid Item 11.b., Earthwork – Excavate from Borrow Area and Backfill.**
Q1	Can the County share their estimate for the probable cost of construction for the project with the Bidders?
A1	**Please refer to the response to Addendum 3, Question 12.**
Q2	The "Invitation to Bid" for the project indicates that the bid can either be submitted electronically or via hard copy submission. It also states that the original bid bond must be "physically received by Purchasing prior to the submission deadline…" If we are physically

	delivering a hard copy of the bid, is it acceptable to package the bid bond with the bid or should it be packaged separately and delivered prior to submission of the bid?
A2	**See page 5, Section 00010-1, Invitation to Bid. The bond may be included with the hard-copy submission package.**
Q3	The "Statement of Indemnification" form to be submitted with the bid includes the Florida Department of Transportation (FDOT). Will this statement of indemnification apply to FDOT?
A3	**Division 0, Section 00160-8, Certificates and Forms, relating to "Florida Department of Transportation (FDOT)" is to be removed from the solicitation package. This is not applicable to this project.**
Q4	Where should the Contractor plan to stockpile material stripped from the Cell 5 footprint?
A4	**This material shall be stockpiled to the east of the dewatering area. Drawing C2 has been revised to indicate the location of this stockpile. Please note that this material will become the property of the Owner for their use. Additionally, the Owner may elect to strip this material themselves prior to the beginning of work by the Contractor. The Contractor shall install a silt fence around the stockpile meeting the requirements of Drawing EC3. Attachment 1.a provides Revised Drawing C2. Attachment 1.b provides redline markups showing the revisions to the Drawing C2.**
Q5	Specification Section 02330, Soil-Bentonite Cutoff Wall, Part 2, paragraphs B and C describe the temporary and permanent soil caps for the completed slurry cutoff walls. Paragraph B states that the temporary cover shall be at least two feet thick. Does this mean that the top elevation of the wall would be level two feet below the lowest elevation (on the low side of the cell) and the cover soil (both temporary and permanent) would be 2' thick on the west end and slope up to be thicker to the east? In other words, is it correct to assume that the top of the slurry wall would be at a fixed elevation with no slope.
A5	**The Temporary Soil Cap (Section 02330, Soil-Bentonite Cutoff Wall, Article 2.01.B) is intended to be installed if the slurry wall is excavated and constructed from existing site grades or at an elevation higher than the proposed bottom liner grades as shown on Drawing C10. The top of the Permanent Soil Cap (Section 02330, Article 2.01.C) is to be installed at the elevation of the bottom liner grades as shown on Drawing C10. If the soil bentonite cutoff wall is constructed after construction of the final bottom liner grade, then only the Permanent Soil Cap would be required.**
Q6	It was stated during the pre-bid meeting that the base elevation will be 47 ft. NGVD for the cutoff walls. Please confirm that this will be the base elevation for both cutoff walls.
A6	**That is correct. The base elevation of the Environmental Cutoff Wall shall be at EL 47.0. Please refer to the responses to Addendum 3, Questions 2 and 3, for additional information.**
Q7	It is our understanding that temporary piezometers will be installed within each of the perimeters of the slurry wall footprints in order to monitor the effectiveness of the dewatering system. Is it correct to assume that these piezometers can be abandoned prior to the installation of the geosynthetic materials once the effectiveness of the dewatering system has been verified?

A7	**One piezometer shall be installed within the limits of each soil bentonite cutoff wall (two total piezometers) on the west end. The piezometers can be abandoned immediately before the geosynthetic materials are installed once the effectiveness of the dewatering system is demonstrated.**
Q8	Since the dewatering effort will need to continue until the soil cover is placed over the cell, will it be permissible to install a pipe through the slurry wall below the cell subgrade that would report to the perimeter of the cell for pumping? Will it then be acceptable to abandon and grout-fill these pipes (assuming one per slurry wall containment) once the dewatering effort is complete?
A8	**The proposed approach is acceptable.**
Q9	In the event that unsuitable soil is discovered in the work area that would need to be removed and replaced, how would such work be paid for under the contract?
A9	**If unsuitable soils is discovered within the work area, excavation and replacement shall be paid for under Item 11.b. Earthwork – Excavate from Borrow Area and Backfill. Removal and replacement of soils shall be as directed by the Engineer. Also, soil with a moisture content outside the ranges specified in Section 02301, Earthwork for Landfill Construction, are not classified as unsuitable and do not qualify for payment as unsuitable material. The Contractor shall test materials as needed to obtain installed density and moisture contents.**
Q10	Bid Item #5, Site Demolition, on the bid form is shown with a unit of measure of "LF." Is it correct to assume that the unit of measure should read LS for lump sum?
A10	**That is correct. A revised copy of the bid form is included as Attachment 2 and electronically.**
Q11	Plan Sheet C1 ("Site Plan") shows an area on the far southeast side of the landfill that is marked as "Future Borrow Pit Area." We were told during the pre-bid meeting that this would be the area that we would need to use if the Owner elects to go with the deductive alternate bid item for onsite drainage soil. If the Owner does elect to go with this option, will all clearing, access road construction, stripping, etc., for borrow area preparation be the responsibility of the Contractor?
A11	**Development of the borrow area such as clearing, access road construction, striping, over burden removal, etc., shall be the responsibility of the Owner. Development of this area by the Owner is expected to occur before the drainage soil is installed. The Contractor will need to provide all equipment and operations to excavate suitable soils, load, transport, install, and repair any damage to the haul road as a result of their construction activities. Please refer to the response to Question 16 for additional information.**
Q12	If the onsite borrow area is to be developed, where should clearing debris and strippings be disposed of/stockpiled on the site?
A12	**Please refer to the response to Question 11 in this addendum.**
Q13	Is there any geotechnical information available for the onsite borrow pit area that will help us understand if there will need to be any overburden that would need to be removed to

	get to the onsite drainage sand? If overburden needs to be removed, where would that be stockpiled?
A13	**Please refer to the response to Questions 11 and 16.**
Q14	Will the drainage soil excavated from onsite be suitable for use on the project without the need for any screening or conditioning?
A14	**The Contractor shall assume that processing the material (other than excavation and installation) will not be required and should not be included in the cost of this work for bidding purposes. If processing is required and the Owner opts for this approach, the cost of the additional work will be negotiated and addressed through a change order.**
Q15	Is there a requirement as to which area of the onsite borrow area footprint would need to be developed first?
A15	**Attachment 3 includes a copy of the borrow area construction drawings. Cells will be developed sequentially by the Owner starting with Cell 1. Please refer to the responses to Questions 11 and 16 for additional information.**
Q16	Where would dewatering from the onsite borrow area be discharged to?
A16	**The development of the onsite borrow area and dewatering operations will be by the Owner. Please refer to the response to Question 11 for additional information**
Q17	What would the final disposition of areas developed in the borrow pit need to look like (perimeter slope angle, final vegetation, etc.)?
A17	**The development of the onsite borrow area and dewatering operations will be by the Owner. The Contractor will need to stay within the limits of the proposed excavation limits and final grades. The Contractor is not expected grade down to final grades, install to soil, or grass the borrow are upon completion of their work and should not include this work in their bid price.**
Q18	Under which bid item should the work required to expose and clean the tie-in to existing Cell 3 be included?
A18	**This work shall be included under Bid Item 19, Anchor Trenches.**
Q19	Under which bid item should the cell access ramp and turnaround pad be included?
A19	**This work shall be included under Bid Item 24, Paved and Unpaved Site Roads.**
Q20	The plans and specifications do not appear to correspond to each other regarding the quantity of leachate pumps at each pump station. The plans appear to call for four (4) pumps per pump station (one (1) for each riser and one (1) spare. Specification Section 11300 – Leachate Pumps, Part 2.03A specifies a total of eight pumps per pump station (four collection pumps, two detection pumps, and two spare pumps). Are we required to supply a total of four (4) pumps per pump station (two collection pumps, one detection pump, and one spare pump?
A20	**A total of four pumps shall be provided per pump station (two collection pumps, one detection pump, and one spare pump) for a total of eight pumps.**
Q21	Please specify the total length of each pump lead and cable.

A21	**The Contractor is responsible for determining the total pump lead cable length for each individual pump and coordinating that with the pump supplier/manufacturer. Total length will be required as shown on the Drawings, but the exact length will depend on the conduit layouts and conduit routings.**
Q22	Detail 1 on Drawing No. C24 instructs us to raise existing groundwater monitoring wells MW-32G and MW-33G. Drawing No. C28 provides details for raising existing groundwater monitoring wells. However, this work does not appear on the Bid Form, nor is it described in the Measurement and Payment specifications. Are we to include this work under Bid Item 10 Groundwater Monitoring Wells and Gas Probes? Also, please provide the height to which they are to be raised.
A22	**Raising the groundwater monitoring wells has been removed from the project. Attachment 1.a provides Revised Drawings G2, C2, and C24. Attachment 1.b provides redline markups showing the revisions to the Drawings C2, C24, and C28. For MW 32G, the Contractor shall excavate outside the footprint of the base of the well casing to allow for a soil pad the support the current above grade infrastructure for MW 32G and to allow for access for future sampling as directed by the Engineer in the field during construction.**
Q23	Detail 1 on Drawing No. C24 instructs us to protect existing groundwater monitoring well MW-31G. Does this existing groundwater monitoring well also get raised, like MW-32G and MW-33G? Or, is it to be left alone and not raised.
A23	**Raising the groundwater monitoring wells has been removed from the project. Please refer to the response to Question 22 for additional details.**
Q24	Note 1 on Drawing No. C8 instructs Contractor to install piezometers within the Cell 5 project area to monitor groundwater levels and dewatering system performance. However, there are no details of new piezometers to be installed. Please provide the quantity of piezometers to be installed, as well as the details and specifications for the work.
A24	**The piezometers shall be of the same general design as the groundwater monitoring wells shown on Drawing C27 but with only the PVC pipe stub up above grade and not the other above-grade components including concrete pad, aluminum case, and bollards. The piezometers shall be screened in the zone in which groundwater is to be observed. Additional information on installation is included in Specification Section 02526, Groundwater Monitoring Well Construction and Well Abandonment. Please refer to the response to Question 7 for additional details.**
Q25	Note 4 on Drawing No. C8 instructs Contractor to abandon piezometers in accordance with the plans and specifications. However, this work is not provided in the plans. Please provide the quantity of piezometers to be abandoned, as well as the details and specifications for the work.
A25	**The piezometers shall be abandonment in accordance with Specification Section 02526, Groundwater Monitoring Well Construction and Well Abandonment. During abandonment, piezometer infrastructure shall be demolished to 2 feet below the final bottom liner elevation before completing abandonment in accordance with Specification Section 02526, Article 3.04. Please refer to the response to Question 7 for additional details.**

Q26	Is there a water source onsite which we are allowed to use for the duration of the work? If so, where is the location of the water source? Also, are we required to pay any fees associated with using the water source?
A26	**Please refer to the Well Inventory figure in Attachment 4 for the discussion below.** **The well labeled 1 is a non-potable well, South Florida Water Management District Water Use Permit 28-00339-W. This is a 12-inch-diameter well and is classified as an Industrial Landscape Groundwater Supply well. The source of the water is the Florida Aquifer. The water is chlorinated and supplies bathrooms at the site. It has a permitted capacity of 0.72 MGD. It can be used for construction activities, but the Contractor shall minimize its usage when other sources at the site are acceptable quality for the intended purpose.** **The dry hydrant pump shown on the figure in Attachment 4, which draws water from a previous borrow area, is also available for the Contractor's use.** **No required fees are associated with the use of either of these water sources.**
Q27	Will the water source meet the required specifications for quality water?
A27	**Whether the water from the two sources identified in the response to Question 26 will meet the specified requirements for use in the soil bentonite slurry wall without some form of treatment or softening is unknown.** **Attachment 5 provides available data from surface water and onsite groundwater wells. The onsite non-potable water source is the Floridan Aquifer, and general water quality data can be obtained online for this source.** **Deviations from the requirements of Specification Section 02330, Soil-Bentonite Cutoff Wall, Article 2.01.F.3, in terms of water quality will be allowed if in the soil bentonite cutoff wall subcontractor's professional opinion the quality is compatible with their mix design and they demonstrate that the installed slurry wall will meet the other requirements presented in Section 02330.**
Q28	What is the maximum rate at which we can extract water from the source?
A28	**The dry hydrant pump source has no extraction rate limits other than the installed infrastructure and the capabilities of the Contractor's pumping system.** **Please refer to the response to Question 26 for details on the non-potable well.**
Q29	We have been informed that Argentine Bahia seed is not available until after harvest in September. Due to the bad crop last year and it is also sold out. Pensacola Bahia may possibly be more available. Please confirm that Pensacola Bahia is an acceptable equal.
A29	**Pensacola Bahia is an acceptable equal.**
Q30	Is the gravel specified in Specification Section 02301 Earthwork for landfill construction, Part 2.07 to be used for both the leachate collection and leak detection trenches, as well as the leachate collection and leak detection sumps? If not, please specify what type of gravel each is to receive.

A30	**The gravel specified in Specification Section 02301, Earthwork for Landfill Construction, Article 2.07, can be used for the leachate collection and leak detection trenches, as well as the sumps.**
Q31	Detail 3 on Dwg. No.: C18 shows a gravel filled chamber, with no geotextile, under the leachate collection trench. However, Section A on Dwg. No.: C23 appears to show gravel in this same chamber, but with a geotextile wrap. Does this receive any geotextile? If so, does this geotextile completely wrap around the gravel inside this chamber? Additionally, is this geotextile to be 8oz or 16 oz?
A31	**Detail 3 on Drawing C18, right expanded detail, shows all required geosynthetic layers for the leachate collection trench. Wherever gravel is directly adjacent to geomembrane, a minimum of 32 ounces of geotextile shall be installed consisting of a 16-ounce geotextile (either one 16-ounce or two 8-ounces geotextiles) and a double-sided geocomposite (consisting of a geonet with two 8-ounce geotextiles bonded to it). This also applies to the sumps as presented on Drawing C21 and Note 2.** **The geotextile separating the gravel from the overlying sand shall be 8 ounces.**
Q32	Will the primary geocomposite terminate at the toe of the slope as indicated on details 1/C18 and 4/C20 or will they extend to the edge of liner as shown on dwg C6 notes for the location key map?
A32	**The primary geocomposite terminates at base of the slopes on the east, west, and south sides. On the north side, the primary geocomposite extends to the tie-in with the existing liner system.**
Q33	Location key map on C6 for the secondary geocomposite indicates there will be 2 additional layers in the sump and leachate trench, but the details only show 1 additional layer that overlaps the other and doesn't cover the entire footprint of the sump or trench. Are the details correct or are we to assume that the material will have 2 whole layers covering the footprints of the sump and trench?
A33	**In accordance with Proposed Secondary Geocomposite Location Key Map, Note 2, two layers of secondary geocomposite are required in the leak detection layer of the leachate collection sump and two in the leak detection sump. Please refer to the response to Question 31 for additional details.**
Q34	Detail 3 on Dwg C18 is showing a layer of some material extending 3' minimum past the trench limits underneath the GCL. The zoomed in views do not show anything beneath the GCL. What is that material and does it go in the sump as well?
A34	**Bidders shall disregard the layer in question.**
Q35	Are we required to supply the 4" trash pump shown on Dwg. No. C20? If so, please provide specifications for the two (2) rain tarp stormwater pumps, i.e. manufacturer, model, size, electrical requirements, etc.
A35	**Please refer to the response to Question 5 in Addendum 3.**
Q36	We would prefer to perform the slurry wall work at the existing grade and not at a benched grade. Is the existing surface stable enough to support a trencher and support equipment?
A36	**Please refer to the Geotechnical Report included with the original bid documents for site conditions.**

Q37	Addendum No. 3 stated that water from ponds and dewatering operations are available for our use. Will the quality of the water source meet the required specifications?
A37	**Please refer to the response to Question 27.**
Q38	Are there any underground obstructions or utilities that may interfere with the slurry wall installation?
A38	**To the best of our knowledge, no underground obstructions or utilities that may interfere with the soil-bentonite cutoff wall installation are present. However, the Contractor is responsible for contacting the Utilities Notification Center in accordance with General Note 9 on Drawing G4.**
Q39	Are there any overhead/above ground obstructions or utilities that may interfere with the slurry wall installation?
A39	**Please refer to the response to Question 38.**
Q40	Any specialized training required for our field crew?
A40	**Health and safety is the responsibility of the Contractor.**
Q41	Can our spoils from the slurry wall installation act as a temporary cap in-leu of plastic cap?
A41	**Yes.**
Q42	Please confirm that the Soil-Bentonite wall is to sit on the cemented silt/limestone layer and is not to be keyed into the cemented silt/limestone layer? Furthermore, the OPT Test Section states there will be at least one key-in verification exploration. Can this be removed as we are not keying-in to the cemented silt/limestone layer and only placing the Soil-Bentonite wall on top of this layer?
A42	**The soil bentonite cutoff wall is not being keyed into a cemented silt/limestone layer. The key-in verification section has been deleted. Section 02330, Soil-Bentonite Cutoff Wall, Article 3.02.B.3 has been deleted. Attachment 6 provides revised copy of Section 02330.**
Q43	Can the section about maintaining cutter speeds and advancement rates be removed? Our cutter speed and advancement rates are dependent on depth and soil conditions. We may be able to trench faster through shallow areas and slower through deeper areas.
A43	**Yes. Section 02330, Soil-Bentonite Cutoff Wall, Article 3.04.B has been deleted. Attachment 6 provides a revised copy of Section 02330.**
Q44	Can the required hydraulic conductivity be shown as "$K \leq 7.5 \times 10^{-7}$" in lieu of "$K = 7.5 \times 10^{-7}$"?
A44	**The requested change is acceptable. Section 02330, Soil-Bentonite Cutoff Wall, Article 2.01.D.3.B has been revised. Attachment 6 provides a revised copy of Section 02330.**
Q45	Will a bench scale mix be required, or can the contractor rely on their experience with soils of the area to propose a mix design?
A45	**The Contractor may rely on their experience with soils and the area to propose a mix design as long as it meets the specification requirements for hydraulic conductivity.**
Q46	Can a 30" wide Soil-Bentonite wall be acceptable?

A46	**Yes.**
Attachment(s):	**ATTACHMENT 1.a: REVISED DRAWINGS G2, C2, and C24** **ATTACHMENT 1.b: REDLINE MARKUPS TO DRAWINGS C2, C24, AND C28** **ATTACHMENT 2: REVISED BID FORM** **ATTACHMENT 3: BORROW AREA DRAWING SET** **ATTACHMENT 4: WELL INVENTORY FIGURE** **ATTACHMENT 5: SURFACE WATER AND GROUNDWATER DATA** **ATTACHMENT 6: REVISED SPECIFICATION SECTION 02330**

IN DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS:

1. Section 00300, Bid Form:

   Delete:
   Section 00300 in its entirety.

   Replace with:
   Revised Section 00330 included in Attachment 1.

IN DIVISION 2 – SITE CONSTRUCTION:

1. Section 02330, Soil Bentonite Cutoff Wall:

   Delete:
   Section 02330 in its entirety.

   Replace with:
   Revised Section 02330 included in Attachment 6.

IN THE DRAWINGS:

1. Drawing G2, Drawing Index and Abbreviations; Drawing C2, Project Site Plan and Key Map; Drawing C24, Landfill Details; Drawing C28, Landfill Details:

   Delete:
   Drawings G2, C2, C24, and C28 in their entirety.

   Replace with:
   Drawings G2, C2, and C24 included in 1.a. Redline markups showing the revisions to the Drawings C2, C24, and C28 are included in Attachment 1.b.

ATTACHMENT 1.a

REVISED DRAWINGS G2, C2, and C24

ABBREVIATIONS

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

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
	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.

▷ ** 2. DELETED C28 FROM DRAWING SET.

ATTACHMENT 1.A, REVISED DRAWINGS G2, C2, and C24

BID DOCUMENTS

LTR.	DATE	REVISIONS	BY	APPRD.
2	4/2024	ADDENDUM 4	PEU	GAR
1	03/2024	ADDENDUM 3	AJT	GAR

DESIGNED GREINHART
DRAWN PUPSTILL
CHECKED TMCKNIGHT

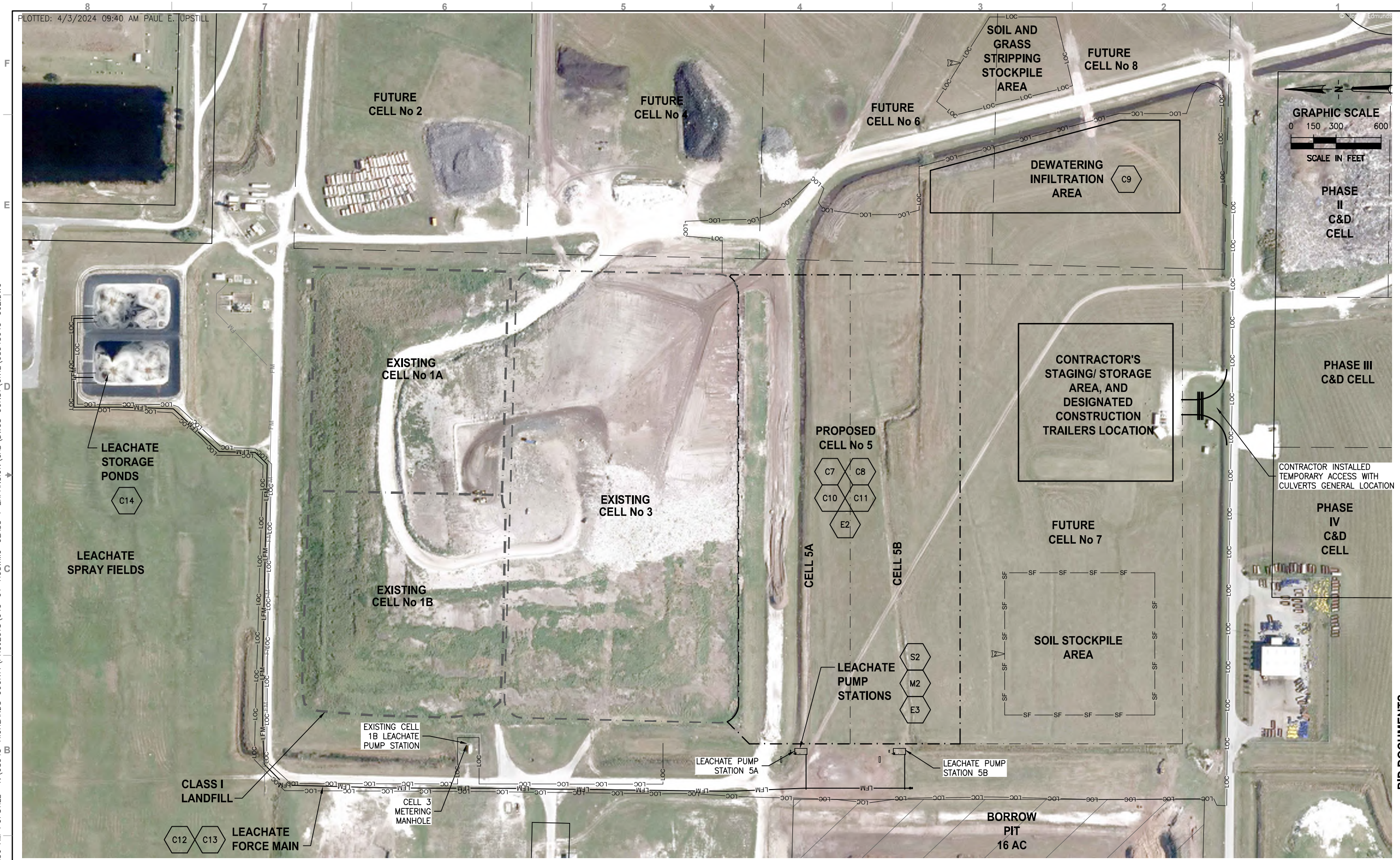
JonesEdmunds
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821

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

DRAWING INDEX AND ABBREVIATIONS

PROJECT NO: 08345-045-01
DATE: SEP 2023
INDEX NO:
DWG NO: G2

PLOTTED: 4/3/2024 09:40 AM PAUL E. TUPSTILL



SOURCE: 2021 AERIAL PHOTOGRAPHY DISTRIBUTED BY FDOT SURVEY & MAPPING OFFICE.

ATTACHMENT 1.A, REVISED DRAWINGS G2, C2, and C24

BID DOCUMENTS

LTR.	DATE	REVISIONS	BY	APPRD.
2	4/2024	ADDENDUM 4	PEU	GAR

DESIGNED GREINHART
DRAWN PUPSTILL
CHECKED TMCKNIGHT

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

PROJECT SITE PLAN AND KEY MAP

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).
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PROJECT NO: 08345-045-01
DATE: SEP 2023
INDEX NO:
DWG NO: C2

SAVED: 4/3/2024 9:36 AM PUPSTILL Y:\08345-HIGHLANDS COUNTY\PROJECTS\045-01-HCSWMC-CLASS-I-EXPANSION\CAD\DWGS CONST\CIVIL\08345045-C02.DWG

ATTACHMENT 1.A, REVISED DRAWINGS G2, C2, and C24

BID DOCUMENTS

GRAPHIC SCALE
0 30 60 120
SCALE IN FEET

N

CELL 5B

FUTURE CELL 7
EXPANSION

LIMEROCK ROAD

MW-38
MW-40
MW-39
MW-41

(22' WIDE)
LIMEROCK ROAD
SEE DETAIL 1 C26

100 LF 36"
RCP W/ MES
I.E. = 59.10
W.I.E. = 61.50

(CONTINUED THIS DWG)

(20'x35')
RIPRAP APRON
SEE SECTION B C26

R45.0'

N: 1152795.10
E: 554362.65

PROTECT WELL MW-32G

LFG-12
LFG-11

DIRT ROAD

LIMEROCK ROAD GRADING DETAIL 1 C10,C11

N: 1152830.19
E: 555024.21

4:1 (TYP)

PROTECT WELL MW-33G

(CONTINUED THIS DWG)

N: 1152833.08
E: 553690.01

PROTECT WELL MW-31G

6' SHOULDER @ 2%

2%

(22' WIDE)
LIMEROCK ROAD
SEE DETAIL 1 C26

A C17
B C17

503 504 505 506 507 508 509 510 511 512 527 528

LOC

PLOTTED: 4/3/2024 09:46 AM PAUL E. UPSTILL

SAVED: 4/3/2024 9:25 AM PUPSTILL Y:\08345-HIGHLANDS COUNTY\PROJECTS\045-01-HCSWMC-CLASS-I-EXPANSION\CAD\DWGS CONST\CIVIL\0834504S-C24.DWG

LTR.	DATE	REVISIONS	BY	APPRD.
1	4/2024	ADDENDUM 4	PEU	GAR

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

LANDFILL D

GEORGE A. REINHART, III, PHD, PE, STATE OF FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. 66516
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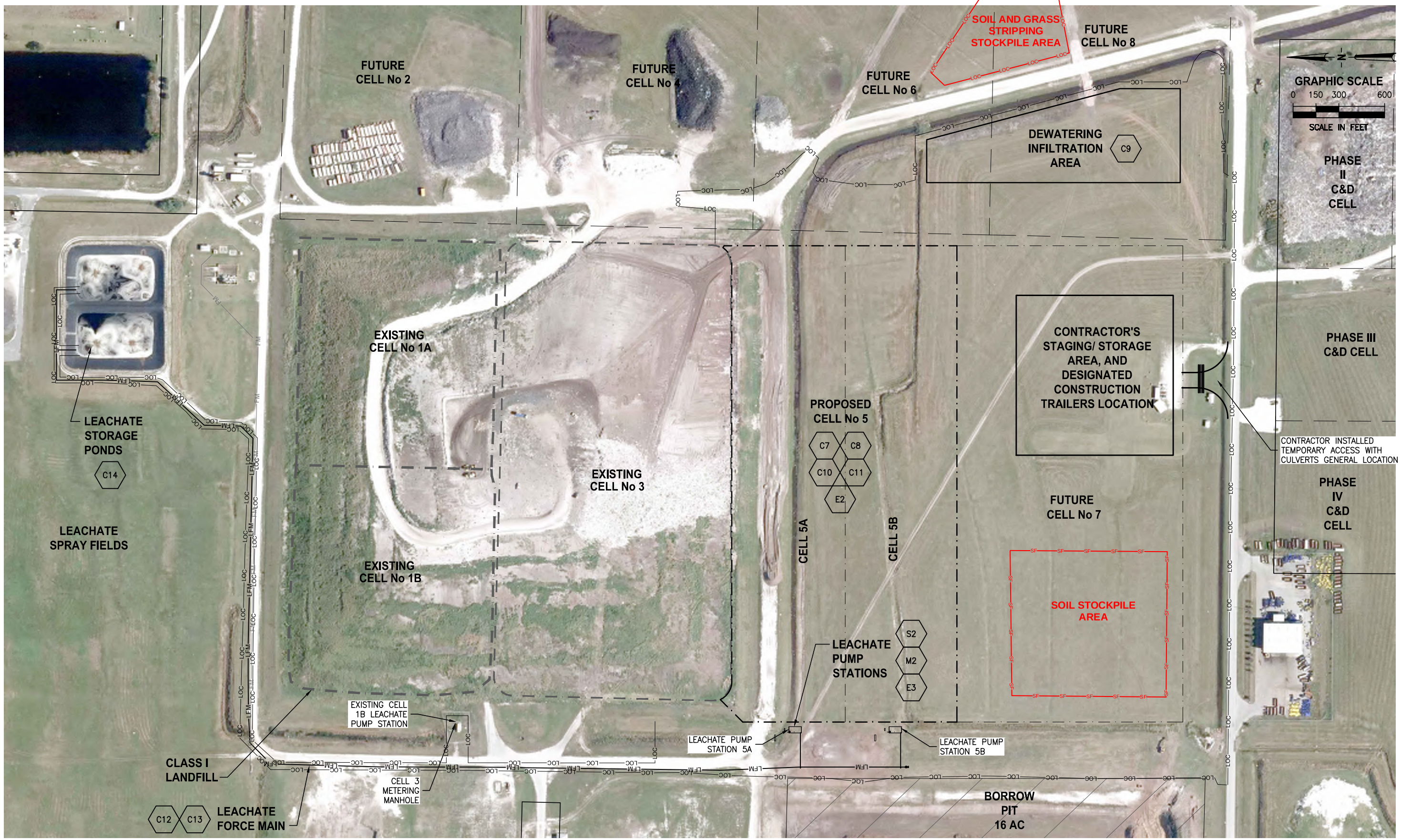
PROJECT NO: 08345-045-01
DATE: SEP 2023
INDEX NO:
DWG NO: C24

ATTACHMENT 1.b

REDLINE MARKUPS TO DRAWINGS C2, C24 AND C28

PLOTTED: 3/22/2024 11:08 AM ALI'IMO TOSI



SOURCE: 2021 AERIAL PHOTOGRAPHY DISTRIBUTED BY FDOT SURVEY & MAPPING OFFICE.

ATTACHMENT 1.b, REDLINE MARKUPS TO RAWINGS C2, C24 AND C28

BID DOCUMENTS

LTR.	DATE	REVISIONS	BY	APPRD.

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

PROJECT SITE PLAN AND KEY MAP

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: C2

SAVED: 9/18/2023 5:46 PM PUPSTILL Y:\08345-HIGHLANDS COUNTY\PROJECTS\045-01-HCSWMC-CLASS-I-EXPANSION\CAD\DWGS CONST\CIVIL\08345045-C02.DWG

ATTACHMENT 1.b, REDLINE MARKUPS TO RAWINGS C2, C24 AND C28

BID DOCUMENTS

GRAPHIC SCALE
0 30 60 120
SCALE IN FEET

N

MW-38

(22' WIDE) LIMEROCK ROAD SEE DETAIL 1 C26

100 LF 36" RCP W/ MES
I.E. = 59.10
W.I.E. = 61.50

(CONTINUED THIS DWG)

(20'x35') RIPRAP APRON SEE SECTION B C26

LIMEROCK ROAD

CELL 5B

FUTURE CELL 7 EXPANSION

MW-40

MW-39

LIMEROCK ROAD

B C17

DIRT ROAD

N: 1152795.10
E: 554362.65

(MW-32G) RAISE GROUNDWATER MONITORING WELL 1 C26 SEE DETAIL

PROTECT WELL MW-32G

LFG-12

LFG-11

MW-41

6' SHOULDER @ 2%

A C17

(22' WIDE) LIMEROCK ROAD SEE DETAIL 1 C26

N: 1152833.08
E: 553690.01

PROTECT WELL MW-31G

LIMEROCK ROAD GRADING DETAIL 1 C10,C11

4:1 (TYP)

N: 1152830.19
E: 555024.21

PROTECT WELL MW-33G

(MW-33G) RAISE GROUNDWATER MONITORING WELL 1 C26 SEE DETAIL

(CONTINUED THIS DWG)

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: C24

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

LANDFILL DETAILS

DESIGNED GREINHART
DRAWN PUPSTILL
CHECKED TMCKNIGHT

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

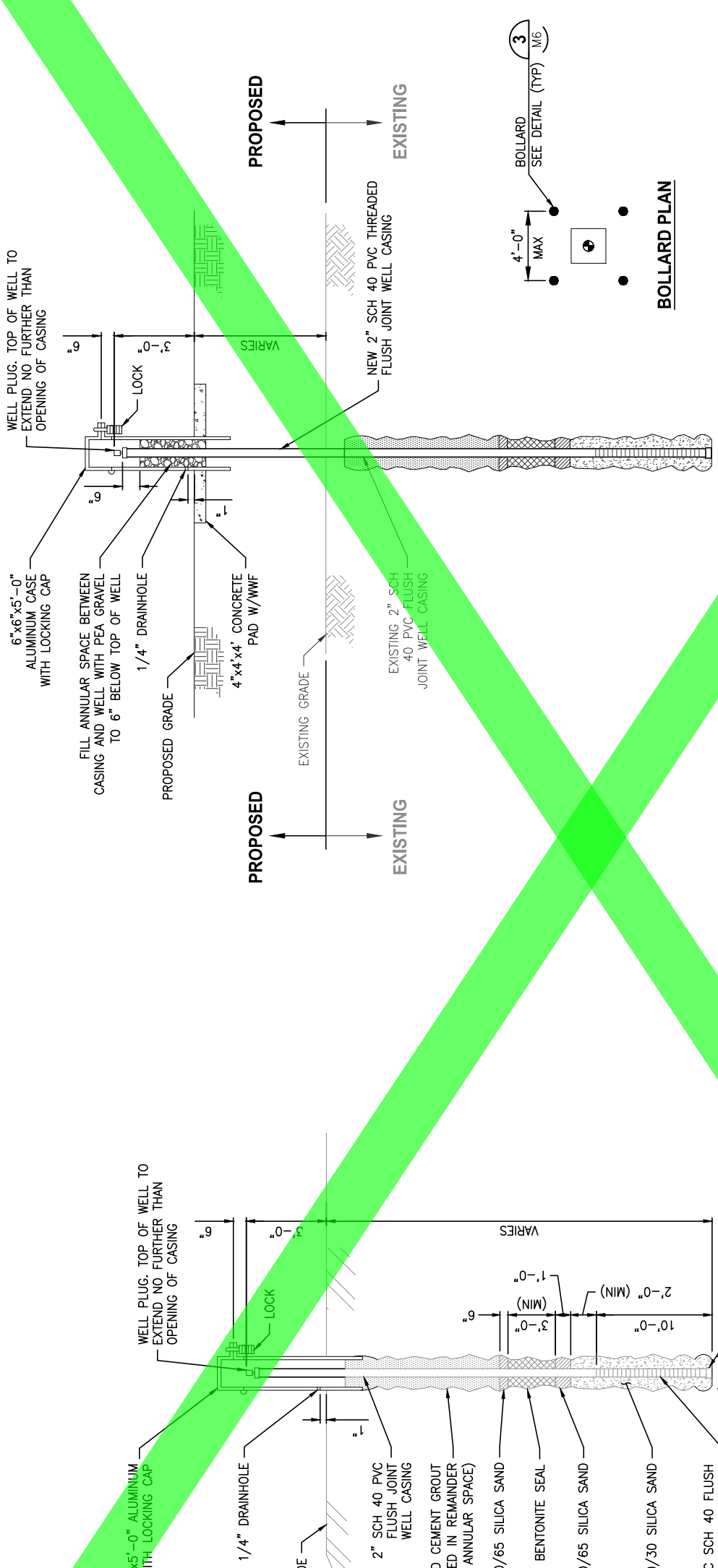
LTR.	DATE	REVISIONS	BY	APPRD.

PLOTTED: 3/22/2024 11:12 AM ALI'IMO TOSI

SAVED: 9/15/2023 5:03 PM PUPSTILL Y:\08345-HIGHLANDS COUNTY\PROJECTS\045-01-HCSWMC-CLASS-I-EXPANSION\CAD\DWGS CONST\CIVIL\0834504 5-C24.DWG

BID DOCUMENTS

LANDFILL DETAILS



BOLLARD PLAN

RAISED GROUNDWATER MONITORING WELLS

NOTES:
1. WHEN INSTALLED ON GROUND SLOPES OF 5% OR LESS, SLOPE PAD TO DRAIN. IF GROUND SLOPE EXCEEDS 5%, INSTALL PAD AT SLOPE GRADE.
2. INSTALL 4 BOLLARDS AT EVERY MONITORING WELL (SEE BOLLARD PLAN).
3. CONTRACTOR SHALL REUSE EXISTING ALUMINUM CASE.

RAISE GROUNDWATER MONITORING WELL DETAIL 1 C10,C24

NTS

EXISTING GROUNDWATER MONITORING WELLS

Delete Drawing.
Work has been deleted from project.

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: C28

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

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

DESIGNED GREINHART
DRAWN PUPSTILL
CHECKED TMCKNIGHT

LTR.	DATE	REVISIONS	BY	APPRD.

PLOTTED: 3/22/2024 11:13 AM ALI'IMO TOSI
SAVED: 9/14/2023 12:47 PM PUPSTILL Y:\08345-HIGHLANDS COUNTY\PROJECTS\045-01-HCSWMC-CLASS-I-EXPANSION\CAD\DWGS CONST\CIVIL\0834504 5-C28.DWG

ATTACHMENT 2

REVISED BID FORM

ATTACHMENT 3

BORROW AREA DRAWING SET

CONSTRUCTION PLANS FOR:

HIGHLANDS COUNTY SOLID WASTE MANAGEMENT CENTER

BORROW PIT MINING FOR COVER MATERIAL

SEBRING, FLORIDA

SECTION 22, TOWNSHIP 34 SOUTH, RANGE 30 EAST

I N D E X

ENGINEER OF RECORD:
W. R. CUATHAN
CHASTAIN SKILLMAN, INC.
205 EAST ORANGE STREET, SUITE #110
LAKELAND, FLORIDA 33801-4611
(863) 646.1402

Wallace R Cauthan

Digitally signed by Wallace R Cauthan
Date: 2022.11.16 14:34:47 -05'00'

CHASTAIN SKILLMAN

CHASTAIN-SKILLMAN (863) 646-1402 C.A. NO 262
205 EAST ORANGE STREET, SUITE #110, LAKELAND, FLORIDA 33801-4611

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ENGINEER: W. R. CAUTHAN, P.E.
REG. NO.: 27563
C.S.I. JOB NO. 9775.03

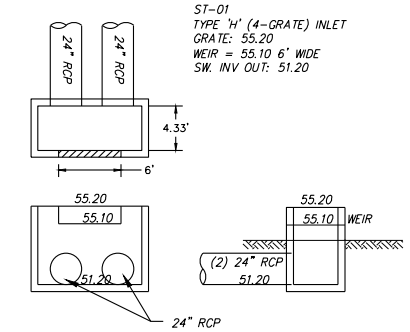
P:\977503\CAD\Civil\977503\Production Drawings\977503-WRC-2021-COVER.dwg Cover Nov 16, 2022 1:38pm by: rcarnahan

SunShine811

Call 811 or www.sunshine811.com two full business days before digging to have utilities located and marked.

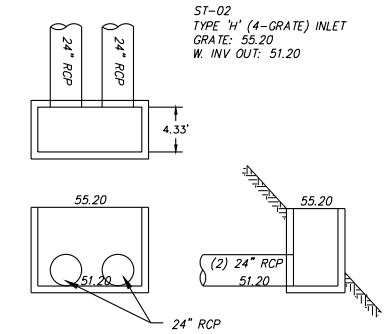
Check positive response codes before you dig!

NUMBER	DATE	DESCRIPTION
P-0	09/28/2021	ISSUED FOR 30% REVIEW



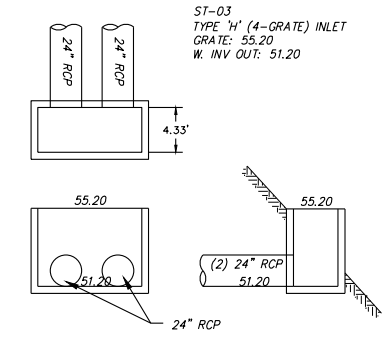
STRUCTURE ST-01 DETAIL TYPE "H" INLET

N.T.S.



STRUCTURE ST-02 DETAIL TYPE "H" INLET

N.T.S.



STRUCTURE ST-03 DETAIL TYPE "H" INLET

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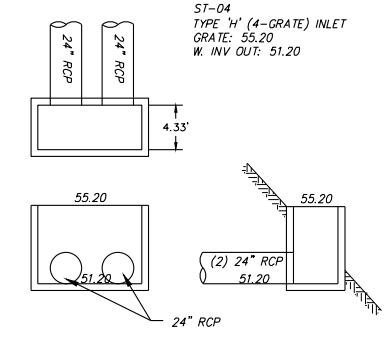

STRUCTURE ST-04 DETAIL TYPE "H" INLET

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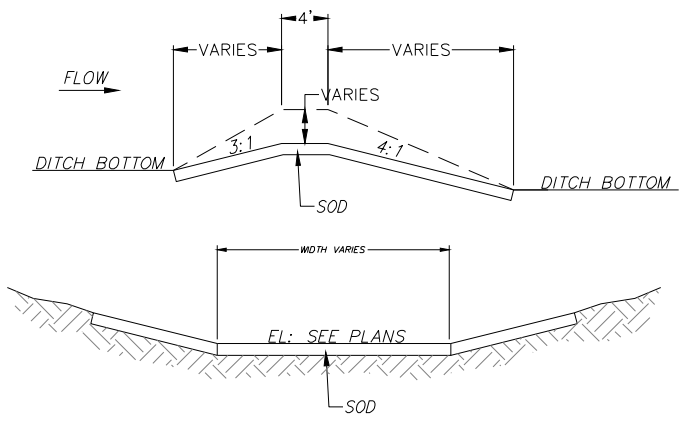
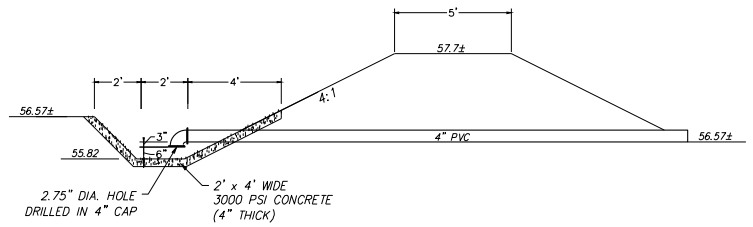
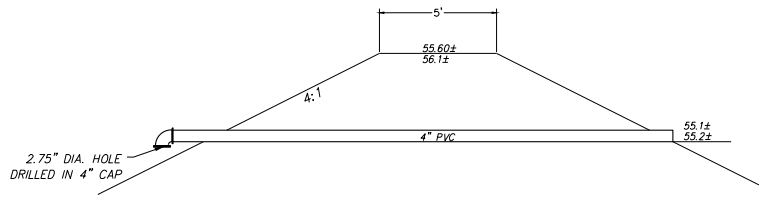


SODDED DITCH BLOCK DETAIL

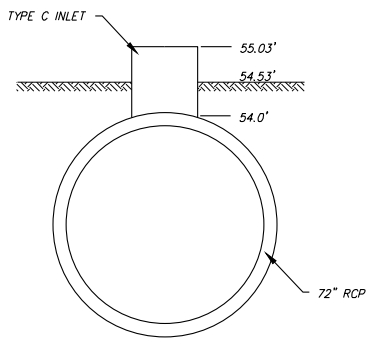
N.T.S.



DITCH BLOCK DETAIL STA 17+00

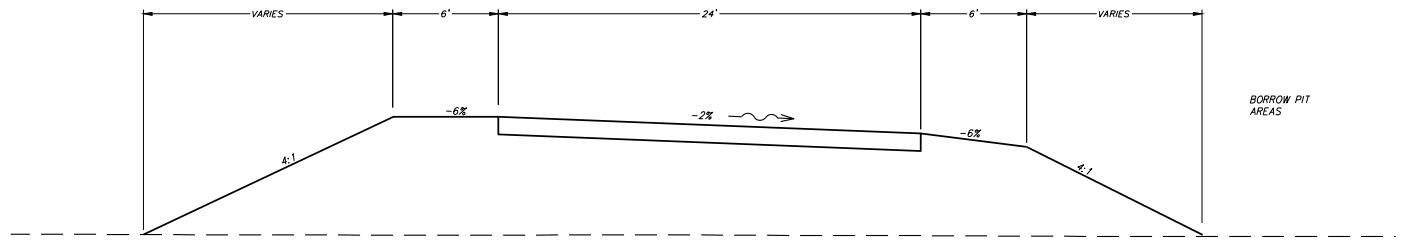


DITCH BLOCK DETAIL STA 23+00

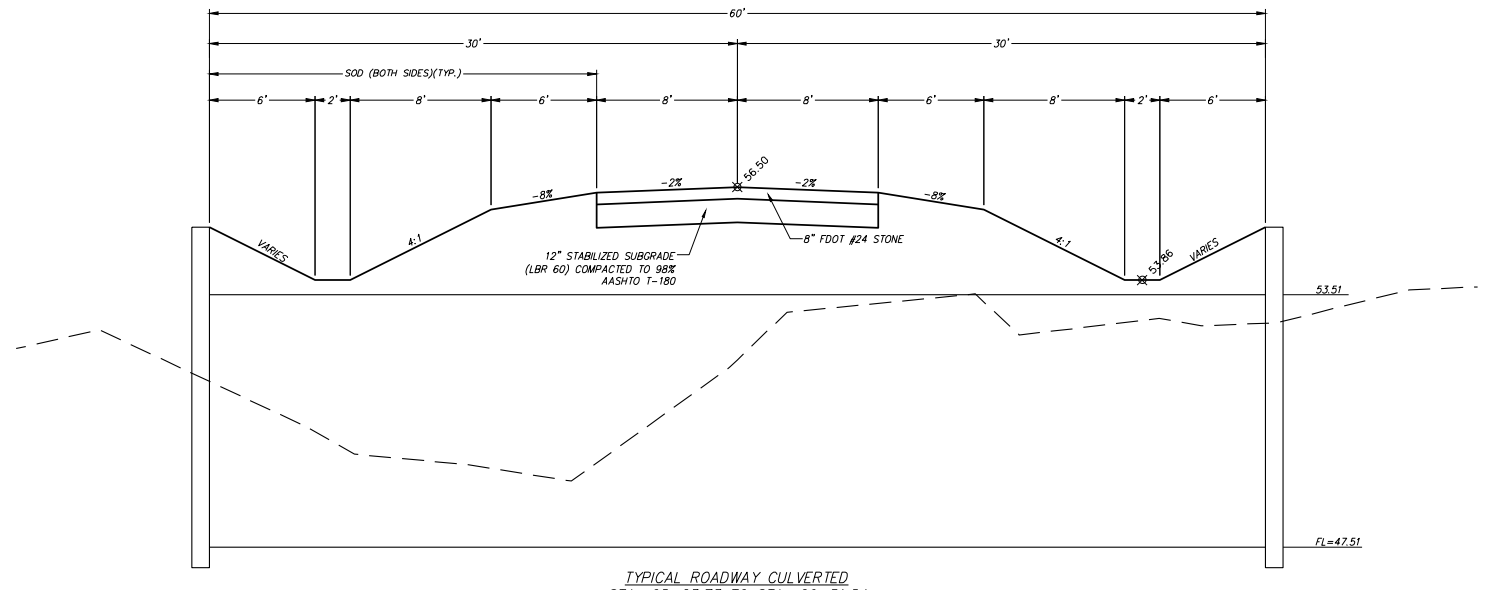


TYPICAL SECTION
ST-07, ST-08, ST-09 & ST-10

N.T.S.

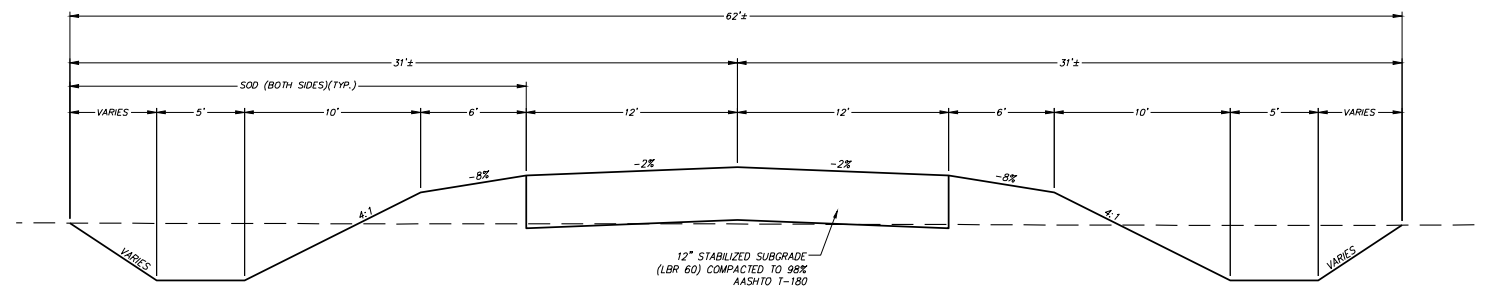


TYPICAL BORROW PIT HAUL ROAD
STA: 27+00.12 TO BEYOND



TYPICAL ROADWAY CULVERTED
STA: 25+23.73 TO STA: 26+51.54

NOTE: STATION 24+00 TO 28+00 SUBSTITUTE 12" STABILIZATION SUBGRADE WITH FDOT NO. 24 (1-1/2" AVG.) COURSE AGGREGATE. FDOT SECTION 901.



TYPICAL BORROW PIT ENTRANCE ROAD
STA: 11+00 TO STA: 24+75

NUMBER	DATE	DESCRIPTION
P-1	12/01/2021	ISSUED FOR 60% REVIEW
P-0	09/28/2021	ISSUED FOR 30% REVIEW

CHASTAIN-SKILLMAN
205 EAST ORANGE STREET
SUITE #110
LAKELAND, FL 33801-4611
(863) 646-1402

CHASTAIN SKILLMAN

HIGHLANDS COUNTY BOARD OF COUNTY COMMISSIONERS
BORROW PIT
HIGHLANDS COUNTY, FLORIDA

TYPICAL SECTION AND DETAILS

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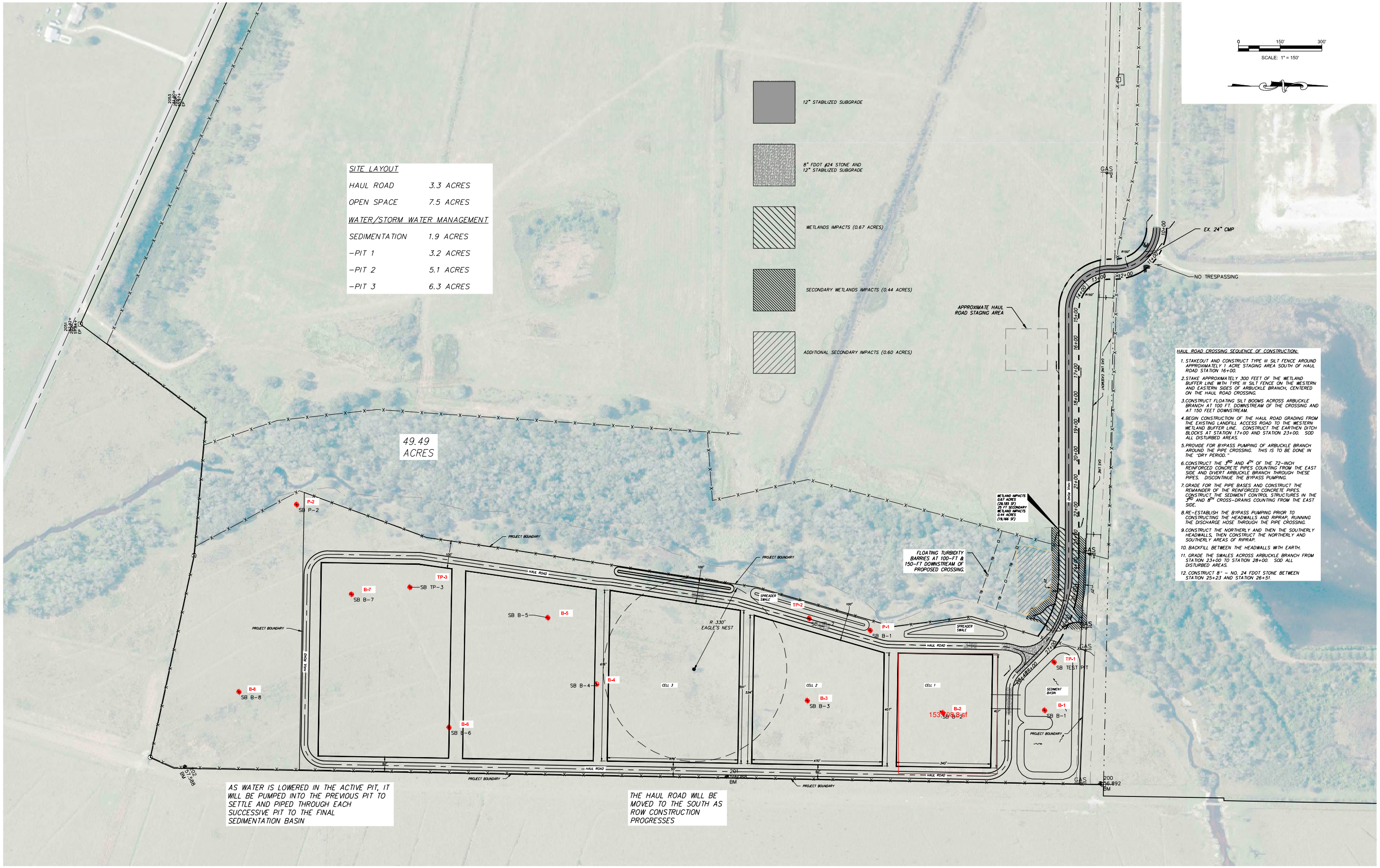
November 16, 2022 ENGINEER: W. R. CAUTHAN, P.E. REG. NO.: 27563

PROJECT NUMBER: 9775.03

SHEET NUMBER: C-01

ATTACHMENT 3, BORROW AREA DRAWING SET

P:\9775\03\Civil\Civil\9775\03\Production Drawings\9775\03-eBC-2021-0369.dwg C-01 TYPICAL SECTION-DETAILS Nov 16, 2022 1:38pm by rcarnahan



NUMBER	DATE	DESCRIPTION
P-1	12/01/2021	ISSUED FOR 60% REVIEW
P-0	09/28/2021	ISSUED FOR 30% REVIEW

CHASTAIN-SKILLMAN
205 EAST ORANGE STREET
SUITE #110
LAKELAND, FL 33801-4611
(863) 646-1402

CHASTAIN SKILLMAN

HIGHLANDS COUNTY BOARD OF COUNTY COMMISSIONERS
BORROW PIT
HIGHLANDS COUNTY, FLORIDA

OVERALL SITE PLAN

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November 16, 2022 ENGINEER: W. R. CAUTHAN, P.E. REG. NO.: 27563

PROJECT NUMBER: 9775.03

SHEET NUMBER: C-02

P:\9775\03\Civil\Civil\9775\03\Production Drawings\9775\03-MRC-2021-SITE.dwg 04-SITE PLAN Nov 16, 2022 1:36pm by rcarothan

ATTACHMENT 3, BORROW AREA DRAWING SET

NO WORK SHALL ENCROACH INTO THE WETLANDS OR WETLANDS BUFFER AREA EXCEPT WHERE SPECIFICALLY SHOWN AS PART OF THE CONSTRUCTION OF THE PROPOSED HAUL ROAD STREAM CROSSING.

SCALE: 1" = 60'

25' WETLAND BUFFER

WETLAND IMPACTS
0.67 ACRES
(29,185 SF)
25 FT SECONDARY
WETLAND IMPACTS
0.44 ACRES
(19,166 SF)

ADDITIONAL SECONDARY IMPACTS (0.60 ACRES)

0.45± ACRES SPREADER SWALE

0.44± ACRES SPREADER SWALE

PHASE I CELL 3 (163,587 C.Y.)

PHASE I CELL 2 (129,982 C.Y.)

PHASE I CELL 1 (80,074 C.Y.)

1.61± ACRE SEDIMENT BASIN

HAUL ROAD

MES-07 CONST. 24" MES INV: 51.00

ST-04 CONST. TYPE 'H' INLET GRATE: 55.20 W. INV OUT: 51.20

MES-06 CONST. 24" MES INV: 51.00

MES-05 CONST. 24" MES INV: 51.00

ST-03 CONST. TYPE 'H' INLET GRATE: 55.20 W. INV OUT: 51.20

MES-03 CONST. 24" MES INV: 51.00

MES-04 CONST. 24" MES INV:=51.00

MES-01 CONST. 24" MES INV: 51.00

MES-02 CONST. 24" MES INV: 51.00

ST-02 CONST. TYPE 'H' INLET GRATE: 55.20 W. INV OUT: 51.20

ST-01 CONST. TYPE 'H' INLET GRATE: 55.20 6FT WIDE 50.07 INV. 55.10 SW. INV OUT: 51.20

PROPOSED (9) 40' LF 72" PIPE HEADWALL INV. EL. = 47.50

80152
47.119
INV. CMP: 36

MH-02 CONSTRUCTION MANHOLE RIM: 55.38 NE. INV IN: 51.05 S. INV OUT: 51.05

MH-01 CONSTRUCTION MANHOLE RIM: 55.38 NE. INV IN: 51.05 S. INV OUT: 51.05

PHASE 2 PROPOSED (3) 36" RCP INV. EL.=52.00'

PROPOSED (3) 36" RCP INV. EL.=52.00'

OVERFLOW SECTION E-E

OVERFLOW SECTION F-F

OVERFLOW SECTION G-G

OVERFLOW SECTION D-D

OVERFLOW SECTION C-C

OVERFLOW SECTION B-B

AS WATER IS LOWERED IN THE ACTIVE PIT, IT WILL BE PUMPED INTO THE PREVIOUS PIT TO SETTLE AND PIPED THROUGH EACH SUCCESSIVE PIT TO THE FINAL SEDIMENTATION BASIN

THE HAUL ROAD WILL BE MOVED TO THE SOUTH AS ROW CONSTRUCTION PROGRESSES

ATTACHMENT 3, BORROW AREA DRAWING SET

NUMBER	DATE	DESCRIPTION
P-1	12/01/2021	ISSUED FOR 60% REVIEW
P-0	09/28/2021	ISSUED FOR 30% REVIEW

CHASTAIN-SKILLMAN
205 EAST ORANGE STREET
SUITE #110
LAKELAND, FL 33801-4611
(863) 646-1402

CHASTAIN SKILLMAN

HIGHLANDS COUNTY BOARD OF COUNTY COMMISSIONERS
BORROW PIT
HIGHLANDS COUNTY, FLORIDA

GRADING PLAN

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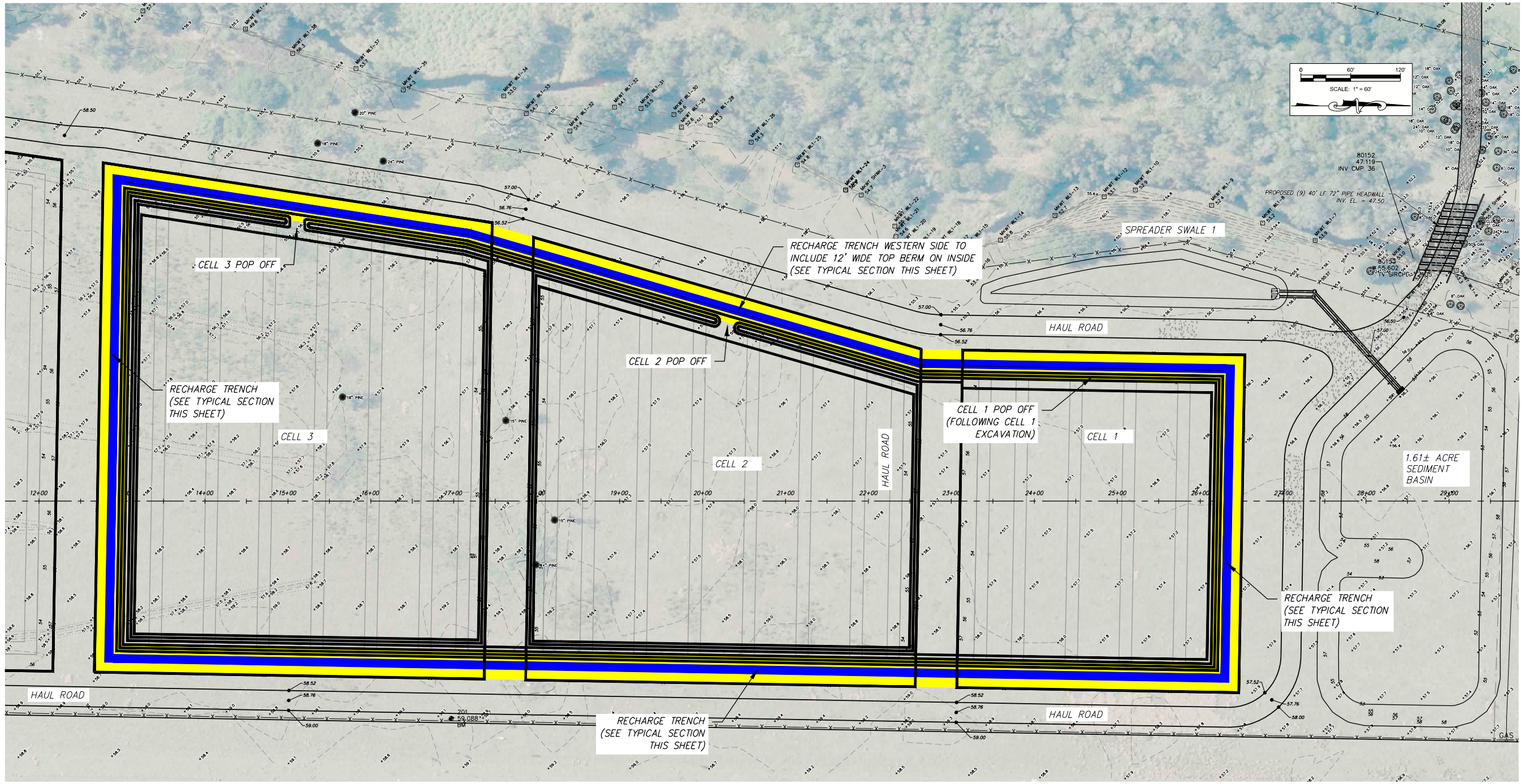
November 16, 2022

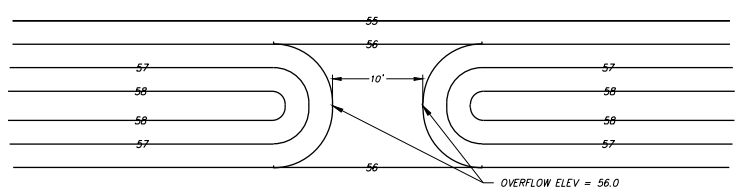
ENGINEER: W. R. CAUTHAN, P.E.
REG. NO.: 27563

PROJECT NUMBER: 9775.03

SHEET NUMBER: C-03

P:\9775\03\CAD\Civil\9775\03Production Drawings\9775\03-MRC-2021-GRADING.dwg GRADING-NORTH Nov 15, 2022 1:39pm by: cconshow

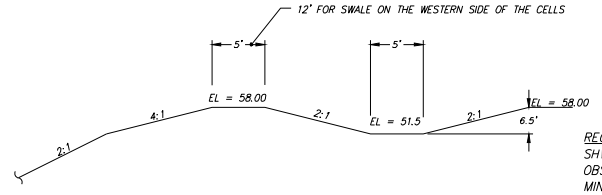




POP OFF DETAIL
N.T.S.

CONSTRUCTION OPERATIONS –PROJECT START UP PHASE:

1. CONSTRUCT HAUL ROAD & CULVERTED STREAM CROSSING
2. CONSTRUCT SEDIMENT BASIN
3. CONSTRUCT OUTFALL STRUCTURE & PIPING
4. CONSTRUCT SPREADER SWALE 1
5. DIG CELLS 2 & 3 TO ELEVATION 56 (SHWT)
6. CONSTRUCT RECHARGE TRENCH & CELL 2 & 3 POP OFFS



RECHARGE TRENCH TYPICAL SECTION
N.T.S.

RECHARGE TRENCH DESIGN ELEVATIONS:
SHWT = 56.0'
OBSERVED GWT = 51.5'
MINIMUM WATER LEVEL DURING DEWATERING = 53.0'
MAXIMUM WATER LEVEL DURING DEWATERING = 57.0'
OPERATING ELEVATIONS TO BE MONITORED BY ONSITE STAFF GAUGE (LOCATIONS SHOWN ON C-05)

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DEWATERING PLAN

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November 16, 2022 ENGINEER: W. R. CAUTHAN, P.E. REG. NO.: 27563

PROJECT NUMBER: 9775.03

SHEET NUMBER: C-04

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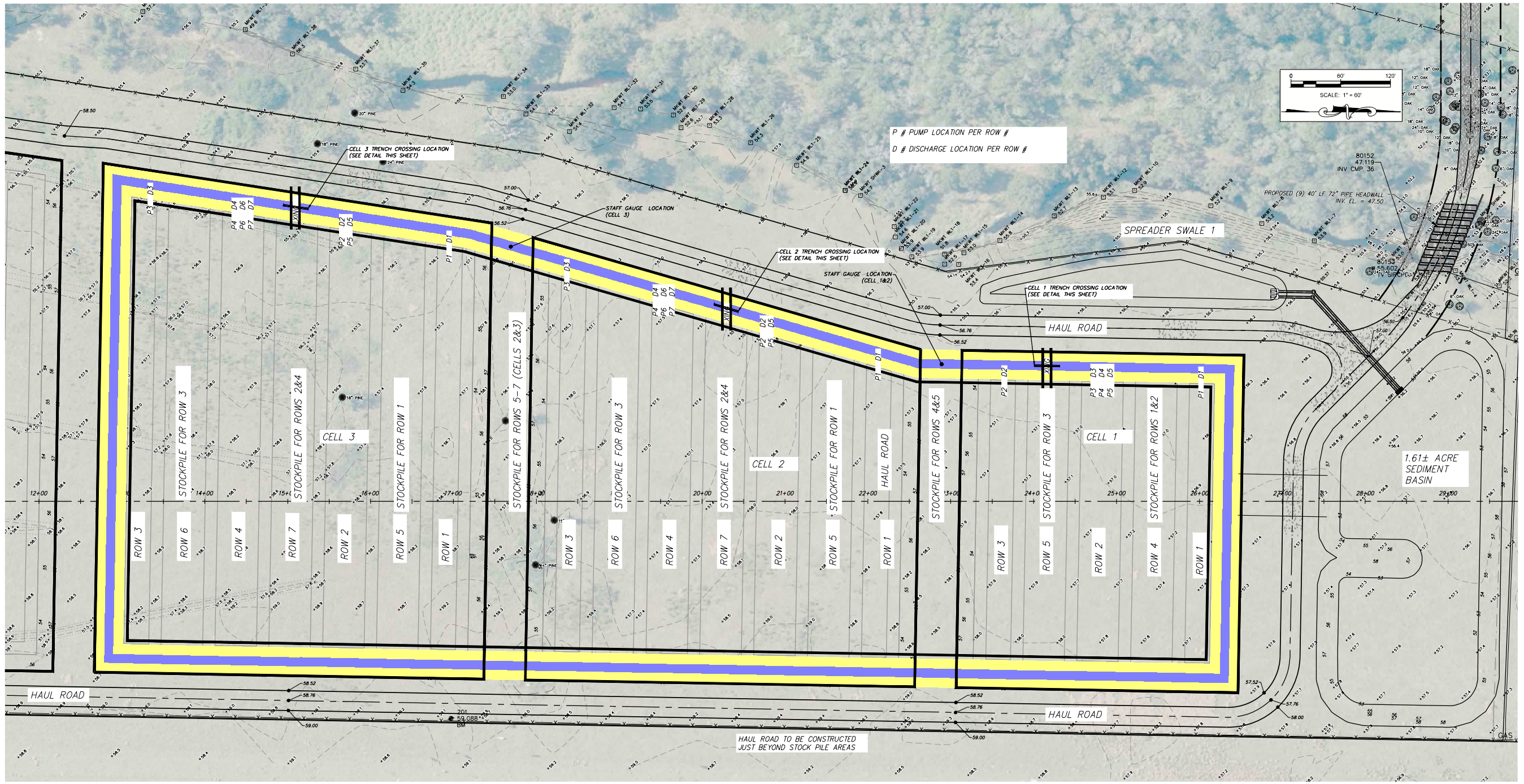
ATTACHMENT 3, BORROW AREA DRAWING SET



CONSTRUCTION OPERATIONS – PRIMARY EXCAVATION PHASE:

NOTE: BOTTOM OF DEWATERING (38.0') TO COINCIDE WITH BOTTOM OF CELL EXCAVATION (38.0') FOR ALL CELLS.

CELL 1

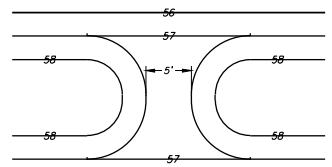
- *CONSTRUCT CELL 1 TRENCH CROSSING*
- *EXCAVATE ROWS 1 & 3 W/POP OFF FROM RECHARGE TRENCH INTO ACTIVE ROW @ ELEV 57.0*
- *EXCAVATE ROW 4 & 5 W/POP OFF NEXT TO ROW 2*
- *UPON COMPLETION OF EXCAVATION, LOWER POP OFF WEIR TO ELEV 56.0 AND REMOVE CELL 1 TRENCH CROSSING*

CELL 2

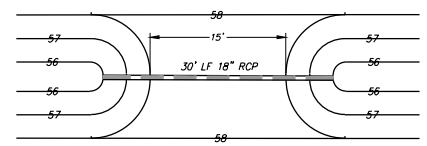
- *CONSTRUCT CELL 2 TRENCH CROSSING*
- *EXCAVATE ROWS 1 & 4 W/POP OFF FROM RECHARGE TRENCH INTO ACTIVE ROW @ ELEV 57.0*
- *EXCAVATE ROW 5 W/POP OFF NEXT TO ROW 1*
- *EXCAVATE ROWS 6 & 7 W/POP OFF NEXT TO CELL 4*
- *UPON COMPLETION OF EXCAVATION, LOWER POP OFF WEIR TO ELEV 56.0 AND REMOVE CELL 2 TRENCH CROSSING*

CELL 3

- *CONSTRUCT CELL 3 TRENCH CROSSING*
- *EXCAVATE ROWS 1 & 4 W/POP OFF FROM RECHARGE TRENCH INTO ACTIVE ROW @ ELEV 57.0*
- *EXCAVATE ROW 5 W/POP OFF NEXT TO ROW 1*
- *EXCAVATE ROWS 6 & 7 W/POP OFF NEXT TO CELL 4*
- *UPON COMPLETION OF EXCAVATION, REMOVE CELL TRENCH CROSSING*



ACTIVE ROW/CELL POPOFF WEIR DETAIL
N.T.S.



TRENCH CROSSING DETAIL
N.T.S.

NUMBER	DATE	DESCRIPTION
P-1	12/01/2021	ISSUED FOR 60% REVIEW
P-0	09/28/2021	ISSUED FOR 30% REVIEW

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DEWATERING PLAN

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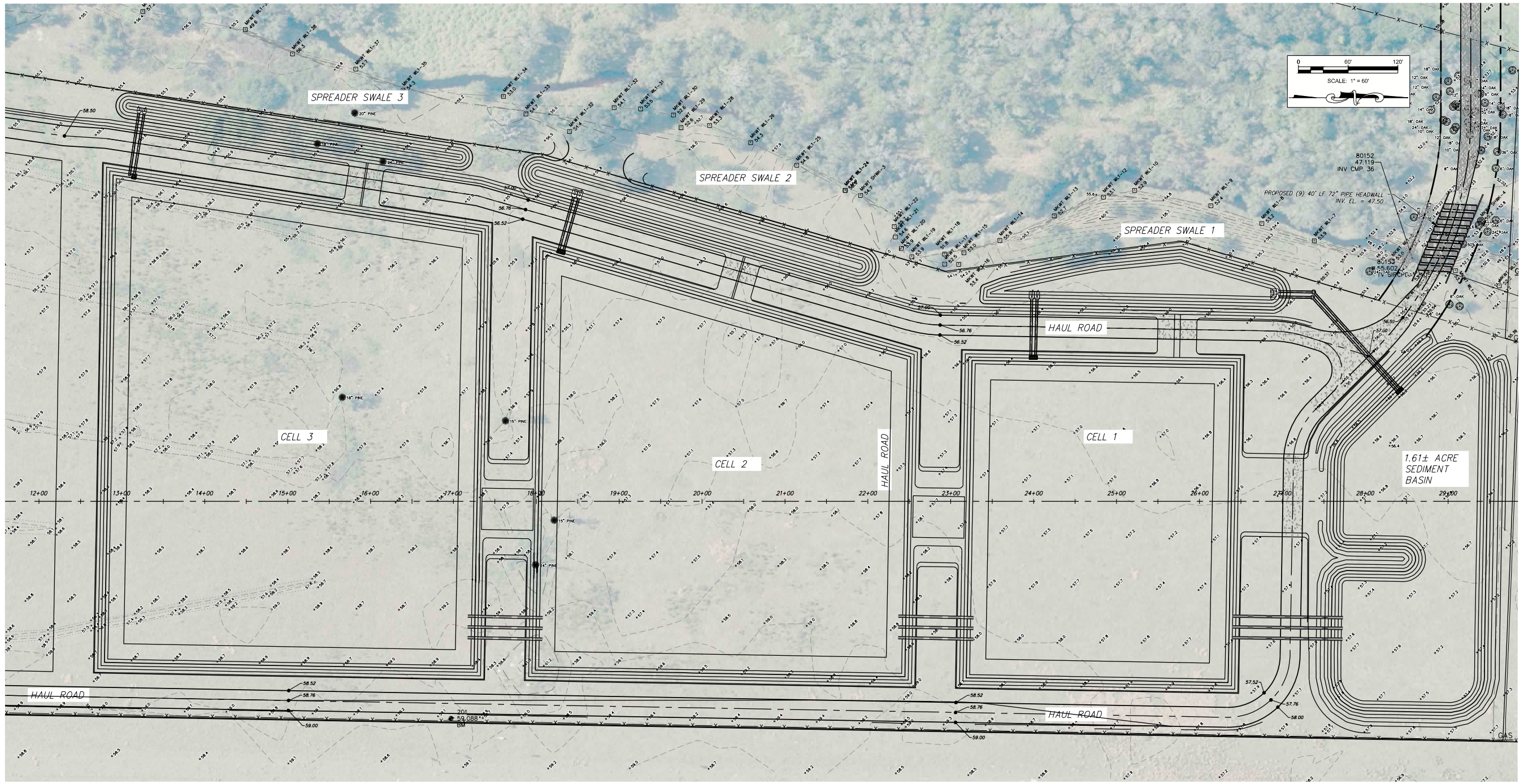
November 16, 2022 ENGINEER: W. R. CAUTHAN, P.E.
REG. NO.: 27563

PROJECT NUMBER: 9775.03

SHEET NUMBER: C-05



CONSTRUCTION OPERATIONS – SECONDARY EXCAVATION & PROJECT COMPLETION PHASE:

1. RECHARGE TRENCH TO BE REMOVED AND CELLS 1-3 FULL EXCAVATED. (NO DEWATERING IS TO TAKE PLACE DURING THIS EXCAVATION)

2. CONSTRUCTION SPREADER SWALES 2 & 3 AND THE ASSOCIATED CONTROL STRUCTURES AND PIPES CONNECTING THE ADJACENT CELLS AND SPREADER SWALES

3. REGRADE BERMS BETWEEN CELLS 1 & 2 AND 2 & 3 AND ROAD AREAS FOR CONVEYANCE

NUMBER	DATE	DESCRIPTION
P-1	12/01/2021	ISSUED FOR 60% REVIEW
P-0	09/28/2021	ISSUED FOR 30% REVIEW

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DEWATERING PLAN

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November 16, 2022 ENGINEER: W. R. CAUTHAN, P.E.
REG. NO.: 27563

PROJECT NUMBER: 9775.03

SHEET NUMBER: C-06

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ATTACHMENT 3, BORROW AREA DRAWING SET

ATTACHMENT 3, BORROW AREA DRAWING SET

NUMBER	DATE	DESCRIPTION		
P-1	12/01/2021	ISSUED FOR 60% REVIEW		
P-0	09/28/2021	ISSUED FOR 30% REVIEW		

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BORROW PIT PROFILE

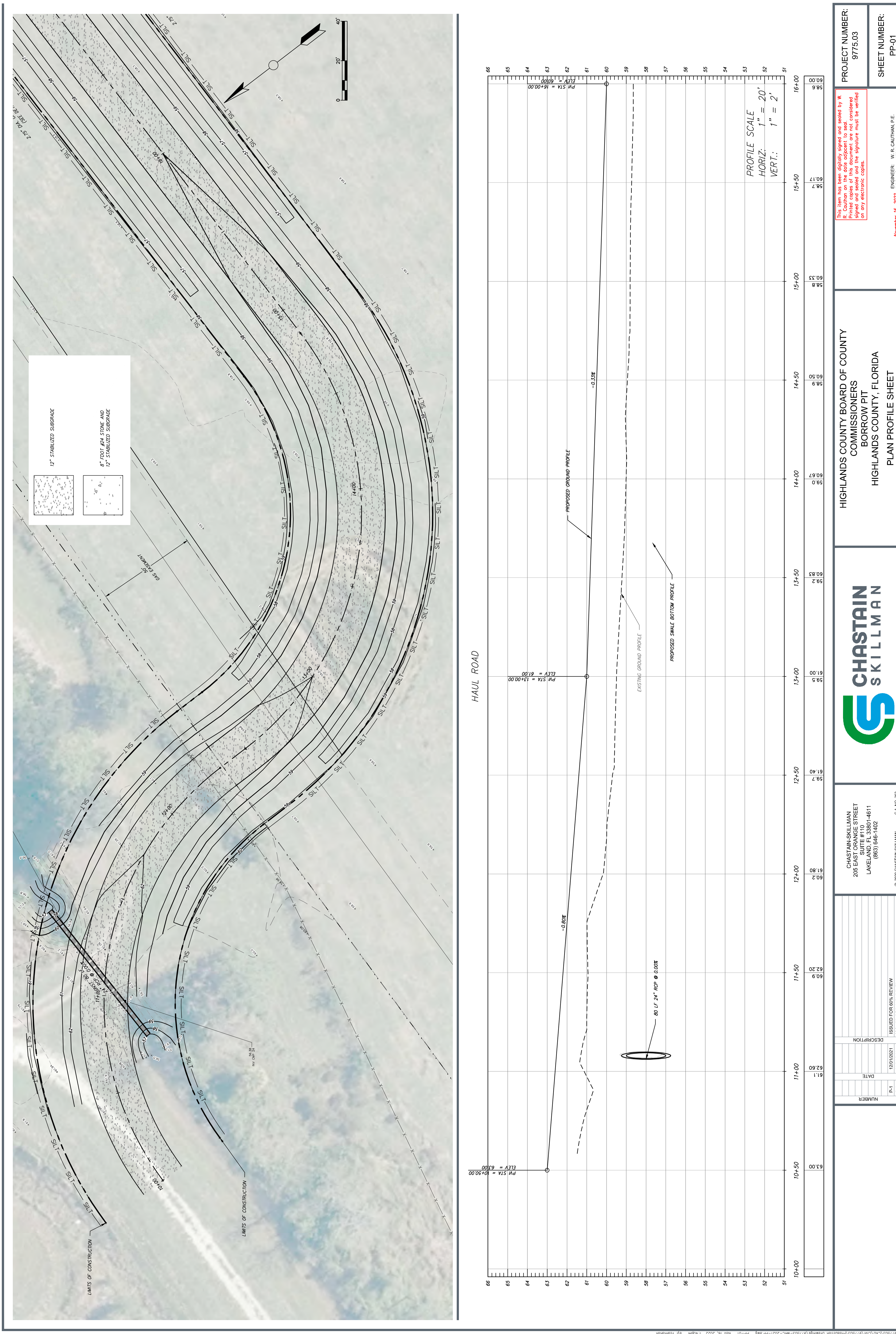
ENGINEER: W. R. CAUTHAN, P.E.
REG. NO.: 27563

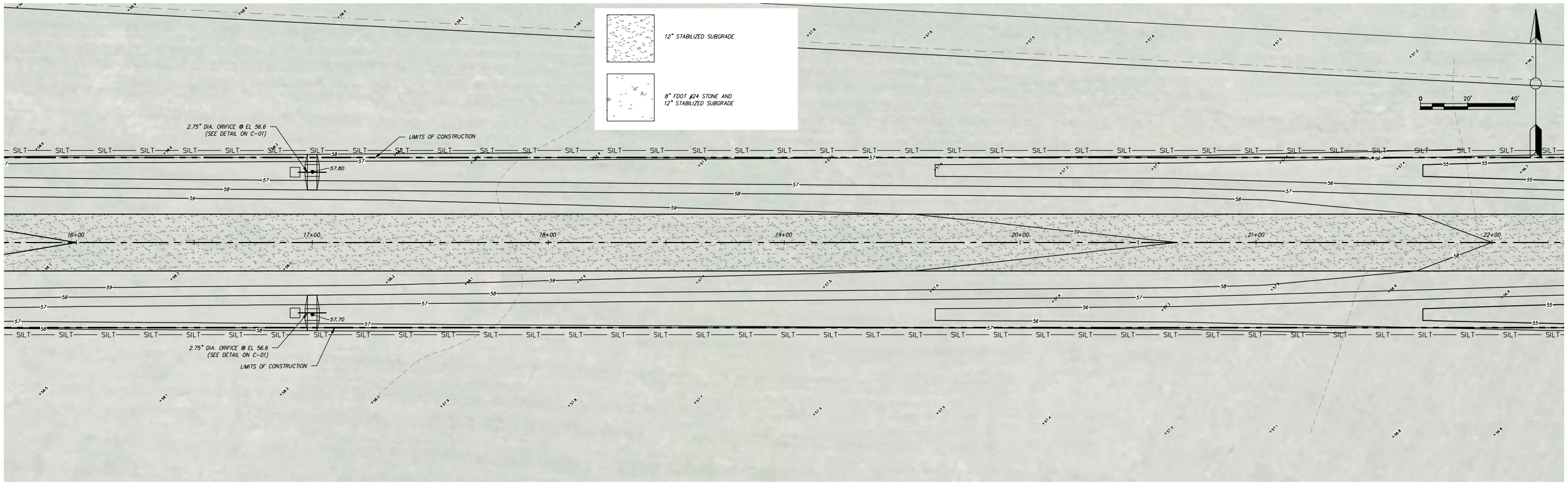
November 16, 2022

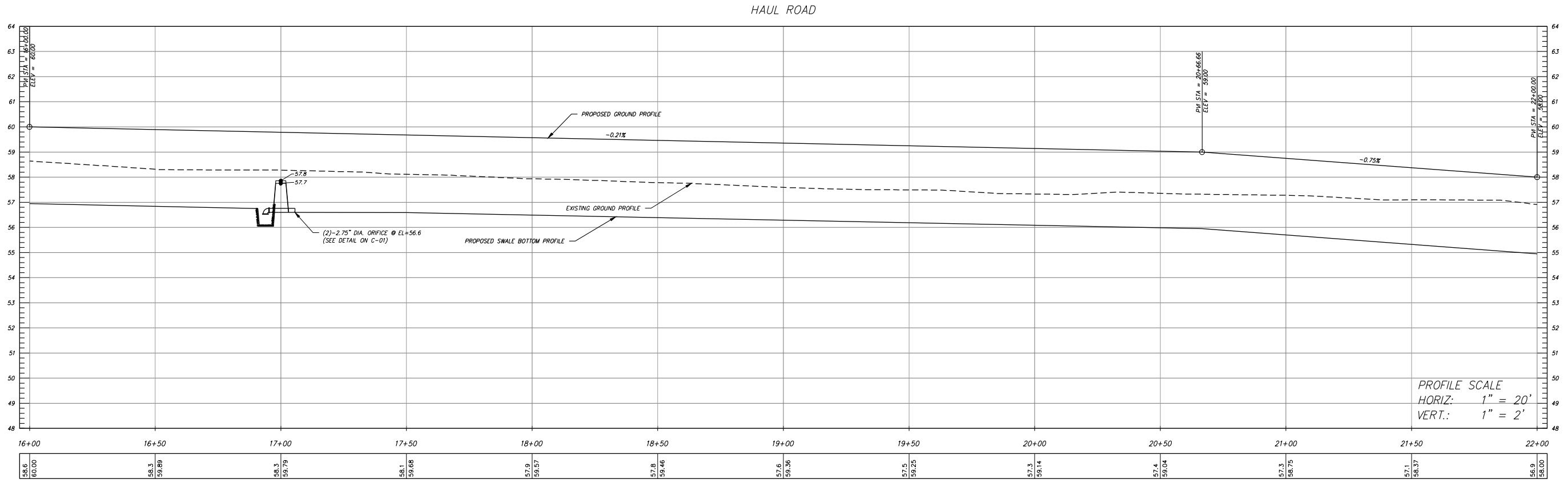
SHEET NUMBER: C-07

PROJECT NUMBER: 9775.03

ATTACHMENT 3, BORROW AREA DRAWING SET







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PLAN PROFILE SHEET

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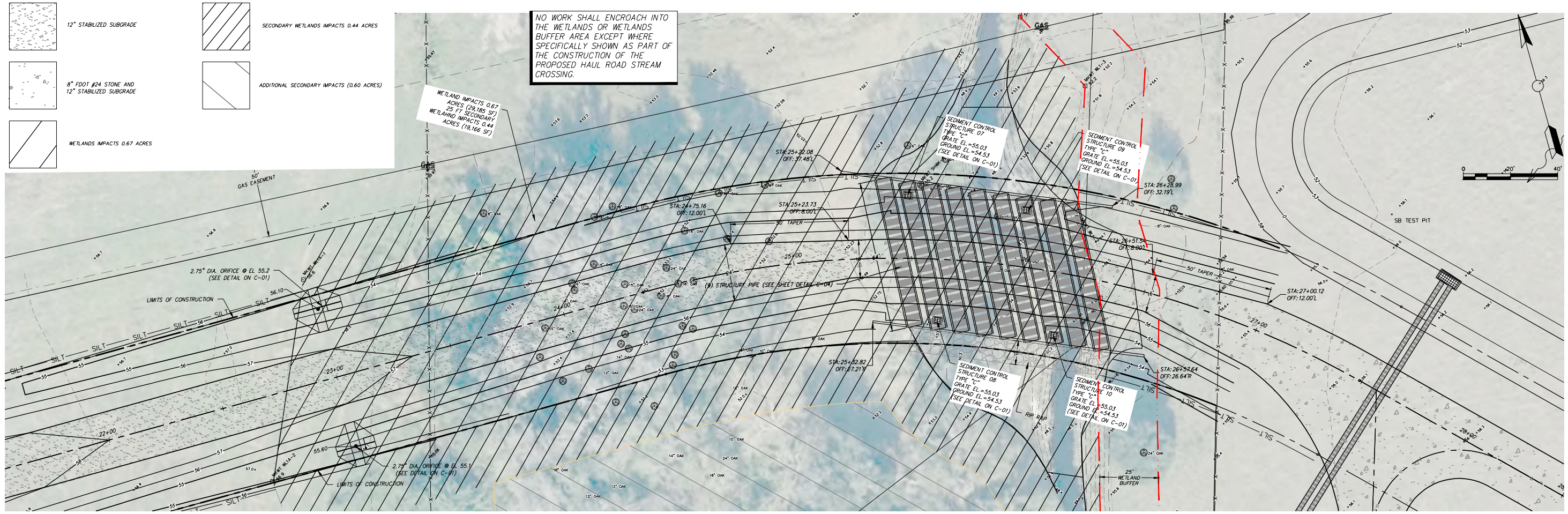
November 16, 2022 ENGINEER: W. R. CAUTHAN, P.E. REG. NO.: 27563

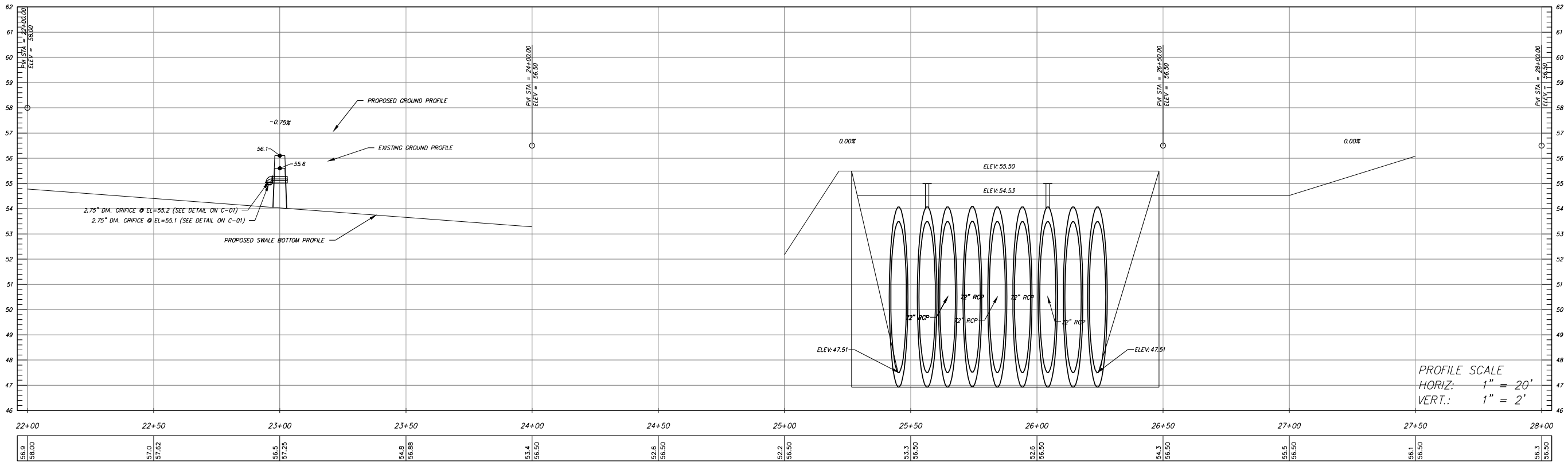
PROJECT NUMBER: 9775.03

SHEET NUMBER: PP-02

ATTACHMENT 3, BORROW AREA DRAWING SET



HAUL ROAD



ATTACHMENT 3, BORROW AREA DRAWING SET

NUMBER	DATE	DESCRIPTION
P-1	12/01/2021	ISSUED FOR 60% REVIEW
P-0	09/28/2021	ISSUED FOR 30% REVIEW

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PLAN PROFILE SHEET

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November 16, 2022 ENGINEER: W. R. CAUTHAN, P.E. REG. NO.: 27563

PROJECT NUMBER: 9775.03

SHEET NUMBER: PP-03

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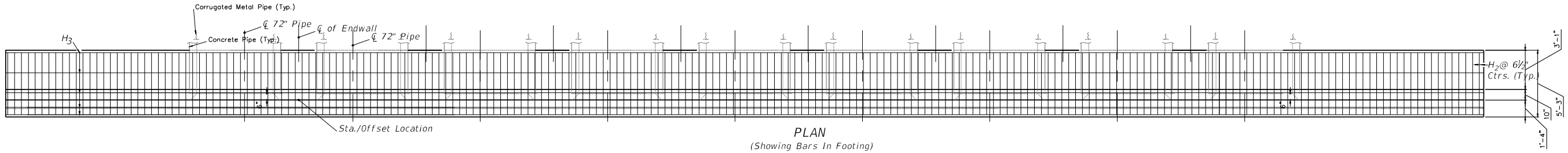
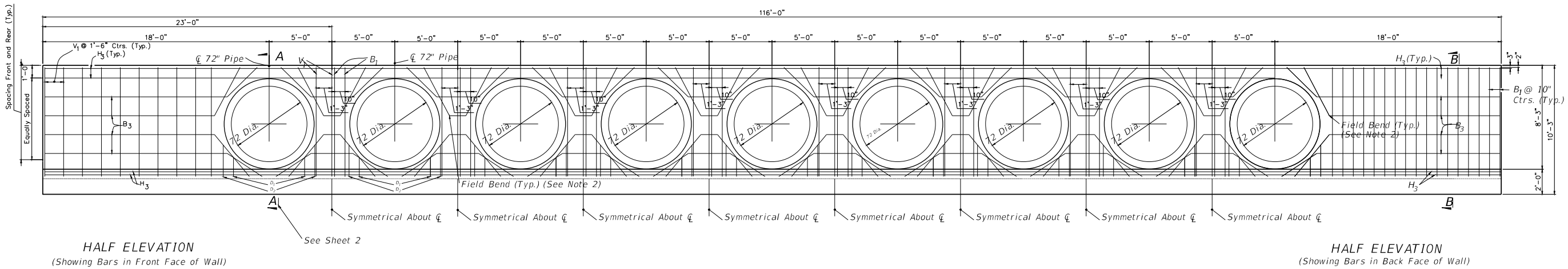
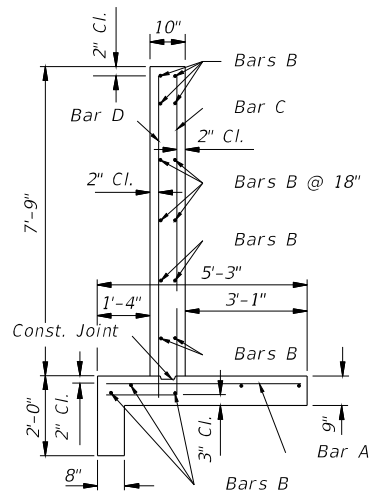


PLAN
(Showing Bars In Footing)



HALF ELEVATION
(Showing Bars in Front Face of Wall)

HALF ELEVATION
(Showing Bars in Back Face of Wall)



TYPICAL SECTION
THRU ENDWALL

NOTES:

1. 2" clearance on all reinforcement, unless otherwise shown.
2. Cut and bend B_3 Bars as shown.
3. All bar dimensions are out to out.

LEGEND:

H = Horizontal Bars
V = Vertical Bars
B = Bent Bars
D = Dowels or Diagonal Bars

NUMBER	DATE	DESCRIPTION
P-1	12/01/2021	ISSUED FOR 60% REVIEW
P-0	09/28/2021	ISSUED FOR 30% REVIEW

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HEADWALL DETAIL

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November 16, 2022 ENGINEER: W. R. CAUTHAN, P.E. REG. NO.: 27563

PROJECT NUMBER: 9775.03

SHEET NUMBER: C-08

ATTACHMENT 3, BORROW AREA DRAWING SET

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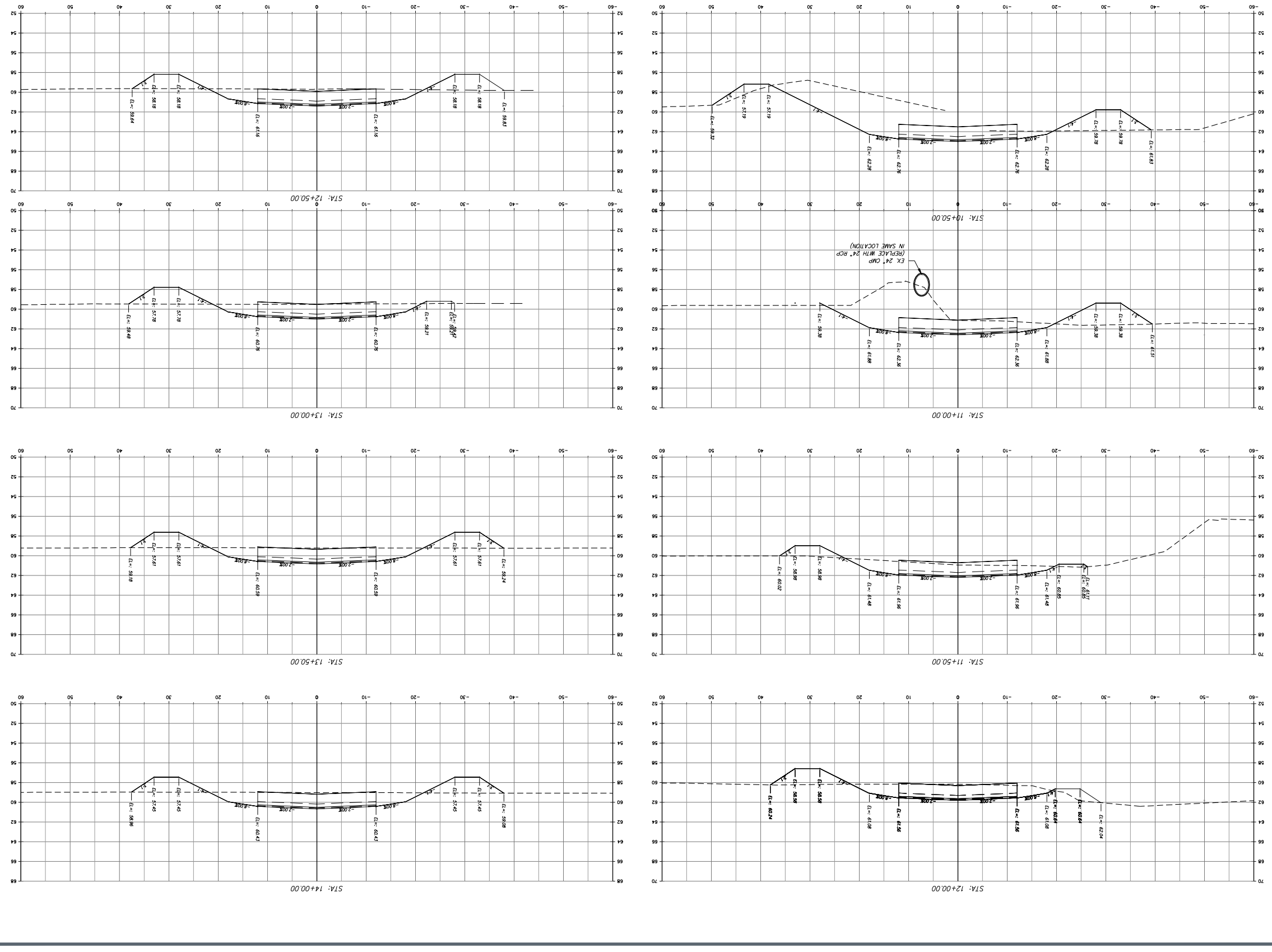
ATTACHMENT 3, BORROW AREA DRAWING SET



1" = 10' Horizontal
1" = 10' Vertical

PROJECT NUMBER: 9775.03	This item has been digitally signed and sealed by W. R. Coulton on the date adjacent to seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.	November 16, 2022 ENGINEER: W. R. CAUTHAN, P.E. REG. NO.: 27563	SHEET NUMBER: XS-01

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HIGHLANDS COUNTY, FLORIDA
CROSS SECTIONS

CHASTAIN SKILLMAN

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NUMBER	DATE	DESCRIPTION
P.0	09/28/2021	ISSUED FOR 30% REVIEW
P-1	12/01/2021	ISSUED FOR 60% REVIEW

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ATTACHMENT 3, BORROW AREA DRAWING SET

NUMBER	DATE	DESCRIPTION
P-0	09/28/2021	ISSUED FOR 30% REVIEW
P-1	12/01/2021	ISSUED FOR 60% REVIEW

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HIGHLANDS COUNTY BOARD OF COUNTY COMMISSIONERS
BORROW PIT
HIGHLANDS COUNTY, FLORIDA
CROSS SECTIONS

ENGINEER: W. R. CAUTHAN, P.E.
REG. NO.: 27563
November 16, 2022

PROJECT NUMBER: 9775.03

SHEET NUMBER: XS-02

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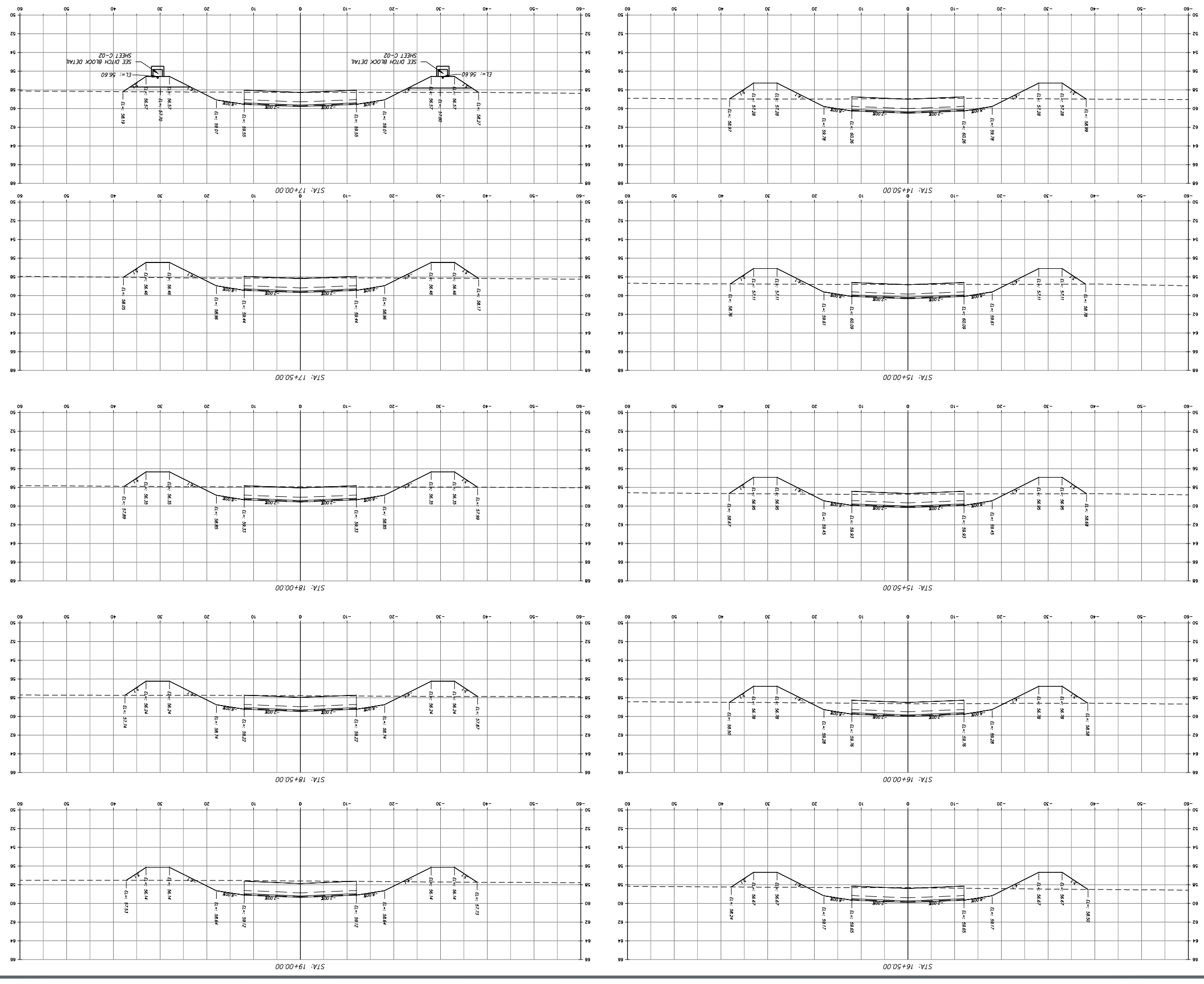

ATTACHMENT 3, BORROW AREA DRAWING SET

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NUMBER	DATE	DESCRIPTION
P-0	09/28/2021	ISSUED FOR 30% REVIEW
P-1	12/01/2021	ISSUED FOR 60% REVIEW

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BORROW PIT
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CROSS SECTIONS

ENGINEER: W. R. CAUTHAN, P.E.
REG. NO.: 27563
November 16, 2022

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PROJECT NUMBER: 9775.03

SHEET NUMBER: XS-03

1" = 10' Horizontal
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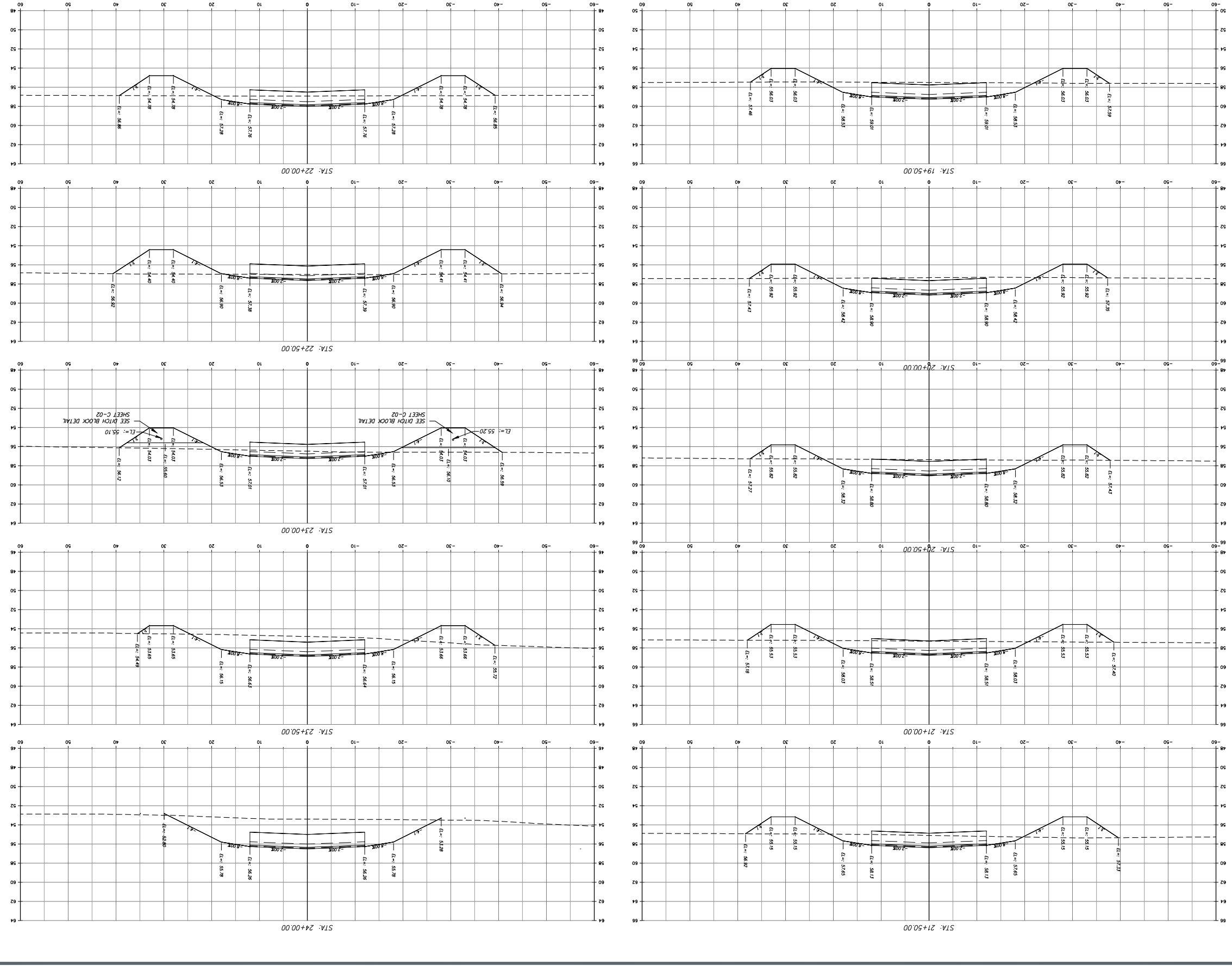
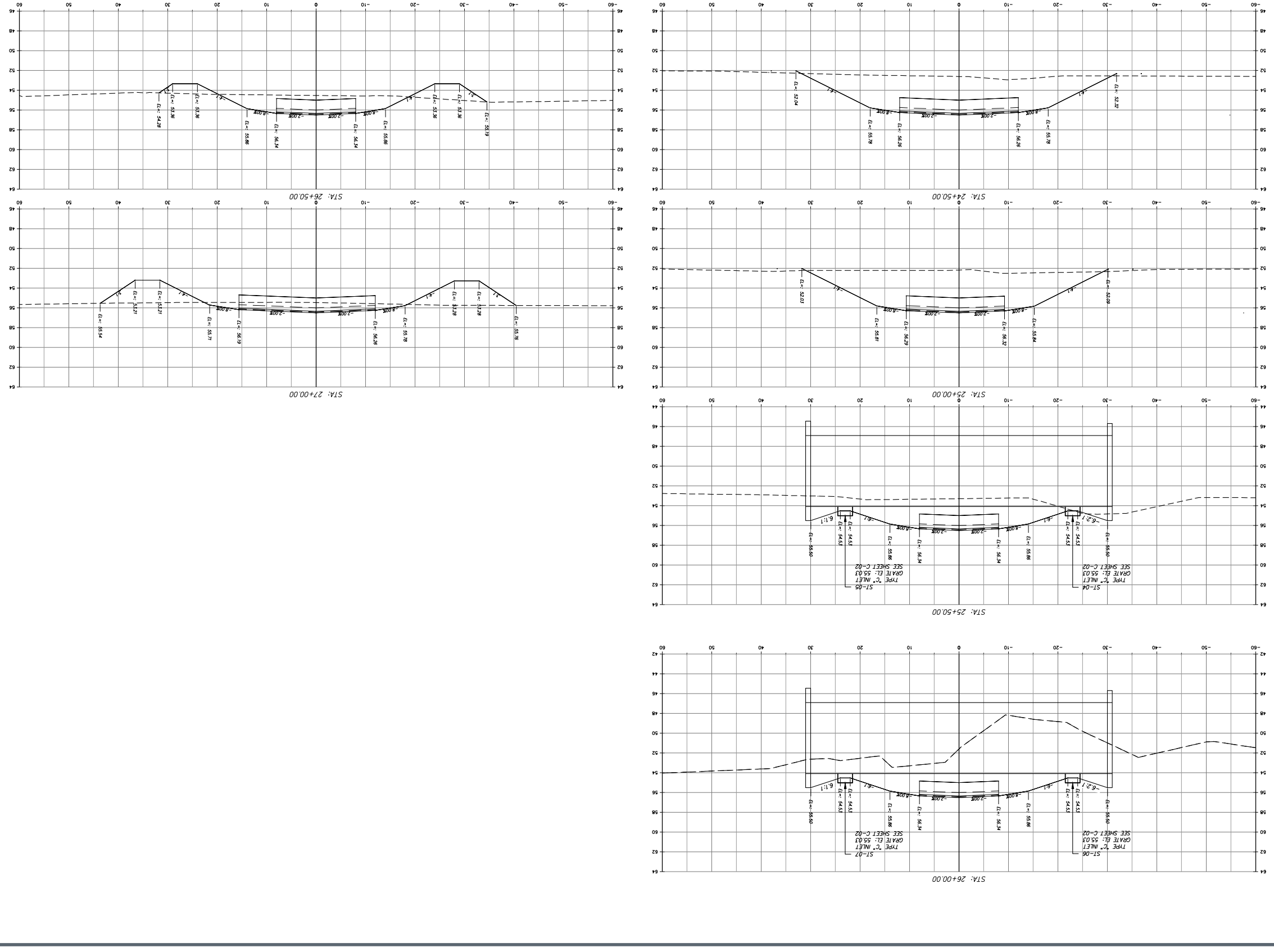


ATTACHMENT 3, BORROW AREA DRAWING SET



1" = 10' Horizontal
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PROJECT NUMBER:	SHEET NUMBER:
9775.03	XS-04

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REG. NO.: 27563

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BORROW PIT
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CROSS SECTIONS

CHASTAIN SKILLMAN

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P:\9775\03\CAD\Civil\9775003-MRC-2021-35.dwg, XS-04, Nov 16, 2022, 1:49pm, by: rcrimmen

CONSTRUCTION NOTES

GENERAL NOTES:

1. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES, AFFECTING THIS WORK, PRIOR TO CONSTRUCTION AND PRIOR TO PROVIDING A COST FOR CONSTRUCTION. CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES BETWEEN THE PLANS AND THE FIELD CONDITIONS.
2. PRIOR TO THE INITIATION OF SITE CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ANY EXISTING UTILITIES INCLUDING GAS, WATER, ELECTRIC, COMMUNICATIONS, CABLE TV, SANITARY AND STORM SEWERS, ON AND/OR ADJACENT TO THE SITE, REMOVE OR CAP AS NECESSARY.
3. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN AREAS OF BURIED UTILITIES AND SHALL CALL "SUNSHINE" AT 1-800-432-4770, AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, TO ARRANGE FOR FIELD LOCATIONS OF BURIED UTILITIES.
4. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES, ABOVE OR BELOW GROUND, THAT MAY OCCUR AS A RESULT OF THE WORK PERFORMED, BY THE CONTRACTOR OR SUBCONTRACTORS, AS CALLED FOR IN THESE CONTRACT DOCUMENTS.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH THE PERMIT INSPECTION AND CERTIFICATION REQUIREMENTS SPECIFIED BY THE VARIOUS GOVERNMENTAL AGENCIES AND THE ENGINEER. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION, AND SCHEDULE INSPECTIONS ACCORDING TO AGENCY INSTRUCTIONS/REQUIREMENTS.
6. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL PRE-CAST AND MANUFACTURED ITEMS TO THE OWNER'S ENGINEER FOR APPROVAL, PRIOR TO ORDERING. FAILURE TO OBTAIN APPROVAL BEFORE INSTALLATION MAY RESULT IN REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
7. ALL UTILITY SERVICE STUB-OUTS (WATER, SANITARY SEWER, etc.) ARE TO BE INSTALLED TO WITHIN 5' OF BUILDING(S), UNLESS OTHERWISE NOTED ON PLANS.
8. CONTRACTOR TO COORDINATE WITH THE APPLICABLE ELECTRIC UTILITY SUPPLIER REGARDING ANY NECESSARY RELOCATION(S) OF UNDERGROUND AND/OR OVERHEAD ELECTRIC FACILITIES, AND FOR THE LOCATION AND INSTALLATION OF TRANSFORMER PAD(S) AND ASSOCIATED ELECTRIC FACILITIES.
9. SAFETY:
   A. DURING THE CONSTRUCTION AND/OR MAINTENANCE OF THIS PROJECT, ALL SAFETY REGULATIONS ARE TO BE ENFORCED. THE CONTRACTOR OR HIS REPRESENTATIVE SHALL BE RESPONSIBLE FOR THE CONTROL AND SAFETY OF THE TRAVELING PUBLIC AND THE SAFETY OF HIS/HER PERSONNEL.
   B. LABOR SAFETY REGULATIONS SHALL CONFORM TO THE PROVISIONS SET FORTH BY OSHA IN THE FEDERAL REGISTER OF THE DEPARTMENT OF TRANSPORTATION.
   C. THE MINIMUM STANDARDS AS SET FORTH IN THE CURRENT EDITION OF "THE STATE OF FLORIDA, MANUAL ON TRAFFIC CONTROL AND SAFE PRACTICES FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS" SHALL BE FOLLOWED IN THE DESIGN, APPLICATION, INSTALLATION, MAINTENANCE AND REMOVAL OF ALL TRAFFIC CONTROL DEVICES, WARNING DEVICES AND BARRIERS NECESSARY TO PROTECT THE PUBLIC AND CONSTRUCTION PERSONNEL FROM HAZARDS WITHIN THE PROJECT LIMITS.
   D. ALL TRAFFIC CONTROL MARKINGS AND DEVICES SHALL CONFORM TO THE PROVISIONS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES PREPARED BY THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION.
   E. ALL SUBSURFACE CONSTRUCTION SHALL COMPLY WITH THE "TRENCH SAFETY ACT". THE CONTRACTOR SHALL INSURE THAT THE METHOD OF TRENCH PROTECTION AND CONSTRUCTION IS IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS.

   IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY AND ENFORCE ALL APPLICABLE SAFETY REGULATIONS. THE ABOVE INFORMATION HAS BEEN PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY AND DOES NOT IMPLY THAT THE OWNER OR ENGINEER WILL INSPECT AND/OR ENFORCE SAFETY REGULATIONS.
10. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ANY "ON-SITE PIPING PERMITS" (IF REQUIRED) FOR CONSTRUCTION OF THE PROPOSED UTILITY FACILITIES. THIS PERMIT MUST BE OBTAINED BY A DULY LICENSED PLUMBING CONTRACTOR (OR CLASS A GENERAL CONTRACTOR) PRIOR TO THE START OF CONSTRUCTION. THESE PLANS AND ANY SUBSEQUENT REVISIONS TO THESE PLANS, THAT ARE ISSUED BY THE ENGINEER, WILL BE SUBJECT TO THE APPROVAL CONDITIONS OF THIS PERMIT.
11. THE GRAPHIC INFORMATION DEPICTED ON THESE PLANS HAS BEEN COMPILED TO PROPORTION BY SCALE AS ACCURATELY AS POSSIBLE. HOWEVER, DUE TO REPRODUCTIVE DISTORTION, REDUCTION, AND/OR REVISIONS, INFORMATION CONTAINED HEREIN IS NOT INTENDED TO BE SCALED FOR CONSTRUCTION PURPOSES.
12. ALL SPECIFICATIONS AND DOCUMENTS REFERENCED HEREIN SHALL BE OF THE LATEST REVISION.
13. ALL UNDERGROUND UTILITIES MUST BE IN-PLACE, TESTED AND INSPECTED PRIOR TO BASE AND SURFACE CONSTRUCTION.
14. WORK PERFORMED UNDER THIS CONTRACT SHALL INTERFACE SMOOTHLY WITH ANY OTHER WORK BEING PERFORMED ON-SITE BY OTHER CONTRACTORS/SUBCONTRACTORS AND UTILITY COMPANIES. IT WILL BE NECESSARY FOR THE GENERAL CONTRACTOR TO COORDINATE AND SCHEDULE ITS ACTIVITIES ACCORDINGLY.
15. ALL AREAS AFFECTED BY THIS WORK SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THE EXISTING CONDITION, UNLESS SPECIFICALLY EXEMPTED BY THE PLANS. THE COST FOR SUCH RESTORATION SHALL BE INCIDENTAL TO OTHER CONSTRUCTION AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
16. THE CONTRACTOR SHALL REMAIN SOLELY RESPONSIBLE FOR ANY DESIGN CHANGES WHICH HE MAY INCORPORATE INTO THE PLANS WITHOUT PRIOR WRITTEN CONSENT AND/OR APPROVAL FROM THE OWNER AND ENGINEER.
17. AT LEAST 30 DAYS PRIOR TO ANTICIPATED COMPLETION OF SITE CONSTRUCTION, THE FINAL CERTIFICATION PROCESS SHALL BEGIN. THE CONTRACTOR SHALL PROVIDE DOCUMENTS AND INFORMATION IN A TIMELY MANNER TO ENGINEER, INCLUDING AND WITHOUT LIMITATIONS:
   A. SURVEYED "AS-BUILTS" PER AS-BUILT SURVEY SCOPE IN SPEC MANUAL.
   B. COMPACTION AND DENSITY TEST RESULTS.

   THE CONTRACTOR SHALL HAVE TWO SETS OF AS-BUILT PLANS SIGNED AND SEALED BY THE SURVEYOR ON RECORD ON SITE THE DAY OF THE CIVIL ENGINEERING PUNCH LIST INSPECTION. THE GENERAL CONTRACTOR IS TO GIVE THE TWO AS-BUILT PLANS TO THE REPRESENTATIVE FOR BARRIOS ENGINEERING, LLC PRESENT. IF ANY DEFICIENCIES ARE NOTED, ONE COPY OF REDLINED AS-BUILTS WILL BE GIVEN TO THE GC FOR REVISIONS TO BE MADE.
18. PARKING STALLS SHALL COMPLY WITH LOCAL CODE REQUIREMENTS AND ALL ADA REQUIRED FEATURES AND APPURTENANCES REQUIRED BY ADA SHALL COMPLY WITH MINIMUM ADA REQUIREMENTS.

CLEARING AND SITE PREPARATION NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER INSTALLATION OF THE EROSION CONTROL DEVICES, AS SHOWN ON THE CONSTRUCTION PLANS, PRIOR TO ANY SITE CLEARING. REFER TO THE "EROSION CONTROL NOTES" SECTION CONTAINED HEREIN FOR ADDITIONAL REQUIREMENTS.
2. PRIOR TO ANY SITE CLEARING, ALL TREES SHOWN TO REMAIN, AS INDICATED ON THE CONSTRUCTION PLANS, SHALL BE PROTECTED IN ACCORDANCE WITH LOCAL TREE ORDINANCES, AND DETAILS CONTAINED IN THESE PLANS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THESE TREES IN GOOD CONDITION. NO TREE(S) SHOWN TO REMAIN SHALL BE REMOVED WITHOUT WRITTEN APPROVAL FROM THE OWNER AND THE LOCAL AGENCY HAVING JURISDICTION OVER THESE ACTIVITIES.
3. THE CONTRACTOR SHALL CLEAR AND GRUB ONLY THOSE PORTIONS OF THE SITE NECESSARY FOR CONSTRUCTION. ALL DISTURBED AREAS MUST BE SODDED IMMEDIATELY FOLLOWING CONSTRUCTION.
4. ALL CONSTRUCTION DEBRIS AND OTHER WASTE MATERIAL SHALL BE DISPOSED OF OFF-SITE, BY THE CONTRACTOR, IN ACCORDANCE WITH APPLICABLE REGULATORY AGENCY REQUIREMENTS. A DUMPSTER OR OTHER CONTAINER SUITABLE IN SIZE TO CONTAIN ALL WASTE MATERIAL SHALL BE PROVIDED DURING THE CONSTRUCTION.
5. THE CONTRACTOR IS TO CLEAR AND PREPARE THE SITE IN ACCORDANCE WITH THE SPECIFICATIONS AND RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL INVESTIGATION REPORT BY MADRID CPWG. GENERAL CONTRACTOR (AND ALL SITE WORK SUBCONTRACTORS) SHALL OBTAIN AND REVIEW A COPY OF THE GEOTECHNICAL INVESTIGATION REPORT. COPIES OF THE REPORT ARE AVAILABLE THROUGH THE OWNER/DEVELOPER OR MADRID CPWG DIRECTLY.

PAVING AND GRADING NOTES:

1. ALL DELETERIOUS SUBSURFACE MATERIAL (I.E. MUCK, PEAT, BURIED DEBRIS) IS TO BE EXCAVATED IN ACCORDANCE WITH THESE PLANS OR AS DIRECTED BY THE OWNER, THE OWNERS ENGINEER, OR OWNERS SOILS TESTING COMPANY. DELETERIOUS MATERIAL IS TO BE STOCKPILED OR REMOVED FROM THE SITE AS DIRECTED BY THE OWNER. EXCAVATED AREAS ARE TO BE BACKFILLED WITH APPROVED MATERIALS AND COMPACTED AS SHOWN ON THESE PLANS. CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ANY PERMITS THAT ARE NECESSARY FOR REMOVING DELETERIOUS MATERIAL FROM THE SITE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXCAVATIONS AGAINST COLLAPSE AND WILL PROVIDE BRACING, SHEETING OR SHORING AS NECESSARY. DEWATERING METHODS SHALL BE USED AS REQUIRED TO KEEP TRENCHES DRY WHILE PIPE AND APPURTENANCES ARE BEING PLACED.
3. ALL NECESSARY FILL AND EMBANKMENT THAT IS PLACED DURING CONSTRUCTION SHALL CONSIST OF MATERIAL SPECIFIED BY THE OWNER'S SOILS TESTING COMPANY, BE GRADED ACCORDING TO THE APPROVED GRADING PLAN AND PLACED / COMPACTED ACCORDING TO THE RECOMMENDATIONS AND SPECIFICATIONS CONTAINED IN THE GEOTECHNICAL INVESTIGATION REPORT PERFORMED BY MADRID CPWG.
4. PROPOSED SPOT ELEVATIONS REPRESENT FINISHED PAVEMENT OR GROUND SURFACE GRADES UNLESS OTHERWISE NOTED.
5. IT MAY BE NECESSARY TO FIELD ADJUST PAVEMENT ELEVATIONS TO PRESERVE THE ROOT SYSTEMS OF TREES SHOWN TO BE SAVED. CONTRACTOR TO COORDINATE WITH OWNER'S ENGINEER PRIOR TO ANY ELEVATION CHANGES.
6. CONTRACTOR SHALL SAW CUT, TACK, AND MATCH EXISTING PAVEMENT AT LOCATIONS WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT.
7. CURBING SHALL BE PLACED AT THE EDGES OF ALL PAVEMENT, UNLESS OTHERWISE NOTED. REFER TO THE LATEST EDITION OF F.D.O.T. "ROADWAY AND TRAFFIC DESIGN STANDARDS" FOR DETAILS AND SPECIFICATIONS OF ALL F.D.O.T. TYPE CURB AND GUTTERS CALLED FOR IN THESE PLANS.
8. PRIOR TO CONSTRUCTING CONCRETE PAVEMENT, THE CONTRACTOR IS TO SUBMIT A PROPOSED JOINTING PATTERN TO THE SOILS ENGINEER FOR APPROVAL.
9. CONTRACTOR TO PROVIDE A 1/2" TO 1" BITUMINOUS EXPANSION JOINT MATERIAL WITH SEALER AT ABUTMENT OF CONCRETE AND OTHER MATERIALS (STRUCTURES, OTHER PLACED CONCRETE, ETC.)
10. ALL PAVEMENT MARKINGS SHALL BE MADE IN ACCORDANCE WITH F.D.O.T. STANDARDS.
11. THE CONTRACTOR WILL STABILIZE, BY SEED AND MULCH, SOD, OR OTHER APPROVED MATERIALS (REFER TO PLANS), ANY AND ALL DISTURBED AREAS WITHIN ONE WEEK FOLLOWING CONSTRUCTION OF THE UTILITY SYSTEMS AND PAVEMENT AREAS. CONTRACTOR SHALL MAINTAIN SUCH AREAS UNTIL FINAL ACCEPTANCE BY OWNER. CONTRACTOR TO COORDINATE WITH OWNER REGARDING TYPE OF MATERIAL, LANDSCAPING AND IRRIGATION REQUIREMENTS.
12. ALL ELEVATION REFER TO NAVD 1988 VERTICAL DATUM.

AS-BUILT:

UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL FURNISH THE OWNER'S ENGINEER WITH COMPLETE "AS-BUILT" INFORMATION, CERTIFIED BY A REGISTERED LAND SURVEYOR. THIS "AS-BUILT" INFORMATION SHALL INCLUDE INVERT ELEVATIONS, DRAINAGE STRUCTURES, WEIRS, LOCATIONS OF STRUCTURES FOR ALL UTILITIES INSTALLED, AS WELL AS TOP OF BANK, TOE OF SLOPE, AND GRADE BREAK LOCATIONS, ELEVATIONS FOR POND AND DITCH/SWALE CONSTRUCTION, AND TOP AND BOTTOM OF HANDICAP RAMPS AND SPOT ELEVATIONS ALONG ALL HANDICAP ACCESSIBLE ROUTES AND STALLS. NO ENGINEER'S CERTIFICATIONS FOR CERTIFICATE OF OCCUPANCY (C.O.) PURPOSES WILL BE MADE UNTIL THIS INFORMATION HAS BEEN RECEIVED AND APPROVED BY THE OWNER'S ENGINEER.

TESTING AND INSPECTION REQUIREMENTS (PAVING/GRADING):

1. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING APPLICABLE TESTING WITH THE SOILS ENGINEER. TESTS WILL BE REQUIRED PURSUANT TO THE GEOTECHNICAL REPORT, AS WELL AS THE TESTING SCHEDULE REQUIRED BY FDOT AND THE AFFECTED MUNICIPALITY. UPON COMPLETION OF WORK, THE SOILS ENGINEER WILL SUBMIT CERTIFICATIONS TO THE OWNER AND OWNER'S ENGINEER STATING THAT ALL REQUIREMENTS HAVE BEEN MET.
2. A QUALIFIED TESTING LABORATORY SHALL PERFORM ALL TESTING NECESSARY TO ASSURE COMPLIANCE OF THE IN-PLACE MATERIALS AS REQUIRED BY THESE PLANS AND THE VARIOUS AGENCIES. SHOULD ANY RETESTING BE REQUIRED DUE TO THE FAILURE OF ANY TESTS TO MEET THE REQUIREMENTS, THE CONTRACTOR WILL BEAR ALL COSTS OF SAID RETESTING.

STORMWATER INFRASTRUCTURE MAINTENANCE NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER INSTALLATION OF THE EROSION CONTROL DEVICES, AS SHOWN ON THE CONSTRUCTION PLANS, PRIOR TO ANY SITE CLEARING. REFER TO THE "EROSION CONTROL NOTES" SECTION CONTAINED HEREIN FOR ADDITIONAL REQUIREMENTS.
2. INLETS AND PIPES MUST BE KEPT FREE OF TRASH AND SILT, AND SHALL BE INSPECTED ANNUALLY.
3. THE CIRCULAR ORIFICE CONTROL STRUCTURE SHALL BE KEPT FREE OF TRASH AND DEBRIS. REMOVE THE GRATE AND REMOVE SEDIMENTS AND DEBRIS THAT HAVE ENTERED THE DIVERSION.
4. ALL SURFACEWATER MANAGEMENT FACILITIES PERMITTED BY THE DISTRICT SHALL BE OPERATED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED DESIGN, PLANS AND CALCULATIONS, AND OTHER SPECIFICATIONS THAT HAVE BEEN SUBMITTED WITH THE APPLICATION AND APPROVED BY THE DISTRICT, AND INCORPORATED BY REFERENCE INTO ANY PERMIT ISSUED. OILS, PAINTS, AND OTHER HARMFUL CHEMICALS SHALL BE KEPT FROM THE FACILITIES. ANY SUCH MATERIALS INADVERTENTLY ENTERING SHALL BE IMMEDIATELY REMOVED.
5. DURING THE EARTHWORK, GRADING, LANDSCAPING, PLANTING, ETC., EROSION PROTECTION SUCH AS SYNTHETIC HAY BALES, TURBIDITY CURTAINS, AND OTHER MATERIALS, SHALL BE PLACED AT INLETS AND OUTLET PIPES TO CONTROL STORMWATER QUALITY AND TURBIDITY.
6. INSPECTIONS SHALL BE MADE AT LEAST ANNUALLY TO CHECK DRAINAGE STRUCTURES AND PIPES FOR MAJOR BUILD UP SEDIMENTATION OR TRASH. THE DRAINAGE STRUCTURES SHALL BE CLEANED IF THE SEDIMENTATION LEVEL IN THE SUMP IS 6 INCHES OR GREATER. THE SEDIMENT MAY BE VACUUMED, PUMPED, OR MANUALLY REMOVED FROM THE BASIN. THE INSPECTION SHALL INCLUDE EROSION AND SOIL STABILIZATION TO PREVENT SEDIMENT DISCHARGE TO WATERS IN THE STATE. ANY VEGETATION UTILIZED FOR EROSION CONTROL SHALL BE INSPECTED AND MAINTAINED FOR FUNCTION.
7. ANY PERVIOUS PAVED SURFACES MUST BE STREET SWEPT BY A VACUUMED SWEEPER TWICE A MONTH.
8. ANY PERVIOUS PAVED SURFACES MUST BE PRESSURE WASHED EVERY THREE MONTHS.
9. ALL PERVIOUS PAVED SURFACES MUST BE INSPECTED FOR PERFORMANCES, VISUALLY AND/OR MANUALLY, BY A CERTIFIED PERVIOUS CONCRETE PERFORMANCE TESTING COMPANY ONCE PER YEAR.

CONSTRUCTION SITE WORK TESTING:

1. ALL SITE WORK CONSTRUCTION TESTING SHALL BE PERFORMED BY A CERTIFIED/LICENSED GEOTECHNICAL ENGINEERING FIRM.
2. ALL SITE WORK CONSTRUCTION TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH THE GEOTECHNICAL INVESTIGATION REPORT PERFORMED BY MADRID CPWG AND/OR THE TESTING PARAMETERS OF THE LOCAL MUNICIPALITY/AGENCY HAVING JURISDICTION OVER THE SITE WORK. THE MORE STRINGENT REQUIREMENTS SHALL APPLY.
3. COPIES OF PASSING TEST RESULTS SHALL BE PROVIDED TO THE DEVELOPER, ENGINEER OF RECORD, CONTRACTOR AND LOCAL MUNICIPALITY/AGENCY FOR PURPOSES, SUCH AS BUT NOT LIMITED TO, CERTIFICATION, AND ACCEPTANCE OF FACILITIES BY THE DEVELOPER AND/OR MUNICIPALITY/AGENCY.
4. THE SERVICES OF A CONSTRUCTION TESTING GEOTECHNICAL FIRM SHALL BE RETAINED BY THE CONTRACTOR, UNLESS OTHERWISE SPECIFIED IN THE BID DOCUMENTS.
5. ENGINEER-OF-RECORD AND/OR BARRIOS ENGINEERING, LLC WILL NOT BE RESPONSIBLE FOR SCHEDULING, COORDINATION OR EVALUATION OF THE SOILS TESTING AND CERTIFICATIONS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE OWNER/DEVELOPER AND GENERAL CONTRACTOR TO MAKE THE NECESSARY ARRANGEMENTS DIRECTLY WITH THE SOILS TESTING LABORATORY/GEOTECHNICAL FIRM AND THE SITE CONTRACTOR.
6. THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHEN CONSTRUCTION IS COMPLETE FOR WATER, WASTEWATER, AND STORMWATER SYSTEMS SO TIMELY CERTIFICATIONS MAY BE INITIATED. SATISFACTORY BACTERIOLOGICAL TEST RESULTS, PRESSURE TEST RESULTS, AND AN AS-BUILT SURVEY SHALL BE SUBMITTED TO ENGINEER FOR ALL WORK REQUIRING CERTIFICATIONS.

EROSION CONTROL NOTES:

1. CONTRACTOR IS TO PROVIDE AND MAINTAIN EROSION CONTROL/SEDIMENTATION BARRIERS (SYNTHETIC HAY BALES OR SILTATION CURTAINS) TO PREVENT SILTATION OF ADJACENT PROPERTY, STREETS, STORM SEWERS AND WATERWAYS. IN ADDITION, CONTRACTOR SHALL PLACE STRAW, MULCH, OR OTHER SUITABLE MATERIAL ON GROUND IN AREAS WHERE CONSTRUCTION RELATED TRAFFIC IS TO ENTER AND EXIT SITE. IF, IN THE OPINION OF THE ENGINEER AND/OR LOCAL AUTHORITIES, EXCESSIVE QUANTITIES OF EARTH ARE TRANSPORTED OFF-SITE EITHER BY NATURAL DRAINAGE OR BY VEHICULAR TRAFFIC, THE CONTRACTORS IS TO REMOVE SAID EARTH TO THE SATISFACTION OF THE ENGINEER AND/OR AUTHORITIES.
2. THE CONTRACTOR SHALL LIMIT THE DISCHARGE OF TURBID WATERS OFF-SITE, OR INTO ON-SITE/OFF-SITE WETLANDS (IF APPLICABLE), TO NO MORE THAN 29 NTU's (NEPHELOMETRIC TURBIDITY UNITS), ABOVE BACKGROUND LEVELS.
3. IF WIND EROSION BECOMES SIGNIFICANT DURING CONSTRUCTION, THE CONTRACTOR SHALL STABILIZE THE AFFECTED AREA USING SPRINKLING, IRRIGATION OR OTHER ACCEPTABLE METHODS.
4. CONTRACTOR SHALL INSPECT AND MAINTAIN ON A DAILY BASIS ALL EROSION/SEDIMENTATION CONTROL FACILITIES. ALL EROSION CONTROL MEASURES SHALL ALSO BE INSPECTED AFTER ANY ½" OR GREATER RAINFALL EVENT.
5. THE CONTRACTOR SHALL ENSURE THAT SILTATION ACCUMULATIONS GREATER THAN THE LESSER OF 12 INCHES OR ONE-HALF THE DEPTH OF THE SILTATION CONTROL BARRIER SHALL BE IMMEDIATELY REMOVED AND PLACED IN UPLAND AREAS.

DRAINAGE SYSTEM NOTES:

1. STANDARD INDEXES REFER TO THE LATEST EDITION OF F.D.O.T. "ROADWAY AND TRAFFIC DESIGN STANDARDS".
2. ALL STORM SEWER PIPE SHALL BE REINFORCED CONCRETE CLASS III (ASTM C-76) UNLESS OTHERWISE NOTED ON PLANS. ALL DRAINAGE STRUCTURES SHALL BE IN ACCORDANCE WITH F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS UNLESS OTHERWISE NOTED ON PLANS.
3. PIPE LENGTHS SHOWN ARE APPROXIMATE AND TO CENTER OF DRAINAGE STRUCTURES, WITH THE EXCEPTION OF MITERED END AND FLARED END SECTIONS, WHICH ARE NOT INCLUDED IN LENGTHS.
4. ALL DRAINAGE STRUCTURE GRATES AND COVERS SHALL BE TRAFFIC RATED FOR H-20 LOADINGS.
5. CONSTRUCTION OF THE STORMWATER MANAGEMENT SYSTEM MUST BE COMPLETE AND ALL DISTURBED AREAS STABILIZED IN ACCORDANCE WITH THE PERMITTED PLANS AND CONDITIONS PRIOR TO ANY OF THE FOLLOWING: ISSUANCE OF THE FIRST CERTIFICATE OF OCCUPANCY; INITIATION OF INTENDED USE OF THE INFRASTRUCTURE; OR TRANSFER OF RESPONSIBILITY FOR MAINTENANCE OF THE SYSTEM TO A LOCAL GOVERNMENT OR OTHER RESPONSIBLE ENTITY.

TESTING AND INSPECTION REQUIREMENTS (DRAINAGE):

1. THE STORM DRAINAGE PIPING AND RETENTION POND SYSTEM SHALL BE SUBJECT TO A VISUAL INSPECTION BY THE OWNER'S ENGINEER PRIOR TO THE PLACEMENT OF BACKFILL. CONTRACTOR TO NOTIFY THE ENGINEER 48 HOURS IN ADVANCE TO SCHEDULE INSPECTION.
2. THE CONTRACTOR SHALL MAINTAIN AND PROTECT FROM MUD, DIRT, DEBRIS, ETC. THE STORM DRAINAGE SYSTEM UNTIL FINAL ACCEPTANCE OF THE PROJECT. THE STORM SYSTEM WILL BE REINSPECTED BY THE OWNERS ENGINEER PRIOR TO APPROVAL FOR CERTIFICATE OF OCCUPANCY PURPOSES. THE CONTRACTOR MAY BE REQUIRED TO RECLEAN PIPES AND INLETS FOR THESE PURPOSES.

PAVEMENT MARKINGS & STRIPING:

ALL PERMITTED PAVEMENT STRIPING PERTAINING TO THIS ACCESS PERMIT SHALL REQUIRE CERTIFIED LEAD FREE, THERMOPLASTIC MARKING MATERIALS IN A HEATED LIQUID STATE ONLY, AS PREFORMED THERMOPLASTIC SHEETS SHALL NOT BE ALLOWED TO BE UTILIZED AS THE FINAL PLACEMENT AND MUST MEET THOSE REQUIREMENTS SHOWN IN SECTION 711 OF THE MOST CURRENT FDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION FOR ANY FINAL PLACEMENT OF THIS CONSTRUCTION ITEM. IN SOME CASES, TEMPORARY TRAFFIC BEARING PAINT AND RPM'S SHALL BE REQUIRED TO BE SET IN PLACE 30 MINUTES BEFORE OFFICIAL SUNDOWN, AS MAY BE REQUIRED BY FDOT NORMAL OPERATIONAL PROCEDURES. BOTH TEMPORARY TRAFFIC BEARING PAINTS AND THERMOPLASTIC MARKING MATERIALS SHALL BE LEAD FREE AND SHALL MEET/OR OBTAIN FDOT MINIMUM SPECIFICATIONS FOR NIGHT REFLECTIVITY. TEMPORARY RPM'S SHALL BE INSTALLED DURING BOTH TEMPORARY AND PERMANENT STRIPING PHASES.

FAILURE BY THE PERMITTEE AND/OR HIS/HER CONTRACTOR TO HAVE A CERTIFIED STRIPING CREW ON SITE BEFORE THE START OF PAVING CAN BE REASON TO SUSPEND THE APPROVED PERMIT UNTIL SUCH TIME AS THE PERMITTEE AND/OR HIS/HER CONTRACTOR CORRECTS THE SITUATION TO THE SATISFACTION OF THE ON-SITE STATE FDOT PERMITS PESONNEL/INSPECTOR.

ROADWAY RIGHT-OF-WAY GRASS SOD & RIGHT-OF-WAY RESTORATION:

ALL AREAS, WHICH HAVE BEEN DISTRIBUTION BY THE CONSTRUCTION, WILL, AS A MINIMUM, BE SEEDED. SEED SHALL HAVE MINIMUM 90% PURITY AND 85% GERMINATION AS INDICATED ON LABEL. IF NECESSARY, THE APPLICATION OF AMENDMENTS, SUCH AS DOLOMITIC LIMESTONE WILL BE USED TO CORRECT THE pH FACTOR TO WITHIN THE LIMITS OF 6.0-7.0.

ALL RETENTION/DETENTION BASINS SHALL BE SODDED WITHIN THEIR LIMITS. ALL EXPOSED AREAS WITHIN THEIR LIMITS. ALL EXPOSED AREAS WITHIN PUBLIC RIGHTS-OF-WAY WILL BE SOLID SODDED. OTHER AREAS WITH SLOPES THAN STEEPER THAN 4:1 WILL BE SODDED.

ALL PERMANENT SOIL EROSION CONTROL MEASURES ANDDD ROW RESTORATION SHALL MEET THE STANDARDS OF SECTION 6.14.02 IN THE CITY OF ORLANDO ENGINEERS STANDARDS MANUAL.

OTHER NOTES OF IMPORTANCE:

CONTRACTOR MUST VISIT SITE PRIOR TO BIDDING AND BECOME FULLY FAMILIAR WITH EXISTING CONDITIONS (I.E. EXISTING UTILITIES, LANDSCAPING, STRUCTURES, ETC.

CONTRACTOR MUST LOCATE AND VERIFY EXACT ELEVATION OF ALL EXISTING UTILITIES AT POINTS OF CONNECTION AND INTERSECTIONS PRIOR TO THE BEGINNING OF THE PROJECT. GC SHALL CONTACT ENGINEER OF RECORD IMMEDIATELY IF ANY DISCREPANCIES.

ALL DISTURBED AREAS, IN AND OUTSIDE THE BOUNDARY LINES OF THE PROPOSED DEVELOPMENT, MUST BE SEEDED OR SODDED. CONTRACTOR TO OBTAIN FINAL APPROVAL FROM FDOT AND HIGHLANDS COUNTY PRIOR TO OWNERS ACCEPTANCE.

CONTRACTOR MUST PROVIDE ALL MAINTENANCE OF TRAFFIC METHODS AND DEVISES REQUIRED BY FDOT AND HIGHLANDS COUNTY EVEN WHEN THEY DIFFER FROM THE METHODS SHOWN ON THIS SET OF CONSTRUCTION DRAWINGS AS LONG AS THE METHODS AND DEVICES APPROVED BY THE FDOT AND COUNTY.

CONTRACTOR MUST PROVIDE AS-BUILT DRAWING TO ENGINEER OF RECORD PRIOR TO SUBMITTING FOR CERTIFICATE OF OCCUPANCY.

AS-BUILT DRAWINGS MUST INCLUDE INVERT ELEVATIONS AT BOTH ENDS OF ALL PIPES AND TOP AND BOTTOM ELEVATIONS OF ALL RAMPS.

ALL REQUIRED ELEVATIONS ON HANDICAP ZONE, ALL CONTOURS IN THE PONDS AND PROPOSED SWALES, FINISH FLOOR ELEVATION, AND ALL SITE IMPROVEMENTS AS REQUIRED BY THE ENGINEER OF RECORD.

CONTRACTOR SHALL COORDINATE ALL BACTERIOLOGICAL AND PRESSURE TEST AS MAY BE REQUIRED BY THE JURISDICTION HAVING AUTHORITY.

CONTRACTOR MUST PROVIDE ALL TEST RESULTS TO ENGINEER OF RECORD 30 DAYS PRIOR TO PROJECT COMPLETION.

ATTACHMENT 3, BORROW AREA DRAWING SET

NUMBER	DATE	DESCRIPTION
P-1	12/01/2021	ISSUED FOR 60% REVIEW
P-0	09/28/2021	ISSUED FOR 30% REVIEW

CHASTAIN-SKILLMAN
205 EAST ORANGE STREET
SUITE #110
LAKELAND, FL 33801-4611
(863) 646-1402

CHASTAIN SKILLMAN

HIGHLANDS COUNTY BOARD OF COUNTY COMMISSIONERS
BORROW PIT
HIGHLANDS COUNTY, FLORIDA

GENERAL CONSTRUCTION NOTES

This item has been digitally signed and sealed by W. R. Cauthon on the date adjacent to seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

November 16, 2022 ENGINEER: W. R. CAUTHAN, P.E.
REG. NO.: 27563

PROJECT NUMBER: 9775.03

SHEET NUMBER: C-09

P:\9775\03\CAD\Civil\9775(3)Production Drawings\9775(3)-MISC-2021-NOTES.dwg C-09 GEN. NOTES Nov 16, 2022 1:43pm by cranahan

ATTACHMENT 4

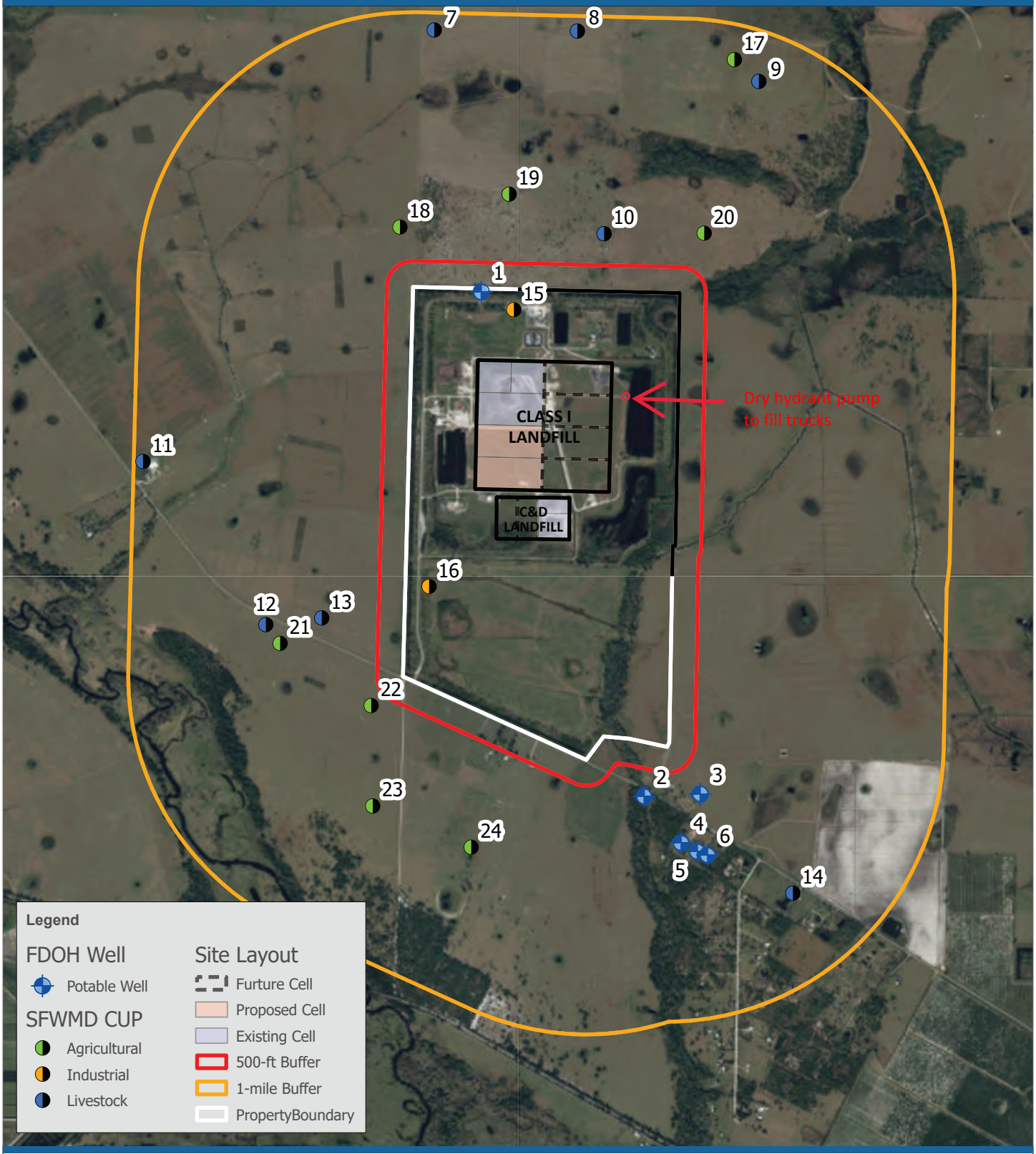
WELL INVENTORY FIGURE

ATTACHMENT 4, WELL INVENTORY FIGURE

Attachment H.1.g

Well Inventory

Highlands County Class I Landfill Expansion



JonesEdmunds

For Informational Purposes Only Q:\08345_Highlands\045-01_ClassI_Expansion\Highlands\Highlands.aprx mhays 3/23/2023

ATTACHMENT 5

SURFACE WATER AND GROUNDWATER DATA

ALL DATA
HIGHLANDS CO. SWMC CLASS I LANDFILL
FEBRUARY 2019 THROUGH JANUARY 2024

PARAMETER		CONDUC-TIVITY (FIELD)	DEPTH TO WATER FROM MEASURE PT	DISSOLVED OXYGEN (FIELD)	GROUND-WATER ELEVATION	pH (FIELD)	TEMPER-ATURE (FIELD)	TURBIDITY (FIELD)	AMMONIA NITROGEN	CHLORIDE	GROSS ALPHA	GROSS ALPHA COUNTING ERROR	NITRATE NITROGEN
STANDARD UNITS		(1) uS/cm	(1) ft	(1) ppm	(1) ft, NGVD	6.5-8.5 S.U.** S.U.	(1) deg C	(1) NTU	2.8 mg/L*** mg/L	250 mg/L** mg/L	15 pCi/L* pCi/L	(1) pCi/L	10 mg/L* mg/L
Background													
MW-1	03/25/2019	130	7.94	0.59	62.83	4.80	22.3	1.20	0.61	7.6	11.6	2.74	<0.025
MW-1	06/26/2019	90	-	0.19	64.67	4.32	24.9	0.70	0.50	6.2	11.9	2.66	0.056
MW-1	09/24/2019	174.4	7.15	0.67	63.62	5.08	26.9	0.85	0.65	10.2	13.3	3.56	0.071
MW-1	12/17/2019	138.4	-	0.81	63.07	5.21	24.8	0.98	0.53	9.4	11.2	2.66	0.10
MW-1	03/23/2020	89.8	8.22	1.30	62.55	4.18	23.9	0.59	0.505	6.5	15.5	3.56	<0.025
MW-1	06/18/2020	106.2	-	2.60	64.07	4.79	26.1	0.96	0.53	6.4	9.26	2.73	0.078
MW-1	09/14/2020	81.4	3.96	0.99	66.81	6.30	27.6	2.67	0.10	5.6	10.8	2.95	<0.025
MW-1	11/11/2020	96	4.32	0.20	66.45	5.10	26.5	2.40	-	-	-	-	-
MW-1	12/14/2020	94	7.16	0.13	63.61	4.40	24.7	1.94	0.56	9.4	12.1	3.37	<0.025
MW-1	03/24/2021	101.9	-	0.16	62.52	5.06	21.7	0.56	0.42	10.4	8.20	2.57	<0.025
MW-1	06/22/2021	64.9	7.80	0.72	62.97	7.73	25.2	1.54	0.22	4.4 I	12.1	3.29	<0.025
MW-1	09/20/2021	95.7	6.70	072	64.07	5.94	26.5	0.98	0.52	10.2	12.7	3.47	<0.025
MW-1	12/28/2021	119.4	7.74	0.40	63.03	5.69	23.2	3.75	0.39	11.4	11.7	3.10	0.060
MW-1	03/24/2022	80.9	8.35	0.37	62.42	5.00	22.8	0.30	0.36	9.0	23.9	6.79	<0.025
MW-1	08/25/2022	107.5	6.95	6.45	63.82	5.22	27.3	1.45	0.58	9.9	7.10	2.31	<0.025
MW-1	10/04/2022	170.1	5.35	2.10	65.42	4.76	24.8	4.71	0.48	12.7	6.99	2.32	1.5
MW-1	12/28/2022	117.1	7.35	1.55	63.42	5.30	22.2	2.70	0.35	10.8	9.20	2.67	<0.025
MW-1	03/28/2023	73.0	8.33	0.29	62.44	4.00	24.3	1.25	0.36	7.6 I	10.1	1.3	<0.092
MW-1	06/30/2023	55.7	7.88	0.24	62.89	4.78	26.2	1.10	0.32	9.3	10.8	2.1	1.0
MW-1	09/26/2023	815	8.50	0.05	62.27	4.05	27.7	3.65	0.38	11	13.5	1.5	<0.023
Detection													
MW-4	03/25/2019	631	8.40	0.12	61.21	5.47	22.7	0.82	0.93	134	6.96	1.97	< 0.025
MW-4	06/26/2019	536	-	0.04	61.99	5.14	24.3	0.85	0.75	127	12.4	2.76	< 0.025
MW-4	09/24/2019	496	8.06	0.64	62.65	5.17	26.5	0.72	0.82	111	7.13	2.30	0.099
MW-4	12/17/2019	545	-	0.26	61.35	4.40	25.1	2.21	0.81	104	8.07	2.16	< 0.025
MW-4	03/23/2020	560	8.79	0.42	60.82	4.45	24.7	1.67	0.676	109	10.3	2.77	< 0.025
MW-4	06/18/2020	137.4	-	0.64	61.81	5.53	25.6	2.95	0.18	9.4	3.50	1.87	0.052
MW-4	09/14/2020	170.4	7.32	0.39	62.29	5.87	27.5	1.85	< 0.035	6.4	3.42	1.89	0.18
MW-4	12/14/2020	231	7.94	0.30	61.67	6.40	24.9	2.36	0.19	9.8	5.46	2.18	0.39
MW-4	03/24/2021	427.6	-	1.05	61.11	6.95	22.8	1.84	0.34	85.7	<3.81	<1.90	< 0.025
MW-4	06/22/2021	200.9	8.19	1.22	61.42	6.37	25.3	11.6	0.079	18.9	3.61	2.11	1.1
MW-4	09/20/2021	260.9	7.71	0.56	61.90	6.10	26.5	1.90	0.22	19.3	3.49	1.32	0.25
MW-4	12/28/2021	326.6	8.20	0.15	61.41	5.60	23.5	2.30	0.20	29.5	<6.60	<3.42	0.31
MW-4	03/24/2022	583	8.35	0.50	61.26	6.00	23.1	1.65	0.49	102	4.61	1.96	0.62
MW-4	08/25/2022	228.1	7.75	2.53	61.86	5.56	27.4	2.45	< 0.035	5.7	2.99	1.49	7.4
MW-4	10/04/2022	500	6.95	2.86	62.66	5.55	24.9	2.83	0.40	74.5	2.81	1.72	0.036 I
MW-4	12/28/2022	172.7	7.90	2.40	61.71	6.25	23.2	3.20	0.13	11.4	<2.78	1.45	< 0.025
MW-4	03/28/2023	333	8.87	0.12	60.74	5.47	24.5	3.69	0.28	60	1.2	4.0 I	<0.092
MW-4	06/30/2023	168	8.27	1.00	61.34	5.85	25.9	0.80	0.15	19	4.6	1.3	3.8

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PARAMETER		CONDUC-TIVITY (FIELD)	DEPTH TO WATER FROM MEASURE PT	DISSOLVED OXYGEN (FIELD)	GROUND-WATER ELEVATION	pH (FIELD)	TEMPER-ATURE (FIELD)	TURBIDITY (FIELD)	AMMONIA NITROGEN	CHLORIDE	GROSS ALPHA	GROSS ALPHA COUNTING ERROR	NITRATE NITROGEN
STANDARD UNITS		(1) uS/cm	(1) ft	(1) ppm	(1) ft, NGVD	6.5-8.5 S.U.** S.U.	(1) deg C	(1) NTU	2.8 mg/L*** mg/L	250 mg/L** mg/L	15 pCi/L* pCi/L	(1) pCi/L	10 mg/L* mg/L
MW-4	09/27/2023	226	9.50	0.06	60.11	5.45	27.0	3.45	0.080	2.2 I	1.6 I	0.7	11
MW-7A	03/28/2019	610	20.20	0.06	60.44	6.16	28.2	3.51	6.1	133	-	-	< 0.025
MW-7A	09/24/2019	1307	18.79	0.58	61.85	5.44	28.2	3.10	12.1	196	-	-	< 0.025
MW-7A	12/18/2019	884	-	0.50	60.73	4.94	25.0	0.76	10.9	156	-	-	-
MW-7A	03/24/2020	608	20.3	0.19	60.34	4.88	26.9	3.77	6.43	118	-	-	< 0.025
MW-7A	06/29/2020	1053	-	0.13	62.10	5.61	26.5	3.52	9.5	178	-	-	-
MW-7A	09/15/2020	940	15.15	0.24	65.49	5.64	27.2	2.84	9.1	147	-	-	< 0.025
MW-7A	12/14/2020	1293	19.00	0.11	61.64	6.53	27.2	3.20	6.7	138	-	-	-
MW-7A	03/23/2021	928	-	0.17	60.32	5.68	26.0	1.30	9.4	140	-	-	< 0.025
MW-7A	09/21/2021	1036	16.61	0.10	64.03	6.32	27.5	1.44	7.4	149	-	-	< 0.025
MW-7A	03/30/2022	658	20.5	0.70	60.14	6.24	26.5	14.1	7.7	109	-	-	< 0.025
MW-7A	10/05/2022	834	16.6	2.28	64.04	5.56	27.5	3.27	8.2	130	-	-	< 0.025
MW-7A	03/29/2023	691	20.52	0.08	60.12	5.47	27.9	1.40	55	120	-	-	<0.092
MW-7A	06/30/2023	637	19.60	0.50	61.04	5.40	28.8	0.20	1.7	-	-	-	-
MW-7A	09/27/2023	683	21.50	0.09	59.14	5.64	29.3	1.96	6.7	90	-	-	0.038 I
MW-21	03/25/2019	1159	8.10	0.20	62.21	6.29	24.3	1.27	5.8	90.2	10.0	2.72	<0.025
MW-21	06/26/2019	1129	-	0.09	62.76	6.04	27.5	2.19	7.8	75.7	6.98	2.22	<0.25
MW-21	09/24/2019	1204	8.50	0.51	61.81	5.70	30.5	1.91	15.0	114	7.35	2.36	<0.025
MW-21	12/17/2019	1242	-	0.47	61.44	5.51	27.3	1.13	8.9	143	7.08	2.07	<0.025
MW-21	03/23/2020	1104	9.4	0.14	60.91	4.81	27.0	2.31	7.35	113	18.8	4.32	<0.025
MW-21	06/18/2020	792	-	0.51	62.37	5.92	27.9	1.34	3.4	30.4	6.83	2.62	0.032 I
MW-21	09/14/2020	623	7.15	0.12	63.16	6.12	29.4	3.05	8.6	26.6	6.95	2.03	<0.025
MW-21	12/14/2020	534	8.36	0.11	61.95	5.82	26.0	1.77	7.2	14.7	3.65	1.95	<0.025
MW-21	03/24/2021	718	-	0.35	60.75	6.35	23.2	1.73	4.1	26.9	13.0	3.40	<0.025
MW-21	06/22/2021	778	9.29	0.21	61.02	6.51	26.6	2.24	3.1	32.1	13.7	3.28	0.059
MW-21	09/20/2021	603	8.03	1.49	62.28	6.35	29.4	1.46	2.2	7.4	5.51	2.02	0.035 I
MW-21	12/28/2021	569	9.05	0.43	61.26	5.49	24.8	4.52	2.0	7.5	<5.29	<2.90	<0.025
MW-21	03/24/2022	627	9.85	0.31	60.46	6.12	23.5	0.75	2.2	20.4	19.40	6.23	<0.025
MW-21	08/25/2022	909	7.85	1.03	62.46	5.95	29.8	1.54	0.67	10.1	10.6	2.96	43.2
MW-21	10/04/2022	269.4	6.80	2.12	63.51	6.36	27.0	1.46	1.4	5.0 I	<2.31	1.09	<0.025
MW-21	12/28/2022	348.8	8.55	1.89	61.76	6.51	23.8	1.64	1.2	5.0 I	4.37	2.20	0.062
MW-21	03/28/2023	436	9.96	0.57	60.35	6.12	24.0	0.57	1.2	14	7.8	1.1	<0.092
MW-21	06/30/2023	495	9.24	0.72	61.07	6.12	27.0	0.65	0.93	24	9.9	2.0	1.4
MW-21	09/27/2023	451	8.17	0.52	62.14	6.14	27.7	2.15	0.084	<0.12	6.8	0.9	<0.023
MW-30	03/28/2019	1260	11.04	0.64	58.74	5.63	21.9	1.00	1.1	68.0	-	-	0.045 I
MW-30	09/24/2019	1066	10.30	0.68	59.48	4.26	28.9	2.01	0.42	36.7	-	-	0.042 I
MW-30	12/18/2019	1041	-	0.51	59.04	4.09	25.8	1.25	1.1	39.1	-	-	-
MW-30	03/24/2020	1008	11.37	0.53	58.41	4.98	24.7	0.91	1.42	45.9	-	-	<0.025
MW-30	06/29/2020	569	-	0.09	59.08	4.02	27.1	3.10	1.2	25.0	-	-	-

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PARAMETER		CONDUC-TIVITY (FIELD)	DEPTH TO WATER FROM MEASURE PT	DISSOLVED OXYGEN (FIELD)	GROUND-WATER ELEVATION	pH (FIELD)	TEMPER-ATURE (FIELD)	TURBIDITY (FIELD)	AMMONIA NITROGEN	CHLORIDE	GROSS ALPHA	GROSS ALPHA COUNTING ERROR	NITRATE NITROGEN
STANDARD UNITS		(1) uS/cm	(1) ft	(1) ppm	(1) ft, NGVD	6.5-8.5 S.U.** S.U.	(1) deg C	(1) NTU	2.8 mg/L*** mg/L	250 mg/L** mg/L	15 pCi/L* pCi/L	(1) pCi/L	10 mg/L* mg/L
MW-30	09/14/2020	532	10.00	0.51	59.78	5.40	28.8	1.39	0.15	26.3	-	-	0.45
MW-30	12/14/2020	682	10.76	0.35	59.02	4.62	24.5	1.91	0.16	41.6	-	-	-
MW-30	03/23/2021	798	-	0.70	58.67	4.42	22.4	1.33	1.0	45.8	-	-	<0.025
MW-30	09/21/2021	771	9.55	0.48	60.23	4.76	26.4	1.62	0.33	44.8	-	-	0.42
MW-30	03/28/2022	751	11.52	1.29	58.26	5.23	23.9	0.86	1.4	53.8	-	-	0.027 I
MW-30	10/05/2022	1130	9.15	3.10	60.63	4.95	25.5	5.65	<0.035	48.7	-	-	20.3
MW-31	03/28/2019	771	10.61	0.12	58.61	5.45	23.4	1.10	2.5	102	-	-	<0.025
MW-31	09/24/2019	638	9.90	0.45	59.32	4.29	28.7	1.40	2.8	65.8	-	-	0.46
MW-31	12/18/2019	789	-	0.36	58.90	4.08	25.9	2.44	3.9	83.3	-	-	-
MW-31	03/24/2020	1004	10.95	0.83	58.27	4.00	25.6	1.36	1.52	143	-	-	<0.025
MW-31	06/29/2020	782	-	0.06	58.72	4.15	26.8	1.26	2.5	149	-	-	-
MW-31	09/14/2020	638	9.95	0.39	59.27	5.02	28.5	1.47	2.0	70.8	-	-	0.42
MW-31	12/14/2020	692	10.40	0.28	58.82	4.67	25.1	1.35	2.2	92.8	-	-	-
MW-31	03/23/2021	723	-	0.14	58.57	4.45	22.9	1.71	2.2	103	-	-	<0.025
MW-31	09/21/2021	776	8.80	0.68	60.42	5.33	26.3	1.72	3.1	87.5	-	-	1.5
MW-31	03/28/2022	1167	10.9	0.38	58.32	5.14	24.1	0.63	5.4	205	-	-	0.025 I
MW-31	10/05/2022	698	9.05	2.47	60.17	4.51	25.8	4.50	3.7	78.7	-	-	11.3
MW-31	03/29/2023	1007	10.95	0.33	58.27	5.43	24.9	4.08	43	280	-	-	<0.092
MW-31	06/23/2023	833	10.39	1.59	58.83	4.78	28.6	2.56	4.4	150	-	-	2.5
MW-31	09/27/2023	1110	10.10	0.30	59.12	5.56	28.2	12.01	6.6	150	-	-	0.047 I
MW-32	03/28/2019	570	9.46	0.34	60.00	6.46	22.7	1.65	0.54	6.1	-	-	<0.025
MW-32	09/24/2019	385.6	7.55	1.06	61.91	4.89	28.5	1.38	0.81	4.3 I	-	-	<0.025
MW-32	12/18/2019	496.6	-	1.02	60.37	4.56	23.8	1.34	0.55	20.9	-	-	-
MW-32	03/24/2020	299.6	9.65	0.51	59.81	5.03	27.2	1.41	0.314	5.7	-	-	<0.025
MW-32	06/29/2020	255	-	0.06	62.20	5.22	26.1	4.60	0.55	6.0	-	-	-
MW-32	09/15/2020	223.7	5.90	0.36	63.56	5.56	26.8	4.46	0.45	8.8	-	-	< 0.025
MW-32	12/14/2020	180.3	8.05	0.19	61.41	6.00	24.7	1.16	0.37	3.7 I	-	-	-
MW-32	03/23/2021	176.5	-	1.44	59.65	5.54	23.1	2.73	0.39	5.4	-	-	0.061
MW-32	09/21/2021	256.1	6.37	0.65	63.09	5.84	27.0	3.72	0.40	7.0	-	-	< 0.025
MW-32	03/28/2022	290.0	9.75	0.29	59.71	5.95	23.3	1.19	1.4	18.0	-	-	< 0.025
MW-32	10/05/2022	347.4	5.05	1.88	64.41	5.82	27.4	1.18	2.3	24.2	-	-	< 0.025
MW-32	03/29/2023	398	9.73	0.14	59.73	5.56	23.8	0.85	0.78	35	-	-	<0.092
MW-32	09/27/2023	401	10.13	0.10	59.33	6.18	24.5	1.18	0.28	51	-	-	<0.12
MW-33	03/28/2019	324	8.80	0.07	58.52	5.56	22.7	1.05	0.96	9.0	-	-	< 0.025
MW-33	09/24/2019	344.4	8.09	0.55	59.23	4.32	27.5	1.13	0.87	9.6	-	-	< 0.025
MW-33	12/18/2019	360.2	-	0.94	58.91	4.17	22.7	1.19	0.73	9.9	-	-	-
MW-33	03/24/2020	422.9	9.13	0.95	58.19	4.03	25.0	1.12	0.661	12.1	-	-	< 0.025
MW-33	06/29/2020	486	-	0.03	58.72	4.24	25.7	1.34	0.76	16.1	-	-	-
MW-33	09/15/2020	488.2	8.02	1.48	59.30	4.34	25.9	1.43	0.52	12.6	-	-	< 0.025

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PARAMETER		CONDUC-TIVITY (FIELD)	DEPTH TO WATER FROM MEASURE PT	DISSOLVED OXYGEN (FIELD)	GROUND-WATER ELEVATION	pH (FIELD)	TEMPER-ATURE (FIELD)	TURBIDITY (FIELD)	AMMONIA NITROGEN	CHLORIDE	GROSS ALPHA	GROSS ALPHA COUNTING ERROR	NITRATE NITROGEN
STANDARD UNITS		(1) uS/cm	(1) ft	(1) ppm	(1) ft, NGVD	6.5-8.5 S.U.** S.U.	(1) deg C	(1) NTU	2.8 mg/L*** mg/L	250 mg/L** mg/L	15 pCi/L* pCi/L	(1) pCi/L	10 mg/L* mg/L
MW-33	12/14/2020	423.3	8.55	0.36	58.77	4.73	24.0	1.42	0.41	7.8	-	-	-
MW-33	03/23/2021	446.6	-	0.22	57.82	4.51	22.7	2.33	0.38	8.6	-	-	0.048 I
MW-33	09/21/2021	329.4	7.10	1.14	60.22	6.43	26.1	1.78	0.98	11.0	-	-	< 0.025
MW-33	03/28/2022	599	9.1	0.39	58.22	6.15	23.2	1.32	0.43	7.2	-	-	< 0.025
MW-33	10/05/2022	506	7.10	2.21	60.22	4.20	25.3	1.88	0.82	8.8	-	-	< 0.25
MW-33	03/29/2023	541	9.15	0.13	58.17	4.45	24.0	0.28	0.81	20	-	-	<0.092
MW-33	09/27/2023	687	9.21	0.34	58.11	4.05	27.7	3.86	1.5	24	-	-	<0.023
Intermediate													
MW-22	03/25/2019	751	8.42	0.68	61.47	4.47	21.7	1.92	0.86	185	28.6	5.91	<0.025
MW-22	06/26/2019	475	-	0.35	62.48	4.71	24.4	7.83	0.36	105	20.9	4.13	1.5
MW-22	09/24/2019	551	8.00	0.64	61.89	5.19	27.9	4.21	0.45	76.0	18.8	4.41	<0.025
MW-22	12/17/2019	804	-	0.65	61.63	4.68	25.7	2.13	0.97	192	26.6	5.43	<0.025
MW-22	03/23/2020	738	8.81	0.74	61.08	4.55	25.0	2.89	0.860	174	46.9	9.16	<0.025
MW-22	06/18/2020	520	-	1.39	62.17	5.34	25.5	15.4	0.31	88.5	25.6	6.22	10.4
MW-22	09/14/2020	374.9	7.00	1.11	62.89	5.73	27.7	8.7	0.37	49.9	15.8	3.77	0.98
MW-22	12/14/2020	653	7.74	0.37	62.15	4.95	24.4	7.36	0.75	149	16.2	4.37	<0.025
MW-22	03/24/2021	687	-	0.23	61.04	5.02	22.0	14.2	0.73	131	45.0	9.01	<0.025
MW-22	06/22/2021	609	7.80	0.52	62.09	6.34	25.7	15.3	0.66	110	47.9	9.55	<0.25
MW-22	09/20/2021	543	7.92	1.45	61.97	6.08	28.6	13.7	0.046 I	49.0	37.1	7.54	16.8
MW-22	12/28/2021	653	8.40	0.28	61.49	4.94	23.8	19.6	0.68	122	37.0	7.75	<0.025
MW-22	03/24/2022	647	9.1	0.44	60.79	5.36	23.1	15.7	0.84	119	65.7	13.6	<0.025
MW-22	08/25/2022	445.0	7.62	1.61	62.27	5.42	28.9	19.8	0.43	95.3	36.6	8.35	0.19
MW-22	10/04/2022	345.9	6.85	1.71	63.04	5.75	27.5	19.8	0.11	25.6	3.38	1.67	4.8
MW-22	12/28/2022	589	8.00	2.21	61.89	5.66	23.6	19.3	0.54	105	27.8	6.89	<0.025
MW-22	03/28/2023	789	9.31	1.26	60.58	4.79	23.2	18.9	0.93	170	26.9	2.0	<0.092
MW-22	06/30/2023	562	8.60	2.05	61.29	4.32	26.3	22.6	0.59	130	58.2	2.8	0.24 I
MW-22	09/27/2023	655	9.48	1.20	60.41	5.09	27.5	29.05	0.61	62	125.8	3.6	<0.023

LEGEND

* =Primary Drinking Water Standard
** =Secondary Drinking Water Standard
*** =Chapter 62-777 - Groundwater Cleanup Target Level (GCTL)
(1) =No Standard
- =Not Analyzed

I = Value is between the Method Detection Level (MDL) and the Reporting Detection Level (RDL)
J = Estimated value
V = Analyte found in associated method blank
Q = Estimated value; analyte analyzed after acceptable holding time

ALL DATA
HIGHLANDS CO. SWMC CLASS I LANDFILL
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PARAMETER		TOTAL DISSOLVED SOLIDS	ANTIMONY	ARSENIC	BARIUM	BERYLLIUM	CADMIUM	CHROMIUM	COBALT	COPPER	IRON	LEAD	MERCURY
STANDARD UNITS		500 mg/L** mg/L	6 µg/L* µg/L	10 µg/L* µg/L	2000 µg/L* µg/L	4 µg/L* µg/L	5 µg/L* µg/L	100 µg/L* µg/L	140µg/L*** µg/L	1000 µg/L** µg/L	300 µg/L** µg/L	15 µg/L* µg/L	2 µg/L* µg/L
Background													
MW-1	03/25/2019	36.0	<5.5	<7.1	4.7 I	<1.6	<0.33	<1.7	<0.96	<2.6	47.8	<4.6	<0.10
MW-1	06/26/2019	94.0	-	-	-	-	-	-	-	-	41.2	-	<0.10
MW-1	09/24/2019	139	<5.5	<7.1	4.8 I	<1.6	<0.33	2.1 I	<0.96	<2.6	36.9 I	<4.6	<0.10
MW-1	12/17/2019	112	-	-	-	-	-	-	-	-	36.9 I	-	<0.10
MW-1	03/23/2020	89.0	<5.5	<7.1	2.7 I	<1.6	<0.33	2.4 I	<0.96	<2.6	34.8 I	<4.6	<0.10
MW-1	06/18/2020	55.0	-	-	-	-	-	-	-	-	27.2 I	-	<0.090
MW-1	09/14/2020	124	<5.5	93.7	1.6 I	<0.17	<0.33	2.6 I	<0.96	<2.6	<25.0	<4.6	<0.090
MW-1	11/11/2020	-	-	7.6 I	-	-	-	-	-	-	-	-	-
MW-1	12/14/2020	218	-	-	-	-	-	-	-	-	<25.0	-	<0.090
MW-1	03/24/2021	111	<5.5	8.8 I	2.2 I	<0.17	<0.33	1.9 I	<0.96	<2.6	<25.0	<4.6	<0.090
MW-1	06/22/2021	88.0	-	-	-	-	-	-	-	-	29.4 I	-	<0.090
MW-1	09/20/2021	129	<5.5	<3.4	2.5 I	<0.17	<0.33	2.9 I	<0.96	<2.6	27.1 I	<4.6	<0.090
MW-1	12/28/2021	113	-	-	-	-	-	-	-	-	<25.0	-	<0.090
MW-1	03/24/2022	100	<5.5	4.0 I	2.2 I	<0.17	<0.33	1.9 I	<0.96	<2.6	<25.0	<4.6	<0.090
MW-1	08/25/2022	101	-	-	-	-	-	-	-	-	<25.0	-	<0.090
MW-1	10/04/2022	151	<5.5	<3.4	4.5 I	<0.17	<0.33	2.5 I	<0.96	<2.6	<25.0	<2.1	<0.090
MW-1	12/28/2022	155	-	-	-	-	-	-	-	-	<25.0	-	<0.090
MW-1	03/28/2023	100	<1.0	3.3	1.7 I	<2.0	<0.25	1.6 I	<0.25	<1.0	15 I	<0.50	0.057 I
MW-1	06/30/2023	66	-	-	-	-	-	-	-	-	<6.7	-	<0.011
MW-1	09/26/2023	98	<1.0	2.5	2.2	<2.0	<0.25	2.6	<0.25	<1.0	25 I	0.77 I	<0.011
Detection													
MW-4	03/25/2019	370	< 5.5	< 7.1	28.6	< 1.6	< 0.33	2.4 I	< 0.96	< 2.6	86.5	< 4.6	< 0.10
MW-4	06/26/2019	329	-	-	-	-	-	-	-	-	60.9	-	< 0.10
MW-4	09/24/2019	322	< 5.5	< 7.1	25.9	< 1.6	< 0.33	2.5 I	< 0.96	< 2.6	53.0	< 4.6	< 0.10
MW-4	12/17/2019	345	-	-	-	-	-	-	-	-	73.5	-	< 0.10
MW-4	03/23/2020	317	< 5.5	< 7.1	26.3	< 1.6	< 0.33	3.1 I	< 0.96	< 2.6	65.4	< 4.6	< 0.10
MW-4	06/18/2020	101	-	-	-	-	-	-	-	-	81.6	-	< 0.090
MW-4	09/14/2020	112	< 5.5	< 7.1	8.6 I	< 0.17	< 0.33	< 1.7	< 0.96	< 2.6	46.5	< 4.6	< 0.090
MW-4	12/14/2020	190	-	-	-	-	-	-	-	-	52.5	-	< 0.090
MW-4	03/24/2021	334	< 5.5	< 7.1	30.3	< 0.17	< 0.33	2.3 I	< 0.96	< 2.6	80.6	< 4.6	< 0.090
MW-4	06/22/2021	156	-	-	-	-	-	-	-	-	177	-	< 0.090
MW-4	09/20/2021	140	< 5.5	< 3.4	12.7	< 0.17	0.59 I	2.1 I	< 0.96	< 2.6	72.1	< 4.6	< 0.090
MW-4	12/28/2021	207	-	-	-	-	-	-	-	-	35.6 I	-	< 0.090
MW-4	03/24/2022	365	< 5.5	< 3.4	29.2	< 0.17	< 0.33	2.7 I	< 0.96	7.0	77.9	< 4.6	< 0.090
MW-4	08/25/2022	171	-	-	-	-	-	-	-	-	33.1 I	-	< 0.090
MW-4	10/04/2022	252	< 5.5	< 3.4	19.2	< 0.17	< 0.33	2.1 I	< 0.96	2.7 I	36.6 I	< 2.1	< 0.090
MW-4	12/28/2022	137	-	-	-	-	-	-	-	-	25.7 I	-	< 0.090
MW-4	03/28/2023	230	<1.0	0.48 I	17	<2.0	<0.25	2.1	<0.25	<1.0	88 I	<0.50	0.028 I
MW-4	06/30/2023	120	-	-	-	-	-	-	-	-	< 6.7	-	< 0.011

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PARAMETER		TOTAL DISSOLVED SOLIDS	ANTIMONY	ARSENIC	BARIUM	BERYLLIUM	CADMIUM	CHROMIUM	COBALT	COPPER	IRON	LEAD	MERCURY
STANDARD UNITS		500 mg/L** mg/L	6 µg/L* µg/L	10 µg/L* µg/L	2000 µg/L* µg/L	4 µg/L* µg/L	5 µg/L* µg/L	100 µg/L* µg/L	140µg/L*** µg/L	1000 µg/L** µg/L	300 µg/L** µg/L	15 µg/L* µg/L	2 µg/L* µg/L
MW-4	09/27/2023	160	<1.0	0.30 I	11	<2.0	<0.25	1.2 I	<0.25	<1.0	19 I	<0.50	<0.011
MW-7A	03/28/2019	184	< 5.5	< 7.1	36.1	< 1.6	< 0.33	10.2	1.3 I	< 2.6	616	< 4.6	< 0.10
MW-7A	09/24/2019	680	< 5.5	< 7.1	60.6	< 1.6	< 0.33	4.4 I	< 0.96	< 2.6	491	< 4.6	< 0.10
MW-7A	12/18/2019	416	-	-	-	-	-	-	-	-	-	-	-
MW-7A	03/24/2020	322	< 5.5	< 7.1	40.6	< 1.6	< 0.33	5.1	< 0.96	< 2.6	478	< 4.6	< 0.10
MW-7A	06/29/2020	578	-	-	-	-	-	-	-	-	-	-	-
MW-7A	09/15/2020	558	< 5.5	< 7.1	44.8	< 0.17	< 0.33	5.1	< 0.96	< 2.6	860	< 4.6	< 0.090
MW-7A	12/14/2020	886	-	-	-	-	-	-	-	-	-	-	-
MW-7A	03/23/2021	530	< 5.5	< 7.1	33.6	< 0.17	< 0.33	7.3	< 0.96	< 2.6	411	< 4.6	< 0.090
MW-7A	09/21/2021	572	< 5.5	< 3.4	34.2	< 0.17	< 0.33	7.1	< 0.96	< 2.6	624	< 4.6	< 0.090
MW-7A	03/30/2022	438	< 5.5	< 3.4	28.1	< 0.17	< 0.33	8.2	< 0.96	< 2.6	2360	< 4.6	< 0.090
MW-7A	10/05/2022	467	< 5.5	< 3.4	40.9	< 0.17	< 0.33	5.0 I	< 0.96	< 2.6	423	< 2.1	< 0.090
MW-7A	03/29/2023	540	<1.0	1.1	32	<2.0	<0.25	4.6	<0.25	<1.0	440	<0.50	<0.011
MW-7A	06/30/2023	-	-	-	-	-	-	-	-	-	-	-	-
MW-7A	09/27/2023	450	<1.0	1.2	18	<2.0	<0.25	6.1	<0.25	<1.0	1000	<0.50	<0.011
MW-21	03/25/2019	592	<5.5	<7.1	2.6 I	<1.6	<0.33	8.4	<0.96	<2.6	339	<4.6	<0.10
MW-21	06/26/2019	802	-	-	-	-	-	-	-	-	589	-	<0.10
MW-21	09/24/2019	660	<5.5	<7.1	4.6 I	<1.6	<0.33	5.0 I	<0.96	<2.6	742	<4.6	<0.10
MW-21	12/17/2019	732	-	-	-	-	-	-	-	-	355	-	<0.10
MW-21	03/23/2020	766	<5.5	<7.1	2.9 I	<1.6	<0.33	8.5	<0.96	<2.6	307	<4.6	<0.10
MW-21	06/18/2020	448	-	-	-	-	-	-	-	-	304	-	<0.090
MW-21	09/14/2020	371	<5.5	<7.1	7.3 I	<0.17	<0.33	4.2 I	<0.96	<2.6	1140	<4.6	<0.090
MW-21	12/14/2020	348	-	-	-	-	-	-	-	-	841	-	<0.090
MW-21	03/24/2021	641	<5.5	<7.1	4.8 I	<0.17	<0.33	7.1	<0.96	<2.6	682	<4.6	<0.090
MW-21	06/22/2021	641	-	-	-	-	-	-	-	-	362	-	<0.090
MW-21	09/20/2021	459	<5.5	8.5 I	6.0 I	<0.17	1.2	4.1 I	<0.96	<2.6	478	<4.6	<0.090
MW-21	12/28/2021	387	-	-	-	-	-	-	-	-	372	-	<0.090
MW-21	03/24/2022	525	<5.5	3.5 I	4.7 I	<0.17	<0.33	7.6	<0.96	<2.6	446	<4.6	<0.090
MW-21	08/25/2022	638	-	-	-	-	-	-	-	-	76.3	-	<0.090
MW-21	10/04/2022	214	<5.5	<3.4	3.6 I	<0.17	<0.33	2.7 I	<0.96	<2.6	403	<2.1	<0.090
MW-21	12/28/2022	234	-	-	-	-	-	-	-	-	448	-	<0.090
MW-21	03/28/2023	410	<1.0	2.1	3.9	<2.0	<0.25	3.8	<0.25	<1.0	520	<0.50	0.033 I
MW-21	06/30/2023	390	-	-	-	-	-	-	-	-	130	-	<0.011
MW-21	09/27/2023	590	2.7 I	0.90 I	5.3	<2.0	<0.25	2.2	<0.25	1.5 I	19 I	1.0 I	<0.011
MW-30	03/28/2019	770	<5.5	<7.1	30.4	<1.6	<0.33	<1.7	1.6 I	<2.6	368	<4.6	<0.10
MW-30	09/24/2019	712	<5.5	<7.1	25.2	<1.6	<0.33	<1.7	<0.96	<2.6	374	<4.6	<0.10
MW-30	12/18/2019	679	-	-	-	-	-	-	-	-	-	-	-
MW-30	03/24/2020	616	<5.5	<7.1	19.7	<1.6	<0.33	<1.7	<0.96	<2.6	284	<4.6	<0.10
MW-30	06/29/2020	356	-	-	-	-	-	-	-	-	-	-	-

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PARAMETER		TOTAL DISSOLVED SOLIDS	ANTIMONY	ARSENIC	BARIUM	BERYLLIUM	CADMIUM	CHROMIUM	COBALT	COPPER	IRON	LEAD	MERCURY
STANDARD UNITS		500 mg/L** mg/L	6 µg/L* µg/L	10 µg/L* µg/L	2000 µg/L* µg/L	4 µg/L* µg/L	5 µg/L* µg/L	100 µg/L* µg/L	140µg/L*** µg/L	1000 µg/L** µg/L	300 µg/L** µg/L	15 µg/L* µg/L	2 µg/L* µg/L
MW-30	09/14/2020	350	<5.5	<7.1	9.5 I	<0.17	<0.33	<1.7	<0.96	<2.6	186	<4.6	<0.090
MW-30	12/14/2020	424	-	-	-	-	-	-	-	-	-	-	-
MW-30	03/23/2021	446	<5.5	<7.1	17.1	<0.17	<0.33	<1.7	<0.96	<2.6	570	<4.6	<0.090
MW-30	09/21/2021	495	<5.5	<3.4	12.9	<0.17	<0.33	<1.7	<0.96	<2.6	319	<4.6	<0.090
MW-30	03/28/2022	446	<5.5	<3.4	17.4	<0.17	<0.33	<1.7	<0.96	<2.6	888	<4.6	<0.090
MW-30	10/05/2022	948	<5.5	<3.4	40.6	<0.17	<0.33	1.7 I	<0.96	<2.6	63.3	<2.1	<0.090
MW-31	03/28/2019	474	<5.5	<7.1	24.1	<1.6	<0.33	2.0 I	<0.96	<2.6	461	<4.6	<0.10
MW-31	09/24/2019	392	<5.5	<7.1	18.9	<1.6	<0.33	2.3 I	<0.96	<2.6	429	<4.6	<0.10
MW-31	12/18/2019	443	-	-	-	-	-	-	-	-	-	-	-
MW-31	03/24/2020	574	<5.5	<7.1	30.5	<1.6	<0.33	3.0 I	<0.96	<2.6	703	<4.6	<0.10
MW-31	06/29/2020	485	-	-	-	-	-	-	-	-	-	-	-
MW-31	09/14/2020	441	<5.5	<7.1	21.2	<0.17	<0.33	2.8 I	<0.96	<2.6	353	<4.6	<0.090
MW-31	12/14/2020	473	-	-	-	-	-	-	-	-	-	-	-
MW-31	03/23/2021	403	<5.5	<7.1	24.5	<0.17	<0.33	2.8 I	<0.96	<2.6	461	<4.6	<0.090
MW-31	09/21/2021	537	<5.5	<3.4	20.8	<0.17	0.83 I	3.0 I	<0.96	<2.6	340	<4.6	<0.090
MW-31	03/28/2022	696	<5.5	<3.4	31.0	<0.17	<0.33	10.6	<0.96	<2.6	455	<4.6	<0.090
MW-31	10/05/2022	546	<5.5	3.8 I	35.1	<0.17	<0.33	6.2	<0.96	<2.6	238	<2.1	<0.090
MW-31	03/29/2023	690	4.8	6.4	17	<2.0	<0.25	8.8	0.25 I	4.5	340	7.5	0.038 I
MW-31	06/23/2023	710	<2.0	3.9	25	<2.0	<0.50	6.6	<0.50	3.1 I	300	4.4	<0.011
MW-31	09/27/2023	530	<1.0	4.0	14	<2.0	<0.25	10	0.37 I	3.5 I	270	3.9	<0.011
MW-32	03/28/2019	487	<5.5	<7.1	8.0 I	<1.6	0.48 I	5.0	1.1 I	<2.6	124	<4.6	<0.10
MW-32	09/24/2019	321	<5.5	<7.1	3.4 I	<1.6	<0.33	<1.7	<0.96	<2.6	122	<4.6	<0.10
MW-32	12/18/2019	390	-	-	-	-	-	-	-	-	-	-	-
MW-32	03/24/2020	174	<5.5	<7.1	1.8 I	<1.6	<0.33	2.7 I	<0.96	<2.6	90.0	<4.6	<0.10
MW-32	06/29/2020	209	-	-	-	-	-	-	-	-	-	-	-
MW-32	09/15/2020	189	< 5.5	< 7.1	1.7 I	< 0.17	< 0.33	2.4 I	< 0.96	< 2.6	70.0	< 4.6	< 0.090
MW-32	12/14/2020	185	-	-	-	-	-	-	-	-	-	-	-
MW-32	03/23/2021	169	< 5.5	< 7.1	1.3 I	< 0.17	< 0.33	2.4 I	< 0.96	< 2.6	169	< 4.6	< 0.090
MW-32	09/21/2021	221	< 5.5	< 3.4	2.0 I	< 0.17	0.72 I	2.0 I	< 0.96	< 2.6	97.2	< 4.6	< 0.090
MW-32	03/28/2022	416	< 5.5	< 3.4	40.8	0.18 I	< 0.33	< 1.7	< 0.96	< 2.6	362	< 4.6	< 0.090
MW-32	10/05/2022	227	< 5.5	< 3.4	2.7 I	< 0.17	< 0.33	2.0 I	< 0.96	< 2.6	172	< 2.1	< 0.090
MW-32	03/29/2023	340	<1.0	1.7	2.6	<2.0	<0.25	2.0 I	0.33 I	<1.0	180	0.55 I	<0.011
MW-32	09/27/2023	880	<1.0	1.8	7.8	<2.0	<0.25	2.4	0.35 I	<1.0	100	1.3 I	<0.011
MW-33	03/28/2019	92.0	< 5.5	< 7.1	13.3	< 1.6	< 0.33	< 1.7	0.99 I	< 2.6	214	< 4.6	< 0.10
MW-33	09/24/2019	244	< 5.5	< 7.1	15.5	< 1.6	< 0.33	2.0 I	< 0.96	< 2.6	167	< 4.6	< 0.10
MW-33	12/18/2019	267	-	-	-	-	-	-	-	-	-	-	-
MW-33	03/24/2020	288	< 5.5	< 7.1	17.4	< 1.6	< 0.33	1.8 I	< 0.96	< 2.6	322	< 4.6	< 0.10
MW-33	06/29/2020	348	-	-	-	-	-	-	-	-	-	-	-
MW-33	09/15/2020	357	< 5.5	< 7.1	22.8	< 0.17	< 0.33	1.9 I	< 0.96	< 2.6	401	< 4.6	< 0.090

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PARAMETER		TOTAL DISSOLVED SOLIDS	ANTIMONY	ARSENIC	BARIUM	BERYLLIUM	CADMIUM	CHROMIUM	COBALT	COPPER	IRON	LEAD	MERCURY
STANDARD UNITS		500 mg/L** mg/L	6 µg/L* µg/L	10 µg/L* µg/L	2000 µg/L* µg/L	4 µg/L* µg/L	5 µg/L* µg/L	100 µg/L* µg/L	140µg/L*** µg/L	1000 µg/L** µg/L	300 µg/L** µg/L	15 µg/L* µg/L	2 µg/L* µg/L
MW-33	12/14/2020	319	-	-	-	-	-	-	-	-	-	-	-
MW-33	03/23/2021	272	< 5.5	< 7.1	17.5	< 0.17	< 0.33	2.0 I	< 0.96	< 2.6	409	< 4.6	< 0.090
MW-33	09/21/2021	345	< 5.5	< 3.4	22.2	< 0.17	0.62 I	2.4 I	< 0.96	< 2.6	279	< 4.6	< 0.090
MW-33	03/28/2022	220	< 5.5	< 3.4	2.2 I	< 0.17	< 0.33	< 1.7	< 0.96	< 2.6	243	< 4.6	< 0.090
MW-33	10/05/2022	371	< 5.5	< 3.4	31.8	< 0.17	< 0.33	2.0 I	< 0.96	< 2.6	402	< 2.1	< 0.090
MW-33	03/29/2023	450	<1.0	0.41 I	24	<2.0	<0.25	1.7 I	0.35 I	<1.0	790	<0.50	<0.011
MW-33	09/27/2023	460	<1.0	0.36 I	55	<2.0	<0.25	1.4 I	0.51 I	<1.0	1600	<0.50	<0.011
Intermediate													
MW-22	03/25/2019	444	<5.5	<7.1	12.6	<1.6	<0.33	7.1	<0.96	<2.6	150	<4.6	<0.10
MW-22	06/26/2019	445	-	-	-	-	-	-	-	-	28.6 I	-	<0.10
MW-22	09/24/2019	324	<5.5	<7.1	8.8 I	<1.6	<0.33	5.3	<0.96	<2.6	121	<4.6	<0.10
MW-22	12/17/2019	530	-	-	-	-	-	-	-	-	132	-	<0.10
MW-22	03/23/2020	552	<5.5	<7.1	7.5 I	<1.6	<0.33	11.2	<0.96	<2.6	91.3	<4.6	<0.10
MW-22	06/18/2020	439	-	-	-	-	-	-	-	-	26.2 I	-	<0.090
MW-22	09/14/2020	346	<5.5	<7.1	6.4 I	<0.17	<0.33	5.0 I	<0.96	<2.6	<25.0	<4.6	<0.090
MW-22	12/14/2020	460	-	-	-	-	-	-	-	-	40.4	-	<0.090
MW-22	03/24/2021	617	<5.5	<7.1	6.1 I	<0.17	<0.33	14.0	<0.96	<2.6	87.6	<4.6	<0.090
MW-22	06/22/2021	599	-	-	-	-	-	-	-	-	65.3	-	<0.090
MW-22	09/20/2021	469	<5.5	<3.4	11.1	<0.17	0.81 I	8.8	<0.96	<2.6	<25.0	<4.6	<0.090
MW-22	12/28/2021	627	-	-	-	-	-	-	-	-	43.4	-	0.10 I
MW-22	03/24/2022	645	<5.5	<3.4	3.0 I	<0.17	<0.33	<1.7	<0.96	<2.6	<25.0	<4.6	<0.090
MW-22	08/25/2022	477	-	-	-	-	-	-	-	-	90.4	-	0.13 I
MW-22	10/04/2022	385	<5.5	<3.4	6.0 I	<0.17	<0.33	6.0	<0.96	<2.6	33.6 I	<2.1	<0.090
MW-22	12/28/2022	636	-	-	-	-	-	-	-	-	67.7	-	0.090 I
MW-22	03/28/2023	740	<1.0	0.85 I	3.2	<2.0	<0.50	8.6	<0.50	<2.0	40 I	1.7 I	<0.011
MW-22	06/30/2023	650	-	-	-	-	-	-	-	-	41 I	-	<0.011
MW-22	09/27/2023	790	<1.0	2.2 I	3.9	<2.0	<1.2	23	<0.25	<5.0	82 I	5.9	<0.011

LEGEND

* =Primary Drinking Water Standard
** =Secondary Drinking Water Standard
*** =Chapter 62-777 - Groundwater Cleanup Target Level (GCTL)
(1) =No Standard
- =Not Analyzed

I = Value is between the Method Detection Level (MDL) and the Reporting Detection Level (RDL)
J = Estimated value
V = Analyte found in associated method blank
Q = Estimated value; analyte analyzed after acceptable holding time

ALL DATA
HIGHLANDS CO. SWMC CLASS I LANDFILL
FEBRUARY 2019 THROUGH JANUARY 2024

PARAMETER		NICKEL	SELENIUM	SILVER	SODIUM	THALLIUM	VANADIUM	ZINC	1,1,1,2-TETRA-CHLORO-ETHANE	1,1,1-TRICHLORO-ETHANE	1,1,2,2-TETRA-CHLORO-ETHANE	1,1,2-TRICHLORO-ETHANE	1,1-DICHLORO-ETHANE
STANDARD UNITS		100 µg/L* µg/L	50 µg/L* µg/L	100 µg/L** µg/L	160 mg/L* mg/L	2 µg/L* µg/L	49 µg/L*** µg/L	5000 µg/L** µg/L	1.3 µg/L*** µg/L	200 µg/L* µg/L	0.2 µg/L*** µg/L	5 µg/L* µg/L	70 µg/L*** µg/L
Background													
MW-1	03/25/2019	<2.1	<8.5	<1.0	3.8	<0.50	3.5 I	<11.0	<0.32	<0.30	<0.20	<0.30	<0.34
MW-1	06/26/2019	-	-	-	3.1	-	-	-	-	-	-	-	-
MW-1	09/24/2019	<2.1	<8.5	<1.0	5.2	<0.11	4.4 I	<11.0	<0.32	<0.30	<0.20	<0.30	<0.34
MW-1	12/17/2019	-	-	-	4.2	-	-	-	-	-	-	-	-
MW-1	03/23/2020	<2.1	<8.5	<1.0	3.3	<0.21	5.4 I	<11.0	<0.32	<0.30	<0.20	<0.30	<0.34
MW-1	06/18/2020	-	-	-	3.5	-	-	-	-	-	-	-	-
MW-1	09/14/2020	<2.1	<8.5	<1.0	2.8	<0.11	6.3 I	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-1	11/11/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	12/14/2020	-	-	-	4.5	-	-	-	-	-	-	-	-
MW-1	03/24/2021	<2.1	<8.5	<1.0	4.1	<0.11	4.2 I	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-1	06/22/2021	-	-	-	2.5	-	-	-	-	-	-	-	-
MW-1	09/20/2021	<2.1	<3.9	<1.0	4.7	<0.11	4.9 I	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-1	12/28/2021	-	-	-	4.8	-	-	-	-	-	-	-	-
MW-1	03/24/2022	<2.1	<3.9	<1.0	4.8	<0.11	3.8 I	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-1	08/25/2022	-	-	-	4.9	-	-	-	-	-	-	-	-
MW-1	10/04/2022	<1.0	<3.9	<1.0	8.2	<0.11	4.3 I	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-1	12/28/2022	-	-	-	6.7	-	-	-	-	-	-	-	-
MW-1	03/28/2023	<1.2	<1.2	<0.50	5.2	<0.25	2.6 I	7.4 I	<0.47	<0.39	<0.20	<0.40	<0.38
MW-1	06/30/2023	-	-	-	3.2	-	-	-	-	-	-	-	-
MW-1	09/26/2023	<1.2	<1.2	<0.50	9.1	<0.25	5.0	21 I	<0.47	<0.39	<0.20	<0.40	<0.38
Detection													
MW-4	03/25/2019	< 2.1	< 8.5	< 1.0	70.4	< 0.50	17.1	< 11.0	< 0.32	< 0.30	< 0.20	< 0.30	< 0.34
MW-4	06/26/2019	-	-	-	73.7	-	-	-	-	-	-	-	-
MW-4	09/24/2019	< 2.1	< 8.5	< 1.0	66.3	< 0.11	12.6	< 11.0	< 0.32	< 0.30	< 0.20	< 0.30	< 0.34
MW-4	12/17/2019	-	-	-	71.2	-	-	-	-	-	-	-	-
MW-4	03/23/2020	< 2.1	< 8.5	< 1.0	74.6	< 0.11	14.6	< 11.0	< 0.32	< 0.30	< 0.20	< 0.30	< 0.34
MW-4	06/18/2020	-	-	-	11.7	-	-	-	-	-	-	-	-
MW-4	09/14/2020	< 2.1	< 8.5	< 1.0	3.3	< 0.11	11.6	< 11.0	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34
MW-4	12/14/2020	-	-	-	11.8	-	-	-	-	-	-	-	-
MW-4	03/24/2021	< 2.1	< 8.5	< 1.0	39.6	< 0.11	14.0	< 11.0	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34
MW-4	06/22/2021	-	-	-	11.1	-	-	-	-	-	-	-	-
MW-4	09/20/2021	< 2.1	< 3.9	< 1.0	10.9	< 0.11	11.4	< 11.0	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34
MW-4	12/28/2021	-	-	-	19.5	-	-	-	-	-	-	-	-
MW-4	03/24/2022	< 2.1	< 3.9	< 1.0	50.4	< 0.11	14.7	< 11.0	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34
MW-4	08/25/2022	-	-	-	6.4	-	-	-	-	-	-	-	-
MW-4	10/04/2022	1.4 I	< 3.9	< 1.0	37.0	< 0.11	16.1	< 11.0	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34
MW-4	12/28/2022	-	-	-	10.7	-	-	-	-	-	-	-	-
MW-4	03/28/2023	<1.2	<1.2	<0.50	26	<0.25	12	11 I	<0.47	<0.39	<0.20	<0.40	<0.38
MW-4	06/30/2023	-	-	-	14	-	-	-	-	-	-	-	-

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HIGHLANDS CO. SWMC CLASS I LANDFILL
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PARAMETER		NICKEL	SELENIUM	SILVER	SODIUM	THALLIUM	VANADIUM	ZINC	1,1,1,2-TETRA-CHLORO-ETHANE	1,1,1-TRICHLORO-ETHANE	1,1,2,2-TETRA-CHLORO-ETHANE	1,1,2-TRICHLORO-ETHANE	1,1-DICHLORO-ETHANE
STANDARD UNITS		100 µg/L* µg/L	50 µg/L* µg/L	100 µg/L** µg/L	160 mg/L* mg/L	2 µg/L* µg/L	49 µg/L*** µg/L	5000 µg/L** µg/L	1.3 µg/L*** µg/L	200 µg/L* µg/L	0.2 µg/L*** µg/L	5 µg/L* µg/L	70 µg/L*** µg/L
MW-4	09/27/2023	<1.2	<1.2	<0.50	3.3	<0.25	12	17 I	<0.47	<0.39	<0.20	<0.40	<0.38
MW-7A	03/28/2019	7.0	< 8.5	< 1.0	82.8	< 0.50	17.6	75.5	< 0.32	< 0.30	< 0.20	< 0.30	< 0.34
MW-7A	09/24/2019	3.7 I	< 8.5	< 1.0	152	< 0.11	13.6	30.4	< 0.32	< 0.30	< 0.20	< 0.30	< 0.34
MW-7A	12/18/2019	-	-	-	103	-	-	-	-	-	-	-	-
MW-7A	03/24/2020	2.4 I	< 8.5	< 1.0	83.1	< 0.11	16.7	27.4	< 0.32	< 0.30	< 0.20	< 0.30	< 0.34
MW-7A	06/29/2020	-	-	-	121	-	-	-	-	-	-	-	-
MW-7A	09/15/2020	4.7 I	< 8.5	< 1.0	131	< 0.11	13.3	42.3	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34
MW-7A	12/14/2020	-	-	-	178	-	-	-	-	-	-	-	-
MW-7A	03/23/2021	3.2 I	< 8.5	< 1.0	114	< 0.11	21.1	< 11.0	< 0.32	< 0.30	< 0.18	< 0.30	< 0.34
MW-7A	09/21/2021	4.3 I	< 3.9	< 1.0	133	< 0.11	19.9	86.5	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34
MW-7A	03/30/2022	4.5 I	< 3.9	< 1.0	89.2	< 0.11	24.5	66.8	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34
MW-7A	10/05/2022	2.2 I	< 3.9	< 1.0	101	< 0.11	17.3	22.9	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34
MW-7A	03/29/2023	2.4 I	<1.2	<0.50	87	<0.25	18	23 I	<0.47	<0.39	<0.20	<0.40	<0.38
MW-7A	06/30/2023	-	-	-	-	-	-	-	-	-	-	-	-
MW-7A	09/27/2023	3.7 I	<1.2	<0.50	120	<0.25	18	61	<0.47	<0.39	<0.20	<0.40	<0.38
MW-21	03/25/2019	<2.1	<8.5	<1.0	33.5	<0.50	22.2	<11.0	<0.32	<0.30	<0.20	<0.30	<0.34
MW-21	06/26/2019	-	-	-	23.3	-	-	-	-	-	-	-	-
MW-21	09/24/2019	<2.1	<8.5	<1.0	23.5	<0.11	8.9 I	<11.0	<0.32	<0.30	<0.20	<0.30	<0.34
MW-21	12/17/2019	-	-	-	33.3	-	-	-	-	-	-	-	-
MW-21	03/23/2020	<2.1	<8.5	<1.0	35.3	<0.53	22.2	<11.0	<0.32	<0.30	<0.20	<0.30	<0.34
MW-21	06/18/2020	-	-	-	16.7	-	-	-	-	-	-	-	-
MW-21	09/14/2020	<2.1	<8.5	<1.0	4.7	<0.11	5.0 I	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-21	12/14/2020	-	-	-	4.1	-	-	-	-	-	-	-	-
MW-21	03/24/2021	<2.1	<8.5	<1.0	13.2	<0.11	15.2	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-21	06/22/2021	-	-	-	20.9	-	-	-	-	-	-	-	-
MW-21	09/20/2021	<2.1	<3.9	<1.0	6.2	<0.11	5.7 I	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-21	12/28/2021	-	-	-	5.8	-	-	-	-	-	-	-	-
MW-21	03/24/2022	<2.1	<3.9	<1.0	10.9	<0.11	15.9	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-21	08/25/2022	-	-	-	4.9	-	-	-	-	-	-	-	-
MW-21	10/04/2022	2.1 I	<3.9	<1.0	1.5 I	<0.11	3.9 I	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-21	12/28/2022	-	-	-	1.6 I	-	-	-	-	-	-	-	-
MW-21	03/28/2023	1.3 I	<1.2	<0.50	9.7	<0.25	9.0	7.5 I	<0.47	<0.39	<0.20	<0.40	<0.38
MW-21	06/30/2023	-	-	-	5.6	-	-	-	-	-	-	-	-
MW-21	09/27/2023	1.6 I	<1.2	<0.50	6.3	<0.25	30	41	<0.47	<0.39	<0.20	<0.40	<0.38
MW-30	03/28/2019	<2.1	<8.5	<1.0	57.9	<0.50	2.7 I	<11.0	<0.32	<0.30	<0.20	<0.30	<0.34
MW-30	09/24/2019	<2.1	<8.5	<1.0	45.6	<0.11	2.2 I	<11.0	<0.32	<0.30	<0.20	<0.30	<0.34
MW-30	12/18/2019	-	-	-	45.9	-	-	-	-	-	-	-	-
MW-30	03/24/2020	<2.1	<8.5	<1.0	44.5	<0.11	1.4 I	<11.0	<0.32	<0.30	<0.20	<0.30	<0.34
MW-30	06/29/2020	-	-	-	22.3	-	-	-	-	-	-	-	-

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HIGHLANDS CO. SWMC CLASS I LANDFILL
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PARAMETER		NICKEL	SELENIUM	SILVER	SODIUM	THALLIUM	VANADIUM	ZINC	1,1,1,2-TETRA-CHLORO-ETHANE	1,1,1-TRICHLORO-ETHANE	1,1,2,2-TETRA-CHLORO-ETHANE	1,1,2-TRICHLORO-ETHANE	1,1-DICHLORO-ETHANE
STANDARD		100 µg/L*	50 µg/L*	100 µg/L**	160 mg/L*	2 µg/L*	49 µg/L***	5000 µg/L**	1.3 µg/L***	200 µg/L*	0.2 µg/L***	5 µg/L*	70 µg/L***
UNITS		µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-30	09/14/2020	<2.1	<8.5	<1.0	25.8	<0.11	2.4 I	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-30	12/14/2020	-	-	-	35.1	-	-	-	-	-	-	-	-
MW-30	03/23/2021	<2.1	<8.5	<1.0	36.8	<0.11	1.6 I	<11.0	<0.32	<0.30	<0.18	<0.30	<0.34
MW-30	09/21/2021	<2.1	<3.9	<1.0	51.3	<0.11	1.1 I	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-30	03/28/2022	<2.1	<3.9	<1.0	41.7	<0.11	1.1 I	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-30	10/05/2022	<1.0	38.4	<1.0	50.9	<0.11	5.2 I	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-31	03/28/2019	<2.1	<8.5	<1.0	47.0	<0.50	4.0 I	<11.0	<0.32	<0.30	<0.20	<0.30	<0.34
MW-31	09/24/2019	<2.1	<8.5	<1.0	47.4	<0.11	3.1 I	<11.0	<0.32	<0.30	<0.20	<0.30	<0.34
MW-31	12/18/2019	-	-	-	56.9	-	-	-	-	-	-	-	-
MW-31	03/24/2020	<2.1	<8.5	<1.0	88.2	<0.11	4.1 I	<11.0	<0.32	<0.30	<0.20	<0.30	<0.34
MW-31	06/29/2020	-	-	-	69.9	-	-	-	-	-	-	-	-
MW-31	09/14/2020	<2.1	<8.5	<1.0	52.7	<0.11	4.5 I	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-31	12/14/2020	-	-	-	49.4	-	-	-	-	-	-	-	-
MW-31	03/23/2021	<2.1	<8.5	<1.0	62.7	<0.11	3.3 I	<11.0	<0.32	<0.30	<0.18	<0.30	<0.34
MW-31	09/21/2021	<2.1	<3.9	<1.0	60.6	<0.11	4.1 I	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-31	03/28/2022	3.0 I	<3.9	<1.0	142	<0.21	6.1 I	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-31	10/05/2022	2.5 I	4.6 I	<1.0	78.2	<0.11	6.3 I	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-31	03/29/2023	2.4 I	<1.2	<0.50	140	<0.25	5.0	8.0 I	<0.47	<0.39	<0.20	<0.40	<0.38
MW-31	06/23/2023	<2.5	8.3 I	<1.0	98	<0.25	5.7 I	<12	<0.47	<0.39	<0.20	<0.40	<0.38
MW-31	09/27/2023	3.7 I	<1.2	<0.50	120	<0.25	7.9	9.4 I	<0.47	<0.39	<0.20	<0.40	<0.38
MW-32	03/28/2019	<2.1	<8.5	<1.0	13.4	<0.50	3.0 I	<11.0	<0.32	<0.30	<0.20	<0.30	<0.34
MW-32	09/24/2019	<2.1	<8.5	<1.0	10.0	<0.11	2.2 I	<11.0	<0.32	<0.30	<0.20	<0.30	<0.34
MW-32	12/18/2019	-	-	-	7.8	-	-	-	-	-	-	-	-
MW-32	03/24/2020	<2.1	<8.5	<1.0	7.0	<0.11	3.3 I	<11.0	< 0.32	<0.30	<0.20	<0.30	<0.34
MW-32	06/29/2020	-	-	-	5.3	-	-	-	-	-	-	-	-
MW-32	09/15/2020	< 2.1	< 8.5	< 1.0	4.7	< 0.11	2.8 I	16.4 I	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34
MW-32	12/14/2020	-	-	-	4.7	-	-	-	-	-	-	-	-
MW-32	03/23/2021	< 2.1	< 8.5	< 1.0	4.6	< 0.11	3.2 I	< 11.0	< 0.32	< 0.30	< 0.18	< 0.30	< 0.34
MW-32	09/21/2021	< 2.1	< 3.9	< 1.0	6.4	< 0.11	2.0 I	< 11.0	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34
MW-32	03/28/2022	< 2.1	< 3.9	< 1.0	16.6	< 0.11	1.1 I	< 11.0	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34
MW-32	10/05/2022	1.4 I	< 3.9	< 1.0	20.8	< 0.11	1.2 I	< 11.0	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34
MW-32	03/29/2023	1.6 I	<1.2	<0.50	26	<0.25	2.4 I	7.3 I	<0.47	<0.39	<0.20	<0.40	<0.38
MW-32	09/27/2023	2.3 I	<1.2	<0.50	120	<0.25	4.4	10 I	<0.47	<0.39	<0.20	<0.40	<0.38
MW-33	03/28/2019	< 2.1	< 8.5	< 1.0	9.6	< 0.50	1.6 I	< 11.0	< 0.32	< 0.30	< 0.20	< 0.30	< 0.34
MW-33	09/24/2019	< 2.1	< 8.5	< 1.0	10.2	< 0.11	1.5 I	< 11.0	< 0.32	< 0.30	< 0.20	< 0.30	< 0.34
MW-33	12/18/2019	-	-	-	11.2	-	-	-	-	-	-	-	-
MW-33	03/24/2020	< 2.1	< 8.5	< 1.0	11.5	< 0.11	1.0 I	< 11.0	< 0.32	< 0.30	< 0.20	< 0.30	< 0.34
MW-33	06/29/2020	-	-	-	11.4	-	-	-	-	-	-	-	-
MW-33	09/15/2020	< 2.1	< 8.5	< 1.0	14.3	< 0.11	1.8 I	< 11.0	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34

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PARAMETER		NICKEL	SELENIUM	SILVER	SODIUM	THALLIUM	VANADIUM	ZINC	1,1,1,2-TETRA-CHLORO-ETHANE	1,1,1-TRICHLORO-ETHANE	1,1,2,2-TETRA-CHLORO-ETHANE	1,1,2-TRICHLORO-ETHANE	1,1-DICHLORO-ETHANE
STANDARD UNITS		100 µg/L* µg/L	50 µg/L* µg/L	100 µg/L** µg/L	160 mg/L* mg/L	2 µg/L* µg/L	49 µg/L*** µg/L	5000 µg/L** µg/L	1.3 µg/L*** µg/L	200 µg/L* µg/L	0.2 µg/L*** µg/L	5 µg/L* µg/L	70 µg/L*** µg/L
MW-33	12/14/2020	-	-	-	12.5	-	-	-	-	-	-	-	-
MW-33	03/23/2021	< 2.1	< 8.5	< 1.0	11.7	< 0.11	1.6 I	< 11.0	< 0.32	< 0.30	< 0.18	< 0.30	< 0.34
MW-33	09/21/2021	< 2.1	< 3.9	< 1.0	12.4	< 0.11	1.9 I	< 11.0	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34
MW-33	03/28/2022	< 2.1	< 3.9	< 1.0	7.0	< 0.11	2.2 I	14.4 I	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34
MW-33	10/05/2022	< 1.0	< 3.9	< 1.0	13.9	< 0.11	1.3 I	< 11.0	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34
MW-33	03/29/2023	1.3 I	<1.2	<0.50	10	<0.25	1.3 I	8.1 I	<0.47	<0.39	<0.20	<0.40	<0.38
MW-33	09/27/2023	2.1 I	<1.2	<0.50	19	<0.25	1.1 I	27	<0.47	<0.39	<0.20	<0.40	<0.38
Intermediate													
MW-22	03/25/2019	3.0 I	<8.5	<1.0	113	<0.50	13.9	<11.0	<0.32	<0.30	<0.20	<0.30	<0.34
MW-22	06/26/2019	-	-	-	67.3	-	-	-	-	-	-	-	-
MW-22	09/24/2019	<2.1	<8.5	<1.0	54.8	<0.11	11.3	<11.0	<0.32	<0.30	<0.20	<0.30	<0.34
MW-22	12/17/2019	-	-	-	131	-	-	-	-	-	-	-	-
MW-22	03/23/2020	5.0	<8.5	<1.0	110	<0.53	21.1	<11.0	<0.32	<0.30	<0.20	<0.30	<0.34
MW-22	06/18/2020	-	-	-	63.1	-	-	-	-	-	-	-	-
MW-22	09/14/2020	<2.1	<8.5	<1.0	37.5	<0.11	9.0 I	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-22	12/14/2020	-	-	-	80.9	-	-	-	-	-	-	-	-
MW-22	03/24/2021	4.7 I	<8.5	<1.0	105	<0.11	27.6	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-22	06/22/2021	-	-	-	89.2	-	-	-	-	-	-	-	-
MW-22	09/20/2021	3.0 I	<3.9	<1.0	42.9	<0.53	15.6	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-22	12/28/2021	-	-	-	85.5	-	-	-	-	-	-	-	-
MW-22	03/24/2022	<2.1	<3.9	<1.0	12.2	<0.53	4.5 I	71.3	<0.32	<0.30	<0.59	<0.30	<0.34
MW-22	08/25/2022	-	-	-	81.2	-	-	-	-	-	-	-	-
MW-22	10/04/2022	3.0 I	<3.9	<1.0	24.8	<0.11	7.8 I	<11.0	<0.32	<0.30	<0.59	<0.30	<0.34
MW-22	12/28/2022	-	-	-	84.5	-	-	-	-	-	-	-	-
MW-22	03/28/2023	3.0 I	<2.5	<1.0	130	<0.25	21	<12	<0.47	<0.39	<0.20	<0.40	<0.38
MW-22	06/30/2023	-	-	-	100	-	-	-	-	-	-	-	-
MW-22	09/27/2023	7.0 I	<6.2	<2.5	89	<0.25	46	<30	<0.47	<0.39	<0.20	<0.40	<0.38

LEGEND

* =Primary Drinking Water Standard
** =Secondary Drinking Water Standard
*** =Chapter 62-777 - Groundwater Cleanup Target Level (GCTL)
(1) =No Standard
- =Not Analyzed

I = Value is between the Method Detection Level (MDL) and the Reporting Detection Level (RDL)
J = Estimated value
V = Analyte found in associated method blank
Q = Estimated value; analyte analyzed after acceptable holding time

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PARAMETER		1,1-DICHLORO-ETHENE	1,2,3-TRICHLORO-PROPANE	1,2-DIBROMO-3-CHLORO-PROPANE	1,2-DIBROMO-ETHANE (EDB)	1,2-DICHLORO-BENZENE	1,2-DICHLORO-ETHANE	1,2-DICHLORO-PROPANE	1,4-DICHLORO-BENZENE	2-HEXANONE	4-METHYL-2-PENTANONE	ACETONE	ACRYLONI-TRILE
STANDARD		7 µg/L*	0.02 µg/L***	0.2 µg/L*	0.02 µg/L*	600 µg/L*	3 µg/L*	5 µg/L*	75 µg/L*	280 µg/L***	350 µg/L**	6300 µg/L***	0.06µg/L***
UNITS		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Background													
MW-1	03/25/2019	<0.27	<1.1	<0.0064	<0.0075	<0.29	<0.27	<0.23	<0.28	<0.85	<0.32	<5.3	<3.7
MW-1	06/26/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	09/24/2019	<0.27	<1.1	<0.0064	<0.0076	<0.29	<0.27	<0.23	<0.28	<0.85	<0.32	<5.3	<3.7
MW-1	12/17/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	03/23/2020	<0.27	<1.1	<0.0066	<0.0077	<0.29	<0.27	<0.23	<0.28	<0.85	<0.32	<5.3	<3.7
MW-1	06/18/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	09/14/2020	<0.59	<0.53	<0.0063	<0.0074	<0.60	<0.27	<0.23	<0.28	<3.2	<7.5	<5.3	<3.7
MW-1	11/11/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	03/24/2021	<0.59	<0.53	<0.0066	<0.0077	<0.60	<0.27	<0.23	<0.28	<3.2	<7.5	<5.3	<3.7
MW-1	06/22/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	09/20/2021	<0.59	<0.53	<0.0066	<0.0078	<0.60	<0.27	<0.23	<0.28	<3.2	<7.5	<5.3	<3.7
MW-1	12/28/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	03/24/2022	<0.59	<0.53	<0.0067	<0.0079	<0.60	<0.27	<0.23	<0.28	<10.0	<7.5	<9.4	<11.0
MW-1	08/25/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	10/04/2022	<0.59	<0.53	<0.0065	<0.0077	<0.60	<0.27	<0.23	<0.28	<3.2	<7.5	<8.7	<3.7
MW-1	12/28/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	03/28/2023	<0.41	<0.015	<0.023	<0.019	<0.44	<0.40	<0.18	<0.36	<0.42	<0.40	<0.90	<0.38
MW-1	06/30/2023	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	09/26/2023	<0.41	<0.015	<0.023	<0.019	<0.44	<0.40	<0.18	<0.36	<0.42	<0.40	<0.90	<0.38
Detection													
MW-4	03/25/2019	< 0.27	< 1.1	< 0.0066	< 0.0077	< 0.29	< 0.27	< 0.23	< 0.28	< 0.85	< 0.32	< 5.3	< 3.7
MW-4	06/26/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	09/24/2019	< 0.27	< 1.1	< 0.0065	< 0.0076	< 0.29	< 0.27	< 0.23	< 0.28	< 0.85	< 0.32	< 5.3	< 3.7
MW-4	12/17/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	03/23/2020	< 0.27	< 1.1	< 0.0065	< 0.0077	< 0.29	< 0.27	< 0.23	< 0.28	< 0.85	< 0.32	< 5.3	< 3.7
MW-4	06/18/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	09/14/2020	< 0.59	< 0.53	< 0.0065	< 0.0076	< 0.60	< 0.27	< 0.23	< 0.28	< 3.2	< 7.5	< 5.3	< 3.7
MW-4	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	03/24/2021	< 0.59	< 0.53	< 0.0064	< 0.0075	< 0.60	< 0.27	< 0.23	< 0.28	< 3.2	< 7.5	< 5.3	< 3.7
MW-4	06/22/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	09/20/2021	< 0.59	< 0.53	< 0.0067	< 0.0078	< 0.60	< 0.27	< 0.23	< 0.28	< 3.2	< 7.5	< 5.3	< 3.7
MW-4	12/28/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	03/24/2022	< 0.59	< 0.53	< 0.0068	< 0.0079	< 0.60	< 0.27	< 0.23	< 0.28	< 10.0	< 7.5	< 9.4	< 11.0
MW-4	08/25/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	10/04/2022	< 0.59	< 0.53	< 0.0064	< 0.0076	< 0.60	< 0.27	< 0.23	< 0.28	< 3.2	< 7.5	< 8.7	< 3.7
MW-4	12/28/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	03/28/2023	<0.41	<0.015	<0.023	<0.019	<0.44	<0.40	<0.18	<0.36	<0.42	<0.40	<0.90	<0.38
MW-4	06/30/2023	-	-	-	-	-	-	-	-	-	-	-	-

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PARAMETER		1,1-DICHLORO-ETHENE	1,2,3-TRICHLORO-PROPANE	1,2-DIBROMO-3-CHLORO-PROPANE	1,2-DIBROMO-ETHANE (EDB)	1,2-DICHLORO-BENZENE	1,2-DICHLORO-ETHANE	1,2-DICHLORO-PROPANE	1,4-DICHLORO-BENZENE	2-HEXANONE	4-METHYL-2-PENTANONE	ACETONE	ACRYLONI-TRILE
STANDARD UNITS		7 µg/L* µg/L	0.02 µg/L*** µg/L	0.2 µg/L* µg/L	0.02 µg/L* µg/L	600 µg/L* µg/L	3 µg/L* µg/L	5 µg/L* µg/L	75 µg/L* µg/L	280 µg/L*** µg/L	350 µg/L** µg/L	6300 µg/L*** µg/L	0.06µg/L*** µg/L
MW-4	09/27/2023	<0.41	<0.015	<0.023	<0.019	<0.44	<0.40	<0.18	<0.36	<0.42	<0.40	<0.90	<0.38
MW-7A	03/28/2019	< 0.50	< 1.1	< 0.0065	< 0.0076	< 0.50	< 0.50	< 0.23	< 0.50	< 0.85	< 0.32	< 5.3	< 3.7
MW-7A	09/24/2019	< 0.27	< 1.1	< 0.0066	< 0.0077	< 0.29	< 0.27	< 0.23	< 0.28	< 0.85	< 0.32	< 5.3	< 3.7
MW-7A	12/18/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-7A	03/24/2020	< 0.50	< 1.1	< 0.0065	< 0.0076	< 0.50	< 0.50	< 0.23	< 0.50	< 0.85	< 0.32	< 5.3	< 3.7
MW-7A	06/29/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-7A	09/15/2020	< 0.59	< 0.53	< 0.0062	< 0.0073	< 0.60	< 0.27	< 0.23	< 0.28	< 3.2	< 7.5	< 5.3	< 3.7
MW-7A	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-7A	03/23/2021	< 0.59	< 0.53	< 0.0065	< 0.0076	< 0.60	< 0.27	< 0.23	< 0.28	< 3.2	< 2.8	< 5.3	< 0.93
MW-7A	09/21/2021	< 0.59	< 0.53	< 0.0066	< 0.0078	< 0.60	< 0.27	< 0.23	< 0.28	< 3.2	< 7.5	< 5.3	< 3.7
MW-7A	03/30/2022	< 0.59	< 0.53	< 0.0065	< 0.0076	< 0.60	< 0.27	< 0.23	< 0.28	< 10.0	< 7.5	< 9.4	< 11.0
MW-7A	10/05/2022	< 0.59	< 0.53	< 0.0063	< 0.0074	< 0.60	< 0.27	< 0.23	< 0.28	< 3.2	< 7.5	< 8.7	< 3.7
MW-7A	03/29/2023	<0.41	<0.015	<0.023	<0.019	<0.44	<0.40	<0.18	<0.36	<0.42	<0.40	<0.90	<0.38
MW-7A	06/30/2023	-	-	-	-	-	-	-	-	-	-	-	-
MW-7A	09/27/2023	<0.41	<0.015	<0.023	<0.019	<0.44	<0.40	<0.18	<0.36	<0.42	<0.40	<0.90	<0.38
MW-21	03/25/2019	<0.27	<1.1	<0.0065	<0.0076	<0.29	<0.27	<0.23	<0.28	<0.85	<0.32	7.0 I	<3.7
MW-21	06/26/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	09/24/2019	<0.27	<1.1	<0.0065	<0.0076	<0.29	<0.27	<0.23	<0.28	<0.85	<0.32	<5.3	<3.7
MW-21	12/17/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	03/23/2020	<0.27	<1.1	<0.0065	<0.0076	<0.29	<0.27	<0.23	<0.28	<0.85	<0.32	<5.3	<3.7
MW-21	06/18/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	09/14/2020	<0.59	<0.53	<0.0063	<0.0074	<0.60	<0.27	<0.23	<0.28	<3.2	<7.5	<5.3	<3.7
MW-21	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	03/24/2021	<0.59	<0.53	<0.0065	<0.0076	<0.60	<0.27	<0.23	<0.28	<3.2	<7.5	<5.3	<3.7
MW-21	06/22/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	09/20/2021	<0.59	<0.53	<0.0069	<0.0081	<0.60	<0.27	<0.23	<0.28	<3.2	<7.5	<5.3	<3.7
MW-21	12/28/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	03/24/2022	<0.59	<0.53	<0.0068	<0.0080	<0.60	<0.27	<0.23	<0.28	<10.0	<7.5	<9.4	<11.0
MW-21	08/25/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	10/04/2022	<0.59	<0.53	<0.0064	<0.0075	<0.60	<0.27	<0.23	<0.28	<3.2	<7.5	<8.7	<3.7
MW-21	12/28/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	03/28/2023	<0.41	<0.015	<0.023	<0.019	<0.44	<0.40	<0.18	<0.36	<0.42	<0.40	<0.90	<0.38
MW-21	06/30/2023	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	09/27/2023	<0.41	<0.015	<0.023	<0.019	<0.44	<0.40	<0.18	<0.36	<0.42	<0.40	<0.90	<0.38
MW-30	03/28/2019	<0.27	<1.1	<0.0065	<0.0076	<0.29	<0.27	<0.23	<0.28	<0.85	<0.32	<5.3	<3.7
MW-30	09/24/2019	<0.27	<1.1	<0.0068	<0.0079	<0.29	<0.27	<0.23	<0.28	<0.85	<0.32	<5.3	<3.7
MW-30	12/18/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-30	03/24/2020	<0.50	<1.1	<0.0068	<0.0080	<0.50	<0.50	<0.23	<0.50	<0.85	<0.32	<5.3	<3.7
MW-30	06/29/2020	-	-	-	-	-	-	-	-	-	-	-	-

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HIGHLANDS CO. SWMC CLASS I LANDFILL
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PARAMETER		1,1-DICHLORO-ETHENE	1,2,3-TRICHLORO-PROPANE	1,2-DIBROMO-3-CHLORO-PROPANE	1,2-DIBROMO-ETHANE (EDB)	1,2-DICHLORO-BENZENE	1,2-DICHLORO-ETHANE	1,2-DICHLORO-PROPANE	1,4-DICHLORO-BENZENE	2-HEXANONE	4-METHYL-2-PENTANONE	ACETONE	ACRYLONI-TRILE
STANDARD UNITS		7 µg/L* µg/L	0.02 µg/L*** µg/L	0.2 µg/L* µg/L	0.02 µg/L* µg/L	600 µg/L* µg/L	3 µg/L* µg/L	5 µg/L* µg/L	75 µg/L* µg/L	280 µg/L*** µg/L	350 µg/L** µg/L	6300 µg/L*** µg/L	0.06µg/L*** µg/L
MW-30	09/14/2020	<0.59	<0.53	<0.0064	<0.0075	<0.60	<0.27	<0.23	<0.28	<3.2	<7.5	<5.3	<3.7
MW-30	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-30	03/23/2021	<0.59	<0.53	<0.0066	<0.0077	<0.60	<0.27	<0.23	<0.28	<3.2	<2.8	<5.3	<0.93
MW-30	09/21/2021	<0.59	<0.53	<0.0065	<0.0076	<0.60	<0.27	<0.23	<0.28	<3.2	<7.5	<5.3	<3.7
MW-30	03/28/2022	<0.59	<0.53	<0.0067	<0.0078	<0.60	<0.27	<0.23	<0.28	<10.0	<7.5	<9.4	<11.0
MW-30	10/05/2022	<0.59	<0.53	<0.0064	<0.0075	<0.60	<0.27	<0.23	<0.28	<3.2	<7.5	<8.7	<3.7
MW-31	03/28/2019	<0.50	<1.1	<0.0064	<0.0075	<0.50	<0.50	<0.23	<0.50	<0.85	<0.32	<5.3	<3.7
MW-31	09/24/2019	<0.27	<1.1	<0.0067	<0.0078	<0.29	<0.27	<0.23	<0.28	<0.85	<0.32	<5.3	<3.7
MW-31	12/18/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-31	03/24/2020	<0.50	<1.1	<0.0064	<0.0075	<0.50	<0.50	<0.23	<0.50	<0.85	<0.32	<5.3	<3.7
MW-31	06/29/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-31	09/14/2020	<0.59	<0.53	<0.0064	<0.0075	<0.60	<0.27	<0.23	<0.28	<3.2	<7.5	<5.3	<3.7
MW-31	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-31	03/23/2021	<0.59	<0.53	<0.0064	<0.0076	<0.60	<0.27	<0.23	<0.28	<3.2	<2.8	<5.3	<0.93
MW-31	09/21/2021	<0.59	<0.53	<0.0065	<0.0076	<0.60	<0.27	<0.23	<0.28	<3.2	<7.5	<5.3	<3.7
MW-31	03/28/2022	<0.59	<0.53	<0.0068	<0.0079	<0.60	<0.27	<0.23	<0.28	<10.0	<7.5	19.7 I	<11.0
MW-31	10/05/2022	<0.59	<0.53	<0.0066	<0.0077	<0.60	<0.27	<0.23	<0.28	<3.2	<7.5	<8.7	<3.7
MW-31	03/29/2023	<0.41	<0.015	<0.023	<0.019	<0.44	<0.40	<0.18	<0.36	<0.42	2.8	150	<0.38
MW-31	06/23/2023	<0.41	<0.015	<0.023	<0.019	<0.44	<0.40	<0.18	<0.36	<0.42	0.92 I	41	<0.38
MW-31	09/27/2023	<0.41	<0.015	<0.023	<0.019	<0.44	<0.40	<0.18	<0.36	<0.42	<0.40	<0.90	<0.38
MW-32	03/28/2019	<0.50	<1.1	<0.0062	<0.0073	<0.50	<0.50	<0.23	<0.50	<0.85	<0.32	<5.3	<3.7
MW-32	09/24/2019	<0.27	<1.1	<0.0064	<0.0075	<0.29	<0.27	<0.23	<0.28	<0.85	<0.32	<5.3	<3.7
MW-32	12/18/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-32	03/24/2020	<0.27	< 1.1	<0.0066	< 0.0077	<0.29	<0.27	<0.23	<0.28	< 0.85	< 0.32	< 5.3	<3.7
MW-32	06/29/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-32	09/15/2020	< 0.59	< 0.53	< 0.0063	< 0.0074	< 0.60	< 0.27	< 0.23	< 0.28	< 3.2	< 7.5	< 5.3	< 3.7
MW-32	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-32	03/23/2021	< 0.59	< 0.53	< 0.0064	< 0.0075	< 0.60	< 0.27	< 0.23	< 0.28	< 3.2	< 2.8	< 5.3	< 0.93
MW-32	09/21/2021	< 0.59	< 0.53	< 0.0061	< 0.0071	< 0.60	< 0.27	< 0.23	< 0.28	< 3.2	< 7.5	< 5.3	< 3.7
MW-32	03/28/2022	< 0.59	< 0.53	< 0.0066	< 0.0077	< 0.60	< 0.27	< 0.23	< 0.28	< 10.0	< 7.5	< 9.4	< 11.0
MW-32	10/05/2022	< 0.59	< 0.53	< 0.0065	< 0.0076	< 0.60	< 0.27	< 0.23	< 0.28	< 3.2	< 7.5	< 8.7	< 3.7
MW-32	03/29/2023	<0.41	<0.015	<0.023	<0.019	<0.44	<0.40	<0.18	<0.36	<0.42	<0.40	<0.90	<0.38
MW-32	09/27/2023	<0.41	<0.015	<0.023	<0.019	<0.44	<0.40	<0.18	<0.36	<0.42	<0.40	<0.90	<0.38
MW-33	03/28/2019	< 0.50	< 1.1	< 0.0064	< 0.0075	< 0.50	< 0.50	< 0.23	< 0.50	< 0.85	< 0.32	< 5.3	< 3.7
MW-33	09/24/2019	< 0.27	< 1.1	< 0.0065	< 0.0076	< 0.29	< 0.27	< 0.23	< 0.28	< 0.85	< 0.32	< 5.3	< 3.7
MW-33	12/18/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-33	03/24/2020	< 0.50	< 1.1	< 0.0068	< 0.0079	< 0.50	< 0.50	< 0.23	< 0.50	< 0.85	< 0.32	< 5.3	< 3.7
MW-33	06/29/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-33	09/15/2020	< 0.59	< 0.53	< 0.0064	< 0.0074	< 0.60	< 0.27	< 0.23	< 0.28	< 3.2	< 7.5	< 5.3	< 3.7

ALL DATA
HIGHLANDS CO. SWMC CLASS I LANDFILL
FEBRUARY 2019 THROUGH JANUARY 2024

PARAMETER		1,1-DICHLORO-ETHENE	1,2,3-TRICHLORO-PROPANE	1,2-DIBROMO-3-CHLORO-PROPANE	1,2-DIBROMO-ETHANE (EDB)	1,2-DICHLORO-BENZENE	1,2-DICHLORO-ETHANE	1,2-DICHLORO-PROPANE	1,4-DICHLORO-BENZENE	2-HEXANONE	4-METHYL-2-PENTANONE	ACETONE	ACRYLONI-TRILE
STANDARD UNITS		7 µg/L* µg/L	0.02 µg/L*** µg/L	0.2 µg/L* µg/L	0.02 µg/L* µg/L	600 µg/L* µg/L	3 µg/L* µg/L	5 µg/L* µg/L	75 µg/L* µg/L	280 µg/L*** µg/L	350 µg/L** µg/L	6300 µg/L*** µg/L	0.06µg/L*** µg/L
MW-33	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-33	03/23/2021	< 0.59	< 0.53	< 0.0065	< 0.0076	< 0.60	< 0.27	< 0.23	< 0.28	< 3.2	< 2.8	< 5.3	< 0.93
MW-33	09/21/2021	< 0.59	< 0.53	< 0.0066	< 0.0077	< 0.60	< 0.27	< 0.23	< 0.28	< 3.2	< 7.5	< 5.3	< 3.7
MW-33	03/28/2022	< 0.59	< 0.53	< 0.0066	< 0.0078	< 0.60	< 0.27	< 0.23	< 0.28	< 10.0	< 7.5	< 9.4	< 11.0
MW-33	10/05/2022	< 0.59	< 0.53	< 0.0065	< 0.0077	< 0.60	< 0.27	< 0.23	< 0.28	< 3.2	< 7.5	< 8.7	< 3.7
MW-33	03/29/2023	<0.41	<0.015	<0.023	<0.019	<0.44	<0.40	<0.18	<0.36	<0.42	<0.40	<0.90	<0.38
MW-33	09/27/2023	<0.41	<0.015	<0.023	<0.019	<0.44	<0.40	<0.18	<0.36	<0.42	<0.40	<0.90	<0.38
Intermediate													
MW-22	03/25/2019	<0.27	<1.1	<0.0065	<0.0077	<0.29	<0.27	<0.23	<0.28	<0.85	<0.32	<5.3	<3.7
MW-22	06/26/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	09/24/2019	<0.27	<1.1	<0.0065	<0.0076	<0.29	<0.27	<0.23	<0.28	<0.85	<0.32	<5.3	<3.7
MW-22	12/17/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	03/23/2020	<0.27	<1.1	<0.0066	<0.0077	<0.29	<0.27	<0.23	<0.28	<0.85	<0.32	<5.3	<3.7
MW-22	06/18/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	09/14/2020	<0.59	<0.53	<0.0063	<0.0074	<0.60	<0.27	<0.23	<0.28	<3.2	<7.5	<5.3	<3.7
MW-22	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	03/24/2021	<0.59	<0.53	<0.0065	<0.0077	<0.60	<0.27	<0.23	<0.28	<3.2	<7.5	<5.3	<3.7
MW-22	06/22/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	09/20/2021	<0.59	<0.53	<0.0064	<0.0075	<0.60	<0.27	<0.23	<0.28	<3.2	<7.5	<5.3	<3.7
MW-22	12/28/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	03/24/2022	<0.59	<0.53	<0.0067	<0.0079	<0.60	<0.27	<0.23	<0.28	<10.0	<7.5	<9.4	<11.0
MW-22	08/25/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	10/04/2022	<0.59	<0.53	<0.0066	<0.0077	<0.60	<0.27	<0.23	<0.28	<3.2	<7.5	<8.7	<3.7
MW-22	12/28/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	03/28/2023	<0.41	<0.015	<0.023	<0.019	<0.44	<0.40	<0.18	<0.36	<0.42	<0.40	<0.90	<0.38
MW-22	06/30/2023	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	09/27/2023	<0.41	<0.015	<0.023	<0.019	<0.44	<0.40	<0.18	<0.36	<0.42	<0.40	11	<0.38

LEGEND

* =Primary Drinking Water Standard
** =Secondary Drinking Water Standard
*** =Chapter 62-777 - Groundwater Cleanup Target Level (GCTL)
(1) =No Standard
- =Not Analyzed

I = Value is between the Method Detection Level (MDL) and the Reporting Detection Level (RDL)
J = Estimated value
V = Analyte found in associated method blank
Q = Estimated value; analyte analyzed after acceptable holding time

ALL DATA
HIGHLANDS CO. SWMC CLASS I LANDFILL
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PARAMETER		BENZENE	BROMO-CHLORO-METHANE	BROMO-DICHLORO-METHANE	BROMOFORM	BROMO-METHANE	CARBON DISULFIDE	CARBON TETRA-CHLORIDE	CHLORO-BENZENE	CHLORO-ETHANE	CHLORO-FORM	CHLORO-METHANE	CIS-1,2-DICHLORO-ETHENE
STANDARD UNITS		1 µg/L* µg/L	91 µg/L*** µg/L	0.6 µg/L*** µg/L	4.4 µg/L*** µg/L	9.8 µg/L*** µg/L	700 µg/L*** µg/L	3 µg/L* µg/L	100 µg/L* µg/L	12 µg/L*** µg/L	70 µg/L*** µg/L	2.7 µg/L*** µg/L	70 µg/L* µg/L
Background													
MW-1	03/25/2019	<0.30	<0.37	<0.19	<2.6	<4.0	<0.45	<1.1	<0.35	<3.7	<0.32	<0.97	<0.27
MW-1	06/26/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	09/24/2019	<0.30	<0.37	<0.19	<2.6	<4.0	<0.45	<1.1	<0.35	<3.7	<0.32	<0.97	<0.27
MW-1	12/17/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	03/23/2020	<0.30	<0.37	<0.19	<2.6	<4.0	<0.45	<1.1	<0.35	<3.7	<0.32	<0.97	<0.27
MW-1	06/18/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	09/14/2020	<0.30	<0.37	<0.19	<0.48	<8.1	<1.8	<0.44	<0.35	<3.7	<0.32	<0.43	<0.27
MW-1	11/11/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	03/24/2021	<0.30	<0.37	<0.19	<0.48	<8.1	<1.8	<0.44	<0.35	<3.7	<0.32	<0.43	<0.27
MW-1	06/22/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	09/20/2021	<0.30	<0.37	<0.19	<0.48	<8.1	<1.8	<0.44	<0.35	<3.7	<0.32	<0.43	<0.27
MW-1	12/28/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	03/24/2022	<0.30	<0.37	<0.44	<2.8	<3.9	<1.8	<0.44	<0.35	<3.7	<0.56	<0.92	<0.83
MW-1	08/25/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	10/04/2022	<0.30	<0.37	<0.19	<0.48	<3.9	<1.8	<0.44	<0.35	<3.7	<0.56	<0.43	<0.27
MW-1	12/28/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	03/28/2023	<0.28	<0.33	<0.39	<0.36	<0.32	<0.42	<0.41	<0.38	<0.42	<0.37	<0.39	<0.39
MW-1	06/30/2023	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	09/26/2023	<0.28	<0.33	<0.39	<0.36	<0.32	<0.42	<0.41	<0.38	<0.42	<0.37	<0.39	<0.39
Detection													
MW-4	03/25/2019	< 0.30	< 0.37	< 0.19	< 2.6	< 4.0	< 0.45	< 1.1	< 0.35	< 3.7	< 0.32	< 0.97	< 0.27
MW-4	06/26/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	09/24/2019	< 0.30	< 0.37	< 0.19	< 2.6	< 4.0	< 0.45	< 1.1	< 0.35	< 3.7	< 0.32	< 0.97	< 0.27
MW-4	12/17/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	03/23/2020	< 0.30	< 0.37	< 0.19	< 2.6	< 4.0	< 0.45	< 1.1	< 0.35	< 3.7	< 0.32	< 0.97	< 0.27
MW-4	06/18/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	09/14/2020	< 0.30	< 0.37	< 0.19	< 0.48	< 8.1	< 1.8	< 0.44	< 0.35	< 3.7	< 0.32	< 0.43	< 0.27
MW-4	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	03/24/2021	< 0.30	< 0.37	< 0.19	< 0.48	< 8.1	< 1.8	< 0.44	< 0.35	< 3.7	< 0.32	< 0.43	< 0.27
MW-4	06/22/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	09/20/2021	< 0.30	< 0.37	< 0.19	< 0.48	< 8.1	< 1.8	< 0.44	< 0.35	< 3.7	< 0.32	< 0.43	< 0.27
MW-4	12/28/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	03/24/2022	< 0.30	< 0.37	< 0.44	< 2.8	< 3.9	< 1.8	< 0.44	< 0.35	< 3.7	< 0.56	< 0.92	< 0.83
MW-4	08/25/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	10/04/2022	< 0.30	< 0.37	< 0.19	< 0.48	< 3.9	< 1.8	< 0.44	< 0.35	< 3.7	< 0.56	< 0.43	< 0.27
MW-4	12/28/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	03/28/2023	<0.28	<0.33	<0.39	<0.36	<0.32	<0.42	<0.41	<0.38	<0.42	<0.37	<0.39	<0.39
MW-4	06/30/2023	-	-	-	-	-	-	-	-	-	-	-	-

ALL DATA
HIGHLANDS CO. SWMC CLASS I LANDFILL
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PARAMETER		BENZENE	BROMO-CHLORO-METHANE	BROMO-DICHLORO-METHANE	BROMOFORM	BROMO-METHANE	CARBON DISULFIDE	CARBON TETRA-CHLORIDE	CHLORO-BENZENE	CHLORO-ETHANE	CHLORO-FORM	CHLORO-METHANE	CIS-1,2-DICHLORO-ETHENE
STANDARD UNITS		1 µg/L* µg/L	91 µg/L*** µg/L	0.6 µg/L*** µg/L	4.4 µg/L*** µg/L	9.8 µg/L*** µg/L	700 µg/L*** µg/L	3 µg/L* µg/L	100 µg/L* µg/L	12 µg/L*** µg/L	70 µg/L*** µg/L	2.7 µg/L*** µg/L	70 µg/L* µg/L
MW-4	09/27/2023	<0.28	<0.33	<0.39	<0.36	<0.32	<0.42	<0.41	<0.38	<0.42	<0.37	<0.39	<0.39
MW-7A	03/28/2019	0.21 I	< 0.37	< 0.19	< 2.6	< 4.0	< 0.45	< 0.50	< 0.50	< 3.7	< 0.50	< 0.97	< 0.50
MW-7A	09/24/2019	< 0.30	< 0.37	< 0.19	< 2.6	< 4.0	< 0.45	< 1.1	< 0.35	< 3.7	< 0.32	< 0.97	< 0.27
MW-7A	12/18/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-7A	03/24/2020	< 0.10	< 0.37	< 0.19	< 2.6	< 4.0	< 0.45	< 0.50	< 0.50	< 3.7	< 0.50	< 0.97	< 0.50
MW-7A	06/29/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-7A	09/15/2020	< 0.30	< 0.37	< 0.19	< 0.48	< 8.1	< 1.8	< 0.44	< 0.35	< 3.7	< 0.32	< 0.43	< 0.27
MW-7A	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-7A	03/23/2021	< 0.30	< 0.37	< 0.19	< 1.0	< 2.3	< 1.8	< 0.44	< 0.35	< 1.4	< 0.32	< 0.96	< 0.27
MW-7A	09/21/2021	< 0.30	< 0.37	< 0.19	< 0.48	< 8.1	< 1.8	< 0.44	< 0.35	< 3.7	< 0.32	< 0.43	< 0.27
MW-7A	03/30/2022	< 0.30	< 0.37	< 0.44	< 2.8	< 3.9	< 1.8	< 0.44	< 0.35	< 3.7	< 0.56	< 0.92	< 0.83
MW-7A	10/05/2022	< 0.30	< 0.37	< 0.19	< 0.48	< 3.9	< 1.8	< 0.44	< 0.35	< 3.7	< 0.56	< 0.43	< 0.27
MW-7A	03/29/2023	<0.28	<0.33	<0.39	<0.36	<0.32	<0.42	<0.41	<0.38	<0.42	<0.37	<0.39	<0.39
MW-7A	06/30/2023	-	-	-	-	-	-	-	-	-	-	-	-
MW-7A	09/27/2023	<0.28	<0.33	<0.39	<0.36	<0.32	<0.42	<0.41	<0.38	<0.42	<0.37	<0.39	<0.39
MW-21	03/25/2019	<0.30	<0.37	<0.19	<2.6	<4.0	<0.45	<1.1	<0.35	<3.7	<0.32	<0.97	<0.27
MW-21	06/26/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	09/24/2019	<0.30	<0.37	<0.19	<2.6	<4.0	<0.45	<1.1	<0.35	<3.7	<0.32	<0.97	<0.27
MW-21	12/17/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	03/23/2020	<0.30	<0.37	<0.19	<2.6	<4.0	<0.45	<1.1	<0.35	<3.7	<0.32	<0.97	<0.27
MW-21	06/18/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	09/14/2020	<0.30	<0.37	<0.19	<0.48	<8.1	<1.8	<0.44	<0.35	<3.7	<0.32	<0.43	<0.27
MW-21	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	03/24/2021	<0.30	<0.37	<0.19	<0.48	<8.1	<1.8	<0.44	<0.35	<3.7	<0.32	<0.43	<0.27
MW-21	06/22/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	09/20/2021	<0.30	<0.37	<0.19	<0.48	<8.1	<1.8	<0.44	<0.35	<3.7	<0.32	<0.43	<0.27
MW-21	12/28/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	03/24/2022	<0.30	<0.37	<0.44	<2.8	<3.9	<1.8	<0.44	<0.35	<3.7	<0.56	<0.92	<0.83
MW-21	08/25/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	10/04/2022	<0.30	<0.37	<0.19	<0.48	<3.9	<1.8	<0.44	<0.35	<3.7	<0.56	<0.43	<0.27
MW-21	12/28/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	03/28/2023	<0.28	<0.33	<0.39	<0.36	<0.32	<0.42	<0.41	<0.38	<0.42	<0.37	<0.39	<0.39
MW-21	06/30/2023	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	09/27/2023	<0.28	<0.33	<0.39	<0.36	<0.32	<0.42	<0.41	<0.38	<0.42	<0.37	<0.39	<0.39
MW-30	03/28/2019	<0.30	<0.37	<0.19	<2.6	<4.0	<0.45	<1.1	<0.35	<3.7	<0.32	<0.97	<0.27
MW-30	09/24/2019	<0.30	<0.37	<0.19	<2.6	<4.0	<0.45	<1.1	<0.35	<3.7	<0.32	<0.97	<0.27
MW-30	12/18/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-30	03/24/2020	0.19 I	<0.37	<0.19	<2.6	<4.0	<0.45	<0.50	<0.50	<3.7	<0.50	<0.97	<0.50
MW-30	06/29/2020	-	-	-	-	-	-	-	-	-	-	-	-

ALL DATA
HIGHLANDS CO. SWMC CLASS I LANDFILL
FEBRUARY 2019 THROUGH JANUARY 2024

PARAMETER		BENZENE	BROMO-CHLORO-METHANE	BROMO-DICHLORO-METHANE	BROMOFORM	BROMO-METHANE	CARBON DISULFIDE	CARBON TETRA-CHLORIDE	CHLORO-BENZENE	CHLORO-ETHANE	CHLORO-FORM	CHLORO-METHANE	CIS-1,2-DICHLORO-ETHENE
STANDARD UNITS		1 µg/L* µg/L	91 µg/L*** µg/L	0.6 µg/L*** µg/L	4.4 µg/L*** µg/L	9.8 µg/L*** µg/L	700 µg/L*** µg/L	3 µg/L* µg/L	100 µg/L* µg/L	12 µg/L*** µg/L	70 µg/L*** µg/L	2.7 µg/L*** µg/L	70 µg/L* µg/L
MW-30	09/14/2020	<0.30	<0.37	<0.19	<0.48	<8.1	<1.8	<0.44	<0.35	<3.7	<0.32	<0.43	<0.27
MW-30	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-30	03/23/2021	<0.30	<0.37	<0.19	<1.0	<2.3	<1.8	<0.44	<0.35	<1.4	<0.32	<0.96	<0.27
MW-30	09/21/2021	<0.30	<0.37	<0.19	<0.48	<8.1	<1.8	<0.44	<0.35	<3.7	<0.32	<0.43	<0.27
MW-30	03/28/2022	<0.30	<0.37	<0.44	<2.8	<3.9	<1.8	<0.44	<0.35	<3.7	<0.56	<0.92	<0.83
MW-30	10/05/2022	<0.30	<0.37	<0.19	<0.48	<3.9	<1.8	<0.44	<0.35	<3.7	<0.56	<0.43	<0.27
MW-31	03/28/2019	0.24 I	<0.37	<0.19	<2.6	<4.0	<0.45	<0.50	<0.50	<3.7	<0.50	<0.97	<0.50
MW-31	09/24/2019	<0.30	<0.37	<0.19	<2.6	<4.0	<0.45	<1.1	<0.35	<3.7	<0.32	<0.97	<0.27
MW-31	12/18/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-31	03/24/2020	<0.10	<0.37	<0.19	<2.6	<4.0	<0.45	<0.50	<0.50	<3.7	<0.50	<0.97	<0.50
MW-31	06/29/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-31	09/14/2020	<0.30	<0.37	<0.19	<0.48	<8.1	<1.8	<0.44	<0.35	<3.7	<0.32	<0.43	<0.27
MW-31	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-31	03/23/2021	0.36 I	<0.37	<0.19	<1.0	<2.3	<1.8	<0.44	<0.35	<1.4	<0.32	<0.96	<0.27
MW-31	09/21/2021	<0.30	<0.37	<0.19	<0.48	<8.1	<1.8	<0.44	<0.35	<3.7	<0.32	<0.43	<0.27
MW-31	03/28/2022	<0.30	<0.37	<0.44	<2.8	<3.9	<1.8	<0.44	<0.35	<3.7	<0.56	<0.92	<0.83
MW-31	10/05/2022	<0.30	<0.37	<0.19	<0.48	<3.9	<1.8	<0.44	<0.35	<3.7	<0.56	<0.43	<0.27
MW-31	03/29/2023	0.68 I	<0.33	<0.39	<0.36	<0.32	0.58 I	<0.41	<0.38	<0.42	<0.37	<0.39	<0.39
MW-31	06/23/2023	<0.28	<0.33	<0.39	<0.36	<0.32	1.0	<0.41	<0.38	<0.42	<0.37	<0.39	<0.39
MW-31	09/27/2023	<0.28	<0.33	<0.39	<0.36	<0.32	1.1	<0.41	<0.38	<0.42	<0.37	<0.39	<0.39
MW-32	03/28/2019	<0.10	<0.37	<0.19	<2.6	<4.0	<0.45	<0.50	<0.50	<3.7	<0.50	<0.97	<0.50
MW-32	09/24/2019	<0.30	<0.37	<0.19	<2.6	<4.0	<0.45	<1.1	<0.35	<3.7	<0.32	<0.97	<0.27
MW-32	12/18/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-32	03/24/2020	<0.30	< 0.37	<0.19	<2.6	<4.0	< 0.45	<1.1	<0.35	<3.7	<0.32	<0.97	< 0.27
MW-32	06/29/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-32	09/15/2020	< 0.30	< 0.37	< 0.19	< 0.48	< 8.1	< 1.8	< 0.44	< 0.35	< 3.7	< 0.32	< 0.43	< 0.27
MW-32	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-32	03/23/2021	< 0.30	< 0.37	< 0.19	< 1.0	< 2.3	< 1.8	< 0.44	< 0.35	< 1.4	< 0.32	< 0.96	< 0.27
MW-32	09/21/2021	< 0.30	< 0.37	< 0.19	< 0.48	< 8.1	< 1.8	< 0.44	< 0.35	< 3.7	< 0.32	< 0.43	< 0.27
MW-32	03/28/2022	< 0.30	< 0.37	< 0.44	< 2.8	< 3.9	< 1.8	< 0.44	< 0.35	< 3.7	< 0.56	< 0.92	< 0.83
MW-32	10/05/2022	< 0.30	< 0.37	< 0.19	< 0.48	< 3.9	< 1.8	< 0.44	< 0.35	< 3.7	< 0.56	< 0.43	< 0.27
MW-32	03/29/2023	<0.28	<0.33	<0.39	<0.36	<0.32	<0.42	<0.41	<0.38	<0.42	<0.37	<0.39	<0.39
MW-32	09/27/2023	<0.28	<0.33	<0.39	<0.36	<0.32	<0.42	<0.41	<0.38	<0.42	<0.37	<0.39	<0.39
MW-33	03/28/2019	< 0.10	< 0.37	< 0.19	< 2.6	< 4.0	< 0.45	< 0.50	< 0.50	< 3.7	< 0.50	< 0.97	< 0.50
MW-33	09/24/2019	< 0.30	< 0.37	< 0.19	< 2.6	< 4.0	< 0.45	< 1.1	< 0.35	< 3.7	< 0.32	< 0.97	< 0.27
MW-33	12/18/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-33	03/24/2020	< 0.10	< 0.37	< 0.19	< 2.6	< 4.0	< 0.45	< 0.50	< 0.50	< 3.7	< 0.50	< 0.97	< 0.50
MW-33	06/29/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-33	09/15/2020	< 0.30	< 0.37	< 0.19	< 0.48	< 8.1	< 1.8	< 0.44	< 0.35	< 3.7	< 0.32	< 0.43	< 0.27

ALL DATA
HIGHLANDS CO. SWMC CLASS I LANDFILL
FEBRUARY 2019 THROUGH JANUARY 2024

PARAMETER		BENZENE	BROMO-CHLORO-METHANE	BROMO-DICHLORO-METHANE	BROMOFORM	BROMO-METHANE	CARBON DISULFIDE	CARBON TETRA-CHLORIDE	CHLORO-BENZENE	CHLORO-ETHANE	CHLORO-FORM	CHLORO-METHANE	CIS-1,2-DICHLORO-ETHENE
STANDARD UNITS		1 µg/L* µg/L	91 µg/L*** µg/L	0.6 µg/L*** µg/L	4.4 µg/L*** µg/L	9.8 µg/L*** µg/L	700 µg/L*** µg/L	3 µg/L* µg/L	100 µg/L* µg/L	12 µg/L*** µg/L	70 µg/L*** µg/L	2.7 µg/L*** µg/L	70 µg/L* µg/L
MW-33	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-33	03/23/2021	< 0.30	< 0.37	< 0.19	< 1.0	< 2.3	< 1.8	< 0.44	< 0.35	< 1.4	< 0.32	< 0.96	< 0.27
MW-33	09/21/2021	< 0.30	< 0.37	< 0.19	< 0.48	< 8.1	< 1.8	< 0.44	< 0.35	< 3.7	< 0.32	< 0.43	< 0.27
MW-33	03/28/2022	< 0.30	< 0.37	< 0.44	< 2.8	< 3.9	< 1.8	< 0.44	< 0.35	< 3.7	< 0.56	< 0.92	< 0.83
MW-33	10/05/2022	< 0.30	< 0.37	< 0.19	< 0.48	< 3.9	< 1.8	< 0.44	< 0.35	< 3.7	< 0.56	< 0.43	< 0.27
MW-33	03/29/2023	<0.28	<0.33	<0.39	<0.36	<0.32	<0.42	<0.41	<0.38	<0.42	<0.37	<0.39	<0.39
MW-33	09/27/2023	<0.28	<0.33	<0.39	<0.36	<0.32	<0.42	<0.41	<0.38	<0.42	<0.37	<0.39	<0.39
Intermediate													
MW-22	03/25/2019	<0.30	<0.37	<0.19	<2.6	<4.0	<0.45	<1.1	<0.35	<3.7	<0.32	<0.97	<0.27
MW-22	06/26/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	09/24/2019	<0.30	<0.37	<0.19	<2.6	<4.0	<0.45	<1.1	<0.35	<3.7	<0.32	<0.97	<0.27
MW-22	12/17/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	03/23/2020	<0.30	<0.37	<0.19	<2.6	<4.0	<0.45	<1.1	<0.35	<3.7	<0.32	<0.97	<0.27
MW-22	06/18/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	09/14/2020	<0.30	<0.37	<0.19	<0.48	<8.1	<1.8	<0.44	<0.35	<3.7	<0.32	<0.43	<0.27
MW-22	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	03/24/2021	<0.30	<0.37	<0.19	<0.48	<8.1	<1.8	<0.44	<0.35	<3.7	<0.32	<0.43	<0.27
MW-22	06/22/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	09/20/2021	<0.30	<0.37	<0.19	<0.48	<8.1	<1.8	<0.44	<0.35	<3.7	<0.32	<0.43	<0.27
MW-22	12/28/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	03/24/2022	<0.30	<0.37	<0.44	<2.8	<3.9	<1.8	<0.44	<0.35	<3.7	<0.56	<0.92	<0.83
MW-22	08/25/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	10/04/2022	<0.30	<0.37	<0.19	<0.48	<3.9	<1.8	<0.44	<0.35	<3.7	<0.56	<0.43	<0.27
MW-22	12/28/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	03/28/2023	<0.28	<0.33	<0.39	<0.36	<0.32	<0.42	<0.41	<0.38	<0.42	<0.37	<0.39	<0.39
MW-22	06/30/2023	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	09/27/2023	<0.28	<0.33	<0.39	<0.36	<0.32	<0.42	<0.41	<0.38	<0.42	<0.37	<0.39	<0.39

LEGEND

* =Primary Drinking Water Standard
** =Secondary Drinking Water Standard
*** =Chapter 62-777 - Groundwater Cleanup Target Level (GCTL)
(1) =No Standard
- =Not Analyzed

I = Value is between the Method Detection Level (MDL) and the Reporting Detection Level (RDL)
J = Estimated value
V = Analyte found in associated method blank
Q = Estimated value; analyte analyzed after acceptable holding time

ALL DATA
HIGHLANDS CO. SWMC CLASS I LANDFILL
FEBRUARY 2019 THROUGH JANUARY 2024

PARAMETER		CIS-1,3-DICHLORO-PROPENE	DIBROMO-CHLORO-METHANE	DICHLORO-METHANE	ETHYL-BENZENE	M&P-XYLENES	METHYL ETHYL KETONE	METHYL-IODIDE	O-XYLENES	STYRENE	TETRA-CHLORO-ETHENE	TOLUENE	TRANS-1,2-DICHLORO-ETHENE
STANDARD UNITS		0.4 µg/L*** µg/L	0.4 µg/L*** µg/L	5 µg/L* µg/L	30 µg/L** µg/L	20 µg/L** µg/L	4200 µg/L*** µg/L	(1) µg/L	20 µg/L** µg/L	100 µg/L* µg/L	3 µg/L* µg/L	40 µg/L** µg/L	100 µg/L* µg/L
Background													
MW-1	03/25/2019	<0.17	<0.45	<2.0	<0.30	<2.1	<7.5	<9.3	<0.27	<0.26	<0.38	<0.33	<0.23
MW-1	06/26/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	09/24/2019	<0.17	<0.45	<2.0	<0.30	<2.1	<7.5	<9.3	<0.27	<0.26	<0.38	<0.33	<0.23
MW-1	12/17/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	03/23/2020	<0.17	<0.45	<2.0	<0.30	<2.1	<7.5	<9.3	<0.27	<0.26	<0.38	<0.33	<0.23
MW-1	06/18/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	09/14/2020	<0.17	<0.45	<4.4	<0.30	<2.1	<21.0	<9.3	<0.57	<0.26	<0.38	<0.33	<0.23
MW-1	11/11/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	03/24/2021	<0.17	<0.45	<4.4	<0.30	<2.1	<21.0	<9.3	<0.57	<0.26	<0.38	<0.33	<0.23
MW-1	06/22/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	09/20/2021	<0.17	<0.45	<4.4	<0.30	<2.1	<21.0	<9.3	<0.57	<0.26	<0.38	<0.33	<0.23
MW-1	12/28/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	03/24/2022	<0.51	<0.97	<4.4	<0.30	<2.1	<6.0	<9.3	<0.57	<0.65	<0.38	<0.71	<0.23
MW-1	08/25/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	10/04/2022	<0.17	<0.45	<1.7	<0.30	<0.75	<6.7	<3.6	<0.57	<0.26	<0.38	<0.33	<0.23
MW-1	12/28/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	03/28/2023	<0.26	<0.36	<0.56	<0.56	-	<0.33	<0.83	-	<0.29	<0.45	<0.66	<0.39
MW-1	06/30/2023	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	09/26/2023	<0.26	<0.36	<0.56	<0.56	-	<0.33	<0.83	-	<0.29	<0.45	<0.66	<0.39
Detection													
MW-4	03/25/2019	< 0.17	< 0.45	< 2.0	< 0.30	< 2.1	< 7.5	< 9.3	< 0.27	< 0.26	< 0.38	< 0.33	< 0.23
MW-4	06/26/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	09/24/2019	< 0.17	< 0.45	< 2.0	< 0.30	< 2.1	< 7.5	< 9.3	< 0.27	< 0.26	< 0.38	< 0.33	< 0.23
MW-4	12/17/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	03/23/2020	< 0.17	< 0.45	< 2.0	< 0.30	< 2.1	< 7.5	< 9.3	< 0.27	< 0.26	< 0.38	< 0.33	< 0.23
MW-4	06/18/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	09/14/2020	< 0.17	< 0.45	< 4.4	< 0.30	< 2.1	< 21.0	< 9.3	< 0.57	< 0.26	< 0.38	< 0.33	< 0.23
MW-4	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	03/24/2021	< 0.17	< 0.45	< 4.4	< 0.30	< 2.1	< 21.0	< 9.3	< 0.57	< 0.26	< 0.38	< 0.33	< 0.23
MW-4	06/22/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	09/20/2021	< 0.17	< 0.45	< 4.4	< 0.30	< 2.1	< 21.0	< 9.3	< 0.57	< 0.26	< 0.38	< 0.33	< 0.23
MW-4	12/28/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	03/24/2022	< 0.51	< 0.97	< 4.4	< 0.30	< 2.1	< 6.0	< 9.3	< 0.57	< 0.65	< 0.38	< 0.71	< 0.23
MW-4	08/25/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	10/04/2022	< 0.17	< 0.45	< 1.7	< 0.30	< 0.75	< 6.7	< 3.6	< 0.57	< 0.26	< 0.38	< 0.33	< 0.23
MW-4	12/28/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	03/28/2023	<0.26	<0.36	<0.56	<0.56	-	<0.33	<0.83	-	<0.29	<0.45	<0.66	<0.39
MW-4	06/30/2023	-	-	-	-	-	-	-	-	-	-	-	-

ALL DATA
HIGHLANDS CO. SWMC CLASS I LANDFILL
FEBRUARY 2019 THROUGH JANUARY 2024

PARAMETER		CIS-1,3-DICHLORO-PROPENE	DIBROMO-CHLORO-METHANE	DICHLORO-METHANE	ETHYL-BENZENE	M&P-XYLENES	METHYL ETHYL KETONE	METHYL-IODIDE	O-XYLENES	STYRENE	TETRA-CHLORO-ETHENE	TOLUENE	TRANS-1,2-DICHLORO-ETHENE
STANDARD UNITS		0.4 µg/L*** µg/L	0.4 µg/L*** µg/L	5 µg/L* µg/L	30 µg/L** µg/L	20 µg/L** µg/L	4200 µg/L*** µg/L	(1) µg/L	20 µg/L** µg/L	100 µg/L* µg/L	3 µg/L* µg/L	40 µg/L** µg/L	100 µg/L* µg/L
MW-4	09/27/2023	<0.26	<0.36	<0.56	<0.56	-	<0.33	<0.83	-	<0.29	<0.45	<0.66	<0.39
MW-7A	03/28/2019	< 0.17	< 0.45	< 2.0	< 0.50	< 1.0	< 5.0	< 9.3	< 0.50	< 0.26	< 0.50	< 0.50	< 0.50
MW-7A	09/24/2019	< 0.17	< 0.45	< 2.0	< 0.30	< 2.1	< 7.5	< 9.3	< 0.27	< 0.26	< 0.38	< 0.33	< 0.23
MW-7A	12/18/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-7A	03/24/2020	< 0.17	< 0.45	< 2.0	< 0.50	< 1.0	< 5.0	< 9.3	< 0.50	< 0.26	< 0.50	< 0.50	< 0.50
MW-7A	06/29/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-7A	09/15/2020	< 0.17	< 0.45	< 4.4	< 0.30	< 2.1	< 21.0	< 9.3	< 0.57	< 0.26	< 0.38	< 0.33	< 0.23
MW-7A	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-7A	03/23/2021	< 0.17	< 0.45	< 1.5	< 0.30	< 0.63	< 3.4	< 9.3	< 0.57	< 0.26	< 0.38	< 0.33	< 0.23
MW-7A	09/21/2021	< 0.17	< 0.45	< 4.4	< 0.30	< 2.1	< 21.0	< 9.3	< 0.57	< 0.26	< 0.38	< 0.33	< 0.23
MW-7A	03/30/2022	< 0.51	< 0.97	< 4.4	< 0.30	< 2.1	< 6.0	< 9.3	< 0.57	< 0.65	< 0.38	< 0.71	< 0.23
MW-7A	10/05/2022	< 0.17	< 0.45	< 1.7	< 0.30	< 0.75	< 6.7	< 3.6	< 0.57	< 0.26	< 0.38	< 0.33	< 0.23
MW-7A	03/29/2023	<0.26	<0.36	<0.56	<0.56	-	<0.33	<0.83	-	<0.29	<0.45	<0.66	<0.39
MW-7A	06/30/2023	-	-	-	-	-	-	-	-	-	-	-	-
MW-7A	09/27/2023	<0.26	<0.36	<0.56	<0.56	-	<0.33	<0.83	-	<0.29	<0.45	<0.66	<0.39
MW-21	03/25/2019	<0.17	<0.45	<2.0	<0.30	<2.1	<7.5	<9.3	<0.27	<0.26	<0.38	<0.33	<0.23
MW-21	06/26/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	09/24/2019	<0.17	<0.45	<2.0	<0.30	<2.1	<7.5	<9.3	<0.27	<0.26	<0.38	<0.33	<0.23
MW-21	12/17/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	03/23/2020	<0.17	<0.45	<2.0	<0.30	<2.1	<7.5	<9.3	<0.27	<0.26	<0.38	<0.33	<0.23
MW-21	06/18/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	09/14/2020	<0.17	<0.45	<4.4	<0.30	<2.1	<21.0	<9.3	<0.57	<0.26	<0.38	<0.33	<0.23
MW-21	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	03/24/2021	<0.17	<0.45	<4.4	<0.30	<2.1	<21.0	<9.3	<0.57	<0.26	<0.38	<0.33	<0.23
MW-21	06/22/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	09/20/2021	<0.17	<0.45	<4.4	<0.30	<2.1	<21.0	<9.3	<0.57	<0.26	<0.38	<0.33	<0.23
MW-21	12/28/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	03/24/2022	<0.51	<0.97	<4.4	<0.30	<2.1	<6.0	<9.3	<0.57	<0.65	<0.38	<0.71	<0.23
MW-21	08/25/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	10/04/2022	<0.17	<0.45	<1.7	<0.30	<0.75	<6.7	<3.6	<0.57	<0.26	<0.38	<0.33	<0.23
MW-21	12/28/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	03/28/2023	<0.26	<0.36	<0.56	<0.56	-	<0.33	<0.83	-	<0.29	<0.45	<0.66	<0.39
MW-21	06/30/2023	-	-	-	-	-	-	-	-	-	-	-	-
MW-21	09/27/2023	<0.26	<0.36	<0.56	<0.56	-	<0.33	<0.83	-	<0.29	<0.45	<0.66	<0.39
MW-30	03/28/2019	<0.17	<0.45	<2.0	<0.30	<2.1	<7.5	<9.3	<0.27	<0.26	<0.38	<0.33	<0.23
MW-30	09/24/2019	<0.17	<0.45	<2.0	<0.30	<2.1	<7.5	<9.3	<0.27	<0.26	<0.38	<0.33	<0.23
MW-30	12/18/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-30	03/24/2020	<0.17	<0.45	<2.0	<0.50	<1.0	<5.0	<9.3	<0.50	<0.26	<0.50	<0.50	<0.50
MW-30	06/29/2020	-	-	-	-	-	-	-	-	-	-	-	-

ALL DATA
HIGHLANDS CO. SWMC CLASS I LANDFILL
FEBRUARY 2019 THROUGH JANUARY 2024

PARAMETER		CIS-1,3-DICHLORO-PROPENE	DIBROMO-CHLORO-METHANE	DICHLORO-METHANE	ETHYL-BENZENE	M&P-XYLENES	METHYL ETHYL KETONE	METHYL-IODIDE	O-XYLENES	STYRENE	TETRA-CHLORO-ETHENE	TOLUENE	TRANS-1,2-DICHLORO-ETHENE
STANDARD UNITS		0.4 µg/L*** µg/L	0.4 µg/L*** µg/L	5 µg/L* µg/L	30 µg/L** µg/L	20 µg/L** µg/L	4200 µg/L*** µg/L	(1) µg/L	20 µg/L** µg/L	100 µg/L* µg/L	3 µg/L* µg/L	40 µg/L** µg/L	100 µg/L* µg/L
MW-30	09/14/2020	<0.17	<0.45	<4.4	<0.30	<2.1	<21.0	<9.3	<0.57	<0.26	<0.38	<0.33	<0.23
MW-30	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-30	03/23/2021	<0.17	<0.45	<1.5	<0.30	<0.63	<3.4	<9.3	<0.57	<0.26	<0.38	<0.33	<0.23
MW-30	09/21/2021	<0.17	<0.45	<4.4	<0.30	<2.1	<21.0	<9.3	<0.57	<0.26	<0.38	<0.33	<0.23
MW-30	03/28/2022	<0.51	<0.97	<4.4	<0.30	<2.1	<6.0	<9.3	<0.57	<0.65	<0.38	<0.71	<0.23
MW-30	10/05/2022	<0.17	<0.45	<1.7	<0.30	<0.75	<6.7	<3.6	<0.57	<0.26	<0.38	<0.33	<0.23
MW-31	03/28/2019	<0.17	<0.45	<2.0	<0.50	<1.0	<5.0	<9.3	<0.50	<0.26	<0.50	<0.50	<0.50
MW-31	09/24/2019	<0.17	<0.45	<2.0	<0.30	<2.1	<7.5	<9.3	<0.27	<0.26	<0.38	<0.33	<0.23
MW-31	12/18/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-31	03/24/2020	<0.17	<0.45	<2.0	<0.50	<1.0	<5.0	<9.3	<0.50	<0.26	<0.50	<0.50	<0.50
MW-31	06/29/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-31	09/14/2020	<0.17	<0.45	<4.4	<0.30	<2.1	<21.0	<9.3	<0.57	<0.26	<0.38	<0.33	<0.23
MW-31	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-31	03/23/2021	<0.17	<0.45	<1.5	<0.30	<0.63	<3.4	<9.3	<0.57	<0.26	<0.38	<0.33	<0.23
MW-31	09/21/2021	<0.17	<0.45	<4.4	<0.30	<2.1	<21.0	<9.3	<0.57	<0.26	<0.38	<0.33	<0.23
MW-31	03/28/2022	<0.51	<0.97	<4.4	<0.30	<2.1	<6.0	<9.3	<0.57	<0.65	<0.38	1.1	<0.23
MW-31	10/05/2022	<0.17	<0.45	<1.7	<0.30	<0.75	<6.7	<3.6	<0.57	<0.26	<0.38	<0.33	<0.23
MW-31	03/29/2023	<0.26	<0.36	<0.56	<0.56	-	7.7	<0.83	-	<0.29	<0.45	59	<0.39
MW-31	06/23/2023	<0.26	<0.36	<0.56	<0.56	-	6.0	<0.83	-	<0.29	<0.45	13	<0.39
MW-31	09/27/2023	<0.26	<0.36	<0.56	<0.56	-	<0.33	<0.83	-	<0.29	<0.45	<0.66	<0.39
MW-32	03/28/2019	<0.17	<0.45	<2.0	<0.50	<1.0	<5.0	<9.3	<0.50	<0.26	<0.50	<0.50	<0.50
MW-32	09/24/2019	<0.17	<0.45	<2.0	<0.30	<2.1	<7.5	<9.3	<0.27	<0.26	<0.38	<0.33	<0.23
MW-32	12/18/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-32	03/24/2020	<0.17	<0.45	<2.0	<0.30	< 2.1	< 7.5	< 9.3	< 0.27	< 0.26	<0.38	<0.33	<0.23
MW-32	06/29/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-32	09/15/2020	< 0.17	< 0.45	< 4.4	< 0.30	< 2.1	< 21.0	< 9.3	< 0.57	< 0.26	< 0.38	< 0.33	< 0.23
MW-32	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-32	03/23/2021	< 0.17	< 0.45	< 1.5	< 0.30	< 0.63	< 3.4	< 9.3	< 0.57	< 0.26	< 0.38	< 0.33	< 0.23
MW-32	09/21/2021	< 0.17	< 0.45	< 4.4	< 0.30	< 2.1	< 21.0	< 9.3	< 0.57	< 0.26	< 0.38	< 0.33	< 0.23
MW-32	03/28/2022	< 0.51	< 0.97	< 4.4	< 0.30	< 2.1	< 6.0	< 9.3	< 0.57	< 0.65	< 0.38	< 0.71	< 0.23
MW-32	10/05/2022	< 0.17	< 0.45	< 1.7	< 0.30	< 0.75	< 6.7	< 3.6	< 0.57	< 0.26	< 0.38	< 0.33	< 0.23
MW-32	03/29/2023	<0.26	<0.36	<0.56	<0.56	-	<0.33	<0.83	-	<0.29	<0.45	<0.66	<0.39
MW-32	09/27/2023	<0.26	<0.36	<0.56	<0.56	-	<0.33	<0.83	-	<0.29	<0.45	<0.66	<0.39
MW-33	03/28/2019	< 0.17	< 0.45	< 2.0	< 0.50	< 1.0	< 5.0	< 9.3	< 0.50	< 0.26	< 0.50	< 0.50	< 0.50
MW-33	09/24/2019	< 0.17	< 0.45	< 2.0	< 0.30	< 2.1	< 7.5	< 9.3	< 0.27	< 0.26	< 0.38	< 0.33	< 0.23
MW-33	12/18/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-33	03/24/2020	< 0.17	< 0.45	< 2.0	< 0.50	< 1.0	< 5.0	< 9.3	< 0.50	< 0.26	< 0.50	< 0.50	< 0.50
MW-33	06/29/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-33	09/15/2020	< 0.17	< 0.45	< 4.4	< 0.30	< 2.1	< 21.0	< 9.3	< 0.57	< 0.26	< 0.38	< 0.33	< 0.23

ALL DATA
HIGHLANDS CO. SWMC CLASS I LANDFILL
FEBRUARY 2019 THROUGH JANUARY 2024

PARAMETER		CIS-1,3-DICHLORO-PROPENE	DIBROMO-CHLORO-METHANE	DICHLORO-METHANE	ETHYL-BENZENE	M&P-XYLENES	METHYL ETHYL KETONE	METHYL-IODIDE	O-XYLENES	STYRENE	TETRA-CHLORO-ETHENE	TOLUENE	TRANS-1,2-DICHLORO-ETHENE
STANDARD UNITS		0.4 µg/L*** µg/L	0.4 µg/L*** µg/L	5 µg/L* µg/L	30 µg/L** µg/L	20 µg/L** µg/L	4200 µg/L*** µg/L	(1) µg/L	20 µg/L** µg/L	100 µg/L* µg/L	3 µg/L* µg/L	40 µg/L** µg/L	100 µg/L* µg/L
MW-33	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-33	03/23/2021	< 0.17	< 0.45	< 1.5	< 0.30	< 0.63	< 3.4	< 9.3	< 0.57	< 0.26	< 0.38	< 0.33	< 0.23
MW-33	09/21/2021	< 0.17	< 0.45	< 4.4	< 0.30	< 2.1	< 21.0	< 9.3	< 0.57	< 0.26	< 0.38	< 0.33	< 0.23
MW-33	03/28/2022	< 0.51	< 0.97	< 4.4	< 0.30	< 2.1	< 6.0	< 9.3	< 0.57	< 0.65	< 0.38	< 0.71	< 0.23
MW-33	10/05/2022	< 0.17	< 0.45	< 1.7	< 0.30	< 0.75	< 6.7	< 3.6	< 0.57	< 0.26	< 0.38	< 0.33	< 0.23
MW-33	03/29/2023	<0.26	<0.36	<0.56	<0.56	-	<0.33	<0.83	-	<0.29	<0.45	<0.66	<0.39
MW-33	09/27/2023	<0.26	<0.36	<0.56	<0.56	-	<0.33	<0.83	-	<0.29	<0.45	<0.66	<0.39
Intermediate													
MW-22	03/25/2019	<0.17	<0.45	<2.0	<0.30	<2.1	<7.5	<9.3	<0.27	<0.26	<0.38	<0.33	<0.23
MW-22	06/26/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	09/24/2019	<0.17	<0.45	<2.0	<0.30	<2.1	<7.5	<9.3	<0.27	<0.26	<0.38	<0.33	<0.23
MW-22	12/17/2019	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	03/23/2020	<0.17	<0.45	<2.0	<0.30	<2.1	<7.5	<9.3	<0.27	<0.26	<0.38	<0.33	<0.23
MW-22	06/18/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	09/14/2020	<0.17	<0.45	<4.4	<0.30	<2.1	<21.0	<9.3	<0.57	<0.26	<0.38	<0.33	<0.23
MW-22	12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	03/24/2021	<0.17	<0.45	<4.4	<0.30	<2.1	<21.0	<9.3	<0.57	<0.26	<0.38	<0.33	<0.23
MW-22	06/22/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	09/20/2021	<0.17	<0.45	<4.4	<0.30	<2.1	<21.0	<9.3	<0.57	<0.26	<0.38	<0.33	<0.23
MW-22	12/28/2021	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	03/24/2022	<0.51	<0.97	<4.4	<0.30	<2.1	<6.0	<9.3	<0.57	<0.65	<0.38	<0.71	<0.23
MW-22	08/25/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	10/04/2022	<0.17	<0.45	<1.7	<0.30	<0.75	<6.7	<3.6	<0.57	<0.26	<0.38	<0.33	<0.23
MW-22	12/28/2022	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	03/28/2023	<0.26	<0.36	<0.56	<0.56	-	<0.33	<0.83	-	<0.29	<0.45	<0.66	<0.39
MW-22	06/30/2023	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	09/27/2023	<0.26	<0.36	<0.56	<0.56	-	<0.33	<0.83	-	<0.29	<0.45	<0.66	<0.39

LEGEND

* =Primary Drinking Water Standard
** =Secondary Drinking Water Standard
*** =Chapter 62-777 - Groundwater Cleanup Target Level (GCTL)
(1) =No Standard
- =Not Analyzed

I = Value is between the Method Detection Level (MDL) and the Reporting Detection Level (RDL)
J = Estimated value
V = Analyte found in associated method blank
Q = Estimated value; analyte analyzed after acceptable holding time

ALL DATA
HIGHLANDS CO. SWMC CLASS I LANDFILL
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PARAMETER		TRANS-1,3-DICHLORO-PROPENE	TRICHLORO-ETHENE	TRICHLORO-FLUORO-METHANE	VINYL ACETATE	VINYL CHLORIDE	XYLENES	TOTAL VOCS	(E)-1,4-DICHLORO-2-BUTENE	DIBROMO-METHANE
STANDARD UNITS		0.4 µg/L*** µg/L	3 µg/L* µg/L	2100 µg/L*** µg/L	88 µg/L*** µg/L	1 µg/L* µg/L	20 µg/L** µg/L	(1) µg/L	(1) µg/L	70 µg/L*** µg/L
Background										
MW-1	03/25/2019	<0.17	<0.36	<0.35	<0.19	<0.39	<2.1	-	<2.5	<0.68
MW-1	06/26/2019	-	-	-	-	-	-	-	-	-
MW-1	09/24/2019	<0.17	<0.36	<0.35	<0.19	<0.39	<2.1	-	<2.5	<0.68
MW-1	12/17/2019	-	-	-	-	-	-	-	-	-
MW-1	03/23/2020	<0.17	<0.36	<0.35	<0.19	<0.39	<2.1	-	<2.5	<0.68
MW-1	06/18/2020	-	-	-	-	-	-	-	-	-
MW-1	09/14/2020	<0.37	<0.36	<0.35	<1.8	<0.39	<2.1	-	<2.5	<0.68
MW-1	11/11/2020	-	-	-	-	-	-	-	-	-
MW-1	12/14/2020	-	-	-	-	-	-	-	-	-
MW-1	03/24/2021	<0.37	<0.36	<0.35	<1.8	<0.39	<2.1	-	<2.5	<0.68
MW-1	06/22/2021	-	-	-	-	-	-	-	-	-
MW-1	09/20/2021	<0.37	<0.36	<0.35	<1.8	<0.39	<2.1	-	<2.5	<0.68
MW-1	12/28/2021	-	-	-	-	-	-	-	-	-
MW-1	03/24/2022	<0.89	<0.36	<0.82	<1.8	<0.88	<2.1	-	<2.5	<0.34
MW-1	08/25/2022	-	-	-	-	-	-	-	-	-
MW-1	10/04/2022	<0.37	<0.36	<0.72	<1.8	<0.39	<2.1	-	<2.5	<0.68
MW-1	12/28/2022	-	-	-	-	-	-	-	-	-
MW-1	03/28/2023	<0.26	<0.32	<0.26	<0.37	<0.44	<1.3	-	<0.46	<0.41
MW-1	06/30/2023	-	-	-	-	-	-	-	-	-
MW-1	09/26/2023	<0.26	<0.32	<0.26	<0.37	<0.44	<1.3	-	<0.46	<0.41
Detection										
MW-4	03/25/2019	< 0.17	< 0.36	< 0.35	< 0.19	< 0.39	< 2.1	-	< 2.5	< 0.68
MW-4	06/26/2019	-	-	-	-	-	-	-	-	-
MW-4	09/24/2019	< 0.17	< 0.36	< 0.35	< 0.19	< 0.39	< 2.1	-	< 2.5	< 0.68
MW-4	12/17/2019	-	-	-	-	-	-	-	-	-
MW-4	03/23/2020	< 0.17	< 0.36	< 0.35	< 0.19	< 0.39	< 2.1	-	< 2.5	< 0.68
MW-4	06/18/2020	-	-	-	-	-	-	-	-	-
MW-4	09/14/2020	< 0.37	< 0.36	< 0.35	< 1.8	< 0.39	< 2.1	-	< 2.5	< 0.68
MW-4	12/14/2020	-	-	-	-	-	-	-	-	-
MW-4	03/24/2021	< 0.37	< 0.36	< 0.35	< 1.8	< 0.39	< 2.1	-	< 2.5	< 0.68
MW-4	06/22/2021	-	-	-	-	-	-	-	-	-
MW-4	09/20/2021	< 0.37	< 0.36	< 0.35	< 1.8	< 0.39	< 2.1	-	< 2.5	< 0.68
MW-4	12/28/2021	-	-	-	-	-	-	-	-	-
MW-4	03/24/2022	< 0.89	< 0.36	< 0.82	< 1.8	< 0.88	< 2.1	-	< 2.5	< 0.34
MW-4	08/25/2022	-	-	-	-	-	-	-	-	-
MW-4	10/04/2022	< 0.37	< 0.36	< 0.72	< 1.8	< 0.39	< 2.1	-	< 2.5	< 0.68
MW-4	12/28/2022	-	-	-	-	-	-	-	-	-
MW-4	03/28/2023	<0.26	<0.32	<0.26	<0.37	<0.44	<1.3	-	<0.46	<0.41
MW-4	06/30/2023	-	-	-	-	-	-	-	-	-

ALL DATA
HIGHLANDS CO. SWMC CLASS I LANDFILL
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PARAMETER		TRANS-1,3-DICHLORO-PROPENE	TRICHLORO-ETHENE	TRICHLORO-FLUORO-METHANE	VINYL ACETATE	VINYL CHLORIDE	XYLENES	TOTAL VOCS	(E)-1,4-DICHLORO-2-BUTENE	DIBROMO-METHANE
STANDARD UNITS		0.4 µg/L*** µg/L	3 µg/L* µg/L	2100 µg/L*** µg/L	88 µg/L*** µg/L	1 µg/L* µg/L	20 µg/L** µg/L	(1) µg/L	(1) µg/L	70 µg/L*** µg/L
MW-4	09/27/2023	<0.26	<0.32	<0.26	<0.37	<0.44	<1.3	-	<0.46	<0.41
MW-7A	03/28/2019	< 0.17	< 0.50	< 0.35	< 0.19	< 0.50	< 1.0	0.21	< 2.5	< 0.68
MW-7A	09/24/2019	< 0.17	< 0.36	< 0.35	< 0.19	< 0.39	< 2.1	-	< 2.5	< 0.68
MW-7A	12/18/2019	-	-	-	-	-	-	-	-	-
MW-7A	03/24/2020	< 0.17	< 0.50	< 0.35	< 0.19	< 0.50	< 1.0	-	< 2.5	< 0.68
MW-7A	06/29/2020	-	-	-	-	-	-	-	-	-
MW-7A	09/15/2020	< 0.37	< 0.36	< 0.35	< 1.8	< 0.39	< 2.1	-	< 2.5	< 0.68
MW-7A	12/14/2020	-	-	-	-	-	-	-	-	-
MW-7A	03/23/2021	< 0.37	< 0.36	< 0.35	< 0.84	< 0.39	< 0.63	-	< 0.53	< 0.24
MW-7A	09/21/2021	< 0.37	< 0.36	< 0.35	< 1.8	< 0.39	< 2.1	-	< 2.5	< 0.68
MW-7A	03/30/2022	< 0.89	< 0.36	< 0.82	< 1.8	< 0.88	< 2.1	-	< 2.5	< 0.34
MW-7A	10/05/2022	< 0.37	< 0.36	< 0.72	< 1.8	< 0.39	< 2.1	-	< 2.5	< 0.68
MW-7A	03/29/2023	<0.26	<0.32	<0.26	<0.37	<0.44	<1.3	-	<0.46	<0.41
MW-7A	06/30/2023	-	-	-	-	-	-	-	-	-
MW-7A	09/27/2023	<0.26	<0.32	<0.26	<0.37	<0.44	<1.3	-	<0.46	<0.41
MW-21	03/25/2019	<0.17	<0.36	<0.35	<0.19	<0.39	<2.1	7	<2.5	<0.68
MW-21	06/26/2019	-	-	-	-	-	-	-	-	-
MW-21	09/24/2019	<0.17	<0.36	<0.35	<0.19	<0.39	<2.1	-	<2.5	<0.68
MW-21	12/17/2019	-	-	-	-	-	-	-	-	-
MW-21	03/23/2020	<0.17	<0.36	<0.35	<0.19	<0.39	<2.1	-	<2.5	<0.68
MW-21	06/18/2020	-	-	-	-	-	-	-	-	-
MW-21	09/14/2020	<0.37	<0.36	<0.35	<1.8	<0.39	<2.1	-	<2.5	<0.68
MW-21	12/14/2020	-	-	-	-	-	-	-	-	-
MW-21	03/24/2021	<0.37	<0.36	<0.35	<1.8	<0.39	<2.1	-	<2.5	<0.68
MW-21	06/22/2021	-	-	-	-	-	-	-	-	-
MW-21	09/20/2021	<0.37	<0.36	<0.35	<1.8	<0.39	<2.1	-	<2.5	<0.68
MW-21	12/28/2021	-	-	-	-	-	-	-	-	-
MW-21	03/24/2022	<0.89	<0.36	<0.82	<1.8	<0.88	<2.1	-	<2.5	<0.34
MW-21	08/25/2022	-	-	-	-	-	-	-	-	-
MW-21	10/04/2022	<0.37	<0.36	<0.72	<1.8	<0.39	<2.1	-	<2.5	<0.68
MW-21	12/28/2022	-	-	-	-	-	-	-	-	-
MW-21	03/28/2023	<0.26	<0.32	<0.26	<0.37	<0.44	<1.3	-	<0.46	<0.41
MW-21	06/30/2023	-	-	-	-	-	-	-	-	-
MW-21	09/27/2023	<0.26	<0.32	<0.26	<0.37	<0.44	<1.3	-	<0.46	<0.41
MW-30	03/28/2019	<0.17	<0.36	<0.35	<0.19	<0.39	<2.1	-	<2.5	<0.68
MW-30	09/24/2019	<0.17	<0.36	<0.35	<0.19	<0.39	<2.1	-	<2.5	<0.68
MW-30	12/18/2019	-	-	-	-	-	-	-	-	-
MW-30	03/24/2020	<0.17	<0.50	<0.35	<0.19	<0.50	<1.0	0.19	<2.5	<0.68
MW-30	06/29/2020	-	-	-	-	-	-	-	-	-

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HIGHLANDS CO. SWMC CLASS I LANDFILL
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PARAMETER		TRANS-1,3-DICHLORO-PROPENE	TRICHLORO-ETHENE	TRICHLORO-FLUORO-METHANE	VINYL ACETATE	VINYL CHLORIDE	XYLENES	TOTAL VOCS	(E)-1,4-DICHLORO-2-BUTENE	DIBROMO-METHANE
STANDARD UNITS		0.4 µg/L*** µg/L	3 µg/L* µg/L	2100 µg/L*** µg/L	88 µg/L*** µg/L	1 µg/L* µg/L	20 µg/L** µg/L	(1) µg/L	(1) µg/L	70 µg/L*** µg/L
MW-30	09/14/2020	<0.37	<0.36	<0.35	<1.8	<0.39	<2.1	-	<2.5	<0.68
MW-30	12/14/2020	-	-	-	-	-	-	-	-	-
MW-30	03/23/2021	<0.37	<0.36	<0.35	<0.84	<0.39	<0.63	-	<0.53	<0.24
MW-30	09/21/2021	<0.37	<0.36	<0.35	<1.8	<0.39	<2.1	-	<2.5	<0.68
MW-30	03/28/2022	<0.89	<0.36	<0.82	<1.8	<0.88	<2.1	-	<2.5	<0.34
MW-30	10/05/2022	<0.37	<0.36	<0.72	<1.8	<0.39	<2.1	-	<2.5	<0.68
MW-31	03/28/2019	<0.17	<0.50	<0.35	<0.19	<0.50	<1.0	0.24	<2.5	<0.68
MW-31	09/24/2019	<0.17	<0.36	<0.35	<0.19	<0.39	<2.1	-	<2.5	<0.68
MW-31	12/18/2019	-	-	-	-	-	-	-	-	-
MW-31	03/24/2020	<0.17	<0.50	<0.35	<0.19	<0.50	<1.0	-	<2.5	<0.68
MW-31	06/29/2020	-	-	-	-	-	-	-	-	-
MW-31	09/14/2020	<0.37	<0.36	<0.35	<1.8	<0.39	<2.1	-	<2.5	<0.68
MW-31	12/14/2020	-	-	-	-	-	-	-	-	-
MW-31	03/23/2021	<0.37	<0.36	<0.35	<0.84	<0.39	<0.63	0.36	<0.53	<0.24
MW-31	09/21/2021	<0.37	<0.36	<0.35	<1.8	<0.39	<2.1	-	<2.5	<0.68
MW-31	03/28/2022	<0.89	<0.36	<0.82	<1.8	<0.88	<2.1	20.8	<2.5	<0.34
MW-31	10/05/2022	<0.37	<0.36	<0.72	<1.8	<0.39	<2.1	-	<2.5	<0.68
MW-31	03/29/2023	<0.26	<0.32	<0.26	<0.37	<0.44	<1.3	220.76	<0.46	<0.41
MW-31	06/23/2023	<0.26	<0.32	<0.26	<0.37	<0.44	<1.3	61.92	<0.46	<0.41
MW-31	09/27/2023	<0.26	<0.32	<0.26	<0.37	<0.44	<1.3	1.1	<0.46	<0.41
MW-32	03/28/2019	<0.17	<0.50	<0.35	<0.19	<0.50	<1.0	-	<2.5	<0.68
MW-32	09/24/2019	<0.17	<0.36	<0.35	<0.19	<0.39	<2.1	-	<2.5	<0.68
MW-32	12/18/2019	-	-	-	-	-	-	-	-	-
MW-32	03/24/2020	<0.17	<0.36	<0.35	< 0.19	<0.39	<2.1	-	<2.5	< 0.68
MW-32	06/29/2020	-	-	-	-	-	-	-	-	-
MW-32	09/15/2020	< 0.37	< 0.36	< 0.35	< 1.8	< 0.39	< 2.1	-	< 2.5	< 0.68
MW-32	12/14/2020	-	-	-	-	-	-	-	-	-
MW-32	03/23/2021	< 0.37	< 0.36	< 0.35	< 0.84	< 0.39	< 0.63	-	< 0.53	< 0.24
MW-32	09/21/2021	< 0.37	< 0.36	< 0.35	< 1.8	< 0.39	< 2.1	-	< 2.5	< 0.68
MW-32	03/28/2022	< 0.89	< 0.36	< 0.82	< 1.8	< 0.88	< 2.1	-	< 2.5	< 0.34
MW-32	10/05/2022	< 0.37	< 0.36	< 0.72	< 1.8	< 0.39	< 2.1	-	< 2.5	< 0.68
MW-32	03/29/2023	<0.26	<0.32	<0.26	<0.37	<0.44	<1.3	-	<0.46	<0.41
MW-32	09/27/2023	<0.26	<0.32	<0.26	<0.37	<0.44	<1.3	-	<0.46	<0.41
MW-33	03/28/2019	< 0.17	< 0.50	< 0.35	< 0.19	< 0.50	< 1.0	-	< 2.5	< 0.68
MW-33	09/24/2019	< 0.17	< 0.36	< 0.35	< 0.19	< 0.39	< 2.1	-	< 2.5	< 0.68
MW-33	12/18/2019	-	-	-	-	-	-	-	-	-
MW-33	03/24/2020	< 0.17	< 0.50	< 0.35	< 0.19	< 0.50	< 1.0	-	< 2.5	< 0.68
MW-33	06/29/2020	-	-	-	-	-	-	-	-	-
MW-33	09/15/2020	< 0.37	< 0.36	< 0.35	< 1.8	< 0.39	< 2.1	-	< 2.5	< 0.68

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HIGHLANDS CO. SWMC CLASS I LANDFILL
FEBRUARY 2019 THROUGH JANUARY 2024

PARAMETER		TRANS-1,3-DICHLORO-PROPENE	TRICHLORO-ETHENE	TRICHLORO-FLUORO-METHANE	VINYL ACETATE	VINYL CHLORIDE	XYLENES	TOTAL VOCS	(E)-1,4-DICHLORO-2-BUTENE	DIBROMO-METHANE
STANDARD UNITS		0.4 µg/L*** µg/L	3 µg/L* µg/L	2100 µg/L*** µg/L	88 µg/L*** µg/L	1 µg/L* µg/L	20 µg/L** µg/L	(1) µg/L	(1) µg/L	70 µg/L*** µg/L
MW-33	12/14/2020	-	-	-	-	-	-	-	-	-
MW-33	03/23/2021	< 0.37	< 0.36	< 0.35	< 0.84	< 0.39	< 0.63	-	< 0.53	< 0.24
MW-33	09/21/2021	< 0.37	< 0.36	< 0.35	< 1.8	< 0.39	< 2.1	-	< 2.5	< 0.68
MW-33	03/28/2022	< 0.89	< 0.36	< 0.82	< 1.8	< 0.88	< 2.1	-	< 2.5	< 0.34
MW-33	10/05/2022	< 0.37	< 0.36	< 0.72	< 1.8	< 0.39	< 2.1	-	< 2.5	< 0.68
MW-33	03/29/2023	<0.26	<0.32	<0.26	<0.37	<0.44	<1.3	-	<0.46	<0.41
MW-33	09/27/2023	<0.26	<0.32	<0.26	<0.37	<0.44	<1.3	-	<0.46	<0.41
Intermediate										
MW-22	03/25/2019	<0.17	<0.36	<0.35	<0.19	<0.39	<2.1	-	<2.5	<0.68
MW-22	06/26/2019	-	-	-	-	-	-	-	-	-
MW-22	09/24/2019	<0.17	<0.36	<0.35	<0.19	<0.39	<2.1	-	<2.5	<0.68
MW-22	12/17/2019	-	-	-	-	-	-	-	-	-
MW-22	03/23/2020	<0.17	<0.36	<0.35	<0.19	<0.39	<2.1	-	<2.5	<0.68
MW-22	06/18/2020	-	-	-	-	-	-	-	-	-
MW-22	09/14/2020	<0.37	<0.36	<0.35	<1.8	<0.39	<2.1	-	<2.5	<0.68
MW-22	12/14/2020	-	-	-	-	-	-	-	-	-
MW-22	03/24/2021	<0.37	<0.36	<0.35	<1.8	<0.39	<2.1	-	<2.5	<0.68
MW-22	06/22/2021	-	-	-	-	-	-	-	-	-
MW-22	09/20/2021	<0.37	<0.36	<0.35	<1.8	<0.39	<2.1	-	<2.5	<0.68
MW-22	12/28/2021	-	-	-	-	-	-	-	-	-
MW-22	03/24/2022	<0.89	<0.36	<0.82	<1.8	<0.88	<2.1	-	<2.5	<0.34
MW-22	08/25/2022	-	-	-	-	-	-	-	-	-
MW-22	10/04/2022	<0.37	<0.36	<0.72	<1.8	<0.39	<2.1	-	<2.5	<0.68
MW-22	12/28/2022	-	-	-	-	-	-	-	-	-
MW-22	03/28/2023	<0.26	<0.32	<0.26	<0.37	<0.44	<1.3	-	<0.46	<0.41
MW-22	06/30/2023	-	-	-	-	-	-	-	-	-
MW-22	09/27/2023	<0.26	<0.32	<0.26	<0.37	<0.44	<1.3	11	<0.46	<0.41

LEGEND

* =Primary Drinking Water Standard
** =Secondary Drinking Water Standard
*** =Chapter 62-777 - Groundwater Cleanup Target Level (GCTL)
(1) =No Standard
- =Not Analyzed

I = Value is between the Method Detection Level (MDL) and the Reporting Detection Level (RDL)
J = Estimated value
V = Analyte found in associated method blank
Q = Estimated value; analyte analyzed after acceptable holding time

ALL DATA
HIGHLANDS CO. SWMC CLASS I LANDFILL
MAY 2019 THROUGH APRIL 2024

PARAMETER		CONDUC-TIVITY (FIELD)	DISSOLVED OXYGEN (FIELD)	pH (FIELD)	TEMPER-ATURE (FIELD)	TURBIDITY (FIELD)	AMMONIA NITROGEN	UN-IONIZED AMMONIA	BIOCHEMI-CAL OXYGEN DEMAND	CHEMICAL OXYGEN DEMAND	CHLORO-PHYLL A	FECAL COLIFORM	NITRATE + NITRITE
STANDARD UNITS		(1) uS/cm	(1) ppm	6.5-8.5 S.U.** S.U.	(1) deg C	(1) NTU	2.8 mg/L*** mg/L	(1) mg/L	(1) mg/L	(1) mg/L	(1) mg/m3	1 col/100ml* col/100ml	10 mg/L* mg/L
Surface Water													
Wetlands	09/23/2019	246.0	5.98	6.40	25.0	1.55	< 0.035	< 0.020	< 2.0	63.1	3.2 I	28.0	< 0.033
Wetlands	03/25/2020	353.0	5.17	6.2	22.9	2.39	< 0.0317	< 0.020	3.9	84.3	7.6	TNTC	< 0.033
Wetlands	09/15/2020	244.1	1.49	6.76	29.4	2.26	0.21	< 0.020	< 2.0	65.0	7.1	12.0	< 0.033
Wetlands	03/24/2021	345.3	6.59	6.96	24.0	1.51	0.90	< 0.020	< 2.0	74.7	2.9 I	14.0	< 0.033
Wetlands	09/22/2021	237.0	5.10	8.85	27.5	6.12	0.28	0.11	2.2	74.1	10.9	53.0	< 0.015
Wetlands	03/25/2022	402.7	5.80	7.98	21.9	1.72	1.5	-	2.5	65.5	1.6 I	55.0	0.026 I
Wetlands	10/05/2022	300.4	4.48	7.30	26.1	3.79	0.85	< 0.020	2.7	87.2	13.1	64.0	< 0.015
Wetlands	03/28/2023	444	2.99	7.16	27.23	2.19	0.91	0.011	<2.0	99	11	48	-
Wetlands	09/29/2023	260.2	3.89	5.86	28.5	11.61	-	0.00017	7.9	64	18	<1.0	<0.24

LEGEND

* =Primary Drinking Water Standard
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(1) =No Standard
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I = Value is between the Method Detection Level (MDL) and the Reporting Detection Level (RDL)
J = Estimated value
V = Analyte found in associated method blank
Q = Estimated value; analyte analyzed after acceptable holding time

ALL DATA
HIGHLANDS CO. SWMC CLASS I LANDFILL
MAY 2019 THROUGH APRIL 2024

PARAMETER		NITRATE NITROGEN	TOTAL PHOS-PHORUS as P	TOTAL DISSOLVED SOLIDS	TOTAL HARDNESS	TOTAL HARDNESS	TOTAL KJELDAHL NITROGEN	TOTAL NITROGEN	TOTAL ORGANIC CARBON	TOTAL SUSPENDED SOLIDS	ANTIMONY	ARSENIC	BARIUM
STANDARD UNITS		10 mg/L* mg/L	(1) mg/L	500 mg/L** mg/L	(1) mg/L	(1) mg/L	(1) mg/L	(1) mg/L	(1) mg/L	(1) mg/L	6 µg/L* µg/L	10 µg/L* µg/L	2000 µg/L* µg/L
Surface Water													
Wetlands	09/23/2019	< 0.025	0.017	170	58.3	-	1.0	1.0	20.1	< 5.0	< 5.5	< 7.1	14.6
Wetlands	03/25/2020	< 0.025	0.027	55.0	71.2	-	1.6	1.6	2.8	5.3	< 5.5	< 7.1	25.8
Wetlands	09/15/2020	< 0.025	0.014	166	54.1	-	1.1	1.1	20.4	< 5.0	< 5.5	< 7.1	27.1
Wetlands	03/24/2021	< 0.025	0.022	245	67.0	-	2.2	2.2	24.9	< 5.0	< 5.5	< 7.1	24.5
Wetlands	09/22/2021	< 0.025	0.018	173	51.5	-	1.3	1.3	21.4	< 5.0	< 5.5	< 3.4	13.7
Wetlands	03/25/2022	0.026 I	0.024	202	59.5	-	2.5	2.6	23.0	< 5.0	< 5.5	< 3.4	20.0
Wetlands	10/05/2022	< 0.025	0.026	197	83.7	-	2.2	2.2	25.7	6.0	< 5.5	< 3.4	29.5
Wetlands	03/28/2023	<0.092	<0.15	320	110	-	1.87	1.87	25	3.6	<1.0	0.78 I	35
Wetlands	09/29/2023	<0.023	<0.048	200	-	64	1.31	1.31	21	8.5	<1.0	0.57 I	36

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HIGHLANDS CO. SWMC CLASS I LANDFILL
MAY 2019 THROUGH APRIL 2024

PARAMETER		BERYLLIUM	CADMIUM	CHROMIUM	COBALT	COPPER	IRON	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	SODIUM
STANDARD UNITS		4 µg/L* µg/L	5 µg/L* µg/L	100 µg/L* µg/L	140µg/L*** µg/L	1000 µg/L** µg/L	300 µg/L** µg/L	15 µg/L* µg/L	2 µg/L* µg/L	100 µg/L* µg/L	50 µg/L* µg/L	100 µg/L** µg/L	160 mg/L* mg/L
Surface Water													
Wetlands	09/23/2019	< 1.6	< 0.050	< 1.7	< 0.96	< 2.6	64.0	< 0.50	0.00114	< 2.1	< 0.50	< 0.050	23.4
Wetlands	03/25/2020	< 1.6	< 0.050	< 1.7	< 0.96	< 2.6	146	< 0.50	0.00196	< 2.1	< 0.50	< 0.050	34.3
Wetlands	09/15/2020	< 0.17	< 0.050	< 1.7	< 0.96	< 2.6	111	< 0.22	0.00308 I	< 2.1	< 1.2	< 0.21	17.9
Wetlands	03/24/2021	< 0.17	< 0.050	< 1.7	< 0.96	< 2.6	108	< 0.22	0.00107	< 2.1	< 1.2	< 0.21	32.4
Wetlands	09/22/2021	< 0.17	< 0.050	2.2 I	< 0.96	< 2.6	152	< 0.22	0.00166	< 2.1	< 1.2	< 0.21	20.8
Wetlands	03/25/2022	< 0.17	< 0.050	< 1.7	< 0.96	< 2.6	84.8	< 0.22	0.00149	< 2.1	< 1.2	< 0.21	26.9
Wetlands	10/05/2022	< 0.17	< 0.067	2.7 I	< 0.96	< 2.6	202	< 0.22	0.00380	< 1.0	0.42 I	< 0.028	23.2
Wetlands	03/28/2023	<2.0	<0.25	1.2 I	<0.25	<1.0	93 I	<0.50	0.014 I	<1.2	<1.2	<0.50	41
Wetlands	09/29/2023	<2.0	<0.25	1.5 I	<0.25	<1.0	20 I	<0.50	<0.011	<1.2	<1.2	<0.50	350

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HIGHLANDS CO. SWMC CLASS I LANDFILL
MAY 2019 THROUGH APRIL 2024

PARAMETER		THALLIUM	VANADIUM	ZINC	1,1,1,2-TETRA-CHLORO-ETHANE	1,1,1-TRICHLORO-ETHANE	1,1,2,2-TETRA-CHLORO-ETHANE	1,1,2-TRICHLORO-ETHANE	1,1-DICHLORO-ETHANE	1,1-DICHLORO-ETHENE	1,2,3-TRICHLORO-PROPANE	1,2-DIBROMO-3-CHLORO-PROPANE	1,2-DIBROMO-ETHANE (EDB)
STANDARD		2 µg/L*	49 µg/L***	5000 µg/L**	1.3 µg/L***	200 µg/L*	0.2 µg/L***	5 µg/L*	70 µg/L***	7 µg/L*	0.02 µg/L***	0.2 µg/L*	0.02 µg/L*
UNITS		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Surface Water													
Wetlands	09/23/2019	< 0.11	2.1 I	< 11.0	< 0.32	< 0.30	< 0.20	< 0.30	< 0.34	< 0.27	< 1.1	< 0.0065	< 0.0076
Wetlands	03/25/2020	< 0.11	2.4 I	< 11.0	< 0.32	< 0.30	< 0.20	< 0.30	< 0.34	< 0.27	< 1.1	< 0.0066	< 0.0077
Wetlands	09/15/2020	< 0.11	2.7 I	< 11.0	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34	< 0.59	< 0.53	< 0.0064	< 0.0075
Wetlands	03/24/2021	< 0.11	4.2 I	< 11.0	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34	< 0.59	< 0.53	< 0.0065	< 0.0076
Wetlands	09/22/2021	< 0.11	2.7 I	< 11.0	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34	< 0.59	< 0.53	< 0.0065	< 0.0076
Wetlands	03/25/2022	< 0.11	4.6 I	< 11.0	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34	< 0.59	< 0.53	< 0.0066	< 0.0078
Wetlands	10/05/2022	< 0.11	3.1 I	< 11.0	< 0.32	< 0.30	< 0.59	< 0.30	< 0.34	< 0.59	< 0.53	< 0.0064	< 0.0076
Wetlands	03/28/2023	<0.25	4.6	<50	<0.47	<0.39	<0.20	<0.40	<0.38	<0.41	<0.015	<0.023	<0.019
Wetlands	09/29/2023	<0.25	3.2 I	<50	<0.47	<0.39	<0.20	<0.40	<0.38	<0.41	<0.015	<0.023	<0.019

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MAY 2019 THROUGH APRIL 2024

PARAMETER		1,2-DICHLORO-BENZENE	1,2-DICHLORO-ETHANE	1,2-DICHLORO-PROPANE	1,4-DICHLORO-BENZENE	2-HEXANONE	4-METHYL-2-PENTANONE	ACETONE	ACRYLONI-TRILE	BENZENE	BROMO-CHLORO-METHANE	BROMO-DICHLORO-METHANE	BROMOFORM
STANDARD UNITS		600 µg/L* µg/L	3 µg/L* µg/L	5 µg/L* µg/L	75 µg/L* µg/L	280 µg/L*** µg/L	350 µg/L** µg/L	6300 µg/L*** µg/L	0.06µg/L*** µg/L	1 µg/L* µg/L	91 µg/L*** µg/L	0.6 µg/L*** µg/L	4.4 µg/L*** µg/L
Surface Water													
Wetlands	09/23/2019	< 0.29	< 0.27	< 0.23	< 0.28	< 0.85	< 0.32	< 5.3	< 3.7	< 0.30	< 0.37	< 0.19	< 2.6
Wetlands	03/25/2020	< 0.29	< 0.27	< 0.23	< 0.28	< 0.85	< 0.32	< 5.3	< 3.7	< 0.30	< 0.37	< 0.19	< 2.6
Wetlands	09/15/2020	< 0.60	< 0.27	< 0.23	< 0.28	< 3.2	< 7.5	7.2 I	< 3.7	< 0.30	< 0.37	< 0.19	< 0.48
Wetlands	03/24/2021	< 0.60	< 0.27	< 0.23	< 0.28	< 3.2	< 7.5	< 5.3	< 3.7	< 0.30	< 0.37	< 0.19	< 0.48
Wetlands	09/22/2021	< 0.60	< 0.27	< 0.23	< 0.28	< 3.2	< 7.5	< 5.3	< 3.7	< 0.30	< 0.37	< 0.19	< 0.48
Wetlands	03/25/2022	< 0.60	< 0.27	< 0.23	< 0.28	< 10.0	< 7.5	< 9.4	< 11.0	< 0.30	< 0.37	< 0.44	< 2.8
Wetlands	10/05/2022	< 0.60	< 0.27	< 0.23	< 0.28	< 3.2	< 7.5	< 8.7	< 3.7	< 0.30	< 0.37	< 0.19	< 0.48
Wetlands	03/28/2023	<0.44	<0.40	<0.18	<0.36	<0.42	<0.40	<0.90	<0.38	<0.28	<0.33	<0.39	<0.36
Wetlands	09/29/2023	<0.44	<0.40	<0.18	<0.36	<0.42	<0.40	<0.90	<0.38	<0.28	<0.33	<0.39	<0.36

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PARAMETER		BROMO-METHANE	CARBON DISULFIDE	CARBON TETRA-CHLORIDE	CHLORO-BENZENE	CHLORO-ETHANE	CHLORO-FORM	CHLORO-METHANE	CIS-1,2-DICHLORO-ETHENE	CIS-1,3-DICHLORO-PROPENE	DIBROMO-CHLORO-METHANE	DICHLORO-METHANE	ETHYL-BENZENE
STANDARD UNITS		9.8 µg/L*** µg/L	700 µg/L*** µg/L	3 µg/L* µg/L	100 µg/L* µg/L	12 µg/L*** µg/L	70 µg/L*** µg/L	2.7 µg/L*** µg/L	70 µg/L* µg/L	0.4 µg/L*** µg/L	0.4 µg/L*** µg/L	5 µg/L* µg/L	30 µg/L** µg/L
Surface Water													
Wetlands	09/23/2019	< 4.0	< 0.45	< 1.1	< 0.35	< 3.7	0.84 I	< 0.97	< 0.27	< 0.17	< 0.45	< 2.0	< 0.30
Wetlands	03/25/2020	< 4.0	< 0.45	< 1.1	< 0.35	< 3.7	0.61 I	< 0.97	< 0.27	< 0.17	< 0.45	< 2.0	< 0.30
Wetlands	09/15/2020	< 8.1	< 1.8	< 0.44	< 0.35	< 3.7	0.43 I	< 0.43	< 0.27	< 0.17	< 0.45	< 4.4	< 0.30
Wetlands	03/24/2021	< 8.1	< 1.8	< 0.44	< 0.35	< 3.7	< 0.32	< 0.43	< 0.27	< 0.17	< 0.45	< 4.4	< 0.30
Wetlands	09/22/2021	< 8.1	< 1.8	< 0.44	< 0.35	< 3.7	< 0.32	< 0.43	< 0.27	< 0.17	< 0.45	< 4.4	< 0.30
Wetlands	03/25/2022	< 3.9	< 1.8	< 0.44	< 0.35	< 3.7	< 0.56	< 0.92	< 0.83	< 0.51	< 0.97	< 4.4	< 0.30
Wetlands	10/05/2022	< 3.9	< 1.8	< 0.44	< 0.35	< 3.7	< 0.56	< 0.43	< 0.27	< 0.17	< 0.45	< 1.7	< 0.30
Wetlands	03/28/2023	<0.32	<0.42	<0.41	<0.38	<0.42	<0.37	<0.39	<0.39	<0.26	<0.36	<0.56	<0.56
Wetlands	09/29/2023	<0.32	<0.42	<0.41	<0.38	<0.42	<0.37	<0.39	<0.39	<0.26	<0.36	<0.56	<0.56

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MAY 2019 THROUGH APRIL 2024

PARAMETER		M&P-XYLENES	METHYL ETHYL KETONE	METHYL-IODIDE	O-XYLENES	STYRENE	TETRA-CHLORO-ETHENE	TOLUENE	TRANS-1,2-DICHLORO-ETHENE	TRANS-1,3-DICHLORO-PROPENE	TRICHLORO-ETHENE	TRICHLORO-FLUORO-METHANE	VINYL ACETATE
STANDARD UNITS		20 µg/L** µg/L	4200 µg/L*** µg/L	(1) µg/L	20 µg/L** µg/L	100 µg/L* µg/L	3 µg/L* µg/L	40 µg/L** µg/L	100 µg/L* µg/L	0.4 µg/L*** µg/L	3 µg/L* µg/L	2100 µg/L*** µg/L	88 µg/L*** µg/L
Surface Water													
Wetlands	09/23/2019	< 2.1	< 7.5	< 9.3	< 0.27	< 0.26	< 0.38	< 0.33	< 0.23	< 0.17	< 0.36	< 0.35	< 0.19
Wetlands	03/25/2020	< 2.1	< 7.5	< 9.3	0.69 I	< 0.26	< 0.38	< 0.33	< 0.23	< 0.17	< 0.36	< 0.35	< 0.19
Wetlands	09/15/2020	< 2.1	< 21.0	< 9.3	< 0.57	< 0.26	< 0.38	< 0.33	< 0.23	< 0.37	< 0.36	< 0.35	< 1.8
Wetlands	03/24/2021	< 2.1	< 21.0	< 9.3	< 0.57	< 0.26	< 0.38	< 0.33	< 0.23	< 0.37	< 0.36	< 0.35	< 1.8
Wetlands	09/22/2021	< 2.1	< 21.0	< 9.3	< 0.57	< 0.26	< 0.38	< 0.33	< 0.23	< 0.37	< 0.36	< 0.35	< 1.8
Wetlands	03/25/2022	< 2.1	< 6.0	< 9.3	< 0.57	< 0.65	< 0.38	< 0.71	< 0.23	< 0.89	< 0.36	< 0.82	< 1.8
Wetlands	10/05/2022	< 0.75	< 6.7	< 3.6	< 0.57	< 0.26	< 0.38	< 0.33	< 0.23	< 0.37	< 0.36	< 0.72	< 1.8
Wetlands	03/28/2023	-	<0.33	<0.83	-	<0.29	<0.45	<0.66	<0.39	<0.26	<0.32	<0.26	<0.37
Wetlands	09/29/2023	-	<0.33	<0.83	-	<0.29	<0.45	<0.66	<0.39	<0.26	<0.32	<0.26	<0.37

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PARAMETER		VINYL CHLORIDE	XYLENES	TOTAL VOCS	(E)-1,4-DICHLORO-2-BUTENE	DIBROMO-METHANE
STANDARD UNITS		1 µg/L* µg/L	20 µg/L** µg/L	(1) µg/L	(1) µg/L	70 µg/L*** µg/L
Surface Water						
Wetlands	09/23/2019	< 0.39	< 2.1	0.84	< 2.5	< 0.68
Wetlands	03/25/2020	< 0.39	< 2.1	1.3	< 2.5	< 0.68
Wetlands	09/15/2020	< 0.39	< 2.1	7.63	< 2.5	< 0.68
Wetlands	03/24/2021	< 0.39	< 2.1	-	< 2.5	< 0.68
Wetlands	09/22/2021	< 0.39	< 2.1	-	< 2.5	< 0.68
Wetlands	03/25/2022	< 0.88	< 2.1	-	< 2.5	< 0.34
Wetlands	10/05/2022	< 0.39	< 2.1	-	< 2.5	< 0.68
Wetlands	03/28/2023	<0.44	<1.3	-	<0.46	<0.41
Wetlands	09/29/2023	<0.44	<1.3	-	<0.46	<0.41

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ATTACHMENT 6

REVISED SPECIFICATION SECTION 02330

SECTION 02330
SOIL-BENTONITE CUTOFF WALL

PART 1 GENERAL

1.01 SCOPE OF WORK

A. This Section describes the requirements for constructing multiple variable length soil-bentonite (SB) cutoff walls at the Highlands County Solid Waste Management Center Cell 5 Landfill Expansion near Sebring in Highlands County, Florida. All procedures, operations, and methods shall be in accordance with the Specifications and Drawings. The Contractor shall furnish all labor, equipment, tools, appliances, and materials and perform all operations necessary for constructing multiple variable length SB cutoff walls using the one-pass trench (OPT) method. The SB cutoff wall shall be installed to the top of the cemented silt/limestone layer.

1.02 SUBMITTALS

The Contractor shall submit shop drawings in accordance with Section 01330, Submittals and Acceptance:

A. Pre-Construction Submittals: Submit the following within 30 days of Notice to Proceed and 30 days before beginning construction of the SB cutoff wall.

1. Construction Quality Control (CQC) Plan

   a. The Contractor shall provide a detailed CQC Plan signed by the Contractor addressing procedures, test methods, and Quality Control Laboratory qualifications.
   b. The CQC Plan shall include project title, project number, project location, sample test identification numbering procedures, sample soil test and retest reports, and sample test location site plans.

2. SB Cutoff Wall Implementation Plan

   a. Detailed Implementation Plan with forms.
   b. OPT Equipment – to include details of equipment used for excavating and backfilling the trench, manufacturing and hydration of bentonite slurry, slurry delivery, etc., as required for SB Cutoff Wall construction.
   c. OPT Method – Description of approach to wall construction (e.g., start location, direction of progress, how to terminate and close the convergence of adjacent walls), a Test Section Design

and Implementation Plan, the Results of the Test Section Testing, and a Test Section Report.

d. The Implementation Plan shall include the minimum requirements for a working platform, including anticipated platform elevation required for the OPT trencher to work from.

e. SB Wall construction sequence and schedule.

B. The Contractor shall submit a Test Section Design and Implementation Plan. The Contractor will submit a proposed Test Section Design including in- situ wall sampling and an implementation plan. This will include batching and monitoring procedures for inspection of bentonite and water usage, rate of advancement, chain rotation, and a target mix design including percentage and rate of bentonite and water injection. A Test Section Report shall be submitted for review by the Owner and Engineer.

C. Test reports including a Daily Quality Control Report, a Weekly Quality Control Report, a Laboratory Test Report, and the CQC Test Results.

D. Certificates of the Bentonites Powder Manufacturer Test Results and of the Calibration of Scales and Flow Meter Test Results. Provide, for information only, bentonite manufacturer's certification of material compliance with specifications for each shipment of bentonite.

E. Closeout Submittals including the Construction Records, Construction Documentation, the Construction Log, and the As-Built Drawings.

1.03 REFERENCE STANDARDS

Reference standards and recommended practices referred to in this Section shall be the latest revision of any such document in effect at bid time. The following documents are a part of this Section. Where this Section differs from these documents, the requirements of this Section shall apply.

A. American Petroleum Institute (API)

1. API Spec 13A—Specification for Drilling Fluid Materials.
2. API RP 13B-1—Recommended Practice for Field Testing Water-Based Drilling Fluids.

B. American Society for Testing and Materials (ASTM)

1. ASTM C143/C 143M—Standard Test Method for Slump of Hydraulic-Cement Concrete.
2. ASTM D4832—Standard Test Method for Preparation and Testing of Controlled Low Strength Material Test Cylinders.

3. ASTM D5084—Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter.
4. ASTM D6913—Standard Test Method for Particle Seize Distribution of Soils Using Sieve Analysis.
5. ASTM D7263—Standard Test Methods for Laboratory Determination of Density (Unit Weight) of Soil Specimens.

C. Occupational Safety and Health Administration (OSHA)

1. 29 CFR 1926—Safety and Health Regulations for Construction.

1.04 QUALITY ASSURANCE

A. The Owner will engage and pay for the services of an Engineer and a testing agency to perform Construction Quality Assurance (CQA) testing in addition to the CQC testing performed by the Contractor. The Contractor shall help the Engineer with CQA sampling and testing by providing samples, personnel, and equipment necessary.

1. The Owner will engage and pay for CQA testing of the materials in accordance with test procedures listed in Table 2. The CQC Testing Agency contracted by the Contractor shall not be the same as the CQA Testing Agency contracted by the Owner.
2. The CQA tests will be the basis of acceptance of material and construction. The Contractor is responsible for the cost of retesting if the CQA test fails. The retest will be paid for by the Owner and reimbursed by the Contractor. The Contractor, at his discretion, may retain and bear all costs for a testing agency to confirm or dispute the results of the CQA tests.

B. The Contractor shall coordinate construction and CQC activities with the Engineer.

1.05 QUALIFICATIONS

A. The quality control Monitor (QC Monitor) shall be an employee of, or representative of, the Contractor. He shall continuously monitor and perform testing required during the progress of the SB slurry wall construction.

B. The quality assurance monitor (QA Monitor) shall be an employee of the Engineer and will represent the Owner. He shall continuously monitor the progress of the SB slurry wall construction.

C. The QC Monitor shall be responsible for conducting all necessary quality control testing and monitoring in the field, and shall collect and transport all samples required for laboratory analysis.

D. The QA Monitor shall observe the testing performed by the QC Monitor and perform periodic quality assurance testing. The Contractor shall provide access to the QA Monitor to collect his own samples as well as provide access to observe and review all QC testing and records.

E. The QA Monitor shall have the authority to direct the Contractor's work only as it relates to the contract specifications, including stop work authority for slurry wall construction if specification requirements are not met.

1.06 TESTING REQUIREMENTS (NOT USED – SEE PRODUCTS)

1.07 RECORD DRAWINGS

A. Record Drawings shall be prepared, maintained, and submitted showing the location and depth of the SB cutoff wall depth at 10-foot intervals along the wall alignment in accordance with the requirements of Section 01785, Record Documents, and the Contract Documents. Record Drawings shall be updated throughout the project and are subject to field review by the Engineer any time upon request.

1.08 DEFINITIONS

A. *Bentonite Slurry*: Bentonite slurry is a colloidal mixture of adequately hydrated bentonite and water and other suitable material prepared in accordance with API Spec 13A.

B. *Construction Quality Assurance (CQA)*: A planned system of activities that provides assurance that the materials to be installed on the project are in accordance with the contract plans and specifications. CQA includes inspections, testing, and evaluations to assess the quality of the materials and the construction. CQA refers to the measures taken by the Owner to determine compliance and conformance of the materials with the Contract Specifications.

C. *Construction Quality Control (CQC)*: A planned system that provides procedures for delivering a construction project that meets the requirements defined in the contract plans and specification. CQC is performed by the Contractor and includes surveying, documentation, sampling, testing, and personnel qualifications.

D. *Contractor:* The Contractor referred to herein is the company chosen to perform the work. The Contractor is responsible for his own Quality Control inspection and testing.

E. *General Fill*: Soil fill that meets the characteristics in Section 02301, Earthwork for Landfill Construction, Article 2.02, and is placed to specified relative compaction densities and moisture contents to lines and grades shown on the Drawings.

F. *One-Pass Trench Method:* The OPT method is accomplished via track-mounted equipment consisting of a continuous cutter chain that rotates at high speeds on a blade that is inserted into the ground. Trenchers are equipped with metered bentonite delivery systems, underground water injection nozzles, as applicable pre-mixed slurry injection ports, speed controls for both the mixing chain and track speeds, GPS mapping and laser guides to control depth (or other Engineer approved methods for horizontal and vertical alignment). The blade and cutter chain are initially rotated from a horizontal position at the ground surface to a vertical one at the desired depth. From that point, the equipment can move in forward or reverse, cutting a continuous trench (on a straight or curved alignment) while mixing the soil in situ with metered amounts of additives (dry-mixed or slurried). Because of the high-speed rotation of the cutter chain, a relatively stiff, heavy mix can be processed. Trenching depth can be varied within a limited range before withdrawal of the blade and chain are required to replace with a longer or shorter blade and cutter chain.

G. *Owner's Representative:* The Owner's Representative is any individual designated by the Owner to act on its behalf in the execution of these specifications.

H. *Quality Control (QC)* Monitor *:* An employee of the Contractor overseeing construction and performing quality control testing to verify compliance with project requirements.

I. *Quality Assurance (QA)* Monitor*:* An employee or designated representative of the Engineer and representing the Owner, observing and documenting the construction and performing testing to verify compliance.

J. *Soil-Bentonite Slurry Cutoff Wall Backfill:* A homogeneous mixture of material produced by mixing soil, bentonite, and water and/or other materials approved by the Engineer, which is used to construct the SB slurry cutoff wall.

PART 2 PRODUCTS

2.01 MATERIALS

A. Bentonite

1. Bentonite shall be sodium cation base montmorillonite powder that conforms to API Spec 13A, Section 9. Bentonite shall be new, pulverized, high-swelling natural sodium cation montmorillonite (Premium Grade Wyoming-type bentonite or equivalent). Chemically treated bentonite will not be allowed unless otherwise approved by the Engineer). No bentonite from the bentonite manufacturer shall be used prior to acceptance by the Engineer. All bentonite shall be subject to inspection, sampling, and verification of quality by Contractor QC testing and Engineer QA testing. Bentonite not meeting specifications shall be promptly removed from the site and replaced with bentonite conforming to specification requirements at the Contractors expense. Protect bentonite from moisture during transit and storage.
2. The Contractor shall provide a sample of the bentonite material used within the mix upon request from the Engineer. The sample shall consist of a minimum of 10 pounds of the proposed bentonite at least 5 days prior to use with certification that it meets API Spec 13A.
3. The Contractor shall submit a copy of the Bentonite Powder Manufacturer Test Results for each lot shipped to the site and a certificate of compliance stating that the bentonite complies with all applicable standards.

B. Temporary Soil Cap

1. Temporary soil cap placed over completed slurry cutoff walls shall be uncompacted general fill at least 2 feet thick.

C. Permanent Soil Cap

1. The permanent soil cap placed over completed slurry cutoff walls shall be compacted general fill. A single layer of BX-1100 (or equivalent) geogrid shall be placed over the wall and at the base of the compacted fill. The geogrid shall extend at least 30-inches out from the slurry wall trench edges on either side and be covered entirely with one 12-inch lift of fill compacted to 95% of the Modified Proctor Maximum Dry Density.

D. OPT SB Mixture

1. The Contractor shall inject, calculate, and monitor quantities of bentonite and water depending on the results of the OPT Test Section.

2. The SB mixture shall consist of in situ soil mixed with water (both in situ and added) and bentonite to form a low permeability wall. The bentonite shall consist of either a slurry mixture or dry application with water injection as needed for the OPT method. The bentonite shall meet the requirements specified. The initial mixture shall contain a minimum of four percent bentonite by dry weight of soil. The final mix proportions shall be determined by the testing results of the required test section. Based on the results of the specified test section, the bentonite quantity shall be adjusted by the Contractor as necessary, and as approved by the Engineer to achieve the properties specified below.

3. The SB mixture in the trench shall have the following properties based on a 10-specimen moving (running) average:

   a. Slump: The SB mixture shall have a 10-test average slump cone value of 5 to 7 inches determined in accordance with ASTM Cl43/Cl43M. No test result shall be less than 4 inches and no higher than 9 inches.
   b. Hydraulic Conductivity: The SB mixture shall have a 10-test running average less than or equal to $7.5x10^{-7}$ centimeters per second (cm/sec) or less when measured at 14 days or later and tested in accordance with ASTM D5084. No test shall be greater than $1x10^{-6}$ cm/sec. Any test greater than $1x10^{-6}$ cm/sec may be retested once before rejection.

4. For gradation, the Contractor will use ASTM D6913. There are no set criteria for the gradation results.

5. The initial design mix may be adjusted by the Contractor if necessary and if approved by the Engineer based on the Results of the Test Section Testing and to adapt to changes in field conditions.

E. The Contractor must submit a record of OPT injection materials (bentonite and water quantities) introduced into the cutoff wall including any additives utilized, and adjustments for each production shift including the date mixed and stations completed.

F. Water

1. Source: Water for construction, including all piping, pumping, valving, storage, hauling, conditioning, and distribution shall be the responsibility of the Contractor.

2. The water source shall be subject to the approval of the Engineer.

3. Water Quality: The water quality shall comply with the standards specified below unless otherwise approved by the Engineer following compatibility testing. The Contractor shall furnish water quality test results for water used for mixing with the slurry to assure conformance with these standards.

Property	Property Requirement	Test Method
pH	7.0 +/- 1.0	API RP 13B-1
Total Dissolved Solids	< 500 ppm	EPA 600/4-90/027F
Oil, organics, acids, or other deleterious	< 50 ppm each	API RP 13B-1
Hardness	<= 50 ppm	API RP 13B-1

G. Disposal Site: Cutoff wall trench excavated material or excess slurry that is not suitable for use shall be disposed of within the approved disposal area as designated by the Owner.

2.02 EQUIPMENT

A. Field Laboratory Equipment

1. The field laboratory equipment used for the Contractor's quality control testing shall be made available for QA testing at any time and shall contain, at a minimum, the following:

a. Two Marsh funnel sets.
b. One standard filter press (4 single units or one 4 unit press).
c. Two mud balances (direct reading of density).
d. One slurry sampler.
e. Two No. 200 sieves.
f. One set of standard sieves and sieve shaker.
g. One oven to measure moisture content.
h. One scale.
i. One pH meter.
j. Two slump cones.
k. An adequate number of 3-inch by 6-inch cylindrical sample molds.

B. Hauling Equipment

1. Earthwork-related hauling and SB mixing equipment, if required to execute the work specified herein, shall be pneumatic-tired and track equipment suitable for hauling excavated material and mixing soil with bentonite slurry.
2. The maximum overall width of the equipment used for construction shall be 18 feet.

C. OPT Method Equipment

1. OPT Excavation Equipment:

a. The equipment shall be capable of excavating the required minimum width of trench in a single pass of the excavating equipment. The equipment shall be able to excavate at least 5 feet deeper than the maximum target depth. The Contractor shall provide written description on the method for verifying vertical tolerance as part of the OPT Cutoff Wall Implementation Plan submittal package. The cutoff wall depth shall be documented at 10-foot intervals along the wall alignment or as otherwise approved by the Engineer to verify that required depth has been achieved.

2. OPT Mixing Equipment:

a. The OPT equipment used for batching and mixing the bentonite and injected water shall be capable of mixing the materials into a homogeneous mixture conforming to the contract specification requirements. Mixing equipment shall be capable of continually mixing in the situ trench material to provide and maintain a uniform blended cutoff wall.
b. The OPT equipment shall have a controlled weighing system for assuring that the dry and/or wet constituents of the mixture are properly proportioned. If a dry mixture is used, the proportions and rates of injection of bentonite and any added water shall be continuously monitored and recorded. If wet bentonite slurries are pumped, appropriate mixing and storage tanks shall be provided and the slurry density, flow rates, and total volume of slurry pumped shall be obtained using a data acquisition system. Wet slurries shall be fully hydrated (minimum 8 hours) prior to testing or placing in the trench.
c. The equipment will have integral electronic inclinometers or similar approved instrumentation for continuously verifying and

documenting that the walls are being constructed within vertical tolerances. Accurate measurement equipment shall be included in the equipment to fully verify and document the depth of wall being constructed at all times.

d. The rate of material use will be made available for the Engineer's inspection so that the proportions of the various mixes can be checked. Data acquisition display will be easily accessible to QA Monitors and will not interfere with Contractor's activities. At the end of each shift, the Contractor shall submit a hardcopy output of all the data collected along with a digital record of the materials used.

PART 3 EXECUTION

3.01 TOLERANCES

A. The cutoff wall shall be constructed to the lines, and grades showing in the Construction Drawing Set and to the approximate elevations determined during the Cemented Silt Layer Elevation field investigations.

B. The cutoff wall shall not deviate from vertical more than two percent of the wall depth. Deviations from vertical of more than two percent may be cause for rejection for that segment of the cutoff wall. Reconstruction of an SB cutoff wall segment because of excess deviation from vertical shall not be cause for additional compensation. The Contractor shall provide written description on the method used for verifying vertical tolerance to the Engineer as part of the submittal package.

C. The cutoff wall shall be to the depth and identified above. The Engineer may direct the Contractor to modify the depth based on refusal criteria, examination of trench cuttings, and key-in material information.

D. The cutoff trench and the temporary soil cap shall be centered on the cutoff wall. The cutoff wall alignment shall be allowed to be off-center no more than 1.5 feet on either side of centerline.

3.02 OPT METHOD PREPARATION

A. The Contractor shall submit an SB Cutoff Wall Implementation Plan that includes a construction schedule, sequence of operations, equipment data, and quality control program details.

B. OPT Test Section

1. Before starting cutoff wall construction, the Contractor shall construct a cutoff wall test section to verify that the performance criteria specified herein are met. A minimum 100-foot linear test section of the Subcell III-1 cutoff wall will be constructed to verify that the mix design meets minimum project performance criteria. The Contractor will submit a proposed test section design including in- situ wall sampling and an implementation plan. This will include batching and monitoring procedures for inspection of bentonite and water usage, rate of advancement, chain rotation, and a target mix design including percentage and rate of bentonite and water injection. After completing the test section, the Contractor will perform two full depth sample explorations using techniques approved by the Engineer to verify the homogeneity of the cutoff wall mixed material.
2. The Contractor shall submit a report summarizing the procedures and results of the preconstruction OPT test section. The report shall include advancement rate, chain rotation speeds, a description of materials used (including additives), mix proportions, water ratio, densities, gradation and classification of mixed materials, slump of mixed materials, calculation relating to injection and mixing rate with minimum bentonite cement by weight of dry soil, slump of mixed materials, and permeability of a minimum of one set of cylinders of the proposed OPT cutoff wall from the top, middle, and bottom once every sheet or every 200 feet in length. The calculation needs to show how the injection and procedure ensures mixing of minimum bentonite, as per the approved design mix.
3. ~~At least one key-in verification exploration shall be located in the test section. The location of the test section will be selected in conjunction with the Engineer.~~
4.3. Following completion of the SB cutoff wall test section, the Contractor shall either stand down until the specified laboratory test results demonstrate that the performance criteria are met or proceed at his/her own risk with cutoff wall construction. If the Contractor elects to proceed with cutoff wall construction and the test results indicate performance criteria are not met, the Contractor shall remix any completed length of cutoff wall until the performance criteria are met. Any required remedial remixing necessary to meet the performance criteria shall be performed by the Contractor at no additional cost to the Owner. As a result of the findings of a successful test section, the OPT Cutoff Wall Implementation Plan shall be revised as necessary.

3.03 OPT METHOD EXCAVATION

A. OPT Method excavation occurs simultaneously with the SB Cutoff Wall construction. No open trenches will be present at any time.

3.04 OPT METHOD SB CUTOFF WALL CONSTRUCTION

A. The Contractor shall monitor and adjust the cutter post speed as necessary during the wall excavation and mixing process. All metering and weighing equipment shall be calibrated at the beginning of the cutoff wall installation work and again at the 50 percent project completion point. The OPT Contractor shall submit the monitoring results to the Engineer at the end of each day.

~~B. The cutter speed and advancement rates shall be as established by the Contractor during the test section and shall be adjusted as needed to achieve adequate mixing. If the cutter speed and advancement rate vary by more than 10% from the parameter established in the test section, the Engineer may require additional testing to verify acceptable results.~~

~~C.~~B. The quantity of bentonite (dry or slurry) injected shall be in accordance with the design established during the test section. The bentonite injection rate shall be constantly monitored, calculated, and controlled. For production quality control, the real-time monitoring of the bentonite injection rate shall be performed. The injection rate shall meet the minimum rate established by the test section.

~~D.~~C. The Contractor may request to modify the established test section and injection ratio. All modifications are subject to review by the Engineer, and the Engineer may request additional quality control testing to verify acceptable results.

~~E.~~D. Cutoff wall elements shall be excavated maintaining chain rotation and excavator advancement speed to ensure a continuous, thoroughly mixed cutoff wall. At each new shift or for work stoppage greater than 12 hours, the completed cutoff wall trench shall be reworked and excavated at a distance of 5 feet at all depths. When trench excavation overlaps into previously completed cutoff wall, the excavation shall extend a minimum of 5 feet into the previously completed OPT cutoff wall at all depths. The Contractor will continuously monitor and report chain rotation speed as well as excavation advancement rate.

~~F.~~E. After completion of an OPT work segment (shift, day, etc.), maintain the OPT mix to within 1 foot of the ground surface. After initial setting of the OPT mix, remove any free water, all sloughed trench sidewall material, and disturbed mix material from the top of the cutoff wall, and add fresh OPT mix to the top of the cutoff wall. Repair any depression that develops within the completed cutoff wall

area, with additional OPT mix material. Place a temporary plastic sheeting cover over the top of the cutoff wall to prevent desiccation after trench is topped off.

~~G.~~F. Temporary Cap

1. A temporary cap shall be placed within 48 hours of the SB backfill reaching the working surface over each 100-foot reach along the trench. The temporary cap shall be constructed using embankment fill material and placed without compaction effort. The temporary cap shall be removed no sooner than 28 calendar days after placement, except that a shorter time may be allowed by the Engineer based upon monitoring of the actual cutoff wall settlement. The temporary cap shall be 2 feet thick and extend at least 2 feet laterally from each edge of the completed trench. If any depression develops within the completed SB slurry cutoff wall, it shall be repaired by placing additional material. This material shall be SB backfill if the depression is observed during cutoff wall construction and embankment fill material if the depression is observed after placement of the temporary cap. Heavy construction equipment and machinery shall only be driven over the constructed SB cutoff wall at approved heavy equipment crossing points that are bridged to support the equipment weights. Contractor will avoid heavy equipment loading adjacent to or on the temporary cap until approved by the Engineer based on the settlement plate monitoring.

~~H.~~G. Removal of Temporary Cap

1. The temporary cap shall be removed and a permanent cap installed before bottom liner installation. The permanent soil cap placed over completed slurry cutoff walls shall be compacted general fill. A single layer of BX-1100 (or equivalent) geogrid shall be placed over the wall and at the base of the compacted fill. The geogrid shall extend at least 30 inches out from the slurry wall trench edges on either side and be covered entirely with one 12-inch lift of fill compacted to 95% of the Modified Proctor Maximum Dry Density. Movement of construction equipment and machinery over the slurry trench is only allowed at approved heavy equipment crossing points.

~~I.~~H. Cutoff Wall Protection

1. After placement of the SB slurry cutoff wall, the Contractor shall take all necessary actions to protect the backfilled cutoff wall from disturbance. No construction activity on top of the cutoff wall will be permitted until the settlement monitoring period is completed. Heavy construction equipment and machinery shall only be driven over the cutoff wall at

approved equipment crossing points which are bridged with steel plates and additional cover material so as not to impose any significant equipment load on the cutoff wall.

~~J.~~I. Cleanup

1. The Contractor shall continually clean up all slurry waste, debris, and leftover materials resulting from the cutoff wall construction process. After completion of the Work, the site shall be cleared of all debris which may have accumulated in the execution of the work. Spoils generated by the cutoff wall construction that do not meet the requirements for use in the fill areas shall be disposed of within the area designated by the Owner.

3.05 TESTING

A. OPT Method Material Testing

1. The Contractor shall test the SB mixture following the construction of the OPT SB Cutoff Wall Test Section. The results from these tests will determine the bentonite and water quantities applied to the SB Cutoff Wall construction. Testing requirements within the Test Section are the same as within the SB Cutoff Wall.
2. The Contractor shall take at least two bulk samples of the SB cutoff wall mix material from the cutoff wall trench for every work shift and at least every 200 feet along the cutoff wall alignment. This material will be field tested for slump, density, and gradation. The Contractor, in coordination with the QA Monitor, shall also collect enough material for 4 lab tests from every 200 feet (or a minimum of one set per shift for less than 200 feet production), and shall be stored and handled in accordance with ASTM D4832. Two samples will be kept by the Contractor and two by the QA Monitor. One sample representing each of the batches collected per shift or 200 feet (whichever is more frequent) will be tested by the Contractor's QC laboratory for hydraulic conductivity. QA permeability tests will be performed at half the frequency of QC tests; roughly one test for every 400 feet of constructed wall. The remaining samples will be stored for possible tests in the future.
3. Permeability tests shall be conducted on specimens molded at the placement moisture content to the in-situ density using method ASTM D5084. The sample shall be back-pressured and tested at a hydraulic gradient between 5 and 10 psi. The maximum effective confining stress should be less than 10 psi.

B. Field Quality Control

1. The Contractor shall perform material testing to ensure the final materials conform to these specifications, using the same test methods used by the Engineer.
2. Material testing may also be performed by the Engineer. Where materials tested by the Engineer are in nonconformance with the specifications, the Contractor shall execute appropriate actions to bring the materials into conformance and then perform further testing of the materials.
3. The Engineer will perform final acceptance testing of the materials. If the materials do not meet the specification requirements at final acceptance testing, the materials shall be rejected and the Contractor shall remove the materials from the work site and replace the materials at no additional cost to the Department. The testing procedure described above will be repeated.
4. The Contractor is responsible for determining the depth of the trench excavation and the final depth of the SB cutoff wall. The depths shall be recorded at 10-foot intervals along the alignment.

END OF SECTION