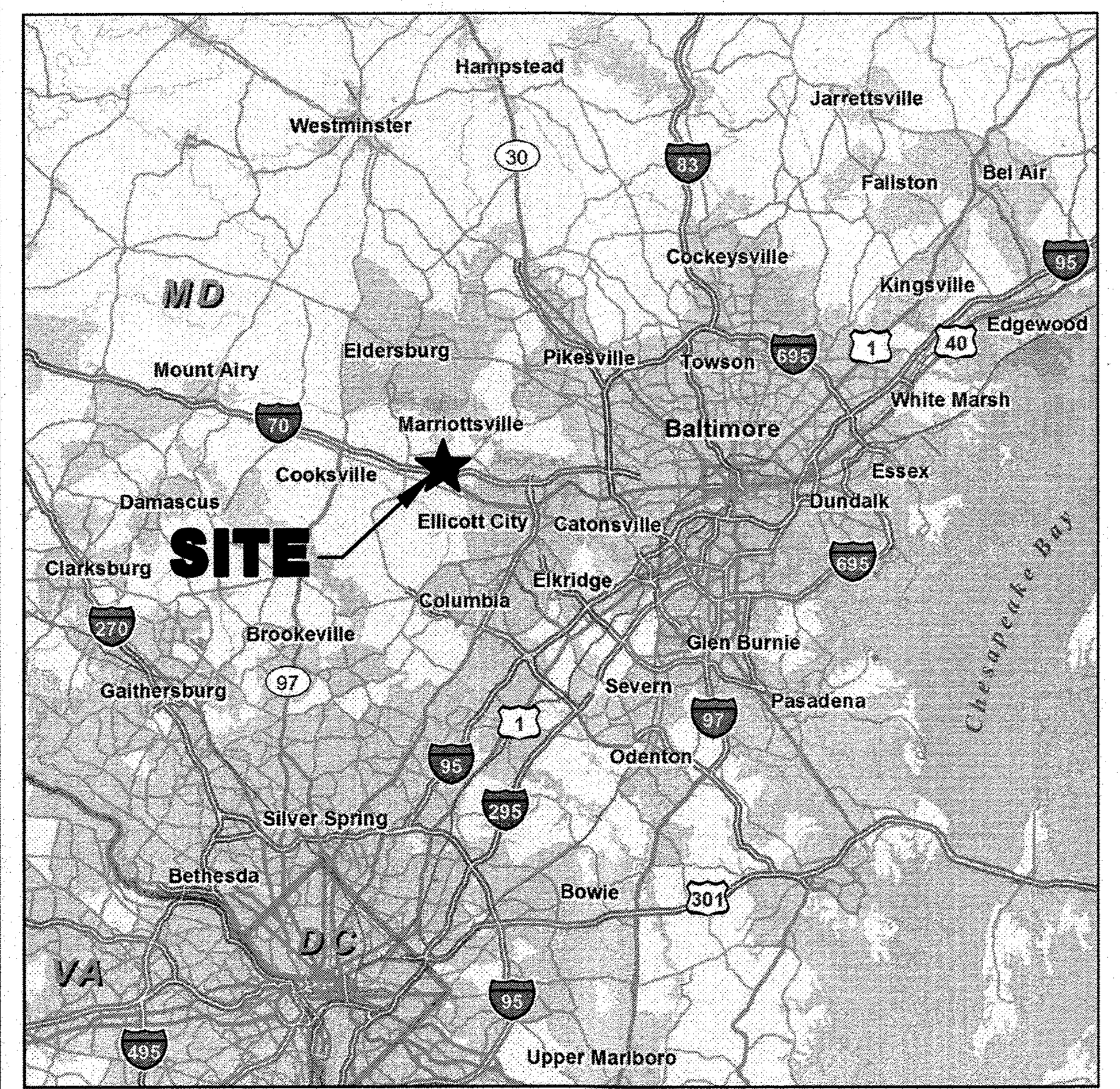
COMPOST FACILITY - PHASE II
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND
SITE DEVELOPMENT PLAN #SDP-16-035



VICINITY MAP

0 5 10 20
GRAPHIC SCALE IN MILES

SITE ANALYSIS

SITE AREA:	590.00 AC
WETLAND AREA:	0 AC
WETLAND BUFFER AREA:	0 AC
FLOODPLAIN AREA:	0 AC
FLOODPLAIN BUFFER AREA:	0 AC
FORESTED AREA:	0 AC
SLOPES > 15% AREA:	3.06 AC
SLOPES > 25% AREA:	1.03 AC
ERODIBLE SOILS AREA:	0 AC
LIMIT OF DISTURBANCE AREA:	~~13.97 AC~~ 15.53 AC (2)
PROPOSED SITE USE:	COMPOSTING FACILITY
GREEN OPEN AREA:	~~5.49 AC~~ 8.94 AC
PROPOSED IMPERVIOUS AREA:	6.59 AC*

*FULL BUILD-OUT AREA

BENCHMARK INFORMATION

THE SYSTEM OF COORDINATES USED BY HOWARD COUNTY IS BASED ON THE FOLLOWING DATUMS AND PROJECTIONS:

- HORIZONTAL: MARYLAND NAD83
- VERTICAL: NAVD88

BENCHMARK LOCATIONS PROVIDED ON PROJECT ACCESS INSET.

1. HOWARD COUNTY SURVEY CONTROL: BASE A
   ELEVATION 564.733 US FT
   N 598,156.281 E 1,336,841.785

2. HOWARD COUNTY SURVEY CONTROL: BASE F
   ELEVATION 512.817 US FT
   N 597,030.549 E 1,338,031.404

ADDRESS CHART	
LOT/PARCEL #	STREET ADDRESS
220, 253, 11, 23, 54	2350 MARRIOTTSVILLE RD, MARRIOTTSVILLE, MARYLAND 21104

PERMIT INFORMATION CHART

Subdivision Name			Section/Area		Lot/Parcel No.
N/A					220, 253, 11, 23, 54
Plat # or L/F: L.6689 F.619	Grid #: 8	Zoning: RC-DEO	Tax Map No.: 0016	Elect District: 3-02	Census Tract
Water Code			Sewer Code		LIBER-891/FOLIO 314 LIBER 6689/FOLIO 619

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

[signature] 4/22/17
HOWARD SCD DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[signature] 12-12-17
DIRECTOR DATE

[signature] 11.29.17
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[signature] 12.5.17
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS

[signature] for Maura Rossman 11/20/2017
DATE

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

GRID: 8
ZONING: RC-DEO
TAX MAP: 0016
BLOCK: N/A
PARCEL/LOT: 220, 253, 11, 23, 54
ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — MARK JOSEPH GUTBERLET — No. 23402 — PROFESSIONAL ENGINEER
10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

FILE PATH: Q:\PROJECTS\1498205 - ARL COMPOST FACILITY\1498205T-03SDP.DWG [T-1 - TITLE SHEET - (SDP-1)] 3/12/15

DESIGN NARRATIVE:

NATURAL RESOURCE PROTECTION AND ENHANCEMENT
THE PROJECT DOES NOT IMPACT ADJACENT NATURAL RESOURCES. NO NEARBY TREES WILL BE REMOVED AND A NEARBY STREAM AND ITS BUFFER WILL NOT BE IMPACTED. A PORTION OF EXISTING MAN-MADE STEEP SLOPES WILL BE REQUIRED TO BE IMPACTED TO INSTALL THE COMPOST FACILITY, A PUBLIC ESSENTIAL SERVICE, AND OPERATED BY HOWARD COUNTY GOVERNMENT. THE LIMIT OF STEEP SLOPE IMPACTS WILL BE MINIMIZED TO THE MAXIMUM EXTENT POSSIBLE.

MAINTENANCE OF NATURAL FLOW PATTERNS
THE PROJECT DOES NOT ALTER NATURAL DRAINAGE PATTERNS.

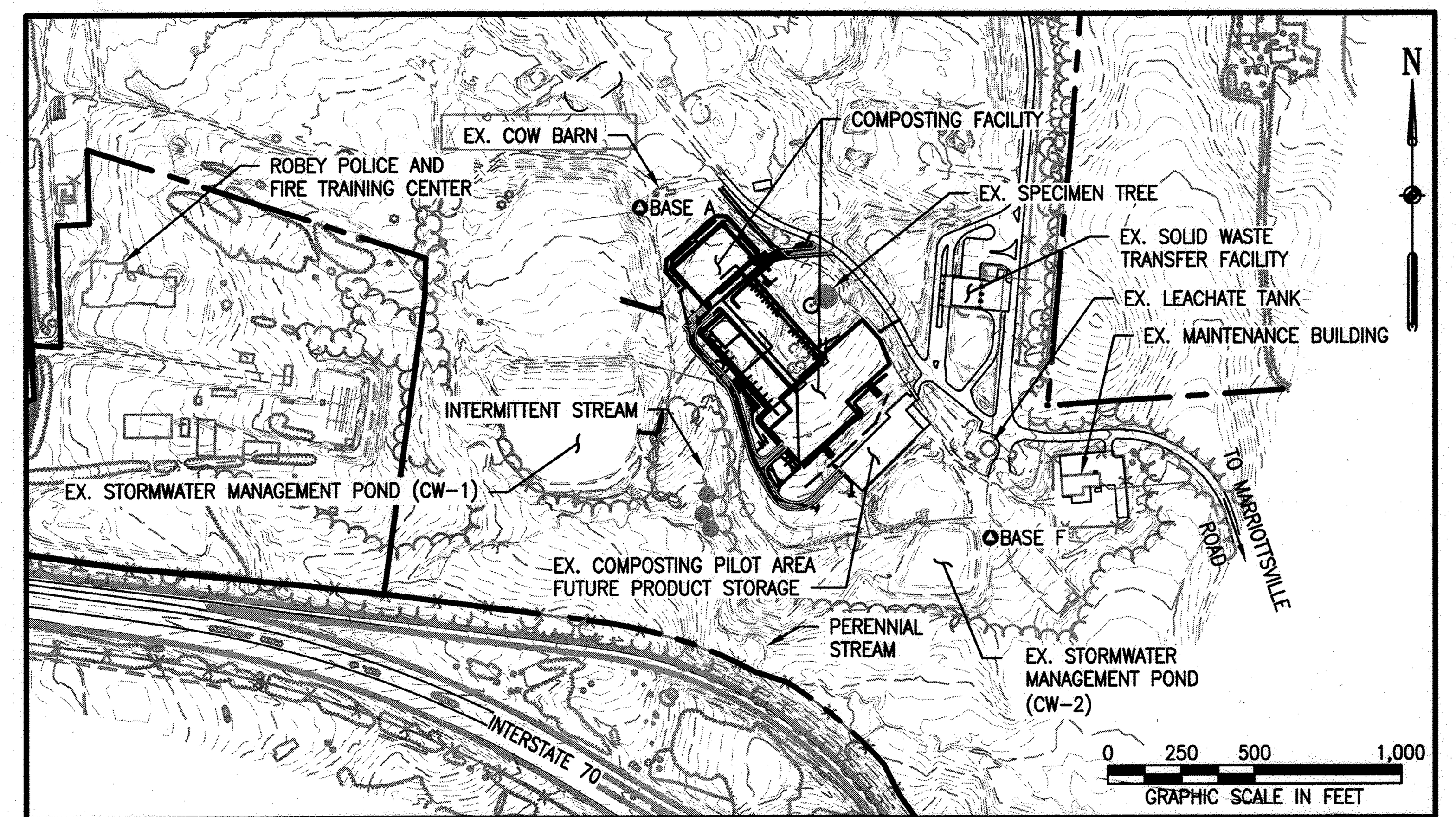
REDUCTION OF IMPERVIOUS AREAS
THE NEW IMPERVIOUS AREA ASSOCIATED WITH THE PROJECT HAS BEEN MINIMIZED AS MUCH AS IS PRACTICABLE TO STILL ALLOW THE FUNCTIONALITY OF THE COMPOSTING OPERATION.

LANDSCAPING
THE PROPOSED PROJECT WILL MAINTAIN EXISTING SPECIMEN TREE, PROVIDE TREE PROTECTION DURING CONSTRUCTION FOR EXISTING TREES TO REMAIN, AND PROVIDE PERMANENT STABILIZATION TO DISTURBED AREAS THAT CONFORMS WITH SCHEDULED FIELD MOWING AND SITE OPERATIONS.

INTEGRATION OF EROSION AND SEDIMENT CONTROL IN THE SWM STRATEGY
THE PROPOSED EROSION AND SEDIMENT CONTROL MEASURES ARE COMPATIBLE WITH THE PROPOSED ESD PRACTICES.

IMPLEMENTATION OF ESD PLANNING TECHNIQUES AND PRACTICES
THE PROPOSED PROJECT WILL UTILIZE A COMBINATION OF M-6 MICRO-BIORETENTION AND M-2 SUBMERGED GRAVEL WETLAND FACILITIES TO PROVIDE ESD TO THE MAXIMUM EXTENT PRACTICABLE. FOR ALL REMAINING REQUIRED ESD VOLUME, AN EXISTING P-2 WET POND WILL BE UTILIZED FOR TREATMENT PURPOSES.

24. ALTERNATIVE COMPLIANCE FILE WP-22-053 WAS APPROVED 24 NOVEMBER 2021 FOR HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS SECTIONS 16.156(o)(1)(ii) AND 16.156(o)(2), GRANTING REACTIVATION OF THE APPROVED SDP FOR COMPLETION OF PHASE IIC CONSTRUCTION OF THE ALPHA RIDGE LANDFILL COMPOST FACILITY. APPROVAL IS CONDITIONAL ON 1) BUILDING PERMIT APPLICATIONS BEING SUBMITTED WITHIN 1 YEAR OF APPROVAL DATE; AND 2) SUBMISSION OF THE PROPOSED REDLINE REVISIONS TO THE DEPARTMENT OF PLANNING AND ZONING BEING RECEIVED PRIOR TO FILING BUILDING PERMIT APPLICATIONS.



PROJECT ACCESS INSET

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATION WHERE APPLICABLE.
2. THE CONTRACTOR SHALL CONTACT THE CONSTRUCTION INSPECTION DIVISION 24 HOURS IN ADVANCE OF COMMENCEMENT OF WORK AT (410) 313-1880.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
4. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
5. ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
6. THE EXISTING TOPOGRAPHY OUTSIDE OF THE 'LIMIT OF FIELD RUN TOPO' BOUNDARY HAS BEEN PROVIDED FROM THE HOWARD COUNTY GIS DATABASE IN DECEMBER 2013.
7. THE EXISTING TOPOGRAPHY AND UTILITIES INSIDE OF THE 'LIMIT OF FIELD RUN TOPO', UNLESS OTHERWISE MENTIONED, HAVE BEEN PROVIDED FROM A FIELD RUN SURVEY BY THE HOWARD COUNTY SURVEY DIVISION IN AUGUST 2011.
8. THE TOPOGRAPHIC SURVEY IS BASED ON GEODETIC CONTROL STATIONS ALPHA 1, AERIAL TARGET 1, AERIAL TARGET 2, AND BENCHMARK 16BM2, BEING PART OF THE MARYLAND STATE REFERENCE SYSTEM NAD '83/'91.
9. THE EXISTING FIBER OPTIC LINE HAS BEEN TAKEN FROM AN AS-BUILT PLAN PREPARED BY KCI CONVERGENT TECHNOLOGIES AND DATED 04/04/12.
10. THE EXISTING WATER LINES HAVE BEEN PROVIDED FROM TWO SEPARATE AS-BUILT PLANS PREPARED BY KCI TECHNOLOGIES DATED DECEMBER 2004 AND JUNE 2009.
11. THE SOILS HAVE BEEN PROVIDED FROM THE WEB SOIL SURVEY IN MARCH 2014.
12. WATER IS PUBLIC. SEWER IS PRIVATE.
13. STORMWATER MANAGEMENT IS PROVIDED VIA A COMBINATION OF M-6 MICRO-BIORETENTION AND M-2 SUBMERGED GRAVEL WETLAND FACILITIES TO PROVIDE ESD TO THE MAXIMUM EXTENT PRACTICABLE. FOR ALL REMAINING REQUIRED ESD VOLUME, AN EXISTING P-2 WET POND WILL BE UTILIZED FOR TREATMENT PURPOSES. ALL FACILITIES WILL BE OWNED AND MAINTAINED BY HOWARD COUNTY.
14. THE FLOODPLAIN SHOWN HEREIN HAS BEEN PROVIDED FROM PLANS PREPARED BY URS DATED NOVEMBER 2006. THIS PLAN REFERENCES 1978 FLOODPLAIN DELINEATION BY CENTURY ENGINEERING AND A 1986 UPDATE BY BERNARD JOHNSON, INC.
15. THE WETLANDS DELINEATION WAS PERFORMED BY EA ON 15 FEBRUARY 2016.
16. NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT.
17. PROJECT CONFORMS WITH COMAR 26.04.11, COMPOSTING FACILITIES.
18. STREAMS SHALL NOT BE DISTURBED DURING CONSTRUCTION.
19. A COUNTY COUNCIL RESOLUTION HAS BEEN SUBMITTED TO REQUEST VARIANCE TO MAXIMUM HEIGHT LIMITATIONS FOR THE FEEDSTOCK RECEIVING ENCLOSURE, AS NOTED IN HOWARD COUNTY CODE SECTION 104.0.E.2 FOR PRINCIPAL STRUCTURES WITH GABLED ROOFS CONSTRUCTED WITHIN AREAS ZONED RC.
20. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN WETLANDS, STREAM(S) OR THEIR BUFFERS OR FOREST CONSERVATION EASEMENT AREAS.
21. FOREST CONSERVATION OBLIGATIONS HAVE BEEN PREVIOUSLY ADDRESSED BY SDP-97-128. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
22. THE SYSTEM OF COORDINATES USED BY HOWARD COUNTY IS BASED IN THE FOLLOWING DATUMS AND PROJECTIONS:
    - HORIZONTAL: MARYLAND NAD83
    - VERTICAL: NAVD88
23. ALTERNATIVE COMPLIANCE FILE WP-18-011 HAS BEEN APPROVED FOR HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS SECTION 16.156(M), GRANTING REACTIVATION AND EXTENSION FOR SUBMISSION OF THE SDP PLAN ORIGINALS FOR SIGNATURE ON OR BEFORE NOVEMBER 6, 2017.

DEVELOPER'S CERTIFICATE

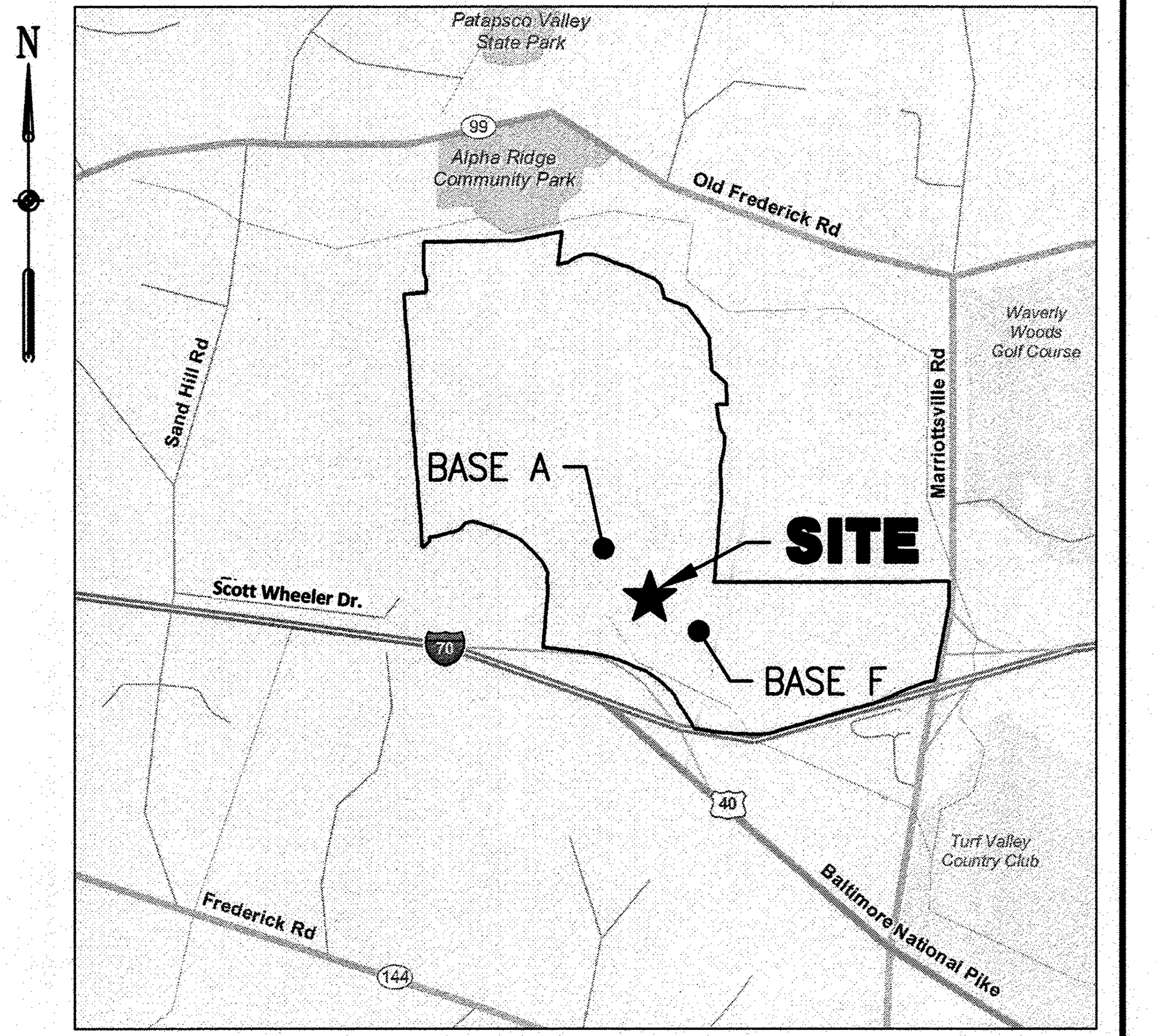
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

[signature] acting 10/16/17
DEVELOPER'S NAME HERE DATE

ENGINEER'S CERTIFICATE

I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

[signature] 10/4/17
MARK J. GUTBERLET, P.E. DATE



ADC MAP COORDINATES: MAP 4814 - GRID F2 - N 598,623 E 1,337,186

LOCATION MAP

0 1,000 2,000 4,000
GRAPHIC SCALE IN FEET

SITE ADDRESS:
ALPHA RIDGE LANDFILL
2350 MARRIOTTSVILLE RD
MARRIOTTSVILLE, MARYLAND 21104

WGS84 (DECIMAL DEGREES)
LAT: 39.310328
LONG: -79.912165

NAD83 MARYLAND STATE PLAN (FEET)
NORTHING: 598,623.21034
EASTING: 1,337,186.70975

SDP SHEET LIST			
REV.	SDP SHEET NO.	DRAWING NO.	SHEET TITLE
(2) (1)	1	T-1	TITLE SHEET
	2	G-1	INDEX & GENERAL NOTES
(2) (1)	3	G-2	KEY PLAN
(2) (1)	4	C-4	PROPOSED CONDITIONS PLAN I
(2)	5	C-5	PROPOSED CONDITIONS PLAN II
	6	C-8	CONTACT WATER GRAVITY LINE PROFILE
	7	C-9	CONTACT WATER PRESSURE LINE PROFILE I
(2)	8	C-10	~~CONTACT WATER PRESSURE LINE PROFILE II~~ SWM PRESSURE PIPE PLAN & PROFILE
(2)	9	C-11	WATER LINE PROFILE
(2) (1)	10	C-13	CIVIL LAYOUT PLAN I
	11	C-14	CIVIL LAYOUT PLAN II
(2)	12	ES-1	EROSION AND SEDIMENT CONTROL PLAN - INITIAL I (PHASES IIA AND IIB)
(2)	13	ES-2	EROSION AND SEDIMENT CONTROL PLAN - INITIAL II (PHASES IIA AND IIB)
(2)	14	ES-3	EROSION AND SEDIMENT CONTROL PLAN - INITIAL DRAINAGE AREA MAP
(2) (1)	15	ES-4	EROSION AND SEDIMENT CONTROL PLAN - FINAL I
(2)	16	ES-5	EROSION AND SEDIMENT CONTROL PLAN - FINAL II
(2) (1)	17	ES-6	EROSION AND SEDIMENT CONTROL PLAN - FINAL DRAINAGE AREA MAP
	18	ES-7	EROSION AND SEDIMENT CONTROL DETAILS I
	19	ES-8	EROSION AND SEDIMENT CONTROL DETAILS II
	20	ES-9	EROSION AND SEDIMENT CONTROL DETAILS III
	21	ES-10	EROSION AND SEDIMENT CONTROL DETAILS IV
	22	ES-11	EROSION AND SEDIMENT CONTROL NOTES I
(2)	23	ES-12	EROSION AND SEDIMENT CONTROL NOTES II
	24	SW-3	STORMDRAIN PROFILE I
	25	SW-4	STORMDRAIN PROFILE II
	26	SW-5	STORMDRAIN PROFILE III
(2) (1)	27	SW-6	ESD PROFILE AND DETAILS I
(2) (1)	28	SW-7	ESD PROFILE AND DETAILS II
(2)	29	SW-8	ESD PROFILE AND DETAILS III
	30	SW-9	ESD PLANTING PLANS
	31	SW-10	STORMWATER MANAGEMENT DETAILS I
	32	SW-11	STORMWATER MANAGEMENT DETAILS II
	33	SW-14	GEOTECHNICAL SOIL BORING LOGS I
	34	SW-15	GEOTECHNICAL SOIL BORING LOGS II
(1)	35	SW-16	STORMDRAIN DRAINAGE AREA MAP
(2) (1)	36	DA-1	ESD DRAINAGE AREA MAP
(2)	37	A-1	FLOOR PLAN
(2)	38	A-2	BUILDING ELEVATIONS
(2)	39	A-3	BUILDING ELEVATIONS
(2)	40	~~S-6~~ S-8	RETAINING WALL STRUCTURAL PLAN, ELEVATION AND SECTIONS I
(2)	41	~~S-7~~ S-9	RETAINING WALL STRUCTURAL PLAN, ELEVATION AND SECTIONS II
(2)	42	~~S-8~~ S-10	RETAINING WALL STRUCTURAL ~~PLAN, ELEVATION AND~~ SECTIONS ~~III~~ AND DETAIL
(2)	43	~~S-9~~ S-11	COMPOST BINS - FINISHED FLOOR PLANS
(2)	44	~~S-10~~ S-12	COMPOST BINS - SECTIONS
(2)	45	ES-13	EROSION AND SEDIMENT CONTROL PLAN - INITIAL III (PHASE IIC)

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

		BY	NO.	REVISION	DATE
DSN. BY:	MBS/MP	SMB	1	REVISED UTILITY BUILDING AND TRANSFORMER LOCATION	4/2018
DRN. BY:	JAP/KEJ	CVH	2	REVISED TO REFLECT PHASE IIA AND PHASE IIB AS-BUILT CONDITIONS AND PHASE IIC DESIGN	8/2022
CHK. BY:	SMD				
DATE:	OCT. 2016				

TITLE SHEET

COMPOST FACILITY - PHASE II
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 1 OF ~~44~~ 45 (2)
DRAWING: T-1
PROJECT: 14982.05
SHEET: ~~1 OF 70~~

NOT FOR CONSTRUCTION - SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035

ABBREVIATIONS

AC	ACRE(S)
APPROX.	APPROXIMATE
ASP	AERATED STATIC PILE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BLDG	BUILDING
CLF	CHAIN LINK FENCE
CONC	CONCRETE
CORR	CORRUGATED
D.A.	DRAINAGE AREA
DIA	DIAMETER
DOT	DEPARTMENT OF TRANSPORTATION
EL/ELEV	ELEVATION
ECP	ENVIRONMENTAL CONCEPT PLAN
EPA	ENVIRONMENTAL PROTECTION AGENCY
ESD	ENVIRONMENTAL SITE DESIGN
EX/EXIST	EXISTING
FM	FORCEMAIN
FT	FEET
FT BGS	FEET BELOW GROUND SURFACE
GALS	GALLONS
GALV	GALVANIZED
GPS	GLOBAL POSITIONING SYSTEM
INV.	INVERT
lbs	POUNDS
MG/KG	MILLIGRAMS PER KILOGRAM
MHW	MEAN HIGH WATER
MM	MILLIMETER
MSL	MEAN SEA LEVEL
MTL	METAL
NAD 83	NORTH AMERICAN DATUM 1983
NAVD 88	NORTH AMERICAN VERTICAL DATUM 1988
N.O.	NUMBER
NRCS	NATIONAL RESOURCES CONSERVATION SERVICE
PSF	POUNDS PER SQUARE FOOT
PR.	PROPOSED
RCP	REINFORCED CONCRETE PIPE
SCH	SCHEDULE
S.D.	STORM DRAIN
sec	SECOND
SS	STAINLESS STEEL
SWM	STORMWATER MANAGEMENT
SWPPP	STORMWATER POLLUTION PREVENTION PLAN
TYP	TYPICAL
U.S.	UNITED STATES
USACE	U.S. ARMY CORPS OF ENGINEERS
USCGS	U.S. COAST AND GEODETIC SURVEY
USDA	U.S. DEPARTMENT OF AGRICULTURE
USGS	U.S. GEOLOGICAL SURVEY
W/	WITH
WSEL	WATER SURFACE ELEVATION

LEGEND

SYMBOL	DESCRIPTION
— — —10— — —	EXISTING INDEX CONTOUR
— — —9— — —	EXISTING INTERMEDIATE CONTOUR
	STEEP SLOPES (15–25%)
	STEEP SLOPES (>25%)
	EXISTING BUILDING
	EXISTING ROAD
	EXISTING GRAVEL ROAD
—x—x—x—x—	EXISTING FENCE
	EXISTING STORM DRAIN INLET/JUNCTION BOX
	EXISTING BENCHMARK
	EXISTING UTILITY POLE
	EXISTING SANITARY CLEANOUT
	EXISTING ELECTRIC STRUCTURE
	EXISTING TREE (TO BE REMOVED)
	EXISTING EDGE OF WATER / RIVER
	EXISTING WETLAND
	EXISTING RIPRAP
	EXISTING TREE OR BRUSH LINE
— S — S —	EXISTING SANITARY FORCEMAIN
— SAN — SAN —	EXISTING SANITARY SEWER PIPE (GRAVITY)
— W — W —	EXISTING WATER PIPE
— SD — SD —	EXISTING STORM DRAIN
— UE — UE —	EXISTING UNDERGROUND ELECTRIC LINE
— UT — UT —	EXISTING UNDERGROUND TELEPHONE LINE
— LR — LR —	EXISTING LEACHATE GRAVITY LINE
— LFM — LFM —	EXISTING LEACHATE FORCE MAIN
— DFM — DFM —	EXISTING DRAIN FORCE MAIN
— OFD — OFD —	EXISTING OVERFLOW DRAIN
	EXISTING PROPERTY LINE
	LIMIT OF FIELD RUN TOPO
— B — B —	WETLAND BUFFER LINE
—10—	PROPOSED INDEX CONTOUR
—9—	PROPOSED INTERMEDIATE CONTOUR
— LOD — LOD —	LIMIT OF DISTURBANCE
	HYDROLOGIC SOIL GROUP BOUNDARY
GbB GbC	HYDROLOGIC SOIL GROUP LABEL
	DRAINAGE AREA BOUNDARY
B-1	SOIL BORING
— SD — SD —	PROPOSED STORM DRAIN
— W — W —	PROPOSED WATER PIPE
— C — C —	PROPOSED CONTACT WATER GRAVITY LINE
— CL — CL —	PROPOSED CONTACT WATER FORCEMAIN
— UE — UE —	PROPOSED UNDERGROUND ELECTRIC LINE
— SF — SF —	PROPOSED SILT FENCE
— SSF — SSF —	PROPOSED SUPER SILT FENCE
— DF — DF —	PROPOSED DIVERSION FENCE
— SWM — SWM —	PROPOSED STORMWATER POND FORCEMAIN
	LIMIT OF LAGOON ANCHOR TRENCH
A-2	EARTH DIKE
SCE	STABILIZED CONSTRUCTION ENTRANCE
TGOS	TEMPORARY GABION OUTLET STRUCTURE
TSOS	TEMPORARY STONE OUTLET STRUCTURE
AGIP	AT-GRADE INLET PROTECTION
— UT — UT —	PROPOSED UNDERGROUND TELEPHONE LINE
	PROPOSED LIGHT POLE
	PROPOSED ASPHALT
	PROPOSED CONCRETE
	PROPOSED STABILIZATION MATTING

Table 5.1 Natural Resources and the Corresponding Regulatory Authorities

FEDERAL		STATE		LOCAL	
Wetlands	Shown	Tidal and Non-Tidal Wetlands	Shown	Steep Slopes	Shown
Major Waterways	Not Present	Wetlands of Special State Concern	Not Present	Highly Erodible Soils	Shown
Floodplains	Not Present	Wetland Buffers	Shown	Enhanced Stream Buffers	Not Present
		Stream Buffers	Not Present	Topography/Slopes	Shown
		Perennial Streams	Not Present	Springs	Not Present
		Floodplains	Not Present	Seeps	Not Present
		Forests	Shown	Intermittent Streams	Not Present
		Forest Buffers	Not Present	Vegetative Cover	Shown
		Critical Areas	Not Present	Soils	Shown
				Bedrock/Geology	Noted
				Existing Drainage Areas	Shown

HYDROLOGIC SOIL GROUP – HOWARD COUNTY, MARYLAND*

MAP UNIT SYMBOL	MAP UNIT NAME	HSG RATING	k RATING
BaA	Baile silt loam, 0–3% Slopes	D	0.32
GbB	Gladstone loam, 3–8% Slopes	B	0.20
GbC	Gladstone loam, 8–15% Slopes	B	0.20
GnB	Glenville-Baile silt loams, 0–8% Slopes	C	0.37
UbF	Udorthents, Refuse, 0–65% Slopes	N/A	N/A

*Soils information provided from USDA NRCS Web Soil Survey

REFERENCE SYMBOLS

LETTER INDICATES SECTION DESIGNATION — A — INDICATES DIRECTION OF CUTTING PLANE
SHEET NO. WHERE SECTION IS DRAWN — ES-00

NUMBER INDICATES DETAIL DESIGNATION — A — TITLE
SHEET NO. WHERE DETAIL IS DRAWN — ES-00

LETTER INDICATES SECTION DESIGNATION — A — SECTION — NOT TO SCALE
SHEET NO. WHERE SECTION IS DRAWN — ES-00 — ES-01, ES-02

NUMBER INDICATES DETAIL DESIGNATION — 1 — DETAIL — NOT TO SCALE
SHEET NO. WHERE DETAIL IS DRAWN — ES-00 — ES-01, ES-02

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[signature] 12-12-17
DIRECTOR — DATE

[signature] 11.29.17
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

[signature] 12-5-17
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

GRID: 8
ZONING: RC-DEO
TAX MAP: 0016
BLOCK: N/A
PARCEL/LOT: 220, 253, 11, 23, 54
ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — MARK JOSEPH GUTBERLET — No. 23402 — PROFESSIONAL ENGINEER — 6/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY: MBS/MP
DRN. BY: JAP/KEJ
CHK. BY: SMD
DATE: OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TOTAL SHEET NUMBER DUE TO ADDITION OF SHEET 45	8/2022

INDEX & GENERAL NOTES

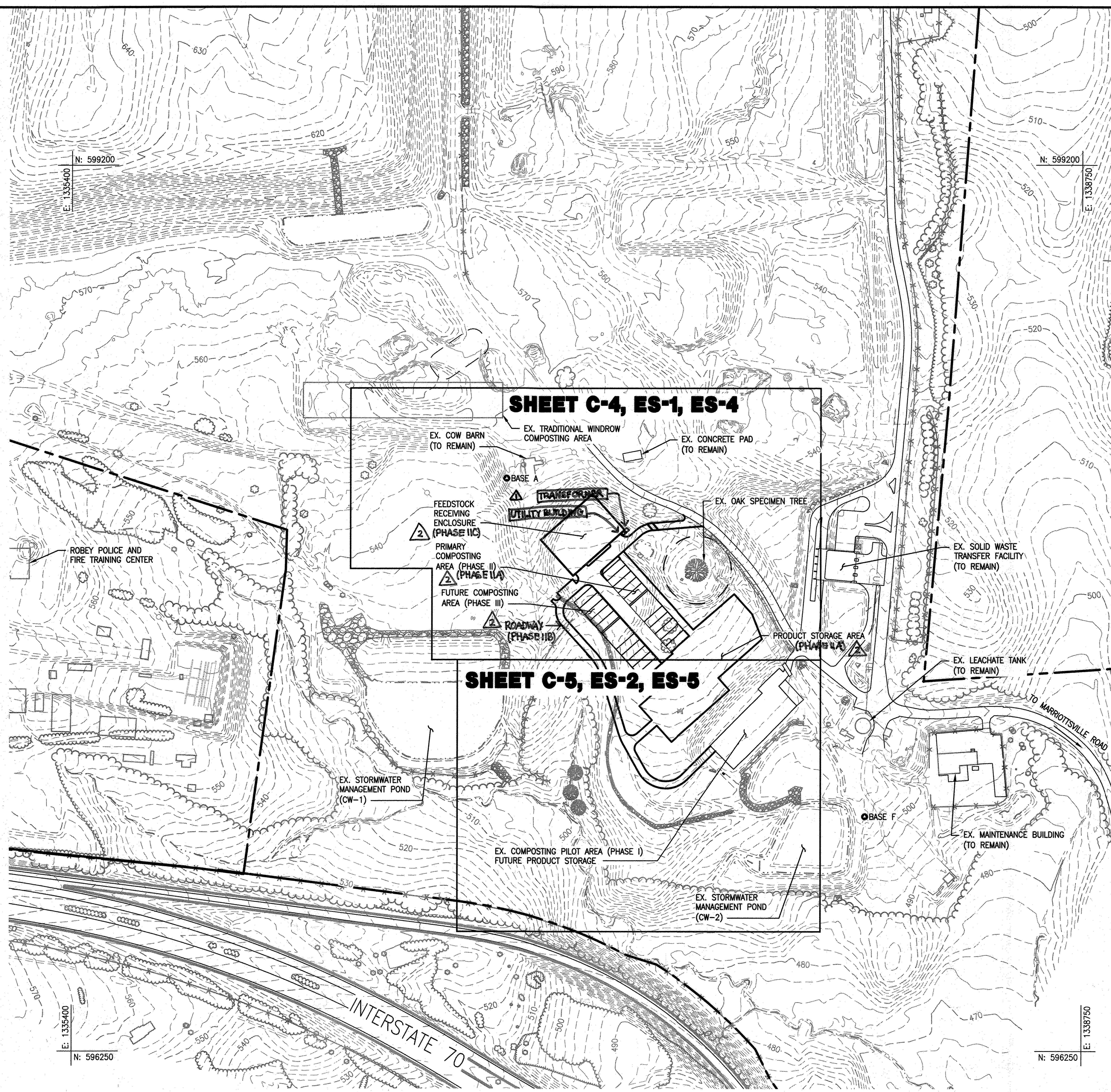
COMPOST FACILITY – PHASE II
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 2 OF ~~44~~ 45
DRAWING: G-1
PROJECT: 14982.05
SHEET: ~~2 OF 70~~

NOT FOR CONSTRUCTION – SITE DEVELOPMENT PLAN #SDP-16-035

FILE PATH: Q:\PROJECTS\1498205 – ARL COMPOST FACILITY\14982050-03INDX.DWG

SDP-16-035



KEY PLAN
SCALE: 1" = 200'
0 100 200 400
GRAPHIC SCALE IN FEET

FIELD VERIFICATION CERTIFICATION

I HEREBY CERTIFY THAT I COMPLETED A FIELD VERIFICATION TO THE INFORMATION SHOWN ON THE PLAN ON ________ AND THAT THE INFORMATION SHOWN ON THE PLANS IS IN AGREEMENT WITH THE ACTUAL FIELD CONDITIONS.

PRINTED NAME

SIGNATURE DATE

BENCHMARK INFORMATION

1. HOWARD COUNTY SURVEY CONTROL: BASE A
ELEVATION 564.733 US FT
N 598,156.281 E 1,336,841.785

2. HOWARD COUNTY SURVEY CONTROL: BASE F
ELEVATION 512.817 US FT
N 597,030.549 E 1,338,031.404

THE SYSTEM OF COORDINATES USED BY HOWARD COUNTY IS BASED ON THE FOLLOWING DATUMS AND PROJECTIONS:
- HORIZONTAL: MARYLAND NAD83
- VERTICAL: NAVD88

BENCHMARK LOCATIONS PROVIDED ON PROJECT ACCESS INSET.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — 12-12-17 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 11-29-17 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 12-5-17 DATE

GRID: 8
ZONING: RC-DEO
TAX MAP: 0016
BLOCK: N/A
PARCEL/LOT: 220, 253, 11, 23, 54
ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL:
STATE OF MARYLAND — MARK JOSEPH GUTBERLET — No. 23402 — PROFESSIONAL ENGINEER
10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	MBS/MP
DRN. BY:	JAP/KEJ
CHK. BY:	SMD
DATE:	OCT. 2016

BY	NO.	REVISION	DATE
SMB	1	REVISED UTILITY BUILDING AND TRANSFORMER LOCATION	4/2018
CVH	2	REVISED TO DEMARCATE PHASED CONSTRUCTION	8/2022

KEY PLAN

COMPOST FACILITY – PHASE II
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 3 OF ~~44~~ 45
DRAWING: G-2
PROJECT: 14982.05
SHEET: ~~3 OF 70~~

NOT FOR CONSTRUCTION - SITE DEVELOPMENT PLAN #SDP-16-035

FILE PATH: Q:\PROJECTS\1498205 - ARL COMPOST FACILITY\1498205G-02KEY.DWG

SDP-16-035

BENCHMARK INFORMATION

1. HOWARD COUNTY SURVEY CONTROL: BASE A
   ELEVATION 564.733 US FT
   N 598,156.281 E 1,336,841.785
2. HOWARD COUNTY SURVEY CONTROL: BASE F
   ELEVATION 512.817 US FT
   N 597,030.549 E 1,338,031.404

THE SYSTEM OF COORDINATES USED BY HOWARD COUNTY IS BASED ON THE FOLLOWING DATUMS AND PROJECTIONS:

- HORIZONTAL: MARYLAND NAD83
- VERTICAL: NAVD88

BENCHMARK LOCATIONS PROVIDED ON PROJECT ACCESS INSET.

DATA SOURCES

1. THE EXISTING TOPOGRAPHY AND UTILITIES INSIDE OF THE 'LIMIT OF FIELD RUN TOPO', UNLESS OTHERWISE MENTIONED, HAVE BEEN PROVIDED FROM A FIELD RUN SURVEY BY THE HOWARD COUNTY SURVEY DIVISION IN AUGUST 2011.
2. ALL INFORMATION LOCATED OUTSIDE OF THE LIMIT OF FIELD RUN TOPO LINE HAS BEEN TAKEN FROM THE HOWARD COUNTY GIS DATABASE.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR	DATE 12-12-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 11-29-17
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 12.5.17

GRID: 8
ZONING: RC-DEO
TAX MAP: 0016
BLOCK: N/A
PARCEL/LOT: 220, 253, 11, 23, 54
ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND MARK JOSEPH GUTBERLET No. 23402 PROFESSIONAL ENGINEER 10/4/17

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY: MBS/MP
DRN. BY: JAP/KEJ
CHK. BY: SMD
DATE: OCT. 2016

BY	NO.	REVISION	DATE
SMB	1	REVISED BUILDING AND TRANSFORMER LOCATION	4/2019
CVH	2	REVISED TO REFLECT PHASE IIA AND IIB AS-BUILT CONDITIONS AND PHASE IIC DESIGN	8/2022

SITE PLAN

SCALE: 1" = 50'

0 25 50 100
GRAPHIC SCALE IN FEET

NOTE:

1. RELOCATED GRAVEL ACCESS ROAD TO MATCH EXISTING ROAD SECTION.
2. LOCATION OF EXISTING UNDERGROUND TELEPHONE LINE IS APPROXIMATE.

PROPOSED CONDITIONS PLAN I

COMPOST FACILITY – PHASE II AT ALPHA RIDGE LANDFILL

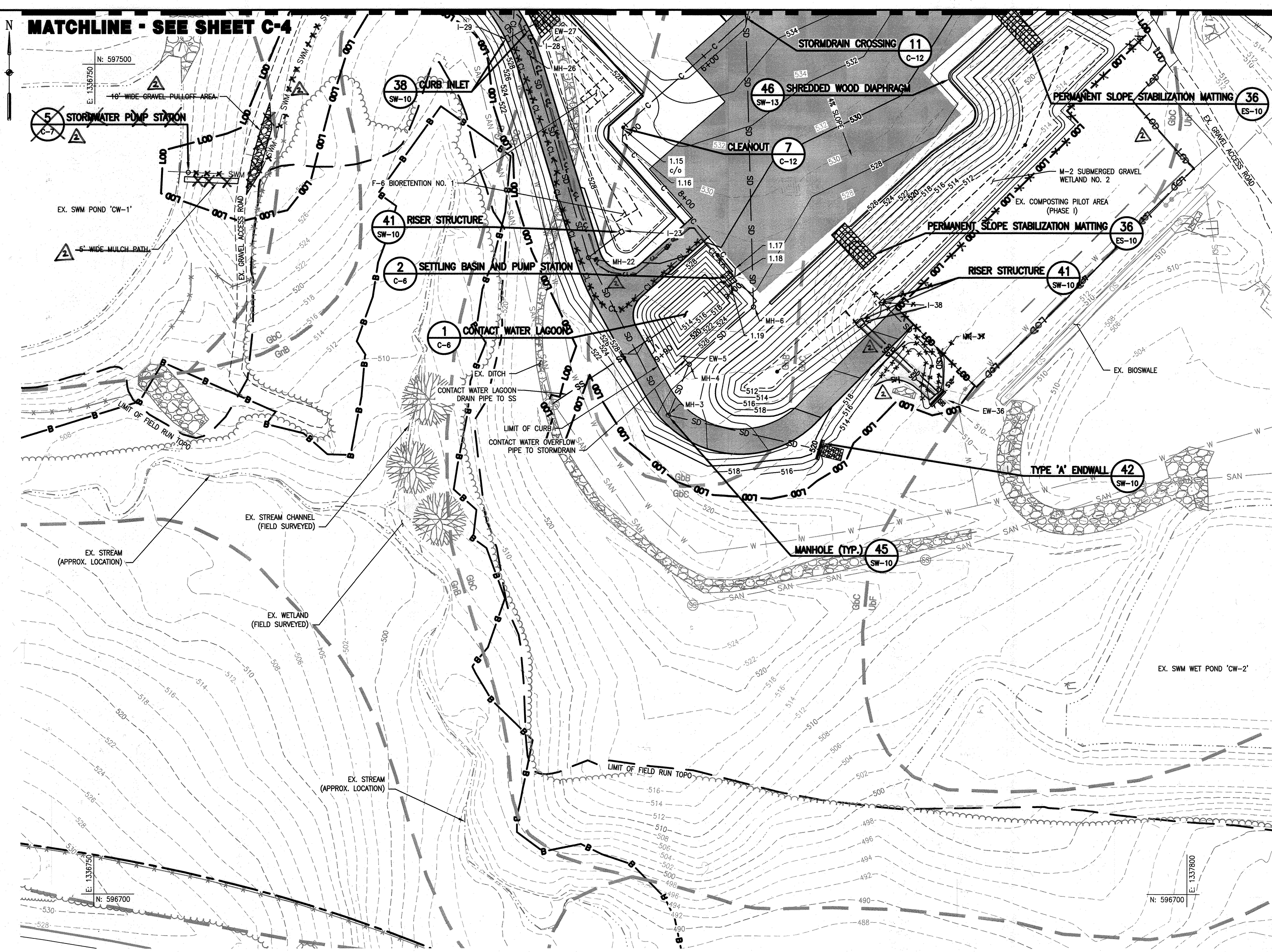
HOWARD COUNTY, MARYLAND

SDP SHEET: ~~44~~ 45 4 OF 45
DRAWING: C-4
PROJECT: 14982.05
SHEET: ~~7 OF 70~~

SDP-16-035

NOT FOR CONSTRUCTION - SITE DEVELOPMENT PLAN #SDP-16-035

FILE PATH: Q:\PROJECTS\1498205 - ARL COMPOST FACILITY\1498205C-04PROP.DWG [C-4 - PROP CONDITIONS PLAN I - (SDP-4)] 3/12/15



SITE PLAN

SCALE: 1" = 50'

0 25 50 100

GRAPHIC SCALE IN FEET

BENCHMARK INFORMATION

1. HOWARD COUNTY SURVEY CONTROL: BASE A
   ELEVATION 564.733 US FT
   N 598,156.281 E 1,336,841.785
2. HOWARD COUNTY SURVEY CONTROL: BASE F
   ELEVATION 512.817 US FT
   N 597,030.549 E 1,338,031.404

THE SYSTEM OF COORDINATES USED BY HOWARD COUNTY IS BASED ON THE FOLLOWING DATUMS AND PROJECTIONS:

- HORIZONTAL: MARYLAND NAD83
- VERTICAL: NAVD88

BENCHMARK LOCATIONS PROVIDED ON PROJECT ACCESS INSET.

DATA SOURCES

1. THE EXISTING TOPOGRAPHY AND UTILITIES INSIDE OF THE 'LIMIT OF FIELD RUN TOPO', UNLESS OTHERWISE MENTIONED, HAVE BEEN PROVIDED FROM A FIELD RUN SURVEY BY THE HOWARD COUNTY SURVEY DIVISION IN AUGUST 2011.
2. ALL INFORMATION LOCATED OUTSIDE OF THE LIMIT OF FIELD RUN TOPO LINE HAS BEEN TAKEN FROM THE HOWARD COUNTY GIS DATABASE.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR	DATE 12-12-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 11-29-17
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 12-5-17

GRID: 8	BLOCK: N/A
ZONING: RC-DEO	PARCEL/LOT: 220, 253, 11, 23, 54
TAX MAP: 0016	ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND, MARK JOSEPH GUTBERLET, No. 23402, PROFESSIONAL ENGINEER — 10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	MBS/MP
DRN. BY:	JAP/KEJ
CHK. BY:	SMD
DATE:	OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TO REFLECT PHASE IIA AND PHASE IIB AS-BUILT CONDITIONS AND LOD	8/2022

PROPOSED CONDITIONS PLAN II

COMPOST FACILITY – PHASE II AT ALPHA RIDGE LANDFILL

HOWARD COUNTY, MARYLAND

SDP SHEET: 5 OF ~~44~~ 45

DRAWING: C-5

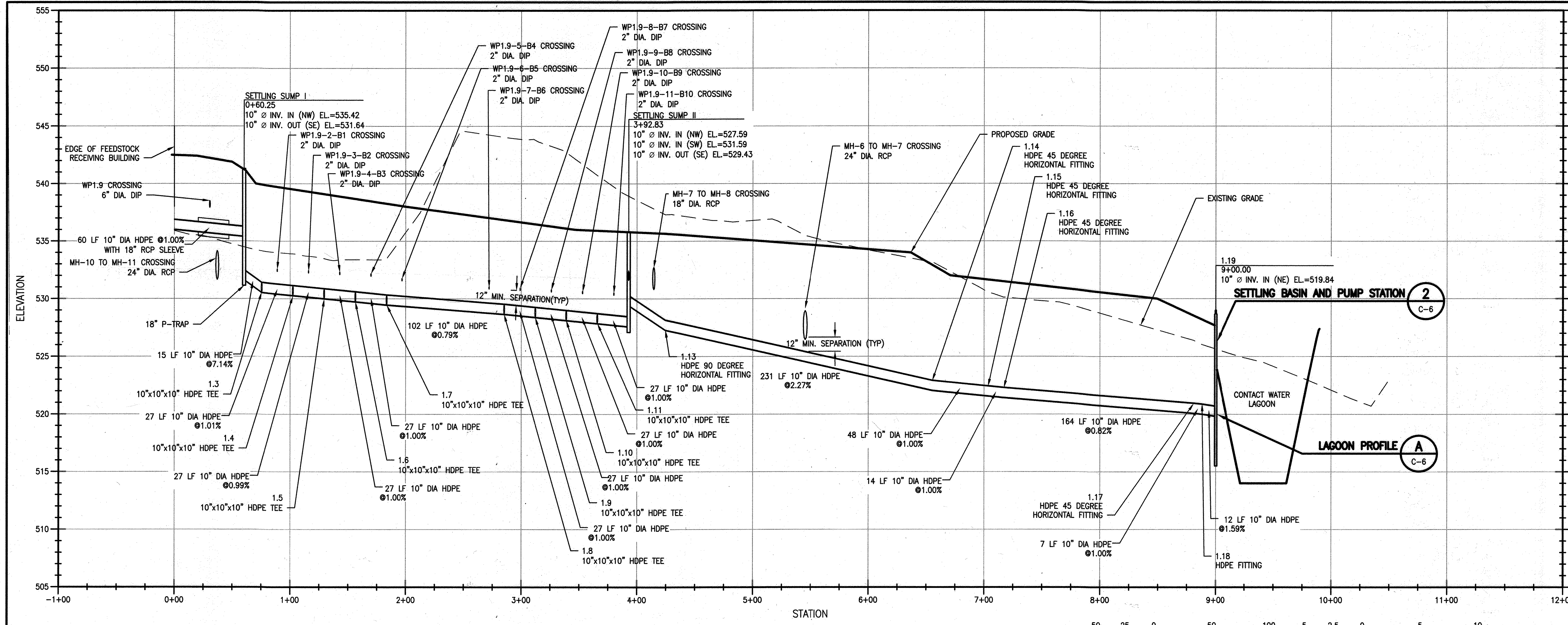
PROJECT: 14982.05

SHEET: ~~8 OF 70~~

SDP-16-035

NOT FOR CONSTRUCTION - SITE DEVELOPMENT PLAN #SDP-16-035

FILE PATH: Q:\PROJECTS\1498205 - ARL COMPOST FACILITY\1498205C-05PROP.DWG [C-5 - PROP CONDITIONS PLAN II - (SDP-5)] 3/12/15



A CONTACT WATER–RECEIVING BUILDING TO CW LAGOON PROFILE

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'

GRAPHIC SCALE IN FEET HORIZONTAL (50 25 0 50 100)

GRAPHIC SCALE IN FEET VERTICAL (5 2.5 0 5 10)

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11-29-17

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12-5-17

GRID: 8	BLOCK: N/A
ZONING: RC-DEO	PARCEL/LOT: 220, 253, 11, 23, 54
TAX MAP: 0016	ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — MARK GUTBERLET — No. 23402 — PROFESSIONAL ENGINEER — 12/4/17

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	LO
DRN. BY:	JAP/LO
CHK. BY:	SMD
DATE:	OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TOTAL SHEET NUMBER DUE TO ADDITION OF SHEET 42	8/2022

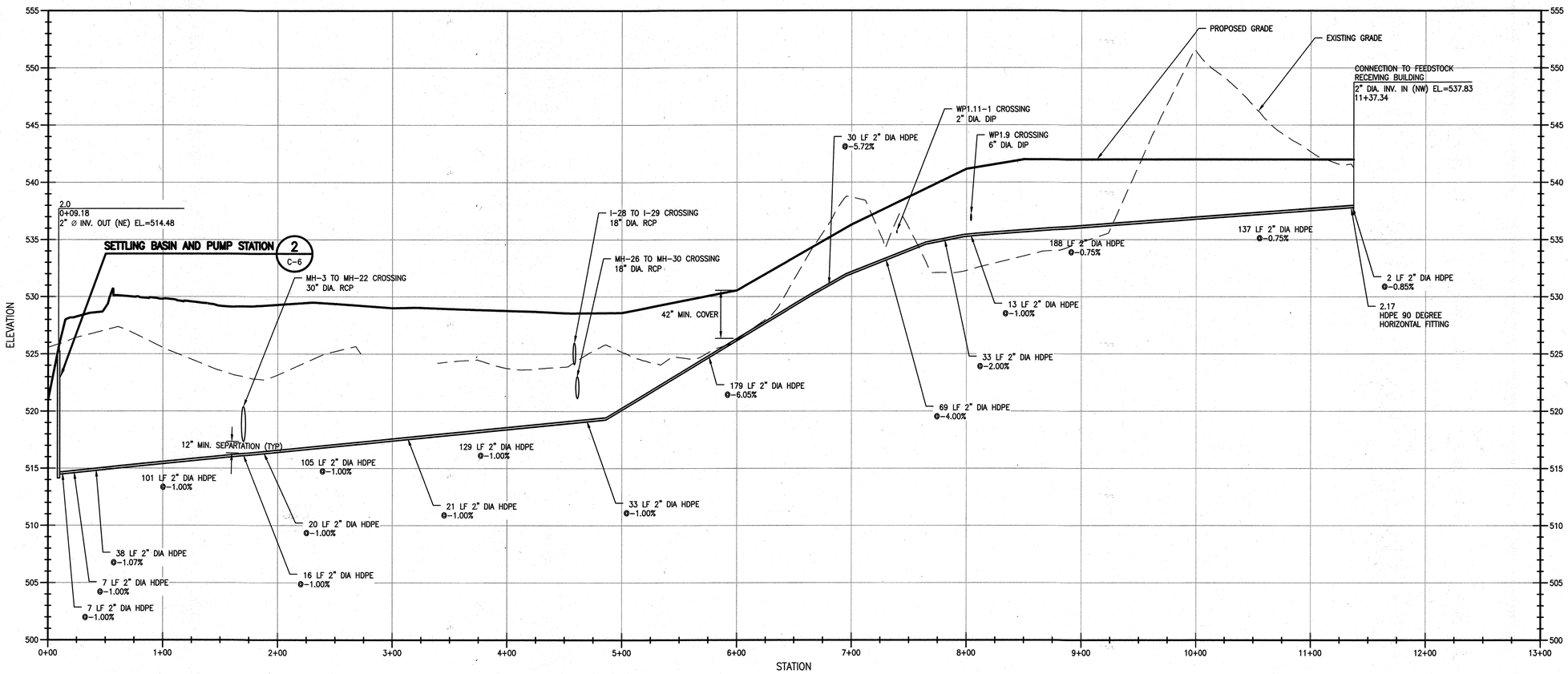
CONTACT WATER GRAVITY LINE PROFILE

COMPOST FACILITY – PHASE II AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 6 OF ~~44~~ 45
DRAWING: C-8
PROJECT: 14982.05
SHEET: ~~11 OF 70~~

~~NOT FOR CONSTRUCTION~~ SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035



B PRESSURE PIPE FROM CONTACT WATER LAGOON TO FEEDSTOCK RECEIVING BUILDING PROFILE

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'

50 25 0 50 100
GRAPHIC SCALE IN FEET
HORIZONTAL

5 2.5 0 5 10
GRAPHIC SCALE IN FEET
VERTICAL

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11-29-17

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12-5-17

GRID: 8 BLOCK: N/A
ZONING: RC-DEO PARCEL/LOT: 220, 253, 11, 23, 54
TAX MAP: 0016 ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL:
STATE OF MARYLAND — MARK STEVEN GUTBERLET — No. 23402 — PROFESSIONAL ENGINEER
10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	LO
DRN. BY:	JAP/LO
CHK. BY:	SMD
DATE:	OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TOTAL SHEET NUMBER DUE TO ADDITION OF SHEET 45	8/2022

CONTACT WATER PRESSURE LINE PROFILE I

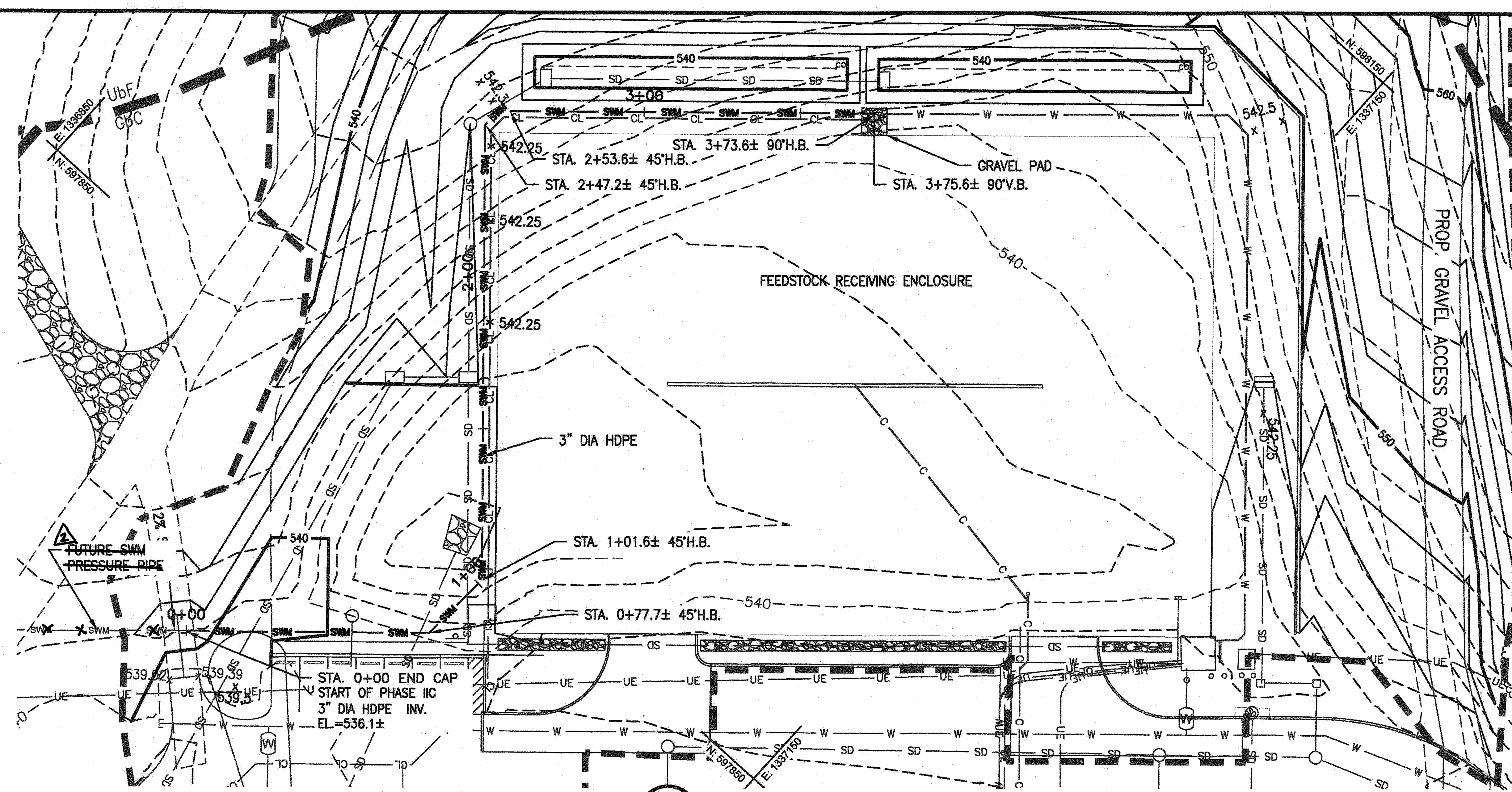
COMPOST FACILITY – PHASE II
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 7 OF ~~44~~ 45 (2)
DRAWING: C-9
PROJECT: 14982.05
SHEET: ~~12 OF 70~~

SDP-16-035

~~NOT FOR CONSTRUCTION — SITE DEVELOPMENT PLAN #SDP-16-035~~

FILE PATH: G:\PROJECTS\14982.05 - ARL COMPOST FACILITY\14982.05-DESIGN\LDWG [C-9 - CONTACT WATER PRESSURE LINE PROFILE I - (SDP-7)] 3/12/15

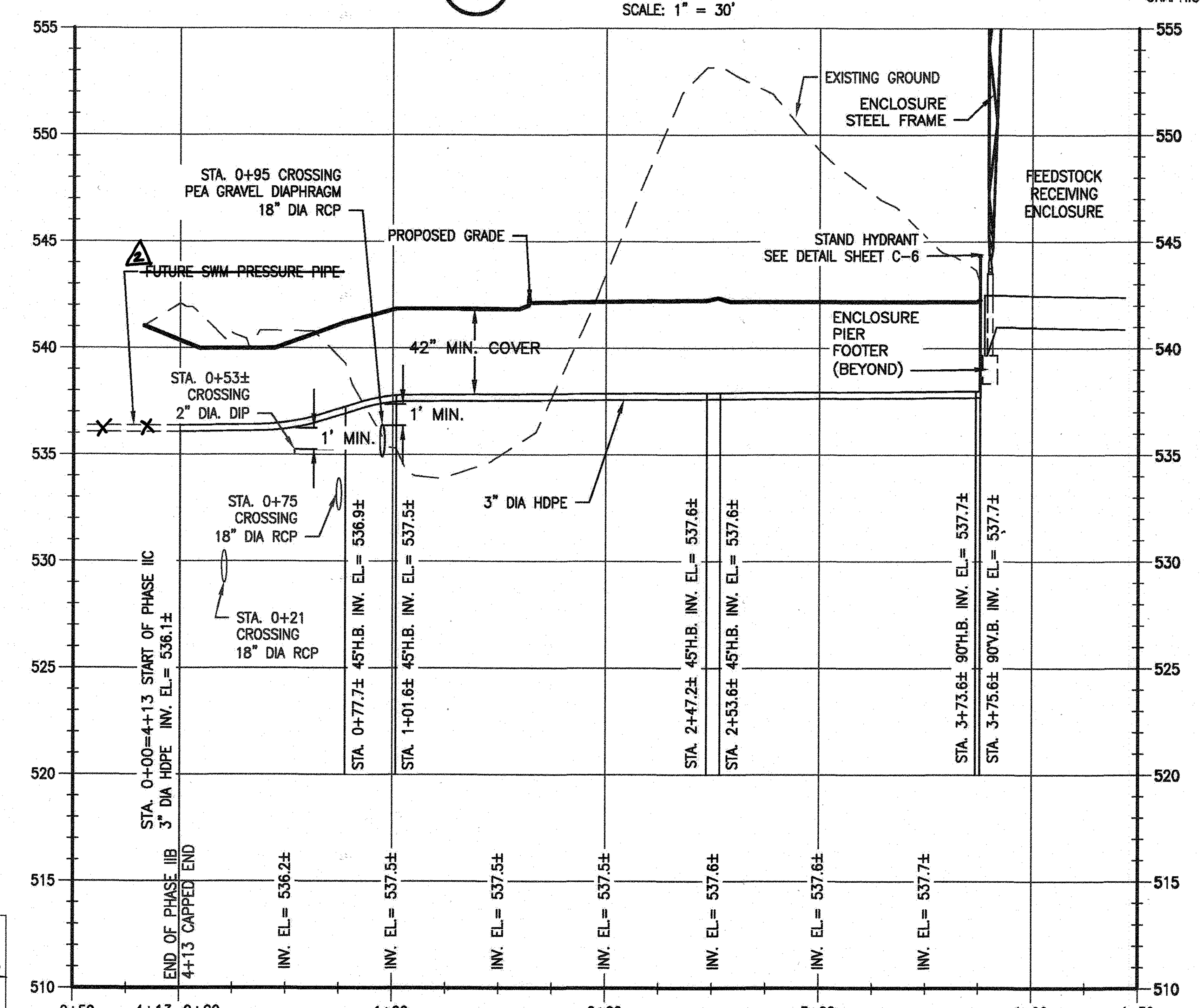


D SWM PRESSURE PIPE PLAN

SCALE: 1" = 30'

NOTE:

1. ALL SWM PRESSURE PIPE SHALL BE HDPE DR-17.
2. SWM PIPE SHOWN SHALL BE CONNECTED TO FUTURE SWM PIPE AT STA. 0+00. PROVIDE END CAP AND FIBERGLASS SIGN AND MARKER AT THIS LOCATION, FOR EASE OF FUTURE LOCATION AND CONNECTION.
3. TRACER WIRE SHALL BE PLACED FOR 3-IN DIA. HDPE PIPE FROM STA. 0+00 TO STA. 1+00.



D SWM PRESSURE PIPE PROFILE

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR	DATE 9-15-22
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 9.12.22
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 9/15/22

DIVISION CHIEF, BUREAU OF ENVIRONMENTAL SERVICES OPERATIONS — DATE 8/19/2022

SEAL: STATE OF MARYLAND — MARK JOSEPH GUIBERT — 23402 — PROFESSIONAL ENGINEER — 8/19/2022

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2022.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	RMC
DRN. BY:	JRG
CHK. BY:	SMD
DATE:	JUNE 2021

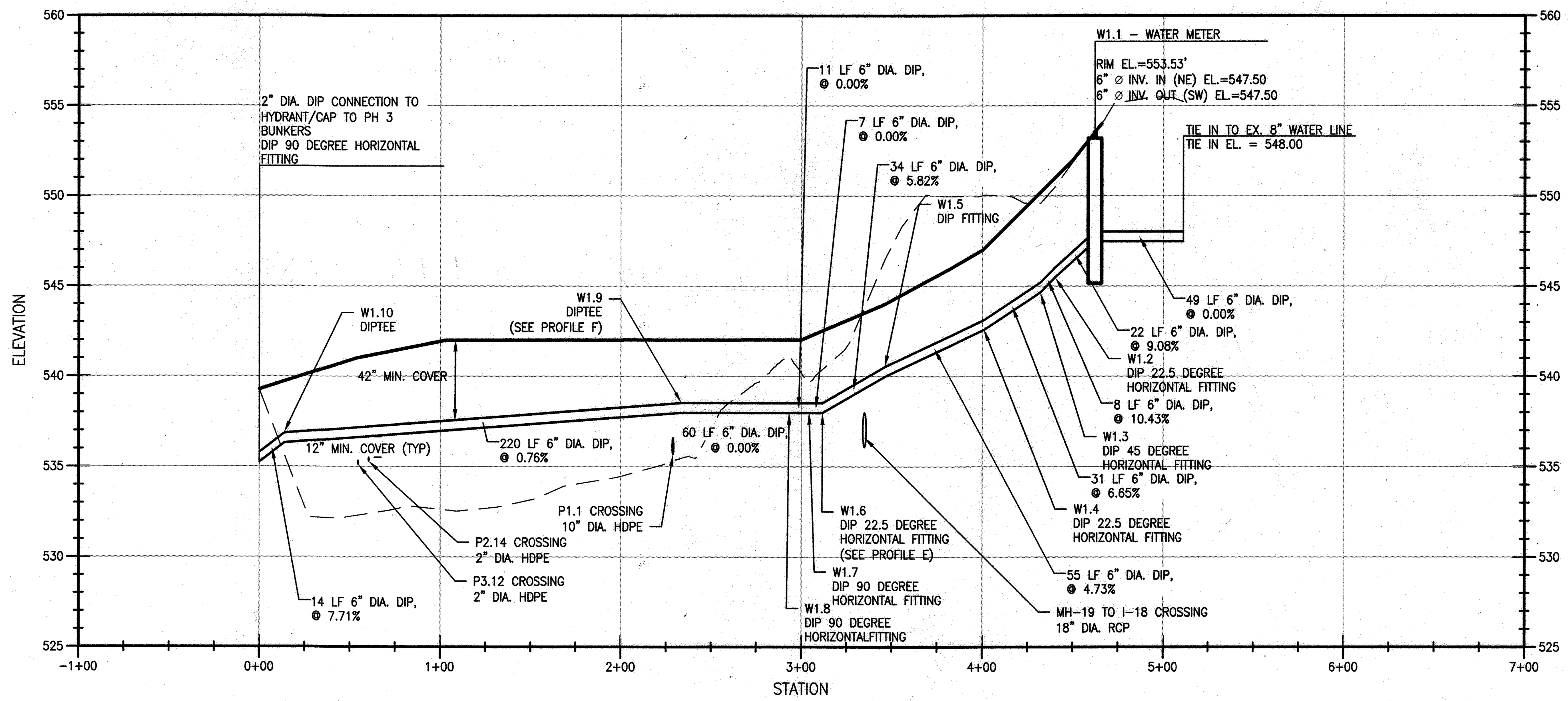
BY	NO.	REVISION	DATE
CVH	2	REPLACEMENT SHEET FROM PHASE IIC CONTRACT DRAWINGS TO SHOW DESIGN PHASE REVISIONS TO SWM PRESSURE PIPE ROUTING	8/2022

SWM PRESSURE PIPE
PLAN & PROFILE
(REPLACEMENT SHEET) 2

COMPOST FACILITY – PHASE IIC
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

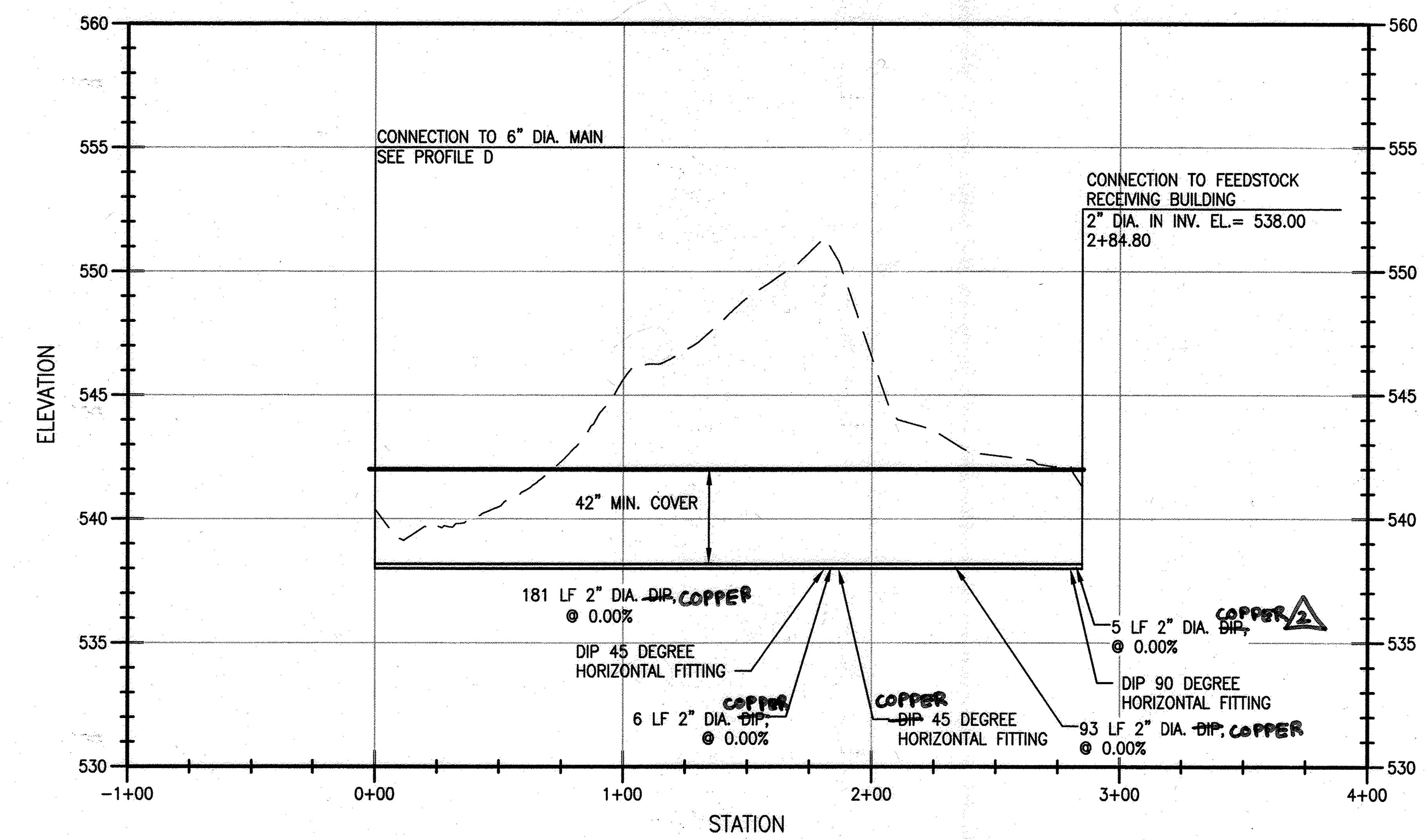
SDP SHEET: 8 OF 45
DRAWING: C-10
PROJECT: 1556408
SHEET: ~~8 OF 43~~

REVISED SITE DEVELOPMENT PLAN #SDP-16-035



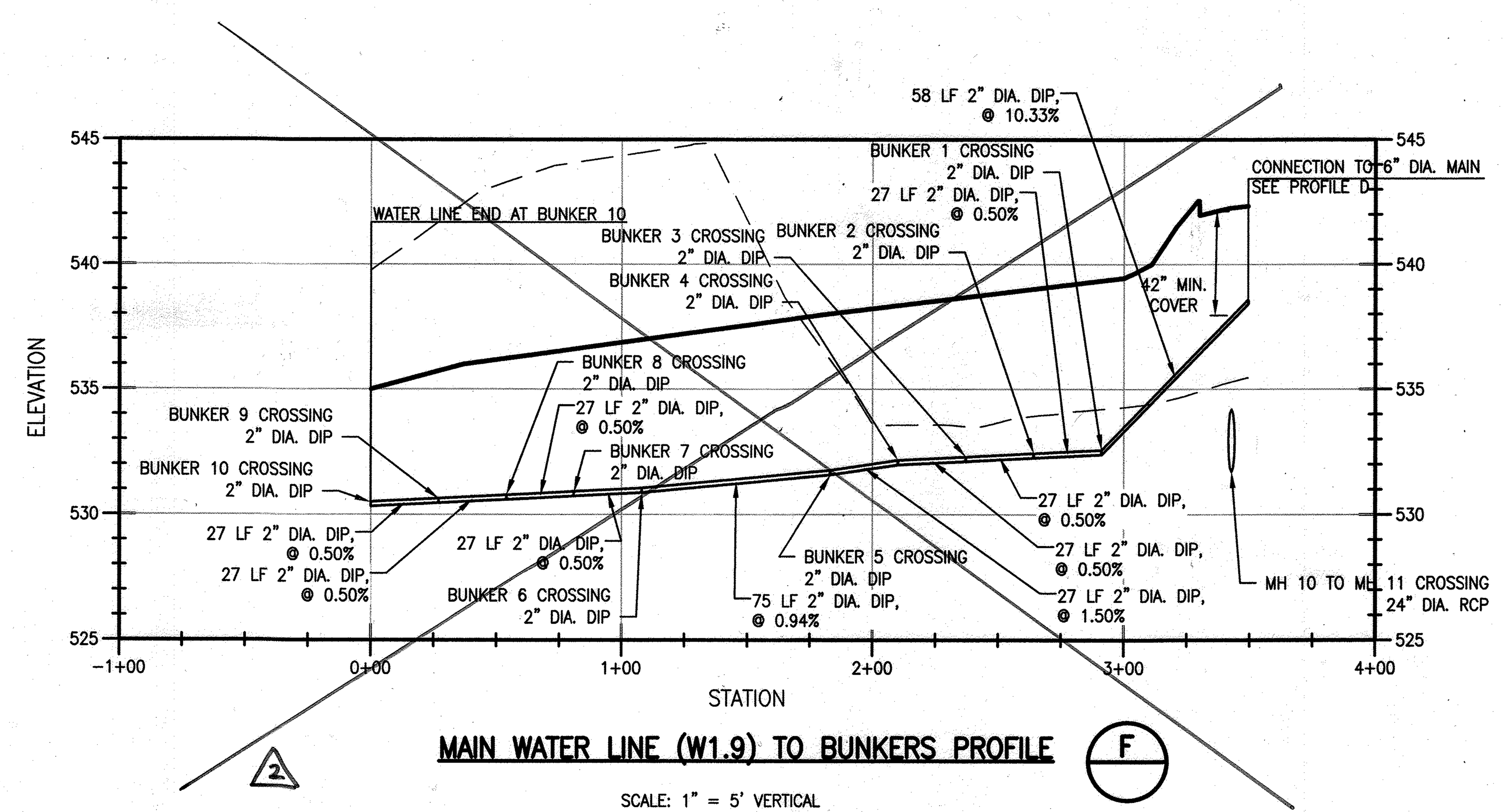
6 INCH DIA. MAIN WATER LINE PROFILE (D)

SCALE: 1" = 5' VERTICAL
1" = 50' HORIZONTAL



MAIN WATER LINE (1.6) TO FEEDSTOCK RECEIVING BUILDING PROFILE (E)

SCALE: 1" = 5' VERTICAL
1" = 50' HORIZONTAL



MAIN WATER LINE (W1.9) TO BUNKERS PROFILE (F)

SCALE: 1" = 5' VERTICAL
1" = 50' HORIZONTAL

GRAPHIC SCALE IN FEET HORIZONTAL (50 25 0 50 100)

GRAPHIC SCALE IN FEET VERTICAL (5 2.5 0 5 10)

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11-29-17

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12-5-17

GRID: 8 BLOCK: N/A
ZONING: RC-DEO PARCEL/LOT: 220, 253, 11, 23, 54
TAX MAP: 0016 ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: 10/4/17

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	LO
DRN. BY:	JAP/LO
CHK. BY:	SMD
DATE:	OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TO REFLECT PHASE IIA WATERLINE AS-BUILT CONDITIONS	8/2022

WATER LINE PROFILE

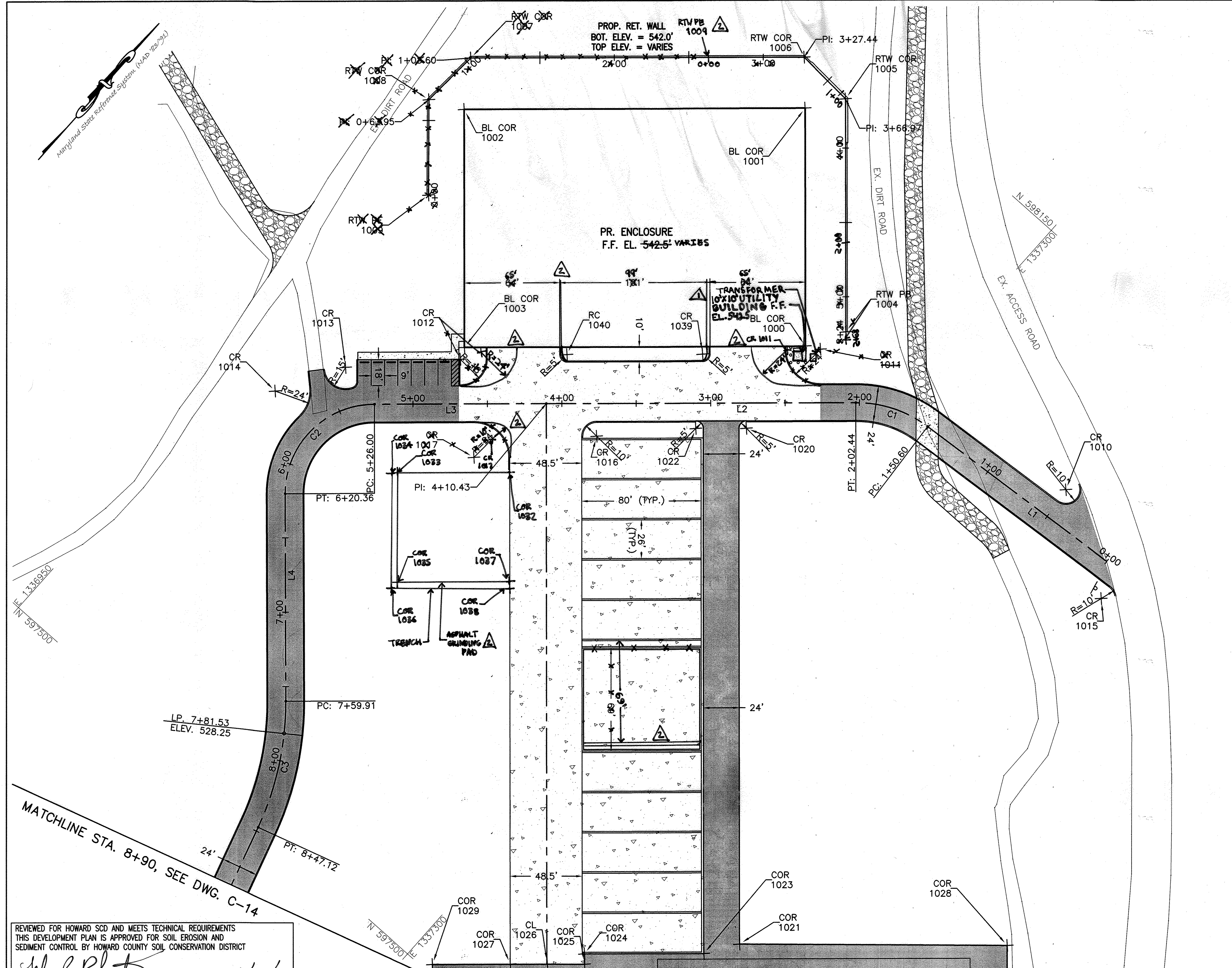
COMPOST FACILITY – PHASE II AT ALPHA RIDGE LANDFILL

HOWARD COUNTY, MARYLAND

SDP SHEET: 9 OF 45
DRAWING: C-11
PROJECT: 14982.05
SHEET: ~~14 OF 76~~

NOT FOR CONSTRUCTION – SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035



LAYOUT PLAN

SCALE: 1"=40'

POINT TABLE (2)				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
1000	542.~~50~~25	~~597982.07~~ 597983.15	~~1337228.23~~ 1337227.27	BL COR
1001	542.~~50~~25	598101.33	1337121.74	BL COR
1002	542.~~50~~25	597948.81	1336950.93	BL COR
1003	542.~~50~~25	~~597829.46~~ 597828.63	~~1337057.50~~ 1337056.46	BL COR
1004	542.00	~~598007.31~~ 598006.40	~~1337242.35~~ 1337247.61	RTW PB
1005	542.00	598124.~~08~~15	~~1337138.01~~ 1337137.94	RTW COR
1006	542.00	598126.~~38~~45	1337098.~~54~~48	RTW COR
~~1007~~	~~542.00~~	~~597977.55~~	~~1336931.34~~	~~RTW COR~~
~~1008~~	~~542.00~~	~~597937.99~~	~~1336928.86~~	~~RTW COR~~
1009	542.00	~~597890.02~~ 598084.07	~~1336971.15~~ 1337050.87	RTW PE

POINT TABLE			
POINT #	NORTHING	EASTING	DESCRIPTION
1021	597652.97	1337462.30	COR
1023	597632.34	1337448.55	COR
1024	597579.05	1337388.88	COR
1025	597573.80	1337393.56	COR
1026	597557.15	1337374.89	CL
1027	597540.57	1337356.20	COR
1028	597771.80	1337597.51	COR
1029	597505.73	1337317.27	COR
1032	597786.09	1337136.55	COR
1033	597736.14	1337080.61	COR
1034	597733.44	1337077.59	COR
1035	597680.20	1337130.56	COR
1036	597674.52	1337130.20	COR
1037	597730.00	1337186.34	COR
1038	597727.17	1337189.17	COR

(2)

POINT TABLE (2)			
POINT #	NORTHING	EASTING	DESCRIPTION
1010	598026.35	1337423.45	CR
1011	~~597987.36~~ 597972.32	~~1337237.32~~ 1337220.39	CR
1012	~~597821.70~~ 597826.23	~~1337060.81~~ 1337068.19	CR
1013	597766.40	1337006.67	CR
1014	597723.13	1336981.86	CR
1015	597987.58	1337489.69	CR
1016	597843.95	1337163.77	CR
1017	~~597778.52~~ 597798.29	~~1337111.55~~ 1337112.67	CR
1020	597325.28	1337235.40	CR
1022	597891.94	1337210.04	CR
1039	~~597932.30~~ 597931.48	~~1337180.17~~ 1337179.25	CR
1040	~~597871.69~~ 597872.33	~~1337112.30~~ 1337173.24	CR

LINE TABLE: DRIVEWAY				
LINE #	LENGTH	DIRECTION	START POINT	END POINT
L1	150.60'	S85° 21' 40"W	N 598008.53 E 1337475.90	N 597996.35 E 1337325.79
L2	207.60'	S48° 14' 10"W	N 597976.29 E 1337278.98	N 597837.75 E 1337123.83
L3	115.96'	S48° 14' 10"W	N 597837.75 E 1337123.83	N 597760.78 E 1337037.63
L4	139.55'	S41° 52' 30"E	N 597675.97 E 1337032.92	N 597572.06 E 1337126.06

CURVE TABLE: DRIVEWAY							
CURVE #	RADIUS	LENGTH	START POINT	END POINT	CHORD LENGTH	CHORD DIRECTION	DELTA ANGLE
C1	80.00'	51.84'	N 597996.35 E 1337325.79	N 597976.29 E 1337278.98	50.93'	S66° 47' 56"W	37.13
C2	60.00'	94.36'	N 597760.78 E 1337037.63	N 597675.97 E 1337032.92	84.93'	S3° 10' 52"W	90.11
C3	200.00'	87.22'	N 597572.06 E 1337126.06	N 597496.67 E 1337168.52	86.53'	S29° 22' 52"E	24.99

GRAPHIC SCALE IN FEET 40 20 0 40 80
1"=40'

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY HOWARD COUNTY SOIL CONSERVATION DISTRICT

HOWARD SCD 4/22/17 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR, DEPARTMENT OF PLANNING AND ZONING 12-12-17 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION 11-29-17 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 12-5-17 DATE

DHILLON ENGINEERING, INC.
10902 REISTERSTOWN ROAD, # 204
OWINGS MILLS, MD 21117

GRID: 8 BLOCK: N/A
ZONING: RC-DEO PARCEL/LOT: 220, 253, 11, 23, 54
TAX MAP: 0016 ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 8050, EXPIRATION DATE 08/19/2017.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY: LMB/MM
DRN. BY: MM
CHK. BY: AM
DATE: AUGUST, 2016

BY	NO.	REVISION	DATE
SMB	1	REVISED UTILITY BUILDING AND TRANSFORMER LOCATION	4/2018
CVH	2	REVISED TO REFLECT PHASE IIA AND PHASE IIB AS-BUILT CONDITIONS AND PHASE IIC DESIGN	8/2022

CIVIL LAYOUT PLAN I

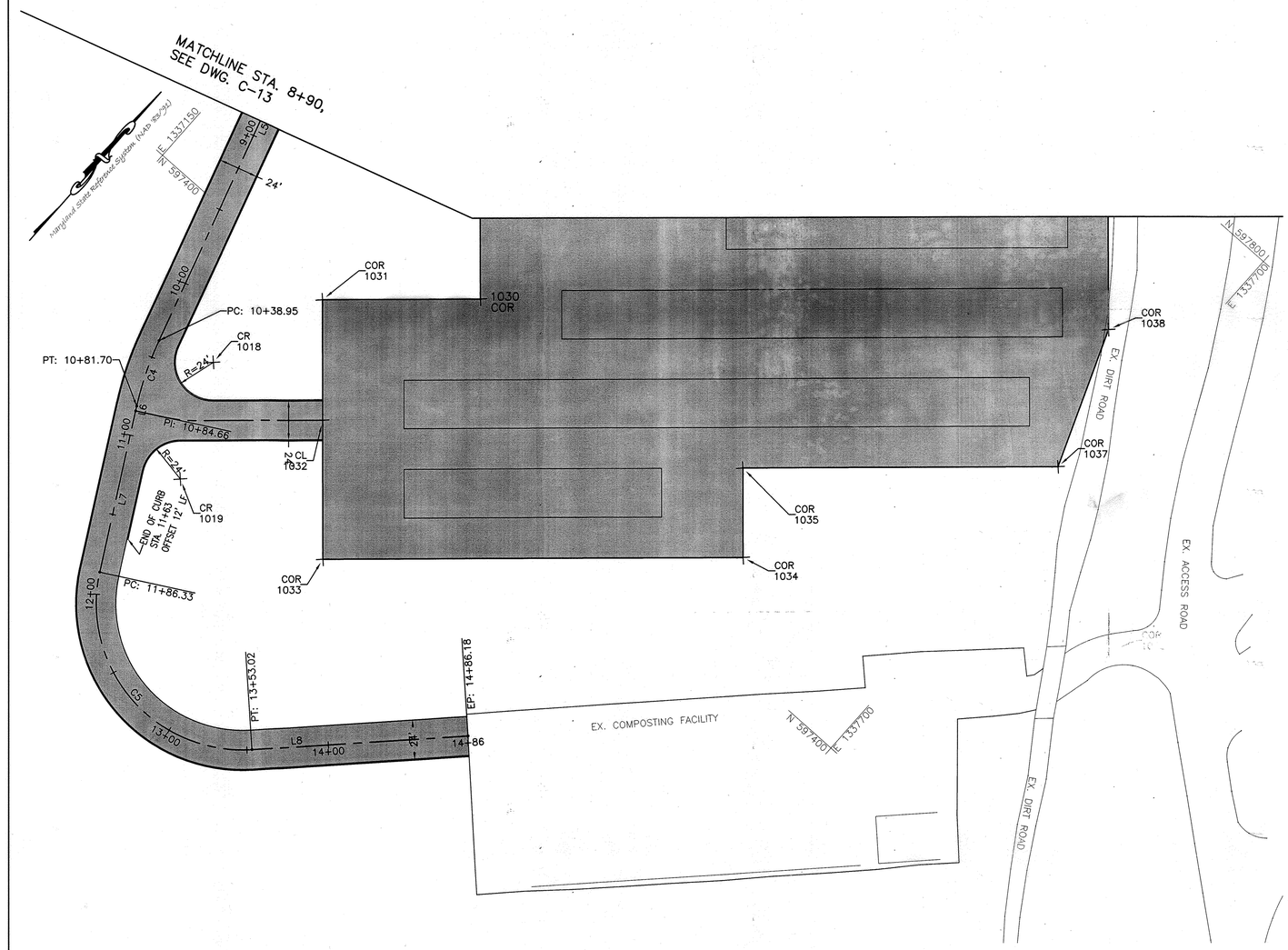
COMPOST FACILITY AT ALPHA RIDGE LANDFILL

HOWARD COUNTY, MARYLAND

SDP SHEET: 10 OF ~~44~~ 45
DRAWING: C-13
PROJECT: 14982.05
SHEET: ~~13 OF 70~~

NOT FOR CONSTRUCTION—SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035



LAYOUT PLAN
SCALE: 1"=40'

LINE TABLE: DRIVEWAY				
LINE #	LENGTH	DIRECTION	START POINT	END POINT
L5	191.83'	S16° 53' 20"E	N 597496.67 E 1337168.52	N 597313.11 E 1337224.24
L6	2.96'	S29° 08' 10"E	N 597273.84 E 1337240.92	N 597271.25 E 1337242.36
L7	101.67'	S29° 08' 10"E	N 597271.25 E 1337242.36	N 597182.45 E 1337291.87
L8	133.16'	N44° 44' 40"E	N 597162.91 E 1337434.40	N 597257.49 E 1337528.14

CURVE TABLE: DRIVEWAY							
CURVE #	RADIUS	LENGTH	START POINT	END POINT	CHORD LENGTH	CHORD DIRECTION	DELTA ANGLE
C4	200.00'	42.75'	N 597313.11 E 1337224.24	N 597273.84 E 1337240.92	42.67'	S23° 00' 45"E	12.25
C5	90.00'	166.69'	N 597182.45 E 1337291.87	N 597162.91 E 1337434.40	143.87'	S82° 11' 44"E	106.12

POINT TABLE			
POINT #	NORTHING	EASTING	DESCRIPTION
1018	597325.28	1337258.17	CR
1019	597258.02	1337290.96	CR

POINT TABLE			
POINT #	NORTHING	EASTING	DESCRIPTION
1030	597463.43	1337355.04	COR
1031	597398.68	1337282.54	COR
1032	597343.09	1337332.18	CL
1033	597279.30	1337389.14	COR
1034	597451.49	1337581.89	COR
1035	597492.51	1337545.26	COR
1037	597621.60	1337689.81	COR
1038	597705.38	1337656.82	COR

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY HOWARD COUNTY SOIL CONSERVATION DISTRICT

HOWARD SCD — DATE 11/22/17

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR, DEPARTMENT OF PLANNING AND ZONING — DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.29.17

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12-5-17

DHILLON ENGINEERING, INC.
10902 REISTERSTOWN ROAD, # 204
OWINGS MILLS, MD 21117

GRID: 8
ZONING: RC-DEO
TAX MAP: 0016
BLOCK: N/A
PARCEL/LOT: 220, 253, 11, 23, 54
ELECTION DISTRICT: 3-02

SEAL: STATE OF MARYLAND — MARK STEVEN GUTBERLET — No. 8050 — REGISTERED PROFESSIONAL ENGINEER

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 8050, EXPIRATION DATE 08/19/2017.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY®

DSN. BY: LMB/MM
DRN. BY: MM
CHK. BY: AM
DATE: AUGUST, 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TOTAL NUMBER OF SHEETS TO REFLECT ADDITION OF SHEET 45	8/2022

CIVIL LAYOUT PLAN II

COMPOST FACILITY
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

40 20 0 40 80
GRAPHIC SCALE IN FEET
1"=40'

SDP SHEET: 45 — 11 OF ~~44~~ 45
DRAWING: C-14
PROJECT: 14982.05
SHEET: ~~14 OF 70~~

~~NOT FOR CONSTRUCTION~~ - SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035

N

N: 598400
E: 1336750

N: 598400
E: 1337800

EX. TRADITIONAL WINDROW COMPOSTING AREA

EX. GRAVEL ACCESS ROAD

EX. GRAVEL ACCESS ROAD

EX. COW BARN

BASE A

LIMIT OF FIELD RUN TOPO

EX. ASPHALT ROAD

PR. BORROW STOCKPILE AREA FOR CONSTRUCTION

19 ES-7 SUPER SILT FENCE
LENGTH = 174 FT.
SLOPE = 1.7%
SLOPE LENGTH = 153 FT.

32 ES-10 PIPE SLOPE DRAIN

37 ES-10 ROCK OUTLET PROTECTION III
Q_{10} = 5.7 CFS
V_{10} = 9.5 FT/SEC
12'L x 13.5'W x 19"D
CLASS I RIPRAP
UNDERLAIN BY GEOTEXTILE

19 ES-7 SUPER SILT FENCE
LENGTH = 437 FT.
SLOPE = 1.3%
SLOPE LENGTH = 412 FT.

17 ES-7 EARTH DIKE
D.A. = 2.13 AC
SLOPE = 0.9%

33 ES-10 MOUNTABLE BERM

18" CMP

DIVERSION FENCE 18 ES-7
D.A. = 0.88 AC
LENGTH = 355 FT.
SLOPE = 3.1%

STOCKPILE AREA
MAX HEIGHT = 20-FT
MAX SIDE SLOPE = 2H:1V

19 ES-7 SUPER SILT FENCE

STABILIZED CONSTRUCTION ENTRANCE 16 ES-7

TREE PROTECTION 35 ES-10

STABILIZED CONSTRUCTION ENTRANCE 16 ES-7

SPECIMEN TREE OFFSET

EX. SOLID WASTE TRANSFER FACILITY

EX. OAK SPECIMEN TREE

LIMIT OF FIELD RUN TOPO

EX. ASPHALT ROAD

19 ES-7 SUPER SILT FENCE
LENGTH = 80 FT.
SLOPE = 28.6%
SLOPE LENGTH = 7 FT.

17 ES-7 EARTH DIKE
D.A. = 1.69 AC
SLOPE = 2.9%

EX. GRAVEL ACCESS ROAD

17 ES-7 EARTH DIKE
D.A. = 0.22 AC
SLOPE = 9.1%

EX. DITCH

EX. TREE TO BE REMOVED (TYP. OF 2)

EARTH DIKE 17 ES-7
D.A. = 0.68 AC
SLOPE = 8.6%

PERMANENT SLOPE STABILIZATION MATTING 36 ES-10
D.A. = 4.66 AC
SHEAR STRESS = 2.9 LB/FT²
SEE NOTE 1

19 ES-7 SUPER SILT FENCE
LENGTH = 58 FT.
SLOPE = 30.0%
SLOPE LENGTH = 10 FT.

19 ES-7 SUPER SILT FENCE
LENGTH = 135 FT.
SLOPE = 33.3%
SLOPE LENGTH = 9 FT.

MOUNTABLE BERM 33 ES-10

30 ES-9 SILT FENCE
LENGTH = 266 FT.
SLOPE = 9.3%
SLOPE LENGTH = 70 FT.

N: 597600
E: 1336750

MATCHLINE - SEE SHEET ES-2

BENCHMARK INFORMATION

1. HOWARD COUNTY SURVEY CONTROL: BASE A
   ELEVATION 564.733 US FT
   N 598,156.281 E 1,336,841.785
2. HOWARD COUNTY SURVEY CONTROL: BASE F
   ELEVATION 512.817 US FT
   N 597,030.549 E 1,338,031.404

THE SYSTEM OF COORDINATES USED BY HOWARD COUNTY IS BASED ON THE FOLLOWING DATUMS AND PROJECTIONS:
- HORIZONTAL: MARYLAND NAD83
- VERTICAL: NAVD88

BENCHMARK LOCATIONS PROVIDED ON PROJECT ACCESS INSET.

DATA SOURCES

1. THE EXISTING TOPOGRAPHY AND UTILITIES INSIDE OF THE 'LIMIT OF FIELD RUN TOPO', UNLESS OTHERWISE MENTIONED, HAVE BEEN PROVIDED FROM A FIELD RUN SURVEY BY THE HOWARD COUNTY SURVEY DIVISION IN AUGUST 2011.
2. ALL INFORMATION LOCATED OUTSIDE OF THE LIMIT OF FIELD RUN TOPO LINE HAS BEEN TAKEN FROM THE HOWARD COUNTY GIS DATABASE.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.29.17

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12.5.17

NOTES:

1. PERMANENT SLOPE STABILIZATION MATTING (PSSMC) MUST WITHSTAND THE SHEAR STRESS SHOWN ON THE PLANS.

SITE PLAN
SCALE: 1" = 50'
0 25 50 100
GRAPHIC SCALE IN FEET

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD SCD — DATE 11/22/17

SDP SHEET:	DRAWING:
45 12 OF 14 (2)	ES-1

GRID: 8
ZONING: RC-DEO
TAX MAP: 0016
BLOCK: N/A
PARCEL/LOT: 220, 253, 11, 23, 54
ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — MARK BRADLEY GUTBERLET — No. 23407 — PROFESSIONAL ENGINEER
10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY: MBS/MP
DRN. BY: JAP/KEJ
CHK. BY: SMD
DATE: OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED LOD FOR PHASE IIB AND PHASE IIC CONSTRUCTION	8/2022

EROSION AND SEDIMENT CONTROL PLAN - INITIAL I
(2) (PHASES IIA AND IIB)

COMPOST FACILITY - PHASE II
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

PROJECT: 14982.05
SHEET: ~~21 OF 70~~

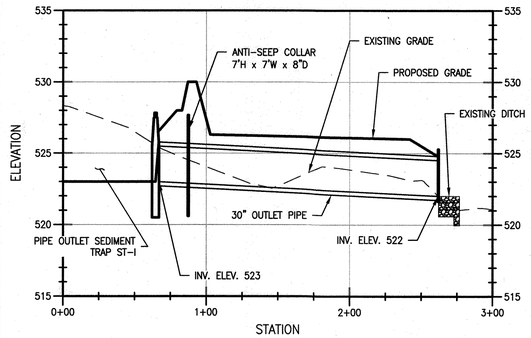
~~NOT FOR CONSTRUCTION - SITE DEVELOPMENT PLAN #SDP-16-035~~

SDP-16-035

FILE PATH: Q:\PROJECTS\14982005 - ARL COMPOST FACILITY\14982005-01\PROP\DWG [ES-1 - ESC PLAN - INITIAL I - (SDP-12)] 3/13/15

NOTES:

1. SEE DRAWING ES-8 FOR SEDIMENT TRAP TABLE.
2. PERMANENT SLOPE STABILIZATION MATTING (PSSMC) MUST WITHSTAND THE SHEAR STRESS SHOWN ON THE PLANS.

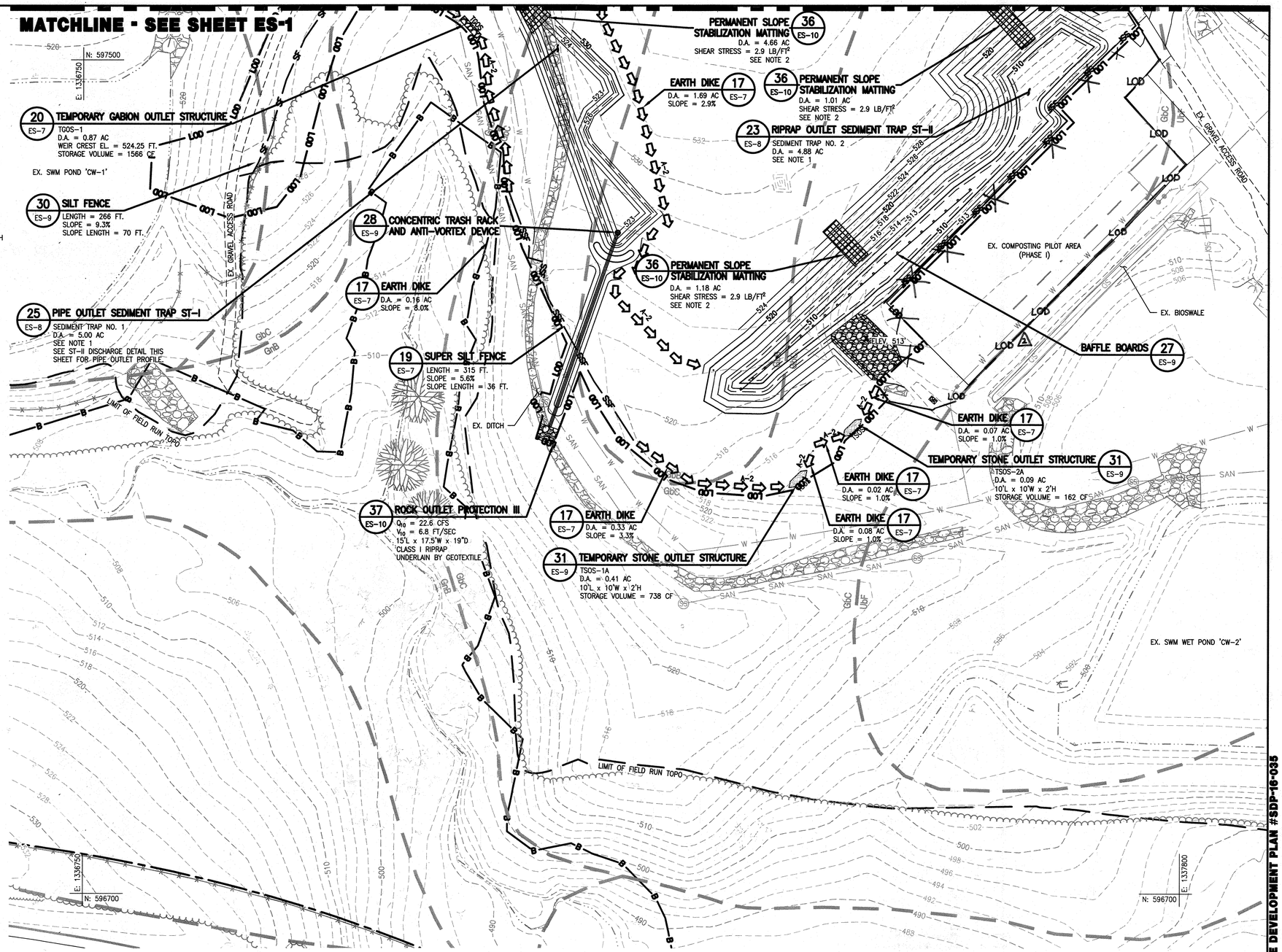


ST-II DISCHARGE DETAIL

SCALE: 1" = 50' HORIZONTAL
1" = 5' VERTICAL

0 25 50 100
GRAPHIC SCALE IN FEET HORIZONTAL

0 2.5 5 10
GRAPHIC SCALE IN FEET VERTICAL



SITE PLAN

SCALE: 1" = 50'

0 25 50 100
GRAPHIC SCALE IN FEET

BENCHMARK INFORMATION

1. HOWARD COUNTY SURVEY CONTROL: BASE A
   ELEVATION 564.733 US FT
   N 598,156.281 E 1,336,841.785
2. HOWARD COUNTY SURVEY CONTROL: BASE F
   ELEVATION 512.817 US FT
   N 597,030.549 E 1,338,031.404

THE SYSTEM OF COORDINATES USED BY HOWARD COUNTY IS BASED ON THE FOLLOWING DATUMS AND PROJECTIONS:
- HORIZONTAL: MARYLAND NAD83
- VERTICAL: NAVD88

BENCHMARK LOCATIONS PROVIDED ON PROJECT ACCESS INSET.

DATA SOURCES

1. THE EXISTING TOPOGRAPHY AND UTILITIES INSIDE OF THE 'LIMIT OF FIELD RUN TOPO', UNLESS OTHERWISE MENTIONED, HAVE BEEN PROVIDED FROM A FIELD RUN SURVEY BY THE HOWARD COUNTY SURVEY DIVISION IN AUGUST 2011.
2. ALL INFORMATION LOCATED OUTSIDE OF THE LIMIT OF FIELD RUN TOPO LINE HAS BEEN TAKEN FROM THE HOWARD COUNTY GIS DATABASE.

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SCD — DATE 4/22/17

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11-29-17

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12-5-17

GRID: 8 BLOCK: N/A
ZONING: RC-DEO PARCEL/LOT: 220, 253, 11, 23, 54
TAX MAP: 0016 ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — MARK BRIAN GUTBERLET — No. 23402 — PROFESSIONAL ENGINEER
10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	MBS/MP
DRN. BY:	JAP/KEJ
CHK. BY:	SMD
DATE:	OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED LOD FOR PHASE IIB CONSTRUCTION	8/2022

EROSION AND SEDIMENT CONTROL PLAN – INITIAL II
2 (PHASES IIA AND IIB)

COMPOST FACILITY – PHASE II AT ALPHA RIDGE LANDFILL

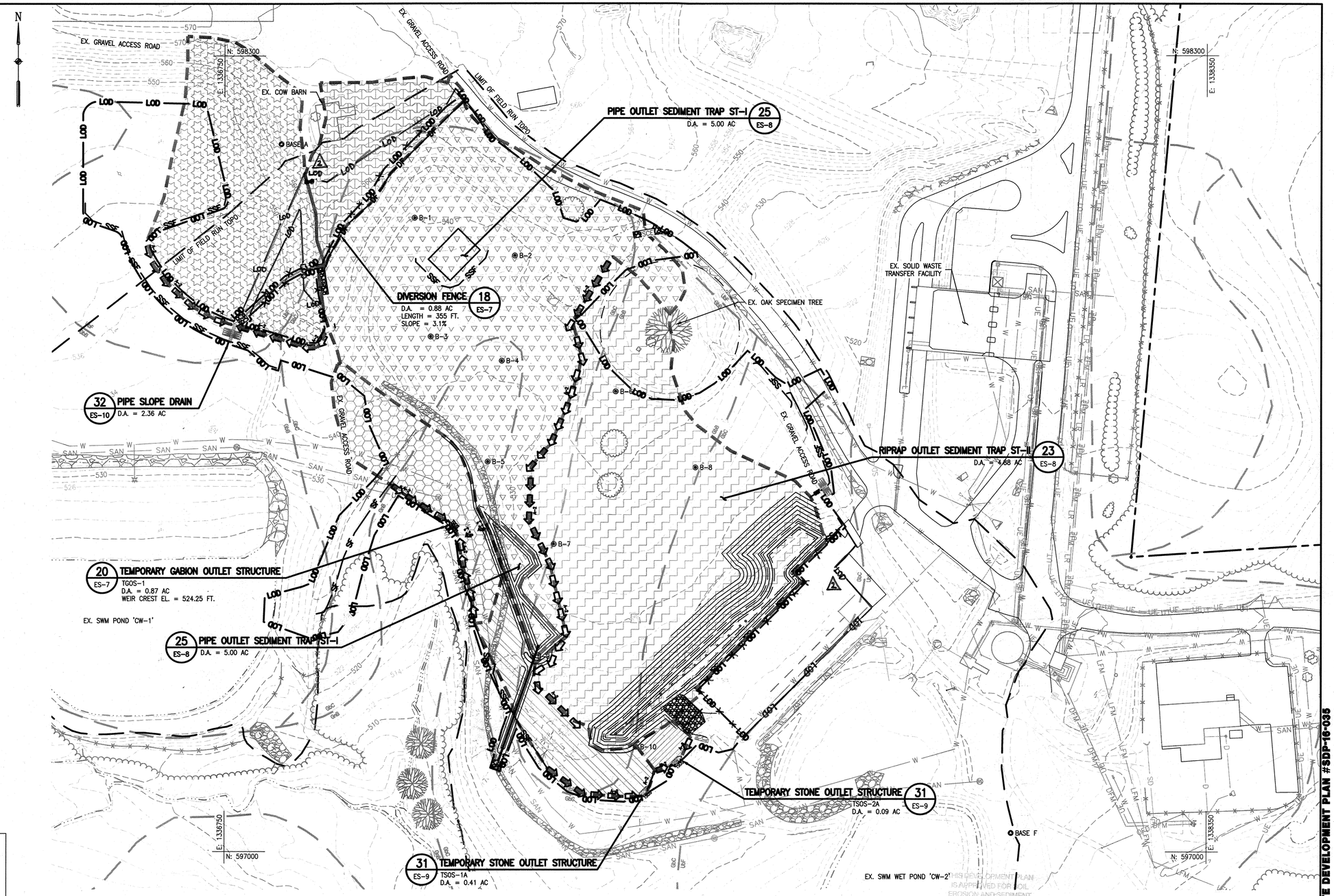
HOWARD COUNTY, MARYLAND

SDP SHEET: 13 OF 45 2
DRAWING: ES-2
PROJECT: 14982.05
SHEET: 25 OF 70

NOT FOR CONSTRUCTION - SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035

FILE PATH: Q:\PROJECTS\14982005 - ARL COMPOST FACILITY\14982005-ESPROPOSING [ES-2 - ESC PLAN - INITIAL II - (SDP-13)] 3/13/15



DRAINAGE AREA MAP

SCALE: 1" = 80'

0 40 80 160

GRAPHIC SCALE IN FEET

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.29.17

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12-5-17

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Approved: Howard SCD — 11/22/17

GRID: 8
ZONING: RC-DEO
TAX MAP: 0016

BLOCK: N/A
PARCEL/LOT: 220, 253, 11, 23, 54
ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — MARK JOSEPH GUTBERLET — No. 23401 — PROFESSIONAL ENGINEER — 10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	MBS/MP
DRN. BY:	JAP/KEJ
CHK. BY:	SMD
DATE:	OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED LOD FOR PHASE II & AND IIC CONSTRUCTION	8/2022

EROSION AND SEDIMENT CONTROL PLAN – INITIAL DRAINAGE AREA MAP

COMPOST FACILITY – PHASE II AT ALPHA RIDGE LANDFILL

HOWARD COUNTY, MARYLAND

SDP SHEET: 45 — 14 OF 14 — 2
DRAWING: ES-3
PROJECT: 14982.05
SHEET: 28 OF 70

-NOT FOR CONSTRUCTION – SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035

FILE PATH: G:\PROJECTS\14982005-ARL COMPOST FACILITY\14982005-02DWG\ES-3 - ESC PLAN - INITIAL DRAINAGE AREA MAP - (SDP-16)] 3/13/15

BENCHMARK INFORMATION

1. HOWARD COUNTY SURVEY CONTROL: BASE A
   ELEVATION 564.733 US FT
   N 598,156.281 E 1,336,841.785

2. HOWARD COUNTY SURVEY CONTROL: BASE F
   ELEVATION 512.817 US FT
   N 597,030.549 E 1,338,031.404

THE SYSTEM OF COORDINATES USED BY HOWARD COUNTY IS BASED ON THE FOLLOWING DATUMS AND PROJECTIONS:
- HORIZONTAL: MARYLAND NAD83
- VERTICAL: NAVD88

BENCHMARK LOCATIONS PROVIDED ON PROJECT ACCESS INSET.

DATA SOURCES

1. THE EXISTING TOPOGRAPHY AND UTILITIES INSIDE OF THE 'LIMIT OF FIELD RUN TOPO', UNLESS OTHERWISE MENTIONED, HAVE BEEN PROVIDED FROM A FIELD RUN SURVEY BY THE HOWARD COUNTY SURVEY DIVISION IN AUGUST 2011.
2. ALL INFORMATION LOCATED OUTSIDE OF THE LIMIT OF FIELD RUN TOPO LINE HAS BEEN TAKEN FROM THE HOWARD COUNTY GIS DATABASE.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR	DATE 12-12-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 11-29-17
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 12-5-17

SITE PLAN

SCALE: 1" = 50'

0 25 50 100
GRAPHIC SCALE IN FEET

NOTES:

1. SEE DRAWING ES-8 FOR SEDIMENT TRAP TABLE.
2. EROSION AND SEDIMENT CONTROLS INSTALLED DURING INITIAL PHASE ARE SHOWN AS EXISTING IN FINAL PHASE.

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD SCD — DATE 11/22/17

GRID: 8 — BLOCK: N/A
ZONING: RC-DEO — PARCEL/LOT: 220, 253, 11, 23, 54
TAX MAP: 0016 — ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — MARK GUTBERLET — No. 23402 — PROFESSIONAL ENGINEER — 10/4/17

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

		BY	NO.	REVISION	DATE
DSN. BY:	MBS/MP	SMB	2	REVISED UTILITY BUILDING AND TRANSFORMER LOCATION	4/2018
DRN. BY:	JAP/KEJ	CVH	2	REVISED TO REFLECT PHASE IIA AND IIB AS-BUILT CONDITIONS AND PHASE IIC DESIGN	8/2022
CHK. BY:	SMD				
DATE:	OCT. 2016				

EROSION AND SEDIMENT CONTROL PLAN - FINAL I

COMPOST FACILITY - PHASE II
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

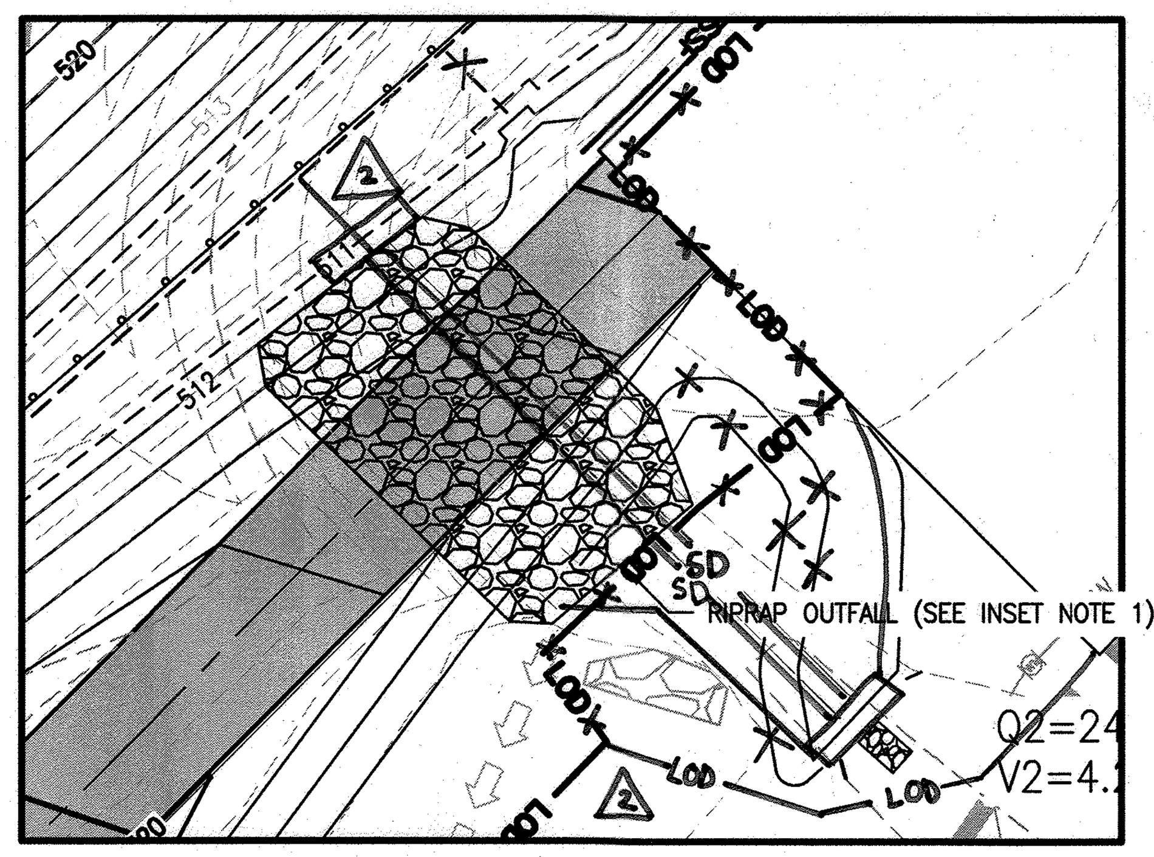
SDP SHEET: 15 OF 45 (~~44~~)
DRAWING: ES-4
PROJECT: 14982.05
SHEET: ~~27 OF 70~~

NOT FOR CONSTRUCTION - SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035

NOTES:

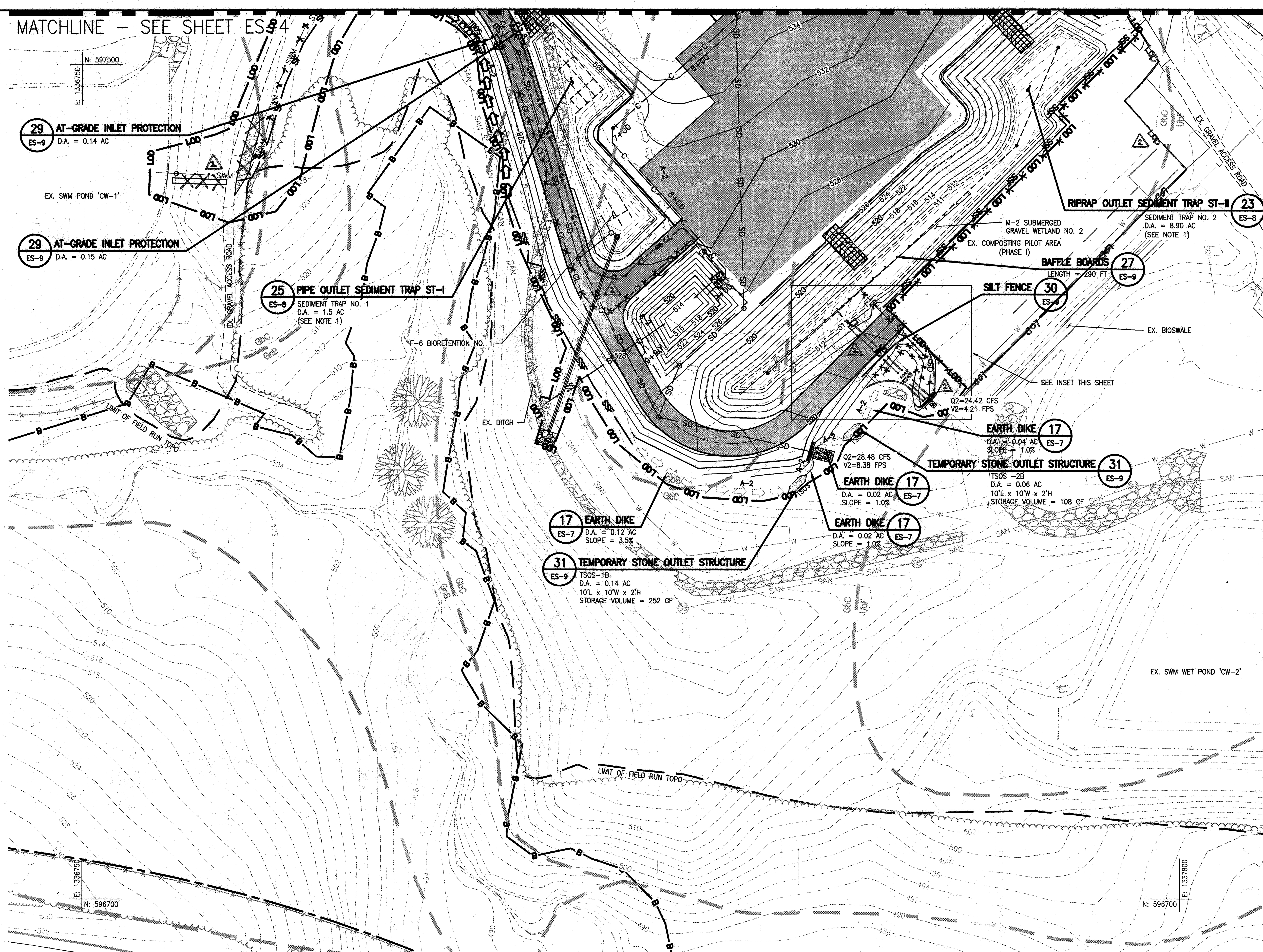
1. SEE DRAWING ES-8 FOR SEDIMENT TRAP TABLE.
2. EROSION AND SEDIMENT CONTROLS INSTALLED DURING INITIAL PHASE ARE SHOWN AS EXISTING IN FINAL PHASE.



INSET
SCALE: 1" = 30'
0 15 30 60
GRAPHIC SCALE IN FEET

INSET NOTES:

1. REMOVE RIPRAP OUTFALL BEFORE COMPLETION OF THE ROAD.



SITE PLAN
SCALE: 1" = 50'
0 25 50 100
GRAPHIC SCALE IN FEET

BENCHMARK INFORMATION

1. HOWARD COUNTY SURVEY CONTROL: BASE A
ELEVATION 564.733 US FT
N 598,156.281 E 1,336,841.785
2. HOWARD COUNTY SURVEY CONTROL: BASE F
ELEVATION 512.817 US FT
N 597,030.549 E 1,338,031.404

THE SYSTEM OF COORDINATES USED BY HOWARD COUNTY IS BASED ON THE FOLLOWING DATUMS AND PROJECTIONS:
- HORIZONTAL: MARYLAND NAD83
- VERTICAL: NAVD88

BENCHMARK LOCATIONS PROVIDED ON PROJECT ACCESS INSET.

DATA SOURCES

1. THE EXISTING TOPOGRAPHY AND UTILITIES INSIDE OF THE 'LIMIT OF FIELD RUN TOPO', UNLESS OTHERWISE MENTIONED, HAVE BEEN PROVIDED FROM A FIELD RUN SURVEY BY THE HOWARD COUNTY SURVEY DIVISION IN AUGUST 2011.
2. ALL INFORMATION LOCATED OUTSIDE OF THE LIMIT OF FIELD RUN TOPO LINE HAS BEEN TAKEN FROM THE HOWARD COUNTY GIS DATABASE.

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SCD — DATE 11/22/17

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11-29-17

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12-5-17

GRID: 8	BLOCK: N/A
ZONING: RC-DEO	PARCEL/LOT: 220, 253, 11, 23, 54
TAX MAP: 0016	ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND MARK JOSEPH GUTBERLET No. 23402 PROFESSIONAL ENGINEER 10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	MBS/MP
DRN. BY:	JAP/KEJ
CHK. BY:	SMD
DATE:	OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TO REFLECT PHASE II A AND PHASE II B AS-BUILT CONDITIONS AND LOD	8/2022

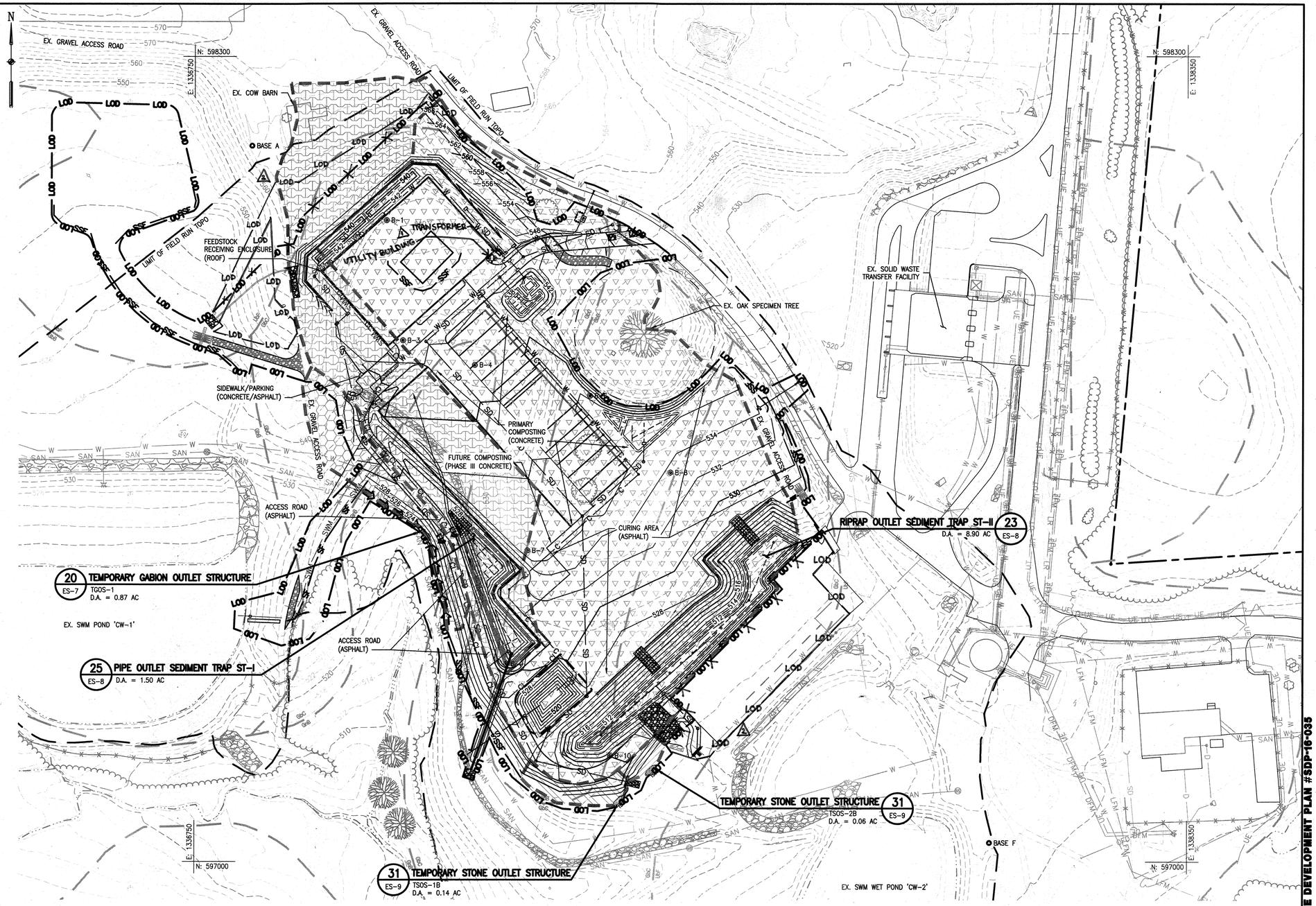
EROSION AND SEDIMENT CONTROL PLAN - FINAL II

COMPOST FACILITY - PHASE II AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 16 OF ~~44~~ 45	DRAWING: ES-5
	PROJECT: 14982.05
	SHEET: ~~28 OF 70~~

SDP-16-035

NOT FOR CONSTRUCTION - SITE DEVELOPMENT PLAN #SDP-16-035



DRAINAGE AREA MAP

SCALE: 1" = 80'

0 40 80 160

GRAPHIC SCALE IN FEET

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR	DATE 12-12-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 11.29.17
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 12-5-17

GRID: 8 BLOCK: N/A
ZONING: RC-DEO PARCEL/LOT: 220, 253, 11[illegible]23, 54
TAX MAP: 0016 ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL:

STATE OF MARYLAND — MARK STEVEN GUTBERLET — No. 23402 — PROFESSIONAL ENGINEER

10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE AND TECHNOLOGY

DSN. BY: MBS/MP
DRN. BY: JAP/KEJ
CHK. BY: SMD
DATE: OCT. 2016

BY	NO.	REVISION	DATE
SMB	1	REVISED UTILITY BUILDING AND TRANSFORMER LOCATION	4/2018
CVH	2	REVISED LOD FOR PHASE IIB AND PHASE IIC CONSTRUCTION	8/2022

EROSION AND SEDIMENT CONTROL PLAN – FINAL DRAINAGE AREA MAP

COMPOST FACILITY – PHASE II AT ALPHA RIDGE LANDFILL

HOWARD COUNTY, MARYLAND

SDP SHEET: 17 OF 45 (2)
DRAWING: ES-6
PROJECT: 14982.05
SHEET: ~~29 OF 70~~

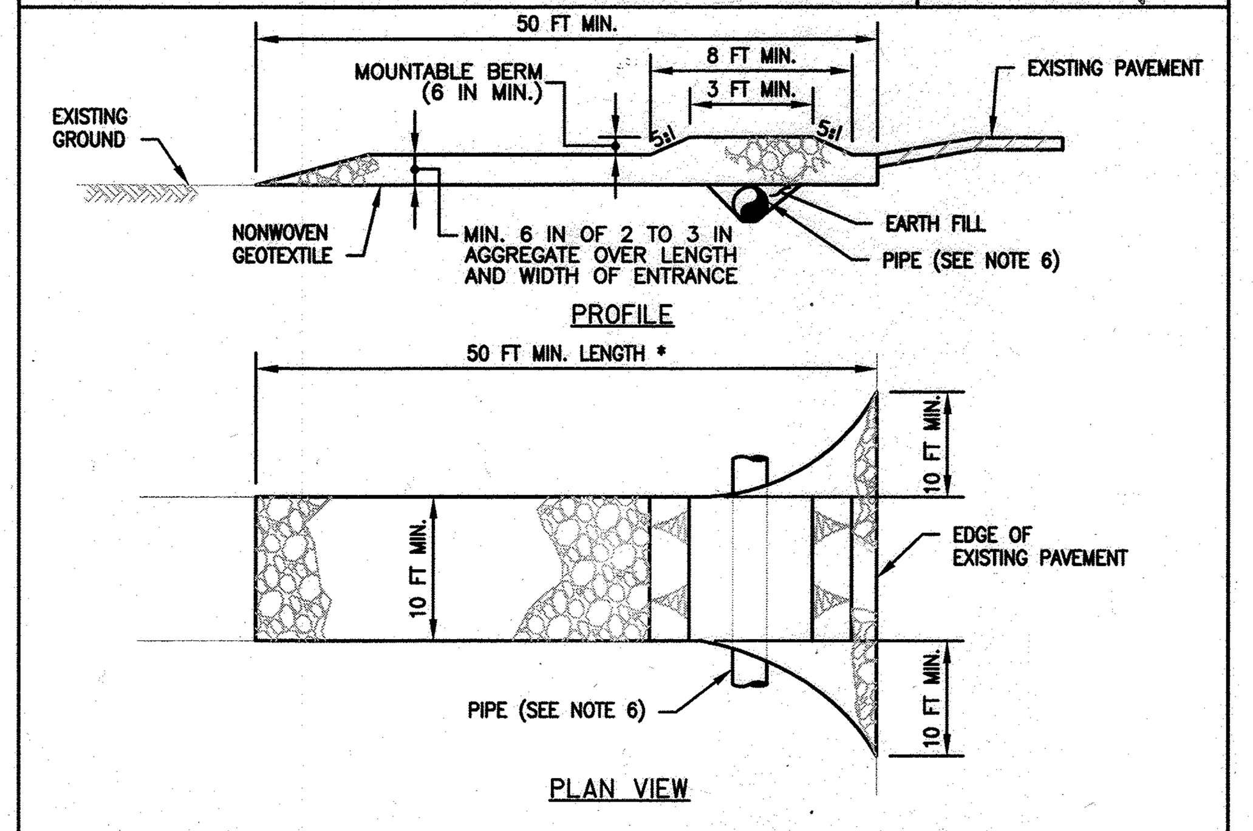
~~NOT FOR CONSTRUCTION~~ -- SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035

FILE PATH: Q:\PROJECTS\14982005 - ARL COMPOST FACILITY\14982005-DRAWINGS\ [ES-6 - ESC PLAN - FINAL DRAINAGE AREA MAP - (SDP-17)] 3/12/15

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.

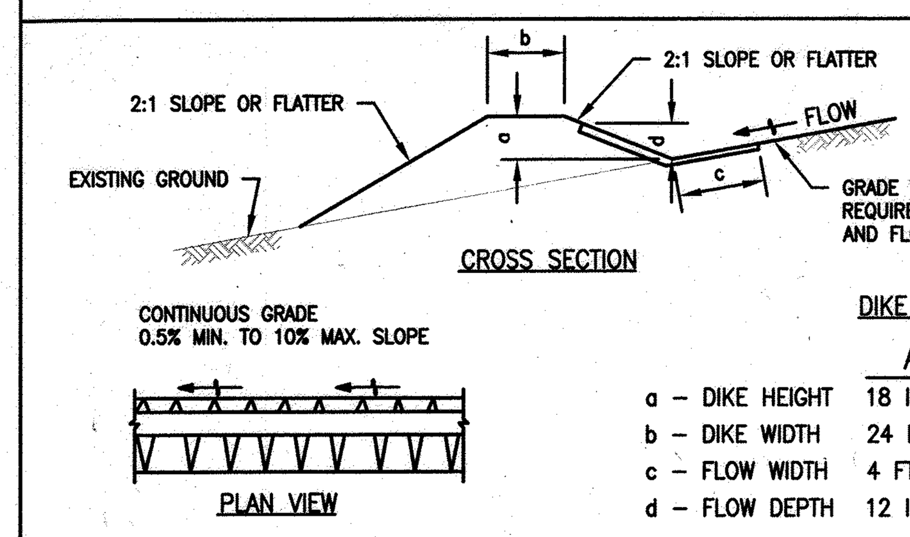
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

16 (ES-1) STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

DETAIL C-1 EARTH DIKE

STANDARD SYMBOL: A-1 — PLACE DESIGNATION (e.g. A-1) ON FLOW CHANNEL SIDE OF DIKE.



DIKE TYPE

	A	B
a – DIKE HEIGHT	18 IN MIN.	30 IN MIN.
b – DIKE WIDTH	24 IN MIN.	36 IN MIN.
c – FLOW WIDTH	4 FT MIN.	6 FT MIN.
d – FLOW DEPTH	12 IN MIN.	24 IN MIN.

FLOW CHANNEL STABILIZATION

- A-1 SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.)
- A-2/B-2 SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.
- A-3/B-3 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

CONSTRUCTION SPECIFICATIONS

1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.
2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. COMPACT FILL.
4. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
5. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
6. STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
8. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

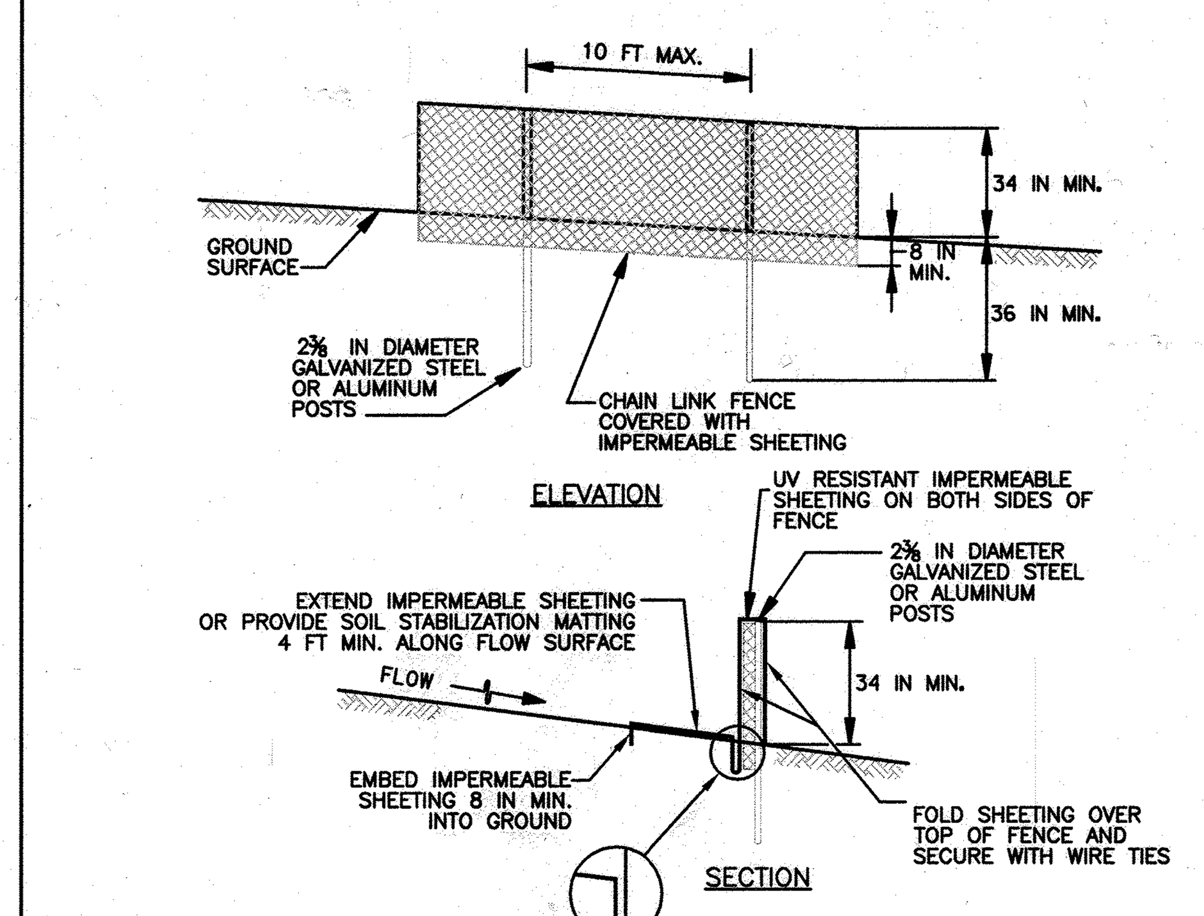
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

17 (ES-1, ES-2) EARTH DIKE
NOT TO SCALE

DETAIL C-9 DIVERSION FENCE

STANDARD SYMBOL: DF

MAXIMUM DRAINAGE AREA = 2 ACRES



CONSTRUCTION SPECIFICATIONS

1. USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2⅜ INCH MAXIMUM OPENING).
2. USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
3. FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
4. SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
5. EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
6. WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.
7. KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

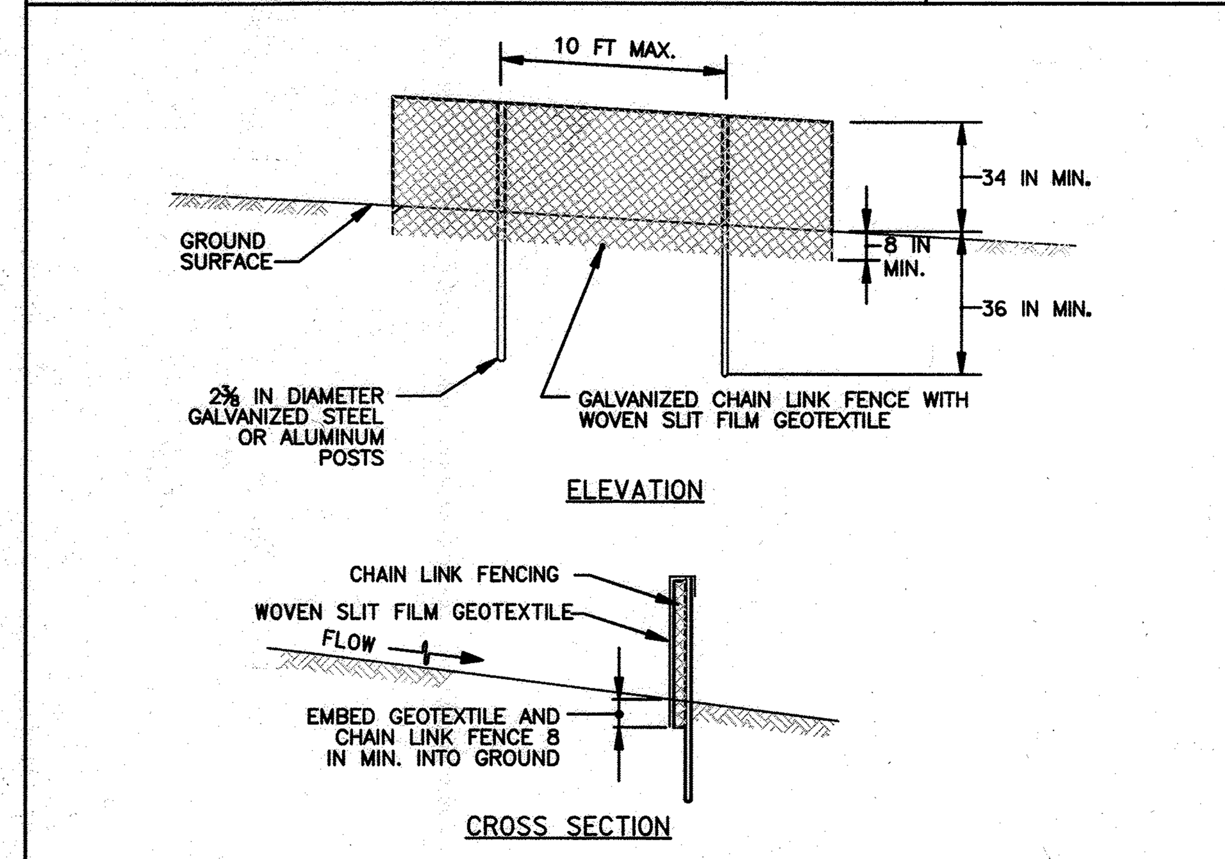
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

18 (ES-1) DIVERSION FENCE
NOT TO SCALE

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 MANUFACTURER 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

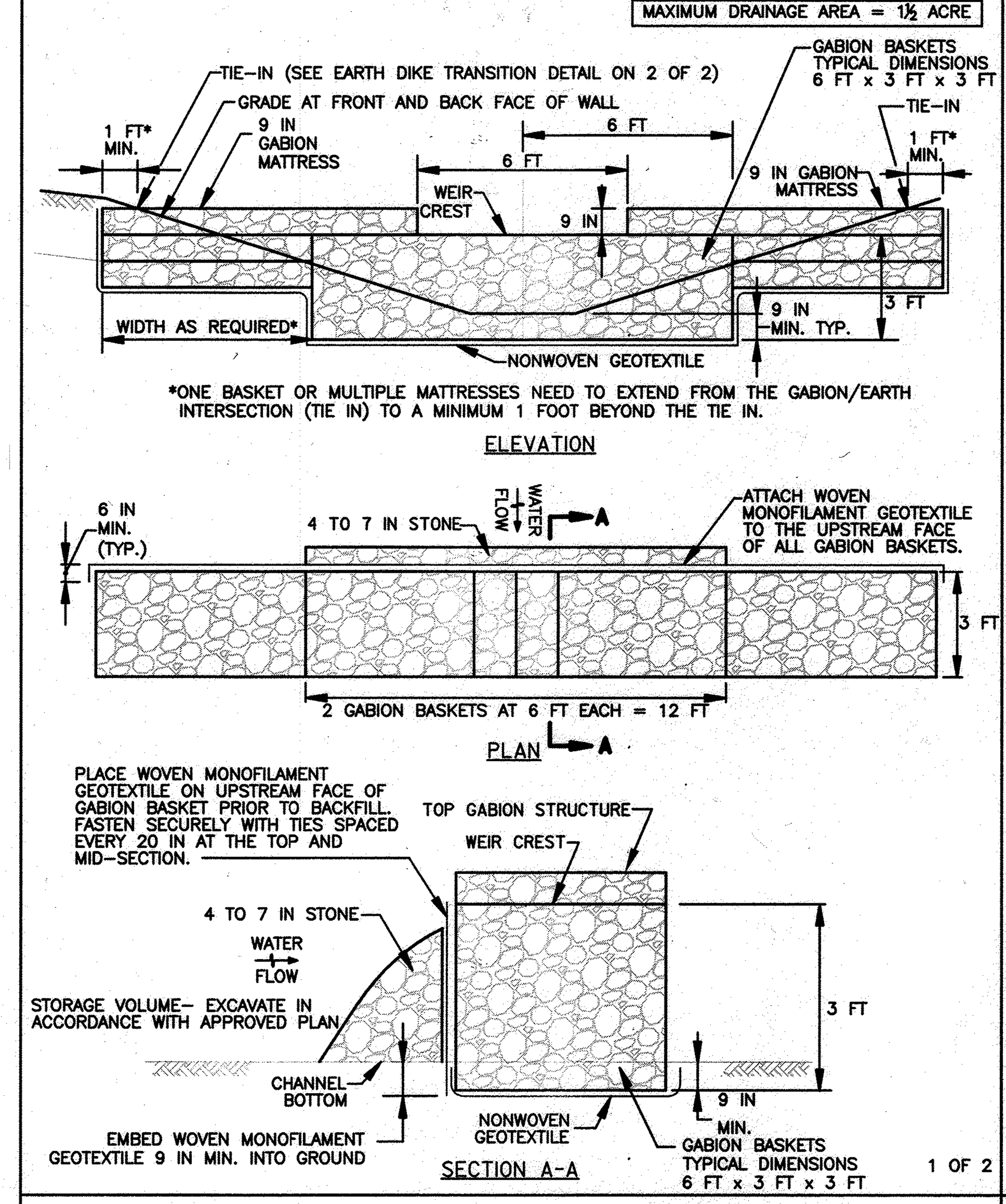
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

19 (ES-1, ES-2) SUPER SILT FENCE
NOT TO SCALE

DETAIL E-8 TEMPORARY GABION OUTLET STRUCTURE

STANDARD SYMBOL: TGOS

MAXIMUM DRAINAGE AREA = ½ ACRE



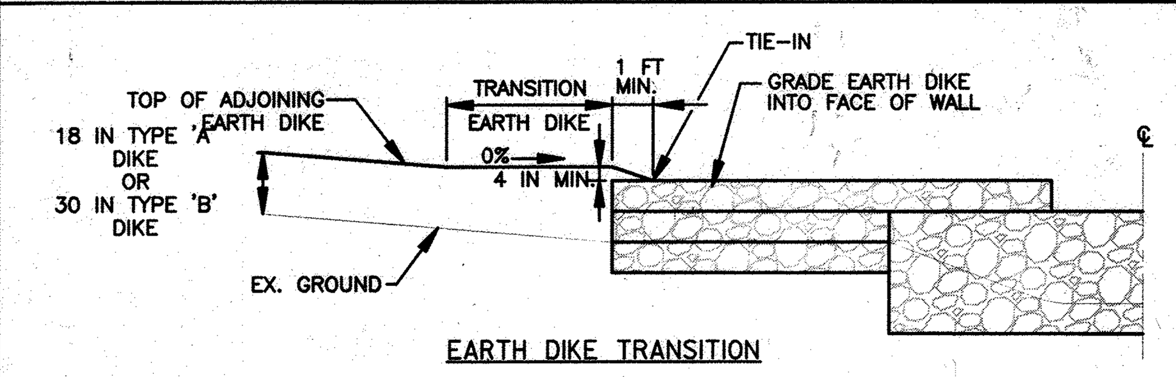
1 OF 2

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

DETAIL E-8 TEMPORARY GABION OUTLET STRUCTURE

STANDARD SYMBOL: TGOS



NOTES:

1. PROVIDE TRANSITION LENGTH AND HEIGHT AS SPECIFIED ON PLAN. HEIGHT OF TRANSITION EARTH DIKE MUST EXCEED 4 INCH MINIMUM FREEBOARD ABOVE TOP OF GABION AND EXTEND AT THIS ELEVATION UNTIL IT INTERCEPTS THE TOP OF ADJOINING EARTH DIKE.
2. PROVIDE POSITIVE DRAINAGE ALONG EARTH DIKE TO GABION OUTLET STRUCTURE.
3. COMPACT FILL.
4. SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED ON PLAN. BANK PROJECTIONS OR IRREGULARITIES ARE NOT ALLOWED.

CONSTRUCTION SPECIFICATIONS

1. PROVIDE STORAGE VOLUME AS SPECIFIED ON APPROVED PLANS.
2. USE BASKETS MADE OF 11 GAUGE WIRE OR HEAVIER.
3. USE NONWOVEN AND WOVEN MONOFILAMENT GEOTEXTILES AS SPECIFIED IN SECTION H-1 MATERIALS.
4. INSTALL GABIONS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
5. EMBED THE GABION OUTLET STRUCTURE INTO THE SOIL A MINIMUM OF 9 INCHES. PROVIDE NONWOVEN GEOTEXTILE UNDER ALL GABIONS.
6. FILL GABION BASKETS WITH CLEAN 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE WITHOUT REBAR OR WIRE MESH.
7. MAKE THE WEIR CREST OF THE GABION OUTLET STRUCTURE 9 INCHES LOWER THAN THE TOP OF THE ADJACENT GABIONS.
8. PROVIDE A MINIMUM WEIR CREST OF 6 FEET.
9. ATTACH WOVEN MONOFILAMENT GEOTEXTILE TO THE UPSTREAM FACE OF GABION BASKETS AND COVER WITH 4 TO 7 INCH STONE.
10. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO WITHIN 12 INCHES OF THE WEIR CREST. REPLACE GEOTEXTILE AND STONE FACING WHEN STRUCTURE CEASES TO FUNCTION. MAINTAIN LINE, GRADE, AND CROSS SECTION.
11. UPON REMOVAL OF GABION OUTLET STRUCTURE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

2 OF 2

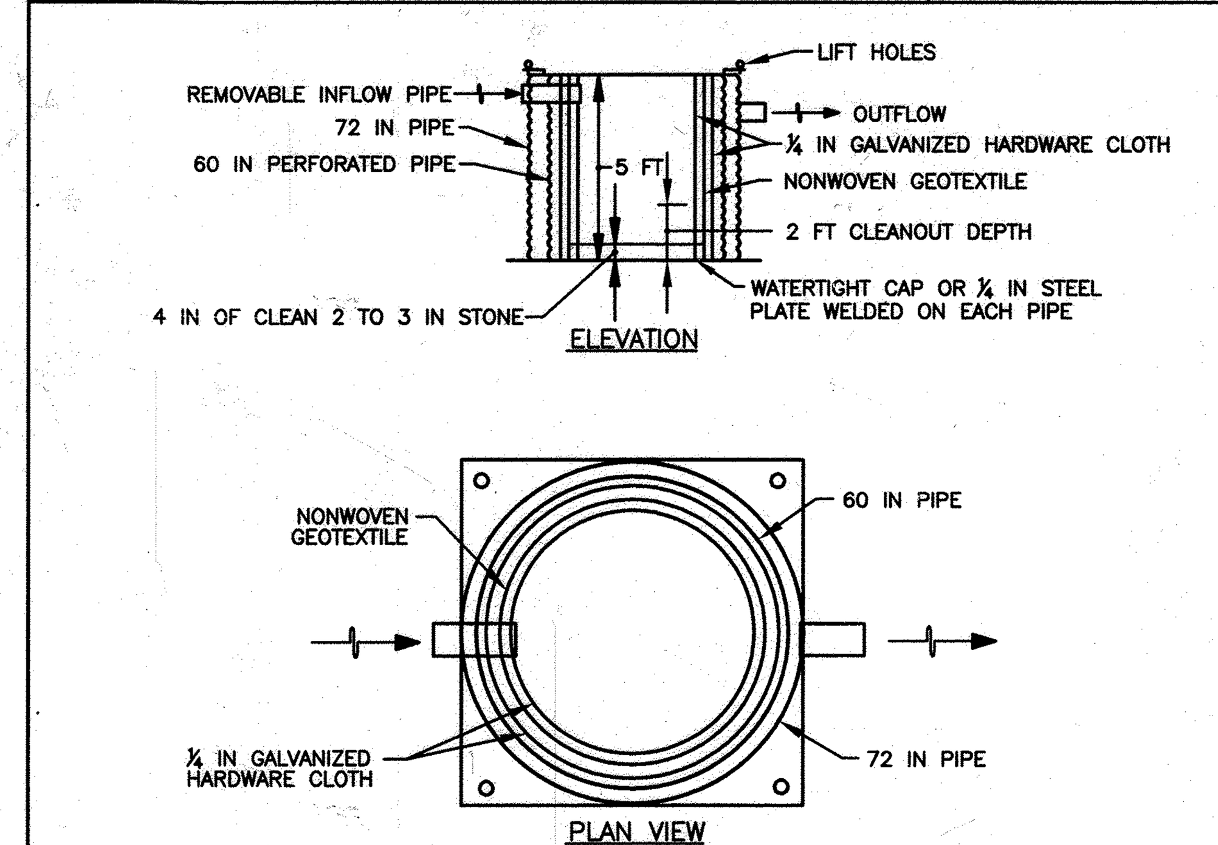
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

20 (ES-2) TEMPORARY GABION OUTLET STRUCTURE
NOT TO SCALE

DETAIL F-3 PORTABLE SEDIMENT TANK

STANDARD SYMBOL: PST



CONSTRUCTION SPECIFICATIONS

1. PROVIDE 1 CUBIC FOOT OF STORAGE FOR EACH GALLON PER MINUTE OF PUMP CAPACITY. REQUIRED STORAGE VOLUME MAY BE ATTAINED BY PLACEMENT OF TANKS IN PARALLEL WITH INFLOW EVENLY DISTRIBUTED AMONG TANKS. OVERTOPPING OF TANKS IS NOT PERMITTED.
2. USE 60 INCH CORRUGATED METAL OR PLASTIC PIPE WITH 1 INCH DIAMETER PERFORATIONS, 6 INCHES ON CENTER FOR THE INNER PIPE. LINE PIPE WITH NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, SECURED WITH, AND ATTACHED TO, ¼ INCH HARDWARE CLOTH.
3. OVERLAP GEOTEXTILE 8 INCHES MINIMUM AT VERTICAL SEAM AND AT THE BOTTOM PLATE.
4. ANCHOR GEOTEXTILE AT BOTTOM OF TANK WITH 4 INCHES OF 2 TO 3 INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE.
5. USE 72 INCH CORRUGATED METAL OR PLASTIC OUTER PIPE WITH PERMANENT OUTFLOW PIPE WITH INVERT LOWER THAN INFLOW PIPE.
6. INFLOW PIPE MUST DISCHARGE INTO INNER PIPE AND BE REMOVABLE.
7. PLACE TANK ON LEVEL SURFACE AND DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
8. A PORTABLE SEDIMENT TANK REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT FROM INNER PIPE WHEN IT REACHES TWO FEET IN DEPTH. IF SYSTEM CLOGS, PULL OUT INNER PIPE, REMOVE ACCUMULATED SEDIMENT, AND REPLACE GEOTEXTILE. KEEP POINT OF DISCHARGE FREE OF EROSION.

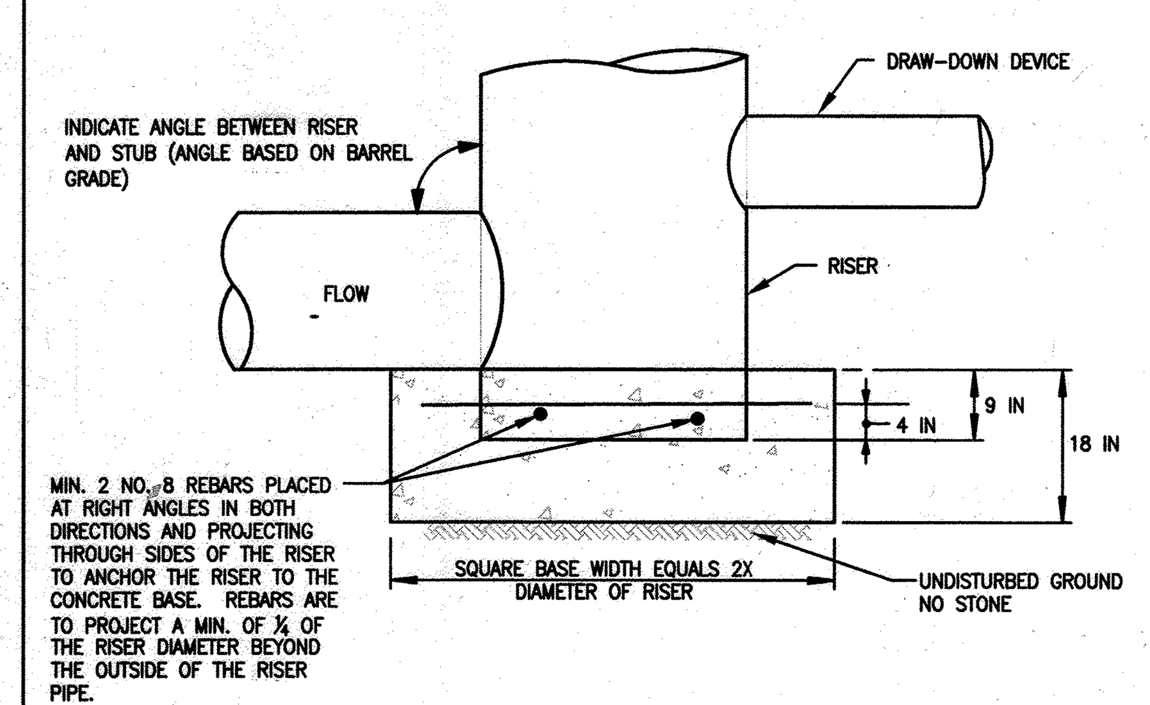
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

21 (–) PORTABLE SEDIMENT TANK
NOT TO SCALE

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

22 (–) CORRUGATED RISER BASE
NOT TO SCALE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SCD — DATE 4/22/17

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11-29-17

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12-5-17

GRID: 8	BLOCK: N/A
ZONING: RC-DEO	PARCEL/LOT: 220, 253, 11, 23, 54
TAX MAP: 0016	ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
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ENGINEER:
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CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
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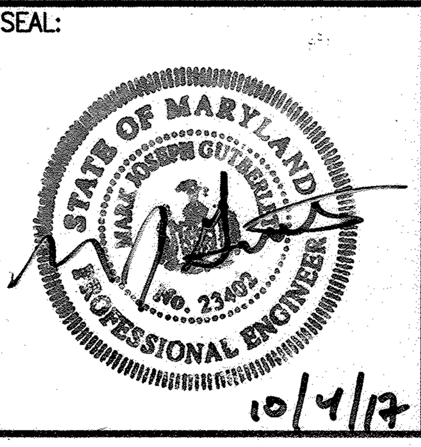
SEAL:



PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	MBS/MP
DRN. BY:	JAP/KEJ
CHK. BY:	SMD
DATE:	OCT. 2016

BY	NO.	REVISION	DATE
CVH	1	REVISED TOTAL SHEET NUMBER DUE TO ADDITION OF SHEET 45	8/2022

EROSION AND SEDIMENT CONTROL DETAILS I

COMPOST FACILITY – PHASE II AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

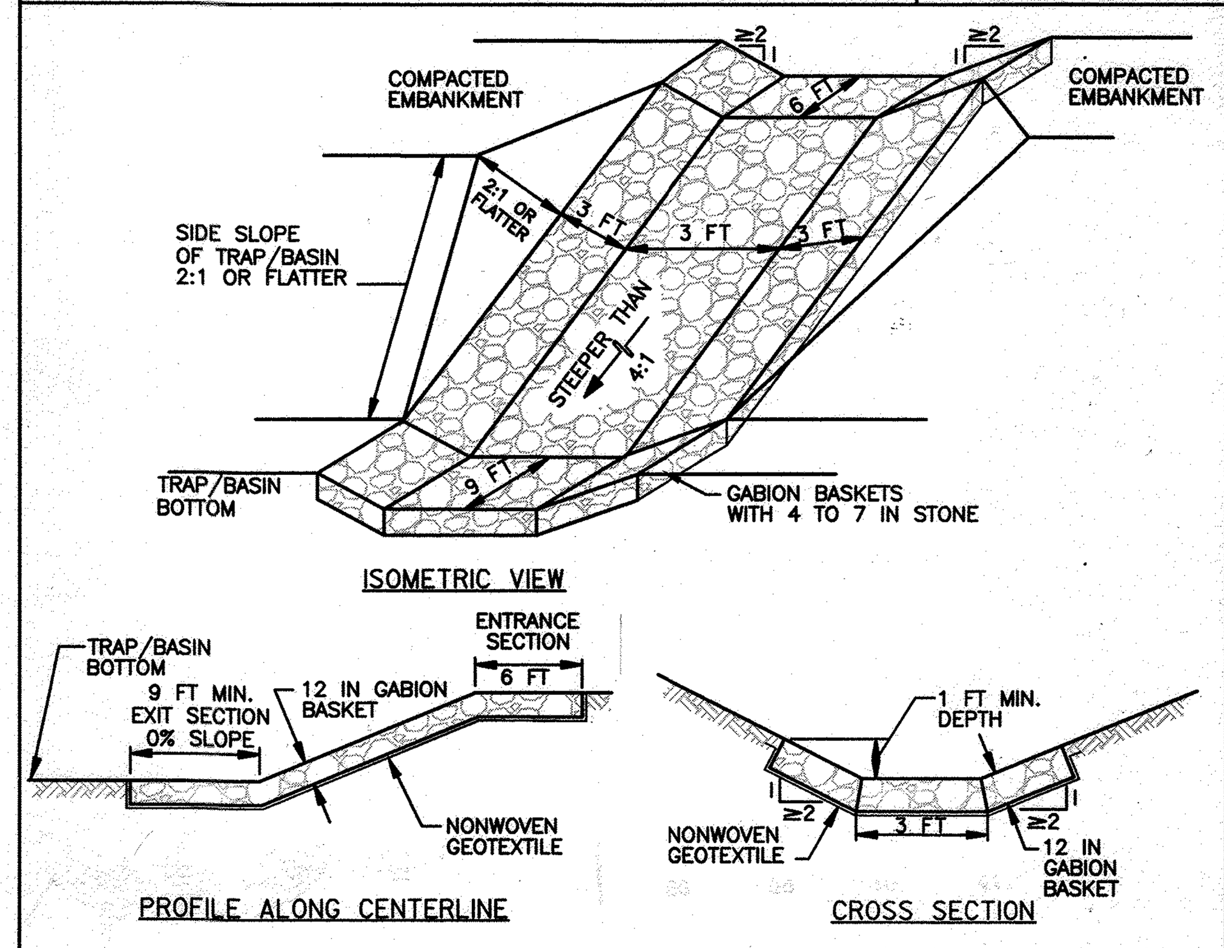
SDP SHEET: 18 OF 45 (44 struck out)
DRAWING: ES-7
PROJECT: 14982.05
SHEET: ~~30 OF 70~~

~~NOT FOR CONSTRUCTION~~ – SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035

DETAIL D-3-2 GABION INFLOW PROTECTION

STANDARD SYMBOL: GP



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 WEIR 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

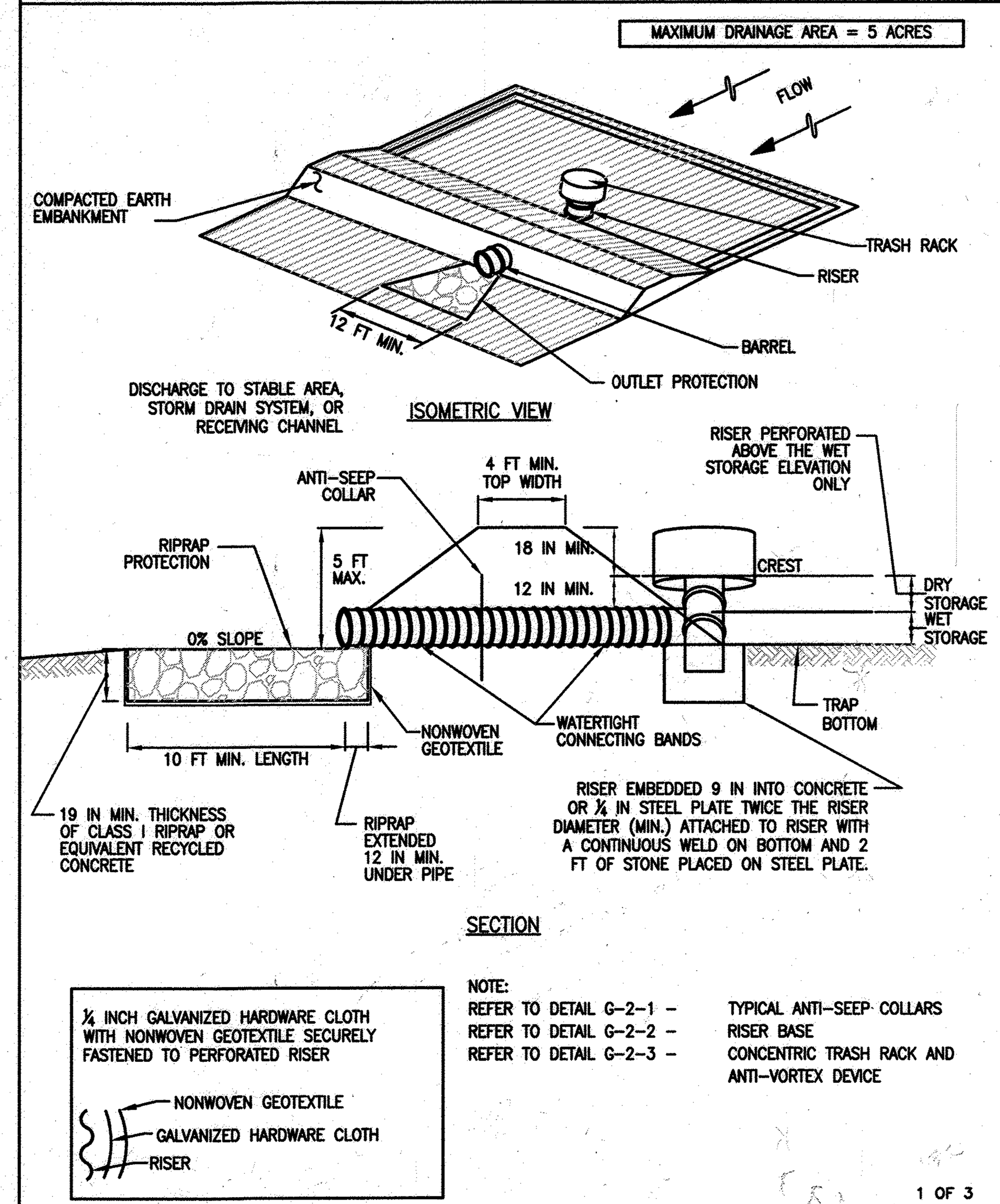
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

24 GABION INFLOW PROTECTION
ES-2
NOT TO SCALE

DETAIL G-1-1 PIPE OUTLET SEDIMENT TRAP ST-I

STANDARD SYMBOL: ST-I

MAXIMUM DRAINAGE AREA = 5 ACRES



NOTE:
REFER TO DETAIL G-2-1 – TYPICAL ANTI-SEEP COLLARS
REFER TO DETAIL G-2-2 – RISER BASE
REFER TO DETAIL G-2-3 – CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE

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

DETAIL G-1-1 PIPE OUTLET SEDIMENT TRAP ST-I

STANDARD SYMBOL: ST-I

CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT TRAP IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE AVOIDED.
2. CLEAR, GRUB, AND STRIP ANY VEGETATION AND ROOT MAT FROM THE AREA UNDER THE EMBANKMENT AND TRAP BOTTOM.
3. PERFORATE THE RISER WITH 1 INCH DIAMETER HOLES SPACED 6 INCHES ON CENTER WITH THE LOWEST PERFORATIONS AT THE WET STORAGE ELEVATION OR PROVIDE A HORIZONTAL OR VERTICAL DRAW-DOWN DEVICE PERFORATED ACCORDING TO APPROVED PLAN. DO NOT PERFORATE THE RISER WITHIN 6 INCHES OF THE TOP OF THE HORIZONTAL BARREL.
4. SET RISER/BARREL ASSEMBLY PRIOR TO EMBANKMENT CONSTRUCTION. MAKE ALL PIPE CONNECTIONS WATERTIGHT. OFFSET RISER FROM EMBANKEMENT TO ACCOMODATE PLACEMENT OF THE TRASH RACK. ANCHOR THE RISER WITH EITHER A REINFORCED CONCRETE BASE OR STEEL PLATE BASE TO PREVENT FLOTATION. MAKE CONCRETE BASES AT LEAST TWICE THE RISER DIAMETER AND 18 INCHES THICK WITH THE RISER EMBEDDED 9 INCHES.
5. USE FILL MATERIAL FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL FOR THE EMBANKMENT.
6. HAND COMPACT IN 4 INCH LAYERS FILL MATERIAL AROUND THE PIPE SPILLWAY. PLACE A MINIMUM OF 2 FEET OF HAND COMPACTED BACKFILL OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT.
7. CONSTRUCT TOP OF EMBANKMENT 1 FOOT MINIMUM ABOVE RISER CREST. COMPACT THE EMBANKMENT BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
8. MAKE ALL CUT AND FILL SLOPES 2:1 OR FLATTER.
9. WRAP THE RISER WITH ¼ INCH GALVANIZED HARDWARE CLOTH THEN WRAP WITH NONWOVEN GEOTEXTILE. DO NOT WRAP WITH MORE THAN ONE LAYER OF GEOTEXTILE. EXTEND HARDWARE CLOTH AND GEOTEXTILE AT LEAST 6 INCHES ABOVE THE HIGHEST PERFORATIONS AND AT LEAST 6 INCHES BELOW THE LOWEST PERFORATIONS. OVERLAP, FOLD AND FASTEN WHERE ENDS OF GEOTEXTILE COME TOGETHER TO PREVENT BYPASS. REPLACE GEOTEXTILE AS NECESSARY TO PREVENT CLOGGING.
10. USE STRAPS OR CONNECTING BANDS AT THE TOP AND BOTTOM OF THE GEOTEXTILE TO HOLD THE GEOTEXTILE AND HARDWARE CLOTH IN PLACE.
11. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
12. STABILIZE THE EMBANKMENT AND INTERIOR SLOPES WITH SEED AND MULCH. STABILIZE POINTS OF CONCENTRATED INFLOW AS SHOWN ON APPROVED PLAN.
13. CONSTRUCT AND MAINTAIN THE OUTLET ACCORDING TO THE APPROVED PLAN AND IN SUCH A MANNER THAT EROSION AT OR BELOW THE OUTLET DOES NOT OCCUR.
14. REMOVE SEDIMENT AND RESTORE TRAP TO ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO CLEANOUT ELEVATION (50% OF WET STORAGE DEPTH). DEPOSIT REMOVED SEDIMENT IN AN APPROVED AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. KEEP POINTS OF INFLOW AND OUTFLOW AS WELL AS INTERIOR OF THE TRAP FREE FROM EROSION, AND REMOVE ACCUMULATED DEBRIS. MAINTAIN EMBANKMENTS TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. REMOVE ANY TREES, BRUSH, OR OTHER WOODY VEGETATION GROWING ON EMBANKMENT OR NEAR PRINCIPAL SPILLWAY. MAINTAIN LINE, GRADE, AND CROSS SECTION. MAINTAIN WATER TIGHT CONNECTIONS. REPLACE GEOTEXTILE AROUND PERFORATED RISER IF DRY STORAGE VOLUME DOES NOT DRAW DOWN WITHIN 10 HOURS.
15. WHEN DEWATERING TRAP, PASS REMOVED WATER THROUGH AN APPROVED SEDIMENT CONTROL PRACTICE.
16. UPON REMOVAL, GRADE AND STABILIZE THE AREA OCCUPIED BY TRAP.

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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

DETAIL G-1-1 PIPE OUTLET SEDIMENT TRAP ST-I

STANDARD SYMBOL: ST-I

PIPE OUTLET SEDIMENT TRAP ST-I, TRAP NO. 1		
DRAINAGE AREA – INITIAL	5.00	ACRES
DRAINAGE AREA – INTERIM	5.00	ACRES
DRAINAGE AREA – FINAL	1.50	ACRES
TOTAL STORAGE REQUIRED	18,000	CF
TOTAL STORAGE PROVIDED	18,323	CF
WET STORAGE REQUIRED	9,000	CF
WET STORAGE PROVIDED	9,011	CF
DRY STORAGE REQUIRED	9,000	CF
DRY STORAGE PROVIDED	9,312	CF
TRAP BOTTOM ELEVATION	523	FT
TRAP BOTTOM DIMENSIONS	209 X 34 +/-	FT x FT
RISER CREST (DRY STORAGE) ELEVATION	526.4	FT
OUTLET (WET STORAGE) ELEVATION	525	FT
CLEANOUT ELEVATION	525.4	FT
TOP OF EMBANKMENT ELEVATION	528	FT
SIDE SLOPE	2:1	H:V RATIO
EMBANKMENT TOP WIDTH	4	FT
PRINCIPAL SPILLWAY MATERIAL (BARREL, RISER, ANTI-SEEP COLLAR)	CORRUGATED METAL	
RISER DIAMETER	42	IN
BARREL DIAMETER	30	IN
TRASH RACK DIAMETER	60	IN
TRASH RACK HEIGHT	27	IN
ANTI-SEEP COLLAR DIMENSIONS	7' x 7' x 8"	FT
OUTLET PROTECTION – LENGTH	15	FT
OUTLET PROTECTION – WIDTH	17.5	FT
OUTLET PROTECTION – DEPTH	19	IN

3 OF 3

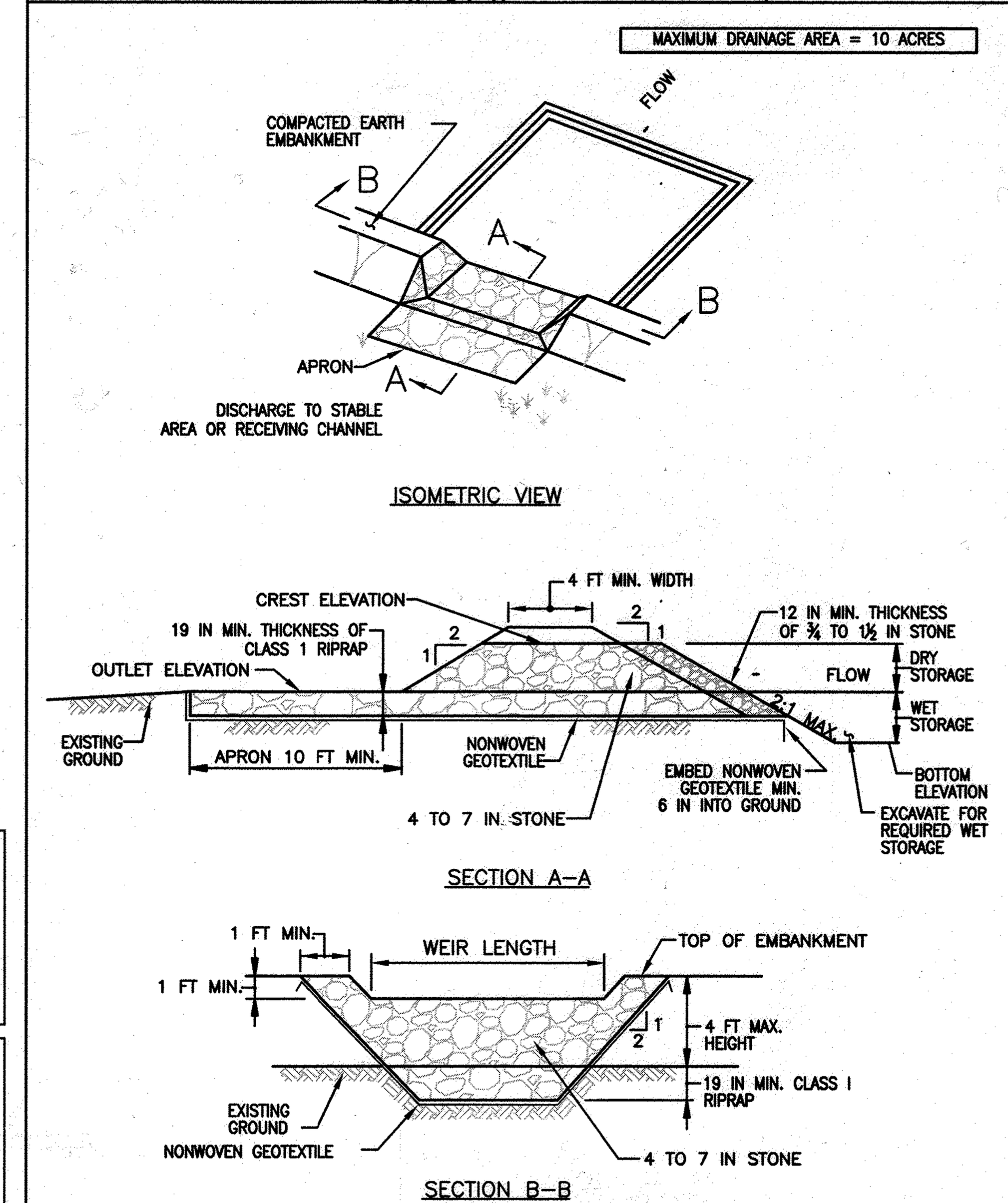
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

25 PIPE OUTLET SEDIMENT TRAP ST-I
ES-1, ES-2, ES-4, ES-5
NOT TO SCALE

DETAIL G-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II

STANDARD SYMBOL: ST-II

MAXIMUM DRAINAGE AREA = 10 ACRES



1 OF 4

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

DETAIL G-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II

STANDARD SYMBOL: ST-II

CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT TRAP IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE AVOIDED.
2. CLEAR, GRUB, AND STRIP ANY VEGETATION AND ROOT MAT FROM THE AREA UNDER THE EMBANKMENT AND TRAP BOTTOM.
3. USE FILL MATERIAL FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL FOR THE EMBANKMENT.
4. CONSTRUCT TOP OF EMBANKMENT 1 FOOT MINIMUM ABOVE WEIR CREST. COMPACT THE EMBANKMENT BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
5. MAKE ALL CUT AND FILL SLOPES 2:1 OR FLATTER.
6. PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE BOTTOM AND SIDES OF OUTLET AND APRON PRIOR TO PLACEMENT OF RIPRAP. OVERLAP SECTIONS OF GEOTEXTILE AT LEAST 1 FOOT WITH THE SECTION NEARER TO THE TRAP PLACED ON TOP. EMBED GEOTEXTILE AT LEAST 6 INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
7. USE CLEAN 4 TO 7 INCH RIPRAP TO CONSTRUCT THE WEIR. USE CLASS I RIPRAP FOR THE APRON. USE OF RECYCLED CONCRETE EQUIVALENT IS ACCEPTABLE.
8. PLACE 1 FOOT OF CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE ON THE UPSTREAM FACE OF THE WEIR.
9. CONSTRUCT AND MAINTAIN THE OUTLET ACCORDING TO APPROVED PLAN, AND IN SUCH A MANNER THAT EROSION AT OR BELOW THE OUTLET DOES NOT OCCUR.
10. STABILIZE THE EMBANKMENT AND INTERIOR SLOPES WITH SEED AND MULCH. STABILIZE POINTS OF CONCENTRATED INFLOW AS SHOWN ON APPROVED PLAN.
11. REMOVE SEDIMENT AND RESTORE TRAP TO ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO CLEANOUT ELEVATION (50% OF WET STORAGE DEPTH). DEPOSIT REMOVED SEDIMENT IN AN APPROVED AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. KEEP POINTS OF INFLOW AND OUTFLOW AS WELL AS INTERIOR OF THE TRAP FREE FROM EROSION, AND REMOVE ACCUMULATED DEBRIS. MAINTAIN EMBANKMENTS TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. REMOVE ANY TREES, BRUSH, OR OTHER WOODY VEGETATION GROWING ON EMBANKMENT OR NEAR PRINCIPAL SPILLWAY. MAINTAIN LINE, GRADE, AND CROSS SECTION.
12. WHEN DEWATERING TRAP, PASS REMOVED WATER THROUGH AN APPROVED SEDIMENT CONTROL PRACTICE.
13. UPON REMOVAL, GRADE AND STABILIZE THE AREA OCCUPIED BY TRAP.

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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

DETAIL G-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II

STANDARD SYMBOL: ST-II

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II, TRAP NO. 2		
DRAINAGE AREA – INITIAL	4.9	ACRES
DRAINAGE AREA – INTERIM	N/A	ACRES
DRAINAGE AREA – FINAL	8.9	ACRES
TOTAL STORAGE REQUIRED	32,400	CF
TOTAL STORAGE PROVIDED	50,265	CF
WET STORAGE REQUIRED	16,200	CF
WET STORAGE PROVIDED	33,547	CF
DRY STORAGE REQUIRED	16,200	CF
DRY STORAGE PROVIDED	16,718	CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	512	FT
TRAP BOTTOM ELEVATION	509	FT
TRAP BOTTOM DIMENSIONS	450 X 30 +/-	FT x FT
WEIR LENGTH	36	FT
WEIR CREST (DRY STORAGE) ELEVATION	513	FT
CLEANOUT ELEVATION	511.5	FT
TOP OF EMBANKMENT ELEVATION	514	FT
SIDE SLOPE	2:1	H:V RATIO
EMBANKMENT TOP WIDTH	4	FT
OUTLET PROTECTION – LENGTH	67	FT
OUTLET PROTECTION – DEPTH	19	IN

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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

23 RIPRAP OUTLET SEDIMENT TRAP ST-II
ES-2, ES-5
NOT TO SCALE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
[signature] 4/22/17
HOWARD SCD — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[signature] 12-12-17
DIRECTOR — DATE
[signature] 11.29.17
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
[signature] 12-5-17
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

GRID: 8 — BLOCK: N/A
ZONING: RC-DEO — PARCEL/LOT: 220, 253, 11, 23, 54
TAX MAP: 0016 — ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — PROFESSIONAL ENGINEER — No. 23402 — 10/4/17

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	MBS/MP
DRN. BY:	JAP/KEJ
CHK. BY:	SMD
DATE:	OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TOTAL SHEET NUMBER DUE TO ADDITION OF SHEET 48	8/2022

EROSION AND SEDIMENT CONTROL DETAILS II

COMPOST FACILITY – PHASE II AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 19 OF ~~44~~ 45
DRAWING: ES-8
PROJECT: 14982.05
SHEET: ~~31 OF 70~~

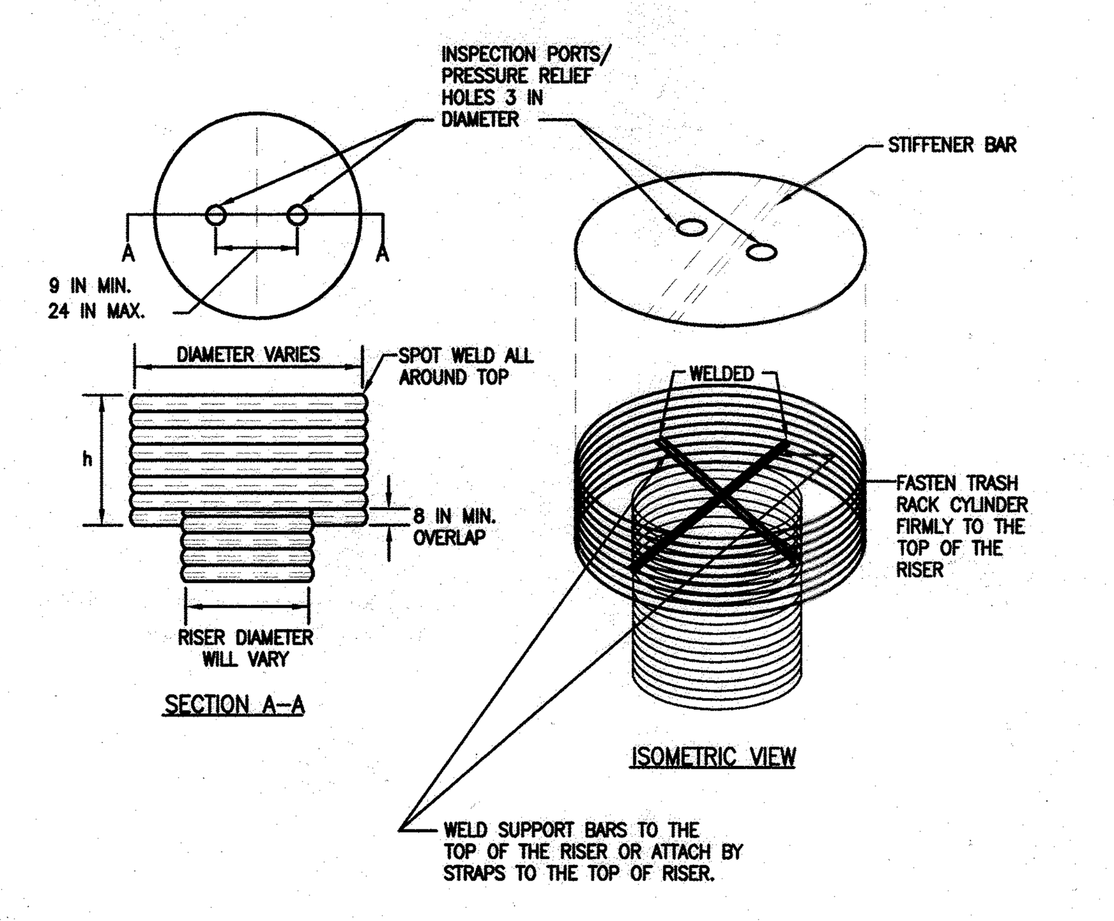
NOT FOR CONSTRUCTION – SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035

FILE PATH: Q:\PROJECTS\1498205 – ARL COMPOST FACILITY\1498205ES-08DETL.DWG

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

DETAIL G-2-3 CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE

STANDARD SYMBOL: TR

RISER DIAM. (IN)	TRASH RACK CYLINDER DIAM. (IN)	TRASH RACK CYLINDER THICKNESS (GAUGE)	h (IN)	MINIMUM SIZE SUPPORT BAR	MINIMUM TOP THICKNESS (GAUGE)	STIFFENER
12	18	16	14	#6 REBAR	16	N/A
15	21	16	15	#6 REBAR	16	N/A
18	27	16	16	#6 REBAR	16	N/A
21	30	16	19	#6 REBAR	16	N/A
24	36	16	21	#6 REBAR	14	N/A
27	42	16	21	#6 REBAR	14	N/A
36	54	14	25	#8 REBAR	12	N/A
42	60	14	27	#8 REBAR	12	N/A
48	72	12	29	1¼ IN PIPE OR 1¼ x 1¼ x ¼ ANGLE	10	N/A
54	78	12	33	1¼ IN PIPE OR 1¼ x 1¼ x ¼ ANGLE	10	N/A
60	90	12	37	1½ IN PIPE OR 1½ x 1½ x ¼ ANGLE	8	N/A
66	96	10	41	2 IN PIPE OR 2 x 2 x 3/16 ANGLE	8	2 x 2 x ¼ ANGLE
72	102	10	44	2 IN PIPE OR 2 x 2 x 3/16 ANGLE	8	2½ x 2½ x ¼ ANGLE
78	114	10	47	2½ IN PIPE OR 2 x 2 x ¼ ANGLE	8	2½ x 2½ x ¼ ANGLE
84	120	10	50	2½ IN PIPE OR 2½ x 2½ x ¼ ANGLE	8	2½ x 2½ x 5/16 ANGLE

NOTE:
THE ABOVE TRASH RACK AND ANTI-VORTEX DEVICE INFORMATION IS FOR CORRUGATED METAL PIPE ONLY. CONCRETE RISERS MUST MEET THE REQUIREMENTS OF MD 378.

2 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

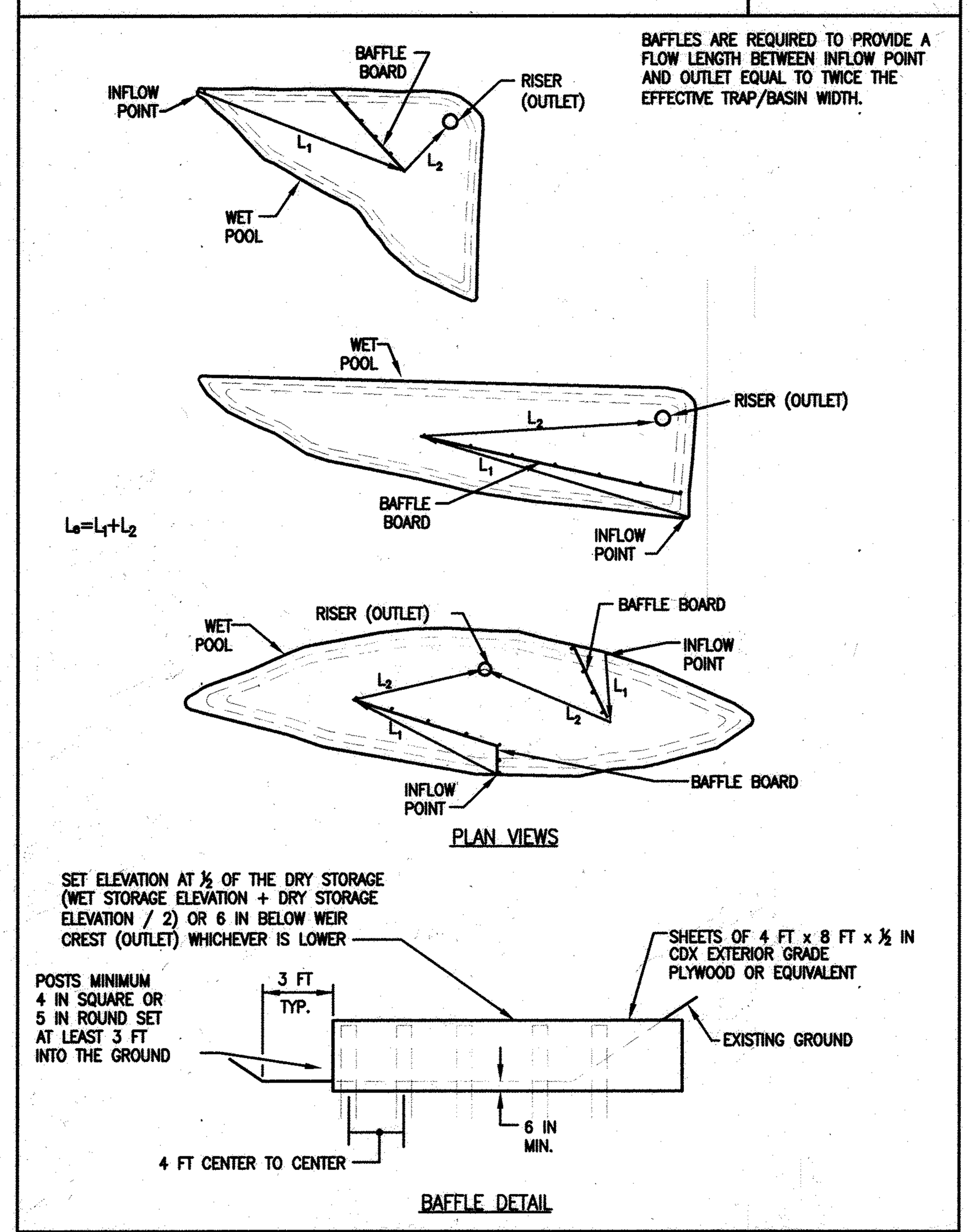
26 SEDIMENT BASIN SCHEMATIC HORIZONTAL DRAW-DOWN

NOT TO SCALE

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

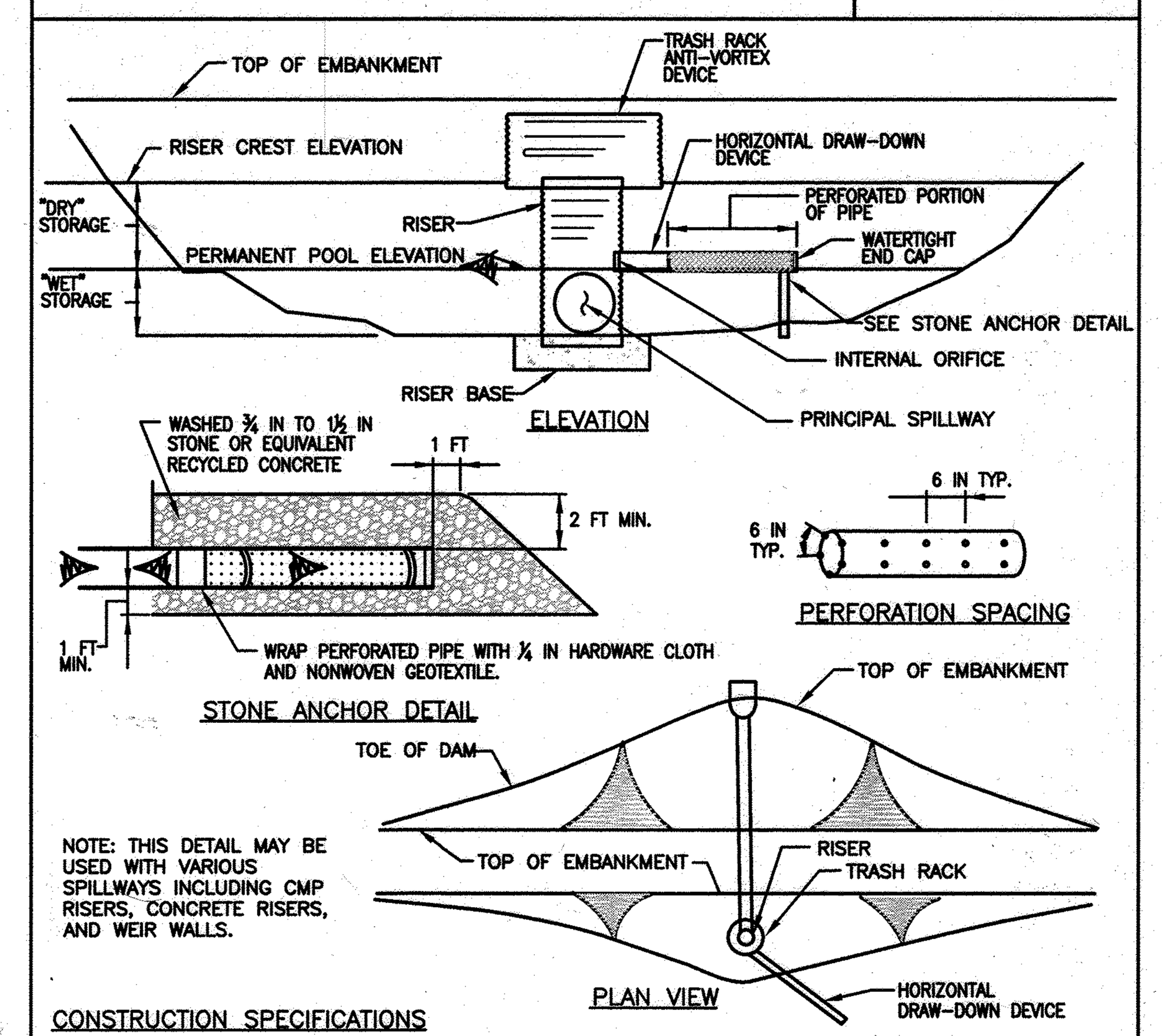
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

27 BAFFLE BOARDS (ES-2)

NOT TO SCALE

DETAIL G-2-6 SEDIMENT BASIN SCHEMATIC HORIZONTAL DRAW-DOWN DEVICE

STANDARD SYMBOL: HDDD



NOTE: THIS DETAIL MAY BE USED WITH VARIOUS SPILLWAYS INCLUDING CMP RISERS, CONCRETE RISERS, AND WEIR WALLS.

CONSTRUCTION SPECIFICATIONS

1. PERFORATE PIPE WITH 1 INCH DIAMETER PERFORATIONS SPACED 6 INCHES APART LONGITUDINALLY AND RADIALLY OR IN ACCORDANCE WITH APPROVED PLAN.
2. WRAP THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE FIRST WITH ¼ INCH GALVANIZED HARDWARE CLOTH, THEN WITH NONWOVEN GEOTEXTILE. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS. DO NOT WRAP WITH MORE THAN ONE LAYER OF GEOTEXTILE.
3. AS AN ALTERNATE TO STONE ANCHORING, SECURE DRAW-DOWN DEVICE WITH TWO 1 INCH STEEL ANGLES SET 3 FEET MINIMUM INTO THE GROUND ATTACHED TO DRAW-DOWN DEVICE BY A 1 INCH WIDE GALVANIZED STEEL STRAP OR 12 GAUGE OR HEAVIER WIRE.
4. REMOVE SEDIMENT WHEN IT ACCUMULATES TO CLEANOUT ELEVATION (50% OF THE WET STORAGE DEPTH). DEPOSIT REMOVED SEDIMENT IN AN APPROVED AREA IN A SUCH A MANNER THAT IT WILL NOT ERODE. MAINTAIN WATER TIGHT CONNECTIONS. REPLACE GEOTEXTILE AROUND PERFORATED RISER IF DRY STORAGE VOLUME DOES NOT DRAW DOWN WITHIN 10 HOURS.

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

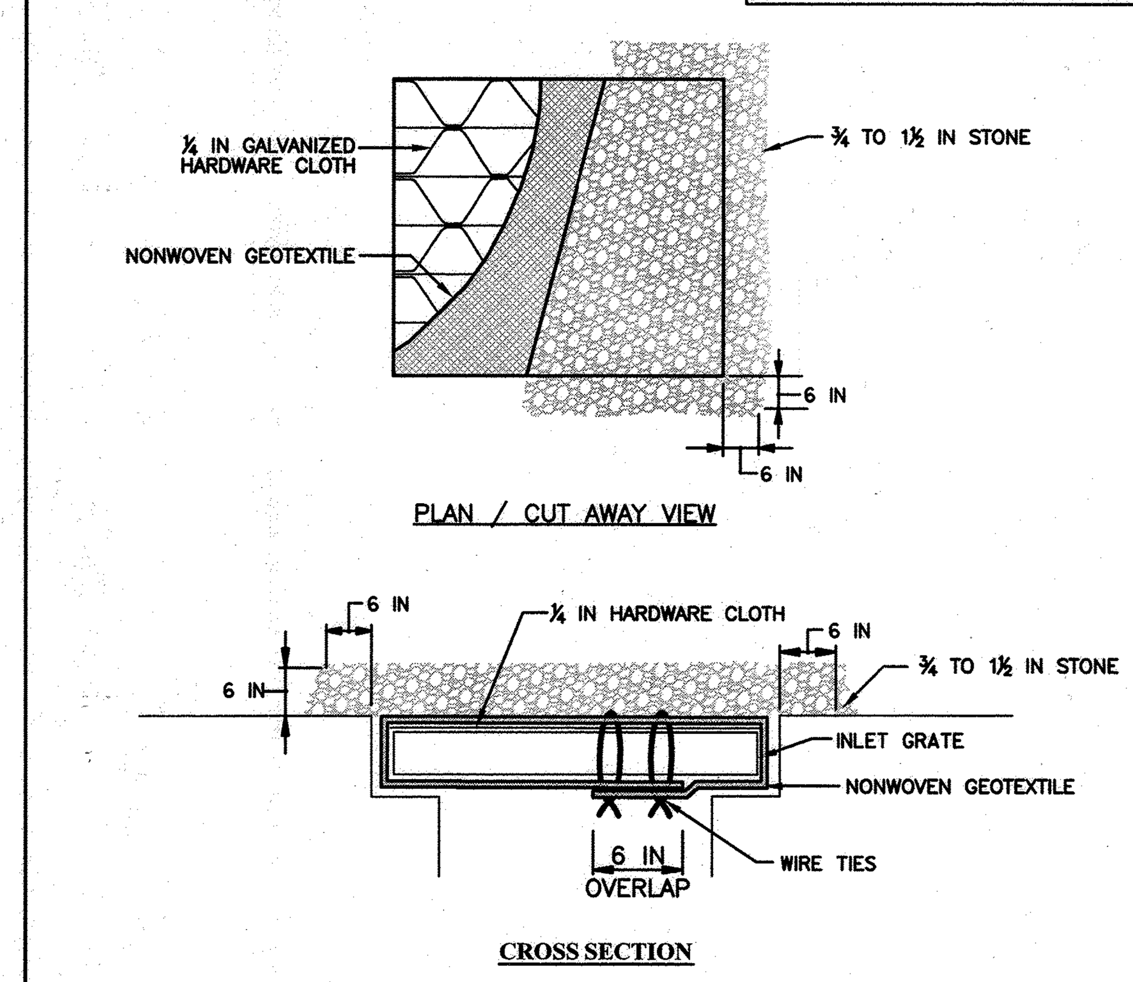
28 CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE (ES-2)

NOT TO SCALE

DETAIL E-9-2 AT-GRADE INLET PROTECTION

STANDARD SYMBOL: AGIP

MAXIMUM DRAINAGE AREA = 1 ACRE



CONSTRUCTION SPECIFICATIONS

1. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
3. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
4. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

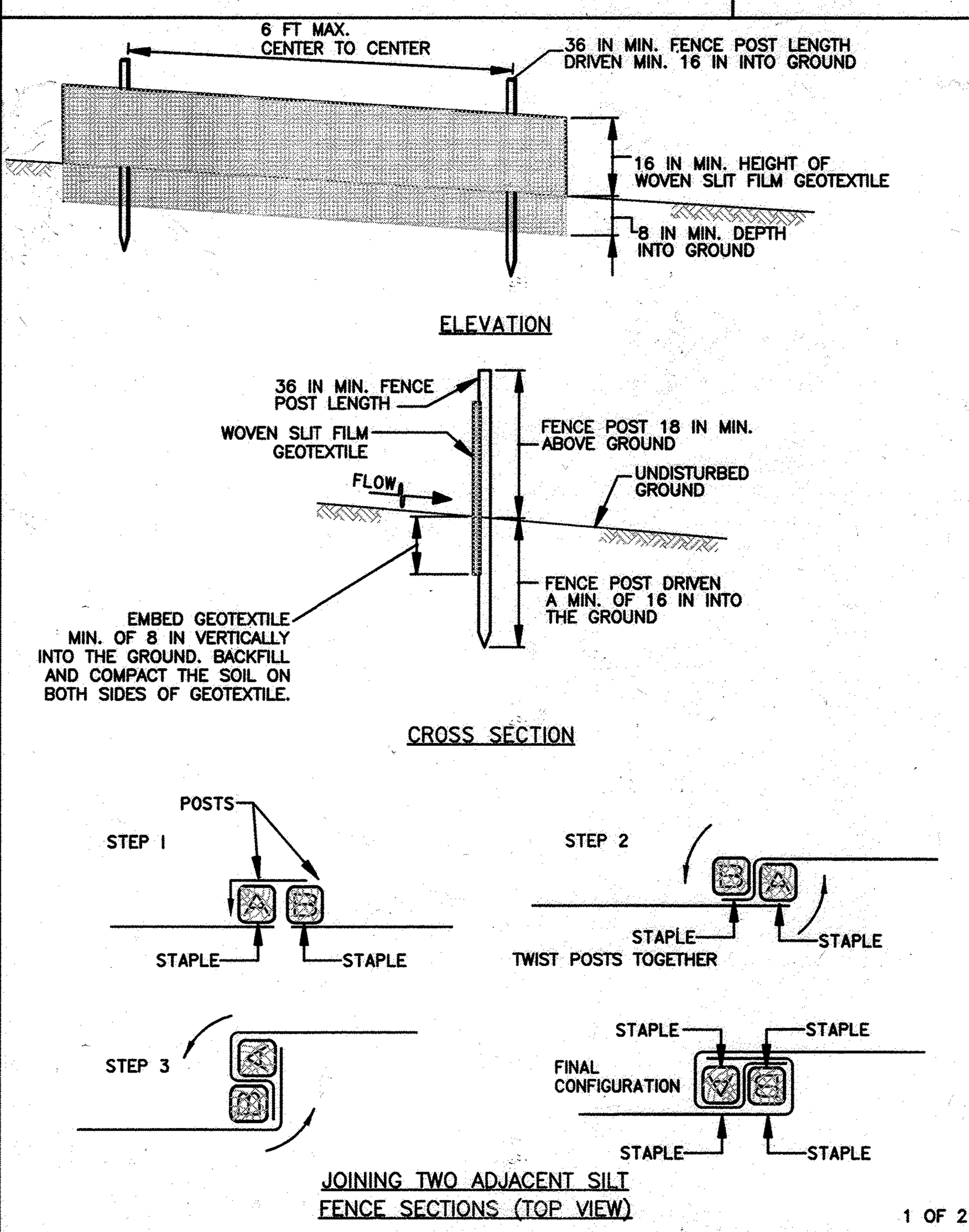
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

29 AT-GRADE INLET PROTECTION (ES-5)

NOT TO SCALE

DETAIL E-1 SILT FENCE

STANDARD SYMBOL



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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

DETAIL E-1 SILT FENCE

STANDARD SYMBOL

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± 1/16 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE 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 SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

2 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

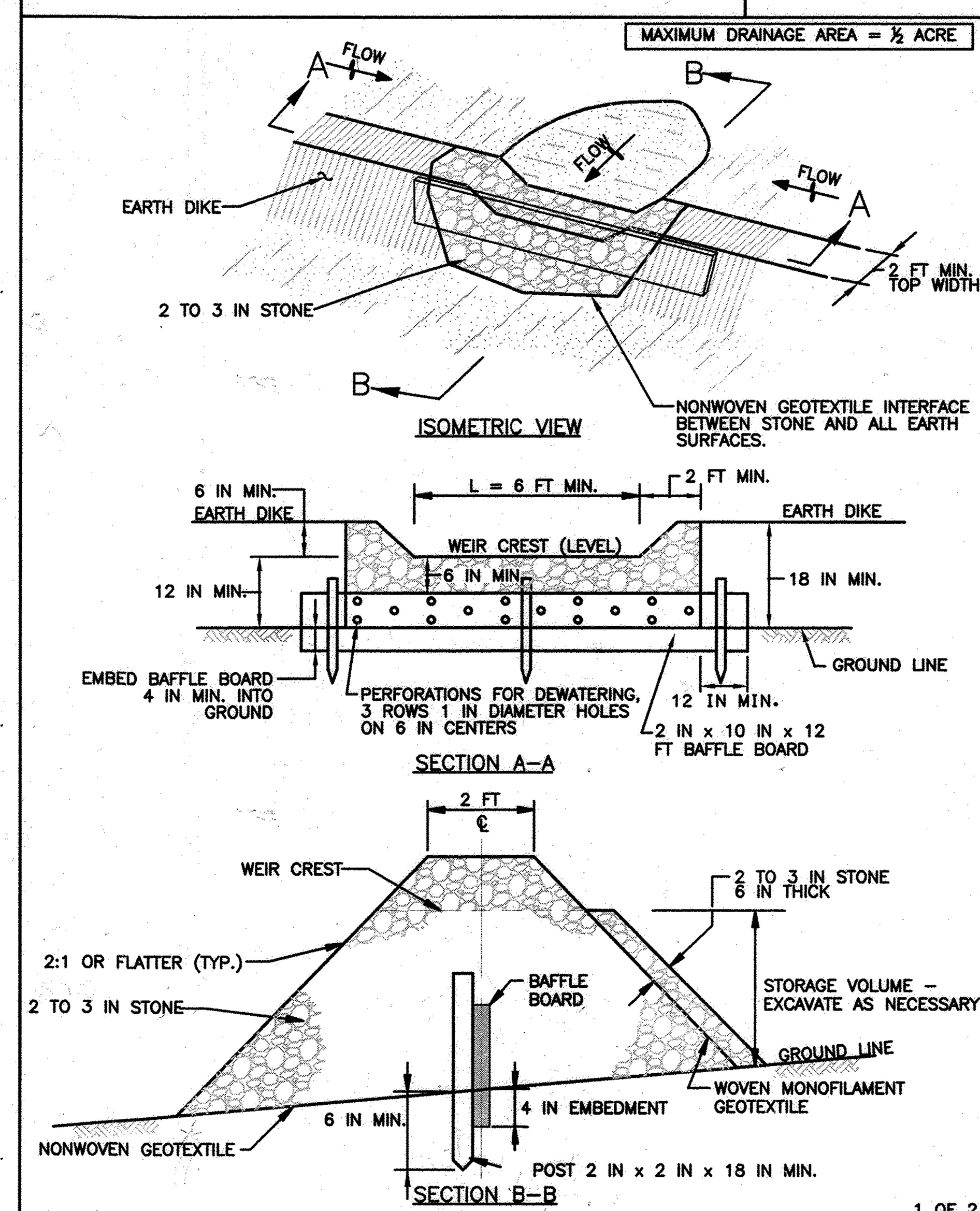
30 SILT FENCE (ES-1, ES-2)

NOT TO SCALE

DETAIL E-7 TEMPORARY STONE OUTLET STRUCTURE

STANDARD SYMBOL: TSOS

MAXIMUM DRAINAGE AREA = ½ ACRE



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

DETAIL E-7 TEMPORARY STONE OUTLET STRUCTURE

STANDARD SYMBOL: TSOS

CONSTRUCTION SPECIFICATIONS

1. PROVIDE STORAGE VOLUME AS SPECIFIED ON APPROVED PLANS.
2. USE NONWOVEN GEOTEXTILE ON INTERFACE BETWEEN GROUND AND STONE.
3. PERFORATE BAFFLE BOARD WITH 3 ROWS OF 1 INCH DIAMETER HOLES 6 INCHES ON CENTER, EMBED A MINIMUM OF 4 INCHES INTO GROUND, AND EXTEND BAFFEL BOARD MINIMUM OF 12 INCHES INTO EARTH DIKE.
4. USE CLEAN 2 TO 3 INCH STONE OR EQUIVALENT RECYCLED CONCRETE. PLACE WOVEN MONOFILAMENT GEOTEXTILE ON UPSTREAM FACE AND COVER WITH A MINIMUM OF 6 INCHES OF ADDITIONAL STONE.
5. USE NONWOVEN AND WOVEN MONOFILAMENT GEOTEXTILES AS SPECIFIED IN SECTION H-1 MATERIALS.
6. SET WEIR CREST OF STONE 6 INCHES LOWER THAN THE TOP OF EARTH DIKE. USE MINIMUM LENGTH OF 6 FEET FOR WEIR CREST.
7. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO WITHIN 6 INCHES OF WEIR CREST. REPLACE GEOTEXTILE AND STONE FACING WHEN STRUCTURE CEASES TO DRAIN. MAINTAIN LINE, GRADE, AND CROSS SECTION.
8. UPON REMOVAL OF STONE OUTLET STRUCTURE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

2 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

31 TEMPORARY STONE OUTLET STRUCTURE (ES-2, ES-3)

NOT TO SCALE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

[signature] HOWARD SCD — 11/22/17 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[signature] DIRECTOR — 12-12-17 DATE

[signature] CHIEF, DEVELOPMENT ENGINEERING DIVISION — 11-29-17 DATE

[signature] CHIEF, DIVISION OF LAND DEVELOPMENT — 12-5-17 DATE

GRID: 8
ZONING: RC-DEO
TAX MAP: 0016
BLOCK: N/A
PARCEL/LOT: 220, 253, 11, 23, 54
ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — MARK JOSEPH GUTBERLET — No. 23402 — PROFESSIONAL ENGINEER — 10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY: MBS/MP
DRN. BY: JAP/KEJ
CHK. BY: SMD
DATE: OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TOTAL SHEET NUMBER DUE TO ADDITION OF SHEET 45	8/2022

EROSION AND SEDIMENT CONTROL DETAILS III

COMPOST FACILITY – PHASE II AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 20 OF ~~44~~ 45
DRAWING: ES-9
PROJECT: 14982.05
SHEET: ~~32 OF 70~~

~~NOT FOR CONSTRUCTION~~ SITE DEVELOPMENT PLAN #SDP-16-035

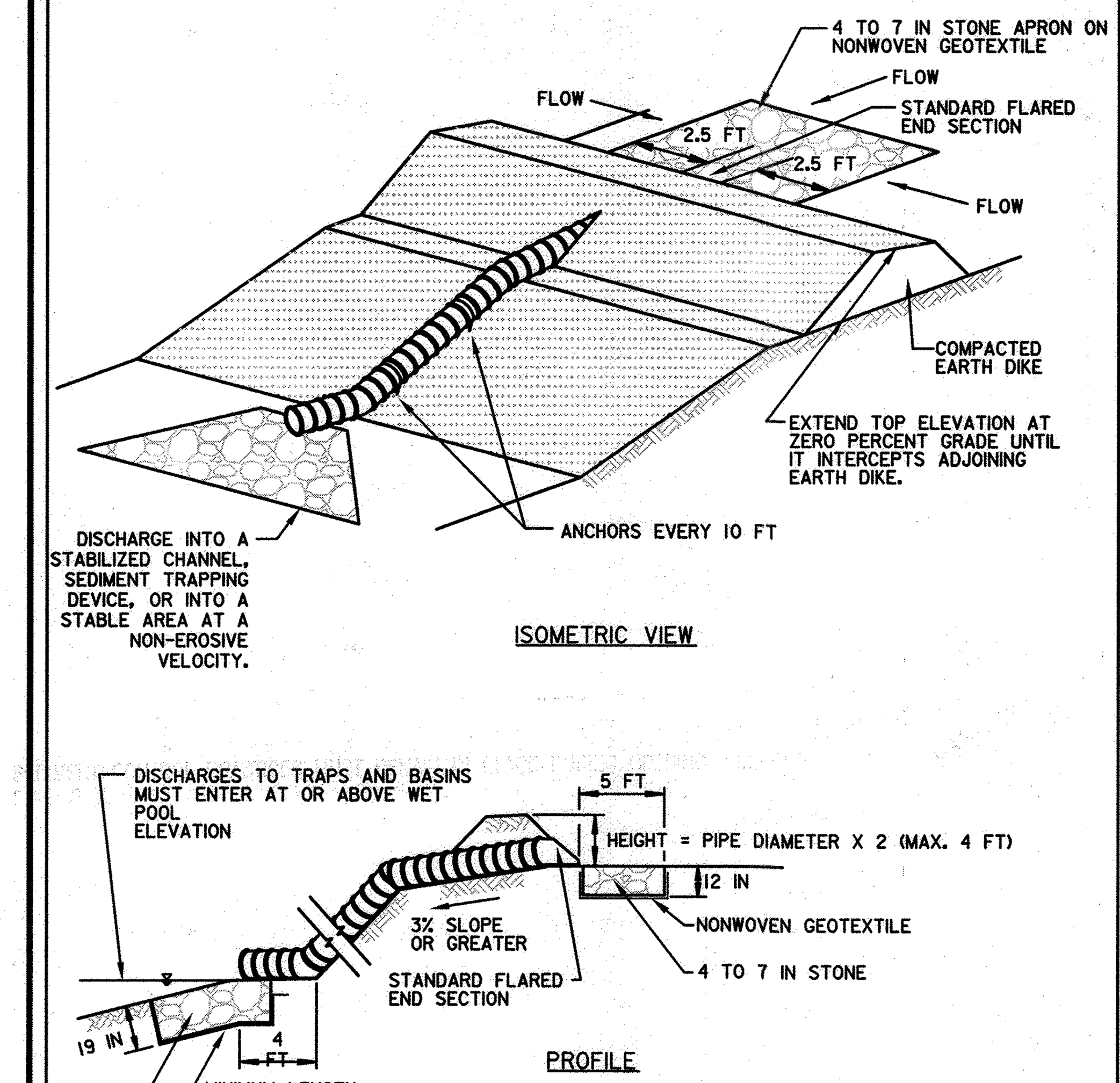
SDP-16-035

FILE PATH: Q:\PROJECTS\1498205 - ARL COMPOST FACILITY\1498205ES-09DETL.DWG [ES-9 - ESC DETAILS III - (SDP-20)] 3/12/15

DETAIL D-1 PIPE SLOPE DRAIN

STANDARD SYMBOL: PSD - 12

DESIGNATION PSD-12 REFERS TO 12 IN PIPE SLOPE DRAIN.



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

DETAIL D-1 PIPE SLOPE DRAIN

STANDARD SYMBOL: PSD - 12

DESIGNATION PSD-12 REFERS TO 12 IN PIPE SLOPE DRAIN.

CONSTRUCTION SPECIFICATIONS

1. THE HEIGHT OF THE EARTH DIKE MUST BE AT LEAST 2 TIMES THE PIPE DIAMETER MEASURED FROM THE INVERT OF THE PIPE. EXTEND THE TOP ELEVATION OF DIKE AT ZERO PERCENT GRADE UNTIL IT INTERCEPTS THE TOP OF THE ADJOINING EARTH DIKE.
2. FLEXIBLE PIPE IS PREFERRED. HOWEVER, CORRUGATED METAL PIPE OR EQUIVALENT PVC PIPE CAN BE USED. ALL CONNECTIONS MUST BE WATERTIGHT.
3. ATTACH A FLARED END SECTION TO THE INLET END OF PIPE WITH A WATERTIGHT CONNECTION. AT THE INLET OF THE PIPE SLOPE DRAIN, INSTALL 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PLACED 12 INCHES IN DEPTH ON NONWOVEN GEOTEXTILE AND EXTEND OUT 5 FEET FROM THE INLET IN ALL DIRECTIONS.
4. PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL RIPRAP.
5. SECURELY ANCHOR THE PIPE SLOPE DRAIN (PSD) TO THE SLOPE. SPACE THE ANCHORS EVERY 10 FEET.
6. HAND TAMP THE SOIL AROUND AND UNDER THE PIPE AND END SECTION IN 4 INCH LIFTS TO THE TOP OF THE EARTH DIKE.
7. UPON COMPLETING INSTALLATION OF THE PSD, STABILIZE ASSOCIATED DISTURBANCES WITH SEED, MULCH, AND TACK.
8. INSTALL OUTLET PROTECTION AS SPECIFIED ON APPROVED PLAN.
9. KEEP POINTS OF INFLOW AND OUTFLOW FREE OF EROSION. MAINTAIN WATER TIGHT CONNECTIONS AND POSITIVE DRAINAGE. REMOVE ACCUMULATED SEDIMENT AND DEBRIS.

2 OF 2

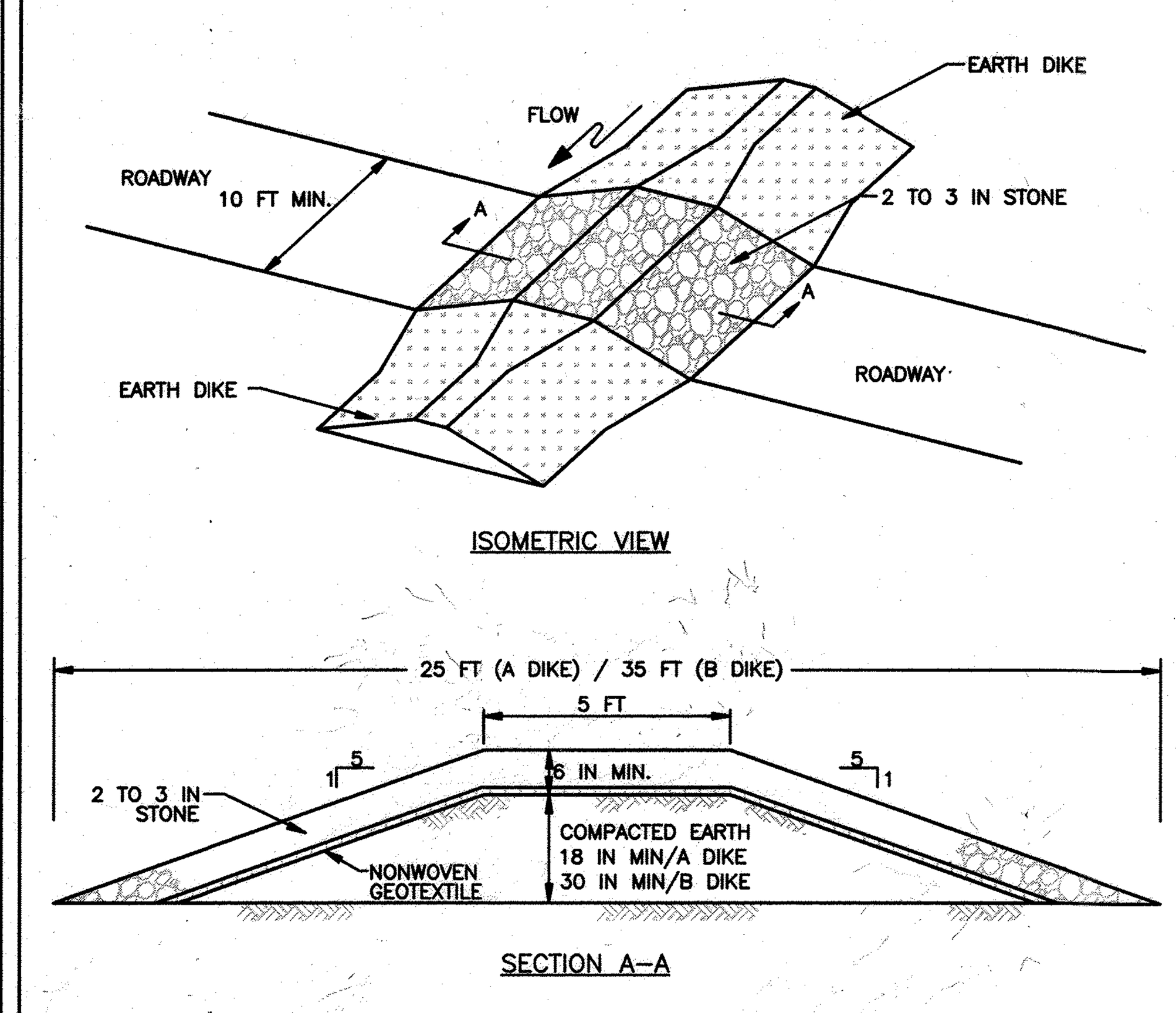
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

32 (ES-1) PIPE SLOPE DRAIN
NOT TO SCALE

DETAIL C-8 MOUNTABLE BERM

STANDARD SYMBOL: MB



CONSTRUCTION SPECIFICATIONS

1. USE MINIMUM WIDTH OF 10 FEET TO ALLOW FOR VEHICULAR PASSAGE.
2. PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE EARTH MOUND PRIOR TO PLACING STONE.
3. PLACE 2 TO 3 INCH STONE OR EQUIVALENT RECYCLED CONCRETE AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE MOUNTABLE BERM.
4. MAINTAIN LINE, GRADE, AND CROSS SECTION. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN SPECIFIED DIMENSIONS. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE.

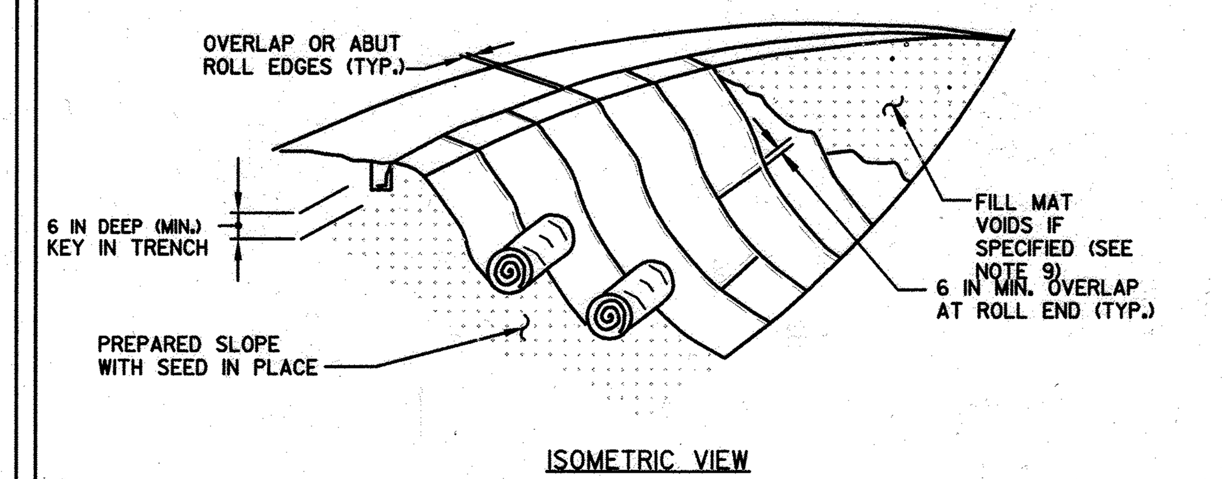
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

33 (ES-1) MOUNTABLE BERM
NOT TO SCALE

DETAIL B-4-6-D PERMANENT SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL: PSSMS - * lb/ft² (* INCLUDE SHEAR STRESS)



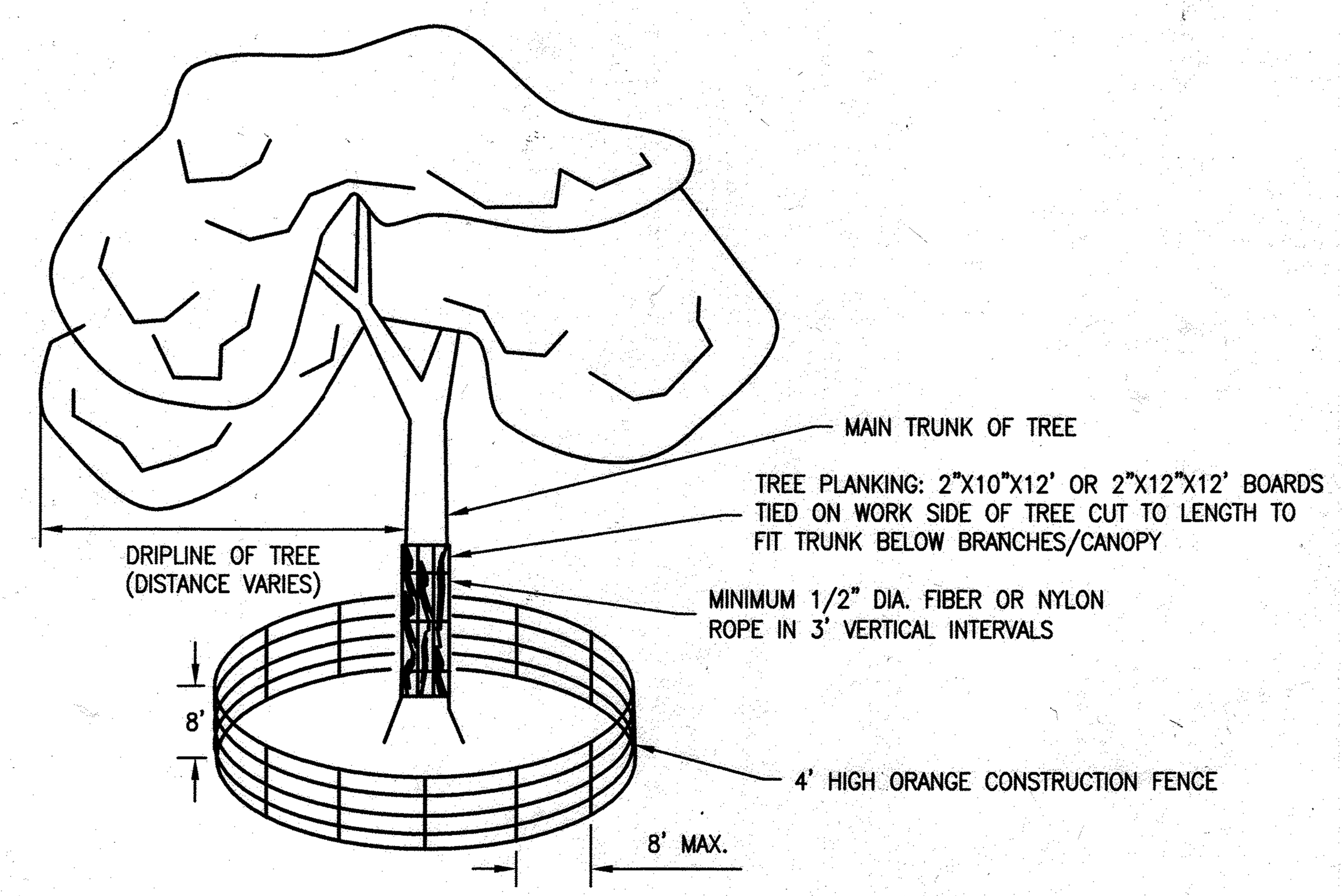
CONSTRUCTION SPECIFICATIONS

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 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 DOWNSLOPE 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

34 (-) PERMANENT SOIL STABILIZATION MATTING SLOPE APPLICATION
NOT TO SCALE



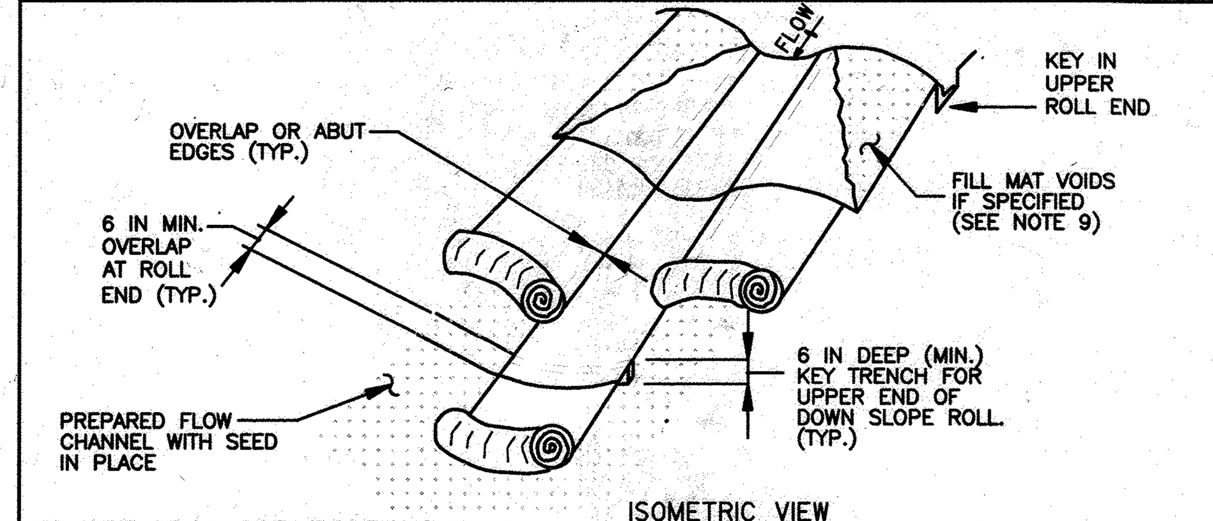
NOTES:

1. FOR TREE PROTECTION PLANKING AS DIRECTED BY THE ENGINEER, TIE WITH 1 / 2" DIA. ROPE (FIBER OR NYLON) SUFFICIENT 2"x10"x12' or 2"x12"x12' BOARDS AROUND MAIN TRUNK OF TREE TO PROTECT ALL AREAS EXPOSED TO CONSTRUCTION. CUT TO LENGTH AS NEEDED TO FIT TRUNK BELOW BRANCHES / CANOPY.
2. INSTALL WIRE EYE BOLTS FIRMLY IN EACH PLANK WHERE FIBER OR NYLON ROPES CROSS OVER PLANKS.
3. WHERE SIGNIFICANT TREE BRANCHES EXIST WHICH PREVENT PLANK INSTALLATION, PLANKING SHALL EXTEND TO THE ELEVATION OF THE LOWEST BRANCH.
4. ORANGE CONSTRUCTION FENCING WILL BE PLACED 5' FROM TRUNK AS INDICATED ON THE PLANS IN HIGH TRAFFIC OR AREAS OF CONCERN. ORANGE CONSTRUCTION FENCE SHALL BE REPLACED BY TREE PROTECTION FENCE AS DESCRIBED IN THE TREE PROTECTION FENCE DETAIL.
5. ORANGE CONSTRUCTION FENCE POST MUST BE INSTALLED TO A DEPTH OF NO LESS THAN 1 / 3 OF THE POST HEIGHT.

35 (ES-1) TREE PROTECTION
NOT TO SCALE

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 1 ½ 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. 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

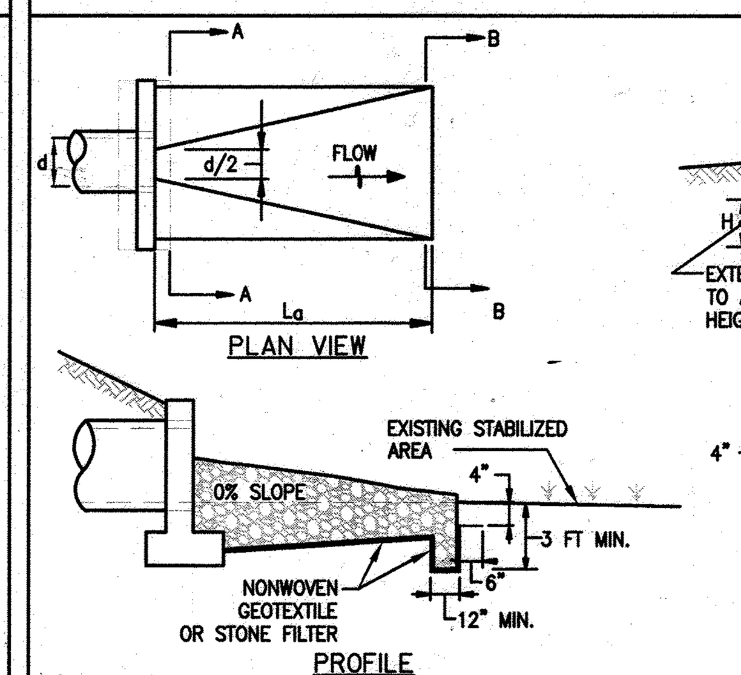
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

36 (C-5) PERMANENT SLOPE STABILIZATION MATTING (ES-1, ES-2)
NOT TO SCALE

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 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 RIPRAP 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

37 (ES-1) ROCK OUTLET PROTECTION III (ES-2)
NOT TO SCALE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

John R Robertson 1/22/17
HOWARD SCD — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

12-12-17
DIRECTOR — DATE

11-29-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

12-5-17
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

GRID: 8	BLOCK: N/A
ZONING: RC-DEO	PARCEL/LOT: 220, 253, 11, 23, 54
TAX MAP: 0016	ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — MARK JOSEPH GUTBERLET — No. 23402 — PROFESSIONAL ENGINEER
10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	MBS/MP
DRN. BY:	JAP/KEJ
CHK. BY:	SMD
DATE:	OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TOTAL SHEET NUMBER DUE TO ADDITION OF SHEET 45	8/2022

EROSION AND SEDIMENT CONTROL DETAILS IV

COMPOST FACILITY - PHASE II AT ALPHA RIDGE LANDFILL

HOWARD COUNTY, MARYLAND

SDP SHEET: 21 OF ~~44~~ 45 (2)
DRAWING: ES-10
PROJECT: 14982.05
SHEET: ~~33 OF 70~~

~~NOT FOR CONSTRUCTION~~ - SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035

FILE PATH: Q:\PROJECTS\1498205 - ARL COMPOST FACILITY\1498205ES-10DETL.DWG

B-4 STANDARDS AND SPECIFICATIONS
FOR
VEGETATIVE STABILIZATION

DEFINITION
USING VEGETATION AS COVER TO PROTECT EXPOSED SOIL FROM EROSION.

PURPOSE
TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL.

CONDITIONS WHERE PRACTICE APPLIES
ON ALL DISTURBED AREAS NOT STABILIZED BY OTHER METHODS. THIS SPECIFICATION IS DIVIDED INTO SECTIONS ON INCREMENTAL STABILIZATION; SOIL PREPARATION, SOIL AMENDMENTS AND TOPSOILING; SEEDING AND MULCHING; TEMPORARY STABILIZATION; AND PERMANENT STABILIZATION.

EFFECTS ON WATER QUALITY AND QUANTITY
STABILIZATION PRACTICES ARE USED TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL. WHEN SOIL IS STABILIZED WITH VEGETATION, THE SOIL IS LESS LIKELY TO ERODE AND MORE LIKELY TO ALLOW INFILTRATION OF RAINFALL, THEREBY REDUCING SEDIMENT LOADS AND RUNOFF TO DOWNSTREAM AREAS.

PLANTING VEGETATION IN DISTURBED AREAS WILL HAVE AN EFFECT ON THE WATER BUDGET, ESPECIALLY ON VOLUMES AND RATES OF RUNOFF, INFILTRATION, EVAPORATION, TRANSPIRATION, PERCOLATION, AND GROUNDWATER RECHARGE. OVER TIME, VEGETATION WILL INCREASE ORGANIC MATTER CONTENT AND IMPROVE THE WATER HOLDING CAPACITY OF THE SOIL AND SUBSEQUENT PLANT GROWTH.

VEGETATION WILL HELP REDUCE THE MOVEMENT OF SEDIMENT, NUTRIENTS, AND OTHER CHEMICAL CARRIED BY RUNOFF TO RECEIVING WATERS. PLANTS WILL ALSO HELP PROTECT GROUNDWATER SUPPLIES BY ASSIMILATING THOSE SUBSTANCES PRESENT WITHIN THE ROOT ZONE.

SEDIMENT CONTROL PRACTICES MUST REMAIN IN PLACE DURING GRADING, SEEDBED PREPARATION, SEEDING, MULCHING, AND VEGETATIVE ESTABLISHMENT.

ADEQUATE VEGETATIVE ESTABLISHMENT
INSPECT SEEDED AREAS FOR VEGETATIVE ESTABLISHMENT AND MAKE NECESSARY REPAIRS, REPLACEMENTS, AND RESEEDINGS WITHIN THE PLANTING SEASON.

1. ADEQUATE VEGETATIVE STABILIZATION REQUIRES 95 PERCENT GROUNDCOVER.
2. IF AN AREA HAS LESS THAN 40 PERCENT GROUNDCOVER, RESTABILIZE FOLLOWING THE ORIGINAL RECOMMENDATIONS FOR LIME, FERTILIZER, SEEDBED PREPARATION, AND SEEDING.
3. IF AN AREA HAS BETWEEN 40 AND 94 PERCENT GROUNDCOVER, OVER-SEED AND FERTILIZE USING HALF OF THE RATES ORIGINALLY SPECIFIED.
4. MAINTENANCE FERTILIZER RATES FOR PERMANENT SEEDING ARE SHOWN IN TABLE B.6.

B-4-1 STANDARDS AND SPECIFICATIONS
FOR
INCREMENTAL STABILIZATION

DEFINITION
ESTABLISHMENT OF VEGETATIVE COVER ON CUT AND FILL SLOPES.

PURPOSE
TO PROVIDE TIMELY VEGETATIVE COVER ON CUT AND FILL SLOPES AS WORK PROGRESSES.

CONDITIONS WHERE PRACTICE APPLIES
ANY CUT OR FILL SLOPE GREATER THAN 15 FEET IN HEIGHT. THIS PRACTICE ALSO APPLIES TO STOCKPILES.

CRITERIA

A. INCREMENTAL STABILIZATION – CUT SLOPES
1. EXCAVATE AND STABILIZE CUT SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL CUT SLOPES AS THE WORK PROGRESSES.
2. CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.1):
2.a. CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO CONVEY RUNOFF AROUND THE EXCAVATION.
2.b. PERFORM PHASE I EXCAVATION, PREPARE SEEDBED, AND STABILIZE.
2.c. PERFORM PHASE 2 EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PHASE 1 AREAS AS NECESSARY.
2.d. PERFORM FINAL PHASE EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED AREAS AS NECESSARY.

NOTE: ONCE EXCAVATION HAS BEGUN, THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

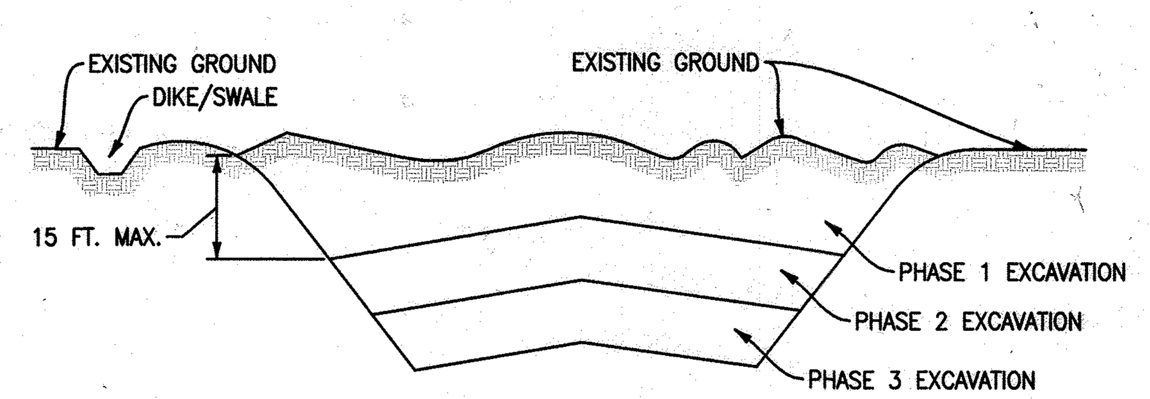


FIGURE B.1: INCREMENTAL STABILIZATION – CUT

B. INCREMENTAL STABILIZATION – FILL SLOPES
1. CONSTRUCT AND STABILIZE FILL SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL SLOPES AS THE WORK PROGRESSES.
2. STABILIZE SLOPES IMMEDIATELY WHEN THE VERTICAL HEIGHT OF A LIFT REACHES 15 FEET OR WHEN THE GRADING OPERATION CEASES AS PRESCRIBED IN THE PLANS.
3. AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.
4. CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.2):
4.a. CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO DIVERT RUNOFF AROUND THE FILL. CONSTRUCT SILT FENCE ON LOW SIDE OF FILL UNLESS OTHER METHODS SHOWN ON THE PLANS ADDRESS THIS AREA.
4.b. AT THE END OF THE DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.
4.c. PLACE PHASE 1 FILL, PREPARE SEEDBED, AND STABILIZE.
4.d. PLACE PHASE 2 FILL, PREPARE SEEDBED, AND STABILIZE.
4.e. PLACE FINAL PHASE FILL, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED AREAS AS NECESSARY.

NOTE: ONCE THE PLACEMENT OF FILL HAS BEGUN, THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

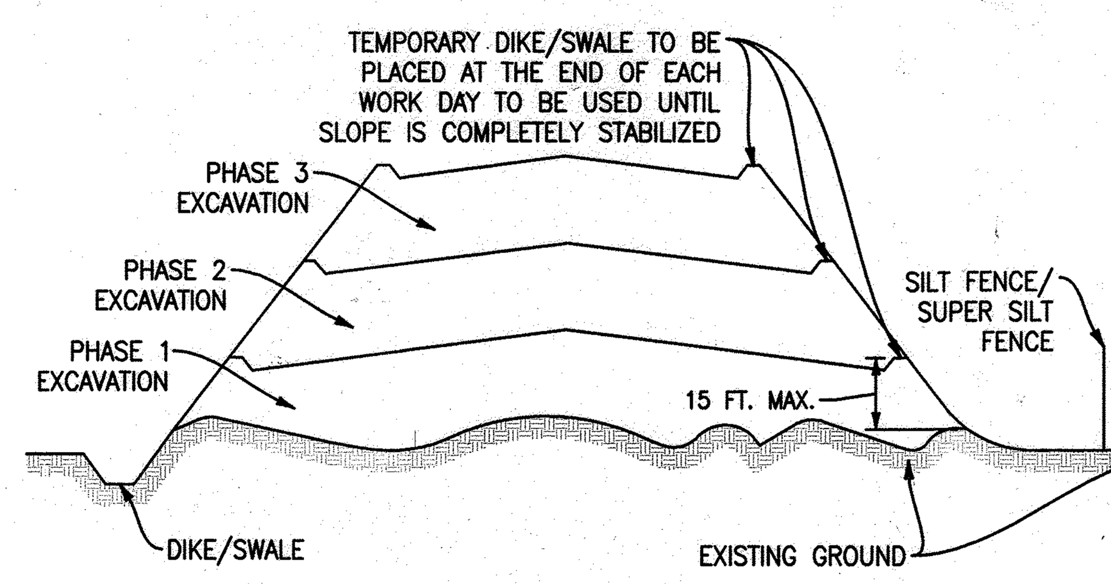


FIGURE B.2: INCREMENTAL STABILIZATION – FILL

B-4-2 STANDARDS AND SPECIFICATIONS
FOR
SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

DEFINITION
THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

PURPOSE
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES
WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA

A. SOIL PREPARATION
1. TEMPORARY STABILIZATION
1.a. SEED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
1.b. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
1.c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS

2. PERMANENT STABILIZATION
2.a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
a. SOIL PH BETWEEN 6.0 TO 7.0.
b. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
c. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE
d. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
e. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
2.a. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
2.b. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
2.c. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
2.d. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING
1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
3.a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
3.b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT MATERIAL.
3.c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
3.d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
5.a. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 ½ INCHES IN DIAMETER.
5.b. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
5.c. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
6. TOPSOIL APPLICATION
6.a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
6.b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
6.c. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SEIVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SEIVE.
4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

B-4-3 STANDARDS AND SPECIFICATIONS
FOR
SEEDIND AND MULCHING

DEFINITION
THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

PURPOSE
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES
TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

CRITERIA

A. SEEDING
1. SPECIFICATIONS
1.a. ALL SEED MUST MEET THE REQUIREMENT OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
1.b. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
1.c. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
1.d. SOD AND SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
2. APPLICATION
2.a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
a. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
b. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
2.B. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
a. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST ¼ INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
b. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
2.C. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
a. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, TEH APPLICATION RATES SHOULD BE EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL SOLUBLE NITROGEN; P_2O_5 (PHOSPHOROUS), 200 POUNDS PER ACRE; K_2O (POTASSIUM), 200 POUNDS PER ACRE.
b. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
c. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
d. WHEN HYDROSEEDING, DO NOT INCORPORATE INTO THE SOIL.

B. MULCHING
1. MULCH MATERIALS (IN ORDER OF PREFERENCE)
1.a. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLE BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEE LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
1.b. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
a. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
b. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
c. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
d. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BY PHYTO-TOXIC.
e. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.
2. APPLICATION
2.a. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
2.b. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
2.c. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 100 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
3. ANCHORING
3.a. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
a. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
b. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
c. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
d. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

B-4-4 STANDARDS AND SPECIFICATIONS
FOR
TEMPORARY STABILIZATION

DEFINITION
TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.

PURPOSE
TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA

A. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THE SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
B. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOILS TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
C. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONG AS PRESCRIBED IN SECTION B-4-3.A.1.1B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

HARDINESS ZONE: 6b SEED MIXTURE:					FERTILIZER RATE (10-20-20)	LIME RATE
NO.	SPECIES	APPLICATION RATE(LB/AC)	SEEDING DATES	SEEDING DEPTHS		
	ANNUAL RYEGRASS	40	MAR 1-MAY 15 AUG 1-OCT 15		436 LB/AC (10 LB/ 1000SF)	2 TONS/AC (90 LB/ 1000SF)
	FOXTAIL MILLET	30	MAY 16-JULY 31			

B-4-5 STANDARDS AND SPECIFICATIONS
FOR
PERMANENT STABILIZATION

DEFINITION
TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

PURPOSE
TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT COVER ON DISTURBED SOILS..

CONDITIONS WHERE PRACTICE APPLIES
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE..

CRITERIA

A. SEED MIXTURES
1. GENERAL USE
1.a. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
1.b. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 – CRITICAL AREA PLANTING.
1.c. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
1.d. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 ½ POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.
2. TURFGRASS MIXTURES
2.a. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
2.b. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN:
a. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF TOTAL MIXTURE BY WEIGHT.
b. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
c. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
d. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE 60 TO 70 PERCENT. SEEDING RATE: 1 ½ TO 3 POUNDS PER 1000 SQUARE FEET.

NOTES:
SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND".

CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.

3. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES
WESTERN MARYLAND: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A)

CENTRAL MARYLAND: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)

SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)

4. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1 ½ INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.
5. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (½ TO 1 INCH EVER 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

PERMANENT SEEDING SUMMARY

HARDINESS ZONE: 6b SEED MIXTURE: 2, 3					FERTILIZER RATE (20-10-10)			LIME RATE
NO.	SPECIES	APPLICATION RATE(LB/AC)	SEEDING DATES	SEEDING DEPTHS	N	P_2O_5	K_2O	
2	BIG BLUESTEM INDIANGRASS LITTLE BLUESTEM CREEPING RED FESCUE PATRIDGE PEA	6 6 4 15 4	MAR. 1-MAY 15 MAY 16-JUNE 15	¼ TO ½ IN.	250 LB/ AC (5.8 LB/ 1000SF)	100 LB/ AC (2.3 LB/ 1000SF)	100 LB/ AC (2.3 LB/ 1000SF)	2 TONS/ AC (90 LB/ 1000 SF)
3	DEERTONGUE SHEEP FESCUE COMMON LESPEDEZA	20 20 10	MAR. 1-MAY 15 MAY 16-JUNE 15	¼ TO ½ IN.				

B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).
1. GENERAL SPECIFICATIONS
1.a. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
1.b. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF ¾ INCHES, PLUS OR MINUS ¼ INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
1.c. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
1.d. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.

1.e. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN
AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION
2. SOD INSTALLATION
2.a. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
2.b. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACE PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
2.c. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
2.d. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATION OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.
3. SOD MAINTENANCE
3.a. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
3.b. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
3.c. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN ⅓ OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[signature] 12-12-17
DIRECTOR DATE
[signature] 11-29-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
[signature] 12-5-17
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
[signature] 11/22/17
HOWARD SCD DATE

GRID: 8 | BLOCK: N/A
ZONING: RC-DEO | PARCEL/LOT: 220, 253, 11, 23, 54
TAX MAP: 0016 | ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND, MARK JOSEPH GUTBERLET, No. 23402, PROFESSIONAL ENGINEER
10/4/17

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	MBS/MP
DRN. BY:	JAP/KEJ
CHK. BY:	SMD
DATE:	OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TOTAL SHEET NUMBER DUE TO ADDITION OF SHEET 43	8/2022

EROSION AND SEDIMENT CONTROL NOTES I

COMPOST FACILITY – PHASE II
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 22 OF ~~44~~ 45 (2)
DRAWING: ES-11
PROJECT: 14982.05
SHEET: ~~34 OF 70~~

FILE PATH: O:\PROJECTS\1498205 – ARL COMPOST FACILITY\1498205ES-11NOTE.DWG [ES-11 – ESC NOTES I – (SDP-22)] 3/12/15

~~NOT FOR CONSTRUCTION~~ - SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035

B-4-8 STANDARDS AND SPECIFICATIONS

FOR

STOCKPILE AREA

Definition

A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

Purpose

To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

Conditions Where Practice Applies

Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

Criteria

1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
3. Runoff from the stockpile area must drain to a suitable sediment control practice.
4. Access the stockpile area from the upgrade side.
5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
7. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

Maintenance

The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOURS NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:

   1.1. PRIOR TO THE START OF EARTH DISTURBANCE,
   1.2. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING,
   1.3. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT,
   1.4. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.

   OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.

2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.

3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.

4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15' OF CUT AND/OR FILL. STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).

5. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID.

6. SITE ANALYSIS:

TOTAL AREA OF SITE:	590.00 ACRES
AREA DISTURBED:	~~13.97 ACRES~~ 15.53 ACRES (2)
AREA TO BE ROOFED OR PAVED:	6.59 ACRES
AREA TO BE VEGETATIVELY STABILIZED:	~~7.38 ACRES~~ 8.94 ACRES
TOTAL CUT:	22,000 CU. YDS.
TOTAL FILL:	43,400 CU. YDS
OFFSITE WASTE/BORROW AREA LOCATION:	N/A

7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY; AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE:

   - INSPECTION DATE
   - INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)
   - NAME AND TITLE OF INSPECTOR
   - WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)
   - BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES
   - EVIDENCE OF SEDIMENT DISCHARGES
   - IDENTIFICATION OF PLAN DEFICIENCIES
   - IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
   - IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS
   - COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
   - PHOTOGRAPHS
   - MONITORING/SAMPLING
   - MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
   - OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE).

9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORK DAY, WHICHEVER IS SHORTER.

10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY BE ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES.

11. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE HSCD, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.

13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.

14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION.

15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):
   - USE I AND IP MARCH 1-JUNE 15
   - USE III AND IIIP OCTOBER 1-APRIL 30
   - USE IV MARCH 1-MAY 31

16. A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

SEQUENCE OF EROSION AND SEDIMENT CONTROL MEASURES:

1. NOTIFY THE HOWARD COUNTY INSPECTOR OF THE INTENT TO START THE WORK. HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION CAN BE REACHED AT 410-313-5712. INITIATE WORK AFTER RECEIPT OF NOTICE TO PROCEED FROM THE HOWARD COUNTY INSPECTOR. (1 DAY)
2. CLEAR AND GRUB FOR THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS ASSOCIATED WITH THE INITIAL PHASE. (3 DAYS)
3. INSTALL PERIMETER AND EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON INITIAL PHASE EROSION AND SEDIMENT CONTROL DRAWINGS. CONSTRUCTION OF THE SEDIMENT TRAPS SHALL BEGIN AFTER PERIMETER CONTROLS ARE IN PLACE. (5 DAYS)
4. CLEAR AND GRUB WITHIN THE FOOTPRINTS OF THE SEDIMENT TRAPS SHOWN IN THE INITIAL PHASE. (2 DAYS)
5. CONSTRUCT SEDIMENT TRAPS 1 AND 2 AS SHOWN ON THE INITIAL PHASE EROSION AND SEDIMENT CONTROL PLANS. (10 DAYS)
6. AFTER COMPLETING CONSTRUCTION AND STABILIZATION OF ALL INITIAL PHASE EROSION AND SEDIMENT CONTROL MEASURES, AND WITH THE PERMISSION OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB THE REMAINDER OF THE SITE FOR CONSTRUCTION. (5 DAYS)
7. CONSTRUCT SITE, INCLUDING EARTHWORK, UTILITIES, PAVING, BUILDINGS AND STORMWATER MANAGEMENT FACILITIES. MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT CONSTRUCTION. SEDIMENT TRAPS 1 AND 2 SHALL BE CLEANED OUT WHEN ACCUMULATED SEDIMENT REACHES THE CLEANOUT ELEVATIONS INDICATED ON THE PLANS. IF NECESSARY, DEWATER WORK AREAS AND FILTER SEDIMENT LADEN WATER THROUGH A PORTABLE SEDIMENT TANK, AS NEEDED. (300 DAYS)
8. IN ORDER TO COMPLETE A PORTION OF THE PERIMETER ROAD ON THE WEST SIDE OF THE SITE, SEDIMENT TRAP 1 WILL NEED TO BE ABANDONED. WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, ABANDON SEDIMENT TRAP 1 BY FIRST DEWATERING THE TRAP COMPLETELY. MUCK OUT ANY SOFT OR UNSUITABLE MATERIALS BEFORE PROCEEDING WITH ADDITIONAL WORK. REMOVE THE SEDIMENT TRAP 1 RISER STRUCTURE AND ABANDON THE SPILLWAY PIPE IN PLACE BY FILLING WITH FLOWABLE FILL. (3 DAYS)
9. CONSTRUCT STORMWATER MANAGEMENT FACILITIES ACROSS THE SITE ONLY AFTER THEIR INDIVIDUAL CONTRIBUTING DRAINAGE AREAS ARE PERMANENTLY STABILIZED. IF THE AREAS CANNOT BE STABILIZED, SURFACE RUNOFF SHALL BE DIVERTED AROUND THE LOCATIONS OF THE PROPOSED STORMWATER MANAGEMENT FACILITIES. (30 DAYS)
10. UPON COMPLETING CONSTRUCTION AT THE SITE, SEDIMENT TRAP 2 SHALL BE CONVERTED TO A PERMANENT STORMWATER MANAGEMENT FACILITY. WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR. COMPLETELY DEWATER SEDIMENT TRAP 2. MUCK OUT ANY SOFT OR UNSUITABLE MATERIALS BEFORE PROCEEDING WITH ADDITIONAL WORK. REMOVE THE SEDIMENT TRAP SPILLWAY STONE AND PROCEED TO FILL REMAINING AREAS TO GRADE. CONSTRUCT THE REMAINING PORTION OF THE PERIMETER ACCESS ROAD AND CONVERT THE SEDIMENT TRAP 2 AREA TO ITS PROPOSED PERMANENT STORMWATER MANAGEMENT FACILITY. (5 DAYS)
11. EROSION AND SEDIMENT CONTROLS SHALL REMAIN IN PLACE UNTIL THE COMPLETION OF THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF THE SITE UNTIL ALL WORK IS COMPLETE AND THE SITE IS RESTORED TO ORIGINAL CONDITIONS. (ONGOING)
12. UPON COMPLETION OF CONSTRUCTION, PERMANENTLY STABILIZE ALL REMAINING DISTURBED AREAS IN ACCORDANCE WITH THE VEGETATIVE STABILIZATION SPECIFICATIONS SHOWN ON THE DRAWINGS. IN ADDITION TO MEETING PERMANENT STABILIZATION REQUIREMENTS ON SHEET ES-10, AREAS TO BE PERMANENTLY SEEDED SHALL INCLUDE 2-IN. COMPOST (TO BE PROVIDED BY COUNTY) TRACKED INTO AREA PRIOR TO PERMANENT STABILIZATION. (5 DAYS)
13. UPON STABILIZATION OF THE SITE AND WITH PERMISSION OF THE HOWARD COUNTY INSPECTOR, REMOVE SEDIMENT CONTROL MEASURES AND STABILIZE THOSE AREAS DISTURBED BY THIS PROCESS. (2 DAYS)

HOWARD SOIL CONSERVATION DISTRICT PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: SOIL TEST SHALL BE BASED ON 2 INCHES OF COMPOST TRACKED INTO SOIL. RECOMMENDATIONS, NOT TO EXCEED PREFERRED SCHEDULE NOTED BELOW:

1. PREFERRED -- APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 600 LBS/ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS/ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ. FT.)

2. ACCEPTABLE -- APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 1000 LBS/ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

SEEDING -- FOR THE PERIODS MARCH 1 - APRIL 30, AND AUGUST 1 - OCTOBER 15, SEED WITH 60 LBS/ACRE (1.4LBS/1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 - JULY 31, SEED WITH 60 LBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS/ACRE (.05 LBS/100) SQ. FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 - FEBRUARY 28, PROTECT SITE BY:
OPTION 1 -- TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING.
OPTION 2 -- USE SOD.
OPTION 3 -- SEER: WITH 60 LBS/ACRE KENTUCKY 30 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING -- APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPE 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

MAINTENANCE -- INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE RE-DISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: -- LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: -- APPLY 600 LBS/ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ.FT.).

SEEDING: -- FOR PERIODS MARCH 1 - APRIL 30 AND FROM AUGUST 15 - OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ. FT.). FOR THE PERIOD MAY 1 - AUGUST 14, SEED WITH 3 LBS/ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ. FT.). FOR THE PERIOD NOVEMBER 16 - FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS/ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING: -- APPLY 1-1/2 TO 2 TONS/ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED WEED-FREE, SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL. PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPE 8 FT. OR HIGHER, USE 348 GAL. PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

REFER TO THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

( ) By the developer:

"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Signature of Developer Mark Dettorre (actual) Date 10/16/17
Print name below Signature

( ) By the Engineer:

"I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Signature of Engineer Mark J. Gutberlet Date 10/4/17
Print name below signature

( ) For the Howard Soil Conservation District:

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Howard Soil Conservation District Date

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SCD DATE 11/29/17

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 11.29.17

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 12-5-17

GRID: 8 BLOCK: N/A
ZONING: RC-DEO PARCEL/LOT: 220, 253, 11, 23, 54
TAX MAP: 0016 ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — MARK JOSEPH GUTBERLET — No. 22407 — PROFESSIONAL ENGINEER — 10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 22402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY: MBS/MF
DRN. BY: JAP/KE
CHK. BY: SMD
DATE: OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED SITE ANALYSIS DATA TO REFLECT PHASE IIB AND PHASE IIC LOD	8/2022

EROSION AND SEDIMENT CONTROL NOTES II

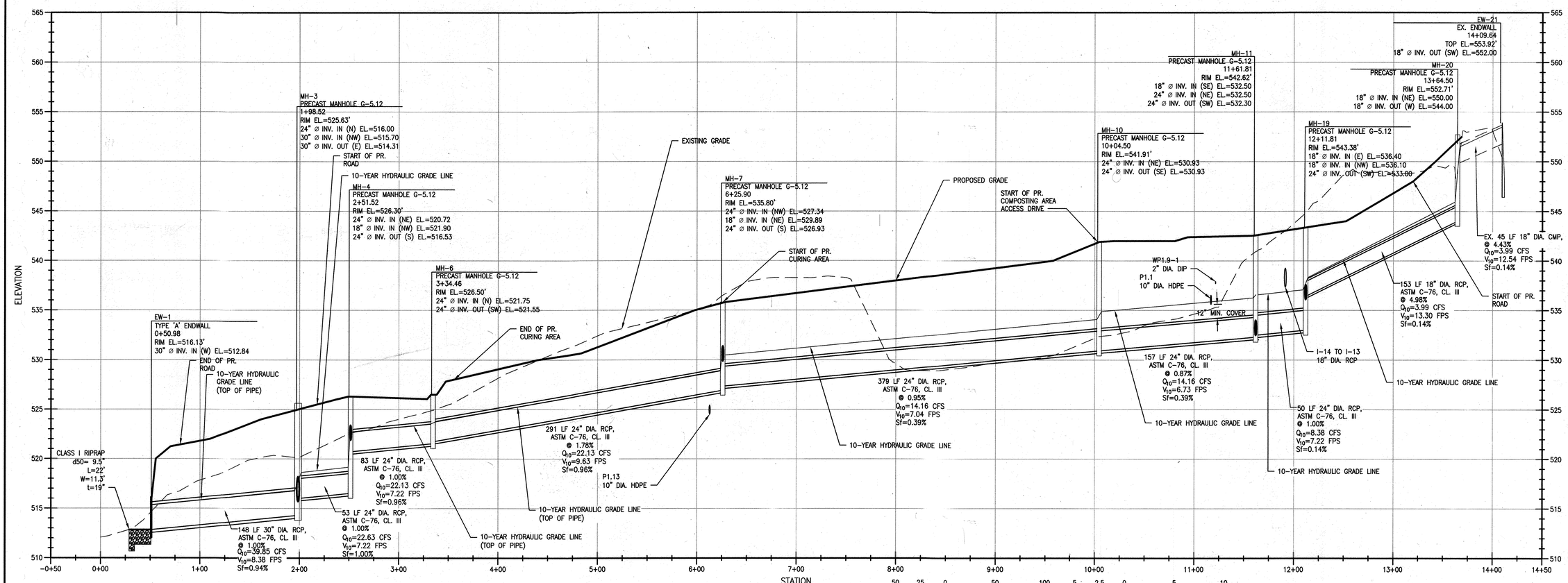
COMPOST FACILITY - PHASE II
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 23 OF ~~35~~ 45 (2)
DRAWING: ES-12
PROJECT: 14982.05
SHEET: ~~35 OF 70~~

NOT FOR CONSTRUCTION - SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035

FILE PATH: Q:\PROJECTS\14982005 - AVL COMPOST FACILITY\14982005-12NOTES.DWG [ES-12 - ESC NOTES II - (SDP-23)] 7/12/19



EW-1 to EW-21 PROFILE

SCALE: 1" = 5' VERTICAL
1" = 50' HORIZONTAL

NOTES:

1. CONTRACTOR SHALL ENSURE FILL FOR PIPE INSTALLATION IS COMPACTED IN ACCORDANCE WITH REQUIREMENTS OF AASHTO T-180.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.29.17

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12.5.17

GRID: 8
ZONING: RC-DEO
TAX MAP: 0016

BLOCK: N/A
PARCEL/LOT: 220, 253, 11, 23, 54
ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — MARK JOSEPH GUTBERLET — No. 23402 — PROFESSIONAL ENGINEER — 10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	MP/KEJ
DRN. BY:	JAP/KEJ
CHK. BY:	SMD
DATE:	OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TOTAL SHEET NUMBER DUE TO ADDITION OF SHEET 45	8/2022

STORMDRAIN PROFILE I

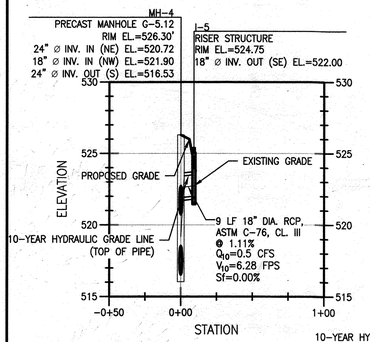
COMPOST FACILITY - PHASE II
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET:	45 / 24 OF ~~44~~ 45
DRAWING:	SW-3
PROJECT:	14982.05
SHEET:	~~38 OF 70~~

~~NOT FOR CONSTRUCTION~~ - SITE DEVELOPMENT PLAN #SDP-16-035

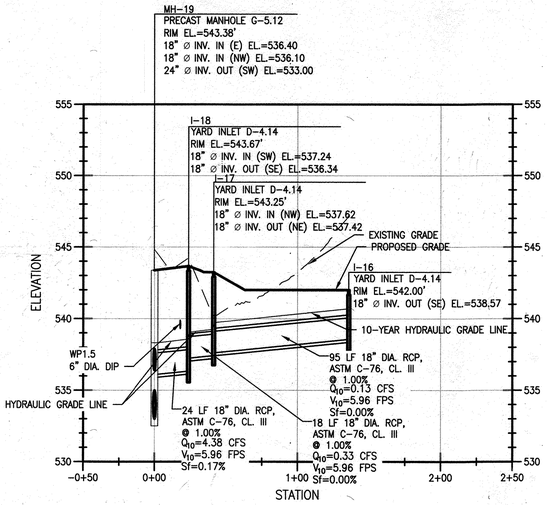
SDP-16-035

FILE PATH: Q:\PROJECTS\14982005 - ADL COMPOST FACILITY\14982005M-SDP01.DWG [SW-3 - STORMDRAIN PROFILE I - (SDP-24)] 3/12/15



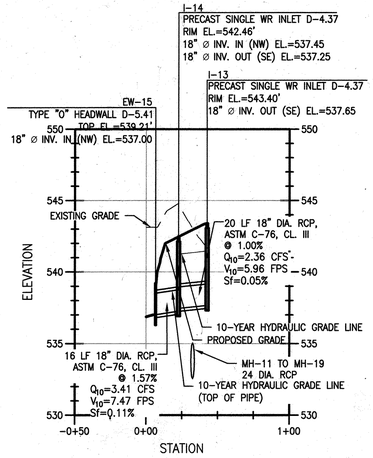
MH-4 to I-5 PROFILE

SCALE: 1" = 5' VERTICAL
1" = 50' HORIZONTAL



MH-19 to I-16 PROFILE

SCALE: 1" = 5' VERTICAL
1" = 50' HORIZONTAL

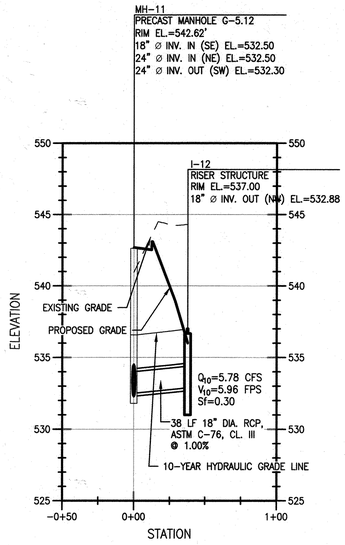


EW-15 to I-13 PROFILE

SCALE: 1" = 5' VERTICAL
1" = 50' HORIZONTAL

NOTES:

1. STATION 0+20 TO STATION 0+43 STORMDRAIN BELOW PROPOSED ROAD.

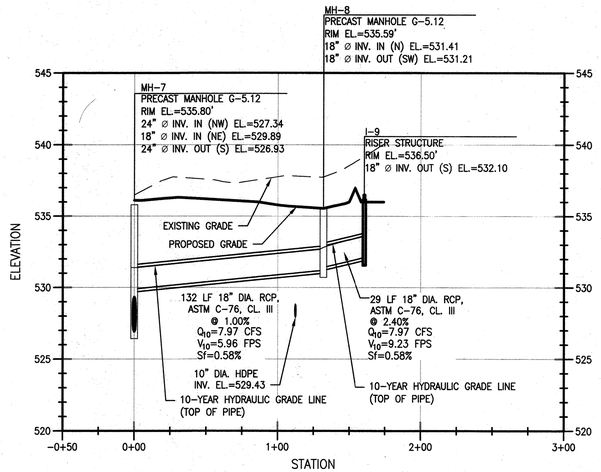


MH-11 to I-12 PROFILE

SCALE: 1" = 5' VERTICAL
1" = 50' HORIZONTAL

NOTES:

1. STATION 0+00 TO STATION 0+13 STORMDRAIN BELOW PROPOSED ROAD.

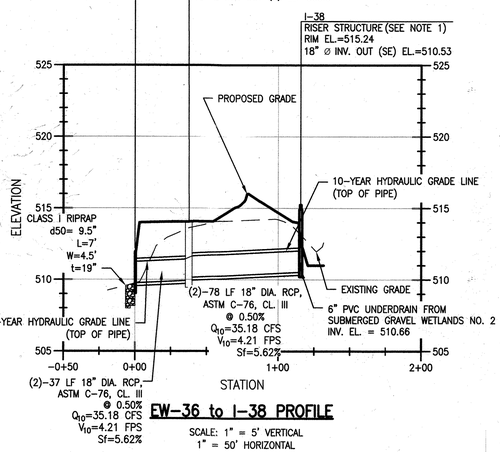


MH-7 to I-9 PROFILE

SCALE: 1" = 5' VERTICAL
1" = 50' HORIZONTAL

NOTES:

1. STATION 0+00 TO STATION 1+50 STORMDRAIN BELOW PROPOSED ROAD.



EW-36 to I-38 PROFILE

SCALE: 1" = 5' VERTICAL
1" = 50' HORIZONTAL

NOTES:

1. ENGINEERED RISER STRUCTURE DESIGN TO BE INCLUDED IN FUTURE DESIGN SUBMITTAL.
2. STATION 0+54 TO STATION 0+78 STORMDRAIN BELOW PROPOSED ROAD.

NOTES:

1. CONTRACTOR SHALL ENSURE FILL FOR PIPE INSTALLATION IS COMPACTED IN ACCORDANCE WITH REQUIREMENTS OF AASHTO T-180.

GRAPHIC SCALE IN FEET HORIZONTAL: 50 25 0 50 100
GRAPHIC SCALE IN FEET VERTICAL: 5 2.5 0 5 10

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.29.17

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12-5-17

GRID: 8
ZONING: RC-DEO
TAX MAP: 0016
BLOCK: N/A
PARCEL/LOT: 220, 253, 11, 23, 54
ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — JOSEPH GUTBERLET — No. 22401 — PROFESSIONAL ENGINEER — 10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	MP/KEJ
DRN. BY:	JAP/KEJ
CHK. BY:	SMD
DATE:	OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	ADDED TOTAL SHEET NUMBER DUE TO ADDITION OF SHEET 45	8/2022

STORMDRAIN PROFILE II

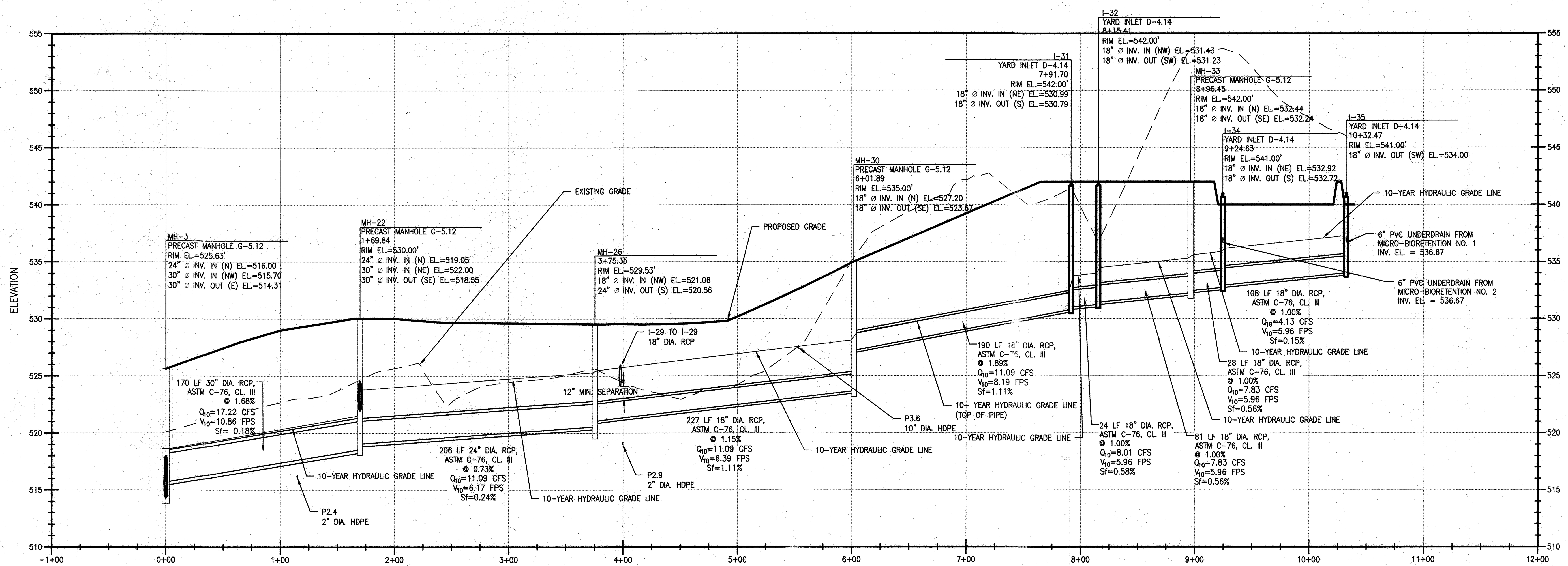
COMPOST FACILITY – PHASE II
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 25 OF 45 (2)
DRAWING: SW-4
PROJECT: 14982.05
SHEET: ~~39 OF 70~~

~~NOT FOR CONSTRUCTION — SITE DEVELOPMENT PLAN #SDP-16-035~~

SDP-16-035

FILE PATH: O:\PROJECTS\148205 - ARL COMPOST FACILITY\148205SDP-PDP2.DWG [SW-4 - STORMDRAIN PROFILE II - (SDP-19)] 3/12/15

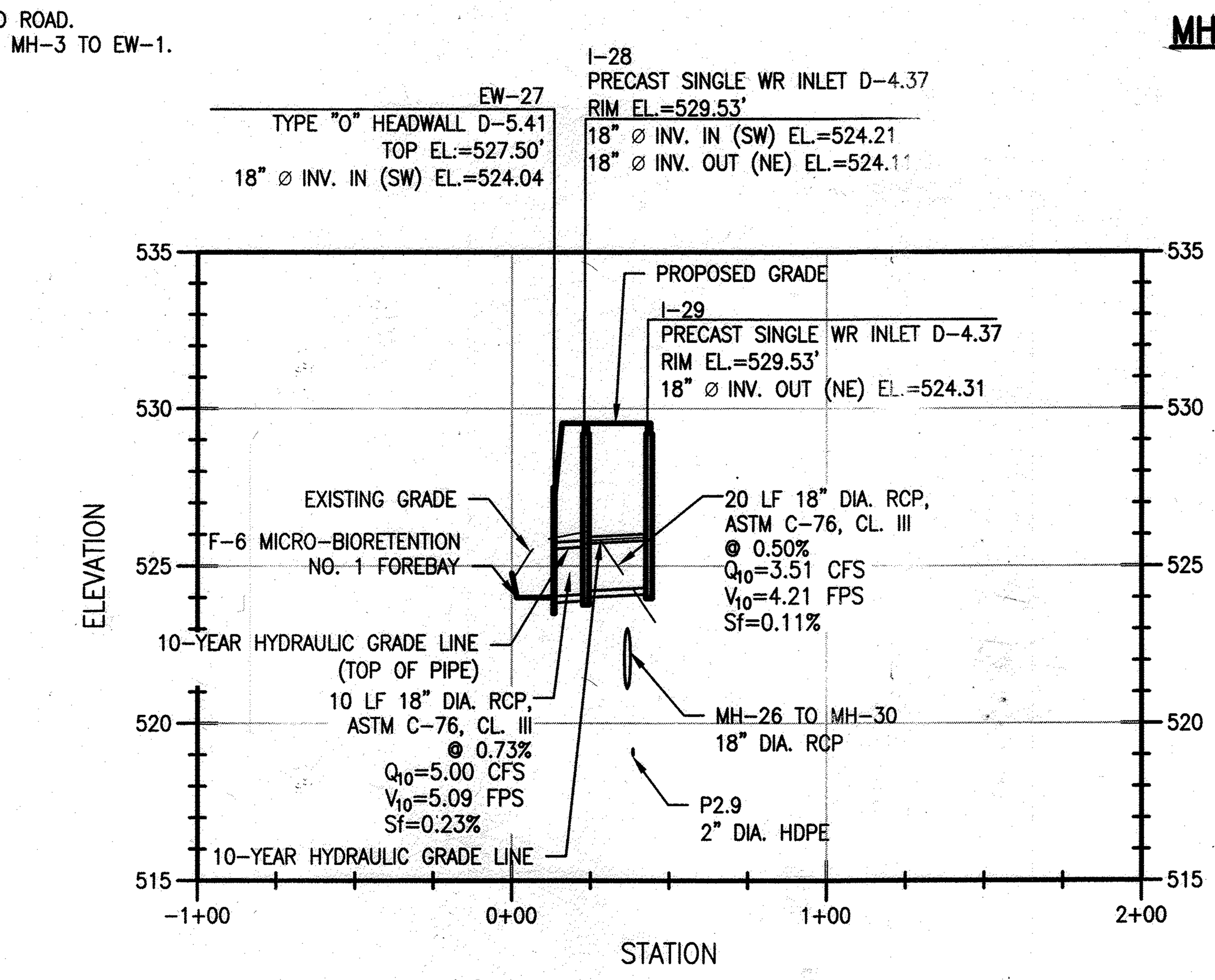


NOTES:

1. STATION 0+00 TO STATION 6+72 STORMDRAIN BELOW PROPOSED ROAD.
2. SEE SHEET SW-3 FOR STORMDRAIN PIPING CONTINUATION FROM MH-3 TO EW-1.

MH-3 to I-35 PROFILE

SCALE: 1" = 5' VERTICAL
1" = 50' HORIZONTAL

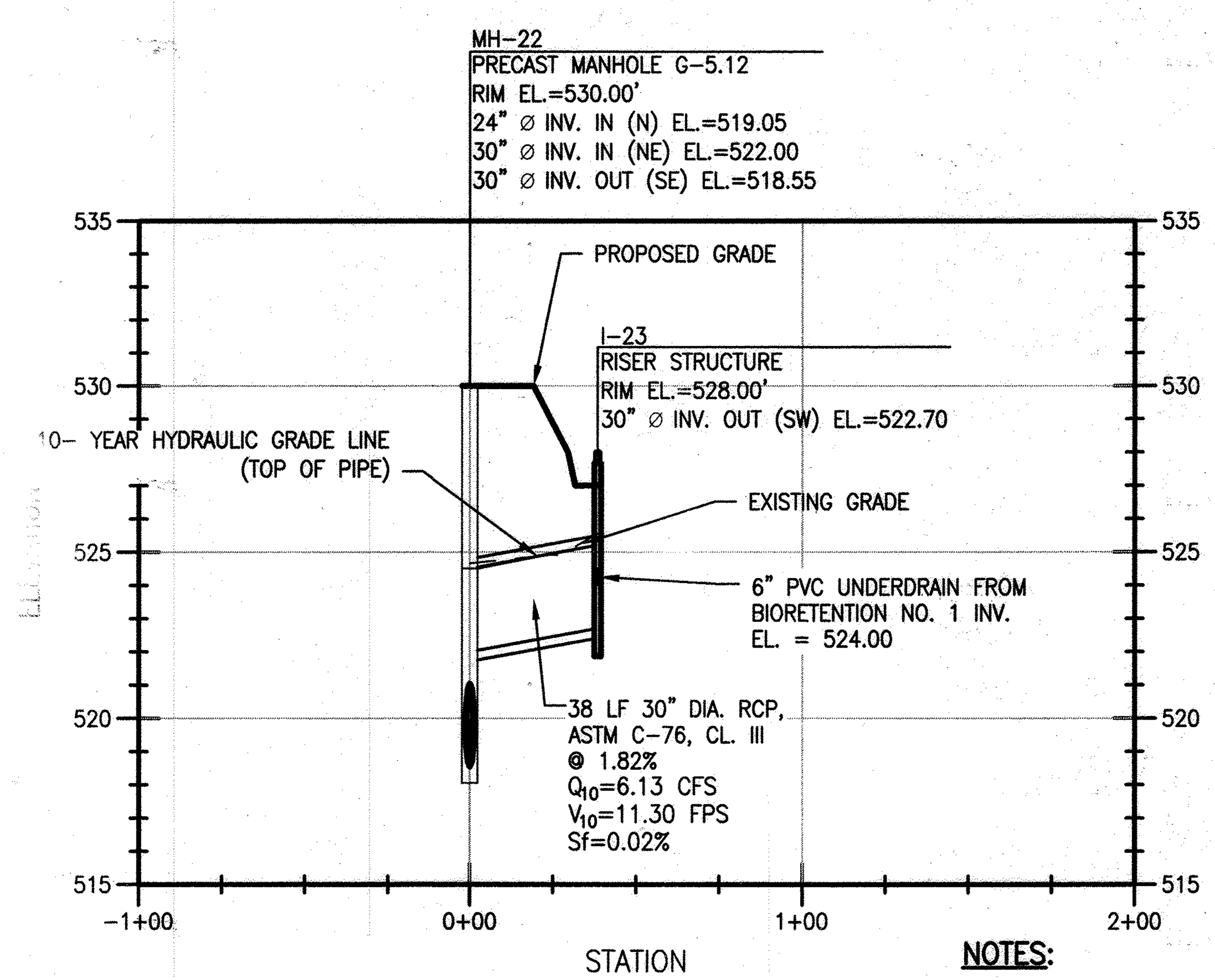


NOTES:

1. STATION 0+22 TO STATION 0+44 STORMDRAIN BELOW PROPOSED ROAD.

EW-27 to I-29 PROFILE

SCALE: 1" = 5' VERTICAL
1" = 50' HORIZONTAL



NOTES:

1. STATION 0+00 TO STATION 0+13 STORMDRAIN BELOW PROPOSED ROAD.

MH-22 to I-23 PROFILE

SCALE: 1" = 5' VERTICAL
1" = 50' HORIZONTAL

NOTES:

1. SEE MH-3 TO I-35 PROFILE THIS SHEET FOR STORMDRAIN PIPING CONTINUATION FROM MH-3 TO EW-1.

50 25 0 50 100
GRAPHIC SCALE IN FEET
HORIZONTAL

5 2.5 0 5 10
GRAPHIC SCALE IN FEET
VERTICAL

NOTES:

1. CONTRACTOR SHALL ENSURE FILL FOR PIPE INSTALLATION IS COMPACTED IN ACCORDANCE WITH REQUIREMENTS OF AASHTO T-180.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR	12-12-17 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	11.29.17 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	12-5-17 DATE

GRID: 8 | BLOCK: N/A
ZONING: RC-DEO | PARCEL/LOT: 220, 253, 23, 54
TAX MAP: 0016 | ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND PROFESSIONAL ENGINEER No. 23402 — 10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	MP/KI
DRN. BY:	JAP/
CHK. BY:	SMD
DATE:	OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TOTAL SHEET NUMBER DUE TO ADDITION OF SHEET 45	8/2022

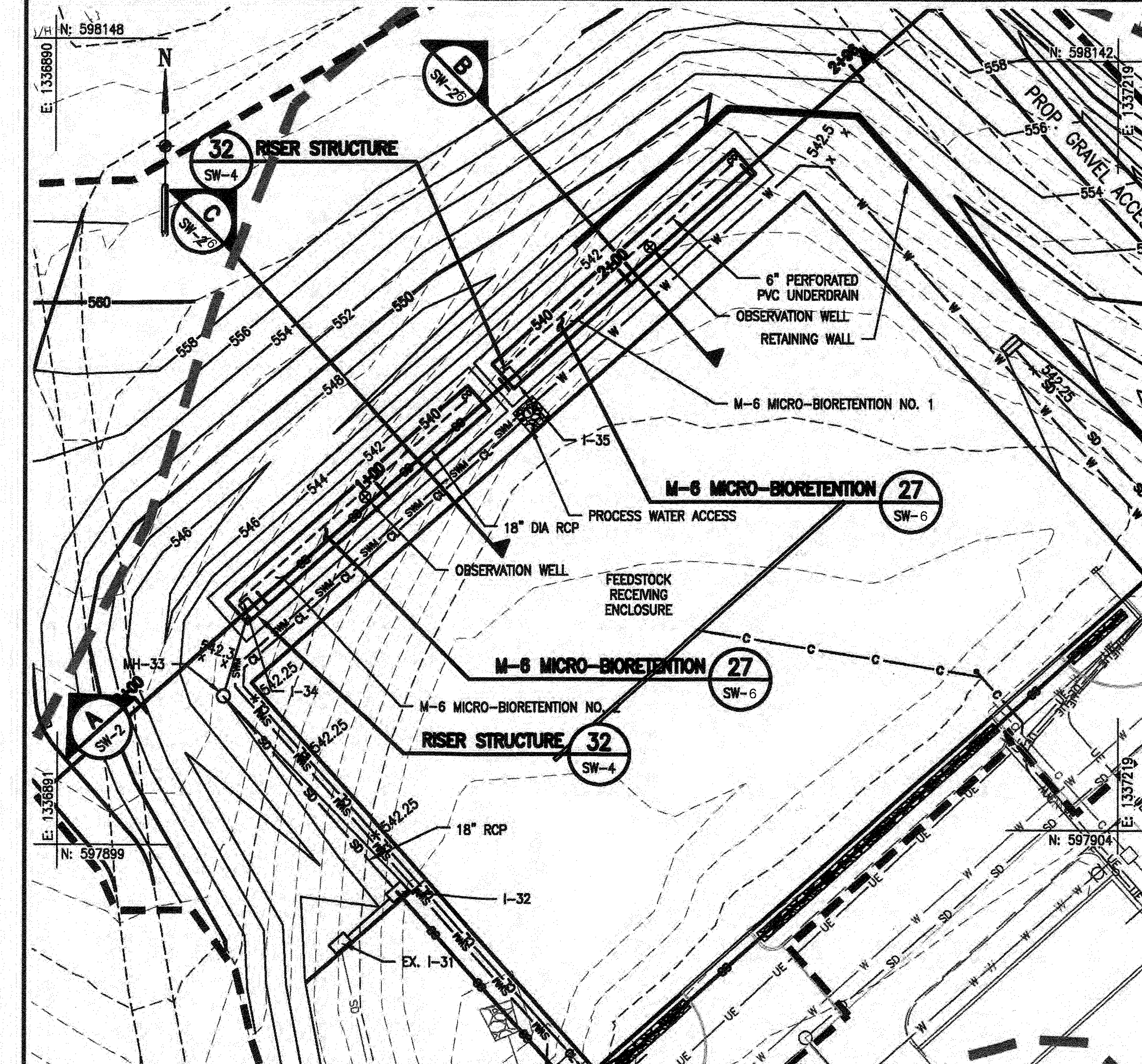
STORMDRAIN PROFILE III

COMPOST FACILITY – PHASE II AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 26 OF ~~44~~ 45
DRAWING: SW-5
PROJECT: 14982.05
SHEET: ~~40 OF 70~~

NOT FOR CONSTRUCTION - SITE DEVELOPMENT PLAN #SDP-16-035

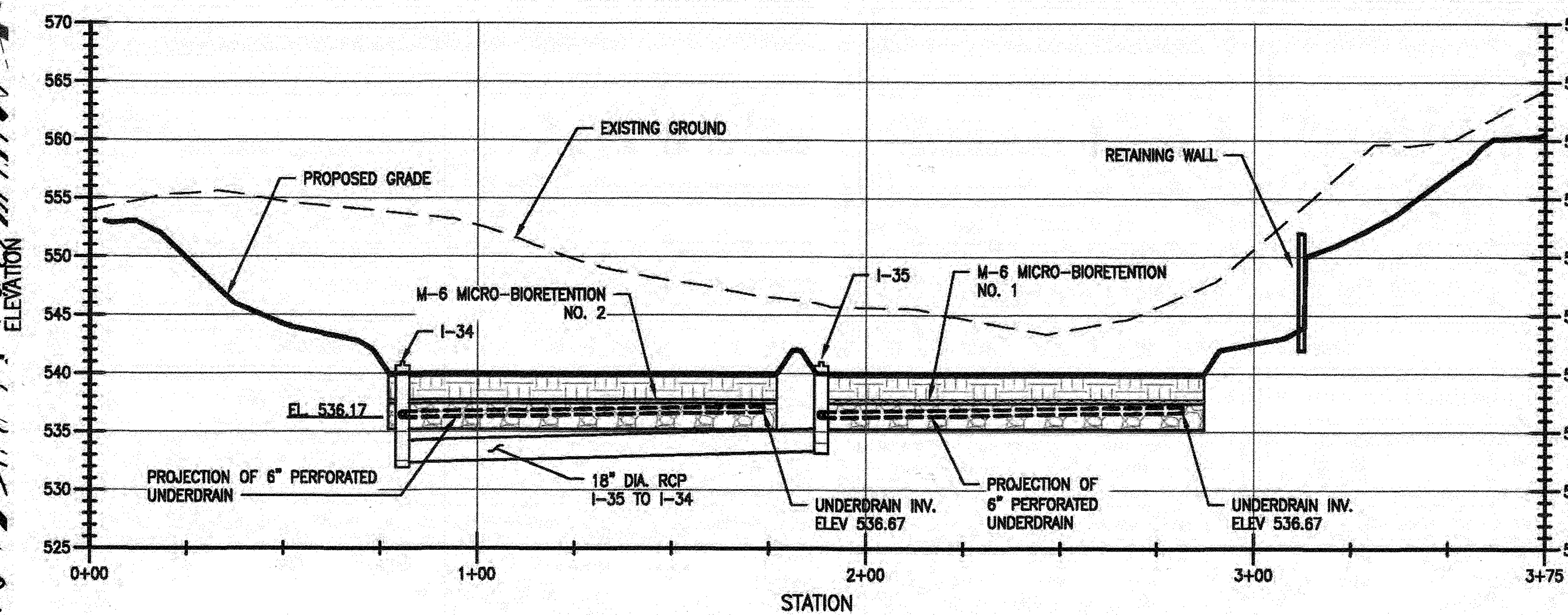
SDP-16-035



M-6 MICRO-BIORETENTION NO. 1 & 2 SITE PLAN

SCALE: 1" = 30'

GRAPHIC SCALE IN FEET

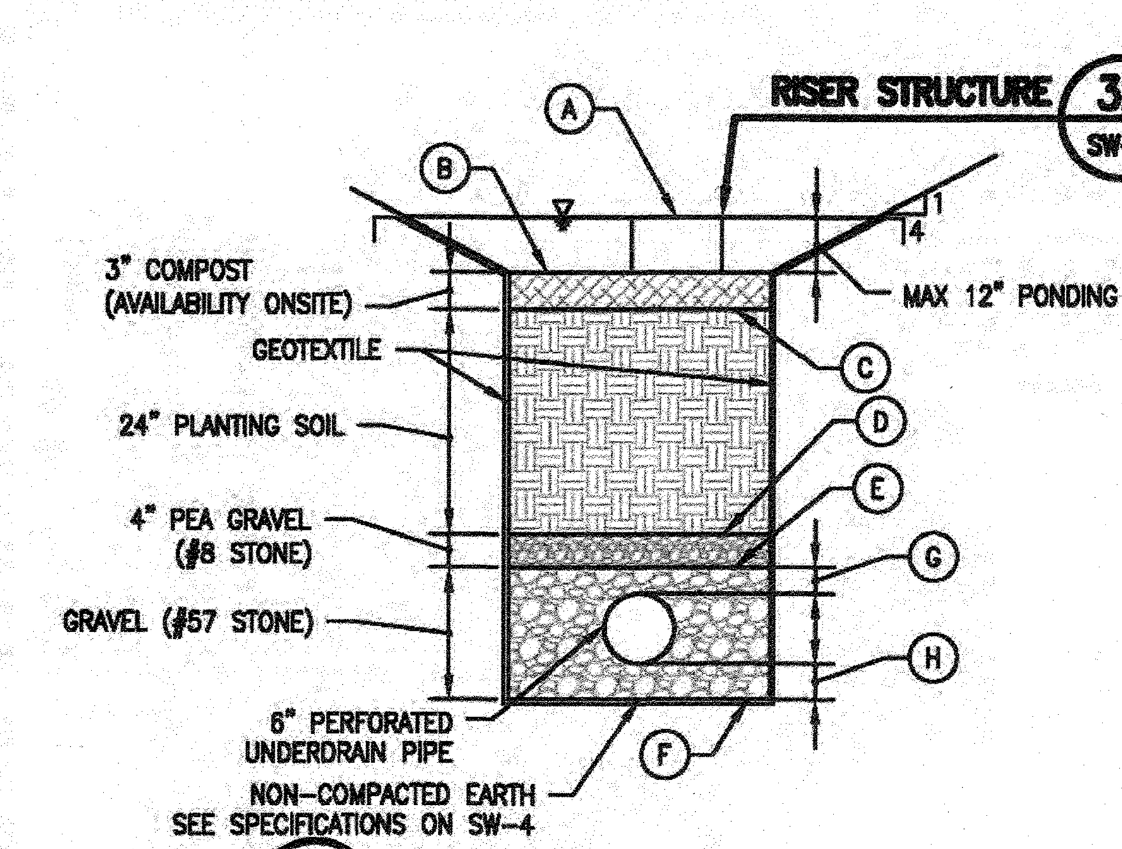


(A / SW-6) M-6 MICRO-BIORETENTION NO. 1 & 2 PROFILE

GRAPHIC SCALE IN FEET

NOTES :

1. REFER TO PROFILE I-31 TO I-35 FOR STORMDRAIN ON SHEET SW-1.
2. SEE TYPICAL SECTION DETAIL THIS SHEET.



(27 / SW-6) M-6 MICRO-BIORETENTION

NOT TO SCALE

ESD FEATURE	ELEVATIONS (IN FEET)						G**	H
	A*	B	C	D	E	F		
M-6 MICRO-BIORETENTION NO. 1	541.00	540.00	539.75	537.75	537.42	535.17	3"	12"
M-6 MICRO-BIORETENTION NO. 2	541.00	540.00	539.75	537.75	537.42	535.17	3"	12"

*RISER INLET GRATE ELEVATION SET AT MAXIMUM WATER PONDING DEPTH.
** MINIMUM DEPTH OF GRAVEL ABOVE TOP OF UNDERDRAIN, DEPTH WILL VARY.

NOTES :

1. PVC UNDERDRAIN SHALL HAVE 1/2-INCH DIA. HOLES SPACED 90 DEGREES APART AROUND PERIMETER EVERY 6-IN FOR ENTIRE PERFORATED LENGTH. PVC UNDERDRAIN WILL BE PERFORATED WHERE IT IS LOCATED WITHIN THE GRAVEL MEDIA. WRAP UNDERDRAIN WITH GEONET WITH NONWOVEN GEOTEXTILE AND SECURE WITH ZIP TIES EVERY 12-IN.
2. PROPOSED PERFORATED AND SOLID UNDERDRAIN AND GEONET PRODUCT SHALL BE SUBMITTED FOR ENGINEER'S REVIEW AND APPROVAL PRIOR TO INSTALLATION.
3. GEOTEXTILE SHALL BE PE TYPE 1 NONWOVEN.

BENCHMARK INFORMATION

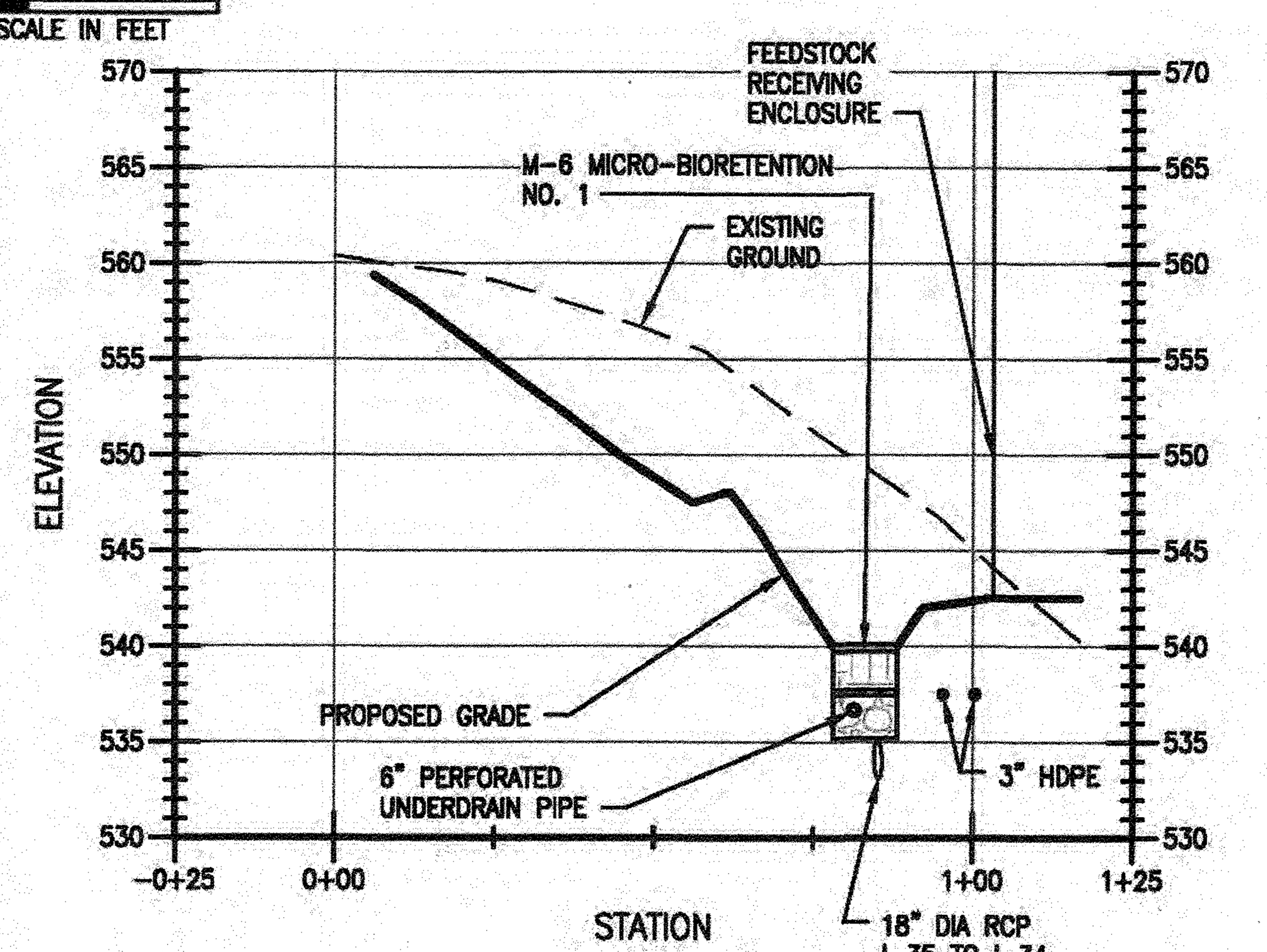
1. HOWARD COUNTY SURVEY CONTROL: BASE A
ELEVATION 564.733 US FT
N 598,156.281 E 1,336,841.785
2. HOWARD COUNTY SURVEY CONTROL: BASE F
ELEVATION 512.817 US FT
N 597,030.549 E 1,338,031.404

THE SYSTEM OF COORDINATES USED BY HOWARD COUNTY IS BASED ON THE FOLLOWING DATUMS AND PROJECTIONS:
- HORIZONTAL: MARYLAND NAD83
- VERTICAL: NAVD88

BENCHMARK LOCATIONS PROVIDED ON PROJECT ACCESS INSET.

DATA SOURCES

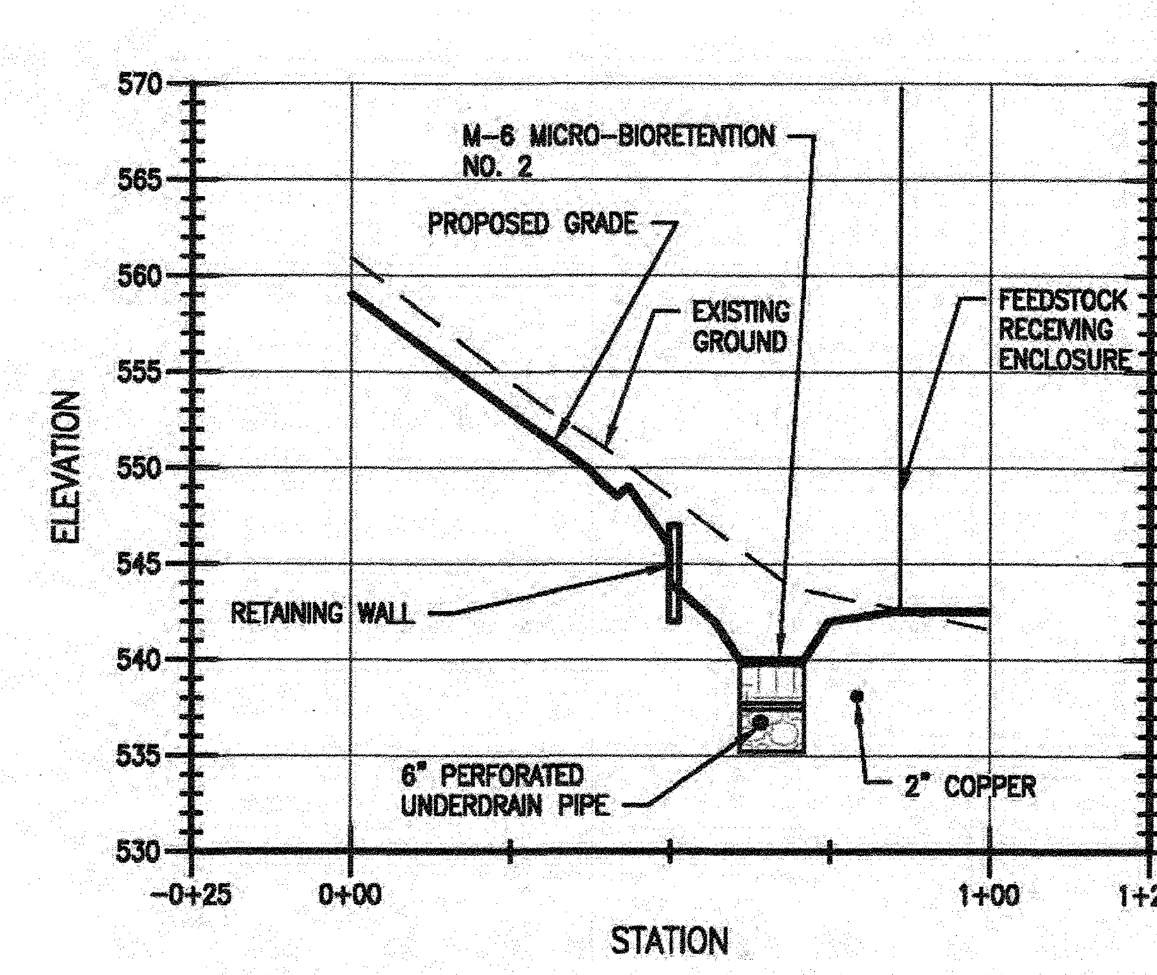
1. THE EXISTING TOPOGRAPHY AND UTILITIES INSIDE OF THE 'LIMIT OF FIELD RUN TOPO', UNLESS OTHERWISE MENTIONED, HAVE BEEN PROVIDED FROM A FIELD RUN SURVEY BY THE HOWARD COUNTY SURVEY DIVISION IN AUGUST 2011.
2. ALL INFORMATION LOCATED OUTSIDE OF THE LIMIT OF FIELD RUN TOPO LINE HAS BEEN TAKEN FROM THE HOWARD COUNTY GIS DATABASE.



(C / SW-6) M-6 MICRO-BIORETENTION NO. 2 PROFILE

NOTES :

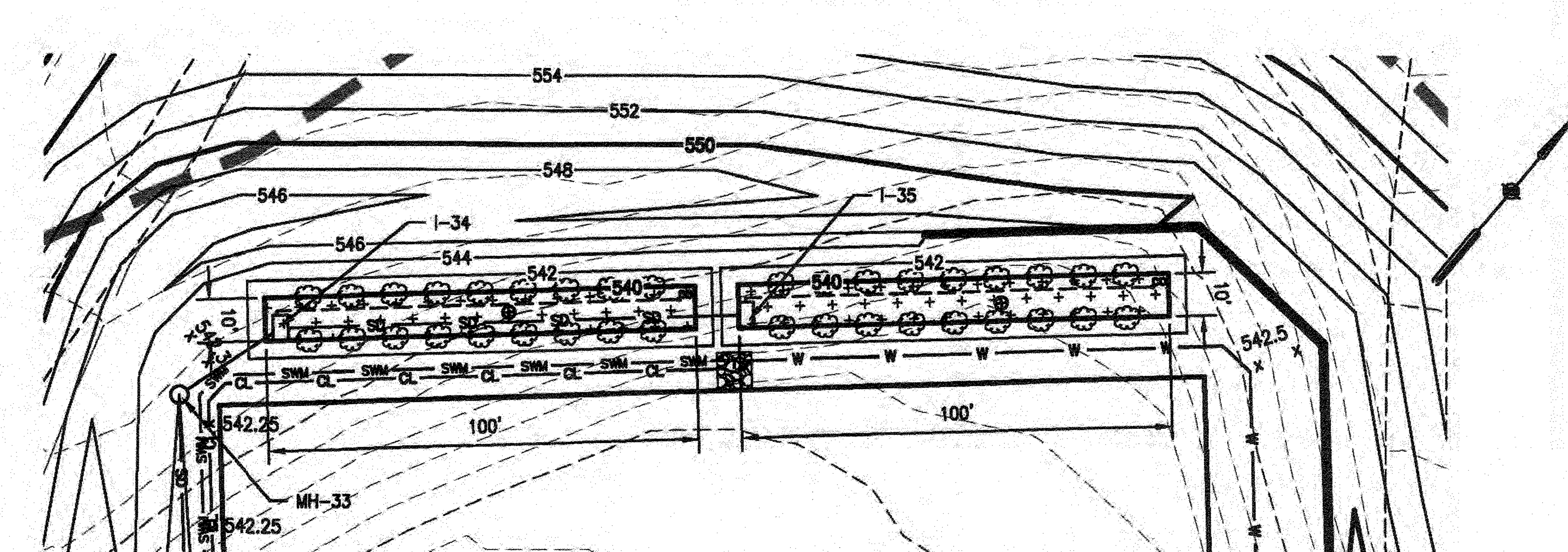
1. REFER TO PROFILE I-31 TO I-35 FOR STORMDRAIN ON SHEET SW-1.
2. REFER TO PROFILE B ON SHEET C-3 AND PROFILE C ON SHEET C-5 FOR CONTACT WATER AND SWM FORSEMAIN PROFILES.
3. SEE TYPICAL SECTION DETAIL THIS SHEET.



(B / SW-6) M-6 MICRO-BIORETENTION NO. 1 PROFILE

NOTES :

1. SEE TYPICAL SECTION DETAIL THIS SHEET.
2. REFER TO CIVIL SHEETS FOR WATER LINE PROFILE.



M-6 MICRO-BIORETENTION NO. 1 & 2 PLANTING PLAN

SCALE: 1" = 30'

NOTE :

1. ENSURE PLANTINGS PROVIDE A MINIMUM 2 FT HORIZONTAL SEPARATION FROM PROPOSED OBSERVATION WELL.

M-6 MICRO-BIORETENTION PLANT LIST								
PLANTING TYPE	COMMON NAME	SCIENTIFIC NAME	FORM	SPACING	INDICATOR STATUS	M-6 MICRO-BIORETENTION NO. 1 - QUANTITY	M-6 MICRO-BIORETENTION NO. 2 - QUANTITY	SYMBOL
HERBACEOUS SPECIES								
	FRINGED SEDGE	CAREX CRINITA	1 QUART	2' OC	FACW	125	125	
	WOOLGRASS	SCIRPUS CYPERINUS	1 QUART	2' OC	FACW	125	125	
	BABY JOE PYE WEED	EUTROCHIUM DUBIUM	1 QUART	10' OC	FAC	10	10	

NOTES :

1. DEPICTION OF PLANTS IN PLANTING PLANS THIS SHEET IS MEANT TO CONVEY PLANT SPACING GUIDANCE, IT DOES NOT REFLECT ACTUAL PLANTING QUANTITIES. PLANT QUANTITIES SHOULD BE AS SHOWN IN TABLE.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 9-15-22

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.12.22

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9/15/22

DIVISION CHIEF, BUREAU OF ENVIRONMENTAL SERVICES OPERATIONS — DATE 8/19/2022

SEAL: STATE OF MARYLAND — JOSEPH GUTBERLET — 23402 — PROFESSIONAL ENGINEER — 8/2022

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2022.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

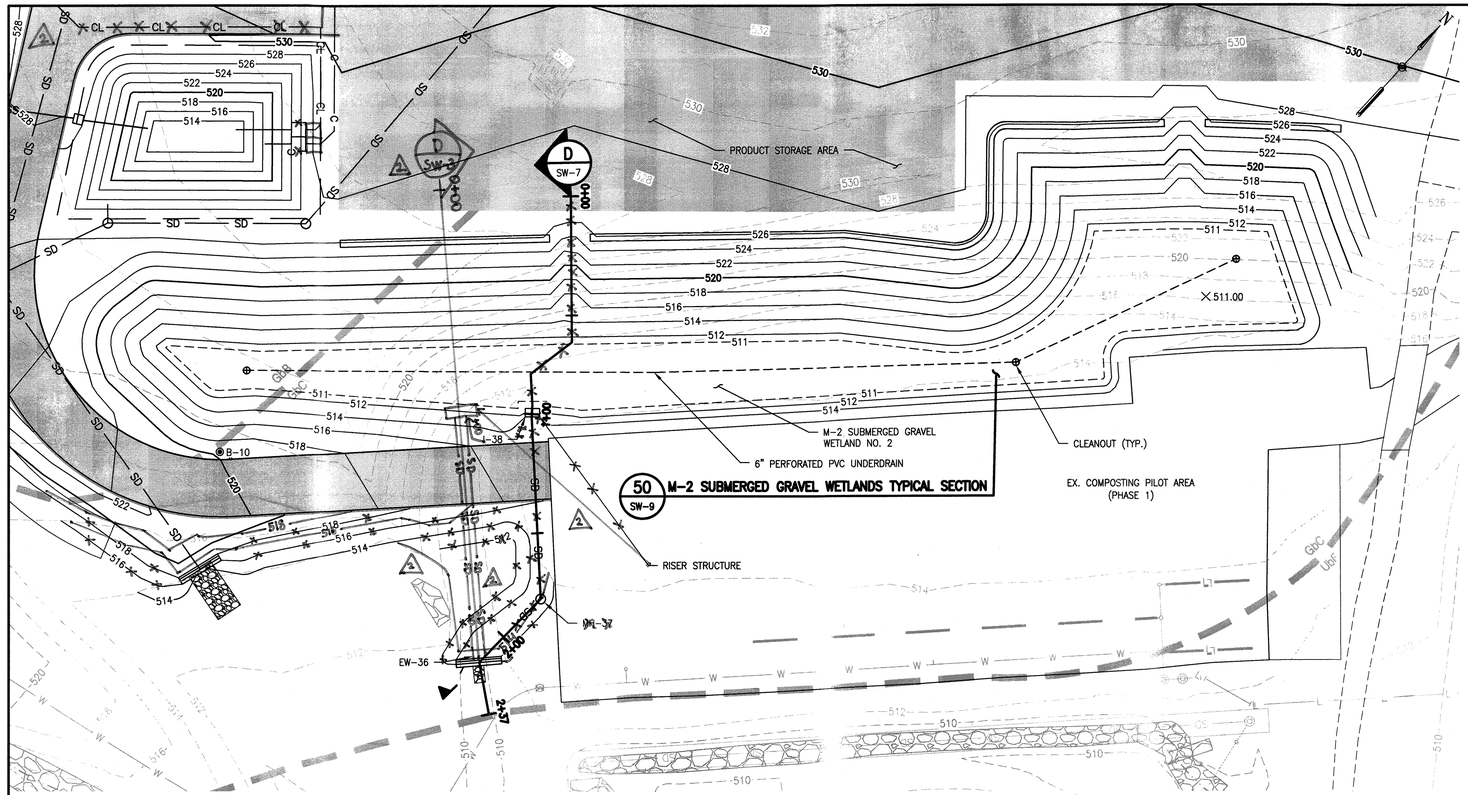
DSN. BY:	MBS/MP	CVH	1	REPLACEMENT SHEET FROM PHASE 1C CONTRACT DRAWINGS TO SHOW DESIGN PHASE REVISIONS TO ESD	8/2022
DRN. BY:	JAP/KEJ				
CHK. BY:	SMD				
DATE:	JUNE 2021	BY	NO.	REVISION	DATE

ESD PROFILE AND DETAILS I
(REPLACEMENT SHEET) 1

COMPOST FACILITY - PHASE II
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 27 OF 45
DRAWING: SW-6
PROJECT: 1556408
SHEET: ~~20 OF 42~~

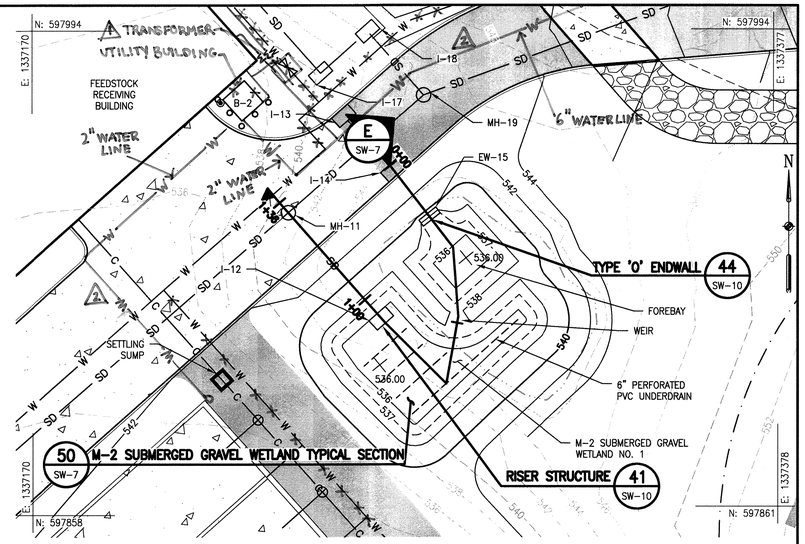
REVISED SITE DEVELOPMENT PLAN #SDP-16-035



50 M-2 SUBMERGED GRAVEL WETLANDS TYPICAL SECTION SW-9

SUBMERGED GRAVEL WETLAND NO. 2 SITE PLAN

SCALE: 1" = 30'



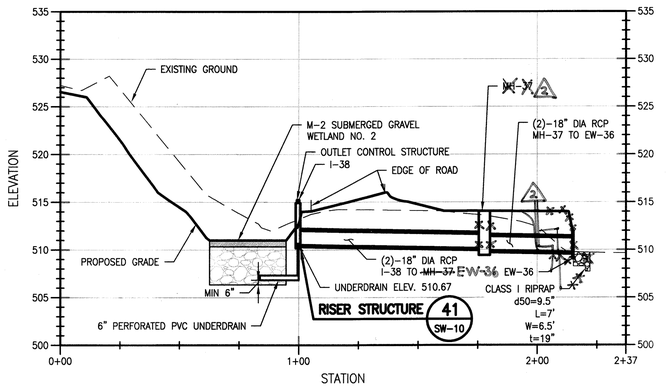
50 M-2 SUBMERGED GRAVEL WETLAND TYPICAL SECTION SW-7

SUBMERGED GRAVEL WETLAND NO. 1 SITE PLAN

SCALE: 1" = 20'

GRAPHIC SCALE IN FEET: 0 10 20 40

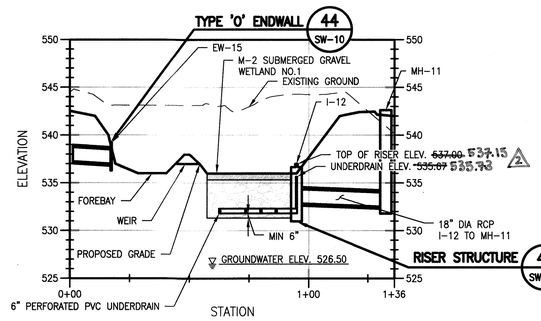
GRAPHIC SCALE IN FEET: 0 15 30 60



D SW-7 SUBMERGED GRAVEL WETLAND NO. 2 PROFILE

NOTES:

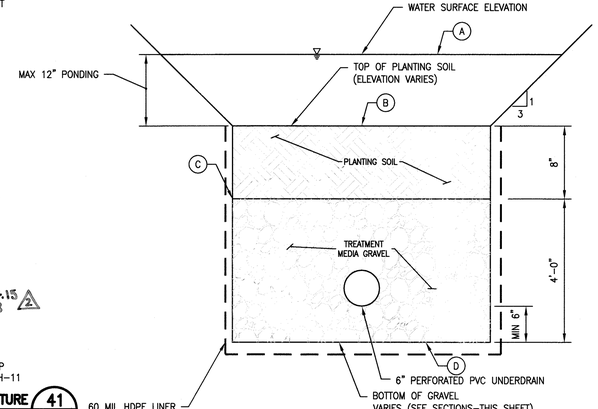
1. AT THE TIME OF GEOTECHNICAL INVESTIGATION, GROUNDWATER WAS NOT ENCOUNTERED WITHIN BORING B-10.
2. SEE TYPICAL SECTION DETAIL THIS SHEET.
3. REFER TO PROFILE EW-36 TO I-38 FOR STORMDRAIN ON SHEET SW-4.



E SW-7 SUBMERGED GRAVEL WETLAND NO. 1 PROFILE

NOTES:

1. AT THE TIME OF GEOTECHNICAL INVESTIGATION, GROUNDWATER WAS ENCOUNTERED AT ELEVATION 526.5 AT BORING B-2.
2. SEE TYPICAL SECTION DETAIL THIS SHEET.
3. REFER TO PROFILE MH-11 TO I-12 FOR STORMDRAIN ON SHEET SW-4.



50 SW-1 M-2 SUBMERGED GRAVEL WETLANDS TYPICAL SECTION SW-2, SW-7

NOT TO SCALE

SUBMERGED GRAVEL WETLANDS	ELEVATIONS (IN FEET)			
	A	B	C	D
SUBMERGED GRAVEL WETLANDS NO. 1	537.00	536.00	535.33	531.33
SUBMERGED GRAVEL WETLANDS NO. 2	512.00	511.00	510.33	506.33

NOTES:

1. SEE SHEET DA-1 FOR ESD FACILITY SUMMARY TABLE AND DRAINAGE AREAS.

BENCHMARK INFORMATION

1. HOWARD COUNTY SURVEY CONTROL: BASE A
   ELEVATION 564.733 US FT
   N 598,156.281 E 1,336,841.785
2. HOWARD COUNTY SURVEY CONTROL: BASE F
   ELEVATION 512.817 US FT
   N 597,030.549 E 1,338,031.404

THE SYSTEM OF COORDINATES USED BY HOWARD COUNTY IS BASED ON THE FOLLOWING DATUMS AND PROJECTIONS:
- HORIZONTAL: MARYLAND NAD83
- VERTICAL: NAVD88

BENCHMARK LOCATIONS PROVIDED ON PROJECT ACCESS INSET.

DATA SOURCES

1. THE EXISTING TOPOGRAPHY AND UTILITIES INSIDE OF THE 'LIMIT OF FIELD RUN TOPO', UNLESS OTHERWISE MENTIONED, HAVE BEEN PROVIDED FROM A FIELD RUN SURVEY BY THE HOWARD COUNTY SURVEY DIVISION IN AUGUST 2011.
2. ALL INFORMATION LOCATED OUTSIDE OF THE LIMIT OF FIELD RUN TOPO LINE HAS BEEN TAKEN FROM THE HOWARD COUNTY GIS DATABASE.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.29.17

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12-5-17

GRID: 8
ZONING: RC-DEO
TAX MAP: 0016
BLOCK: N/A
PARCEL/LOT: 220, 253, [illegible], 23, 54
ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — MARK JOSEPH GUTBERLET — PROFESSIONAL ENGINEER — 12/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY: MBS/MP
DRN. BY: JAP/KEJ
CHK. BY: SMD
DATE: OCT. 2016

BY	NO.	REVISION	DATE
SMB	3	REVISED UTILITY BUILDING AND TRANSFORMER LOCATION	4/2019
CVH	2	REVISED TO REFLECT PHASE II AS-BUILT CONDITIONS AND PHASE IIC DESIGN	8/2022

ESD PROFILE AND DETAILS II

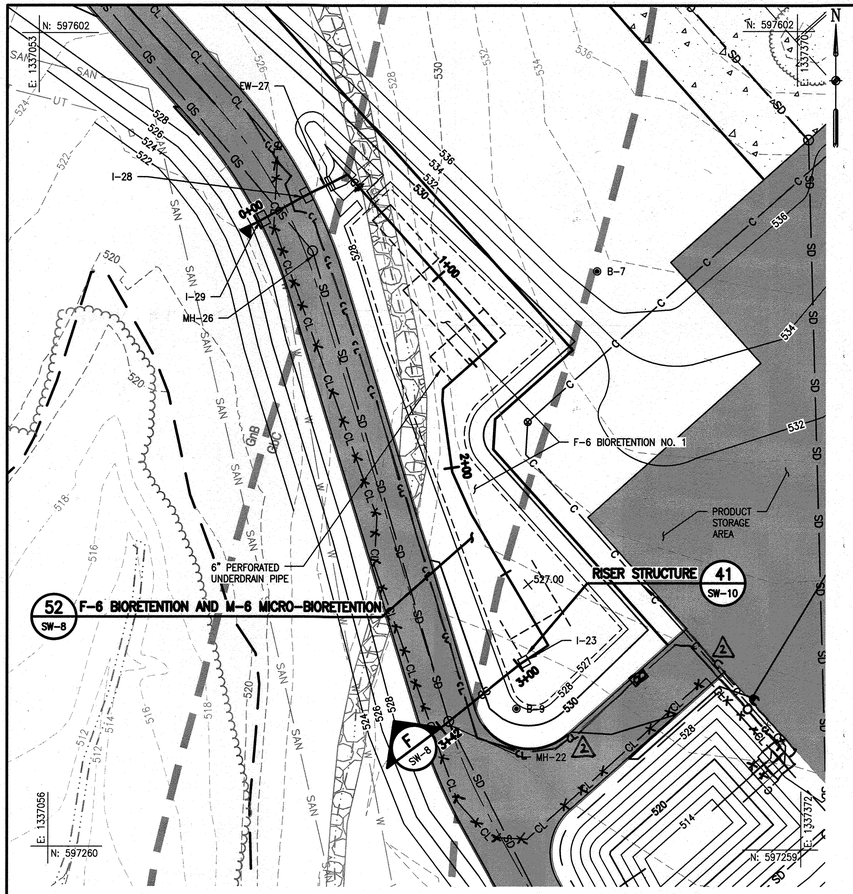
COMPOST FACILITY – PHASE II AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 28 OF 45 (2)
DRAWING: SW-7
PROJECT: 14982.05
SHEET: 42 OF 70

SDP-16-035

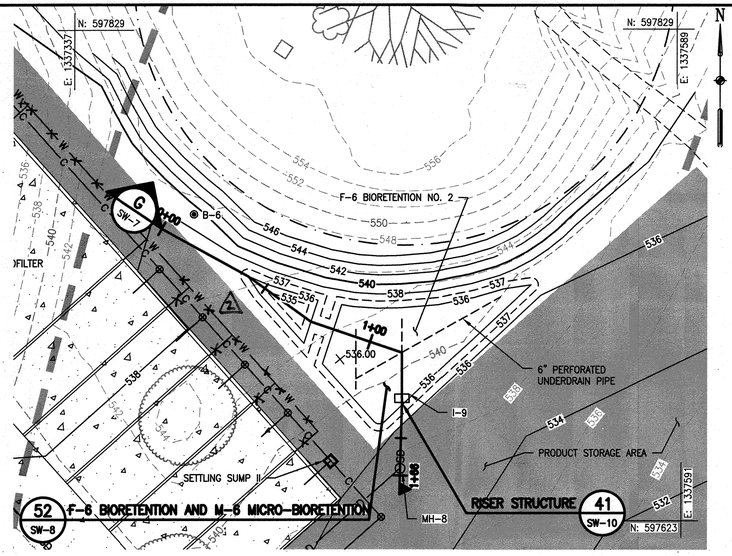
NOT FOR CONSTRUCTION - SITE DEVELOPMENT PLAN #SDP-16-035

FILE PATH: Q:\PROJECTS\14982005 - ARL COMPOST FACILITY\14982005M-SW-7 - ESD PROFILE AND DETAILS II - (SDP-285) 3/12/15



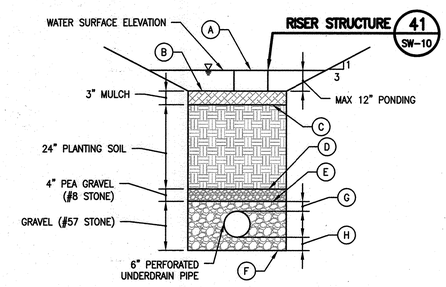
BIORETENTION NO. 1 SITE PLAN

SCALE: 1" = 30'



BIORETENTION NO. 2 SITE PLAN

SCALE: 1" = 30'



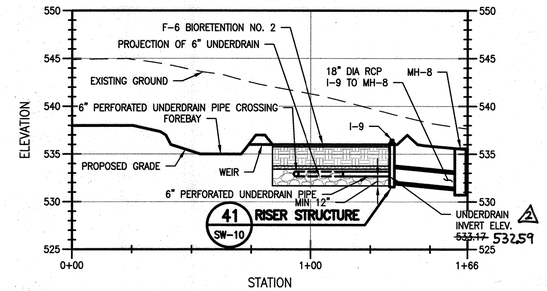
52 SW-1 F-6 BIORETENTION AND M-6 MICRO-BIORETENTION

NOT TO SCALE

SW-2, SW-8

ESD FEATURE	ELEVATIONS (IN FEET)						G	H
	A	B	C	D	E	F		
BIORETENTION NO. 1	528.00	527.00	526.75	524.75	524.42	523.00	3"	8"
BIORETENTION NO. 2	536.50	~~536.00~~	~~535.75~~	~~533.75~~	~~533.42~~	~~531.67~~	3"	12"

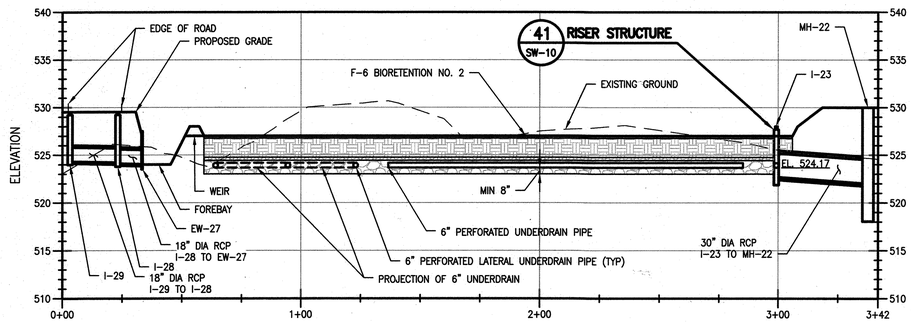
2 ~~536.11~~ ~~535.80~~ ~~533.74~~ ~~533.35~~ ~~531.48~~



G SW-8 BIORETENTION NO. 2 PROFILE

NOTES:

1. REFER TO PROFILE MH-7 TO I-9 FOR STORMDRAIN ON SHEET SW-4.
2. SEE TYPICAL SECTION DETAIL THIS SHEET.



F SW-8 BIORETENTION NO. 1 PROFILE

NOTES:

1. REFER TO PROFILE MH-22 TO I-23 FOR STORMDRAIN ON SHEET SW-5.
2. SEE TYPICAL SECTION DETAIL THIS SHEET.

NOTES:

1. SEE SHEET DA-1 FOR ESD FACILITY SUMMARY TABLE AND DRAINAGE AREAS.

0 15 30 60

GRAPHIC SCALE IN FEET

BENCHMARK INFORMATION

1. HOWARD COUNTY SURVEY CONTROL: BASE A
   ELEVATION 564.733 US FT
   N 598,156.281 E 1,336,841.785
2. HOWARD COUNTY SURVEY CONTROL: BASE F
   ELEVATION 512.817 US FT
   N 597,030.549 E 1,338,031.404

THE SYSTEM OF COORDINATES USED BY HOWARD COUNTY IS BASED ON THE FOLLOWING DATUMS AND PROJECTIONS:
- HORIZONTAL: MARYLAND NAD83
- VERTICAL: NAVD88

BENCHMARK LOCATIONS PROVIDED ON PROJECT ACCESS INSET.

DATA SOURCES

1. THE EXISTING TOPOGRAPHY AND UTILITIES INSIDE OF THE 'LIMIT OF FIELD RUN TOPO', UNLESS OTHERWISE MENTIONED, HAVE BEEN PROVIDED FROM A FIELD RUN SURVEY BY THE HOWARD COUNTY SURVEY DIVISION IN AUGUST 2011.
2. ALL INFORMATION LOCATED OUTSIDE OF THE LIMIT OF FIELD RUN TOPO LINE HAS BEEN TAKEN FROM THE HOWARD COUNTY GIS DATABASE.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.29.17

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12.5.17

GRID: 8 | BLOCK: N/A
ZONING: RC-DEO | PARCEL/LOT: 220, 253, 11, 23, 54
TAX MAP: 0016 | ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — MARK JOSEPH GUTBERLET — No. 23402 — PROFESSIONAL ENGINEER — 10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY®

DSN. BY:	MBS/MP
DRN. BY:	JAP/KEJ
CHK. BY:	SMD
DATE:	OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TO REFLECT PHASE II A AND PHASE IIB AS-BUILT CONDITIONS AND PHASE IIC DESIGN	8/2022

ESD PROFILE AND DETAILS III

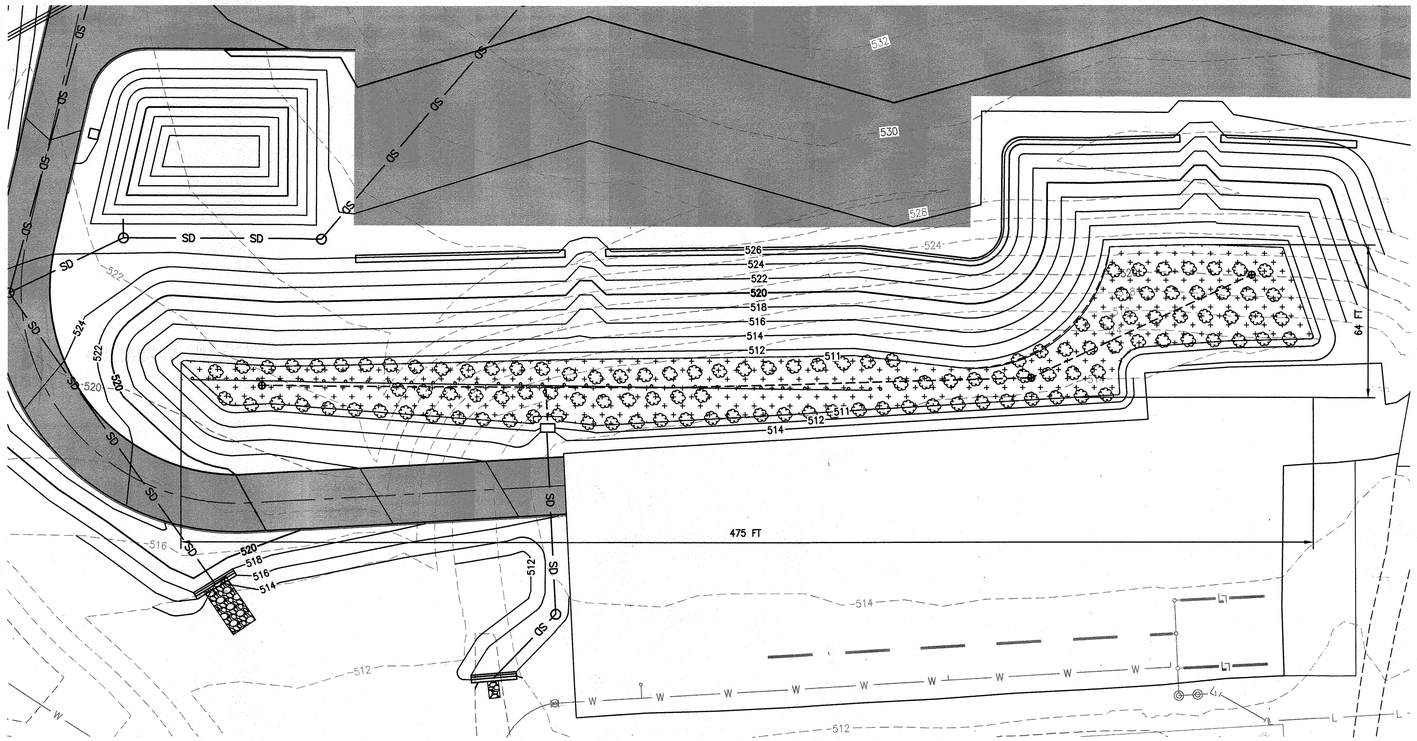
COMPOST FACILITY – PHASE II
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 45 | DRAWING: SW-8
29 OF ~~44~~ 43
PROJECT: 14982.05
SHEET: ~~43 OF 70~~

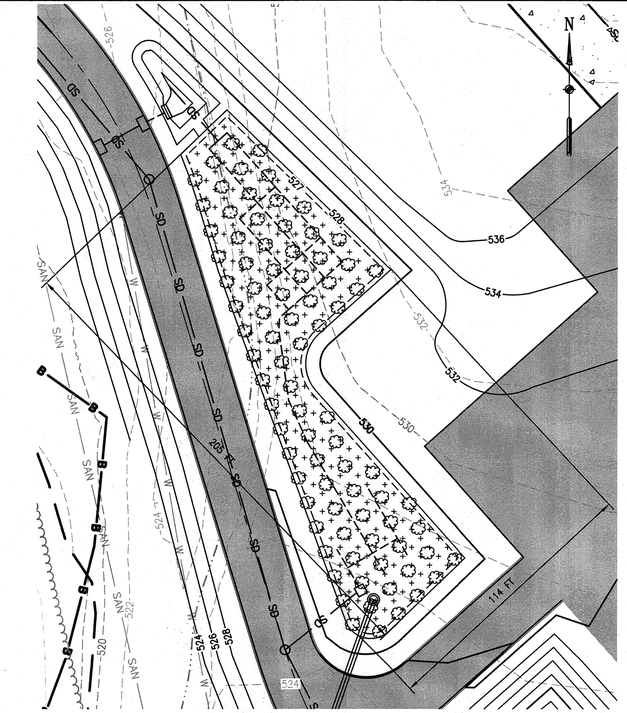
~~NOT FOR CONSTRUCTION~~ – SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035

FILE PATH: G:\PROJECTS\14982005 - ADL COMPOST FACILITY\14982005B-07.DWG [SW-8 - ESD PROFILE AND DETAILS III - (SDP-29)] 3/13/15



SUBMERGED GRAVEL WETLAND NO. 2 PLANTING PLAN
SCALE: 1" = 30'



BIORETENTION NO. 1 PLANTING PLAN
SCALE: 1" = 30'

BENCHMARK INFORMATION

1. HOWARD COUNTY SURVEY CONTROL: BASE A
   ELEVATION 564.733 US FT
   N 598,156.281 E 1,336,841.785
2. HOWARD COUNTY SURVEY CONTROL: BASE F
   ELEVATION 512.817 US FT
   N 597,030.549 E 1,338,031.404

THE SYSTEM OF COORDINATES USED BY HOWARD COUNTY IS BASED ON THE FOLLOWING DATUMS AND PROJECTIONS:
- HORIZONTAL: MARYLAND NAD83
- VERTICAL: NAVD88

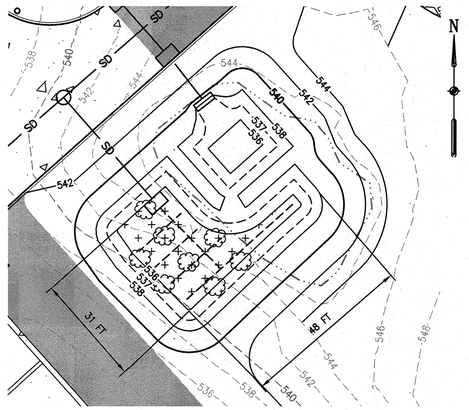
BENCHMARK LOCATIONS PROVIDED ON PROJECT ACCESS INSET.

DATA SOURCES

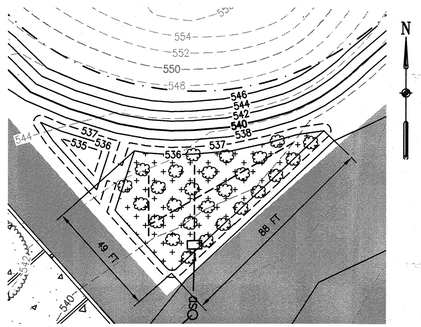
1. THE EXISTING TOPOGRAPHY AND UTILITIES INSIDE OF THE 'LIMIT OF FIELD RUN TOPO', UNLESS OTHERWISE MENTIONED, HAVE BEEN PROVIDED FROM A FIELD RUN SURVEY BY THE HOWARD COUNTY SURVEY DIVISION IN AUGUST 2011.
2. ALL INFORMATION LOCATED OUTSIDE OF THE LIMIT OF FIELD RUN TOPO LINE HAS BEEN TAKEN FROM THE HOWARD COUNTY GIS DATABASE.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR	DATE 12-12-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 11.29.17
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 12-5-17



SUBMERGED GRAVEL WETLAND NO. 1 PLANTING PLAN
SCALE: 1" = 20'



BIORETENTION NO. 2 PLANTING PLAN
SCALE: 1" = 30'

BIORETENTION PLANT LIST								
PLANTING TYPE	COMMON NAME	SCIENTIFIC NAME	FORM	SPACING	INDICATOR STATUS	BIORETENTION NO. 1 – QUANTITY	BIORETENTION NO. 2 – QUANTITY	SYMBOL
HERBACEOUS SPECIES								
	THREE SQUARE BULRUSH	Schoenoplectus pungens	1 QUART	2' OC	FACW+	998	287	
	WOOLGRASS	Scirpus cyperinus	1 QUART	2' OC	FACW	998	287	
	JOE PYE WEED	Eutrochium purpureum	1 QUART	10' OC	FAC	85	26	

SUBMERGED GRAVEL WETLAND PLANT LIST								
PLANTING TYPE	COMMON NAME	SCIENTIFIC NAME	FORM	SPACING	INDICATOR STATUS	SGW NO. 1 – QUANTITY	SGW NO. 2 – QUANTITY	SYMBOL
HERBACEOUS SPECIES								
	THREE SQUARE BULRUSH	Schoenoplectus pungens	1 QUART	2' OC	FACW+	88	1490	
	WOOLGRASS	Scirpus cyperinus	1 QUART	2' OC	FACW	88	1490	
	JOE PYE WEED	Eutrochium purpureum	1 QUART	10' OC	FAC	8	123	

NOTES:

1. SEE SHEET DA-1 FOR ESD FACILITY SUMMARY TABLE AND DRAINAGE AREAS.

0 10 20 40 GRAPHIC SCALE IN FEET

0 15 30 60 GRAPHIC SCALE IN FEET

GRID: 8	BLOCK: N/A
ZONING: RC-DEO	PARCEL/LOT: 220, 253, 11, 23, 54
TAX MAP: 0016	ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — JOSEPH GUTBERLET — No. 23402 — PROFESSIONAL ENGINEER
10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY: MBS/MP
DRN. BY: JAP/KEJ
CHK. BY: SMD
DATE: OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TOTAL SHEET NUMBER DUE TO ADDITION OF SHEET 45	6/7/2018

ESD PLANTING PLANS

COMPOST FACILITY – PHASE II AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

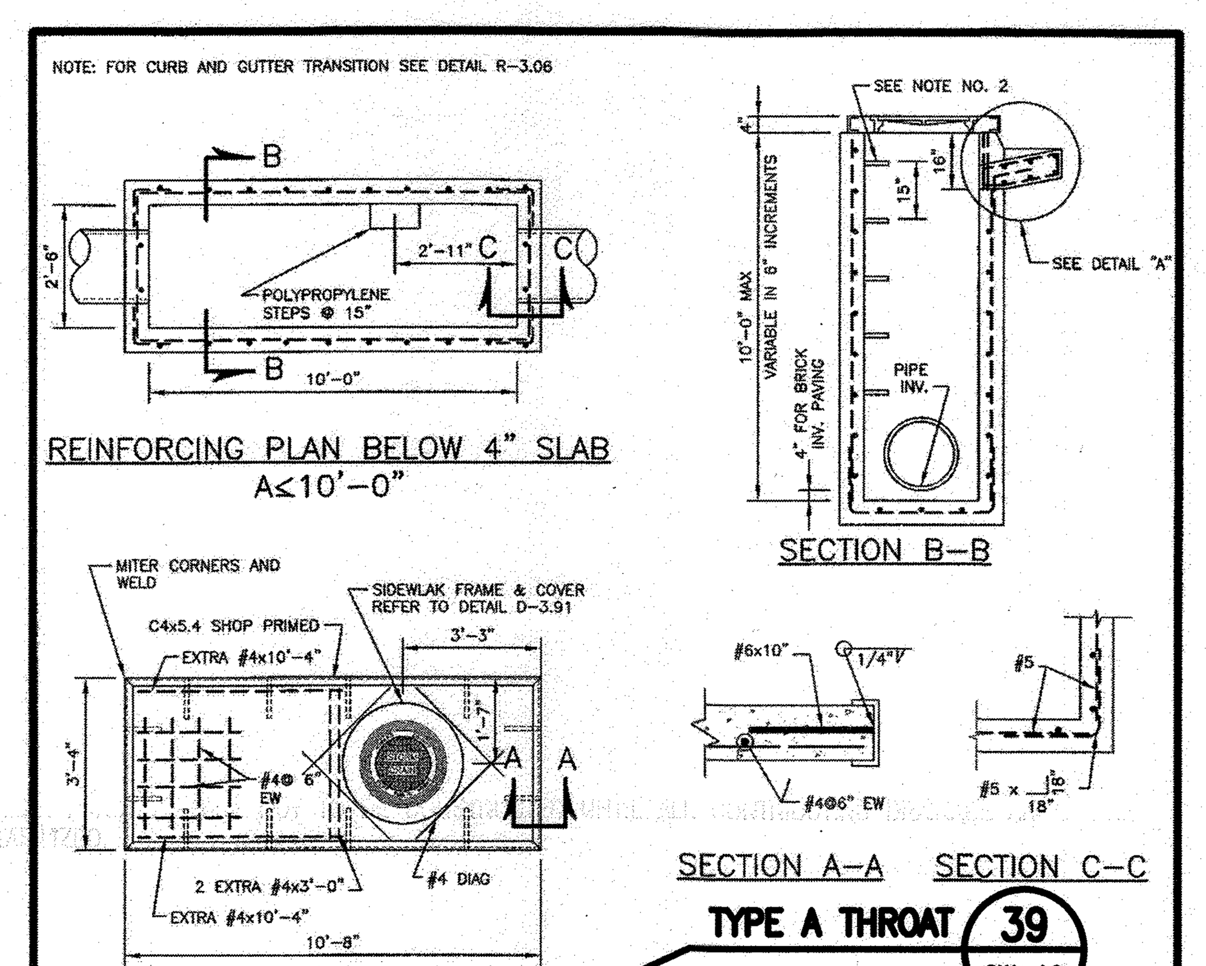
SDP SHEET: 30 OF ~~44~~ 45 (2)
DRAWING: SW-9
PROJECT: 14982.05
SHEET: ~~44 OF 70~~

~~NOT FOR CONSTRUCTION — SITE DEVELOPMENT PLAN #SDP-16-035~~

SDP-16-035

FILE PATH: Q:\PROJECTS\14982056-08.DWG [SW-9 - PROFILE N - (SDP-30)] 3/12/15

NOTE: FOR CURB AND GUTTER TRANSITION SEE DETAIL R-3.06

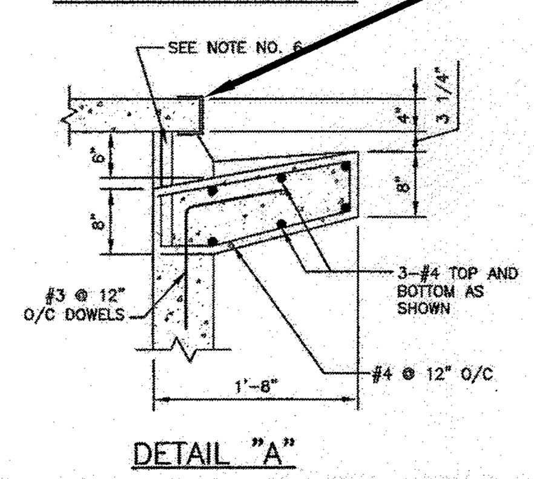


REINFORCING PLAN BELOW 4" SLAB
A≤10'-0"

SECTION B-B

PLAN 4" TOP SLAB

SECTION A-A SECTION C-C



DETAIL "A"

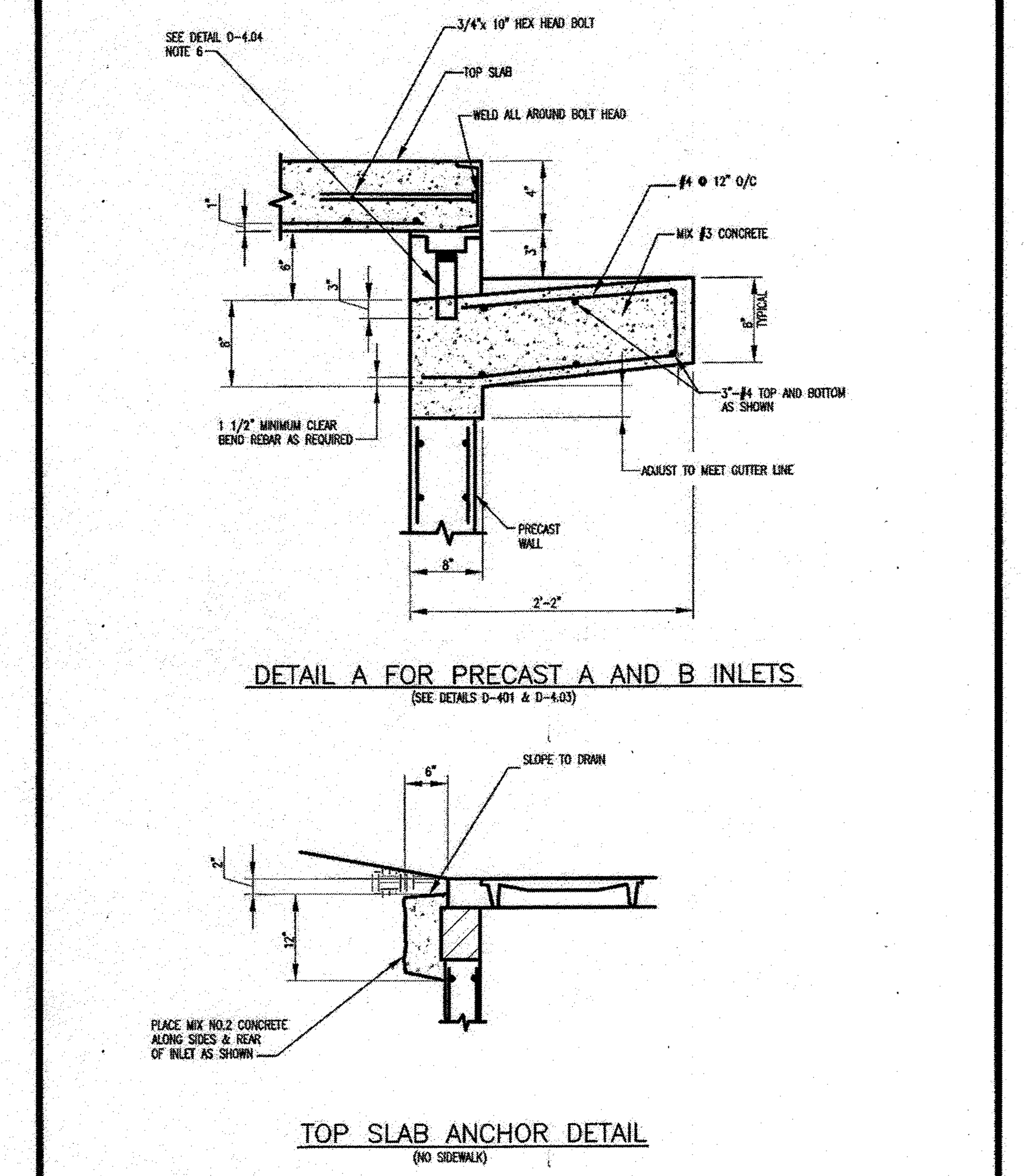
TYPE A THROAT (39 / SW-10)

PRECAST NOTES:

1. CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF LATEST EDITIONS OF ACI 301 AND ACI 318.
2. PRECAST STRUCTURES SHALL BE DESIGNED BY A PRECAST CONCRETE STRUCTURES MANUFACTURER IN ACCORDANCE TO LOADING SPECIFIED IN LATEST EDITIONS OF ASTM C857 ASTM C890.
3. PRECAST STRUCTURES SHALL CONFORM TO THE REQUIREMENT OF LATEST EDITIONS OF ASTM C858
4. RESILIENT CONNECTORS BETWEEN MANHOLE STRUCTURES, PIPES AND LATERALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF LATEST EDITIONS OF ASTM C923.
5. CONCRETE SHALL CONFORM TO LATEST EDITION OF THE SHA STANDARD SPECIFICATION FOR CONSTRUCTION & MATERIALS.
6. POLYPROPYLENE STEPS SHALL BE INSTALLED INLINE WHERE A>3'-6" (SEE G-5.21)
7. REFERENCE DRAWING FOR TYPE A-10 INLET IS HOWARD COUNTY DETAIL D-4.04.
8. PROVIDE 3" DIA RUST PROOF STEEL PIPE, PAINTED GRAY AT MID POINT OF THROAT, FILL WITH CONCRETE.

Howard County, Maryland — Department of Public Works — Revised 5/7/2007 Approved — Chief, Bureau of Engineering
Type A-10 Inlet Precast ≤10' Depth — Detail D-4.03

38 CURB INLET (C-4)
NOT TO SCALE
C-5, SW-1, SW-2

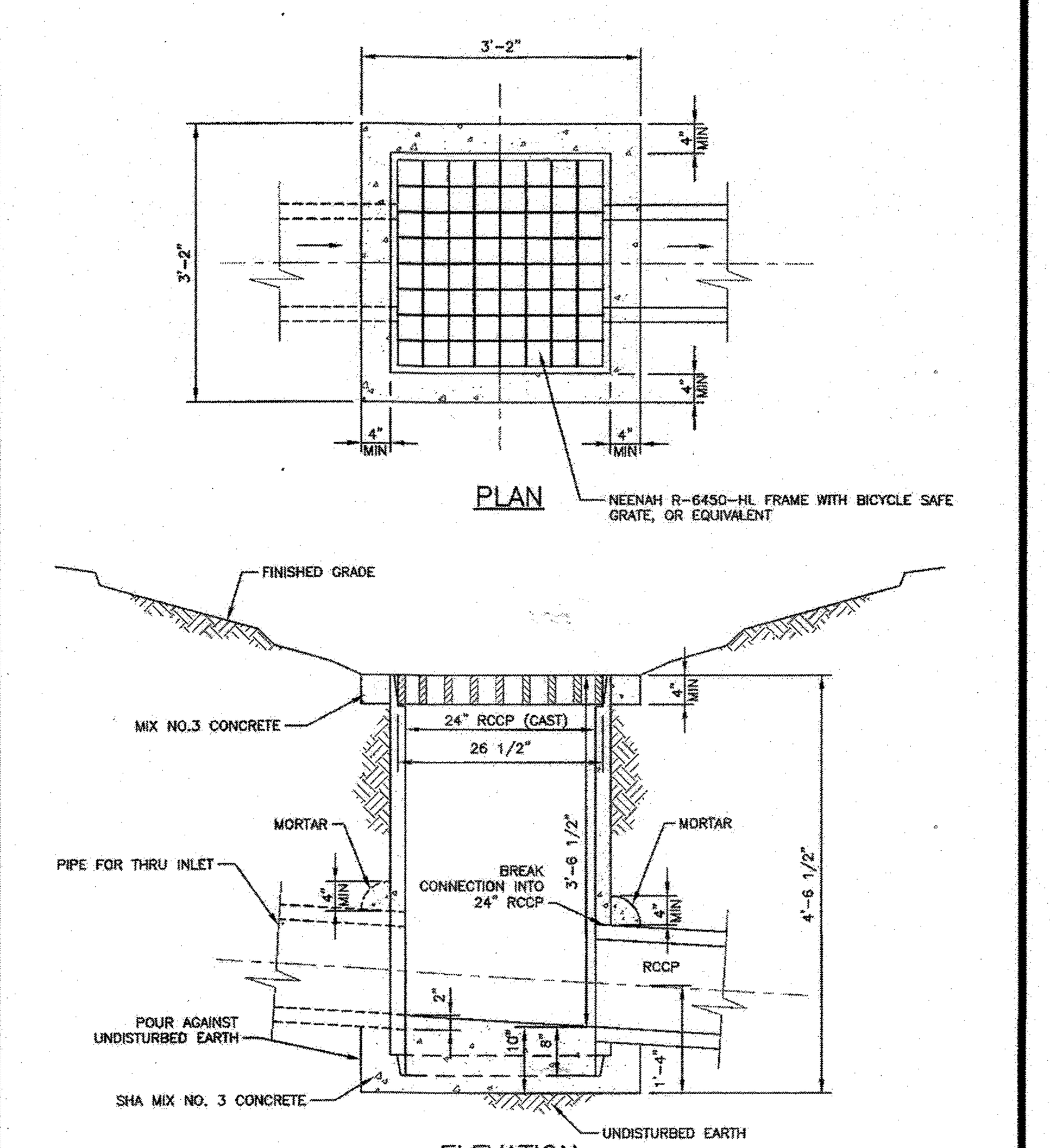


DETAIL A FOR PRECAST A AND B INLETS
(SEE DETAILS D-4.01 & D-4.03)

TOP SLAB ANCHOR DETAIL
(NO SIDEWALK)

Howard County, Maryland — Department of Public Works — Revised 5/7/2007 Approved — Chief, Bureau of Engineering
TYPE A-5 & A-10 Inlet Slab & Throat — Detail D-4.05

39 TYPE A THROAT (–)
NOT TO SCALE



PLAN

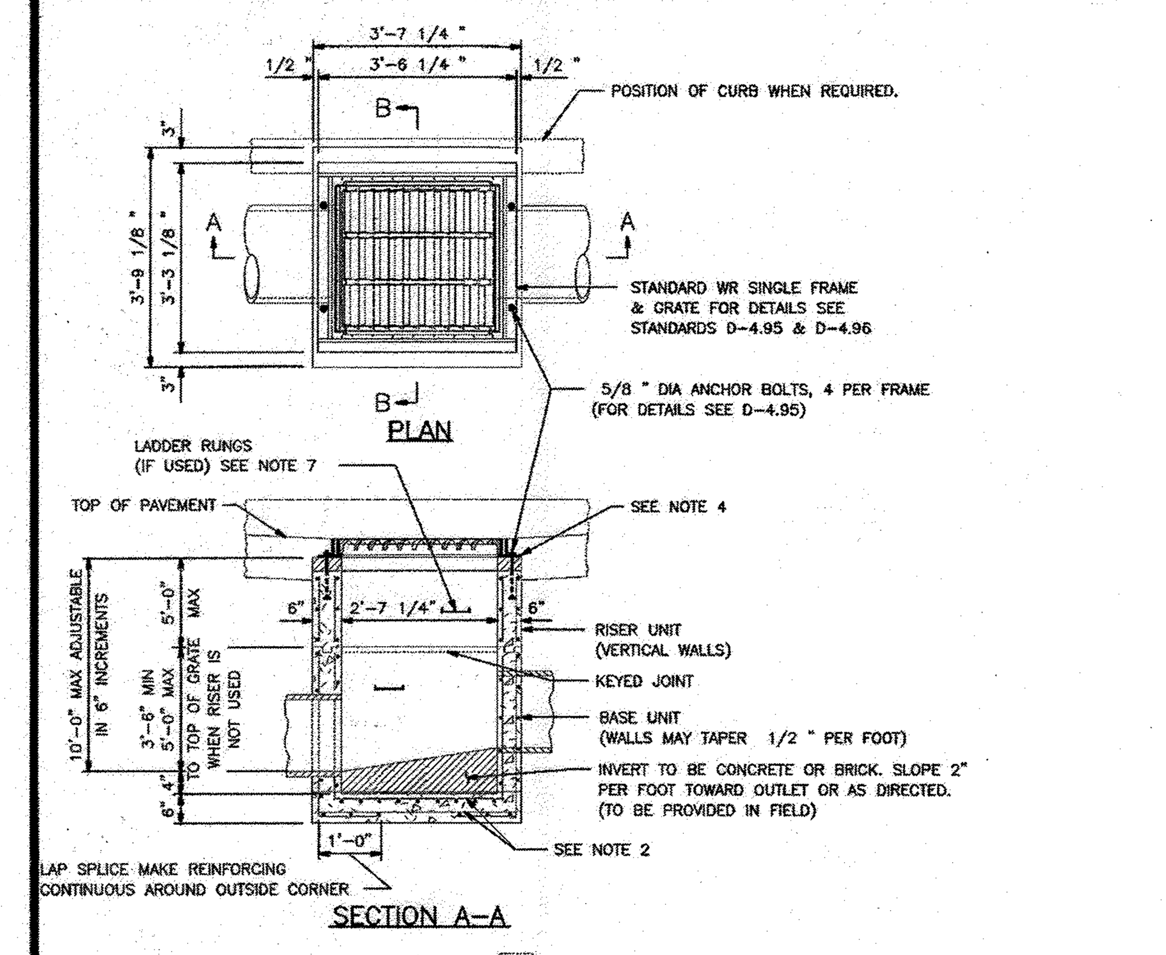
ELEVATION

NOTE:

1. INLET TO BE USED IN A SWALE OR SUMP. MAX. CAPACITY UNDER .25'=3 C.F.S. TO BE USED WITH 15" CONN. OR SMALLER. NOT TO BE USED IN ROADWAY OR PARKING AREA.
2. TO BE USED ONLY WHEN APPROVED BY COUNTY.

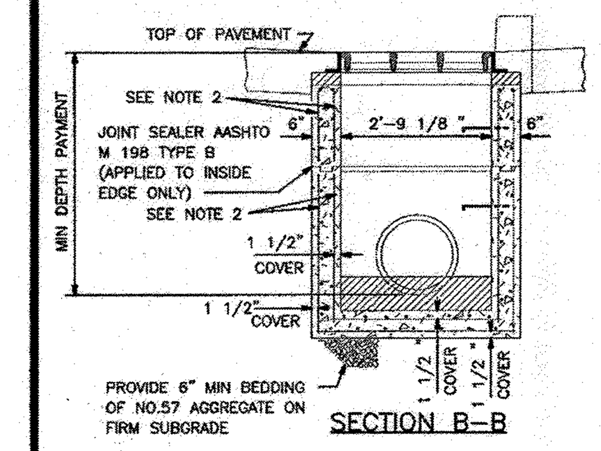
Howard County, Maryland — Department of Public Works — Revised 5/7/2007 Approved — Chief, Bureau of Engineering
Yard Inlet — Detail D-4.14

40 YARD INLET (C-4)
NOT TO SCALE
SW-1



PLAN

SECTION A-A



SECTION B-B

NOTES

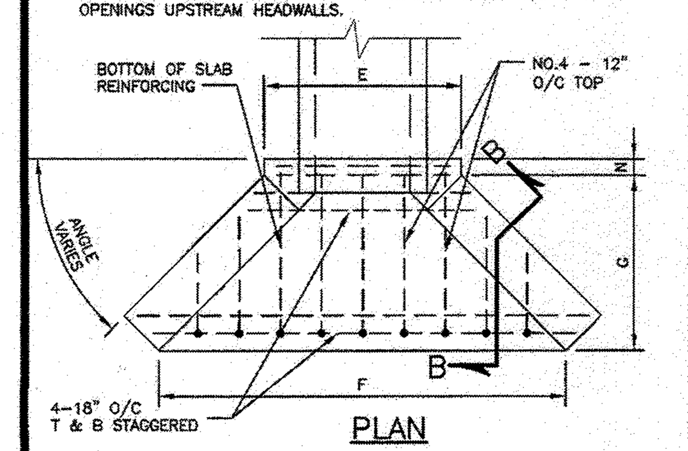
1. CONCRETE TO BE MIX NO. 6 (4500 PSI).
2. REINFORCING-2 LAYERS OF 4x4-W4.0xW4.0 WELDED WIRE FABRIC.
3. THREADED PLASTIC INSERTS TO BE PROVIDED FOR HANDLING.
4. GRADE AND SLOPE ADJUSTMENTS COMPLETED IN THE FIELD USING CONCRETE MIX NO.6.
5. PIPE OPENINGS TO BE PROVIDED AS REQUIRED, FOR SIZE, LOCATION, AND INVERT ELEVATIONS REFER TO CONSTRUCTION PLANS.
6. PLACEMENT OF SUBGRADE DRAINAGE WILL BE AS DIRECTED BY THE ENGINEER OR AS NOTED ON THE CONSTRUCTION PLANS.
7. LADDER RUNGS SHALL BE IN ACCORDANCE WITH G-5.21 OR AS DIRECTED BY THE ENGINEER.
8. MINIMUM DEPTH PAYMENT PER "EACH" INLET INCLUDES DEPTHS UP TO 3'-6". VERTICAL DEPTH PAYMENT PER LINEAR FOOT FOR DEPTHS IN EXCESS OF 3'-6".
9. **STRUCTURE SHALL BE WATERTIGHT.**

Howard County, Maryland — Department of Public Works — Revised 5/7/2007 Approved — Chief, Bureau of Engineering
Single WR Inlet Precast — Detail D-4.37

41 RISER STRUCTURE (C-4)
NOT TO SCALE
C-5, SW-1, SW-2

NOTES:

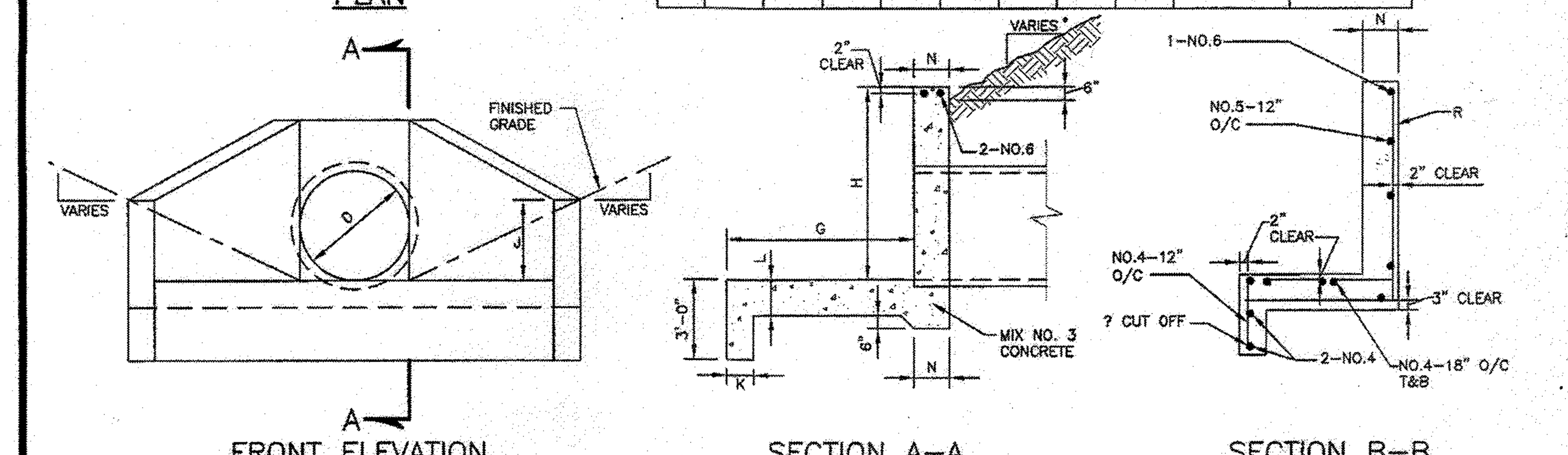
1. CONTRACTOR SHALL PROVIDE 3"-45° BEVEL AROUND PIPE OPENINGS UPSTREAM HEADWALLS.



PLAN

D	E	F	G	H	J	K	L	N	R	Δ VOL. CY
12" 15"	2'-8" 2'-11"	7'-2" 7'-5"	3'-0" 3'-0"	2'-6" 2'-9"	2'-0" 2'-0"	8"	8"	8"	#5-12" O/C	1.50 1.60
18" 21"	3'-0" 3'-4"	7'-6" 7'-9"	3'-0"	3'-0" 3'-3"	2'-0" 2'-0"	8"	8"	8"	#5-12" O/C	1.70 1.80
24" 27"	3'-8" 3'-11"	8'-0" 8'-3"	3'-0"	3'-6" 3'-9"	2'-0" 2'-0"	8"	8"	8"	#5-12" O/C	1.90 2.00
30"	4'-2"	8'-6"	3'-0"	4'-0"	2'-1±"	8"	8"	10"	#5-12" O/C	2.85
36"	4'-8"	10'-0"	3'-6"	4'-6"	2'-3"	8"	10"	10"	#5-12" O/C	3.15
42"	5'-3"	11'-6"	4'-0"	5'-0"	2'-9"	8"	10"	10"	#5-12" O/C	3.87
48"	5'-10"	13'-0"	4'-6"	5'-6"	3'-0"	8"	10"	12"	#5-12" O/C	5.08
54"	6'-5"	14'-6"	5'-0"	6'-0"	3'-3"	9"	12"	12"	#6-8" O/C	6.50
60"	7'-0"	16'-0"	5'-6"	6'-6"	3'-6"	9"	12"	12"	#6-8" O/C	7.98
66"	7'-7"	17'-6"	6'-0"	7'-0"	3'-9"	9"	12"	14"	#6-8" O/C	9.14
72"	8'-2"	19'-0"	6'-6"	7'-6"	4'-3"	9"	12"	14"	#6-8" O/C	11.10

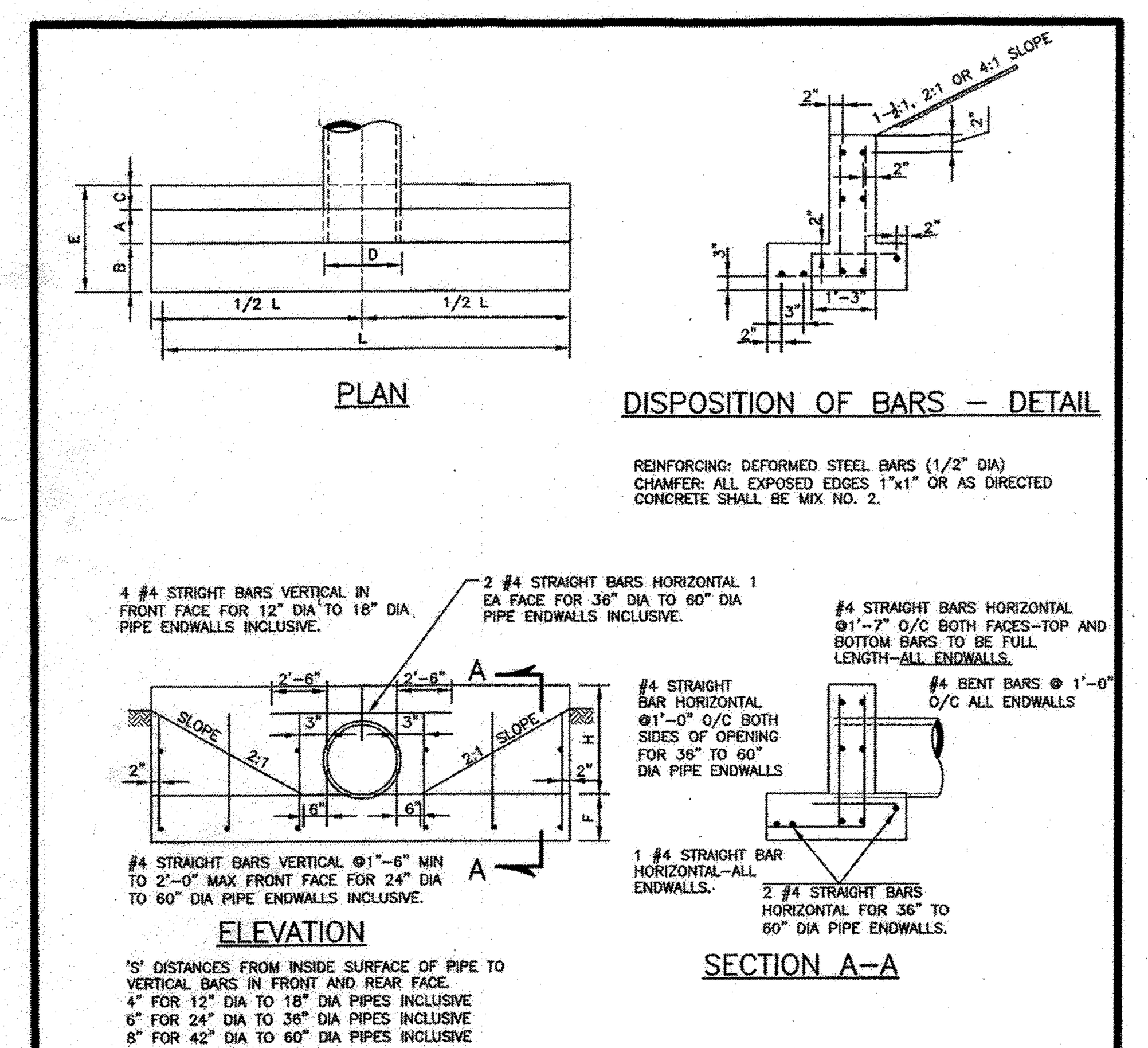
Δ – BASED ON 2:1 CHANNEL SIDE SLOPES AND 45 ANGLE



FRONT ELEVATION — SECTION A-A — SECTION B-B

Howard County, Maryland — Department of Public Works — Revised 5/7/2007 Approved — Chief, Bureau of Engineering
TYPE 'A' Headwall Circular Pipe — Detail D-5.11

42 TYPE 'A' ENDWALL (C-5)
NOT TO SCALE



PLAN

DISPOSITION OF BARS – DETAIL

REINFORCING: DEFORMED STEEL BARS (1/2" DIA)
CHAMFER: ALL EXPOSED EDGES 1"x1" OR AS DIRECTED
CONCRETE SHALL BE MIX NO. 2.

#4 STRAIGHT BARS VERTICAL @1'-6" MIN TO 2'-0" MAX FRONT FACE FOR 24" DIA TO 60" DIA PIPE ENDWALLS INCLUSIVE.

ELEVATION

SECTION A-A

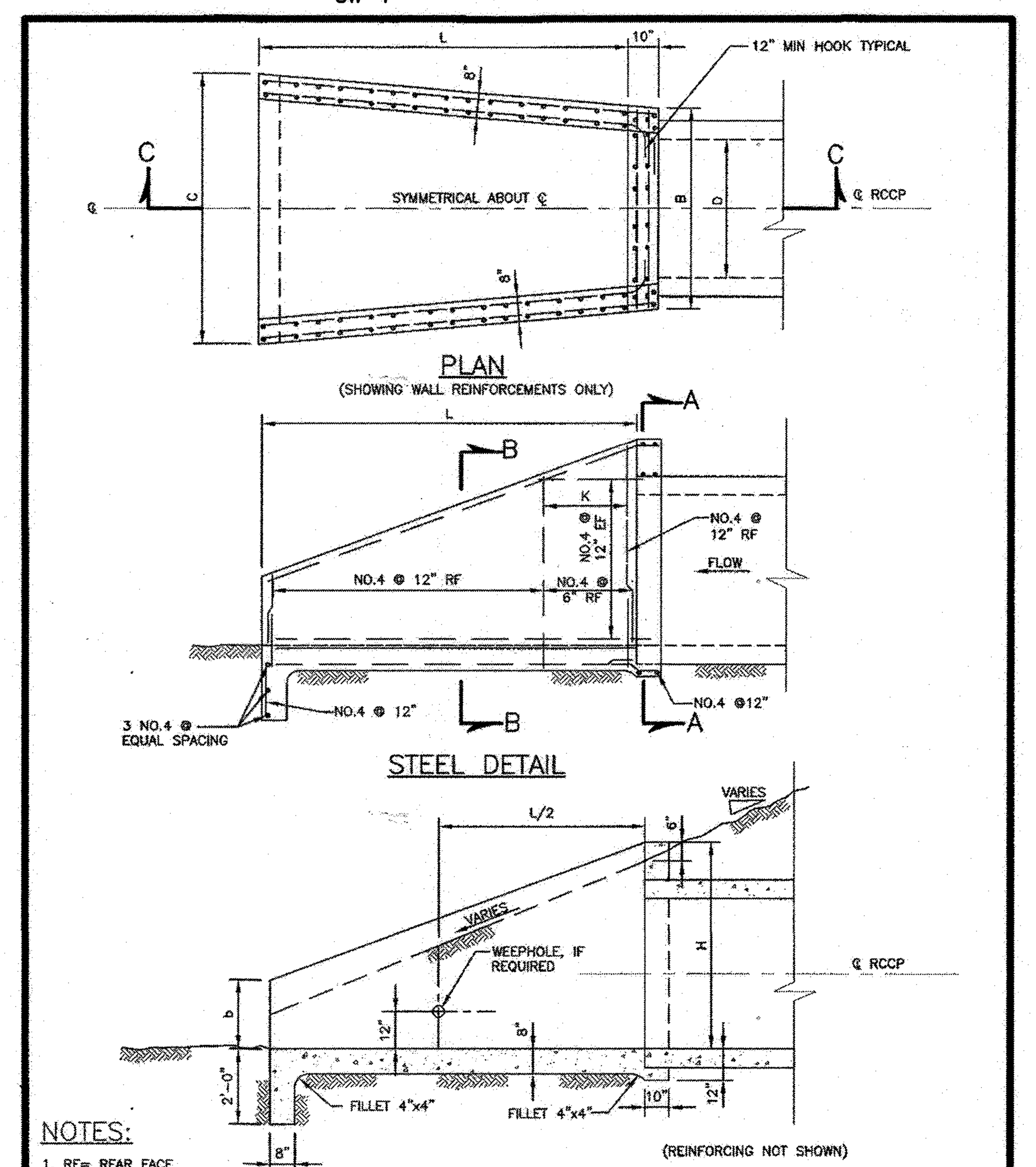
'S' DISTANCES FROM INSIDE SURFACE OF PIPE TO VERTICAL BARS IN FRONT AND REAR FACE.
4" FOR 12" DIA TO 18" DIA PIPES INCLUSIVE
6" FOR 24" DIA TO 36" DIA PIPES INCLUSIVE
8" FOR 42" DIA TO 60" DIA PIPES INCLUSIVE

QUANTITIES FOR ESTIMATION PURPOSES ONLY

OPENING		DIMENSIONS							QUANTITIES	
D INCHES	AREA SQ FT	A	B	C	E	F	H	L	CONC. CY	STEEL LBS
12	0.79	9"	6"	6"	1'-9"	9"	1'-9"	6'-6"	0.61	41
15	1.23	9"	6"	6"	1'-9"	9"	2'-0"	7'-9"	0.77	47
18	1.77	9"	6"	6"	1'-9"	9"	2'-3"	9'-0"	0.95	54
21	2.40	9"	6"	6"	1'-9"	9"	2'-6"	10'-3"	1.14	70
24	3.14	9"	14"	6"	2'-5"	9"	2'-9"	11'-6"	1.56	80
27	3.98	9"	14"	6"	2'-5"	9"	3'-0"	12'10"	1.82	88
30	4.91	9"	14"	6"	2'-5"	12"	3'-6"	14'-2"	2.22	98
33	5.94	9"	14"	6"	2'-5"	12"	3'-9"	15'-5"	2.48	105
36	7.07	12"	16"	10"	3'-2"	12"	4'-0"	16'-8"	4.16	182
42	9.62	12"	16"	10"	3'-2"	12"	4'-6"	19'-2"	5.07	206
48	12.57	12"	16"	10"	3'-2"	12"	5'-0"	21'-8"	6.09	244
54	15.90	12"	20"	12"	3'-8"	12"	5'-6"	24'-2"	7.62	275
60	19.64	12"	20"	12"	3'-8"	12"	6'-0"	26'-8"	8.82	304
72	28.27	12"	20"	12"	3'-8"	12"	7'-0"	31'-8"	11.46	377

Howard County, Maryland — Department of Public Works — Revised 5/7/2007 Approved — Chief, Bureau of Engineering
Type 'C' Endwall Circular Pipe — Detail D-5.21

43 TYPE 'C' ENDWALL (–)
NOT TO SCALE



PLAN
(SHOWING WALL REINFORCEMENTS ONLY)

STEEL DETAIL

SECTION C-C

NOTES:

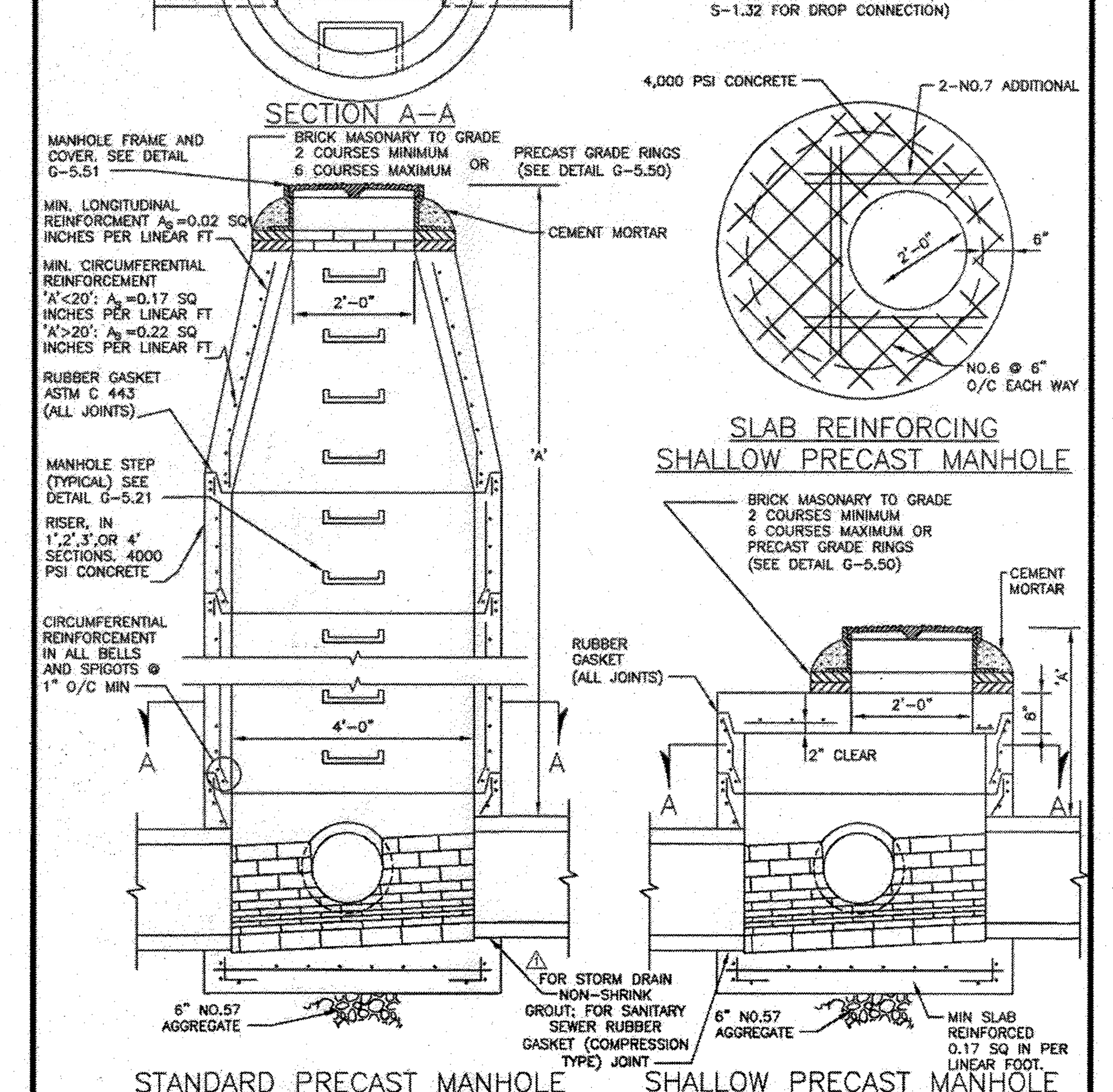
1. RF= REAR FACE
2. FF= FRONT FACE (EXPOSED)
3. EF= EACH FACE
4. USE ONLY WHERE OTHER HEADWALLS CANNOT BE USED.
5. HEADWALL TO BE PARALLEL TO ℄ OF ROADWAY.
6. CHAMFER ALL EXPOSED EDGES 1" x 1".
7. FOR SECTION A & B (SEE DETAIL D-5.42)

Howard County, Maryland — Department of Public Works — Revised 5/7/2007 Approved — Chief, Bureau of Engineering
TYPE 'O' Headwall Circular Pipe Outfall — Detail D-5.41

44 TYPE 'O' ENDWALL (C-4)
NOT TO SCALE
C-5, SW-1, SW-2

NOTES:

1. SEE GENERAL NOTES APPLICABLE TO ALL PRECAST MANHOLES ON DETAIL G-5.11.
2. FOR PIPE SIZES 27" TO 36" AND LARGER USE DETAIL G-5.13.
3. WHERE 'A' (COVER) IS MORE THAN 4.5 FEET USE STANDARD PRECAST MANHOLE.
4. MAXIMUM INVERT DIFFERENTIAL IS 6" WITHOUT DROP CONNECTION. (SEE DETAIL S-1.32 FOR DROP CONNECTION)



SECTION A-A

SLAB REINFORCING
SHALLOW PRECAST MANHOLE

STANDARD PRECAST MANHOLE — SHALLOW PRECAST MANHOLE

Howard County, Maryland — Department of Public Works — Revised 5/7/2007 Approved — Chief, Bureau of Engineering
PRECAST MANHOLE Standard and Shallow 4'-0" for 24" Pipe and smaller — Detail G-5.12

45 MANHOLE (C-4)
NOT TO SCALE
C-5, SW-1, SW-2

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11-29-17

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12-5-17

GRID: 8	BLOCK: N/A
ZONING: RC-DEO	PARCEL/LOT: 220, 253, 11, 23, 54
TAX MAP: 0016	ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — PROFESSIONAL ENGINEER — No. 23402 — 10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	MBS/MP
DRN. BY:	JAP/KEJ
CHK. BY:	SMD
DATE:	OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TOTAL SHEET NUMBER DUE TO ADDITION OF SHEET 45	8/2022

STORMWATER MANAGEMENT DETAILS I

COMPOST FACILITY – PHASE II AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 31 OF ~~44~~ 45
DRAWING: SW-10
PROJECT: 14982.05
SHEET: ~~45 OF 70~~

NOT FOR CONSTRUCTION – SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035

M-2 SUBMERGED GRAVEL WETLAND NOTES:

1. ALL ON-SITE DISTURBED AREAS TO BE STABILIZED PRIOR TO ALLOWING RUNOFF TO ENTER NEWLY CONSTRUCTED SUBMERGED GRAVEL WETLAND.
2. SUBMERGED GRAVEL WETLAND CONSTRUCTION SHALL BE PERFORMED WITH LIGHTWEIGHT, WIDE-TRACKED EQUIPMENT TO MINIMIZE DISTURBANCE AND COMPACTION.
3. PLANTING SOILS MAY BE MIXED ON-SITE BEFORE PLACEMENT. PLANTING SOILS SHALL NOT BE PLACED UNDER SATURATED CONDITIONS. FILTER MEDIA SHALL BE PLACED AND GRADED USING EXCAVATORS OR BACKHOES, OPERATING OUTSIDE THE LIMITS OF SUBMERGED GRAVEL WETLAND OR LANDSCAPE INFILTRATION, AND BE PLACED IN HORIZONTAL LAYERS (12 INCHES PER LIFT MAXIMUM).
4. SPECIES LAYOUT SHALL BE GENERALLY RANDOM AND NATURAL. HERBACEOUS EMBANKMENT PLANTINGS SHOULD BE LIMITED TO 10 INCHES IN HEIGHT.
5. CLASS C GEOTEXTILE OR SIMILAR TO BE PLACED ON SIDE SLOPE AS DIRECTED BY CONTRACTING ENGINEER.
11. FILTER MEDIA BED, MULCH LAYER, PLANTING SPECIFICATIONS SHALL BE IN ACCORDANCE WITH THE MARYLAND STORMWATER DESIGN SPECIFICATIONS SHOWN ON THIS SHEET.
5. GRAVEL MEDIA FOR THE SUBMERGED GRAVEL WETLANDS SHOULD BE COMPOSED OF CLEAN-WASHED, UNIFORMLY GRADED MATERIAL WITH A POROSITY OF 40%. ROUNDED BANK RUN GRAVEL IS RECOMMENDED (ASTM D448 4, 5, OR 6 STONE OR EQUAL). UNDERDRAIN PIPES SHOULD BE RIGID PLASTIC PIPE (ASTM 758, TYPE PS 28, OR AASHTO-M-278). THE UPSTREAM END OF THE PIPE SHOULD BE CAPPED PRIOR TO INSTALLATION.

M-6 MICRO-BIORETENTION AND F-6 BIORETENTION NOTES:

1. THESE PRACTICES ARE NOT TO BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREAS ARE STABILIZED.
2. EXCAVATION TO BE CONDUCTED IN DRY CONDITIONS WITH EQUIPMENT LOCATED OUTSIDE THE PRACTICE TO MINIMIZE BOTTOM AND SIDEWALL COMPACTION. ONLY LIGHTWEIGHT, LOW GROUND CONTACT EQUIPMENT TO BE USED WITHIN MICRO-BIORETENTION AND BIORETENTION PRACTICES.
3. FACILITY BOTTOM SHOULD BE SCARIFIED BEFORE INSTALLING UNDERDRAINS AND FILTERING MEDIA
4. GRAVEL MEDIA FOR MICRO-BIORETENTION AND BIORETENTION UNDERDRAIN SYSTEM SHOULD BE CLEAN, WASHED, AND FREE OF FINES. UNDERDRAIN PIPES SHOULD BE RIGID PLASTIC PIPE (ASTM 758, TYPE PS 28, OR AASHTO-M-278), THE UPSTREAM END OF THE PIPE SHOULD BE CAPPED PRIOR TO INSTALLATION.
5. GRAVEL MEDIA FOR THE SUBMERGED GRAVEL WETLANDS SHOULD BE COMPOSED OF CLEAN-WASHED, UNIFORMLY GRADED MATERIAL WITH A POROSITY OF 40%. ROUNDED BANK RUN GRAVEL IS RECOMMENDED (ASTM D448 4, 5, OR 6 STONE OR EQUAL). UNDERDRAIN PIPES SHOULD BE RIGID PLASTIC PIPE (ASTM 758, TYPE PS 28, OR AASHTO-M-278). THE UPSTREAM END OF THE PIPE SHOULD BE CAPPED PRIOR TO INSTALLATION.
6. PLANTING SOIL MAY BE MIXED ON-SITE BEFORE PLACEMENT. PLANTING SOIL SHOULD NOT BE PLACED UNDER SATURATED CONDITIONS. FILTER MEDIA SHOULD BE PLACED AND GRADED USING EXCAVATORS OR BACKHOES OPERATING ADJACENT TO THE PRACTICE AND SHOULD BE PLACED IN HORIZONTAL LAYERS (12 INCHES PER LIFT MAXIMUM).
7. SHRUBS SHALL NOT BE PLANTED IN THE MICRO-BIORETENTION AND BIORETENTION PRACTICES.
8. HERBACEOUS EMBANKMENT PLANTINGS SHOULD BE LIMITED TO 10 INCHES IN HEIGHT.
8. SPECIES LAYOUT SHOULD BE GENERALLY RANDOM AND NATURAL.
9. THE GRAVEL MEDIA SHALL BE A UNIFORM MIX, FREE OF STONES, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. THE GRAVEL MEDIA SHOULD HAVE A PH RANGE OF 5.5 TO 7.0
10. MULCH LAYER SHOULD BE STANDARD LANDSCAPE STYLE, SINGLE OR DOUBLE SHREDDED HARDWOOD MULCH OR CHIPS, WELL AGED (STOCKPILED OR STORED FOR AT LEAST 12 MONTHS), UNIFORM IN COLOR AND FREE OF OTHER MATERIALS SUCH AS WEEDS, SOIL, ROOTS, ETC. AND SHOULD BE APPLIED TO A MAXIMUM DEPTH OF THREE INCHES.
11. GRAVEL MEDIA BED, MULCH LAYER, PLANTING SPECIFICATIONS SHALL BE IN ACCORDANCE WITH THE MARYLAND STORMWATER DESIGN SPECIFICATIONS SHOWN ON THIS SHEET.

CONSTRUCTION SPECIFICATIONS

1. FILTERING MEDIA OR PLANTING SOIL – THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE PRACTICES THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.

   THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE MATERIAL SPECIFICATIONS IN ACCORDANCE WITH THE MARYLAND STORMWTER DESIGN SPECIFICATIONS SHOWN ON THIS SHEET. THERE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR pH, AND ADDITIONAL TESTS OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.
2. PLANT MATERIAL – RECOMMENDED PLANT MATERIAL IS INCLUDED IN THE PLANT LIST FOR EACH FACILITY.
3. PLANT INSTALLATION – COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.

   ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO ⅛ OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION.

GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.

THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE PRACTICES IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT A MINIMUM, IMPEDES THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.

4. UNDERDRAINS – UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:

   THE GRAVEL LAYER SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN. THE MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1,000 SQUARE FEET OF SURFACE AREA).

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED M-2 SUBMERGED GRAVEL WETLANDS

A. DURING THE FIRST YEAR OF OPERATION, THE OWNER SHALL INSPECT THE FACILITY AFTER EVERY HEAVY STORM AND REPLACE VEGETATION AS NEEDED.
B. THE OWNER SHALL REMOVE SEDIMENT ACCUMULATED IN THE PRETREATMENT AREAS AS NECESSARY.
C. SIGNS OF UNEVEN FLOW WITHIN THE WETLAND MAY MEAN THAT THE GRAVEL OR UNDERDRAIN IS CLOGGED. THE GRAVEL OR UNDERDRAIN SHALL BE REMOVED, CLEANED, AND REPLACED, AS NEEDED.
D. THE OWNER SHALL ENSURE A DENSE STAND OF WETLAND VEGETATION IS MAINTAINED THROUGH THE LIFE OF THE FACILITY AND REPLACE VEGETATION AS NEEDED.
E. THE OWNER SHALL ENSURE THE INLETS AND OUTLETS TO EACH GRAVEL WETLAND CELL ARE FREE FROM DEBRIS. F. THE OWNER SHALL REPAIR EROSION AT INFLOW POINTS AND ENSURE FLOW SPLITTERS ARE FUNCTIONAL TO PREVENT STORM WATER FROM BYPASSING THE FACILITY.

OPERATION AND MAINTENANCE SCHEDULE FOR M-6 MICRO-BIORETENTION PRACTICES

A. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.
B. THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
C. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
D. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

OPERATION AND MAINTENANCE SCHEDULE FOR F-6 BIO-RETENTION PRACTICES

A. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.
B. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
C. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
D. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

MATERIAL SPECIFICATIONS FOR M-2 SUBMERGED GRAVEL WETLAND, M-6 MICRO-BIORETENTION AND F-6 BIORETENTION

PLANTINGS	SEE APPENDIX A, TABLE A.4, MARYLAND STORMWATER DESIGN MANUAL	N/A	PLANTINGS ARE SITE-SPECIFIC
PLANTING SOIL [2' TO 4' DEEP]	LOAMY SAND (60-65%) AND COMPOST (35-40%) OR SANDY LOAM (30%), COARSE SAND (30%) AND COMPOST (40%)	N/A	USDA SOIL TYPES LOAMY SAND OR SANDY LOAM; CLAY CONTENT < 5%
ORGANIC CONTENT	MIN. 10% BY DRY WEIGHT (ASTM-D-2974)		
MULCH	SHREDDED HARDWOOD		AGED 6 MONTHS, MINIMUM; NO PINE OR WOOD CHIPS
PEA GRAVEL DIAPHRAGM	PEA GRAVEL: ASTM-D-448	NO. 8 OR NO.9 (1/8" TO 3/8")	
GEOTEXTILE		N/A	PE TYPE I NONWOVEN
GRAVEL (UNDERDRAINS AND INFILTRATION BERMS)	AASHTO M-43	NO. 57 OF NO. 6 AGGREGATE (1/8" TO 3/8")	
UNDERDRAIN PIPING	F 758, TYPE PS 28 OR AASHTO M-278	4" TO 6" RIGID SCHEDULE 40 PVC OR SDR35	SLOTTED OR PERFORATED PIPE; 3/8" PERF. @ 6" ON CENTER, 4 HOLES PER ROW; MINIMUM OF 3" OF GRAVEL OVER PIPES; NOT NECESSARY UNDERNEATH PIPES. PERFORATED PIPE SHALL BE WRAPPED WITH 1/4-INCH GALVANIZED HARDWARE CLOTH

STORMWATER MAINTENANCE SCHEDULE

PRACTICE	FREQUENCY OF INSPECTION	PREVENTATIVE MAINTENANCE	MAINTENANCE REQUIREMENTS
SUBMERGED GRAVEL WETLANDS	SEASONALLY (AND AFTER A MAJOR STORM)		REMOVE ANY DEAD OR DYING VEGETATION AND REVEGETATE.
			REMOVE ACCUMULATED SEDIMENT FROM PRETREATMENT AREAS.
			CLEAN INLETS AND OUTLETS OF SEDIMENT, DEBRIS, AND TRASH.
			REPAIR EROSION AT INFLOW POINTS.
			SIGNS OF UNEVEN FLOW DISTRIBUTION MAY INDICATE THAT THE GRAVEL OR UNDERDRAIN IS CLOGGED. REMOVE, CLEAN, AND REPLACE GRAVEL.
MICRO-BIORETENTION	SEASONALLY (AND AFTER A MAJOR STORM)		IRRIGATE DURING PROLONGED DRY PERIODS.
		IF SPECIFIC PLANTS ARE NOT SURVIVING, REPLACE WITH MORE APPROPRIATE SPECIES.	REMOVE ANY DEAD OR DYING VEGETATION AND REVEGETATE.
			PRUNE VEGETATION OCCASIONALLY.
			REMOVE ACCUMULATED SEDIMENT FROM SURFACE OF FILTER BED WHEN ACCUMULATION EXCEEDS ONE INCH.
			IF WATER PONDS FOR MORE THAN 48 HOURS, REMOVE AND REPLACE THE TOP FEW INCHES OF FILTER MEDIA.
			REPLACE MULCH ANNUALLY WHERE PRACTICE TREATS AREAS WITH HIGH CONCENTRATIONS OF HEAVY METALS. OTHERWISE, REPLACE TOP 2-3 INCHES AS NECESSARY.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.29.17

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12-5-17

GRID: 8
ZONING: RC-DEO
TAX MAP: 0016

BLOCK: N/A
PARCEL/LOT: 220, 253, 11, 23, 54
ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — MARK JOSEPH GUTBERLET — No. 22402 — PROFESSIONAL ENGINEER — 10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 22402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY: MBS/MP
DRN. BY: JAP/KEJ
CHK. BY: SMD
DATE: OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TOTAL SHEET NUMBER DUE TO ADDITION OF SHEET 45	8/2022

STORMWATER MANAGEMENT DETAILS II

COMPOST FACILITY – PHASE II
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 32 OF 44 (2) | DRAWING: SW-11
PROJECT: 14982.05
SHEET: ~~46 OF 70~~

~~NOT FOR CONSTRUCTION - SITE DEVELOPMENT PLAN #SDP-16-035~~

SDP-16-035

FILE PATH: Q:\PROJECTS\1498205 - ARL COMPOST FACILITY\1498205SW-07DETL.DWG [SW-11 - SWM DETAILS II - (SDP-32)] 3/12/15

BORING LOG — BORING B-1

PAGE 1 OF 1

The Robert B. Balter Company
Geotechnical and Environmental Engineers
Materials and Construction Inspection and Testing
Telephone No. (410) 363-1555
www.balterco.com

CLIENT: SCS Engineers — PROJECT NAME: Howard County Compost Facility
PROJECT LOCATION: Howard County, Maryland — PROJECT NUMBER: 16499-0 MD — DATE TESTED:
RIG: ATV R-Tired CME 750 — METHOD: Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED: 9/30/13 — COMPLETED: 9/30/13
DRILLER: Dennis Strawderman — HELPER: Maurice Hardy
REVIEWED BY: Kristopher Crist — SITE DELAYS:
LOCATION: As Staked — BULK SAMPLES: 0-5'

WATER LEVELS

DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
9/30/13		0		10.7	Dry	
10/1/13		24		10.7	Dry	

SURFACE EL = 539.3 ft

STRATUM CHANGE DEPTH/EL (ft)	USCS	MATERIAL DESCRIPTION
0.6 / 538.7		Topsoil (7-inches)
2.0 / 537.3	SM	Moist, Loose to Very Dense, Brown Silty SAND with Decomposed Rock Fragments
4.0 / 535.3	SM	DECOMPOSED ROCK sampled as: Moist, Very Dense, Gray Silty SAND
6.0 / 533.3	SM	DECOMPOSED ROCK sampled as: Moist, Very Dense, Gray, Micaceous Silty SAND. Drilling through decomposed rock boulders
12.5 / 526.8	SM	HIGHLY WEATHERED ROCK sampled as: Moist, Very Dense, Gray Silty SAND with Rock Fragments
		Auger Refusal at 12.5 feet
		Terminated at 12.5 feet

SAMPLE	SPT BLOWS/6" OR REC IN/IN %	N VALUE OR CORE RQD	NMC %	-#200	PL	LL	PI
S1	2-5-5-50/3"	10	11				
S2	50/4"	50/4"	5				
S3	50/4"	50/4"	8				
S4	50/2"	50/2"					
S5	50/1"	50/1"					
S6	50/0"	50/0"					

REMARKS:

NEW GEOTECH BH LOG 16499-0 HOWARD COUNTY COMPOST FACILITY.GPJ MTA REDLINE.GDT 10/25/13

BORING LOG — BORING B-2

PAGE 1 OF 1

The Robert B. Balter Company
Geotechnical and Environmental Engineers
Materials and Construction Inspection and Testing
Telephone No. (410) 363-1555
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CLIENT: SCS Engineers — PROJECT NAME: Howard County Compost Facility
PROJECT LOCATION: Howard County, Maryland — PROJECT NUMBER: 16499-0 MD — DATE TESTED:
RIG: ATV R-Tired CME 750 — METHOD: Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED: 9/30/13 — COMPLETED: 9/30/13
DRILLER: Dennis Strawderman — HELPER: Maurice Hardy
REVIEWED BY: Kristopher Crist — SITE DELAYS:
LOCATION: As Staked — BULK SAMPLES:

WATER LEVELS

DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
9/30/13		0		15.4	10.7	526.5
10/1/13		24		12.1	9.6	527.6

SURFACE EL = 537.2 ft

STRATUM CHANGE DEPTH/EL (ft)	USCS	MATERIAL DESCRIPTION
0.5 / 536.7		Topsoil (6-inches)
2.5 / 534.7	SM	Moist, Loose, Brown, Micaceous Silty SAND
6.0 / 531.2	SM	DECOMPOSED ROCK sampled as: Moist, Very Dense, Brown, Micaceous Silty SAND
8.0 / 529.2	SM	DECOMPOSED ROCK sampled as: Moist, Medium Dense, Gray-Brown, Micaceous Silty SAND, relic rock structure
9.0 / 528.2	SM	DECOMPOSED ROCK sampled as: Wet, Medium Dense, Brown Silty SAND
16.0 / 521.2	SM	DECOMPOSED ROCK sampled as: Moist to Wet, Very Dense, Tan Silty SAND
		Auger Refusal at 16'
		Terminated at 16.0 feet

SAMPLE	SPT BLOWS/6" OR REC IN/IN %	N VALUE OR CORE RQD	NMC %	-#200	PL	LL	PI
S1	2-3-3-5	6	16				
S2	4-50/5"	50/5"	19				
S3	10-50/5"	50/5"	12				
S4	11-11-11-11	22	14	17	NP	NP	NP
S5	20-50/5"	50/5"					
S6	36-50/4"	50/4"					
S7	50/0"	50/0"					

REMARKS:

NEW GEOTECH BH LOG 16499-0 HOWARD COUNTY COMPOST FACILITY.GPJ MTA REDLINE.GDT 10/25/13

BORING LOG — BORING B-3

PAGE 1 OF 1

The Robert B. Balter Company
Geotechnical and Environmental Engineers
Materials and Construction Inspection and Testing
Telephone No. (410) 363-1555
www.balterco.com

CLIENT: SCS Engineers — PROJECT NAME: Howard County Compost Facility
PROJECT LOCATION: Howard County, Maryland — PROJECT NUMBER: 16499-0 MD — DATE TESTED:
RIG: ATV R-Tired CME 750 — METHOD: Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED: 9/30/13 — COMPLETED: 9/30/13
DRILLER: Dennis Strawderman — HELPER: Maurice Hardy
REVIEWED BY: Kristopher Crist — SITE DELAYS:
LOCATION: As Staked — BULK SAMPLES: 0-5'

WATER LEVELS

DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
9/30/13		0		19.7	8.8	525.2
10/1/13		24		19.2	7.9	526.1

SURFACE EL = 534.0 ft

STRATUM CHANGE DEPTH/EL (ft)	USCS	MATERIAL DESCRIPTION
0.6 / 533.4		Topsoil (6-inches)
4.0 / 530.0	SM	Moist, Medium Dense, Brown Silty SAND
7.0 / 527.0	SM	Moist, Dense to Medium Dense, Tan Silty SAND, fg to mg, relic rock structure Iron ore fragments at 6'
9.7 / 524.3	SM	Moist, Loose, Brown Silty SAND, fine-grained, micaceous
27.5 / 506.5	SM	DECOMPOSED ROCK sampled as: Slightly Wet to Wet, Very Dense to Medium Dense, Tan and Brown Silty SAND, fine- to medium-grained
		AUGER REFUSAL at 27.5'
		Terminated at 27.5 feet

SAMPLE	SPT BLOWS/6" OR REC IN/IN %	N VALUE OR CORE RQD	NMC %	-#200	PL	LL	PI
S1	3-5-7-7	12	15 18	25	NP	NP	NP
S2	5-8-10-11	18	22				
S3	6-12-19-21	31	10				
S4	16-10-6-4	16					
S5	3-5-6-8	11					
S6	47-50/5"	50/5"					
S7	4-8-13	21					
S8	50/4"	50/4"					

REMARKS:

NEW GEOTECH BH LOG 16499-0 HOWARD COUNTY COMPOST FACILITY.GPJ MTA REDLINE.GDT 10/25/13

BORING LOG — BORING B-4

PAGE 1 OF 1

The Robert B. Balter Company
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Materials and Construction Inspection and Testing
Telephone No. (410) 363-1555
www.balterco.com

CLIENT: SCS Engineers — PROJECT NAME: Howard County Compost Facility
PROJECT LOCATION: Howard County, Maryland — PROJECT NUMBER: 16499-0 MD — DATE TESTED:
RIG: ATV R-Tired CME 750 — METHOD: Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED: 9/30/13 — COMPLETED: 10/1/13
DRILLER: Dennis Strawderman — HELPER: Blake Strawderman
REVIEWED BY: Kristopher Crist — SITE DELAYS:
LOCATION: As Staked — BULK SAMPLES:

WATER LEVELS

DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
10/1/13		0		16.5	8.7	521.9
10/2/13		24		18.5	4.6	526.0

SURFACE EL = 530.6 ft

STRATUM CHANGE DEPTH/EL (ft)	USCS	MATERIAL DESCRIPTION
0.3 / 530.3		Topsoil (4-inches)
4.0 / 526.6	SM	Moist, Medium Dense, Brown Silty SAND with Rock Fragments
8.0 / 522.6	SM	Moist, Loose, Brown, Micaceous Silty SAND, fine-grained
12.0 / 518.6	SM	Wet, Loose, Brown, Micaceous Silty SAND
17.0 / 513.6	SM	Slightly Wet, Loose, Brown, Micaceous Silty SAND, relic rock structure
27.0 / 503.6	SM	HIGHLY WEATHERED ROCK sampled as: Slightly Wet, Very Dense, Brown Silty SAND
33.5 / 497.1	SM	HIGHLY WEATHERED ROCK sampled as: Wet, Very Dense, Brown to Orange-Brown Silty SAND, fine- to coarse-grained
		Terminated at 33.5 feet

SAMPLE	SPT BLOWS/6" OR REC IN/IN %	N VALUE OR CORE RQD	NMC %	-#200	PL	LL	PI
S1	13-13-10-7	23	15				
S2	5-3-4-4	7	10				
S3	3-2-3-4	5	38				
S4	3-3-3-4	6	39				
S5	3-2-2-3	4	41	29	41	50	9
S6	3-4-5	9					
S7	43-50/3"	50/3"					
S8	50/4"	50/4"					
S9	50/3"	50/3"					
S10	50/1"	50/1"					

REMARKS:

NEW GEOTECH BH LOG 16499-0 HOWARD COUNTY COMPOST FACILITY.GPJ MTA REDLINE.GDT 10/25/13

BORING LOG — BORING B-5

PAGE 1 OF 1

The Robert B. Balter Company
Geotechnical and Environmental Engineers
Materials and Construction Inspection and Testing
Telephone No. (410) 363-1555
www.balterco.com

CLIENT: SCS Engineers — PROJECT NAME: Howard County Compost Facility
PROJECT LOCATION: Howard County, Maryland — PROJECT NUMBER: 16499-0 MD — DATE TESTED:
RIG: ATV R-Tired CME 750 — METHOD: Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED: 10/1/13 — COMPLETED: 10/1/13
DRILLER: Dennis Strawderman — HELPER: Blake Strawderman
REVIEWED BY: Kristopher Crist — SITE DELAYS:
LOCATION: As Staked — BULK SAMPLES:

WATER LEVELS

DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
10/1/13		0		18.6	10.0	518.3
10/2/13		24		16.3	7.3	521.0

SURFACE EL = 528.3 ft

STRATUM CHANGE DEPTH/EL (ft)	USCS	MATERIAL DESCRIPTION
0.4 / 527.9		Topsoil (4-inches)
2.5 / 525.8	SM	Moist, Medium Dense, Brown Silty SAND (Fill)
4.0 / 524.3	ML	Moist, Stiff, Brown Sandy SILT, slightly micaceous
8.0 / 520.3	SM	Moist, Loose, Brown to Red-Brown Silty SAND thin layers of coarse-grained sand at 6'
12.0 / 516.3	SM	Moist, Loose, Tan Silty SAND, fine- to coarse-grained
14.5 / 513.8	SM	Wet, Dense, Brown Silty SAND, relic rock structure
17.0 / 511.3	GP	Wet, Dense, Tan Quartz Rock Fragments
23.5 / 504.8	SM	DECOMPOSED ROCK sampled as: Moist, Very Dense, Greenish Brown Silty SAND
		Auger Refusal at 23.0'
		Terminated at 23.5 feet

SAMPLE	SPT BLOWS/6" OR REC IN/IN %	N VALUE OR CORE RQD	NMC %	-#200	PL	LL	PI
S1	3-5-7-6	12	17				
S2	4-6-6-7	12	21				
S3	2-3-3-3	6	28	39			
S4	4-5-5-6	10					
S5	3-3-4-4	7					
S6	5-22-14	36					
S7	37-50/4"	50/4"					
S8	50/0"	50/0"					

REMARKS:

NEW GEOTECH BH LOG 16499-0 HOWARD COUNTY COMPOST FACILITY.GPJ MTA REDLINE.GDT 10/25/13

BORING LOG — BORING B-6

PAGE 1 OF 1

The Robert B. Balter Company
Geotechnical and Environmental Engineers
Materials and Construction Inspection and Testing
Telephone No. (410) 363-1555
www.balterco.com

CLIENT: SCS Engineers — PROJECT NAME: Howard County Compost Facility
PROJECT LOCATION: Howard County, Maryland — PROJECT NUMBER: 16499-0 MD — DATE TESTED:
RIG: ATV R-Tired CME 750 — METHOD: Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED: 10/1/13 — COMPLETED: 10/1/13
DRILLER: Dennis Strawderman — HELPER: Blake Strawderman
REVIEWED BY: Kristopher Crist — SITE DELAYS:
LOCATION: As Staked — BULK SAMPLES:

WATER LEVELS

DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
10/1/13		0		25.7	Dry	
10/2/13		24		25.5	21.3	524.6

SURFACE EL = 545.9 ft

STRATUM CHANGE DEPTH/EL (ft)	USCS	MATERIAL DESCRIPTION
0.3 / 545.6		Topsoil (4-inches)
2.0 / 543.9	SM	Moist, Medium Dense, Brown Silty SAND (Fill)
4.5 / 541.4	SM	Moist, Medium Dense, Brown Silty SAND with Rock Fragments, micaceous
6.0 / 539.9	SM	DECOMPOSED ROCK sampled as: Moist, Very Dense, Gray Silty SAND, relic rock structure
12.0 / 533.9	SM	HIGHLY WEATHERED ROCK sampled as: Moist, Very Dense, Gray-Brown to Orange-Tan Silty SAND
19.5 / 526.4	SM	HIGHLY WEATHERED ROCK sampled as: Moist, Very Dense, Brown Silty SAND with Rock Fragments
30.0 / 515.9	SM	HIGHLY WEATHERED ROCK sampled as: Moist, Very Dense, Brown fine-grained Silty SAND
		Terminated at 30.0 feet

SAMPLE	SPT BLOWS/6" OR REC IN/IN %	N VALUE OR CORE RQD	NMC %	-#200	PL	LL	PI
S1	6-8-6-5	14					
S2	6-5-6-6	11					
S3	4-25-29-50/5"	54					
S4	50/1"	50/1"					
S5	50/2"	50/2"					
S6	50/3"	50/3"					
S7	21-28-43	71					
S8	50/3"	50/3"					
S9	50/2"	50/2"					

REMARKS:

NEW GEOTECH BH LOG 16499-0 HOWARD COUNTY COMPOST FACILITY.GPJ MTA REDLINE.GDT 10/25/13

BORING LOG — BORING B-7

PAGE 1 OF 1

The Robert B. Balter Company
Geotechnical and Environmental Engineers
Materials and Construction Inspection and Testing
Telephone No. (410) 363-1555
www.balterco.com

CLIENT: SCS Engineers — PROJECT NAME: Howard County Compost Facility
PROJECT LOCATION: Howard County, Maryland — PROJECT NUMBER: 16499-0 MD — DATE TESTED:
RIG: ATV R-Tired CME 750 — METHOD: Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED: 10/2/13 — COMPLETED: 10/2/13
DRILLER: Dennis Strawderman — HELPER: Maurice Hardy
REVIEWED BY: Kristopher Crist — SITE DELAYS:
LOCATION: As Staked — BULK SAMPLES:

WATER LEVELS

DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
10/2/13	9:37 am	0		13.7	Dry	
10/2/13	11:35 am	2		13.3	Dry	

SURFACE EL = 533.7 ft

STRATUM CHANGE DEPTH/EL (ft)	USCS	MATERIAL DESCRIPTION
0.4 / 533.3		Topsoil (5-inches)
3.5 / 530.2	SM	Moist, Medium Dense, Gray Silty SAND, little decomposed rock fragments
6.0 / 527.7	SM	DECOMPOSED ROCK sampled as: Moist, Very Dense, Gray Silty SAND with Decomposed Rock Fragments
8.0 / 525.7	SM	DECOMPOSED ROCK sampled as: Moist, Very Dense, Orangish Tan Silty SAND with Rock Fragments, medium- to coarse-grained
14.0 / 519.7	SM	DECOMPOSED ROCK sampled as: Moist, Very Dense, Gray-Brown Silty SAND
15.5 / 518.2	SM	HIGHLY WEATHERED ROCK sampled as: Moist, Very Dense, Gray Silty SAND with Rock Fragments
		Auger Refusal at 15.5'
		Terminated at 15.5 feet

SAMPLE	SPT BLOWS/6" OR REC IN/IN %	N VALUE OR CORE RQD	NMC %	-#200	PL	LL	PI
S1	7-7-9-12	16	7				
S2	18-16-20-50/5"	36	8				
S3	39-50/4"	50/4"	7				
S4	45-50/5"	50/5"					
S5	50/5"	50/5"					
S6	41-50/1"	50/1"					
S7	50/0"	50/0"					

REMARKS:

NEW GEOTECH BH LOG 16499-0 HOWARD COUNTY COMPOST FACILITY.GPJ MTA REDLINE.GDT 10/25/13

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[signature] 12-12-17
DIRECTOR — DATE

[signature] 11-29-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

[signature] 12-5-17
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

GRID: 8 — BLOCK: N/A
ZONING: RC-DEO — PARCEL/LOT: 220, 253, 11, 23, 54
TAX MAP: 0016 — ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — MARK JOSEPH GUTBERLET — No. 23402 — PROFESSIONAL ENGINEER — 10/4/17

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY: MBS/MP
DRN. BY: JAP/KEJ
CHK. BY: SMD
DATE: OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TOTAL SHEET NUMBER DUE TO ADDITION OF SHEET 45	8/2022

GEOTECHNICAL SOIL BORING LOGS I

COMPOST FACILITY – PHASE II AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 33 OF ~~44~~ 45
DRAWING: SW-14
PROJECT: 14982.05
SHEET: ~~40 OF 70~~

NOT FOR CONSTRUCTION – SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035

FILE PATH: Q:\PROJECTS\1498205 – ARL COMPOST FACILITY\1498205SW-10BRLG.DWG [SW-14 – GEO SOIL BORING LOGS I – [SDP-33]] 3/12/15

The Robert B. Balter Company
Geotechnical and Environmental Engineers
Materials and Construction Inspection and Testing
Telephone No. (410) 363-1555
www.balterco.com

BORING LOG

BORING B-8

PAGE 1 OF 1

CLIENT SCS Engineers
PROJECT NAME Howard County Compost Facility
PROJECT LOCATION Howard County, Maryland
PROJECT NUMBER 16499-0 MD
DATE TESTED
RIG ATV R-Tired CME 750
METHOD Hollow Stem Auger
SAMPLER: 2-in OD SS
HAMMER: 140#
FALL: 30"
AUTO? Yes
DATE STARTED 10/2/13
COMPLETED 10/2/13
DRILLER Dennis Strawderman
HELPER Maurice Hardy
REVIEWED BY Kristopher Crist
SITE DELAYS
LOCATION As Staked
BULK SAMPLES 0-5'

WATER LEVELS

DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
10/2/13	8:15 am	0 ∇		12.5	Dry	
10/2/13	11:29 am	3.25 ▼		12.2	Dry	

DEPTH (ft)	SAMPLE TYPE AND NUMBER	SPT BLOWS/6" OR REC IN/IN %	N VALUE OR CORE RQD	STRATUM CHANGE DEPTH/EL (ft)	GRAPHIC LOG	USCS	WATER LEVEL	MATERIAL DESCRIPTION (SURFACE EL = 536.3 ft)	PP (tsf)	NMC %	- #200	PL	LL	PI	REMARKS
	S1	5-10-9-9	19	0.3 / 536.0				Topsoil (4-inches)							
				2.0 / 534.3		SM		Moist, Medium Dense, Brown Silty SAND		12					
	S2	5-4-6-6	10			SM		Moist, Loose to Medium Dense, Brown Silty SAND, slightly micaceous, relic rock structure		19					
5	S3	4-7-21-50/4"	28	5.5 / 530.8						25					
	S4	50/4"	50/4"	8.0 / 528.3		SM		DECOMPOSED ROCK sampled as: Moist, Very Dense, Gray Silty SAND with Decomposed Rock Fragments							
	S5	50/2"	50/2"			SM		HIGHLY WEATHERED ROCK sampled as: Moist, Very Dense, Gray Silty SAND							
10															
	S6	50/1"	50/1"	14.0 / 522.3				Auger Refusal at 14.0'							
	S7	50/2"	50/2"					Terminated at 14.0 feet							

REMARKS:

NEW GEOTECH BH LOG 16499-0 HOWARD COUNTY COMPOST FACILITY.GPJ MTA REDLINE.GDT 10/25/13

The Robert B. Balter Company
Geotechnical and Environmental Engineers
Materials and Construction Inspection and Testing
Telephone No. (410) 363-1555
www.balterco.com

BORING LOG

BORING B-9

PAGE 1 OF 1

CLIENT SCS Engineers
PROJECT NAME Howard County Compost Facility
PROJECT LOCATION Howard County, Maryland
PROJECT NUMBER 16499-0 MD
DATE TESTED
RIG ATV R-Tired CME 750
METHOD Hollow Stem Auger
SAMPLER: 2-in OD SS
HAMMER: 140#
FALL: 30"
AUTO? Yes
DATE STARTED 10/2/13
COMPLETED 10/2/13
DRILLER Dennis Strawderman
HELPER Maurice Hardy
REVIEWED BY Kristopher Crist
SITE DELAYS
LOCATION As Staked
BULK SAMPLES 0-5'

WATER LEVELS

DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
10/2/13	10:20 am	0 ∇		11.2	Dry	
10/2/13	11:40 am	1 ▼		11.0	Dry	

DEPTH (ft)	SAMPLE TYPE AND NUMBER	SPT BLOWS/6" OR REC IN/IN %	N VALUE OR CORE RQD	STRATUM CHANGE DEPTH/EL (ft)	GRAPHIC LOG	USCS	WATER LEVEL	MATERIAL DESCRIPTION (SURFACE EL = 524.8 ft)	PP (tsf)	NMC %	- #200	PL	LL	PI	REMARKS
	S1	6-8-10-8	18	0.3 / 524.5				Topsoil (4-inches)		9					
				2.0 / 522.8		SM		Moist, Medium Dense, Tan Silty SAND, fine- to coarse-grained		11	19	NP	NP	NP	
	S2	7-7-9-10	16	4.0 / 520.8		SM		Moist, Medium Dense, Gray Silty SAND, relic rock structure		12					
5	S3	8-15-21-17	36			SM		Moist, Dense to Medium Dense, Tan & Gray ("pepper") Silty SAND		12					
	S4	12-12-13-17	25	8.0 / 516.8						16	29				
	S5	44-50/3"	50/3"			SM		HIGHLY WEATHERED ROCK sampled as: Moist, Very Dense, Tan & Gray ("pepper") Silty SAND							
10															
				13.0				Auger Refusal at 13'							
	S6	50/0"	50/0"	511.8				Terminated at 13.0 feet							

REMARKS:

NEW GEOTECH BH LOG 16499-0 HOWARD COUNTY COMPOST FACILITY.GPJ MTA REDLINE.GDT 10/25/13

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BORING LOG

BORING B-10

PAGE 1 OF 1

CLIENT SCS Engineers
PROJECT NAME Howard County Compost Facility
PROJECT LOCATION Howard County, Maryland
PROJECT NUMBER 16499-0 MD
DATE TESTED
RIG ATV R-Tired CME 750
METHOD Hollow Stem Auger
SAMPLER: 2-in OD SS
HAMMER: 140#
FALL: 30"
AUTO? Yes
DATE STARTED 10/2/13
COMPLETED 10/2/13
DRILLER Dennis Strawderman
HELPER Maurice Hardy
REVIEWED BY Kristopher Crist
SITE DELAYS
LOCATION As Staked
BULK SAMPLES 0-5'

WATER LEVELS

DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
10/2/13		0 ∇		12.3	Dry	

DEPTH (ft)	SAMPLE TYPE AND NUMBER	SPT BLOWS/6" OR REC IN/IN %	N VALUE OR CORE RQD	STRATUM CHANGE DEPTH/EL (ft)	GRAPHIC LOG	USCS	WATER LEVEL	MATERIAL DESCRIPTION (SURFACE EL = 519.5 ft)	PP (tsf)	NMC %	- #200	PL	LL	PI	REMARKS
	S1	3-4-4-5	8	0.3 / 519.2				Topsoil							
				2.0 / 517.5		SM		Moist, Loose, Brown Silty SAND, slightly micaceous		18					
	S2	6-6-5-8	11			SM		Moist, Medium Dense, Brown to Tan Silty SAND		19	31	34	42	8	
5	S3	10-6-5-5	11	6.0 / 513.5						15					
	S4	6-5-7-8	12	8.0 / 511.5		SM		Moist, Medium Dense, Gray-Brown to Tan & Gray ("pepper") Silty SAND, micaceous		15					
10	S5	7-8-7-7	15	12.0 / 507.5		SM		Moist, Medium Dense, Orangish Tan Silty SAND, relic rock structure		17					
15	S6	8-5-8	13	15.0 / 504.5		SM		Moist, Medium Dense, Orangish Brown, Micaceous Silty SAND							
								Terminated at 15.0 feet							

REMARKS:

NEW GEOTECH BH LOG 16499-0 HOWARD COUNTY COMPOST FACILITY.GPJ MTA REDLINE.GDT 10/25/13

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[signature] 12-12-17
DIRECTOR DATE

[signature] 11.29.17
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[signature] 12-5-17
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

GRID: 8
ZONING: RC-DEO
TAX MAP: 0016
BLOCK: N/A
PARCEL/LOT: 220, 253, 11, 23, 54
ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND MARK JOSEPH GUTBERLET No. 23402 PROFESSIONAL ENGINEER
10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY: MBS/MP
DRN. BY: JAP/KEJ
CHK. BY: SMD
DATE: OCT. 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TOTAL SHEET NUMBER DUE TO ADDITION OF SHEET 45	8/2022

GEOTECHNICAL SOIL BORING LOGS II

COMPOST FACILITY – PHASE II
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 34 OF ~~44~~ 45
DRAWING: SW-15
PROJECT: 14982.05
SHEET: ~~50 OF 70~~

SDP-16-035

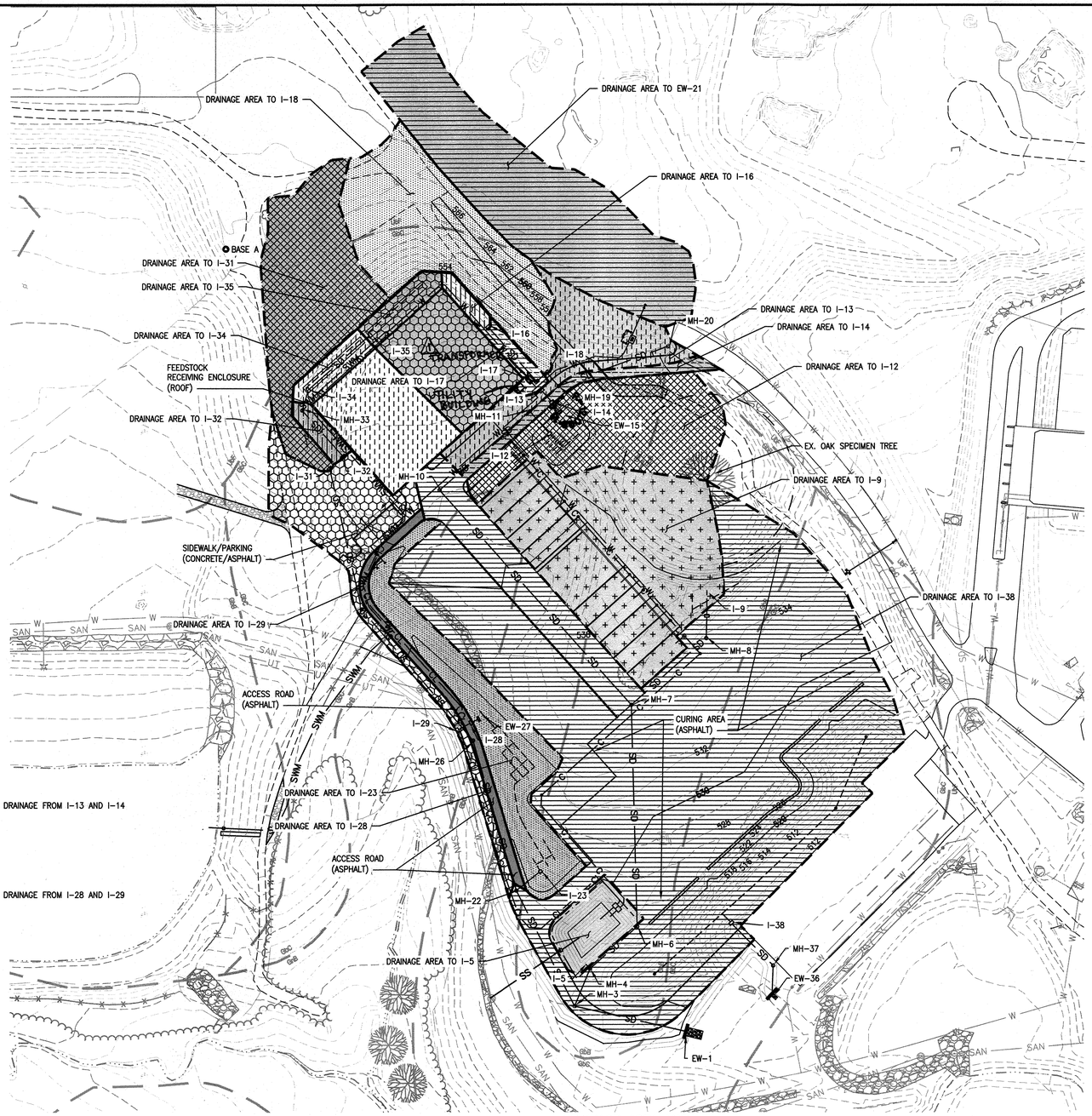
~~NOT FOR CONSTRUCTION~~ - SITE DEVELOPMENT PLAN #SDP-16-035

FILE PATH: Q:\PROJECTS\1498205 - ARL COMPOST FACILITY\1498205SW-11BRLG.DWG [SW-15 - GEO SOIL BORING LOGS II - (SDP-34)] 3/12/15

LEGEND

- DRAINAGE AREA TO EW-21
- DRAINAGE AREA TO I-18
- DRAINAGE AREA TO I-31
- DRAINAGE AREA TO I-29 (SUBDRAINAGE AREA TO I-23)
- DRAINAGE AREA TO I-32
- DRAINAGE AREA TO I-34
- DRAINAGE AREA TO I-35
- DRAINAGE AREA TO I-16
- DRAINAGE AREA TO I-17
- DRAINAGE AREA TO I-13 (SUBDRAINAGE AREA TO I-12)
- DRAINAGE AREA TO I-14 (SUBDRAINAGE AREA TO I-12)
- DRAINAGE AREA TO I-12
- DRAINAGE AREA TO I-38
- DRAINAGE AREA TO I-5
- DRAINAGE AREA TO I-23
- DRAINAGE AREA TO I-28 (SUBDRAINAGE AREA TO I-23)
- DRAINAGE AREA TO I-9

DRAINAGE AREA NO.	DRAINAGE AREA (AC)	C	Q(CFS)	% IMPERVIOUS	
EW-21	1.27	0.37	4.0	10.4%	
I-5	0.20	0.30	0.5	0%	
I-12	1.26	0.54	5.8	20.7	INCLUDES DRAINAGE FROM I-13 AND I-14
I-13	0.46	0.53	2.1	35.0%	
I-14	0.11	0.95	0.9	100%	
I-16	0.05	0.30	0.1	0%	
I-17	0.07	0.30	0.2	0%	
I-18	0.90	0.53	4.1	36.0%	
I-23	1.39	0.52	6.1	33.9	INCLUDES DRAINAGE FROM I-28 AND I-29
I-28	0.16	0.95	1.3	100%	
I-31	0.77	0.47	3.1	22.0%	
I-32	0.06	0.30	0.2	0%	
I-34	0.53	0.83	3.7	81.3%	
I-35	0.52	0.82	3.6	80.2%	
I-38	5.52	0.75	35.4	69.9	
I-9	1.36	0.69	7.9	59.6	
I-29	0.58	0.62	3.0	48.6%	



DRAINAGE AREA MAP

SCALE: 1" = 80'

0 40 80 160

GRAPHIC SCALE IN FEET

STORM DRAIN STRUCTURE SCHEDULE

NO.	TYPE	RIM ELEV.	BOTTOM ELEV.
EW-21	EXISTING ENDWALL	553.92	552.00
MH-20	PRECAST MANHOLE G-5.12	551.71	544.00
MH-19	PRECAST MANHOLE G-5.12	543.38	533.00
MH-11	PRECAST MANHOLE G-5.12	542.62	532.30
MH-10	PRECAST MANHOLE G-5.12	541.91	530.93
MH-7	PRECAST MANHOLE G-5.12	535.80	526.93
MH-6	PRECAST MANHOLE G-5.12	526.50	521.55
MH-4	PRECAST MANHOLE G-5.12	526.30	516.53
MH-3	PRECAST MANHOLE G-5.12	525.63	514.31
EW-1	TYPE 'A' ENDWALL	516.13	512.84
I-35	YARD INLET D-4.14	541	534.00
I-34	YARD INLET D-4.14	541	532.72
MH-33	PRECAST MANHOLE G-5.12	542.00	532.24
I-32	YARD INLET D-4.14	542.00	531.23
I-31	YARD INLET D-4.14	542.00	530.79
MH-30	PRECAST MANHOLE G-5.12	535.00	523.67
MH-26	PRECAST MANHOLE G-5.12	529.53	520.56
MH-22	PRECAST MANHOLE G-5.12	530.00	518.55
I-5	RISER STRUCTURE	524.75	522.00
I-16	YARD INLET D-4.14	542.00	538.57
I-17	YARD INLET D-4.14	543.25	537.42
I-18	YARD INLET D-4.14	543.67	536.34
I-13	YARD INLET D-4.37	543.40	537.65
I-14	YARD INLET D-4.37	542.46	537.25
EW-15	TYPE 'O' HEADWALL D-5.41	539.21	537.00
I-12	RISER STRUCTURE	537.00	532.88
I-9	RISER STRUCTURE	536.50	532.10
MH-8	PRECAST MANHOLE G-5.12	535.59	531.21
I-38	RISER STRUCTURE	515.24	510.53
MH-37	PRECAST MANHOLE G-5.12	514.06	509.94
EW-36	TYPE 'A' HEADWALL D-5.11	511.96	509.75
I-29	YARD INLET D-4.37	529.53	523.31
I-28	YARD INLET D-4.37	529.53	524.11
EW-27	TYPE 'O' HEADWALL D-5.41	527.50	524.04
I-23	RISER STRUCTURE	528.00	522.70

STORM DRAIN PIPE SCHEDULE

FROM	TO	SIZE	TYPE	LENGTH
EW-21	MH-20	18"	EX. CMP	45 LF
MH-20	MH-19	18"	RCP, ASTM C-76, CL. III	153 LF
MH-19	MH-11	24"	RCP, ASTM C-76, CL. III	50 LF
MH-11	MH-10	24"	RCP, ASTM C-76, CL. III	157 LF
MH-10	MH-7	24"	RCP, ASTM C-76, CL. III	379 LF
MH-7	MH-6	24"	RCP, ASTM C-76, CL. III	291 LF
MH-6	MH-4	24"	RCP, ASTM C-76, CL. III	83 LF
MH-4	MH-3	24"	RCP, ASTM C-76, CL. III	53 LF
MH-3	EW-1	30"	RCP, ASTM C-76, CL. III	148 LF
I-35	I-34	18"	RCP, ASTM C-76, CL. III	108 LF
I-34	MH-33	18"	RCP, ASTM C-76, CL. III	28 LF
MH-33	I-32	18"	RCP, ASTM C-76, CL. III	81 LF
I-32	I-31	18"	RCP, ASTM C-76, CL. III	24 LF
I-31	MH-30	18"	RCP, ASTM C-76, CL. III	190 LF
MH-30	MH-26	18"	RCP, ASTM C-76, CL. III	227 LF
MH-26	MH-22	24"	RCP, ASTM C-76, CL. III	206 LF
MH-22	MH-3	30"	RCP, ASTM C-76, CL. III	170 LF
I-5	MH-4	18"	RCP, ASTM C-76, CL. III	10 LF
I-16	I-17	18"	RCP, ASTM C-76, CL. III	95 LF
I-17	I-18	18"	RCP, ASTM C-76, CL. III	18 LF
I-18	MH-19	18"	RCP, ASTM C-76, CL. III	24 LF
I-13	I-14	18"	RCP, ASTM C-76, CL. III	20 LF
I-14	EW-15	18"	RCP, ASTM C-76, CL. III	22 LF
I-12	MH-11	18"	RCP, ASTM C-76, CL. III	38 LF
I-9	MH-8	18"	RCP, ASTM C-76, CL. III	57 LF
MH-8	MH-7	18"	RCP, ASTM C-76, CL. III	132 LF
I-38	MH-37	30"	RCP, ASTM C-76, CL. III	78 LF
MH-37	EW-36	30"	RCP, ASTM C-76, CL. III	37 LF
I-29	I-28	18"	RCP, ASTM C-76, CL. III	20 LF
I-28	EW-27	18"	RCP, ASTM C-76, CL. III	15 LF
I-23	MH-22	30"	RCP, ASTM C-76, CL. III	38 LF

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.29.17

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12-5-17

GRID: 8
ZONING: RC-DEO
TAX MAP: 0016

BLOCK: N/A
PARCEL/LOT: 220, 253, 11, 23, 54
ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — JOSEPH GUTBERLET — No. 23402 — PROFESSIONAL ENGINEER — 10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY: MBS/MP
DRN. BY: JAP/KEJ
CHK. BY: SMD
DATE: OCT. 2016

BY	NO.	REVISION	DATE
SMB	1	REVISED UTILITY BUILDING AND TRANSFORMER LOCATION	4/2018
CVH	2	REVISED TOTAL SHEET NUMBER DUE TO ADDITION OF SHEET 45	8/2022

STORMDRAIN DRAINAGE AREA MAP

COMPOST FACILITY – PHASE II AT ALPHA RIDGE LANDFILL

HOWARD COUNTY, MARYLAND

SDP SHEET: 35 OF 45 (2) | DRAWING: SW-16 | PROJECT: 14982.05 | SHEET: 51 OF 70

NOT FOR CONSTRUCTION — SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035

LEGEND

- DRAINAGE AREA 1 M-6 MICRO-BIORETENTION NO. 1
- DRAINAGE AREA 2 M-6 MICRO-BIORETENTION NO. 2
- DRAINAGE AREA 3 M-2 SUBMERGED GRAVEL WETLAND NO. 1
- DRAINAGE AREA 4 F-6 BIORETENTION NO. 1
- DRAINAGE AREA 5 F-6 BIORETENTION NO. 2
- DRAINAGE AREA 6 M-2 SUBMERGED GRAVEL WETLAND NO. 2

DRAINAGE AREA NO.	DRAINAGE AREA (AC)	% IMPERVIOUS	ESD FEATURE ID	ESD FEATURE DESCRIPTION	PROVIDED ESDV (CU.FT.)
1	0.51	80.9	M-6	MICRO-BIORETENTION NO. 1	1,630
2	0.52	81.7	M-6	MICRO-BIORETENTION NO. 2	1,630
3	1.38	39.1	M-2	SUBMERGED GRAVEL WETLAND 1	1,218
4	1.32	34.1	F-6	BIORETENTION NO. 1	4,443
5	1.34	51.5	F-6	BIORETENTION NO. 2	2,539
6	5.32	58.0	M-2	SUBMERGED GRAVEL WETLAND 2	15,921
				TOTAL PROVIDED ESDV	27,380
				TARGET ESDV	53,865

NOTE:
1. THE REMAINDER OF THE REQUIRED VOLUME OF 26,485 CF WILL BE TREATED BY THE EXISTING CW-2 WET POND.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11-29-17

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12.5.17

GRID: 8
ZONING: RC-DEO
TAX MAP: 0016
BLOCK: N/A
PARCEL/LOT: 220, 253, 11, 23, 54
ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE, SUITE 400
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — MARK BRADLEY GUTBERLET — No. 23402 — PROFESSIONAL ENGINEER
10/4/17

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2018.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY: MBS/MP
DRN. BY: JAP/KEJ
CHK. BY: SMD
DATE: OCT. 2016

BY	NO.	REVISION	DATE
SMB	1	REVISED UTILITY BUILDING AND TRANSFORMER LOCATION	4/2018
CVH	2	REVISED LOD FOR PHASE II B AND PHASE II C CONSTRUCTION	8/2022

ESD DRAINAGE AREA MAP

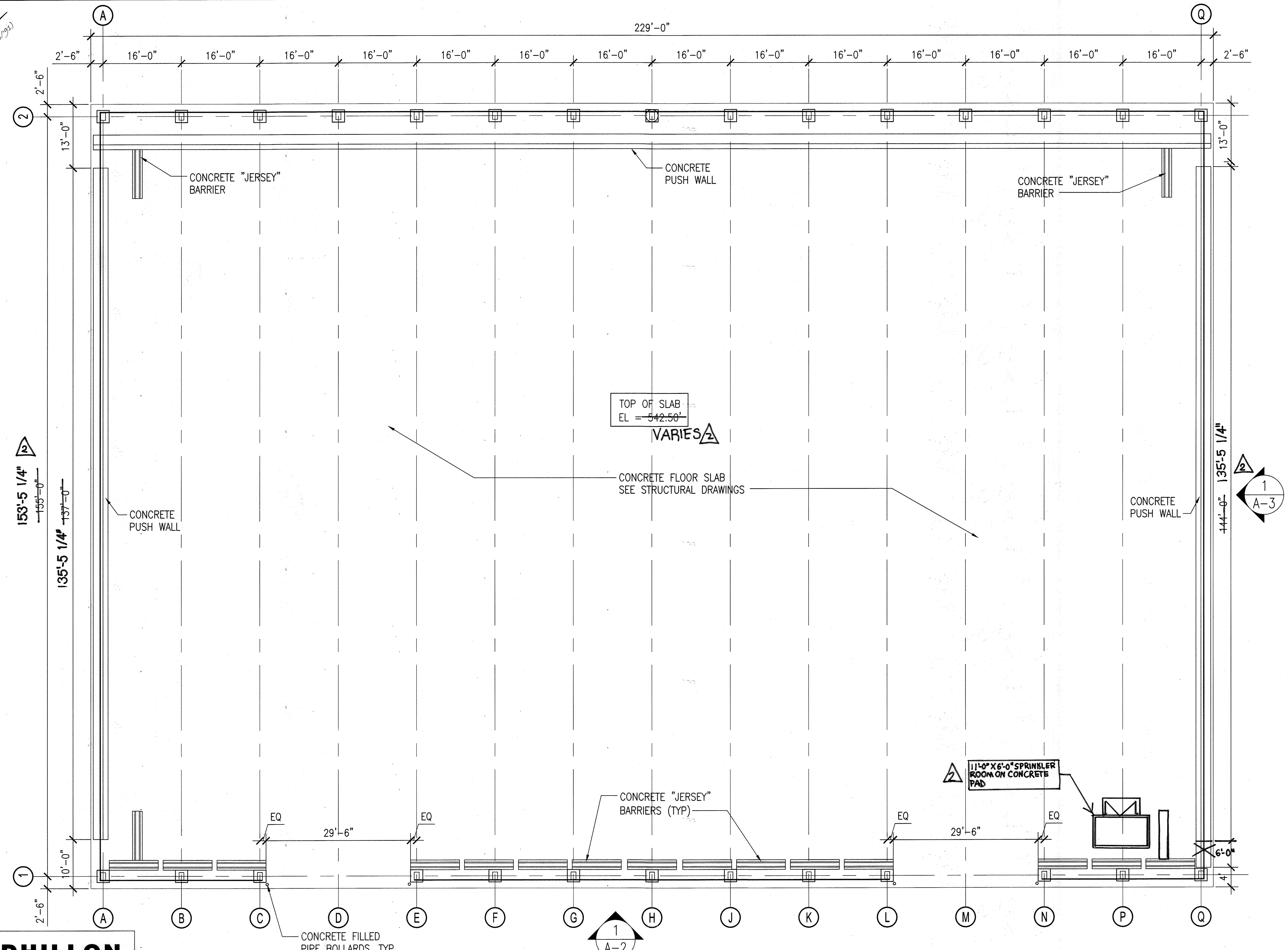
COMPOST FACILITY - PHASE II AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 45 OF 44 (2) | DRAWING: DA-1
PROJECT: 14982.05
SHEET: ~~52 OF 70~~

~~NOT FOR CONSTRUCTION - SITE DEVELOPMENT PLAN #SDP-16-035~~

SDP-16-035

FILE PATH: G:\PROJECTS\149205 - ARL COMPOST FACILITY\FIGURES\ESD-DA-MAP.DWG [DA-1 - ESD DRAINAGE AREA MAP - (SDP-16)] 3/12/15



ENCLOSURE FLOOR PLAN

3/32" = 1'-0"

GRAPHIC SCALE

0 4' 8' 12' 20'

SCALE: 3/32" = 1'-0"

~~REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY HOWARD COUNTY SOIL CONSERVATION DISTRICT~~

~~HOWARD SCD DATE~~

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR, DEPARTMENT OF PLANNING AND ZONING — DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.29.17

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12-5-17

DHILLON ENGINEERING, INC.
10902 REISTERSTOWN ROAD, # 204
OWINGS MILLS, MD 21117

GRID: 8	BLOCK: N/A
ZONING: RC-DEO	PARCEL/LOT: 220, 253, 11, 23, 54
TAX MAP: 0016	ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL:

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 8050, EXPIRATION DATE 08/19/2017.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	LP
DRN. BY:	LP
CHK. BY:	AKM
DATE:	AUGUST, 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TO REFLECT PHASE IIC ENCLOSURE DESIGN	8/2022

FLOOR PLAN

COMPOST FACILITY
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 2 ~~35~~ 37 45 OF ~~40~~ ~~44~~ 45

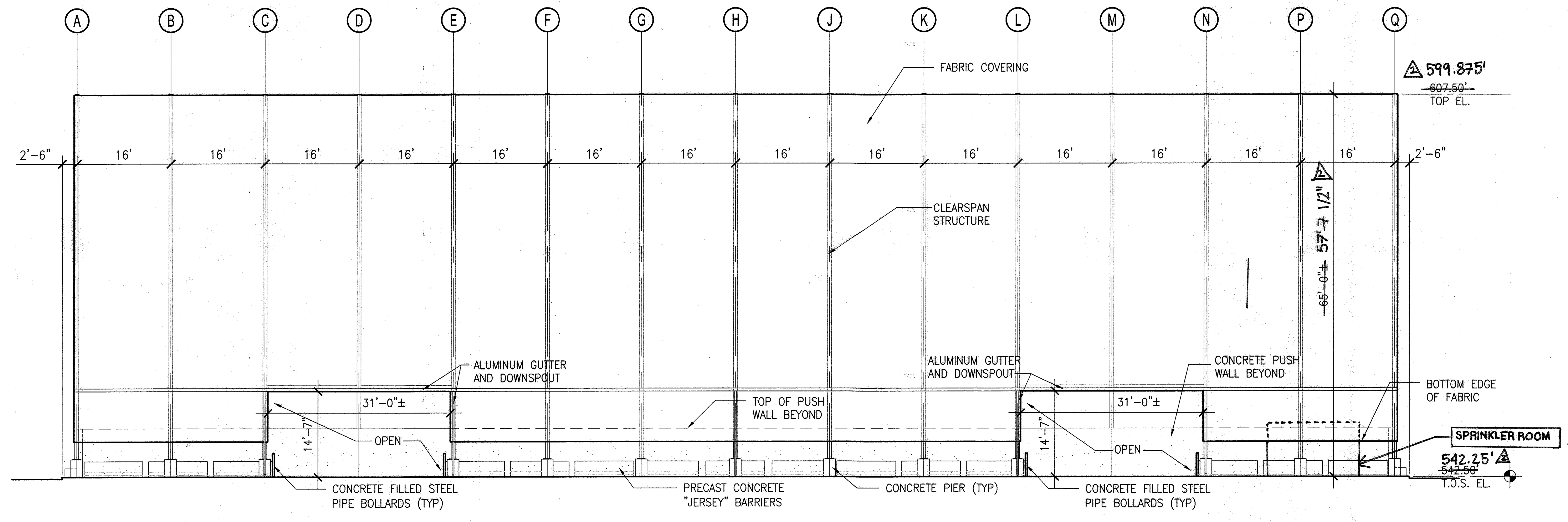
DRAWING: A-1

PROJECT: 14982.05

SHEET: ~~43 OF 59~~

~~NOT FOR CONSTRUCTION~~- SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035



1 / A-2 FRONT ELEVATION
3/32" = 1'-0"

GRAPHIC SCALE
0 4' 8' 12' 20'
SCALE: 3/32" = 1'-0"

REVIEWED FOR HOWARD SCD AND ME[illegible] REQUIREMENTS
THIS DEVELOPMENT PLAN IS APPROVED FO[illegible] EROSION AND
SEDIMENT CONTROL BY HOWARD COUNTY SO[illegible] CONSERVATION DISTRICT

HOWARD SCD — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR, DEPARTMENT OF PLANNING AND ZONING — DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.29.17

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12-5-17

DHILLON ENGINEERING, INC.
10902 REISTERSTOWN ROAD, # 204
OWINGS MILLS, MD 21117

GRID: 8	BLOCK: N/A
ZONING: RC-DEO	PARCEL/LOT: 220, 253, 11, 23, 54
TAX MAP: 0016	ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL:
STATE OF MARYLAND — GURMEET S. DHILLON — NO. 8050 — REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 8050, EXPIRATION DATE 08/19/2017.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	RK
DRN. BY:	LJP
CHK. BY:	AKM
DATE:	AUGUST, 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TO REFLECT PHASE IIC ENCLOSURE DESIGN	8/2022

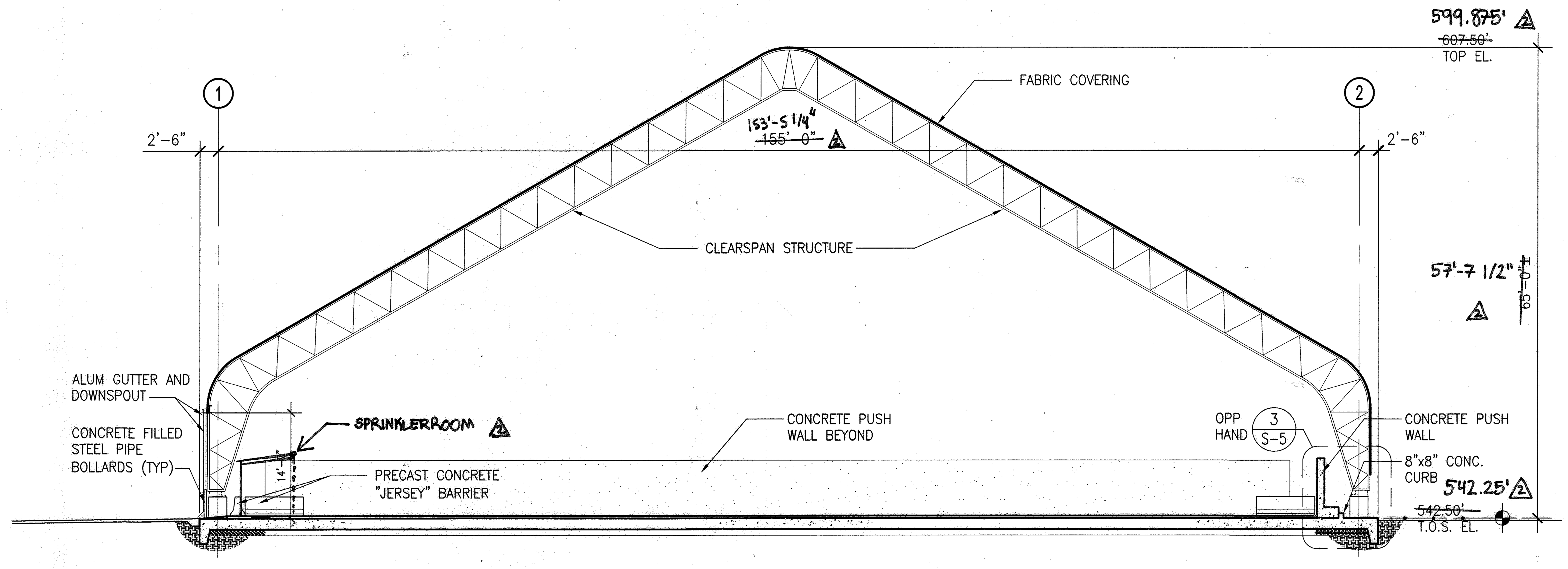
BUILDING ELEVATION I

COMPOST FACILITY
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: ~~38~~ 39 OF ~~44~~ 45 (2)
DRAWING: A-2
PROJECT: 14982.05
SHEET: ~~50 OF 59~~

SDP-16-035

~~NOT FOR CONSTRUCTION~~ SITE DEVELOPMENT PLAN #SDP-16-035



1 / A-3 SIDE ELEVATION

3/32" = 1'-0"

~~REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS~~
~~THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY HOWARD COUNTY SOIL CONSERVATION DISTRICT~~

~~HOWARD SCD~~ DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR, DEPARTMENT OF PLANNING AND ZONING — DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11-29-17

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12-5-17

DHILLON ENGINEERING, INC.
10902 REISTERSTOWN ROAD, # 204
OWINGS MILLS, MD 21117

GRID: 8	BLOCK: N/A
ZONING: RC-DEO	PARCEL/LOT: 220, 253, 11, 23, 54
TAX MAP: 0016	ELECTION DISTRICT: 3-02

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL:

STATE OF MARYLAND
PROFESSIONAL ENGINEER
No. 8050
REGISTERED

PROFESSIONAL CERTIFICATION:

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EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	RK
DRN. BY:	LJP
CHK. BY:	AKM
DATE:	AUGUST, 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TO REFLECT PHASE IIC ENCLOSURE DESIGN	8/2022

BUILDING ELEVATION II

COMPOST FACILITY
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

GRAPHIC SCALE
0 4' 8' 12' 20'
SCALE: 3/32" = 1'-0"

SDP SHEET: 2 39 OF ~~44~~ 45

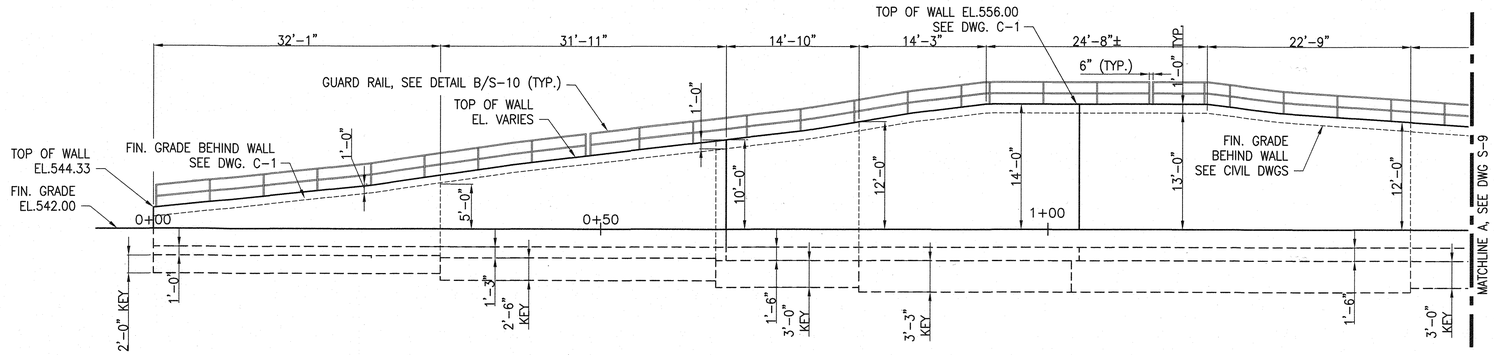
DRAWING: A-3

PROJECT: 14982.05

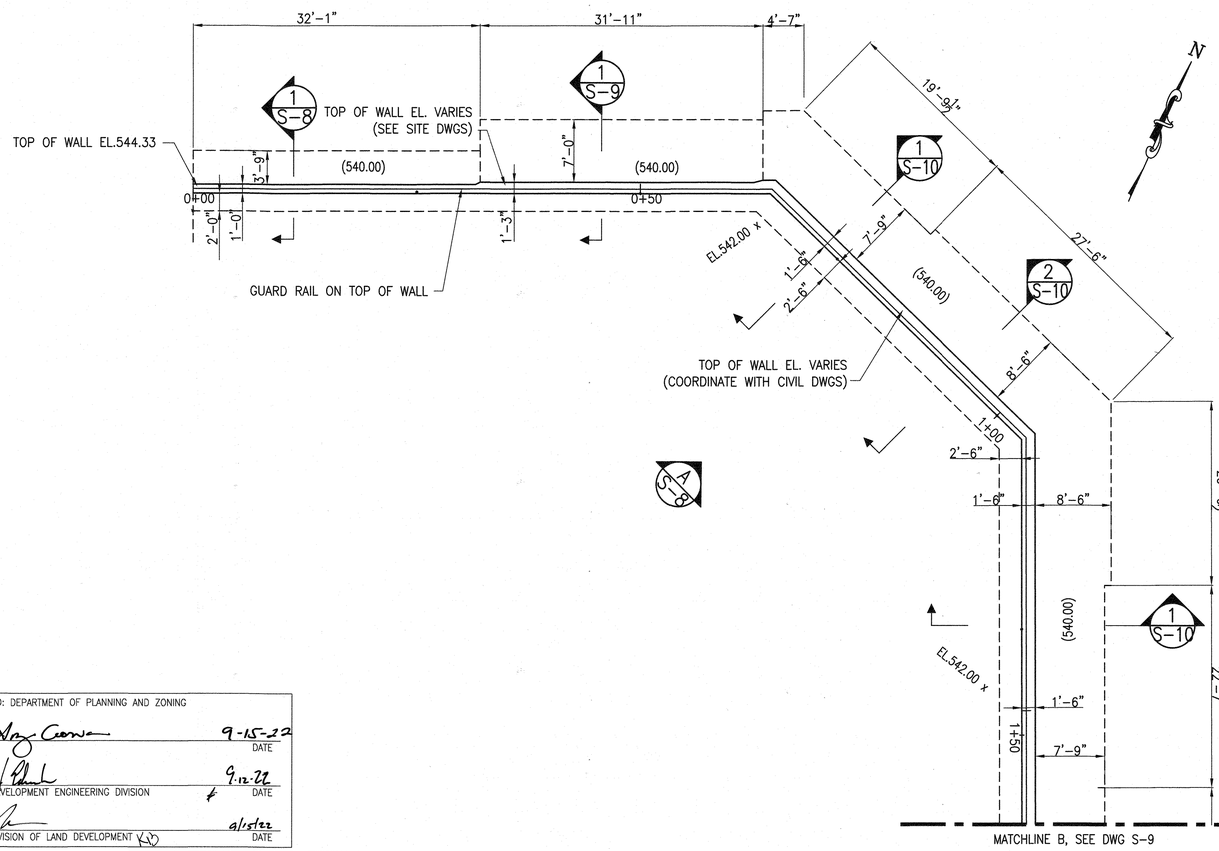
SHEET: ~~51 OF 59~~

~~NOT FOR CONSTRUCTION~~ SITE DEVELOPMENT PLAN #SDP-16-035

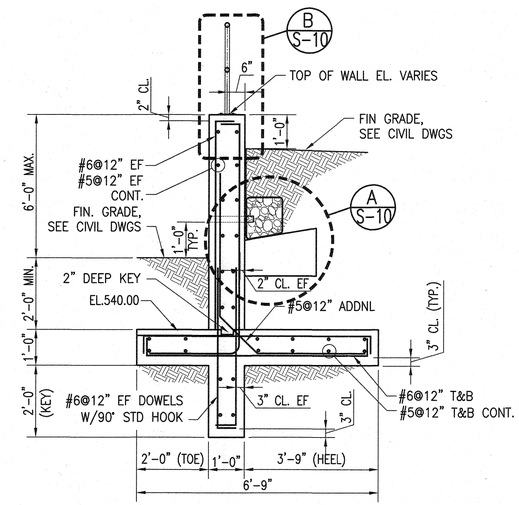
SDP-16-035



A S-8 RETAINING WALL – ELEVATION
SCALE: 1/8" = 1'-0"



B S-8 RETAINING WALL – PLAN
SCALE: 1/8" = 1'-0"



1 S-8 SECTION
SCALE: 1/2" = 1'-0"

GENERAL SHEET NOTES:

1. RETAINING WALL SHALL ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF CONTRACTOR'S THIRD PARTY GEOTECHNICAL INSPECTOR. THE INSPECTOR SHALL BE A REGISTERED PROFESSIONAL ENGINEER AND A (NICET, WACEL, OR EQUIVALENT) CERTIFIED SOILS TECHNICIAN.
2. THE REQUIRED BEARING PRESSURE BENEATH THE FOOTING OF THE WALL SHALL BE VERIFIED IN THE FIELD BY THIRD PARTY GEOTECHNICAL INSPECTOR. THE INSPECTOR SHALL BE A CERTIFIED SOILS TECHNICIAN. TESTING DOCUMENTATION SHALL BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO THE START OF CONSTRUCTION. THE REQUIRED TEST PROCEDURE SHALL BE DYNAMIC CONE PENETROMETER ASTM STP-399.
3. THE SUITABILITY OF FILL MATERIAL SHALL BE CONFIRMED BY THE CONTRACTOR'S THIRD PARTY GEOTECHNICAL INSPECTOR. EACH EIGHT (8) INCH LIFT SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTER DENSITY AND THE TESTING REPORT SHALL BE MADE AVAILABLE TO THE HOWARD COUNTY INSPECTOR UPON COMPLETION OF CONSTRUCTION.
4. CONTRACTOR SHALL COORDINATE WITH CIVIL PLAN C-2 PROPOSED CONDITIONS FOR LAYOUT AND FINISHED GRADE.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 9-15-22

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.12.22

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9/15/22

DEI DHILLON ENGINEERING INC.

DIVISION CHIEF, BUREAU OF ENVIRONMENTAL SERVICES OPERATIONS — DATE 8/19/2022

SEAL: STATE OF MARYLAND · GURMEET S. DHILLON · REGISTERED · No. 30551 · PROFESSIONAL ENGINEER — 8/18/22

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 30551, EXPIRATION DATE 08/19/2021.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY®

DSN. BY: KK
DRN. BY: VL
CHK. BY: GSD
DATE: JUNE, 2021

BY	NO.	REVISION	DATE
CVH	2	REPLACEMENT SHEET FROM PHASE IIC. CONTRACT DRAWINGS TO SHOW DESIGN PHASE REVISIONS TO RETAINING WALL LAYOUT	8/2022

RETAINING WALL STRUCTURAL PLAN, ELEVATION AND SECTION – I (REPLACEMENT SHEET) 2

COMPOST FACILITY – PHASE II
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

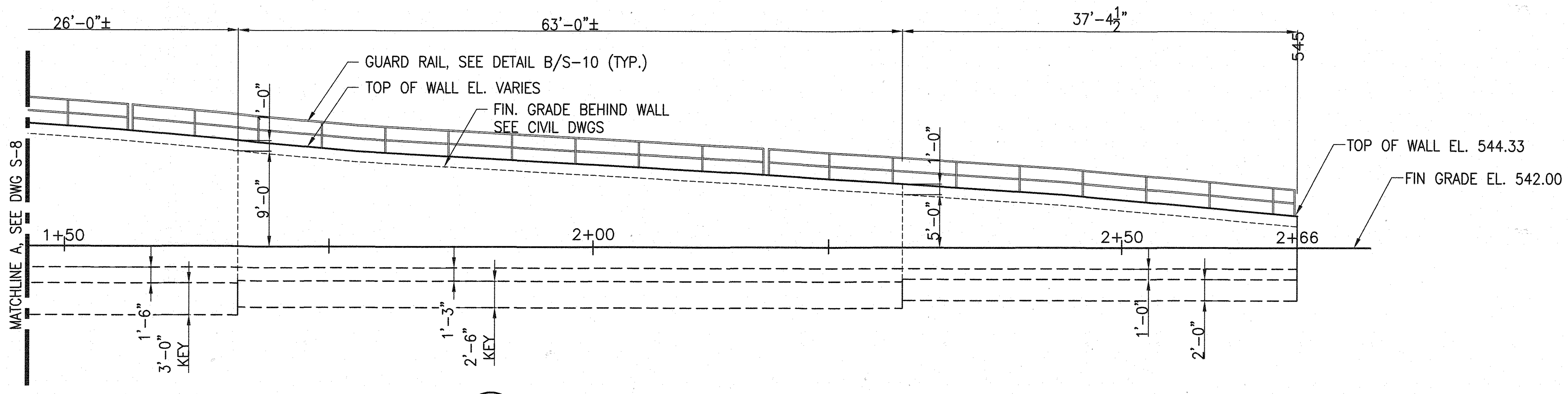
0 1' 2' 4' SCALE: 1/2" = 1'-0"

0 4' 8' 16' SCALE: 1/8" = 1'-0"

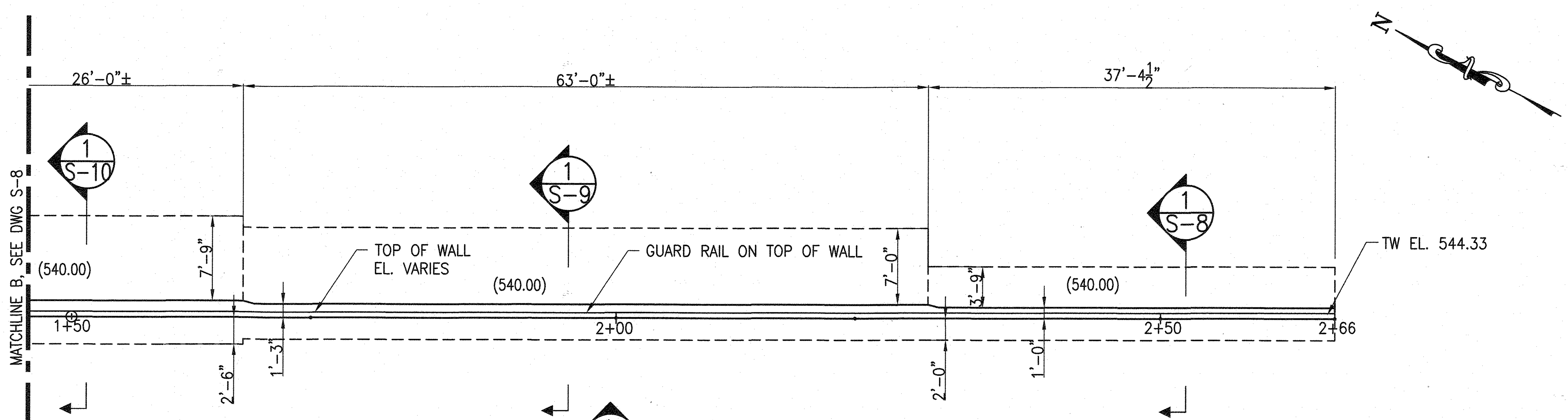
SDP SHEET: 40 OF 45
DRAWING: S-8
PROJECT: 1556408
SHEET: ~~37 OF 42~~

REVISED SITE DEVELOPMENT PLAN #SDP-16-035

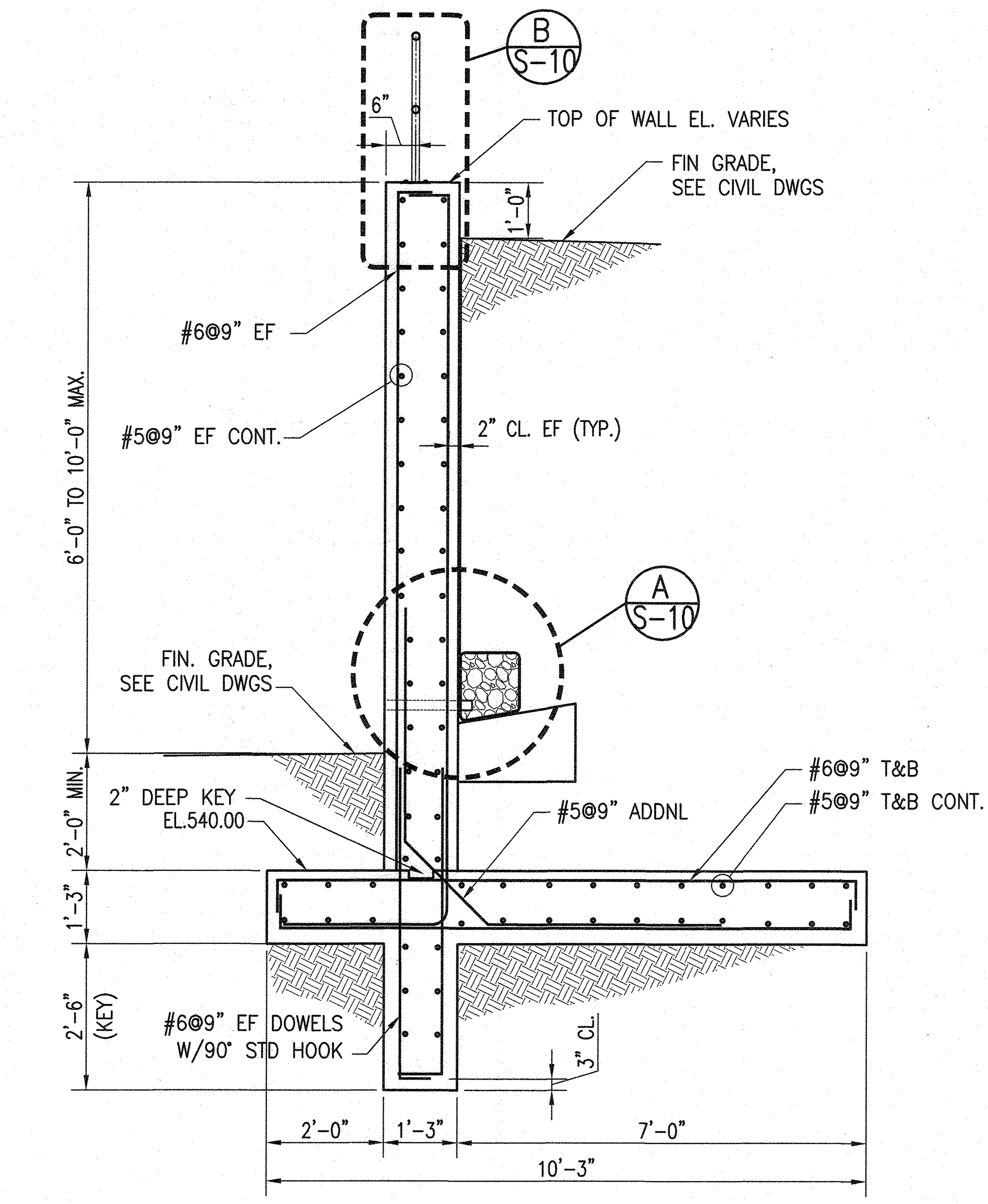
SDP-16-035



A/S-9 RETAINING WALL – ELEVATION
SCALE: 1/8" = 1'-0"



B/S-9 RETAINING WALL – PLAN
SCALE: 1/8" = 1'-0"



1/S-9 SECTION
SCALE: 1/2" = 1'-0"

GENERAL SHEET NOTES:

1. RETAINING WALL SHALL ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF CONTRACTOR'S THIRD PARTY GEOTECHNICAL INSPECTOR. THE INSPECTOR SHALL BE A REGISTERED PROFESSIONAL ENGINEER AND A (NICET, WACEL, OR EQUIVALENT) CERTIFIED SOILS TECHNICIAN.
2. THE REQUIRED BEARING PRESSURE BENEATH THE FOOTING OF THE WALL SHALL BE VERIFIED IN THE FIELD BY THIRD PARTY GEOTECHNICAL INSPECTOR. THE INSPECTOR SHALL BE A CERTIFIED SOILS TECHNICIAN. TESTING DOCUMENTATION SHALL BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO THE START OF CONSTRUCTION. THE REQUIRED TEST PROCEDURE SHALL BE DYNAMIC CONE PENETROMETER ASTM STP-399.
3. THE SUITABILITY OF FILL MATERIAL SHALL BE CONFIRMED BY THE CONTRACTOR'S THIRD PARTY GEOTECHNICAL INSPECTOR. EACH EIGHT (8) INCH LIFT SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTER DENSITY AND THE TESTING REPORT SHALL BE MADE AVAILABLE TO THE HOWARD COUNTY INSPECTOR UPON COMPLETION OF CONSTRUCTION.
4. CONTRACTOR SHALL COORDINATE WITH CIVIL PLAN C-2 PROPOSED CONDITIONS FOR LAYOUT AND FINISHED GRADE.

SCALE: 1/2" = 1'-0" (0, 1', 2', 4')
SCALE: 1/8" = 1'-0" (0, 4', 8', 16')

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR	DATE 9-15-22
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 9.12.22
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 9/13/22

DEI DHILLON ENGINEERING INC.

DIVISION CHIEF, BUREAU OF ENVIRONMENTAL SERVICES OPERATIONS — DATE 8/19/2022

SEAL: STATE OF MARYLAND — GURMEET S. DHILLON — REGISTERED No. 8050 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 8050, EXPIRATION DATE 08/19/2021.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	KK
DRN. BY:	VL
CHK. BY:	GSD
DATE:	JUNE, 2021

BY	NO.	REVISION	DATE
CVH	2	REPLACEMENT SHEET FROM PHASE IIC CONTRACT DRAWINGS TO SHOW DESIGN PHASE REVISIONS TO RETAINING WALL LAYOUT	8/2022

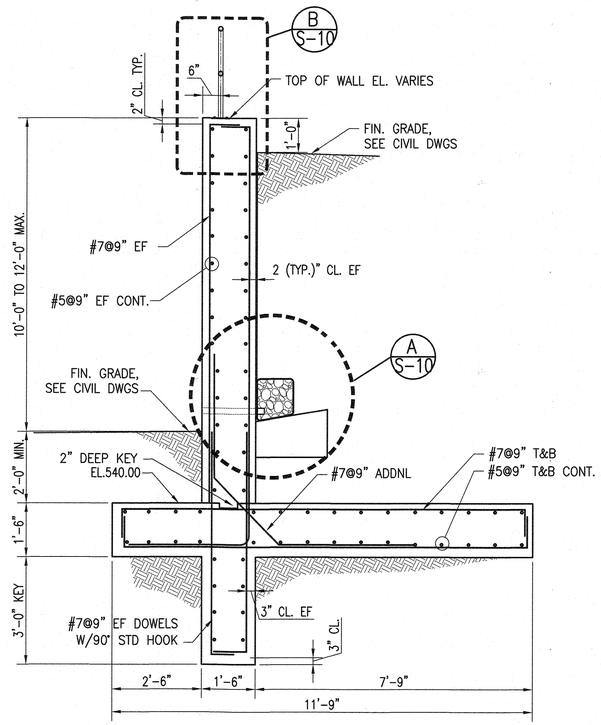
RETAINING WALL
STRUCTURAL PLAN, ELEVATION AND SECTION – II
(REPLACEMENT SHEET) 2

COMPOST FACILITY – PHASE II
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

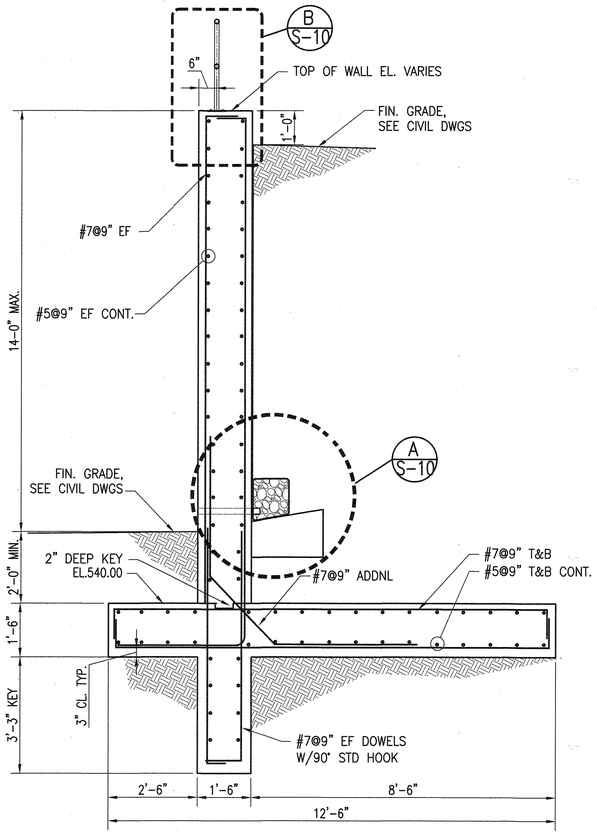
SDP SHEET: 41 OF 45
DRAWING: S-9
PROJECT: 1556408
SHEET: ~~38 OF 42~~

SDP-16-035

REVISED SITE DEVELOPMENT PLAN #SDP-16-035



1 S-10 SECTION
SCALE: 1/2" = 1'-0"



2 S-10 RETAINING WALL – SECTION
SCALE: 1/2" = 1'-0"

GENERAL SHEET NOTES:

1. RETAINING WALL SHALL ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF CONTRACTOR'S THIRD PARTY GEOTECHNICAL INSPECTOR. THE INSPECTOR SHALL BE A REGISTERED PROFESSIONAL ENGINEER AND A (NICET, WACEL, OR EQUIVALENT) CERTIFIED SOILS TECHNICIAN.
2. THE REQUIRED BEARING PRESSURE BENEATH THE FOOTING OF THE WALL SHALL BE VERIFIED IN THE FIELD BY THIRD PARTY GEOTECHNICAL INSPECTOR. THE INSPECTOR SHALL BE A CERTIFIED SOILS TECHNICIAN. TESTING DOCUMENTATION SHALL BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO THE START OF CONSTRUCTION. THE REQUIRED TEST PROCEDURE SHALL BE DYNAMIC CONE PENETROMETER ASTM STP-399.
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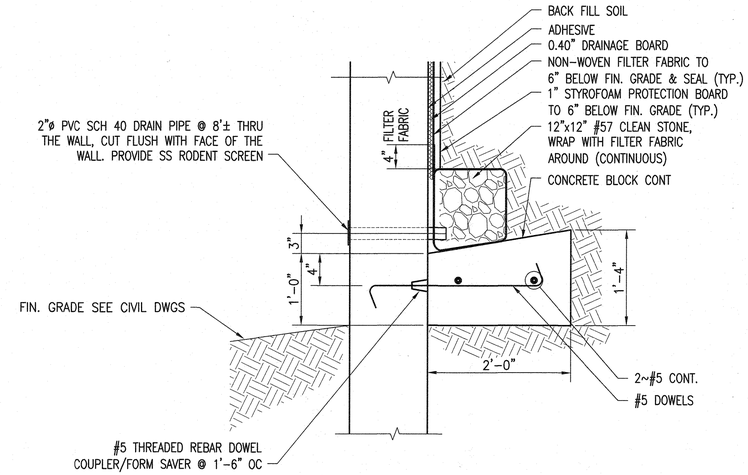
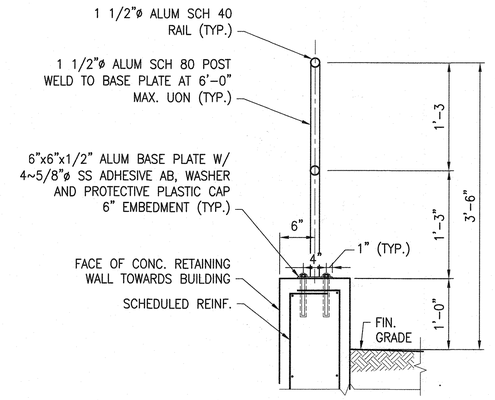
4. CONTRACTOR SHALL COORDINATE WITH CIVIL PLAN C-2 PROPOSED CONDITIONS FOR LAYOUT AND FINISHED GRADE.



A S-10 TYP. DETAIL
SCALE: 1" = 1'-0"



B S-10 TYP. DETAIL – GUARDRAIL POST BASE PLATE CONNECTION
SCALE: 1" = 1'-0"

NOTE:
GUARDRAIL POST MOUNTED ON TOP OF WALL SHALL BE 2'-6" POST WITHOUT TOE PLATE. ANY CONTINUOUS SECTIONS OF GUARD RAIL SHALL NOT EXCEED 60'-0" IN LENGTH.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 9-15-22

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.12.22

CHIEF, DIVISION OF LAND DEVELOPMENT KB — DATE 9/15/22

DIVISION CHIEF, BUREAU OF ENVIRONMENTAL SERVICES OPERATIONS — DATE 8/19/2022

DHILLON ENGINEERING INC.

SEAL: STATE OF MARYLAND · GURMEET S. DHILLON · REGISTERED PROFESSIONAL ENGINEER · 8/19/22

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 8050, EXPIRATION DATE 08/19/2021.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY®

DSN. BY:	KK
DRN. BY:	VL
CHK. BY:	GSD
DATE:	JUNE, 2021

BY	NO.	REVISION	DATE
CVH	2	REPLACEMENT SHEET FROM PHASE IIC CONTRACT DRAWINGS TO SHOW DESIGN PHASE REVISIONS TO RETAINING WALL DETAILS	9/2022

0 1' 2' 4'
SCALE: 1/2" = 1'-0"

0 6" 1' 2'
SCALE: 1" = 1'-0"

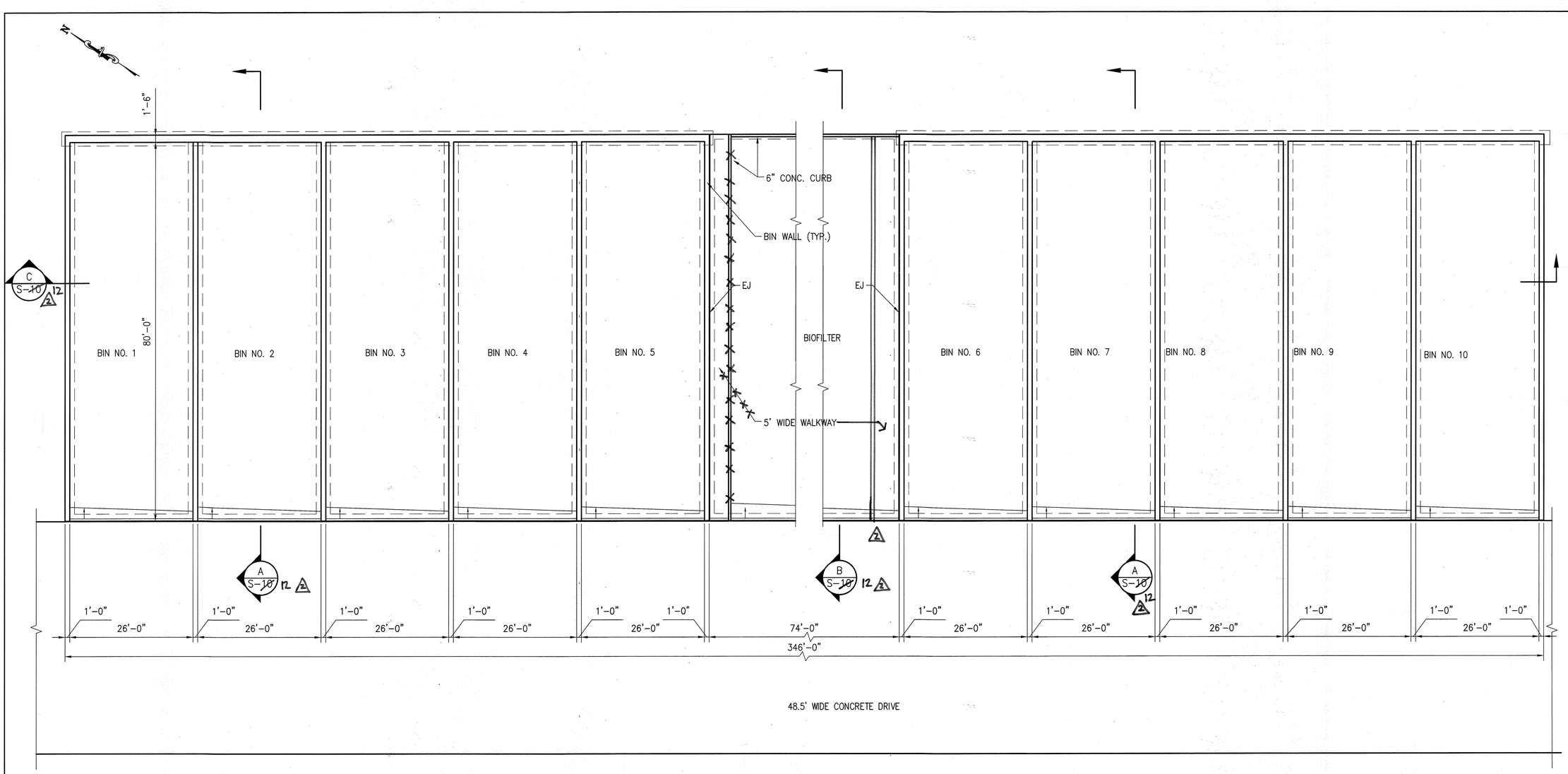
RETAINING WALL STRUCTURAL SECTIONS AND DETAIL (REPLACEMENT SHEET) 2

COMPOST FACILITY – PHASE II
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 42 OF 45
DRAWING: S-10
PROJECT: 1556408
SHEET: ~~39 OF 42~~

REVISED SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035



PLAN
SCALE: 3/32" = 1'-0"

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY HOWARD COUNTY SOIL CONSERVATION DISTRICT

HOWARD SCD — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR, DEPARTMENT OF PLANNING AND ZONING — DATE 12-12-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.28.17

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12.5.17

DHILLON ENGINEERING, INC.
10902 REISTERSTOWN ROAD, # 204
OWINGS MILLS, MD 21117

GRID: 8
ZONING: RC-DEO
TAX MAP: 0016
BLOCK: N/A
PARCEL/LOT: 220, 253, 11, 23, 54
ELECTION DISTRICT: 3-02

SEAL: STATE OF MARYLAND — GREGORY S. DHILLON — NO. 21178 — REGISTERED PROFESSIONAL ENGINEER

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-8419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

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EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY: KK
DRN. BY: VL
CHK. BY: GSD
DATE: AUGUST, 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TO REFLECT PHASE IIA AS-BUILT CONDITIONS	8/2022

COMPOSTING BINS – FINISHED FLOOR PLAN

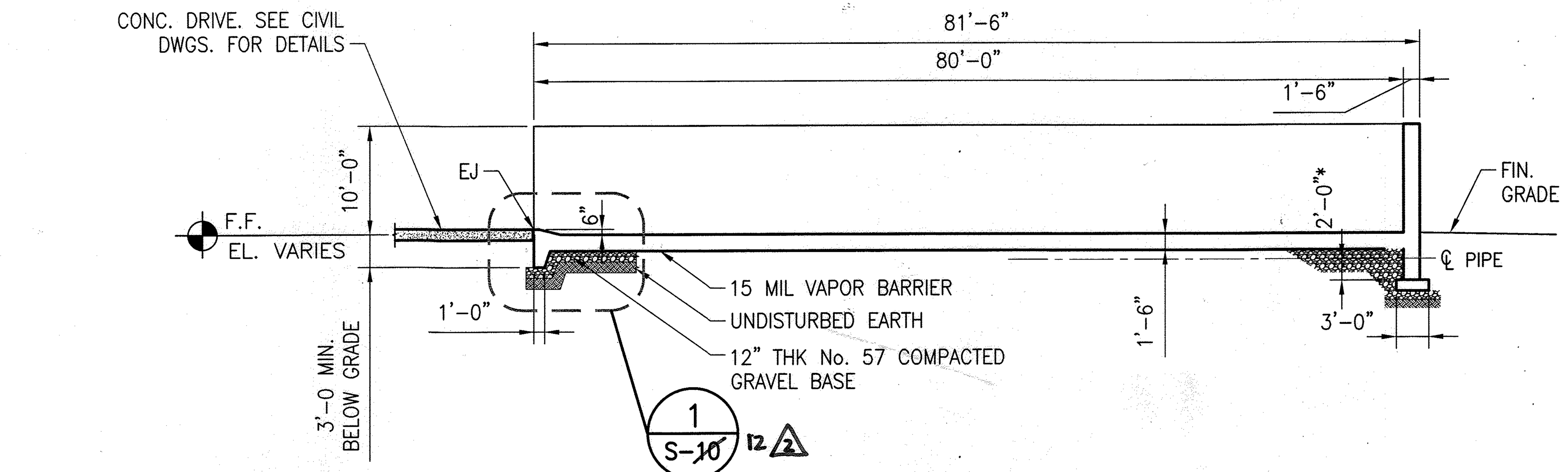
SCALE: 3/32" = 1'-0"

COMPOST FACILITY
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

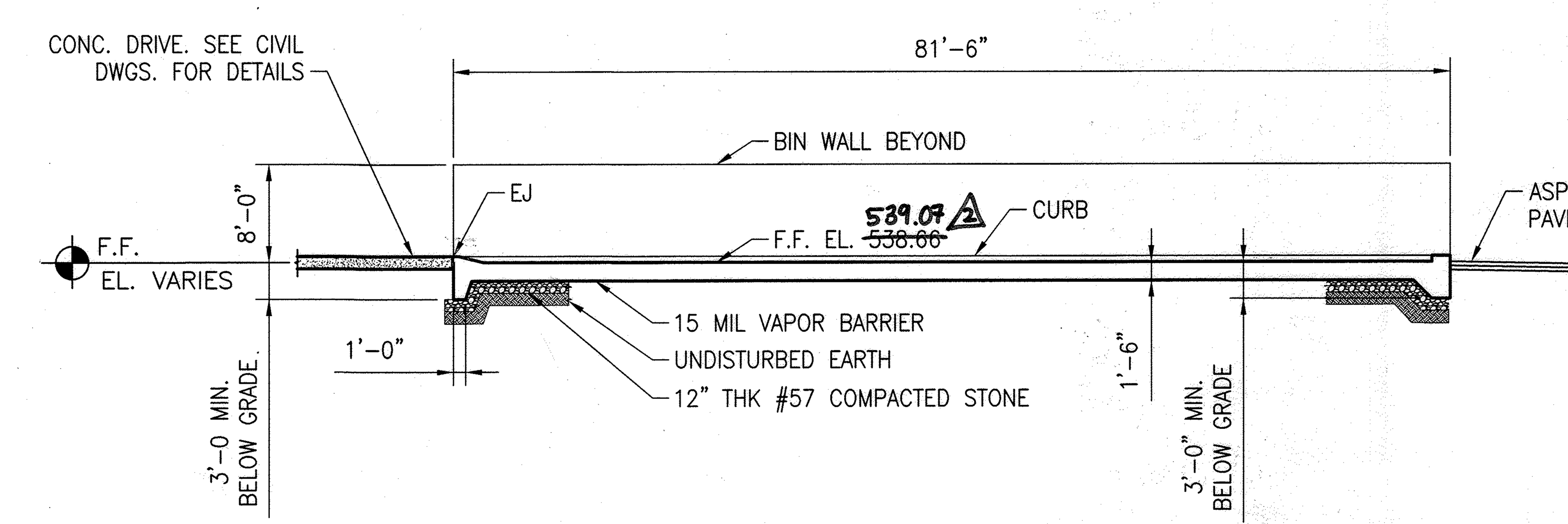
SDP SHEET: ~~39~~ 43 OF ~~45~~ 44 (2)
DRAWING: S-9
PROJECT: 14982.05
SHEET: ~~55~~ OF ~~59~~

~~NOT FOR CONSTRUCTION~~ - SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035

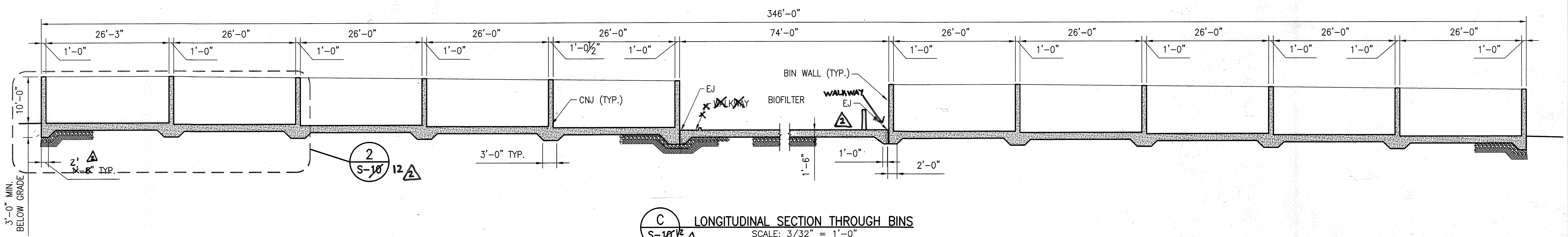


A S-10 12 TYP. SECTION THROUGH BINS
SCALE: 3/32" = 1'-0"

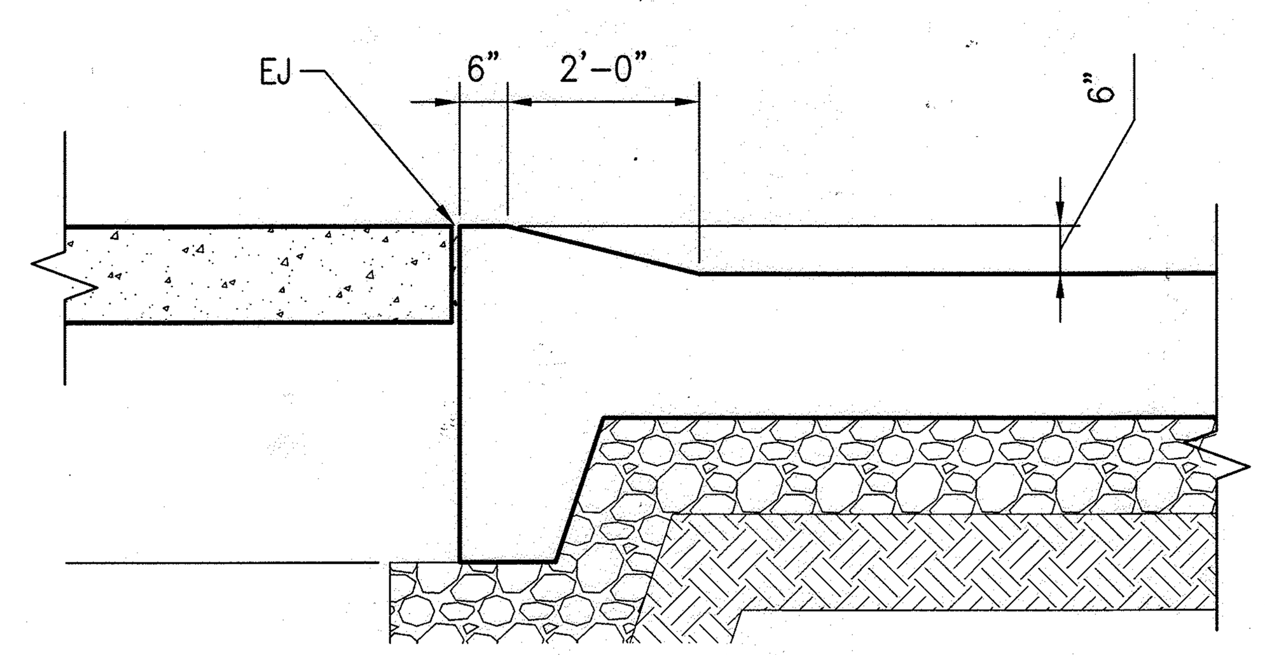


B S-10 12 SECTION THROUGH BIOFILTER
SCALE: 3/32" = 1'-0"

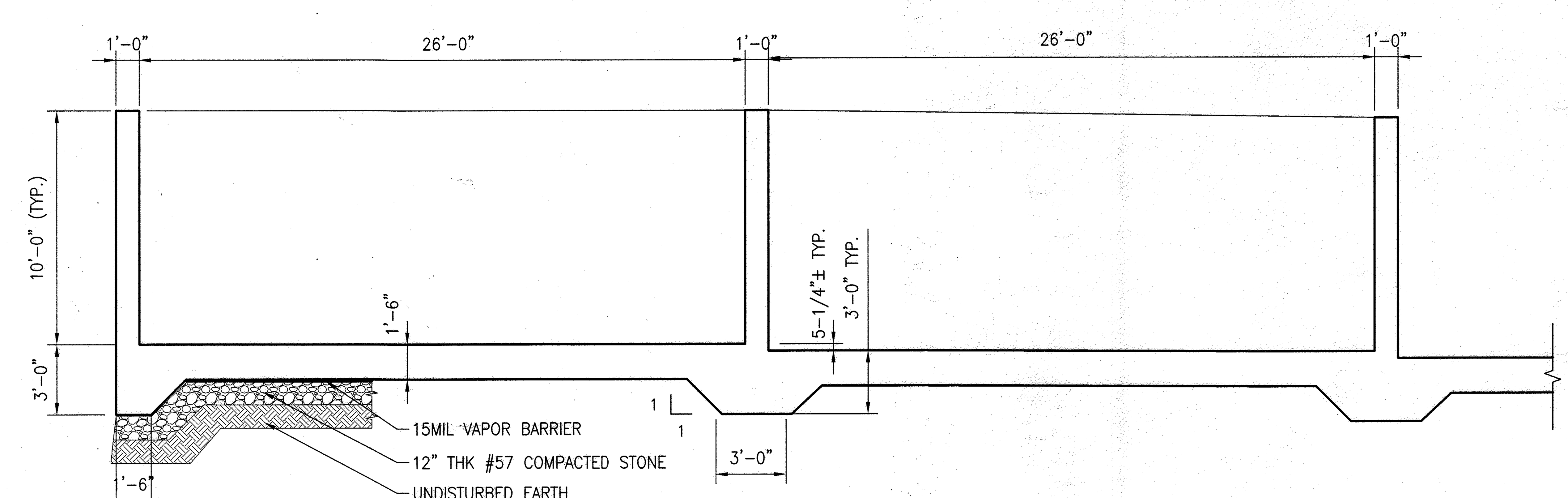
NOTES:
1. DIMENSIONS MARKED THUS "*" COORDINATE WITH EQUIPMENT SUPPLIED.



C S-10 12 LONGITUDINAL SECTION THROUGH BINS
SCALE: 3/32" = 1'-0"



1 S-10 12 TYP. DETAIL AT BIN RAMP
SCALE: 1/2" = 1'-0"



2 S-10 12 TYP. DETAIL AT TURN DOWN EDGE
SCALE: 1/4" = 1'-0"

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY HOWARD COUNTY SOIL CONSERVATION DISTRICT

HOWARD SCD | DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR, DEPARTMENT OF PLANNING AND ZONING — 12-12-17 — DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 11.29.17 — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 12-5-17 — DATE

GRID: 8
ZONING: RC-DEO
TAX MAP: 0016
BLOCK: N/A
PARCEL/LOT: 220, 253, 11, 23, 54
ELECTION DISTRICT: 3-02

DHILLON ENGINEERING, INC.
10902 REISTERSTOWN ROAD, # 204
OWINGS MILLS, MD 21117

OWNER/ENGINEER INFORMATION

DEVELOPER/OWNER:
HOWARD COUNTY GOVERNMENT
CONTACT: JEFF DANNIS, P.E., CSP
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MD 21046
TELEPHONE: (410) 313-6419

ENGINEER:
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC
CONTACT: MARK GUTBERLET, P.E.
225 SCHILLING CIRCLE
HUNT VALLEY, MD 21031
TELEPHONE: (410) 584-7000

SEAL: STATE OF MARYLAND — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:
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EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DSN. BY:	KK
DRN. BY:	VL
CHK. BY:	GSD
DATE:	AUGUST, 2016

BY	NO.	REVISION	DATE
CVH	2	REVISED TO REFLECT PHASE IIA AS-BUILT CONDITIONS	8/2022

COMPOST BINS – SECTIONS

COMPOST FACILITY
AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SCALE: 1/2" = 1'-0" (0 1' 2' 4')
SCALE: 1/4" = 1'-0" (0 2' 4' 8')
SCALE: 3/32" = 1'-0" (0 4' 8' 12' 20')

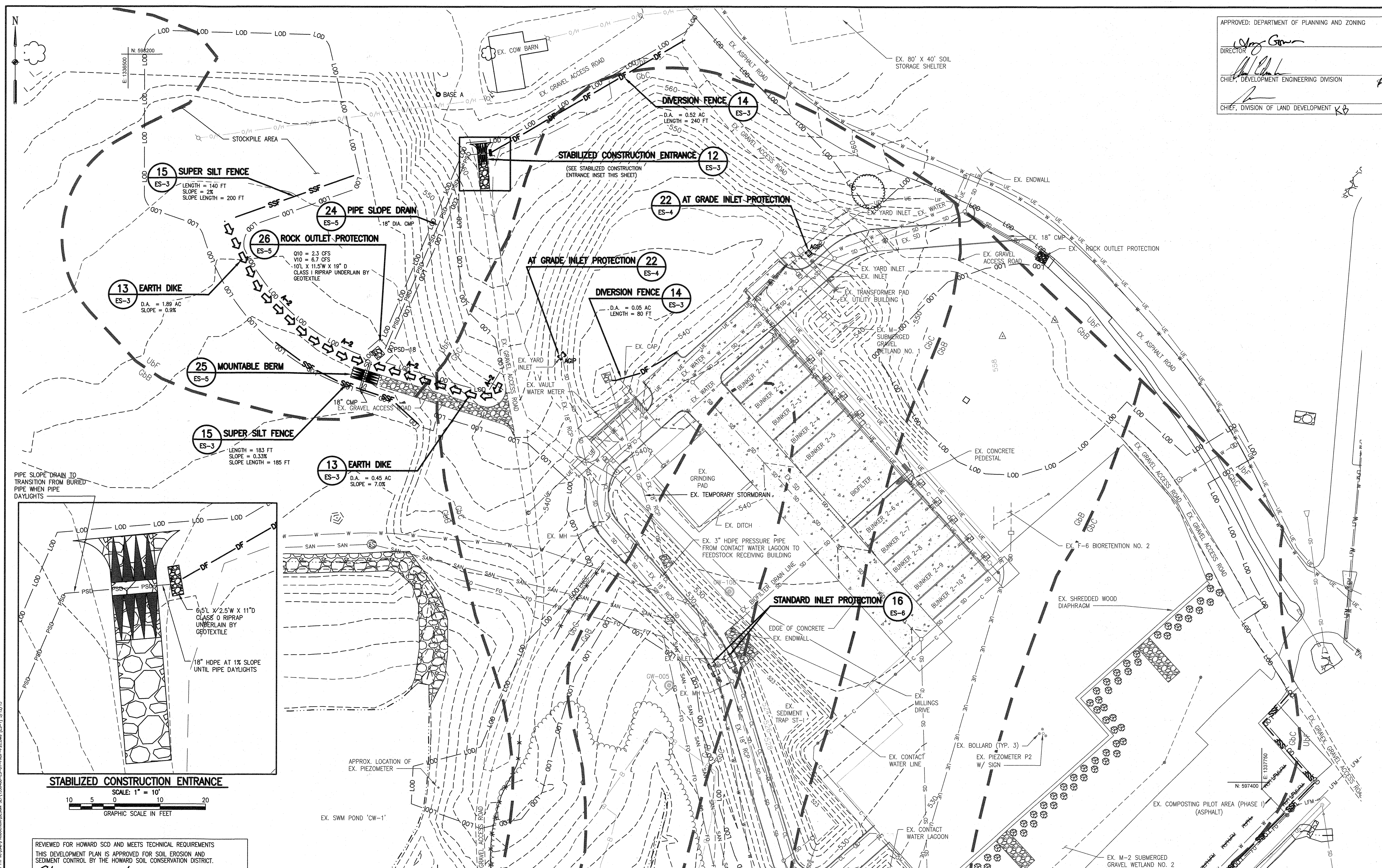
SDP SHEET: 45 OF 44
DRAWING: S-12 (S-10)
PROJECT: 14982.05
SHEET: 56 OF 59

NOT FOR CONSTRUCTION – SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR	9-15-22 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	9.12.22 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT KB	9/15/22 DATE



DIVERSION FENCE 14 ES-3
D.A. = 0.52 AC
LENGTH = 240 FT
STABILIZED CONSTRUCTION ENTRANCE 12 ES-3
(SEE STABILIZED CONSTRUCTION ENTRANCE INSET THIS SHEET)
15 ES-3 SUPER SILT FENCE
LENGTH = 140 FT
SLOPE = 2%
SLOPE LENGTH = 200 FT
24 ES-5 PIPE SLOPE DRAIN
18" DIA. CMP
26 ES-5 ROCK OUTLET PROTECTION
Q10 = 2.3 CFS
V10 = 6.7 CFS
10'L X 11.5'W X 19" D
CLASS I RIPRAP UNDERLAIN BY GEOTEXTILE
13 ES-3 EARTH DIKE
D.A. = 1.89 AC
SLOPE = 0.9%
22 ES-4 AT GRADE INLET PROTECTION
AT GRADE INLET PROTECTION 22 ES-4
DIVERSION FENCE 14 ES-3
D.A. = 0.05 AC
LENGTH = 80 FT
25 ES-5 MOUNTABLE BERM
15 ES-3 SUPER SILT FENCE
LENGTH = 183 FT
SLOPE = 0.33%
SLOPE LENGTH = 185 FT
13 ES-3 EARTH DIKE
D.A. = 0.45 AC
SLOPE = 7.0%
STANDARD INLET PROTECTION 16 ES-6
PIPE SLOPE DRAIN TO TRANSITION FROM BURIED PIPE WHEN PIPE DAYLIGHTS
6.5'L X 2.5'W X 11"D CLASS 0 RIPRAP UNDERLAIN BY GEOTEXTILE
18" HDPE AT 1% SLOPE UNTIL PIPE DAYLIGHTS
STABILIZED CONSTRUCTION ENTRANCE
SCALE: 1" = 10'
GRAPHIC SCALE IN FEET
EX. COW BARN
EX. GRAVEL ACCESS ROAD
EX. ASPHALT ROAD
EX. 80' X 40' SOIL STORAGE SHELTER
STOCKPILE AREA
BASE A
EX. ENDWALL
EX. YARD INLET
EX. WATER
EX. 18" CMP
EX. ROCK OUTLET PROTECTION
EX. GRAVEL ACCESS ROAD
EX. TRANSFORMER PAD
EX. UTILITY BUILDING
EX. M-1 SUBMERGED GRAVEL WETLAND NO. 1
EX. CAP
EX. YARD INLET
EX. VAULT WATER METER
EX. GRINDING PAD
EX. TEMPORARY STORMDRAIN
EX. DITCH
EX. MH
EX. 3" HDPE PRESSURE PIPE FROM CONTACT WATER LAGOON TO FEEDSTOCK RECEIVING BUILDING
BUNKER 2-1
BUNKER 2-2
BUNKER 2-3
BUNKER 2-4
BUNKER 2-5
BIOFILTER
BUNKER 2-6
BUNKER 2-7
BUNKER 2-8
BUNKER 2-9
BUNKER 2-10
EX. CONCRETE PEDESTAL
EX. F-6 BIORETENTION NO. 2
EX. SHREDDED WOOD DIAPHRAGM
EDGE OF CONCRETE
EX. ENDWALL
EX. SEDIMENT TRAP ST-1
EX. MILLINGS DRIVE
EX. BOLLARD (TYP. 3)
EX. PIEZOMETER P2 W/ SIGN
EX. CONTACT WATER LINE
EX. CONTACT WATER LAGOON
APPROX. LOCATION OF EX. PIEZOMETER
EX. SWM POND 'CW-1'
EX. COMPOSTING PILOT AREA (PHASE I) (ASPHALT)
EX. M-2 SUBMERGED GRAVEL WETLAND NO. 2
N: 598200
E: 1336500
N: 597400
E: 1337750
GRAPHIC SCALE IN FEET

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SCD — DATE 09/01/22

NOTE:

1. SEE DRAWING ES-4 FOR EXISTING SEDIMENT TRAP ST-1 TABLE.

SITE PLAN
SCALE: 1" = 50'

DIVISION CHIEF, BUREAU OF ENVIRONMENTAL SERVICES OPERATIONS — DATE 8/19/2022

SEAL: STATE OF MARYLAND — JOSEPH GUERRE — 23402 — PROFESSIONAL ENGINEER — 8/2022

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402, EXPIRATION DATE 25 AUGUST 2022.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

		BY	NO.	REVISION	DATE
DSN. BY:	KEF	CVH	2	ADDITIONAL SHEET FROM PHASE IIC CONTRACT DRAWINGS TO SHOW PHASE IIC E&S CONTROLS	8/2022
DRN. BY:	CAG				
CHK. BY:	MP				
DATE:	JUNE 2021				

EROSION AND SEDIMENT CONTROL PLAN – INITIAL III (PHASE IIC)
(ADDITIONAL SHEET) 2

COMPOST FACILITY – PHASE II AT ALPHA RIDGE LANDFILL
HOWARD COUNTY, MARYLAND

SDP SHEET: 45 OF 45

DRAWING: ES-13

PROJECT: 1556408

SHEET: ~~12 OF 42~~

REVISED SITE DEVELOPMENT PLAN #SDP-16-035

SDP-16-035