

- GENERAL NOTES:
- THE SUBJECT PROPERTY IS ZONED RC-DEO PER THE 10/06/13 COMPREHENSIVE ZONING REGULATIONS.
 - THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT (410) 313-1800 AT LEAST FIVE (5) 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.
 - THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH MAXIMUM TWO FOOT CONTOUR INTERVALS PREPARED BY VANMAR ASSOCIATES, INC., MAY 2017.
 - THE BASIS OF BEARINGS FOR THIS PLAN IS THE MARYLAND COORDINATE SYSTEM (NAD83/91) PER HOWARD COUNTY SURVEY CONTROL STATIONS:
HO.CO.#07CA N.610,731.347 E.1,292,224.348
HO.CO.#07FC N.608,315.535 E.1,291,525.534
 - DISTANCES SHOWN HEREON ARE GROUND DISTANCES.
 - THIS PROPERTY IS NOT LOCATED WITHIN THE METROPOLITAN DISTRICT. THIS LOT WILL BE SERVED BY PRIVATE WATER AND PRIVATE SEWERAGE.
 - STORMWATER MANAGEMENT WILL BE PROVIDED BY BIORETENTION (F-G), MICRO-BIORETENTION (M-G), A CISTERN (M-1) AND ROOFTOP DISCONNECT (N-2) TO MEET THE REQUIREMENTS OF THE MARYLAND STORMWATER DESIGN MANUAL DATED MAY, 2009, AND IN ACCORDANCE WITH THE MD SWM ACT OF 2007.
 - THERE ARE NO HISTORIC STRUCTURES, CEMETERIES OR ENVIRONMENTAL FEATURES (I.E. STREAMS OR THEIR BUFFERS, STEEP SLOPES, WETLANDS, ETC.) FOUND ON THIS SITE.
 - ANY DAMAGE TO THE STATE HIGHWAY RIGHT OF WAYS ON THIS SITE WILL BE THE CORRECTED AT THE CONTRACTOR'S EXPENSE.
 - THIS PLAN IS SUBJECT TO PRIOR DPZ FILE NO. ECP-16-026, APPROVED MAY 26, 2016.
 - PROPERTY OWNER: THE LISBON VOLUNTEER FIRE COMPANY, INC.
ADDRESS: 1330 WOODBINE ROAD, WOODBINE, MARYLAND 21797
PROPERTY MAINTENANCE: THE LISBON VOLUNTEER FIRE COMPANY, INC.
 - PROPERTY INFORMATION: TAX MAP: 07 GRID: 11 PARCEL: 488
TAX ACCOUNT # 04-340574, 04-340582
DEED REFERENCE: LIBER 13092, FOLIO 041
PLAT NO.
TOTAL SITE AREA: 0.226 AC.±

- THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL 45-2003 AND ZONING REGULATIONS AS AMENDED BY COUNCIL BILL 75-2003. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN. FOREST BANK NAME: LOTS 1 - 7, BUILDABLE PRESERVATION PARCEL A & QUARTZ HILL III FOREST MITIGATION BANK; FILE # F-13-070
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF FLOODPLAIN, WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS, OR FOREST CONSERVATION EASEMENT AREAS.
- SITE DEVELOPMENT PLAN APPROVAL BY THE DEPARTMENT OF PLANNING AND ZONING IS REQUIRED PRIOR TO BUILDING PERMITS BEING ISSUED FOR THE CONSTRUCTION OF NEW BUILDINGS.
- THE AFFORESTATION REQUIREMENT WILL BE MET BY PURCHASING FOREST CREDIT FROM AN EXISTING OFF-SITE FOREST BANK AT THE RATE OF 1.23 AC. FOR NEW FOREST CREDIT. (See General Note #12)
- THE SUBJECT PROPERTY CONSISTS OF TWO (2) RECORDED LOTS. NO FURTHER SUBDIVISION (INCLUDING LOT CONSOLIDATION) IS REQUIRED.
- THE SUBJECT PROPERTY IS SERVED BY AN EXISTING WELL (#10-95-2137) AND A PROPOSED SEPTIC SYSTEM. PERCOLATION TESTING AND SEPTIC AREA LAYOUT HAVE BEEN APPROVED BY THE HOWARD COUNTY HEALTH DEPARTMENT. NO SPECIMEN TREES ARE PROPOSED FOR REMOVAL.
- THE SUBJECT PROPERTY IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA PER THE NATIONAL FLOOD INSURANCE PROGRAM. SEE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 24027C0030D, EFFECTIVE NOVEMBER 6, 2013.
- SITE LIGHTING TO BE BUILDING MOUNTED WALL PACKS, DOWN DIRECTED SO AS TO CAUSE NO OFF SITE GLARE.
- A) THE R-1-1 ("STOP") SIGN FOR THE DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED
- B) THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
- C) ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (M&MUTCD).
- D) ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED ("QUICK PUNCH" TYPE), SQUARE TUBE POST (1 1/2" GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. THE ANCHOR SHALL NOTE EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- IT HAS BEEN DETERMINED THAT A LANDSCAPE SURETY IS NOT REQUIRED BECAUSE THE VOLUNTEER FIRE STATION WILL SERVE AS A PUBLIC SERVICE TO THE COMMUNITY. *Landscaping must be provided in per raise with the Landscaping Plan (Sheet 10).*
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- EXISTING UTILITIES ARE BASED ON PUBLIC UTILITY RECORDS AND VISUAL OBSERVATION.
- THE FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY VANMAR ASSOCIATES, INC., DATED JULY 11, 2017 AND WAS APPROVED ON AUGUST 14, 2017.
- THE TRAFFIC STUDY/APFD STATEMENT FOR THIS PROJECT WAS PREPARED BY VANMAR ASSOCIATES, INC., DATED MAY 24, 2017 AND WAS APPROVED ON JUNE 26, 2017.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- THE ZONING DIVISION HAS DETERMINED THAT THE SILO MAY EXCEED THE 34-FOOT HEIGHT REQUIREMENT AND THE ENTIRE FIRE HOUSE STRUCTURE WILL BE CONSIDERED A GABLE ROOF STRUCTURE NOT TO EXCEED 40 FEET IN HEIGHT.
- THIS AREA DESIGNATES A PRIVATE SEWAGE AREA OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THESE AREAS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE AREA. RECORDATION OF A MODIFIED SEWAGE AREA SHALL NOT BE NECESSARY.
- SEPTIC SYSTEM DESIGN FLOWS:
SLEEPING FOR 3 PEOPLE (BEDS) @ 100 GPD = 300 GPD
300-PERSON SOCIAL HALL @ 5 GPD = 1,500 GPD
TOTAL DESIGN FLOW = 1,800 GPD
- THE HEALTH DEPARTMENT RECOMMENDS THAT THE WASTEWATER PUMP SYSTEM BE WIRED TO A CIRCUIT ENERGIZED BY THE EMERGENCY GENERATOR.

34. MDE MUST APPROVE THE DISCHARGE FROM THE RAINWATER SKID TO THE STORMWATER DEVICE PRIOR TO HEALTH DEPT. APPROVAL OF BUILDING PERMIT.

APPROVED
FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.
HOWARD COUNTY HEALTH DEPARTMENT

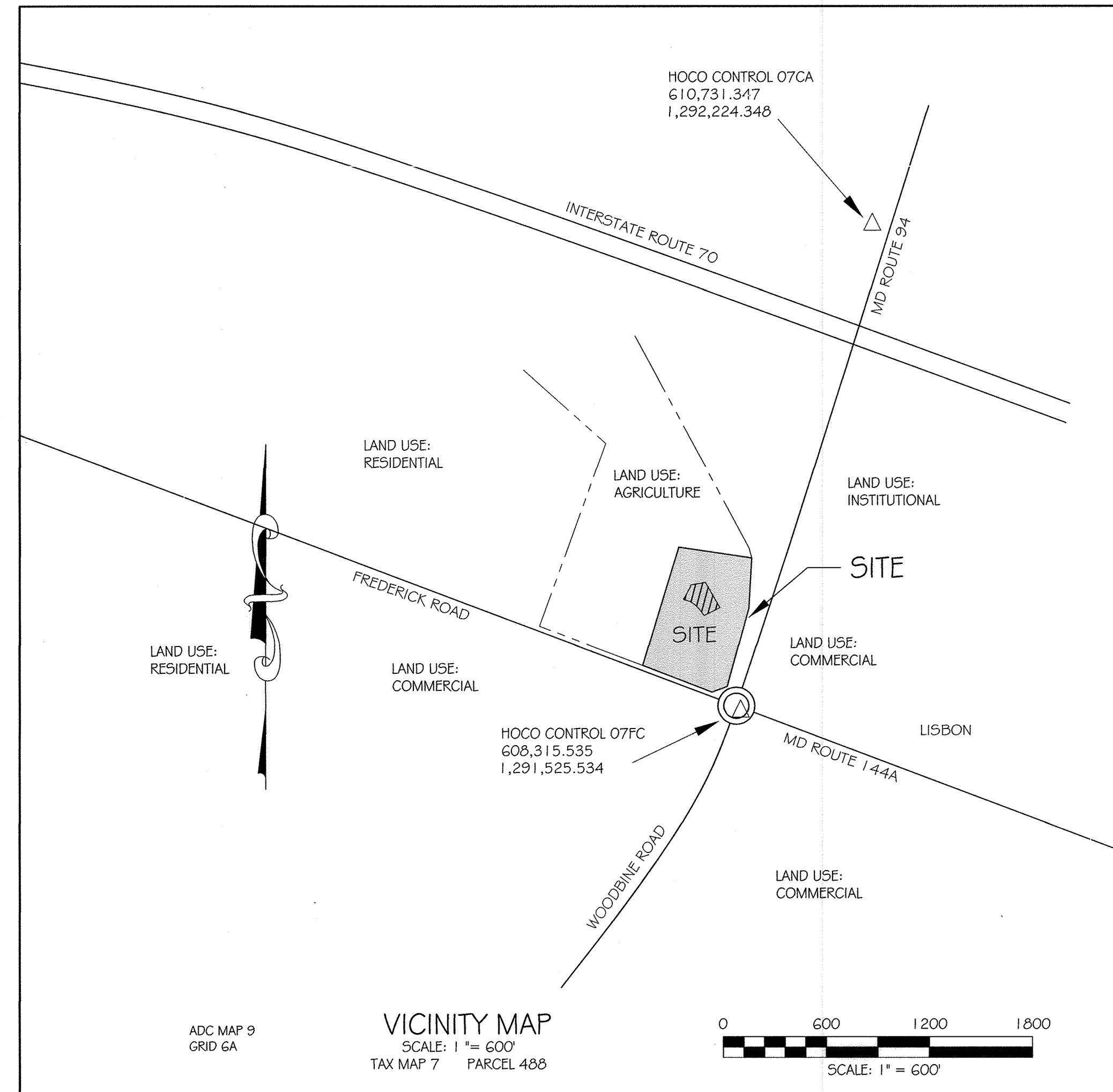
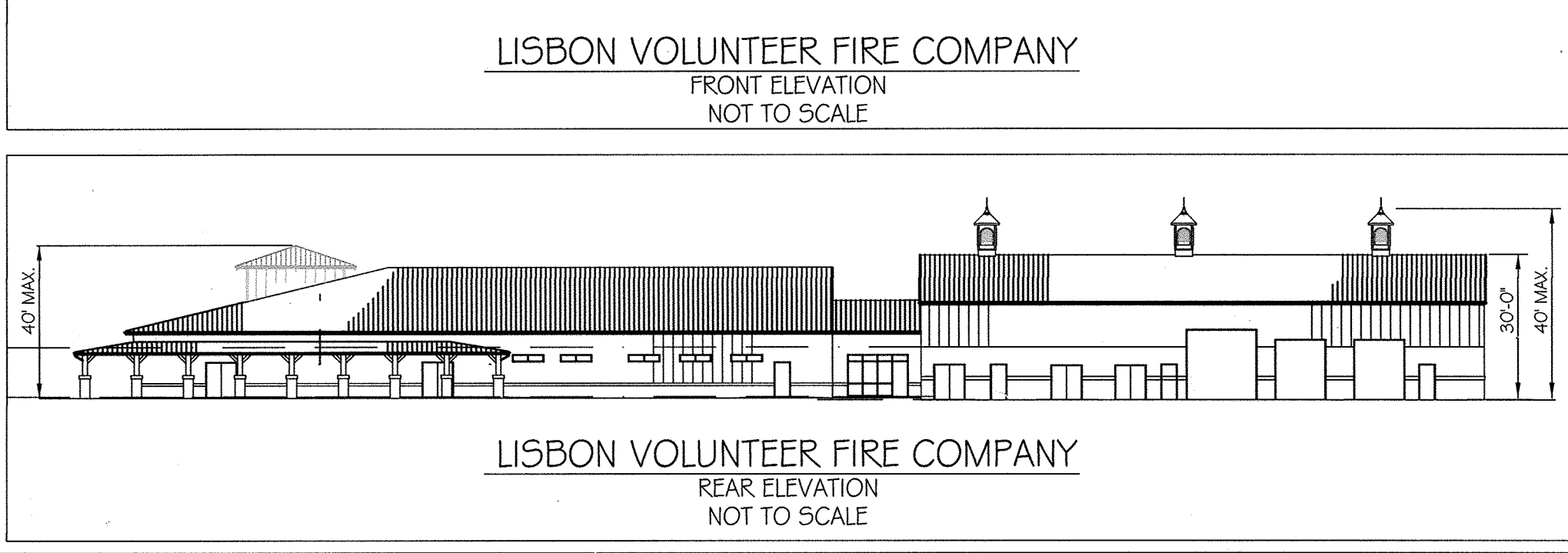
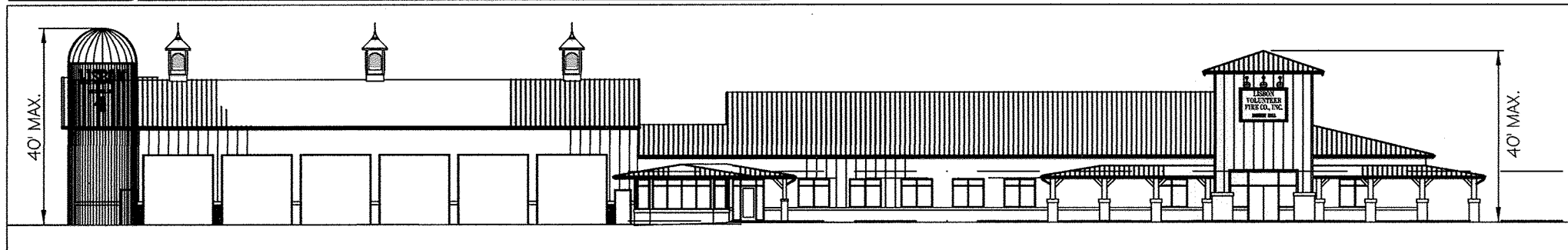
Madison for Maureen Rogman 7/6/2015
COUNTY HEALTH OFFICER 2 *MS* DATE *MGR*

APPROVED
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

N. Valmicevic 7-12-18
DIRECTOR DATE

Neil S. DeJure 7-11-18
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Chad Edmiston 6-12-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION & DATE



- SHA CONSTRUCTION NOTES:
- THE CONTRACTOR SHALL VERIFY EXISTING PAVEMENT ELEVATIONS. CROSS SECTION DESIGNS INCLUDING CROSS SLOPES SHALL BE MAINTAINED TO THE BEST EXTENT PRACTICAL.
 - THE PROPOSED CULVERT AND END TREATMENT TO BE PRIVATELY OWNED AND MAINTAINED.
 - THE SHA STANDARD MD 354.01 SHALL BE USED FOR CONCRETE END WALLS.
 - MARYLAND DEPARTMENT OF THE ENVIRONMENT STANDARD DETAILS D-4-1-B AND D-4-1-C SHALL BE USED FOR RIP-RAP OUTLET PROTECTION.
 - THE FOLLOWING SHA STANDARDS FOR TEMPORARY TRAFFIC CONTROL ARE REQUIRED FOR THIS PROJECT: MD 104.00, MD 104.01 AND MD 620.02-01.
 - SEE SHEET 14 FOR PAVEMENT STRIPING, DETAILS AND ADDITIONAL CROSS SECTIONS.

LOT/PARCEL NUMBER	FACILITY NAME # NUMBER	PRACTICE TYPE (QUANTITY)	PUBLIC	PRIVATE	HOA MAINTAINS	MISC.
LOT 3, LOWER TRAIL	BIO-RETENTION FACILITY #1	BIO-RETENTION (F-G)		X		
LOT 3, LOWER TRAIL	MICRO-BIORETENTION FACILITY #2	MICRO-BIORETENTION (M-G)		X		
LOT 3, LOWER TRAIL	MICRO-BIORETENTION FACILITY #3	MICRO-BIORETENTION (M-G)		X		
LOT 3, LOWER TRAIL	CISTERN	CISTERN (M-1)		X		
LOT 3, LOWER TRAIL	NON ROOF-TOP DISCONNECT	DISCONNECT (N-2)		X		

HOWARD COUNTY GEODETIC CONTROL STATIONS:

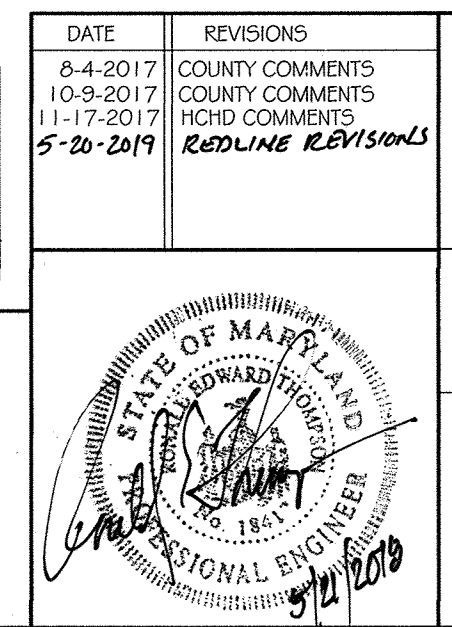
HO. CO. #07CA N.610,731.347
E.1,292,224.348
ELEV. = 619.303
HO. CO. #07FC N.608,315.535
E.1,291,525.534
ELEV. = 591.373

OWNER / DEVELOPER:
LISBON VOL. FIRE COMPANY
c/o CURTIS LOWREY
P.O. BOX 40,
LISBON, MD 21765
443-472-7765

STREET ADDRESS
16104 FREDERICK ROAD, WOODBINE, MD. 21797

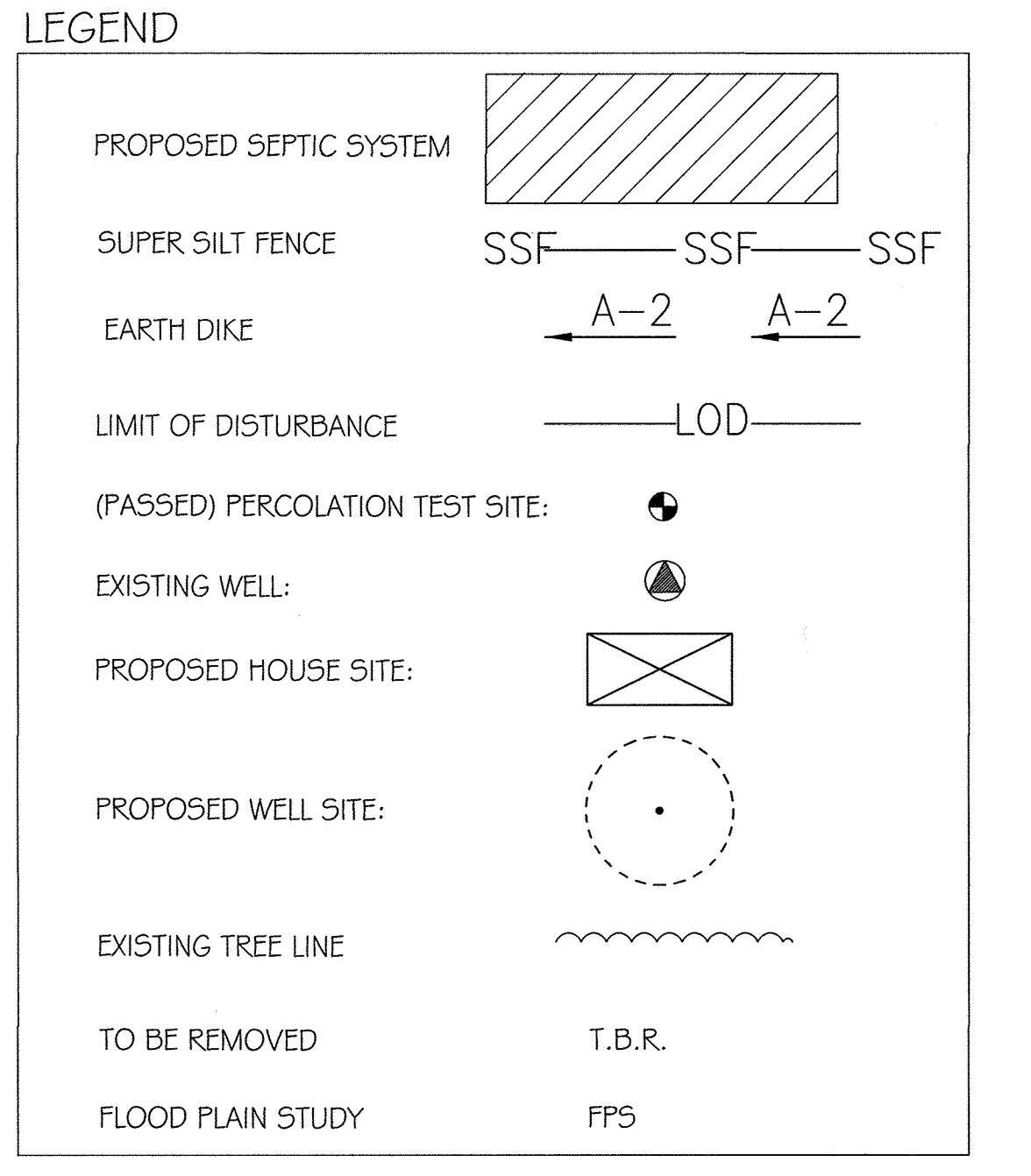
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL No.	ZONING	TAX MAP#	ELECT. DISTRICT
LOWER TRAIL		LOT 3 / P. 488	RC-DEO	07	4
PLAT #	GRID #				CENSUS TRACT
44596	11				6040.01
WATER CODE: NA					SEWER CODE: NA

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18417, EXPIRATION DATE: 09/18/19
SIGNED: *Ronald E. Thompson* DATE: 5/21/2018
RONALD E. THOMPSON, P.E.



SHEET INDEX	
SHEET NO.	DESCRIPTION
1 OF 15	TITLE SHEET
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3 OF 15	SITE NOTES AND DETAILS
4 OF 15	SEDIMENT CONTROL PLAN AND SOILS MAP
5 OF 15	SEDIMENT CONTROL NOTES AND DETAILS
6 OF 15	STORMWATER MANAGEMENT PLAN AND NOTES
7 OF 15	STORMWATER MANAGEMENT NOTES AND DETAILS
8 OF 15	STATE HIGHWAY ENTRANCE PLAN AND DETAILS
9 OF 15	DRAINAGE AREA MAP
10 OF 15	FOREST CONSERVATION & LANDSCAPE PLAN, NOTES & DETAILS
11 OF 15	EXISTING CONDITIONS
12 OF 15	BORING LOGS AND SPECIFICATIONS
13 OF 15	SEPTIC SYSTEM PLAN AND PROFILE
14 OF 15	STATE HIGHWAY STRIPING PLAN AND DETAILS
15 OF 15	STATE HIGHWAY CROSS SECTIONS

- SITE ANALYSIS DATA CHART
- TOTAL AREA OF SUBMISSION: 8.23 AC.±
 - LIMIT OF DISTURBED AREA: 5.40 AC.±
 - EXISTING ZONING: RC-DEO (PER 10/06/2013 COMPREHENSIVE ZONING PLAN)
 - EXISTING USE: RESIDENTIAL/OPEN SPACE.
PROPOSED USE: VOLUNTEER FIRE DEPARTMENT 24,257
 - TOTAL FLOOR SPACE OF PROPOSED BUILDING: 24,257 SQ. FT.
 - PARKING REQUIRED:
EMPLOYEES: 1 SPACE PER EMPLOYEE = 10 SPACES (10 EMPLOYEES)
OFFICE: 6,800 SQ. FT. (9.3 SPACES PER 1,000 SQ. FT.) = 22 SPACES
SOCIAL HALL: 9,130 SQ. FT. (10 SPACES PER 1,000 SQ. FT.) = 91 SPACES
TOTAL SPACES REQUIRED: 123 SPACES
TOTAL SPACES PROVIDED: 134 SPACES
 - PARKING PROVIDED: 134 SPACES (INCLUDING 6 HANDICAPPED)
 - OPEN SPACE: N/A
 - RECREATIONAL AREA: N/A 24,257
 - BUILDING COVERAGE: 24,257 SQ. FT.
 - PREVIOUS HOWARD COUNTY FILES: ECP-16-026
 - TOTAL AREA OF FLOODPLAIN ON SITE: 0.00 AC.±
 - TOTAL AREA OF STEEP SLOPES IN EXCESS OF 25%: 0.00 AC.±
 - NET TRACT AREA: 8.23 AC.±
 - TOTAL AREA OF WETLANDS: 0.00 AC.±
 - TOTAL AREA OF FOREST: 0.00 AC.±
 - TOTAL GREEN OPEN AREA: 5.69 AC.±
 - TOTAL IMPERVIOUS AREA: 2.54 AC.±
 - AREA OF ERODIBLE SOILS: 0.00 AC.±
 - TOTAL AREA OF STREAM ON SITE: 0.00 AC.±
 - TOTAL AREA OF STREAM BUFFER ON SITE: 0.00 AC.±




SOIL LEGEND		
MAP SYMBOL	MAPPING UNIT	HYDROLOGIC SOIL GROUP
GgA	GLENELG LOAM, 0% - 3% SLOPES	B
GgB	GLENELG LOAM, 3% - 8% SLOPES	C
GmA	GLENVILLE SILT LOAM, 0% - 3% SLOPES	C
MaC	MANOR LOAM, 0% - 15% SLOPES	B

TITLE SHEET
LOT 3, LOWER TRAIL
LISBON VOLUNTEER FIRE CO., INC.

TAX MAP: 7 ELECTION DISTRICT: No. 4 SCALE: AS SHOWN
GRID NO: 11 HOWARD COUNTY, MARYLAND DATE: JANUARY, 2017
PARCEL NO: 488 EX. ZONING: RC-DEO SHEET 1 OF 15

VANMAR ASSOCIATES, INC.
Engineers Surveyors Planners
310 South Main Street Mount Airy, Maryland 21771
(301) 829-2890 (301) 831-5015 (410) 549-2751
Fax (301) 831-5603 ©Copyright, Latest Date Shown 5DP-17-035


LEGEND


PROPOSED SEPTIC SYSTEM 

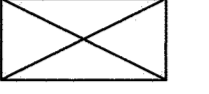
SUPER SILT FENCE SSF—SSF—SSF


EARTH DIKE A-2 A-2


LIMIT OF DISTURBANCE —LOD—


(PASSED) PERCOLATION TEST SITE: 

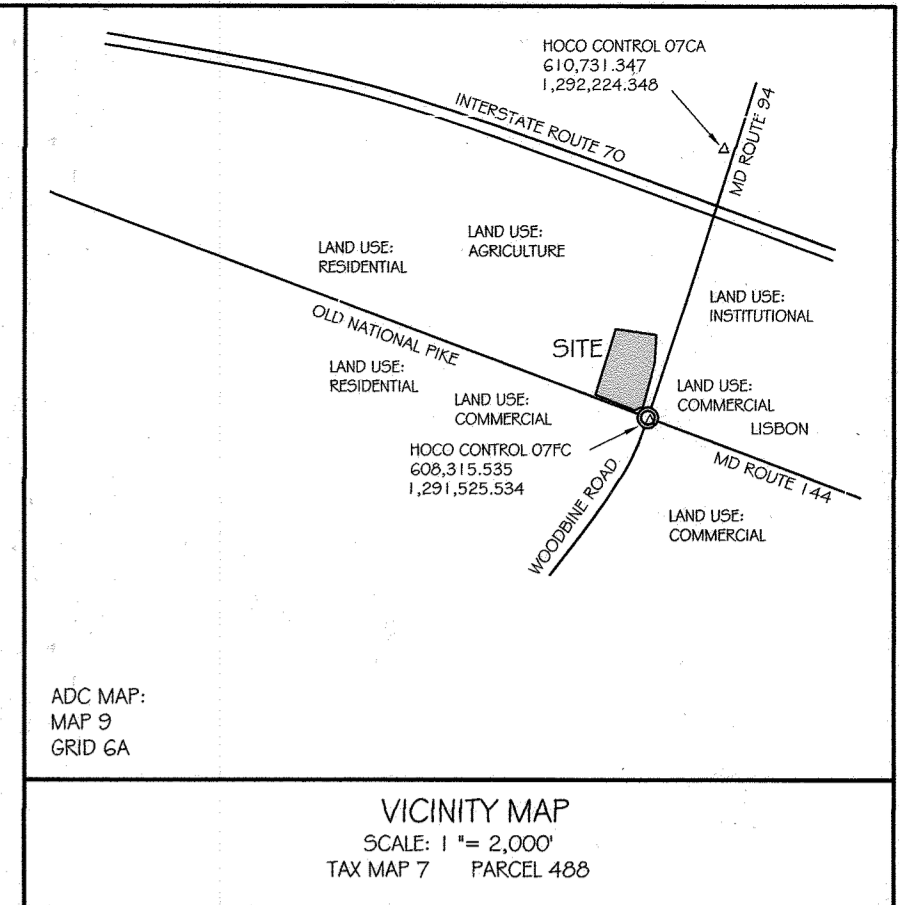
EXISTING WELL: 

PROPOSED HOUSE SITE: 

PROPOSED WELL SITE: 

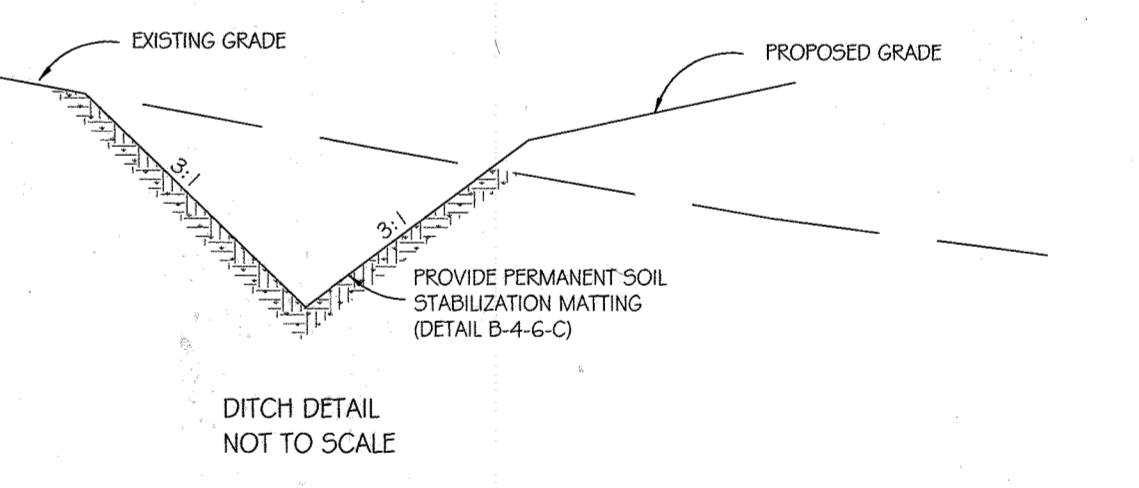
EXISTING TREE LINE 

PAVING 



SOIL LEGEND

MAP SYMBOL	MAPPING UNIT	HYDROLOGIC SOIL GROUP
GgA	GLENELG LOAM, 0% - 3% SLOPES	B
GgB	GLENELG LOAM, 3% - 8% SLOPES	C
GmA	GLENVILLE SILT LOAM, 0% - 3% SLOPES	C
MaC	MANOR LOAM, 8% - 15% SLOPES	B



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

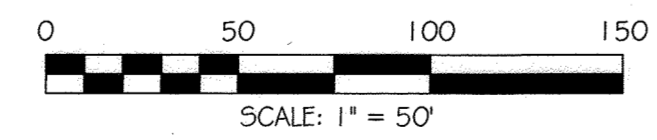
John R. Robertson 5/29/18
DIRECTOR DATE

APPROVED
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Walter J. Jones 7-12-18
DIRECTOR DATE

Keith Sedbrook 7-11-18
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Chad E. Thompson 6-12-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



OWNER / DEVELOPER:
LISBON VOL. FIRE COMPANY
c/o CURTIS LOWREY
P.O. BOX 40,
LISBON, MD 21765
443-472-7765

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

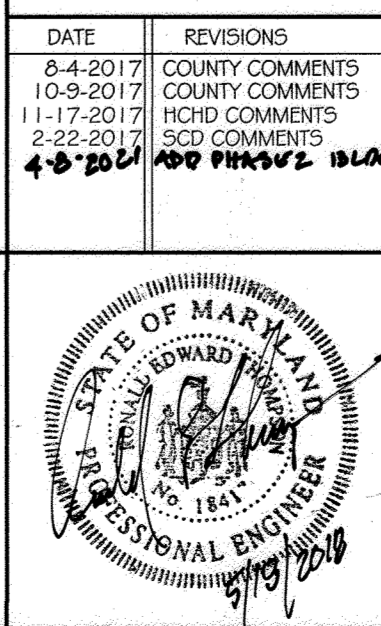
Walter J. Jones 05/21/18
DEVELOPER DATE

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18417, EXPIRATION DATE: 03/18/18

SIGNED: *Ronald E. Thompson* DATE: 5/18/2018
RONALD E. THOMPSON, P.E.

ENGINEER'S CERTIFICATE:
"I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT AND THE 2011 MARYLAND STANDARDS & SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL."

Ronald E. Thompson 5/18/2018
RONALD E. THOMPSON, P.E. DATE



SEDIMENT CONTROL PLAN AND SOILS MAP
LOT 3, LOWER TRAIL
LISBON VOLUNTEER FIRE CO., INC.

TAX MAP: 7 ELECTION DISTRICT: No. 4 SCALE: 1" = 50'
GRID NO: 11 HOWARD COUNTY, MARYLAND DATE: JANUARY, 2017
PARCEL NO: 488 EX. ZONING: RC-DEO SHEET 4 OF 15

VANMAR ASSOCIATES, INC.
Engineers Surveyors Planners
310 South Main Street Mount Airy, Maryland 21771
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Fax (301) 831-5603 ©Copyright, Latest Date Shown SDP-17-035

B-4.2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

- Definition: The process of preparing the soil to permit adequate vegetative stabilization.
Purpose: To provide a suitable soil medium for vegetative growth.
Conditions Where Practice Applies: Where vegetative stabilization is to be established.
Criteria: A. Soil Preparation
1. Temporary Stabilization
a. Seeding
i. Topsoil preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment...

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.
Conditions Where Practice Applies: To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.
Criteria: A. Seeding
1. Specifications
a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory...

Table with 4 columns: No., Species, Application Rate (lb/ac), Seeding Dates, Seeding Depth. Includes rows for Kentucky Bluegrass and Perennial Ryegrass.

Hardness Zone (from Figure B.3): Cb
Seed Mixture (from Table B.1):

Table with 4 columns: No., Species, Application Rate (lb/ac), Seeding Dates, Seeding Depth. Includes rows for Annual Ryegrass and Millet.

B-4.5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

- Definition: To stabilize disturbed soils with permanent vegetation.
Purpose: To use long-lived permanent grasses and legumes to establish permanent ground cover on disturbed soils.
Conditions Where Practice Applies: Exposed soils where ground cover is needed for 6 months or more.
Criteria: A. Seeding Mixture
1. Selection
a. Select one or more of the species or seed mixtures listed in Table B.3 for the appropriate Plant Hardness Zone (from Figure B.3)...

Table with 4 columns: No., Species, Application Rate (lb/ac), Seeding Dates, Seeding Depth. Includes rows for Annual Ryegrass and Millet.

* NOTE: IT IS IMPORTANT TO PROTECT THE SWM AREAS FROM EROSION. DELAY CONSTRUCTION OF THESE FACILITIES UNTIL UPSTREAM AREAS HAVE BEEN ADEQUATELY STABILIZED...

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

APPROVED
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

APPROVED
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

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APPROVED
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

VEGETATIVE SPECIFICATIONS AND NOTES

- 1. Distribute soil as a part of the present cover as possible while performing grading.
2. Disturbance of bare earth from grading operation to be 1 day for the establishment of permanent vegetation or mulching if appropriate...
3. Establish permanent vegetative cover immediately after final grading is completed.
4. Recommended temporary seed mixture:
Seed: Bahia Ryegrass @ 150 lbs. per acre
Perennial Ryegrass @ 150 lbs. per acre
Fertilizer: 10-10-10 @ 1,000 lbs. per acre
Mulch: Straw at 1.5 tons per acre

Table with 4 columns: No., Species, Application Rate (lb/ac), Seeding Dates, Seeding Depth. Includes rows for Kentucky Bluegrass and Perennial Ryegrass.

Hardness Zone (from Figure B.3): Cb
Seed Mixture (from Table B.1):

Table with 4 columns: No., Species, Application Rate (lb/ac), Seeding Dates, Seeding Depth. Includes rows for Annual Ryegrass and Millet.

B-4.6 STANDARDS AND SPECIFICATIONS

- 1. General Specifications
a. Turfgrass sod must be Maryland State Certified. Sod labels must be made available to the foreman and inspector.
b. Sod must be machine cut to a uniform soil thickness of 3/4 inch, plus or minus 1/4 inch, at the time of cutting.
c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the top 10 percent of the section.
d. Sod must not be harvested or transported when moisture content (excessively dry or wet) may adversely affect its survival.

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 collects the potential for erosion, sedimentation, and changes to drainage patterns.

Condition Where Practice Applies: Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

- 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.
3. Stockpiles must be stabilized in accordance with the 377 day stabilization requirement as well as Standard B-4.1. Incremental Stabilization and Standard B-4.4 Temporary Stabilization.
4. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup.

Maintenance: The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio.

Grading: The stockpile area must be graded to a minimum of 1/4 inch per foot slope. The stockpile area must be graded to a minimum of 1/4 inch per foot slope.

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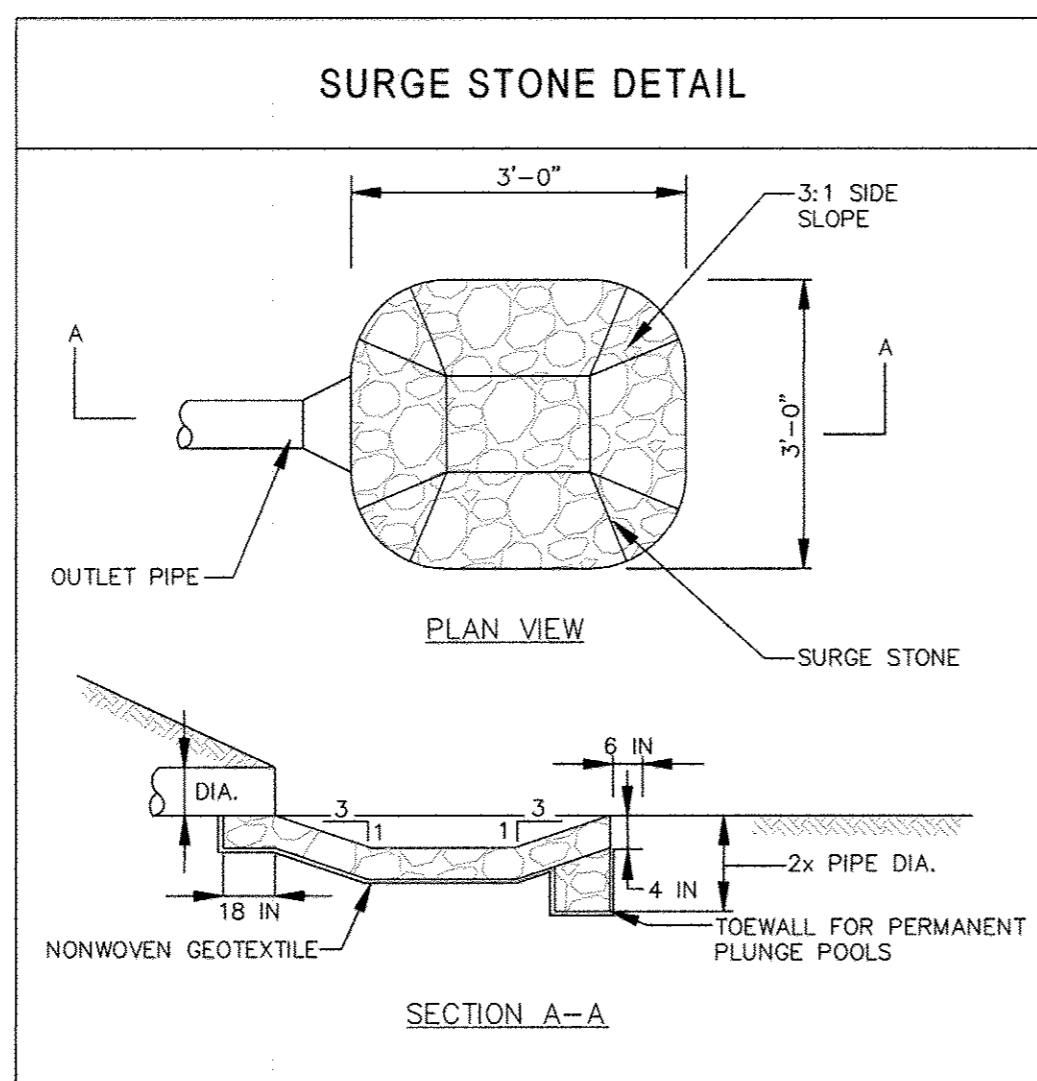
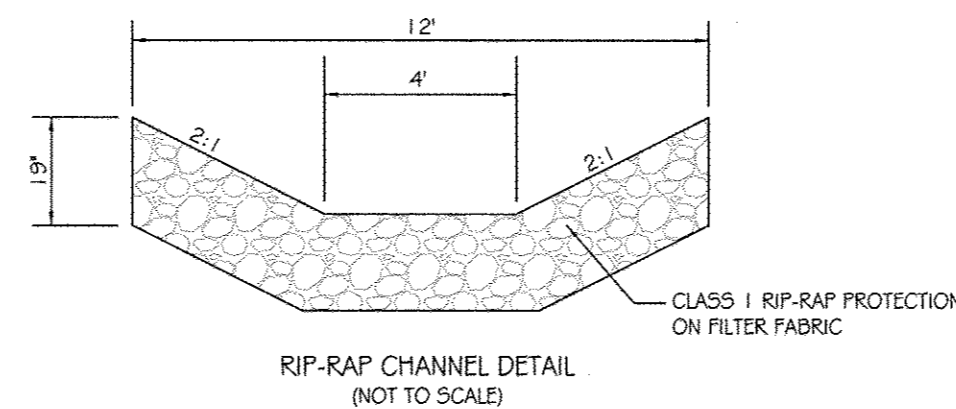
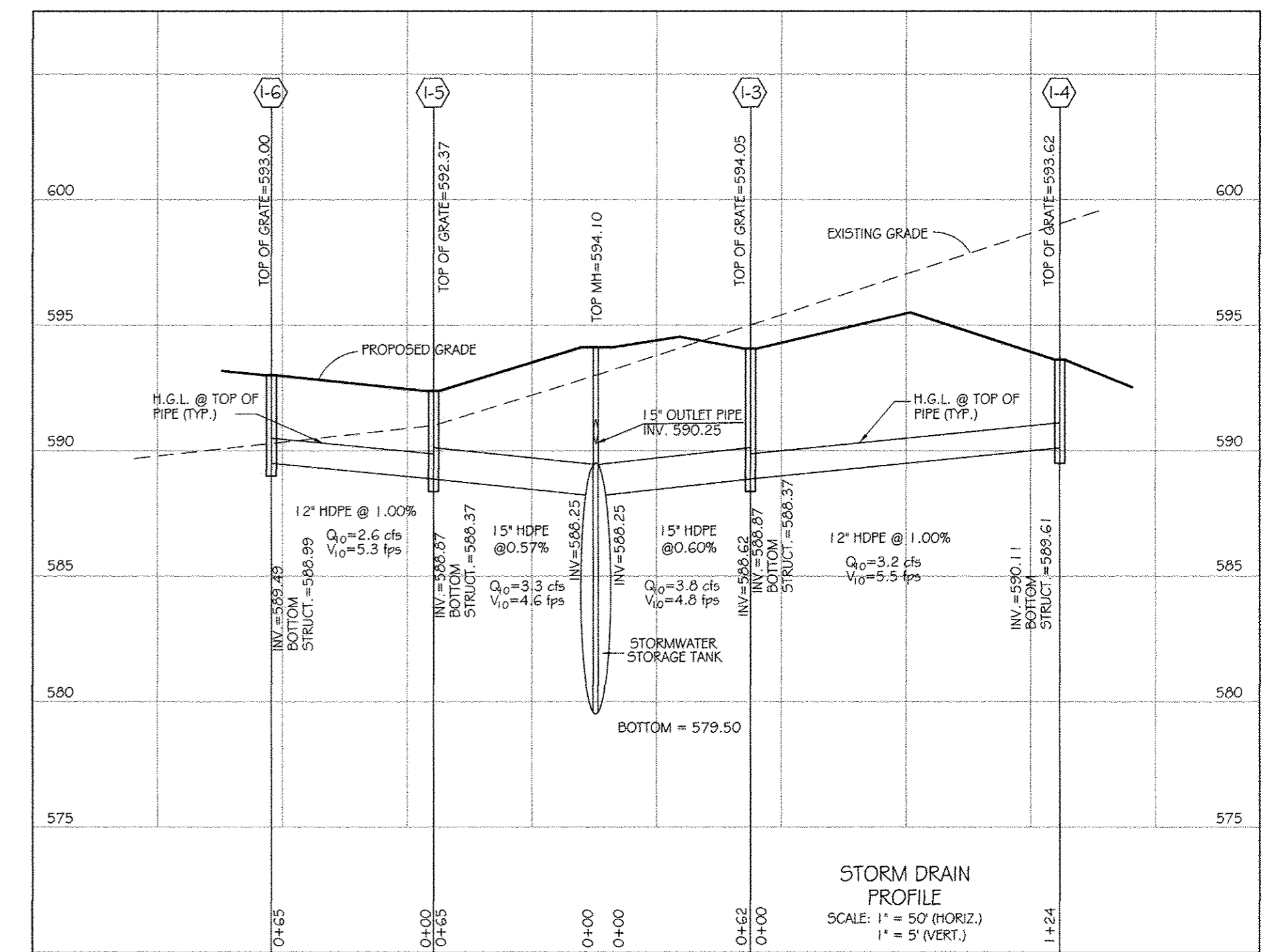
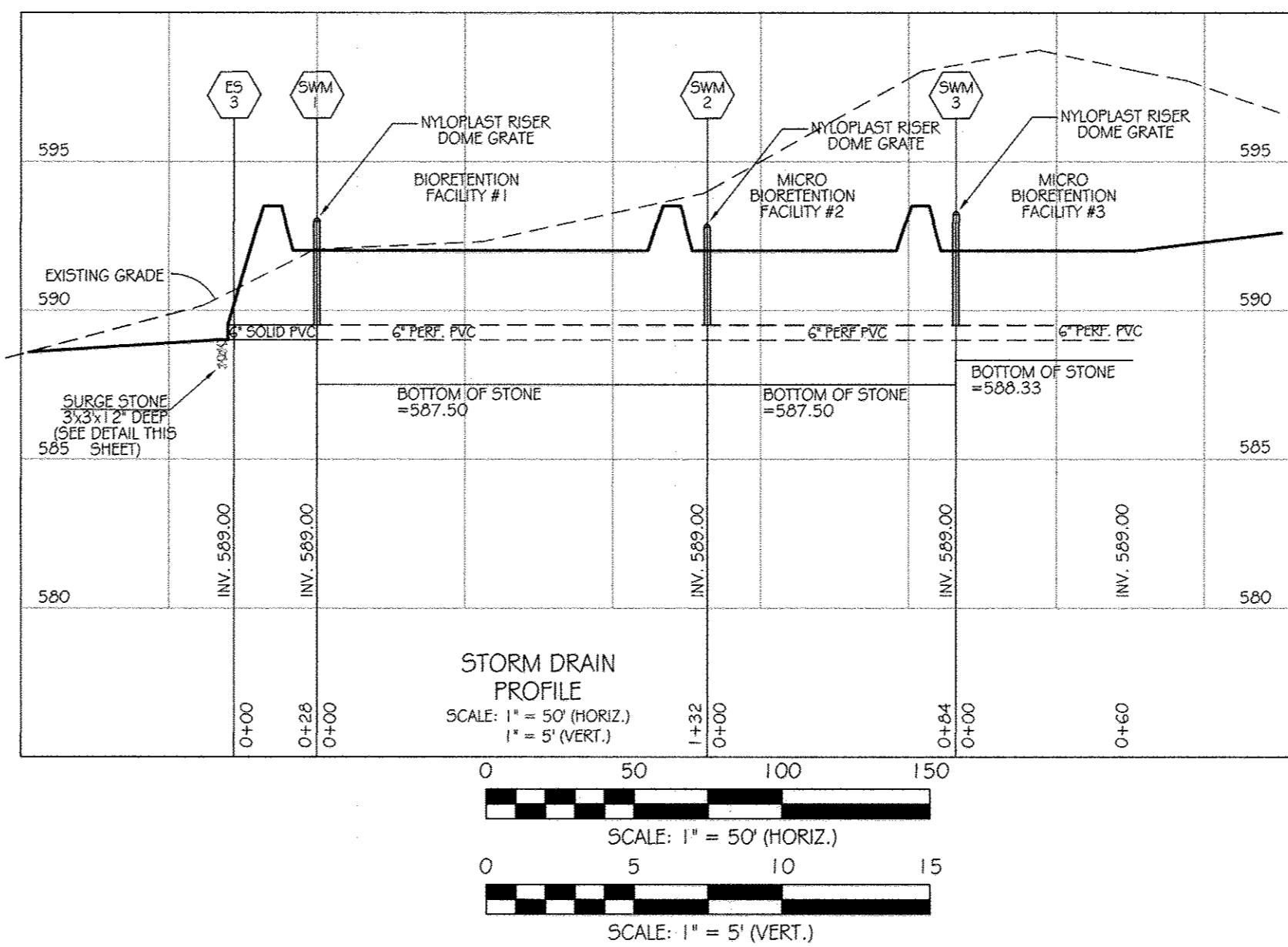
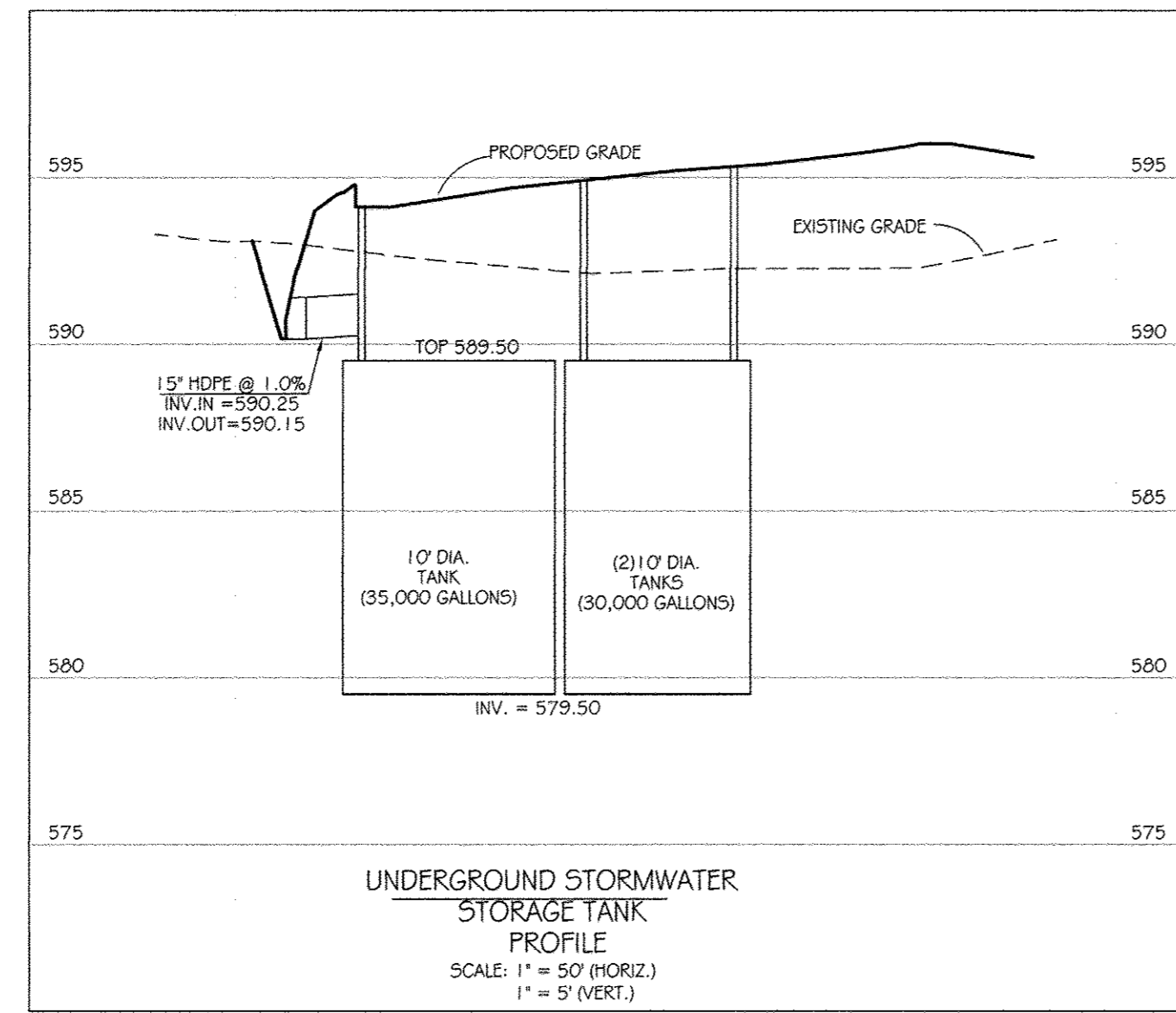
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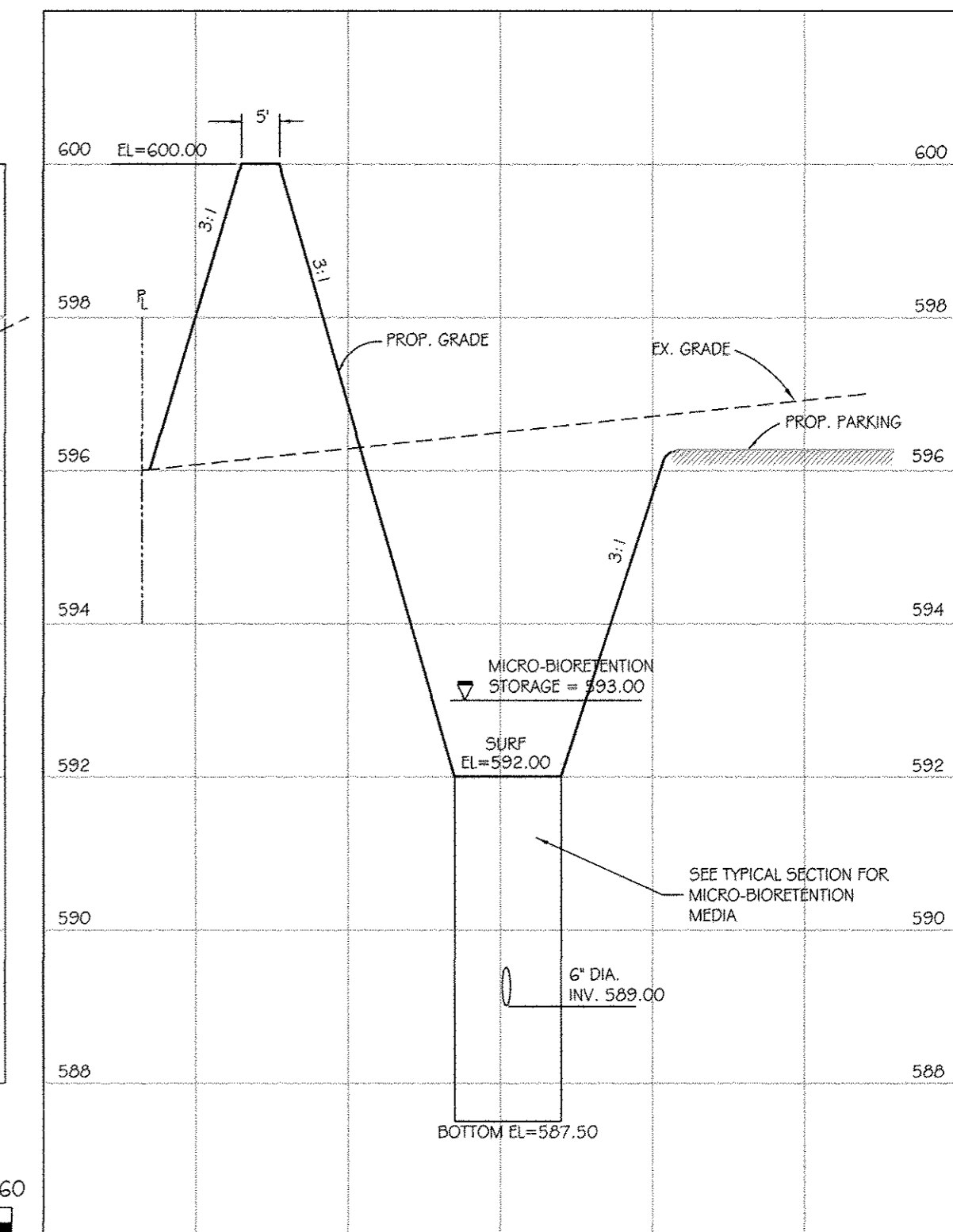
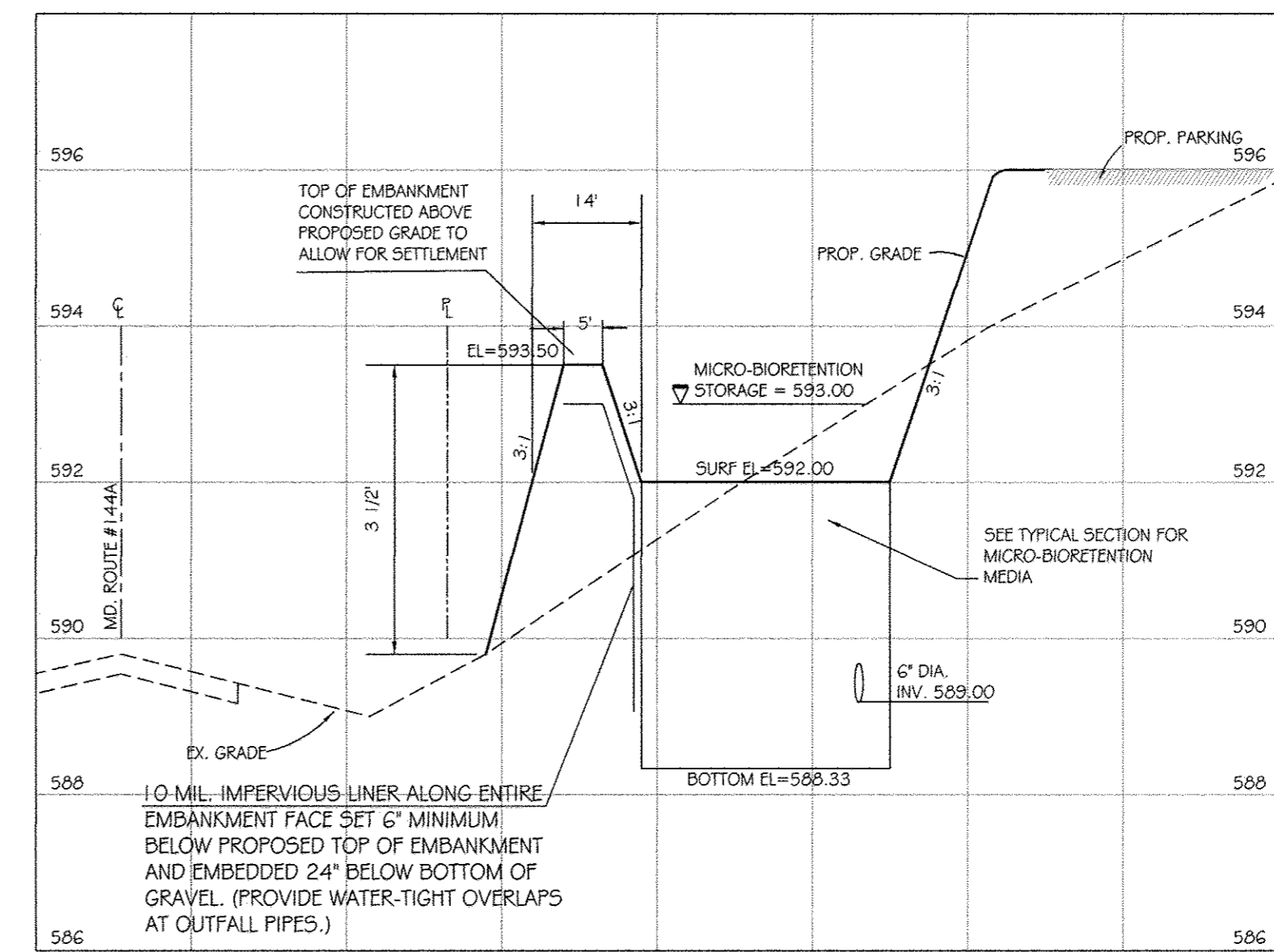
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- FOREBAY GABION WEIR NOTES**
- GABIONS SHALL BE MANUFACTURED BY MACCAFERRI GABIONS INC. OR APPROVED EQUAL. THE INSTALLATION SHALL FOLLOW THE MANUFACTURER'S SPECIFICATIONS. THE GABION BASKETS SHALL BE PVC COATED AND FILLED WITH CLEAN 4" - 7" STONE. THE GABION STONE SHALL BE CAREFULLY PLACED TO CREATE TIGHT, INTERLOCKING AGGREGATE WITH MINIMAL VOIDS.
 - TWO SHEETS OF IMPERVIOUS GEOTEXTILE OR 20 MIL VINYL-PLASTIC SHEETING SHALL BE PLACED ON THE BURIED UPSTREAM (FOREBAY SIDE) FACE OF THE BASKETS. USE 2 FT OVERLAP.
 - GABIONS SHALL BE PLACED ON GEOTEXTILE FABRIC (MIRAFI GOOX OR APPROVED EQUAL) AT ALL SOIL/GABION INTERFACES.
 - GABIONS SHALL BE CAREFULLY PLACED WITH NO DAMAGED WIRE. EARTH FOUNDATION SHALL BE FIRM. SOIL AROUND GABIONS SHALL BE WELL-COMPACTED.
 - GABIONS SHALL BE FASTENED TOGETHER WITH MANUFACTURER-SPECIFIED WIRING.
 - GABIONS TO BE INSTALLED ACROSS FOREBAY AREA WITH 1 1/2" IMBEDMENT INTO ADJACENT FACILITY SIDE SLOPES. GABION BASKETS TO BE 6' X 3' X 1.5' DEEP. THEY SHALL BE PLACED IN LINE AND LEVEL GRADE AND IMBEDDED 6".
 - THE CONTRACTOR SHALL WELL-COMPACT THE EMBANKMENT SOIL AT THE BURIED GABION ENDS. THE GABION FOUNDATION SHALL BE APPROVED BY A GEOTECHNICAL ENGINEER.



STORM STRUCTURE SCHEDULE

STRUCTURE NO.	TYPE	STD.	TOP ELEV.	INVERT IN ELEV.	INVERT OUT ELEV.	REMARKS
EW-1	END WALL	MD 354.01	589.85	-	587.60	18" RCP
EW-2	END WALL	MD 354.01	590.23	587.98	-	18" RCP
ES-1	END SECTION	MD-	-	-	589.87	15" RCP
ES-2	END SECTION	MD-	-	590.15	-	15" RCP
I-1	CURB OPENING	MD 640.02	-	594.10	592.00	-
I-2	CURB OPENING	MD 640.02	-	594.40	592.00	-
I-3	WR INLET	HOWARD CO. D-4.37	594.05	588.87	588.87	BOTTOM = 588.37
I-4	WR INLET	HOWARD CO. D-4.37	593.62	-	590.11	BOTTOM = 589.61
I-5	WR INLET	HOWARD CO. D-4.37	592.37	588.87	588.87	BOTTOM = 588.37
I-6	WR INLET	HOWARD CO. D-4.37	593.00	-	589.49	BOTTOM = 588.99
SWM-1	DOME GRATE	NYLOPLAST R-2	592.75	589.00	589.00	6" DIAMETER
SWM-2	DOME GRATE	NYLOPLAST R-2	592.75	589.00	589.00	6" DIAMETER
SWM-3	DOME GRATE	NYLOPLAST R-2	592.75	589.00	589.00	6" DIAMETER

PIPE SCHEDULE

SIZE	TYPE	CLASS	LENGTH	REMARKS
6"	SOLID PVC	-	38'	SWM RISERS & OUTLET
6"	PERF. PVC	-	476'	SWM UNDER- AND OVERDRAINS
12"	HDPE	-	181'	-
15"	HDPE	-	121'	-
15"	RCP	III	28'	-
18"	RCP	III	76'	-

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16417, EXPIRATION DATE: 09/18/19

SIGNED: *Ronald E. Thompson* DATE: 9/18/2018
RONALD E. THOMPSON, P.E.

DEVELOPER'S CERTIFICATE:

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

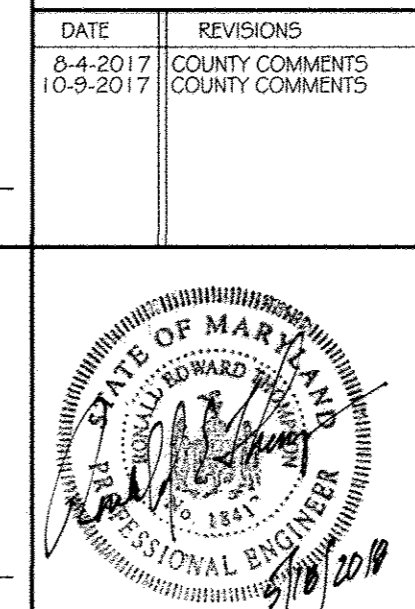
DEVELOPER: *Wesley Curran* DATE: 05/21/18

ENGINEER'S CERTIFICATE:

"I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT AND THE 2011 MARYLAND STANDARDS & SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL."

SIGNED: *Ronald E. Thompson* DATE: 9/18/2018
RONALD E. THOMPSON, P.E.

CALL "MISS UTILITY" AT
1-800-257-7777
48 HOURS BEFORE START OF CONSTRUCTION



STORMWATER MANAGEMENT NOTES AND DETAILS
LOT 3, LOWER TRAIL
LISBON VOLUNTEER FIRE CO., INC.

TAX MAP: 7 ELECTION DISTRICT: No. 4 SCALE: AS SHOWN
GRID NO: 11 HOWARD COUNTY, MARYLAND DATE: JANUARY, 2017
PARCEL NO: 488 EX. ZONING: RC-DEO SHEET 7 OF 15

VANMAR ASSOCIATES, INC.
Engineers Surveyors Planners
318 South Main Street Mount Airy, Maryland 21771
(301) 829-2880 (301) 831-5015 (410) 549-2751
Fax (301) 831-5603 ©Copyright, Latest Date Shown 5DP-17-035

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

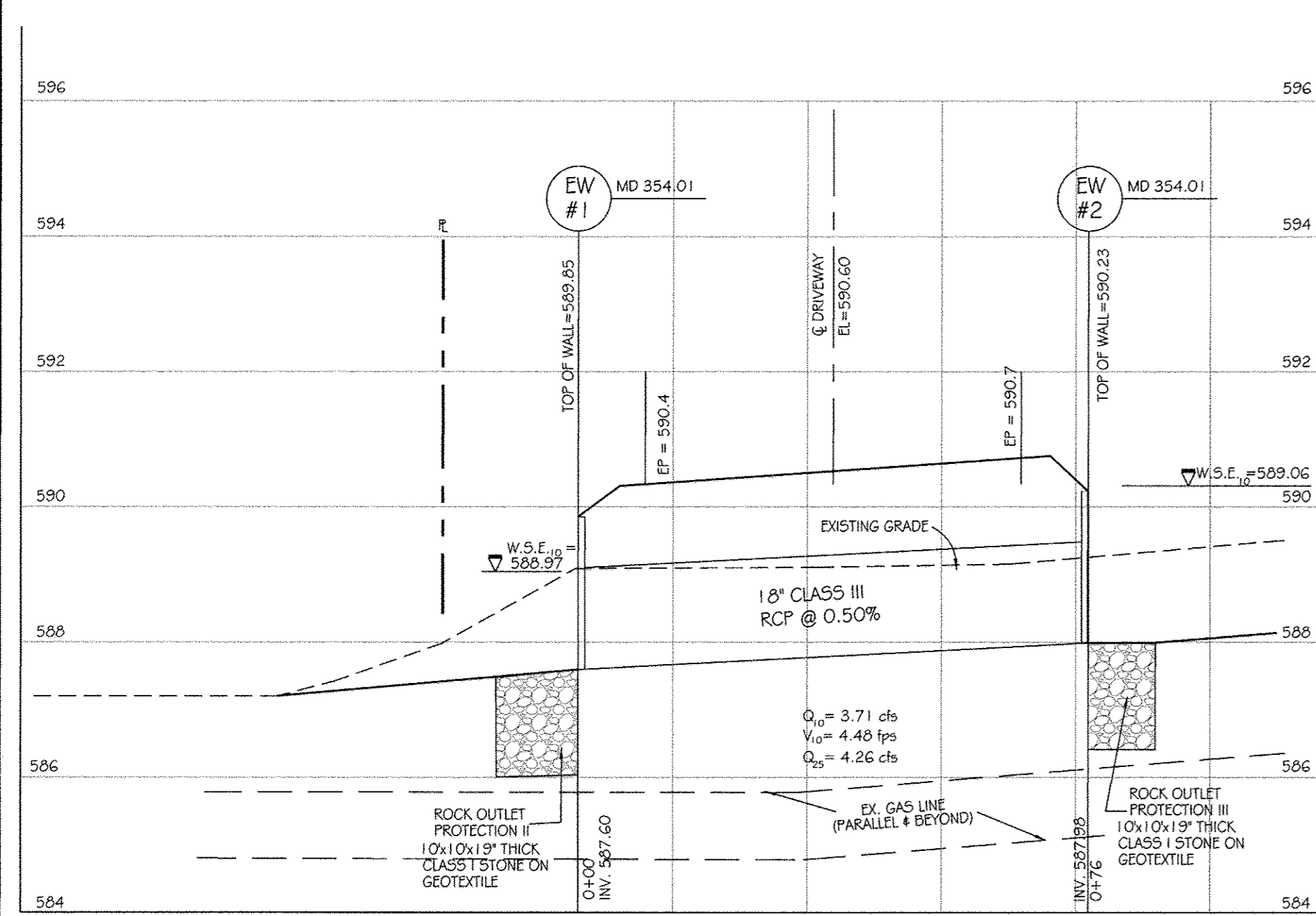
John R. Blanton 5/29/18
HOWARD SCS DATE

APPROVED
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

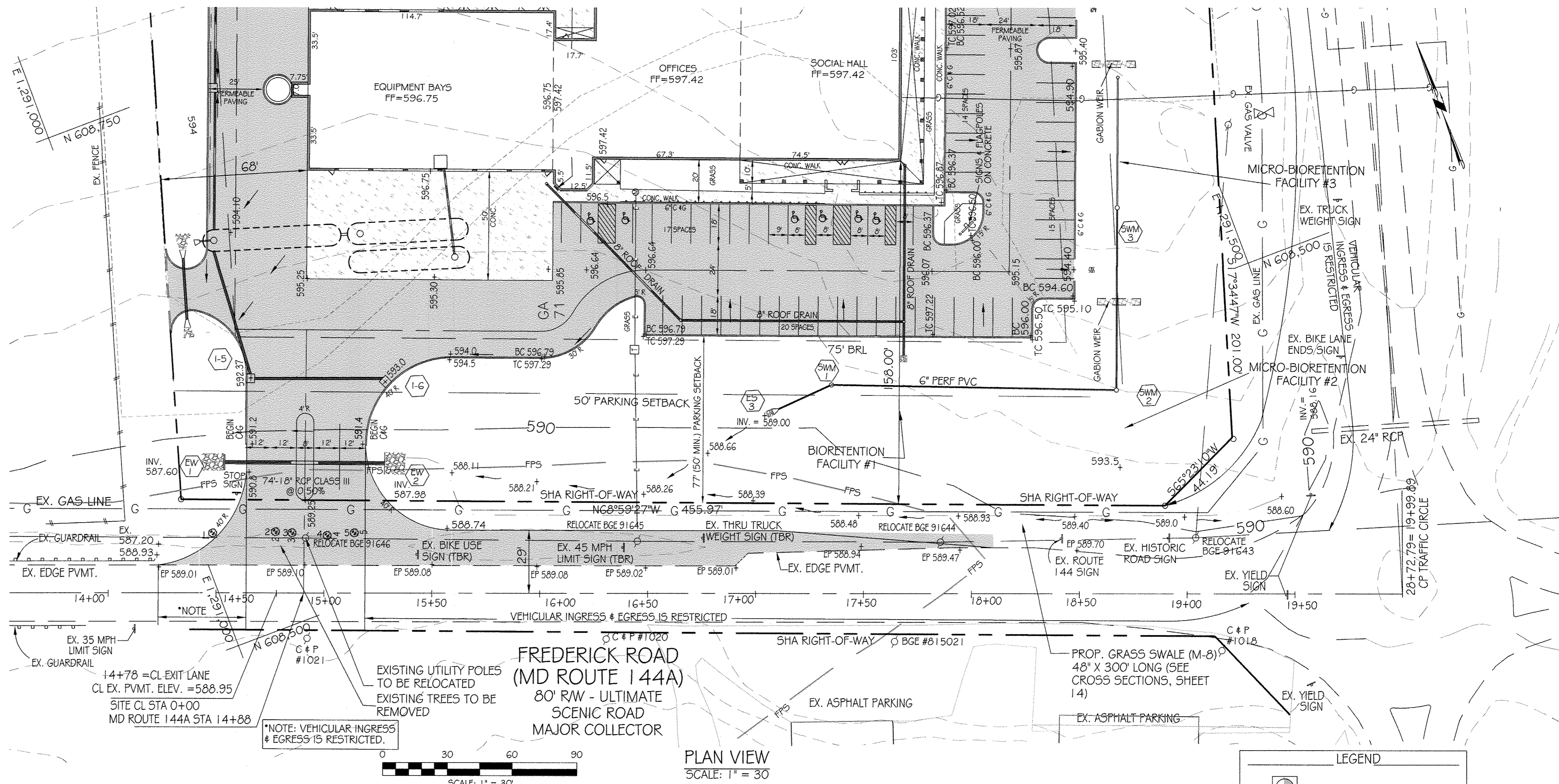
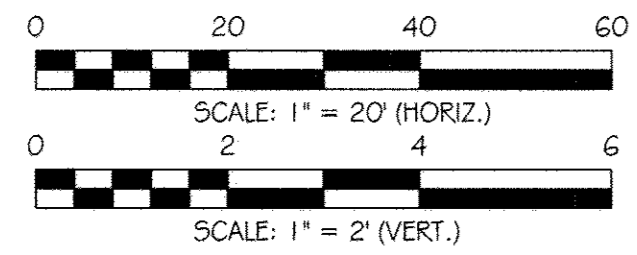
Walter J. J. J. J. 7-12-18
DIRECTOR DATE

Walter J. J. J. J. 7-11-18
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Paul Blanton 6-12-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION # DATE



PRIVATE CULVERT PROFILE @ SHA ENTRANCE (ON PRIVATE PROPERTY)
SCALE: 1" = 20' (HORIZ.)
1" = 2' (VERT.)



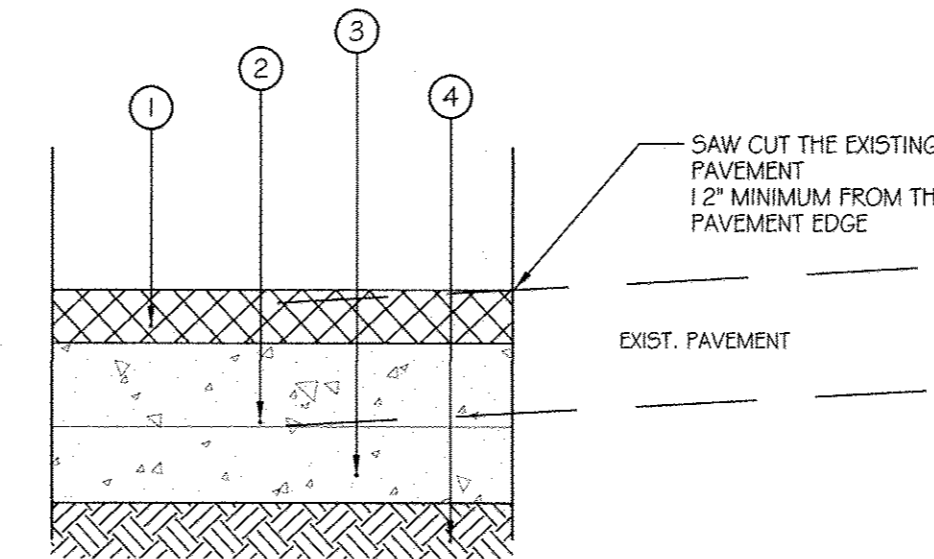
PLAN VIEW
SCALE: 1" = 30'

SHA MITIGATION WAIVED. NO MITIGATION IS REQUESTED BY SHA FOR THE REMOVAL OF TREES NOTED.

SHA TREE REMOVAL SCHEDULE				
KEY	BOTANICAL NAME COMMON NAME	SIZE	NOTES	CONDITION
1	BLACK LOCUST <i>Robinia Pseudacacia</i>	12" dbh	T.B.R.	Poor
2	BLACK CHERRY <i>Prunus serotina</i>	16" dbh	T.B.R.	Poor
3	BOX ELDER <i>Acer negundo</i>	12" dbh	T.B.R.	Fair
4	BOX ELDER <i>Acer negundo</i>	14" dbh	T.B.R.	Dead
5	BLACK CHERRY <i>Prunus serotina</i>	14" dbh	T.B.R.	Poor

ROADSIDE TREE PERMIT. Tree removal, tree installation, tree root and branch pruning, and other regulated impacts to trees in the SHA right of way shall conform to the requirements of the Roadside Tree Permit (RTP) issued by the Maryland Department of Natural Resources, or the approved Forest Conservation Plan (FCP) of the local authority.

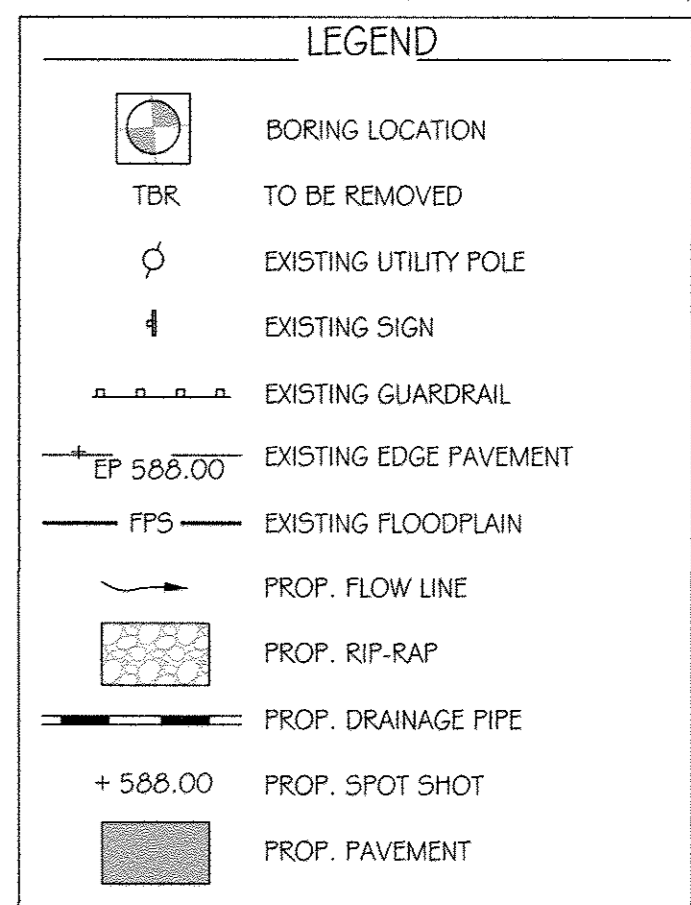
- A copy of the RTP or FCP shall be submitted to the SHA Office of Environmental Design before work is performed, and a copy of the RTP or FCP shall be reproduced in the plans or be in possession of the applicant at the project site when the permitted work is performed.
- A Maryland Licensed Tree Expert shall perform the specified tree operations in conformance with the SHA Standard Specifications and ANSI A 300 Standards for Tree Care Operations.



NOTES:
1. PROVIDE THE FOLLOWING PAVEMENT SECTION:
① 2" ASPHALT SUPERPAVE MIX PG 645-22, LEVEL 2
② 7" ASPHALT SUPERPAVE MIX PG 645-22, LEVEL 2
③ 6" GRADED AGGREGATE BASE
④ APPROVED COMPACTED SUBGRADE
2. THE ASPHALT PAVING SECTION SHALL BE A STANDARD SHA APPROVED FOR MEDIUM DUTY. FINAL DESIGNS MAY BE ADJUSTED BASED ON A PROFESSIONAL GEOTECHNICAL ENGINEERS REPORT AND RECOMMENDATIONS.
3. THE EXISTING PAVEMENT MARKINGS SHALL BE REMOVED USING HYDRO-BLASTING TECHNIQUES TO AVOID DAMAGING THE EXISTING PAVEMENT.

SHA PAVEMENT SECTION DETAIL
N.T.S.

NOTE: ANY FULL DEPTH PAVEMENT AREAS LESS THAN 4' WIDE MUST BE CONSTRUCTED WITH A MODIFIED MIX 6 CONCRETE TO ASSURE PROPER COMPACTION.



APPROVED
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

N. Williams 7-12-18
DIRECTOR DATE

K. Stalder 7-11-18
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Ch. Johnson 6-12-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

OWNER / DEVELOPER:
LISBON VOL. FIRE COMPANY
c/o CURTIS LOWREY
P.O. BOX 40,
LISBON, MD 21765
443-472-7765

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18417, EXPIRATION DATE: 09/18/13

SIGNED: *Ronald E. Thompson* DATE: 5/18/2018
RONALD E. THOMPSON, P.E.

DATE	REVISIONS
8-4-2017	COUNTY COMMENTS
10-9-2017	COUNTY COMMENTS
1-18-2018	SHA COMMENTS

MDOT SHA TRACKING NUMBER 1 | APH0014XX
STATE HIGHWAY ENTRANCE PLAN AND DETAILS
LOT 3, LOWER TRAIL
LISBON VOLUNTEER FIRE CO., INC.

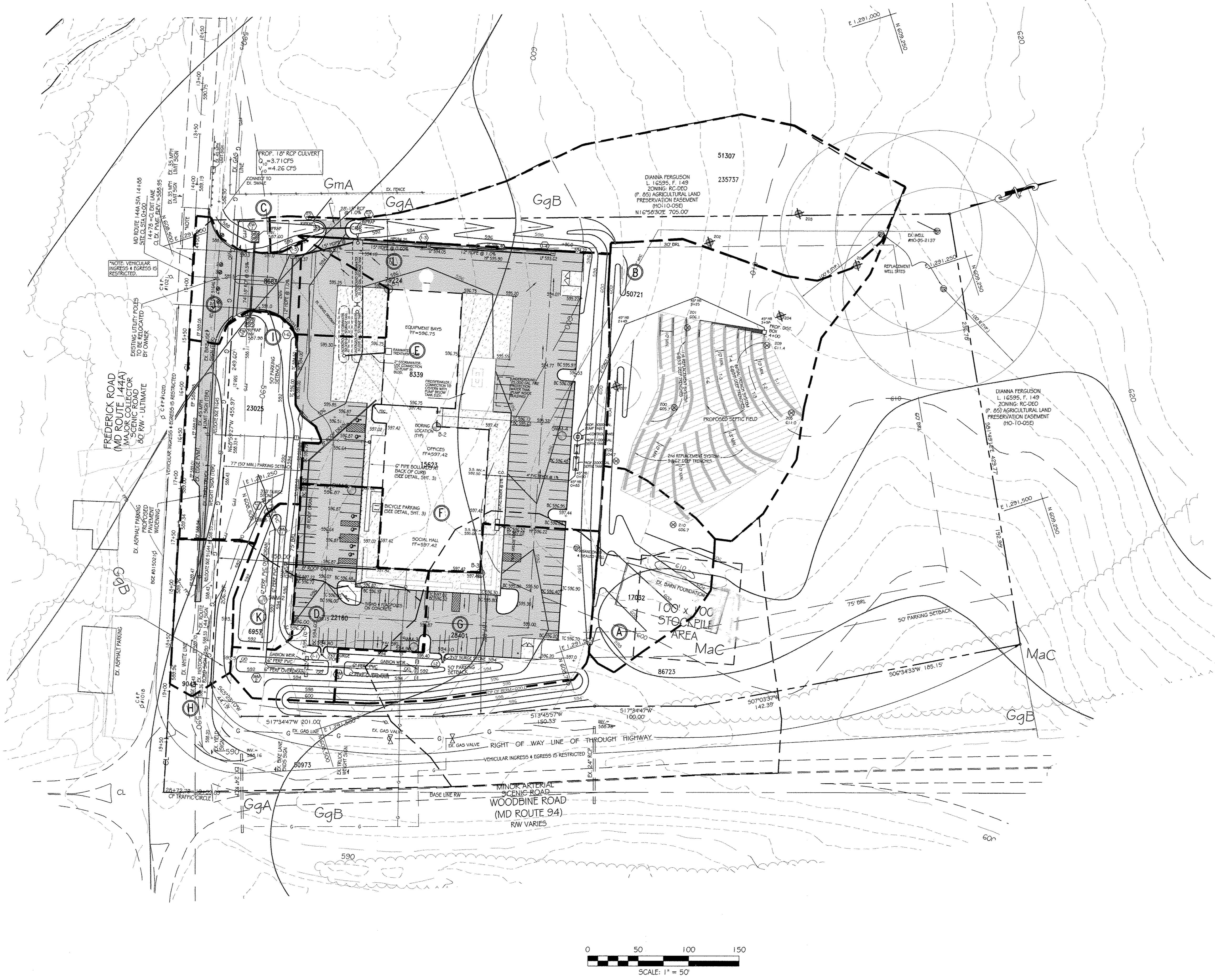
TAX MAP: 7
GRID NO: 11
PARCEL NO: 488

ELECTION DISTRICT: No. 4
HOWARD COUNTY, MARYLAND
EX. ZONING: RC-DEO

SCALE: AS SHOWN
DATE: JANUARY, 2017
SHEET 8 OF 15

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Engineers Surveyors Planners
310 South Main Street Mount Airy, Maryland 21771
(301) 829-2890 (301) 831-5015 (410) 548-2751
Fax (301) 831-5603 ©Copyright, Latest Date Shown

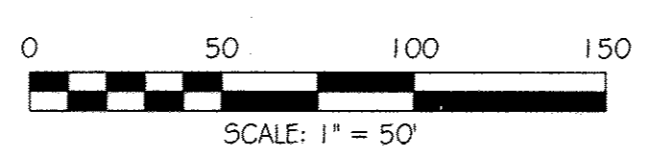
SDP-17-035



DRAINAGE AREA TABULATION						
STUDY POINT	AREA	AREA ID	'C' FACTOR	ZONING	% IMPERVIOUS	% SOIL GROUP
A	0.39 AC.	DITCH N.E. COR. OF PARKING LOT	0.24	RC-DEO	0%	100% 'C'
B	1.16 AC.	DITCH N.W. COR. OF PARKING LOT	0.19	RC-DEO	0%	100% 'C'
C	2.34 AC.	DITCH S.W. COR. OF PARKING LOT	0.19	RC-DEO	0%	100% 'C'
D	0.51 AC.	SWM #2	N/A	RC-DEO	75%	100% 'B'
E	0.19 AC.	EQUIPMENT BUILDING	N/A	RC-DEO	100%	100% 'B'
F	0.36 AC.	OFFICE / SOCIAL HALL BUILDING	N/A	RC-DEO	100%	100% 'B'
G	0.45 AC.	SWM #3	N/A	RC-DEO	51%	100% 'B'
H	0.21 AC.	SWALE HEADED EAST ALONG MD. RTE. #144	0.30	RC-DEO	20%	100% 'B'
I	1.18 AC.	PROP. CULVERT @ DRIVEWAY ENTRANCE	0.37	RC-DEO	30%	100% 'B'
J	0.20 AC.	CROSS DRIVEWAY ENTRANCE	0.86	RC-DEO	100%	100% 'B'
K	0.71 AC.	SWM #1	N/A	RC-DEO	77%	100% 'B'
L	1.82 AC.	CISTERN	N/A	RC-DEO	88%	100% 'B'

SOIL LEGEND		
MAP SYMBOL	MAPPING UNIT	HYDROLOGIC SOIL GROUP
GgA	GLENELG LOAM, 0% - 3% SLOPES	B
GgB	GLENELG LOAM, 3% - 8% SLOPES	C
GmA	GLENVILLE SILT LOAM, 0% - 3% SLOPES	C
MaC	MANOR LOAM, 8% - 15% SLOPES	B

Soils Map No. 2



APPROVED
 HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

N. Williams 7-12-18
 DIRECTOR DATE

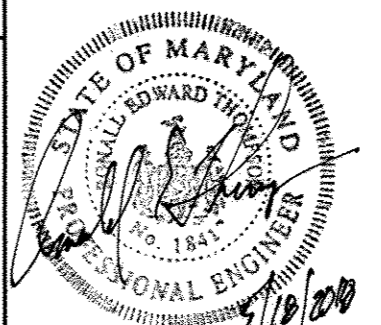
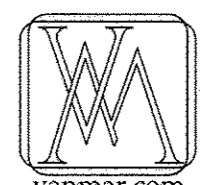
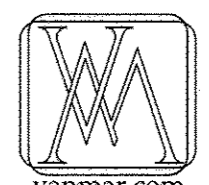
Kent S. Calver 7-11-18
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Chad Johnson 6-12-18
 CHIEF, DEVELOPMENT ENGINEERING DIVISION & DATE

OWNER / DEVELOPER:
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 c/o CURTIS LOWREY
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SIGNED: *Ronald E. Thompson* DATE: 5/18/2018
 RONALD E. THOMPSON, P.E.

DATE 8-4-2017 10-9-2017	REVISIONS COUNTY COMMENTS COUNTY COMMENTS	DRAINAGE AREA MAP LOT 3, LOWER TRAIL LISBON VOLUNTEER FIRE CO., INC.	
TAX MAP: 7 GRID NO: 11 PARCEL NO: 488	ELECTION DISTRICT: No. 4 HOWARD COUNTY, MARYLAND EX. ZONING: RC-DEO	SCALE: 1" = 50' DATE: JANUARY, 2017 SHEET 9 OF 15	  VANMAR ASSOCIATES, INC. Engineers Surveyors Planners 310 South Main Street Mount Airy, Maryland 21771 (301) 829-2890 (301) 831-5015 (410) 549-2751 Fax (301) 831-5603 @Copyright, Latest Date Shown
 VANMAR ASSOCIATES, INC. Engineers Surveyors Planners 310 South Main Street Mount Airy, Maryland 21771 (301) 829-2890 (301) 831-5015 (410) 549-2751 Fax (301) 831-5603 @Copyright, Latest Date Shown			

LANDSCAPE NOTES

- Plants shall conform to current American Standards for Nursery Stock by American Association of Nurserymen (AAN), particularly with regards to site, growth, and size of ball and density of branch structure. Contractor to ensure conformance to national and local building codes and ordinances.
- All plants (B&B or container) shall be properly identified by weatherproof labels securely attached hereto before delivery to the project site. Labels shall identify plants by name, species, and size. Labels shall not be removed until the final inspection by the owners representative.
- Any material and/or work may be rejected by the owners representative if it does not meet the requirements of the specifications, the contractor shall remove all rejected materials from the site.
- The contractor shall furnish all plants in quantities and sizes to complete the work as specified in plant schedule. The landscape contractor shall be responsible to verify all plant quantities on the plans prior to commencement of work. Quantities in the plant schedule are for the contractors convenience only and do not constitute the final count.
- Substitutions in plant species or size shall not be permitted except with the written approval of the owners representative.
- Plants shall be located as shown on the drawings and by scaling or as designated in the field by the owners representative. Tree locations to be field adjusted as required to maintain 10' minimum clearance from all utilities, street lights, and driveways. All locations are to be approved by the owners representative before excavation. The contractor shall note that in the case of a discrepancy between the scaled and figured dimensions shown on these plans, the figured dimension shall govern.
- The location of existing utilities shown hereon are approximate only. Contractor shall excavate to verify the existence, location, and depth of any utilities (constructed and existing) and shall notify the engineer of any discrepancies prior to the beginning of all work, excavation, grading, landscaping, etc.
- Contractor shall locate and mark all underground utility lines and irrigation systems prior to excavating plant beds or pits. All utility easement areas where no planting shall take place shall also be marked on the site, prior to locating and digging the tree pits. If utility lines are encountered in excavation of tree pits, other locations for the trees shall be selected by the owners representative. Such changes shall be made by the contractor without additional compensation. No changes of location shall be made without the approval of the owners representative. Any utility (whether shown or not) damaged due to construction shall be repaired immediately. The contractor shall be responsible for removing or replacing any existing fences, driveways, etc., damaged or removed by the contractor during construction. All of site disturbed areas shall be returned to their original condition.
- All equipment and tools shall be placed so as not to interfere or hinder pedestrian and vehicular traffic flow.
- During planting operations, excess and waste materials shall be promptly and frequently removed from the site.
- All tree pits are to be excavated to a minimum depth to the tree root ball to a minimum depth of 4" higher than finish grade. The tree root ball is to rest on undisturbed soil, or a compacted bed must be prepared for the tree root ball to rest on which will not subside causing the tree to sink below finish grade. All tree pits are to be a minimum of 12" larger on every side of the tree root ball.
- The topsoil to be used to fill the tree pits is to be plant specific. The topsoil for trees shall consist of a maximum of 2/3 existing topsoil from the site, which is cleaned and free of clay, a minimum of 1/3 organic material. These materials are to be mixed prior to backfilling when planting.
- The contractor is responsible to ensure that all tree pits are well drained. The landscape contractor, without cost to the owner, will replace all plant material which is affected by poor drainages.
- All lawn areas are to be seeded with grass seed appropriate for the sunlight conditions which exist on the site.
- All lawn areas are to be tied to a depth of 6" and all foreign material removed which will inhibit the healthy growth of the lawn. All old grass and grass roots are to be removed from the site. New topsoil of a minimum 4" is to be placed over the areas to be seeded. The grass areas are to be fine graded to ensure that no undulations occur on the lawn. The lawns are to be graded in such a way as to appear perfectly well tailored and even. The lawn topsoil is to be rolled and lightly irrigated prior to placing of the seed. The seed is not to be laid on frozen or soaked soil.
- Existing trees are to be protected during the preparation of the lawn areas. The roots of the trees are to be undisturbed during the clearing of the topsoil.
- All plants are to be handled with the best care and attention to ensure that the plants are not bruised, broken, torn, or damaged in any way which will affect the plants general appearance and well being.
- All trees are to be planted with the accepted standards of the American Association of Nurserymen. The trees are to be properly watered and backfilled during planting. All care must be taken to ensure that the trees are upright, at a tree's best side is exposed to the point of greatest visibility.
- The trees must be staked in accordance with acceptable nursery practice to ensure that they are secure in the ground and will grow straight and uniform. The trees are to be wrapped if the contractor deems it necessary to protect the trees from sun scald or insect attack.
- Contractor is to provide a 1-year guarantee for all plant material and other work done on site.
- Quantities as shown on the plan shall govern over plant list quantities. Contractor to verify plant list totals with quantities shown on plan.
- Do not plant within 20' of a property line abutting and agricultural use.
- Plant material source: Within 100 mile radius of Maryland if possible.
- VanMar Associates, Inc. is not responsible for the contractor's utilization of men, materials, equipment, or safety measures in performance of any work for this construction. The contractor assumes all responsibility for performing the work correctly and in conformance with all code requirements.
- Should the contractor discover discrepancies between the plans and field conditions, the work shall be stopped immediately and the engineer notified immediately to resolve the situation. Should the contractor make field connections or adjustments without notifying the engineer, then the contractor assumes all responsibility for those changes.
- It is the intent of these plans and specifications to provide 100% completed work and this shall be the project scope. It shall be distinctly understood that failure to notify the engineer of discrepancies found on these plans and specifications, specifically and work which would naturally and/or normally be required to complete the project shall not relieve the contractor of his responsibility to perform such work.
- This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code and the Landscape Manual.
- At the time of installation, all shrubs and other plantings herein listed and approved for this site, shall be of the proper height requirements in accordance with the Howard County Landscape Manual. In addition, no substitutions or relocation of required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviation from this approved Landscape Plan may result in denial or delay in the release of landscape surety until such time as all required materials are planted and/or revisions are made to applicable plans and certificates.
- The owner, tenant and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and berms, fences and walls. All plant material 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.
- The owner / developer is responsible for the planting of all plant material required to meet the standards established by the Howard County Landscape Manual.
- It has been determined that a landscape surety is not required because the volunteer fire station will serve as a public service to the community.
- All plant materials shall be in good condition and be obtained locally within a 100 mile radius of the subject site.

33. The developer must plant 52 shade trees, 16 evergreen trees and 71 shrubs.

Lisbon Volunteer Fire Department Forest Conservation Worksheet 2.1 2/10/2016

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

Net Tract Area

A. Total Tract Area A= 8.23

B. Deductions (Critical Area, area restricted by local ordinance or program) B= 0.00

C. Net Tract Area = Total Tract Area (A) - Deductions (B) C= 8.23

Land Use Category: Institutional

D. Afforestation Threshold (Net Tract Area x 15 %) D= 1.23

E. Conservation Threshold (Net Tract Area 20 %) E= 1.65

Existing Forest Cover

F. Existing Forest Cover within the Net Tract Area F= 0.00

G. Area of Forest Above Conservation Threshold

If the Existing Forest Cover (F) is greater than the Conservation Threshold (E), then G = F - E. Otherwise G = 0.

G= 0.00

Breakaway Point

H. Breakaway 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 * the Area of Forest Above Conservation Threshold (G) + the Conservation Threshold (E)) H= 0.00

(2) If the Area of Forest Above the Conservation Threshold (G) is equal to 0, then H = Existing Forest Cover (F)

H= 0.00

I. Forest Clearing Permitted Without Mitigation

I = Existing Forest Cover (F) - Breakaway Point (H)

I= 0.00

Proposed Forest Clearing

J. Total Area of Forest to be Cleared J= 0.00

K. Total Area of Forest to be Retained K = Existing Forest Cover (F) - Forest to be Cleared (J)

K= 0.00

Planting Requirements

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

L. Reforestation 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) * 0.25; L= 0.00

(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) * 0.25

M. Reforestation 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 or equal to the Conservation Threshold (E), then M = 2.0 * (Conservation Threshold (E) - Forest to be Retained (K)) (Does not apply if needed) M= 0.00

(2) If Existing Forest Cover (F) is less than or equal to the Conservation Threshold (E), then M = 2.0 * Forest to be Cleared (J)

N. 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 N= 0.00

P. Total Reforestation Required P = L + M - N P= 0.00

Q. Total Afforestation Required

If Existing Forest Cover (F) is less than the Afforestation Threshold (D), then Q = Afforestation Threshold (D) - Existing Forest Cover (F) Q= 1.23

R. Total Planting Requirement R=P+Q R= 1.23

APPROVED
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Naima Zuber 7-12-18
DIRECTOR DATE

Keat Andrew 7-11-18
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Paul Chubb 6-12-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION 4 DATE

SCHEDULE 'M' PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAYS	ADJACENT TO PERIMETER PROPERTIES	TOTAL																		
LANDSCAPE TYPE	#1A+B	#1D+E	2=C	3=A+B	3C=D	3D=E	4=D	5=C	6=C	6A=C											
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	60 LF	240 LF	215 LF	44 LF	60 LF	210 LF	150 LF	80 LF	328 LF	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	
CREDIT FOR WALL, FENCE, BERM (YES, NO, LINEAR FEET)	NO	NO	NO	NO	NO	210 LF	BERM	FENCE	20 LF	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	12 LF	
NUMBERS OF PLANTS REQUIRED																					
SHADE TREES	1	2	6	4	1	1	1	2	0	0	0	0	7	11	18	0	0	0	0	52	
EVERGREEN TREES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SHRUBS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	71	
NUMBERS OF PLANTS PROVIDED																					
SHADE TREES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52	
EVERGREEN TREES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
OTHER TREES (2:1 SUBSTITUTION) (DESCRIBE BELOW IF NEEDED)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	71	
DISCOUNT PLANT SUBSTITUTION CREDITS (BELOW IF NEEDED)																					

SCHEDULE 'B' PARKING LOT INTERNAL LANDSCAPING

NUMBER OF PARKING SPACES	134
NUMBER OF TREES REQUIRED	7
NUMBER OF TREES PROVIDED	7
LANDSCAPED ISLANDS REQUIRED	7
LANDSCAPED ISLANDS PROVIDED	6

PLANT LIST

SYMBOL	QUANTITY	BOTANICAL NAME / COMMON NAME	SIZE	CONDITION	SPACING (SEE NOTES)
1K	33	AMERICAN SYCAMORE / <i>Platanus occidentalis</i>	2.5' cal.	B 4 B	AS SHOWN
1D	19	RED MAPLE / <i>Acer rubrum</i>	2.5' cal.	D 4 B	AS SHOWN
4B	25	NORWAY SPRUCE / <i>Picea abies (excelsa)</i>	6-8' ht.	B 4 B	AS SHOWN
4D	51	WHITE PINE / <i>Pinus strobus</i>	6-8' ht.	B 4 B	AS SHOWN
GA	71	GLOSSY ABELIA / <i>Abelia grandiflora</i>	24" ht.	2 gal. can	AS SHOWN

DEVELOPER/BUILDER 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 SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

see curd plans 05/21/18

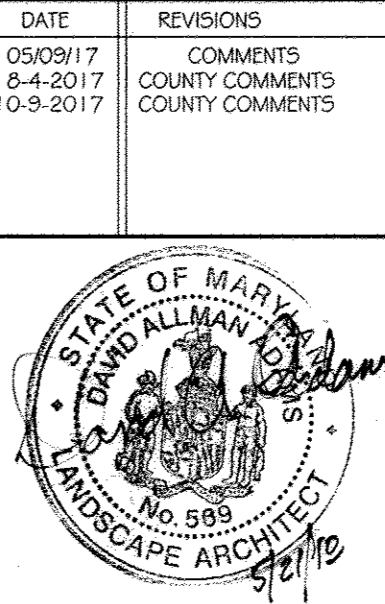
OWNER/DEVELOPER: LISBON VOL. FIRE COMPANY
DATE: 5/21/18

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 569, EXPIRATION DATE: 08/16/19.

SIGNED: *David A. Adams* DATE: 5/21/18
DAVID A. ADAMS, R.L.A.

OWNER / DEVELOPER:
LISBON VOL. FIRE COMPANY
c/o CURTIS LOWREY
P.O. BOX 40,
LISBON, MD 21765
443-472-7765



LEGEND

- PROPOSED SEPTIC SYSTEM
- SUPER SILT FENCE
- EARTH DIKE
- LIMIT OF DISTURBANCE
- (PASSED) PERCOLATION TEST SITE
- EXISTING WELL
- PROPOSED HOUSE SITE
- PROPOSED WELL SITE
- EXISTING TREE LINE
- PERMEABLE PAVING

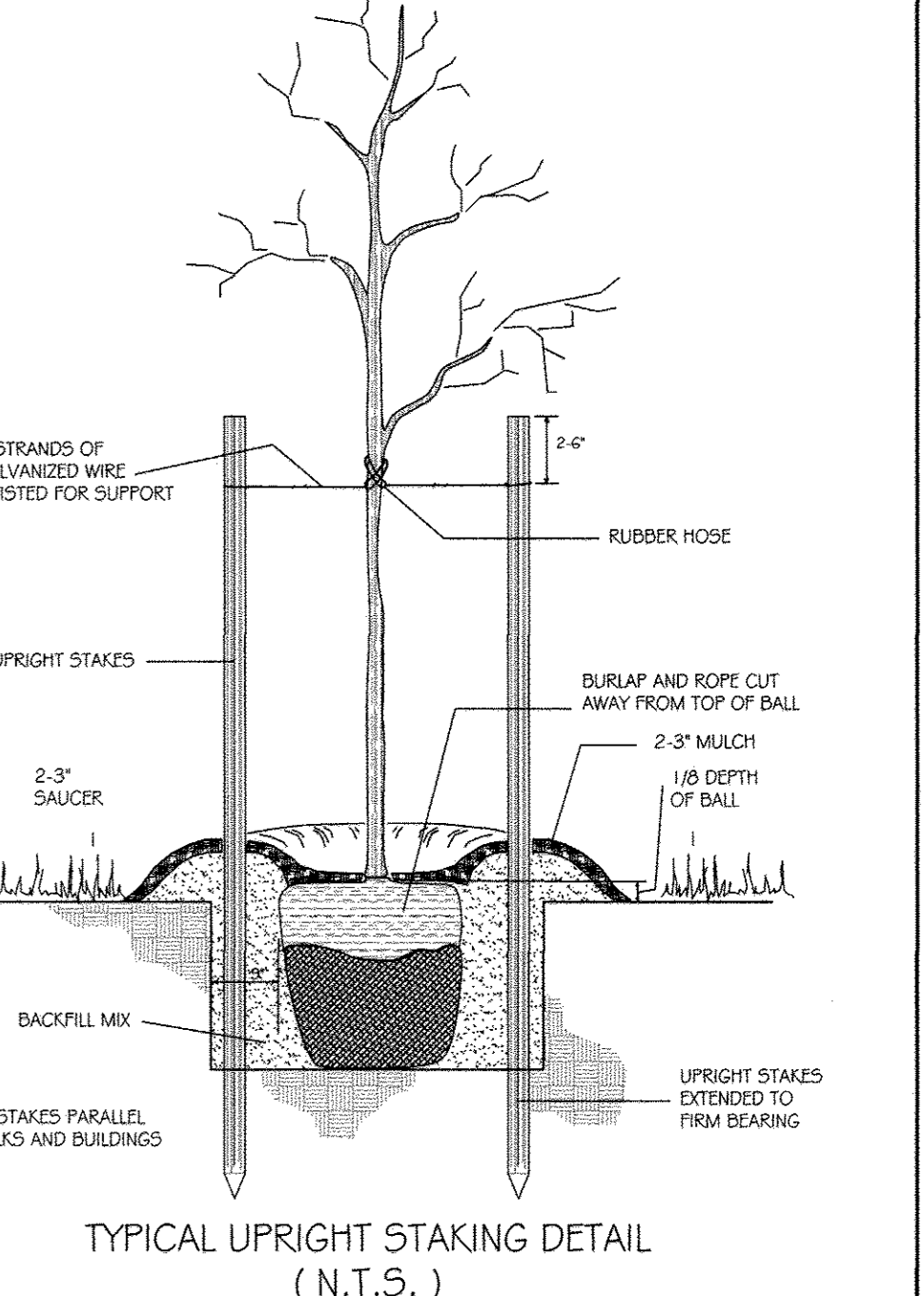
SHA MITIGATION WAIVED. NO MITIGATION IS REQUESTED BY SHA FOR THE REMOVAL OF TREES NOTED.

SHA TREE REMOVAL SCHEDULE

KEY	BOTANICAL NAME / COMMON NAME	SIZE	NOTES	CONDITION
1	BLACK LOCUST / <i>Robinia Pseudacacia</i>	12" dbh	T.B.R.	Poor
2	BLACK CHERRY / <i>Prunus serotina</i>	16" dbh	T.B.R.	Poor
3	BOX ELDER / <i>Acer negundo</i>	12" dbh	T.B.R.	Fair
4	BOX ELDER / <i>Acer negundo</i>	14" dbh	T.B.R.	Dead
5	BLACK CHERRY / <i>Prunus serotina</i>	14" dbh	T.B.R.	Poor

ROADSIDE TREE PERMIT. Tree removal, tree installation, tree root and branch pruning, and other regulated impacts to trees in the SHA right of way shall conform to the requirements of the Roadside Tree Permit (RTP) issued by the Maryland Department of Natural Resources, or the approved Forest Conservation Plan (FCP) of the local authority.

- A copy of the RTP or FCP shall be submitted to the SHA Office of Environmental Design before work is performed, and a copy of the RTP or FCP shall be reproduced in the plans or be in possession of the applicant at the project site when the permitted work is performed.
- A Maryland Licensed Tree Expert shall perform the specified tree operations in conformance with the SHA Standard Specifications and ANSI A 300 Standards for Tree Care Operations.



FOREST CONSERVATION & LANDSCAPING PLAN, NOTES AND DETAILS

LOT 3, LOWER TRAIL
LISBON VOLUNTEER FIRE CO., INC.

TAX MAP: 7
GRID NO: 11
PARCEL NO: 488

ELECTION DISTRICT: No. 4
HOWARD COUNTY, MARYLAND
EX. ZONING: RC-DEO

SCALE: 1" = 50'
DATE: JANUARY, 2017
SHEET 10 OF 15

VANMAR ASSOCIATES, INC.
Engineers Surveyors Planners
310 South Main Street Mount Airy, Maryland 21771
(301) 828-2890 (301) 831-5315 (410) 549-2751
Fax (301) 831-5603 ©Copyright, Latest Date Shown SDP-17-035

KEY

BORING LOCATION: B-1; SWM-4

T.B.R. TO BE REMOVED

SHA MITIGATION WAIVED. NO MITIGATION IS REQUESTED BY SHA FOR THE REMOVAL OF TREES NOTED.

SHA TREE REMOVAL SCHEDULE

KEY	BOTANICAL NAME COMMON NAME	SIZE	NOTES	CONDITION
1	BLACK LOCUST <i>Robinia Pseudoacacia</i>	12" dbh	T.B.R.	Poor
2	BLACK CHERRY <i>Prunus serotina</i>	16" dbh	T.B.R.	Poor
3	BOX ELDER <i>Acer negundo</i>	12" dbh	T.B.R.	Fair
4	BOX ELDER <i>Acer negundo</i>	14" dbh	T.B.R.	Dead
5	BLACK CHERRY <i>Prunus serotina</i>	14" dbh	T.B.R.	Poor

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1. A copy of the RTP or FCP shall be submitted to the SHA Office of Environmental Design before work is performed, and a copy of the RTP or FCP shall be reproduced in the plans or be in possession of the applicant at the project site when the work is performed.

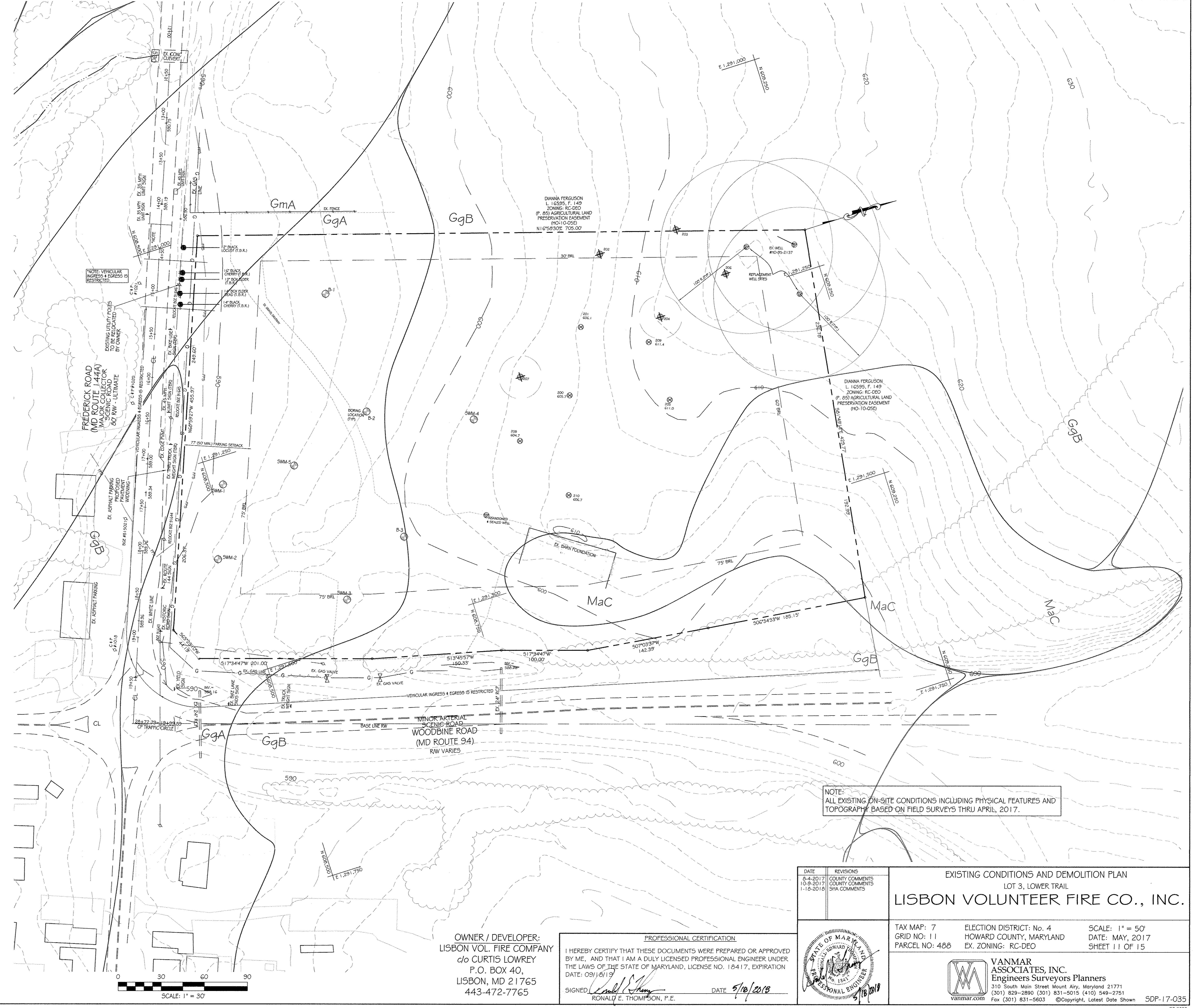
2. A Maryland Licensed Tree Expert shall perform the specified tree operations in conformance with the SHA Standard Specifications and ANSI A300 Standards for Tree Care Operators.

APPROVED
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

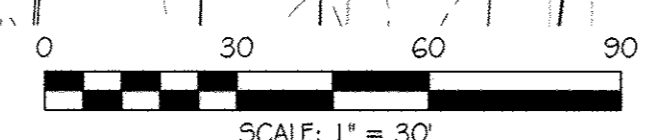
Walter J. J. J. 7-12-18
DIRECTOR DATE

Kent Shalove 7-11-18
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Ed. Edman 6-12-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



NOTE: ALL EXISTING ON-SITE CONDITIONS INCLUDING PHYSICAL FEATURES AND TOPOGRAPHY BASED ON FIELD SURVEYS THRU APRIL, 2017.

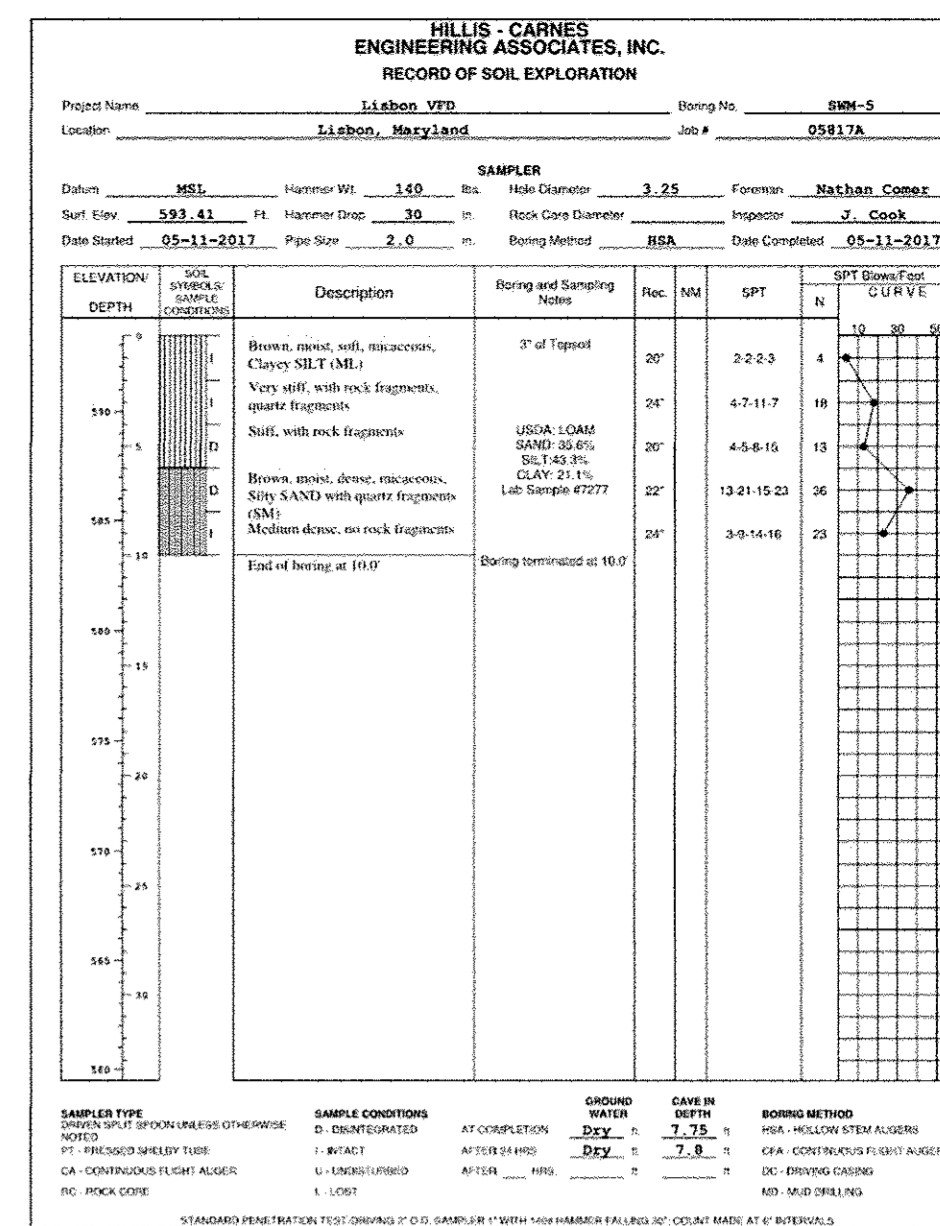
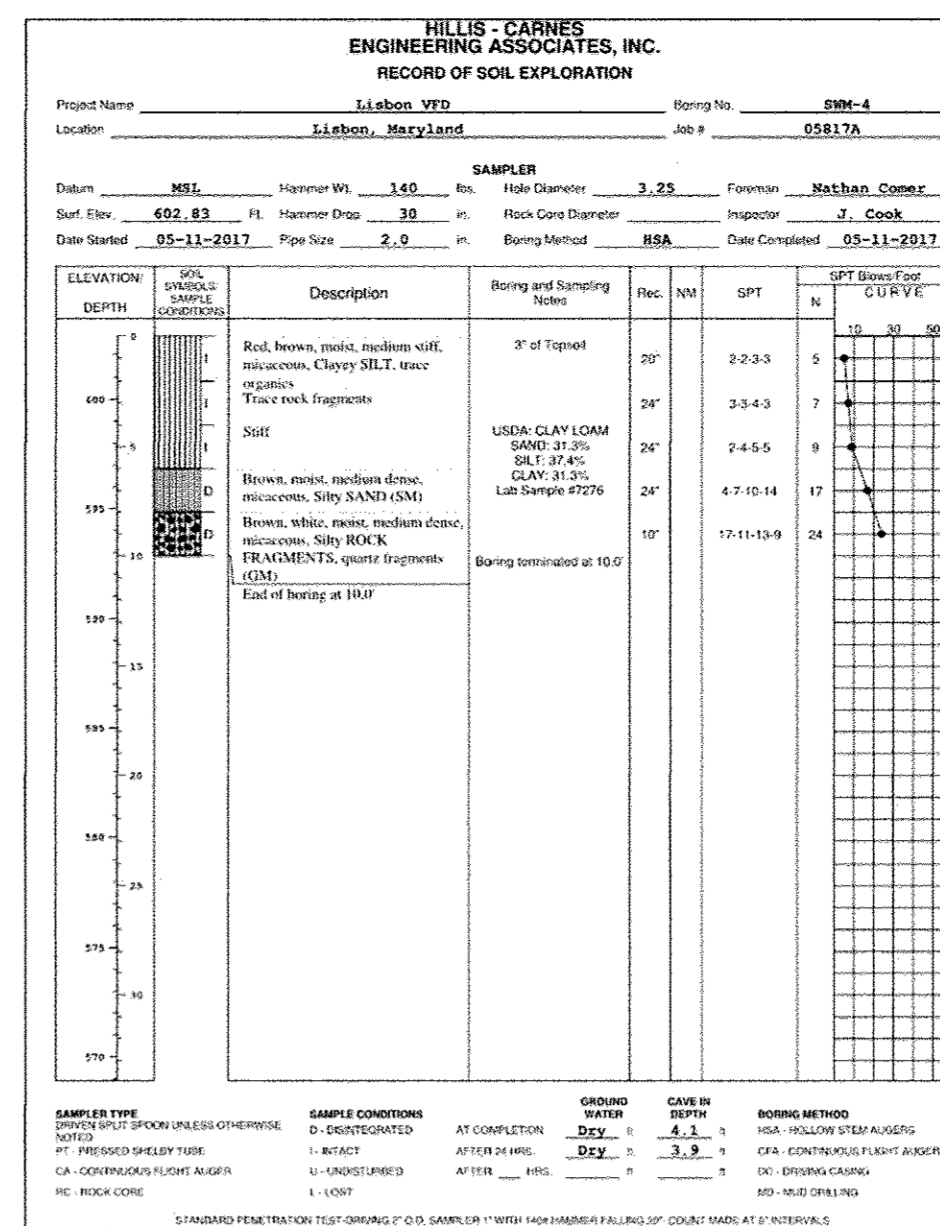
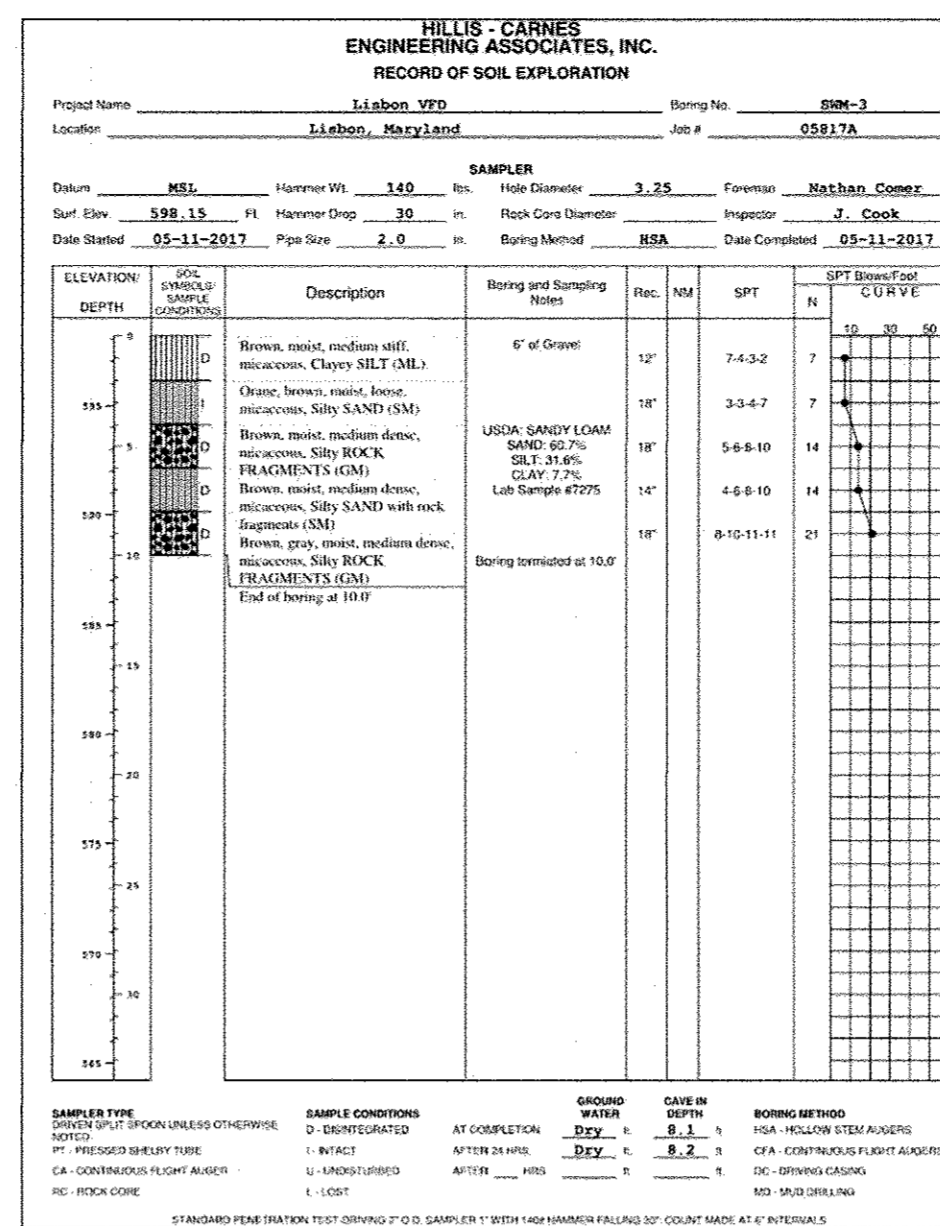
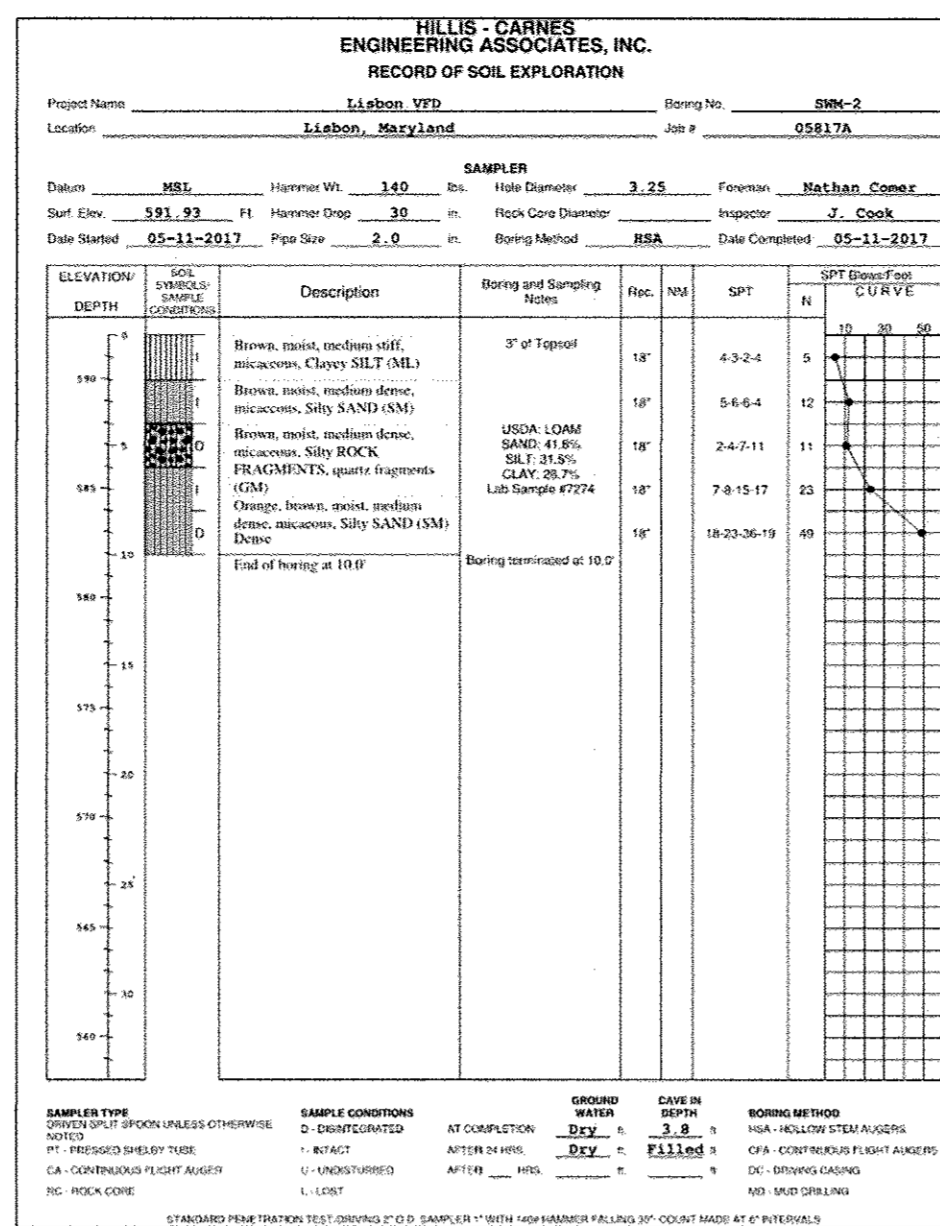
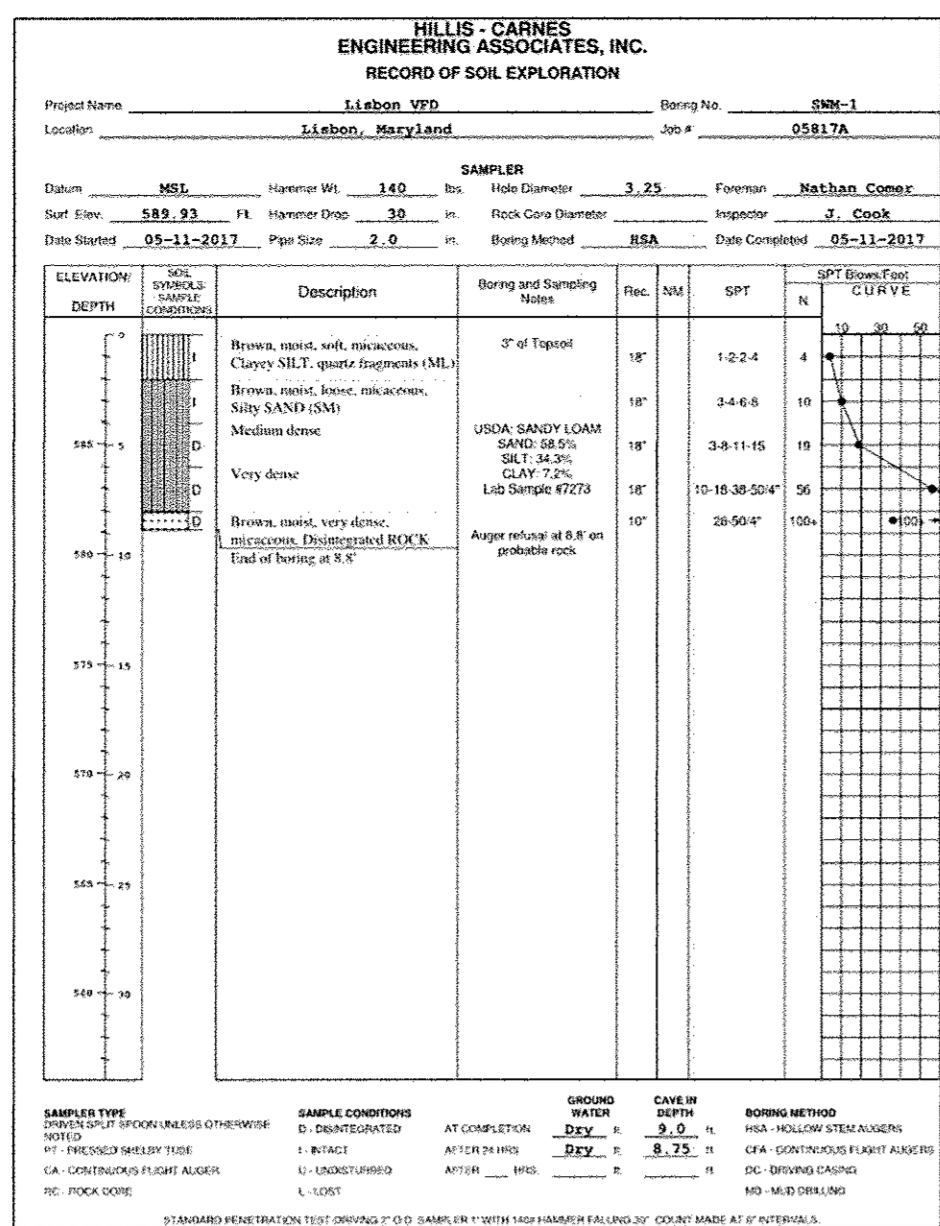


OWNER / DEVELOPER:
LISBON VOL. FIRE COMPANY
c/o CURTIS LOWREY
P.O. BOX 40,
LISBON, MD 21765
443-472-7765

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18417, EXPIRATION DATE: 09/18/19
SIGNED: *Ronald E. Thompson* DATE: 5/10/2018
RONALD E. THOMPSON, P.E.

DATE 8-4-2017 10-9-2017 1-10-2018	REVISIONS COUNTY COMMENTS COUNTY COMMENTS SHA COMMENTS	EXISTING CONDITIONS AND DEMOLITION PLAN LOT 3, LOWER TRAIL LISBON VOLUNTEER FIRE CO., INC.	
TAX MAP: 7 GRID NO: 11 PARCEL NO: 488	ELECTION DISTRICT: No. 4 HOWARD COUNTY, MARYLAND EX. ZONING: RC-DEO	SCALE: 1" = 50' DATE: MAY, 2017 SHEET 11 OF 15	VANMAR ASSOCIATES, INC. Engineers Surveyors Planners 310 South Main Street Mount Airy, Maryland 21771 (301) 829-2890 (301) 831-5015 (410) 549-2751 Fax (301) 831-5603 ©Copyright, Latest Date Shown

Q:\workbooks\488-533\1808-VFC\DWG\18-533-Submittal-18-2018.dwg, ex: cond_cmt11, 5/10/2018 12:02:13 PM



TIME OF READING	DEPTH TO WATER, INCHES	TIME CHANGE, HOURS	DEPTH CHANGE, INCHES	RATE, INCHES/HOUR
9:36	46 1/16			
10:06	46 9/16	0.5	8/16	1.000
10:36	46 13/16	0.5	4/16	0.500
11:06	47 1/16	0.5	12/16	1.500
11:36	47 14/16	0.5	5/16	0.625
12:06	48 1/16	0.5	1 1/16	2.125
12:36	49 14/16	0.5	15/16	1.875
13:06	50 1/16	0.5	13/16	1.625
13:36	51 5/16	0.5	10/16	1.250

Depth of test beneath existing grade: 5' Date of test: 05-15-17

Estimated Infiltration Rate: 1.72 in/hr

HILLIS-CARNES ENGINEERING ASSOCIATES, INC. HCEA Project No.: 045917A SCALE: NTS DATE: May 16, 2017

TIME OF READING	DEPTH TO WATER, INCHES	TIME CHANGE, HOURS	DEPTH CHANGE, INCHES	RATE, INCHES/HOUR
9:30	47 4/16			
10:03	49 4/16	0.5	1 24/16	3.750
10:33	50 4/16	0.5	1 2/16	2.250
11:03	51 4/16	0.5	1 1/16	2.000
11:36	52 7/16	0.5	15/16	1.875
12:03	53 3/16	0.5	14/16	1.750
12:33	53 5/16	0.5	12/16	1.500
1:03	54 1/16	0.5	15/16	1.875
1:33	55 7/16	0.5	9/16	1.125

Depth of test beneath existing grade: 5' Date of test: 05-15-17

Estimated Infiltration Rate: 0.95 in/hr

HILLIS-CARNES ENGINEERING ASSOCIATES, INC. HCEA Project No.: 05917A SCALE: NTS DATE: May 16, 2017

TIME OF READING	DEPTH TO WATER, INCHES	TIME CHANGE, HOURS	DEPTH CHANGE, INCHES	RATE, INCHES/HOUR
9:40	32 1/16			
10:16	32 1/16	0.5	1/16	0.125
10:46	32 15/16	0.5	4/16	0.500
11:16	33 4/16	0.5	7/16	0.875
11:46	33 1/16	0.5	6/16	0.750
12:16	34 2/16	0.5	6/16	0.750
12:46	34 7/16	0.5	5/16	0.625
13:16	34 11/16	0.5	4/16	0.500
13:46	34 15/16	0.5	4/16	0.500

Depth of test beneath existing grade: 5' Date of test: 05-15-17

Estimated Infiltration Rate: 0.95 in/hr

HILLIS-CARNES ENGINEERING ASSOCIATES, INC. HCEA Project No.: 05917A SCALE: NTS DATE: May 16, 2017

TIME OF READING	DEPTH TO WATER, INCHES	TIME CHANGE, HOURS	DEPTH CHANGE, INCHES	RATE, INCHES/HOUR
9:44	42 1/16			
10:14	42 9/16	0.5	8/16	1.000
10:44	42 13/16	0.5	4/16	0.500
11:14	43 1/16	0.5	3/16	0.375
11:44	43 5/16	0.5	5/16	0.625
12:14	43 11/16	0.5	6/16	0.750
12:44	44 1/16	0.5	5/16	0.625
13:14	44 5/16	0.5	4/16	0.500
13:44	44 11/16	0.5	3/16	0.375

Depth of test beneath existing grade: 5' Date of test: 05-15-17

Estimated Infiltration Rate: 0.95 in/hr

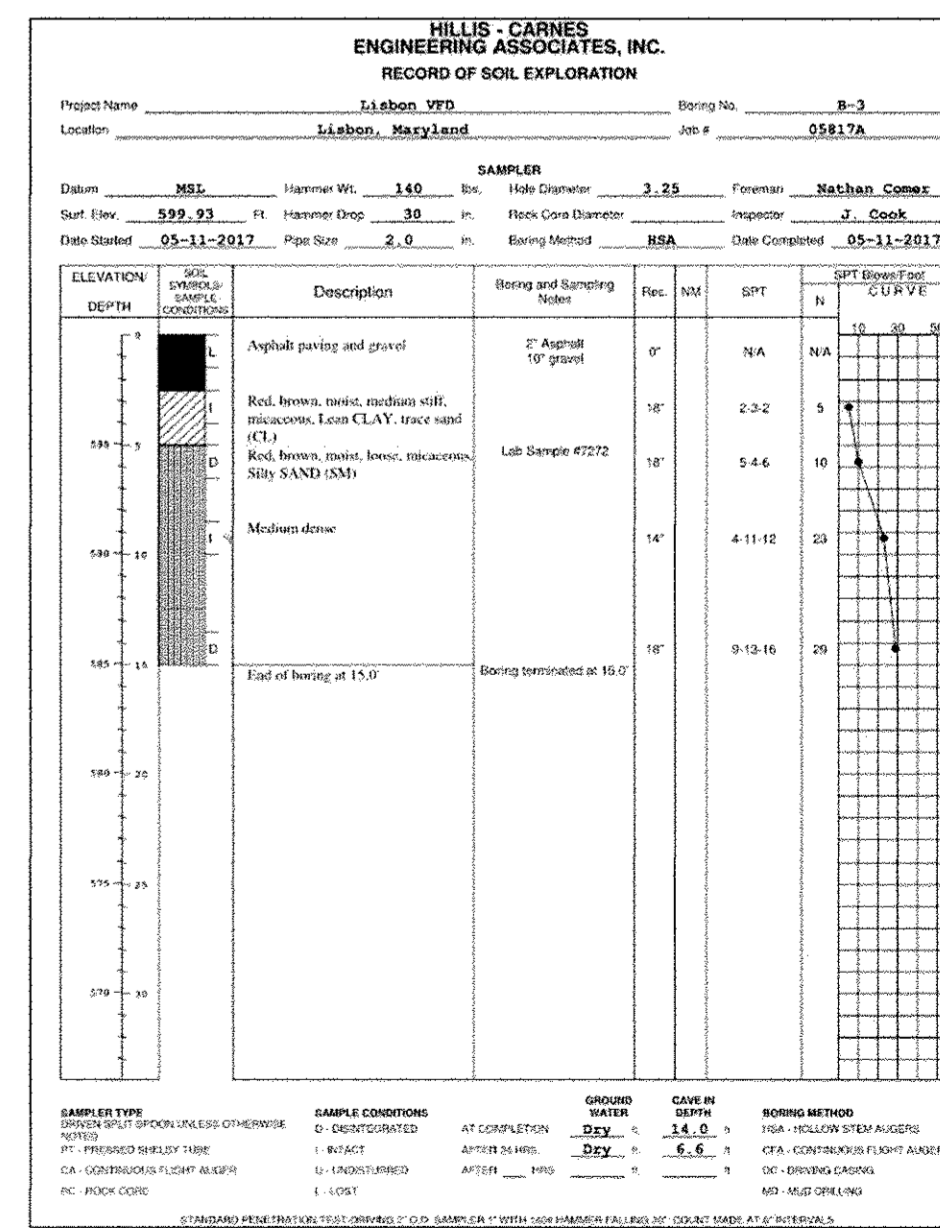
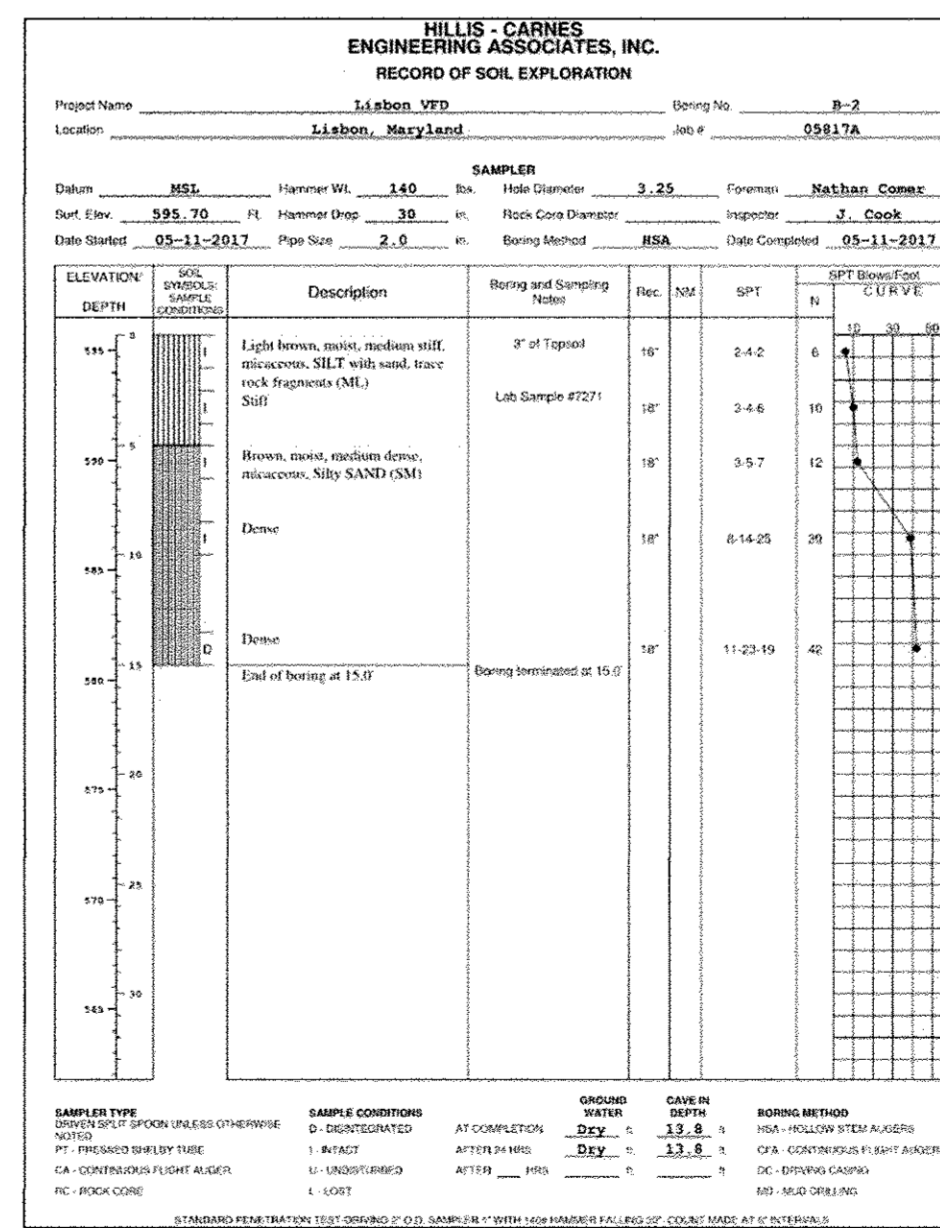
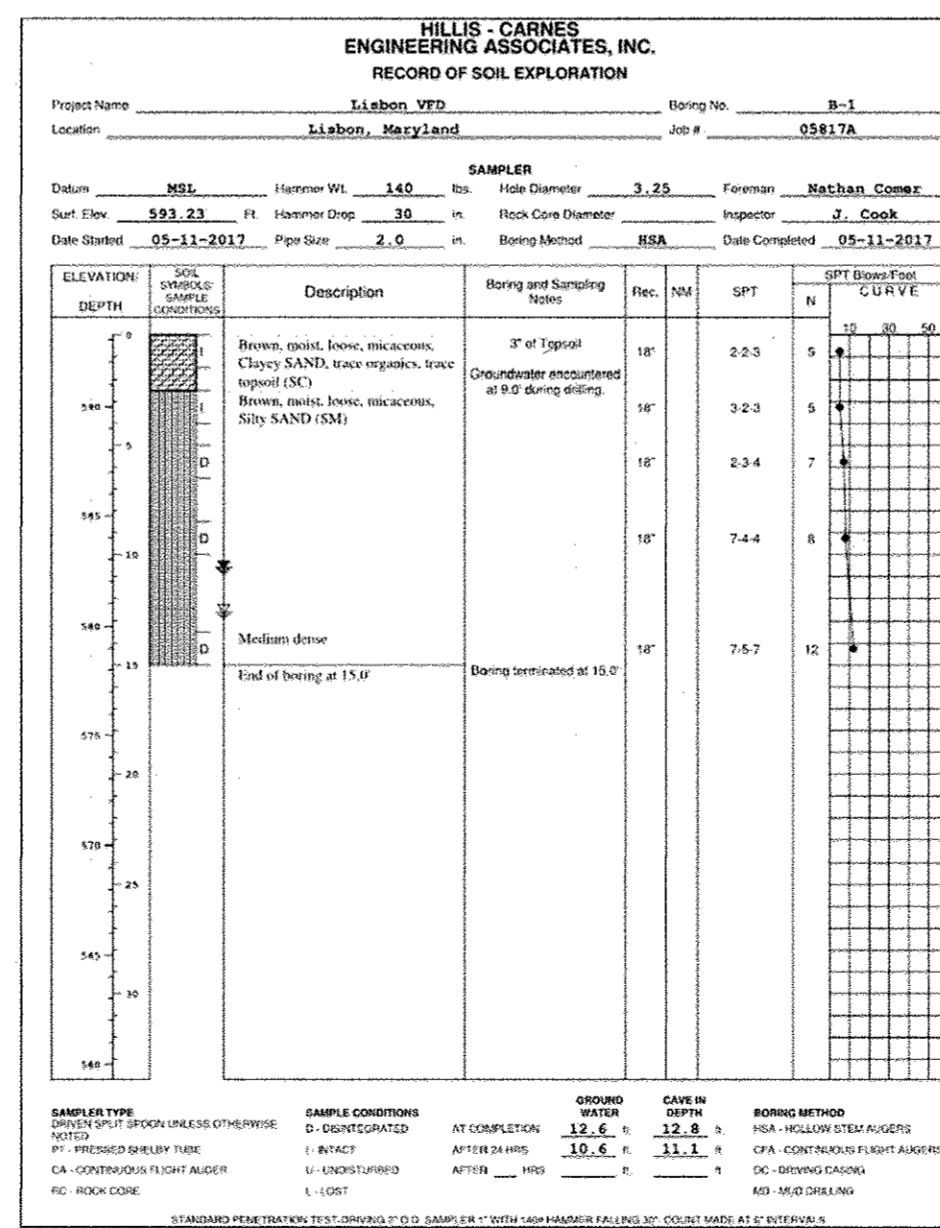
HILLIS-CARNES ENGINEERING ASSOCIATES, INC. HCEA Project No.: 05917A SCALE: NTS DATE: May 16, 2017

TIME OF READING	DEPTH TO WATER, INCHES	TIME CHANGE, HOURS	DEPTH CHANGE, INCHES	RATE, INCHES/HOUR
9:41	56 9/16			
10:11	56 13/16	0.5	3/16	0.375
10:41	57 1/16	0.5	4/16	0.500
11:11	57 5/16	0.5	5/16	0.625
11:41	57 9/16	0.5	3/16	0.375
12:11	57 13/16	0.5	4/16	0.500
12:41	58 1/16	0.5	5/16	0.625
13:11	58 5/16	0.5	5/16	0.625
13:41	58 10/16	0.5	4/16	0.500

Depth of test beneath existing grade: 5' Date of test: 05-15-17

Estimated Infiltration Rate: 0.56 in/hr

HILLIS-CARNES ENGINEERING ASSOCIATES, INC. HCEA Project No.: 05917A SCALE: NTS DATE: May 16, 2017



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

HOWARD SCS DATE

APPROVED
 HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Nathan Comer 7-12-18
 DIRECTOR DATE

Kent DeLoach 7-11-18
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Chad Edwards 6-12-18
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

OWNER / DEVELOPER:
 LISBON VOL. FIRE COMPANY
 c/o CURTIS LOWREY
 P.O. BOX 40,
 LISBON, MD 21765
 443-472-7765

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18417, EXPIRATION DATE: 09/18/19

SIGNED: *Ronald E. Thompson* DATE: 7/8/2018
 RONALD E. THOMPSON, P.E.

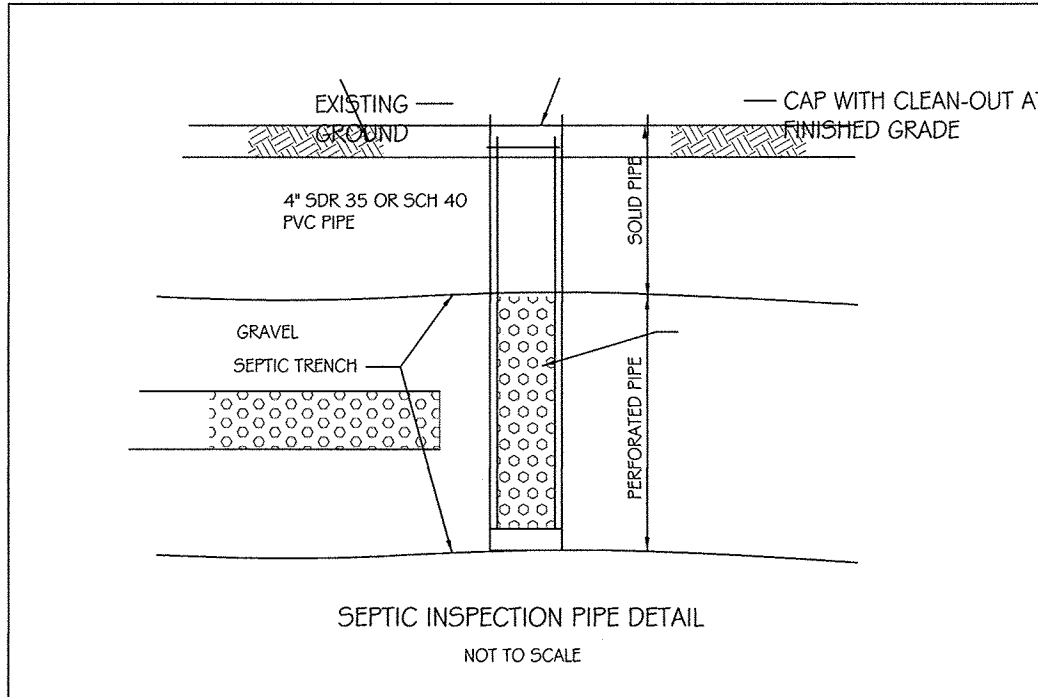
DATE: 10-9-2017 REVISIONS: COUNTY COMMENTS

STATE OF MARYLAND PROFESSIONAL ENGINEER

SOIL BORING LOGS AND DETAILS
 LOT 3, LOWER TRAIL
 LISBON VOLUNTEER FIRE CO., INC.

TAX MAP: 7 ELECTION DISTRICT: No. 4 SCALE: AS SHOWN
 GRID NO: 11 HOWARD COUNTY, MARYLAND DATE: MAY, 2017
 PARCEL NO: 488 EX. ZONING: RC-DEO SHEET 12 OF 15

VANMAR ASSOCIATES, INC.
 Engineers Surveyors Planners
 310 South Main Street Mount Airy, Maryland 21771
 (301) 529-2890 (301) 531-0515 (410) 549-2751
 Fax (301) 831-5603 © Copyright, Latest Date Shown SDP-17-035



PIPE & FITTINGS

FM Pipe = 12 Ft. (Within Pump Chamber)
 FM Pipe = 270 Ft. (Pump Chamber to Distribution Box)

Total = 282 Ft.

FRICION LOSSES

90° Bends: 3 ea. X 10 = 30
 45° Bends: 3 ea. X 4 = 12
 Disconnect: 1 ea. X 3 = 3

Total = 45 Ft.

STATIC HEAD

Elev. @ Distribution Box = 608.00
 Elev. @ Pump = 581.00

Total = 27.0 Ft.

FRICION HEAD

327 feet x 2.75 Ft/ Foot = 9.0 Ft.

Total = 9.0 Ft.

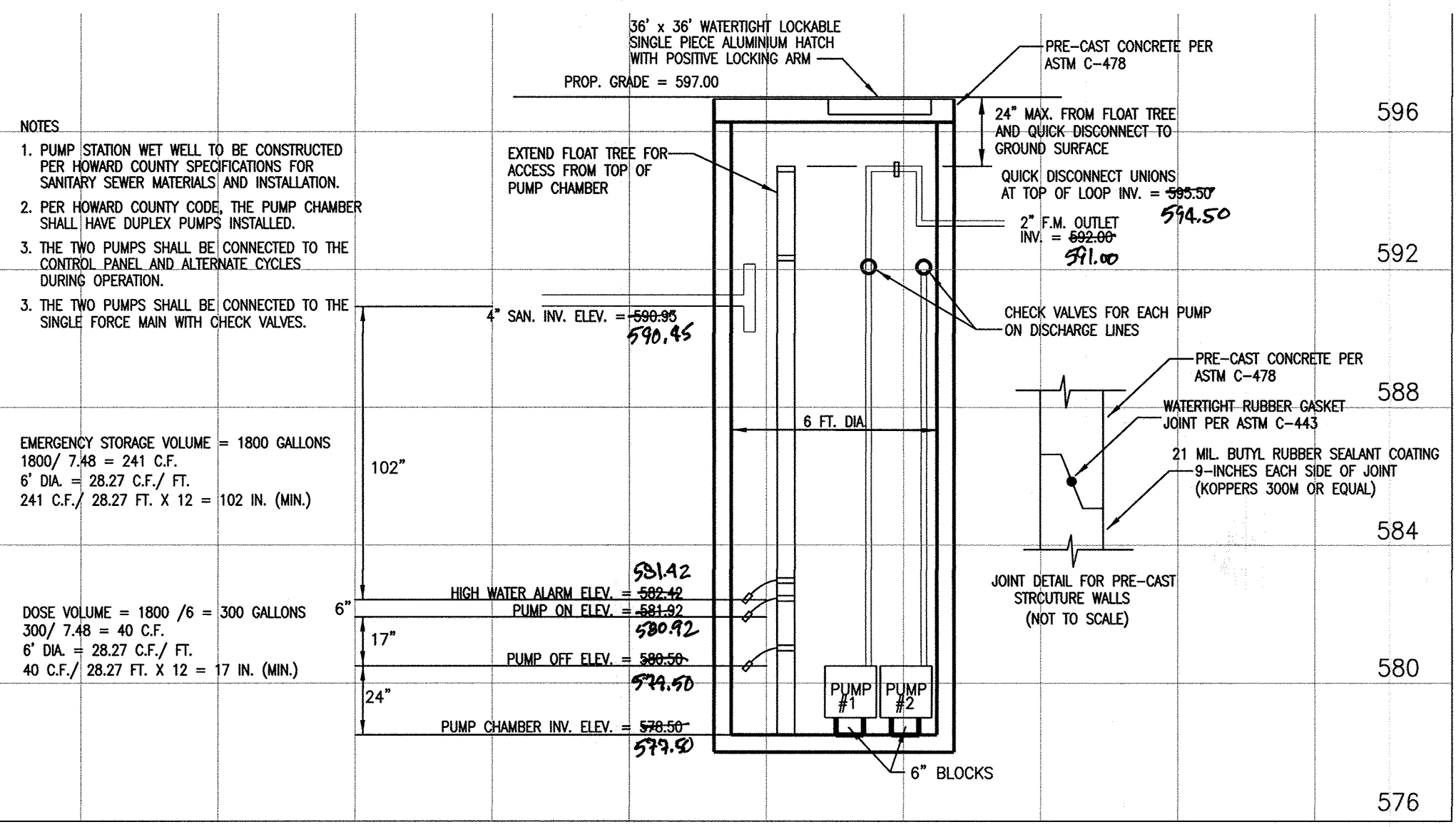
TOTAL HEAD = 36 FEET

PUMP SELECTION

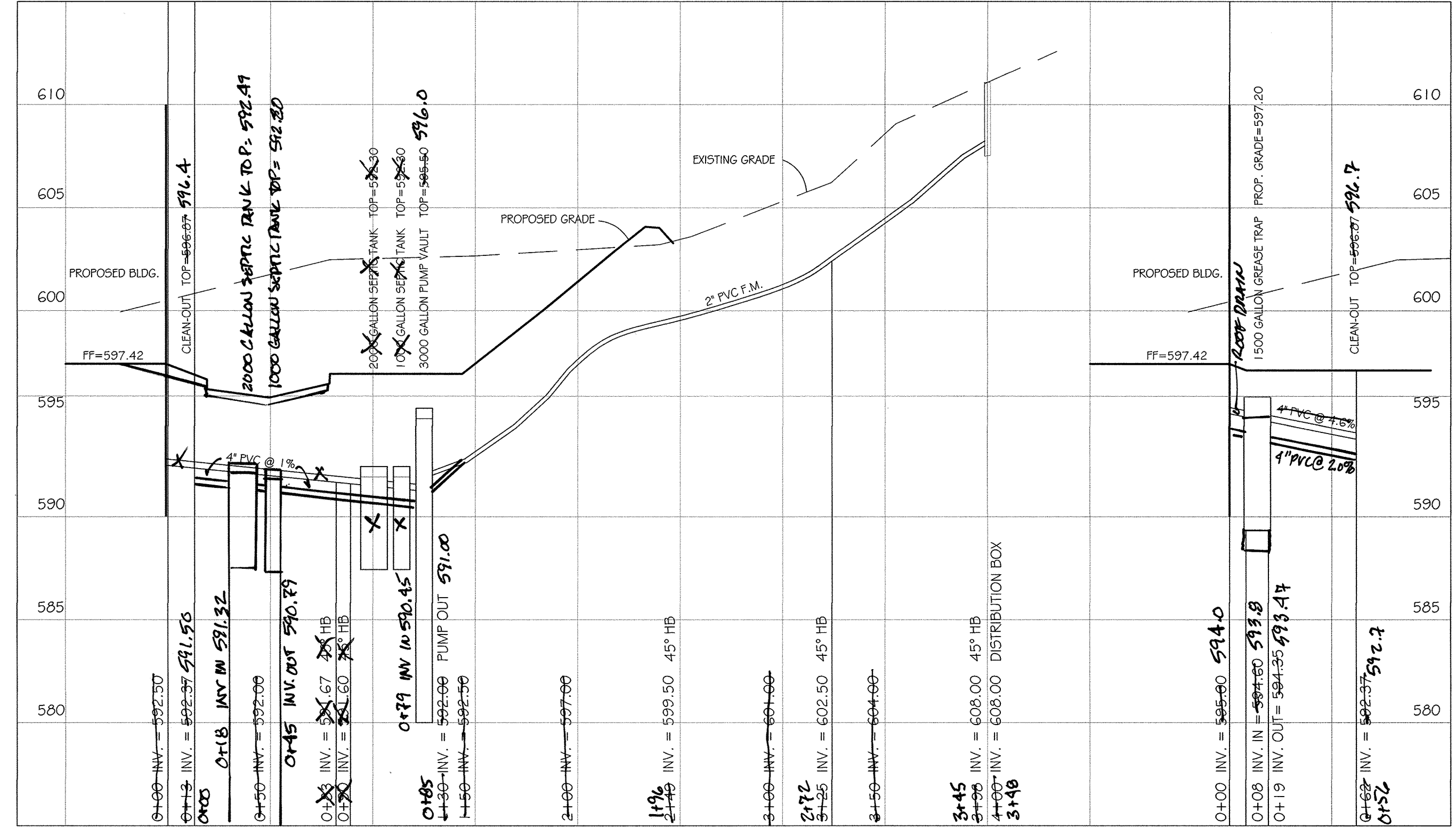
TOTAL DYNAMIC HEAD = 36 Feet
 GOULDS WE Series Model 05 HH (SEE PUMP SELECTION CHART)

PUMP FLOW RATE = 34 GPM
 OUTLET / FORCE MAIN = 2 in.
 FORCE MAIN VELOCITY = 3.4 FEET/SECOND

PUMP CALCULATIONS



3000 GAL. PUMP CHAMBER DETAIL
 SCALE 1/4" = 1'-0"



SEPTIC SYSTEM PROFILE
 SCALE: 1" = 50' (HORIZ.)
 1" = 5' (VERT.)

Wastewater

APPLICATIONS
 Specifically designed for the following uses:
 • Homes, Farms, Trailer Courts, Metals, Schools, Hospitals, Industry, Effluent Systems

SPECIFICATIONS

Pump

- Solids handling capabilities: 3/4" maximum
- Discharge size: 2" NPT
- Capacities: up to 140 GPM
- Total heads: up to 128 feet TDH
- Temperature: 104°F (40°C) continuous, 140°F (60°C) intermittent
- Size order numbers on reverse side for specific HP, voltage, phase and RPM's available.

MOTORS

- Fully submerged in high-grade turbine oil for lubrication and efficient heat transfer.
- Class B insulation on 1 1/2 HP models.
- Class F insulation on 2 HP models.

Single phase (60 Hz):

- Capacitor start motors for maximum starting torque.
- Built-in overload with automatic reset.

Goulds Water Technology

• STOW or STOW severe duty oil and water resistant power cords.

• 1 1/2 HP models have NEMA three prong grounding plugs.

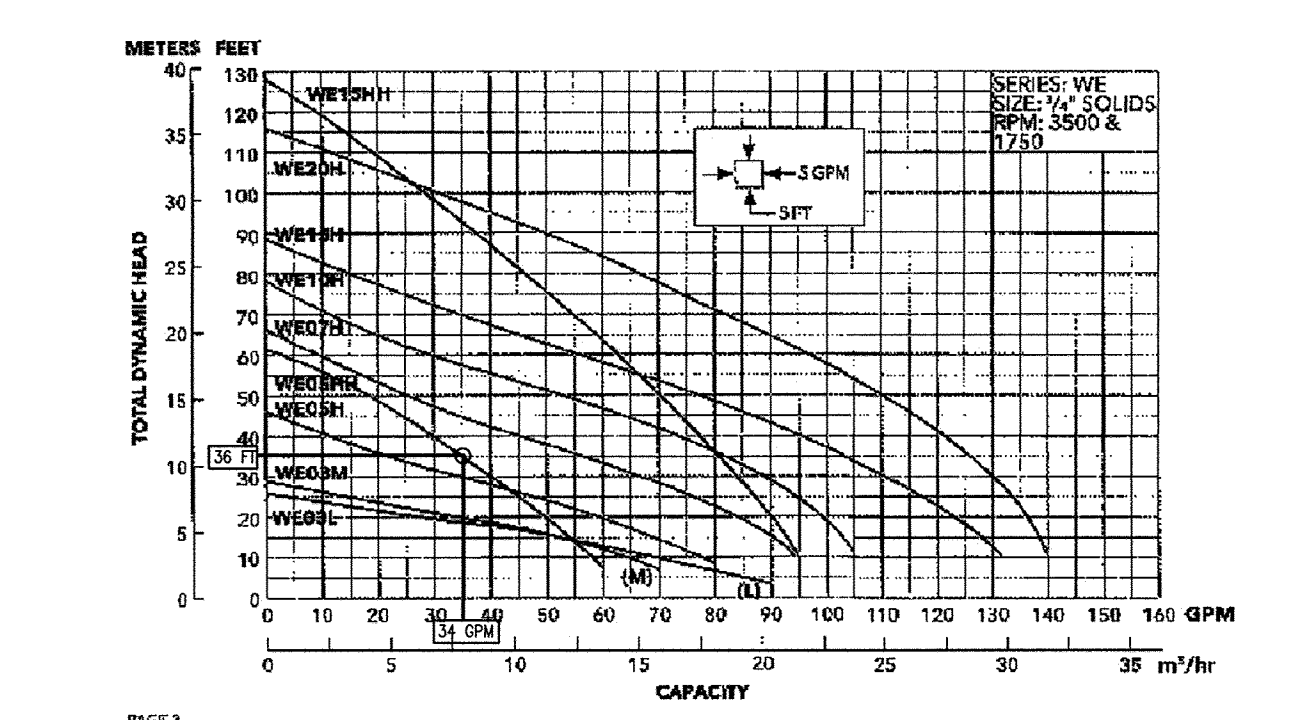
• 1 1/2 HP and larger units have bare lead cord ends.

Three phase (60 Hz):

- Class 10 overload protection must be provided in separately ordered starter unit.
- STOW power cords all have bare lead cord ends.
- Designed for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.
- Bearings: Upper and lower heavy duty ball bearing construction.
- Power Cable: Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. Standard cord is 20'. Optional lengths are available.
- O-rings: Assure positive sealing against contaminants and oil leakage.

AGENCY LISTINGS

Tested to UL 228 and CSA 22.2 100 Standards by Certified Test Laboratories (UL 228/259)



APPROVED
 FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.
 HOWARD COUNTY HEALTH DEPARTMENT

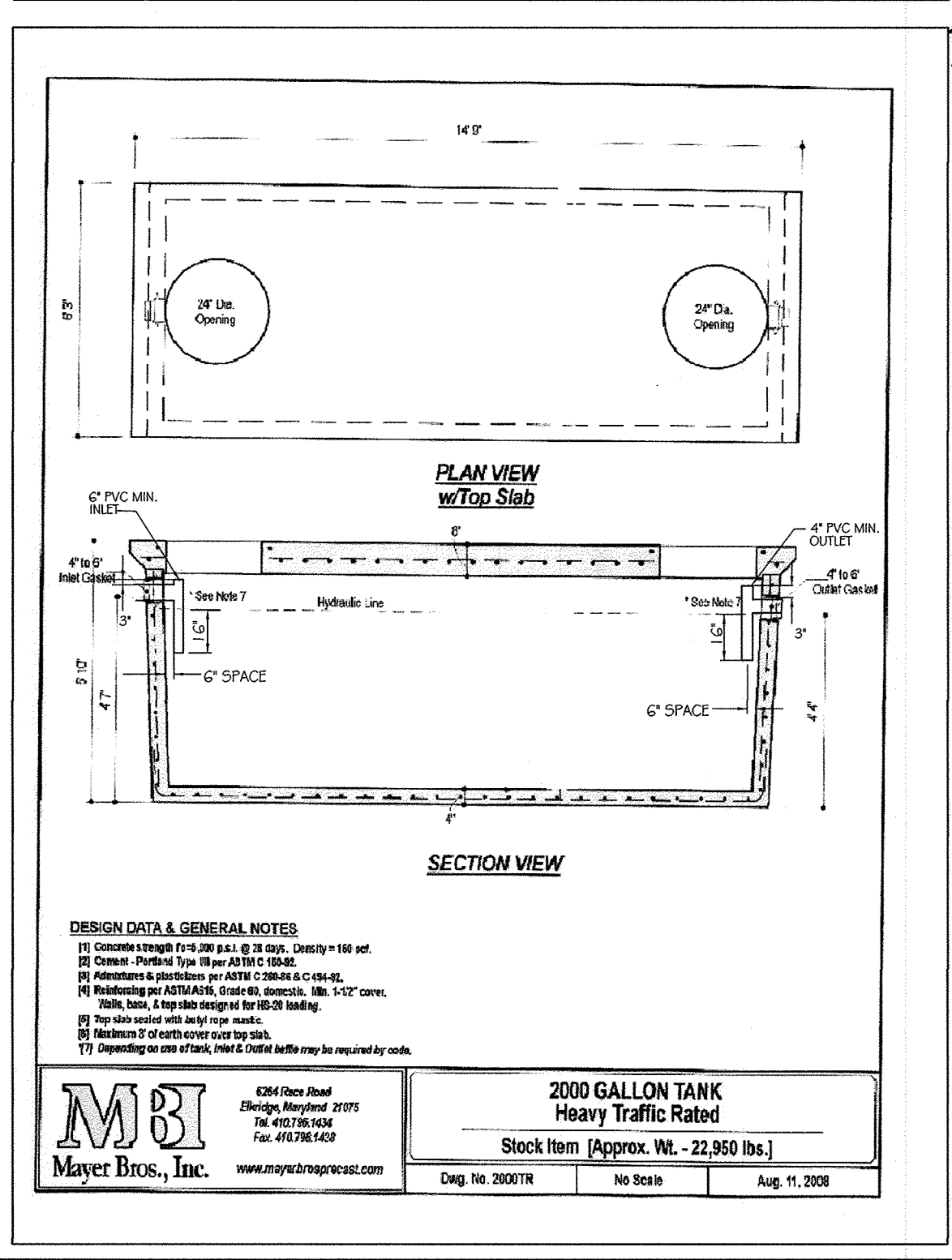
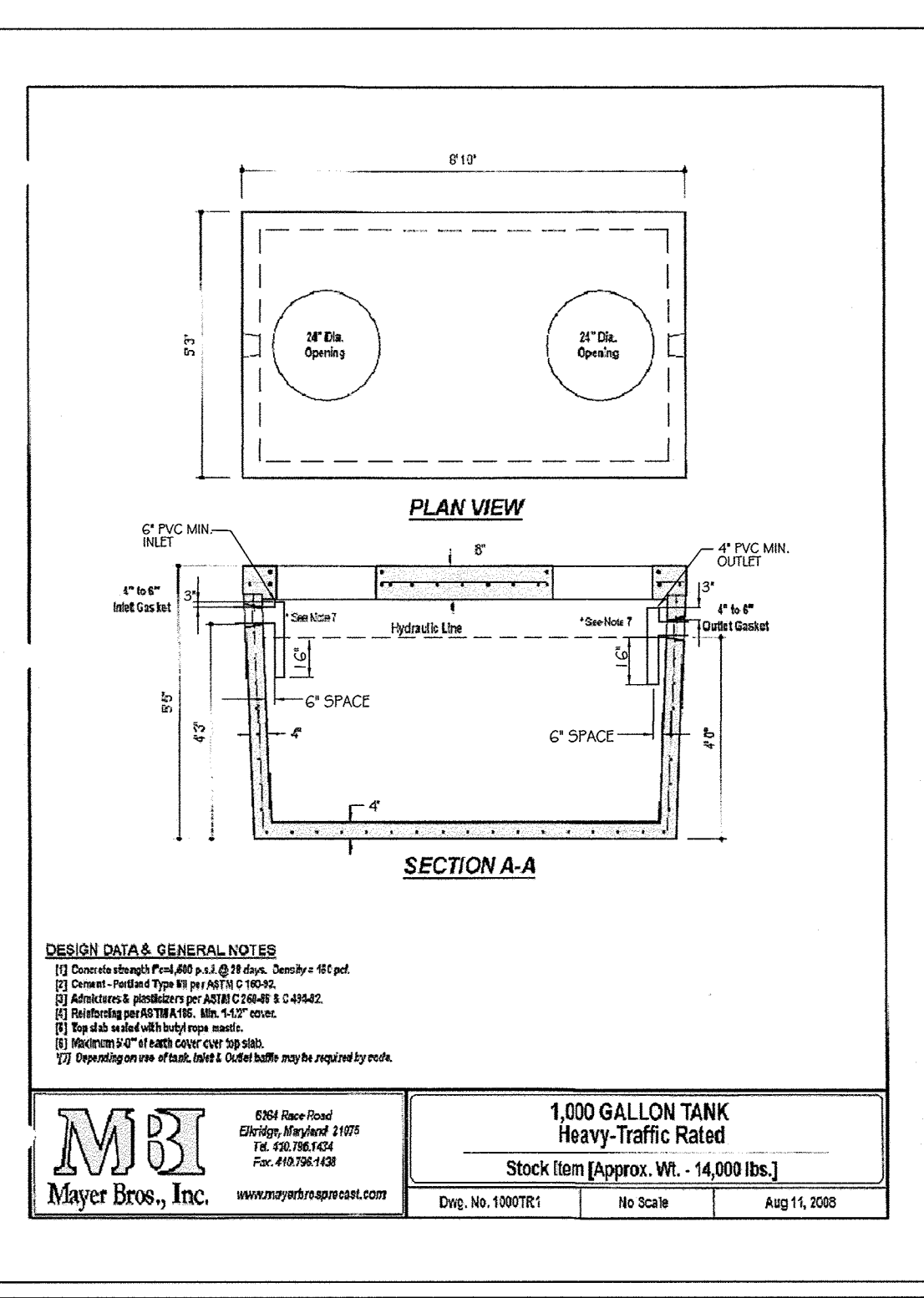
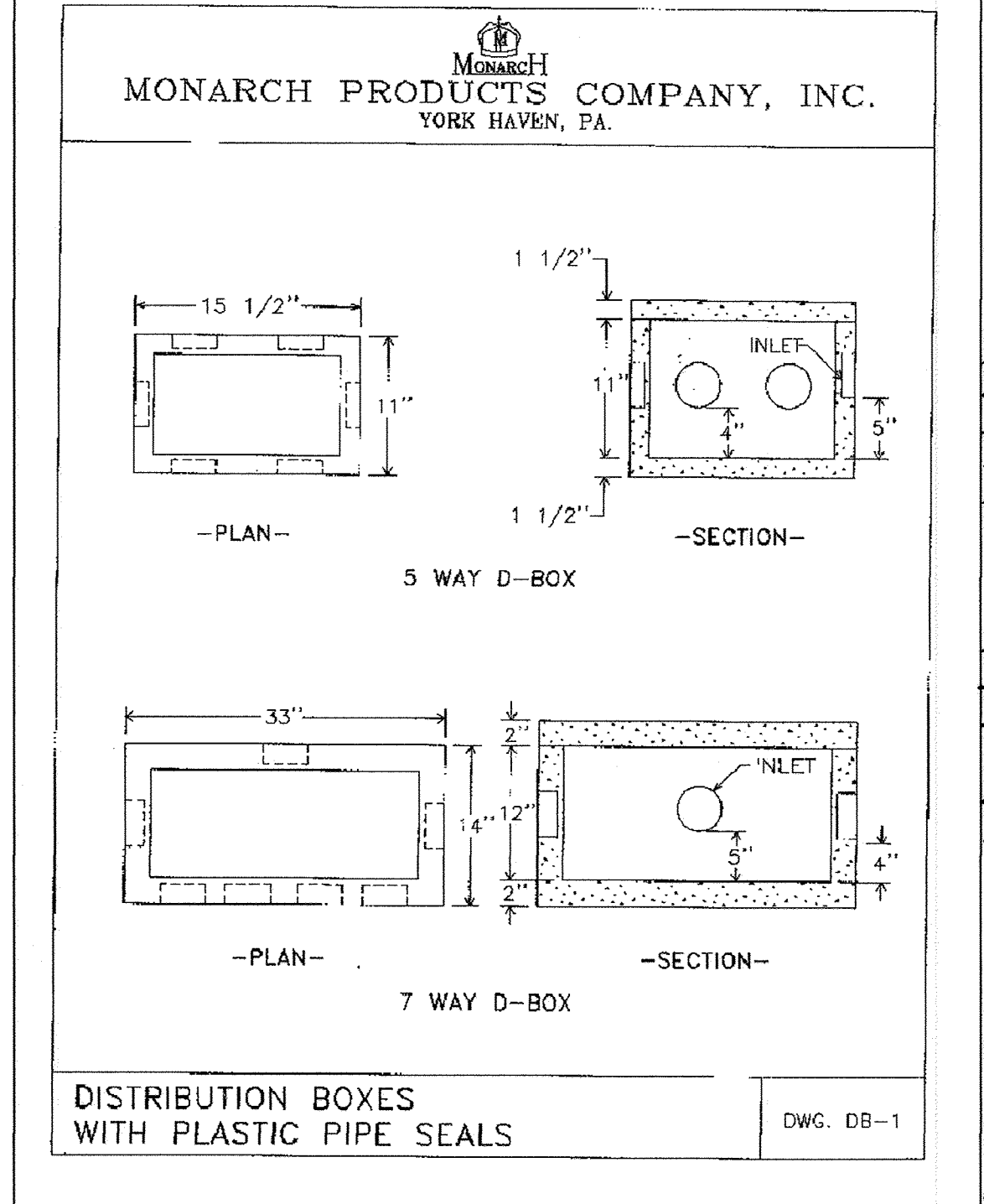
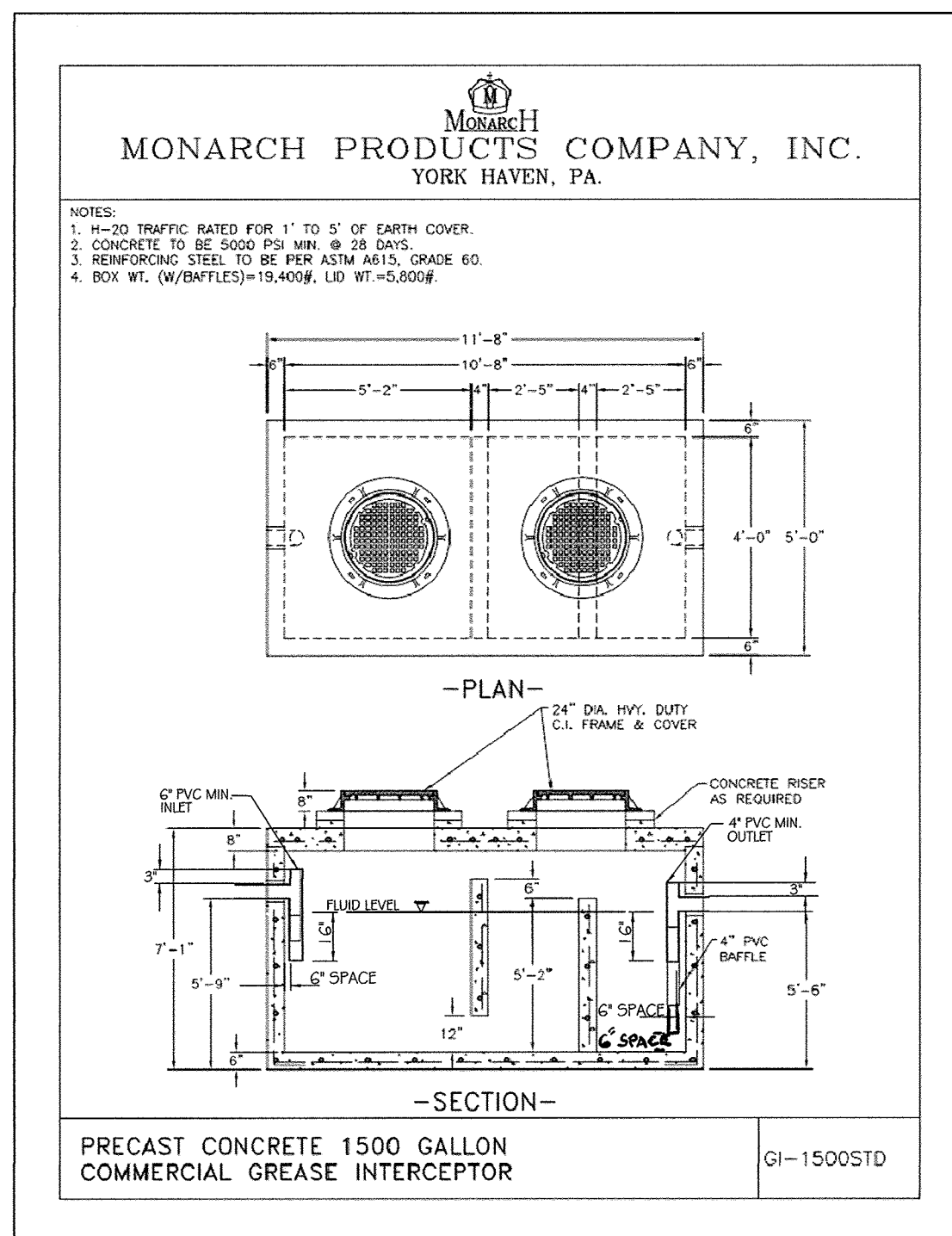
Basilian for Maria Rossman 7/6/2018
 COUNTY HEALTH OFFICER DATE MJB

APPROVED
 HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Nalini J. J. J. 7-12-18
 DIRECTOR DATE

Ken Salas 7-11-18
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Ed Clark 6-12-18
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



INITIAL SYSTEM

Trench T-1 EX GRD=602.8 INV Trench 602.8 B Trench 602.8
 Trench T-2 EX GRD=601.3 INV Trench 601.3 B Trench=602.3
 Trench T-3 EX GRD=604.9 INV Trench 604.9 B Trench=601.5
 Trench T-4 EX GRD=608.8 INV Trench 608.8 B Trench=600.8
 Trench T-5 EX GRD=608.0 INV Trench 608.0 B Trench=600.0
 Trench T-6 EX GRD=607.0 INV Trench 607.0 B Trench=599.0

1st Replacement System

Trench T2-1 EX GRD=606.2 INV Trench 602.2 B Trench 598.2
 Trench T2-2 EX GRD=606.2 INV Trench 602.2 B Trench 598.2
 Trench T2-3 EX GRD=605.5 INV Trench 601.5 B Trench 597.5
 Trench T2-4 EX GRD=605.5 INV Trench 601.5 B Trench 597.5
 Trench T2-5 EX GRD=605.0 INV Trench 601.0 B Trench 597.0
 Trench T2-6 EX GRD=605.0 INV Trench 601.0 B Trench 597.0

2nd Replacement System

Trench T3-1 EX GRD=608.3 INV Trench 604.3 B Trench 600.3
 Trench T3-2 EX GRD=607.8 INV Trench 603.8 B Trench 599.8
 Trench T3-3 EX GRD=607.5 INV Trench 602.5 B Trench 599.5
 Trench T3-4 EX GRD=607.2 INV Trench 602.2 B Trench 599.2
 Trench T3-5 EX GRD=606.9 INV Trench 602.5 B Trench 598.5
 Trench T3-6 EX GRD=606.5 INV Trench 602.0 B Trench 598.0
 Trench T3-7 EX GRD=606.0 INV Trench 601.5 B Trench 597.5
 Trench T3-8 EX GRD=605.5 INV Trench 601.0 B Trench 597.0
 Trench T3-9 EX GRD=605.0 INV Trench 601.0 B Trench 597.0

SEPTIC SYSTEM DESIGN

THE PROPOSED LISBON VFC BUILDING WILL HAVE A BUNK ROOM. THE BUNK ROOM WILL HAVE A MAXIMUM OF 3 MEMBERS SLEEPING IN IT DURING ANY DAY WHEN THE 300-PERSON SOCIAL HALL IS BEING UTILIZED.

MAXIMUM USAGE: 3 PEOPLE @ 100 GPD = 300 GPD + 300-PERSON SOCIAL HALL @ 5 GPD = 1,500 GPD
 TOTAL DESIGN FLOW = 1,800 GPD

FOR INITIAL SYSTEM:
 1,800 GPD / 0.6 APPLICATION RATE = 2,250 S.F.

2,250 S.F. / 3' TRENCH = 750 L.F. STD. TRENCH
 = 533 L.F. DEEP TRENCH REQUIRED

FOR FIRST REPLACEMENT SYSTEM:
 1,800 GPD / 1.2 APPLICATION RATE = 1,500 S.F.

1,500 S.F. / 3' TRENCH = 500 L.F. STD. TRENCH
 = 315 L.F. DEEP TRENCH REQUIRED

FOR SECOND REPLACEMENT SYSTEM:
 1,800 GPD / 0.6 APPLICATION RATE = 3,000 S.F.

3,000 S.F. / 3' TRENCH = 1,000 L.F. STD. TRENCH
 = 560 L.F. DEEP TRENCH SYSTEM

NOTE: THERE WILL BE UP TO 10 BUNKS (1,000 GPD) AVAILABLE IN THE EVENT OF A MAJOR OR NATURAL DISASTER, SUCH AS ICE STORMS, BLIZZARDS, HURRICANES, TROPICAL STORMS, PROLONGED FLOODING OR TERRORIST RELATED EVENTS. IN THE EVENT OF ANY OF THE ABOVE, THE SOCIAL HALL WOULD NOT BE USED FOR ANY FUNCTIONS.

PROPOSED BUILDING:
 F.F. ELEV. = 597.42
 INV. OUT = 592.50

PROP. SEPTIC TANKS:
 EX GRD. ELEV. = 603.50
 PROP. GRD. ELEV. = 597.00
 INV. IN = 591.55
 INV. OUT = 591.00

PROP. PUMP TANK:
 EX GRD. ELEV. = 604.00
 PROP. GRD. ELEV. = 597.00
 INV. IN = 590.33
 INV. OUT = 592.00

PROP. DISTRIBUTION BOX:
 EX GRD. ELEV. = 611.00
 INV. IN = 606.00
 INV. OUT = 607.00

GENERAL NOTES:

- OWNER: THE LISBON VOLUNTEER FIRE COMPANY, INC. DEED REFERENCE: LIBER 13092 FOLIO 041 DATE: FEBRUARY 24, 2011
- TAX MAP: 7 GRID: 11 PARCEL: 488
- NEAREST POTABLE WATER SUPPLY: MT. AIRY. DISTANCE: 4 MILES ±
- TOPOGRAPHY AND PLANNIMETRICS: FROM HOWARD COUNTY GIS, SUPPLEMENTED WITH FIELD LOCATIONS BY VANMAR ASSOCIATES. CONTOUR INTERVAL IS 2 FEET. VERTICAL DATUM IS NAVD83.
- THERE ARE NO WELLS OR SEPTIC SYSTEMS WITHIN 100' OF THE PROPERTY BOUNDARY AND 200' DOWN GRADIENT UNLESS OTHERWISE SHOWN HERON.
- THE EXISTING WELL SHOWN ON THIS PLAN HAS BEEN FIELD LOCATED BY VANMAR ASSOCIATES AND ACCURATELY SHOWN.
- SOIL TYPES: GLENELG (G₁A, G₂B), GLENVILLE (G₁M), MANOR (M₁C) HOWARD COUNTY SOILS MAP GRID NO. 307.
- THE LOTS SHOWN HERON COMPLY WITH THE MINIMUM OWNERSHIP, WIDTH AND LOT AREAS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
- ANY CHANGE TO THE LOCATIONS OR DEPTHS OF ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
- THE SOURCE OF SOILS INFORMATION SHOWN HERON IS THE NATURAL RESOURCES CONSERVATION SERVICE.
- THE EXISTING WELL HAS BEEN DRILLED AND THE WELL COMPLETION REPORT APPROVED BY THE HOWARD COUNTY HEALTH DEPARTMENT (TAG # HO-95-2137).
- ALL EXISTING STRUCTURES AFFECTING THE PROPOSED SEPTIC SYSTEM ARE TO BE RAZED PRIOR TO APPROVAL OF BUILDING PERMIT APPLICATION FOR THE NEW FIRE STATION AND SOCIAL HALL.
- AN EXISTING WELL HAS BEEN SEALED AND THE ABANDONMENT REPORT RECEIVED BY THE HEALTH DEPARTMENT.
- HEALTH DEPARTMENT DOCUMENTS ASSOCIATE SEVERAL WELLS WITH THIS PROPERTY WHICH HAVE NOT BEEN OBSERVED. SHOULD ANY WELL NOT SHOWN ON THIS PLAN BE DISCOVERED DURING DEVELOPMENT OF THIS PROPERTY, THE CONTRACTOR IS TO IMMEDIATELY NOTIFY THE HEALTH DEPARTMENT.
- A WAIVER HAS BEEN APPROVED BY THE HOWARD COUNTY HEALTH DEPARTMENT FOR THE EARTH COVER OVER THE SEPTIC TANKS TO EXCEED 3 FEET. THE EARTH COVER IS NOT TO EXCEED 5 FEET AND THE SEPTIC TANKS ARE DESIGNED TO TRAFFIC BEARING SPECIFICATIONS.
- ELECTRICAL WORK FOR THE INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
- THE PUMP CHAMBER MUST PASS A FIELD CONDUCTED WATER TIGHT TEST.

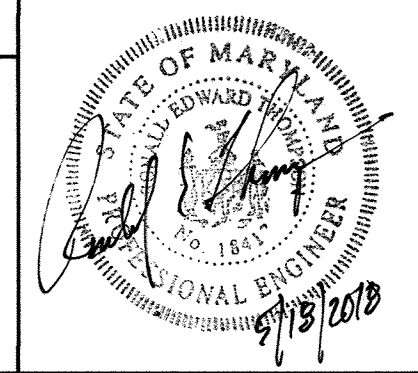
SEE SHEET 2 FOR THE SEPTIC SYSTEM LAYOUT AND COMPONENTS.

OWNER / DEVELOPER:
 LISBON VOL. FIRE COMPANY
 c/o CURTIS LOWREY
 P.O. BOX 40,
 LISBON, MD 21765
 443-472-7765

DATE	REVISIONS
8-4-2017	COUNTY COMMENTS
10-9-2017	COUNTY COMMENTS
11-17-2017	HCHD COMMENTS
11-8-2018	HCHD COMMENTS
5-10-2019	REDLINE REVISIONS

SEPTIC SYSTEM PLAN
 LOT 3, LOWER TRAIL
LISBON VOLUNTEER FIRE CO., INC.

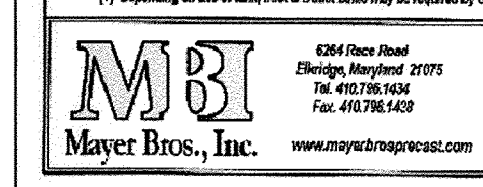
TAX MAP: 7 GRID NO: 11 PARCEL NO: 488
 ELECTION DISTRICT: No. 4 HOWARD COUNTY, MARYLAND EX. ZONING: RC-DEO
 SCALE: AS NOTED DATE: JANUARY, 2017 SHEET 13 OF 15



PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16417, EXPIRATION DATE: 09/18/18
 SIGNED: *Ronald E. Thompson* DATE: 5/16/2018
 RONALD E. THOMPSON, P.E.

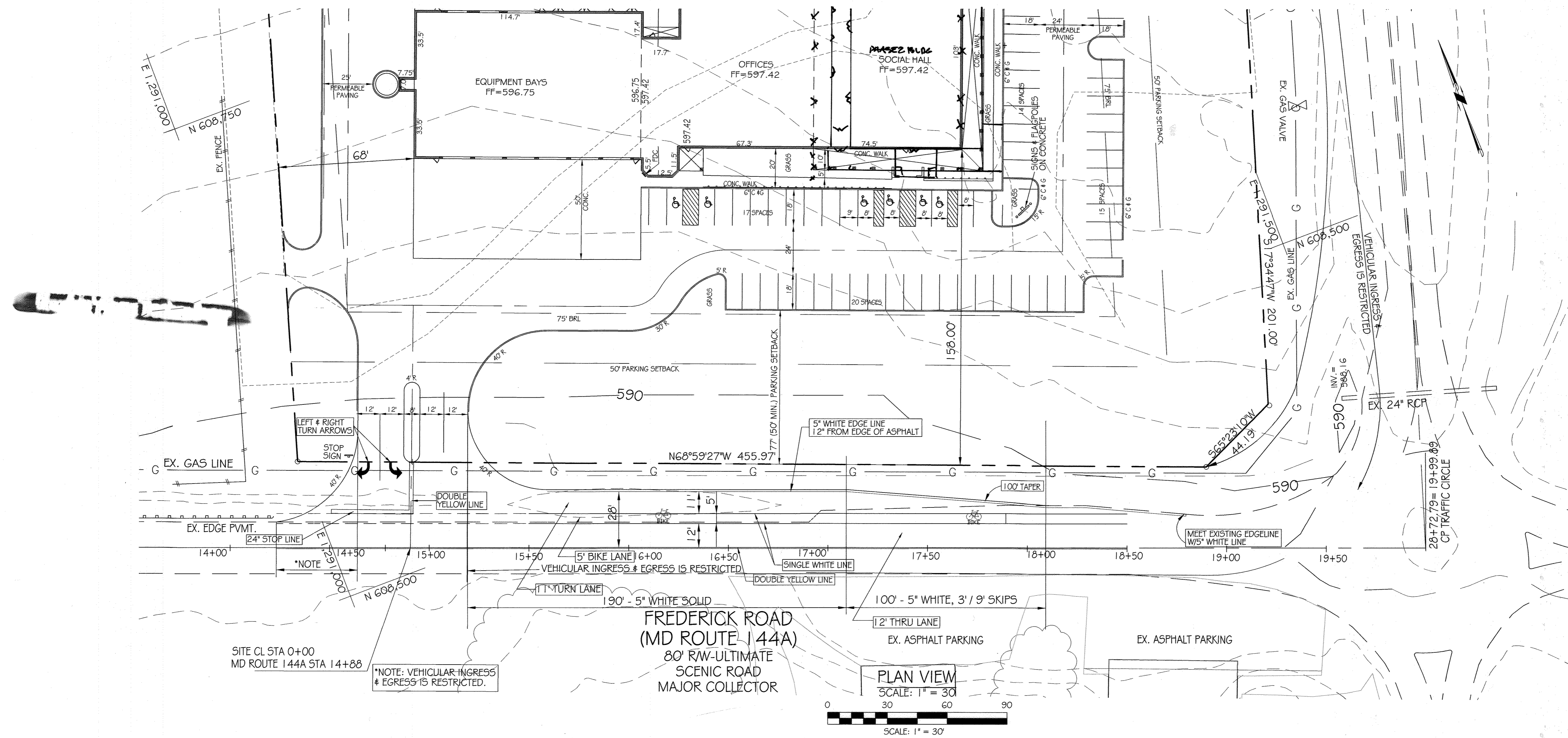


1,000 GALLON TANK
 Heavy Traffic Rated
 Stock Item [Approx. Wt. - 14,000 lbs.]
 Div. No. 100071E No Scale Aug 11, 2009



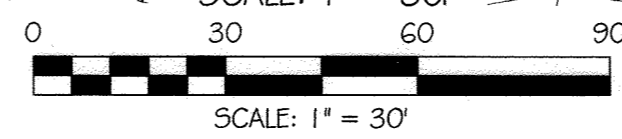
2,000 GALLON TANK
 Heavy Traffic Rated
 Stock Item [Approx. Wt. - 22,950 lbs.]
 Div. No. 200071E No Scale Aug 11, 2009

VANMAR ASSOCIATES, INC. Engineers Surveyors Planners
 210 South Main Street Mount Airy, Maryland 21771
 (301) 829-2890 (301) 831-5015 (410) 549-2751
 Fax (301) 831-5603 ©Copyright, Latest Date Shown SDP-17-035



FREDERICK ROAD
(MD ROUTE 144A)
80' RW-ULTIMATE
SCENIC ROAD
MAJOR COLLECTOR

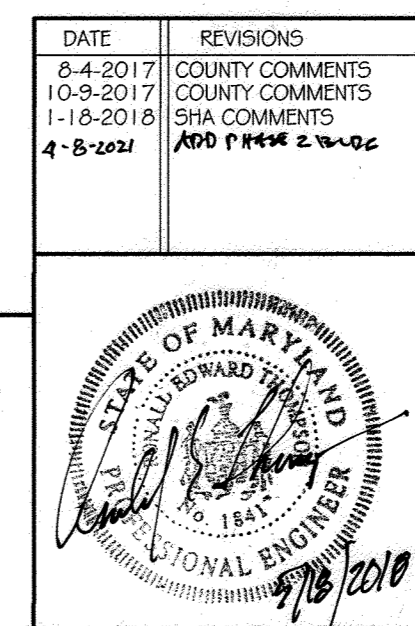
PLAN VIEW
SCALE: 1" = 30'



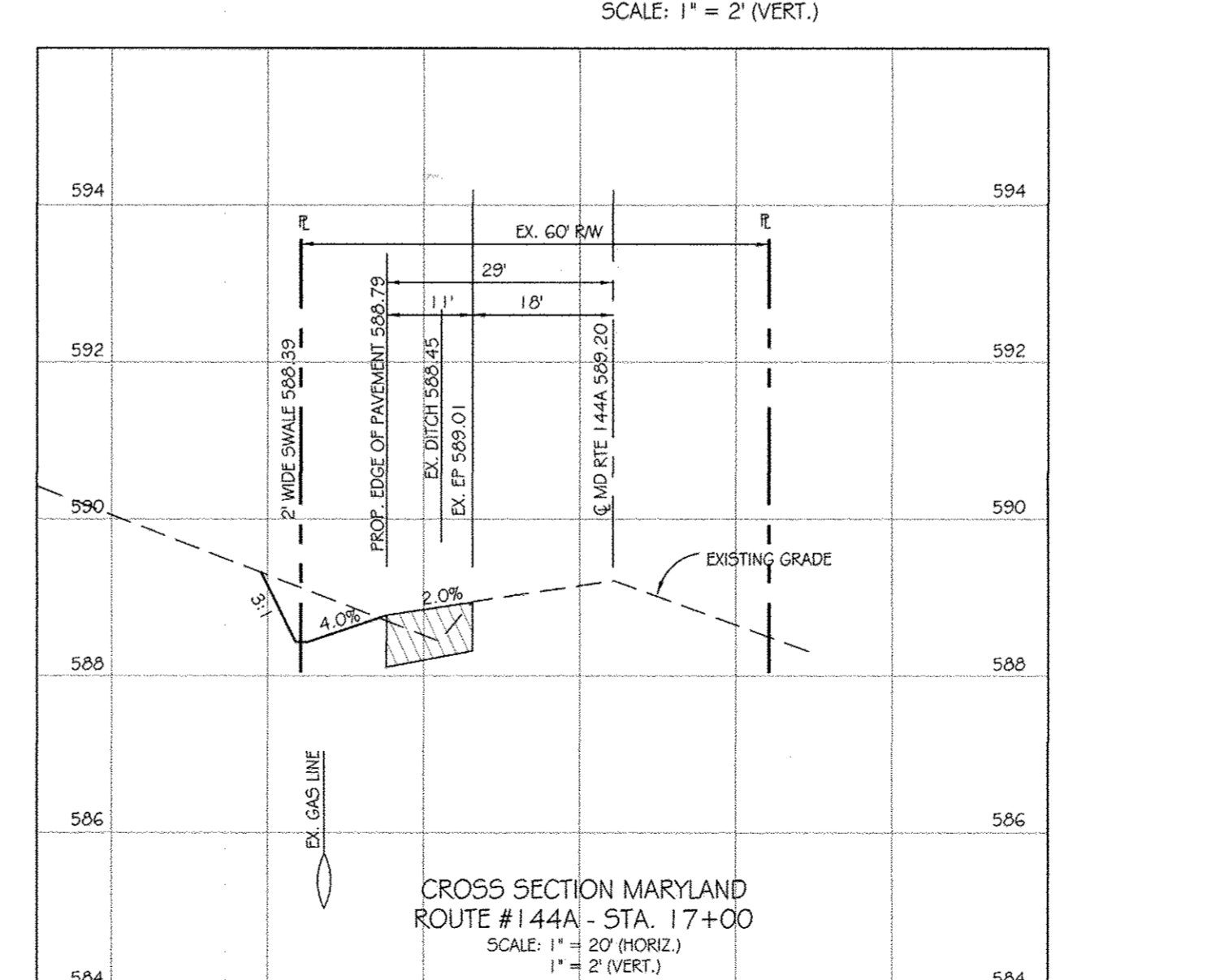
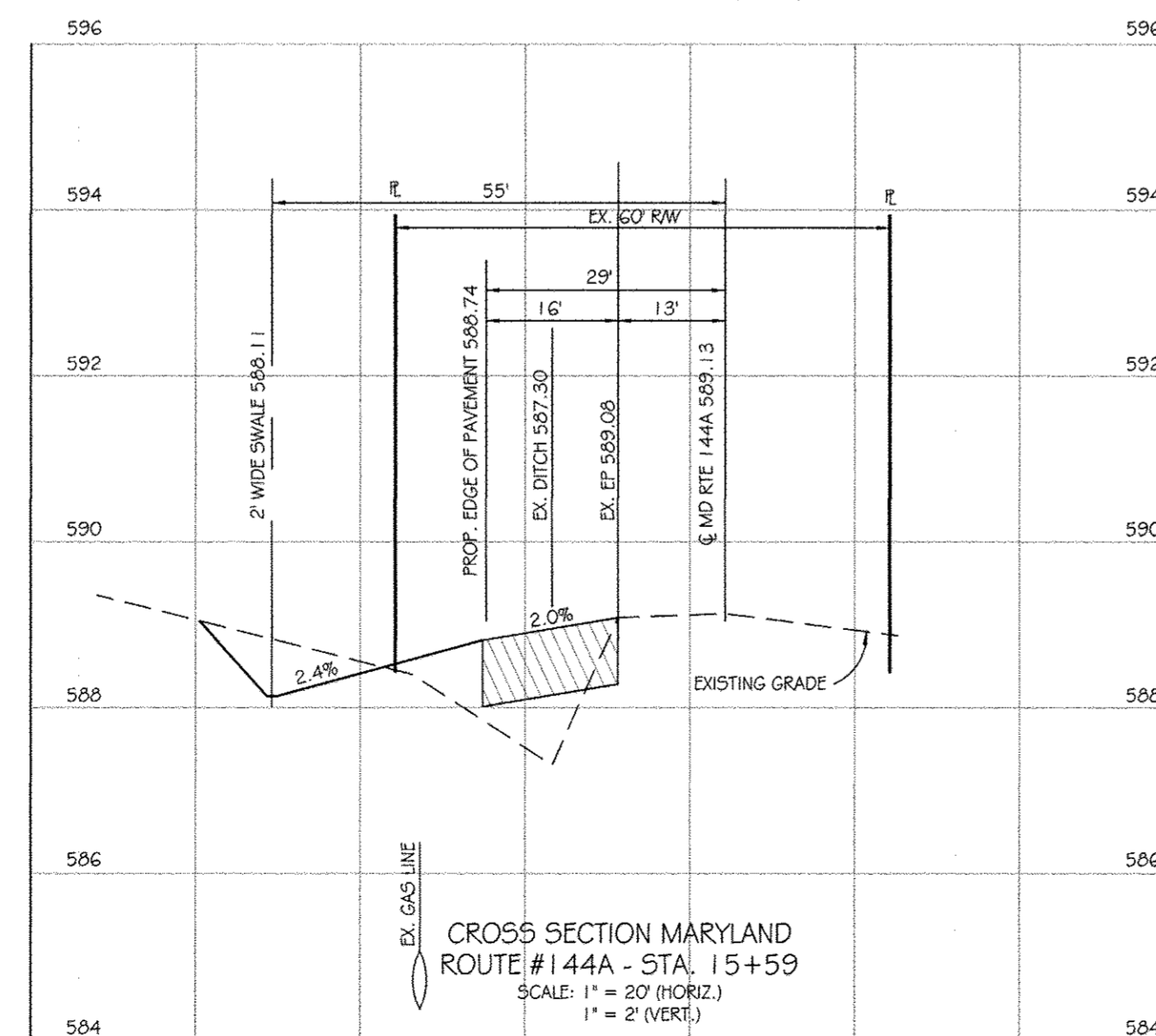
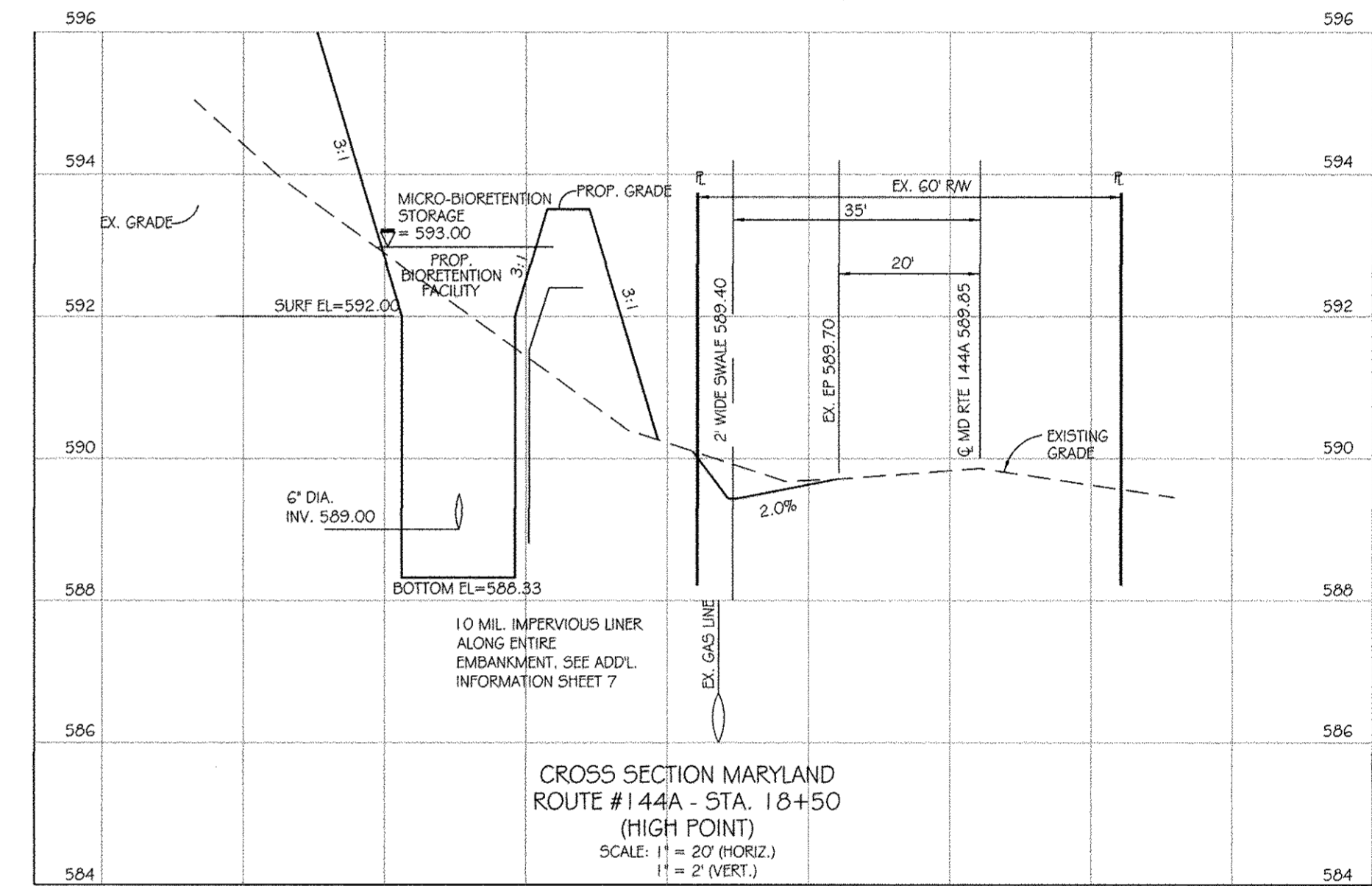
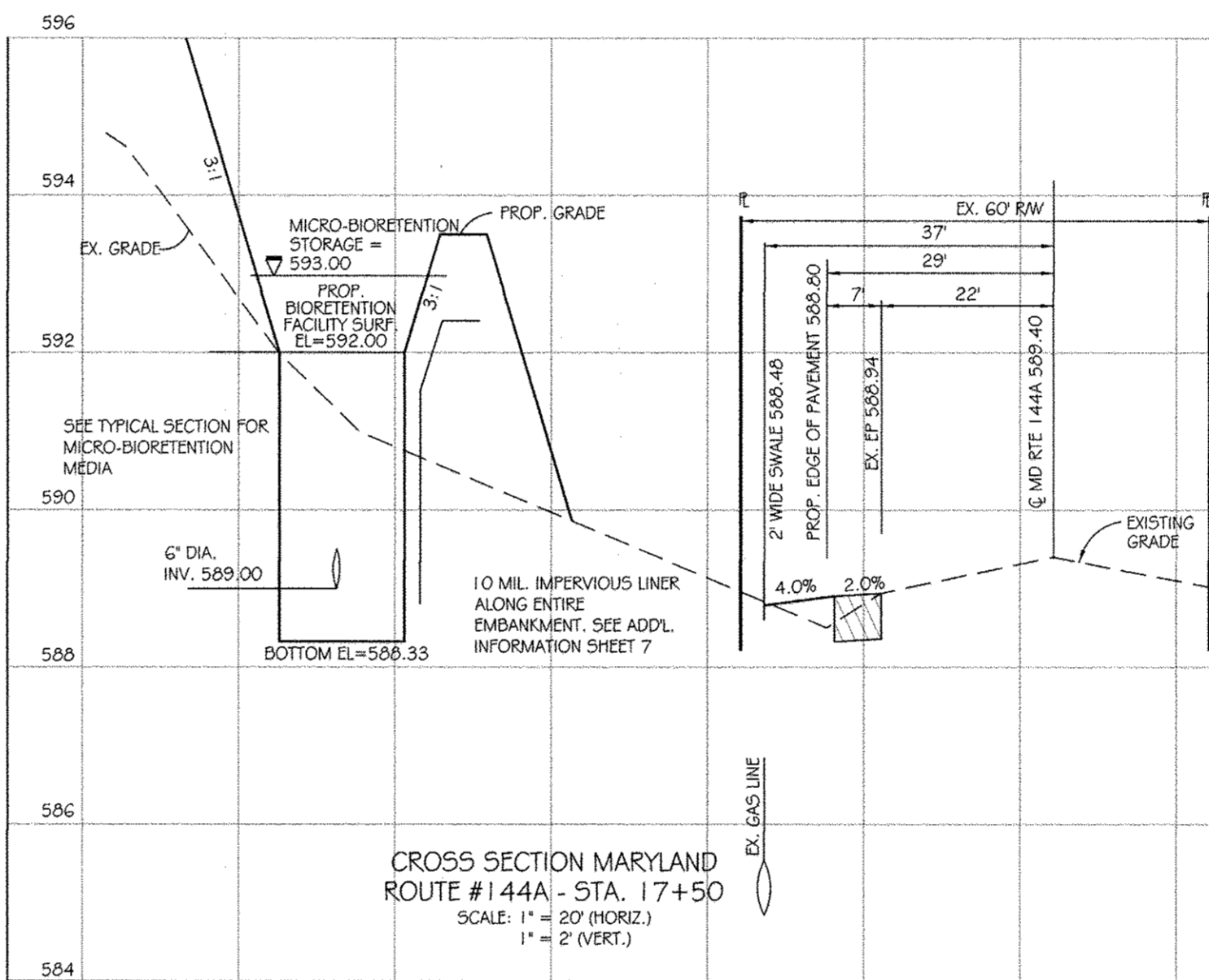
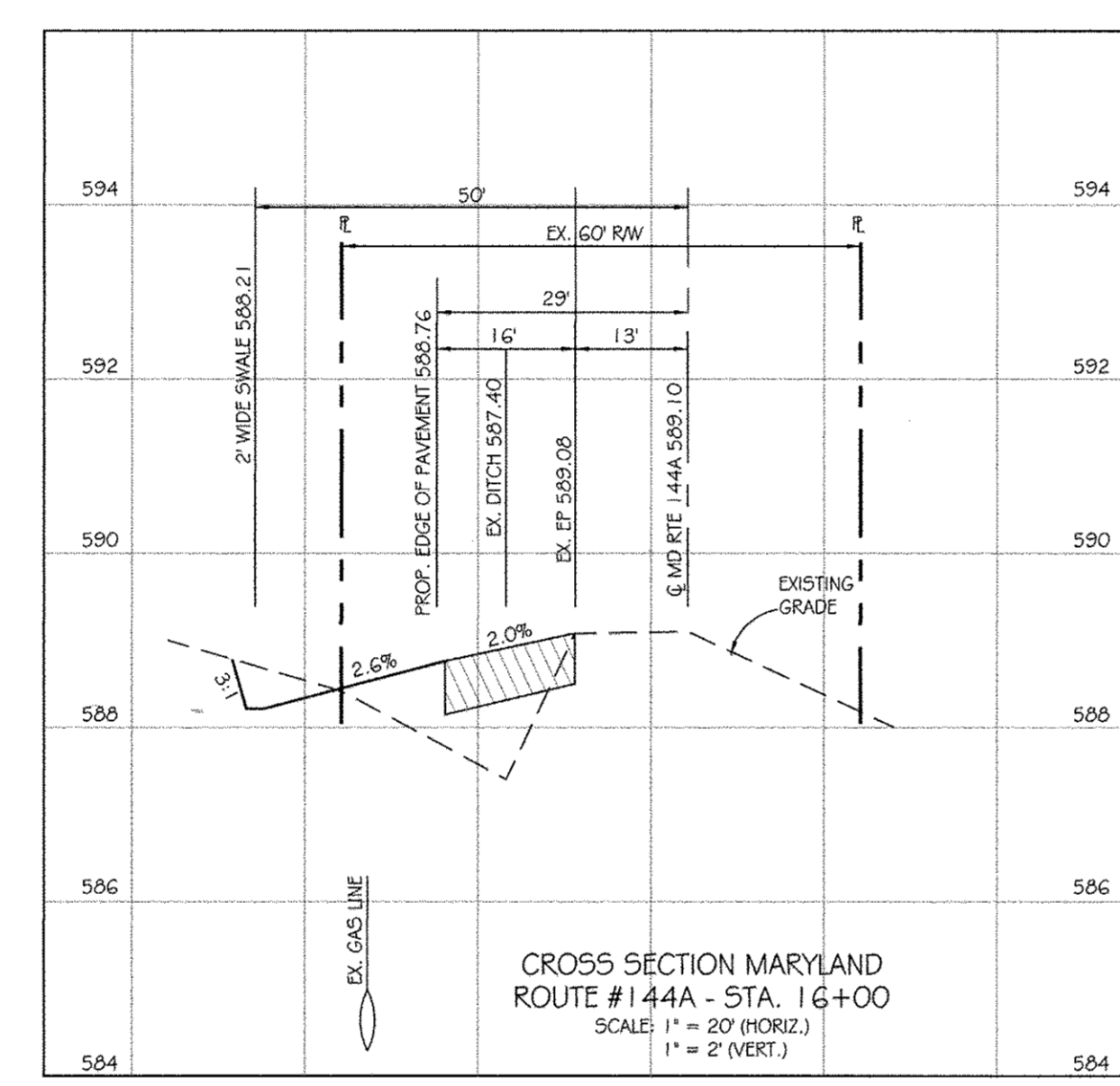
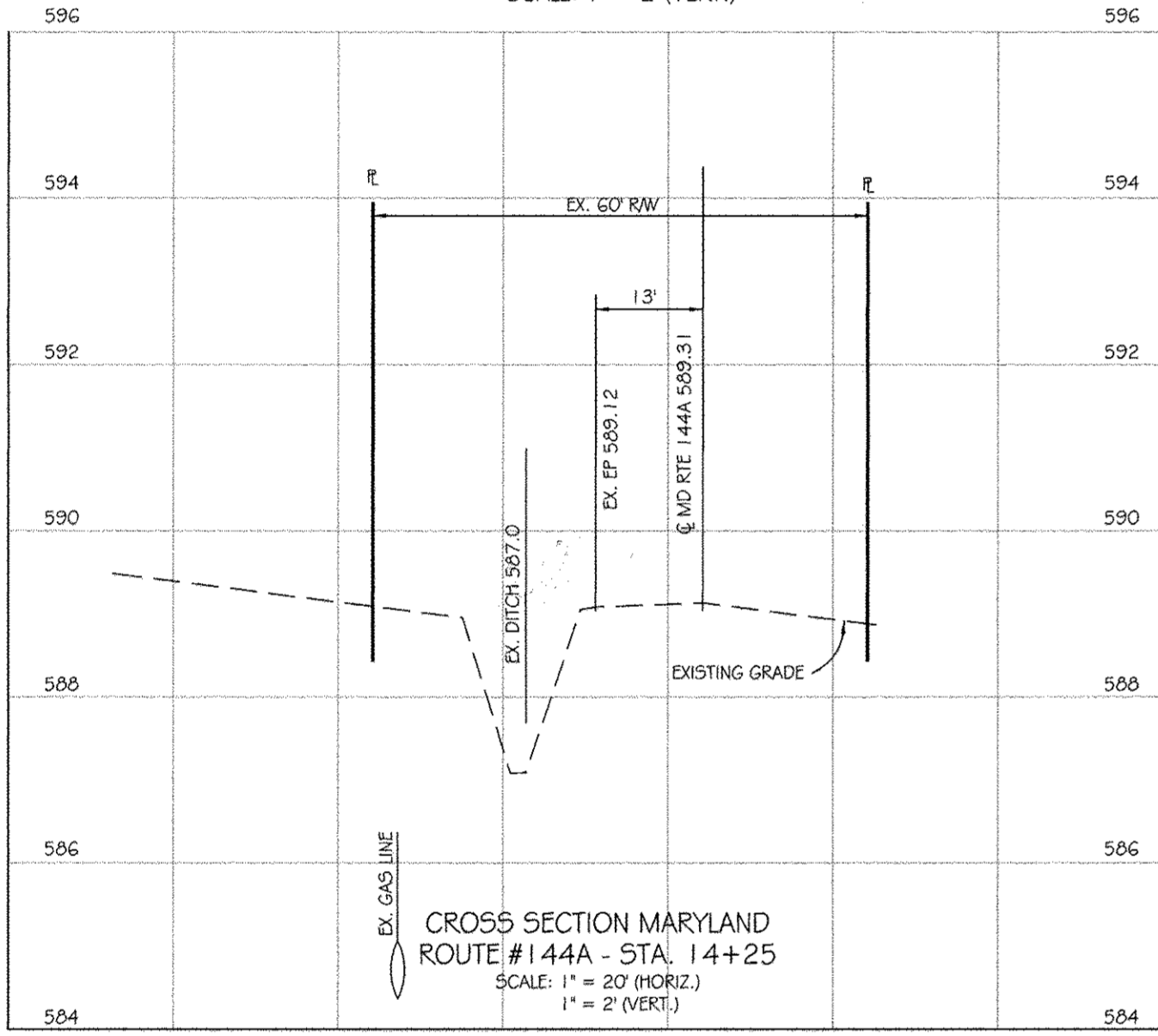
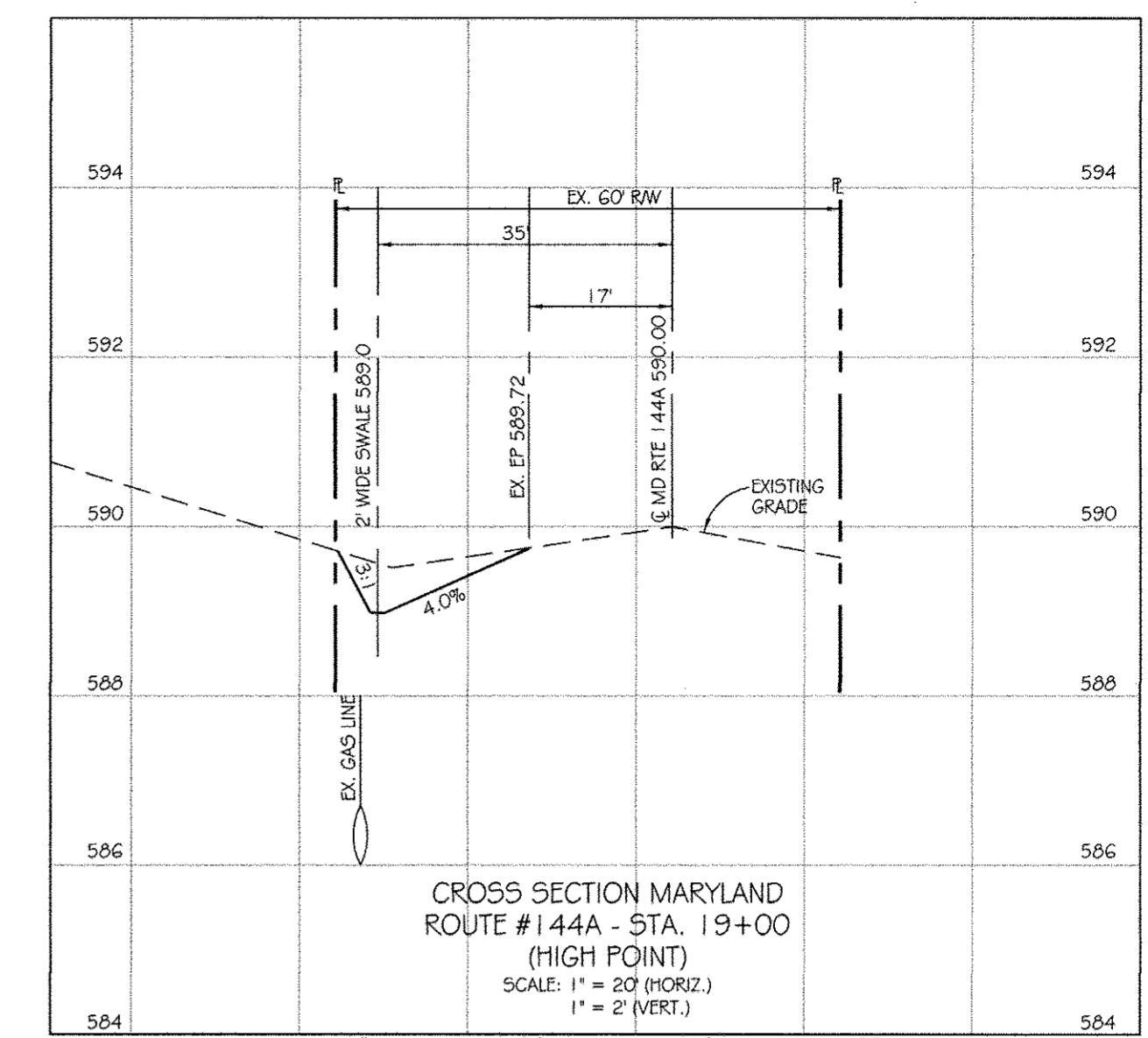
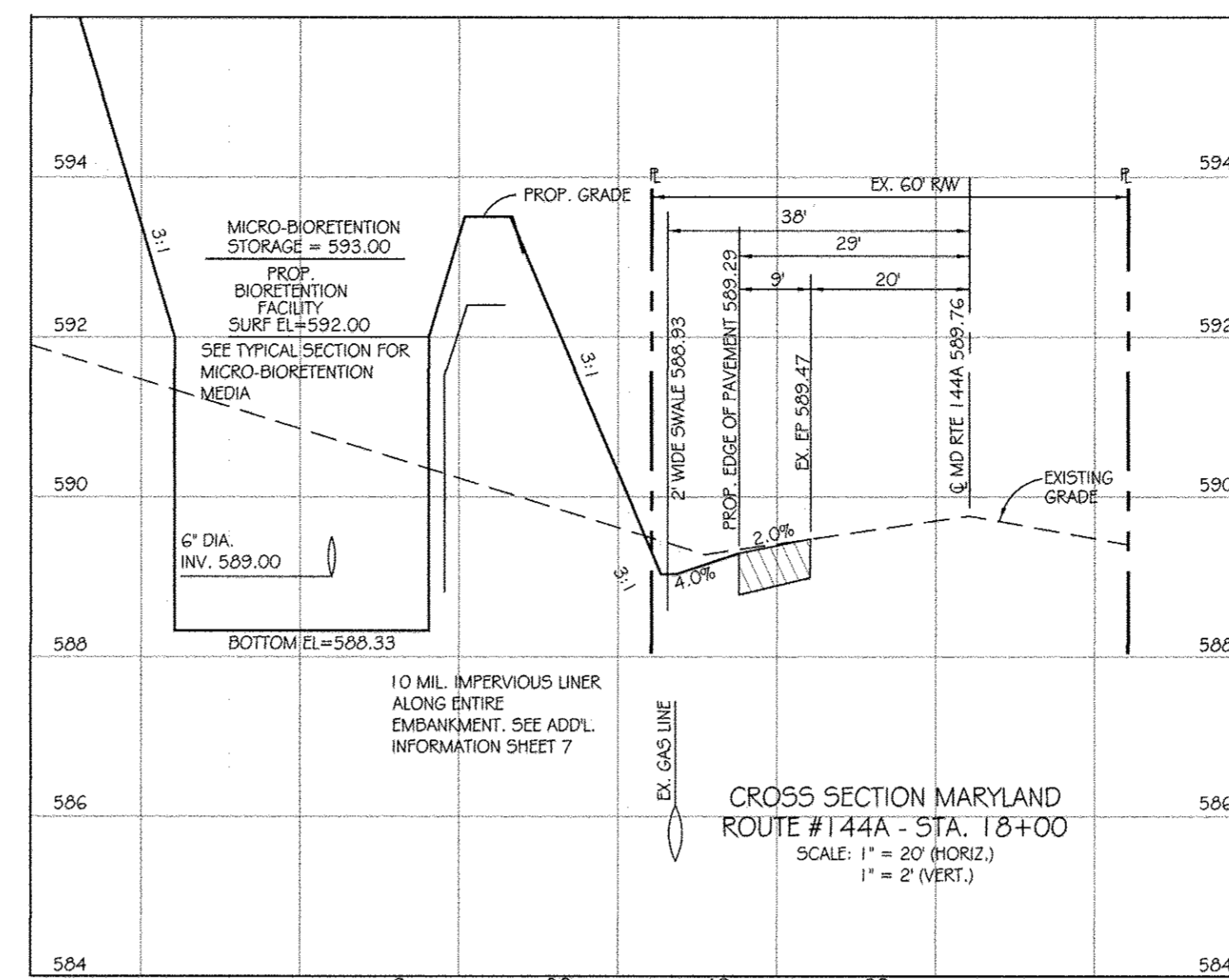
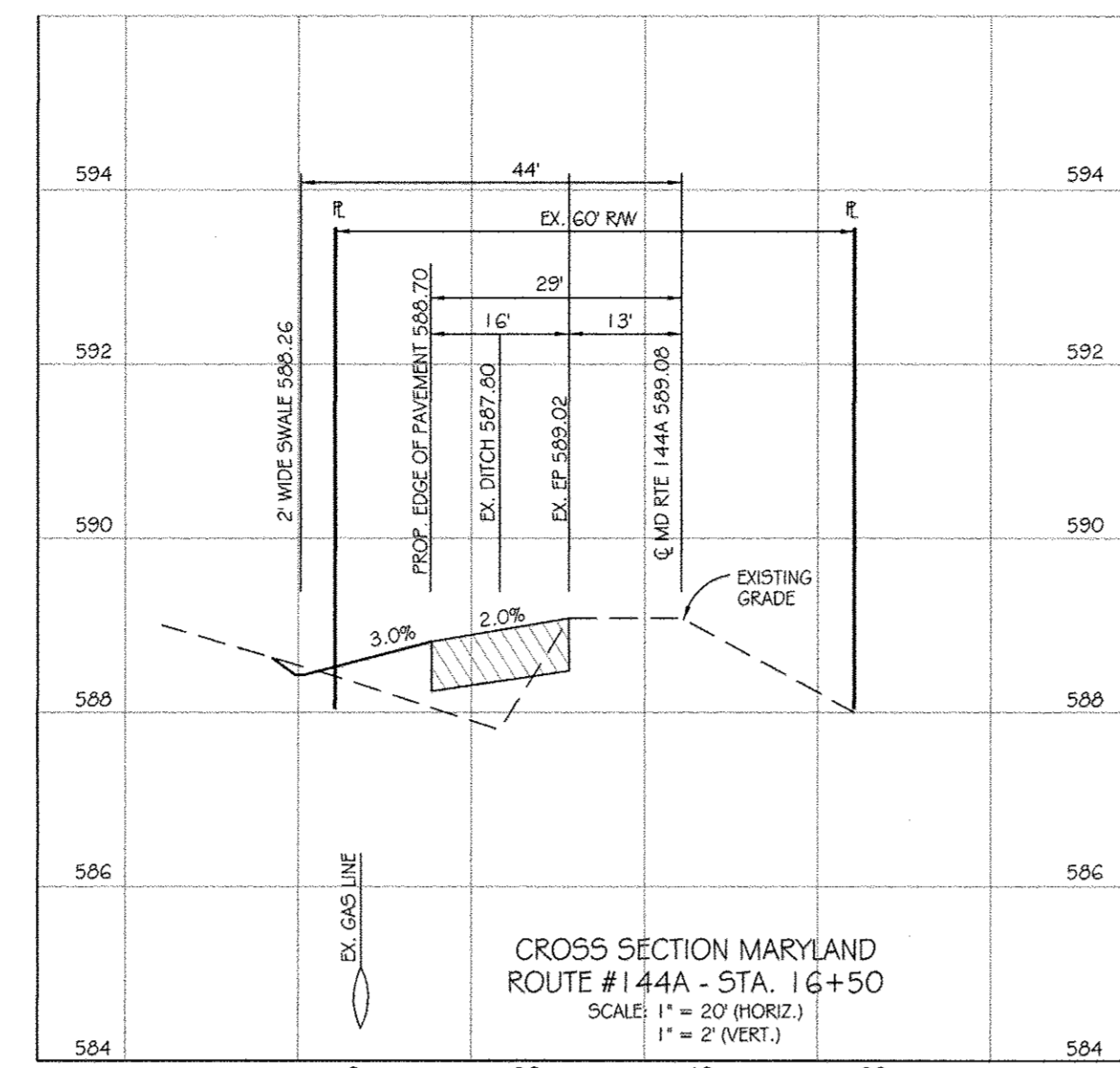
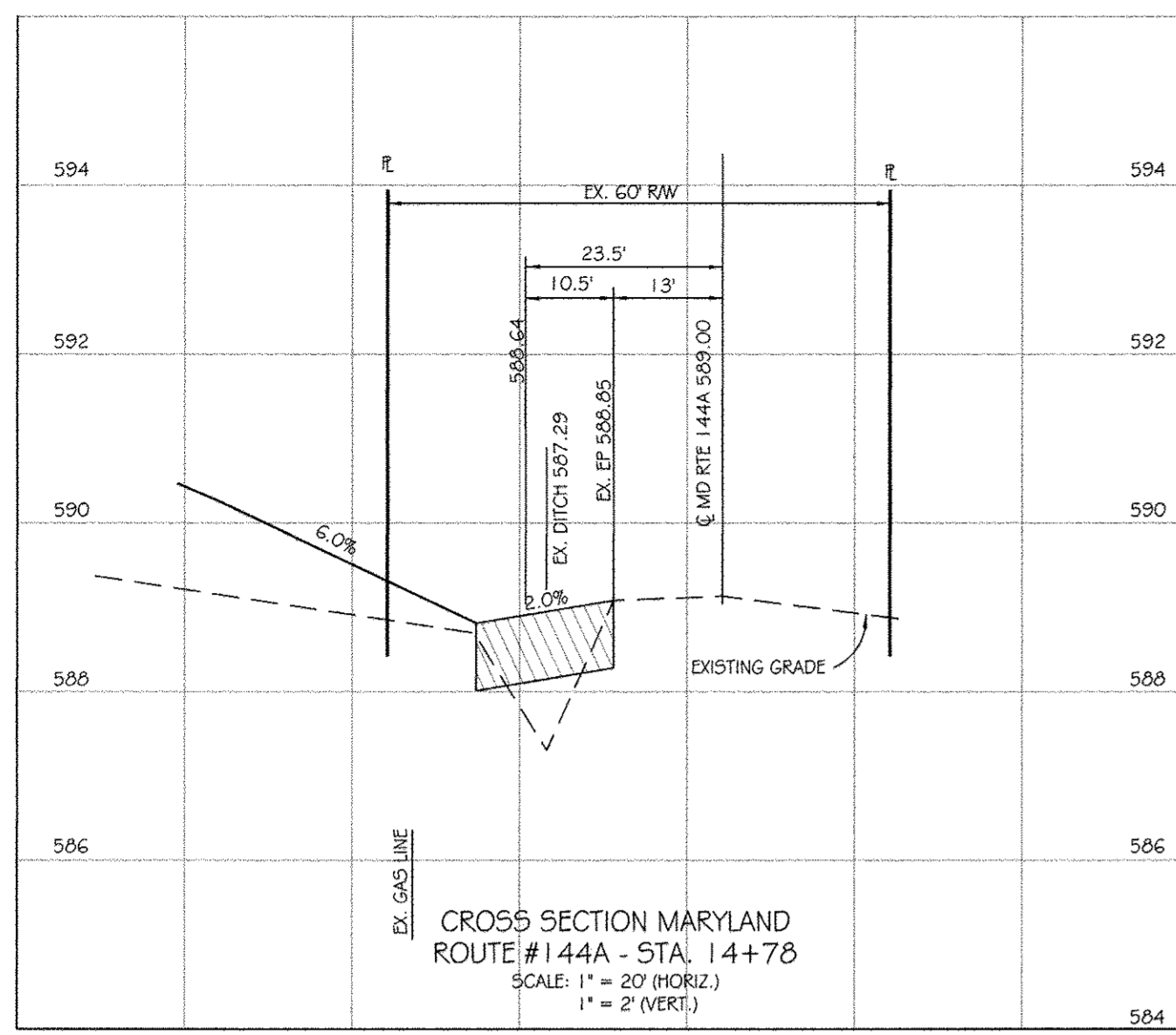
APPROVED	
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING	
<i>N. McW. Zeffie</i>	7-12-18
DIRECTOR	DATE
<i>Kent Leach</i>	7-11-18
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>Paul Clark</i>	6-12-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE

OWNER / DEVELOPER:
LISBON VOL. FIRE COMPANY
c/o CURTIS LOWREY
P.O. BOX 40,
LISBON, MD 21765
443-472-7765

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18417, EXPIRATION DATE: 09/18/18
SIGNED: *Ronald E. Thompson* DATE: 5/18/2018
RONALD E. THOMPSON, P.E.



MDOT SHA TRACKING NUMBER IAPH0014XX		
STATE HIGHWAY STRIPING PLAN AND DETAILS		
LOT 3, LOWER TRAIL		
LISBON VOLUNTEER FIRE CO., INC.		
DATE: 8-4-2017 10-9-2017 1-18-2018 4-8-2021	REVISIONS: COUNTY COMMENTS COUNTY COMMENTS SHA COMMENTS ADD PAVEMENT	TAX MAP: 7 GRID NO: 11 PARCEL NO: 488
ELECTION DISTRICT: No. 4 HOWARD COUNTY, MARYLAND EX. ZONING: RC-DEO		SCALE: AS SHOWN DATE: AUGUST, 2017 SHEET 14 OF 15
VANMAR ASSOCIATES, INC. Engineers Surveyors Planners 310 South Main Street Mount Airy, Maryland 21771 (301) 829-2890 (301) 831-5015 (410) 549-2751 Fax (301) 831-5603		SDP-17-035

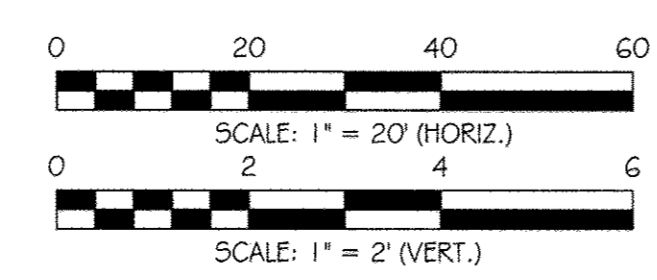


APPROVED
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

NALMA Joffe 7-12-18
DIRECTOR DATE

Paul Shuler 7-11-18
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Paul Shuler 6-12-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

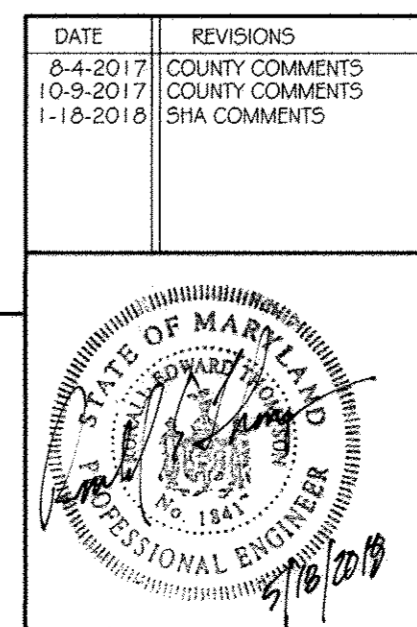


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SIGNED: *Ronald E. Thompson* DATE: 7/18/2018
RONALD E. THOMPSON, P.E.

OWNER / DEVELOPER:
LISBON VOL. FIRE COMPANY
c/o CURTIS LOWREY
P.O. BOX 40,
LISBON, MD 21765
443-472-7765



MDOT SHA TRACKING NUMBER | 1 APHO 01 4XX

STATE HIGHWAY CROSS SECTIONS
LOT 3, LOWER TRAIL
LISBON VOLUNTEER FIRE CO., INC.

DATE: 8-4-2017 10-9-2017 1-18-2018	REVISIONS: COUNTY COMMENTS COUNTY COMMENTS SHA COMMENTS
--	--

TAX MAP: 7
GRID NO: 11
PARCEL NO: 488

ELECTION DISTRICT: No. 4
HOWARD COUNTY, MARYLAND
EX. ZONING: RC-DEO

SCALE: AS SHOWN
DATE: AUGUST, 2017
SHEET 15 OF 15

VANMAR ASSOCIATES, INC.
Engineers Surveyors Planners
310 South Main Street Mount Airy, Maryland 21771
(301) 829-2890 (301) 831-5015 (410) 549-2751
vanmar.com Fax (301) 831-5603 ©Copyright, Latest Date Shown