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# FINAL CONSTRUCTION PLANS

## ROAD CONSTRUCTION, GRADING, SEDIMENT & EROSION CONTROL, AND STORMWATER MANAGEMENT PLANS

# SHAMS SUBDIVISION

LOTS 1 THRU 5, OPEN SPACE LOTS 6 & 7

( A SUBDIVISION OF PARCEL 237 )

DISTRICT TWO, TAX MAP #18, GRID 14, PARCEL 237

SITE ANALYSIS DATA CHART			
TOTAL PROJECT AREA 201,251.14 SF (4.6201 AC)	AREA OF PLAN SUBMISSION 201,251.14 SF (4.6201 AC)	LIMIT OF DISTURBED AREA 114,998.40 SF	PRESENT ZONING R-20
PROPOSED USE RESIDENTIAL	TYPE OF UNIT SINGLE FAMILY DETACHED	TOTAL UNITS ALLOWED 9	PROPOSED USE RESIDENTIAL 5
OPEN SPACE REQUIRED 12,075.36 SF (0.28 AC)	OPEN SPACE PROVIDED 81,574.93 SF (1.87 AC)	RECREATION OPEN SPACE REQUIRED N/A	RECREATION OPEN SPACE PROVIDED N/A
DPZ FILE REF: <b>SP-08-07</b>	DEED REF.: 740/351		
PERMIT INFORMATION CHART			
SUBDIVISION NAME SHAMS SUBDIVISION	SECTION / AREA N/A	PARCEL NUMBER 371	
LIBER / FOLIO SEE INDIVIDUAL LOTS	TAX MAP 18	GRID NO. 14	ZONE R-20
ELECT. DIST. 2nd		CENSUS TR. 6026	
WATER CODE: F02		SEWER CODE: 1451500	

STREET LIGHT CHART					
DWG. NO.	STREET NAME	STATION	OFFSET	MAINTENANCE	FIXTURE/POLE TYPE
10	USE-IN-COMMON DRIVEWAY	C.L. STA. 0+29.0	28' L	PUBLIC	100-WATT H.P.S. VAPOR PREMIER POST-ROP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
10	USE-IN-COMMON DRIVEWAY	C.L. STA. 5+73	12' R	PRIVATE	150-WATT H.P.S. VAPOR PREMIER POST-ROP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.

TRAFFIC CONTROL SIGN					
STREET NAME	STATION	OFFSET	POSTED SIGN	MAINTENANCE	SIGN CODE
USE-IN-COMMON DRIVEWAY	C.L. STA. 0+45.5	15' L	STOP	PRIVATE	R1-1
USE-IN-COMMON DRIVEWAY	C.L. STA. 0+57	11' R	DEAD END ST.	PRIVATE	R1-1
USE-IN-COMMON DRIVEWAY	C.L. STA. 5+70.7	-	NO PARKING TOW AWAY ZONE	PRIVATE	R1-1

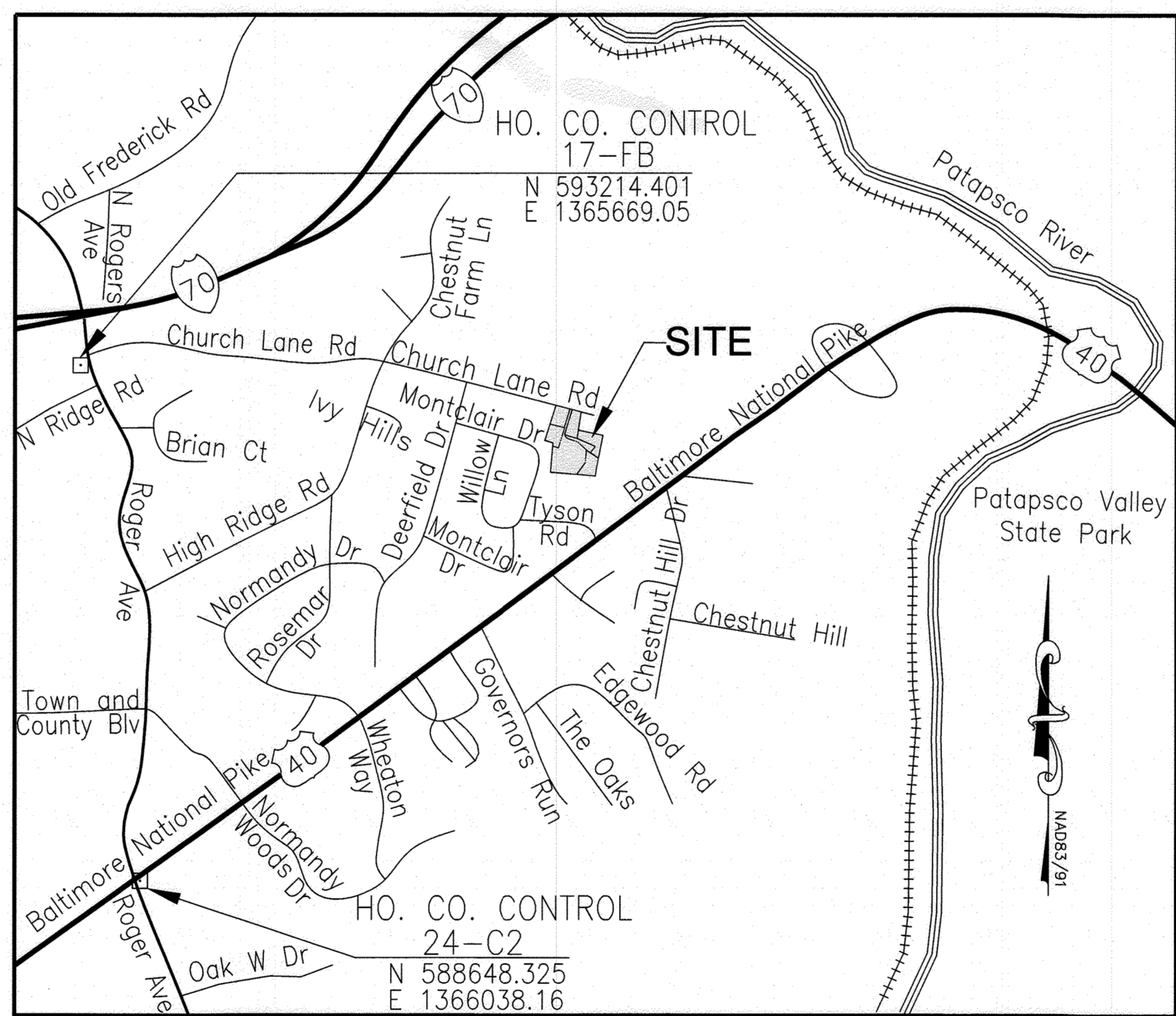
ROAD CLASSIFICATION		
STREET NAME	CLASSIFICATION	R/W
USE-IN-COMMON DRIVEWAY	USE-IN-COMMON DRIVEWAY	36'

LOT TABULATION			
LOT NO.	NET LOT AREA (SF)	PIPESTEM AREA (SF)	TOTAL AREA (SF)
1	20,014.92	N/A	20,014.92
2	20,109.58	658.43	20,768.01
3	21,057.44	N/A	21,057.44
4	24,591.77	2,023.77	26,615.54
5	20,626.17	1,933.13	22,559.30
6 (OPEN SPACE)	69,157.57	842.84	70,000.41
7 (OPEN SPACE)	10,887.82	886.70	11,774.52
DEDICATION AREA			8,661.00
TOTAL AREA			201,251.14

AREA TABULATION CHART	
TOTAL NUMBER OF LOTS TO BE RECORDED:.....	7
BUILDABLE LOTS.....	5
NON-BUILDABLE LOTS.....	0
OPEN SPACE.....	2
PRESERVATION PARCELS.....	0
TOTAL AREA OF LOTS TO BE RECORDED:.....	4,421.3 AC.±
BUILDABLE LOTS.....	2,548.5 AC.±
NON-BUILDABLE LOTS.....	0
OPEN SPACE.....	1,872.7 AC.±
PRESERVATION PARCELS.....	0
TOTAL AREA OF ROADWAY TO BE RECORDED INCLUDING WIDENING STRIPS.....	0.1988 AC.±
TOTAL AREA OF SUBDIVISION TO BE RECORDED.....	4.6201 AC.±

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS MK 09/08/2022 DATE  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF DIVISION OF LAND DEVELOPMENT 11/22 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION 9.22.22 DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.  
 Alexander Butchko 08/17/22 DATE  
 HOWARD SCD



**VICINITY MAP**  
 ADC MAP #4861  
 GRIDS C3 & C4  
 SCALE: 1" = 1000'

## SECOND ELECTION DISTRICT

## HOWARD COUNTY, MARYLAND

- GENERAL NOTES**
- THE SUBJECT PROPERTY IS ZONED R-20 IN ACCORDANCE WITH THE 02/02/2004 COMPREHENSIVE ZONING PLAN AND THE "COMP LITE" ZONING AMENDMENTS DATED 07/28/2006. THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS EFFECTIVE 10/2/03 PER COUNCIL BILL 75-2003.
  - ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARD SPECIFICATIONS IF APPLICABLE.
  - THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST (7) WORKING DAYS PRIOR TO THE START OF WORK.
  - THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
  - TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
  - COORDINATES AND NORTH SHOWN HEREON REFER TO THE NAD83/91 HORIZONTAL DATUM. BASED ON GPS OBSERVATION ON MAY 10, 2005 USING THE FOLLOWING PROVIDED BY HOWARD COUNTY:

- | DESIGNATION | NORTHING (±FT) | EASTING (±FT) | ELEVATION (±FT) |
|-------------|----------------|---------------|-----------------|
| 24-C2       | 588648.325     | 1366038.16    | 354.089         |
| 17-FB       | 593214.401     | 1365669.05    | 456.316         |
- THIS SUBDIVISION PLAN IS SUBJECT TO PREVIOUS DPZ FILES SP-08-007, WP-08-083, WP-09-124, WP-10-032.
  - EX PUBLIC WATER AND SEWER ARE CONTRACTS # 70-W & 20 W&S RESPECTIVELY.
  - PROPOSED PUBLIC WATER AND SEWER CONTRACT NUMBER IS 24-4574-D.
  - THE SUBJECT PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
  - EXISTING UTILITIES SHOWN HEREON ARE TAKEN FROM CURRENT HOWARD COUNTY CONTRACT DRAWINGS.
  - THE BOUNDARY AND TOPOGRAPHIC INFORMATION IS BASED ON FIELD RUN SURVEY BY AB CONSULTANTS ON OR ABOUT MAY 10, 2005.
  - THE STEEP SLOPES WITH CONTINUOUS AREAS OF 63,939.39 SQ. FT. EXISTS ON THIS SITE. THE AREA OF DISTURBED STEEP SLOPES = 23,189.14 SQ. FT.
  - WETLANDS AND FOREST STAND DELINEATION INFORMATION WAS TAKEN FROM REPORTS PREPARED BY JEFFREY A. WOLINSKI, CONSULTING ECOLOGIST ON 1/27/06 & 1/31/07.
  - SOILS INFORMATION TAKEN FROM SOILS MAP NO.16. "SOILS SURVEY", HOWARD COUNTY, MARYLAND JULY 1968 ISSUE.
  - FOR FLAG OR PIPE STEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE IS TO BE PROVIDED AT THE JUNCTION OF THE FLAG OR PIPE STEM AND THE ROAD RIGHT-OF-WAY AND NOT ONTO THE FLAG OR PIPE STEM LOT DRIVEWAY.
  - THERE ARE NO FLOODPLAIN FOR THIS SITE PER STUDY DATED 1/27/06.
  - TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT AND WAS PERFORMED BY MARS GROUP DATED FEBRUARY 2008.
  - NOISE STUDY IS REQUIRED FOR THE DEVELOPMENT AND WAS PERFORMED BY MARS GROUP ON FEBRUARY, 2008. THE UNMITIGATED 65 dBA NOISE CONTOUR LINE IS DRAWN ON THIS SUBDIVISION PLAN IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL CHAPTER 11.87 (23,189.14 SQ. FT.) PROVIDED.
  - THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY MAFI ASSOCIATES, INC. ON JUNE 2007. OPEN SPACE CALCULATIONS: BASED ON ZONING R-20, AND MINIMUM LOT SIZE OF 20,000 SQ. FT., 6% OPEN SPACE REQUIRED. 4.6201 ACRES X 6% = 0.28 ACRES (12,075.36 SQ. FT.) REQUIRED.
  - STORMWATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH HOWARD COUNTY AND MARYLAND 378 SPECIFICATIONS. RECHARGE VOLUME WILL BE PROVIDED THROUGH THE USE OF DRYWELLS (M-5) AND MICRO-BIORETENTION (M-6) PRACTICES. WATER QUALITY VOLUME (ESDv) WILL BE PROVIDED BY FOUR DRYWELLS (M-5), TWO MICRO-BIORETENTION (M-6) PRACTICES AND NON-ROOFTOP DISCONNECT (N-2). STORMWATER MANAGEMENT FACILITIES SHALL BE PRIVATELY OWNED AND MAINTAINED BY HOMEOWNERS ASSOCIATION.
  - THE OPEN SPACE LOT 6 AND LOT 7 ARE BEING DEDICATED TO HOMEOWNERS ASSOCIATION.
  - THERE ARE NO KNOWN CEMETERIES, GRAVE SITES OR HISTORIC STRUCTURES LOCATED ON THE SUBJECT PROPERTY.
  - NO GRADING, REMOVAL OF VEGETATIVE COVER AND TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN WETLANDS, STREAMS OR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS.
  - THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
  - THERE SHALL BE 95% COMPACTION PER AASHTO T-180 SPECIFICATIONS UNDER ALL IMPROVEMENTS. LANDSCAPE IS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. SEE LANDSCAPING PLAN SHEET 11.
  - FOREST CONSERVATION PLAN WAS PREPARED BY JEFFREY A. WOLINSKI, CONSULTING ECOLOGIST ON 1/27/06 & 1/31/07, AND REVISED ON 01/28/2008. THE FOREST CONSERVATION OBLIGATION INCURRED BY THIS PROJECT HAS BEEN SATISFIED WITH THE RETENTION OF 0.93 ACRE CREDITED EASEMENT AND 0.14 ACRE OF NON-CREDITED EASEMENT AND A FEE-IN-LIEU OF \$8,494 FOR THE BALANCE OF 0.26 ACRE WILL BE PAID WHICH MEETS THE BREAK-EVEN POINT OBLIGATION OF 1.14 ACRES FOR THIS SITE. FOREST CONSERVATION SURETY IN THE AMOUNT OF \$8,102 WILL BE POSTED FOR THIS PROJECT PER SECTION 16.134(c)(1)(ii) OF THE SUBDIVISION REGULATIONS, A FEE-IN-LIEU OF \$3,680 (115 SY x \$32/SY) WILL BE PAID BY THE DEVELOPER FOR NOT CONSTRUCTING SIDEWALKS. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
  - THE LANDSCAPING SURETY AMOUNT OF \$7,800 FOR TOTAL OF 44 TREES (SEE LANDSCAPING PLANT LIST ON SHEET 11) WILL BE POSTED WITH THE DEVELOPER'S AGREEMENT AT THE FINAL PLAT STAGE.
  - NO GRAVITY SEWER SERVICE IS PROVIDED FOR LOTS 4 & 5 CELLAR (GNS). DESIGN MANUAL WAIVER #02-22-018 WAS APPROVED BY DPW-BUREAU OF ENGINEERING/UTILITY DESIGN DIVISION ON MARCH 25, 2022.
  - PRIVATE USE-IN-COMMON DRIVEWAY SHALL BE FOR THE BENEFIT OF LOTS 2,4,5, OPEN SPACE LOTS 6,7, AND THE POTENTIAL FUTURE USE FOR PARCEL 281.
  - LAND DEDICATED TO HOWARD COUNTY, MARYLAND, FOR PURPOSES OF A PUBLIC ROAD 8661.00 SQ.FT. (0.199 ACRE).
  - PUBLIC WATER AND SEWAGE TO SERVE LOTS 1-5 WERE CONSTRUCTED UNDER CONTRACT NUMBER 24-4574D. PUBLIC WATER AND/OR SEWER ALLOCATION FOR THIS DEVELOPMENT IS SUBJECT TO SECTION 18.122B OF THE HOWARD COUNTY CODE. ALLOCATION WILL BE MADE AT THE TIME OF FINAL PLAT APPROVAL, IF CAPACITY IS AVAILABLE AT THAT TIME.
  - THERE IS AN EXISTING HOUSE LOCATED ON LOT 1 THAT IS TO REMAIN. NO NEW BUILDINGS, EXTENSION OR ADDITIONS TO THE EXISTING DWELLING IS TO BE CONSTRUCTED AT A DISTANCE LESS THAN THE ZONING REGULATION REQUIREMENTS.
  - DRIVEWAY(S) SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:  
 1) WIDTH-12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE)  
 2) SURFACE-6 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MIN.)  
 3) GEOMETRY-MAX. 15% GRADE, MAX. 10% GRADE CHANGE AND MIN. OF 45-FOOT TURNING RADIUS.  
 4) STRUCTURE(CULVERT/BRIDGE)-CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING).  
 5) DRAINAGE ELEMENTS-CAPABLE OF SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE.
  - MAINTENANCE-SUFFICIENT TO INSURE ALL WEATHER USE.
  - ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
  - STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006), SECTION 5.5.A. A MINIMUM OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
  - A PRIVATE RANGE OF ADDRESS SIGN ASSEMBLY SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES.
  - WAIVER PETITION WP-08-083 FOR MISSING DEADLINE WAS APPROVED ON APRIL 7, 2008 PER SECTIONS 16.144.D2 & 16.144.I2 OF SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
  - WAIVER PETITIONS WP-09-124 AND WP-10-032 FOR THE EXTENSION OF SUBMISSION DEADLINE FOR PLANS & PLAT WERE APPROVED ON MARCH 11, 2009 AND SEPTEMBER 18, 2009 RESPECTIVELY. APPROVALS WERE BASED PER SECTION 16.146(b) (4)(ii) OF SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
  - DURING THE CONSTRUCTION PROCESS AND AT THE TIME OF CONNECTION TO PUBLIC WATER AND SEWER, THE EXISTING WELL SHALL BE PROPERLY ABANDONED/SEALED (BY A LICENSED WELL DRILLER). THE EXISTING SEPTIC TANK SHALL BE LUMPED OUT BY A LICENSED SEPTIC HAULER. TANK SHALL BE REMOVED AND DISPOSED IN AN APPROVED LANDFILL AS PER HOWARD COUNTY REQUIREMENTS. THE CONTRACTOR SHALL COORDINATE WITH THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO SEPTIC SYSTEM REMOVAL.
  - THE EXISTING HOUSE ON LOT 1 IS CONSIDERED NON-COMPLIANT WITH THE CURRENT ZONING REGULATION DUE TO THE ENCRICHMENT INTO THE FRONT SETBACK, BUT IS PERMITTED AS AN EXISTING NON-COMPLIANT STRUCTURE BUILT PRIOR TO THE DELINEATION OF THE BRL'S ON THIS PLAT.

STORMWATER MANAGEMENT FACILITY: (PRIVATE)  
 TYPE - 4 DRYWELLS (M-5) & 2 MICRO-BIORETENTION (M-6) PRACTICES  
 OWNER - HOMEOWNERS ASSOCIATION  
 MAINTENANCE - HOMEOWNERS ASSOCIATION

**REPLACEMENT SHEET 01 OF 16**

**PURPOSE NOTE:**  
 REVISED W & S LOCATIONS, PLAN & PROFILES  
 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.  
 MOSTAFA IZADI, PE  
 LICENSE NO.12748, EXPIRATION DATE:02/11/2023

**OWNER/DEVELOPER**  
 OLEGARIO RAMIREZ, PRESIDENT  
 WEST ONE INVESTMENTS LLC  
 8170 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MD 21043  
 EMAIL: OLE@RFCFRAMING.COM  
 TELEPHONE: 301-748-1010

Advanced Engineering Consultants, PC  
 Engineers & Planners  
 P.O. BOX 129 RIDGEWOOD, MD 21139  
 TEL.: 410-382-9180 FAX: 410-296-0505  
 mizad@aec-engineers.biz

REVISIONS	DESCRIPTION	BY	DATE
1	REVISION	M I	12/11/13
2	REVISION	M I	04/04/22
3	REVISION	M I	06/19/22

**TITLE:** COVER SHEET  
 FINAL CONSTRUCTION PLANS  
**SHAMS SUBDIVISION**  
 PARCEL NO. 237  
 ELECTION DISTRICT 02  
 TAX MAP #18, GRID 14  
 HOWARD COUNTY, MARYLAND

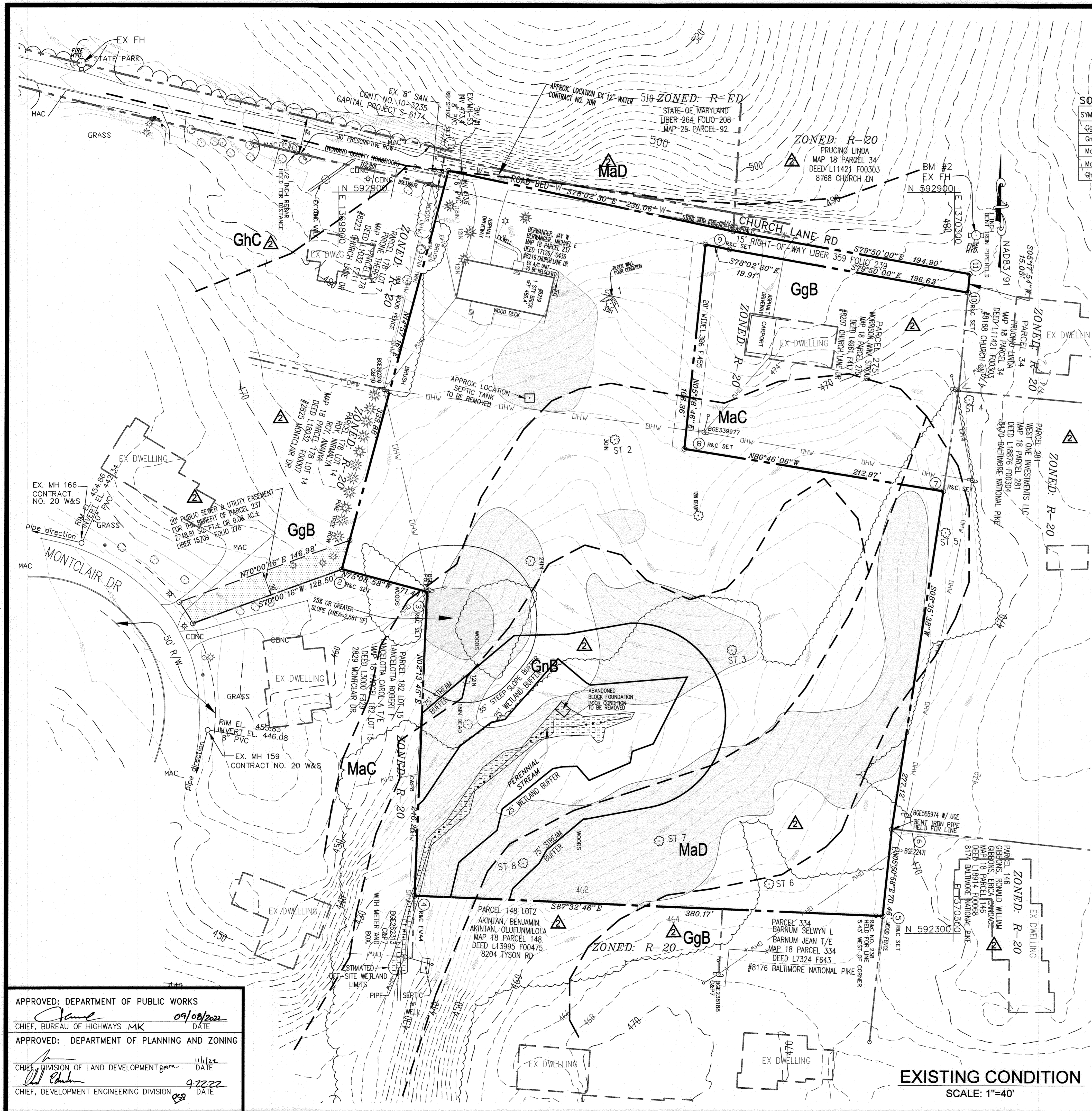


**DRAWN BY:** TH  
**CHECKED BY:** MI  
**SCALE:** AS SHOWN

**DATE:** 06-19-2022

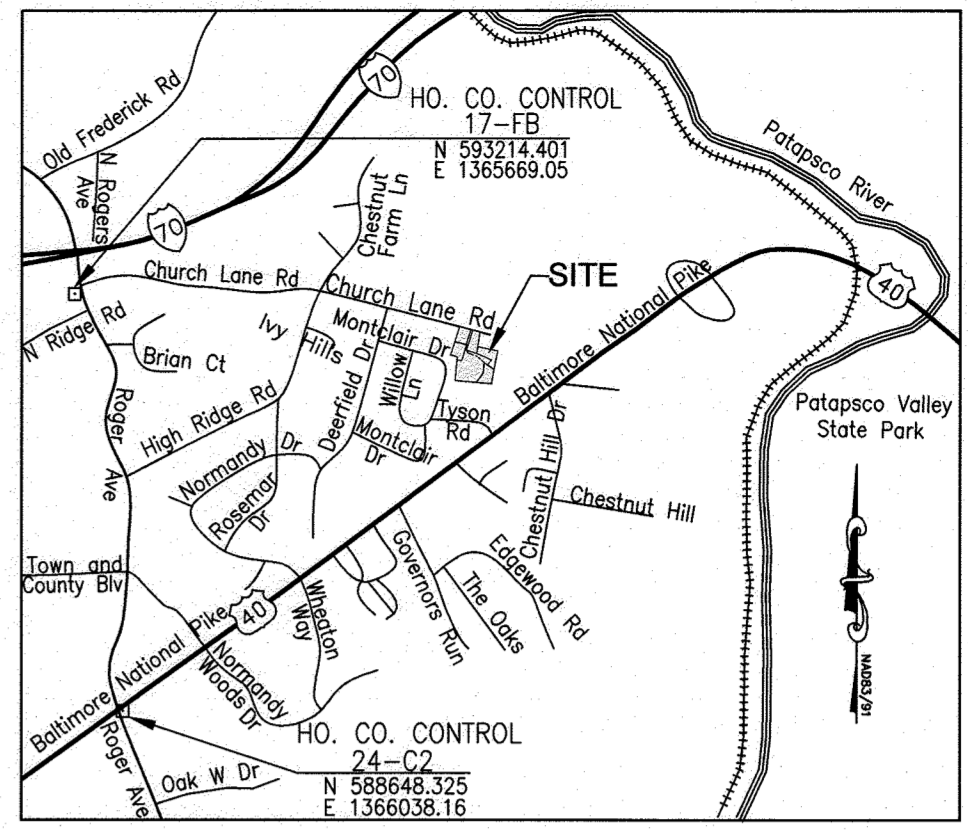
**SHEET 1 OF 16**

**HOWARD CO. FILE NO. F-10-081**



**SOILS TABLE**

SYMBOL	NAME	DESCRIPTION	HSG SOIL	Kw
GgB	GLENELG LOAM	3-8% SLOPES	B	0.24
GnB	GLENVILLE-BALLE SILT LOAMS	0-8% SLOPES	C	0.43
MaC	MANOR LOAM	8-15% SLOPES	B	0.28
MaD	MANOR LOAM	15-25% SLOPES	B	0.28
GhC	GLENELG-URBAN LAND COMPLEX	8-15% SLOPES	B	0.28



**LEGEND**

- 15% ~ 24% SLOPES
- 25% OR GREATER SLOPES
- MaC, GnB SOILS LINE
- STREAM CENTER LINE
- TREE LINE

**VICINITY MAP**  
ADC MAP #4816  
GRIDS C3 & C4  
SCALE: 1" = 2000'

**EX. PROPERTY CONERS COORDINATE TABLE**

CONER	Easting	Northing
1	592917.3192	1369889.6504
2	592594.7476	1369803.4925
3	592576.4365	1369872.5505
4	592330.3765	1369862.9740
5	592314.0977	1370242.8000
6	592384.1794	1370249.9797
7	592658.1845	1370291.3889
8	592692.3504	1370081.1811
9	592857.8523	1370098.0297
10	592819.0141	1370311.0413
11	592834.0089	1370312.4319

- NOTES:**  
SAID PROPERTY SUBJECT TO THE FOLLOWING ITEMS:
- PROPERTY DATA:  
RECORDED AMONG THE LAND RECORDS OF HOWARD COUNTY, MARYLAND  
MAP 18 PARCEL 237  
PROPERTY AREA = 201,256.00 SQ.FT. OR 4.6202 ACRES.  
CURRENT OWNER: WEST ONE INVESTMENTS LLC  
CURRENT DEED: SEE INDIVIDUAL LOTS FOR LIBER/FOLIO  
PROPERTY ADDRESS: 8213 CHURCH LANE RD, ELLICOTT CITY, MARYLAND 21043
  - THIS SURVEY WAS CONDUCTED IN ACCORDANCE WITH AN "URBAN SURVEY" AS IDENTIFIED BY THE MARYLAND DEPARTMENT OF LABOR, LICENSING AND REGULATIONS, BOARD OF PROFESSIONAL LAND SURVEYORS IN COMAR 09.13.06.03.
  - SUBJECT TO THE USE IN COMMON WITH OTHERS OF A 15 FOOT WIDE RIGHT-OF-WAY ADJACENT TO THE SOUTH SIDE OF CHURCH LANE AS MORE FULLY DESCRIBED IN A DEED DATED SEPTEMBER 21, 1960 AND RECORDED AMONG THE LAND RECORDS OF HOWARD COUNTY IN LIBER R.H.M. 359 FOLIO 239.
  - SUBJECT TO A ROAD 20 FOOT WIDE REFERRED TO IN A DEED DATED JUNE 4, 1962 AND RECORDED AMONG THE LAND RECORDS OF HOWARD COUNTY IN LIBER W.H.H. LIBER 386 FOLIO 455.
  - NO ENCROACHMENTS EXIST, EXCEPT AS SHOWN ON THIS DRAWING.
  - THE FIELD SURVEY WORK WAS PERFORMED BY AB CONSULTANTS BETWEEN THE DATES OF 5/01/2005 AND 12/20/2007.

**HORIZONTAL DATUM**  
COORDINATES AND NORTH SHOWN HEREON REFER TO THE NAD83/91 HORIZONTAL DATUM. BASED ON GPS OBSERVATION ON MAY 10, 2005 USING THE FOLLOWING PROVIDED BY HOWARD COUNTY :

DESIGNATION	NORTHING(sFT)	EASTING(sFT)	ELEVATION(sFT)
24-C2	588648.325	1366038.16	354.089
17-FB	593214.401	1365669.05	456.316

**PURPOSE NOTE:**  
USING USDA WEB SOIL SURVEY IN LIEU OF SOIL SURVEY OF HOWARD COUNTY, MARYLAND

**REPLACEMENT SHEET 02 OF 16**

**"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.

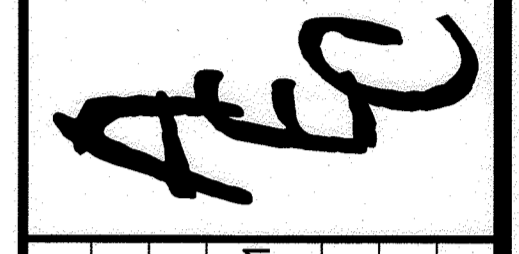
**OWNER/DEVELOPER**  
OLEGARIO RAMIREZ, PRESIDENT  
WEST ONE INVESTMENTS LLC  
8170 BALTIMORE NATIONAL PIKE  
ELLICOTT CITY, MD 21043  
EMAIL: OLE@CFTRAMING.COM  
TELEPHONE: 301-748-1010

APPROVED: DEPARTMENT OF PUBLIC WORKS  
09/08/2022  
CHIEF, BUREAU OF HIGHWAYS MK  
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
11/12/22  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE

09/22/22  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE

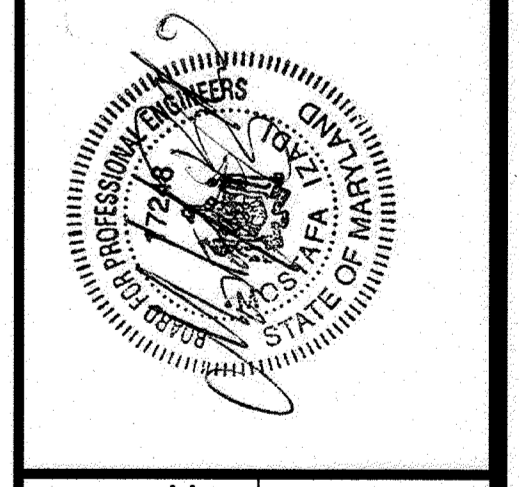
Advanced Engineering Consultants, PC.  
Engineers & Planners  
P.O. BOX 129 RIDERWOOD, MD 21139  
TEL.: 410-382-9180 FAX: 410-296-0505  
mizadi@aec-engineers.biz



**REVISIONS**

NO.	DESCRIPTION	BY	DATE
1	USING USDA WEB SOIL SURVEY IN LIEU OF SOIL SURVEY OF HOWARD COUNTY, MARYLAND	M I	10/08/21

**TITLE:** EXISTING CONDITION  
FINAL CONSTRUCTION PLANS  
**SHAMS SUBDIVISION**  
PARCEL NO. 237  
ELECTION DISTRICT 02  
TAX MAP #18, GRID 14  
HOWARD COUNTY, MARYLAND

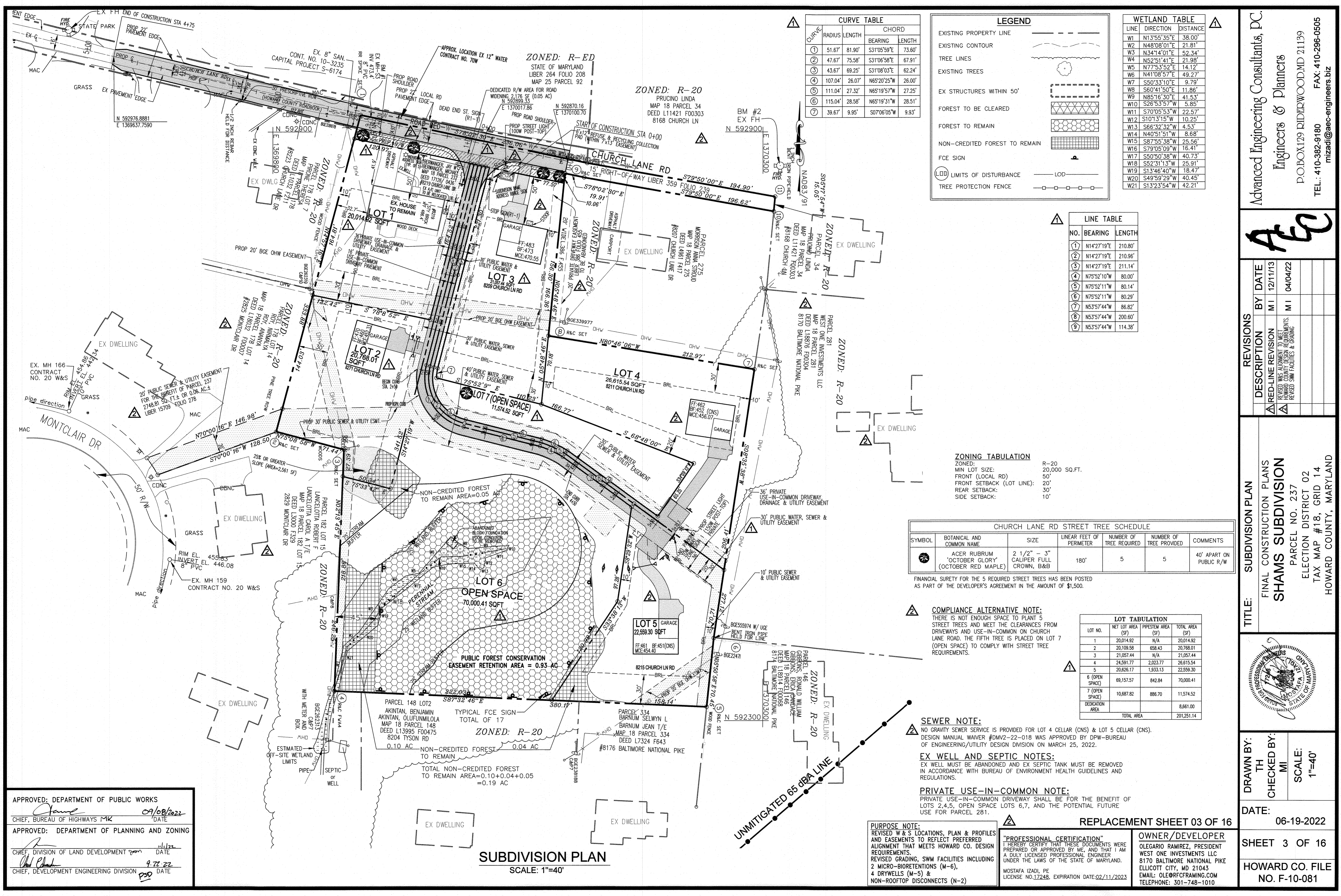


**DRAWN BY:** TH  
**CHECKED BY:** MI  
**SCALE:** 1"=40'

**DATE:** 06-19-2022

**SHEET 2 OF 16**

**HOWARD CO. FILE NO. F-10-081**



CURVE	RADIUS	LENGTH	CHORD	
			BEARING	LENGTH
1	51.67'	81.90'	S31°05'59"E	73.80'
2	47.67'	75.58'	S31°06'58"E	67.91'
3	43.67'	69.25'	S31°08'03"E	62.24'
4	107.04'	26.07'	N65°20'25"W	26.00'
5	111.04'	27.32'	N65°19'57"W	27.25'
6	115.04'	28.58'	N65°19'31"W	28.51'
7	39.67'	9.95'	S07°06'05"W	9.93'

LEGEND	
EXISTING PROPERTY LINE	---
EXISTING CONTOUR	~ ~ ~
TREE LINES	⊙
EXISTING TREES	⊙
EX STRUCTURES WITHIN 50'	⊠
FOREST TO BE CLEARED	⊠
FOREST TO REMAIN	⊠
NON-CREDITED FOREST TO REMAIN	⊠
FCE SIGN	⊠
LIMITS OF DISTURBANCE	⊠
TREE PROTECTION FENCE	⊠

WETLAND TABLE		
LINE	DIRECTION	DISTANCE
W1	N13°55'35"E	38.00'
W2	N48°08'01"E	21.81'
W3	N34°14'01"E	52.34'
W4	N52°51'41"E	21.98'
W5	N77°53'52"E	14.12'
W6	N41°08'57"E	49.27'
W7	S50°33'10"E	9.79'
W8	S60°41'50"E	11.86'
W9	N85°16'30"E	41.53'
W10	S26°53'53"W	5.85'
W11	S70°05'53"W	22.57'
W12	S107°31'55"W	10.25'
W13	S66°32'32"W	4.53'
W14	N40°51'51"W	8.68'
W15	S87°55'38"W	25.56'
W16	S79°05'09"W	16.41'
W17	S50°50'38"W	40.73'
W18	S52°31'13"W	25.91'
W19	S13°46'40"W	18.47'
W20	S49°59'29"W	40.45'
W21	S13°23'54"W	42.21'

LINE TABLE		
NO.	BEARING	LENGTH
1	N14°27'19"E	210.80'
2	N14°27'19"E	210.96'
3	N14°27'19"E	211.14'
4	N75°52'10"W	80.00'
5	N75°52'11"W	80.14'
6	N75°52'11"W	80.29'
7	N53°57'44"W	86.82'
8	N53°57'44"W	200.60'
9	N53°57'44"W	114.38'

**ZONING TABULATION**  
 ZONED: R-20  
 MIN LOT SIZE: 20,000 SQ.FT.  
 FRONT (LOCAL RD): 50'  
 FRONT SETBACK (LOT LINE): 20'  
 REAR SETBACK: 30'  
 SIDE SETBACK: 10'

CHURCH LANE RD STREET TREE SCHEDULE						
SYMBOL	BOTANICAL AND COMMON NAME	SIZE	LINEAR FEET OF PERIMETER	NUMBER OF TREE REQUIRED	NUMBER OF TREE PROVIDED	COMMENTS
⊙	ACER RUBRUM 'OCTOBER GLORY' (OCTOBER RED MAPLE)	2 1/2" - 3" CALIPER FULL CROWN, B&B	180'	5	5	40' APART ON PUBLIC R/W

FINANCIAL SURETY FOR THE 5 REQUIRED STREET TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$1,500.

**COMPLIANCE ALTERNATIVE NOTE:**  
 THERE IS NOT ENOUGH SPACE TO PLANT 5 STREET TREES AND MEET THE CLEARANCES FROM DRIVEWAYS AND USE-IN-COMMON ON CHURCH LANE ROAD. THE FIFTH TREE IS PLACED ON LOT 7 (OPEN SPACE) TO COMPLY WITH STREET TREE REQUIREMENTS.

LOT TABULATION			
LOT NO.	NET LOT AREA (SQ)	PIEPISTEM AREA (SQ)	TOTAL AREA (SQ)
1	20,014.92	N/A	20,014.92
2	20,109.58	658.43	20,768.01
3	21,057.44	N/A	21,057.44
4	24,591.77	2,023.77	26,615.54
5	20,626.17	1,933.13	22,559.30
6 (OPEN SPACE)	69,157.57	842.84	70,000.41
7 (OPEN SPACE)	10,687.82	886.70	11,574.52
DEDICATION AREA			8,661.00
TOTAL AREA			201,251.14

**SEWER NOTE:**  
 NO GRAVITY SEWER SERVICE IS PROVIDED FOR LOT 4 CELLAR (CNS) & LOT 5 CELLAR (CNS). DESIGN MANUAL WAIVER #DW2-22-018 WAS APPROVED BY DPW-BUREAU OF ENGINEERING/UTILITY DESIGN DIVISION ON MARCH 25, 2022.

**EX WELL AND SEPTIC NOTES:**  
 EX WELL MUST BE ABANDONED AND EX SEPTIC TANK MUST BE REMOVED IN ACCORDANCE WITH BUREAU OF ENVIRONMENT HEALTH GUIDELINES AND REGULATIONS.

**PRIVATE USE-IN-COMMON NOTE:**  
 PRIVATE USE-IN-COMMON DRIVEWAY SHALL BE FOR THE BENEFIT OF LOTS 2,4,5, OPEN SPACE LOTS 6,7, AND THE POTENTIAL FUTURE USE FOR PARCEL 281.

**PURPOSE NOTE:**  
 REVISED W & S LOCATIONS, PLAN & PROFILES AND EASEMENTS TO REFLECT PREFERRED ALIGNMENT THAT MEETS HOWARD CO. DESIGN REQUIREMENTS.  
 REVISED GRADING, SWM FACILITIES INCLUDING 2 MICRO-BIOTENTIONS (M-6), 4 DRYWELLS (M-5) & NON-ROOFTOP DISCONNECTS (N-2)

**"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.  
 MOSTAFA IZADI, PE  
 LICENSE NO. 12,248. EXPIRATION DATE: 02/11/2023

**OWNER/DEVELOPER**  
 OLEGARIO RAMIREZ, PRESIDENT  
 WEST ONE INVESTMENTS LLC  
 8170 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MD 21043  
 EMAIL: OLE@RFRAMING.COM  
 TELEPHONE: 301-748-1010

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS MK  
 DATE: 09/08/2022

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 09/12/22

CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 9.22.22

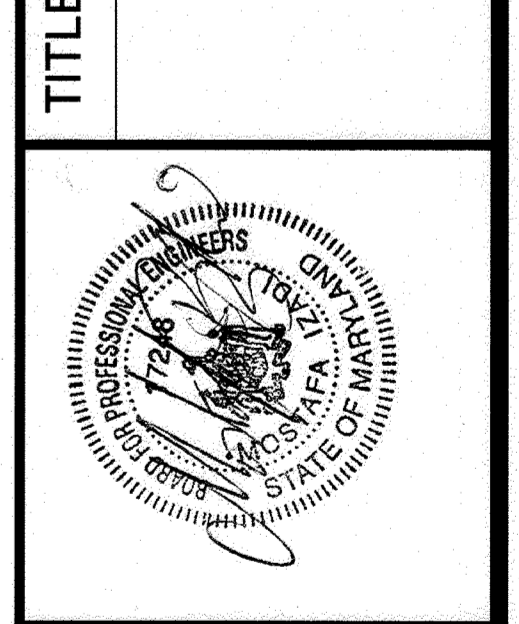
**SUBDIVISION PLAN**  
 SCALE: 1"=40'

Advanced Engineering Consultants, P.C.  
 Engineers & Planners  
 P.O. BOX 129 RIDERWOOD, MD 21139  
 TEL: 410-382-9180 FAX: 410-296-0505  
 mtzadi@aec-engineers.biz

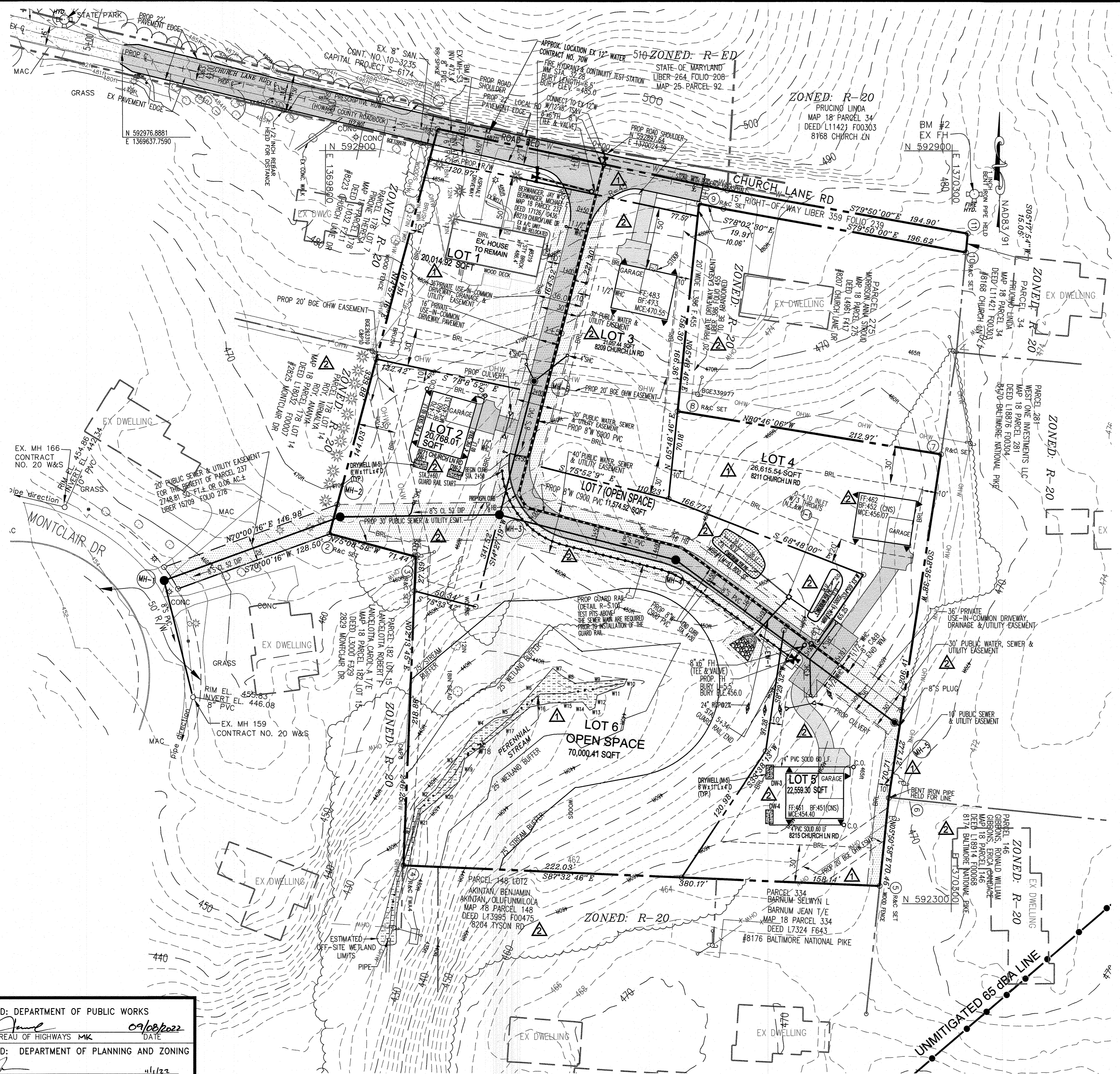
**AEC**

REVISIONS	
DESCRIPTION	BY DATE
RED-LINE REVISION	M1 12/11/13
REVISED PERMITS TO MEET HOWARD COUNTY DESIGN REQUIREMENTS. REVISED SWM FACILITIES & GRADING	M1 04/04/22

**TITLE: SUBDIVISION PLAN**  
 FINAL CONSTRUCTION PLANS  
**SHAMS SUBDIVISION**  
 PARCEL NO. 237  
 ELECTION DISTRICT 02  
 TAX MAP #18, GRID 14  
 HOWARD COUNTY, MARYLAND



**DRAWN BY:** TH  
**CHECKED BY:** MI  
**SCALE:** 1"=40'  
**DATE:** 06-19-2022  
**SHEET 3 OF 16**  
**HOWARD CO. FILE NO. F-10-081**



**LEGEND**

PROPERTY BOUNDARY	---
EX ADJACENT LOTS OR PARCEL LINE	---
EXISTING CONTOUR	~ ~ ~
TREE LINES	~ ~ ~
EXISTING TREES	⊗
PROPOSED CONTOUR	470
SPOT ELEVATION	+463.5
PROPOSED DOWN SPOUT	▲
PROPOSED PAVEMENT	▒
EXISTING OVERHEAD WIRE	OHW
EXISTING WATER MAIN	--- W --- W ---
PROPOSED WATER MAIN	--- W --- W ---
EXISTING SEWER MAIN	--- S --- S ---
PROPOSED SEWER MAIN	--- S --- S ---
PROPOSED FIRE HYDRANT	+
PROPOSED STORM DRAIN	---
STREAM CENTER LINE	⋯
36" PRIVATE USE-IN-COMMON DRIVEWAY, DRAINAGE & UTILITY EASEMENT	▒

**PRIVATE USE-IN-COMMON NOTE:**  
PRIVATE USE-IN-COMMON DRIVEWAY SHALL BE FOR THE BENEFIT OF LOTS 2,4,5, OPEN SPACE LOTS 6,7, AND THE POTENTIAL FUTURE USE FOR PARCEL 281.

**PURPOSE NOTE:**  
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REVISED GRADING, SWM FACILITIES INCLUDING 2 MICRO-BIOTENTIONS (M-6), 4 DRYWELLS (M-5) & NON-ROOFTOP DISCONNECTS (N-2)

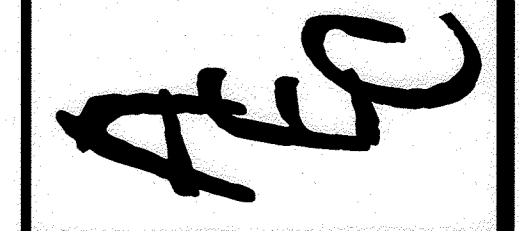
APPROVED: DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS MK 09/08/2022 DATE  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT gm 11/22 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION PSD 11/3/22 DATE

**SUBDIVISION UTILITIES & LAYOUT**  
SCALE: 1"=40'

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 LICENSE NO. 17248, EXPIRATION DATE: 02/11/2023

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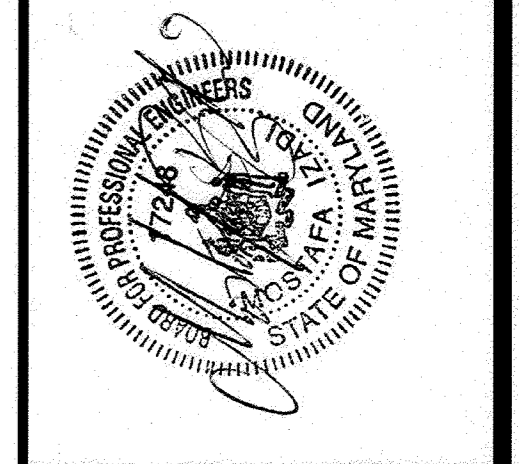
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**REVISIONS**

DESCRIPTION	BY	DATE
RED-LINE REVISION	M I	12/11/13
REVISED SWM FACILITIES & GRADING	M I	04/04/22
COMPLETED TO 6/19/22 COMMENTS	M I	06/19/22

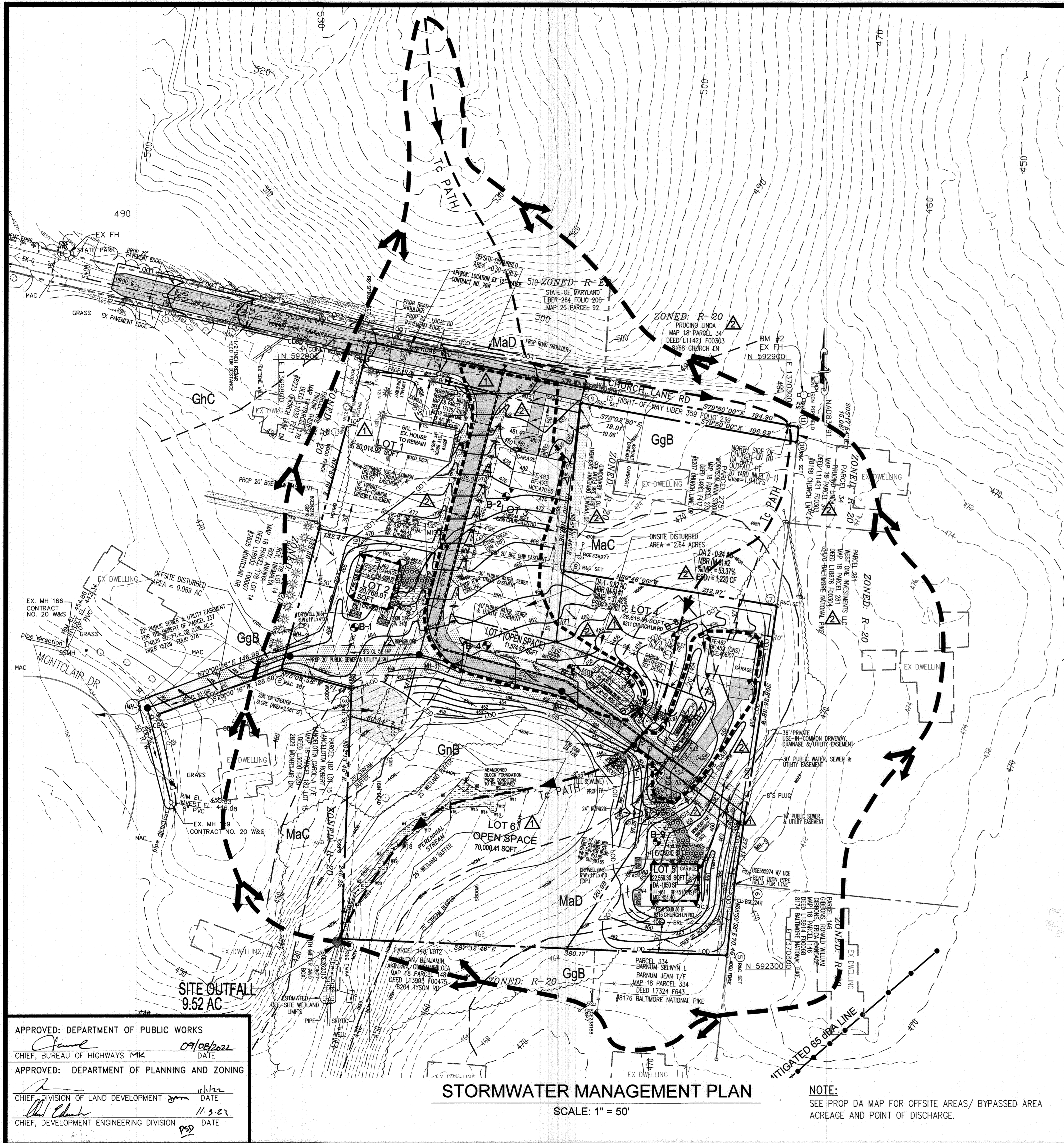
**TITLE: SUBDIVISION UTILITIES & LAYOUT**  
 FINAL CONSTRUCTION PLANS  
**SHAMS SUBDIVISION**  
 PARCEL NO. 237  
 ELECTION DISTRICT 02  
 TAX MAP #18, GRID 14  
 HOWARD COUNTY, MARYLAND



**DRAWN BY:** TH  
**CHECKED BY:** MI  
**SCALE:** 1"=40'  
**DATE:** 06-19-2022

**SHEET 4 OF 16**  
**HOWARD CO. FILE NO. F-10-081**

REPLACEMENT SHEET 04 OF 16



### LEGEND

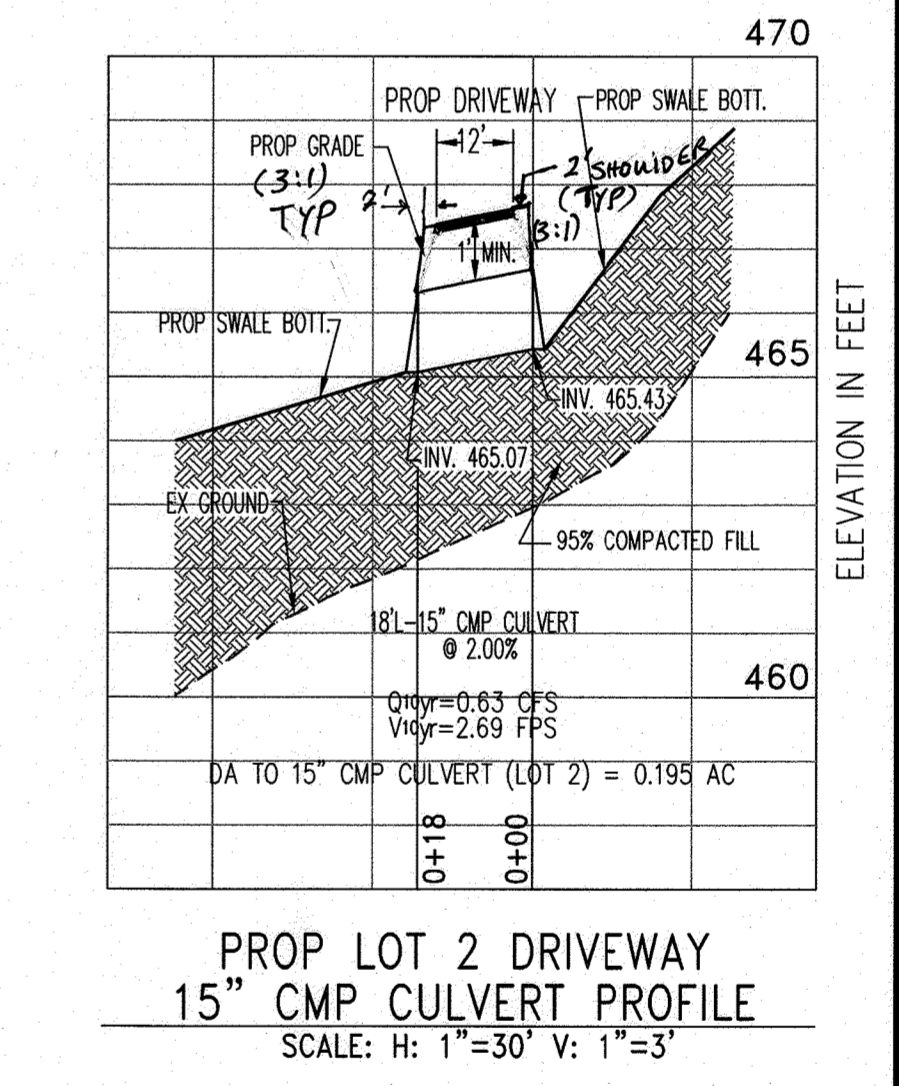
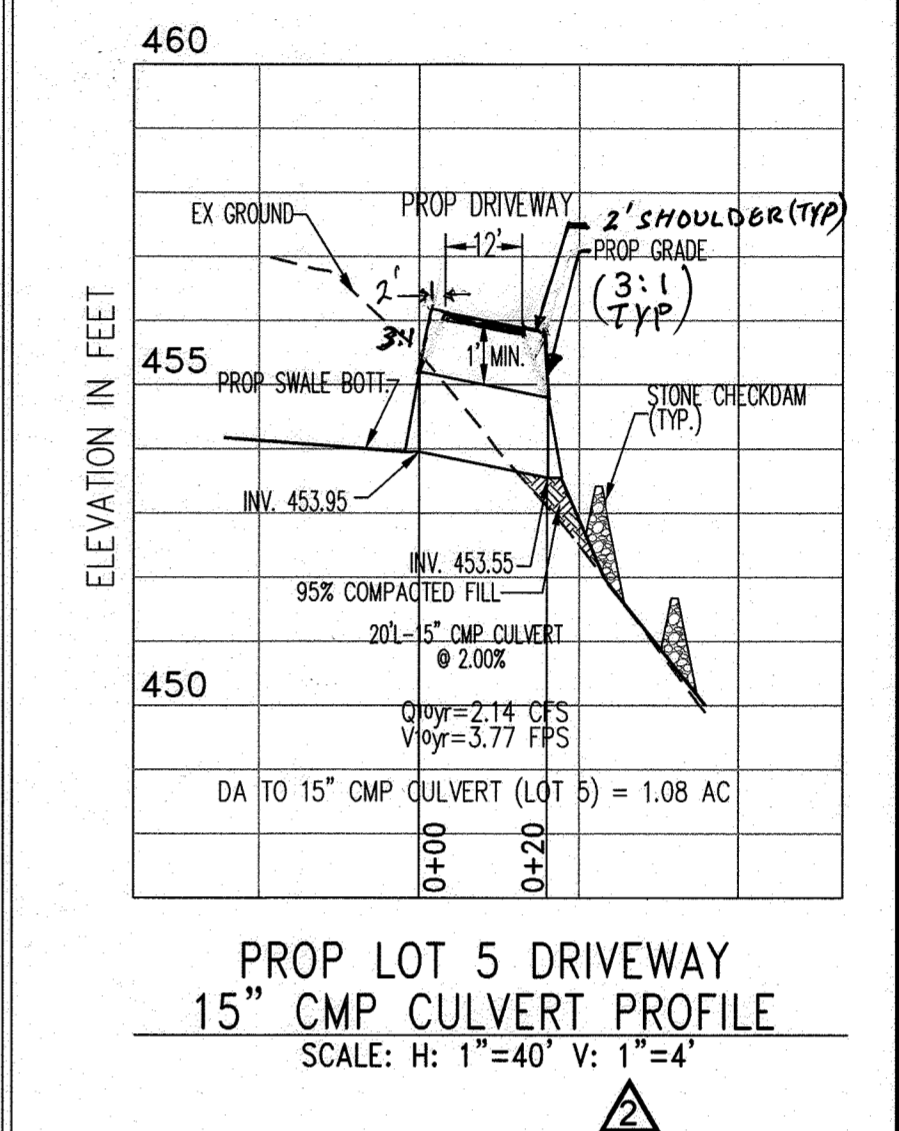
- PROPERTY BOUNDARY: - - - - -
- EX ADJACENT LOTS OR PARCEL LINE: - - - - -
- EXISTING CONTOUR: ~~~~~
- TREE LINES: [Symbol]
- EXISTING TREES: [Symbol]
- PROPOSED CONTOUR: ——— 470
- SPOT ELEVATION: +463.5
- SOIL BORING LOCATION: B-4 [Symbol]
- 25% OR GREATER SLOPES: [Shaded Area]
- STREAM CENTER LINE: - . - . - . -
- TEMPORARY STONE OUTLET STRUCTURE (PER MDE PAGE C-11-2): [Symbol]
- STONE CHECK DAM: [Symbol]
- (LOD) LIMITS OF DISTURBANCE: - LOD -
- --- --- DRAINAGE DIVIDE
- --- --- SOILS LINE
- PROPOSED DOWN SPOUT: [Symbol]
- PROPOSED PAVEMENT: [Pattern]
- NON-ROOF TOP DISCONNECT (N-2): [Pattern]
- DISCONNECT AREAS: [Pattern]
- 36' PRIVATE USE-IN-COMMON DRIVEWAY, DRAINAGE & UTILITY EASEMENT: [Pattern]

### SOILS TABLE

SYMBOL	NAME	DESCRIPTION	HSG SOIL	Kw
GgB	GLENELG LOAM	3-8% SLOPES	B	0.24
GhB	GLENVILLE-BALLE SILT LOAMS	0-8% SLOPES	C	0.43
MaC	MANOR LOAM	8-15% SLOPES	B	0.28
MaD	MANOR LOAM	15-25% SLOPES	B	0.28
GhC	GLENELG-URBAN LAND COMPLEX	8-15% SLOPES	B	0.28

### DRYWELL ELEVATIONS TABLE

DRYWELL	PROP GRADE EL	TOP EL	BOTTOM EL
DW-1	466.00	464.00	460.00
DW-2	465.00	462.50	458.50
DW-3	456.00	454.00	450.00
DW-4	459.00	457.00	453.00



### GABIONS MATTRESS SPECIFICATIONS:

NOTE: LENGTH VARIES AS SHOWN ON PLANS

DURA-FLEX GABIONS OR APPROVED EQUAL BASKETS ARE DOUBLE TWISTED HEXAGONAL WOVEN GALVANIZED STEEL WIRE MESH BASKETS WITH A RECTANGULAR BOX SHAPE. MOUNTED WITHIN ARE DIAPHRAGMS THAT FORM EQUAL SIZE COMPARTMENTS OR CELLS. THE COMPARTMENTS OR CELLS ARE FILLED WITH NATURAL STONE AND THE DIAPHRAGMS MINIMIZE STONE MIGRATION WITHIN THE BASKET AND PROVIDING EVEN DISTRIBUTION OF THE STONE FILL THROUGHOUT THE BASKET EVEN AFTER STRUCTURAL MOVEMENT.

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 [Signature] 09/08/2022  
 CHIEF, BUREAU OF HIGHWAYS MK DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 11/3/22  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 09/09  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

## STORMWATER MANAGEMENT PLAN

SCALE: 1" = 50'

NOTE:  
 SEE PROP DA MAP FOR OFFSITE AREAS/ BYPASSED AREA ACREAGE AND POINT OF DISCHARGE.

PURPOSE NOTE:  
 REVISED W & S LOCATIONS, PLAN & PROFILES AND EASEMENTS TO REFLECT PREFERRED ALIGNMENT THAT MEETS HOWARD CO. DESIGN REQUIREMENTS.  
 REVISED GRADING, SWM FACILITIES INCLUDING 2 MICRO-BIOTENTIONS (M-6), 4 DRYWELLS (M-5) & NON-ROOFTOP DISCONNECTS (N-2)

REPLACEMENT SHEET 05 OF 16

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 LICENSE NO. 17248, EXPIRATION DATE: 02/11/2023

OWNER/DEVELOPER  
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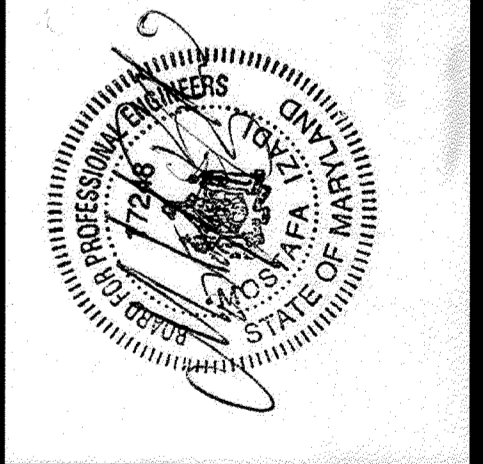
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**AEC**

### REVISIONS

DESCRIPTION	BY	DATE
RED-LINE REVISION	M I	12/11/13
REVISED SWM FACILITIES & GRADING	M I	04/04/22
COMPLETED TO 5/10/22 COMMENTS	M I	06/19/22

TITLE: STORMWATER MANAGEMENT PLAN  
 FINAL CONSTRUCTION PLANS  
**SHAMS SUBDIVISION**  
 PARCEL NO. 237  
 ELECTION DISTRICT 02  
 TAX MAP #18, GRID 14  
 HOWARD COUNTY, MARYLAND

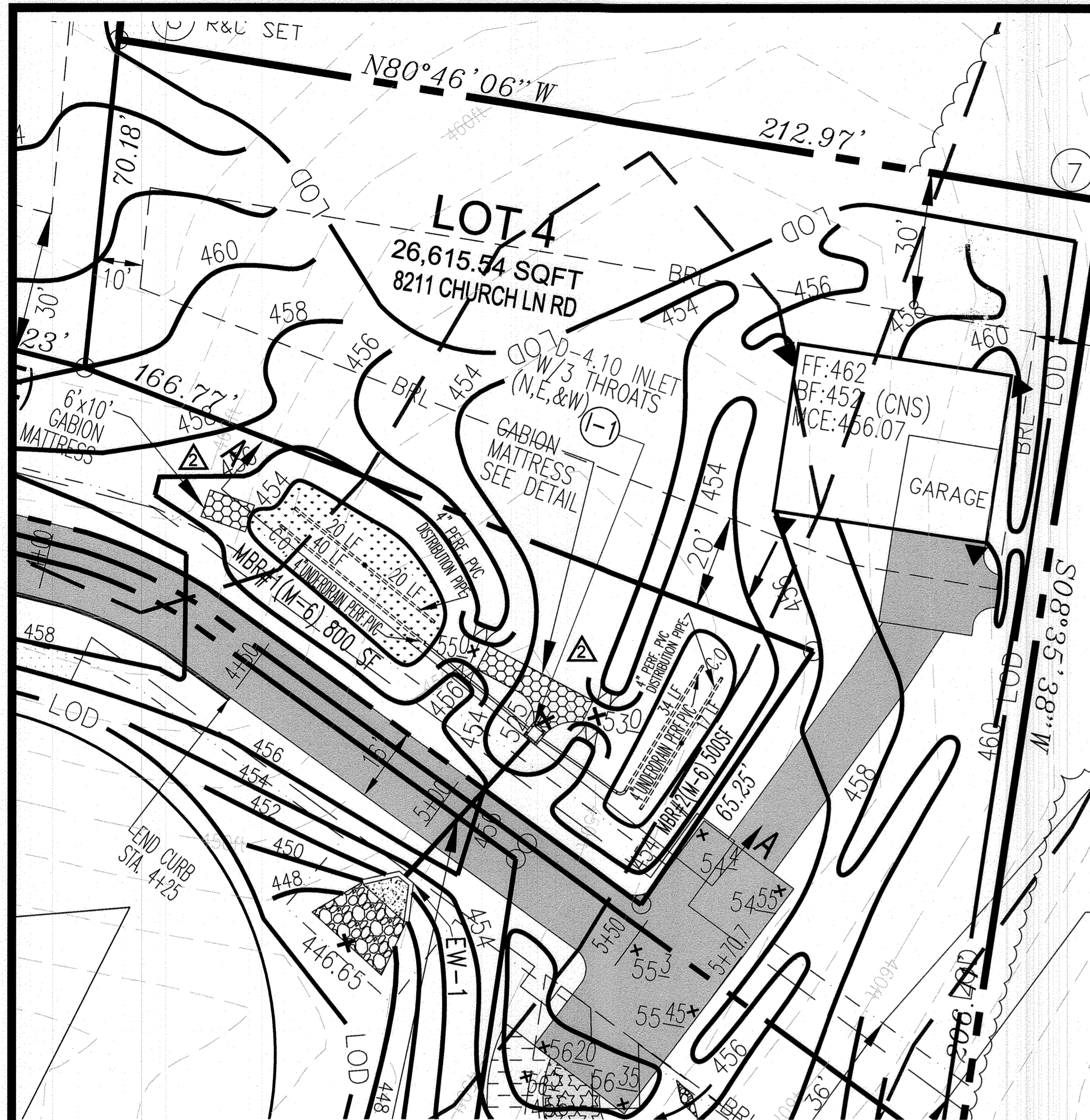


DRAWN BY: TH  
 CHECKED BY: MI  
 SCALE: AS SHOWN

DATE: 06-19-2022

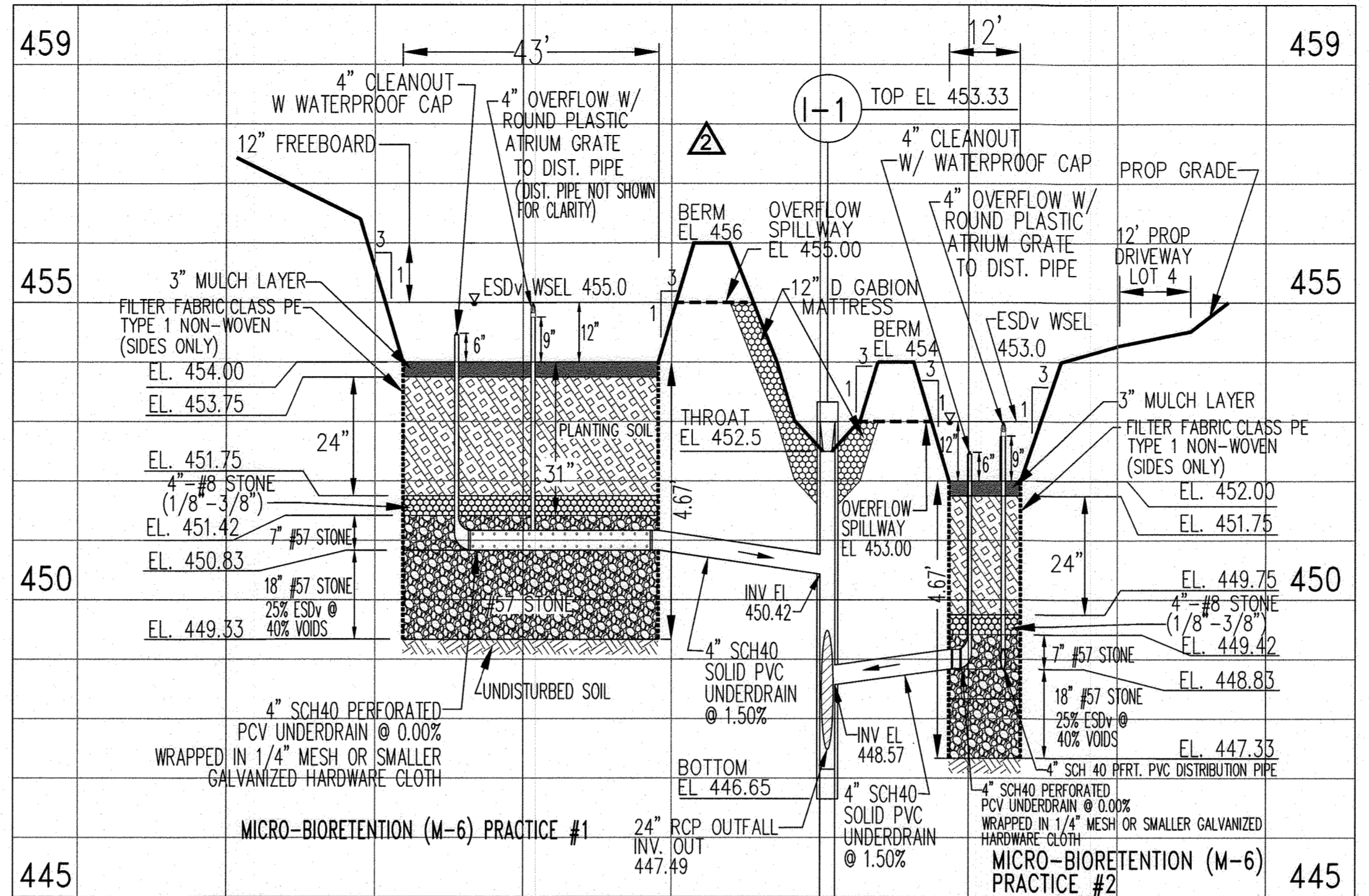
SHEET 5 OF 16

HOWARD CO. FILE NO. F-10-081



**MICRO-BIORETENTIONS (M-6) PLAN**  
(SEE THIS SHEET FOR OVERFLOW & UNDERDRAIN DETAILS)

SCALE: 1" = 20'



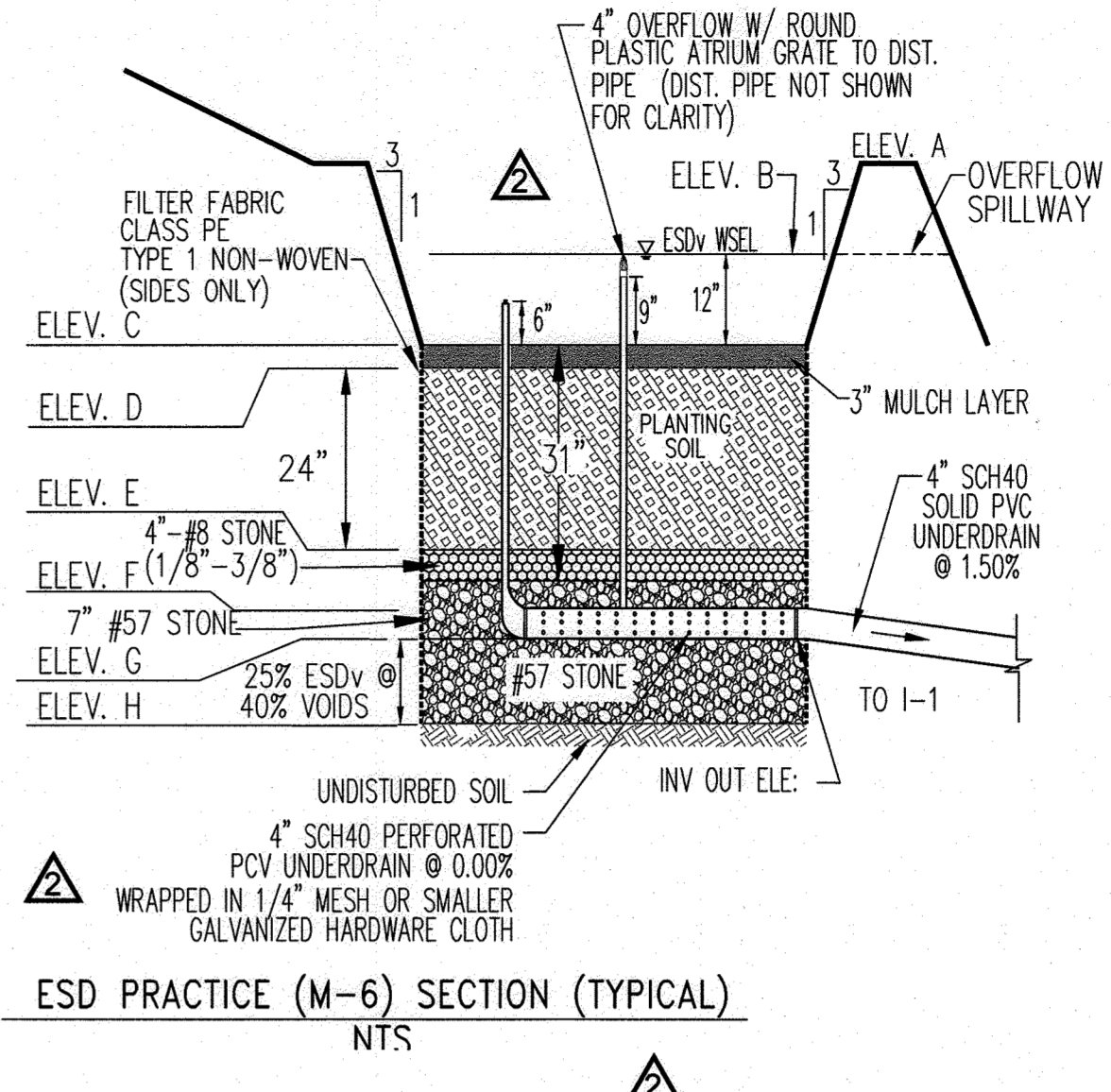
**MICRO BIORETENTION PRACTICES #1 & #2 SECTION (A-A)**  
SCALE: H: 1"=20' V: 1"=2'

**MICRO-BIORETENTION (M-6) PRACTICE #1 PLANT LIST ( 800 SF )**

SYMBOL	QTY.	BOTANICAL NAME	COMMON NAME	SIZE
LP	6	PLATANUS X ACERIFOLIA	LONDON PLANE TREE	2 1/2" - 3" Col.
IG	6	ILEX GLABRA	INK BERRY	2' - 3' HT.
CF	36	LOBELEA CARDINALIS	CARDINAL FLOWER LOBELIA	1 GAL. CONTAINER
WF	24	DRYOPTERIS SP.	WOOD FERN	1 GAL. CONTAINER
NE	18	ASTER NOVAE - ANGLIAE	NEW ENGLAND ASTER	1 GAL. CONTAINER
●	250	LIRIOPE APICATA	CREeping LILY TURF	2" POT (EVERY 6")

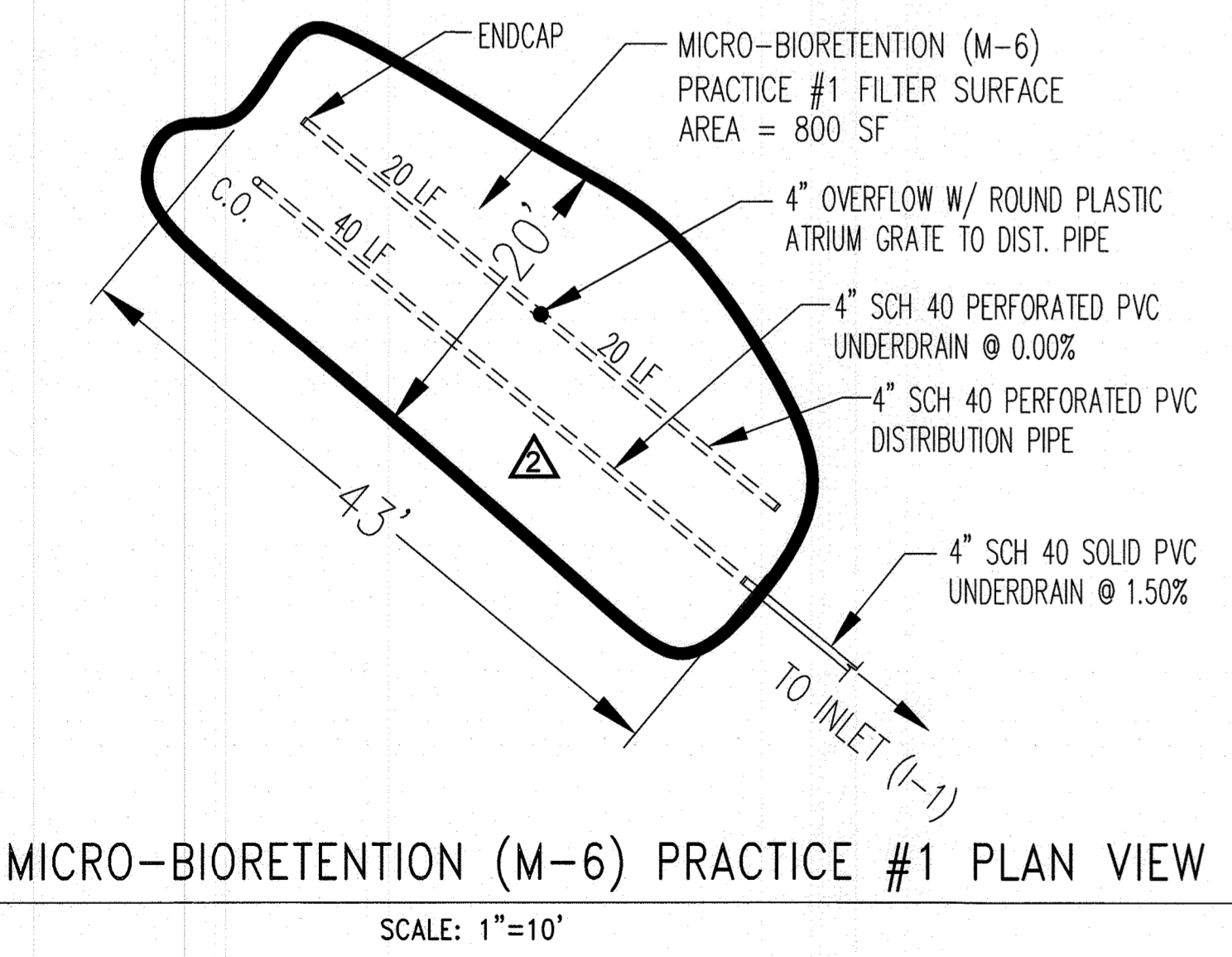
**MICRO-BIORETENTION (M-6) PRACTICE #2 PLANT LIST ( 500 SF )**

SYMBOL	QTY.	BOTANICAL NAME	COMMON NAME	SIZE
LP	4	PLATANUS X ACERIFOLIA	LONDON PLANE TREE	2 1/2" - 3" Col.
IG	4	ILEX GLABRA	INK BERRY	2' - 3' HT.
CF	30	LOBELEA CARDINALIS	CARDINAL FLOWER LOBELIA	1 GAL. CONTAINER
WF	20	DRYOPTERIS SP.	WOOD FERN	1 GAL. CONTAINER
NE	15	ASTER NOVAE - ANGLIAE	NEW ENGLAND ASTER	1 GAL. CONTAINER
●	200	LIRIOPE APICATA	CREeping LILY TURF	2" POT (EVERY 6")

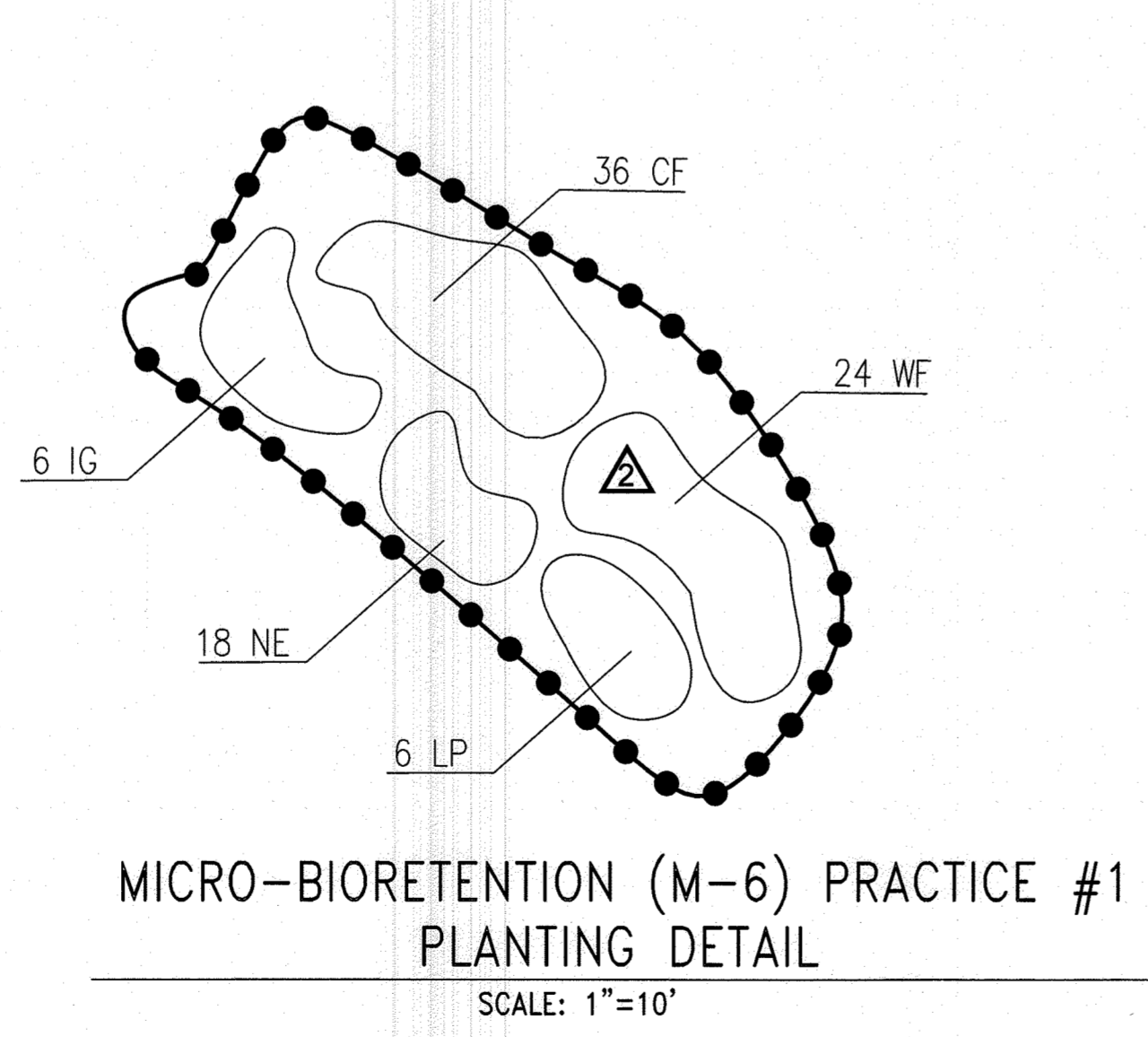


**MICRO-BIORETENTION (M-6) PRACTICES DATA CHART**

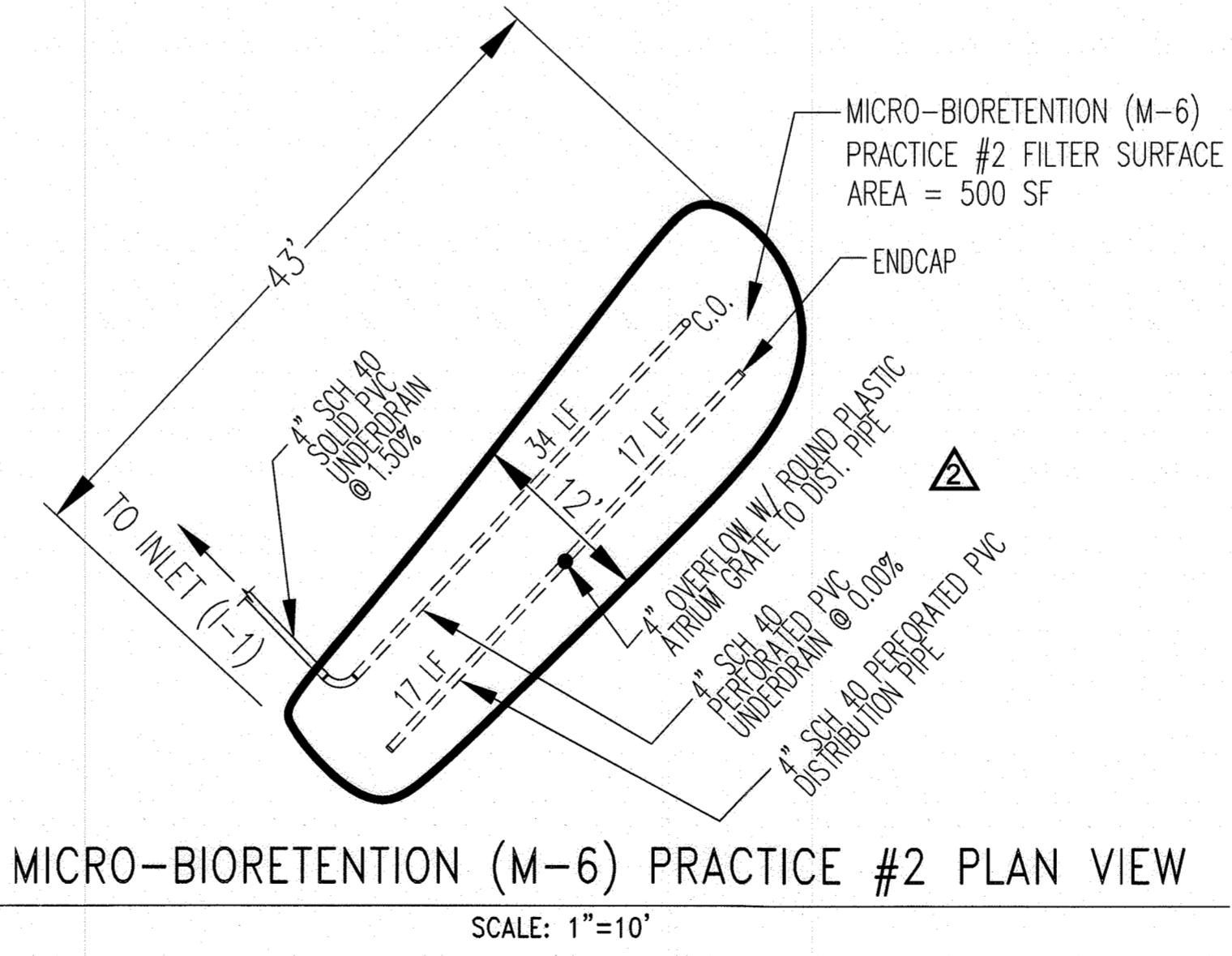
MBR (M-6) Practices #	Surface Area (ft²)	Ponding depth (ft)	BERM Elev. A	Ponding Elev. B	Top of mulch Elev. C	Bottom of Mulch Elev. D	Bottom of Plant mix Elev. E	Bottom of #8 STONE Layer Elev. F	Invert of 4" PVC perf. Underdrain Elev. G	Bottom of Add. Stone Layer Elev. H	Approx. Dimensions (at midpoint)
1	800	1.0	456	455.0	454.00	453.75	451.75	451.42	450.83	449.33	20' x 43'
2	500	1.0	454	453.0	452.00	451.75	449.75	449.42	448.83	447.33	12' x 43'



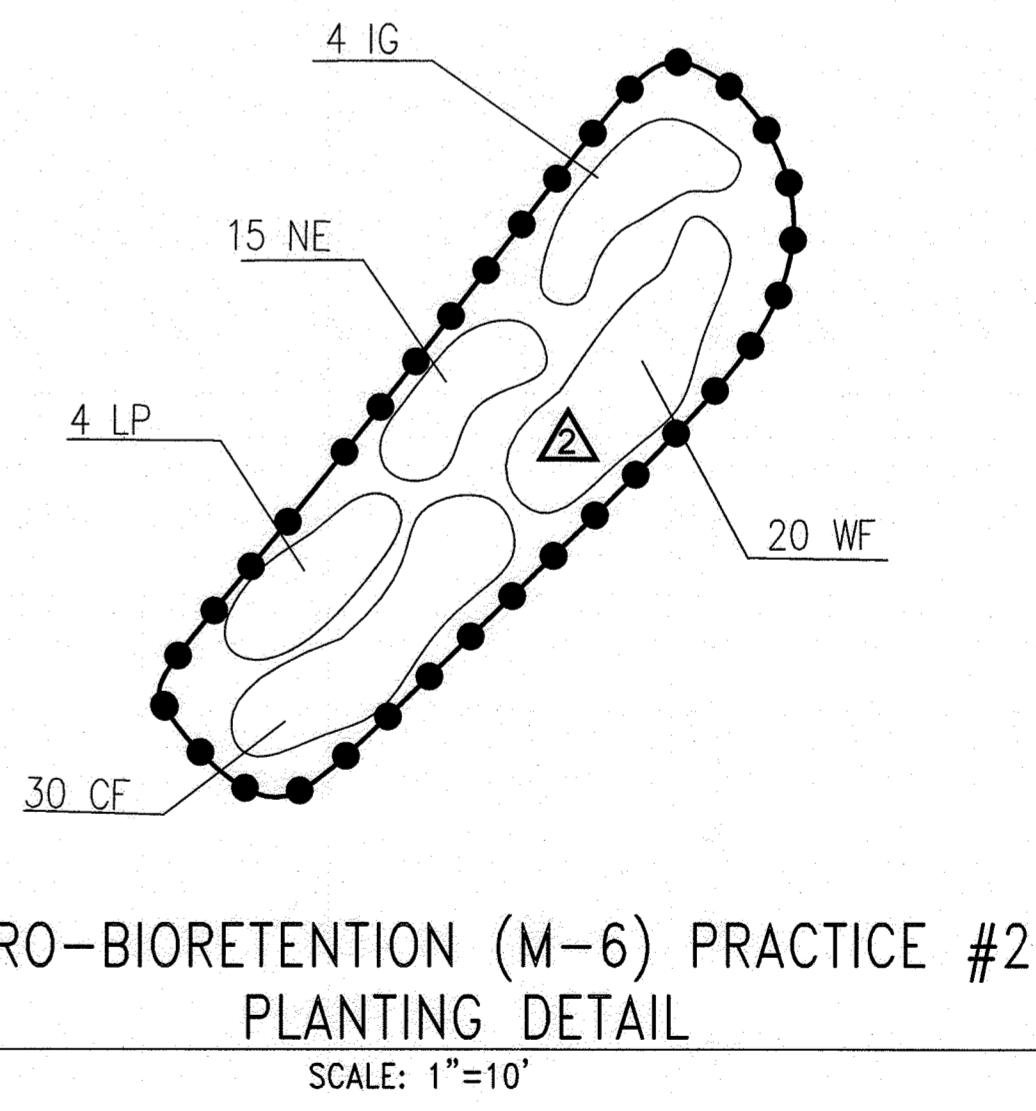
**MICRO-BIORETENTION (M-6) PRACTICE #1 PLAN VIEW**  
SCALE: 1"=10'



**MICRO-BIORETENTION (M-6) PRACTICE #1 PLANTING DETAIL**  
SCALE: 1"=10'



**MICRO-BIORETENTION (M-6) PRACTICE #2 PLAN VIEW**  
SCALE: 1"=10'



**MICRO-BIORETENTION (M-6) PRACTICE #2 PLANTING DETAIL**  
SCALE: 1"=10'

- "MICRO-BIORETENTION" PLANTING SCHEDULE NOTES:**
- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HOWARD COUNTY PLANTING SPECIFICATIONS. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
  - FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.
  - SEE THIS SHEET FOR TYPICAL PLANTING SPECIFICATIONS AND DETAILS.
  - MICRO-BIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF 1000 STEMS PER PLANTED ACRE (.0229 STEMS PER SQUARE FOOT). ABOVE PLANTING RATIOS ARE TO BE APPLIED TO THE AREAS PROVIDED IN THE ESDV SUMMARY.

**PURPOSE NOTE:**  
REVISED W & S LOCATIONS, PLAN & PROFILES AND EASEMENTS TO REFLECT PREFERRED ALIGNMENT THAT MEETS HOWARD CO. DESIGN REQUIREMENTS.  
REVISED GRADING, SWM FACILITIES INCLUDING 2 MICRO-BIORETENTIONS (M-6), 4 DRYWELLS (M-5) & NON-ROOFTOP DISCONNECTS (N-2)

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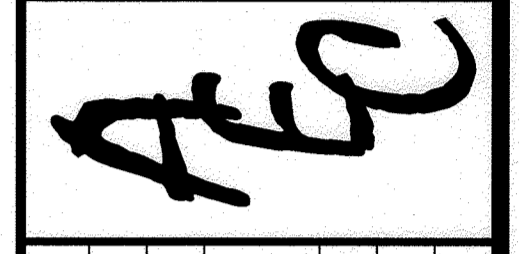
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TELEPHONE: 301-748-1010

APPROVED: DEPARTMENT OF PUBLIC WORKS  
CHIEF, BUREAU OF HIGHWAYS MK  
DATE: 09/08/2022

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE: 11/22/22

CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 9/27/22

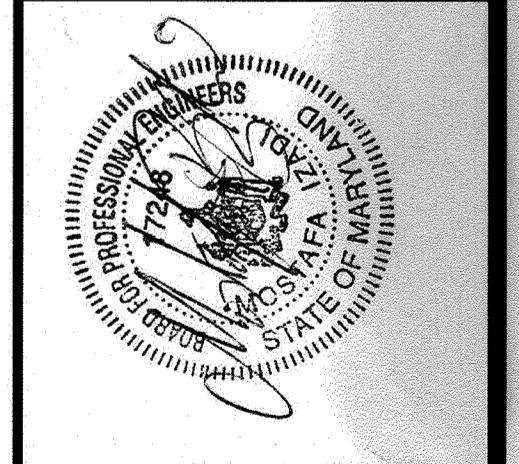
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FAX: 410-296-0505



**REVISIONS**

DESCRIPTION	BY	DATE
REVISED THIS ALIGNMENT TO MEET HOWARD COUNTY DESIGN REQUIREMENTS REVISED SWM FACILITIES & GRADING	MI	04/04/22
COMPLETED TO 6/10/22 COMMENTS	MI	06/19/22

**TITLE: MICRO-BIORETENTIONS (M-6) PLAN & SECTION**  
FINAL CONSTRUCTION PLANS  
**SHAMS SUBDIVISION**  
PARCEL NO. 237  
ELECTION DISTRICT 02  
TAX MAP #18, GRID 14  
HOWARD COUNTY, MARYLAND



**DRAWN BY:** TH  
**CHECKED BY:** MI  
**SCALE:** AS SHOWN

**DATE:** 06-19-2022

**SHEET 6 OF 16**  
**HOWARD CO. FILE NO. F-10-081**

**REPLACEMENT SHEET 06 OF 16**

B.4.C CONSTRUCTION SPECIFICATIONS FOR MICRO-BIORETENTION (M-6)

1. MATERIAL SPECIFICATIONS
THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1.

2. FILTERING MEDIA OR PLANTING SOIL

THE SOIL SHALL BE A UNIFORM MIX FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH...

3. COMPACTION

IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REAR BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL...

4. PLANT MATERIAL

RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.

5. PLANT INSTALLATION

COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3"...

ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8TH OF THE BALL IS ABOVE FINAL GRADE SURFACE...

THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY...

UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:
PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F756, TYPE PS28, OR AASHTO-M-278) IN A GRAVEL LAYER...

PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 1/2" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW...

GRAVEL - THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.

THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.
A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQUARE FEET) TO PROVIDE A CLEAN-OUT POINT AND MONITOR PERFORMANCE OF THE FILTER.

A 4" LAYER OF PEAV GRAVEL (1/2" TO 3/4" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN...

THE MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5% OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

MISCELLANEOUS
THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED

OPERATION AND MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)

- 1. THE TOP FEW INCHES OF FILTER MEDIA (MULCH LAYER) SHOULD BE INSPECTED EACH SPRING, ONCE EVERY 2 TO 3 YEARS, REMOVE PREVIOUS MULCH LAYER AND APPLY NEW 2 TO 3 INCH MULCH LAYER.
2. SILTS AND SEDIMENT SHOULD BE REMOVED FROM THE SURFACE OF THE FILTER BED WHEN ACCUMULATION EXCEEDS ONE (1) INCH...

CONSTRUCTION INSPECTION SCHEDULE FOR MICRO-BIORETENTION FACILITY (M-6)

- 1. THE DEVELOPER SHALL NOTIFY AT LEAST 48 HOURS BEFORE COMMENCING ANY WORK IN CONJUNCTION WITH SITE DEVELOPMENT, THE STORMWATER MANAGEMENT PLAN, AND UPON COMPLETION OF THE PROJECT.
2. WRITTEN INSPECTION REPORTS SHALL INCLUDE:
A. THE DATE AND LOCATION OF THE INSPECTION;
B. WHETHER CONSTRUCTION WAS IN COMPLIANCE WITH THE APPROVED STORMWATER MANAGEMENT PLAN;

TABLE B.4.1 MATERIALS SPECIFICATIONS FOR MICRO-BIORETENTION Rain Gardens & Landscape Infiltration

Table with 4 columns: Material, Specification, Size, Notes. Rows include Plantings, Filtering media, Organic content, Mulch, Pea gravel diaphragm, Curtain drain, Geotextile, Gravel (underdrains and infiltration basins), Underdrain piping, Poured in place concrete, and Sand.

DRY WELLS (M-5) CONSTRUCTION CRITERIA:

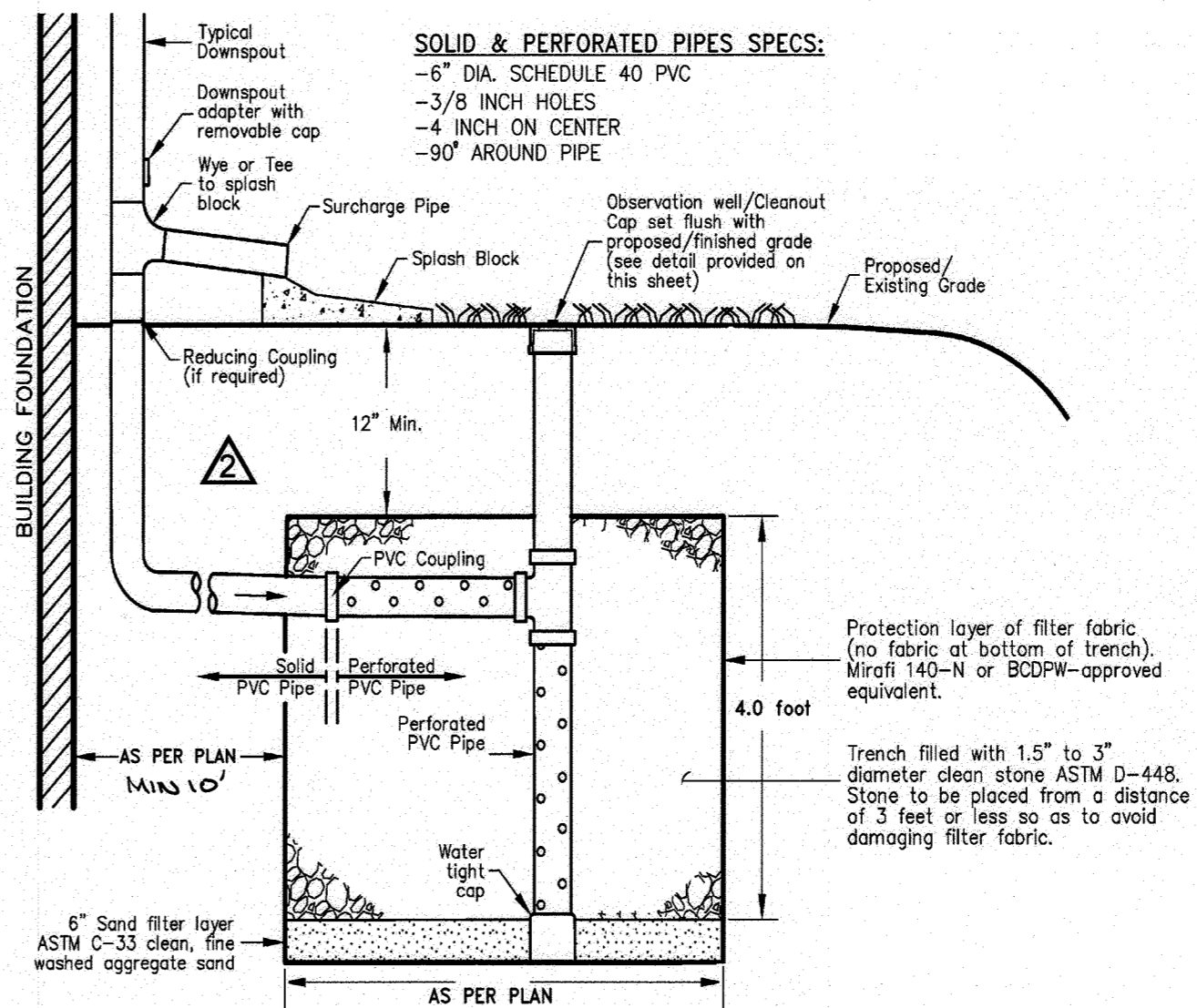
- THE FOLLOWING ITEMS SHOULD BE ADDRESSED DURING CONSTRUCTION OF PROJECTS WITH DRY WELLS:
- EROSION AND SEDIMENT CONTROL: FINAL GRADING FOR PROPOSED DRY WELLS SHOULD NOT TAKE PLACE UNTIL THE SURROUNDING SITE IS COMPLETELY STABILIZED...

INSPECTION OF DRY WELLS DURING CONSTRUCTION:

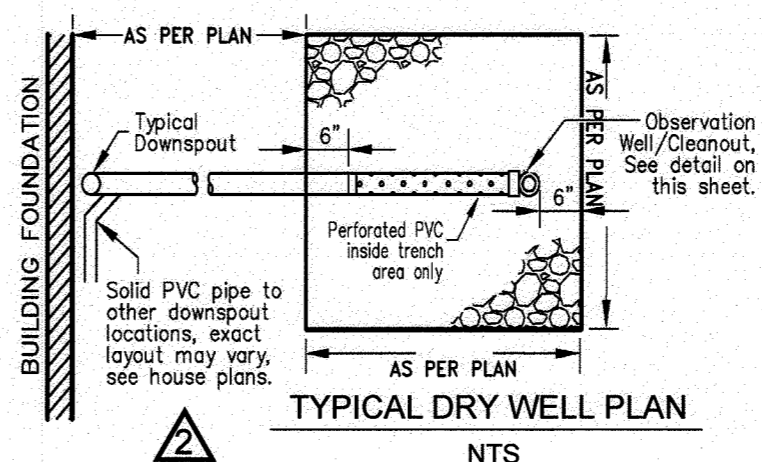
- REGULAR INSPECTIONS SHALL BE MADE DURING THE FOLLOWING STAGES OF CONSTRUCTION:
- DURING EXCAVATION TO SUBGRADE;
- DURING PLACEMENT OF BACKFILL AND PERFORATED INLET PIPE AND OBSERVATION WELL...

DRY WELLS (M-5) MAINTENANCE CRITERIA:

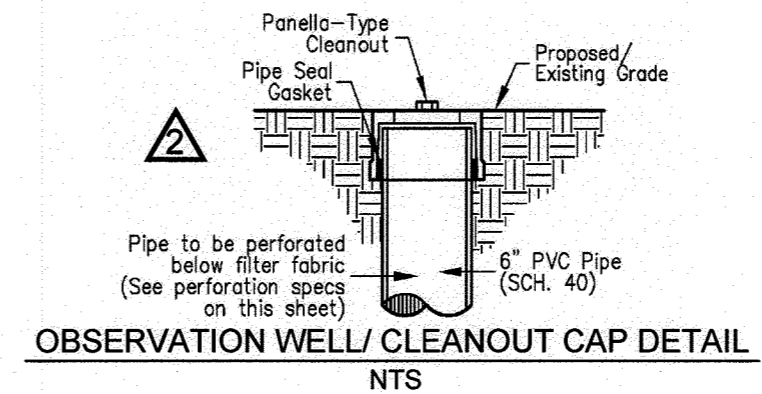
- THE FOLLOWING ITEMS SHOULD BE ADDRESSED TO ENSURE PROPER MAINTENANCE AND LONG-TERM PERFORMANCE OF DRY WELLS:
- DRY WELLS SHALL HAVE A MAINTENANCE PLAN, SWM EASEMENTS ARE PROVIDED FOR THE PROJECT FOR INSPECTION BY BALTIMORE COUNTY INSPECTORS...



TYPICAL DRY WELL SECTION NTS



TYPICAL DRY WELL PLAN NTS



OBSERVATION WELL/ CLEANOUT CAP DETAIL NTS

Summary of ESDv for each Practice. Table with columns: DRAINAGE AREA #, AREA, FACILITY, MICRO-BIO RETENTION (M-6), DRY WELLS (M-5), NON-ROOFTOP DISCONNECT (N-2), RECHARGE, ESDv VOLUME. Includes totals for ESDv REQUIRED and PROVIDED.

Targeted ESDv Vs. Provided ESDv Summary. Table with columns: DRAINAGE AREA, FACILITY, IMPERV, GRASS AREA, TOTAL AREA, PERCENT IMPERVIOUS, Rv, ESDv MINIMUM, ESDv MAXIMUM, TARGET ESDv, PROVIDED ESDv.

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS MK
DATE: 09/08/2022
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 09/22/22

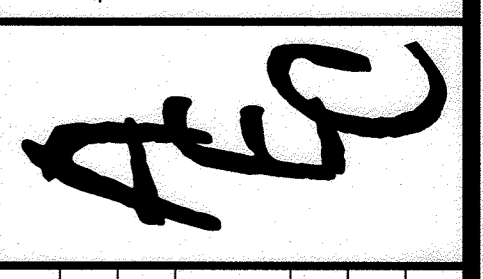
PURPOSE NOTE:
REVISED W & S LOCATIONS, PLAN & PROFILES AND EASEMENTS TO REFLECT PREFERRED ALIGNMENT THAT MEETS HOWARD CO. DESIGN REQUIREMENTS.
REVISED GRADING, SWM FACILITIES INCLUDING 2 MICRO-BIORETENTIONS (M-6), 4 DRYWELLS (M-5) & NON-ROOFTOP DISCONNECTS (N-2)

REPLACEMENT SHEET 07 OF 16

"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.
MUSTAFA IZADI, PE
LICENSE NO. 17248, EXPIRATION DATE: 02/11/2023

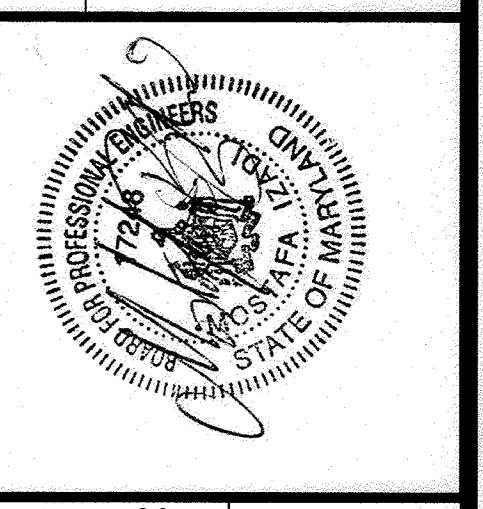
OWNER/DEVELOPER
OLEGARIO RAMIREZ, PRESIDENT
WEST ONE INVESTMENTS LLC
8170 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
EMAIL: OLER@CFRFRAMING.COM
TELEPHONE: 301-748-1010

Advanced Engineering Consultants, P.C.
Engineers & Planners
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TEL: 410-382-9180
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FAX: 410-296-0505



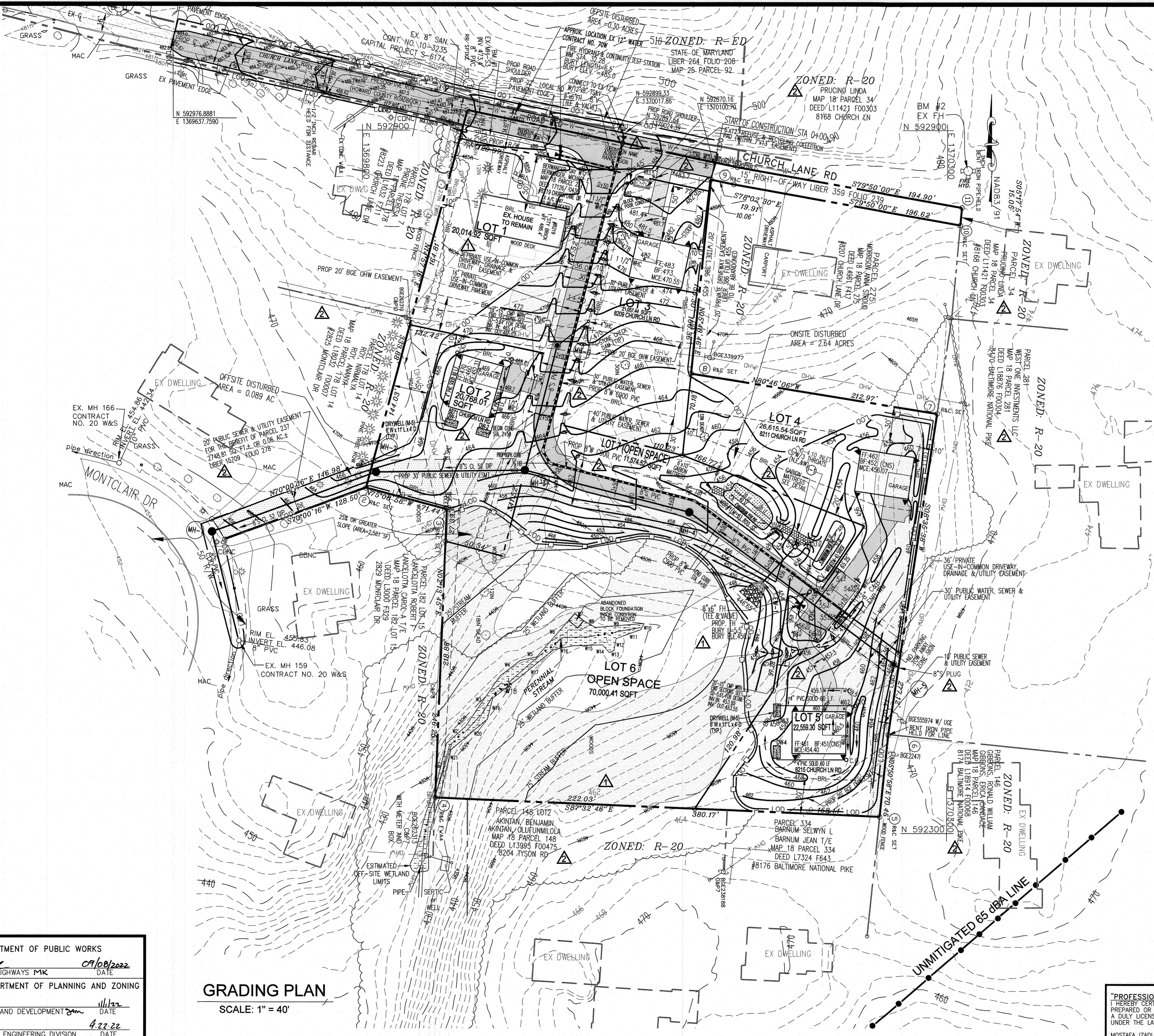
REVISIONS table with columns: REVISIONS, DESCRIPTION, BY DATE. Includes a revision for 'REVISED THIS ALIGNMENT TO MEET HOWARD COUNTY DESIGN REQUIREMENTS' on 04/04/22.

TITLE: MICRO-BIORETENTION & DRYWELLS SPECIFICATIONS
FINAL CONSTRUCTION PLANS
SHAMS SUBDIVISION
PARCEL NO. 237
ELECTION DISTRICT 02
TAX MAP #18, GRID 14
HOWARD COUNTY, MARYLAND



DRAWN BY: TH
CHECKED BY: MI
SCALE:
DATE: 06-19-2022

SHEET 7 OF 16
HOWARD CO. FILE NO. F-10-081



**LEGEND**

EXISTING PROPERTY LINE	---
PROP PROPERTY LINE	---
EXISTING CONTOUR	~ ~ ~
TREE LINES	~ ~ ~
EXISTING TREES	○
PROPOSED CONTOUR	~ ~ ~ 470
SPOT ELEVATION	+463.5
15% ~ 24% SLOPES	▭
25% OR GREATER SLOPES	▭
STREAM CENTER LINE	— · — · —
STONE CHECK DAM	— · — · —
SILT FENCE	— SF — SF —
SUPER SILT FENCE	— SSF — SSF —
LOD LIMITS OF DISTURBANCE	— LOD —
TREE PROTECTION FENCE	— ○ — ○ —

- DRAWING NOTES**
- ONLY THE MINIMUM CLEARING AREA NECESSARY TO INSTALL THE PERIMETER CONTROL DEVICES SHALL BE CLEARED IN PHASE 1.
  - THE DEMOLITION OF EXISTING FEATURES AND STRUCTURES SHALL BE CONDUCTED IN A MANNER THAT MINIMIZES THE IMPACT ON INDIVIDUAL TREES AND GROUPS OF TREES TO BE PRESERVED.
  - TREES TO BE PRESERVED ON THIS SITE WILL REQUIRE PROTECTION AND CARE THROUGHOUT THE CONSTRUCTION PHASE. THE TREE PROTECTION FENCE SHALL CONSIST OF FOUR-FOOT HEIGHT, 14-GAUGE WELDED WIRE ATTACHED TO A SIX FOOT STEEL POST, DRIVEN 18" INTO THE GROUND AND PLACE NO MORE THAN 10' APART. THIS FENCE SHALL BE ERRECTED AT THE LIMITS OF CLEARING AND GRADING.

**PRIVATE USE-IN-COMMON NOTE:**  
PRIVATE USE-IN-COMMON DRIVEWAY SHALL BE FOR THE BENEFIT OF LOTS 2,4,5, OPEN SPACE LOTS 6,7, AND THE POTENTIAL FUTURE USE FOR PARCEL 281.

**PURPOSE NOTE:**  
REVISED W & S LOCATIONS, PLAN & PROFILES AND EASEMENTS TO REFLECT PREFERRED ALIGNMENT THAT MEETS HOWARD CO. DESIGN REQUIREMENTS.  
REVISED GRADING, SWM FACILITIES INCLUDING 2 MICRO-BIOTENTIONS (M-6), 4 DRYWELLS (M-5) & NON-ROOFTOP DISCONNECTS (N-2)

REPLACEMENT SHEET 08 OF 16

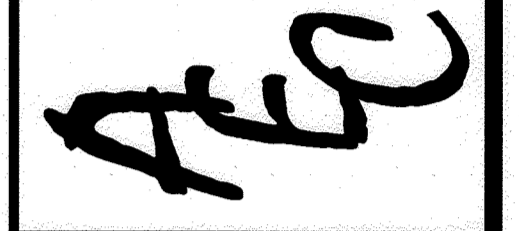
"PROFESSIONAL CERTIFICATION"  
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MOSTAFA IZADI, PE  
LICENSE NO. 17248, EXPIRATION DATE: 02/11/2023

**OWNER/DEVELOPER**  
OLEGARIO RAMIREZ, PRESIDENT  
WEST ONE INVESTMENTS LLC  
8170 BALTIMORE NATIONAL PIKE  
ELLICOTT CITY, MD 21043  
EMAIL: OLE@RCFRAMING.COM  
TELEPHONE: 301-748-1010

APPROVED: DEPARTMENT OF PUBLIC WORKS  
CHIEF, BUREAU OF HIGHWAYS MK  
DATE 09/08/2022  
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE 09/22/22  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

**GRADING PLAN**  
SCALE: 1" = 40'

Advanced Engineering Consultants, DC.  
Engineers & Planners  
P.O. BOX 129 RIDERWOOD, MD 21139  
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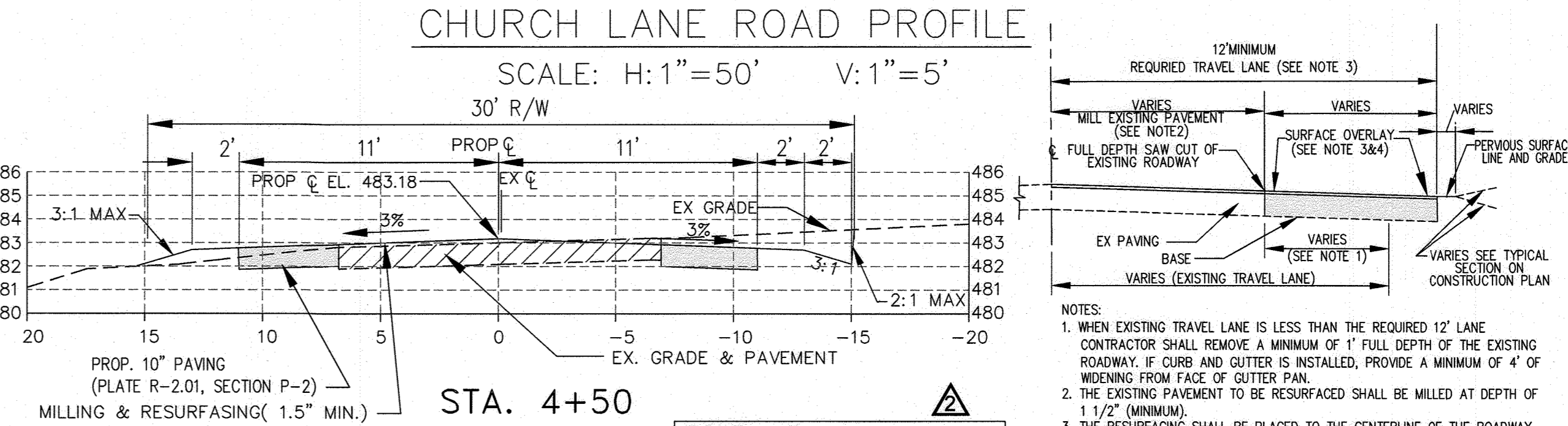
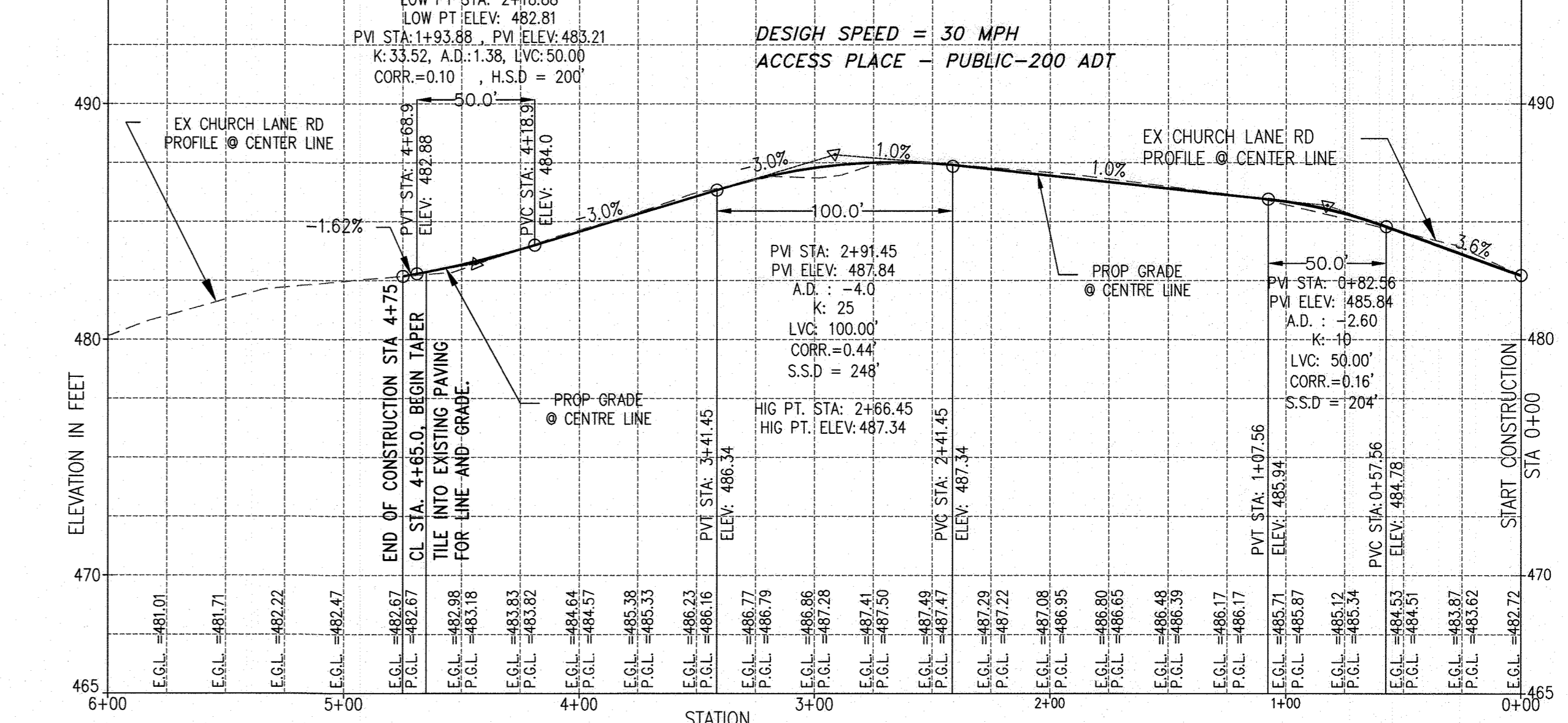
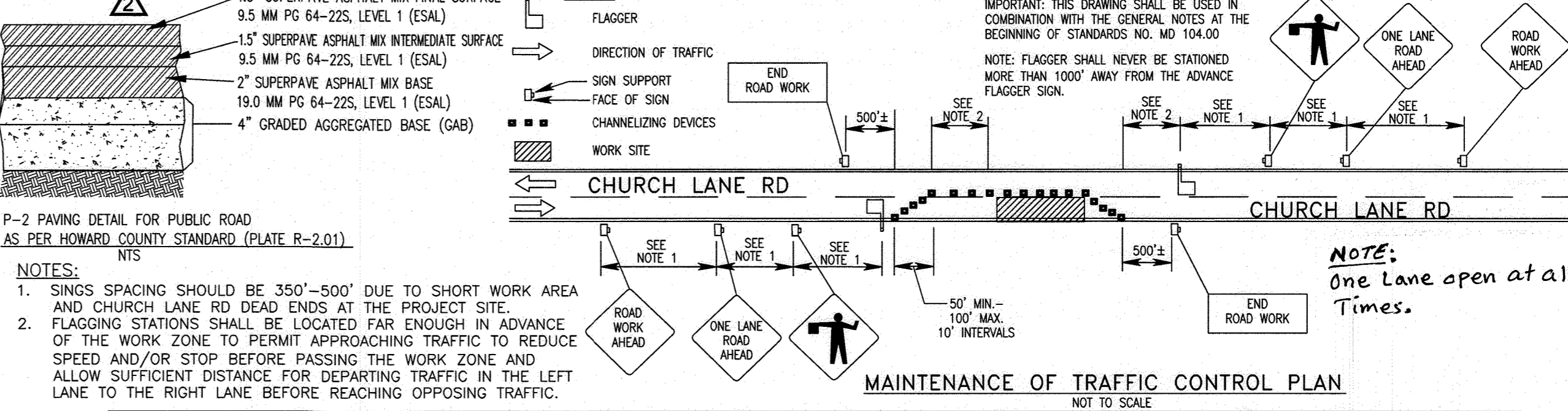
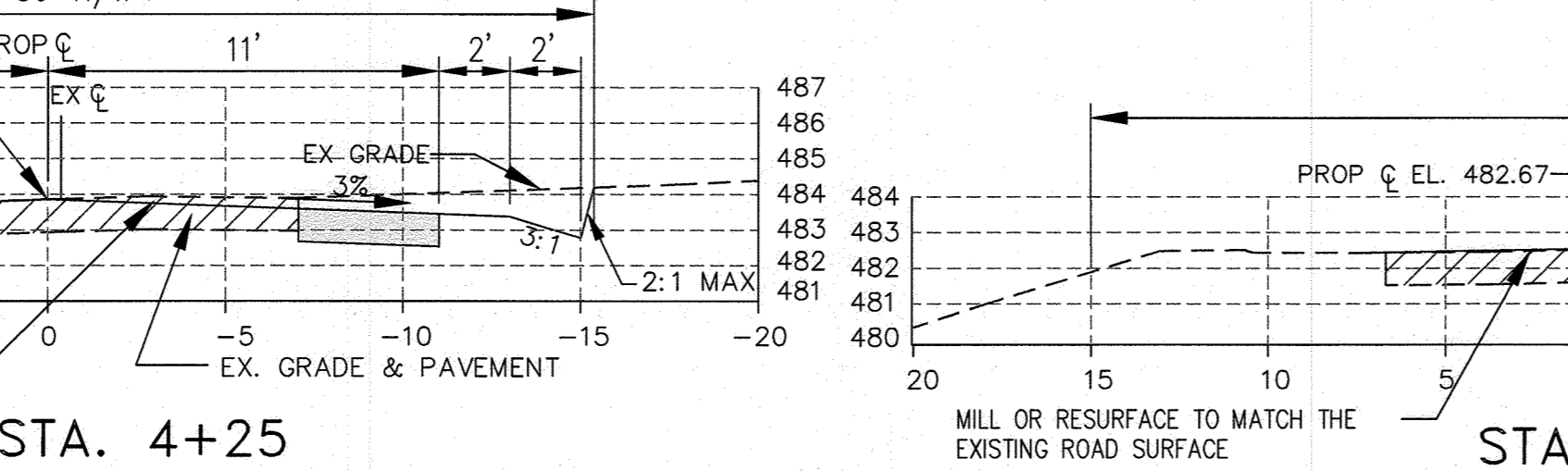
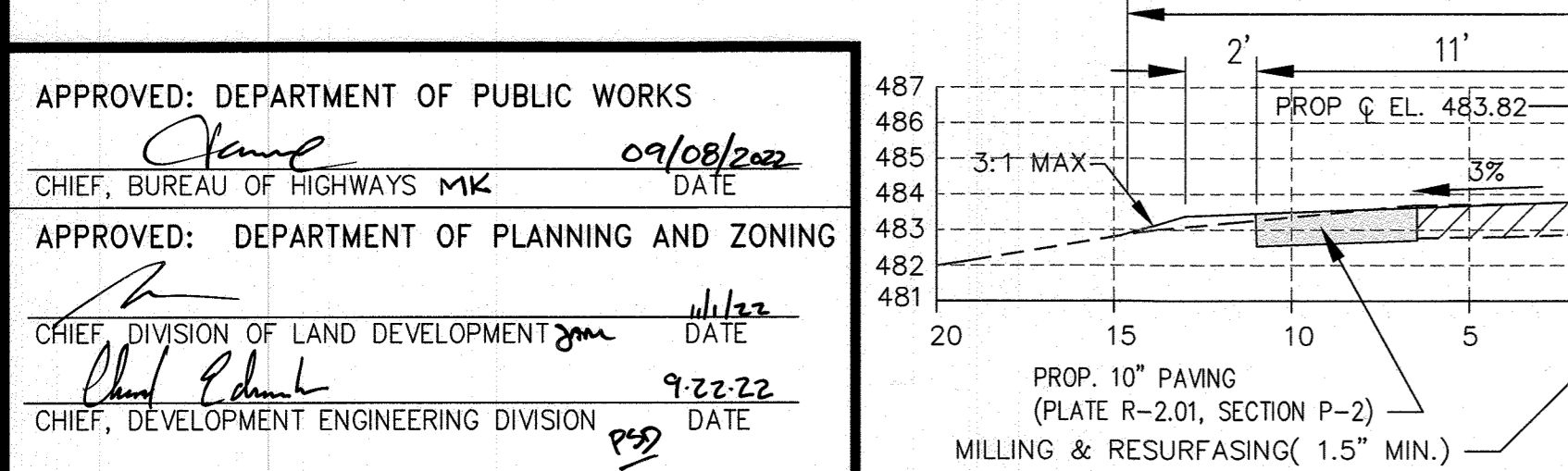
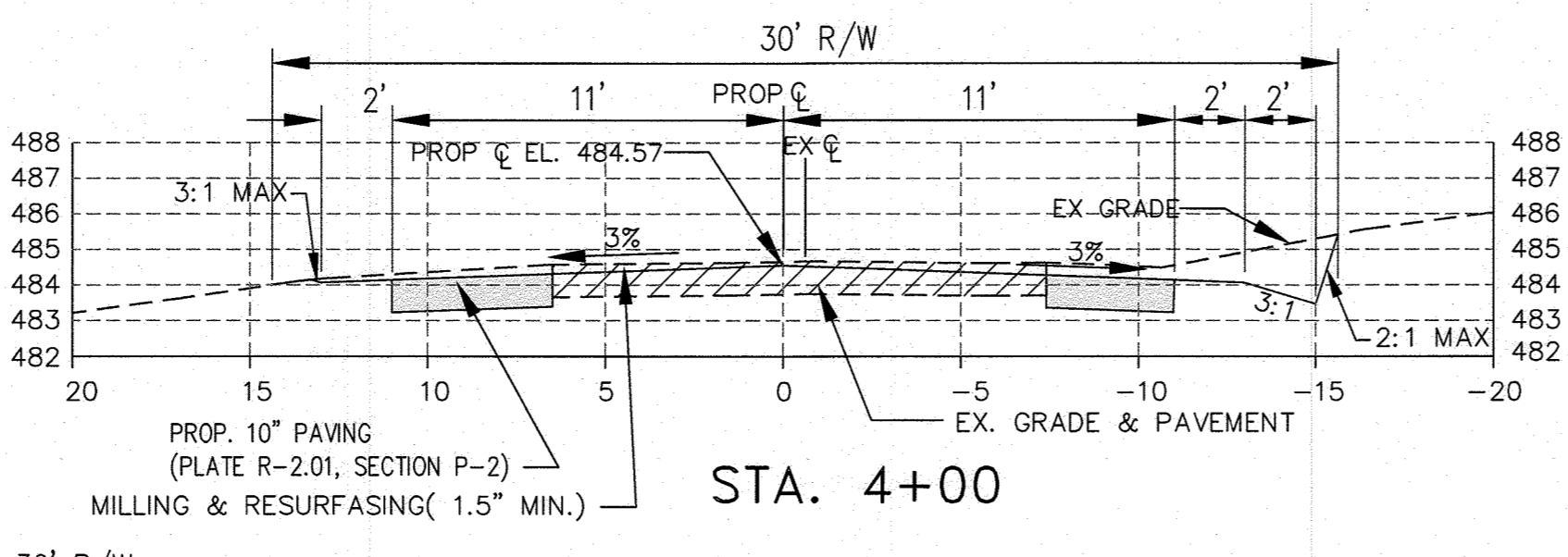
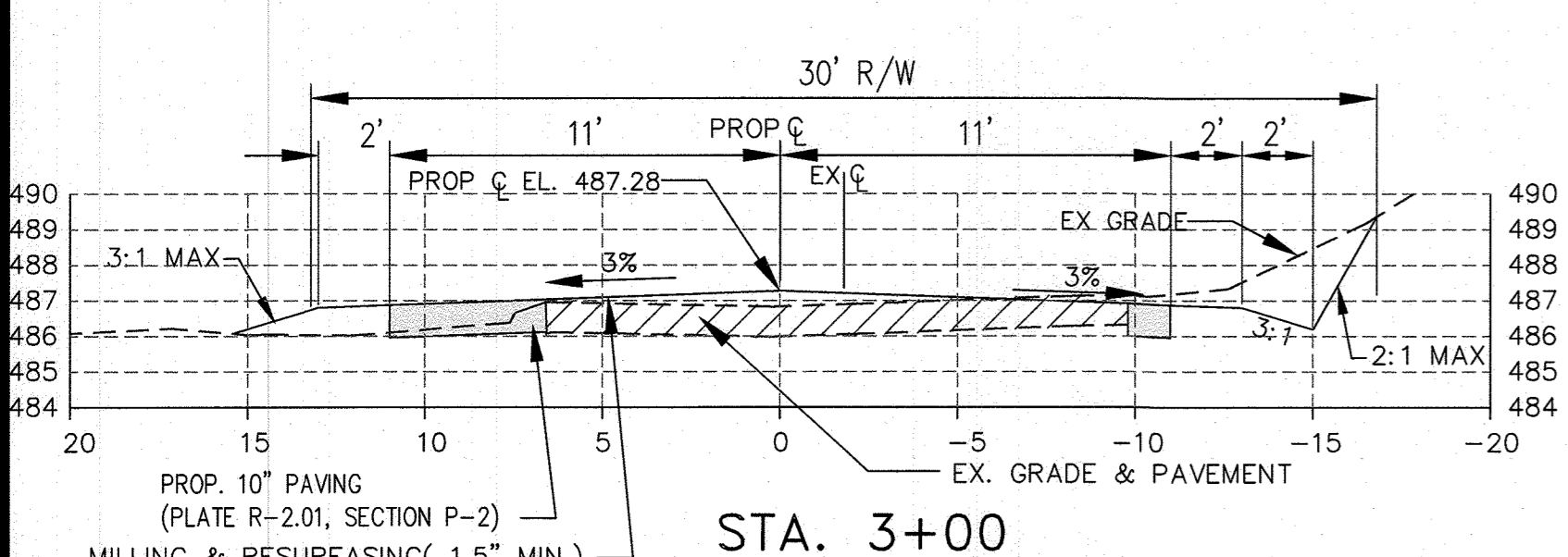
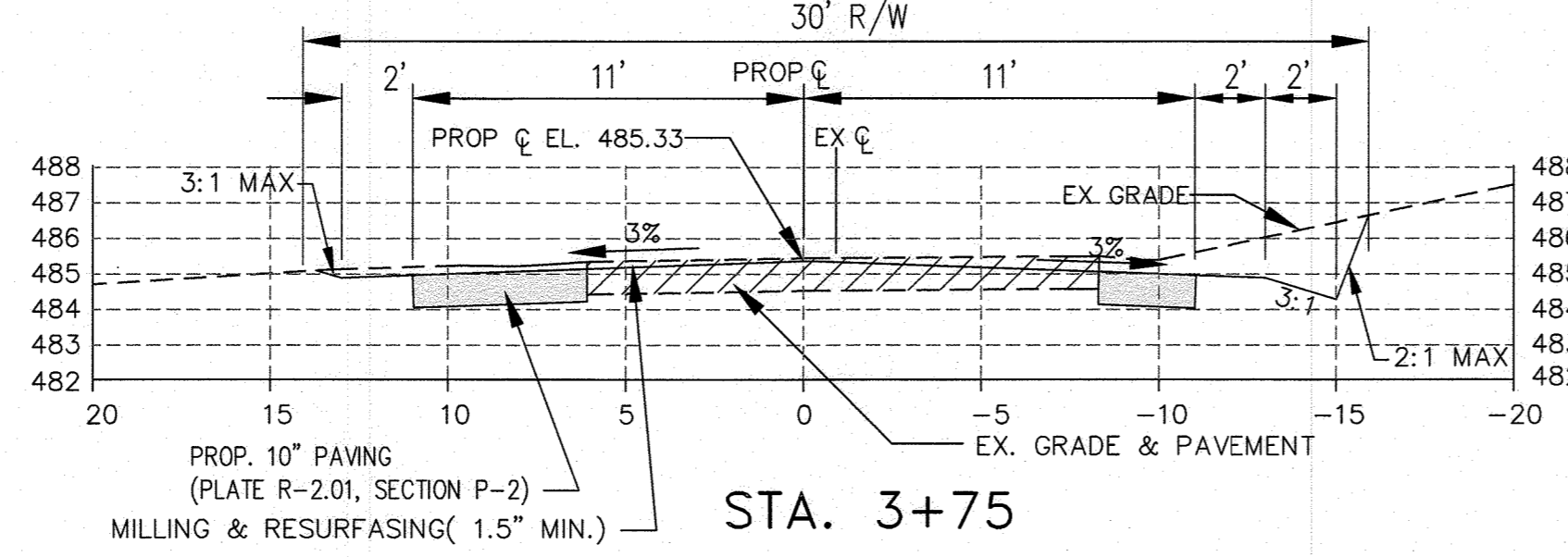
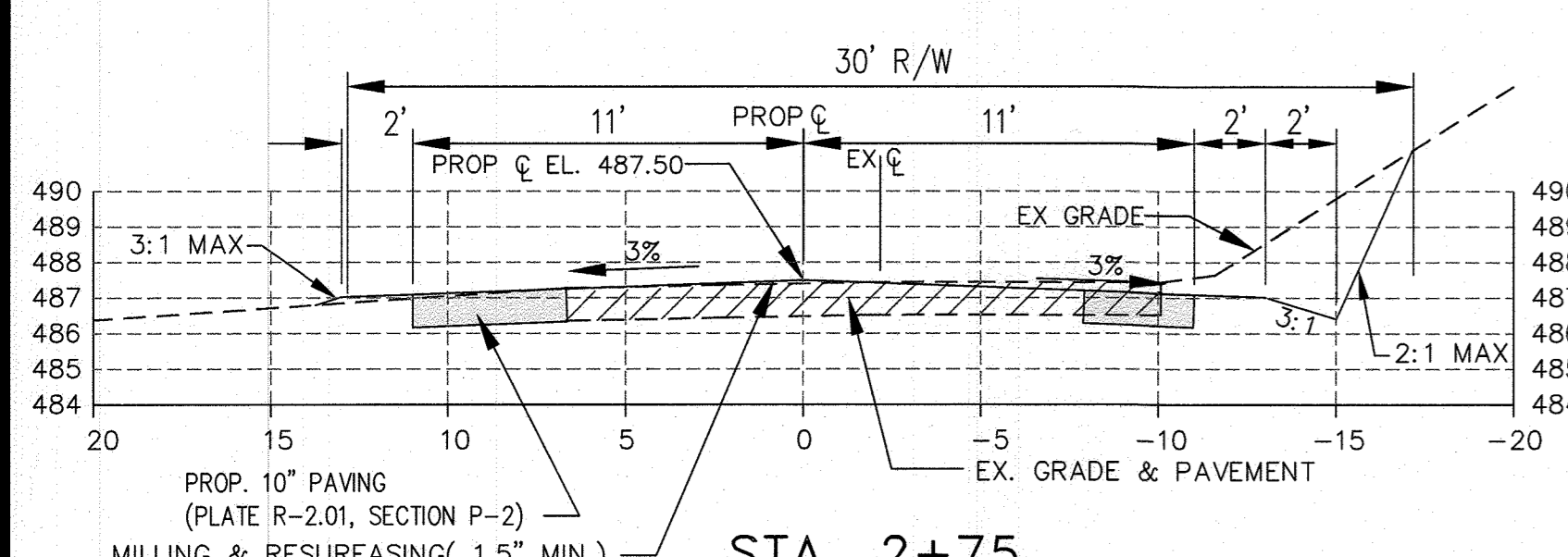
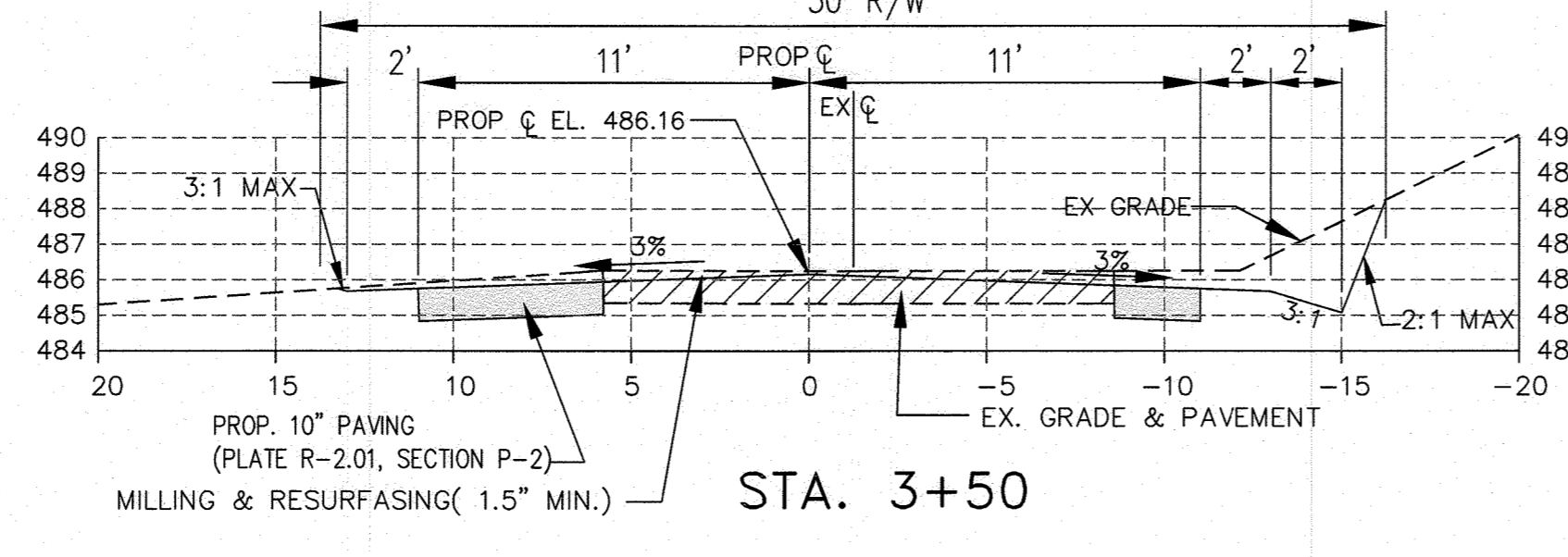
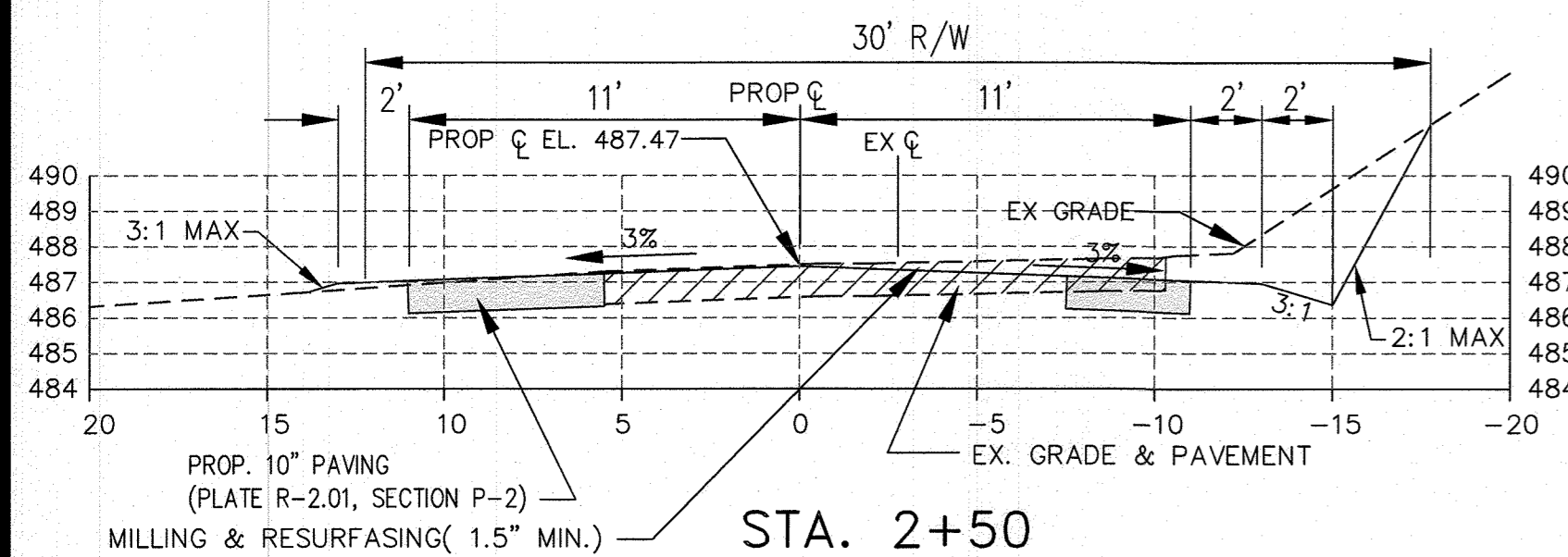
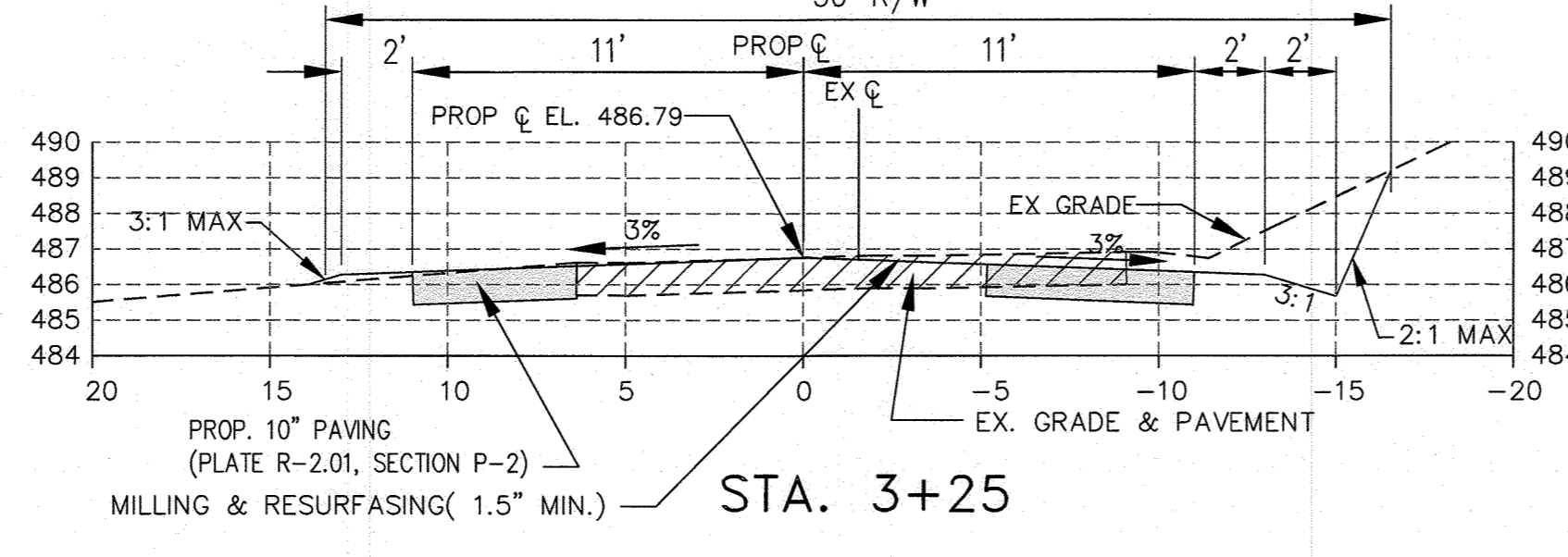
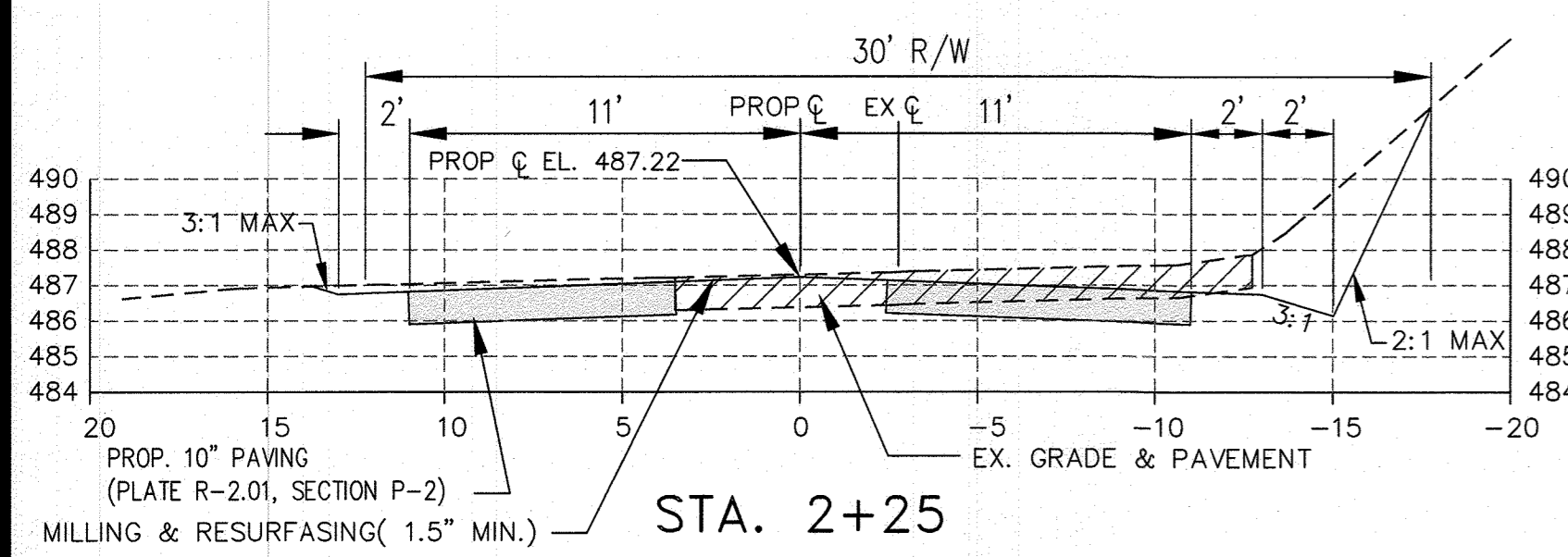
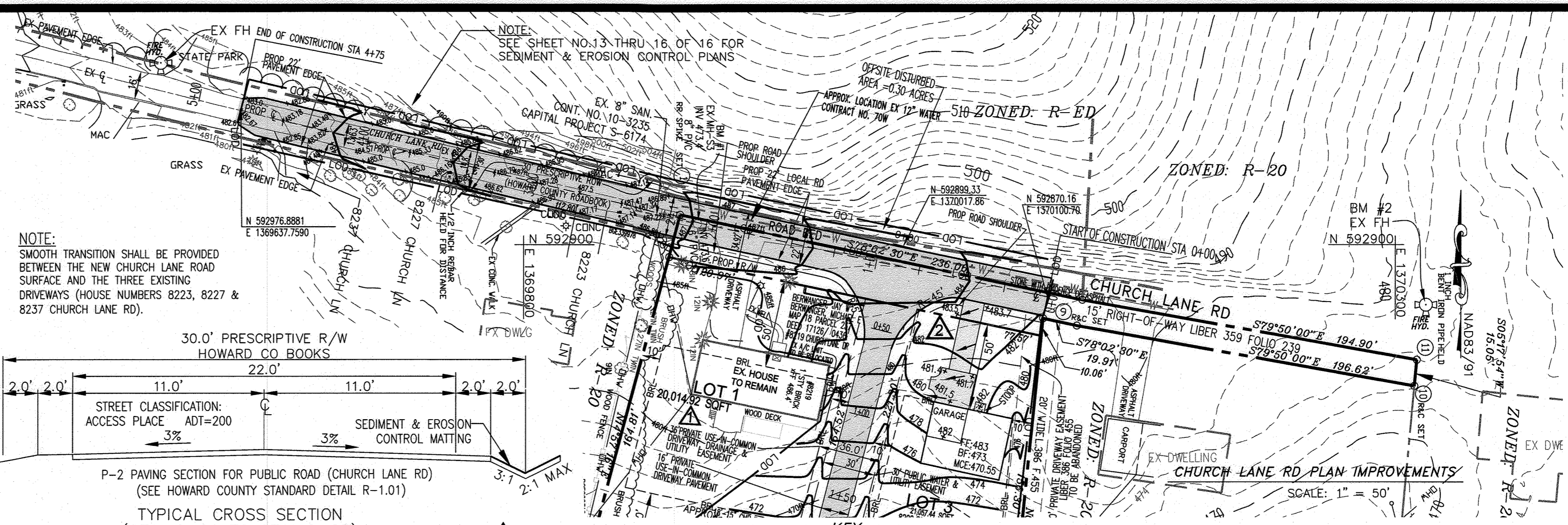
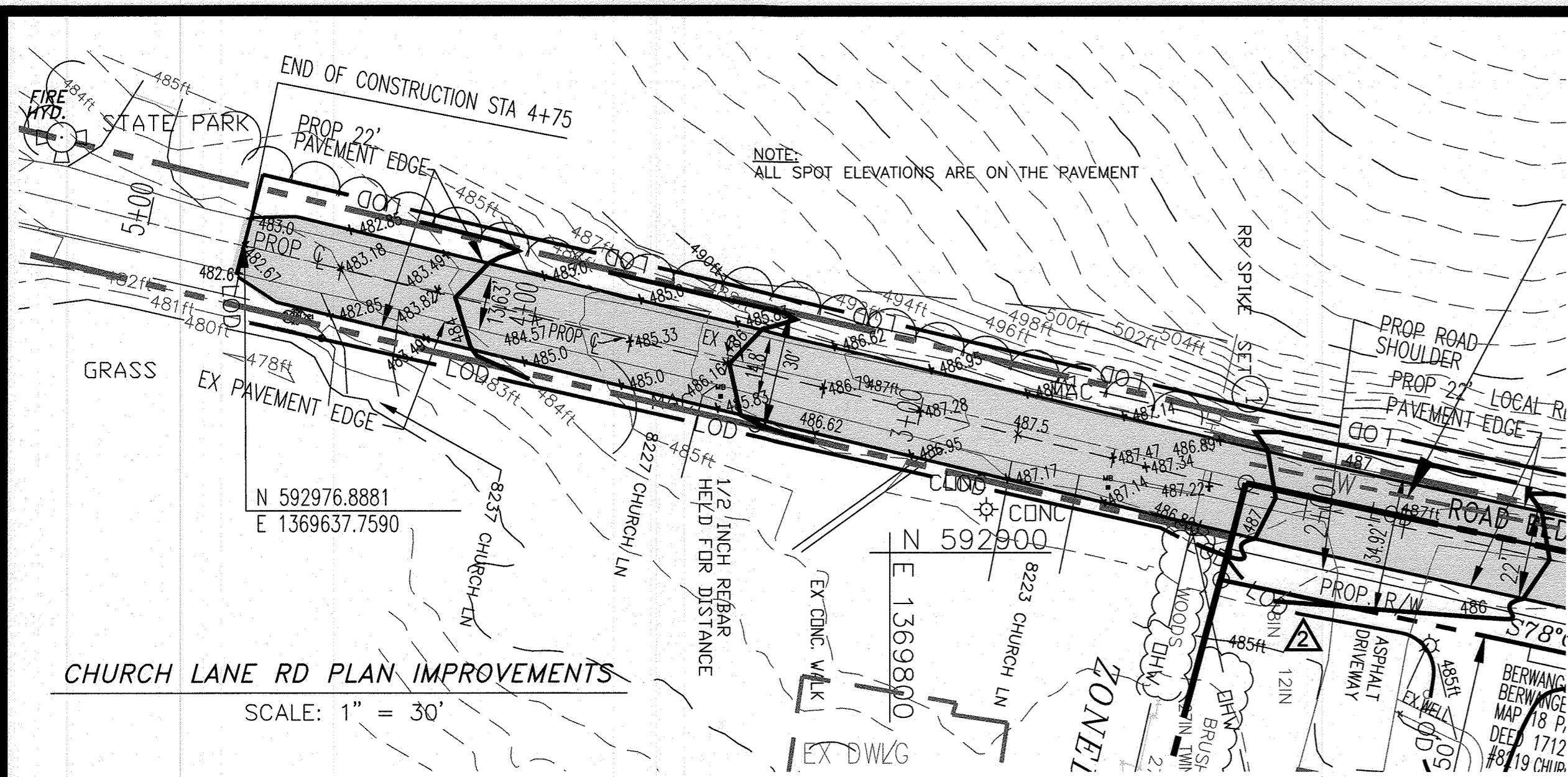
REVISIONS	DESCRIPTION	BY	DATE
1	RED-LINE REVISION	M1	12/11/13
2	REVISED SWM FACILITIES & GRADING	M1	04/04/22

**TITLE:** GRADING PLAN  
**FINAL CONSTRUCTION PLANS**  
**SHAMS SUBDIVISION**  
PARCEL NO. 237  
ELECTION DISTRICT 02  
TAX MAP #18, GRID 14  
HOWARD COUNTY, MARYLAND



**DRAWN BY:** TH  
**CHECKED BY:** MI  
**SCALE:** 1"=40'  
**DATE:** 06-19-2022  
**SHEET 8 OF 16**  
**HOWARD CO. FILE NO. F-10-081**





APPROVED: DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS MK DATE 09/08/2022  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 09/22/22  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 09/22/22

PURPOSE NOTE:  
 REVISED W & S LOCATIONS, PLAN & PROFILES AND EASEMENTS TO REFLECT PREFERRED ALIGNMENT THAT MEETS HOWARD CO. DESIGN REQUIREMENTS.  
 REVISED GRADING, SWM FACILITIES INCLUDING 2 MICRO-BIOTENTIONS (M-6), 4 DRYWELLS (M-5) & NON-ROOFTOP DISCONNECTS (N-2)

OWNER/DEVELOPER  
 OLEGARIO RAMIREZ, PRESIDENT  
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 ELLICOTT CITY, MD 21043  
 EMAIL: OLE@RFRFRAMING.COM  
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 mizadi@aec-engineers.biz

REVISION	DESCRIPTION	BY	DATE
1	RED-LINE REVISION	M1	12/11/13
2	REVISED W & S ALIGNMENT TO MEET HOWARD COUNTY DESIGN REQUIREMENTS (REVISED SWM FACILITIES & GRADING)	M1	04/04/22

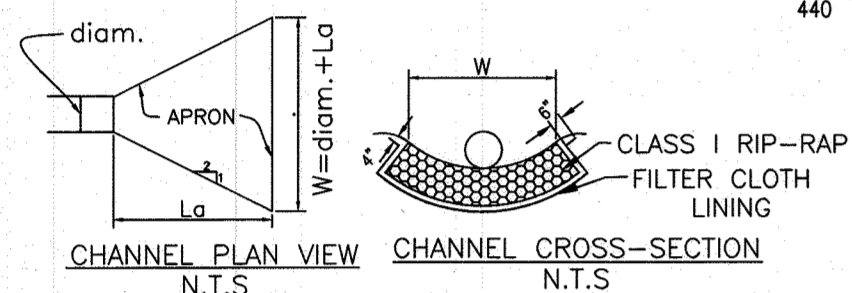
TITLE: CHURCH LANE RD PLAN, PROFILE & SECTIONS  
 FINAL CONSTRUCTION PLANS  
 SHAMS SUBDIVISION  
 PARCEL NO. 237  
 ELECTION DISTRICT 02  
 TAX MAP #18, GRID 14  
 HOWARD COUNTY, MARYLAND



DRAWN BY: TH MI  
 CHECKED BY: MI  
 SCALE: AS SHOWN  
 DATE: 06-19-2022  
 SHEET 9 OF 16  
 HOWARD CO. FILE NO. F-10-081

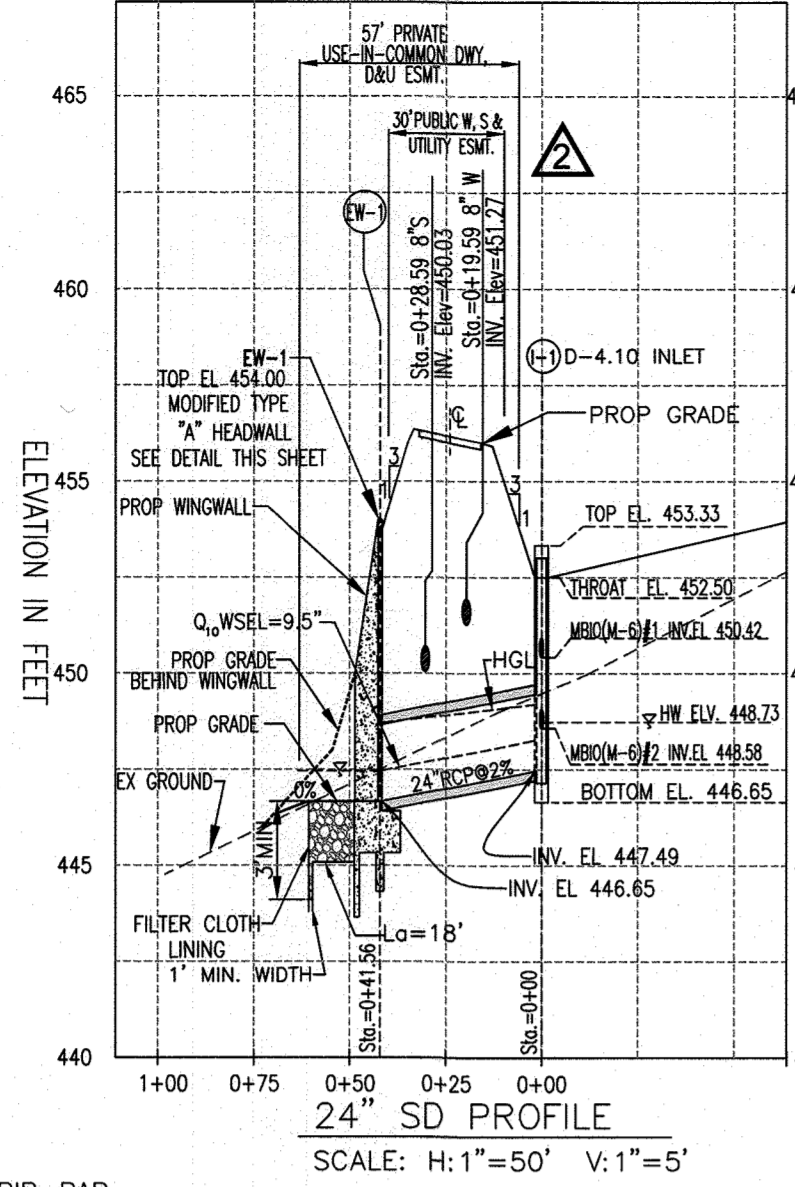
**CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS**

1. THE SUBGRADE FOR THE FILTER, RIPRAP OR GABION SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES, ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
2. THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED RESPECTIVELY IN THE RIPRAP OR FILTER.
3. FILTER CLOTH SHALL BE PROTECTED FROM PUNCHING, CUTTING OR TEARING. ANY DAMAGE OTHER THAN AN OCCASIONAL HOLE SHALL BE REPAIRED BY PLACING ANOTHER PIECE OF CLOTH OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE CLOTH. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF CLOTH SHALL BE A MINIMUM OF ONE FOOT.
4. STONE FOR THE RIPRAP OR GABION OUTLETS MAY BE PLACED BY EQUIPMENT BOTH SHALL EACH BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. THE STONE FOR RIPRAP OR GABION OUTLETS SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL INSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES. SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. RIPRAP SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR FILTER CLOTH. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.



PIPE SIZE	Q (CFS)	V (ft/sec)	La (ft)	W (ft)	D(t)	d <sub>o</sub> (ft)
24" PIPE	32	10.2	18'	20'	1.6'	9"

La, D, & W WERE OBTAINED FROM MDE MANUAL, TABLE 19, PAGE F-18-6



24" SD PROFILE  
SCALE: H:1"=50' V:1"=5'

$Q = \frac{1.49}{n} A R^{2/3} S^{1/2}$   
 $R = \frac{A}{P}$   
 $Q = \text{Discharge [CFS]}$   
 $R = \text{Hydraulic Radius of the flow cross-section [ft]}$   
 $A = \text{Flow cross-section Area [ft}^2\text{]}$   
 $P = \text{Wetted perimeter [ft]}$   
 $n = \text{Manning's Roughness Coefficients, 0.013 for concrete lining}$   
 $S = \text{Slope of Energy Gradient}$

$Q_{24} = 1.49/0.013 \times 3.141 \times (3.141/6.283)^{2/3} \times (.020)^{1/2}$   
 $= 32.08 \text{ CFS} \times 3.141 \times 0.013 \times 0.141 \times 0.141$   
 $V_o = 3.18 \text{ FPS, } q_o = 9.5"$

**STRUCTURE SCHEDULE**

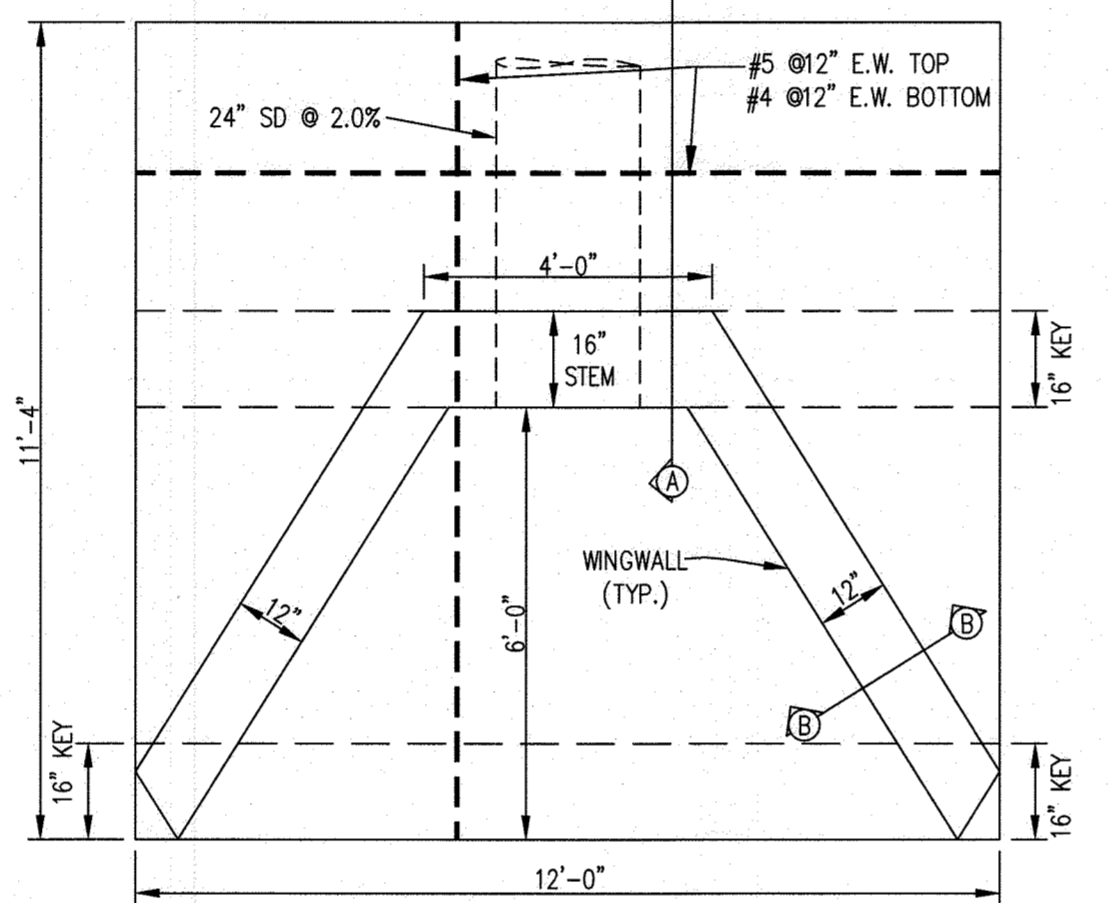
SIZE	TOP ELEV. INV. IN	INV. OUT	ROAD STA.	TYPE	REMARKS
I-1	453.83	447.49	446.78	STA. 5+04.5 LT. 2+87	D-4.10
EW-1	456.78	-	-	N 592517.83 E 1370146.01	TYPE 'A' MODIFIED/ENDWALL S.D. 5.11

**PIPE SCHEDULE**

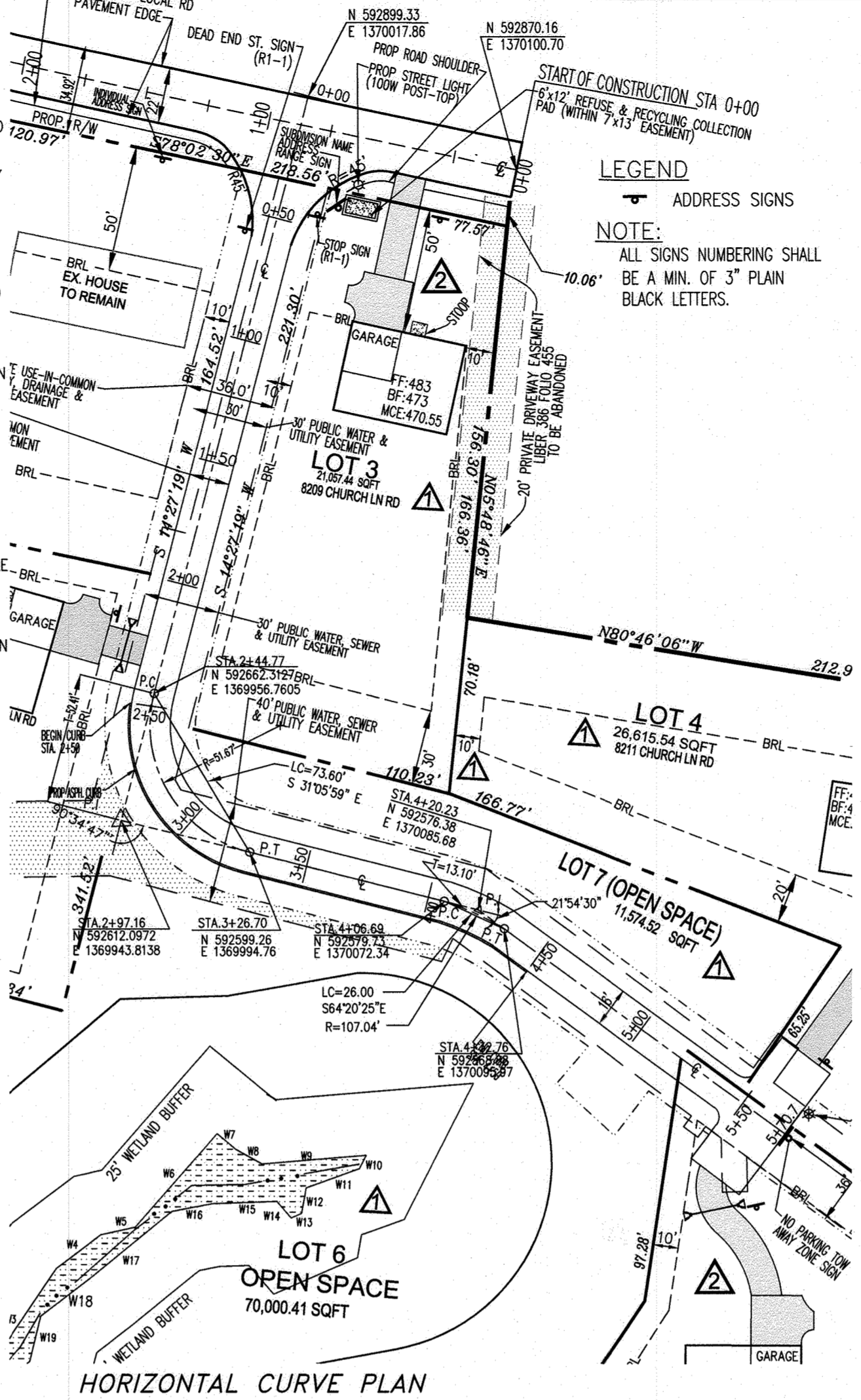
SIZE	MATERIAL	LENGTH
24"	RCP	36.15'
15"	CMP	36.15'

**MAINTENANCE OF TRAFFIC SPECIAL PROVISIONS**

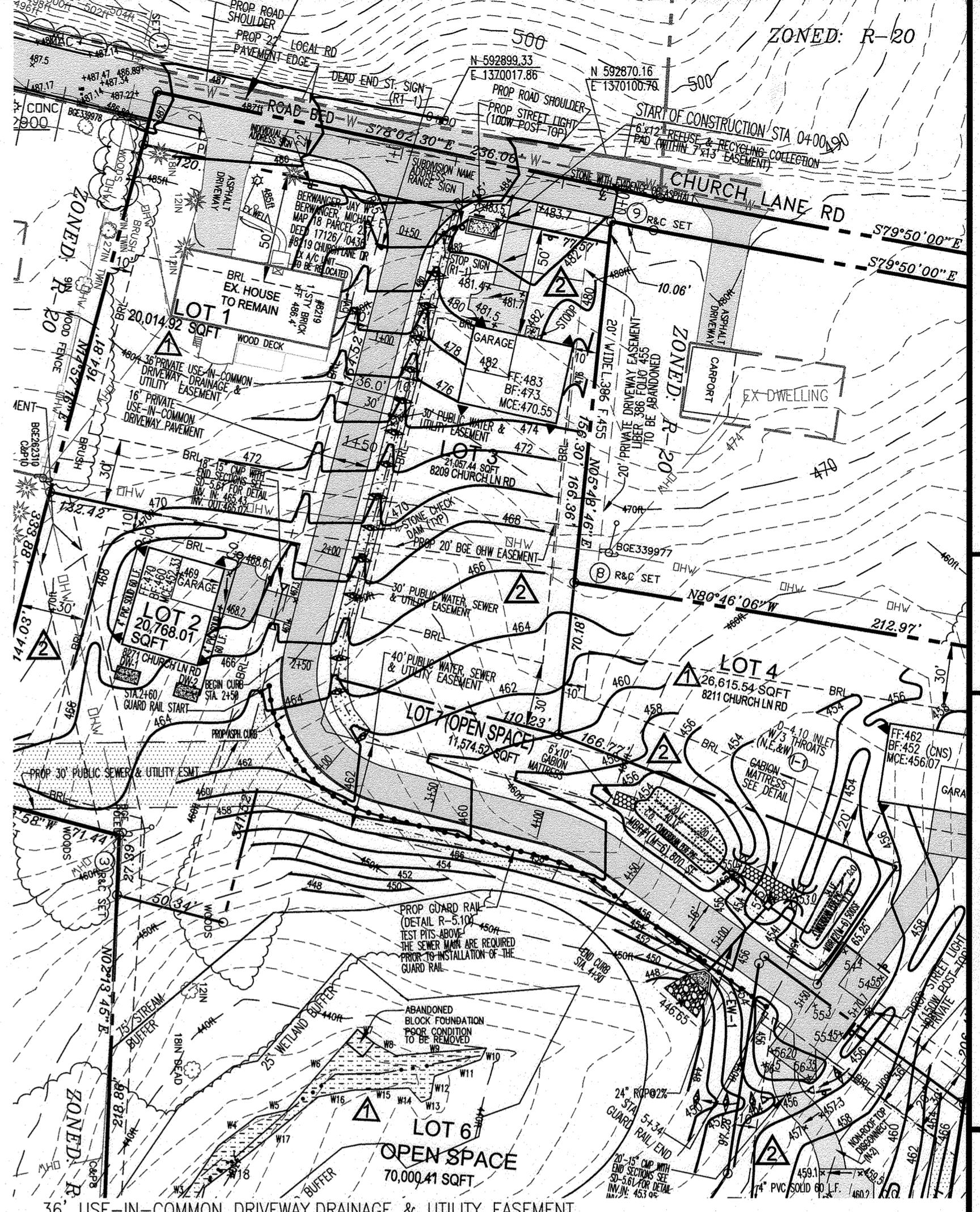
- GENERAL**
1. THE PURPOSE OF THIS PORTION OF THE SPECIAL PROVISION IS TO SET FOR THE TRAFFIC CONTROL REQUIREMENTS NECESSARY FOR THE SAFE AND EFFICIENT MAINTENANCE OF TRAFFIC WITHIN WORK AREAS, AND TO MINIMIZE AND INCONVENIENCES TO THE TRAVELING PUBLIC AND THE CONTRACTOR AND/OR PERMITTEE.
  2. PROPERTY TRAFFIC CONTROL THROUGH WORK AREAS IS ESSENTIAL FOR INSURING THE SAFETY AND THAT OF HIGHWAY WORKERS HAS THE HIGHEST PRIORITY OF ALL TASKS WITHIN THIS PROJECT. THE PROPERTY APPLICATION OF THE APPROVED TRAFFIC CONTROL PLAN (TCP) WILL PROVIDE THE DESIRED LEVEL OF SAFETY.
  3. THROUGHOUT THESE SPECIAL PROVISIONS, ANY MENTION OF THE TOP SHALL BE IMPLIED TO INCLUDE ANY COMBINATION OF TYPICAL TRAFFIC CONTROL STANDARDS WHICH FORM THE OVERALL TOP FOR THIS PROJECT WHICH HAS BEEN APPROVED BY THE APPROPRIATE SHA TRAFFIC ENGINEER.
  4. THE CONTRACTOR AND/OR PERMITTEE SHALL BE REQUIRED TO ADHERE TO THE PROVISIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 1988 EDITION, ESPECIALLY PART V, AND TO SECTION 814 OF THE MARYLAND DOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS (JANUARY, 1992), INCLUDING ALL REVISIONS AND SUPPLEMENTS TO EACH.
  5. THE CONTRACTOR AND/OR PERMITTEE SHALL BE REQUIRED TO ADHERE TO THE REQUIREMENTS SET FORTH IN THE TOP AND THESE SPECIAL PROVISIONS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ANY REQUESTS TO MAKE MINOR CHANGES TO THE TOP OR THE SPECIAL PROVISIONS WITH REGARD TO THE TRAFFIC CONTROL ITEMS SHALL BE MADE IN WRITING TO THE ENGINEER A MINIMUM OF THREE WORKING DAYS PRIOR TO THE PROPOSED SCHEDULING CHANGE. THE CONTRACTOR AND/OR PERMITTEE SHALL HAVE WRITTEN APPROVAL OF THE ENGINEER PRIOR TO THE IMPLEMENTATION OF ANY CHANGE.
  6. NO WORK SHALL BEGIN ON ANY WORK ACTIVITY OR WORK PHASE UNTIL ALL REQUIRED TRAFFIC CONTROL PATTERNS AND DEVICES INDICATED ON THE TOP FOR THAT ACTIVITY OR PHASE ARE COMPLETELY AND CORRECTLY IN PLACE TO HAVE BEEN CHECKED FOR APPROVED USAGE.
  7. GENERAL AND SPECIFIC WARNING SIGNS SHALL ONLY BE IN PLACE WHEN SPECIFIC WORK TASKS AND ACTIVITIES ARE ACTUALLY UNDERWAY OR CONDITIONS EXIST THAT POSE A POTENTIAL HAZARD TO THE PUBLIC, AND ANY ADDITIONAL SIGNING HAS BEEN APPROVED BY THE APPROPRIATE SHA TRAFFIC ENGINEER. NOTE: THE PRACTICE OF PLACING SIGNING AND OTHER TRAFFIC CONTROL DEVICES IN ADDITION TO THOSE INDICATED ON THE APPROVED TOP IS NOT PERMITTED.
  8. THE CONTRACTOR AND/OR PERMITTEE SHALL PROVIDE, MAINTAIN IN NEW CONDITION, AND MOVE WHEN NECESSARY, OR AS DIRECTED BY THE ENGINEER. ALL TRAFFIC CONTROL DEVICES USED FOR THE GUIDANCE AND PROTECTION OF MOTORISTS, PEDESTRIANS, AND WORKERS.
  9. ALL TRAFFIC CONTROL DEVICES REQUIRED BY THE TOP SHALL BE KEPT IN GOOD CONDITION, FULLY PERFORMING AS SET FORTH IN THE TOP, THE MUTCD, AND/OR SECTION 814 OF THE SPECIFICATIONS. FOR REFLECTIVE DEVICES, A PARTICULAR DEVICE IS ASSUMED TO HAVE FAILED TO MEET MINIMUM OPERATIONAL STANDARDS WHEN THE DEVICE NO LONGER HAS RETRO-REFLECTANCE CAPABILITY OF AT LEAST 60% OF THE SPECIFIED MINIMUM VALUE OVER AT LEAST 90% OF THE VISIBLE REFLECTIVE SURFACE.
  10. ALL TRAFFIC CONTROL DEVICES NOT REQUIRED FOR THE SAFE CONDUCT OF TRAFFIC SHALL BE PROMPTLY REMOVED, COMPLETELY COVERED, TURNED AWAY FROM TRAFFIC, OR OTHERWISE TAKEN OUT OF SERVICE. IT IS INTENDED THAT NO TRAFFIC CONTROL DEVICE IS TO BE IN SERVICE WHEN THERE IS NO CLEAR OUT REASON FOR THE DEVICE.
  11. THROUGHOUT THE PERIOD(S) OF WORK ACTIVITIES, TRAFFIC SHALL BE MAINTAINED BY IMPLEMENTING THE APPROVED TOP. LIEU OF THE TOP PREPARED FOR THIS PROJECT, AND/OR INDIVIDUAL TYPICAL TRAFFIC CONTROL STANDARDS, THE CONTRACTOR AND/OR PERMITTEE HAS THE OPTION OF PREPARING AND SUBMITTING A TOP, WHOLLY OR IN PART, OF HIS OWN DESIGN, FOLLOWING GUIDELINES SET FORTH IN THE MUTCD AND PRESCRIBED BY THE ADMINISTRATION. A TOP DEVELOPED BY THE CONTRACTOR AND/OR PERMITTEE SHALL NOT BE IMPLEMENTED UNTIL ADVANCE WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER. TOP'S MAY BE IMPLEMENTED WITHIN A SINGLE PROJECT OR JOINTLY BETWEEN TWO OR MORE PROJECTS. IN SITUATIONS WHERE TOP'S JOINTLY IMPLEMENTED, CARE SHALL BE EXERCISED TO PRESENT CORRECT AND NON-CONFLICTING GUIDANCE TO THE TRAVELING PUBLIC. IF THE TRAVELING PUBLIC IS NOTED, THIS MEANS THE POSTED SPEED OR PREVAILING TRAVEL SPEED, WHICHEVER IS HIGHER, UNLESS OTHERWISE NOTED.
  12. THROUGHOUT THESE SPECIAL PROVISIONS, WHERE SPEED OF TRAFFIC IS NOTED, THIS MEANS THE POSTED SPEED OR PREVAILING TRAVEL SPEED, WHICHEVER IS HIGHER, UNLESS OTHERWISE NOTED.
  13. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES THROUGHOUT THE ENTIRE LENGTH OF THE PROJECT, UNLESS OTHERWISE NOTED. NO TRAVEL LANE(S) OTHER THAN THOSE DESIGNATED FOR POSSIBLE CLOSURE IN THE TOP SHALL BE CLOSED WITHOUT OBTAINING PRIOR APPROVAL FROM THE ENGINEER. ALL INGRESS AND EGRESS TO THE WORK AREA BY THE CONTRACTOR AND/OR PERMITTEE SHALL BE PERFORMED WITH THE FLOW OF TRAFFIC.



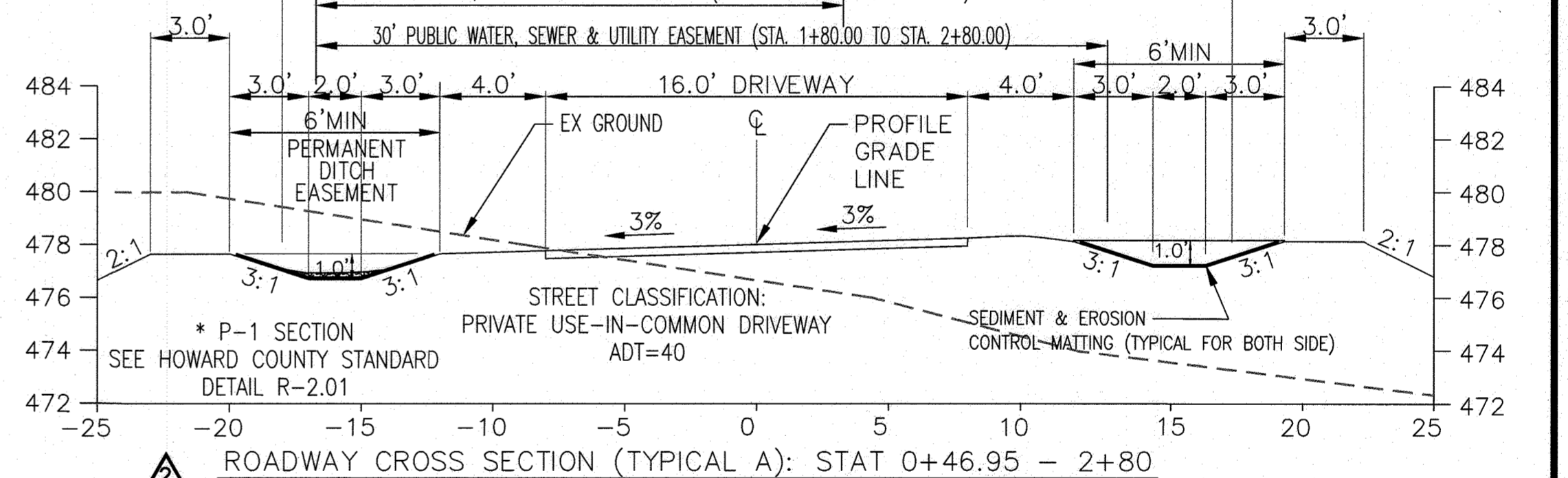
FOOTING PLAN (EW-1)  
SCALE: 3/8"=1'



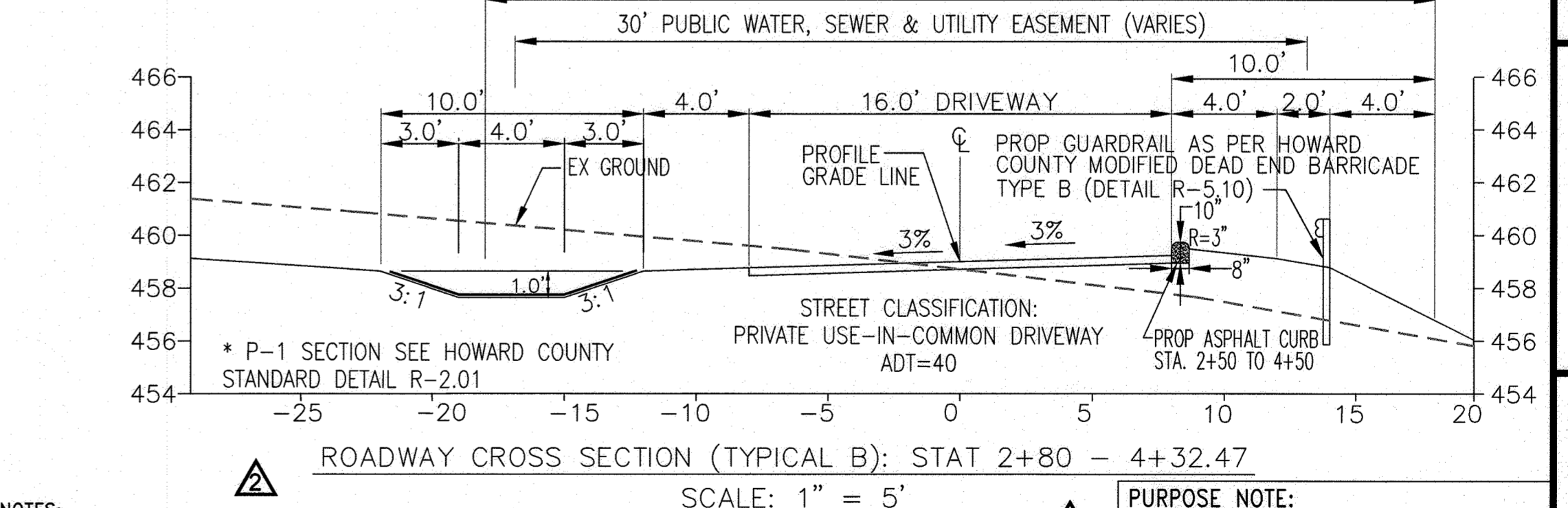
HORIZONTAL CURVE PLAN  
SCALE: 1" = 50'



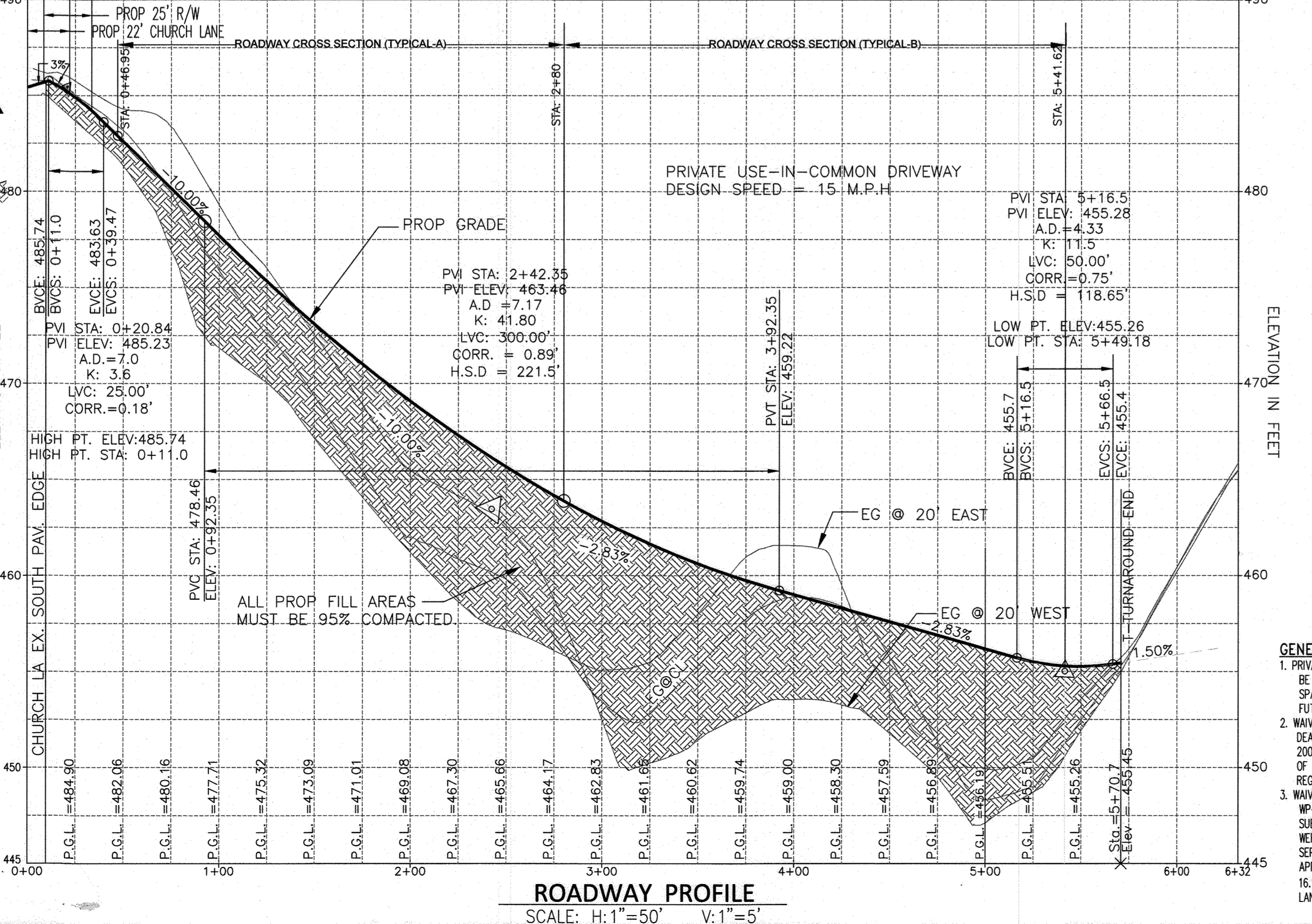
36' USE-IN-COMMON DRIVEWAY, DRAINAGE & UTILITY EASEMENT



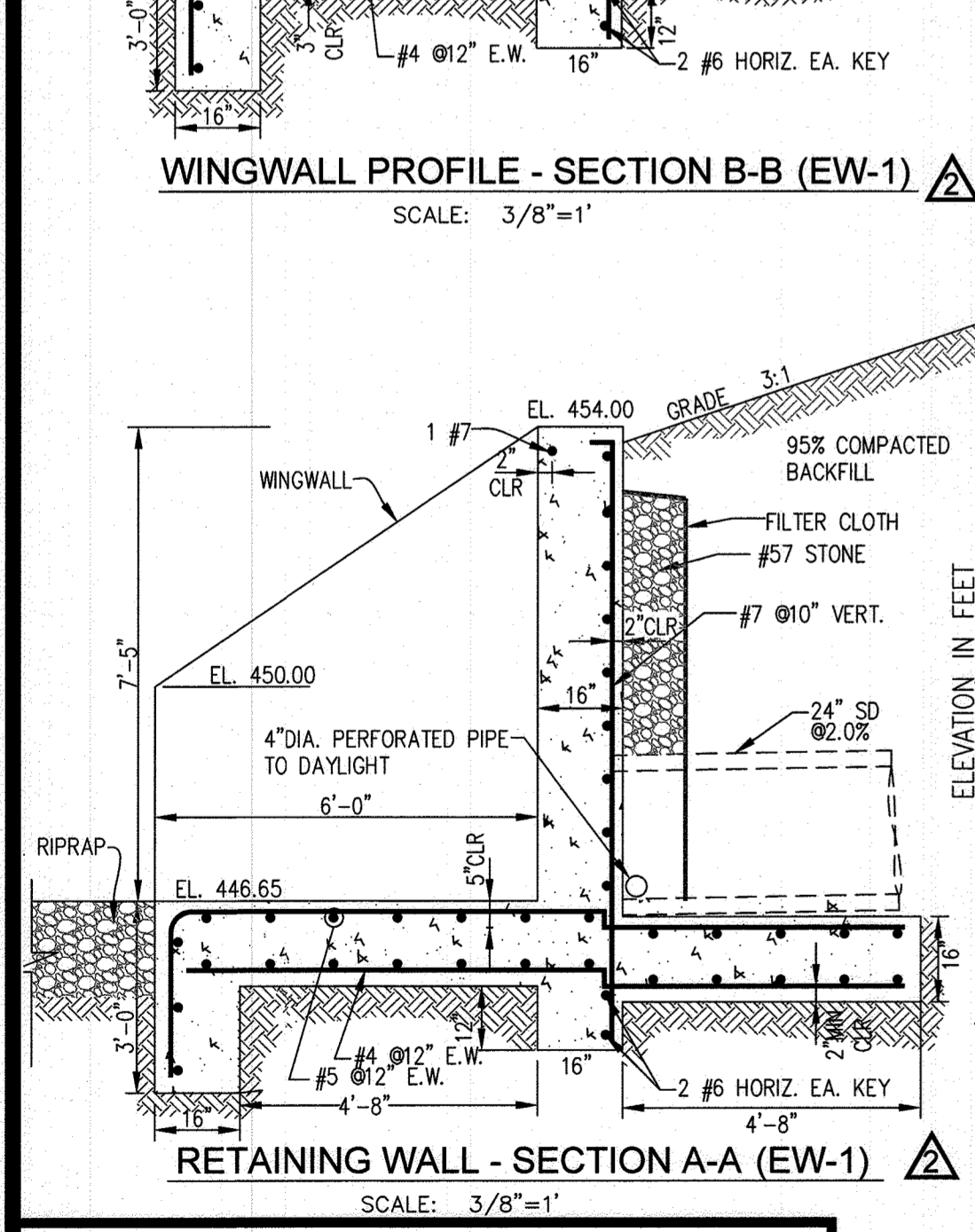
ROADWAY CROSS SECTION (TYPICAL A): STAT 0+46.95 - 2+80  
SCALE: 1" = 5'



ROADWAY CROSS SECTION (TYPICAL B): STAT 2+80 - 4+32.47  
SCALE: 1" = 5'



ROADWAY PROFILE  
SCALE: H:1"=50' V:1"=5'



WINGWALL PROFILE - SECTION B-B (EW-1)  
SCALE: 3/8"=1'

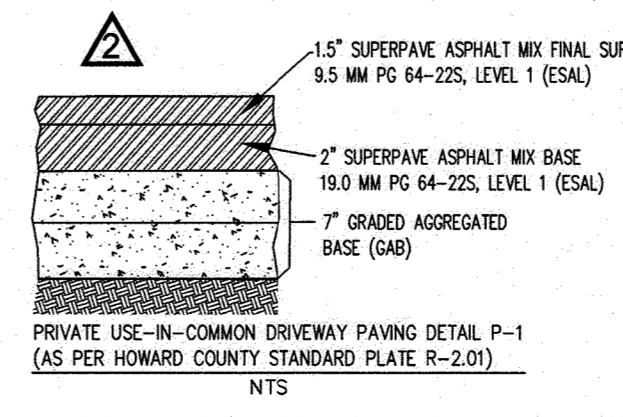
RETAINING WALL - SECTION A-A (EW-1)  
SCALE: 3/8"=1'

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS MK  
 DATE: 09/08/2022

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 9/22/22

CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 9/22/22

- GENERAL NOTES:**
1. PRIVATE USE-IN-COMMON DRIVEWAY SHALL BE FOR THE BENEFIT OF LOTS 2, 4, 5, 6, 7, AND 8, AND THE POTENTIAL FUTURE USE FOR PARCEL 281.
  2. WAIVER PETITION WP-08-083 FOR MISSING DEADLINE WAS APPROVED ON APRIL 7, 2008 PER SECTIONS 16.144.02 & 16.144.02 OF SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
  3. WAIVER PETITIONS WP-09-124 AND WP-10-032 FOR THE EXTENSION OF SUBMISSION DEADLINE FOR PLANS & PLAT WERE APPROVED ON MARCH 11, 2009 AND SEPTEMBER 18, 2009 RESPECTIVELY. APPROVALS WERE BASED PER SECTION 16.146(b) (4)(ii) OF SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.

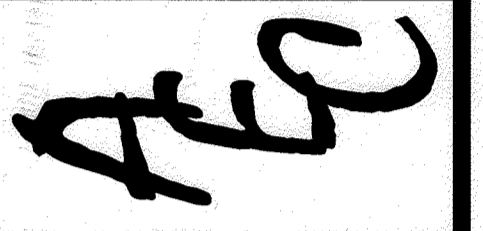


PRIVATE USE-IN-COMMON DRIVEWAY PAVING DETAIL P-1 (AS PER HOWARD COUNTY STANDARD PLATE R-2.01)  
N.T.S.

**"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.  
 MOSTAFA IZADI, PE  
 LICENSE NO. 17248, EXPIRATION DATE: 02/11/2023

**OWNER/DEVELOPER**  
 OLEGARIO RAMIREZ, PRESIDENT  
 WEST ONE INVESTMENTS LLC  
 8170 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MD 21043  
 EMAIL: OLEORCFRAMING.COM  
 TELEPHONE: 301-748-1010

Advanced Engineering Consultants, P.C.  
 Engineers & Planners  
 P.O. BOX 1129 RIDERWOOD, MD 21139  
 TEL: 410-382-9180  
 FAX: 410-296-0505  
 mizadi@aec-engineers.biz

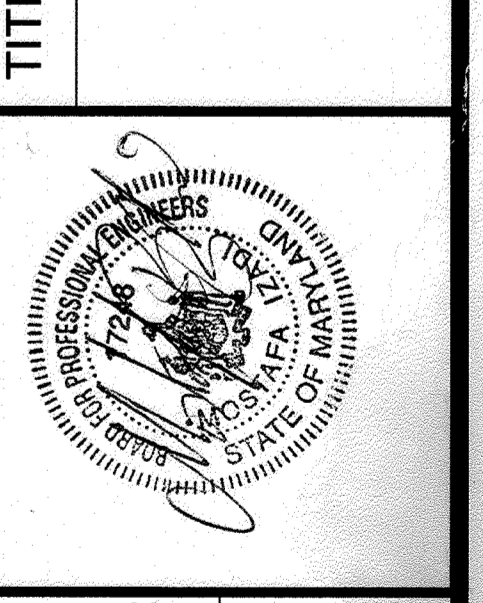


**REVISIONS**

DESCRIPTION	BY	DATE
RED-LINE REVISION	MI	12/11/13
REVISED THIS ALIGNMENT TO MEET HOWARD COUNTY DESIGN REQUIREMENTS. REVISED SWM FACILITIES & GRADING	MI	04/04/22

**ROADWAY SECTIONS & PROFILE**

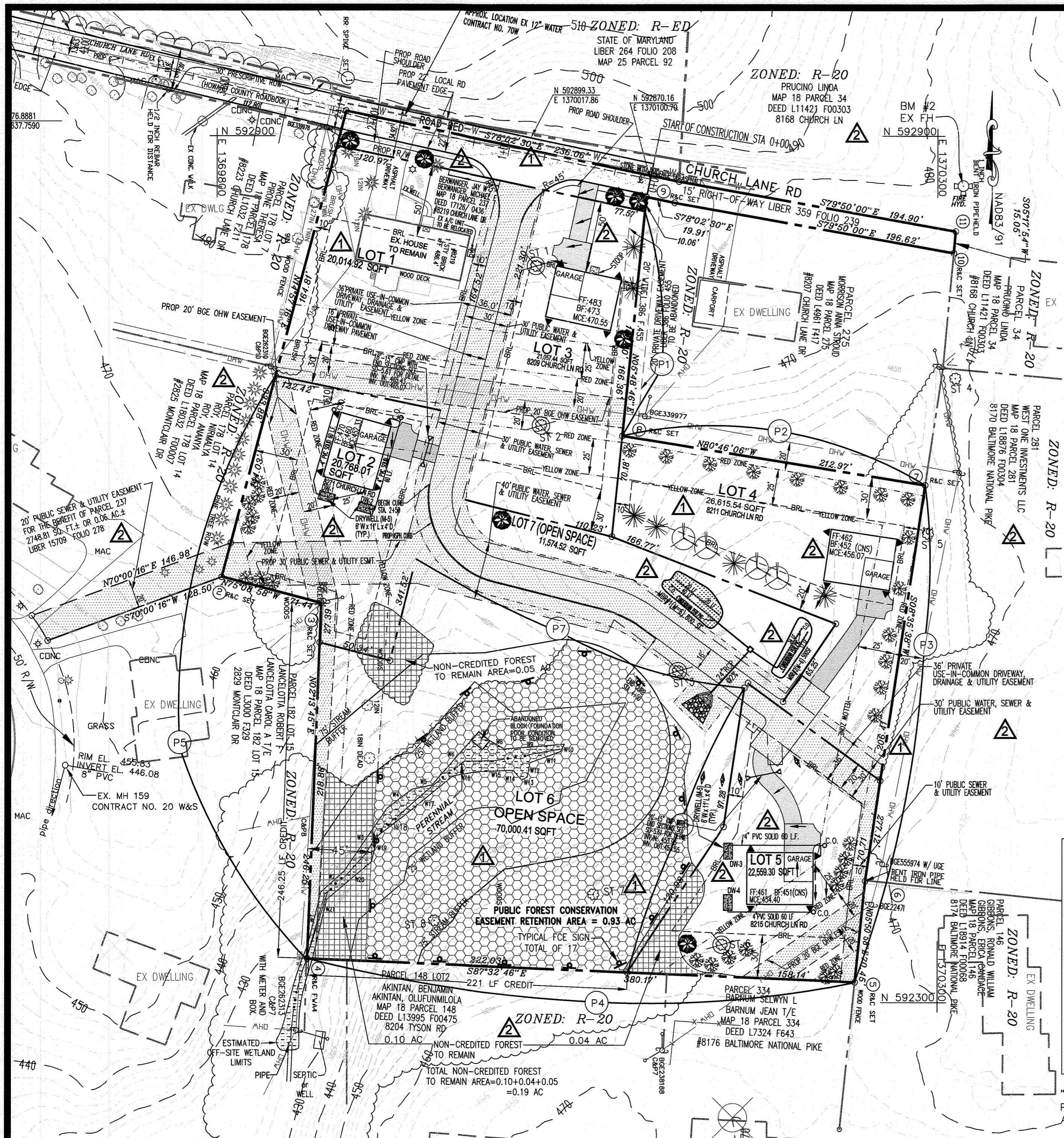
FINAL CONSTRUCTION PLANS  
**SHAMS SUBDIVISION**  
 PARCEL NO. 237  
 ELECTION DISTRICT 02  
 TAX MAP #18, GRID 14  
 HOWARD COUNTY, MARYLAND



**DRAWN BY:** TH  
**CHECKED BY:** MI  
**SCALE:** AS SHOWN

**DATE:** 06-19-2022

**SHEET 10 OF 16**  
**HOWARD CO. FILE NO. F-10-081**



**LANDSCAPING PLAN**  
SCALE: 1"=50'

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS MK 09/08/2022 DATE  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT v.1132 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION 9/22/22 DATE

CATEGORY	SCHEDULE A PERIMETER LANDSCAPE EDGE							TOTAL NUMBER TREES REQUIRED	TOTAL NUMBER TREES PROVIDED
	PERIMETER P1	PERIMETER P2	PERIMETER P3	PERIMETER P4	PERIMETER P5	PERIMETER P6	PERIMETER P7		
LANDSCAPE TYPE	TYPE 'A'	TYPE 'A'	TYPE 'A'	TYPE 'A'	TYPE 'A'	TYPE 'A'	TYPE 'A'		
LINEAR FEET OF PERIMETER	161'	213'	348'	380'	460'	218'	251'		
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) ( DESCRIBE BELOW IF NEEDED )	NO	NO	NO	YES* 221'	YES* 246'	YES* 218'	YES* 251'		
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) ( DESCRIBE BELOW IF NEEDED )	NO	NO	NO	NO	NO	NO	NO		
NUMBER OF PLANTS REQUIRED									
SHADE TREES	3	4	6	3	4	0	0	20	0
EVERGREEN TREES	0	0	0	0	0	0	0	0	0
ORNAMENTAL TREES	0	0	0	0	0	0	0	0	0
NUMBER OF PLANTS PROVIDED									
SHADE TREES	3	0	0	1	0	0	0	0	4
EVERGREEN TREES	0	0	0	0	0	0	0	0	0
OTHER TREES ( 2:1 SUBSTITUTION )	0	0	8	12	4	8	0	0	32
ORNAMENTAL TREES ( DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED )	0	0	0	0	0	0	0	0	0

SPECIMEN TREE(ST)#	COMMON NAME	BOTANICAL NAME	SIZE DBH	CONDITION	
1	BLACK WALNUT	JUGLANS NIGRA	32.5"	GOOD	TO BE REMOVED
2	BLACK WALNUT	JUGLANS NIGRA	33.5"	GOOD	TO BE REMOVED
3	BLACK WALNUT	JUGLANS NIGRA	43.5"	GOOD	TO BE REMOVED
4	GREEN ASH	FRAXINUS PENNSYLVANICUS	35"	FAIR	TO REMAIN
5	TULIPTREE	LIRIODENDRON TULIPIFERA	35"	FAIR	TO REMAIN
6	BLACK WALNUT	BLACK WALNUT	35.5"	GOOD	TO BE REMOVED
7	TULIPTREE	LIRIODENDRON TULIPIFERA	40"	GOOD	TO REMAIN
8	RED OAK	QUERCUS RUBRA	47"	GOOD	TO REMAIN

CHURCH LANE RD STREET TREE SCHEDULE						
SYMBOL	BOTANICAL AND COMMON NAME	SIZE	LINEAR FEET OF PERIMETER	NUMBER OF TREE REQUIRED	NUMBER OF TREE PROVIDED	COMMENTS
☼	ACER RUBRUM 'OCTOBER GLORY' (OCTOBER RED MAPLE)	2 1/2" - 3" CALIPER FULL CROWN, B&B	180'	5	5	40' APART ON PUBLIC R/W

FINANCIAL SURETY FOR THE 5 REQUIRED STREET TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$1,500.

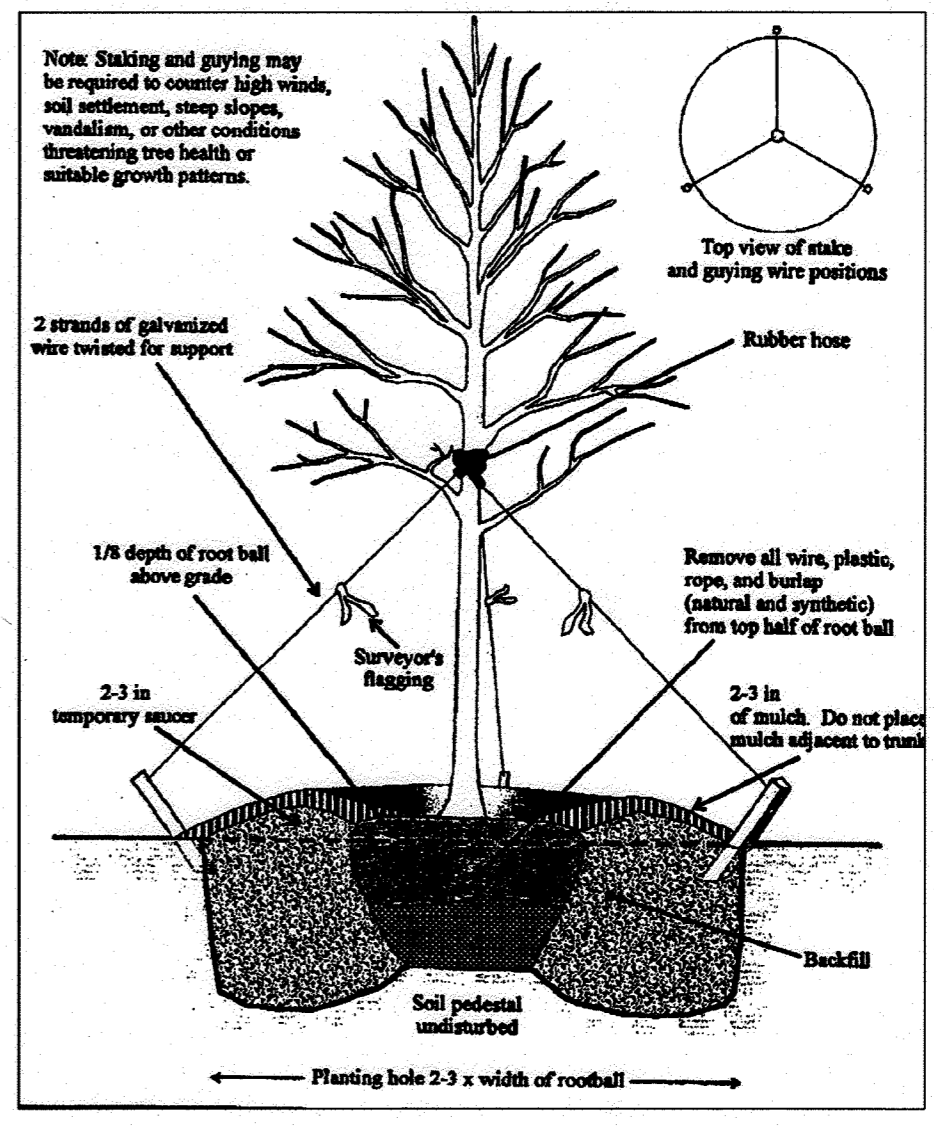
**COMPLIANCE ALTERNATIVE NOTE:**  
 THERE IS NOT ENOUGH SPACE TO PLANT 5 STREET TREES AND MEET THE CLEARANCES FROM DRIVEWAYS AND USE-IN-COMMON ON CHURCH LANE ROAD. THE FIFTH TREE IS PLACED ON LOT 7 (OPEN SPACE) TO COMPLY WITH STREET TREE REQUIREMENTS.

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING	
LINEAR FEET OF PERIMETER	166.77'
NUMBER OF TREE REQUIRED	
SHADE TREES	4
EVERGREEN TREES	4
CREDIT FOR EXISTING VEGETATION (YES, NO AND %)	NO
CREDIT FOR OTHER LANDSCAPING (YES, NO AND %)	NO
NUMBER OF TREES PROVIDED	
SHADE TREES	4
EVERGREEN TREES	4
OTHER TREES ( 2:1 SUBSTITUTION )	0
ORNAMENTAL TREES	0
( DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED )	

LANDSCAPING PLANT LIST				
QTY.	KEY	NAME	SIZE	
2	☼	ACER RUBRUM 'OCTOBER GLORY' (OCTOBER RED MAPLE)	2 1/2" - 3" CALIPER FULL CROWN, B&B	
6	☼	PLATANUS x ACERIFOLIA 'BLOODGOOD' BLOODGOOD LONDON PLANE	2 1/2" - 3" CALIPER FULL CROWN, B&B	
4	☼	PINUS STROBUS EASTERN WHITE PINE	6' - 8' HT	
32	☼	FLOWERING CRABAPPLE MALUS ( PRAIRIFIRE )	2 1/2" - 3" CALIPER FULL CROWN, B&B	

"THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL."

**DEVELOPER'S/OWNER'S LANDSCAPE CERTIFICATE**  
 I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.  
 SIGNATURE: *[Signature]* DATE: 06/17/2022  
 NAME: OLEGARIO RAMIREZ



TREE GUYING FOR 3 INCHES IN CLIPPER AND GREATER WHEN REQUIRED

**PLANTING SPECIFICATIONS**

PLANTS, RELATED MATERIAL, AND OPERATIONS SHALL MEET THE DETAILED DESCRIPTION AS GIVEN ON THE PLANS AND AS DESCRIBED HEREIN. ALL PLANT MATERIAL, UNLESS OTHERWISE SPECIFIED, SHALL BE NURSERY GROWN, UNIFORMLY BRANCHED, HAVE A VIGOROUS ROOT SYSTEM, AND SHALL CONFORM TO THE SPECIES, SIZE, ROOT AND SHAPE SHOWN ON THE PLANT LIST AND THE AMERICAN ASSOCIATION OF NURSEYMEN(AAN) STANDARDS. PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, FREE FROM DEFECTS, DECAY, DISFIGURING ROOTS, SUN SCALD INJURIES, ABRASIONS OF THE BARK, PLANT DISEASE, INSECT PEST EGGS, BORERS AND ALL FORMS OF INSECT INFESTATIONS OR OBJECTIONABLE DISFIGUREMENTS. PLANT MATERIAL THAT IS WEAK OR WHICH HAS BEEN CUT BACK FROM LARGER GRADES TO MEET SPECIFIED REQUIREMENTS WILL BE REJECTED. TREES WITH FORKED LEADERS WILL NOT BE ACCEPTED. ALL PLANTS SHALL BE FRESHLY DUG, NO HEALED-IN PLANTS FROM COLD STORAGE WILL BE ACCEPTED.

UNLESS OTHERWISE SPECIFIED, ALL GENERAL CONDITIONS, PLANTING OPERATIONS, DETAILS AND PLANTING SPECIFICATION SHALL CONFORM TO "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS" (HEREINAFTER "LANDSCAPE GUIDELINES") APPROVED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF METROPOLITAN WASHINGTON AND THE POTOMAC CHAPTER OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECT, LATEST EDITION, INCLUDING ALL AGENDA.

CONTRACTOR SHALL BE REQUIRED TO GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE IN ACCORDANCE WITH THE APPROPRIATE SECTION OF THE LANDSCAPE GUIDELINES CONTRACTOR'S ATTENTIONS IS DIRECTED TO THE MAINTENANCE REQUIREMENTS FOUND WITHIN THE ONE YEAR SPECIFICATIONS INCLUDING WATERING AND REPLACEMENT OF SPECIFIED PLANT MATERIAL.

CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING UTILITY COMPANIES, UTILITY CONTRACTORS AND "MISS UTILITY" MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY WORK. CONTRACTOR MAY MAKE MINOR ADJUSTMENTS IN SPACING AND LOCATION OF PLANT MATERIAL TO AVOID CONFLICTS WITH UTILITIES. DAMAGE TO EXISTING STRUCTURE AND UTILITIES SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.

PROTECTION OF EXISTING VEGETATION TO REMAIN SHALL BE ACCOMPLISHED BY THE TEMPORARY INSTALLATION OF 4 FOOT HIGH SNOW FENCE OR BLAZE ORANGE SAFETY FENCE AT THE DRIP LINE.

CONTRACTOR IS RESPONSIBLE OF INSTALLING ALL MATERIAL IN THE PROPER PLANTING SEASON FOR EACH PLANT TYPE. ALL PLANTING IS TO BE COMPLETED WITHIN THE GROWING SEASON OF COMPLETION OF SITE CONSTRUCTION.

BID SHALL BE BASE ON ACTUAL SITE CONDITIONS. NO EXTRA PAYMENT SHALL BE MADE FOR WORK ARISING FROM SITE CONDITIONS DIFFERING FROM THOSE INDICATED ON DRAWINGS AND SPECIFICATIONS.

PLANTS QUANTITIES ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON PLAN AND THOSE SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE PLAN TAKE PRECEDENCE.

ALL SHRUBS SHALL BE PLANTED IN CONTINUOUS TRENCHES OR PREPARED PLANTING BEDS AND MULCHED WITH COMPOSTED HARDWOOD MULCH AS DETAILS AND SPECIFIED EXCEPT WHERE NOTED ON PLANS.

POSITIVE DRAINAGE SHALL BE MAINTAINED IN PLANTING BEDS 2 PERCENT SLOPE.

PLANTING MIX SHALL BE AS FOLLOWS: DECIDUOUS PLANTS - TWO PARTS TOPSOIL, ONE PART WELL-ROTTED COW OR HORSE MANURE, ADD 3 LBS. OF STANDARD FERTILIZER PER CUBIC YARD OF PLANTING MIX. EVERGREEN PLANTS-TWO PARTS TOPSOIL, ONE PART HUMUS OR OTHER APPROVED ORGANIC MATERIAL, ADD 3 LBS. OF EVERGREEN (ACLDC) FERTILIZER PER CUBIC YARD OF PLANTING MIX. TOPSOIL SHALL CONFORM TO THE LANDSCAPE GUIDELINES.

WEED CONTROL, INCORPORATE A PRE-EMERGENT HERBICIDE INTO THE PLANTING BED FOLLOWING RECOMMENDED RATES ON THE LABEL. CAUTION: BE SURE TO CAREFULLY CHECK THE CHEMICAL USED TO ASSURE ITS ADAPTABILITY TO THE SPECIFIC GROUND COVER TO BE TREATED.

ALL AREAS WITHIN CONTRACT LIMITS DISTURBED DURING OR PRIOR TO CONSTRUCTION NOT DESIGNATED TO RECEIVE PLANTS AND MULCH SHALL BE FINE GRADED AND SEEDED.

THIS PLAN IS INTENDED FOR LANDSCAPE USE ONLY. SEE OTHER PLAN SHEETS FOR MORE INFORMATION ON GRADING, SEDIMENT CONTROL, LAYOUT, ETC.

AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEWING AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY BE RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISION ARE MADE TO THE APPLICABLE PLANS.

THE OWNER TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.

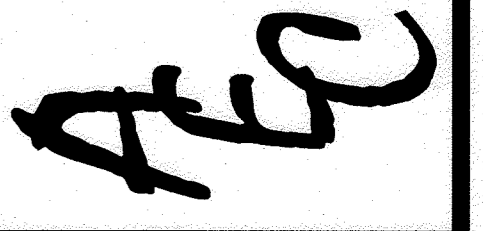
THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL WITH 8 SHADE TREES, 32 ORNAMENTAL TREES AND 4 EVERGREEN TREES ( TOTAL OF 44 TREES ) PROVIDED WITH LANDSCAPE SURETY IN THE AMOUNT OF \$ 7,800 WITH THE DPW AND WILL BE POSTED WITH THE DEVELOPER'S AGREEMENT AT THE FINAL PLAN STAGE.

**PURPOSE NOTE:**  
 REVISED W & S LOCATIONS, PLAN & PROFILES AND EASEMENTS TO REFLECT PREFERRED ALIGNMENT THAT MEETS HOWARD CO. DESIGN REQUIREMENTS.  
 REVISED GRADING, SWM FACILITIES INCLUDING 2 MICRO-BIOTENTIONS (M-6), 4 DRYWELLS (M-5) & NON-ROOFTOP DISCONNECTS (N-2)

**"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.  
 MOSTAFA IZADI, PE  
 LICENSE NO. 17248, EXPIRATION DATE: 02/11/2023

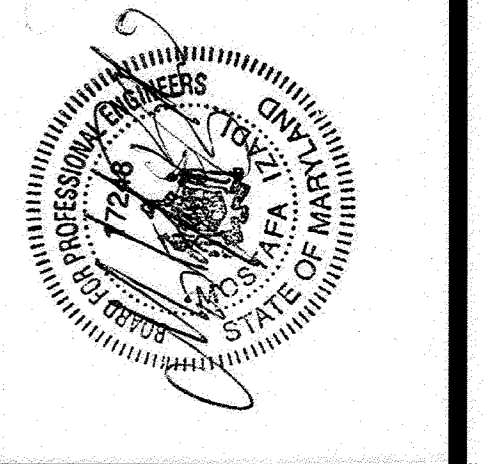
**OWNER/DEVELOPER**  
 OLEGARIO RAMIREZ, PRESIDENT  
 WEST ONE INVESTMENTS LLC  
 8170 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MD 21043  
 EMAIL: OLE@RCFRAMING.COM  
 TELEPHONE: 301-748-1010

Advanced Engineering Consultants, DC.  
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 TEL.: 410-382-9180  
 FAX: 410-296-0505  
 mizadi@aec-engineers.biz



REVISION	DESCRIPTION	BY	DATE
1	RED-LINE REVISION	M I	12/11/13
2	REVISED WAS ALIGNMENT TO MEET HOWARD COUNTY DESIGN REQUIREMENTS & GRADING	M I	04/04/22

TITLE: LANDSCAPING PLAN AND DETAILS  
 FINAL CONSTRUCTION PLANS  
 SHAMS SUBDIVISION  
 PARCEL NO. 237  
 ELECTION DISTRICT 02  
 TAX MAP #18, GRID 14  
 HOWARD COUNTY, MARYLAND



DRAWN BY: TH  
 CHECKED BY: MI  
 SCALE: 1" = 50'  
 DATE: 06-19-2022

SHEET 11 OF 16  
 HOWARD CO. FILE NO. F-10-081

UNIT PRICE FOR FOREST CONSERVATION SURETY			
FOREST RETENTION	ACRES	SQ.FT.	AMOUNT OF SURETY
REGENERATION OR SELECTIVE CLEARING WITH SUPPLEMENTAL PLANTING	\$0.20 PER SQ.FT.	0.93	40,510
REFORESTATION / AFFORESTATION	\$0.50 PER SQ.FT.	-	-

FOREST CONSERVATION FEE-IN-LIEU			
REFORESTATION OR AFFORESTATION	ACRES	SQ.FT.	AMOUNT OF SURETY
EASEMENT ABANDONMENT	\$0.75 PER SQ.FT.	0.26	11,325
NON-COMPLIANCE WITH FOREST CONSERVATION	\$1.20 PER SQ.FT.	-	-

### Forest Conservation Worksheet 2.1

Note: Use 0 for all negative numbers that result from the calculations.

**Net Tract Area**

A. Total Tract Area  
 B. Deductions (Critical Area, area restricted by local ordinance or program)  
 C. Net Tract Area = Total Tract Area (A) - Deductions (B)

**Land Use Category** R-20

D. Afforestation Threshold (Net Tract Area [C] x 15%)  
 E. Conservation Threshold (Net Tract Area [C] x 20%)

**Existing Forest Cover**

F. Existing Forest Cover within the Net Tract Area  
 G. Area of Forest Above Conservation Threshold  
 (If Existing Forest Cover (F) is greater than the Conservation Threshold (E), then G = F - E, Otherwise G = 0.)

**Breakeven Point**

H. Breakeven Point (Amount of forest that must be retained so that no mitigation is required)

(1) If the Area of Forest Above the Conservation Threshold (G) is greater than 0, then H = (0.2 x the Area of Forest Above Conservation Threshold (G)) + the Conservation Threshold (E);  
 (2) If the Area of Forest Above the Conservation Threshold (G) is equal to 0, then H = Existing Forest Cover (F).

**Proposed Forest Clearing**

I. Forest Clearing Permitted Without Mitigation  
 J. Total Area of Forest to be Cleared  
 K. Total Area of Forest to be Retained  
 L. Existing Forest Cover (F) - Breakeven Point (H)  
 M. Existing Forest Cover (F) - Forest to be Cleared (J)

**Planting Requirements**

If the Total Area of Forest to be Cleared (K) is at or above the Breakeven Point (H), no planting is required and no further calculations are necessary (L=0, M=0, N=0, P=0);  
 Otherwise, calculate the planting requirements as follows:

**Restoration for Clearing Above the Conservation Threshold**

(1) If the Total Area of Forest to be Retained (K) is greater than the Conservation Threshold (E), then L = the Area of Forest to be Cleared (J) x 0.25;  
 (2) If the Forest to be Retained (K) is less than or equal to the Conservation Threshold (E), then L = Area of Forest Above Conservation Threshold (G) x 0.25

**Restoration for Clearing Below the Conservation Threshold**

(1) If Existing Forest Cover (F) is greater than the Conservation Threshold (E) and the Forest to be Retained (K) is less than the Conservation Threshold (E), then M = 2.0 x (Conservation Threshold (E) - Forest to be Retained (K))  
 (2) If Existing Forest Cover (F) is less than or equal to the Conservation Threshold (E), then M = 2.0 x Forest to be Cleared (J)

**Credit for Retention Above the Conservation Threshold**

If the Area of Forest to be Retained (K) is greater than the Conservation Threshold (E), then N = K - E

**Total Reforestation Required** P = L + M - N

**Total Afforestation Required**  
 If Existing Forest Cover (F) is less than the Afforestation Threshold (D), then Q = Afforestation Threshold (D) - Existing Forest Cover (F)

**Total Planting Requirement** R = P + Q

**Forest Conservation Worksheet** C:5

#### CONSTRUCTION PERIOD PRACTICES

The construction period extends from final approval of the development proposal until the release of all required guarantees specified for forest conservation requirements in the developers agreement.

#### Construction Period Supervision

As part of the construction period management and planting program, the developer shall designate an individual or firm to be fully responsible for implementing the requirements of the approved forest conservation plan or requesting modifications of previously approved requirements concerning planting techniques, species or maintenance needs. Those responsible for implementation of the approved forest conservation plan during the construction period shall conform to the professional qualifications cited in Chapter VI of this manual.

#### Protecting and Managing Forest Retention Areas

Forest retention stands are extremely vulnerable to damage, long term decline, and death stemming from improper design and construction practices. Saving forests and specimen trees during the construction period requires site planning, engineering practices and construction methods that respect the biological needs of trees. A few fundamental horticultural principals are the basis of the protection guidelines and requirements cited in this manual:

- A tree's root system can be large, extending well beyond the drip line of the crown. Typically, root systems are very shallow, in most cases being only 12" - 18" deep.
- Trees generally do not have tap roots.
- There are about as many roots as there are twigs and branches. If roots die, branches will die to keep the tree in balance.
- Tree roots need a balance of water and air in the soil. Air only penetrates 12" - 18" into the soil. Stress and decline in tree health results when soil is piled on top of existing roots or roots are suddenly forced to sit in waterlogged soil or overly dry soils due to topography changes during construction.
- Soil compacted to bulk densities of 1.7 gram/cubic centimeters or greater cannot support root growth. Existing roots in heavily compacted soils usually die.
- Trees growing in disturbed or filled soils usually die back in proportion to the root area disturbed. Even minor disturbances such as tilling within the root zone for lawn installation will cause harm.
- Trees, especially large trees, may take a long time to show the effects of construction damage. Trees may die 5 or even 10 years after being weakened by construction activity. Secondary stresses such as insects, disease, or drought may kill weakened trees while the same stress would not have affected a healthy tree.

#### Soil Protection Zone

The soil protection zone must be protected from construction activity and other stresses (e.g. flooding) to protect the forest stand from damage. The forest retention practices for a development must address the specific needs and stresses the proposal may cause. Nevertheless, the need to define the soil protection zone (critical root area) for forest areas is the one factor common to all retention efforts.

The extent of the root system is quite large. The ratio of root expansion to crown spread can be 2:1 or larger on open grown specimen trees and can be significantly larger (up to 5:1) for trees growing in the interior of forest stands. Furthermore, the minimum requirement for root protection varies from species to species and from soil type to soil type. For open grown trees, it is generally accepted that protecting the soil within the drip line of the tree is adequate to save the tree in most cases. For trees that have been part of forest communities, however, the soil protection zone may have to be modified to reflect a more complex relationship between crown spread and root growth.

Techniques for management of the soil protection zone are described in detail in Appendix G.

#### Best Management Practices During Construction

Many of the construction period measures cited in the manual are for areas that should not be disturbed. The desire to protect areas within the limit of disturbance can be easily nullified by poor construction site management. The required construction period management program must therefore specify how construction activities will be managed to protect forest retention areas. The following should be depicted on site construction documents and/or forest conservation plans; they shall also be itemized in the developers agreement.

- storage of equipment and materials
- disposal of construction debris
- washing of equipment, disposal of wastewater from concrete operations, etc.
- employee parking
- temporary structures such as trailers, sanitary facilities, etc.

Unless specifically exempted by the approved forest conservation plan, any use of forest retention areas for these activities or other intrusions shall be a violation of the approved forest conservation plan.

Because reforestation and afforestation typically may involve disturbances greater than 5,000 square feet, proper sediment and erosion controls may be required. Developers should refer to the Howard County Soil Conservation District for current standards, specifications and requirements. It may be necessary to protect forest retention areas from erosion and sedimentation caused by implementation of reforestation or afforestation plantings.

#### Certification of Completion

At the end of the construction period, the designated qualified professional shall convey to the Department of Planning and Zoning certification that all forest retention areas have been preserved, all reforestation and afforestation plantings have been installed as required by the forest conservation plan, and that all protection measures required for the post-construction period have been put in place. Appendix J contains a sample format for such certification. Planting must occur before June 30th to be credited toward the current growing season.

Upon review of the certification document for completeness and accuracy, the Department will notify the developer of the beginning of the post-construction management period.

#### PRIVATE USE-IN-COMMON NOTE:

PRIVATE USE-IN-COMMON DRIVEWAY SHALL BE FOR THE BENEFIT OF LOTS 2,4,5, OPEN SPACE LOTS 6,7, AND THE POTENTIAL FUTURE USE FOR PARCEL 281.

#### REPLACEMENT SHEET 12 OF 16

"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.

MOSTAFA IZADI, PE  
 LICENSE NO.17248, EXPIRATION DATE:02/11/2023

OWNER/DEVELOPER  
 OLEGARIU RAMIREZ, PRESIDENT  
 WEST ONE INVESTMENTS LLC  
 8170 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MD 21043  
 EMAIL: OLEG@CFRAMING.COM  
 TELEPHONE: 301-748-1010

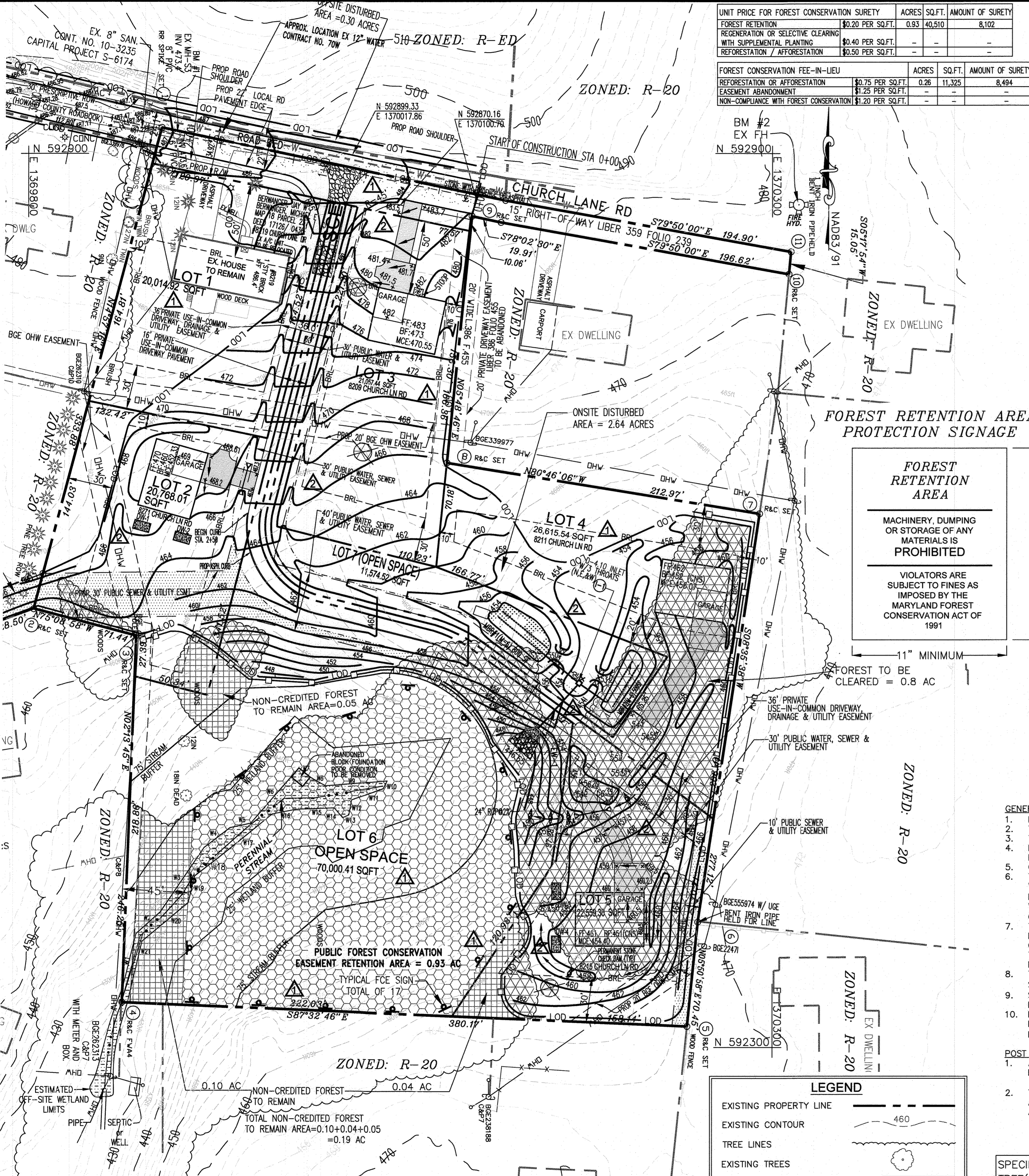
Advanced Engineering Consultants, DC.  
 Engineers & Planners  
 P.O. BOX 129 RIDERWOOD, MD 21139  
 TEL: 410-382-9180  
 FAX: 410-296-0505  
 mizadi@aec-engineers.biz

REVISIONS	DESCRIPTION	BY	DATE
1	RED-LINE REVISION	M1	12/11/13
2	REVISED SWM FACILITIES & GRADING	M1	04/04/22

TITLE: FOREST CONSERVATION PLAN  
 FINAL CONSTRUCTION PLANS  
 SHAMS SUBDIVISION  
 PARCEL NO. 237  
 ELECTION DISTRICT 02  
 TAX MAP #18, GRID 14  
 HOWARD COUNTY, MARYLAND



DRAWN BY: TH  
 CHECKED BY: MI  
 SCALE: 1"=40'  
 DATE: 06-19-2022  
 SHEET 12 OF 16  
 HOWARD CO. FILE NO. F-10-081



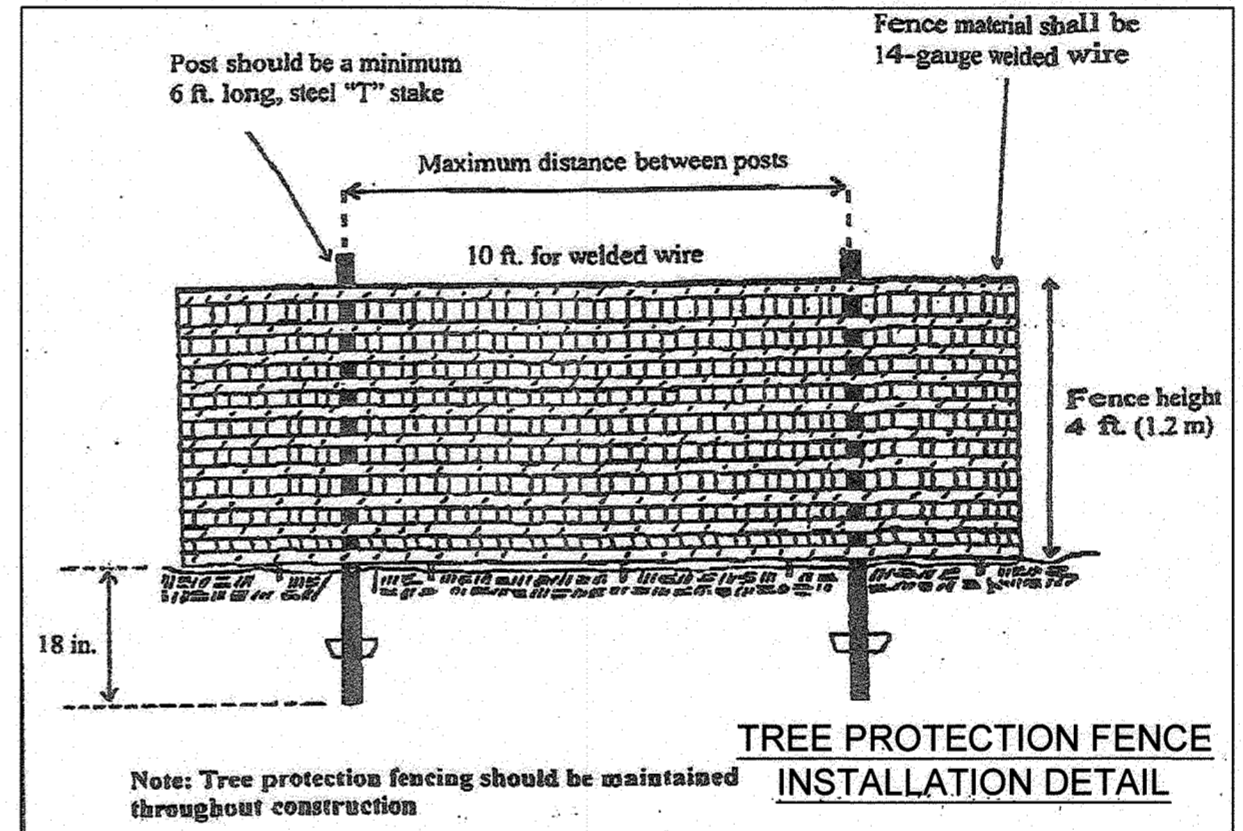
**FOREST RETENTION AREA**

MACHINERY, DUMPING OR STORAGE OF ANY MATERIALS IS PROHIBITED

VIOLATORS ARE SUBJECT TO FINES AS IMPOSED BY THE MARYLAND FOREST CONSERVATION ACT OF 1991

11" MINIMUM

15" MINIMUM



- #### GENERAL NOTES:
- FCE SIGNS MUST BE PLACED EVERY 50' AROUND THE ENTIRE LIMIT OF THE FCE.
  - THERE ARE NO RARE, THREATENED, OR ENDANGERED SPECIES RECORDED ON THIS SITE.
  - THE FOREST STAND DELINEATION CAN BE FOUND WITH SP-08-007.
  - DUE TO SITE TOPOGRAPHY AND OTHER CONSTRAINTS, THE PROPOSED CLEARING AREAS OF THE FOREST CANNOT BE SAVED.
  - OVERALL AN AREA OF 0.93 ACRES OF FOREST IS PROTECTED AND WILL NOT BE DISTURBED. THE FOREST CONSERVATION OBLIGATION INCURRED BY THIS PROJECT HAS BEEN SATISFIED WITH THE RETENTION OF 0.93 ACRE CREDITED EASEMENT AND 0.14 ACRE OF NON-CREDITED EASEMENT AND A FEE IN LIEU OF \$8,494 FOR THE BALANCE OF 0.26 ACRE WILL BE PAID WHICH MEETS THE BREAK-EVEN POINT OBLIGATION OF 1.14 ACRES FOR THIS SITE. FOREST CONSERVATION SURETY IN THE AMOUNT OF \$8,102 WILL BE POSTED FOR THIS PROJECT. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
  - THE BEARINGS AND DISTANCES CAN BE FOUND WITH THE ASSOCIATED PLAT UNDER THE SAME FILE NUMBER (F-10-081)
  - SEE SHEET 14 OF 14 (SEQUENCE OF CONSTRUCTION) FOR PRE AND POST MAINTENANCE OF FOREST CONSERVATION EASEMENT.
  - PRIOR TO ANY GRADING, EXCAVATION OR SIMILAR DISTURBANCE, THE PERMANENT SIGNAGE FOR THE FOREST RETENTION AREA PROTECTION AND THE TEMPORARY TREE PROTECTION FENCING SHALL BE INSTALLED (SEE SEQUENCE OF CONSTRUCTION ON SHEET 14 OF 14).
- #### POST CONSTRUCTION NOTE:
- ALL TEMPORARY PROTECTION FENCING SHALL BE REMOVED AT THE END OF CONSTRUCTION PERIOD.
  - THE DEVELOPER/BUILDER SHALL PROVIDE PAMPHLETS TO THE RESIDENTS TO EDUCATE THEM ABOUT THE MAINTENANCE OF PERMANENT FCE SIGNAGE, REMOVAL OF ANY INVASIVE SPECIES AND PROTECTION OF FCE IN ACCORDANCE WITH THE HOWARD COUNTY GUIDELINES.

SPECIMEN TREE(ST)#	COMMON NAME	BOTANICAL NAME	SIZE DBH	CONDITION	
1	BLACK WALNUT	JUGLANS NIGRA	32.5"	GOOD	TO BE REMOVED
2	BLACK WALNUT	JUGLANS NIGRA	33.5"	GOOD	TO BE REMOVED
3	BLACK WALNUT	JUGLANS NIGRA	43.5"	GOOD	TO BE REMOVED
4	GREEN ASH	FRAXINUS PENNSYLVANICUS	35"	FAIR	TO REMAIN
5	TULIP TREE	LIRIODENDRON TULIPIFERA	35"	FAIR	TO REMAIN
6	BLACK WALNUT	BLACK WALNUT	35.5"	GOOD	TO BE REMOVED
7	TULIP TREE	LIRIODENDRON TULIPIFERA	40"	GOOD	TO REMAIN
8	RED OAK	QUERCUS RUBRA	47"	GOOD	TO REMAIN

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS MK  
 DATE 09/08/2022

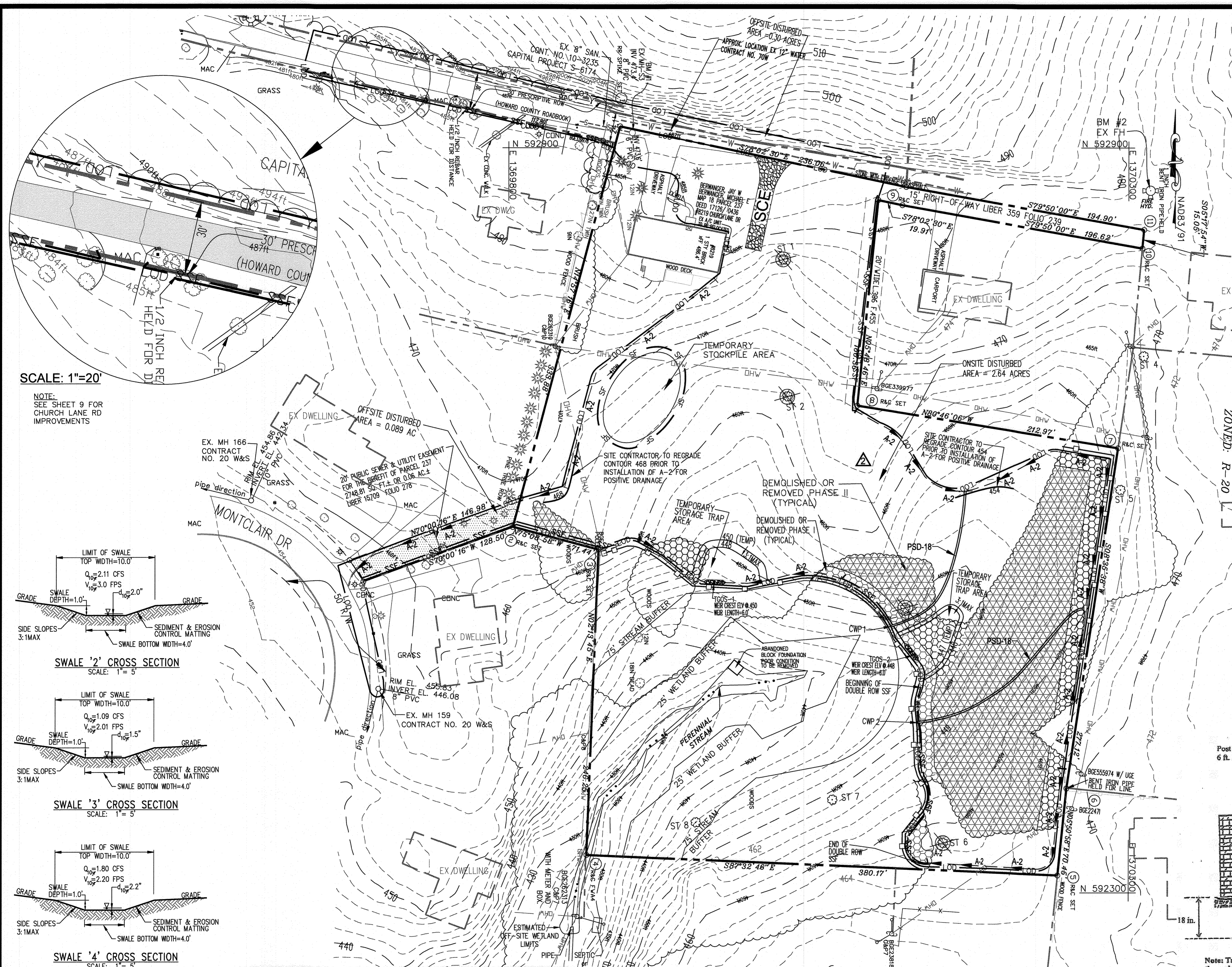
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE 11/22  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE 07-22-22

Jeffrey A. Wolinski  
 Consulting Ecologist  
 38643 Morrisonville Road  
 Lovettsville, VA 20180  
 Phone: (540) 882-4947  
 Fax: (540) 882-4965  
 MD Phone: (410) 274-7678

Jeffrey A. Wolinski  
 MDRCA Qualified Professional

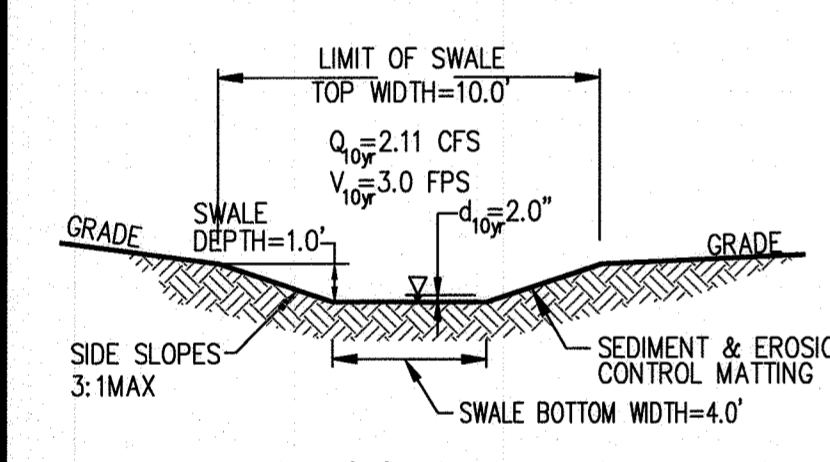
**FOREST CONSERVATION PLAN**  
 SCALE: 1"=40'

**PURPOSE NOTE:**  
 REVISED W & S LOCATIONS, PLAN & PROFILES AND EASEMENTS TO REFLECT PREFERRED ALIGNMENT THAT MEETS HOWARD CO. DESIGN REQUIREMENTS.  
 REVISED GRADING, SWM FACILITIES INCLUDING 2 MICRO-BIOTENTIONS (M-6), 4 DRYWELLS (M-5) & NON-ROOFTOP DISCONNECTS (N-2)

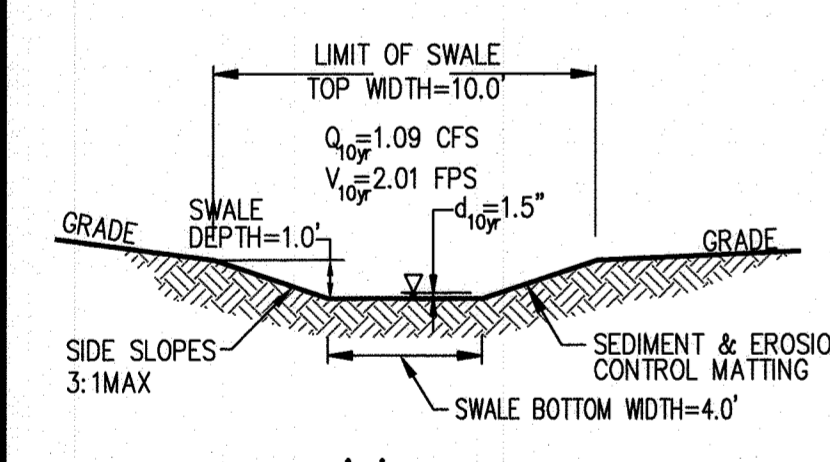


SCALE: 1"=20'

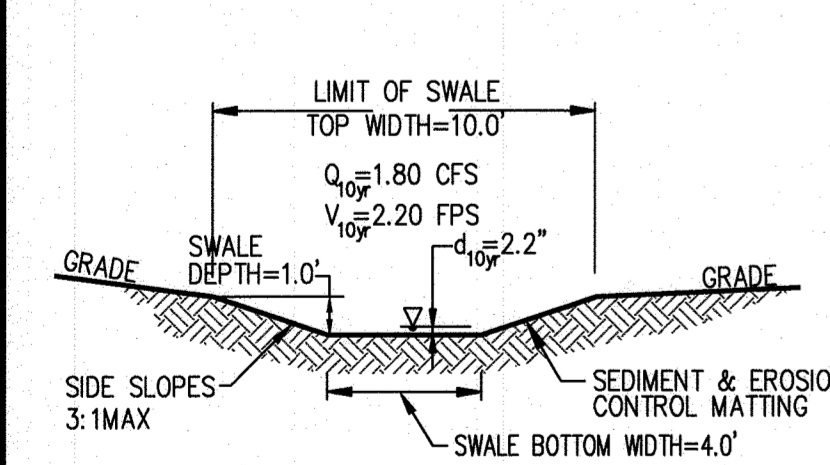
NOTE: SEE SHEET 9 FOR CHURCH LANE RD IMPROVEMENTS



SWALE '2' CROSS SECTION SCALE: 1"=5'



SWALE '3' CROSS SECTION SCALE: 1"=5'

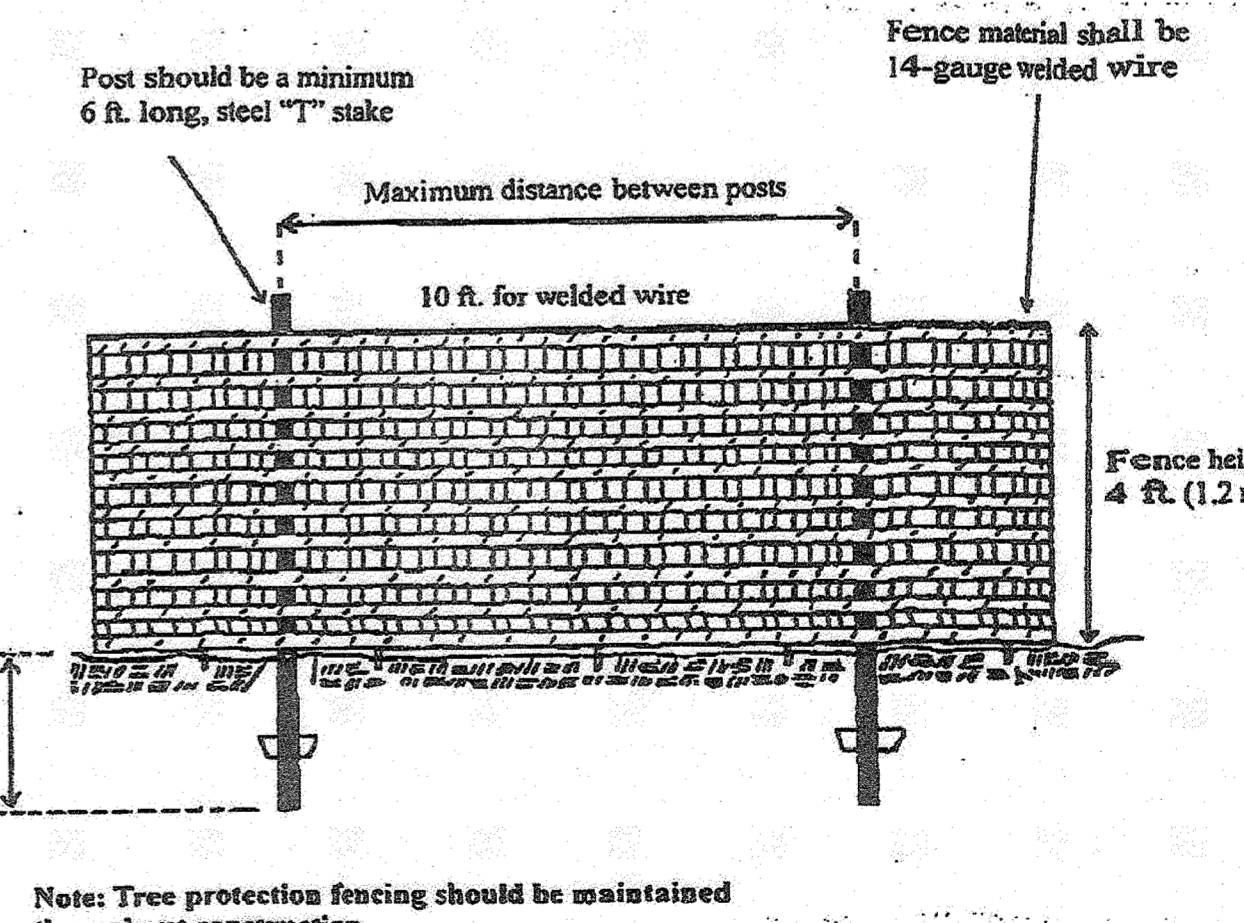


SWALE '4' CROSS SECTION SCALE: 1"=5'

LEGEND	
EXISTING PROPERTY LINE	---
PROP PROPERTY LINE	---
EXISTING CONTOUR	~~~~~
PROP CONTOUR	~~~~~ 456
SPOT ELEVATION	X 456
TREE LINES	~~~~~
EXISTING TREES	⊙
DEMOLISHED OR REMOVED PHASE I	▨
DEMOLISHED OR REMOVED PHASE II	▩
EROSION CONTROL MATTING	▨
TEMPORARY GABION OUTLET STRUCTURE	⊞
STONE CHECKDAM	⊞
SILT FENCE	— SF — SF —
SUPER SILT FENCE	— SSF — SSF —
STABILIZED CONSTRUCTION ENTRANCE	▨ SCE
(LOD) LIMITS OF DISTURBANCE	— LOD —
TREE PROTECTION FENCE	— ⊞ — ⊞ —
EARTH DIKE	— A-2 —
PIPE SLOPE DRAIN	— PSD 18 —
CLEAR WATER PIPE THROUGH SUPER SILT FENCE	⊞ CWP

DRAWING NOTES

- ONLY THE MINIMUM CLEARING AREA NECESSARY TO INSTALL THE PERIMETER CONTROL DEVICES SHALL BE CLEARED AT THIS PHASE. ( PHASE I DEMOLITION )
- THE DEMOLITION OF EXISTING FEATURES AND STRUCTURES SHALL BE CONDUCTED IN A MANNER THAT MINIMIZES THE IMPACT ON INDIVIDUAL TREES AND GROUPS OF TREES TO BE PRESERVED.
- AFTER COMPLETION OF PHASE I DEMOLITION, INSTALL PERIMETER CONTROL DEVICES. PHASE II DEMOLITION SHALL BE PERFORM AFTER PERIMETER CONTROL DEVICES ARE INSTALLED AND APPROVED BY HOWARD COUNTY INSPECTOR.
- TREES TO BE PRESERVED ON THIS SITE WILL REQUIRE PROTECTION AND CARE THROUGHOUT THE CONSTRUCTION PHASE. THE TREE PROTECTION FENCE SHALL CONSIST OF FOUR-FOOT HEIGHT, 14-GAUGE WELDED WIRE ATTACHED TO A SIX FOOT STEEL POST, DRIVEN 18" INTO THE GROUND AND PLACE NO MORE THAN 10' APART. THIS FENCE SHALL BE ERECTED AT THE LIMITS OF CLEARING AND GRADING.
- SEE SEQUENCE OF CONSTRUCTION ON NEXT SHEET.



TREE PROTECTION FENCE INSTALLATION DETAIL

REPLACEMENT SHEET 13 OF 16

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS MK 07/08/2022 DATE  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT gaw 07/13/22 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION psj 07/22/22 DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 Alexander Bratche 08/17/22 DATE  
 HOWARD SCD  
 ENGINEER'S CERTIFICATE  
 I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
 SIGNATURE: Mostafa Izadi DATE: 06/19/2022  
 NAME: MOSTAFA IZADI, PE MD REGISTRATION No. 17248

DEVELOPER'S CERTIFICATE  
 I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.  
 SIGNATURE: Olegario Ramirez DATE: 06/17/2022

PURPOSE NOTE:  
 REVISED W & S LOCATIONS, PLAN & PROFILES AND EASEMENTS TO REFLECT PREFERRED ALIGNMENT THAT MEETS HOWARD CO. DESIGN REQUIREMENTS.  
 REVISED GRADING, SWM FACILITIES INCLUDING 2 MICRO-BIORETENTIONS (M-6), 4 DRYWELLS (M-5) & NON-ROOFTOP DISCONNECTS (N-2)

"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.  
 MOSTAFA IZADI, PE  
 LICENSE NO. 17248, EXPIRATION DATE: 02/11/2023

OWNER/DEVELOPER  
 OLEGARIO RAMIREZ, PRESIDENT  
 WEST ONE INVESTMENTS LLC  
 8170 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MD 21043  
 EMAIL: OLE@RCFRAMING.COM  
 TELEPHONE: 301-748-1010

THIS SHEET IS FOR EROSION AND SEDIMENT CONTROL PURPOSES ONLY

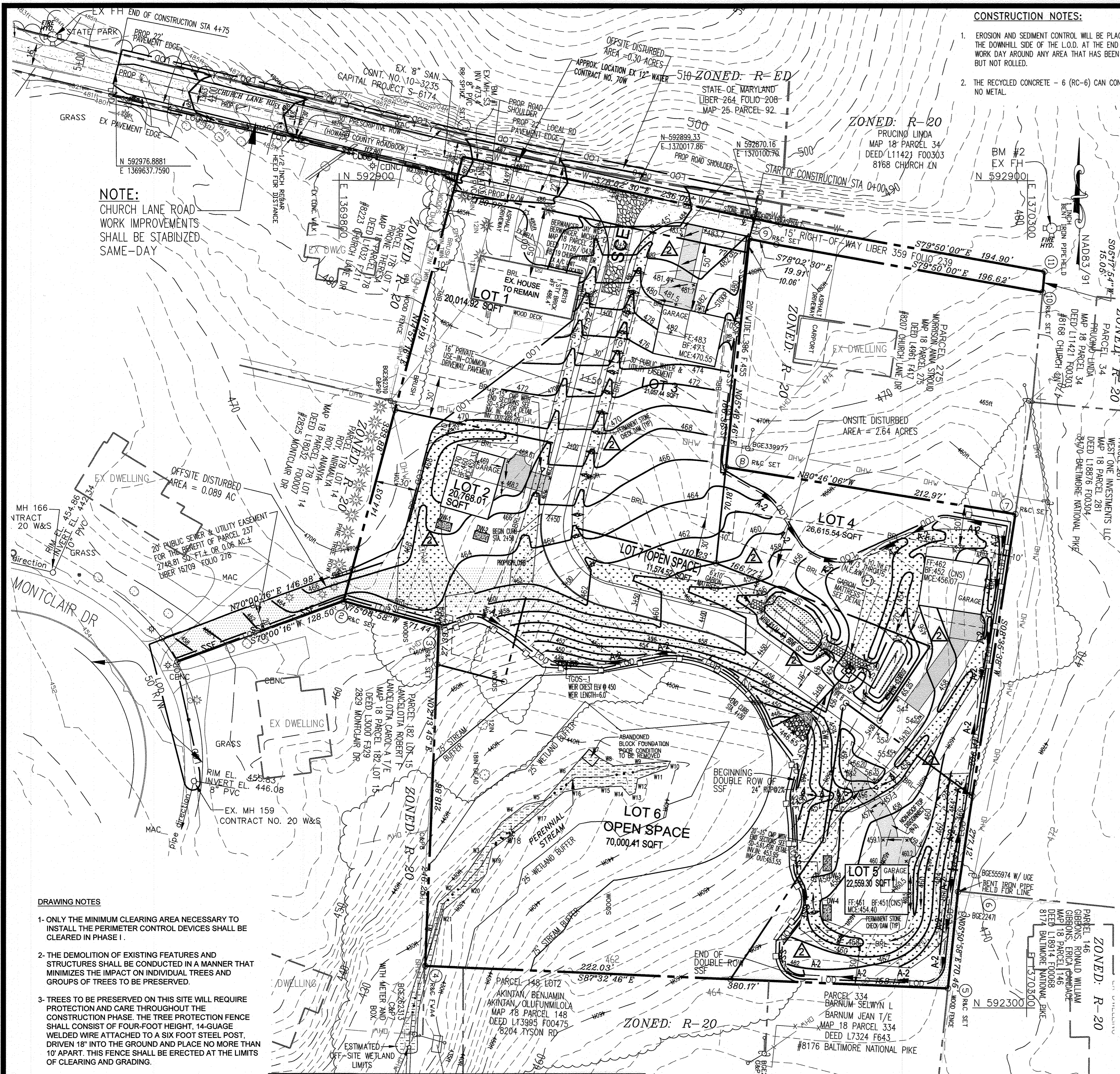
Advanced Engineering Consultants, PC  
 Engineers & Planners  
 P.O. BOX 129 RIDERWOOD, MD 21139  
 TEL.: 410-382-9180 FAX: 410-296-0505  
 mizadi@aec-engineers.biz

REVISIONS	DESCRIPTION	BY	DATE
1	REVISED W&S ALIGNMENT TO MEET PERMITS	M	04/04/22
2	REVISED SWM FACILITIES & GRADING	M	

TITLE: SEDIMENT & EROSION CONTROL PHASE I  
 FINAL CONSTRUCTION PLANS  
 SHAMS SUBDIVISION  
 PARCEL NO. 237  
 ELECTION DISTRICT 02  
 TAX MAP #18, GRID 14  
 HOWARD COUNTY, MARYLAND

DRAWN BY: TH  
 CHECKED BY: MI  
 SCALE: 1"=40'

DATE: 06-19-2022  
 SHEET 13 OF 16  
 HOWARD CO. FILE NO. F-10-081



**CONSTRUCTION NOTES:**

- EROSION AND SEDIMENT CONTROL WILL BE PLACED ON THE DOWNHILL SIDE OF THE L.O.D. AT THE END OF EACH WORK DAY AROUND ANY AREA THAT HAS BEEN GRADED BUT NOT ROLLED.
- THE RECYCLED CONCRETE - 6 (RC-6) CAN CONTAIN NO METAL.

**HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES**

- A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE L.O.D AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:
  - PRIOR TO THE START OF EARTH DISTURBANCE.
  - UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
  - PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT.
  - PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES

**HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES - CONTINUED**

9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES.
11. DISTURBANCES SHALL NOT OCCUR OUTSIDE THE L.O.D. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGINS ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE HSCD, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.
13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION UNTIL FINAL GRADE.
14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED IN LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER. LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION.
15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):
  - USE I AND II MARCH 1 - JUNE 15
  - USE III AND III OCTOBER 1 - APRIL 30
  - USE IV MARCH 1 - MAY 31
16. A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

**NOTE:**  
CHURCH LANE ROAD WORK IMPROVEMENTS SHALL BE STABILIZED SAME-DAY

**SEQUENCE OF CONSTRUCTION:**

- OBTAIN A GRADING PERMIT.
- NOTIFY "MISS UTILITY" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION AT 410-313-1330 24 HOURS BEFORE STARTING WORK.
- INSTALL CONSTRUCTION ENTRANCE(S). INSTALL ALL TREE PROTECTION FENCE FOR TREES TO BE UNDISTURBED AS INDICATED ON THE PLANS. CLEAR AND GRUB ONLY FOR INSTALLATION OF STABILIZED CONSTRUCTION ENTRANCE AND THE PERIMETER SEDIMENT AND EROSION CONTROL DEVICES. THE PERMANENT SOILAGE FOR FOREST RETENTION AREA PROTECTION SHALL BE INSTALLED AT THE EARLY STAGES OF THE CONSTRUCTION PERIOD IN ORDER TO ALERT CONSTRUCTION PEOPLE AND AS WELL AS FUTURE HOMEOWNERS. REMOVE THE ABANDONED BLOCK FOUNDATION FROM THE STREAM/SPRING HEAD. REMOVAL SHALL BE BY HAND ONLY. UNDER NO CIRCUMSTANCE ANY TYPE OF MECHANICAL EQUIPMENT SHALL ENTER THE FOREST CONSERVATION AREA (21 DAYS).
- INSTALL EARTH DIKES, PSD-18 (CMP1 & CMP 2), TGS 1&2 DOUBLE ROW SUPER SILT FENCE, AND OTHER RELATED SEDIMENT EROSION CONTROLS AS INDICATED ON THE PLANS. (2 WEEKS)
- RECEIVE PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEEDING. CLEAR AND GRUB THE REMAINDER OF THE SITE. (3 DAYS)
- GRADE SITE TO THE PROPOSED SUB-GRADE AND INSTALL THE SEWER AND WATER ALONG WITH THE STORM DRAIN SYSTEM AND BMP FACILITIES. (DELAY COMPLETION OF THE MICRO-BIORETENTIONS UNTIL THEIR CONTRIBUTING DRAINAGE AREAS ARE STABILIZED).
- STABILIZE ALL SLOPES IMMEDIATELY UPON COMPLETION OF GRADING. (6 WEEKS)
- INSTALL TEMPORARY SILT FENCE AROUND THE MICRO-BIORETENTION FACILITIES TO PREVENT CONTAMINATION OF BMP FACILITIES. INSTALL BMP PLATING AS PER PLANS.
- UPON COMPLETE STABILIZATION TO TGS 1&2 CONTRIBUTING AREAS, REMOVE CMP 1&2. (SEE NOTE #9 PRIOR TO REMOVAL OF TGS-2)
- UPON COMPLETE INSTALLATION OF 24" RCP AND EW-1, REMOVE TGS-2 AND RE-CONFIGURE SUPER SILT FENCE AS PER HOWARD COUNTY DETAILS D-5.53.
- THE PERIMETER SILT FENCE AROUND BMP FACILITIES SHALL NOT BE REMOVED UNTIL THE SITE IS FULLY STABILIZED AND GRASS IS GROWING AND THERE IS NO CHANCE OF SEDIMENT ENTERING THE FACILITIES (PREFERABLY MINIMUM OF 2 CUTS).
- THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON. AFTER EACH RAINFALL AND ON A DAILY BASIS.
- CONSTRUCT THE 16" PRIVATE USE-IN-COMMON DRIVEWAY BASE COURSE. (2 WEEKS)
- WHEN ALL CONTRIBUTION AREAS TO THE SEDIMENT CONTROL DEVICES AND THE BMP FACILITIES HAVE BEEN STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE TEMPORARY SILT FENCE AROUND BMP FACILITIES MAY BE REMOVED AND ALL DISTURBED AREAS SHALL BE BROUGHT TO FINAL DESIGN GRADE AND STABILIZED AS PER PLANS. (1 WEEKS)
- NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR FINAL INSPECTION OF THE COMPLETED PROJECT PRIOR TO REMOVAL OF ANY PERIMETER S&E CONTROL DEVICES. ALL AREAS DISTURBED BY REMOVAL OF PERIMETER S&E CONTROL SHALL BE STABILIZED WITH CONTROL MATTING AND SEEDING MULCHING AS PER PLANS AND TABLE SHOWN ON SHEET 16 OF 16.

**LEGEND**

- EXISTING PROPERTY LINE
- PROP PROPERTY LINE
- EXISTING CONTOUR
- PROP CONTOUR
- SPOT ELEVATION
- TREE LINES
- EXISTING TREES
- DEMOLISHED OR REMOVED PHASE I
- DEMOLISHED OR REMOVED PHASE II
- EROSION CONTROL MATTING
- TEMPORARY GABION OUTLET STRUCTURE
- STONE CHECKDAM
- SILT FENCE
- STANDARD INLET PROTECTION (SIP-TYPE B)
- SUPER SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- LIMITS OF DISTURBANCE
- TREE PROTECTION FENCE

**DRAWING NOTES**

- ONLY THE MINIMUM CLEARING AREA NECESSARY TO INSTALL THE PERIMETER CONTROL DEVICES SHALL BE CLEARED IN PHASE I.
- THE DEMOLITION OF EXISTING FEATURES AND STRUCTURES SHALL BE CONDUCTED IN A MANNER THAT MINIMIZES THE IMPACT ON INDIVIDUAL TREES AND GROUPS OF TREES TO BE PRESERVED.
- TREES TO BE PRESERVED ON THIS SITE WILL REQUIRE PROTECTION AND CARE THROUGHOUT THE CONSTRUCTION PHASE. THE TREE PROTECTION FENCE SHALL CONSIST OF FOUR-FOOT HEIGHT, 14-GAUGE WELDED WIRE ATTACHED TO A SIX FOOT STEEL POST, DRIVEN 18" INTO THE GROUND AND PLACE NO MORE THAN 10' APART. THIS FENCE SHALL BE ERRECTED AT THE LIMITS OF CLEARING AND GRADING.

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

**ENGINEER'S CERTIFICATE**

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS. THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE: *Mostafa Izadi* DATE: 04/04/2022  
 NAME: MOSTAFA IZADI, PE MD REGISTRATION No. 17248

**DEVELOPER'S CERTIFICATE**

I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

SIGNATURE: *Olegario Ramirez* DATE: 04/02/2022  
 OLEGARIO RAMIREZ

**APPROVED: DEPARTMENT OF PUBLIC WORKS**  
 CHIEF, BUREAU OF HIGHWAYS MK 09/09/2022 DATE

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**  
 CHIEF, DIVISION OF LAND DEVELOPMENT gom 04/22/22 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION PSD DATE

**PURPOSE NOTE:**  
REVISED W & S LOCATIONS, PLAN & PROFILES AND EASEMENTS TO REFLECT PREFERRED ALIGNMENT THAT MEETS HOWARD CO. DESIGN REQUIREMENTS.  
REVISED GRADING, SWM FACILITIES INCLUDING 2 MICRO-BIORETENTIONS (M-6), 4 DRYWELLS (M-5) & NON-ROOFTOP DISCONNECTS (N-2)

**REPLACEMENT SHEET 14 OF 16**

**"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.  
 MOSTAFA IZADI, PE  
 LICENSE NO. 17248, EXPIRATION DATE: 02/11/2023

**OWNER/DEVELOPER**  
 OLEGARIO RAMIREZ, PRESIDENT  
 WEST ONE INVESTMENTS LLC  
 8170 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MD 21043  
 EMAIL: OLEG@CFRAMING.COM  
 TELEPHONE: 301-748-1010

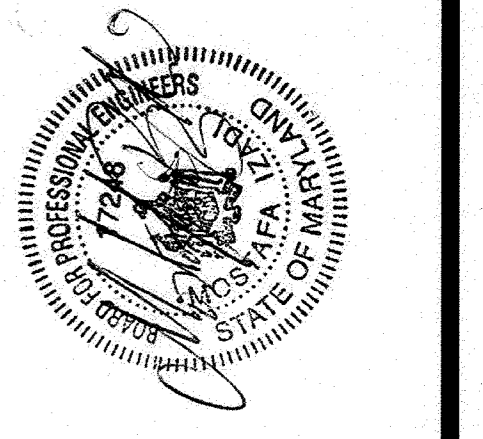
**THIS SHEET IS FOR EROSION AND SEDIMENT CONTROL PURPOSES ONLY**

Advanced Engineering Consultants, P.C.  
 Engineers & Planners  
 P.O. BOX 129 RIDERWOOD, MD 21139  
 TEL.: 410-382-9180 FAX: 410-296-0505  
 mizadi@aec-engineers.biz

**AEC**

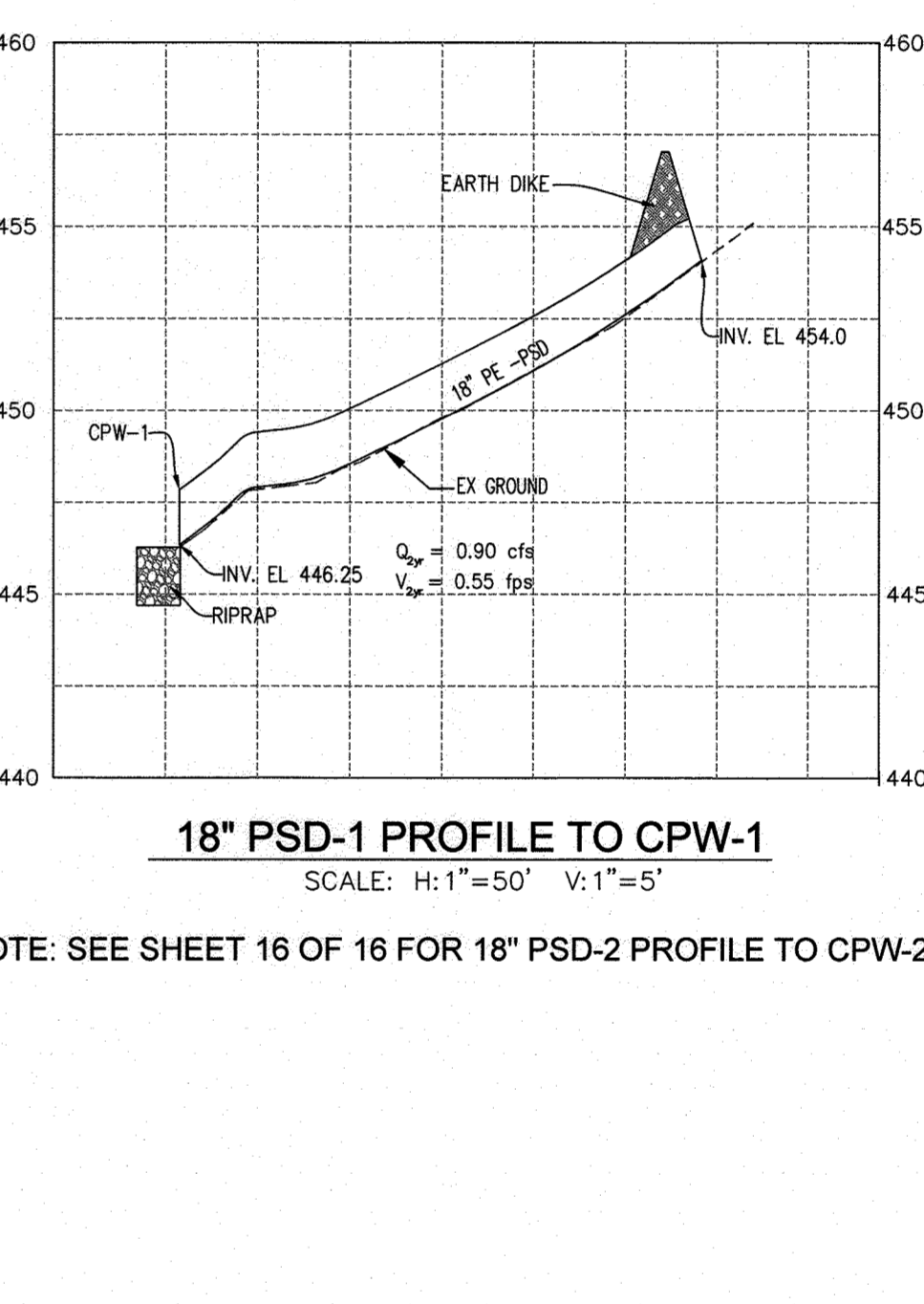
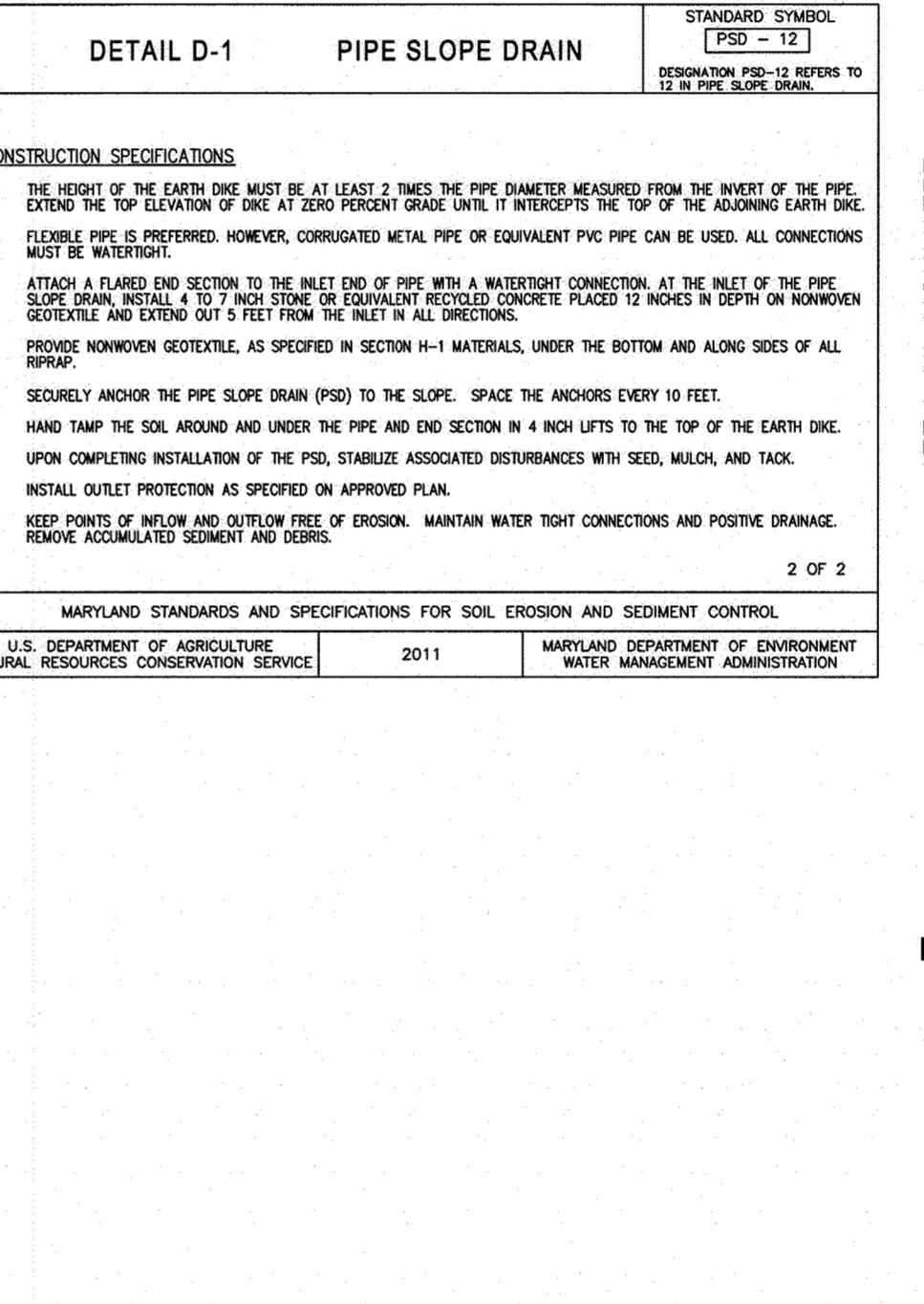
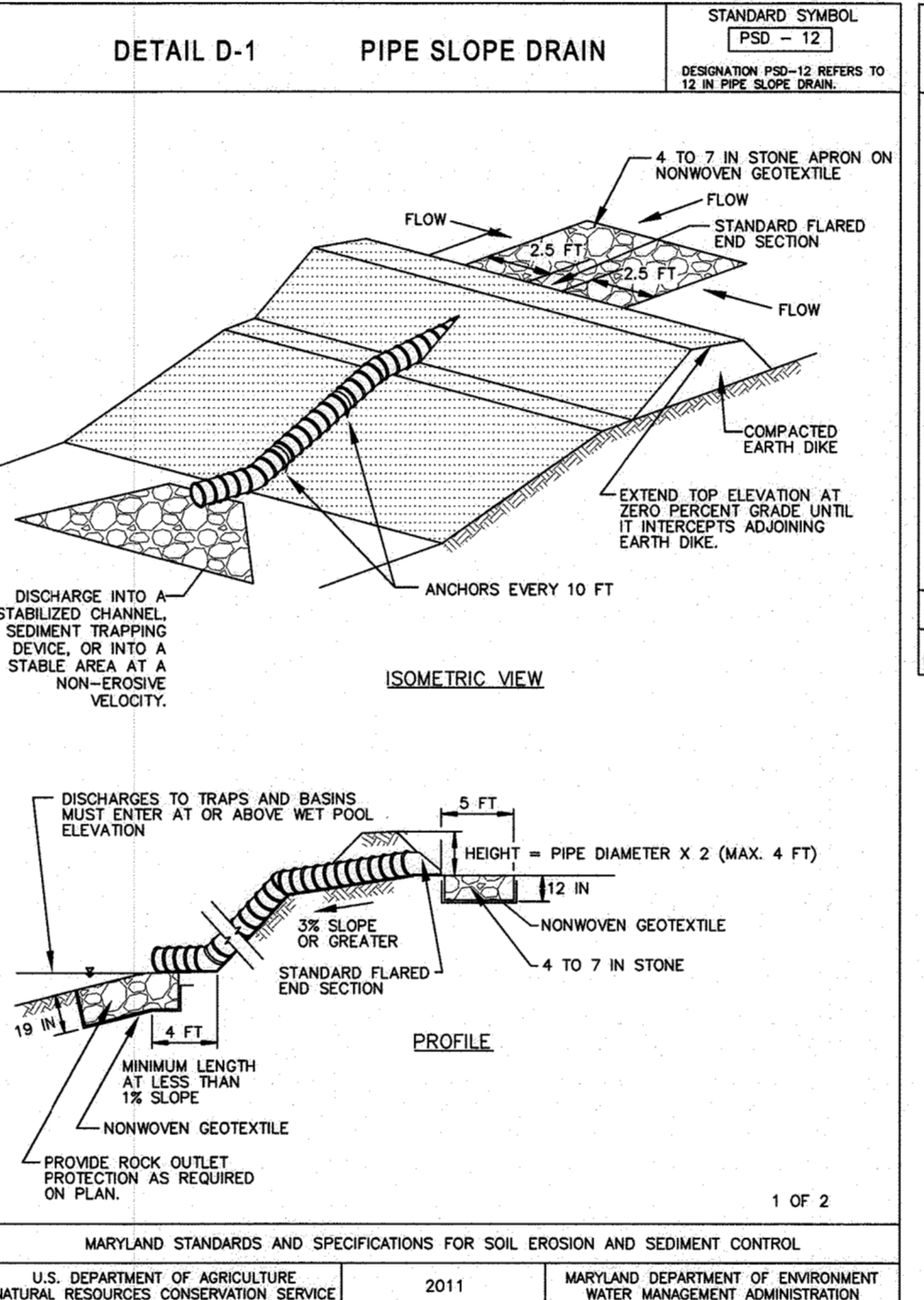
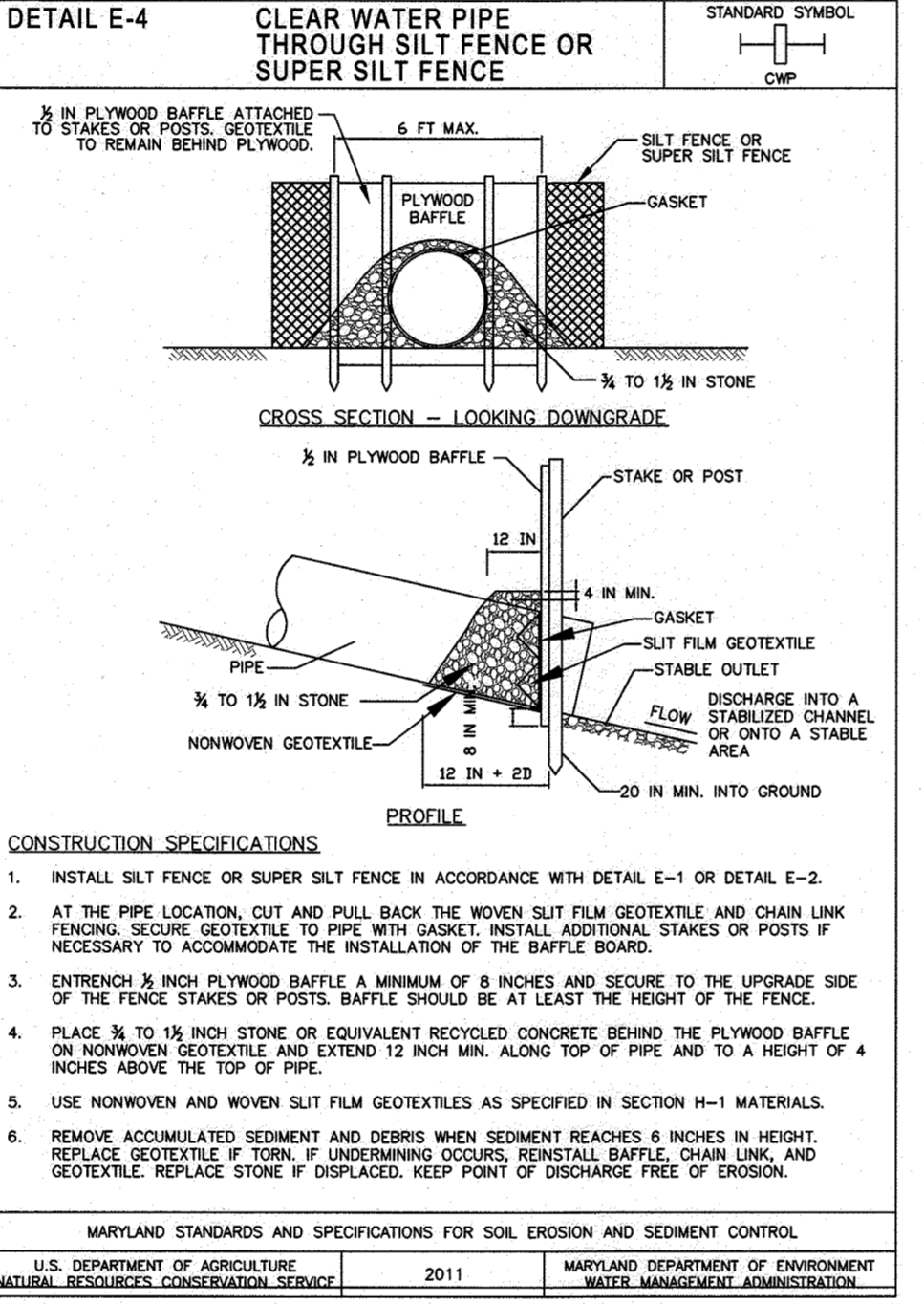
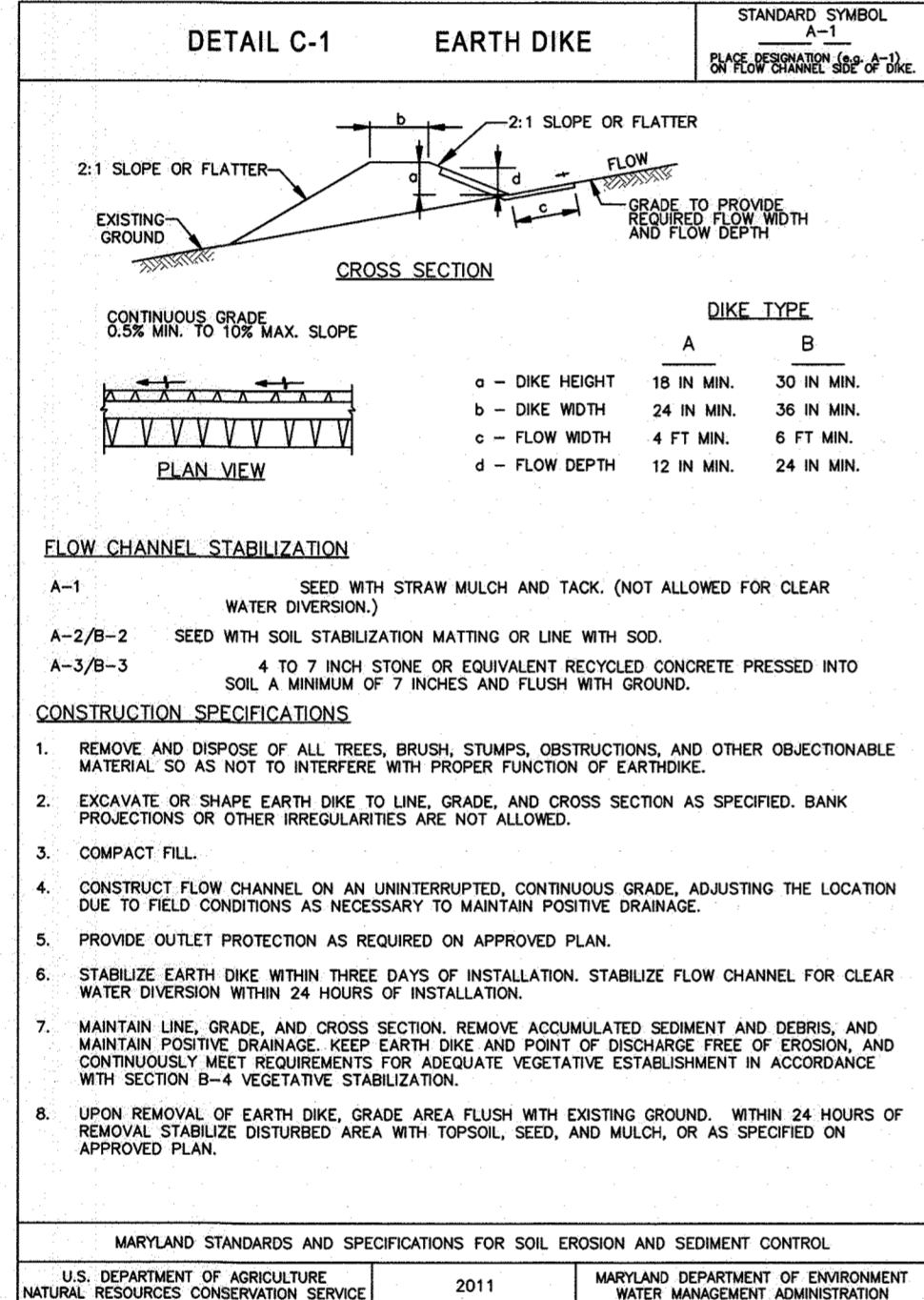
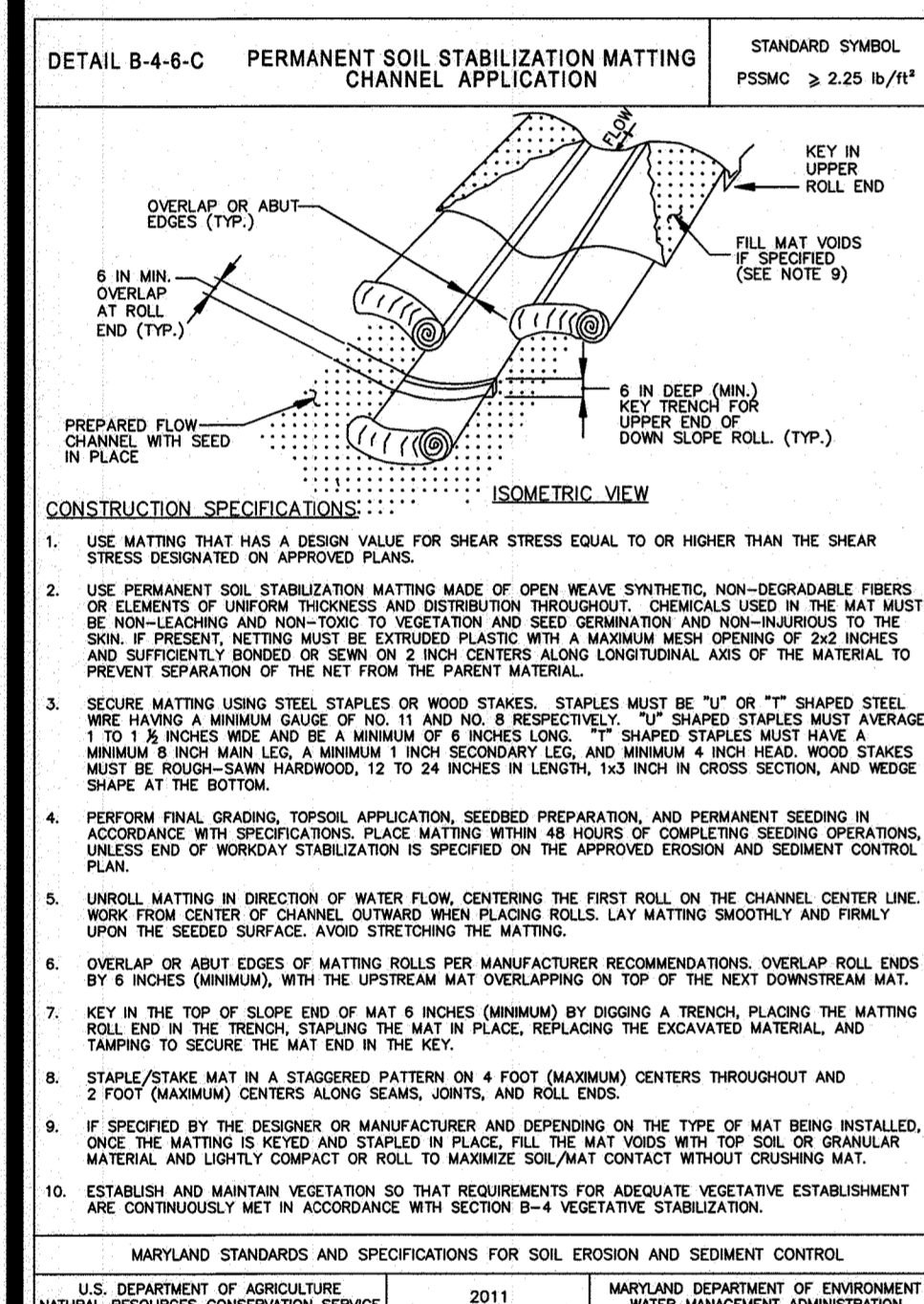
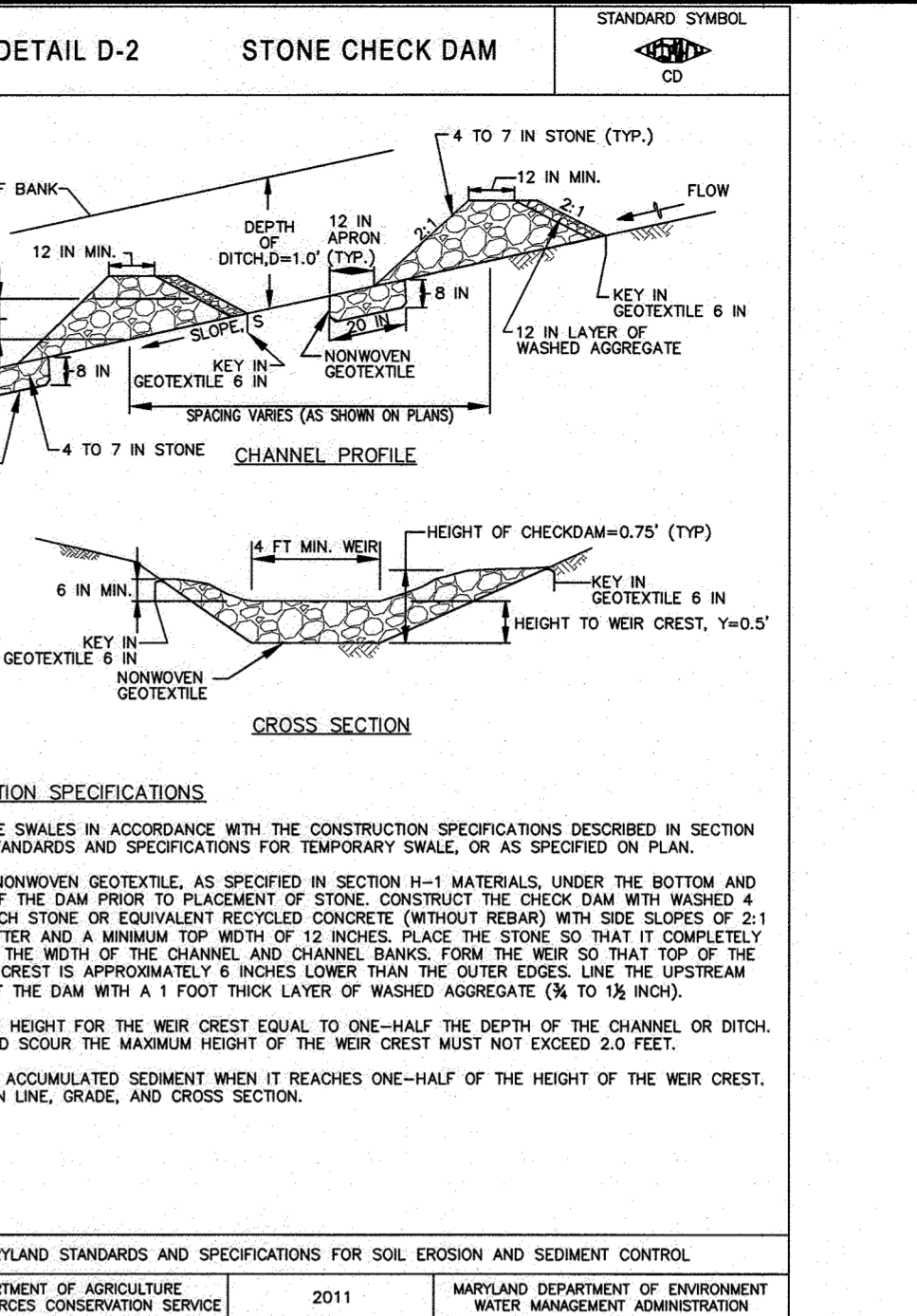
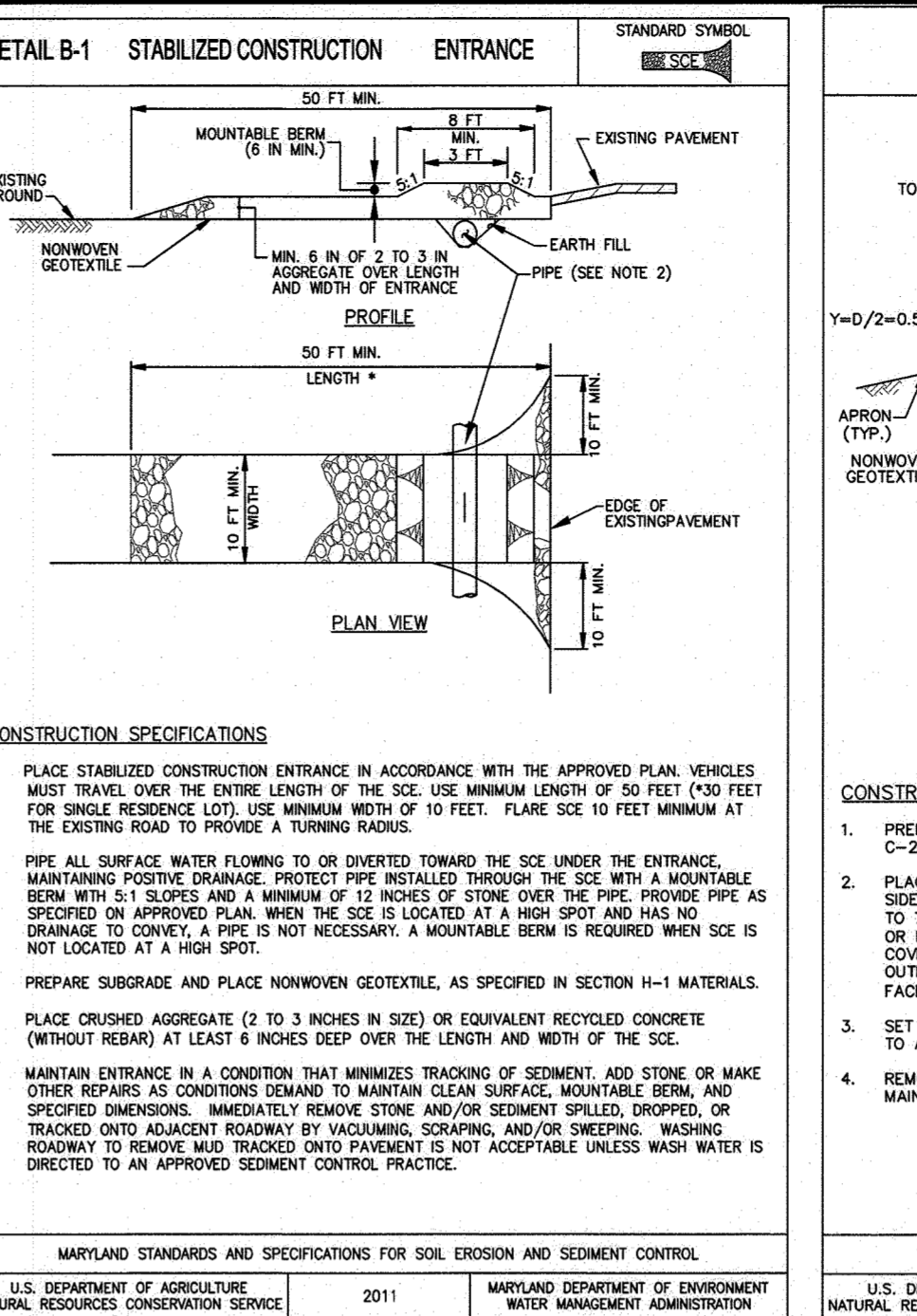
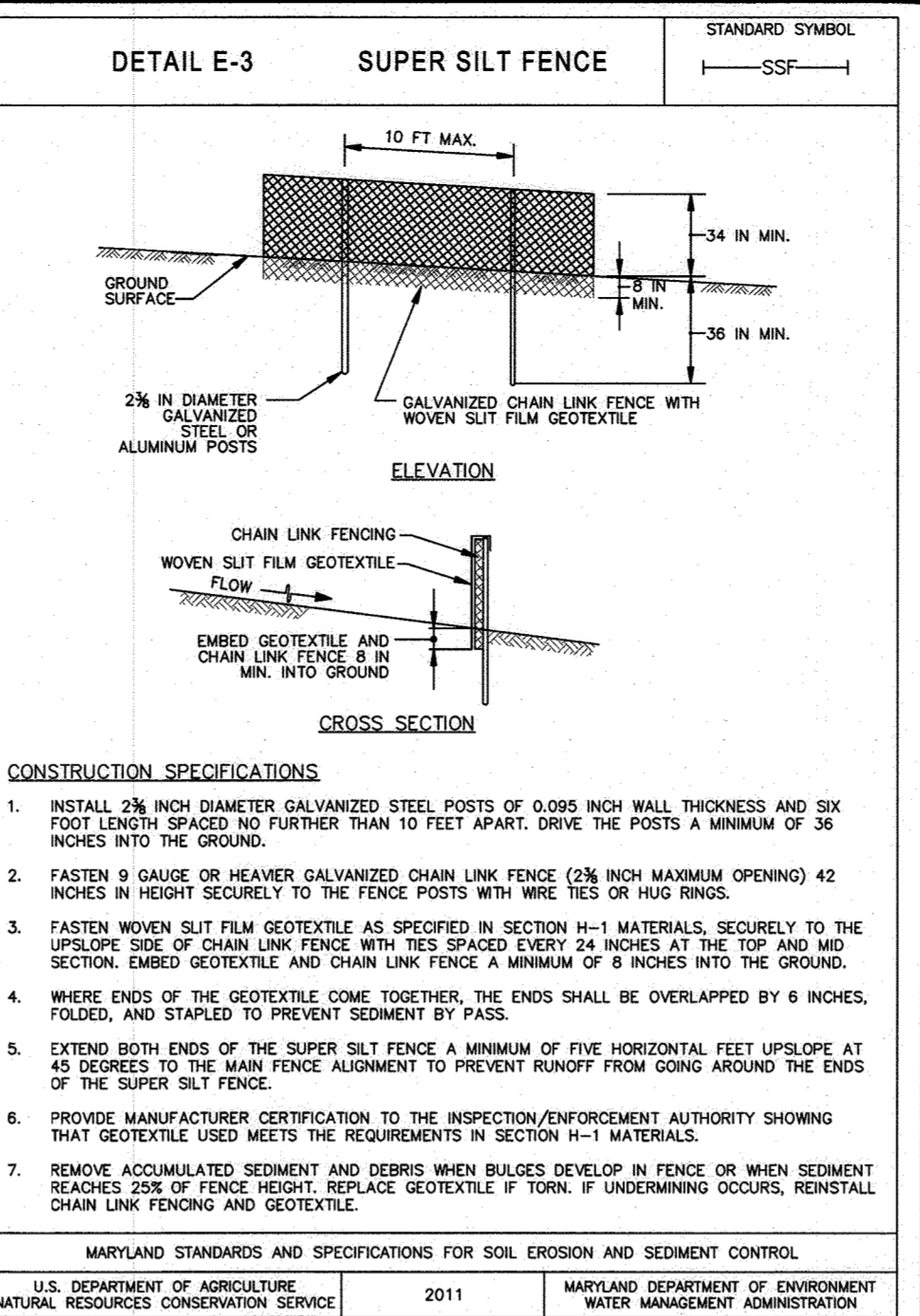
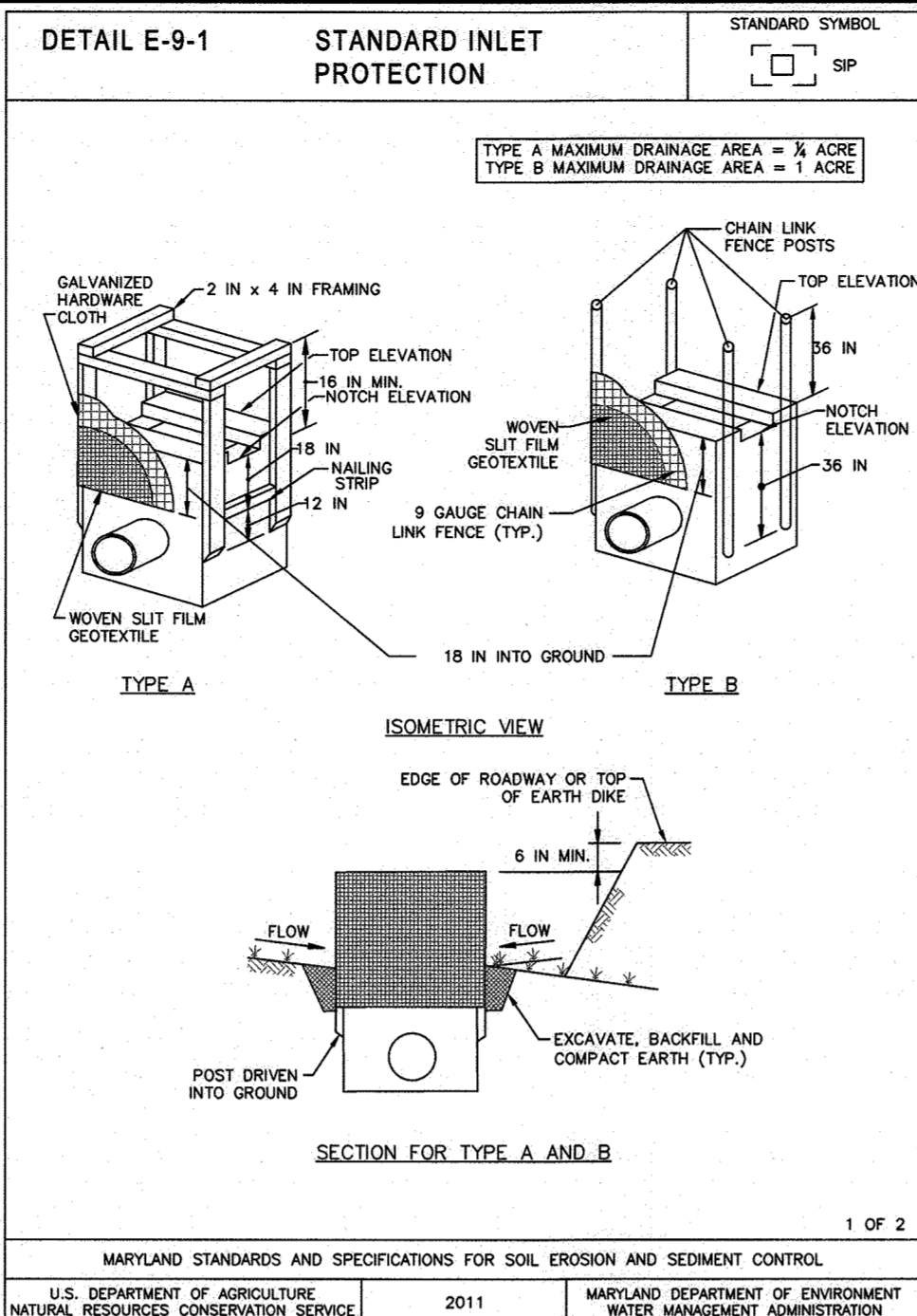
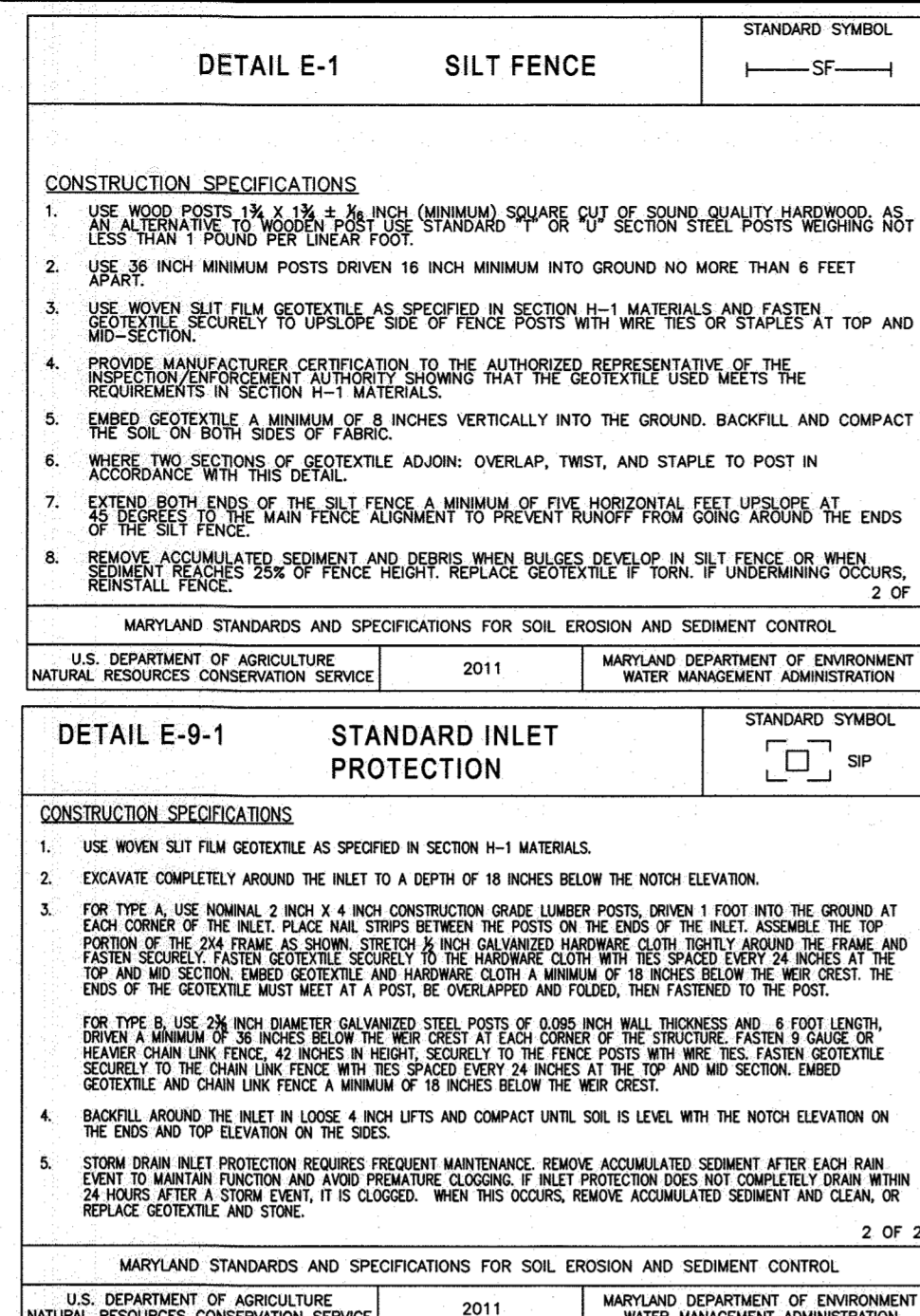
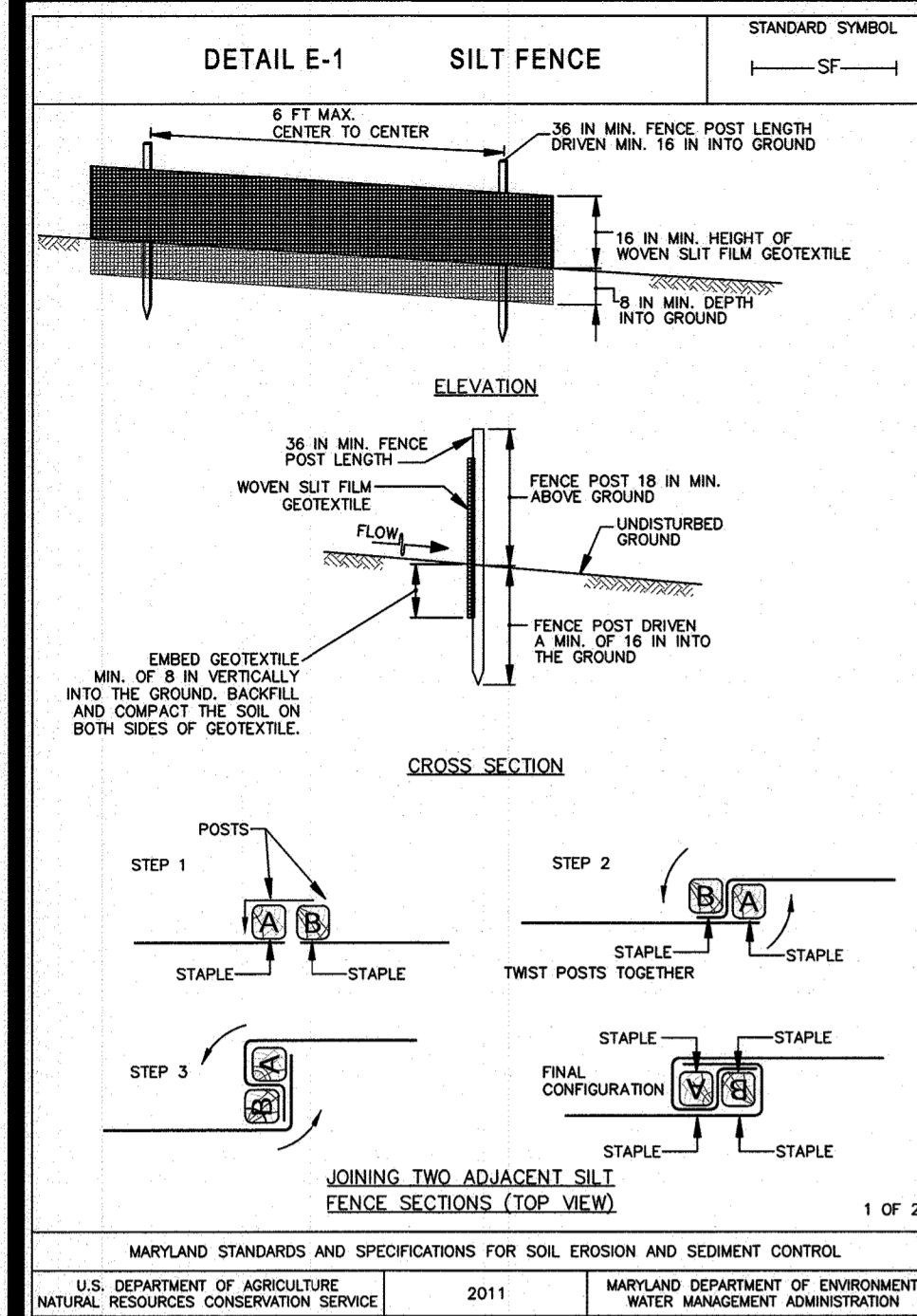
REVISION	DESCRIPTION	BY	DATE
1	REVISED W&S ALIGNMENT TO MEET HOWARD COUNTY DESIGN REQUIREMENTS. REVISED SWM FACILITIES & GRADING	M I	04/04/22

TITLE: SEDIMENT & EROSION CONTROL PHASE II  
 FINAL CONSTRUCTION PLANS  
 SHAMS SUBDIVISION  
 PARCEL NO. 237  
 ELECTION DISTRICT 02  
 TAX MAP #18, GRID 14  
 HOWARD COUNTY, MARYLAND



**DRAWN BY:** TH  
**CHECKED BY:** MI  
**SCALE:** 1"=40'  
**DATE:** 06-19-2022

**SHEET 14 OF 16**  
**HOWARD CO. FILE NO. F-10-081**



**II.1 STANDARDS AND SPECIFICATIONS**

**FOR MATERIALS**

**Table II.1: Geotextile Fabrics**

PROPERTY	TEST METHOD	WOVEN SPLIT FILM GEOTEXTILE		WOVEN MONOFILAMENT GEOTEXTILE		NONWOVEN GEOTEXTILE	
		MD	CD	MD	CD	MD	CD
Grab Tensile Strength	ASTM D-4632	200 lb	200 lb	200 lb	200 lb	200 lb	200 lb
Chd Tensile Strength	ASTM D-4632	150 lb	150 lb	150 lb	150 lb	150 lb	150 lb
Topsoil Tensile Strength	ASTM D-4532	75 lb	75 lb	100 lb	60 lb	60 lb	60 lb
Puncture Strength	ASTM D-6441	450 lb	900 lb	450 lb	450 lb	450 lb	450 lb
Apparent Opening Size*	ASTM D-4751	U.S. Sieve 30 (0.60 mm)	U.S. Sieve 70 (0.21 mm)	U.S. Sieve 70 (0.21 mm)	U.S. Sieve 70 (0.21 mm)	U.S. Sieve 70 (0.21 mm)	U.S. Sieve 70 (0.21 mm)
Permeability	ASTM D-4491	0.05 sec <sup>2</sup>	0.28 sec <sup>2</sup>	1.1 sec <sup>2</sup>	1.1 sec <sup>2</sup>	1.1 sec <sup>2</sup>	1.1 sec <sup>2</sup>
Ultraslow Resistance Retained at 500 Years	ASTM D-4555	70% strength	70% strength	70% strength	70% strength	70% strength	70% strength

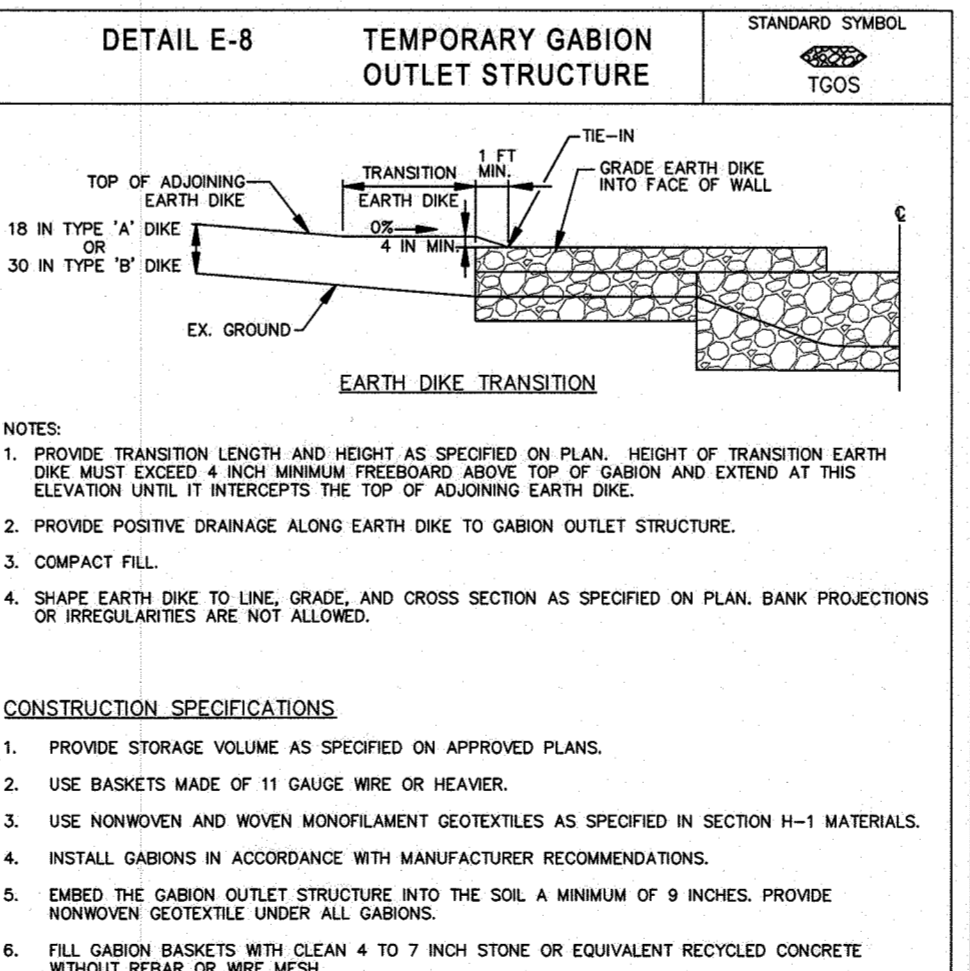
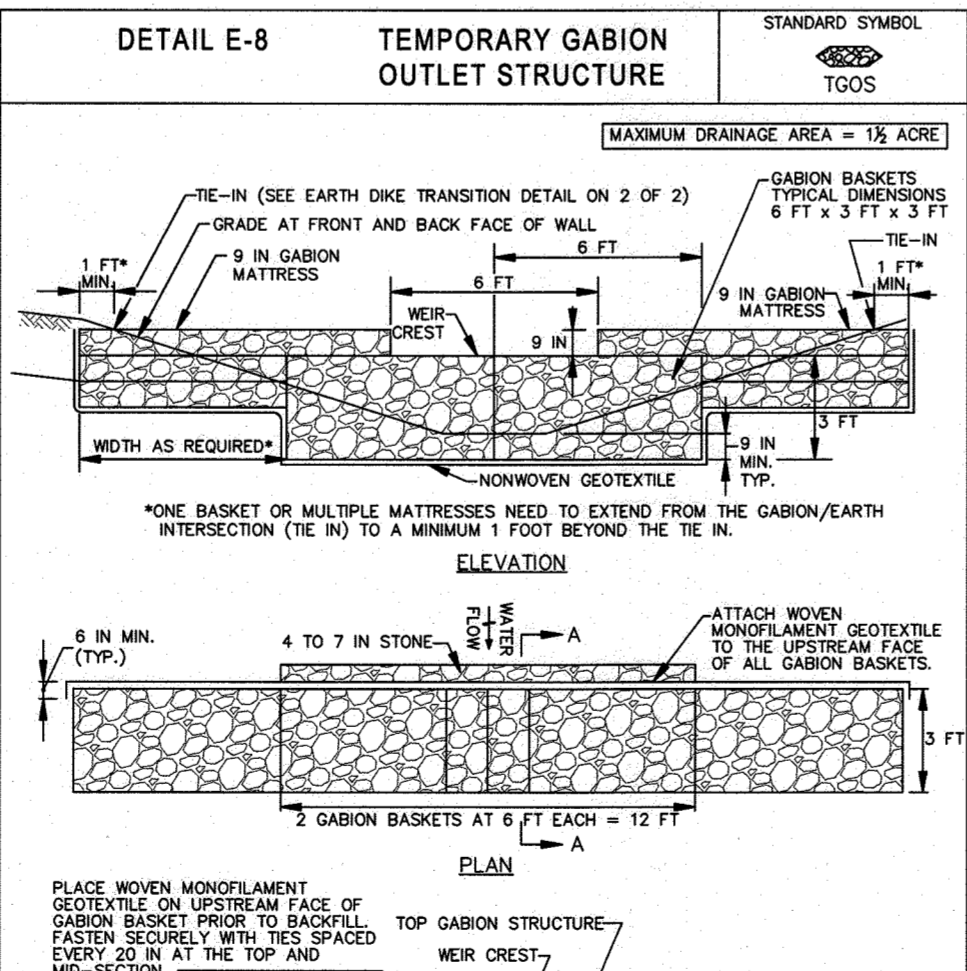
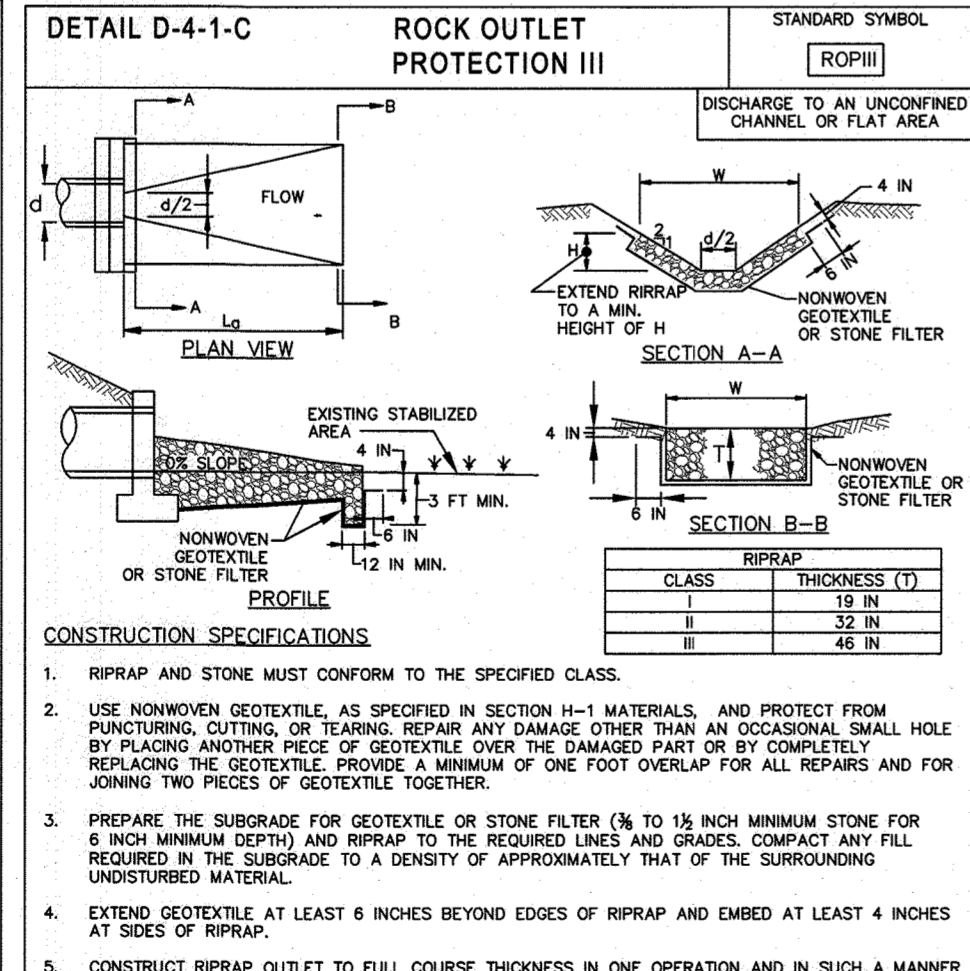
\* A numerical value except apparent opening size (AOS) represent minimum average roll value (MARV). MARV is calculated as the typical minus two standard deviations. MD is machine direction, CD is cross direction.

† Values for AOS represent the average maximum opening.

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

The geotextile must be inert to commonly encountered chemicals and hydrocarbons and must be rot and mold 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 polyethylene or polypropylene, and be formed into a stable network on the filaments or yarns retain their dimensional stability to each other, including shrinkage.

When used as a means of erosion control, geotextiles must be installed over a prepared subgrade. The geotextile must be pulled out over the applied surface. Equipment must not run over exposed fabric. When placing riprap on geotextile, do not exceed a one foot drop height.



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

*Alexander Butcher* 08/17/22  
HOWARD SCD DATE

**ENGINEER'S CERTIFICATE**

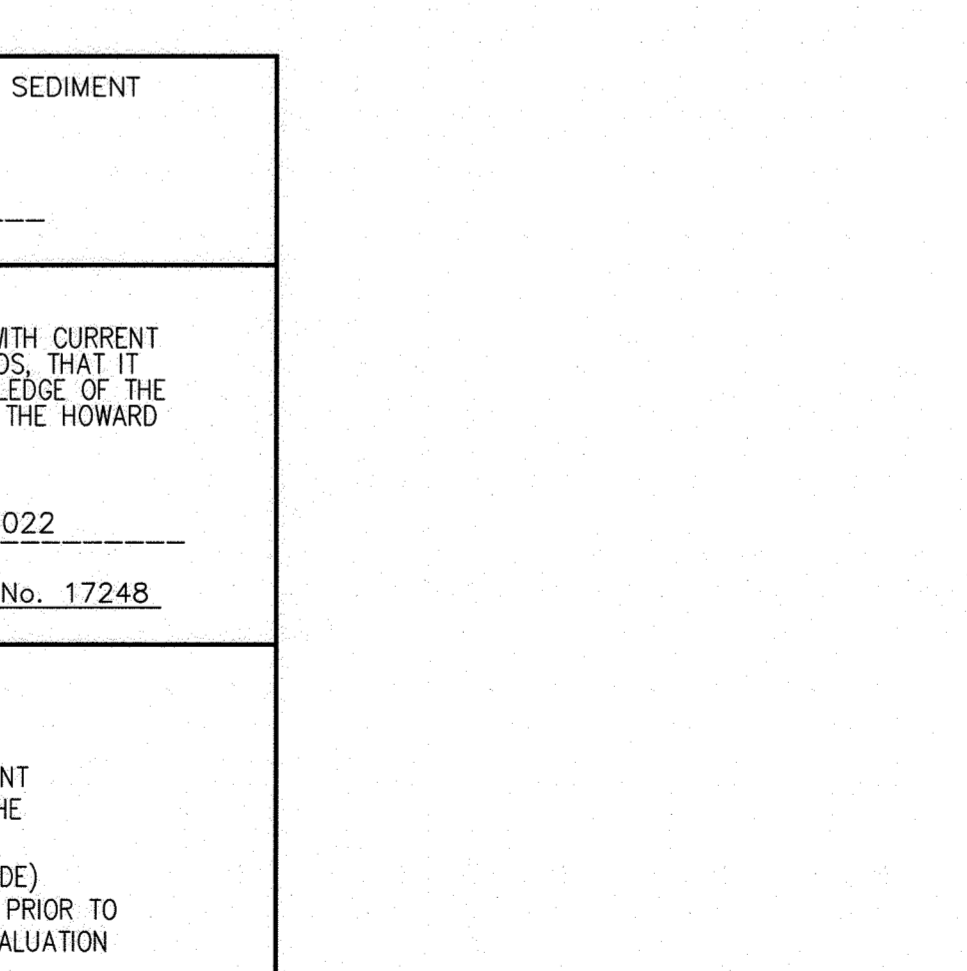
I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE: *Mostafa Izadi* DATE: 06/19/2022  
NAME: MOSTAFA IZADI, PE MD REGISTRATION NO. 17248

**DEVELOPER'S CERTIFICATE**

I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

SIGNATURE: *Olegario Ramirez* DATE: 06/17/2022  
NAME: OLEGARIO RAMIREZ MD REGISTRATION NO. 17248



APPROVED: DEPARTMENT OF PUBLIC WORKS  
*James MK* 09/08/2022  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*11/1/22*  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*02-22*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

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

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

PURPOSE NOTE:  
REVISED W & S LOCATIONS, PLAN & PROFILES AND EASEMENTS TO REFLECT PREFERRED ALIGNMENT THAT MEETS HOWARD CO. DESIGN REQUIREMENTS.  
REVISIONS: GRADING, SWM FACILITIES INCLUDING 2 MICRO-BIOTENTATIONS (M-6), 4 DRYWELLS (M-5) & NON-ROOFTOP DISCONNECTS (N-2)

**"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.  
MOSTAFA IZADI, PE  
LICENSE NO. 17248, EXPIRATION DATE: 02/11/2023

**OWNER/DEVELOPER**  
OLEGARIO RAMIREZ, PRESIDENT  
WEST ONE INVESTMENTS, LLC  
8170 BALTIMORE NATIONALS PIKE  
ELICOTT CITY, MD 21043  
EMAIL: OLEORCFRAMING.COM  
TELEPHONE: 301-748-1010

Advanced Engineering Consultants, DC.  
Engineers & Planners  
P.O. BOX 129 RIDERWOOD, MD 21139  
TEL: 410-382-9180 FAX: 410-296-0505  
mizadi@aec-engineers.biz

**REVISIONS**

NO.	DESCRIPTION	DATE
1	REVISED WAS ALIGNMENT TO MEET HOWARD COUNTY DESIGN REQUIREMENTS, REVISED SWM FACILITIES & GRADING	04/04/22
M 1		

**TITLE: SEDIMENT AND EROSION CONTROL DETAILS**

**FINAL CONSTRUCTION PLANS**

**SHAMS SUBDIVISION**

PARCEL NO. 237  
ELECTION DISTRICT 02  
TAX MAP #18, GRID 14  
HOWARD COUNTY, MARYLAND

**DRAWN BY:** TH MI  
**CHECKED BY:** MI  
**SCALE:**

**DATE:** 06-19-2022

**SHEET 15 OF 16**

**HOWARD CO. FILE NO. F-10-081**

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

A. SOIL PREPARATION

- 1. TEMPORARY STABILIZATION
A. SEEDING PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT...

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...

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...

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

- DEFINITION: THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.
PURPOSE: TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION...

B. MULCHING

- 1. MULCH MATERIALS (IN ORDER OF PREFERENCE)
A. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR...

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...

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

- DEFINITION: TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.
PURPOSE: TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS...

- 1. GENERAL USE
A. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE...

Table with columns: NO., SPECIES, APPLICATION RATE (LB/AC), SEEDING DATES, SEEDING DEPTHS, N, P2O5, K2O, LIME RATE. Includes rows for TALL FESCUE and TURFGRASS MIXTURES.

PERMANENT SEEDING SUMMARY

Summary table for permanent seeding with columns for hardness zone, species, application rate, seeding dates, seeding depths, and fertilizer/lime rates.

- 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...

- 3. SOD MAINTENANCE
A. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AS NECESSARY TO MAINTAIN MOISTURE TO A DEPTH OF 4 INCHES...

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

- DEFINITION: TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.
PURPOSE: TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS...

TEMPORARY SEEDING SUMMARY

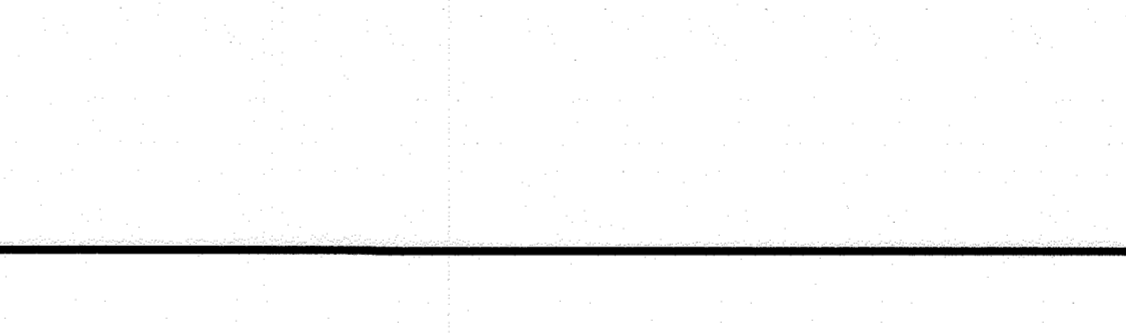
Table with columns: NO., SPECIES, APPLICATION RATE (LB/AC), SEEDING DATES, SEEDING DEPTHS, FERTILIZER RATE, LIME RATE. Includes rows for BARLEY, OATS, and RYE.

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

- DEFINITION: A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.
PURPOSE: TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS...

- 1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.
2. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1...

18" PSD-2 PROFILE TO CPW-2



NOTE: SEE SHEET 15 OF 16 FOR 18" PSD-1 PROFILE TO CPW-1

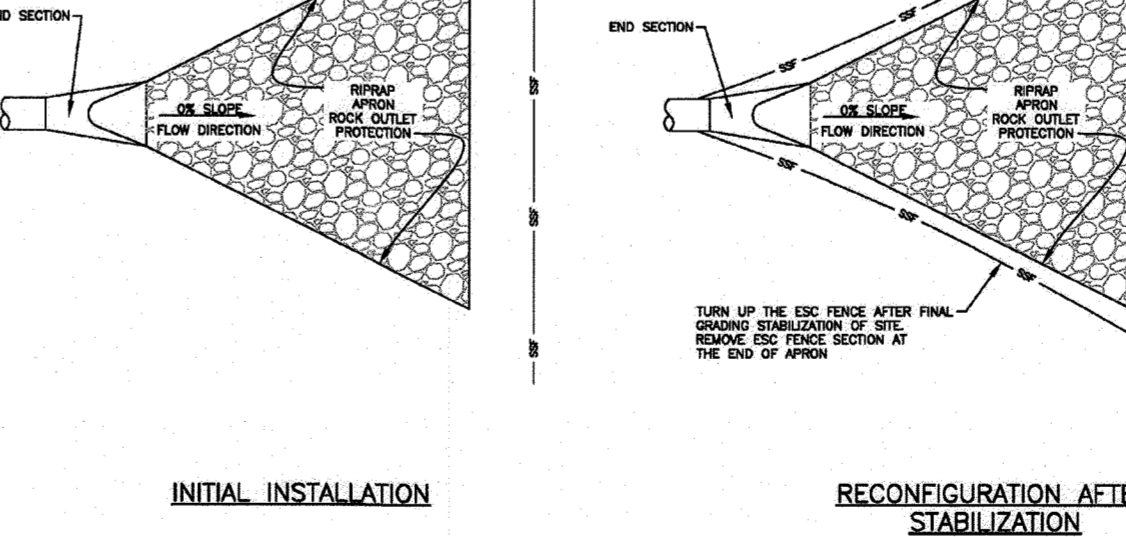
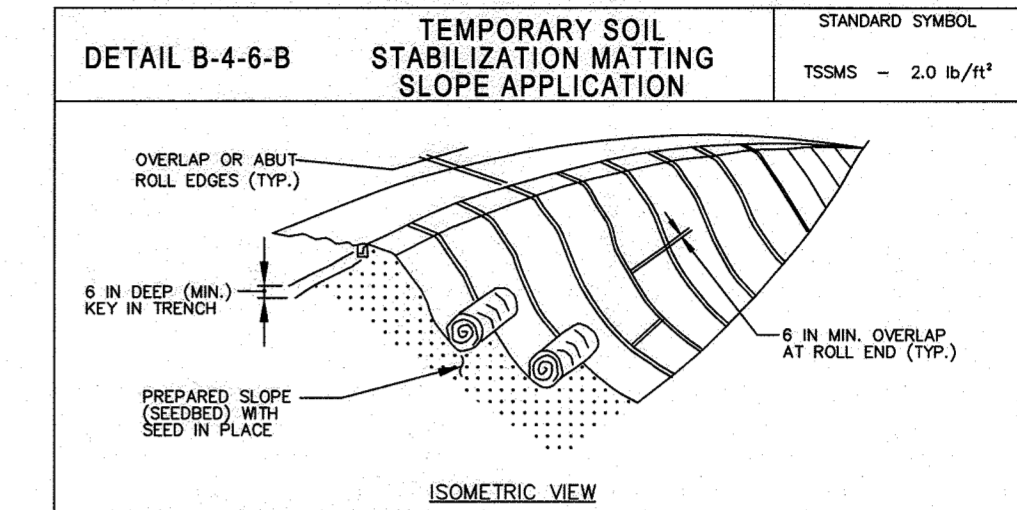


Table with columns: Name, Title, Department, and Detail. Includes information for Howard County, Maryland Department of Public Works.

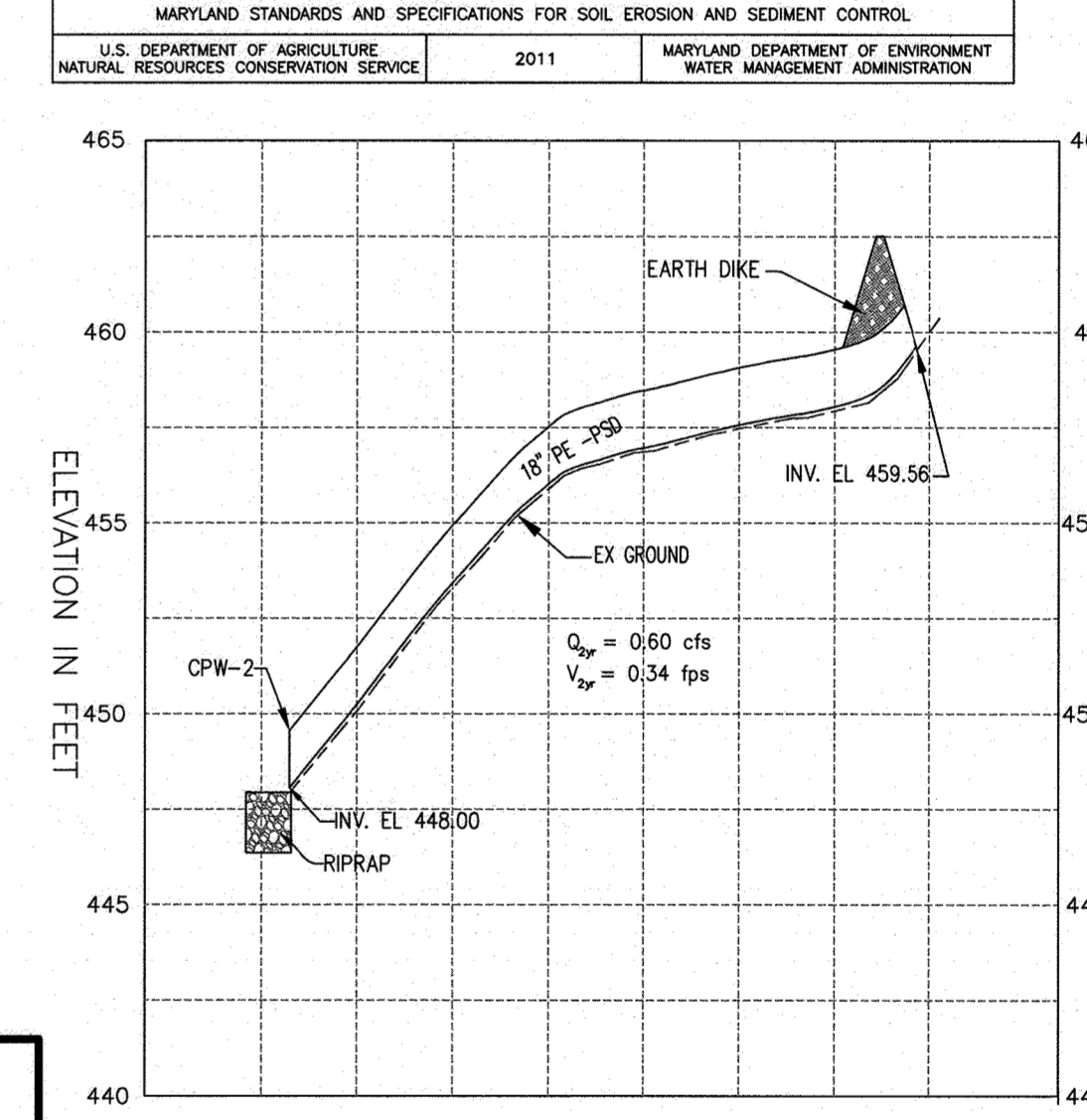
STANDARD STABILIZATION NOTE

- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
A.) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND



CONSTRUCTION SPECIFICATIONS

- 1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC) MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMALLER RESISTANT CHEMICALS USED IN THE MAT...



NOTE: SEE SHEET 15 OF 16 FOR 18" PSD-1 PROFILE TO CPW-1

APPROVED: DEPARTMENT OF PUBLIC WORKS
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT
CHIEF, DEVELOPMENT ENGINEERING DIVISION

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
ALEXANDER BRATCHE
DATE: 08/17/22
ENGINEER'S CERTIFICATE
I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS...

DEVELOPER'S CERTIFICATE
I HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM...

PURPOSE NOTE:
REVISED W & S LOCATIONS, PLAN & PROFILES AND EASEMENTS TO REFLECT PREFERRED ALIGNMENT THAT MEETS HOWARD CO. DESIGN REQUIREMENTS FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

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EMAIL: OLE@CFRAMING.COM
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mizadi@aec-engineers.biz
REVISIONS BY DATE DESCRIPTION
FINAL CONSTRUCTION PLANS SHAMS SUBDIVISION
PARCEL NO. 237
ELECTION DISTRICT 02
TAX MAP #18, GRID 14
HOWARD COUNTY, MARYLAND
TITLE: SEDIMENT AND EROSION CONTROL NOTES
DRAWN BY: TH
CHECKED BY: MI
SCALE:
DATE: 06-19-2022
SHEET 16 OF 16
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