St. Mary's Soil Conservation District
26737 Radio Station Way, Suite B
Leonardtown, MD 20650
Phone: 301-475-8402 ext. 3
www.stmarysscd.com

March 13, 2026

Nick Brader
NJB Engineering, Inc.
810 Gleneagles Court, Suite 311
Towson, MD 21266

The St. Mary's Soil Conservation District Board of Supervisors approved an erosion and sediment control plan **Oak Crest Center Ph. 1 & 2, Mass Grading Plan, LUGM #04-132-010 & 19-133-009 on February 11, 2026.**

*****This approval does NOT relieve the applicant from obtaining all other Federal, State, County, or Municipal approvals prior to any earth disturbance activities at this project site.*****

☐ Approved plans will be released upon notification from the Department of Land Use and Growth Management that the project meets the requirements of the Forest Conservation Act. Upon FCA notification, the plans will be distributed as noted below.

☐ One approved copy of this plan will be forwarded to the St. Mary's County Department of Land Use and Growth Management and the Maryland Department of Environment. Remaining plans will be forwarded to the St. Mary's County Department of Public Works Office.

☐ One approved copy of this plan will be forwarded to the St. Mary's County Department of Land Use and Growth Management and the Maryland Department of Environment. Remaining plans are to be picked up at the St. Mary's Soil Conservation Office.

☒ One approved copy of this plan will be forwarded to each of the following agencies: St. Mary's County Department of Land Use and Growth Management, St. Mary's County Department of Public Works, and the Maryland Department of Environment. Remaining plans are to be picked up at the St. Mary's Soil Conservation Office.

☐ One approved copy of this plan will be forwarded to each of the following agencies: St. Mary's County Department of Land Use and Growth Management and the Maryland Department of Environment. Remaining plans will be forwarded to the Town of Leonardtown Commissioners Office.

Sincerely,

Bruce A. Young
District Manager

cc: Landowner
DPW&T
Amber Thompson, LUGM
Brandy Glenn, LUGM
SCD File

All SCD programs and services are offered on a nondiscriminatory basis,
Without regard to race, color, national origin, religion, sex, age, marital status, or handicap.

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26737 Radio Station Way, Suite B
Leonardtown, MD 20650
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www.stmarysscd.com

Erosion and Sediment Control Plan
Transmittal sheet

Please complete this form and include with **NEW** sediment control plan submittals and **RENEWALS.**

DATE: 03/03/2026

Owners Name: Cecil's Mill LLC
Phone: (410) 788-0100
Owners Mailing address: 2560 Lord Baltimore Drive, Baltimore, MD 21244

Developers Name: St. John Properties, Inc.
Phone: (410) 788-0100
Developers Mailing Address: 2560 Lord Baltimore Drive, Baltimore, MD 21244

Consulting Firm Name: NJB Engineering, Inc.
Phone: (410) 832-7691
Consultant Contact Name: Nick Brader
Consultant Mailing Address: 810 Gleneagles Court, Suite 311, Towson, Maryland 21286

Project Name: Oak Crest Center (Revision to P/O Phase 1 and Phase 2)
Project Location: NE of intersection of MD-235 & Oak Crest Road
Disturbed Area: 41.10 Acres

LUGM # 04-132-010 & 19-133-009

New Submittal YES or [✓ NO]	Renewal [✓ YES] or NO

MASS GRADING PLAN
OAK CREST CENTER
(REVISION TO P/O PHASE 1 & PHASE 2)
LEXINGTON EXCHANGE
p/o THE OAK CREST CENTER PUD
SEE LUGM # 04-132-010 & # 19-133-009

SEQUENCE OF CONSTRUCTION

TO BEGIN THIS PLAN, PHASE 1 (BUILDINGS 'A', 'B' & 'C') WILL NEED TO BE 95% STABILIZED.

WORK SECTION 1A (LOD = 0.51 AC +/-, 6 WEEKS) (SHEET 3 OF 16)

1. NOTIFY ST. MARY'S SOIL CONSERVATION DISTRICT (SMSCD) AT 301-475-8402 x3 FIVE (5) DAYS PRIOR TO BEGINNING OF WORK SECTION 1A TO ARRANGE A PRE-CONSTRUCTION MEETING. (1 WEEK)
2. CLEAR AND GRUB FOR ALL SEDIMENT AND EROSION CONTROL MEASURES OR DEVICES FOR WORK SECTION 1A INCLUDING ANY AREA NEEDED TO OBTAIN OR SPOIL MATERIAL FOR THE BASIN /TRAP. (2 WEEKS)
3. INSTALL ALL SEDIMENT AND EROSION CONTROL MEASURES AND DEVICES FOR WORK SECTION 1A:
   - A. STABILIZED CONSTRUCTION ENTRANCE (SCE #1).
   - B. SUPER SILT FENCE AND BERM FOR TEMPORARY ACCESS. SUPER SILT FENCE LOCATED BELOW SEDIMENT BASIN TO BE OPERATIONAL PRIOR TO CONSTRUCTING SEDIMENT BASIN.
   - C. CONSTRUCT THE SEDIMENT BASIN #2 IN THE FOLLOWING ORDER.
     - C-1. THE BASIN HAS BEEN DESIGNED AS DUAL FUNCTION FACILITY AND, AS SUCH, WILL OPERATE AS A SEDIMENT CONTROL BASIN DURING THE MASS GRADING PHASE AND THEN CONVERTED TO SWM FACILITY.
     - C-2. IF GROUNDWATER IS ENCOUNTERED DURING POND CONSTRUCTION, REFER TO GEOTECHNICAL REPORT OR CALL SOILS ENGINEER AT: SPECIALIZED ENGINEEREING, ATTN: IRA HELMS (PH: 301-607-4180, x100)
     - C-3. BEFORE CONSTRUCTING THE BASIN, HAVE THE CONSTRUCTION SUPERVISOR NOTIFY CERTIFYING ENGINEER, NICK BRADER (410-832-7691) AT LEAST 48 HOURS IN ADVANCE OF STARTING WORK, TO ENSURE THAT THE "AS-BUILT" PHASE MAY BE ACCOMPLISHED LATER.
     - C-4. CONSTRUCT AND INSTALL CUT-OFF TRENCH, OUTFALL #6 (SEE STEPS C-5 ~ C-7), SEDIMENT BASIN DRAWDOWN DEVICE, AND STORM DRAINS FROM E-4 TO M-28 AND FROM MH-3 TO I-59 (SEE SHEETS 5 & 10 FOR PROFILES AND DETAILS). THE GEOTECHNICAL ENGINEER SHALL BE PRESENT TO MONITOR AND INSPECT THE PERMANENT FEATURES SO THAT CERTIFICATIONS CAN BE PROVIDED TO THE ENGINEER OF RECORD.
     - C-5. WITH PERMISSION OF MDE INSPECTOR, CLEAR AND GRUB FOR AREAS NECESSARY FOR OUTFALL #6 AND ASSOCIATED STORM DRAINS
     - C-6. INSTALL SUPER SILT FENCE AROUND TEMPORARY OUTFALL #6 (SEE SHEET 14 FOR FILTER FENCE OUTFALL PROTECTION DETAIL).
     - C-7. INSTALL TEMPORARY PLUNGE POOL,AND STORM DRAINS FROM 48" STUB TO MH-5 (SEE SHEET 3 OF 16 FOR TEMPORARY OUTFALL PROFILE AND DETAILS). UPON ISSUANCE OF MDE PERMIT, REMOVE TEMPORARY OUTFALL AND COMPLETE INSTALLATION OF 48" STORM DRAIN, END SECTION E-1, AND PERMANENT PLUNGE POOL.
     - C-8. GRADE FOR SEDIMENT BASIN STORAGE VOLUME. EXCESS CUT MAY BE PLACED IN THE TEMPORARY STOCKPILE AREA AS SHOWN ON WORK SECTION 1A PLAN. INSTALL INFLOW PROTECTION (RRP AND GP), BAFFLES AND REMOVABLE PUMPING STATION (RPS) (RPS TO BE USED FOR MAINTENANCE PURPOSES SUCH AS CLEANOUT AND AT TIME OF CONVERSION OF BASIN). INSTALL EARTH DIKE #2.
     - C-9. UPON COMPLETION OF SAID INSTALLATION, PROVIDE PERMANENT VEGETATIVE STABILIZATION TO THOSE AREAS WHICH ARE AT FINAL GRADE (INCLUDING THE EMBANKMENT DAM SECTIONS). OTHER AREAS DISTURBED BY THIS CONSTRUCTION TO BE TEMPORARILY STABILIZED IN ACCORDANCE WITH TEMPORARY SEEDING SCHEDULE. ALL PERIMETER CONTROLS WILL REMAIN IN PLACE UNTIL THEY ARE REPLACED /REMOVED IN THE NEXT WORK SECTION.

WORK SECTION 1B (LOD = 9.87 AC +/-, 4 WEEKS) (SHEET 4 OF 16)

4. WITH THE APPROVAL OF THE SMSCD AND MDE INSPECTOR, CLEAR AND GRUB FOR ALL SEDIMENT AND EROSION CONTROL MEASURES OR DEVICES FOR WORK SECTION 1B INCLUDING ANY AREA NEEDED TO OBTAIN OR SPOIL MATERIAL FOR THE BASIN /TRAP. (1 WEEK)
5. INSTALL TEMPORARY 30" DIVERSION PIPE AND SAND BAGS AS SHOWN ON SHEET 3. INSTALLATION WILL BEGIN AT DOWNSTREAM END AND WORK UPSTREAM.
6. ONCE THE DIVERSION PIPE IS FUNCTIONAL, ADJUST SUPER SILT FENCE BELOW THE BASIN #2. INSTALL TEMPORARY GABION OUTLET STRUCTURE (TGOS #2) AND ASSOCIATED DIVERSION FENCE (DF).
7. BEGIN WORK SECTION 1B GRADING. MODIFY BASIN #2 TO DIVERT OUTFLOW FROM EXISTING TRAP TO THE BASIN (MODIFY EMBANKMENT OF BASIN #2 INCLUDING INSTALLATION OF CUTOFF TRENCH AND IMPERVIOUS CORE)
8. ONCE WORK SECTION 1B GRADING IS COMPLETE, REMOVE THE EXISTING TRAP AND ASSOCIATED EARTH DIKE, SUPER SILT FENCE, MOUNTABLE BERM AND RPS. THE EXISTING TRAP WILL BE MUCKED OUT AS PART OF REMOVAL. TEMPORARY 30" STORM DRAIN MAY BE REMOVED AT SAME TIME.
9. PROVIDE PERMANENT VEGETATIVE STABILIZATION TO THOSE AREAS WHICH ARE AT FINAL GRADE (INCLUDING TGOS #2). STABILIZE OTHER AREAS NOT TO BE IMMEDIATELY USED PER TEMPORARY SEEDING SCHEDULE. ALL PERIMETER CONTROLS WILL REMAIN IN PLACE UNTIL THEY ARE REPLACED /REMOVED IN THE NEXT WORK SECTION.

(REVISED) WORK SECTION 1C (LOD = 21.95 AC +/-, 8 WEEKS) (SHEET 5 OF 16)

10. WITH THE APPROVAL OF THE SMSCD AND MDE INSPECTOR, CLEAR AND GRUB FOR ALL SEDIMENT AND EROSION CONTROL MEASURES OR DEVICES FOR WORK SECTION 1C INCLUDING ANY AREA NEEDED TO OBTAIN OR SPOIL MATERIAL FOR THE BASIN /TRAP. (2 WEEKS)

REVISION #3 - REVISED WORK SECTION 1C, SOME GRADING AND LIMIT OF DISTURBANCE AREAS MOVED BETWEEN WORK SECTIONS

11. INSTALL ALL SEDIMENT AND EROSION CONTROL MEASURES AND DEVICES FOR WORK SECTION 1C IN THE FOLLOWING ORDER:
    - A. STABILIZED CONSTRUCTION ENTRANCE (SCE #2).
    - B. SUPER SILT FENCE BELOW TEMPORARY SWALE #1, TGOS #1 AND ASSOCIATED DIVERSION FENCE (DF).
    - C. BEGIN GRADING. INSTALL 36" STORM DRAIN FROM MH-28 TO MH-24 AS FILL IS PLACED (MANHOLE MH-24 TO BE INSTALLED IN WORK SECTION 3).
    - D. BEGIN GRADING FOR BASIN #1 AND TEMPORARY SWALE #1. AS GRADING PROCEEDS, INSTALL STORM DRAINS FROM MH-5 TO MH-12 AND RETAINING WALL #1.
    - E. INSTALL BASIN #1 AND ASSOCIATED STORM DRAIN FROM I-24 TO MH-12, RIPRAP INFLOW PROTECTION (RRP), DRAWDOWN DEVICE, AND RPS. AFTER BASIN #1 COMPLETION, INSTALL EARTH DIKE #1 AND SUPER SILT FENCE BELOW TEMPORARY SWALE #2. ONCE SSF IS FUNCTIONAL, INSTALL TEMPORARY SWALE #2 AND TEMPORARY 24" STORM DRAIN FROM T-4 TO T-5. (REFER TO STEP #3 C-1 ~ C-3 FOR CONSTRUCTION OF BASIN #1)
12. BEGIN GRADING REVISED WORK SECTION 1C. PROVIDE PERMANENT VEGETATIVE STABILIZATION TO THOSE AREAS WHICH ARE AT FINAL GRADE. STABILIZE OTHER AREAS NOT TO BE IMMEDIATELY USED PER TEMPORARY SEEDING SCHEDULE. ALL PERIMETER CONTROLS WILL REMAIN IN PLACE UNTIL THEY ARE REPLACED /REMOVED IN THE NEXT WORK SECTION.

WORK SECTION 2 (LOD = 17.30 AC +/-, 8 WEEKS) (SHEET 6 OF 16)

13. NOTIFY THE SMSCD AT 301-475-8402 x3 UPON COMPLETION OF WORK SECTION 1C AND PRIOR TO BEGINNING OF WORK SECTION 2 TO ARRANGE A PRE-CONSTRUCTION MEETING. WITH THE APPROVAL OF THE SMSCD AND MDE INSPECTOR, CLEAR AND GRUB FOR SEDIMENT CONTROL DEVICES WORK SECTION 2 AREA.
14. INSTALL THE FOLLOWING SEDIMENT CONTROL DEVICES:
    - F. SEDIMENT TRAP #1 IN THE FOLLOWING ORDER:
      - F-1. INSTALL EARTH DIKE #3, RIPRAP, TGOS #4 AND ASSOCIATED DIVERSION FENCE (SEE INSERT AREA #1 SHEET 5).
      - F-2. AS GRADING PROCEEDS IN TRAP #1 AREA, INSTALL STORM DRAINS FROM E-2 TO I-56.
      - F-3. INSTALL TRAP #1 AND ASSOCIATED DRAWDOWN DEVICE, INFLOW PROTECTION (RRP), RPS, AND BAFFLES.
      - F-4. ONCE TRAP #1 IS FUNCTIONAL, REMOVE EARTH DIKE #3 AND INSTALL EARTH DIKE #4 & #5 AT SAME TIME.
    - G. TGOS #3 AND ASSOCIATED DIVERSION FENCE (SEE INSERT AREA #2 ON SHEET 5), AND SUPER SILT FENCE ALONG PERIMETER BOUNDARY OF WORK SECTION 1C.
15. BEGIN MASS GRADING FOR WORK SECTION 2 AREA. INSTALL RIPRAP INFLOW PROTECTION. DIRECT RUNOFF TO MH-24 (MH-24 TO BE INSTALLED IN WORK SECTION 3). PROVIDE PERMANENT VEGETATIVE STABILIZATION TO THOSE AREAS WHICH ARE AT FINAL GRADE. STABILIZE OTHER AREAS NOT TO BE IMMEDIATELY USED PER TEMPORARY SEEDING SCHEDULE. ALL PERIMETER CONTROLS ARE TO REMAIN IN PLACE UNTIL THEY ARE REPLACED /REMOVED IN THE NEXT WORK SECTION.

ANY AREAS NOT BEING WORKED ON SITE NEED TO BE TEMPORARILY STABILIZED WITH SEED AND MULCH.

WORK SECTION 3 (LOD = 21.3 AC +/-, 8 WEEKS) (SHEET 7 OF 16)

16. NOTIFY THE SMSCD AT 301 475 8402 x3 UPON COMPLETION OF WORK SECTION 2 AREA AND PRIOR TO BEGINNING OF WORK SECTION 3 TO ARRANGE A PRE-CONSTRUCTION MEETING. WITH THE APPROVAL OF THE SMSCD AND MDE INSPECTOR, CLEAR AND GRUB FOR REMAINDER OF THE SITE.
17. BEGIN MASS GRADING FOR WORK SECTION 3 AREA. AS GRADING PROCEEDS, INSTALL GABION INFLOW PROTECTION (GP) FOR TGOS #3. REMOVE EARTH DIKE #4 AND #5. INSTALL TEMPORARY SWALE #3. EXCESS CUT MAY BE PLACED IN THE TEMPORARY STOCKPILE #3 AS SHOWN ON SHEET 7 OF 16. PROVIDE PERMANENT VEGETATIVE STABILIZATION TO THOSE AREAS WHICH ARE AT FINAL GRADE. STABILIZE OTHER AREAS NOT TO BE IMMEDIATELY USED PER TEMPORARY SEEDING SCHEDULE. **ANY AREAS NOT BEING WORKED ON SITE NEED TO BE TEMPORARILY STABILIZED WITH SEED AND MULCH. ALL PERIMETER SEDIMENT CONTROL MEASURES SHOWN ON THIS PLAN ARE TO REMAIN IN PLACE UNTIL AN APPROVED EROSION AND SEDIMENT CONTROL PLAN SUPERCEDES THIS ONE.**

NOTES:

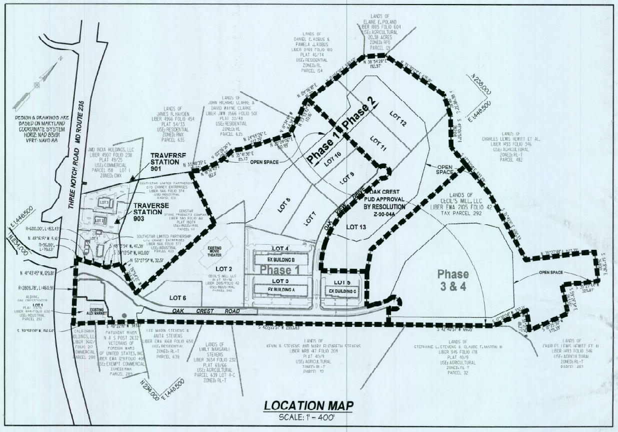
(1) ANY AREAS WITH TEMPORARY STABILIZATION THAT ARE DORMANT OVER 9 MONTHS WILL REQUIRE PERMANENT STABILIZATION.

(2) MAINTENANCE OF ALL PERIMETER SEDIMENT CONTROLS AND INSPECTION OF SEDIMENT TRAPS / BASINS SHALL BE DONE AS PER NOI REQUIREMENTS.

GENERAL NOTES

1. OWNER: CECIL'S MILL LLC
   2560 LORD BALTIMORE DRIVE
   BALTIMORE, MARYLAND 21244

   DEVELOPER: ST. JOHN PROPERTIES
   2560 LORD BALTIMORE DRIVE
   BALTIMORE, MARYLAND 21244
   (410) 788-0100
2. PROPERTY DATA: TOTAL SITE AREA: 134.38 Ac±
   TAX MAP 34, BLOCK 10, PARCEL 292 — TAX ACCOUNT # 08-015546
   DEED REFERENCE: 2105 / 42 — ELECTION DISTRICT 8
   COUNCILMANIC DISTRICT 5
   ZONING DATA: 'I', PUD-IP PER RESOLUTION Z-90-04A (RECORDED IN MRB LIBER 007 FOLIO 178); AE ZONE AREA 4
   COMPREHENSIVE PLANNING DISTRICT: "LEXINGTON PARK DEVELOPMENT DISTRICT"
3. SUBJECT PROPERTY DOES NOT APPEAR TO LIE WITHIN THE SPECIAL FLOOD HAZARD AREA, AS DELINEATED ON FLOOD INSURANCE RATE MAP PANEL 24037C0192E AND 24037C0184F FOR ST. MARY'S COUNTY, MARYLAND. DISTRIBUTED BY: THE FEDERAL EMERGENCY MANAGEMENT AGENCY. THE EFFECTIVE DATE FOR THE FIRM PANELS IS OCTOBER 19, 2004.
4. REFERENCE MDE "MODIFICATION OF AUTHORIZATION -B, # 11-NT-0321 / 201161311: FOR IMPACTS TO WETLANDS AND WETLAND BUFFERS ASSOCIATED WITH CULVERT INSTALLATION ON OAK CREST ROAD AND VARIOUS STORM DRAIN OUTFALLS. PERMIT EFFECTIVE DATE FEBRUARY 27, 2018; EXPIRATION DATE MARCH 22, 2022.
5. NON-TIDAL WETLANDS HAVE BEEN FIELD LOCATED AND DELINEATED BY BOHLER ENGINEERING.
6. THERE ARE NO CULTURAL FEATURES, CRITICAL HABITATS OR HISTORICAL SITES AFFECTING THIS PROPERTY PER MD MERLIN ONLINE MAPS.
7. FOREST CONSERVATION: THIS SITE IS EXEMPT FROM FOREST CONSERVATION REQUIREMENTS PER CZO SECTION 75.2.K. PUD APPROVED AUGUST 21, 1990.
8. BUFFER YARDS FOR PUD BOUNDARY: 75' "E" BUFFER ADJACENT TO ALL RL PROPERTIES PER RESOLUTION Z-90-04A.
9. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MARYLAND STATE HIGHWAY ADMINISTRATION STANDARDS AND SPECIFICATIONS FOR CONSTRUCTION AND THE ST. MARY'S COUNTY ROAD ORDINANCE, SEDIMENTATION ORDINANCE, ZONING ORDINANCE (AS APPLICABLE) AND THE COMPREHENSIVE WATER & SEWER PLAN.
10. THE CONTRACTOR SHALL CONTACT THE ST. MARY'S COUNTY DEPARTMENT OF PUBLIC WORKS, 301-475-4200 AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
11. ALL EXISTING UTILITIES HAVE BEEN LOCATED FROM THE BEST AVAILABLE INFORMATION. HOWEVER, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO EXCAVATION WORK, BY CALLING "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO CONSTRUCTION.
12. SOILS INDICATED ARE PER ST. MARY'S COUNTY SOIL SURVEY, USDA, SCD. SOILS FOUND TO BE UNSUITABLE FOR THE CONSTRUCTION SHALL BE EXCAVATED AND REPLACED OR REMOVED AS ENCOUNTERED DURING CONSTRUCTION AND TAKEN TO A SITE WITH AN APPROVED AND ACTIVE SCD PLAN.
13. TOPOGRAPHIC SURVEY BY SOLTESZ, INC. DATED FEBRUARY 5, 2019 AND MTPLS, DATED JULY 25, 2016. HORIZONTAL DATUM NAD 83/91, VERTICAL DATUM NAVD 88.
14. ALL DISTURBED AREAS THAT WILL NOT BE PAVED, SODDED, OR LANDSCAPED WILL BE STABILIZED BY TOP SOILING, SEEDING, AND MULCHING IN ACCORDANCE WITH THE 2011 STATE OF MARYLAND "STANDARDS AND SPECIFICATIONS FOR SEDIMENT AND EROSION CONTROL" UNLESS OTHERWISE NOTED HEREON.
15. RETAINING WALL CONSTRUCTION FOR ANY WALLS OVER 4' IN HEIGHT WILL ONLY BEGIN WITH ISSUANCE OF NECESSARY PERMITS.
16. PRIOR TO CONSTRUCTION, THE OWNER SHALL PROVIDE PLANS TO LUGM FOR THE RETAINING WALL THAT ARE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER AND A BUILDING PERMIT SHALL BE OBTAINED FOR THE WALL.
17. **FUTURE BUILDING CONSTRUCTION WILL OCCUR UNDER SEPARATE EROSION AND SEDIMENT CONTROL PLAN.**

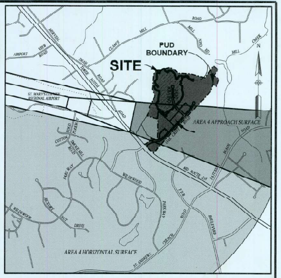


LANDS OF ELAINE E. POLAND LIBER 1805 FOLIO 604 USE: AGRICULTURAL 20.38 ACRES ZONED: RPD PARCEL 121
LANDS OF DANIEL C. KOBUS & PAMELA J. KOBUS LIBER 3459 FOLIO 180 PLAT 46/74 USE: RESIDENTIAL ZONED: RL PARCEL 154
N 38°54'26" E 192.97'
N 238,000
THREE NOTCH ROAD MD ROUTE 235
TRAVERSE STATION 901
TRAVERSE STATION 903
Phase 1
Phase 2
LOT 5
LOT 6
LOT 7
LOT 8
LOT 9
LOT 10
LOT 11
LOT 12
LOT 13
LOT 1
LOT 3
LOT 4
OPEN SPACE
OAK CREST PUD APPROVAL BY RESOLUTION Z-90-04A
LANDS OF CECIL'S MILL, LLC LIBER EWA 2105 FOLIO 42 TAX PARCEL 292
Phase 3 & 4
OAK CREST ROAD
EX BUILDING B
EX BUILDING A
EX BUILDING C
N 234,000
E 1,446,500
E 1,448,500
LANDS OF KEVIN B. STEVENS AND MARY ELIZABETH STEVENS LIBER MRB 47 FOLIO 209 PLAT 40/9 USE: AGRICULTURAL ZONED: RL-T PARCEL 32
LANDS OF EMILY MARGARET STEVENS LIBER 3654 FOLIO 232 PLAT 69/66 USE: AGRICULTURAL PARCEL 639 LOT 4-C ZONED: RL-T
LANDS OF STEPHANIE L. STEVENS & CLAUDE F. MARTIN III LIBER 945 FOLIO 178 PLAT 40/9 USE: AGRICULTURAL ZONED: RL-T PARCEL 32
LANDS OF CHARLES LEWIS HEWITT ET AL LIBER 1493 FOLIO 346 USE: AGRICULTURAL ZONED: RL-T PARCEL 482
N.A.S. POST 2632 VETERANS OF FOREIGN WARS OF UNITED STATES, INC LIBER EWA 1291 FOLIO 408 USE: EXEMPT COMMERCIAL ZONED: RMA PARCEL 289
DESIGN & DRAWINGS ARE BASED ON MARYLAND COORDINATE SYSTEM HORIZ NAD 83/91 VERT NAVD 88

LOCATION MAP
SCALE: 1' = 400'

BENCHMARK DATA

SOLTESZ TRAVERSE STATION	NORTHING	EASTING	ELEVATION
901	235131.4904	1446885.2621	105.34
903	234769.8112	1447079.9041	131.67



VICINITY MAP
SCALE: 1' = 2000'

REVISION #3 - REVISED WORK SECTION 1C. SOME GRADING AND LIMIT OF DISTURBANCE AREAS MOVED BETWEEN WORK SECTIONS

CUT / FILL ESTIMATE

	CUT	FILL	NET	LOD
WORK SECTION 1A	32,500 CY	32,500 CY	0 CY	9.54 AC
WORK SECTION 1B	2,000 CY	2,000 CY	0 CY	8.24 AC
WORK SECTION 1C	65,000 CY	65,000 CY	0 CY	22.95 AC
WORK SECTION 2	75,000 CY	75,000 CY	0 CY	13.30 AC
WORK SECTION 3	94,000 CY	94,000 CY	0 CY	16.30 AC

SHEET INDEX

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SHEET 4 OF 16 MASS GRADING WORK SECTION 1B
SHEET 5 OF 16 MASS GRADING WORK SECTION 1C
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SHEET 11 OF 16 SEDIMENT TRAP #1 DETAILS
SHEET 12 OF 16 STORM DRAIN PROFILES
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SHEET 14 OF 16 SPECIFICATIONS AND DETAILS
SHEET 15 OF 16 SPECIFICATIONS AND DETAILS
SHEET 16 OF 16 SOIL BORINGS

LEGEND

EXISTING CURB	
EXISTING ELECTRIC	E
EXISTING GAS	G
EXISTING INDEX CONTOUR	120
EXISTING INTERMEDIATE CONTOUR	122
EXISTING NON-TIDAL WETLANDS	W
EX. NON-TIDAL WETLANDS BUFFER	WB
EXISTING OVERHEAD UTILITIES	OH
EXISTING UTILITY POLE	Ø
PROPERTY LINE	
EXISTING WATER	EX. 6" W.
EXISTING SEWER	EX. 6" SAN.
EXISTING STORMDRAIN	EX. 15" SD
EXISTING TREELINE	
EX. PARKING LOT LIGHTING	
ZONING	ZONED DR 3.5 ZONED MR IM
EXISTING SOILS	FaA KeB
EX. DRAINAGE FLOW ARROW	→
PROPOSED LOT LINE	
PROPOSED ROAD R/W	
PROPOSED CONTOURS	310
PROPOSED CURB	
PROPOSED WATER	PROP. 6" W.
PROPOSED SEWER	PROP. 6" SAN.
PROPOSED STORMDRAIN	PROP. 15" SD

SEDIMENT CONTROL LEGEND

LIMIT OF DISTURBANCE	LOD
SILT FENCE	SF
SUPER SILT FENCE	SSF
DIVERSION FENCE	DF
STABILIZED CONSTRUCTION ENTRANCE	SCE
MOUNTABLE BERM TYPE A	
EARTH DIKE	A-2
REMOVABLE PUMPING STATION	☒ RPS
STANDARD INLET PROTECTION	SIP(B)
RIPRAP INFLOW PROTECTION	RRP
GABION INFLOW PROTECTION	GP
BAFFLE BOARD	
DRAINAGE AREA BOUNDARY	
Tc PATH	→
EXISTING EARTH DIKE	A-2
EXISTING SUPER SILT FENCE	SSF
PHASE LINE	Phase 1 Phase 2

AIRPORT EASEMENTS, RESTRICTIONS AND COVENANTS

THE FOLLOWING NOTES SHALL BE INCLUDED ON ALL RECORD PLATS OF LAND WHOLLY OR PARTLY WITHIN THE AE OVERLAY DISTRICT AND SUBDIVIDED AFTER THE ADOPTION OF THIS PROVISION:

1. WITHIN THE AREA OF THE TRACT HEREBY CREATED, NO STRUCTURE, ERECTION, OBJECT, GROWTH OF TREES OR VEGETATION WITHIN THE BOUNDARIES OF THE TRACT HEREIN DESCRIBES, NOR ANY OTHER OBJECTS PLACED WITHIN SAID TRACT, SHALL PENETRATE THE AE OVERLAY SUBDISTRICT SURFACES OF AN AIRPORT OR HELIPORT. THE OWNER, HIS/HER/THEIR/ITS HEIRS, SUCCESSORS AND ASSIGNS SHALL BE RESPONSIBLE FOR MAINTAINING AND PRUNING TREES AND VEGETATION SO THIS HEIGHT RESTRICTION IS NOT EXCEEDED.
2. THE LAND OWNER EXPRESSLY RESERVES FOR THE USE AND BENEFIT OF ITSELF AND THE PUBLIC A RIGHT OF FLIGHT FOR THE PASSAGE OF AIRCRAFT IN THE AIRSPACE ABOVE THE LANDS IDENTIFIED HEREIN, TOGETHER WITH THE RIGHT TO CAUSE ABOVE SUCH TRACT ALL SUCH NOISE, FUMES, DUST, VIBRATION AND FUEL PARTICLES AS MAY BE INHERENT IN THE OPERATION OF AIRCRAFT USING SAID AIRSPACE FOR LANDING AND TAKING OFF FROM THE ST. MARY'S COUNTY REGIONAL AIRPORT AND OTHER REGULATED PUBLIC LANDING STRIPS.

SCD DATA BLOCK

LIMIT OF DISTURBANCE = 41.10 ACRES

AREA TO BE VEGETATIVELY STABILIZED = 41.10 ACRES

OWNER / DEVELOPER CERTIFICATION:

I / we hereby certify that any clearing, grading, construction or development, or all of these will be done pursuant to this plan and that all responsible personnel involved in the construction project will have a certificate of training at a Maryland Department of the Environment approved training program before beginning the project.

Owner/Developer Signature: Edward St. John Date 11/12/2021

Printed Name and Title EDWARD ST. JOHN, CHAIRMAN, ST. JOHN PROPERTIES

CONSULTANT CERTIFICATION

I hereby certify that the plans have been designed in accordance with the approved erosion and sediment control odinance, regulations, standards, and criteria.

Signature: Date 11/12/2021
Nicholas J. Brader, P.E.
NJB Engineering, Inc.

Received
MAR 17 2026
St. Mary's County
Land Use & Growth Management

St. Mary's
Soil Conservation District
Plan Sheets 1-16 of 16
Approved 3 / 11 / 26
By
Plan expires 2 years from approval date

Construction Set April 7, 2022

NJB Engineering, Inc.
Civil Engineering Consulting

810 Gleneagles Court Suite 311
Towson, Maryland 21286
410-832-7691

NO.	REVISIONS	BY	DATE
1	No changes this sheet	NJB	2/17/22
2	Revised Sequence of Construction (Step #3-C-7).	NJB	7/19/22
3	Revised Work Section 1C, Revised Seq. of Construction Steps 11-17.	NJB	1/23/23
6	Plan renewal with no changes.	NJB	2/27/26

DATE: JULY 2021	CAD STANDARDS VERSION: V8 - 2000		
DESIGNED: NJB	TECHNICIAN: DTB	CHECKED: NJB	

MISS UTILITY NOTE

INFORMATION CONCERNING EXISTING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND UTILITY CROSSINGS BY DIGGING TEST PITS BY HAND, WELL IN ADVANCE OF THE START OF EXCAVATION. CONTACT "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF EXCAVATION. IF CLEARANCES ARE LESS THAN SHOWN ON THIS PLAN OR TWELVE (12) INCHES, WHICHEVER IS LESS, CONTACT THE ENGINEER AND THE UTILITY COMPANY BEFORE PROCEEDING WITH CONSTRUCTION. CLEARANCES LESS THAN NOTED MAY REQUIRE REVISIONS TO THIS PLAN.

DEVELOPER / APPLICANT

ST. JOHN PROPERTIES
2560 Lord Baltimore Drive
Baltimore, Maryland 21244
(410) 788-0100

ZONING CATEGORY: I (AE OVERLAY & PUD-IP OVERLAY)	W&S CATEGORY: W-3D / S-3D
TAX MAP / PARCEL 34 / 292	GRID 10
SITE DATUM HORIZONTAL: NAD83 VERTICAL: NGVD88	LIBER/ FOLIO 2105 / 042

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. 18558 EXPIRATION DATE: 1-12-24

No. 18558

COVER SHEET

MASS GRADING PLAN
OAK CREST CENTER
(REVISION TO P/O PHASE 1 & PHASE 2)
LEXINGTON EXCHANGE

ST. MARY'S COUNTY, MARYLAND
ELECTION DISTRICT: 8

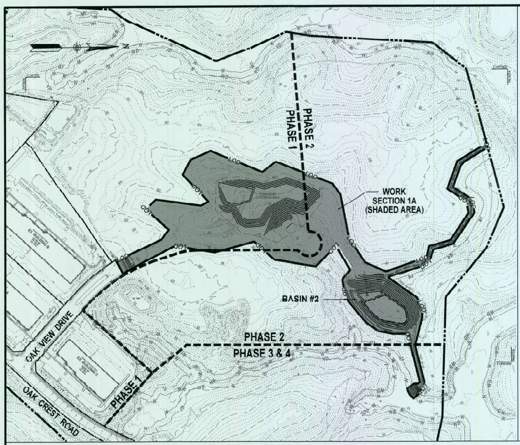
FEBRUARY 17, 2022

SCALE: 1" = 400'

MASS GRADING
SHEET 1 OF 16

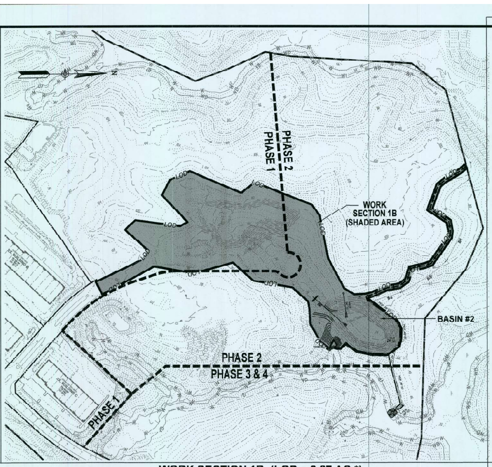
PROJECT NO.

PN 2017-019 SJP-Oakcrest/Sheets/LOD concept Title.dgn



WORK SECTION 1A (LOD = 9.54 AC)

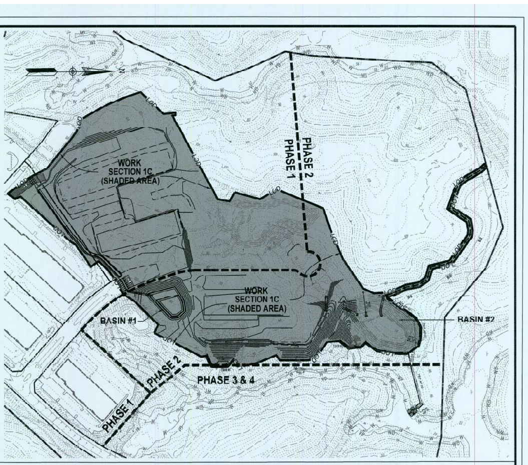
SCALE: 1" = 200'



WORK SECTION 1B (LOD = 9.87 AC *)

SCALE: 1" = 200'

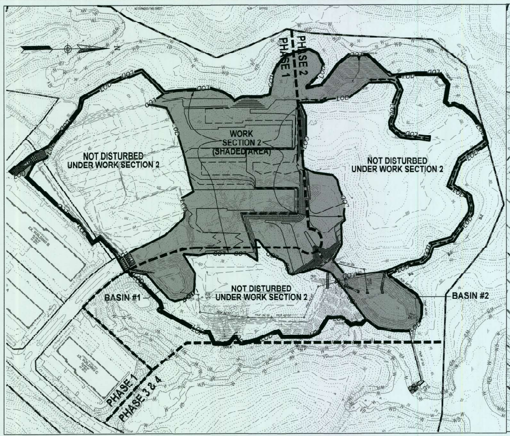
* INCLUDING 1.63 AC FOR PERIMETER CONTROL MAINTENANCE



REVISED WORK SECTION 1C (LOD = 24.95 AC *)

SCALE: 1" = 200'

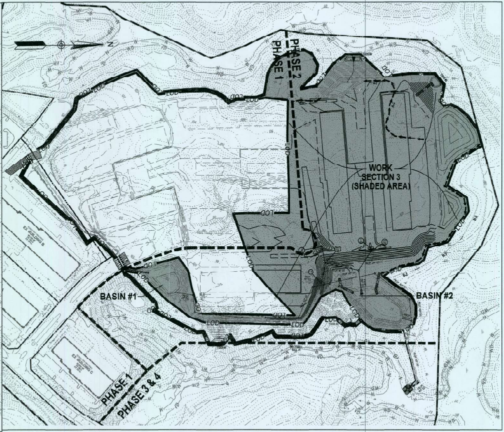
* INCLUDING 2.0 AC FOR PERIMETER CONTROL MAINTENANCE


PHASE 2
PHASE 1
WORK SECTION 2 (SHADED AREA)
NOT DISTURBED UNDER WORK SECTION 2
NOT DISTURBED UNDER WORK SECTION 2
NOT DISTURBED UNDER WORK SECTION 2
BASIN #1
BASIN #2
PHASE 1
PHASE 3 & 4

WORK SECTION 2 (LOD = 17.30 AC *)

SCALE: 1" = 200'

* INCLUDING 4.0 AC FOR PERIMETER CONTROL MAINTENANCE



WORK SECTION 3 (LOD = 21.30 AC)

SCALE: 1" = 200'

* INCLUDING 5.0 AC FOR PERIMETER CONTROL MAINTENANCE

APPROVED
MAR 1 1 2026
St. Mary's SCD

NJB Engineering, Inc.
Civil Engineering Consulting

810 Gleneagles Court
Towson, Maryland 21286
Suite 311
410-832-7691

NO.	REVISIONS	BY	DATE
1	NO CHANGES THIS SHEET	NJB	2/17/22
3	REVISED WORK SECTION 1C, ADJUST WORK/LOD BETWEEN SECTIONS 1C, 2 and 3	NJB	1/23/23

DATE: JULY 2021 | CAD STANDARDS VERSION: V8 - 2000
DESIGNED: NJB | TECHNICIAN: DTB | CHECKED: NJB

MISS UTILITY NOTE

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ST. JOHN PROPERTIES

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Baltimore, Maryland 21244
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ZONING CATEGORY: I (AE OVERLAY & PUD-IF OVERLAY)	W&S CATEGORY: W-3D / S-3D
TAX MAP / PARCEL 34 / 292	GRID 10
SITE DATUM HORIZONTAL: NAD83 VERTICAL: NGVD88	LIBER/ FOLIO 2105 / 042

PROFESSIONAL CERTIFICATION

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LICENSE NO. 18558
EXPIRATION DATE: 1-12-22

Work Section Location Plan

MASS GRADING PLAN
OAK CREST CENTER
(REVISION TO P/O PHASE 1 & PHASE 2)
LEXINGTON EXCHANGE

ST. MARY'S COUNTY, MARYLAND
ELECTION DISTRICT: 8

FEBRUARY 17, 2022

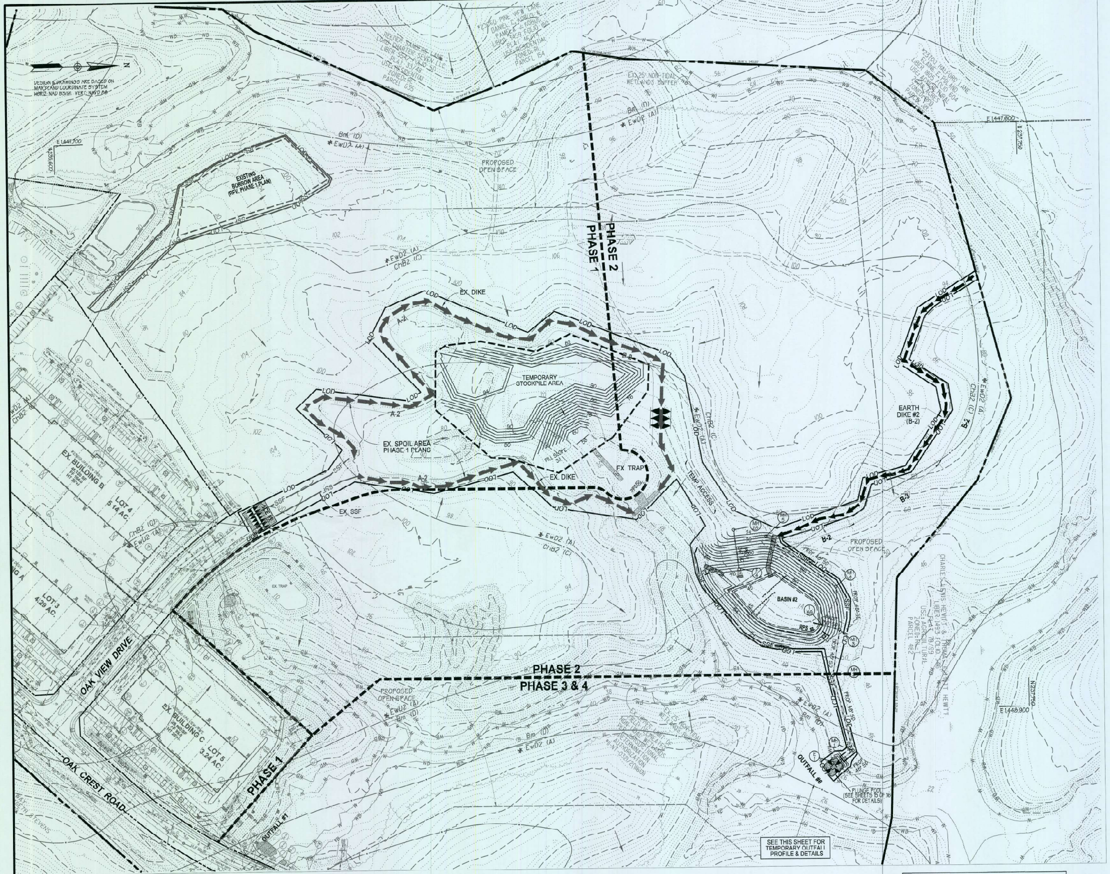
SCALE: AS SHOWN

MASS GRADING

SHEET 2
OF 16

PROJECT NO.

PN 2017-019 SJP Oakcrest/Sheets/[03] ex conditions plan.dgn

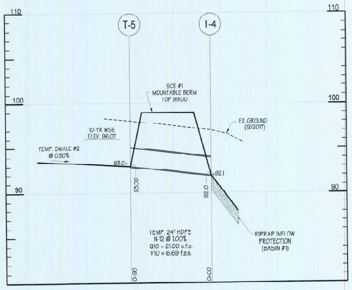

DESIGN & DRAWINGS ARE BASED ON MARYLAND COORDINATE SYSTEM HORIZ: NAD 83/91 VERT: NAVD 88
N
E 1,447,700
N 235,600
REEDER SANDERS LANE LORD CHARTER SEVEN LLC LIBER 5547 FOLIO 50 PLAT 33/48 USE: RESIDENTIAL ZONED: RL PARCEL 635
#23050 PINE VIEW LANE DANIEL C. KOBUS & PAMELA J. KOBUS LIBER 3459 FOLIO 180 PLAT 46/74 USE: RESIDENTIAL ZONED: RL PARCEL 154
EXISTING BORROW AREA (REV. PHASE 1 PLAN)
PROPOSED OPEN SPACE
EX. 25' NON-TIDAL WETLANDS BUFFER
#23700 HALFORD LANE ELAINE E. POLAND LIBER 1805 FOLIO 604 24.6 ACRES USE: AGRICULTURAL ZONED: RPD PARCEL 121
E 1,447,600
N 237,750
PHASE 2
PHASE 1
EX. DIKE
TEMPORARY STOCKPILE AREA
EX. SPOIL AREA PHASE 1 PLANS
FILL SLOPE 3:1
FX TRAP
EX. DIKE
EX. SSF
TEMP. ACCESS
EARTH DIKE #2 (B-2)
B-2
B-3
A-2
SCE #1
EX. BUILDING B
LOT 4 5.14 AC.
LOT 3 4.29 AC.
OAK VIEW DRIVE
EX. BUILDING C
LOT 5 3.24 AC.
OAK CREST ROAD
EX. TRAP
PHASE 1
OUTFALL #1
PHASE 2
PHASE 3 & 4
PROPOSED OPEN SPACE
BASIN #2
PROP. 48" SD
MH 5
MH 20
MH 4
MH 3
MH 2
MH 1
PROPOSED OPEN SPACE
CHARLES LEWIS HEWITT & THOMAS LAMONT HEWITT LIBER 1493 FOLIO 146 PLAT 78/59 USE: AGRICULTURAL ZONED: RL PARCEL 462
EX. UPPER LIMIT OF FIELD DELINEATED NON-TIDAL WETLANDS PER JURISDICTIONAL DETERMINATION AUTHORIZATION #NAB-2016-03211
EX. 25' NON-TIDAL WETLANDS BUFFER
OUTFALL #6
PLUNGE POOL (SEE SHEETS 15 OF 16 FOR DETAILS)
E 1,448,900
N 237,750
SEE THIS SHEET FOR TEMPORARY OUTFALL PROFILE & DETAILS

SEE SHEET 14 FOR FILTER FENCE OUTFALL PROTECTION DURING INSTALLATION OF PLUNGE POOL AND E-1

MASS GRADING PLAN - WORK SECTION 1A

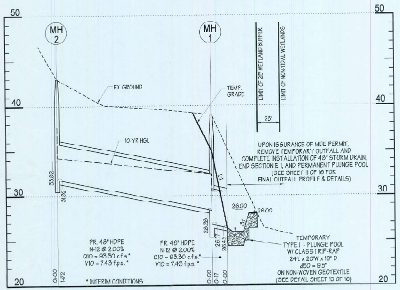
SCALE: 1" = 100'

LOD = 9.54 AC.
CUT = 32,500 CY
FILL = 32,500 CY


110
100
90
T-5
I-4
SCE #1 MOUNTABLE BERM TOP 99.00
EX. GROUND (12/2017)
10-YR WSE ELEV. 96.07
TEMP. SWALE #2 @ 0.50%
93.0±
92.1
93.00
92.0
TEMP. 24" HDPE N-12 @ 1.00% Q10 = 21.00 c.f.s. V10 = 6.69 f.p.s.
RIPRAP INFLOW PROTECTION (BASIN #1)
0+90
0+00

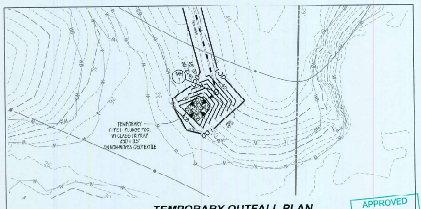
TEMPORARY 24" STORM DRAIN PROFILE

SCALE: HORZ. 1" = 50'
VERT. 1" = 5'
(SEE SHEET 5 FOR STORM DRAIN PLAN VIEW)


50
40
30
20
MH 2
MH 1
EX. GROUND
TEMP. GRADE
LIMIT OF 25' WETLAND BUFFER
LIMIT OF NON-TIDAL WETLANDS
25'
10-YR HGL
UPON ISSURANCE OF MDE PERMIT, REMOVE TEMPORARY OUTFALL AND COMPLETE INSTALLATION OF 48" STORM DRAIN, END SECTION E-1, AND PERMANENT PLUNGE POOL (SEE SHEET 11 OF 16 FOR FINAL OUTFALL PROFILE & DETAILS)
33.82
31.34
28.38
26.47
26.43
26.00
28.00
PR. 48" HDPE N-12 @ 2.00% Q10 = 93.30 c.f.s.* V10 = 7.43 f.p.s.*
PR. 48" HDPE N-12 @ 2.00% Q10 = 93.30 c.f.s.* V10 = 7.43 f.p.s.*
* INTERIM CONDITIONS
TEMPORARY TYPE I - PLUNGE POOL W/ CLASS I RIP-RAP 24'L x 20'W x 19" D d50 = 9.5" ON NON-WOVEN GEOTEXTILE (SEE DETAIL SHEET 15 OF 16)
0+00
1+72
0+00
0+17
0+00

STORM DRAIN PROFILE

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


MH 1
48" SD INV. 26.45
LOD
TEMPORARY TYPE I - PLUNGE POOL W/ CLASS I RIPRAP d50 = 9.5" ON NON-WOVEN GEOTEXTILE

TEMPORARY OUTFALL PLAN

SCALE: 1" = 50'

APPROVED
MAR 1 1 2026
St. Mary's SCD

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Towson, Maryland 21286
Suite 311
410-832-7691

NO.	REVISIONS	BY	DATE
1	NO CHANGES THIS SHEET	NJB	2/17/22
2	ADDED TEMPORARY OUTFALL PLAN INSERT AND PROFILE	NJB	7/19/22

DATE: JULY 2021
CAD STANDARDS VERSION: V8 - 2000
DESIGNED: NJB
TECHNICIAN: DTB
CHECKED: NJB

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TAX MAP / PARCEL 34 / 292	GRID 10
SITE DATUM HORIZONTAL: NAD83 VERTICAL: NGVD88	LIBER/ FOLIO 2105 / 042

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LICENSE NO. 18558
EXPIRATION DATE: 1-12-22

No. 18558
NICHOLAS JOSEPH BRADER III

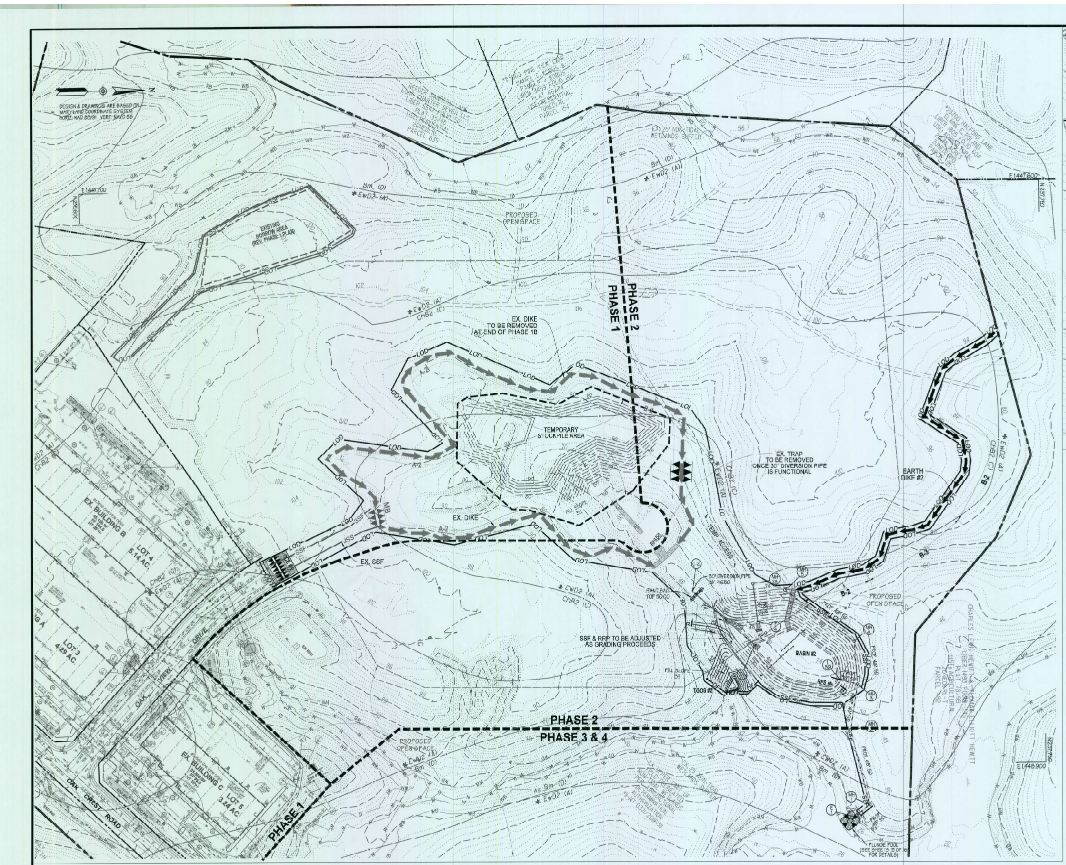
Mass Grading Plan - Work Section 1A

MASS GRADING PLAN
OAK CREST CENTER
(REVISION TO P/O PHASE 1 & PHASE 2)
LEXINGTON EXCHANGE

ST. MARY'S COUNTY, MARYLAND
ELECTION DISTRICT: 8
FEBRUARY 17, 2022

SCALE: AS SHOWN
MASS GRADING
SHEET 3 OF 16
PROJECT NO.

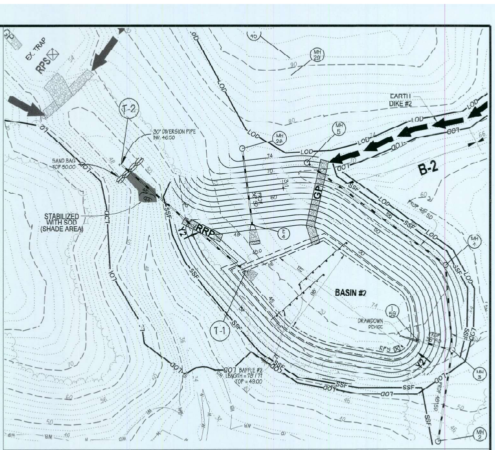
PW 2017-013 SJP-Oakcrest/Sheets/[03] ex conditions plan.dgn


DESIGN & DRAWINGS ARE BASED ON MARYLAND COORDINATE SYSTEM HORIZ: NAD 83/91 VERT: NAVD 88
E 1447,700
N 237,600
REEDER SANDERS LANE LORD CHARTER SEVEN, LLC LIBER 5542 FOLIO 50 PLAT 33/48 USE: RESIDENTIAL ZONED: RL PARCEL 635
23660 PINE VIEW LANE DANIEL C. KOBUS & PAMELA J. KOBUS LIBER 3459 FOLIO 180 PLAT 46/74 USE: RESIDENTIAL ZONED: RL PARCEL 154
EXISTING BORROW AREA (REV. PHASE 1 PLAN)
PROPOSED OPEN SPACE
EX. DIKE TO BE REMOVED AT END OF PHASE 1B
PHASE 2
PHASE 1
TEMPORARY STOCKPILE AREA
EX. DIKE
EX. TRAP TO BE REMOVED ONCE 30" DIVERSION PIPE IS FUNCTIONAL
EARTH DIKE #2
TEMP. ACCESS
30" DIVERSION PIPE INV. 46.50
SAND BAG TOP 50.00
SSF & RRP TO BE ADJUSTED AS GRADING PROCEEDS
FILL SLOPE 3:1
BASIN #2
TGOS #2
PROPOSED OPEN SPACE
CHARLES LEWIS HEWITT & ELLIOTT HEWITT LIBER 1493 FOLIO 145 PLAT 78/99 USE: AGRICULTURAL ZONED: RL-T PARCEL 82
EX. BUILDING B
LOT 4
LOT 3
EX. BUILDING C
LOT 5
OAK CREST ROAD
PHASE 2
PHASE 3 & 4
PHASE 1
EX. UPPER LIMIT OF FIELD DELINEATED NON-TIDAL WETLANDS PER JURISDICTIONAL DETERMINATION AUTHORIZATION #1-NT-0321/201631
EX. 25' NON-TIDAL WETLANDS BUFFER
PLUNGE POOL (SEE SHEETS 15 OF 16 FOR DETAILS)
E 1448,900
B-2
B-3
LOD
SSF
A-2

MASS GRADING PLAN - WORK SECTION 1B

SCALE: 1" = 100'

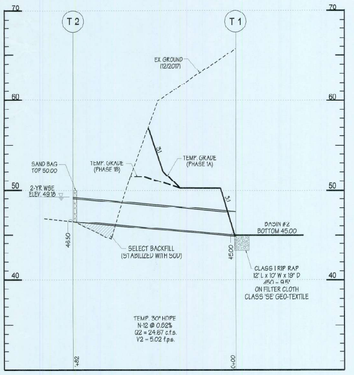
LOD = 9.87 AC (8.24 AC TO BE DISTURBED + 1.63 AC PERIMETER CONTROL MAINTENANCE)
CUT = 2,000 CY
FILL = 2,000 CY



TEMPORARY 30" DIVERSION PIPE

SCALE: 1" = 50'

(REFER TO SEQUENCE OF CONSTRUCTION ON SHEET 1 AND MARYLAND'S GUIDELINES TO WATERWAY CONSTRUCTION DETAIL 1.4 ON SHEET 15 FOR INSTALLATION AND REMOVAL OF 30" PIPE AND SAND BAGS)


70
60
50
40
T 2
T 1
EX. GROUND (12/2017)
SAND BAG TOP 50.00
TEMP. GRADE (PHASE 1B)
TEMP. GRADE (PHASE 1A)
3:1
2-YR WSE ELEV. 49.18
BASIN #2 BOTTOM 45.00
46.50
45.00
SELECT BACKFILL (STABILIZED WITH SOD)
CLASS I RIP RAP 12' L x 10' W x 19" D d50 = 9.5" ON FILTER CLOTH CLASS 'SE' GEO-TEXTILE
TEMP. 30" HDPE N-12 @ 0.82% Q2 = 24.67 c.f.s. V2 = 5.02 f.p.s.
+82
0+00

TEMPORARY 30" DIVERSION PIPE PROFILE

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

(SEE MARYLAND'S GUIDELINES TO WATERWAY CONSTRUCTION DETAIL 1.4 FOR DIVERSION PIPE AND SAND BAG DESIGN DETAILS)
(SEE SHEET 12 FOR PIPE SCHEDULE)

APPROVED
MAR 1 1 2026
St. Mary's SCD

NJB Engineering, Inc.
Civil Engineering Consulting
810 Gleneagles Court Suite 311
Towson, Maryland 21286 410-832-7691

NO	REVISIONS	BY	DATE
1	NO CHANGES THIS SHEET	NJB	2/17/22

DATE: JULY 2021 | CAD STANDARDS VERSION: V8 - 2000
DESIGNED: NJB | TECHNICIAN: DTD | CHECKED: NJB

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TAX MAP / PARCEL 34 / 292	GRID 10
SITE DATUM HORIZONTAL: NAD83 VERTICAL: NGVD88	LIBER/ FOLIO 2105 / 042

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LICENSE NO. 18558
EXPIRATION DATE: 1-12-22

NICHOLAS JOSEPH BRADER III No. 18558

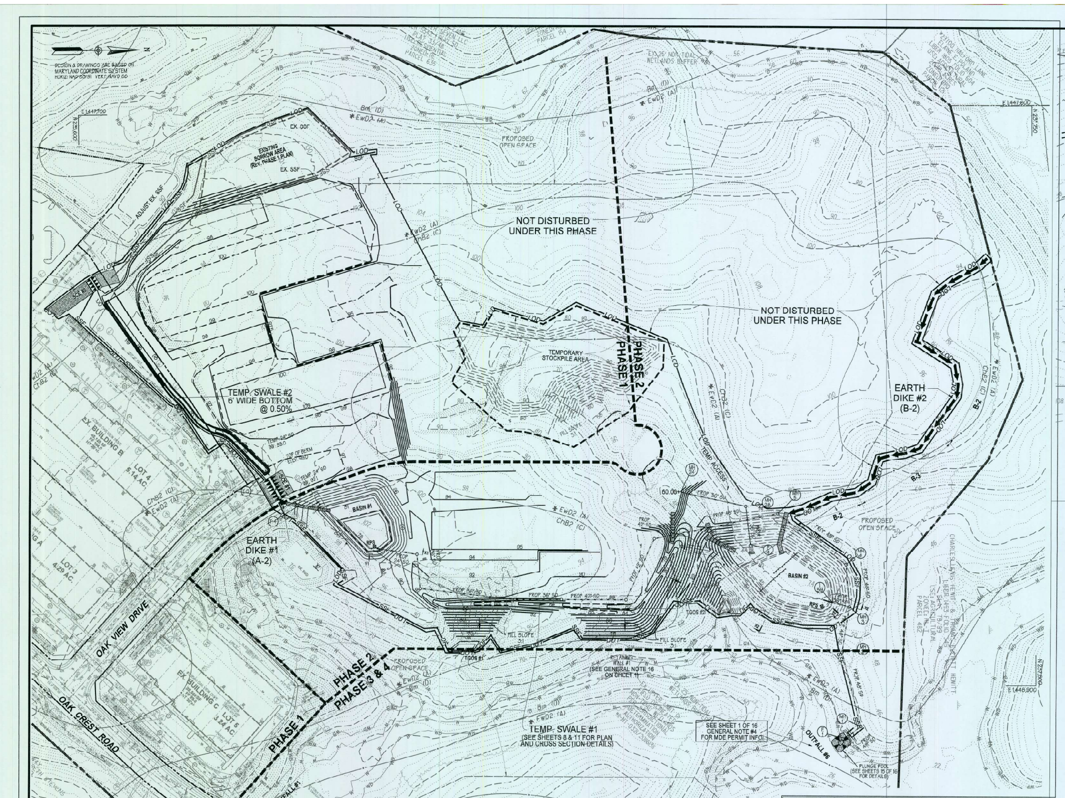
Mass Grading Plan - Work Section 1B

MASS GRADING PLAN
OAK CREST CENTER
(REVISION TO P/O PHASE 1 & PHASE 2)
LEXINGTON EXCHANGE

ST. MARY'S COUNTY, MARYLAND
ELECTION DISTRICT: 8
FEBRUARY 17, 2022

SCALE: AS SHOWN
MASS GRADING
SHEET 4 OF 16
PROJECT NO.

PN 2017-019 SJP-Oakcrest/Sheets/[03] ex conditions plan.dgn

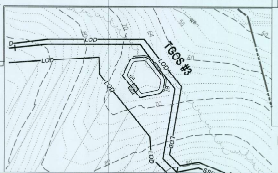


MASS GRADING PLAN - REVISED WORK SECTION 1C

SCALE: 1" = 100'

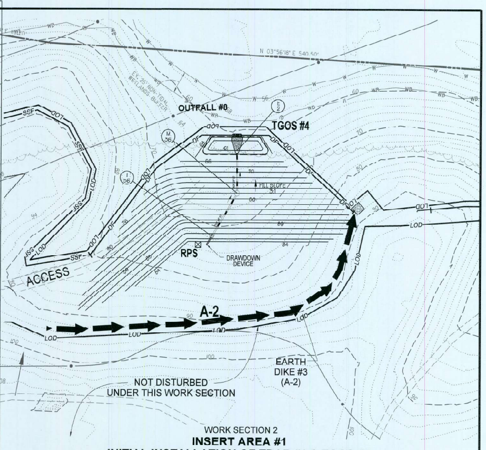
LOD = 24.95 AC.(22.95 AC TO BE DISTURBED + 2.00 AC PERIMETER CONTROL MAINTENANCE)

CUT = 65,000 CY
FILL = 65,000 CY



INSERT AREA #2
TGOS #3

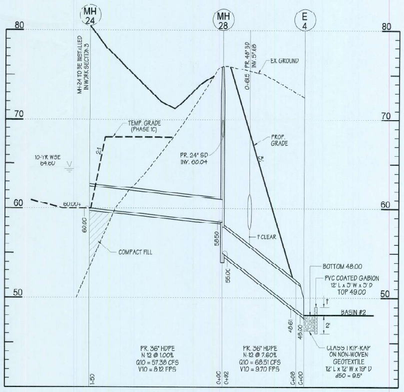
SCALE: 1" = 50'



WORK SECTION 2

INSERT AREA #1
INITIAL INSTALLATION OF TRAP #1 & TGOS #4

SCALE: 1" = 50'
(SEE SHEET 11 FOR TRAP #1 DETAILS AND STORM DRAIN PROFILE FROM E-2 TO I-56)


MH 24
MH 28
E 4
80
70
60
50
MH-24 TO BE INSTALLED IN WORK SECTION 3
O-61.5 / PR. 48" SD INV. 57.68
EX. GROUND
TEMP. GRADE (PHASE 1C)
2:1
PROP. GRADE
3:1
10-YR WSE 64.60
PR. 24" SD INV. 60.04
60.00+
60.00
58.50
55.00
1' CLEAR
COMPACT FILL
BOTTOM 48.00
PVC COATED GABION 12' L x 3' W x 3' D TOP 49.00
BASIN #2
1'
2'
48.61
48.00
CLASS I RIP-RAP ON NON-WOVEN GEOTEXTILE 12' L x 12' W x 19" D d50 = 9.5"
PR. 36" HDPE N-12 @ 1.00% Q10 = 57.38 CFS V10 = 8.12 FPS
PR. 36" HDPE N-12 @ 7.60% Q10 = 68.51 CFS V10 = 9.70 FPS
I-50
0+00
0+92
C+08
C+00

STORM DRAIN PROFILES

SCALE: HORZ. 1" = 50'
VERT. 1" = 5'
(SEE SHEET 12 FOR PIPE & STRUCTURE SCHEDULE)

APPROVED
MAR 1 1 2026
St. Mary's SCD

Temporary Gabion Outlet Structure (TGOS #3)

Elevation (ft)	Area (sf)	Average Area (sf)	Contour Interval (ft)	Incremental Volume (ft^3)	Total Pond Volume (ft^3)	Total Pond Volume (ac-ft)	Notes
64.00	916				0	0.00	Max DA = 1.40 Ac.
		1039	1.00	1039.0			Storage Required
65.00	1160				1039	0.02	= 1.40 x 1800 cu-ft
		1294	1.00	1294.0			= 2520 cu-ft
66.00	1428				2333	0.05	(2600 cu ft Provided)
		1464	0.25	365.9			
66.25	1499				2699	0.06	Weir Crest = 66.25

Temporary Gabion Outlet Structure (TGOS #4)

Elevation (ft)	Area (sf)	Average Area (sf)	Contour Interval (ft)	Incremental Volume (ft^3)	Total Pond Volume (ft^3)	Total Pond Volume (ac-ft)	Notes
61.00	617				0	0.00	Max DA = 1.16 Ac.
		763	1.00	763.0			Storage Required
62.00	909				763	0.02	= 1.16 x 1800 cu-ft
		1065	1.00	1064.5			= 2088 cu-ft
63.00	1220				1828	0.04	(2143 cu-ft Provided)
		1261	0.25	315.3			
63.25	1302				2143	0.05	Weir Crest = 63.25

NJB Engineering, Inc.
Civil Engineering Consulting

810 Gleneagles Court
Towson, Maryland 21286
Suite 311
410-832-7691

NO.	REVISIONS	BY	DATE
1	NO CHANGES THIS SHEET	NJB	2/17/22
3	Revised Work Section 1C and LOD of Work Sections 1C, 2 and 3.	NJB	1/23/23

DATE: JULY 2021
CAD STANDARDS VERSION: V8 2000
DESIGNED: NJB
TECHNICIAN: DTB
CHECKED: NJB

PN 2017-019 SJP-Oakcrest/Sheets/[03] ex conditions plan.dgn

MISS UTILITY NOTE

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DEVELOPER / APPLICANT

ST. JOHN PROPERTIES
2560 Lord Baltimore Drive
Baltimore, Maryland 21244
(410) 788-0100

ZONING CATEGORY: I (AE OVERLAY & PUD-IP OVERLAY)
W&S CATEGORY: W-3D / S-3D
TAX MAP / PARCEL: 34 / 292
GRID: 10
SITE DATUM: HORIZONTAL: NAD83 VERTICAL: NGVD88
LIBER/ FOLIO: 2105 / 042

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. 18558 EXPIRATION DATE: 1-12-22

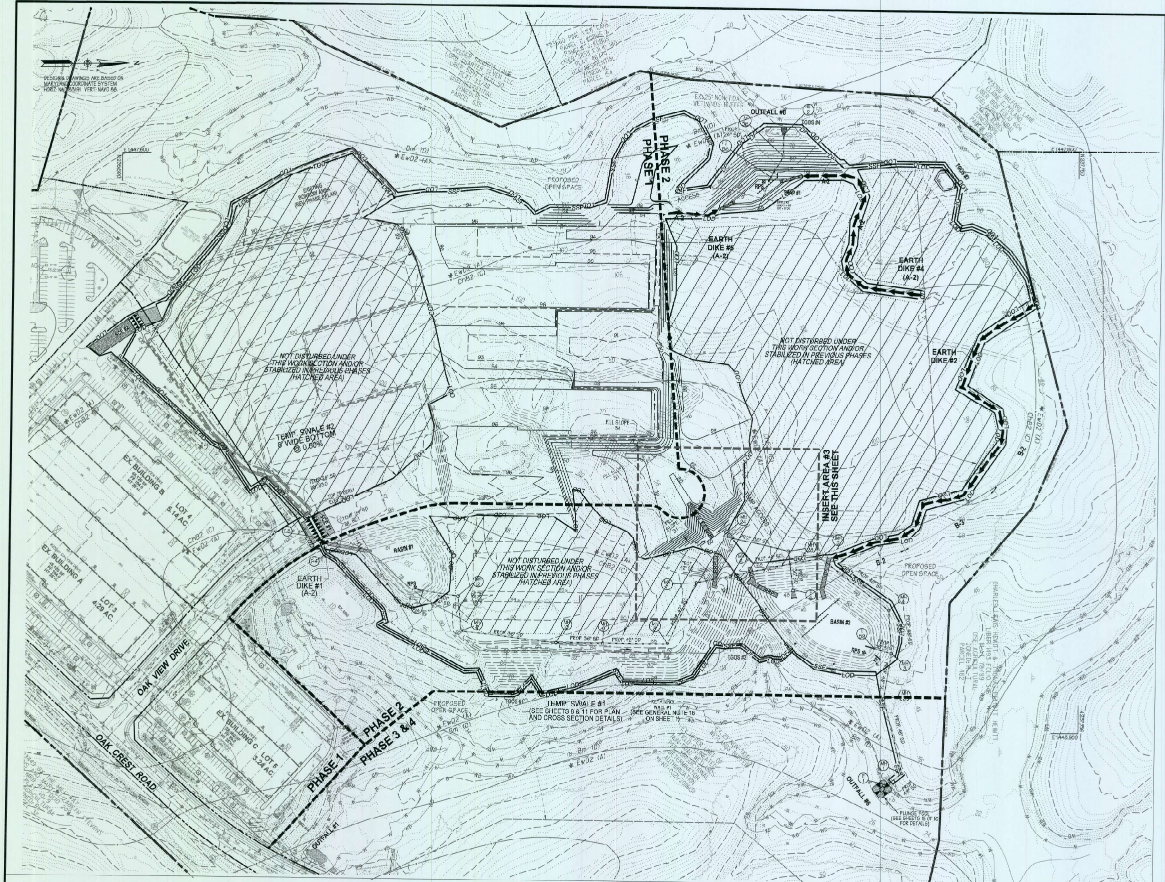
NICHOLAS JOSEPH BRADER III
No. 18558

Mass Grading Plan - REVISED Work Section 1C

MASS GRADING PLAN
OAK CREST CENTER
(REVISION TO P/O PHASE 1 & PHASE 2)
LEXINGTON EXCHANGE

ST. MARY'S COUNTY, MARYLAND
ELECTION DISTRICT: 8
FEBRUARY 17, 2022

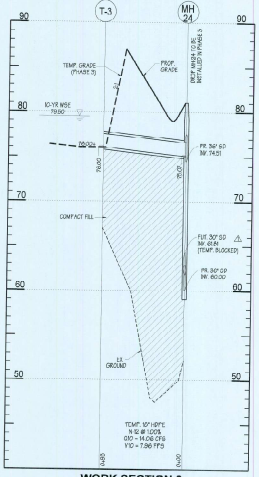
SCALE: AS SHOWN
MASS GRADING
SHEET 5 OF 16
PROJECT NO.


DESIGN & DRAWINGS ARE BASED ON MARYLAND COORDINATE SYSTEM HORIZ: NAD 83/91 VERT: NAVD 88
#23660 PINE VIEW LANE DANIEL C. KOBUS & PAMELA J. KOBUS LIBER 3459 FOLIO 180 PLAT 46/74 USE: RESIDENTIAL ZONED: RL PARCEL 154
REEDER SANDERS LANE LORD CHARTER SEVEN LLC LIBER 5542 FOLIO 50 PLAT 33/48 USE: RESIDENTIAL ZONED: RL PARCEL 635
#23700 HALFORD LANE ELAINE E. POLAND LIBER 1805 FOLIO 604 USE: AGRICULTURAL ZONED: RPD PARCEL 112
EXISTING BORROW AREA (REV. PHASE 1 PLAN)
PROPOSED OPEN SPACE
EX. 25' NON-TIDAL WETLANDS BUFFER
OUTFALL #8
TGOS #4
TGOS #3
TRAP #1
RPS
ACCESS
PHASE 2
PHASE 1
EARTH DIKE #5 (A-2)
EARTH DIKE #4 (A-2)
EARTH DIKE #2
EARTH DIKE #1 (A-2)
NOT DISTURBED UNDER THIS WORK SECTION AND/OR STABILIZED IN PREVIOUS PHASES (HATCHED AREA)
TEMP. SWALE #2 6' WIDE BOTTOM @ 0.50%
TEMP 24" SD INV. 93.0
TOP OF BERM ELEV. 99.0
TEMP 24" SD INV. 92.1
SCE #1
SCE #2
FILL SLOPE 3:1
INSERT AREA #3 SEE THIS SHEET
TEMP. ACCESS
BASIN #1
BASIN #2
TGOS #2
PROP. 36" SD
PROP. 42" SD
PROP. 48" SD
RETAINING WALL #1 (SEE GENERAL NOTE 16 ON SHEET 1)
TEMP. SWALE #1 (SEE SHEETS 8 & 11 FOR PLAN AND CROSS SECTION DETAILS)
EX. UPPER LIMIT OF FIELD DELINEATED NON-TIDAL WETLANDS PER JURISDICTIONAL DETERMINATION AUTHORIZATION #1-NT-0321/2016(3)
OUTFALL #6
PLUNGE POOL (SEE SHEETS 15 OF 16 FOR DETAILS)
CHARLES LEWIS HEWITT & THOMAS EDWARD HEWITT LIBER 1493 FOLIO 346 PLAT 78/99 USE: AGRICULTURAL ZONED: R-T PARCEL 182
EX. BUILDING B LOT 4 5.14 AC.
EX. BUILDING A LOT 3 4.29 AC.
EX. BUILDING C LOT 5 3.24 AC.
OAK VIEW DRIVE
OAK CREST ROAD
PHASE 2
PHASE 3 & 4
PHASE 1
OUTFALL #1
E 1,447,600
N 235,600
E 1,448,900
N 237,750

MASS GRADING PLAN - WORK SECTION 2

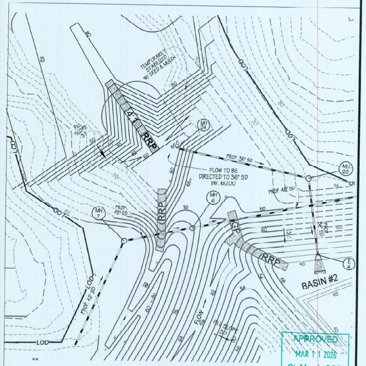
SCALE: 1" = 100'

REVISION #3
LOD = 17.3 AC (13.3 AC TO BE DISTURBED + 4.0 AC PERIMETER CONTROL MAINTENANCE)
CUT = 75,000 CY
FILL = 75,000 CY



WORK SECTION 3
TEMPORARY 24" STORM DRAIN PROFILE

SCALE: HORZ. 1" = 50'
VERT. 1" = 5'
(SEE SHEET 7 FOR STORM DRAIN PLAN AND SHEET 12 FOR PIPE & STRUCTURE SCHEDULE)


TEMPORARILY STABILIZED W/ SEED & MULCH
RRP
LOD
PROP. 42' SD
FLOW
FILL SLOPE 3:1
FLOW TO BE DIRECTED TO 36" SD
BASIN #2
E 4

INSERT AREA #3

SCALE: 1" = 50'

APPROVED
MAR 1 1 2026
St. Mary's SCD

NJB Engineering, Inc.
Civil Engineering Consulting

810 Gleneagles Court
Towson, Maryland 21286
Suite 311
410-832-7691

NO.	REVISIONS	BY	DATE
⚠	Revised future storm drain invert	NJB	2/17/22
3	Revised Work Section 1C and LOD of Work Sections 1C, 2 and 3.	NJB	1/23/23

DATE: JULY 2021
DESIGNED: NJB
CAD STANDARDS VERSION: V8 - 2000
TECHNICIAN: DTB
CHECKED: NJB

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MISS UTILITY NOTE

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DEVELOPER / APPLICANT

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ZONING CATEGORY: I (AE OVERLAY & PUD-IP OVERLAY)
W&S CATEGORY: W-3D / S-3D
TAX MAP / PARCEL 34 / 292
GRID 10
SITE DATUM HORIZONTAL: NAD83 VERTICAL: NGVD88
LIBER/ FOLIO 2105 / 042

PROFESSIONAL CERTIFICATION

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LICENSE NO. 18558
EXPIRATION DATE: 1-12-22

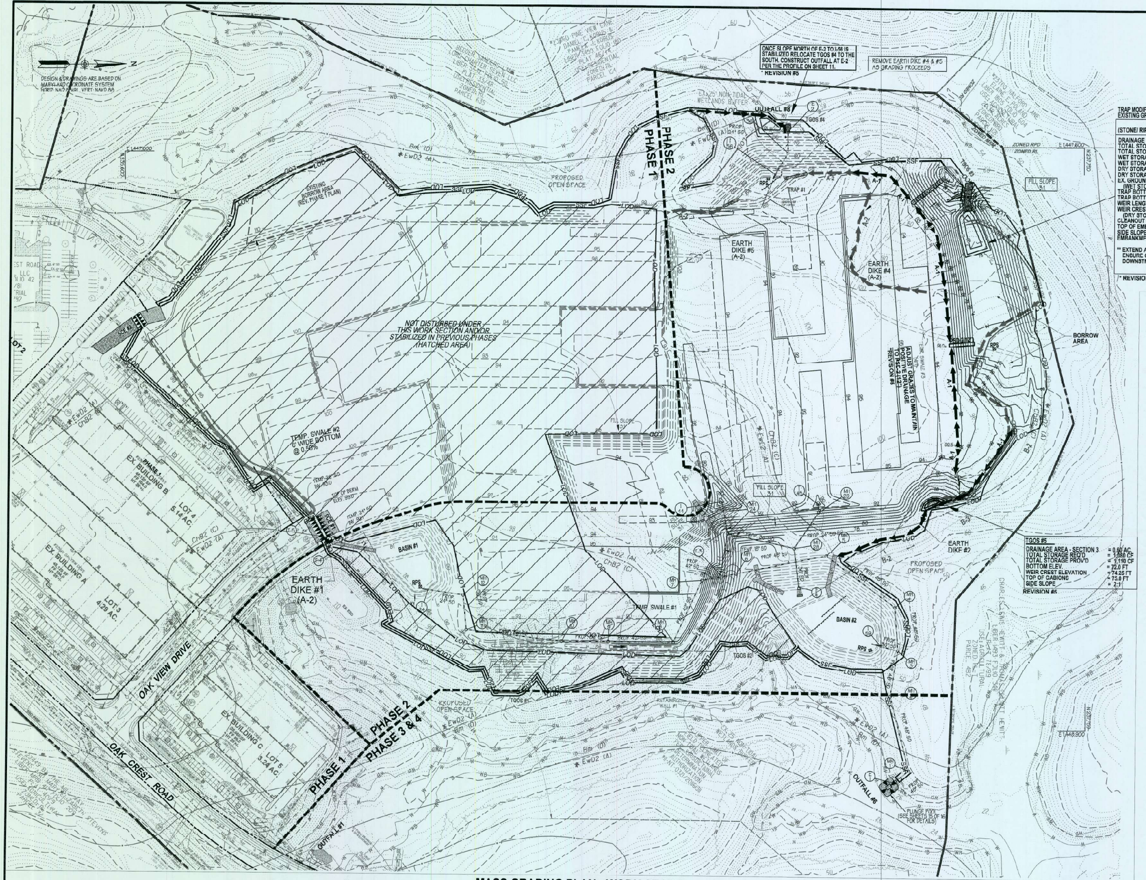
NICHOLAS JOSEPH BRADER III No. 18558

Mass Grading Plan - Work Section 2

MASS GRADING PLAN
OAK CREST CENTER
(REVISION TO P/O PHASE 1 & PHASE 2)
LEXINGTON EXCHANGE

ST. MARY'S COUNTY, MARYLAND
ELECTION DISTRICT: 8
FEBRUARY 17, 2022

SCALE: AS SHOWN
MASS GRADING
SHEET 6 OF 16
PROJECT NO



ONCE SLOPE NORTH OF E-2 TO I-56 IS STABILIZED RELOCATE TGOS #4 TO THE SOUTH. CONSTRUCT OUTFALL AT E-2 PER THE PROFILE ON SHEET 11.
* REVISION #5

REMOVE EARTH DIKE #4 & #5 AS GRADING PROCEEDS

TRAP MODIFIED WITH REDLINED REVISION #5
EXISTING GRADES IN BLUE REFLECT FIELD CHANGES,

SEDIMENT TRAP # 2
(STONE/ RIPRAP OUTLET SEDIMENT TRAP ST-II)

DRAINAGE AREA - SECTION 3	= 4.0 AC.
TOTAL STORAGE REQ'D	= 14,400 CF
TOTAL STORAGE PROV'D	= 15,960 CF
WET STORAGE REQUIRED	= 7,200 CF
WET STORAGE PROVIDED	= 7,410 CF
DRY STORAGE REQUIRED	= 7,200 CF
DRY STORAGE PROVIDED	= 8,550 CF
EX. GROUND ELEV @ OUTLET (WET STORAGE ELEV.)	= 71.0 FT **
TRAP BOTTOM ELEV.	= 68.0 FT
TRAP BOTTOM DIMENSIONS	= 70' x 26'
WEIR LENGTH	= 16 FT
WEIR CREST ELEVATION (DRY STORAGE)	= 71.0 FT
CLEANOUT ELEVATION	= 69.50 FT
TOP OF EMBANKMENT	= 74.0 FT
SIDE SLOPE	= 3:1
EMBANKMENT TOP WIDTH	= 4.0 FT

** EXTEND APRON TO ELEV. 67.0 +/- TO ENSURE OUTFLOW IS DIRECTED DOWNSTREAM OF TGOS # 3

* REVISION #5

TGOS #5

DRAINAGE AREA - SECTION 3	= 0.60 AC.
TOTAL STORAGE REQ'D	= 1,080 CF
TOTAL STORAGE PROV'D	= 1,110 CF
BOTTOM ELEV.	= 72.0 FT
WEIR CREST ELEVATION	= 74.25 FT
TOP OF GABIONS	= 75.0 FT
SIDE SLOPE	= 2:1

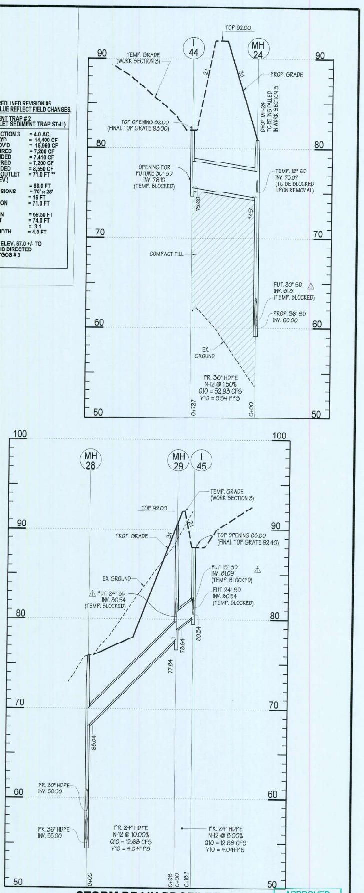
REVISION #5

MASS GRADING PLAN - WORK SECTION 3

SCALE: 1" = 100'

LOD = ~~21.3~~ 22.4 AC (~~16.3~~ 17.4 AC TO BE DISTURBED + 5.0 AC PERIMETER CONTROL MAINTENANCE)
CUT = 94,000 CY
FILL = 94,000 CY

THESE REDLINED REVISIONS SUPERSEDE THE ORIGINAL DESIGN (REV #5)


I 44
MH 24
TOP 93.00
TEMP. GRADE (WORK SECTION 3)
PROP. GRADE
TOP OPENING 85.00 (FINAL TOP GRATE 93.00)
OPENING FOR FUTURE 30" SD INV. 76.10 (TEMP. BLOCKED)
PROP. MH-36 TO BE INSTALLED IN WORK SECTION 3
TEMP. 18" SD INV. 75.07 (TO BE BLOCKED UPON REMOVAL)
COMPACT FILL
FUT. 30" SD INV. 61.01 (TEMP. BLOCKED)
PROP. 36" SD INV. 60.00
EX. GROUND
PR. 36" HDPE N-12 @ 1.50% Q10 = 52.93 CFS V10 = 9.04 FPS
MH 28
MH 29
I 45
TEMP. GRADE (WORK SECTION 3)
TOP 90.00
PROP. GRADE
TOP OPENING 85.00 (FINAL TOP GRATE 92.40)
EX. GROUND
FUT. 24" SD INV. 80.54 (TEMP. BLOCKED)
FUT. 15" SD INV. 81.09 (TEMP. BLOCKED)
FUT. 24" SD INV. 80.54 (TEMP. BLOCKED)
PR. 30" HDPE INV. 55.50
PR. 36" HDPE INV. 55.00
PR. 24" HDPE N-12 @ 10.00% Q10 = 12.68 CFS V10 = 4.04FPS
PR. 24" HDPE N-12 @ 8.00% Q10 = 12.68 CFS V10 = 4.04FPS
50
60
70
80
90
100

STORM DRAIN PROFILES

SCALE: HORZ. 1" = 50'
VERT. 1" = 5'
(SEE SHEET 12 FOR PIPE AND STRUCTURE SCHEDULE)

APPROVED
MAR 1 1 2026
St. Mary's SCD

NJB Engineering, Inc.
Civil Engineering Consulting
810 Gleneagles Court
Suite 311
Towson, Maryland 21286
410-832-7691

NO.	REVISIONS	BY	DATE
1	Added / revised future storm drain connections	NJB	2/17/22
4	REFLECT REVISED GRADING WORK SECTION 3 - PER FIELD SURVEY	N.B.	1/9/2024
5	REVISE PER FIELD MEETING 4/15/24:MOVE OUTFALL TRAP #2, ADJ. TGOS #4 & ADD TGOS #5	N.B.	4/16/2024

DATE: JULY 2021
CAD STANDARDS VERSION: V8 - 2000
DESIGNED: NJB
TECHNICIAN: DTB
CHECKED: NJB

PN 2017-019 SJP-Oakcrest/Sheets/[03] ex conditions plan.dgn

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(410) 788-0100

ZONING CATEGORY: I (AE OVERLAY & PUD-IP OVERLAY)	W&S CATEGORY: W-3D / S-3D
TAX MAP / PARCEL 34 / 292	GRID 10
SITE DATUM HORIZONTAL: NAD83 VERTICAL: NGVD88	LIBER/ FOLIO 2105 / 042

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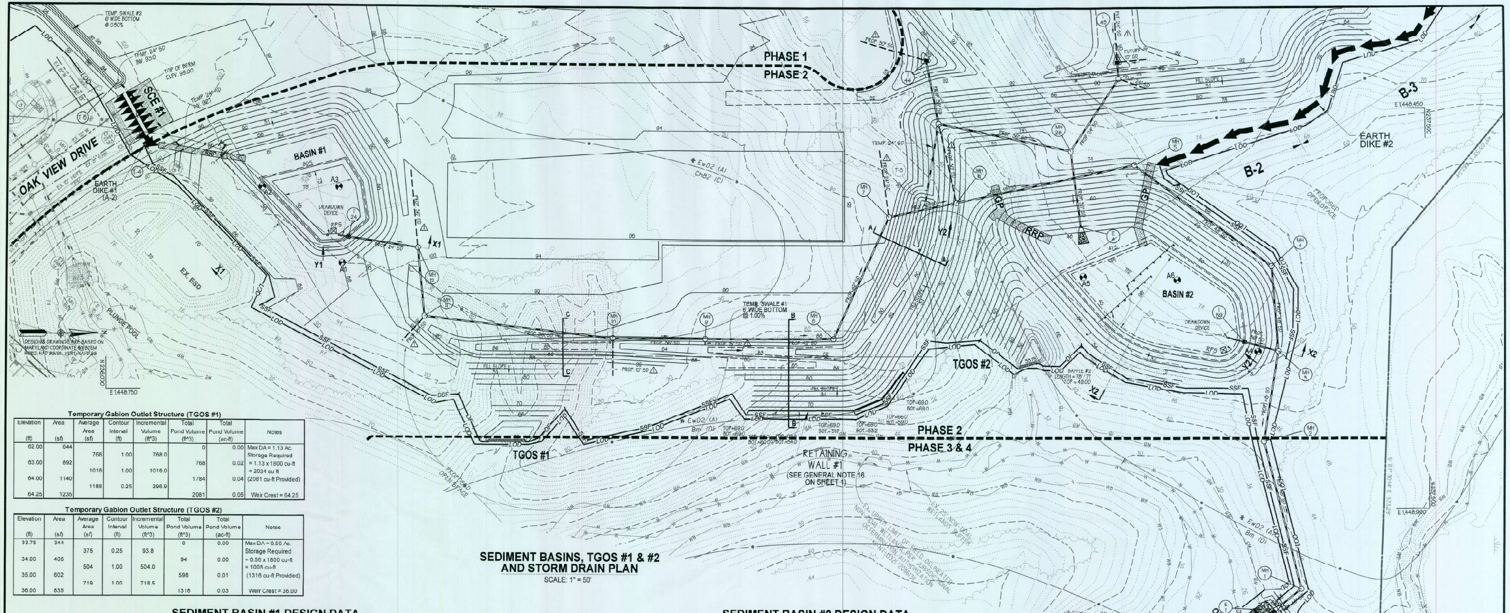
No. 18558
NICHOLAS JOSEPH BRADEY III

Mass Grading Plan - Work Section 3

MASS GRADING PLAN
OAK CREST CENTER
(REVISION TO P/O PHASE 1 & PHASE 2)
LEXINGTON EXCHANGE

ST. MARY'S COUNTY, MARYLAND
ELECTION DISTRICT: 8
FEBRUARY 17, 2022

SCALE: AS SHOWN
MASS GRADING
SHEET 7 OF 16
PROJECT NO.


PHASE 1
PHASE 2
PHASE 2
PHASE 3 & 4
BASIN #1
BASIN #2
TGOS #1
TGOS #2
OAK VIEW DRIVE
SCE #1
EARTH DIKE #1 (A-2)
EARTH DIKE #2
B-2
B-3
TEMP. SWALE #2 6' WIDE BOTTOM @ 0.50%
TEMP. SWALE #1 6' WIDE BOTTOM @ 1.00%
DRAWDOWN DEVICE
EX. SSD
PLUNGE POOL
X1
Y1
X2
Y2
RRP
RETAINING WALL #1 (SEE GENERAL NOTE 16 ON SHEET 1)
OUTFALL #6
PLUNGE POOL (SEE SHEETS 15 OF 16 FOR DETAILS)
UPPER LIMIT OF FIELD DELINEATED TIDAL WETLANDS PER JURISDICTIONAL DETERMINATION AUTHORIZATION #1-NT-0321-20161311
NON-TIDAL WETLANDS BUFFER
DESIGN & DRAWINGS ARE BASED ON MARYLAND COORDINATE SYSTEM HORIZ. NAD 83/01 VERT. NAVD 88
N 236000
E 1448,750
E 1448,450
E 1448,950
LOD
SSF

SEDIMENT BASINS, TGOS #1 & #2 AND STORM DRAIN PLAN

SCALE: 1" = 50'

Temporary Gabion Outlet Structure (TGOS #1)

Elevation (ft)	Area (sf)	Average Area (sf)	Contour Interval (ft)	Incremental Volume (ft^3)	Total Pond Volume (ft^3)	Total Pond Volume (ac-ft)	Notes
62.00	644				0	0.00	Max DA = 1.13 Ac.
		768	1.00	768.0			Storage Required
63.00	892				768	0.02	= 1.13 x 1800 cu-ft
		1016	1.00	1016.0			= 2034 cu ft
64.00	1140				1784	0.04	(2081 cu-ft Provided)
		1188	0.25	296.9			
64.25	1235				2081	0.05	Weir Crest = 64.25

Temporary Gabion Outlet Structure (TGOS #2)

Elevation (ft)	Area (sf)	Average Area (sf)	Contour Interval (ft)	Incremental Volume (ft^3)	Total Pond Volume (ft^3)	Total Pond Volume (ac-ft)	Notes
33.75	344				0	0.00	Max DA = 0.56 Ac.
		375	0.25	93.8			Storage Required
34.00	406				94	0.00	= 0.56 x 1800 cu-ft
		504	1.00	504.0			= 1008 cu-ft
35.00	602				598	0.01	(1316 cu-ft Provided)
		719	1.00	718.5			
36.00	835				1316	0.03	Weir Crest = 36.00

SEDIMENT BASIN #1 DESIGN DATA

Table G.6: Temporary Sediment Basin Design Data Sheet

(Refer to instructions on pages G27 through G29)

Computed by PFL Date: 7/28/2021 Checked by: ____ Date: ____
Project name: Oak Crest Center Phase 2 Basin # : 1
Location: St. Mary's County

Design Volumes and Elevations

1. Total area draining to basin = 7.30 acres (ac)
2. Required total storage volume = 3600 ft^3/ac x 7.30 acres drainage area = 26,280 ft^3
3. Required wet storage volume = 1800 ft^3/ac x 7.30 acres drainage area = 13,140 ft^3
4. Required dry storage volume = 1800 ft^3/ac x 7.30 acres drainage area = 13,140 ft^3
5. Basin bottom elevation = 78.00 ft
6. Riser or weir crest (total storage) elevation = 83.00 ft.
7. Provided total storage volume = 43134 ft^3
8. Wet storage (permanent pool/ drawdown) elevation = 80.50 ft.
9. Provided wet storage volume = 14802 ft^3
10. Provided dry storage volume = 28333 ft^3
11. Basin cleanout elevation (located at 1/2 wet storage depth) 79.25 ft.
12. Distance from riser crest elevation to cleanout elevation = 3.75 ft.

Surface Area Design

13. Q_{10} = 21.4 cfs. (peak discharge from 10 yr, 24 hr storm event, attach computations)
14. Minimum basin surface area >= 0.0035 x Q_{10} = 0.0749 ac. <= 0.163 ac.
Required Provided

Principal Spillway (Qps)

(See Figure G.1)

15. Design Qps for barrel = 21.4 cfs. (min. 10% of Q_{10})
16. Barrel head H = 6.13 ft. ; Barrel length 83.00 ft.
17. Barrel Diam. 24 in. Note: Qps must equal or exceed Design Qps.
Qps = Q (from Table 13 or 14) 36.86 x (length correction factor) 0.96 = 35.39 cfs.
18. Riser Diameter = see plan ; Riser Height 7 ft.; Riser Head (h) = 0.79 ft.
19. Trash Rack Diameter see plan in. Trash Rack Height = 12 in.

Emergency Spillway (Qes)

(See Figure G.3 and G.4)

20. Emergency spillway capacity Qes = Q10 - Qps = N/A = ____ cfs.
21. Width ____ ft.; Hp ____ ft.
22. Exit channel slope ____ %
23. Emergency Spillway Crest = ____ %
24. Design High Water = 83.79 ft
25. Settled top of embankment elevation 86.00 ft.

Anti-Seep Collar Design (If required)

(See Figure G.5 and G.6)

26. y = ft.; z= ____ : 1; pipe slope = ____ %; Ls = ____ ft.
27. Use collars x isquare; projection = ____ ft.

Draw down Device

(See Figure G.10 and Details G-2-6 and G-2-7)

28. $Q_{d\text{-}d}$ = 0.79 cfs
29. Calculated A_0 = 0.13 ft^2
30. Calculated d_0 = 4.82 in.
31. Maximum diameter from Table G.10 = 4 in.
32. Design d_0 = smaller of line 30 or 31 = 4 in.
33. Draw-down device pipe diameter = 8 in.
34. Minimum At = total area of perforations = $4A_0$ = 0.51 ft^2
35. Perforation diameter = 1.0 in.
36. Minimum number of perforations = 93
37. Number of longitudinal rows = 4
38. Perforated pipe length = 12 ft.
39. Actual At = (0.0055 ft^2) x (line 37 − 0.5 ft) x (line 38) = 0.52 ft^2 (must be >= line 34)

Baffle Board Design

(See Details G-2-4)

40. A = surface area at wet storage elevation = 7097 ft^2
41. Effective width, We = $(A/2)^{1/2}$ = 60 ft.
42. Flow length from inflow point to outlet = 150 ft.
43. If line 42 is less than We x 2, provide baffle boards to lengthen flow path
44. Effective flow length Le = L1 + L2 + L3 = ft (must be >= We x2 = 119 ft)

SEDIMENT BASIN #2 DESIGN DATA

Table G.6: Temporary Sediment Basin Design Data Sheet

(Refer to instructions on pages G27 through G29)

Computed by PFL Date: 6/24/2021 Checked by: ____ Date: ____
Project name: Oak Crest Center Phase 2 Basin # : 2
Location: St. Mary's County

Design Volumes and Elevations

1. Total area draining to basin = 26.20 acres (ac)
2. Required total storage volume = 3600 ft^3/ac x 26.20 acres drainage area = 94,320 ft^3
3. Required wet storage volume = 1800 ft^3/ac x 26.20 acres drainage area = 47,160 ft^3
4. Required dry storage volume = 1800 ft^3/ac x 26.20 acres drainage area = 47,160 ft^3
5. Basin bottom elevation = 45.00 ft.
6. Riser or weir crest (total storage) elevation = 50.00 ft.
7. Provided total storage volume = 98085 ft^3
8. Wet storage (permanent pool/ drawdown) elevation = 48.00 ft.
9. Provided wet storage volume = 50527 ft^3
10. Provided dry storage volume = 47558 ft^3
11. Basin cleanout elevation (located at 1/2 wet storage depth) 46.50 ft.
12. Distance from riser crest elevation to cleanout elevation = 3.50 ft.

Surface Area Design

13. Q_{10} = 71.6 cfs. (peak discharge from 10 yr, 24 hr storm event, attach computations)
14. Minimum basin surface area >= 0.0035 x Q_{10} = 0.251 ac. <= 0.502 ac.
Required Provided

Principal Spillway (Qps)

(See Figure G.1)

15. Design Qps for barrel = 71.6 cfs. (min. 10% of Q_{10})
16. Barrel head H = 5.83 ft. ; Barrel length L = 40 ft.
17. Barrel Diam. 36 in. (min. 10 inch)
Qps = Q (from Table G.7 or G.8) 86.4 x (length correction factor) 1.05 = 90.72 cfs.
Note: Qps must equal or exceed Design Qps
18. Riser Dia. = see plan Riser Height = 7.83 ft.; Riser Head (h) = 1.83 ft.
19. Trash Rack Diameter see plan in. Trash Rack Height = 24 in.

Emergency Spillway (Qes)

(See Figure G.3 and G.4)

20. Emergency spillway capacity Qes = Q10 - Qps = N/A = ____ cfs.
21. Width N/A ft.; Hp N/A ft.
22. Exit channel slope N/A %
23. Emergency Spillway Crest = N/A %
24. Design High Water = 51.83 ft
25. Settled top of embankment elevation 54.00 ft.

Anti-Seep Collar Design (If required)

(See Figure G.5 and G.6)

26. y = ft.; z= ____ : 1; pipe slope = ____ %; Ls = ____ ft.
27. collars projection = ____ ft.

Draw-down Device

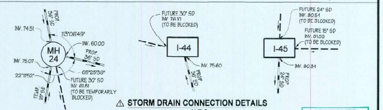
(See Figure G.10 and Details G-2-6 and G-2-7)

28. $Q_{d\text{-}d}$ = 1.32 cfs
29. Calculated A_0 = 0.24 ft^2
30. Calculated d_0 = 6.60 in.
31. Maximum diameter from Table G.10 = 8.00 in.
32. Design d_0 = smaller of line 30 or 31 = 7.00 in.
33. Draw-down device pipe diameter = 12 in.
34. Minimum At = total area of perforations = $4A_0$ 1.07 ft^2
35. Perforation diameter = 1.0 in.
36. Minimum number of perforations = 196
37. Number of longitudinal rows = 6
38. Perforated pipe length = 17 ft.
39. Actual At = (0.0055 ft^2) x (line 37 = 0.5 ft) x (line 38) = 1.11 ft^2 (must be >= line 34)

Baffle Board Design

(See Details G-2-4)

40. A = surface area at wet storage elevation = 21876 ft^2
41. Effective width, We = (A / 2)1/2 = 104.6 ft.
42. Flow length from inflow point to outlet = 166 ft.
43. If line 42 is less than We x 2, provide baffle boards to lengthen flow path
44. Effective flow length Le = L1 + L2 + L3 = 216 ft (must be >= We x2 = 209.2 ft)


PROP. 36" SD
INV. 74.51
113°06'49"
INV. 60.00
PROP. 36" SD
MH 24
INV. 75.07
65°25'39"
22°11'52"
FUTURE 30" SD INV. 61.81 (TO BE TEMPORARILY BLOCKED)
TEMP. 18" SD
FUTURE 30" SD INV. 76.10 (TO BE BLCOKED)
I-44
INV. 75.60
PROP. 36" SD
FUTURE 24" SD INV. 80.51 (TO BE BLCOKED)
FUTURE 15" SD INV. 81.09 (TO BE BLCOKED)
I-45
INV. 80.31
PROP. 24" SD

⚠ STORM DRAIN CONNECTION DETAILS
N.T.S.

APPROVED
MAR 1 1 2026
St. Mary's SCD

NJB Engineering, Inc.
Civil Engineering Consulting

810 Gleneagles Court
Towson, Maryland 21286
Suite 311
410-832-7691

NO.	REVISIONS	BY	DATE
1	Added storm drain connection details and future storm drains.	NJB	2/17/22

DATE: JULY 2021 CAD STANDARDS VERSION: V8 - 2000
DESIGNED: NJB TECHNICIAN: DTB CHECKED: NJB

MISS UTILITY NOTE

INFORMATION CONCERNING EXISTING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND UTILITY CROSSINGS BY DIGGING TEST PITS BY HAND, WELL IN ADVANCE OF THE START OF EXCAVATION. CONTACT "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF EXCAVATION. IF CLEARANCES ARE LESS THAN SHOWN ON THIS PLAN OR TWELVE (12) INCHES, WHICHEVER IS LESS, CONTACT THE ENGINEER AND THE UTILITY COMPANY BEFORE PROCEEDING WITH CONSTRUCTION. CLEARANCES LESS THAN NOTED MAY REQUIRE REVISIONS TO THIS PLAN.

DEVELOPER / APPLICANT

ST. JOHN PROPERTIES
2560 Lord Baltimore Drive
Baltimore, Maryland 21244
(410) 788-0100

ZONING CATEGORY: I (AE OVERLAY & PUD-IP OVERLAY)	W&S CATEGORY: W-3D / S-3D
TAX MAP / PARCEL 34 / 292	GRID 10
SITE DATUM HORIZONTAL: NAD83 VERTICAL: NGVD88	LIBER/ FOLIO 2105 / 042

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. 18558 EXPIRATION DATE: 1-12-20

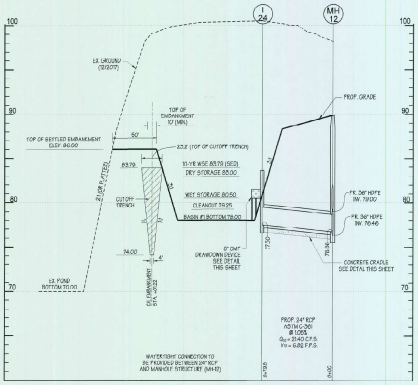
NICHOLAS JOSEPH BRABER III No. 18558

Sediment Basin and Storm Drain Plan

MASS GRADING PLAN
OAK CREST CENTER
(REVISION TO P/O PHASE 1 & PHASE 2)
LEXINGTON EXCHANGE

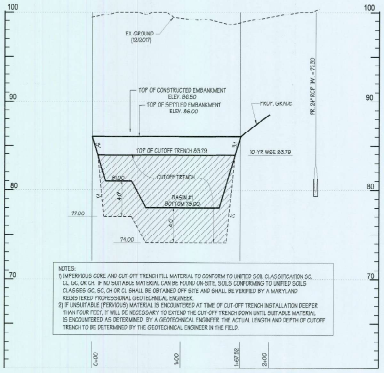
ST. MARY'S COUNTY, MARYLAND
ELECTION DISTRICT: 8
FEBRUARY 17, 2022

SCALE: AS SHOWN
MASS GRADING
SHEET 8 OF 16
PROJECT NO.


I 24
MH 12
100
90
80
70
EX. GROUND (12/2017)
PROP. GRADE
TOP OF EMBANKMENT 10' (MIN.)
50'
TOP OF SETTLED EMBANKMENT ELEV. 86.00
25.2' (TOP OF CUTOFF TRENCH)
83.79
10-YR WSE 83.79 (SED)
DRY STORAGE 83.00
WET STORAGE 80.50
CLEANOUT 79.25
BASIN #1 BOTTOM 78.00
2:1 (OR FLATTER)
CUTOFF TRENCH
3:1
1:1
74.00
4'
C/L EMBANKMENT STA. +01.22
EX. POND BOTTOM 70.00
8" CMP DRAWDOWN DEVICE SEE DETAIL THIS SHEET
77.50
76.36
PR. 36" HDPE INV. 79.00
PR. 36" HDPE INV. 76.46
CONCRETE CRADLE SEE DETAL THIS SHEET
PROP. 24" RCP ASTM C-361 @ 1.05% Q10 = 21.40 C.F.S. V10 = 6.82 F.P.S.
WATERTIGHT CONNECTION TO BE PROVIDED BETWEEN 24" RCP AND MANHOLE STRUCTURE (MH-12)
0+79.8
0+00

BASIN #1 PRINCIPAL SPILLWAY PROFILE (X1 - X1)

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

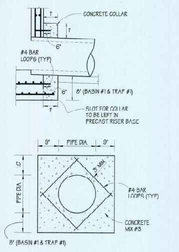


NOTES:
1) IMPERVIOUS CORE AND CUT-OFF TRENCH FILL MATERIAL TO CONFORM TO UNIFIED SOIL CLASSIFICATION SC, CL, GC, OR CH. IF NO SUITABLE MATERIAL CAN BE FOUND ON-SITE, SOILS CONFORMING TO UNIFIED SOILS CLASSES GC, SC, CH OR CL SHALL BE OBTAINED OFF SITE AND SHALL BE VERIFIED BY A MARYLAND REGISTERED PROFESSIONAL GEOTECHNICAL ENGINEER.
2) IF UNSUITABLE (PERVIOUS) MATERIAL IS ENCOUNTERED AT TIME OF CUT-OFF TRENCH INSTALLATION DEEPER THAN FOUR FEET, IT WILL BE NECESSARY TO EXTEND THE CUT-OFF TRENCH DOWN UNTIL SUITABLE MATERIAL IS ENCOUNTERED AS DETERMINED BY A GEOTECHNICAL ENGINEER. THE ACTUAL LENGTH AND DEPTH OF CUTOFF TRENCH TO BE DETERMINED BY THE GEOTECHNICAL ENGINEER IN THE FIELD.

BASIN #1 PROFILE ALONG CENTER LINE OF EMBANKMENT (Y1 - Y1)

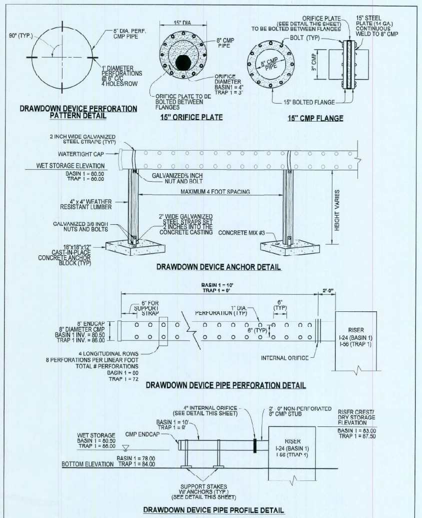
SCALE: HORZ. 1" = 50'
VERT. 1" = 5'

THE SEAL BETWEEN THE PIPE AND THE RISER SHALL BE WATERTIGHT



CONCRETE COLLAR DETAIL

N.T.S.


90° (TYP.)
8" DIA. PERF. CMP PIPE
1' DIAMETER PERFORATIONS @ 6" C/C 4 HOLES/ROW
15" DIA
8" CMP PIPE
ORIFICE DIAMETER BASIN1 = 4" TRAP 1 = 3"
ORIFICE PLATE TO BE BOLTED BETWEEN FLANGES
ORIFICE PLATE (SEE DETAIL THIS SHEET) TO BE BOLTED BETWEEN FLANGES
15" STEEL PLATE (14 GA.) CONTINUOUS WELD TO 8" CMP
BOLT (TYP)
8" CMP PIPE
3" CMP
15" BOLTED FLANGE
2 INCH WIDE GALVANIZED STEEL STRAPS (TYP)
WATERTIGHT CAP
WET STORAGE ELEVATION BASIN 1 - 80.50 TRAP 1 - 86.00
GALVANIZED⅜ INCH NUT AND BOLT
MAXIMUM 4 FOOT SPACING
4" x 4" WEATHER RESISTANT LUMBER
GALVANIZED 3/8 INCH NUTS AND BOLTS
2" WIDE GALVANIZED STEEL STRAPS SET 2 INCHES INTO THE CONCRETE CASTING
CONCRETE MIX #3
HEIGHT VARIES
18"x18"x12" CAST-IN-PLACE CONCRETE ANCHOR BLOCK (TYP)
BASIN 1 = 10' TRAP 1 = 9'
2'-0"
6" FOR SUPPORT STRAP
1" DIA. PERFORATION (TYP)
6" (TYP)
8" ENDCAP 8" DIAMETER CMP BASIN 1 INV. = 80.50 TRAP 1 INV. = 86.00
6" (TYP)
RISER I-24 (BASIN 1) I-56 (TRAP 1)
4 LONGITUDINAL ROWS 8 PERFORATIONS PER LINEAR FOOT TOTAL # PERFORATIONS BASIN 1 = 80 TRAP 1 = 72
INTERNAL ORIFICE
4" INTERNAL ORIFICE (SEE DETAIL THIS SHEET)
2' - 0" NON-PERFORATED 8" CMP STUB
RISER CREST/ DRY STORAGE ELEVATION BASIN 1 = 83.00 TRAP 1 = 87.50
BASIN 1 = 10' TRAP 1 = 9'
CMP ENDCAP
WET STORAGE BASIN 1 = 80.50 TRAP 1 = 86.00
RISER I-24 (BASIN 1) I-56 (TRAP 1)
BOTTOM ELEVATION BASIN 1 = 78.00 TRAP 1 = 84.00
SUPPORT STAKES W/ ANCHORS (TYP.) (SEE DETAIL THIS SHEET)

DRAWDOWN DEVICE PERFORATION PATTERN DETAIL

15" ORIFICE PLATE

15" CMP FLANGE

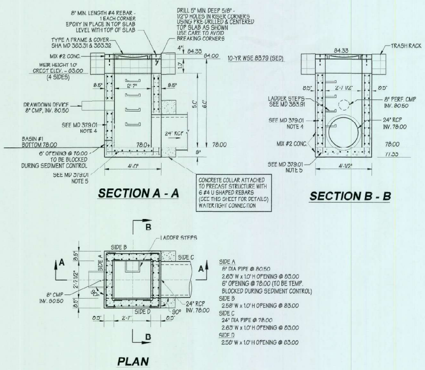
DRAWDOWN DEVICE ANCHOR DETAIL

DRAWDOWN DEVICE PIPE PERFORATION DETAIL

DRAWDOWN DEVICE PIPE PROFILE DETAIL

HORIZONTAL DRAWDOWN DEVICE DETAIL SEDIMENT BASIN #1 & TRAP #1

NOT TO SCALE

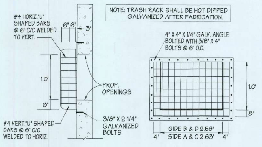

8" MIN. LENGTH #4 REBAR - 1 EACH CORNER EPOXY IN PLACE IN TOP SLAB LEVEL WITH TOP OF SLAB
DRILL 5" MIN. DEEP 5/8" - 1/2"D HOLES IN RISER CORNERS USING PRE-DRILLED & CENTERED TOP SLAB AS SHOWN USE CARE TO AVOID BREAKING CORNERS
TYPE A FRAME & COVER SHA MD 383.31 & 383.32
MIX #2 CONC.
WEIR HEIGHT 1.0' CREST ELEV. - 83.00 (4 SIDES)
4"
84.33
84.00
10-YR WSE 83.79 (SED)
1.0'
8.5"
2' 7"
8.5"
5.0'
6.0'
DRAWDOWN DEVICE 8" CMP, INV. 80.50
SEE MD 379.01 NOTE 4
24" RCP
BASIN #1 BOTTOM 78.00
78.0+
78.00
8"
6" OPENING @ 78.00 TO BE BLOCKED DURING SEDIMENT CONTROL
4'-0"
SEE MD 379.01 NOTE 5
CONCRETE COLLAR ATTACHED TO PRECAST STRUCTURE WITH 6 #4 U SHAPED REBARS (SEE THIS SHEET FOR DETAILS) WATERTIGHT CONNECTION
SECTION A - A
84.33
TRASH RACK
8.5"
2'-7 1/2"
8.5"
LADDER STEPS SEE MD 383.91
8" PERF. CMP INV. 80.50
SEE MD 379.01 NOTE 4
24" RCP INV. 78.00
MIX #2 CONC.
78.00
77.33
SEE MD 379.01 NOTE 5
4'-1/2"
SECTION B - B
B
LADDER STEPS
SIDE B
SIDE A
SIDE C
SIDE D
A
A
3.5"
2'-7 1/2"
8.5"
8" CMP INV. 80.50
90°
24" RCP INV. 78.00
8.5"
2'-7"
8.5"
B
PLAN

SIDE A
8" DIA PIPE @ 80.50
2.63' W x 1.0' H OPENING @ 83.00
6" OPENING @ 78.00 (TO BE TEMP. BLOCKED DURING SEDIMENT CONTROL)
SIDE B
2.58' W x 1.0' H OPENING @ 83.00
SIDE C
24" DIA PIPE @ 78.00
2.63' W x 1.0' H OPENING @ 83.00
SIDE D
2.58' W x 1.0' H OPENING @ 83.00

RELEASE STRUCTURE DETAILS (I-24)

MODIFIED TYPE S INLET
(REFER TO SHA STD. MD 379.01)
SCALE: 1" = 3'

NOTE: TRASH RACK SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.


#4 HORIZ."U" SHAPED BARS @ 6" C/C WELDED TO VERT.
6" 6"
3"
1.0'
8"
PROP. OPENINGS
#4 VERT."U" SHAPED BARS @ 6" C/C WELDED TO HORIZ.
3/8" X 2 1/4" GALVANIZED BOLTS
4" X 4" X 1/4" GALV. ANGLE BOLTED WITH 3/8" X 4" BOLTS @ 6" O.C.
1.0'
8"
SIDE B & D 2.58'
4"
SIDE A & C 2.63'
4"

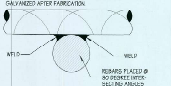
SIDE VIEW

FRONT VIEW

TYPICAL TRASH RACK DETAILS

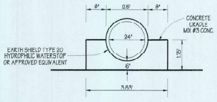
N.T.S.

NOTE:
NO RUST SHALL BE PERMITTED ON REBAR SURFACES TO BE WELDED. ALL WELDED CONNECTIONS MUST BE HOT DIPPED GALVANIZED AFTER FABRICATION.



TRASH RACK WELDING DETAIL

N.T.S.

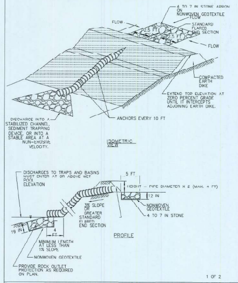

8"
2.5'
8"
CONCRETE CRADLE MIX #3 CONC.
24"
EARTH SHIELD TYPE 20 HYDROPHILIC WATERSTOP OR APPROVED EQUIVALENT
1.75'
6"
3.83'

BASIN #1 CONCRETE CRADLE

N.T.S.

DETAIL D-1 PIPE SLOPE DRAIN	STANDARD SYMBOL PSD - 12 DESIGNATION PSD-12 REFERS TO 12 IN PIPE SLOPE DRAIN.

DETAIL ADDED W/REVISION #5


4 TO 7 IN STONE APRON ON NONWOVEN GEOTEXTILE
FLOW
FLOW
2.5 FT
2.5 FT
STANDARD FLARED END SECTION
FLOW
COMPACTED EARTH DIKE
EXTEND TOP ELEVATION AT ZERO PERCENT GRADE UNTIL IT INTERCEPTS ADJOINING EARTH DIKE.
DISCHARGE INTO A STABILIZED CHANNEL, SEDIMENT TRAPPING DEVICE, OR INTO A STABLE AREA AT A NON-EROSIVE VELOCITY.
ANCHORS EVERY 10 FT
ISOMETRIC VIEW
DISCHARGES TO TRAPS AND BASINS MUST ENTER AT OR ABOVE WET POOL ELEVATION
5 FT
HEIGHT = PIPE DIAMETER X 2 (MAX. 4 FT)
12 IN
NONWOVEN GEOTEXTILE
4 TO 7 IN STONE
3% SLOPE OR GREATER
STANDARD FLARED END SECTION
19 IN
4 FT
MINIMUM LENGTH AT LESS THAN 1% SLOPE
NONWOVEN GEOTEXTILE
PROVIDE ROCK OUTLET PROTECTION AS REQUIRED ON PLAN.
PROFILE

1 OF 2

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.

APPROVED
MAR 1 1 2026
St. Mary's SCD

2 OF 2

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

NJB Engineering, Inc.
Civil Engineering Consulting

810 Gleneagles Court
Towson, Maryland 21286
Suite 311
410-832-7691

NO.	REVISIONS	BY	DATE
1	NO CHANGES THIS SHEET	NJB	2/17/22
5	PIPE SLOPE DRAIN ADDED THIS SHEET	NJB	4/16/24

DATE: JULY 2021	CAD STANDARDS VERSION: V8 - 2000	
DESIGNED: NJB	TECHNICIAN: DTB	CHECKED: NJB

MISS UTILITY NOTE

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DEVELOPER / APPLICANT

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Baltimore, Maryland 21244
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ZONING CATEGORY: I (AE OVERLAY & PUD-IP OVERLAY)	W&S CATEGORY: W-3D / S-3D
TAX MAP / PARCEL 34 / 292	GRID 10
SITE DATUM HORIZONTAL: NAD83 VERTICAL: NGVD88	LIBER/ FOLIO 2105 / 042

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LICENCE NO. 18558
EXPIRATION DATE: 1-12-20

No. 18558
NICHOLAS JOSEPH BRADER III

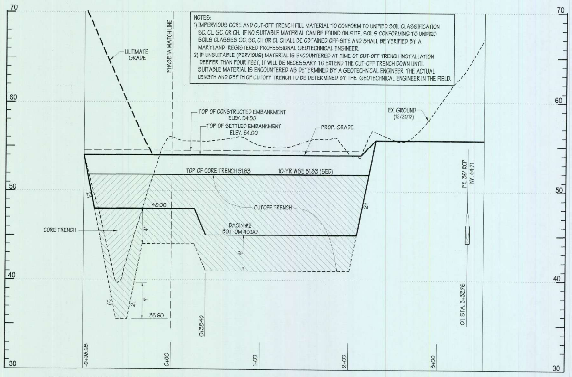
Sediment Basin #1 Details

MASS GRADING PLAN
OAK CREST CENTER
(REVISION TO P/O PHASE 1 & PHASE 2)
LEXINGTON EXCHANGE

ST. MARY'S COUNTY, MARYLAND
ELECTION DISTRICT: 8
FEBRUARY 17, 2022

SCALE: AS SHOWN
MASS GRADING
SHEET 9 OF 16
PROJECT NO.

PN 2017-019 SJP-Oakcrest/Sheets/[03] ex conditions plan.dgn



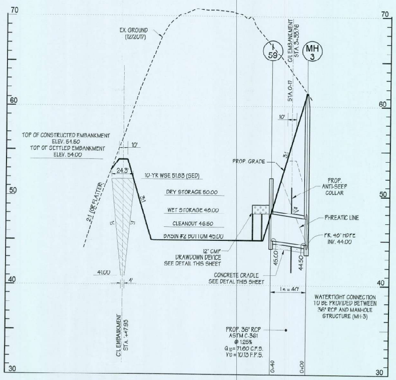
NOTES:

1) IMPERVIOUS CORE AND CUT-OFF TRENCH FILL MATERIAL TO CONFORM TO UNIFIED SOIL CLASSIFICATION SC, CL, GC, OR CH. IF NO SUITABLE MATERIAL CAN BE FOUND ON-SITE, SOILS CONFORMING TO UNIFIED SOILS CLASSES GC, SC, CH OR CL SHALL BE OBTAINED OFF-SITE AND SHALL BE VERIFIED BY A MARYLAND REGISTERED PROFESSIONAL GEOTECHNICAL ENGINEER.

2) IF UNSUITABLE (PERVIOUS) MATERIAL IS ENCOUNTERED AT TIME OF CUT-OFF TRENCH INSTALLATION DEEPER THAN FOUR FEET, IT WILL BE NECESSARY TO EXTEND THE CUT-OFF TRENCH DOWN UNTIL SUITABLE MATERIAL IS ENCOUNTERED AS DETERMINED BY A GEOTECHNICAL ENGINEER. THE ACTUAL LENGTH AND DEPTH OF CUTOFF TRENCH TO BE DETERMINED BY THE GEOTECHNICAL ENGINEER IN THE FIELD.

BASIN #2 PROFILE ALONG CENTER LINE OF EMBANKMENT (Y2 - Y2 PHASE 1B)

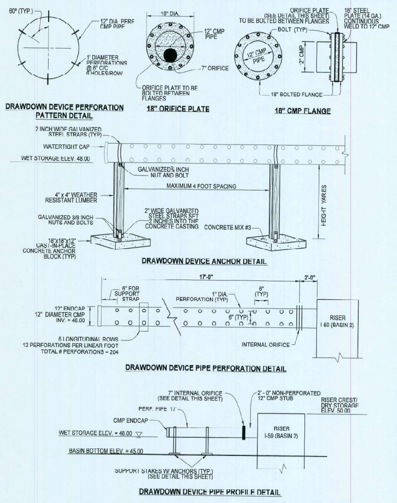
SCALE: HORZ. 1" = 50'
VERT. 1" = 5'



70
60
50
40
30
EX. GROUND (12/2017)
I 59
MH 3
C/L EMBANKMENT STA. 3+33.76
STA. 0-17
10'
TOP OF CONSTRUCTED EMBANKMENT ELEV. 54.50
TOP OF SETTLED EMBANKMENT ELEV. 54.00
24.3'
10-YR WSE 51.83 (SED)
DRY STORAGE 50.00
WET STORAGE 48.00
CLEANOUT 46.50
BASIN #2 BOTTOM 45.00
2:1 (OR FLATTER)
3:1
PROP. GRADE
PROP. ANTI-SEEP COLLAR
PHREATIC LINE
PR. 40" HDPE INV. 44.00
12" CMP DRAWDOWN DEVICE SEE DETAIL THIS SHEET
CONCRETE CRADLE SEE DETAL THIS SHEET
45.00
44.50
41.00
4'
Ls = 40'
WATERTIGHT CONNECTION TO BE PROVIDED BETWEEN 36" RCP AND MANHOLE STRUCTURE (MH-3)
PROP. 36" RCP ASTM C-361 @ 1.25% Q10 = 71.60 C.F.S. V10 = 10.13 F.P.S.
C/L EMBANKMENT STA. +47.93
0+40
0+00

BASIN #2 PRINCIPAL SPILLWAY PROFILE (X2 - X2)

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



60° (TYP.)
12" DIA. PERF. CMP PIPE
1' DIAMETER PERFORATIONS @ 6" C/C 6 HOLES/ROW
18" DIA.
12" CMP PIPE
7" ORIFICE
ORIFICE PLATE TO BE BOLTED BETWEEN FLANGES
ORIFICE PLATE (SEE DETAIL THIS SHEET) TO BE BOLTED BETWEEN FLANGES
18" STEEL PLATE (14 GA.) CONTINUOUS WELD TO 12" CMP
BOLT (TYP)
12" CMP PIPE
2" CMP
18" BOLTED FLANGE
2 INCH WIDE GALVANIZED STEEL STRAPS (TYP)
WATERTIGHT CAP
WET STORAGE ELEV. 48.00
GALVANIZED 3/8 INCH NUT AND BOLT
MAXIMUM 4 FOOT SPACING
4" x 4" WEATHER RESISTANT LUMBER
GALVANIZED 3/8 INCH NUTS AND BOLTS
2" WIDE GALVANIZED STEEL STRAPS SET 2 INCHES INTO THE CONCRETE CASTING
CONCRETE MIX #3
18"x18"x12" CAST-IN-PLACE CONCRETE ANCHOR BLOCK (TYP)
HEIGHT VARIES
17'-0"
2'-0"
6" FOR SUPPORT STRAP
1" DIA. PERFORATION (TYP)
6" (TYP)
12" ENDCAP
12" DIAMETER CMP INV. = 48.00
6 LONGITUDINAL ROWS 12 PERFORATIONS PER LINEAR FOOT TOTAL # PERFORATIONS = 204
INTERNAL ORIFICE
RISER I-59 (BASIN 2)
7" INTERNAL ORIFICE (SEE DETAIL THIS SHEET)
2' - 0" NON-PERFORATED 12" CMP STUB
RISER CREST/ DRY STORAGE ELEV. 50.00
PERF. PIPE 17'
CMP ENDCAP
WET STORAGE ELEV. = 48.00
BASIN BOTTOM ELEV. = 45.00
SUPPORT STAKES W/ ANCHORS (TYP.) (SEE DETAIL THIS SHEET)

DRAWDOWN DEVICE PERFORATION PATTERN DETAIL

18" ORIFICE PLATE

18" CMP FLANGE

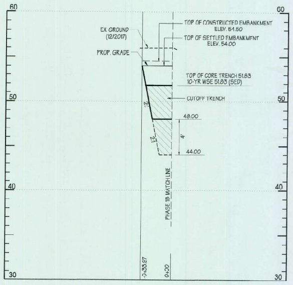
DRAWDOWN DEVICE ANCHOR DETAIL

DRAWDOWN DEVICE PIPE PERFORATION DETAIL

DRAWDOWN DEVICE PIPE PROFILE DETAIL

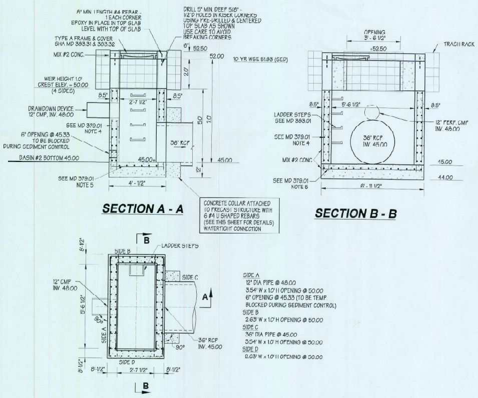
HORIZONTAL DRAWDOWN DEVICE DETAIL (BASIN #2)

NOT TO SCALE



BASIN #2 PROFILE ALONG CENTER LINE OF EMBANKMENT (Y2 - Y2 PHASE 1A)

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



8" MIN. LENGTH #4 REBAR - 1 EACH CORNER EPOXY IN PLACE IN TOP SLAB LEVEL WITH TOP OF SLAB
DRILL 5" MIN. DEEP 5/8" - 1/2" D HOLES IN RISER CORNERS USING PRE-DRILLED & CENTERED TOP SLAB AS SHOWN USE CARE TO AVOID BREAKING CORNERS
TYPE A FRAME & COVER SHA MD 383.31 & 383.32
MIX #2 CONC.
6"
52.50
52.00
10 YR WSE 51.83 (SED)
WEIR HEIGHT 1.0' CREST ELEV. = 50.00 (4 SIDES)
8.5"
2'-7 1/2"
2.0'
5.0
7.0
DRAWDOWN DEVICE 12" CMP, INV. 48.00
SEE MD 379.01 NOTE 4
6" OPENING @ 45.33 TO BE BLOCKED DURING SEDIMENT CONTROL
36" RCP
BASIN #2 BOTTOM 45.00
45.00
12"
SEE MD 379.01 NOTE 5
4' - 1/2"
OPENING 3' - 6 1/2"
+52.50
TRASH RACK
5'-6 1/2"
LADDER STEPS SEE MD 383.01
12" PERF. CMP INV. 48.00
36" RCP INV. 45.00
MIX #2 CONC.
15.00
44.00
6' - 11 1/2"
B
A
SIDE A
SIDE B
SIDE C
SIDE D
LADDER STEPS
12" CMP INV. 48.00
36" RCP INV. 45.00
90°
8'-1/2"
2'-7 1/2"
5'-6 1/2"

CONCRETE COLLAR ATTACHED TO PRECAST STRUCTURE WITH 6 #4 U SHAPED REBARS (SEE THIS SHEET FOR DETAILS) WATERTIGHT CONNECTION

SECTION A - A

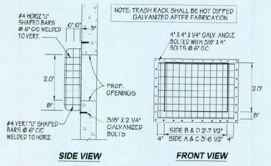
SECTION B - B

PLAN

SIDE A
12" DIA PIPE @ 48.00
3.54' W x 1.0' H OPENING @ 50.00
6" OPENING @ 45.33 (TO BE TEMP. BLOCKED DURING SEDIMENT CONTROL)
SIDE B
2.63' W x 1.0' H OPENING @ 50.00
SIDE C
36" DIA PIPE @ 45.00
3.54' W x 1.0' H OPENING @ 50.00
SIDE D
2.63' W x 1.0' H OPENING @ 50.00

RELEASE STRUCTURE DETAILS (I-59)

MODIFIED TYPE S INLET
(REFER TO SHA STD. MD 379.03)
SCALE: 1" = 3'



#4 HORIZ. "U" SHAPED BARS @ 6" C/C WELDED TO VERT.
6" 6"
3"
2.0'
8"
PROP. OPENINGS
#4 VERT. "U" SHAPED BARS @ 6" C/C WELDED TO HORIZ.
3/8" X 2 1/4" GALVANIZED BOLTS
4" X 4" X 1/4" GALV. ANGLE BOLTED WITH 3/8" X 4" BOLTS @ 6" O.C.
SIDE B & D 2'-7 1/2"
SIDE A & C 3'-6 1/2"
4"

NOTE: TRASH RACK SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.

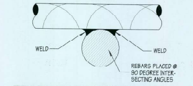
SIDE VIEW

FRONT VIEW

TYPICAL TRASH RACK DETAILS

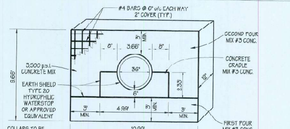
N.T.S.

NOTE :
NO RUST SHALL BE PERMITTED ON REBAR SURFACES TO BE WELDED. ALL WELDED CONNECTIONS MUST BE HOT DIPPED GALVANIZED AFTER FABRICATION.



TRASH RACK WELDING DETAIL

N.T.S.



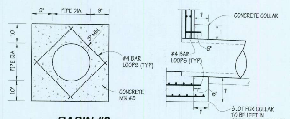
#4 BARS @ 6" o/c EACH WAY 2" COVER (TYP.)
SECOND POUR MIX #3 CONC.
CONCRETE CRADLE MIX #3 CONC.
FIRST POUR MIX #3 CONC.
3,500 p.s.i. CONCRETE MIX
EARTH SHIELD TYPE 20 HYDROPHILIC WATERSTOP OR APPROVED EQUIVALENT
8"
3.66'
36"
6"
3' MIN.
4.99'
10.99'
9.66'
2.33'
12"

COLLARS TO BE A MINIMUM OF 2 FT FROM ANY PIPE JOINT

ANTI-SEEP COLLAR DESIGN
Ls = 40' 15% OF Ls = 6"
REQUIRED PROJECTION = 6"
USE 1 COLLAR WITH 3' PROJECTION
PROVIDED PROJECTION = 6'

BASIN #2 CONCRETE ANTI-SEEP COLLAR & CONCRETE CRADLE

N.T.S.



THE SEAL BETWEEN THE PIPE AND THE RISER SHALL BE WATERTIGHT.

BASIN #2 CONCRETE COLLAR DETAIL

N.T.S.

APPROVED
MAR 1 1 2022
St. Mary's SCD

NJB Engineering, Inc.
Civil Engineering Consulting
810 Gleneagles Court
Towson, Maryland 21286
Suite 311
410-832-7691

NO.	REVISIONS	BY	DATE
1	NO CHANGES THIS SHEET	NJB	2/17/22

DATE: JULY 2021
CAD STANDARDS VERSION: V8 - 2000
DESIGNED: NJB
TECHNICIAN: DTB
CHECKED: NJB

MISS UTILITY NOTE

INFORMATION CONCERNING EXISTING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND UTILITY CROSSINGS BY DIGGING TEST PITS BY HAND, WELL IN ADVANCE OF THE START OF EXCAVATION. CONTACT "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF EXCAVATION. IF CLEARANCES ARE LESS THAN SHOWN ON THIS PLAN OR TWELVE (12) INCHES, WHICHEVER IS LESS, CONTACT THE ENGINEER AND THE UTILITY COMPANY BEFORE PROCEEDING WITH CONSTRUCTION. CLEARANCES LESS THAN NOTED MAY REQUIRE REVISIONS TO THIS PLAN.

DEVELOPER / APPLICANT

ST. JOHN PROPERTIES
2560 Lord Baltimore Drive
Baltimore, Maryland 21244
(410) 788-0100

ZONING CATEGORY: I (AE OVERLAY & PUD-IP OVERLAY)	W&S CATEGORY: W-3D / S-3D
TAX MAP / PARCEL 34 / 292	GRID 10
SITE DATUM HORIZONTAL: NAD83 VERTICAL: NGVD88	LIBER/ FOLIO 2105 / 042

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. 18558
EXPIRATION DATE: 1-12-20

Nicholas Joseph Brader III
No. 18558

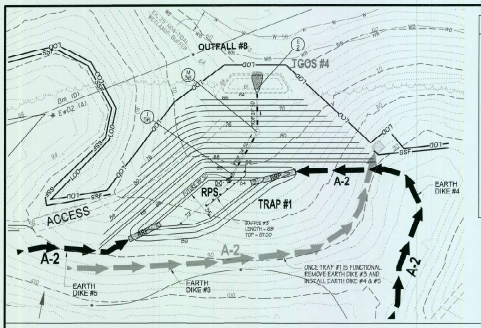
Sediment Basin #2 Details

MASS GRADING PLAN
OAK CREST CENTER
(REVISION TO P/O PHASE 1 & PHASE 2)
LEXINGTON EXCHANGE

ST. MARY'S COUNTY, MARYLAND
ELECTION DISTRICT: 8
FEBRUARY 17, 2022

SCALE: AS SHOWN
MASS GRADING
SHEET 10 OF 16
PROJECT NO.

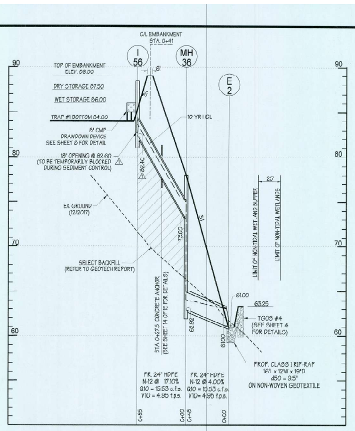
PN 2017-019 SJP-Oakcrest/Sheets/[03] ex conditions plan.dgn


OUTFALL #8
TGOS #4
A-2
RPS
TRAP #1
ACCESS
EARTH DIKE #4
EARTH DIKE #5
EARTH DIKE #3
BAFFLE #1 LENGTH = 68' TOP = 87.00
ONCE TRAP #1 IS FUNCTIONAL REMOVE EARTH DIKE #3 AND INSTALL EARTH DIKE #4 & #5

SEDIMENT TRAP # 1 (PIPE OUTLET SEDIMENT TRAP ST-I)	
DRAINAGE AREA - PHASE 1	= 2.44 AC.
DRAINAGE AREA - PHASE 2	= 2.20 AC.
DRAINAGE AREA - PHASE 3	= 3.19 AC.
TOTAL STORAGE REQ'D	= 11,484 CF
TOTAL STORAGE PROV'D	= 15,763 CF
WET STORAGE REQUIRED	= 5,742 CF
WET STORAGE PROVIDED	= 7,291 CF
DRY STORAGE REQUIRED	= 5,742 CF
DRY STORAGE PROVIDED	= 8,212 CF
TRAP BOTTOM ELEV.	= 84.00 FT
TRAP BOTTOM DIMENSIONS	= 79' x 34'
RISER CREST (DRY STORAGE) ELEV.	= 87.50 FT
OUTLET (WET STORAGE) ELEV.	= 86.00 FT
CLEANOUT ELEVATION	= 85.00 FT
TOP OF EMBANKMENT	= 89.00 FT
EMBANKMENT TOP WIDTH	= 6.0 FT
SIDE SLOPE	= 3:1
TOP OF BAFFLE ELEV.	= 87.00 FT
BAFFLE LENGTH	= 68 FT

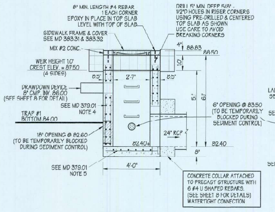
TRAP #1 PLAN

SCALE: 1" = 50'

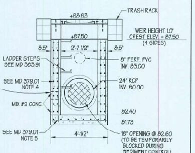

C/L EMBANKMENT STA. 0+41
I 56
MH 36
E 2
TOP OF EMBANKMENT ELEV. 89.00
DRY STORAGE 87.50
WET STORAGE 86.00
TRAP #1 BOTTOM 84.00
8" CMP DRAWDOWN DEVICE SEE SHEET 6 FOR DETAIL
18" OPENING @ 82.60 (TO BE TEMPORARILY BLOCKED DURING SEDIMENT CONTROL)
EX. GROUND (12/2017)
SELECT BACKFILL (REFER TO GEOTECH REPORT)
10-YR HGL
LIMIT OF NONTIDAL WETLAND BUFFER
LIMIT OF NONTIDAL WETLANDS
25'
61.00
63.25
TGOS #4 (SEE SHEET 4 FOR DETAILS)
PROP. CLASS I RIP-RAP
PR. 24" HDPE N-12 @ 17.10% Q10 = 13.53 c.f.s. V10 = 4.30 f.p.s.
PR. 24" HDPE N-12 @ 4.00% Q10 = 13.53 c.f.s. V10 = 4.30 f.p.s.
ON NON-WOVEN GEOTEXTILE
90
80
70
60

TRAP #1 PROFILE

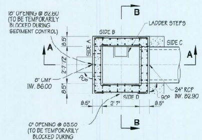
SCALE: HORZ. 1" = 50'
VERT. 1" = 5'


8" MIN. LENGTH #4 REBAR 1 EACH CORNER EPOXY IN PLACE IN TOP SLAB LEVEL WITH TOP OF SLAB
SIDEWALK FRAME & COVER SEE MD 383.31 & 383.32
MIX #2 CONC.
WEIR HEIGHT 1.0' CREST ELEV. = 87.50 (4 SIDES)
DRAWDOWN DEVICE 8" CMP INV. 86.00 (SEE SHEET 6 FOR DETAIL)
TRAP #1 BOTTOM 84.00
18" OPENING @ 82.60 (TO BE TEMPORARILY BLOCKED DURING SEDIMENT CONTROL)
SEE MD 379.01 NOTE 5
DRILL 1/2" MIN. DEEP RAW 1/2"Ø HOLES IN RISER CORNERS USING PRE-DRILLED & CENTERED TOP SLAB AS SHOWN USE CARE TO AVOID BREAKING CORNERS
88.83
88.50
6" OPENING @ 83.50 (TO BE TEMPORARILY BLOCKED DURING SEDIMENT CONTROL)
24" RCP
82.40
4'-0"
CONCRETE COLLAR ATTACHED TO PRECAST STRUCTURE WITH 6 #4 U SHAPED REBARS. (SEE SHEET 8 FOR DETAILS) WATERTIGHT CONNECTION

SECTION A - A


88.83
TRASH RACK
WEIR HEIGHT 1.0' CREST ELEV. = 87.50 (4 SIDES)
LADDER STEPS SEE MD 383.81
6" PERF. PVC INV. 83.00
24" RCP INV. 82.90
MIX #2 CONC.
SEE MD 379.01 NOTE 5
4'-1/2"
18" OPENING @ 82.60 (TO BE TEMPORARILY BLOCKED DURING SEDIMENT CONTROL)

SECTION B - B

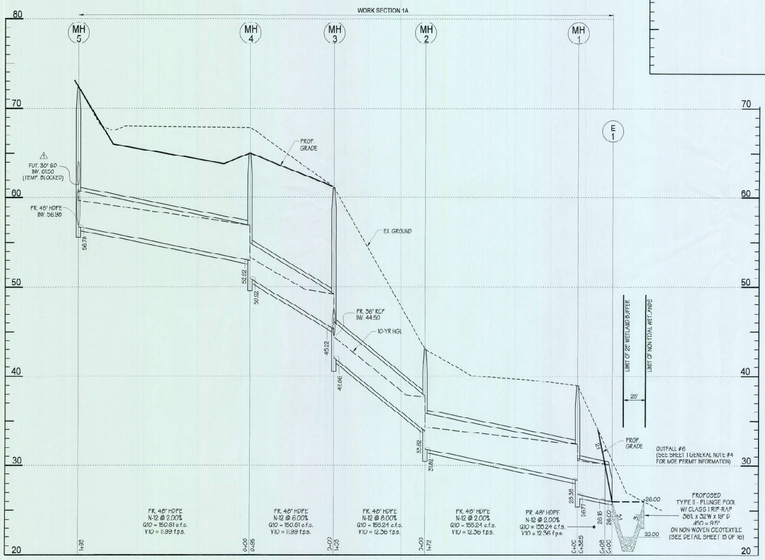

18" OPENING @ 82.60 (TO BE TEMPORARILY BLOCKED DURING SEDIMENT CONTROL)
LADDER STEPS
SIDE A
SIDE B
SIDE C
SIDE D
8" CMP INV. 86.00
24" RCP INV. 82.90
6" OPENING @ 83.50 (TO BE TEMPORARILY BLOCKED DURING SEDIMENT CONTROL)
A
B

SIDE A
8" DIA PIPE @ 86.00
2.63' W x 1.0' H OPENING @ 87.50
18" OPENING @ 82.60 (TO BE TEMPORARILY BLOCKED DURING SEDIMENT CONTROL)
SIDE B
2.58' W x 1.0' H OPENING @ 87.50
SIDE C
24" DIA PIPE @ 82.90
2.63' W x 1.0' H OPENING @ 87.50
SIDE D
2.58' W x 1.0' H OPENING @ 87.50
6" OPENING @ 83.50 (TO BE TEMPORARILY BLOCKED DURING SEDIMENT CONTROL)

PLAN

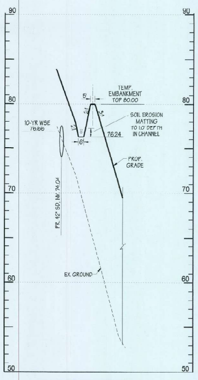
⚠ RELEASE STRUCTURE DETAILS (I-56)

MODIFIED TYPE S INLET
(REFER TO SHA STD. MD 379.01)
SCALE: 1" = 3'

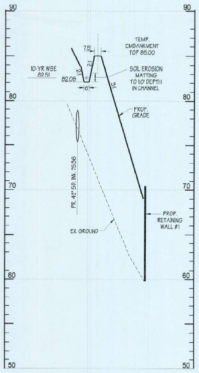

WORK SECTION 1A
MH 5
MH 4
MH 3
MH 2
MH 1
E 1
FUT. 30" RCP INV. 61.00 (TEMP. BLOCKED)
PR. 48" HDPE INV. 56.98
PROP. GRADE
EX. GROUND
PR. 36" RCP INV. 44.50
10-YR HGL
LIMIT OF 25' WETLAND BUFFER
LIMIT OF NONTIDAL WETLANDS
OUTFALL #6 (SEE SHEET 1 GENERAL NOTE #4 FOR MDE PERMIT INFORMATION)
PROPOSED TYPE II - PLUNGE POOL W/ CLASS I RIP-RAP 36'L x 32'W x 19" D d50 = 9.5" ON NON-WOVEN GEOTEXTILE (SEE DETAIL SHEET 15 OF 16)
PR. 48" HDPE N-12 @ 2.00% Q10 = 150.61 c.f.s. V10 = 11.99 f.p.s.
PR. 48" HDPE N-12 @ 6.00% Q10 = 150.61 c.f.s. V10 = 11.99 f.p.s.
PR. 48" HDPE N-12 @ 8.00% Q10 = 155.24 c.f.s. V10 = 12.36 f.p.s.
PR. 48" HDPE N-12 @ 2.00% Q10 = 155.24 c.f.s. V10 = 12.36 f.p.s.
PR. 48" HDPE N-12 @ 2.00% Q10 = 155.24 c.f.s. V10 = 12.36 f.p.s.
26.00
23.00
80
70
60
50
40
30
20

STORM DRAIN PROFILE

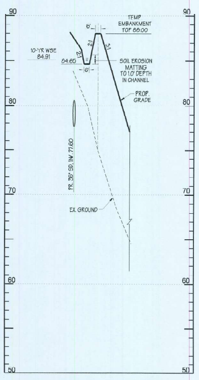
SCALE: HORZ. 1" = 50'
VERT. 1" = 5'
(SEE SHEET 12 FOR PIPE & STRUCTURE SCHEDULE)



CROSS SECTION A - A



CROSS SECTION B - B


TEMP EMBANKMENT TOP 88.00
10-YR WSE 84.91
84.65
SOIL EROSION MATTING TO 1.0' DEPTH IN CHANNEL
PROP. GRADE
EX. GROUND
90
80
70
60
50

CROSS SECTION C - C

TEMPORARY SWALE CHANNEL

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

APPROVED
MAR 1 1 2026
St. Mary's SCD

NJB Engineering, Inc.
Civil Engineering Consulting
810 Gleneagles Court Suite 311
Towson, Maryland 21286 410-832-7691

NO.	REVISIONS	BY	DATE
⚠	Revised storm drain inverts and associated release structure (I-56).	NJB	2/17/22

DATE: JULY 2021
CAD STANDARDS VERSION: V8 - 2000
DESIGNED: NJB
TECHNICIAN: DTB
CHECKED: NJB

MISS UTILITY NOTE

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DEVELOPER / APPLICANT

ST. JOHN PROPERTIES
2560 Lord Baltimore Drive
Baltimore, Maryland 21244
(410) 788-0100

ZONING CATEGORY: I (AE OVERLAY & PUD-IP OVERLAY)
W&S CATEGORY: W-3D / S-3D
TAX MAP / PARCEL: 34 / 292
GRID: 10
SITE DATUM HORIZONTAL: NAD83 VERTICAL: NGVD88
LIBER / FOLIO: 2105 / 042

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. 19558 EXPIRATION DATE: 1-12-20

PROFESSIONAL ENGINEER No. 19558 JOSEPH BRADER III

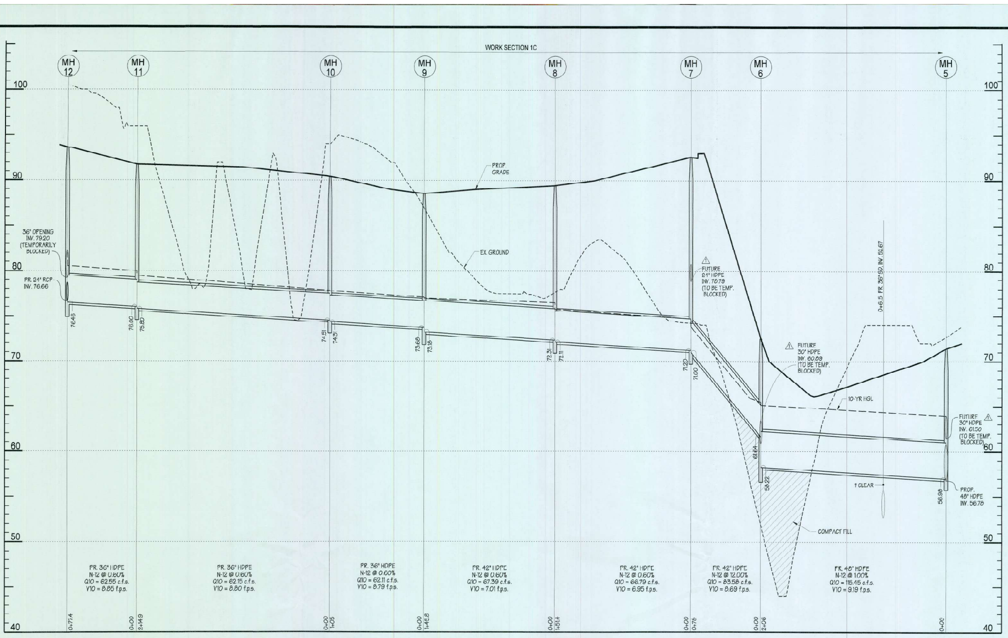
Sediment Trap #1 Details

MASS GRADING PLAN
OAK CREST CENTER
(REVISION TO P/O PHASE 1 & PHASE 2)
LEXINGTON EXCHANGE

ST. MARY'S COUNTY, MARYLAND
ELECTION DISTRICT: 8
FEBRUARY 17, 2022

SCALE: AS SHOWN
MASS GRADING
SHEET 11 OF 16
PROJECT NO.

PN 2017-019 SJP-Oakcrest/Sheets/T031 ex conditions plan.dgn


WORK SECTION 1C
MH 12
MH 11
MH 10
MH 9
MH 8
MH 7
MH 6
MH 5
100
90
80
70
60
50
40
PROP. GRADE
EX. GROUND
36" OPENING INV. 79.20 (TEMPORARILY BLOCKED)
PR. 24" RCP INV. 76.66
76.45
76.00
75.80
74.51
74.31
73.68
73.18
72.31
72.11
71.20
71.00
61.64
58.22
56.98
FUTURE 24" HDPE INV. 78.79 (TO BE TEMP. BLOCKED)
FUTURE 30" HDPE INV. 60.69 (TO BE TEMP. BLOCKED)
0+6.5 PR. 36" SD INV. 52.67
10-YR HGL
FUTURE 30" HDPE INV. 61.50 (TO BE TEMP. BLOCKED)
1' CLEAR
PROP. 48" HDPE INV. 56.78
COMPACT FILL
PR. 36" HDPE N-12 @ 0.60% Q10 = 62.55 c.f.s. V10 = 8.85 f.p.s.
PR. 36" HDPE N-12 @ 0.60% Q10 = 62.15 c.f.s. V10 = 8.80 f.p.s.
PR. 36" HDPE N-12 @ 0.60% Q10 = 62.11 c.f.s. V10 = 8.79 f.p.s.
PR. 42" HDPE N-12 @ 0.60% Q10 = 67.39 c.f.s. V10 = 7.01 f.p.s.
PR. 42" HDPE N-12 @ 0.60% Q10 = 66.79 c.f.s. V10 = 6.95 f.p.s.
PR. 42" HDPE N-12 @ 12.00% Q10 = 83.58 c.f.s. V10 = 8.69 f.p.s.
PR. 48" HDPE N-12 @ 1.00% Q10 = 115.45 c.f.s. V10 = 9.19 f.p.s.
0+77.4
0+00
2+14.9
0+00
1+05
0+00
1+45.8
0+00
1+51.4
0+00
0+76
0+00
2+06
0+00

STORM DRAIN PROFILE

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

PIPE SCHEDULE - STORM DRAIN

FROM	TO	SIZE	TYPE/CLASS	LENGTH	SLOPE	WORK SECTION
E-1	MH-1	48"	HDPE N-12 *	38.5'	2.00%	1A
MH-1	MH-2	48"	HDPE N-12 *	172'	2.00%	1A
MH-2	MH-3	48"	HDPE N-12 *	103'	8.00%	1A
MH-3	MH-4	48"	HDPE N-12 *	95'	6.00%	1A
MH-4	MH-5	48"	HDPE N-12 *	193'	2.00%	1A
MH-5	MH-6	48"	HDPE N-12 *	206'	1.00%	1C
MH-6	MH-7	42"	HDPE N-12 *	78'	12.00%	1C
MH-7	MH-8	42"	HDPE N-12 *	151.4'	0.60%	1C
MH-8	MH-9	42"	HDPE N-12 *	145.8'	0.60%	1C
MH-9	MH-10	36"	HDPE N-12 *	105'	0.60%	1C
MH-10	MH-11	36"	HDPE N-12 *	214.9'	0.60%	1C
MH-11	MH-12	36"	HDPE N-12 *	77.4'	0.60%	1C
MH-12	I-24	24"	RCP CLASS IV	79.8'	1.05%	1C
MH-3	I-59	36"	RCP CLASS IV	40'	1.25%	1A
E-2	MH-36	24"	HDPE N-12 *	44.7'	4.00%	1C
MH-36	I-56	24"	HDPE N-12 *	55'	18.00%	1C
E-4	MH-28	36"	HDPE N-12 *	92'	7.60%	1A
MH-24	I-44	36"	HDPE N-12 *	72.7'	1.50%	3
MH-24	T-3	18"	HDPE N-12 *	93'	1.00%	3
MH-28	MH-24	36"	HDPE N-12 *	150'	1.00%	1C
MH-28	MH-29	24"	HDPE N-12 *	98'	10.00%	3
MH-29	I-45	24"	HDPE N-12 *	18.7'	8.00%	3
T-1	T-2	30"	HDPE N-12 *	182'	0.82%	1B
T-4	T-5	24"	HDPE N-12 *	90'	1.00%	1C

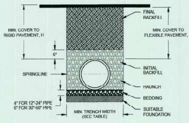
* ADS N-12 (MANNING'S FACTOR n = 0.012) OR EQUIVALENT

STRUCTURE SCHEDULE - STORM DRAIN

NAME	TYPE	RIM ELEV. (FT)	INVERTS (FT)	COORDINATES	COMMENTS	WORK SECTION
MH-1	PRECAST 72" MH	39.00	IN = 28.38 OUT = 26.77	N 237,353.8742 E 1,448,989.0936	MDSHA MD 384.05	1A
MH-2	PRECAST 72" MH	43.00	IN = 33.82 OUT = 31.82	N 237,312.8080 E 1,448,821.9366	MDSHA MD 384.05	1A
MH-3	STANDARD 72" DROP MANHOLE	61.12	IN = 45.22 IN = 44.50 OUT = 42.06	N 237,330.0895 E 1,448,720.5029	MDSHA MD 383.11	1A
MH-4	PRECAST 72" MH	65.00	IN = 52.92 OUT = 50.92	N 237,323.7021 E 1,448,625.1383	MDSHA MD 384.05	1A
MH-5	PRECAST 72" MH	71.43	IN = 56.98 OUT = 56.78	N 237,100.0523 E 1,448,508.9001	MDSHA MD 384.05	1A
MH-6	PRECAST 72" MH	72.90	IN = 61.64 OUT = 58.22	N 236,900.6012 E 1,448,561.4109	MDSHA MD 384.05	1C
MH-7	PRECAST 72" MH	92.60	IN = 71.20 OUT = 71.00	N 236,900.6136 E 1,448,561.3422	MDSHA MD 384.05	1C
MH-8	PRECAST 60" MH	89.33	IN = 72.31 OUT = 72.11	N 236,839.1813 E 1,448,700.3831	MDSHA MD 384.03	1C
MH-9	PRECAST 60" MH	88.54	IN = 73.68 OUT = 73.18	N 236,670.5098 E 1,448,698.1152	MDSHA MD 384.03	1C
MH-10	PRECAST 60" MH	90.43	IN = 74.51 OUT = 74.31	N 236,575.1709 E 1,448,697.0845	MDSHA MD 384.03	1C
MH-11	PRECAST 60" MH	91.75	IN = 76.00 OUT = 75.80	N 236,413.7500 E 1,448,695.0349	MDSHA MD 384.03	1C
MH-12	PRECAST 60" MH	92.33	IN = 79.20 IN = 76.66 OUT = 76.46	N 236,331.0790 E 1,448,649.2303	MDSHA MD 384.03	1C
MH-24	STANDARD 60" DROP MANHOLE	81.00	IN = 75.07 IN = 74.51 OUT = 60.00	N 236,948.5385 E 1,448,458.7647	MDSHA MD 383.11	3
MH-28	STANDARD 60" DROP MANHOLE	75.90	IN = 58.50 IN = 68.04 OUT = 55.00	N 237,097.8013 E 1,448,492.2168	MDSHA MD 383.11	1A
MH-29	PRECAST 60" MH	90.60	IN = 78.84 OUT = 77.84	N 237,153.3259 E 1,448,411.3566	MDSHA MD 384.03	3
MH 36	STANDARD 60" DROP MANHOLE	78.00	IN = 73.00 OUT = 61.96	N 237,085.8573 E 1,447,609.9806	MDSHA MD 383.11	1C
E-1	48" HDPE END SECTION	NA	IN = 27.00	N 237,319.4714 E 1,449,015.3693	48" ADS MITERED END SECTION	1A
E-2	24" HDPE END SECTION	NA	IN = 61.00	N 237,086.2429 E 1,447,566.9861	24" ADS MITERED END SECTION	1C
E-4	36" HDPE END SECTION	NA	IN = 48.00	N 237,108.1472 E 1,448,578.2297	36" ADS MITERED END SECTION	1A

STRUCTURE SCHEDULE - STORM DRAIN

NAME	TYPE	TOP GRATE (FT)	INVERTS (FT)	COORDINATES	COMMENTS	WORK SECTION
I-24	SINGLE 'S' INLET	84.33	OUT = 77.50	N 236,276.4568 E 1,448,590.1650	MDSHA MD 379.01 SINGLE 'S' INLET	1C
I-44	DOUBLE 'S' INLET	82.00 (FINAL 93.00)	OUT = 75.60	N 236,935.6699 E 1,448,387.1348	MDSHA MD 379.04 DOUBLE GRATE TANDEM	3
I-45	SINGLE 'S' INLET	88.00 (FINAL 92.40)	OUT = 80.34	N 237,152.3509 E 1,448,392.6794	MDSHA MD 379.01 SINGLE 'S' INLET	3
⚠ I-56	SINGLE 'S' INLET	88.83	OUT = 82.40	N 237,057.4192 E 1,447,657.3729	MDSHA MD 379.01 SINGLE 'S' INLET	1C
I-59	DOUBLE 'S' INLET	52.50	OUT = 45.00	N 237,291.9762 E 1,448,709.9490	MDSHA MD 379.03 DOUBLE GRATE TANDEM	1A



RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4" (100mm)	21" (533mm)
6" (150mm)	23" (584mm)
8" (200mm)	26" (660mm)
10" (250mm)	28" (711mm)
12" (300mm)	30" (762mm)
15" (375mm)	34" (864mm)
18" (450mm)	39" (991mm)
24" (600mm)	48" (1219mm)
30" (750mm)	56" (1422mm)
36" (900mm)	64" (1626mm)
42" (1050mm)	72" (1829mm)
48" (1200mm)	80" (2032mm)
60" (1500mm)	96" (2438mm)

MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS**

PIPE DIAM.	SURFACE LIVE LOADING CONDITION	
	H-25	HEAVY CONSTRUCTION (75T AXLE LAOD) *
12" - 48" (300mm - 1200mm)	12" (305mm)	48" (1219mm)
60" (1500mm)	24" (610mm)	60" (1524mm)

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER
**SEE BACKFILL REQUIREMENTS IN NOTE 6.

MAXIMUM RECOMMENDED COVER BASED ON VECHICLE LOADING CONDITIONS

PIPE DIAM	CLASS I		CLASS II		CLASS III
	COMPACTED	DUMPED	95%	90%	95%
4" (100mm)	37 (11.3m)	18 (5.5m)	25 (7.6m)	18 (5.5m)	18 (5.5m)
6" (150mm)	44 (13.4m)	20 (6.1m)	29 (8.8m)	20 (6.1m)	21 (6.4m)
8" (200mm)	32 (9.8m)	15 (4.6m)	22 (6.7m)	15 (4.6m)	16 (4.9m)
10" (250mm)	38 (11.6m)	18 (5.5m)	26 (7.9m)	18 (5.5m)	18 (5.5m)
12" (300mm)	35 (10.7m)	17 (5.2m)	24 (7.3m)	17 (5.2m)	17 (5.2m)
15" (375mm)	38 (11.6m)	17 (5.2m)	25 (7.6m)	17 (5.2m)	18 (5.5m)
18" (450mm)	36 (11.0m)	17 (5.2m)	24 (7.3m)	17 (5.2m)	17 (5.2m)
24" (600mm)	28 (8.5m)	13 (4.0m)	20 (6.1m)	13 (4.0m)	14 (4.3m)
30" (750mm)	28 (8.5m)	13 (4.0m)	20 (6.1m)	13 (4.0m)	14 (4.3m)
36" (900mm)	26 (7.9m)	12 (3.7m)	18 (5.5m)	13 (4.0m)	13 (4.0m)
42" (1050mm)	23 (7.0m)	11 (3.4m)	16 (4.9m)	11 (3.4m)	11 (3.4m)
48" (1200mm)	25 (7.6m)	11 (3.4m)	17 (5.2m)	11 (3.4m)	12 (3.7m)
60" (1500mm)	25 (7.6m)	11 (3.4m)	17 (5.2m)	11 (3.4m)	12 (3.7m)

FILL HEIGHT TABLE GENERATED USING AASHTO SECTION 12, LOAD RESISTANCE FACTOR DESIGN (LRFD) PROCEDURE WITH THE FOLLOWING ASSUMPTIONS:
NO HYDROSTATIC PRESSURE,
UNIT WEIGHT OF SOIL (Ys) = 120 PCF

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-1500mm).

5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT. FOR TRAFFIC APPLICATIONS WITH LESS THAN FOUR FEET OF COVER, EMBEDMENT OF THE PIPE SHALL BE USING ONLY A CLASS I OR CLASS II BACKFILL.

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ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS DETAIL BASED ON INFORMATION PROVIDED TO ADS. THIS DRAWING IS INTENDED TO DEPICT THE COMPONENTS AS REQUESTED. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT, NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

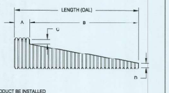
REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D
	COVER HEIGHTS TO MATCH TN 2.01	AGC	09/28/17	CMF

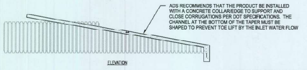
TRENCH INSTALLATION DETAIL (N-12 PER AASHTO)
DRAWING NUMBER: STD-101
ADS ADVANCED DRAINAGE SYSTEMS, INC.
4640 TRUEMAN BLVD
HILLIARD, OHIO 43026
TJR
12/29/16
NTS
1 OF 1

PIPE DIAMETER	2:1 SLOPE A	2:1 SLOPE B	2:1 SLOPE C	2:1 SLOPE D	2:1 SLOPE OAL	3:1 SLOPE A	3:1 SLOPE B	3:1 SLOPE C	3:1 SLOPE D	3:1 SLOPE OAL	4:1 SLOPE A	4:1 SLOPE B	4:1 SLOPE C	4:1 SLOPE D	4:1 SLOPE OAL	6:1 SLOPE A	6:1 SLOPE B	6:1 SLOPE C	6:1 SLOPE D	6:1 SLOPE OAL
12" (300mm)	8" (200mm)	12" (300mm)	3" (76mm)	3" (76mm)	20" (508mm)	8" (200mm)	18" (450mm)	3" (76mm)	3" (76mm)	26" (660mm)	8" (200mm)	24" (600mm)	3" (76mm)	3" (76mm)	32" (813mm)	8" (200mm)	36" (900mm)	3" (76mm)	3" (76mm)	44" (1118mm)
15" (375mm)	9.75" (248mm)	14.8" (376mm)	4" (100mm)	4" (100mm)	24.5" (622mm)	9.75" (248mm)	22" (559mm)	4" (100mm)	4" (100mm)	31.9" (810mm)	9.75" (248mm)	29.4" (747mm)	4" (100mm)	4" (100mm)	39.1" (993mm)	9.75" (248mm)	41.6" (1057mm)	4" (100mm)	4" (100mm)	51.4" (1306mm)
18" (450mm)	12" (300mm)	21" (533mm)	4.2" (107mm)	4" (100mm)	33" (838mm)	12" (300mm)	30" (750mm)	4.2" (107mm)	4" (100mm)	42" (1050mm)	12" (300mm)	39" (991mm)	4.2" (107mm)	4" (100mm)	51" (1295mm)	12" (300mm)	60" (1500mm)	4.2" (107mm)	4" (100mm)	72" (1829mm)
24" (600mm)	16" (406mm)	24" (600mm)	6" (150mm)	6" (150mm)	40" (1016mm)	16" (406mm)	36" (900mm)	6" (150mm)	6" (150mm)	52" (1321mm)	16" (406mm)	48" (1200mm)	6" (150mm)	6" (150mm)	64" (1626mm)	16" (406mm)	72" (1829mm)	6" (150mm)	6" (150mm)	88" (2235mm)
30" (750mm)	16" (406mm)	36" (900mm)	6" (150mm)	6" (150mm)	52" (1321mm)	16" (406mm)	56" (1422mm)	6" (150mm)	6" (150mm)	72" (1829mm)	16" (406mm)	72" (1829mm)	6" (150mm)	6" (150mm)	88" (2235mm)	16" (406mm)	108" (2743mm)	6" (150mm)	6" (150mm)	124" (3150mm)
36" (900mm)	18.5" (470mm)	48.1" (1222mm)	6.9" (175mm)	6" (150mm)	64.6" (1641mm)	18.5" (470mm)	73.9" (1877mm)	6.9" (175mm)	6" (150mm)	92.3" (2344mm)	18.5" (470mm)	96.9" (2461mm)	6.9" (175mm)	6" (150mm)	115.4" (2931mm)					
42" (1050mm)	17.5" (445mm)	64.4" (1636mm)	5.2" (132mm)	6" (150mm)	82" (2083mm)	17.5" (445mm)	73.9" (1877mm)	5.2" (132mm)	6" (150mm)	111.3" (2827mm)	17.5" (445mm)	122.9" (3122mm)	5.2" (132mm)	6" (150mm)	140.5" (3569mm)					
48" (1200mm)	17.5" (445mm)	76.1" (1933mm)	5.4" (137mm)	6" (150mm)	93.6" (2377mm)	17.5" (445mm)	111.2" (2824mm)	5.4" (137mm)	6" (150mm)	128.7" (3269mm)	17.5" (445mm)	148.4" (3769mm)	5.4" (137mm)	6" (150mm)	163.9" (4163mm)					
60" (1500mm)	12" (300mm)	100.6" (2555mm)	3.6" (91mm)	6" (150mm)	112.6" (2860mm)															

** REFERENCE ONLY - DIMENSIONS MAY VARY **

E-1 : 48" END SECTION w/ 2:1 SLOPE
E-2 : 24" END SECTION w/ 2:1 SLOPE
E-4 : 36" END SECTION w/ 3:1 SLOPE




ADS RECOMMENDS THAT THE PRODUCT BE INSTALLED WITH A CONCRETE COLLAR/EDGE TO SUPPORT AND CLOSE CORRUGATIONS PER DOT SPECIFICATIONS. THE CHANNEL AT THE BOTTOM OF THE TAPER MUST BE SHAPED TO PREVENT TOE LIFT BY THE INLET WATER FLOW

ELEVATION

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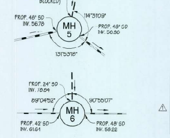
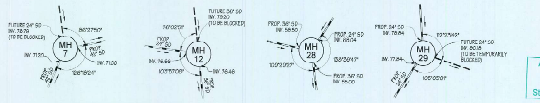
REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D
4	UPDATED TABLE AND RENAMED	WWI	02/10/18	

MITERED END SECTION DETAIL
DRAWING NUMBER: STD-301
ADS ADVANCED DRAINAGE SYSTEMS, INC.
4640 TRUEMAN BLVD
HILLIARD, OHIO 43026
CKS/TJR
4/24/07
NTS
1 OF 1





APPROVED
MAR 1 1 2026
St. Mary's SCD

⚠ STORM DRAIN CONNECTION DETAILS

N.T.S.

NJB Engineering, Inc.
Civil Engineering Consulting

810 Gleneagles Court
Towson, Maryland 21286
Suite 311
410-832-7691

NO.	REVISIONS	BY	DATE
⚠	Added storm drain connection details. Updated structure schedule (inverts)	NJB	2/17/22

DATE: JULY 2021
CAD STANDARDS VERSION: V8 - 2000
DESIGNED: NJB
TECHNICIAN: DTB
CHECKED: NJB

MISS UTILITY NOTE

INFORMATION CONCERNING EXISTING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND UTILITY CROSSINGS BY DIGGING TEST PITS BY HAND, WELL IN ADVANCE OF THE START OF EXCAVATION. CONTACT "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF EXCAVATION. IF CLEARANCES ARE LESS THAN SHOWN ON THIS PLAN OR TWELVE (12) INCHES, WHICHEVER IS LESS, CONTACT THE ENGINEER AND THE UTILITY COMPANY BEFORE PROCEEDING WITH CONSTRUCTION. CLEARANCES LESS THAN NOTED MAY REQUIRE REVISIONS TO THIS PLAN.

DEVELOPER / APPLICANT

ST. JOHN PROPERTIES
2560 Lord Baltimore Drive
Baltimore, Maryland 21244
(410) 788-0100

ZONING CATEGORY: I (AE OVERLAY & PUD-IP OVERLAY)	W&S CATEGORY: W-3D / S-3D
TAX MAP / PARCEL 34 / 292	GRID 10
SITE DATUM HORIZONTAL: NAD83 VERTICAL: NGVD88	LIBER/ FOLIO 2105 / 042

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. 18558
EXPIRATION DATE: 1-12-20

N. CHOBRASER III No. 18558

Storm Drain Profiles and Details

MASS GRADING PLAN
OAK CREST CENTER
(REVISION TO P/O PHASE 1 & PHASE 2)
LEXINGTON EXCHANGE

ST. MARY'S COUNTY, MARYLAND
ELECTION DISTRICT: 8
FEBRUARY 17, 2022

SCALE: AS SHOWN
MASS GRADING
SHEET 12 OF 16
PROJECT NO.

PN 2017-019 SJP-Oakcrest/Sheets/[03] ex conditions plan.dgn

Stabilization/ Seeding Specifications

B-4-2 STANDARDS AND SPECIFICATIONS

A. Soil Preparation

1. Temporary Stabilization

a. Seedbed 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 the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.

b. Apply fertilizer and lime as prescribed on the plans.

c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.

2. Permanent Stabilization

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:

i. Soil pH between 6.0 and 7.0.

ii. Soluble salts less than 500 parts per million (ppm).

iii. 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.

iv. Soil contains 1.5 percent minimum organic matter by weight.

v. Soil contains sufficient pore space to permit adequate root penetration.

b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.

c. 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.

d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.

e. 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 the 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:

a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.

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 nutrients.

c. The original soil to be vegetated contains material toxic to plant growth.

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:

a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Others 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 1/2 inches in diameter.

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.

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

a. Erosion and sediment control practices must be maintained when applying topsoil.

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.

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 sieve and 98 to 100 percent will pass through a #20 mesh sieve.

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 SEEDING AND MULCHING

A. Seeding

1. Specifications

a. All seed must meet the requirements 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.

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.

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.

d. Sod or seed must not be placed on soil which has been treated with soil sterilant's or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

2. Application

a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.

i. 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.

ii. 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.

b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.

i. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.

ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.

c. Hydroseeding: Apply seed uniformly with hydroseeding (slurry includes seed and fertilizer).

i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P2O5 (phosphorous), 200 pounds per acre; K2O (potassium), 200 pounds per acre.

ii. 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 hydoseeding.

iii. Mix seed and fertilizer on site and seed immediately and without interruption.

iv. When hydroseeding do not incorporate seed into the soil.

B-4-3 STANDARDS AND SPECIFICATIONS SEEDING AND MULCHING - CONT.

B. Mulching

1. Mulch Materials (in order of preference)

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 Seed 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.

b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.

i. 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.

ii. WCFM, including dye, must contain no germination or growth inhibiting factors.

iii. 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 homogeneous 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 seedings.

iv. WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic.

v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimerter, 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

a. Apply mulch to all seeded areas immediately after seeding.

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.

c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 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

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:

i. 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.

ii. 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.

iii. 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.

iv. 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 TEMPORARY STABILIZATION

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.

1. 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 this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.

2. For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.

3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1b and maintain until the next seeding season.

B-4-5 STANDARDS AND SPECIFICATIONS PERMANENT STABILIZATION

Conditions Where Practice Applies:

Exposed soils where ground cover is needed for 6 months or more.

A. Seed Mixtures

1. General Use

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.

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, Seciton 342-Critical Area Planting.

c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.

d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 1/2 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

a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.

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.

i. 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 the total mixture by weight.

ii. 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.

iii. 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.

iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensivly managed turf area. Mixture includes: Cerifed Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 1/2 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 cerficiation grogram of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line

c. Ideal times of Seeding for Turf Grass Mixtures

Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b,6a)

Central MD: 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)

d. 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 1/2 inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.

e. If soil moisture is deficient, supply new seedings with adequate water for plant growth (1/2 to 1 inch every 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.

B-4-5 STANDARDS AND SPECIFICATIONS PERMANENT STABILIZATION - CONT.

B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).

1. General Specifications

a. Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.

b. Sod must be machine cut at a uniform soil thickness of 3/4 inch, plus or minus 1/4 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.

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.

d. sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.

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

a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.

b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strenght. 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.

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.

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 operations of laying, tamping and irrigationg for any piece of sod within eight hours.

3. Sod Maintenance

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.

b. After the first week, sod watering is required as necessary to maintain adequate moisture content.

c. Do not mow until the sod is firmly rooted. No more than 1/3 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.

Sediment and Erosion Control Plan Notes:

General Notes (For Erosion and Sediment control plans only)

1. REFER TO "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" FOR STANDARD DETAILS AND DETAILED SPECIFICATIONS OF EACH PRACTICE SPECIFIED HEREIN.
2. WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, MINOR FIELD ADJUSTMENTS CAN AND WILL BE MADE TO INSURE THE CONTROL OF ANY SEDIMENT. CHANGES IN SEDIMENT CONTROL PRACTICES REQUIRE PRIOR APPROVAL OF THE SEDIMENT CONTROL INSPECTOR AND THE ST MARY'S COUNTY SOIL CONSERVATION DISTRICT.
3. AT THE END OF EACH WORKING DAY, ALL SEDIMENT CONTROL PRACTICES WILL BE INSPECTED AND LEFT IN OPERATIONAL CONDITION.
4. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
   A) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN THREE HORIZONTAL TO 1 VERTICAL (3:1)
   B) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.
5. ANY CHANGE TO THE GRADING PROPOSED ON THIS PLAN REQUIRES RE-SUBMISSION TO ST. MARY'S COUNTY SOIL CONSERVATION DISTRICT FOR APPROVAL.
6. DUST CONTROL WILL BE PROVIDED FOR ALL DISTURBED AREAS. REFER TO "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", PAGE H.22, FOR ACCEPTABLE METHODS AND SPECIFICATIONS FOR DUST CONTROL.
7. ANY VARIATION FROM THE SEQUENCE OF OPERATIONS STATED ON THIS PLAN REQUIRES THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR AND THE ST MARY'S COUNTY SOIL CONSERVATION DISTRICT PRIOR TO THE INITIATION OF THE CHANGE.
8. EXCESS CUT OR BORROW MATERIAL SHALL GO TO OR COME FROM, RESPECTIVELY, A SITE WITH AN OPEN GRADING PERMIT AND AN APPROVED SEDIMENT CONTROL PLAN.
9. THE FOLLOWING ITEM MAY BE USED AS APPLICABLE: REFER TO "MARYLAND'S GUIDELINES TO WATERWAY CONSTRUCTION" BY THE WATER MANAGEMENT ADMINISTRATION OF THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, REVISED NOVEMBER 2000, FOR STANDARD DETAILS AND DETAILED SPECIFICATIONS OF EACH PRACTICE SPECIFIED HEREIN FOR WATERWAY CONSTRUCTION.
10. PUMPING SEDIMENT LADEN WATER INTO WATERS OF THE STATE IS STRICTLY PROHIBITED. ANY PORTABLE DEWATERING DEVICE MUST BE LOCATED WITHIN THE LIMIT OF DISTURBANCE.

TRAP/BASIN FLOW DIVERSION NOTE:

TO PREVENT SLOPE EROSION, WITHIN SEDIMENT TRAPPING DEVICES, ADEQUATELY SIZED AND STABILIZED FLOW DIVERSION MEASURES (I.E., EARTH DIKE, TEMPORARY SWALE, PERIMETER DIKE / SWALE, SUPER FENCE DIVERSION, ETC.) SHALL BE INSTALLED AT THE UPSLOPE EXTENT OF TRAP, AND BASIN STORAGE AREAS TO DIVERT ALL FLOWS TO APPROPRIATE INFLOW PROTECTION DEVICES. THESE MEASURES WILL BE LOCATED BY THE CONTRACTOR AND THEREFORE NOT SHOWN ON THE PLAN VIEW.

Temp Stockpile Area Note :

TEMPORARY STOCKPILES SHALL BE:

1) LOCATED WITHIN THE LIMIT OF DISTURBANCE (LOD).
2) DRAIN TO A FUNCTIONING SEDIMENT CONTROL DEVICE.
3) POSITIONED TO NOT IMPEDE UPON, OR IMPAIR THE FUNCTION OF SAID DEVICE.
4) POSITIONED TO NOT ALTER DRAINAGE DIVIDES.

THESE ITEMS SHOULD BE INCORPORATED INTO ANY NOTE REFERENCING TEMPORARY STOCKPILES, AND WHEN ACTUALLY DELINEATING THEM ON PLAN VIEWS.

8 Points Of The General Permit :

1. UTILIZATION OF ENVIRONMENTAL SITE DESIGN: THIS PLAN IS TO PREPARE THE SITE FOR DEVELOPMENT. ESD PRACTICES CONSISTENT WITH REDEVELOPMENT STANDARDS ARE PROPOSED WITH THE ULTIMATE SITE DESIGN.
2. THE LIMITS OF DISTURBANCE SHOWN ON THIS SEDIMENT AND EROSION CONTROL PLAN WERE ESTABLISHED TO MINIMIZE DISTURBANCE TO STREAMS, STEEP SLOPES, WETLANDS AND WETLAND BUFFERS TO THE MAXIMUM EXTENT POSSIBLE. ADDITIONALLY, THE SITE IS REDEVELOPMENT AND, AS SUCH, THERE IS LITTLE UNDISTURBED GROUND REMAINING.
3. USE OF LIGHTWEIGHT AND/OR WIDE TRACK CONSTRUCTION EQUIPMENT AND VEHICLES WILL BE NECESSARY IN THE AREA OF THE ESD FACILITIES TO PREVENT COMPACTION.
4. EVALUATION AND APPROPRIATE LIMITATION OF SITE CLEARING: NO ADDITIONAL FOREST CLEARING IS PROPOSED PER THIS PLAN.
5. EVALUATION AND DESIGNATION OF SITE AREA FOR PHASING OR SEQUENCING: THESE PHASES ARE PROPOSED TO MINIMIZE THE AREA DISTURBED AT ONE TIME.
6. IDENTIFICATION OF SOILS AT HIGH RISK FOR EROSION AND ADVANCED STABILIZATION TECHNIQUES TO BE USED: ERODIBLE SOILS IDENTIFIED. STABILIZATION AND SEC PRACTICES BEING SPECIFIED AS NEEDED.
7. ANY STEEP SLOPES ON THIS PLAN WERE MAN-MADE. THE AREAS WILL BE STABILIZED USING TECHNIQUES OUTLINED IN THIS PLAN.
8. EVALUATION AND DESIGNATION OF STABILIZATION REQUIREMENTS SUCH AS SEEDING, MULCHING, ETC. INCLUDING A TIME LIMIT TO INITIATE STABILIZATION AFTER SOIL HAS BEEN EXPOSED HAS BEEN ADDRESSED BY THE SEDIMENT & EROSION CONTROL GENERAL NOTES AND THE SEQUENCE OF CONSTRUCTION, INCLUDING A DETAILED PHASING SCHEME. SPECIAL PROTECTION MEASURES TO BE INSTALLED FOR DISCHARGES TO THE CHESPEAKE BAY CRITICAL AREAS OF IMPAIRED WATERS, OR WATERS WITH ESTABLISHED TOTAL MAXIMUM DAILY LOAD (TMDL) INCLUDE AN UPGRADE OF SILT FENCE TO REINFORCED SILT FENCE. ADDITIONALLY, THE SITE HAS HISTORICALLY OPERATED AS A CONCRETE & ASPHALT PLANT WITH SURFACE STORAGE OF AGGREGATES. THE REDEVELOPMENT AND PERMANENT STABILIZATION WILL BE BENEFICIAL FOR WATER QUALITY.

Temporary and Permanent Stabilization Statement

Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within.

a. Three (3) calendar days for all peimeter controls, dikes, swales, ditches, perimeter slopes and all greater than 3 horizontal to 1 vertical (3:1) and

b. Seven (7) days as to all other disturbed or graded areas in the project site.

Table B.3: Selected List of Permanent Herbaceous Seeding Mixtures

Mix	Recommended Cultivar	Seeding Rate 1/ lb/ac	Seeding Rate 1/ lb/1000 ft2	Soil Drainage Class 2/	Max. Height (inch)	Maint. Level 3/	Remarks
WARM-SEASON/COOL-SEASON GRASS MIXES							
1. SELECT ONE WARM-SEASON GRASS:							
Switch Grass (Panicum virgatum)	Blackwell, Carthage, Cave-in-Rock, or Shelter	10	0.23	E - P	4 - 7	C - D	All species are native to Maryland. Plant this mix with a regular grass drill.
OR							
Coastal Panic Grass (Panicum amarum var. amarulum)	Atlantic	10	0.23				Coastal panicgrass is best adapted to Zones 7a and 7b.
AND ADD:							
Creeping Red Fescue (Festuca rubra var. rubra)	Dawson, Pennlawn, Flyer, Fortess, Ruby, or Salem	15	0.34				Creeping red fescue is a cool-season grass that will provide erosion protection while the warm-season grass (switchgrass or coastal panicgrass) is becoming established.
PLUS ONE OF THE FOLLOWING LEGUMES:							
Partridge Pea (Chamaecrista fasciculate)	Common	4	0.09				Switchgrass, coastal panicgrass, the Dawson variety of creeping red fescue, and partridge pea are moderately salt tolerant. Do not use bush clover or wild indigo on wet sites.
Bush Clover (Lespedeza capitata)	Common	2	0.05				
Wild Indigo (Baptisia tinctoria)	Common	2	0.05				
2. Big Bluestem (Andropogon gerardii)	Niagara or Rountree	6	0.14	E - MW	6 - 8	C - D	All species are native to Maryland.
Indiangrass (Sorghastrum nutans)	Rumsey	6	0.14				The Indiangrass and bluestems have fluffy seeds. Plant with a specialized native seed drill.
Little Bluestem (Schizachyrium scoparium)	Aldous or Blaze	4	0.09				
Creeping Red Fescue (Festuca rubra var. rubra)	Dawson, Pennlawn, Flyer, Fortess, Ruby, or Salem	15	0.34				Creeping red fescue is a cool-season grass that will provide erosion protection while the warm-season grasses are becoming established.
PLUS ONE OF THE FOLLOWING LEGUMES:							
Partridge Pea (Chamaecrista fasciculate)	Common	4	0.09				
Bush Clover (Lespedeza capitata)	Common	2	0.05				
Wild Indigo (Baptisia tinctoria)	Common	2	0.05				
Showy Tick Trefoil (Desmodium canadense)	Common	1	0.02				
3. SELECT THREE GRASSES:							
Deertongue (Dichanthelium clandestinum)	Tioga	20	0.46	E - MW	4 - 6	C - D	Excellent for excessively droughty, low pH (acidic) soils.
Sheep Fescue (Festuca ovina)	Common or Bighorn	20	0.46				Sheep fescue, Canada wild rye, and redtop are cool-season grasses that will provide erosion protection while the warm-season grass (deertongue) is becoming established.
OR							
Canada Wild Rye (Elymus canadensis)	Common	3	0.07				
Redtop (Agrostis gigantea)	Streaker	1	0.02				
PLUS ONE OF THE FOLLOWING LEGUMES:							
Common Lespedeza (Lespedeza striata)	Kobe	10	0.23				Common lespedeza ('Kobe' variety) is more tolerant of low acidity and high manganese concentrations than Korean lespedeza. These lespedezas are reseeding annuals.
Korean Lespedeza (Lespedeza stipulacea)	Climax or Rowan	10	0.23				
4. Deertongue (Dichanthelium clandestinum)	Tioga	15	0.34	W - P	2 - 3	C - D	
Creeping Red Fescue (Festuca rubra var. rubra)	Dawson, Pennlawn, Flyer, Fortess, Ruby, or Salem	20	0.46				
Virginia Wild Rye (Elymus virginicus)	Common	5	0.11				Use Virginia wild rye on moist, shady sites.
OR							
Canada Wild Rye (Elymus canadensis)	Common	5	0.11				Use Canada wild rye on droughty sites.
5. SELECT TWO GRASSES:							
Creeping Red Fescue (Festuca rubra var. rubra)	Dawson, Pennlawn, Flyer, Fortess, Ruby, or Salem	20	0.46	E - SP	2 - 3	B - D	Use creeping red fescue in heavy shade and on moist sites.
OR							
Hard Fescue (Festuca trachyphylla)	Attila or Aurora	20	0.46				Perennial ryegrass and redtop will establish more rapidly than either fescue. Redtop tolerates wet sites better than ryegrass.
Perennial Ryegrass (Lolium perenne)	Blazer (II), Pennfine	10	0.23				
OR							
Redtop (Agrostis gigantea)	Streaker	1	0.02				Flatpea will suppress woody vegetation. It should be planted in the spring, or as a dormant seeding in late fall or winter. It must be incorporated into the soil or covered with mulch. It may not be winter-hardy if planted late summer - fall. Caution: Flatpea can spread aggressively, and can be toxic to livestock.
AND ADD THE FOLLOWING LEGUME:							
Flatpea (Lathyrus sylvestris)	Lathco	15	0.34				
6. Tall Fescue (Lolium arundinaceum) (formerly Festuca arundinacea)	Recommended MD turf-types 4/	40	0.93	W - SP	2 - 3	C - D	
Perennial Ryegrass (Lolium perenne)	Blazer (II), Pennfine	25	0.57				
PLUS ONE OF THE FOLLOWING LEGUMES:							
Birdsfoot Trefoil (Lotus corniculatus)	Empire, Viking, Norcen, Leo	8	0.18				Birdsfoot trefoil is suitable for use only in Zones 5b and 6a.
White Clover (Trifolium repens)	Common	5	0.11				
7. Creeping Red Fescue (Festuca rubra var. rubra)	Dawson, Pennlawn, Flyer, Fortess, Ruby, or Salem	60	1.38	W - MW	1 - 2	C - D	This mix has good shade tolerance
Kentucky Bluegrass (Poa pratensis)	Recommended MD turf-types 4/	10	0.34				
8. Tall Fescue (Lolium arundinaceum) (formerly Festuca arundinacea)	Recommended MD turf-types 4/	100	2.3	E - SP	2 - 3	A - D	Tall fescue produces a dense turf if frequently mowed, but tends to be clumpy if mowed only occasionally. For best results, recommend using a blend of 3 cultivars. Use low-endophyte cultivars in areas where livestock may graze.
9. SELECT ONE SPECIES OF FESCUE:							Good for highly managed athletic fields.
Tall Fescue (Lolium arundinaceum) (formerly Festuca arundinacea)	Recommended MD turf-types 4/	60	1.38	W - SP	2 - 3	A - B	Tall fescue is more suitable for compacted, high use areas and on moist sites.
OR							
Hard Fescue (Festuca trachyphylla)	Attila or Aurora	40	0.92				Hard fescue produces finer-textured turf with more shade tolerance.
AND ADD:							
Kentucky Bluegrass (Poa pratensis)	Recommended MD turf-types 4/	40	0.92				Use tall fescue instead of hard fescue for wastewater treatment strips and areas.
Perennial Ryegrass (Lolium perenne)	Blazer (II), Pennfine	20	0.46				For best results, recommend using a blend of 3 cultivars each for tall fescue and Kentucky bluegrass.
10. Orchardgrass (Dactylis glomerata)	Any	20	0.57	W - SP	2 - 3	C - D	Low maintenance mix that is easy to establish.
Creeping Red Fescue (Festuca rubra var. rubra)	Dawson, Pennlawn, Flyer, Fortess, Ruby, or Salem	10	0.23				
Redtop (Agrostis gigantea)	Streaker	1	0.02				
Alsike Clover (Trifolium hybridum)	Common	3	0.07				Alsike clover can be toxic to horses.
White Clover (Trifolium repens)	Common	3	0.07				Omit the clovers if using this mix for wastewater treatment strips and areas.
11. Creeping Red Fescue (Festuca rubra var. rubra)	Dawson, Pennlawn, Flyer, Fortess, Ruby, or Salem	30	0.69	E - MW	2 - 3	B - D	
Chewings Fescue (Festuca rubra ssp. commutata)	Common	30	0.69				
Kentucky Bluegrass (Poa pratensis)	Recommended MD turf-types 4/	20	0.46				
OPTIONAL ADDITION							
Rough Bluegrass (Poa trivialis)	Common	15	0.34				Add rough bluegrass in moist, shady conditions.
12. Creeping Red Fescue (Festuca rubra var. rubra)	Dawson, Pennlawn, Flyer, Fortess, Ruby, or Salem	25	0.57	E - MW	2 - 3	C - D	Attractive mix of fine fescues and wildflowers for low maintenance conditions. Once well established, the grasses may tend to outcompete the wildflowers.
Hard Fescue (Festuca trachyphylla)	Attila or Aurora	25	0.57				Wildflowers are best established by broadcasting and cultipacking on a prepared seedbed. Drilling can be also used, but care must be taken so that seeds are not drilled too deep.
Sheep Fescue (Festuca ovina)	Common or Bighorn	25	0.57				Hydroseeding is not recommended for this mix if wildflowers are used. (They have very small seeds.)
PLUS WILDFLOWER MIX:							
Black-eyed Susan (Rudbeckia hirta)	Common	2	0.05				
Lance-leaved Coreopsis (Coreopsis lanceolata)	Common	2	0.05				
Purple Coneflower (Echinacea purpurea)	Common	2	0.05				
Partridge Pea (Chamaecrista fasciculata)	Common	5	0.11				
OR ADD CLOVER MIX:							
White Clover (Trifolium repens)	Common	3	0.07				
Red Clover (Trifolium pratense)	Any	3	0.07				
13. Alkali Saltgrass (Puccinellia distans)	Fults or Salty	20	0.46	W - P	2 - 3	B - D	This is the recommended mix for saline sites. Saltgrass will persist only under saline conditions.
Creeping Red Fescue (Festuca rubra var. rubra)	Dawson	15	0.34				For best results, use only the Dawson variety of creeping red fescue. It is a salt-tolerant variety.
Fowl Meadowgrass (Poa palustris)	Common	2	0.05				
OPTIONAL ADDITION							
Creeping Bentgrass (Agrostis stolonifera)	Seaside	2	0.05				Add bentgrass for wetter conditions.

USE FOR RESTABILIZATION OF BASIN EMBANKMENT MIX No.6 W/ WHITE CLOVER

COOL-SEASON MIXTURES TO BE USED

Utility Notes :

1) CONTRACTOR SHOULD OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED BELOW (DOWNSLOPE OF) THE TRENCH.
2) PLACE ALL EXCAVATED MATERIAL ON UPHILL SIDE OF TRENCH.
3) ANY SEDIMENT CONTROLS DISTURBED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY.

Notes:

1/ Seeding Rates: Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates must be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usualy not needed for the cool-season grasses, legumes, or wildflowers. All legume seeds must be inoculated before planting with the appropriate Rhizobium bacteria. When feasible, hard-seeded legumes should be scarified to improve germination.

2/ Soil Drainage Class (refer to the county soil survey for further information):
E - Excessively Drained; W - Well Drained; MW - Moderately Well Drained; SP - Somewhat Poorly Drained; P - Poorly Drained.

3/ Maintenance Level:
A - Intensive mowing (every 2 - 4 days), fertilization, lime, insect and weed control, and watering (examples: high maintenance lawns and athletic fields).
B - Frequent mowing (every 4 - 7 days), occasional fertilization, lime, pest control, and watering (examples: residential, school, and commercial lawns).
C - Periodic mowing (every 7 - 14 days), occasional fertilization and lime (examples: residential lawns, parks).
D - Infrequent or no mowing, fertilization, or lime after the first year of establishment (examples: wildlife areas, roadsides, steep banks).

4/ Turf-type cultivars of tall fescue and Kentucky bluegrass must be selected based on recommendations of the University of Maryland Cooperative Extension Service, Agronomy Mimeo 77. Recommendations are as follows:

A. Kentucky Bluegrass -

1. The following Kentucky bluegrass cultivars are suitable for general use, and are also noted for shade tolerance:

America
Ascot
Brilliant
Champagne
Compact
Coventry
Liberator
Moonlight
Nuglade
Princeton 105
Quantum Leap
Showcase
SR 2000
Unique

2. The following Kentucky bluegrass cultivars are suitable for general use, and are also noted for tolerance of low maintenance conditions:

Caritus
Caliber
Eagleton
Freedom
Haga
Livingston
Merit
Midnight
Monopoly
Washington

B. Tall Fescue - The following turf-type cultivars are suitable for general use:

Alamo E
Apache II
Avanti*
Axiom
Bandana
Barlexus
Barrington
Bonanza*
Bonanza II
Bulldawg
Chapel Hill
Chieftain II*
Chinook
Cochise II
Comstock
Coyote
Crossfire*
Crossfire II
Debutante
Dominion
Duke
Duster*
Eldorado*
Empress
Falcon II*
Finelawn Petite*
Genesis
Good-En
Grande
Guardian
Heritage
Houndog 5
Jaguar II
Lancer
Leprechaun
Masterpiece
Micro DD
Millenium
Olympic Gold
Oncue
Pixie
Pixie E+
Plantation
Pyramid
Rebel 2000
Rebel 3D*
Rebel III*
Rebel Jr.
Rebel Sentry
Red Coat
Regiment*
Rembrandt
Renegade
Reserve
Scorpio
Shenandoah
Shenandoah II
Southern Choice*
SR 8200
SR 8300
Stetson
Tarheel
TF6
Titan 2
Tomahawk*
Trailblazer II*
Twilight II
Virtue*
Watchdog
Wolfpack
WPEZE
Wyatt

Tall fescue cultivar names that are followed by an asterisk (*) have low endophyte levels (20% or lower, based on seed analysis). To avoid livestock health problems due to endophyte toxicity, use low-endophyte cultivars for critical area plantings where livestock may be allowed to graze (e.g. heavy use grass loafing paddocks). Please note that endophyte levels in plantings can vary between varieties, between fields of the same variety, and with the time of year. For areas where livestock will not have access, cultivars with higher endophyte levels are desirable because they tend to be more drought tolerant and more resistant to disease and insect damage.

Table B.1: Temporary Seeding for Site Stabilization

Plant Species	Seeding Rate 1/ lb/ac	Seeding Rate 1/ lb/1000 ft2	Seeding Depth 2/ (inches)	Recommended Seeding Dates by Plant Hardiness Zone 3/ 5b and 6a	6b	[✓ 7a] and 7b
Cool-Season Grasses						
Annual Ryegrass (Lolium perenne ssp. multiflorum)	40	1.0	0.5	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Barley (Hordeum vulgare)	96	2.2	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Oats (Avena sativa)	72	1.7	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Wheat (Triticum aestivum)	120	2.8	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Cereal Rye (Secale cereale)	112	2.8	1.0	Mar 15 to May 31; Aug 1 to Oct 31	Mar 1 to May 15; Aug 1 to Nov 15	Feb 15 to Apr 30; Aug 15 to Dec 15
Warm-Season Grasses						
* Foxtail Millet (Setaria italica)	30	0.7	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14
* Pearl Millet (Pennisetum glaucum)	20	0.5	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14

NOTES:

1/ Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usually not needed for the cool-season grasses.

* Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the overall permanent seeding mix. Cereal rye generally should not be used as a nurse crop, unless planting will occur in very late fall beyond the seeding dates for other temporary seedings. Cereal rye has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/3 of the rate listed above.

Oats are the recommended nurse crop for warm-season grasses.

2/ For sandy soils, plant seeds at twice the depth listed above.

3/ The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

H-1 Standards and Specifications For Materials

Table H.1: Geotextile Fabrics

		WOVEN SILT FILM GEOTEXTILE		WOVEN MONOFILAMENT GEOTEXTILE		NONWOVEN GEOTEXTILE	
		MINIMUM AVERAGE ROLL VALUE [1]					
PROPERTY	TEST METHOD	MD	CD	MD	CD	MD	CD
Grab Tensile Strength	ASTM D-4632	200 lb	200 lb	370 lb	250 lb	200 lb	200 lb
Grab Tensile Elongation	ASTM D-4632	15%	10%	15%	15%	50%	50%
Trapezoidal Tear Strength	ASTM D-4533	75 lb	75 lb	100 lb	60 lb	80 lb	80 lb
Puncture Strength	ASTM D-6241	450 lb		900 lb		450 lb	
Apparent Opening Size [2]	ASTM D-4751	U.S. Sieve 30 (0.59 MM)		U.S. Sieve 70 (0.21 MM)		U.S. Sieve 70 (0.21 MM)	
Permittivity	ASTM D-4491	0.05 sec [1]		0.20 sec [1]		1.10 sec [1]	
Ultraviolet Resistance Retained at 500 hours	ASTM D-4355	70% strength		70% strength		70% strength	

[1] All numeric values except apparent opening size (AOS) represent minimum average roll values (MARV). MARV is calculated as the typical minus two standard deviations. MD is machine direction; CD is cross direction.

[2] Values for AOS represent the average maximum opening.

Geotextiles must be evaluated by the National Transportation Product Evaluation Program (NTPEP) and conform to the values in Table H.1.

The geotextile must be inert to commonly encountered chemicals and hydrocarbons and must be rot and mildew resistant. The geotextile must be manufactured from fibers consisting of long chain synthetic polymers and composed of a minimum of 95 percent by weight of polyolefins or polyesters, and formed into a stable network so the filaments or yarns retain their dimensional stability relative to each other, including selvages.

When more than one section of geotextile is necessary, overlap the sections by at least one foot. The geotextile must be pulled taut over the applied surface. Equipment must not run over exposed fabric. When placing riprap on geotextile, do not exceed a one foot drop height.

Temporary Seeding Summary

Hardiness Zone (from Figure B.3): 7A
Seed Mixture (from Table B.1): ______
Fertilizer Rate (10-20-20): 436 lbs per acre (10.0 lb/1000 sf)
Lime Rate: 2 ton/per acre (90.0 lb/1000 sf)

Permanent Seeding Summary

Hardiness Zone (from Figure B.3): 7A
Seed Mixture (from Table B.3): ______
Fertilizer Rate (10-20-20): N = (45 pounds per acre (1.0 lb/1000 sf)
P_2O_5 = (90 lbs/ac (2.0 lb/1000 sf), K_2O = (90 lbs/ac (2.0 lb/1000 sf)
Seeding Depth: 1/4 - 1/2 in
Seeding Dates: March 1 to May 15, Aug 1 to Oct 15 *
Lime Rate: 2 ton/per acre (90.0 lb/1000 sf)

* For seeding between May 16 to July 31, Contractor to add temporary seed, as a nurse crop for permanent seed mixtures 6, 8, 9 & 11, use warm-season grasses (see table B-1).

APPROVED
MAR 1 1 2026
St. Mary's SCD

NJB Engineering, Inc.
Civil Engineering Consulting
810 Cleneagles Court
Towson, Maryland 21286
Suite 311
410-832-7691

⚠	NO CHANGES THIS SHEET	NJB	2/17/22
NO.	REVISIONS	BY	DATE

DATE: JULY 2021
CAD STANDARDS VERSION: V8 - 2000
DESIGNED: NJB
TECHNICIAN: DTB
CHECKED: NJB

MISS UTILITY NOTE

INFORMATION CONCERNING EXISTING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND UTILITY CROSSINGS BY DIGGING TEST PITS BY HAND, WELL IN ADVANCE OF THE START OF EXCAVATION. CONTACT "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF EXCAVATION. IF CLEARANCES ARE LESS THAN SHOWN ON THIS PLAN OR TWELVE (12) INCHES, WHICHEVER IS LESS, CONTACT THE ENGINEER AND THE UTILITY COMPANY BEFORE PROCEEDING WITH CONSTRUCTION. CLEARANCES LESS THAN NOTED MAY REQUIRE REVISIONS TO THIS PLAN.

DEVELOPER / APPLICANT

ST. JOHN
PROPERTIES
2560 Lord Baltimore Drive
Baltimore, Maryland 21244
(410) 788-0100

ZONING CATEGORY: I (AE OVERLAY & PUD-IP OVERLAY)	W&S CATEGORY: W-3D / S-3D
TAX MAP / PARCEL 34 / 292	GRID 10
SITE DATUM HORIZONTAL: NAD83 VERTICAL: NGVD88	LIBER/ FOLIO 2105 / 042

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. 18558 EXPIRATION DATE: 1-12-20

Seeding Specifications & Notes

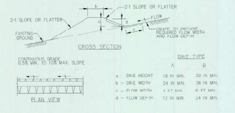
MASS GRADING PLAN
OAK CREST CENTER
(REVISION TO P/O PHASE 1 & PHASE 2)
LEXINGTON EXCHANGE

ST. MARY'S COUNTY, MARYLAND
ELECTION DISTRICT: 8
FEBRUARY 17, 2022

SCALE: AS SHOWN
MASS GRADING
SHEET 13 OF 16
PROJECT NO.

PN 2017-019 SJP-Oakcrest/Sheets/(03) ex conditions plan.dgn

DETAIL C-1 EARTH DIKE


2:1 SLOPE OR FLATTER
FLOW
EXISTING GROUND
CROSS SECTION
CONTINUOUS GRADE 0.5% MIN. TO 10% MAX. SLOPE
PLAN VIEW
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

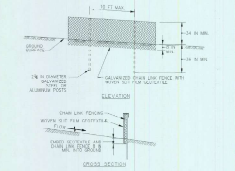
A-1 SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.)
A-2/B-2 SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.
A-3/B-3 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

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 EARTH DIKE.
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

DETAIL E-3 SUPER SILT FENCE


STANDARD SYMBOL
SSF
10 FT MAX.
34 IN MIN.
8 IN MIN.
36 IN MIN.
2⅜ IN DIAMETER GALVANIZED STEEL OR ALUMINUM POSTS
GALVANIZED CHAIN LINK FENCE WITH WOVEN SLIT FILM GEOTEXTILE
ELEVATION
CHAIN LINK FENCING
WOVEN SLIT FILM GEOTEXTILE
FLOW
EMBED GEOTEXTILE AND CHAIN LINK FENCE 8 IN MIN. INTO GROUND
CROSS SECTION

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 HOG 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
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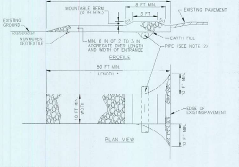
DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE



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
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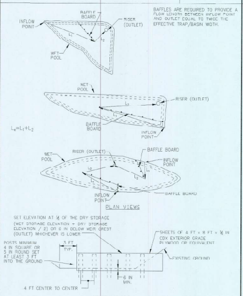
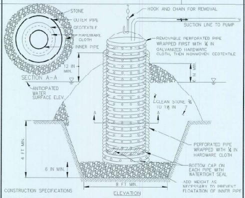
DETAIL G-2-4 BAFFLE BOARDS


STANDARD SYMBOL
BAFFLES ARE REQUIRED TO PROVIDE A FLOW LENGTH BETWEEN INFLOW POINT AND OUTLET EQUAL TO TWICE THE EFFECTIVE TRAP/BASIN WIDTH
INFLOW POINT
BAFFLE BOARD
RISER (OUTLET)
WET POOL
RISER (OUTLET)
BAFFLE BOARD
INFLOW POINT
Le=L1+L2
WET POOL
RISER (OUTLET)
BAFFLE BOARD
INFLOW POINT
BAFFLE BOARD
PLAN VIEWS
SET ELEVATION AT ½ OF THE DRY STORAGE (WET STORAGE ELEVATION + DRY STORAGE ELEVATION / 2) OR 6 IN BELOW WEIR CREST (OUTLET) WHICHEVER IS LOWER
SHEETS OF 4 FT x 8 FT x ½ IN CDX EXTERIOR GRADE PLYWOOD OR EQUIVALENT
POSTS MINIMUM 4 IN SQUARE OR 5 IN ROUND SET AT LEAST 3 FT INTO THE GROUND
3 FT TYP.
EXISTING GROUND
6 IN MIN.
4 FT CENTER TO CENTER
BAFFLE DETAIL

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 F-1 REMOVABLE PUMPING STATION

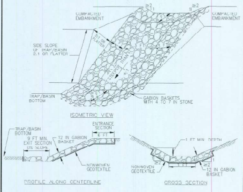

STANDARD SYMBOL
STONE
OUTER PIPE
GEOTEXTILE
HARDWARE CLOTH
INNER PIPE
HOOK AND CHAIN FOR REMOVAL
SUCTION LINE TO PUMP
REMOVABLE PERFORATED PIPE WRAPPED FIRST WITH ¼ IN GALVANIZED HARDWARE CLOTH, THEN NONWOVEN GEOTEXTILE
12 IN MIN.
SECTION A–A
ANTICIPATED WATER SURFACE ELEV.
CLEAN STONE ¾ TO 1½ IN
4 FT MIN.
6 IN MIN.
PERFORATED PIPE WRAPPED WITH ¼ IN HARDWARE CLOTH
BOTTOM CAP ON EACH PIPE WITH WATERTIGHT SEAL
ADD WEIGHT AS NECESSARY TO PREVENT FLOATATION OF INNER PIPE
8 FT MIN.
ELEVATION

CONSTRUCTION SPECIFICATIONS

1. USE CORRUGATED METAL OR PLASTIC PIPE WITH 1 INCH DIAMETER PERFORATIONS 6 INCHES ON CENTER.
2. USE A MINIMUM 12 INCH DIAMETER INNER PIPE WITH AN OUTER PIPE A MINIMUM 6 INCHES LARGER IN DIAMETER. BOTTOM OF EACH PIPE MUST BE CAPPED WITH WATERTIGHT SEAL.
3. WRAP EACH PIPE WITH ¼ INCH GALVANIZED HARDWARE CLOTH. ON INNER PIPE WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE HARDWARE CLOTH.
4. EXCAVATE 8 FEET X 8 FEET X 4 FEET DEEP PIT FOR PIPE PLACEMENT. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
5. SET TOP OF INNER AND OUTER PIPES MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION (OR RISER CREST ELEVATION WHEN DEWATERING A BASIN).
6. BACKFILL PIT AROUND THE OUTER PIPE WITH ¾ TO 1½ INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
7. DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
8. A REMOVABLE PUMPING STATION REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, PULL OUT INNER PIPE AND REPLACE GEOTEXTILE. KEEP POINT OF DISCHARGE FREE OF EROSION.

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

DETAIL D-3-2 GABION INFLOW PROTECTION



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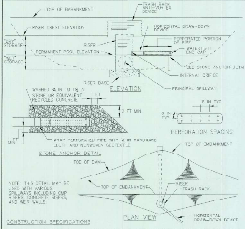
DETAIL G-2-6 SEDIMENT BASIN SCHEMATIC HORIZONTAL DRAW-DOWN DEVICE

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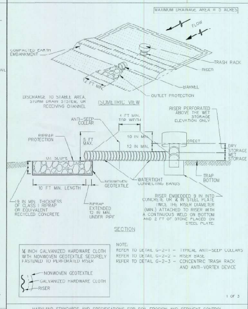
DETAIL G-1-1 PIPE OUTLET SEDIMENT TRAP ST-I

STANDARD SYMBOL ST-I


MAXIMUM DRAINAGE AREA = 5 ACRES
FLOW
COMPACTED EARTH EMBANKMENT
TRASH RACK
RISER
ISOMETRIC VIEW
OUTLET PROTECTION
RISER PERFORATED ABOVE THE WET STORAGE ELEVATION ONLY
DRY STORAGE
WET STORAGE
ANTI-SEEP COLLAR
RISER EMBEDDED 9 IN INTO CONCRETE BASE
TRASH RACK
SECTION

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.

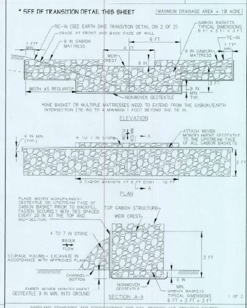
2 OF 3

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 E-8 TEMPORARY GABION OUTLET STRUCTURE

STANDARD SYMBOL

* SEE DF TRANSITION DETAIL THIS SHEET


MAXIMUM DRAINAGE AREA = 1½ ACRE
TIE-IN (SEE EARTH DIKE TRANSITION DETAIL ON 2 OF 2)
GRADE AT FRONT AND BACK FACE OF WALL
GABION BASKETS TYPICAL DIMENSIONS 6 FT x 3 FT x 3 FT
1 FT* MIN.
9 IN GABION MATTRESS
6 FT
6 FT
WEIR CREST
9 IN GABION MATTRESS
TIE-IN
1 FT* MIN.
FLOW
NONWOVEN GEOTEXTILE
ELEVATION
PLACE WOVEN MONOFILAMENT GEOTEXTILE ON UPSTREAM FACE OF GABION BASKETS
PLAN
STORAGE VOLUME – EXCAVATE IN ACCORDANCE WITH APPROVED PLANS
3 FT
CHANNEL BOTTOM
NONWOVEN GEOTEXTILE
9 IN MIN.
EMBED WOVEN MONOFILAMENT GEOTEXTILE 9 IN MIN. INTO GROUND
SECTION A-A
GABION BASKETS TYPICAL DIMENSIONS 6 FT x 3 FT x 3 FT

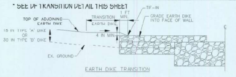
1 OF 2

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

* SEE DF TRANSITION DETAIL THIS SHEET


TIE-IN
TOP OF ADJOINING EARTH DIKE
TRANSITION EARTH DIKE
1 FT MIN.
GRADE EARTH DIKE INTO FACE OF WALL
18 IN TYPE 'A' DIKE OR 30 IN TYPE 'B' DIKE
4 IN MIN.
EX. GROUND
EARTH DIKE TRANSITION

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

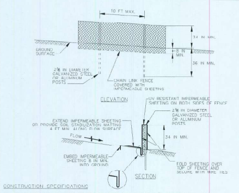
1. PROVIDE STORAGE VOLUME AS SPECIFIED ON APPROVED PLANS.
2. USE BASKETS MADE OF 11 GAUGE WIRE OR HEAVIER.
3. USE NONWOVEN AND WOVEN MONOFILAMENT GEOTEXTILES AS SPECIFIED IN SECTION H-1 MATERIALS.
4. INSTALL GABIONS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
5. EMBED THE GABION OUTLET STRUCTURE 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

DETAIL G-9 DIVERSION FENCE

STANDARD SYMBOL DF


MAXIMUM DRAINAGE AREA = 2 ACRES
10 FT MAX.
34 IN MIN.
GROUND SURFACE
36 IN MIN.
2⅜ IN DIAMETER GALVANIZED STEEL OR ALUMINUM POSTS
CHAIN LINK FENCE COVERED WITH IMPERMEABLE SHEETING
ELEVATION
UV RESISTANT IMPERMEABLE SHEETING ON BOTH SIDES OF FENCE
2⅜ IN DIAMETER GALVANIZED STEEL OR ALUMINUM POSTS
EXTEND IMPERMEABLE SHEETING OR PROVIDE SOIL STABILIZATION MATTING 4 FT MIN. ALONG FLOW SURFACE
FLOW
34 IN MIN.
EMBED IMPERMEABLE SHEETING 8 IN MIN. INTO GROUND
FOLD SHEETING OVER TOP OF FENCE AND SECURE WITH WIRE TIES
SECTION

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
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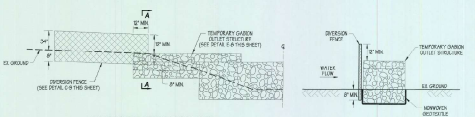
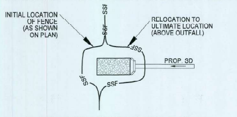

A
12" MIN.
34"
8"
12" MIN.
TEMPORARY GABION OUTLET STRUCTURE (SEE DETAIL E-8 THIS SHEET)
EX. GROUND
DIVERSION FENCE (SEE DETAIL G-9 THIS SHEET)
A
8" MIN.
DIVERSION FENCE
12" MIN.
TEMPORARY GABION OUTLET STRUCTURE
WATER FLOW
EX. GROUND
8" MIN.
NONWOVEN GEOTEXTILE
SECTION A - A

DIVERSION FENCE TIED INTO
TEMPORARY GABION OUTLET STRUCTURE DETAIL
NOT TO SCALE

FILTER FENCE OUTFALL PROTECTION


INITIAL LOCATION OF FENCE (AS SHOWN ON PLAN)
SSF
SSF
RELOCATION TO ULTIMATE LOCATION (ABOVE OUTFALL)
SSF
PROP. SD
SSF
SSF

FILTER FENCE AT PIPE OUTFALL E-1 & E-2
NOT TO SCALE

Inspection Agency Approval Statements

1. APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION FOR INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
2. APPROVAL SHALL BE REQUESTED UPON FINAL STABILIZATION OF ALL SITES BEFORE REMOVAL OF SEDIMENT CONTROLS.
3. THE CONTRACTOR SHALL NOTIFY MDE, ENFORCEMENT DIVISION ONCE THE PERIMETER SEDIMENT CONTROLS HAVE BEEN INSTALLED AT 410-537-3510 OR MDE, SEDIMENT AND STORMWATER ADMIN., 1800 WASHINGTON BLVD., BALTIMORE, MD 21230-1708.

APPROVED
MAR 1 1 2026
St. Mary's SCD

NJB Engineering, Inc.
Civil Engineering Consulting
810 Gleneagles Court
Towson, Maryland 21286
Suite 311
410-832-7691

NO.	REVISIONS	BY	DATE
⚠	NO CHANGES THIS SHEET	NJB	2/17/22

DATE: JULY 2021
DESIGNED: NJB
CAD STANDARDS VERSION: V8-2000
TECHNICIAN: DTB
CHECKED: NJB

MISS UTILITY NOTE

INFORMATION CONCERNING EXISTING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND UTILITY CROSSINGS BY DIGGING TEST PITS BY HAND, WELL IN ADVANCE OF THE START OF EXCAVATION. CONTACT "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF EXCAVATION. IF CLEARANCES ARE LESS THAN SHOWN ON THIS PLAN OR TWELVE (12) INCHES, WHICHEVER IS LESS, CONTACT THE ENGINEER AND THE UTILITY COMPANY BEFORE PROCEEDING WITH CONSTRUCTION. CLEARANCES LESS THAN NOTED MAY REQUIRE REVISIONS TO THIS PLAN.

DEVELOPER / APPLICANT

ST. JOHN
PROPERTIES
2560 Lord Baltimore Drive
Baltimore, Maryland 21244
(410) 788-0100

ZONING CATEGORY: I (AE OVERLAY & PUD-IP OVERLAY)
W&S CATEGORY: W-3D / S-3D
TAX MAP / PARCEL 34 / 292
GRID 10
SITE DATUM HORIZONTAL: NAD83 VERTICAL: NGVD88
LIBER/ FOLIO 2105 / 042

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. 18558
EXPIRATION DATE: 1 12 20

No. 18558

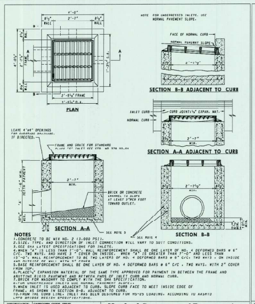
Specifications and Details

MASS GRADING PLAN
OAK CREST CENTER
(REVISION TO P/O PHASE 1 & PHASE 2)
LEXINGTON EXCHANGE

ST. MARY'S COUNTY, MARYLAND
ELECTION DISTRICT: 8
FEBRUARY 17, 2022

SCALE: AS SHOWN
MASS GRADING
SHEET 14 OF 16
PROJECT NO.

PN 2017-019 SJP-Oakcrest/Sheets/[03] ex conditions plan.dgn

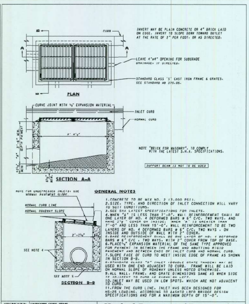

NOTE: FOR UNDEPRESSED INLETS, USE NORMAL PAVEMENT SLOPE.
4'-0"
2'-7"
WALL
PLAN
SECTION B-B ADJACENT TO CURB
SECTION A-A ADJACENT TO CURB
SECTION A-A
SECTION B-B
LEAVE 4"x4" OPENINGS FOR SUBGRADE DRAINAGE, IF DIRECTED.
FRAME AND GRATE FOR STANDARD
BRICK OR CONCRETE CHANNEL TO SLOPE AT LEAST 2" PER FOOT TOWARD OUTLET.
SEE NOTE 5
SEE NOTE 4

NOTES

1. CONCRETE TO BE MIX NO. 2 (3,000 PSI).
2. SIZE, TYPE, AND DIRECTION OF INLET CONNECTION WILL VARY TO SUIT CONDITIONS.
3. SEE SHA LATEST SPECIFICATIONS FOR INLETS.
4. WHEN "A" IS LESS THAN 7'-0", WALL REINFORCEMENT SHALL BE ONE LAYER OF NO. 4 DEFORMED BARS @ 6" C/C, TWO WAYS, AND HAVE 3" COVER ON INSIDE. WHEN "A" IS GREATER THAN 7'-0" AND LESS THAN 15'-0", WALL REINFORCEMENT TO BE TWO LAYERS OF NO. 4 DEFORMED BARS @ 6" C/C, TWO WAYS, ON INSIDE AND OUTSIDE OF WALL WITH 2" COVER.
5. BASE REINFORCEMENT SHALL BE ONE LAYER OF NO. 4 DEFORMED BARS @ 6" C/C, TWO WAYS, WITH 2" COVER FROM TOP.
6. PLACE ¼" EXPANSION MATERIAL OF THE SAME TYPE APPROVED FOR PAYMENT IN BETWEEN THE FRAME AND ABUTTING RIGID PAVEMENT AND BETWEEN ENDS OF INLET CURB AND NORMAL CURB.
7. BRICK FOR MASONRY TO COMPLY WITH THE SHA SPECIFICATION.
8. FOR UNDEPRESSED INLETS USE NORMAL PAVEMENT SLOPE.
9. WHEN INLET IS USED ADJACENT TO CURB, SLOPE CURB FACE TO MEET INSIDE EDGE OF FRAME, AS SHOWN IN SECTION B-B, ADJACENT TO CURB.
10. FROM THE CURB LINE, INLET HAS BEEN DESIGNED FOR HS-25 LOADING, ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

SPECIFICATION 305 | CATEGORY CODE ITEMS
APPROVED
APPROVAL 7-9-62 | APPROVAL 2-24-88
REVISED 10-7-14 | REVISED 9-29-14

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
STANDARD TYPE S INLET
SINGLE GRATE
STANDARD NO. MD 379.01

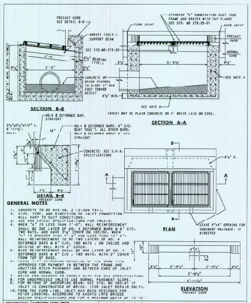

INVERT MAY BE PLAIN CONCRETE OR 4" BRICK LAID ON EDGE. INVERT TO SLOPE DOWN TOWARD OUTLET AT THE RATE OF 2" PER FOOT, OR AS DIRECTED.
CURB
LEAVE 4"x4" OPENING FOR SUBGRADE DRAINAGE, IF DIRECTED.
STANDARD CLASS 'S' CAST IRON FRAME & GRATES. SEE STANDARD MD 379.05.
PLAN
CURVE JOINT WITH ½" EXPANSION MATERIAL
INLET CURB
NORMAL CURB
NOTE "BRICK FOR MASONRY", TO COMPLY WITH THE LATEST S.H.A. SPECIFICATIONS.
SUPPORT BEAM IS NOT TO BE USED
SECTION A-A
NORMAL CURB LINE
NORMAL ROADWAY SLOPE
SEE NOTE 4
SEE NOTE 5
SECTION B-B

GENERAL NOTES

1. CONCRETE TO BE MIX NO. 2 (3,000 PSI).
2. SIZE, TYPE, AND DIRECTION OF INLET CONNECTION WILL VARY TO SUIT CONDITIONS.
3. SEE SHA LATEST SPECIFICATIONS FOR INLETS.
4. WHEN "A" IS LESS THAN 7'-0", WALL REINFORCEMENT SHALL BE ONE LAYER OF NO. 4 DEFORMED BARS @ 6" C/C, TWO WAYS, AND HAVE 3" COVER ON INSIDE. WHEN "A" IS GREATER THAN 7'-0" AND LESS THAN 15'-0", WALL REINFORCEMENT TO BE TWO LAYERS OF NO. 4 DEFORMED BARS @ 6" C/C, TWO WAYS, ON INSIDE AND OUTSIDE OF WALL WITH 2" COVER.
5. BASE REINFORCEMENT SHALL BE ONE LAYER OF NO. 4 DEFORMED BARS @ 6" C/C, TWO WAYS, WITH 2" COVER FROM TOP OF BASE.
6. PLACE ¼" EXPANSION MATERIAL OF THE SAME TYPE APPROVED FOR PAYMENT IN BETWEEN THE FRAME AND ABUTTING RIGID PAVEMENT AND BETWEEN ENDS OF INLET CURB AND NORMAL CURB.
7. SLOPE FACE OF CURB TO MEET INSIDE EDGE OF FRAME AS SHOWN IN SECTION B-B.
8. STANDARD CLASS "S" INLET (DOUBLE GRATE TANDEM) MAY BE USED WITH ONE END ADJACENT TO CURB. FRAME WILL BE LAID ON NORMAL SLOPE OF ROADWAY UNLESS NOTED OTHERWISE.
9. ALL WALL, FRAME, AND GRATE DIMENSIONS SAME AS WHEN SIDE IS ADJACENT TO CURB AS SHOWN ON LEFT.
10. INLET MAY BE USED IN LOW SPOTS, WHICH ARE NOT ADJACENT TO CURB.
11. FROM THE CURB LINE, INLET HAS BEEN DESIGNED FOR HS-25 LOADING, ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND FOR A MAXIMUM DEPTH OF 15'-0".

SPECIFICATION 305 | CATEGORY CODE ITEMS
APPROVED
APPROVAL 10-30-69 | APPROVAL 11-10-69
REVISED 10-7-14 | REVISED 9-29-14

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
STANDARD TYPE S INLET
DOUBLE GRATE TANDEM
STANDARD NO. MD 379.03

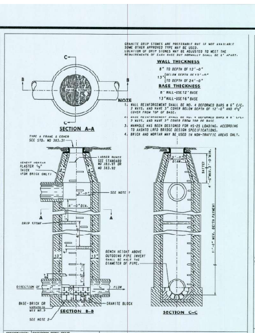

PRECAST CURB SEE DETAIL B-B
W8x21 (GALV.) SUPPORT BEAM
SEE STD. MD-379.05
6½" BEARING (TYP.)
CONCRETE OR BRICK CHANNEL TO SLOPE 2" PER FOOT TOWARD OUTLET
SECTION B-B
STANDARD "S" COMBINATION CAST IRON FRAME AND GRATES WITH CUT FLANGE SEE STD. MD 379.05-01
CURB JOINT
PRECAST CURB
NORMAL CURB
SEE NOTE 4
SEE NOTE 6
INVERT MAY BE PLAIN CONCRETE OR 4" BRICK LAID ON EDGE.
SECTION A-A
NO.6 @ DEFORMED BAR, STRAIGHT
NO.4 @ DEFORMED BARS, 8" C/C, BENT THUS, ALL OTHER BARS.
CONCRETE, SEE S.H.A. SPECIFICATIONS
DETAIL B-B
PRECAST CURB
PLAN
LEAVE 4"x4" OPENING FOR SUBGRADE DRAINAGE, IF DIRECTED
ELEVATION
PRECAST CURB

GENERAL NOTES

1. CONCRETE TO BE MIX NO. 2 (3,000 PSI).
2. SIZE, TYPE, AND DIRECTION OF INLET CONNECTION WILL VARY TO SUIT CONDITIONS.
3. SEE SHA LATEST SPECIFICATIONS FOR INLETS.
4. WHEN "A" IS LESS THAN 7'-0", WALL REINFORCEMENT SHALL BE ONE LAYER OF NO. 4 DEFORMED BARS @ 6" C/C, TWO WAYS, AND HAVE 3½" COVER ON INSIDE. WHEN "A" IS GREATER THAN 7'-0" AND LESS THAN 15'-0" WALL REINFORCEMENT TO BE TWO LAYERS OF NO. 4 DEFORMED BARS @ 6" C/C, TWO WAYS, ON INSIDE AND OUTSIDE OF WALL WITH 2" COVER.
5. BASE REINFORCEMENT SHALL BE ONE LAYER OF NO. 4 DEFORMED BARS @ 6" C/C, TWO WAYS, WITH 2" COVER FROM TOP OF BASE.
6. PLACE ¼" EXPANSION MATERIAL OF THE SAME TYPE APPROVED FOR PAYMENT IN BETWEEN THE FRAME AND ABUTTING RIGID PAVEMENT AND BETWEEN ENDS OF INLET CURB AND NORMAL CURB.
7. BRICK FOR MASONRY TO COMPLY WITH THE SHA SPECIFICATION.
8. FOR UNDEPRESSED INLETS USE NORMAL PAVEMENT SLOPE.
9. FOR METHOD OF ANCHORING BEAM, SEE STD. MD 380.01 IF INLET IS CONSTRUCTED OF BRICK. (FOR INLET REPAIR ONLY).
10. FROM THE CURB LINE, INLET HAS BEEN DESIGNED FOR HS-25 LOADING, ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND FOR A MAXIMUM DEPTH OF 15'-0".

SPECIFICATION 305 | CATEGORY CODE ITEMS
APPROVED
APPROVAL 10-30-69 | APPROVAL 11-10-69
REVISED 10-7-14 | REVISED 9-29-14

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
STANDARD TYPE S COMBINATION INLET
DOUBLE GRATE TANDEM
STANDARD NO. MD 379.04


SECTION A-A
TYPE A FRAME & COVER SEE STD. MD 383.31
CEMENT MORTAR PLASTER ½" THICK (FOR BRICK ONLY)
LADDER RUNGS SEE STANDARD MD 383.91 OR MD 383.92
SEE NOTE 1
4'-0" DIA.
DRIP STONE
BENCH HEIGHT ABOVE OUTGOING PIPE INVERT SHALL BE HALF THE DIAMETER OF PIPE.
DIRECTION OF FLOW
BASE-BRICK OR CONCRETE MIX NO.2
GRANITE BLOCK
SEE NOTE 2
SECTION B-B
SECTION C-C

GRANITE DRIP STONES ARE PREFERABLE BUT IF NOT AVAILABLE SOME OTHER APPROVED TYPE MAY BE USED. LOCATION OF DRIP STONES MAY BE ADJUSTED TO MEET THE REQUIREMENTS OF EACH CASE BUT NORMALLY SHALL BE 6' APART.

WALL THICKNESS
8" TO DEPTH OF 12'-0"
13" BELOW DEPTH OF 12'-0" TO DEPTH OF 24'-0"

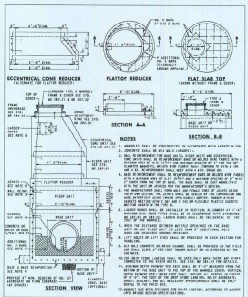
BASE THICKNESS
8" WALL-USE 12" BASE
13" WALL-USE 16" BASE

NOTE

1. WALL REINFORCEMENT SHALL BE NO. 4 DEFORMED BARS @ 6" C/C, 2 WAYS, AND HAVE 3" COVER BELOW DEPTH OF 12'-0" AND 4½" COVER FROM TOP OF BASE.
2. BASE REINFORCEMENT SHALL BE NO. 4 DEFORMED BARS @ 6" C/C, 2 WAYS, AND HAVE 2" COVER FROM TOP OF BASE.
3. MANHOLE HAS BEEN DESIGNED FOR HS-25 LOADING, ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
4. BRICK AND MORTAR MAY BE USED IN NON-TRAFFIC AREAS ONLY.

SPECIFICATION 305 | CATEGORY CODE ITEMS
APPROVED
APPROVAL 7-23-74 | APPROVAL 9-11-74
REVISED 10-7-14 | REVISED 9-29-14

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
STANDARD DROP MANHOLE
STANDARD NO. MD 383.11

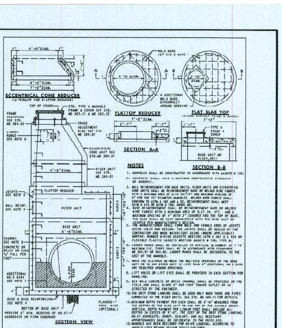

ECCENTRICAL CONE REDUCER
(ALTERNATE FOR FLATTOP REDUCER)
FLATTOP REDUCER
FLAT SLAB TOP
(SHOWN WITHOUT FRAME & COVER)
SECTION A-A
SECTION B-B
NO. 5 BARS
4 ADDITIONAL NO. 5 BARS DIAGONALLY AROUND OPENING
STANDARD TYPE A MANHOLE FRAME & COVER SEE STD. MD 383.31 & MD 383.32
FRAME ANCHORAGE SEE STD. MD 384.02
GRADE ADJUSTMENT RING SEE STD. MD 384.01
LADDER RUNGS SEE NOTE 6
ECCENTRICAL CONE UNIT SEE STD. MD 384.01
RISER UNIT SEE STD. MD 384.01
JOINTS SEE NOTE 5
WALL REINF. SEE NOTE 3
FLATTOP REDUCER
RISER UNIT
BASE UNIT
CHANNEL SEE NOTE 9
ADDITIONAL NO. 3 BARS SEE NOTE 7
BASE & BASE REINFORCING SEE NOTE 4
PROVIDE 6" MIN. BEDDING OF NO. 57 AGGREGATE ON FIRM SUBGRADE (BY OTHERS)
BOTTOM OF BASE UNIT
FLANGED CONC. BASE (OPTIONAL)
SECTION VIEW

NOTES

1. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M 199.
2. CONCRETE SHALL BE MIX NO.6 (4500PSI).
3. WALL REINFORCEMENT FOR BASE UNITS, RISER UNITS AND ECCENTRICAL CONE UNITS SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.15 IN²/FT AND MAXIMUM SPACING OF 3" FOR THE 60" DIAMETER MANHOLES. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 AND A 82. REINFORCEMENT SHALL MEET ASTM A 615, GRADE 60.
4. BASE REINFORCEMENT SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.27 IN²/FT AND A MAXIMUM SPACING OF 6" WITH 2" COVER FROM THE TOP OF BASE. THE BASE SHALL BE CAST MONOLITHIC WITH THE UNIT OR JOINTED PER THE MANUFACTURER'S DESIGN.
5. THE MANUFACTURER SHALL FORM MALE AND FEMALE ENDS OF JOINTS USING THEIR OWN DESIGN. THE JOINTS SHALL BE SEALED BY THE CONTRACTOR AND MADE WATERTIGHT USING (WHERE APPLICABLE) MORTAR, RUBBER O-RING GASKETS MEETING ASTM C 361 AND C 443 OR FLEXIBLE PLASTIC GASKETS MEETING AASHTO M 198 TYPE B.
6. LADDER RUNGS SHALL BE INSTALLED IN VERTICAL ALIGNMENT AT 1'-4" MAXIMUM C/C. RUNG TYPES SHALL BE IN ACCORDANCE WITH STANDARDS MD 383.91 OR 383.92. LADDER RUNGS SHALL BE INCIDENTAL TO THE COST OF THE MANHOLE.
7. WHEN THE DISTANCE BETWEEN MUTIPLE OPENINGS IN THE BASE UNIT OR ANY RISER UNIT IS LESS THAN 6" ADDITIONAL NO.3 BARS ARE REQUIRED AROUND OPENINGS.
8. LIFT HOLES OR LIFT EYES SHALL BE PROVIDED IN EACH SECTION FOR HANDLING.
9. MIX NO.2 CONCRETE OR BRICK CHANNEL SHALL BE PROVIDED IN THE FIELD AND SHALL SLOPE 2" PER FOOT TOWARD OUTLET OR AS DIRECTED BY THE ENGINEER.
10. THE DRIP STONE LANDING SHALL BE USED ONLY WHEN THERE ARE PIPES CONNECTED TO THE RISER UNITS. SEE STD. MD 384.13 FOR DETAILS.
11. MINIMUM DEPTH PAYMENT PER EACH SHALL BE 9'-0" MEASURED FROM THE BOTTOM OF THE BASE UNIT TO THE TOP OF THE MANHOLE COVER. VERTICAL DEPTH PAYMENT PER LINEAR FOOT SHALL INCLUDE ALL DEPTHS IN EXCESS OF 9'-0". THE COST OF THE DRIP STONE LANDING, NO.57 AGGREGATE, GROUT, SEALANT, AND ALL NECESSARY APPURTENANCES SHALL BE INCIDENTAL TO THE PRICE BID.
12. MANHOLE HAS BEEN DESIGNED FOR HS-25 LOADING, ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

SPECIFICATION 305 | CATEGORY CODE ITEMS
APPROVED
DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT
APPROVAL 2-22-91 | APPROVAL 1-2-91
REVISED 10-7-14 | REVISED 9-29-14

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
60" DIAMETER PRECAST MANHOLE
FOR 27" TO 36" PIPES
STANDARD NO. MD 384.03


ECCENTRICAL CONE REDUCER
(ALTERNATE FOR FLATTOP REDUCER)
FLATTOP REDUCER
FLAT SLAB TOP
SECTION A-A
SECTION B-B
NO.5 BARS
4 ADDITIONAL NO.5 BARS DIAGONALLY AROUND OPENING
STD. TYPE A MANHOLE FRAME & COVER SEE STD. MD 383.31 & MD 383.32
TOP OF COVER
FRAME ANCHORAGE SEE STD. MD 384.02
GRADE ADJUSTMENT RING SEE STD. MD 384.01
LADDER RUNGS SEE NOTE 6
ECCENTRICAL CONE UNIT SEE STD. MD 384.01
RISER UNIT SEE STD. MD 384.01
JOINTS SEE NOTE 5
WALL REINF. SEE NOTE 3
FLATTOP REDUCER
RISER UNIT
BASE UNIT 6'-0" DIAM.
CHANNEL SEE NOTE 9
CONCRETE OR BRICK ON EDGE ¼" FALL PER FOOT
ADDITIONAL NO.3 BARS SEE NOTE 7
BASE & BASE REINFORCING SEE NOTE 4
BOTTOM OF BASE UNIT
PROVIDE 6" MIN. BEDDING OF NO.57 AGGREGATE ON FIRM SUBGRADE
FLANGED CONC. BASE (OPTIONAL)
SECTION VIEW

NOTES

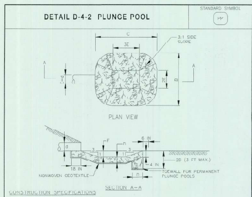
1. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M 199.
2. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4500PSI.
3. WALL REINFORCEMENT FOR BASE UNITS, RISER UNITS AND ECCENTRICAL CONE UNITS SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.15 IN²/FT AND MAXIMUM SPACING OF 6" FOR THE 72" DIAMETER MANHOLES. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 AND A 82. REINFORCEMENT SHALL MEET ASTM A 615 OR ASTM A 706, GRADE 60.
4. BASE REINFORCEMENT SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.27 IN./FT. AND A MAXIMUM SPACING OF 4" WITH 2" COVERED FRO THE TOP OF BASE. THE BASE SHALL BE CAST MONOLITHIC WITH THE BASE UNIT OR JOINTED PER MANUFACTURER'S DESIGN.
5. THE MANUFACTURER SHALL FORM MALE AND FEMALE ENDS OF JOINTS USING THEIR OWN DESIGN. THE JOINTS SHALL BE SEALED BY THE CONTRACTOR AND MADE WATERTIGHT USING (WHERE APPLICABLE) MORTAR, RUBBER O-RING GASKETS MEETING ASTM C 361 AND C 443 OR FLEXIBLE PLASTIC GASKETS MEETING AASHTO M 198, TYPE B.
6. LADDER RUNGS SHALL BE INSTALLED IN VERTICAL ALIGNMENT AT 1'-4" MAXIMUM C/C. TYPES SHALL BE IN ACCORDANCE WITH STANDARDS MD 383.91 OR 383.92. LADDER RUNGS SHALL BE INCIDENTAL TO THE COST OF THE MANHOLE.
7. WHEN THE DISTANCE BETWEEN THE MULTIPLE OPENINGS IN THE BASE UNIT OR IN ANY RISER UNIT IS LESS THAN 6" ADDITIONAL NO.3 BARS ARE REQUIRED AROUND OPENINGS.
8. LIFT HOLES OR LIFT EYES SHALL BE PROVIDED IN EACH SECTION FOR HANDLING.
9. MIX NO.2 CONCRETE OR BRICK CHANNEL SHALL BE PROVIDED IN THE FIELD AND SHALL SLOPE 2" PER FOOT TOWARD OUTLET OR AS DIRECTED BY THE ENGINEER.
10. THE DRIP STONE LANDING SHALL BE USED ONLY WHEN THERE ARE PIPES CONNECTED TO THE RISER UNITS. SEE STD. MD 384.13 FOR DETAILS.
11. MINIMUM DEPTH PAYMENT PER EACH SHALL BE 9'-0" MEASURED FROM THE BOTTOM OF THE BASE UNIT TO THE TOP OF THE MANHOLE COVER. VERTICAL DEPTH PAYMENT PER LINEAR FOOT SHALL INCLUDE ALL DEPTHS IN EXCESS OF 9'-0". THE COST OF THE DRIP STONE LANDING, NO.57 AGGREGATE, GROUT, SEALANT, AND ALL NECESSARY APPURTENANCES SHALL BE INCIDENTAL TO THE PRICE BID.
12. MANHOLE HAS BEEN DESIGNED FOR HS-25 LOADING, ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

SPECIFICATION 305 | CATEGORY CODE ITEMS
APPROVED
APPROVAL 2-22-91 | APPROVAL 1-2-91
REVISED 4-12-16 | REVISED 3-4-16

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
72" DIAMETER PRECAST MANHOLE
FOR 42" & 48" PIPES
STANDARD NO. MD 384.05

DETAIL D-4-2 PLUNGE POOL

STANDARD SYMBOL PP



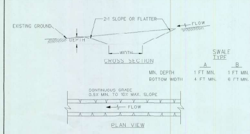
CONSTRUCTION SPECIFICATIONS

1. USE SPECIFIED CLASS OF RIPRAP.
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCHING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN 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.
3. PREPARE THE SUBGRADE FOR THE PLUNGE POOL TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EMBED THE GEOTEXTILE A MINIMUM OF 4 INCHES AND EXTEND THE GEOTEXTILE A MINIMUM OF 6 INCHES BEYOND THE EDGE OF THE SCOUR HOLE.
5. STONE FOR THE PLUNGE POOL MAY BE PLACED BY EQUIPMENT. CONSTRUCT TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. DELIVER AND PLACE THE STONE FOR THE PLUNGE POOL IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE STONE FOR THE PLUNGE POOL IN A MANNER TO PREVENT DAMAGE TO THE GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. AT THE PLUNGE POOL OUTLET, PLACE THE STONE SO THAT IT MEETS THE EXISTING GRADE.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

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

DETAIL C-2 TEMPORARY SWALE

STANDARD SYMBOL A-1



SWALE TYPE	A	B
MIN. DEPTH	1 FT MIN.	1 FT MIN.
BOTTOM WIDTH	4 FT MIN.	6 FT 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.

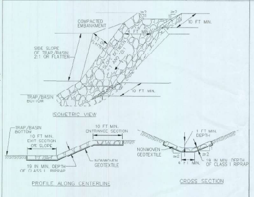
CONSTRUCTION SPECIFICATIONS

1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF TEMPORARY SWALE.
2. EXCAVATE OR SHAPE TEMPORARY SWALE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. STABILIZE TEMPORARY SWALE WITHIN THREE DAYS OF INSTALLATION. STABILIZE SWALES USED FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
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. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP TEMPORARY SWALE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
7. UPON REMOVAL OF TEMPORARY SWALE, 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

DETAIL D-3-1 RIPRAP INFLOW PROTECTION

STANDARD SYMBOL RRP



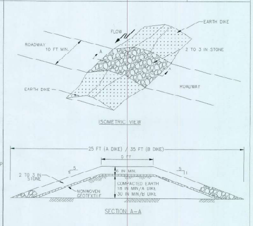
CONSTRUCTION SPECIFICATIONS

1. PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL RIPRAP.
2. CONSTRUCT INFLOW CHANNEL WITH CLASS I RIPRAP OR EQUIVALENT RECYCLED CONCRETE LINING TO A MINIMUM DEPTH OF 19 INCHES (2 x D_{50}) AND A 1 FOOT DEEP FLOW CHANNEL. INFLOW RIPRAP PROTECTION CHANNEL MUST HAVE A TRAPEZOIDAL CROSS SECTION WITH 2:1 OR FLATTER SIDE SLOPES AND A 4 FOOT MINIMUM BOTTOM WIDTH.
3. INSTALL ENTRANCE AND EXIT SECTIONS AS SHOWN ON THE PROFILE.
4. BLEND RIPRAP INTO EXISTING GROUND.
5. 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

DETAIL C-8 MOUNTABLE BERM

STANDARD SYMBOL MB

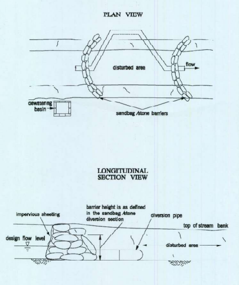


CONSTRUCTION SPECIFICATIONS

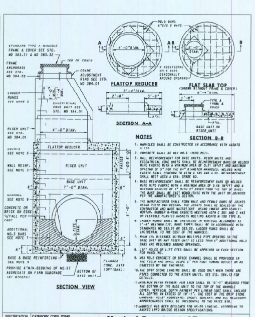
1. USE MINIMUM WIDTH OF 10 FEET TO ALLOW FOR VEHICULAR PASSAGE.
2. PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE EARTH MOUND PRIOR TO PLACING STONE.
3. PLACE 2 TO 3 INCH STONE OR EQUIVALENT RECYCLED CONCRETE AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE MOUNTABLE 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

Maryland's Guidelines To Waterway Construction
DETAIL 1.4: DIVERSION PIPE



TEMPORARY INSTREAM CONSTRUCTION MEASURES | REVISED NOVEMBER 2000 PAGE 1.4 - 2 | MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

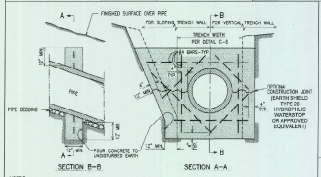

NO.5 BARS 6"C/C 2 WAYS
4'-0" DIAM.
2'-0" DIAM.
4 ADDITIONAL NO.5 BARS DIAGONALLY AROUND OPENING
STANDARD TYPE A MANHOLE FRAME & COVER SEE STD. MD 383.31 & MD 383.32
TOP OF COVER
FRAME ANCHORAGE SEE STD. MD 384.02
GRADE ADJUSTMENT RING SEE STD. MD 384.01
FLATTOP REDUCER
FLAT SLAB TOP (SHOWN WITHOUT FRAME & COVER)
LADDER RUNGS SEE NOTE 6
ECCENTRICAL CONE UNIT SEE STD. MD 384.01
SECTION A-A
SECTION B-B
RISER UNIT SEE STD. MD 384.01
JOINTS SEE NOTE 5
WALL REINF. SEE NOTE 3
FLATTOP REDUCER
RISER UNIT
BASE UNIT 7'-0" DIAM.
CHANNEL SEE NOTE 9
CONCRETE OR BRICK ON EDGE ¼" FALL PER FOOT
ADDITIONAL NO.3 BARS SEE NOTE 7
BASE & BASE REINFORCING SEE NOTE 4
PROVIDE 6" MIN. BEDDING OF NO.57 AGGREGATE ON FIRM SUBGRADE (BY OTHERS)
BOTTOM OF BASE UNIT
FLANGED CONC. BASE (OPTIONAL)
SECTION VIEW

NOTES

1. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M 199.
2. CONCRETE SHALL BE MIX NO.6 (4500 PSI).
3. WALL REINFORCEMENT FOR BASE UNITS, RISER UNITS AND ECCENTRICAL CONE UNITS SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.21 IN²/FT AND MAXIMUM SPACING OF 5" FOR THE 84" DIAMETER MANHOLES. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 AND A 82. REINFORCEMENT SHALL MEET ASTM A 615, GRADE 60.
4. BASE REINFORCEMENT SHALL BE REINFORCEMENT BARS OR WELDED WIRE WIRE FABRIC WITH A MINIMUM AREA OF 0.48 IN²/FT AND A MAXIMUM SPACING OF 4" WITH 2" COVER FROM THE TOP OF BASE. THE BASE SHALL BE CAST MONOLITHIC WITH THE UNIT OR JOINTED PER THE MANUFACTURER'S DESIGN.
5. THE MANUFACTURER SHALL FORM MALE AND FEMALE ENDS OF JOINTS USING THEIR OWN DESIGN. THE JOINTS SHALL BE SEALED BY THE CONTRACTOR AND MADE WATERTIGHT USING (WHERE APPLICABLE) MORTAR, RUBBER O-RING GASKETS MEETING ASTM C 361 AND C 443 OR FLEXIBLE PLASTIC GASKETS MEETING AASHTO M 198 TYPE B.
6. LADDER RUNGS SHALL BE INSTALLED IN VERTICAL ALIGNMENT AT 1'-4" MAXIMUM C/C. RUNG TYPES SHALL BE IN ACCORDANCE WITH STANDARDS MD 383.91 OR 383.92. LADDER RUNGS SHALL BE INCIDENTAL TO THE COST OF THE MANHOLE.
7. WHEN THE DISTANCE BETWEEN MULTIPLE PIPE OPENING IN THE BASE UNIT OR ANY RISER UNIT IS LESS THAN 6" ADDITIONAL NO.3 BARS ARE REQUIRED AROUND OPENINGS.
8. LIFT HOLES OR LIFT EYES SHALL BE APPROVED IN EACH SECTION FOR HANDLING.
9. MIX NO.2 CONCRETE OR BRICK CHANNEL SHALL BE PROVIDED IN THE FIELD AND SHALL SLOPE 2" PER FOOT TOWARD OUTLET OR AS DIRECTED BY THE ENGINEER.
10. THE DRIP STONE LANDING SHALL BE USED ONLY WHEN THERE ARE PIPES CONNECTED TO THE RISER UNITS. SEE STD. 384.13 FOR DETAILS.
11. MINIMUM DEPTH PAYMENT PER EACH SHALL BE 10'-1" MEASURED FROM THE BOTTOM OF THE BASE UNIT TO THE TOP OF THE MANHOLE COVER. VERTICAL DEPTH PAYMENT PER LINEAR FOOT SHALL INCLUDE ALL DEPTHS IN EXCESS OF 10'-1". THE COST OF THE DRIP STONE LANDING, NO.57 AGGREGATE, GROUT, SEALANT, AND ALL NECESSARY APPURTENANCES SHALL BE INCIDENTAL TO THE PRICE BID.
12. MANHOLE HAS BEEN DESIGNED FOR HS-25 LOADING, ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

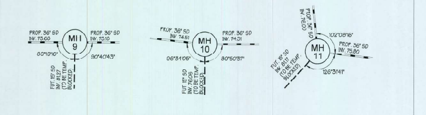
SPECIFICATION 305 | CATEGORY CODE ITEMS
APPROVED
DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT
REVISED 10-7-14 | REVISED 9-29-14

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
84" DIAMETER PRECAST MANHOLE
FOR 54" &60" PIPES
STANDARD NO. MD 384.07


A
FINISHED SURFACE OVER PIPE
B
FOR SLOPING TRENCH WALL
FOR VERTICAL TRENCH WALL
TRENCH WIDTH PER DETAIL C-6
#4 BARS-TYP.
12" MIN.
PIPE
4" TYP.
4"
12" MIN.
PIPE BEDDING
OPTIONAL CONSTRUCTION JOINT (EARTH SHIELD TYPE 20 HYDROPHILIC WATERSTOP OR APPROVED EQUIVALENT)
4" TYP.
12" MIN.
POUR CONCRETE TO UNDISTURBED EARTH
12" MIN.
4" TYP.
SECTION B-B
SECTION A-A

NOTES:
1. ANCHORS SHALL BE MIX #3 CONCRETE.
2. ANCHORS SHALL NOT BE PLACED WITHIN 6" OF A PIPE JOINT.
3. TRENCH SHALL BE BACKFILLED IN ACCORDANCE WITH MD SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.

CONCRETE ANCHOR DETAIL
NOT TO SCALE



⚠ **STORM DRAIN CONNECTION DETAILS**
NOT TO SCALE

APPROVED
MAR 1 1 2026
St. Mary's SCD

NJB Engineering, Inc.
Civil Engineering Consulting
810 Gleneagles Court
Towson, Maryland 21286
Suite 311
410-832-7691

NO.	REVISIONS	BY	DATE
⚠	Added storm drain connection details	NJB	2/17/22

DATE: JULY 2021 | CAD STANDARDS VERSION: V8 - 2000
DESIGNED: NJB | TECHNICIAN: DTD | CHECKED: NJB

MISS UTILITY NOTE

INFORMATION CONCERNING EXISTING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND UTILITY CROSSINGS BY DIGGING TEST PITS BY HAND, WELL IN ADVANCE OF THE START OF EXCAVATION. CONTACT "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF EXCAVATION. IF CLEARANCES ARE LESS THAN SHOWN ON THIS PLAN OR TWELVE (12) INCHES, WHICHEVER IS LESS, CONTACT THE ENGINEER AND THE UTILITY COMPANY BEFORE PROCEEDING WITH CONSTRUCTION. CLEARANCES LESS THAN NOTED MAY REQUIRE REVISIONS TO THIS PLAN.

DEVELOPER / APPLICANT

ST. JOHN PROPERTIES
2560 Lord Baltimore Drive
Baltimore, Maryland 21244
(410) 788-0100

ZONING CATEGORY: I (AE OVERLAY & PUD-IP OVERLAY)	W&S CATEGORY: W-3D / S-3D
TAX MAP / PARCEL 34 / 292	GRID 10
SITE DATUM HORIZONTAL: NAD83 VERTICAL: NGVD88	LIBER/ FOLIO 2105 / 042

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. 18558
EXPIRATION DATE: 1-12-20

No. 18558
NICHOLAS JOSEPH BRABER III

Specifications and Details

MASS GRADING PLAN
OAK CREST CENTER
(REVISION TO P/O PHASE 1 & PHASE 2)
LEXINGTON EXCHANGE

ST. MARY'S COUNTY, MARYLAND
ELECTION DISTRICT: 8
FEBRUARY 17, 2022

SCALE: AS SHOWN
MASS GRADING
SHEET 15
OF 16
PROJECT NO.

PN 2017-019 SJP-Oakcrest/Sheets/[03] ex conditions plan.dgn

Pond Construction Specifications

(BASIN #1 & #2)

CONSTRUCTION SPECIFICATIONS
These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

SITE PREPARATION
Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

EARTH FILL
Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer.

Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

The minimum required density shall not be less than 95% of maximum dry density with a moisture content within ± 2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

STRUCTURE BACKFILL
Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi; 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

PIPE CONDUITS
All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criterial shall apply for corrugulated metal pipe:

1. Materials - (Polymer Coated steel pipe) - Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M 245 & M 246 with watertight coupling bands or flanges.

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M 190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.

3. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Simple bands are not considered to be watertight.

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the bandwidth. The following type connections are acceptable for pipes less than 24 inches in diameter: flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket, pre-punched to the flange bolt circle, sandwiched between adjacent flanges; a 12 inch wide standard lap type band with 12 inch wide by 3/8 inch thick closed cell circular neoprene gasket; and a 12-inch wide hugger type band with o-ring gaskets having a minimum diameter of ½ inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 24 inch long annular corrugated band using a minimum of 4 (four) rods and lugs, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will be installed with 12 inches on the end of each pipe. Flanged joints with 3/8 inch closed cell gaskets the full width of the flange is also acceptable.

Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

4. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

5. Backfilling shall conform to "Structure Backfill".

6. Other details (anti seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.

2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding / cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.

3. Laying pipe - Bell and spigot shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.

4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Plastic Pipe - The following criteria shall apply for plastic pipe:

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4"-10" pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.

2. Joints and connections to anti-seep collars shall be completely watertight.

3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Drainage Diaphragms - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

CONCRETE
Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 902.10, Mix No. 3.

ROCK RIPRAP
Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials. Section 921.09, Class SE Non-woven.

CARE OF WATER DURING CONSTRUCTION
All work on permanent structures shall be carried out in areas fee from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water sumps from which the water shall be pumped.

STABILIZATION
All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD 342) or as shown on the accompanying drawings.
(See Approved Sediment Control Plan for specific vegetative stabilization methods and materials)

EROSION AND SEDIMENT CONTROL
Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.

FILTER CLOTH
Filter cloth shall meet the requirements of maryland department of transportation state highway administration standard specifications for construction and materials, section 921.09 durable filter fabrics for drainage purposes include but are not limited to Mirafi 1405 Dupont Type AC No.3341 or 3401.

Filter cloth shall be protected from punching or tearing. Any damage other than an occasional small hole shall be repaired by placing another small piece of filter cloth over the damaged area or by replacing the cloth section. All overlaps shall be a minimum of one foot.

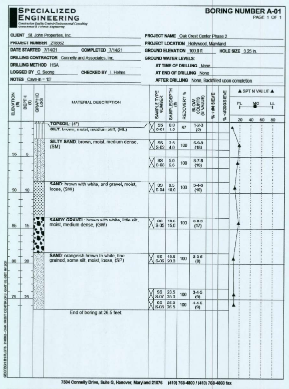
OUTFALL PROTECTION
Subgrade for riprap or gabion outfalls shall be prepared to the required line and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the specified grading limits when installed in the riprap or gabion. All stone shall be delivered and placed in a manner that will insure the stone in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another, with the smaller rocks filling the voids between the larger rocks. Stone for outfalls may be placed by equipment. Riprap or gabion outlets shall be constructed to full course thickness in one operation and in such a manner as to avoid any displacement of underlying materials. The contractor shall avoid damage to the filter blanket or cloth during placement of riprap. Hand placement shall be required as needed to prevent damage to the permanent works. Filter cloth shall be placed under all riprap and gabions.

GABIONS
Gabions shall meet the requirements of Maryland Department of Transportation State Highway Administration Standard Specifications for Construction and Materials, Section 312. CL IV, PVC Coated.

FENCE
Construct fencing in accordance with the State Highway Administration (S.H.A.) Standard Details 690.01 and 690.02. Use specifications for a 6' fence, substituting 42" fabric and 6'-8" line posts. Construct the gate in accordance with the S.H.A. Standard Detail 690.01 with 42" fabric. The fabric used for the fence and gate must conform to AASHTO Designation M-181-74. Dark vinyl coating is required for the fence posts and wire fabric in accordance with the Landscape Manual adopted by Resolution 56 90, October 1, 1990.
* 3' Split Rail (Wood) Fence is optional.

LANDSCAPING
Large and deep holes shall be excavated around the proposed planting sites and shall be backfilled with uncompacted topsoil. Planting holes should be at least 6" larger than the diameter of the rootball of balled and burlap stock and 3" wider for container grown stock. This practice should enable the stock to develop unconfined root systems. Avoid species that require full shade, are susceptible to winterkill, or are prone to wind damage. Extra mulching around the base of the tree or shrub is strongly recommended as a means of conserving moisture and suppressing weeds.

Soil Borings



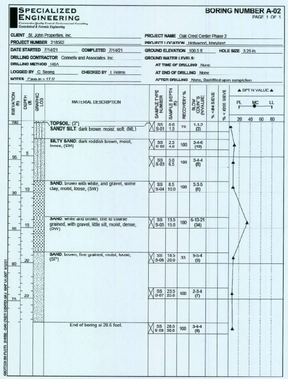
SPECIALIZED ENGINEERING
Construction Quality Control•Environmental Consulting
Geotechnical & Forensic Engineering

BORING NUMBER A-01
PAGE 1 OF 1

CLIENT St. John Properties, Inc.
PROJECT NAME Oak Crest Center Phase 2
PROJECT NUMBER 218562
PROJECT LOCATION Hollywood, Maryland
DATE STARTED 7/14/21 COMPLETED 7/14/21
GROUND ELEVATION 100.0 ft HOLE SIZE 3.25 in.
DRILLING CONTRACTOR Connelly and Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD HSA
AT TIME OF DRILLING None
LOGGED BY C. Seong CHECKED BY I. Helms
AT END OF DRILLING None
NOTES Cave-in = 15'
AFTER DRILLING None, Backfilled upon completion

MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft)	RECOVERY %	BLOW COUNTS (N VALUE)	% < #4 SIEVE	% < #200 SIEVE
TOPSOIL: (4") **SILT**: brown, moist, medium stiff, (ML)	SS S-01	0.0 1.5	67	1-2-3 (5)		
SILTY SAND: brown, moist, medium dense, (SM)	SS S-02	2.5 4.0	100	6-9-9 (18)		
	SS S-03	5.0 6.5	100	8-7-8 (15)		
SAND: brown with white, and gravel, moist, loose, (SW)	SS S-04	8.5 10.0	100	3-4-6 (10)		
SANDY GRAVEL: brown with white, little silt, moist, medium dense, (GW)	SS S-05	13.5 15.0	100	8-8-9 (17)		
SAND: orangeish brown to white, fine grained, some silt, moist, loose, (SP)	SS S-06	18.5 20.0	100	3-3-5 (8)		
	SS S-07	23.5 25.0	100	3-4-5 (9)		
	SS S-08	25.0 26.5	100	4-4-5 (9)		
End of boring at 26.5 feet.						

7504 Connelly Drive, Suite G, Hanover, Maryland 21076 (410) 768-4800 / (410) 768-4803 fax



SPECIALIZED ENGINEERING

BORING NUMBER A-02
PAGE 1 OF 1

CLIENT St. John Properties, Inc.
PROJECT NAME Oak Crest Center Phase 2
PROJECT NUMBER 218562
PROJECT LOCATION Hollywood, Maryland
DATE STARTED 7/14/21 COMPLETED 7/14/21
GROUND ELEVATION 100.5 ft HOLE SIZE 3.25 in.
DRILLING CONTRACTOR Connelly and Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD HSA
AT TIME OF DRILLING None
LOGGED BY C. Seong CHECKED BY I. Helms
AT END OF DRILLING None
NOTES Cave-in = 17.5'
AFTER DRILLING None, Backfilled upon completion

MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft)	RECOVERY %	BLOW COUNTS (N VALUE)	% < #4 SIEVE	% < #200 SIEVE
TOPSOIL: (3") **SANDY SILT**: dark brown, moist, soft, (ML)	SS S-01	0.0 1.5	70	1-1-2 (3)		
SILTY SAND: dark reddish brown, moist, loose, (SM)	SS S-02	2.5 4.0	100	3-4-6 (10)		
	SS S-03	5.0 6.5	100	3-4-4 (8)		
SAND: brown with white, and gravel, some clay, moist, loose, (SW)	SS S-04	8.5 10.0	100	3-3-5 (8)		
SAND: white and brown, fine to coarse grained, with gravel, little silt, moist, dense, (SW)	SS S-05	13.5 15.0	100	6-13-21 (34)		
SAND: brown, fine grained, moist, loose, (SP)	SS S-06	18.5 20.0	33	9-5-4 (9)		
	SS S-07	23.5 25.0	100	2-3-4 (7)		
End of boring at 28.5 feet.	SS S-08	28.5 30.0	100	3-4-4 (8)		

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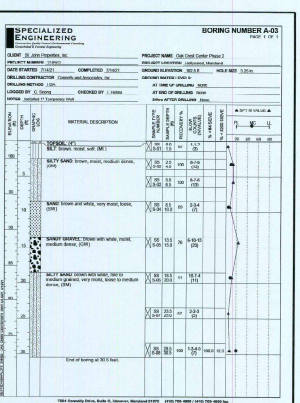

SPECIALIZED ENGINEERING

BORING NUMBER A-03
PAGE 1 OF 1

CLIENT St. John Properties, Inc.
PROJECT NAME Oak Crest Center Phase 2
PROJECT NUMBER 218562
PROJECT LOCATION Hollywood, Maryland
DATE STARTED 7/14/21 COMPLETED 7/14/21
GROUND ELEVATION 102.5 ft HOLE SIZE 3.25 in.
DRILLING CONTRACTOR Connelly and Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD HSA
AT TIME OF DRILLING None
LOGGED BY C. Seong CHECKED BY I. Helms
AT END OF DRILLING None
NOTES Installed 1" Temporary Well
24hrs AFTER DRILLING None

MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft)	RECOVERY %	BLOW COUNTS (N VALUE)	% < #4 SIEVE	% < #200 SIEVE
TOPSOIL: (4") **SILT**: brown, moist, soft, (ML)	SS S-01	0.0 1.5	67	1-1-2 (3)		
SILTY SAND: brown, moist, medium dense, (SM)	SS S-02	2.5 4.0	100	8-7-6 (13)		
	SS S-03	5.0 6.5	100	8-7-6 (13)		
SAND: brown and white, very moist, loose, (SW)	SS S-04	8.5 10.0	69	2-3-4 (7)		
SANDY GRAVEL: brown with white, moist, medium dense, (GW)	SS S-05	13.5 15.0	78	6-10-13 (23)		
SILTY SAND: brown with white, fine to medium grained, very moist, loose to medium dense, (SM)	SS S-06	18.5 20.0	11	10-7-4 (11)		
	SS S-07	23.5 25.0	67	2-2-3 (5)		
	SS S-08	28.5 30.5	100	1-3-4-5 (7)	100.0	12.0
End of boring at 30.5 feet.						

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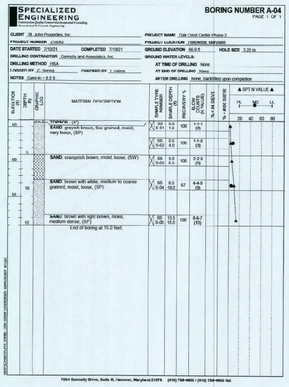

SPECIALIZED ENGINEERING

BORING NUMBER A-04
PAGE 1 OF 1

CLIENT St. John Properties, Inc.
PROJECT NAME Oak Crest Center Phase 2
PROJECT NUMBER 218562
PROJECT LOCATION Hollywood, Maryland
DATE STARTED 7/19/21 COMPLETED 7/19/21
GROUND ELEVATION 66.0 ft HOLE SIZE 3.25 in.
DRILLING CONTRACTOR Connelly and Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD HSA
AT TIME OF DRILLING None
LOGGED BY C. Seong CHECKED BY I. Helms
AT END OF DRILLING None
NOTES Cave-in = 8.5 ft
AFTER DRILLING None, Backfilled upon completion

MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft)	RECOVERY %	BLOW COUNTS (N VALUE)	% < #4 SIEVE	% < #200 SIEVE
TOPSOIL: (4") **SAND**: grayish brown, fine grained, moist, very loose, (SP)	SS S-01	0.0 1.5	100	1-1-1 (2)		
	SS S-02	2.5 4.0	100	1-1-2 (3)		
SAND: orangeish brown, moist, loose, (SW)	SS S-03	5.0 6.5	100	2-2-3 (5)		
SAND: brown with white, medium to coarse grained, moist, loose, (SP)	SS S-04	8.5 10.0	67	4-4-5 (9)		
SAND: brown with light brown, moist, medium dense, (SP)	SS S-05	13.5 15.0	100	8-6-7 (13)		
End of boring at 15.0 feet.						

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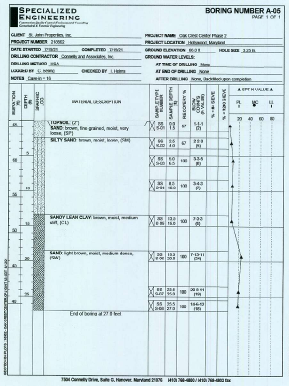

SPECIALIZED ENGINEERING

BORING NUMBER A-05
PAGE 1 OF 1

CLIENT St. John Properties, Inc.
PROJECT NAME Oak Crest Center Phase 2
PROJECT NUMBER 218562
PROJECT LOCATION Hollywood, Maryland
DATE STARTED 7/19/21 COMPLETED 7/19/21
GROUND ELEVATION 66.0 ft HOLE SIZE 3.25 in.
DRILLING CONTRACTOR Connelly and Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD HSA
AT TIME OF DRILLING None
LOGGED BY C. Seong CHECKED BY I. Helms
AT END OF DRILLING None
NOTES Cave-in = 16
AFTER DRILLING None, Backfilled upon completion

MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft)	RECOVERY %	BLOW COUNTS (N VALUE)	% < #4 SIEVE	% < #200 SIEVE
TOPSOIL: (2") **SAND**: brown, fine grained, moist, very loose, (SP)	SS S-01	0.0 1.5	67	1-1-1 (2)		
SILTY SAND: brown, moist, loose, (SM)	SS S-02	2.5 4.0	67	2-2-3 (5)		
	SS S-03	5.0 6.5	100	3-3-5 (8)		
	SS S-04	8.5 10.0	100	3-4-3 (7)		
SANDY LEAN CLAY: brown, moist, medium stiff, (CL)	SS S-05	13.5 15.0	100	7-3-3 (6)		
SAND: light brown, moist, medium dense, (SW)	SS S-06	18.5 20.0	100	7-13-11 (24)		
	SS S-07	23.5 25.0	100	20-8-11 (19)		
	SS S-08	25.5 27.0	100	14-6-12 (18)		
End of boring at 27.0 feet.						

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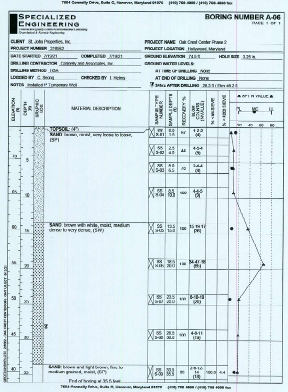

SPECIALIZED ENGINEERING

BORING NUMBER A-06
PAGE 1 OF 1

CLIENT St. John Properties, Inc.
PROJECT NAME Oak Crest Center Phase 2
PROJECT NUMBER 218562
PROJECT LOCATION Hollywood, Maryland
DATE STARTED 7/19/21 COMPLETED 7/19/21
GROUND ELEVATION 74.5 ft HOLE SIZE 3.25 in.
DRILLING CONTRACTOR Connelly and Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD HSA
AT TIME OF DRILLING None
LOGGED BY C. Seong CHECKED BY I. Helms
AT END OF DRILLING None
NOTES Installed 1" Temporary Well
24hrs AFTER DRILLING 28.3 ft / Elev 46.2 ft

MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft)	RECOVERY %	BLOW COUNTS (N VALUE)	% < #4 SIEVE	% < #200 SIEVE
TOPSOIL: (4") **SAND**: brown, moist, very loose to loose, (SP)	SS S-01	0.0 1.5	67	1-2-2 (4)		
	SS S-02	2.5 4.0	44	4-5-4 (9)		
	SS S-03	5.0 6.5	78	2-4-4 (8)		
	SS S-04	8.5 10.0	100	4-4-5 (9)		
SAND: brown with white, moist, medium dense to very dense, (SW)	SS S-05	13.5 15.0	100	15-19-17 (36)		
	SS S-06	18.5 20.0	100	34-47-18 (65)		
	SS S-07	23.5 25.0	100	8-10-10 (20)		
	SS S-08	28.5 30.0	100	4-8-11 (19)		
SAND: brown and light brown, fine to medium grained, moist, (SP)	SS S-09	33.5 35.5	80	2-6-12-14 (18)	100.0	4.4
End of boring at 35.5 feet.						

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APPROVED
MAR 1 1 2026
St. Mary's SCD

NJB Engineering, Inc.
Civil Engineering Consulting

810 Gleneagles Court
Towson, Maryland 21286
Suite 311
410-832-7691

NO.	REVISIONS	BY	DATE
△	NO CHANGES THIS SHEET	NJB	2/17/22

DATE: JULY 2021
CAD STANDARDS VERSION: V8 - 2000
DESIGNED: NJB
TECHNICIAN: DTB
CHECKED: NJB

MISS UTILITY NOTE
INFORMATION CONCERNING EXISTING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND UTILITY CROSSINGS BY DIGGING TEST PITS BY HAND, WELL IN ADVANCE OF THE START OF EXCAVATION. CONTACT "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF EXCAVATION. IF CLEARANCES ARE LESS THAN SHOWN ON THIS PLAN OR TWELVE (12) INCHES, WHICHEVER IS LESS, CONTACT THE ENGINEER AND THE UTILITY COMPANY BEFORE PROCEEDING WITH CONSTRUCTION. CLEARANCES LESS THAN NOTED MAY REQUIRE REVISIONS TO THIS PLAN.

DEVELOPER / APPLICANT
ST. JOHN PROPERTIES
2560 Lord Baltimore Drive
Baltimore, Maryland 21244
(410) 788-0100

ZONING CATEGORY: I (AE OVERLAY & PUD-IP OVERLAY)
W&S CATEGORY: W-3D / S-3D
TAX MAP / PARCEL 34 / 292
GRID 10
SITE DATUM HORIZONTAL: NAD83 VERTICAL: NGVD88
LIBER/ FOLIO 2105 / 042

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. 18558
EXPIRATION DATE. 1-12-20

Nicholas Joseph Brader III

Specifications and Soil Borings

MASS GRADING PLAN
OAK CREST CENTER
(REVISION TO P/O PHASE 1 & PHASE 2)
LEXINGTON EXCHANGE

ST. MARY'S COUNTY, MARYLAND
ELECTION DISTRICT: 8
FEBRUARY 17, 2022

SCALE: AS SHOWN
MASS GRADING
SHEET 16
OF 16
PROJECT NO.