

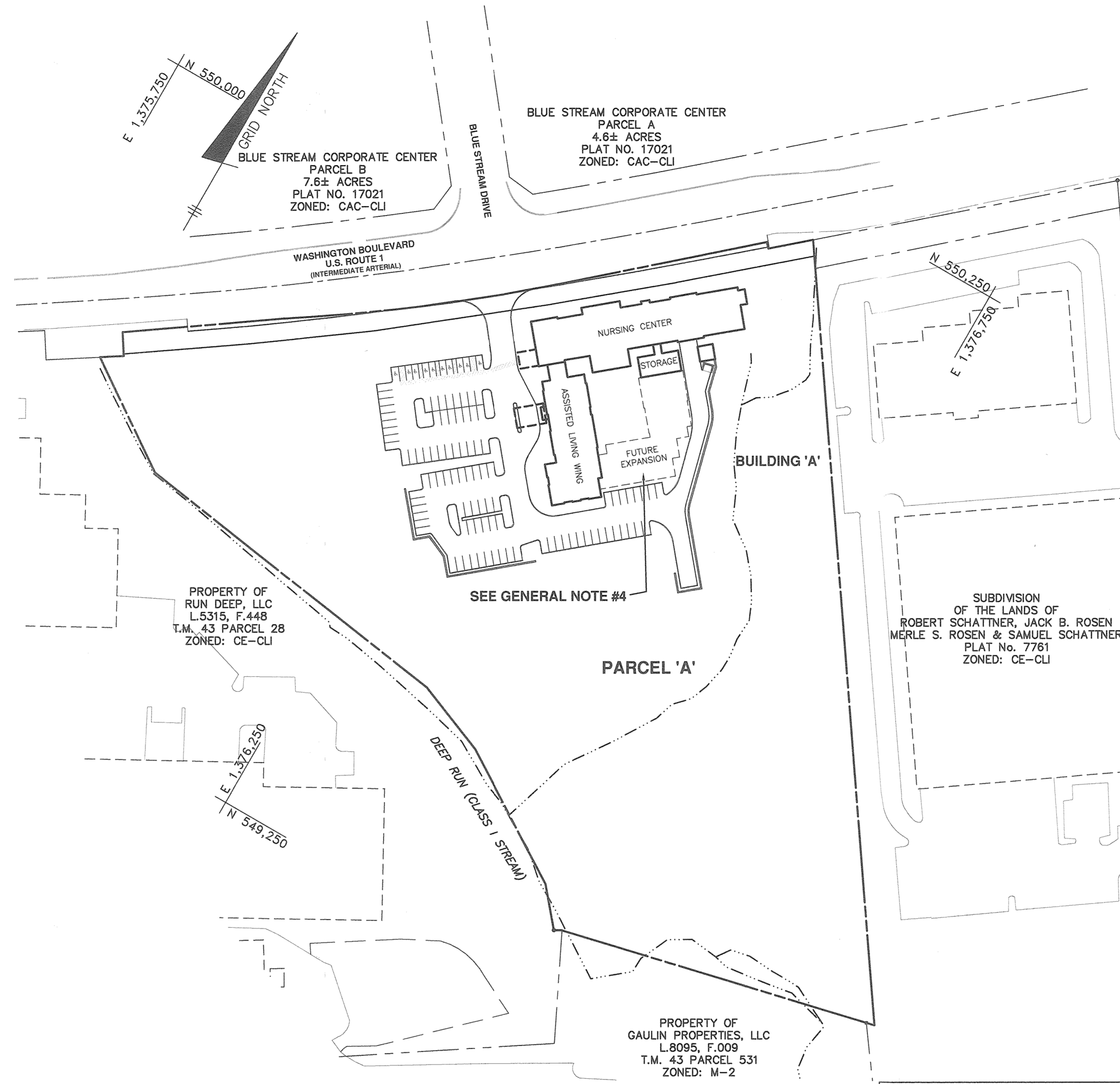
GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS CONSTRUCTION INSPECTION DIVISION AT (410)313-1880 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.
- THE SUBJECT PROPERTY IS ZONED FOR AS A RESULT OF ZB CASE NO. 1075M APPROVED BY THE ZONING BOARD ON JUNE 2009. ZB 1075M APPROVED TOTAL FLOOR AREA OF 32,046 SF (14,729 FOR BUILDING 'A' AND 17,317 SF FOR THE FUTURE BUILDING EXTENSION), PER SECTION 100.C.2.(1) OF THE ZONING REGULATIONS MINOR MODIFICATIONS TO THE PLAN WITH A FLOOR AREA NO LARGER THAN 20% OF THE EXISTING FLOOR AREA OF THE MAIN FLOOR SHALL NOT REQUIRE RECONSIDERATION BY THE ZONING BOARD. FUTURE EXPANSIONS THAT RESULT IN A FOOTPRINT EXCEEDING THE ORIGINALLY APPROVED FOOTPRINT OF 32,046 SF BY MORE THAN 20% MUST BE APPROVED BY THE ZONING BOARD IN ACCORDANCE WITH THE PROCEDURES FOR THE ORIGINAL ZONING BOARD PETITION.
- THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE ZONING REGULATIONS EFFECTIVE APRIL 13, 2004.
- BOUNDARY IS BASED ON A BOUNDARY SURVEY CONDUCTED BY PATTON HARRIS RUST & ASSOCIATES ON OR ABOUT MARCH, 2007 AND VERIFIED BY BENCHMARK ENGINEERING, INC. IN JULY, 2010.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM, HOWARD COUNTY MONUMENT NOS. 43BB AND 43BC WERE USED FOR THIS PROJECT.
- EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON FIELD RUN SURVEY PERFORMED BY PATTON HARRIS RUST & ASSOCIATES PERFORMED ON OR ABOUT MARCH, 2007.
- EXISTING UTILITIES SHOWN HAVE BEEN TAKEN FROM CONTRACT DRAWINGS #44-3805, #36-W&S, #10-1300 AND FIELD SURVEYED LOCATIONS. IF NECESSARY, CONTRACTOR SHALL ADJUST ANY OR ALL STRUCTURE TOP ELEVATIONS TO MATCH SDP GRADES.
- THERE ARE NO CEMETERIES LOCATED ON THIS SITE. THE SITE IS LISTED ON THE HOWARD COUNTY HISTORIC SITES CATALOG AS HD-833. THE PROJECT WAS PRESENTED TO THE HISTORIC DISTRICT COMMISSION ON APRIL 15, 2009 AS CASE HDC-09-17 AND THE COMMISSION HAD NO OBJECTION TO THE PROPOSAL.
- THERE ARE SEVERAL EXISTING STRUCTURES LOCATED ON THIS SITE ALL TO BE REMOVED.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS, THEIR REQUIRED BUFFERS OR 100 YEAR FLOODPLAIN EXCEPT THAT WHICH IS SPECIFIED IN APPROVED WP-10-161, OR FOREST CONSERVATION EASEMENTS (SEE GENERAL NOTES 22 AND 25 BELOW).
- THE FLOODPLAIN SHOWN ON THIS PLAN IS BASED ON FIRM PANEL 24004400409 (REVISED 12/4/1986) AND A FLOODPLAIN STUDY PROVIDED BY KOI TECHNOLOGIES, INC. ON JANUARY 1997.
- THE NOISE STUDY WAS PREPARED BY BENCHMARK ENGINEERING, INC. IN AUGUST, 2010.
- THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY THE TRAFFIC GROUP, INC. DATED: JULY, 2010 AND APPROVED ON 10-01-2010 FOR INITIAL CONSTRUCTION SHOWN ON THIS SDP. A REVISED TRAFFIC STUDY WAS PREPARED ON JANUARY 22, 2019 BY THE TRAFFIC GROUP, INC. FOR THE ADDITION OF THE NORTH AND SOUTH WINGS.
- THIS SITE IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
- WATER IS PUBLIC. THE CONTRACT NUMBER IS 44-3805-D. THE DRAINAGE AREA IS "PATAPSCO".
- SEWER IS PUBLIC. THE CONTRACT NUMBER IS 10-1300. THE DRAINAGE AREA IS "PATAPSCO".
- THIS SUBDIVISION IS SUBJECT TO SECTION 16.122B OF THE HOWARD COUNTY CODE. PUBLIC WATER AND/OR SEWER SERVICE HAS BEEN GRANTED UNDER THE TERMS AND PROVISIONS, THEREOF, EFFECTIVE 1-10-2011, ON WHICH DATE DEVELOPER AGREEMENT # 44-4692-D WAS FILED AND ACCEPTED.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$15,450.00 (\$13,200.00 FOR 44 SHADE TREES, \$1,200.00 FOR 8 EVERGREEN TREES, AND \$1,050.00 FOR 35 SHRUBS).
- THE FOREST CONSERVATION OBLIGATION FOR THIS PLAN HAS BEEN MET BY PROVIDING 0.80 AC. OF CREDITED RETENTION AND 0.47 AC. OF REFORESTATION IN THE ON-SITE FOREST CONSERVATION EASEMENT, AND A FOREST CONSERVATION FEE-IN-LIEU PAYMENT OF \$2,287.00 MADE PAYABLE TO THE HOWARD COUNTY FOREST CONSERVATION FUND FOR THE OUTSTANDING 0.07 AC. OF REFORESTATION (0.11 AC. = 4,791.8 S.F. X \$0.75 = \$3,593.85 OR \$3,594.00). THE REQUIRED FOREST CONSERVATION SURETY OF \$16,945.00 HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT FOR SDP-11-002.
- THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.120 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT. 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.
- STORMWATER MANAGEMENT FOR THIS SITE COMPLIES WITH ECP-10-006 WHICH WAS APPROVED ON JULY 20, 2010. IT IS BEING PROVIDED UNDER THE REDEVELOPMENT CRITERIA. 50% OF THE EXISTING IMPERVIOUS IS BEING ADDRESSED FOR WATER QUALITY. THE METHODS OF TREATMENT ARE MICRO-BIOTRETENTION, PERVIOUS CONCRETE, AND SUBMERGED GRAVEL WETLANDS. ALL FACILITIES ARE TO BE PRIVATELY OWNED AND MAINTAINED.
- THE GEOTECHNICAL REPORT WAS PREPARED BY HILLIS-CARNES ENGINEERING ASSOCIATES, INC. ON OCTOBER 26, 2009.
- WP-10-161, A REQUEST TO WAIVE SECTION 16.1205(A)(10) FOR SPECIMEN TREE REMOVAL; 16.115 FOR DEVELOPMENT WITHIN THE 100 YEAR FLOODPLAIN; 16.116(A)(1) FOR DEVELOPMENT WITHIN 25' WETLAND BUFFER; AND 16.116(A)(2)(iv) FOR DEVELOPMENT WITHIN 50' OF A PERENNIAL STREAMBANK WAS APPROVED ON JUNE 25, 2010. THE APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
 - IN ORDER TO COUNT THE FEE ALONG THE NORTH BOUNDARY THAT IS LESS THAN 35' A REFORESTATION AREA MUST BE ESTABLISHED ADJACENT TO IT.
 - THE WAIVER PERTAINS ONLY TO THE LOD LOCATED WITHIN THE 100-YEAR FLOODPLAIN, 25' WETLAND BUFFER AND 50' STREAM BUFFER.
 - ALL GRADING, REMOVAL OF VEGETATIVE COVER, DISTURBANCES AND DEVELOPMENT WITHIN THE 25' WETLAND BUFFER ARE SUBJECT TO OBTAINING THE NECESSARY MDE PERMITS AND ADDING A NOT TO THE SDP IDENTIFYING THE TRACKING NUMBER.
- A DESIGN MANUAL WAIVER, A REQUEST FOR ALTERNATIVE COMPLIANCE TO THE HOWARD COUNTY DESIGN MANUAL VOLUME I, SECTION 8.2.1.A, WHICH SPECIFIES THAT 100 AND 100 R QUANTITY MANAGEMENT IS REQUIRED IN THE DEEP RUN WATERSHED TO ALLOW NO QUANTITY MANAGEMENT BE PROVIDED OTHER THAN ESD TO THE MEP PROPOSED WAS APPROVED ON JULY 20, 2010.
- ZONING CASE BA-10-020V, A VARIANCE PETITION TO ALLOW FOR A REDUCTION OF THE STRUCTURE SETBACK TO US ROUTE 1 FROM 30' TO 10' WAS HELD ON 9/27/2010. THE DECISION APPROVING THE VARIANCE WAS ISSUED ON OCTOBER 4, 2010.
- DESIGN ADVISORY PANEL MEETING WAS HELD ON MARCH 10, 2010. AS A RESULT, NO ADDITIONAL MEETING IS NECESSARY.
- PREVIOUS HOWARD COUNTY FILE NUMBERS: WP-10-161, ECP-10-006
- TRASH COLLECTION SHALL BE PROVIDED PRIVATELY.
- KNOX BOX SHALL BE PLACED ON THE FRONT OF ALL BUILDINGS NO MORE THAN 6' TO THE RIGHT OF THE MAIN ENTRANCE AT A HEIGHT OF 4'-5". IT SHALL BE ELECTRONICALLY SUPERVISED TO NOTIFY THE OWNER THAT IT IS BEING ACCESSSED (INTEGRATED WITH THE FIRE ALARM SYSTEM).
- 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 2-3/8" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- MDE PERMIT APPLICATION (TRACKING #201061129) WAS APPROVED ON 9-13-2010.
- ALL OUTDOOR LIGHTING SHALL COMPLY WITH THE REQUIREMENTS OF ZONING SECTION 134.
- THE 65 dBA NOISE CONTOUR LINE DRAWN ON THIS PLAN IS ADVISORY AS REQUIRED BY THE HOWARD COUNTY DESIGN MANUAL, CHAPTER 5, REVISED FEBRUARY, 1992 AND CANNOT BE CONSIDERED TO EXACTLY LOCATE THE 65 dBA NOISE EXPOSURE. THE 65 dBA NOISE LINE WAS ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS, BUILDERS AND FUTURE RESIDENTS THAT AREAS BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVELS ESTABLISHED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993). A MINIMUM SPACING OF 20 FEET SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- WP-11-025, A REQUEST TO WAIVE SECTION 16.120(b)(5)(i) PROVIDE THE REQUIRED NOISE MITIGATION FOR THIS PROJECT TO ENSURE THAT THE NOISE LEVELS IN THE REAR YARD DO NOT EXCEED THE STANDARD SET IN THE DESIGN MANUAL WAS APPROVED ON SEPTEMBER 17, 2010. THE APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
 - PLACE A BIG BOLD NOTE STATING "BUILDING CONSTRUCTION MATERIALS SHALL BE USED TO REDUCE THE INTERIOR SOUND TO 45 DBA" ON ALL PLANS.

COMMERCIAL SITE DEVELOPMENT PLAN

LORIEN-ELKRIDGE

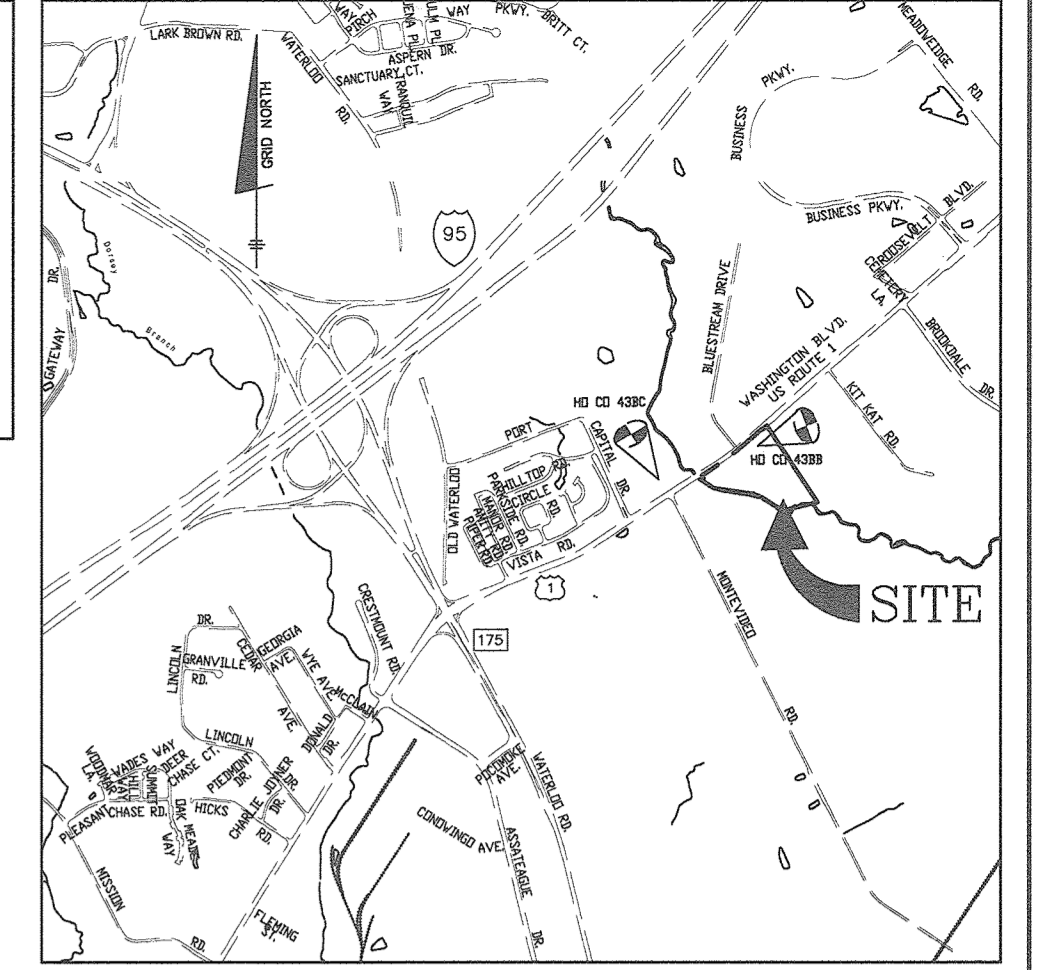
NURSING HOME WITH ASSISTED LIVING



BENCHMARKS NAD'83 HORIZONTAL

HO. CO. #43BB
STAMPED BRASS DISK SET ON TOP OF CONCRETE BASE, NORTH BOUND U.S. ROUTE 1, BY # 7561 US-1 (JESSUP)
N 550534.19' E 1376905.25'
ELEVATION: 208.91'

HO. CO. #43BC
STAMPED BRASS DISK SET ON TOP OF CONCRETE BASE, SOUTH BOUND ROUTE 1 AND MOUNTAINVIEW ROAD.
N 549592.091' E 1375466.62'
ELEVATION: 214.137'



SITE ANALYSIS DATA CHART

A.) TOTAL PROJECT AREA	11.77 AC.
B.) AREA OF PLAN SUBMISSION	11.77 AC.
C.) LIMIT OF DISTURBED AREA	4.36 AC.
D.) PRESENT ZONING:	POR
E.) PROPOSED USE OF SITE:	NURSING CENTER/ ASSISTED LIVING
F.) FLOOR SPACE ON EACH LEVEL OF BUILDING 'A' PER USE	
NURSING CENTER:	1st FLOOR (NURSING) 14,729 sf 2nd FLOOR (NURSING) 14,729 sf 3rd FLOOR (NURSING) 14,729 sf
ASSISTED LIVING WING:	GR FLOOR (ASSISTED LIVING) 8,951 sf 1st FLOOR (ASSISTED LIVING) 8,951 sf 2nd FLOOR (ASSISTED LIVING) 8,951 sf 3rd FLOOR (ASSISTED LIVING) 8,951 sf
STORAGE:	GR FLOOR (STORAGE) 1,359 sf 1st FLOOR N/A 2nd FLOOR N/A 3rd FLOOR N/A
G.) TOTAL NUMBER OF UNITS ALLOWED AS SHOWN ON FINAL PLAN(S)	N/A
H.) TOTAL NUMBER OF UNITS PROPOSED	N/A
I.) MAXIMUM NUMBER OF EMPLOYEES, TENANTS ON SITE PER USE	N/A
J.) NUMBER OF PARKING SPACES REQUIRED BY HO. CO. ZONING REGS AND/OR FDP CRITERIA	SEE PARKING CALCS THIS SHEET
K.) NUMBER OF PARKING SPACES PROVIDED ONSITE (INCLUDES HANDICAPPED SPACES)	SEE PARKING CALCS THIS SHEET
L.) AREA OF OPEN SPACE REQUIRED: (20% OF TOTAL)	2.35 AC.
AREA OF OPEN SPACE PROVIDED:	2.35 AC.
M.) AREA OF RECREATIONAL OPEN SPACE REQUIRED	N/A
AREA OF RECREATIONAL OPEN SPACE PROVIDED	N/A
N.) BUILDING COVERAGE OF SITE	25.039 SF
PERCENTAGE OF GROSS AREA	4.9%
O.) APPLICABLE DPZ FILE REFERENCES:	WP-10-161, ECP-10-006, ZB 1075M, BA-10-020V, F-11-008, WP-11-025

FOREST CONSERVATION SUMMARY

NON-CREDITED RETENTION (FLOODPLAIN):	3.69 AC.
CREDITED RETENTION (NTA):	0.80 AC.
REFORESTATION:	0.47 AC.
TOTAL EASEMENT AREA:	4.96 AC.

PARKING CALCULATIONS

Building 'A'	S.F.	Number of Proposed beds	Number of Spaces Required
Nursing	NA	76	38
Assisted Living	NA	44	22
Future Assisted Living	NA	44	22
Future Medical Clinic	3000	NA	15
TOTAL PARKING REQUIRED*			97
TOTAL PARKING PROVIDED			107

ADDRESS CHART

BUILDING	STREET ADDRESS
A	7615 WASHINGTON BOULEVARD

HANDICAPPED PARKING CALCULATIONS

Medical Care Facilities (nursing and medical clinic)	10% of total spaces per Federal ADA Manual Sect. 4.1.2.(5)(i)	5
Assisted Living	2 spaces for 26-50 spaces per Maryland ADA Manual Section 4.1.2.(5)(a)	2
TOTAL HANDICAP PARKING REQUIRED		7
TOTAL HANDICAP PARKING PROVIDED		10

*based on 5 spaces per 1,000 s.f. of building space for medical centers per Section 133.D.3.b of Zoning Regulations and 1.0 space per 2 beds for nursing homes and residential care facilities per Section 133.D.7.f of Zoning Regulations

SHEET INDEX

NO.	DESCRIPTION
1	TITLE SHEET
2-3	EXISTING CONDITIONS PLAN
4-5	SITE DEVELOPMENT AND GRADING PLAN
6	STORM DRAIN DRAINAGE AREA MAP
7	STORM DRAIN, SEWER & WHC PROFILES AND DETAILS
8-10	STORMWATER MANAGEMENT MICRO PRACTICE PLAN, NOTES & DETAILS
11	SOIL BORING LOGS AND STORM DRAIN PROFILES.
12	SEDIMENT AND EROSION CONTROL PLAN - PHASE 1
13	SEDIMENT AND EROSION CONTROL PLAN - PHASE 2
14	SEDIMENT AND EROSION CONTROL PLAN - PHASE 3
15	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
16	PERIMETER LANDSCAPE AND STREET TREE PLAN, NOTES AND DETAILS
17-18	FOREST CONSERVATION PLAN
19	FOREST CONSERVATION NOTES AND DETAILS
20	U.S. ROUTE 1 ROAD IMPROVEMENT AND MOT PLAN/DETAIL SHEET
21	U.S. ROUTE 1 ROAD IMPROVEMENT CROSS-SECTIONS AND DETAILS
22	SIGHT DISTANCE PLAN & PROFILE
23	RETAINING WALL PLAN AND DETAILS
24	RETAINING WALL #1 ELEVATION
25	RETAINING WALL #2 ELEVATION
26-27	SEDIMENT AND EROSION CONTROL PLAN - PHASE 4
28-29	ELEVATIONS - ASSISTED LIVING WING AND NORTH WING

3	1-16-2020	REVISE NORTH WING TO BE 1-STORY STORAGE. UPDATE SITE ANALYSIS CHART AND PARING CALCS ACCORDINGLY.
2	3-21-2019	ADD EXPANSION TO BLDG A, REVISE PARKING CALCS, SITE ANALYSIS CHART, SHEET INDEX, GEN NOTE 4, 15, REMOVE OLS NOTE 39.
1	5-5-2011	REVISE BUILDING 'A'
NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC.
ENGINEERS & LAND SURVEYORS & PLANNERS
8400 BALTIMORE NATIONAL PIKE & SUITE 315 & ELLICOTT CITY, MARYLAND 21043
(P) 410-485-8105 (F) 410-485-8844
WWW.BEI-CIVILENGINEERING.COM

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. 22980, Expiration Date: 6-30-2021.

OWNER:
MUSIC FAIR LIMITED PARTNERSHIP
1205 YORK ROAD, FLOOR 4
LUTHERVILLE, MARYLAND 21093
410-825-8400

DEVELOPER:
COMMERCIAL CONTRACTORS
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

LORIEN-ELKRIDGE
PARCEL 'A'

TAX MAP: 43 - GRID: 10 - PARCEL: 32
ZONED: POR
ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

TITLE SHEET

DATE: NOVEMBER, 2010 BEI PROJECT NO. 2071
SCALE: AS SHOWN SHEET 1 OF 29



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division 2-6-20
Chief, Division of Land Development 2/11/20
Director 2-13-2020

BUILDING 'A'
WEST (ROUTE 1) ELEVATION

BUILDING 'A'
SOUTH ELEVATION

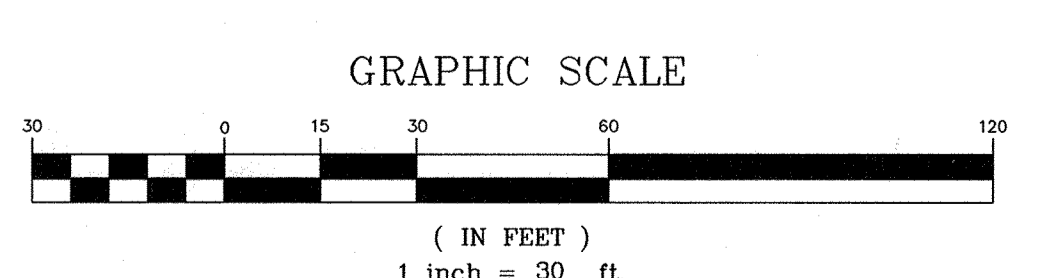
BUILDING ELEVATIONS
SCALE: 1" = 30'



LEGEND

- EXISTING CONTOURS MARCH, 2007
- EXISTING OVERHEAD POWER LINES
- EXISTING TREELINE
- EXISTING STREAM
- LIMIT OF WETLANDS
- LIMIT OF SUBMISSION
- EXISTING 100YR FLOODPLAIN
- SOILS DELINEATION LINE
- SOILS CLASSIFICATION

Khc2



NOTE:
ALL EXISTING ON-SITE STRUCTURES AND PAVEMENT ARE TO BE REMOVED.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard County
CHIEF, DEVELOPMENT ENGINEERING DIVISION 1/7/11 DATE

Robert Schallinger
CHIEF, DIVISION OF LAND DEVELOPMENT 1/27/11 DATE

Thomas J. Butler
DIRECTOR 1/10/11 DATE

3-21-2010 REVISE TOTAL SHEET NUMBER TO 29

NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC.
ENGINEERS • LAND SURVEYORS • PLANNERS
8480 BALTIMORE NATIONAL PIKE & SUITE 418 & ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BE-CMENGINEERING.COM

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. 28559, Expiration Date: 7-23-2011.

Thomas J. Butler 01/10/2010

OWNER: MUSIC FAIR LIMITED PARTNERSHIP
1205 YORK ROAD, FLOOR 4
LUTHERVILLE, MARYLAND 21093
410-825-8400

DEVELOPER: COMMERCIAL CONTRACTORS
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

LORIEN-ELKRIDGE
PARCEL 'A'

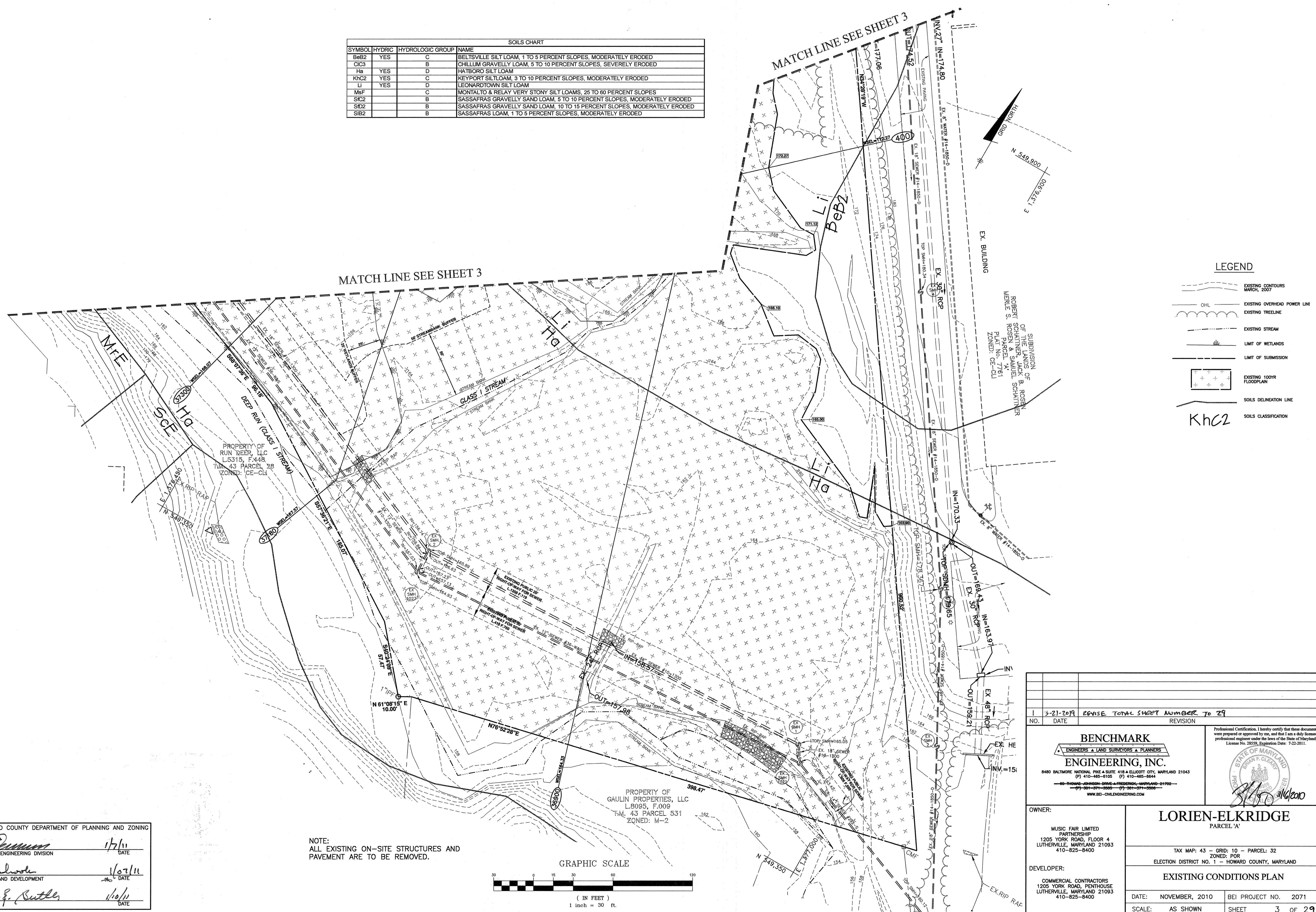
TAX MAP: 43 - GRID: 10 - PARCEL: 32
ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

EXISTING CONDITIONS PLAN

DATE: NOVEMBER, 2010	BEI PROJECT NO. 2071
SCALE: AS SHOWN	SHEET 2 OF 29

SDP-11-002

SOILS CHART			
SYMBOL	HYDRIC	HYDROLOGIC GROUP	NAME
BeB2	YES	C	BELTSVILLE SILT LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED
CiC3		B	CHILLUM GRAVELLY LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED
Ha	YES	D	HATBORO SILT LOAM
KhC2	YES	C	KEYPORT SILT LOAM, 3 TO 10 PERCENT SLOPES, MODERATELY ERODED
Li	YES	D	LEONARDTOWN SILT LOAM
M&F		C	MONTALTO & RELAY VERY STONY SILT LOAMS, 25 TO 60 PERCENT SLOPES
SiC2		B	SASSAFRAS GRAVELLY SAND LOAM, 5 TO 10 PERCENT SLOPES, MODERATELY ERODED
SD2		B	SASSAFRAS GRAVELLY SAND LOAM, 10 TO 16 PERCENT SLOPES, MODERATELY ERODED
SIB2		B	SASSAFRAS LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED



LEGEND

- EXISTING CONTOURS MARCH, 2007
- OHL - EXISTING OVERHEAD POWER LINE
- EXISTING TREELINE
- EXISTING STREAM
- LIMIT OF WETLANDS
- LIMIT OF SUBMISSION
- EXISTING 100YR FLOODPLAIN
- SOILS DELINEATION LINE
- SOILS CLASSIFICATION

1 3-21-2019 REVISE TOTAL SHEET NUMBER TO 29 NO. DATE REVISION		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. 28559, Expiration Date: 7-23-2011.
BENCHMARK ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE & SUITE 418 A ELLICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6644 80 THOMAS-JOHNSON DRIVE & FREDERICK, MARYLAND 21702 (P) 301-991-9999 (F) 301-991-0000 WWW.BE-CMENGINEERING.COM		
OWNER: MUSIC FAIR LIMITED PARTNERSHIP 1205 YORK ROAD, FLOOR 4 LUTHERVILLE, MARYLAND 21093 410-825-8400		STATE OF MARYLAND BRUNF. & CLEARY
DEVELOPER: COMMERCIAL CONTRACTORS 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400		
LORIEN-ELKRIDGE PARCEL 'A'		
TAX MAP: 43 - GRID: 10 - PARCEL: 32 ZONED: FOR ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND		
EXISTING CONDITIONS PLAN		
DATE: NOVEMBER, 2010	BEI PROJECT NO. 2071	
SCALE: AS SHOWN	SHEET 3 OF 29	

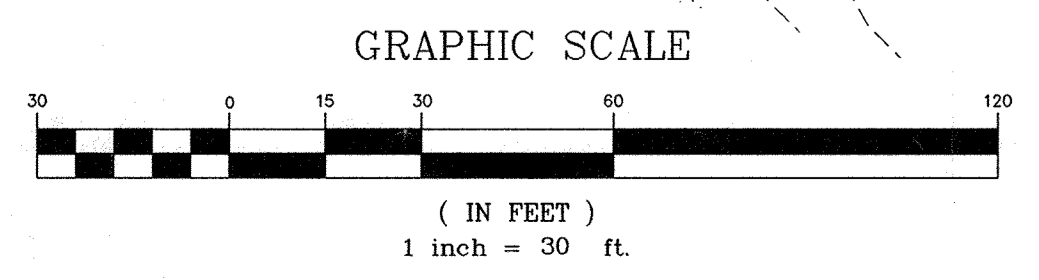
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

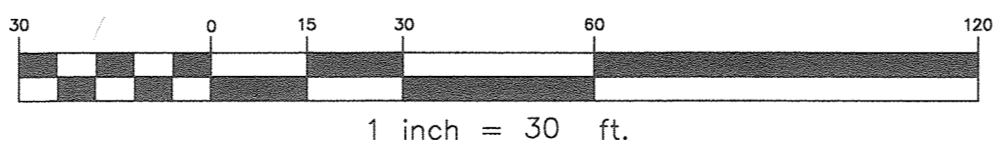
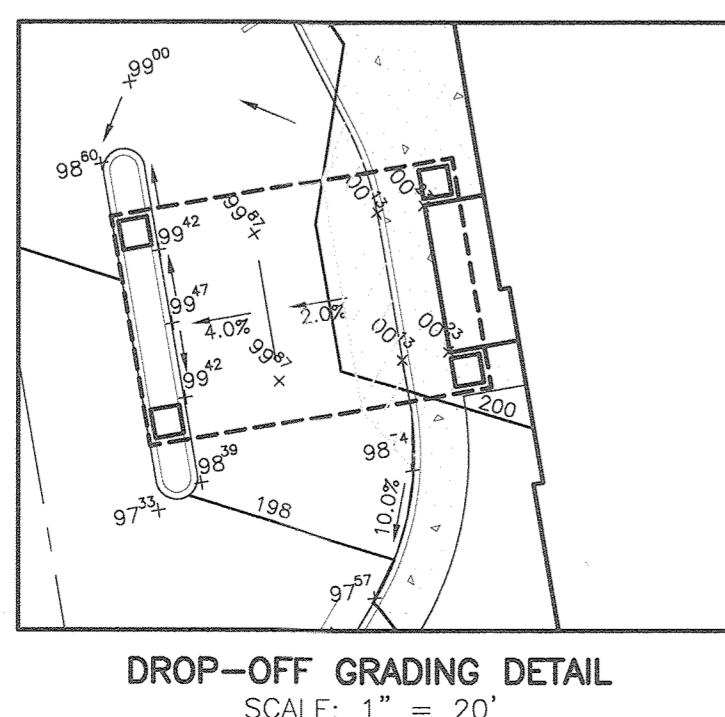
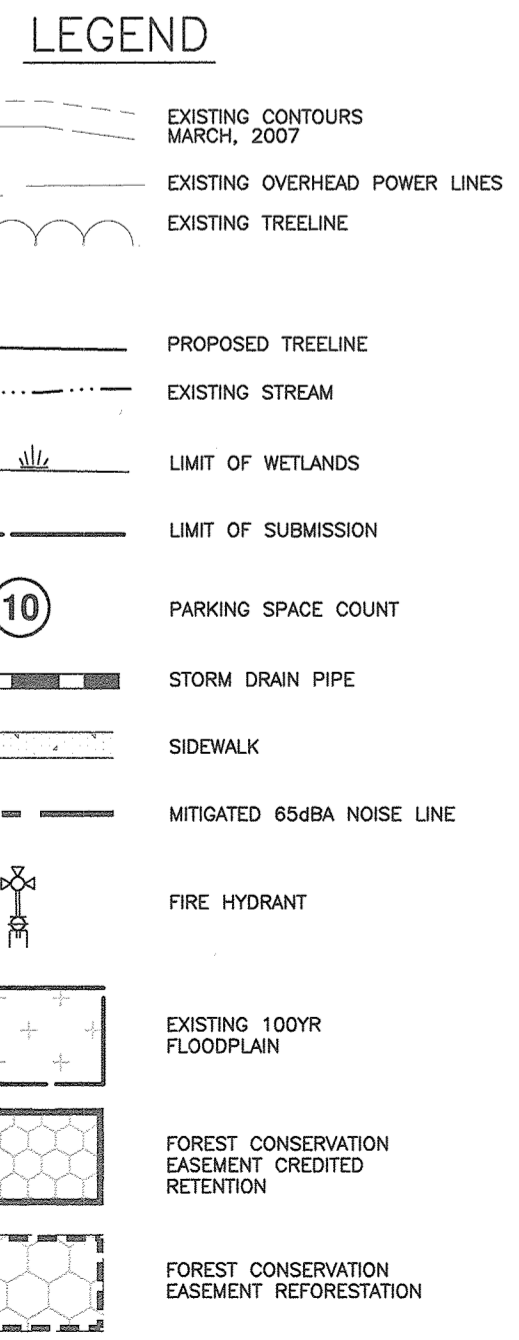
Howard County Seal
 CHIEF, DEVELOPMENT ENGINEERING DIVISION 1/7/11 DATE

Kathleen
 CHIEF, DIVISION OF LAND DEVELOPMENT 1/27/11 DATE

Morgan E. Ruttle
 DIRECTOR 1/28/11 DATE

NOTE:
 ALL EXISTING ON-SITE STRUCTURES AND PAVEMENT ARE TO BE REMOVED.





- NOTES:**
1. ALL SPOT ELEVATIONS SHOWN IN PARKING LOT ARE FLOWLINE UNLESS OTHERWISE STATED.
 2. ALL CURB FILLET RADII ARE 3 FEET UNLESS OTHERWISE STATED.
 3. ALL CURB IS STD 7" COMBINATION CURB & GUTTER HO.CO.STD. R-3.01.

THIS SHEET REPLACES THE PREVIOUS SHEET 4 SIGNED ON 4-24-2019

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard
CHIEF DEVELOPMENT ENGINEERING DIVISION
DATE: 2.6.20

Joe D. Man & Co.
CHIEF ENGINEER
DATE: 2/11/20

Joe
DIRECTOR
DATE: 2-13-2020

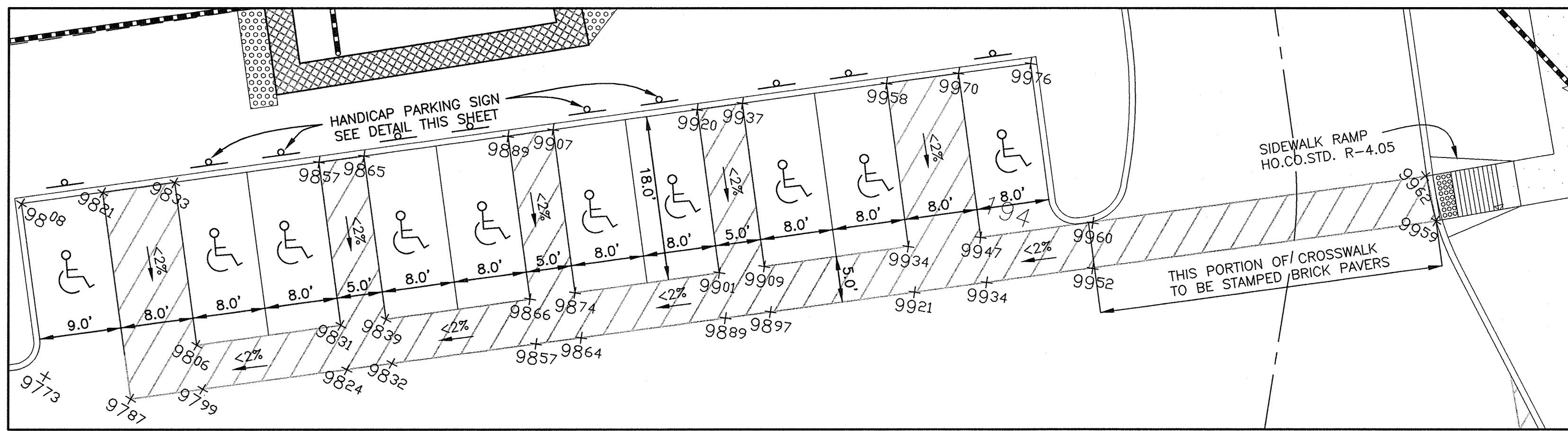
NO.	DATE	REVISION
3	1-16-2020	REVISE NORTH WING TO BE 1-STORY STORAGE BUILDING. ADJUST SPOT GRADES AND SIDEWALK ACCORDINGLY.
2	3-21-2019	ADD ASSISTED LIVING WING AND NORTH WING TO BLDG A, ADD ASSOCIATED STORM DRAIN, ROOF LEADER MANIFOLDS, BOCCO COURT, SIDEWALKS, SHC, CORRECT LOCATION OF FH AND EASEMENT
1	5-5-2011	REVISE STORM DRAIN, BUILDING 'A', AND REVISE GARAGE

BENCHMARK ENGINEERING, INC.
ENGINEERS & LAND SURVEYORS & PLANNERS
8480 BALTIMORE NATIONAL PIKE & SUITE 315 & ELLICOTT CITY, MARYLAND 21043
(P) 410-465-8105 (F) 410-465-6644
WWW.BE-CVLENGINEERING.COM

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer in the State of Maryland, License No. 121424-26, dated 6-30-2021.

Joe D. Man
DATE: 2-11-20

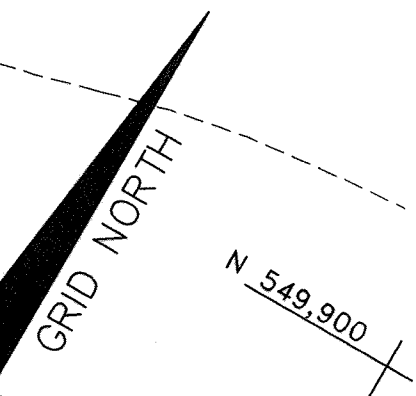
OWNER: MUSIC FAIR LIMITED PARTNERSHIP 1205 YORK ROAD, FLOOR 4 LUTHERVILLE, MARYLAND 21093 410-825-8400		LORIEN-ELKRIDGE PARCEL 'A'	
DEVELOPER: COMMERCIAL CONTRACTORS 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400		TAX MAP: 43 - GRID: 10 - PARCEL: 32 ZONED: POR ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND	
SITE DEVELOPMENT AND GRADING PLAN			
DATE: NOVEMBER, 2010	BEI PROJECT NO. 2071		
SCALE: AS SHOWN	SHEET 4 OF 29		



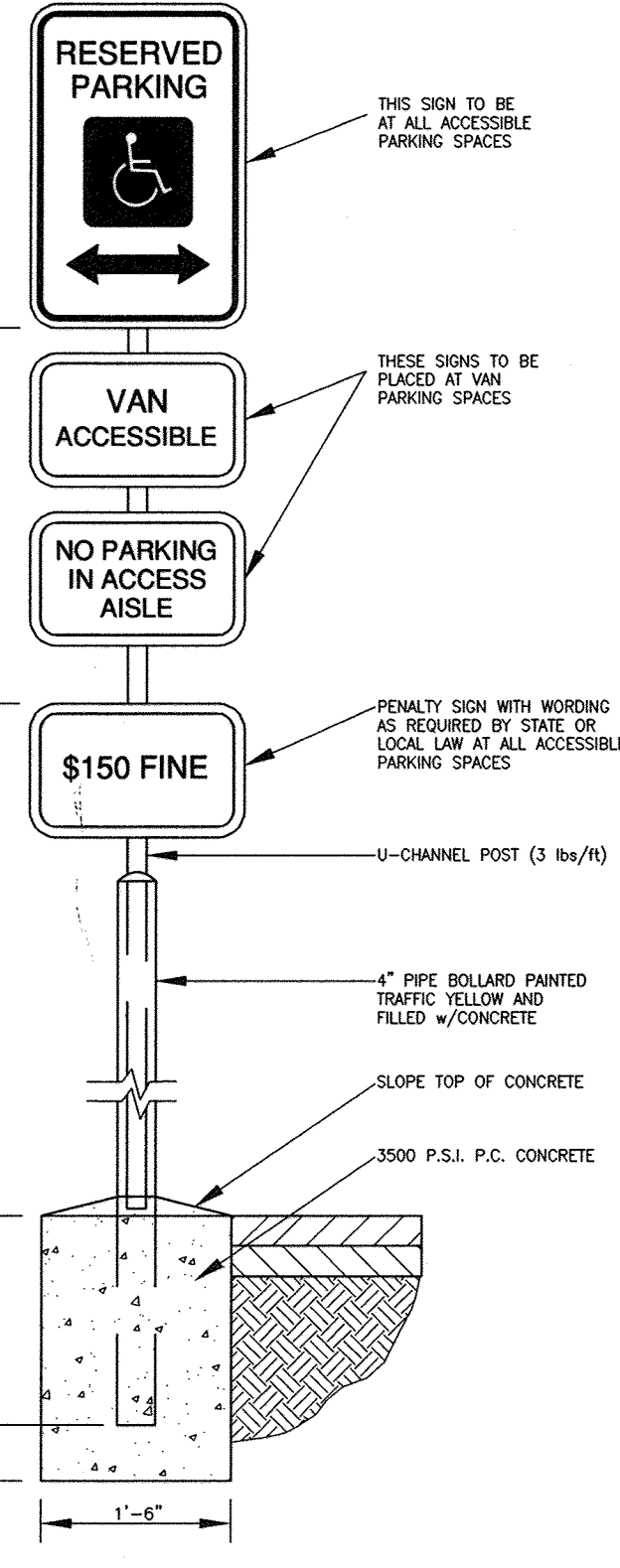
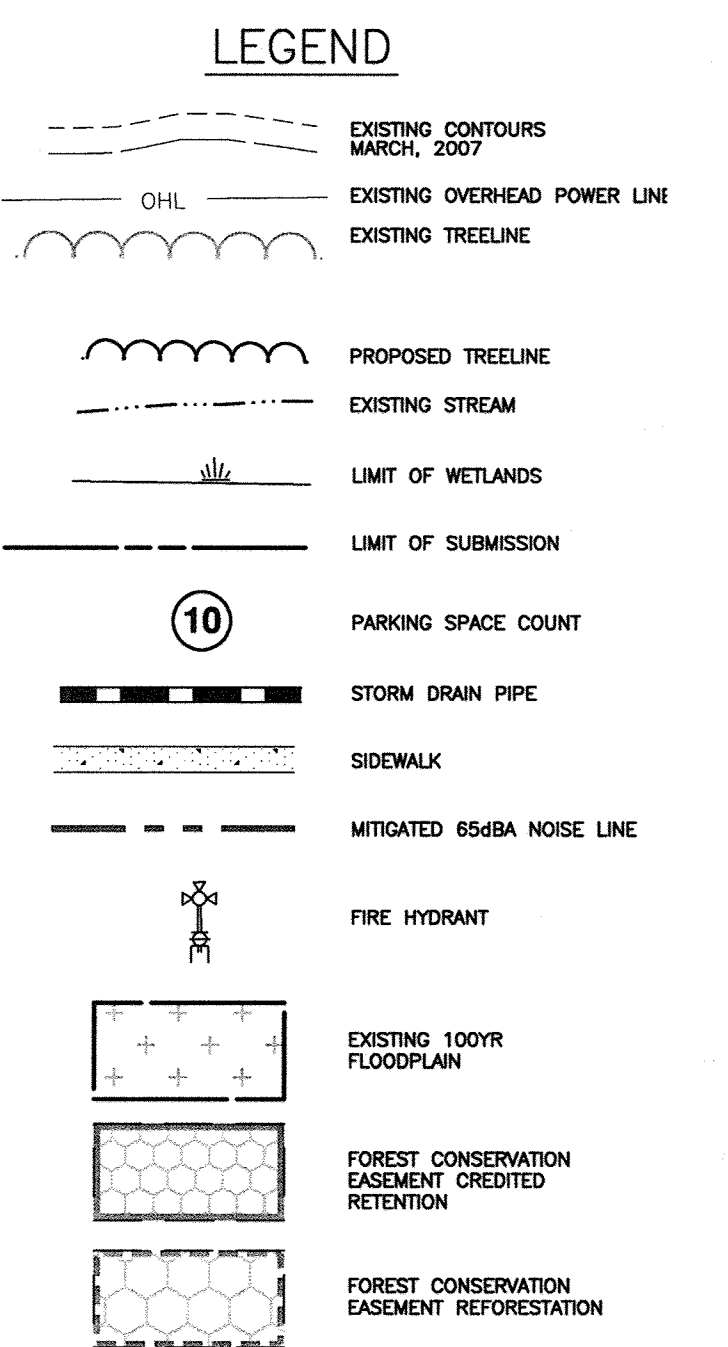
HANDICAP PARKING DETAIL
SCALE: 1" = 10'

MATCH LINE SEE SHEET 4

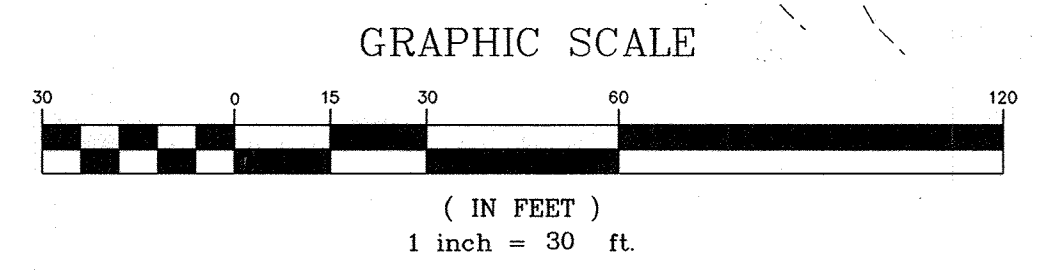
MATCH LINE SEE SHEET 4



EX. BUILDING
SUBDIVISION OF THE LANDS OF ROBERT S. SCHARTNER, JAMES B. ROSEN, HELEN S. ROSEN & SANDY SCHARTNER
PARCEL # 7761
ZONED: CE-CU



HANDICAP SIGN DETAIL
NOT TO SCALE



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chris Dennis 1/2/14
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Neil J. Anderson 1/27/11
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Dennis & Huttler 1/10/11
DIRECTOR DATE

NO.	DATE	REVISION
1	3-21-2019	REVISE TOTAL SHEET NUMBER TO 29

BENCHMARK ENGINEERING, INC.
ENGINEERS • LAND SURVEYORS • PLANNERS
8480 BALTIMORE NATIONAL PIKE SUITE 418 & ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BE-CIVILENGINEERING.COM

OWNER: **MUSIC FAIR LIMITED PARTNERSHIP**
1205 YORK ROAD, FLOOR 4
LUTHERVILLE, MARYLAND 21093
410-825-8400

DEVELOPER: **COMMERCIAL CONTRACTORS**
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

LORIEN-ELKRIDGE
PARCEL 'A'

TAX MAP: 43 - GRID: 10 - PARCEL: 32
ZONED: POR
ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

SITE DEVELOPMENT AND GRADING PLAN

DATE: NOVEMBER, 2010 BEI PROJECT NO. 2071
SCALE: AS SHOWN SHEET 5 OF 29

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. 28559, Expiration Date: 7-22-2011.

STATE OF MARYLAND
BRUNN & CLAYTON
REGISTERED PROFESSIONAL ENGINEER
1/16/2010

BLUE STREAM CORPORATE CENTER
PARCEL B
PLAT NO. 17021
ZONED: CAC-CL1

WASHINGTON BOULEVARD
U.S. ROUTE 1
(INTERMEDIATE ARTERIAL)

BLUE
STREAM
DRIVE



STORM DRAINAGE AREA DATA
NOTE: >25 YEAR

I-1	AREA = 0.21 AC	I-1	ZONE = POR
	"C" FACTOR = 0.89		IMPERVIOUS = 85%
I-2	AREA = 0.55 AC	I-2	ZONE = POR
	"C" FACTOR = 0.89		IMPERVIOUS = 85%
I-3	AREA = 0.43 AC	I-3	ZONE = POR
	"C" FACTOR = 0.89		IMPERVIOUS = 85%
I-4	AREA = 0.45 AC	I-4	ZONE = POR
	"C" FACTOR = 0.89		IMPERVIOUS = 85%
I-5	AREA = 0.11 AC	I-5	ZONE = POR
	"C" FACTOR = 0.89		IMPERVIOUS = 85%
I-6	AREA = 0.36 AC	I-6	ZONE = POR
	"C" FACTOR = 0.89		IMPERVIOUS = 85%
I-7	AREA = 0.03 AC	I-7	ZONE = POR
	"C" FACTOR = 0.95		IMPERVIOUS = 97%
I-8	AREA = 0.02 AC	I-8	ZONE = POR
	"C" FACTOR = 0.94		IMPERVIOUS = 96%
I-9	AREA = 0.03 AC	I-9	ZONE = POR
	"C" FACTOR = 0.89		IMPERVIOUS = 85%
I-10	AREA = 0.04 AC	I-10	ZONE = POR
	"C" FACTOR = 0.90		IMPERVIOUS = 85%
I-11	AREA = 0.10 AC	I-9	ZONE = ROW
	"C" FACTOR = 0.87		IMPERVIOUS = 100%
I-12	AREA = 0.12 AC	I-10	ZONE = ROW
	"C" FACTOR = 0.97		IMPERVIOUS = 100%
I-13	AREA = 0.06 AC	I-13	ZONE = ROW
	"C" FACTOR = 0.97		IMPERVIOUS = 100%

PROPERTY OF
RUN DEEP, LLC
L.5315, F.448
T.M. 43 PARCEL 28
ZONED: CE-CL1

ADD ASSISTED LIVING WING AND NORTH WING TO BLOCK A.	
UPDATE DRAINAGE AREAS, ADD I-13, ADD ROOF LEADER	
2	3-21-2019 ADD EXPANSION TO BUILDING 'A'
1	5-5-2011 REVISE STORM DRAIN, BUILDING 'A', AND GRADES
NO.	DATE REVISION

BENCHMARK ENGINEERING, INC.
ENGINEERS & LAND SURVEYORS & PLANNERS
8480 BALTIMORE NATIONAL PIKE & SUITE 315 A ELLICOTT CITY, MARYLAND 21043
(P) 410-465-8105 (F) 410-465-8644
WWW.BE-CIVILENGINEERING.COM

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. 12097, Exp. 6-30-2019.

Signature 4-4-19

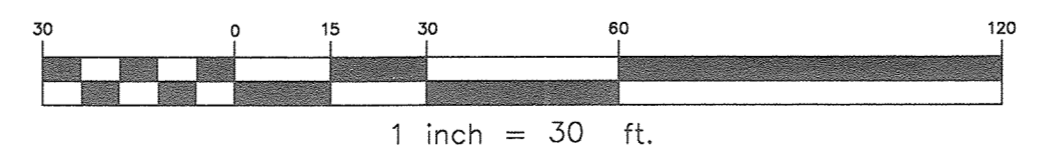
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Signature 4/16/19
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Signature 4-24-19
CHIEF, DIVISION OF LAND DEVELOPMENT

Signature 4-24-19
DIRECTOR

THIS SHEET REPLACES
THE PREVIOUS SHEET 6
SIGNED ON 1-10-2011



OWNER: MUSIC FAIR LIMITED PARTNERSHIP 1205 YORK ROAD, FLOOR 4 LUTHERVILLE, MARYLAND 21093 410-825-8400		LORIEN-ELKRIDGE PARCEL 'A'	
DEVELOPER: COMMERCIAL CONTRACTORS 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400		TAX MAP: 43 - GRID: 10 - PARCEL: 32 ZONED: POR ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND	
STORM DRAINAGE AREA MAP			
DATE: NOVEMBER, 2010	BEI PROJECT NO. 2071		
SCALE: AS SHOWN	SHEET 6 OF 29		

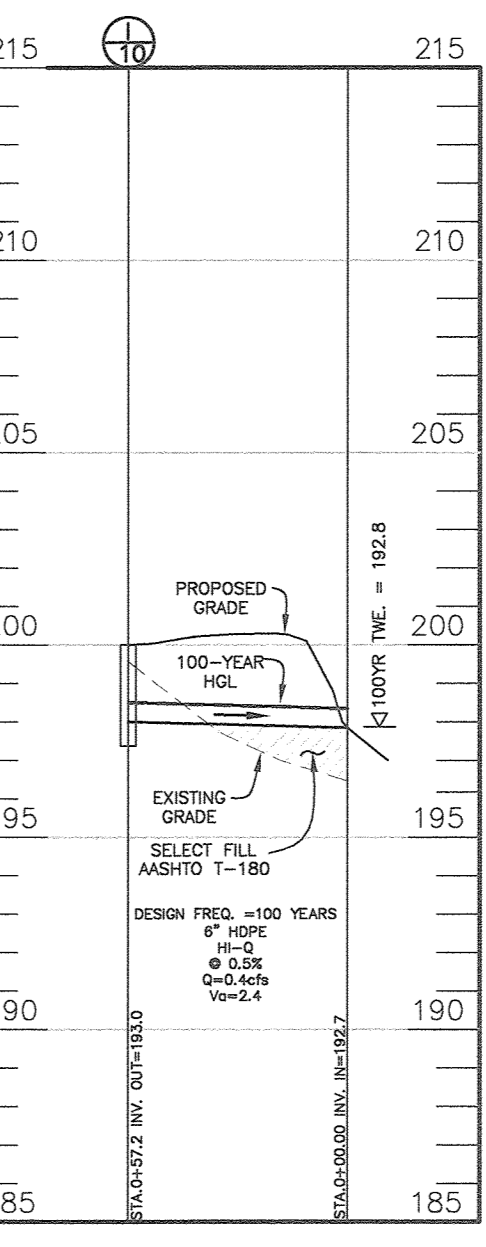
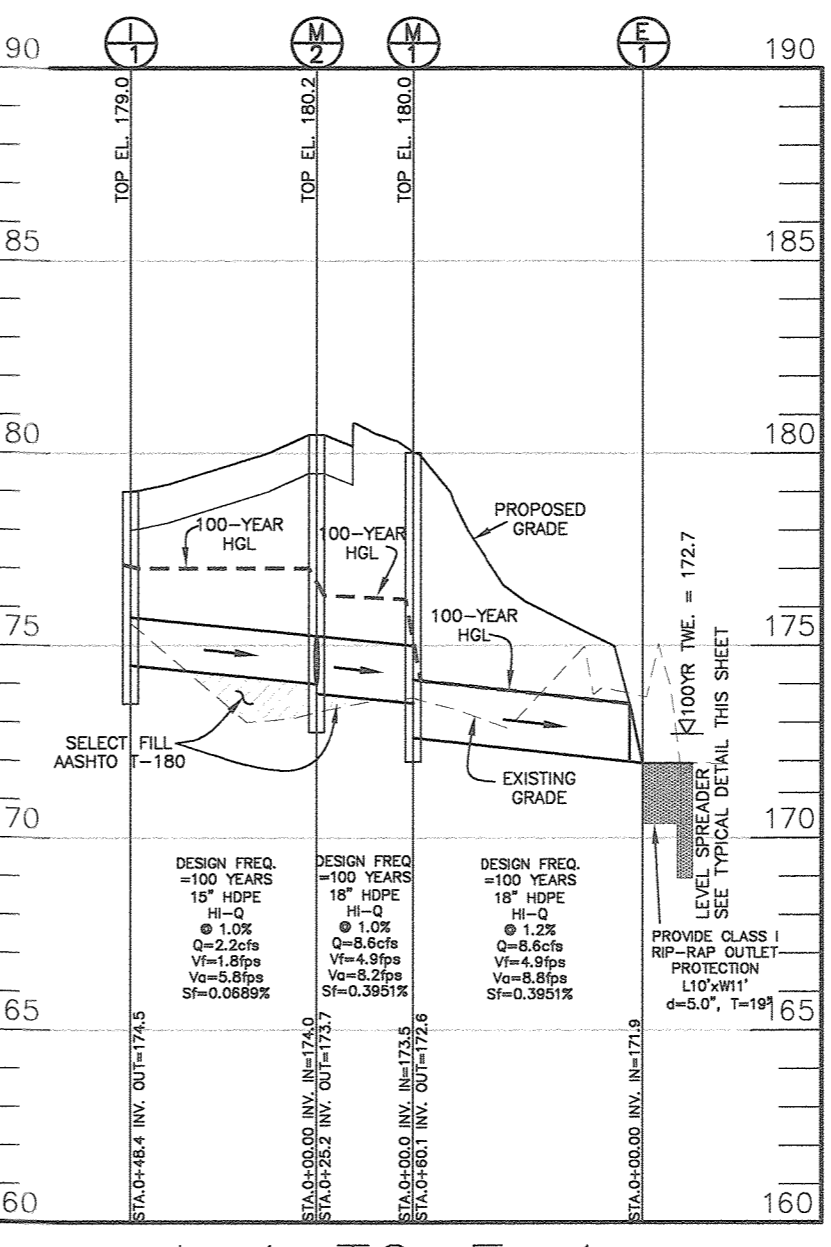
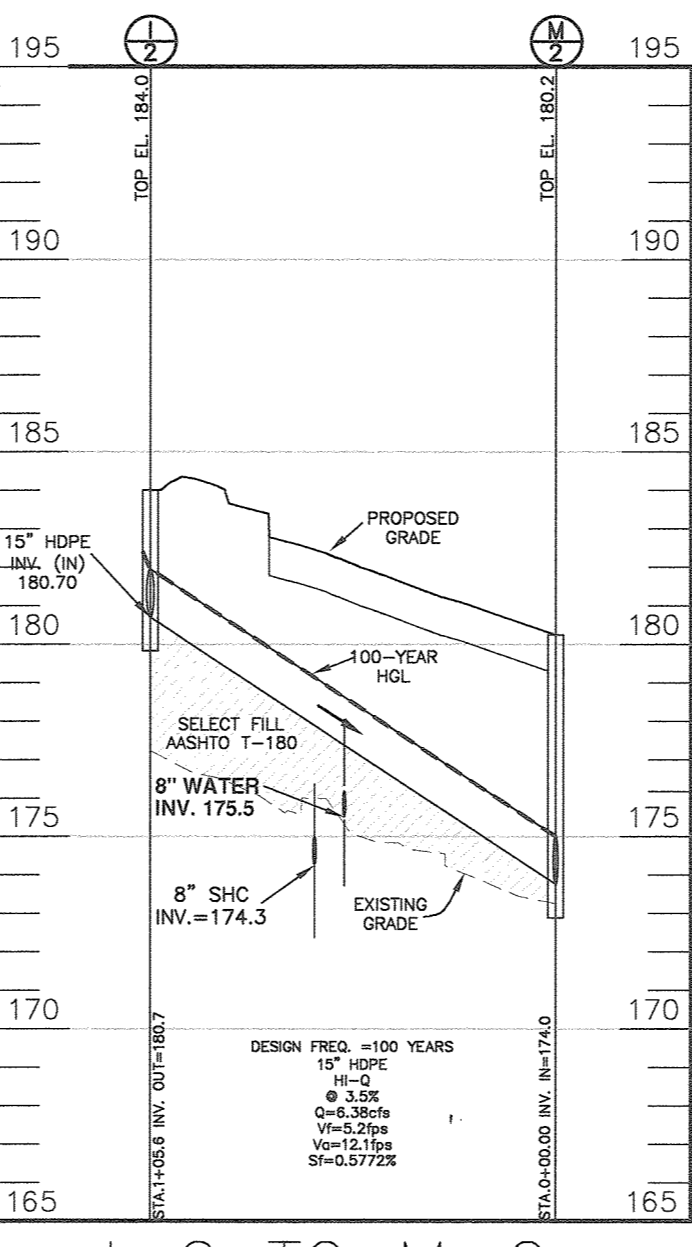
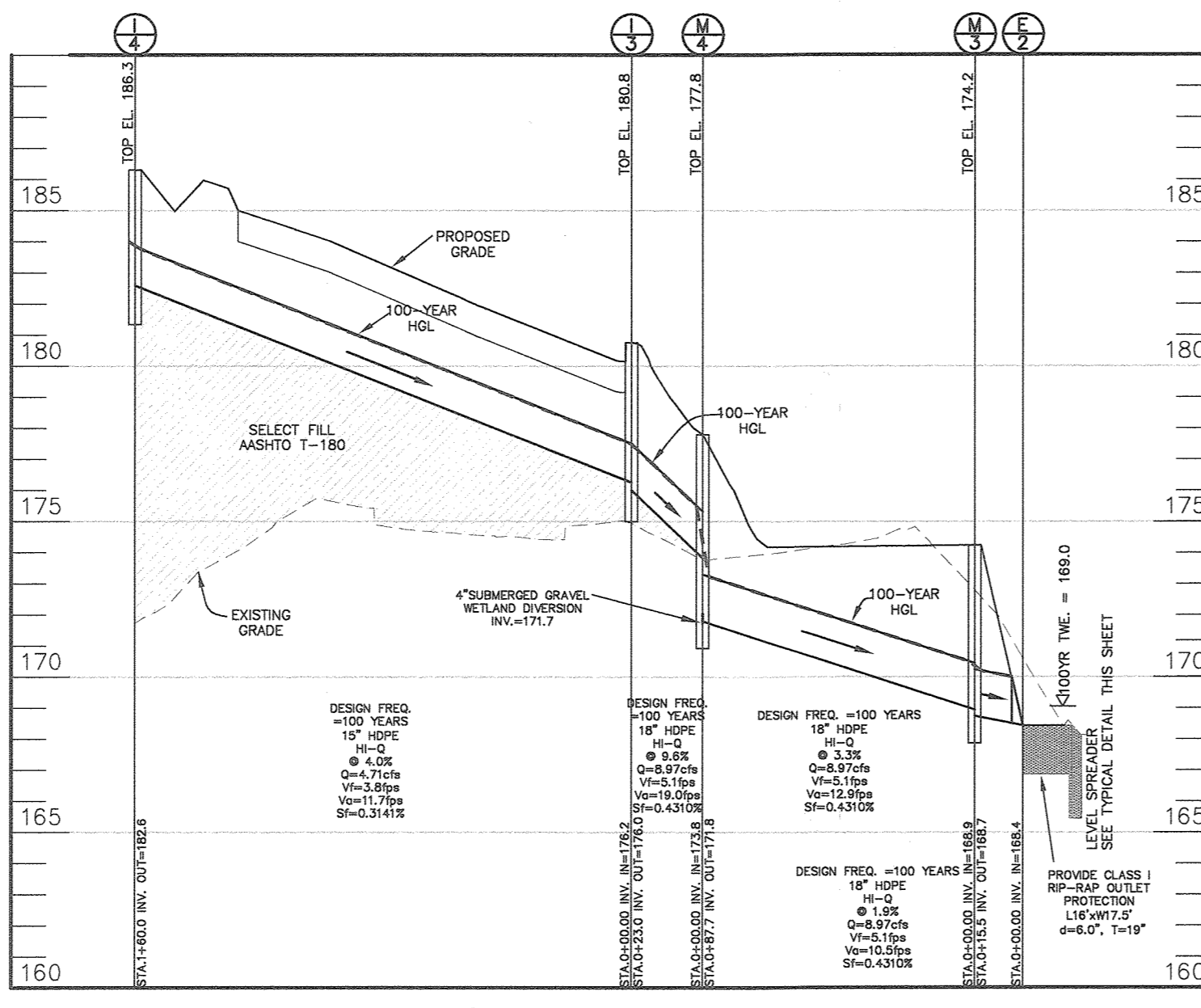
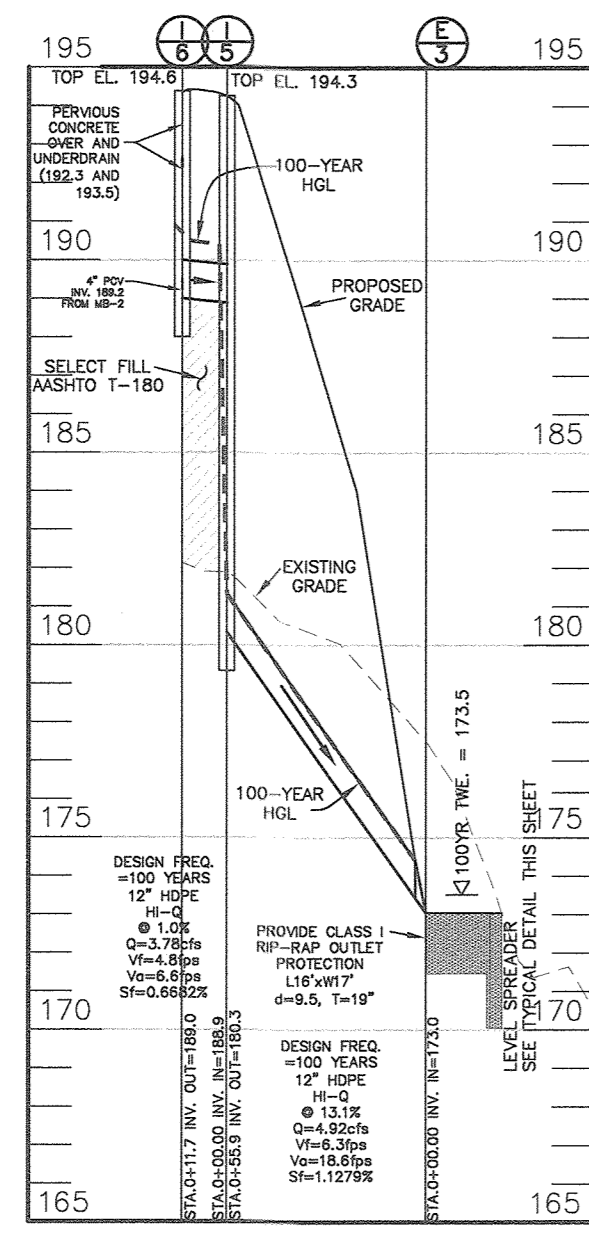
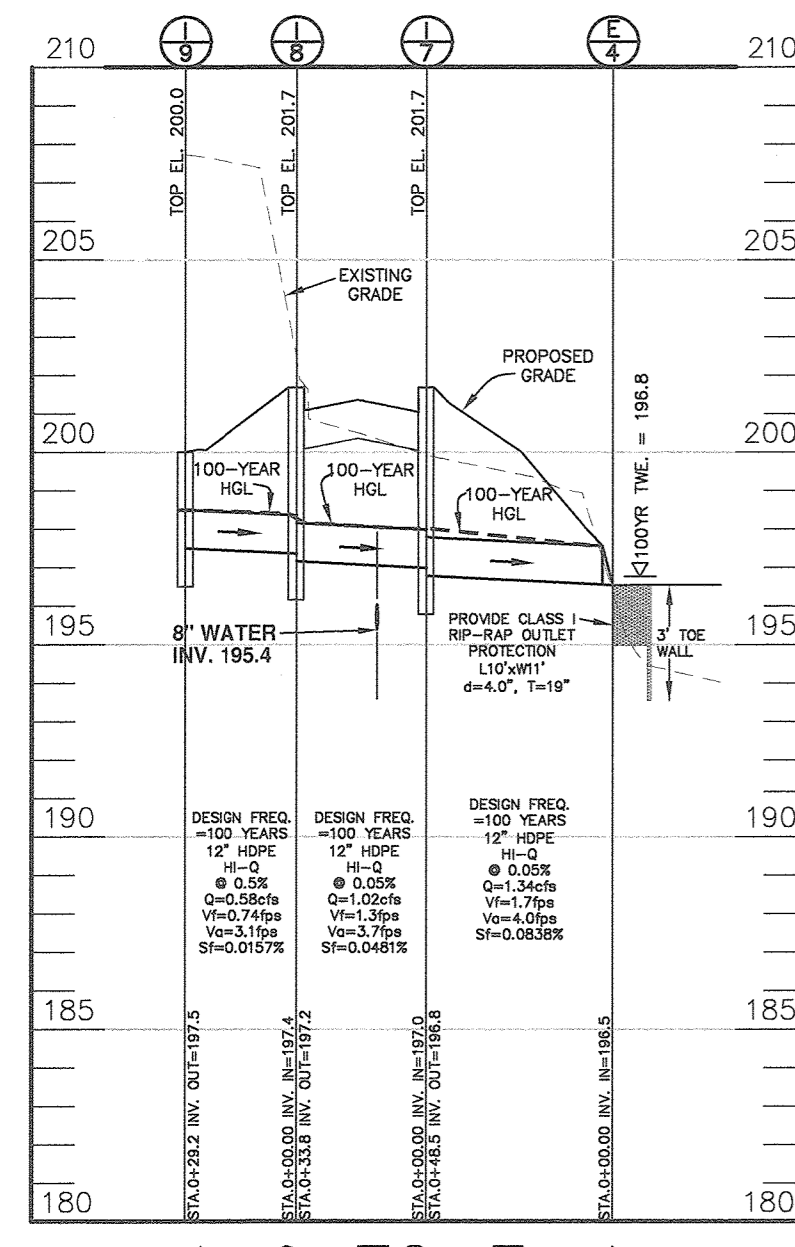
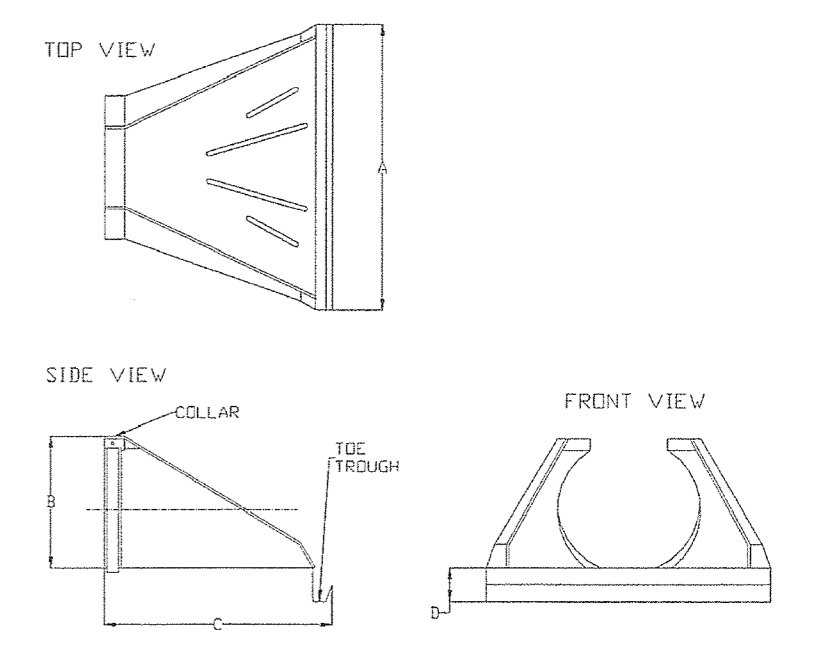
HANCOR HI-Q® FLARED END SECTION SPECIFICATIONS

Scope
This specification describes 10- through 36-inch (250 to 900mm) HI-Q Flared End Sections for use in culvert and drainage outlet applications.

Requirements
The invert of the pipe and the end section shall be at the same elevation. HI-Q Flared End Section shall be high density polyethylene meeting ASTM D3500 minimum cell classification 21320C. Each end section shall have a carbon black additive for UV protection. The metal threaded fastener shall be stainless steel.

Installation
Installation shall be in accordance with Hancor installation instructions and with those issued by state or local authorities.

	PIPE DIAMETER, IN (mm)					
	10	12	15	18	24	30
A	42	41	49	49	58.5	66
B	14.6	15	22	22	28	36
C	(38)	(45)	(52)	(52)	(71)	(82)
D	33	34	43	43	48	66.5
E	(85)	(85)	(105)	(105)	(145)	(165)
F	6	6	6	6	6	6
G	(15)	(15)	(15)	(15)	(15)	(15)



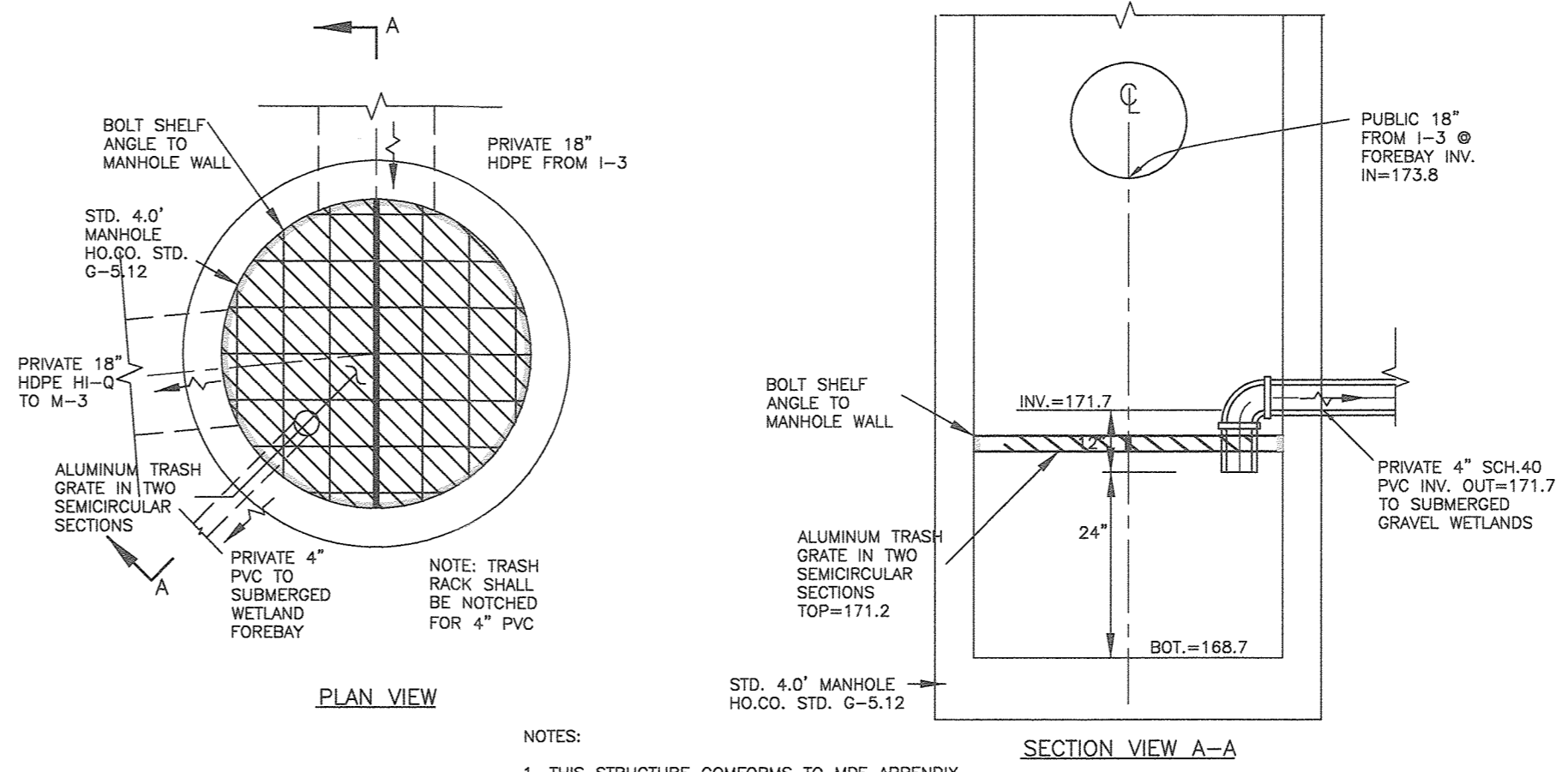
STRUCTURE SCHEDULE							
NO.	TYPE	LOCATION	PIPE INV. IN	PIPE INV. OUT	TOP ELEV.	THROAT ELEV.	OWNERSHIP
END SECTIONS							
E-1	18" HDPE END SECT.	N 549,736.85, E 1,376,595.43	---	171.9	NA	NA	PRIVATE
E-2	18" HDPE END SECT.	N 549,699.50, E 1,376,494.74	---	168.4	NA	NA	PRIVATE
E-3	12" HDPE END SECT.	N 549,652.12, E 1,376,242.73	---	173.0	NA	NA	PRIVATE
E-4	12" HDPE END SECT.	N 549,868.90, E 1,376,206.38	---	196.5	NA	NA	PRIVATE
INLETS							
I-1	S-COMBINATION	N 549,769.36, E 1,376,614.87	---	174.5	179.6	179.0	PRIVATE
I-2	D-OPEN 4 SIDES	N 549,885.94, E 1,376,615.15	180.70	180.7	184.8	184.0	PRIVATE
I-3	A-5 width=2.5'	N 549,794.71, E 1,376,535.11	176.2	176.0	180.6	180.0	PRIVATE
I-4	A-5 width=2.5'	N 549,689.15, E 1,376,414.85	---	182.6	186.3	185.7	PRIVATE
I-5	D-OPEN 1 SIDE	N 549,705.77, E 1,376,227.18	188.9,190.0	180.3	194.3	193.5	PRIVATE
I-6	A-5 width=2.5'	N 549,715.49, E 1,376,234.33	193.5,192.3,189.2	189.0	194.6	194.0	PRIVATE
I-7	A-5 width=2.5'	N 549,896.35, E 1,376,248.66	---	197.0	196.8	201.8	PRIVATE
I-8	A-5 width=2.5'	N 549,914.85, E 1,376,272.28	---	197.4	197.2	201.1	PRIVATE
I-9	MH-DRAINAGE GRATE	N 549,944.60, E 1,376,267.99	---	197.5	200.0	---	PRIVATE
I-10	MH-DRAINAGE GRATE	N 549,992.98, E 1,376,319.57	---	193.0	200.0	---	PRIVATE
I-11	COG-5	N 549,726.52, E 1,376,925.20	n/a	n/a	188.4	187.6	PUBLIC
I-12	COG-5	N 549,992.98, E 1,376,319.57	n/a	n/a	193.5	192.7	PUBLIC
I-13	YARD INLET	N 549,931.5, E 1,376,427.9	182.42	182.09	185.50	NA	PRIVATE
MANHOLES							
M-1	4'-0" MANHOLE	N 549,782.96, E 1,376,556.96	173.5	172.6	180.0	NA	PRIVATE
M-2	4'-0" MANHOLE	N 549,799.08, E 1,376,576.27	174.0	173.7	180.2	NA	PRIVATE
M-3	4'-0" MANHOLE	N 549,714.69, E 1,376,491.72	168.9	168.7	180.8	NA	PRIVATE
M-4	4'-0" INVERT MANHOLE	N 549,778.59, E 1,376,551.72	173.8	171.7,171.8	177.8	NA	PRIVATE
M-5	4'-0" MANHOLE	N 549,889.3, E 1,376,463.0	181.54	181.29	186.70	NA	PRIVATE

- 1) STRUCTURE LOCATION FOR MANHOLES IS AT THE CENTER OF THE MANHOLE.
- 2) STRUCTURE LOCATION FOR INLETS IS AT THE CENTER OF THE INLET.
- 3) STRUCTURE ELEVATION AND LOCATION FOR ENDSECTIONS IS AT THE MIDPOINT OF THE END OF STRUCTURE.
- 4) PRECAST STRUCTURES MEETING HS-20 LOADING MAY BE USED.
- 5) WIDTH LISTED FOR 'A' TYPE INLETS IN THE INTERIOR WALL WIDTH.
- 6) STRUCTURE LOCATION FOR CURB OR COMBINATION INLETS IS AT THE CENTER FACE OF CURB.

STORM DRAIN PROFILES

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

STORMDRAIN PIPE SCHEDULE			
PIPE SIZE	LENGTH	TYPE	OWNERSHIP
6"	116'	PVC	PRIVATE
8"	79'	PVC	
12"	288'	PVC	
12"	292'	HDPE HI-Q	
15"	374'	HDPE HI-Q	
18"	212'	HDPE HI-Q	



MH-4 DIVERSION STRUCTURE DETAIL
SCALE: NTS

- NOTES:
1. THIS STRUCTURE CONFORMS TO MDE APPENDIX D-8; DETAIL 6 AND HO. CO. STD. DETAIL G-5.12
 2. DIVERSION STRUCTURE SHALL BE PRIVATELY OWNED AND MAINTAINED

LEVEL SPREADER TYPICAL
SCALE: 1" = 2'

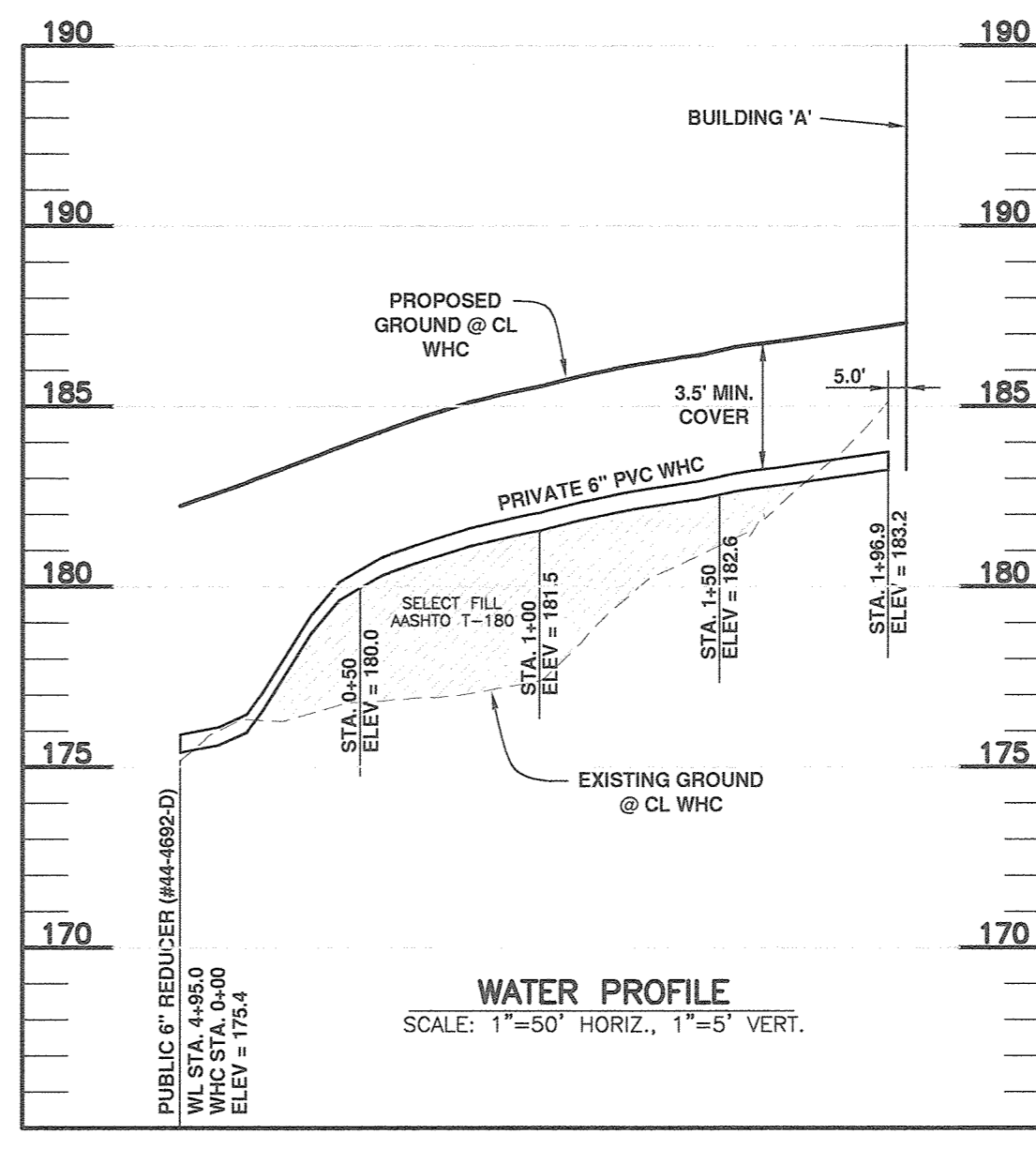
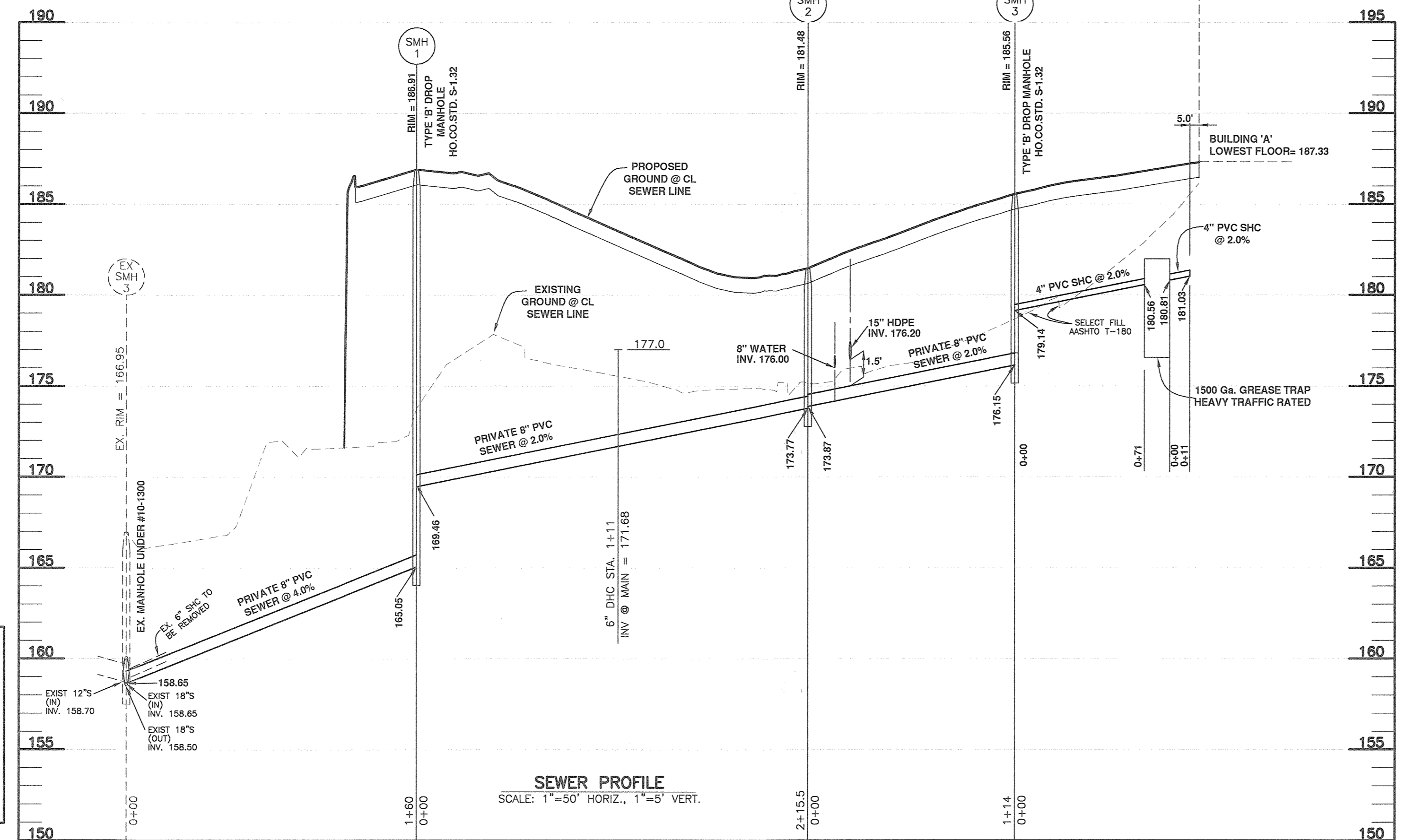
THIS SHEET REPLACES THE PREVIOUS SHEET 7 SIGNED ON 4-24-2019

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DATE: 2-6-20

DATE: 2/11/00

DATE: 2-13-2020



PLAN VIEW

SECTION VIEW

DESIGN DATA & GENERAL NOTES:

- (1) Concrete strength: f'c = 3,000 p.s.i. @ 28 days. Density = 150 pcf.
- (2) Concrete: Portland Type III per ASTM C 150-92.
- (3) Reinforcing steel: per ASTM A 615, Grade 60, Domestic. Min. 1-1/2" cover.
- (4) Reinforcing per ASTM A 615, Grade 60, Domestic. Min. 1-1/2" cover.
- (5) Rebar: 1/2" dia. steel designed for 60,000 psi.
- (6) Top slab sealed with butyl rope mastic.
- (7) Minimum 6" of earth cover over top slab.

Mayer Bros., Inc.

1500 GALLON TANK Heavy Traffic Rated

Stock Item [Approx. Wt. = 16,000 lbs.]

Dwg. No. 1500TR No Scale Jan. 1, 2000

REVISIONS:

NO.	DATE	REVISION
2	1-16-2020	REMOVE SHC AT SMH 3
1	3-21-2019	ADD I-13 AND M-5 TO SCHEDULE, ADD SHC BETWEEN SMH 1 AND SMH 2 AND AT SMH 3, REVISE PIPE SCHEDULE

BENCHMARK ENGINEERING, INC.

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. 22300

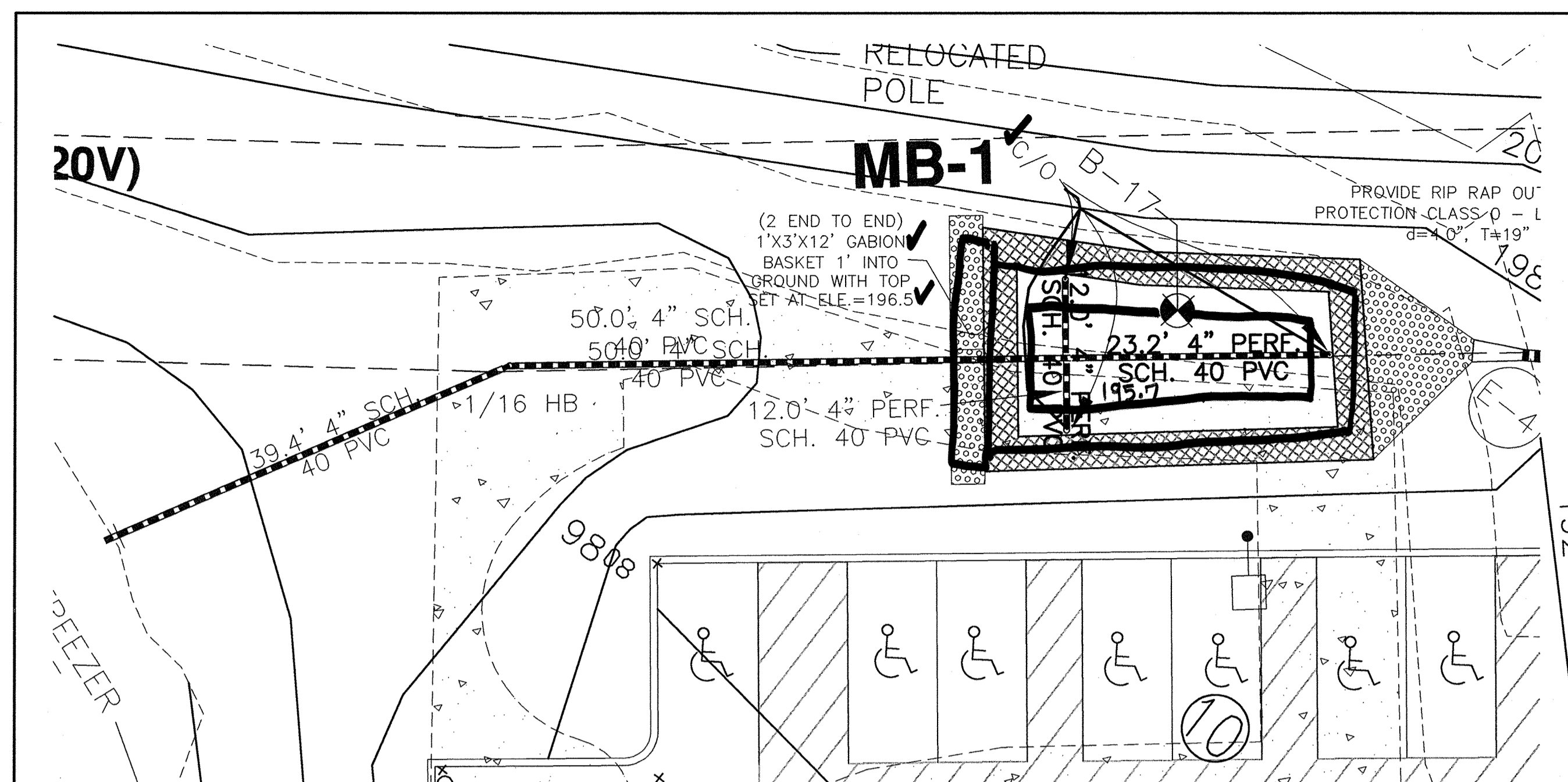
LORIEN-ELKRIDGE PARCEL 'A'

TAX MAP: 43 - GRID: 10 - PARCEL: 32
ZONED: POR
ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

STORM DRAIN, SEWER & WHC PROFILES AND DETAILS

DATE: NOVEMBER, 2010 BEI PROJECT NO. 2071

SCALE: AS SHOWN SHEET 7 OF 29



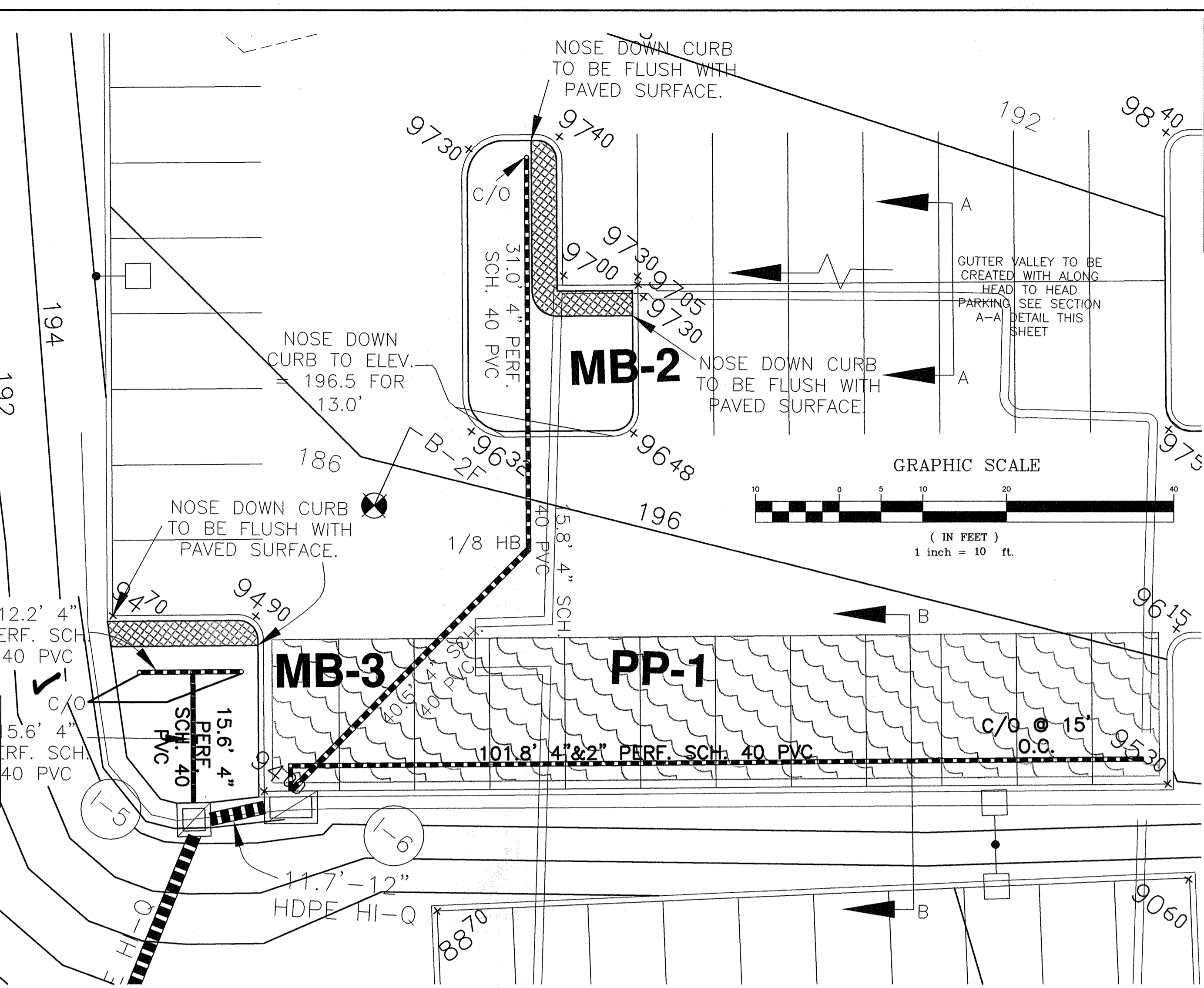
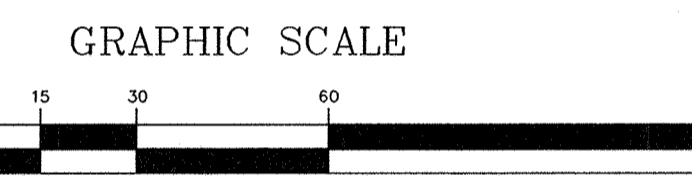
ESD MICRO-PRACTICE M-6 (MB-1) DETAIL PLAN

BIORETENTION PLANTING LIST MB-1	BIORETENTION PLANTING LIST MB-2																																				
<table border="1"> <tr><th>SYMBOL</th><th>QUANTITY</th><th>NAME</th></tr> <tr><td>1</td><td>63</td><td>VINCA MINOR (COMMON PERIWINKLE)</td></tr> <tr><td>2</td><td>56</td><td>AJUSTA REPTAN S (CREEPING BUGLEWEED)</td></tr> <tr><td>3</td><td>30</td><td>IRIS VERSICOLOR (IRIS)</td></tr> <tr><td>4</td><td>19</td><td>HEMEROCALLIS SP (DAYLILY)</td></tr> <tr><td>5</td><td>1</td><td>ACER RUBRUM (RED MAPLE)</td></tr> </table>	SYMBOL	QUANTITY	NAME	1	63	VINCA MINOR (COMMON PERIWINKLE)	2	56	AJUSTA REPTAN S (CREEPING BUGLEWEED)	3	30	IRIS VERSICOLOR (IRIS)	4	19	HEMEROCALLIS SP (DAYLILY)	5	1	ACER RUBRUM (RED MAPLE)	<table border="1"> <tr><th>SYMBOL</th><th>QUANTITY</th><th>NAME</th></tr> <tr><td>1</td><td>32</td><td>VINCA MINOR (COMMON PERIWINKLE)</td></tr> <tr><td>2</td><td>29</td><td>AJUSTA REPTAN S (CREEPING BUGLEWEED)</td></tr> <tr><td>3</td><td>15</td><td>IRIS VERSICOLOR (IRIS)</td></tr> <tr><td>4</td><td>10</td><td>HEMEROCALLIS SP (DAYLILY)</td></tr> <tr><td>5</td><td>1</td><td>ACER RUBRUM (RED MAPLE)</td></tr> </table>	SYMBOL	QUANTITY	NAME	1	32	VINCA MINOR (COMMON PERIWINKLE)	2	29	AJUSTA REPTAN S (CREEPING BUGLEWEED)	3	15	IRIS VERSICOLOR (IRIS)	4	10	HEMEROCALLIS SP (DAYLILY)	5	1	ACER RUBRUM (RED MAPLE)
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SCALE: 1" = 10'
CONSTRUCTION AND INSPECTION SPECIFICATIONS FOR ALTERNATIVE SURFACES

- Erosion and Sediment Control:** Final grading for installation shall not take place until the surrounding site is stabilized. If this cannot be accomplished, runoff from disturbed areas shall be diverted around proposed pavement locations.
- Soil Compaction:** Sub soils shall not be compacted. Construction should be performed with lightweight, wide tracked equipment to minimize compaction. Excavated materials should be placed in a contained area.
- Distribution Systems:** Overdrain, underdrain, and distribution pipes shall be checked to ensure that both the material and perforations meet specifications (see Appendix B.4). The upstream ends of pipes should be capped prior to installation. All underdrain or distribution pipes used should be installed flat along the bed bottom.
- Subbase Installation:** Subbase aggregate shall be clean, washed, and free of fines. The subbase shall be placed in lifts and lightly rolled according to the specifications (see Appendix B.4).
- Inspection:** Regular inspections shall be made during the following stages of construction:
 - During excavation to subgrade.
 - During placement and backfill of any drainage or distribution system(s).
 - During placement of the subbase material.
 - During placement of the surface material.
 - Upon completion of final grading and establishment of permanent stabilization.

NOTE: THE MICRO-BIORETENTION FACILITIES SHALL BE LINED WITH FILTER FABRIC AND A LAYER OF FILTER FABRIC SHALL BE USED BETWEEN THE BOTTOM OF THE PLANTING SOIL AND THE GRAVEL CHAMBER.



ESD MICRO-PRACTICE M-6 (MB-2 & MB-3) AND ALTERNATIVE SURFACE PRACTICE A-2 (PP-1) DETAIL PLAN

MATERIAL	SPECIFICATION	SIZE	NOTES
PLANTINGS (IF REQUIRED)	SEE APPENDIX A; TABLE A.4	N/A	PLANTINGS ARE SITE SPECIFIC
PLANTING SOIL (2" TO 4" DEEP)	SAND: 35-60% SILT: 30-35% CLAY: 10-25%	N/A	USDA SOIL TYPES: LOAMY SAND, SANDY LOAM OR LOAM
MULCH	SHREDED HARDWOOD	N/A	2" TO 3" DEPTH, AGED 6 MONTHS, MINIMUM
PEA GRAVEL DAPHRAGM AND CURTAIN DRAIN	PEA GRAVEL, ASTM D-448, ORNAMENTAL, WASHED COBBLES	PEA GRAVEL, NO. 8, 2" TO 5"	
GEOTEXTILE (CLASS C)	APPROXIMATE OPENING SIZE: (ASTM D-4751) TENSILE STRENGTH: (ASTM D-4632) PUNCTURE RESISTANCE: (ASTM D-4833)	N/A	FOR USE AS NECESSARY BENEATH UNDERDRAINS ONLY
UNDERDRAIN GRAVEL	AASHTO M-43	0.375" TO 0.750"	
UNDERDRAIN PIPING	4" TO 6" RIGID SCH. 40 PVC OR AASHTO M-278	1/4" PER 8" O.D. 4 HOLES PER ROW; MINIMUM OF 3" OF GRAVEL OVER PIPES; NOT NECESSARY UNDERNEATH PIPES	

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

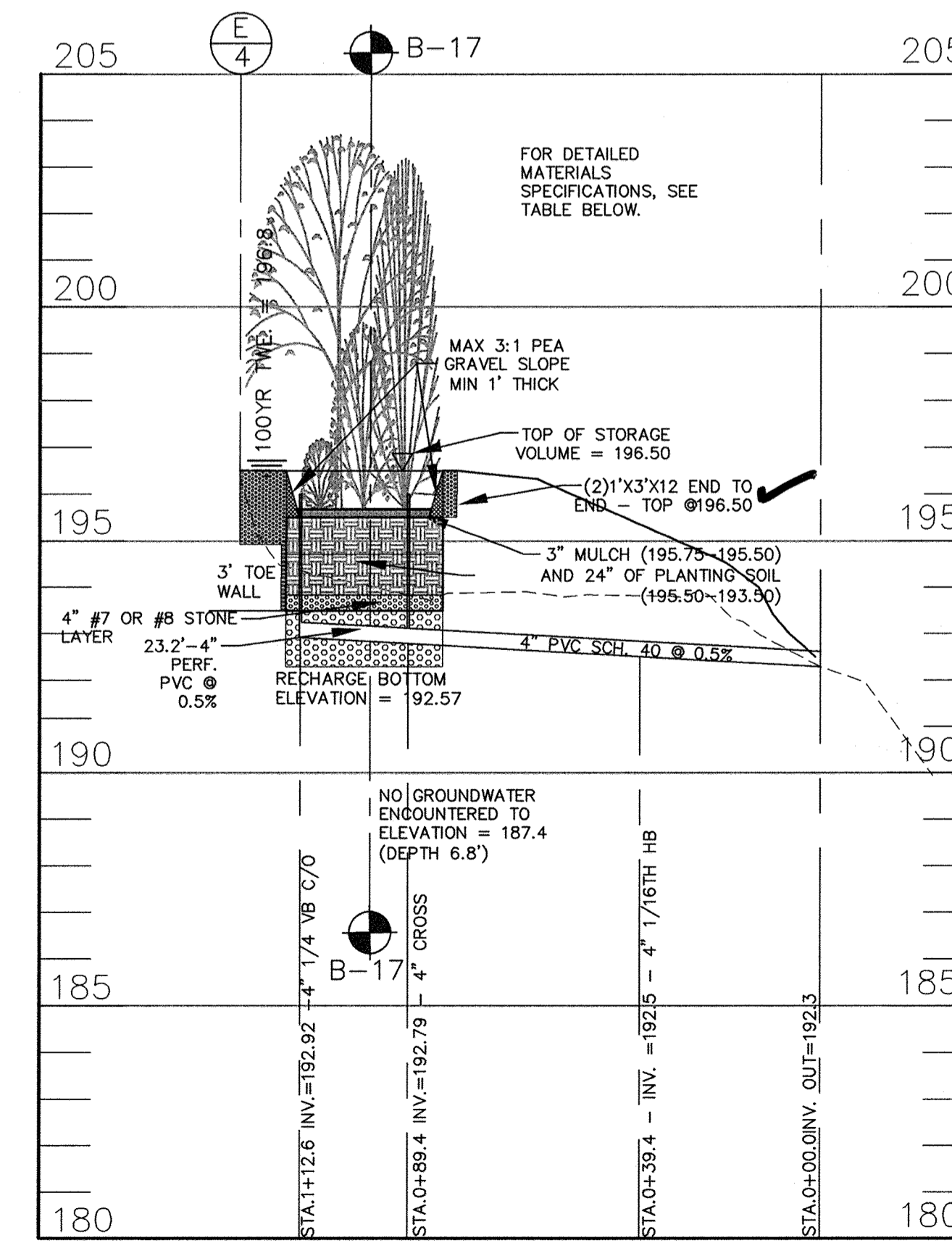
- Annual maintenance of plant material, mulch layer and soil layer is required. Maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning. Acceptable replacement plant material is limited to the following: 2000 Maryland Stormwater Design Manual Volume II, Table A.4.1 and 2.
- Schedule of plant inspection will be twice a year in spring and fall. This inspection will include removal of dead and diseased vegetation considered beyond treatment, treatment of all diseased trees and shrubs and replacement of all deficient stakes and wires.
- Mulch shall be inspected each spring. Remove previous mulch layer before applying new layer once every 2 to 3 years.
- Soil erosion to be addressed on an as needed basis, with a minimum of once per month and after heavy storm events.

CONSTRUCTION SPECIFICATIONS

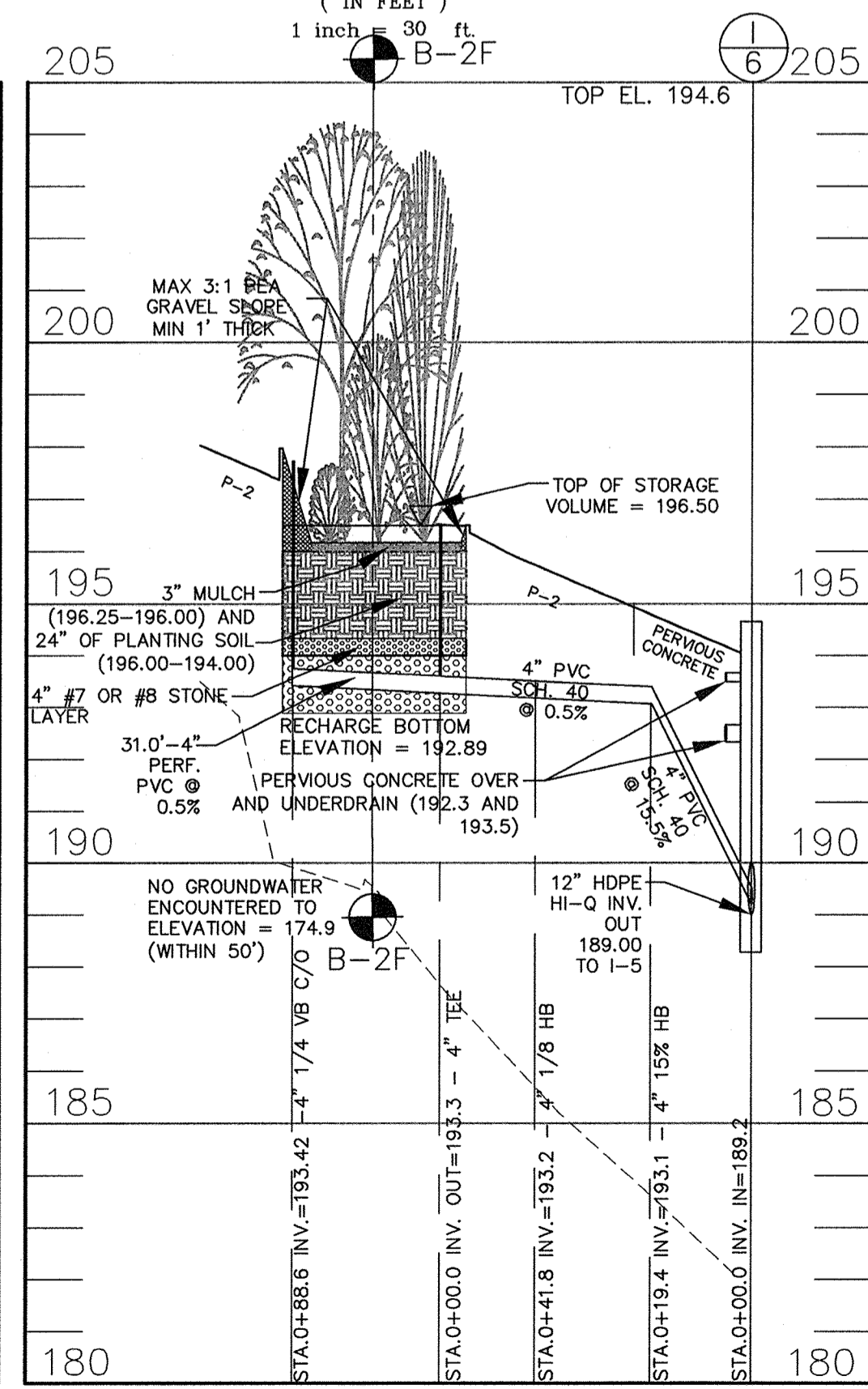
- THE SUBGRADE FOR ALL BIORETENTION COMPONENTS SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL. EMBANKMENTS SHALL BE PREPARED BY STRIPPING TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE AREAS, AND BE COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DRY DENSITY REFERENCED TO AASHTO 199 STANDARD PROCTORS.
- THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED RESPECTIVELY IN THE RIP-RAP OR FILTER.
- GEOTEXTILE CLASS C28 OR BETTER SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE PREPARED BY PLACING ANOTHER PIECE OF GEOTEXTILE FABRIC OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE FABRIC. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC SHALL BE A MINIMUM OF ONE FOOT.
- STONE FOR THE RIP-RAP OR LEVEL SPREADERS MAY BE PLACED BY EQUIPMENT. THEY SHALL BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DELAYMENT OF UNDERLYING MATERIALS. THE STONE FOR THE RIP-RAP OR LEVEL SPREADERS SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. STONE SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE FABRIC. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.
- THE STONE UNDER SHALL BE PLACED SO THAT IT BLENDS IN WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN THE FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED PERMEABLE PAVEMENT (A-2)

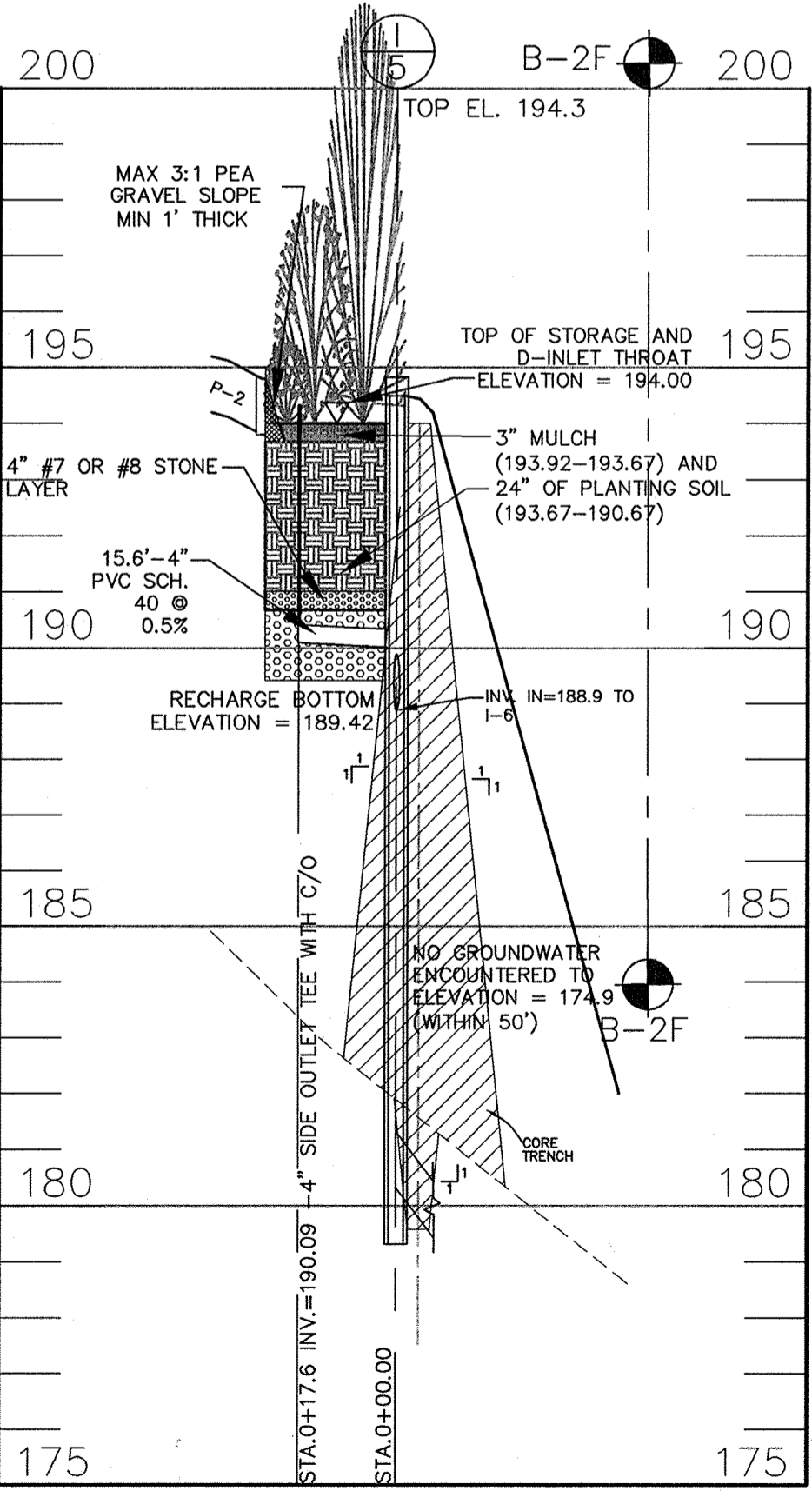
- Pavement surfaces should be swept and vacuumed (if porous concrete) to reduce sediment accumulation and ensure continued surface porosity. Sweeping should be performed at least twice annually with a commercial cleaning unit. Washing or compressed air units should not be used to perform surface cleaning.
- Drainage pipes, inlets, stone edge drains and other structures within or draining to the subbase should be cleaned out at regular intervals.
- Deicers should be used in moderation. Deicers should be non-toxic and be applied either as calcium magnesium acetate or as pre-treated salt. Snow plowing should be done carefully with blades set one-inch above the surface. Plowed snow piles and snowmelt should not be directed to permeable pavement.



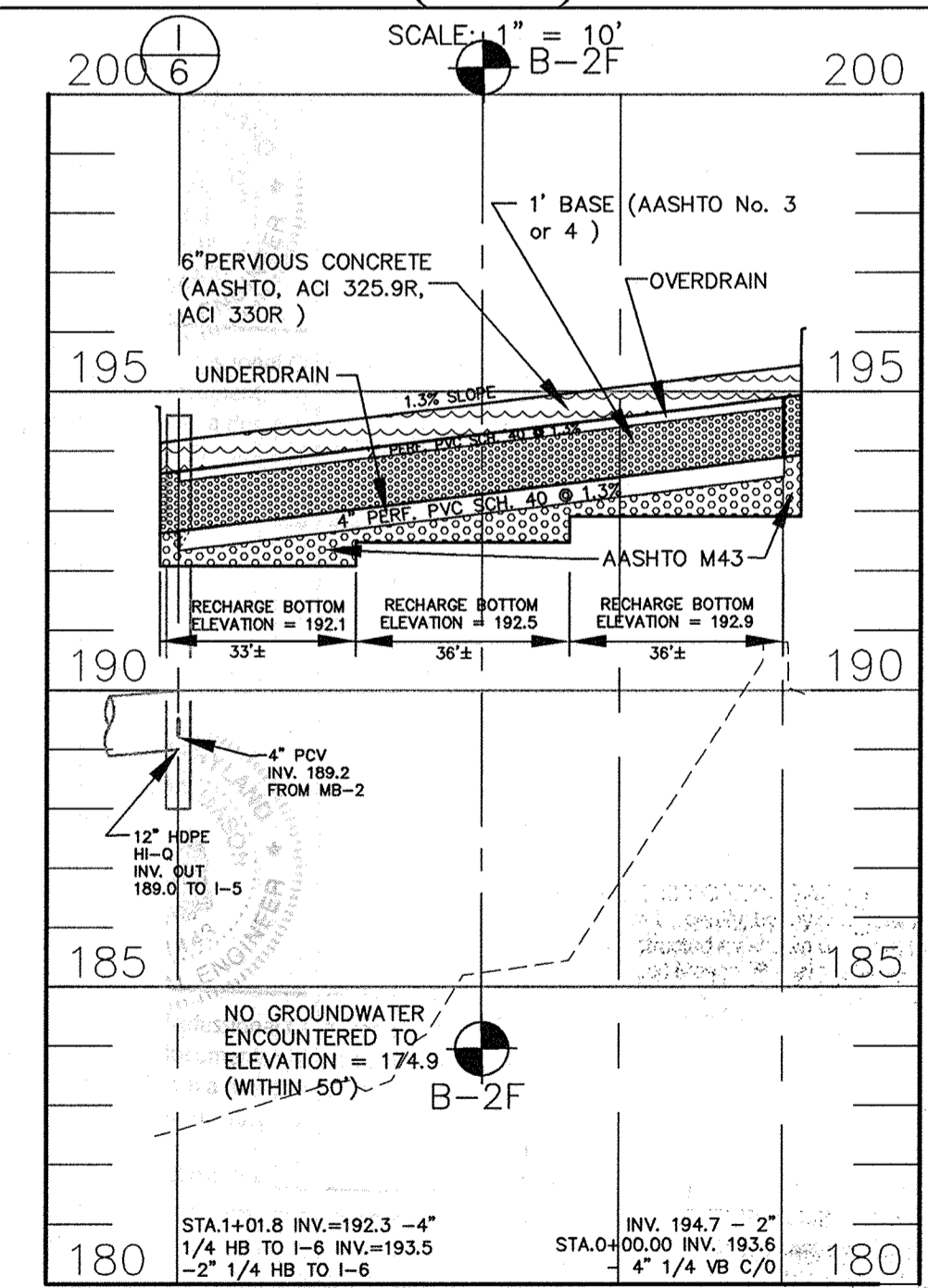
MICRO-PRACTICE M-6 (MB-1)



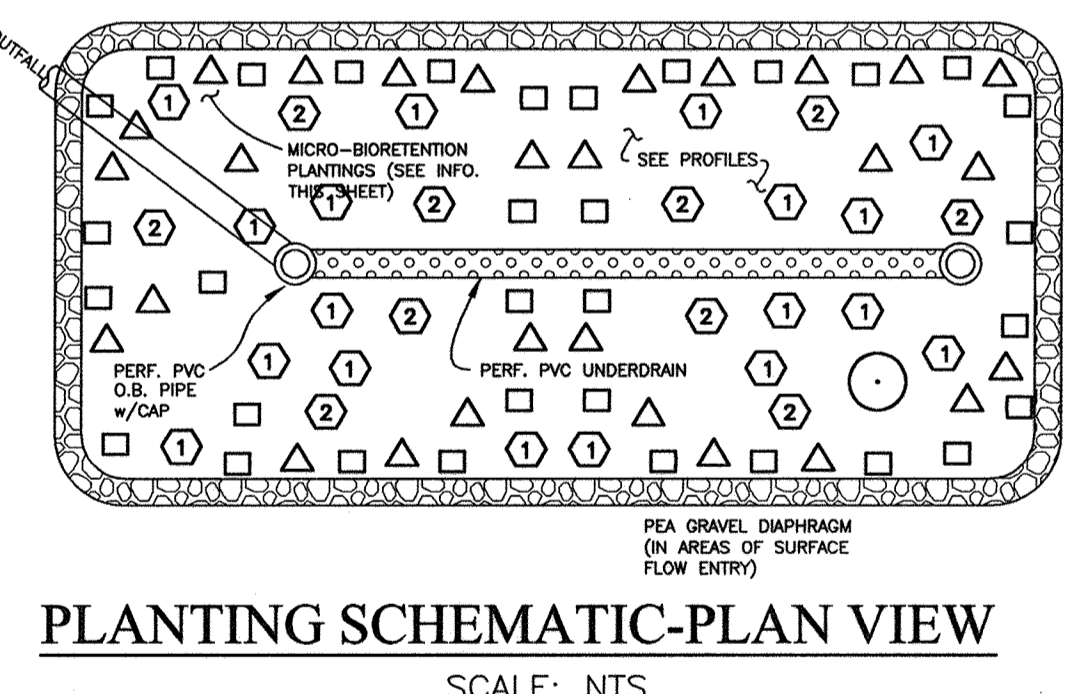
MICRO-PRACTICE M-6 (MB-2)



MICRO-PRACTICE M-6 (MB-3)



ALTERNATIVE SURFACE PRACTICE A-2 (PP-1)



PLANTING SCHEMATIC-PLAN VIEW

MICRO-BIORETENTION - PLANTING DATA

- PLANTINGS WITHIN THE PONDING AREA OF THE MICRO-BIORETENTION ARE TO BE OF A MEDIUM TO HIGH WATER TOLERANCE. SUGGESTED SPECIES: CREEPING BUGLEWEED (AJUSTA REPTANS), COMMON PERIWINKLE (VINCA MINOR), LILY-TURF (LIRIOPE, SP.), IRIS (IRIS VERSICOLOR), DAYLILY (HEMEROCALLIS, SP.), WHITE GLORY (ASTILE, SP.).
- PLANTINGS ALONG THE PERIMETER (BERM) AREA OF THE FACILITY ARE TO BE OF A LOW TO MEDIUM WATER TOLERANCE. SUGGESTED SPECIES: (PERENNIALS/ANNUALS) IRIS (IRIS VERSICOLOR), DAYLILY (HEMEROCALLIS, SP.), WHITE GLORY (ASTILE, SP.).
- AVOID PLANTINGS WITH EXCESSIVE ROOT MASS IN POND AREA NEAR PIPE AND UNDERDRAIN.

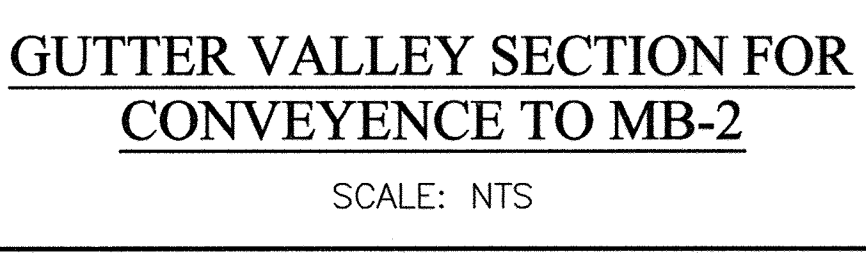
PIPE SIZE	LENGTH	TYPE	OWNERSHIP
4"	216'	PVC SCH. 40	PRIVATE
4"	407'	PERF. PVC SCH. 40	PRIVATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division: [Signature] 1/7/10
 Chief, Division of Land Development: [Signature] 1/7/10
 Director: [Signature] 2/10/11

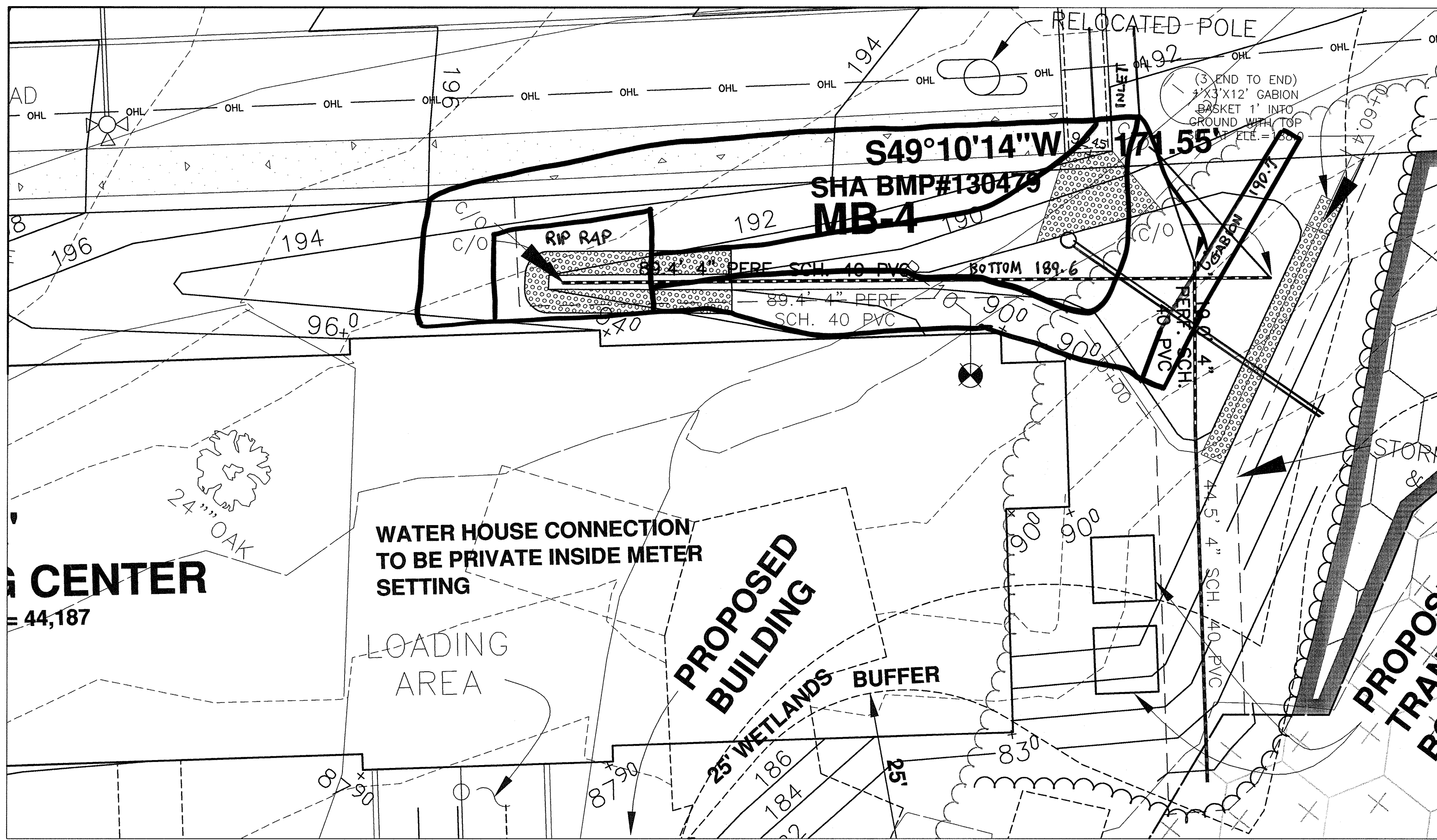
BENCHMARK ENGINEERING, INC.
 840 BALTIMORE NATIONAL PIKE SUITE 418 ELLOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-6444
 WWW.BE-CVLENGINEERING.COM

LORIEN-ELKRIDGE
 PARCEL 'A'
 TAX MAP: 43 - GRID: 10 - PARCEL: 32
 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND
STORM WATER MANAGEMENT MICRO PRACTICE PLAN, NOTES AND DETAILS
 DATE: NOVEMBER, 2010 BEI PROJECT NO. 2071
 SCALE: AS SHOWN SHEET 8 OF 29

AS-BUILT CERTIFICATION
 I hereby certify that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.
 Date: 5-28-13
 License No. 21443 Expiration Date: 12-21-14

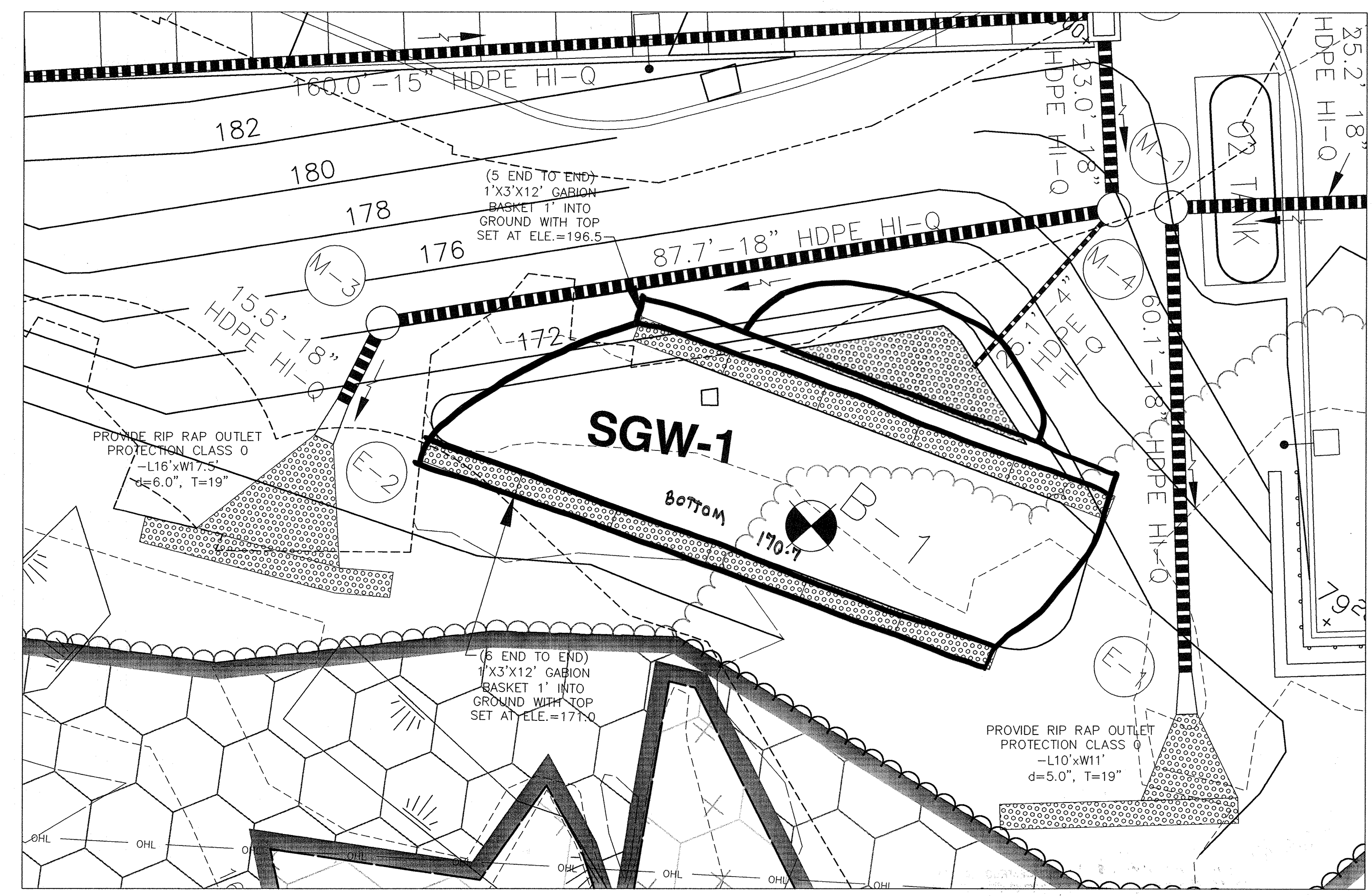


GUTTER VALLEY SECTION FOR CONVEYANCE TO MB-2



ESD MICRO-PRACTICE M-6 (MB-4) DETAIL PLAN

SCALE: 1" = 10'



ESD MICRO-PRACTICE M-2 (SGW-1) DETAIL PLAN

SCALE: 1" = 10'

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




- During the first year of operation, inspections should be conducted after every major storm and poorly established areas revegetated.
- Sediment accumulation in the pretreatment areas should be removed as necessary. Signs of uneven flow within the wetland may mean that the gravel or underdrain is clogged. The gravel or underdrain may need to be removed, cleaned and replaced.
- A dense stand of wetland vegetation should be maintained through the life of the facility with plantings replaced as needed.
- Inlets and outlets to each gravel wetland cell should be free from debris.
- Erosion at inflow points should be repaired. Flow splitters should be functional to prevent bypassing of the facility.

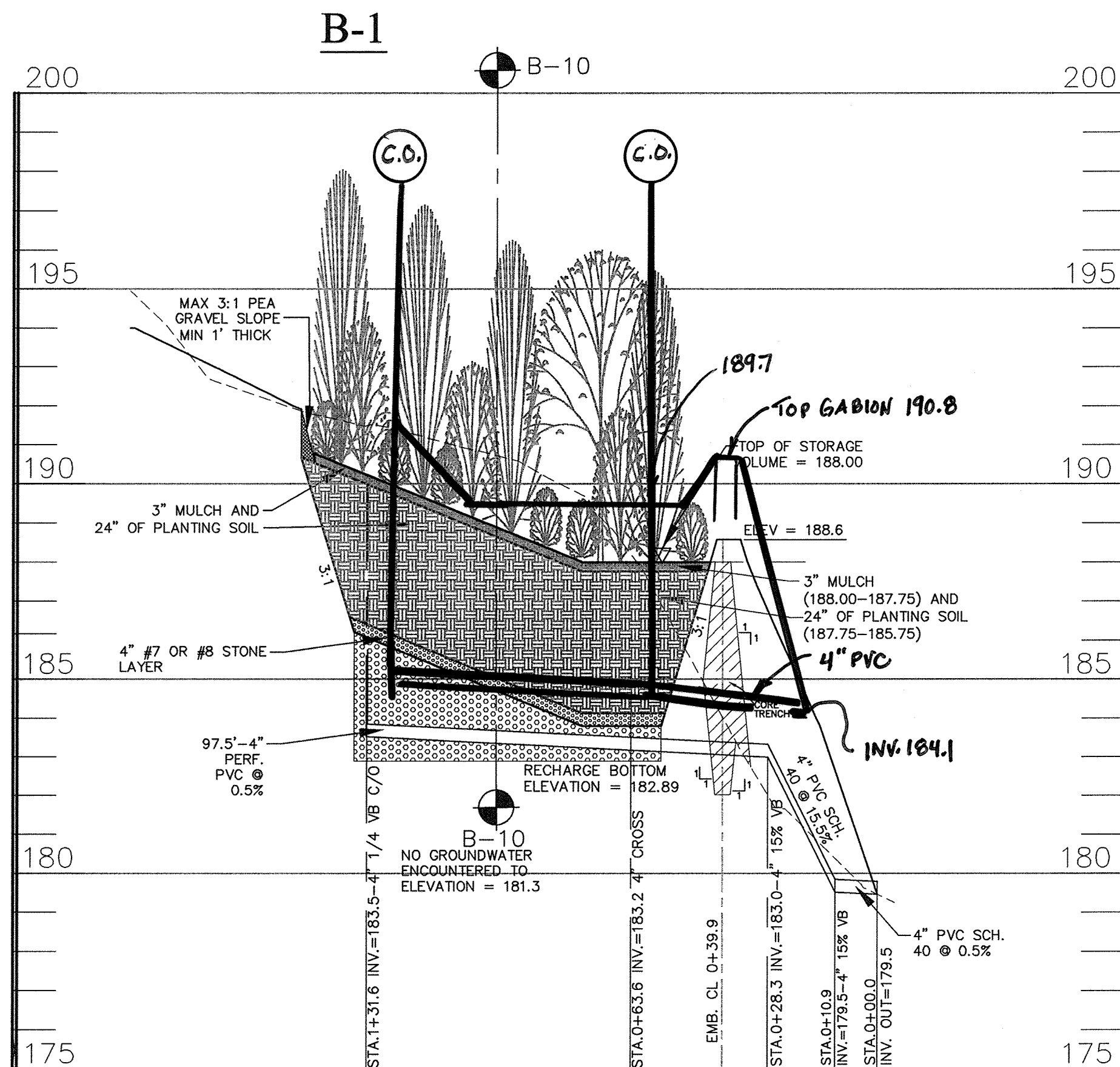
CONSTRUCTION AND INSPECTION SPECIFICATIONS FOR SUBMERGED GRAVEL WETLANDS

- Site Disturbance:** All on-site disturbed areas shall be stabilized prior to allowing runoff to enter the newly constructed wetland.
- Erosion and Sediment Control:** The proposed location of a submerged gravel wetland shall be protected during construction. Surface runoff shall be diverted away from the practice during grading operations. Flow splitters and other conveyance infrastructure shall be blocked.
- Wetland Construction:** Wetland construction shall be performed with lightweight, wide-tracked equipment to minimize disturbance and compaction. Excavated materials shall be placed in a contained area. Any pumping operations shall discharge filtered water to a stable outlet.
- Gravel Media:** The aggregate shall be composed of an 18 to 48 inch layer of clean washed, uniformly graded material with a porosity of 40%. Rounded bank run gravel is recommended.
- Inspection:** Regular inspections shall be made during the following stages of construction:
 - During excavation to subgrade.
 - During placement of backfill of perforated inlet pipe and observation wells.
 - During placement of geotextiles and all filter media.
 - During construction of any appurtenant conveyance systems such as diversion structures, inlets, outlets, and flow distribution structures.
 - Upon completion of final grading and establishment.

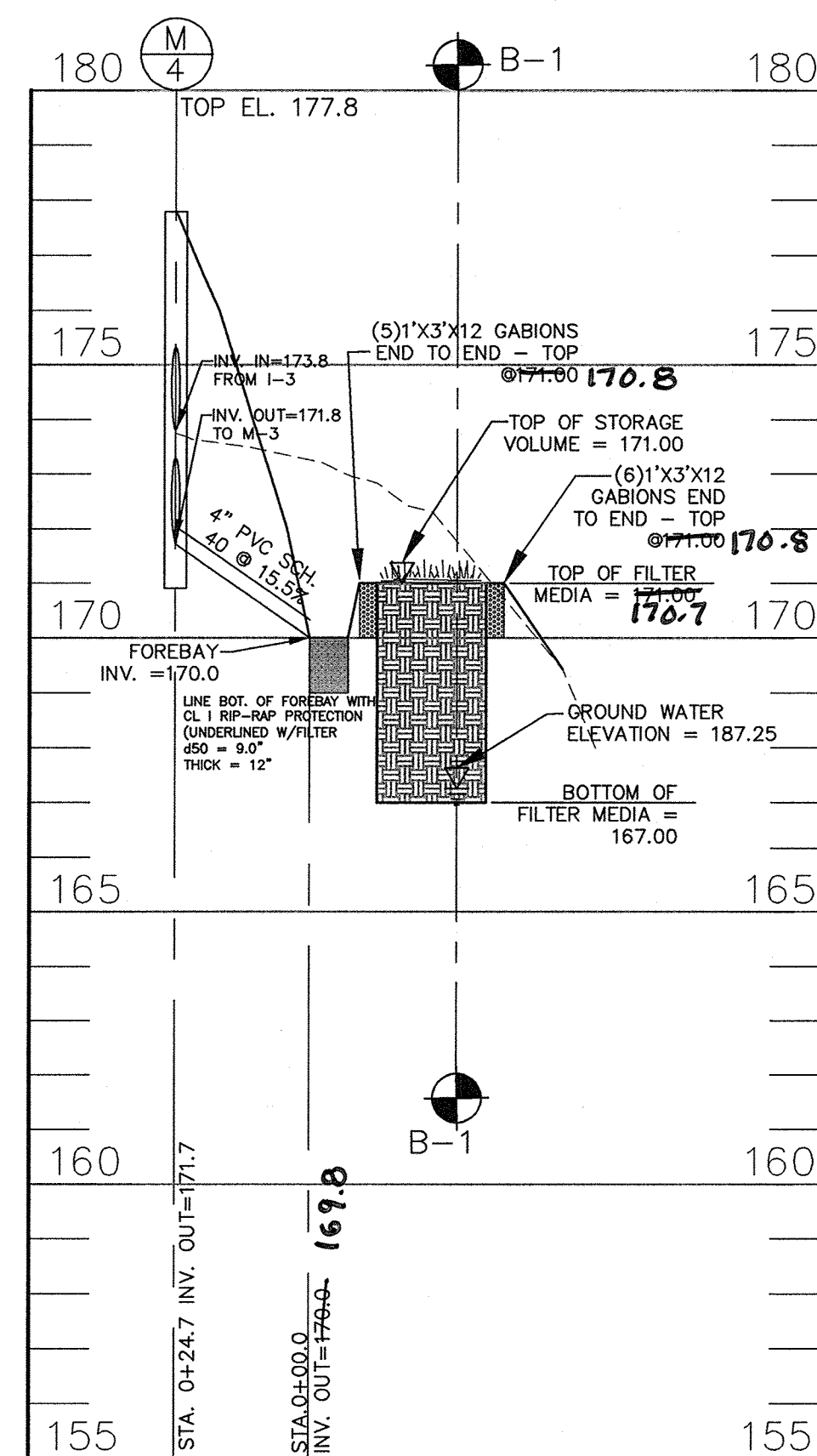
BIORETENTION PLANTING LIST MB-4		
SYMBOL	QUANTITY	NAME
①	69	VINCA MINOR (COMMON PERIWINKLE)
②	61	AJUSTA REPTAN S (CREEPING BUCKLEWEED)
③	32	IRIS VERSICOLOR (IRIS)
④	20	HEMEROCALLIS SP (DAYLILY)
⑤	1	ACER RUBRUM (RED MAPLE)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

 1/7/10 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 1/7/11 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT
 1/16/11 DATE
 DIRECTOR



MICRO-PRACTICE M-6 (MB-4)

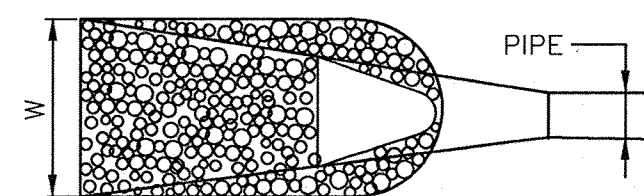


MICRO-PRACTICE M-2 (SGW-1)

SUBMERGED GRAVEL WETLAND PLANTING LIST SGW-1		
QUANTITY	NAME	REMARKS
120	BEE BALM	
100	GREEN CONEFLOWER	WETLAND PLANTING SHALL BE PLANTED THROUGHOUT
110	NEW YORK IRONWEED	FILTER MEDIA AND MAINTAIN 2' O.C. SPACING
105	SOFT RUSH	
110	CHUFA	

CONSTRUCTION SPECIFICATIONS

- THE SUBGRADE FOR THE FILTER, RIP-RAP, 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.
- THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED RESPECTIVELY IN THE RIP-RAP OR FILTER.
- GEOTEXTILE CLASS 225 OR BETTER SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN AN ISOLATED SMALL HOLE SHALL BE REPAIRED BY REPLACING THE GEOTEXTILE FABRIC. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC SHALL BE A MINIMUM OF ONE FOOT.
- A STONE FOR THE RIP-RAP OR GABION OUTLETS MAY BE PLACED BY EQUIPMENT. THEY SHALL 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 RIP-RAP OR GABION OUTLETS SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SHALL FILL THE Voids BETWEEN THE LARGER STONES. RIP-RAP SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE FABRIC. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.
- THE STONE SHALL BE PLACED SO THAT IT BLENDS IN WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN THE FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.



STRUCTURE	D-50	LENGTH (L)	WIDTH (W)	THICKNESS (T)	SHA CLASS
E-1	5.0'	10'	11'	19"	0
E-2	6.0'	16'	17.5'	19"	0
E-3	9.5'	16'	17'	19"	1
E-4	4.0'	10'	11'	19"	0

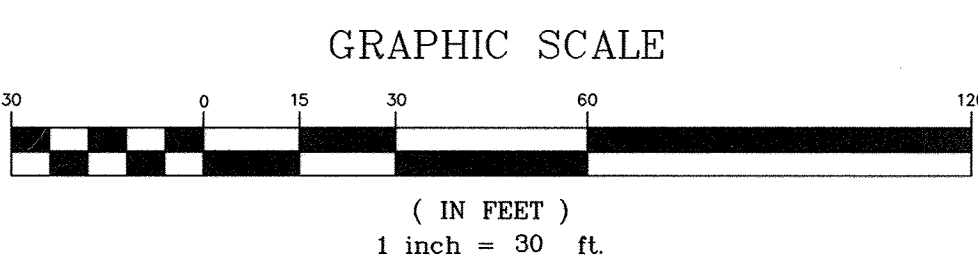
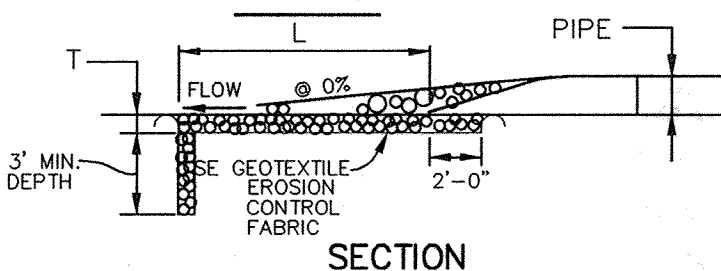
OUTLET PROTECTION DETAIL NOT TO SCALE

AS-BUILT CERTIFICATION
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.
Donald Mason, P.E. No. 21443 Date 5-28-13



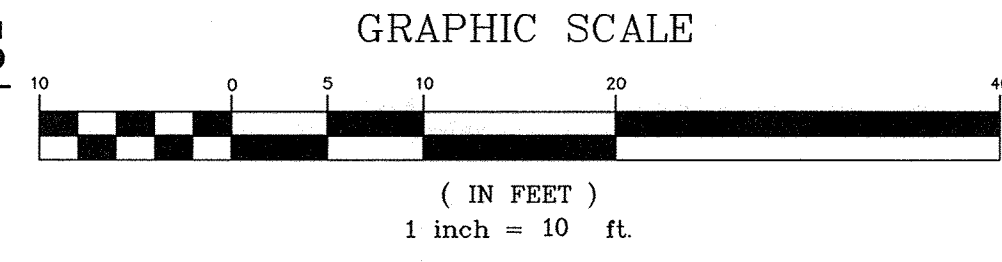
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 21443 Expiration Date: 12-21-14

B-17



ESD PRACTICE SECTIONS AND DETAILS

SCALE: HORIZONTAL 1" = 30'
VERTICAL 1" = 3'



1 3-21-2019 REVISE TOTAL SHEET NUMBER TO 29

NO.	DATE	REVISION
1	3-21-2019	REVISE TOTAL SHEET NUMBER TO 29

BENCHMARK ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE SUITE 418 ELLICOTT CITY, MARYLAND 21043
(P) 410-465-8105 (F) 410-465-8644
WWW.BE-CMENGINEERING.COM

OWNER: MUSIC FAIR LIMITED PARTNERSHIP
1205 YORK ROAD, FLOOR 4 LUTHERVILLE, MARYLAND 21093 410-825-8400

DEVELOPER: COMMERCIAL CONTRACTORS
1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400

LORIEN-ELKRIDGE PARCEL 'A'

TAX MAP: 43 - GRID: 10 - PARCEL: 32
ZONED: PDR
ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

STORMWATER MANAGEMENT MICRO PRACTICE PLAN, NOTES AND DETAILS

DATE: NOVEMBER, 2010 BEI PROJECT NO. 2071
SCALE: AS SHOWN SHEET 9 OF 29

AS-BUILT SDP-11-002

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

Site Preparation
 Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped to topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.
 Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.
 All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

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

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

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

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

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

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

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

Structure Backfill

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

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

Pipe Conduits

All pipes shall be circular in cross section.

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

- Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4" - 10" inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.
- Joints and connections to anti-seep collars shall be completely watertight.
- Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
- Backfilling shall conform to "Structure Backfill".

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

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

Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

Rock Riprap

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

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

Care of Water during Construction

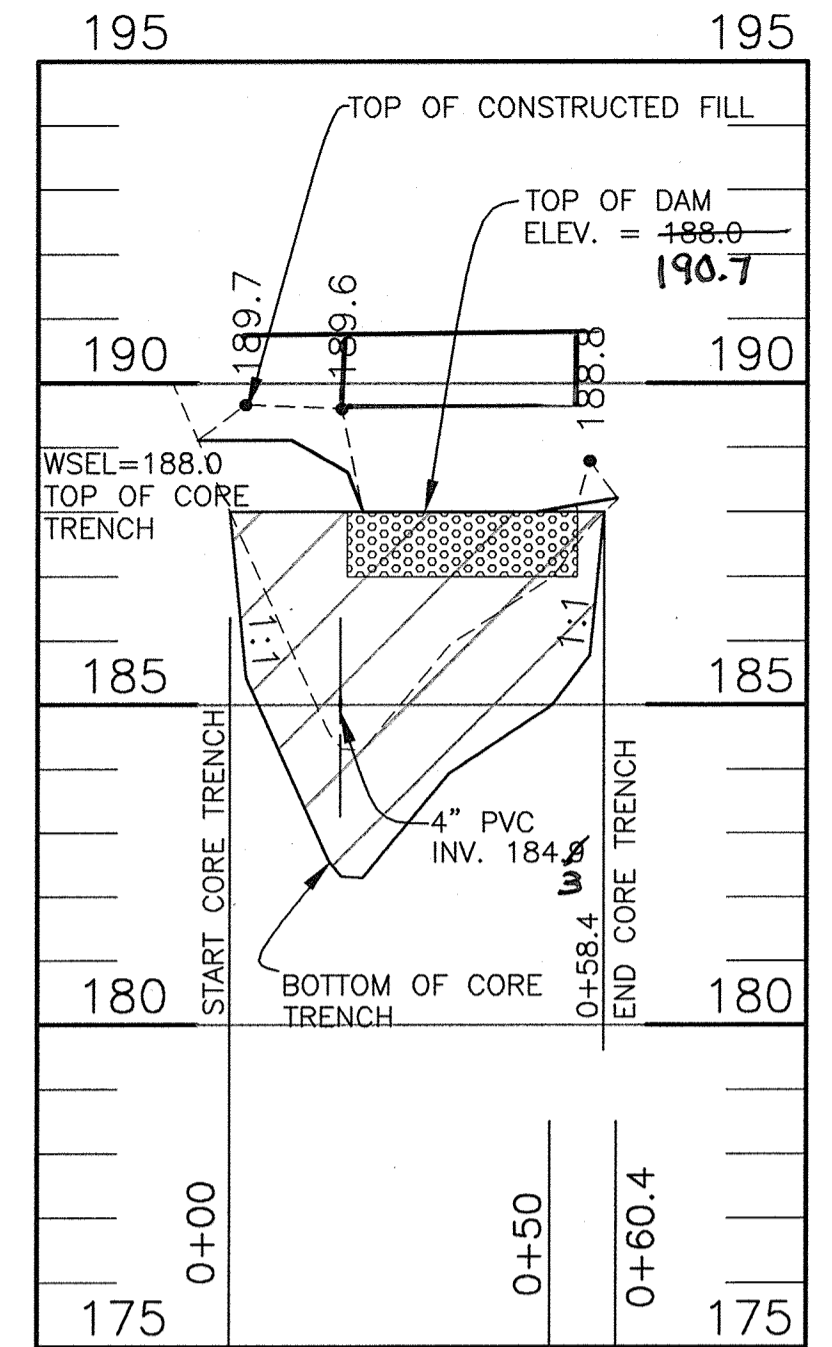
All work on permanent structures shall be carried out in areas free from water. The contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also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

Stabilization

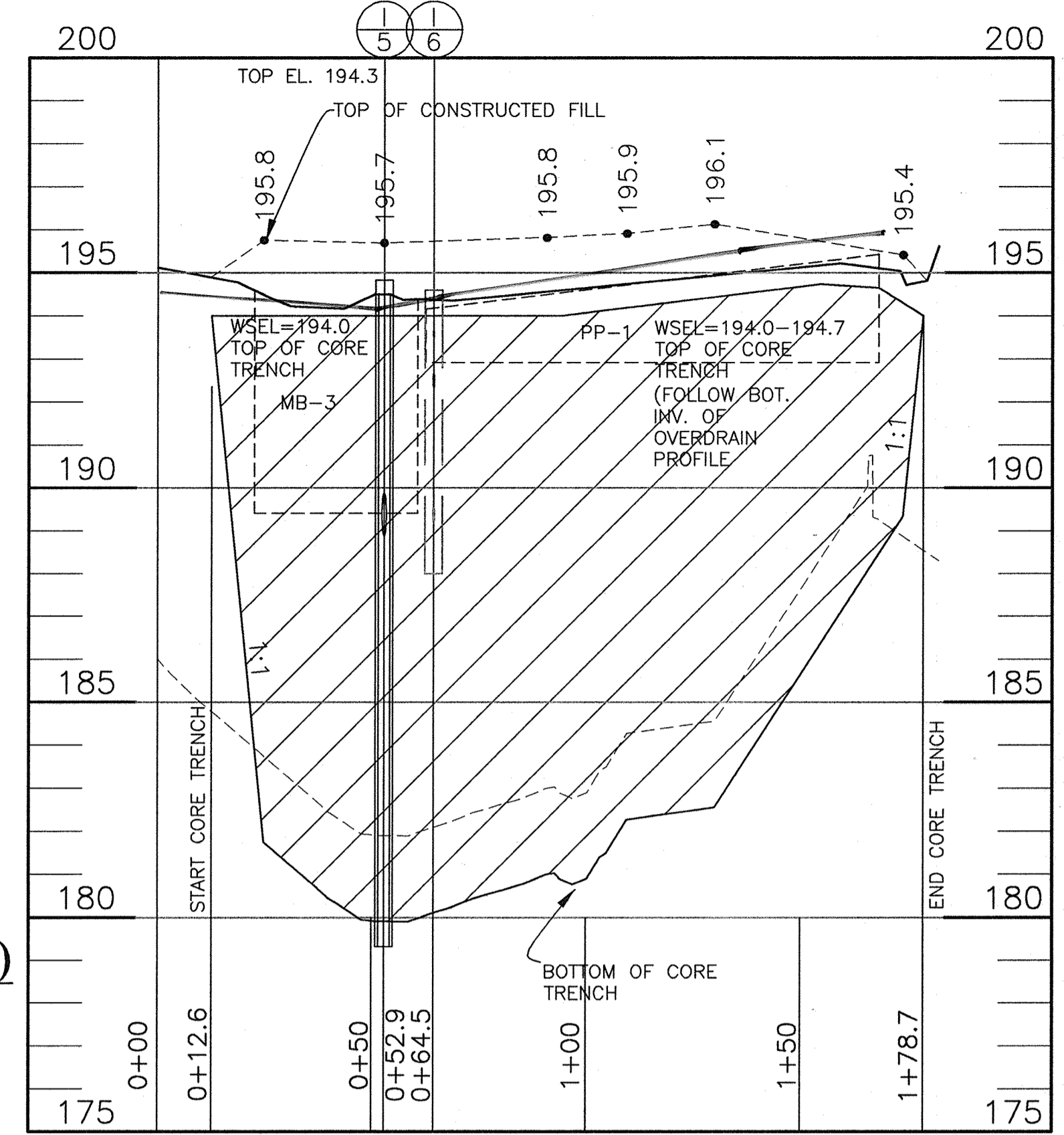
All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

Erosion and Sediment Control

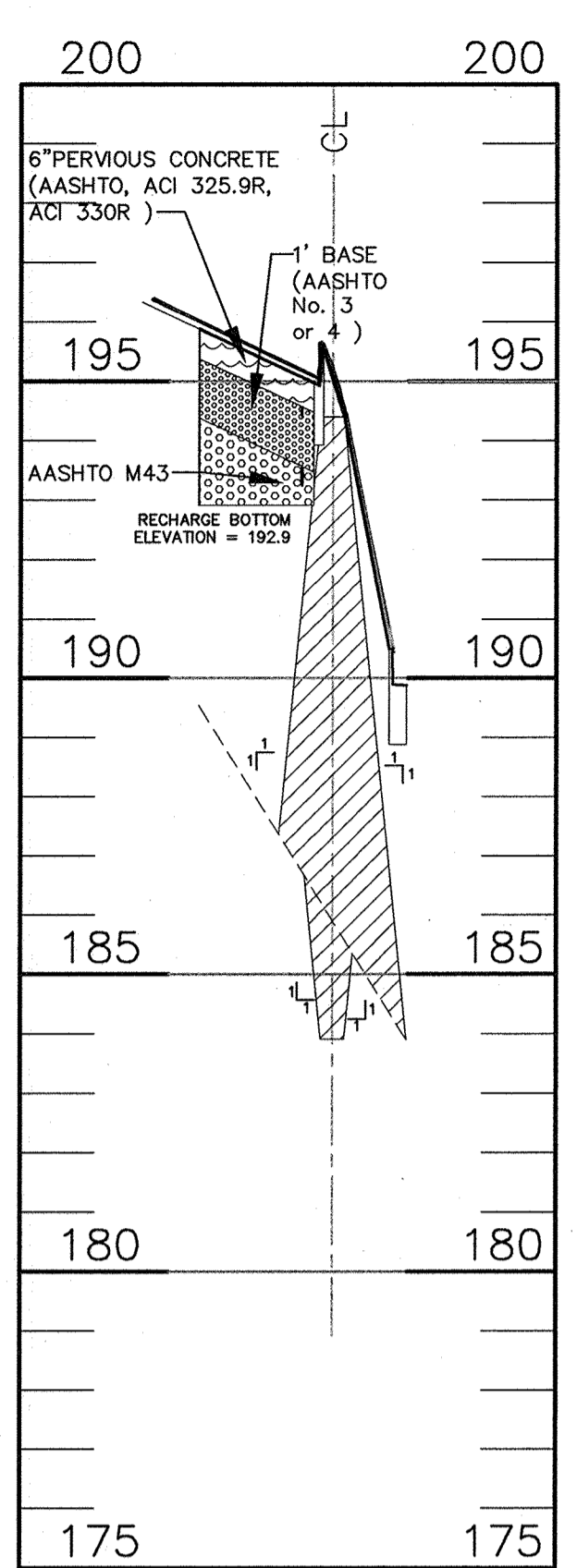
Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.



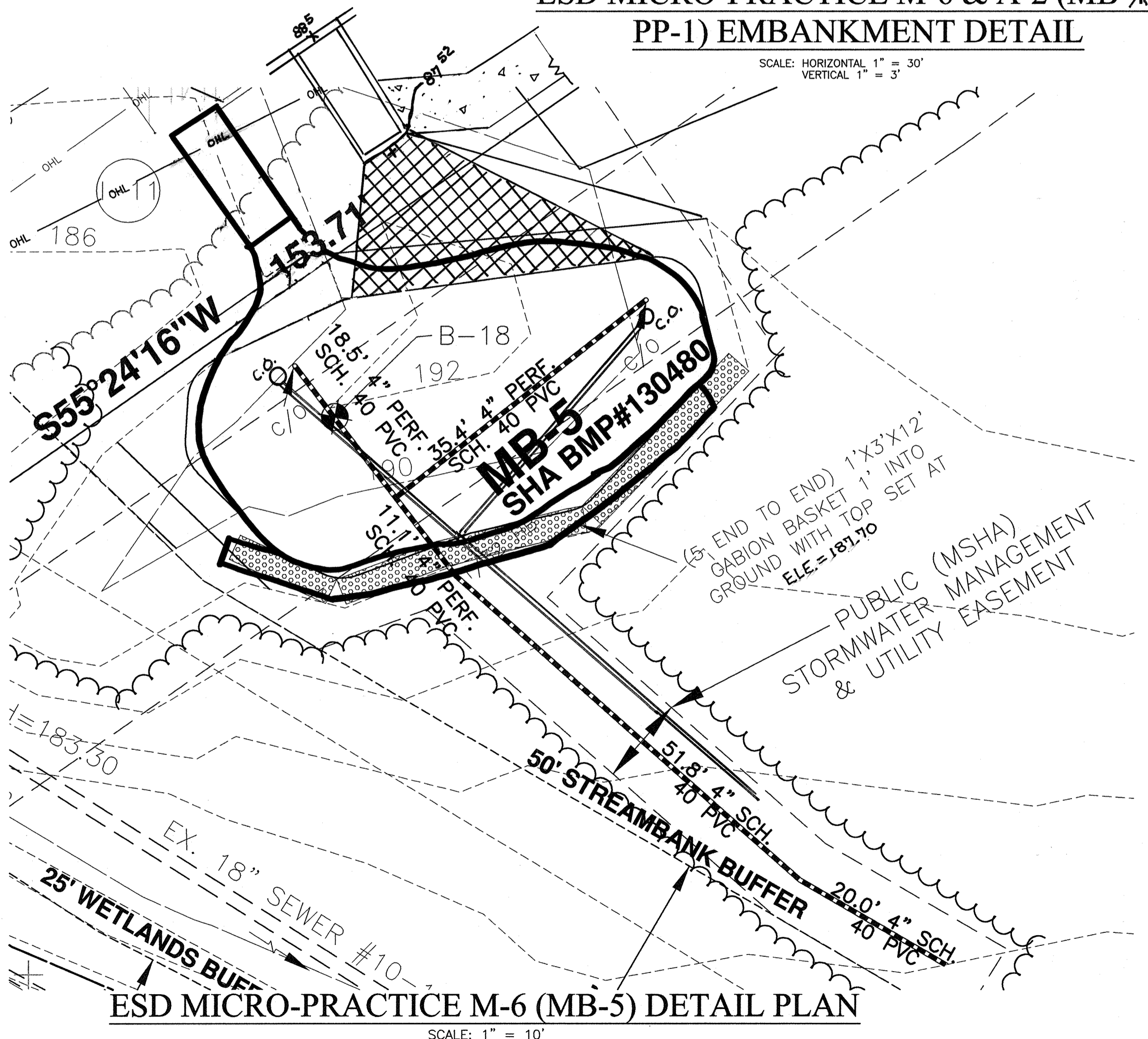
ESD MICRO-PRACTICE M-6 (MB-4) EMBANKMENT DETAIL
 SCALE: HORIZONTAL 1" = 30'
 VERTICAL 1" = 3'



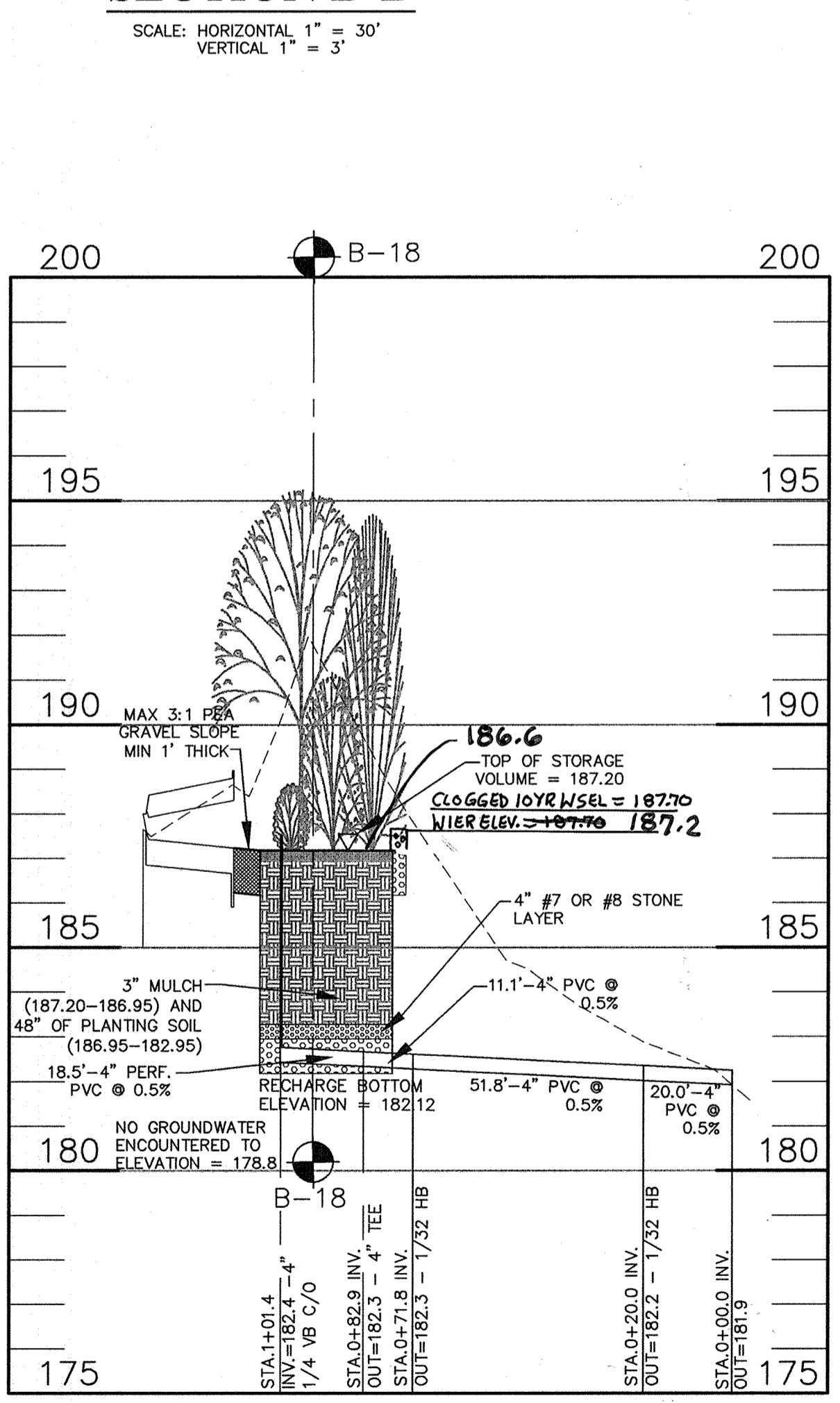
ESD MICRO-PRACTICE M-6 & A-2 (MB-3 & PP-1) EMBANKMENT DETAIL
 SCALE: HORIZONTAL 1" = 30'
 VERTICAL 1" = 3'



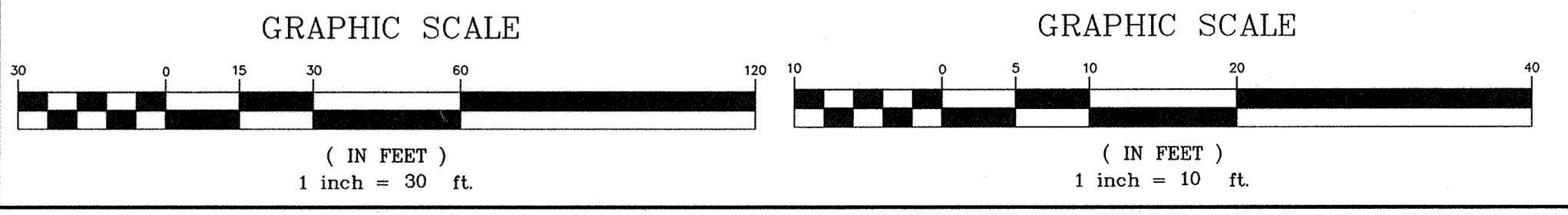
SECTION B-B
 SCALE: HORIZONTAL 1" = 30'
 VERTICAL 1" = 3'



ESD MICRO-PRACTICE M-6 (MB-5) DETAIL PLAN
 SCALE: 1" = 10'



MICRO-PRACTICE M-6 (MB-5) ESD PRACTICE SECTIONS AND DETAILS
 SCALE: HORIZONTAL 1" = 30'
 VERTICAL 1" = 3'



BIORETENTION PLANTING LIST MB-5		
SYMBOL	QUANTITY	NAME
①	145	VINCA MINOR (COMMON PERIWINKLE)
△	128	ALUSTA REPTAN S (CREEPING BUGLEWEED)
□	68	IRIS VERSICOLOR (IRIS)
②	43	HEMEROCALLIS SP (DAYLILY)
●	1	ACER RUBRUM (RED MAPLE)

AS-BUILT CERTIFICATION
 I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.
 Donald Mason, P.E. No. 21443 Date 5-28-13

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. 21443 Expiration Date: 12-21-14

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 1/7/11

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 1/7/11

DIRECTOR DATE 1/10/11

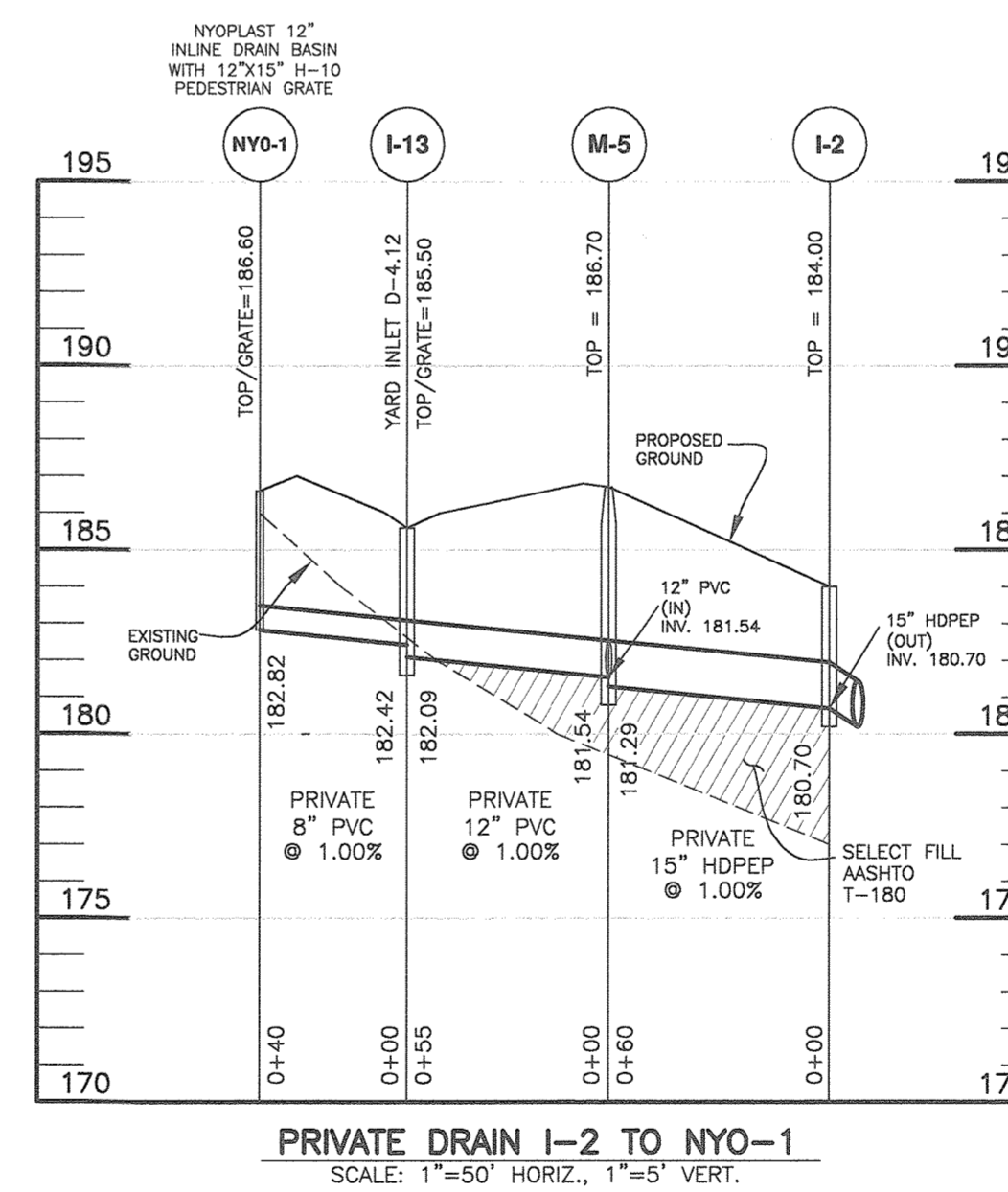
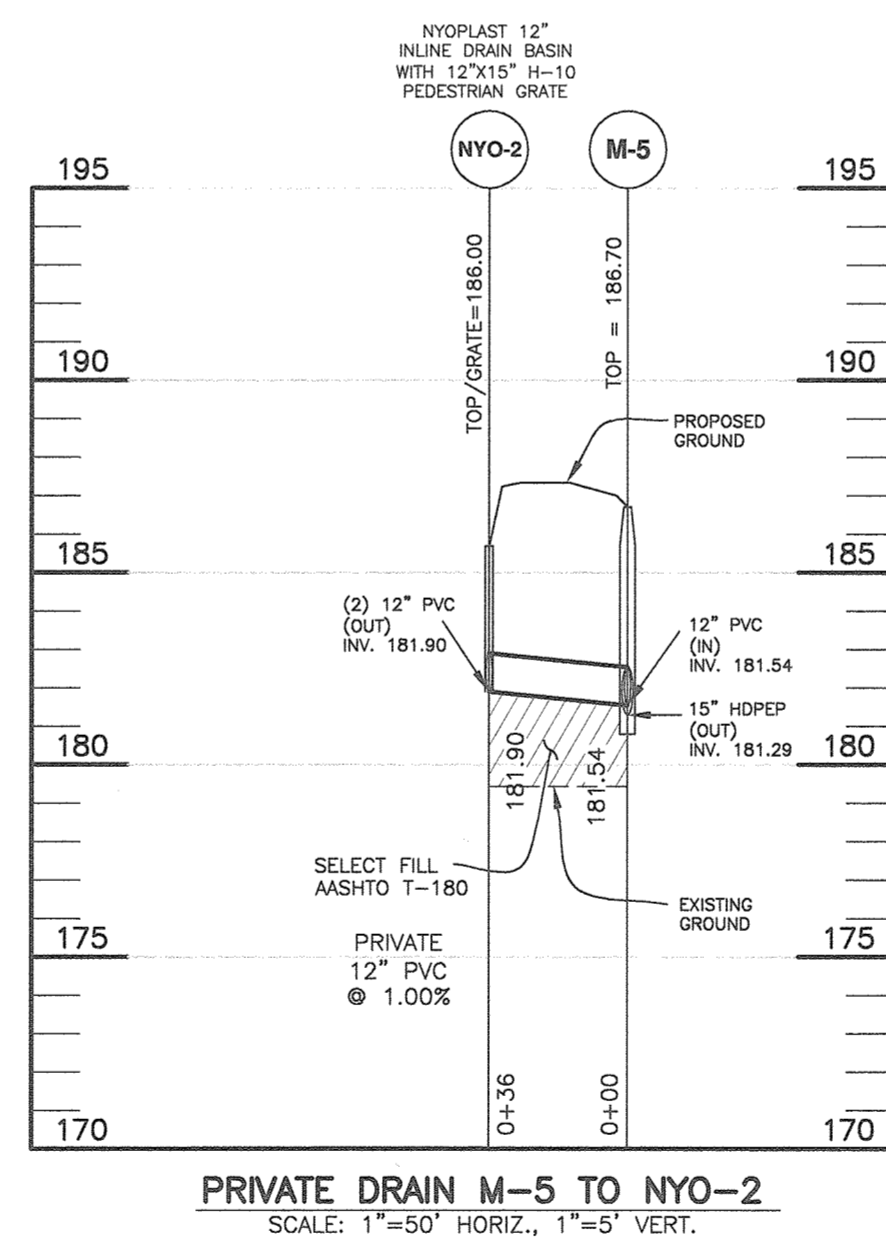
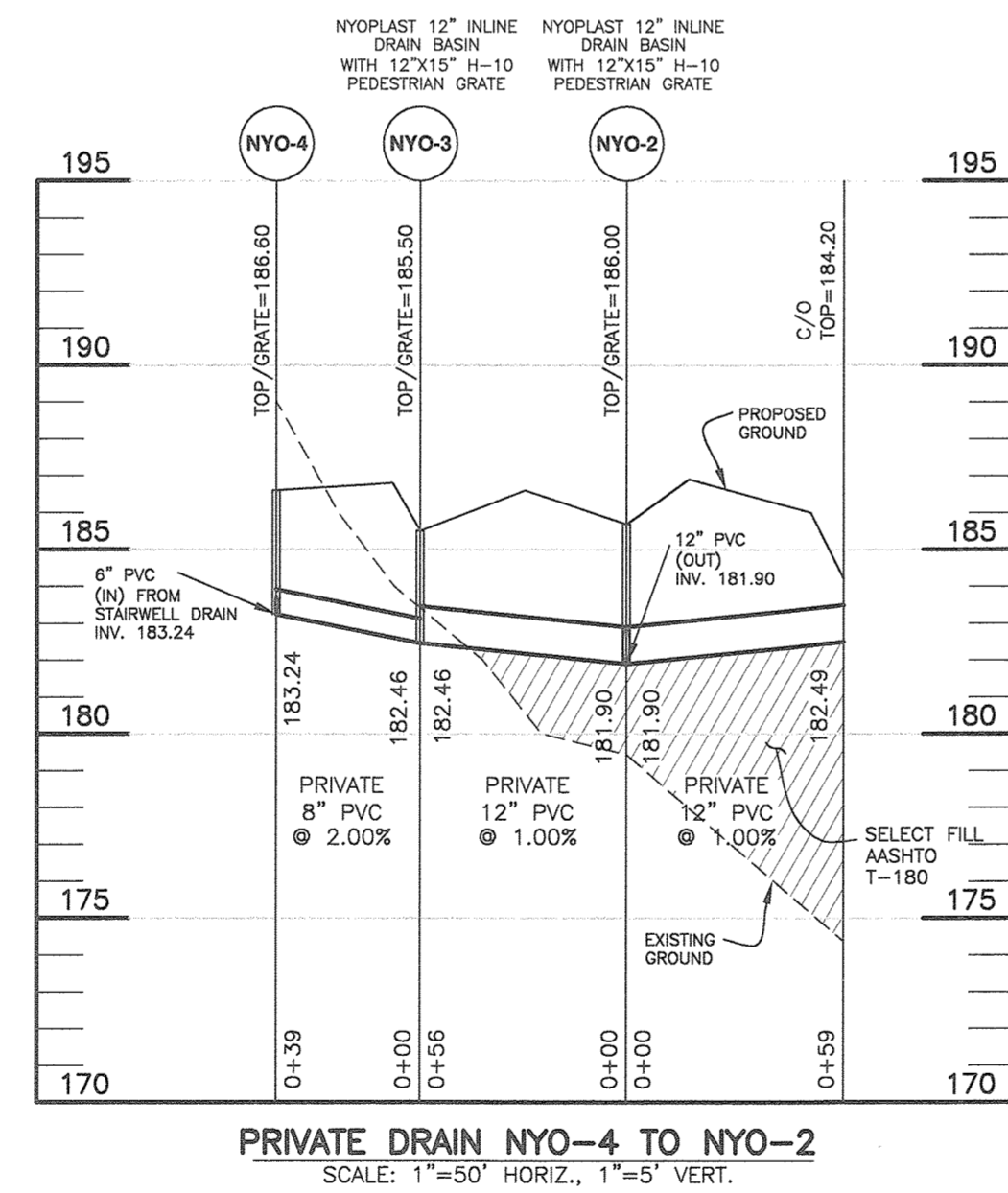
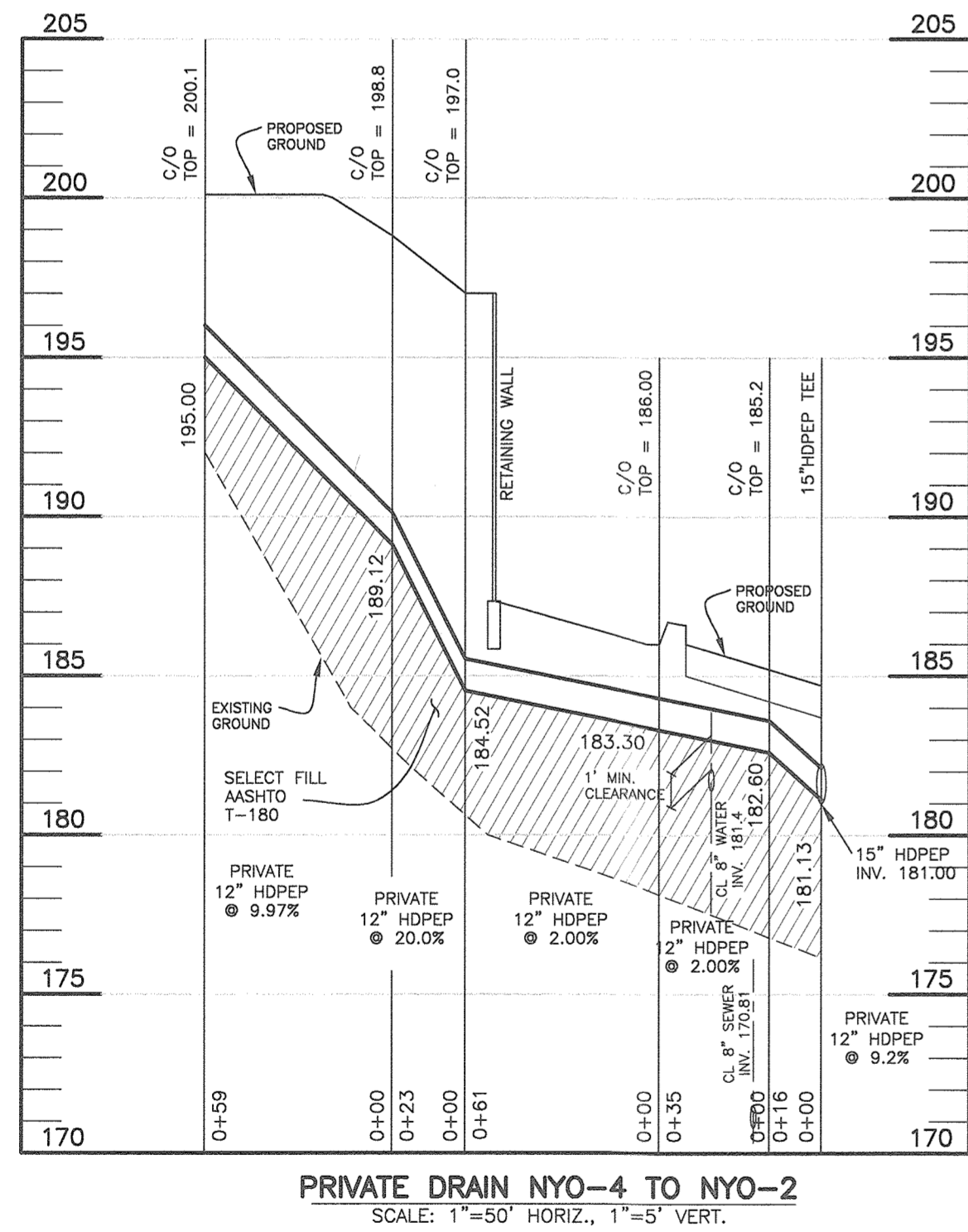
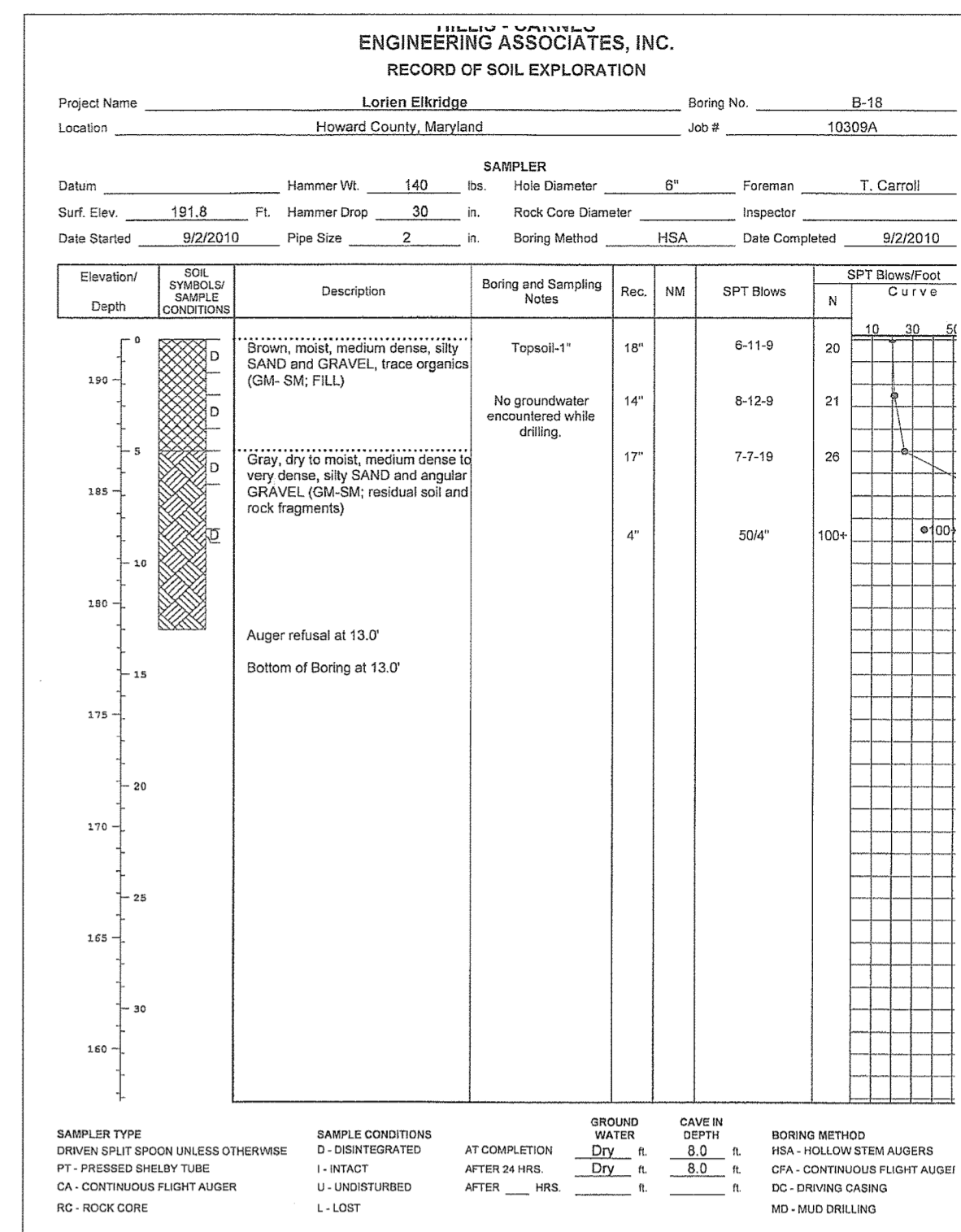
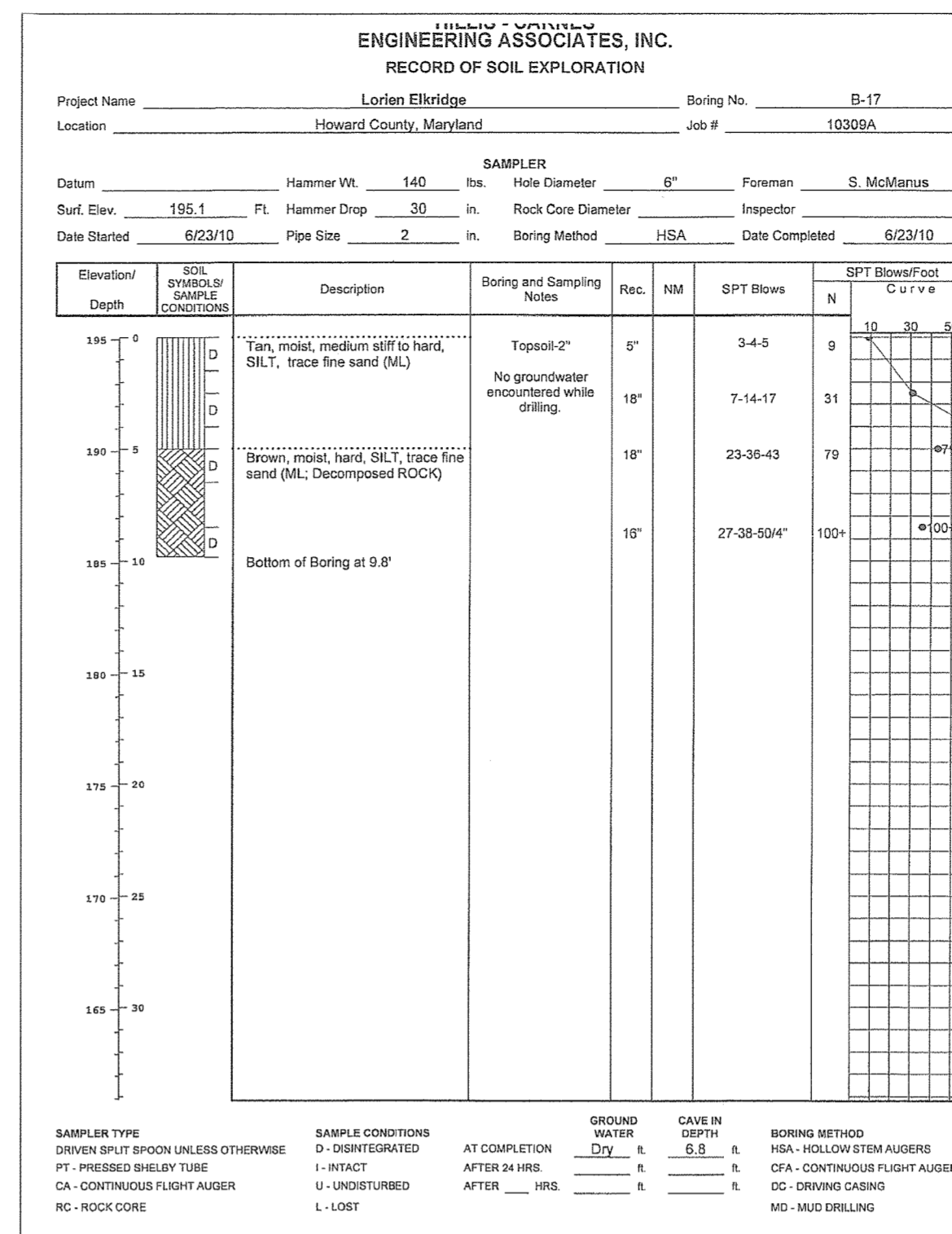
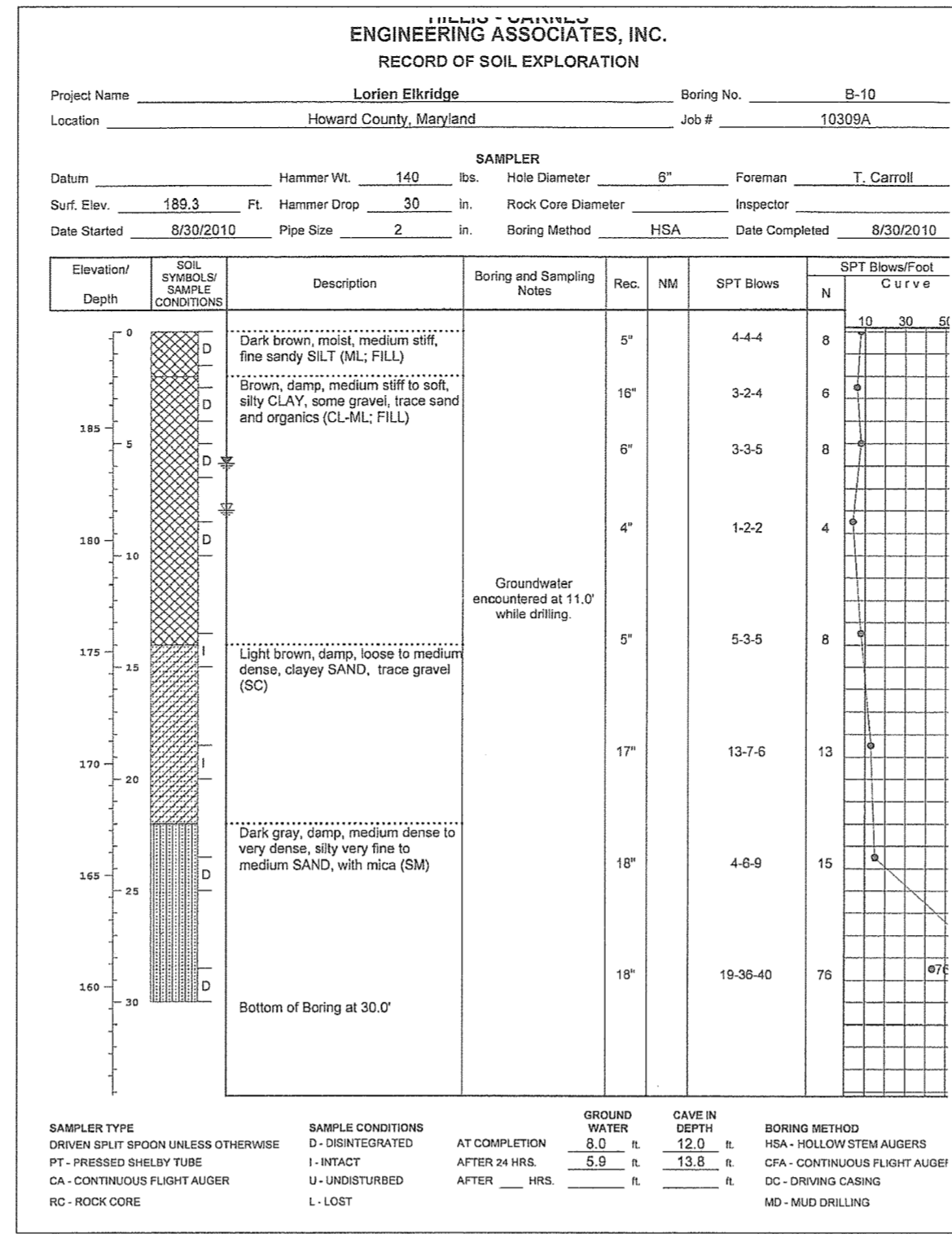
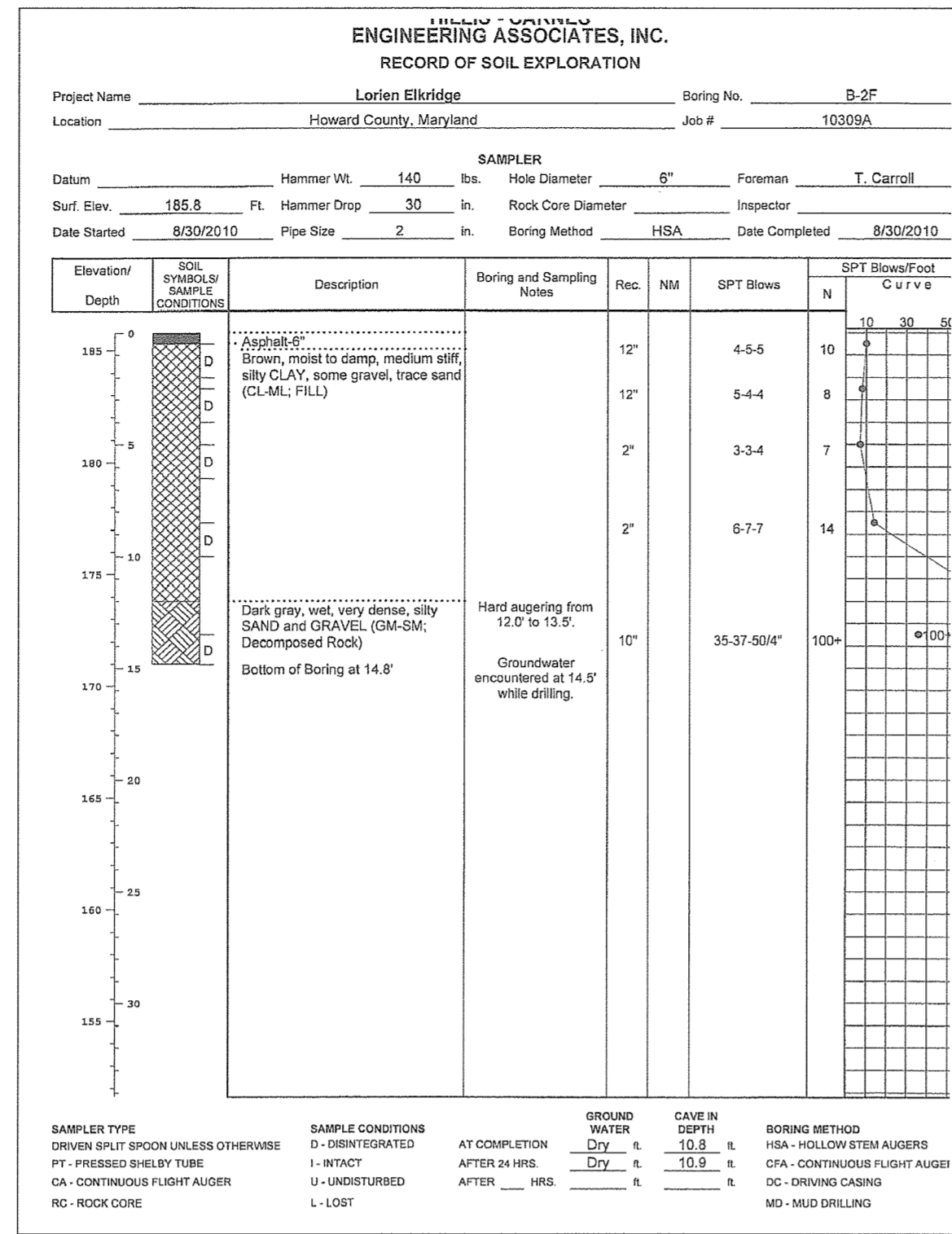
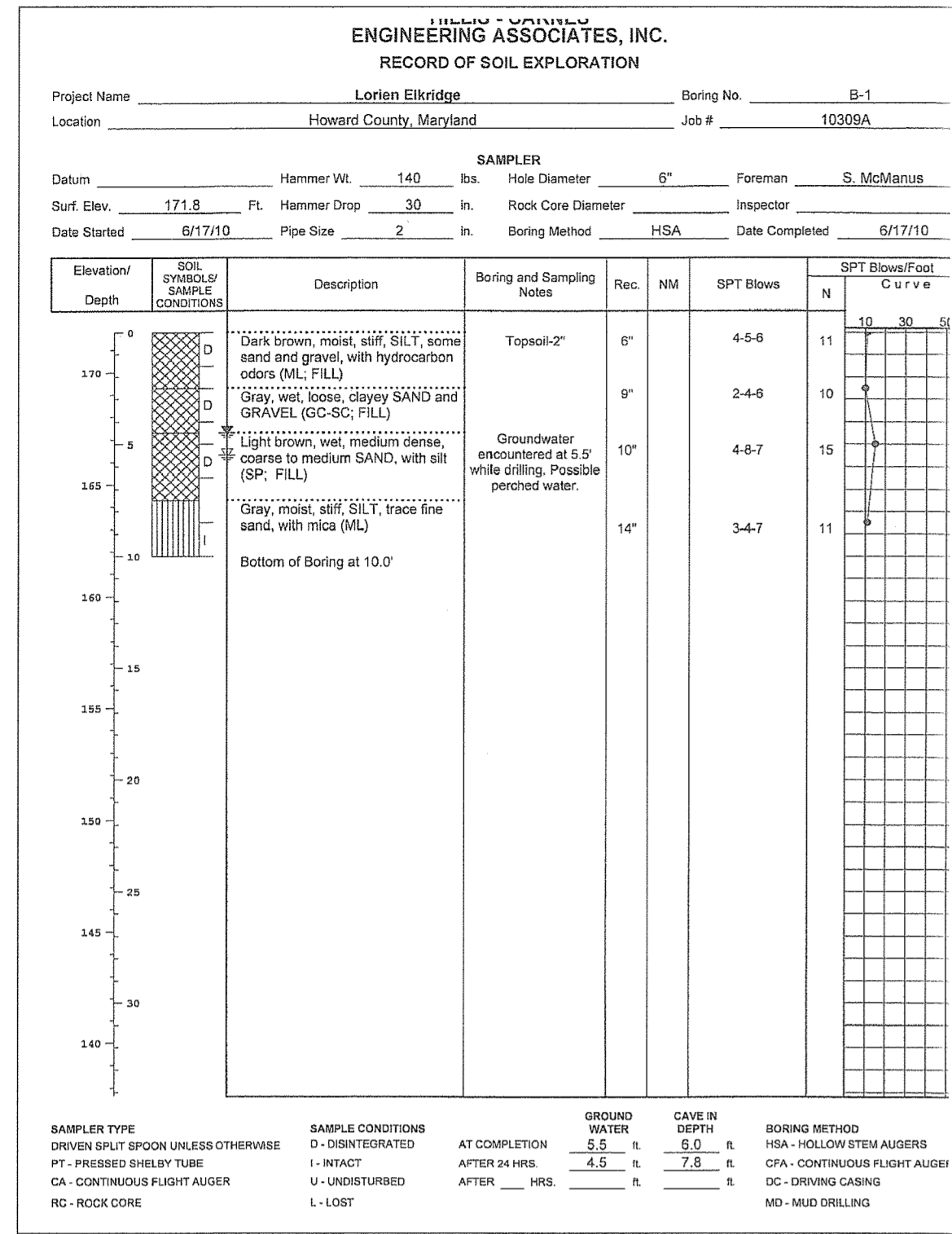
BENCHMARK ENGINEERING, INC.
 8480 BALTIMORE NATIONAL PIKE A SUITE 418 A ELLOTT CITY, MARYLAND 21043
 (P) 410-465-8105 (F) 410-465-8644
 80 THAMES AVENUE - 3RD FLOOR - FREDERICK, MARYLAND 21702
 (P) 301-391-8888 WWW.BE-ENGINEERING.COM

LORIEN-ELKRIDGE PARCEL 'A'

TAX MAP: 43 - GRID: 10 - PARCEL: 32
 ZONED: POR
 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

STORMWATER MANAGEMENT MICRO PRACTICE PLAN NOTES AND DETAILS

DATE: NOVEMBER, 2010 BEI PROJECT NO. 2071
 SCALE: AS SHOWN SHEET 10 OF 29



ADD PRIVATE DRAIN PROFILES TO THIS SHEET
ADD NORTH WING AND SOUTH WING TO BUILDING 'A'

1 3-21-2019
NO. DATE REVISION

BENCHMARK ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE & SUITE 315 ELLICOTT CITY, MARYLAND 21043
(P) 410-485-8105 (F) 410-485-8644
WWW.BE-CIVILENGINEERING.COM

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. 22390, exp. 10-31-2019.

LORIEN-ELKRIDGE
PARCEL 'A'

MUSIC FAIR LIMITED PARTNERSHIP
1205 YORK ROAD, FLOOR 4
LUTHERVILLE, MARYLAND 21093
410-825-8400

TAX MAP: 43 - GRID: 10 - PARCEL: 32
ZONED: PDR
ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

DEVELOPER:
COMMERCIAL CONTRACTORS
1205 YORK ROAD, FLOOR 4
LUTHERVILLE, MARYLAND 21093
410-825-8400

SOIL BORING LOGS AND STORM DRAIN PROFILES

DATE: NOVEMBER, 2010 BEI PROJECT NO. 2071
SCALE: AS SHOWN SHEET 11 OF 29

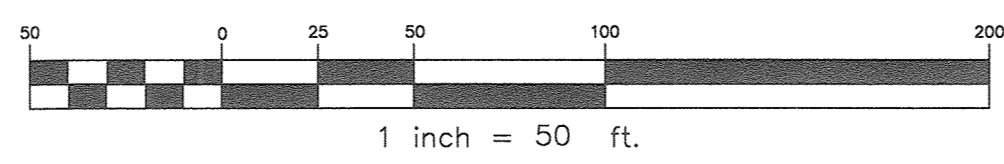
OWNER: MUSIC FAIR LIMITED PARTNERSHIP
DEVELOPER: COMMERCIAL CONTRACTORS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

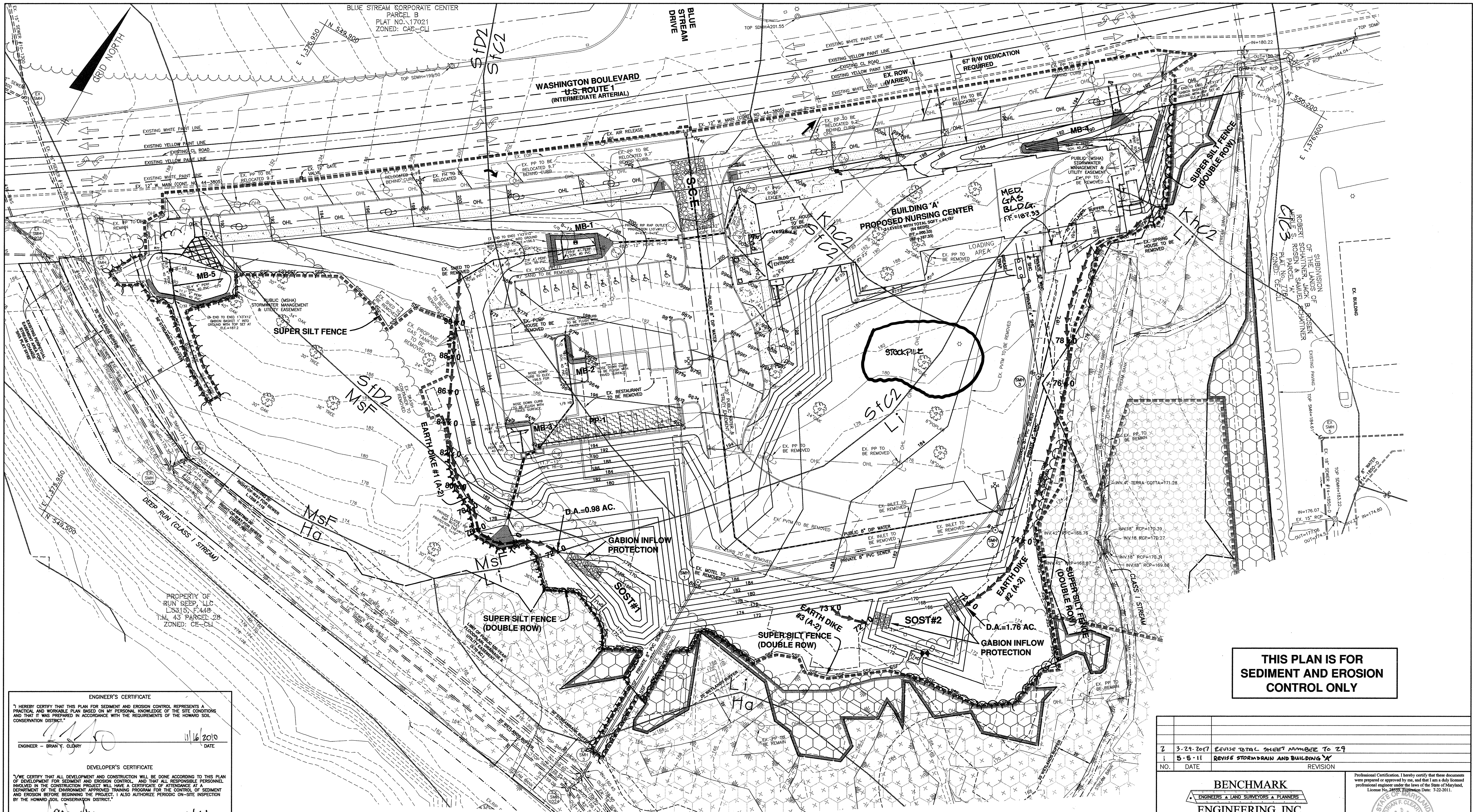
Chad Clark 4-16-19
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kurt Seidman 4-24-19
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Neil M. Jaffee 4-24-19
DIRECTOR DATE



THIS SHEET REPLACES THE PREVIOUS SHEET II SIGNED ON 1-10-2011



**THIS PLAN IS FOR
SEDIMENT AND EROSION
CONTROL ONLY**

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

ENGINEER - BRIAN F. CLEARY
 11/16/2010
 DATE

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

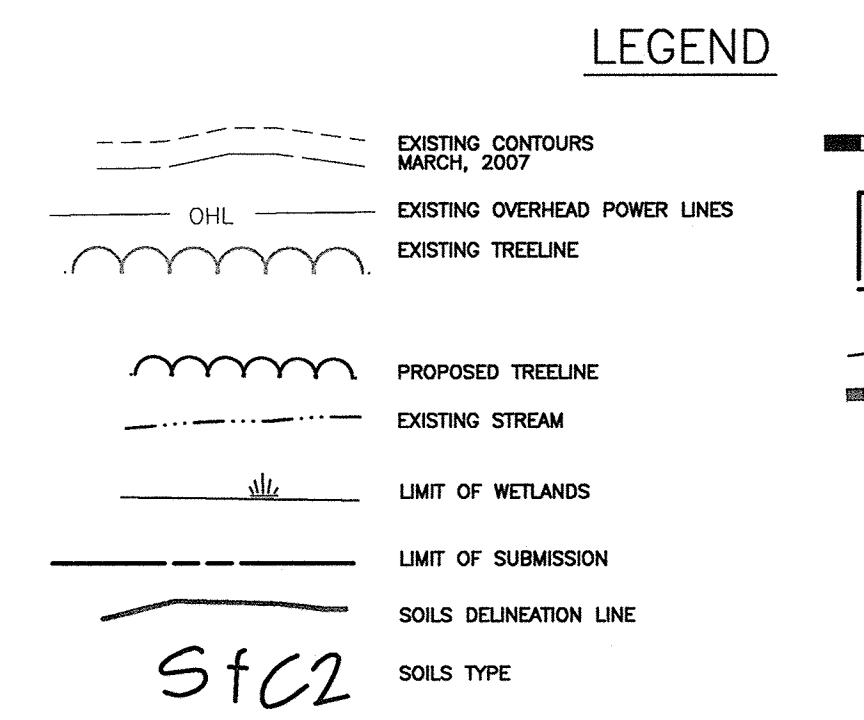
DEVELOPER
 11/16/10
 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

1/7/11
 DATE

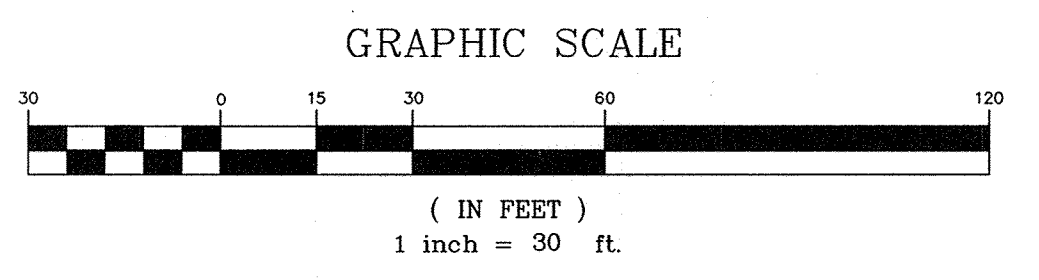
1/07/11
 DATE

1/10/11
 DATE



SOST #1

TYPE	ST-II
EXISTING D.A.	1.2 AC.
PROPOSED D.A.	1.4 AC.
STORAGE REQUIRED	WET 2,520 CF DRY 2,520 CF
STORAGE PROVIDED	WET 2,772 CF DRY 2,624 CF
WET STORAGE ELEV.	169.25
DRY STORAGE ELEV.	171.00
EMBANKMENT ELEVATION	172.00
EMBANKMENT WIDTH	4 FT
WEIR CREST ELEVATION	171.00
WEIR CREST LENGTH	8 FT
CLEANOUT ELEVATION	167.99
BOTTOM ELEVATION	166.00



SOST #2

TYPE	ST-II
EXISTING D.A.	2.0 AC.
PROPOSED D.A.	1.5 AC.
STORAGE REQUIRED	WET 3,600 CF DRY 3,600 CF
STORAGE PROVIDED	WET 3,772 CF DRY 4,675 CF
WET STORAGE ELEV.	168.75
DRY STORAGE ELEV.	171.00
EMBANKMENT ELEVATION	172.00
EMBANKMENT WIDTH	4 FT
WEIR CREST ELEVATION	171.00
WEIR CREST LENGTH	8 FT
CLEANOUT ELEVATION	167.50
BOTTOM ELEVATION	166.00

NO.	DATE	REVISION
2	3-29-2017	REVISE TOTAL SHEET NUMBER TO 29
1	5-5-11	REVISE STORM DRAIN AND BUILDING 'A'

BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS
 9480 BALTIMORE NATIONAL PIKE & SUITE 418 • ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-6644
 60 THOMAS JOHNSON DRIVE • FREDERICK, MARYLAND 21702
 (P) 301-391-3868 (F) 301-391-3868
 WWW.BE-ENGINEERING.COM

OWNER: MUSIC FAIR LIMITED PARTNERSHIP
 1205 YORK ROAD, FLOOR 4
 LUTHERVILLE, MARYLAND 21093
 410-825-8400

DEVELOPER: COMMERCIAL CONTRACTORS
 1205 YORK ROAD, PENTHOUSE
 LUTHERVILLE, MARYLAND 21093
 410-825-8400

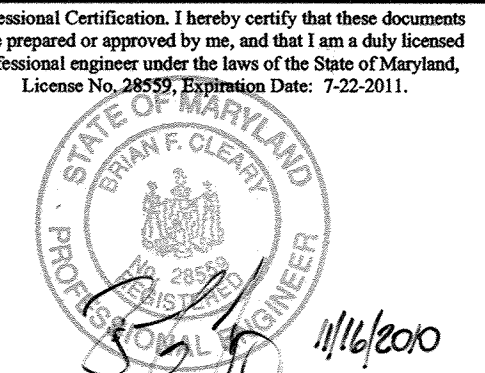
LORIEN-ELKRIDGE
 PARCEL 'A'

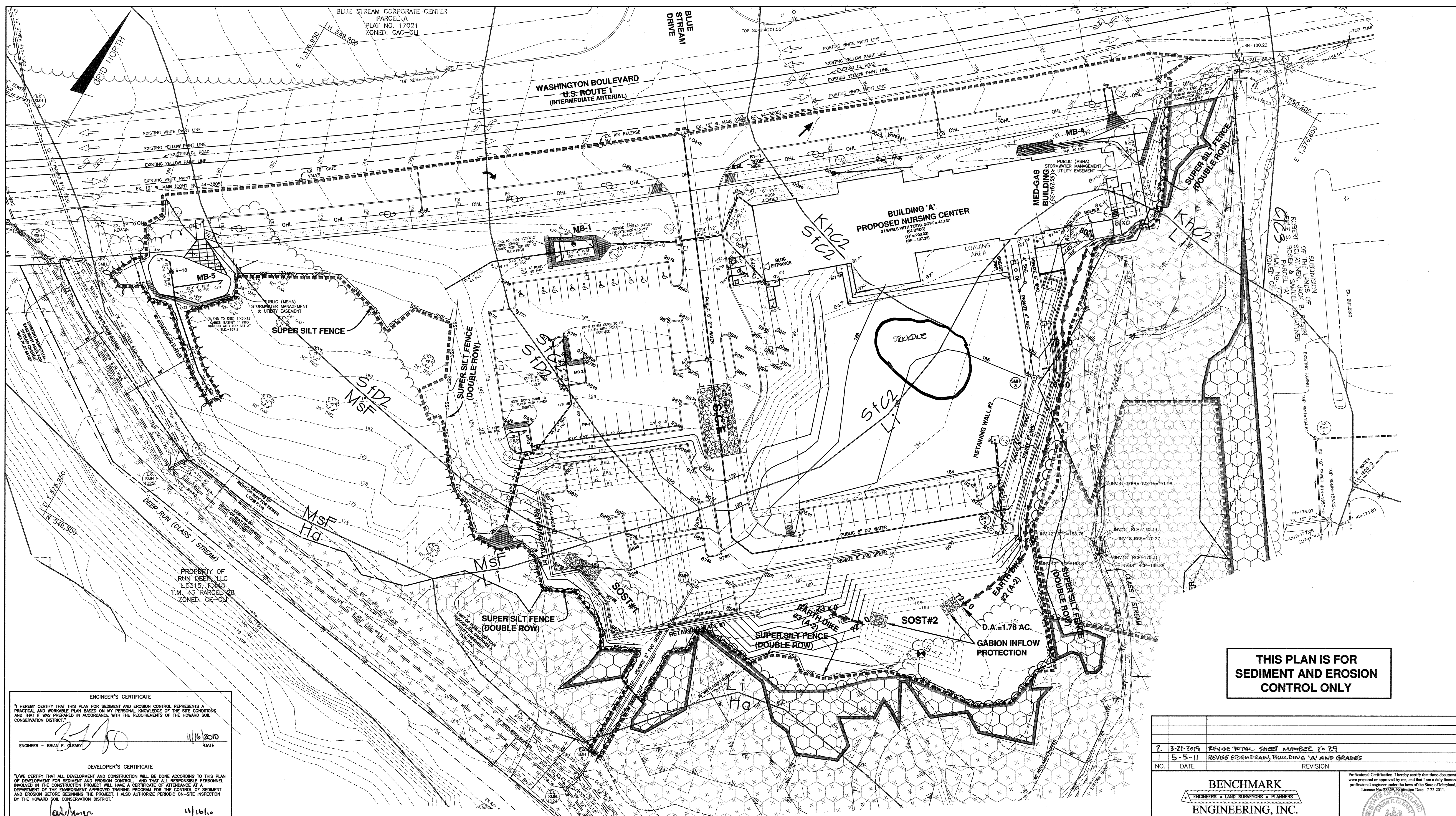
TAX MAP: 43 - GRID: 1D - PARCEL: 32
 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

SEDIMENT & EROSION CONTROL PLAN
 PHASE I

DATE: BER, 2010
 SCALE: AS SHOWN

BEI PROJECT NO. 2071
 SHEET 12 OF 29





**THIS PLAN IS FOR
SEDIMENT AND EROSION
CONTROL ONLY**

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

ENGINEER - BRIAN F. CLEAR
11/16/2010
DATE

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

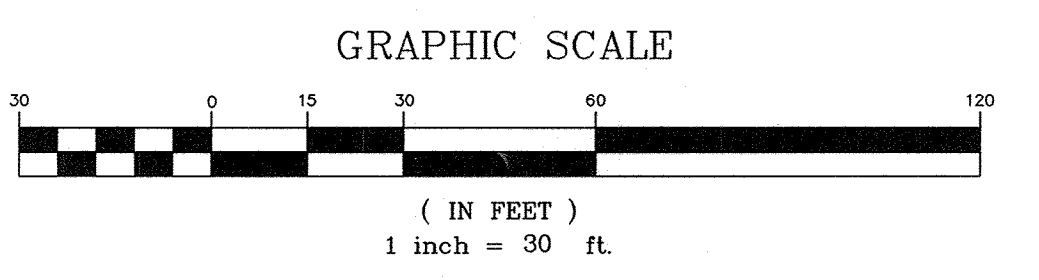
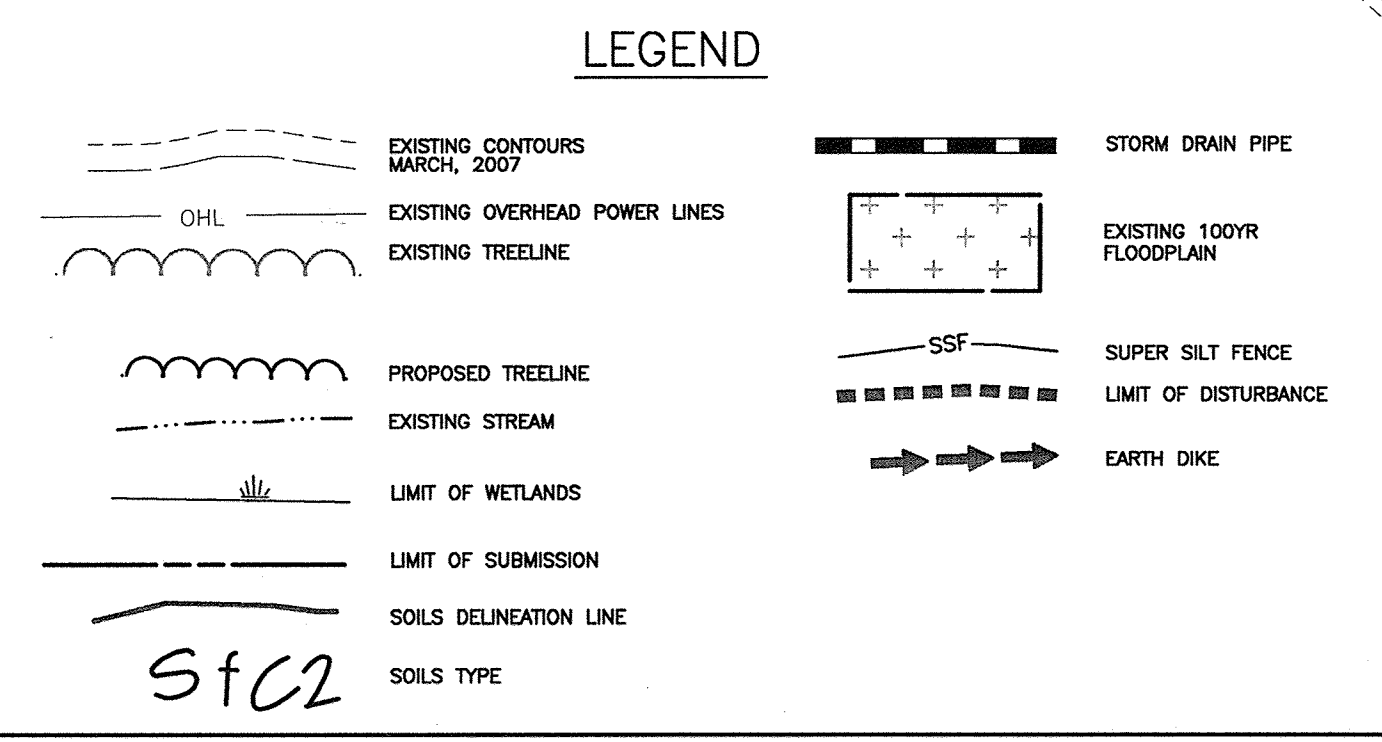
DEVELOPER
11/16/10
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

JOHN L. BLANTON
1/7/11
DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION

KURT SHALVOH
1/7/11
DATE
CHIEF, DIVISION OF LAND DEVELOPMENT

1/10/11
DATE
DIRECTOR



SOST #2

TYPE	ST-11
EXISTING D.A.	2.0 AC.
PROPOSED D.A.	1.5 AC.
STORAGE REQUIRED	3,600 CF WET DRY
STORAGE PROVIDED	3,600 CF WET DRY
WET STORAGE ELEV.	168.75
DRY STORAGE ELEV.	171.00
EMBANKMENT ELEVATION	172.00
EMBANKMENT WIDTH	4 FT
WEIR CREST ELEVATION	171.00
WEIR CREST LENGTH	8 FT
CLEANOUT ELEVATION	167.50
BOTTOM ELEVATION	166.00

NO.	DATE	REVISION
2	3-21-2014	REVISE TOTAL SHEET NUMBER TO 29
1	5-5-11	REVISE STORM DRAIN, BUILDING 'A' AND GRADES

BENCHMARK ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE SUITE 418 A ELICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BE-CMENGINEERING.COM

LORIEN-ELKRIDGE
PARCEL 'A'

TAX MAP: 43 - GRID: 10 - PARCEL: 32
ZONED: FOR
ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

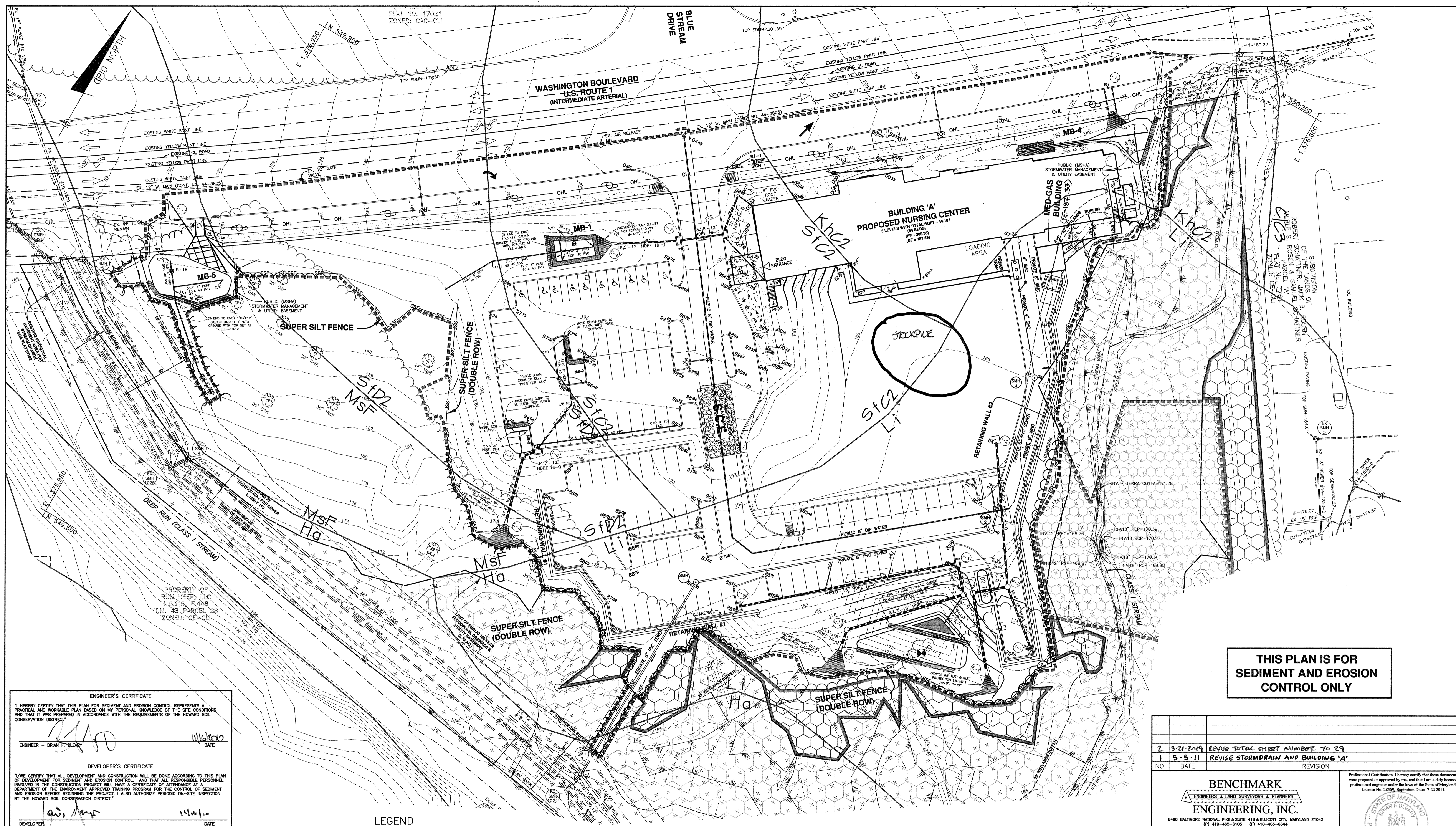
SEDIMENT & EROSION CONTROL PLAN
PHASE 2

OWNER: MUSIC FAIR LIMITED PARTNERSHIP
1205 YORK ROAD, FLOOR 4
LUTHERVILLE, MARYLAND 21093
410-825-8400

DEVELOPER: COMMERCIAL CONTRACTORS
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

DATE: NOVEMBER, 2010
SCALE: AS SHOWN

BEI PROJECT NO. 2071
SHEET 13 OF 29



**THIS PLAN IS FOR
SEDIMENT AND EROSION
CONTROL ONLY**

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

ENGINEER - BRIAN F. CLEARY
DATE 11/16/10

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

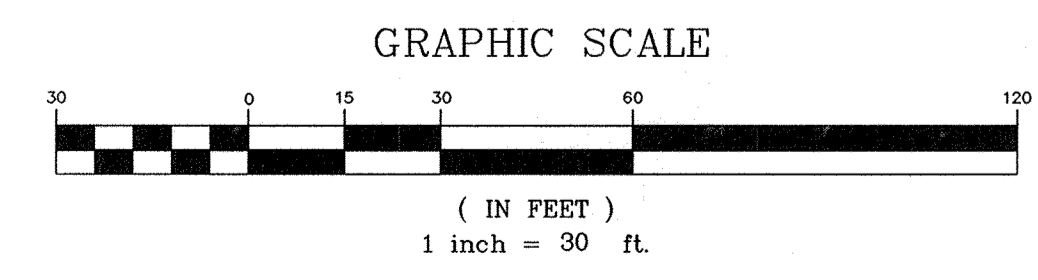
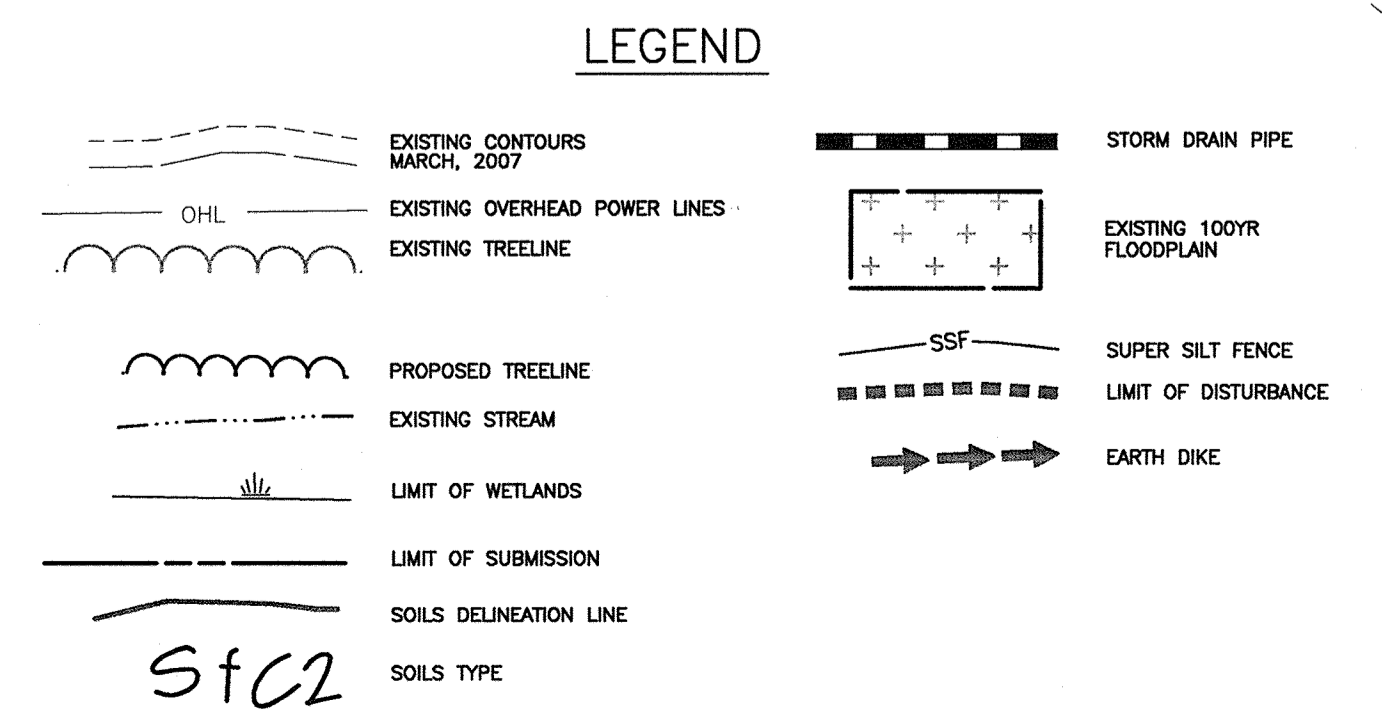
DEVELOPER
DATE 11/16/10

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

John R. Whitson 11/18/10
DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Kent Schulz 11/17/10
DATE
CHIEF, DIVISION OF LAND DEVELOPMENT

Thomas J. Jentle 11/16/10
DATE
DIRECTOR



NO.	DATE	REVISION
2	3-21-2010	LENSE TOTAL SHEET NUMBER TO 29
1	5-5-11	REVISE STORMDRAIN AND BUILDING 'A'

BENCHMARK ENGINEERING, INC.
ENGINEERS & LAND SURVEYORS & PLANNERS
8480 BALTIMORE NATIONAL PIKE & SUITE 418 & ELICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BE-CVLENGINEERING.COM

LORIEN-ELKRIDGE
PARCEL 'A'

TAX MAP: 43 - GRID: 10 - PARCEL: 32
ZONED: FOR
ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

SEDIMENT & EROSION CONTROL PLAN
PHASE 3

OWNER: MUSIC FAIR LIMITED PARTNERSHIP
1205 YORK ROAD, FLOOR 4
LUTHERVILLE, MARYLAND 21093
410-825-8400

DEVELOPER: COMMERCIAL CONTRACTORS
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

DATE: NOVEMBER, 2010
SCALE: AS SHOWN

BEI PROJECT NO. 2071
SHEET 14 OF 29

SEDIMENT CONTROL NOTES

TOPSOIL SPECIFICATIONS

SEQUENCE OF CONSTRUCTION

- 1. A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION...

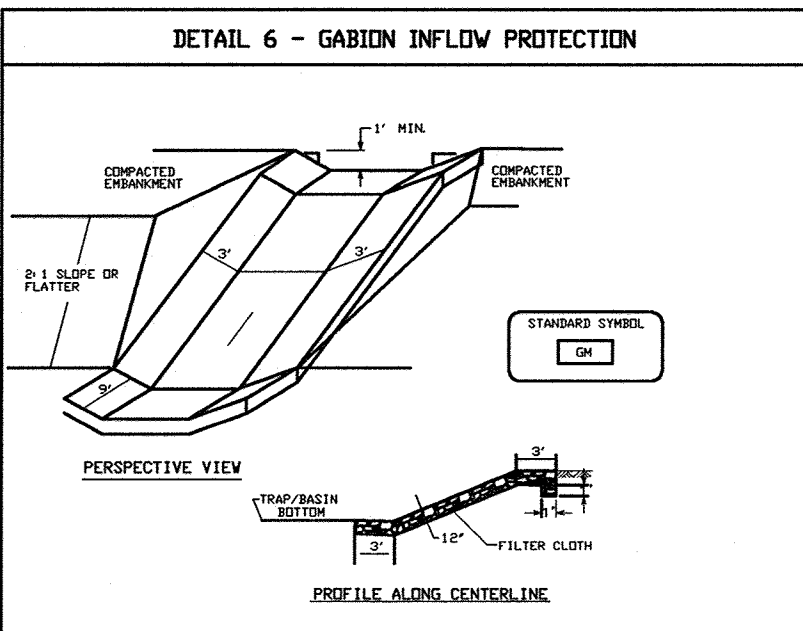
Table with 2 columns: Description and Quantity. Includes rows for TOTAL AREA OF SITE (11.77 ACRES), AREA DISTURBED (4.37 ACRES), etc.

- I. Topsoil salvaged from the existing site may be used provided that it meets that standards as set forth in these specifications... II. Topsoil Specifications - Soil to be used as topsoil must meet the following: 1. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand...

Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

- V. Topsoil Application 1. When topsoiling, maintain needed erosion and sediment control practices such as diversions, grade stabilization structures, earth dikes, slope silt fence and sediment traps and basins...

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



- 1. Gabion inflow protection shall be constructed of 9' x 3' x 9' gabion baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes...

TEMPORARY SEEDBED PREPARATIONS

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

- SEEDING: FOR PERIOD MARCH 1 THROUGH APRIL 30 AND FROM AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT)...

PERMANENT SEEDBED PREPARATIONS

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

- 1. PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 800 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT) BEFORE SEEDING...

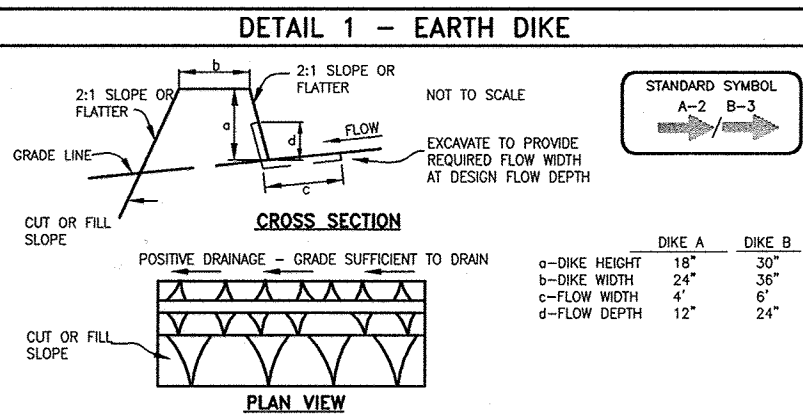
30.0 DUST CONTROL

Controlling dust blowing and movement on construction sites and roads.

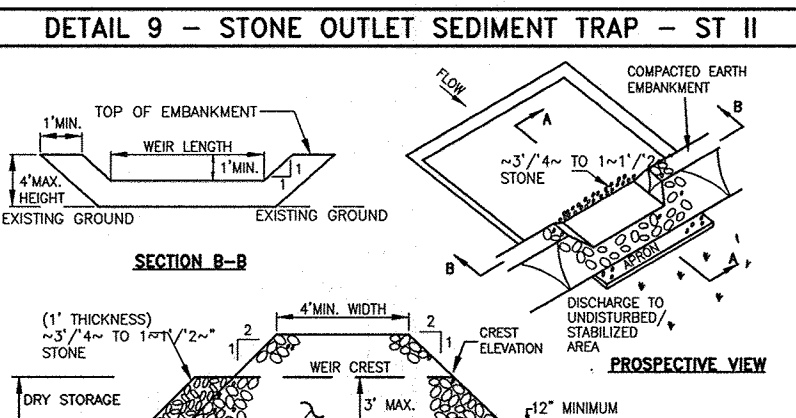
- Purpose To prevent blowing and movement of dust from exposed soil surfaces, reduce on and off-site damage, health hazards, and improve traffic safety...

- 1. Mulches - See standards for vegetative stabilization with mulches only. Mulch should be crimped or trolled to prevent blowing and improve traffic safety...

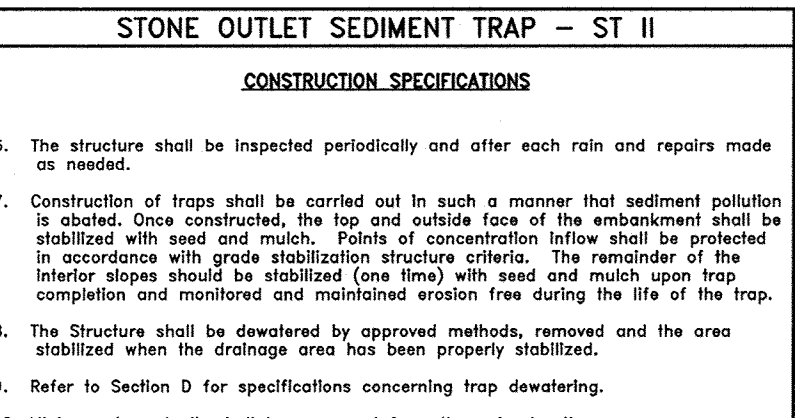
- 1. Permanent Vegetation - See standards for permanent vegetative cover, and permanent stabilization with sod. Existing trees or large shrubs may offer valuable protection if left in place.



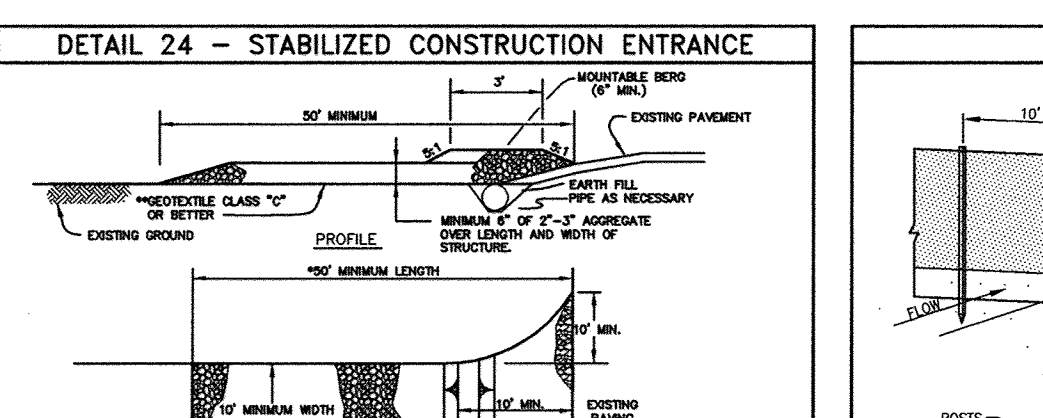
- 1. Seed and cover with straw mulch. 2. Seed and cover with Erosion Control Matting or live with sod. 3. 4' - 7' stone or recycled concrete equivalent pressed into the soil 7" minimum.



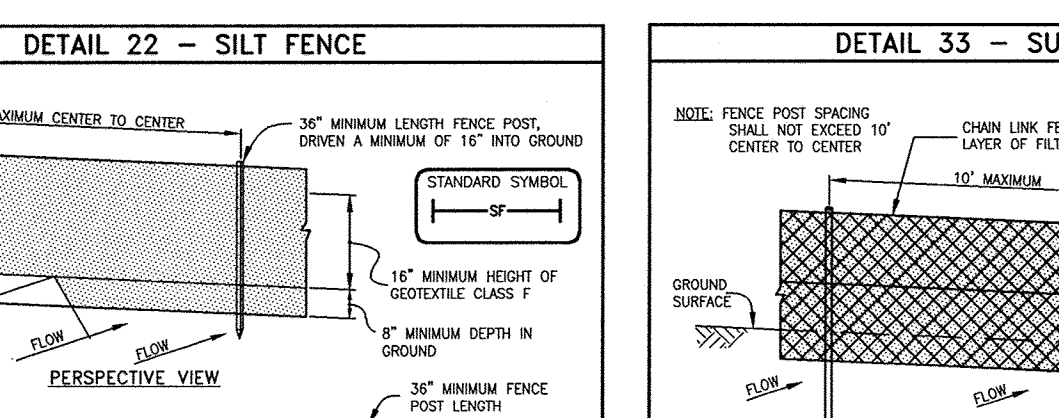
- 1. Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The post area shall be cleared.



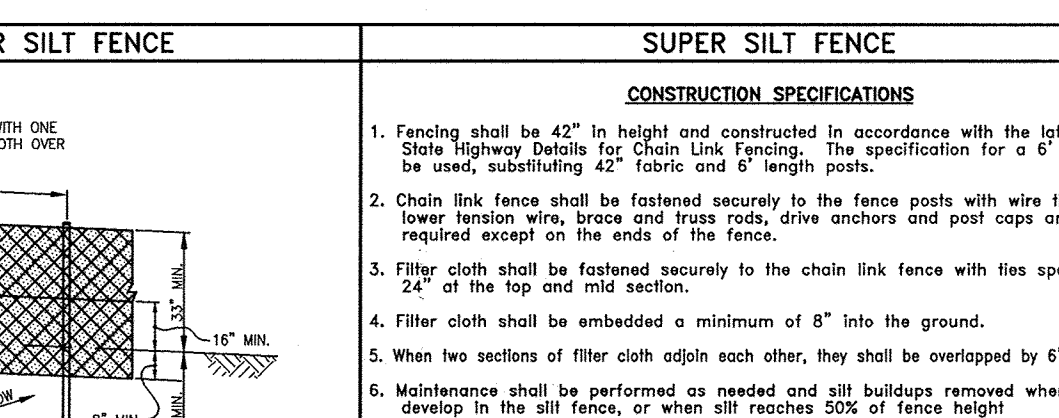
- 6. The structure shall be inspected periodically and after each rain and repairs made as needed.



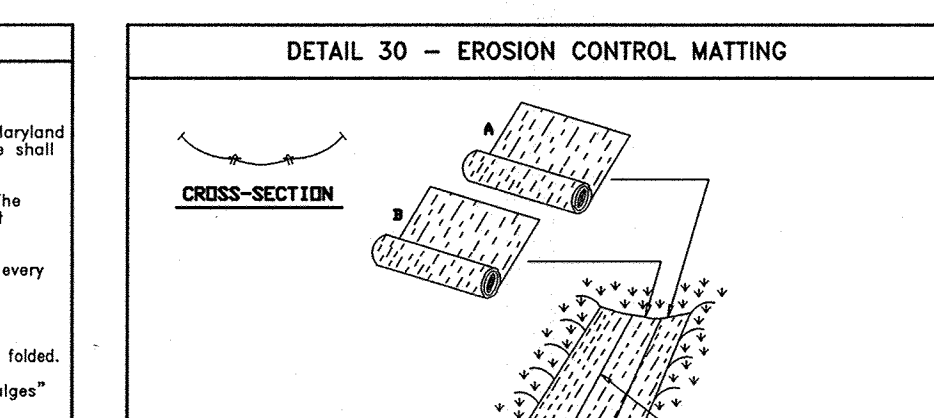
- 1. Length - Minimum of 40' (50' for slope retention only).



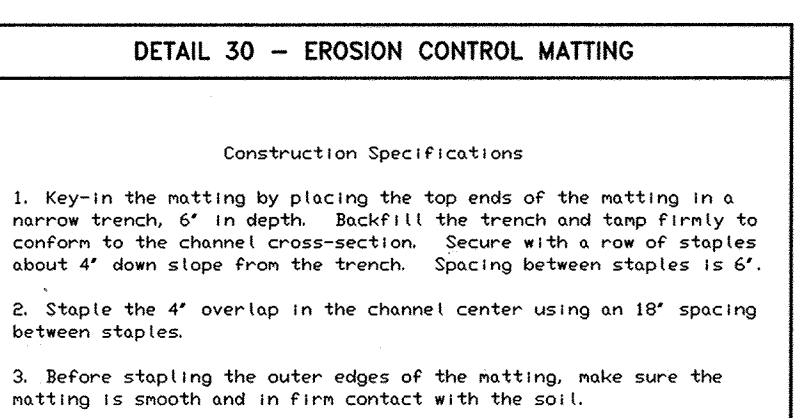
- 1. Fabricate fabric (other cloth) that can be placed over the existing ground prior to placing stone.



- 1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Design for Chain Link Fencing.



- 1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth.



- 1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth.

- NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF WORK PHASE I 1. Obtain grading & demolition permit. (day 1) 2. Install stabilized construction entrance and super silt fences. (day 2-3)

- PHASE II 1. Upon approval of the Howard County sediment control inspector, install super silt fence along earth dike #1. Once in place, remove earth dike #1 and SOST #1.

- PHASE III 1. Upon approval of the Howard County sediment control inspector, install super silt fence along earth dike #2. Once in place, remove earth dike #2 and SOST #2.

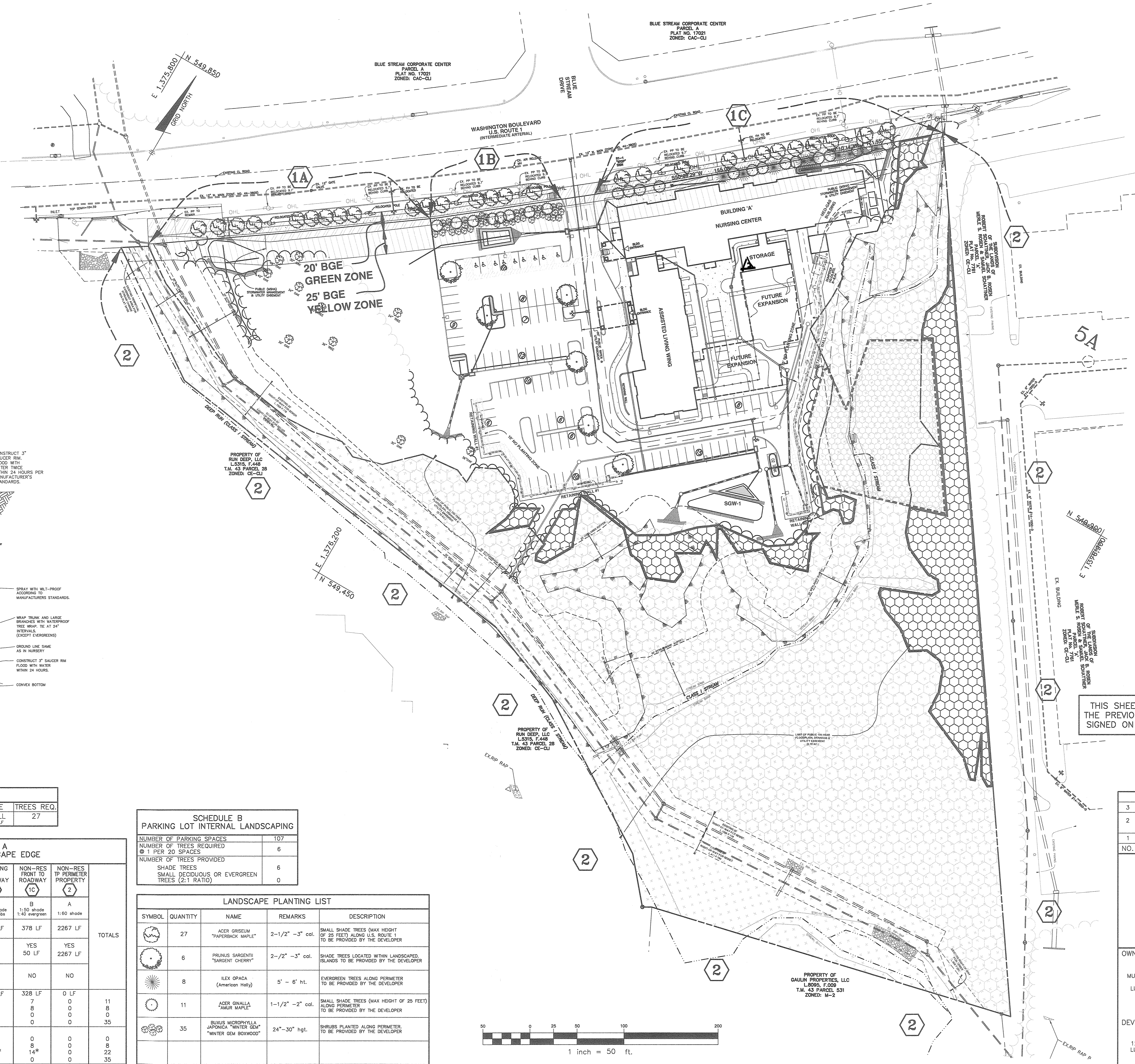
ENGINEER'S CERTIFICATE I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS...

DEVELOPER'S CERTIFICATE I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL...

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING CHIEF, DEVELOPMENT ENGINEERING DIVISION

Table with columns: NO., DATE, REVISION. Includes entry 1 with date 3-21-2019 and revision number 29.

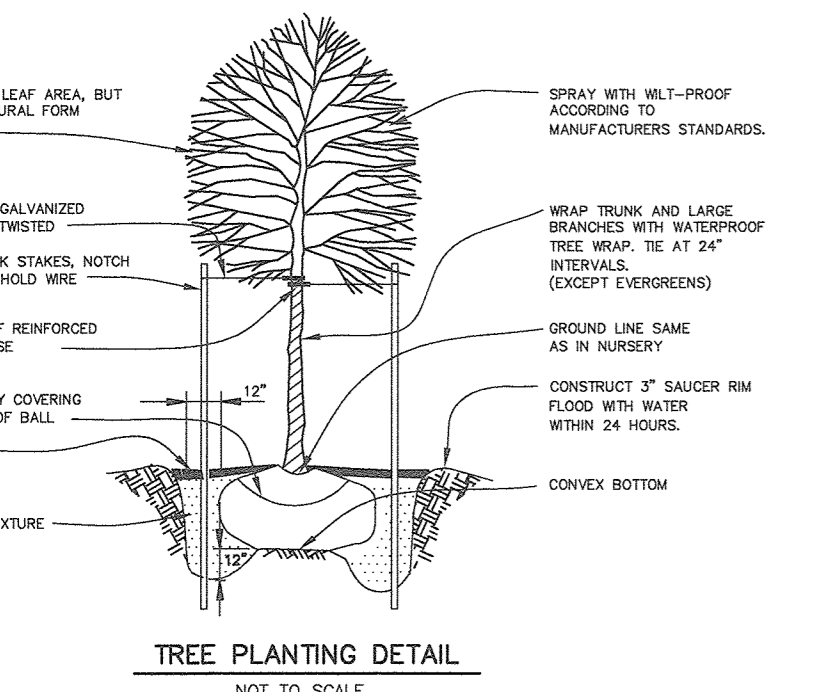
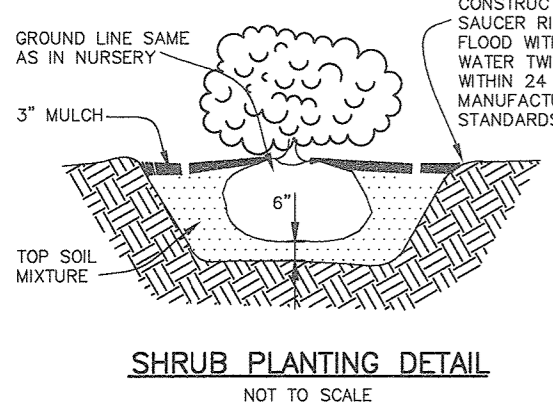
Professional information for BENCHMARK ENGINEERING, INC. and LORIEN-ELKRIDGE PARCEL 'A'. Includes address, contact info, and professional seals.



LEGEND

- POWER POLES
- OVERHEAD POWER LINES
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING STREAM
- LIMIT OF WETLANDS
- LIMIT OF SUBMISSION
- PARKING SPACE COUNT
- STORM DRAIN PIPE
- SIDEWALK
- FIRE HYDRANT
- EXISTING 100' FLOODPLAIN
- 20' WIDE BGE GREEN ZONE
- 25' WIDE BGE YELLOW ZONE
- 10' NO PLANTING ZONE BEHIND RETAINING WALLS
- FOREST CONSERVATION EASEMENT (RETENTION)
- FOREST CONSERVATION EASEMENT (PLANTING)

- LANDSCAPE NOTES:**
- STREET TREES ALONG U.S. ROUTE 1 TO BE CENTERED BETWEEN CURB AND SIDEWALK. STREET TREES MAY NOT BE PLANTED WITHIN 5 FEET OF A DRAIN INLET, 5 FEET OF AN OPEN SPACE ACCESS STRIP, OR 10 FEET OF A DRIVEWAY.
 - SEE TREE PLANTING DETAIL - THIS SHEET.
 - THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL.
 - AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWIT 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 RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATIONS.
 - 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.
 - FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$15,450.00 (\$13,200.00 FOR 44 SHADE TREES, \$1,200.00 FOR 8 EVERGREENS, AND \$1,050.00 FOR 35 SHRUBS)



STREET TREE SCHEDULE

ROAD NAME	PERIMETER	SIZE	TREES REQ.
U.S. ROUTE 1	819'	SMALL 1:30 LF	27

SCHEDULE A PERIMETER LANDSCAPE EDGE

CATEGORY	NON-RES SIDE TO ROADWAY	PARKING TO ROADWAY	NON-RES FRONT TO ROADWAY	NON-RES TP PERIMETER PROPERTY	TOTALS
	1A	1B	1C	2	
LANDSCAPE TYPE	B 1:50 shade 1:40 evergreen	E 1:40 shrubs 1:40 evergreen	B 1:50 shade 1:40 evergreen	A 1:60 shade	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	301 LF	140 LF	378 LF	2267 LF	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES 301 LF	NO	YES 50 LF	YES 2267 LF	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	
NUMBER OF PLANTS REQUIRED	0 LF	140 LF	328 LF	0 LF	11
SHADE TREES	0	4	7	0	11
EVERGREEN TREES	0	0	8	0	8
OTHER TREES (2:1 SUBSTITUTE)	0	0	0	0	0
SHRUBS	0	35	0	0	35
NUMBER OF PLANTS PROVIDED	0	0	0	0	0
SHADE TREES	0	0	8	0	8
EVERGREEN TREES	0	0	8*	0	8
OTHER TREES (2:1 SUBSTITUTE)	0	0	14*	0	22
SHRUBS	0	35	0	0	35

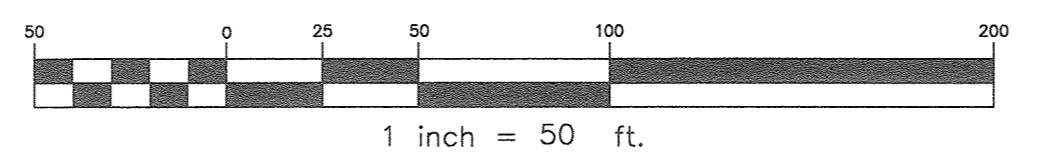
* SMALL SHADE TREES FOR BGE ZONE

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING

NUMBER OF PARKING SPACES	107
NUMBER OF TREES REQUIRED @ 1 PER 20 SPACES	6
NUMBER OF TREES PROVIDED	6
SHADE TREES	6
SMALL DECIDUOUS OR EVERGREEN TREES (2:1 RATIO)	0

LANDSCAPE PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS	DESCRIPTION
(Symbol)	27	ACER GRISEBUM "HARPBRACK MAPLE"	2-1/2" - 3" cal.	SMALL SHADE TREES (MAX HEIGHT OF 25 FEET) ALONG PERIMETER TO BE PROVIDED BY THE DEVELOPER
(Symbol)	6	PRUNUS SARGENTII "SARGENT CHERRY"	2-1/2" - 3" cal.	SHADE TREES LOCATED WITHIN LANDSCAPED ISLANDS TO BE PROVIDED BY THE DEVELOPER
(Symbol)	8	ILEX OPACA (American Holly)	5' - 6' ht.	EVERGREEN TREES ALONG PERIMETER TO BE PROVIDED BY THE DEVELOPER
(Symbol)	11	ACER GINALLA "AMUR MAPLE"	1-1/2" - 2" cal.	SMALL SHADE TREES (MAX HEIGHT OF 25 FEET) ALONG PERIMETER TO BE PROVIDED BY THE DEVELOPER
(Symbol)	35	BUXUS MICROPHYLLA JAPONICA "WINTER GEM" "WINTER GEM BOXWOOD"	24"-30" hgt.	SHRUBS PLANTED ALONG PERIMETER TO BE PROVIDED BY THE DEVELOPER



DEVELOPER'S/BUILDER'S 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 HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION OF 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.

Louis Mangione 1/22/20
LOUIS MANGIONE DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Cheryl 2.6.20
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

John M. S. & Co 2/11/20
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John 2-13-2020
DIRECTOR DATE

THIS SHEET REPLACES THE PREVIOUS SHEET 16 SIGNED ON 4-24-2019

NO.	DATE	REVISION
3	1-16-2020	REVISE NORTH WING TO BE 1-STORY STORAGE BUILDING
2	3-21-2019	ADD ASSISTED LIVING WING AND NORTH WING TO BLDG A, REVISE NUMBER OF PARKING SPACES IN SCHEDULE B
1	5-5-2011	REVISE STORM DRAIN AND BUILDING 'A'

BENCHMARK ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE A SUITE 315 & ELLICOTT CITY, MARYLAND 21043
(P) 410-465-8105 (F) 410-465-8844
WWW.BE-CIVILENGINEERING.COM

Professional Certification: I hereby certify that these documents were prepared or approved by me and that I am a duly licensed professional engineer in the State of Maryland. License No. 12071, Expiration Date: 6-30-2019.

LORIEN-ELKRIDGE
PARCEL 'A'

OWNER: MUSIC FAIR LIMITED PARTNERSHIP
1205 YORK ROAD, FLOOR 4
LUTHERVILLE, MARYLAND 21093
410-825-8400

DEVELOPER: COMMERCIAL CONTRACTORS
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TAX MAP: 43 - GRID: 10 - PARCEL: 32
ZONED: POR
ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

PERIMETER LANDSCAPE AND STREET TREE PLAN, NOTES, AND DETAILS

DATE: NOVEMBER, 2010 BEI PROJECT NO. 2071
SCALE: AS SHOWN SHEET 16 OF 29



BLUE STREAM CORPORATE CENTER
 PARCEL B
 PLAT NO. 17021
 ZONED: CAC-CL1

WASHINGTON BOULEVARD
 U.S. ROUTE 1
 (INTERMEDIATE ARTERIAL)

BLUE
 STREAM
 DRIVE

FOREST CONSERVATION
 EASEMENT #1
 NON-CREDITED RETENTION
 IN FLOODPLAIN: 3.48 AC. (1.66 AC.)
 CREDITED RETENTION:
 0.78 AC. (0.34 AC.)
 REFORESTATION:
 0.47 AC. (0.42 AC.)
 TOTAL: 4.73 AC. (2.42 AC.)

CREDITED
 RETENTION AREA #4
 0.03 AC

FOREST CONSERVATION
 EASEMENT #2
 NON-CREDITED
 RETENTION IN
 FLOODPLAIN: 0.21 AC.
 CREDITED RETENTION:
 0.02 AC.
 TOTAL: 0.23 AC.
 PLAT # 21424-26

REFORESTATION
 AREA #1
 0.47 AC. (0.42 AC.)

LEGEND

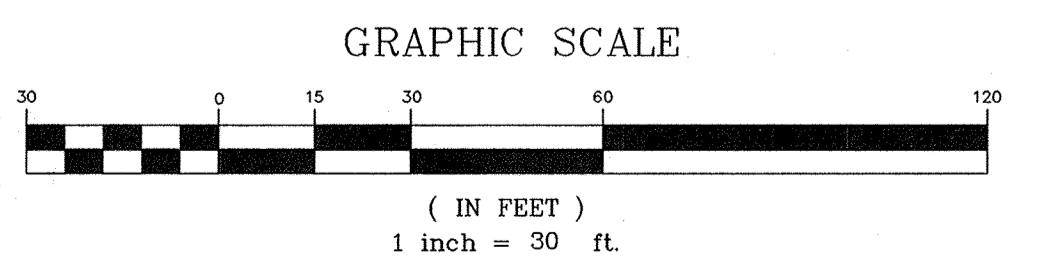
- EXISTING CONTOURS MARCH, 2007
- EXISTING OVERHEAD POWER LINES
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING STREAM
- LIMIT OF WETLANDS
- LIMIT OF SUBMISSION
- EXISTING 100YR FLOODPLAIN
- FOREST CONSERVATION EASEMENT (NON-CREDITED)
- CREDITED RETENTION AREA
- REFORESTATION AREA
- FOREST CONSERVATION SIGNAGE
- LIMIT OF DISTURBANCE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard 1/21/11
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kate 1/27/11
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Morgan 1/10/11
 DIRECTOR DATE



2 3-21-2019 Issue TOTAL SHEET NUMBER TO 29	
1 5-5-11 Revise STORMDRAIN AND BUILDING 'A'	
NO.	DATE REVISION

BENCHMARK
 ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.
 8480 BALTIMORE NATIONAL PIKE SUITE 418 A ELIJAH CITY, MARYLAND 21043
 (P) 410-465-8105 (F) 410-465-8644
 40 THUNDERBOLT DRIVE - FREDERICK, MARYLAND 21702
 (P) 301-321-3100 (F) 301-321-3100
 WWW.BE-CVLENGINEERING.COM

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. 28559, Expiration Date: 7-31-2011.

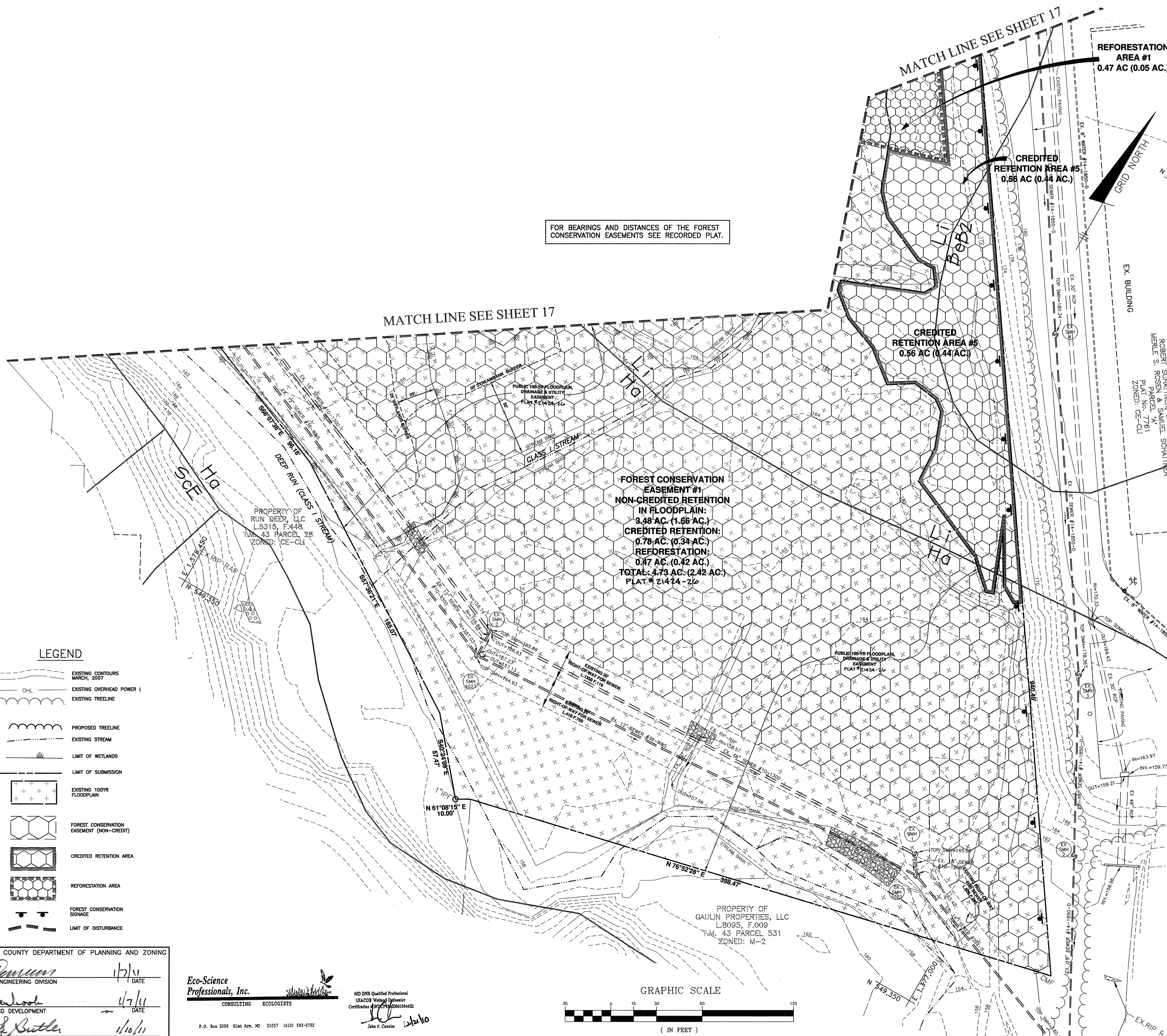
OWNER: MUSIC FAIR LIMITED PARTNERSHIP 1205 YORK ROAD, FLOOR LUTHERVILLE, MARYLAND 21093 410-825-8400	LORIEN-ELKRIDGE PARCEL 'A' TAX MAP: 43 - GRID: 10 - PARCEL: 32 ZONED: POR ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND
DEVELOPER: COMMERCIAL CONTRACTORS 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400	
DATE: NOVEMBER, 2010 SCALE: AS SHOWN	BEI PROJECT NO. 2071 SHEET 17 OF 29

Eco-Science
 Professionals, Inc.
 CONSULTING ECOLOGISTS

MD DNR Qualified Professional
 USACE Wetland Delimitator
 Certifications # JDC2301MD6104421
 John P. Canale

P.O. Box 5006 Glen Arm, MD 21057 (410) 592-6152

FOR BEARINGS AND DISTANCES OF THE FOREST CONSERVATION EASEMENTS SEE RECORDED PLAT.



FOREST CONSERVATION EASEMENT #1
NON-CREDITED RETENTION IN FLOODPLAIN:
 3.48 AC. (1.66 AC.)
CREDITED RETENTION:
 0.78 AC. (0.34 AC.)
REFORESTATION:
 0.47 AC. (0.42 AC.)
TOTAL: 4.73 AC. (2.42 AC.)
 PLAT # 21424-26

CREDITED RETENTION AREA #4
 0.56 AC (0.44 AC.)

CREDITED RETENTION AREA #5
 0.56 AC (0.44 AC.)

REFORESTATION AREA #1
 0.47 AC (0.05 AC.)

LEGEND

- EXISTING CONTOURS MARCH, 2007
- EXISTING OVERHEAD POWER LINE
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING STREAM
- LIMIT OF WETLANDS
- LIMIT OF SUBMISSION
- EXISTING 100YR FLOODPLAIN
- FOREST CONSERVATION EASEMENT (NON-CREDITED)
- CREDITED RETENTION AREA
- REFORESTATION AREA
- FOREST CONSERVATION SIGNAGE
- LIMIT OF DISTURBANCE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard 1/7/11 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

Ritchie 1/7/11 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT

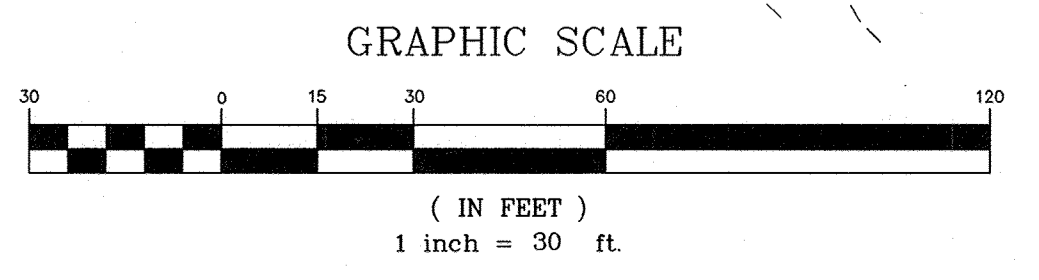
Mason & Butler 1/10/11 DATE
 DIRECTOR

Eco-Science Professionals, Inc.
 CONSULTING ECOLOGISTS

P.O. Box 5056 Glen Burnie, MD 21057 (410) 592-0752

MD DNR Qualified Professional
 USACE Wetland Designer
 Certificate # W-123456789

John P. Corbin 1/10/11



3-21-2019		RANGE TOTAL SHEET NUMBER TO 29	
NO.	DATE	REVISION	
BENCHMARK ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE SUITE 418 ELLICOTT CITY, MARYLAND 21043 (P) 410-485-6105 (F) 410-485-6644 WWW.BE-CIVILENGINEERING.COM		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. 28539, Expiration Date: 7-22-2011.	
OWNER:		LORIEN-ELKRIDGE PARCEL 'A'	
MUSIC FAIR LIMITED PARTNERSHIP 1205 YORK ROAD, FLOOR 4 LUTHERVILLE, MARYLAND 21093 410-825-8400		TAX MAP: 43 - GRID: 10 - PARCEL: 32 ZONED: POR ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND	
DEVELOPER:		FOREST CONSERVATION PLAN	
COMMERCIAL CONTRACTORS 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400		DATE: NOVEMBER, 2010	BEI PROJECT NO. 2071
SCALE: AS SHOWN		SHEET	18 OF 29

PLANTING SCHEDULE

FCE - Planting Area B - 0.47acres

Whips with tree shelters Required: 165
Whips with tree shelter Provided: 165

Qty	Species	Size	Spacing	Total FCA Units
30	Acer rubrum - Red maple	2-3' whip	11' o.c.	
20	Cornus florida - Flowering dogwood	2-3' whip	11' o.c.	
25	Liriodendron tulipifera - Tulip poplar	2-3' whip	11' o.c.	
30	Platanus occidentalis - Sycamore	2-3' whip	11' o.c.	
20	Prunus serotina - Black cherry	2-3' whip	11' o.c.	
20	Robinia pseudo-acacia - Black locust	2-3' whip	11' o.c.	
20	Viburnum prunifolium - Blackhaw	2-3' whip	11' o.c.	
		Total whip plantings		165

Planting Notes:

Planting density based spacing requirements: 1" caliper trees @ 15' on center, whips with shelter @ 11' on center.

1" caliper trees should be staggered along the perimeter of the planting area to serve as demarcation of the boundary as indicated on the plan.

Planting may be made in a curvilinear fashion along contour. The planting should avoid a grid appearance but should be spaced to facilitate maintenance.

Multiflora rose/heavy brush removal/control may be required prior to installation of planting. All whips are required to be installed with tree shelters per Howard County FCA requirements.

REFORESTATION PLAN

The reforestation area will be placed into a Forest Conservation Easement.

A. Planting Plan and Methods

Plant species selection was based on our knowledge regarding plant communities in Maryland's Piedmont Plateau and information provided in the soil survey on typical vegetation for the soil type on the planting site. Species selection was also based on our knowledge of plant availability in the nursery industry.

Reforestation will be accomplished through a mixed planting of whips and branched transplants. Container grown stock is recommended but bareroot stock may be used to help control afforestation costs. If bareroot stock is used the root systems of all plants will be dipped in an anti-desiccant gel prior to planting to improve moisture retention in the root systems.

Prior to planting the proposed Forest Conservation Easements all multiflora rose in the planting area shall be removed. Removal of the rose may be performed with mowing and herbicide treatments. Physical removal of all top growth following by a periodic herbicide treatment of stump sprouts is recommended. Native tree and shrub species occurring within the rose thickets should be retained wherever possible. Herbicides treatments shall occur on 2 month intervals during the first growing season and once each in the spring and fall for subsequent years. Herbicide used shall be made specifically to address woody plant material and shall be applied as per manufacturers specifications. Care should be taken not to spray planted trees or naturally occurring native tree/shrub seedlings. It is recommended that initiation of rose removal begin at least six months prior to planting.

B. Planting and Soil Specifications

Plant material will be installed in accordance with the Planting Detail and Planting Specifications shown on the Forest Conservation Plan.

Amendments to existing soil will be in accordance with the Planting Specifications shown on the Forest Conservation Plan. Soil disturbance will be limited to individual planting locations.

C. Maintenance of Plantings

For information regarding maintenance of the reforestation plantings, see Section VIII B.

D. Guarantee Requirements

A 90 percent survival rate of the reforestation plantings will be required after one growing season. All plant material below the 90 percent survival threshold will be replaced at the beginning of the second growing season. At the end of the second growing season, a 75 percent survival rate will be required. All plant material below the 75 percent survival threshold will be replaced by the beginning of the next growing season.

E. Security for Reforestation

Section 16-1209 of the Howard County Forest Conservation Act requires that a developer shall post a security (bond, letter of credit, etc.) with the County to insure that all work is done in accordance with the FCP.

CONSTRUCTION PERIOD PROTECTION PROGRAM

A. Forest Protection Techniques

1. Soil Protection Area (Critical Root Zone)

The soil protection area, or critical root zone, of a tree is that portion of the soil column where most of its roots may be found. The majority of roots responsible for water and nutrient uptake are located just below the soil surface. Temporary fencing shall be placed around the critical root zone of the forest in areas where the forest limits occur within 25 feet of the limit of disturbance.

2. Fencing and Signage

Existing forest limits occurring within 25 feet of the limits of disturbance shall be protected using temporary protective fencing. Permanent signage shall be placed around the afforestation area prior to plant installation, as shown on the plan.

B. Pre-Construction Meeting

Upon staking of limits of disturbance a pre-construction meeting will be held between the developer, contractor and appropriate County inspector. The purpose of the meeting will be to verify that all sediment control is in order, and to notify the contractor of possible penalties for non-compliance with the FCP.

C. Storage Facilities/Equipment Cleaning

All equipment storage, parking, sanitary facilities, material stockpiling, etc. associated with construction of the project will be restricted to those areas outside of the proposed Forest Conservation Easement. Cleaning of equipment will be limited to area within the LOD of the proposed homesites. Wastewater resulting from equipment cleaning will be controlled to prevent runoff into environmentally sensitive areas.

D. Sequence of Construction

The following timetable represents the proposed timetable for development. The items outlined in the Forest Conservation Plan will be enacted within two (2) years of subdivision approval.

Below find a proposed sequence of construction.

1. Install all signage and sediment control devices.
2. Hold pre-construction meeting between developer, contractor and County inspector.
3. Build access roads, install well and septic systems, and construct houses. Stabilize all disturbed areas accordingly.
4. Begin multiflora rose removal. Install permanent protective signage for Easements and initiate plantings in accordance with Forest Conservation Plan. Plantings will be completed within two (2) years of subdivision approval.
5. Remove sediment control.
6. Hold post-construction meeting with County inspectors to assure compliance with FCP. Submit Certification of Installation.
7. Monitor and maintain plantings for 2 years.

E. Construction Monitoring

Eco-Science Professionals, or another qualified professional designated by the developer, will monitor construction of the project to ensure that all activities are in compliance with the Forest Conservation Plan.

F. Post-Construction Meeting

Upon completion of construction, Eco-Science Professionals, or another qualified professional designated by the developer, will notify the County that construction has been completed and arrange for a post-construction meeting to review the project site. The meeting will allow the County inspector to verify that afforestation plantings have been installed.

POST-CONSTRUCTION MANAGEMENT PLAN

Howard County requires a two year post-construction management plan be prepared as part of the forest conservation plan. The plan goes into effect upon acceptance of the construction certification of completion by the County. Eco-Science Professionals, or another qualified professional designated by the developer, will be responsible for implementation of the post-construction management plan.

The following items will be incorporated into the plan:

A. Fencing and Signage

Permanent signage indicating the limits of the retention/reforestation area shall be maintained.

B. General Site Inspections/Maintenance of Plantings

Site inspections will be performed a minimum of three times during the growing season. The purpose of the inspections will be to assess the health of the afforestation plantings. Appropriate measures will be taken to rectify any problems which may arise.

In addition, maintenance of the afforestation plantings will involve the following steps:

1. Watering - All plant material shall be watered twice a month during the 1st growing season, more or less frequently depending on weather conditions. During the second growing season, once a month during May-September, if needed.
2. Removal of invasive exotics and noxious weeds. Old field successional species will be retained.
3. Identification of serious plant pests and diseases, treatment with appropriate agent.
4. Pruning of dead branches.
5. After 12 and 24 months, replacement of plants, if required, in accordance with the Guarantee Requirements shown on the FCP.

C. Education

The developer will provide appropriate materials to property owners informing them of the location and purpose of the afforestation area. Materials may include site plans and information explaining the intent of the forest conservation law.

D. Final Inspection

At the end of the two year post-construction management period, Eco-Science Professionals, or another qualified professional, will submit to the administrator of the Howard County Forest Conservation Program certification that all retention/reforestation/afforestation requirements have been met. Upon acceptance of this certification, the County will release the developer from all future obligations and release the developer's bond.

Planting/Soil Specifications

1. Installation of bareroot/plug plant stock shall take place between March 15 - April 20; b&b/container stock March 15 - May 30 or September 15 - November 15. Fall planting of B&B stock is not recommended.
2. Disturbed areas shall be seeded and stabilized as per general construction plan for project. Planting areas not impacted by site grading shall have no additional topsoil installed.
3. Bareroot plants shall be installed so that the top of root mass is level with the top of existing grade. Roots shall be dipped in an anti-desiccant gel prior to planting. Backfill in the planting pits shall consist of 3 parts existing soil to 1 part pine fines or equivalent.
4. Fertilizer shall consist of Agriform 22-8-2, or equivalent, applied as per manufacturer's specifications, for woody plants. Herbaceous plant shall be fertilized with Osmocote 8-6-12. Plant material shall be transported to the site in a tarped or covered truck. Plants shall be kept moist prior to planting.
5. The contractor shall remove all non-organic debris associated with the planting operation from the site.

Sequence of Construction

1. Sediment control shall be installed in accordance with general construction plan for site.
2. Plants shall be installed as per Plant Schedule and the Planting/Soil Specifications for the project.
3. Upon completion of the planting, signage shall be installed as shown.
4. Plantings shall be maintained and guaranteed in accordance with the Maintenance and Guarantee requirements for project.

Maintenance of Plantings

1. Maintenance of plantings shall last for a period of two years.
2. Plantings must receive 2 gallons of water, either through precipitation or watering, weekly during the 1st growing season, as needed. During second growing season, once a month during May-September, if needed.
3. Invasive exotics and noxious weeds will be removed, as required, from planting areas mechanically and/or with limited herbicide. Old field successional species will be retained.
4. Plants shall be examined a minimum two times during the growing season for serious plant pests and diseases. Serious problems will be treated with the appropriate agent.
5. Dead branches will be pruned from plantings.

Guarantee Requirements

1. A 90 percent survival rate of the reforestation plantings will be required after one growing season. All plant material below the 90 percent survival threshold will be replaced at the beginning of the second growing season. At the end of the second growing season, a 75 percent survival rate will be required. All plant material below the 75 percent survival threshold will be replaced by the beginning of the next growing season.

Education of New Occupants

1. The developer shall provide educational information to all property owners within the new development/home about the proper use of forest conservation areas.

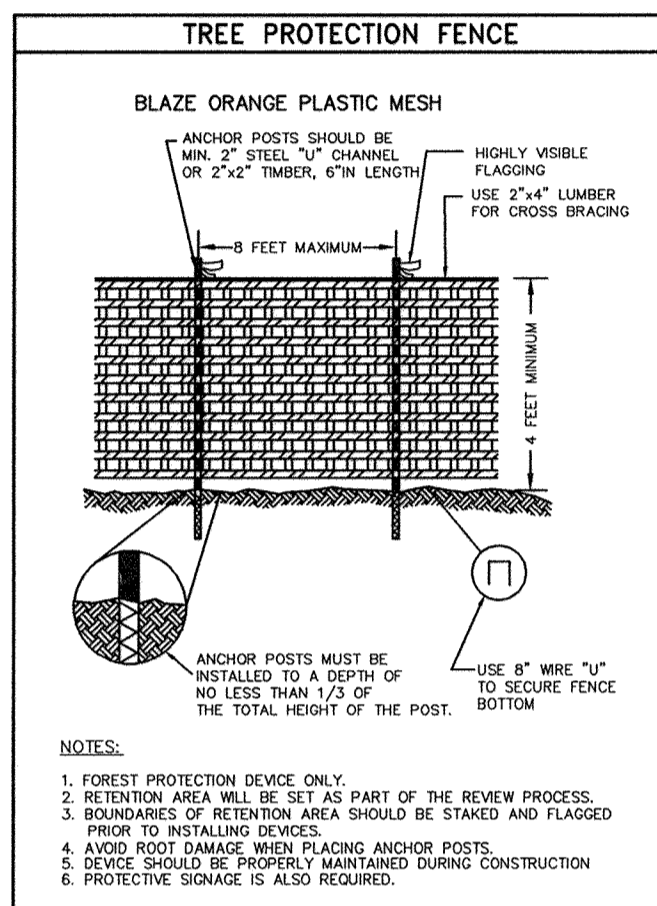
Final Inspection and Release of Obligations

At the end of the post-construction management and protection period the developer shall submit a certification to the County that all forest conservation areas have remained intact or have been restored to appropriate condition, that the stipulated survival rates have been achieved, and that any permanent protection measures required by the plan are in place. Upon review and acceptance, the County will inform the developer of their release of the development of future obligations related to the Forest Conservation Act.

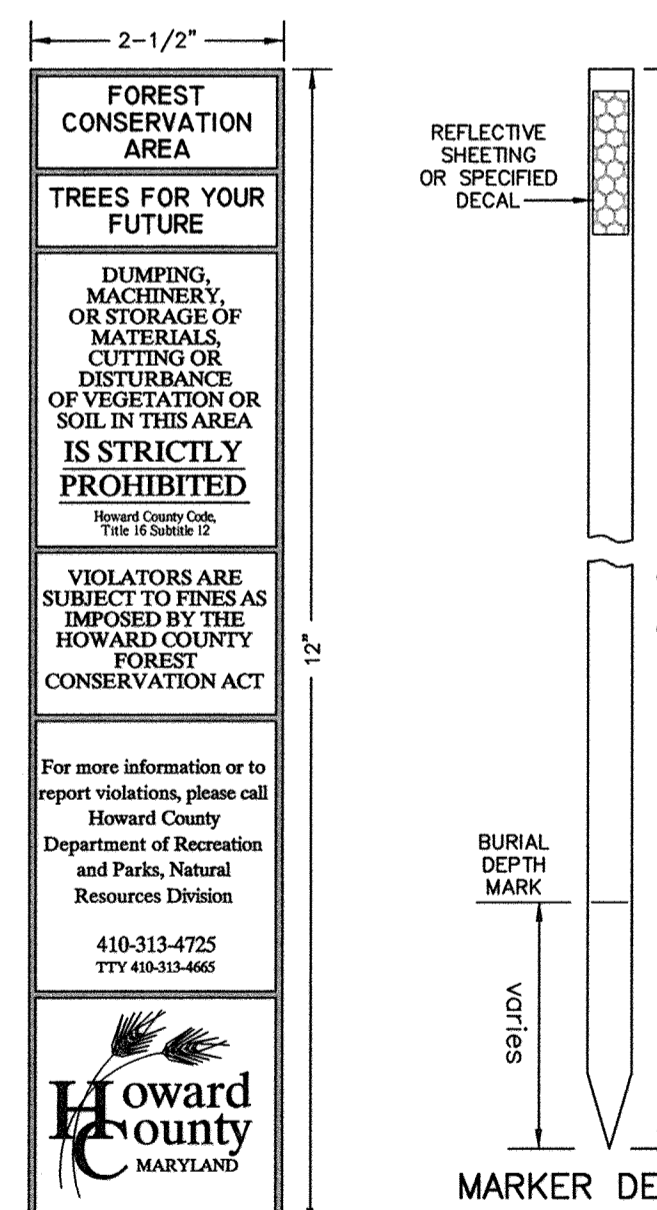
FOREST CONSERVATION SUMMARY	
NON-CREDITED RETENTION (FLOODPLAIN):	3.89 AC.
CREDITED RETENTION (NTA):	0.80 AC.
REFORESTATION:	0.47 AC.
TOTAL EASEMENT AREA:	4.96 AC.

FOREST CONSERVATION EASEMENT #1 CHART	
NON-CREDITED RETENTION (FLOODPLAIN):	3.48 AC.
CREDITED RETENTION (NTA):	0.79 AC.
REFORESTATION:	0.47 AC.
TOTAL EASEMENT AREA:	4.73 AC.

FOREST CONSERVATION EASEMENT #2 CHART	
NON-CREDITED RETENTION (FLOODPLAIN):	0.21 AC.
CREDITED RETENTION (NTA):	0.02 AC.
REFORESTATION:	0.02 AC.
TOTAL EASEMENT AREA:	0.23 AC.



TREE PROTECTION FENCE



DECAL SPECIFICATIONS

FCE CARBONITE MARKER NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 1/10/11

CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 1/10/11

DIRECTOR
 DATE: 1/10/11

FOREST CONSERVATION WORKSHEET	
LORIEN-ELKRIDGE	
Computations by: MCR	BEI JOB No. 2071
	Date: 10/28/2010
NET TRACT AREA:	
A. Total tract area	11.70 ac.
B. Other deductions: (floodplain)	5.67 ac.
C. Net Tract Area	6.03 ac.
LAND USE CATEGORY:	
Select category (AR, MDR, ID, HDR, MPD, CI)	CI A
D. Afforestation Threshold	15% x "F" = 0.90 ac.
E. Conservation threshold	15% x "F" = 0.90 ac.
EXISTING FOREST COVER:	
F. Existing forest cover (NTA)	2.16 ac.
G. Area of forest above afforestation threshold	1.26 ac.
H. Area of forest above conservation threshold	1.26 ac.
BREAK EVEN POINT:	
I. Forest retention above threshold with no mitigation	1.16 ac.
J. Clearing permitted without mitigation	1.00 ac.
PROPOSED FOREST CLEARING:	
K. Total area of forest to be cleared	1.39 ac.
L. Total area of forest to be retained	0.77 ac.
PLANTING REQUIREMENTS:	
M. Reforestation for clearing above conservation threshold	0.31 ac.
N. Reforestation for clearing below conservation threshold	0.27 ac.
O. Credit for retention above conservation threshold	0.00 ac.
P. Total reforestation required	0.58 ac.
Q. Total afforestation required	0.00 ac.
R. Credit for landscaping - may not exceed 20% of "S."	0.00 ac.
S. Total reforestation and afforestation required	0.58 ac.
See Forest Conservation Note #1 (this sheet).	

FOREST CONSERVATION NOTES:

1. THE FOREST CONSERVATION OBLIGATION FOR THIS PLAN HAS BEEN MET BY PROVIDING 0.77 AC. OF CREDITED RETENTION AND 0.47 AC. OF REFORESTATION IN THE ON-SITE FOREST CONSERVATION EASEMENT AND A FOREST CONSERVATION EASEMENT IN LEU PAYMENT OF \$3,594,000 MADE TO THE HOWARD COUNTY FOREST CONSERVATION FUND FOR THE OUTSTANDING 0.11 AC. OF REFORESTATION (0.11 AC. = 4,791.6 S.F. X \$0.75 = \$3,593.70 = \$3,594.00). THE REQUIRED FOREST CONSERVATION SURETY OF \$16,745,000 HAS BEEN POSTED AS A PART OF THE DEVELOPER'S AGREEMENT FOR THIS PLAN.
2. ANY FOREST CONSERVATION EASEMENT (FCE) AREA SHOWN HEREON IS SUBJECT TO PROTECTIVE COVENANTS WHICH MAY BE FOUND IN THE LAND RECORDS OF HOWARD COUNTY WHICH RESTRICT THE DISTURBANCE AND USE OF THESE AREAS.
3. THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE, FOREST CONSERVATION ACT. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENTS; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
4. LIMITS OF DISTURBANCE SHALL BE RESTRICTED TO AREAS OUTSIDE THE LIMIT OF TEMPORARY FENCING OR THE FCE BOUNDARY, WHICHEVER IS GREATER.
5. THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENT, EXCEPT AS PERMITTED BY HOWARD COUNTY DPZ.
6. NO STOCKPILES, PARKING AREAS, EQUIPMENT CLEANING AREAS, ETC. SHALL OCCUR WITHIN AREAS DESIGNATED AS FOREST CONSERVATION EASEMENTS.
7. TEMPORARY FENCING SHALL BE USED TO PROTECT FOREST RESOURCES DURING CONSTRUCTION. THE FENCING SHALL BE PLACED ALONG ALL FCE RETENTION BOUNDARIES WHICH OCCUR WITHIN 15 FEET OF THE PROPOSED LIMITS OF DISTURBANCE.
8. PERMANENT SIGNAGE SHALL BE PLACED 50'-100' APART ALONG THE BOUNDARIES OF ALL AREAS INCLUDED IN FOREST CONSERVATION EASEMENTS.
9. PORTIONS OF THE SITE OCCURRING WITHIN THE 100-YEAR FLOODPLAIN ARE NOT INCLUDED AS PART OF THE NET TRACT AREA OF THE SITE. AREAS OF FLOODPLAIN FOREST OCCURRING WITHIN THE LIMITS OF A FOREST CONSERVATION EASEMENT WILL BE PROTECTED BY THE EASEMENT RESTRICTIONS BUT HAVE NOT BEEN CREDITED TOWARD THE PROJECTS FCA OBLIGATIONS.
10. THE FOREST CONSERVATION WATERSHED FOR THIS PROJECT IS THE PATAPSCO RIVER LOWER NORTH BRANCH #2130906.
11. THERE ARE NO RARE, THREATENED OR ENDANGERED SPECIES LOCATED ON THIS SITE. THERE ARE NO SPECIMEN OR CHAMPION TREES LOCATED ON THIS SITE. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO HISTORIC STRUCTURES LOCATED ON THIS SITE.
12. THE PROTECTIVE SIGNAGE SHALL STAY ON-SITE IN PERPETUITY.

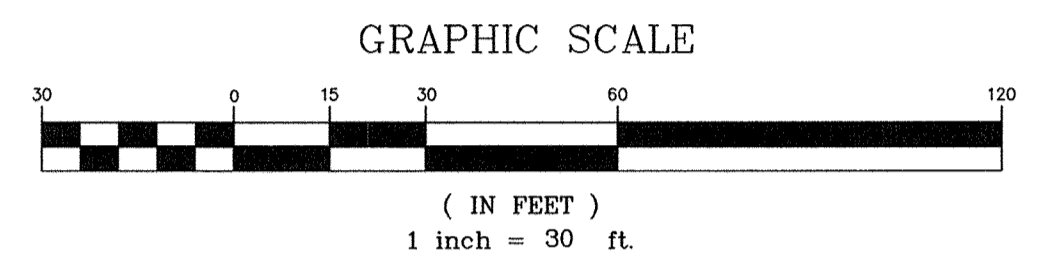
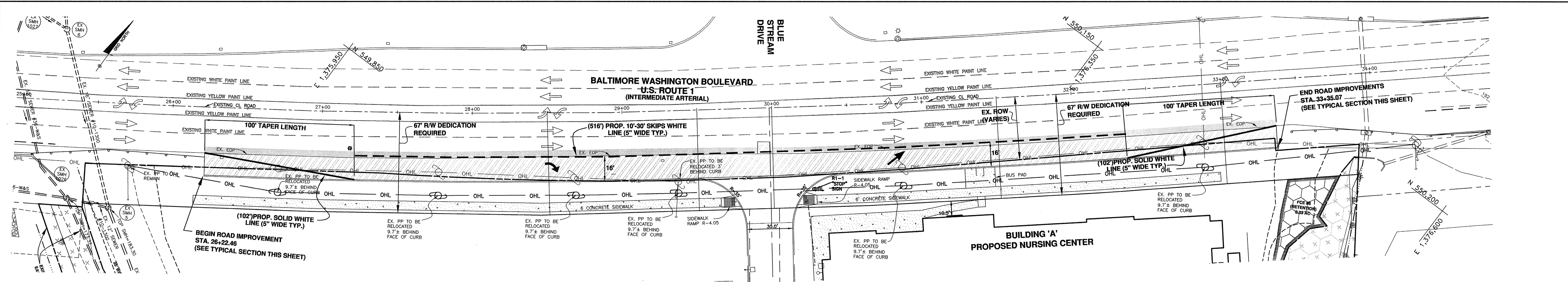
NO.	DATE	REVISION
1	3/21/19	REVISE TOTAL SHEET NUMBER TO 29
 BENCHMARK ENGINEERING, INC. ENGINEERS & LAND SURVEYORS & PLANNERS 8480 BALTIMORE NATIONAL PIKE SUITE 418 ELICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6644 40 THOMAS WASHINGTON DRIVE #1000 ROCKVILLE, MARYLAND 20850-2192 (P) 301-371-3608 (F) 301-371-3699 WWW.BE-CIVILENGINEERING.COM		
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. 28559, Expiration Date: 7-22-2011.		
LORIEN-ELKRIDGE PARCEL 'A'		
OWNER: MUSIC FAIR LIMITED PARTNERSHIP 1205 YORK ROAD, FLOOR 4 LUTHERVILLE, MARYLAND 21093 410-825-8400		
DEVELOPER: COMMERCIAL CONTRACTORS 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400		
TAX MAP: 43 - GRID: 10 - PARCEL: 32 ZONE: POR ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND		
FOREST CONSERVATION NOTES AND DETAILS		
DATE: NOVEMBER, 2010	BEI PROJECT NO. 2071	
SCALE: AS SHOWN	SHEET 19 OF 29	

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional USACE Wetland Delimitation Certification # WFC-001004423

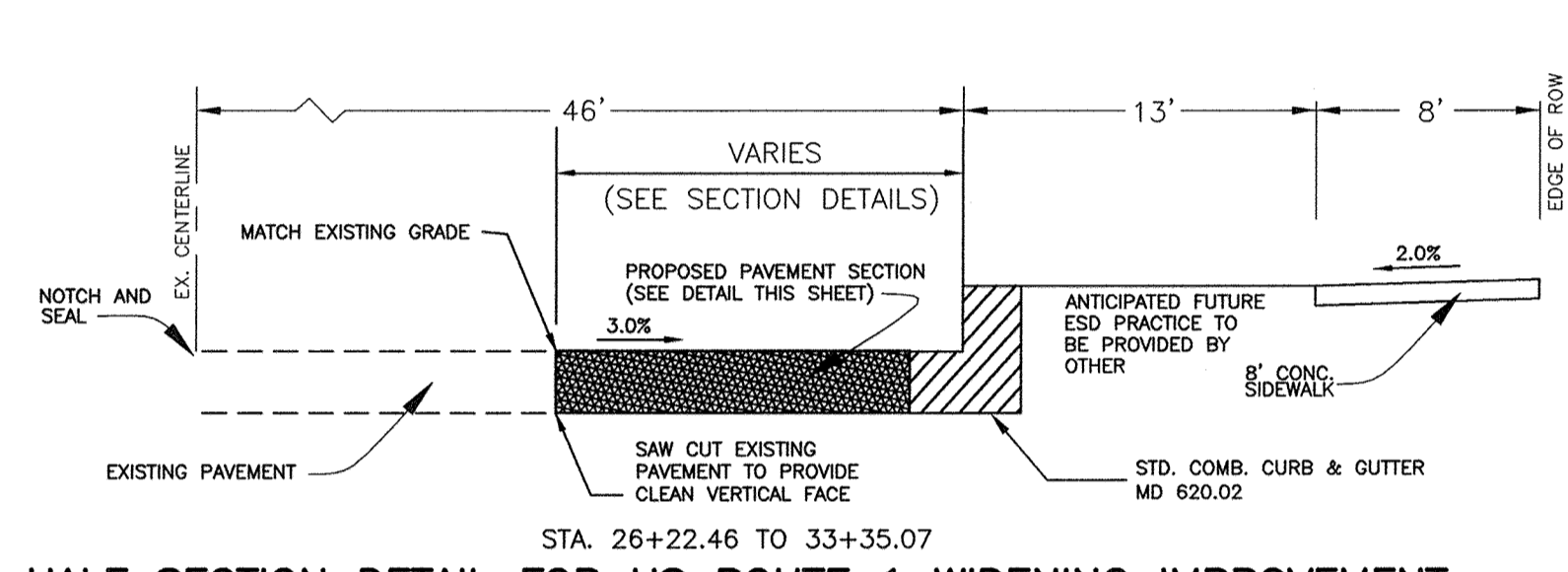
John P. Canale

P.O. Box 5036 0166 Actn, MD 21057 (410) 592-4752



US ROUTE 1 ROAD WIDENING IMPROVEMENT PLAN

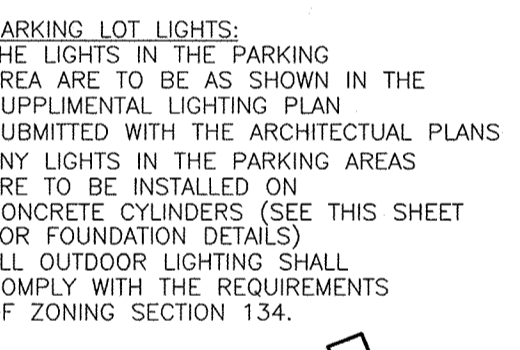
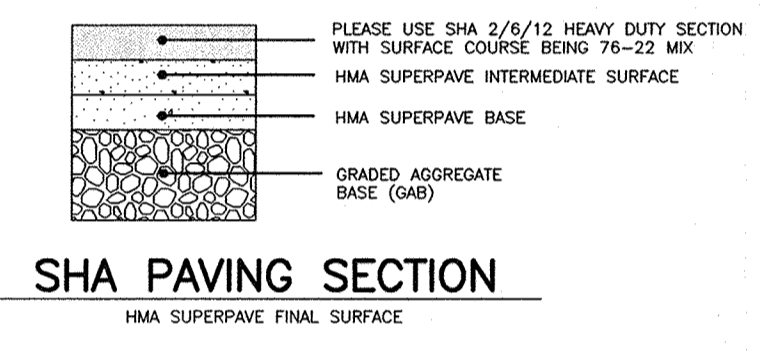
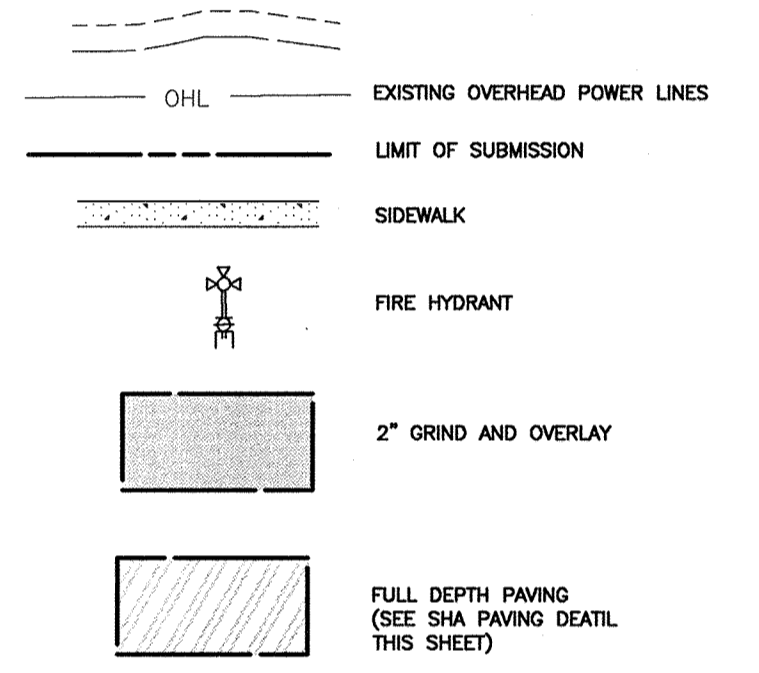
SCALE: 1" = 30'



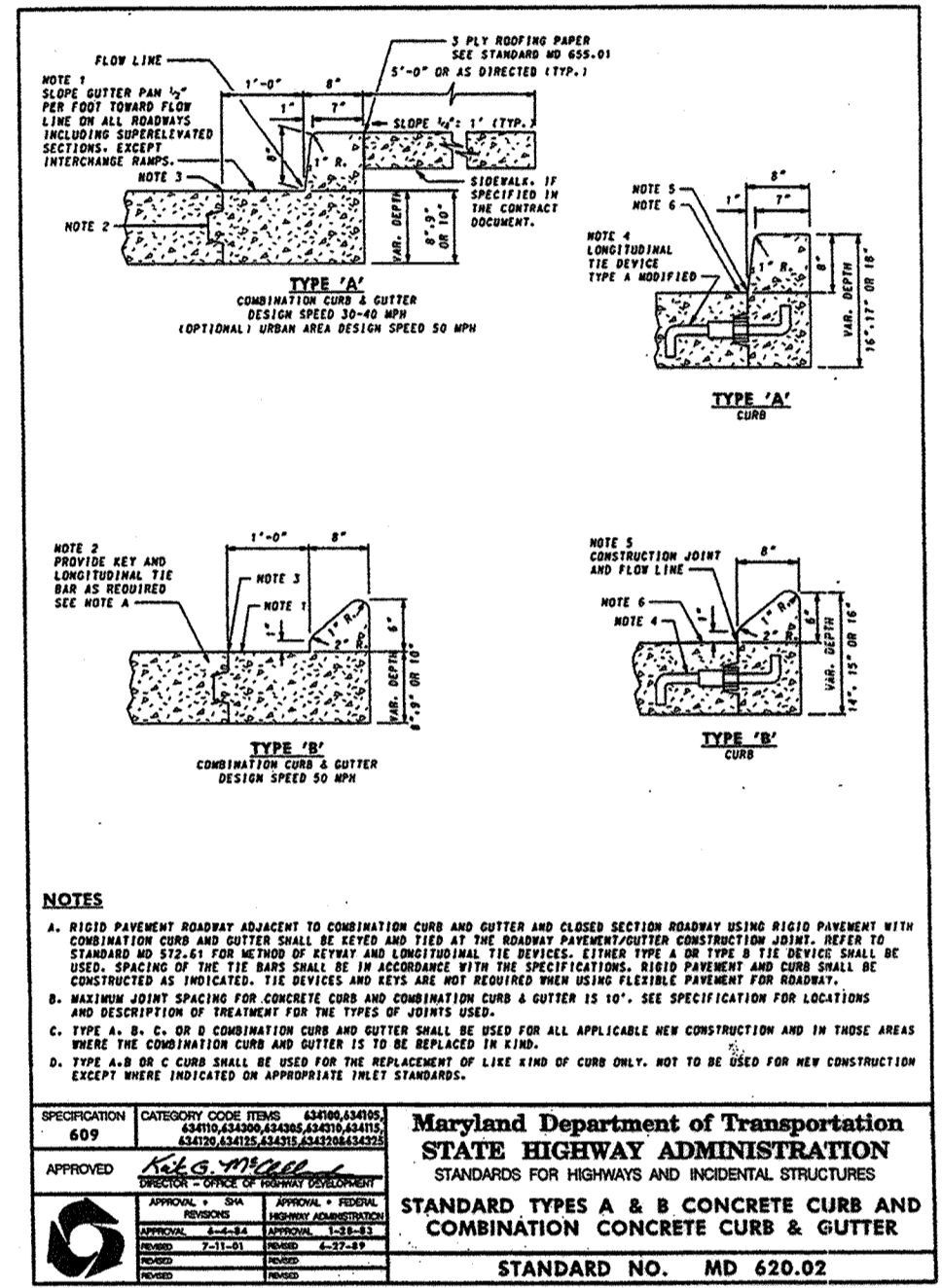
HALF SECTION DETAIL FOR US ROUTE 1 WIDENING IMPROVEMENT
NOT TO SCALE

- NOTES:
- PLEASE NOTE THAT STORMWATER MANAGEMENT FOR THE WIDENING HAS BEEN ADDRESSED WITHIN THE M-6 PRACTICE FACILITIES MB-4 AND MB-5 AND HAS BEEN ADDRESS FOR THE 100-YEAR STORM. THESE FACILITIES HAVE ALSO BEEN ENCOMPASSED BY PUBLIC EASEMENTS.
 - ROAD WIDENING HAS BEEN PROVIDED FOR SAFE ENTRY AND EXIT TO THE PROPOSED DEVELOPMENT.
 - AS A RESULT OF THE SEVERE GRADES IN THE AREA OF THE SITE AND THE VERTICAL ALIGNMENT IT WAS DETERMINED THAT A 4% SLOPE FROM THE BACK OF THE CURB WAS UNNECESSARY AND THEREFORE HAS BEEN SHOWN AS A FLAT SECTION WITH THE SIDEWALK SLOPING TOWARD THE CURB AT 2%.

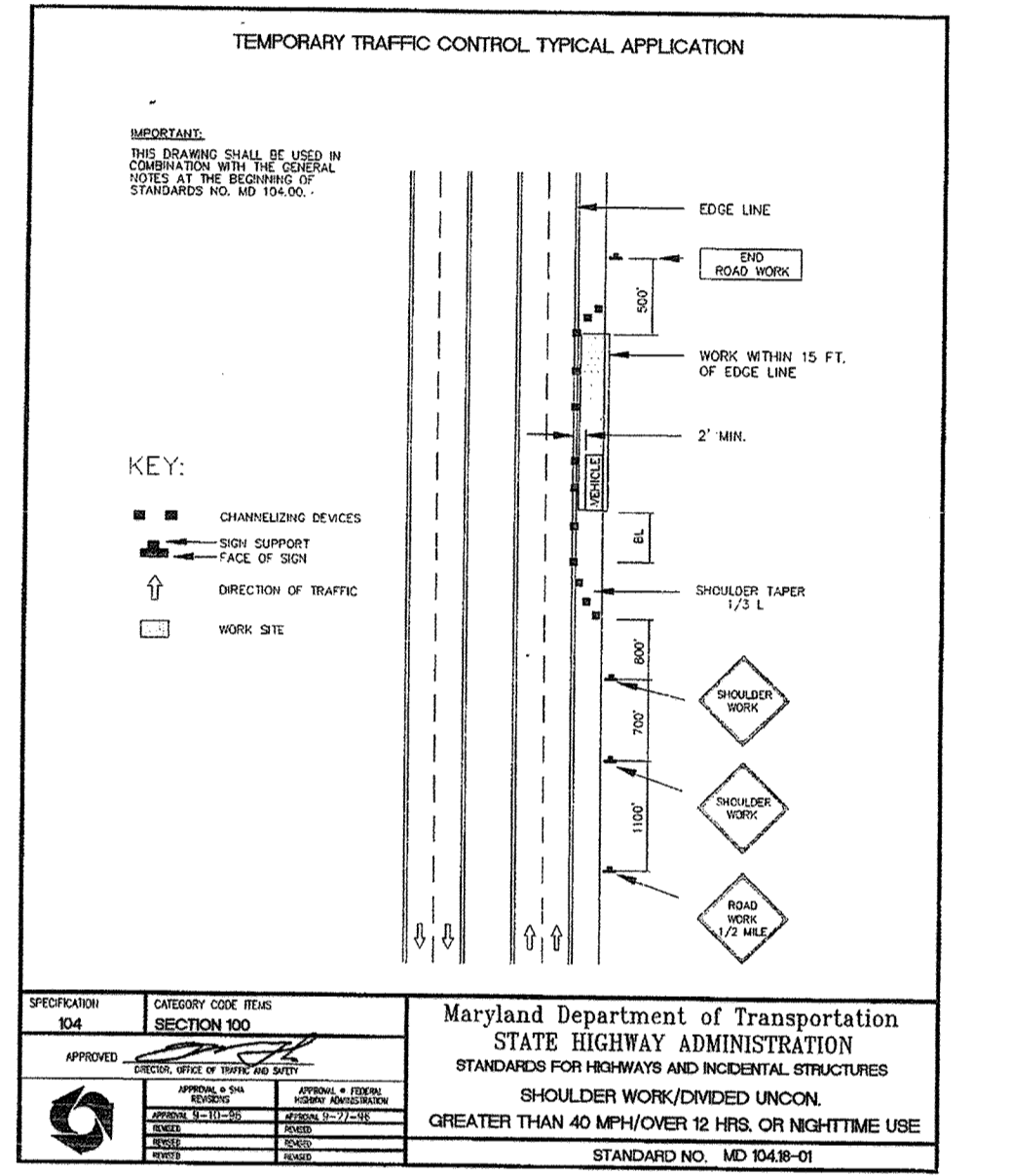
LEGEND



PARKING LOT LIGHT
LIGHTING DETAIL NOT TO SCALE



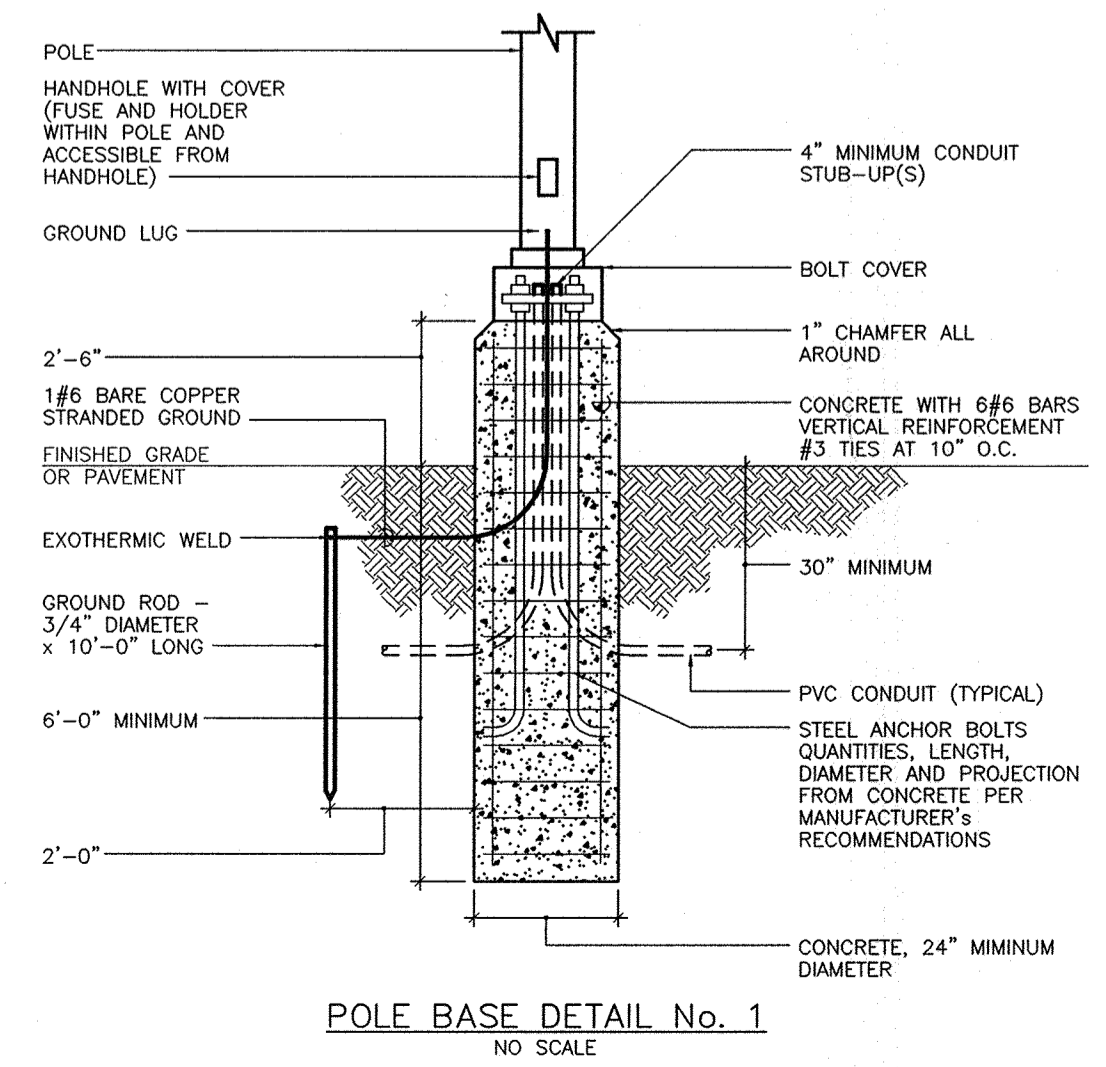
STANDARD TYPES A & B CONCRETE CURB AND COMBINATION CONCRETE CURB & GUTTER
STANDARD NO. MD 620.02



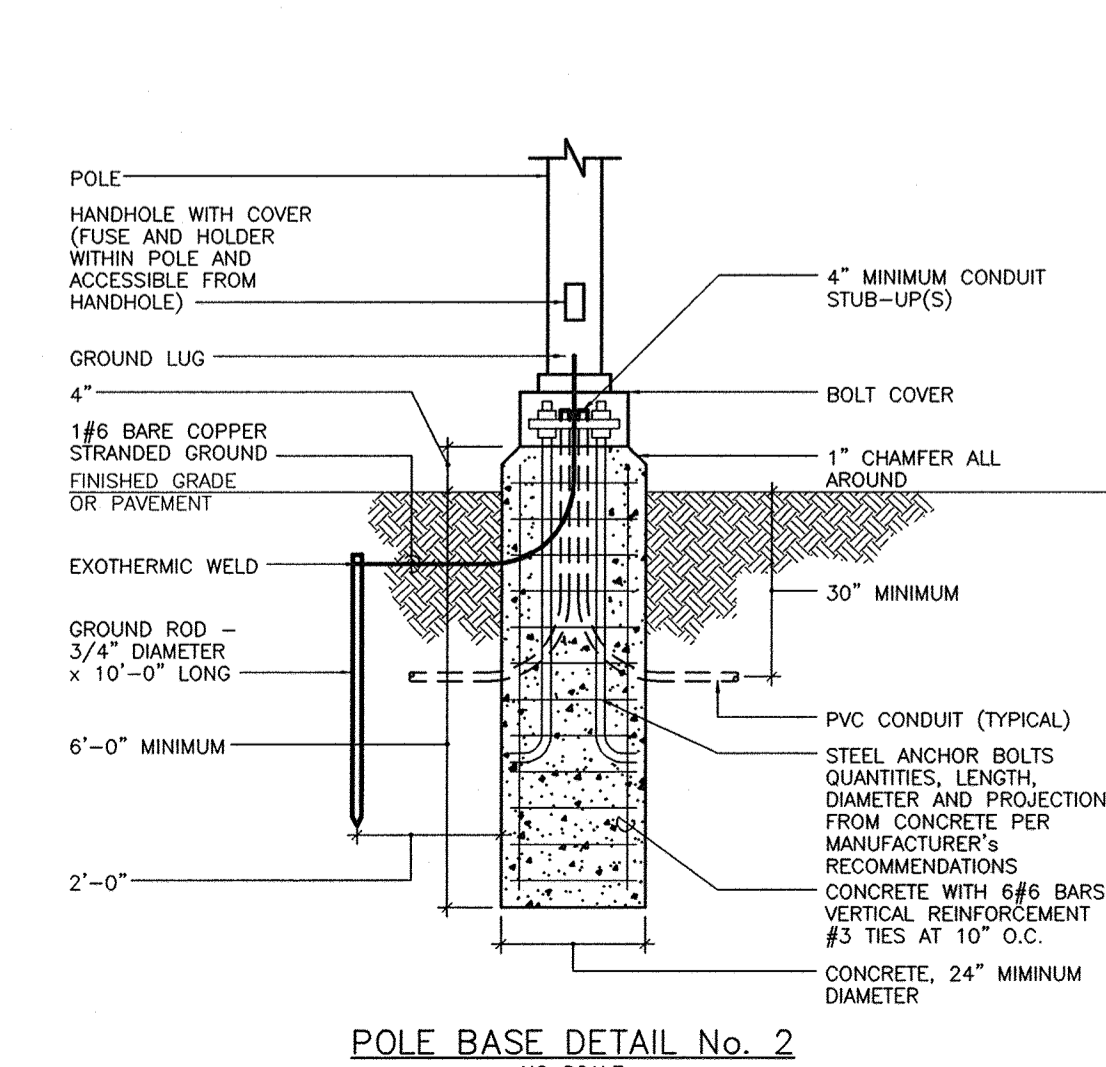
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
SHOULDER WORK/DIVIDED UNCON.
GREATER THAN 40 MPH/OVER 12 FPS. ON NIGHTTIME USE
STANDARD NO. MD 624-01

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)	3 TO <5			5 TO <7			>7		
			MIN	HMA WITH GAB	HMA WITH CONSTANT GAB	MIN	HMA WITH GAB	HMA WITH CONSTANT GAB	MIN	HMA WITH GAB	HMA WITH CONSTANT GAB
P-2	PARKING DRIVE ALLEYS, RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY LOCAL ROADS: ACCESS PLACE, ACCESS STREET CUL-DE-SAC, RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
		9.5 MM PG 64-22, LEVEL 1 (LOW ESAL)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
		HMA SUPERPAVE INTERMEDIATE SURFACE	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
		9.5 MM PG 64-22, LEVEL 1 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
P-4	MINOR COLLECTORS: NON-RESIDENTIAL MAJOR COLLECTORS	HMA SUPERPAVE FINAL SURFACE	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
		12.5 MM PG 64-22, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
		HMA SUPERPAVE INTERMEDIATE SURFACE	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
		12.5 MM PG 64-22, LEVEL 2 (LOW ESAL)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
P-4	MINOR COLLECTORS: NON-RESIDENTIAL MAJOR COLLECTORS	HMA SUPERPAVE FINAL SURFACE	13.0	7.0	4.0	6.0	6.0	6.0	6.0	6.0	6.0
		19.0 MM PG 64-22, LEVEL 2 (LOW ESAL)	13.0	7.0	4.0	6.0	6.0	6.0	6.0	6.0	6.0
		HMA SUPERPAVE BASE	13.0	7.0	4.0	6.0	6.0	6.0	6.0	6.0	6.0
		19.0 MM PG 64-22, LEVEL 2 (LOW ESAL)	13.0	7.0	4.0	6.0	6.0	6.0	6.0	6.0	6.0

HOWARD COUNTY PAVING SECTION DETAIL



POLE BASE DETAIL No. 1
NO SCALE



POLE BASE DETAIL No. 2
NO SCALE

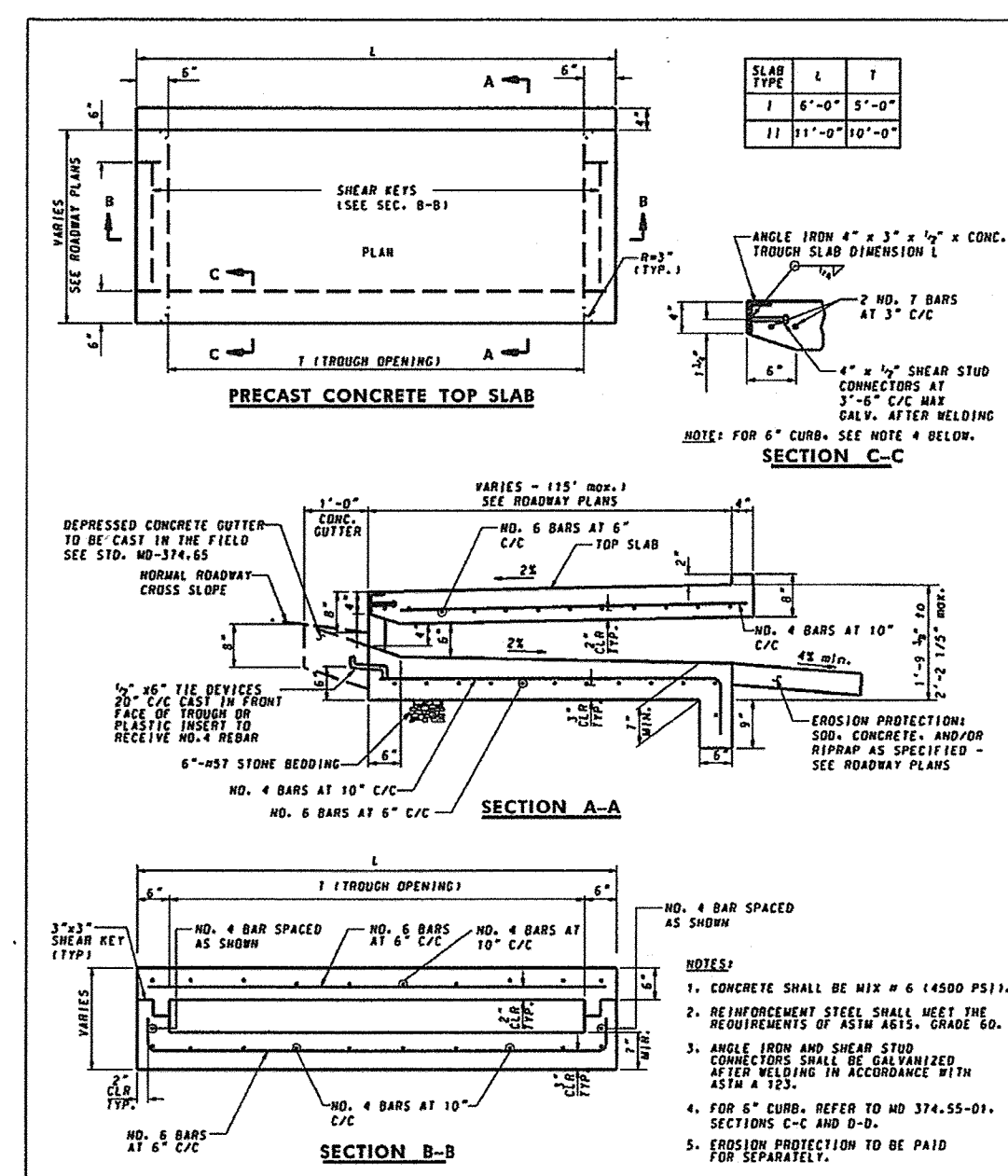
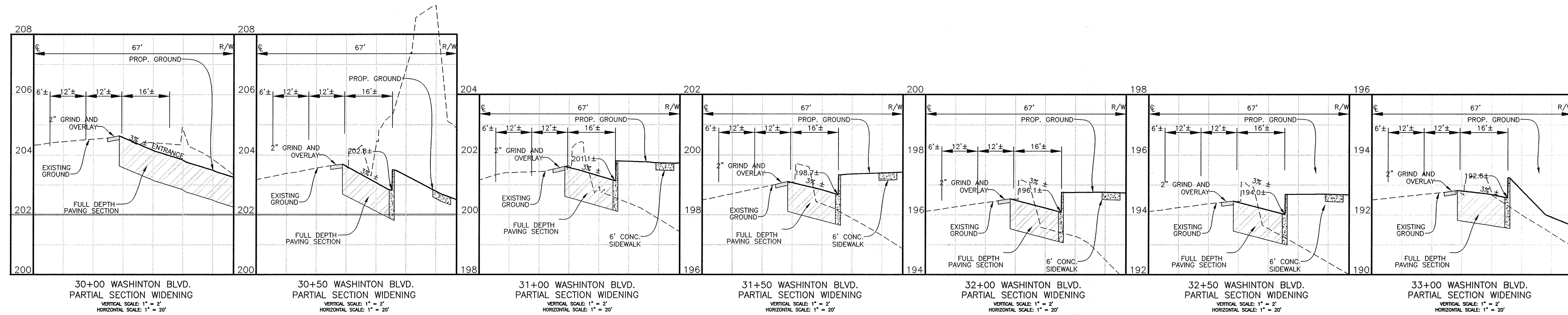
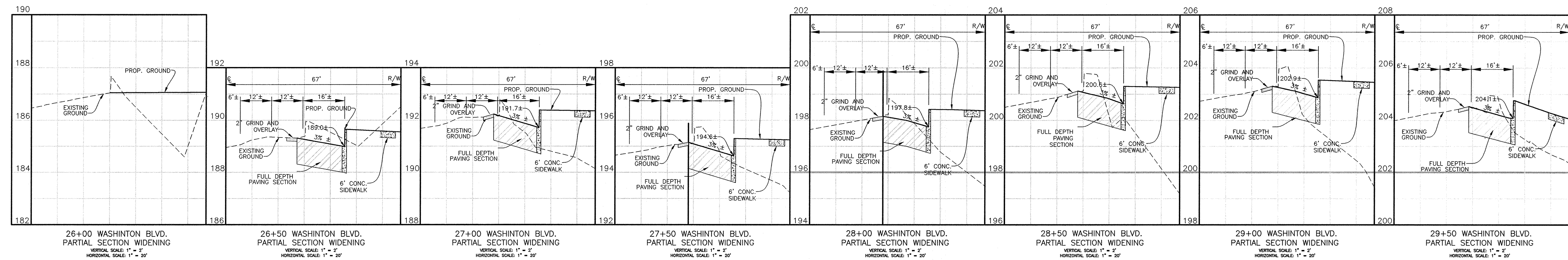
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard County
CHIEF, DEVELOPMENT ENGINEERING DIVISION 1/7/11 DATE

Veronica
CHIEF, DIVISION OF LAND DEVELOPMENT 1/7/11 DATE

Morgan & Suttle
DIRECTOR 1/16/11 DATE

1 3-21-2011 REVISE TOTAL SHEET NUMBER TO 29		REVISION
<p>BENCHMARK ENGINEERING, INC. ENGINEERS & LAND SURVEYORS & PLANNERS 8480 BALTIMORE NATIONAL PIKE & SUITE 418 A ELLICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6644 WWW.BE-CALINEERING.COM</p>		
OWNER:	<p>LORIEN-ELKRIDGE PARCEL 'A'</p>	
DEVELOPER:	<p>MUSIC FAIR LIMITED PARTNERSHIP 1205 YORK ROAD, FLOOR 4 LUTHERVILLE, MARYLAND 21093 410-825-8400</p>	
<p>TAX MAP: 43 - GRID: 10 - PARCEL: 32 ZONED: FOR ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND</p>		<p>DATE: NOVEMBER, 2010 BEI PROJECT NO. 2071 SCALE: AS SHOWN SHEET 20 OF 29</p>



APPROVED:	DATE:	APPROVED:	DATE:
<i>[Signature]</i>	11-15-10	<i>[Signature]</i>	11-15-10
APPROVED:	DATE:	APPROVED:	DATE:
<i>[Signature]</i>	11-15-10	<i>[Signature]</i>	11-15-10

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
 STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
PRECAST OR CAST-IN-PLACE
COG / COS OPENING FOR 5' CURB
5' OR 10' ONLY
 STANDARD NO. MD 374.68

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 1/7/11
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 1/7/11
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 1/15/11
 DIRECTOR DATE

NO.	DATE	REVISION
1	3-21-2010	REVISE TOTAL SHEET NUMBER TO 29

BENCHMARK ENGINEERING, INC.
 8480 BALTIMORE NATIONAL PIKE SUITE 418 A ELICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-6644
 WWW.BE-CMLENGINEERING.COM

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. 08559 (Expiration Date: 7-23-2011).

[Signature] 1/15/2010

OWNER: MUSIC FAIR LIMITED PARTNERSHIP
 1205 YORK ROAD, FLOOR 4
 LUTHERVILLE, MARYLAND 21093
 410-825-8400

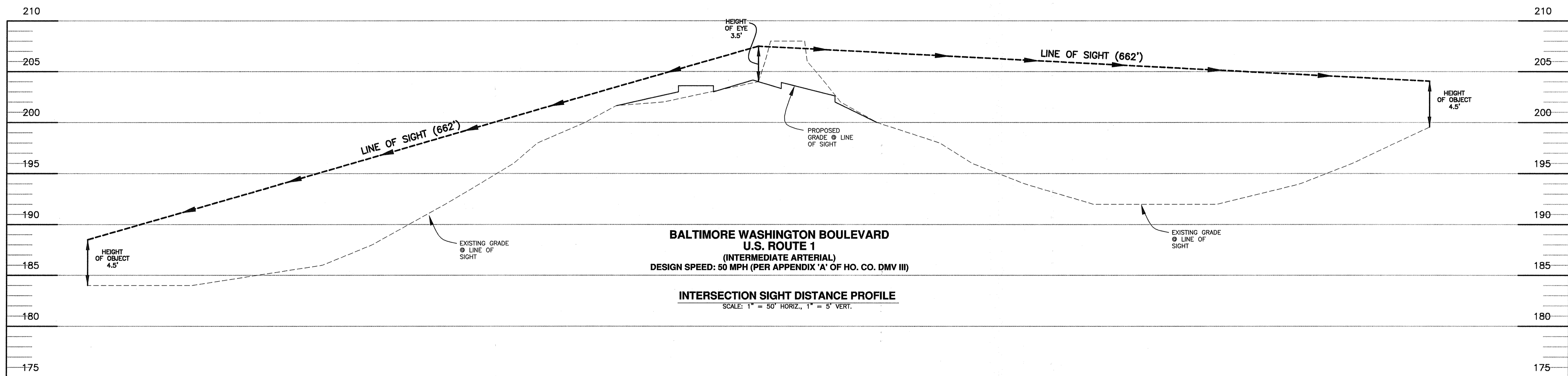
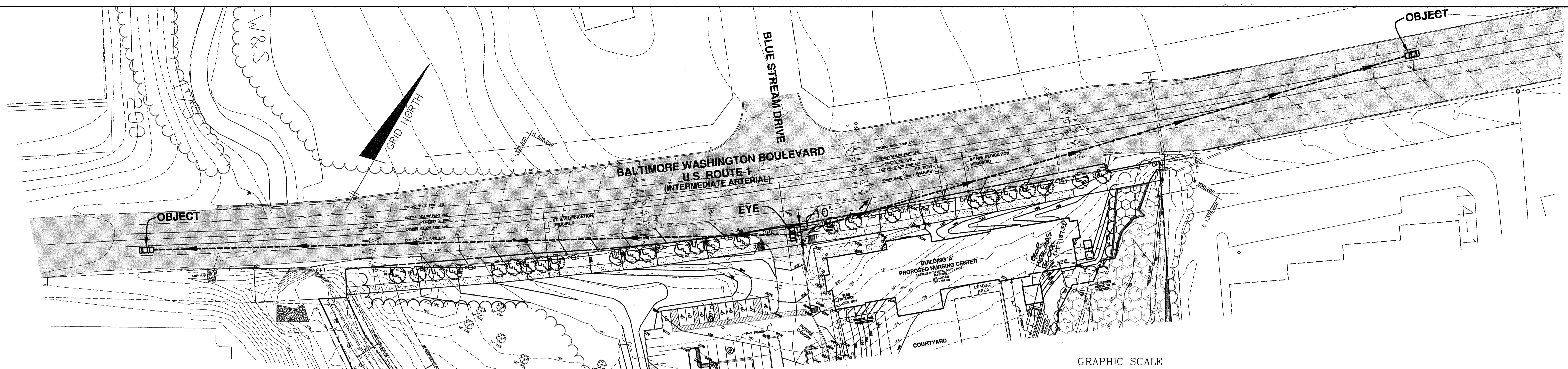
DEVELOPER: COMMERCIAL CONTRACTORS
 1205 YORK ROAD, PENTHOUSE
 LUTHERVILLE, MARYLAND 21093
 410-825-8400

LORIEN-ELKRIDGE
 PARCEL 'A'

TAX MAP: 43 - GRID: 10 - PARCEL: 32
 ZONED: FOR
 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

US ROUTE 1 ROAD IMPROVEMENT
CROSS-SECTIONS AND DETAILS

DATE: NOVEMBER, 2010 BEI PROJECT NO. 2071
 SCALE: AS SHOWN SHEET 21 OF 29



**BALTIMORE WASHINGTON BOULEVARD
U.S. ROUTE 1
(INTERMEDIATE ARTERIAL)
DESIGN SPEED: 50 MPH (PER APPENDIX 'A' OF HO. CO. DMV III)**

INTERSECTION SIGHT DISTANCE PROFILE
SCALE: 1" = 50' HORIZ., 1" = 5' VERT.

INTERSECTION SIGHT DISTANCE

ISD = 1.47(V_{major})(t_g)
 WHERE:
 ISD = intersection sight distance (length of the leg of sight triangle along the major road)(ft)
 V_{major} = design speed of major road(mph)
 t_g = time gap for minor road vehicle to enter the major road (s)
 7.5s for CASE B1, 6.5s for CASE B2 and B3 per EXHIBIT 9-54 and 9-57

NOTE:
 PER SECTION 2.5.B.9 OF HOWARD COUNTY DESIGN MANUAL VOL.III;
 INTERSECTION SIGHT DISTANCE IS MEASURED USING A HEIGHT OF EYE OF 3.5 FEET AND HEIGHT OF OBJECT OF 4.5 FEET. THE DISTANCE IS MEASURED FROM A POINT 10 FEET BACK FROM THE EDGE OF PAVING.

TIME GAP FOR CASE B1 - LEFT TURN FROM STOP

DESIGN VEHICLE	TIME GAP (t _g)(seconds)
Passenger Car	7.5
Single-Unit truck	9.5
Combination truck	11.5

Time gaps are for a stopped vehicle to turn left onto a two-lane highway with no median and grades 3 percent or less. The table values require adjustment as follows:
 For multilane highways:
 For left turns onto two-way highways with more than two lanes, add 0.5 seconds for passenger cars or 0.7 seconds for trucks for each additional lane, from the left, in excess of one to be crossed by turning vehicle.

For minor road approach grades:
 If the approach grade is an upgrade that exceeds 3 percent; add 0.2 seconds for each percent grade for left turns.

INTERSECTION SIGHT DISTANCE LEFT TURN	
ISD = 1.47(V _{major})(t _g)	
ISD = 1.47 (50) (7.5+0.5+0.5+0.5)	
ISD = 662'	

TIME GAP FOR CASE B2 - RIGHT TURN FROM STOP AND CASE B3 - CROSSING MANEUVER

DESIGN VEHICLE	TIME GAP (t _g)(seconds)
Passenger Car	6.5
Single-Unit truck	8.5
Combination truck	10.5

Time gaps are for a stopped vehicle to turn left onto a two-lane highway with no median and grades 3 percent or less. The table values require adjustment as follows:
 For multilane highways:
 For left turns onto two-way highways with more than two lanes, add 0.5 seconds for passenger cars or 0.7 seconds for trucks for each additional lane, from the left, in excess of one to be crossed by turning vehicle.

For minor road approach grades:
 If the approach grade is an upgrade that exceeds 3 percent; add 0.1 seconds for each percent grade for left turns.

INTERSECTION SIGHT DISTANCE RIGHT TURN	
ISD = 1.47(V _{major})(t _g)	
ISD = 1.47 (50) (6.5)	
ISD = 478'	

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 1/2/10
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 1/2/10
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 1/15/10
 DIRECTOR DATE

NO. 1		DATE 3-21-2019		REVISION RANGE TOTAL SHEET NUMBER TO 29	
BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE SUITE 418 & ELLICOTT CITY, MARYLAND 21043 (P) 410-465-8105 (F) 410-465-6644 WWW.BE-CIVILENGINEERING.COM				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. 20559 (Expiration Date: 7-22-2011). 	
OWNER:		LORIEN-ELKRIDGE PARCEL 'A' TAX MAP: 43 - GRID: 10 - PARCEL: 32 ZONED: FOR ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND			
DEVELOPER:		COMMERCIAL CONTRACTORS 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400			
DATE: NOVEMBER, 2010		BEI PROJECT NO. 2071		SHEET 22 OF 29	
SCALE: AS SHOWN		SDP-11-002			

SPECIFICATIONS

MODULAR CONCRETE BLOCK RETAINING WALL

PART 1: GENERAL

- 1.01 Description
- A. Work shall consist of furnishing and construction of a Modular Retaining Wall System in accordance with these specifications and in reasonably close conformity with the lines, grades, design, and dimensions shown on the plans.
- B. Work includes preparing foundation soil, furnishing and installing leveling pad, unit drainage fill and backfill to the lines and grades shown on the construction drawings.
- C. Work includes furnishing and installing geogrid soil reinforcement of the type, size, location, and lengths designated on the construction drawings.

- 1.02 Delivery, Storage and Handling
- A. Contractor shall check all materials upon delivery to assure that the proper type, grade, color, and certification has been received.
- B. Contractor shall protect all materials from damage due to job site conditions and in accordance with manufacturer's recommendations. Damaged materials shall not be incorporated into the work.

PART 2: PRODUCTS

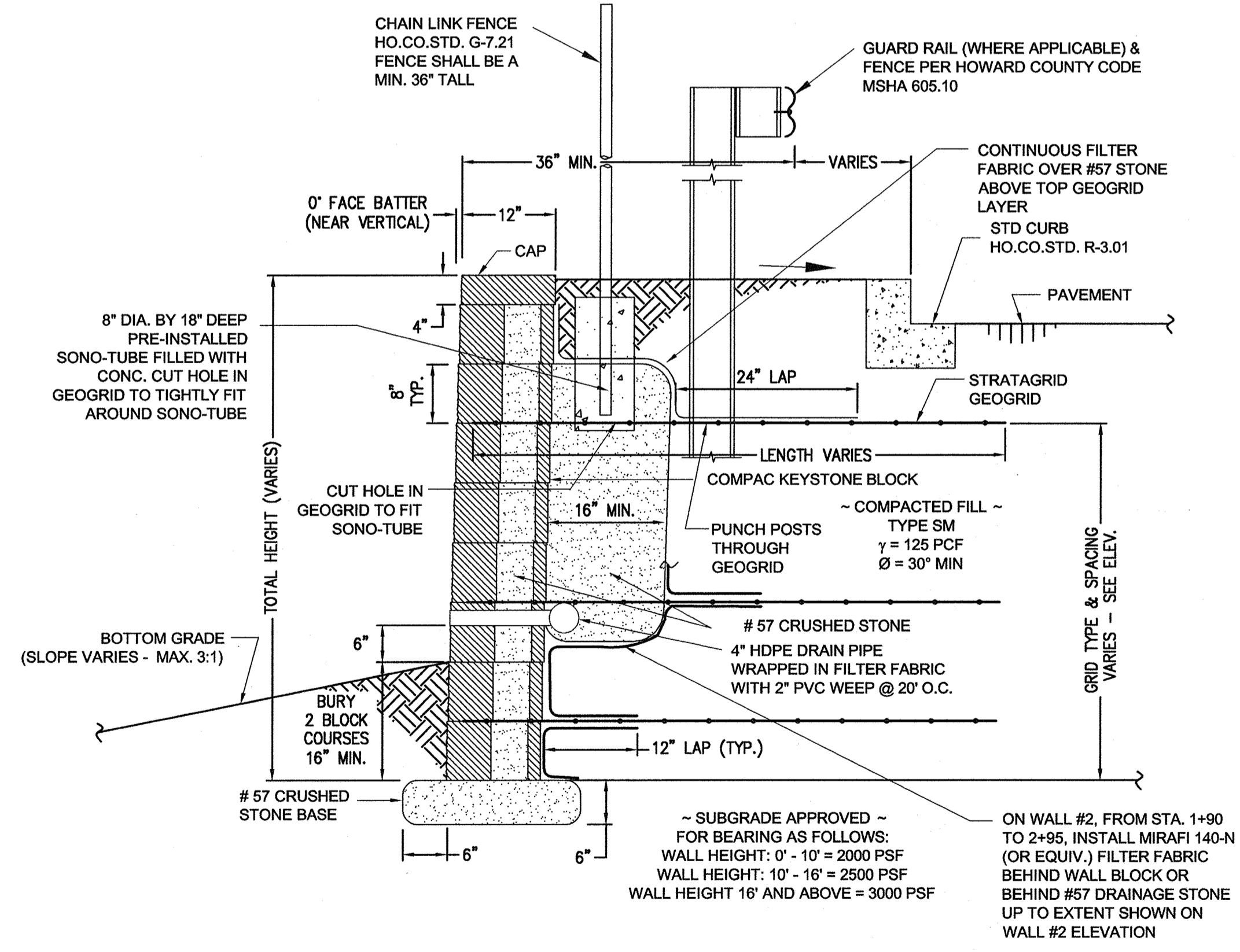
- 2.01 Modular Concrete Retaining Wall Units
- A. Modular concrete units shall conform to the following architectural requirements:
- face color - concrete gray - standard manufacturers' color may be specified by the Owner;
 - face finish - sculptured rock face in angular tri-planer configuration. Other face finishes will not be allowed without written approval of Owner.
 - bond configuration - running with bonds nominally located at midpoint vertically adjacent units, in both straight and curved alignments.
- B. Modular concrete materials shall conform to the requirements of ASTM C1372 - Standard Specifications for Segmental Retaining Wall Units.
- C. Modular concrete units shall conform to the following structural and geometric requirements measured in accordance with appropriate references:
- compressive strength = 3000 psi minimum;
 - absorption = 8 % maximum (8% in northern states) for standard weight aggregates;
 - dimensional tolerances = ± 1/8" from nominal unit dimensions not including rough split face, ±1/16" unit height - top and bottom planes;
 - unit size - 8" (H) x 18" (W) x 12" (D) minimum;
 - unit weight - 75 lbs/unit minimum for standard weight aggregates;

- inter-unit shear strength - 1000 pif minimum at 2 psi normal pressure;
- geogrid/unit peak connection strength - 1000 pif minimum at 2 psi normal force.
- D. Modular concrete units shall conform to the following constructability requirements: (If applicable)
- vertical setback = 1/8" ± per course (near vertical) or 1" ± per course per the design;
 - alignment and grid positioning mechanism - fiberglass pins, two per unit minimum;
 - maximum horizontal gap between erected units shall be 1/2 inch.
- 2.02 Shear Connectors (If applicable)
- A. Shear connectors shall be 1/2 inch diameter thermoset isophthalic polyester resin-protuded fiberglass reinforcement rods or equivalent to provide connection between vertically and horizontally adjacent units. Strength of shear connectors between vertical adjacent units shall be applicable over a design temperature of 10 degrees F to + 100 degrees F.
- B. Shear connectors shall be capable of holding the geogrid in the proper design position during grid pre-tensioning and backfilling.
- 2.03 Base Leveling Pad Material
- A. Material shall consist of a compacted #57 crushed stone base as shown on the construction drawings.
- 2.04 Unit Drainage Fill
- A. Unit drainage fill shall consist of #57 crushed stone
- 2.05 Reinforced Backfill
- A. Reinforced backfill shall type SM, be free of debris and meet the following gradation tested in accordance with ASTM D-422 and meet other properties shown on the plan:
- | Sieve Size | Percent Passing |
|------------|-----------------|
| 2 inch | 100-75 |
| 3/4 inch | 100-75 |
| No. 40 | 0-40 |
| No. 200 | 0-40 |
- Plasticity Index (PI) <10 and Liquid Limit <40 per ASTM D-4318.
- B. Material can be site excavated soils where the above requirements can be met. Unsuitable soils for backfill (high plastic clays or organic soils) shall not be used in the reinforced soil mass.
- 2.06 Geogrid Soil Reinforcement
- A. Geosynthetic reinforcement shall consist of geogrids manufactured specifically for soil reinforcement

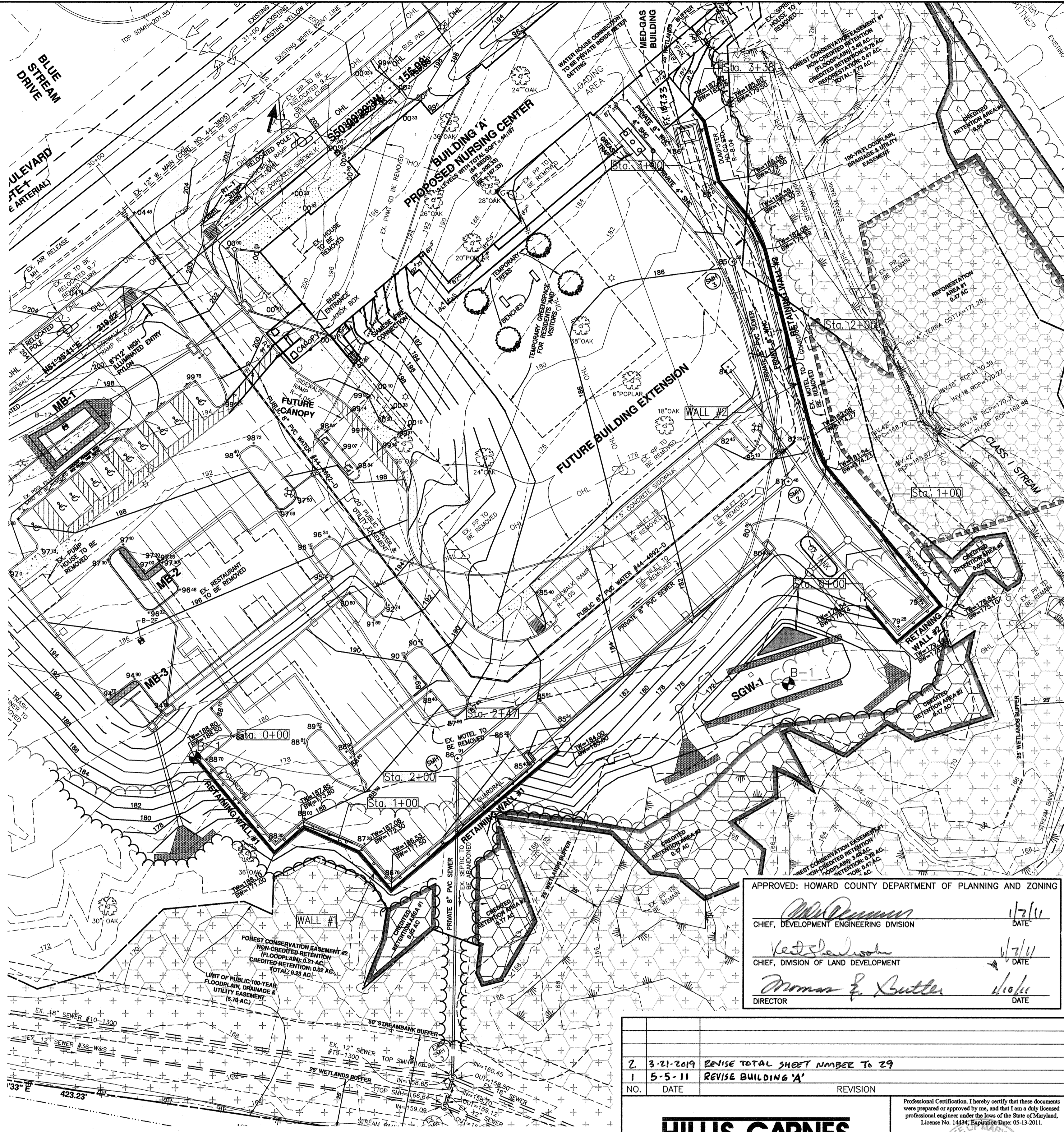
- applications and shall be manufactured from high tenacity polyester yarn.
- 2.07 Drainage Pipe
- A. The drainage pipe shall be perforated corrugated HDPE pipe manufactured in accordance with ASTM D-1248.
- PART 3 EXECUTION
- 3.01 Excavation
- A. Contractor shall excavate to the lines and grades shown on the construction drawings. Owner's representative shall be responsible for inspecting and approving the excavation prior to placement of leveling material or fill soils.
- 3.02 Base Leveling Pad
- A. Leveling pad material shall be placed to the lines and grades shown on the construction drawings, to a minimum thickness of 6 inches and extend laterally a minimum of 6" in front and behind the modular wall unit.
- B. Leveling pad shall be prepared to insure full contact to the base surface of the concrete units.
- 3.03 Modular Unit Installation
- A. First course of units shall be placed on the leveling pad at the appropriate line and grade. Alignment and level shall be checked in all directions and insure that all units are in full contact with the base and properly seated.
- B. Place the front of units side-by-side. Do not leave gaps between adjacent units. Layout of corners and curves shall be in accordance with manufacturer's recommendations.
- C. Install shear/connecting devices per manufacturer's recommendations.
- D. Place and compact drainage fill within and behind wall units. Place and compact backfill soil behind drainage fill. Follow wall erection and drainage fill closely with structure backfill.
- E. Maximum stacked vertical height of wall units, prior to unit drainage fill and backfill placement and compaction, shall not exceed three courses.
- 3.04 Structural Geogrid Installation
- A. Geogrid shall be oriented with the highest strength axis perpendicular to the wall alignment.
- B. Geogrid reinforcement shall be placed at the strengths, lengths, and elevations shown on the construction design drawings or as directed by the Engineer.
- C. The geogrid shall be laid horizontally on compacted backfill and attached to the modular wall units. Place the next course of modular concrete units over the geogrid. The geogrid shall be pulled taut, and anchored prior to backfill placement on the geogrid.

- D. Geogrid reinforcements shall be continuous throughout their embedment lengths and placed side-by-side to provide 100% coverage at each level. Spliced connections between shorter pieces of geogrid or gaps between adjacent pieces of geogrid are not permitted.
- 3.05 Reinforced Backfill Placement
- A. Reinforced backfill shall be placed, spread, and compacted in such a manner that minimizes the development of slack in the geogrid and installation damage.
- B. Reinforced backfill shall be placed and compacted in lifts not to exceed 6 inches where hand compaction is used, or 8 - 10 inches where heavy compaction equipment is used. Lift thickness shall be decreased to achieve the required density as required.
- C. Reinforced backfill shall be compacted to 95% of the maximum density as determined by ASTM D698. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be + 3% to - 3% of optimum.
- D. Only light weight hand-operated equipment shall be allowed within 3 feet from the tail of the modular concrete unit.
- E. Tracked construction equipment shall not be operated directly upon the geogrid reinforcement. A minimum fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.
- F. Rubber tired equipment may pass over geogrid reinforcement at slow speeds, less than 10 MPH. Sudden braking and sharp turning shall be avoided.
- G. At the end of each day's operation, the Contractor shall slope the last lift of reinforced backfill away from the wall units to direct runoff away from wall face. The Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.
- 3.06 Cap Installation
- A. Cap units shall be glued to underlying units with an all-weather adhesive recommended by the manufacturer.
- 3.07 Field Quality Control
- A. The Owner shall engage inspection and testing services, including independent laboratories, to provide quality assurance and testing services during construction.
- B. As a minimum, quality assurance testing should include foundation soil inspection, soil and backfill testing, verification of design parameters, and observation of construction for general compliance with design drawings and specifications.

- NOTES:
- No trees shall be planted within 10 feet of the top of the retaining wall.
 - Retaining walls shall only be constructed under the observation of a registered professional engineer and a (NICET, WACEL, or equiv.) certified soils technician.
 - One soil boring shall be required every one hundred feet along the entire length of the wall. Copies of all boring reports shall be provided to the Howard County Inspector Prior to the start of construction.
 - The required bearing pressure beneath the wall system shall be verified in the field by a certified soils technician. Testing documentation must be provided to the Howard County Inspector prior to start of construction. The required bearing test shall be the Dynamic Cone Penetrometer test ASTM STP-399.
 - The suitability of fill material shall be confirmed by the on-site soils technician. Each 8" lift must be compacted to a minimum 95% standard proctor density and the testing report shall be made available to the Howard County Inspector upon completion of construction.
 - Walls shall not be constructed on uncultivated fill materials.
 - Walls shall not be constructed within a Howard Co. right-of-way or easement.



TYPICAL WALL SECTION
N.T.S.



WALL LOCATION PLAN
1" = 30'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Michael J. ... 1/7/11
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kevin ... 1/7/11
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Norman E. Butler 1/6/11
DIRECTOR DATE

NO.	DATE	REVISION
2	3-21-2019	REVISE TOTAL SHEET NUMBER TO 29
1	5-5-11	REVISE BUILDING 'A'

HILLIS-CARNES
ENGINEERING ASSOCIATES

10975 Guilford Road, Suite A Annapolis Junction, MD
(410) 880-4788 Fax: (410) 880-4098

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. 14344, Expiration Date: 05-15-2011.

[Signature] 11/6/2010

OWNER:
MUSIC FAIR LIMITED PARTNERSHIP
1205 YORK ROAD, FLOOR 4
LUTHERVILLE, MARYLAND 21093
410-825-8400

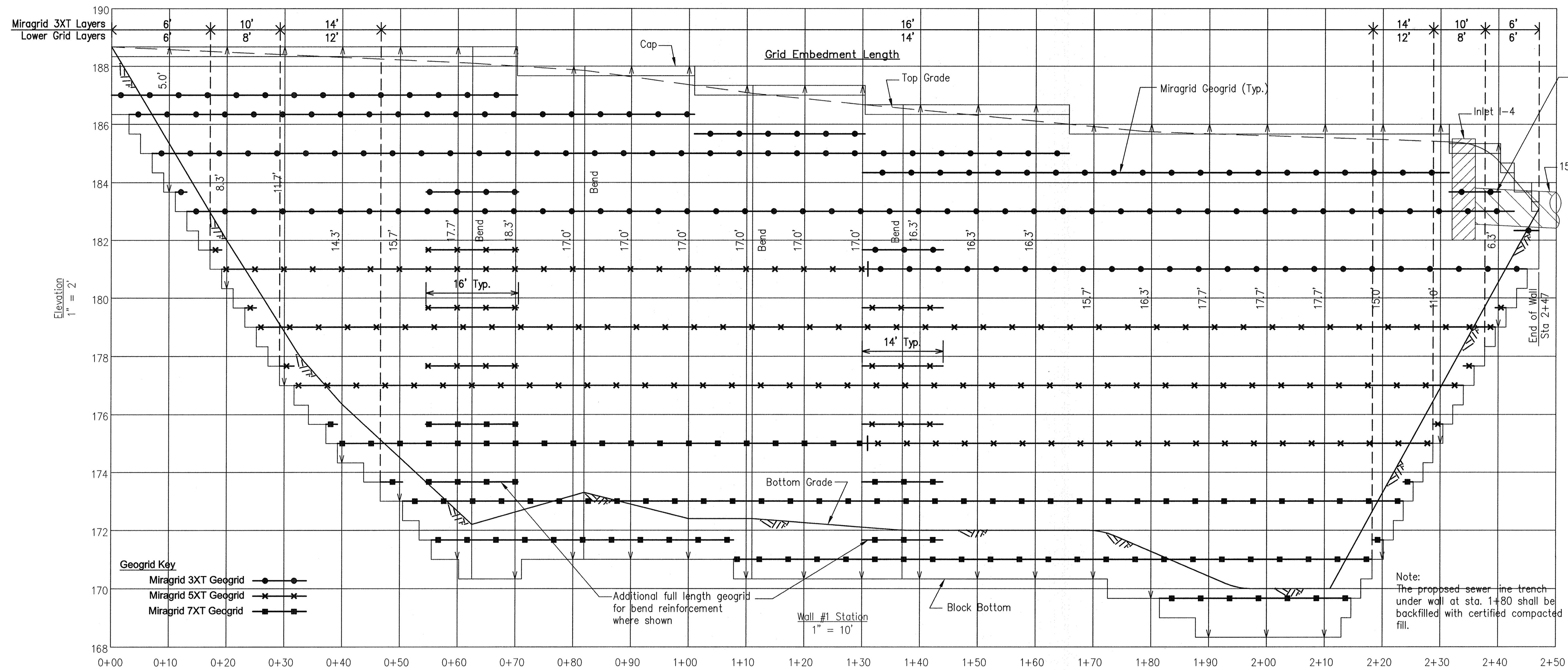
DEVELOPER:
COMMERCIAL CONTRACTORS
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

LORIEN-ELKRIDGE
PARCEL 'A'

TAX MAP: 43 - GRID: 10 - PARCEL: 32
ZONED: POR
ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

RETAINING WALL PLAN AND DETAILS

DATE: NOVEMBER, 2010 HCEA PROJECT NO. 10309-B
SCALE: AS SHOWN SHEET 23 OF 29



Note:
Install inlet I-4 and pipe during wall construction. Backfill around entire outside perimeter of inlet I-4 full height with a 2 ft. thick wrap of compacted soil cement consisting of a ratio of 180 lbs. Portland cement thoroughly mixed with 1 cu. yd. of type SM soil at 3% over optimum moisture. Trim full length geogrids at face of inlet structure and embed in soil cement. Place soil-cement within 2 hours after mixing.

Note:
Slope geogrid layers up or down as needed to avoid conflict with storm drain pipe.

Note:
The proposed sewer line trench under wall at sta. 1+80 shall be backfilled with certified compacted fill.

WALL #1 ELEVATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

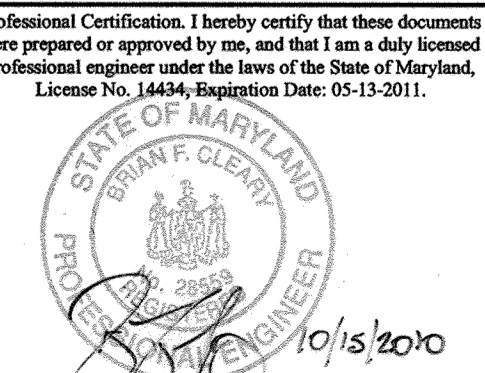
Howard County 1/7/11
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

West 1/7/11
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Thomas E. Butcher 1/10/11
DIRECTOR DATE

NO.	DATE	REVISION
1	3-21-2019	REVISE TOTAL SHEET NUMBER TO 29

HILLIS-CARNES
ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A Annapolis Junction, MD
(410) 880-4788 Fax: (410) 880-4098



OWNER:
MUSIC FAIR LIMITED PARTNERSHIP
1205 YORK ROAD, FLOOR 4
LUTHERVILLE, MARYLAND 21093
410-825-8400

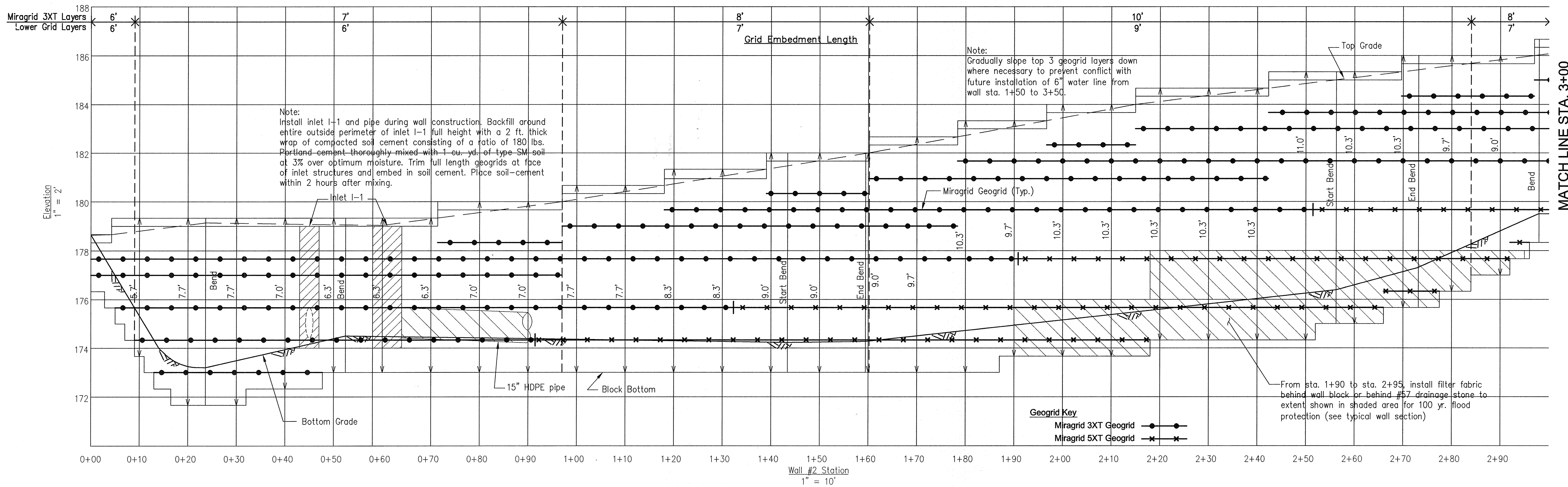
DEVELOPER:
COMMERCIAL CONTRACTORS
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

LORIEN-ELKRIDGE
PARCEL 'A'

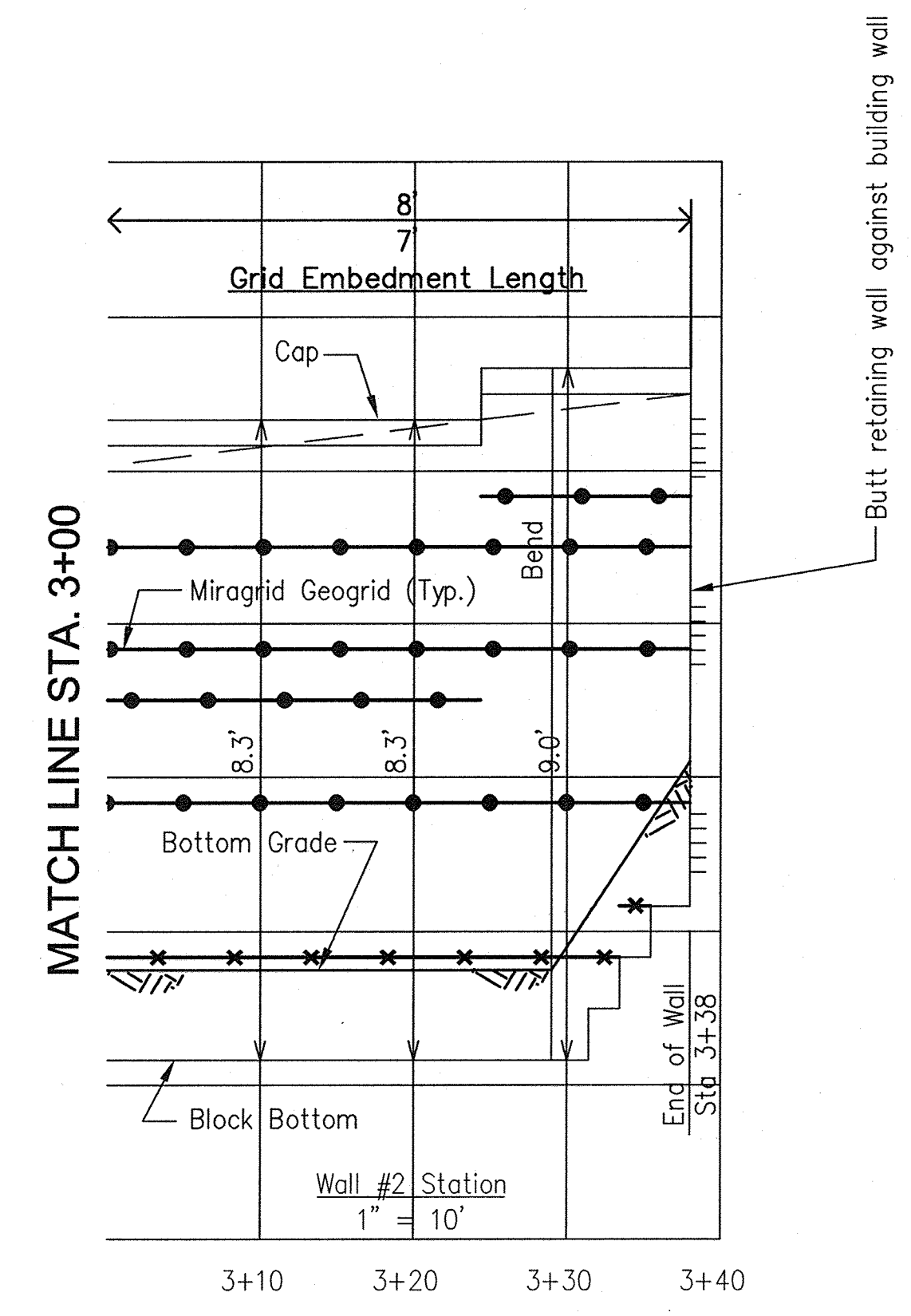
TAX MAP: 43 - GRID: 10 - PARCEL: 32
ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

RETAINING WALL #1 ELEVATION

DATE: NOVEMBER, 2010 HCEA PROJECT NO. 10309-B
SCALE: AS SHOWN SHEET 24 OF 29



WALL #2 ELEVATION



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 1/7/11
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

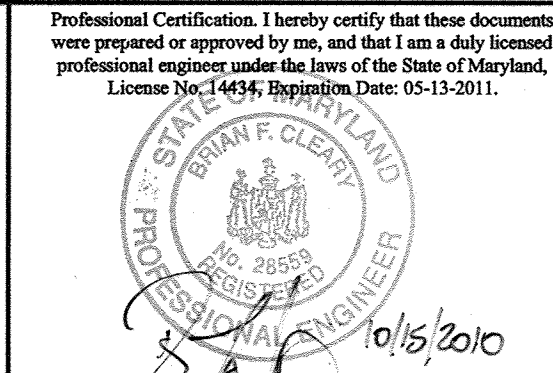
[Signature] 1/7/11
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 1/10/11
DIRECTOR DATE

NO.	DATE	REVISION
1	3-21-2010	REVISE TOTAL SHEET NUMBER TO 29

HILLIS-CARNES
ENGINEERING ASSOCIATES

10975 Guilford Road, Suite A Annapolis Junction, MD
(410) 880-4788 Fax: (410) 880-4098



OWNER:
MUSIC FAIR LIMITED PARTNERSHIP
1205 YORK ROAD, FLOOR 4
LUTHERVILLE, MARYLAND 21093
410-825-8400

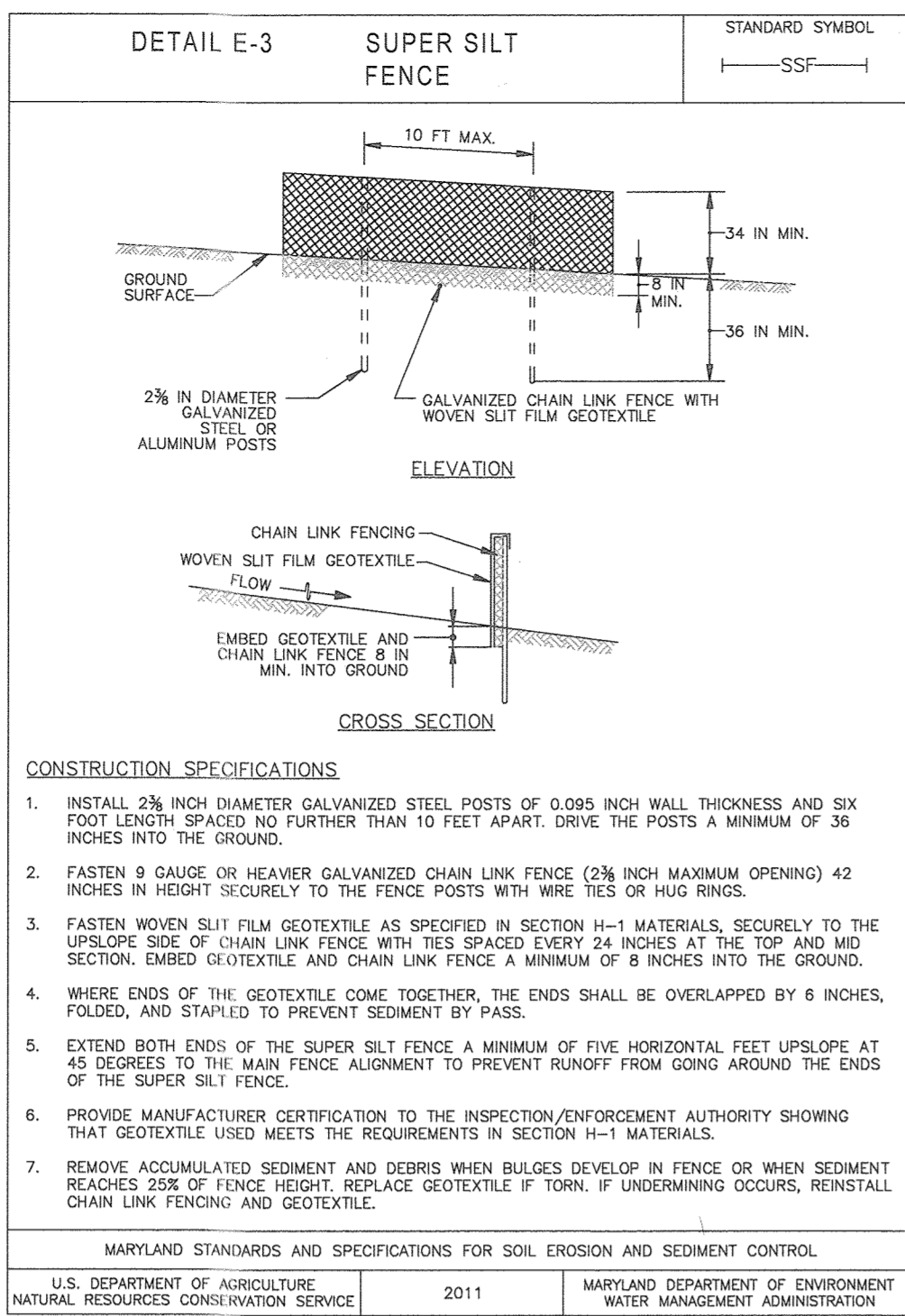
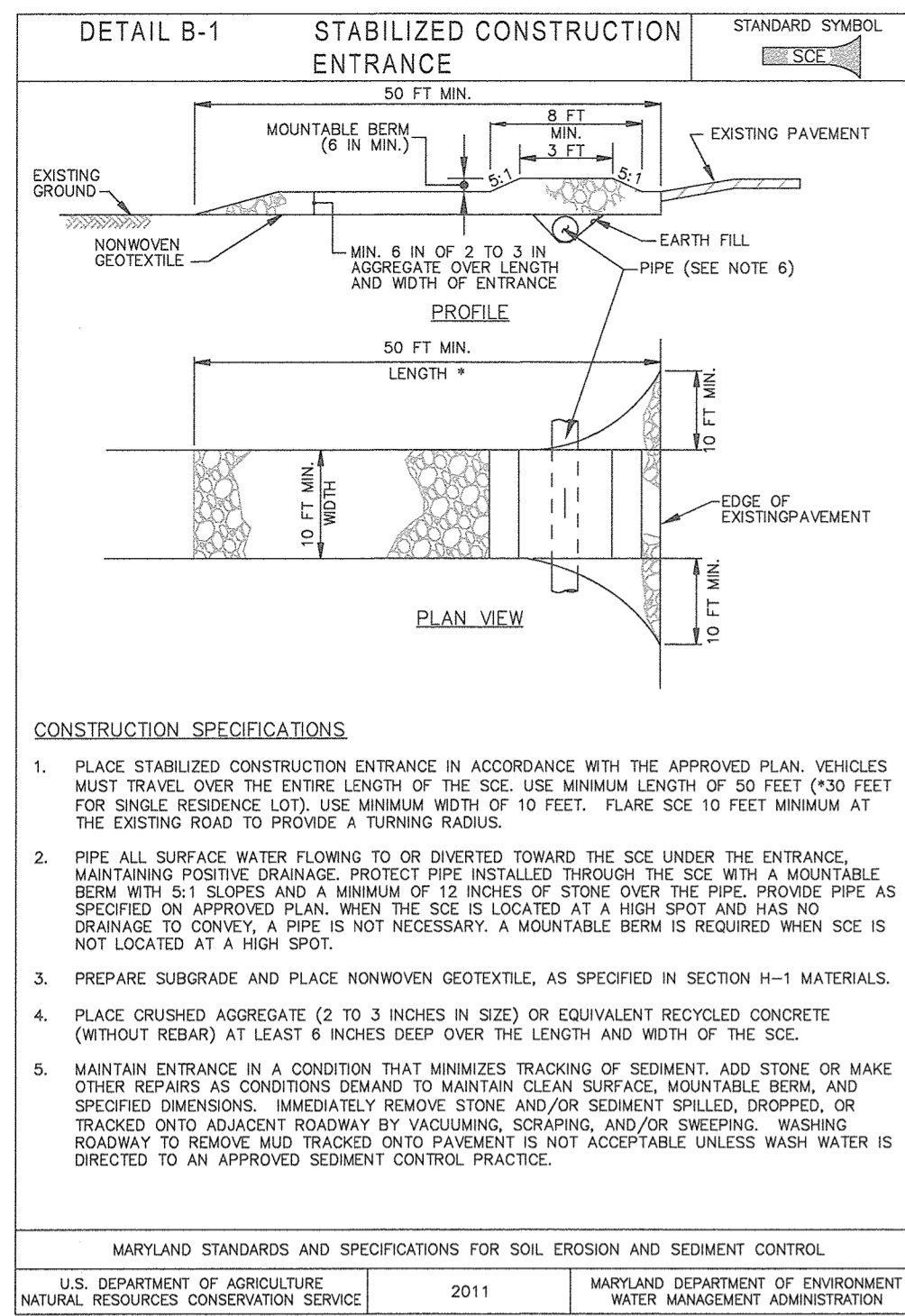
DEVELOPER:
COMMERCIAL CONTRACTORS
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

LORIEN-ELKRIDGE
PARCEL 'A'

TAX MAP: 43 - GRID: 10 - PARCEL: 32
ZONED: PDR
ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

RETAINING WALL #2 ELEVATION

DATE: **NOVEMBER, 2010** HCEA PROJECT NO. 10309-B
SCALE: AS SHOWN SHEET 25 OF 29



SEQUENCE OF CONSTRUCTION

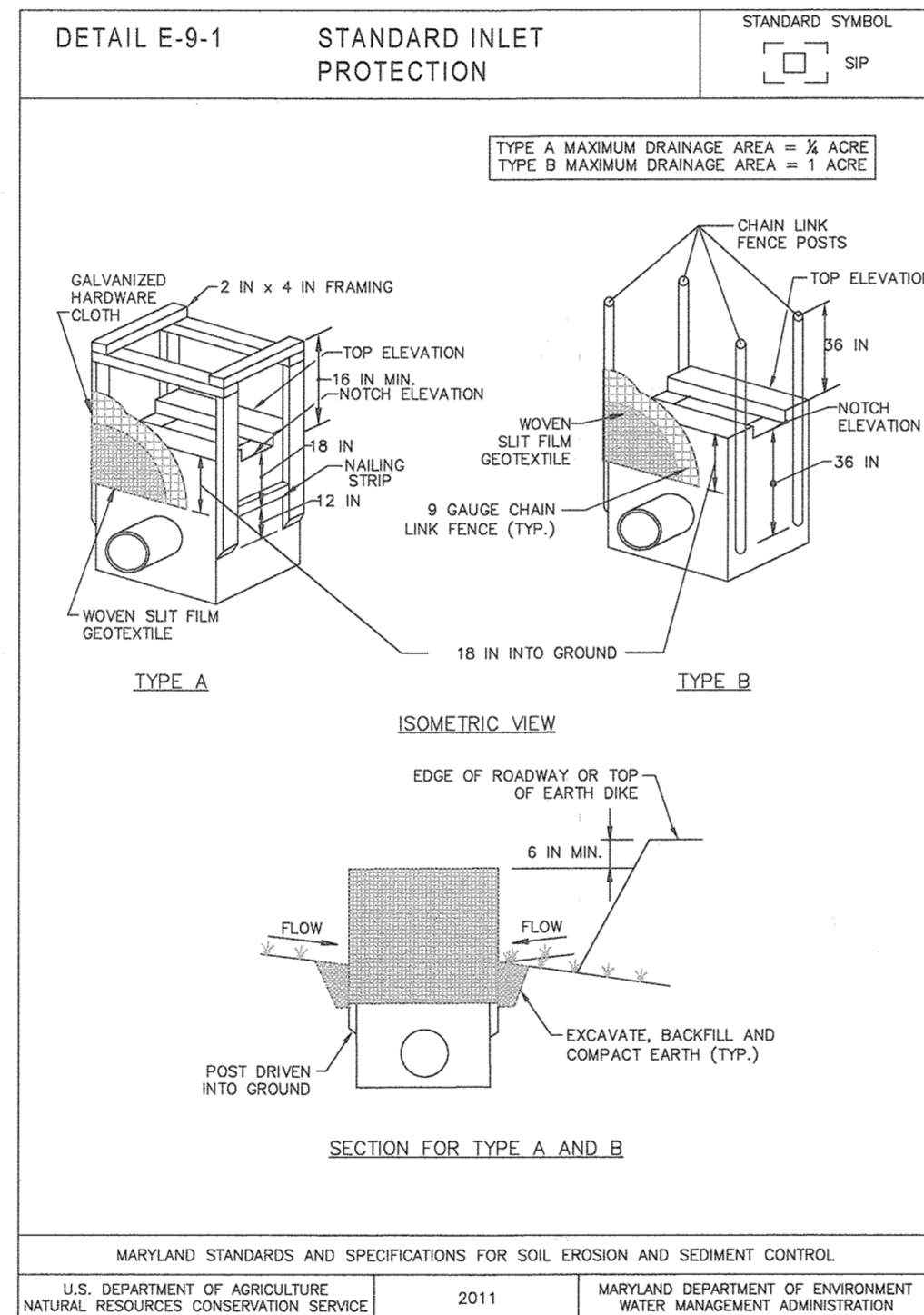
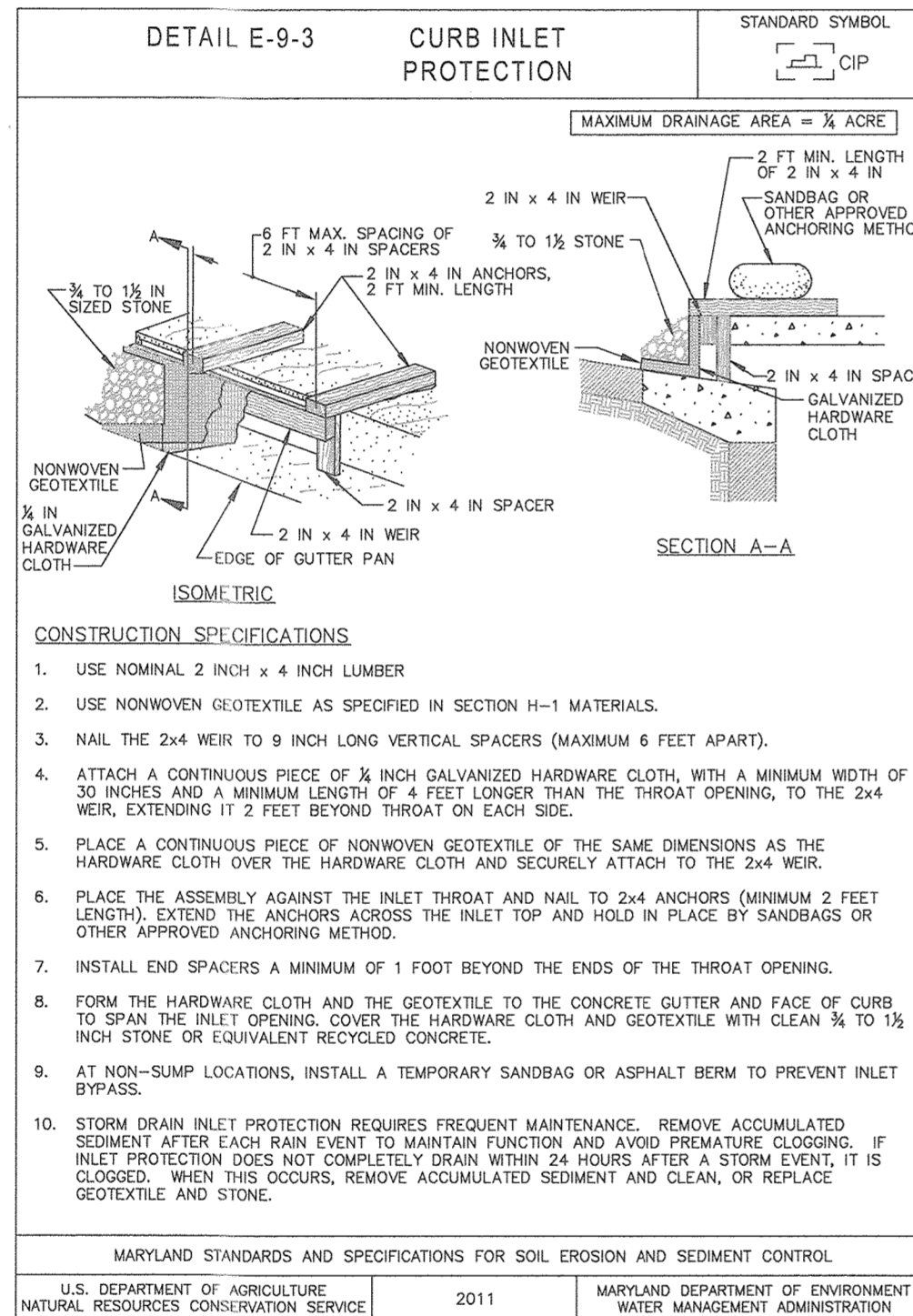
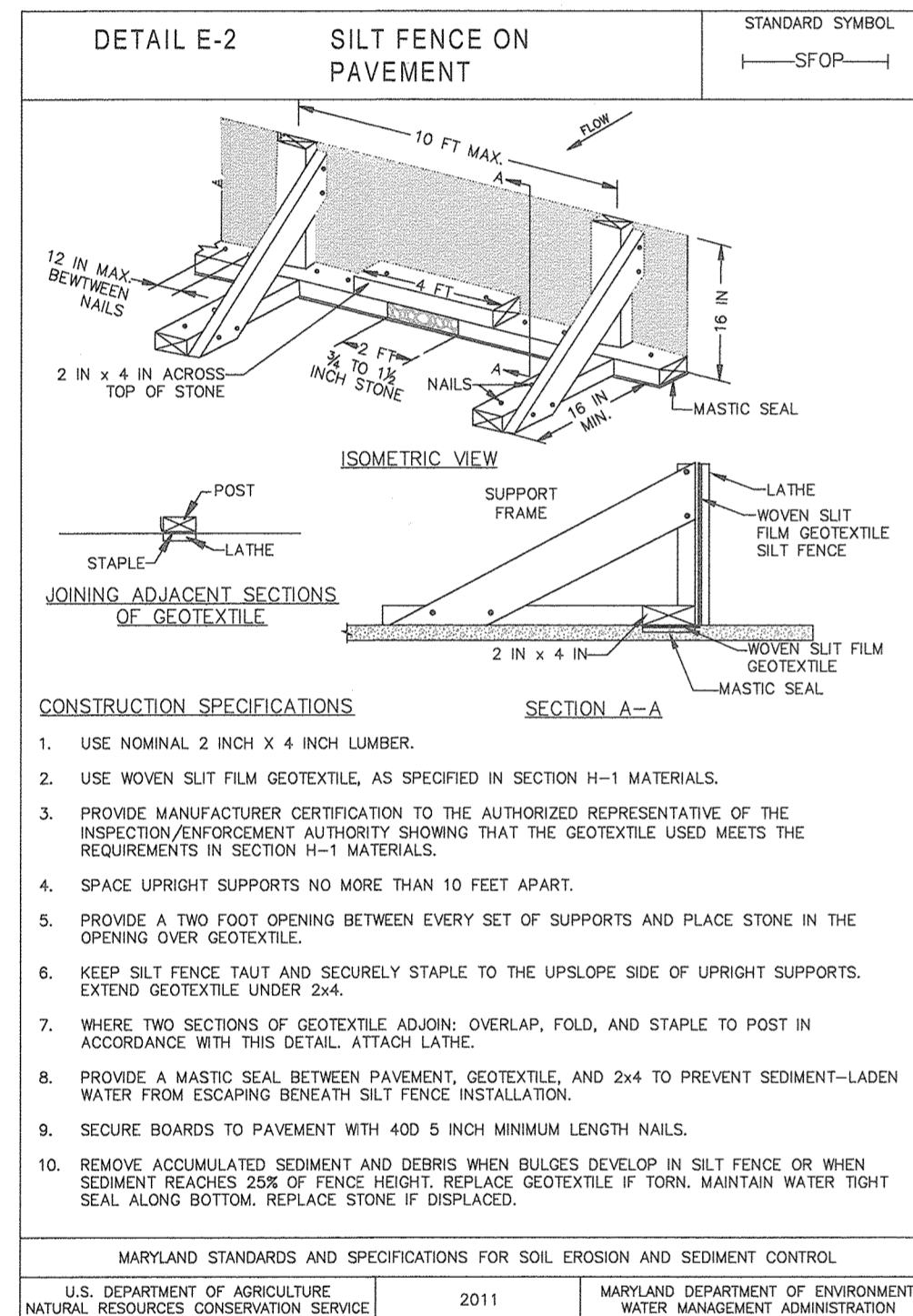
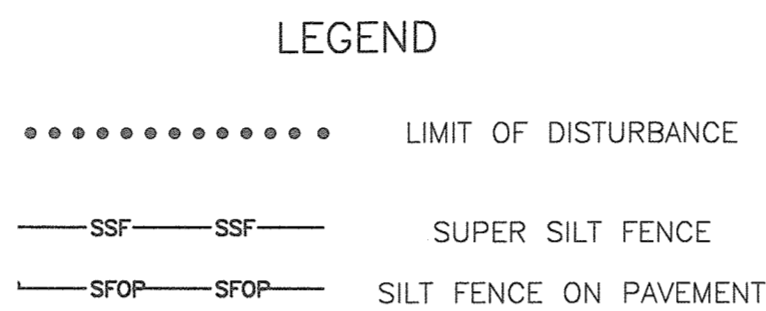
NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF WORK

- Obtain grading permit and demo permit. Notify D.I.P. at 410-313-1880 at least 24 hours before starting any work. (1 day)
- Hold on-site pre-construction meeting. (1 day)
- Install stabilized construction entrance and perimeter super silt fencing. (2 days)
- Construct buildings. Install storm drains and sewer connections. (180 days)
- Complete fine grading of site and stabilize in accordance with the permanent seeded notes. (2 days)
- Upon approval from the Howard County Sediment Control Inspector, remove all sediment control devices and stabilize any remaining disturbed areas in accordance with the permanent seeded notes. (2 days)

Note: Following initial soil disturbance or any re-disturbances, permanent or temporary stabilization shall be completed within:

- 3 calendar days for all perimeter sediment control structures, dikes, swales and all slopes greater than 3:1.
- 7 calendar days for all other disturbed areas.

During grading and after each rainfall, contractor will inspect and provide necessary maintenance to the sediment control measures of this plan.



ENGINEER'S CERTIFICATE

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

Clayton M. ... 1-21-20
ENGINEER DATE

DEVELOPER'S CERTIFICATE

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

John K. ... 1/22/20
DEVELOPER DATE

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

John K. ... 1/23/20
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

... 2.6.20
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

... 2/11/20
CHIEF, DEPARTMENT OF LAND DEVELOPMENT DATE

... 2-13-2020
DIRECTOR DATE

THIS SHEET REPLACES THE PREVIOUS SHEET 26 SIGNED ON 4-24-2019

NO.	DATE	REVISION
1	1-16-2020	REVISE NORTH WING TO BE 1-STORY STORAGE BUILDING. ADJUST SPOT GRADES AND SIDEWALK ACCORDINGLY.

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. 22881, Expiration Date: 6-30-2021.

BENCHMARK ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE & SUITE 315 & ELLICOTT CITY, MARYLAND 21043
(P) 410-485-8105 (F) 410-485-8644
WWW.BE-CIVILENGINEERING.COM

OWNER: MUSIC FAIR LIMITED PARTNERSHIP
1205 YORK ROAD, FLOOR 4
LUTHERVILLE, MARYLAND 21093
410-825-8400

DEVELOPER: COMMERCIAL CONTRACTORS
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

LORIEN-ELKRIDGE
PARCEL 'A'

TAX MAP: 43 - GRID: 10 - PARCEL: 32
ZONED: POR
ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

SEDIMENT AND EROSION CONTROL PHASE 4

DATE: MARCH 21, 2019 BEI PROJECT NO. 2071
SCALE: AS SHOWN SHEET 26 OF 29



ASSISTED LIVING WING - SOUTH ELEVATION
3/32" = 1'-0"



ASSISTED LIVING WING - NORTH ELEVATION
3/32" = 1'-0"



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 4-16-19
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 4-24-19
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 4-24-19
 DIRECTOR DATE

NO.	DATE	REVISION

BENCHMARK
 ENGINEERS • LAND SURVEYORS • PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE & SUITE 315 • ELLOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-6644
 WWW.BE-CIVILENGINEERING.COM

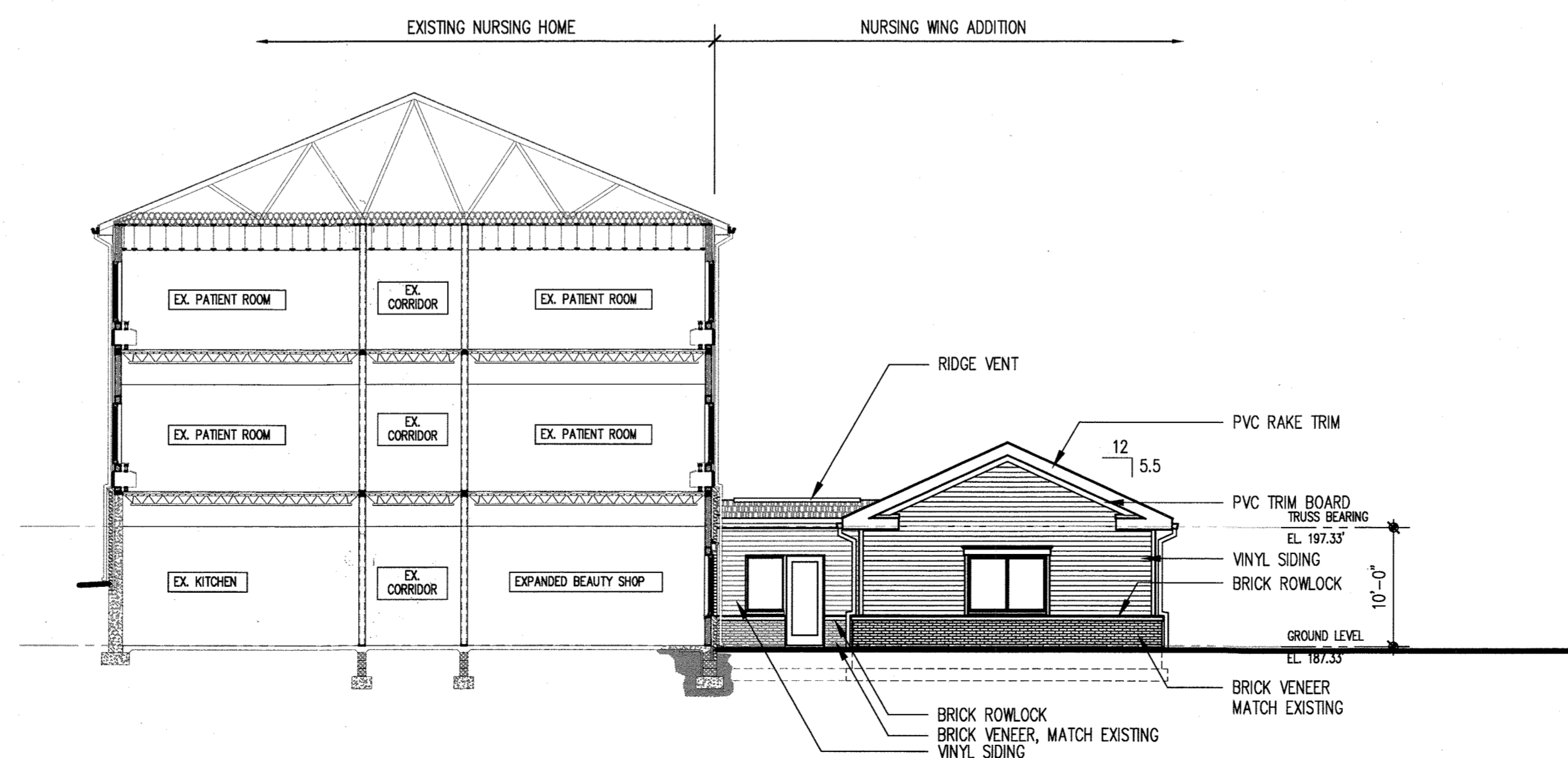
OWNER: MUSIC FAIR LIMITED PARTNERSHIP 1205 YORK ROAD, FLOOR 4 LUTHERVILLE, MARYLAND 21093 410-825-8400	LORIEN-ELKRIDGE PARCEL 'A' TAX MAP: 43 - GRID: 10 - PARCEL: 32 ZONED: POR ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND
DEVELOPER: COMMERCIAL CONTRACTORS 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400	ELEVATIONS DATE: NOVEMBER, 2010 BEI PROJECT NO. 2071 SCALE: AS SHOWN SHEET 28 OF 29



C EAST (REAR) ELEVATION
 A2.2 3/32" = 1'-0"



E STORAGE - NORTH ELEVATION
 A2.2 3/32" = 1'-0"



D STORAGE - SOUTH ELEVATION
 A2.2 3/32" = 1'-0"



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 Chief, Division of Land Development
 Director
 DATE: 2-6-20
 DATE: 2/11/20
 DATE: 2-13-2020

THIS SHEET REPLACES THE PREVIOUS SHEET 29 SIGNED ON 4-24-2019

NO.	DATE	REVISION
1	1-16-2020	REVISE ELEVATION VIEWS TO REFLECT TO BE 1-STORY STORAGE BUILDING.
OWNER:		
MUSIC FAIR LIMITED PARTNERSHIP 1205 YORK ROAD, FLOOR 4 LUTHERVILLE, MARYLAND 21093 410-825-8400		
DEVELOPER:		
COMMERCIAL CONTRACTORS 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400		
LORIEN-ELKRIDGE PARCEL 'A'		
TAX MAP: 43 - GRID: 10 - PARCEL: 32 ZONED: POR ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND		
ELEVATIONS		
DATE:	MARCH 21, 2019	BEI PROJECT NO. 2071
SCALE:	AS SHOWN	SHEET 29 OF 29