PHASE III REPORT PERMIT DRAWINGS FOR CHESAPEAKE TERRACE RUBBLE LANDFILL ANNE ARUNDEL COUNTY, MARYLAND REVISED JANUARY 14, 2022

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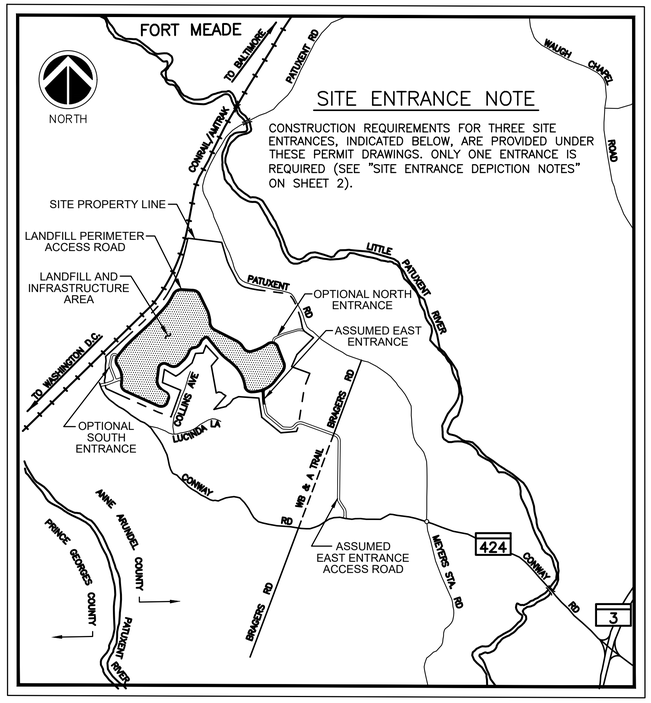
* SOIL AND EROSION CONTROL PLAN SPECIFIC DRAWINGS



LOCATION MAP

SCALE: 1"= 2,000'

SITE ANALYSIS:

TOTAL SITE AREA = 480.0 ACRES
TOTAL DISTURBED AREA = 193.2 ACRES
TOTAL VOLUME – CUT = 2,664,000 CY
TOTAL VOLUME – FILL = 2,466,000 CY
EXCESS VOLUME (TO BE REMOVED) = 198,000 CY
SITE IS 93% BALANCED

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER PAUL G. STEYMAN No. 15851

REVISION:	DATE:
REVISED TO ADDRESS MDE COMMENTS ON PHASE 3	9/03/2021
REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS	11/09/2021
FINAL ISSUED TO MDE	1/14/2022

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

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a Montrose Environmental Group company
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INDEX DRAWING

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

INDEX

NOTES:

1. THIS PROJECT INCLUDES FOUR (4) PONDS FOR STORMWATER MANAGEMENT (IDENTIFIED AS BASIN No1 THROUGH BASIN No4). THREE OF THE BASINS (BASIN No1 THROUGH BASIN No3) ARE DESIGNED TO FUNCTION AS SEDIMENT PONDS DURING THE ACTIVE LIFE OF THE FACILITY.
2. NOTIFY MARYLAND DEPARTMENT OF ENVIRONMENT AT LEAST 48 HOURS BEFORE COMMENCEMENT OF WORK. WORK MAY NOT COMMENCE OF EACH PHASE.
3. SEQUENCE OF CONSTRUCTION IS PROVIDED ON DRAWINGS ES–2. INITIAL CONSTRUCTION IS EXPECTED TO REQUIRE 21.9 MONTHS. LANDFILL OPERATION AND SEQUENTIAL CONSTRUCTION IS EXPECTED TO OCCUR OVER A 12 YEAR PERIOD. FINAL CAPPING AND SITE STABILIZATION AFTER COMPLETION OF WASTE DISPOSAL IS EXPECTED TO REQUIRE 7.3 MONTHS.
4. EROSION CONTROL MONITORING DEVICE (IRON STAKE) WILL BE INSTALLED AT LOCATIONS SPECIFIED BY AASCD.
5. AFTER INSTALLATION OF SEDIMENT CONTROLS, CONTACT INSPECTOR FOR APPROVAL.
6. REMOVAL OF SEDIMENT CONTROL (AND ACCUMULATED SEDIMENT) MAY BE PERFORMED WITH INSPECTOR'S APPROVAL AFTER SITE IS 95% STABILIZED.
7. THE SURVEY WAS PERFORMED BY JOHNSON, MIRMIRAN & THOMPSON (JMT) (HUNT VALLEY, MD) (JMT #B–0568–001) MARYLAND STATE PLAN COORDINATE SYSTEM NAD 83 (2011), ZONE 1900 (GEOID 12A).
8. EXCAVATION SPOILS SHALL BE PLACED A MINIMUM OF 20 FEET FROM BASINS.
9. INSPECTOR SHALL INDICATE ACCEPTANCE OF BASIN CONSTRUCTION AND VERITY THAT THE NEXT PHASE OF CONSTRUCTION MAY BEGIN.

CONSULTANT'S CERTIFICATION

The Developer's plan to control silt and erosion is adequate to contain the silt and erosion on the property covered by the plan. I certify that this plan of erosion and sediment control represents a practical and workable plan based on my personal knowledge of this site and was prepared in accordance with the requirements of the AASCD Plan Submittal Guidelines and the current Maryland Standards and Specifications for Soil Erosion and Sediment Control. I have reviewed this erosion and sediment control plan with the [illegible] Engineer.

MD P.E. License # 21681

MD Land Surveyor License # NA

MD Landscape Architect # NA

Name Paul Stratman

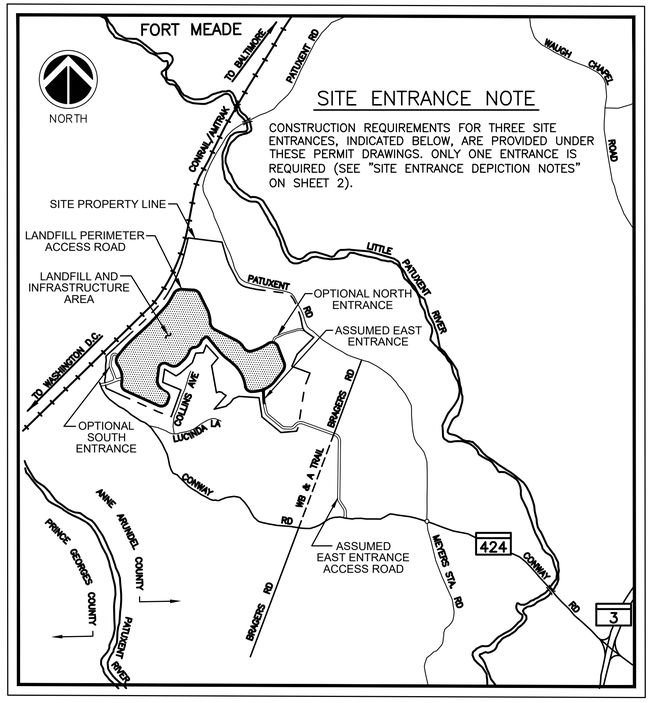
Firm Name Advanced Geo Services Corp

Address 1055 Andrew Dr. Suite A

City West Chester State PA Zip Code 19380

STATE OF MARYLAND PAUL STRATMAN 21681 PROFESSIONAL ENGINEER

10/1/2021
Date



LOCATION MAP

SCALE: 1"= 2,000'

STANDARD RESPONSIBILITY NOTES

1. I (We) certify that:
   a. All development and construction will be done in accordance with this sediment and erosion control plan, and further, authorize the right of entry for periodic on-site evaluation by the Anne Arundel Soil Conservation District (AASCD) Board of Supervisors or their authorized agents.
   b. Any responsible personnel involved in the construction project will have a certificate of attendance from the Maryland Department of the Environment's approved training program for the control of sediment and erosion before beginning the project.

      Responsible personnel on site: _____

   c. If applicable, the appropriate enclosure will be constructed and maintained on sediment basin(s) included in this plan. Such structure(s) will be in compliance with the Anne Arundel County Code.
2. The developer is responsible for the acquisition of all easements, right, and/or rights-of-way that may be required for the sediment and erosion control practices, storm water management practices and the discharge of storm water onto or across adjacent or downstream properties included in the plan.
3. For initial soil disturbance or re-disturbance, permanent and/or temporary stabilization per the AASCD Vegetative Establishment shall be completed within three calendar days for the surface of all controls, dikes, swales, ditches, perimeter slopes and all slopes greater than 3 horizontal to 1 vertical (3:1); and seven days for all other disturbed or graded areas on the project site.
4. The grading and sediment control approval on this plan extends only to those areas within the limits of disturbance.
5. The approval of this plan for sediment and erosion control does not relieve the developer/consultant from complying with Federal, State or County requirements pertaining to environmental issues.
6. The developer must request that the sediment and erosion control inspector approve work completed in accordance with the approved erosion and sediment control plan, the grading or building permit, and the ordinance.
7. All material shall be taken to a site with an approved sediment and erosion control plan.
8. First phase inspection and approval of the sediment and erosion control inspector shall be required upon completion of the installation of erosion and sediment controls prior to proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until the initial approval by the sediment and erosion control inspector is given. Inspection and Permits may also require that an inspection and certification of the installation of sediment control also be performed by a design professional prior to construction commencing.
9. Approval from the inspector must be requested on final stabilization of all sites prior to removal of sediment and erosion controls.
10. Existing topography must be field verified by responsible personnel to the satisfaction of the sediment control inspector prior to commencing work.

Signature of Developer/Owner _____ Date 10-4-2021

Print: Name: Stephen N. Fleischman
Title: Vice President
Affiliation: National Waste Managers, Inc.
Address: 2900 Linden Lane, #200, Silver Spring, MD 20910
Telephone Number: (301) 495-1760
Email Address: sfleischman@thelincompanies.com

GENERAL INFORMATION RELATED TO SEQUENCE OF CONSTRUCTION

1. THE PROPOSED PROJECT INCLUDES THE CONSTRUCTION OPERATION OF A RUBBLE LANDFILL.
2. THE PROPOSED LANDFILL IS REGULATED BY MARYLAND DEPARTMENT OF THE ENVIRONMENT.
3. THE PROJECT WILL SPAN A PERIOD OF APPROXIMATELY 15 YEARS. THIS INCLUDES THE PERIOD FROM START OF INITIAL CONSTRUCTION, THROUGH LANDFILL OPERATIONS (RECEIPT AND PLACEMENT OF WASTE MATERIAL) TO FINAL CLOSURE AND CAPPING.
4. THE MDE ALSO REGULATES POST–CLOSURE CARE AND MAINTENANCE OF THE SITE THAT INCLUDES ROUTINE MONITORING, INSPECTIONS, REPORTING AND REPAIRS.
5. THE TIME PERIOD THAT THE LANDFILL CAN ACTUALLY RECEIVE AND DISPOSE OF WASTE IS ESTABLISHED AS 12 YEARS UNDER A SPECIAL EXCEPTION BY ANNE ARUNDEL COUNTY.
6. FROM A CONSTRUCTION AND OPERATION PERSPECTIVE THE SITE CAN BE CONSIDERED AS A MAIN ENTRANCE, EAST DISPOSAL AREA AND WEST DISPOSAL AREA. BEFORE THE SITE CAN START RECEIVING WASTE AN ENTRANCE ROAD AND THE EAST DISPOSAL AREA MUST BE CONSTRUCTED.
7. THE PROPOSED DESIGN SHOWS 3 ENTRANCES. THE PLANNED ENTRANCE WILL BE THE "EAST ENTRANCE" FROM CONWAY ROAD AS SHOWN ON DRAWING 4. ALTERNATE ENTRANCES REFERRED TO AS THE OPTIONAL NORTH AND OPTIONAL SOUTH ENTRANCES (SEE DRAWINGS 89 AND 90) ARE ONLY PROVIDED IN THE EVENT THAT THE OWNER IS UNABLE TO SECURE ACCESS FOR THE EAST ENTRANCE. USE OF EITHER THE NORTH OR SOUTH ENTRANCES WILL REQUIRE A CHANGE FROM A COUNTY CONDITION REQUIRING ACCESS FROM CONWAY ROAD.
8. THE ANTICIPATED CONSTRUCTION STAGES ARE PRESENTED IN TABULAR FORM ON DRAWING 58. EACH CONSTRUCTION STAGE HAS BEEN ASSIGNED A LETTER DESIGNATION (I.E. A, B C, ETC.). IN SOME INSTANCES, THE STAGE HAS BEEN SUBDIVIDED TO LIMIT THE AREA OF DISTURBANCE.
9. CONSTRUCTION ACTIVITIES THAT ARE ASSOCIATED WITH THE SITE INFRASTRUCTURE HAVE BEEN ASSIGNED PHASE DESIGNATIONS, IN ADDITION TO THEIR STAGE DESIGNATIONS, AS PRESENTED ON DRAWING 51. AS SHOWN, CONSTRUCTION OF THE ENTRANCE, CONSTRUCTION OF THE STORMWATER MANAGEMENT AND DRAINAGE FEATURES AROUND THE EAST DISPOSAL AREA, AND THE PERIMETER LANDFILL ACCESS ROAD AROUND THE EAST DISPOSAL AREA ARE CONSTRUCTED DURING PHASES 1, 2 AND 3. PHASES 1, 2 AND 3 ARE ALL PART OF STAGE A. CONSTRUCTION OF THE STORMWATER MANAGEMENT, DRAINAGE FEATURES AND PERIMETER ACCESS ROAD AROUND THE WEST DISPOSAL AREA ARE CONSTRUCTED DURING PHASES 4, 5 AND 6.
10. THE TABLE ON DRAWING 58 INCLUDES THE DESIGNATED STAGE/PHASE OF CONSTRUCTION, THE ESTIMATED DURATION (IN MONTHS) TOTAL MONTHS FROM START OF THE PROJECT, A DESCRIPTION OF THE ACTIVE CONSTRUCTION ACTIVITY, MAXIMUM TOTAL AREA OF DISTURBANCE WITHIN EACH STAGE/PHASE, AND CRITICAL INFORMATION REGARDING MATERIAL VOLUMES (INCLUDING CUT/FILL AND A TABULATION OF STOCKPILED MATERIAL VOLUMES).
11. DURING THE OPERATING LIFE OF THE LANDFILL ANY PRECIPITATION FALLING ON THE WASTE IS COLLECTED AND MANAGED AS LEACHATE. IT DOES NOT ENTER THE STORMWATER MANAGEMENT SYSTEM, THEREFORE; THE AREA OF THE CELLS WHERE ACTIVE WASTE PLACEMENT IS OCCURRING IS NOT INCLUDED IN THE TOTAL AREA OF DISTURBANCE.
12. AS PRESENTED ON DRAWING 58 THE TOTAL AREA OF DISTURBANCE IN ANY PARTICULAR STAGE/PHASE IS LESS THAN 20 ACRES, EXCEPT DURING STAGE J1/PHASE 6 (20.1 ACRES), STAGE K (28.3 ACRES) AND STAGE M1 (20.6 ACRES). THE STAGE K AND STAGE M1 AREAS OF DISTURBANCE ARE DRIVEN BY THE AREA OF CAPPING (17.9 ACRES AND 18.1 ACRES, RESPECTIVELY) THAT ARE ASSUMED TO BE OCCURRING AT THOSE TIMES.
13. THE TOTAL ANTICIPATED TIME FOR CONSTRUCTION IS 171.4 MONTHS (14.3 YEARS).
14. OVERALL THE PROJECT WILL GENERATE EXCESS MATERIAL (ESTIMATED TO BE 197,877 CUBIC YARDS).
15. THE GENERALIZED SEQUENCE OF CONSTRUCTION IS PROVIDED IN SECTION II(E) ON DRAWING 63

STATE OF MARYLAND PAUL STRATMAN 21681 PROFESSIONAL ENGINEER
10/1/21

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PATUXENT ROAD, ODENTON
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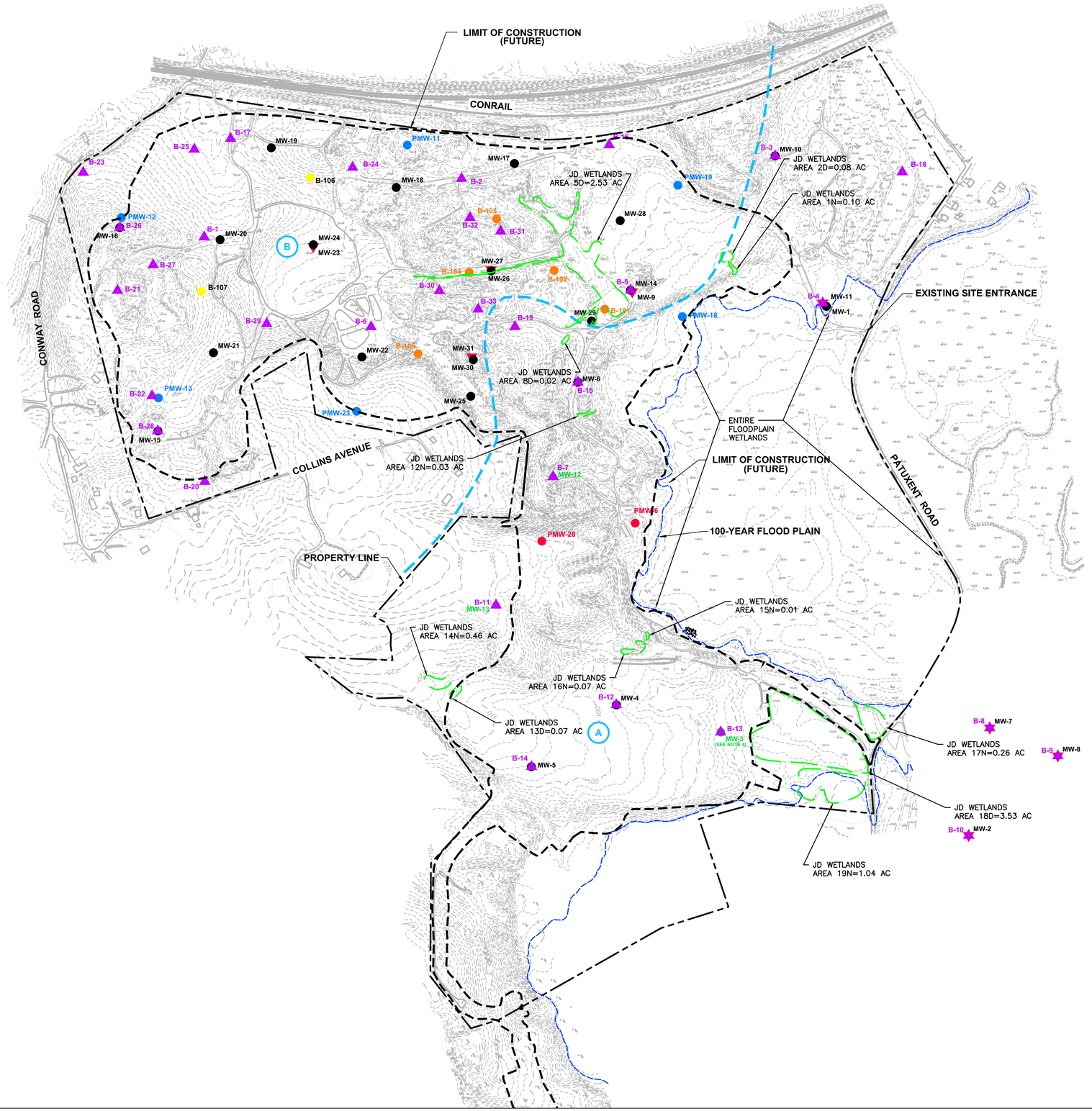
SEDIMENT AND EROSION CONTROL PLAN
NOTES AND INFORMATION

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 1



LEGEND

- PROPERTY LINE
- LIMIT OF DISTURBANCE (FUTURE)
- 100-YEAR FLOODPLAIN (SEE NOTE 5)
- EXISTING MONITORING WELL (SEE REFERENCE 2)
- FORMER MONITORING WELLS DAMAGED BY VANDALS (NOT USEABLE) (SEE REFERENCE 2)
- HISTORICAL BOREHOLES (SEE REFERENCE 3)
- EXISTING GROUNDWATER MONITORING WELLS THAT WERE UNABLE TO BE LOCATED (SEE NOTE 5)
- PERMANENT MONITORING WELL INSTALLED IN 2013 (SCREENED ABOVE CLAY CONFINING UNIT) (SEE REFERENCE 2)
- PERMANENT MONITORING WELL INSTALLED IN 2013 (SCREENED BELOW CLAY CONFINING UNIT) (SEE REFERENCE 2)
- BORING LOCATIONS ALONG TA/B/TB TRANSITION (B-101 TO B-105) COMPLETED APRIL/MAY 2013
- ADDITIONAL BORINGS LOCATIONS REQUESTED BY MDE (B-106 AND B-107) COMPLETED APRIL/MAY 2013
- HYDROGEOLOGIC AREA DIVIDE (SEE REFERENCE 2)
- (A) HYDROGEOLOGIC AREA (SEE REFERENCE 2)
- JURISDICTIONAL DETERMINATION (JD) WETLANDS BOUNDARY (APPROX.) WITH IDENTIFICATION AND AREA (SEE REFERENCE 6)

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

2.) MONITORING WELL LOCATIONS DIGITIZED FROM HARD COPY OF DRAWING ENTITLED "PERMANENT GROUNDWATER MONITORING WELL PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED MAY 2008.

3.) ADDITIONAL HISTORICAL BORING LOCATIONS FROM HARD COPY OF DRAWING ENTITLED "PLATE 2, CHESAPEAKE RUBBLE LANDFILL HYDROGEOLOGIC BASE MAP," DATED NOVEMBER 2003, CREATED BY MARK SCHULTZ ASSOCIATES, ANNAPOLIS, MARYLAND.

4.) HYDROGEOLOGIC AREAS & BOUNDARIES TAKEN FROM "PHASE II PERMIT APPLICATION", PREPARED BY ADVANCED GEOSERVICES CORP DATED JUNE 2020.

5.) THE POST-2012 100-YEAR FLOOD PLAIN LIMITS SHOWN ARE BASED ON FEMA NATIONAL FLOOD INSURANCE PROGRAM MAP NUMBER 24003C0136E, DATED 10/16/2012, AND PROVIDED AS PLATE 3 OF THE "PHASE II PERMIT APPLICATION", PREPARED BY ADVANCED GEOSERVICES CORP DATED JUNE 2020.

6.) JURISDICTIONAL WETLAND BOUNDARIES OBTAINED FROM FIGURES ATTACHED TO THE ARMY CORPS OF ENGINEERS PUBLIC NOTICE DATED NOVEMBER 22, 1991, AND AS SUBSEQUENTLY AMENDED IN WRITING BY MCCARTHY AND ASSOCIATES ON APRIL 2, 1997

NOTES

1.) HYDROLOGIC AREAS AND THEIR MAPPING IS BASED ON FORMATIONS MAPPED IN FIELD BOREHOLES, SURFACE OBSERVATION, HISTORICAL AERIAL PHOTOGRAPHS, AND REGIONAL GEOLOGIC MAPS AS DESCRIBED IN THE PHASE III APPLICATION.

2.) THE CONRAIL TRACKS ARE ALSO SHARED WITH AMTRAK FOR HIGH-SPEED COMMUTER TRAINS BETWEEN BOSTON, MASSACHUSETTS AND WASHINGTON, D.C.

3.) THE PROPERTY WAS PREVIOUSLY USED FOR SAND AND GRAVEL MINING ACTIVITIES. PORTIONS OF THE SITE CURRENTLY HAVE NO VEGETATION AND ARE BARREN.

4.) WATER LEVELS IN WELLS MW-2, MW-7, MW-8, MW-9, MW-11, MW-23, MW-26, AND MW-31 WERE NOT OBTAINED DURING FIELD ACTIVITIES BY GOLDER ASSOCIATES IN 2014 AND ADVANCED GEOSERVICES IN 2019 AS THE WELLS COULD NOT BE LOCATED.

5.) THE BLUE 100-YEAR FLOODPLAIN LINE REPRESENTS THE BOUNDARY IMPORTED FROM REFERENCE 5 AND ADJUSTED BASED ON THE FEMA PROJECTED ELEVATIONS AND THE ACTUAL ON-SITE TOPOGRAPHIC INFORMATION. THE BLUE FLOODPLAIN LINE REFLECTS THIS ADJUSTED LINE.

GRAPHIC SCALE

300 0 150 300 600 1200

(IN FEET)
1 inch =300 ft.

STATE OF MARYLAND — KHURRAM FAYYAZ — PROFESSIONAL ENGINEER — No. 52371

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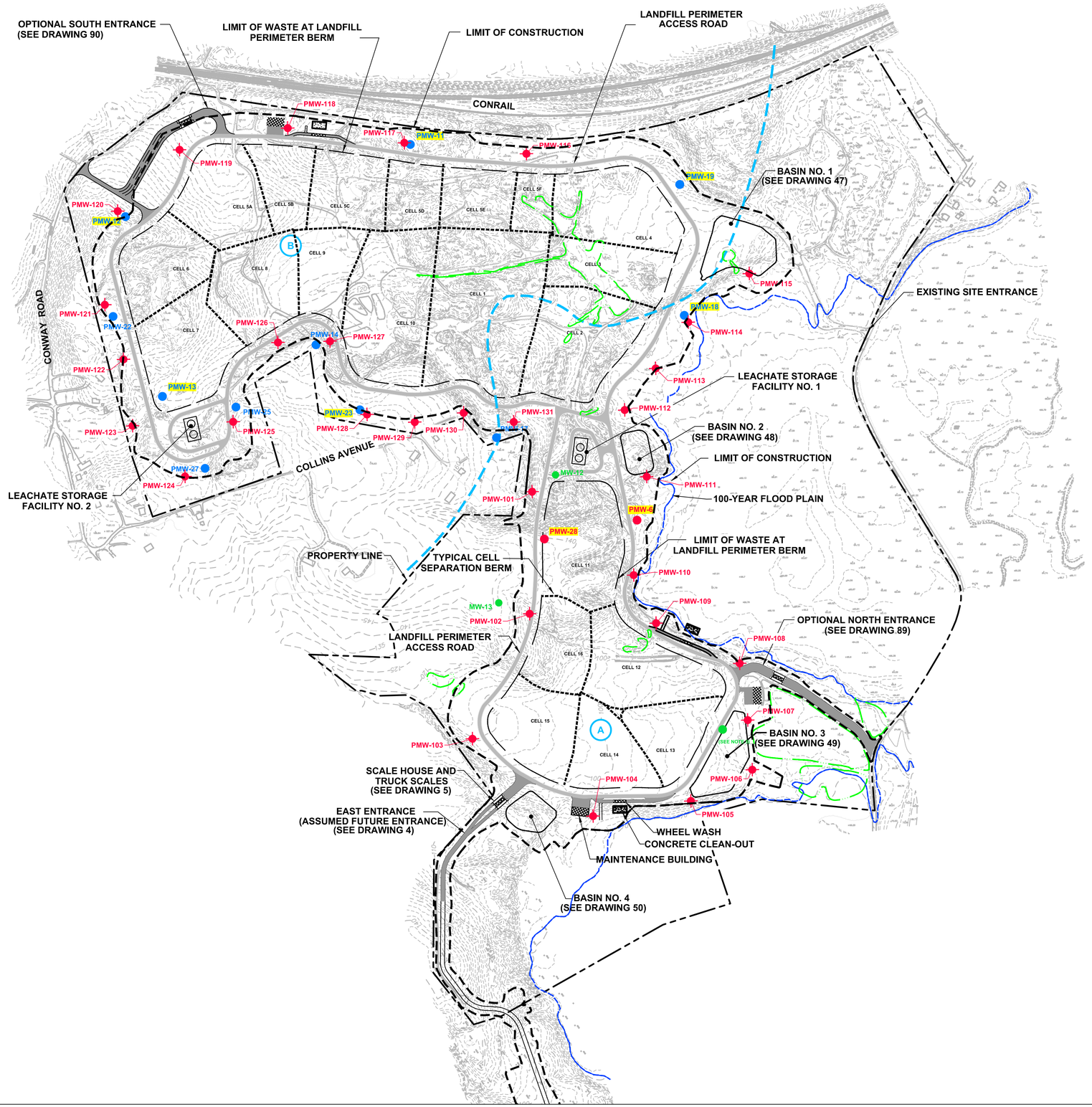
EXISTING CONDITIONS

PROJECT MANAGER: PGS
CHECKED BY: PGS
DRAWN BY: KHF
SCALE: AS NOTED
PROJECT NUMBER: 2018 - 3854
DATE: 09/03/2021

DRAWING 2



LEGEND

- PROPERTY LINE
- LANDFILL PERIMETER ACCESS ROAD (FUTURE)
- SITE ENTRANCE (FUTURE)
- LANDFILL LIMITS (FUTURE)
- LANDFILL CELL SEPARATION BERM (FUTURE)
- LIMIT OF DISTURBANCE (FUTURE)
- 100–YEAR FLOODPLAIN (SEE NOTE 5)
- MW-12 — FORMER MONITORING WELLS DAMAGED BY VANDALS (NOT USEABLE) (SEE REFERENCE 2) (SEE NOTE 5)
- PMW-6 — EXISTING PERMANENT MONITORING WELL (SCREENED ABOVE MCU) (INSTALLED IN 2013)
- PMW-112 — PROPOSED PERMANENT MONITORING WELL (SCREENED ABOVE MCU)
- PMW-19 — EXISTING PERMANENT MONITORING WELL (SCREENED BELOW MCU) (INSTALLED IN 2013)
- PMW-28 — EXISTING MONITORING WELL (SCREENED ABOVE CLAY CONFINING UNIT) (SEE REFERENCE 2)
- PMW-23 — EXISTING MONITORING WELL (SCREENED BELOW CLAY CONFINING UNIT) (SEE REFERENCE 2)
- HYDROGEOLOGIC AREA DIVIDE (SEE REFERENCE 4)
- A — HYDROGEOLOGIC AREA (SEE REFERENCE 4)
- JURISDICTIONAL DETERMINATION (JD) WETLANDS BOUNDARY (APPROX.) WITH IDENTIFICATION AND AREA (SEE REFERENCE 6)

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

2.) MONITORING WELL LOCATIONS DIGITIZED FROM HARD COPY OF DRAWING ENTITLED "PERMANENT GROUNDWATER MONITORING WELL PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED MAY 2008.

3.) ADDITIONAL HISTORICAL BORING LOCATIONS FROM HARD COPY OF DRAWING ENTITLED "PLATE 2, CHESAPEAKE RUBBLE LANDFILL HYDROGEOLOGIC BASE MAP," DATED NOVEMBER 2003, CREATED BY MARK SCHULTZ ASSOCIATES, ANNAPOLIS, MARYLAND.

4.) HYDROGEOLOGIC AREAS & BOUNDARIES TAKEN FROM "PHASE II PERMIT APPLICATION", PREPARED BY ADVANCED GEOSERVICES CORP DATED JUNE 2020.

5.) THE POST–2012 100–YEAR FLOOD PLAIN LIMITS SHOWN ARE BASED ON FEMA NATIONAL FLOOD INSURANCE PROGRAM MAP NUMBER 24003C0136E, DATED 10/16/2012, AND PROVIDED AS PLATE 3 OF THE "PHASE II PERMIT APPLICATION", PREPARED BY ADVANCED GEOSERVICES CORP DATED JUNE 2020.

6.) JURISDICTIONAL WETLAND BOUNDARIES OBTAINED FROM FIGURES ATTACHED TO THE ARMY CORPS OF ENGINEERS PUBLIC NOTICE DATED NOVEMBER 22, 1991, AND AS SUBSEQUENTLY AMENDED IN WRITING BY MCCARTHY AND ASSOCIATES ON APRIL 2, 1997

NOTES

1.) HYDROLOGIC AREAS AND THEIR MAPPING IS BASED ON FORMATIONS MAPPED IN FIELD BOREHOLES, SURFACE OBSERVATION, HISTORICAL AERIAL PHOTOGRAPHS, AND REGIONAL GEOLOGIC MAPS AS DESCRIBED IN THE PHASE III APPLICATION.

2.) THE CONRAIL TRACKS ARE ALSO SHARED WITH AMTRAK FOR HIGH–SPEED COMMUTER TRAINS BETWEEN BOSTON, MASSACHUSETTS AND WASHINGTON, D.C.

3.) THE PROPERTY WAS PREVIOUSLY USED FOR SAND AND GRAVEL MINING ACTIVITIES. PORTIONS OF THE SITE CURRENTLY HAVE NO VEGETATION AND ARE BARREN.

4.) WATER LEVELS IN WELLS MW–2, MW–7, MW–8, MW–9, MW–11, MW–23, MW–26, AND MW–31 WERE NOT OBTAINED DURING FIELD ACTIVITIES BY GOLDER ASSOCIATES IN 2014 AND ADVANCED GEOSERVICES IN 2019 AS THE WELLS COULD NOT BE LOCATED.

5.) THE BLUE 100–YEAR FLOODPLAIN LINE REPRESENTS THE BOUNDARY IMPORTED FROM REFERENCE 5 AND ADJUSTED BASED ON THE FEMA PROJECTED ELEVATIONS AND THE ACTUAL ON–SITE TOPOGRAPHIC INFORMATION. THE BLUE FLOODPLAIN LINE REFLECTS THIS ADJUSTED LINE.

GRAPHIC SCALE

300 0 150 300 600 1200

(IN FEET)
1 inch =300 ft.

STATE OF MARYLAND — KEVIN R. STRATMAN — No. 15371 — PROFESSIONAL ENGINEER

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

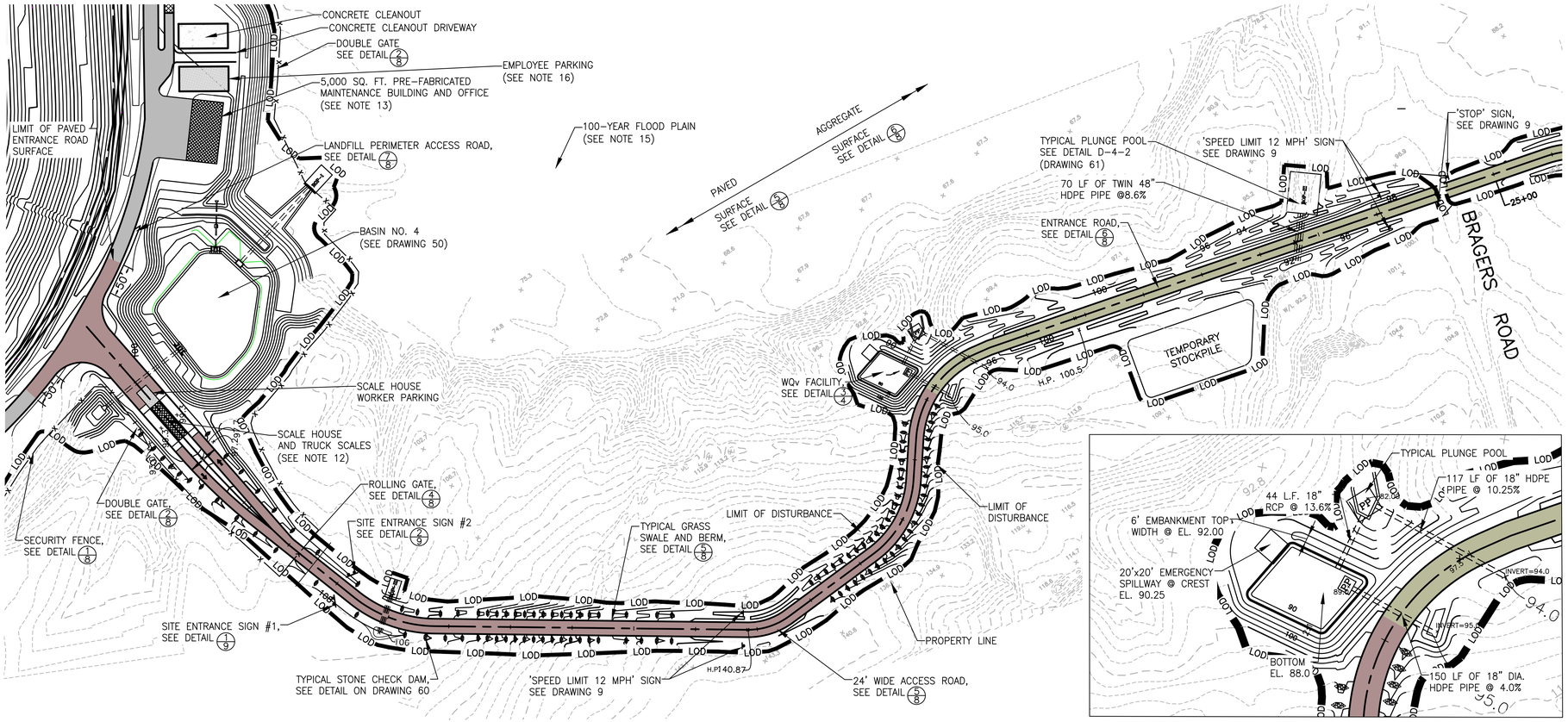
NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
1978 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.9226 www.advancedgeoservices.com

PROPOSED CONDITIONS

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 3

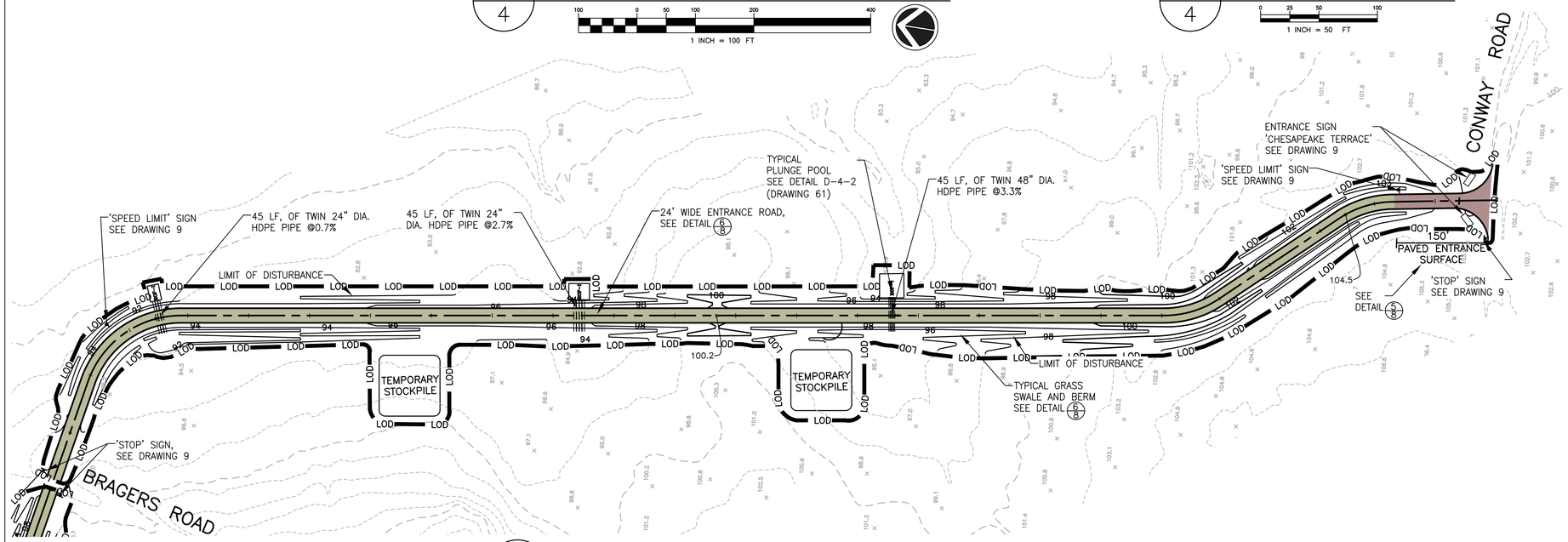


1/4 BRAGERS ROAD TO LANDFILL PERIMETER ACCESS ROAD

1 INCH = 100 FT

3/4 WQv FACILITY PLAN

1 INCH = 50 FT



2/4 CONWAY ROAD TO BRAGERS ROAD

1 INCH = 100 FT

LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN (SEE REFERENCE 3 & NOTE 15)
- 2 FT INCREMENT CONTOUR
- 5 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- LOD — LIMIT OF DISTURBANCE
- CHECK DAM, SEE DETAIL 97/61
- PIPE
- PP — PLUNGE POOL, SEE DRAWING 61
- ROP-_ — ROCK OUTLET PROTECTION-TYPE I, II OR III (AS NOTED), SEE DRAWING 61
- x x — PROPOSED CHAIN LINK FENCE, SEE DRAWING 8 AND NOTE 14
- ENTRANCE ROAD, AGGREGATE SURFACE, SEE DRAWING 6/8
- ENTRANCE ROAD, PAVED SURFACE, SEE DRAWING 5/8
- LANDFILL PERIMETER ACCESS ROAD, SEE DRAWING 7/8
- SIGNS, SEE DRAWING 9

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

2.) EAST ENTRANCE ROAD ALIGNMENT, PAVING, WQ_V FACILITY AND GRASS SWALE IS FROM DIGITAL FILE (3 OF 8) TITLED "EAST SECTION ACCESS RD GRADING PLAN" PREPARED BY CENTURY ENGINEERING, INC., DATED MAY 2008.

3.) THE POST-2012 100-YEAR FLOOD PLAIN LIMITS SHOWN ARE BASED ON FEMA NATIONAL FLOOD INSURANCE PROGRAM MAP NUMBER 24003C0136E, DATED 10/16/2012.

NOTES

1.) WQ_V IS AN ABBREVIATION WHICH STANDS FOR "WATER QUALITY VOLUME." IT IS A BASIC REQUIREMENT OF THE MARYLAND STORMWATER MANAGEMENT LAW AS DOCUMENTED IN THE MARYLAND STORMWATER DESIGN MANUAL, SECTION 2.1.

2.) THE PURPOSE OF THIS PLAN IS TO SHOW GRADING REQUIRED TO INSTALL THE STORMWATER MANAGEMENT FEATURES, FUTURE EAST ENTRANCE FACILITIES, FUTURE ACCESS ROADS, AND PERIMETER ROAD AS SHOWN.

3.) SEE PROPOSED CONDITIONS ON DRAWING 3 FOR ASSUMED EAST ENTRANCE LOCATION.

4.) SEE DRAWING 5 FOR ASSUMED EAST ENTRANCE INFRASTRUCTURE AND SCALE HOUSE LAYOUT.

5.) SEE DRAWING 55 FOR EAST ENTRANCE INITIAL GRADING SEDIMENT CONTROL PLAN.

6.) SEE DRAWING 89 FOR OPTIONAL NORTH ENTRANCE PLAN.

7.) SEE DRAWING 90 FOR OPTIONAL SOUTH ENTRANCE PLAN.

8.) SEE DRAWING 50 FOR CONSTRUCTION OF BASIN NO. 4, EAST ENTRANCE FACILITIES, ACCESS ROADS AND PERIMETER CHANNEL NO. 8, IN THE AREA SHOWN HEREON.

9.) SEE DRAWING 63, "SEQUENCE AND GENERAL NOTES FOR CONSTRUCTION", FOR CELL CONSTRUCTION REQUIREMENTS.

10.) WHEEL WASH SHALL HAVE WATER STORAGE COMPARTMENT WITH PIPE DRAIN CONNECTED TO CONCRETE CLEANOUT (SEE CONCRETE CLEANOUT DETAIL ON DRAWING 60). LANDFILL OPERATOR SHALL PUMP WATER FROM CLEANOUT TO TANKER TRUCK AS NECESSARY TO MAINTAIN WATER LEVEL <18 INCHES. WATER FROM CLEANOUT MAY BE USED FOR DUST SUPPRESSION IN ACTIVE WASTE FILL AREAS OR SHALL BE TRANSFERRED TO LEACHATE TANKS. SEDIMENT SHALL BE REMOVED WHEN LEVELS REACH 12 INCHES.

11.) ENTRANCE ROAD SHALL BE PAVED FROM PROPERTY LINE TO LANDFILL PERIMETER ACCESS ROAD. SEE ASSUMED EAST ENTRANCE ACCESS ROAD PLAN, "TYPICAL SECTION FROM SITE PROPERTY LINE TO LANDFILL", ON DRAWING 8 FOR ENTRANCE ROAD PAVEMENT CROSS SECTION. SEE PLAN BELOW FOR PAVEMENT WIDTH.

12.) SCALE HOUSE IS CONFIGURED AS SINGLE-WIDE TRAILER WIDTH. TRUCK SCALES (CONFIGURED AT 70 FEET LENGTH, WITH 10 FEET LONG CONCRETE RAMPS AT EACH END) SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

13.) MAINTENANCE BUILDING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER OR ARCHITECT. BUILDING AND FINAL ACCESS AREA ARE EACH DEPICTED AT 100 FEET LENGTH BY 50 FEET WIDTH. CONFIGURATION MAY VARY, BASED ON 5,000 SQUARE FEET BUILDING DESIGN. BUILDING AND WHEEL WASH ACCESS SHALL HAVE AGGREGATE SURFACE EQUIVALENT TO LANDFILL PERIMETER ACCESS ROAD.

14.) FENCELINE IS SHOWN JUST OUTSIDE THE LIMIT OF DISTURBANCE TO BE VISIBLE, BUT SHALL BE CONSTRUCTED AT LIMIT OF DISTURBANCE.

15.) THE 100-YEAR FLOODPLAIN ELEVATION BETWEEN 71-72 FEET MSL IN THIS AREA OF THE SITE; BASED UPON MODELING BY FEMA SHOWN ON FIRM MAP NO 24003C0136E DATED OCTOBER 16, 2012, MODIFIED TO ALIGN WITH SITE TOPOGRAPHY BASED UPON DETERMINED BASE FLOOD ELEVATIONS.

16.) EMPLOYEE PARKING SHALL BE "BACK-IN" ONLY.

STATE OF MARYLAND — KEVIN D. STRAYMAN — REGISTERED PROFESSIONAL ENGINEER — No. 25371 — EXP. 10/25/22

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

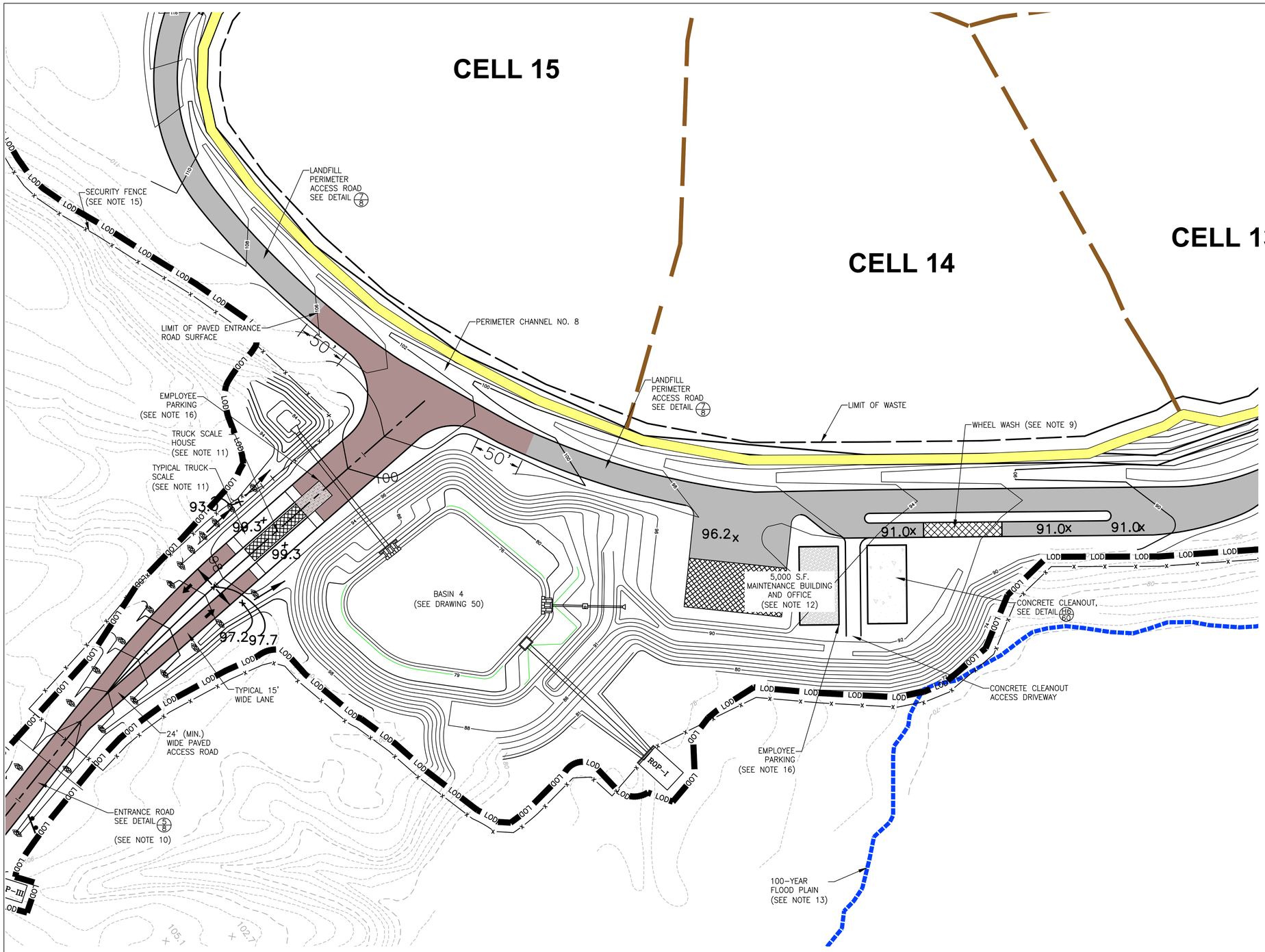
NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices — a Montrose Environmental Group company
1979 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

EAST ENTRANCE – ACCESS ROAD PLAN

PROJECT MANAGER:	PGS	SCALE: AS NOTED	
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3654
DRAWN BY:	KHF	DATE: 09/03/2021	

DRAWING 4



EAST ENTRANCE PLAN

50 0 25 50 100 200

1 INCH = 50 FT

LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN (SEE REFERENCE 3 & NOTE 13)
- 2 FT INCREMENT CONTOUR
- 5 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION LINE
- LOD — LIMIT OF DISTURBANCE
- CHECK DAM, SEE DETAIL 62/61
- PIPE
- PP — PLUNGE POOL, SEE DRAWING 61
- ROP-_ — ROCK OUTLET PROTECTION-TYPE I, II OR III (AS NOTED), SEE DRAWING 61
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 7
- ENTRANCE ROAD, PAVED SURFACE, SEE DRAWING 5/8
- LANDFILL PERIMETER ACCESS ROAD, SEE DRAWING 7/8
- SIGNS, SEE DRAWING 9
- PERIMETER BERM, SEE DETAIL 2/16

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

2.) EAST ENTRANCE ROAD ALIGNMENT, PAVING, WQ_f FACILITY BASIN NO.4, AND ASSOCIATED GRADING IS FROM DIGITAL FILE (4 OF 68) TITLED "ASSUMED SITE ACCESS EAST ENTRANCE MASS GRADING," PREPARED BY CENTURY ENGINEERING INC., DATED MAY 2018

3.) THE POST-2012 100-YEAR FLOOD PLAIN LIMITS SHOWN ARE BASED ON FEMA NATIONAL FLOOD INSURANCE PROGRAM MAP NUMBER 24003C0136E, DATED 10/16/2012, AND PROVIDED AS PLATE 3.

NOTES

1.) THE PURPOSE OF THIS PLAN IS TO SHOW GRADING REQUIRED TO INSTALL THE STORMWATER MANAGEMENT FEATURES, FUTURE EAST ENTRANCE FACILITIES, FUTURE ACCESS ROADS, AND PERIMETER ROAD AS SHOWN.

2.) SEE PROPOSED CONDITIONS ON DRAWING 2 FOR ASSUMED EAST ENTRANCE LOCATION.

3.) SEE DRAWING 4 FOR ASSUMED EAST ENTRANCE LAYOUT.

4.) SEE DRAWING 55 FOR EAST ENTRANCE INITIAL GRADING SEDIMENT CONTROL PLAN.

5.) SEE DRAWING 89 FOR OPTIONAL NORTH ENTRANCE PLAN.

6.) SEE DRAWING 90 FOR OPTIONAL SOUTH ENTRANCE PLAN.

7.) SEE DRAWING 50 FOR CONSTRUCTION OF BASIN NO. 4, EAST ENTRANCE FACILITIES, ACCESS ROADS AND PERIMETER CHANNEL NO. 8, IN THE AREA SHOWN HEREON.

8.) SEE DRAWING 63, "SEQUENCE AND GENERAL NOTES FOR CONSTRUCTION", FOR CELL CONSTRUCTION REQUIREMENTS.

9.) WHEEL WASH SHALL HAVE WATER STORAGE COMPARTMENT WITH PIPE DRAIN CONNECTED TO CONCRETE CLEANOUT (SEE CONCRETE CLEANOUT DETAIL ON DRAWING 60). LANDFILL OPERATOR SHALL PUMP WATER FROM CLEANOUT TO TANKER TRUCK AS NECESSARY TO MAINTAIN WATER LEVEL <18 INCHES. WATER FROM CLEANOUT MAY BE USED FOR DUST SUPPRESSION IN ACTIVE WASTE FILL AREAS OR SHALL BE TRANSFERRED TO LEACHATE TANKS. SEDIMENT SHALL BE REMOVED WHEN LEVEL REACH 12 INCHES.

10.) ENTRANCE ROAD SHALL BE PAVED FROM PROPERTY LINE TO LANDFILL PERIMETER ACCESS ROAD. SEE ASSUMED EAST ENTRANCE ACCESS ROAD PLAN, "TYPICAL SECTION FROM SITE PROPERTY LINE TO LANDFILL", ON DRAWING 8 FOR ENTRANCE ROAD PAVEMENT CROSS SECTION. SEE PLAN BELOW FOR PAVEMENT WIDTH.

11.) SCALE HOUSE IS CONFIGURED AS SINGLE-WIDE TRAILER WIDTH. TRUCK SCALES (CONFIGURED AT 70 FEET LENGTH, WITH 10 FEET LONG CONCRETE RAMPS AT EACH END) SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

12.) MAINTENANCE BUILDING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER OR ARCHITECT. BUILDING AND FINAL ACCESS AREA ARE EACH DEPICTED AT 100 FEET LENGTH BY 50 FEET WIDTH. CONFIGURATION MAY VARY, BASED ON 5,000 SQUARE FEET BUILDING DESIGN. BUILDING AND WHEEL WASH ACCESS SHALL HAVE AGGREGATE SURFACE EQUIVALENT TO LANDFILL PERIMETER ACCESS ROAD.

13.) THE 100-YEAR FLOODPLAIN ELEVATION BETWEEN 71-72 FEET MSL IN THIS AREA OF THE SITE; BASED UPON MODELING BY FEMA SHOWN ON FIRM MAP NO 24003C0136E DATED OCTOBER 16, 2012, MODIFIED TO ALIGN WITH SITE TOPOGRAPHY BASED UPON DETERMINED BASE FLOOD ELEVATIONS.

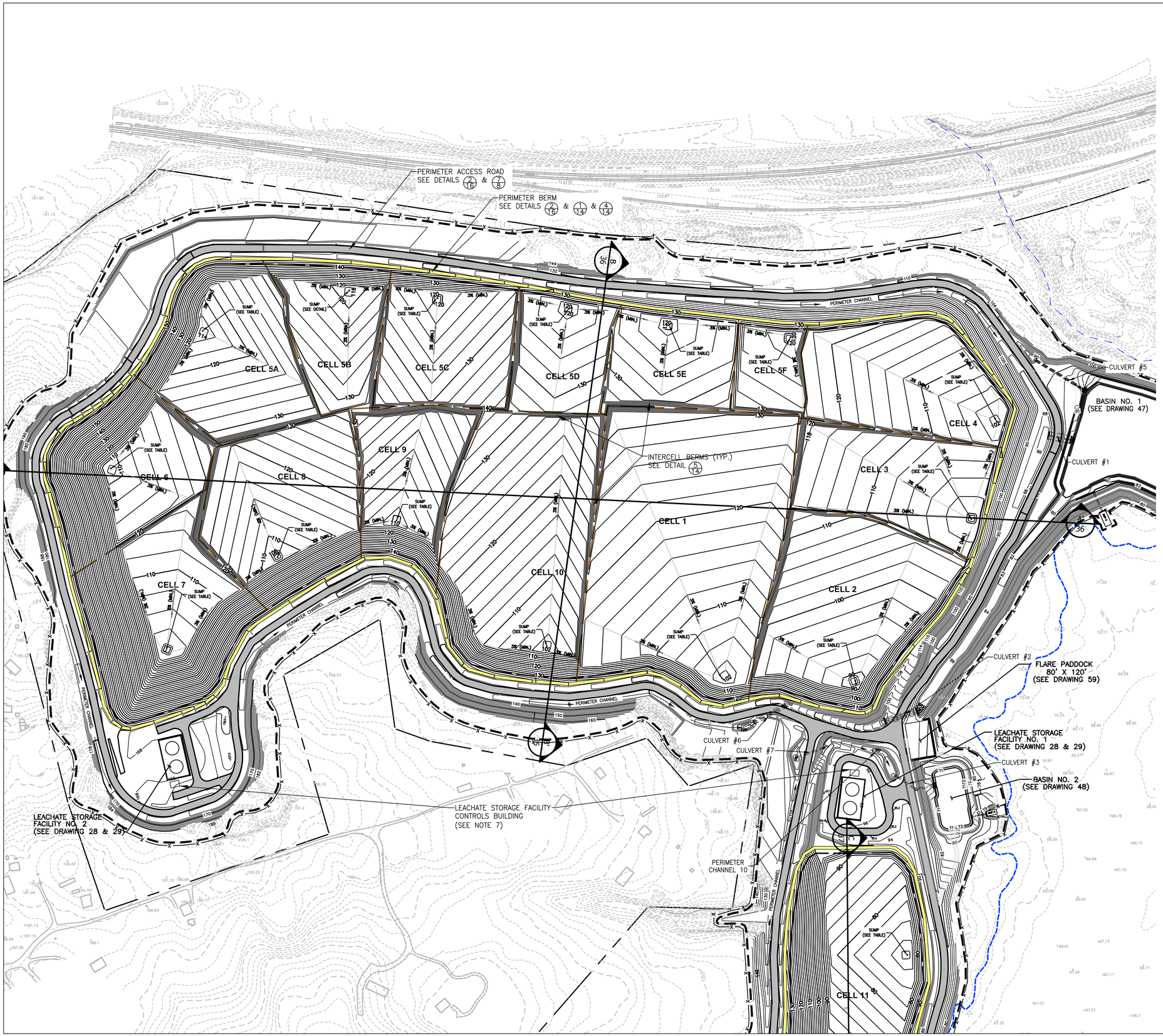
14.) THE EAST ENTRANCE IS PLANNED AS THE MAIN SITE ENTRANCE. AS WITH EVERY ITEM AT A LANDFILL, THE OPTIONAL NORTH OR SOUTH ENTRANCE ARE PRESENTED FOR CONSTRUCTION IN THE EVENT THE EAST ENTRANCE IS NOT CONSTRUCTED AND ONE OF THE OTHER ENTRANCES IS PURSUED.

15.) FENCELINE IS SHOWN JUST OUTSIDE THE LIMIT OF DISTURBANCE TO BE VISIBLE, BUT SHALL BE CONSTRUCTED AT LIMIT OF DISTURBANCE.

16.) EMPLOYEE PARKING SHALL BE "BACK-IN" ONLY.

17.) SEE DRAWINGS 10 AND 11 FOR TOP OF SUBGRADE ELEVATIONS IN THE CELLS.

STATE OF MARYLAND — MICHAEL STEVEN STRAYMAN — REGISTERED PROFESSIONAL ENGINEER — No. 19-0-0-0



LEGEND

- PROPERTY LINE
- 100–YEAR FLOODPLAIN (SEE REFERENCE 2 & NOTE 6)
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LIMIT OF DISTURBANCE
- PIPE
- PERIMETER CHANNEL FLOW DIRECTION
- PP — PLUNGE POOL, SEE DRAWING 61
- ROP–_ — ROCK OUTLET PROTECTION–TYPE I, II OR III (AS NOTED), SEE DRAWING 61
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- LANDFILL PERIMETER ACCESS ROAD, SEE DETAIL 7/8
- PERIMETER BERM, SEE DETAIL 2/16
- SIGNS, SEE DRAWING 9
- TYPICAL WETLANDS SEE REFERENCE 3

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

2.) THE POST–2012 100–YEAR FLOOD PLAIN LIMITS SHOWN ARE BASED ON FEMA NATIONAL FLOOD INSURANCE PROGRAM MAP NUMBER 24003C0136E, DATED 10/16/2012, AND PROVIDED AS PLATE 3 OF THE PHASE II REPORT.

3.) JURISDICTIONAL WETLAND BOUNDARIES OBTAINED FROM FIGURES ATTACHED TO THE ARMY CORPS OF ENGINEERS PUBLIC NOTICE DATED NOVEMBER 22, 1991, AND AS SUBSEQUENTLY AMENDED IN WRITING BY MCCARTHY AND ASSOCIATES ON APRIL 2, 1997

NOTES

1.) WHILE FEMA HAS RE–ASSESSED AND MODIFIED THE 100 YEAR FLOODPLAIN IN THE VICINITY OF THE SITE, THE REVISED 100–YEAR FLOODPLAIN BASE ELEVATIONS NEARS CELLS 2, 3 AND 4 ARE BETWEEN 72 AND 73 FEET MSL. THE PROPOSED LANDFILL PERIMETER ROAD BERM GRADES ARE PROPOSED A MINIMUM OF 5 FEET ABOVE THE NEW FEMA BASE FLOOD ELEVATIONS.

2.) THE GRADES SHOWN ON THIS DRAWING REPRESENT THE BOTTOM OF THE 24" THICK PREPARED SUBBASE LAYER. REFER TO DRAWING 14 FOR LINER SYSTEM DETAILS.

3.) MINIMUM SLOPE AT BOTTOM OF CELL IS 3%. INTERIOR SIDESLOPES ARE 33% MAX.

4.) FOR STORMWATER MANAGEMENT FEATURES, REFER TO DRAWINGS 38 THROUGH 44.

5.) THE FENCELINE IS SHOWN JUST OUTSIDE THE LIMIT OF DISTURBANCE, SO THAT IT IS VISIBLE. IT IS INTENDED TO BE BUILT AT THE LIMIT OF DISTURBANCE.

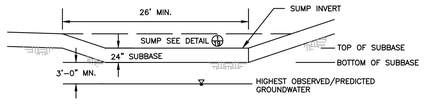
6.) THE 100–YEAR FLOODPLAIN ELEVATION BETWEEN 71–72 FEET MSL IN THIS AREA OF THE SITE; BASED UPON MODELING BY FEMA SHOWN ON FIRM MAP NO 24003C0136E DATED OCTOBER 16, 2012, MODIFIED TO ALIGN WITH SITE TOPOGRAPHY BASED UPON DETERMINED BASE FLOOD ELEVATIONS.

7.) THE LEACHATE STORAGE FACILITY CONTROL BUILDING SHALL HOUSE MASTER CONTROL PANELS SHOWN ON DRAWING 27.

8.) THE CELL FLOOR SHALL HAVE A MINIMUM OF 2 PERCENT SLOPE POST–SETTLEMENT AT ALL LOCATIONS.

CELL AREAS AND CRITICAL SUMP ELEVATION

CELL No	CELL AREA (AC)	BOTTOM OF SUBBASE AT SUMP	SUMP INVERT ELEV.	HIGHEST OBSERVED/ PREDICTED GW BELOW SUMP
1	13.2	101.0	103.0	87.5
2	7.5	86.0	88.0	78.5
3	4.9	98.0	100.0	94.5
4	5.5	100.5	102.5	97.5
5A	5.6	113.0	115.0	110.0
5B	3.4	116.5	118.5	113.5
5C	4.4	118.0	120.0	115.0
5D	2.9	119.5	121.5	116.5
5E	3.2	119.5	121.5	116.5
5F	1.7	118.0	120.0	115.0
6	5.2	107.0	109.0	103.8
7	6.7	100.0	102.0	97.0
8	6.0	106.0	108.0	103.0
9	4.0	109.2	111.2	106.2
10	9.6	101.0	103.0	98.0



GRAPHIC SCALE

150 0 75 150 300 600

1 inch = 150 ft.

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER PAUL G. STREYMAN No. 23821

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

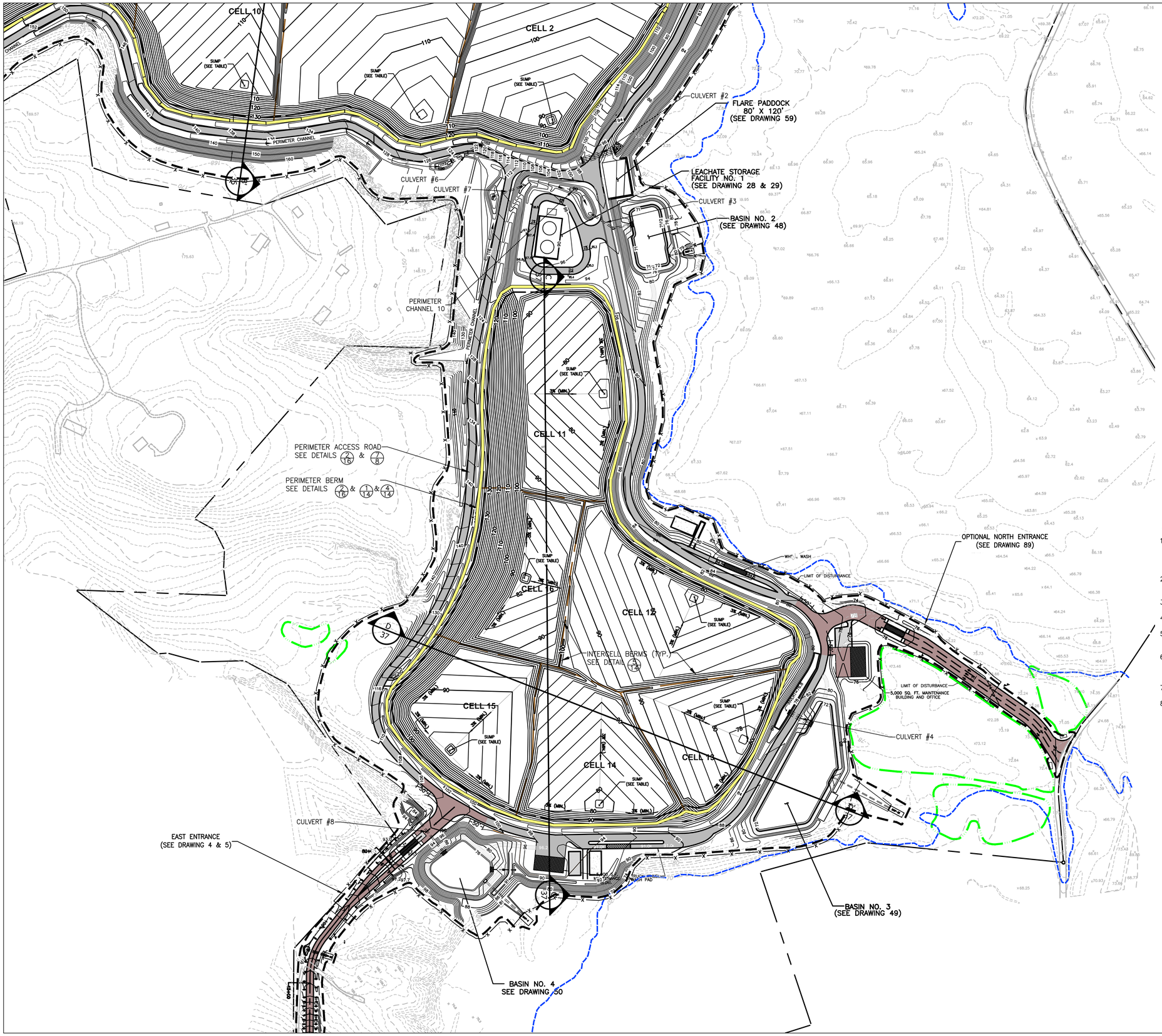
NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
1870 MARLTON PIKE EAST, SUITE 13, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

BOTTOM OF SUBBASE GRADING PLAN – WEST (CELL 1–10)

PROJECT MANAGER:	PGS	SCALE:	AS NOTED
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE:	09/03/2021

DRAWING 6



LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN SEE REFERENCE 2
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LIMIT OF DISTURBANCE
- PIPE
- PERIMETER CHANNEL FLOW DIRECTION
- PP — PLUNGE POOL, SEE DRAWING 61
- RIP-RAP — ROCK OUTLET PROTECTION–TYPE I, II OR III (AS NOTED), SEE DRAWING 61
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- PERIMETER BERM, SEE DETAIL 2/16
- ENTRANCE ROAD, PAVED SURFACE, SEE DRAWING 5/8 AND 8/8
- LANDFILL PERIMETER ACCESS ROAD, SEE DRAWING 7/8
- SIGNS, SEE DRAWING 9
- TYPICAL WETLANDS SEE REFERENCE 3

REFERENCES

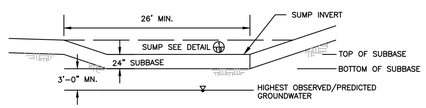
1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.
2.) THE POST-2012 100-YEAR FLOOD PLAIN LIMITS SHOWN ARE BASED ON FEMA NATIONAL FLOOD INSURANCE PROGRAM MAP NUMBER 24003C0136E, DATED 10/16/2012, AND PROVIDED AS PLATE 3 OF THE PHASE II REPORT.
3.) JURISDICTIONAL WETLAND BOUNDARIES OBTAINED FROM FIGURES ATTACHED TO THE ARMY CORPS OF ENGINEERS PUBLIC NOTICE DATED NOVEMBER 22, 1991, AND AS SUBSEQUENTLY AMENDED IN WRITING BY MCCARTHY AND ASSOCIATES ON APRIL 2, 1997

NOTES

1.) WHILE FEMA HAS RE-ASSESSED AND MODIFIED THE 100 YEAR FLOODPLAIN IN THE VICINITY OF THE SITE, THE REVISED 100-YEAR FLOODPLAIN BASE ELEVATIONS NEARS CELLS 2, 3 AND 4 ARE BETWEEN 72 AND 73 FEET MSL. THE PROPOSED LANDFILL PERIMETER ROAD BERM GRADES ARE PROPOSED A MINIMUM OF 5 FEET ABOVE THE NEW FEMA BASE FLOOD ELEVATIONS.
2.) THE GRADES SHOWN ON THIS DRAWING REPRESENT THE BOTTOM OF THE 24" THICK PREPARED SUBBASE LAYER. REFER TO DRAWING 14 FOR LINER SYSTEM DETAILS.
3.) MINIMUM SLOPE AT BOTTOM OF CELL IS 3%. INTERIOR SIDESLOPES ARE 33% MAX.
4.) FOR STORMWATER MANAGEMENT FEATURES, REFER TO DRAWINGS 38 THROUGH 44.
5.) THE FENCELINE IS SHOWN JUST OUTSIDE THE LIMIT OF DISTURBANCE, SO THAT IT IS VISIBLE. IT IS INTENDED TO BE BUILT AT THE LIMIT OF DISTURBANCE.
6.) THE 100-YEAR FLOODPLAIN ELEVATION BETWEEN 71-72 FEET MSL IN THIS AREA OF THE SITE; BASED UPON MODELING BY FEMA SHOWN ON FIRM MAP NO 24003C0136E DATED OCTOBER 16, 2012, MODIFIED TO ALIGN WITH SITE TOPOGRAPHY BASED UPON DETERMINED BASE FLOOD ELEVATIONS.
7.) THE LEACHATE STORAGE FACILITY CONTROL BUILDING SHALL HOUSE MASTER CONTROL PANELS SHOWN ON DRAWING 27.
8.) THE CELL FLOOR SHALL HAVE A MINIMUM OF 2 PERCENT SLOPE POST-SETTLEMENT AT ALL LOCATIONS.

CELL AREAS AND CRITICAL SUMP ELEVATION

CELL No	CELL AREA (AC)	BOTTOM OF SUBBASE AT SUMP	SUMP INVERT ELEV.	HIGHEST OBSERVED/ PREDICTED GW BELOW SUMP
11	7.0	71.0	73.0	68.0
12	6.7	71.5	73.5	68.5
13	3.4	75.0	77.0	72.0
14	4.3	77	79.0	74.0
15	4.7	79.0	82.0	76.0
16	4.5	78.0	80.0	75.0



GRAPHIC SCALE

150 0 75 150 300 600

1 inch = 150 ft.

STATE OF MARYLAND — KARL W. STRAYMAN — REGISTERED PROFESSIONAL ENGINEER — No. 19321

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

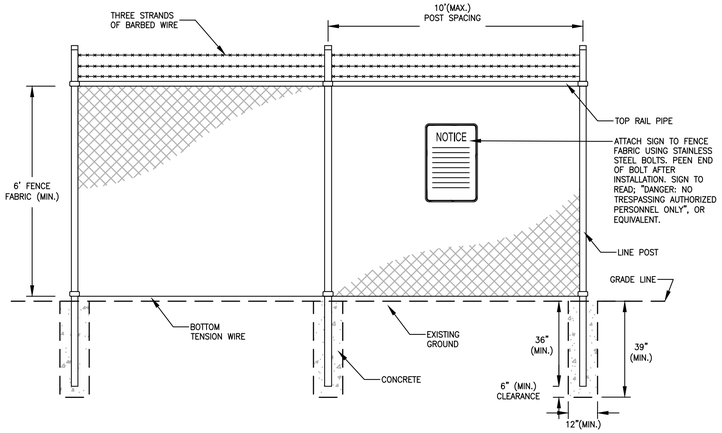
NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
1979 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2271 F: 856.354.8226 www.advancedgeoservices.com

BOTTOM OF SUBBASE GRADING PLAN – EAST (CELL 11–16)

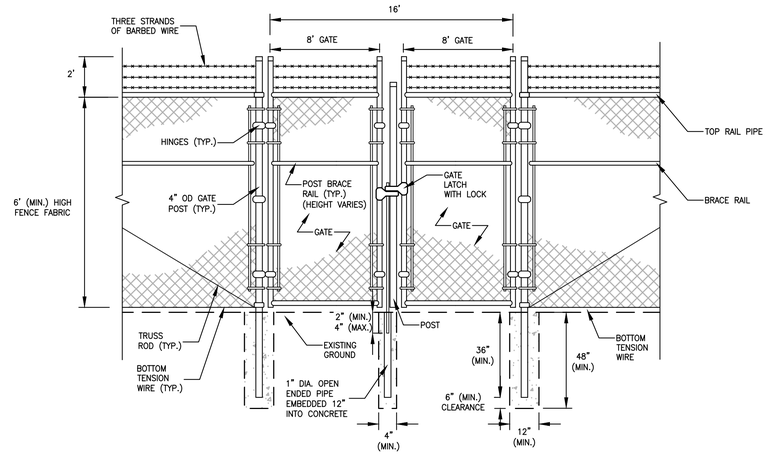
PROJECT MANAGER:	PGS	SCALE: AS NOTED	
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE: 09/03/2021	

DRAWING 7



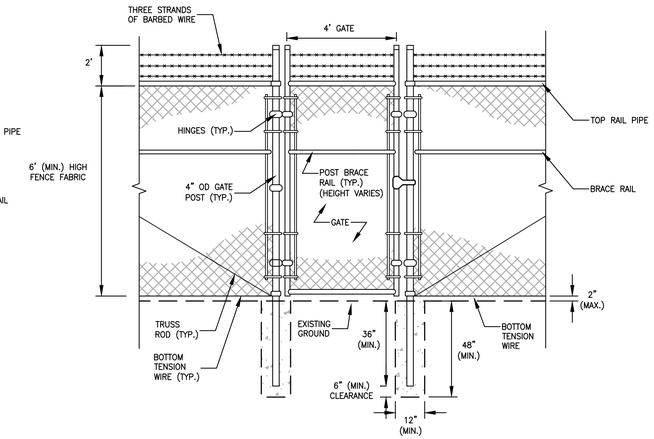
1/8 SECURITY FENCE

NOT TO SCALE



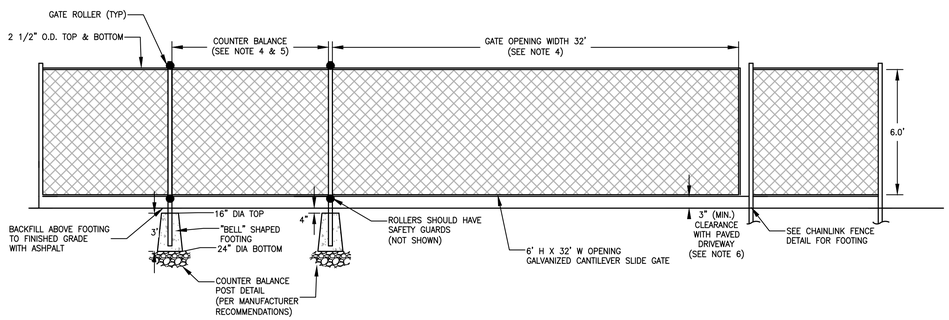
2/8 DOUBLE-WIDE GATE

NOT TO SCALE



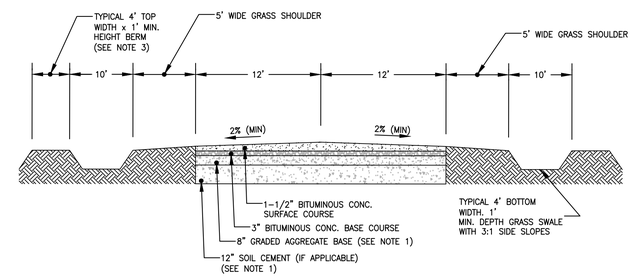
3/8 SINGLE (MAN) GATE

NOT TO SCALE



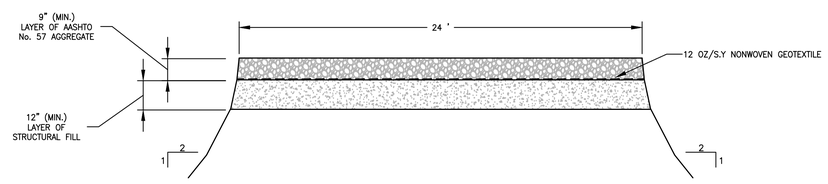
4/8 ROLLING ENTRANCE FENCE

NOT TO SCALE



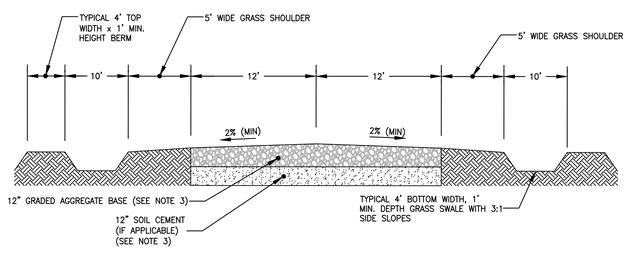
5/8 PAVED EAST ENTRANCE ROAD WITH GRASS SWALE AND BERM (SITE PROPERTY LINE TO LANDFILL)

NOT TO SCALE



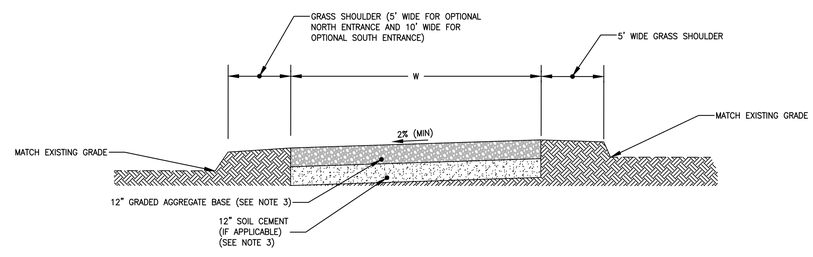
7/8 LANDFILL PERIMETER ACCESS ROAD

NOT TO SCALE



6/8 STONE EAST ENTRANCE ROAD WITH GRASS SWALE AND BERM (CONWAY ROAD TO SITE PROPERTY LINE)

NOT TO SCALE



8/8 OPTIONAL ENTRANCE ROADS

NOT TO SCALE

ROAD WIDTH "W" WILL BE 45' FOR OPTIONAL NORTH ENTRANCE OR 60' FOR OPTIONAL SOUTH ENTRANCE QUEUE LANES

NOTES

1.) PROVIDE 8" GRADED AGGREGATE BASE ON ROAD SUBGRADE WHICH HAS BEEN COMPACTED TO 95 PERCENT MODIFIED PROCTOR (AASHTO T-180). FOR POOR SUBGRADE, 12" SOIL CEMENT MAY BE USED. ALL ROAD CONSTRUCTION SHALL BE PER RECOMMENDATION OF A PROFESSIONAL GEOTECHNICAL ENGINEER REGISTERED IN THE STATE OF MARYLAND.
2.) OPTIONAL NORTH ENTRANCE PAVEMENT CONSTRUCTION SHALL BE PER THE TYPICAL SECTION ON DETAIL 8 ON THIS DRAWING. OPTINAL SOUTH ENTRACNE PAVEMENT CONSTRUCTION SHALL BE SAME AS DETIAL 6 ON THIS PAGE FROM CONWAY ROAD.
3.) PROVIDE GRADED AGGREGATE BASE ON ROAD SUBGRADE WHICH HAS BEEN COMPACTED TO 95 PERCENT MODIFIED PROCTOR (AASHTO T-180). FOR POOR SUBGRADE, 12" SOIL CEMENT MAY BE USED. ALL ROAD CONSTRUCTION SHALL BE PER RECOMMENDATION OF A PROFESSIONAL GEOTECHNICAL ENGINEER REGISTERED IN THE STATE OF MARYLAND.
4.) SEE MANUFACTURER (HOOVER FENCE OR APPROVED EQUAL) FOR MAXIMUM GATE OPENING AND COUNTER BALANCE SIZE.
5.) ALLOW ROOM FOR OPENING PLUS COUNTER BALANCE WHEN IN OPEN POSITION. (GATE WIDTH + COUNTER BALANCE).
6.) CONFIRM CLEARANCE TO FINISHED GRADE PRIOR TO INSTALLATION.

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
9/30/2021	CORRECTED SWALE WIDTH ON DETAILS 4 AND 5
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
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PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
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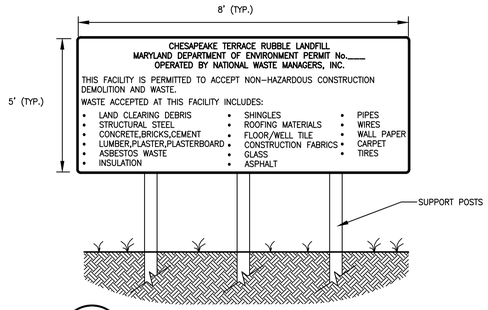
1978 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

ENTRANCE ACCESS ROAD DETAILS

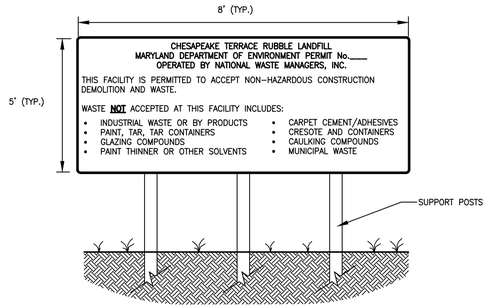
PROJECT MANAGER:	PGS	SCALE: AS NOTED	
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE: 09/03/2021	

DRAWING 8



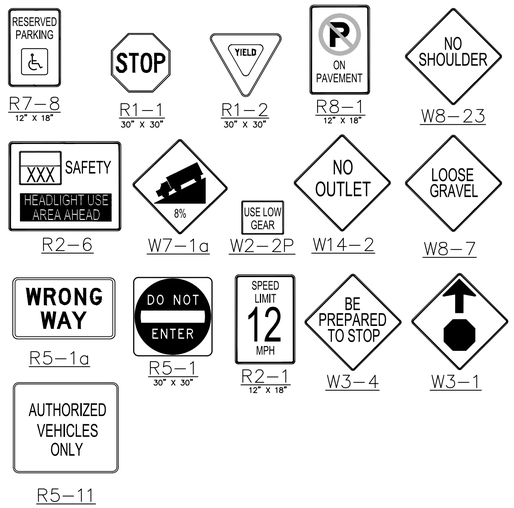
1/9 SITE ENTRANCE SIGN #1

NOT TO SCALE



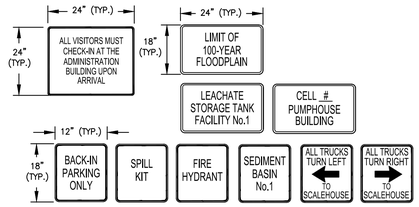
2/9 SITE ENTRANCE SIGN #2

NOT TO SCALE



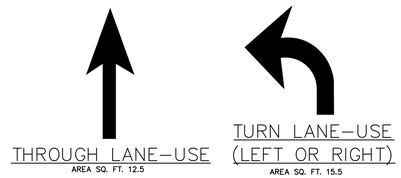
3/9 MARYLAND DOT SPECIFIED SIGNS

NOT TO SCALE



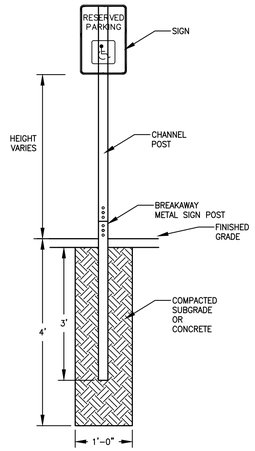
4/9 SITE SPECIFIED SIGNS

NOT TO SCALE



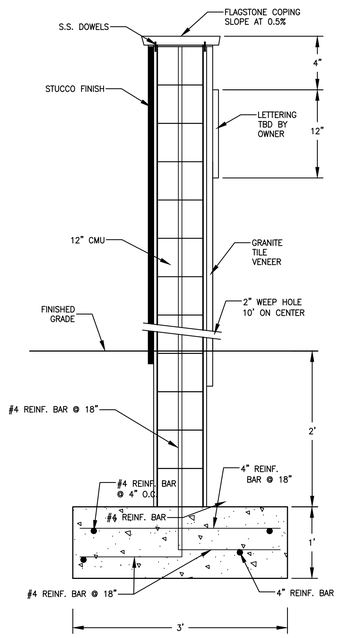
5/9 TRAFFIC ARROWS

NOT TO SCALE



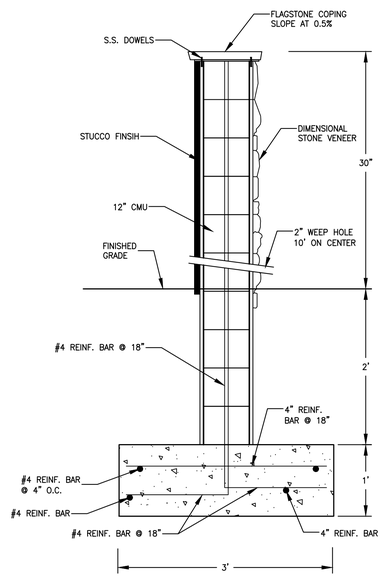
6/9 SIGN INSTALLATION DETAIL

NOT TO SCALE



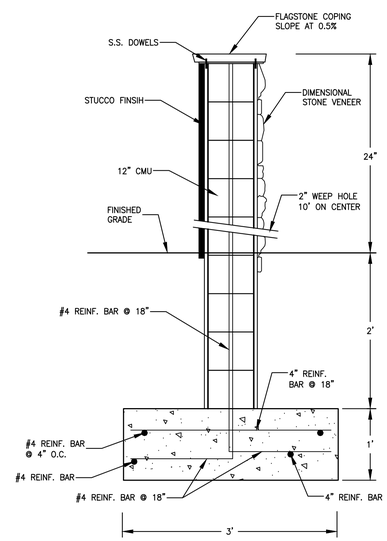
7/9 FORMAL ENTRANCE SIGN - WALL #4 (UPPER)

NOT TO SCALE



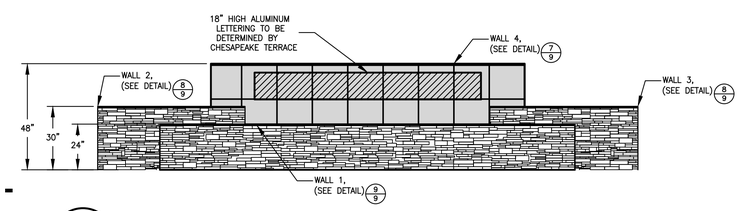
8/9 FORMAL ENTRANCE SIGN - WALLS #2&3 (MID)

NOT TO SCALE



9/9 FORMAL ENTRANCE SIGN - WALL #1 (LOWER)

NOT TO SCALE



10/9 FORMAL ENTRANCE SIGN - ELEVATION

NOT TO SCALE

REVISION:	DATE:
REVISED TO ADDRESS MDE COMMENTS ON PHASE 3	9/03/2021
REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS	11/09/2021
FINAL ISSUED TO MDE	1/14/2022

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
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PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

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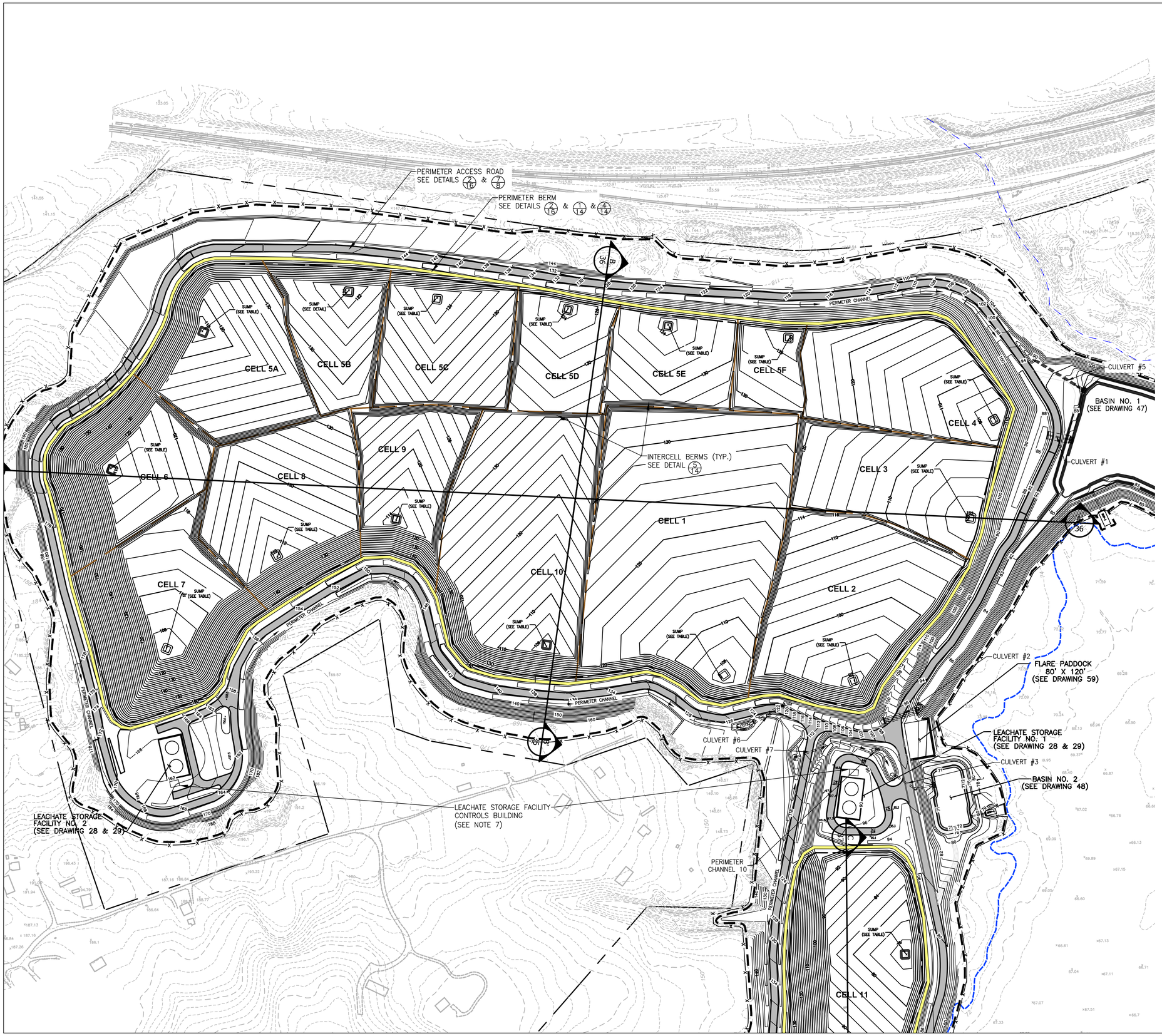
1978 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8026 www.advancedgeoservices.com

SITE SECURITY DETAILS

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 - 3654
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 9



LEGEND

- PROPERTY LINE
- 100–YEAR FLOODPLAIN SEE REFERENCE 2
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LIMIT OF DISTURBANCE
- PIPE
- PERIMETER CHANNEL FLOW DIRECTION
- PP — PLUNGE POOL, SEE DRAWING 61
- ROCK OUTLET PROTECTION–TYPE I, II OR III (AS NOTED), SEE DRAWING 61
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- PERIMETER BERM, SEE DETAIL 2/16
- ENTRANCE ROAD, PAVED SURFACE, SEE DRAWING 8/8 AND 9/8
- LANDFILL PERIMETER ACCESS ROAD, SEE DRAWING 7/8
- SIGNS, SEE DRAWING 9
- TYPICAL WETLANDS SEE REFERENCE 3

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

2.) THE POST–2012 100–YEAR FLOOD PLAIN LIMITS SHOWN ARE BASED ON FEMA NATIONAL FLOOD INSURANCE PROGRAM MAP NUMBER 24003C0136E, DATED 10/16/2012, AND PROVIDED AS PLATE 3 OF THE PHASE II REPORT.

3.) JURISDICTIONAL WETLAND BOUNDARIES OBTAINED FROM FIGURES ATTACHED TO THE ARMY CORPS OF ENGINEERS PUBLIC NOTICE DATED NOVEMBER 22, 1991, AND AS SUBSEQUENTLY AMENDED IN WRITING BY MCCARTHY AND ASSOCIATES ON APRIL 2, 1997

NOTES

1.) WHILE FEMA HAS RE–ASSESSED AND MODIFIED THE 100 YEAR FLOODPLAIN IN THE VICINITY OF THE SITE, THE REVISED 100–YEAR FLOODPLAIN BASE ELEVATIONS NEARS CELLS 2, 3 AND 4 ARE BETWEEN 72 AND 73 FEET MSL. THE PROPOSED LANDFILL PERIMETER ROAD BERM GRADES ARE PROPOSED A MINIMUM OF 5 FEET ABOVE THE NEW FEMA BASE FLOOD ELEVATIONS.

2.) THE GRADES SHOWN ON THIS DRAWING REPRESENT THE TOP OF THE 24" THICK PREPARED SUBBASE LAYER. REFER TO DRAWING 14 FOR LINER SYSTEM DETAILS.

3.) MINIMUM CONSTRUCTED SLOPE AT BOTTOM OF CELL IS 3%. INTERIOR SIDESLOPES ARE 33% MAX.

4.) FOR STORMWATER MANAGEMENT FEATURES, REFER TO DRAWINGS 38 THROUGH 44.

5.) THE FENCELINE IS SHOWN JUST OUTSIDE THE LIMIT OF DISTURBANCE, SO THAT IT IS VISIBLE. IT IS INTENDED TO BE BUILT AT THE LIMIT OF DISTURBANCE.

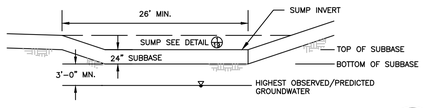
6.) THE 100–YEAR FLOODPLAIN ELEVATION BETWEEN 71–72 FEET MSL IN THIS AREA OF THE SITE; BASED UPON MODELING BY FEMA SHOWN ON FIRM MAP NO 24003C0136E DATED OCTOBER 16, 2012, MODIFIED TO ALIGN WITH SITE TOPOGRAPHY BASED UPON DETERMINED BASE FLOOD ELEVATIONS.

7.) THE LEACHATE STORAGE FACILITY CONTROL BUILDING SHALL HOUSE MASTER CONTROL PANELS SHOWN ON DRAWING 27.

8.) THE CELL FLOOR SHALL HAVE A MINIMUM OF 2 PERCENT SLOPE POST–SETTLEMENT AT ALL LOCATIONS.

CELL AREAS AND CRITICAL SUMP ELEVATION

CELL No	CELL AREA (AC)	BOTTOM OF SUBBASE AT SUMP	SUMP INVERT ELEV.	HIGHEST OBSERVED/ PREDICTED GW BELOW SUMP
1	13.2	101.0	103.0	87.5
2	7.5	86.0	88.0	78.5
3	4.9	98.0	100.0	94.5
4	5.5	100.5	102.5	97.5
5A	5.6	113.0	115.0	110.0
5B	3.4	116.5	118.5	113.5
5C	4.4	118.0	120.0	115.0
5D	2.9	119.5	121.5	116.5
5E	3.2	119.5	121.5	116.5
5F	1.7	118.0	120.0	115.0
6	5.2	107.0	109.0	103.8
7	6.7	100.0	102.0	97.0
8	6.0	106.0	108.0	103.0
9	4.0	109.2	111.2	106.2
10	9.6	101.0	103.0	98.0



GRAPHIC SCALE

150 0 75 150 300 600

1 inch = 150 ft.

STATE OF MARYLAND — KEVIN R. STEYMAN — PROFESSIONAL ENGINEER — No. 35257

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
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PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

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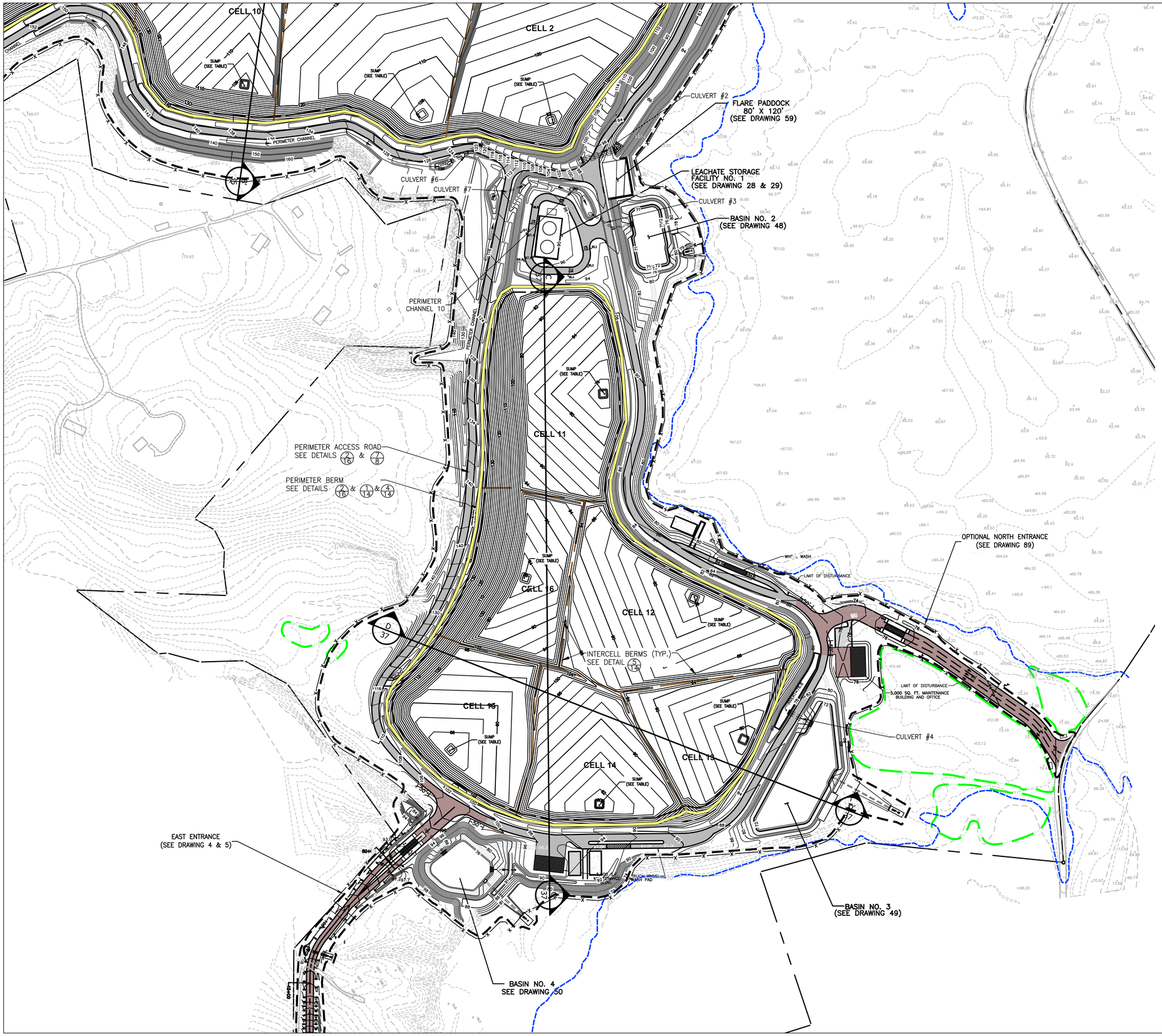
1870 MARLTON PIKE EAST SUITE 10, CHERRY HILL, NJ, 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

TOP OF SUBBASE GRADING PLAN – WEST (CELL 1–10)

PROJECT MANAGER: PGS	SCALE:AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE:09/03/2021

DRAWING 10



LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN SEE REFERENCE 2
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LIMIT OF DISTURBANCE
- PIPE
- PERIMETER CHANNEL FLOW DIRECTION
- PP — PLUNGE POOL, SEE DRAWING 61
- RCP-... — ROCK OUTLET PROTECTION–TYPE I, II OR III (AS NOTED), SEE DRAWING 61
- X X — PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- PERIMETER BERM, SEE DETAIL 2/16
- ENTRANCE ROAD, PAVED SURFACE, SEE DRAWING 5/8 AND 8/8
- LANDFILL PERIMETER ACCESS ROAD, SEE DRAWING 7/8
- SIGNS, SEE DRAWING 9
- TYPICAL WETLANDS SEE REFERENCE 3

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.
2.) THE POST–2012 100–YEAR FLOOD PLAIN LIMITS SHOWN ARE BASED ON FEMA NATIONAL FLOOD INSURANCE PROGRAM MAP NUMBER 24003C0136E, DATED 10/16/2012, AND PROVIDED AS PLATE 3 OF THE PHASE II REPORT.
3.) JURISDICTIONAL WETLAND BOUNDARIES OBTAINED FROM FIGURES ATTACHED TO THE ARMY CORPS OF ENGINEERS PUBLIC NOTICE DATED NOVEMBER 22, 1991, AND AS SUBSEQUENTLY AMENDED IN WRITING BY MCCARTHY AND ASSOCIATES ON APRIL 2, 1997

NOTES

1.) WHILE FEMA HAS RE–ASSESSED AND MODIFIED THE 100 YEAR FLOODPLAIN IN THE VICINITY OF THE SITE, THE REVISED 100–YEAR FLOODPLAIN BASE ELEVATIONS NEARS CELLS 2, 3 AND 4 ARE BETWEEN 72 AND 73 FEET MSL. THE PROPOSED LANDFILL PERIMETER ROAD BERM GRADES ARE PROPOSED A MINIMUM OF 5 FEET ABOVE THE NEW FEMA BASE FLOOD ELEVATIONS.
2.) THE GRADES SHOWN ON THIS DRAWING REPRESENT THE TOP OF THE 24" THICK PREPARED SUBBASE LAYER. REFER TO DRAWING 14 FOR LINER SYSTEM DETAILS.
3.) MINIMUM CONSTRUCTED SLOPE AT BOTTOM OF CELL IS 3%. INTERIOR SIDESLOPES ARE 33% MAX.
4.) FOR STORMWATER MANAGEMENT FEATURES, REFER TO DRAWINGS 38 THROUGH 44.
5.) THE FENCELINE IS SHOWN JUST OUTSIDE THE LIMIT OF DISTURBANCE, SO THAT IT IS VISIBLE. IT IS INTENDED TO BE BUILT AT THE LIMIT OF DISTURBANCE.
6.) THE 100–YEAR FLOODPLAIN ELEVATION BETWEEN 71–72 FEET MSL IN THIS AREA OF THE SITE; BASED UPON MODELING BY FEMA SHOWN ON FIRM MAP NO 24003C0136E DATED OCTOBER 16, 2012, MODIFIED TO ALIGN WITH SITE TOPOGRAPHY BASED UPON DETERMINED BASE FLOOD ELEVATIONS.
7.) THE LEACHATE STORAGE FACILITY CONTROL BUILDING SHALL HOUSE MASTER CONTROL PANELS SHOWN ON DRAWING 27.
8.) THE CELL FLOOR SHALL HAVE A MINIMUM OF 2 PERCENT SLOPE POST–SETTLEMENT AT ALL LOCATIONS.

CELL AREAS AND CRITICAL SUMP ELEVATION

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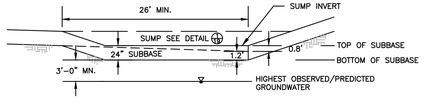
15	4.7	79.0	82.0	76.0
16	4.5	78.0	80.0	75.0



GRAPHIC SCALE

150 0 75 150 300 600

1 inch = 150 ft.

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER PAUL C. STRAYMAN No. 15821 PROFESSIONAL ENGINEER

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
1979 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

TOP OF SUBBASE GRADING PLAN – EAST (CELL 11–16)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 11

LEGEND

- PROPERTY LINE
- 100–YEAR FLOODPLAIN SEE REFERENCE 2
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LIMIT OF DISTURBANCE
- PIPE
- PERIMETER CHANNEL FLOW DIRECTION
- PP — PLUNGE POOL, SEE DRAWING 61
- ROP — ROCK OUTLET PROTECTION–TYPE I, II OR III (AS NOTED), SEE DRAWING 61
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- PERIMETER BERM, SEE DETAIL 6/16
- ENTRANCE ROAD, PAVED SURFACE, SEE DRAWING 5/8 AND 6/8
- LANDFILL PERIMETER ACCESS ROAD, SEE DRAWING 7/8
- SIGNS, SEE DRAWING 9
- TYPICAL WETLANDS SEE REFERENCE 3

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

2.) THE POST–2012 100–YEAR FLOOD PLAIN LIMITS SHOWN ARE BASED ON FEMA NATIONAL FLOOD INSURANCE PROGRAM MAP NUMBER 24003C0136E, DATED 10/16/2012, AND PROVIDED AS PLATE 3 OF THE PHASE II REPORT.

3.) JURISDICTIONAL WETLAND BOUNDARIES OBTAINED FROM FIGURES ATTACHED TO THE ARMY CORPS OF ENGINEERS PUBLIC NOTICE DATED NOVEMBER 22, 1991, AND AS SUBSEQUENTLY AMENDED IN WRITING BY MCCARTHY AND ASSOCIATES ON APRIL 2, 1997

NOTES

1.) WHILE FEMA HAS RE–ASSESSED AND MODIFIED THE 100 YEAR FLOOD PLAIN IN THE VICINITY OF THE SITE, THE PROPOSED LANDFILL PERIMETER ROAD BERM GRADES ARE PROPOSED A MINIMUM OF 5 FEET ABOVE THE NEW FEMA BASE FLOOD ELEVATIONS.

2.) LANDFILL CROSS–SECTIONS ARE PRESENTED ON DRAWINGS 45 AND 46.

3.) THE GRADES ON THIS DRAWING REPRESENT THE TOP OF SELECT WASTE (48" THICK). REFER TO DRAWING 14 FOR DETAILS

4.) LEACHATE COLLECTION SYSTEM LAYOUT AND DETAILS ARE PROVIDED ON DRAWINGS 17 THROUGH 21.

5.) MINIMUM SLOPES ON THE CELL FLOOR ARE 3%. MAXIMUM SLOPE ON INTERIOR SIDESLOPES IS 33% PRIOR TO FILLING.

6.) THE FENCELINE IS SHOWN JUST OUTSIDE THE LIMIT OF DISTURBANCE, SO THAT IT IS VISIBLE. IT IS INTENDED TO BE BUILT AT THE LIMIT OF DISTURBANCE.

GRAPHIC SCALE

150 0 75 150 300 600

1 inch = 150 ft.

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER — PAUL C. STRAYMAN — No. 19371

DATE:	REVISION:
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NATIONAL WASTE MANAGERS
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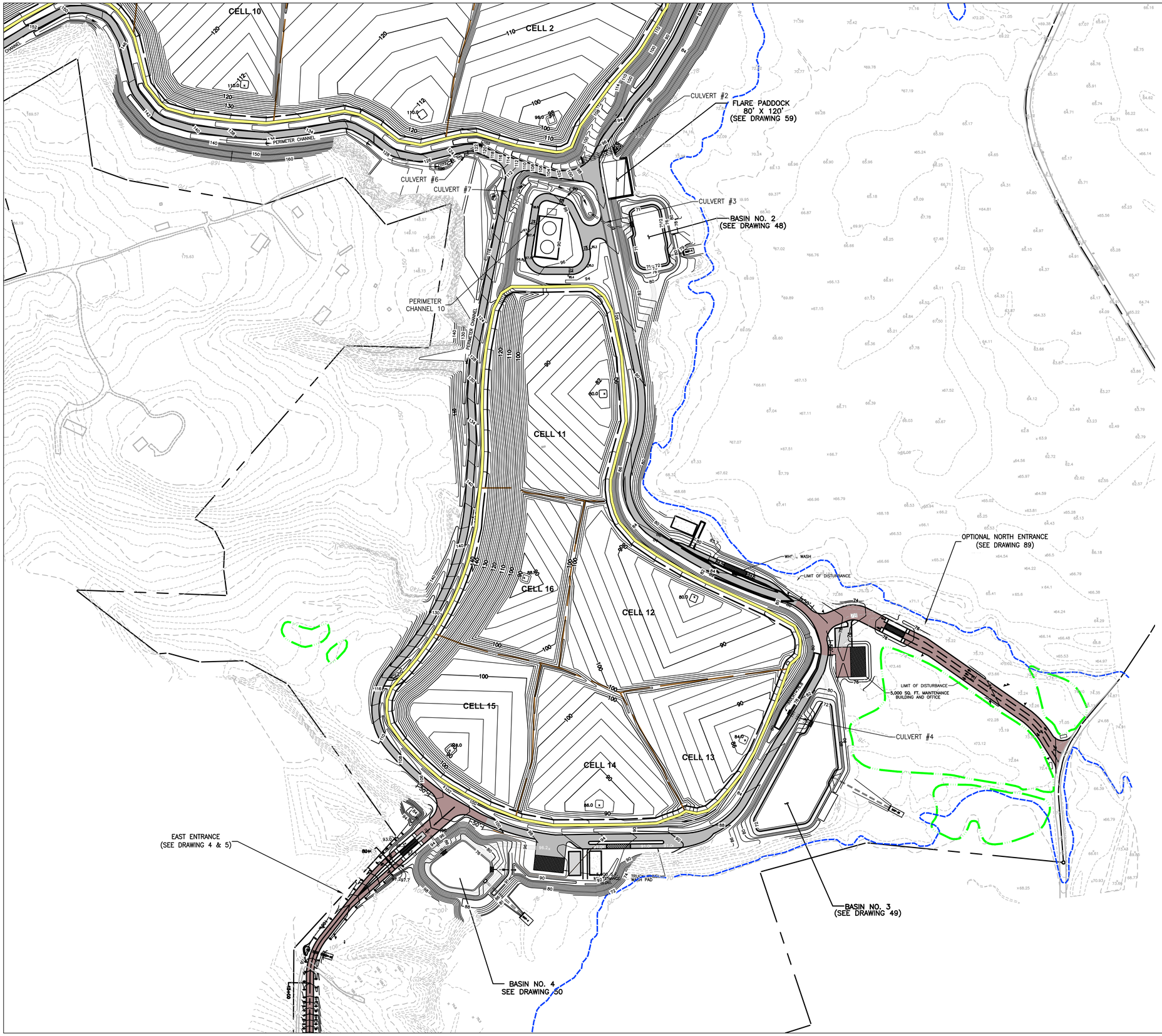
TOP OF SELECT WASTE
GRADING PLAN –
WEST (CELL 1–10)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 12



LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN SEE REFERENCE 2
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LIMIT OF DISTURBANCE
- PIPE
- PERIMETER CHANNEL FLOW DIRECTION
- PP — PLUNGE POOL, SEE DRAWING 61
- ROCK OUTLET PROTECTION–TYPE I, II OR III (AS NOTED), SEE DRAWING 61
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- PERIMETER BERM, SEE DETAIL 2/16
- ENTRANCE ROAD, PAVED SURFACE, SEE DRAWING 5/8 AND 8/8
- LANDFILL PERIMETER ACCESS ROAD, SEE DRAWING 7/8
- SIGNS, SEE DRAWING 9
- TYPICAL WETLANDS SEE REFERENCE 3

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

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NOTES

1.) WHILE FEMA HAS RE–ASSESSED AND MODIFIED THE 100 YEAR FLOOD PLAIN IN THE VICINITY OF THE SITE, THE PROPOSED LANDFILL PERIMETER ROAD BERM GRADES ARE PROPOSED A MINIMUM OF 5 FEET ABOVE THE NEW FEMA BASE FLOOD ELEVATIONS.

2.) LANDFILL CROSS–SECTIONS ARE PRESENTED ON DRAWINGS 45 AND 46.

3.) THE GRADES ON THIS DRAWING REPRESENT THE TOP OF SELECT WASTE (48" THICK). REFER TO DRAWING 14 FOR DETAILS

4.) LEACHATE COLLECTION SYSTEM LAYOUT AND DETAILS ARE PROVIDED ON DRAWINGS 17 THROUGH 21.

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6.) THE FENCELINE IS SHOWN JUST OUTSIDE THE LIMIT OF DISTURBANCE, SO THAT IT IS VISIBLE. IT IS INTENDED TO BE BUILT AT THE LIMIT OF DISTURBANCE.

GRAPHIC SCALE

150 0 75 150 300 600

1 inch = 150 ft.

STATE OF MARYLAND — KYLE WILFRED STEYMAN — No. 15231 — PROFESSIONAL ENGINEER

REVISION:	DATE:
REVISED TO ADDRESS MDE COMMENTS ON PHASE 3	9/03/2021
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NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

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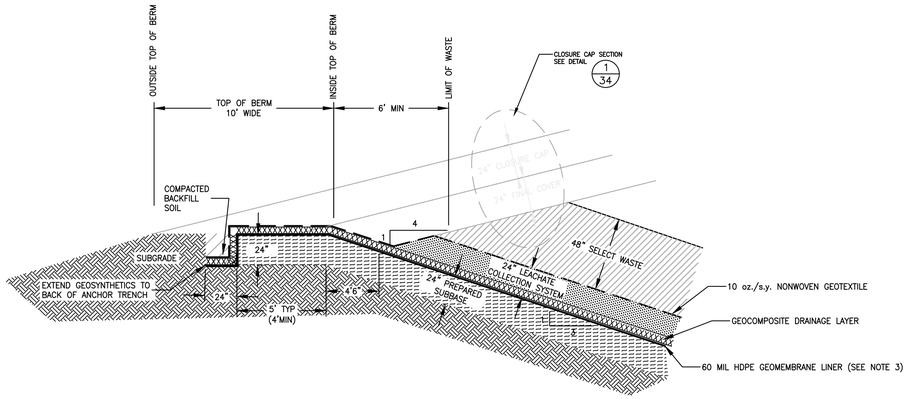
T: 856.354.2273, F: 856.354.8236 www.advancedgeoservices.com

TOP OF SELECT WASTE
GRADING PLAN –
EAST (CELL 11–16)

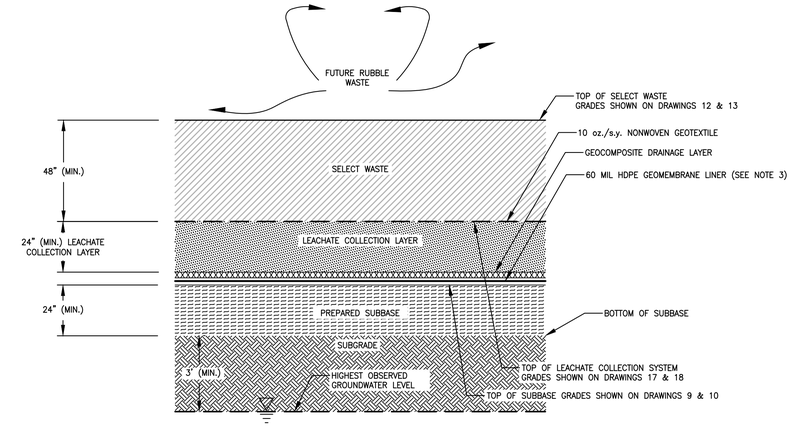
PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 13



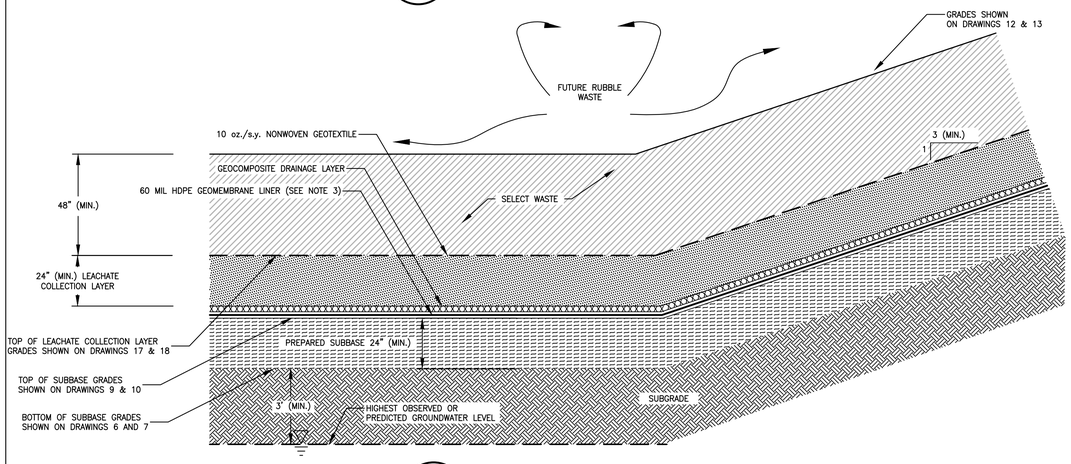
1/14 DETAIL: TOP OF PERIMETER BERM / LINER ANCHOR TRENCH

NOT TO SCALE



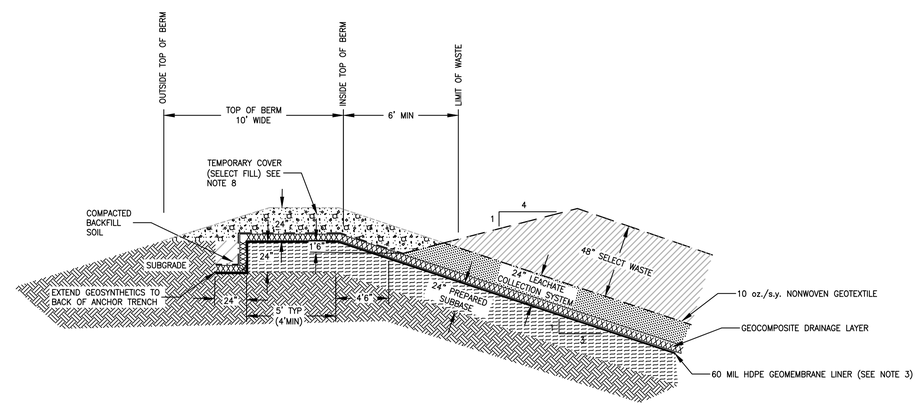
2/14 DETAIL: LINER SYSTEM - FLOOR

NOT TO SCALE



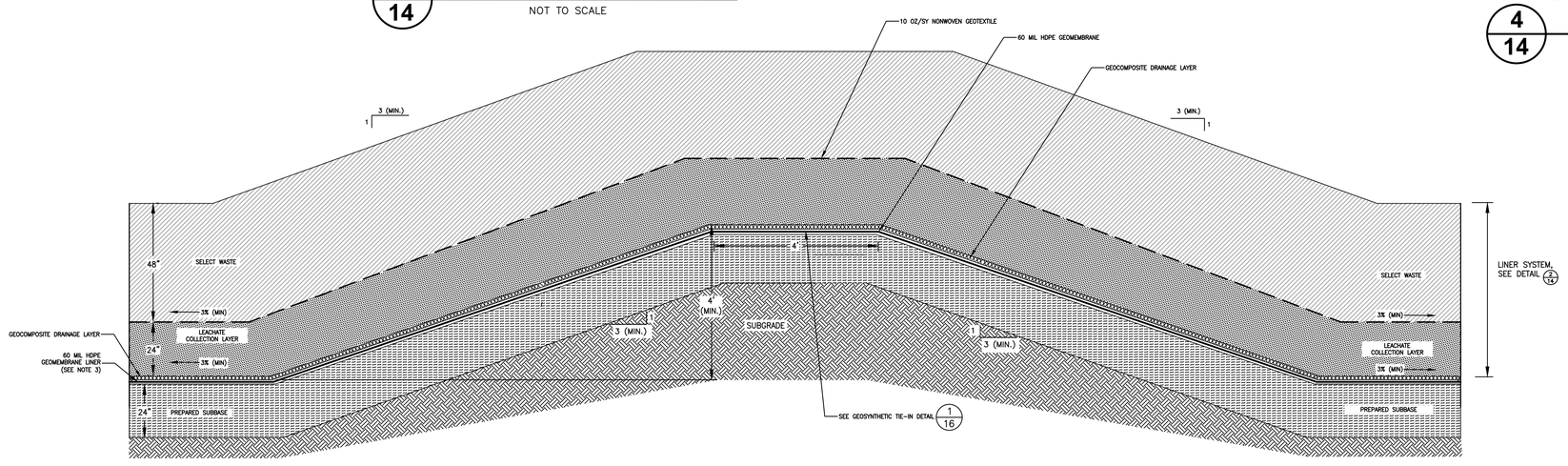
3/14 LINER SYSTEM - SLOPES

NOT TO SCALE



4/14 DETAIL: TOP OF PERIMETER BERM / WITH TEMPORARY COVER

NOT TO SCALE



5/14 TYPICAL INTER-CELL BERM

NOT TO SCALE

NOTES

1. THICKNESS OF GEOSYNTHETICS IS EXAGGERATED FOR CLARITY.
2. FOR MATERIALS REQUIREMENTS, SEE THE TECHNICAL SPECIFICATIONS IN SECTION 14 OF THE PHASE III REPORT
3. THE HDPE LINER SHALL BE TEXTURED ON BOTH SIDES, ON SLOPES EXCEEDING 8%. FOR SLOPES FLATTER THAN 8%, THE HDPE LINER MAY BE SMOOTH.
4. CODE OF MARYLAND REGULATIONS (COMAR) 26.04.07.16C REQUIRES THE USE OF THE LINER SYSTEM SHOWN ON THIS DETAIL (SHOWN WITH ALTERNATE GEOMEMBRANE BARRIER LAYER).
5. COMAR 26.04.07.16C (3)(b) ALLOWS THE USE OF A 50 MIL (MIN. THICKNESS) SYNTHETIC MEMBRANE WITH A PERMEABILITY OF LESS THAN OR EQUAL TO $1x10^{-10}$ cm/sec, FOR THE BARRIER LAYER.
6. COMAR 26.04.07.16C (8) IMPOSES A PERFORMANCE SPECIFICATION FOR THE LEACHATE COLLECTION LAYER SO THAT THE DEPTH OF LEACHATE OVER THE LINER DOES NOT EXCEED 1 FOOT (30 CM).
7. CONSTRUCTION QUALITY ASSURANCE REQUIREMENTS ARE DETAILED IN THE CONSTRUCTION QUALITY ASSURANCE PLAN, INCLUDED IN SECTION 13 OF THE PHASE III PERMIT APPLICATION.
8. TEMPORARY COVER IS REQUIRED FOR SUPPORT AT WELL COMPACTED CLEANOUTS AND LEACHATE COLLECTION RISERS. TEMPORARY COVER SHALL BE WELL COMPACTED STRUCTURAL FILL.

STATE OF MARYLAND
REGISTERED PROFESSIONAL ENGINEER
KAYE S. BRAYMAN
No. 25351
PROFESSIONAL ENGINEER
1/14/22

REVISION:

DATE:	REVISION:
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NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

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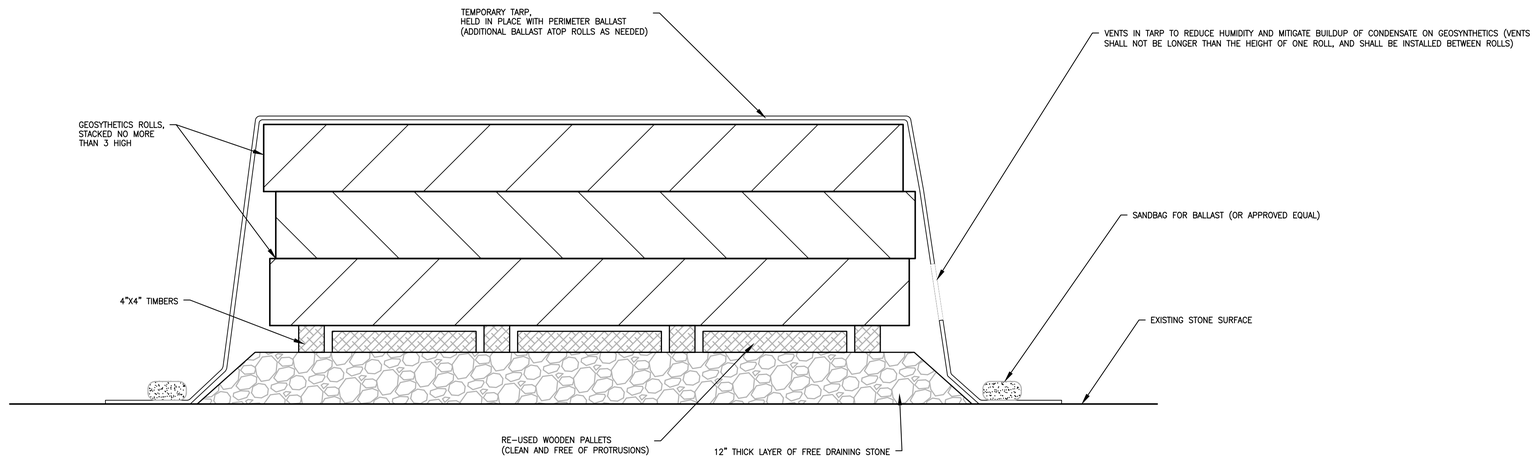
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

LINER SYSTEM DETAILS
(SHEET 1 OF 3)

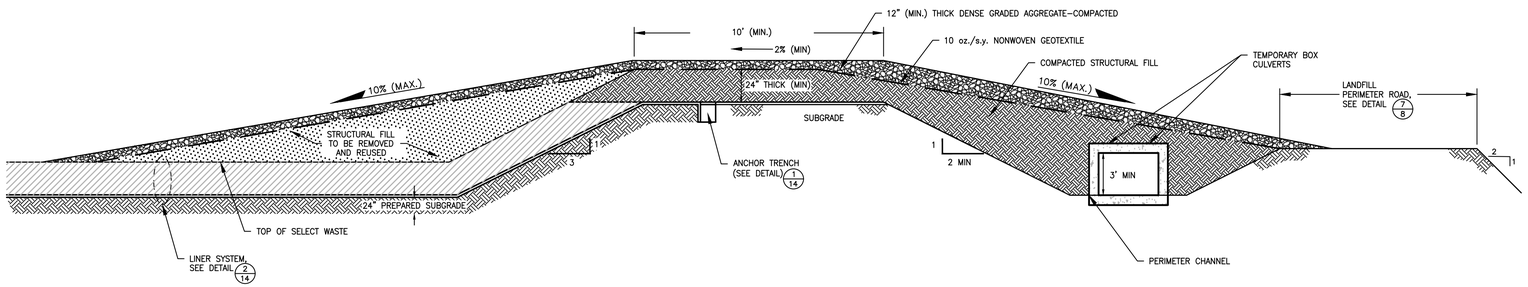
PROJECT MANAGER:	PGS	SCALE: AS NOTED	
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE: 09/03/2021	

DRAWING 14



1/15 GEOSYNTHETICS STAGING PAD

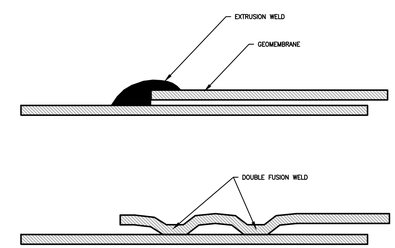
NOT TO SCALE



2/15 TEMPORARY ACCESS ROAD INTO LANDFILL CELLS

NOT TO SCALE

(TO BE USED WHERE A HAUL ROAD ENTERS A CELL; CONTRACTOR TO COORDINATE LOCATION WITH OWNER)
TEMPORARY ACCESS ROAD AND TEMPORARY BOX CULVERTS SHALL BE REMOVED AT TIME OF CAPPING



3/15 GEOMEMBRANE WELDS

NOT TO SCALE

NOTES

1.) THICKNESS OF GEOSYNTHETICS IS EXAGGERATED FOR CLARITY.
2.) FOR MATERIALS REQUIREMENTS, SEE THE TECHNICAL SPECIFICATIONS IN SECTION 14 OF THE PHASE III REPORT
3.) MINIMUM AND MAXIMUM CELL SLOPES ARE 3% AND 33%, RESPECTIVELY, AT THE TIME OF CONSTRUCTION.
4.) THE TEMPORARY CULVERTS SHALL BE CLASS V CONCRETE, CAPABLE OF SUPPORTING H520 LOADING.
5.) GEOMEMBRANE SHALL BE TEXTURED ON BOTH SIDES WHEN PLACED ON SLOPES STEEPER THAN 8%.

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER PAUL C. STRAYMAR No. 15251 PROFESSIONAL ENGINEER 1/14/22

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NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
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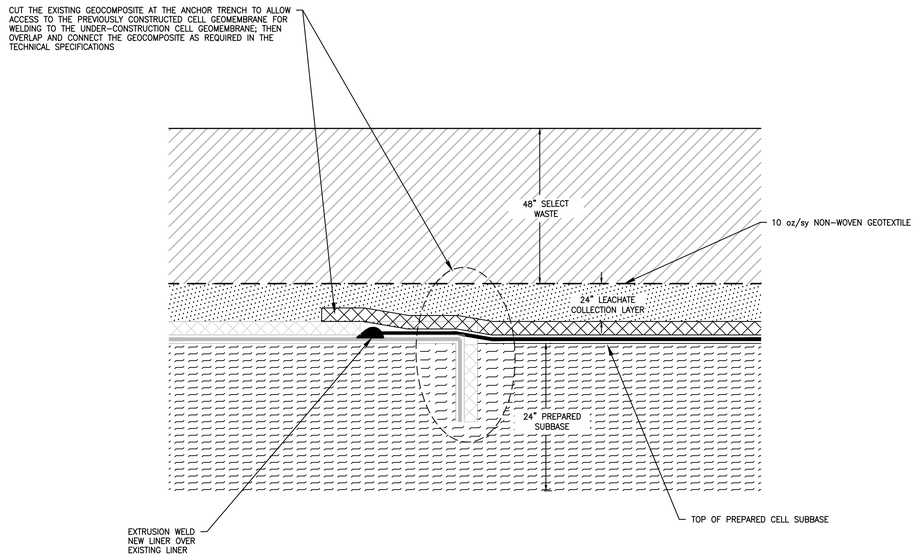
1878 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

LINER SYSTEM DETAILS
(SHEET 2 OF 3)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

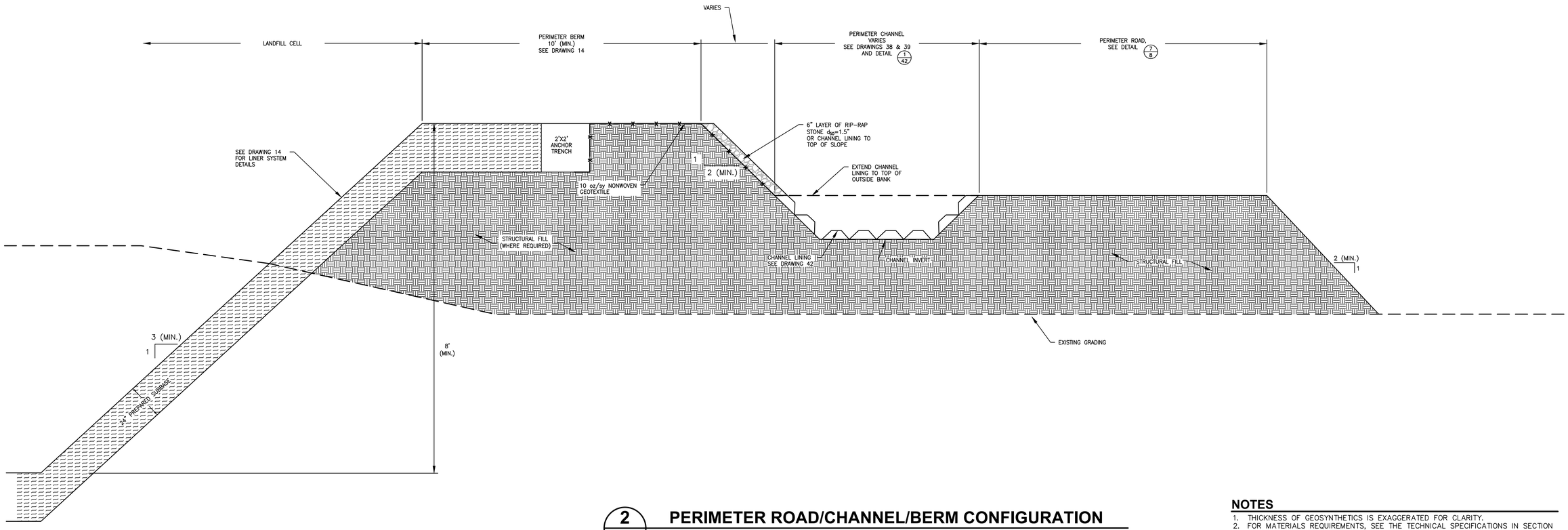
DRAWING 15

N:\Projects\2018\2018854 - Chesapeake Terrace LF\ACAD\DWGS\C & P\Phase III Application\Drawings\Final\2018854 M13 - LINER SYSTEM DETAILS SHEET 2 OF 3.dwg



1/16 GEOSYNTHETIC CELL LINER TIE-IN AT INTER-CELL BERM

NOT TO SCALE



2/16 PERIMETER ROAD/CHANNEL/BERM CONFIGURATION

NOT TO SCALE

NOTES

1. THICKNESS OF GEOSYNTHETICS IS EXAGGERATED FOR CLARITY.
2. FOR MATERIALS REQUIREMENTS, SEE THE TECHNICAL SPECIFICATIONS IN SECTION 14 OF THE PHASE III REPORT.
3. STRUCTURAL FILL SHALL BE UTILIZED TO RAISE EXISTING GRADES TO PROPOSED SUBGRADES (SEE SPECIFICATIONS).

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER KEVIN R. STEYMAN No. 36351 7/14/22

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NATIONAL WASTE MANAGERS
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PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

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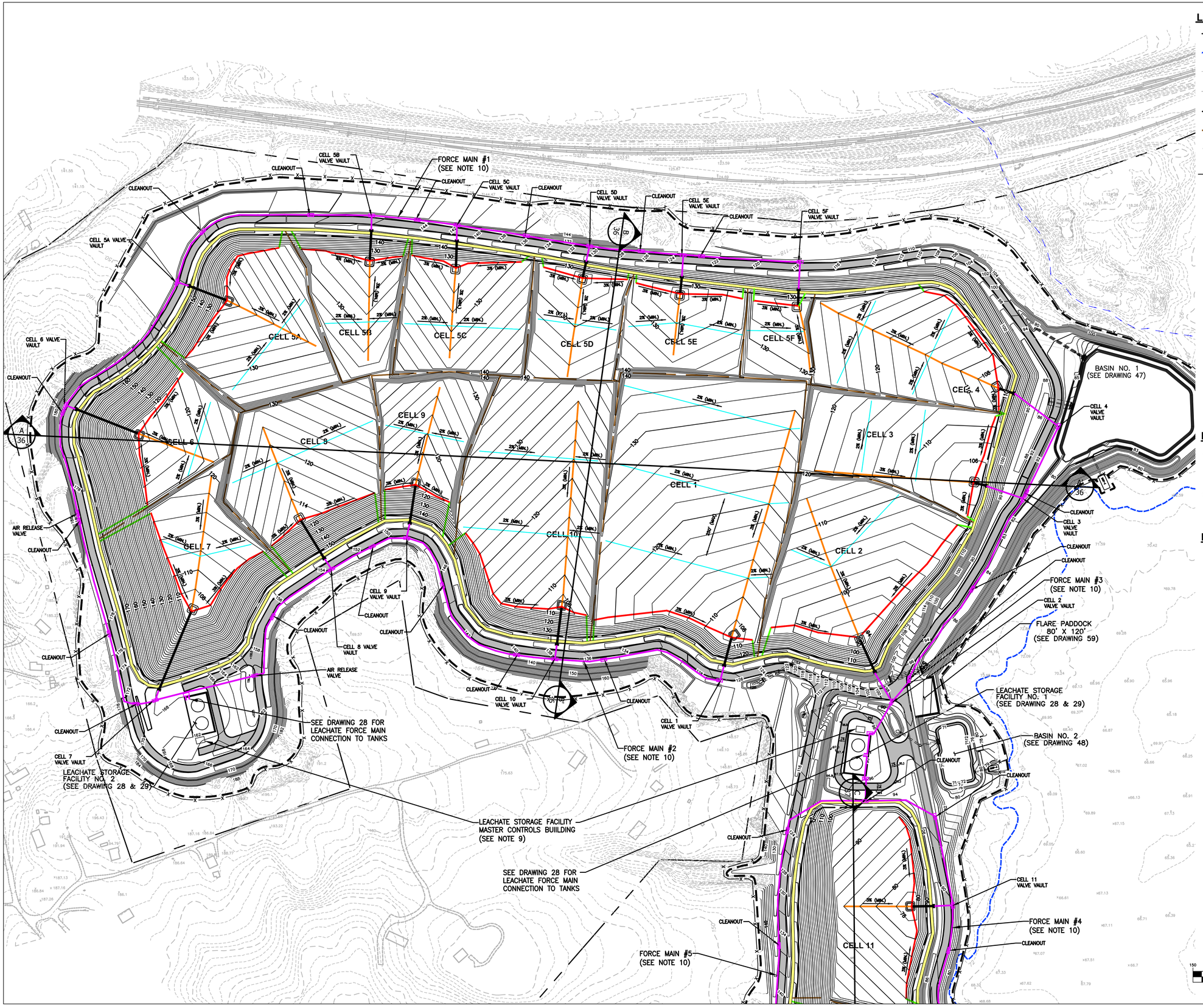
LINER SYSTEM DETAILS
(SHEET 3 OF 3)

PROJECT MANAGER:	PGS	SCALE:	AS NOTED
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE:	09/03/2021

DRAWING 16

N:\Projects\2018\3854 - Chesapeake Terrace\CAD\ANCWC & Phase III Application\Drawings\Final\3854 B16 - LINER SYSTEM DETAILS SHEET 1 OF 3.dwg



LEGEND

- PROPERTY LINE
- 100–YEAR FLOODPLAIN
- 2 FT INCREMENT CONTOUR
- 5 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LIMIT OF DISTURBANCE
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- PERIMETER BERM, SEE DETAIL 2/16
- LANDFILL PERIMETER ROAD, SEE DETAIL 7/8
- 6" LEACHATE COLLECTION LATERAL AT TOE OF SLOPE, SEE DETAIL 3/20
- LEACHATE CLEANOUT LINES, SEE DETAIL 2/20
- 6" LEACHATE COLLECTION LATERALS, SEE DETAIL 1/20
- 8" LEACHATE COLLECTION HEADERS, SEE DETAIL 1/20
- LEACHATE FORCE MAINS
- LEACHATE SIDE SLOPE RISER & PUMPHOUSE, SEE DRAWING 19

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

2.) PERIMETER MONITORING WELL LOCATIONS DIGITIZED FROM HARD COPY OF DRAWING ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED MAY 2008.

NOTES

1.) FOR MATERIALS REQUIREMENTS SEE THE TECHNICAL SPECIFICATIONS IN SECTION 14 OF THE PHASE III REPORT.

2.) LEACHATE COLLECTION HEADERS AND TOE OF SLOPE LATERALS SHALL HAVE A MINIMUM SLOPE OF 3%. CROSS–SLOPE LATERAL SHALL HAVE MINIMUM SLOPE OF 2%.

3.) LEACHATE COLLECTION LATERALS SHALL BE SPACED AT A MINIMUM FREQUENCY OF EVERY 250 FEET.

4.) LEACHATE FORCE/MAINS SHALL HAVE CLEANOUT VAULTS LOCATED EVERY 400 FEET ALONG THEIR LENGTH. CLEANOUT VAULT DETAILS ARE ON DRAWING 22.

5.) DOUBLE WALL FORCE MAIN LINES SHALL BE 6" SDR–11 HDPE INSIDE 10" SDR–17 HDPE CONTAINMENT PIPES.

6.) PREPONDERANCE OF FORCE MAINS SHALL BE LOCATED ALONG THE PERIMETER ACCESS ROAD SHOULDER AS SHOWN ON DRAWINGS 17 & 18. PROFILES OF FORCE MAIN ARE SHOWN ON DRAWINGS 24 & 25.

7.) A LEACHATE VALVE IS LOCATED WHERE EACH CELL PUMP HOUSE DISCHARGE LINE TIES INTO THE FORCE MAIN SO THAT THE LEACHATE FROM EACH CELL CAN BE ISOLATED FROM THE HEADER FOR REPAIRS, AS MAY BE NEEDED.

8.) ACCESS TO PUMP HOUSE FOR PUMP AND FORCE MAIN MAINTENANCE EQUIPMENT SHALL BE PROVIDED BY CROSSING THE PERIMETER CHANNEL WHERE BOX CULVERTS ARE LOCATED, AS SHOWN ON DRAWINGS 38 & 39.

9.) THE LEACHATE STORAGE FACILITY MASTER CONTROLS BUILDING SHALL BE HEATED AND COOLED, AND MONITORED FOR METHANE. THE CONTROL PANELS FOR THE LEACHATE TANKS AND MASTER PANEL FOR CELL PUMPS, AS SHOWN ON DRAWING 27.

10.) LEACHATE FORCE MAINS (SHON IN PURPLE) ARE SHOWN ALONG OUTSIDE EDGE OF ROAD FOR CLARITY. ACTUAL LOCATION WILL BE ON EDGE OF ROAD.

GRAPHIC SCALE

150 0 75 150 300 600

1 inch = 150 ft.

STATE OF MARYLAND — CHRISTOPHER J. TREYMAN — No. 36 — PROFESSIONAL ENGINEER

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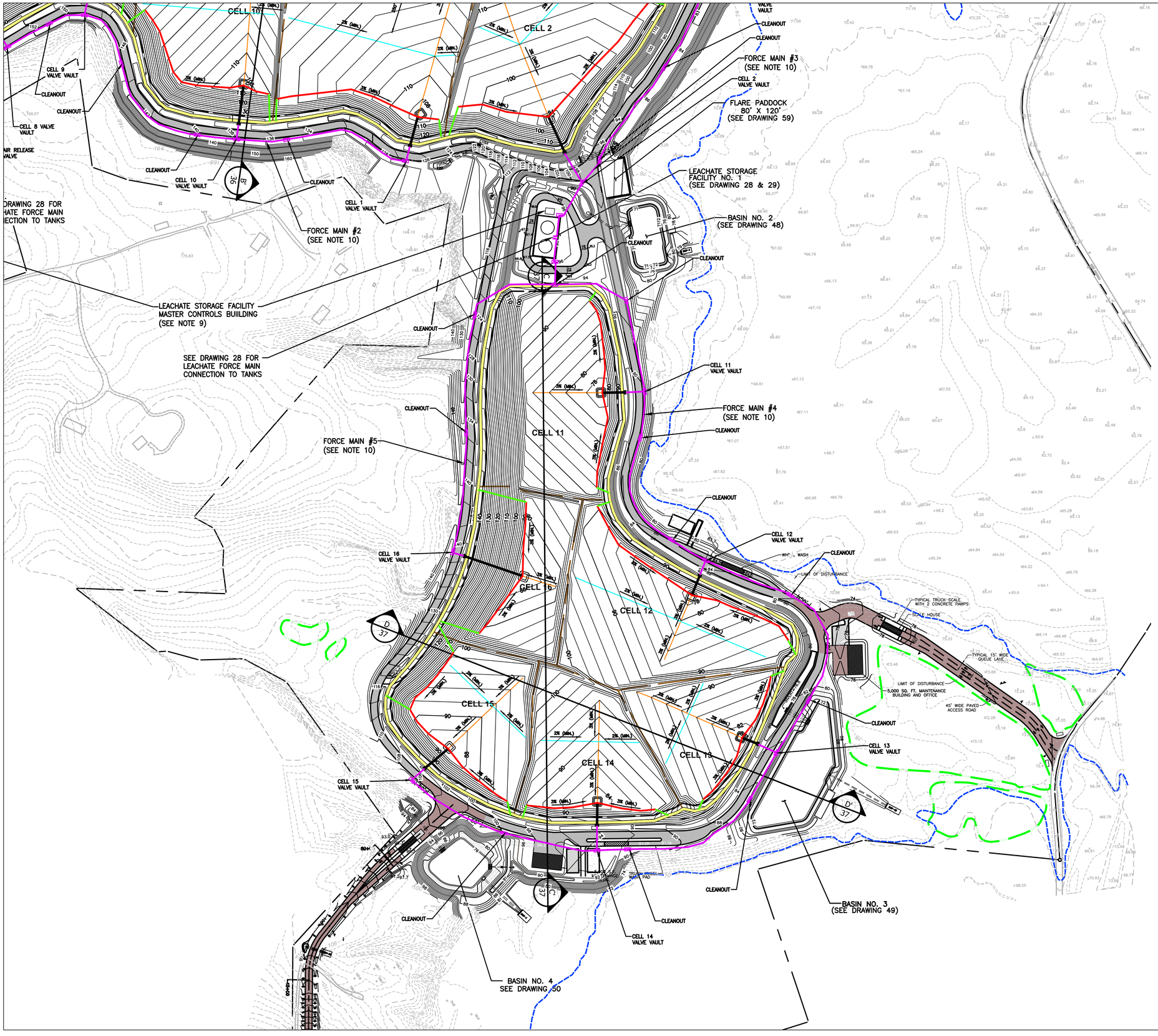
TOP OF LEACHATE COLLECTION LAYER WEST (1–10)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 17



LEGEND

- PROPERTY LINE
- 100–YEAR FLOODPLAIN
- 2 FT INCREMENT CONTOUR
- 5 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LIMIT OF DISTURBANCE
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- PERIMETER BERM, SEE DETAIL 2/16
- LANDFILL PERIMETER ROAD, SEE DETAIL 7/8
- 6" LEACHATE COLLECTION LATERAL AT TOE OF SLOPE, SEE DETAIL 3/20
- LEACHATE CLEANOUT LINES, SEE DETAIL 2/20
- 6" LEACHATE COLLECTION LATERALS, SEE DETAIL 1/20
- 8" LEACHATE COLLECTION HEADERS, SEE DETAIL 1/20
- LEACHATE FORCE MAINS
- LEACHATE SIDE SLOPE RISER & PUMPHOUSE, SEE DRAWING 19

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

2.) PERIMETER MONITORING WELL LOCATIONS DIGITIZED FROM HARD COPY OF DRAWING ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED MAY 2008.

NOTES

1.) FOR MATERIALS REQUIREMENTS SEE THE TECHNICAL SPECIFICATIONS IN SECTION 14 OF THE PHASE III REPORT.

2.) LEACHATE COLLECTION HEADERS AND TOE OF SLOPE LATERALS SHALL HAVE A MINIMUM SLOPE OF 3%. CROSS–SLOPE LATERAL SHALL HAVE MINIMUM SLOPE OF 2%.

3.) LEACHATE COLLECTION LATERALS SHALL BE SPACED AT A MINIMUM FREQUENCY OF EVERY 250 FEET.

4.) LEACHATE FORCE/MAINS SHALL HAVE CLEANOUT VAULTS LOCATED EVERY 400 FEET ALONG THEIR LENGTH. CLEANOUT VAULT DETAILS ARE ON DRAWING 22.

5.) DOUBLE WALL FORCE MAIN LINES SHALL BE 6" SDR–11 HDPE INSIDE 10" SDR–17 HDPE CONTAINMENT PIPES.

6.) PREPONDERANCE OF FORCE MAINS SHALL BE LOCATED ALONG THE PERIMETER ACCESS ROAD SHOULDER AS SHOWN ON DRAWINGS 17 & 18. PROFILES OF FORCE MAIN ARE SHOWN ON DRAWINGS 24 & 25.

7.) A LEACHATE VALVE IS LOCATED WHERE EACH CELL PUMP HOUSE DISCHARGE LINE TIES INTO THE FORCE MAIN SO THAT THE LEACHATE FROM EACH CELL CAN BE ISOLATED FROM THE HEADER FOR REPAIRS, AS MAY BE NEEDED.

8.) ACCESS TO PUMP HOUSE FOR PUMP AND FORCE MAIN MAINTENANCE EQUIPMENT SHALL BE PROVIDED BY CROSSING THE PERIMETER CHANNEL WHERE BOX CULVERTS ARE LOCATED, AS SHOWN ON DRAWINGS 38 & 39.

9.) THE LEACHATE STORAGE FACILITY MASTER CONTROLS BUILDING SHALL BE HEATED AND COOLED, AND MONITORED FOR METHANE. THE CONTROL PANELS FOR THE LEACHATE TANKS AND MASTER PANEL FOR CELL PUMPS, AS SHOWN ON DRAWING 27.

10.) LEACHATE FORCE MAINS (SHON IN PURPLE) ARE SHOWN ALONG OUTSIDE EDGE OF ROAD FOR CLARITY. ACTUAL LOCATION WILL BE ON EDGE OF ROAD.

GRAPHIC SCALE

150 0 75 150 300 600

1 inch = 150 ft.

STATE OF MARYLAND — JAY C. STRAYMAR — No. 15231 — PROFESSIONAL ENGINEER

REVISION:	DATE:
REVISED TO ADDRESS MDE COMMENTS ON PHASE 3	9/03/2021
REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS	11/09/2021
FINAL ISSUED TO MDE	1/14/2022

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

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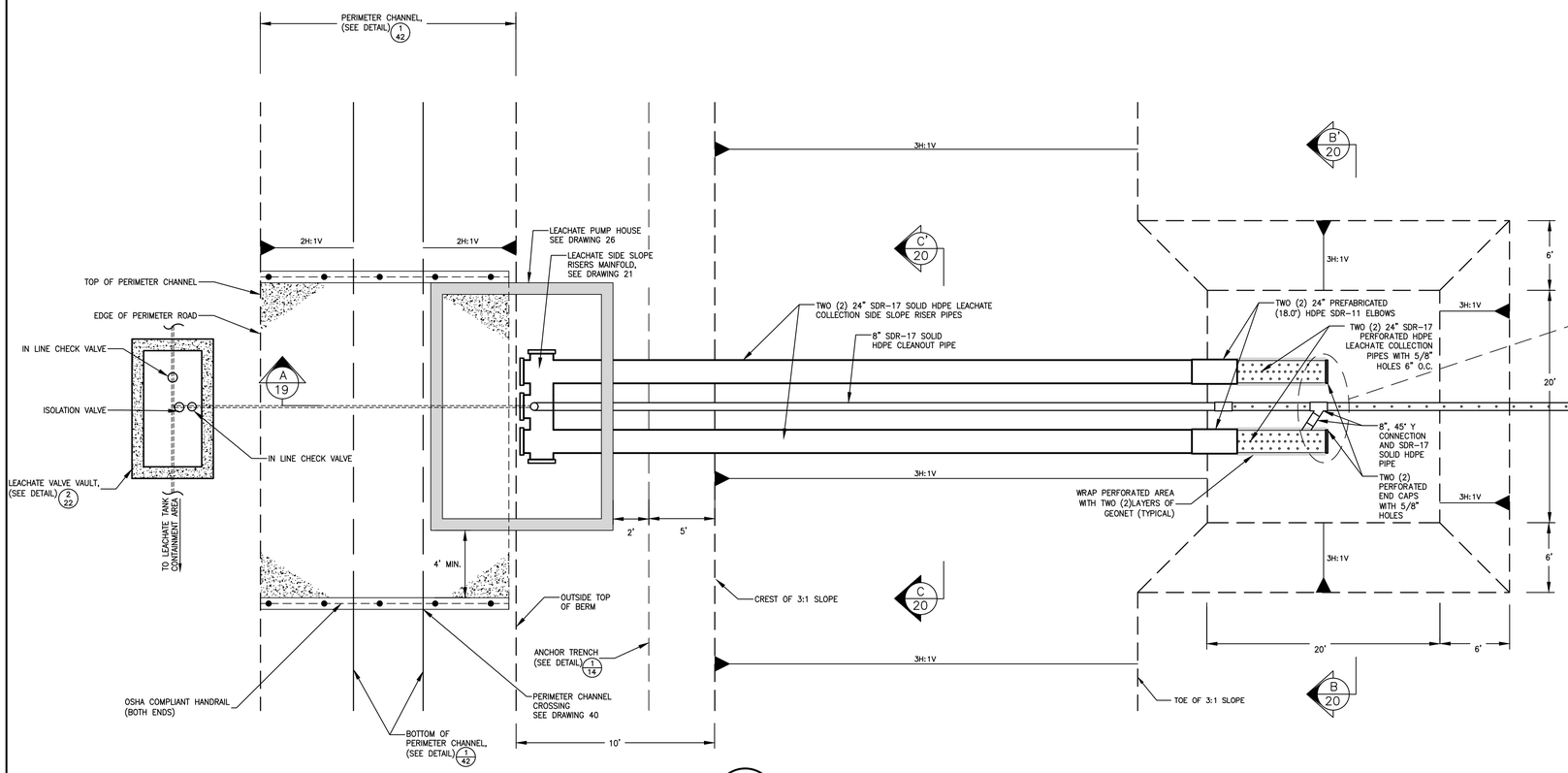
TOP OF LEACHATE COLLECTION LAYER EAST (11–16)

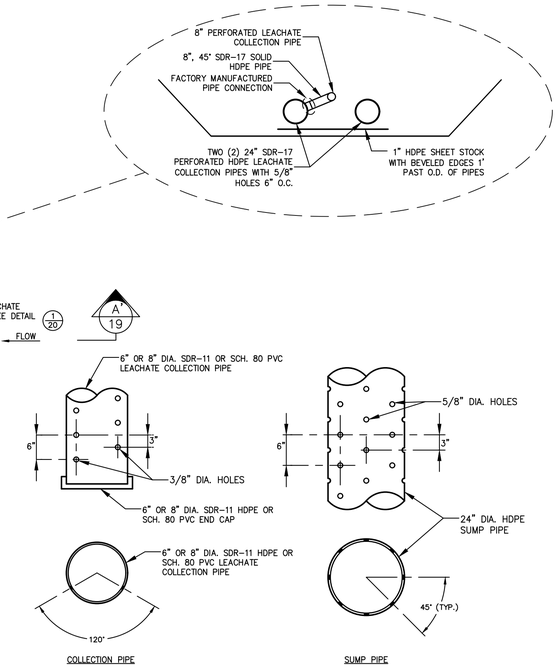
PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 18



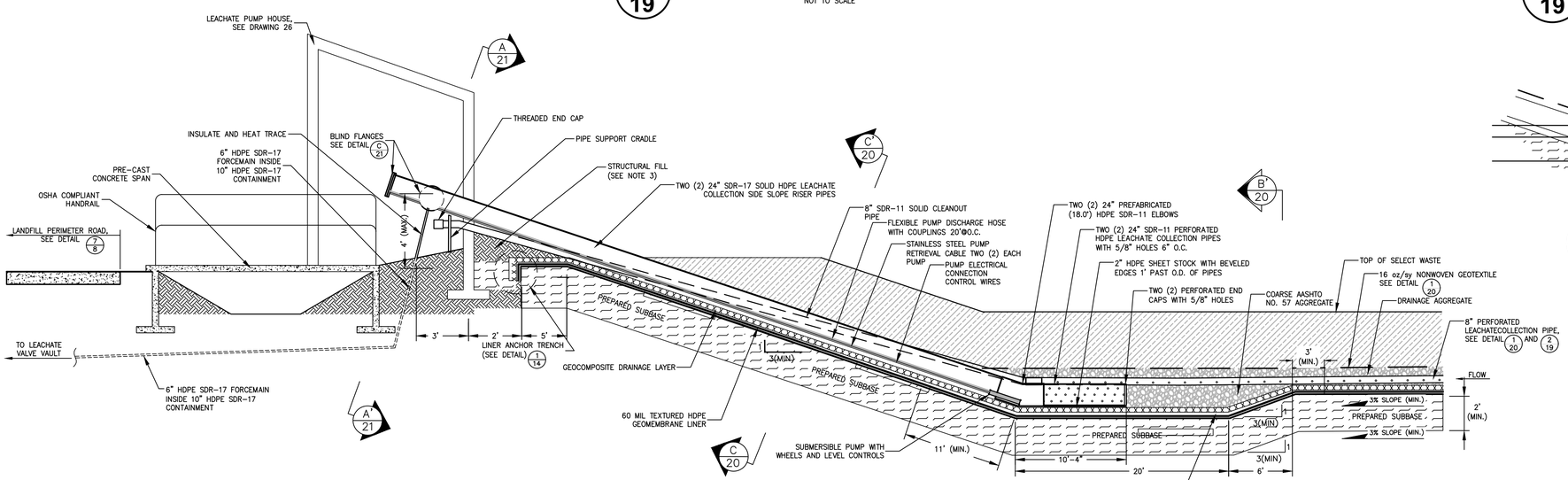
1/19 LEACHATE COLLECTION SUMP

NOT TO SCALE



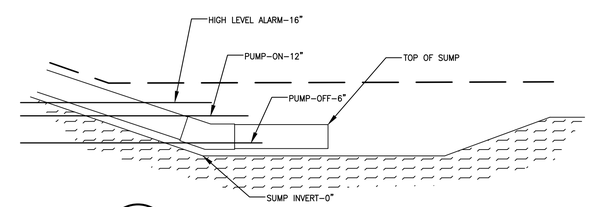
2/19 LEACHATE COLLECTION AND SUMP PIPE PERFORATION

NOT TO SCALE



A/19 SECTION A-A'

NOT TO SCALE



3/19 PUMP CONTROL SETTING

NOT TO SCALE

NOTES

1.) THICKNESS OF GEOSYNTHETICS IS EXAGGERATED FOR CLARITY.
2.) FOR MATERIALS REQUIREMENTS, SEE THE TECHNICAL SPECIFICATIONS IN SECTION 14 OF THE PHASE III REPORT.
3.) STRUCTURAL FILL SHALL BE PLACED AS SUPPORT BENEATH 24" HDPE RISER PIPES. STRUCTURAL FILL SHALL BE REMOVED AT TIME OF FINAL COVER/CLOSURE CAP CONSTRUCTION.
4.) FOR PUMP SPECIFICATIONS, REFER TO SPECIFICATION SECTION 02652.

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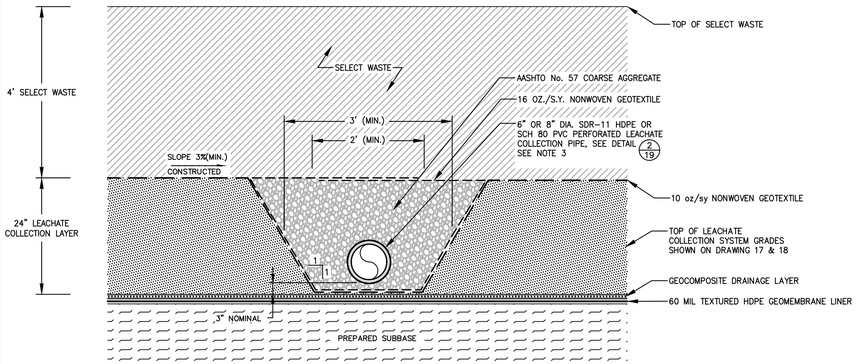
LEACHATE COLLECTION SYSTEM DETAILS (SHEET 1 OF 4)

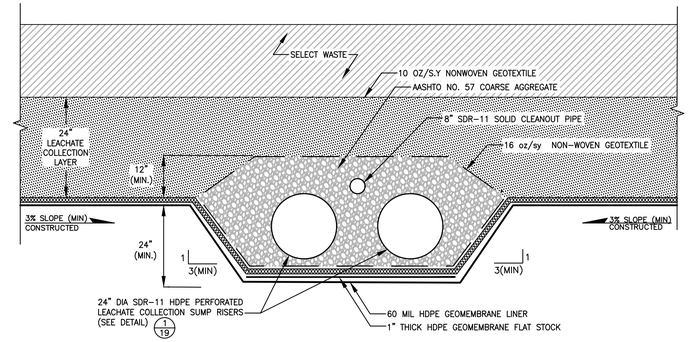
PROJECT MANAGER:	PGS	SCALE:	AS NOTED
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE:	09/03/2021

DRAWING 19



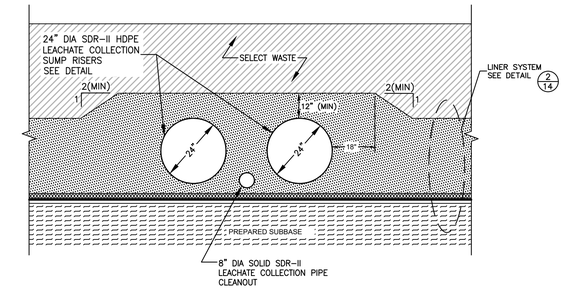
1/20 LEACHATE COLLECTION PIPE

NOT TO SCALE



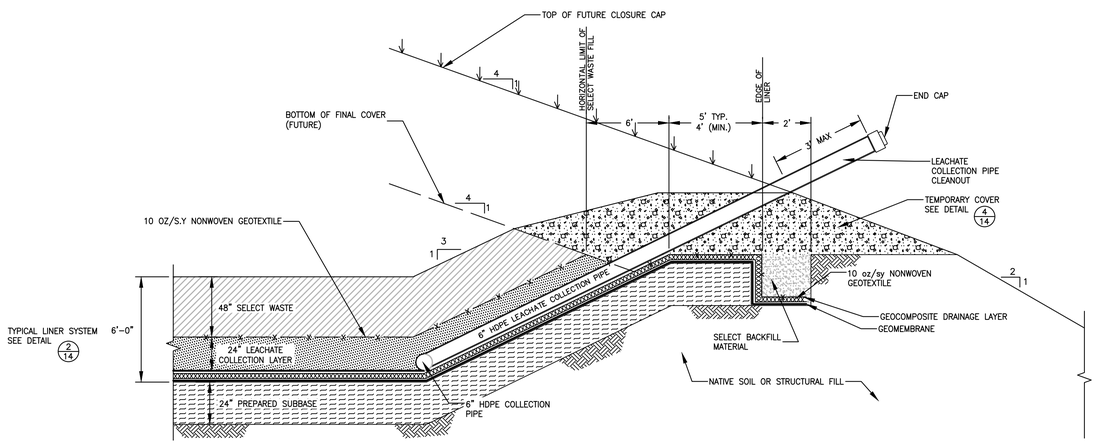
B/20 SECTION B-B'

NOT TO SCALE



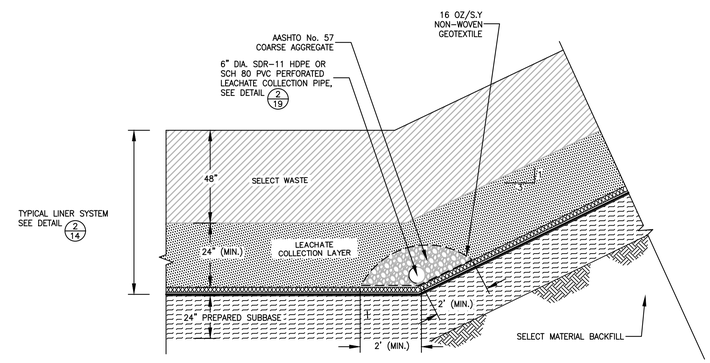
C/20 SECTION C-C'

NOT TO SCALE



2/20 TYPICAL LEACHATE CLEANOUT ALONG PERIMETER BERM (DURING FILLING) SEE NOTE

NOT TO SCALE



3/20 LEACHATE COLLECTION AT TOE OF PERIMETER BERM

NOT TO SCALE

NOTES

1.) THICKNESS OF GEOSYNTHETICS IS EXAGGERATED FOR CLARITY.

2.) FOR MATERIALS REQUIREMENTS, SEE THE TECHNICAL SPECIFICATIONS IN SECTION 14 OF THE PHASE III REPORT.

3.) LEACHATE COLLECTION HEADERS (8" DIA) AND LATERALS (6"DIA) SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 3% AND 2%, RESPECTIVELY.

4.) SEE DETAIL 3/35 FOR TYPICAL LEACHATE CLEANOUT ALONG PERIMETER BERM AFTER CAP COMPLETION.

STATE OF MARYLAND — KYLE RICHARD STRAYMAN — REGISTERED PROFESSIONAL ENGINEER — No. 52451

DATE:	REVISION:
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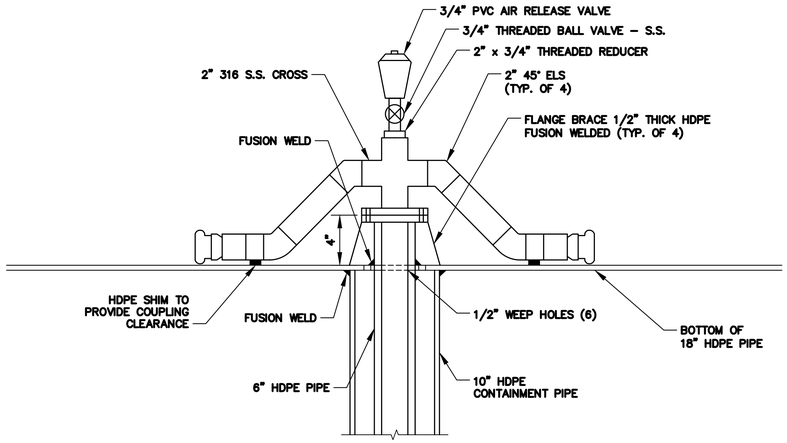
LEACHATE COLLECTION SYSTEM DETAILS (SHEET 2 OF 3)

PROJECT MANAGER:	PGS	SCALE:	AS NOTED
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE:	09/03/2021

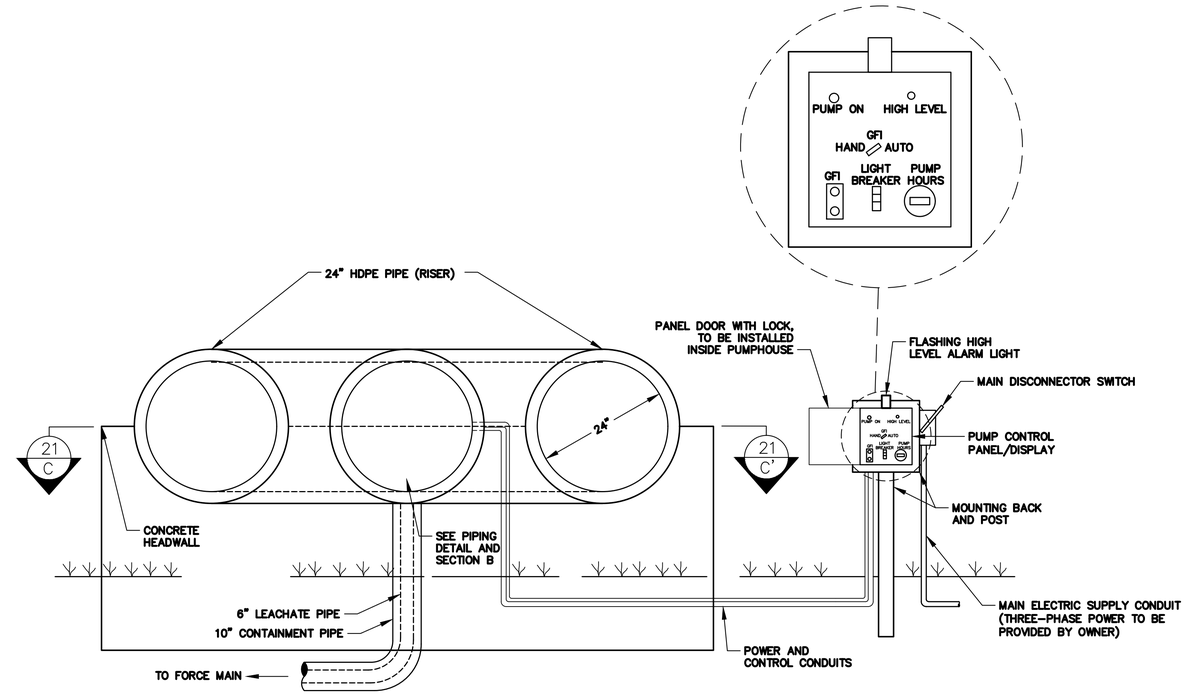
DRAWING 20



PUMP HOSE CONNECTION TO LEACHATE FORCE MAIN

1 / 21

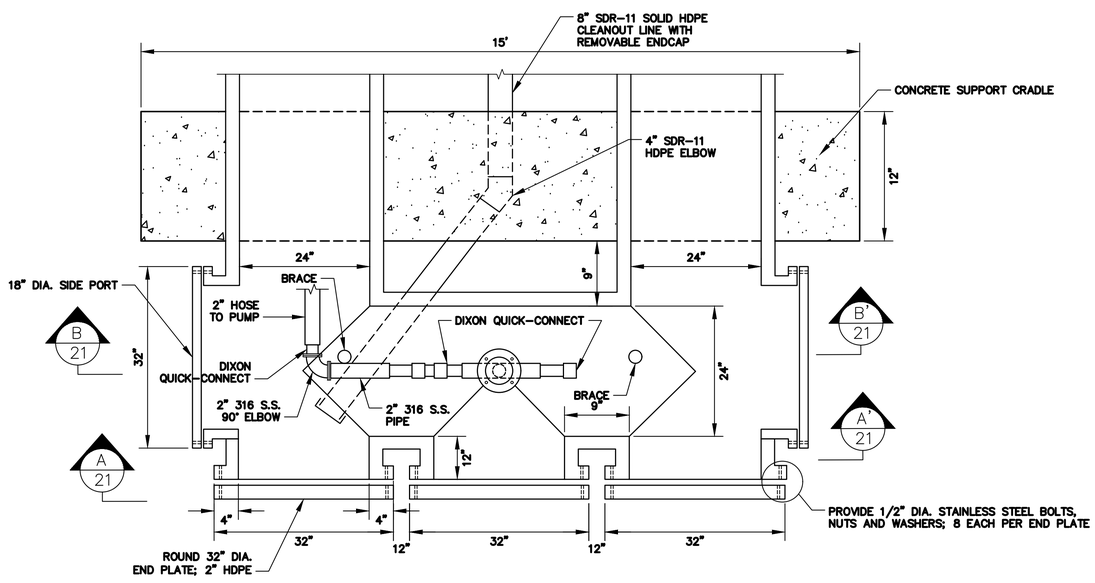
NOT TO SCALE



SECTION A-A'

A / 21

NOT TO SCALE



SECTION C-C' SIDESLOPE RISER MANIFOLD - TOP END

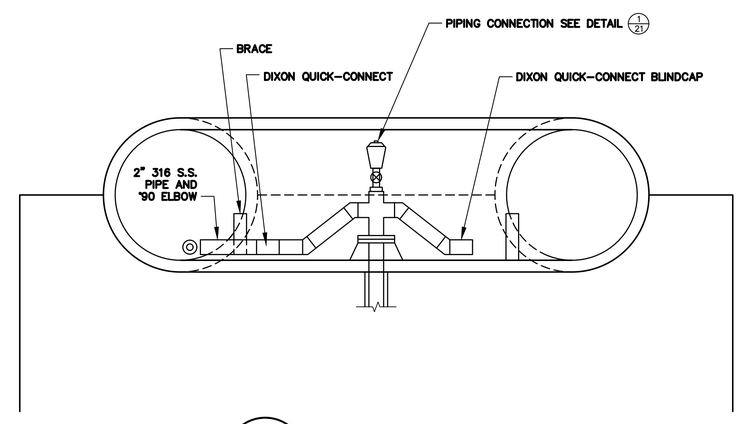
C / 21

NOT TO SCALE

NOTES

1.) BRACE TO BE 2" HDPE PIPE, 6" TALL FUSION WELDED ON BOTTOM OF PIPE TO KEEP TENSION OFF HARD PIPING.

2.) SEE DRAWING 19 FOR SIDESLOPE RISER/SUMP DETAILS.



SECTION B-B'

B / 21

NOT TO SCALE

NOTES

1. THICKNESS OF GEOSYNTHETICS IS EXAGGERATED FOR CLARITY.
2. FOR MATERIALS REQUIREMENTS, SEE THE TECHNICAL SPECIFICATIONS IN SECTION 14 OF THE PHASE III REPORT

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STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER — KEVIN P. SCHRAYMAN — No. 25351 — 1/14/22

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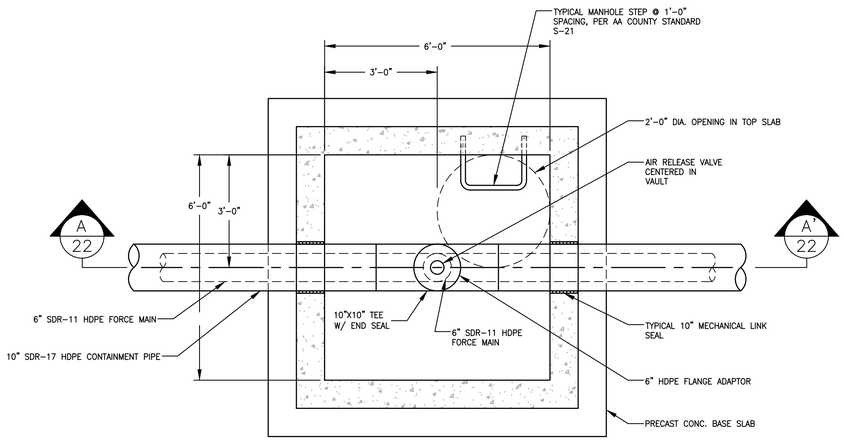
LEACHATE COLLECTION SYSTEM DETAILS (SHEET 3 OF 3)

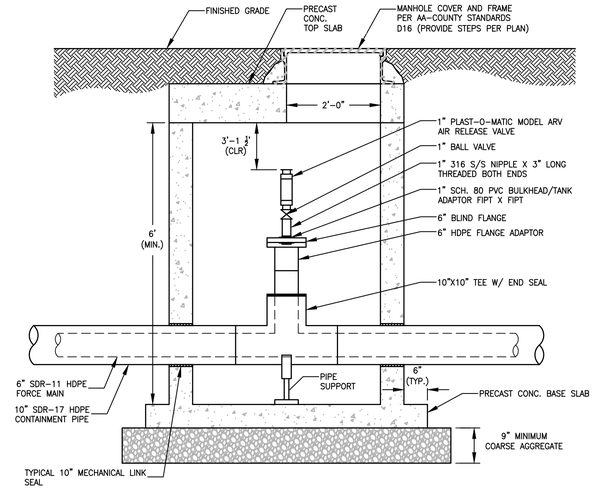
PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 21



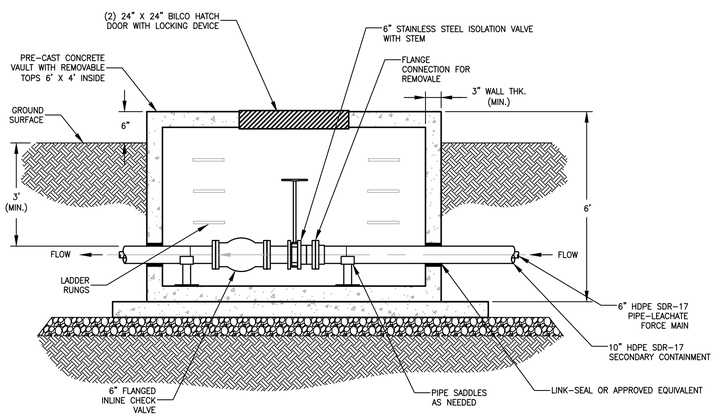
1/22 AIR RELEASE VALVE AND VAULT PLANS

NOT TO SCALE



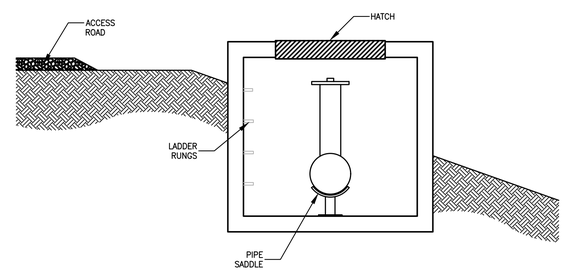
A/22 AIR RELEASE VALVE AND VAULT PLANS - SECTION A-A'

NOT TO SCALE



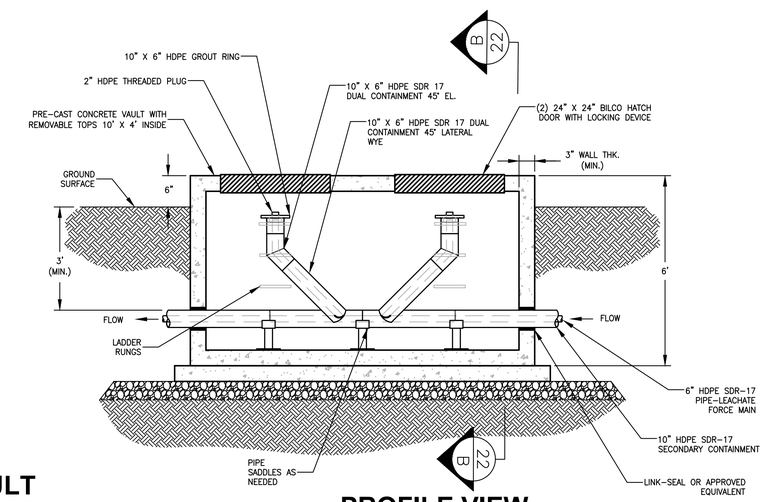
2/22 VALVE VAULT

NOT TO SCALE



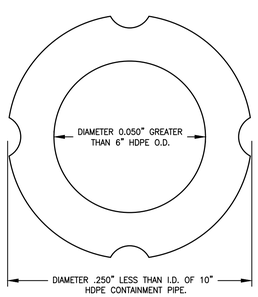
SECTION VIEW
B/22 TYPICAL FORCEMAIN CLEAN-OUT VAULT

NOT TO SCALE
NOTE: 400 FEET MAXIMUM SPACING ALONG FORCEMAIN



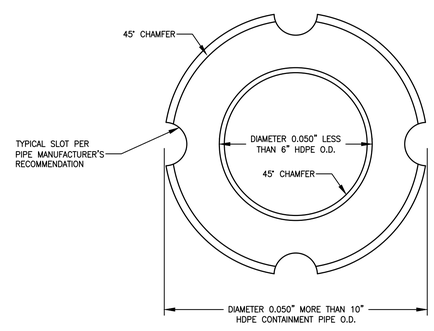
PROFILE VIEW
3/22 FORCE MAIN CLEAN-OUT VAULT

NOT TO SCALE
NOTE: 400 FEET MAXIMUM SPACING ALONG FORCEMAIN



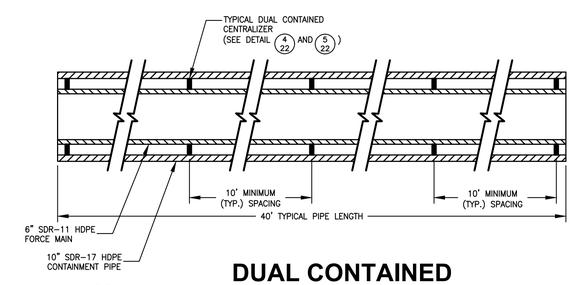
4/22 LOOSE FIT DUAL CONTAINED CENTRALIZER

NOT TO SCALE



5/22 PRESS FIT DUAL CONTAINED CENTRALIZER

NOT TO SCALE



6/22 DUAL CONTAINED CENTRALIZED PLAN

NOT TO SCALE

REVISION:	DATE:
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STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER — KAYE C. BRAYMAN — No. 15251

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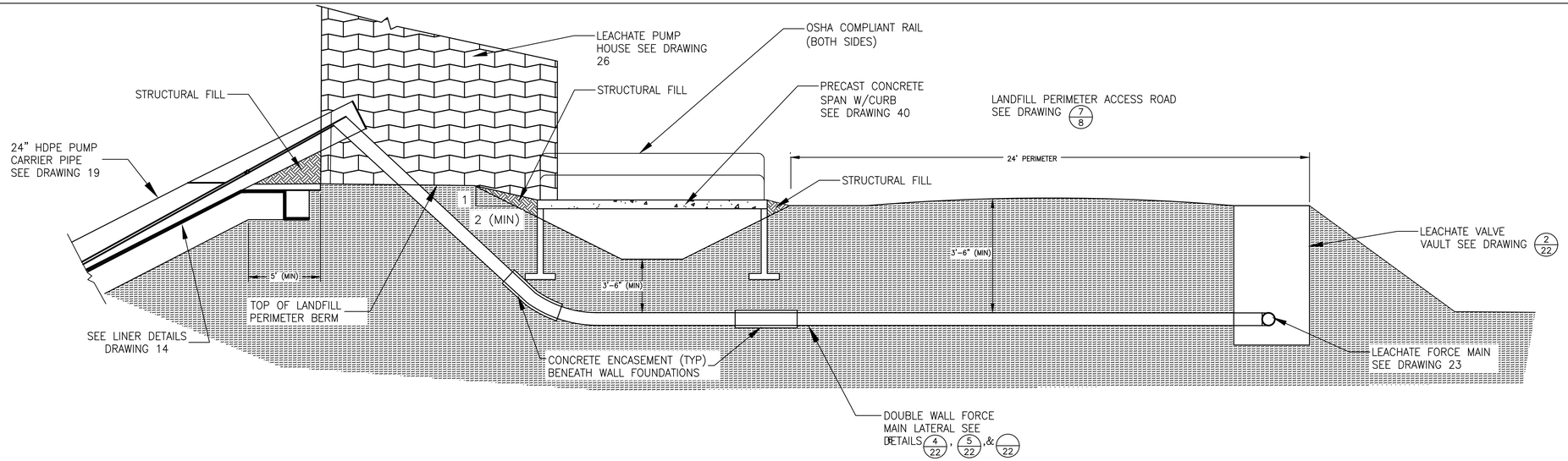
LEACHATE FORCE MAIN DETAILS (SHEET 1 OF 2)

PROJECT MANAGER: PCS
CHECKED BY: PCS
DRAWN BY: KHF
SCALE: AS NOTED
PROJECT NUMBER: 2018 – 3854
DATE: 09/03/2021

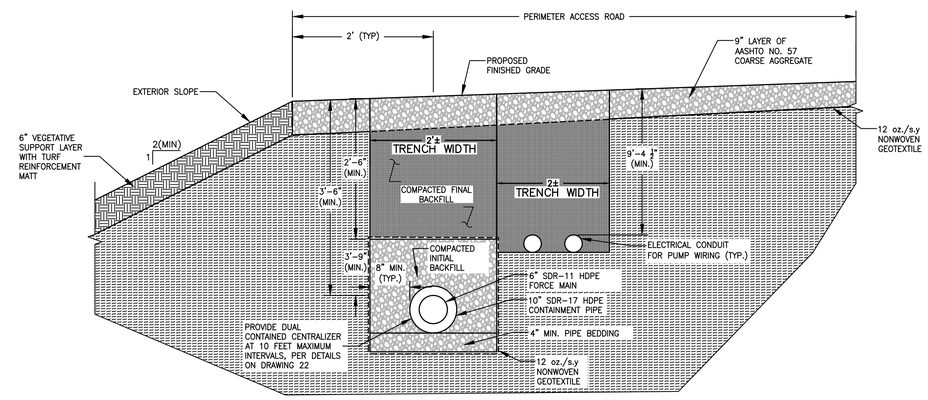
DRAWING 22



FORCE MAIN LATERAL PROFILE (TYPICAL)

1/23

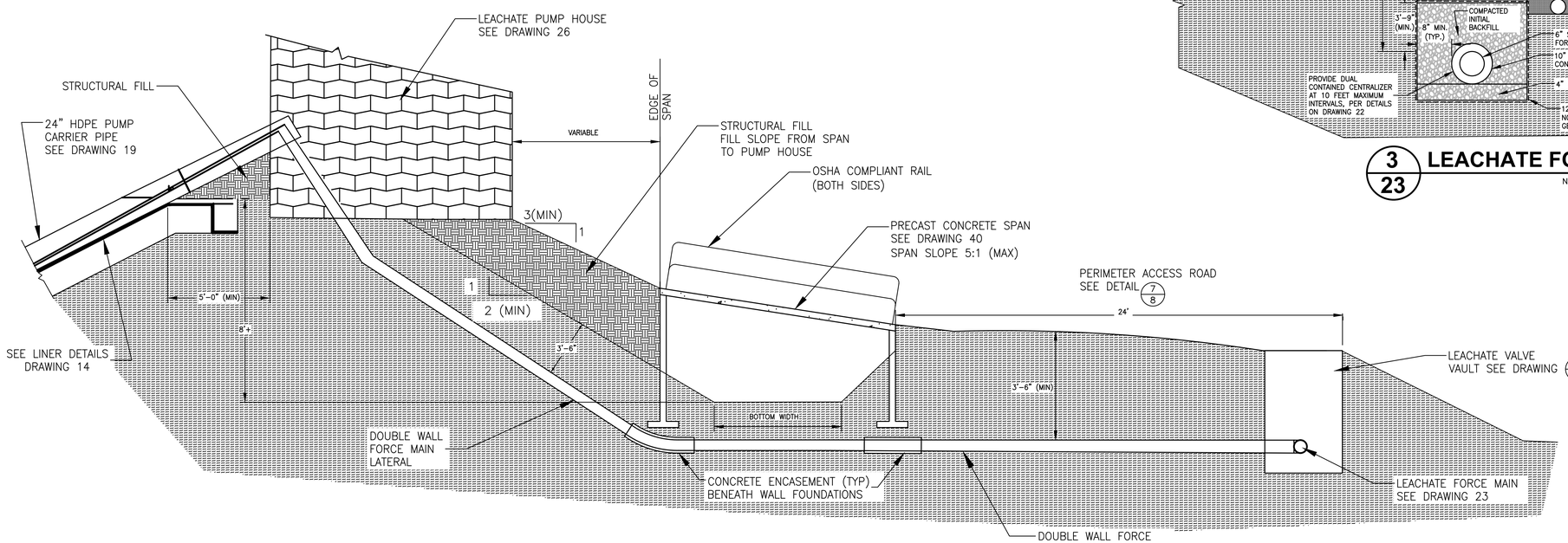
NOT TO SCALE



LEACHATE FORCE MAIN BEDDING

3/23

NOT TO SCALE



FORCE MAIN LATERAL PROFILE (CELLS 2, 3, 4, 5E, 5F, 12, AND 13)

2/23

NOT TO SCALE

NOTES

1.) THICKNESS OF GEOSYNTHETICS IS EXAGGERATED FOR CLARITY.

2.) FOR MATERIALS REQUIREMENTS, SEE THE TECHNICAL SPECIFICATIONS IN SECTION 14 OF THE PHASE III REPORT

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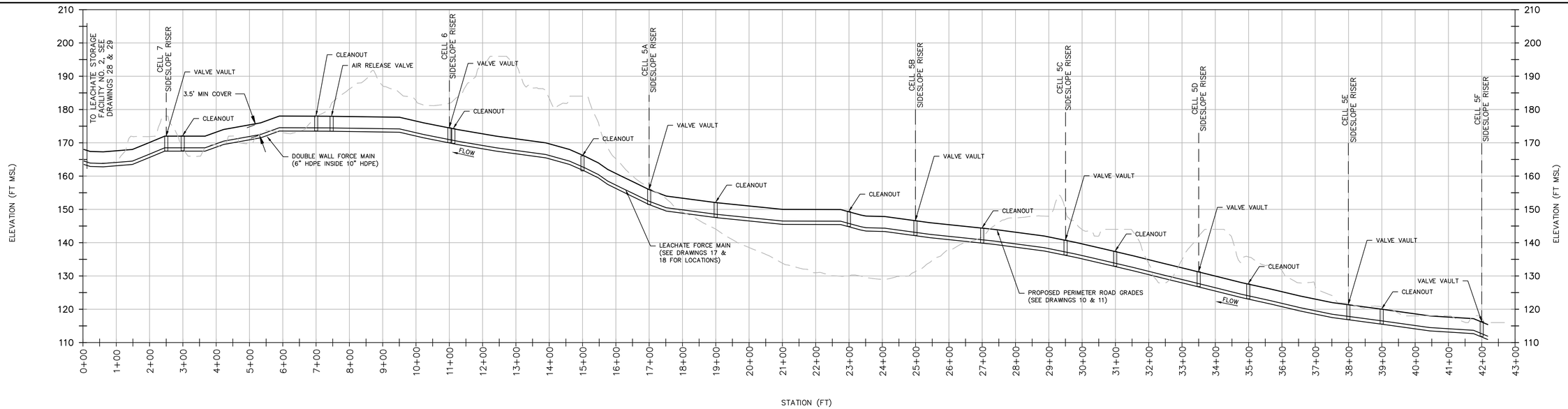
LEACHATE FORCE MAIN DETAILS (SHEET 2 OF 2)

PROJECT MANAGER: PGS
CHECKED BY: PGS
DRAWN BY: KHF
SCALE: AS NOTED
PROJECT NUMBER: 2018 – 3854
DATE: 09/03/2021

DRAWING 23

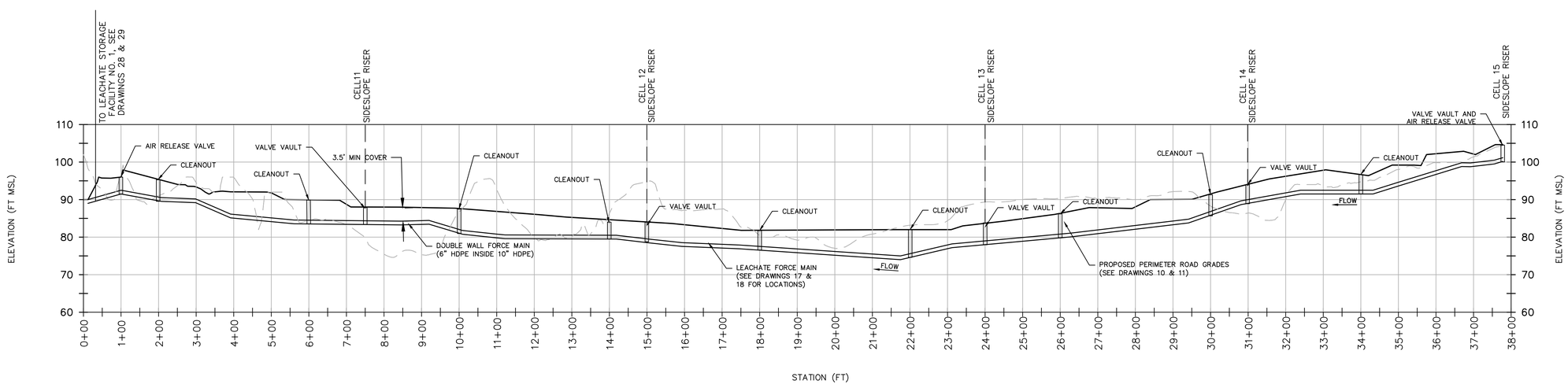


1
24

PROFILE- LEACHATE FORCE MAIN NO. 1

SCALE: VERTICAL– 0 7.5 15 30 1 INCH = 15 FT

HORIZONTAL– 0 75 150 300 1 INCH = 150 FT



2
24

PROFILE- LEACHATE FORCE MAIN NO. 4

SCALE: VERTICAL– 0 7.5 15 30 1 INCH = 15 FT

HORIZONTAL– 0 75 150 300 1 INCH = 150 FT

NOTES

1.) THE CELL SIDESLOPE RISER LOCATION RELATIVE TO THE FORCE MAIN ALIGNMENT IS APPROXIMATE.
2.) CLEAN OUT VAULTS SHALL BE FELD LOCATED EVERY 400 FEET ALONG THE LENGTH OF EACH FORCE MAIN.
3.) FOR FORCE MAIN DETAILS, SEE DRAWINGS 22 & 23.
4.) AIR RELEASE VALVES SHALL BE LOCATED AT HIGH POINTS IN ALIGNMENT.
5.) CLEANOUT, AIR RELEASE VALVE AND VALVE VAULT LOCATIONS ARE APPROXIMATE AND SHALL BE FIELD LOCATED.

STATE OF MARYLAND KARL FREDERICK STEYMAN REGISTERED PROFESSIONAL ENGINEER No. 19971 7/14/22

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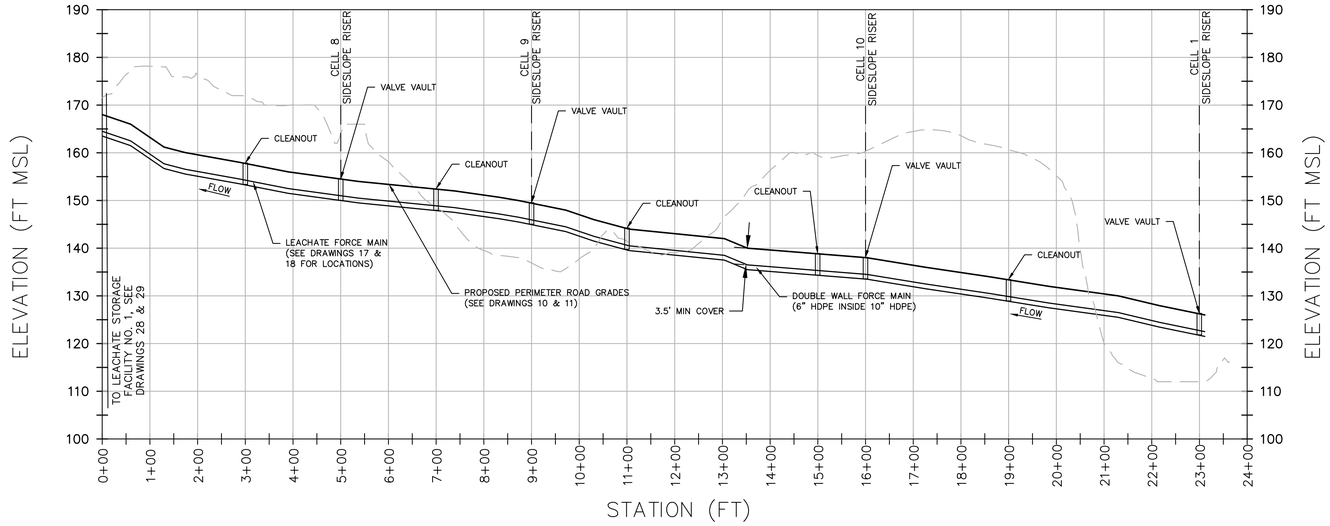
LEACHATE FORCE MAIN PROFILES (SHEET 1 OF 2)

PROJECT MANAGER:	PGS	SCALE: AS NOTED	
CHECKED BY:	PGS	PROJECT NUMBER: 2018 – 3854	
DRAWN BY:	KHF	DATE: 09/03/2021	

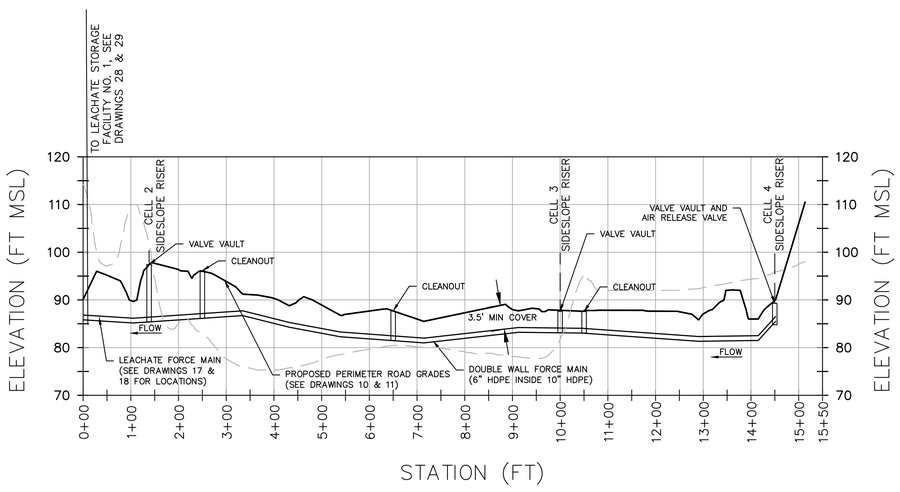
DRAWING 24



1/25 PROFILE- LEACHATE FORCE MAIN NO. 2

SCALE: VERTICAL– 1 INCH = 15 FT

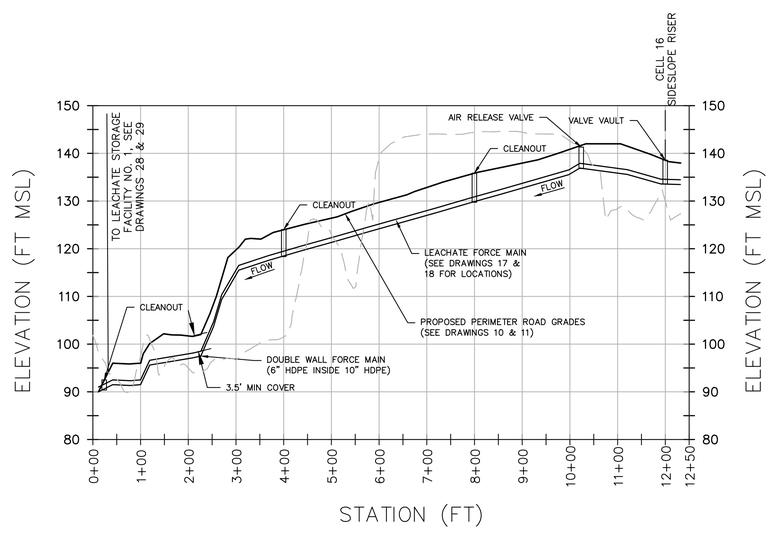
HORIZONTAL– 1 INCH = 150 FT



2/25 PROFILE- LEACHATE FORCE MAIN NO. 3

SCALE: VERTICAL– 1 INCH = 15 FT

HORIZONTAL– 1 INCH = 150 FT



3/25 PROFILE- LEACHATE FORCE MAIN NO. 5

SCALE: VERTICAL– 1 INCH = 15 FT

HORIZONTAL– 1 INCH = 150 FT

NOTES

1.) THE CELL SIDESLOPE RISER LOCATION RELATIVE TO THE FORCE MAIN ALIGNMENT IS APPROXIMATE.
2.) CLEAN OUT VAULTS SHALL BE FELD LOCATED EVERY 400 FEET ALONG THE LENGTH OF EACH FORCE MAIN.
3.) FOR FORCE MAIN DETAILS, SEE DRAWINGS 22 & 23.
4.) AIR RELEASE VALVES SHALL BE LOCATED AT HIGH POINTS IN ALIGNMENT.
5.) CLEANOUT, AIR RELEASE VALVE AND VALVE VAULT LOCATIONS ARE APPROXIMATE AND SHALL BE FIELD LOCATED.

STATE OF MARYLAND — MICHAEL R. STEYMAN — REGISTERED PROFESSIONAL ENGINEER — No. 35351 — 1/14/22

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
1978 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.1273 F: 856.354.9236 www.advancedgeoservices.com

LEACHATE FORCE MAIN PROFILES (SHEET 2 OF 2)

PROJECT MANAGER:	PGS	SCALE: AS NOTED	
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE: 09/03/2021	

DRAWING 25

NOTES

1.) PUMP HOUSE IS INTENDED TO PROVIDE SHELTER FOR WORKERS PERFORMING O&M ACTIVITIES IN INCLEMENT WEATHER.
2.) THE CONTROL PANELS SHALL BE INSTALLED ON THE INSIDE OF THE PUMP HOUSE.
3.) THE PUMP ACCESS PLATFORM SHALL BE CONSTRUCTED IN ACCORDANCE WITH OSHA REQUIREMENTS, IF NEEDED.
4.) THE PUMP HOUSE SHALL BE EQUIPPED WITH LIGHTING, AND HEATING AND COOLING CAPACITY.
5.) THE CELL PUMP HOUSE SHALL HAVE THE FOLLOWING MINIMUM DIMENSIONS: 8 FT WIDE X 16 FT LONG X 10 FT TALL.
6.) THE DOUBLE-SWING DOORS MAY BE REPLACED WITH A SLIDING DOOR OR A TRADITIONAL, COMMERCIAL OVERHEAD GARAGE DOOR.

STATE OF MARYLAND
BERNARD STRATMAN
PROFESSIONAL ENGINEER
1/14/22

DATE:	REVISION:
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NATIONAL WASTE MANAGERS
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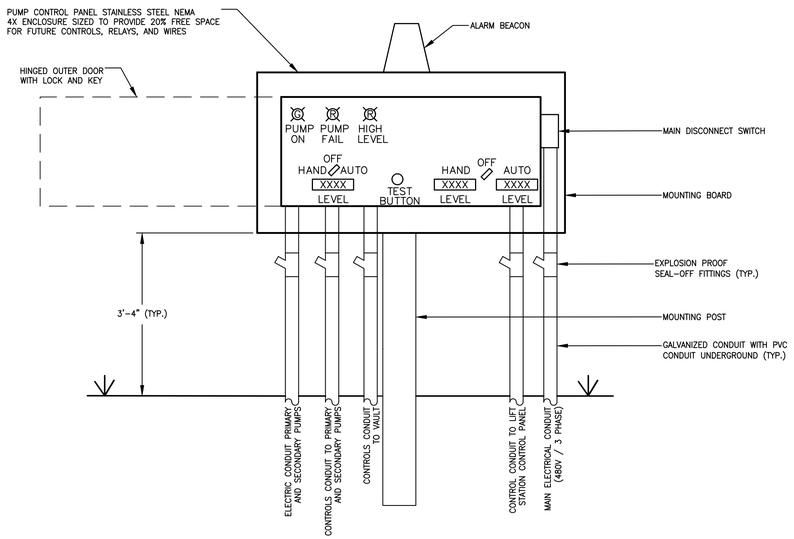
LEACHATE PUMP
HOUSE DETAILS

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

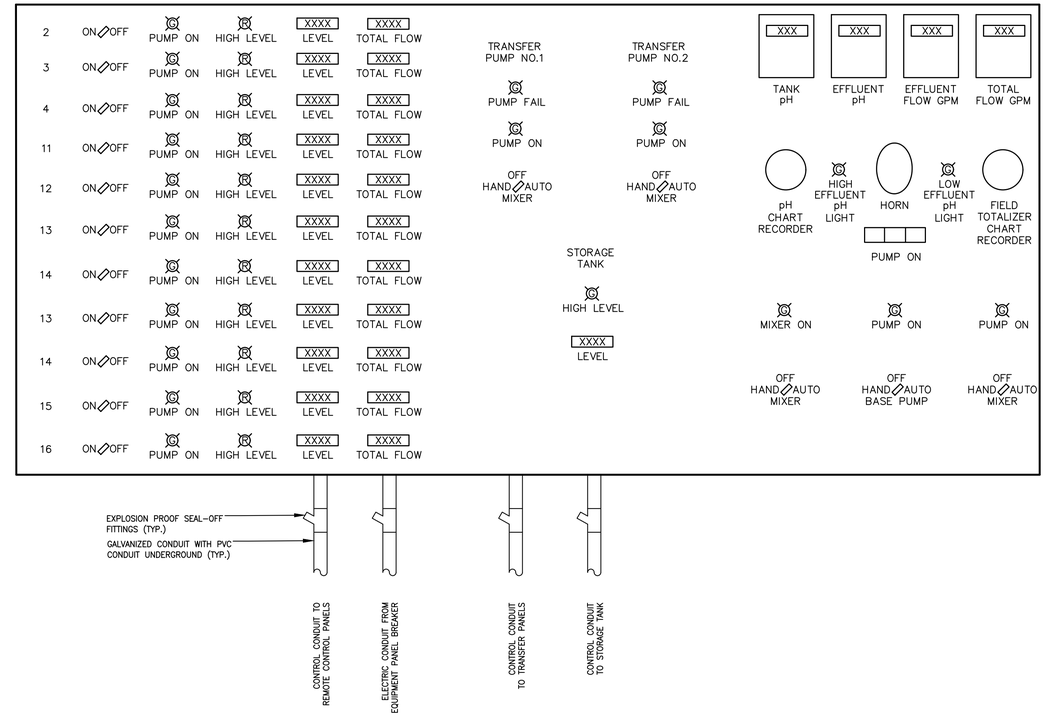
DRAWING 26

N:\Projects\2018\2018854 - Chesapeake Terrace II\CAD\ACAD\AC & Phase III Application\Drawings\Final\2018854 B06 - PUMP HOUSE DETAIL.dwg



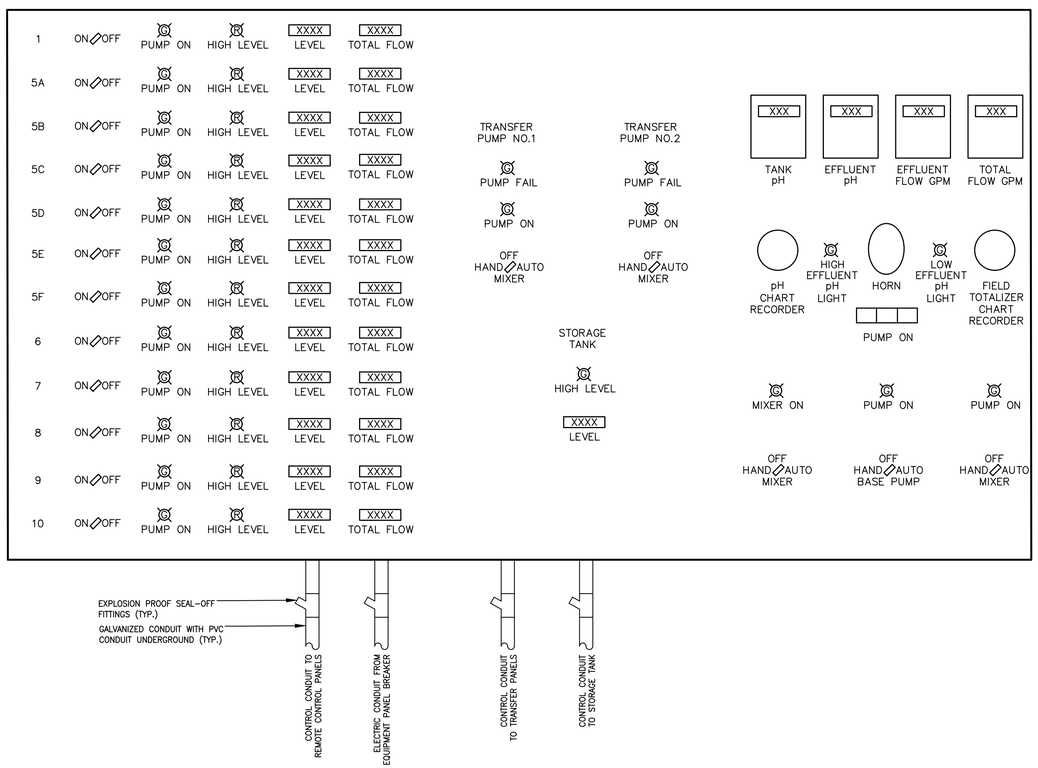
1/27 LEACHATE CONTROL SUMP PUMP CONTROL PANEL AT EACH CELL

NOT TO SCALE



2/27 MAIN CONTROL PANEL AT LEACHATE STORAGE FACILTY No. 1

NOT TO SCALE



3/27 MAIN CONTROL PANEL AT LEACHATE STORAGE FACILTY No. 2

NOT TO SCALE

Cell or Sub-cell ID	Peak Leachate Generation (gpm)	Total Head (ft)	Selected Pump
1	91.8	108.9	Model 18-4 HP 5.0
2	54.8	50.2	Model 18-2 HP 3.0
3	34.1	35.2	Model 18-1 HP 1.5
4	38.1	35.3	Model 18-1 HP 1.5
5A	41.4	93.4	Model 18-2 HP 3.0
5B	24.5	89.2	Model 18-2 HP 3.0
5C	31.5	89.4	Model 18-2 HP 3.0
5D	20.3	87.2	Model 18-2 HP 3.0
5E	23.5	89.3	Model 18-2 HP 3.0
5F	11.7	87.1	Model 18-3 HP 5.0
6	40.8	101.3	Model 18-3 HP 5.0
7	53.4	107.1	Model 18-3 HP 5.0
8	43.3	99.1	Model 18-3 HP 5.0
9	28.7	97.1	Model 18-2 HP 3.0
10	68.2	107.8	Model 18-3 HP 5.0
11	53.4	59.2	Model 18-2 HP 3.0
12	44.8	59.3	Model 18-2 HP 3.0
13	27.5	55.2	Model 18-1 HP 1.5
14	23.9	53.2	Model 18-1 HP 1.5
15	37.9	51.5	Model 18-2 HP 3.0
16	33.3	51.2	Model 18-1 HP 1.5

NOTES

1.) FOR PUMP SPECIFICATIONS, REFER TO TECHNICAL SPECIFICATION SECTION 02652.
2.) THE MAIN CONTROL PANELS AT EACH LEACHATE STORAGE FACILITY SHALL BE LOCATED IN A SMALL BUILDING TO PROVIDE SHELTER DURING INCLEMENT WEATHER AND STORAGE OF BACKUP PUMPS AND RELATED EQUIPMENT.

STATE OF MARYLAND — KARL SCHROEDER STEYMAN — REGISTERED PROFESSIONAL ENGINEER — No. 19321

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
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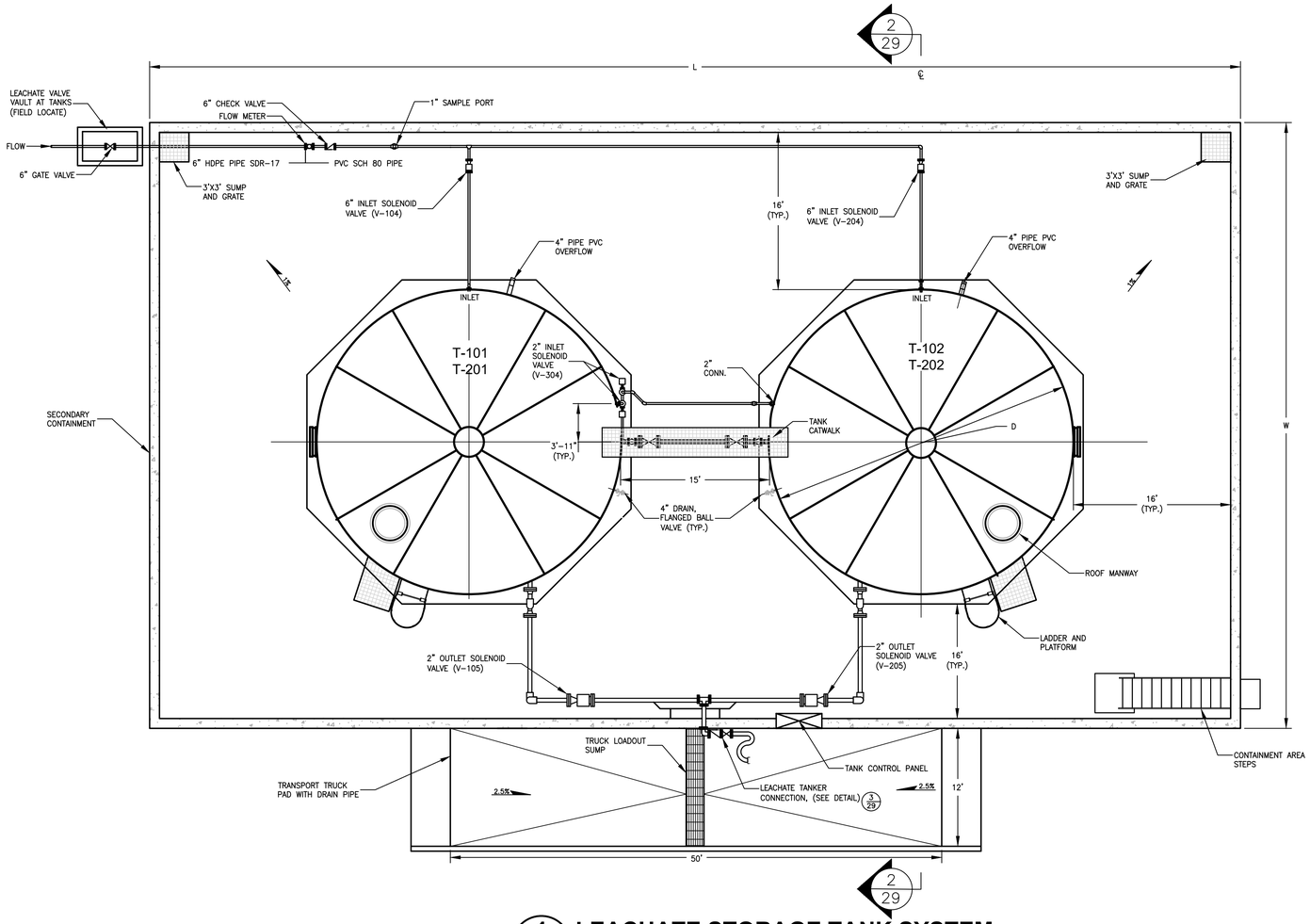
LEACHATE CONTROL PANEL LAYOUT

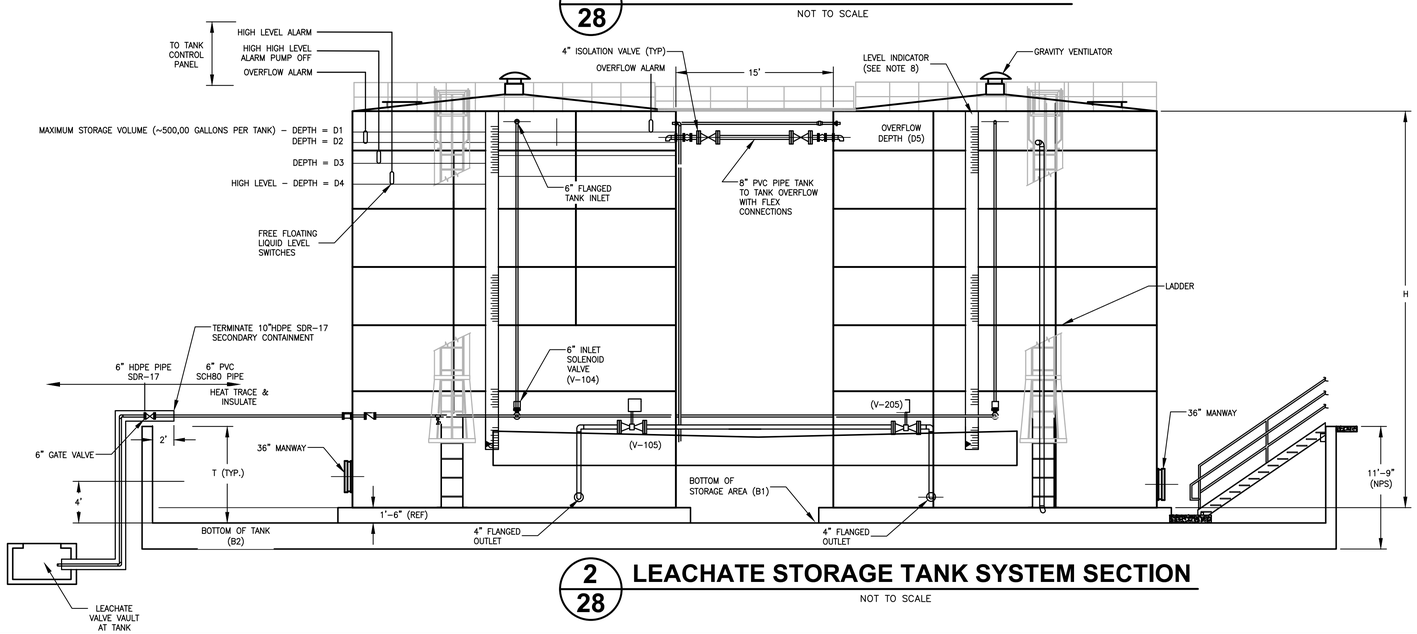
PROJECT MANAGER:	PGS	SCALE: AS NOTED	
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE: 09/03/2021	

DRAWING 27



1/28 LEACHATE STORAGE TANK SYSTEM

NOT TO SCALE



2/28 LEACHATE STORAGE TANK SYSTEM SECTION

NOT TO SCALE

PARAMETER	LECHATE STORAGE AREA NO. 1	LEACHATE STORAGE AREA NO. 2
# OF TANKS	2	2
STORAGE IN EACH TANK	500,000 GALLONS	500,000 GALLONS
TANK DIAMETER (D)	45 FT	45 FT
TANK HEIGHT (H)	46 FT (MIN)	46 FT (MIN)
STORAGE AREA LENGTH (L)	140 FT	140 FT
STORAGE AREA WIDTH (W)	80 FT	80 FT
STORAGE AREA HEIGHT (T)	9 FT	9 FT
BOTTOM OF STORAGE AREA (B1)	90	162
BOTTOM OF TANK (B2)	92	164
TOP OF TANK ELEV	138	208
MAXIMUM STORAGE VOLUME DEPTH (D1)	43 FT	43 FT
OVERFLOW ALARM (D2)	40 FT	40 FT
HIGH HIGH LEVEL ALARM (D3)	37 FT	37 FT
HIGH LEVEL ALARM (D4)	33 FT	33 FT
OVERFLOW (D5)	39 FT	39 FT
TANK REFERENCE ID.	T-101 & T-102	T-201 & T-202

LEGEND

- 1" SAMPLE PORT
- 2" CHECK VALVE
- FLOW METER
- 2" GATE VALVE
- 2" INLET SOLENOID VALVE (V-104)
- 4" DRAIN, FLANGED BALL VALVE (TYP.)
- 4" OTLET SOLENOID VALVE (V-205)
- OVERFLOW ALARM
- 4" FLANGED OUTLET

NOTES

1.) ALL PIPING FROM SITE CELL PUMPING STATIONS TO LEACHATE TANK FARM CONTAINMENT WALL TO BE 6" HDPE, SDR-17, THEN FLANGED CONNECTED TO PVC SCH 80 PIPE TO STORAGE TANKS.
2.) STORAGE TANKS HAVE DESIGN STORAGE VOLUMES OF APPROXIMATELY 500,000 GALLONS EACH. THE SYSTEM FLOW RATES ARE DESIGNED FOR FOR AN AVERAGE FLOW OF 82,000 GPD. THE OVERFLOW IS DESIGNED FOR A PEAK RATE OF 41,000 GPD.
3.) SEAL 4" PVC PIPE PENETRATION THROUGH SECONDARY CONTAINMENT FROM TRUCK LOADOUT PAD.
4.) STORAGE TANK OUTLET QUICK DISCONNECT FITTING TO MATCH TANKER TRUCK FITTING.
5.) SEE DRAWING 10 & 11 FOR SITE PLAN LAYOUT.
6.) ANY PIPING LESS THEN 3.5 FEET BELOW GROUND SURFACE, SHALL BE HEAT TRACED AND INSULATED.
7.) LEVEL INDICATOR TO BE INSTALLED IN FRONT OF STORAGE TANKS AS SHOWN, IN SIGHT OF OFF TRUCK LOADING RAMP.
8.) A STRUCTURAL ENGINEER WILL BE REQUIRED TO DEVELOP THE STRUCTURAL DESIGN OF CONCRETE SECONDARY CONTAINMENT RELATIVE TO REINFORCEMENT, TYPE, SIZE, AND LOCATION WITHIN THE CONCRETE SLAB.

STATE OF MARYLAND — KARL RUDOLPH STEYMAN — REGISTERED PROFESSIONAL ENGINEER — No. 15251

REVISION:

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9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
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NATIONAL WASTE MANAGERS
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ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
1978 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
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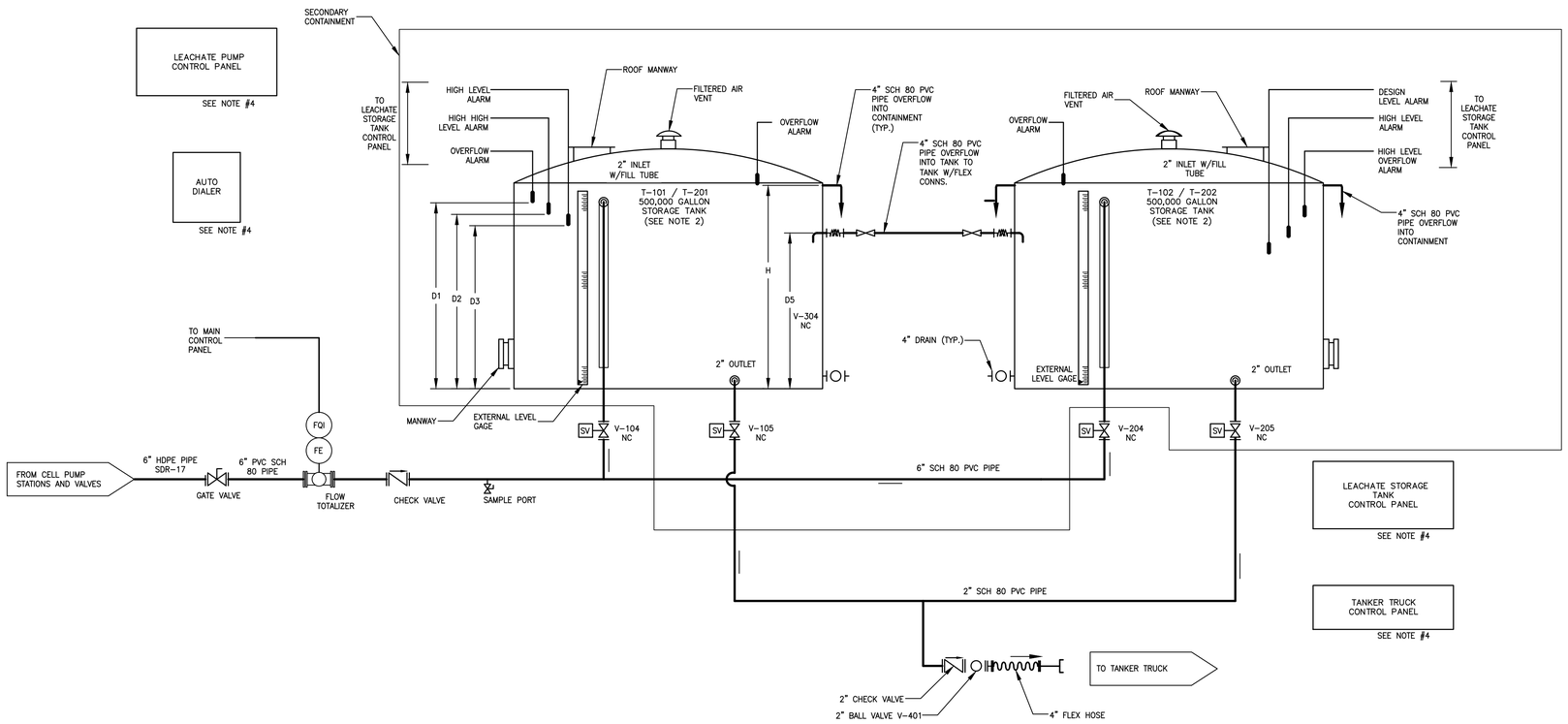
LEACHATE STORAGE TANK DETAILS (SHEET 1 OF 2)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 28



LEACHATE STORAGE TANKS PROCESS & INSTRUMENTATION DIAGRAM

1 / 29

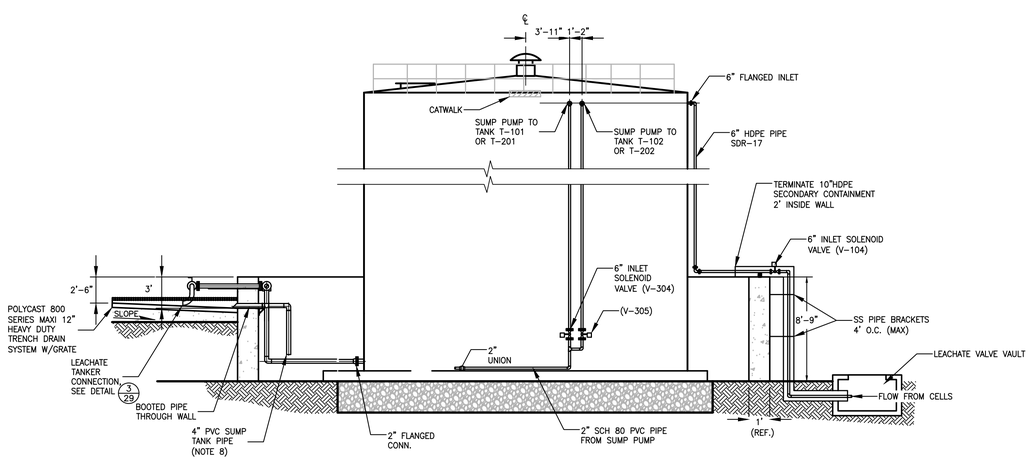
NOT TO SCALE

LEGEND

- LEACHATE PIPE LINE
- FQI — FLOW TOTALIZING INDICATOR
- FE — FLOW ELEMENT
- SV — SOLENOID VALVE
- LH — HIGH LEVEL
- LL — LOW LEVEL
- NC — NORMALLY CLOSE
- NO — NORMALLY OPEN
- T — TANK
- QUICK CONNECT COUPLING
- DIRECTION OF FLOW
- ENTRY AND EXIT FLOW
- MAGNETIC FLOW METER
- LEVEL SWITCH
- SUMP PUMP
- GATE VALVE
- BALL VALVE
- CHECK VALVE

NOTES

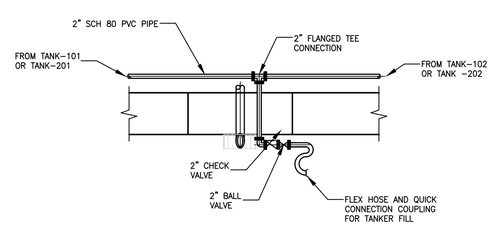
1.) ALL PIPING FROM SITE CELL PUMPING STATIONS TO LEACHATE TANK FARM CONTAINMENT WALL TO BE 6" HDPE, SDR-17, THEN FLANGED CONNECTED TO PVC SCH 80 PIPE TO STORAGE TANKS.
2.) STORAGE TANKS HAVE DESIGN STORAGE VOLUMES OF APPROXIMATELY 500,000 GALLONS EACH. THE SYSTEM FLOW RATES ARE DESIGNED FOR FOR AN AVERAGE FLOW OF 82,000 GPD. THE OVERFLOW IS DESIGNED FOR A PEAK RATE OF 41,000 GPD.
3.) FLOW RATES:
82,000 GPD (GALLON PER DAY) HIGHEST AVERAGE FLOW
246,000 GPD – HIGHEST PEAK FLOW
4.) SEE SYSTEM CONTROL SPECIFICATIONS 13214-1 FOR SYSTEM OPERATIONS AND CONTROLS.
5.) SEE SPECIFICATION SECTION 13215 FOR SEQUENCE OF OPERATIIONS OF LEACHATE COLLECTION, CONVEYANCE AND STORAGE SYSTEM.
6.) ALL PIPING FROM SITE CELL PUMPING STATIONS TO LEACHATE TANK FARM CONTAINMENT WALL TO BE 6" HDPE, SDR-17, THEN FLANGED CONNECTED TO PVC SCH 80 PIPE TO STORAGE TANKS.
7.) ANY PIPING LESS THEN FOUR FEET BELOW GROUND SURFACE, SHALL BE HEAT TRACED AND INSULATED.
8.) LEACHATE SPILLED DURING TRUCK LOADING SHALL BE DIRECTED/WASHED TO SECONDARY CONTAINMENT SUMPS AND TRANSFERRED INTO LEACHATE TANKS



LEACHATE STORAGE TANK PROFILE

2 / 29

NOT TO SCALE



LEACHATE TANKER CONNECTION

3 / 29

NOT TO SCALE

REVISION:	DATE:
REVISED TO ADDRESS MDE COMMENTS ON PHASE 3	9/03/2021
REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS	11/09/2021
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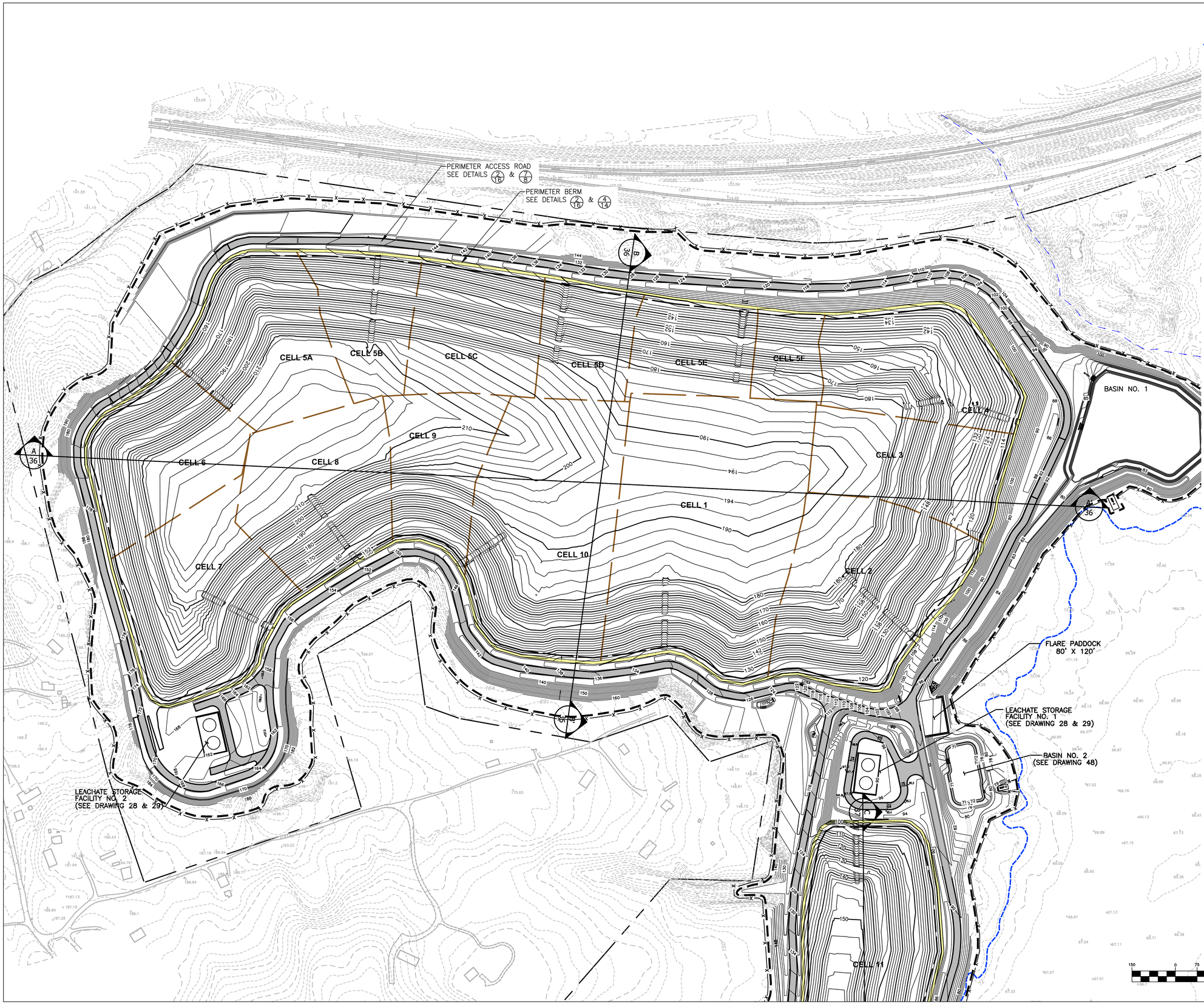
NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
1978 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

LEACHATE STORAGE TANK DETAILS (SHEET 2 OF 2)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 - 3654
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 29



LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN (SEE REF. 2)
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LIMIT OF DISTURBANCE
- CHECK DAM, SEE DETAIL 62/61
- PIPE
- PP — PLUNGE POOL, SEE DRAWING 61
- ROP-_ — ROCK OUTLET PROTECTION–TYPE I, II OR III (AS NOTED), SEE DRAWING 61
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- LANDFILL PERIMETER ROAD, SEE DETAIL 7/8
- PERIMETER BERM, SEE DETAIL 2/16
- SIGNS, SEE DRAWING 8

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.
2.) PERIMETER MONITORING WELL LOCATIONS DIGITIZED FROM HARD COPY OF DRAWING ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED MAY 2008.

NOTES

1.) WHILE FEMA HAS RE-ASSESSED AND MODIFIED THE 100 YEAR FLOOD PLAIN IN THE VICINITY OF THE SITE, THE PROPOSED LANDFILL PERIMETER ROAD BERM GRADES ARE PROPOSED A MINIMUM OF 5 FEET ABOVE THE NEW FEMA BASE FLOOD ELEVATIONS.
2.) THE GRADES SHOWN ON THIS DRAWING REPRESENT TOP OF WASTE GRADES WITHIN THE PERIMETER BERM. REFER TO DRAWING 34 FOR FINAL COVER SYSTEM DETAILS.
3.) MINIMUM AND MAXIMUM TOP OF WASTE SLOPES WITHIN THE LIMIT OF WASTE ARE 4% AND 25% RESPECTIVELY.
4.) FOR STORMWATER MANAGEMENT FEATURES, REFER TO DRAWINGS 38 THROUGH 44.
5.) THE FENCELINE IS SHOWN JUST OUTSIDE THE LIMIT OF DISTURBANCE, SO THAT IT IS VISIBLE. IT IS INTENDED TO BE BUILT AT THE LIMIT OF DISTURBANCE.

STATE OF MARYLAND — KARL RUDOLPH STRETTMAN — No. 36.....1957 — PROFESSIONAL ENGINEER
1/14/22

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
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NATIONAL WASTE MANAGERS
PHASE III APPLICATION
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ANNE ARUNDEL COUNTY, MARYLAND

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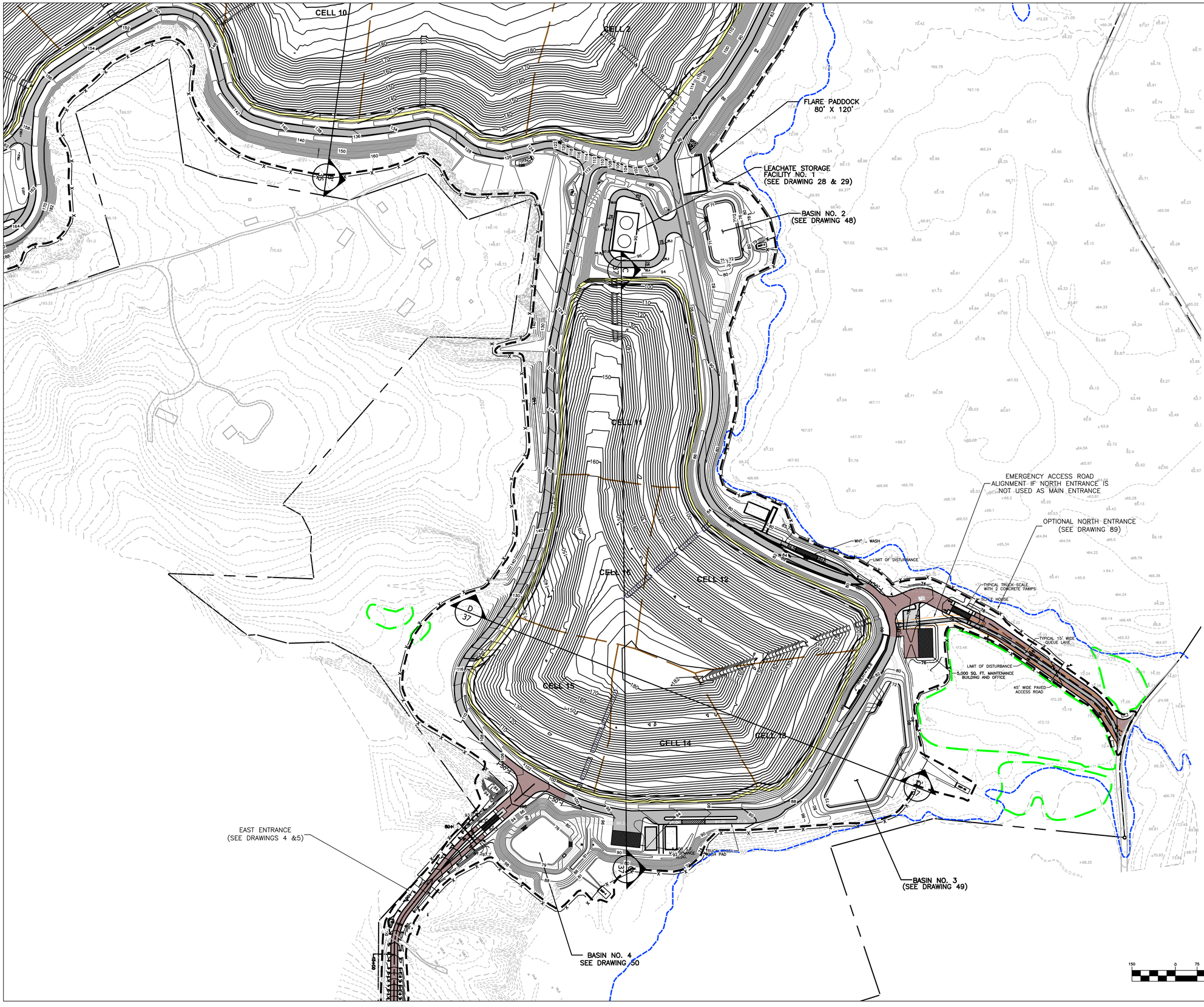
TOP
OF WASTE PLAN –
WEST (CELL 1–10)

PROJECT MANAGER:	PGS	SCALE:	AS NOTED
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE:	09/03/2021

DRAWING 30



LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN SEE REFERENCE 2
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LIMIT OF DISTURBANCE
- CHECK DAM, SEE DETAIL D7/61
- PIPE
- PP — PLUNGE POOL, SEE DRAWING 61
- ROP-_ — ROCK OUTLET PROTECTION–TYPE I, II OR III (AS NOTED), SEE DRAWING 61
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- PERIMETER BERM, SEE DETAIL 2/16
- ENTRANCE ROAD, PAVED SURFACE, SEE DRAWING 5/8
- LANDFILL PERIMETER ROAD, SEE DRAWING 6/8
- SIGNS, SEE DRAWING 8
- TYPICAL WETLANDS SEE REFERENCE 3

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

2.) PERIMETER MONITORING WELL LOCATIONS DIGITIZED FROM HARD COPY OF DRAWING ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED MAY 2008.

NOTES

1.) WHILE FEMA HAS RE-ASSESSED AND MODIFIED THE 100 YEAR FLOOD PLAIN IN THE VICINITY OF THE SITE, THE PROPOSED LANDFILL PERIMETER ROAD BERM GRADES ARE PROPOSED A MINIMUM OF 5 FEET ABOVE THE NEW FEMA BASE FLOOD ELEVATIONS.

2.) THE GRADES SHOWN ON THIS DRAWING REPRESENT TOP OF WASTE GRADES WITHIN THE PERIMETER BERM. REFER TO DRAWING 34 FOR FINAL COVER SYSTEM DETAILS.

3.) MINIMUM AND MAXIMUM TOP OF WASTE SLOPES WITHIN THE LIMIT OF WASTE ARE 4% AND 25% RESPECTIVELY.

4.) FOR STORMWATER MANAGEMENT FEATURES, REFER TO DRAWINGS 38 THROUGH 44.

5.) THE FENCELINE IS SHOWN JUST OUTSIDE THE LIMIT OF DISTURBANCE, SO THAT IT IS VISIBLE. IT IS INTENDED TO BE BUILT AT THE LIMIT OF DISTURBANCE.

STATE OF MARYLAND — RICHARD A. STRAYMAN — REGISTERED PROFESSIONAL ENGINEER — No. 19371 — 1/14/22

DATE:	REVISION:
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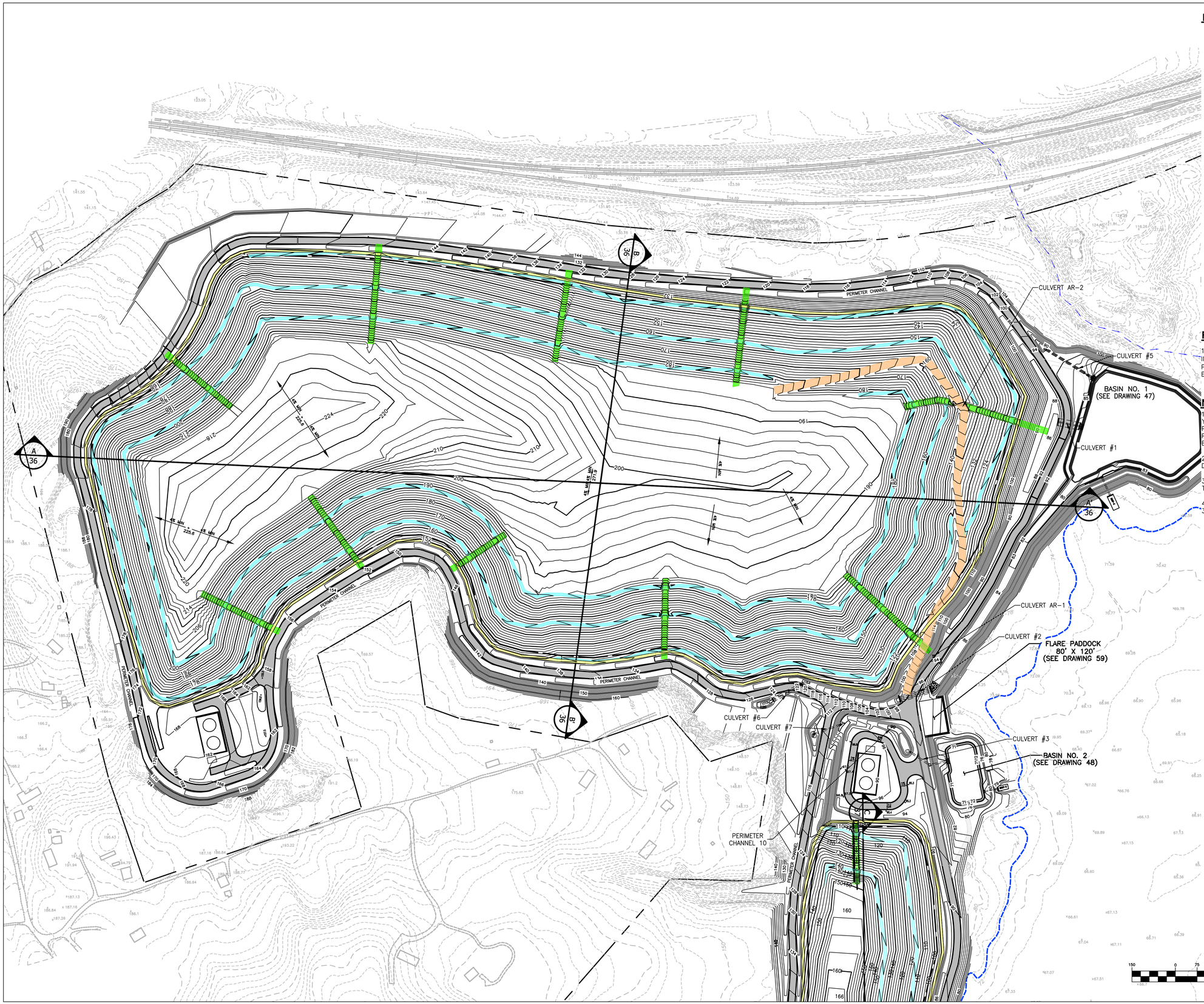
TOP
OF WASTE PLAN –
EAST (CELL 11–16)

PROJECT MANAGER: PCS
CHECKED BY: PCS
DRAWN BY: KHF
SCALE: AS NOTED
PROJECT NUMBER: 2018 – 3854
DATE: 09/03/2021

DRAWING 31



LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN
- 2 FT INCREMENT CONTOUR
- 5 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- LIMIT OF DISTURBANCE
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- LANDFILL PERIMETER ROAD, SEE DRAWING 7/8
- SIGNS, SEE DRAWING 9
- ACCESS ROAD TO THE TOP, SEE DETAIL 2/35
- TERRACE, SEE DETAIL 2/34
- PERIMETER BERM, SEE DETAIL 2/35
- DOWNCHUTE, SEE DETAIL 1/20

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

NOTES

1.) WHILE FEMA HAS RE-ASSESSED AND MODIFIED THE 100 YEAR FLOOD PLAIN IN THE VICINITY OF THE SITE, THE PROPOSED LANDFILL PERIMETER ROAD BERM GRADES ARE PROPOSED A MINIMUM OF 5 FEET ABOVE THE NEW FEMA BASE FLOOD ELEVATIONS.

2.) FOR STORMWATER MANAGEMENT FEATURES, SEE DRAWINGS 38 & 39.

3.) THE GRADES SHOWN ON THIS REPRESENT THE TOP OF THE FINAL COVER LAYER.

4.) FINAL COVER/CLOSURE CAP DETAILS ARE ON DRAWINGS 34 & 35.

STATE OF MARYLAND
KARL D. STRATMAN
No. 36.....
EXPIRES 1/31/2022
PROFESSIONAL ENGINEER

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

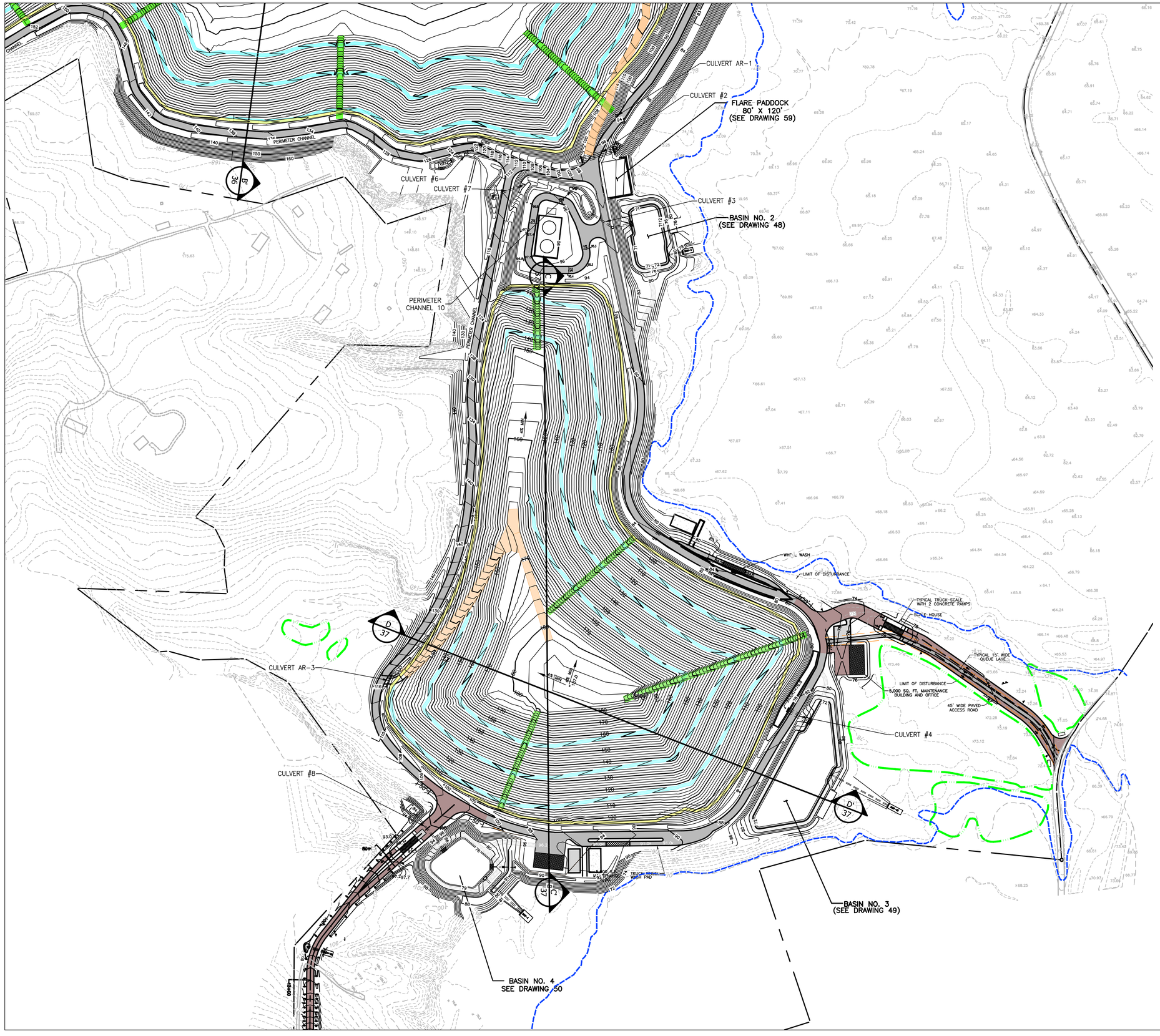
NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED Geoservices
a Montrose Environmental Group company
1978 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2275 F: 856.354.9216 www.advancedgeoservices.com

TOP OF CLOSURE CAP
GRADING PLAN –
WEST (CELL 1–10)

PROJECT MANAGER:	PGS	SCALE: AS NOTED	
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE: 09/03/2021	

DRAWING 32



LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN
- 2 FT INCREMENT CONTOUR
- 5 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- LIMIT OF DISTURBANCE
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- LANDFILL PERIMETER ROAD, SEE DRAWING 7/8
- SIGNS, SEE DRAWING 9
- ACCESS ROAD TO THE TOP, SEE DETAIL 2/35
- TERRACE, SEE DETAIL 2/34
- PERIMETER BERM, SEE DETAIL 3/35
- DOWNCHUTE, SEE DETAIL 1/20

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

NOTES

1.) WHILE FEMA HAS RE-ASSESSED AND MODIFIED THE 100 YEAR FLOOD PLAIN IN THE VICINITY OF THE SITE, THE PROPOSED LANDFILL PERIMETER ROAD BERM GRADES ARE PROPOSED A MINIMUM OF 5 FEET ABOVE THE NEW FEMA BASE FLOOD ELEVATIONS.

2.) FOR STORMWATER MANAGEMENT FEATURES, SEE DRAWINGS 38 & 39.

3.) THE GRADES SHOWN ON THIS REPRESENT THE TOP OF THE FINAL COVER LAYER.

4.) FINAL COVER/CLOSURE CAP DETAILS ARE ON DRAWINGS 34 & 35.

GRAPHIC SCALE

150 0 75 150 300 600

1 inch = 150 ft.

STATE OF MARYLAND — KARL D. STRAYMAR — REGISTERED PROFESSIONAL ENGINEER — No. 19371

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
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NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

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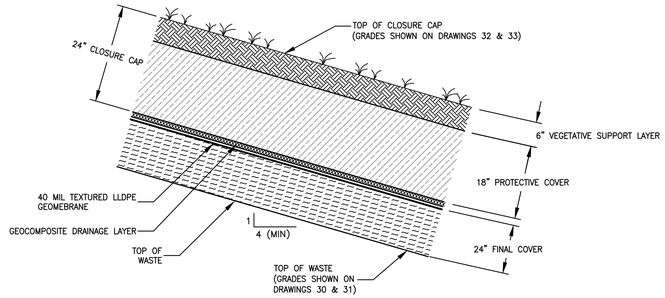
a Montrose Environmental Group company
1978 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

TOP OF CLOSURE CAP
GRADING PLAN –
EAST (CELL 11-16)

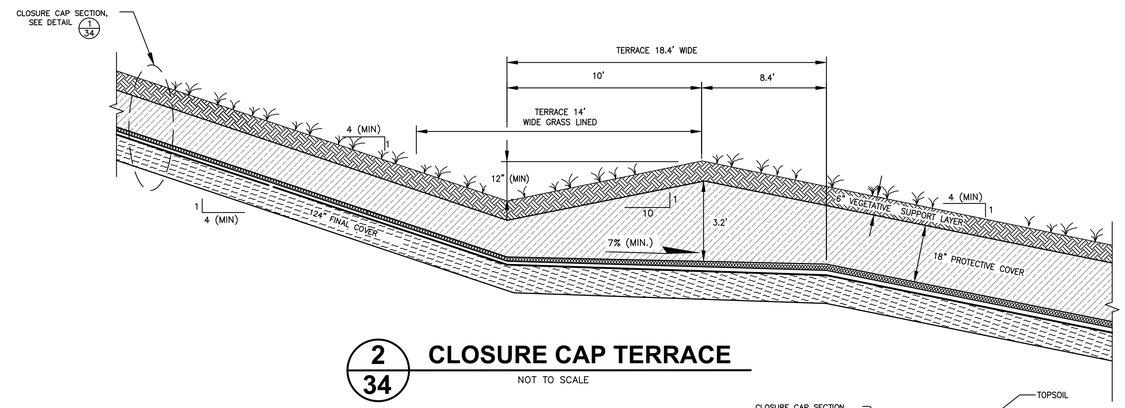
PROJECT MANAGER:	PGS	SCALE: AS NOTED	
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE: 09/03/2021	

DRAWING 33



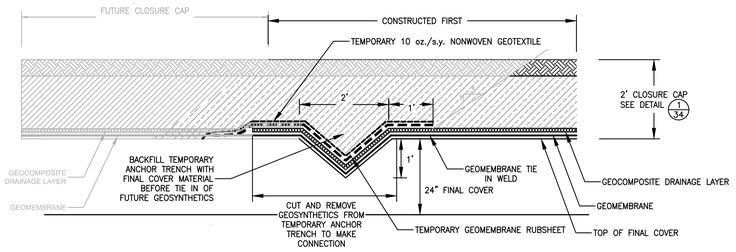
1/34 CLOSURE CAP SECTION

NOT TO SCALE



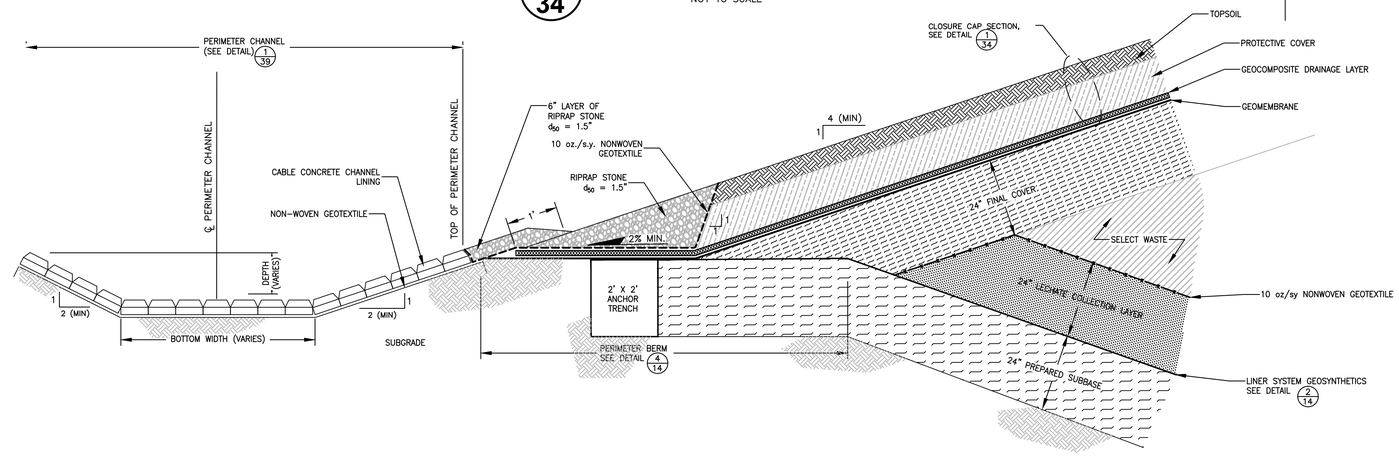
2/34 CLOSURE CAP TERRACE

NOT TO SCALE



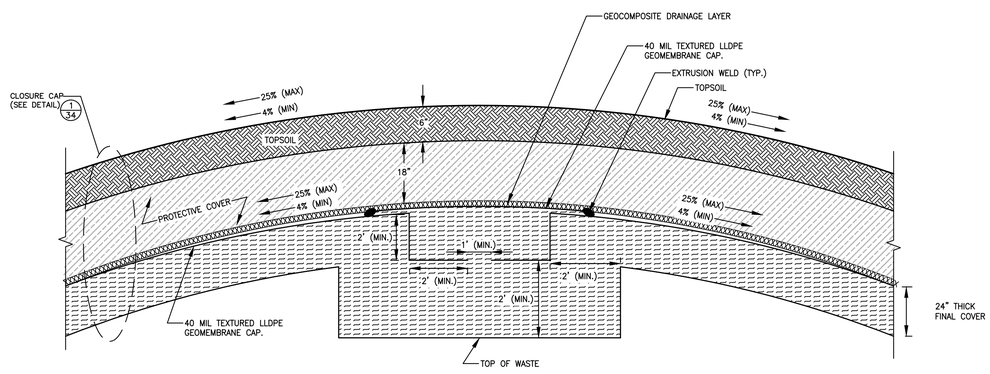
3/34 TEMPORARY CAP TERMINATION (FOR PHASED CONSTRUCTION)

NOT TO SCALE



4/34 CAP TOE DRAIN

NOT TO SCALE



5/34 CROWN GEOSYNTHETICS TIE-IN

NOT TO SCALE

NOTES

1.) THICKNESS OF GEOSYNTHETICS IS EXAGGERATED FOR CLARITY.
2.) FOR MATERIALS REQUIREMENTS, SEE THE TECHNICAL SPECIFICATIONS IN SECTION 14 OF THE PHASE III REPORT
3.) THE 40 MIL GEOMEMBRANE SHALL BE TEXTURED ON BOTH SIDES IN ALL AREAS.

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER PAUL C. RAYMAR No. 15251 PROFESSIONAL ENGINEER 1/14/22

DATE:	REVISION:
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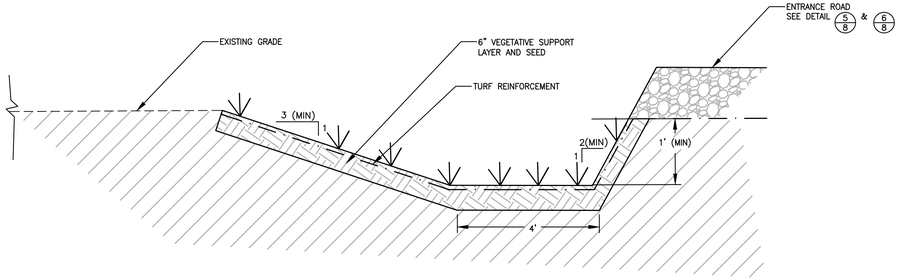
NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
1878 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

FINAL COVER DETAILS
(SHEET 1 OF 2)

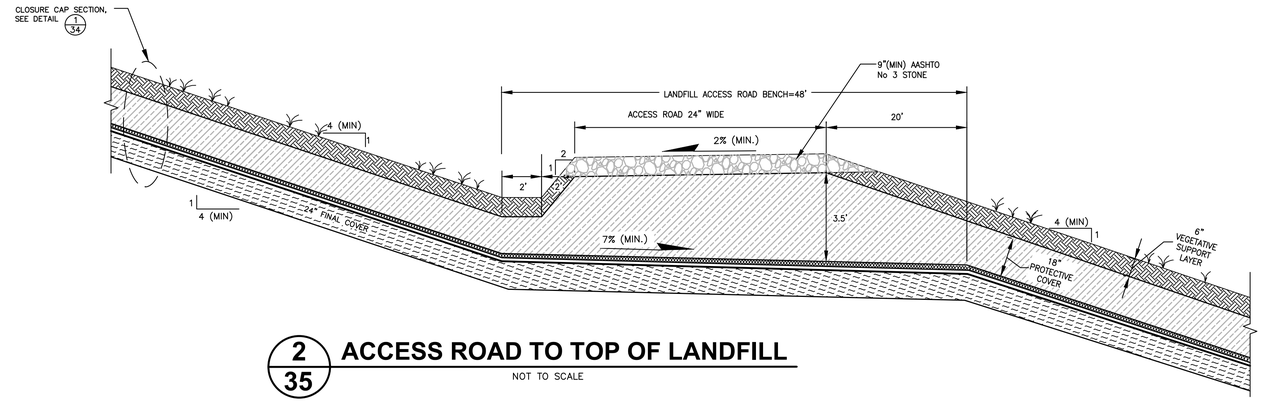
PROJECT MANAGER:	PGS	SCALE:	AS NOTED
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE:	09/03/2021

DRAWING 34



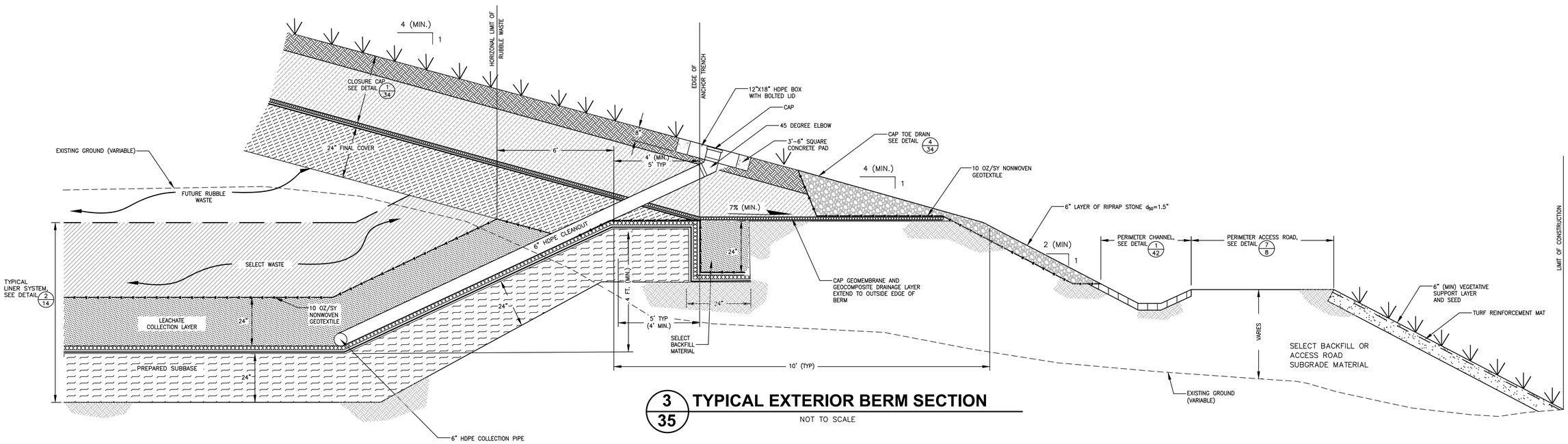
1/35 ENTRANCE ROAD CHANNEL

NOT TO SCALE



2/35 ACCESS ROAD TO TOP OF LANDFILL

NOT TO SCALE



3/35 TYPICAL EXTERIOR BERM SECTION

NOT TO SCALE

NOTES

1.) THICKNESS OF GEOSYNTHETICS IS EXAGGERATED FOR CLARITY.
2.) FOR MATERIALS REQUIREMENTS, SEE THE TECHNICAL SPECIFICATIONS IN SECTION 14 OF THE PHASE III REPORT

STATE OF MARYLAND
KEVIN R. FITZPATRICK
No. 35351
PROFESSIONAL ENGINEER
1/14/22

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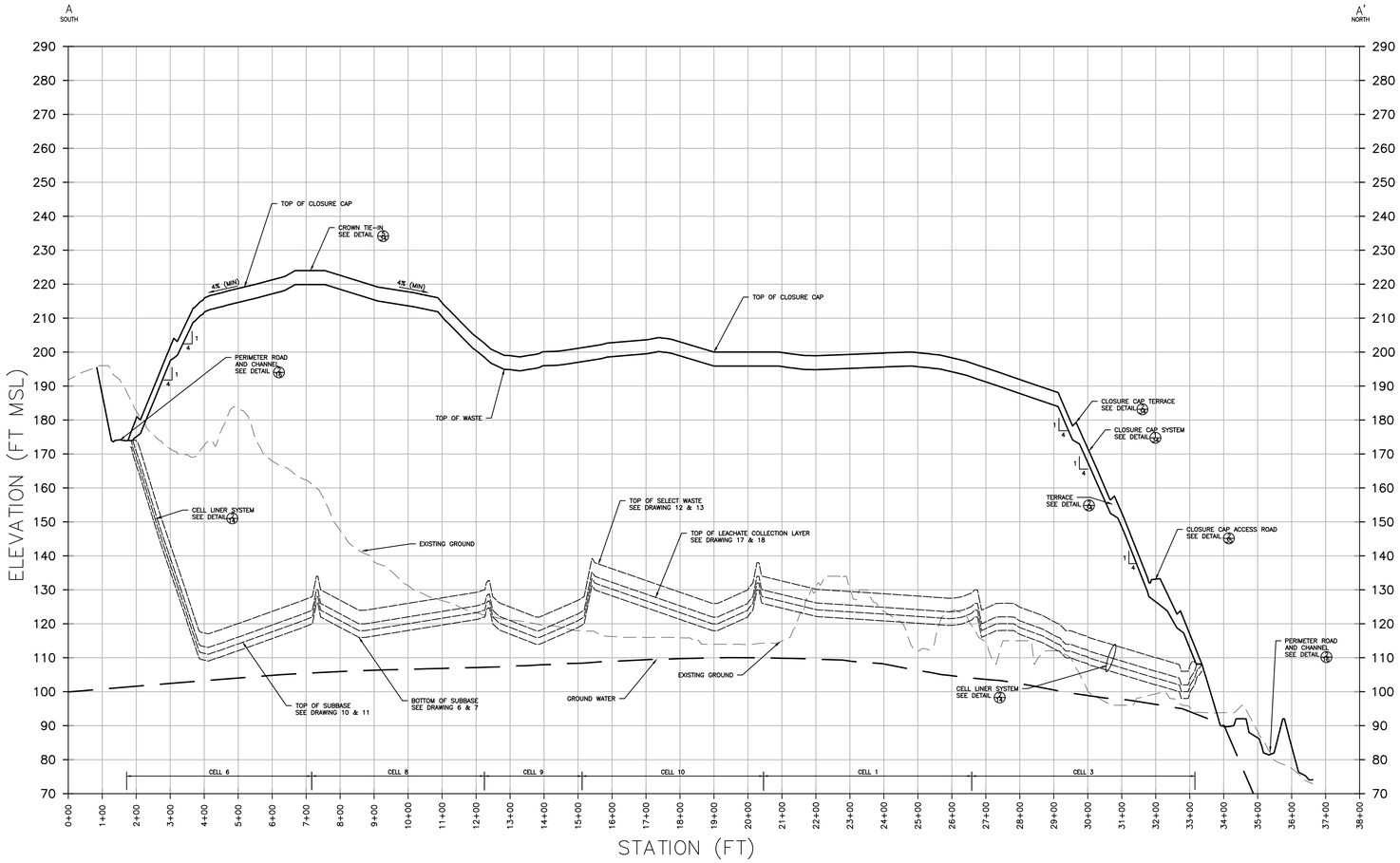
NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
1878 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.0273 F: 856.354.8236 www.advancedgeoservices.com

FINAL COVER DETAILS
(SHEET 2 OF 2)

PROJECT MANAGER:	PGS	SCALE:AS NOTED	
CHECKED BY:	PGS	PROJECT NUMBER:	2018 - 3854
DRAWN BY:	KHF	DATE:09/03/2021	

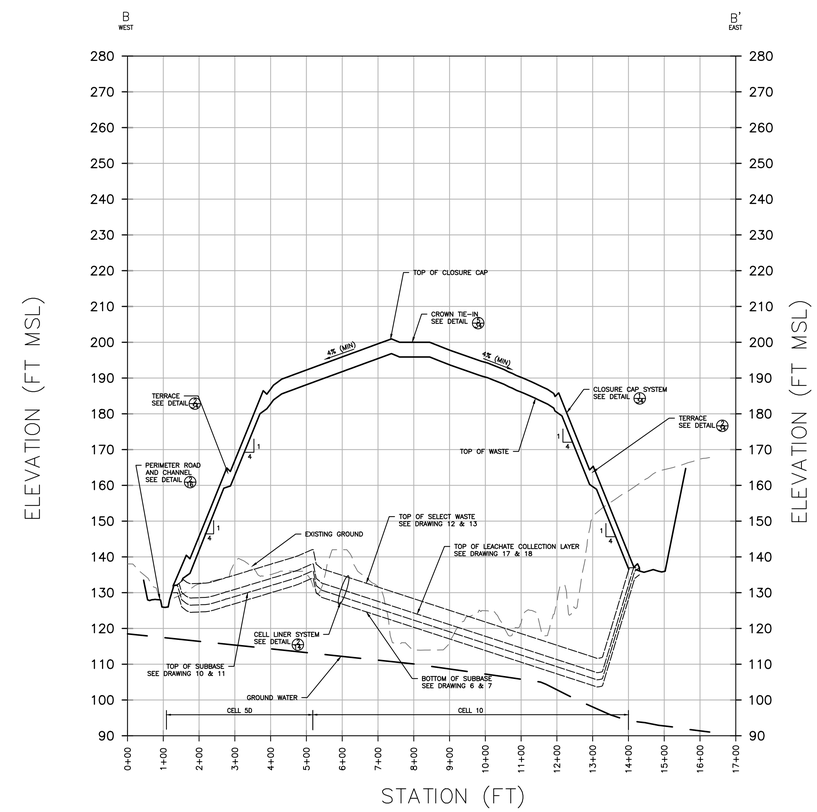
DRAWING 35



A/36 LANDFILL CROSS SECTION A-A'

SCALE: VERTICAL— 0 10 20 40 — 1 INCH = 20 FT

HORIZONTAL— 0 100 200 400 — 1 INCH = 200 FT



B/36 LANDFILL CROSS SECTION B-B'

SCALE: VERTICAL— 0 10 20 40 — 1 INCH = 20 FT

HORIZONTAL— 0 100 200 400 — 1 INCH = 200 FT

NOTES

1.) TOP OF CLOSURE CAP. SEE DRAWINGS 38 & 39.
2.) TOP OF FINAL COVER LAYER FOR CLOSURE CAP, SEE DRAWINGS 32 & 33.
3.) TOP OF SUBBASE, SEE DRAWINGS 10 & 11.
4.) TOP OF SELECT WASTE, SEE DRAWINGS 12 & 13.
5.) THE MINIMUM AND MAXIMUM SLOPES ON THE FINAL COVER AND CLOSURE CAP ARE 4% AND 25%, RESPECTIVELY, AT THE TIME OF CONSTRUCTION.
6.) THE MINIMUM AND MAXIMUM SLOPES FOR THE BOTTOM LINER SYSTEM ARE 3% AND 33%, RESPECTIVELY, AT THE TIME OF CONSTRUCTION.

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER — PAUL C. STEYMAN — No. 19851 — 1/14/22

REVISION:	DATE:
REVISED TO ADDRESS MDE COMMENTS ON PHASE 3	9/03/2021
REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS	11/09/2021
FINAL ISSUED TO MDE	1/14/2022

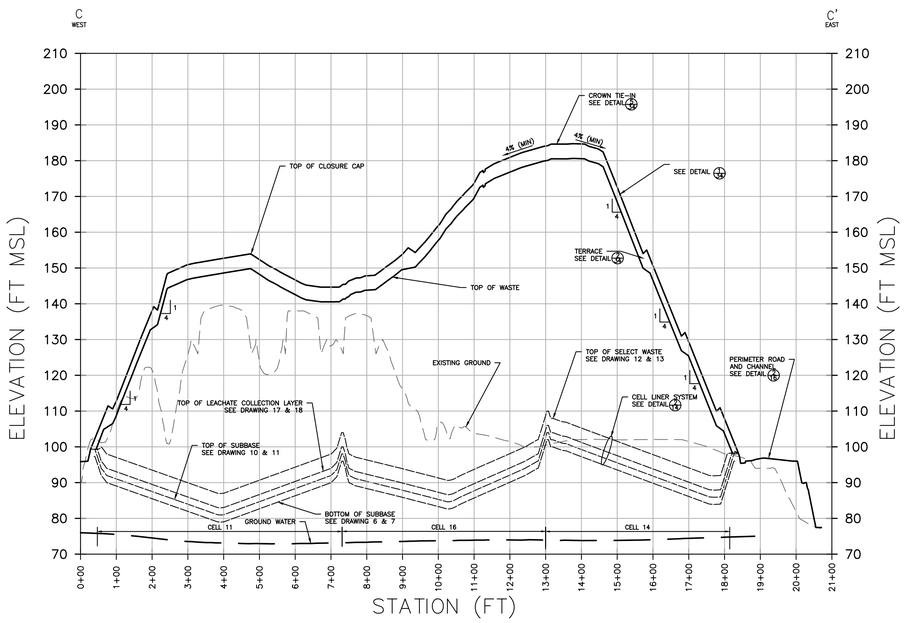
NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED EcoServices
a Montrose Environmental Group company
1978 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedecoservices.com

LANDFILL CROSS-SECTION (SHEET 1 OF 2)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

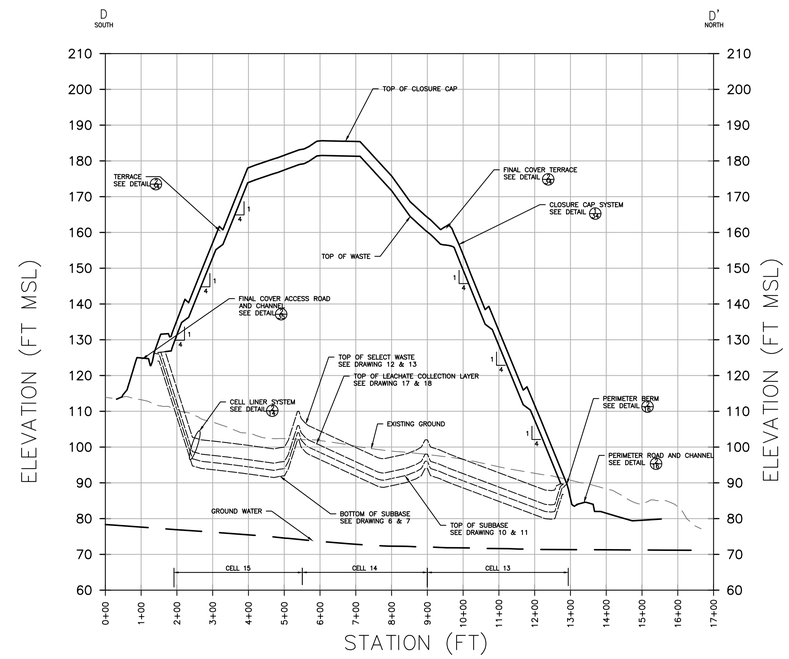
DRAWING 36



C 37 LANDFILL CROSS SECTION C-C'

SCALE: VERTICAL– 1 INCH = 20 FT

HORIZONTAL– 1 INCH = 200 FT



D 37 LANDFILL CROSS SECTION D-D'

SCALE: VERTICAL– 1 INCH = 20 FT

HORIZONTAL– 1 INCH = 200 FT

NOTES

1.) TOP OF CLOSURE CAP. SEE DRAWINGS 38 & 39.
2.) TOP OF FINAL COVER LAYER FOR CLOSURE CAP, SEE DRAWINGS 32 & 33.
3.) TOP OF SUBBASE, SEE DRAWINGS 10 & 11.
4.) TOP OF SELECT WASTE, SEE DRAWINGS 12 & 13.
5.) THE MINIMUM AND MAXIMUM SLOPES ON THE FINAL COVER AND CLOSURE CAP ARE 4% AND 25%, RESPECTIVELY, AT THE TIME OF CONSTRUCTION.
6.) THE MINIMUM AND MAXIMUM SLOPES FOR THE BOTTOM LINER SYSTEM ARE 3% AND 33%, RESPECTIVELY, AT THE TIME OF CONSTRUCTION.

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER PAUL G. STEYMAN No. 15851

1/14/22

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
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NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

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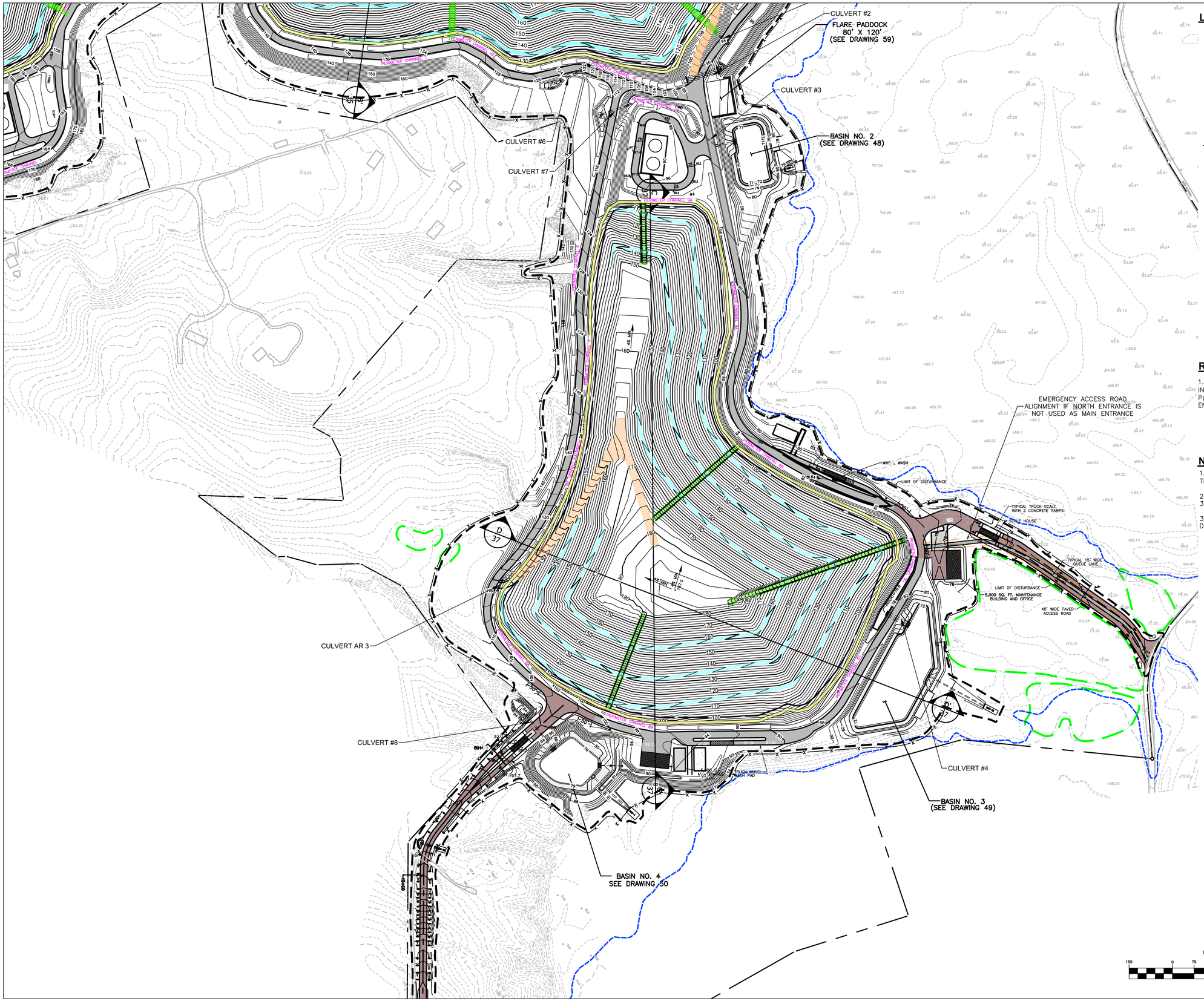
a Montrose Environmental Group company
1878 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

LANDFILL CROSS-SECTION (SHEET 2 OF 2)

PROJECT MANAGER: PGS
CHECKED BY: PGS
DRAWN BY: KHF
SCALE: AS NOTED
PROJECT NUMBER: 2018 – 3854
DATE: 09/03/2021

DRAWING 37

CULVERT AR 2
CULVERT #5
BASIN NO. 1
(SEE DRAWING 47)
CULVERT #1
CULVERT AR 1
CULVERT #2
FLARE PADDOCK
80' X 120'
(SEE DRAWING 59)
CULVERT #3
BASIN NO. 2
(SEE DRAWING 48)
CULVERT #6
CULVERT #7
PERIMETER CHANNEL 3C
PERIMETER CHANNEL 3B
PERIMETER CHANNEL 3A
PERIMETER CHANNEL 4A
PERIMETER CHANNEL 4B
PERIMETER CHANNEL 5A
PERIMETER CHANNEL 5B
PERIMETER CHANNEL 6A
PERIMETER CHANNEL 6B
PERIMETER CHANNEL 7A
PERIMETER CHANNEL 7B
PERIMETER CHANNEL 8A
PERIMETER CHANNEL 8B
PERIMETER CHANNEL 9A
PERIMETER CHANNEL 9B
PERIMETER CHANNEL



LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN
- 2 FT INCREMENT CONTOUR
- 5 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- LIMIT OF DISTURBANCE
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- LANDFILL PERIMETER ROAD, SEE DRAWING 7/8
- SIGNS, SEE DRAWING 9
- ACCESS ROAD TO THE TOP, SEE DETAIL 2/35
- TERRACE, SEE DETAIL 2/34
- PERIMETER BERM, SEE DETAIL 3/35
- DOWNCHUTE, SEE DETAIL 1/20

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

NOTES

1.) THE GRADES SHOWN ON THIS REPRESENT THE TOP OF THE FINAL COVER/CLOSURE CAP.

2.) FINAL COVER/CLOSURE CAP DETAILS ARE ON DRAWINGS 34 & 35.

3.) STORMWATER MANAGEMENT DETAILS ARE SHOWN ON DRAWINGS 40 THROUGH 44.

STATE OF MARYLAND — KARL FREDERICK STRAYMAR — No. 15251 — PROFESSIONAL ENGINEER

1/14/22

REVISION:	DATE:
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NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

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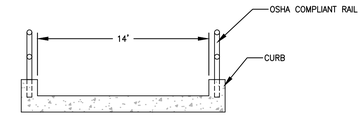
1979 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

STORMWATER MGMT
SYSTEM LAYOUT –
EAST (CELL 11–16)

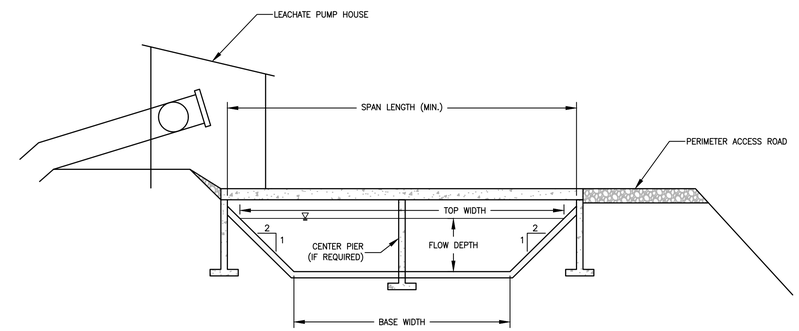
PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 39



A/40 SECTION A-A'

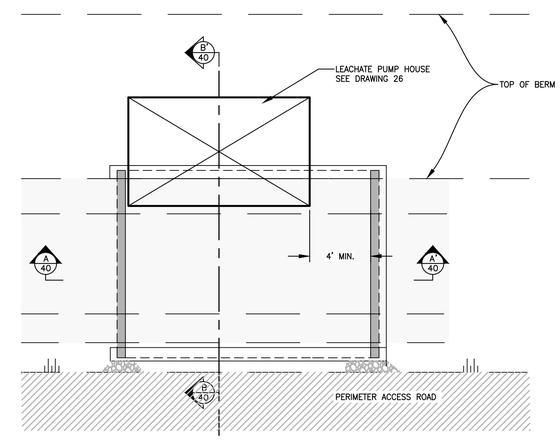
NOT TO SCALE



LEACHATE PUMP HOUSE EXTENDS ONTO CHANNEL CROSSING SPAN
FOR ALL CELLS EXCEPT 2, 3, 4, 5E, 5F, 12, AND 13

B/40 SECTION B-B'

NOT TO SCALE



1/40 PERIMETER CHANNEL CROSSING (AT PUMP HOUSES)

NOT TO SCALE

CELL/PUMP HOUSE NUMBER	BASE WIDTH (FT)	FLOW DEPTH (FT)	TOP WIDTH (FT)	MINIMUM SPAN LENGTH (FT)
1	15.1	3.3	28.3	32.3
2	15.1	3.5	29.1	33.1
3	9.6	2.2	18.4	22.4
4	9.6	2.2	18.4	22.4
5A	9.6	2	17.6	21.6
5B	13.8	2.6	24.2	28.2
5C	13.8	2.6	24.2	28.2
5D	15.1	2.6	25.5	29.5
5E	15.1	3.2	27.9	31.9
5F	15.1	3.2	27.9	31.9
6	4.1	2	12.1	16.1
7	NA	NA	NA	NA
8	13.8	2	21.8	28.8
9	13.8	2.5	23.8	27.8
10	15.1	2.8	26.3	26.3
11	8.3	2.6	18.7	22.7
12	9.6	2.6	20	24
13	17.9	2.2	26.7	30.7
14	8.3	2	16.3	20.3
15	2.8	2	10.8	14.8
16	2.8	2	10.8	14.8

TABLE: CHANNEL CROSSING TO PUMP HOUSE

CHANNEL CROSSING END FOUNDATIONS MUST BE PLACED OUTSIDE OF CHANNEL FLOW

NOTES

1.) THICKNESS OF GEOSYNTHETICS IS EXAGGERATED FOR CLARITY.
2.) FOR MATERIALS REQUIREMENTS, SEE THE TECHNICAL SPECIFICATIONS IN SECTION 14 OF THE PHASE III REPORT.
3.) FLOW DEPTH BASED ON 25 YEAR–24 HOUR DESIGN STORM EVENT.
4.) PRECAST CONCRETE BRIDGE SPAN AND FOUNDATION SUPPORTS SHALL BE DESIGNED BY A MARYLAND LICENSED STRUCTURAL ENGINEER.
5.) SPAN LENGTH >18 FT MAY BE CONSTRUCTED WITH A CENTER PIER, PROVIDED WIDTH OF PIER IS LESS THAN 5% OF SPAN WIDTH.
6.) LEACHATE PUMP HOUSE EXTENDS ONTO CHANNEL CROSSING SPAN FOR ALL CELLS EXCEPT 2, 3, 4, 5E, 5F, 12, AND 13.
7.) CHANNEL CROSSING END FOUNDATIONS MUST BE PLACED OUTSIDE OF CHANNEL FLOW.

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER
KYLE RICHARD STRATMAN No. 35251
1/14/22

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NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

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1978 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
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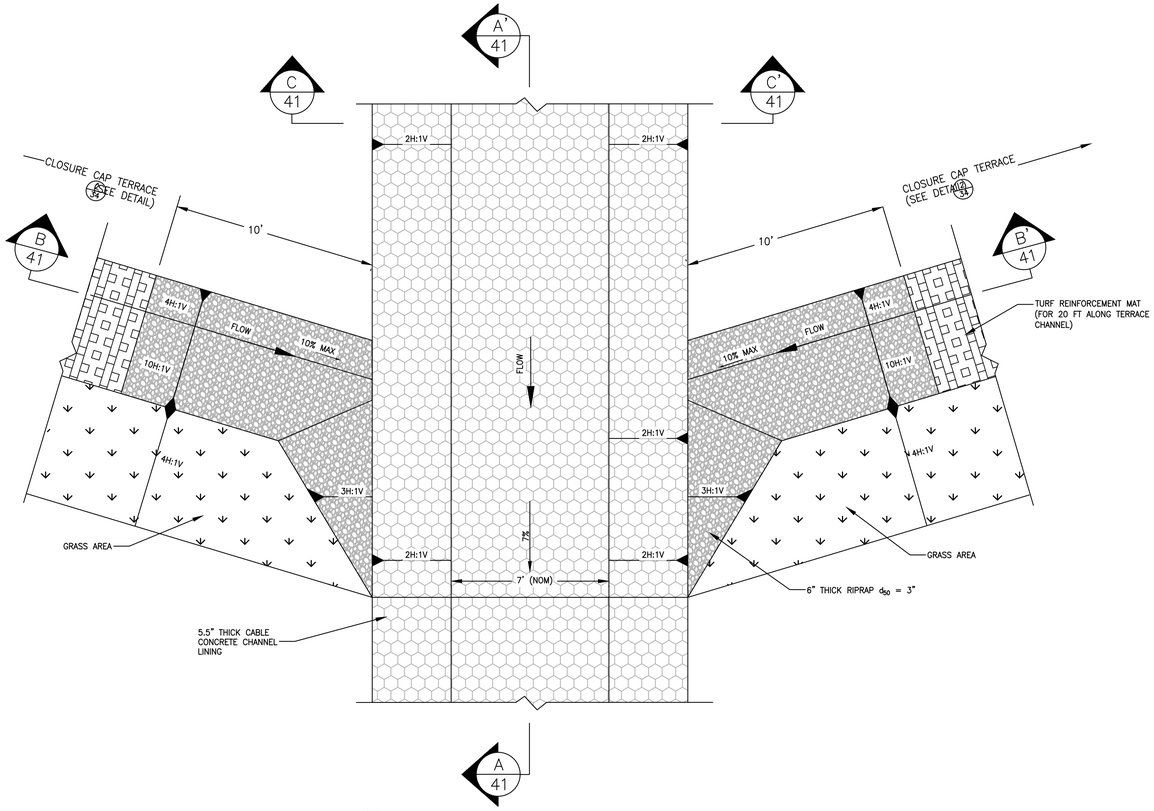
STORMWATER MANAGEMENT SYSTEM DETAILS (SHEET 1 OF 4)

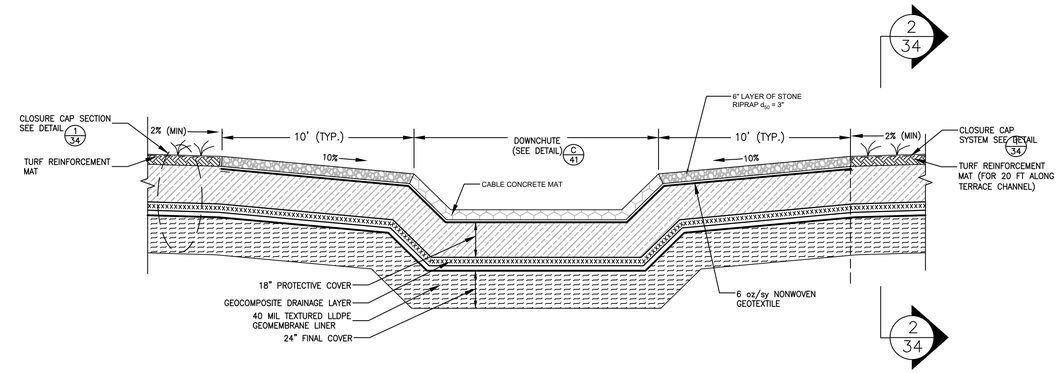
PROJECT MANAGER: PGS
CHECKED BY: PGS
DRAWN BY: KHF
SCALE: AS NOTED
PROJECT NUMBER: 2018 – 3854
DATE: 09/03/2021

DRAWING 40



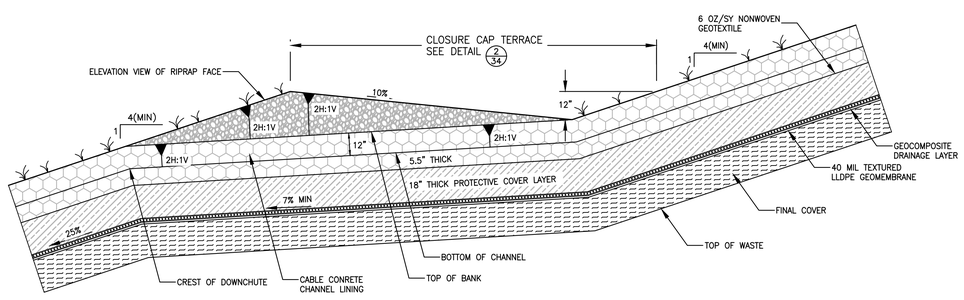
1/41 DOWNCHUTE CHANNEL

NOT TO SCALE



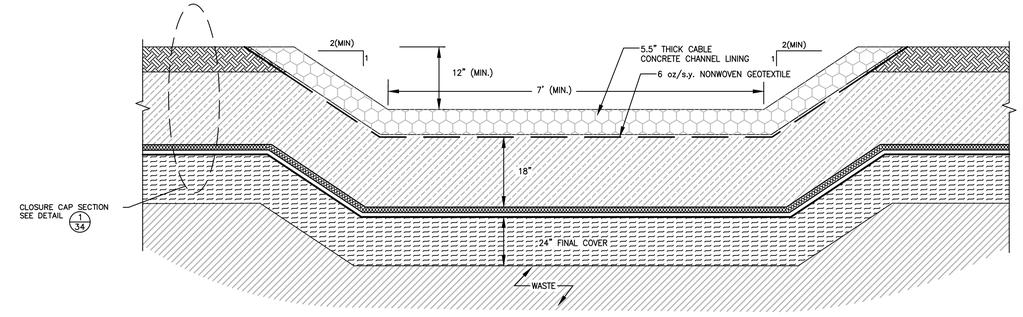
B/41 SECTION B-B'

NOT TO SCALE



A/41 SECTION A-A'

NOT TO SCALE



C/41 SECTION C-C'

NOT TO SCALE

NOTES

1.) THICKNESS OF GEOSYNTHETICS IS EXAGGERATED FOR CLARITY.
2.) FOR MATERIALS REQUIREMENTS, SEE THE TECHNICAL SPECIFICATIONS IN SECTION 14 OF THE PHASE III REPORT

STATE OF MARYLAND — GERARD T. STRATMAN — REGISTERED PROFESSIONAL ENGINEER — No. 19351

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PHASE III APPLICATION
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PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

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a Montrose Environmental Group company
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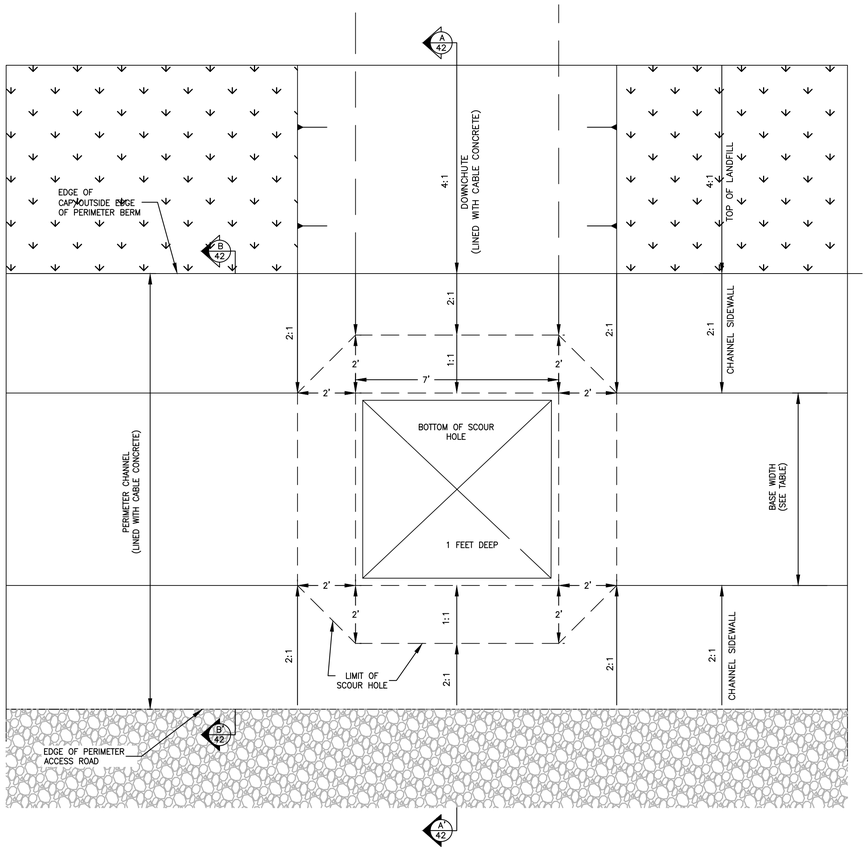
STORMWATER MANAGEMENT SYSTEM DETAILS (SHEET 2 OF 4)

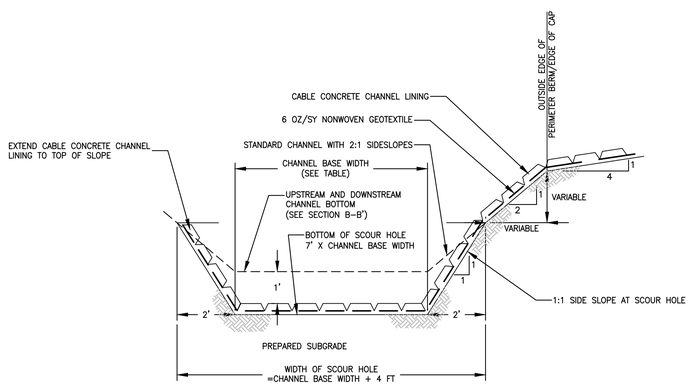
PROJECT MANAGER:	PGS	SCALE: AS NOTED	
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE: 09/03/2021	

DRAWING 41



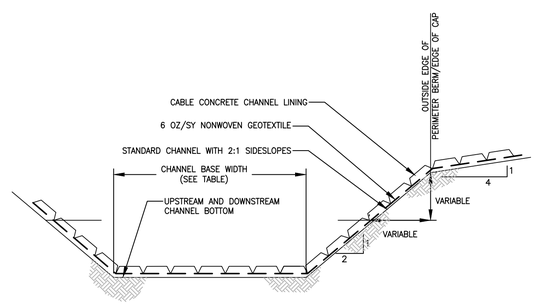
PLAN VIEW
2/42 TYPICAL DOWNCHUTE SCOUR HOLE

NOT TO SCALE



A/42 SECTION A-A'

NOT TO SCALE

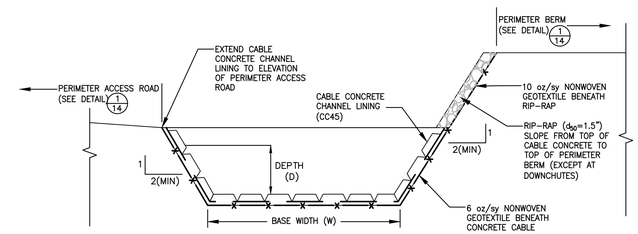


B/42 SECTION B-B'

NOT TO SCALE

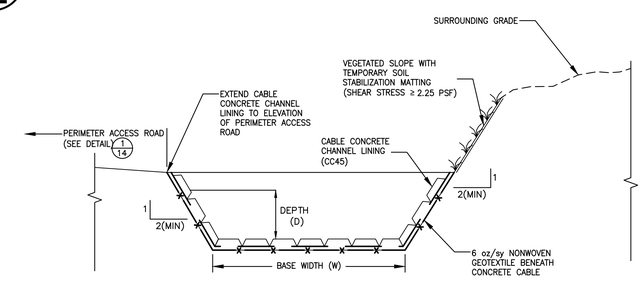
PERIMETER CHANNEL ID	BASE WIDTH (W) (FT)	DEPTH (D) (FT)	DISCHARGE (25 YR/24 HRS) (Q)(CFS)	LINING
1A	9.6	2.5	64.6	CC45
1B	9.6	2.0	64.6	CC45
2	4.1	2.0	31.8	CC45
3A	4.1	2.0	16.0	CC45
3B	9.6	2.0	80.8	CC45
3C	13.8	2.6	140.3	CC45
3D	15.1	2.6	197.6	CC45
3E	15.1	3.2	282.9	CC45
4A	4.1	2.0	40.7	CC45
4B	13.8	2.0	109.2	CC45
4C	13.8	2.5	160.6	CC45
4D	15.1	2.8	210.3	CC45
4E	15.1	3.3	281.1	CC45
4F	15.1	3.5	347.9	CC45
5	9.6	2.2	81.0	CC45
6	8.3	2.0	24.0	CC45
7	2.8	2.0	17.3	CC45
8A	2.8	2.0	36.5	CC45
8B	8.3	2.0	113.8	CC45
8C	17.9	2.2	279.9	CC45
9A	8.3	2.6	48.2	CC45
9B	9.6	2.6	91.1	CC45
9C	13.8	2.6	122.8	CC45
10	9.6	2.0	68.5	CC45

NOTES:
- MAX PERIMETER CHANNEL VELOCITY=9.7 FPS (CHANNEL 4F FOR 25 YEAR FLOW) AND 11.2 FPS (CHANNEL 4F FOR 100 YEAR FLOW).
- PROPOSED CABLE CONCRETE IS BETHLEHAM PRE–CAST CLOSED CELL CC45. MAX ALLOWABLE VELOCITY= 17.2 FPS @ 5:1 BED–SLOPE. (ALLOWABLE SHEAR STRESS=9.8 PSF @ FS=2.0).
- ALTERNATE CHANNEL LINING MATERIALS MAY BE PROPOSED FOR MDE APPROVAL BASED ON AVAILABILITY AND SUITABILITY OF ALTERNATE MATERIALS.



1/42 PERIMETER CHANNEL (BETWEEN PERIMETER BERM AND ACCESS ROAD)

NOT TO SCALE



3/42 PERIMETER CHANNEL (OUTSIDE OF PERIMETER ACCESS ROAD)

NOT TO SCALE

NOTES

1.) THICKNESS OF GEOSYNTHETICS IS EXAGGERATED FOR CLARITY.
2.) FOR MATERIALS REQUIERMENTS, SEE THE TECHNICAL SPECIFICAITONS IN SECTION 14 OF THE PHASE III REPORT

STATE OF MARYLAND — PAUL STEVEN STRATMAN — No. 35.....(EXP. 1/31/22) — PROFESSIONAL ENGINEER

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PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

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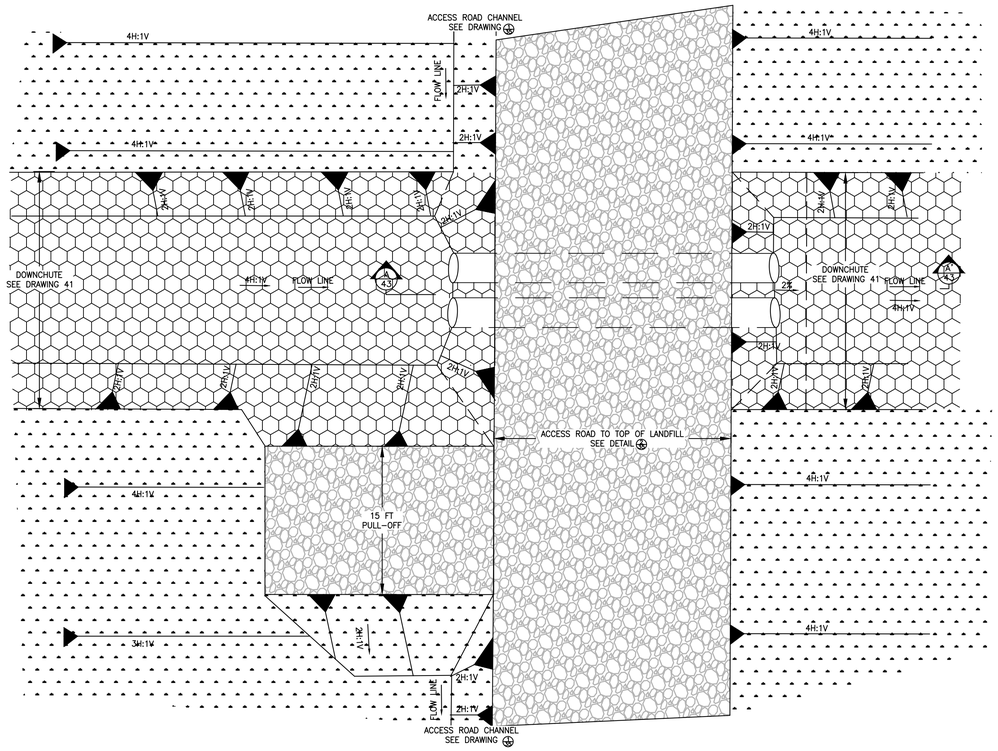
STORMWATER MANAGEMENT SYSTEM DETAILS (SHEET 3 OF 4)

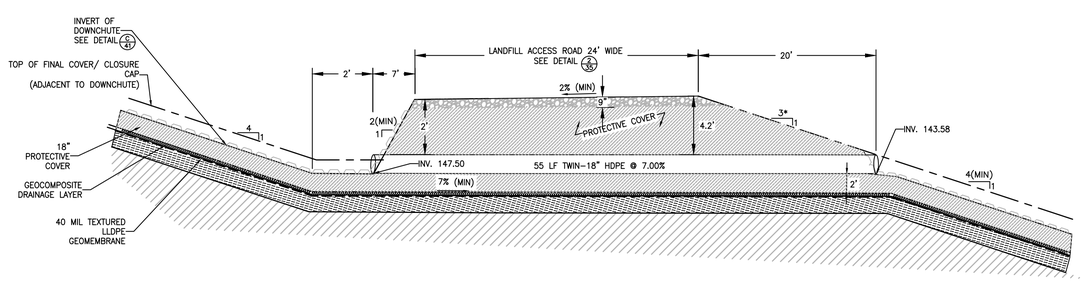
PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 42



1/43 DOWNCHUTE ACCESS CROSSING ROAD

NOT TO SCALE



* 3:1 SLOPE AT PIPE CROSSING ONLY. ALL OTHER OUTSIDE SLOPE OF ACCESS ROAD TO TOP OF LANDIFLL SHALL BE 4:1

A/43 SECTION A-A' (CULVERT AR-2)

NOT TO SCALE

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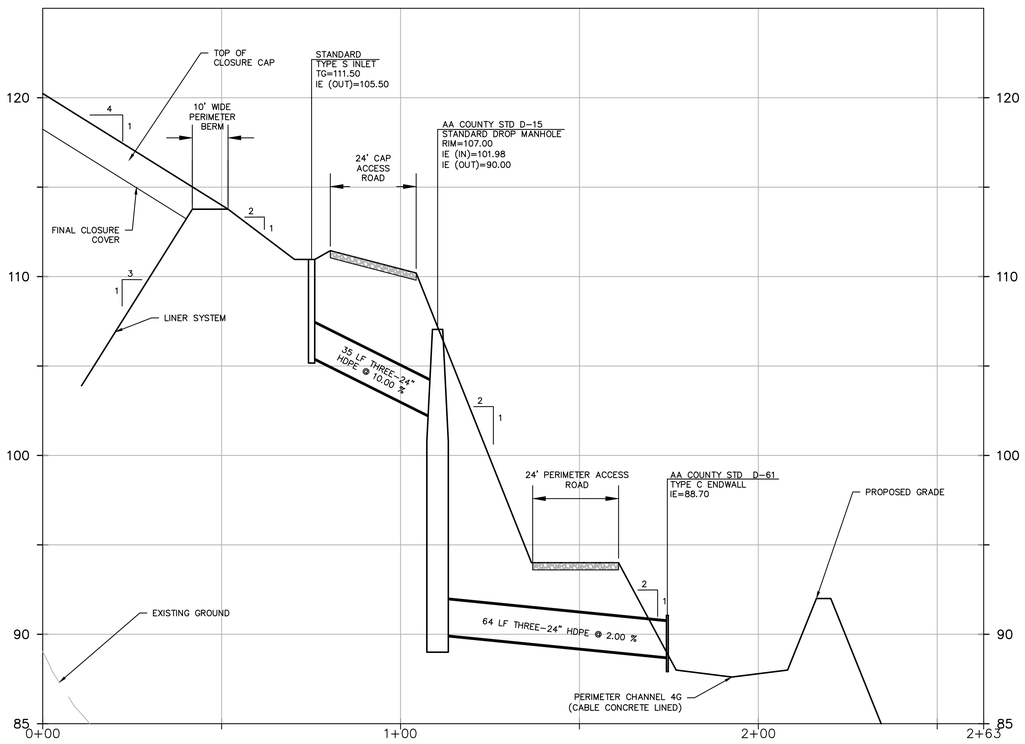
STORMWATER
MANAGEMENT SYSTEM
DETAILS (SHEET 4 OF 4)

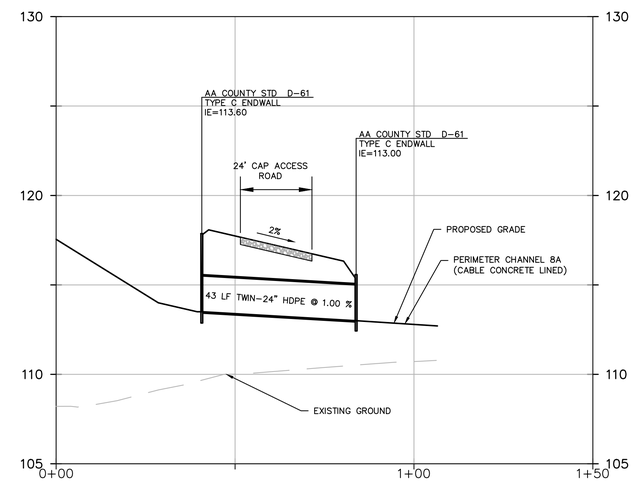
PROJECT MANAGER:	PGS	SCALE:	AS NOTED
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE:	09/03/2021

DRAWING 43



1/44 PROFILE- CULVERT AR-1

SCALE: 1"=20' HOR
1"=4' VERT



2/44 PROFILE- CULVERT AR-3

SCALE: 1"=20' HOR
1"=4' VERT

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9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
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STATE OF MARYLAND
GERARD STRAYMAN REGISTERED PROFESSIONAL ENGINEER
No. 35237
1/14/22

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
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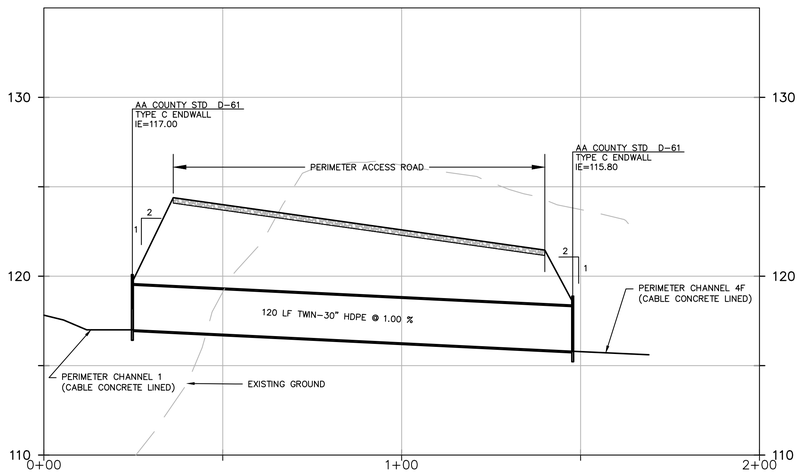
STORMWATER
CULVERT PROFILES
(SHEET 1 OF 2)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

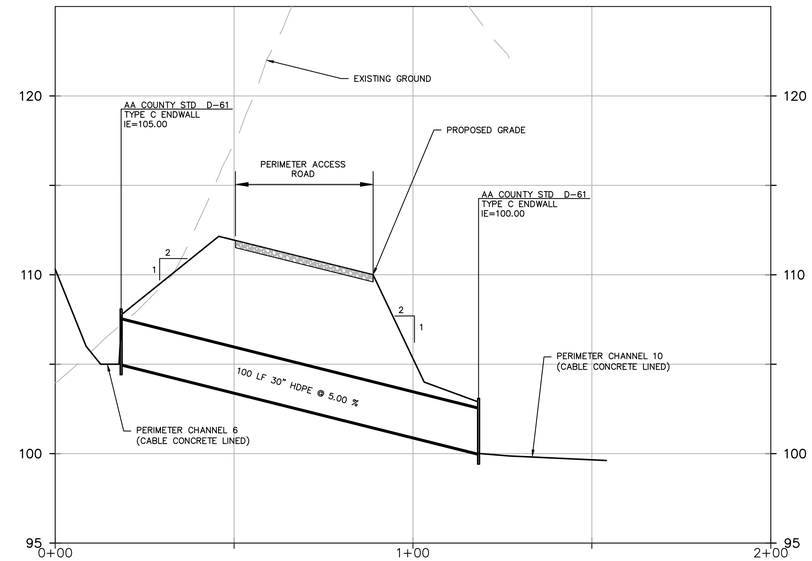
DRAWING 44

N:\Projects\2018\2018354 - Chesapeake Terrace LF\CAD\DWG\IC & Phase III Application\Drawings\Final\2018354.B044 - STORMWATER CULVERT PROFILES - SHEET 1 OF 2.dwg



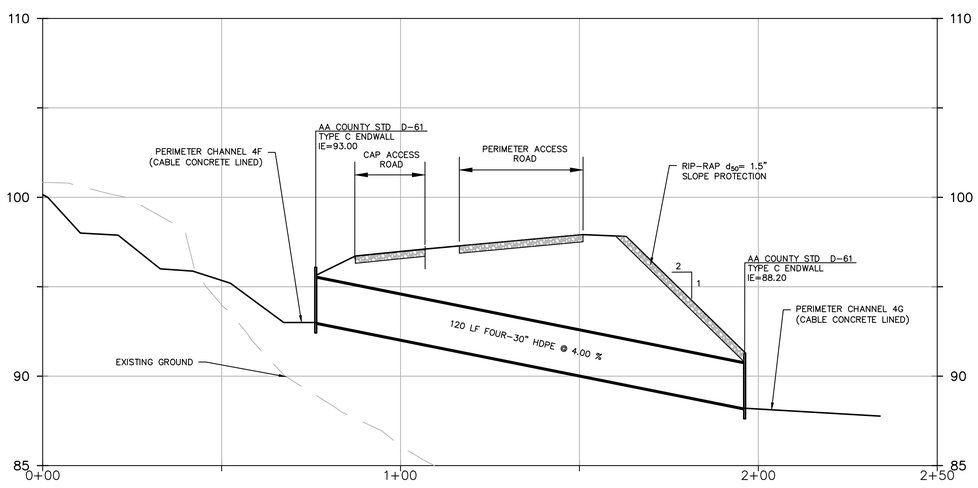
1/45 PROFILE- CULVERT #6

SCALE: 1"=20' HOR
1"=4' VERT



2/45 PROFILE- CULVERT #7

SCALE: 1"=20' HOR
1"=4' VERT



2/45 PROFILE- CULVERT #2

SCALE: 1"=20' HOR
1"=4' VERT

STATE OF MARYLAND
ALFRED D. STRATMAN III
No. 22551
PROFESSIONAL ENGINEER
1/14/22

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PHASE III APPLICATION
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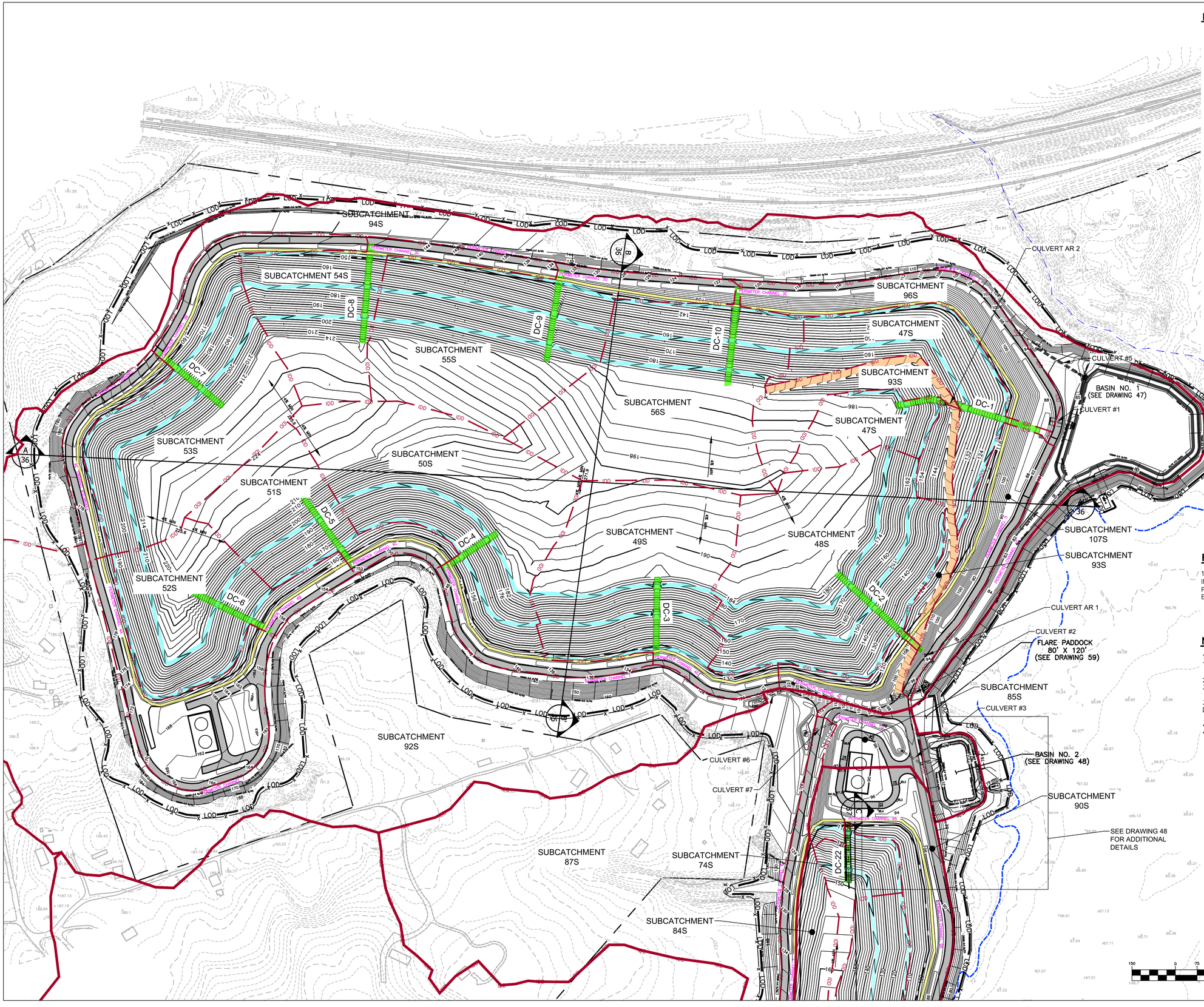
STORMWATER
CULVERT PROFILES
(SHEET 2 OF 2)

PROJECT MANAGER:	PGS	SCALE:	AS NOTED
CHECKED BY:	PGS	PROJECT NUMBER:	2018 - 3854
DRAWN BY:	KHF	DATE:	09/03/2021

DRAWING 45



LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN
- 2 FT INCREMENT CONTOUR
- 5 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- LOD — LIMIT OF DISTURBANCE
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- LANDFILL PERIMETER ROAD, SEE DRAWING 7/8
- SIGNS, SEE DRAWING 9
- ACCESS ROAD TO THE TOP, SEE DETAIL 2/35
- TERRACE, SEE DETAIL 2/34
- PERIMETER BERM, SEE DETAIL 2/35
- DOWNCHUTE, SEE DETAIL 1/20
- PERIMETER DRAINAGE AREA DIVIDE
- IDD — INTERIOR DRAINAGE AREA DIVIDE
- TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION WITH MINIMUM SHEAR STRESS (lb/ft²)

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

NOTES

1.) THE GRADES SHOWN ON THIS REPRESENT THE TOP OF THE FINAL COVER/CLOSURE CAP.

2.) FINAL COVER/CLOSURE CAP DETAILS ARE ON DRAWINGS 34 & 35.

3.) STORMWATER MANAGEMENT DETAILS ARE SHOWN ON DRAWINGS 40 THROUGH 44.

4.) PERIMETER CHANNEL DETAIL ARE SHOWN ON DRAWING 42.

STATE OF MARYLAND — KARL D. STRAYMAN — REGISTERED PROFESSIONAL ENGINEER — No. 19371 — 1/14/22

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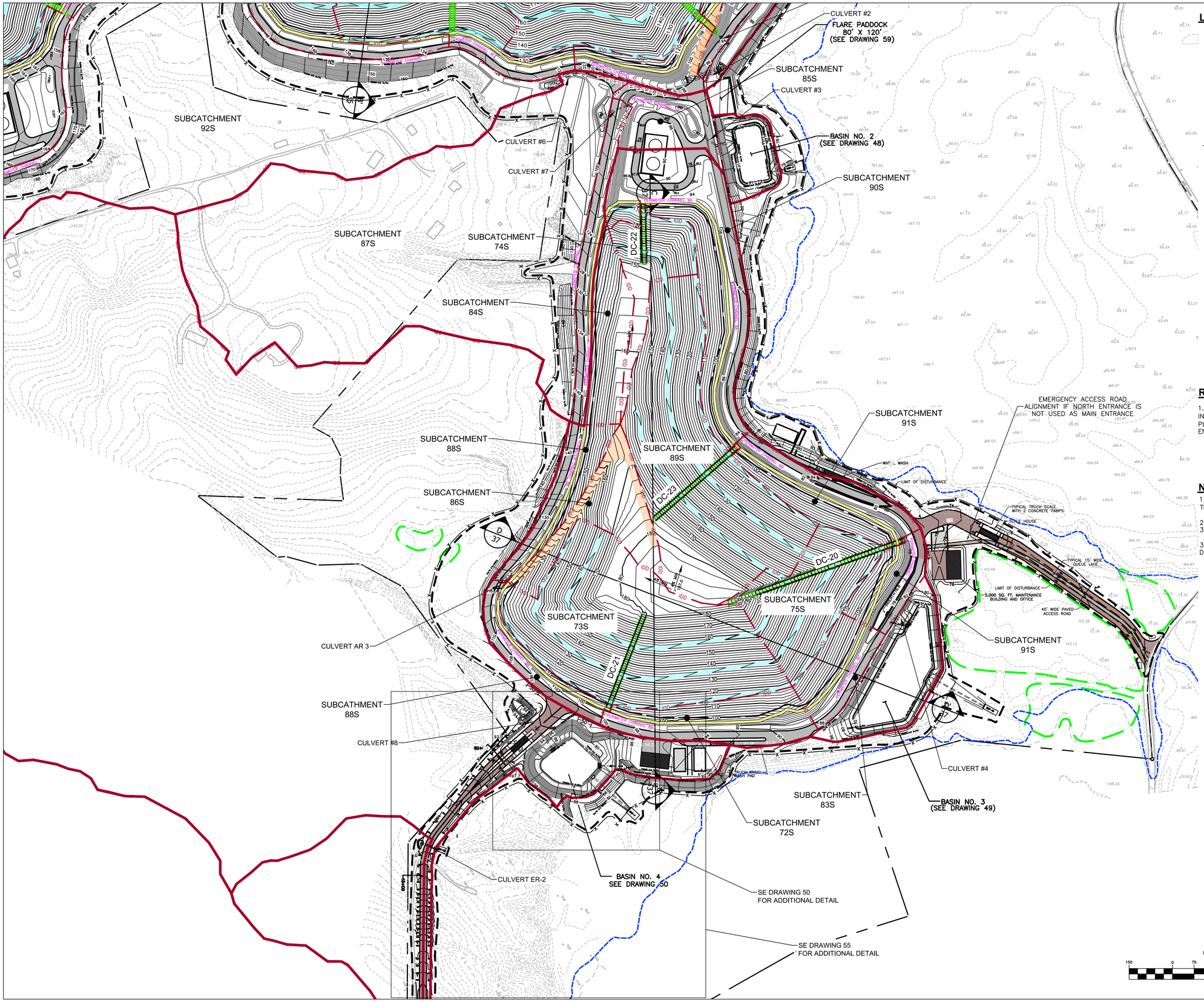
WEST AREA
FINAL LAYOUT
WITH EROSION CONTROL

PROJECT MANAGER:	PGS	SCALE: AS NOTED	
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE: 09/03/2021	

DRAWING 46



LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN
- 2 FT INCREMENT CONTOUR
- 5 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- LIMIT OF DISTURBANCE
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- LANDFILL PERIMETER ROAD, SEE DRAWING 7/8
- SIGNS, SEE DRAWING 9
- ACCESS ROAD TO THE TOP, SEE DETAIL 2/35
- TERRACE, SEE DETAIL 2/34
- PERIMETER BERM, SEE DETAIL 2/35
- DOWNCHUTE, SEE DETAIL 1/20
- PERIMETER DRAINAGE AREA DIVIDE
- IDD — INTERIOR DRAINAGE AREA DIVIDE
- TRSMS — TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION WITH MINIMUM SHEAR STRESS (lb/ft²)

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY Ccentury ENGINEERING, INC., DATED APRIL 12, 2010.

NOTES

1.) THE GRADES SHOWN ON THIS REPRESENT THE TOP OF THE FINAL COVER/CLOSURE CAP.

2.) FINAL COVER/CLOSURE CAP DETAILS ARE ON DRAWINGS 34 & 35.

3.) STORMWATER MANAGEMENT DETAILS ARE SHOWN ON DRAWINGS 40 THROUGH 44.

STATE OF MARYLAND
PAUL GREGORY STRAYMAR
No. 15251
PROFESSIONAL ENGINEER
1/14/22

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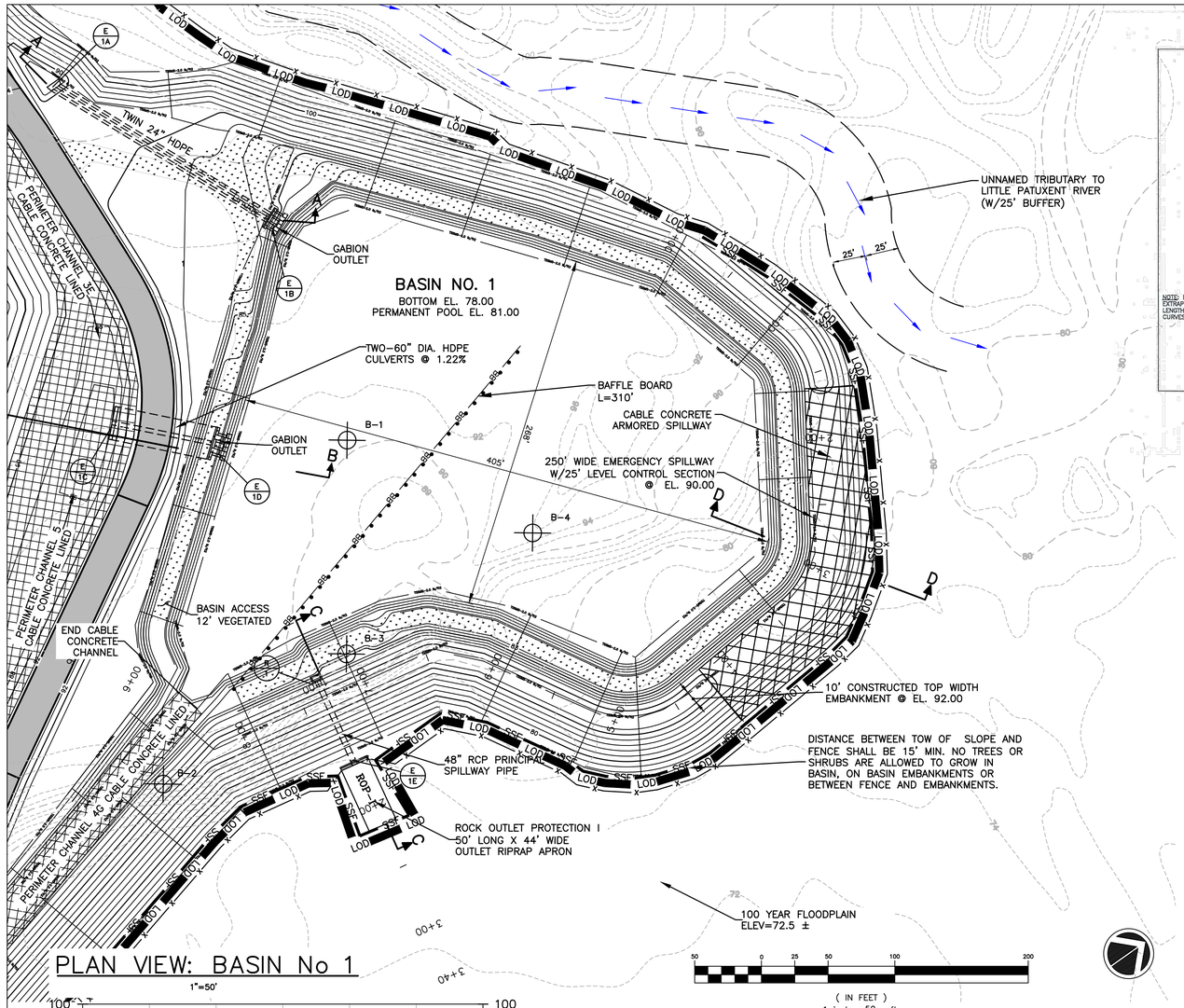
EAST AREA
FINAL LAYOUT
WITH EROSION CONTROL

PROJECT MANAGER: PGS	SCALE:AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 - 3854
DRAWN BY: KHF	DATE:09/03/2021

DRAWING 46A



PLAN VIEW: BASIN No 1

1"=50'

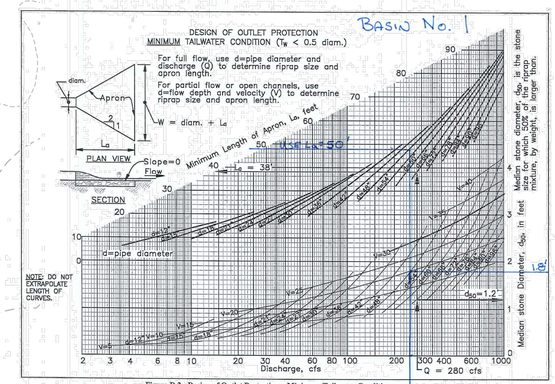
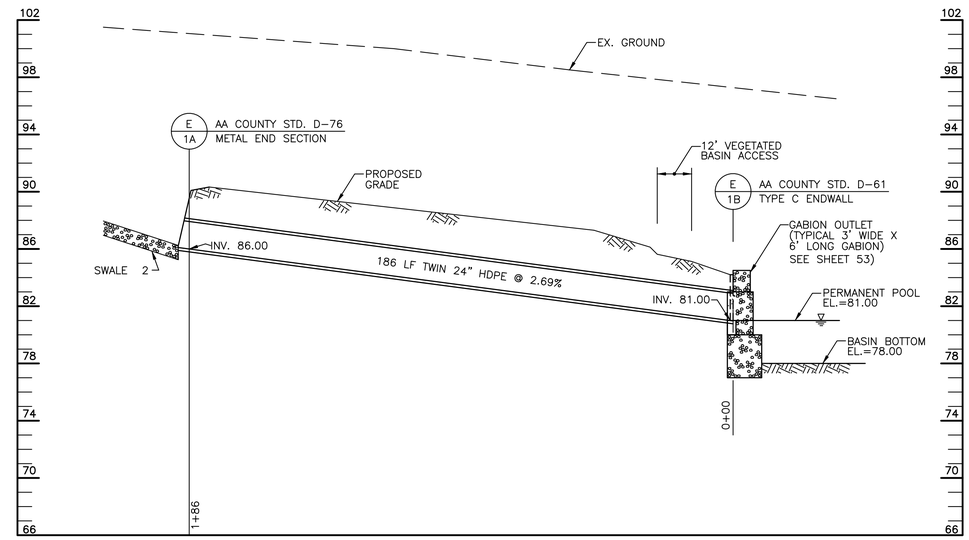


Figure D.2: Design of Outlet Protection – Minimum Tailwater Condition

D.18

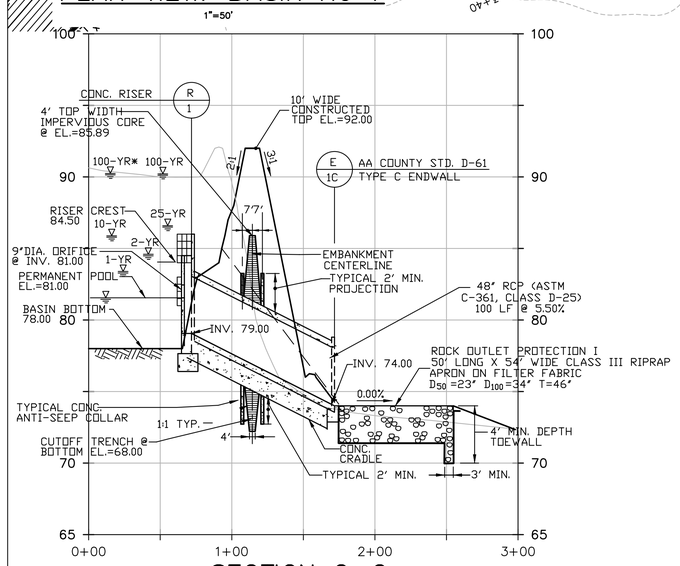
SEQUENCE OF CONSTRUCTION

1. PROPOSED CONTOURS HEREON DEPICT BASIN NO. 1, LANDFILL PERIMETER ACCESS ROAD, PERIMETER DITCH AND GRADING CONTOURS, AS SHOWN ON DRAWING 6.
2. PERFORM CLEARING ALONG PROPOSED FENCE/LIMIT OF DISTURBANCE, AND INSTALL SUPER SILTFENCE.
3. FOLLOWING INSTALLATION OF SUPER SILT FENCE, BASIN NO. 1 SHALL BE CONSTRUCTED IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS ON THESE PERMIT DRAWINGS. SEE DRAWING 63 "SEQUENCE AND GENERAL NOTES FOR CONSTRUCTION" ITEM V(B)(I) FOR TYPICAL BASIN REQUIREMENTS.
4. PROVIDE 4" TOPSOIL ON BASIN NO. 1 EMBANKMENT TOP WIDTH AND SIDE SLOPES. VEGETATIVELY STABILIZE ALL DISTURBED AREAS. INSTALL TEMPORARY SOIL STABILIZATION MAT (TSSMS) (2.25 lb/ft²) ON ALL BASIN SLOPES STEEPER THAN 3:1 AND TSSMS (1.5 lb/ft²) ON ALL SLOPES BETWEEN 4:1 AND 3:1.
5. BASIN NO. 1 WILL SERVE AS A SEDIMENT CONTROL FACILITY UNTIL LANDFILL CELLS WITHIN THE CONTRIBUTING DRAINAGE AREA HAVE BEEN CLOSED AND VEGETATED IN ACCORDANCE WITH MARYLAND DEPARTMENT OF ENVIRONMENT REGULATIONS, SEE DRAWING 53 FOR CONCRETE RISER CONNECTIONS DURING THE SEDIMENT CONTROL PHASE.
6. TO CONVERT BASIN NO. 1 TO A PERMANENT STORMWATER MANAGEMENT POND, CONCRETE RISER CONNECTIONS DURING THE SEDIMENT CONTROL PHASE WILL BE REMOVED, THE BASIN WILL BE DEWATERED AND THE RISER ORIFICE WILL BE UTILIZED FOR SWM PURPOSE. SEE DRAWING 54 FOR RISER ORIFICE DETAILS. SEE DRAWING 54 FOR BASIN CONVERSION TO SWM POND.
7. OVEREXCAVATE DISCHARGE PIPE TRENCH BY 4 FT, BACKFILL WITH STRUCTURAL FILL TO PIPE CRADLE SUBBASE. TRENCH SIDE SLOPES SHALL BE 2:1. BOTTOM WIDTH SHALL BE PIPE DIAMETER PLUS 4 FT.
8. SILT FENCE SHALL REMAIN IN–PLACE UNTIL BASIN SIDESLOPES ARE 95% STABILIZED.
9. INSTALL IRON STAKE 2.5 FEET INTO GROUND FOR EROSION MONITORING 10 ± FEET BEYOND END OF ROCK OUTLET PROTECTION AT BASIN DISCHARGE.



SECTION A–A (CULVERT #5)

SCALE: HORZ. 1"=25' VERT. 1"=5'



SECTION C–C

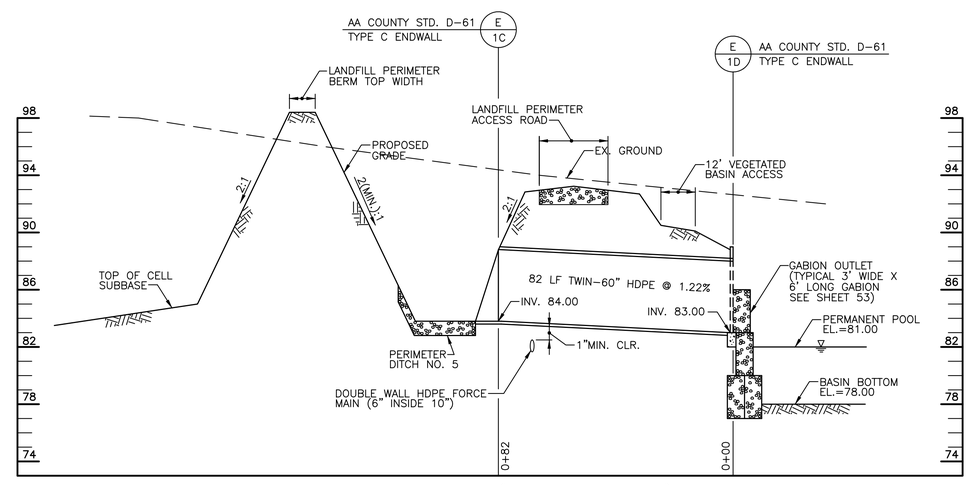
SCALE: HORZ. 1"=50' VERT. 1"=5'

LEGEND

B–4	SOIL TEST BORING BY CENTURY ENGINEERING NOV 2006 (SEE DRAWINGS 94 AND 95)
TSSMS	TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION WITH MINIMUM SHEAR STRESS (lb/ft²)
LOD	LIMIT OF DISTURBANCE
ROP–I	ROCK OUTLET PROTECTION–TYPE I (SEE DRAWING 61)
SSF	SUPER SILTFENCE (SEE DRAWING 60)
RSF	REINFORCED SILTFENCE (SEE DRAWING 60)
CD	STONE CHECK DAM (SEE DRAWING 60)

BASIN NO. 1 SUMMARY					
STORM	MAX WATER ELEV.	Q IN (CFS)	Q OUT (CFS)	% REDUCTION	OUTLET VELOCITY (FPS)
1-YEAR	83.39	79.81	3.02	96%	-
2-YEAR	84.59	129.23	5.43	96%	-
10-YEAR	85.89	312.73	106.39	66%	9.82
25-YEAR	86.6	386.46	140.81	64%	-
100-YEAR	90.22	672.36	255.13	62%	14.62
100-YEAR*	90.25	672.36	267.17	60%	-

* ASSUME LOWEST OUTLET DEVICE CLOGGED



SECTION B–B (CULVERT #1)

SCALE: HORZ. 1"=25' VERT. 1"=5'

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
9/30/2021	REVISED OUTLET PROTECTION
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

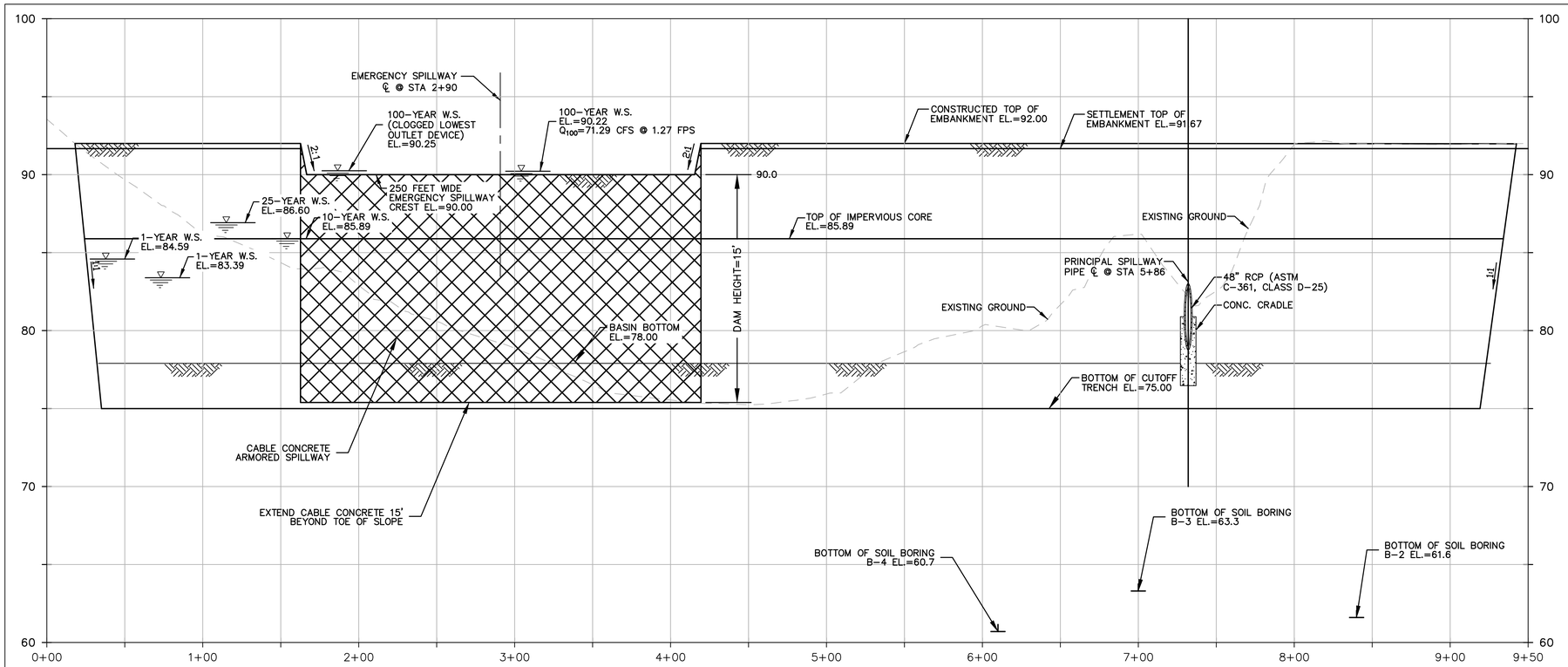
NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
1870 MARLTON PIKE EAST SUITE 13, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

BASIN NO. 1
PLAN AND SECTION
WITH EROSION CONTROL

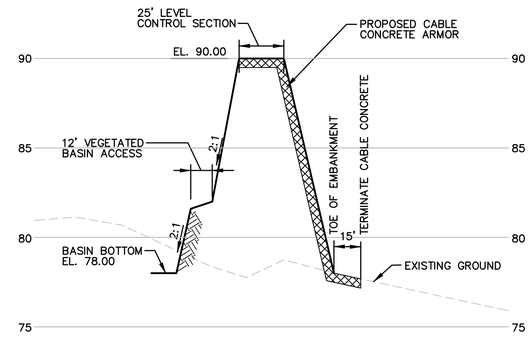
PROJECT MANAGER:	PGS	SCALE: AS NOTED	
CHECKED BY:	PGS	PROJECT NUMBER: 2018 – 3854	
DRAWN BY:	KHF	DATE: 09/03/2021	

DRAWING 47



BASIN NO. 1 EMBANKMENT CENTERLINE PROFILE

SCALE: HOR. 1"=40'
VERT. 1"=4'



SECTION D-D
PROFILE EMERGENCY SPILLWAY

SCALE: HOR. 1"=40'
VERT. 1"=4'

CONSULTANT'S HAZARD CLASS CERTIFICATION

I CERTIFY THAT THIS POND MEETS ALL REQUIREMENTS FOR HAZARD CLASS A REQUIREMENTS, AS STATED IN THE USDA NATURAL RESOURCES CONSERVATION SERVICE – MARYLAND CONSERVATION PRACTICE STANDARD FOR POND, CODE 378, JANUARY 2000. ALL NECESSARY INVESTIGATIONS AND COMPUTATIONS HAVE BEEN PERFORMED TO VERIFY THIS FINDING. A COPY OF SAID INFORMATION HAS BEEN SUPPLIED TO AASCD.

SIGNATURE _____

NAME (PRINTED) PAUL STRATMAN, PE DATE NOVEMBER 9, 2021

STATE OF MARYLAND PAUL R. STRATMAN No. 15851 PROFESSIONAL ENGINEER

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
9/30/2021	REVISED BASIN 1 PROFILE
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

Table G.6: Temporary Sediment Basin Design Data Sheet
(Refer to instructions on pages G.27 through G.29)

Computed by: P Stratman Date: 9/24/2021 Checked by: ____ Date: ____
Project name: Chesapeake Terrace Basin #: Basin No.1
Location: AA County

Design Volumes and Elevations

1. Total area draining to basin = 154.4 acres (ac)
2. Required total storage volume = 3600 ft³/ac x 154.4 acre drainage area =555,840ft³
3. Required wet storage volume = 1800 ft³/ac x 154.4 acre drainage area =277,920ft³
4. Required dry storage volume = 1800 ft³/ac x 154.4 acre drainage area =277,920ft³
5. Basin bottom elevation = 78.0 ft
6. Riser or weir crest (total storage) elevation = 84.5 ft
7. Provided total storage volume = 650,160 ft³
8. Wet storage (permanent pool/draw-down) elevation 81.0 ft
9. Provided wet storage volume = 318,048 ft³
10. Provided dry storage volume = 434,800 ft³
11. Basin cleanout elevation (located at ½ wet storage depth) = 80.0 ft
12. Distance from riser crest elevation to cleanout elevation = 4.5 ft

Surface Area Design

13. Q_{10} = 312.7 cfs (peak inflow from 10-yr, 24-hr storm event; attach computations)
14. Minimum basin surface area ≥ 0.0035 x Q_{10}= 1.1 ac ≤ 2.5 ac
    required provided

Principal Spillway (Q_{ps})
(See Figure G.1)

15. Design Q_{ps} for barrel = 31.3 cfs (min. 10% of Q_{10})
16. Barrel head, H = 4.9 ft; Barrel length, L = 100 ft
17. Barrel dia. = 48 in (min. 10 inch); Q_{ps} = 145.4 (Q from Table G.7 or G.8) x 0.97 (length correction factor) = 141.0cfs. **Note: Q_{ps} must equal or exceed Design Q_{ps}**
18. Riser dia. = 72* in; Riser height = 16.0 ft; Riser head (h) = 1.4** ft ** During 10 year Event
19. Trash rack dia. = *** in; Trash rack height = ____ in

* Riser is rectangular 3.0' x 6.5' Weir length equivalent to a 72" diameter circular riser
*** Trash Rack is rectangular, see detail on Design Drawing 53

Emergency Spillway (Q_{es})
(See Figures G.3 and G.4)

20. Emergency spillway capacity Q_{es} = Q_{10} - Q_{ps} =312.7-141.0=171.7 cfs
21. Width, b = 250 ft; Hp = 0.35 ft
22. Exit channel slope 33 %
23. Emergency Spillway Crest = 90.0 ft
24. Design High Water = 85.89 ft Spillway not engaged for 10 year rain event
25. Settled top of embankment elevation = 91.67 ft

100 yr Design Storm Level 90.22 ft

Table G.6: Temporary Sediment Basin Design Data Sheet (continued)

Anti-Seep Collar Design (If Required)
(See Figures G.5 and G.6)

26. y = 6.9 ft; z = 2 :1; pipe slope = 5.5 %; Ls = 53 ft
27. Use 2 collars, 8 ft - 0 in. square; projection = 2 ft

Draw-Down Device
(See Table G.10 and Details G-2-6 and G-2-7)

28. Q_{d4} = 7.72 cfs
29. Calculated A_o = 0.86 ft²
30. Calculated d_o = 1.04 in
31. Maximum diameter from Table G.10 = 15 in
32. Design d_o = smaller of line 30 or line 31 = 1.04 in
33. Draw-down device pipe diameter = 12 in
34. Minimum A_o = total area of perforations = $4A_o$ = 3.4 ft²
35. Perforation diameter = 1.0 in
36. Minimum number of perforations = 625
37. Number of longitudinal rows = 8
38. Perforated pipe length = 39.0 ft
39. Actual A_t = (0.0055 ft²) x (line 37 ÷ 0.5 ft) x (line 38) = 3.4 ft² (must be ≥ line 34)

Baffle Board Design
(See Detail G-2-4)

40. A = surface area at wet storage elevation = 110,353 ft²
41. Effective width, W_e = $(A/2)^{1/2}$ = 235 ft
42. Flow length from inflow point to outlet = 150 ft
43. If line 42 is less than W_e x 2, provide baffle boards to lengthen flow path
44. Effective flow length, L_e = L_1 + L_2 + L_3 = 490 ft (must be ≥ W_e x 2 = 470 ft)

MD-ENG-14
(Rev. 10/2000)
Reference:
NRCS-MD-378

U. S. Department of Agriculture
Natural Resources Conservation Service
POND SUMMARY SHEET

Note: This form is to be used for NRCS Class "a" ponds only. Other ponds require permit from Maryland Department of the Environment, Dam Safety Division

PROJECT INFORMATION

Project Name: Chesapeake Terrace Landfill
SCD File No:
Pond No: Basin No 1

MARYLAND COORDINATES (to nearest 1000 feet)
East 1387000
North 502000
County Anne Arundel
ADC Map/Grid 5291 / C4

OWNER INFORMATION

Name: National Waste Managers
Address: 2900 Linden Lane
City, State, Zip Silver Spring MD 20910

TYPE OF POND: ☐ Excavated ☐ Embankment ☑ Both

Drainage Area: 154.4 Acres
Surface Area: 3.9 Acres
Normal Depth: 14.0 Feet
Design Storm Frequency: 100 Years
Storage at Design High Water (DHW): 35.9 Ac-ft

PURPOSE OF POND (Check all that apply)
☒ Stormwater Management-Wet ☒ Sediment Control ☐ Wetland Mitigation
☒ Stormwater Management-Dry ☐ Livestock ☐ Wildlife/Fish
☐ Infiltration/Water Quality ☐ Flood Control ☐ Fire Control
☐ Water Supply/Irrigation ☐ Recreation ☐ Other (Specify below):
☐ Sand & Gravel Wash Pond ☐ Borrow Material

EMBANKMENT
Top Elevation 92.0 Feet
Normal Pool Elevation 81.0 Feet
DHW Water Elevation 90.3 Feet
Maximum Fill Height 14.0 Feet
Top Width 10.0 Feet
Side Slopes: U.S. 2 :1
D.S. 3 :1

Will embankment serve as public roadway? ☐ Yes ☒ No

PRINCIPAL SPILLWAY
Barrel Size: 48 Inches
☐ BCCMP ☐ Alum (CAP) ☒ RCP
☐ Weir ☐ Channel ☐ Other:
Design Capacity at DHW: 183.8 cfs
☐ PVC ☐ Cast-in-Place Box Culvert

EMERGENCY SPILLWAY
Velocity: 6.3 Ft/sec
Crest Elev: 90.0 Ft
Spillway Protection: ☐ Grass ☐ Riprap ☐ Gabions ☒ Other: Cable Concrete
Design Capacity at DHW: 71.3 Cfs
Bottom Width: 250 Feet
Side Slopes: 3 :1

DISTANCES BELOW POND TO
Property Line: 620 Feet
Public Road: 620 Feet

Soil Conservation District (Name):
District Manager Signature _____ Date: _____

The following line to be completed and form is to be resubmitted after As-Built certification has been accepted by the District:)
Date As-Builts Accepted: _____
District Representative Signature

SMALL POND APPROVAL LETTER

Basin No. 1

As authorized by the Annotated Code of Maryland, Environment, Article 5-503, the Anne Arundel Soil Conservation (AASCD) hereby approves the plans and specifications for SMALL POND NUMBER 999 located at Maryland Coordinates 502,000 feet north and 1,387,000 feet east.

A. This approval is issued under the following conditions. Failure to comply with these conditions will constitute grounds for withdrawal of our approval and notification to MDE Dam Safety.

1. The approval is valid only for use by the developer/owner and may not be transferred to another unless written permission for such transfer is obtained from the AASCD.
2. The approval shall become null and void if the construction under the approval has not begun one year from the date of the approval and completed within eight (8) months after start of construction, except that these limits may be extended at the discretion of the AASCD.
3. Construction shall be in strict accordance with NRCS criteria for pond construction and the terms of this approval. The location, dimensions and type of all structures, as well as any excavation or filling, shall be in accordance with the aforementioned plans submitted by the developer/owner, unless written approval for any change is granted by the AASCD.
4. The pond shall be constructed under the supervision of a registered professional engineer. Within 45 days of the completion of construction, the developer/owner shall provide the AASCD with an "interim as-built" plan that meets the requirements of the AASCD Small Pond Approval Checklist. In addition, "final as-built" plans need to be submitted at completion of project. All as-built plans shall be sealed by a registered professional engineer. The registered professional engineer shall certify that the pond was constructed in accordance with the approved plans and specifications and that the entire as-built checklist has been addressed.
5. The pond construction shall at all times be in full conformance with Anne Arundel County/City of Annapolis and MDE Code. Any change or deviation from the approved plans must be redesigned and the revised plans must be approved by the AASCD prior to the performance of the work.

B. ACCEPTANCE

1. This approval and its conditions are accepted.
2. Permission is hereby granted to representatives of the AASCD to enter in or upon the subject premises at any reasonable time for the purpose of observing construction progress, reviewing the completed structure, and insuring adequate maintenance and repair of the completed structure.

Accepted by _____ Vice President 11/08/2021
(Developer/Owner's Signature) (Title) (Date)

Print/Type Name Stephen N. Fleischman
Firm National Waste Managers , Inc. Address 2900 Linden Lane, Suite 300
Silver Spring MD 20910

AASCD Small Pond Approval Checklist 9/2015

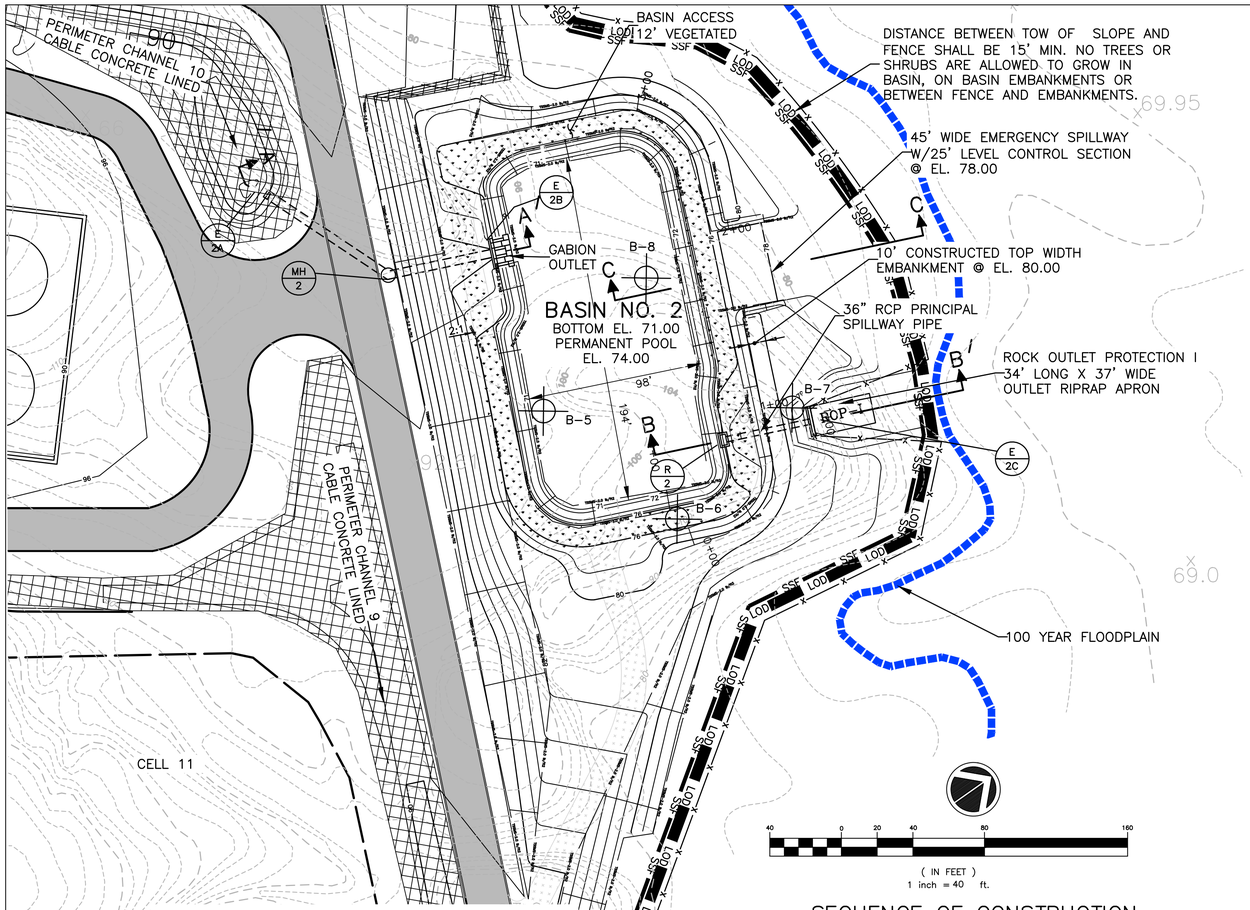
11

ADVANCED Geoservices
a Montrose Environmental Group company
1878 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

BASIN NO.1
SECTION AND SUMMARY SHEETS

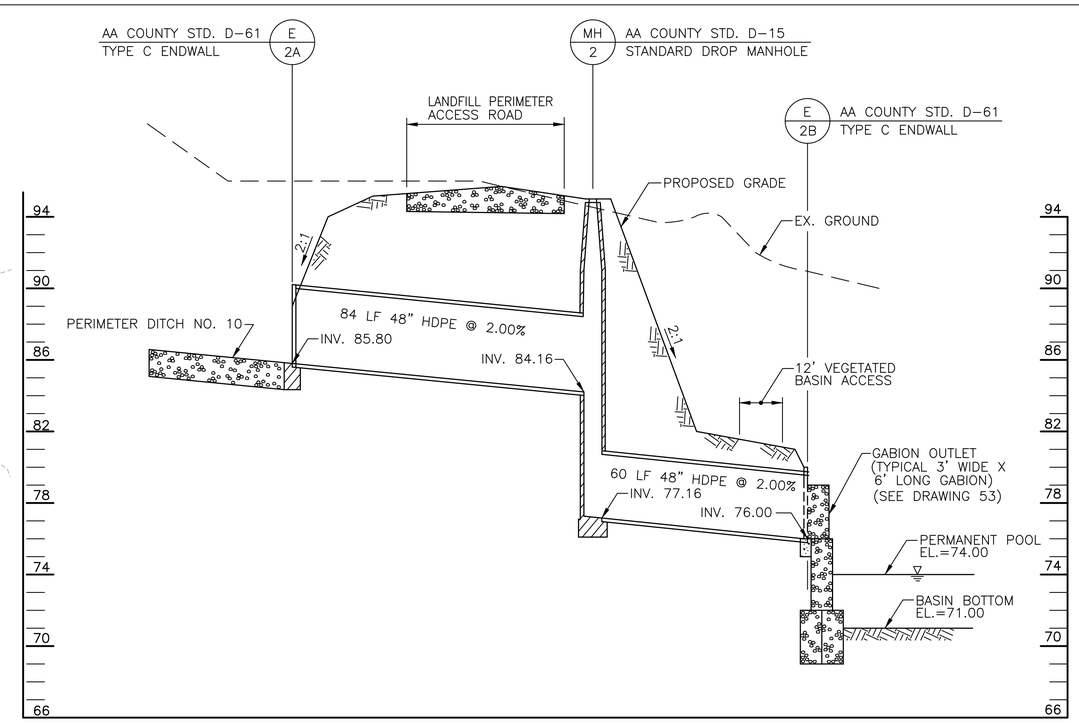
PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 47A



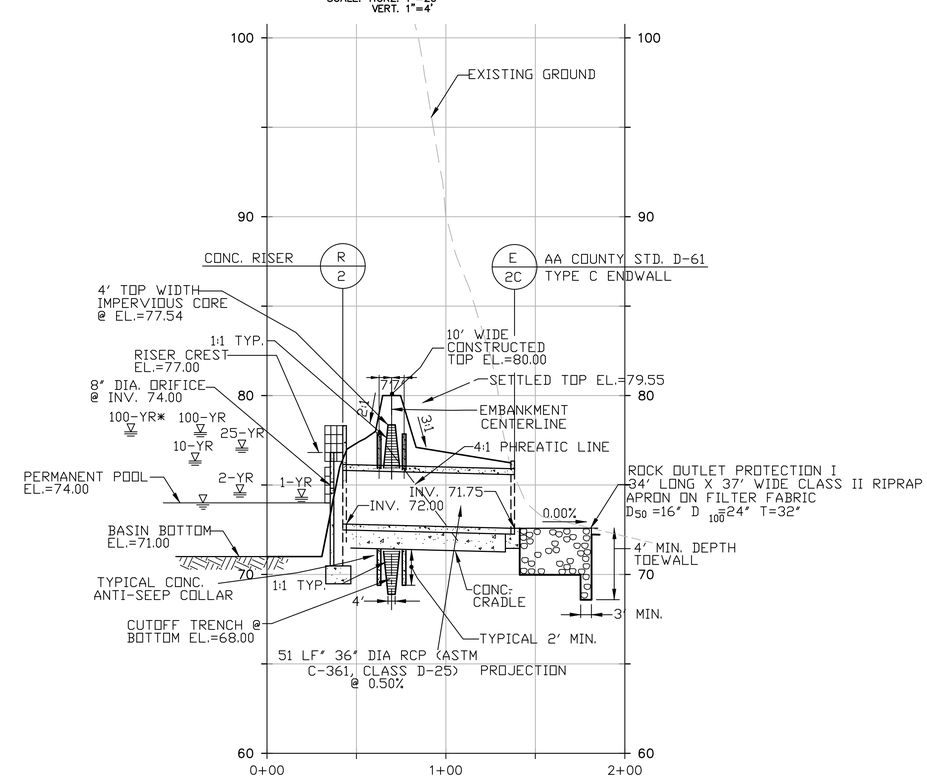
PLAN VIEW: BASIN No 2

1"=40'



SECTION A–A

SCALE: HORZ. 1"=20'
VERT. 1"=4'



SECTION B–B

SCALE: HORZ. 1"=40'
VERT. 1"=4'

LEGEND

B–5	SOIL TEST BORING BY CENTURY ENGINEERING NOV 2006 (SEE DRAWINGS 94 AND 95)
TSSMS	TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION WITH MINIMUM SHEAR STRESS (lb/ft²)
LOD	LIMIT OF DISTURBANCE
ROP–I	ROCK OUTLET PROTECTION–TYPE I (SEE DRAWING 61)
SSF	SUPER SILTFENCE (SEE DRAWING 60)
RSF	REINFORCED SILTFENCE (SEE DRAWING 60)
CD	STONE CHECK DAM (SEE DRAWING 60)

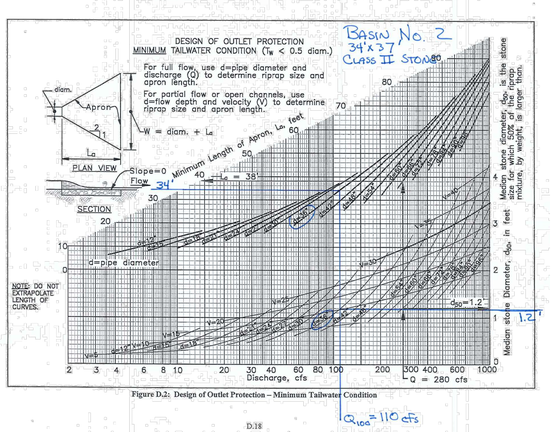


Figure D.2: Design of Outlet Protection – Minimum Tailwater Condition

D.18

SEQUENCE OF CONSTRUCTION

1. PROPOSED CONTOURS HEREON DEPICT BASIN NO. 2, LANDFILL PERIMETER ACCESS ROAD, PERIMETER DITCH AND OTHER INITIAL GRADING CONTOURS, AS SHOWN ON DRAWINGS 6 AND 7.
2. PERFORM CLEARING ALONG PROPOSED FENCE/LIMIT OF DISTURBANCE, AND INSTALL SUPER SILTFENCE.
3. FOLLOWING INSTALLATION OF SUPER SILT FENCE, BASIN NO. 2 SHALL BE CONSTRUCTED IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS ON THESE PERMIT DRAWINGS. SEE DRAWING 63 "SEQUENCE AND GENERAL NOTES FOR CONSTRUCTION" ITEM V(B)(I) FOR TYPICAL BASIN REQUIREMENTS.
4. PROVIDE 4" TOP SOIL ON BASIN NO 2 EMBANKMENT TOP WIDTH AND SIDE SLOPES. VEGETATIVELY STABILIZE ALL DISTURBED AREAS. INSTALL TEMPORARY SOIL STABILIZATION MAT (TSSMS) (2.25 lb/ft²) ON ALL BASIN SLOPES STEEPER THAN 3:1 AND TSSMS (1.5 lb/ft²) ON ALL SLOPES BETWEEN 4:1 AND 3:1.
5. BASIN NO. 2 WILL SERVE AS A SEDIMENT CONTROL FACILITY UNTIL LANDFILL CELLS WITHIN THE CONTRIBUTING DRAINAGE AREA HAVE BEEN CLOSED AND VEGETATED IN ACCORDANCE WITH MARYLAND DEPARTMENT OF ENVIRONMENT REGULATIONS, SEE DRAWING 53 FOR CONCRETE RISER CONNECTIONS DURING THE SEDIMENT CONTROL PHASE.
6. TO CONVERT BASIN NO. 2 TO A PERMANENT STORMWATER MANAGEMENT POND, CONCRETE RISER CONNECTIONS DURING THE SEDIMENT CONTROL PHASE WILL BE REMOVED, THE BASIN WILL BE DEWATERED AND THE RISER ORIFICE WILL BE UTILIZED FOR SWM PURPOSE, AS SHOWN ON SECTION B–B HEREON. SEE DRAWING 53 FOR RISER ORIFICE DETAILS. SEE DRAWING 54 FOR BASIN CONVERSION TO SWM POND.
7. OVEREXCAVATE DISCHARGE PIPE TRENCH BY 4 FT, BACKFILL WITH STRUCTURAL FILL TO PIPE CRADLE SUBBASE. TRENCH SIDE SLOPES SHALL BE 2:1. BOTTOM WIDTH SHALL BE PIPE DIAMETER PLUS 4 FT.
8. SILT FENCE SHALL REMAIN IN–PLACE UNTIL BASIN SIDESLOPES ARE 95% STABILIZED.
9. INSTALL IRON STAKE 2.5 FEET INTO GROUND FOR EROSION MONITORING 10 ± FEET BEYOND END OF ROCK OUTLET PROTECTION AT BASIN DISCHARGE.

BASIN NO. 2 SUMMARY

STORM	MAX WATER ELEV.	Q IN (CFS)	Q OUT (CFS)	% REDUCTION	OUTLET VELOCITY (FPS)
1-YEAR	74.31	1.36	0.3	78%	-
2-YEAR	74.56	6.08	0.8	87%	-
10-YEAR	76.34	35.52	2.38	93%	3.65
25-YEAR	77.06	49.6	3.75	92%	-
100-YEAR	77.93	110.04	58.51	47%	8.28
100-YEAR*	77.97	110.04	59.59	46%	-

* ASSUME LOWEST OUTLET DEVICE CLOGGED

REVISION:

DATE:	
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
9/30/2021	REVISED OUTLET PROTECTION
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

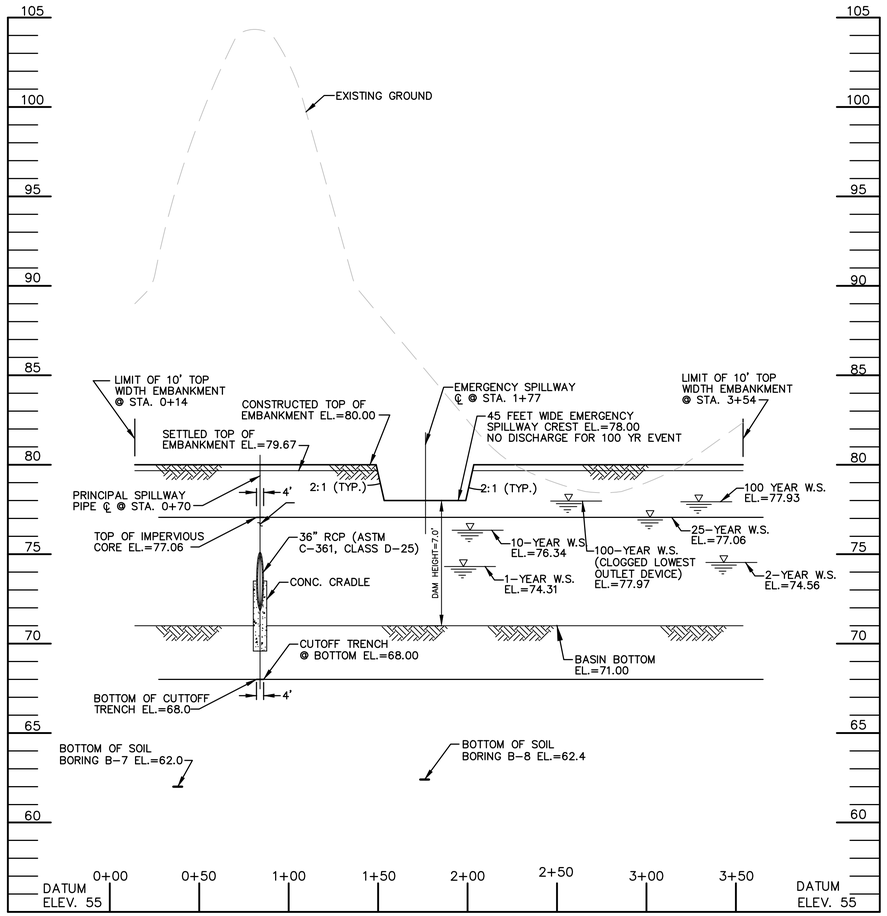
NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
1978 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

BASIN NO. 2
SECTION AND SUMMARY
WITH EROSION CONTROL

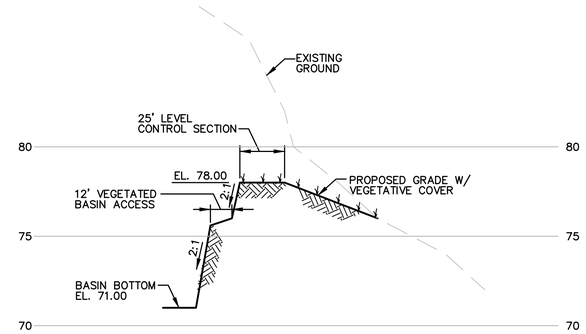
PROJECT MANAGER:	PGS
CHECKED BY:	PGS
DRAWN BY:	KHF
SCALE:	AS NOTED
PROJECT NUMBER:	2018 – 3854
DATE:	09/03/2021

DRAWING 48



BASIN NO. 2 EMBANKMENT CENTERLINE PROFILE

SCALE: HOR. 1"=40'
VERT. 1"=4'



SECTION C–C
PROFILE EMERGENCY SPILLWAY

SCALE: HOR. 1"=40'
VERT. 1"=4'

CONSULTANT'S HAZARD CLASS CERTIFICATION

I CERTIFY THAT THIS POND MEETS ALL REQUIREMENTS FOR HAZARD CLASS A REQUIREMENTS, AS STATED IN THE USDA NATURAL RESOURCES CONSERVATION SERVICE – MARYLAND CONSERVATION PRACTICE STANDARD FOR POND, CODE 378, JANUARY 2000. ALL NECESSARY INVESTIGATIONS AND COMPUTATIONS HAVE BEEN PERFORMED TO VERIFY THIS FINDING. A COPY OF SAID INFORMATION HAS BEEN SUPPLIED TO AASCD.

SIGNATURE _____

NAME (PRINTED) PAUL STRATMAN, PE DATE NOVEMBER 9, 2021

Table G.6: Temporary Sediment Basin Design Data Sheet
(Refer to instructions on pages G.27 through G.29)

Computed by: P Stratman Date: 9/24/2021 Checked by:____ Date:____
Project name: Chesapeake Terrace Basin #: Basin No.2
Location: AA County

Design Volumes and Elevations

1. Total area draining to basin = 27.7 acres (ac)
2. Required total storage volume = 3600 ft³/ac x 27.7 acre drainage area = 99,720 ft³
3. Required wet storage volume = 1800 ft³/ac x 27.7 acre drainage area = 49,860 ft³
4. Required dry storage volume = 1800 ft³/ac x 27.7 acre drainage area = 49,860 ft³
5. Basin bottom elevation = 71.0 ft
6. Riser or weir crest (total storage) elevation = 77.00 ft
7. Provided total storage volume = 135,199 ft³
8. Wet storage (permanent pool/draw-down) elevation 74.0 ft
9. Provided wet storage volume = 58,236 ft³
10. Provided dry storage volume = 77,190 ft³
11. Basin cleanout elevation (located at ½ wet storage depth) = 72.5 ft
12. Distance from riser crest elevation to cleanout elevation = 4.5 ft

Surface Area Design

13. Q_{10} = 35.52 cfs (peak inflow from 10-yr, 24-hr storm event; attach computations)
14. Minimum basin surface area ≥ 0.0035 x Q_{10} = 0.12 ac ≤ 0.7 ac
    required provided

Principal Spillway (Q_{ps})
(See Figure G.1)

15. Design Q_{ps} for barrel = 3.6 cfs (min. 10% of Q_{10})
16. Barrel head, H = 3.7 ft; Barrel length, L = 51 ft
17. Barrel dia. = 36 in (min. 10 inch); Q_{ps} = 69.20 (Q from Table G.7 or G.8) x 1.04 (length correction factor) = 72.0 cfs. **Note: Q_{ps} must equal or exceed Design Q_{pp}**
18. Riser dia. = 72* in; Riser height = 16.0 ft; Riser head (h) = 1.4** ft ** During 10 year Event
19. Trash rack dia. = *** in; Trash rack height = ____ in

* Riser is rectangular 3.0' x 6.5' Weir length equivalent to a 72" diameter circular riser
*** Trash Rack is rectangular, see detail on Design Drawing 53

Emergency Spillway (Q_{es})
(See Figures G.3 and G.4)

20. Emergency spillway capacity Q_{es} = Q_{10} - Q_{ps} = 35.52 - 72.0 = OK cfs
21. Width, b = ____ ft; Hp = ____ ft Spillway not engaged for 10 year rain event
22. Exit channel slope ____ %
23. Emergency Spillway Crest = ____ ft
24. Design High Water = ____ ft
25. Settled top of embankment elevation = ____ ft

Table G.6: Temporary Sediment Basin Design Data Sheet (continued)

Anti-Seep Collar Design (If Required)
(See Figures G.5 and G.6)

26. y = 5.34ft; z = 2 :1; pipe slope = 0.5 %; Ls = 33 ft
27. Use 2 collars, 7 ft - 0 in. square; projection = 2 ft

Draw-Down Device
(See Table G.10 and Details G-2-6 and G-2-7)

28. Q_{d-d} = 1.39 cfs
29. Calculated A_o = 0.20 ft²
30. Calculated d_o = 0.51 in
31. Maximum diameter from Table G.10 = 8 in
32. Design d_o = smaller of line 30 or line 31 = 0.51 in
33. Draw-down device pipe diameter = 12 in
34. Minimum A_t = total area of perforations = 4A_o = 0.8 ft²
35. Perforation diameter = 1.0 in
36. Minimum number of perforations = 145
37. Number of longitudinal rows = 8
38. Perforated pipe length = 9.1 ft
39. Actual A_t = (0.0055 ft²) x (line 37 ÷ 0.5 ft) x (line 38) = 0.8 ft² (must be ≥ line 34)

Baffle Board Design
(See Detail G-2-4)

40. A = surface area at wet storage elevation = 21,185 ft²
41. Effective width, W_e = (A/2)$^{0.5}$ = 103 ft
42. Flow length from inflow point to outlet = 160 ft
43. If line 42 is less than W_e x 2, provide baffle boards to lengthen flow path
44. Effective flow length, L_e = L_1 + L_2 + L_3 = NA ft (must be ≥ W_e x 2 = NA ft)

MD-ENG-14
(Rev. 10/2000)
Reference:
NRCS-MD-378

U. S. Department of Agriculture
Natural Resources Conservation Service
POND SUMMARY SHEET

Note: This form is to be used for NRCS Class "a" ponds only. Other ponds require permit from Maryland Department of the Environment, Dam Safety Division

PROJECT INFORMATION
Project Name: Chesapeake Terrace Landfill
SCD File No:
Pond No: Basin No 2

MARYLAND COORDINATES (to nearest 1000 feet)
East 1383000
North 501000
County Anne Arundel
ADC Map/Grid 5291 / C4

OWNER INFORMATION
Name: National Waste Managers
Address: 2900 Linden Lane
City, State, Zip Silver Spring MD 20910

TYPE OF POND: ☑ Excavated ☐ Embankment ☐ Both

Drainage Area: 27.7 Acres
Surface Area: 0.9 Acres
Normal Depth: 9.0 Feet
Design Storm Frequency: 100 Years
Storage at Design High Water (DHW): 4.2 Ac-ft

PURPOSE OF POND (Check all that apply)
☒ Stormwater Management-Wet ☒ Sediment Control ☐ Wetland Mitigation
☒ Stormwater Management-Dry ☐ Livestock ☐ Wildlife/Fish
☐ Infiltration/Water Quality ☐ Flood Control ☐ Fire Control
☐ Water Supply/Irrigation ☐ Recreation ☐ Other (Specify below):
☐ Sand & Gravel Wash Pond ☐ Borrow Material

EMBANKMENT
Top Elevation 80.0 Feet
Normal Pool Elevation 74.0 Feet
DHW Water Elevation 77.93 Feet
Maximum Fill Height 0.0 Feet
Top Width 10.0 Feet
Side Slopes: U.S. 2 :1
D.S. 3 :1

Will embankment serve as public roadway? ☐ Yes ☒ No

PRINCIPAL SPILLWAY
Barrel Size: 36 Inches
☐ BCCMP ☐ Alum (CAP) ☒ RCP ☐ PVC ☐ Cast-in-Place Box Culvert
☐ Weir ☐ Channel ☐ Other:
Design Capacity at DHW: 58.5 cfs

EMERGENCY SPILLWAY
Velocity: No Flow Ft/sec
Crest Elev: 78.0 Ft
Spillway Protection: ☒ Grass ☐ Riprap ☐ Gabions ☐ Other:
Design Capacity at DHW: 0.0 cfs
Bottom Width: 45.0 Feet
Side Slopes: 3 :1

DISTANCES BELOW POND TO
Property Line: 1250 Feet
Public Road: 1250 Feet

Soil Conservation District (Name):
District Manager Signature _____ Date:____

The following line to be completed and form is to be resubmitted after As-Built certification has been accepted by the District.)
Date As-Builts Accepted: _____
District Representative Signature

SMALL POND APPROVAL LETTER
Basin No. 2

As authorized by the Annotated Code of Maryland, Environment, Article 5-503, the Anne Arundel Soil Conservation (AASCD) hereby approves the plans and specifications for SMALL POND NUMBER 1000 located at Maryland Coordinates 501,000 feet north and 1,388,000 feet east.

A. This approval is issued under the following conditions. Failure to comply with these conditions will constitute grounds for withdrawal of our approval and notification to MDE Dam Safety.

1. The approval is valid only for use by the developer/owner and may not be transferred to another unless written permission for such transfer is obtained from the AASCD.
2. The approval shall become null and void if the construction under the approval has not begun one year from the date of the approval and completed within eight (8) months after start of construction, except that these limits may be extended at the discretion of the AASCD.
3. Construction shall be in strict accordance with NRCS criteria for pond construction and the terms of this approval. The location, dimensions and type of all structures, as well as any excavation or filling, shall be in accordance with the aforementioned plans submitted by the developer/owner, unless written approval for any change is granted by the AASCD.
4. The pond shall be constructed under the supervision of a registered professional engineer. Within 45 days of the completion of construction, the developer/owner shall provide the AASCD with an "interim as-built" plan that meets the requirements of the AASCD Small Pond Approval Checklist. In addition, "final as-built" plans need to be submitted at completion of project. All as-built plans shall be sealed by a registered professional engineer. The registered professional engineer shall certify that the pond was constructed in accordance with the approved plans and specifications and that the entire as-built checklist has been addressed.
5. The pond construction shall at all times be in full conformance with Anne Arundel County/City of Annapolis and MDE Code. Any change or deviation from the approved plans must be redesigned and the revised plans must be approved by the AASCD prior to the performance of the work.

B. ACCEPTANCE

1. This approval and its conditions are accepted.
2. Permission is hereby granted to representatives of the AASCD to enter in or upon the subject premises at any reasonable time for the purpose of observing construction progress, reviewing the completed structure, and insuring adequate maintenance and repair of the completed structure.

Accepted by _____ Vice President 11/08/2021
(Developer/Owner's Signature) (Title) (Date)

Print/Type Name Stephen N. Fleischman
Firm National Waste Managers , Inc. Address 2900 Linden Lane, Suite 300
Silver Spring MD 20910

AASCD Small Pond Approval Checklist 9/2015

REVISION:

DATE:	
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
9/30/2021	REVISED BASIN PROFILES
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

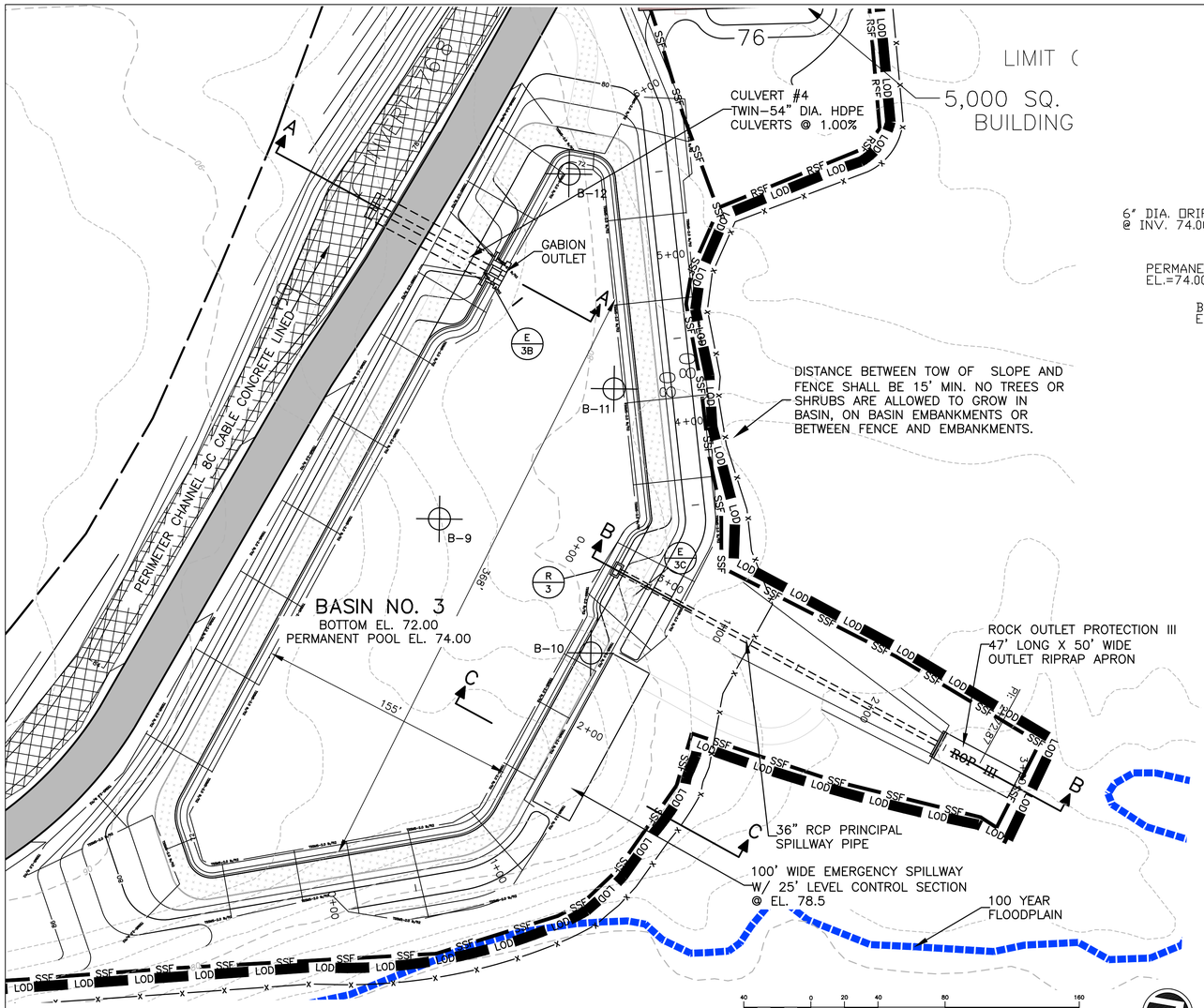
NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
1878 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

BASIN NO.2
SECTION AND SUMMARY SHEETS

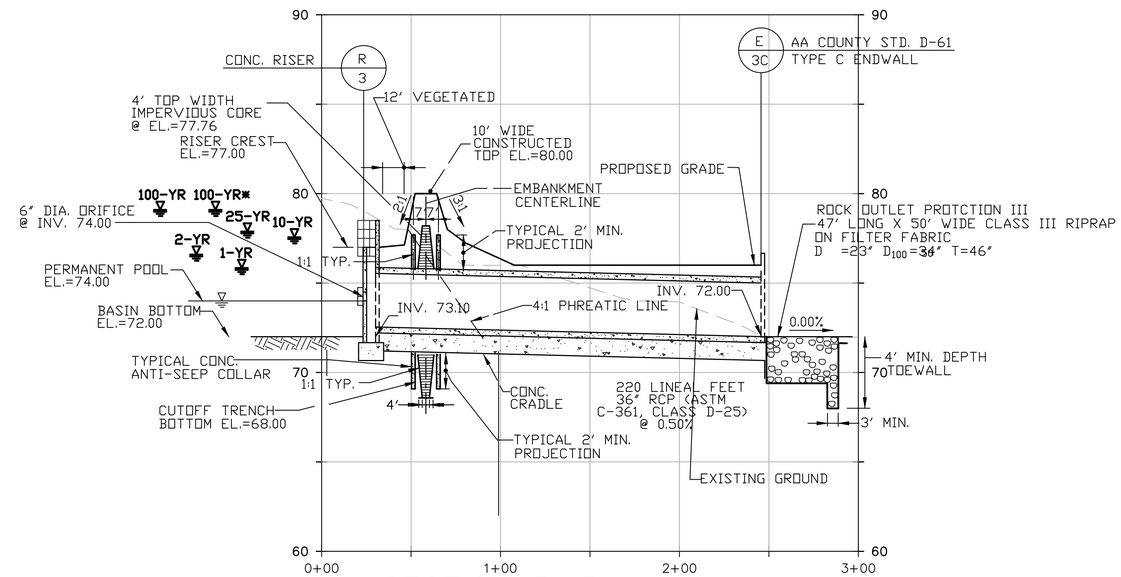
PROJECT MANAGER: PGS
CHECKED BY: PGS
DRAWN BY: KHF
SCALE: AS NOTED
PROJECT NUMBER: 2018 – 3854
DATE: 09/03/2021

DRAWING 48A



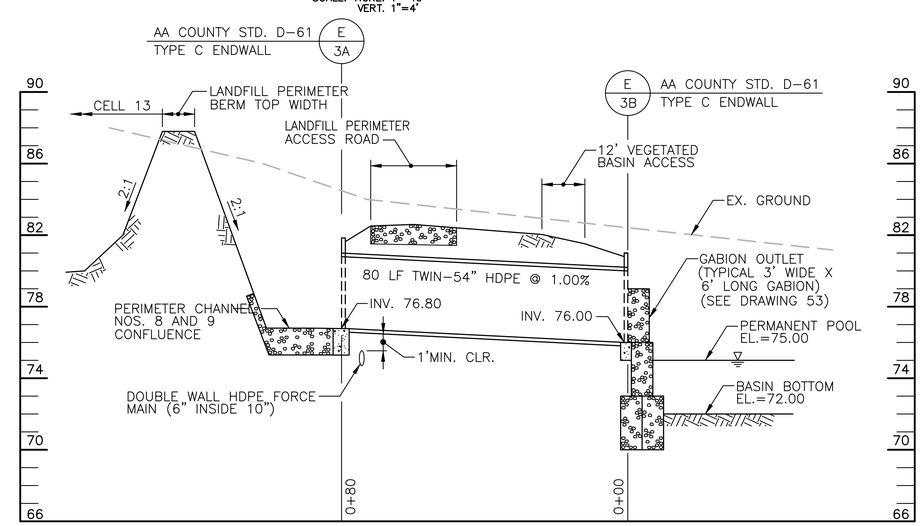
PLAN VIEW: BASIN No 3

1"=40'



SECTION B–B

SCALE: HORZ. 1"=40'
VERT. 1"=4'



SECTION A–A (CULVERT #4)

SCALE: HORZ. 1"=20'
VERT. 1"=4'

LEGEND

- B–9 — SOIL TEST BORING BY CENTURY ENGINEERING NOV 2006 (SEE DRAWINGS 94 AND 95)
- TSSMS — TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION WITH MINIMUM SHEAR STRESS (lb/ft²)
- LOD — LIMIT OF DISTURBANCE
- ROP–III — ROCK OUTLET PROTECTION–TYPE III (SEE DRAWING 61)
- SSF — SUPER SILTFENCE (SEE DRAWING 60)
- RSF — REINFORCED SILTFENCE (SEE DRAWING 60)
- CD — STONE CHECK DAM (SEE DRAWING 60)

BASIN NO. 3 SUMMARY					
STORM	MAX WATER ELEV.	Q IN (CFS)	Q OUT (CFS)	% REDUCTION	OUTLET VELOCITY (FPS)
1-YEAR	75.85	55.7	1.2	98%	-
2-YEAR	76.6	80.16	1.45	98%	-
10-YEAR	77.57	163.63	28.12	83%	7.4
25-YEAR	77.89	195.44	54.16	72%	-
100-YEAR	79.1	314.99	193.46	39%	9.61
100-YEAR*	79.12	314.99	200.62	36%	-

* ASSUME LOWEST OUTLET DEVICE CLOGGED

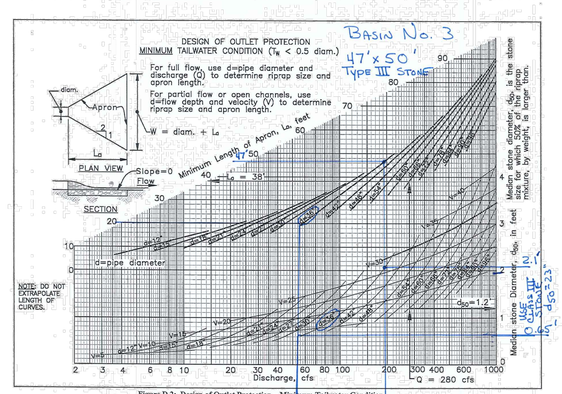


Figure D.2: Design of Outlet Protection – Minimum Tailwater Condition

D.18

SEQUENCE OF CONSTRUCTION

1. PROPOSED CONTOURS HEREON DEPICT BASIN NO. 3, LANDFILL PERIMETER ACCESS ROAD, PERIMETER DITCH AND OTHER INITIAL GRADING CONTOURS, AS SHOWN ON DRAWING 7.
2. PERFORM CLEARING ALONG PROPOSED FENCE/LIMIT OF DISTURBANCE, AND INSTALL SUPER SILTFENCE.
3. FOLLOWING INSTALLATION OF SUPER SILT FENCE, BASIN NO. 3 SHALL BE CONSTRUCTED IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS ON THESE PERMIT DRAWINGS. SEE DRAWING 63 "SEQUENCE AND GENERAL NOTES FOR CONSTRUCTION" ITEM V(B)(I) FOR TYPICAL BASIN REQUIREMENTS.
4. PROVIDE 4" TOP SOIL ON BASIN NO 3 EMBANKMENT TOP WIDTH AND SIDE SLOPES. VEGETATIVELY STABILIZE ALL DISTURBED AREAS. INSTALL TEMPORARY SOIL STABILIZATION MAT (TSSMS) (2.25 lb/ft²) ON ALL BASIN SLOPES STEEPER THAN 3:1 AND TSSMS (1.5 lb/ft²) ON ALL SLOPES BETWEEN 4:1 AND 3:1.
5. BASIN NO. 3 WILL SERVE AS A SEDIMENT CONTROL FACILITY UNTIL LANDFILL CELLS WITHIN THE CONTRIBUTING DRAINAGE AREA HAVE BEEN CLOSED AND VEGETATED IN ACCORDANCE WITH MARYLAND DEPARTMENT OF ENVIRONMENT REGULATIONS, SEE DRAWING 53 FOR CONCRETE RISER CONNECTIONS DURING THE SEDIMENT CONTROL PHASE.
6. TO CONVERT BASIN NO. 3 TO A PERMANENT STORMWATER MANAGEMENT POND, CONCRETE RISER CONNECTIONS DURING THE SEDIMENT CONTROL PHASE WILL BE REMOVED, THE BASIN WILL BE DEWATERED AND THE RISER ORIFICE WILL BE UTILIZED FOR SWM PURPOSE, AS SHOWN ON SECTION B–B HEREON. SEE DRAWING 53 FOR RISER ORIFICE DETAILS. SEE DRAWING 54 FOR BASIN CONVERSION TO SWM POND.
7. OVEREXCAVATE DISCHARGE PIPE TRENCH BY 4 FT, BACKFILL WITH STRUCTURAL FILL TO PIPE CRADLE SUBBASE. TRENCH SIDE SLOPES SHALL BE 2:1. BOTTOM WIDTH SHALL BE PIPE DIAMETER PLUS 4 FT.
8. SILT FENCE SHALL REMAIN IN–PLACE UNTIL BASIN SIDESLOPES ARE 95% STABILIZED.
9. INSTALL IRON STAKE 2.5 FEET INTO GROUND FOR EROSION MONITORING 10 ± FEET BEYOND END OF ROCK OUTLET PROTECTION AT BASIN DISCHARGE.

STATE OF MARYLAND — KEVIN C. FREYMAN — No. 15251 — PROFESSIONAL ENGINEER

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
9/30/2021	REVISED OUTLET PROTECTION
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
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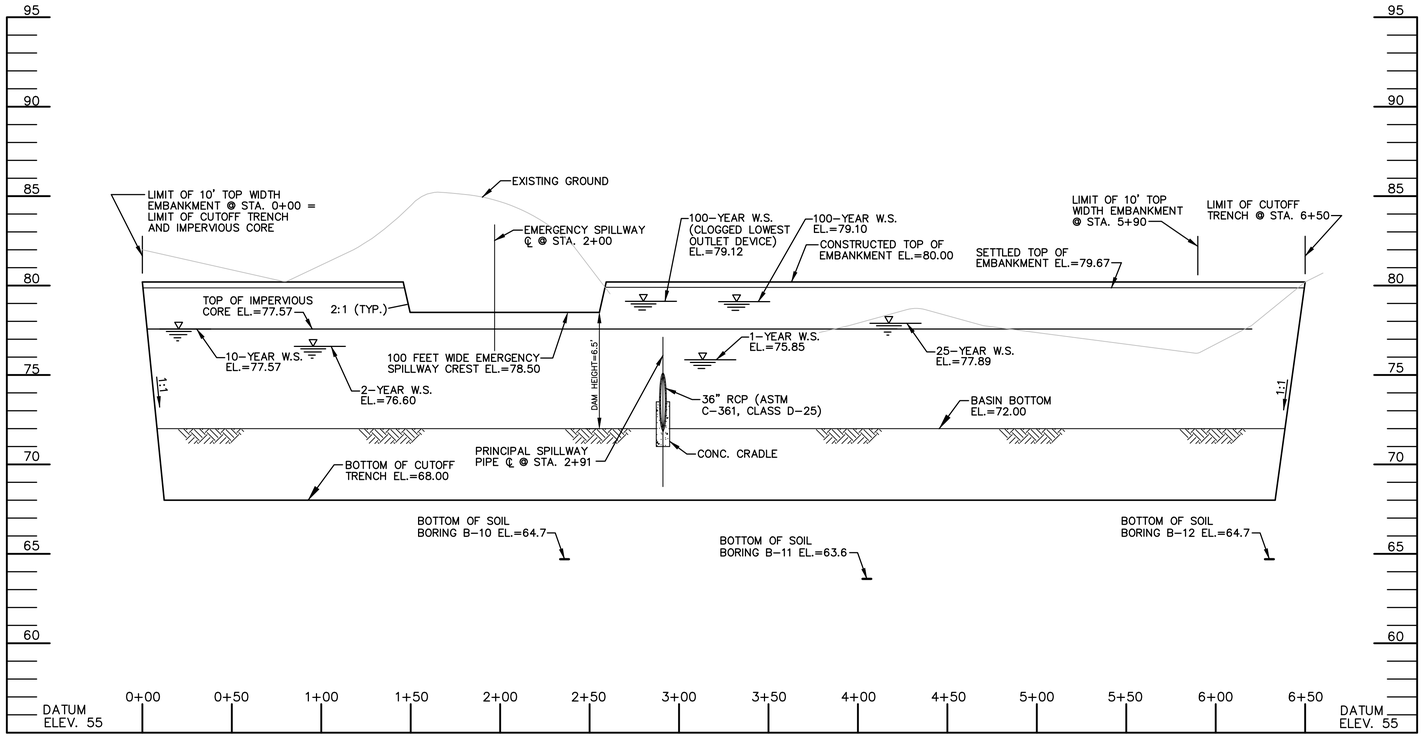
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

BASIN NO. 3
PLAN AND SECTION
WITH EROSION CONTROL

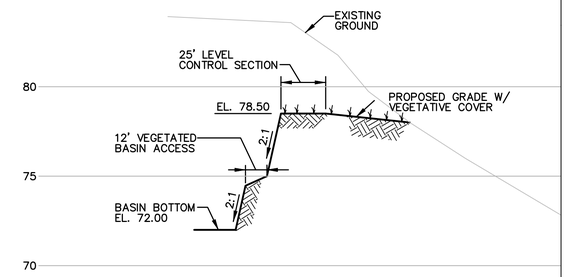
PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 49



BASIN NO. 3 EMBANKMENT CENTERLINE PROFILE

SCALE: HOR. 1"=40'
VERT. 1"=4'



SECTION C-C PROFILE EMERGENCY SPILLWAY

SCALE: HOR. 1"=40'
VERT. 1"=4'

CONSULTANT'S HAZARD CLASS CERTIFICATION

I CERTIFY THAT THIS POND MEETS ALL REQUIREMENTS FOR HAZARD CLASS A REQUIREMENTS, AS STATED IN THE USDA NATURAL RESOURCES CONSERVATION SERVICE – MARYLAND CONSERVATION PRACTICE STANDARD FOR POND, CODE 378, JANUARY 2000. ALL NECESSARY INVESTIGATIONS AND COMPUTATIONS HAVE BEEN PERFORMED TO VERIFY THIS FINDING. A COPY OF SAID INFORMATION HAS BEEN SUPPLIED TO AASCD.

SIGNATURE _____

NAME (PRINTED) PAUL STRATMAN, PE DATE NOVEMBER 9, 2021

Table G.6: Temporary Sediment Basin Design Data Sheet
(Refer to instructions on pages G.27 through G.29)

Computed by: P Stratman Date: 9/24/2021 Checked by: ____ Date: ____
Project name: Chesapeake Terrace Basin #: Basin No.3
Location: AA County

Design Volumes and Elevations

1. Total area draining to basin = 41.4 acres (ac)
2. Required total storage volume = 3600 ft³/ac x 41.4 acre drainage area = 149,040 ft³
3. Required wet storage volume = 1800 ft³/ac x 41.4 acre drainage area = 74,520 ft³
4. Required dry storage volume = 1800 ft³/ac x 41.4 acre drainage area = 74,520 ft³
5. Basin bottom elevation = 72.0 ft
6. Riser or weir crest (total storage) elevation = 77.00 ft
7. Provided total storage volume = 318,507 ft³
8. Wet storage (permanent pool/draw-down) elevation 74.0 ft
9. Provided wet storage volume = 114,288 ft³
10. Provided dry storage volume = 204,126 ft³
11. Basin cleanout elevation (located at ½ wet storage depth) = 73.0 ft
12. Distance from riser crest elevation to cleanout elevation = 4.0 ft

Surface Area Design

13. Q_{10} = 163.6 cfs (peak inflow from 10-yr, 24-hr storm event; attach computations)
14. Minimum basin surface area ≥ 0.0035 x Q_{10} = 0.6 ac ≤ 1.9 ac
    required provided

Principal Spillway (Q_{ps})
(See Figure G.1)

15. Design Q_{ps} for barrel = 5.37 cfs (min. 10% of Q_{10})
16. Barrel head, H = 5.0 ft; Barrel length, L = 220 ft
17. Barrel dia. = 36 in (min. 10 inch); Q_{ps} = 80.38 (Q from Table G.7 or G.8) x 0.8 (length correction factor) = 64.3 cfs. **Note: Q_{ps} must equal or exceed Design Q_{ps}**
18. Riser dia. = 72* in; Riser height = 16.0 ft; Riser head (h) = 1.4** ft ** During 10 year Event
19. Trash rack dia. = *** in; Trash rack height = ____ in

* Riser is rectangular 3.0' x 6.5' Weir length equivalent to a 72" diameter circular riser
*** Trash Rack is rectangular, see detail on Design Drawing 53

Emergency Spillway (Q_{es})
(See Figures G.3 and G.4)

20. Emergency spillway capacity Q_{es} = Q_{10} - Q_{ps} = 163.6 - 64.3 = 99.3 cfs
21. Width, b = 100 ft; Hp = NA ft Spillway not engaged for 10 year rain event
22. Exit channel slope 33 %
23. Emergency Spillway Crest = 78.50 ft
24. Design High Water = 77.90 ft 100 year design storm event
25. Settled top of embankment elevation = 79.67 ft

Table G.6: Temporary Sediment Basin Design Data Sheet (continued)

Anti-Seep Collar Design (If Required)
(See Figures G.5 and G.6)

26. y = 5.0 ft; z = 2:1; pipe slope = 0.5 %; Ls = 31 ft
27. Use 2 collars, 7 ft - 0 in. square; projection = 2 ft

Draw-Down Device
(See Table G.10 and Details G-2-6 and G-2-7)

28. Q_{wq} = 2.07 cfs
29. Calculated A_o = 0.30 ft²
30. Calculated d_o = 2.60 in
31. Maximum diameter from Table G.10 = 10 in
32. Design d_o = smaller of line 30 or line 31 = 2.6 in
33. Draw-down device pipe diameter = 12 in
34. Minimum A_s = total area of perforations = $4A_o$ = 1.2 ft²
35. Perforation diameter = 1.0 in
36. Minimum number of perforations = 218
37. Number of longitudinal rows = 8
38. Perforated pipe length = 13.6 ft
39. Actual A_s = (0.0055 ft²) x (line 37 ÷ 0.5 ft) x (line 38) = 1.2 ft² (must be ≥ line 34)

Baffle Board Design
(See Detail G-2-4)

40. A = surface area at wet storage elevation = 59,381 ft²
41. Effective width, W_e = (A/2)^½ = 172 ft
42. Flow length from inflow point to outlet = 185 ft
43. If line 42 is less than W_e x 2, provide baffle boards to lengthen flow path
44. Effective flow length, L_e = L_1 + L_2 + L_3 = NA ft (must be ≥ W_e x 2 = NA ft)

MD-ENG-14
(Rev. 10/2000)
Reference:
NRCS-MD-378

U. S. Department of Agriculture
Natural Resources Conservation Service
POND SUMMARY SHEET

Note: This form is to be used for NRCS Class "a" ponds only. Other ponds require permit from Maryland Department of the Environment, Dam Safety Divisio

PROJECT INFORMATION

Project Name: Chesapeake Terrace Landfill
SCD File No:
Pond No: Basin No. 3

MARYLAND COORDINATES (to nearest 1000 feet)
East 1390,000
North 501,000
County Anne Arundel
ADC Map/Grid 5291 / C4

OWNER INFORMATION

Name: National Waste Managers
Address: 2900 Linden Lane
City, State, Zip Silver Spring, MD 20910

TYPE OF POND: ☐ Excavated ☐ Embankment ☑ Both

Drainage Area: 41.4 Acres
Surface Area: 2.1 Acres
Normal Depth: 8.0 Feet
Design Storm Frequency: 100 Years
Storage at Design High Water (DHW): 10.6 Ac-ft

PURPOSE OF POND (Check all that apply)
☒ Stormwater Management-Wet ☒ Sediment Control ☐ Wetland Mitigation
☒ Stormwater Management-Dry ☐ Livestock ☐ Wildlife/Fish
☐ Infiltration/Water Quality ☐ Flood Control ☐ Fire Control
☐ Water Supply/Irrigation ☐ Recreation ☐ Other (Specify below):
☐ Sand & Gravel Wash Pond ☐ Borrow Material

EMBANKMENT
Top Elevation 80.0 Feet
Normal Pool Elevation 74.0 Feet
DHW Water Elevation 79.1 Feet
Maximum Fill Height 2.0 Feet
Top Width 10.0 Feet
Side Slopes: U.S. 2 :1
D.S. 3 :1

Will embankment serve as public roadway? ☐ Yes ☑ No

PRINCIPAL SPILLWAY
Barrel Size: 36 Inches
☐ BCCMP ☐ Alum (CAP) ☑ RCP ☐ PVC ☐ Cast-in-Place Box Culvert
☐ Weir ☐ Channel ☐ Other:
Design Capacity at DHW: 67.9 cfs

EMERGENCY SPILLWAY
Velocity: 2.1 Ft/sec
Crest Elev: 78.5 Ft
Spillway Protection: ☑ Grass ☐ Riprap ☐ Gabions ☐ Other:
Design Capacity at DHW: 125.4 cfs
Bottom Width: 100.0 Feet
Side Slopes: 3 :1

DISTANCES BELOW POND TO
Property Line: 90 Feet
Public Road: 875 Feet

Soil Conservation District (Name):
District Manager Signature: _____ Date: ____

The following line to be completed and form is to be resubmitted after As-Built certification has been accepted by the District.)
Date As-Builts Accepted: _____
District Representative Signature

SMALL POND APPROVAL LETTER

Basin No. 3

As authorized by the Annotated Code of Maryland, Environment, Article 5-503, the Anne Arundel Soil Conservation (AASCD) hereby approves the plans and specifications for SMALL POND NUMBER 1001 located at Maryland Coordinates 501,000 feet north and 1,390,000 feet east.

A. This approval is issued under the following conditions. Failure to comply with these conditions will constitute grounds for withdrawal of our approval and notification to MDE Dam Safety.

1. The approval is valid only for use by the developer/owner and may not be transferred to another unless written permission for such transfer is obtained from the AASCD.

2. The approval shall become null and void if the construction under the approval has not begun one year from the date of the approval and completed within eight (8) months after start of construction, except that these limits may be extended at the discretion of the AASCD.

3. Construction shall be in strict accordance with NRCS criteria for pond construction and the terms of this approval. The location, dimensions and type of all structures, as well as any excavation or filling, shall be in accordance with the aforementioned plans submitted by the developer/owner, unless written approval for any change is granted by the AASCD.

4. The pond shall be constructed under the supervision of a registered professional engineer. Within 45 days of the completion of construction, the developer/owner shall provide the AASCD with an "interim as-built" plan that meets the requirements of the AASCD Small Pond Approval Checklist. In addition, "final as-built" plans need to be submitted at completion of project. All as-built plans shall be sealed by a registered professional engineer. The registered professional engineer shall certify that the pond was constructed in accordance with the approved plans and specifications and that the entire as-built checklist has been addressed.

5. The pond construction shall at all times be in full conformance with Anne Arundel County/City of Annapolis and MDE Code. Any change or deviation from the approved plans must be redesigned and the revised plans must be approved by the AASCD prior to the performance of the work.

B. ACCEPTANCE

1. This approval and its conditions are accepted.

2. Permission is hereby granted to representatives of the AASCD to enter in or upon the subject premises at any reasonable time for the purpose of observing construction progress, reviewing the completed structure, and insuring adequate maintenance and repair of the completed structure.

Accepted by _____ Vice President 11/08/2021
(Developer/Owner's Signature) (Title) (Date)

Print/Type Name Stephen N. Fleischman

Firm National Waste Managers , Inc. Address 2900 Linden Lane, Suite 300
Silver Spring MD 20910

AASCD Small Pond Approval Checklist 9/2015

11

REVISION:	DATE:
REVISED TO ADDRESS MDE COMMENTS ON PHASE 3	9/03/2021
REVISED BASIN 1 PROFILE	9/30/2021
REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS	11/09/2021
FINAL ISSUED TO MDE	1/14/2022

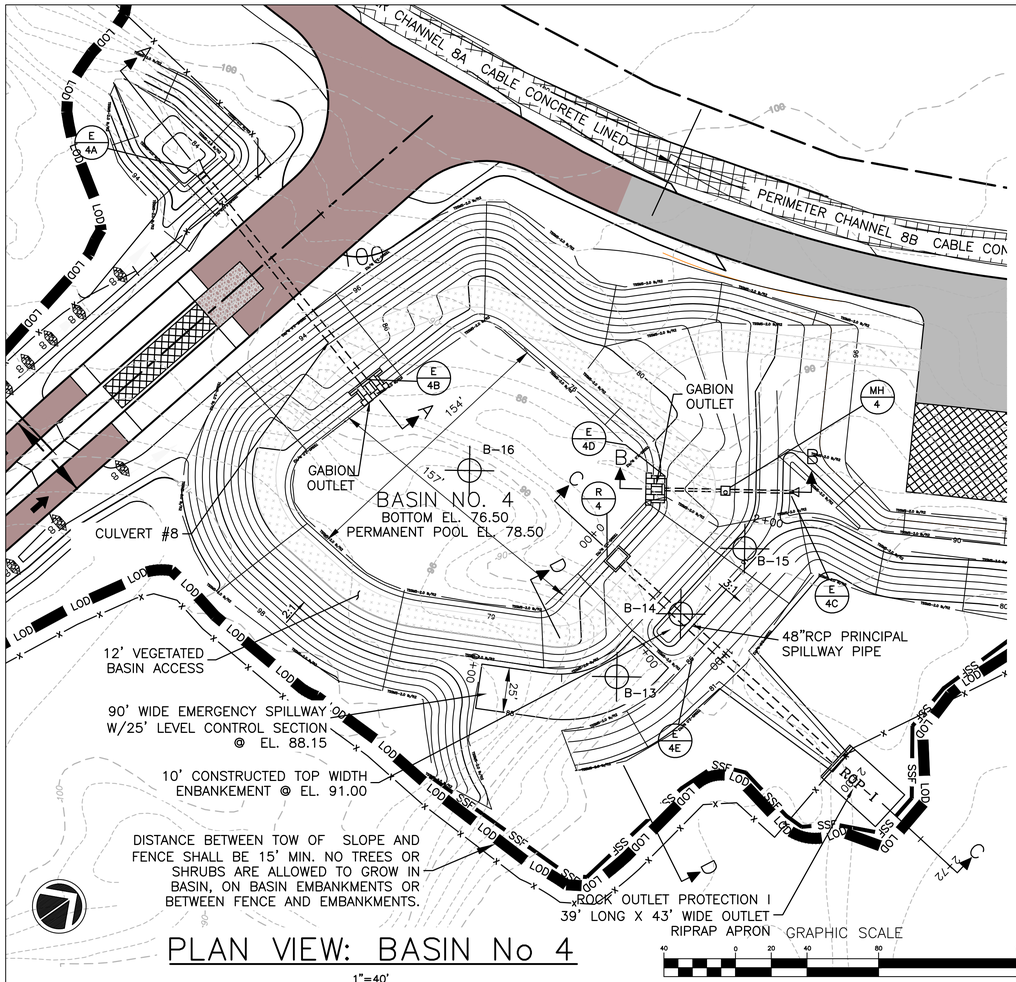
NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED Geoservices
a Montrose Environmental Group company
1978 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

BASIN NO.3
SECTION AND SUMMARY SHEETS

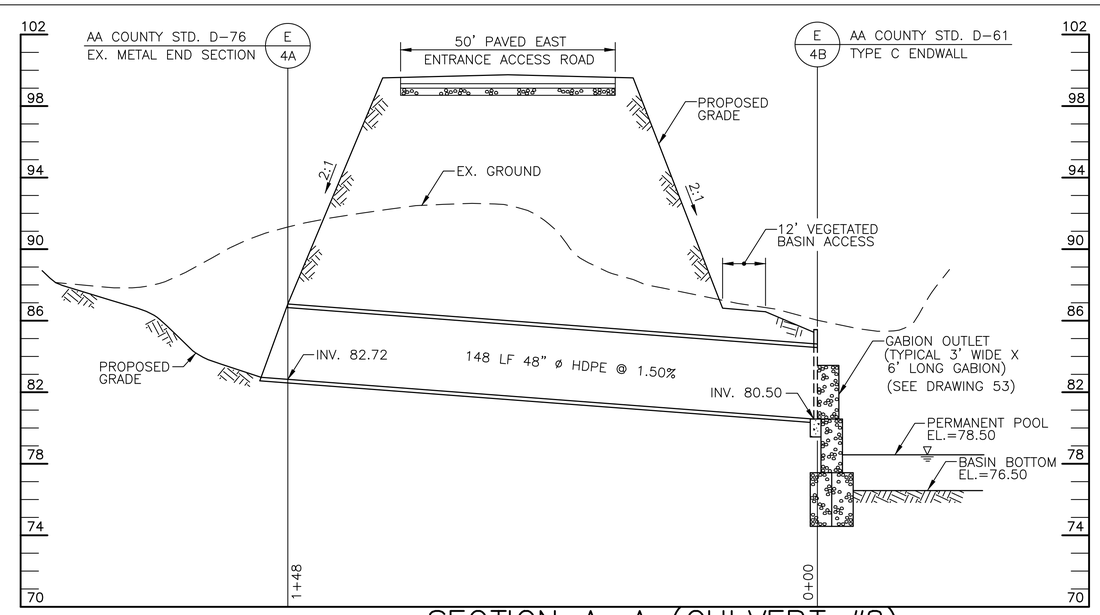
PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 49A



PLAN VIEW: BASIN No 4

1"=40'

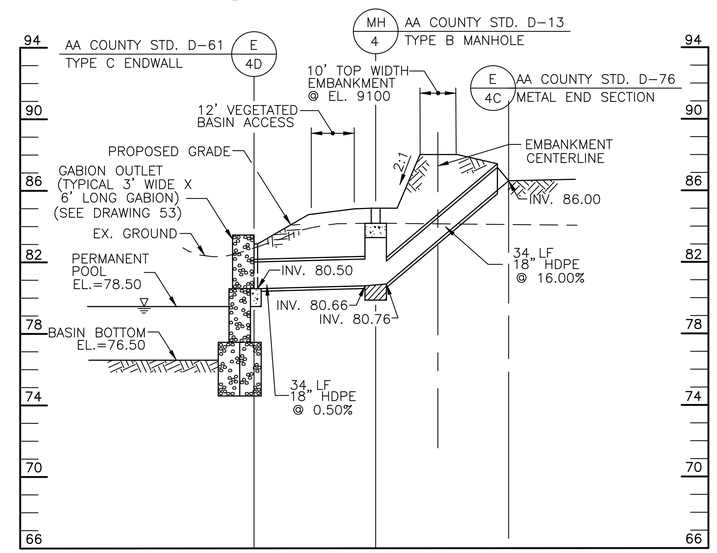


SECTION A-A (CULVERT #8)

SCALE: HORZ. 1"=20'
VERT. 1"=4'

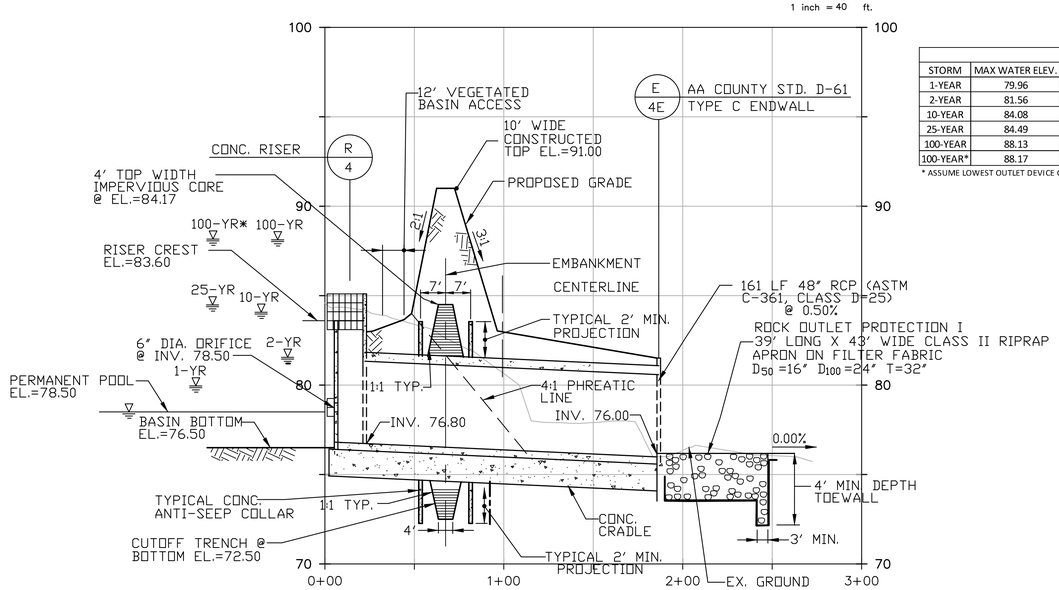
LEGEND

- B-13 — SOIL TEST BORING BY CENTURY ENGINEERING NOV 2006 (SEE DRAWINGS 94 AND 95)
- TSMS — TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION WITH MINIMUM SHEAR STRESS (lb/ft²)
- LOD — LIMIT OF DISTURBANCE
- ROP-I — ROCK OUTLET PROTECTION-TYPE I (SEE DRAWING 61)
- SSF — SUPER SILTFENCE (SEE DRAWING 60)
- RSF — REINFORCED SILTFENCE (SEE DRAWING 60)
- SCD — STONE CHECK DAM (SEE DRAWING 60)



SECTION B-B

SCALE: HORZ. 1"=20'
VERT. 1"=4'



SECTION C-C

SCALE: HORZ. 1"=40'
VERT. 1"=4'

BASIN NO. 4 SUMMARY					
STORM	MAX WATER ELEV.	Q IN (CFS)	Q OUT (CFS)	% REDUCTION	OUTLET VELOCITY (FPS)
1-YEAR	79.96	8.61	1.04	88%	-
2-YEAR	81.56	28.12	1.58	94%	-
10-YEAR	84.08	135.96	39.12	71%	7.94
25-YEAR	84.49	186.05	95.11	49%	-
100-YEAR	88.13	399.01	184.84	54%	14.71
100-YEAR*	88.17	399.01	185.75	53%	-

* ASSUME LOWEST OUTLET DEVICE CLOGGED

SEQUENCE OF CONSTRUCTION

1. EXISTING CONTOURS SHOWN ABOVE FOR THE EAST ENTRANCE FACILITIES, PERIMETER ACCESS ROAD, AND PERIMETER CHANNEL NO. 8 ARE PROPOSED CONTOURS UNDER THE GRADING PLAN ON DRAWING 7.

   PROPOSED CONTOURS DEPICT BASIN NO. 4 AND THE GRASS SWALE AND BERM ADJACENT TO THE MAINTENANCE BUILDING AND CONCRETE CLEANOUT.

2. PERFORM CLEARING ALONG PROPOSED FENCE/LIMIT OF DISTURBANCE, AND INSTALL SUPER SILTFENCE.

3. CONSTRUCT BASIN NO. 4 IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS ON THESE PERMIT DRAWINGS. SEE " DRAWING 63 SEQUENCE AND GENERAL NOTES FOR CONSTRUCTION" ITEM V(B)(I). TYPICAL FOR ALL BASINS.

4. PROVIDE 4" TOPSOIL ON EMBANKMENT TOP WIDTH AND SIDE SLOPES, AND VEGETATIVELY STABILIZE DISTURBED AREAS. INSTALL TEMPORARY SOIL STABILIZATION MAT (TSSMS) (2.25 lb/ft²) ON ALL BASIN SLOPES STEEPER THAN 3:1 AND TSSMS (1.5 lb/ft²) ON ALL SLOPES BETWEEN 4:1 AND 3:1.

5. INSTALL THE SCALE HOUSE AND TRUCK SCALES, MAINTENANCE BUILDING AND OFFICE, CONCRETE CLEANOUT AND WHEEL WASH. CONSTRUCT ACCESS ROAD FINISHED SURFACES.

6. OVEREXCAVATE DISCHARGE PIPE TRENCH BY 4 FT, BACKFILL WITH STRUCTURAL FILL TO PIPE CRADLE SUBBASE. TRENCH SIDE SLOPES SHALL BE 2:1. BOTTOM WIDTH SHALL BE PIPE DIAMETER PLUS 4 FT.

7. SILT FENCE SHALL REMAIN IN-PLACE UNTIL BASIN SIDESLOPES ARE 95% STABILIZED.

8. INSTALL IRON STAKE 2.5 FEET INTO GROUND FOR EROSION MONITORING 10 ± FEET BEYOND END OF ROCK OUTLET PROTECTION AT BASIN DISCHARGE.

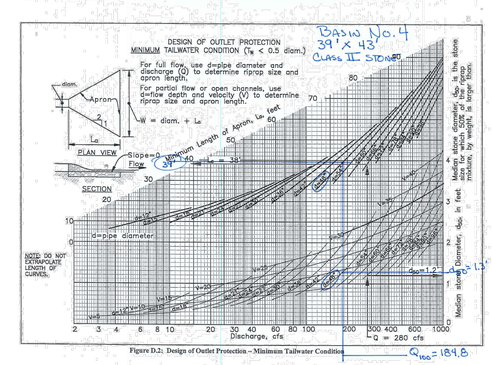


Figure D.21. Design of Outlet Protection – Minimum Tailwater Condition

D.18

REVISION:	
DATE:	
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
9/30/2021	REVISED OUTLET PROTECTION
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

STATE OF MARYLAND — LORD STEPHEN TREYMAN — REGISTERED PROFESSIONAL ENGINEER — No. 15851

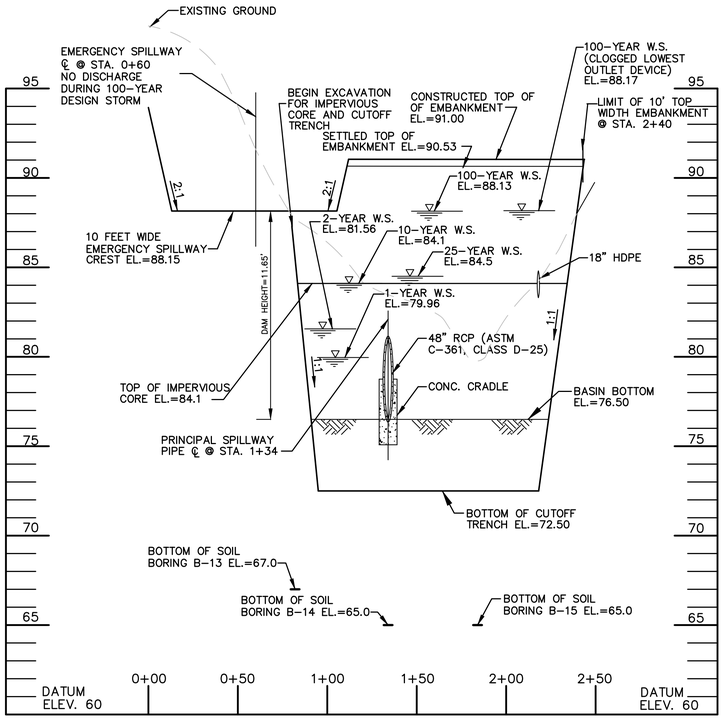
NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
1978 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

BASIN NO. 4
PLAN AND SECTION
WITH EROSION CONTROL

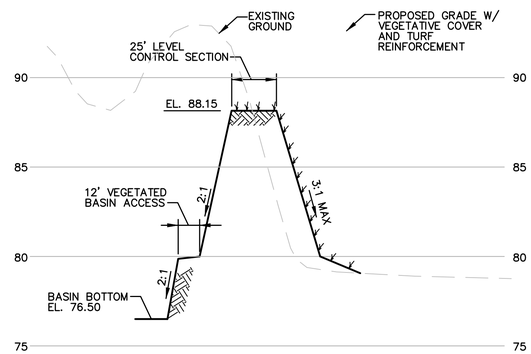
PROJECT MANAGER:	PGS
CHECKED BY:	PGS
DRAWN BY:	KHF
SCALE: AS NOTED	
PROJECT NUMBER: 2018 – 3854	
DATE: 09/03/2021	

DRAWING 50



BASIN NO. 4 EMBANKMENT CENTERLINE PROFILE

SCALE: HOR. 1"=40'
VERT. 1"=4'



SECTION D-D PROFILE EMERGENCY SPILLWAY

SCALE: HOR. 1"=40'
VERT. 1"=4'

CONSULTANT'S HAZARD CLASS CERTIFICATION

I CERTIFY THAT THIS POND MEETS ALL REQUIREMENTS FOR HAZARD CLASS A REQUIREMENTS, AS STATED IN THE USDA NATURAL RESOURCES CONSERVATION SERVICE – MARYLAND CONSERVATION PRACTICE STANDARD FOR POND, CODE 378, JANUARY 2000. ALL NECESSARY INVESTIGATIONS AND COMPUTATIONS HAVE BEEN PERFORMED TO VERIFY THIS FINDING. A COPY OF SAID INFORMATION HAS BEEN SUPPLIED TO AASCD.

SIGNATURE _____

NAME (PRINTED) PAUL STRATMAN, PE DATE NOVEMBER 9, 2021

MD-ENG-14
(Rev. 10/2000)
Reference:
NRCS-MD-378

U. S. Department of Agriculture
Natural Resources Conservation Service
POND SUMMARY SHEET

Note: This form is to be used for NRCS Class "a" ponds only. Other ponds require permit from Maryland Department of the Environment, Dam Safety Division

PROJECT INFORMATION

Project Name: Chesapeake Terrace Landfill
SCD File No:
Pond No: Basin No. 4

MARYLAND COORDINATES (to nearest 1000 feet)
East 1390,000
North 500,000
County Anne Arundel
ADC Map/Grid 5391 / C4

OWNER INFORMATION

Name: National Waste Managers
Address: 2900 Linden Lane
City, State, Zip Silver Spring MD 20910

TYPE OF POND: ☐ Excavated ☐ Embankment ☑ Both

Drainage Area:	102.3	Acres
Surface Area:	1.2	Acres
Normal Depth:	14.5	Feet
Design Storm Frequency:	100	Years
Storage at Design High Water (DHW):	9.7	Ac-ft

PURPOSE OF POND (Check all that apply)
☑ Stormwater Management-Wet ☒ Sediment Control ☐ Wetland Mitigation
☒ Stormwater Management-Dry ☐ Livestock ☐ Wildlife/Fish
☐ Infiltration/Water Quality ☐ Flood Control ☐ Fire Control
☐ Water Supply/Irrigation ☐ Recreation ☐ Other (Specify below):
☐ Sand & Gravel Wash Pond ☐ Borrow Material

EMBANKMENT

Top Elevation	91.0	Feet	Maximum Fill Height	11.0	Feet
Normal Pool Elevation	78.5	Feet	Top Width	10.0	Feet
DHW Water Elevation	88.13	Feet	Side Slopes: U.S.	2	:1
			D.S.	3	:1

Will embankment serve as public roadway? ☐ Yes ☒ No

PRINCIPAL SPILLWAY
Barrel Size: 48 Inches
☐ BCCMP ☐ Alum (CAP) ☑ RCP ☐ PVC ☐ Cast-in-Place Box Culvert
☐ Weir ☐ Channel ☐ Other:
Design Capacity at DHW: 184.8 cfs

EMERGENCY SPILLWAY
Velocity: Na ft/sec
Crest Elev: 88.15 ft
Spillway Protection: ☑ Grass ☐ Riprap ☐ Gabions ☐ Other:
Design Capacity at DHW: 0 cfs
Bottom Width: 90.0 Feet
Side Slopes: 3 :1

DISTANCES BELOW POND TO
Property Line: 810 Feet
Public Road: 1,900 Feet

Soil Conservation District (Name):
District Manager Signature: _____ Date: _____

(The following line to be completed and form is to be resubmitted after As-Built certification has been accepted by the District.)
Date As-Builts Accepted: _____
District Representative Signature

SMALL POND APPROVAL LETTER
Basin No. 4

As authorized by the Annotated Code of Maryland, Environment, Article 5-503, the Anne Arundel Soil Conservation (AASCD) hereby approves the plans and specifications for SMALL POND NUMBER 1002 located at Maryland Coordinates 500,000 feet north and 1,390,000 feet east.

A. This approval is issued under the following conditions. Failure to comply with these conditions will constitute grounds for withdrawal of our approval and notification to MDE Dam Safety.

1. The approval is valid only for use by the developer/owner and may not be transferred to another unless written permission for such transfer is obtained from the AASCD.

2. The approval shall become null and void if the construction under the approval has not begun one year from the date of the approval and completed within eight (8) months after start of construction, except that these limits may be extended at the discretion of the AASCD.

3. Construction shall be in strict accordance with NRCS criteria for pond construction and the terms of this approval. The location, dimensions and type of all structures, as well as any excavation or filling, shall be in accordance with the aforementioned plans submitted by the developer/owner, unless written approval for any change is granted by the AASCD.

4. The pond shall be constructed under the supervision of a registered professional engineer. Within 45 days of the completion of construction, the developer/owner shall provide the AASCD with an "interim as-built" plan that meets the requirements of the AASCD Small Pond Approval Checklist. In addition, "final as-built" plans need to be submitted at completion of project. All as-built plans shall be sealed by a registered professional engineer. The registered professional engineer shall certify that the pond was constructed in accordance with the approved plans and specifications and that the entire as-built checklist has been addressed.

5. The pond construction shall at all times be in full conformance with Anne Arundel County/City of Annapolis and MDE Code. Any change or deviation from the approved plans must be redesigned and the revised plans must be approved by the AASCD prior to the performance of the work.

B. ACCEPTANCE

1. This approval and its conditions are accepted.

2. Permission is hereby granted to representatives of the AASCD to enter in or upon the subject premises at any reasonable time for the purpose of observing construction progress, reviewing the completed structure, and insuring adequate maintenance and repair of the completed structure.

Accepted by _____ Vice President 11/08/2021
(Developer/Owner's Signature) (Title) (Date)

Print/Type Name Stephen N. Fleischman

Firm National Waste Managers , Inc. Address 2900 Linden Lane, Suite 300
Silver Spring MD 20910

AASCD Small Pond Approval Checklist 9/2015

11

NOTE

1. BASIN No 4 IS A STORMWATER MANAGEMENT BASIN ONLY. IT IS NOT UTILIZED AS A TEMPORARY SEDIMENT BASIN, THERFORE NO TEMPORARY SEDIMENT BASIN DESIGN DATA SHEET IS PROVIDED.

STATE OF MARYLAND PAUL STRATMAN No. 15551 PROFESSIONAL ENGINEER
1/14/22

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
9/30/2021	REVISED BASIN PROFILES
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

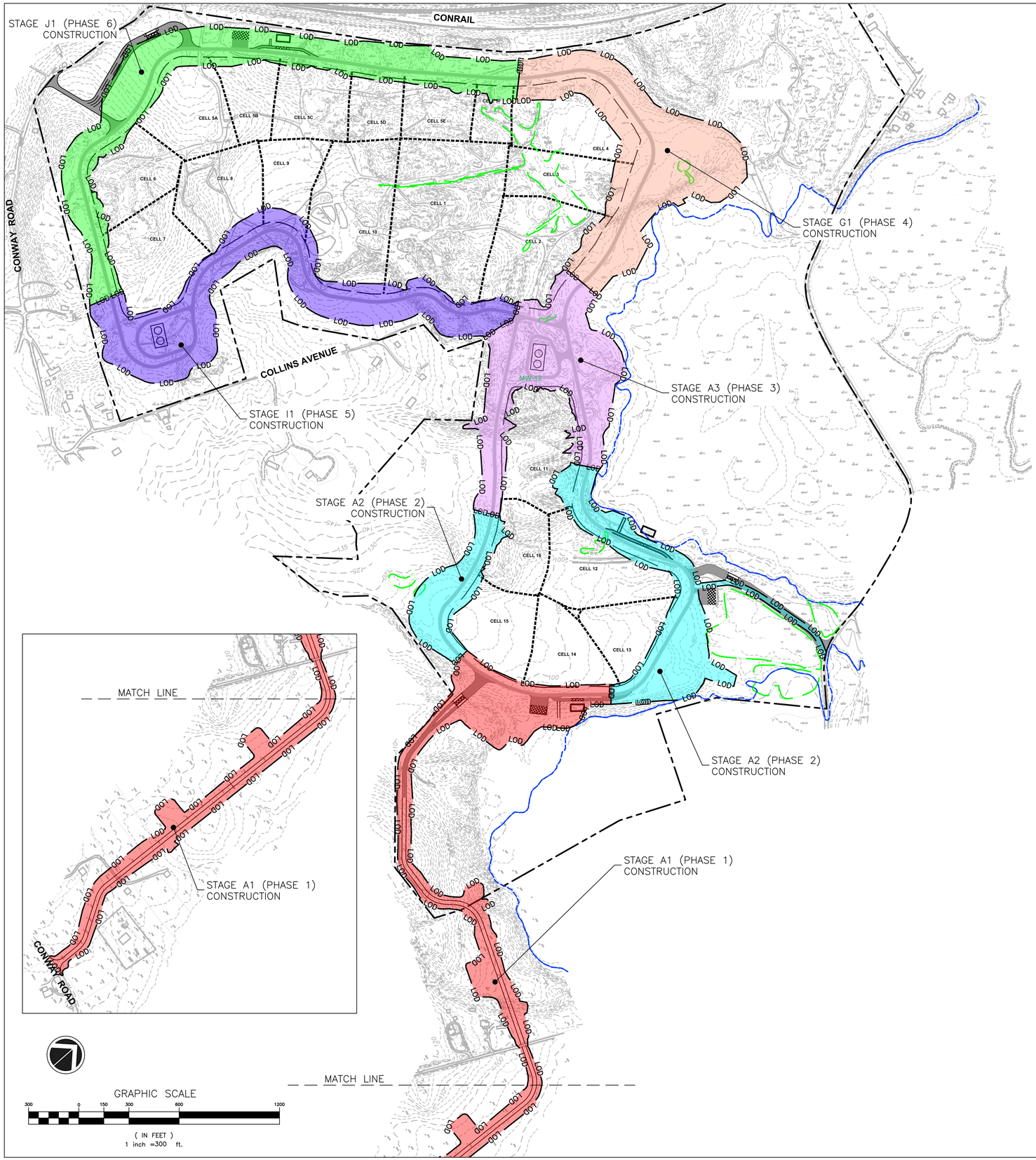
ADVANCED GeoServices
a Montrose Environmental Group company
1878 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

BASIN NO.4
SECTION AND SUMMARY SHEETS

PROJECT MANAGER:	PGS	SCALE: AS NOTED	
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE: 09/03/2021	

DRAWING 50A

N:\Projects\2018\2018\3854 - Chesapeake Terrace LF\CAD\DWG\AC & Phase III Application\Drawings\Final\2018\3854 BASIN NO.4 SECTION AND SUMMARY SHEETS.dwg



LEGEND

- PROPERTY LINE
- LANDFILL PERIMETER ACCESS ROAD (FUTURE)
- SITE ENTRANCE (FUTURE)
- LANDFILL LIMITS (FUTURE)
- LANDFILL CELL SEPARATION BERM (FUTURE)
- LOD — LIMIT OF DISTURBANCE (FUTURE)
- 100-YEAR FLOODPLAIN
- JURISDICTIONAL DETERMINATION (JD) WETLANDS BOUNDARY (APPROX.) WITH IDENTIFICATION AND AREA

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

2.) THE POST-2012 100-YEAR FLOOD PLAIN LIMITS SHOWN ARE BASED ON FEMA NATIONAL FLOOD INSURANCE PROGRAM MAP NUMBER 24003C0136E, DATED 10/16/2012, AND PROVIDED AS PLATE 3 OF THE "PHASE II PERMIT APPLICATION", PREPARED BY ADVANCED GEOSERVICES CORP DATED JUNE 2020.

3.) JURISDICTIONAL WETLAND BOUNDARIES OBTAINED FROM FIGURES ATTACHED TO THE ARMY CORPS OF ENGINEERS PUBLIC NOTICE DATED NOVEMBER 22, 1991, AND AS SUBSEQUENTLY AMENDED IN WRITING BY MCCARTHY AND ASSOCIATES ON APRIL 2, 1997.

4.) VERTICAL AND HORIZONTAL CONTROLS BASED ON GPS RTN (KEY NET) CONTROLS.

NOTES

1.) THE CONRAIL TRACKS ARE ALSO SHARED WITH AMTRAK FOR HIGH-SPEED COMMUTER TRAINS BETWEEN BOSTON, MASSACHUSETTS AND WASHINGTON, D.C.

2.) THE PROPERTY WAS PREVIOUSLY USED FOR SAND AND GRAVEL MINING ACTIVITIES. PORTIONS OF THE SITE CURRENTLY HAVE NO VEGETATION AND ARE BARREN.

3.) THE BLUE 100-YEAR FLOODPLAIN LINE REPRESENTS THE BOUNDARY IMPORTED FROM REFERENCE 5 AND ADJUSTED BASED ON THE FEMA PROJECTED ELEVATIONS AND THE ACTUAL ON-SITE TOPOGRAPHIC INFORMATION. THE BLUE FLOODPLAIN LINE REFLECTS THIS ADJUSTED LINE.

STATE OF MARYLAND — PAUL GREGORY STEYMAN — REGISTERED PROFESSIONAL ENGINEER — No. 19371 — PROFESSIONAL ENGINEER

1/14/22

DATE:	REVISION:
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11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND ASCD 10/25/21 COMMENTS
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NATIONAL WASTE MANAGERS
PHASE III APPLICATION
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PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

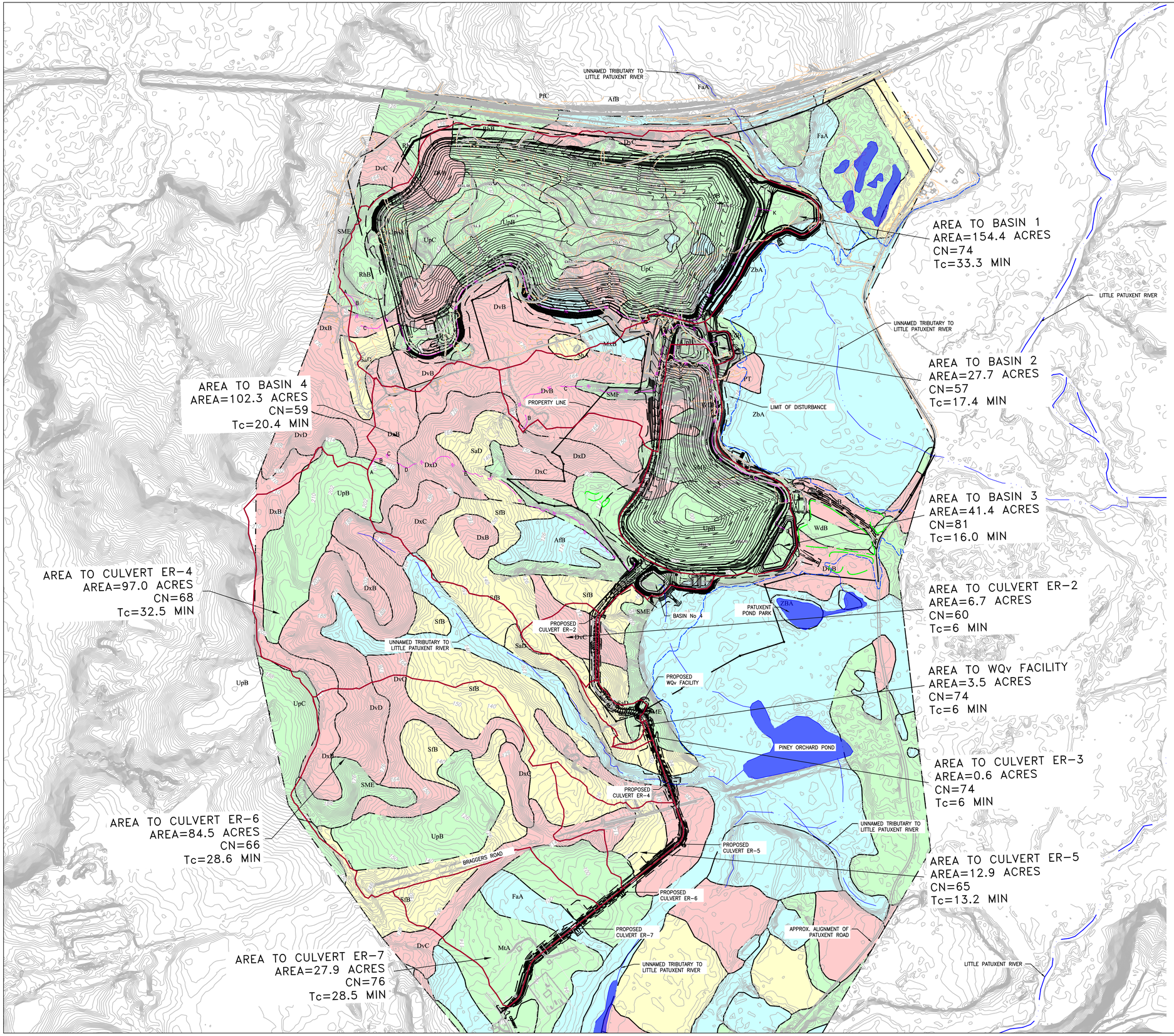
ADVANCED GeoServices
a Montrose Environmental Group company
1878 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.6026 www.advancedgeoservices.com

OVERALL CONSTRUCTION STAGES

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 - 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 51

N:\Projects\2018\3018854 - Chesapeake Terrace LF\CAD\DWG\RC & Phase III Application\Drawings\Final\3018854 B051 - OVERALL CONSTRUCTION STAGES.dwg 1/13/2022 10:07:46 AM



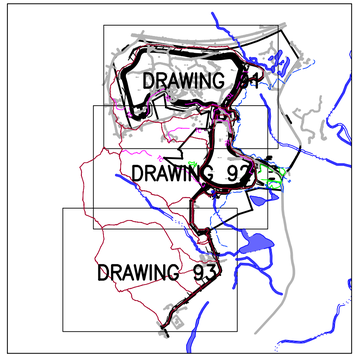
LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN
- LIMIT OF DISTURBANCE
- TYPICAL WETLANDS
- PROPOSED DRAINAGE AREA
- TC — TIME OF CONCENTRATION
- A SOILS
- B SOILS
- C SOILS
- D SOILS

NOTE:

1. UNNAMED TRIBUTARIES TO LITTLE PATUXENT RIVER PLOTTED FROM MARYLAND CRITICAL AREAS MAP ARC-GIS ONLINE MAP VIEWER.
2. TOPOGRAPHIC INFORMATION PRESENTED ON DRAWING 52, 91, 92, AND 93 WITH SOIL DATA OBTAIN FROM ARC-GIS.

SEE DRAWINGS 91, 92, AND 93 FPR 1"=150' SCALE DRAWINGS



KEYMAP
1" = 2000'

GRAPHIC SCALE
400 0 200 400 800 1600
(IN FEET)
1 inch =400 ft.

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
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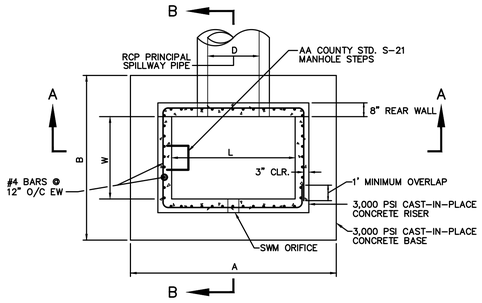
1979 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

OVERALL PROPOSED
SITE DRAINAGE AREAS
(WITH SOIL TYPES)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 - 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 52

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 B052 B091 B092 B093 - DRAINAGE AREAS.dwg, 1/13/2022 10:08:24 AM



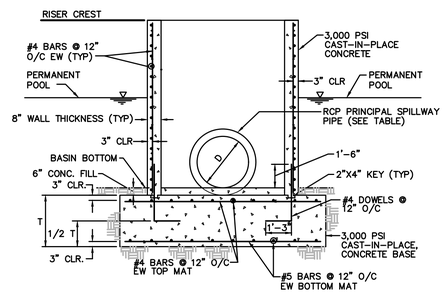
NOTE – SEE RISER TABLE FOR DIMENSIONS

TYPICAL CONCRETE RISER PLAN

NOT TO SCALE

RISER TABLE OF DIMENSIONS

DESCRIPTION	BASIN NO. 1	BASIN NO. 2	BASIN NO. 3	BASIN NO. 4	WQv FACILITY
FACILITY BOTTOM ELEV.	78.00	71.00	72.00	76.50	86.00
PERMANENT POOL ELEV.	81.00	74.00	74.00	78.50	88.00
RISER CREST ELEV.	84.50	77.00	77.00	83.60	89.50
RISER L	6'–6"	6'–6"	6'–6"	10'–0"	4'–0"
RISER W	3'–0"	3'–0"	3'–0"	7'–0"	4'–0"
TOP OF REAR WALL ELEV.	86.00	78.50	78.50	85.10	91.00
RCP PIPE "D"	48"	36"	36"	48"	18"
RCP PIPE INVERT ELEV.	79.00	72.00	73.10	76.80	86.00
RISER/RCP ANGLE	101°06'08"	23°20'15"	63°43'20"	77°57'18"	60°40'45"
TOP OF BASE ELEVATION	78.50	71.50	72.60	76.30	86.50
BASE DIM. A	9'–10"	9'–10"	9'–10"	13'–4"	7'–4"
BASE DIM B	6'–4"	6'–4"	6'–4"	10'–4"	7'–4"
BASE THICKNESS	1'–3"	1'–0"	1'–0"	1'–6"	1'–0"

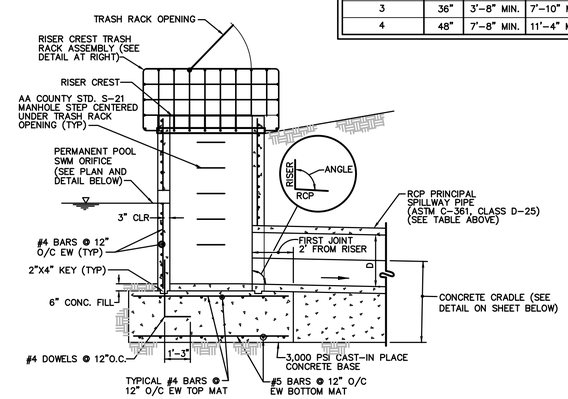


RISER SECTION A–A

NOT TO SCALE

RISER CREST TRASH RACK

BASIN NO.	D	W	H
1	48"	3–8" MIN.	7'–10" MIN.
2	36"	3'–8" MIN.	7'–10" MIN.
3	36"	3'–8" MIN.	7'–10" MIN.
4	48"	7'–8" MIN.	11'–4" MIN.

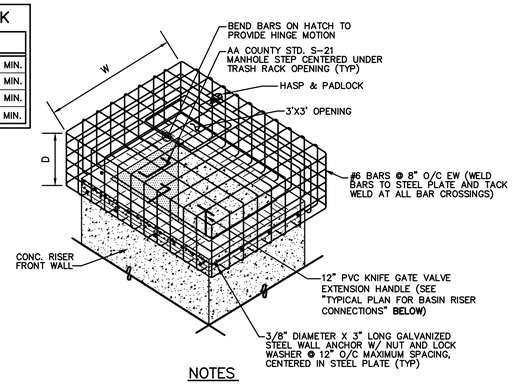


RISER SECTION B–B

NOT TO SCALE

NOTES

1. RISER CREST TRASH RACK AND RCP PRINCIPAL SPILLWAY PIPE CONCRETE CRADLE ARE NOT SHOWN ON SECTION A–A. SEE SECTION B–B AND TRASH RACK DETAIL AT RIGHT. SEE SHEET BELOW FOR CONCRETE CRADLE DETAIL.
2. RISERS MUST BE CAST–IN–PLACE.
3. RISER BASE MUST BE POURED ON ORIGINAL GROUND.



NOTES

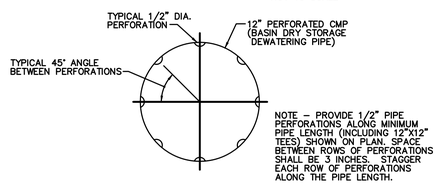
1. ENTIRE TRASH RACK ASSEMBLY SHALL BE HOT–DIPPED GALVANIZED AFTER FABRICATION.
2. TRASH RACK SHALL EXTEND 8" HORIZONTALLY FROM FRONT WALL AND BOTH SIDE WALLS AND DOWNWARD TO 8" BELOW THE RISER CREST ELEVATION. TOP OF TRASH RACK SHALL BE FLAT, AND LEVEL W/ TOP OF REAR WALL.

TYPICAL RISER CREST TRASH RACK DETAIL

NOT TO SCALE

ORIFICE TABLE OF DIMENSIONS

FACILITY	L	ORIFICE DIA.	ORIFICE INV. ELEV.
BASIN NO. 1	6'–6"	9"	81.00
BASIN NO. 2	6'–6"	8"	74.00
BASIN NO. 3	6'–6"	6"	74.00
BASIN NO. 4	10'–0"	6"	78.50
WQv FACILITY	4'–0"	3"	88.00



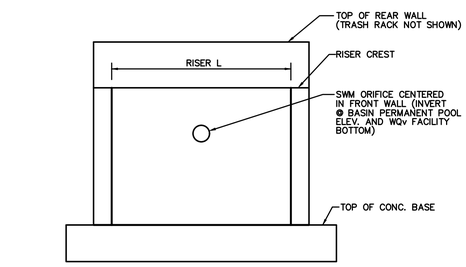
NOTE – PROVIDE 1/2" PIPE PERFORATIONS ALONG MINIMUM PIPE LENGTH (INCLUDING 12"X12" TEES) SHOWN ON PLAN. SPACE BETWEEN ROWS OF PERFORATIONS SHALL BE 3 INCHES. STAGGER EACH ROW OF PERFORATIONS ALONG THE PIPE LENGTH.

DEWATERING PIPE PERFORATION DETAIL

NOT TO SCALE

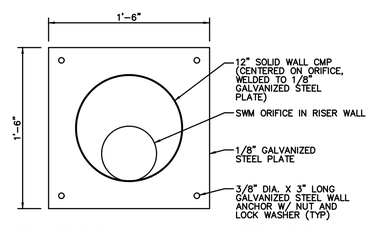
TABLE OF DIMENSIONS

BASIN NO.	D	t	H_1	H_2	W_1	W_2
1	48"	5"	1'–3"	2'–5"	6'–10"	4"
2	36"	4"	1'–0"	1'–10"	5'–6"	3"
3	36"	4"	1'–0"	1'–10"	5'–6"	3"
4	48"	5"	1'–3"	2'–5"	6'–10"	4"



SWM ORIFICE PLAN

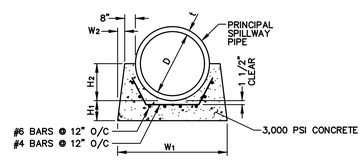
NOT TO SCALE



NOTE – STEEL PLATE SHOWN ABOVE SHALL BE AFFIXED OVER SWM ORIFICES IN RISERS FOR BASIN NOS. 1, 2 AND 3, UNTIL EACH BASIN IS CONVERTED INTO A STORMWATER MANAGEMENT POND. SEE "RISER CONNECTIONS PLAN" AND "RISER CONNECTION SECTION A–A" AT RIGHT.

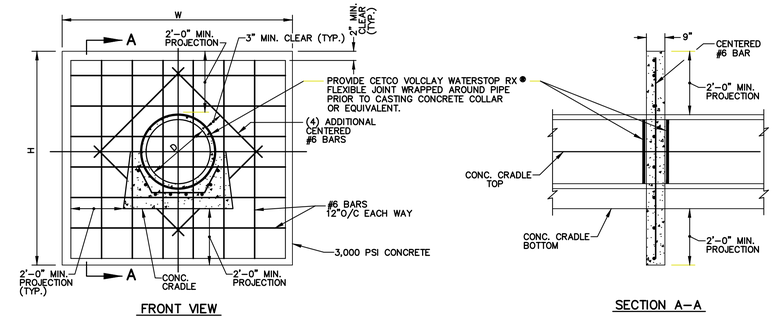
SWM ORIFICE PLATE DETAIL

NOT TO SCALE



CONCRETE CRADLE DETAIL

NOT TO SCALE



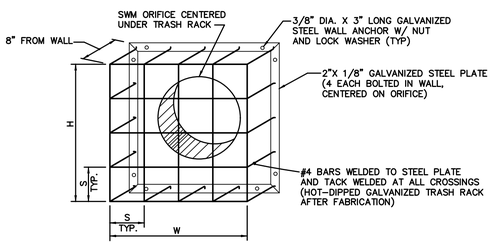
ANTI–SEEP COLLAR

NOT TO SCALE

ORIFICE TRASH RACK TABLE OF DIMENSIONS

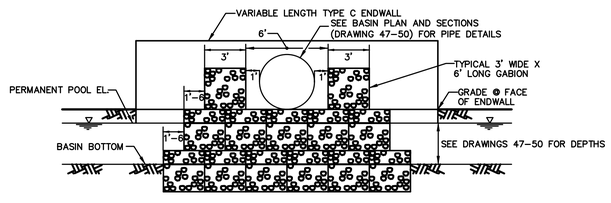
BASIN NO.	ORIFICE DIA.	W	H	S(1)
1	9"	2'–0"	2'–0"	6"
2	8"	1'–0"	1'–3"	2 1/2"
3	6"	1'–0"	1'–3"	2 1/2"
4	6"	1'–6"	1'–6"	4 1/2"
WQv	3"	1'–0"	1'–3"	2 1/2"

(1) #4 BARS CENTER TO CENTER DIMENSION



SWM ORIFICE TRASH RACK DETAIL

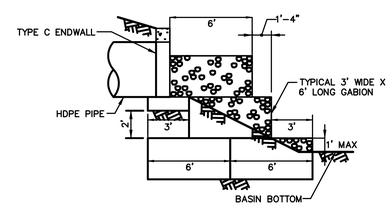
NOT TO SCALE



SECTION THROUGH GABION OUTLET LOOKING AT ENDWALL

NOT TO SCALE

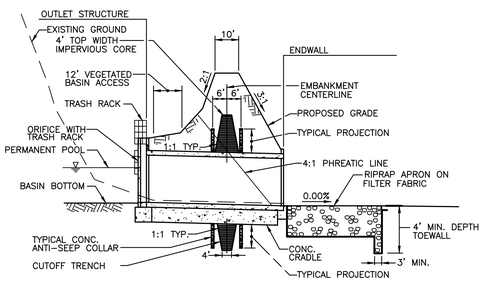
NOTE – SECTION ABOVE SHOWNS GABION OUTLETS FOR BASIN INFLOW PIPES, AS SHOWN ON SHEETS 47, 48, 49 AND 50. PERMANENT POOL EL.=81.00 BASIN NO.1; 74.00 FOR BASIN NO. 2; 74.00 FOR BASIN NO. 3; AND 78.5 FOR BASIN NO. 4.



SECTION THROUGH HDPE PIPE AT GABION OUTLET

NOT TO SCALE

NOTE – SECTION ABOVE SHOWNS GABION OUTLETS FOR BASIN INFLOW PIPES, AS SHOWN ON SHEETS 47, 48, 49 AND 50.



TYPICAL BASIN EMBANKMENT DETAIL

NOT TO SCALE

NOTE – SEE ADDITIONAL DETAILS ON SHEETS 47 THROUGH 50 FOR OUTLET STRUCTURE, ANTI–SEEP COLLARS, CONCRETE CRADLE, RIPRAP APRON, TRASH RACK, AND ENDWALL DETAILS

STATE OF MARYLAND — JAMES R. STRAYMAN — No. 15221 — PROFESSIONAL ENGINEER — MAY 30, 2021

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
9/30/2021	REVISED RISER DETAIL
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
1870 MARLTON PIKE EAST, SUITE 13, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

STORMWATER BASIN DETAILS

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 53

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 B053 - STORMWATER BASIN DETAILS.dwg, 1/13/2022 10:09:34 AM

SEDIMENT BASIN/SWM POND CONVERSION NOTES

1. BASIN NOS. 1, 2, AND 3 WILL FUNCTION AS SEDIMENT BASINS DURING THE LIFE OF LANDFILL CELL CONSTRUCTION AND CELL CLOSURE. SEE ITEM V, "ESTIMATED CELL CONSTRUCTION AND WASTE PLACEMENT SCHEDULE ON DRAWING 63).

   BASIN NO. 4 WILL FUNCTION SOLELY AS A STORM WATER MANAGEMENT POND.

   AS PART OF INITIAL BASIN CONSTRUCTION, INSTALL BASIN RISERS AS SHOWN ON "TYPICAL CONCRETE RISER PLAN". TO PROVIDE CAPABILITY TO DEWATER PERMANENT POOLS, INSTALL 8" PERFORATED AND SOLID WALL PVC PIPE WITH 8" PVC KNIFE GATE VALVE AND APPURTENANCES (AS SHOWN ON "RISER CONNECTIONS PLAN" AND "RISER CONNECTION SECTION A–A" AT RIGHT) IN ALL FOUR BASINS. TO DEWATER DRY STORAGE VOLUMES IN BASIN NOS. 1. 2 AND 3 DURING THEIR FUNCTION AS SEDIMENT BASINS, INSTALL 12" PERFORATED AND SOLID WALL CMP (AS SHOWN ON "RISER CONNECTIONS PLAN" AND "RISER CONNECTION SECTION B–B").

2. WHEN THE RUBBLE WASTE PLACEMENT OPERATION HAS CEASED, AND THE CONTRIBUTING DRAINAGE AREA TO A SEDIMENT BASIN (I.E., EITHER BASIN NO. 1, NO. 2 OR NO. 3) HAVE BEEN PROVIDED WITH PERMANENT VEGETATIVE STABILIZATION IN ACCORDANCE WITH MARYLAND DEPARTMENT OF THE ENVIRONMENT REGULATIONS, THE APPLICABLE BASIN SHALL BE CONVERTED INTO A STORMWATER MANAGEMENT POND.

   SEDIMENT BASIN/SWM POND CONVERSION FOR BASIN NO. 1, NO. 2 OR NO. 3 SHALL BE ACHIEVED BY DEWATERING THE BASIN WET POOL VOLUME VIA THE 8" PVC PIPE CONNECTED TO THE PVC KNIFE GATE VALVE HOUSED IN THE CONCRETE RISER. FOLLOWING WET POOL DRAW–DOWN, 12" PERFORATED AND SOLID WALL CMP PIPES (INCLUDING THE UNDERLYING EARTH BERM AND 1/8" STEEL PLATE ATTACHED TO THE CONCRETE RISER WALL) SHALL BE REMOVED. TRASH RACKS SHALL BE INSTALLED OVER RISER SWM ORIFICES AS SHOWN HEREON, AND DISTURBED AREAS SHALL BE STABILIZED WITH SOD.

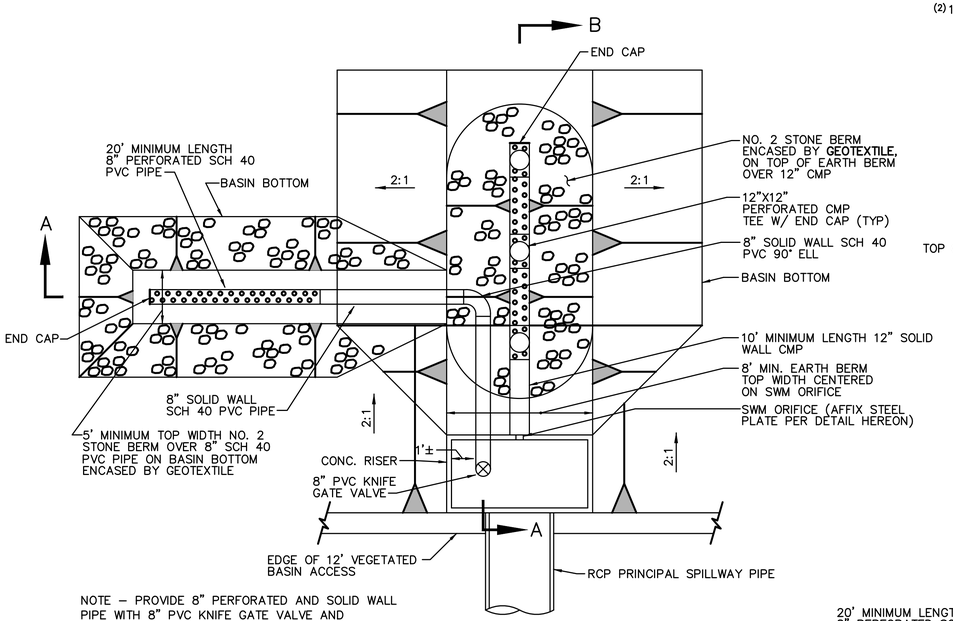
   FOLLOWING COMPLETION OF ALL REQUIRED CONSTRUCTION, THE PVC KNIFE GATE VALVE SHALL BE CLOSED AND THE SWM POND WILL BE FILLED WITH WATER TO THE PERMANENT POOL ELEVATION.

BASIN NOS. 1, 2 AND 3 SEDIMENT CONTROL PHASE ELEVATIONS

BASIN NO.	WET STORAGE ELEVATION	DRY STORAGE ELEVATION(2)	CLEANOUT ELEVATION	RISER CREST ELEVATION(1)
1	81.00	90.22	80.00	84.50
2	74.00	77.93	72.50	77.00
3	74.00	79.10	73.00	77.00

(1) RISER CREST ELEVATION IS EQUIVALENT TO TOP OF 12"X12" PERFORATED CMP TEES WITH END CAPS, AS SHOWN BELOW.

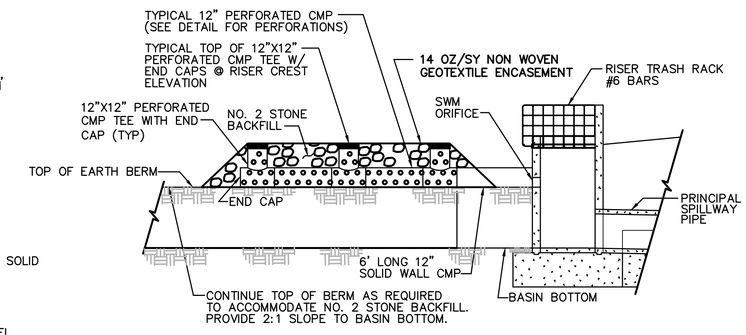
(2) 100 YEAR DESIGN STORM EVENT ELEVATION.



NOTE – PROVIDE 8" PERFORATED AND SOLID WALL PIPE WITH 8" PVC KNIFE GATE VALVE AND APPURTENACES (AS SHOWN ABOVE AND ON SECTION A–A) IN ALL THREE BASINS. PROVIDE 12" PERFORATED AND SOLID WALL CMP (AS SHOWN ABOVE AND ON SECTION B–B) IN BASIN NOS. 1, 2 AND 3.

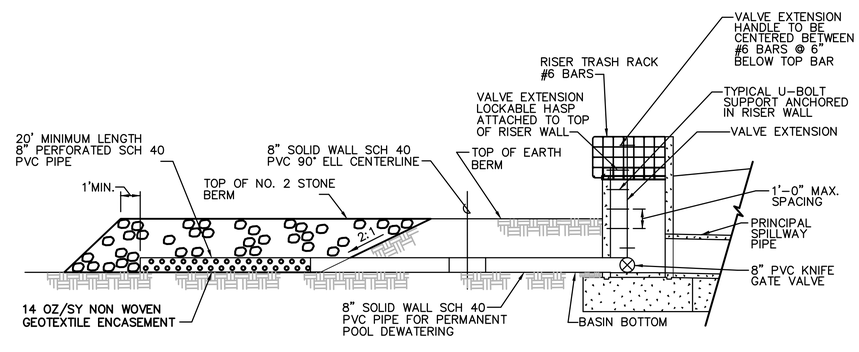
TYPICAL RISER CONNECTIONS PLAN

NOT TO SCALE



RISER CONNECTION SECTION B–B

NOT TO SCALE



RISER CONNECTION SECTION A–A

NOT TO SCALE

AS–BUILT CERTIFICATION FOR AASCD SMALL POND NUMBER 999 (BASIN NO. 1)

I CERTIFY THAT THIS AS–BUILT IS ACCURATE AND COMPLETE AND THE POND AS CONSTRUCTED MEETS THE REQUIREMENTS OF THE USDA, NATURAL RESOURCES CONSERVATION DISTRICT SERVICE MARYLAND STANDARDS AND SPECIFICATIONS FOR PONDS (MD–378). ANY POND DESIGN COMPONENTS NOT IDENTIFIED WITH AS–BUILT NOTATIONS WERE CONSTRUCTED AS PER THE APPROVED POND DESIGN.

SIGNATURE _____

NAME (PRINTED) _____ DATE _____

ADDRESS _____

MD LICENSE # _____

PHONE # _____

SEAL

AS–BUILT CERTIFICATION FOR AASCD SMALL POND NUMBER 1000 (BASIN NO. 2)

I CERTIFY THAT THIS AS–BUILT IS ACCURATE AND COMPLETE AND THE POND AS CONSTRUCTED MEETS THE REQUIREMENTS OF THE USDA, NATURAL RESOURCES CONSERVATION SERVICE MARYLAND STANDARDS AND SPECIFICATIONS FOR PONDS (MD–378). ANY POND DESIGN COMPONENTS NOT IDENTIFIED WITH AS–BUILT NOTATIONS WERE CONSTRUCTED AS PER THE APPROVED POND DESIGN.

SIGNATURE _____

NAME (PRINTED) _____ DATE _____

ADDRESS _____

MD LICENSE # _____

PHONE # _____

SEAL

AS–BUILT CERTIFICATION FOR AASCD SMALL POND NUMBER 1001 (BASIN NO. 3)

I CERTIFY THAT THIS AS–BUILT IS ACCURATE AND COMPLETE AND THE POND AS CONSTRUCTED MEETS THE REQUIREMENTS OF THE USDA, NATURAL RESOURCES CONSERVATION SERVICE MARYLAND STANDARDS AND SPECIFICATIONS FOR PONDS (MD–378). ANY POND DESIGN COMPONENTS NOT IDENTIFIED WITH AS–BUILT NOTATIONS WERE CONSTRUCTED AS PER THE APPROVED POND DESIGN.

SIGNATURE _____

NAME (PRINTED) _____ DATE _____

ADDRESS _____

MD LICENSE # _____

PHONE # _____

SEAL

AS–BUILT CERTIFICATION FOR AASCD SMALL POND NUMBER 1002 (BASIN NO. 4)

I CERTIFY THAT THIS AS–BUILT IS ACCURATE AND COMPLETE AND THE POND AS CONSTRUCTED MEETS THE REQUIREMENTS OF THE USDA, NATURAL RESOURCES CONSERVATION SERVICE MARYLAND STANDARDS AND SPECIFICATIONS FOR PONDS (MD–378). ANY POND DESIGN COMPONENTS NOT IDENTIFIED WITH AS–BUILT NOTATIONS WERE CONSTRUCTED AS PER THE APPROVED POND DESIGN.

SIGNATURE _____

NAME (PRINTED) _____ DATE _____

ADDRESS _____

MD LICENSE # _____

PHONE # _____

SEAL

POND DESIGN CERTIFICATION FOR AASCD SMALL POND NUMBERS 999, 1000, 1001 AND 1002

I CERTIFY THAT THIS DESIGN PLAN FOR THE CONSTRUCTION OF THE EMBANKMENT AND/OR EXCAVATED POND(S) REPRESENTS A HAZARD CLASS "A" POND(S) AND WAS DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE USDA, NATURAL RESOURCES CONSERVATION SERVICE – MARYLAND STANDARDS AND SPECIFICATIONS FOR PONDS, (MD–378). I HAVE REVIEWED THIS PLAN WITH THE OWNER/DEVELOPER.

SIGNATURE _____

NAME (PRINTED) PAUL STRATMAN, PE DATE 11/9/2021

MD LICENSE # 21681

ADDRESS 1055 ANDREW DRIVE, SUITE A

WEST CHESTER, PA 19380

PHONE # 610–840–9100

SEAL

STATE OF MARYLAND PAUL GERARD STRATMAN 21681 PROFESSIONAL ENGINEER

11/9/2021

STATE OF MARYLAND PAUL GERARD STRATMAN 21681 PROFESSIONAL ENGINEER

1/14/22

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
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ANNE ARUNDEL COUNTY, MARYLAND

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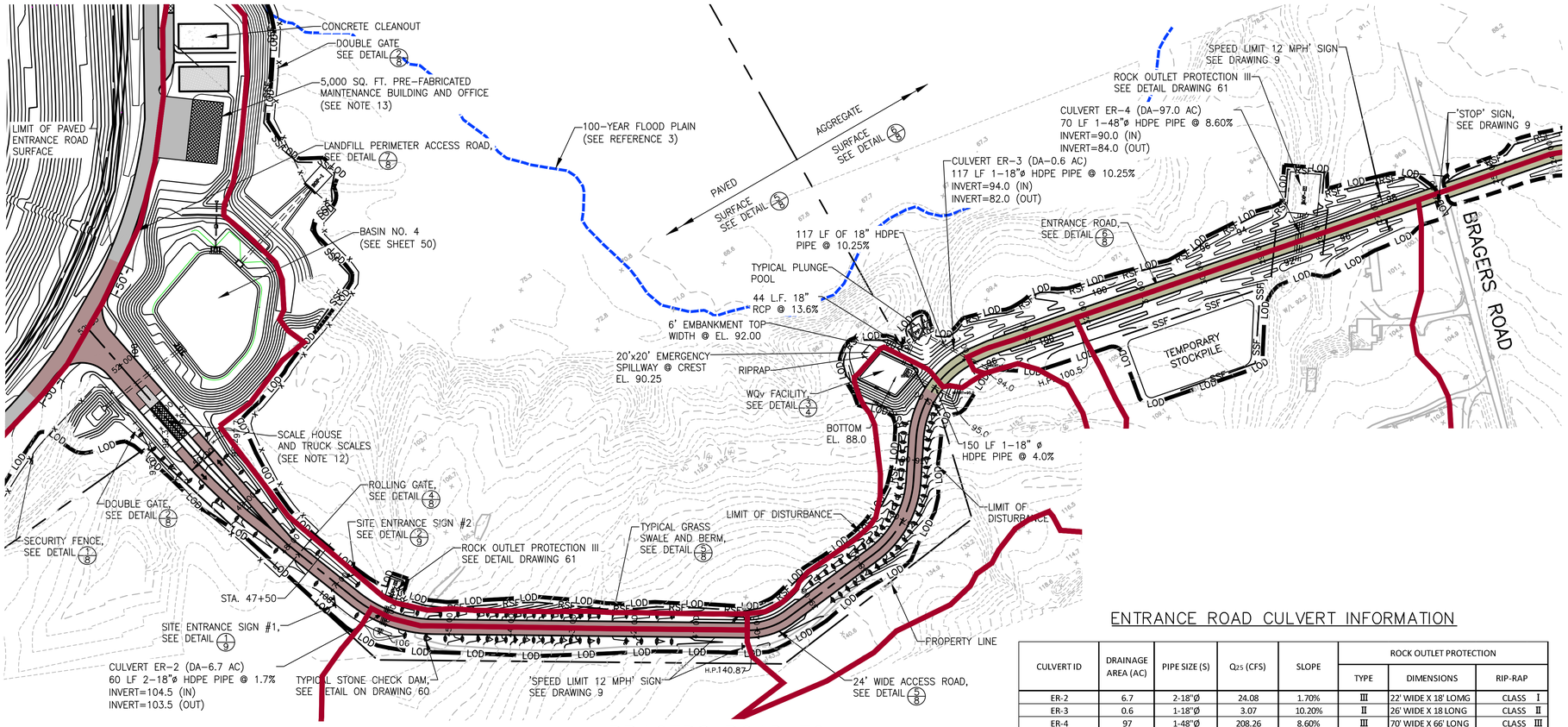
1979 MARLTON PIKE EAST, SUITE 1D, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.9236 www.advancedgeoservices.com

BASIN / SWM CONVERSION DETAILS

PROJECT MANAGER:	PGS
CHECKED BY:	PGS
DRAWN BY:	KHF
SCALE:	AS NOTED
PROJECT NUMBER:	2018 – 3854
DATE:	09/03/2021

DRAWING 54

N:\Projects\2018\2018854 - Chesapeake Terrace LF\CAD\DWG\RC B Phase III Application\Drawings\Final\2018854 B054 - BASIN SWM CONVERSION DETAILS.dwg, 1/13/2022 10:09:41 AM



BRAGERS ROAD TO LANDFILL PERIMETER ACCESS ROAD

1 / 55

1 INCH = 100 FT

LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN
- 2 FT INCREMENT CONTOUR
- 5 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- LOD — LIMIT OF DISTURBANCE
- CHECK DAM, SEE DETAIL D2/61
- PIPE
- PP — PLUNGE POOL, SEE DRAWING 61
- RCP-_ — ROCK OUTLET PROTECTION-TYPE I, II OR III (AS NOTED), SEE DRAWING 61
- x x — PROPOSED CHAIN LINK FENCE, SEE DRAWING 8 AND NOTE 14
- PROPOSED DRAINAGE AREA
- ENTRANCE ROAD, AGGREGATE SURFACE, SEE DRAWING 6/8
- ENTRANCE ROAD, PAVED SURFACE, SEE DRAWING 5/8
- LANDFILL PERIMETER ROAD, SEE DRAWING 7/8
- SIGNS, SEE DRAWING 9
- RSF — REINFORCED SILTFENCE SEE DETAIL F1/60
- SSF — SUPER SILTFENCE SEE DETAIL F3/60
- TSSMC-2.0 lb/ft² — TEMPORARY SOIL STABILIZATION MATTING CHANNEL-2.0 lb/ft²

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

2.) EAST ENTRANCE ROAD ALIGNMENT, PAVING, WQ_v FACILITY AND GRASS SWALE IS FROM DIGITAL FILE (3 OF 8) TITLED "EAST SECTION ACCESS RD GRADING PLAN" PREPARED BY CENTURY ENGINEERING, INC., DATED MAY 2008.

3.) THE POST-2012 100-YEAR FLOOD PLAIN LIMITS SHOWN ARE BASED ON FEMA NATIONAL FLOOD INSURANCE PROGRAM MAP NUMBER 24003C0136E, DATED 10/16/2012.

ENTRANCE ROAD CULVERT INFORMATION

CULVERT ID	DRAINAGE AREA (AC)	PIPE SIZE (S)	Q_{25} (CFS)	SLOPE	ROCK OUTLET PROTECTION		
					TYPE	DIMENSIONS	RIP-RAP
ER-2	6.7	2-18"Ø	24.08	1.70%	III	22' WIDE X 18' LOMG	CLASS I
ER-3	0.6	1-18"Ø	3.07	10.20%	II	26' WIDE X 18 LONG	CLASS II
ER-4	97	1-48"Ø	208.26	8.60%	III	70' WIDE X 66' LONG	CLASS III
ER-5	12.9	2-24"Ø	39.97	0.70%	I	18' WIDE X 14' LONG	CLASS I
ER-6	84.5	5-24"Ø	184.6	2.70%	I	34' WIDE X 24' LONG	CLASS I
ER-7	27.9	1-36"Ø	82.38	3.30%	I	43' WIDE X 40' LONG	CLASS II

SEQUENCE OF CONSTRUCTION STAGE A1

1.) MARYLAND DEPARTMENT OF THE ENVIRONMENT SHALL BE NOTIFIED AT LEAST 72 HOURS PRIOR TO COMMENCING CONSTRUCTION.

2.) INSTALL STABILIZED CONSTRUCTION ENTRANCE AT CONWAY ROAD AND CLEAR AREA WITHIN LIMIT OF DISTURBANCE TO LANDFILL PERIMETER ACCESS ROAD. INSTALL REINFORCED SILT FENCE. ESTABLISH TEMPORARY STOCKPILE AT STA 12+00 AND STA 18+00. — 5 DAYS

3.) CONSTRUCT ROAD AND GRASS SWALES TO APPROXIMATE STATION 12+00, PER DESCRIPTION BELOW. — 10 DAYS

A. GRUB DISTURBED AREA
B. GRADE ROAD
C. INSTALL ROAD AGGREGATE AND INSTALL 48" HDPE CULVERT ER-7, INCLUDING ROCK OUTLET PROTECTION @ STA. 10+45 (3 ADDITIONAL DAYS IF SOIL CEMENT IS REQUIRED)
D. FINE GRADE INSTALL EROSION MAT AND SEED SWALES.
E. FINE GRADE AND VEGETATIVELY STABILIZE DISTURBED AREA

4.) CONSTRUCT ROAD AND GRASS SWALES TO BRAGERS ROAD (STA 26+00), PER SEQUENCE UNDER ITEMS 3(A), 3(B) AND 3(C) ABOVE. THREE ADDITIONAL DAYS WOULD BE REQUIRED FOR SOIL CEMENT INSTALLATION. INSTALL CULVERTS ER-5 AND ER-6, INCLUDING ROCK OUTLET PROTECTION @ STA 15+60 AND 22+50. — 10 DAYS

5.) CONSTRUCT ROAD TO APPROXIMATE STATION 32+00, PER DESCRIPTION BELOW. — 5 DAYS

A. GRUB DISTURBED AREA
B. BEGIN ROAD GRADING AND INSTALL CULVERT ER-4, INCLUDING ROCK OUTLET PROTECTION @ STA 28+30
C. COMPLETE ROAD GRADING (INCLUDING ROAD AGGREGATE PLACEMENT) AND VEGETATIVELY STABILIZE DISTURBED AREA.
D. ESTABLISH TEMPORARY STOCKPILE AT STA 30+00.

6.) CONSTRUCT GRASS SWALES AND ROAD TO END OF AGGREGATE SURFACE AND BEGINNING OF BITUMINOUS CONCRETE SURFACE AT APPROXIMATE PROPERTY LINE, PER DESCRIPTION BELOW. — 5 DAYS

A. GRUB DISTURBED AREA
B. ROUGH GRADE THE AREA AND INSTALL THE WQv FACILITY AS SHOWN ON DRAWING 4
C. INSTALL CULVERTS ER-2 AND ER-3
D. COMPLETE ROAD CONSTRUCTION AND IMMEDIATELY VEGETATE DISTURBED AREA.

WQv FACILITY AND ROADSIDE GRASS SWALES SHALL BE CONSTRUCTED PER PLANS AND SECTIONS ON DRAWINGS 4 AND 8.

7.) GRUB DISTURBED AREA FROM STA 35+00 TO 53+00 (INCLUDING BASIN No4 FOOTPRINT) AND INSTALL THE 48" HDPE @ BASIN NO. 4 AND 18" HDPE CULVERTS, INCLUDING ROCK OUTLET PROTECTION @ STA 46+00 — 5 DAYS

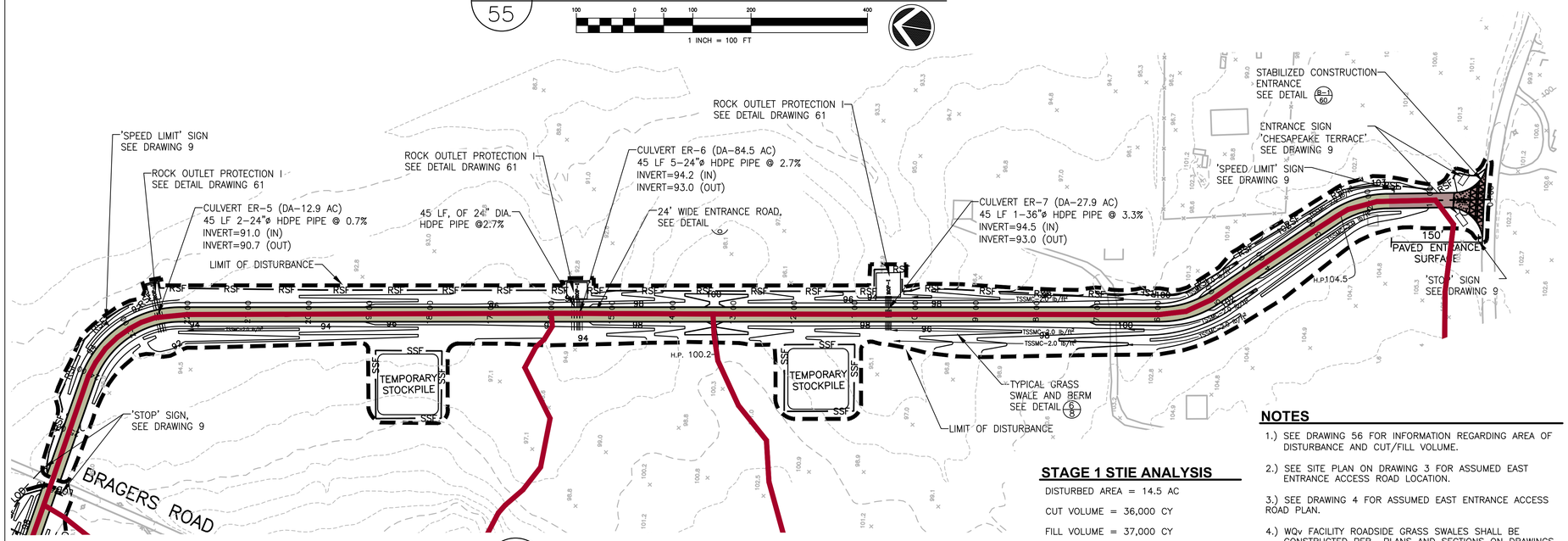
8.) CONSTRUCT BASIN NO. 4 AND ASSUMED EAST ENTRANCE FACILITIES AS SHOWN ON SHEETS 50 AND 56. — 10 DAYS

9.) CONSTRUCT ROAD TO LANDFILL PERIMETER ACCESS ROAD, PER DESCRIPTION BELOW. — 5 DAYS

A. FINE GRADE ROAD AND ROADSIDE DITCHES
B. CONSTRUCT ROAD BITUMINOUS SURFACE. VEGETATIVELY STABILIZE DISTURBED AREAS
C. INSTALL STONE CHECK DAMS AS SHOWN

10.) SILT FENCE SHALL REMAIN IN-PLACE UNTIL STAGE A1 IS 95% COMPLETED.

11.) INSTALL IRON STAKE 2.5 FEET INTO GROUND FOR EROSION MONITORING 10 ± FEET BEYOND END OF ROCK OUTLET PROTECTION FOR EACH ENTRANCE ROAD CULVERT AND AT BASIN No 4 DISCHARGE.



CONWAY ROAD TO BRAGERS ROAD

2 / 55

1 INCH = 100 FT

STAGE 1 STIE ANALYSIS

DISTURBED AREA = 14.5 AC

CUT VOLUME = 36,000 CY

FILL VOLUME = 37,000 CY

IMPORTED STONE = 8,000 CY

EXCESS CUT = 7,000 CY

NOTES

1.) SEE DRAWING 56 FOR INFORMATION REGARDING AREA OF DISTURBANCE AND CUT/FILL VOLUME.

2.) SEE SITE PLAN ON DRAWING 3 FOR ASSUMED EAST ENTRANCE ACCESS ROAD LOCATION.

3.) SEE DRAWING 4 FOR ASSUMED EAST ENTRANCE ACCESS ROAD PLAN.

4.) WQv FACILITY ROADSIDE GRASS SWALES SHALL BE CONSTRUCTED PER PLANS AND SECTIONS ON DRAWINGS 4 AND 8.

5.) UNLESS INDICATED OTHERWISE, ALL STEEP SLOPES ARE 2:1.

STATE OF MARYLAND — MICHAEL R. STEYMAN — REGISTERED PROFESSIONAL ENGINEER — No. 15251

1/14/22

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
9/30/2021	REVISED FOR E&S PERMIT SUBMISSION
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND ASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
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ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices — a Montrose Environmental Group company
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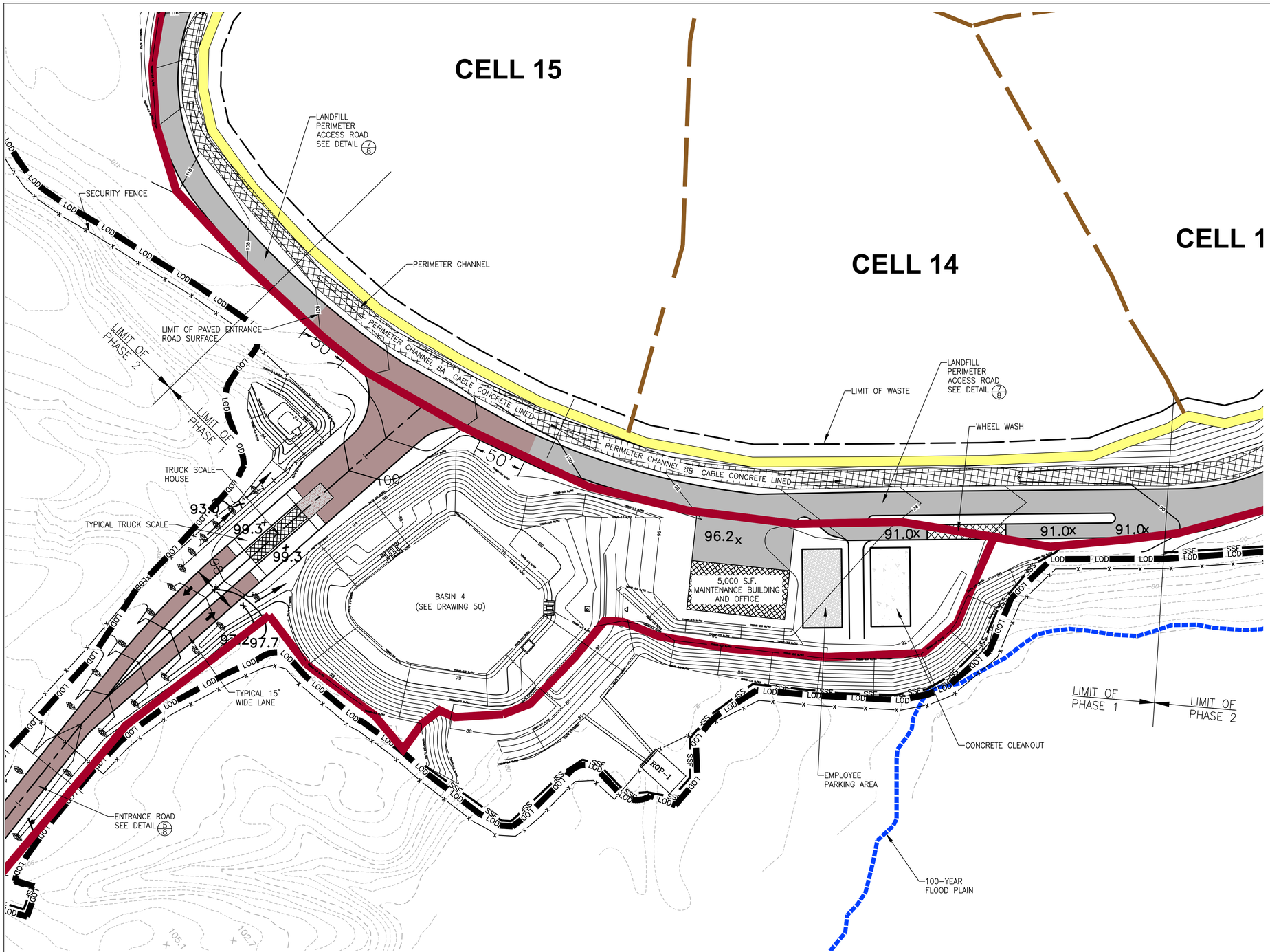
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

EAST ENTRANCE ROAD
SEDIMENT CONTROL PLAN
(SHEET 1 OF 2)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 - 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 55

N:\Projects\2018\3854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 B055 - EAST ENTRANCE ROAD SEDIMENT CONTROL PLAN (SHEET 1 OF 2).dwg, 1/13/2022 10:10:03 AM



LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN (SEE NOTE 13)
- 2 FT INCREMENT CONTOUR
- 5 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION LINE
- LOD — LIMIT OF DISTURBANCE
- CHECK DAM, SEE DETAIL 12/60
- PIPE
- ROP-I — ROCK OUTLET PROTECTION–TYPE I (SEE DRAWING 61)
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- PROPOSED DRAINAGE AREA
- ENTRANCE ROAD, PAVED SURFACE, SEE DRAWING 5/8
- LANDFILL PERIMETER ROAD, SEE DRAWING 7/8
- SIGNS, SEE DRAWING 9
- SSF — SUPER SILTFENCE SEE DETAIL E3/60
- PERIMETER BERM, SEE DETAIL 4/16
- TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION WITH MINIMUM SHEAR STRESS (lb/ft^2)

GENERAL NOTES

1. THE PURPOSE OF THIS SHEET IS TO SHOW SEDIMENT CONTROL MEASURES FOR INITIAL GRADING TO OCCUR PRIOR TO CONSTRUCTION OF BASIN NO. 4, EAST ENTRANCE FACILITIES AND ACCESS ROADS.
2. SEE SITE PLAN ON DRAWING 2 FOR ASSUMED EAST ENTRANCE LOCATION.
3. SEE DRAWING 4 FOR ASSUMED EAST ENTRANCE ACCESS ROAD PLAN.
4. SEE DRAWING 4 FOR ASSUMED EAST ENTRANCE INITIAL GRADING PLAN.
5. SEE DRAWING 55 AND 63 FOR SEQUENCE OF CONSTRUCTION REQUIRED IN THE AREA HEREON.
6. SEE DRAWING 50 FOR BASIN NO. 4 AND EAST ENTRANCE FACILITIES CONSTRUCTION.
7. SEE DRAWING 63, "SEQUENCE AND GENERAL NOTES FOR CONSTRUCTION", FOR CELLS 13 THROUGH 15 CONSTRUCTION REQUIREMENTS.

SEQUENCE OF CONSTRUCTION

1. NOTIFY ANNE ARUNDEL COUNTY PLANNING AND CODE ENFORCEMENT (PACE) INSPECTIONS AND PERMITS (410–222–7780) AT LEAST 72 HOURS BEFORE COMMENCING COSNTRUCTION.
2. SEE SEQUENCE OF CONSTRUCTION FOR PHASE 1 ON DRAWING 55.

PHASE 1

PHASE 1: EAST ENTRANCE ROAD CONSTRUCTION FROM CONWAY ROAD AS SHOWN ON DRAWING 55 INCLUDING BASIN 4 AND PERIMETER ACCESS ROAD TO LIMITS SHOWN HERE.

PHASE 1: AREA OF DISTURBANCE=19.56 ACRES
CUT=37,123 CY
FILL=37,131 CY
CRUSHED AGGREGATE=113,500 SF
BITUMINOUS PAVEMENT=10,100 SF
VEGETATION=720,333 SF
STRUCTURES=8,200 SF

CONSTRUCTION NOTES

1. ENTRANCE ROAD SHALL BE PAVED FROM PROPERTY LINE (STA 35+00) TO LANDFILL PERIMETER ACCESS ROAD. SEE EAST ENTRANCE "TYPICAL SECTION FROM SITE PROPERTY LINE TO LANDFILL" ON SHEET 8 FOR ENTRANCE ROAD PAVEMENT CROSS SECTION. SEE PLAN BELOW FOR PAVEMENT WIDTH.
2. SCALE HOUSE IS CONFIGURED AT SINGLE–WIDE TRAILER WIDTH. TRUCK SCALES (CONFIGURED AT 70 FEET LENGTH, WITH 10 FEET LONG CONCRETE RAMPS AT EACH END) SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
3. MAINTENANCE BUILDING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER OR ARCHITECT. BUILDING AND ACCESS AREA ARE EACH DEPICTED AT 100 FEET LENGTH BY 50 FEET WIDTH. CONFIGURATION MAY VARY, BASED ON 5,000 SQUARE FEET BUILDING DESIGN. BUILDING AND WHEEL WASH ACCESS SHALL HAVE AGGREGATE SURFACE EQUIVALENT TO LANDFILL PERIMETER ACCESS ROAD.
4. UNLESS INDICATED OTHERWISE, ALL STEEP SLOPES ARE 2:1.

50 0 25 50 100 200
1 INCH = 50 FT

STATE OF MARYLAND — RICHARD T. STREYMAN — No. 15851 — PROFESSIONAL ENGINEER
1/14/22

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
9/30/2021	REVISED FOR E&S PERMIT SUBMISSION
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
1878 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8238 www.advancedgeoservices.com

EAST ENTRANCE ROAD
SEDIMENT CONTROL PLAN
SHEET 2 OF 2

PROJECT MANAGER:	PGS	SCALE:	AS NOTED
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE:	09/03/2021

DRAWING 56

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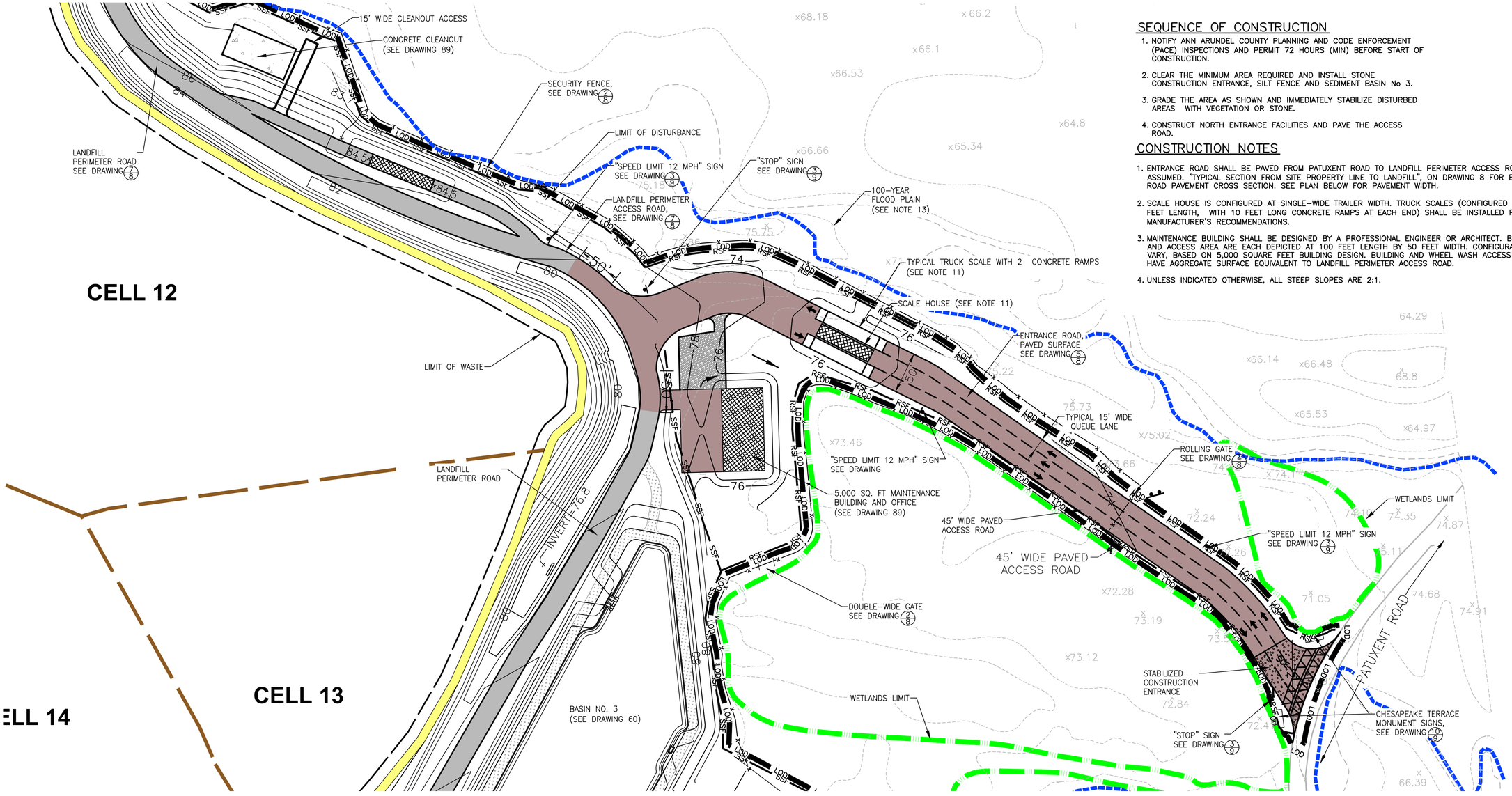

SEQUENCE OF CONSTRUCTION

1. NOTIFY ANN ARUNDEL COUNTY PLANNING AND CODE ENFORCEMENT (PACE) INSPECTIONS AND PERMIT 72 HOURS (MIN) BEFORE START OF CONSTRUCTION.
2. CLEAR THE MINIMUM AREA REQUIRED AND INSTALL STONE CONSTRUCTION ENTRANCE, SILT FENCE AND SEDIMENT BASIN No 3.
3. GRADE THE AREA AS SHOWN AND IMMEDIATELY STABILIZE DISTURBED AREAS WITH VEGETATION OR STONE.
4. CONSTRUCT NORTH ENTRANCE FACILITIES AND PAVE THE ACCESS ROAD.

CONSTRUCTION NOTES

1. ENTRANCE ROAD SHALL BE PAVED FROM PATUXENT ROAD TO LANDFILL PERIMETER ACCESS ROAD. SEE ASSUMED. "TYPICAL SECTION FROM SITE PROPERTY LINE TO LANDFILL", ON DRAWING 8 FOR ENTRANCE ROAD PAVEMENT CROSS SECTION. SEE PLAN BELOW FOR PAVEMENT WIDTH.
2. SCALE HOUSE IS CONFIGURED AT SINGLE-WIDE TRAILER WIDTH. TRUCK SCALES (CONFIGURED AT 70 FEET LENGTH, WITH 10 FEET LONG CONCRETE RAMPS AT EACH END) SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
3. MAINTENANCE BUILDING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER OR ARCHITECT. BUILDING AND ACCESS AREA ARE EACH DEPICTED AT 100 FEET LENGTH BY 50 FEET WIDTH. CONFIGURATION MAY VARY, BASED ON 5,000 SQUARE FEET BUILDING DESIGN. BUILDING AND WHEEL WASH ACCESS SHALL HAVE AGGREGATE SURFACE EQUIVALENT TO LANDFILL PERIMETER ACCESS ROAD.
4. UNLESS INDICATED OTHERWISE, ALL STEEP SLOPES ARE 2:1.

LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN (SEE NOTE 13)
- 2 FT INCREMENT CONTOUR
- 5 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION LINE
- LOD — LIMIT OF DISTURBANCE
- PIPE
- ROP-I — ROCK OUTLET PROTECTION-TYPE I (SEE DRAWING 61)
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- SIGNS, SEE DRAWING 3/9
- ENTRANCE ROAD, PAVED SURFACE, SEE DRAWING 5/8
- LANDFILL PERIMETER ROAD, SEE DRAWING 7/8
- TYPICAL WETLANDS
- SSF — SUPER SILT FENCE, SEE DRAWING 60
- RSF — REINFORCED SILTFENCE, SEE DRAWING 60
- ACCESS ROAD
- PERIMETER BERM, SEE DETAIL 2/16

60 0 30 60 120 240

1 INCH = 60 FT

GENERAL NOTES

1. THESE PERMIT DRAWINGS DO NOT CONTAIN A STORMWATER MANGEMENT PLAN FOR THE OPTIONAL NORTH ENTRANCE. THE OPTIONAL NORTH ENTRANCE MAY NOT BE CONSTRUCTED WITHOUT A STORMWATER MANAGEMENT PLAN APPROVED BY ANNE ARUNDEL SOIL CONSERVATION DISTRICT.
2. PROPOSED CONTOURS DEPICTED HEREON INDICATE GRADING REQUIRED FOR PART OF BASIN NO. 3, THE OPTIONAL NORTH ENTRANCE AND PART OF LANDFILL CELL NOS. 12, 13 AND 14 CONSTRUCTION.
3. BASIN NO. 3 WILL BE CONSTRUCTED PRIOR TO ANY OTHER CONSTRUCTION IN OR UPSLOPE OF THIS AREA (SEE DRAWING 63 "SEQUENCE AND GENERAL NOTES FOR CONSTRUCTION").
4. IF NEITHER THE ASSUMED EAST ENTRANCE NOR THE OPTIONAL SOUTH ENTRANCE IS CONSTRUCTED, THE OPTIONAL NORTH ENTRANCE WILL BE CONSTRUCTED IN LIEU OF THE EAST ENTRANCE, PER THE EAST ENTRANCE SEQUENCE OF CONSTRUCTION ON DRAWING 63 CELL NOS. 11, 12, 13, & 14 WILL PROCEED IN ACCORDANCE WITH REQUIREMENTS ON DRAWINGS 67, 68 AND 69, RESPECTIVELY.
5. SEE SITE PLAN ON DRAWING 3 FOR OPTIONAL NORTH ENTRANCE LOCATION.
6. SEE DRAWINGS 4 & 5 FOR ASSUMED SITE ACCESS (EAST ENTRANCE) INITIAL GRADING PLAN PLAN.
7. SEE DRAWING 90 FOR OPTIONAL SOUTH ENTRANCE PLAN.
8. SEE DRAWING 63, "SEQUENCE AND GENERAL NOTES FOR CONSTRUCTION" FOR CELLS 11 THROUGH 14 CONSTRUCTION REQUIREMENTS.

STATE OF MARYLAND — PAUL G. STRATMAN — No. 15251 — PROFESSIONAL ENGINEER — 1/14/22

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
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OPTIONAL NORTH ENTRANCE ROAD SEDIMENT CONTROL PLAN

PROJECT MANAGER:	PGS	SCALE: AS NOTED	
CHECKED BY:	PGS	PROJECT NUMBER: 2018 - 3854	
DRAWN BY:	KHF	DATE: 09/03/2021	

DRAWING 57

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STORMWATER BASIN CONSTRUCTION/CONVERSION NOTES

- STORMWATER BASINS 4 WILL BE CONSTRUCTED DURING STAGE A1/PHASE 1. BASIN 4 IS A STORMWATER MANAGEMENT ONLY BASIN AND IS NOT DESIGNED OR INTENDED TO OPERATE AS A SEDIMENT POND. THE RUNOFF TO BASIN 4 IS PRIMARILY OFF–SITE DRAINAGE AREA WITH A LIMITED AMOUNT OF DISTURBED ON–SITE ARE ASSOCIATED WITH THE EAST ENTRANCE AND PERIMETER ACCESS ROAD BERM ALONG PROPOSED CELLS 15 AND 16. THE STAGE A1/PHASE 1 CONSTRUCTION IS EXPECTED TO REQUIRE 2.2 MONTHS FOR COMPLETION.

- STORMWATER BASINS 3 WILL BE CONSTRUCTED DURING STAGE A2/PHASE 2. BASIN 3 IS A STORMWATER MANAGEMENT BASIN THAT WILL FUNCTION AS A SEDIMENT POND UNTIL THE END OF STAGE H1. (A PERIOD OF APPROXIMATELY 51.3 MONTHS). AT THE END OF STAGE H1 THE SEDIMENT POND WILL BE CONVERTED TO A STORM WATER MANAGEMENT POND. WHILE FUNCTIONING AS A SEDIMENT POND THE RUNOFF TO BASIN 3 WILL BE SEDIMENT LADEN RUNOFF FROM THE EAST DISPOSAL AREA PERIMETER ACCESS ROADS AND PERIMETER DRAINAGE CHANNELS, WATER PUMPED OUT FROM THE UNDISTURBED AREAS WITHIN THE EAST DISPOSAL AREA PERIMETER BERM AND DISTURBED CELLS UNDER CONSTRUCTION OR UNDERGOING CAP INSTALLATION IN STAGES B THROUGH H1. THE FOLLOWING STEPS WILL BE FOLLOWED DURING BASIN 3 CONVERSION:

  1. CONFIRM THAT CONTRIBUTING DRAINAGE AREA IS STABILIZED WITH FINAL COVER AS REQUIRED BY MDE APPROVED LANDFILL DESIGN. AREAS IDENTIFIED WITH INADEQUATE OR MISSING STABILIZATION (VEGETATION OR COARSE AGGREGATE) SHALL BE REPAIRED.
  2. ONCE THE CONTRIBUTING DRAINAGE AREA IS STABLE AND INCOMING STORMWATER RUNOFF IS VISUALLY CLEAN, DEWATER THE POND UTILIZING THE 8" DIAMETER PVC PIPE AND GATE VALVE (SEE DRAWING 54).
  3. ACCESS POND FROM SOUTHWEST OR NORTHWEST CORNERS. REMOVE ACCUMULATED SEDIMENT TO RE–ESTABLISH DESIGN ELEVATION SHOWN ON DRAWINGS 49 AND 49A. TRAFFIC IN THE POND SHOULD BE MINIMIZED AND THE TYPE OF EQUIPMENT SELECTED TO AVOID DISTURBANCE TO AREAS OUTSIDE THE LIMITS OF REQUIRED SEDIMENT REMOVAL. TRUCKS USED FOR TRANSPORT OF SEDIMENT SHOULD BE LOADED IN THE NORTHWEST OR SOUTHWEST CORNERS WITHOUT DRIVING ON BOTTOM OF BASIN OR INTERIOR SIDE SLOPES.
  4. REMOVE 12" DIAMETER CMP PIPES, SEDIMENT AND SOIL TO SWM ORIFICE. INSTALL TRASH RACK OVER SWM ORIFICE (DRAWING 53).
  5. REMOVED SEDIMENT SHALL BE PLACED IN THE OPEN LANDFILL CELL. IF SEDIMENT IS SATURATED (I.E. DOES NOT PASS THE PAINT FILTER TEST); STOCKPILE SEDIMENT IN A DRY AREA WITHIN THE POND AND ALLOW FREE WATER TO DRAIN BEFORE TRANSPORTING TO LANDFILL CELL. SEDIMENT STOCKPILE AREA SHOULD BE LOCATED AT OR ABOVE ELEVATION 74, AND DOWN SLOPE AREAS PROTECTED WITH REINFORCED SILT FENCE (DRAWING 60).
  6. SEDIMENT REMOVAL ACTIVITIES SHOULD BE COORDINATED TO BE PERFORMED WITH PERIODS FORECAST WITH DRY WEATHER AND CONDITIONS CONDUCIVE TO ESTABLISHING VEGETATION AND SHALL BE EXECUTED IN A MANNER TO MINIMIZE THE DURATION BETWEEN POND DEWATERING AND COMPLETION OF SEDIMENT REMOVAL. DISTURBED AREAS ABOVE THE WET POND SURFACE LEVEL SHOULD BE REVEGETATED IN ACCORDANCE WITH THE PROCEDURES IDENTIFIED ON DRAWINGS 61–62, AND SPECIFICATION SECTION 02936).
  7. UPON COMPLETION OF SEDIMENT REMOVAL, CLOSE GATE VALVE ON 8" PVC PIPE AND ALLOW WET POND LEVEL TO RETURN TO ELEVATION 74.0

- STORMWATER BASIN 2 WILL BE CONSTRUCTED DURING STAGE A/PHASE 3. BASIN 2 IS A STORMWATER MANAGEMENT BASIN THAT WILL FUNCTION AS A SEDIMENT POND UNTIL THE END OF STAGE I1/PHASE 5. (A PERIOD OF APPROXIMATELY 62.7 MONTHS). AT THE END OF STAGE I1 THE SEDIMENT POND WILL BE CONVERTED TO A STORM WATER MANAGEMENT POND. THE RUNOFF TO BASIN 2 IS PRIMARILY RUNOFF FROM OFF–SITE AREAS AND UNDISTURBED ON–SITE AREAS, BUT DOES INCLUDE SOME POTENTIALLY SEDIMENT LADEN RUNOFF DURING THE STAGE A3/PHASE 3 AND STAGE I1/PHASE 5 CONSTRUCTION. BASIN 2 DOES NOT RECEIVE RUNOFF FROM THE CAPPED AREAS. THE FOLLOWING STEPS WILL BE FOLLOWED DURING BASIN 2 CONVERSION:

  1. CONFIRM THAT CONTRIBUTING DRAINAGE AREA IS STABILIZED WITH FINAL COVER AS REQUIRED BY MDE APPROVED LANDFILL DESIGN. AREAS IDENTIFIED WITH INADEQUATE OR MISSING STABILIZATION (VEGETATION OR COARSE AGGREGATE) SHALL BE REPAIRED.
  2. ONCE THE CONTRIBUTING DRAINAGE AREA IS STABLE AND INCOMING STORMWATER RUNOFF IS VISUALLY CLEAN, DEWATER THE POND UTILIZING THE 8" DIAMETER PVC PIPE AND GATE VALVE (SEE DRAWING 54).
  3. ACCESS POND FROM SOUTHEAST CORNER. REMOVE ACCUMULATED SEDIMENT TO RE–ESTABLISH DESIGN ELEVATION SHOWN ON DRAWINGS 48 AND 48A. TRAFFIC IN THE POND SHOULD BE MINIMIZED AND THE TYPE OF EQUIPMENT SELECTED TO AVOID DISTURBANCE TO AREAS OUTSIDE THE LIMITS OF REQUIRED SEDIMENT REMOVAL. TRUCKS USED FOR TRANSPORT OF SEDIMENT SHOULD BE LOADED IN THE SOUTHEAST CORNERS WITHOUT DRIVING ON BOTTOM OF BASIN OR INTERIOR SIDE SLOPES.
  4. REMOVE 12" DIAMETER CMP PIPES, SEDIMENT AND SOIL TO SWM ORIFICE. INSTALL TRASH RACK OVER SWM ORIFICE (DRAWING 53).
  5. REMOVED SEDIMENT SHALL BE PLACED IN THE OPEN LANDFILL CELL. IF SEDIMENT IS SATURATED (I.E. DOES NOT PASS THE PAINT FILTER TEST); STOCKPILE SEDIMENT IN A DRY AREA WITHIN THE POND AND ALLOW FREE WATER TO DRAIN BEFORE TRANSPORTING TO LANDFILL CELL. SEDIMENT STOCKPILE AREA SHOULD BE LOCATED AT OR ABOVE ELEVATION 74, AND DOWN SLOPE AREAS PROTECTED WITH REINFORCED SILT FENCE (DRAWING 60).
  6. SEDIMENT REMOVAL ACTIVITIES SHOULD BE COORDINATED TO BE PERFORMED WITH PERIODS FORECAST WITH DRY WEATHER AND CONDITIONS CONDUCIVE TO ESTABLISHING VEGETATION AND SHALL BE EXECUTED IN A MANNER TO MINIMIZE THE DURATION BETWEEN POND DEWATERING AND COMPLETION OF SEDIMENT REMOVAL. DISTURBED AREAS ABOVE THE WET POND SURFACE LEVEL SHOULD BE REVEGETATED IN ACCORDANCE WITH THE PROCEDURES IDENTIFIED ON DRAWINGS 61–62, AND SPECIFICATION SECTION 02936).
  7. UPON COMPLETION OF SEDIMENT REMOVAL, CLOSE GATE VALVE ON 8" PVC PIPE AND ALLOW WET POND LEVEL TO RETURN TO ELEVATION 74.0

- STORMWATER BASINS 1 WILL BE CONSTRUCTED DURING STAGE G1/PHASE 4 (47.8 MONTHS AFTER THE START OF SITE CONSTRUCTION ACTIVITIES. BASIN 1 IS A STORMWATER MANAGEMENT BASIN THAT WILL FUNCTION AS A SEDIMENT POND UNTIL THE END OF STAGE R1 (A PERIOD OF APPROXIMATELY 123.6 MONTHS). AT THE END OF STAGE F THE SEDIMENT POND WILL BE CONVERTED TO A STORM WATER MANAGEMENT POND. THE RUNOFF TO BASIN 1 WILL BE SEDIMENT LADEN RUNOFF FROM THE WEST DISPOSAL AREA PERIMETER ACCESS ROADS AND PERIMETER DRAINAGE CHANNELS, WATER PUMPED OUT FROM THE UNDISTURBED AREAS WITHIN THE WEST DISPOSAL AREA PERIMETER BERM AND DISTURBED CELLS UNDER CONSTRUCTION OR UNDERGOING CAP INSTALLATION IN STAGES K THROUGH R1. THE FOLLOWING STEPS WILL BE FOLLOWED DURING BASIN 1 CONVERSION:

  1. CONFIRM THAT CONTRIBUTING DRAINAGE AREA IS STABILIZED WITH FINAL COVER AS REQUIRED BY MDE APPROVED LANDFILL DESIGN. AREAS IDENTIFIED WITH INADEQUATE OR MISSING STABILIZATION (VEGETATION OR COARSE AGGREGATE) SHALL BE REPAIRED.
  2. ONCE THE CONTRIBUTING DRAINAGE AREA IS STABLE AND INCOMING STORMWATER RUNOFF IS VISUALLY CLEAN, DEWATER THE POND UTILIZING THE 8" DIAMETER PVC PIPE AND GATE VALVE (SEE DRAWING 54).
  3. ACCESS POND FROM NORTHWEST CORNER. REMOVE ACCUMULATED SEDIMENT TO RE–ESTABLISH DESIGN ELEVATION SHOWN ON DRAWINGS 47 AND 47A. TRAFFIC IN THE POND SHOULD BE MINIMIZED AND THE TYPE OF EQUIPMENT SELECTED TO AVOID DISTURBANCE TO AREAS OUTSIDE THE LIMITS OF REQUIRED SEDIMENT REMOVAL. TRUCKS USED FOR TRANSPORT OF SEDIMENT SHOULD BE LOADED IN THE NORTHWEST OR SOUTHWEST CORNERS WITHOUT DRIVING ON BOTTOM OF BASIN OR INTERIOR SIDE SLOPES.
  4. REMOVE 12" DIAMETER CMP PIPES, SEDIMENT AND SOIL TO SWM ORIFICE. INSTALL TRASH RACK OVER SWM ORIFICE (DRAWING 53).
  5. REMOVED SEDIMENT SHALL BE PLACED IN THE OPEN LANDFILL CELL. IF SEDIMENT IS SATURATED (I.E. DOES NOT PASS THE PAINT FILTER TEST); STOCKPILE SEDIMENT IN A DRY AREA WITHIN THE POND AND ALLOW FREE WATER TO DRAIN BEFORE TRANSPORTING TO LANDFILL CELL. SEDIMENT STOCKPILE AREA SHOULD BE LOCATED AT OR ABOVE ELEVATION 81, AND DOWN SLOPE AREAS PROTECTED WITH REINFORCED SILT FENCE (DRAWING 60).
  6. SEDIMENT REMOVAL ACTIVITIES SHOULD BE COORDINATED TO BE PERFORMED WITH PERIODS FORECAST WITH DRY WEATHER AND CONDITIONS CONDUCIVE TO ESTABLISHING VEGETATION AND SHALL BE EXECUTED IN A MANNER TO MINIMIZE THE DURATION BETWEEN POND DEWATERING AND COMPLETION OF SEDIMENT REMOVAL. DISTURBED AREAS ABOVE THE WET POND SURFACE LEVEL SHOULD BE REVEGETATED IN ACCORDANCE WITH THE PROCEDURES IDENTIFIED ON DRAWINGS 61–62, AND SPECIFICATION SECTION 02936).
  7. UPON COMPLETION OF SEDIMENT REMOVAL, CLOSE GATE VALVE ON 8" PVC PIPE AND ALLOW WET POND LEVEL TO RETURN TO ELEVATION 81.0.

Construction Phase/Stage	Phase/Stage Duration (mos.)(est.)	Phase/Stage End from Start	Active Construction	Active Waste Placement Cells	Area of Cell Construction + Area of Disturbance (AOD) (acres)	Open Stockpile/Borrow Area (acres)	Active Waste Placement Area (acres)	Closure Cap Construction (acres) (Max)	Total Area of Distrubance (acres) (Max)	Cut (cy)	Fill (cy)	Imported Stone/Asphalt (cy)	Leachate Collection Layer Sand (cy)	Final Cover/Cap Soil Used (cy)	Intermediate Cover (cy)	Stockpiled Volume (cy)
Stage A1 (Phase 1)	2.2	3	Enrance Road + Basin No.4	No Waste Disposal	14.5	0	0	0	14.5	36000	37000	8000	0			7000
Stage A2 (Phase 2)	3.3	6.3	East LF +Basin No. 3	No Waste Disposal	15	3	0	0	18	68000	43000	2000	0	-	0	34,000
Stage A3 (Phase 3)	6.5	12.8	East LF + Basin No.2 + Tanks 1	No Waste Disposal	14	3	0	0	17	109000	109000	2000	0	-	0	36,000
Stage B	9.1	21.9	Cell 11	No Waste Disposal	8.1	8	0	0	16.1	306000	0	0	26136	-	0	315,864
Stage C	4.0	25.9	Cell 16	Cell 11	5	8	7	0	13	133000	0	0	16133	-	10000	422,731
Stage D	3.6	29.5	Const. Cell 12 and Cap 11 Northend	Cells 11 and 16	7.2	8	15.5	4.3	19.5	91000	0	0	23232	27,749	20000	442,749
Stage E	3.1	32.6	Cell 13 Const. Cap remainder of 11 and part of 16	Cell 11 southend, 12 and 16	3.9	8	13.9	5.1	17	32000	0	0	12584	32,912	20000	409,253
Stage F	5.6	38.2	Cell 14 Const. Cap portions of 12 and 13	Cell 12, 13 and remainder of 16	4.8	6	10.1	9.2	20	67000	0	0	15488	59,371	20000	381,395
Stage G	2.6	40.8	Const. Cell 15	Portions of 16 and 13, and 14	4.7	5	14.4	0	9.7	88000	0	0	15165	-	10000	444,229
Stage G1 (Phase 4)	7.0	47.8	West LF + Basin No. 1	Portions of 16 and 13, and 14	17.1	2.5	14.4	0	19.6	132000	103000	1300	0	-	10000	464,529
Stage H	2.5	50.3	Cell 2	Portions of 16 and 13, and 14	8.5	5	14.4	0	13.5	61000	23000	0	27427	-	20000	455,103
Stage H1	7.3	57.6	Cap Remaider East LF	Cell 2	0	8	7.5	12	20	0	0		0	77,440	20000	357,663
Stage I	4.0	61.6	Const Cells 3 and 4	Cell 2	10.5	8	7.5	0	18.5	2000	132000	0	33880	-	20000	173,783
Stage I1 (Phase 5)	7.5	69.0	West LF + Tanks 2	Cells 2, 3 and 4	17.8	2	17.9	0	19.8	150000	101000	1800	0	-	20000	204,583
Stage J	5.5	74.5	Const Cell 1	Cells 2, 3 and 4	14.2	2	17.9	0	16.2	81000	104000	0	45819	-	20000	115,764
Stage J1 (Phase 6)	5.1	79.7	West Landfill	Cells 1, 2, 3 and 4	18.1	2	31.1	0	20.1	50000	123000	1500	0	-	20000	24,264
Stage K	11.0	90.7	Const Cells 5E and 5F, Cap 1, 3 and 4	Cell 1	5.4	5	13.2	17.9	28.3	5000	44000		17424	115,515	20000	(167,675)
Stage L	6.2	96.9	Const Cells 10 and 5D	Cells 1, 5E and 5F	13.2	5	18.1	0	18.2	149000	58000		42592	-	20000	(139,267)
Stage M	2.1	99.0	Const.Cells 5C and 9	Cells 1, 10, 5D, 5E and 5F	9.4	5	30.6	0	14.4	36000	35000		30331	-	20000	(188,597)
Stage M1	11.2	110.2	Cap Cells 1, 5E and 5F	Cells 9, 10, 5C and 5D	0	2.5	20.9	18.1	20.6	0	0		0	116,805	20000	(325,403)
Stage N	4.6	114.8	Const Cell 8	Cells 5C, 5D, 9 and 10	7	5	20.9	0	12	152000	2000		22587	-	20000	(217,989)
Stage N1	7.7	122.5	Cap Cells 10 and 5D	Cells 5C, 8 and 9	0	5	14.4	12.5	17.5				0	80,667	20000	(318,656)
Stage O	5.0	127.5	ConstCells 5A and 5B	Cells 5C, 8 and 9	9.5	5	14.4	0	14.5	168000	1000		30653	-	20000	(202,309)
Stage O1	5.2	132.7	Cap Cells 5C and 9	Cells 5A, 5B and 8	0	5	15	8.4	13.4	0	0		0	54,208	20000	(276,517)
Stage P	10.5	143.2	Const. Cell 6	Cells 5A, 5B and 8	5.7	5	15	0	10.7	353000	0		18392	-	20000	38,091
Stage Q	11.8	154.9	Cell 7	Cells 5A, 5B, 6 and 8	6.7	5	20.2	0	11.7	395000	0		21619	-	20000	391,472
Stage R	9.2	164.1	Cap Cells 5A, 5B and 8	Cells 6 and 7	0	5	11.9	15	20	0	0		0	96,800	20000	274,672
Stage R1	7.3	171.4	Cap Cells 6 and 7	Waste Disposal Complete	0	5	0	11.9	16.9	0	0		0	76,795		197,877
										2664000	915000	16600	399461	738261	430000	
										Excess Cut=		197877				

Notes: Construction Time Frame Based on the Greater of Soil Cut+ Fill 1,600 CY/day or Final Cover/Cap Soil/500 CY/day. Assume 21 work days/month
Cell Construction Time covers period to geomembrane liner installation.

REVISION:	DATE:
REVISED TO ADDRESS MDE COMMENTS ON PHASE 3	9/03/2021
REVISIONS TO 10/22/21 MDE COMMENTS AND ASCD 10/25/21 COMMENTS	11/09/2021
FINAL ISSUED TO MDE	1/14/2022

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER KHAN FAYYAZ MAHMOOD No. 19371 — SIGNATURE — 1/14/22

NATIONAL WASTE MANAGERS PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

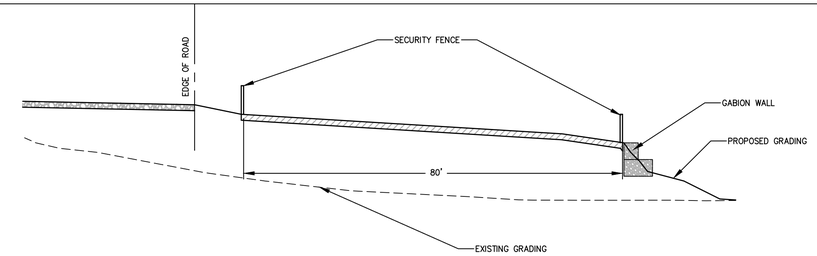
ADVANCED GeoServices
a Montrose Environmental Group company
1878 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.324.2270 F: 856.324.8226 www.advancedgeoservices.com

SEQUENCE OF CONSTRUCTION NARRATIVE

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

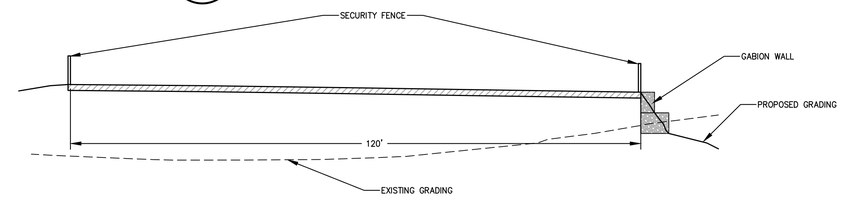
DRAWING 58

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 B058 - SEQUENCE OF CONSTRUCTION NARRATIVE.dwg, 1/13/2022 10:11:04 AM



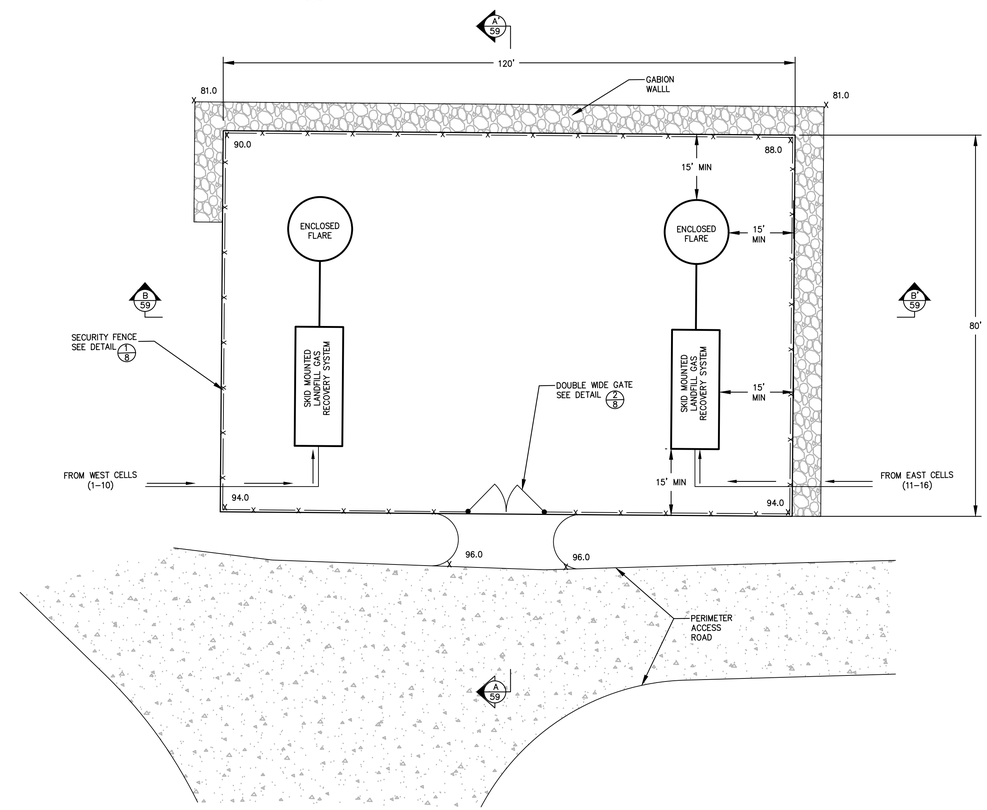
A/59 SECTION A-A'

NOT TO SCALE



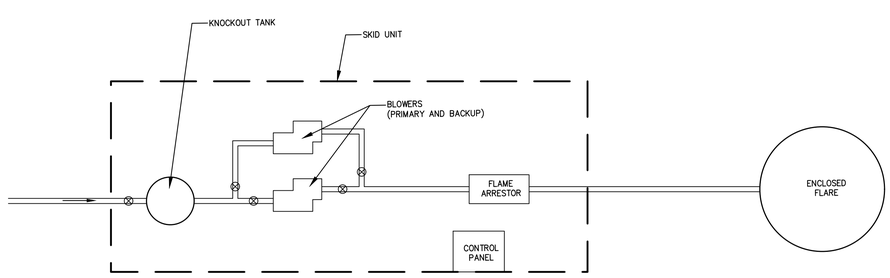
B/59 SECTION B-B'

NOT TO SCALE



1/59 PLAN VIEW FLARE PADDOCK

NOT TO SCALE



2/59 SCHEMATIC: SKID MOUNTED RECOVERY SYSTEM

NOT TO SCALE

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER PAUL G. STEYMAN No. 19851 1/14/22

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
1978 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.9235 www.advancedgeoservices.com

FLARE PADDOCK

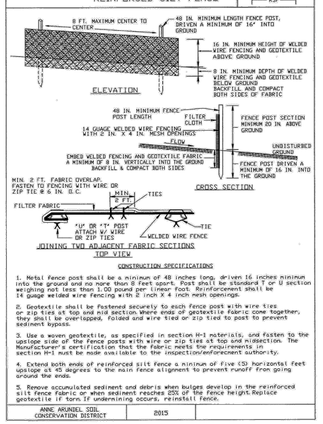
PROJECT MANAGER:	PGS	SCALE:	AS NOTED
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE:	09/03/2021

DRAWING 59

N:\Projects\2018\2018\3854 - Chesapeake Terrace LP\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 B059 - FLARE PADDOCK.DWG, 1/13/2022 10:11:23 AM

REINFORCED SILT FENCE

STANDARD SYMBOL — RSF —



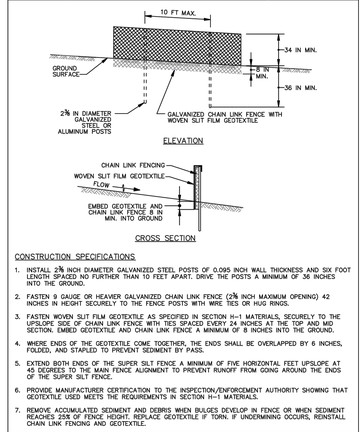
CONSTRUCTION SPECIFICATIONS

1. Metal fence post shall be a minimum of 48 inches long, driven 16 inches minimum into the ground and no more than 8 feet apart. Posts shall be standard T or U section weighing not less than 1.00 pound per linear foot. Reinforcement shall be 14 gauge welded wire fencing with 2 inch X 4 inch mesh openings.
2. Geotextile shall be fastened securely to each fence post with wire ties or zip ties at top and mid section. Where ends of geotextile fabric come together, they shall be overlapped, folded and wire tied or zip tied to post to prevent sediment bypass.
3. Use a woven geotextile, as specified in section H-1 materials, and fasten to the upslope side of the fence posts with wire or zip ties at top and midsection. The Manufacturer's certification that the fabric meets the requirements in section H-1 must be made available to the inspection/enforcement authority.
4. Extend both ends of reinforced silt fence a minimum of five (5) horizontal feet upslope at 45 degrees to the main fence alignment to prevent runoff from going around the ends.
5. Remove accumulated sediment and debris when bulges develop in the reinforced silt fence fabric, or when sediment reaches 25% of the fence height. Replace geotextile if torn. If undermining occurs, reinstall fence.

ANNE ARUNDEL SOIL CONSERVATION DISTRICT	2015

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL — SSF —



CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURERS CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

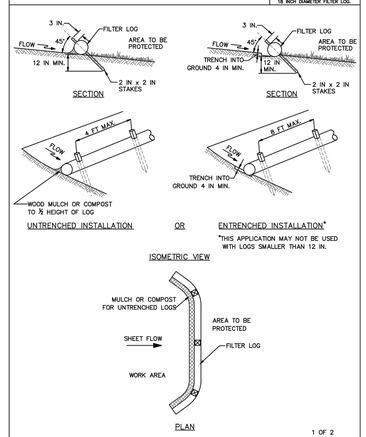
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

E.7

DETAIL E-6 FILTER LOG

STANDARD SYMBOL — FL-18 —

DESIGNATION FL-18 REFERS TO 18 INCH DIAMETER FILTER LOG



1 OF 2

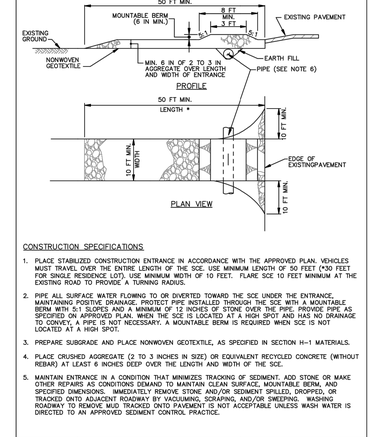
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

E.15

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL — SCE



CONSTRUCTION SPECIFICATIONS

1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

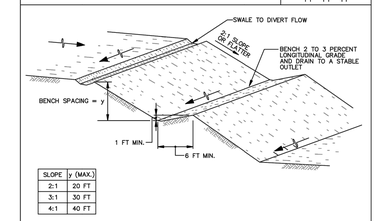
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

B.2

DETAIL B-3-1 BENCHING

STANDARD SYMBOL — BENCHING



SLOPE	y (MAX.)
2:1	20 FT
3:1	30 FT
4:1	40 FT

CONSTRUCTION SPECIFICATIONS

1. USE FILL MATERIAL FREE OF BRUSH, RUBBISH, ROCKS, LOGS, STUMPS, BUILDING DEBRIS, AND OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
2. DO NOT INCORPORATE FROZEN, SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS INTO FILL SLOPES OR STRUCTURAL FILLS. DO NOT PLACE FILL ON A FROZEN FOUNDATION.
3. PLACE ALL FILL IN LOOSE LIFTS NOT TO EXCEED 8 INCHES AND THEN COMPACT.
4. COMPACT ALL FILLS AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, OR OTHER RELATED PROBLEMS. COMPACT FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES, CONDUITS, ETC., IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
5. HANDLE SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION IN ACCORDANCE WITH SECTION H-2 SUBSURFACE DRAINS OR OTHER APPROVED METHODS.
6. MAINTAIN LINE, GRADE, AND CROSS SECTION OF BENCHING. STABILIZE IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION CRITERIA OR AS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN. INSTALLATION OF EROSION CONTROL MATTING MAY BE NECESSARY IN BENCH/SWALE INVERTS. CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
7. KEEP ALL BENCHES FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.

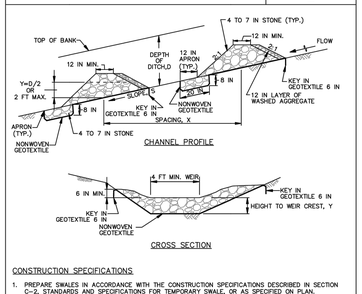
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

B.7

DETAIL D-2 STONE CHECK DAM

STANDARD SYMBOL — CD



CONSTRUCTION SPECIFICATIONS

1. PREPARE SWALES IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATIONS DESCRIBED IN SECTION C-2, STANDARDS AND SPECIFICATIONS FOR TEMPORARY SWALE, OR AS SPECIFIED ON PLAN.
2. PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND SIDES OF THE DAM PRIOR TO PLACEMENT OF STONE. CONSTRUCT THE CHECK DAM WITH WASHED 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) WITH SIDE SLOPES OF 2:1 OR FLATTER AND A MINIMUM TOP WIDTH OF 12 INCHES. PLACE THE STONE SO THAT IT COMPLETELY COVERS THE WIDTH OF THE CHANNEL AND CHANNEL BANKS. FORM THE WEIR SO THAT TOP OF THE OUTLET CREST IS APPROXIMATELY 6 INCHES LOWER THAN THE OUTER EDGES. LINE THE UPSTREAM FACE OF THE DAM WITH A 1 FOOT THICK LAYER OF WASHED AGGREGATE (⅜ TO 1½ INCH).
3. SET THE HEIGHT FOR THE WEIR CREST EQUAL TO ONE-HALF THE DEPTH OF THE CHANNEL OR DITCH. TO AVOID SCOUR THE MAXIMUM HEIGHT OF THE WEIR CREST MUST NOT EXCEED 2.0 FEET.
4. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE-HALF OF THE HEIGHT OF THE WEIR CREST. MAINTAIN LINE, GRADE, AND CROSS SECTION.

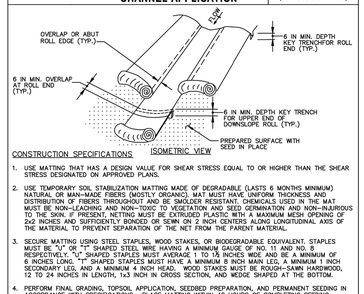
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

D.8

DETAIL B-4-6-A TEMPORARY SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL — TSSMC – * lb/ft² (* INCLUDE SHEAR STRESS)



CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTERLINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MAT SMOOTHLY AND FIRMLY ON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. KEY-IN UPSTREAM END OF EACH MAT ROLL BY DIGGING A 6 INCH (MINIMUM) TRENCH AT THE UPSTREAM END OF THE MATTING. PLACING THE ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END.
7. OVERLAP OR ABUT THE ROLLING EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

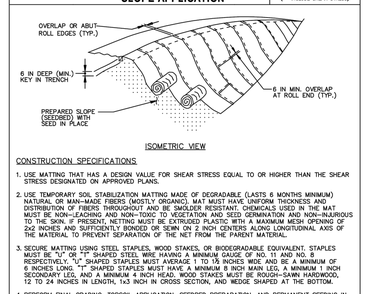
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

B.38

DETAIL B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL — TSSMC – * lb/ft² (* INCLUDE SHEAR STRESS)



CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
7. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
8. KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
9. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

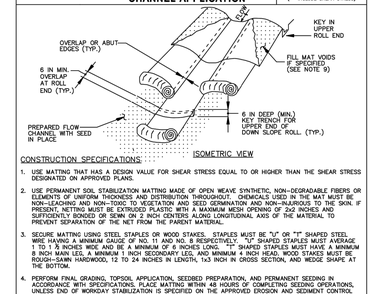
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

B.39

DETAIL B-4-6-C PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL — PSSMC – * lb/ft² (* INCLUDE SHEAR STRESS)



CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. UNROLL MATTING DOWN SLOPE. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

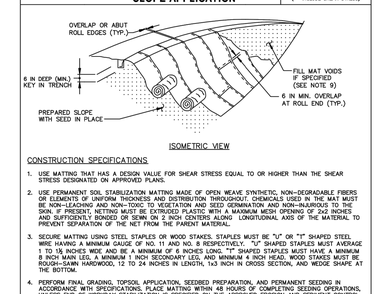
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

B.40

DETAIL B-4-6-D PERMANENT SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL — PSSMC – * lb/ft² (* INCLUDE SHEAR STRESS)

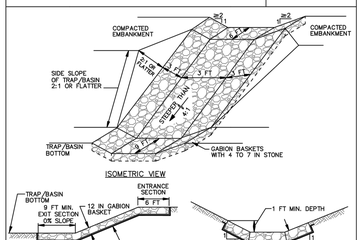


CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDI

DETAIL D-3-2 GABION INFLOW PROTECTION

STANDARD SYMBOL GI GP GO



CONSTRUCTION SPECIFICATIONS

1. PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL GABION BASKETS.
2. USE BASKETS MADE OF MINIMUM 11 GAUGE WIRE.
3. CONSTRUCT GABION INFLOW PROTECTION BY ARRANGING 9 X 3 X 1 FOOT GABION BASKETS TO FORM A TRAPEZOIDAL SECTION WITH A 3 FOOT BOTTOM WIDTH, 1 FOOT MINIMUM DEPTH, 3 FOOT SIDE WALLS, AND 2:1 OR FLATTER SIDE SLOPES. FILL GABION BASKETS WITH 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE WITHOUT REBAR OR WIRE MESH.
4. INSTALL ENTRANCE AND EXIT SECTIONS AS SHOWN ON THE PROFILE.
5. INSTALL GABIONS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
6. BLEND GABIONS INTO EXISTING GROUND.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. KEEP POINTS OF INFLOW AND OUTFLOW FREE OF EROSION

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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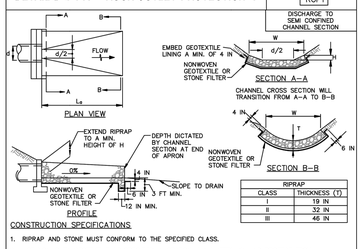
D.12

DETAIL D-4-1-A ROCK OUTLET PROTECTION I

STANDARD SYMBOL ROPI

DISCHARGE TO SEMI CONFINED CHANNEL SECTION



RIPRAP	
CLASS	THICKNESS (T)
I	19 IN
II	32 IN
III	46 IN

CONSTRUCTION SPECIFICATIONS

1. RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
3. PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (⅜ TO 1½ INCH STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF THE RIPRAP.
5. CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE STONE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
7. CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
8. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

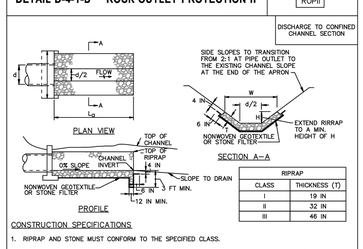
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

D.20

DETAIL D-4-1-B ROCK OUTLET PROTECTION II

STANDARD SYMBOL ROPII

DISCHARGE TO CONFINED CHANNEL SECTION



RIPRAP	
CLASS	THICKNESS (T)
I	19 IN
II	32 IN
III	46 IN

CONSTRUCTION SPECIFICATIONS

1. RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
3. PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (⅜ TO 1½ INCH STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF THE RIPRAP.
5. CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE STONE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
7. CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
8. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

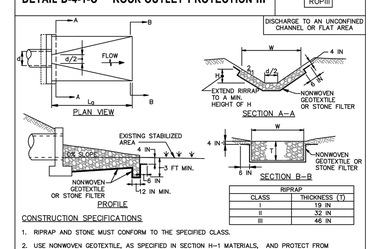
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

D.21

DETAIL D-4-1-C ROCK OUTLET PROTECTION III

STANDARD SYMBOL ROPIII

DISCHARGE TO AN UNCONFINED CHANNEL OR FLAT AREA



RIPRAP	
CLASS	THICKNESS (T)
I	19 IN
II	32 IN
III	46 IN

CONSTRUCTION SPECIFICATIONS

1. RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
2. USE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
3. PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (⅜ TO 1½ INCH MINIMUM STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF RIPRAP.
5. CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE STONE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
7. CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
8. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

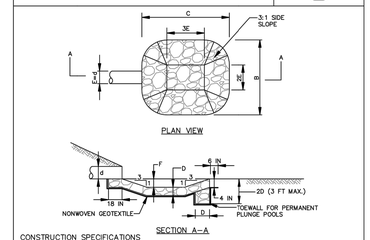
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

D.22

DETAIL D-4-2 PLUNGE POOL

STANDARD SYMBOL PP



CONSTRUCTION SPECIFICATIONS

1. USE SPECIFIED CLASS OF RIPRAP.
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCHING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE.
3. PREPARE THE SUBGRADE FOR THE PLUNGE POOL TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EMBED THE GEOTEXTILE A MINIMUM OF 4 INCHES AND EXTEND THE GEOTEXTILE A MINIMUM OF 6 INCHES BEYOND THE EDGE OF THE SCOUR HOLE.
5. STONE FOR THE PLUNGE POOL MAY BE PLACED BY EQUIPMENT. CONSTRUCT TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. DELIVER AND PLACE THE STONE FOR THE PLUNGE POOL IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE STONE FOR THE PLUNGE POOL IN A MANNER TO PREVENT DAMAGE TO THE GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. AT THE PLUNGE POOL OUTLET, PLACE THE STONE SO THAT IT MEETS THE EXISTING GRADE.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

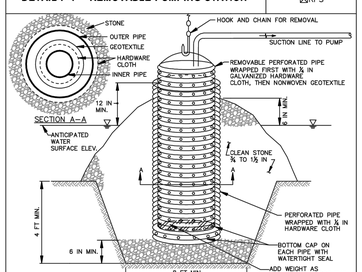
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

D.25

DETAIL F-1 REMOVABLE PUMPING STATION

STANDARD SYMBOL ⊠RPS



CONSTRUCTION SPECIFICATIONS

1. USE CORRUGATED METAL OR PLASTIC PIPE WITH 1 INCH DIAMETER PERFORATIONS 6 INCHES ON CENTER.
2. USE A MINIMUM 12 INCH DIAMETER INNER PIPE WITH AN OUTER PIPE A MINIMUM 6 INCHES LARGER IN DIAMETER. BOTTOM OF EACH PIPE MUST BE CAPPED WITH WATERTIGHT SEAL.
3. WRAP EACH PIPE WITH ¼ INCH GALVANIZED HARDWARE CLOTH. ON INNER PIPE WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE HARDWARE CLOTH.
4. EXCAVATE 8 FEET X 8 FEET X 4 FEET DEEP PIT FOR PIPE PLACEMENT. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
5. SET TOP OF INNER AND OUTER PIPES MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION (OR RISER CREST ELEVATION WHEN DEWATERING A BASIN).
6. BACKFILL PIT AROUND THE OUTER PIPE WITH ¾ TO 1½ INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
7. DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
8. A REMOVABLE PUMPING STATION REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, PULL OUT INNER PIPE AND REPLACE GEOTEXTILE. KEEP POINT OF DISCHARGE FREE OF EROSION.

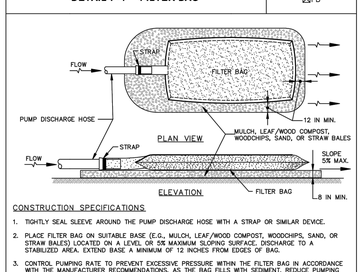
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

F.3

DETAIL F-4 FILTER BAG

STANDARD SYMBOL ⊠FB



CONSTRUCTION SPECIFICATIONS

1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
2. PLACE FILTER BAG ON SUITABLE BASE (E.G., MULCH, LEAF/WOOD COMPOST, WOODCHIPS, SAND, OR STRAW BALES) LOCATED ON A LEVEL OR SE MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
4. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
5. USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) FOR THE FOLLOWING:

GRAB TENSILE	250 LB	ASTM D–4632
PUNCTURE	150 LB	ASTM D–4833
FLOW RATE	70 GAL/MIN/FT^2	ASTM D–4491
PERMITTIVITY (SEC^{-1})	1.2 SEC^{-1}	ASTM D–4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D–4355
APPARENT OPENING SIZE (AOS)	0.15–0.18 MM	ASTM D–4751
SEAM STRENGTH	90%	ASTM D–4632

6. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

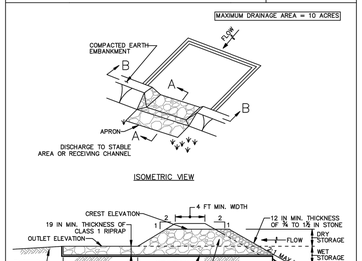
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

F.9

DETAIL G-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II

STANDARD SYMBOL ST–II

MAXIMUM DRAINAGE AREA = 10 ACRES



1 OF 3

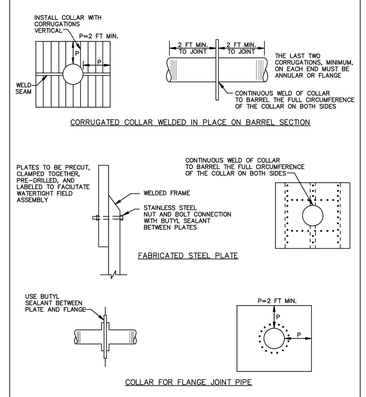
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

G.11

DETAIL G-2-1 TYPICAL ANTI-SEEP COLLARS

STANDARD SYMBOL



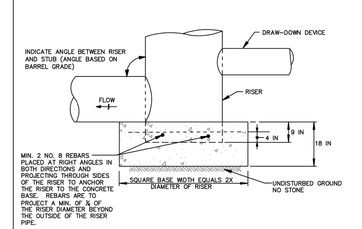
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

G.42

DETAIL G-2-2 CORRUGATED RISER BASE

STANDARD SYMBOL



CONSTRUCTION SPECIFICATIONS

1. BOTTOM OF CONCRETE BASE TO BE PLACED ON UNDISTURBED, NATURAL GROUND.
2. NO STONE IS ALLOWED UNDER BASE. IF NECESSARY, TO ACHIEVE STABILITY INCREASE DEPTH OF CONCRETE BASE.

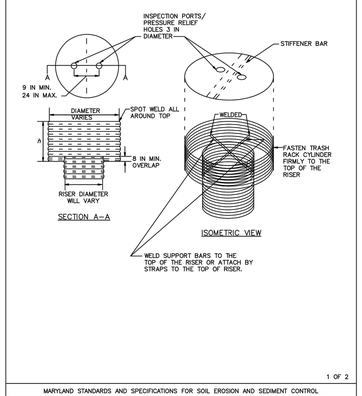
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

G.43

DETAIL G-2-3 CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE

STANDARD SYMBOL TR



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

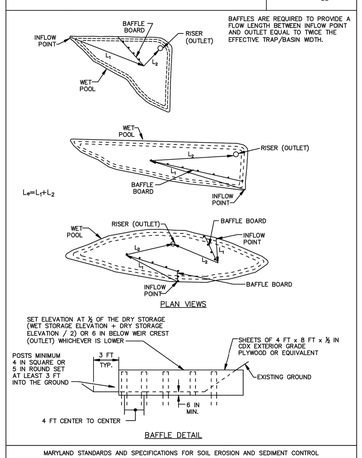
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

G.44

DETAIL G-2-4 BAFFLE BOARDS

STANDARD SYMBOL BB

BAFFLES ARE REQUIRED TO PROVIDE A FLOW LENGTH BETWEEN INFLOW POINT AND OUTLET EQUAL TO TWICE THE EFFECTIVE TRAP/BASIN WIDTH.



MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

G.46

NOTES

DETAILS PROVIDED BY MDE MANUAL (2011).

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
9/30/2021	ADDED DETAILS D-4-1-A, D-4-1-C; F-4, AND G-2-4
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND ASCSD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
1970 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
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SEDIMENT CONTROL DETAILS (SHEET 2 OF 2)

PROJECT MANAGER:	PGS	SCALE: AS NOTED	
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE:	09/03/2021

DRAWING 61

N:\Projects\2018\201838354 - Chesapeake Terrace Lf\CAD\DWG\Rc B_Phase III Application\Drawings\Final\201838354 B061 - SEDIMENT CONTROL DETAILS (SHEET 2 OF 2).dwg, 1/13/2022 10:12:22 AM

POND MD-378 STORMWATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

DETAILS AND SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT

VEGETATIVE ESTABLISHMENT

Following initial soil disturbances or redisturbance, permanent or temporary stabilization shall be completed within three calendar days for the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes greater than 3 horizontal to 1 vertical (3:1) and seven days for all other disturbed or graded areas on the project site.

1. Permanent Seeding:

A. Soil Tests: Lime and fertilizer will be applied per soil tests results for sites greater than 5 acres. Soil tests will be done at completion of initial rough grading or as recommended by the sediment control inspector. Rates and analyses will be provided to the grading inspector as well as the contractor.

Occurrence of acid sulfate soils (grayish black color) will require covering with a minimum of 12 inches of clean soil with 6 inches minimum capping of top soil. No stockpiling of material is allowed. If needed, soil tests should be done before and after a 6-week incubation period to allow oxidation of sulfates.

The minimum soil conditions required for permanent vegetative establishment are:

a. Soil pH shall be between 6.0 and 7.0.
b. Soluble salts shall be less than 500 parts per million (ppm).
c. The soil shall contain less than 40% clay but enough fine grained material (> 30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or serecia lespedeza is to be planted, then a sandy soil (< 30% silt plus clay) would be acceptable.
d. Soil shall contain 1.5% minimum organic matter by weight.
e. Soil must contain sufficient pore space to permit adequate root penetration.
f. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with the Standard and Specification for Soil Preparation, Topsoiling and Soil Amendments from the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control or amendments made as recommended by a certified agronomist.

B. Seedbed Preparation: Area to be seeded shall be loose and friable to a depth of at least 3-5 inches. The top layer shall be loosened by raking, disking or other acceptable means before seeding occurs. For sites less than 5 acres, apply 100 pounds dolomitic limestone and 21 pounds of 10-10-10 fertilizer per 1,000 square feet. Harrow or disk lime and fertilizer into the soil to a depth of at least 3-5 inches on slopes flatter than 3:1.

C. Seeding: Apply 5-6 pounds per 1,000 square feet of tall fescue between February 1 and April 30 or between August 15 and October 31. Apply seed uniformly on a moist firm seedbed with a cyclone seeder, cultipacker seeder or hydroseeder (slurry includes seeds and fertilizer, recommended on steep slopes only). Maximum seed depth should be ¼ inch in clayey soils and ½ inch in sandy soils when using other than the hydroseeder method. Irrigate where necessary to support adequate growth until vegetation is firmly established. If other seed mixes are to be used, select from Table B3 and B5 of the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control.

D. Mulching: Mulch shall be applied to all seeded areas immediately after seeding. During the time periods when seeding is not permitted, mulch shall be applied immediately after grading. Mulch shall be unrotted, unchopped, small grain straw applied at a rate of 2 tons per acre or 90 pounds per 1,000 square feet (2 bales). If a mulch-anchoring tool is used, apply 2.5 tons per acre. Mulch materials shall be relatively free of all kinds of weeds and shall be completely free of prohibited noxious weeds. Spread mulch uniformly, mechanically or by hand, to a depth of 1-2 inches.

E. Securing Straw Mulch: Straw mulch shall be secured immediately following mulch application to minimize movement by wind or water. The following methods are permitted:

i. Use a mulch-anchoring tool which is designed to punch and anchor mulch into the soil surface to a minimum depth of 2 inches. This is the most effective method for securing mulch, however, it is limited to relatively flat areas where equipment can operate safely.

ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. If mixed with water, use 50 pounds of wood cellulose fiber per 100 gallons of water.

iii. Liquid binders may be used. Apply at higher rates at the edges where wind catches mulch, such as in valleys and on crests of slopes. The remainder of the area should appear uniform after binder application. Binders listed in the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control or approved equal shall be applied at rates recommended by the manufacturers.

iv. Lightweight plastic netting may be used to secure mulch. The netting will be stapled to the ground according to manufacturer's recommendations.

2. Temporary Seeding:

Lime:	100 pounds of dolomitic limestone per 1,000 square feet.
Fertilizer:	15 pounds of 10-10-10 per 1,000 square feet.
Seed:	Perennial rye – 0.92 pounds per 1,000 square feet (February 1 through April 30 or August 15 through October 31). Millet – 0.92 pounds per 1,000 square feet (May 1 through August 15).
Mulch:	Same as 1 D and E above.

3. No fills may be placed on frozen ground. All fill is to be placed in approximately horizontal layers, each layer having a loose thickness of not more than 8 inches. All compaction requirements are in accordance to Anne Arundel County Standard Specifications for Construction as well as the AA County Design Manual and Standard Details. Fills for pond embankments shall be compacted as per MD-378 Construction Specifications. All other fills shall be compacted sufficiently so as to be stable and prevent erosion and slippage.

4. Permanent Sod:

Installation of sod should follow permanent seeding dates. Seedbed preparation for sod shall be as noted in section (B) above. Permanent sod is to be tall fescue, state approved sod; lime and fertilizer per permanent seeding specifications and lightly irrigate soil prior to laying sod. Sod is to be laid on the contour with all ends tightly abutting. Joints are to be staggered between rows. Water and roll or tamp sod to insure positive root contact with the soil. All slopes steeper than 3:1, as shown, are to be permanently sodded or protected with an approved erosion control netting. Additional watering for establishment may be required. Sod is not to be installed on frozen ground. Sod shall not be transplanted when moisture content (dry or wet) and/or extreme temperature may adversely affect its survival. In the absence of adequate rainfall, irrigation should be performed to ensure establishment of sod.

5. Mining Operations:

Sediment control plans for mining operations must include the following seeding dates and mixtures:

For seeding dates of February 1 through April 30 and August 15 through October 31, use seed mixture of tall fescue at the rate of 2 pounds per 1,000 square feet and sericea lespedeza at the minimum rate of 0.5 pounds per 1,000 square feet.

6. Topsoil shall be applied as per the Standard and Specifications for Soil Preparation, Topsoiling, and Soil Amendments from the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control.

SEDIMENT CONTROL GENERAL NOTES

1. ALL DISTURBED AREAS WHERE CONCENTRATED FLOW WILL OCCUR (SWALES, DITCHES, OUTFALLS) SHALL BE STABILIZED WITHIN 24 HOURS OF COMPLETION OF GRADING. ALL OTHER AREAS SHALL BE STABILIZED WITHIN 7 DAYS OF COMPLETION OF GRADING.
2. ALL SEDIMENT CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED BY THE CONTRACTOR ON A DAILY BASIS.
3. SEDIMENT REMOVED FROM SEDIMENT TRAPPING DEVICES SHALL BE PLACED IN AN AREA PROTECTED BY SEDIMENT CONTROL MEASURES, AND NOT SUBJECT TO CONCENTRATED FLOWS OF STORMWATER.

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL DISTURBANCE OR RE-DISTURBANCE PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
A.) THREE (3) CALENDAR DAYS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES ,AND ALL SLOPES STEEPER THAN 3:1; AND
B.) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

CONSTRUCTION SPECIFICATIONS

THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN THE SCOPE OF THE STANDARD FOR PRACTICE MD-378. ALL REFERENCES TO ASTM AND AASHTO SPECIFICATIONS APPLY TO THE MOST RECENT VERSION.

SITE PREPARATION

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1. ALL TREES SHALL BE CLEARED AND GRUBBED WITHIN 15 FEET OF THE TOE OF THE EMBANKMENT.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH, AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 25-FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN SPECIFIED, A SUFFICIENT QUANTITY OF TOPSOIL SHALL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

EARTH FILL

MATERIAL – THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6", FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT, AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGNED BY A GEOTECHNICAL ENGINEER. SUCH SPECIAL DESIGNS MUST HAVE CONSTRUCTION SUPERVISED BY A GEOTECHNICAL ENGINEER.

MATERIALS USED IN THE OUTER SHELL OF THE EMBANKMENT MUST HAVE THE CAPABILITY TO SUPPORT VEGETATION OF THE QUALITY REQUIRED TO PREVENT EROSION OF THE EMBANKMENT.

PLACEMENT – AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIAL SHALL BE PLACED IN MAXIMUM 8 INCH THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST PERMEABLE BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT. THE PRINCIPAL SPILLWAY MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.

COMPACTION – THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF HEAVY EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, WIDETRACKED BULLDOZER OR VIBRATORY SMOOTH-DRUM ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL IT WILL NOT CRUMBLE, YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.

WHEN REQUIRED BY THE REVIEWING AGENCY, THE MINIMUM REQUIRED DENSITY SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN ±2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99 (ASTM D698 STANDARD PROCTOR).

CUT OFF TRENCH – THE CUTOFF TRENCH SHALL BE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE GOVERNED BY THE EQUIPMENT USED FOR EXCAVATION, WITH THE MINIMUM WIDTH BEING FOUR FEET. THE DEPTH SHALL BE AT LEAST FOUR FEET BELOW EXISTING GRADE OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1H TO 1V OR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY REQUIREMENTS ARE MET.

EMBANKMENT CORE – THE CORE SHALL BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE TOP WIDTH OF THE CORE SHALL BE A MINIMUM OF FOUR FEET. THE HEIGHT SHALL EXTEND UP TO AT LEAST THE 10 YEAR WATER ELEVATION OR AS SHOWN ON THE PLANS. THE SIDE SLOPES SHALL BE 1H TO 1V OR FLATTER. THE CORE SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY. IN ADDITION, THE CORE SHALL BE PLACED CONCURRENTLY WITH THE OUTER SHELL OF THE EMBANKMENT.

STRUCTURE BACKFILL

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A CONCRETE STRUCTURE OR PIPE, UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE.

STRUCTURAL BACKFILL MAY BE FLOWABLE FILL MEETING THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 313 AS MODIFIED. THE MIXTURE SHALL HAVE A 100-200 PSI; 28 DAY UNCONFINED COMPRESSIVE STRENGTH. THE FLOWABLE FILL SHALL HAVE A MINIMUM PH OF 4.0 AND A MINIMUM RESISTIVITY OF 2,000 OHM-CM. MATERIAL SHALL BE PLACED SUCH THAT A MINIMUM OF 6" (MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) OF FLOWABLE FILL SHALL BE UNDER (BEDDING), OVER AND, ON THE SIDES OF THE PIPE. IT ONLY NEEDS TO EXTEND UP TO THE SPRING LINE FOR RIGID CONDUITS. AVERAGE SLUMP OF THE FILL SHALL BE 7" TO ASSURE FLOWABILITY OF THE MATERIAL. ADEQUATE MEASURES SHALL BE TAKEN (SAND BAGS, ETC.) TO PREVENT FLOATING THE PIPE. WHEN USING FLOWABLE FILL, ALL METAL PIPE SHALL BE BITUMINOUS COATED. ANY ADJOINING SOIL FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL SHALL COMPLETELY FILL ALL VOIDS ADJACENT TO THE FLOWABLE FILL ZONE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A STRUCTURE OR PIPE UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE. BACKFILL MATERIAL OUTSIDE THE STRUCTURAL BACKFILL (FLOWABLE FILL) ZONE SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE CORE OF THE EMBANKMENT OR OTHER EMBANKMENT MATERIALS.

PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

CORRUGATED METAL PIPE – ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR CORRUGATED METAL PIPE:

MATERIALS – (POLYMER COATED STEEL PIPE) –STEEL PIPES WITH POLYMERIC COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATIONS M-245 & M-246 WITH WATERTIGHT COUPLING BANDS OR FLANGES.

1. MATERIALS – (ALUMINUM COATED STEEL PIPE) – THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-274 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM COATED STEEL PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT THE NEED FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A. ANY ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT.

MATERIALS – (ALUMINUM PIPE) – THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-196 OR M-211 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT. HOT DIP GALVANIZED BOLTS MAY BE USED FOR CONNECTIONS. THE PH OF THE SURROUNDING SOILS SHALL BE BETWEEN 4 AND 9.

COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC., MUST BE COMPOSED OF THE SAME MATERIAL AND COATINGS AS THE PIPE. METALS MUST BE INSULATED FROM DISSIMILAR MATERIALS WITH USE OF RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 24 MILS IN THICKNESS.

2. CONNECTIONS – ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATERTIGHT. THE DRAIN PIPE OR BARREL CONNECTION TO THE RISER SHALL BE WELDED ALL AROUND WHEN THE PIPE AND RISER ARE METAL. ANTI-SEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO BE COMPLETELY WATERTIGHT. DIMPLE BANDS ARE NOT CONSIDERED TO BE WATERTIGHT.

3. ALL CONNECTIONS SHALL USE A RUBBER OR NEOPRENE GASKET WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE RE-ROLLED AN ADEQUATE NUMBER OF CORRUGATIONS TO ACCOMMODATE THE BANDWIDTH. THE FOLLOWING TYPE CONNECTIONS ARE ACCEPTABLE FOR PIPES LESS THAN 24 INCHES IN DIAMETER: FLANGES ON BOTH ENDS OF THE PIPE WITH A CIRCULAR 3/8 INCH CLOSED CELL NEOPRENE GASKET, PRE-PUNCHED TO THE FLANGE BOLT CIRCLE, SANDWICHED BETWEEN ADJACENT FLANGES; A 12-INCH WIDE STANDARD LAP TYPE BAND WITH 12-INCH WIDE BY 3/8-INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET; AND A 12-INCH WIDE HUGGER TYPE BAND WITH O-RING GASKETS HAVING A MINIMUM DIAMETER OF 1/2 INCH GREATER THAN THE CORRUGATION DEPTH. PIPES 24 INCHES IN DIAMETER AND LARGER SHALL BE CONNECTED BY A NEOPRENE GASKET; AND A 12-INCH WIDE HUGGER TYPE BAND WITH O-RING GASKETS HAVING A MINIMUM DIAMETER OF 1/2 INCH GREATER THAN THE CORRUGATION DEPTH. PIPES 24 INCHES IN DIAMETER AND LARGER SHALL BE CONNECTED BY A 24 INCH LONG ANNULAR CORRUGATED BAND USING A MINIMUM OF 4 (FOUR) RODS AND LUGS, 2 ON EACH CONNECTING PIPE END. A 24-INCH WIDE BY 3/8-INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET WILL BE INSTALLED WITH 12 INCHES ON THE END OF EACH PIPE. FLANGED JOINTS WITH 3/8 INCH CLOSED CELL GASKETS THE FULL WIDTH OF THE FLANGE ARE ALSO ACCEPTABLE. HELICALLY CORRUGATED PIPE SHALL HAVE EITHER CONTINUOUSLY WELDED SEAMS OR HAVE LOCK SEAMS WITH INTERNAL CAULKING OR A NEOPRENE BEAD.

4. BEDDING – THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

5. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

6. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

REINFORCED CONCRETE PIPE – ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE:

1. MATERIALS – REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM C-361.

2. BEDDING – REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING / CRADLE FOR THEIR ENTIRE LENGTH. THIS BEDDING / CRADLE SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 50% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 6 INCHES. WHERE A CONCRETE CRADLE IS NOT NEEDED FOR STRUCTURAL REASONS, FLOWABLE FILL MAY BE USED AS DESCIBED IN THE "STRUCTURE BACKFILL" SECTION OF THIS STANDARD. GRAVEL BEDDING IS NOT PERMITTED.

3. LAYING PIPE – BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 4 FEET FROM THE RISER.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

PLASTIC PIPE – THE FOLLOWING CRITERIA SHALL APPLY FOR PLASTIC PIPE:

1. MATERIALS – PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D-1785 OR ASTM D-2241. CORRUGATED HIGH DENSITY POLYETHYLENE (HDPE) PIPE, COUPLINGS AND FITTINGS SHALL CONFORM TO THE FOLLOWING: 4" – 10" INCH PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M252 TYPE S, AND 12" THROUGH 24" INCH SHALL MEET THE REQUIREMENTS OF AASHTO M294 TYPE S.

2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATERTIGHT.

3. BEDDING –THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

DRAINAGE DIAPHRAGMS – WHEN A DRAINAGE DIAPHRAGM IS USED, A REGISTERED PROFESSIONAL ENGINEER WILL SUPERVISE THE DESIGN AND CONSTRUCTION INSPECTION.

CONCRETE

CONCRETE SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 902.10.03, MIX NO. 3.

ROCK RIPRAP

ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 311.

GEOTEXTILE SHALL BE PLACED UNDER ALL RIPRAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 921.09, CLASS C.

AS-BUILT PLAN

INTERIM AS-BUILT PLAN MUST BE SUBMITTED WITHIN 45 DAYS OF BASIN/POND CONSTRUCTION.

CARE OF WATER DURING CONSTRUCTION

ALL WORK ON PERMANENT STRUCTURES SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TEMPORARY DIKES, LEVEES, COFFERDAMS, DRAINAGE CHANNELS, AND STREAM DIVERSIONS NECESSARY TO PROTECT THE AREAS TO BE OCCUPIED BY THE PERMANENT WORKS. THE CONTRACTOR SHALL ALSO FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL NECESSARY PUMPING AND OTHER EQUIPMENT REQUIRED FOR REMOVAL OF WATER FROM VARIOUS PARTS OF THE WORK AND FOR MAINTAINING THE EXCAVATIONS,FOUNDATION, AND OTHER PARTS OF THE WORK FREE FROM WATER AS REQUIRED OR DIRECTED BY THE ENGINEER FOR CONSTRUCTING EACH PART OF THE WORK. AFTER HAVING SERVED THEIR PURPOSE, ALL TEMPORARY PROTECTIVE WORKS SHALL BE REMOVED OR LEVELED AND GRADED TO THE EXTENT REQUIRED TO PREVENT OBSTRUCTION IN ANY DEGREE WHATSOEVER OF THE FLOW OF WATER TO THE SPILLWAY OR OUTLET WORKS AND SO AS NOT TO INTERFERE IN ANY WAY WITH THE OPERATION OR MAINTENANCE OF THE STRUCTURE. STREAM DIVERSIONS SHALL BE MAINTAINED UNTIL THE FULL FLOW CAN BE PASSED THROUGH THE PERMANENT WORKS. THE REMOVAL OF WATER FROM THE REQUIRED EXCAVATION AND THE FOUNDATION SHALL BE ACCOMPLISHED IN A MANNER AND TO THE EXTENT THAT WILL MAINTAIN STABILITY OF THE EXCAVATED SLOPES AND BOTTOM REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL CONSTRUCTION OPERATIONS. DURING THE PLACING AND COMPACTING OF MATERIAL IN REQUIRED EXCAVATIONS, THE WATER LEVEL AT THE LOCATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER SUMPS FROM WHICH THE WATER SHALL BE PUMPED.

STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE NATURAL RESOURCES CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

EROSION AND SEDIMENT CONTROL

CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES.

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER PAUL W. STRATMAN No. 15822
7/14/22

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
9/30/2021	ADDED SMALL POND APPROVAL LETTER AND POND SUMMARY SHEET
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND ASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

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SEDIMENT CONTROL AND STORMWATER MANAGEMENT SPEC.

PROJECT MANAGER:	POS	SCALE: AS NOTED	
CHECKED BY:	POS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE: 09/03/2021	

DRAWING 62

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SEQUENCE AND GENERAL NOTES FOR CONSTRUCTION

I. OVERVIEW

A. LANDFILL SITE ENTRANCES

THREE SITE ENTRANCES (I.E., EAST, NORTH, AND SOUTH ENTRANCES) ARE SHOWN IN THESE PERMIT DRAWINGS. CONSTRUCTION OF ONLY ONE SITE ENTRANCE (COMPRISED OF ACCESS ROAD, SCALE HOUSE, TRUCK SCALES, MAINTENANCE BUILDING, WHEEL WASH, AND CONCRETE CLEANOUT) IS REQUIRED FOR RUBBLE LANDFILL OPERATION. SITE ENTRANCE DESCRIPTION IS PROVIDED IN PHASE III REPORT SECTION 3.4. THE EAST ENTRANCE IS REQUIRED FOR USE BY ANNE ARUNDELE COUNTY.

REGARDLESS OF THE SITE ENTRANCE CONSTRUCTED, AN AUXILIARY ROAD (WITHOUT SCALES, SIGNS, AND WITH A REDUCED WIDTH) WILL BE CONSTRUCTED. THIS ROAD WILL PROVIDE INGRESS/EGRESS IN THE EVENT ENTRANCE IS BLOCKED OR COMPROMISED, REQUIRING SITE EVACUATION OR ACCESS BY EMERGENCY FIRST RESPONDERS. THE ACCESS POINTS DESIGNATED FOR THE AUXILIARY ROAD IS THE NORTH OR SOUTH ENTRANCE ACCESS.

B. LANDFILL CELL CONSTRUCTION

THE SITE FOR THE PROPOSED LANDFILL IS COMPRISED OF AREAS PREVIOUSLY MINED FOR SAND AND GRAVEL. PRIMARY LANDFILL AREAS ARE REFERENCED AS EAST SECTION (CELLS 11–16) AND WEST SECTION (CELLS 1–10) ON THE DRAWINGS. EACH SECTION IS SUBDIVIDED INTO CELL AREAS; EACH CELL AREA IS LINED AND SLOPED IN ACCORDANCE WITHCODE OF MARYLAND (COMAR) REGULATIONS, AS NECESSARY TO CREATE A SUMP FOR COLLECTION OF LEACHATE (I.E., STORM WATER PERCOLATION THROUGH RUBBLE WASTE PLACED IN THE CELL).

TWO LEACHATE STORAGE FACILITIES WILL BE CONSTRUCTED TO PROVIDE TEMPORARY STORAGE OF LEACHATE FROM THE LANDFILL CELLS. IN EACH LEACHATE STORAGE FACILITY, TWO 500,000 GALLON TANKS WILL BE INSTALLED WITHIN AN AREA SURROUNDED BY A CONCRETE SECONDARY CONTAINMENT WALLS. THERE ARE FIFTEEN CELLS (EACH WITH SUBMERSIBLE PUMPS IN A LEACHATE COLLECTION SUMP) IN THE WEST SECTION AND SIX CELLS (EACH WITH SUBMERSIBLE PUMPS IN A LEACHATE COLLECTION SUMP) IN THE EAST SECTION. LEACHATE FROM THREE CELLS IN THE WEST SECTION AND ALL CELLS IN THE EAST SECTION WILL BE PUMPED TO FORCE MAIN LINES CONNECTED TO LEACHATE STORAGE FACILITY NO. 1. FORCE MAIN TRUNK LINES FOR THE REMAINING CELLS IN THE WEST SECTION ARE CONNECTED TO LEACHATE STORAGE FACILITY NO. 2.

CELLS ARE NUMBERED, BEGINNING IN THE WEST SECTION. CELLS 2 THROUGH 4 AND 11 THROUGH 16 CONNECTED TO LEACHATE STORAGE FACILITY NO. 1. CELLS 1, 5A THROUGH 5F AND 6 THROUGH 10 ARE CONNECTED TO LEACHATE STORAGE FACILITY NO. 2.

FOUR STORMWATER MANAGMENT BASINS WILL SERVE AS SEDIMENT CONTROL AND STORMWATER MANAGEMENT STRUCTURES FOR THE RUBBLE LANDFILL CONSTRUCTION AND OPERATION THROUGHOUT
THE LIFE OF THE FACILITY. UNDER THE ULTIMATE DEVELOPED LANDFILL CONDITION,

- BASIN NO. 1 SHALL PROVIDE SEDIMENT CONTROL FOR THE ENTIRE WEST SECTION;
- BASIN NO. 2 SHALL PROVIDE SEDIMENT CONTROL FOR OFF–SITE DRAINAGE AREA AND LEACHATE STORAGE FACILITY NO. 1.
- BASIN NO. 3 SHALL PROVIDE SEDIMENT CONTROL FOR THE MAJORITY OF THE EAST SECTION CONSTRUCTION.
- BASIN NO. 4 ADDRESSES RUN –ON FROM UPGRADIANT OFF–SITE AND UNDISTURBED ON–SITE AREAS.
- A SEDIMENT TRAP AND SILT FENCE ENSURE THAT SEDIMENT FROM DISTURBED AREAS, OUTSIDE BASIN DRAINAGE AREAS IS CONTAINED ON–SITE.

PRIOR TO BEGINNING LANDFILL CONSTRUCTION IN ANY GIVEN AREA, ALL SEDIMENT BASINS AND PERIMETER CONTROLS SHALL BE INSTALLED AS SHOWN ON THE DRAWINGS AND INDICATED UNDER ITEM II, "SEQUENCE OF CONSTRUCTION FOR LANDFILL CELLS."

AS SPECIFIED IN THE SEQUENCE, EACH BASIN SHALL BE COMPLETELY CONSTRUCTED (I.E., TOPSOIL SHALL BE CLEARED AND STRIPPED, CUT–OFF TRENCH SHALL BE INSTALLED, SPILLWAY, EXCAVATION, AND EMBANKMENT CONSTRUCTION SHALL BE PERFORMED). PRIOR TO BEGINNING CONSTRUCTION, ALL CONSTRUCTION MATERIALS FOR THE BASIN MUST BE ON–SITE. BASINS WILL BE DEWATERED PER DETAILS ON THE DRAWINGS.

COMPOSITE VIEW OF ALL LANDFILL CELLS AT TOP OF SUBBASE GRADE IS PROVIDED ON DRAWINGS 10 AND 11 GRADES ON CELL SUBBASE PLANS INDICATE THAT EACH CELL WILL BE GRADED TO A SINGLE SUMP, IN WHICH SUBMERSIBLE PUMPS WILL BE INSTALLED IN A SUMP RISER PIPE, AS SHOWN ON DRAWINGS AND DETAILS. THE EMBANKMENT THAT RUNS PERPENDICULAR TO THE SUMP, COUPLED WITH COMPLETELY CONSTRUCTED GRADES IN THE CELL ASSURES POSITIVE DRAINAGE TO THE SUMP AND SEDIMENT CONTAINMENT WITHIN A CELL UNDER CONSTRUCTION. STORM WATER IMPOUNDED IN A CELL UNDER CONSTRUCTION SHALL BE PUMPED THE PERIMETER CHANNEL, WHICH IN TURN DISCHARGES DRAINAGE TO A SEDIMENT BASIN IS PROVIDED.

RUBBLE WASTE MAY NOT BE PLACED IN ANY CELL UNTIL THE CORRESPONDING LEACHATE STORAGE AREA AND FORCE MAIN PIPING SYSTEM TO THE CELL HAVE BEEN COMPLETELY CONSTRUCTED AND TESTED. VEHICULAR ACCESS TO THE STORAGE TANK FOR LOADING AND TRANSPORT OF LEACHATE MUST BE PROVIDED AND MAINTAINED. UPON COMPLETION OF CONSTRUCTION OF THE ACCESS ROAD, FINISHED GRADING FOR A GIVEN CELL, CELL CONSTRUCTION MATERIAL TESTING (INCLUDING PUMP AND FORCE MAIN), AND CONNECTION OF THE FORCE MAIN SYSTEM TO THE STORAGE TANK, WASTE PLACEMENT IN THE CELL MAY BEGIN. AT ALL TIMES DURING THE WASTE PLACEMENT OPERATION IN A CELL, WASTE SHALL BE PLACED IN A MANNER THAT ENSURES COLLECTION OF LEACHATE IN THE CELL SUMP AREA. DAILY AND INTERMEDIATE COVER SHALL BE PLACED IN ACCORDANCE WITH MDE REFUSE DISPOSAL PERMIT STIPULATIONS.

TO SUMMARIZE AND CLARIFY EVENTS THAT OCCUR CHRONOLOGICALLY (ON A CELL–BY–CELL CONSTRUCTION BASIS), ITEM II, "SEQUENCE OF CONSTRUCTION FOR LANDFILL CELLS". STIPULATES CONDITIONS UNDER WHICH THE LANDFILL WILL BE CONSTRUCTED. SEE DRAWINGS 64------ THROUGH 81------ FOR INTERMEDIATE CONSTRUCTION STAGE PLANS, WHICH ILLUSTRATE SEQUENCE OF FILLING AND OF THE LANDFILL CONSTRUCT FROM BEGINNING TO END OF CONSTRUCTION.

UNLESS OTHERWISE APPROVED BY MDE AND ANNE ARUNDEL SOIL CONSERVATION DISTRICT (AASCD), LANDFILL CELL SEQUENCE OF CONSTRUCTION WILL BE PER INTERMEDIATE STAGE CONSTRUCTION DRAWINGS, REFERENCED UNDER ITEM II(B). CELLS WILL BE CONSTRUCTED INDIVIDUALLY OR IN GROUPS, PER THE CHRONOLOGICAL REQUIREMENTS UNDER ITEM II(E), "LANDFILL CONSTRUCTION CHRONOLOGY". VARIANCE FROM CELL SEQUENCE OF CONSTRUCTION IS REFERENCED UNDER ITEM III. TIME FRAMES FOR CONSTRUCTION DURING THE LIFE OF THE LANDFILL OPERATION ARE GIVEN UNDER ITEM V, "ESTIMATED CELL CONSTRUCTION AND WASTE PLACEMENT SCHEDULE".

RUBBLE FILL OPERATION MAY PROCEED IN ANY GIVEN COMPLETED CELL AT ANY TIME THROUGHOUT THE LIFE OF THE FACILITY, PROVIDED THAT: SEDIMENT CONTROLS FOR THE DISTURBED AREA ARE IN–PLACE AND MAINTAINED; LEACHATE IS PROPERLY COLLECTED AND DISPOSED; AND ALL OTHER CONDITIONS OF THE MDE REFUSE DISPOSAL PERMIT ARE MET.

II. SEQUENCE OF CONSTRUCTION FOR LANDFILL CELLS

UNLESS "VARIANCE FROM SEQUENCE OF CONSTRUCTION FOR LANDFILL CELLS" IS OBTAINED, PER ITEM III, THE LANDFILL WILL BE CONSTRUCTED IN ACCORDANCE WITH CRITERIA PROVIDED HEREUNDER. "SURFACE RUNOFF/SEDIMENT CONTROL" SHALL BE PROVIDED PER ITEM II(A). ITEM II(B), "DESCRIPTION OF INTERMEDIATE CONSTRUCTION STAGE PLANS" AND ITEM II(C), "ASSUMPTIONS FOR DEVELOPMENT OF LANDFILL SEQUENCE OF CONSTRUCTION" DESCRIBE SITE CONDITIONS AND ASSUMPTIONS UNDER WHICH THE LANDFILL SEQUENCE OF CONSTRUCTION WAS DETERMINED. ITEM II(D), "INTERMEDIATE CONSTRUCTION STAGE PLAN DEPICTION" INDICATES CONSTRUCTION REQUIREMENTS CONSISTENT WITH DEPICTION ON EACH INTERMEDIATE CONSTRUCTION STAGE PLAN. ITEM II(E), "LANDFILL CONSTRUCTION CHRONOLOGY" LISTS THE SEQUENCE OF CONSTRUCTION SPECIFIED IN THESE PERMIT DRAWINGS.

A. SURFACE RUNOFF/SEDIMENT CONTROL

AS REFERENCED UNDER THE SEQUENCE OF CONSTRUCTION OVERVIEW ABOVE, ALL CELLS WILL BE CONSTRUCTED IN A MANNER THAT WILL CREATE A SUMP, AND SHALL BE LINED WITH MATERIAL SPECIFIED ON THESE PERMIT DRAWINGS. CLEAN SURFACE RUNOFF FROM ADJACENT UNDISTURBED AREAS WILL BE DIVERTED AROUND THE CELL CONSTRUCTION AREA, TO THE EXTENT PRACTICABLE. DURING CONSTRUCTION, CLEAN SURFACE RUNOFF IMPOUNDED IN CELL SUMPS WILL BE PUMPED TO A CONSTRUCTED PERMANENT PERIMETER CHANNEL OR TEMPORARY DITCH, AS REQUIRED, TO ENSURE THAT ALL WATER PUMPED FROM CELLS UNDER CONSTRUCTION WILL DRAIN TO A SEDIMENT BASIN.

CONSTRUCTION OF ACCESS ROADS AND PERIMETER CHANNEL ADJACENT TO CELL AREAS IS REFERENCED UNDER THE SEQUENCE OF CONSTRUCTION ON EACH INTERMEDIATE STAGE CONSTRUCTION DRAWING. IN CELL CONSTRUCTION AREAS WHERE THE PERIMETER CHANNEL IS TO BE CREATED BY FILL, THE MINIMUM WIDTH PERIMETER BERM AT THE TOP OF THE LANDFILL EMBANKMENT SIDE SLOPE SHALL BE PART OF THE CONSTRUCTION.

AS PRACTICABLE, TO REDUCE SEDIMENT LADEN SURFACE RUNOFF TO SEDIMENT BASINS THROUGHOUT THE LIFE OF THE CONSTRUCTION OPERATION, THE LANDFILL OPERATOR SHALL ATTEMPT TO MINIMIZE UN–VEGETATED DISTURBED AREAS THAT DRAIN DIRECTLY TO A SEDIMENT BASIN (VIA EXISTING DRAINAGE SWALES, CONSTRUCTED PERIMETER CHANNEL, OR TEMPORARY MEASURES). PERMANENT OR TEMPORARY VEGETATIVE STABILIZATION, AS APPLICABLE, SHALL BE APPLIED ON DISTURBED AREAS, PER MDE REFUSE DISPOSAL PERMIT STIPULATION, BEFORE OTHER CONSTRUCTION PROCEEDS.

B. DESCRIPTION OF INTERMEDIATE CONSTRUCTION STAGE PLANS

INTERMEDIATE CONSTRUCTION STAGE PLANS (DRAWINGS 64--- THROUGH 81----) DEPICT CONSTRUCTION OF THE LANDFILL FROM BEGINNING OF CONSTRUCTION THROUGHOUT AND CLOSURE OF THE LANDFILL.

THE FOLLOWING SITE CONDITIONS WERE CONSIDERED IN DETERMINING SEQUENCE OF CONSTRUCTION FOR LANDFILL CELLS, ILLUSTRATED ON INTERMEDIATE CONSTRUCTION STAGE PLANS.

1. INTERMEDIATE CONSTRUCTION STAGE PLANS WERE PREPARED ASSUMING DAILY OR WEEKLY COVER SOILS WOULD BE OBTAINED FROM THE NEXT CELL TO BE CONSTRUCTED TO ALLOW BENEFICIAL USE OF ON–SITE EXCESS SOIL MATERIALS. WHERE ALLOWED BY MDE, ALTERNATE DAILY COVER MATERIALS WILL BE USED, WHEN AVAILABLE. SO THEN ON–SITE SOILS CAN BE USED FOR CLOSURE CONSTRUCTION, WHERE ON–SITES MEET THE CLOSURE MATERIALS SPECIFICATIONS.
2. THE PRIMARY MEANS OF SEDIMENT CONTROL FOR CONSTRUCTION OF THE SITE IS BY PERIMETER CHANNEL DRAINAGE TO SEDIMENT BASINS. NATURAL AND CONSTRUCTED DRAINAGE SWALES FROM THE FORMER SAND AND GRAVEL MINING AREAS CONVEY SURFACE RUNOFF THROUGH THE SITE IN A PREDOMINANTLY NORTHERN DIRECTION. ONCE SEDIMENT CONTROLS ARE IN–PLACE, AS CELL CONSTRUCTION PROCEEDS, CLEAN SURFACE RUNOFF DRAINAGE WILL BE DIVERTED AROUND CONSTRUCTION AREAS, TO THE EXISTING SWALES. UNTIL PRECLUDED BY CELL CONSTRUCTION. EXISTING SWALES WILL CONVEY CLEAN SURFACE RUNOFF TO PERIMETER DITCHES AND SEDIMENT BASINS, AS SHOWN ON INTERMEDIATE CONSTRUCTION STAGE PLANS.

C. ASSUMPTIONS FOR DEVELOPMENT OF LANDFILL SEQUENCE OF CONSTRUCTION

BASED ON THE ABOVE SITE CONDITIONS, AND ITEMS II(B)(1) AND II(B)(2), THE FOLLOWING ASSUMPTIONS WERE USED TO DEVELOP THE LANDFILL SEQUENCE OF CONSTRUCTION, DEPICTED ON INTERMEDIATE CONSTRUCTION STAGE PLANS IN THESE PERMIT DRAWINGS.

1. AS PART OF THE INITIAL CONSTRUCTION SEDIMENT BASINS 2, 3, AND 4 WILL BE CONSTRUCTED INITIALTY.
2. LANDFILL CELLS 2 THROUGH 4 AND 11 THROUGH 16, WHEREBY LEACHATE IS PUMPED TO LEACHATE STORAGE FACILITY NO. 1, WILL BE CONSTRUCTED PRIOR TO CELLS 1, 5A THROUGH 5F AND 6 THROUGH 10, WHERE BY LEACHATE IS PUMPED TO LEACHATE STORAGE FACILITY NO. 2.

   WITH RESPECT TO LANDFILL OPERATION, CONSTRUCTION OF LANDFILL CELLS 2 THROUGH 4 AND CELLS 11 THROUGH 16, PRIOR TO CONSTRUCTION OF CELLS 1, AND 5 THROUGH 10, IS ALSO THE MOST DESIRABLE SEQUENCE OF CONSTRUCTION FOR THE LANDFILL, DUE TO CLOSE PROXIMITY OF CELL CONSTRUCTION TO SEDIMENT BASINS AND THE EAST ENTRANCE.
3. STOCKPILES SHALL BE WITHIN DRAINAGE AREAS TO EXISTING SEDIMENT BASINS THROUGHOUT THE LIFE OF LANDFILL CONSTRUCTION AND OPERATION.
4. THREE SITE ENTRANCES TO THE LANDFILL ARE DEPICTED ON DRAWING 3. MDE REQUIRES ONLY ONE ENTRANCE. SOUTH ENTRANCE IS CONSIDERED TO BE THE LEAST DESIRABLE OF THE THREE SITE ENTRANCES, BECAUSE IT IS REMOTE FROM LANDFILL CELLS THAT SHOULD BE CONSTRUCTED AND FILLED WITH RUBBLE WASTE INITIALLY.
5. NORTH AND EAST ENTRANCES ARE, IN CLOSE PROXIMITY TO CELLS DESIGNATED FOR INITIAL CONSTRUCTION, ARE THE MOST DESIRABLE SITE ENTRANCE OPTIONS. ASSUMPTION USED TO DEVELOP THE SEQUENCE OF CONSTRUCTION INDICATED ON INTERMEDIATE CONSTRUCTION STAGE PLANS (DRAWINGS 64 THROUGH 81) IS THAT RUBBLE WASTE HAUL TO THE SITE WILL BE VIA THE COUNTY ROAD TO THE EAST ENTRANCE.
6. VARIANCE FROM THE SEQUENCE OF CONSTRUCTION IN THESE PERMIT DRAWINGS MUST BE APPROVED BY MDE, PER ITEM III HEREON. CONTRACT DOCUMENTS FOR INTERMEDIATE STAGE CONSTRUCTION MUST BE PREPARED AND APPROVED BY MDE, PER ITEM VI(B). THOSE DOCUMENTS WILL PRESENT DESIGN DETAILS AT A SCALE OF 1"=50' OR LARGER, AND SHOW SEDIMENT AND EROSION CONTROL MEASURES.

D. INTERMEDIATE CONSTRUCTION STAGE PLAN DEPICTION

SEQUENCE OF CONSTRUCTION FOR EACH INTERMEDIATE CONSTRUCTION STAGE IS PROVIDED ON DRAWING 64 THROUGH 81. THE FOLLOWING LIST IDENTIFIES CONSTRUCTION REQUIREMENTS, METHODOLOGY ASSOCIATED WITH DEPICTION OF FEATURES ON INTERMEDIATE CONSTRUCTION STAGE PLANS, AS–BUILT SURVEY AND QUALITY ASSURANCE CRITERIA.

1. PERIMETER ROADS: TEMPORARY CONSTRUCTION ROADS INITIALLY USED FOR CONSTRUCTION EQUIPMENT ACCESS SHALL HAVE A SURFACE SUFFICIENT FOR SUCH USE. PERMANENT PERIMETER ROAD SURFACE FOR WASTE HAULERS SHALL BE AS SHOWN ON DRAWINGS 10 AND 11. TEMPORARY ACCESS ROADS USED FOR WASTE HAULERS IN CELL AREAS AND ON RUBBLE WASTE SHALL HAVE AN ALL WEATHER DURABLE SURFACE SUITABLE FOR SUCH USE.
2. PERIMETER CHANNELS: PERIMETER CHANNELS SHALL INCLUDE LINING PER THE TABULATION ON DRAWING 42. TEMPORARY BERMS, RIPRAP CHANNELS AND DITCHES ADJACENT TO TEMPORARY ROADS SHALL BE SUFFICIENT TO CONVEY SURFACE RUNOFF AROUND CELL CONSTRUCTION AND WASTE PLACEMENT AREAS AS SHOWN.
3. SEDIMENT BASINS: INITIAL CONSTRUCTION STAGE INCLUDES CONSTRUCTION OF SEDIMENT BASINS AND PERIMETER CHANNELS ASSOCIATED WITH EACH STAGE, AS NEEDED TO PROVIDE SURFACE RUNOFF TO BASINS, CONSISTENT WITH BASIN DESIGN CRITERIA. FOLLOWING THIS CONSTRUCTION, STOCKPILES SHALL BE PLACED WITHIN THE LIMIT OF DISTURBANCE AND DRAINAGE AREA TO A SEDIMENT BASIN, THROUGHOUT THE LIFE OF LANDFILL CONSTRUCTION AND OPERATION.
4. PROPOSED CONTOURS: FOR CLARITY, PROPOSED CONTOURS REQUIRED TO IMPLEMENT CONSTRUCTION OF EACH INTERMEDIATE CONSTRUCTION STAGE ARE SHOWN IN BLACK ON INTERMEDIATE CONSTRUCTION STAGE PLANS AND PREVIOUSLY CONSTRUCTED ELEMENTS ARE SHOWN IN LIGHT GRAY. TEMPORARY ACCESS ROADS AND DITCHES FOR CELL CONSTRUCTION WILL BE GRADED PER INTERMEDIATE CONSTRUCTION STAGE PLANS AND DETAILS, PER CONDITIONS SPECIFIED UNDER ITEM II, "SEQUENCE OF CONSTRUCTION FOR LANDFILL CELLS", ITEM III, "VARIANCE FROM SEQUENCE OF CONSTRUCTION FOR LANDFILL CELLS" AND ITEM VI, "GENERAL NOTES FOR LANDFILL CELLS AND APPURTENANT CONSTRUCTION" ON THIS DRAWING.
5. CONSTRUCTED CONTOURS ADJACENT TO TEMPORARY ROADS AND DITCHES REPRESENT GRADING REQUIREMENTS FOR CONSTRUCTING CELLS AND ACCESS ON EXISTING GROUND PRIOR TO LANDFILL CONSTRUCTION. PER ITEM 6 BELOW, STOCKPILES OR BORROW AREAS MAY EXIST IN SOME LOCATIONS SHOWN AS EXISTING GROUND ON INTERMEDIATE CONSTRUCTION STAGE PLANS.
6. STOCKPILE/BORROW AREAS: ALL AREAS WITHIN THE BOUNDARY OF THE LANDFILL MAY BE USED FOR STOCKPILE AND BORROW SOURCES FOR LANDFILL OPERATION THROUGHOUT THE LIFE OF THE FACILITY. STOCKPILES AND BORROW SOURCES MAY BE WITHIN AREAS ADJACENT TO TEMPORARY ACCESS ROADS AND CHANNELS FOR CELL CONSTRUCTION (SEE ITEM 4 ABOVE) AT TIME OF CONSTRUCTION. SUFFICIENT SPACE FOR CELL ACCESS AND SURFACE RUNOFF DIVERSION AROUND CELL CONSTRUCTION AND WASTE PLACEMENT SHALL BE PROVIDED THROUGHOUT THE LIFE OF THE FACILITY.
7. INTER–CELL ACCESS: INTER–CELL ACCESS FOR CELL CONSTRUCTION OR WASTE PLACEMENT SHALL BE VIA TEMPORARY ACCESS ROADS OR OVER COVERED RUBBLE WASTE IN ACTIVE CELLS.
8. AS–BUILT SURVEY: THROUGHOUT THE LIFE OF LANDFILL CONSTRUCTION AND OPERATION, FIELD RUN AND AERIAL TOPOGRAPHIC AS–BUILT SURVEY FOR ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS, CONSTRUCTION QUALITY, ASSURANCE PLAN, AND LANDFILL OPERATIONS PLAN.
9. QUALITY ASSURANCE: ALL CELL CONSTRUCTION MATERIAL (INCLUDING LEACHATE COLLECTION SYSTEM) SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONSTRUCTION CERTIFICATIONS BY A MARYLAND CERTIFIED PROFESSIONAL ENGINEER (AS REQUIRED BY THE CONSTRUCTION QUALITY ASSURANCE PLAN) MUST BE SUBMITTED TO AND APPROVED BY THE MDE PRIOR TO WASTE PLACEMENT.

E. LANDFILL CONSTRUCTION CHRONOLOGY

PRIOR TO ANY CONSTRUCTION, PERMANENT GROUNDWATER MONITORING WELLS SHALL BE INSTALLED, AS SHOWN ON "GROUNDWATER MONITORING PLAN" IN PHASE III REPORT SECTION 16.0.

PER CRITERIA AND ASSUMPTIONS UNDER ITEMS II(A), II(B), II(C) AND II(D) ABOVE, LANDFILL CONSTRUCTION CHRONOLOGY DEPICTED ON INTERMEDIATE STAGE CONSTRUCTION DRAWINGS 64 THROUGH 81 IS AS FOLLOWS:

1. INITIAL CONSTRUCTION (ACCESS ROAD, PERIMETER ACCESS ROAD, BERMS, SEDIMENT BASIN NOS. 2 THROUGH 4, SWALES, AND LEACHATE STORAGE FACILITY NO. 1) (STAGE A)
3. CELL 11 (STAGE A AND B)
3. CELL SEPARATION BERM FOR CELLS 12 THROUGH 16
4. CELL 16 (STAGE C)
5. CELLS 12 THROUGH 15, RESPECTIVELY (STAGES C, D, E, F, AND G)
6. CELLS 2, 3, 4, 1, 5F, 5E, AND BASIN NO. 1 AND LEACHATE STORAGE FACILITY NO. 2 (STAGES H, I, J, AND K)
7. CELL 10 AND 5D (AND SURFACE RUNOFF IMPOUNDMENT IN CELL 9 AREA)
8. CELLS 9 AND 5C; 8, 5A AND 5B; AND CELL 6 AND 7, IN THAT ORDER

III. VARIANCE FROM SEQUENCE OF CONSTRUCTION FOR LANDFILL CELLS

AS REFERENCED UNDER ITEM II(C)(5), SEQUENCE OF CONSTRUCTION IS BASED ON SITE ACCESS VIA THE EAST ENTRANCE. IF THE NORTH ENTRANCE IS CONSTRUCTED IN LIEU OF THE EAST ENTRANCE, THE SEQUENCE OF CONSTRUCTION WILL BE IDENTICAL, EXCEPT THAT THE PERIMETER ACCESS ROAD BETWEEN THE NORTH AND EAST ENTRANCES AND PERIMETER CHANNEL NO. 8 WILL NOT BE CONSTRUCTED, UNTIL NECESSARY FOR CONSTRUCTION OF CELLS 12 THROUGH 15. IF THE LANDFILL NORTH ENTRANCE IS CONSTRUCTED IN LIEU OF THE EAST ENTRANCE, THE SEQUENCE OF CONSTRUCTION FOR LANDFILL CELLS SHALL REMAIN AS DESCRIBED IN THESE PERMIT DRAWINGS, VARIANCE FROM THE SEQUENCE OF CONSTRUCTION HEREIN IS NOT REQUIRED. IF THE SOUTH ENTRANCE IS THE ONLY SITE ACCESS THAT IS ULTIMATELY CONSTRUCTED, THE SEQUENCE OF CONSTRUCTION WILL BE REVISED AND MUST BE APPROVED BY ANNE ARUNDEL SOIL CONSERVATION DISTRICT (AASCD) AND MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE).

IV. SEQUENCE OF RUBBLE WASTE PLACEMENT OPERATION

SEQUENCE OF RUBBLE WASTE PLACEMENT IS AS FOLLOWS.

1. FOR EACH INTERMEDIATE STAGE OF CONSTRUCTION PREPARE THE TOP OF CELL SUBGRADE (I.E. BOTTOM OF SUBBASE) IN ACCORDANCE WITH CONTRACT DOCUMENTS (SEE ITEM VI(B) HEREON) AND REQUIREMENTS OF THE REFUSE DISPOSAL PERMIT.
2. CONSTRUCT THE RUBBLE LANDFILL PER INTERMEDIATE CONSTRUCTION STAGE DRAWINGS 64 THROUGH 78. PLACE WASTE IN INDIVIDUAL CELLS IN EAST AND WEST SECTIONS AS SHOWN. AS RUBBLE WASTE PLACEMENT PROGRESSES, PROVIDE DAILY AND INTERMEDIATE COVER PER THE LANDFILL OPERATIONS AND MAINTENANCE PLAN (SEE SECTIONS 12 OF THE PHASE III PERMIT) AND THE REFUSE DISPOSAL PERMIT REQUIREMENTS.
3. WHEN RUBBLE WASTE FILLING IS AT A LEVEL ABOVE THE LANDFILL PERIMETER BERM, PROVIDE COVER AND VEGETATION IN A MANNER THAT PROMOTES SURFACE RUNOFF FROM SOIL COVER OVER THE RUBBLE, ACROSS THE PERIMETER BERM TO A PERIMETER CHANNEL (AS DESCRIBED IN THE LANDFILL OPERATIONS AND MAINTENANCE PLAN).
4. CONTINUE THE RUBBLE WASTE PLACEMENT OPERATION TO FINAL GRADE. ESTIMATED LIFE EXPECTANCY OF THE RUBBLE WASTE PLACEMENT OPERATION IS 12 YEARS. FINAL GRADES SHOWN ON THE PLANS REPRESENT THE TOP ELEVATION FOR THE LANDFILL CLOSURE CAP. FINAL COVER AND CLOSURE CAP SHALL BE INSTALLED PER MARYLAND REGULATIONS. FINAL SIDE SLOPES SHALL BE 3:1, WITH STORMWATER MANAGEMENT TERRACES AND DOWNCHUTES INSTALLED PER PLANS AND DETAILS.
5. WHEN FINAL GRADES ARE VEGETATED PER THE PLANS, SEDIMENT BASINS SHALL BE CONVERTED TO PERMANENT STORMWATER MANAGEMENT STRUCTURES.

V. ESTIMATED CELL CONSTRUCTION AND WASTE PLACEMENT SCHEDULE

PRIOR TO BEGINNING ANY WASTE PLCEMENT, PERMANENT GROUNDWATER MONITORING WELLS SHALL BE INSTALLED, AS SHOWN ON "GROUNDWATER MONITORING PLAN" IN PHASE III REPORT SECTION 16.0.

IN ACCORDANCE WITH ALL CONDITIONS SPECIFIED ON THIS DRAWING, THE LANDFILL SHALL BE CONSTRUCTED. INTERMEDIATE CONSTRUCTION STAGE PLANS (DRAWINGS 64 THROUGH 81) DEPICT CONSTRUCTION OF THE LANDFILL FROM BEGINNING OF CONSTRUCTION THROUGHOUT CONSTRUCTION OF ALL LANDFILL CELLS. SEQUENCE OF CONSTRUCTION IS PROVIDED ON EACH INTERMEDIATE CONSTRUCTION STAGE PLAN. ESTIMATED TIME FRAME FOR CELL CONSTRUCTION AND WASTE PLACEMENT IS PROVIDED HEREUNDER.

PRIOR TO BEGINNING ANY OTHER ON–SITE CONSTRUCTION, INTERMEDIATE CONSTRUCTION INITIAL STAGE, PER PLANS ON DRAWINGS 64 AND 65, SHALL PROCEED. UNDER INITIAL CONSTRUCTION, BASINS NO. 2, 3 AND 4, AND LEACHATE STORAGE FACILITY NO. 1 WILL BE CONSTRUCTED. AREAS OUTSIDE THE LIMIT OF DISTURBANCE FOR INITIAL CONSTRUCTION MAY BE USED TO STOCKPILE EXCAVATED MATERIAL FROM THE CONSTRUCTION OPERATION, AS APPROVED BY THE AASCD SEDIMENT CONTROL INSPECTOR. EXCLUDING ACCESS ROADS, DRAINAGE CHANNELS, AND ENTRANCE INFRASTRUCTURE, ALL DISTURBED AREAS SHALL BE VEGETATED FOR STABILIZATION.

BASED ON THE ANTICIPATED VOLUME AND DENSITY OF RUBBLE WASTE TO BE PLACED IN THE FACILITY ON A DAILY BASIS, DURING 5 DAYS PER WEEK OPERATION, THE ESTIMATED LIFE EXPECTANCY OF THE LANDFILL WASTE PLACEMENT OPERATION IS 12 YEARS.

A. CONSTRUCTION REQUIREMENTS

THE FOLLOWING CONSTRUCTION REQUIREMENTS AND ASSUMPTIONS WERE USED TO GENERATE THE "SEQUENCE OF CELL CONSTRUCTION AND WASTE PLACEMENT", UNDER ITEM B BELOW.

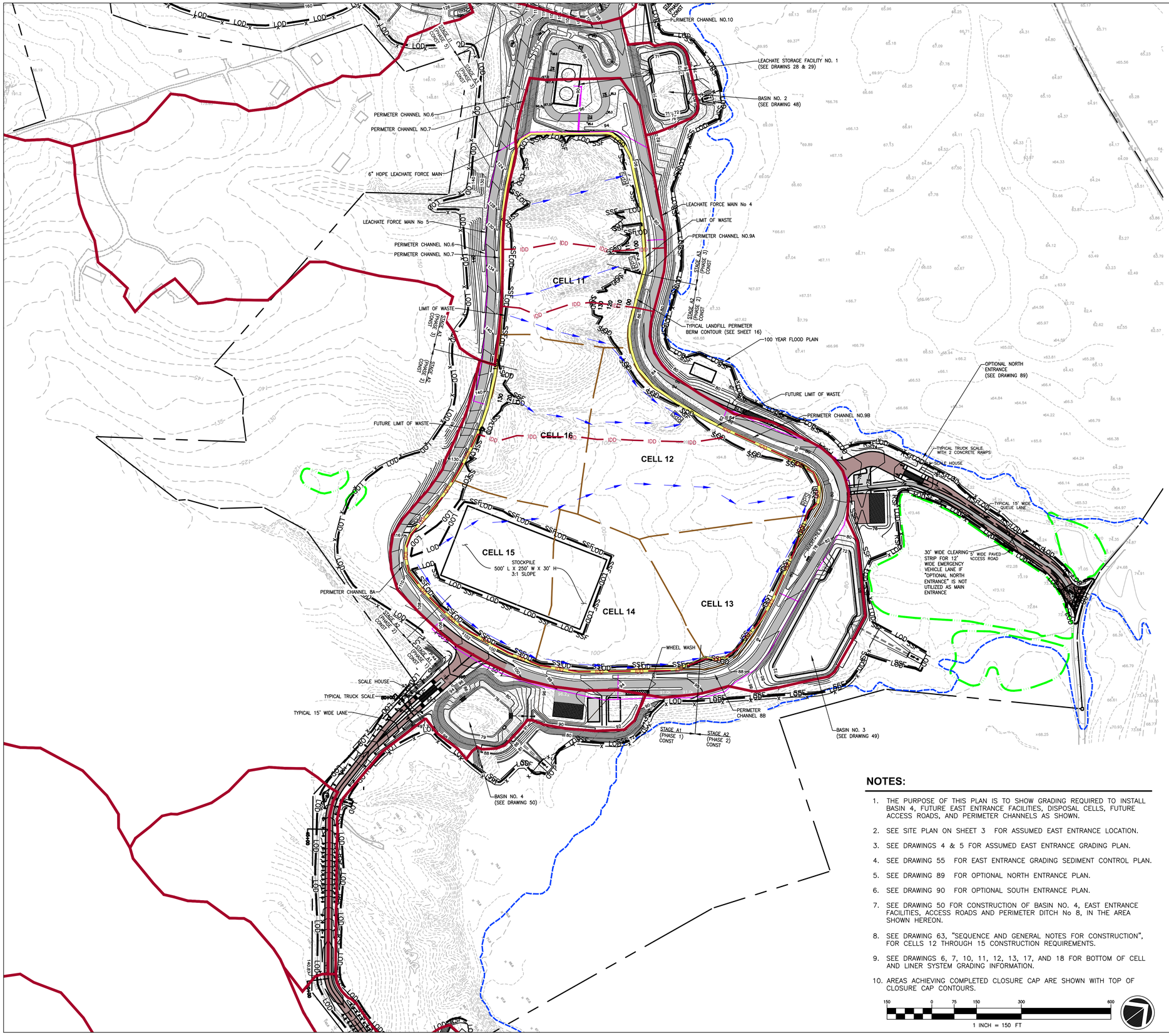
1. LANDFILL WASTE PLACEMENT OPERATION DURATION IS 12 YEARS UNLESS MODIFIED THROUGH REGULATORY OR LEGAL PROCESSES. INITIAL CONSTRUCTION PRIOR TO THE START OF WASTE PLACEMENT IS NOT SUBJECT TO THE 12 YEAR TIME FRAME.
2. COMPLETION OF ANY FINAL CLOSURE CAP CONSTRUCTION OF THE FACILITY (I.E., THE CONSTRUCTION OPERATION ASSOCIATED WITH INSTALLATION OF LANDFILL CLOSURE CAP MATERIAL, PER COMAR REGULATIONS) IS NOT INCLUDED IN THE "SEQUENCE OF CELL CONSTRUCTION AND WASTE PLACEMENT".
3. CONSTRUCTION OF CELL INFRASTRUCTURE (I.E., ACCESS ROADS, PERIMETER DITCHES, STORM DRAINS, AND FORCE MAINS) WILL OCCUR AS REQUIRED TO SUPPORT ONGOING LANDFILL CELL CONSTRUCTION. CELL INFRASTRUCTURE CONSTRUCTION SHOULD BE SCHEDULED AND COMPLETED AS NECESSARY TO ALLOW WASTE PLACEMENT IN ANY GIVEN CELL, IMMEDIATELY FOLLOWING CELL CONSTRUCTION COMPLETION.

B. SEQUENCE OF CELL CONSTRUCTION AND WASTE PLACEMENT

PRIOR TO BEGINNING WORK FOR ANY INTERMEDIATE STAGE OF CONSTRUCTION (AS SHOWN ON DRAWINGS 64 THROUGH 81 AND SPECIFIED UNDER ITEM VI(B) HEREON), ANNE ARUNDEL COUNTY PLANNING AND CODE ENFORCEMENT (PACE) INSPECTIONS AND PERMITS (410–222–7450) SHALL BE NOTIFIED. ALL PROPOSED STOCKPILE AREAS (INCLUDING TEMPORARY SEDIMENT CONTROL MEASURES) SHALL BE PER AASCD SEDIMENT CONTROL INSPECTOR'S APPROVAL.

BASED ON INDIVIDUAL CELL AIR SPACE (PRORATED PER TOTAL LANDFILL CELL ACREAGE) AND INTERMEDIATE CONSTRUCTION STAGE PLANS ON DRAWINGS 64 THROUGH 81, THE "SEQUENCE OF CELL CONSTRUCTION AND WASTE PLACEMENT" IS AS FOLLOWS.

1. COMPLETE CONSTRUCTION OF BASIN NOS. 2, 3, AND 4 AND LEACHATE STORAGE FACILITY NO. 1 INITIAL STAGE, AS SHOWN ON DRAWINGS 3, 11, AND 64. CONSTRUCT EAST ENTRANCE ACCESS ROAD AS SHOWN ON DRAWING 4, EAST ENTRANCE AND BASIN NO. 4 AS SHOWN ON DRAWINGS 5, 50, AND 64 AND THE PERIMETER ACCESS ROAD AS SHOWN ON DRAWINGS 64. CONSTRUCTION OF ALL BASINS SHALL COMPLY WITH THE FOLLOWING. — 2 YEARS (1)
   - ALL MATERIALS FOR BASIN CONSTRUCTION SHALL BE ON–SITE PRIOR TO COMMENCEMENT OF WORK.
   - PRIOR TO COMMENCEMENT OF WORK, AREAS FOR CLEARING, STRIPPING AND STOCKPILING TOPSOIL OR ANY IMPORTED BORROW, AND ANY ON–SITE BORROW AREAS (INCLUDING TEMPORARY SEDIMENT CONTROL MEASURES, SUCH AS SILT FENCE, ETC.) SHALL BE PER APPROVAL OF THE AASCD SEDIMENT CONTROL INSPECTOR.
   - BASINS WILL BE CONSTRUCTED PER APPROVAL BY MDE AND AASCD, UNDER THESE PERMIT DRAWINGS. CONSTRUCTION OF THE CUT–OFF TRENCH, PRINCIPAL AND EMERGENCY SPILLWAYS, AND ALL OTHER ASPEC



LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LEACHATE FORCE MAIN
- LOD — LIMIT OF DISTURBANCE
- CHECK DAM, SEE DETAIL 12/61
- PIPE
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- PERIMETER BERM, SEE DETAIL 7/16
- ENTRANCE ROAD, PAVED SURFACE, SEE DRAWING 5/8
- LANDFILL PERIMETER ROAD, SEE DRAWING 6/8
- SIGNS, SEE DRAWING 8
- SF — SILTFENCE SEE DETAIL E1/60
- SSF — SUPER SILTFENCE SEE DETAIL E3/60
- RPS — REMOVABLE PUMPING STATION (SEE DRAWING 61)
- TYPICAL WETLANDS
- ACTIVE WASTE PLACEMENT AREA
- PERIMETER DRAINAGE AREA DIVIDE
- IDD — INTERIOR DRAINAGE AREA DIVIDE
- FLOW PATH

REFERENCES:

1. BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.
2. HYDROGEOLOGIC AREAS AND MONITORING WELL LOCATIONS DIGITIZED FROM HARD COPY OF DRAWING ENTITLED "PERMANENT GROUNDWATER MONITORING WELL PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED MAY 2008.
3. ADDITIONAL HISTORICAL BORING LOCATIONS FROM HARD COPY OF DRAWING ENTITLED "PLATE 2, CHESAPEAKE RUBBLE LANDFILL HYDROGEOLOGIC BASE MAP," DATED NOVEMBER 2003, CREATED BY MARK SCHULTZ ASSOCIATES, ANNAPOLIS, MARYLAND.

SEQUENCE OF CONSTRUCTION FOR EAST SECTION

1. CONSTRUCTION OF THE ENTRANCE ROAD SHALL BE COMPLETED AS SHOWN ON DRAWINGS 54 AND 55 (FOR THE EAST ENTRANCE OPTION) OR DRAWING 56 (FOR THE NORTH ENTRANCE OPTION). EXPECTATIONS ARE THAT THE EAST ENTRANCE WILL BE THE SELECTED OPTION. IF THE EAST OPTION IS NOT THE SELECTED POINT OF ENTRY, THEN THE NORTH ENTRANCE IS NEXT PREFERRED LOCATION. THE SEQUENCING DESCRIBED HEREIN, WORKS FOR EITHER OPTION. IF THE SOUTH OPTION IS NECESSARY, THEN REVISIONS TO THE SEQUENCE OF CONSTRUCTION DESCRIBED HEREIN WILL BE NECESSARY.
2. THE FIRST PHASE OF CONSTRUCTION WILL BE THE ENTRANCE ROAD AND THE EMERGENCY EXIT, AND BASIN NO.4 (SEE DRAWINGS 54 AND 55 OR DRAWING 56). FOR THE EAST ENTRANCE OPTION THE PHASE 1 AREA OF DISTURBANCE IS APPROXIMATELY 14.5 ACRES, THE CUT VOLUME IS APPROXIMATELY 36,000 CY AND THE FILL VOLUME IS APPROXIMATELY 37,000 CY.
3. ONCE LESS THAN 10 ACRES OF DISTURBED AREA REMAINS FROM PHASE 1, CONSTRUCTION OF PHASE 2 WILL BEGIN. PHASE 2 WILL INCLUDE BASIN NO. 3 AND THE PERIMETER ACCESS ROADS, DRAINAGE SWALES, LEACHATE CONVEYANCE SYSTEM, AND PERIMETER LANDFILL BERM AROUND THE EAST DISPOSAL AREA AS SHOWN ON DRAWING 64. THE PHASE 2 AREA OF DISTURBANCE IS 15.0 ACRES, THE CUT VOLUME IS APPROXIMATELY 68,000 CY, AND THE FILL VOLUME IS APPROXIMATELY 43,000 CY. EXCESS SOILS FROM THE PHASE 2 CONSTRUCTION WILL BE PLACED IN A TEMPORARY STOCKPILE IN THE FUTURE CELL 10 FOOTPRINT.
4. ONCE LESS THAN 10 ACRES OF DISTURBED AREA REMAINS FROM PHASE 2, CONSTRUCTION OF PHASE 3 WILL COMMENCE. PHASE 3 INCLUDES COMPLETION OF THE REMAINING PERIMETER ACCESS ROADS, DRAINAGE SWALES, LEACHATE CONVEYANCE SYSTEM, AND PERIMETER LANDFILL BERM AROUND THE EAST DISPOSAL AREA, AND BASIN NO.2, AS SHOWN ON DRAWING 64. THE PHASE 3 AREA OF DISTURBANCE IS 14.0 ACRES, THE CUT VOLUME IS APPROXIMATELY 109,000 CY, AND THE FILL VOLUME IS APPROXIMATELY 109,000 CY. EXCESS SOILS FROM THE PHASE 2 CONSTRUCTION WILL BE PLACED IN A TEMPORARY STOCKPILE IN THE FUTURE CELL 10 FOOTPRINT.
5. REMOVABLE PUMPING STATIONS WILL BE CONSTRUCTED IN THE FOOTPRINTS OF FUTURE CELLS 11 (2 LOCATIONS) AND 12 (1 LOCATION) TO CAPTURE AND CONVEY STORM WATER RUNOFF FROM THE INTERIOR AREA OF THE EAST DISPOSAL AREA AS DEFINED BY THE PERIMETER BERM TO THE PERIMETER DRAINAGE SWALE THAT RUNS TO BASIN NO. 3.
6. SILT FENCE WILL BE INSTALLED AND MAINTAINED ALONG THE LIMIT OF DISTURBANCE AT ALL AREAS DOWN SLOPE OF DISTURBED AREAS.
7. THE CONTRACTOR SHALL MINIMIZE THE AREA OF DISTURBANCE TO THE EXTENT PRACTICABLE. NO AREAS OUTSIDE THE LIMIT OF DISTURBANCE LINES IN ANY PARTICULAR PHASE OR STAGE OF THE PROJECT SHALL BE DISTURBED.

NOTES:

1. THE PURPOSE OF THIS PLAN IS TO SHOW GRADING REQUIRED TO INSTALL BASIN 4, FUTURE EAST ENTRANCE FACILITIES, DISPOSAL CELLS, FUTURE ACCESS ROADS, AND PERIMETER CHANNELS AS SHOWN.
2. SEE SITE PLAN ON SHEET 3 FOR ASSUMED EAST ENTRANCE LOCATION.
3. SEE DRAWINGS 4 & 5 FOR ASSUMED EAST ENTRANCE GRADING PLAN.
4. SEE DRAWING 55 FOR EAST ENTRANCE GRADING SEDIMENT CONTROL PLAN.
5. SEE DRAWING 89 FOR OPTIONAL NORTH ENTRANCE PLAN.
6. SEE DRAWING 90 FOR OPTIONAL SOUTH ENTRANCE PLAN.
7. SEE DRAWING 50 FOR CONSTRUCTION OF BASIN NO. 4, EAST ENTRANCE FACILITIES, ACCESS ROADS AND PERIMETER DITCH No 8, IN THE AREA SHOWN HEREON.
8. SEE DRAWING 63, "SEQUENCE AND GENERAL NOTES FOR CONSTRUCTION", FOR CELLS 12 THROUGH 15 CONSTRUCTION REQUIREMENTS.
9. SEE DRAWINGS 6, 7, 10, 11, 12, 13, 17, AND 18 FOR BOTTOM OF CELL AND LINER SYSTEM GRADING INFORMATION.
10. AREAS ACHIEVING COMPLETED CLOSURE CAP ARE SHOWN WITH TOP OF CLOSURE CAP CONTOURS.

150 0 75 150 300 600

1 INCH = 150 FT

STATE OF MARYLAND — KARL R. STREYMAN — REGISTERED PROFESSIONAL ENGINEER — No. 19351

1/14/22

REVISION:	DATE:
REVISED TO ADDRESS MDE COMMENTS ON PHASE 3	9/03/2021
REVISED FOR E&S PERMIT SUBMISSION	9/30/2021
REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS	11/09/2021
FINAL ISSUED TO MDE	1/14/2022

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
1870 MARLTON PIKE EAST SUITE 10, CHERRY HILL, NJ 08003
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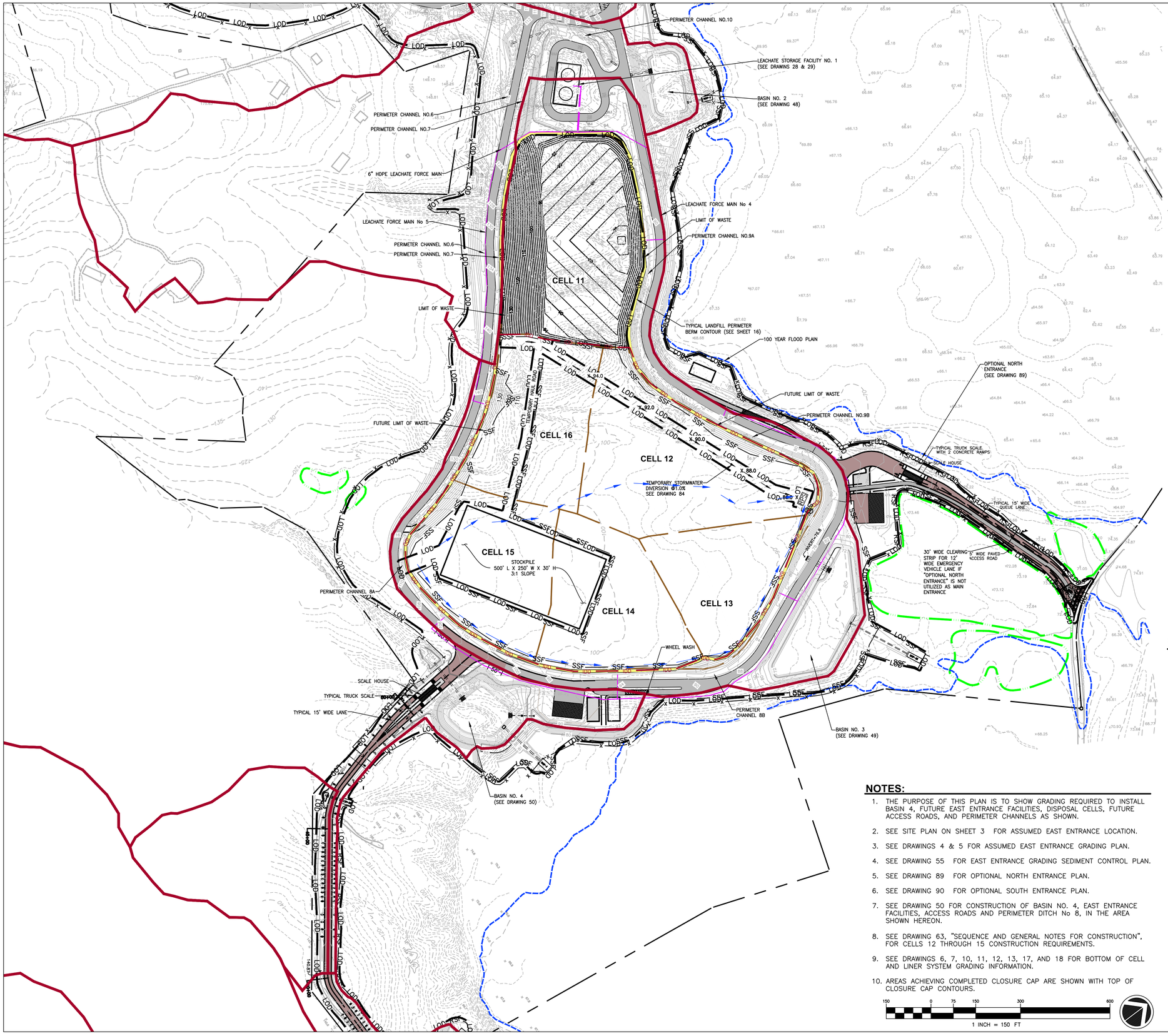
INTERMEDIATE CONSTRUCTION STAGE A (EAST DISPOSAL AREA CONSTRUCTION PHASES 1, 2 AND 3)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 64

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\IC B, Phase III Application\Drawings\Final\20183854 B064 - INTERMEDIATE CONSTRUCTION STAGE A (EAST DISPOSAL AREA PHASES 1,2&3).dwg, 1/13/2022 10:13:19 AM



LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LEACHATE FORCE MAIN
- LOD — LIMIT OF DISTURBANCE
- CHECK DAM, SEE DETAIL 12/61
- PIPE
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- PERIMETER BERM, SEE DETAIL 7/16
- ENTRANCE ROAD, PAVED SURFACE, SEE DRAWING 5/8
- LANDFILL PERIMETER ROAD, SEE DRAWING 6/8
- SIGNS, SEE DRAWING 8
- SF — SILTFENCE SEE DETAIL E1/60
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- TYPICAL WETLANDS
- RPS — REMOVABLE PUMPING STATION (SEE DRAWING 61)
- ACTIVE WASTE PLACEMENT AREA
- PERIMETER DRAINAGE AREA DIVIDE
- IDD — INTERIOR DRAINAGE AREA DIVIDE
- FLOW PATH
- 90.0 — TEMPORARY STORMWATER DIVERSION

REFERENCES:

1. BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.
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3. ADDITIONAL HISTORICAL BORING LOCATIONS FROM HARD COPY OF DRAWING ENTITLED "PLATE 2, CHESAPEAKE RUBBLE LANDFILL HYDROGEOLOGIC BASE MAP," DATED NOVEMBER 2003, CREATED BY MARK SCHULTZ ASSOCIATES, ANNAPOLIS, MARYLAND.

SEQUENCE OF CONSTRUCTION FOR EAST SECTION

1. AS CONSTRUCTION OF THE PERIMETER ROADS, BERMS, SWALES, LEACHATE COLLECTION PIPING AND LEACHATE STORAGE FACILITY NO. 1 ARE COMPLETED, AND REMAINING DISTURBED AREA IS < 10 ACRES, BEGIN TO PERFORM EXCAVATION AND GRADING WITHIN FOOTPRINT OF CELL 11 TO TOP OF SUBBASE (AREA = 7.0 ACRE, APPROXIMATE CUT = 306,000 CY). SEGREGATE SOILS AS TOPSOIL, SAND FOR USE IN LEACHATE COLLECTION LAYER, SOIL FOR USE IN FINAL COVER, INTERMEDIATE COVER, PROTECTIVE COVER AND STRUCTURAL FILL. STAGE MATERIAL IN 250 FT. X 500 FT. TEMPORARY STOCKPILE AREA IN FUTURE CELLS 14 AND 15 (3:1 SIDE SLOPE, 30 FT. MAX HEIGHT AND 75,000 CY VOLUME (APPROX.)). RESERVE APPROXIMATELY 23,000 CY OF SANDY SOILS FOR USE IN CELL 11 LEACHATE COLLECTION LAYER. TRANSPORT EXCESS SOILS TO STOCKPILE IN WEST DISPOSAL AREA FOR FUTURE USE DURING CONSTRUCTION OF WEST DISPOSAL AREA. (SEE SPECS FOR ALL MATERIAL REQUIREMENTS).
2. OVER EXCAVATE CELL 11 SUBBASE BY 2 FEET. CONSTRUCT SUBBASE IN ACCORDANCE WITH SPECIFICATIONS. REUSE, AMEND OR REPLACE SUBBASE MATERIAL AS NECESSARY TO ACHIEVE REQUIRED MATERIAL PARAMETERS (INCLUDING PERMEABILITY).
3. INSTALL LINER SYSTEM, INCLUDING LEACHATE COLLECTION AND REMOVAL SYSTEM, IN CELL 11.
4. CONSTRUCT TEMPORARY STORMWATER DIVERSION ALONG THE WEST EDGE OF CELL 11 TO PREVENT STORMWATER RUNON INTO CELL 11 AND TO DIRECT STORMWATER FROM OUTSIDE CELL 11 TO REMOVABLE PUMPING STATION IN CELL 12. OPERATE REMOVABLE STORMWATER PUMPING STATIONS IN CELL 11 UNTIL LINER INSTALLATION.
5. BEGIN LANDFILLING OPERATIONS IN CELL 11 WITH PLACEMENT OF 4 FEET THICK SELECT WASTE LAYER, AFTER MDE APPROVAL OF CELL LINER SYSTEM CONSTRUCTION.
6. BEGIN COLLECTION AND MANAGEMENT OF ALL LIQUID WITHIN CELL 11 AS LEACHATE IMMEDIATELY FOLLOWING START OF WASTE PLACEMENT IN CELL 11. PRECIPITATION FALLING WITHIN THE CELL 11 FOOTPRINT PRIOR TO THE START OF WASTE PLACEMENT MAY BE MANAGED AS STORMWATER AND PUMPED TO THE REMOVABLE PUMPING STATION IN CELL 12 FOOTPRINT, OR DISCHARGED TO THE PERIMETER CHANNEL OR BASIN NO. 3 THROUGH A FILTER BAG.

NOTES:

1. THE PURPOSE OF THIS PLAN IS TO SHOW GRADING REQUIRED TO INSTALL BASIN 4, FUTURE EAST ENTRANCE FACILITIES, DISPOSAL CELLS, FUTURE ACCESS ROADS, AND PERIMETER CHANNELS AS SHOWN.
2. SEE SITE PLAN ON SHEET 3 FOR ASSUMED EAST ENTRANCE LOCATION.
3. SEE DRAWINGS 4 & 5 FOR ASSUMED EAST ENTRANCE GRADING PLAN.
4. SEE DRAWING 55 FOR EAST ENTRANCE GRADING SEDIMENT CONTROL PLAN.
5. SEE DRAWING 89 FOR OPTIONAL NORTH ENTRANCE PLAN.
6. SEE DRAWING 90 FOR OPTIONAL SOUTH ENTRANCE PLAN.
7. SEE DRAWING 50 FOR CONSTRUCTION OF BASIN NO. 4, EAST ENTRANCE FACILITIES, ACCESS ROADS AND PERIMETER DITCH No 8, IN THE AREA SHOWN HEREON.
8. SEE DRAWING 63, "SEQUENCE AND GENERAL NOTES FOR CONSTRUCTION", FOR CELLS 12 THROUGH 15 CONSTRUCTION REQUIREMENTS.
9. SEE DRAWINGS 6, 7, 10, 11, 12, 13, 17, AND 18 FOR BOTTOM OF CELL AND LINER SYSTEM GRADING INFORMATION.
10. AREAS ACHIEVING COMPLETED CLOSURE CAP ARE SHOWN WITH TOP OF CLOSURE CAP CONTOURS.

150 0 75 150 300 600

1 INCH = 150 FT

STATE OF MARYLAND — PAUL G. STREYMAN — REGISTERED PROFESSIONAL ENGINEER — No. 19321

1/14/22

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
9/30/2021	REVISED FOR E&S PERMIT SUBMISSION
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

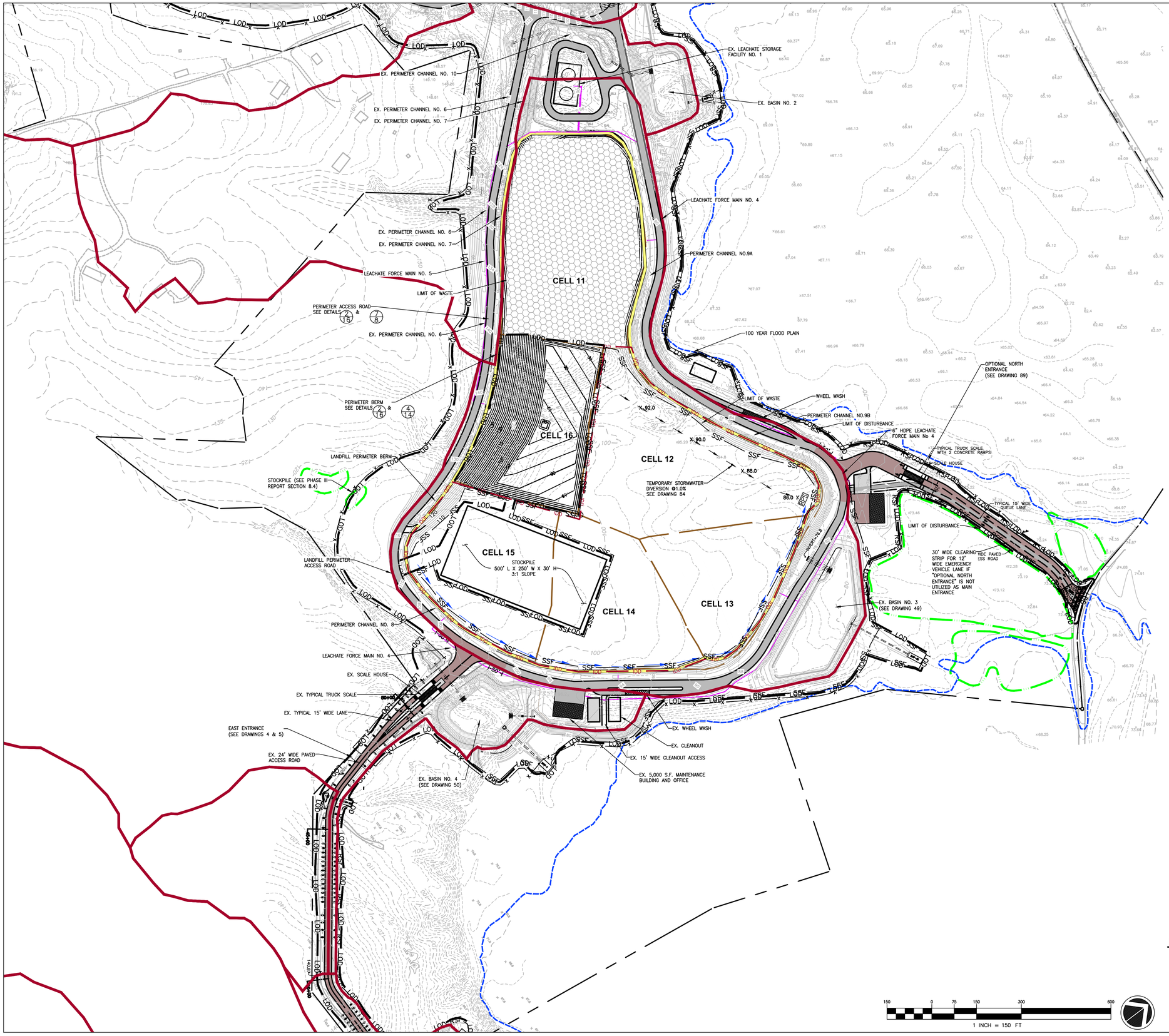
ADVANCED GeoServices
a Montrose Environmental Group company
1978 HAMILTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2771 F: 856.354.8236 www.advancedgeoservices.com

INTERMEDIATE CONSTRUCTION STAGE B (CELL 11)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 - 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 65

N:\Projects\2018\2018854 - Chesapeake Terrace LF\CAD\DWG\RC B Phase III Application\Drawings\Final\20183854 B065 - INTERMEDIATE CONSTRUCTION STAGE B (CELL 11).dwg, 1/13/2022 10:13:58 AM



LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LEACHATE FORCE MAIN
- LOD — LIMIT OF DISTURBANCE
- CHECK DAM, SEE DETAIL 12/61
- PIPE
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- PERIMETER BERM, SEE DETAIL 7/16
- ENTRANCE ROAD, PAVED SURFACE, SEE DRAWING 5/8
- LANDFILL PERIMETER ROAD, SEE DRAWING 6/8
- SIGNS, SEE DRAWING 8
- SF — SILTFENCE SEE DETAIL E1/60
- SSF — SUPER SILTFENCE SEE DETAIL E3/60
- TYPICAL WETLANDS
- RPS — REMOVABLE PUMPING STATION (SEE DRAWING 61)
- ACTIVE WASTE PLACEMENT AREA
- PERIMETER DRAINAGE AREA DIVIDE
- IDD — INTERIOR DRAINAGE AREA DIVIDE
- FLOW PATH
- X 90.0 — TEMPORARY STORMWATER DIVERSION

REFERENCES:

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3. ADDITIONAL HISTORICAL BORING LOCATIONS FROM HARD COPY OF DRAWING ENTITLED "PLATE 2, CHESAPEAKE RUBBLE LANDFILL HYDROGEOLOGIC BASE MAP," DATED NOVEMBER 2003, CREATED BY MARK SCHULTZ ASSOCIATES, ANNAPOLIS, MARYLAND.

SEQUENCE OF CONSTRUCTION FOR EAST SECTION

1. AS LANDFILLING IN CELL 11 ADVANCES PERFORM EXCAVATION AND GRADING WITHIN FOOTPRINT OF CELL 16 TO TOP OF SUBBASE (AREA = 4.5 ACRE, APPROXIMATE CUT = 133,000 CY). RESERVE APPROXIMATELY 15,000 CY OF SANDY SOILS FOR USE IN CELL 16 LEACHATE COLLECTION LAYER. UTILIZE EXCESS SOILS FOR INTERMEDIATE COVER, FINAL COVER OR CLOSURE CAP, OR TRANSPORT EXCESS TO STOCKPILE IN WEST DISPOSAL AREA, OR PLACE IN TEMPORARY STOCKPILE IN CELLS 14 AND 15 FOOTPRINT. (SEE SPECS FOR ALL MATERIAL REQUIREMENTS).
2. OVER EXCAVATE CELL 16 SUBBASE BY 2 FEET. CONSTRUCT SUBBASE IN ACCORDANCE WITH SPECIFICATIONS. REUSE, AMEND OR REPLACE SUBBASE MATERIAL AS NECESSARY TO ACHIEVE REQUIRED MATERIAL PARAMETERS (INCLUDING PERMEABILITY).
3. INSTALL LINER SYSTEM, INCLUDING LEACHATE COLLECTION AND REMOVAL SYSTEM, IN CELL 16.
4. BEGIN LANDFILLING OPERATIONS IN CELL 16 WITH PLACEMENT OF 4 FEET THICK SELECT WASTE LAYER, AFTER MDE APPROVAL OF CELL LINER SYSTEM CONSTRUCTION.
5. BEGIN COLLECTION AND MANAGEMENT OF ALL LIQUID WITHIN CELL 16 AS LEACHATE IMMEDIATELY FOLLOWING START OF WASTE PLACEMENT IN CELL 16 OR WHEN RUNOFF FROM ADJACENT WASTE AREAS ENTERS THE CELL (WHICHEVER OCCURS FIRST). PRECIPITATION FALLING WITHIN THE CELL 16 FOOTPRINT PRIOR TO THE START OF WASTE PLACEMENT OR RUNOFF FROM ADJACENT AREAS MAY BE MANAGED AS STORMWATER AND PUMPED TO THE REMOVABLE PUMPING STATION IN CELL 12 FOOTPRINT OR DISCHARGED TO THE PERIMETER CHANNEL OR BASIN NO. 3 THROUGH A FILTER BAG.
6. INSTALL FINAL COVER ON UNCAPPED AREAS THAT HAVE ACHIEVED FINAL GRADE.

NOTES:

1. ITEMS LABELED AS "EXISTING" (EX.) ARE INTENDED TO HAVE BEEN CONSTRUCTED AT THE TIME OF THE SEQUENCE REFLECTED ON THIS DRAWING.
2. SEE DRAWINGS 6, 7, 10, 11, 12, 13 ,17, AND 18 FOR BOTTOM OF CELL AND LINER SYSTEM GRADING INFORMATION.
3. AREAS ACHIEVING COMPLETED CLOSURE CAP ARE SHOWN WITH TOP OF CLOSURE CAP CONTOURS.

STATE OF MARYLAND — RICHARD STRAYMAN — REGISTERED PROFESSIONAL ENGINEER — 19351 — 1/14/22

REVISION:	DATE:
REVISED TO ADDRESS MDE COMMENTS ON PHASE 3	9/03/2021
REVISED FOR E&S PERMIT SUBMISSION	9/30/2021
REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS	11/09/2021
FINAL ISSUED TO MDE	1/14/2022

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

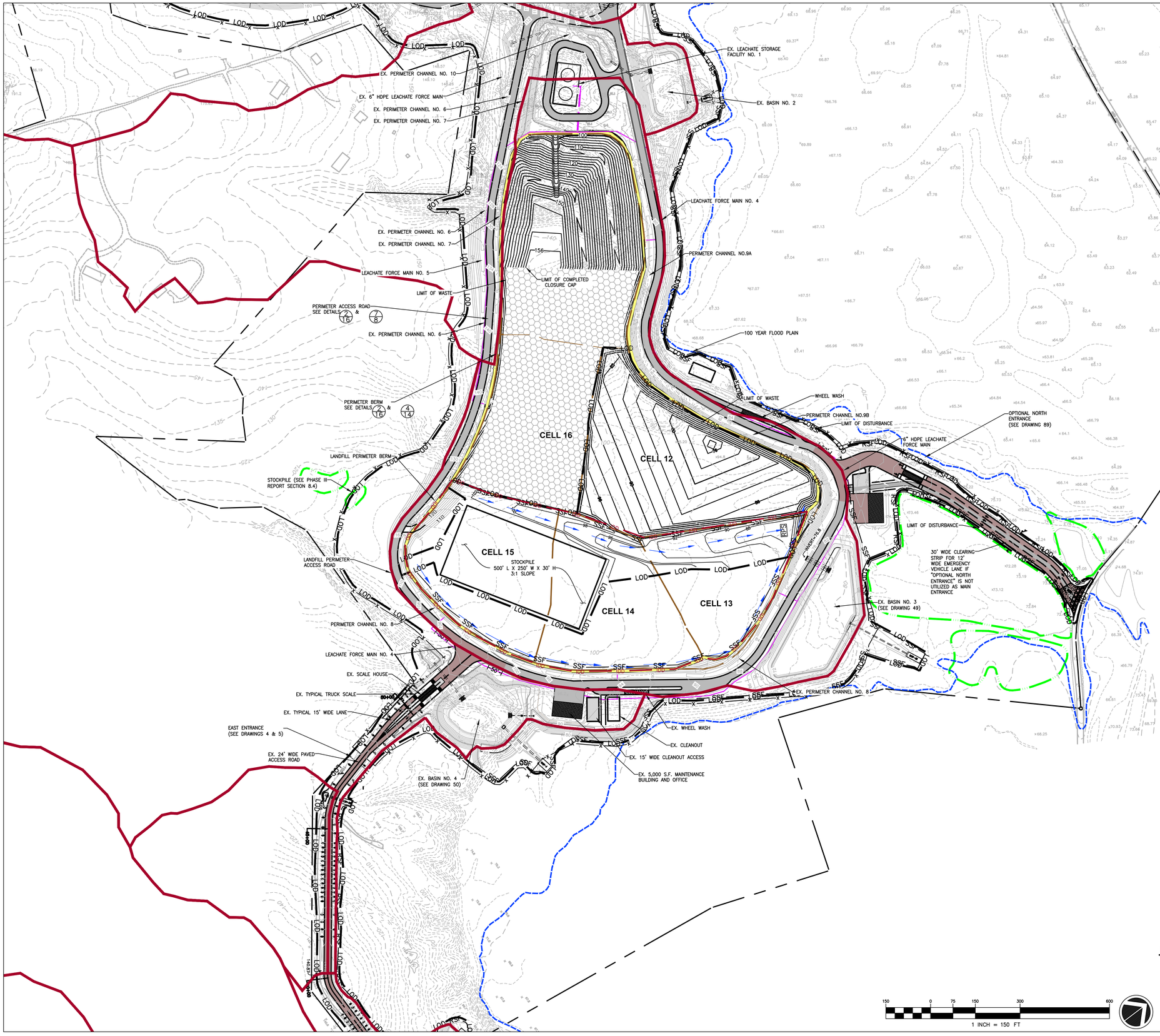
ADVANCED GeoServices
a Montrose Environmental Group company
1878 MARLTON PIKE EAST SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

INTERMEDIATE CONSTRUCTION STAGE C (CELL 16)

PROJECT MANAGER: PGS	SCALE:AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE:09/03/2021

DRAWING 66

N:\Projects\2018\2018854 - Chesapeake Terrace LF\CAD\DWG\IC B, Phase III Application\Drawings\Final\20183854 B066 - INTERMEDIATE CONSTRUCTION STAGE C (CELL 16).dwg, 1/13/2022 10:14:36 AM



LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LEACHATE FORCE MAIN
- LOD — LIMIT OF DISTURBANCE
- CHECK DAM, SEE DETAIL 12/61
- PIPE
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- PERIMETER BERM, SEE DETAIL 7/16
- ENTRANCE ROAD, PAVED SURFACE, SEE DRAWING 5/8
- LANDFILL PERIMETER ROAD, SEE DRAWING 6/8
- SIGNS, SEE DRAWING 8
- SF — SILTFENCE SEE DETAIL E1/60
- SSF — SUPER SILTFENCE SEE DETAIL E3/60
- TYPICAL WETLANDS
- RPS — REMOVABLE PUMPING STATION (SEE DRAWING 61)
- ACTIVE WASTE PLACEMENT AREA
- PERIMETER DRAINAGE AREA DIVIDE
- IDD — INTERIOR DRAINAGE AREA DIVIDE
- FLOW PATH
- x 90.0 — TEMPORARY STORMWATER DIVERSION

REFERENCES:

1. BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.
2. HYDROGEOLOGIC AREAS AND MONITORING WELL LOCATIONS DIGITIZED FROM HARD COPY OF DRAWING ENTITLED "PERMANENT GROUNDWATER MONITORING WELL PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED MAY 2008.
3. ADDITIONAL HISTORICAL BORING LOCATIONS FROM HARD COPY OF DRAWING ENTITLED "PLATE 2, CHESAPEAKE RUBBLE LANDFILL HYDROGEOLOGIC BASE MAP," DATED NOVEMBER 2003, CREATED BY MARK SCHULTZ ASSOCIATES, ANNAPOLIS, MARYLAND.

SEQUENCE OF CONSTRUCTION FOR EAST SECTION

1. AS LANDFILLING IN CELL 16 ADVANCES PERFORM EXCAVATION AND GRADING WITHIN FOOTPRINT OF CELL 12 TO TOP OF SUBBASE (AREA = 6.7 ACRE, APPROXIMATE CUT = 91,000 CY). RESERVE APPROXIMATELY 22,000 CY OF SANDY SOILS FOR USE IN CELL 14 LEACHATE COLLECTION LAYER. UTILIZE EXCESS SOILS FOR INTERMEDIATE COVER, FINAL COVER OR CLOSURE CAP, OR TRANSPORT EXCESS TO STOCKPILE IN WEST DISPOSAL AREA, OR PLACE IN TEMPORARY STOCKPILE IN CELLS 14 AND 15 FOOTPRINT. (SEE SPECS FOR ALL MATERIAL REQUIREMENTS).
2. CONSTRUCT TEMPORARY STORMWATER DIVERSION ALONG TO REMOVABLE STORMWATER STATION IN CELL 13 FOOTPRINT.
3. OVER EXCAVATE CELL 12 SUBBASE BY 2 FEET. CONSTRUCT SUBBASE IN ACCORDANCE WITH SPECIFICATIONS. REUSE, AMEND OR REPLACE SUBBASE MATERIAL AS NECESSARY TO ACHIEVE REQUIRED MATERIAL PARAMETERS (INCLUDING PERMEABILITY).
4. INSTALL LINER SYSTEM, INCLUDING LEACHATE COLLECTION AND REMOVAL SYSTEM, IN CELL 12.
5. BEGIN LANDFILLING OPERATIONS IN CELL 12 WITH PLACEMENT OF 4 FEET THICK SELECT WASTE LAYER, AFTER MDE APPROVAL OF CELL LINER SYSTEM CONSTRUCTION.
6. BEGIN COLLECTION AND MANAGEMENT OF ALL LIQUID WITHIN CELL 12 AS LEACHATE IMMEDIATELY FOLLOWING START OF WASTE PLACEMENT IN CELL 12 OR WHEN RUNOFF FROM ADJACENT WASTE AREAS ENTERS THE CELL (WHICHEVER OCCURS FIRST). PRECIPITATION FALLING WITHIN THE CELL 12 FOOTPRINT PRIOR TO THE START OF WASTE PLACEMENT OR PRIOR TO START OF RUNOFF FROM ADJACENT WASTE AREAS MAY BE MANAGED AS STORMWATER AND PUMPED TO THE REMOVABLE PUMPING STATION IN CELL 13 FOOTPRINT OR DISCHARGED TO THE PERIMETER CHANNEL OR BASIN NO. 3 THROUGH A FILTER BAG.
7. INSTALL FINAL COVER AND CLOSURE CAP ON UNCAPPED AREAS THAT HAVE ACHIEVED FINAL GRADE. INSTALL CABLE CONCRETE CHANNEL LINING IN DOWNCHUTES.

NOTES:

1. ITEMS LABELED AS "EXISTING" (EX.) ARE INTENDED TO HAVE BEEN CONSTRUCTED AT THE TIME OF THE SEQUENCE REFLECTED ON THIS DRAWING.
2. SEE DRAWINGS 6, 7, 10, 11, 12, 13 ,17, AND 18 FOR BOTTOM OF CELL AND LINER SYSTEM GRADING INFORMATION
3. REAS ACHIEVING COMPLETED CLOSURE CAP ARE SHOWN WITH TOP OF CLOSURE CAP CONTOURS.

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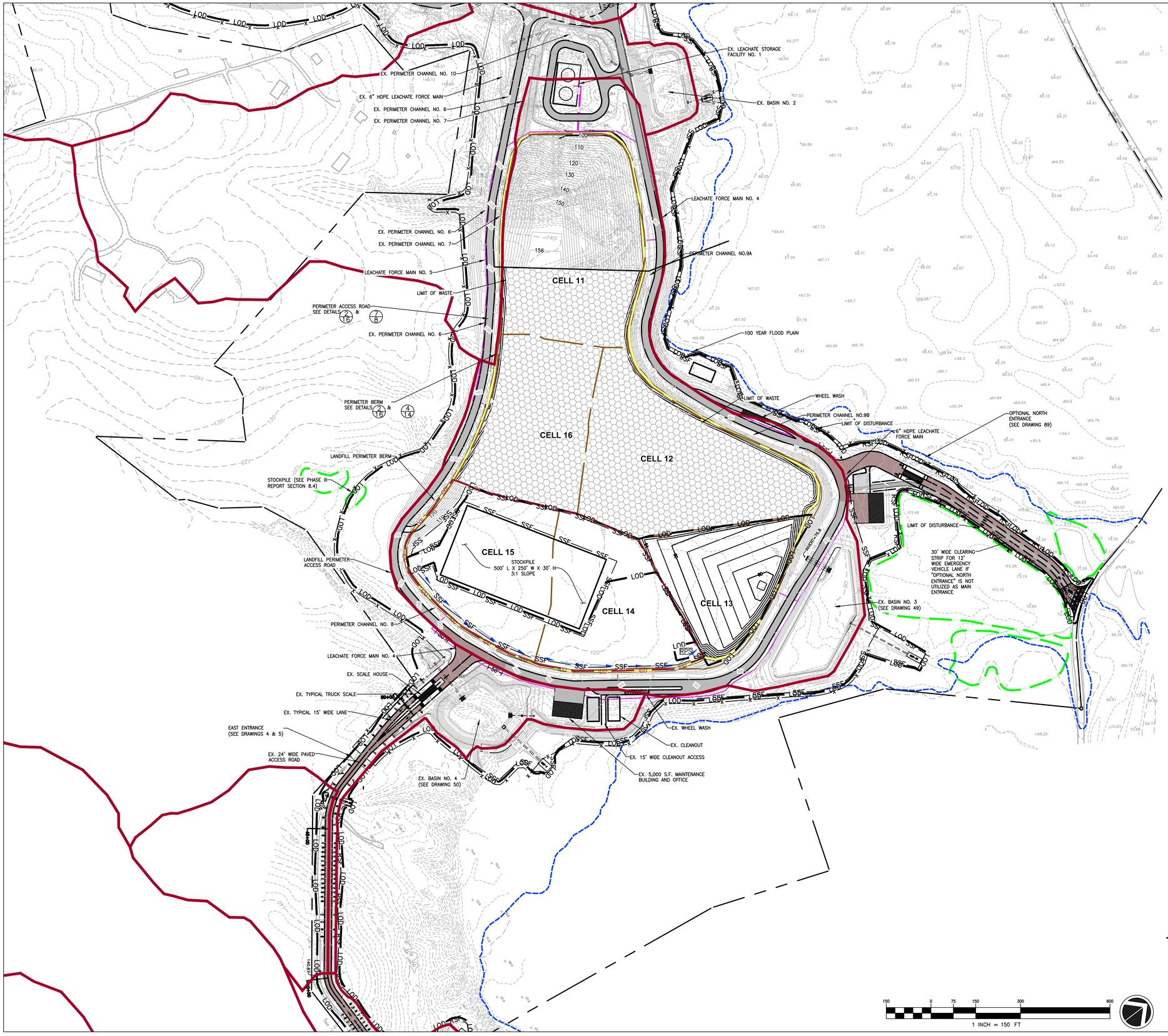
INTERMEDIATE CONSTRUCTION STAGE D (CELL 12)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 - 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 67

N:\Projects\2018\2018\3854 - Chesapeake Terrace LF\CAD\DWG\RC B Phase III Application\Drawings\Final\20183854 B067 - INTERMEDIATE CONSTRUCTION STAGE D (CELL 12).dwg, 1/13/2022 10:15:14 AM



LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LEACHATE FORCE MAIN
- LOD — LIMIT OF DISTURBANCE
- CHECK DAM, SEE DETAIL 12/61
- PIPE
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- PERIMETER BERM, SEE DETAIL 7/16
- ENTRANCE ROAD, PAVED SURFACE, SEE DRAWING 5/8
- LANDFILL PERIMETER ROAD, SEE DRAWING 6/8
- SIGNS, SEE DRAWING 8
- SF — SILTFENCE SEE DETAIL E1/60
- SSF — SUPER SILTFENCE SEE DETAIL E3/60
- TYPICAL WETLANDS
- RPS — REMOVABLE PUMPING STATION (SEE DRAWING 61)
- ACTIVE WASTE PLACEMENT AREA
- PERIMETER DRAINAGE AREA DIVIDE
- IDD — INTERIOR DRAINAGE AREA DIVIDE
- FLOW PATH
- x 90.0 — TEMPORARY STORMWATER DIVERSION

REFERENCES:

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3. ADDITIONAL HISTORICAL BORING LOCATIONS FROM HARD COPY OF DRAWING ENTITLED "PLATE 2, CHESAPEAKE RUBBLE LANDFILL HYDROGEOLOGIC BASE MAP," DATED NOVEMBER 2003, CREATED BY MARK SCHULTZ ASSOCIATES, ANNAPOLIS, MARYLAND.

SEQUENCE OF CONSTRUCTION FOR EAST SECTION

1. AS LANDFILLING IN CELLS 12 AND 16 ADVANCES PERFORM EXCAVATION AND GRADING WITHIN FOOTPRINT OF CELL 13 TO TOP OF SUBBASE (AREA = 3.4 ACRE, APPROXIMATE CUT = 34,000 CY). RESERVE APPROXIMATELY 11,000 CY OF SANDY SOILS FOR USE IN CELL 13 LEACHATE COLLECTION LAYER. UTILIZE EXCESS SOILS FOR INTERMEDIATE COVER, FINAL COVER OR CLOSURE CAP, AND TRANSPORT EXCESS TO STOCKPILE IN WEST DISPOSAL AREA, OR PLACE IN TEMPORARY STOCKPILE IN CELLS 14 AND 15 FOOTPRINT. (SEE SPECS FOR ALL MATERIAL REQUIREMENTS).
2. OVER EXCAVATE CELL 13 SUBBASE BY 2 FEET. CONSTRUCT SUBBASE IN ACCORDANCE WITH SPECIFICATIONS. REUSE, AMEND OR REPLACE SUBBASE MATERIAL AS NECESSARY TO ACHIEVE REQUIRED MATERIAL PARAMETERS (INCLUDING PERMEABILITY).
3. INSTALL LINER SYSTEM, INCLUDING LEACHATE COLLECTION AND REMOVAL SYSTEM, IN CELL 13.
4. BEGIN LANDFILLING OPERATIONS IN CELL 13 WITH PLACEMENT OF 4 FEET THICK SELECT WASTE LAYER, AFTER MDE APPROVAL OF CELL LINER SYSTEM CONSTRUCTION.
5. BEGIN COLLECTION AND MANAGEMENT OF ALL LIQUID WITHIN CELL 13 AS LEACHATE IMMEDIATELY FOLLOWING START OF WASTE PLACEMENT IN CELL 13 OR WHEN RUNOFF FROM ADJACENT WASTE AREAS ENTERS THE CELL (WHICHEVER OCCURS FIRST). PRECIPITATION FALLING WITHIN THE CELL 13 FOOTPRINT PRIOR TO THE START OF WASTE PLACEMENT OR PRIOR TO THE START OF RUNOFF FROM ADJACENT WASTE AREAS MAY BE MANAGED AS STORMWATER AND PUMPED TO THE REMOVABLE PUMPING STATION IN CELL 14 FOOTPRINT OR DISCHARGED TO THE PERIMETER CHANNEL OR BASIN NO. 3 THROUGH A FILTER BAG.
6. INSTALL FINAL COVER ON UNCAPPED AREAS THAT HAVE ACHIEVED FINAL GRADE.

NOTES:

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STATE OF MARYLAND — RICHARD P. STREYMAN — REGISTERED PROFESSIONAL ENGINEER — No. 19351

1/14/22

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NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

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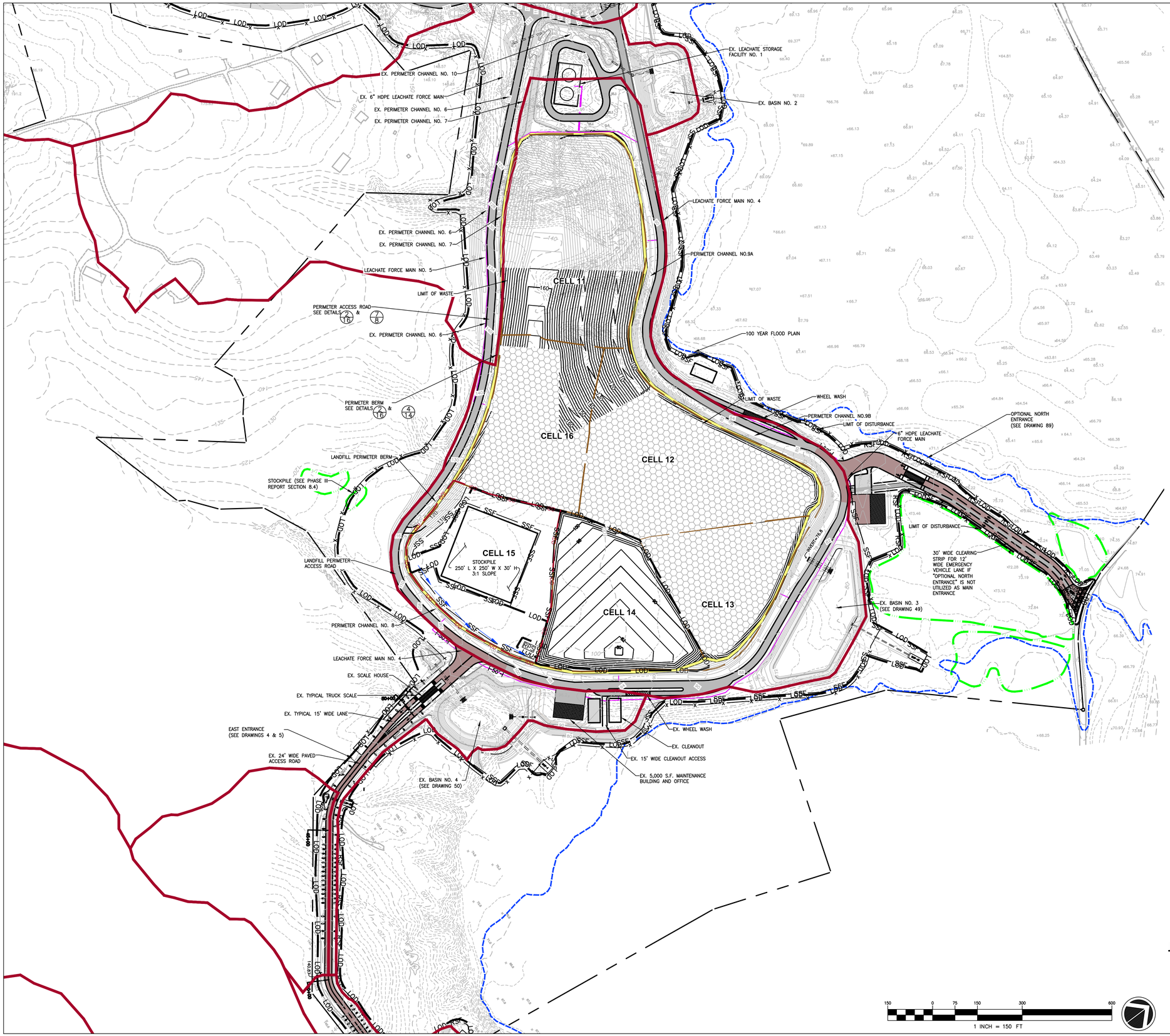
INTERMEDIATE CONSTRUCTION STAGE E (CELL 13)

PROJECT MANAGER: PGS	SCALE:AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE:09/03/2021

DRAWING 68

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\IC B, Phase III Application\Drawings\Final\20183854 B068 - INTERMEDIATE CONSTRUCTION STAGE E (CELL 13).dwg, 1/13/2022 10:15:53 AM



LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LEACHATE FORCE MAIN
- LOD — LIMIT OF DISTURBANCE
- CHECK DAM, SEE DETAIL 12/61
- PIPE
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- PERIMETER BERM, SEE DETAIL 7/16
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- LANDFILL PERIMETER ROAD, SEE DRAWING 6/8
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- SSF — SUPER SILTFENCE SEE DETAIL E3/60
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- RPS — REMOVABLE PUMPING STATION (SEE DRAWING 61)
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- PERIMETER DRAINAGE AREA DIVIDE
- IDD — INTERIOR DRAINAGE AREA DIVIDE
- FLOW PATH
- x 90.0 — TEMPORARY STORMWATER DIVERSION

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SEQUENCE OF CONSTRUCTION FOR EAST SECTION

1. AS LANDFILLING IN CELL 13 ADVANCES PERFORM EXCAVATION AND GRADING WITHIN FOOTPRINT OF CELL 14 TO TOP OF SUBBASE (AREA = 4.3 ACRE, APPROXIMATE CUT = 67,000 CY). AT THIS STAGE, REMOVE REMAINING STOCKPILE WITHIN CELL 14 FOOTPRINT. RESERVE APPROXIMATELY 14,000 CY OF SANDY SOILS FOR USE IN CELL 14 LEACHATE COLLECTION LAYER. UTILIZE EXCESS SOILS FOR INTERMEDIATE COVER, FINAL COVER OR CLOSURE CAP, AND TRANSPORT EXCESS TO STOCKPILE IN WEST DISPOSAL AREA, UTILIZE FOR PHASE 6 CONSTRUCTION (PERIMETER BERM AND ACCESS ROAD) AT WEST DISPOSAL AREA, OR PLACE IN REMAINING PORTION OF TEMPORARY STOCKPILE IN CELL 15 FOOTPRINT. (SEE SPECS FOR ALL MATERIAL REQUIREMENTS).
2. OVER EXCAVATE CELL 14 SUBBASE BY 2 FEET. CONSTRUCT SUBBASE IN ACCORDANCE WITH SPECIFICATIONS. REUSE, AMEND OR REPLACE SUBBASE MATERIAL AS NECESSARY TO ACHIEVE REQUIRED MATERIAL PARAMETERS (INCLUDING PERMEABILITY).
3. INSTALL LINER SYSTEM, INCLUDING LEACHATE COLLECTION AND REMOVAL SYSTEM, IN CELL 14.
4. BEGIN LANDFILLING OPERATIONS IN CELL 14 WITH PLACEMENT OF 4 FEET THICK SELECT WASTE LAYER, AFTER MDE APPROVAL OF CELL LINER SYSTEM CONSTRUCTION.
5. BEGIN COLLECTION AND MANAGEMENT OF ALL LIQUID WITHIN CELL 14 AS LEACHATE IMMEDIATELY FOLLOWING START OF WASTE PLACEMENT IN CELL 14 OR WHEN RUNOFF FROM ADJACENT WASTE AREAS ENTERS THE CELL (WHICHEVER OCCURS FIRST). PRECIPITATION FALLING WITHIN THE CELL 14 FOOTPRINT PRIOR TO THE START OF WASTE PLACEMENT OR PRIOR TO THE START OF RUNOFF FROM ADJACENT WASTE AREAS MAY BE MANAGED AS STORMWATER AND PUMPED TO THE REMOVABLE PUMPING STATION IN CELL 15 FOOTPRINT OR DISCHARGED TO THE PERIMETER CHANNEL OR BASIN NO. 3 THROUGH A FILTER BAG.
6. INSTALL FINAL COVER AND CLOSURE CAP ON UNCAPPED AREAS THAT HAVE ACHIEVED FINAL GRADE. INSTALL CABLE CONCRETE CHANNEL LINING IN DOWNCHUTES.

NOTES:

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2. SEE DRAWINGS 6, 7, 10, 11, 12, 13 ,17, AND 18 FOR BOTTOM OF CELL AND LINER SYSTEM GRADING INFORMATION.
3. AREAS ACHIEVING COMPLETED CLOSURE CAP ARE SHOWN WITH TOP OF CLOSURE CAP CONTOURS.

STATE OF MARYLAND — PAUL STEVEN RUDY — REGISTERED PROFESSIONAL ENGINEER — No. 19351

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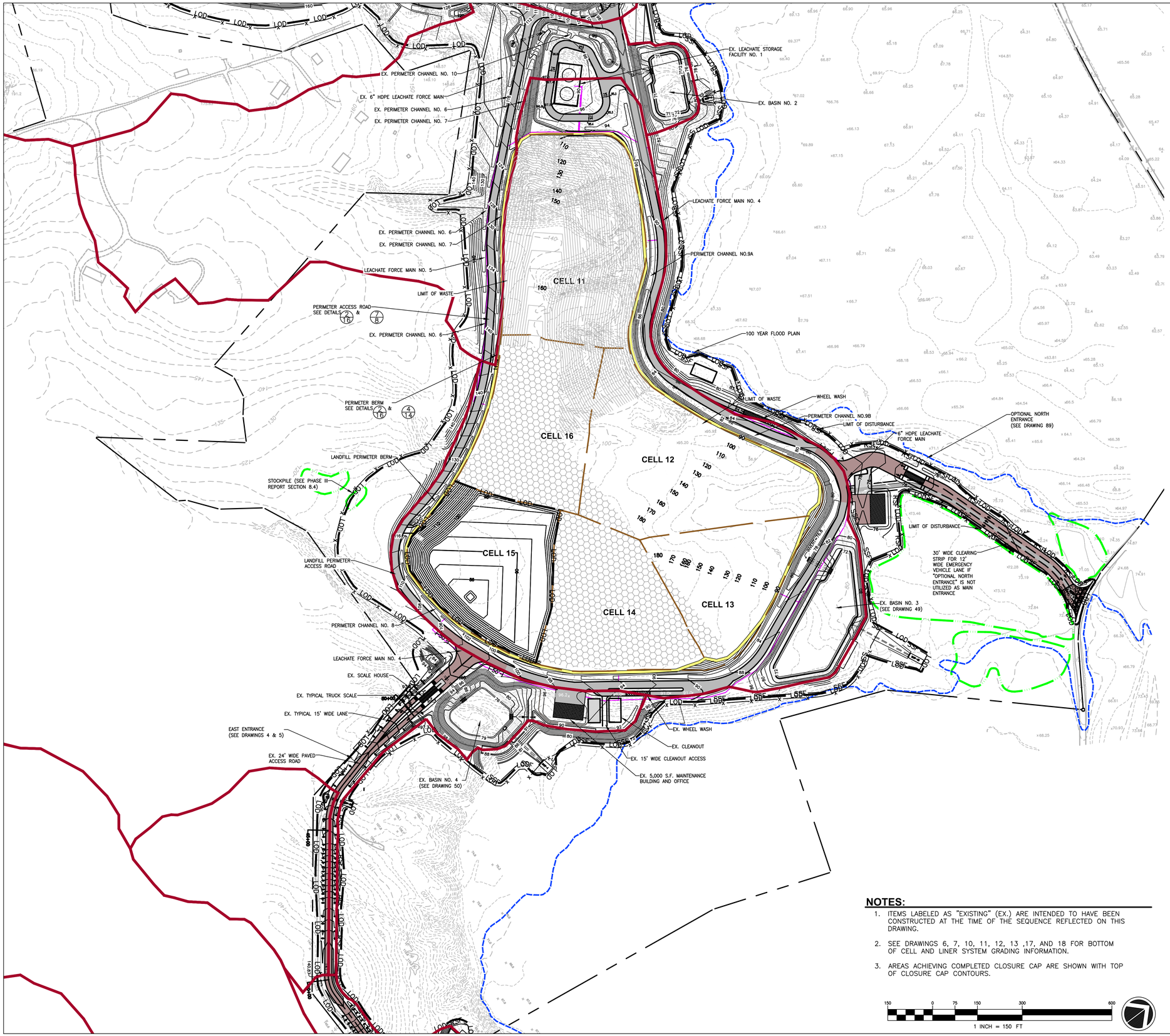
INTERMEDIATE CONSTRUCTION STAGE F (CELL 14)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 69

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 B069 - INTERMEDIATE CONSTRUCTION STAGE F (CELL 14).dwg, 1/13/2022 10:16:31 AM



LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LEACHATE FORCE MAIN
- LOD — LIMIT OF DISTURBANCE
- CHECK DAM, SEE DETAIL 12/61
- PIPE
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- PERIMETER BERM, SEE DETAIL 7/16
- ENTRANCE ROAD, PAVED SURFACE, SEE DRAWING 5/8
- LANDFILL PERIMETER ROAD, SEE DRAWING 6/8
- SIGNS, SEE DRAWING 8
- SF — SILTFENCE SEE DETAIL F1/60
- SSF — SUPER SILTFENCE SEE DETAIL E3/60
- TYPICAL WETLANDS
- RPS — REMOVABLE PUMPING STATION (SEE DRAWING 61)
- ACTIVE WASTE PLACEMENT AREA
- PERIMETER DRAINAGE AREA DIVIDE
- IDD — INTERIOR DRAINAGE AREA DIVIDE
- FLOW PATH
- x 90.0 — TEMPORARY STORMWATER DIVERSION

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3. ADDITIONAL HISTORICAL BORING LOCATIONS FROM HARD COPY OF DRAWING ENTITLED "PLATE 2, CHESAPEAKE RUBBLE LANDFILL HYDROGEOLOGIC BASE MAP," DATED NOVEMBER 2003, CREATED BY MARK SCHULTZ ASSOCIATES, ANNAPOLIS, MARYLAND.

SEQUENCE OF CONSTRUCTION FOR EAST SECTION

1. AS LANDFILLING IN CELL 14 ADVANCES PERFORM EXCAVATION AND GRADING WITHIN FOOTPRINT OF CELL 15 TO TOP OF SUBBASE (AREA = 4.7 ACRE, APPROXIMATE CUT = 88,000 CY). AT THIS STAGE, REMOVE REMAINING STOCKPILE WITHIN CELL 15 FOOTPRINT. RESERVE APPROXIMATELY 15,000 CY OF SANDY SOILS FOR USE IN LEACHATE COLLECTION LAYER. UTILIZE EXCESS SOILS FOR INTERMEDIATE COVER, FINAL COVER OR CLOSURE CAP, AND TRANSPORT EXCESS TO WEST DISPOSAL AREA, OR PLACE IN TEMPORARY STOCKPILE SOUTHWEST OF CELL 15. (SEE SPECS FOR ALL MATERIAL REQUIREMENTS).
2. OVER EXCAVATE CELL 15 SUBBASE BY 2 FEET. CONSTRUCT SUBBASE IN ACCORDANCE WITH SPECIFICATIONS. REUSE, AMEND OR REPLACE SUBBASE MATERIAL AS NECESSARY TO ACHIEVE REQUIRED MATERIAL PARAMETERS (INCLUDING PERMEABILITY).
3. INSTALL LINER SYSTEM, INCLUDING LEACHATE COLLECTION AND REMOVAL SYSTEM, IN CELL 15.
4. BEGIN LANDFILLING OPERATIONS IN CELL 15 WITH PLACEMENT OF 4 FEET THICK SELECT WASTE LAYER, AFTER MDE APPROVAL OF CELL LINER SYSTEM CONSTRUCTION.
5. BEGIN COLLECTION AND MANAGEMENT OF ALL LIQUID WITHIN CELL 15 AS LEACHATE IMMEDIATELY FOLLOWING START OF WASTE PLACEMENT IN CELL 15 OR WHEN RUNOFF FROM ADJACENT WASTE AREAS ENTERS THE CELL (WHICHEVER OCCURS FIRST). PRECIPITATION FALLING WITHIN THE CELL 15 FOOTPRINT PRIOR TO THE START OF WASTE PLACEMENT OR PRIOR TO THE START OF RUNOFF FROM ADJACENT WASTE AREAS MAY BE MANAGED AS STORMWATER AND DISCHARGED TO THE PERIMETER CHANNEL OR BASIN NO. 3 THROUGH A FILTER BAG.
6. INSTALL FINAL COVER AND CLOSURE CAP ON UNCAPPED AREAS OF CELLS 12 AND 13 THAT HAVE ACHIEVED FINAL GRADE. INSTALL CABLE CONCRETE CHANNEL LINING IN DOWN CHUTES.
7. INSTALL SSF AT LOCATIONS SHOWN ON DRAWING 71 AND INSTALL TEMPORARY REMOVABLE PUMPING STATIONS FOR STORMWATER.
8. COMPLETE STAGE G1 (PHASE 4) CONSTRUCTION FOR PERIMETER ACCESS ROAD, PERIMETER BERM (ABOVE EXISTING GRADE), DRAINAGE DITCHES AND BASIN NO.1 ON NORTH END OF WEST LANDFILL AREA.
9. CULVERTS BETWEEN THE PERIMETER CHANNELS AND BASIN NO .1 ARE CONSTRUCTED.
10. LEACHATE FORCE MAIN #3 BETWEEN CELLS 2, 3, AND 4 AND LEACHATE STORAGE FACILITY NO. 1 IS CONSTRUCTED.
11. CREATE TEMPORARY STOCKPILE IN CELL 10 AREA AS SHOWN ON DRAWING 71.
12. SILT FENCE WILL BE INSTALLED AND MAINTAINED ALONG THE LIMIT OF DISTURBANCE AT ALL AREAS DOWN SLOPE OF DISTURBED AREAS.
13. THE CONTRACTOR SHALL MINIMIZE THE AREA OF DISTURBANCE TO THE EXTENT PRACTICABLE. NO AREAS OUTSIDE THE LIMIT OF DISTURBANCE LINES IN ANY PARTICULAR PHASE OR STAGE OF THE PROJECT SHALL BE DISTURBED.

NOTES:

1. ITEMS LABELED AS "EXISTING" (EX.) ARE INTENDED TO HAVE BEEN CONSTRUCTED AT THE TIME OF THE SEQUENCE REFLECTED ON THIS DRAWING.
2. SEE DRAWINGS 6, 7, 10, 11, 12, 13 ,17, AND 18 FOR BOTTOM OF CELL AND LINER SYSTEM GRADING INFORMATION.
3. AREAS ACHIEVING COMPLETED CLOSURE CAP ARE SHOWN WITH TOP OF CLOSURE CAP CONTOURS.

150 0 75 150 300 600

1 INCH = 150 FT

STATE OF MARYLAND — RICHARD STREYMAN — REGISTERED PROFESSIONAL ENGINEER — No. 15251

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NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED Geoservices
a Montrose Environmental Group company
1978 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
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INTERMEDIATE CONSTRUCTION STAGE G (CELL 15 AND PHASE 4)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 70

N:\Projects\2018\2018854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 B070 - INTERMEDIATE CONSTRUCTION STAGE G AND G1 (CELL 15 AND PHASE 4).dwg, 1/13/2022 10:17:09 AM

REFERENCES

1. BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.
2. THE POST–2012 100–YEAR FLOOD PLAIN LIMITS SHOWN ARE BASED ON FEMA NATIONAL FLOOD INSURANCE PROGRAM MAP NUMBER 24003C0136E, DATED 10/16/2012, AND PROVIDED AS PLATE 3 OF THE PHASE II REPORT.

NOTES

1. WHILE FEMA HAS RE–ASSESSED AND MODIFIED THE 100 YEAR FLOOD PLAIN IN THE VICINITY OF THE SITE, THE PROPOSED LANDFILL PERIMETER ROAD BERM GRADES ARE PROPOSED A MINIMUM OF 5 FEET ABOVE THE NEW FEMA BASE FLOOD ELEVATIONS.
2. SEE DRAWINGS 6, 7, 10, 11, 12, 13 ,17, AND 18 FOR BOTTOM OF CELL AND LINER SYSTEM GRADING INFORMATION.
3. AREAS ACHIEVING COMPLETED CLOSURE CAP ARE SHOWN WITH TOP OF CLOSURE CAP CONTOURS.

SEQUENCE OF CONSTRUCTION FOR WEST SECTION

1) AS LANDFILLING IN EAST LANDFILL AREA ADVANCES, PERFORM EXCAVATION AND GRADING WITHIN FOOTPRINT OF CELL 2 TO TOP OF SUBBASE (AREA = 7.5 ACRES), APPROXIMATE CUT = 60,000 CY AND FILL = 23,000 CY). RESERVE APPROXIMATELY 24,000 CY OF SANDY SOILS FOR USE IN LEACHATE COLLECTION LAYER. UTILIZE EXCESS SOILS FOR INTERMEDIATE COVER, FINAL COVER OR CLOSURE CAP, AND TRANSPORT EXCESS TO STOCKPILE B1. (SEE SPECS FOR ALL MATERIAL REQUIREMENTS). INSTALL REMOVABLE PUMPING STATIONS (RPS) AT LOCATIONS SHOWN ON DRAWING 71. GRADE TEMPORARY DIVERSIONS TO DIRECT DRAINAGE TO RPS.
2) OVER EXCAVATE CELL 2 SUBBASE BY 2 FEET. CONSTRUCT SUBBASE IN ACCORDANCE WITH SPECIFICATIONS. REUSE, AMEND OR REPLACE SUBBASE MATERIAL AS NECESSARY TO ACHIEVE REQUIRED MATERIAL PARAMETERS (INCLUDING PERMEABILITY).
3) INSTALL LINER SYSTEM, INCLUDING LEACHATE COLLECTION AND REMOVAL SYSTEM, IN CELL 2.
4) BEGIN LANDFILLING OPERATIONS IN CELL 2 WITH PLACEMENT OF 4 FEET THICK SELECT WASTE LAYER, AFTER MDE APPROVAL OF CELL LINER SYSTEM CONSTRUCTION.
5) BEGIN COLLECTION AND MANAGEMENT OF ALL LIQUID WITHIN CELL 2 AS LEACHATE IMMEDIATELY FOLLOWING START OF WASTE PLACEMENT IN CELL 2. PRECIPITATION FALLING WITHIN THE CELL 2 FOOTPRINT PRIOR TO THE START OF WASTE PLACEMENT OR PRIOR TO THE START OF RUNOFF FROM ADJACENT WASTE AREAS MAY BE MANAGED AS STORMWATER AND DISCHARGED TO THE PERIMETER CHANNEL OR BASIN NO. 1 THROUGH A FILTER BAG.
6) STAGE H1 – COMPLETE FINAL COVER AND CLOSURE CAP INSTALLATION OVER REMAINDER OF EAST DISPOSAL AREA WHEN FINAL GRADES ARE MET. INSTALL CABLE CONCRETE CHANNEL LINING IN DOWN CHUTES.
7) SILT FENCE WILL BE INSTALLED AND MAINTAINED ALONG THE LIMIT OF DISTURBANCE AT ALL AREAS DOWN SLOPE OF DISTURBED AREAS.
8) THE CONTRACTOR SHALL MINIMIZE THE AREA OF DISTURBANCE TO THE EXTENT PRACTICABLE. NO AREAS OUTSIDE THE LIMIT OF DISTURBANCE LINES IN ANY PARTICULAR PHASE OR STAGE OF THE PROJECT SHALL BE DISTURBED.

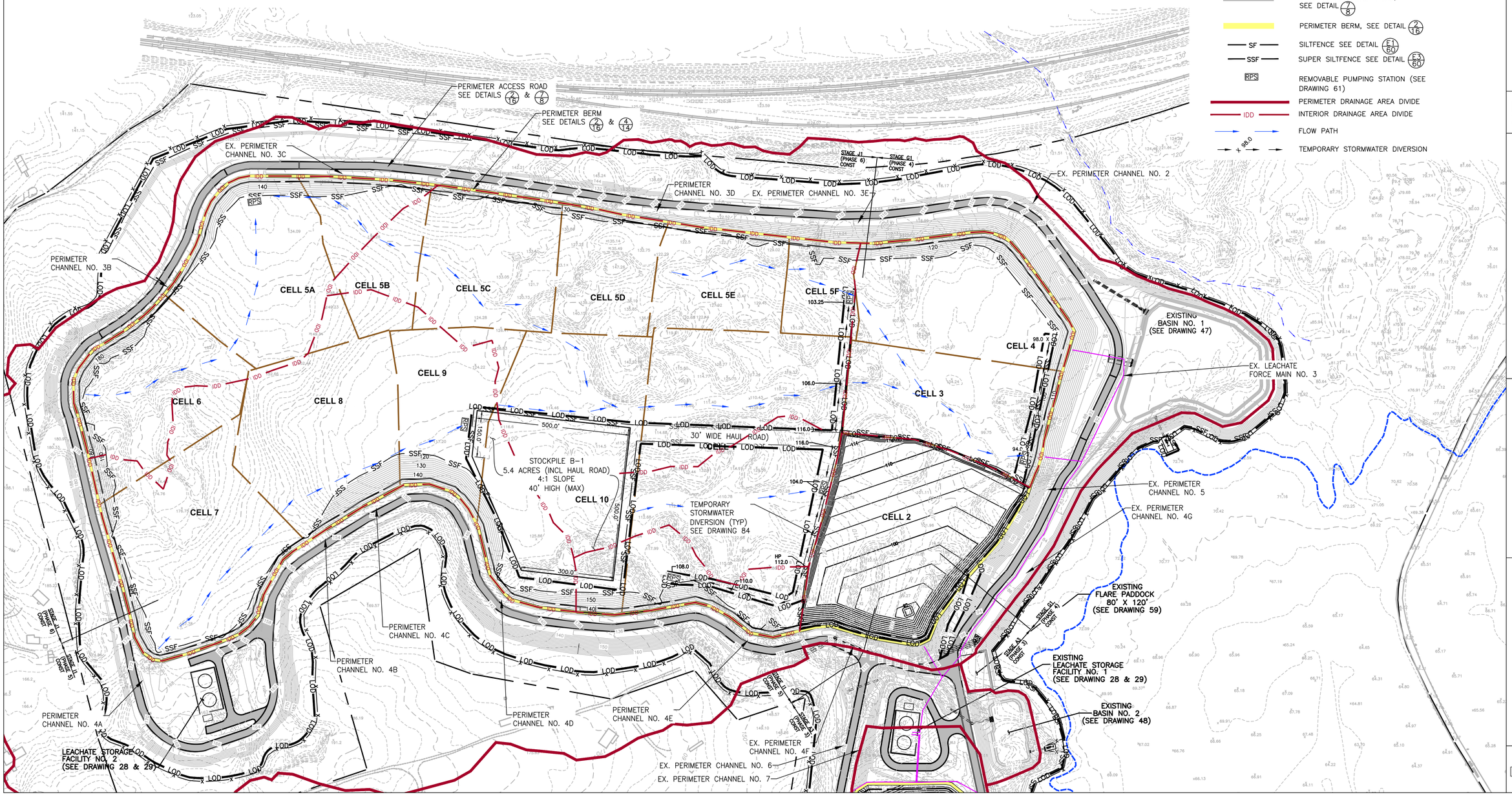
LEGEND

- PROPERTY LINE
- 100–YEAR FLOODPLAIN (SEE REF. 2)
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LEACHATE FORCE MAIN
- LOD — LIMIT OF DISTURBANCE
- PIPE
- x — x — PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- LANDFILL PERIMETER ROAD, SEE DETAIL 7/8
- PERIMETER BERM, SEE DETAIL 7/16
- SF — SILTFENCE SEE DETAIL E1/60
- SSF — SUPER SILTFENCE SEE DETAIL E3/60
- RPS — REMOVABLE PUMPING STATION (SEE DRAWING 61)
- PERIMETER DRAINAGE AREA DIVIDE
- IDD — INTERIOR DRAINAGE AREA DIVIDE
- FLOW PATH
- x 98.0 — TEMPORARY STORMWATER DIVERSION

GRAPHIC SCALE

150 0 75 150 300 600

1 inch = 150 ft.



DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
9/30/2021	REVISED FOR E&S PERMIT SUBMISSION
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

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INTERMEDIATE CONSTRUCTION STAGE H AND H1 (CELL 2 AND EAST LF CAP COMPLETION)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 71

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\RC & Phase III Application\Drawings\Final\20183854 B071 - INTERMEDIATE CONSTRUCTION STAGE H AND H1 (CELL 2 AND EAST LF CAP COMPLETION).dwg, 1/13/2022 10:18:03 AM

REFERENCES

1. BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.
2. THE POST–2012 100–YEAR FLOOD PLAIN LIMITS SHOWN ARE BASED ON FEMA NATIONAL FLOOD INSURANCE PROGRAM MAP NUMBER 24003C0136E, DATED 10/16/2012, AND PROVIDED AS PLATE 3 OF THE PHASE II REPORT.

NOTES

1. WHILE FEMA HAS RE–ASSESSED AND MODIFIED THE 100 YEAR FLOOD PLAIN IN THE VICINITY OF THE SITE, THE PROPOSED LANDFILL PERIMETER ROAD BERM GRADES ARE PROPOSED A MINIMUM OF 5 FEET ABOVE THE NEW FEMA BASE FLOOD ELEVATIONS.
2. SEE DRAWINGS 6, 7, 10, 11, 12, 13 ,17, AND 18 FOR BOTTOM OF CELL AND LINER SYSTEM GRADING INFORMATION.
3. AREAS ACHIEVING COMPLETED CLOSURE CAP ARE SHOWN WITH TOP OF CLOSURE CAP CONTOURS.

SEQUENCE OF CONSTRUCTION FOR WEST SECTION

1) PERFORM EXCAVATION AND GRADING WITHIN FOOTPRINT OF CELLS 3 AND 4 TO TOP OF SUBBASE (AREA = 10.4 ACRES), APPROXIMATE CUT = 2,000 CY AND FILL = 132,000 CY). RESERVE APPROXIMATELY 34,000 CY OF SANDY SOILS FOR USE IN LEACHATE COLLECTION LAYER. UTILIZE EXCESS SOILS FOR INTERMEDIATE COVER, FINAL COVER OR CLOSURE CAP, AND TRANSPORT EXCESS TO STOCKPILE B1. (SEE SPECS FOR ALL MATERIAL REQUIREMENTS). INSTALL REMOVABLE PUMPING STATIONS (RPS) AT LOCATIONS SHOWN ON DRAWING 72. GRADE TEMPORARY DIVERSIONS TO DIRECT DRAINAGE TO RPS.
2) OVER EXCAVATE CELL 3 AND 4 SUBBASE BY 2 FEET. CONSTRUCT SUBBASE IN ACCORDANCE WITH SPECIFICATIONS. REUSE, AMEND OR REPLACE SUBBASE MATERIAL AS NECESSARY TO ACHIEVE REQUIRED MATERIAL PARAMETERS (INCLUDING PERMEABILITY).
3) INSTALL LINER SYSTEM, INCLUDING LEACHATE COLLECTION AND REMOVAL SYSTEM, IN CELLS 3 AND 4.
4) BEGIN LANDFILLING OPERATIONS IN CELLS 3 AND 4 WITH PLACEMENT OF 4 FEET THICK SELECT WASTE LAYER, AFTER MDE APPROVAL OF CELL LINER SYSTEM CONSTRUCTION.
5) BEGIN COLLECTION AND MANAGEMENT OF LIQUID WITHIN CELL 3 AND 4 AS LEACHATE IMMEDIATELY FOLLOWING START OF WASTE PLACEMENT IN CELLS 3 AND 4 OR WHEN RUNOFF FROM ADJACENT WASTE AREAS ENTERS THE CELL (WHICHEVER OCCURS FIRST) PRECIPITATION FALLING WITHIN THE CELL 3 AND 4 FOOTPRINT PRIOR TO THE START OF WASTE PLACEMENT OR PRIOR TO THE START OF RUNOFF FROM ADJACENT WASTE AREAS MAY BE MANAGED AS STORMWATER AND DISCHARGED TO THE PERIMETER CHANNEL OR BASIN NO. 1 THROUGH A FILTER BAG.
6) STAGE I1 – COMPLETE STAGE I1 (PHASE 5) CONSTRUCTION FOR PERIMETER ACCESS ROAD, PERIMETER BERM (ABOVE EXISTING GRADE), DRAINAGE DITCHES AND LEACHATE TANK AREA 2 ON EAST SIDE OF WEST LANDFILL AREA.
   a. LEACHATE FORCE MAIN #3 BETWEEN CELLS 1, 7, 8, 9 AND 10 AND LEACHATE STORAGE FACILITY NO. 2 IS CONSTRUCTED.
   b. CREATE TEMPORARY BORROW AREA/STOCKPILE IN CELL 6 AND 7 AREA AS SHOWN ON DRAWING 72.
7) SILT FENCE WILL BE INSTALLED AND MAINTAINED ALONG THE LIMIT OF DISTURBANCE AT ALL AREAS DOWN SLOPE OF DISTURBED AREAS.
8) THE CONTRACTOR SHALL MINIMIZE THE AREA OF DISTURBANCE TO THE EXTENT PRACTICABLE. NO AREAS OUTSIDE THE LIMIT OF DISTURBANCE LINES IN ANY PARTICULAR PHASE OR STAGE OF THE PROJECT SHALL BE DISTURBED.

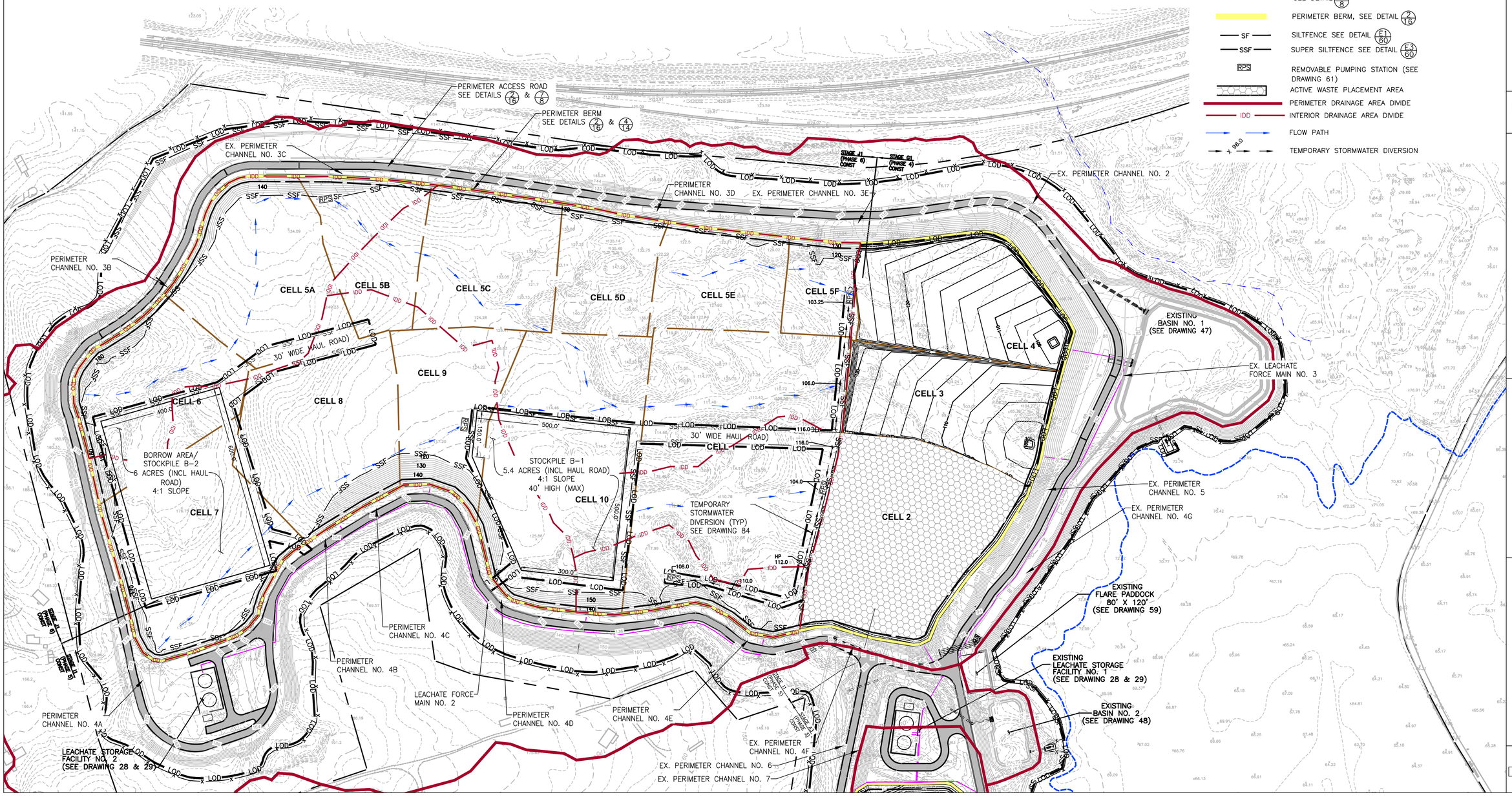
LEGEND

- PROPERTY LINE
- 100–YEAR FLOODPLAIN (SEE REF. 2)
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LEACHATE FORCE MAIN
- LOD — LIMIT OF DISTURBANCE
- PIPE
- x — x — PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- LANDFILL PERIMETER ROAD, SEE DETAIL 7/8
- PERIMETER BERM, SEE DETAIL 2/16
- SF — SILTFENCE SEE DETAIL E1/60
- SSF — SUPER SILTFENCE SEE DETAIL E3/60
- RPS — REMOVABLE PUMPING STATION (SEE DRAWING 61)
- ACTIVE WASTE PLACEMENT AREA
- PERIMETER DRAINAGE AREA DIVIDE
- IDD — INTERIOR DRAINAGE AREA DIVIDE
- FLOW PATH
- x 98.0 — TEMPORARY STORMWATER DIVERSION

GRAPHIC SCALE

150 0 75 150 300 600

1 inch = 150 ft.



STATE OF MARYLAND — KARL RUDOLPH STRETMAN — REGISTERED PROFESSIONAL ENGINEER — 19731 — PROFESSIONAL ENGINEER — 1/14/22

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
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11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
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INTERMEDIATE CONSTRUCTION STAGE I AND I1 (CELLS 3 AND 4, AND PHASE 5)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 72

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\RC & Phase III Application\Drawings\Final\20183854 B072 - INTERMEDIATE CONSTRUCTION STAGE I AND I1 (CELLS 3 & 4 AND PHASE 5).dwg, 1/13/2022 10:18:56 AM

REFERENCES

1. BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.
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NOTES

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2. SEE DRAWINGS 6, 7, 10, 11, 12, 13 ,17, AND 18 FOR BOTTOM OF CELL AND LINER SYSTEM GRADING INFORMATION.
3. AREAS ACHIEVING COMPLETED CLOSURE CAP ARE SHOWN WITH TOP OF CLOSURE CAP CONTOURS.

SEQUENCE OF CONSTRUCTION FOR WEST SECTION

1) PERFORM EXCAVATION AND GRADING WITHIN FOOTPRINT OF CELL 1 TO TOP OF SUBBASE (AREA = 13.2 ACRES), APPROXIMATE CUT = 81,000 CY AND FILL = 104,000 CY). RESERVE APPROXIMATELY 42,000 CY OF SANDY SOILS FOR USE IN LEACHATE COLLECTION LAYER. UTILIZE EXCESS SOILS FOR INTERMEDIATE COVER, FINAL COVER OR CLOSURE CAP, AND TRANSPORT EXCESS TO STOCKPILE B1 OR B2. (SEE SPECS FOR ALL MATERIAL REQUIREMENTS).
2) OVER EXCAVATE CELL 1 SUBBASE BY 2 FEET. CONSTRUCT SUBBASE IN ACCORDANCE WITH SPECIFICATIONS. REUSE, AMEND OR REPLACE SUBBASE MATERIAL AS NECESSARY TO ACHIEVE REQUIRED MATERIAL PARAMETERS (INCLUDING PERMEABILITY).
3) INSTALL LINER SYSTEM, INCLUDING LEACHATE COLLECTION AND REMOVAL SYSTEM, IN CELL 1.
4) BEGIN LANDFILLING OPERATIONS IN CELL 1 WITH PLACEMENT OF 4 FEET THICK SELECT WASTE LAYER, AFTER MDE APPROVAL OF CELL LINER SYSTEM CONSTRUCTION.
5) BEGIN COLLECTION AND MANAGEMENT OF LIQUID WITHIN CELL 1 AS LEACHATE IMMEDIATELY FOLLOWING START OF WASTE PLACEMENT IN CELLS 1 OR WHEN RUNOFF FROM ADJACENT WASTE AREAS ENTERS THE CELL (WHICHEVER OCCURS FIRST). PRECIPITATION FALLING WITHIN THE CELL 1 FOOTPRINT PRIOR TO THE START OF WASTE PLACEMENT OR PRIOR TO THE START OF RUNOFF FROM ADJACENT WASTE AREAS MAY BE MANAGED AS STORMWATER AND DISCHARGED TO THE PERIMETER CHANNEL OR BASIN NO. 1 THROUGH A FILTER BAG.
6) STAGE J1 – COMPLETE STAGE J1 (PHASE 6) CONSTRUCTION FOR PERIMETER ACCESS ROAD, PERIMETER BERM (ABOVE EXISTING GRADE) AND DRAINAGE DITCHES ON WEST SIDE OF WEST LANDFILL AREA.
7) LEACHATE FORCE MAIN BETWEEN CELLS 5A, 5B, 5C, 5D, 5E,5F AND 6 AND LEACHATE STORAGE FACILITY NO. 2 IS CONSTRUCTED.
8) INSTALL REMOVABLE PUMPING STATIONS (RPS) AT LOCATIONS SHOWN ON DRAWING 73. GRADE TEMPORARY DIVERSIONS TO DIRECT DRAINAGE TO RPS.
9) SILT FENCE WILL BE INSTALLED AND MAINTAINED ALONG THE LIMIT OF DISTURBANCE AT ALL AREAS DOWN SLOPE OF DISTURBED AREAS.
10) THE CONTRACTOR SHALL MINIMIZE THE AREA OF DISTURBANCE TO THE EXTENT PRACTICABLE. NO AREAS OUTSIDE THE LIMIT OF DISTURBANCE LINES IN ANY PARTICULAR PHASE OR STAGE OF THE PROJECT SHALL BE DISTURBED.

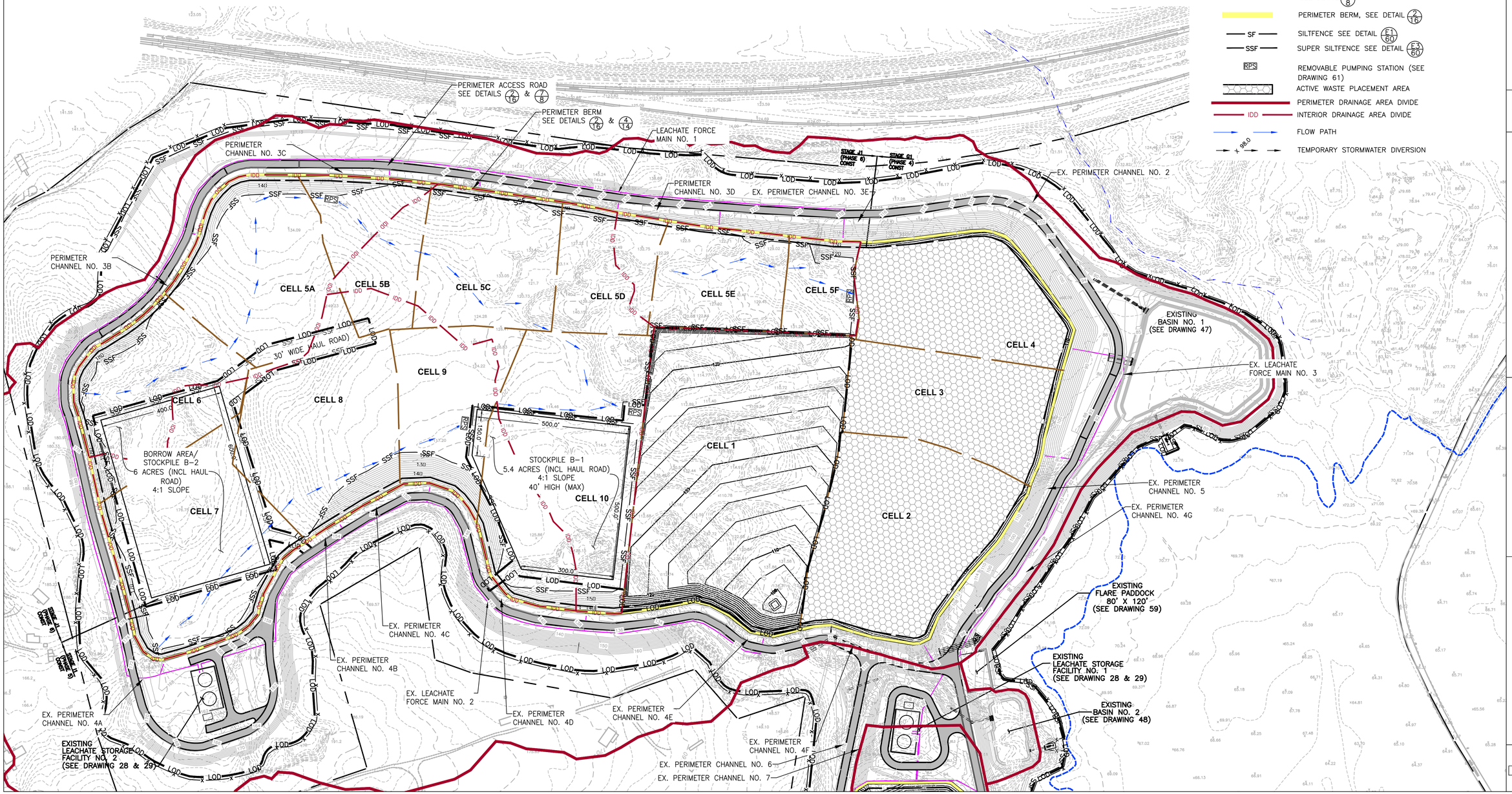
LEGEND

- PROPERTY LINE
- 100–YEAR FLOODPLAIN (SEE REF. 2)
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LEACHATE FORCE MAIN
- LOD — LIMIT OF DISTURBANCE
- PIPE
- x — x — PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- LANDFILL PERIMETER ROAD, SEE DETAIL 7/8
- PERIMETER BERM, SEE DETAIL 7/16
- SF — SILTFENCE SEE DETAIL F1/60
- SSF — SUPER SILTFENCE SEE DETAIL E3/60
- RPS — REMOVABLE PUMPING STATION (SEE DRAWING 61)
- ACTIVE WASTE PLACEMENT AREA
- PERIMETER DRAINAGE AREA DIVIDE
- IDD — INTERIOR DRAINAGE AREA DIVIDE
- FLOW PATH
- x 98.0 — TEMPORARY STORMWATER DIVERSION

GRAPHIC SCALE

150 0 75 150 300 600

1 inch = 150 ft.



DATE:	REVISION:
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9/30/2021	REVISED FOR E&S PERMIT SUBMISSION
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

STATE OF MARYLAND — MICHAEL R. STEYMAN — REG. NO. 15251 — PROFESSIONAL ENGINEER — 1/14/22

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INTERMEDIATE
CONSTRUCTION STAGE J AND J1
(CELL 1 AND PHASE 6)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 73

N:\Projects\2018\2018854 - Chesapeake Terrace LF\CAD\DWG\RC B Phase III Application\Drawings\Final\20183854 B073 - INTERMEDIATE CONSTRUCTION STAGE I AND J1 (CELL 1 AND PHASE 6).dwg, 1/13/2022 10:19:50 AM

REFERENCES

1. BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.
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2. SEE DRAWINGS 6, 7, 10, 11, 12, 13 ,17, AND 18 FOR BOTTOM OF CELL AND LINER SYSTEM GRADING INFORMATION.
3. AREAS ACHIEVING COMPLETED CLOSURE CAP ARE SHOWN WITH TOP OF CLOSURE CAP CONTOURS.

SEQUENCE OF CONSTRUCTION FOR WEST SECTION

1) PERFORM EXCAVATION AND GRADING WITHIN FOOTPRINT OF CELLS 5E AND 5F TO TOP OF SUBBASE (AREA = 4.9 ACRES), APPROXIMATE CUT = 5,000 CY AND FILL = 44,000 CY). RESERVE APPROXIMATELY 16,000 CY OF SANDY SOILS FOR USE IN LEACHATE COLLECTION LAYER. UTILIZE EXCESS SOILS FOR INTERMEDIATE COVER, FINAL COVER OR CLOSURE CAP, AND TRANSPORT EXCESS TO STOCKPILE B1 OR B2. (SEE SPECS FOR ALL MATERIAL REQUIREMENTS).
2) OVER EXCAVATE CELLS 5E AND 5F SUBBASE BY 2 FEET. CONSTRUCT SUBBASE IN ACCORDANCE WITH SPECIFICATIONS. REUSE, AMEND OR REPLACE SUBBASE MATERIAL AS NECESSARY TO ACHIEVE REQUIRED MATERIAL PARAMETERS (INCLUDING PERMEABILITY).
3) INSTALL LINER SYSTEM, INCLUDING LEACHATE COLLECTION AND REMOVAL SYSTEM, IN CELLS 5E AND 5F.
4) BEGIN LANDFILLING OPERATIONS IN CELLS 5E AND 5F WITH PLACEMENT OF 4 FEET THICK SELECT WASTE LAYER, AFTER MDE APPROVAL OF CELL LINER SYSTEM CONSTRUCTION.
5) BEGIN COLLECTION AND MANAGEMENT OF LIQUID WITHIN CELLS 5E AND 5F AS LEACHATE IMMEDIATELY FOLLOWING START OF WASTE PLACEMENT IN CELLS 5E AND 5F OR WHEN RUNOFF FROM ADJACENT WASTE AREAS ENTERS THE CELLS (WHICHEVER OCCURS FIRST). PRECIPITATION FALLING WITHIN THE CELL 5E AND 5F FOOTPRINTS PRIOR TO THE START OF WASTE PLACEMENT OR PRIOR TO THE START OF RUNOFF FROM ADJACENT WASTE AREAS MAY BE MANAGED AS STORMWATER AND DISCHARGED TO THE PERIMETER CHANNEL OR BASIN NO. 1 THROUGH A FILTER BAG.
6) INSTALL FINAL COVER ON THOSE PORTIONS OF CELLS 2, 3 AND 4 THAT HAVE ACHIEVED FINAL GRADE.
7) SILT FENCE WILL BE INSTALLED AND MAINTAINED ALONG THE LIMIT OF DISTURBANCE AT ALL AREAS DOWN SLOPE OF DISTURBED AREAS.
8) THE CONTRACTOR SHALL MINIMIZE THE AREA OF DISTURBANCE TO THE EXTENT PRACTICABLE. NO AREAS OUTSIDE THE LIMIT OF DISTURBANCE LINES IN ANY PARTICULAR PHASE OR STAGE OF THE PROJECT SHALL BE DISTURBED.

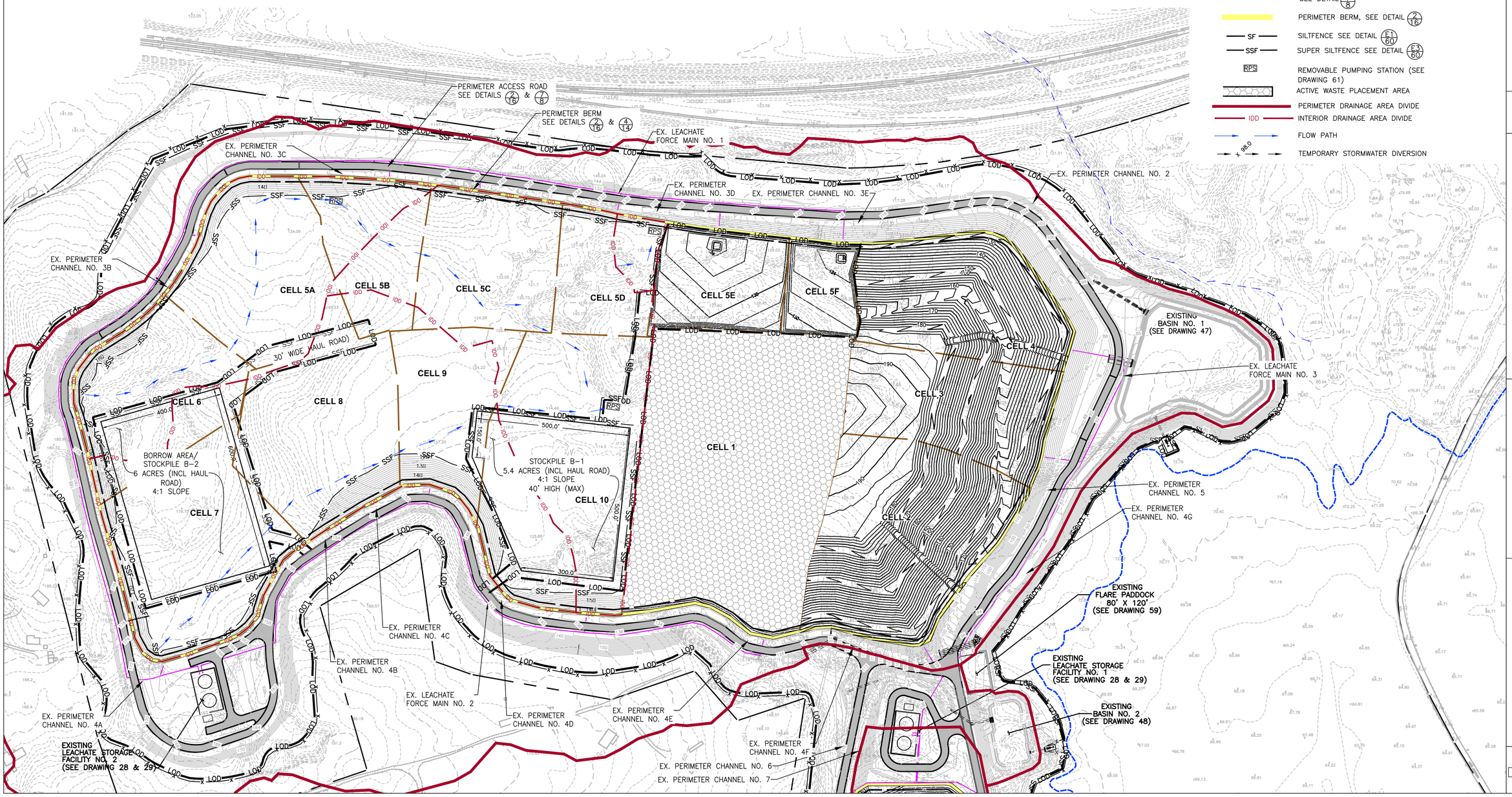
LEGEND

- PROPERTY LINE
- 100–YEAR FLOODPLAIN (SEE REF. 2)
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LEACHATE FORCE MAIN
- LOD — LIMIT OF DISTURBANCE
- PIPE
- x — x — PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- LANDFILL PERIMETER ROAD, SEE DETAIL 7/8
- PERIMETER BERM, SEE DETAIL 7/16
- SF — SILTFENCE SEE DETAIL E1/60
- SSF — SUPER SILTFENCE SEE DETAIL E3/60
- RPS — REMOVABLE PUMPING STATION (SEE DRAWING 61)
- ACTIVE WASTE PLACEMENT AREA
- PERIMETER DRAINAGE AREA DIVIDE
- IDD — INTERIOR DRAINAGE AREA DIVIDE
- FLOW PATH
- x 98.0 — TEMPORARY STORMWATER DIVERSION

GRAPHIC SCALE

150 0 75 150 300 600

1 inch = 150 ft.



REVISION:	DATE:
REVISED TO ADDRESS MDE COMMENTS ON PHASE 3	9/03/2021
REVISED FOR E&S PERMIT SUBMISSION	9/30/2021
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INTERMEDIATE CONSTRUCTION STAGE K (CELLS 5E AND 5F)

PROJECT MANAGER: PGS	SCALE:AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE:09/03/2021

DRAWING 74

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\IC B, Phase III Application\Drawings\Final\20183854 B074 - INTERMEDIATE CONSTRUCTION STAGE K (CELLS 5E & 5F).dwg, 1/13/2022 10:20:38 AM

REFERENCES

1. BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.
2. THE POST–2012 100–YEAR FLOOD PLAIN LIMITS SHOWN ARE BASED ON FEMA NATIONAL FLOOD INSURANCE PROGRAM MAP NUMBER 24003C0136E, DATED 10/16/2012, AND PROVIDED AS PLATE 3 OF THE PHASE II REPORT.

NOTES

1. WHILE FEMA HAS RE–ASSESSED AND MODIFIED THE 100 YEAR FLOOD PLAIN IN THE VICINITY OF THE SITE, THE PROPOSED LANDFILL PERIMETER ROAD BERM GRADES ARE PROPOSED A MINIMUM OF 5 FEET ABOVE THE NEW FEMA BASE FLOOD ELEVATIONS.
2. SEE DRAWINGS 6, 7, 10, 11, 12, 13 ,17, AND 18 FOR BOTTOM OF CELL AND LINER SYSTEM GRADING INFORMATION.
3. AREAS ACHIEVING COMPLETED CLOSURE CAP ARE SHOWN WITH TOP OF CLOSURE CAP CONTOURS.

SEQUENCE OF CONSTRUCTION FOR WEST SECTION

1) PERFORM EXCAVATION AND GRADING WITHIN FOOTPRINT OF CELLS 5D AND 10 TO TOP OF SUBBASE (AREA = 12.5 ACRES), APPROXIMATE CUT = 149,000 CY AND FILL = 58,000 CY). RESERVE APPROXIMATELY 40,000 CY OF SANDY SOILS FOR USE IN LEACHATE COLLECTION LAYER. UTILIZE EXCESS SOILS FOR INTERMEDIATE COVER, FINAL COVER OR CLOSURE CAP, AND TRANSPORT EXCESS TO STOCKPILE B2. (SEE SPECS FOR ALL MATERIAL REQUIREMENTS).
2) OVER EXCAVATE CELLS 5D AND 10 SUBBASE BY 2 FEET. CONSTRUCT SUBBASE IN ACCORDANCE WITH SPECIFICATIONS. REUSE, AMEND OR REPLACE SUBBASE MATERIAL AS NECESSARY TO ACHIEVE REQUIRED MATERIAL PARAMETERS (INCLUDING PERMEABILITY).
3) INSTALL LINER SYSTEM, INCLUDING LEACHATE COLLECTION AND REMOVAL SYSTEM, IN CELLS 5D AND 10.
4) BEGIN LANDFILLING OPERATIONS IN CELLS 5D AND 10 WITH PLACEMENT OF 4 FEET THICK SELECT WASTE LAYER, AFTER MDE APPROVAL OF CELL LINER SYSTEM CONSTRUCTION.
5) BEGIN COLLECTION AND MANAGEMENT OF LIQUID WITHIN CELLS 5D AND 10 AS LEACHATE IMMEDIATELY FOLLOWING START OF WASTE PLACEMENT IN CELLS 5D AND 10 OR WHEN RUNOFF FROM ADJACENT WASTE AREAS ENTERS THE CELLS (WHICHEVER OCCURS FIRST). PRECIPITATION FALLING WITHIN THE CELL 5D AND 10 FOOTPRINTS PRIOR TO THE START OF WASTE PLACEMENT OR PRIOR TO THE START OF RUNOFF FROM ADJACENT WASTE AREAS MAY BE MANAGED AS STORMWATER AND DISCHARGED TO THE PERIMETER CHANNEL OR BASIN NO. 1 THROUGH A FILTER BAG.
6) SILT FENCE WILL BE INSTALLED AND MAINTAINED ALONG THE LIMIT OF DISTURBANCE AT ALL AREAS DOWN SLOPE OF DISTURBED AREAS.
7) THE CONTRACTOR SHALL MINIMIZE THE AREA OF DISTURBANCE TO THE EXTENT PRACTICABLE. NO AREAS OUTSIDE THE LIMIT OF DISTURBANCE LINES IN ANY PARTICULAR PHASE OR STAGE OF THE PROJECT SHALL BE DISTURBED.

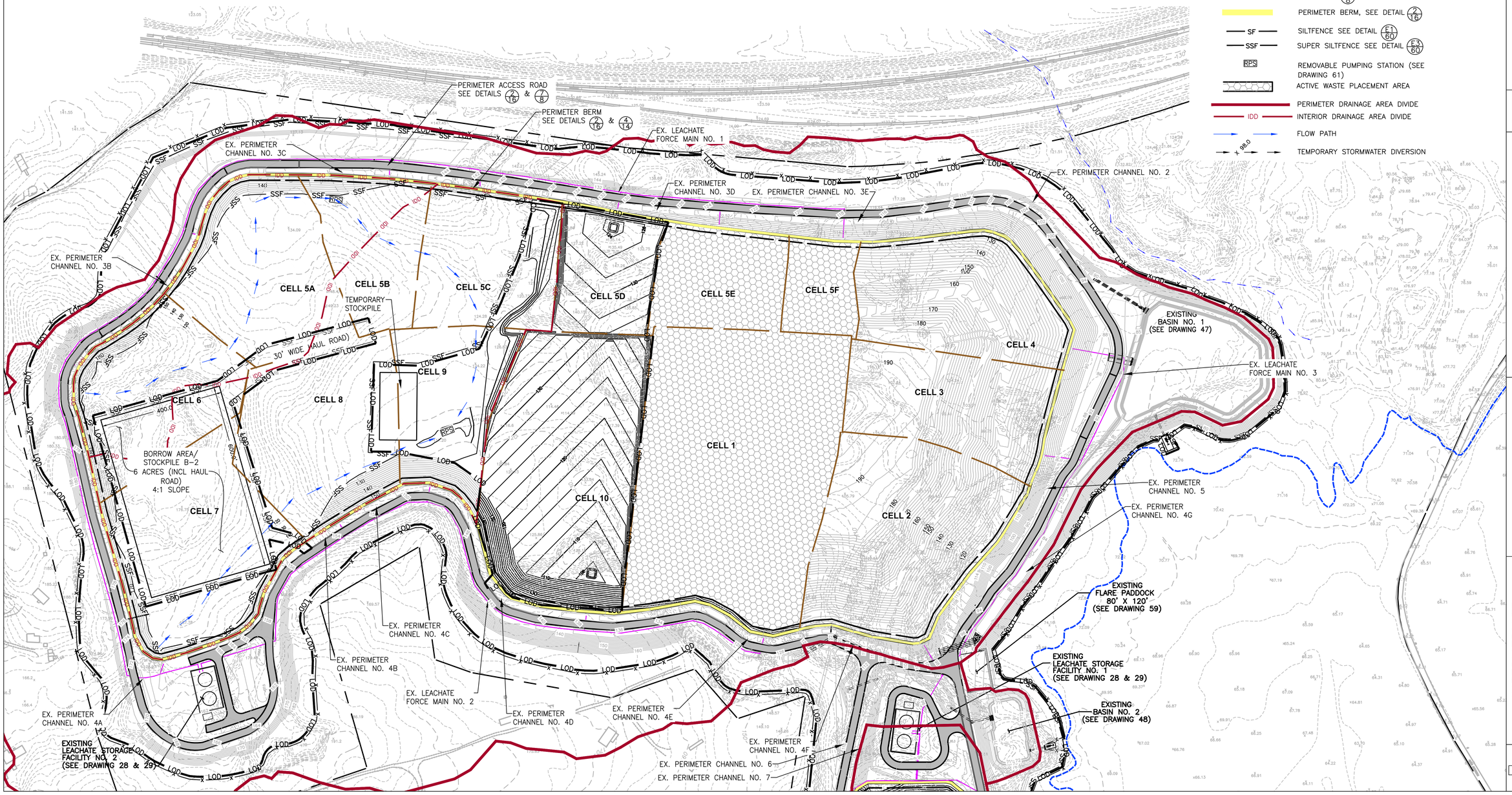
LEGEND

- PROPERTY LINE
- 100–YEAR FLOODPLAIN (SEE REF. 2)
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LEACHATE FORCE MAIN
- LOD — LIMIT OF DISTURBANCE
- PIPE
- x — x — PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- LANDFILL PERIMETER ROAD, SEE DETAIL 7/8
- PERIMETER BERM, SEE DETAIL 2/16
- SF — SILTFENCE SEE DETAIL E1/60
- SSF — SUPER SILTFENCE SEE DETAIL E3/60
- RPS — REMOVABLE PUMPING STATION (SEE DRAWING 61)
- ACTIVE WASTE PLACEMENT AREA
- PERIMETER DRAINAGE AREA DIVIDE
- IDD — INTERIOR DRAINAGE AREA DIVIDE
- FLOW PATH
- x 88.0 — TEMPORARY STORMWATER DIVERSION

GRAPHIC SCALE

150 0 75 150 300 600

1 inch = 150 ft.



DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
9/30/2021	REVISED FOR E&S PERMIT SUBMISSION
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
1979 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
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INTERMEDIATE CONSTRUCTION STAGE L (CELLS 5D AND 10)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 75

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 8075 - INTERMEDIATE CONSTRUCTION STAGE L (CELLS 5D & 10).dwg, 1/13/2022 10:21:26 AM

REFERENCES

1. BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.
2. THE POST–2012 100–YEAR FLOOD PLAIN LIMITS SHOWN ARE BASED ON FEMA NATIONAL FLOOD INSURANCE PROGRAM MAP NUMBER 24003C0136E, DATED 10/16/2012, AND PROVIDED AS PLATE 3 OF THE PHASE II REPORT.

NOTES

1. WHILE FEMA HAS RE–ASSESSED AND MODIFIED THE 100 YEAR FLOOD PLAIN IN THE VICINITY OF THE SITE, THE PROPOSED LANDFILL PERIMETER ROAD BERM GRADES ARE PROPOSED A MINIMUM OF 5 FEET ABOVE THE NEW FEMA BASE FLOOD ELEVATIONS.
2. SEE DRAWINGS 6, 7, 10, 11, 12, 13 ,17, AND 18 FOR BOTTOM OF CELL AND LINER SYSTEM GRADING INFORMATION.
3. AREAS ACHIEVING COMPLETED CLOSURE CAP ARE SHOWN WITH TOP OF CLOSURE CAP CONTOURS.

SEQUENCE OF CONSTRUCTION FOR WEST SECTION

1) PERFORM EXCAVATION AND GRADING WITHIN FOOTPRINT OF CELLS 5C AND 9 TO TOP OF SUBBASE (AREA = 8.4 ACRES), APPROXIMATE CUT = 36,000 CY AND FILL = 35,000 CY). RESERVE APPROXIMATELY 27,000 CY OF SANDY SOILS FOR USE IN LEACHATE COLLECTION LAYER. UTILIZE EXCESS SOILS FOR INTERMEDIATE COVER, FINAL COVER OR CLOSURE CAP, AND TRANSPORT EXCESS TO STOCKPILE B2. (SEE SPECS FOR ALL MATERIAL REQUIREMENTS).
2) INSTALL RPS AS SHOWN ON DRAWINGS 76.
3) OVER EXCAVATE CELLS 5C AND 9 SUBBASE BY 2 FEET. CONSTRUCT SUBBASE IN ACCORDANCE WITH SPECIFICATIONS. REUSE, AMEND OR REPLACE SUBBASE MATERIAL AS NECESSARY TO ACHIEVE REQUIRED MATERIAL PARAMETERS (INCLUDING PERMEABILITY).
4) INSTALL LINER SYSTEM, INCLUDING LEACHATE COLLECTION AND REMOVAL SYSTEM, IN CELLS 5C AND 9.
5) BEGIN LANDFILLING OPERATIONS IN CELLS 5C AND 9 WITH PLACEMENT OF 4 FEET THICK SELECT WASTE LAYER, AFTER MDE APPROVAL OF CELL LINER SYSTEM CONSTRUCTION.
6) BEGIN COLLECTION AND MANAGEMENT OF LIQUID WITHIN CELLS 5C AND 9 AS LEACHATE IMMEDIATELY FOLLOWING START OF WASTE PLACEMENT IN CELLS 5C AND 9 OR WHEN RUNOFF FROM ADJACENT WASTE AREAS ENTERS THE CELLS (WHICHEVER OCCURS FIRST). PRECIPITATION FALLING WITHIN THE CELL 5C AND 9 FOOTPRINTS PRIOR TO THE START OF WASTE PLACEMENT OR PRIOR TO THE START OF RUNOFF FROM ADJACENT WASTE AREAS MAY BE MANAGED AS STORMWATER AND DISCHARGED TO THE PERIMETER CHANNEL OR BASIN NO. 1 THROUGH A FILTER BAG.
7) SILT FENCE WILL BE INSTALLED AND MAINTAINED ALONG THE LIMIT OF DISTURBANCE AT ALL AREAS DOWN SLOPE OF DISTURBED AREAS.
8) THE CONTRACTOR SHALL MINIMIZE THE AREA OF DISTURBANCE TO THE EXTENT PRACTICABLE. NO AREAS OUTSIDE THE LIMIT OF DISTURBANCE LINES IN ANY PARTICULAR PHASE OR STAGE OF THE PROJECT SHALL BE DISTURBED.

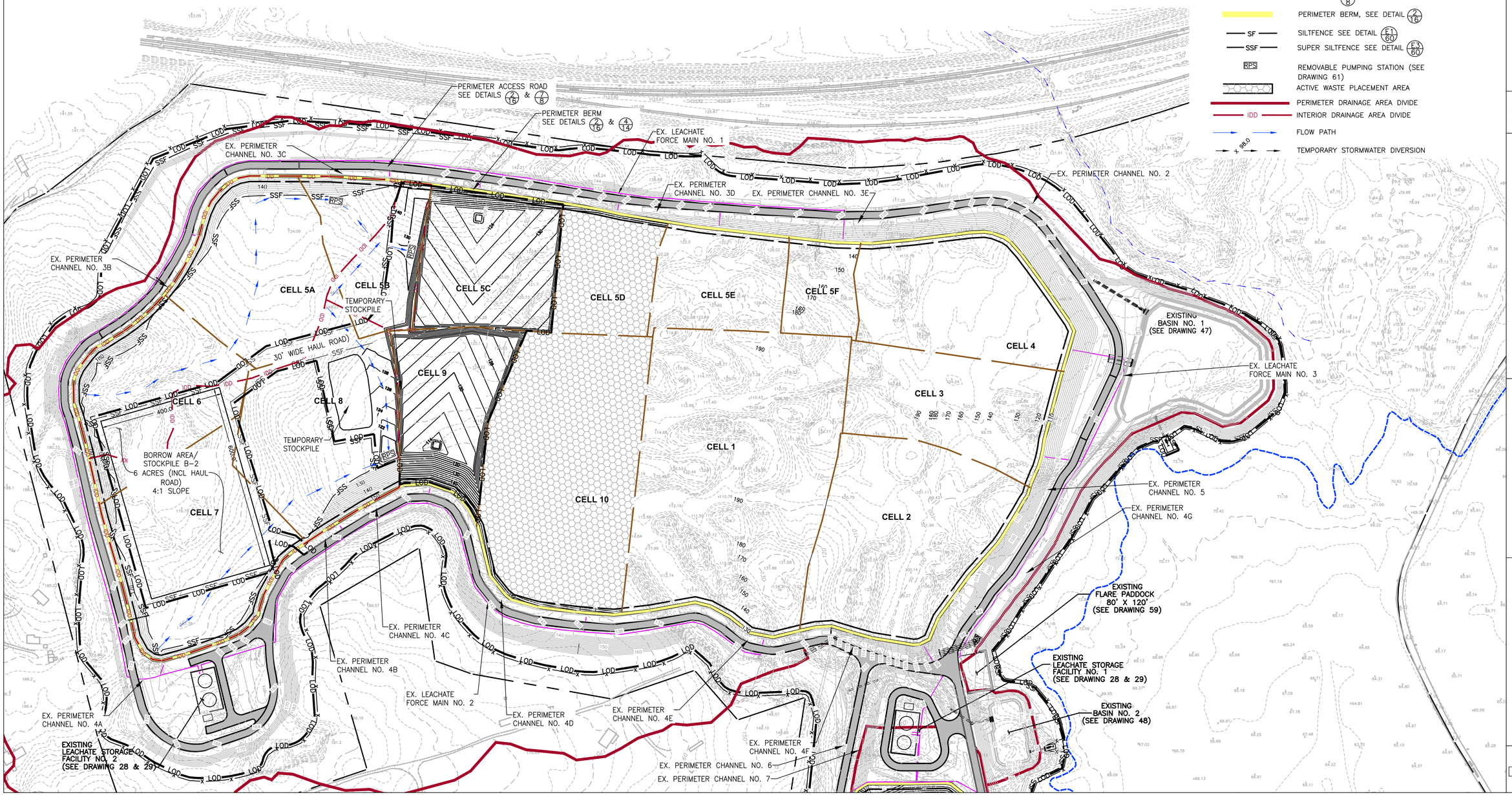
LEGEND

- PROPERTY LINE
- 100–YEAR FLOODPLAIN (SEE REF. 2)
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LEACHATE FORCE MAIN
- LOD — LIMIT OF DISTURBANCE
- PIPE
- x — x — PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- LANDFILL PERIMETER ROAD, SEE DETAIL 7/8
- PERIMETER BERM, SEE DETAIL 2/16
- SF — SILTFENCE SEE DETAIL E1/60
- SSF — SUPER SILTFENCE SEE DETAIL E3/60
- RPS — REMOVABLE PUMPING STATION (SEE DRAWING 61)
- ACTIVE WASTE PLACEMENT AREA
- PERIMETER DRAINAGE AREA DIVIDE
- IDD — INTERIOR DRAINAGE AREA DIVIDE
- FLOW PATH
- x 98.0 — TEMPORARY STORMWATER DIVERSION

GRAPHIC SCALE

150 0 75 150 300 600

1 inch = 150 ft.



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NATIONAL WASTE MANAGERS PHASE III APPLICATION
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ANNE ARUNDEL COUNTY, MARYLAND

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INTERMEDIATE CONSTRUCTION STAGE M AND M1 (CELLS 5C AND 9 AND CAPPING CELLS 1, 5E AND 5F)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 76

N:\Projects\2018\3854 - Chesapeake Terrace LF\CAD\DWG\RC & Phase III Application\Drawings\Final\20183854 B076 - INTERMEDIATE CONSTRUCTION STAGE M AND M1 (CELLS 5C & 9 AND CAPPING CELLS 1,5E & 5F).dwg, 1/13/2022 10:22:15 AM

REFERENCES

1. BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.
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NOTES

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2. SEE DRAWINGS 6, 7, 10, 11, 12, 13 ,17, AND 18 FOR BOTTOM OF CELL AND LINER SYSTEM GRADING INFORMATION.
3. AREAS ACHIEVING COMPLETED CLOSURE CAP ARE SHOWN WITH TOP OF CLOSURE CAP CONTOURS.

SEQUENCE OF CONSTRUCTION FOR WEST SECTION

1) PERFORM EXCAVATION AND GRADING WITHIN FOOTPRINT OF CELL 8 TO TOP OF SUBBASE (AREA = 6.0 ACRES), APPROXIMATE CUT = 152,000 CY AND FILL = 2,000 CY). RESERVE APPROXIMATELY 19,000 CY OF SANDY SOILS FOR USE IN LEACHATE COLLECTION LAYER. UTILIZE EXCESS SOILS FOR INTERMEDIATE COVER, FINAL COVER OR CLOSURE CAP, AND TRANSPORT EXCESS TO STOCKPILE B2. (SEE SPECS FOR ALL MATERIAL REQUIREMENTS).
2) INSTALL RPS AS SHOWN ON DRAWINGS 77.
3) OVER EXCAVATE CELL 8 SUBBASE BY 2 FEET. CONSTRUCT SUBBASE IN ACCORDANCE WITH SPECIFICATIONS. REUSE, AMEND OR REPLACE SUBBASE MATERIAL AS NECESSARY TO ACHIEVE REQUIRED MATERIAL PARAMETERS (INCLUDING PERMEABILITY).
4) INSTALL LINER SYSTEM, INCLUDING LEACHATE COLLECTION AND REMOVAL SYSTEM, IN CELL 8.
5) BEGIN LANDFILLING OPERATIONS IN CELL 8 WITH PLACEMENT OF 4 FEET THICK SELECT WASTE LAYER, AFTER MDE APPROVAL OF CELL LINER SYSTEM CONSTRUCTION.
6) BEGIN COLLECTION AND MANAGEMENT OF LIQUID WITHIN CELL 8 AS LEACHATE IMMEDIATELY FOLLOWING START OF WASTE PLACEMENT IN CELL 8 OR WHEN RUNOFF FROM ADJACENT WASTE AREAS ENTERS THE CELLS (WHICHEVER OCCURS FIRST). PRECIPITATION FALLING WITHIN THE CELL 8 FOOTPRINT PRIOR TO THE START OF WASTE PLACEMENT OR PRIOR TO THE START OF RUNOFF FROM ADJACENT WASTE AREAS MAY BE MANAGED AS STORMWATER AND DISCHARGED TO THE PERIMETER CHANNEL OR BASIN NO. 1 THROUGH A FILTER BAG.
7) INSTALL FINAL COVER ON THOSE PORTIONS OF CELLS THAT HAVE ACHIEVED FINAL GRADE.
8) SILT FENCE WILL BE INSTALLED AND MAINTAINED ALONG THE LIMIT OF DISTURBANCE AT ALL AREAS DOWN SLOPE OF DISTURBED AREAS.
9) THE CONTRACTOR SHALL MINIMIZE THE AREA OF DISTURBANCE TO THE EXTENT PRACTICABLE. NO AREAS OUTSIDE THE LIMIT OF DISTURBANCE LINES IN ANY PARTICULAR PHASE OR STAGE OF THE PROJECT SHALL BE DISTURBED.

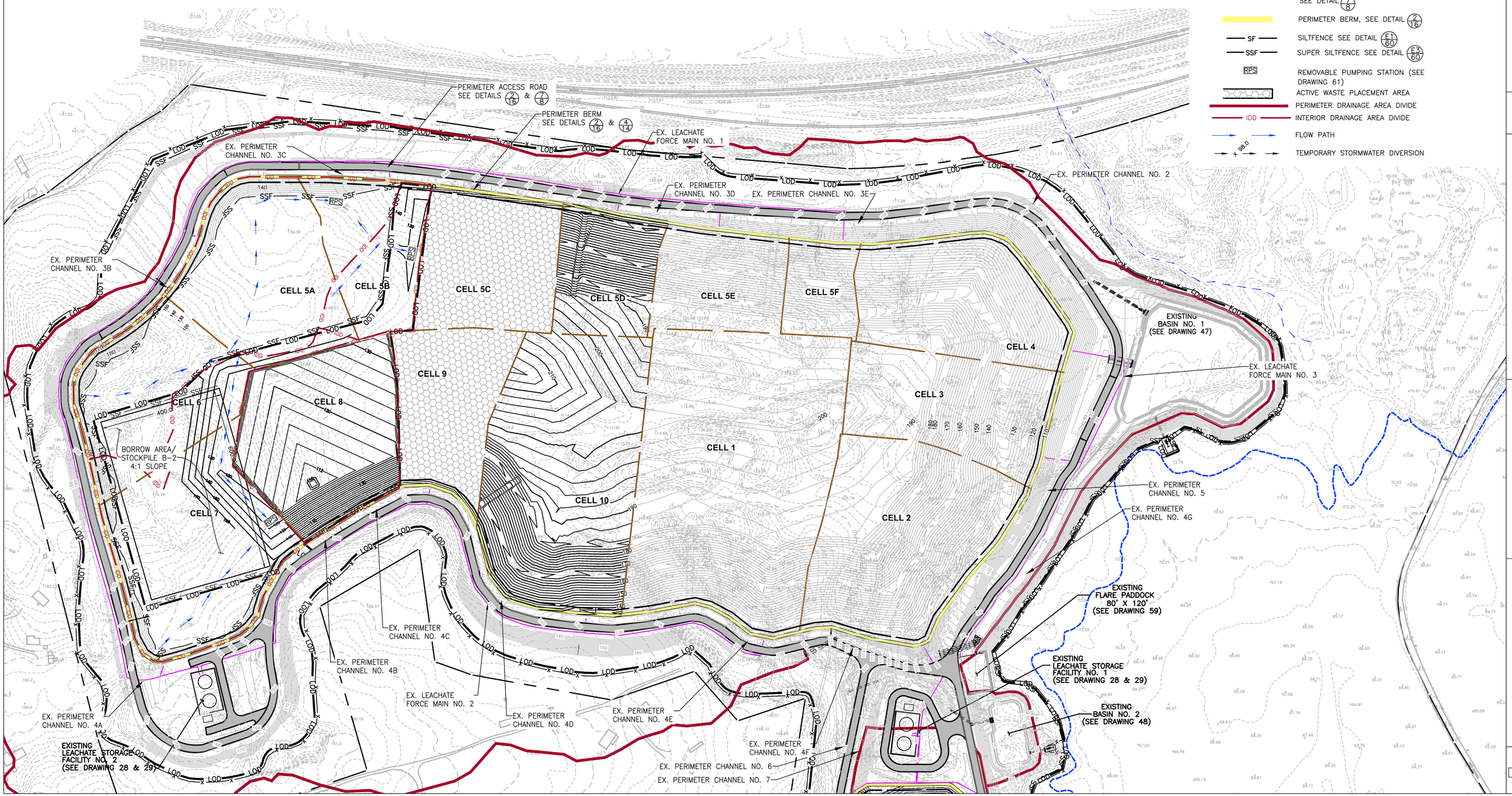
LEGEND

- PROPERTY LINE
- 100–YEAR FLOODPLAIN (SEE REF. 2)
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LEACHATE FORCE MAIN
- LOD — LIMIT OF DISTURBANCE
- PIPE
- x — x — PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- LANDFILL PERIMETER ROAD, SEE DETAIL 7/8
- PERIMETER BERM, SEE DETAIL 2/16
- SF — SILTFENCE SEE DETAIL E1/60
- SSF — SUPER SILTFENCE SEE DETAIL E3/60
- RPS — REMOVABLE PUMPING STATION (SEE DRAWING 61)
- ACTIVE WASTE PLACEMENT AREA
- PERIMETER DRAINAGE AREA DIVIDE
- IDD — INTERIOR DRAINAGE AREA DIVIDE
- FLOW PATH
- + 98.0 — TEMPORARY STORMWATER DIVERSION

GRAPHIC SCALE

150 0 75 150 300 600

1 inch = 150 ft.



DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
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STATE OF MARYLAND — KEVIN J. STREYMAN — REGISTERED PROFESSIONAL ENGINEER — No. 35231 — 1/14/22

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
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ANNE ARUNDEL COUNTY, MARYLAND

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INTERMEDIATE CONSTRUCTION STAGE N AND N1 (CELL 8 AND CAPPING CELLS 10 AND 5D)

PROJECT MANAGER:	PGS	SCALE: AS NOTED	
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE: 09/03/2021	

DRAWING 77

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 B077 - INTERMEDIATE CONSTRUCTION STAGE N AND N1 (CELL 8 AND CAPPING CELLS 10 & 5D).dwg, 1/13/2022 10:23:05 AM

REFERENCES

1. BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.
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2. SEE DRAWINGS 6, 7, 10, 11, 12, 13 ,17, AND 18 FOR BOTTOM OF CELL AND LINER SYSTEM GRADING INFORMATION.
3. AREAS ACHIEVING COMPLETED CLOSURE CAP ARE SHOWN WITH TOP OF CLOSURE CAP CONTOURS.

SEQUENCE OF CONSTRUCTION FOR WEST SECTION

1) PERFORM EXCAVATION AND GRADING WITHIN FOOTPRINT OF CELLS 5A AND 5B TO TOP OF SUBBASE (AREA = 9.0 ACRES), APPROXIMATE CUT = 168,000 CY AND FILL = 1,000 CY). RESERVE APPROXIMATELY 29,000 CY OF SANDY SOILS FOR USE IN LEACHATE COLLECTION LAYER. UTILIZE EXCESS SOILS FOR INTERMEDIATE COVER, FINAL COVER OR CLOSURE CAP, AND TRANSPORT EXCESS TO STOCKPILE B2. (SEE SPECS FOR ALL MATERIAL REQUIREMENTS).
2) INSTALL RPS AS SHOWN ON DRAWINGS 78.
3) OVER EXCAVATE CELLS 5A AND 5B SUBBASE BY 2 FEET. CONSTRUCT SUBBASE IN ACCORDANCE WITH SPECIFICATIONS. REUSE, AMEND OR REPLACE SUBBASE MATERIAL AS NECESSARY TO ACHIEVE REQUIRED MATERIAL PARAMETERS (INCLUDING PERMEABILITY).
4) INSTALL LINER SYSTEM, INCLUDING LEACHATE COLLECTION AND REMOVAL SYSTEM, IN CELLS 5A AND 5B.
5) BEGIN LANDFILLING OPERATIONS IN CELLS 5A AND 5B WITH PLACEMENT OF 4 FEET THICK SELECT WASTE LAYER, AFTER MDE APPROVAL OF CELL LINER SYSTEM CONSTRUCTION.
6) BEGIN COLLECTION AND MANAGEMENT OF LIQUID WITHIN CELLS 5A AND 5B AS LEACHATE IMMEDIATELY FOLLOWING START OF WASTE PLACEMENT IN CELLS 5A AND 5B OR WHEN RUNOFF FROM ADJACENT WASTE AREAS ENTERS THE CELLS (WHICHEVER OCCURS FIRST). PRECIPITATION FALLING WITHIN THE CELL A AND 5B FOOTPRINTS PRIOR TO THE START OF WASTE PLACEMENT OR PRIOR TO THE START OF RUNOFF FROM ADJACENT WASTE AREAS MAY BE MANAGED AS STORMWATER AND DISCHARGED TO THE PERIMETER CHANNEL OR BASIN NO. 1 THROUGH A FILTER BAG.
7) INSTALL FINAL COVER ON THOSE PORTIONS OF CELLS THAT HAVE ACHIEVED FINAL GRADE.
8) SILT FENCE WILL BE INSTALLED AND MAINTAINED ALONG THE LIMIT OF DISTURBANCE AT ALL AREAS DOWN SLOPE OF DISTURBED AREAS.
9) THE CONTRACTOR SHALL MINIMIZE THE AREA OF DISTURBANCE TO THE EXTENT PRACTICABLE. NO AREAS OUTSIDE THE LIMIT OF DISTURBANCE LINES IN ANY PARTICULAR PHASE OR STAGE OF THE PROJECT SHALL BE DISTURBED.

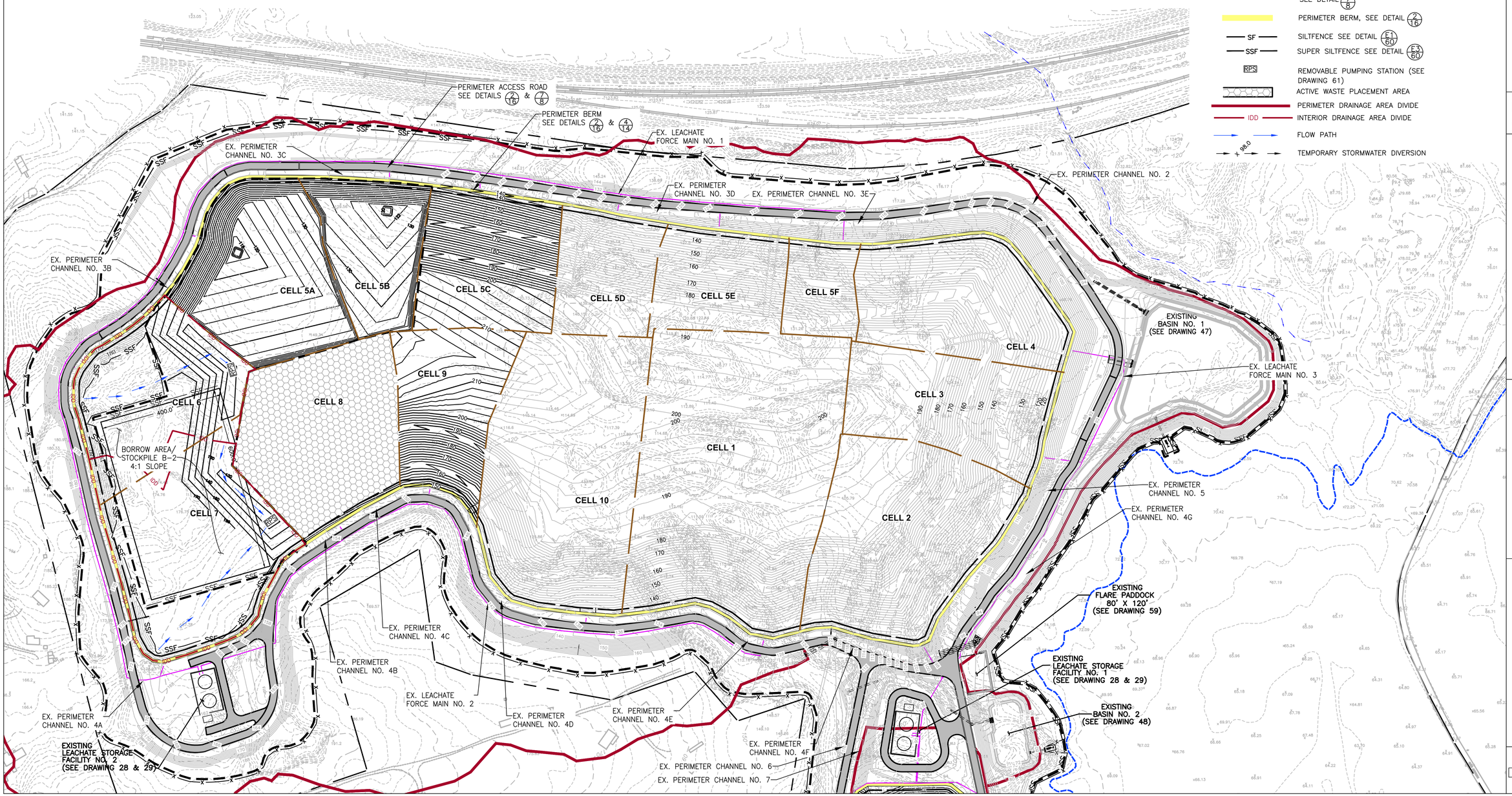
LEGEND

- PROPERTY LINE
- 100–YEAR FLOODPLAIN (SEE REF. 2)
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LEACHATE FORCE MAIN
- LIMIT OF DISTURBANCE
- PIPE
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- LANDFILL PERIMETER ROAD, SEE DETAIL 7/8
- PERIMETER BERM, SEE DETAIL 7/16
- SF — SILTFENCE SEE DETAIL E1/60
- SSF — SUPER SILTFENCE SEE DETAIL E3/60
- RPS — REMOVABLE PUMPING STATION (SEE DRAWING 61)
- ACTIVE WASTE PLACEMENT AREA
- PERIMETER DRAINAGE AREA DIVIDE
- IDD — INTERIOR DRAINAGE AREA DIVIDE
- FLOW PATH
- x 98.0 — TEMPORARY STORMWATER DIVERSION

GRAPHIC SCALE

150 0 75 150 300 600

1 inch = 150 ft.



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NATIONAL WASTE MANAGERS
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INTERMEDIATE
CONSTRUCTION STAGE O AND 01
(CELLS 5A AND 5B AND CAPPING CELLS 5C AND 9)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 78

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 8078 - INTERMEDIATE CONSTRUCTION STAGE O AND 01 (CELLS 5A & 5B AND CAPPING CELLS 5C & 9).dwg, 1/13/2022 10:23:59 AM

REFERENCES

1. BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.
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2. SEE DRAWINGS 6, 7, 10, 11, 12, 13 ,17, AND 18 FOR BOTTOM OF CELL AND LINER SYSTEM GRADING INFORMATION.
3. AREAS ACHIEVING COMPLETED CLOSURE CAP ARE SHOWN WITH TOP OF CLOSURE CAP CONTOURS.

SEQUENCE OF CONSTRUCTION FOR WEST SECTION

1) PERFORM EXCAVATION AND GRADING WITHIN FOOTPRINT OF CELL 6 TO TOP OF SUBBASE (AREA = 5.2 ACRES), APPROXIMATE CUT = 353,000 CY AND FILL = 0 CY). RESERVE APPROXIMATELY 4,000 CY OF SANDY SOILS FOR USE IN LEACHATE COLLECTION LAYER. UTILIZE EXCESS SOILS FOR INTERMEDIATE COVER, FINAL COVER OR CLOSURE CAP, AND TRANSPORT EXCESS TO STOCKPILE B2. (SEE SPECS FOR ALL MATERIAL REQUIREMENTS).
2) INSTALL RPS AS SHOWN ON DRAWINGS 79.
3) OVER EXCAVATE CELL 6 SUBBASE BY 2 FEET. CONSTRUCT SUBBASE IN ACCORDANCE WITH SPECIFICATIONS. REUSE, AMEND OR REPLACE SUBBASE MATERIAL AS NECESSARY TO ACHIEVE REQUIRED MATERIAL PARAMETERS (INCLUDING PERMEABILITY).
4) INSTALL LINER SYSTEM, INCLUDING LEACHATE COLLECTION AND REMOVAL SYSTEM, IN CELL 6.
5) BEGIN LANDFILLING OPERATIONS IN CELL 6 WITH PLACEMENT OF 4 FEET THICK SELECT WASTE LAYER, AFTER MDE APPROVAL OF CELL LINER SYSTEM CONSTRUCTION.
6) BEGIN COLLECTION AND MANAGEMENT OF LIQUID WITHIN CELL 6 AS LEACHATE IMMEDIATELY FOLLOWING START OF WASTE PLACEMENT IN CELL 8 OR WHEN RUNOFF FROM ADJACENT WASTE AREAS ENTERS THE CELLS (WHICHEVER OCCURS FIRST). PRECIPITATION FALLING WITHIN THE CELL 6 FOOTPRINT PRIOR TO THE START OF WASTE PLACEMENT OR PRIOR TO THE START OF RUNOFF FROM ADJACENT WASTE AREAS MAY BE MANAGED AS STORMWATER AND DISCHARGED TO THE PERIMETER CHANNEL OR BASIN NO. 1 THROUGH A FILTER BAG.
7) SILT FENCE WILL BE INSTALLED AND MAINTAINED ALONG THE LIMIT OF DISTURBANCE AT ALL AREAS DOWN SLOPE OF DISTURBED AREAS.
8) THE CONTRACTOR SHALL MINIMIZE THE AREA OF DISTURBANCE TO THE EXTENT PRACTICABLE. NO AREAS OUTSIDE THE LIMIT OF DISTURBANCE LINES IN ANY PARTICULAR PHASE OR STAGE OF THE PROJECT SHALL BE DISTURBED.

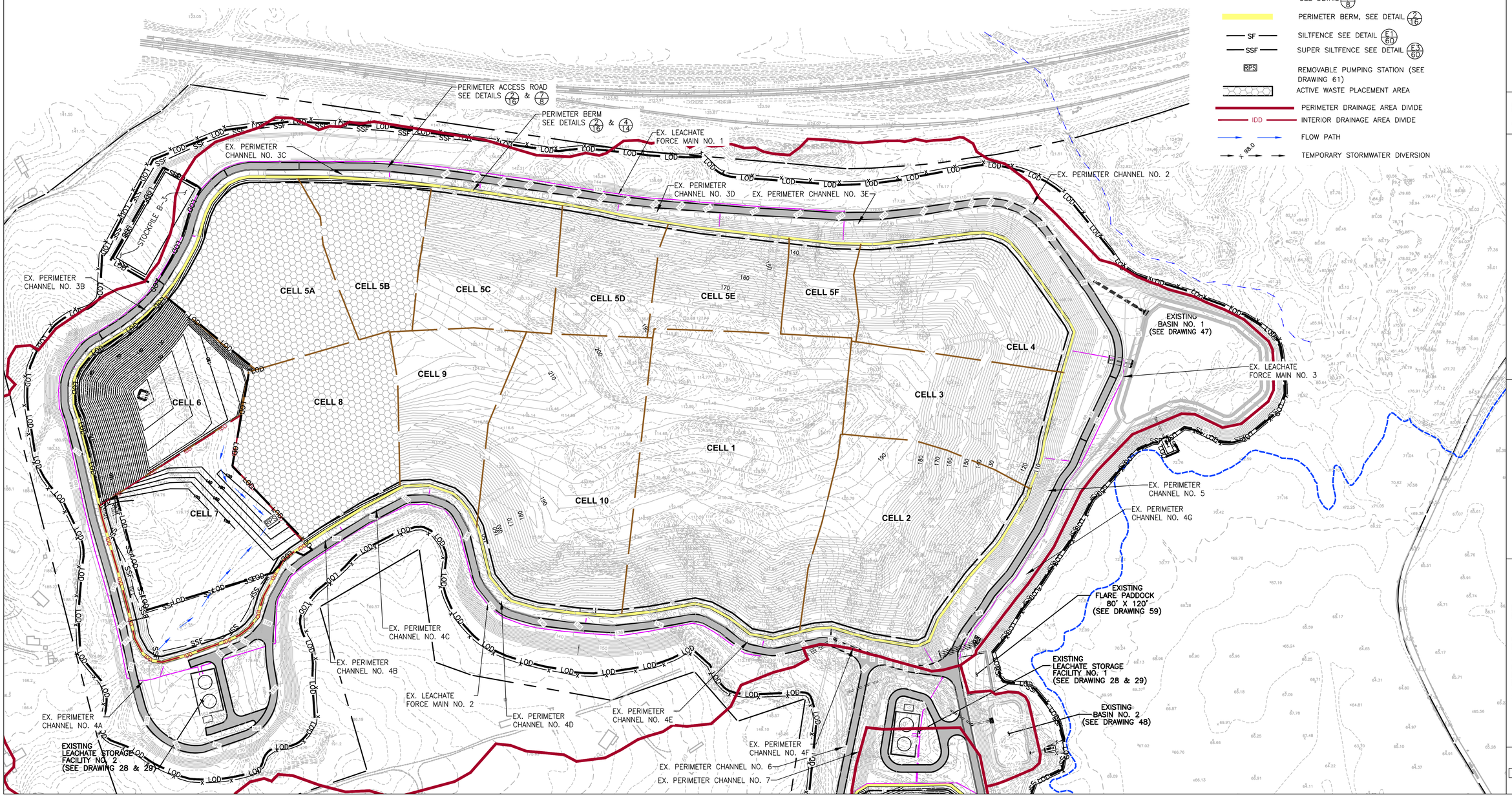
LEGEND

- PROPERTY LINE
- 100–YEAR FLOODPLAIN (SEE REF. 2)
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LEACHATE FORCE MAIN
- LOD — LIMIT OF DISTURBANCE
- PIPE
- x — x — PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- LANDFILL PERIMETER ROAD, SEE DETAIL 7/8
- PERIMETER BERM, SEE DETAIL 7/16
- SF — SILTFENCE SEE DETAIL E1/60
- SSF — SUPER SILTFENCE SEE DETAIL E3/60
- RPS — REMOVABLE PUMPING STATION (SEE DRAWING 61)
- ACTIVE WASTE PLACEMENT AREA
- PERIMETER DRAINAGE AREA DIVIDE
- IDD — INTERIOR DRAINAGE AREA DIVIDE
- FLOW PATH
- x 88.0 — TEMPORARY STORMWATER DIVERSION

GRAPHIC SCALE

150 0 75 150 300 600

1 inch = 150 ft.



DATE:	REVISION:
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11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

STATE OF MARYLAND — KARL RICHARD STREYMAN — REGISTERED PROFESSIONAL ENGINEER — No. 35331 — 1/14/22

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
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INTERMEDIATE CONSTRUCTION STAGE P (CELL 6)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 79

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\RC & Phase III Application\Drawings\Final\20183854 B079 - INTERMEDIATE CONSTRUCTION STAGE P (CELL 6).dwg, 1/13/2022 10:24:47 AM

REFERENCES

1. BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.
2. THE POST–2012 100–YEAR FLOOD PLAIN LIMITS SHOWN ARE BASED ON FEMA NATIONAL FLOOD INSURANCE PROGRAM MAP NUMBER 24003C0136E, DATED 10/16/2012, AND PROVIDED AS PLATE 3 OF THE PHASE II REPORT.

NOTES

1. WHILE FEMA HAS RE–ASSESSED AND MODIFIED THE 100 YEAR FLOOD PLAIN IN THE VICINITY OF THE SITE, THE PROPOSED LANDFILL PERIMETER ROAD BERM GRADES ARE PROPOSED A MINIMUM OF 5 FEET ABOVE THE NEW FEMA BASE FLOOD ELEVATIONS.
2. SEE DRAWINGS 6, 7, 10, 11, 12, 13 ,17, AND 18 FOR BOTTOM OF CELL AND LINER SYSTEM GRADING INFORMATION.
3. AREAS ACHIEVING COMPLETED CLOSURE CAP ARE SHOWN WITH TOP OF CLOSURE CAP CONTOURS.

SEQUENCE OF CONSTRUCTION FOR WEST SECTION

1) PERFORM EXCAVATION AND GRADING WITHIN FOOTPRINT OF CELL 7 TO TOP OF SUBBASE (AREA = 6.7 ACRES), APPROXIMATE CUT = 395,000 CY AND FILL = 0 CY). RESERVE APPROXIMATELY 11,000 CY OF SANDY SOILS FOR USE IN LEACHATE COLLECTION LAYER. UTILIZE EXCESS SOILS FOR INTERMEDIATE COVER, FINAL COVER OR CLOSURE CAP, AND TRANSPORT EXCESS TO STOCKPILE B3. (SEE SPECS FOR ALL MATERIAL REQUIREMENTS).
2) OVER EXCAVATE CELL 7 SUBBASE BY 2 FEET. CONSTRUCT SUBBASE IN ACCORDANCE WITH SPECIFICATIONS. REUSE, AMEND OR REPLACE SUBBASE MATERIAL AS NECESSARY TO ACHIEVE REQUIRED MATERIAL PARAMETERS (INCLUDING PERMEABILITY).
3) INSTALL LINER SYSTEM, INCLUDING LEACHATE COLLECTION AND REMOVAL SYSTEM, IN CELL 7.
4) BEGIN LANDFILLING OPERATIONS IN CELL 7 WITH PLACEMENT OF 4 FEET THICK SELECT WASTE LAYER, AFTER MDE APPROVAL OF CELL LINER SYSTEM CONSTRUCTION.
5) BEGIN COLLECTION AND MANAGEMENT OF LIQUID WITHIN CELL 7 AS LEACHATE IMMEDIATELY FOLLOWING START OF WASTE PLACEMENT IN CELL 8 OR WHEN RUNOFF FROM ADJACENT WASTE AREAS ENTERS THE CELLS (WHICHEVER OCCURS FIRST). PRECIPITATION FALLING WITHIN THE CELL 7 FOOTPRINT PRIOR TO THE START OF WASTE PLACEMENT OR PRIOR TO THE START OF RUNOFF FROM ADJACENT WASTE AREAS MAY BE MANAGED AS STORMWATER AND DISCHARGED TO THE PERIMETER CHANNEL OR BASIN NO. 1 THROUGH A FILTER BAG.
6) SILT FENCE WILL BE INSTALLED AND MAINTAINED ALONG THE LIMIT OF DISTURBANCE AT ALL AREAS DOWN SLOPE OF DISTURBED AREAS.

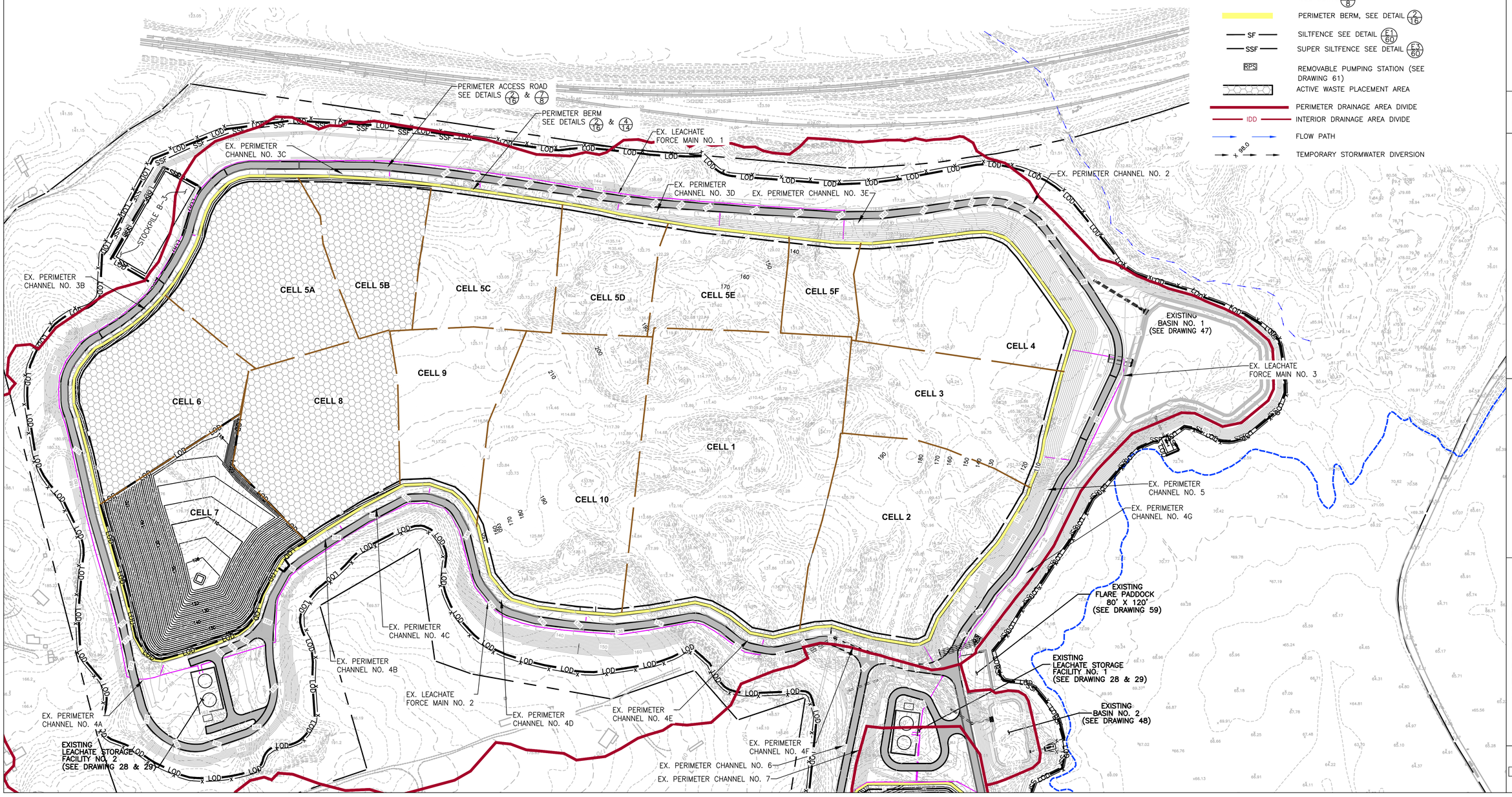
LEGEND

- PROPERTY LINE
- 100–YEAR FLOODPLAIN (SEE REF. 2)
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LEACHATE FORCE MAIN
- LOD — LIMIT OF DISTURBANCE
- PIPE
- x — x — PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- LANDFILL PERIMETER ROAD, SEE DETAIL 7/8
- PERIMETER BERM, SEE DETAIL 2/16
- SF — SILTFENCE SEE DETAIL E1/60
- SSF — SUPER SILTFENCE SEE DETAIL E3/60
- RPS — REMOVABLE PUMPING STATION (SEE DRAWING 61)
- ACTIVE WASTE PLACEMENT AREA
- PERIMETER DRAINAGE AREA DIVIDE
- IDD — INTERIOR DRAINAGE AREA DIVIDE
- FLOW PATH
- + 98.0 — TEMPORARY STORMWATER DIVERSION

GRAPHIC SCALE

150 0 75 150 300 600

1 inch = 150 ft.



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NATIONAL WASTE MANAGERS
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INTERMEDIATE CONSTRUCTION STAGE Q (CELL 7)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 80

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\RC & Phase III Application\Drawings\Final\20183854 B080 - INTERMEDIATE CONSTRUCTION STAGE Q (CELL 7).dwg, 1/13/2022 10:25:37 AM

REFERENCES

1. BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.
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NOTES

1. WHILE FEMA HAS RE–ASSESSED AND MODIFIED THE 100 YEAR FLOOD PLAIN IN THE VICINITY OF THE SITE, THE PROPOSED LANDFILL PERIMETER ROAD BERM GRADES ARE PROPOSED A MINIMUM OF 5 FEET ABOVE THE NEW FEMA BASE FLOOD ELEVATIONS.
2. SEE DRAWINGS 6, 7, 10, 11, 12, 13 ,17, AND 18 FOR BOTTOM OF CELL AND LINER SYSTEM GRADING INFORMATION.
3. AREAS ACHIEVING COMPLETED CLOSURE CAP ARE SHOWN WITH TOP OF CLOSURE CAP CONTOURS.

SEQUENCE OF CONSTRUCTION FOR WEST SECTION

1) INSTALL FINAL COVER ON THOSE PORTIONS OF CELLS 5A, 5C, 5C, 8 AND 9 THAT HAVE ACHIEVED FINAL GRADE.
2) INSTALL FINAL COVER OVER REMAINING LANDFILL AREAS WHEN FILLING IS COMPLETE.
3) SILT FENCE WILL BE INSTALLED AND MAINTAINED ALONG THE LIMIT OF DISTURBANCE AT ALL AREAS DOWN SLOPE OF DISTURBED AREAS.
4) THE CONTRACTOR SHALL MINIMIZE THE AREA OF DISTURBANCE TO THE EXTENT PRACTICABLE. NO AREAS OUTSIDE THE LIMIT OF DISTURBANCE LINES IN ANY PARTICULAR PHASE OR STAGE OF THE PROJECT SHALL BE DISTURBED.

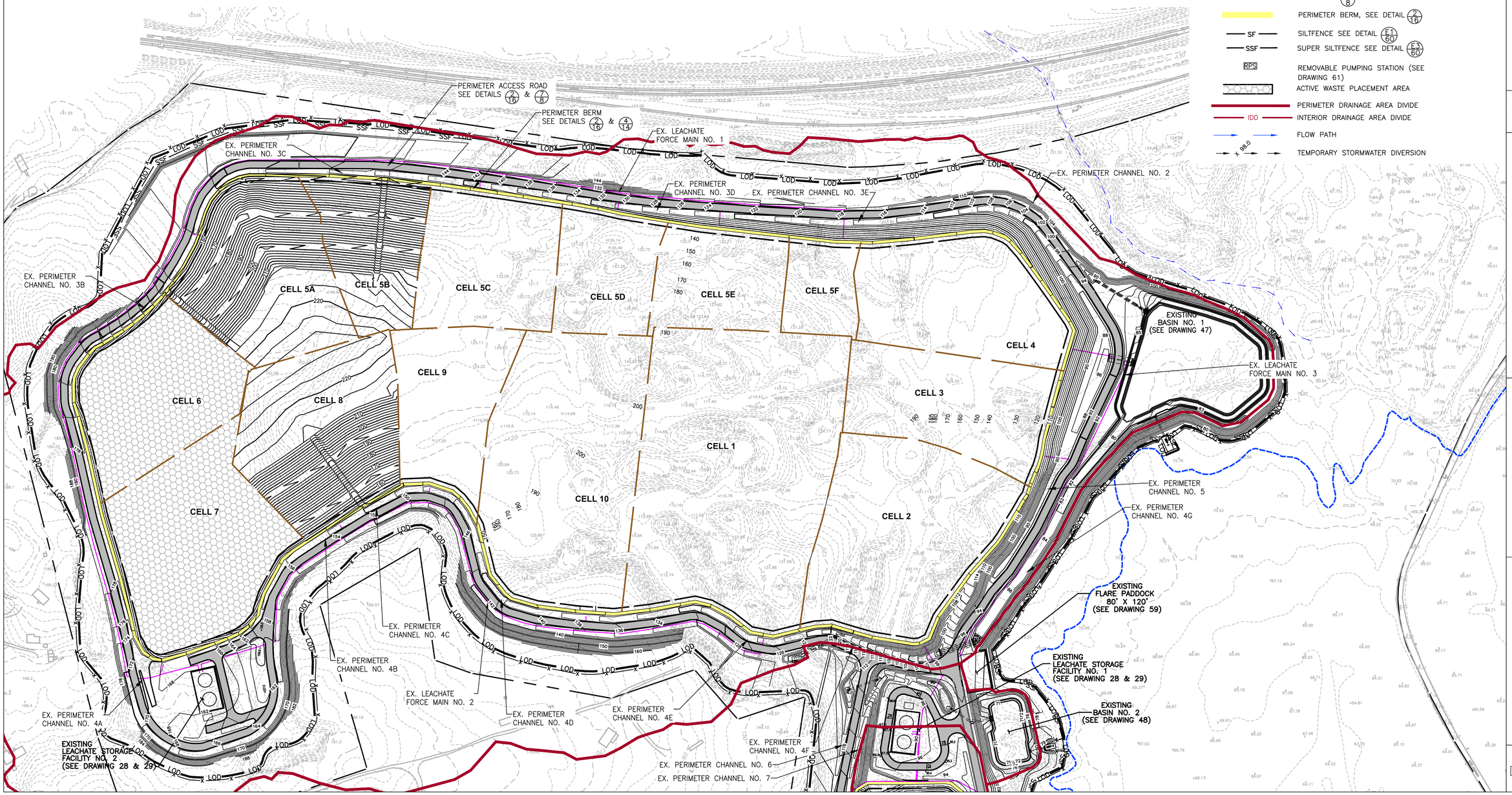
LEGEND

- PROPERTY LINE
- 100–YEAR FLOODPLAIN (SEE REF. 2)
- EXISTING 2 FT INCREMENT CONTOUR
- EXISTING 5 FT INCREMENT CONTOUR
- PROPOSED 2 FT INCREMENT CONTOUR
- PROPOSED 10 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION BOUNDARY
- LEACHATE FORCE MAIN
- LOD — LIMIT OF DISTURBANCE
- PIPE
- x — x — PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- LANDFILL PERIMETER ROAD, SEE DETAIL 7/8
- PERIMETER BERM, SEE DETAIL 7/16
- SF — SILTFENCE SEE DETAIL E1/60
- SSF — SUPER SILTFENCE SEE DETAIL E3/60
- RPS — REMOVABLE PUMPING STATION (SEE DRAWING 61)
- ACTIVE WASTE PLACEMENT AREA
- PERIMETER DRAINAGE AREA DIVIDE
- IDD — INTERIOR DRAINAGE AREA DIVIDE
- FLOW PATH
- x 88.0 — TEMPORARY STORMWATER DIVERSION

GRAPHIC SCALE

150 0 75 150 300 600

1 inch = 150 ft.



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STATE OF MARYLAND — KARL SCHREIBER STEYMAN — No. 35361 — PROFESSIONAL ENGINEER

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

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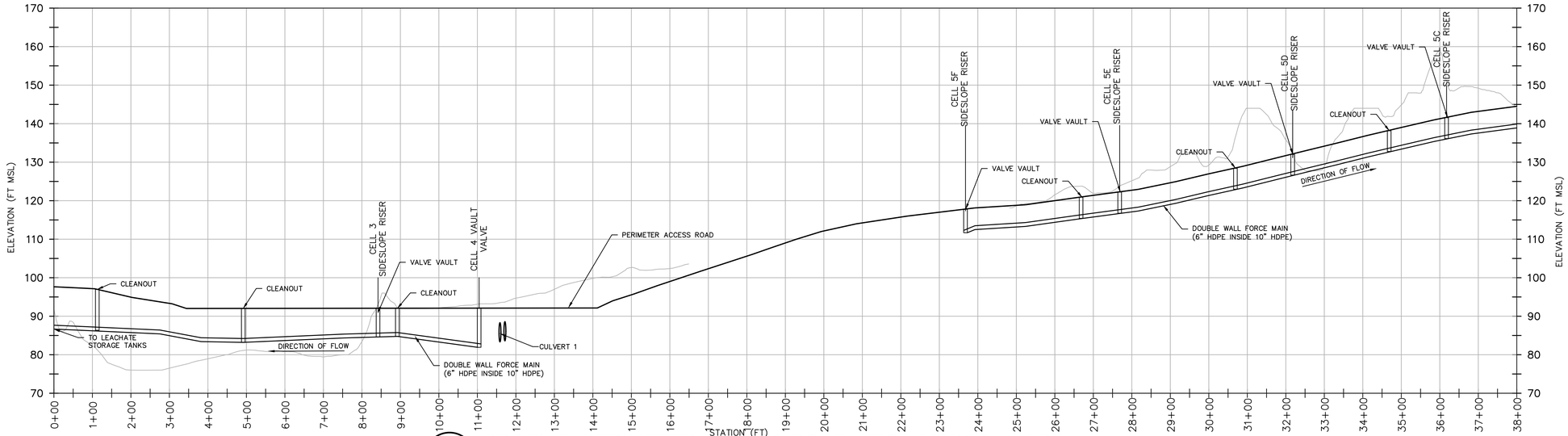
INTERMEDIATE CONSTRUCTION STAGE R AND R1 (FINAL CAPPING)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 81

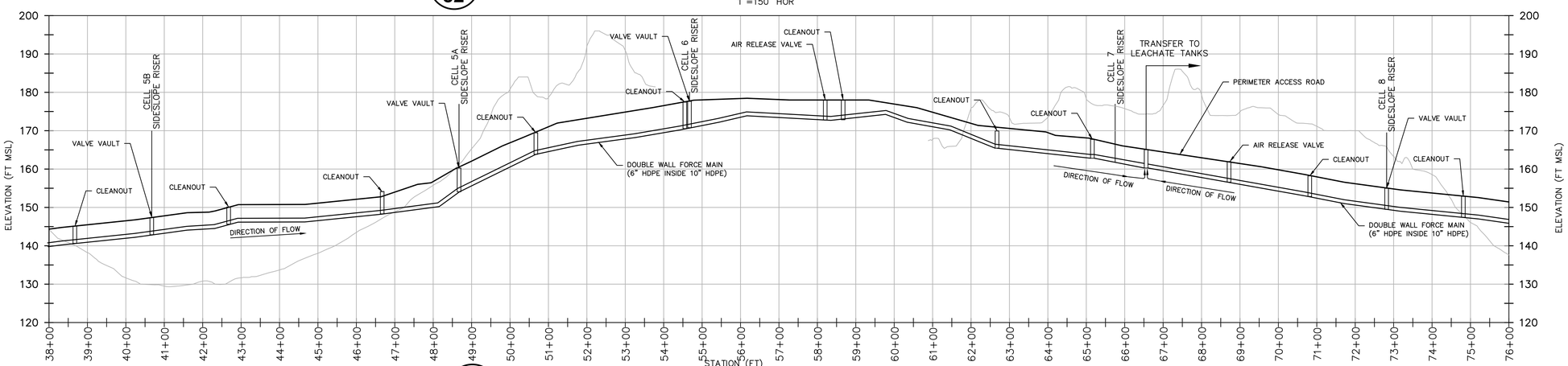
N:\Projects\2018\3854 - Chesapeake Terrace Lf\CAD\DWG\RC B_Phase III Application\Drawings\Final\3854 B081 - INTERMEDIATE CONSTRUCTION STAGE R AND R1 (FINAL CAPPING).dwg, 1/13/2022 10:26:31 AM



1
82

PROFILE- PERIMETER ACCESS ROAD WEST DISPOSAL AREA

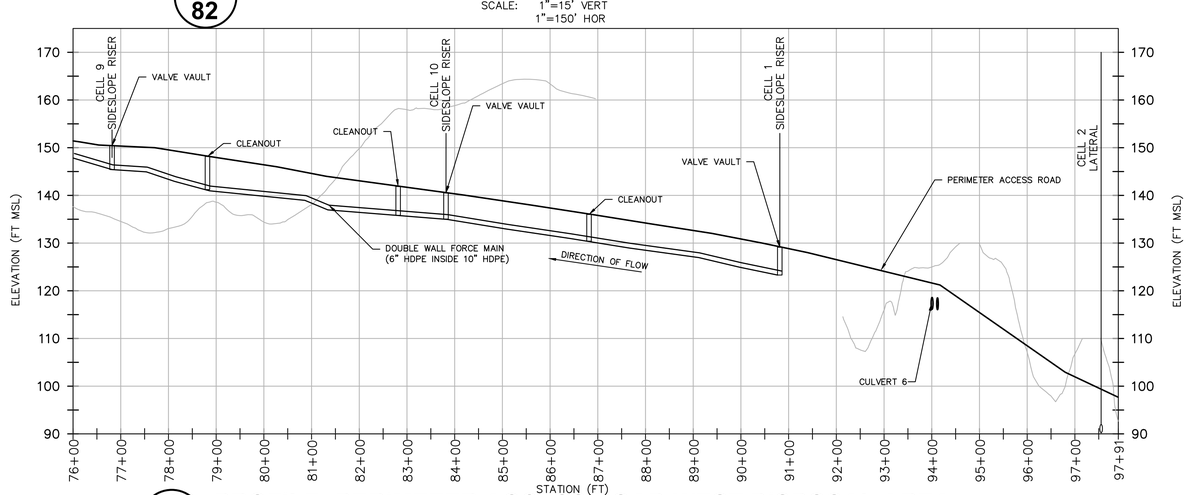
SCALE: 1"=15' VERT
1"=150' HOR



1
82

PROFILE- PERIMETER ACCESS ROAD WEST DISPOSAL AREA

SCALE: 1"=15' VERT
1"=150' HOR



1
82

PROFILE- PERIMETER ACCESS ROAD WEST DISPOSAL AREA

SCALE: 1"=15' VERT
1"=150' HOR

NOTE

1.) SEE DRAWINGS 17 AND 18 FOR STATIONS OF PERIMETER ACCESS ROAD.

SCALE: VERTICAL– 0 7.5 15 30 — 1 INCH = 15 FT
HORIZONTAL– 0 75 150 300 — 1 INCH = 150 FT

STATE OF MARYLAND — KARL HEINRICH STRYMAN — REGISTERED PROFESSIONAL ENGINEER — No. 19351

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NATIONAL WASTE MANAGERS
PHASE III APPLICATION
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PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

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a Montrose Environmental Group company
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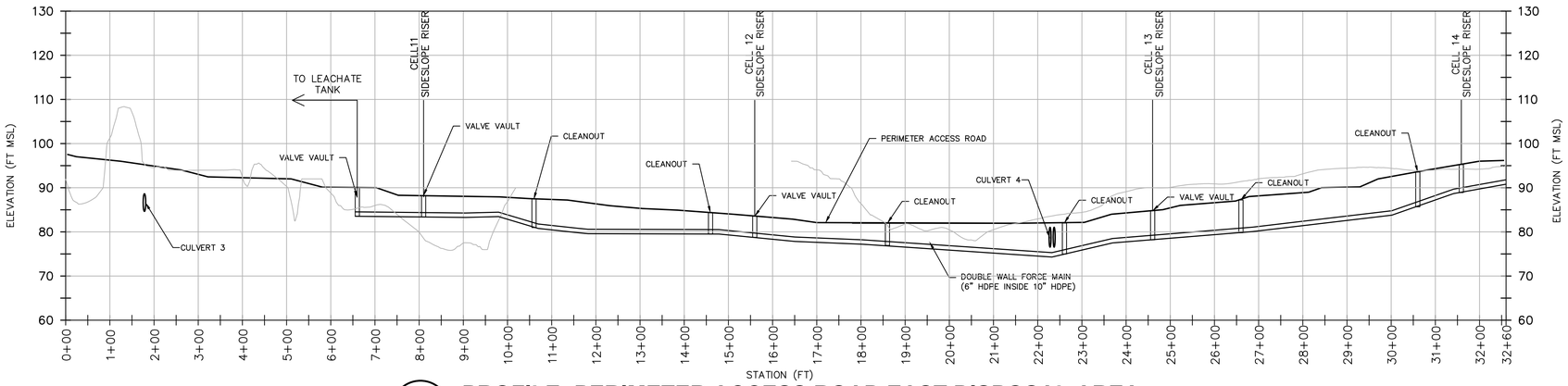
PERIMETER ACCESS ROAD PROFILES (SHEET 1 OF 2)

PROJECT MANAGER: PGS	SCALE:AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE:09/03/2021

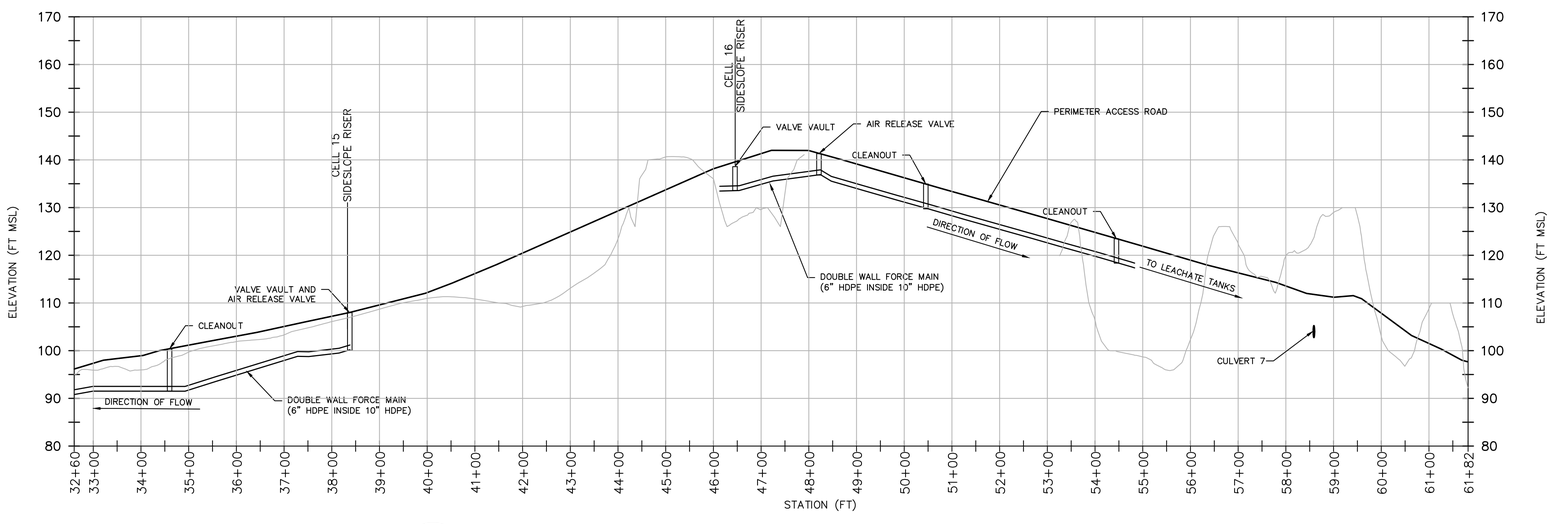
DRAWING 82

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 B082 - PERIMETER ACCESS ROAD PROFILES (SHEET 1 OF 2).dwg, 1/13/2022 10:26:49 AM



1/83 PROFILE- PERIMETER ACCESS ROAD EAST DISPOSAL AREA

SCALE: 1"=15' VERT
1"=150' HOR



2/83 PROFILE- PERIMETER ACCESS ROAD EAST DISPOSAL AREA

SCALE: 1"=15' VERT
1"=150' HOR

NOTE

1.) SEE DRAWINGS 17 AND 18 FOR STATIONS OF PERIMETER ACCESS ROAD.

SCALE: VERTICAL– 1 INCH = 15 FT
HORIZONTAL– 1 INCH = 150 FT

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NATIONAL WASTE MANAGERS
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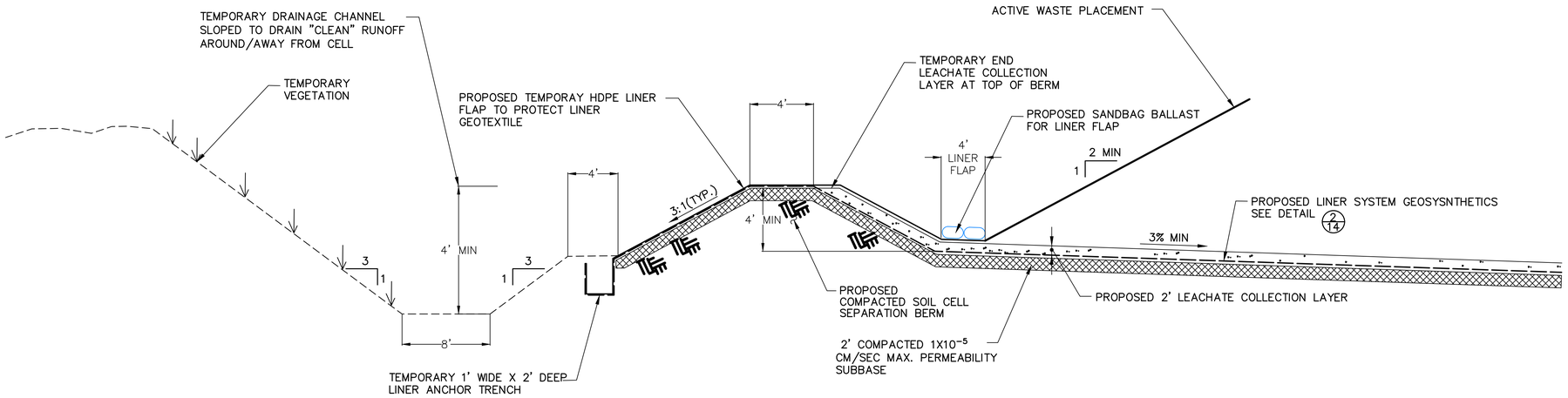
PERIMETER ACCESS ROAD PROFILES (SHEET 2 OF 2)

PROJECT MANAGER:	PGS
CHECKED BY:	PGS
DRAWN BY:	KHF
SCALE:	AS NOTED
PROJECT NUMBER:	2018 – 3854
DATE:	09/03/2021

DRAWING 83

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 B083 - PERIMETER ACCESS ROAD PROFILES (SHEET 2 OF 2).dwg, 1/13/2022 10:27:00 AM

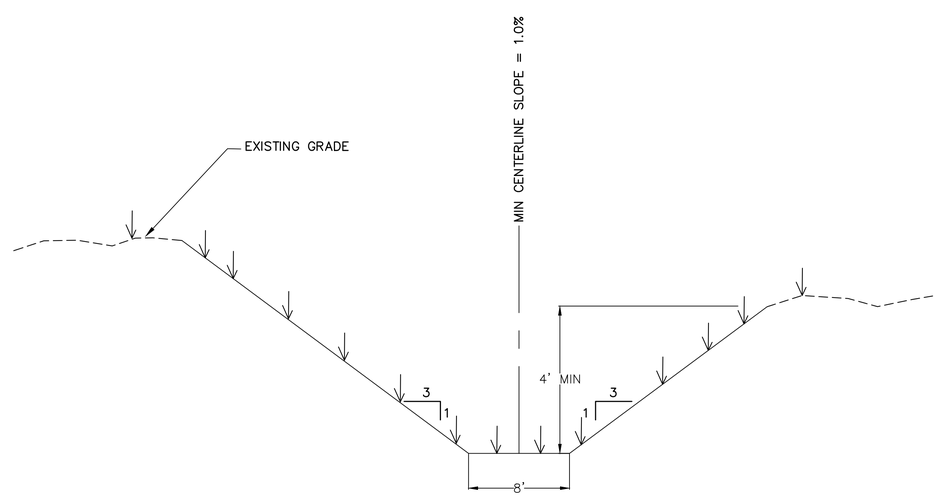


NOTES

1. CELL SEPARATION BERM SHALL BE CONSTRUCTED PER DETAIL 5/14
2. THIS TYPICAL CONFIGURATION IS FOR LOCATION WHERE EXTERIOR GRADE IS EQUAL TO OR HIGHER THAN CELL BOTTOM.

1/84 TYPICAL STORMWATER SEPARATION (AT INTERCELL BERM ALONG UNLINED/UNFILLED AREA)

NOT TO SCALE



2/84 TEMPORARY STORMWATER DIVERSION

NOT TO SCALE

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NATIONAL WASTE MANAGERS
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INTERMEDIATE
STORWATER SEPARATION

PROJECT MANAGER: PGS
CHECKED BY: PGS
DRAWN BY: KHF
SCALE: AS NOTED
PROJECT NUMBER: 2018 – 3854
DATE: 09/03/2021

DRAWING 84

N:\Projects\2018\2018-3854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\2018-3854 B084 - INTERMEDIATE STORMWATER SEPARATION.dwg, 1/13/2022 10:27:08 AM

LEGEND

— — — —	PROPERTY LINE
- - - - - - - -	100-YEAR FLOODPLAIN
◎ GP-24	GAS MONITORING PROBE (3/88)
	PROPOSED ACCESS ROAD

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

2.) HYDROGEOLOGIC AREAS AND MONITORING WELL LOCATIONS DIGITIZED FROM HARD COPY OF DRAWING ENTITLED "PERMANENT GROUNDWATER MONITORING WELL PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED MAY 2008.

3.) ADDITIONAL HISTORICAL BORING LOCATIONS FROM HARD COPY OF DRAWING ENTITLED "PLATE 2, CHESAPEAKE RUBBLE LANDFILL HYDROGEOLOGIC BASE MAP," DATED NOVEMBER 2003, CREATED BY MARK SCHULTZ ASSOCIATES, ANNAPOLIS, MARYLAND.

NOTES

1. THE PURPOSE OF THIS DRAWING IS TO SHOW THE PROPOSED LOCATIONS OF THE GAS MONITORING PROBES. PROPOSED LOCATIONS ARE APPROXIMATELY 400 FEET ON-CENTER AND LOCATED OUTSIDE THE PERIMETER ACCESS ROAD AND INSIDE THE SITE SECURITY FENCE.

2. THE PROPOSED SCALE HOUSE AND MAINTENANCE BUILDINGS SHALL BE MONITORED AS PART OF THE LANDFILL GAS MONITORING PLAN. (GP-01 AND GP-37)

240 0 120 240 480 960

1 INCH = 240 FT

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER PAUL C. STRAYMAN No. 15371

1/14/22

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LANDFILL GAS
PERIMETER PROBE
MONITORING PLAN

PROJECT MANAGER: PGS	SCALE:AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 - 3854
DRAWN BY: KHF	DATE:09/03/2021

DRAWING 85

N:\Projects\2018\2018854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 B085 - LANDFILL GAS PERIMETER MONITORING PLAN.dwg, 1/13/2022 10:27:29 AM

LEGEND

- GAS MONITORING PROBE (3/88)
- PROPERTY LINE
- CELL DRAINAGE DIVIDE
- ACCESS ROAD
- LEACHATE FORCE MAIN
- PROPOSED FINAL GRADE
- HEADER/LATERAL (1/88)
- LANDFILL GAS EXTRACTION WELL (2/88)
- ISOLATION VALVE (5/88)
- LEACHATE SIDE SLOPE RISERS (1/19)
- CONDENSATE DRAIN (4/88)

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

2.) HYDROGEOLOGIC AREAS AND MONITORING WELL LOCATIONS DIGITIZED FROM HARD COPY OF DRAWING ENTITLED "PERMANENT GROUNDWATER MONITORING WELL PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED MAY 2008.

3.) ADDITIONAL HISTORICAL BORING LOCATIONS FROM HARD COPY OF DRAWING ENTITLED "PLATE 2, CHESAPEAKE RUBBLE LANDFILL HYDROGEOLOGIC BASE MAP," DATED NOVEMBER 2003, CREATED BY MARK SCHULTZ ASSOCIATES, ANNAPOLIS, MARYLAND.

150 0 75 150 300 600

1 INCH = 150 FT

STATE OF MARYLAND
KARL R. STRATMAN
No. 36 PROFESSIONAL ENGINEER
1/14/22

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

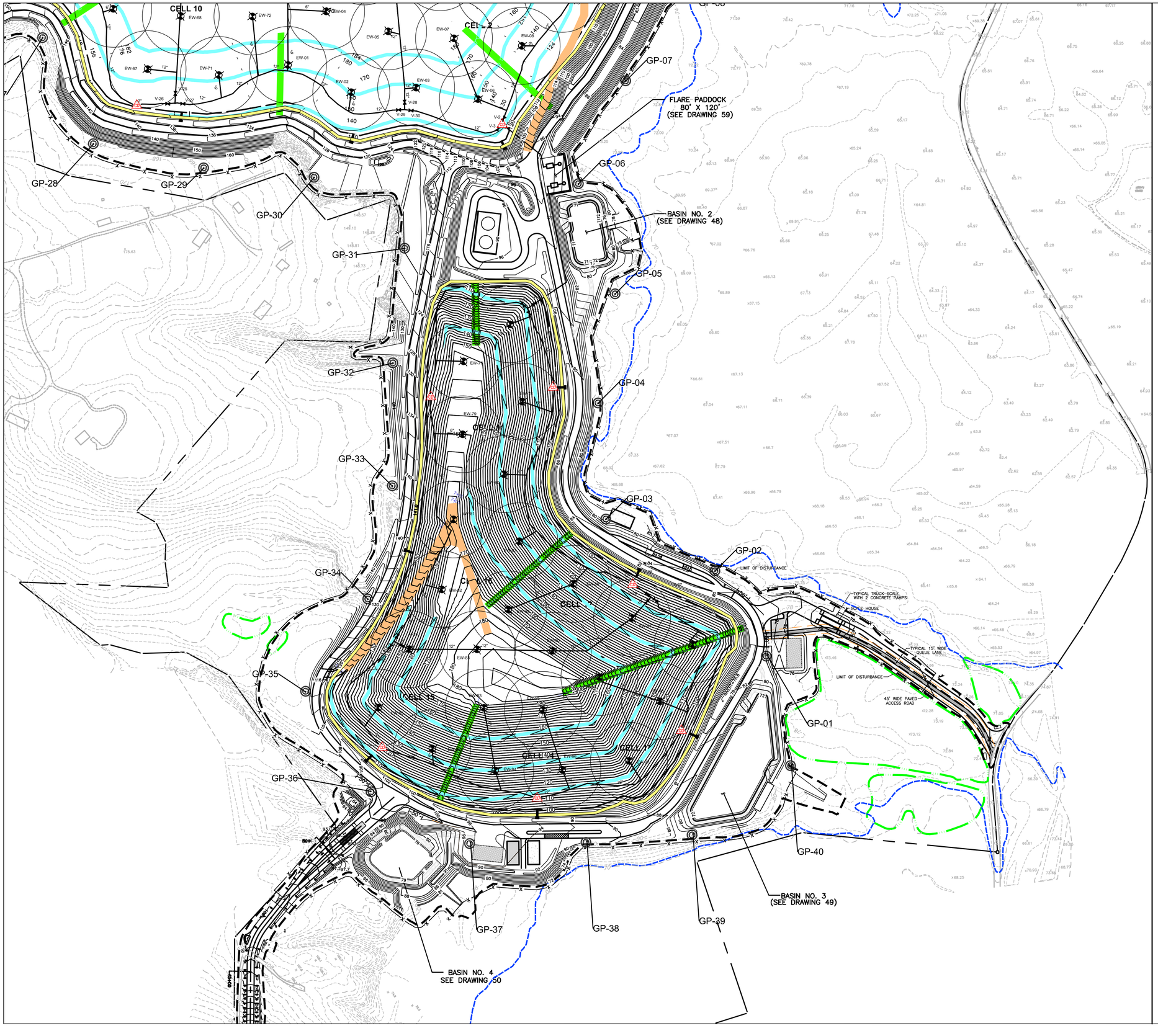
ADVANCED GeoServices
a Montrose Environmental Group company
1979 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2275 F: 856.354.9236 www.advancedgeoservices.com

WEST SECTION
LANDFILL GAS COLLECTION
CONTROL SYSTEM PLAN

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 86

N:\Projects\2018\2018854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 B086 - WEST SECTION LANDFILL GAS COLLECTION CONTROL SYSTEM PLAN.dwg, 1/13/2022 10:28:17 AM



LEGEND

GP-24	GAS MONITORING PROBE (3/88)
	PROPERTY LINE
	CELL DRAINAGE DIVIDE
	ACCESS ROAD
FM	LEACHATE FORCE MAIN
220	PROPOSED FINAL GRADE
	HEADER/LATERAL (1/88)
EW-85	LANDFILL GAS EXTRACTION WELL (2/88)
	ISOLATION VALVE (5/88)
	LEACHATE SIDE SLOPE RISERS (1/19)
	CONDENSATE DRAIN (4/88)

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

2.) HYDROGEOLOGIC AREAS AND MONITORING WELL LOCATIONS DIGITIZED FROM HARD COPY OF DRAWING ENTITLED "PERMANENT GROUNDWATER MONITORING WELL PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED MAY 2008.

3.) ADDITIONAL HISTORICAL BORING LOCATIONS FROM HARD COPY OF DRAWING ENTITLED "PLATE 2, CHESAPEAKE RUBBLE LANDFILL HYDROGEOLOGIC BASE MAP," DATED NOVEMBER 2003, CREATED BY MARK SCHULTZ ASSOCIATES, ANNAPOLIS, MARYLAND.

150 0 75 150 300 600

1 INCH = 150 FT

STATE OF MARYLAND
KHIEM FRANK HUYNH
No. 32121
PROFESSIONAL ENGINEER
1/14/22

REVISION:	DATE:
REVISED TO ADDRESS MDE COMMENTS ON PHASE 3	9/03/2021
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NATIONAL WASTE MANAGERS
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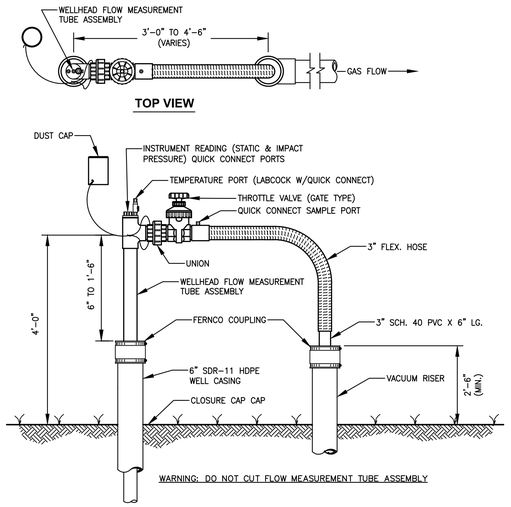
T: 856.354.2273 F: 856.354.9236 www.advancedgeoservices.com

EAST SECTION
LANDFILL GAS COLLECTION
CONTROL SYSTEM PLAN

PROJECT MANAGER:	PGS	SCALE: AS NOTED	
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE: 09/03/2021	

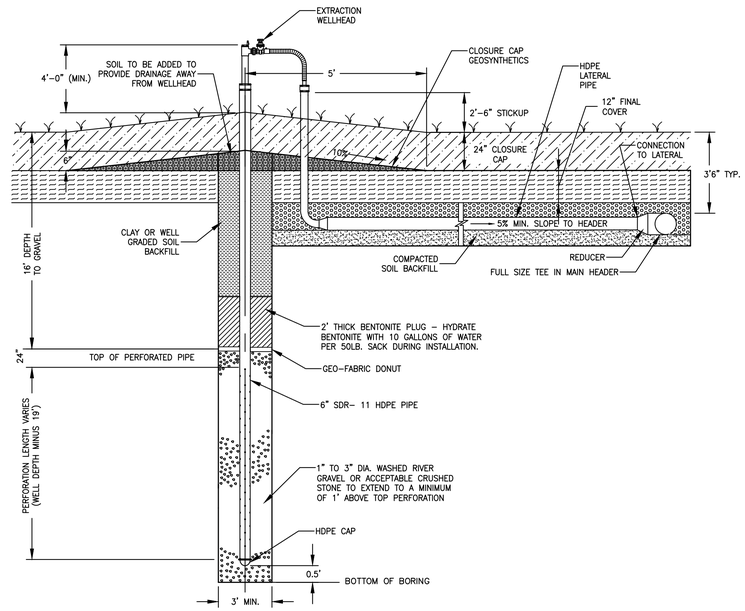
DRAWING 87

N:\Projects\2018\2018854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 B087 - EAST SECTION LANDFILL GAS COLLECTION CONTROL SYSTEM PLAN.dwg, 1/13/2022 10:29:04 AM



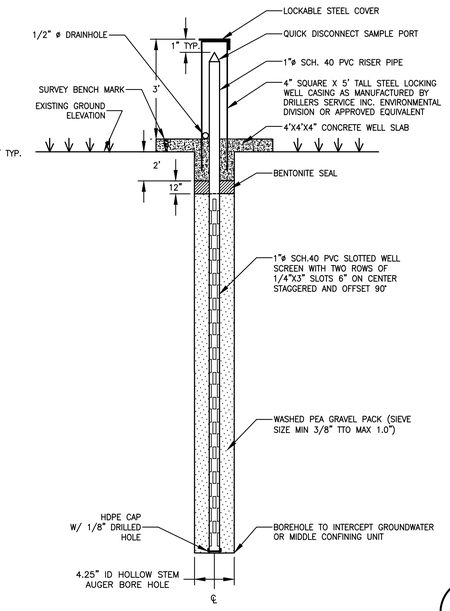
1/88 TYPICAL WELLHEAD FOR ACTIVE GAS EXTRACTION

NOT TO SCALE



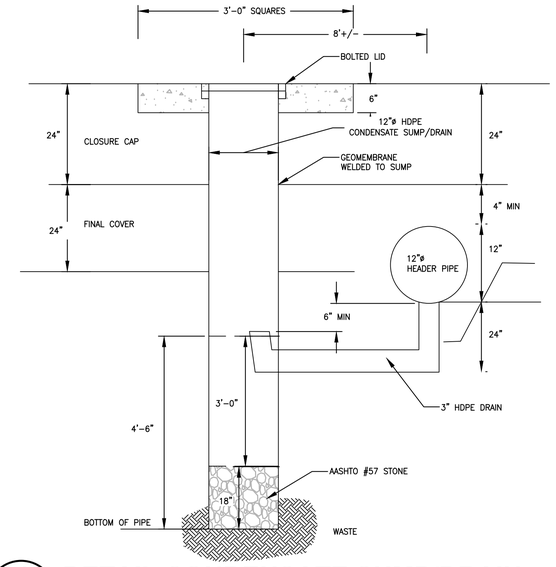
2/88 TYPICAL LANDFILL GAS WELL (CONNECTED TO EXTRACTION SYSTEM)

NOT TO SCALE



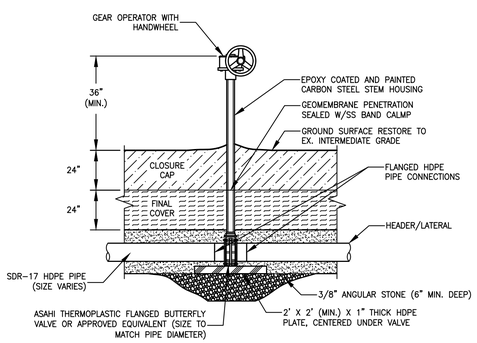
3/88 PERIMETER GAS MONITORING PROBE

NOT TO SCALE



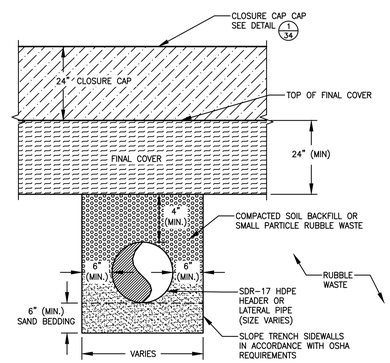
4/88 DETAIL CONDENSATE SUMP/DRAIN

NOT TO SCALE



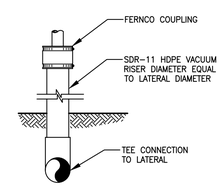
5/88 TYPICAL ISOLATION VALVE

NOT TO SCALE

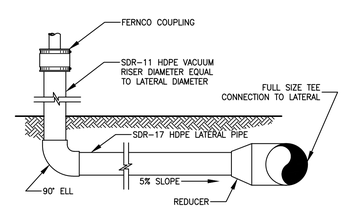


6/88 TYPICAL GAS HEADER AND LATERAL TRENCH

NOT TO SCALE



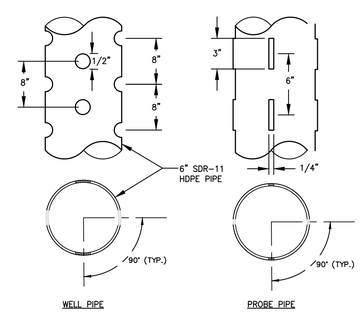
DIRECT CONNECTION TO LATERAL



CONNECTION OFFSET FROM LATERAL

7/88 CONNECTION TO LATERAL

NOT TO SCALE



8/88 PIPE PERFORATION

NOT TO SCALE

NOTES:

1. THE TYPICAL MINIMUM PIPE SLOPE FOR GAS HEADERS AND LATERALS IS FIVE PERCENT (5%) IN RUBBLE WASTE, AND ONE PERCENT (1%) OUTSIDE OF RUBBLE WASTE.

2. ALL HDPE PIPES FOR THE GAS EXTRACTION SYSTEM SHALL BE CONNECTED BY BUTT FUSION, ELECTROFUSION COUPLINGS, OR FLANGED JOINTS. THE INTEGRITY OF THE PIPE AND ALL CONNECTIONS SHALL BE VERIFIED BY THE CONTRACTOR USING AIR PRESSURE TESTING DURING CONSTRUCTION. PASSING TEST: 20 PSI AIR, 20 MINUTES, MAX FIVE PERCENT (5%) PRESSURE DROP.

3. FLANGE CONNECTIONS SHALL BE MADE USING HDPE STUB END FLANGE ADAPTERS, EPOXY COATED CARBON STEEL BACKUP RINGS, STAINLESS STEEL BOLTING HARDWARE COATED WITH ANTI-SIEZE COMPOUND, AND NEOPRENE GASKETS.

4. NO FIELD CONSTRUCTED SADDLE TEES OR BRANCHES ARE PERMITTED.

5. BLIND FLANGES ARE TO BE DRILLED TO ANSI 150# BOLT PATTERN AND CAN BE FABRICATED FROM ONE INCH (1") THICK HDPE FLAT STOCK.

6. ALL TEES USED DURING CONSTRUCTION SHALL BE SIZED ACCORDING TO THE CONNECTING PIPE DIAMETERS. CONCENTRIC REDUCERS SHALL BE USED AS NECESSARY.

7. RUBBLE WASTE REMOVED DURING THE CONSTRUCTION OF THE LANDFILL GAS COLLECTION & CONTROL SYSTEM SHALL BE DISPOSED WITHIN THE ACTIVE LANDFILL WORKFACE BY THE CONTRACTOR, UNLESS USED AS BACKFILL MATERIAL. RUBBLE WASTE USED AS BACKFILL SHALL BE APPROVED BY THE OWNER.

8. SOIL BACKFILL SHALL BE CLEAN MATERIAL FREE OF ORGANIC MATTER, ROOTS, DEBRIS, OR FROZEN MATERIAL, AND SHALL HAVE A MAXIMUM TWO INCH (2") PARTICLE SIZE.

9. CONTRACTOR SHALL ENSURE THAT ALL CONSTRUCTION SLOPES AND EXCAVATIONS ARE COMPLIANT WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS FOR JOB SITE SAFETY.

10. ALL EXISTING CONDITIONS SHALL BE FIELD LOCATED AND VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.

11. REFER TO DRAWING 86 & 87 FOR LAND FILL GAS EXTRACTION WELL AND LATERAL LAYOUT AND SIZES.

12. REFER TO DRAWING 85 FOR LANDFILL GAS MONITORING PROBE LOCATIONS.

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NATIONAL WASTE MANAGERS
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PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

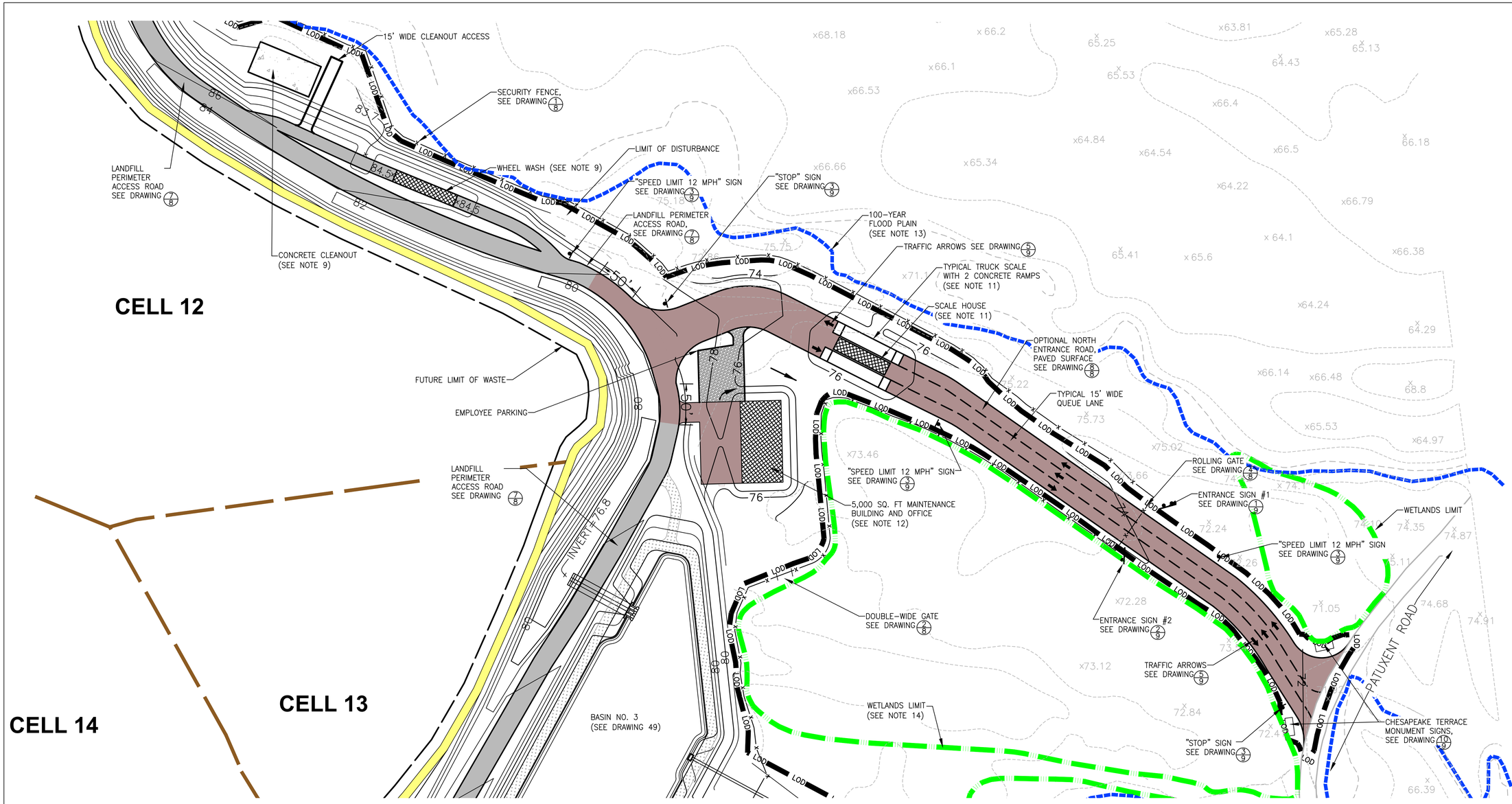
ADVANCED GeoServices
a Montrose Environmental Group company
1978 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8036 www.advancedgeoservices.com

LANDFILL GAS EXTRACTION DETAILS

PROJECT MANAGER: PGS
CHECKED BY: PGS
DRAWN BY: KHF
SCALE: AS NOTED
PROJECT NUMBER: 2018 – 3854
DATE: 09/03/2021

DRAWING 88

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 B088 - LANDFILL GAS EXTRACTION DETAILS.dwg, 1/13/2022 10:29:24 AM



LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN (SEE REFERENCE 2 & NOTE 13)
- 2 FT INCREMENT CONTOUR
- 5 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION LINE
- LOD — LIMIT OF DISTURBANCE
- PIPE
- ROP-I — ROCK OUTLET PROTECTION-TYPE I (SEE DRAWING 61)
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- SIGNS, SEE DRAWING 3/9
- ENTRANCE ROAD, PAVED SURFACE, SEE DRAWING 5/8
- LANDFILL PERIMETER ACCESS ROAD, SEE DRAWING 7/8
- TYPICAL WETLANDS
- ACCESS ROAD AROUND BASIN NO. 3
- PERIMETER BERM, SEE DETAIL 2/16

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

2.) EAST ENTRANCE ROAD ALIGNMENT, PAVING, WQ_V FACILITY BASIN NO.4, AND ASSOCIATED GRADING IS FROM DIGITAL FILE (4 OF 68) TITLED "ASSUMED SITE ACCESS EAST ENTRANCE MASS GRADING," PREPARED BY CENTURY ENGINEERING INC., DATED MAY 2008.

3.) THE POST-2012 100-YEAR FLOOD PLAIN LIMITS SHOWN ARE BASED ON FEMA NATIONAL FLOOD INSURANCE PROGRAM MAP NUMBER 24003C0136E, DATED 10/16/2012, AND PROVIDED AS PLATE 3.

NOTES

1.) THE PURPOSE OF THIS PLAN IS TO SHOW GRADING REQUIRED TO INSTALL THE OPTIONAL NORTH ENTRANCE FACILITIES. THIS OPTION WILL ONLY BE CONSTRUCTED IF EAST ENTRANCE CANNOT BE CONSTRUCTED.

2.) SEE PROPOSED CONDITIONS ON DRAWING 3 FOR ENTRANCE LOCATION.

3.) SEE DRAWINGS 4 AND 5 FOR ASSUMED EAST ENTRANCE LAYOUT.

4.) SEE DRAWING 55 FOR EAST ENTRANCE INITIAL GRADING SEDIMENT CONTROL PLAN.

5.) SEE DRAWING 57 FOR OPTIONAL NORTH ENTRANCE GRADING SEDIMENT CONTROL PLAN.

6.) SEE DRAWING 90 FOR OPTIONAL SOUTH ENTRANCE PLAN.

7.) SEE DRAWING 49 FOR CONSTRUCTION OF BASIN NO. 3, EAST ENTRANCE FACILITIES, ACCESS ROADS AND PERIMETER CHANNEL NO. 8, IN THE AREA SHOWN HEREON.

8.) SEE DRAWING 63, "SEQUENCE AND GENERAL NOTES FOR CONSTRUCTION", FOR CELLS 1 THROUGH 16 CONSTRUCTION REQUIREMENTS.

9.) WHEEL WASH SHALL HAVE WATER STORAGE COMPARTMENT WITH PIPE DRAIN CONNECTED TO CONCRETE CLEANOUT (SEE CONCRETE CLEANOUT DETAIL ON DRAWING 60). LANDFILL OPERATOR SHALL PUMP WATER FROM CLEANOUT TO TANKER TRUCK. WATER FROM CLEANOUT MAY BE USED FOR DUST SUPPRESSION IN ACTIVE WASTE FILL AREAS OR SHALL BE TRANSFERRED TO LEACHATE TANKS.

10.) OPTIONAL NORTH ENTRANCE ROAD (IF CONSTRUCTED) SHALL BE PAVED FROM PATUXENT ROAD TO LANDFILL PERIMETER ACCESS ROAD. SEE DETAIL 8 ON DRAWING 8 FOR ENTRANCE ROAD PAVEMENT CROSS SECTION. OPTIONAL NORTH ENTRANCE ROAD PAVEMENT WIDTH IS 45 FEET.

11.) SCALE HOUSE IS CONFIGURED AT SINGLE-WIDE TRAILER WIDTH. TRUCK SCALES (CONFIGURED AT 70 FEET LENGTH, WITH 10 FEET LONG CONCRETE RAMPS AT EACH END) SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

12.) MAINTENANCE BUILDING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER OR ARCHITECT. BUILDING AND ACCESS AREA ARE EACH DEPICTED AT 100 FEET LENGTH BY 50 FEET WIDTH. CONFIGURATION MAY VARY, BASED ON 5,000 SQUARE FEET BUILDING DESIGN. BUILDING AND WHEEL WASH ACCESS SHALL HAVE AGGREGATE SURFACE EQUIVALENT TO LANDFILL PERIMETER ACCESS ROAD.

13.) THE 100-YEAR FLOODPLAIN ELEVATION IS BETWEEN 72 AND 73 FEET MSL IN THIS AREA OF THE SITE, BASED UPON MODELING BY FEMA, SHOWN ON FIRM MAP NO. 24003C0136E DATED OCTOBER 16, 2012, MODIFIED TO ALIGN WITH SITE TOPOGRAPHY BASED UPON DETERMINED BASE FLOOD ELEVATIONS.

14.) A WETLANDS PERMIT HAS BEEN OBTAINED FOR THE EXTENT OF WETLANDS IMPACTED BY THE PROPOSED CONSTRUCTION.

15.) THE EAST ENTRANCE IS PLANNED AS THE MAIN SITE ENTRANCE. THE OPTIONAL NORTH OR SOUTH ENTRANCE ARE PRESENTED FOR CONSTRUCTION IN THE EVENT THE EAST ENTRANCE IS NOT CONSTRUCTED AND ONE OF THE OTHER ENTRANCES IS PURSUED.

16.) EMPLOYEE PARKING SHALL BE "BACK-IN" ONLY.

17.) SEE DRAWINGS 10 AND 11 FOR TOP OF SUBGRADE ELEVATIONS IN THE CELLS.

OPTIONAL NORTH ENTRANCE PLAN

60 0 30 60 120 240

1 INCH = 60 FT

STATE OF MARYLAND — PAUL G. STEYMAN — REGISTERED PROFESSIONAL ENGINEER — No. 19851

DATE:	REVISION:
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1/14/2022	FINAL ISSUED TO MDE

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

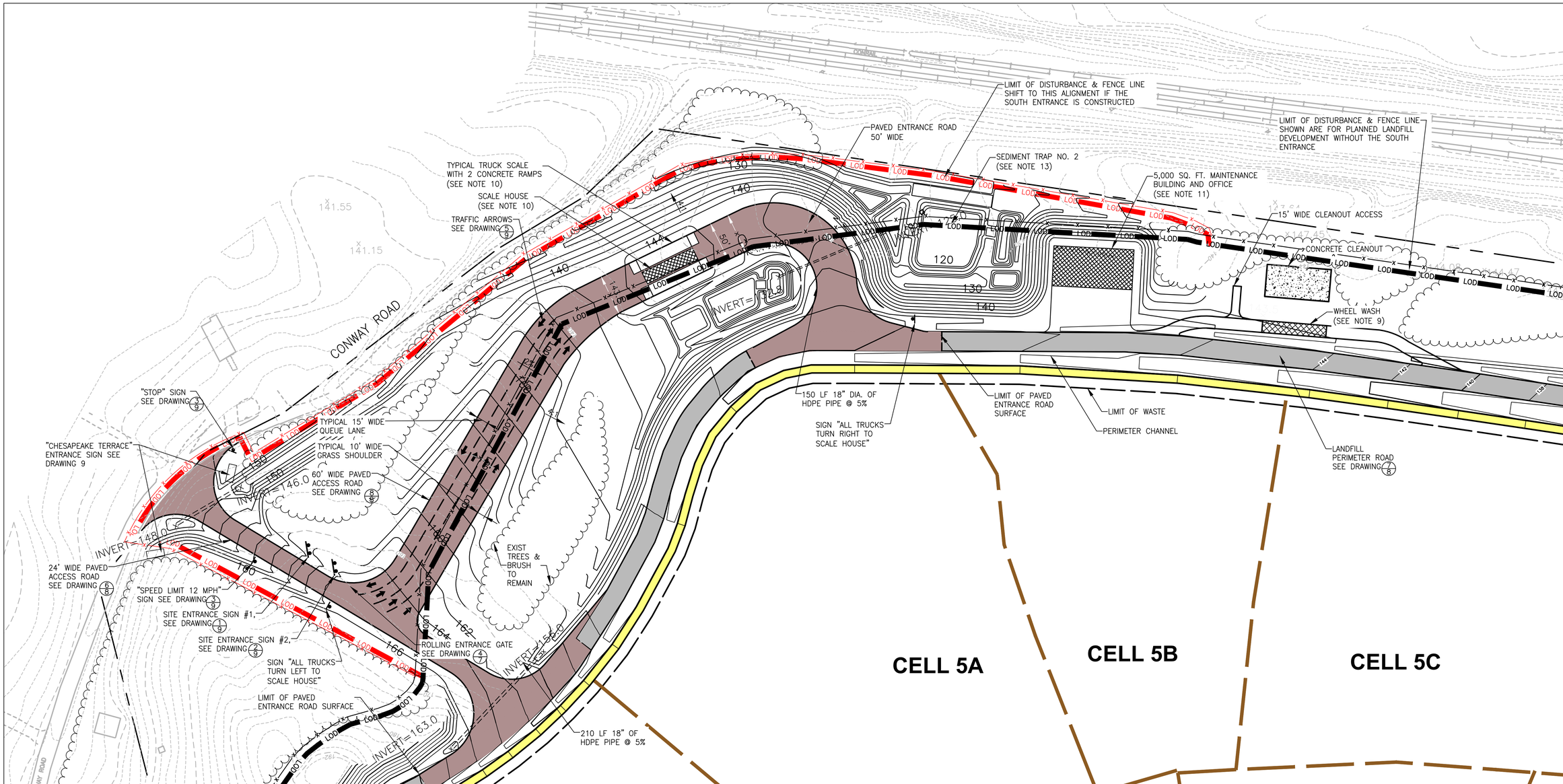
ADVANCED GeoServices
a Montrose Environmental Group company
1878 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

OPTIONAL NORTH ENTRANCE LAYOUT

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 89

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 B089 - OPTIONAL NORTH ENTRANCE LAYOUT.dwg, 1/13/2022 10:29:56 AM



LEGEND

- PROPERTY LINE
- 2 FT INCREMENT CONTOUR
- 5 FT INCREMENT CONTOUR
- LIMIT OF WASTE
- CELL SEPARATION LINE
- LOD — LIMIT OF DISTURBANCE
- ROP-I — ROCK OUTLET PROTECTION–TYPE I (SEE DRAWING 61)
- PROPOSED CHAIN LINK FENCE, SEE DRAWING 8
- SIGNS, SEE DRAWING 9
- LOD — ALTERNATE LIMIT OF DISTURBANCE
- ALTERNATE PROPOSED CHAIN LINK FENCE
- ENTRANCE ROAD, PAVED SURFACE, SEE DRAWING 8/8
- LANDFILL PERIMETER ACCESS ROAD, SEE DRAWING 7/8
- NEW TREE LINE
- CONCRETE HATCH
- PERIMETER BERM, SEE DETAIL 2/16

REFERENCES

1.) BASEMAP SHOWN, INCLUDING TOPOGRAPHICAL INFORMATION, IS FROM DIGITAL FILE (2 OF 68) SITE PLAN.DWG, ENTITLED "SITE PLAN," PREPARED BY CENTURY ENGINEERING, INC., DATED APRIL 12, 2010.

2.) SOUTH ENTRANCE ROAD ALIGNMENT, PAVING, SEDIMENT TRAP, AND ASSOCIATED GRADING IS FROM DIGITAL FILE (6 OF 68) TITLED "OPTIONAL SOUTH ENTRANCE PLAN," PREPARED BY CENTURY ENGINEERING INC., DATED MAY 2008

NOTES

1.) DRAWING 58 PRESENTS THE SEDIMENT CONTROL PLAN FOR THE OPTIONAL SOUTH ENTRANCE.

2.) CONTOURS DEPICTED HEREON INDICATE GRADING REQUIRED FOR THE OPTIONAL SOUTH ENTRANCE AND PART OF LANDFILL CELL NOS. 6, 5A,5B, AND 5C (SEE DRAWING 63 "SEQUENCE AND GENERAL NOTES FOR CONSTRUCTION").

3.) IF NEITHER THE ASSUMED EAST ENTRANCE NOR THE OPTIONAL NORTH ENTRANCE IS CONSTRUCTED, THE OPTIONAL SOUTH ENTRANCE WILL BE CONSTRUCTED. PER THE EAST ENTRANCE SEQUENCE OF CONSTRUCTION ON DRAWING 63. AN ACCESS ROAD WILL BE PROVIDED TO CELLS 11 THROUGH 16 AREA AS REQUIRED, AND LANDFILL CELL CONSTRUCTION WILL PROCEED IN ACCORDANCE WITH SEQUENCES OF CONSTRUCTION SPECIFIED ON THESE PERMIT DRAWINGS.

4.) SEE SITE PLAN ON DRAWING 3 FOR OPTIONAL SOUTH ENTRANCE LOCATION.

5.) SEE DRAWING 58 FOR OPTIONAL SOUTH ENTRANCE SEDIMENT CONTROL PLAN.

6.) SEE DRAWING 4 & 5 FOR ASSUMED SITE ACCESS (EAST ENTRANCE) PLAN.

7.) SEE DRAWING 89 FOR OPTIONAL NORTH ENTRANCE PLAN.

8.) SEE DRAWING 63, "SEQUENCE AND GENERAL NOTES FOR CONSTRUCTION" FOR CELLS 1 THROUGH 16 CONSTRUCTION REQUIREMENTS.

9.) WHEEL WASH SHALL HAVE WATER STORAGE COMPARTMENT WITH PIPE DRAIN CONNECTED TO CONCRETE CLEANOUT (SEE CONCRETE CLEANOUT DETAIL ON DRAWING 60). LANDFILL OPERATOR SHALL PUMP WATER FROM CLEANOUT TO TANKER TRUCK. WATER FROM CLEANOUT MAY BE USED FOR DUST SUPPRESSION IN ACTIVE WASTE FILL AREAS OR SHALL BE TRANSFERRED TO LEACHATE TANKS.

10.) SCALE HOUSE IS CONFIGURED AT SINGLE–WIDE TRAILER WIDTH. TRUCK SCALES (CONFIGURED AT 70 FEET LENGTH, WITH 10 FEET LONG CONCRETE RAMPS AT EACH END) SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

11.) MAINTENANCE BUILDING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER OR ARCHITECT. BUILDING AND ACCESS AREA ARE EACH DEPICTED AT 100 FEET LENGTH BY 50 FEET WIDTH. CONFIGURATION MAY VARY, BASED ON 5,000 SQUARE FEET BUILDING DESIGN. BUILDING AND WHEEL WASH ACCESS SHALL HAVE AGGREGATE SURFACE EQUIVALENT TO LANDFILL PERIMETER ACCESS ROAD.

12.) THE EAST ENTRANCE IS PLANNED AS THE MAIN SITE ENTRANCE. THE OPTIONAL NORTH OR SOUTH ENTRANCE ARE PRESENTED FOR CONSTRUCTION IN THE EVENT THE EAST ENTRANCE IS NOT CONSTRUCTED AND ONE OF THE OTHER ENTRANCES IS PURSUED.

13.) SEDIMENT TRAP NO. 2 AND ASSOCIATED CULVERTS AND CHANNELS WILL ONLY BE CONSTRUCTED IF THE SOUTH ENTRANCE IS CONSTRUCTED.

SOUTH ENTRANCE PLAN

60 0 30 60 120 240

1 INCH = 60 FT

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER PAUL G. STEYMAN No. 15851

DATE:	REVISION:
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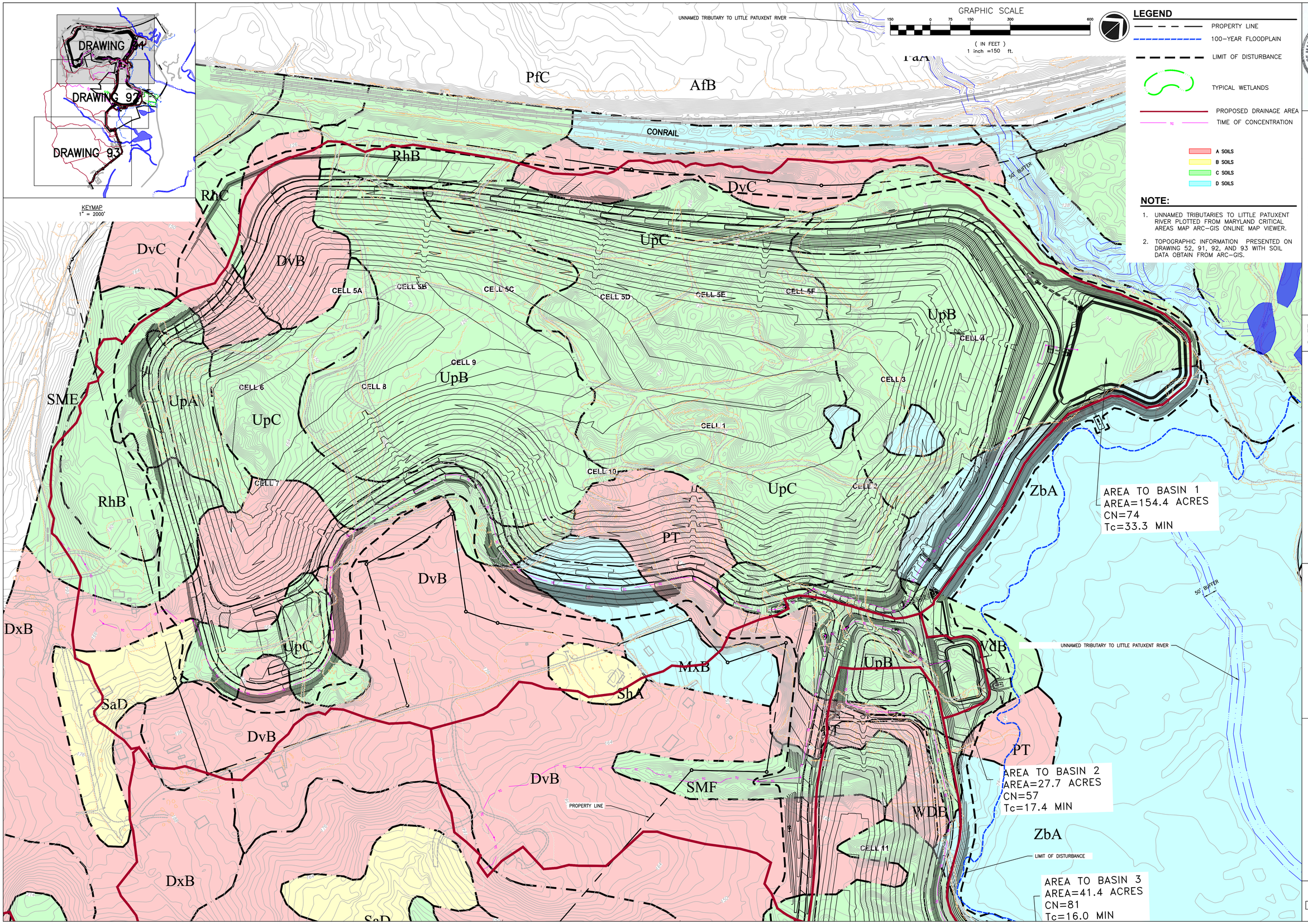
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

OPTIONAL
SOUTH ENTRANCE LAYOUT

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 90

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 B090 - OPTIONAL SOUTH ENTRANCE LAYOUT.dwg 1/13/2022 10:39:18 AM



LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN
- LIMIT OF DISTURBANCE
- TYPICAL WETLANDS
- PROPOSED DRAINAGE AREA
- TIME OF CONCENTRATION
- A SOILS
- B SOILS
- C SOILS
- D SOILS

NOTE:

1. UNNAMED TRIBUTARIES TO LITTLE PATUXENT RIVER PLOTTED FROM MARYLAND CRITICAL AREAS MAP ARC-GIS ONLINE MAP VIEWER.
2. TOPOGRAPHIC INFORMATION PRESENTED ON DRAWING 52, 91, 92, AND 93 WITH SOIL DATA OBTAIN FROM ARC-GIS.

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
1979 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.8236 www.advancedgeoservices.com

WEST LANDFILL
DRAINAGE AREAS
(WITH SOIL TYPES)

PROJECT MANAGER:	PGS	SCALE: AS NOTED	
CHECKED BY:	PGS	PROJECT NUMBER: 2018 - 3854	
DRAWN BY:	KHF	DATE: 09/03/2021	

DRAWING 91

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 B052 B091 B092 B093 - DRAINAGE AREAS.dwg, 1/13/2022 10:30:49 AM

KEYMAP
1" = 2000'

LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN
- LIMIT OF DISTURBANCE
- TYPICAL WETLANDS
- PROPOSED DRAINAGE AREA
- TIME OF CONCENTRATION
- A SOILS
- B SOILS
- C SOILS
- D SOILS

NOTE:

1. UNNAMED TRIBUTARIES TO LITTLE PATUXENT RIVER PLOTTED FROM MARYLAND CRITICAL AREAS MAP ARC-GIS ONLINE MAP VIEWER.
2. TOPOGRAPHIC INFORMATION PRESENTED ON DRAWING 52, 91, 92, AND 93 WITH SOIL DATA OBTAIN FROM ARC-GIS.

GRAPHIC SCALE
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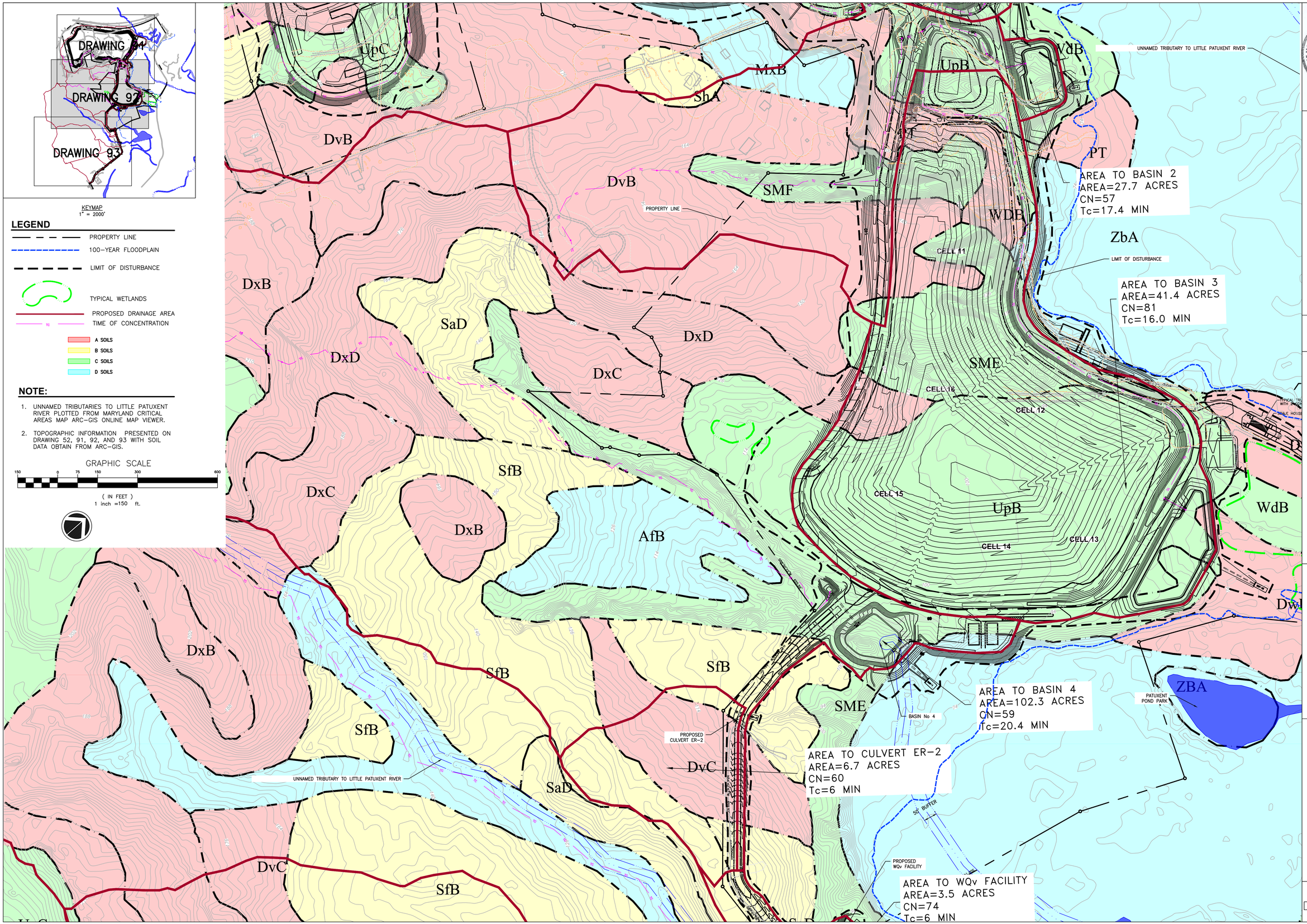
(IN FEET)
1 inch =150 ft.



STATE OF MARYLAND
RICHARD P. STREYMAN
No. 19851
PROFESSIONAL ENGINEER
1/14/22

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
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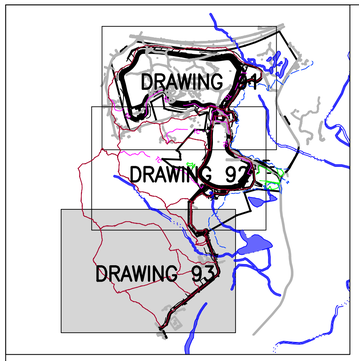
EAST LANDFILL
DRAINAGE AREAS
(WITH SOIL TYPES)

PROJECT MANAGER:	PGS	SCALE: AS NOTED	
CHECKED BY:	PGS	PROJECT NUMBER:	2018 – 3854
DRAWN BY:	KHF	DATE: 09/03/2021	

DRAWING 92

N:\Projects\2018\2018354 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 B052 B091 B092 B093 - DRAINAGE AREAS.dwg, 1/13/2022 10:31:58 AM



KEYMAP
1" = 2000'

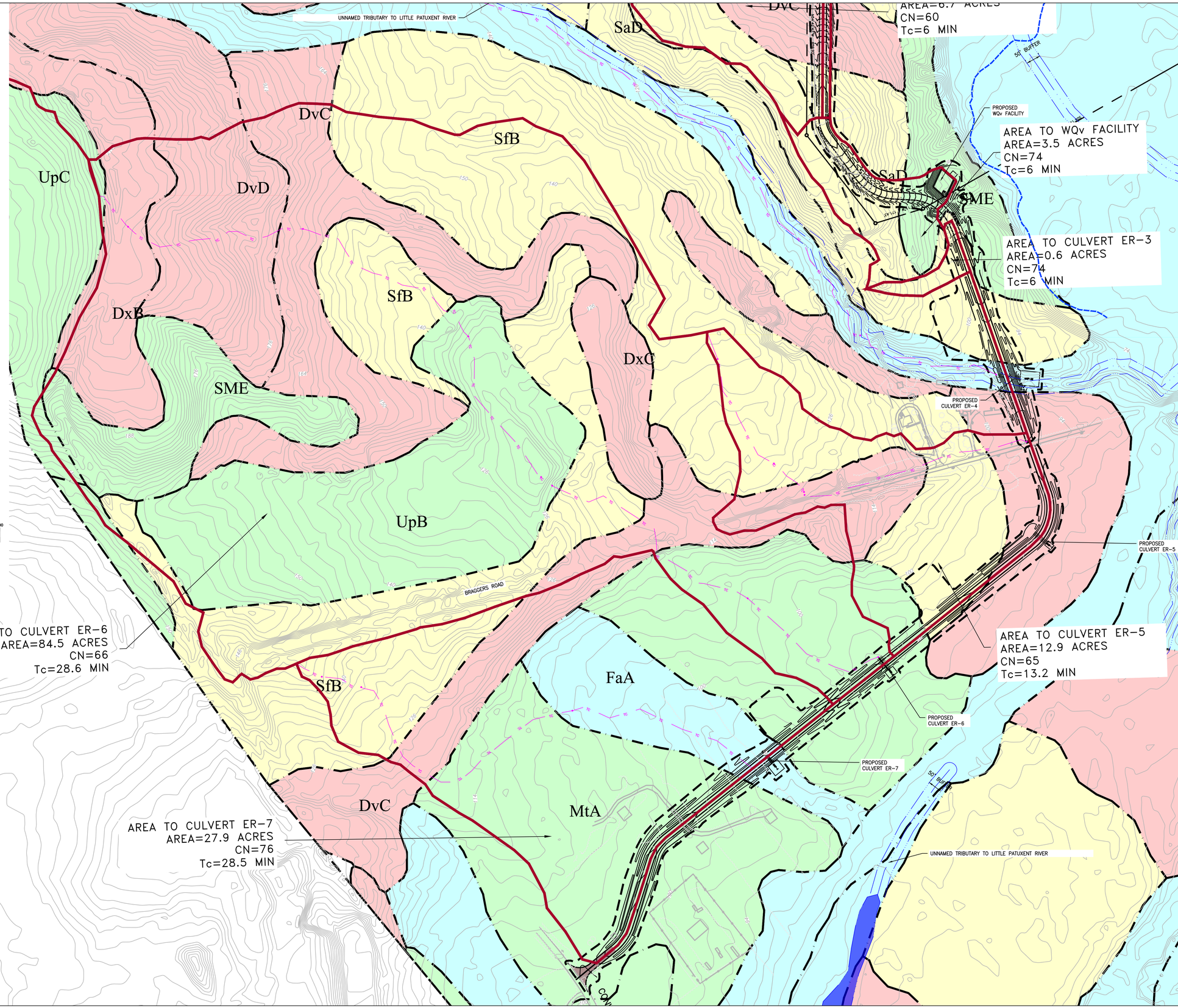
LEGEND

- PROPERTY LINE
- 100-YEAR FLOODPLAIN
- LIMIT OF DISTURBANCE
- TYPICAL WETLANDS
- PROPOSED DRAINAGE AREA
- TIME OF CONCENTRATION
- A SOILS
- B SOILS
- C SOILS
- D SOILS

NOTE:

1. UNNAMED TRIBUTARIES TO LITTLE PATUXENT RIVER PLOTTED FROM MARYLAND CRITICAL AREAS MAP ARC-GIS ONLINE MAP VIEWER.
2. TOPOGRAPHIC INFORMATION PRESENTED ON DRAWING 52, 91, 92, AND 93 WITH SOIL DATA OBTAIN FROM ARC-GIS.

GRAPHIC SCALE
150 0 75 150 300 600
(IN FEET)
1 inch =150 ft.



REVISION:	DATE:
REVISED TO ADDRESS MDE COMMENTS ON PHASE 3	9/03/2021
REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS	11/09/2021
FINAL ISSUED TO MDE	1/14/2022

STATE OF MARYLAND
PAUL GERARD STRATMAN, JR. REGISTERED PROFESSIONAL ENGINEER
No. 19851
1/14/22

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices
a Montrose Environmental Group company
1978 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2273 F: 856.354.6236 www.advancedgeoservices.com

ROAD ENTRANCE
DRAINAGE AREAS
(WITH SOIL TYPES)

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 - 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 93

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 B052 B091 B092 B093 - DRAINAGE AREAS.dwg, 1/13/2022 10:33:11 AM

TEST BORING LOG — BORING B-1

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACTOR : Findling, Inc.

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	—
11/11/06	Comp.	18.5	—	19.5	Size I.D.:			— in.
11/18/06	1 week	Dry	—	17.0	Hammer Wt.:	— lbs.	140 lbs.	—
					Hammer Fall:	— in.	30 in.	—

CONTRACT NO.: 23203.02
SHEET NO. : 1 of 2
NORTHING :
EASTING :
ELEVATION : 91.8 ft.
DATE START : 11-11-06
END : 11-11-06
DRILLER : T. Oleszczuk
INSPECTOR : J. Burtis

Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Type	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			4-7	1		0.0-1.5	18"		2" Root Mat Tan and Reddish Brown, slightly moist, stiff, Sandy SILT, trace Clay (ML)
			10-13-10	2		2.5-4.0	18"	88.3 3.5	Tan-Red, moist, very stiff, Clayey SILT, trace fine Sand (ML)
5			9-12-12	3		5.0-6.5	18"	86.3 5.5	Tan-Orange Brown, moist to wet, medium dense to dense, fine-medium SAND, trace Silt (SP-SM)
10			7-18-22	4		8.5-10.0	18"		
15			11-25-22	5		13.5-15.0	18"		
20			7-15-18	6		18.5-20.0	18"		▽
			6-5-10	7		23.5-25.0	18"	69.8 22.0	**NOTE**: Groundwater encountered at 22.0 feet Tan wet, medium dense, fine SAND

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

BORING B-1

Jan 8, 07

TEST BORING LOG — BORING B-1

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACT NO.: 23203.02
SHEET NO. : 2 of 2

Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Type	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
									- same as above -
			6-7-9	8		28.5-30.0	18"	64.8 27.0	Red and Tan, moist, very stiff, Silty CLAY, little fine Sand (CL)
30								61.8 30.0	**Bottom of Test Boring at 30.0 feet**

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

BORING B-1

Jan 8, 07

TEST BORING LOG — BORING B-2

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACT NO.: 23203.02
SHEET NO. : 1 of 2

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	—
11/20/06	Comp.	Dry	—	20.0	Size I.D.:			— in.
11/21/06	24 hr.	20.0	—	21.0	Hammer Wt.:	— lbs.	140 lbs.	—
					Hammer Fall:	— in.	30 in.	—

CONTRACT NO.: 23203.02
SHEET NO. : 1 of 2
NORTHING :
EASTING :
ELEVATION : 91.6 ft.
DATE START : 11-20-06
END : 11-20-06
DRILLER : T. Oleszczuk
INSPECTOR : J. Burtis

Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Type	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			1-1-2	1		0.0-1.5	6"		3" Topsoil Brown, moist, very loose to loose, Clayey fine-medium SAND, trace to little fine-coarse Gravel (SC)
			4-5-3	2		2.5-4.0	12"	87.1 4.5	Orange Brown, moist, soft, fine-medium Sandy CLAY, trace fine Gravel (CL)
5			2-3-3	3		5.0-6.5	18"	83.6 8.0	Orange Brown, moist to wet, very loose, Clayey fine-medium SAND, trace fine-medium Gravel (with lenses of Sandy Clay (SC w/ CL)
10			WOH/12-2	4		8.5-10.0	18"		
15			2-2-2	5		13.5-15.0	18"	79.6 12.0	Tan-Orange Brown, moist to wet, very loose to medium dense, fine-medium SAND, trace silt (SP-SM)
20			3-5-7	6		18.5-20.0	18"		**NOTE**: Groundwater encountered at 18.0 feet ▽
			12-19-27	7		23.5-25.0	18"	68.6 22.0	Tan-Orange Brown, wet, dense to very dense, fine-medium SAND, trace Silt (SP-SM)

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

BORING B-2

Jan 8, 07

TEST BORING LOG — BORING B-2

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACT NO.: 23203.02
SHEET NO. : 2 of 2

Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Type	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
									- same as above -
			16-26-53	8		28.5-30.0	18"	61.6 30.0	**Bottom of Test Boring at 30.0 feet**

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

BORING B-2

Jan 8, 07

TEST BORING LOG — BORING B-3

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACTOR : Findling, Inc.

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	—
11/11/06	Comp.	Dry	—	22.0	Size I.D.:			— in.
11/18/06	1 week	Dry	—	21.3	Hammer Wt.:	— lbs.	140 lbs.	—
					Hammer Fall:	— in.	30 in.	—

CONTRACT NO.: 23203.02
SHEET NO. : 1 of 2
NORTHING :
EASTING :
ELEVATION : 93.3 ft.
DATE START : 11-11-06
END : 11-11-06
DRILLER : T. Oleszczuk
INSPECTOR : J. Burtis

Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Type	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			1-1-2	1		0.0-1.5	3"		3" Root Mat Dark Brown to medium Brown, moist, very loose, Silty fine-medium SAND, trace fine-medium Gravel and root fragments (FILL) (SM)
			2-2-2	2		2.5-4.0	4"		
5			2-2-2	3		5.0-6.5	6"		
10			2-4-7	4		8.5-10.0	18"	85.8 7.5	Brown, slightly moist, medium dense, Silty fine-medium SAND, trace fine-medium Gravel (Possible fill) (SM)
15			4-8-5	5		13.5-15.0	18"	81.8 11.5	Brown, moist, medium dense, Silty fine-medium SAND, trace to little fine-coarse Gravel (SM)
20			10-15-20	6		18.5-20.0	18"	76.3 17.0	Orange Brown, moist to wet, dense, fine-medium SAND (SP)
									NOTE: Groundwater encountered at 20.0 feet
			3-4-4	7		23.5-25.0	18"	71.3 22.0	Orange Brown, wet, loose, fine-medium SAND (SP)

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

BORING B-3

Jan 8, 07

TEST BORING LOG — BORING B-3

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACT NO.: 23203.02
SHEET NO. : 2 of 2

Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Type	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
									- same as above -
			8-14-18	8		28.5-30.0	18"	66.3 27.0	Red and Tan, moist, very stiff, Silty CLAY, trace fine Sand (CL)
30								63.3 30.0	**Bottom of Test Boring at 30.0 feet**

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

BORING B-3

Jan 8, 07

TEST BORING LOG — BORING B-4

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACTOR : Findling, Inc.

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	—
11/20/06	Comp.	22.5	—	23.0	Size I.D.:			— in.
11/21/06	24 hr.	20.0	—	22.0	Hammer Wt.:	— lbs.	140 lbs.	—
					Hammer Fall:	— in.	30 in.	—

CONTRACT NO.: 23203.02
SHEET NO. : 1 of 2
NORTHING :
EASTING :
ELEVATION : 91.2 ft.
DATE START : 11-20-06
END : 11-20-06
DRILLER : T. Oleszczuk
INSPECTOR : J. Burtis

Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Type	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			1-1-1	1		0.0-1.5	18"		3" Topsoil Orange Brown, moist to wet, very loose, Silty SAND, trace fine Gravel (with pockets, lenses of Sandy Silt) (SM)
			1-1-1	2		2.5-4.0	18"	86.7 4.5	Brown moist to wet, very loose, Silty fine SAND, trace Clay (SM)
5			1-1-1	3		5.0-6.5	18"	83.7 7.5	Orange Brown, moist, medium to very dense, fine SAND, trace Silt (SP-SM)
10			4-5-6	4		8.5-10.0	18"		
15			11-26-39	5		13.5-15.0	18"	73.7 17.5	Orange Brown, wet, dense to very dense, fine-medium SAND, trace Silt (SP-SM) **NOTE**: Groundwater encountered at 18.5 feet ▽
20			10-15-20	6		18.5-20.0	18"		
			12-24-21	7		23.5-25.0	18"		

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

BORING B-4

Jan 8, 07

TEST BORING LOG — BORING B-4

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACT NO.: 23203.02
SHEET NO. : 2 of 2

Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Type	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
									- same as above -
			16-24-53	8		28.5-30.0	18"	60.7 30.5	**Bottom of Test Boring at 30.5 feet**

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

BORING B-4

Jan 8, 07

TEST BORING LOG — BORING B-5

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACTOR : Findling, Inc.

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	—
11/19/06	Comp.	16.0	—	17.0	Size I.D.:			— in.
11/20/06	24 hr.	5.5	—	6.0	Hammer Wt.:	— lbs.	140 lbs.	—
					Hammer Fall:	— in.	30 in.	—

CONTRACT NO.: 23203.02
SHEET NO. : 1 of 2
NORTHING :
EASTING :
ELEVATION : 96.4 ft.
DATE START : 11-19-06
END : 11-19-06
DRILLER : T. Oleszczuk
INSPECTOR : J. Burtis

Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Type	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			1/12"	1		0.0-1.5	15"		2" Topsoil Brown, moist, very loose, fine-medium SAND, little to trace Silt, trace fine-medium Gravel (SM-SP)
			2-2-2	2		2.5-4.0	15"		
5			4-4-4	3		5.0-6.5	18"	91.4 5.0	Reddish Brown, wet, loose to medium dense, fine-medium SAND, some little fine-coarse Gravel, trace Silt (SP-SM)
10			4-7-6	4		8.5-10.0	18"		**NOTE**: Groundwater encountered at 9.0 feet
15			4-7-22	5		13.5-15.0	18"	85.4 11.0	Tan, moist, very stiff, SILT, trace Clay and fine Sand (ML)
								81.9 14.5	Tan, moist to wet, dense fine SAND (SP)
20			8-10-20	6		18.5-20.0	18"	79.4 17.0	▽ Tan, very moist, medium dense, fine SAND and SILT, trace Clay (SM) **NOTE**: Multiple perched GW throughout
			4-15-23	7		23.5-25.0	18"	74.4 22.0	Orange Brown and Tan, wet, dense medium to fine SAND, little Silt and fine-medium Gravel (SP-SM)

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

BORING B-5

Jan 8, 07

TEST BORING LOG — BORING B-5

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACT NO.: 23203.02
SHEET NO. : 2 of 2

Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Type	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
									- same as above -
			16-21-31	8		28.5-30.0	18"	65.4 31.0	Tan, moist, very stiff, Silty CLAY (CL)
30			8-19-33	9		33.5-35.0	18"	62.4 34.0	Tan, wet, very dense, fine-medium SAND (SP)
								60.9 35.5	**Bottom of Test Boring at 35.5 feet**

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

BORING B-5

Jan 8, 07

TEST BORING LOG — BORING B-6

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACTOR : Findling, Inc.

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	—
11/18/06	Comp.	29.0	—	30.0	Size I.D.:			— in.
11/19/06	24 hr.	14.0	—	24.0	Hammer Wt.:	— lbs.	140 lbs.	—
					Hammer Fall:	— in.	30 in.	—

CONTRACT NO.: 23203.02
SHEET NO. : 1 of 2
NORTHING :
EASTING :
ELEVATION : 101.9 ft.
DATE START : 11-18-06
END : 11-18-06
DRILLER : T. Oleszczuk
INSPECTOR : J. Burtis

Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Type	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			4-4-2	1		0.0-1.5	18"		3" Topsoil Brown, moist, loose to very loose, fine-medium SAND, trace to some fine-medium Gravel, trace Silt (SP-SM)
			1-1-1	2		2.5-4.0	3"		
5			1-2-2	3		5.0-6.5	18"		
10			5-6-5	4		8.5-10.0	18"	94.4 7.5	Brown, moist, medium dense, medium grained SAND (SP)
15			7-10-11	5		13.5-15.0	17"		▽
20			31-43-53	6		18.5-20.0	18"	85.9 16.0 84.9 17.0	Tan, SILT (ML) Tan, slightly moist, very dense fine SAND, trace Silt (SP-SM)
			33-24-49	7		23.5-25.0	18"		

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

BORING B-6

Jan 8, 07

TEST BORING LOG — BORING B-6

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACT NO.: 23203.02
SHEET NO. : 2 of 2

Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Type	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
									- same as above -
								74.9 27.0	**NOTE**: Groundwater encountered at 27.0 feet
			18-23-32	8		28.5-30.0	18"		Brown, wet, very dense to medium dense, medium-fine SAND (SP)
30			7-7-10	9		33.5-35.0	18"		
								65.4 36.5	Red and Tan, hard, Silty CLAY, trace fine Sand (CL)
40			11-14-22	10		38.5-40.0	18"	61.9 40.0	**Bottom of Test Boring at 40.0 feet**

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

BORING B-6

Jan 8, 07

STATE OF MARYLAND — BRIAN E. STRATMAN — No. 45571 — PROFESSIONAL ENGINEER — 1/14/22

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

ADVANCED GeoServices — a Montrose Environmental Group company
1878 MARLTON PIKE EAST, SUITE 10, CHERRY HILL, NJ 08003
T: 856.354.2272 F: 856.354.8236 www.advancedgeoservices.com

BASIN
SOIL BORING LOGS

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 94

N:\Projects\2018\20183854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20183854 B094 - BASIN SOIL BORING LOGS (SHEET 1 OF 2).dwg, 1/13/2022 10:34:29 AM

TEST BORING LOG — BORING B-7

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACTOR : Findling, Inc.

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	—
11/19/06	Comp.	34.5	—	35.0	Size I.D.:		— in.	
11/20/06	24 hr.	23.0	—	32.0	Hammer Wt.:	— lbs.	140 lbs.	—
					Hammer Fall:	— in.	30 in.	—

CONTRACT NO. : 23303.02
SHEET NO. : 1 of 2
NORTHING :
EASTING :
ELEVATION : 102.0 ft.
DATE START : 11-19-06
END : 11-19-06
DRILLER : T. Olesczuk
INSPECTOR : J. Burtis

Depth in Feet	Strata Change	Case BPF (Drill) (mm/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Sample Type	Sample Depth Range (ft)	Sample Recov-ery (in)	Elev-ation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			1 1-1	1		0.0 1.5	18"		4" Topsoil
			3-3	2		2.5 4.0	18"		Brown, moist, loose, Clayey fine-medium SAND, trace fine-medium Gravel (SC)
5			6-18	3		5.0 6.5	18"	97.5 4.5	Grayish Brown, moist, medium dense, Silty fine-coarse SAND and Gravel (SM-GM)
			6-6	4		6.5 10.0	18"	95.0 7.0	Tan-Orange Brown, moist, medium dense to loose, medium Gravel SAND, trace fine Gravel
10			5-4	5		13.5 15.0	18"		
15			11-15	6		18.5 20.0	18"	84.0 18.0	Tan, moist, stiff, SILT, trace fine Sand and Clay (ML).
								83.0 19.0	Tan-Orange Brown, moist to wet, medium dense to dense, fine-medium SAND (SP)
20			16-17	7		23.5 25.0	18"		

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

Jan 8, 07 — BORING B-7

TEST BORING LOG — BORING B-7

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACT NO.: 23303.02
SHEET NO. : 2 of 2

Depth in Feet	Strata Change	Case BPF (Drill) (mm/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Sample Type	Sample Depth Range (ft)	Sample Recov-ery (in)	Elev-ation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
									- same as above -
30			11 17-21	8		28.5 30.0	18"		
35			14-27	9		33.5 35.0	18"	70.0 32.0	Tan, moist and wet, hard to very stiff, Clayey SILT (w/ lenses of fine-medium SAND) (ML w/ SP)
40			9-14	10		38.5 40.0	18"	62.0 40.0	**NOTE**: Groundwater encountered at 34.0 feet
45									**Bottom of Test Boring at 40.0 feet**
50									
55									

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

Jan 8, 07 — BORING B-7

TEST BORING LOG — BORING B-8

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACTOR : Findling, Inc.

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	—
11/19/06	Comp.	Dry	—	29.0	Size I.D.:		— in.	
11/20/06	24 hr.	Dry	—	29.0	Hammer Wt.:	— lbs.	140 lbs.	—
					Hammer Fall:	— in.	30 in.	—

CONTRACT NO.: 23303.02
SHEET NO. : 1 of 2
NORTHING :
EASTING :
ELEVATION : 92.4 ft.
DATE START : 11-19-06
END : 11-19-06
DRILLER : T. Olesczuk
INSPECTOR : J. Burtis

Depth in Feet	Strata Change	Case BPF (Drill) (mm/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Sample Type	Sample Depth Range (ft)	Sample Recov-ery (in)	Elev-ation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			1/12"			0.0 1.2	12"		6" Topsoil
			1 1-1	1		2.5 4.0	12"		Brown, moist very loose, fine-medium SAND, trace Silt, fine-medium Gravel and roots (possible fill) (SP-SM)
5			2 1-2	2		5.0 6.5	18"	87.9 4.5	Brown, very moist, fine SAND and SILT, trace organics (SM)
			3 3-3	3		6.5 10.0	3"	86.4 6.0	Orange Brown, moist, loose, fine-medium SAND, trace Silt and fine-medium Gravel (SP-SM)
10			4-5	4		13.5 15.0	18"		
15			5-7	5		18.5 20.0	15"	75.4 17.0	Orange Brown and Reddish Brown, moist, medium dense, fine-coarse SAND, some fine-coarse Gravel, trace Silt (SP-SM)
20			6-7	6		23.5 25.0	18"	70.9 21.5	Tan, moist, stiff to very stiff, Silty CLAY (with lenses of fine Sand) (CL)

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

Jan 8, 07 — BORING B-8

TEST BORING LOG — BORING B-8

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACT NO.: 23303.02
SHEET NO. : 2 of 2

Depth in Feet	Strata Change	Case BPF (Drill) (mm/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Sample Type	Sample Depth Range (ft)	Sample Recov-ery (in)	Elev-ation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
									- same as above -
30			9-15	8		28.5 30.0	17"	62.4 30.0	**Bottom of Test Boring at 30.0 feet**
35									**NOTE**: No groundwater encountered
40									
45									
50									
55									

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

Jan 8, 07 — BORING B-8

TEST BORING LOG — BORING B-9

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACTOR : Findling, Inc.

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	—
11/18/06	Comp.	Dry	—	10.0	Size I.D.:		— in.	
11/19/06	24 hr.	8.0	—	9.0	Hammer Wt.:	— lbs.	140 lbs.	—
					Hammer Fall:	— in.	30 in.	—

CONTRACT NO.: 23303.02
SHEET NO. : 1 of 1
NORTHING :
EASTING :
ELEVATION : 83.3 ft.
DATE START : 11-18-06
END : 11-18-06
DRILLER : T. Olesczuk
INSPECTOR : J. Burtis

Depth in Feet	Strata Change	Case BPF (Drill) (mm/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Sample Type	Sample Depth Range (ft)	Sample Recov-ery (in)	Elev-ation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			2-2	1		0.0 1.5	18"		3" Topsoil
			3-4	2		2.5 4.0	18"		Orange Brown, moist to wet, very loose, Silty fine-medium SAND, trace Clay and fine Gravel (SM)
5			4-4	3		5.0 6.5	18"	79.8 3.5	Red-Brown-Gray, moist, medium stiff, Silty CLAY (CH)
			6-12	4		8.5 10.0	12"	75.8 7.5	Orange Brown, wet, medium dense, fine-coarse GRAVEL and SAND (GW-GM)
10			9-11	5		14.0 15.5	18"		**NOTE**: Groundwater encountered at 9.0 feet
15								71.3 12.0	Tan, moist, medium dense, Silty fine SAND (SM)
								67.8 15.5	**Bottom of Test Boring at 15.5 feet**
20									

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

Jan 8, 07 — BORING B-9

TEST BORING LOG — BORING B-10

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACTOR : Findling, Inc.

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	—
11/18/06	Comp.	Dry	—		Size I.D.:		— in.	
11/19/06	24 hr.	8.0	—	9.0	Hammer Wt.:	— lbs.	140 lbs.	—
					Hammer Fall:	— in.	30 in.	—

CONTRACT NO.: 23303.02
SHEET NO. : 1 of 1
NORTHING :
EASTING :
ELEVATION : 80.4 ft.
DATE START : 11-18-06
END : 11-18-06
DRILLER : T. Olesczuk
INSPECTOR : J. Burtis

Depth in Feet	Strata Change	Case BPF (Drill) (mm/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Sample Type	Sample Depth Range (ft)	Sample Recov-ery (in)	Elev-ation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			2-3	1		0.0 1.5	15"		3" Topsoil
			1-2	2		2.5 4.0	12"	77.4 3.0	Medium Brown, moist, very loose, Silty fine-medium SAND, trace fine-medium Gravel (SM)
5			2-2	3		5.0 6.5	15"	75.4 5.0	Orange Brown, moist, very soft, Clayey fine-medium SAND and SILT, trace fine-coarse Gravel (SC)
			3-9	4		8.5 10.0	18"	72.9 7.5	Orange Brown, wet, very loose Silty fine SAND, trace mica (SM)
10			7-11-15	5		13.5 15.0	18"	68.4 12.0	Tan and Orange, moist, very stiff, Silty CLAY, some fine Sand (CL)
15								65.4 15.0	Brownish Gray, moist, very stiff, Silty CLAY (CL-CH)
									Bottom of Test Boring at 15.0 feet
20									**NOTE**: No groundwater encountered

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

Jan 8, 07 — BORING B-10

TEST BORING LOG — BORING B-11

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACTOR : Findling, Inc.

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	—
11/18/06	Comp.	4.5	—	5.0	Size I.D.:		— in.	
11/19/06	24 hr.	Dry	—	5.0	Hammer Wt.:	— lbs.	140 lbs.	—
					Hammer Fall:	— in.	30 in.	—

CONTRACT NO.: 23303.02
SHEET NO. : 1 of 1
NORTHING :
EASTING :
ELEVATION : 78.6 ft.
DATE START : 11-18-06
END : 11-18-06
DRILLER : T. Olesczuk
INSPECTOR : J. Burtis

Depth in Feet	Strata Change	Case BPF (Drill) (mm/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Sample Type	Sample Depth Range (ft)	Sample Recov-ery (in)	Elev-ation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			3-4	1		0.0 1.5	18"		3" Topsoil
			7-8	2		2.5 4.0	8"	76.1 2.5	Orange Brown, moist, medium dense, fine-coarse SAND, some fine-medium Gravel (SW)
5			6-7-9	3		5.0 6.5	6"		**NOTE**: Groundwater encountered at 5.0 feet
			6-8	4		8.5 10.0	18"	71.1 7.5	Light Gray, moist, stiff, Silty CLAY
10			8-12-16	5		13.5 15.0	18"	67.6 11.0	Tan, wet, medium dense, fine SAND, trace Silt
15								63.6 15.0	**Bottom of Test Boring at 15.0 feet**
20									

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

Jan 8, 07 — BORING B-11

TEST BORING LOG — BORING B-12

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACTOR : Findling, Inc.

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	—
11/18/06	Comp.	8.0	—	8.0	Size I.D.:		— in.	
11/19/06	24 hr.	Dry	—	8.5	Hammer Wt.:	— lbs.	140 lbs.	—
					Hammer Fall:	— in.	30 in.	—

CONTRACT NO.: 23303.02
SHEET NO. : 1 of 1
NORTHING :
EASTING :
ELEVATION : 79.7 ft.
DATE START : 11-18-06
END : 11-18-06
DRILLER : T. Olesczuk
INSPECTOR : J. Burtis

Depth in Feet	Strata Change	Case BPF (Drill) (mm/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Sample Type	Sample Depth Range (ft)	Sample Recov-ery (in)	Elev-ation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			2 4-4	1		0.0 1.5	15"		3" Topsoil
			6 4-3	2		2.5 4.0	15"		Tan moist Silty fine-coarse SAND, little Gravel (SM)
5			2 2-3	3		5.0 6.5	18"		
			4 5-6	4		8.5 10.0	18"	71.2 8.5	**NOTE**: Groundwater encountered at 8.0 feet
10			7 8-12	5		13.5 15.0	18"		Tan and Orange, moist, stiff to very stiff, fine Sandy SILT (ML)
15								64.7 15.0	**Bottom of Test Boring at 15.0 feet**
20									

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

Jan 8, 07 — BORING B-12

TEST BORING LOG — BORING B-13

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACTOR : Connelly & Associates

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	
10-30-09	Enc.	20.0			Size I.D.:	2.25 in.		
10-30-09	Compl.			9.0	Hammer Wt.:		140 lbs.	—
11-3-09	4 days	8.8	11.0		Hammer Fall:		30 in.	—

CONTRACT NO.: 23303.02
SHEET NO. : 1 of 1
STATION :
OFFSET :
ELEVATION : 87 ft.
DATE START : 10-30-09
END : 10-30-09
DRILLER : J.L.
INSPECTOR : C. Jacobs

Depth in Feet	Strata Change	Case BPF (Drill) (mm/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Sample Type	Sample Depth Range (ft)	Sample Recov-ery (in)	Elev-ation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			1 1-1	S1		0.0 1.5	16"	86.5 0.2	Topsoil
			3 7-9	S2		2.5 4.0	18"	85.0 2.0	Orange Brown moist Silty fm SAND, trace Clay (SM)
5			4 5-6	S3		5.0 6.5	16"	82.5 4.5	Tan moist SILT and fine SAND (ML)
			4 4-5	S4		8.5 10.0	18"	78.5 8.5	Tan moist fm SAND, trace Silt (SP)
10			12 17-19	S5		13.5 15.0	18"	76.0 11.0	Tan wet fc SAND, trace Silt (SW)
15			5 7-11	S6		18.5 20.0	14"	74.0 13.0	Brown-Olive very moist Silty CLAY, trace fine Sand (CL)
								69.0 18.0	Brown moist f-c SAND, little Gravel (SW)
20								67.0 20.0	Orange-Brown very moist to wet Sandy GRAVEL, with trace/pockets of Silt & Clay (GP)

Bottom of Boring @ 20.0 Ft.
Perched Groundwater at 10.0'
Temporary piezometer installed to 11'
Boring backfilled at completion

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

Apr 9, 10 — BORING B-13

TEST BORING LOG — BORING B-14

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACTOR : Connelly & Associates

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	
10-30-09	Enc.	None			Size I.D.:	2.25 in.		
10-30-09	Compl.	Dry		12.0	Hammer Wt.:		140 lbs.	—
11-3-09	4 days	Dry	18.5		Hammer Fall:		30 in.	—

CONTRACT NO.: 23303.02
SHEET NO. : 1 of 1
STATION :
OFFSET :
ELEVATION : 85 ft.
DATE START : 10-30-09
END : 10-30-09
DRILLER : J.L.
INSPECTOR : C. Jacobs

Depth in Feet	Strata Change	Case BPF (Drill) (mm/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Sample Type	Sample Depth Range (ft)	Sample Recov-ery (in)	Elev-ation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			1 1-1	S1		0.0 1.5	18"	84.5 0.4	Topsoil
			3 2-9	S2		2.5 4.0	18	82.5 2.5	Brown moist Silty fm-f SAND, trace Clay & Roots (SM)
5			6 9-15	S3		5.0 6.5	14"		Brown moist Silty f-c SAND (SM)
			3 4-5	S4		8.5 10.0	18"		
10			3 4-6	S5		13.5 15.0	18"	74.0 11.0	Gray-Brown very moist Clayey SILT (ML)
15			7 11-14	S6		18.5 20.0	16"	70.0 15.0	Orange Brown moist f-c SAND, some Gravel, trace Silt (SW-SM)
20								65.0 20.0	

Bottom of Boring @ 20.0 Ft.
Boring offset 9' west due to slope (+2' in grade)
Bulk sample obtained 0-10.0'
Temp. piezometer installed to 18.5'

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

Apr 9, 10 — BORING B-14

TEST BORING LOG — BORING B-15

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACTOR : Connelly & Associates

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	
10-30-09	Enc.	2.5			Size I.D.:	2.25 in.		
10-30-09	Compl.	7.8		8.2	Hammer Wt.:		140 lbs.	—
11-3-09	4 days	4.5		4.5	Hammer Fall:		30 in.	—

CONTRACT NO.: 23303.02
SHEET NO. : 1 of 1
STATION :
OFFSET :
ELEVATION : 80 ft.
DATE START : 10-30-09
END : 10-30-09
DRILLER : J.L.
INSPECTOR : C. Jacobs

Depth in Feet	Strata Change	Case BPF (Drill) (mm/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Sample Type	Sample Depth Range (ft)	Sample Recov-ery (in)	Elev-ation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			1 1-1	S1		0.0 1.5	14"	79.5 0.3	Topsoil
			1 1-1	S2		2.5 4.0	14"	77.5 2.3	Brown moist silty f-m SAND, trace Roots (SM) (Possible Fill)
5			2 4-4	S3		5.0 6.5	8"	76.5 3.3	Brown wet Silty fine SAND (SM) (Possible Fill)
			3 4-3	S4		8.5 10.0	10"	74.5 5.3	Dark Brown wet f-m SAND, little Gravel, trace Organics (SM)
10			13 22-50/5"	S5		13.5 14.9	5"	71.0 9.0	Gray-Brown wet fine SAND, trace Silt (SP-SM)
15								67.5 12.5	Orange-Brown wet f-c GRAVEL, some Sand (GW)
								65.0 15.0	Tan wet fine SAND, trace small Gravel (SP)
20									

Bottom of Boring @ 15.0 Ft.
Boring backfilled upon completion

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

Apr 9, 10 — BORING B-15

TEST BORING LOG — BORING B-16

CENTURY ENGINEERING

PROJECT : Chesapeake Terrace SWM Basins
CLIENT : National Waste Managers, Inc.
CONTRACTOR : Connelly & Associates

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	
10-30-09	Enc.	14.8			Size I.D.:	2.25 in.		
10-30-09	Compl.			9.0	Hammer Wt.:		140 lbs.	—
11-3-09	4days	None	13.5		Hammer Fall:		30 in.	—

CONTRACT NO.: 23303.02
SHEET NO. : 1 of 1
STATION :
OFFSET :
ELEVATION : 94 ft.
DATE START : 10-30-09
END : 10-30-09
DRILLER : J.L.
INSPECTOR : C. Jacobs

Depth in Feet	Strata Change	Case BPF (Drill) (mm/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Sample Type	Sample Depth Range (ft)	Sample Recov-ery (in)	Elev-ation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			1 1-1	S1		0.0 1.5	16"	93.5 0.3	Topsoil
			6 6-9	S2		2.5 4.0	18"	91.5 2.5	Brown-Gray moist fine Sandy SILT, trace Clay & Roots (ML) (Possible Fill)
5			6 5-5	S3		5.0 6.5	18"		Orange-Brown moist to very moist Silty CLAY, some fine SAND (CL-ML) with lenses of Silty SAND (Possible Fill)
			3 3-2	S4		8.5 10.0	18"	84.5 9.5	Olive-Brown very moist Silty CLAY, trace fine Sand (CL)
10			7 5-6	S5		13.5 15.0	18"	80.5 13.5	Orange Brown wet Silty fm SAND (SM)
15								79.3 14.8	Tan wet f-m SAND (SP)
								79.0 15.0	Bottom of Boring @ 15.0 Ft.
20									Temp. piezometer installed to 13.5' Boring backfilled upon completion

BLOWS/FT. DENSITY: 0-5 Very Loose; 6-10 Loose; 11-30 Medium Dense; 31-50 Dense; 51+ Very Dense
BLOWS/FT. CONSISTENCY: 0-3 Very Soft; 4-5 Soft; 6-10 Medium Stiff; 11-15 Stiff; 16-30 Very Stiff; 31+ Hard
SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; See Remarks
SUMMARY: Overburden: Rock: Samples:

Apr 9, 10 — BORING B-16

DATE:	REVISION:
9/03/2021	REVISED TO ADDRESS MDE COMMENTS ON PHASE 3
11/09/2021	REVISIONS TO 10/22/21 MDE COMMENTS AND AASCD 10/25/21 COMMENTS
1/14/2022	FINAL ISSUED TO MDE

STATE OF MARYLAND — BRIAN STRATMAN — REGISTERED PROFESSIONAL ENGINEER — No. 45351 — 1/14/22

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NATIONAL WASTE MANAGERS
PHASE III APPLICATION
CHESAPEAKE TERRACE RUBBLE LANDFILL
PATUXENT ROAD, ODENTON
ANNE ARUNDEL COUNTY, MARYLAND

BASIN
SOIL BORING LOGS

PROJECT MANAGER: PGS	SCALE: AS NOTED
CHECKED BY: PGS	PROJECT NUMBER: 2018 – 3854
DRAWN BY: KHF	DATE: 09/03/2021

DRAWING 95

N:\Projects\2018\2018\3854 - Chesapeake Terrace LF\CAD\DWG\RC B_Phase III Application\Drawings\Final\20181B3854 B095 - BASIN SOIL BORING LOGS (SHEET 2 OF 2).dwg, 1/13/2022 10:34:40 AM