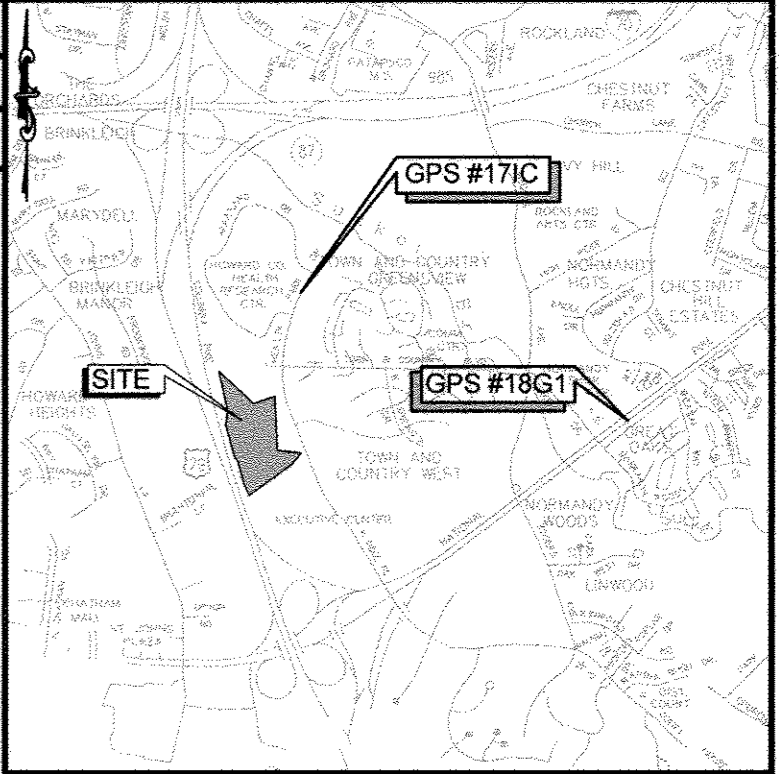


MARYLAND STATE COORDINATE SYSTEM (NAD 83/91)

POINT	NORTHING	EASTING	ELEVATION
#171C	591056.92	1363154.63	415.41
#18G1	589985.06	1367750.24	407.74



VICINITY MAP

SCALE: 1" = 2000'
ADC MAP 21B6

LEGEND

- PROPERTY LINE
- - - ADJOINING PROPERTY LINE
- BUILDING OUTLINE
- EXISTING CONTOUR
- EXISTING TREELINE
- EXISTING EDGE OF PAVEMENT
- LOD
- GNB
- MaC
- 25%-GREATER STEEP SLOPES
- 15-25% STEEP SLOPES
- WETLANDS

SOILS TABLE

SYMBOL	DESCRIPTION	HYDROLOGIC SOILS GROUP	K-VALUE
GgB	GLENELG LOAM, 3-8% SLOPES	B	0.20
GgC	GLENELG LOAM, 8-15% SLOPES	B	0.20
GhB	GLENELG-URBAN LAND COMPLEX 0-8% SLOPES	B	0.20
GnB	GLENVILLE-BAILE SILT LOAMS, 0-8% SLOPES	C	0.37
MaC	MANOR LOAM, 8-15% SLOPES	B	0.24
MaD	MANOR LOAM, 15-25% SLOPES	B	0.24

SOIL MAP #13 (ELLICOTT CITY SW)

KCI TECHNOLOGIES
ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS
11850 WEST MARKET PLACE
SUITE A
FULTON, MD 20759
TELEPHONE: (410) 792-8086
FAX: (410) 792-7419

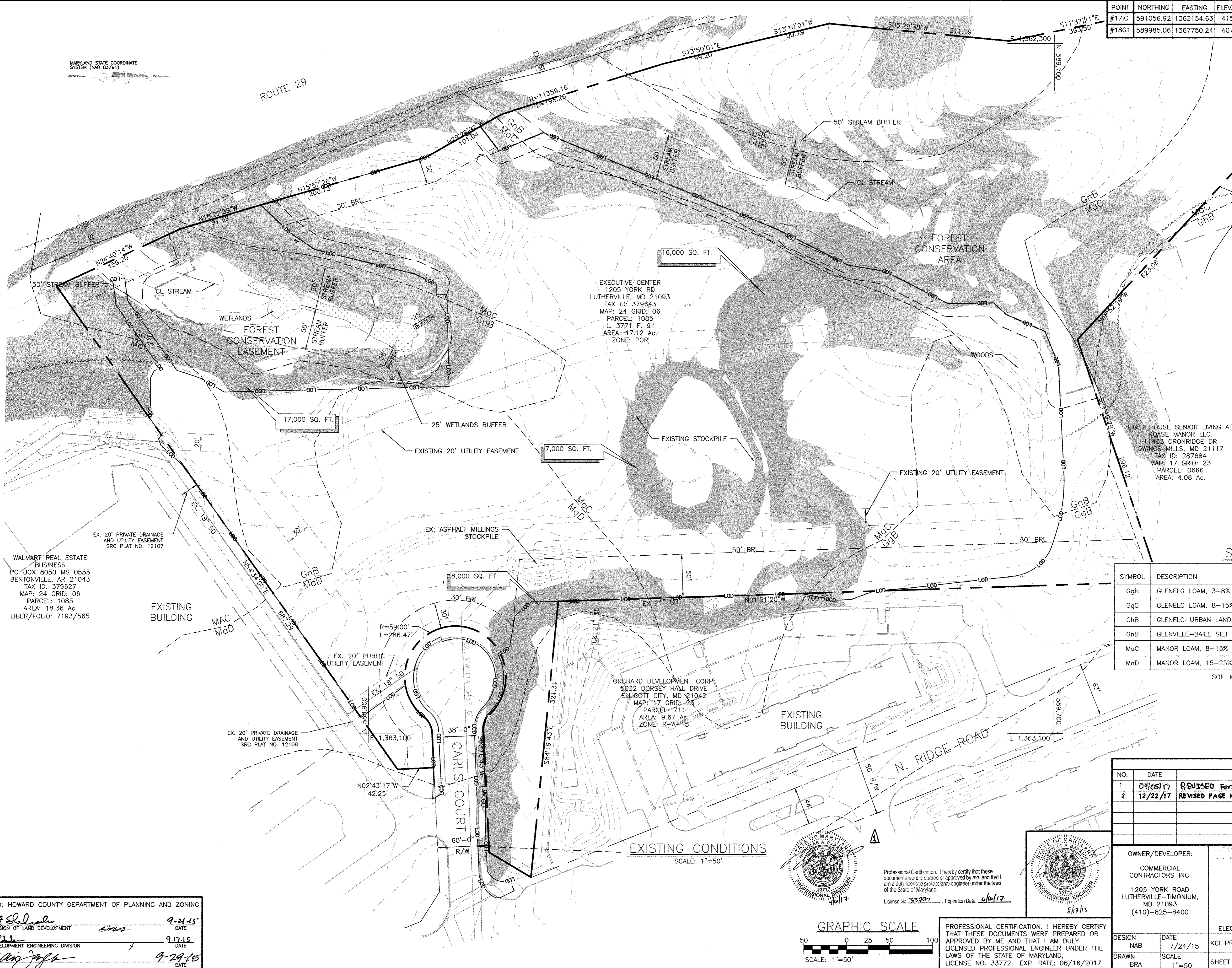
NO.	DATE	REVISIONS	BY
1	04/05/17	REVISED FOR NEW BUILDING LAYOUT	NB
2	12/22/17	REVISED PAGE NUMBERING	BA

OWNER/DEVELOPER:
COMMERCIAL CONTRACTORS INC.
1205 YORK ROAD
LUTHERVILLE-TIMONIUM,
MD 21093
(410)-825-8400

LEGACY AT ELLICOTT'S RETREAT
EXISTING CONDITIONS PLAN
AGE RESTRICTED ADULT HOUSING
TAX MAP: 24 GRID: 06 PARCEL: 1085
ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

DESIGN: NAB DATE: 7/24/15
DRAWN: BRA SCALE: 1"=50'

KCI PROJECT NO. 27134772 SHEET NO. C-0.02
SHEET NO. 2 OF 45



EXECUTIVE CENTER
1205 YORK RD
LUTHERVILLE, MD 21093
TAX ID: 379643
MAP: 24 GRID: 06
PARCEL: 1085
L. 3771 F. 91
AREA: 17.12 Ac.
ZONE: POR

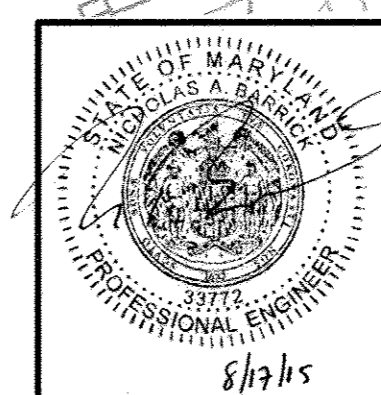
LIGHT HOUSE SENIOR LIVING AT ROASE MANOR LLC
11433 CRONRIDGE DR
OWINGS MILLS, MD 21117
TAX ID: 287684
MAP: 17 GRID: 23
PARCEL: 0666
AREA: 4.08 Ac.

WALMART REAL ESTATE BUSINESS
PO BOX 8050 MS 0555
BENTONVILLE, AR 21043
TAX ID: 379627
MAP: 24 GRID: 06
PARCEL: 1085
AREA: 18.36 Ac.
LIBER/FOLIO: 7193/565

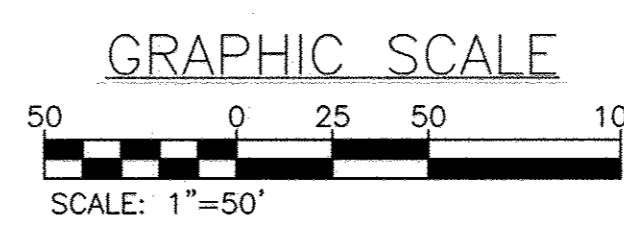
ORCHARD DEVELOPMENT CORP
5032 DORSEY HALL DRIVE
ELLICOTT CITY, MD 21042
MAP: 17 GRID: 23
PARCEL: 711
AREA: 9.67 Ac.
ZONE: R-A=15



Professional Certification, I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 33772, Expiration Date: 6/16/17



PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

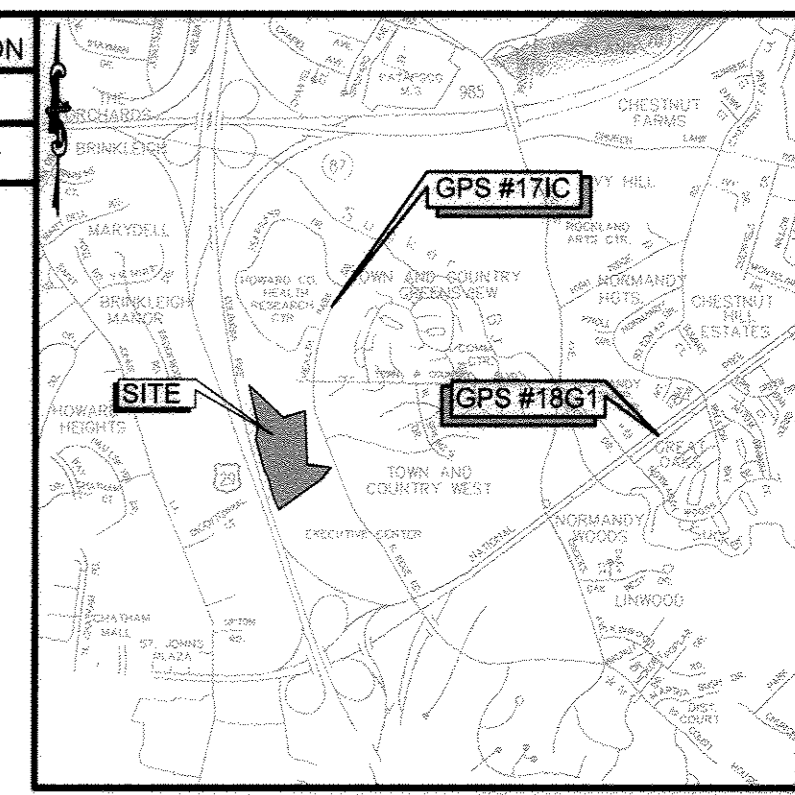
Veronica Salas 9-21-15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Chris Hill 9-17-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Valerie Joffe 9-29-15
DIRECTOR DATE

BENCHMARK DATA			
No.	NORTHING	EASTING	ELEV.
1	588971.65	1362993.12	416.20
2	589778.33	1362905.76	441.80
3	589416.22	1362495.27	418.27

POINT	NORTHING	EASTING	ELEVATION
#17C	591056.92	1363154.63	415.41
#18G1	589985.06	1367750.24	407.74



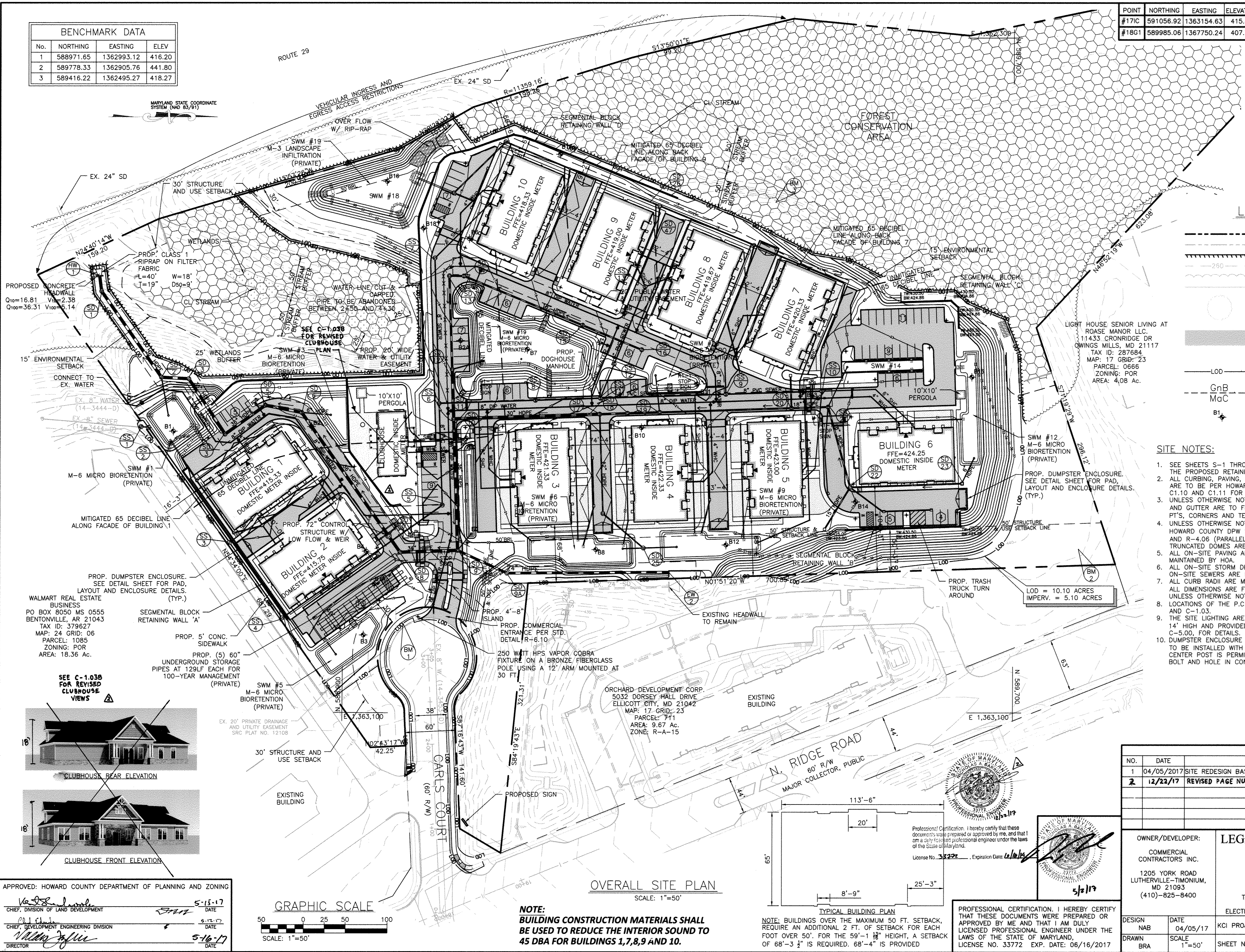
VICINITY MAP
SCALE: 1" = 2000'
ADC MAP 21B6

LEGEND

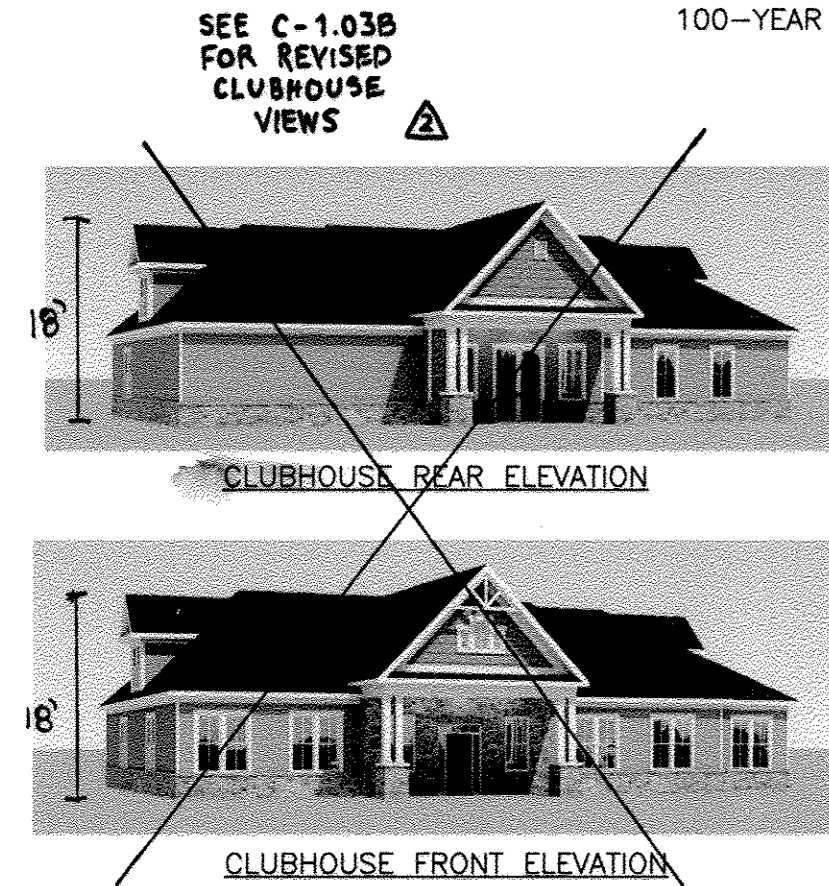
- PROPERTY LINE
- ADJOINING PROPERTY LINE
- EXISTING BUILDING LINE
- EXISTING CONTOUR
- EXISTING TREELINE
- EXISTING EDGE OF PAVEMENT
- EXISTING TREE
- PROPOSED IMPERIOUS PAVEMENT
- LOD --- LIMIT OF DISTURBANCE
- G_nB --- SOILS LINE
- MaC --- SOILS LINE
- ⊕ BORING LOCATION

SITE NOTES:

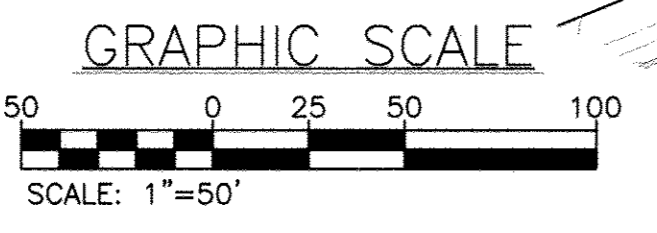
- SEE SHEETS S-1 THROUGH S-5 FOR DETAILS INCLUDING GRADES FOR THE PROPOSED RETAINING WALLS ON SITE.
- ALL CURBING, PAVING, SIDEWALKS, HANDICAP RAMPS AND TRANSITIONS ARE TO BE PER HOWARD COUNTY STANDARD DETAILS. SEE SHEETS C1.10 AND C1.11 FOR DETAILS.
- UNLESS OTHERWISE NOTED, PROPOSED SPOT ELEVATIONS ALONG CURB AND GUTTER ARE TO FLOW LINE (BOTTOM OF CURB) AT THE PC'S & PT'S, CORNERS AND TERMINUSES.
- UNLESS OTHERWISE NOTED, ALL SIDEWALK RAMPS ARE TYPE 'C' PER HOWARD COUNTY DPW STD. DTL. R-4.04 (CURB FILLET APPLICATION) AND R-4.06 (PARALLEL TO CURB APPLICATION) DETECTABLE WARNING TRUNCATED DOMES ARE PER HOWARD COUNTY DPW STD. DTL. R-4.07. ALL ON-SITE PAVING AND ROADWAYS ARE PRIVATELY OWNED AND MAINTAINED BY HOA.
- ALL ON-SITE STORM DRAIN SYSTEMS ARE PRIVATELY MAINTAINED. ALL ON-SITE SEWERS ARE PRIVATELY MAINTAINED.
- ALL CURB RADII ARE MEASURED FROM FACE OF CURB AT FLOW LINE. ALL DIMENSIONS ARE FROM FACE OF STRUCTURE (CURB, BLDG, ETC.) UNLESS OTHERWISE NOTED.
- LOCATIONS OF THE P.C.'S AND P.T.'S ARE SHOWN ON SHEETS C-1.02 AND C-1.03.
- THE SITE LIGHTING ARE 150 WATT COLORED STYLE LAMPS MOUNTED 14" HIGH AND PROVIDED BY BGE. SEE PHOTOMETRIC PLAN, SHEET C-5.00, FOR DETAILS.
- DUMPSTER ENCLOSURE PER STD. DTL. R-8.05. ENCLOSURE GATES ARE TO BE INSTALLED WITH MINIMUM OPENING OF 21'-6" WHEN OPEN. NO CENTER POST IS PERMITTED. GATE LATCH TO BE FITTED WITH CANE BOLT AND HOLE IN CONCRETE PAD FOR LATCHING.



LOD = 10.10 ACRES
IMPERV. = 5.10 ACRES



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 5-15-17 DATE
 5-16-17 DATE



NOTE: BUILDING CONSTRUCTION MATERIALS SHALL BE USED TO REDUCE THE INTERIOR SOUND TO 45 DBA FOR BUILDINGS 1,7,8,9 AND 10.

NOTE: BUILDINGS OVER THE MAXIMUM 50 FT. SETBACK, REQUIRE AN ADDITIONAL 2 FT. OF SETBACK FOR EACH FOOT OVER 50'. FOR THE 59'-1 1/8" HEIGHT, A SETBACK OF 68'-3 1/2" IS REQUIRED. 68'-4" IS PROVIDED

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

REVISIONS			
NO.	DATE	BY	
1	04/05/2017	SITE REDESIGN BASED ON BUILDING CHANGES	BA
2	12/22/17	REVISED PAGE NUMBERING	BA

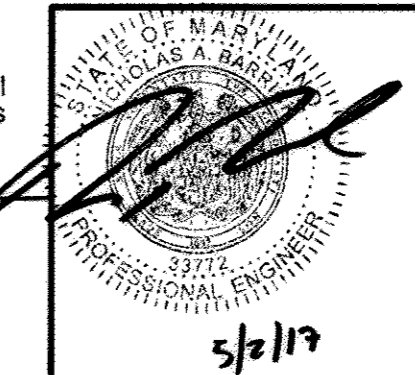
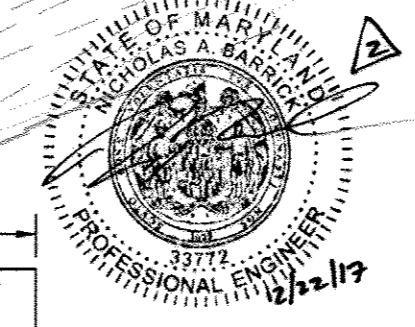
OWNER/DEVELOPER: COMMERCIAL CONTRACTORS INC.
 1205 YORK ROAD LUTHERVILLE-TIMONIUM, MD 21093 (410)-825-8400

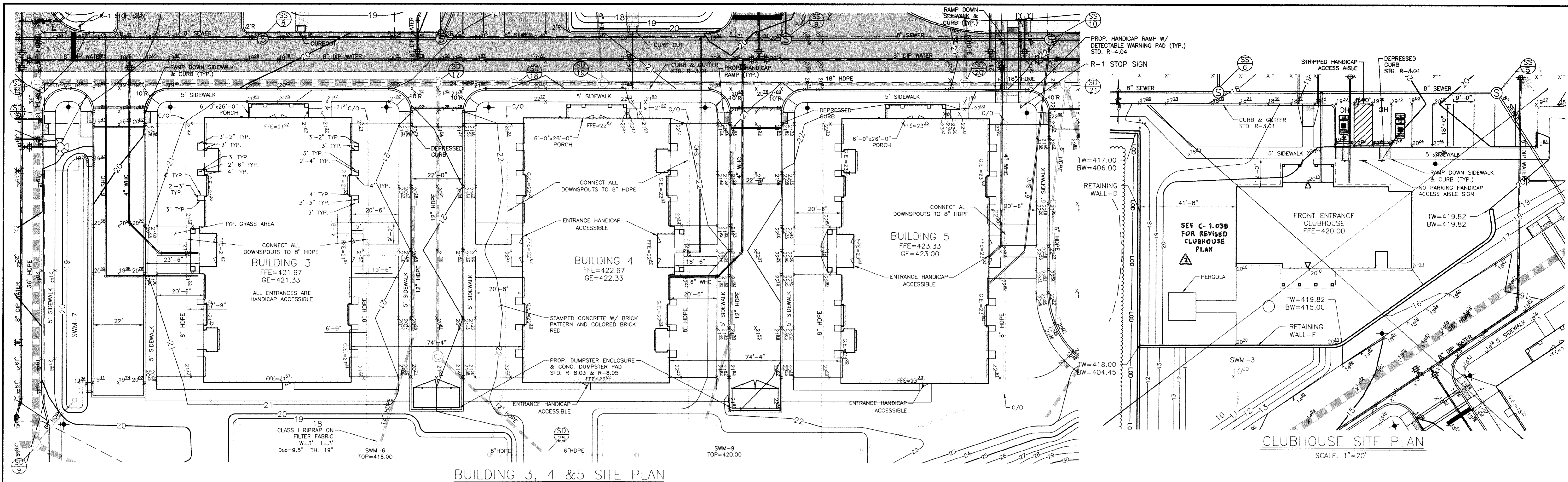
LEGACY AT ELLICOTT'S RETREAT
 OVERALL SITE PLAN
 AGE RESTRICTED ADULT HOUSING
 TAX MAP: 24 GRID: 06 PARCEL: 1085
 ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

DESIGN DATE: NAB 04/05/17
 DRAWN SCALE: BRA 1"=50'

KCI PROJECT NO. 27134772
 SHEET NO. 3 OF 45
 SHEET NO. C-1.01A

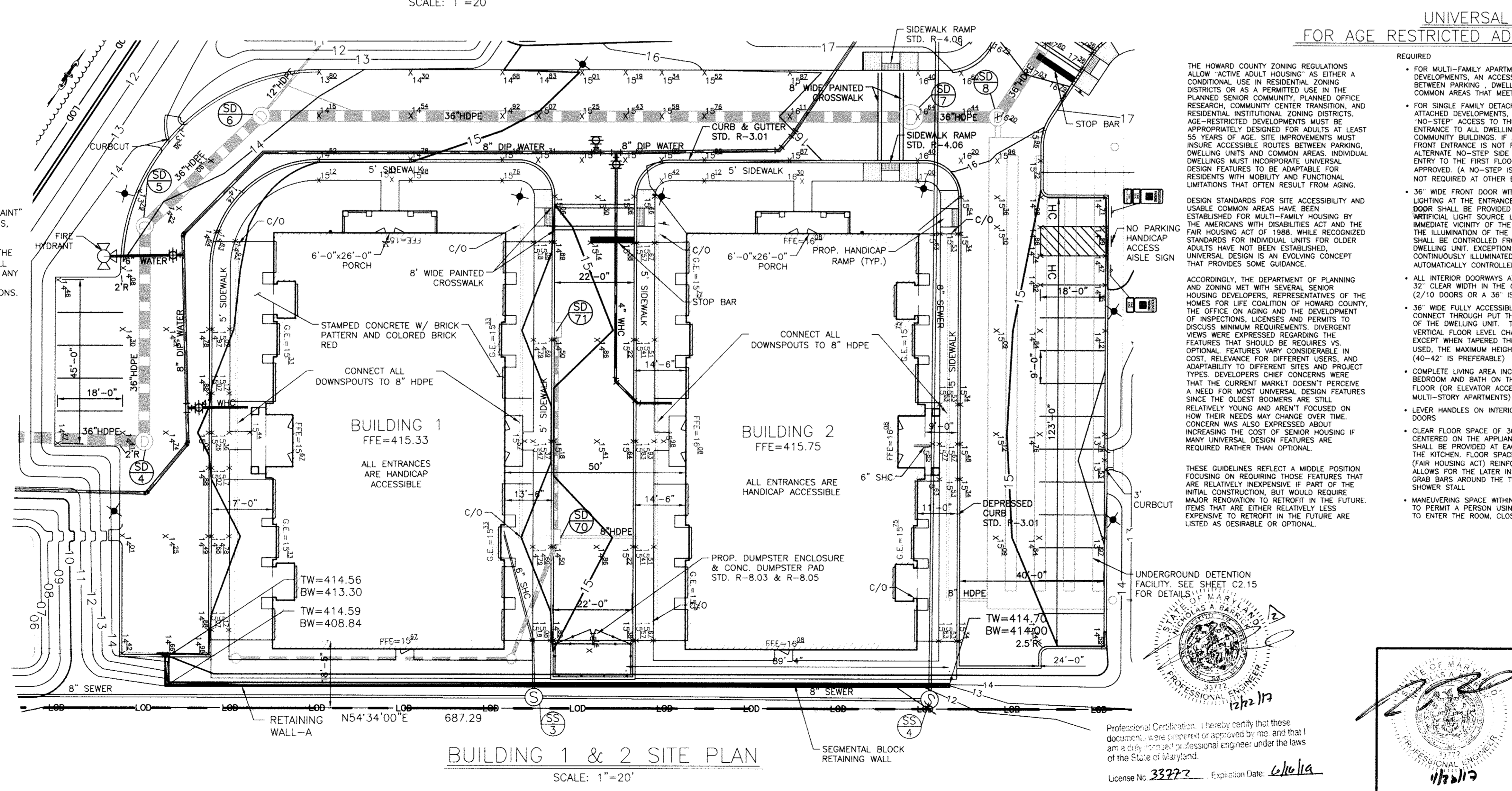
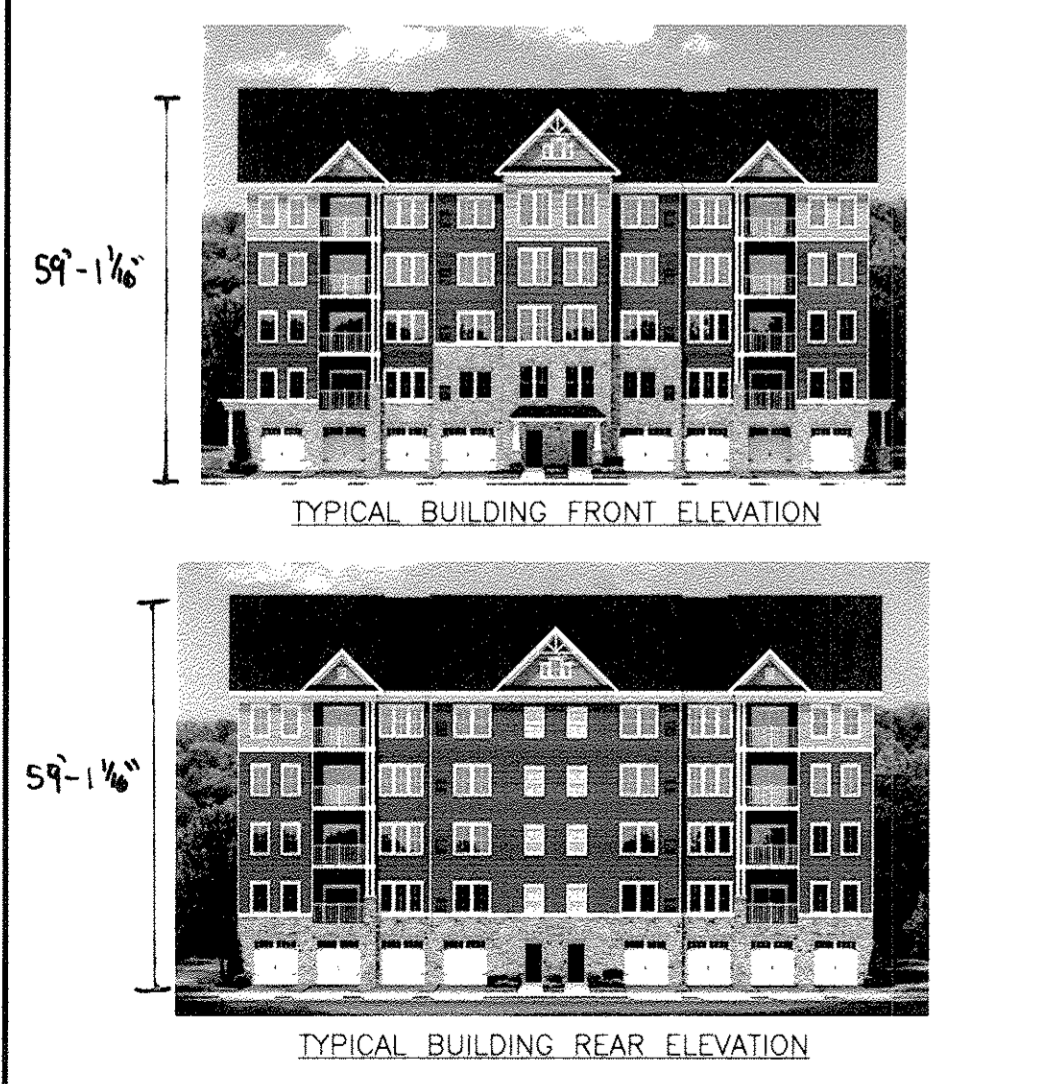
ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS
KCI TECHNOLOGIES
 11850 WEST MARKET PLACE SUITE A FUSION, MD 20759 TELEPHONE: (410) 792-8086 FAX: (410) 792-7419





NOTES:

- ALL CURB & GUTTER ARE TYPE -A (DTC, R-G.01) UNLESS OTHERWISE NOTED.
- ALL CURB RADI ARE MEASURED FROM FACE OF CURB UNLESS OTHERWISE NOTED.
- ALL SIDEWALKS ARE 5' WIDE FROM BACK OF CURB UNLESS OTHERWISE NOTED.
- ALL PAVEMENT MARKINGS TO BE APPLIED USING "SETFAST PREMIUM ALKYL" TRAFFIC PAINT BY SHERWIN WILLIAMS OR APPROVED EQUAL. ALL PAVEMENT ARROWS, "ONLY" MARKINGS, STOP BARS, STOP BAR MARKING AND CROSSWALK MARKINGS MUST BE INSTALLED IN THERMOPLASTIC.
- TRAFFIC CONTROL DEVICES, WARNING, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREETS AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT AND PUTTING THE ROADWAY INTO SERVICE.
- CONNECT ALL PVIOUS PAVEMENT IN TO STORM DRAIN TRUNK WITH FIELD CONNECTIONS.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 5-15-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 5-16-17

DIRECTOR
DATE: 5-16-17

LEGACY AT ELLICOTT'S RETREAT

BUILDING SITE PLAN

AGE RESTRICTED ADULT HOUSING
TAX MAP: 24 GRID: 06 PARCEL: 1085
ZONED: POR
ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

OWNER/DEVELOPER: COMMERCIAL CONTRACTORS INC.
1205 YORK ROAD LUTHERVILLE, TIMONIUM, MD 21093
(410)-825-8400

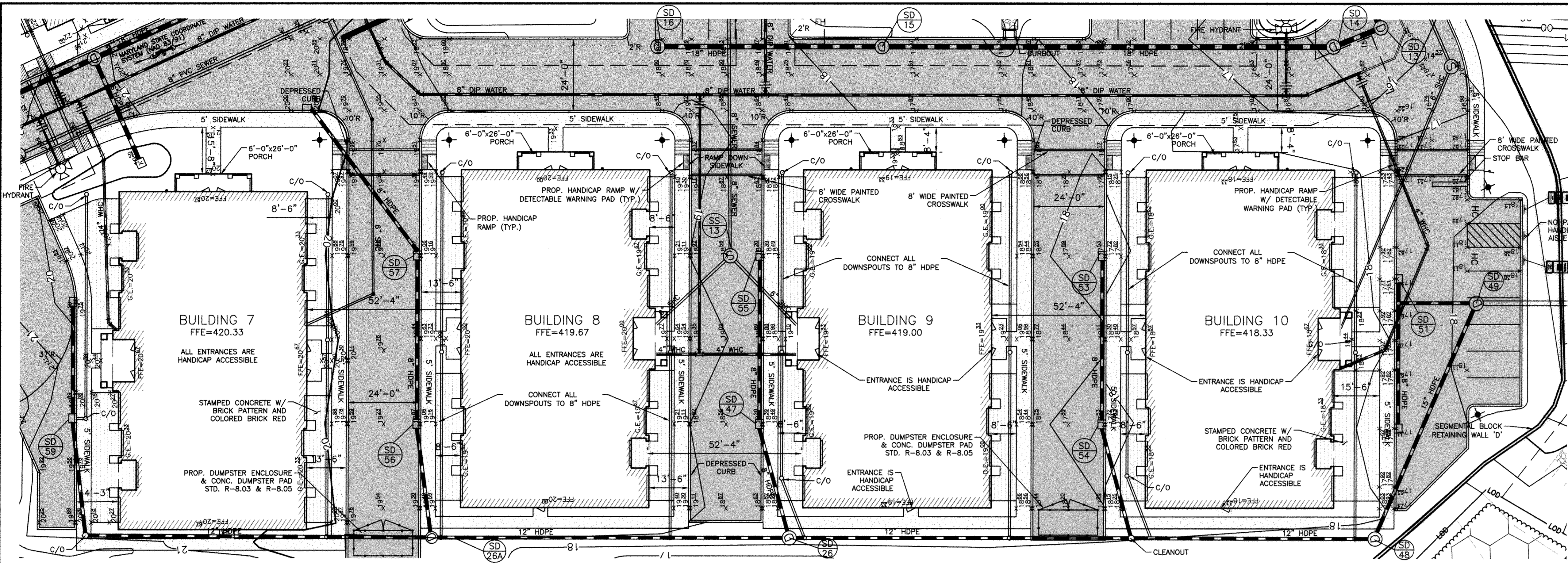
KCI TECHNOLOGIES
11850 WEST MARKET PLACE SUITE A
FULTON, MD 20759
TELEPHONE (410) 792-8088
FAX (410) 792-7419

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

NO.	DATE	REVISIONS	BY
1	04/05/2017	SITE PLANS UPDATED TO REFLECT THE BUILDING CHANGES	BA
2	12/22/17	REVISED PAGE NUMBERING	BA

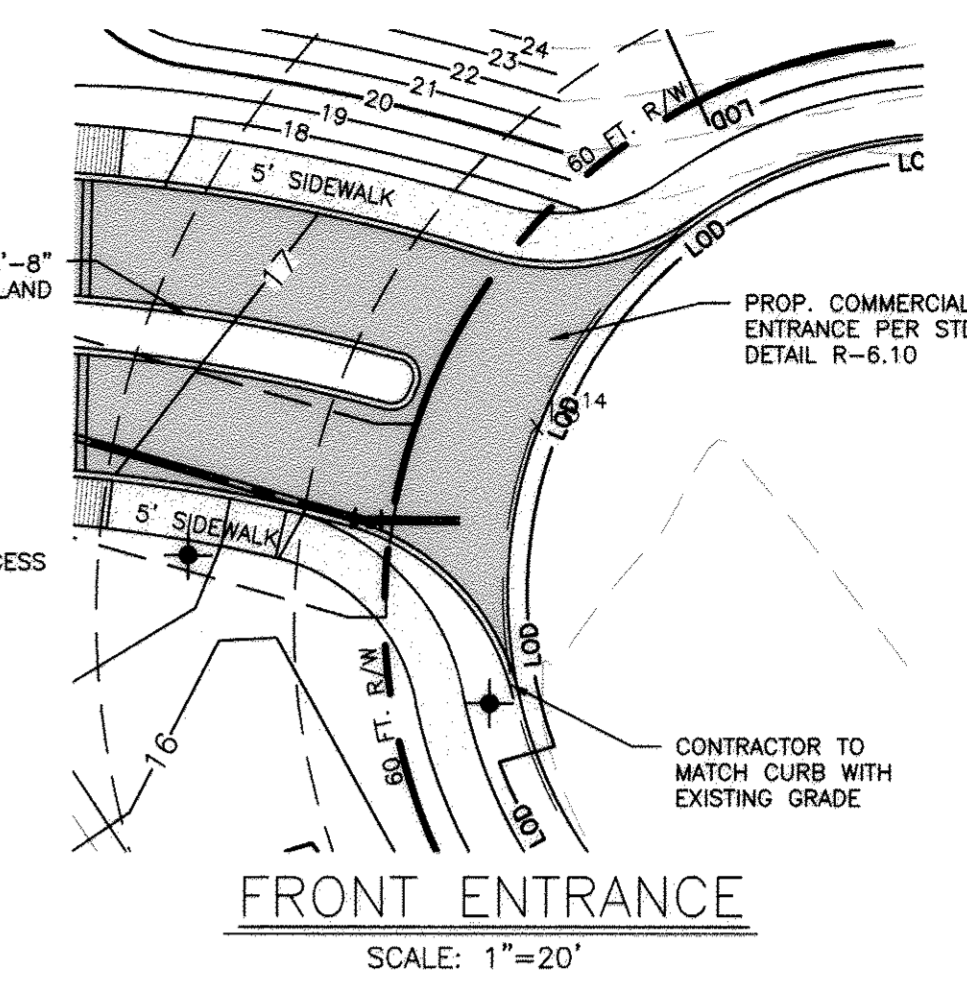
DESIGN	DATE	KCI PROJECT NO.	SHEET NO.
NAB	04/05/17	27134772	C-1.02A

DRAWN	SCALE	SHEET NO.	OF
BRA	1"=20'	4	45



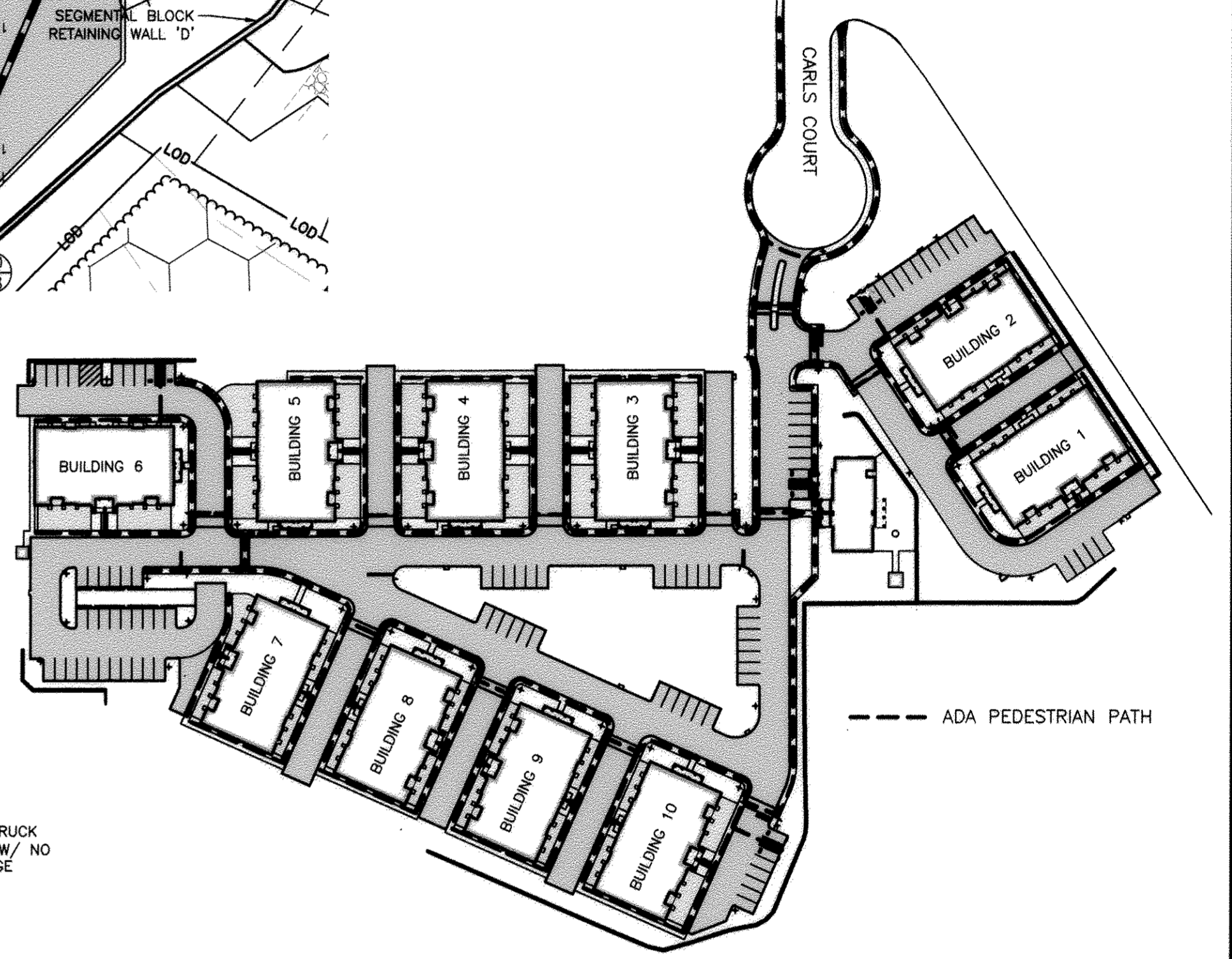
BUILDINGS 7 - 10 SITE PLAN

SCALE: 1"=20'



FRONT ENTRANCE

SCALE: 1"=20'

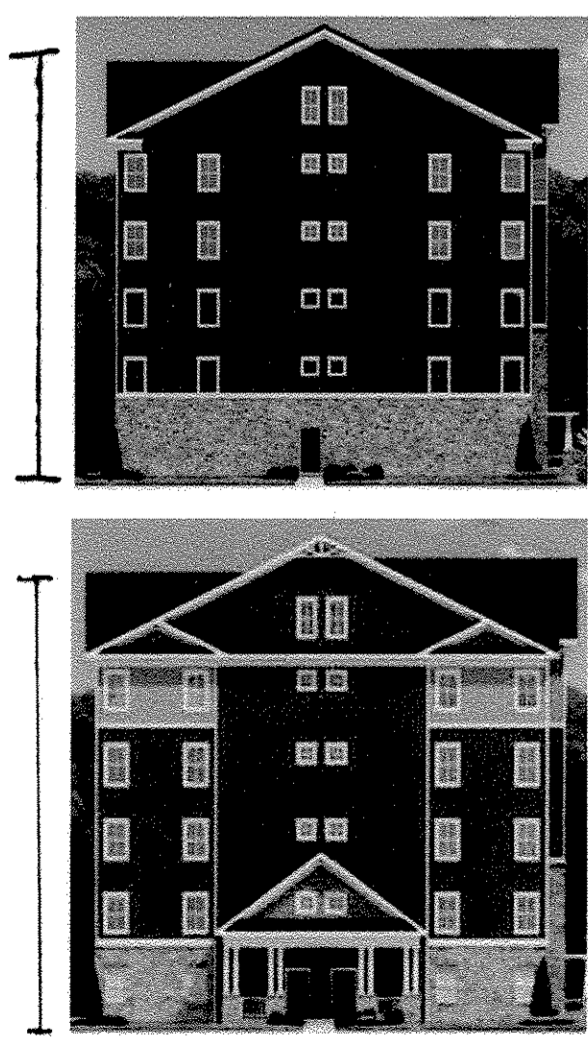


PEDESTRIAN WALKING PLAN

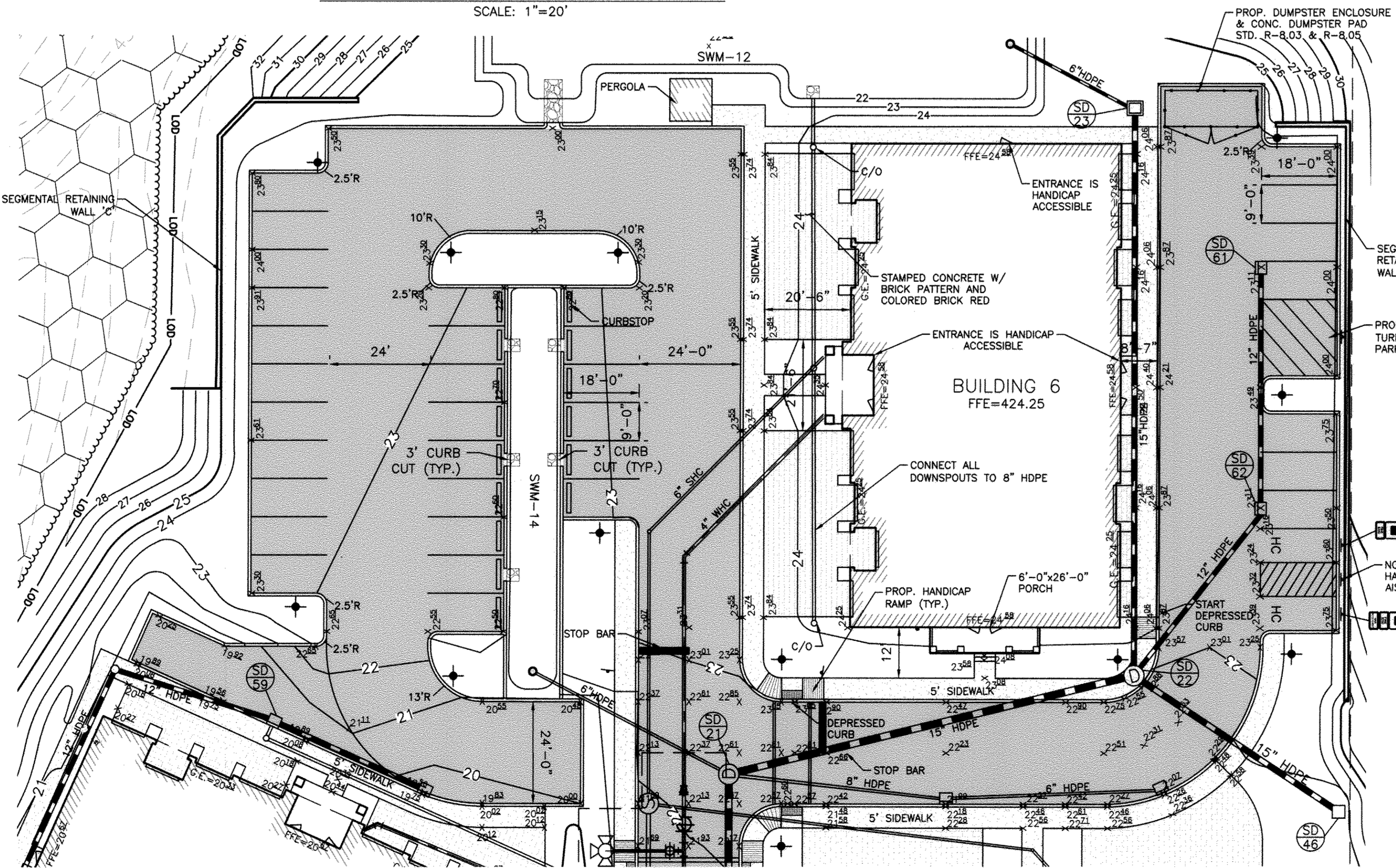
SCALE: 1"=100'

PAVEMENT LEGEND

- CONC. SIDEWALK (STD. R-3.05)
- ASPHALT PAVING (P-2)
- STAMPED CONCRETE

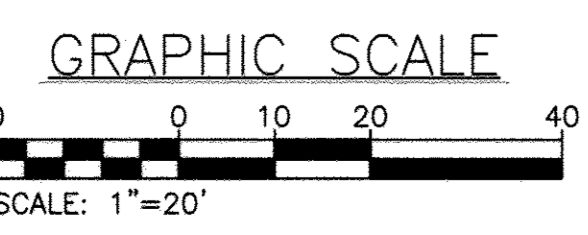


TYPICAL BUILDING SIDE ELEVATIONS



BUILDING 6 SITE PLAN

SCALE: 1"=20'

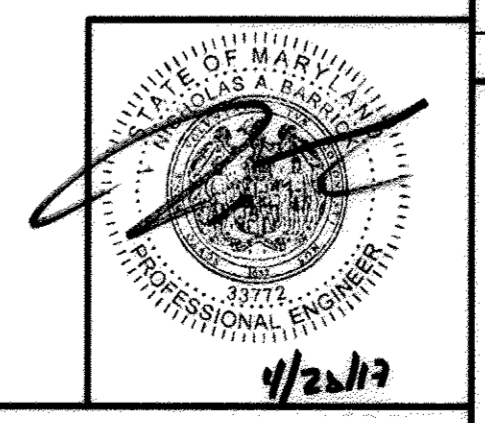


APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Victoria J. Kelly 5-15-17
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Chadler 5-12-17
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Victoria J. Kelly 5-16-17
 DIRECTOR DATE



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

REVISIONS		
NO.	DATE	BY
1	04/05/2017	BA
2	12/22/17	BA

OWNER/DEVELOPER: **LEGACY AT ELLICOTT'S RETREAT**

COMMERCIAL CONTRACTORS INC.
 1205 YORK ROAD, LUTHERVILLE-TIMONIUM, MD 21093
 (410)-825-8400

BUILDING SITE PLAN
 AGE RESTRICTED ADULT HOUSING
 TAX MAP: 24 GRID: 06 PARCEL: 1085
 ZONED: POR ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

DESIGN DATE: 04/05/17 KCI PROJECT NO. 27134772 SHEET NO. C-1.03A
 DRAWN SCALE: 1"=20' SHEET NO. 5 OF 45

ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS



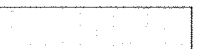
KCI TECHNOLOGIES

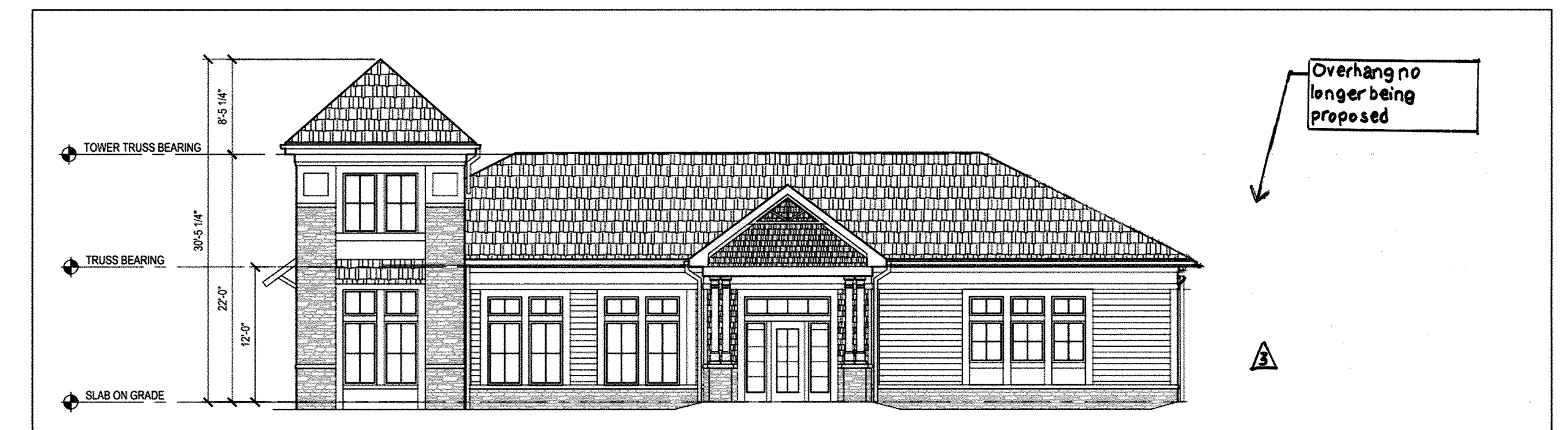
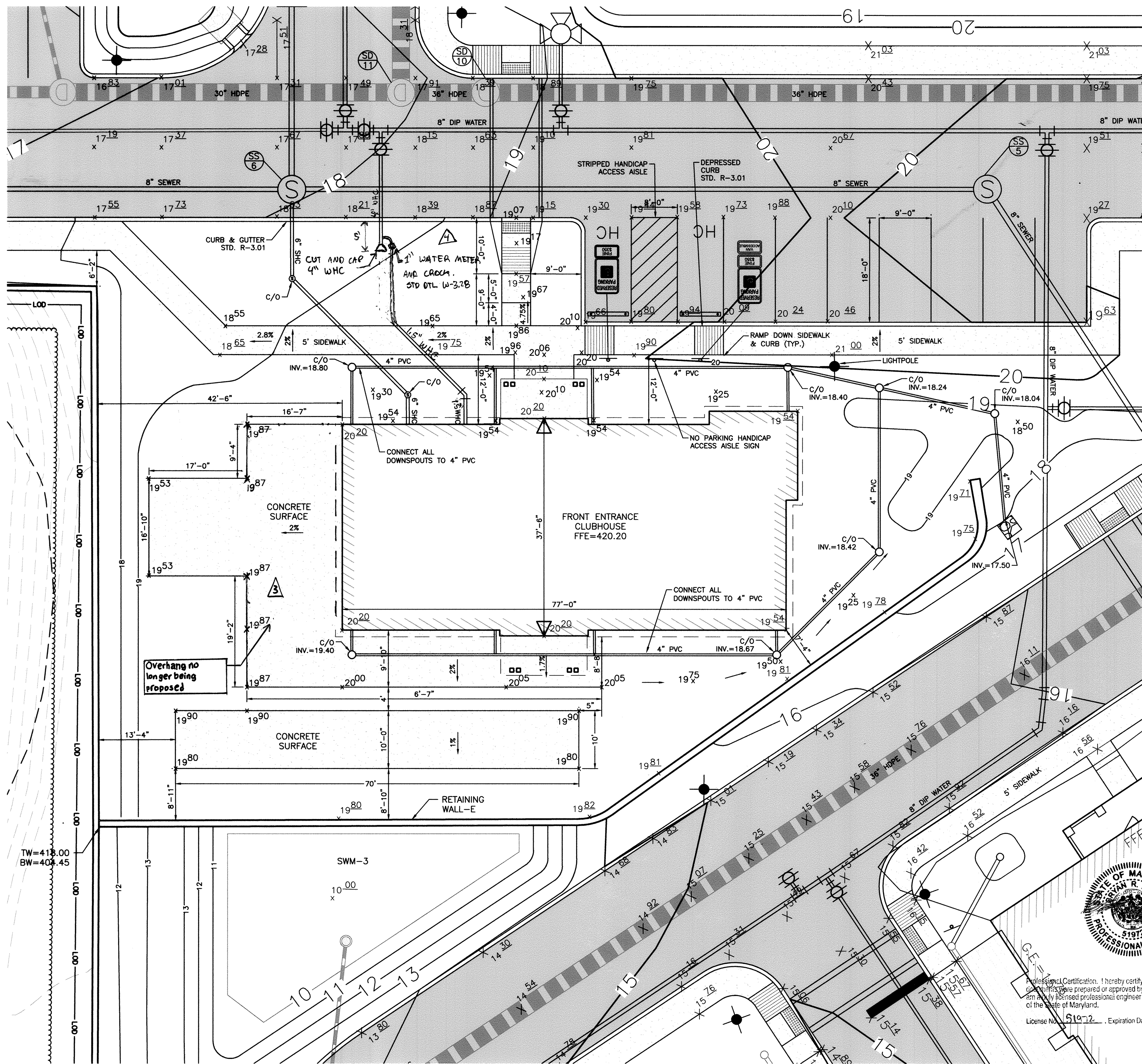
11850 WEST MARKET PLACE, SUITE A, FULTON, MD 20759
 TELEPHONE: (410) 792-8086 FAX: (410) 792-7419

PURPOSE STATEMENT:
THIS PLAN SHOWS THE DESIGN ALTERATIONS TO THE CLUBHOUSE COMMUNITY CENTER BUILDING.

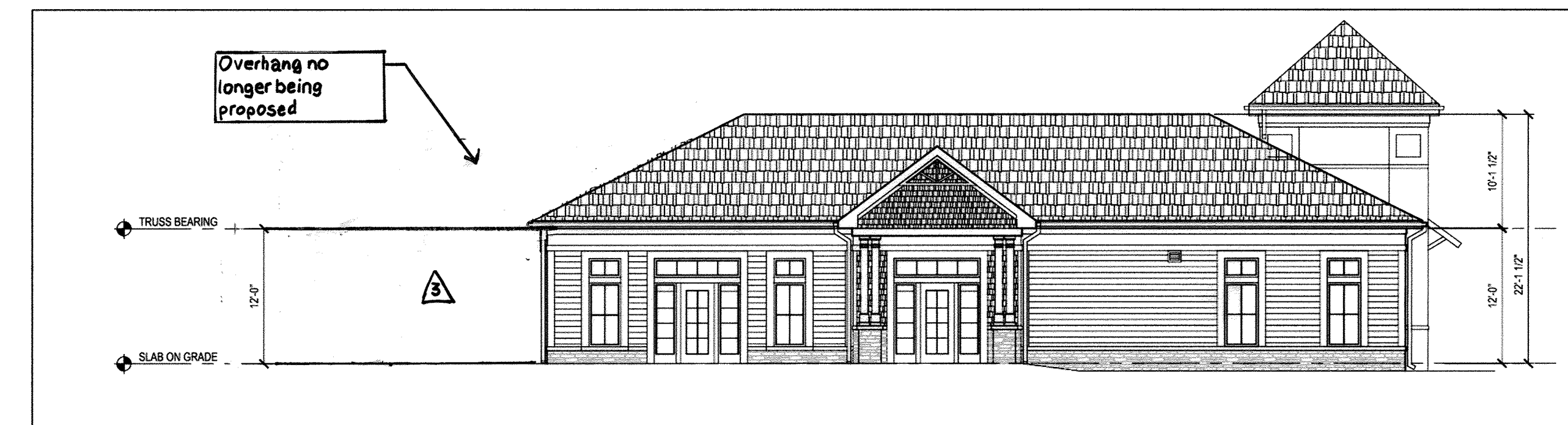
- NOTES:**
1. ALL CURB & GUTTER ARE TYPE -A (DTC, R-3.01) UNLESS OTHERWISE NOTED.
 2. ALL CURB RADI ARE MEASURED FROM FACE OF CURB UNLESS OTHERWISE NOTED.
 3. ALL SIDEWALKS ARE 5' WIDE FROM BACK OF CURB UNLESS OTHERWISE NOTED.
 4. ALL PAVEMENT MARKINGS TO BE APPLIED USING "SETFAST PREMIUM ALKYD TRAFFIC PAINT" BY SHERWIN WILLIAMS OR APPROVED EQUAL. ALL PAVEMENT ARROWS "ONLY" MARKINGS, "STOP BARS, STOP BAR MARKING AND CROSSWALK MARKINGS MUST BE INSTALLED IN THERMOPLASTIC.
 5. TRAFFIC CONTROL DEVICES, WARNING, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREETS AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT AND PUTTING THE ROADWAY INTO SERVICE.

PAVEMENT LEGEND

-  CONC. SIDEWALK (STD. R-3.05)
-  ASPHALT PAVING (P-2)
-  STAMPED CONCRETE

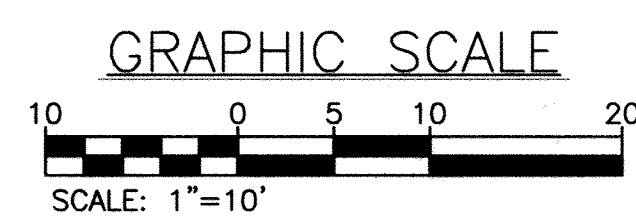


CLUBHOUSE FRONT ELEVATION
SCALE: NOT TO SCALE



CLUBHOUSE REAR ELEVATION
SCALE: NOT TO SCALE

CLUBHOUSE SITE PLAN
SCALE: 1"=10'



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 1-7-18
CHIEF, DIVISION OF LAND DEVELOPMENT, JS for DB
DATE

[Signature] 1-3-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE

[Signature] 1-7-18
DIRECTOR
DATE

PROFESSIONAL CERTIFICATION. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 51972, Expiration Date: 12/11/19

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. 33772, Expiration Date: 06/16/2019

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. 33772, Expiration Date: 06/16/2019

ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

KCI
TECHNOLOGIES

11850 WEST MARKET PLACE
SUITE A
FULTON, MD 20759
Telephone: (410) 792-9086
Fax: (410) 792-7419

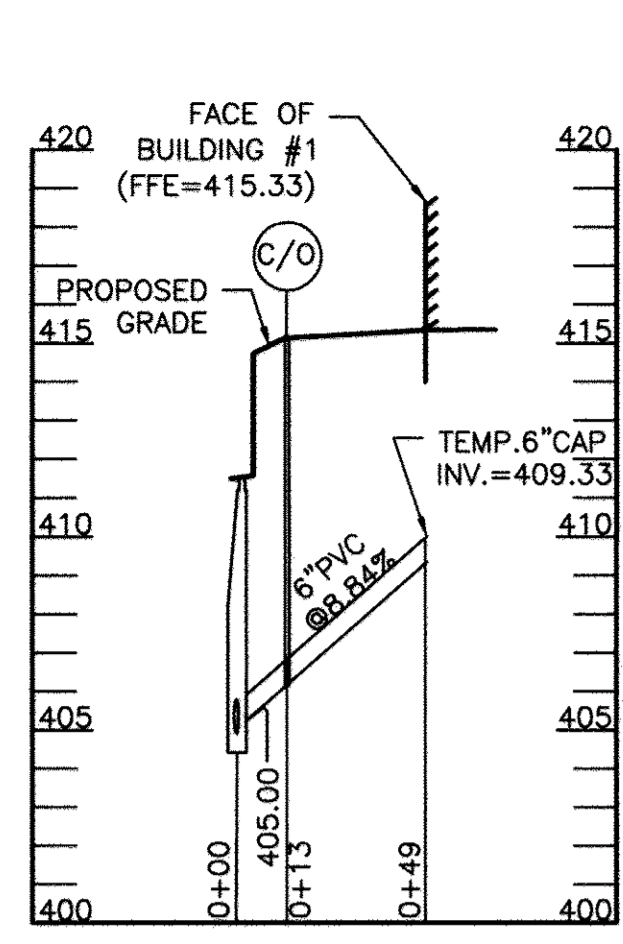
REVISIONS			
NO.	DATE	DESCRIPTION	BY
1	4/5/2017	SITE PLANS UPDATED TO REFLECT THE BUILDING CHANGES	BA
2	12/21/2017	REVISIONS TO THE CLUBHOUSE	BA
3	3/4/2018	CLUBHOUSE OVERHANG IS NO LONGER BEING PROPOSED	BA
4	9/24/2018	CLUBHOUSE W/C METER ADDITION	BA

OWNER/DEVELOPER:
COMMERCIAL CONTRACTORS INC.
1205 YORK ROAD
LUTHERVILLE, TIMONIUM, MD 21093
(410)-825-8400

LEGACY AT ELLICOTT'S RETREAT
REVISED SITE DEVELOPMENT PLAN
BUILDING SITE PLAN - CLUBHOUSE
AGE RESTRICTED ADULT HOUSING
TAX MAP: 24 GRID: 06 PARCEL: 1085
ZONED: POR
ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

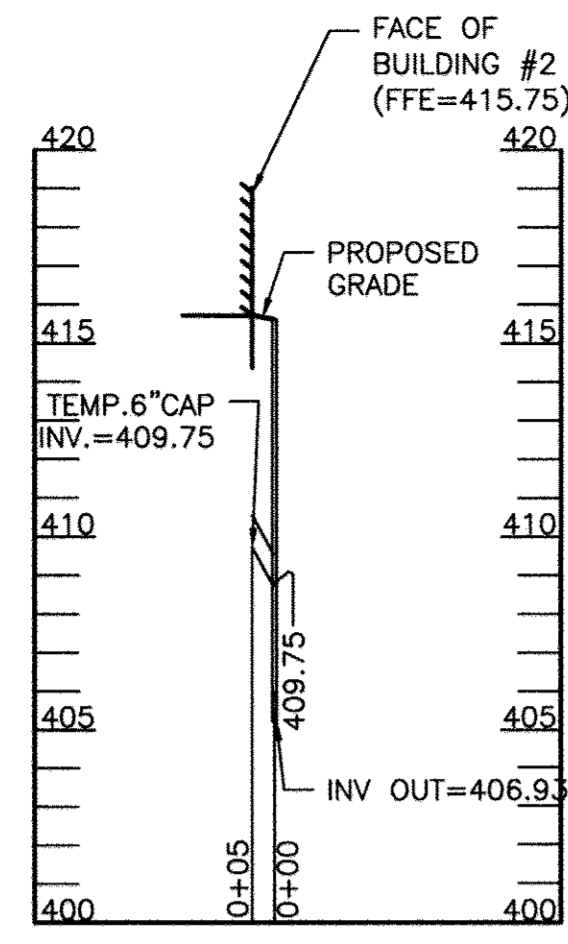
DESIGN NAB DATE 12/22/17
DRAWN SCALE 1"=10' SHEET NO. 6 OF 45

KCI PROJECT NO. 27134772 SHEET NO. C-1.03B



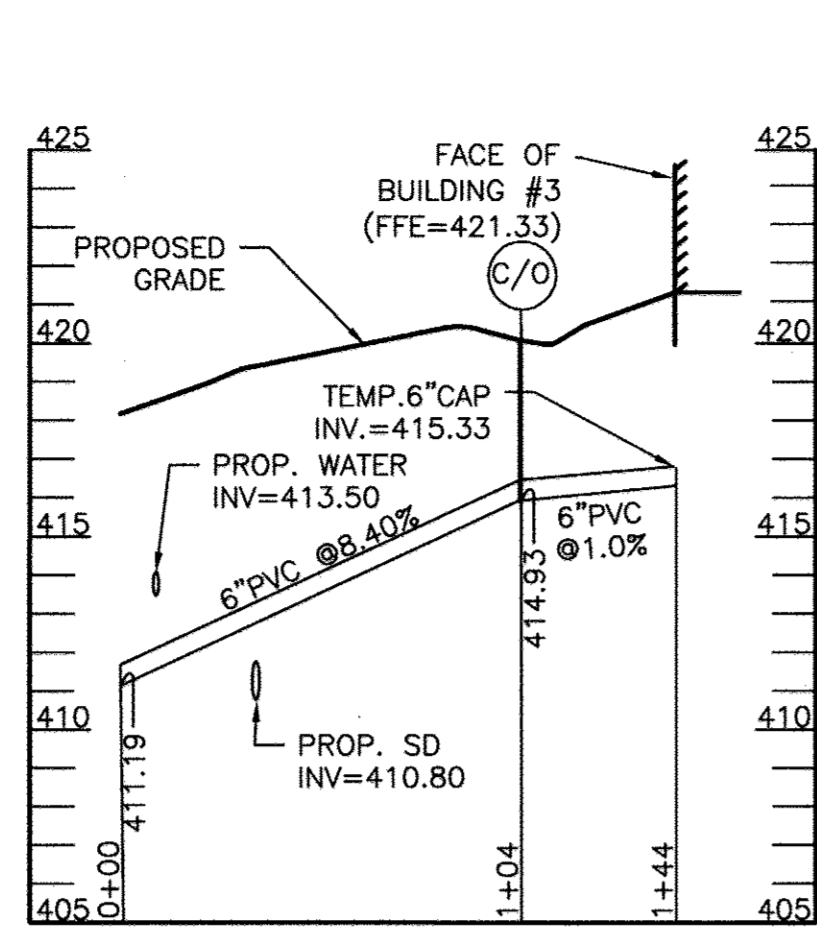
SHC BUILDING 1
PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



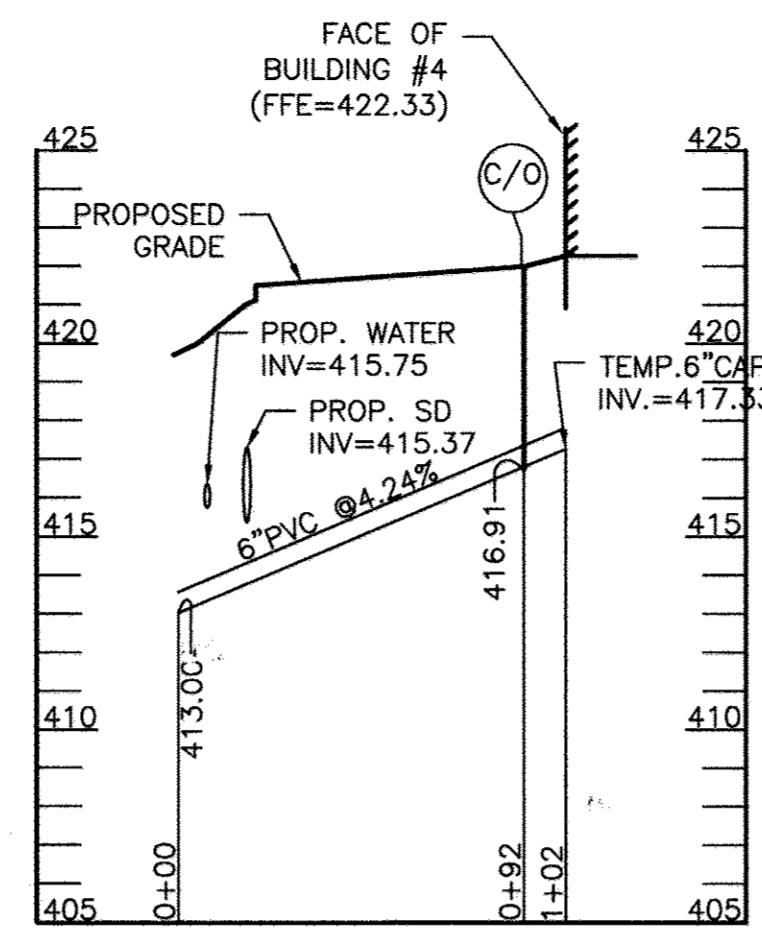
SHC BUILDING 2
PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



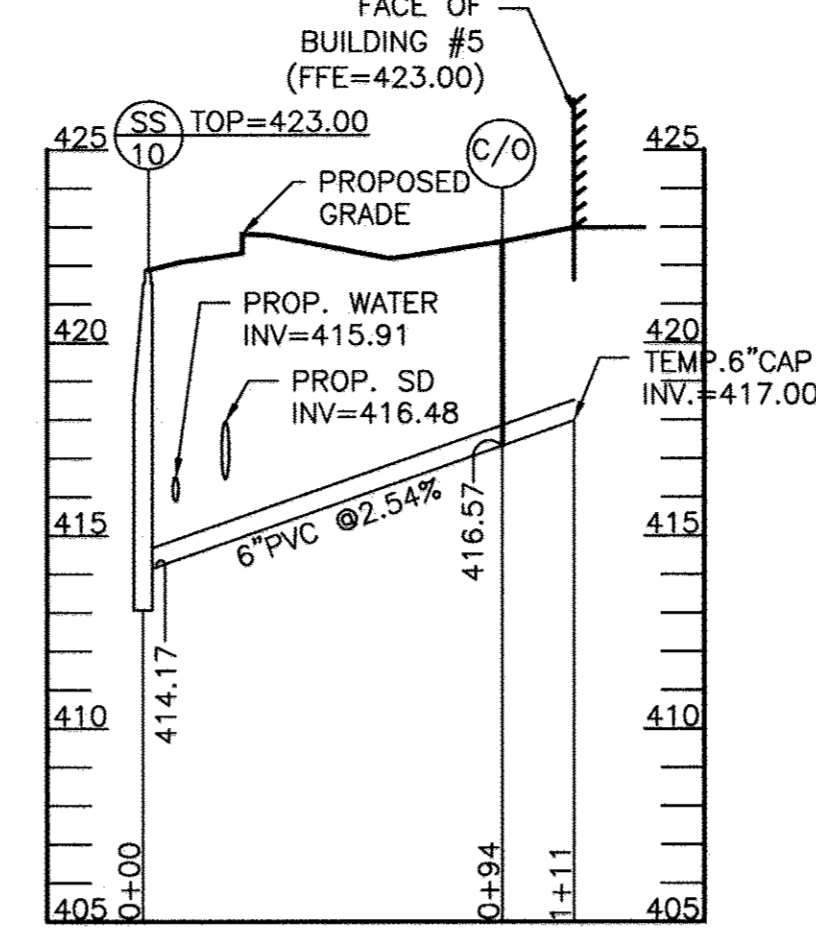
SHC BUILDING 3
PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



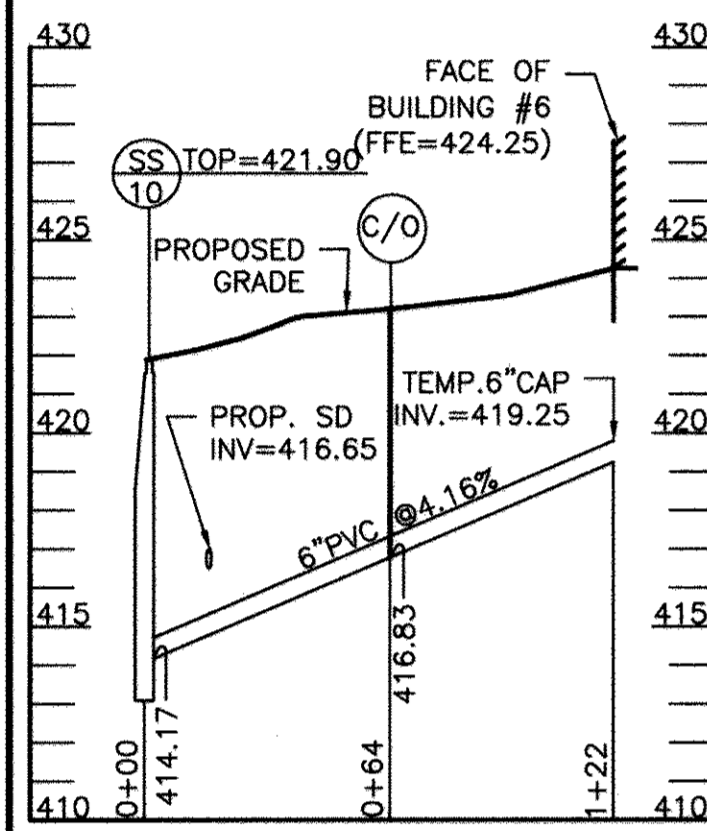
SHC BUILDING 4
PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



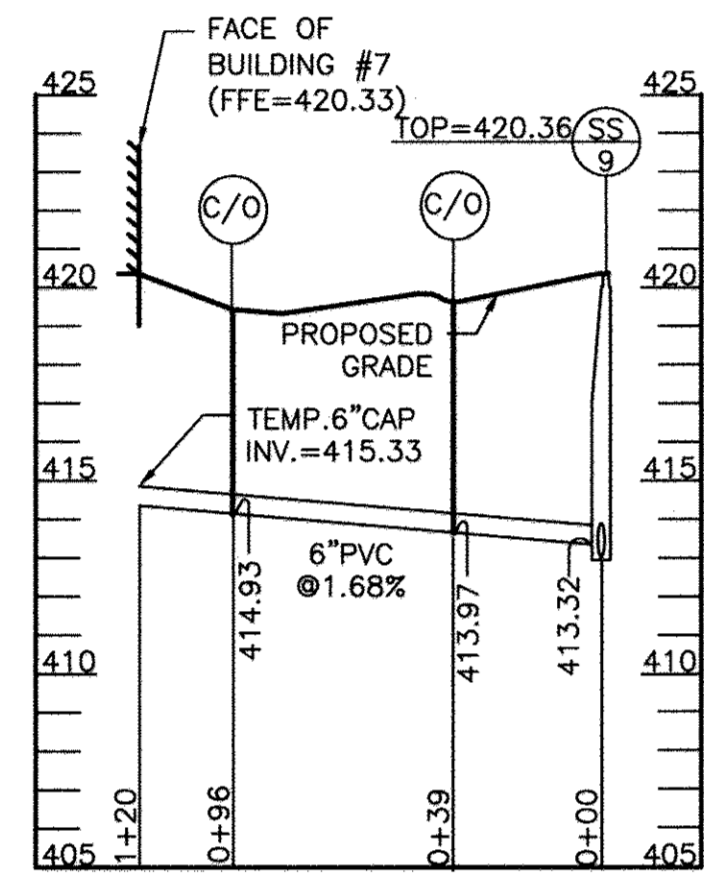
SHC BUILDING 5
PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



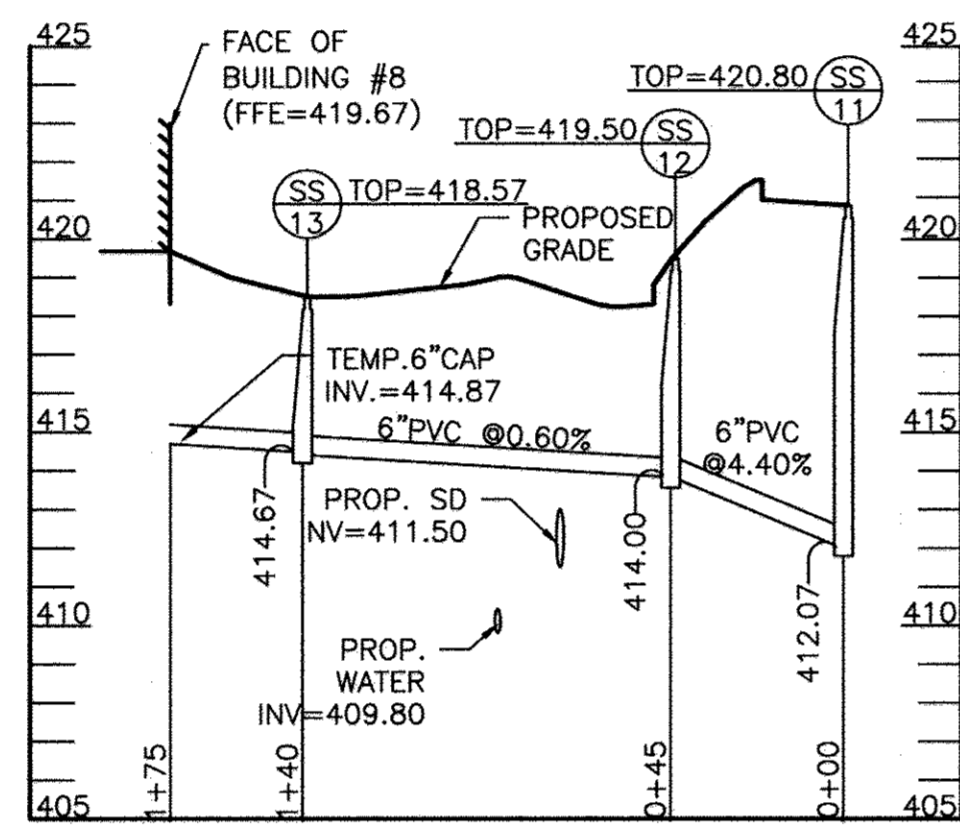
SHC BUILDING 6
PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



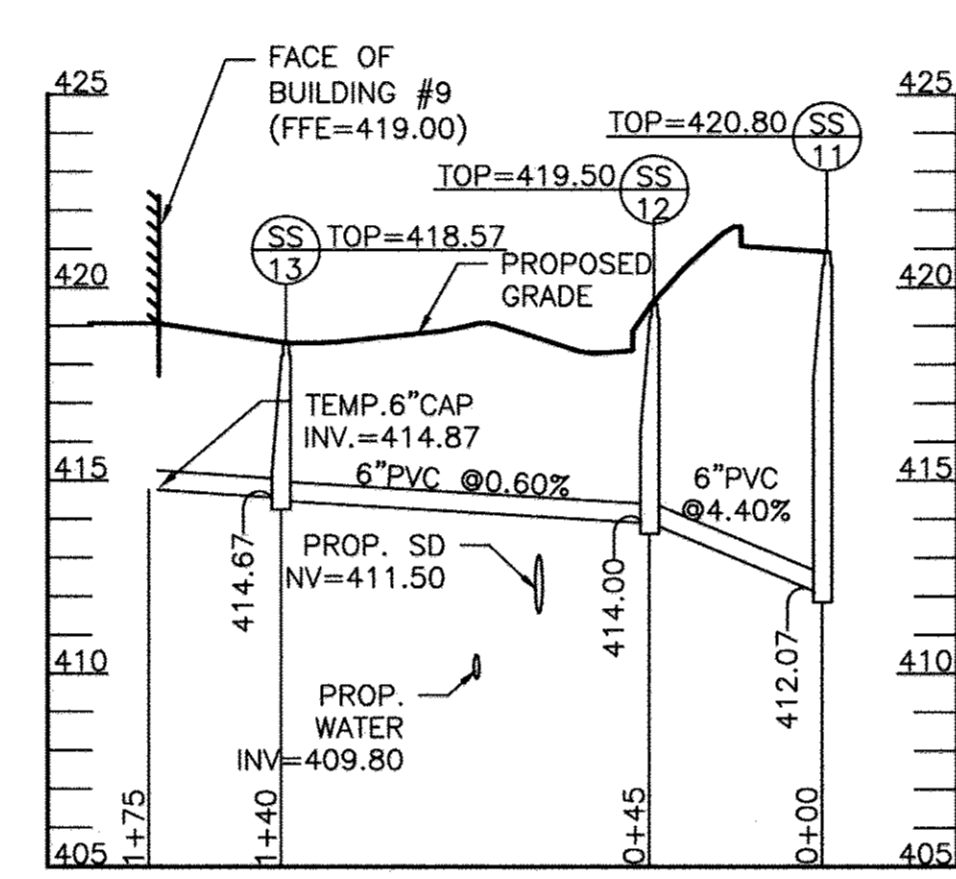
SHC BUILDING 7
PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



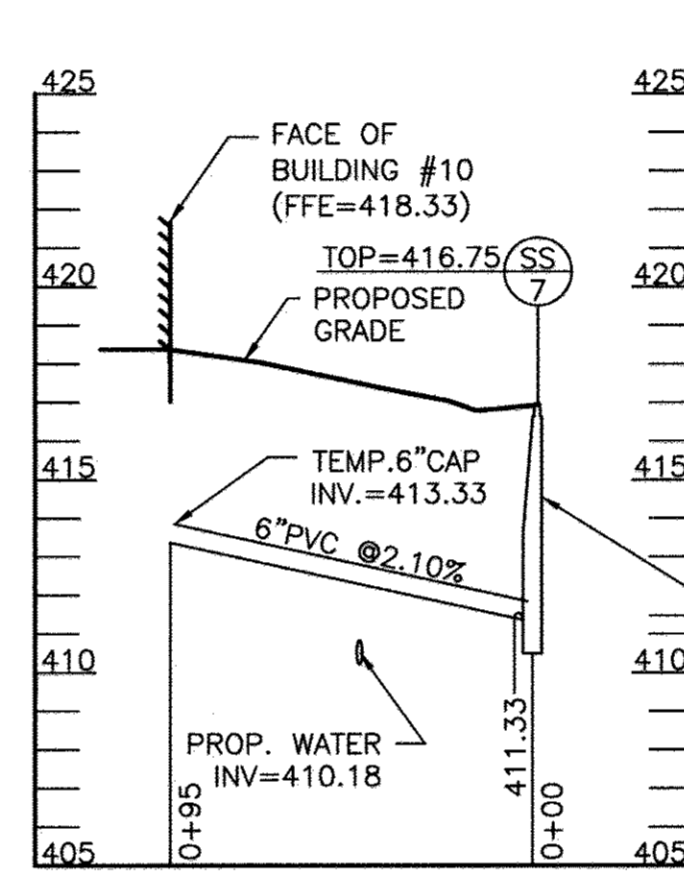
SHC BUILDING 8
PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



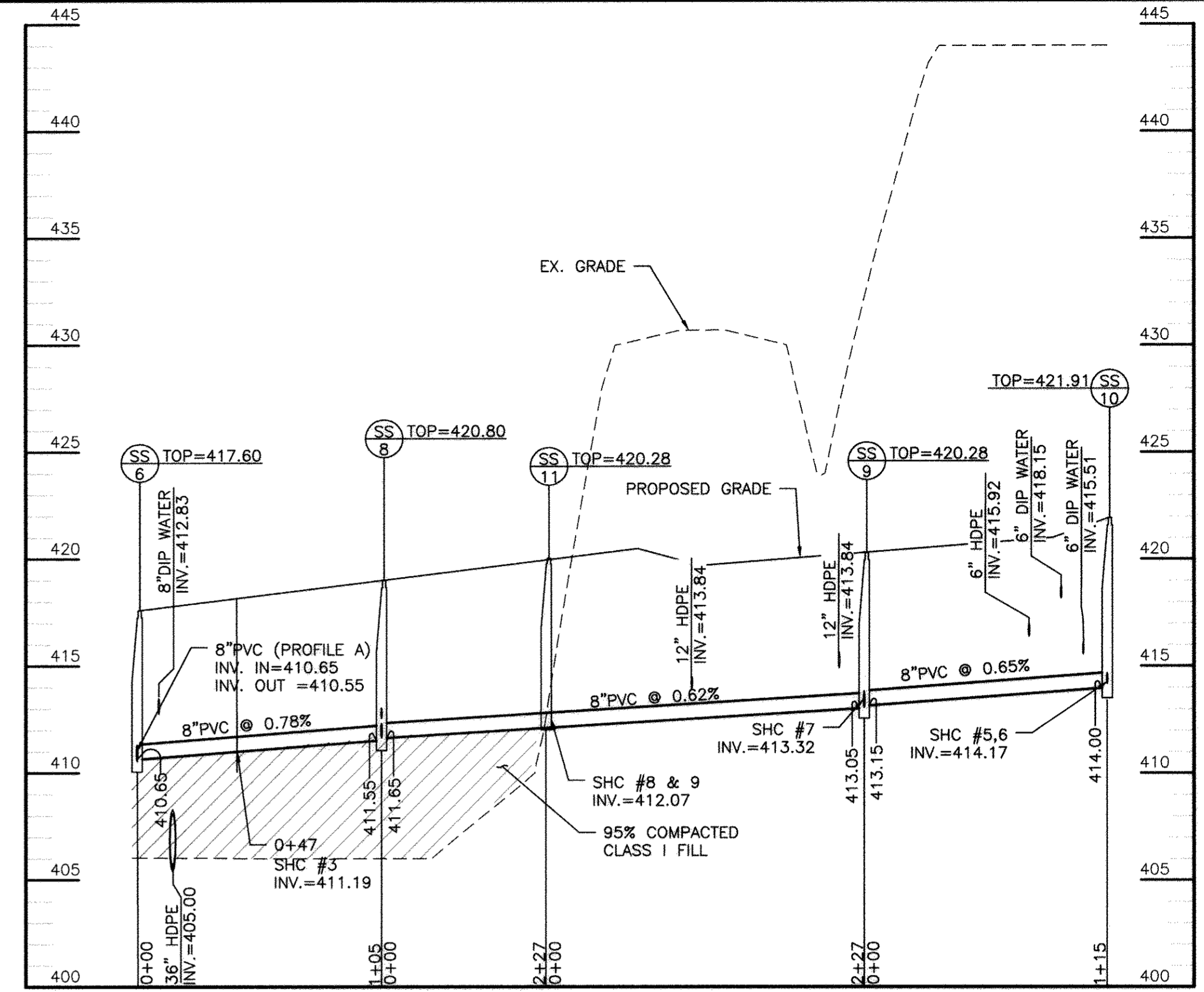
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PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



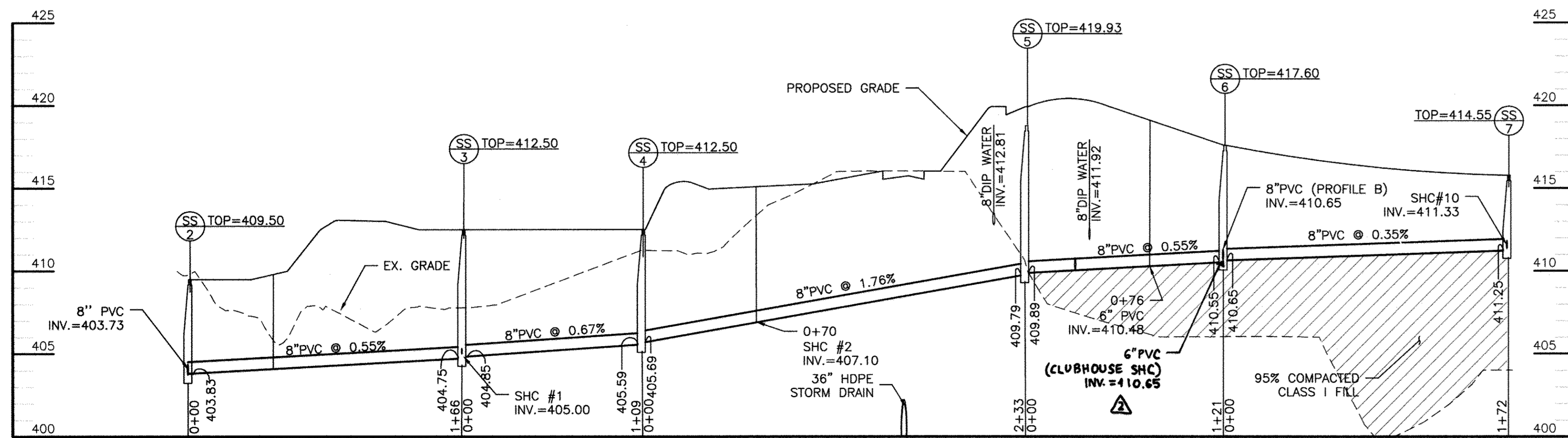
SHC BUILDING 10
PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



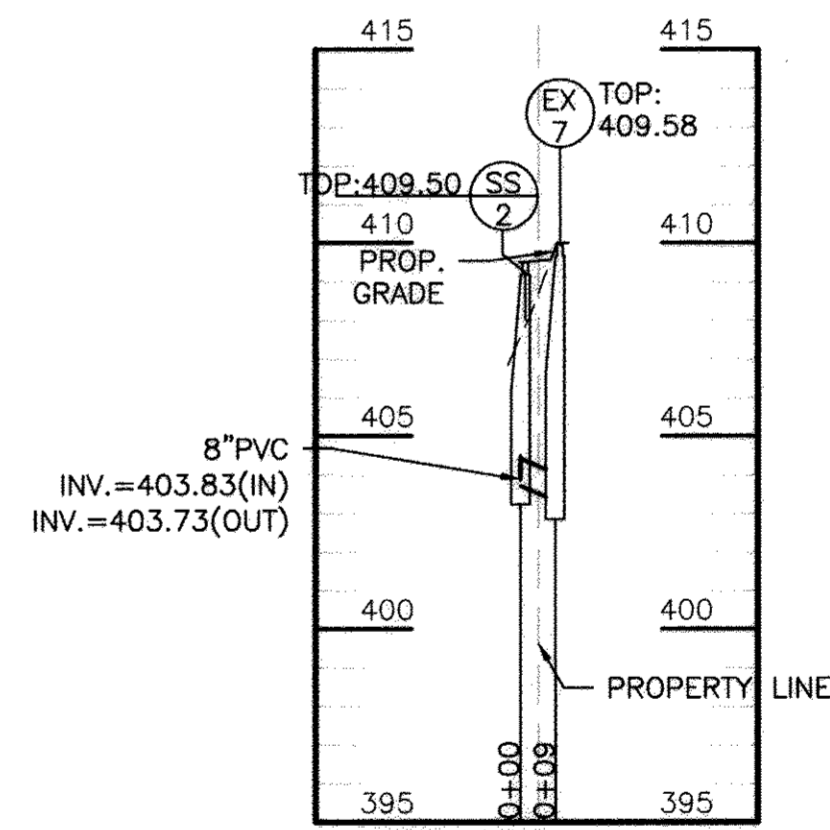
SANITARY SEWER 'B' PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



SANITARY SEWER 'A' PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



OFF SITE SEWER CONNECTION

SCALE: HOR: 1"=50'
VERT: 1"=5'

ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

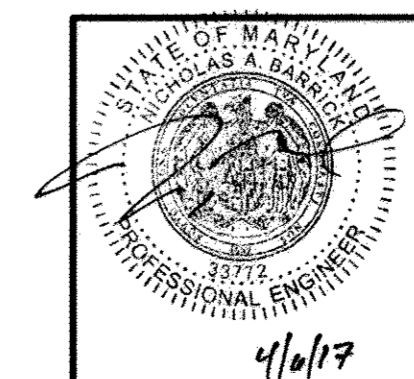
KCI
TECHNOLOGIES

11850 West Market Place
Suite A
Ft. Belvoir, MD 20759
Telephone: (410) 792-8086
Fax: (410) 792-7419

REVISIONS			
NO.	DATE	DESCRIPTION	BY
1	04/05/2017	SHC's UPDATED W/ BUILDING CHANGES. WHC'S MOVED TO C-1.06	BA
2	12/21/17	REVISIONS TO THE CLUBHOUSE	BA



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. **33772**, Expiration Date: **06/16/2017**



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772, EXP. DATE: 06/16/2017

OWNER/DEVELOPER: **LEGACY AT ELLICOTT'S RETREAT**

COMMERCIAL CONTRACTORS INC.
1205 YORK ROAD
LUTHERVILLE-TIMONIUM, MD 21093
(410)-825-8400

AGE RESTRICTED ADULT HOUSING
TAX MAP: 24 GRID: 06 PARCEL: 1085
ZONED: POR
ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

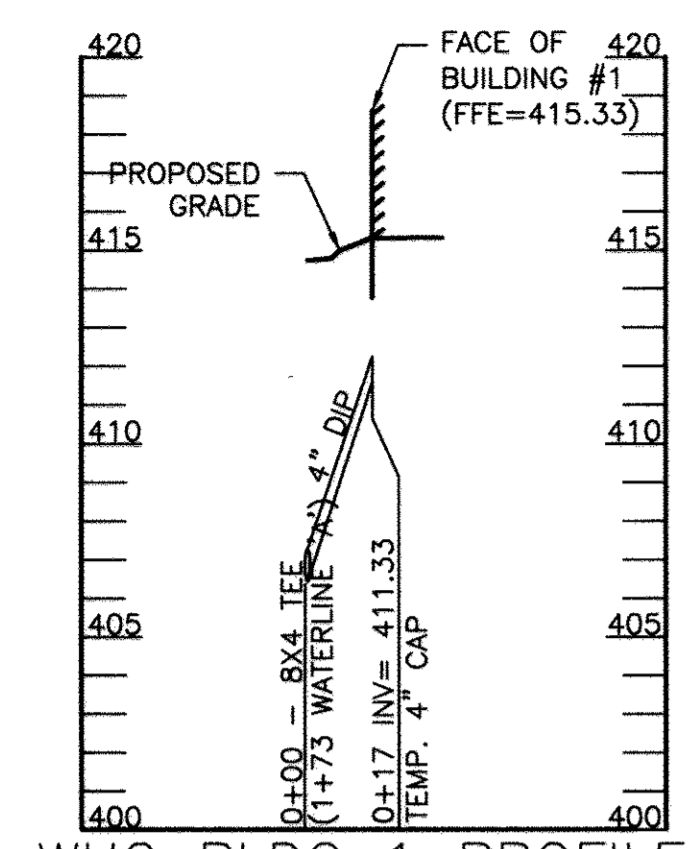
DESIGN: NAB DATE: 09/05/17 KCI PROJECT NO. 27134772 SHEET NO. C-1.05
DRAWN: BRA SCALE: VARIES SHEET NO. 8 OF 45

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

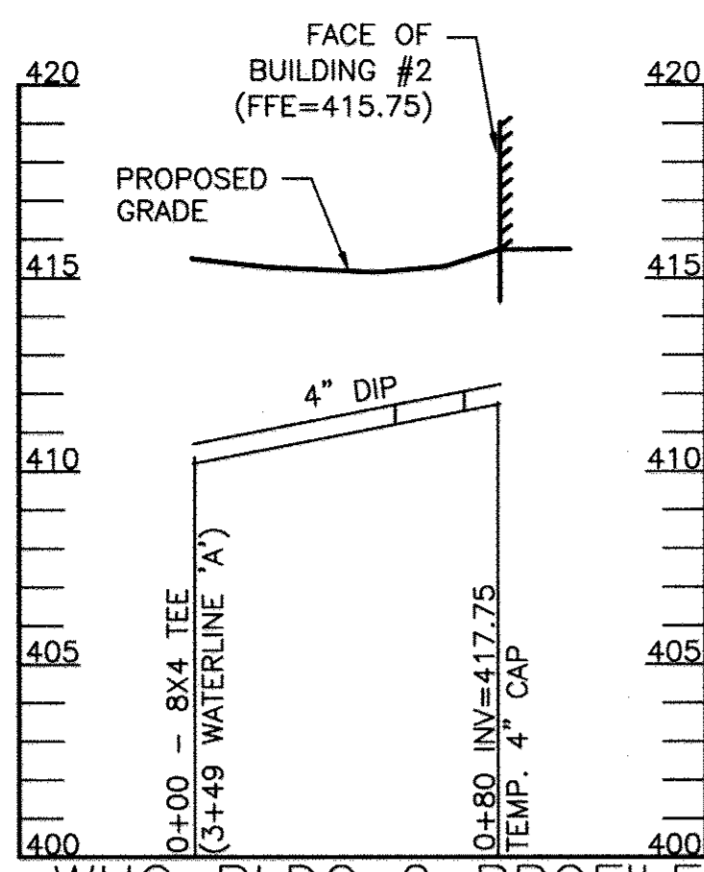
Keith L. ... 5-15-17
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

... 5-12-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

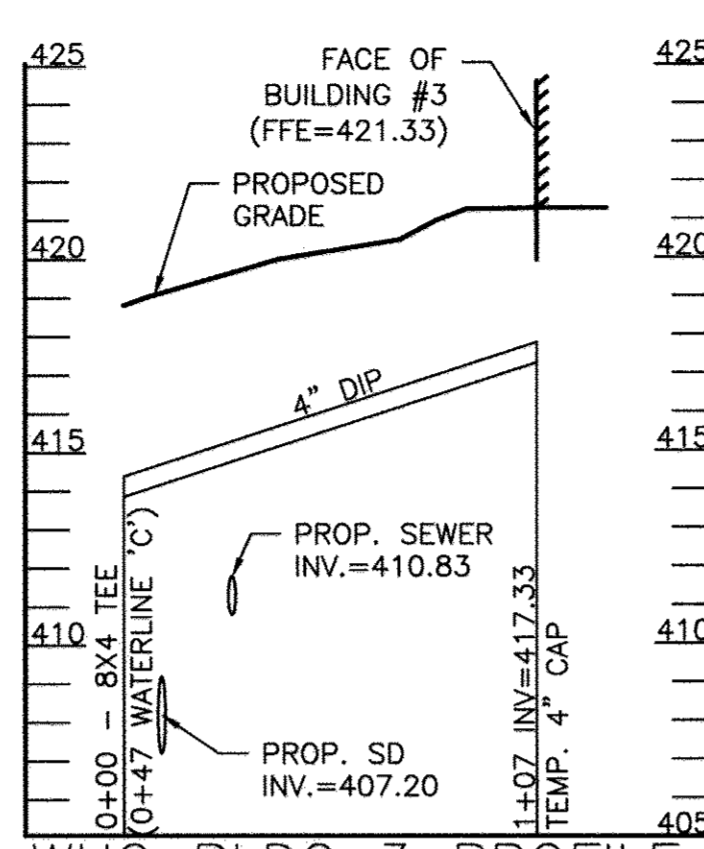
... 5-16-17
DIRECTOR DATE



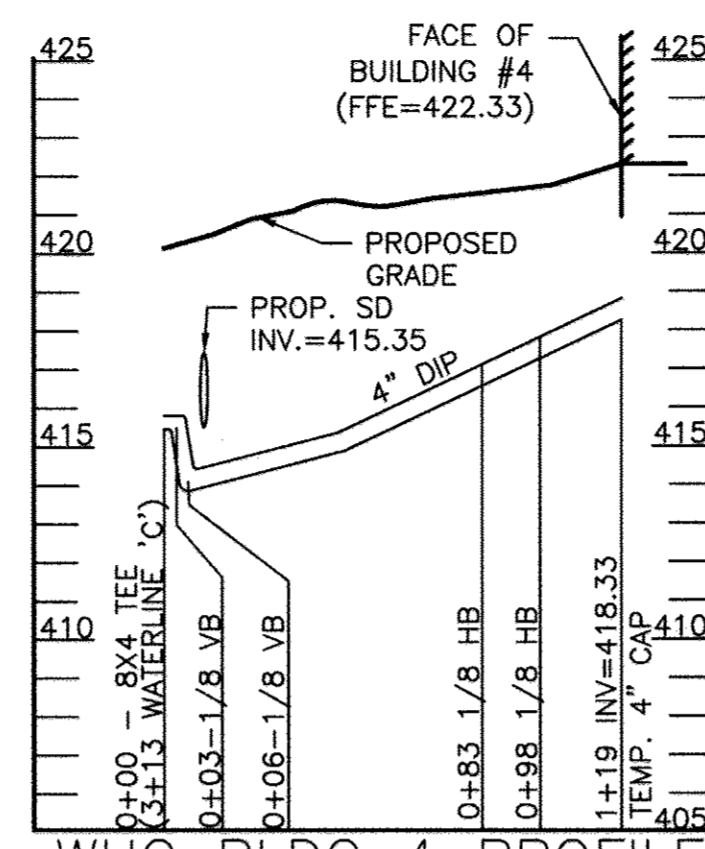
WHC BLDG 1 PROFILE
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VERT: 1"=5'



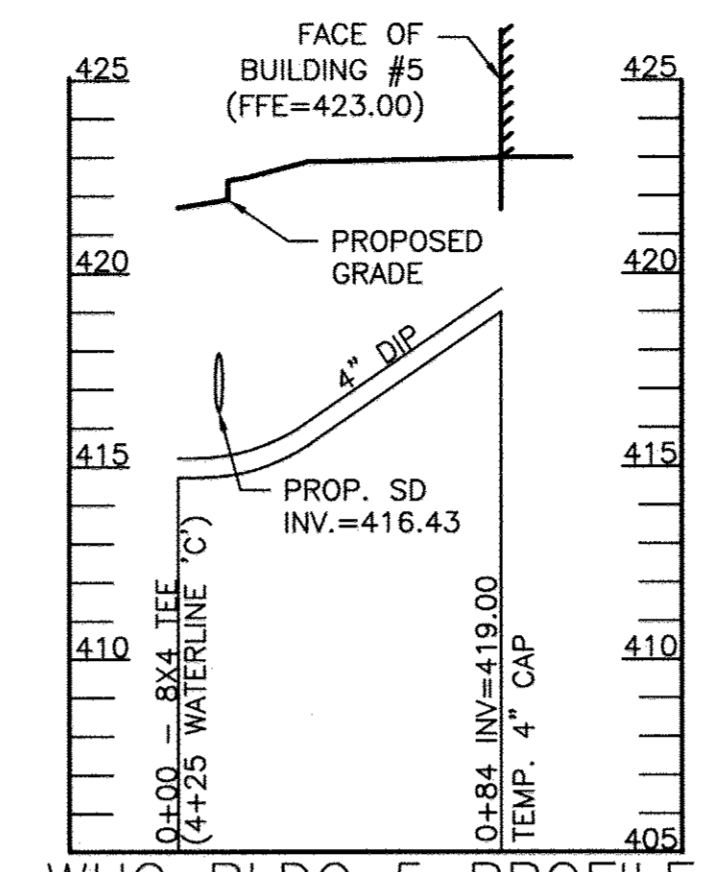
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VERT: 1"=5'



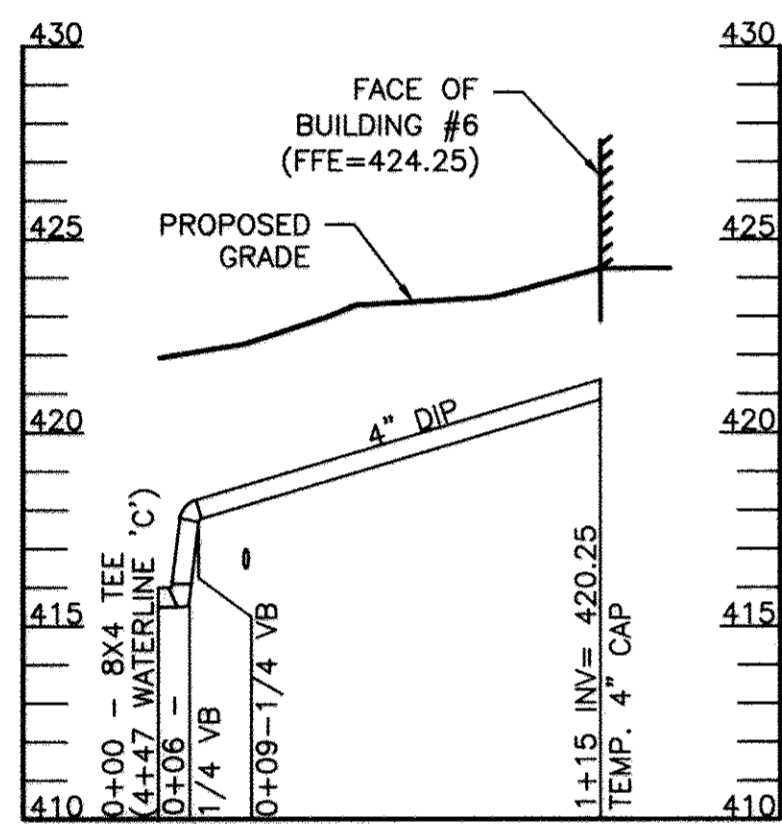
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VERT: 1"=5'



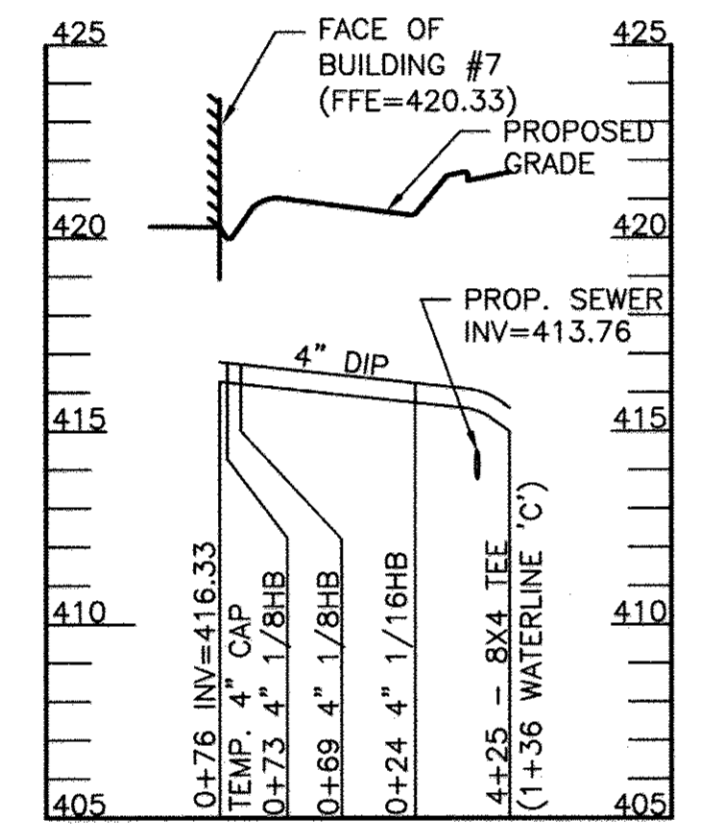
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SCALE: HOR: 1"=50'
VERT: 1"=5'



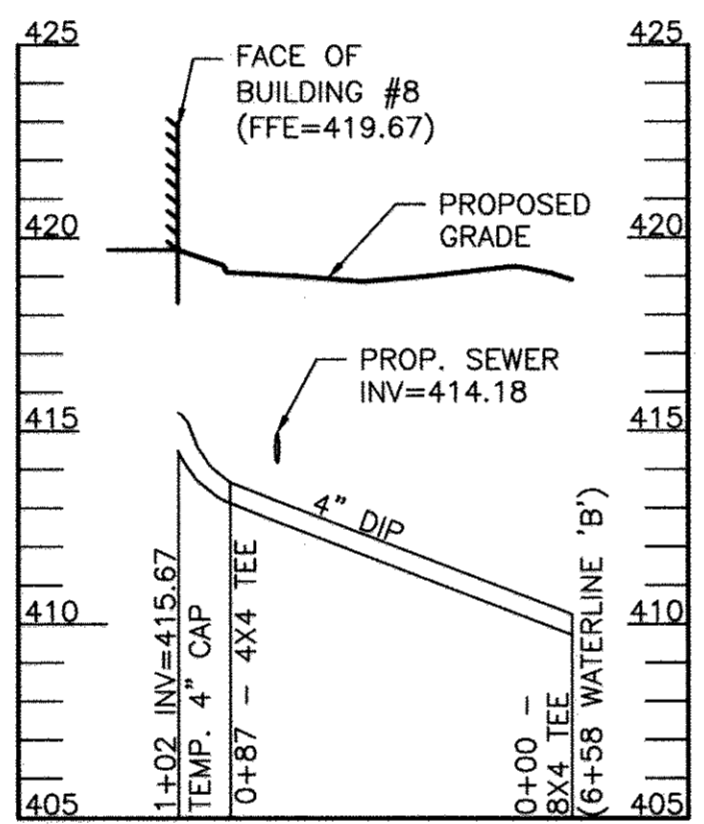
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SCALE: HOR: 1"=50'
VERT: 1"=5'



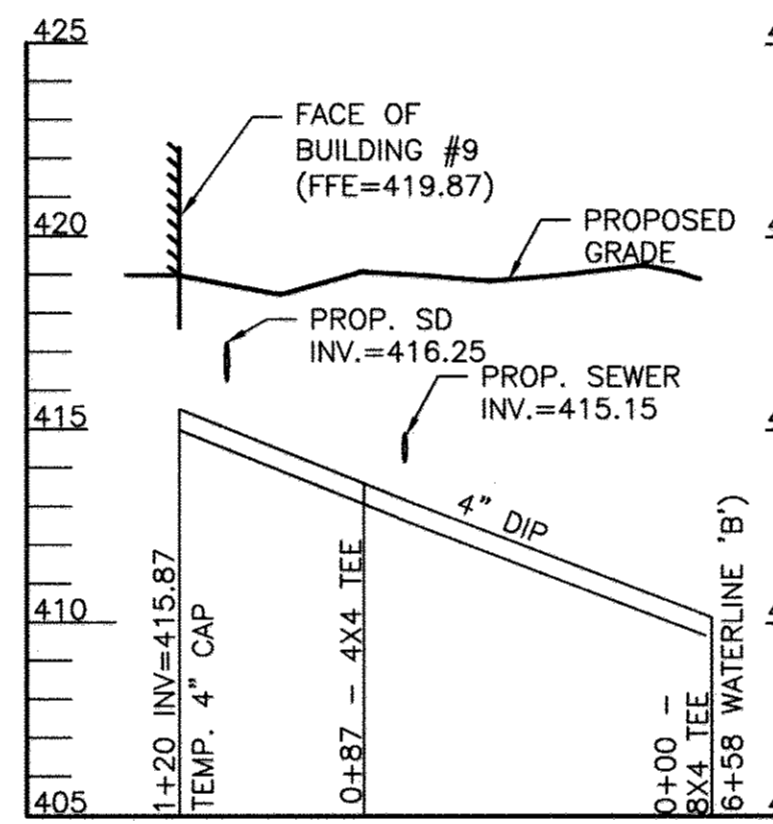
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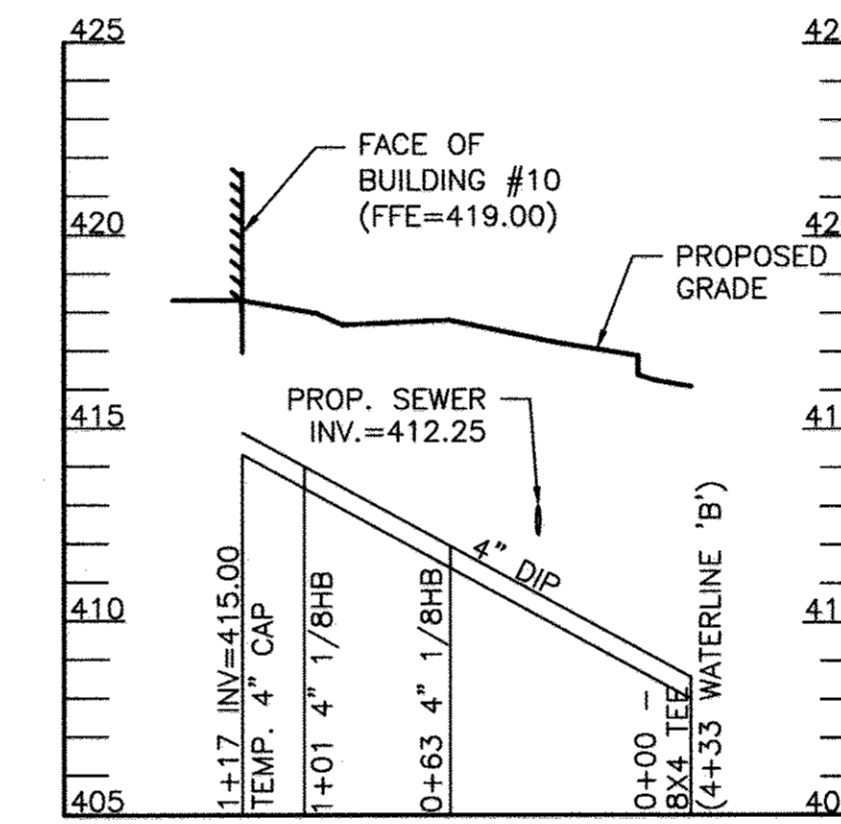
WHC BLDG 7 PROFILE
SCALE: HOR: 1"=50'
VERT: 1"=5'



WHC BLDG 8 PROFILE
SCALE: HOR: 1"=50'
VERT: 1"=5'



WHC BLDG 9 PROFILE
SCALE: HOR: 1"=50'
VERT: 1"=5'



WHC BLDG 10 PROFILE
SCALE: HOR: 1"=50'
VERT: 1"=5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development: *Karl Schaefer* 5-15-17
 Chief, Development Engineering Division: *Walter J. Jellie* 5-16-17
 Director: *Walter J. Jellie* 5-16-17



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 33772 EXP. DATE: 06/16/2017

KCI TECHNOLOGIES
 ENGINEERS
 PLANNERS
 SCIENTISTS
 CONSTRUCTION MANAGERS
 11850 West Market Place
 Suite A
 Fulton, MD 20759
 Telephone: (410) 792-8086
 Fax: (410) 792-7419

REVISIONS		
NO.	DATE	BY
1	04/08/2017	WHC's UPDATED DUE TO LAYOUT CHANGES.
2	12/27/17	REVISED PAGE NUMBERING

OWNER/DEVELOPER: **LEGACY AT ELLICOTT'S RETREAT**
 COMMERCIAL CONTRACTORS INC.
 1205 YORK ROAD LUTHERVILLE-TIMONIUM, MD 21093 (410)-825-8400
 AGE RESTRICTED ADULT HOUSING
 TAX MAP: 24 GRID: 06 PARCEL: 1085
 ZONED: POR ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

DESIGN: NAB DATE: 04/05/17 KCI PROJECT NO. 27134772 SHEET NO. C-1.06
 DRAWN: BRA SCALE: VARIES SHEET NO. 9 OF 45

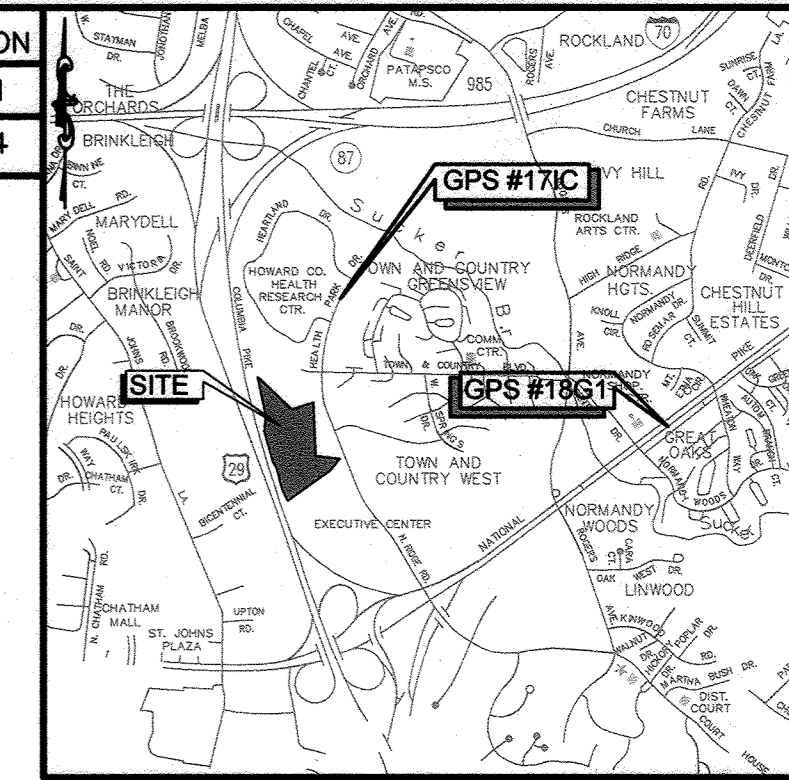
BENCHMARK DATA			
No.	NORTHING	EASTING	ELEV.
1	588971.65	1362993.12	416.20
2	589778.33	1362905.76	441.80
3	589416.22	1362495.27	418.27

MARYLAND STATE COORDINATE SYSTEM (NAD 83/91)

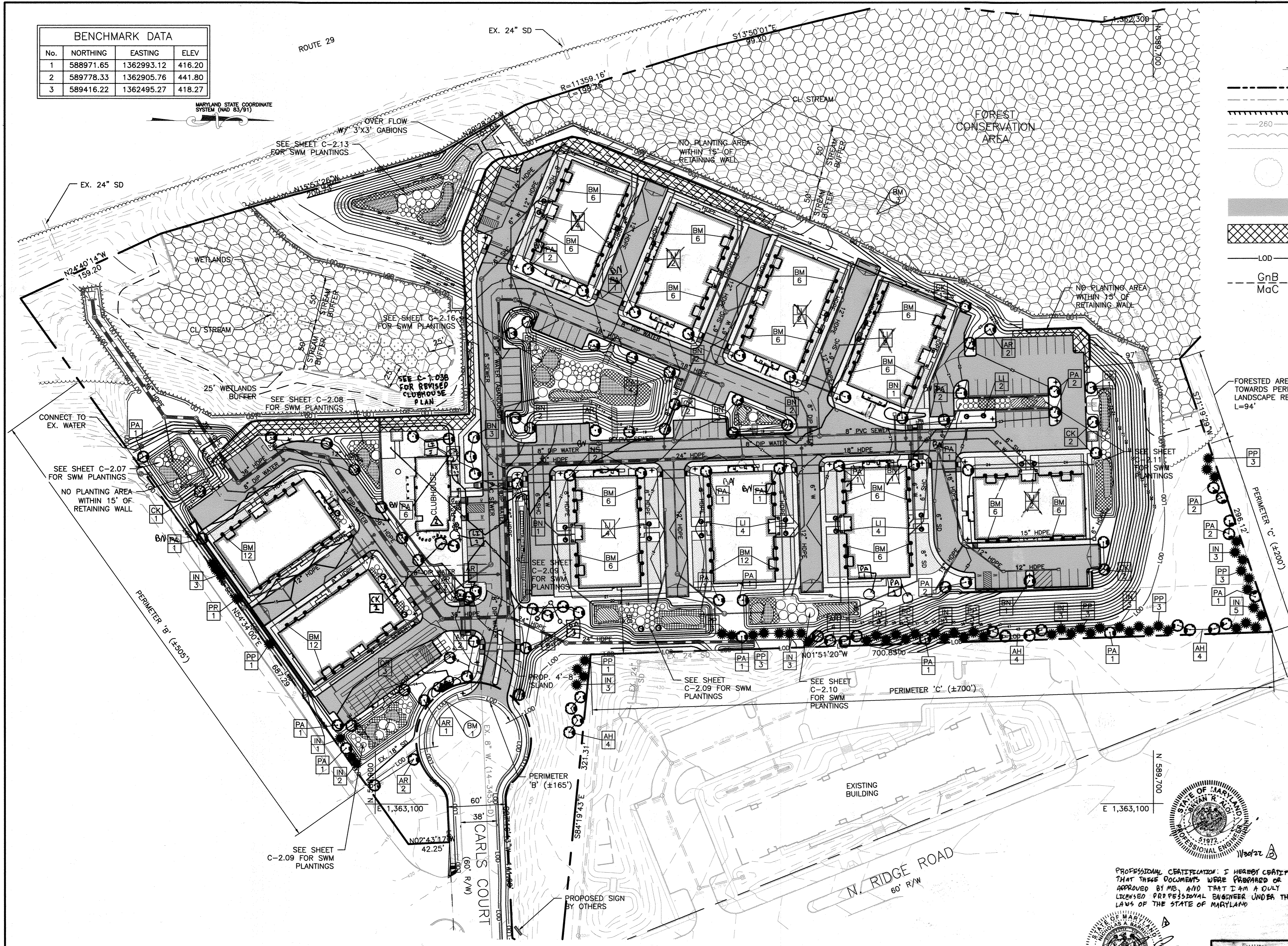
POINT	NORTHING	EASTING	ELEVATION
#171C	591056.32	1363154.63	415.41
#18G1	589985.06	1367750.24	407.74

LEGEND

- PROPERTY LINE
- ADJOINING PROPERTY LINE
- EXISTING BUILDING LINE
- EXISTING CONTOUR
- EXISTING TREELINE
- EXISTING EDGE OF PAVEMENT
- EXISTING TREE
- PROPOSED IMPERIOUS PAVEMENT
- ▨ NO PLANTING AREA
- LOD --- LIMIT OF DISTURBANCE
- GnB --- SOILS LINE
- MaC ---



VICINITY MAP
SCALE: 1" = 2000'
ADC MAP 21B6



SCHEDULE 'A' PERIMETER LANDSCAPE EDGE

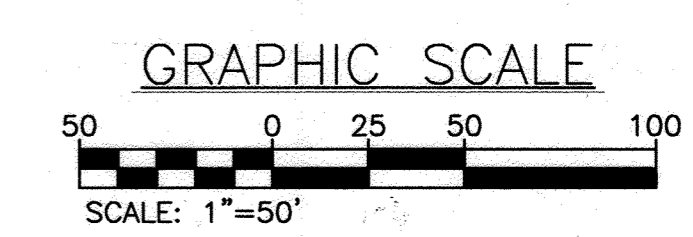
CATEGORY	ADJACENT TO ROADWAYS	ADJACENT TO PERIMETER PROPERTIES (NORTH & EAST)
LANDSCAPE TYPE	B	C
LINEAR FEET OF PERIMETER	670'	900'
CREDIT FOR EXISTING VEGETATION	NO	YES - 94'
NUMBER OF PLANTS REQUIRED		
-SHADE TREES	11	23
-EVERGREEN TREES	0	46
-SHRUBS	0	0
NUMBER OF PLANTS PROVIDED		
-SHADE TREES	8	27
-EVERGREEN	9	50
-SHRUBS	0	0

NOTE: THE FOREST CONSERVATION AREA ALONG THE NORTH AND WEST OF THE SITE SATISFIES THE REQUIREMENT ALONG THESE PROPERTY LINES.

DEVELOPER'S/OWNER'S LANDSCAPE CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

[Signature]
DEVELOPER'S / OWNER'S NAME



KCI TECHNOLOGIES
ENGINEERS, PLANNERS, SCIENTISTS, CONSTRUCTION MANAGERS
11890 WEST MARKET PLACE, SUITE A, FORT WASHINGTON, MD 20759
TELEPHONE: (410) 792-8086, FAX: (410) 792-7419

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. 33222, Expiration Date: 4/16/16



LANDSCAPING PLAN
SCALE: 1"=50'

MISS UTILITY

CALL "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF WORK. THE EXCAVATOR MUST NOTIFY ALL PUBLIC UTILITY COMPANIES WITH UNDERGROUND FACILITIES IN THE AREA OF PROPOSED EXCAVATION AND HAVE THOSE FACILITIES LOCATED BY THE UTILITY COMPANIES PRIOR TO COMMENCING EXCAVATION. THE EXCAVATOR IS RESPONSIBLE FOR COMPLIANCE WITH REQUIREMENTS OF CHAPTER 36A OF THE MONTGOMERY COUNTY CODE.

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 33772 EXP. DATE: 06/16/2017

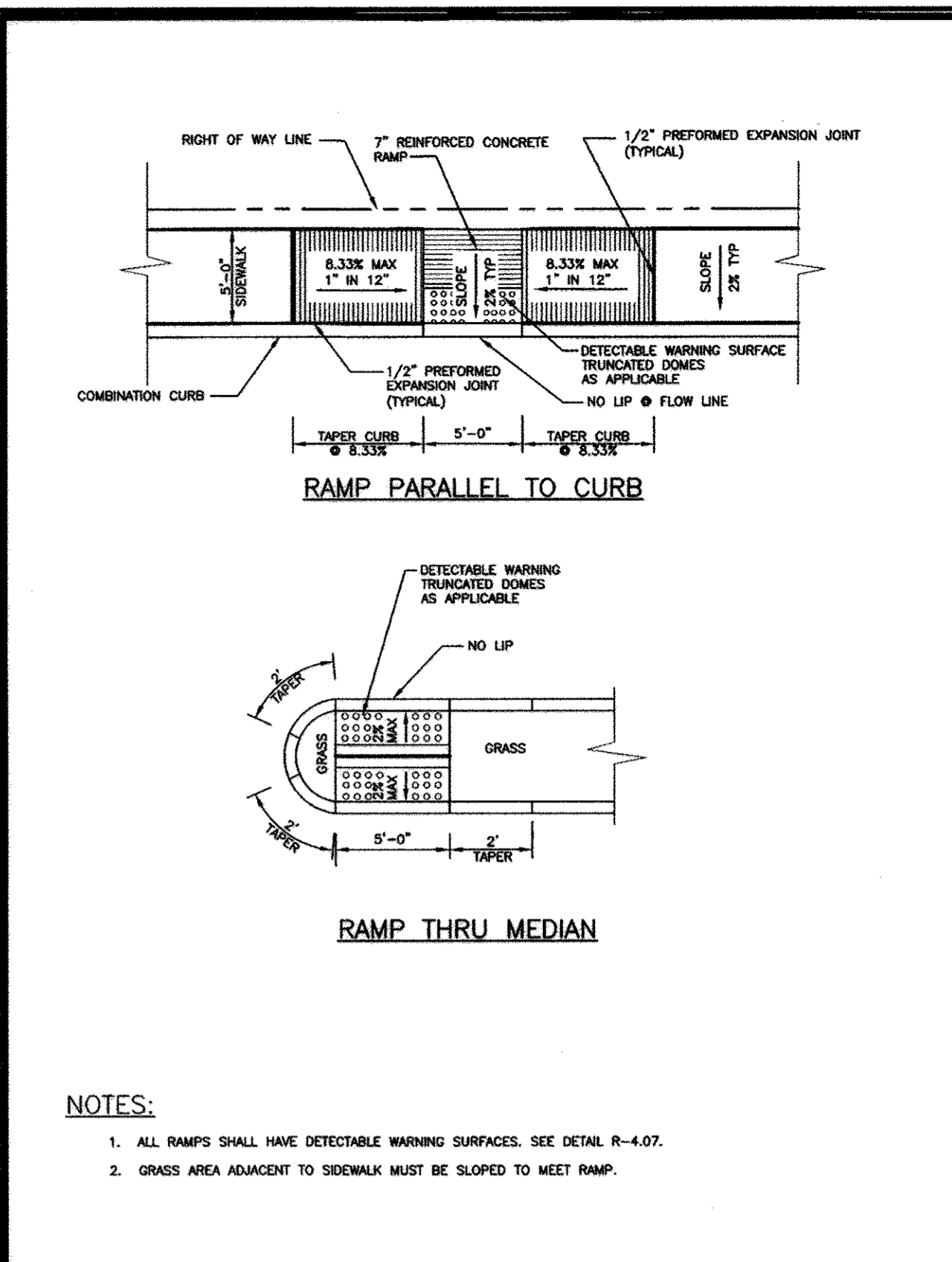
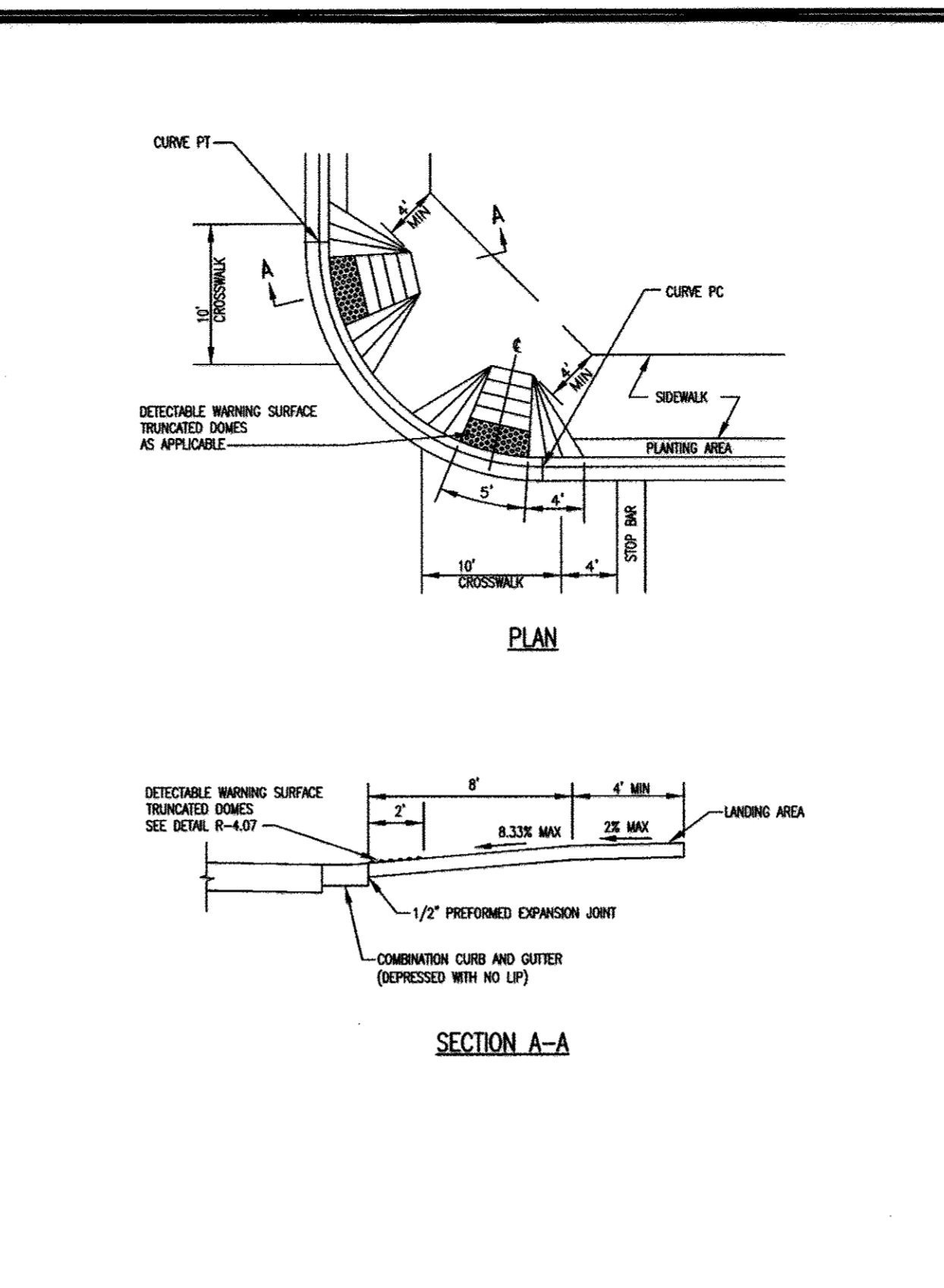
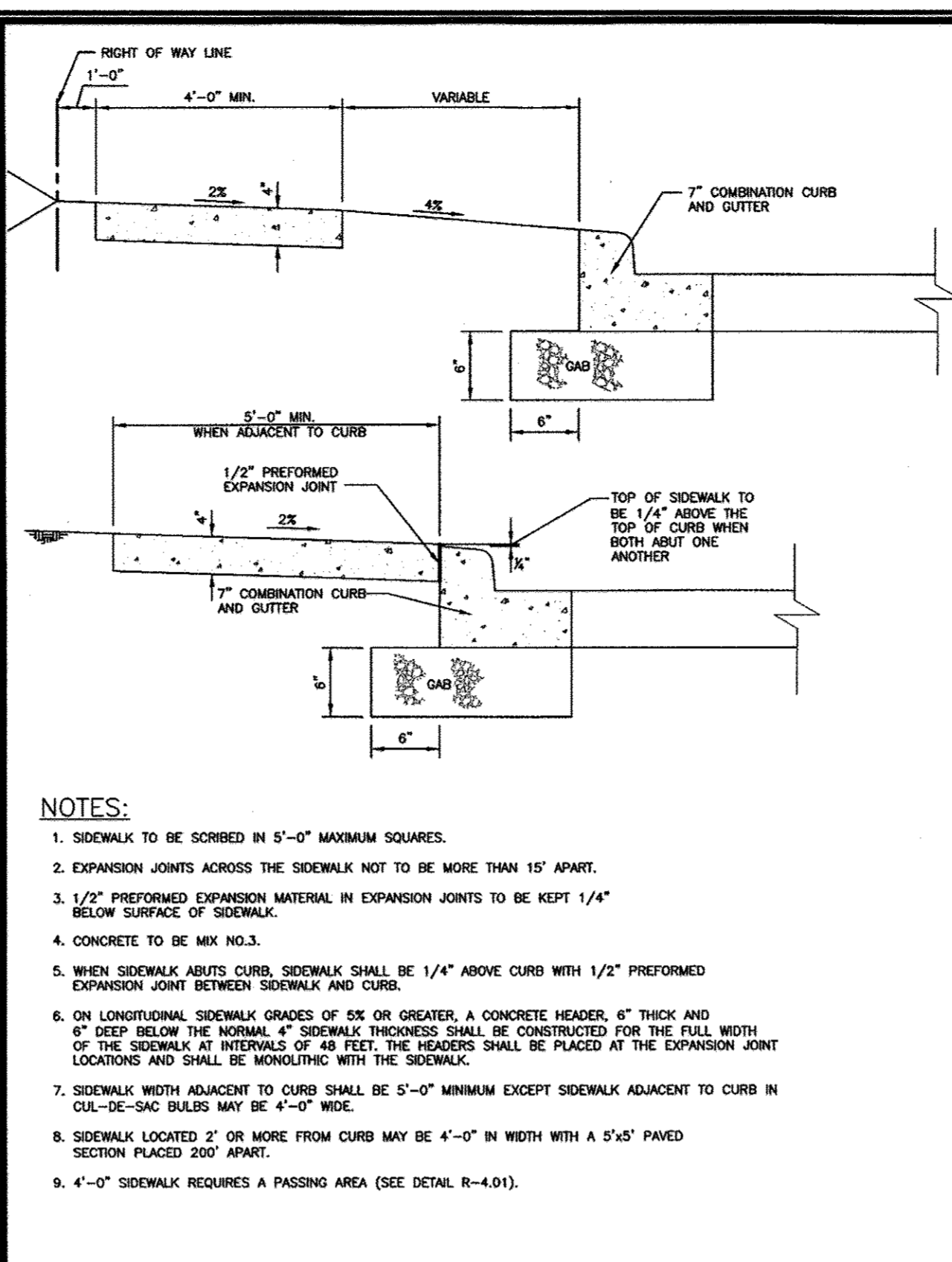
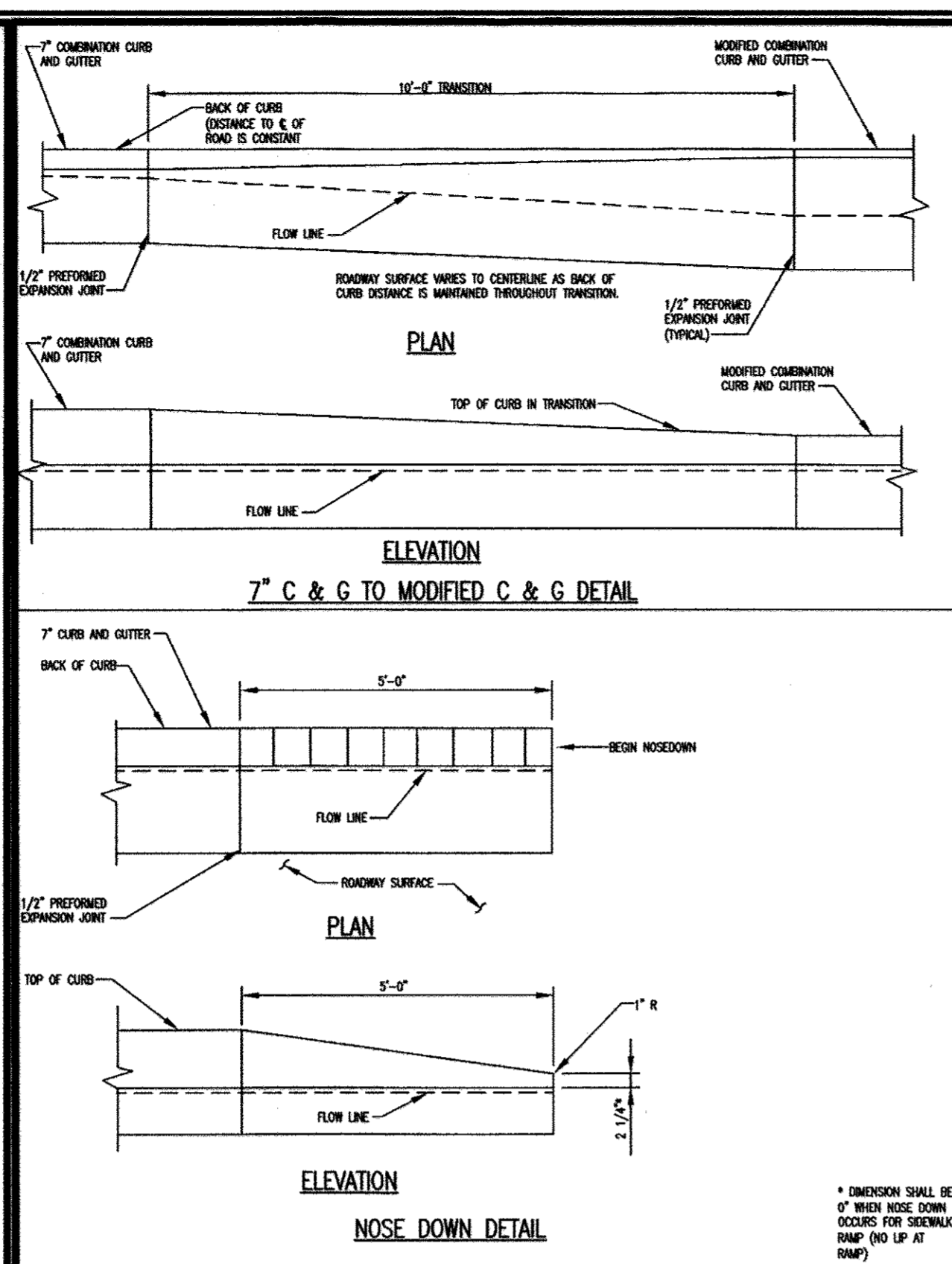
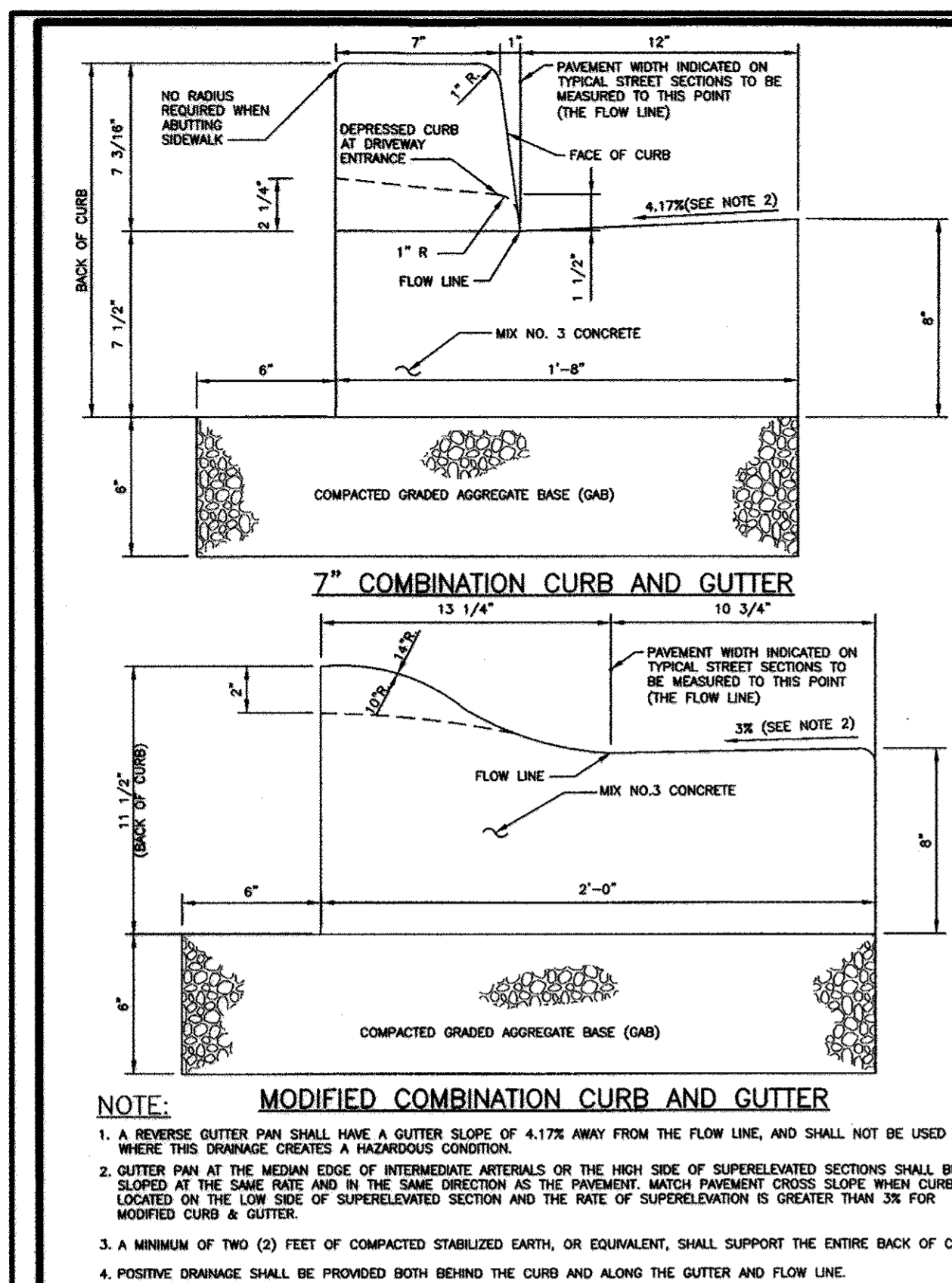
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
5-15-17 DATE
5-13-17 DATE
5-16-17 DATE

REVISIONS			
NO.	DATE	BY	
1	04/05/2017	LANDSCAPING HAS CHANGED BASED ON NEW LAYOUT	BA
2	12/22/17	REVISIONS TO THE CLUBHOUSE. MOVE LOCATION OF ONE TREE.	BA
3	11/30/2022	SUPPLEMENTAL CLUBHOUSE PLANTINGS and TREE CHANGES	BA

OWNER/DEVELOPER: **LEGACY AT ELLICOTT'S RETREAT**
COMMERCIAL CONTRACTORS INC.
1205 YORK ROAD, LUTHERVILLE-TIMONIUM, MD 21093, (410)-825-8400

LANDSCAPING PLAN
AGE RESTRICTED ADULT HOUSING
TAX MAP: 24 GRID: 06 PARCEL: 1085
ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

DESIGN: NAB DATE: 04/05/17 KCI PROJECT NO. 27134772 SHEET NO. C-1.07
DRAWN: BRA SCALE: 1"=50' SHEET NO. 10 OF 45



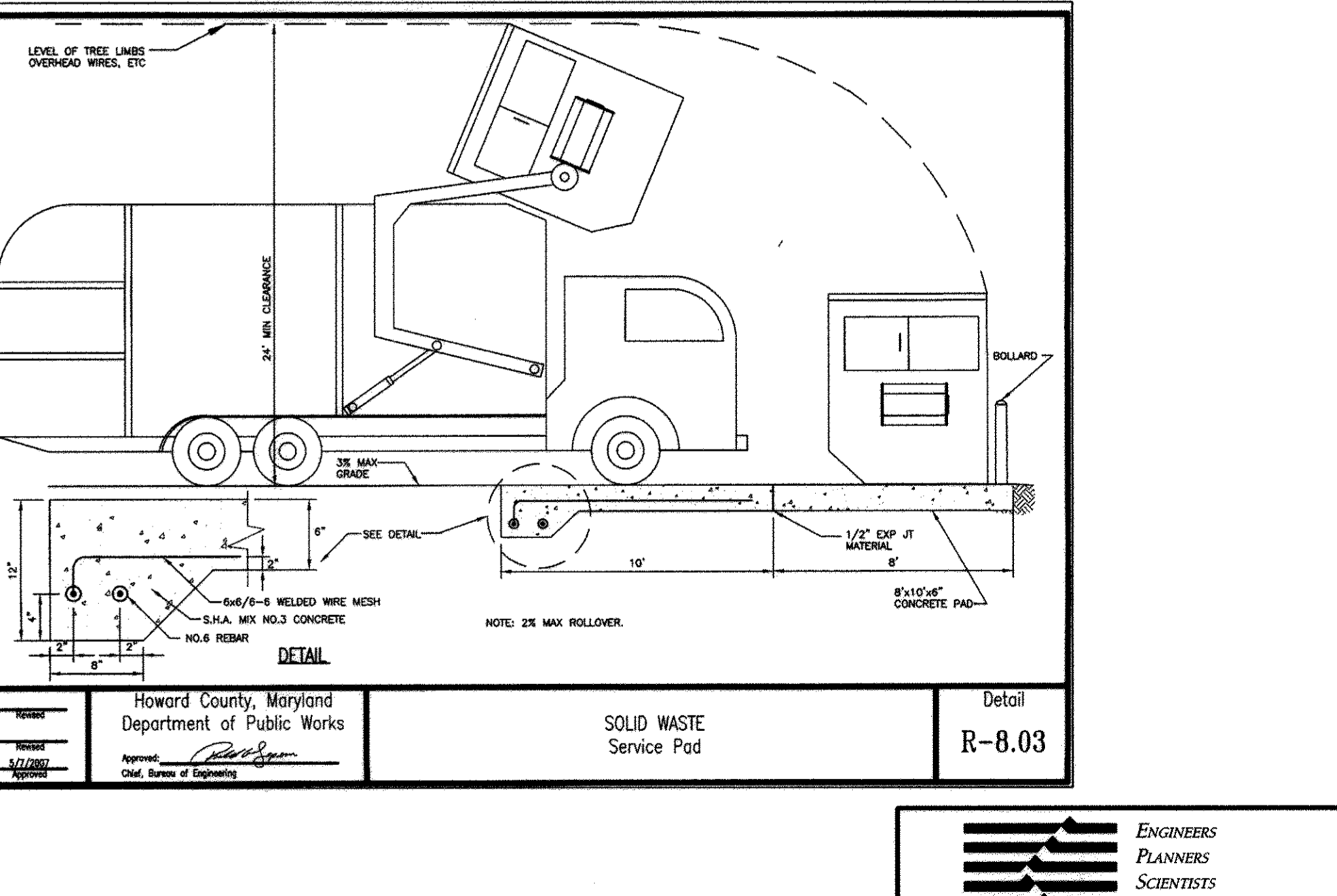
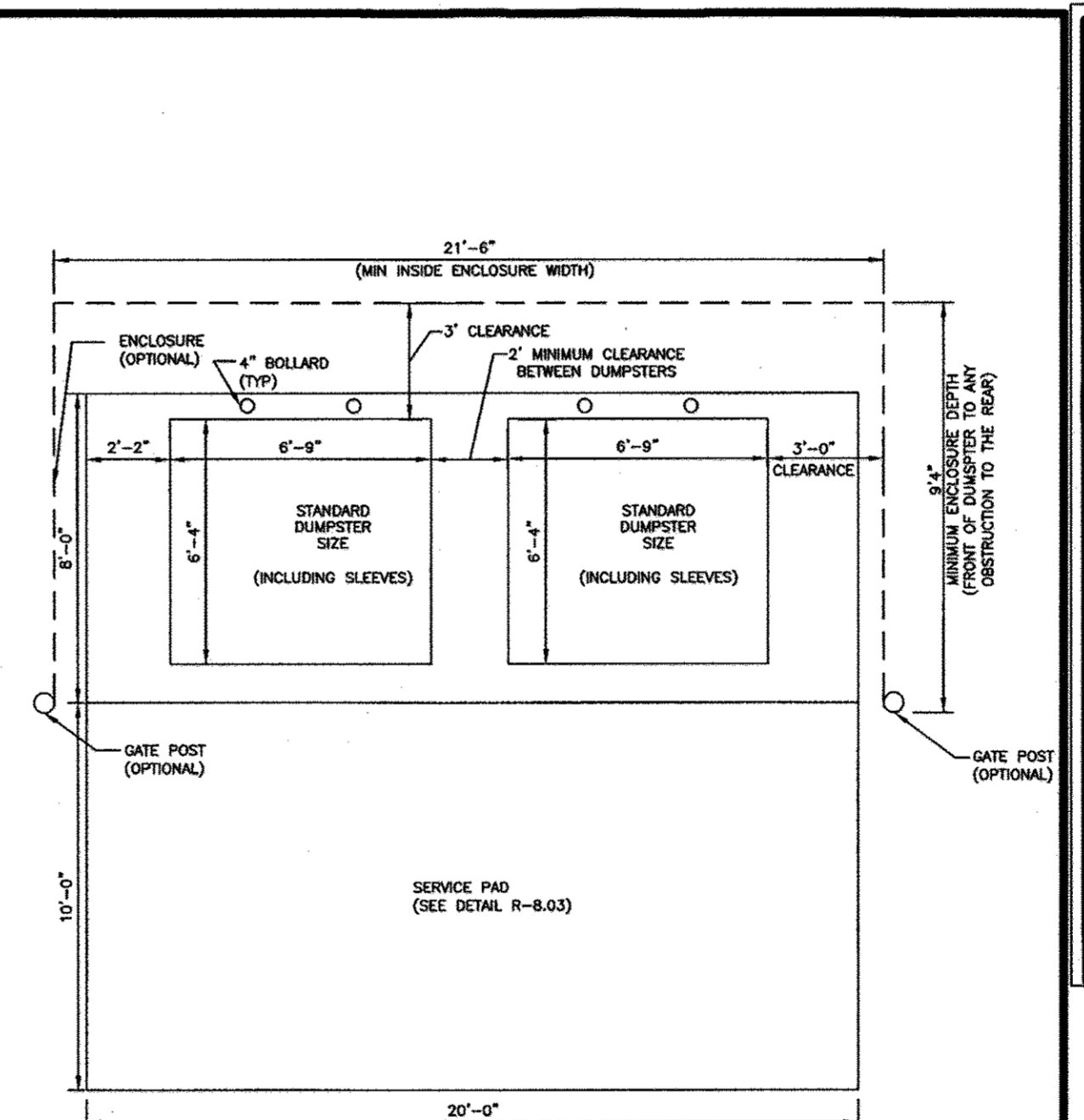
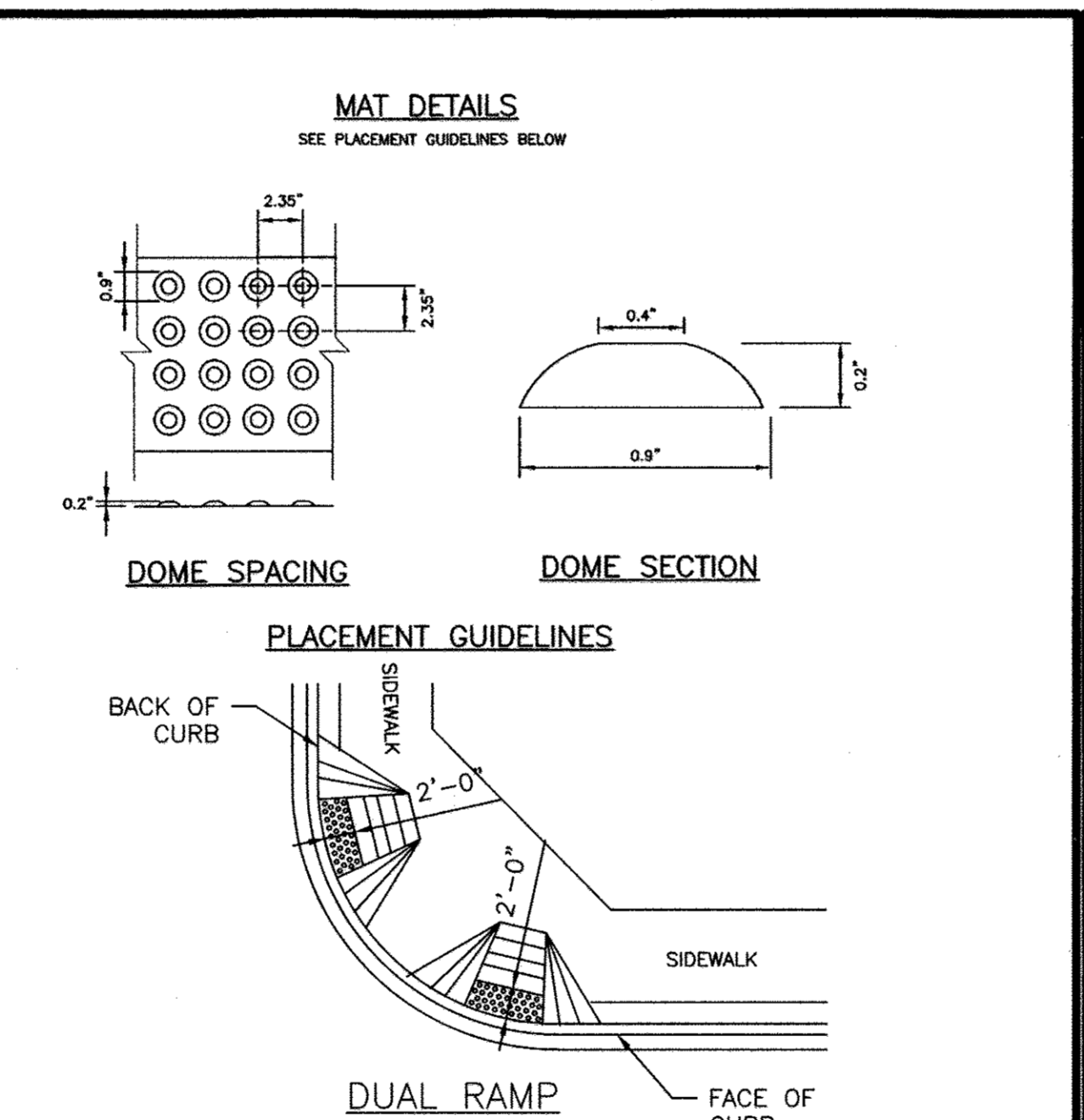
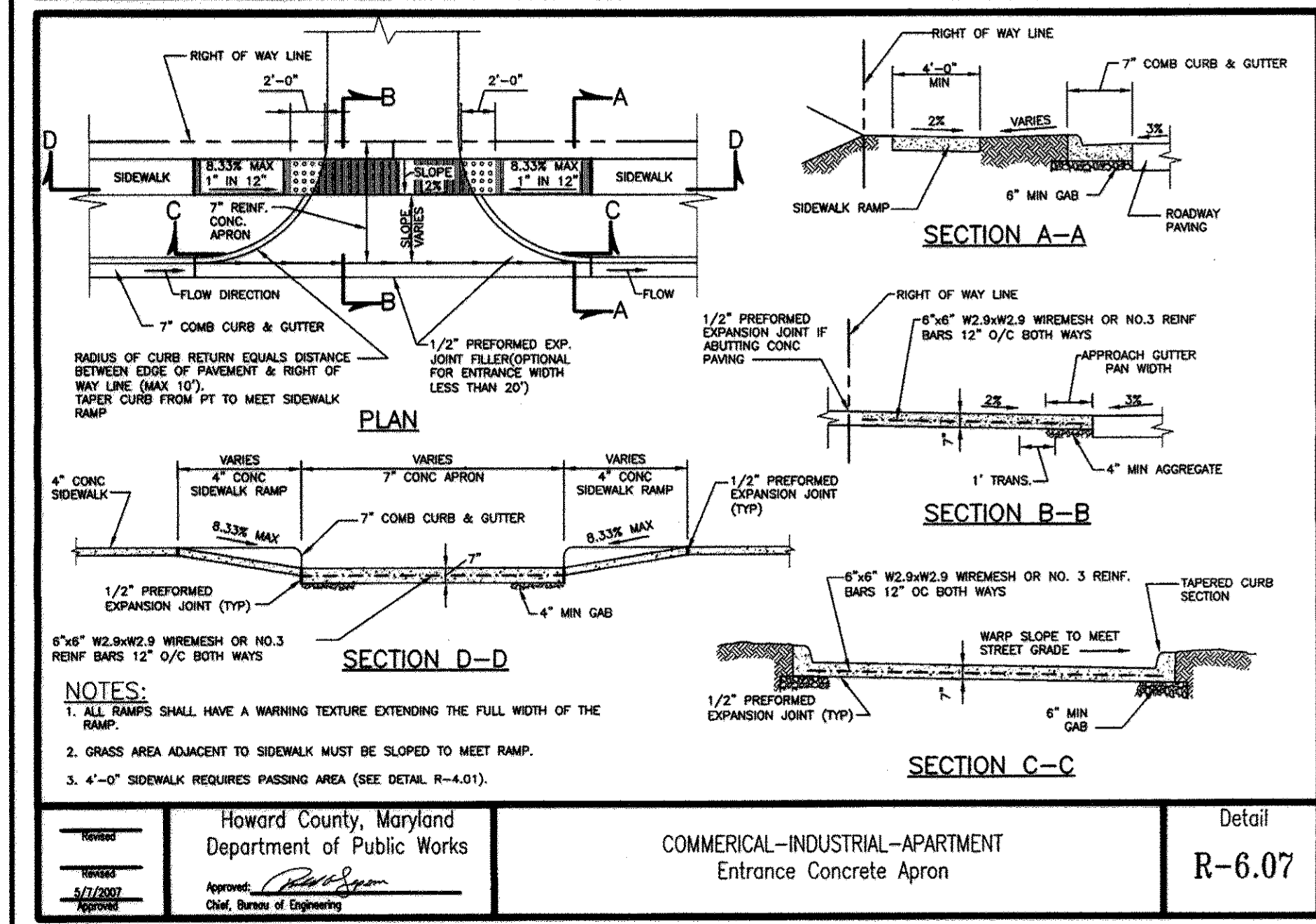
Howard County, Maryland Department of Public Works	CURB AND GUTTER 7" & Modified	Detail R-3.01
---	----------------------------------	------------------

Howard County, Maryland Department of Public Works	CURB AND GUTTER 7" Transition to Modified & Nose Down	Detail R-3.02
---	---	------------------

Howard County, Maryland Department of Public Works	Concrete Sidewalk	Detail R-3.05
---	-------------------	------------------

Howard County, Maryland Department of Public Works	SIDEWALK RAMP Type B Dual Ramp	Detail R-4.03
---	--------------------------------------	------------------

Howard County, Maryland Department of Public Works	SIDEWALK RAMP Layout & Grading Parallel to Curb & Thru Median	Detail R-4.06
---	---	------------------



Howard County, Maryland Department of Public Works	COMMERCIAL-INDUSTRIAL-APARTMENT Entrance Concrete Apron	Detail R-6.07
---	--	------------------

Howard County, Maryland Department of Public Works	SIDEWALK RAMP Detectable Warning Truncated Domes	Detail R-4.07
---	--	------------------

Howard County, Maryland Department of Public Works	SOLID WASTE Double Container Enclosure 2 Gate System	Detail R-8.05
---	--	------------------

Howard County, Maryland Department of Public Works	SOLID WASTE Service Pad	Detail R-8.03
---	----------------------------	------------------

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 5-15-17
 CHIEF, DIVISION OF LAND DEVELOPMENT
 5-12-17
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 5-16-17
 DIRECTOR

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

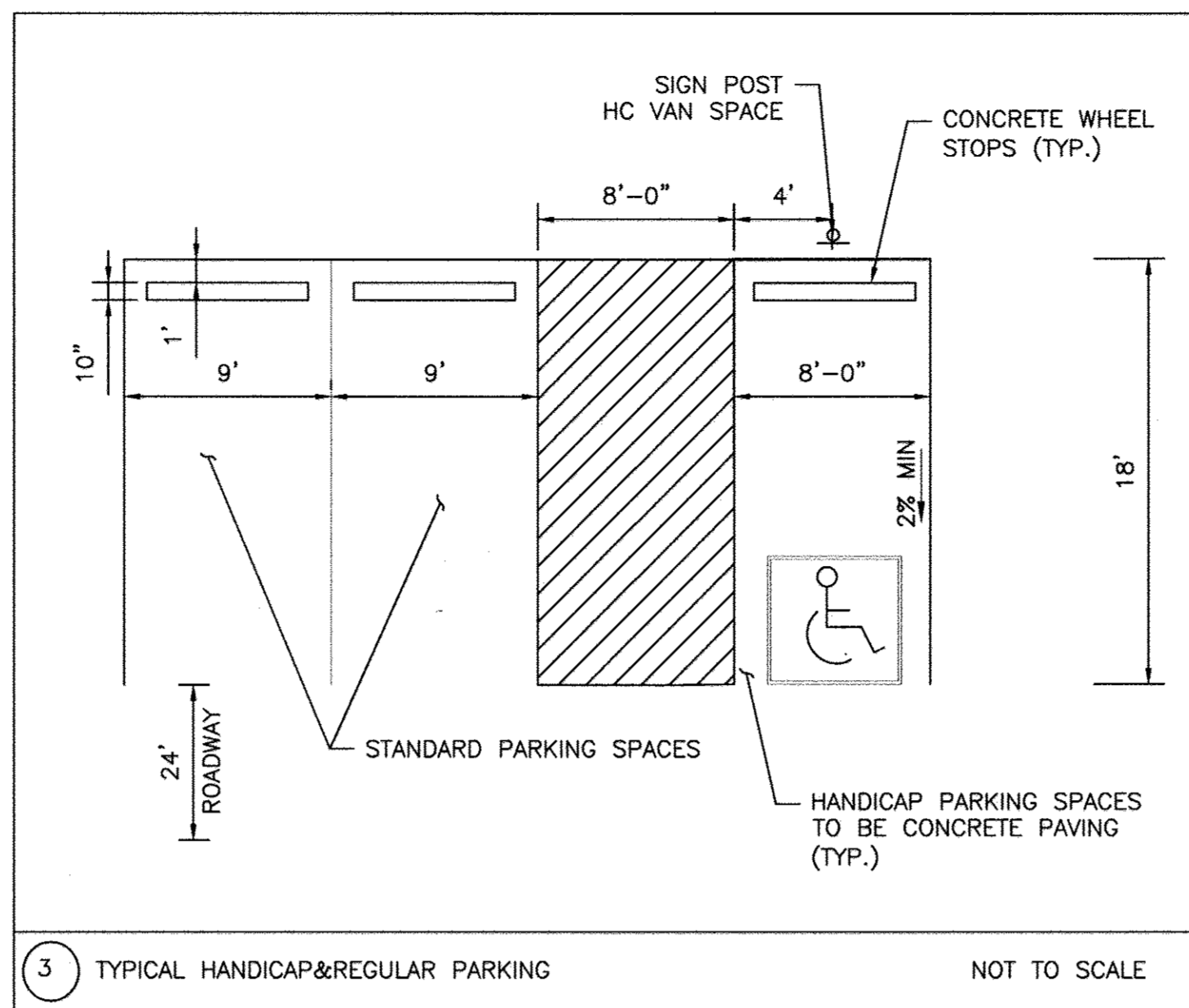
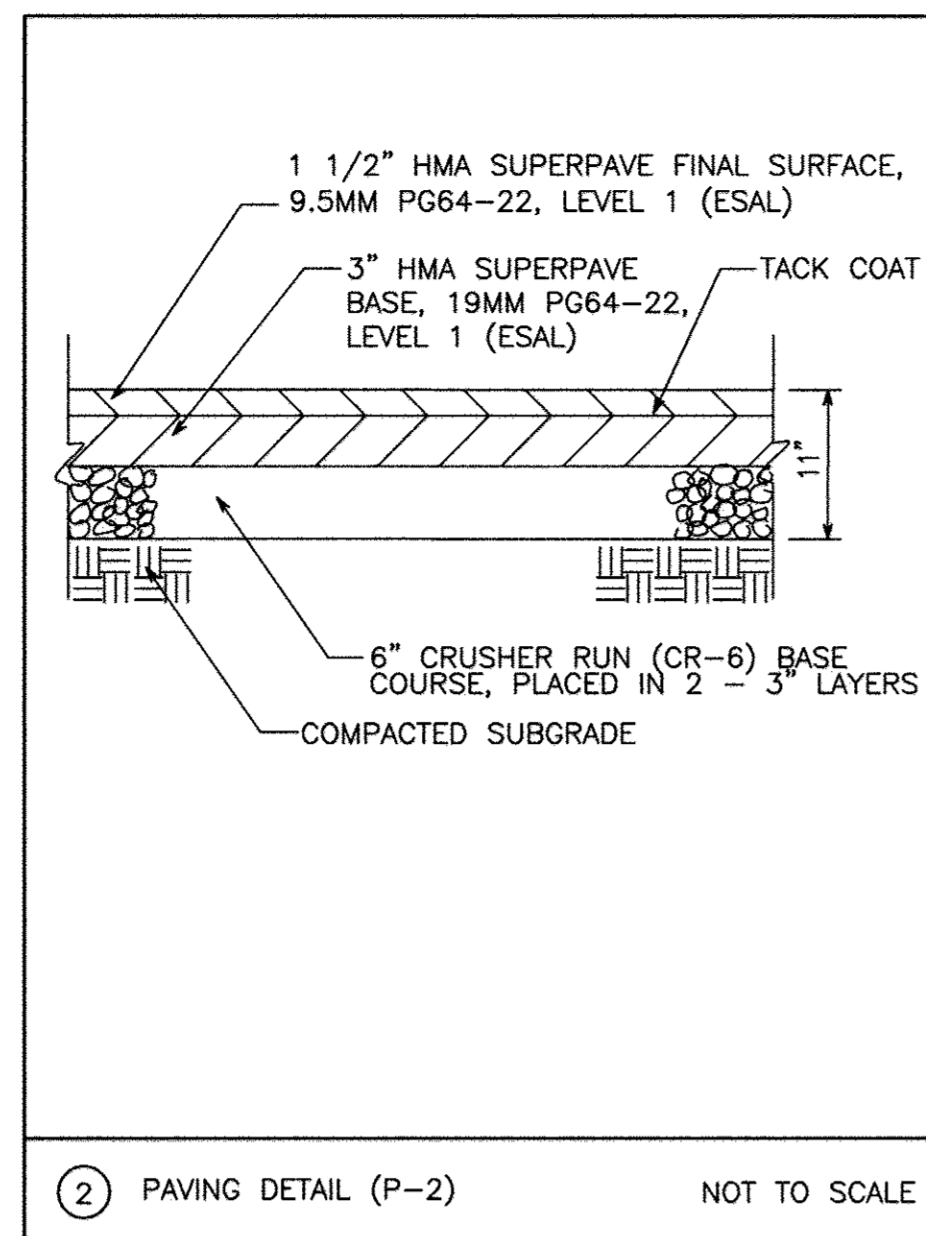
OWNER/DEVELOPER: LEGACY AT ELLICOTT'S RETREAT
 COMMERCIAL CONTRACTORS INC.
 1205 YORK ROAD, LUTHERVILLE-TIMONIUM, MD 21093 (410)-825-8400

SITE DETAILS
 AGE RESTRICTED ADULT HOUSING
 TAX MAP: 24 GRID: 06 PARCEL: 1085
 ZONED: POR ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

DESIGN DATE: 04/05/17 KCI PROJECT NO. 27134772 SHEET NO. C-1.09
 DRAWN SCALE: AS SHOWN SHEET NO. 12 OF 45

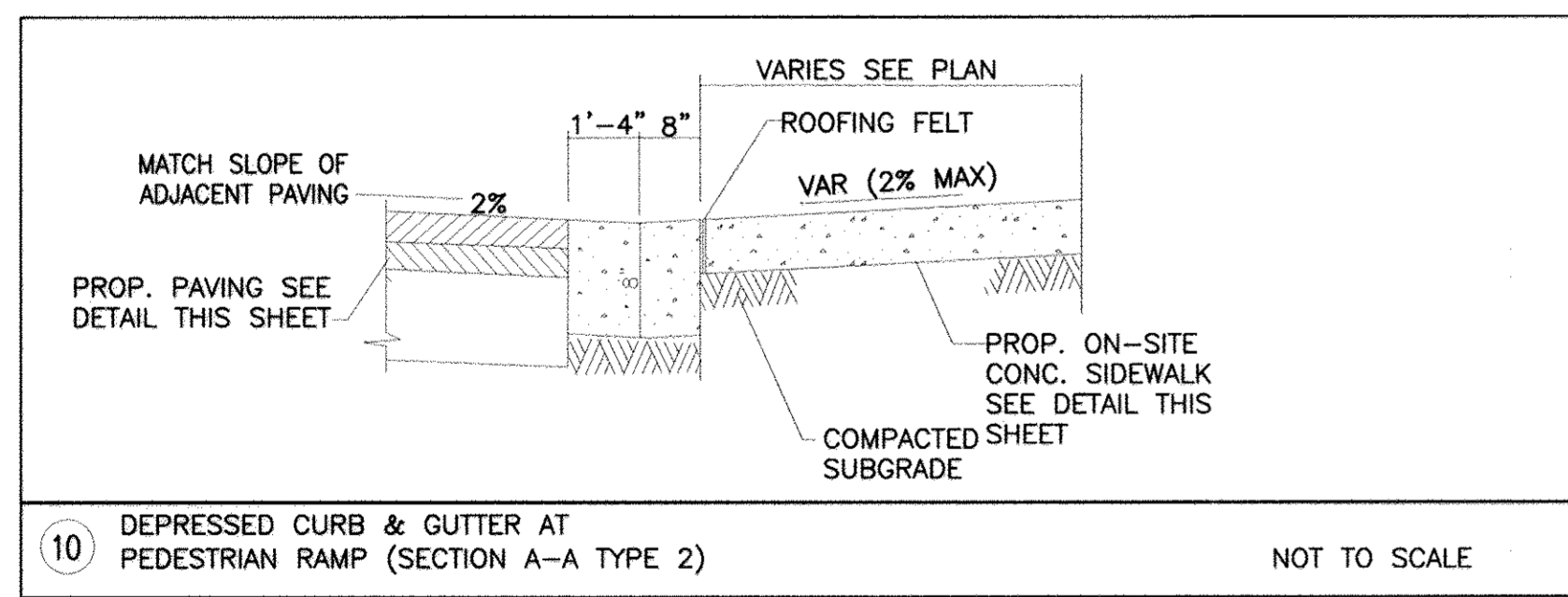
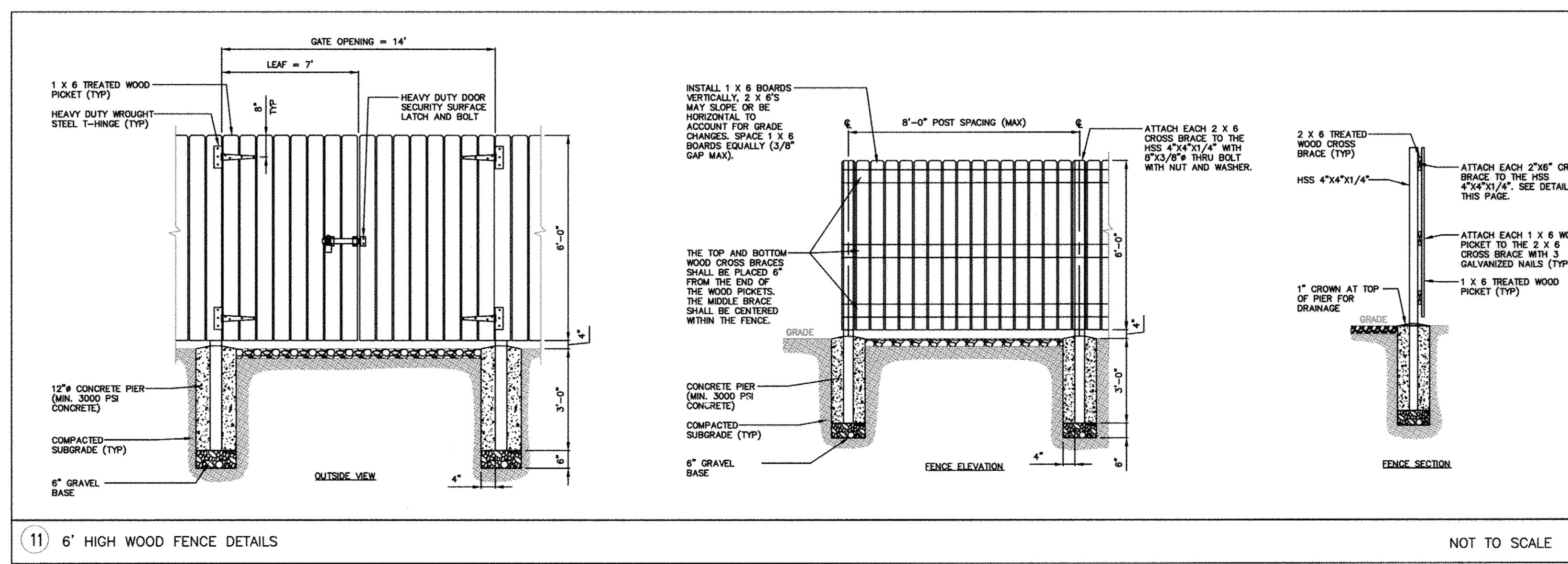
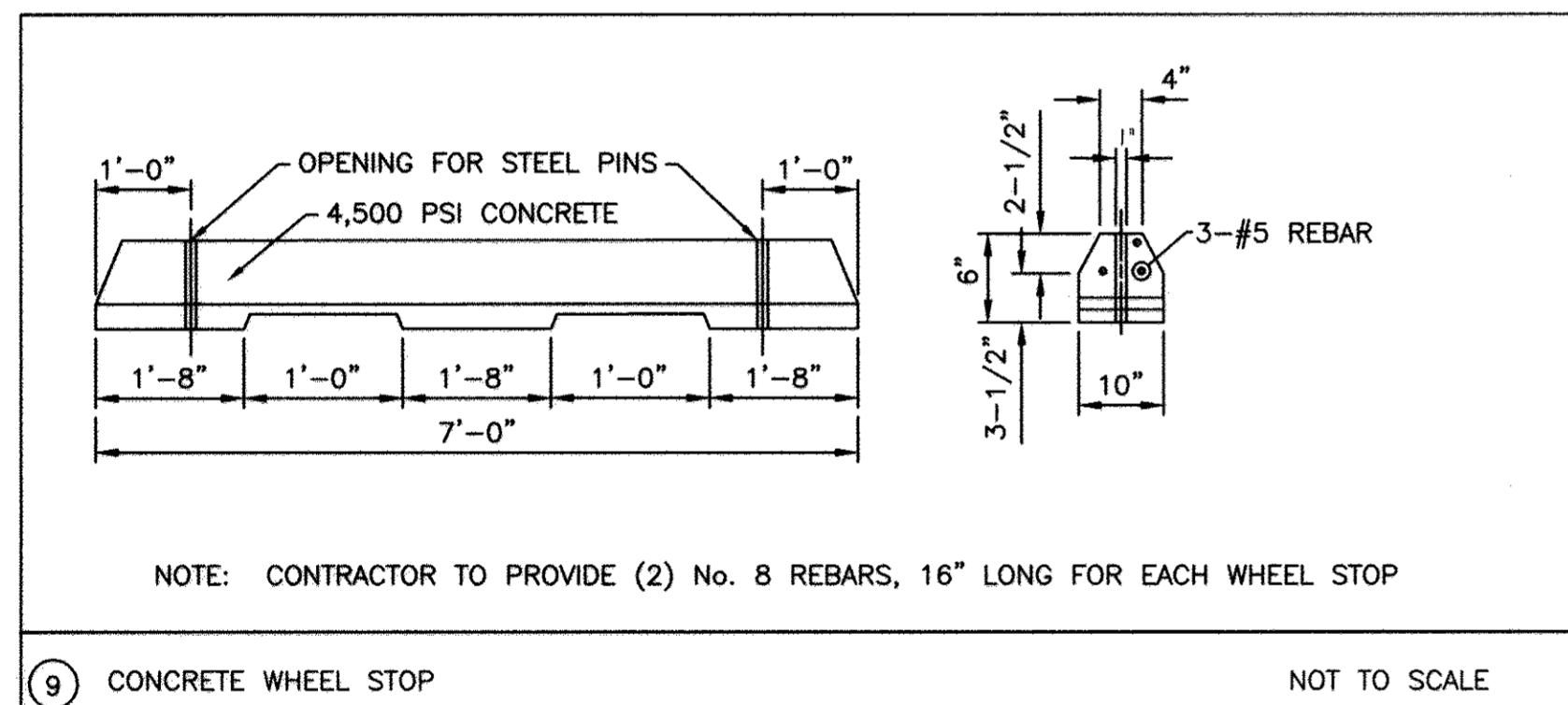
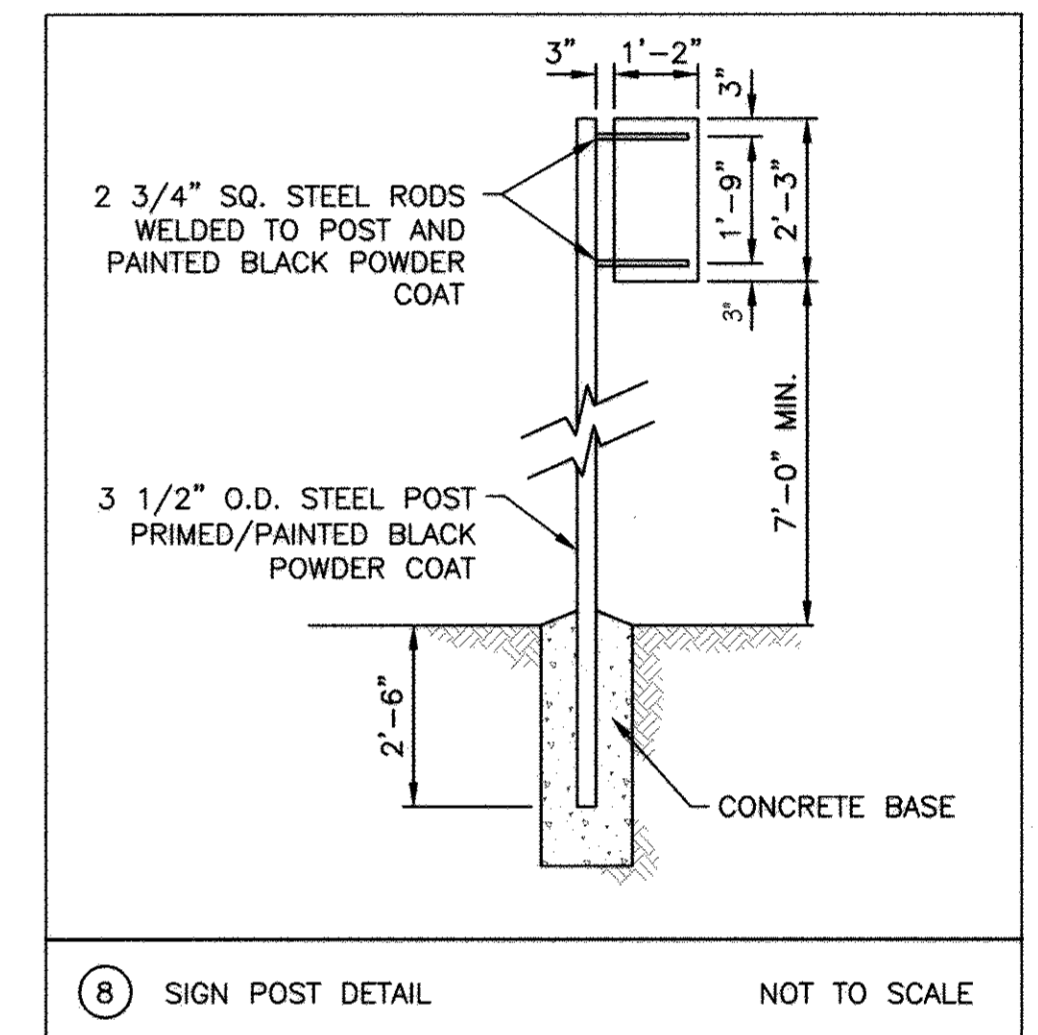
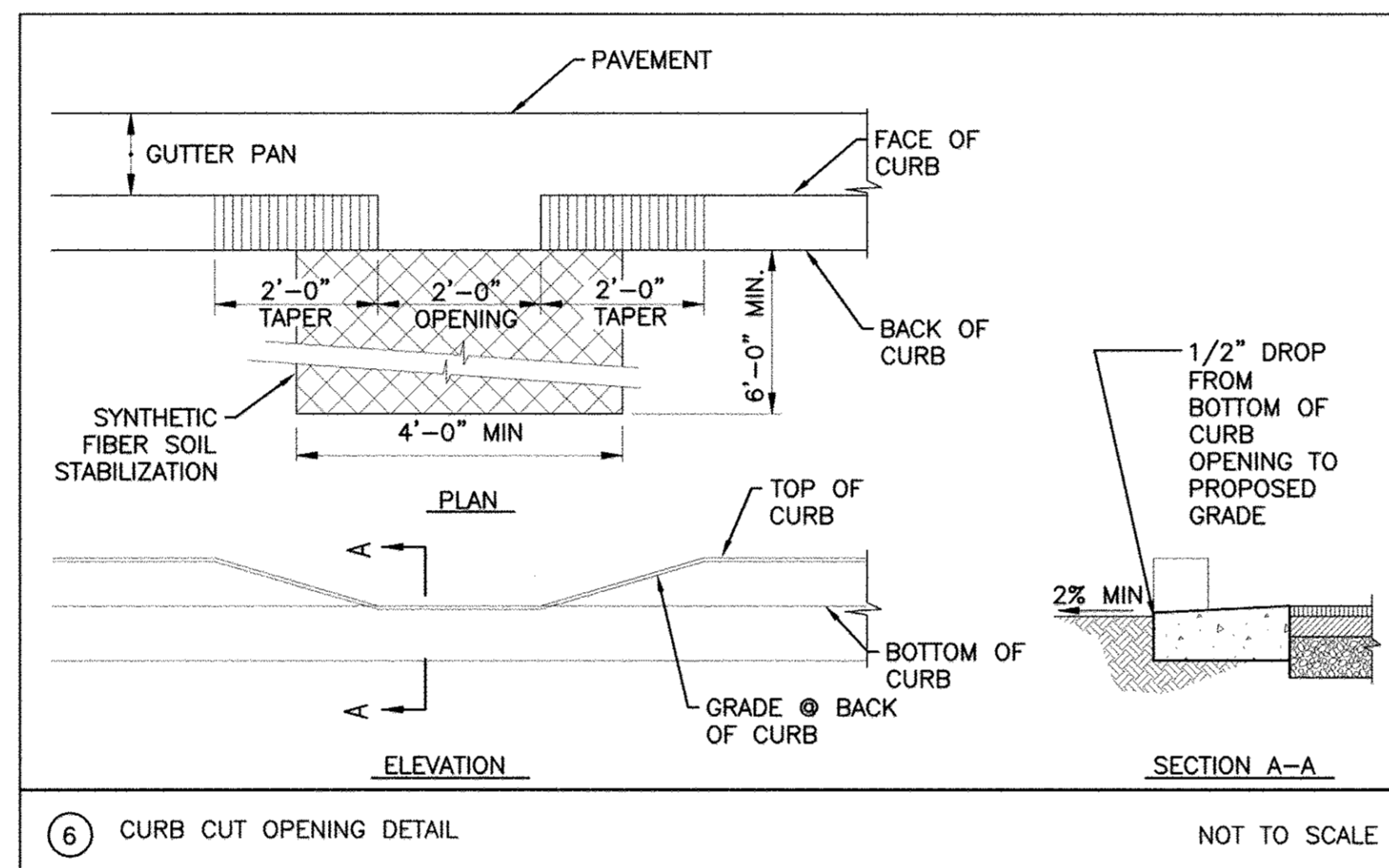
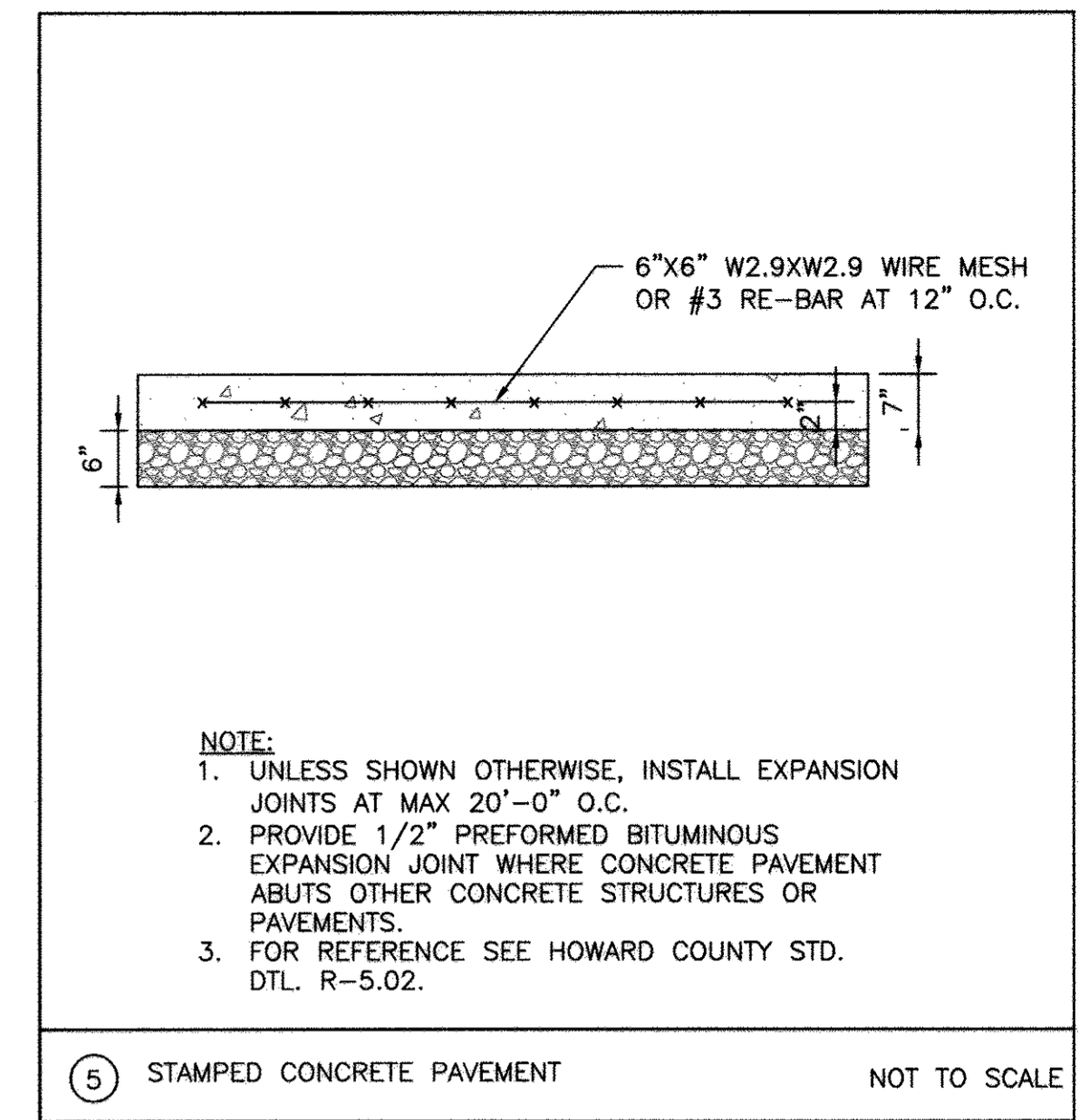


REVISIONS		
NO.	DATE	BY
1	04/05/2017	DETAIL R-8.03 HAS BEEN ADDED.
2	12/12/17	REVISED PAGE NUMBERING



	HANDICAP WITH FINE	R7-B(3)	4
	VAN ACCESSIBLE WITH FINE	R7-BA	4
	STOP SIGN	R1-1	4
	NO PARKING IN ACCESS AISLE		4

④ SIGN SCHEDULE NOT TO SCALE



ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

11850 WEST MARKET PLACE
SUITE A
FLEXTON, MD 20759
TELEPHONE: (410) 792-8686
FAX: (410) 792-7419

REVISIONS			
NO.	DATE	DETAILS	BY
1	04/05/2017	DETAILS HAVE BEEN UPDATED	BA
2	12/12/17	REVISED PAGE NUMBERING	BA

OWNER/DEVELOPER:
COMMERCIAL CONTRACTORS INC.
1205 YORK ROAD
LUTHERVILLE-TIMONIUM,
MD 21093
(410)-825-8400

LEGACY AT ELLICOTT'S RETREAT

SITE DETAILS

AGE RESTRICTED ADULT HOUSING
TAX MAP: 24 GRID: 06 PARCEL: 1085
ZONED: POR
ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

DESIGN NAB	DATE 09/05/17	KCI PROJECT NO. 27134772	SHEET NO. C-1.10
DRAWN BRA	SCALE AS SHOWN	SHEET NO. 13 OF 45	

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Kentel Leach 5-15-17
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Paul Brown 5-12-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

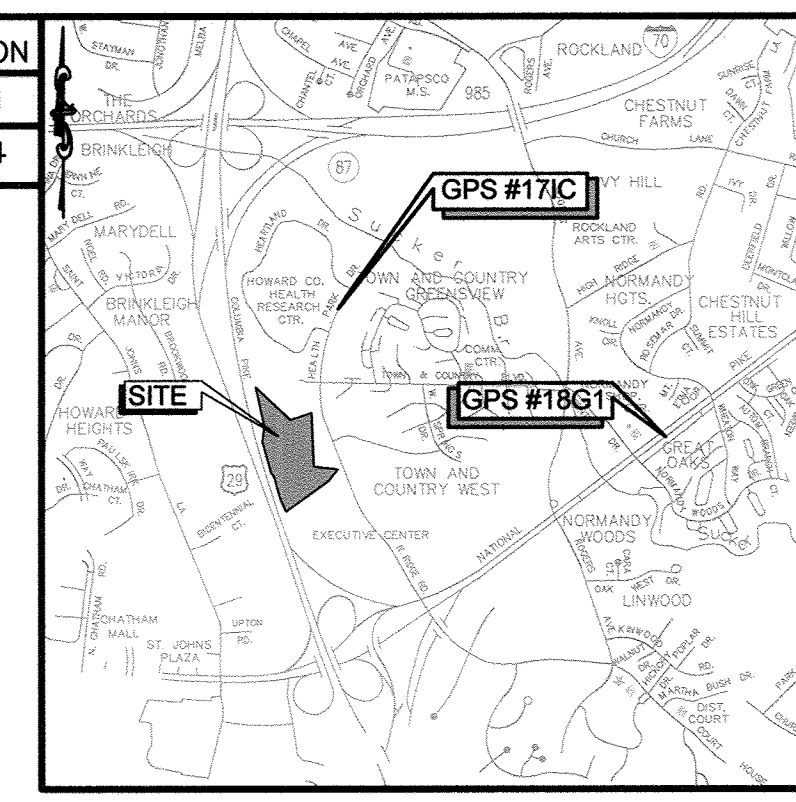
W. Williams 5-16-17
DIRECTOR DATE

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

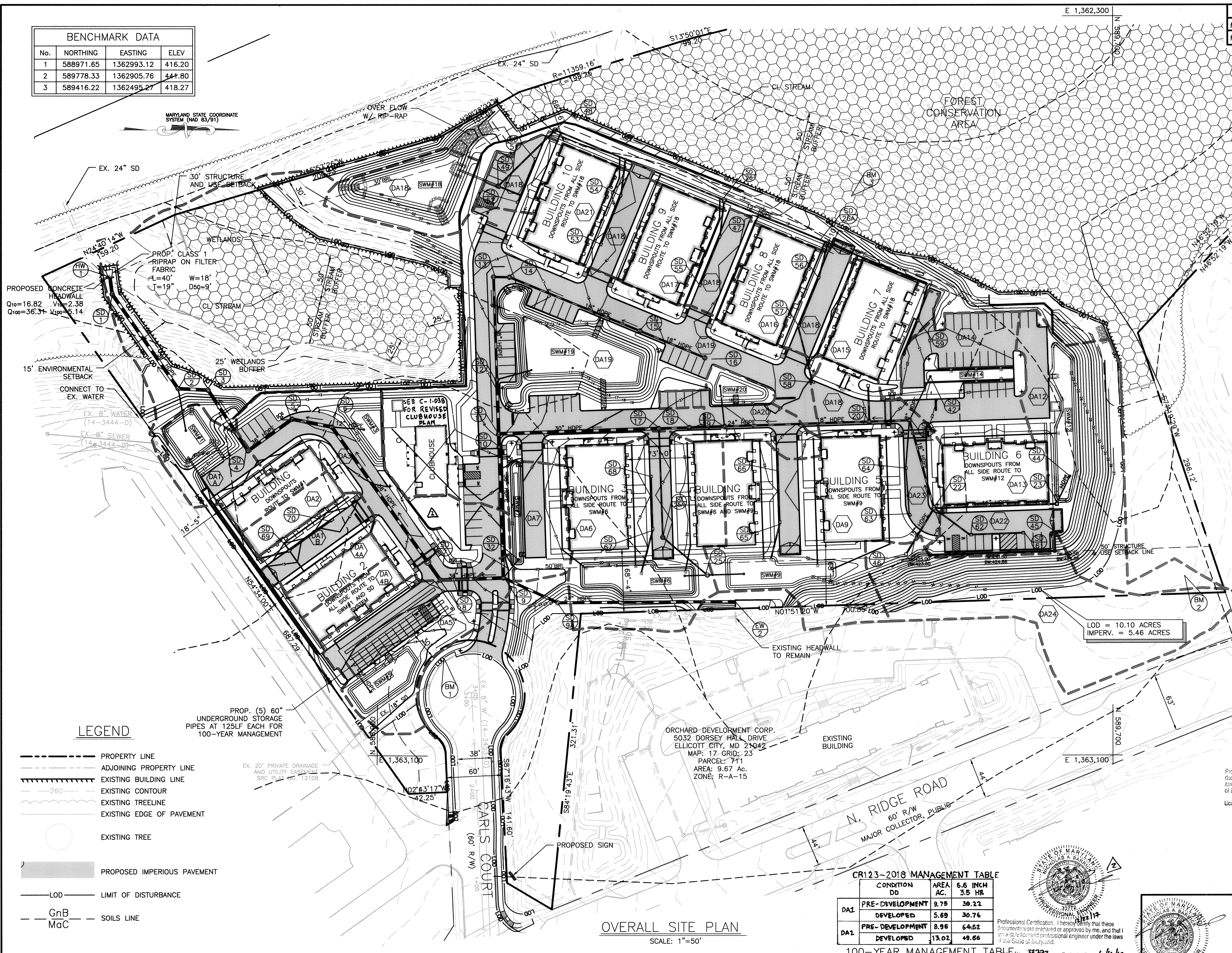
4/10/17

BENCHMARK DATA			
No.	NORTHING	EASTING	ELEV.
1	588971.65	1362993.12	416.20
2	589778.33	1362905.76	441.80
3	589416.22	1362495.27	418.27

POINT	NORTHING	EASTING	ELEVATION
#17C	591056.92	1363154.63	415.41
#18G1	589985.06	1367750.24	407.74



VICINITY MAP
SCALE: 1" = 2000'
ADC MAP 21B6



STORMWATER MANAGEMENT FACILITY TABLE

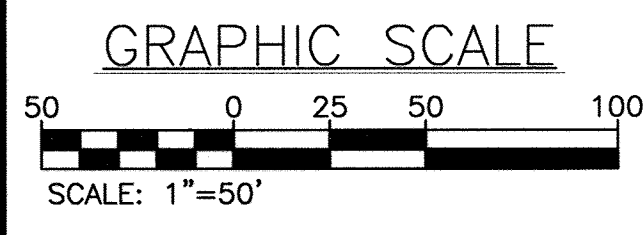
FACILITY	DRAINAGE AREA (SF)	IMPERVIOUS AREA (S.F.)	%	PROVIDED	
				PE	ESDv (C.F.)
SWM #1 (M-6)MICRO-BORATION	25,350	19,850	78%	0.88"	1,402
SWM #3 (M-6)MICRO-BORATION	23,176	10,779	47%	1.35"	1,225
SWM #5 (M-6)MICRO-BORATION	19,221	9,898	51%	2.50"	2,138
SWM #6 (M-6)MICRO-BORATION	33,493	20,044	60%	1.60"	2,628
SWM #7 (M-6)MICRO-BORATION	7,938	5,024	63%	0.93"	383
SWM #9 (M-6)MICRO-BORATION	30,795	18,868	61%	1.54"	2,384
SWM #12 (M-6)MICRO-BORATION	33,534	16,192	22%	1.34"	1,821
SWM #14 (M-6)MICRO-BORATION	16,000	10,170	64%	1.88"	1,562
SWM #18 (M-2)MICRO-BORATION	72,908	60,148	83%	2.60"	12,519
SWM #19 (M-6)MICRO-BORATION	72,175	41,700	58%	2.34"	8,010
SWM #20 (M-6)MICRO-BORATION	8,005	5,059	63%	2.57"	1,061

- NOTE:
- ALL FACILITIES ARE PRIVATE AND HOA MAINTAINED.
 - STORMWATER FACILITIES 2, 4, 8, 10, 13, 15, 16, 17, 21, 22, 23 AND THE NON-ROOFTOP DISCONNECTION FROM THE PREVIOUS SUBMISSION WERE REMOVED.
 - SITE COMPLIES WITH CR 123-2018 STORMWATER REGULATIONS

LEGEND

- PROPERTY LINE
- ADJOINING PROPERTY LINE
- EXISTING BUILDING LINE
- EXISTING CONTOUR
- EXISTING TREELINE
- EXISTING EDGE OF PAVEMENT
- EXISTING TREE
- PROPOSED IMPERIOUS PAVEMENT
- LOD - LIMIT OF DISTURBANCE
- GnB - SOILS LINE
- MgC - SOILS LINE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 Chief, Development Engineering Division
 DATE: 5-13-17
 DATE: 5-16-17

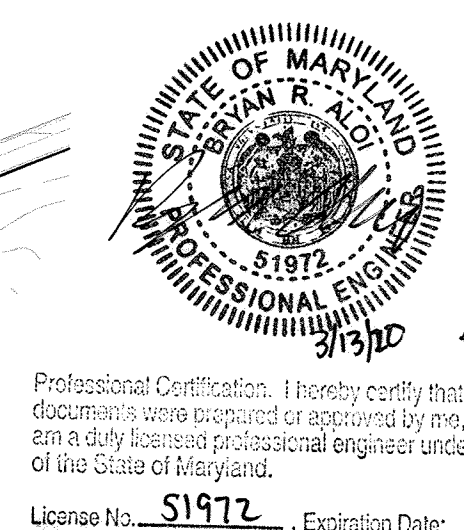


AREA OF DISTURBANCE (AC.)	PROPOSED IMPERVIOUS (AC.)	%	PE	QE	ESDv REQUIRED (CF)	ESDv PROVIDED (CF)
10.10	5.37	53	1.80"	0.95"	34,878	35,511

CR123-2018 MANAGEMENT TABLE		
CONDITION	AREA AC.	Q 6.5 INCH DD 3.5 HR
DA1 PRE-DEVELOPMENT	9.75	26.22
DA1 DEVELOPED	5.69	30.76
DA2 PRE-DEVELOPMENT	8.96	64.82
DA2 DEVELOPED	13.02	48.66

100-YEAR MANAGEMENT TABLE					
CONDITION	AREA AC.	Q 1-YEAR	Q 10-YEAR	Q 100-YEAR	Q
DA1 PRE-DEVELOPMENT	9.75	1.40	13.98	39.10	
DA1 DEVELOPED	5.69	1.07	10.20	23.09	
DA2 PRE-DEVELOPMENT	8.96	6.54	27.00	59.69	
DA2 DEVELOPED	13.02	3.47	16.82	36.31	

* NOTE: SEE SHEET ECP5 FOR OVERALL DRAINAGE AREA MAPS C-2.a

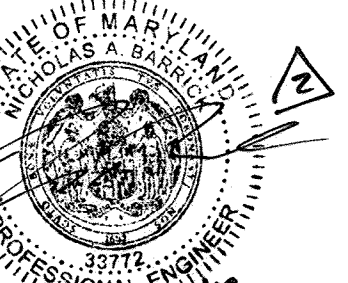


KCI TECHNOLOGIES
 ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS
 11850 WEST MARKET PLACE
 SUITE A
 FULTON, MD 20759
 TELEPHONE: (410) 792-8086
 FAX: (410) 792-7419

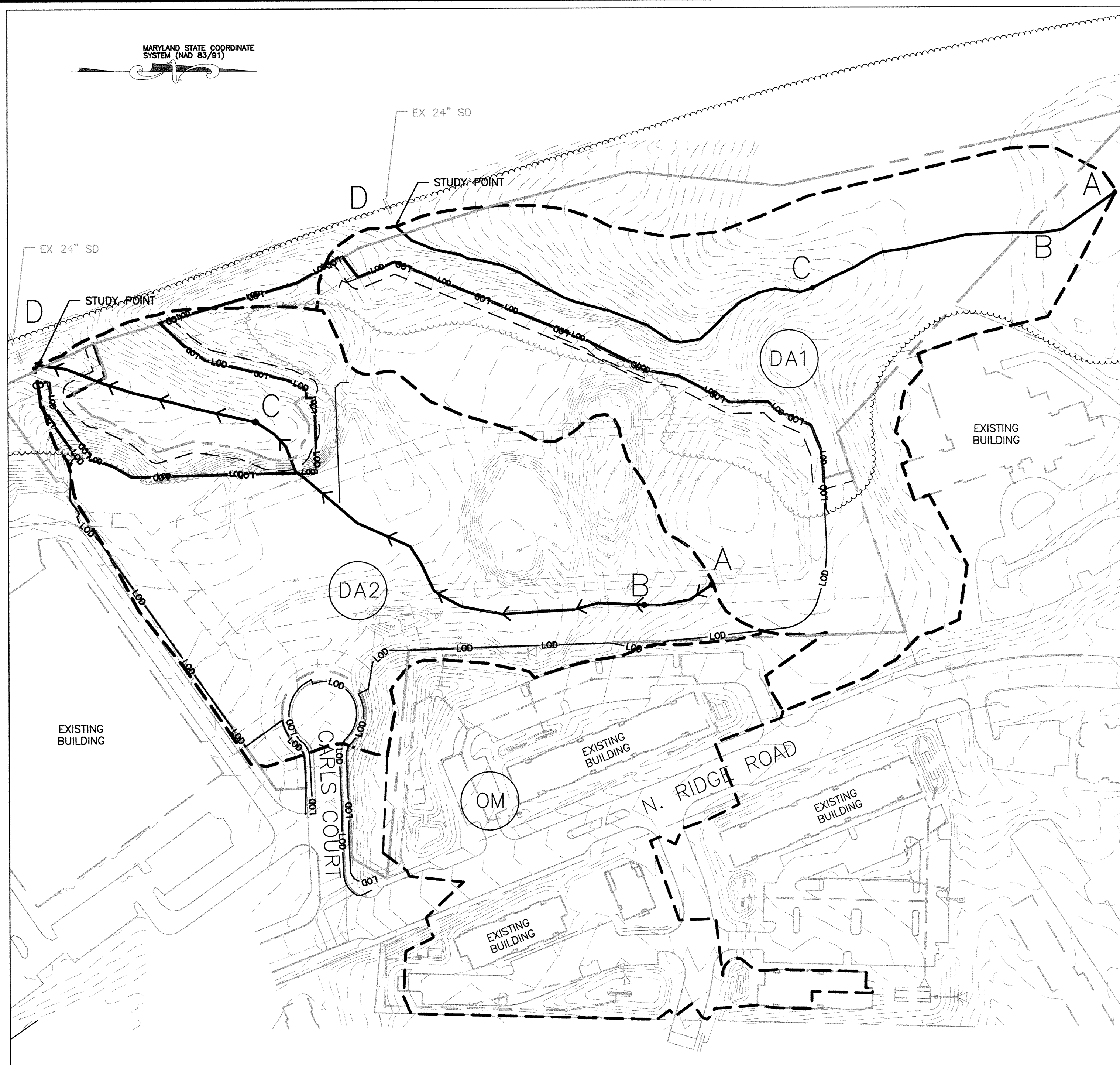
REVISIONS			
NO.	DATE	BY	
1	04/06/2017	LAYOUT HAS BEEN UPDATED. NUMBER OF SWM FACILITIES REDUCED	BA
2	12/22/17	REVISIONS TO THE CLUBHOUSE	BA
3	2/28/2020	SWM CALCS AND SWM #12 UPDATED BASED ON CR 123-2018	BA

OWNER/DEVELOPER: **LEGACY AT ELLICOTT'S RETREAT**
 COMMERCIAL CONTRACTORS INC.
 1205 YORK ROAD LUTHERVILLE-TIMONIUM, MD 21093 (410)-825-8400
 TAX MAP: 24 GRID: 06 PARCEL: 1085
 ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

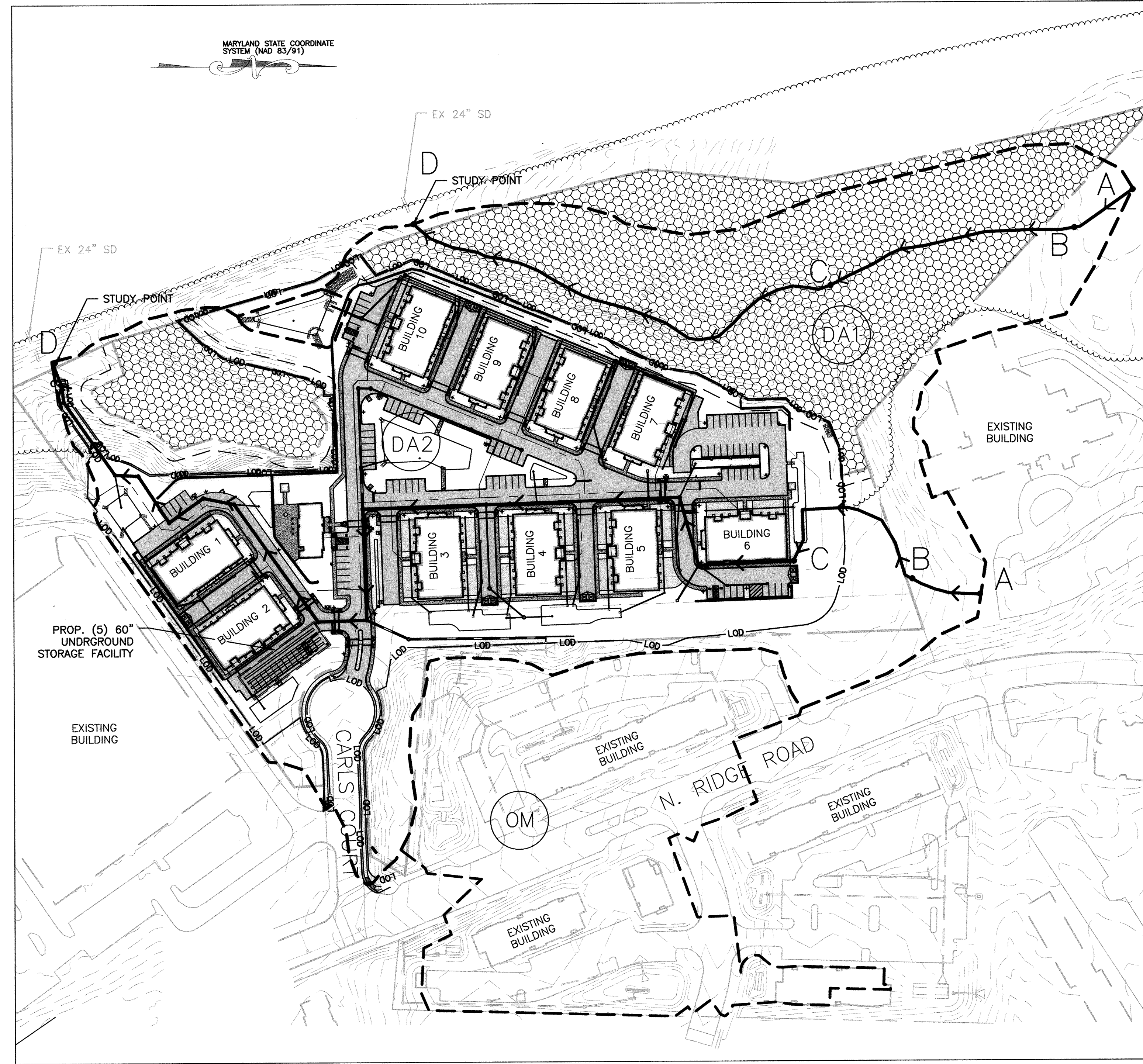
DESIGN: NAB DATE: 04/06/17 KCI PROJECT NO. 27134772 SHEET NO. C-2.00
 DRAWN: BRA SCALE: 1"=50' SHEET NO. 14 OF 45



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017



EXISTING DRAINAGE AREA
SCALE: 1"=100'



PROPOSED DRAINAGE AREA
SCALE: 1"=100'

EXISTING DRAINAGE AREA SUMMARY TABLE								
DRAINAGE AREA	AREA (AC.)	IMP. AREA (AC.)	RCN	TC (HR.)	1-YR Q (cfs)	50-YR Q (cfs)	100-YR Q (cfs)	6.6 INCH 3.5 HR
DA1	9.75	0	62	0.379	1.38	29.29	39.14	39.21
OM	6.19	3.27	63	0.100	1.65	3.39	4.25	4.45
DA2	8.96	0.16	63	0.212	6.54	47.23	59.69	60.86

NOTE: DRAINAGE AREA OM DUMPS INTO DA2. FLOWS SHOWN FROM TR-20 REPORT.

PROPOSED DRAINAGE AREA SUMMARY TABLE								
DRAINAGE AREA	AREA (AC.)	IMP. AREA (AC.)	RCN	TC (HR.)	1-YR Q (cfs)	50-YR Q (cfs)	100-YR Q (cfs)	
DA1	5.69	0.203	---	---	1.07	10.20	23.09	
OM	6.19	3.27	---	---	1.65	3.39	4.25	
DA2	13.02	1.162	---	---	3.28	16.82	36.31	

NOTE: DATA SHOWN ABOVE IS FROM THE ROUTED TR-20 OUTPUT. SEE REPORT FOR ROUTING.

PROP DA SUMMARY TABLE			
DRAINAGE AREA	AREA (AC.)	IMP. AREA (AC.)	6.6 INCH 3.5 HR
DA1	5.69	0.203	30.76
OM	6.19	3.27	49.86
DA2	13.02	1.162	

• SITE COMPLIES WITH CR 123-2018 STORMWATER REGULATIONS

KCI TECHNOLOGIES
ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS
11850 WEST MARKET PLACE
SUITE 200
FELTON, MD 20759
TELEPHONE: (410) 792-8086
FAX: (410) 792-7419

REVISIONS		
NO.	DATE	BY
1	04/06/2017	BA
2	12/22/17	BA
3	2/28/2020	BA

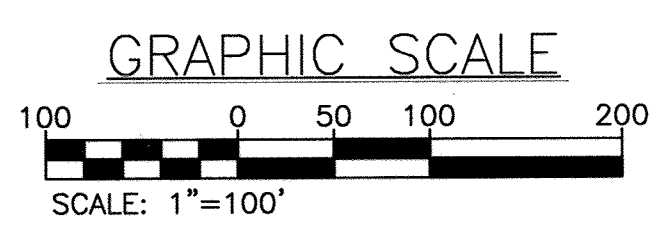
OWNER/DEVELOPER: **LEGACY AT ELLICOTT'S RETREAT**
COMMERCIAL CONTRACTORS INC.
1205 YORK ROAD
LUTHERVILLE-TIMONIUM, MD 21093
(410)-825-8400

AGE RESTRICTED ADULT HOUSING
TAX MAP: 24 GRID: 06 PARCEL: 1085
ZONED: POR
ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

DESIGN: NAB DATE: 04/09/17
DRAWN: BRA SCALE: 1"=100'

KCI PROJECT NO. 27134772
SHEET NO. 15 OF 45
C-2.01

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
K. S. [Signature] 5-15-17
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
P. [Signature] 5-12-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
W. [Signature] 5-16-17
DIRECTOR DATE

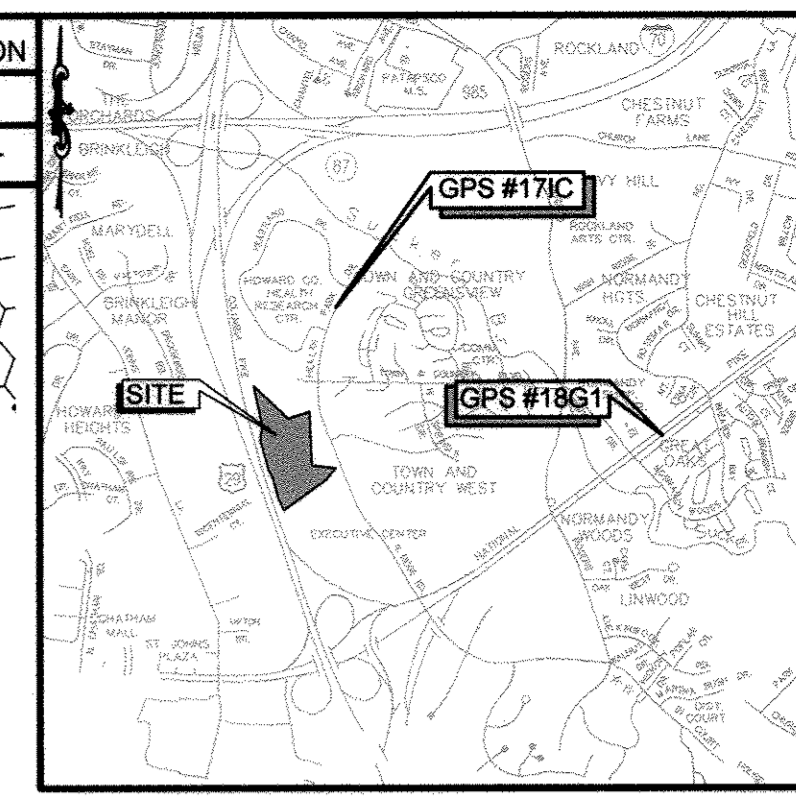


Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 50972, Expiration Date: 12/31/21

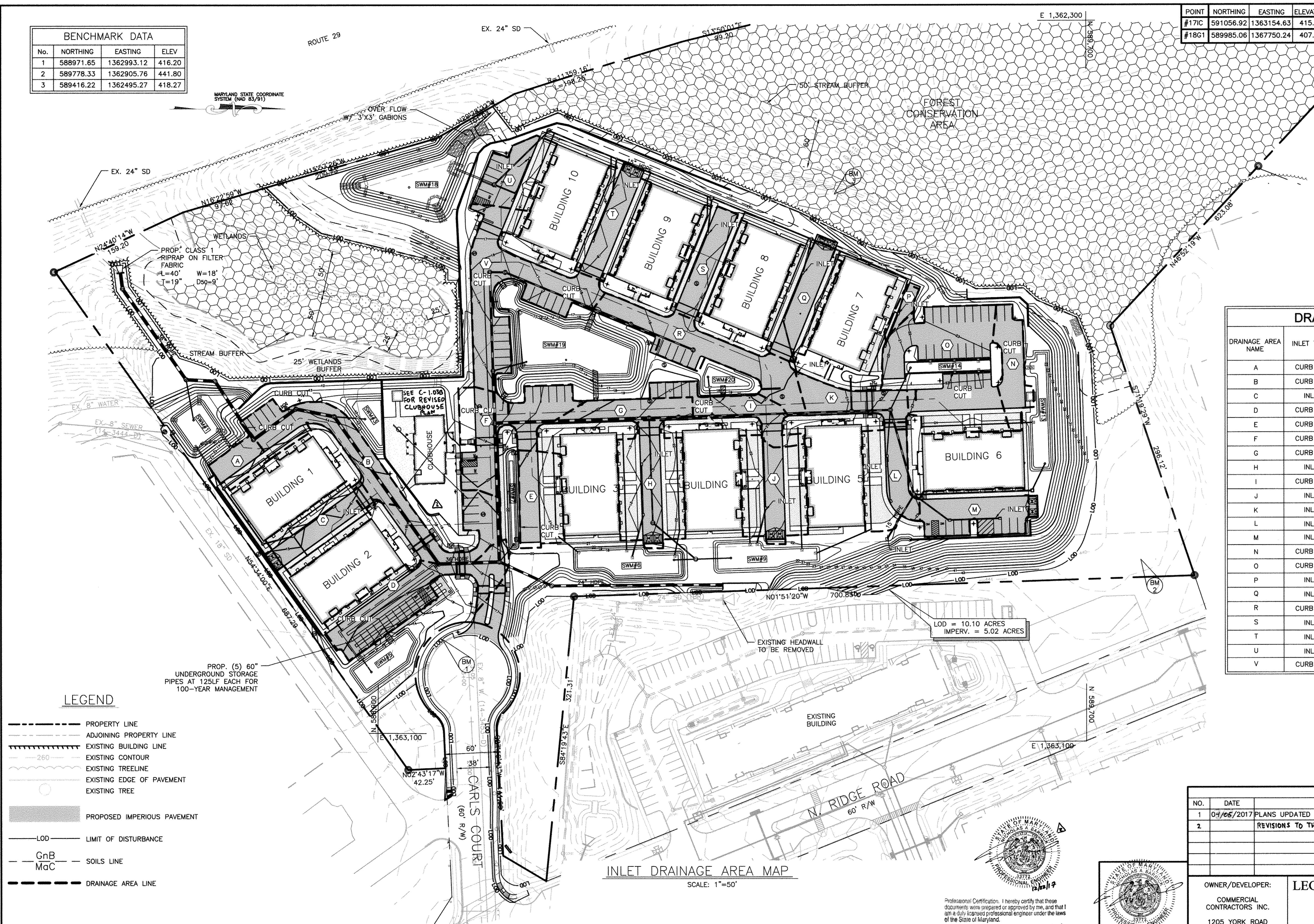
PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 33772 EXP. DATE: 06/16/2017

BENCHMARK DATA			
No.	NORTHING	EASTING	ELEV.
1	588971.65	1362993.12	416.20
2	589778.33	1362905.76	441.80
3	589416.22	1362495.27	418.27

POINT	NORTHING	EASTING	ELEVATION
#171C	591056.92	1363154.63	415.41
#18G1	589985.06	1367750.24	407.74



VICINITY MAP
SCALE: 1" = 2000'
ADC MAP 2186



DRAINAGE AREAS				
DRAINAGE AREA NAME	INLET TYPE	AREA TO INLET (S.F.)	%	'C' FACTOR
A	CURB CUT	2,181	100%	95
B	CURB CUT	10,667	100%	95
C	INLET	6,340	100%	95
D	CURB CUT	9,370	100%	95
E	CURB CUT	8,401	100%	95
F	CURB CUT	5,092	100%	95
G	CURB CUT	3,416	100%	95
H	INLET	9,170	100%	95
I	CURB CUT	4,358	100%	95
J	INLET	7,880	100%	95
K	INLET	3,562	100%	95
L	INLET	6,008	100%	95
M	INLET	5,882	100%	95
N	CURB CUT	3,774	100%	95
O	CURB CUT	16,501	100%	95
P	INLET	882	100%	95
Q	INLET	6,490	100%	95
R	CURB CUT	8,512	100%	95
S	INLET	6,253	100%	95
T	INLET	6,346	100%	95
U	INLET	4,848	100%	95
V	CURB CUT	11,844	100%	95

LEGEND

- PROPERTY LINE
- ADJOINING PROPERTY LINE
- EXISTING BUILDING LINE
- 260 --- EXISTING CONTOUR
- EXISTING TREELINE
- EXISTING EDGE OF PAVEMENT
- EXISTING TREE
- PROPOSED IMPERVIOUS PAVEMENT
- LOD --- LIMIT OF DISTURBANCE
- GNB --- SOILS LINE
- MgC --- SOILS LINE
- DRAINAGE AREA LINE

PROP. (5) 60" UNDERGROUND STORAGE PIPES AT 125LF EACH FOR 100-YEAR MANAGEMENT

LOD = 10.10 ACRES
IMPERV. = 5.02 ACRES

INLET DRAINAGE AREA MAP
SCALE: 1" = 50'



REVISIONS		
NO.	DATE	BY
1	04/05/2017	PLANS UPDATED TO 10 BUILDINGS. DRAINAGE AREA CHART UPDATED
2		REVISIONS TO THE CLUBHOUSE

OWNER/DEVELOPER: **LEGACY AT ELLICOTT'S RETREAT**

COMMERCIAL CONTRACTORS INC.
1205 YORK ROAD
LUTHERVILLE-TIMONIUM, MD 21093
(410)-825-8400

AGE RESTRICTED ADULT HOUSING
TAX MAP: 24 GRID: 06 PARCEL: 1085
ZONED: POR
ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

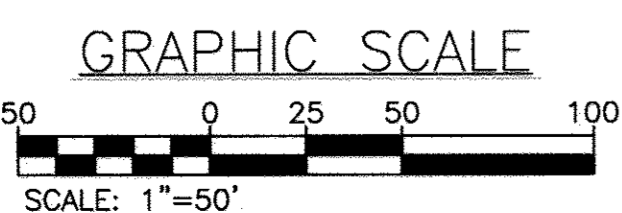
DESIGN: NAB DATE: 04/05/17 KCI PROJECT NO. 27134772 SHEET NO. C-2.02
DRAWN: BRA SCALE: 1"=50' SHEET NO. 16 OF 45

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Karl Schuler 5-15-17
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

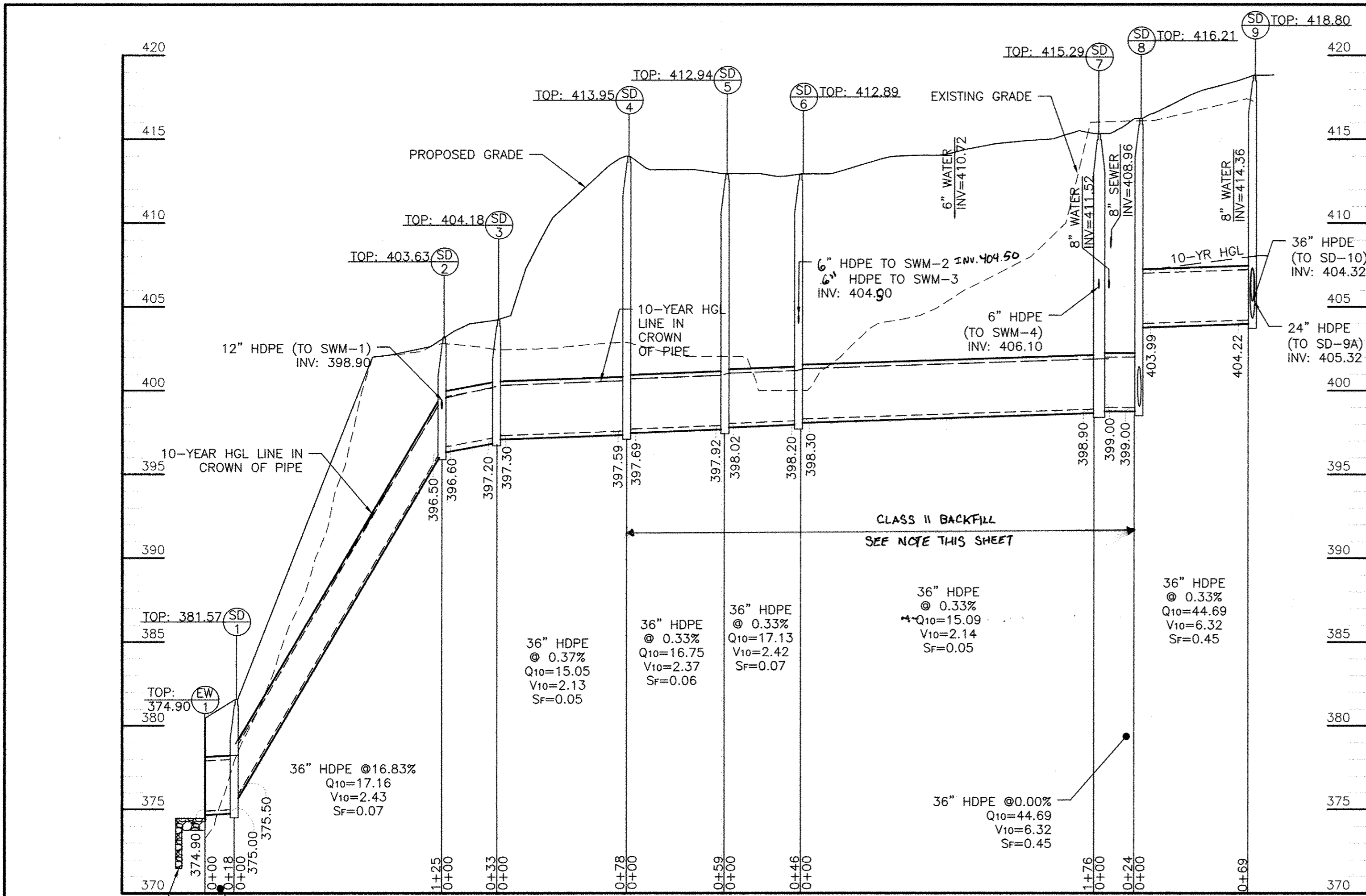
John J. ... 5-18-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Nathan J. ... 5-18-17
DIRECTOR DATE



Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 33722 Expiration Date: 06/16/2017

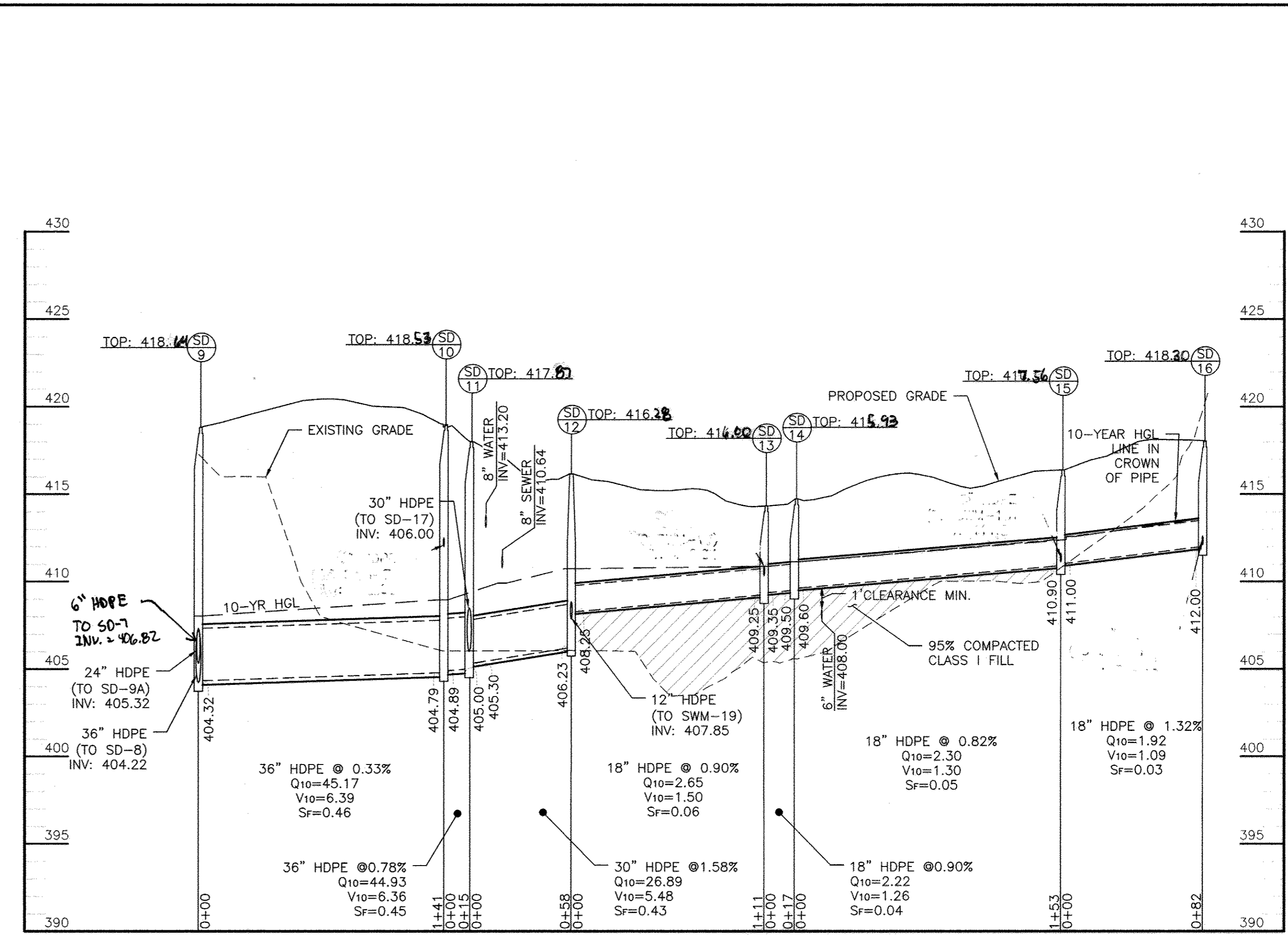
PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 33772 EXP. DATE: 06/16/2017



STORM DRAIN PROFILE 1

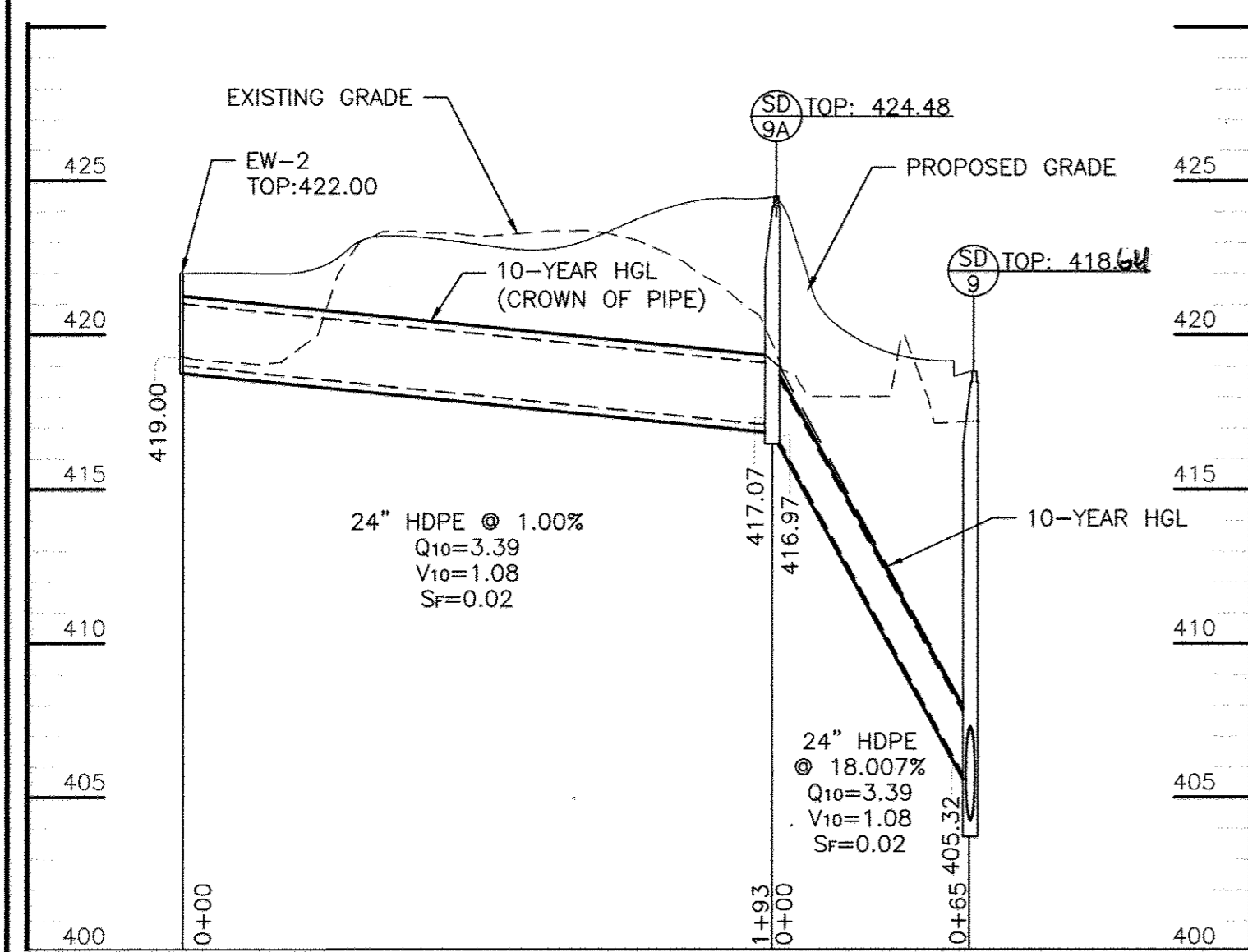
CLASS 1 RIP-RAP ON FILTER FABRIC
L=12' W=14'
Th=19" D₅₀=9"

SCALE: HOR: 1"=50'
VERT: 1"=5'



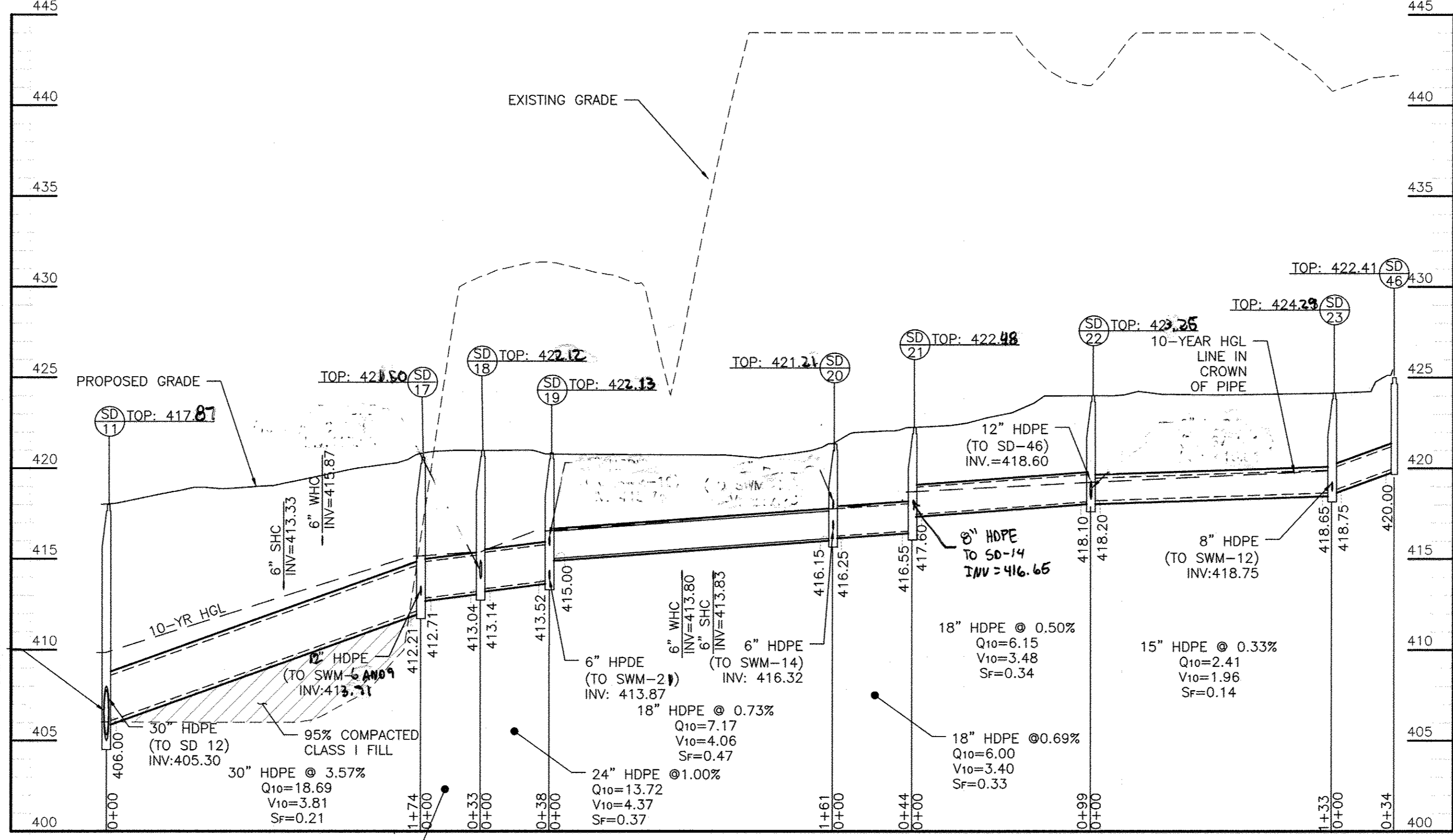
STORM DRAIN PROFILE 2

SCALE: HOR: 1"=50'
VERT: 1"=5'



ORCHARD MEADOWS TO SD-9 PROFILE

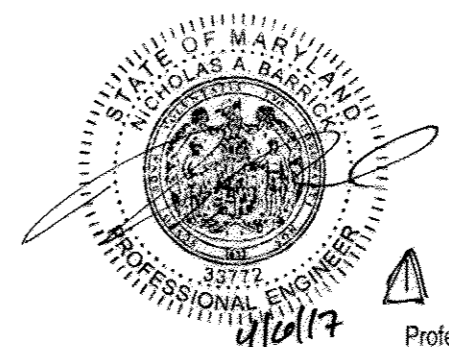
SCALE: HOR: 1"=50'
VERT: 1"=5'



STORM DRAIN PROFILE 3

SCALE: HOR: 1"=50'
VERT: 1"=5'

NOTE:
CONTRACTOR TO BACKFILL 36" HDPE PIPE BETWEEN MANHOLES SD-4 TO SD-8 WITH CLASS II BACKFILL COMPACTED TO 95% PROCTOR. BEDDING TO BE CLASS II PLACED 8" THICK COMPACTED TO 95% PROCTOR. REMAINING BACKFILL SHALL BE ACCEPTABLE MATERIAL PER THE SPECIFICATIONS PLACED IN 8" LIFTS AND COMPACTED.



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. 33772, Expiration Date: 11/17



REVISIONS			
NO.	DATE	REVISION	BY
1	9/15/2017	REVISED INVERTS, CHANGED SHEET NUMBERS	BA
2	12/22/17	REVISED PAGE NUMBERING	BA

OWNER/DEVELOPER:
COMMERCIAL CONTRACTORS INC.
1205 YORK ROAD
LUTHERVILLE-TIMONIUM,
MD 21093
(410)-825-8400

LEGACY AT ELLICOTT'S RETREAT

STORM DRAIN PROFILES

AGE RESTRICTED ADULT HOUSING
TAX MAP: 24 GRID: 06 PARCEL: 1085
ZONED: POR
ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

DESIGN: NAB DATE: 7/24/15
DRAWN: BRA SCALE: VARIES

KCI PROJECT NO. 27134772 SHEET NO. C-2.03
SHEET NO. 17 OF 48

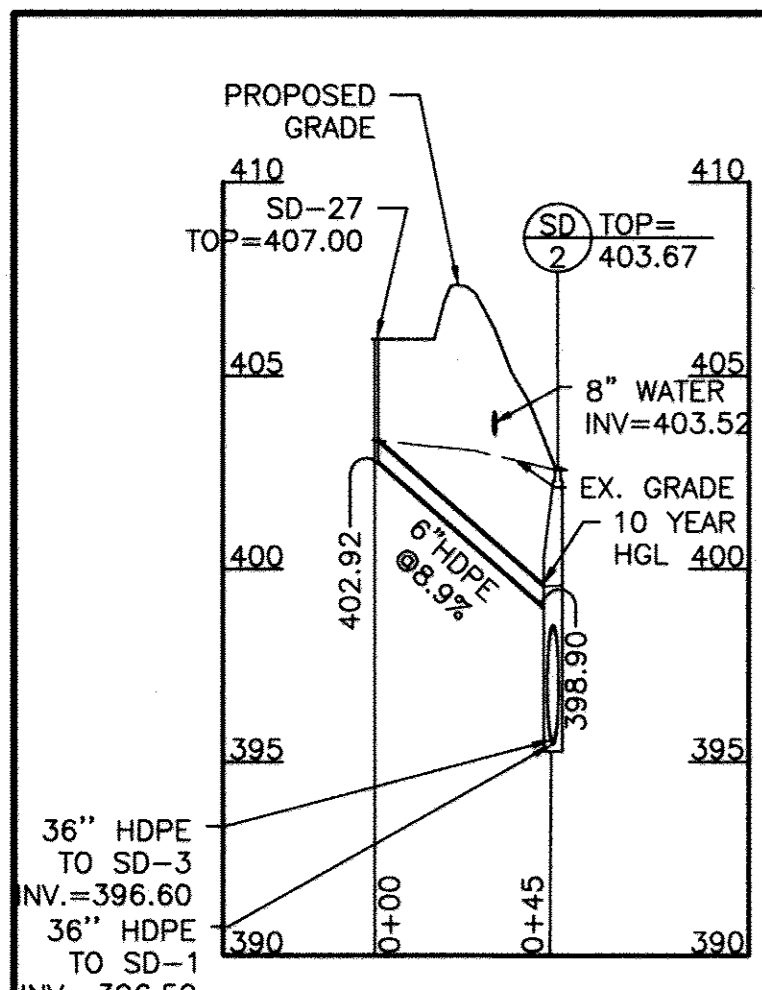
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Ketzel 9-21-15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Chad 9-17-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

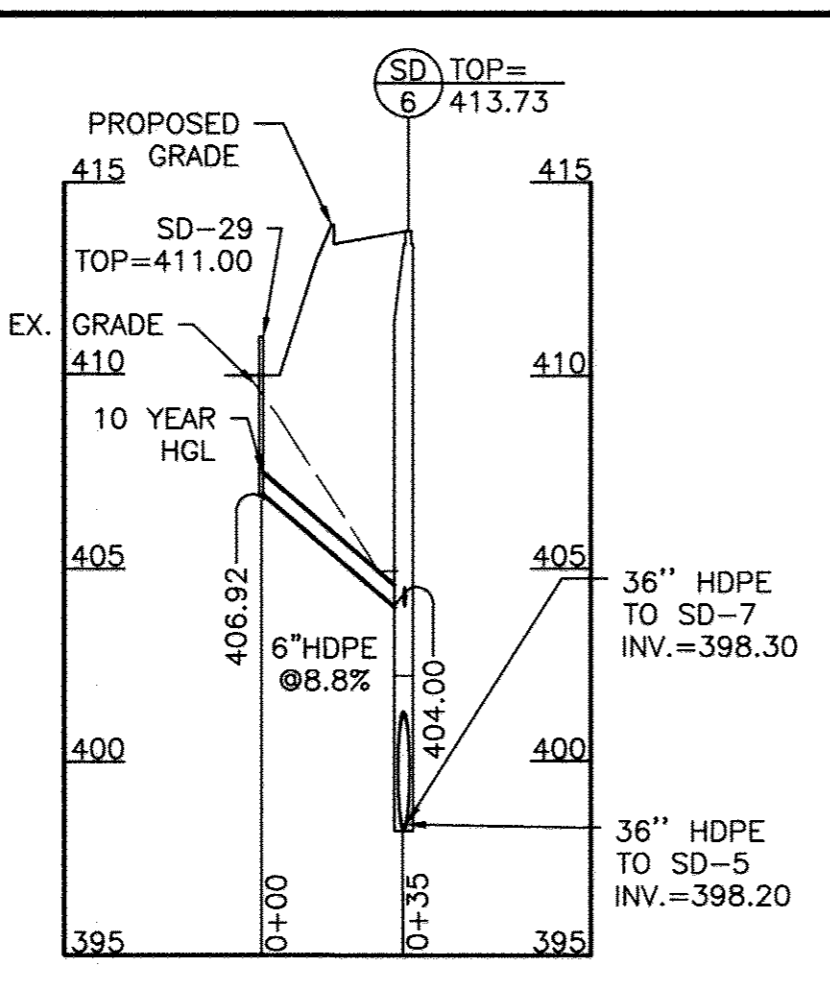
Palmer 9-29-15
DIRECTOR DATE

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017



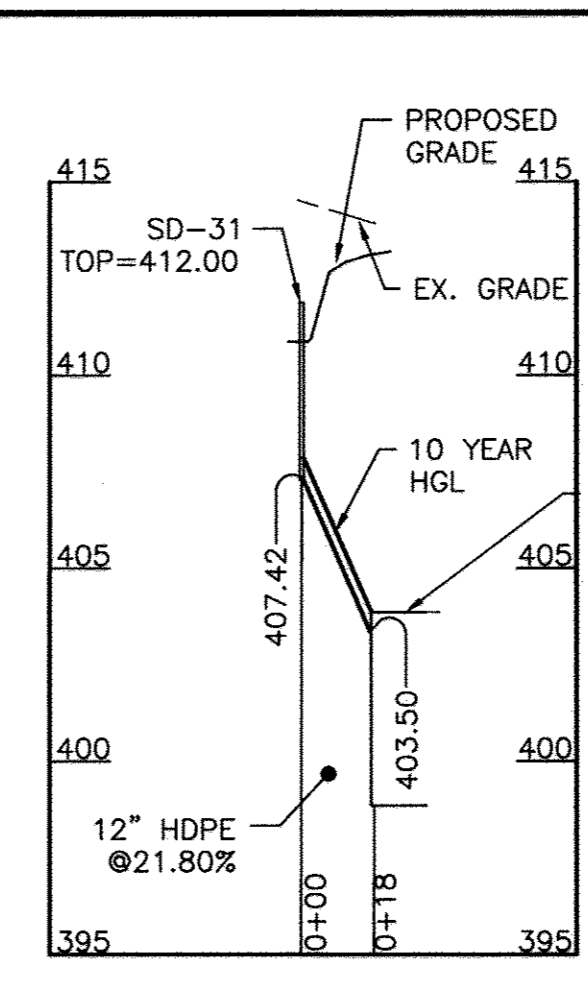
SWM #1 TO SD-2 PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



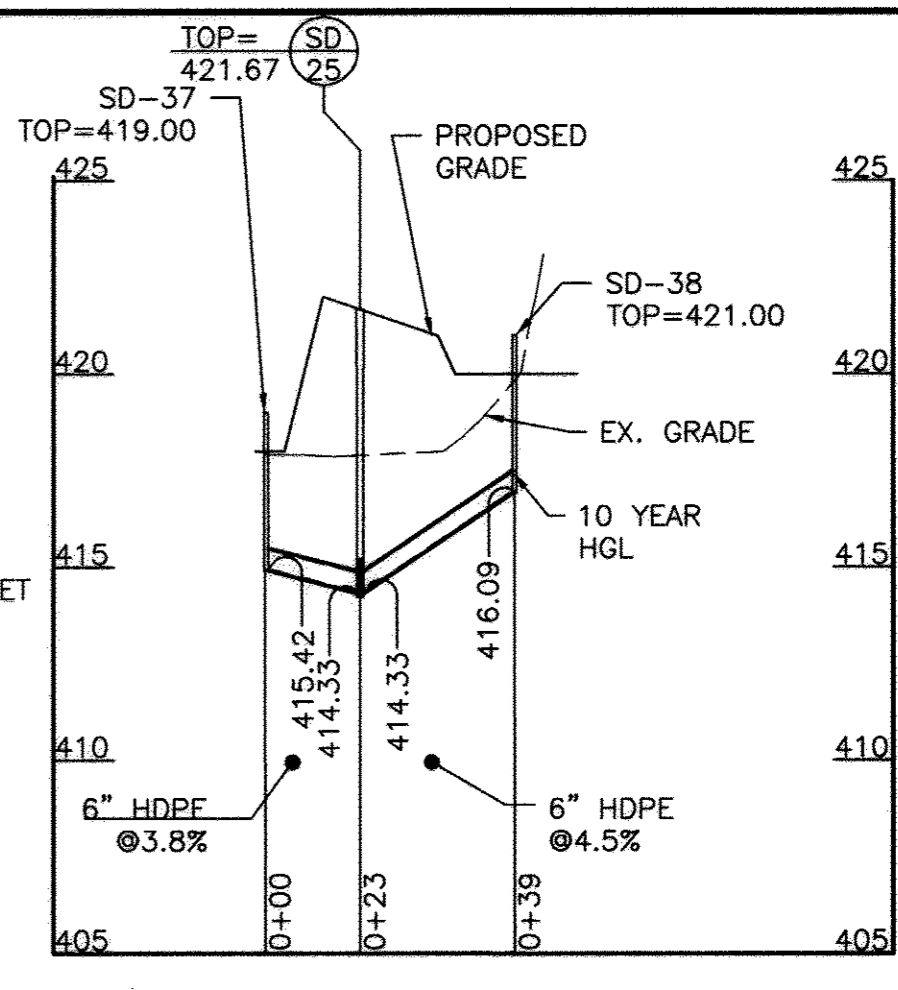
SWM #3 TO SD-6 PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



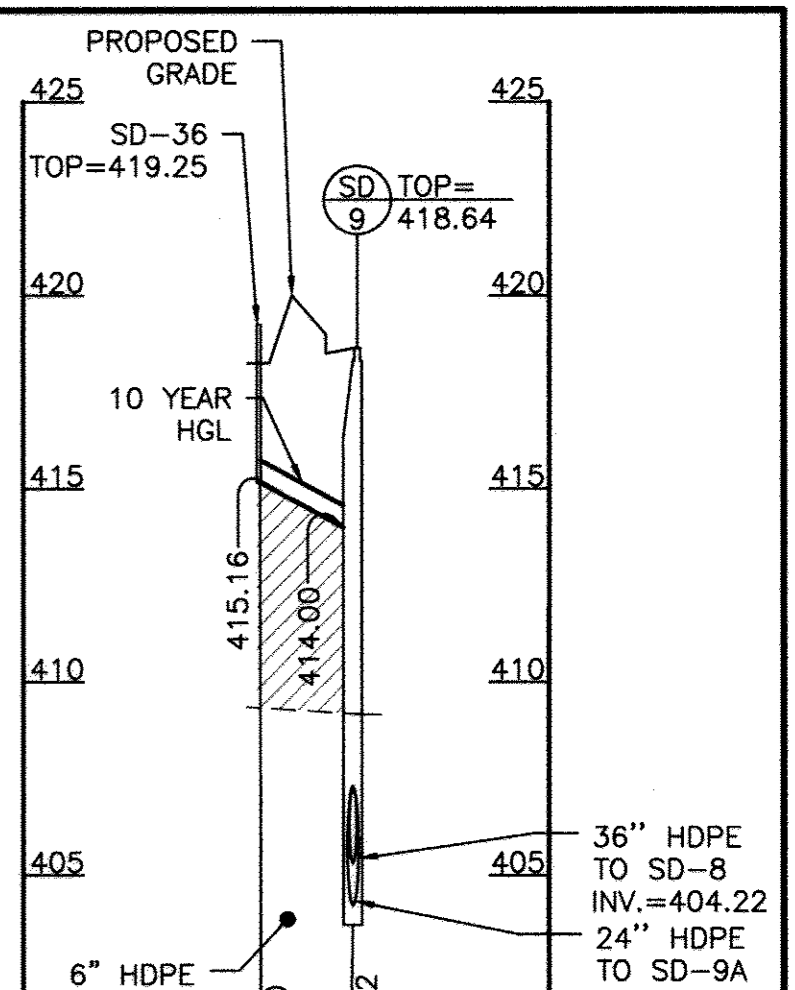
SWM #5 TO STORAGE SYSTEM PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



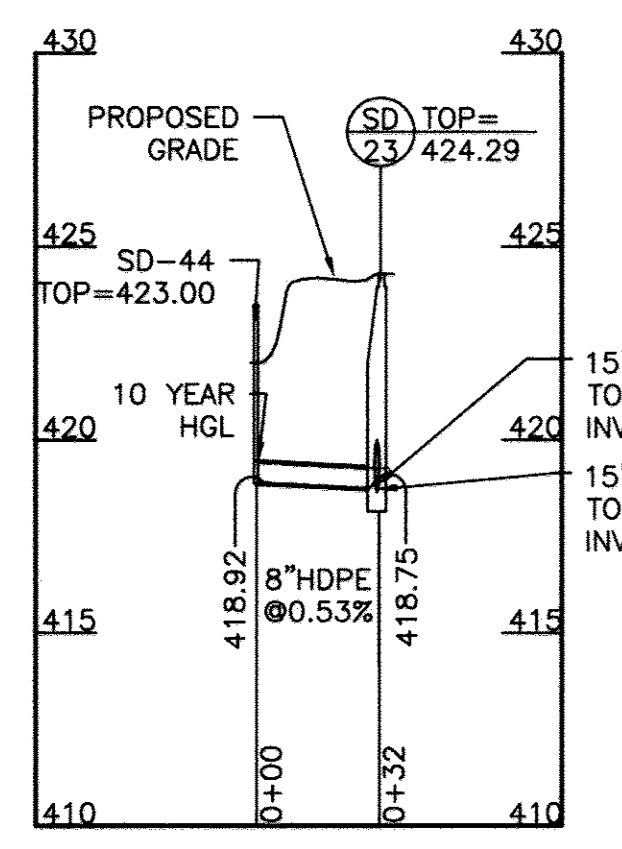
SWM #6 & 9 TO SD-25 PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



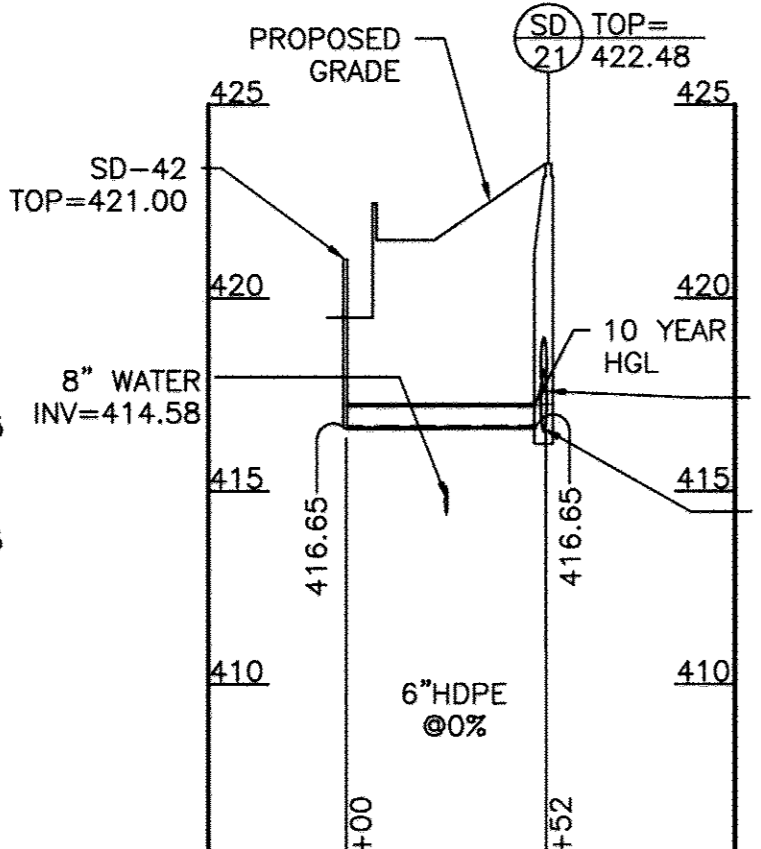
SWM #7 TO SD-9 PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



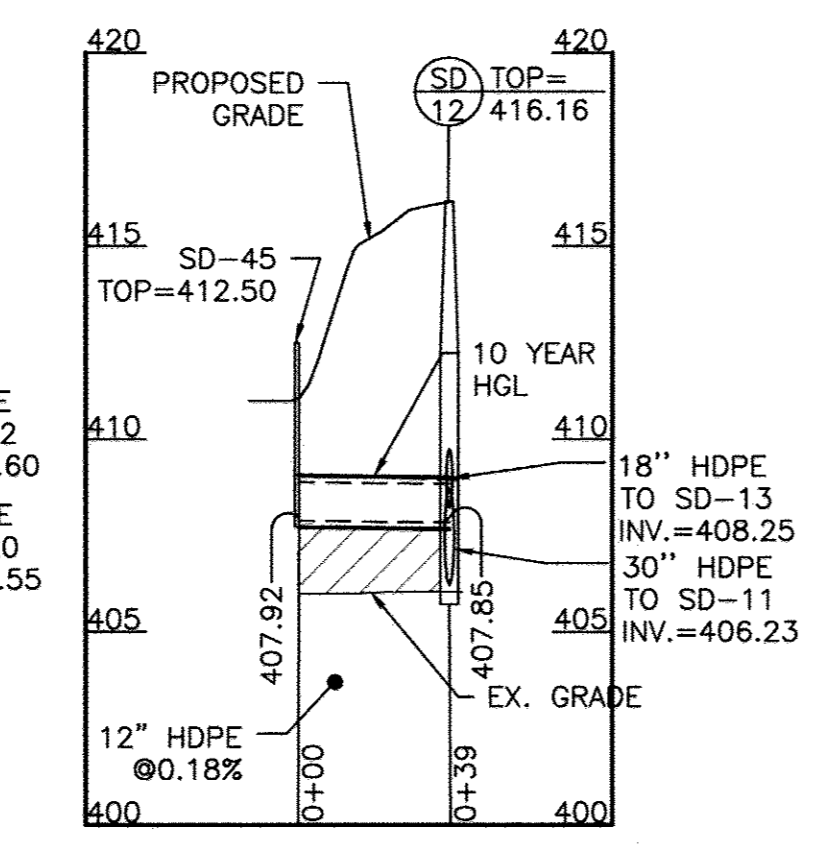
SWM #12 TO SD-23 PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'
NOTE: EXISTING GRADE AT 440'



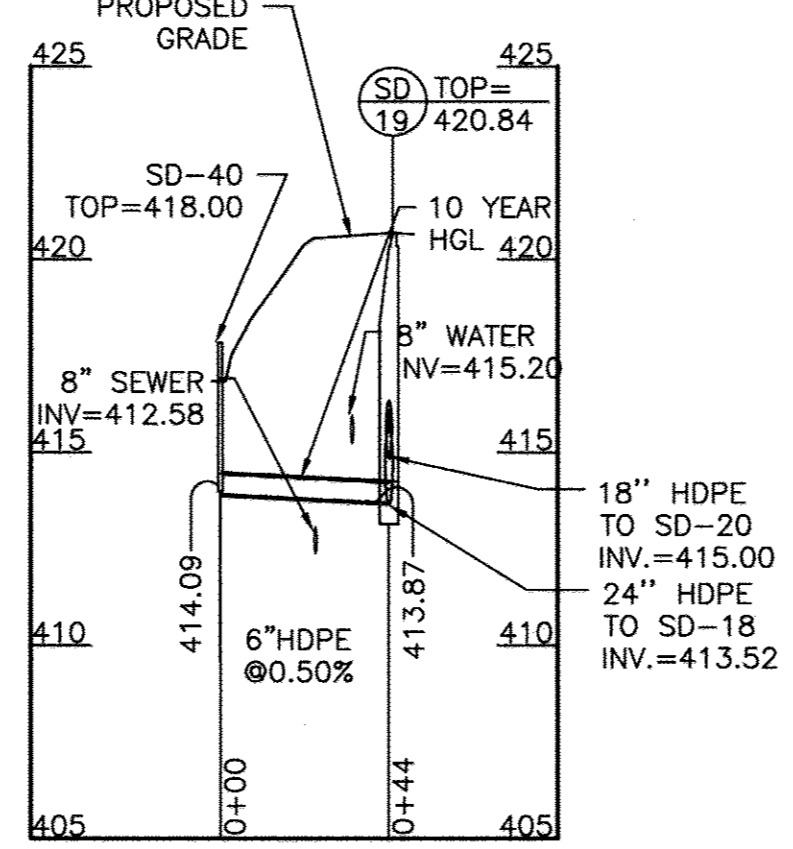
SWM #14 TO SD-21 PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'
NOTE: EXISTING GRADE AT 440'



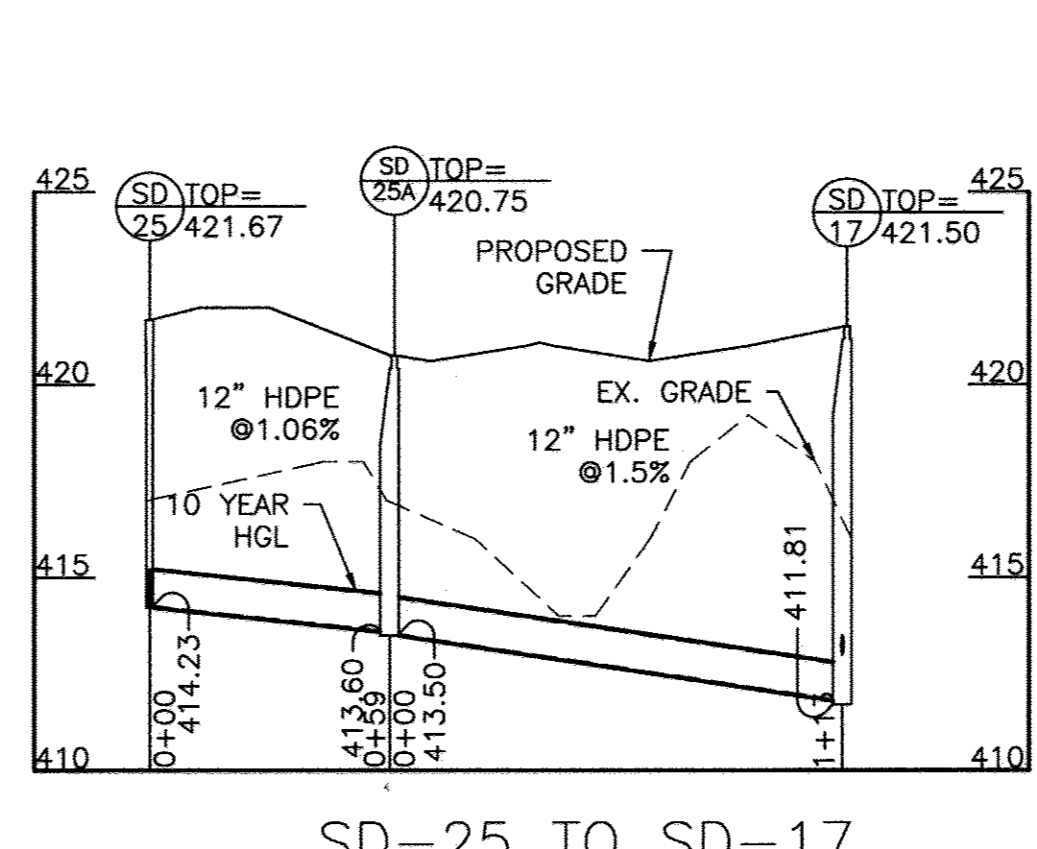
SWM #19 TO SD-12 PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



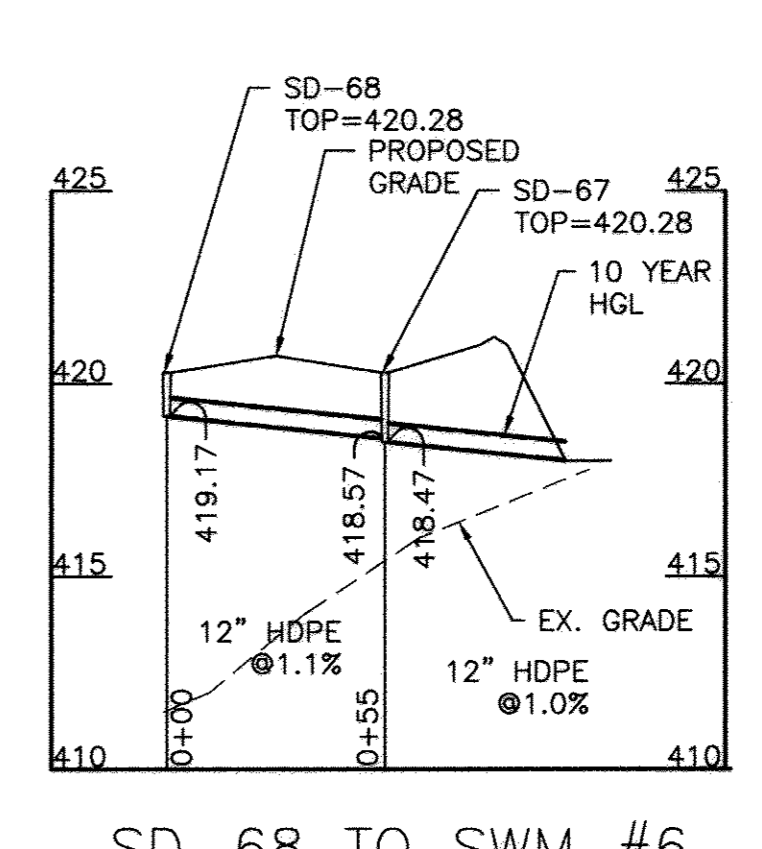
SWM #20 TO SD-19 PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'
NOTE: EXISTING GRADE AT 430'



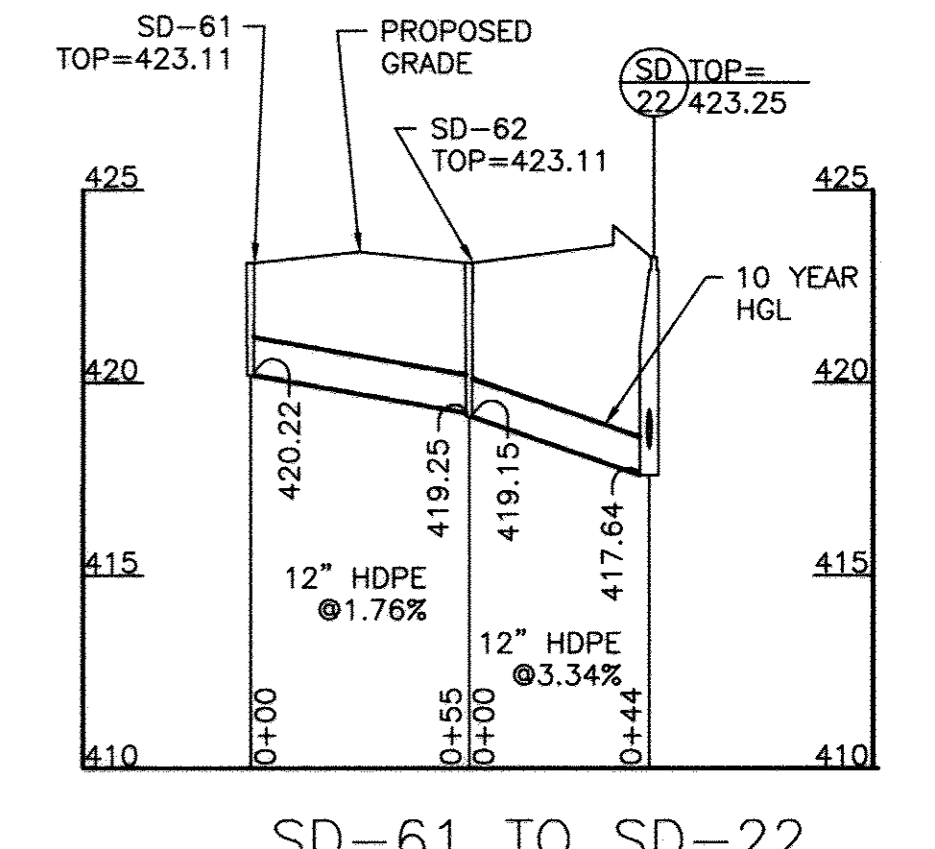
SD-25 TO SD-17 PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



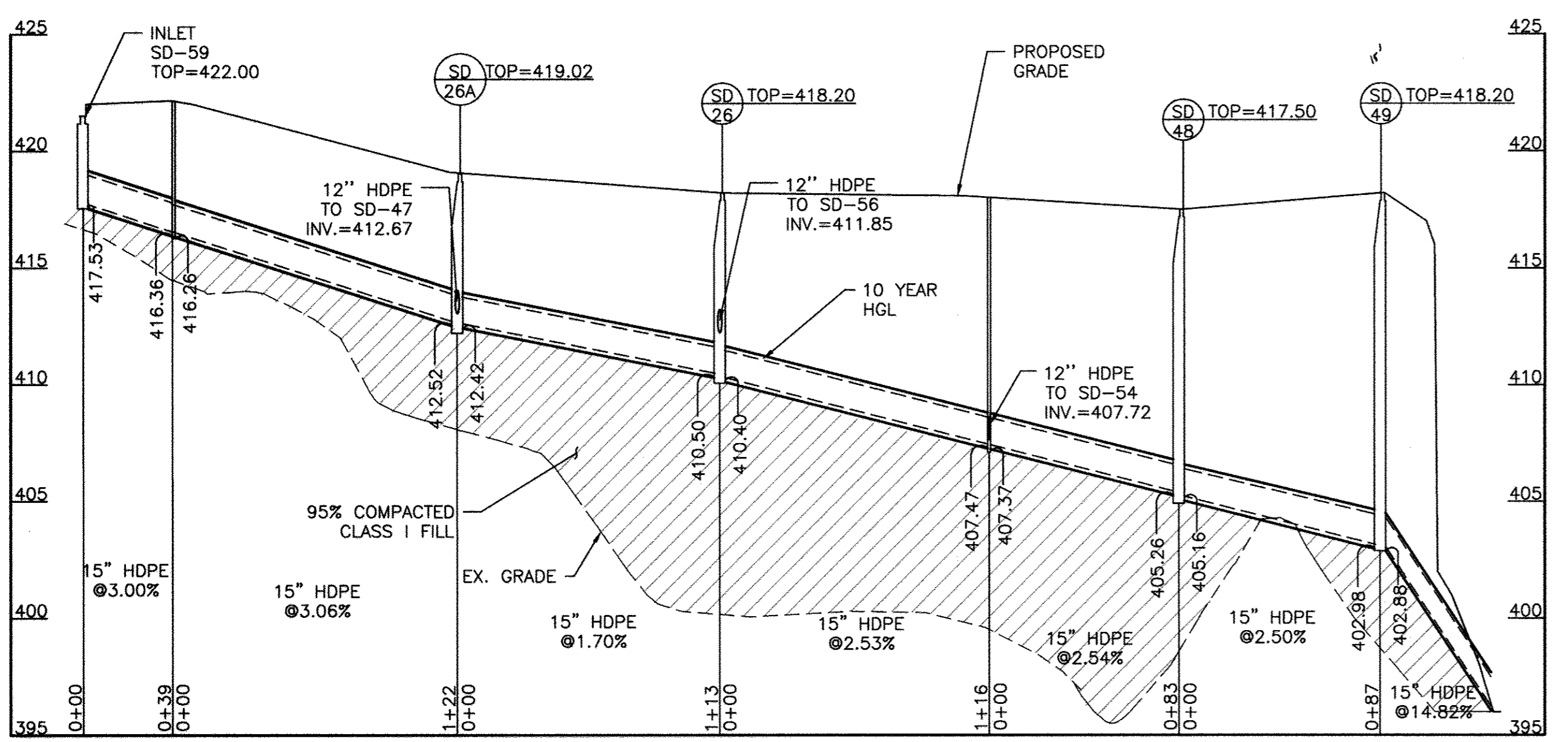
SD-68 TO SWM #6 PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



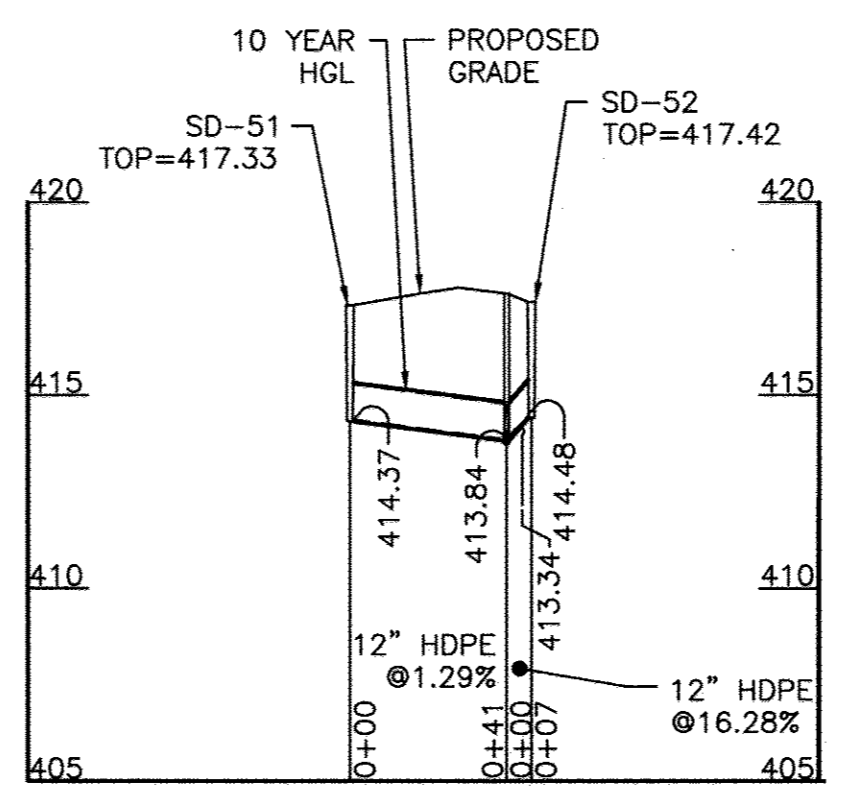
SD-61 TO SD-22 PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



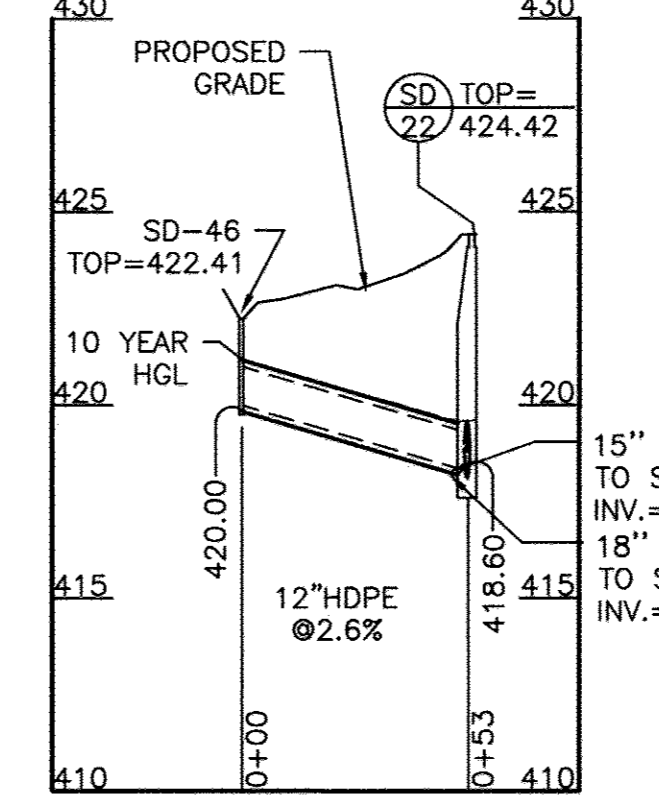
SD-59 TO SWM #18 PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



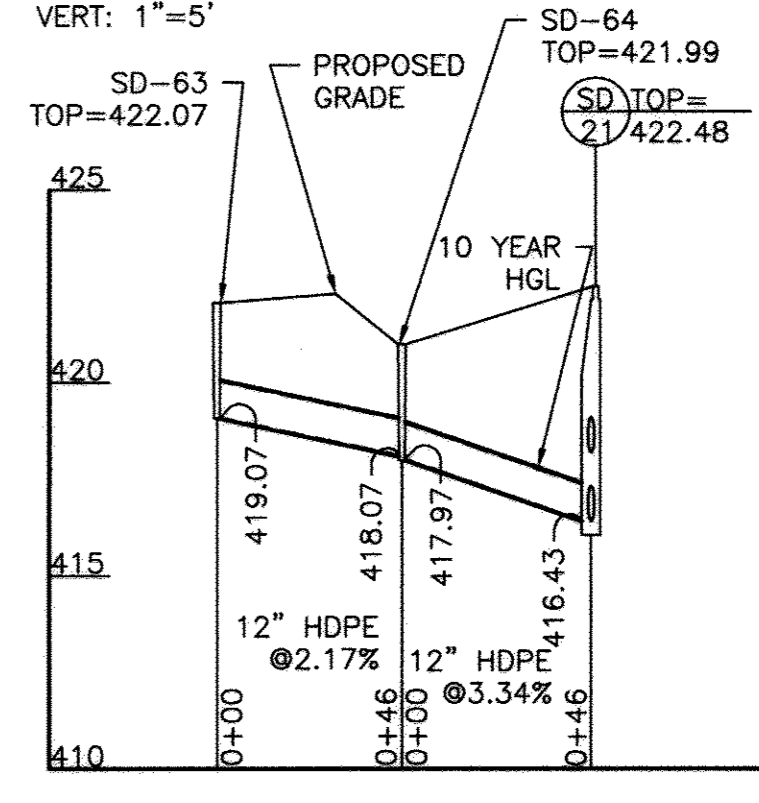
SD-51 TO SD-52 PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



GRASS INLET TO SD-22 PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'
NOTE: EXISTING GRADE AT 440'



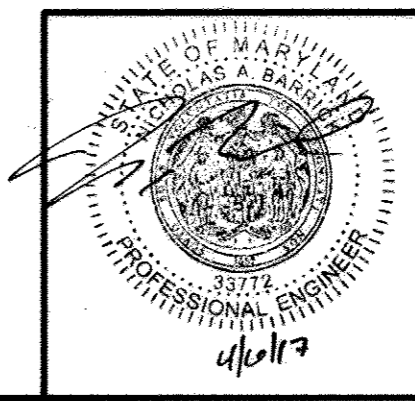
SD-63 TO SD-21 PROFILE

SCALE: HOR: 1"=50'
VERT: 1"=5'



REVISIONS		
NO.	DATE	BY
1	04/05/2017	REVISED PROFILES
2	12/21/17	REVISED PAGE NUMBERING

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 Chief, Development Engineering Division
 Director



PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

OWNER/DEVELOPER: **LEGACY AT ELLICOTT'S RETREAT**
 COMMERCIAL CONTRACTORS INC.
 1205 YORK ROAD LUTHERVILLE-TIMONIUM, MD 21093 (410)-825-8400

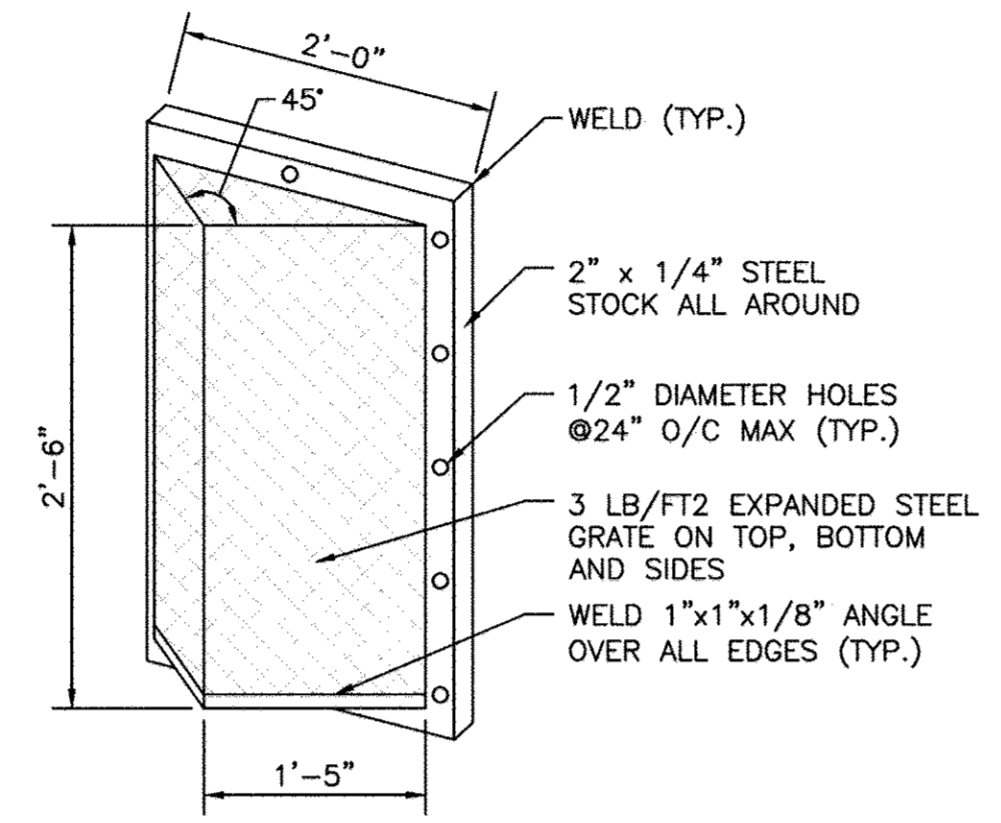
AGE RESTRICTED ADULT HOUSING
 TAX MAP: 24 GRID: 06 ZONED: POR
 ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

KCI PROJECT NO. 27134772
 SHEET NO. 18 OF 45
C-2.04

STORM DRAIN STRUCTURE TABLE with columns: STRUCTURE NAME, TOP ELEVATION, INVERT IN, INVERT OUT, NORTHING, EASTING, DESCRIPTION. Lists structures SD-1 through SD-70.

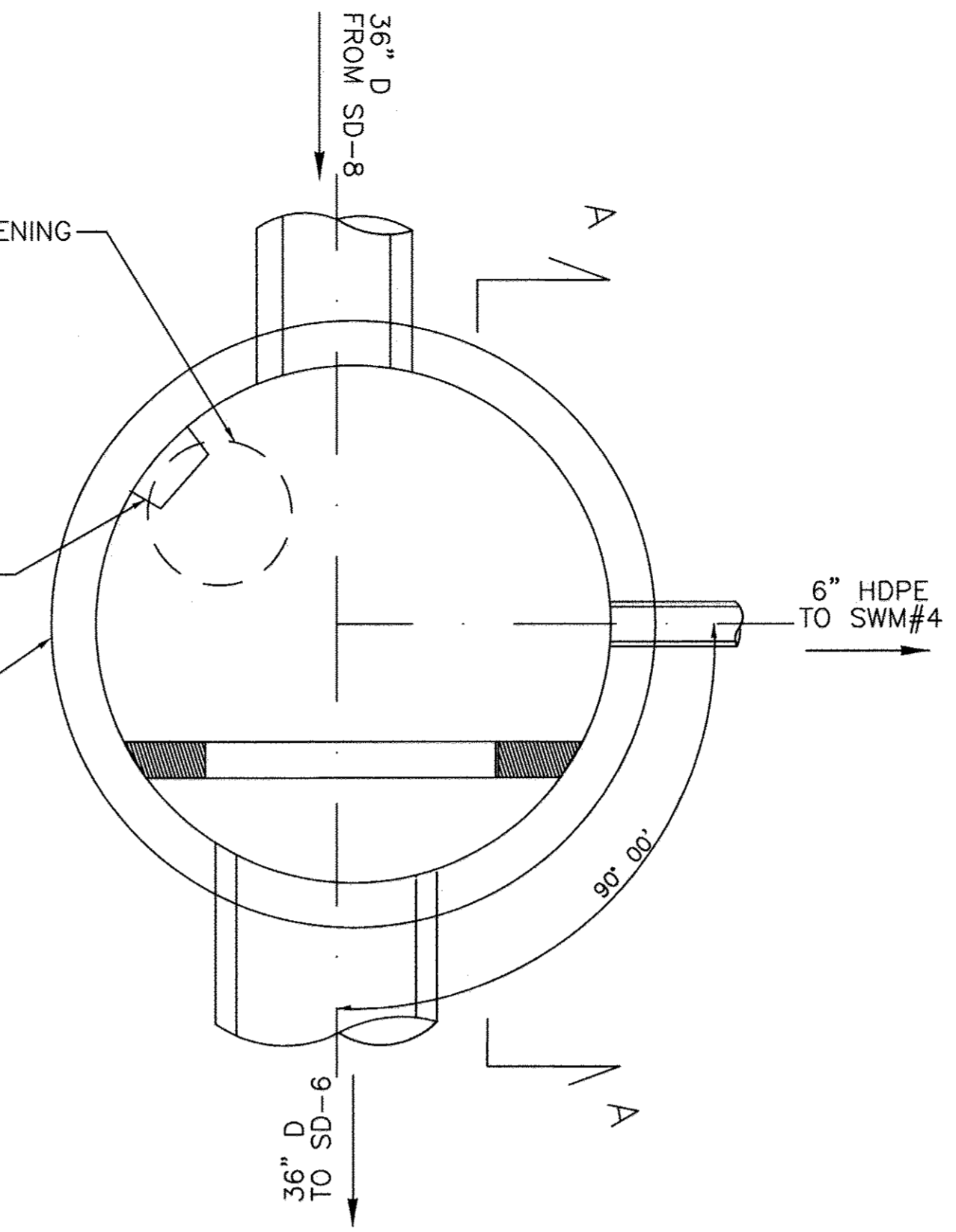
PIPE SUMMARY

Table with columns: TYPE, LENGTH. Lists pipe types: 36" HDPE (785'), 30" HDPE (223'), 24" HDPE (329'), 18" HDPE (667'), 15" HDPE (740'), 12" HDPE (1315'), 8" HDPE (2073'), 6" HDPE (575'), 4" PERF. HDPE (1405').

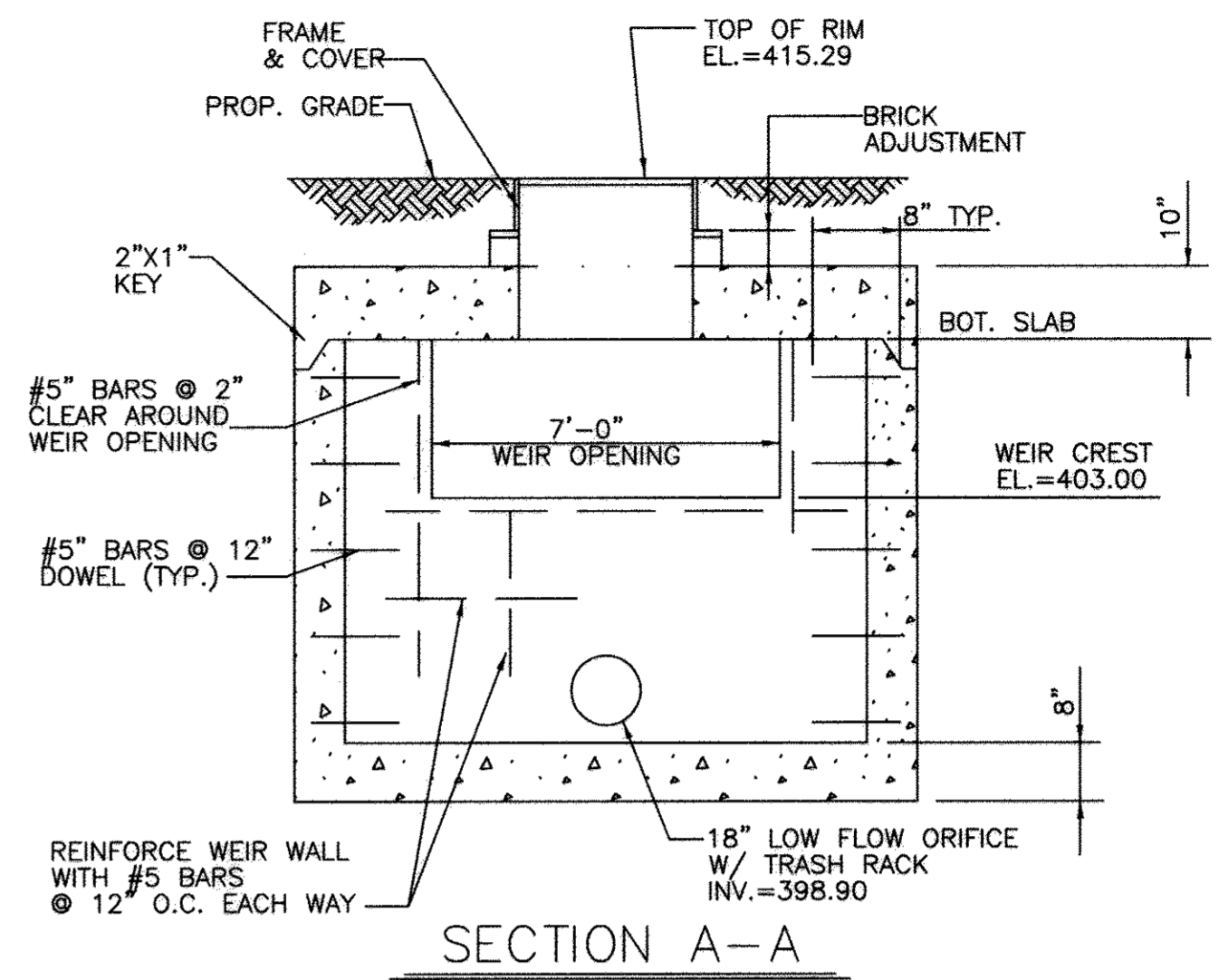


NOTES: 1. TRASH RACK TO BE CENTERED OVER OPENING. 2. STEEL TO CONFIRM TO ASTM A-36. 3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING. 4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS. TRASH RACK TO BE REMOVABLE.

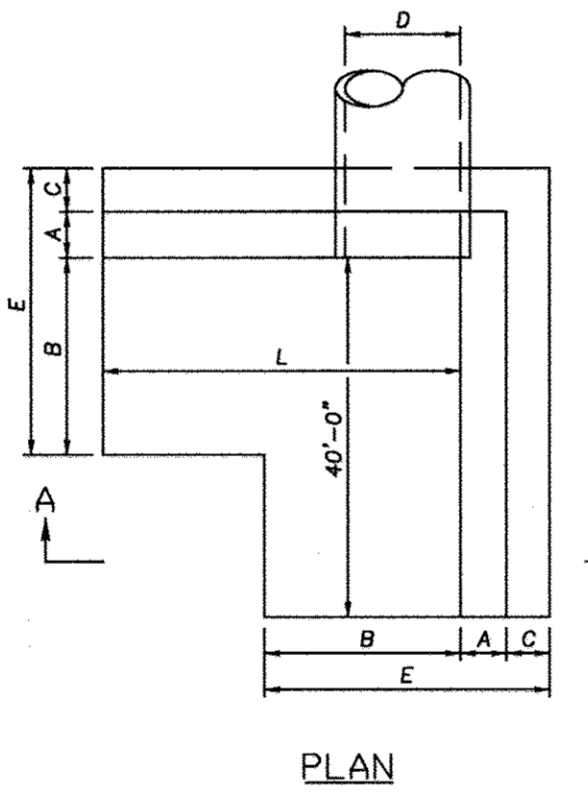
TRASH RACK FOR LOW FLOW ORIFICE NOT TO SCALE



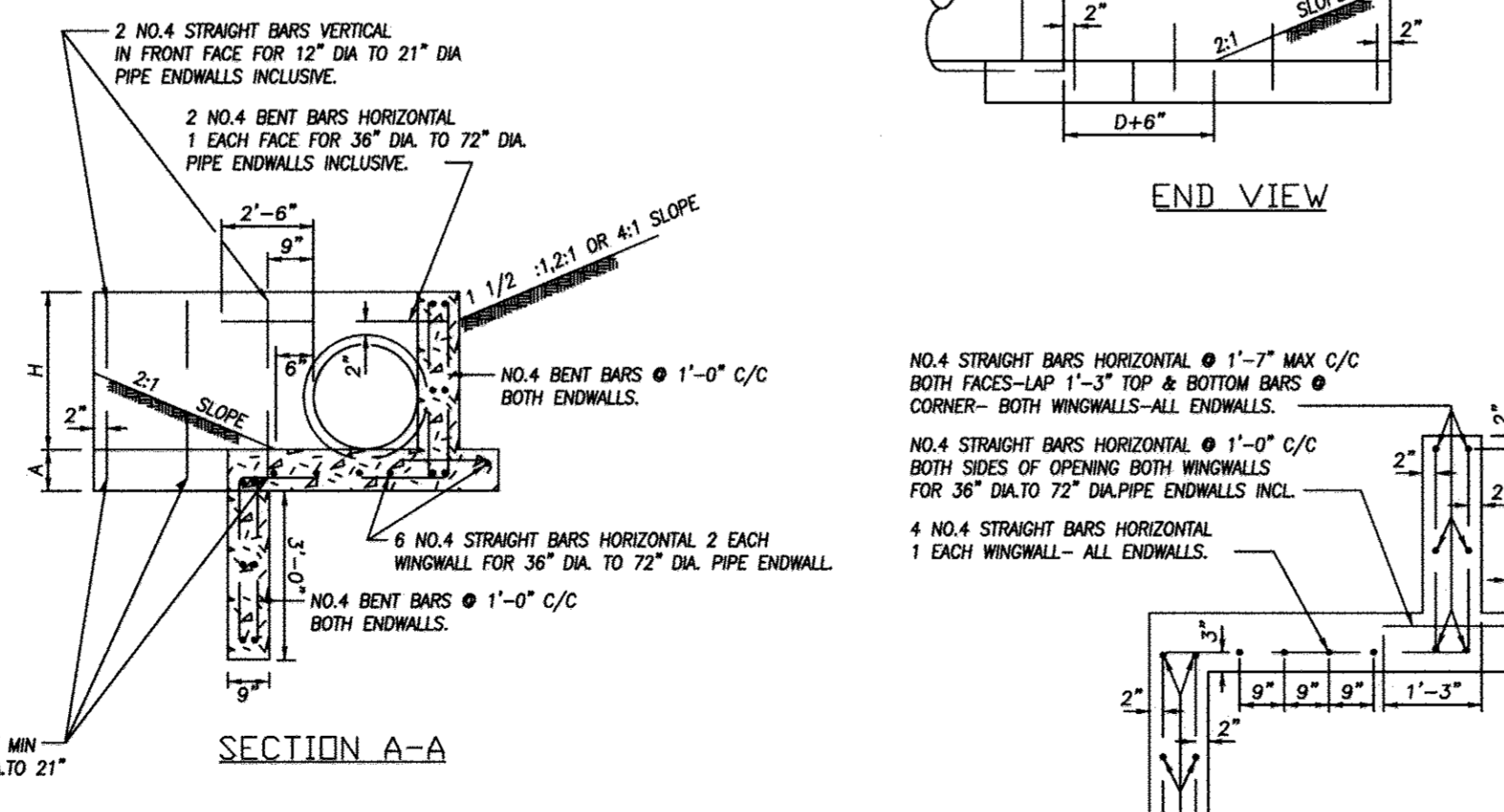
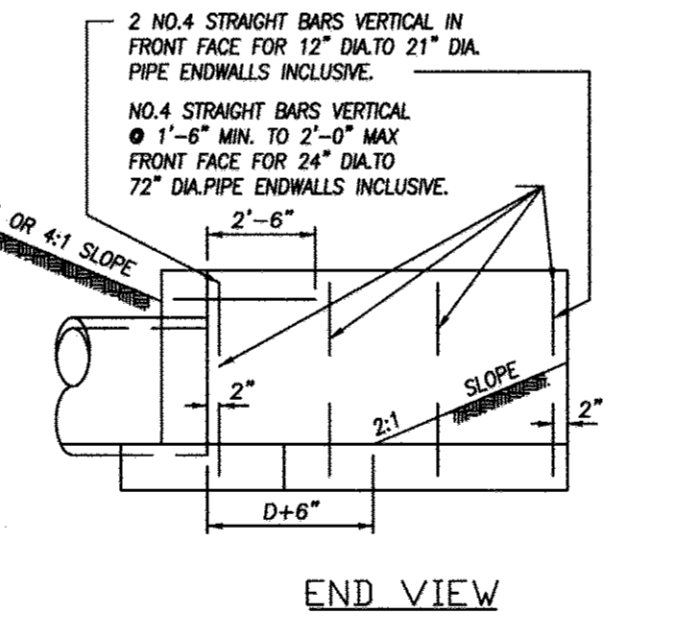
CONTROL MANHOLE DETAIL SD-7 NOT TO SCALE



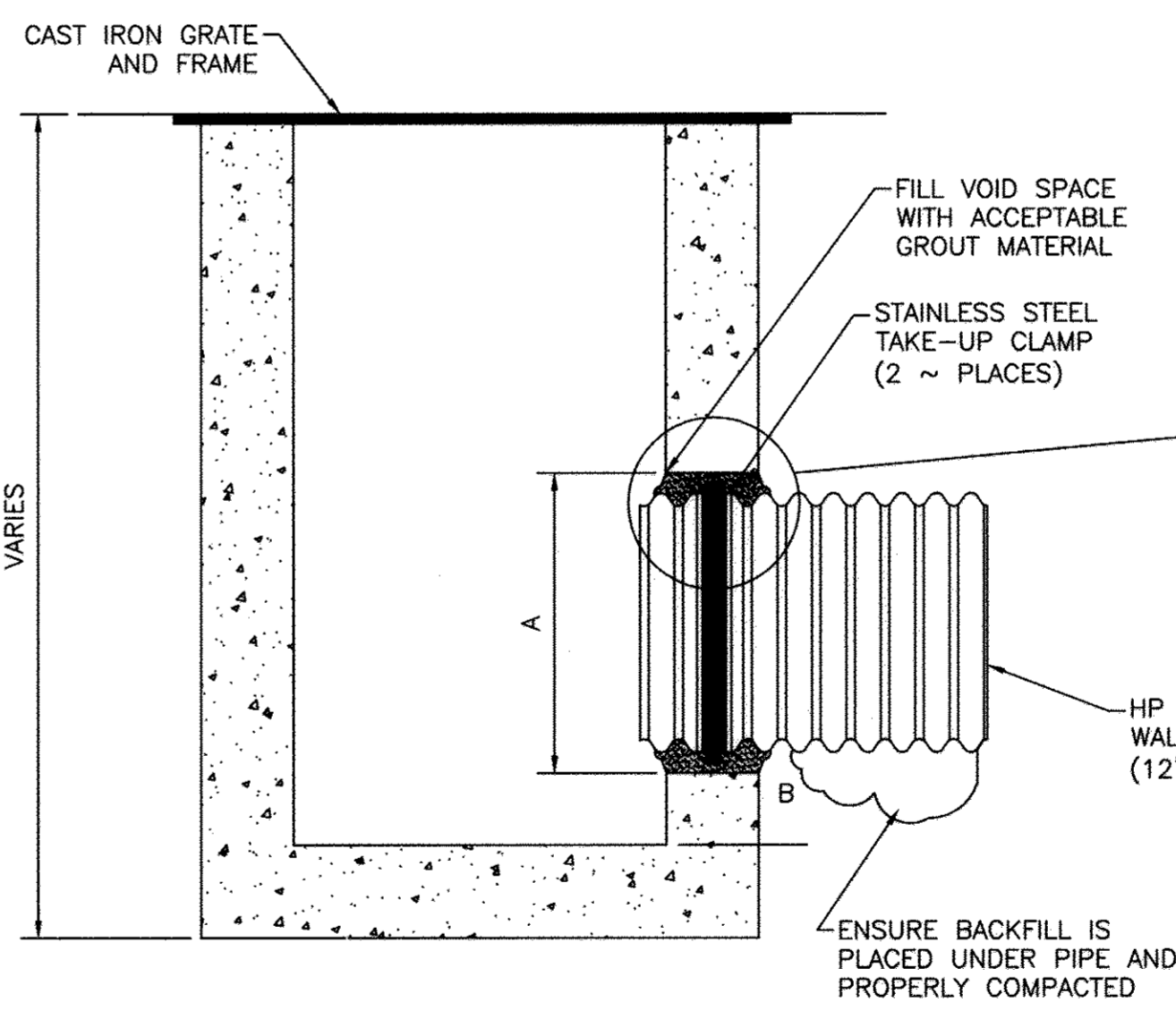
SECTION A-A



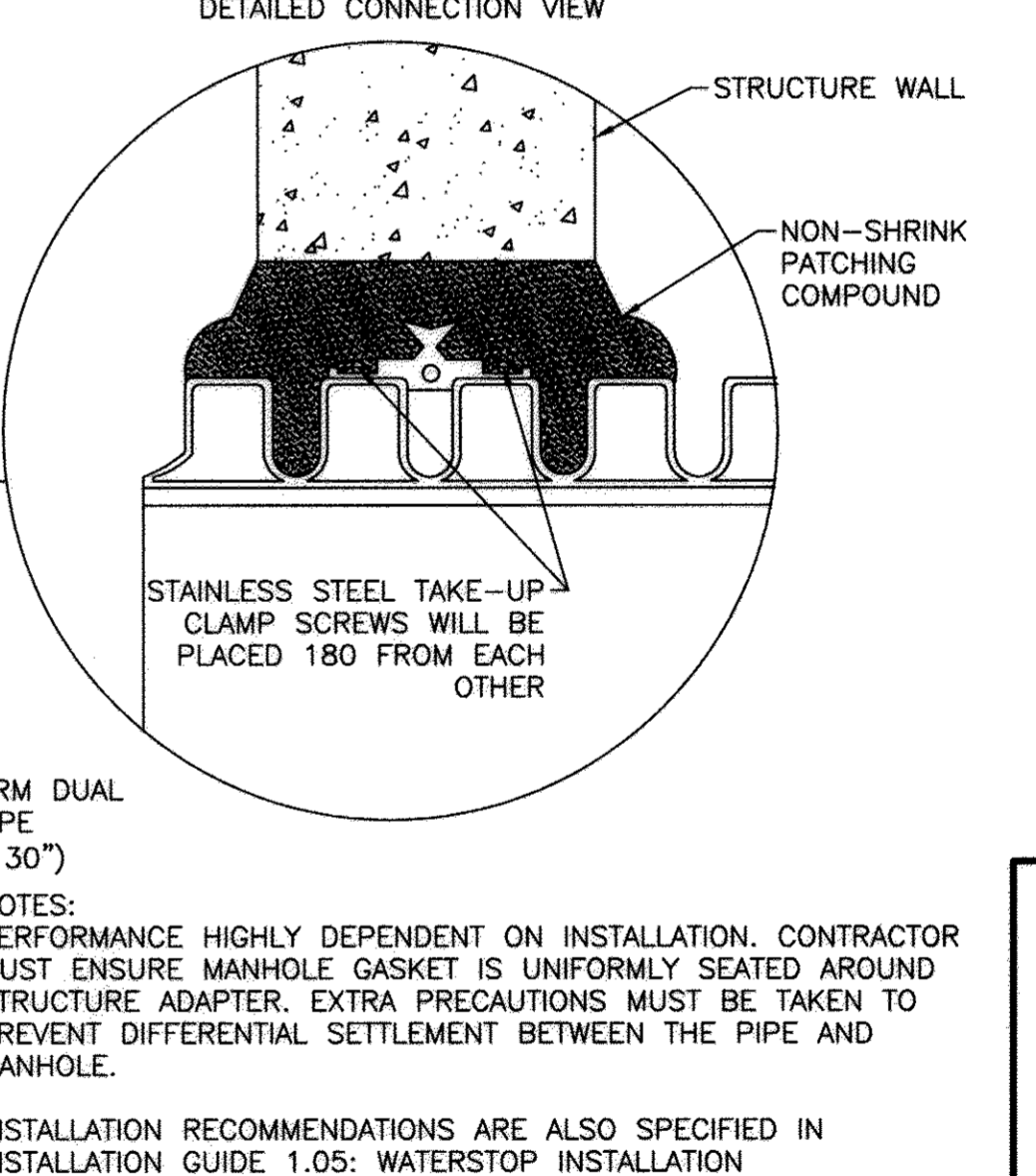
QUANTITIES FOR ESTIMATING PURPOSES ONLY table with columns: OPENING D AREA, DIMENSIONS (A, B, C, E, H, L), QUANTITIES (CONC. C.Y., STEEL LBS.).



GENERAL NOTES: REINFORCING: CONCRETE SHALL BE MIX NO.2; DEFORMED STEEL BARS - NO.4; ALL EXPOSED EDGES 1/2" OR AS DIRECTED.



12-60" STORM WATERSTOP GROUDED MANHOLE CONNECTION NOT TO SCALE



NOTES: PERFORMANCE HIGHLY DEPENDENT ON INSTALLATION. CONTRACTOR MUST ENSURE MANHOLE GASKET IS UNIFORMLY SEATED AROUND STRUCTURE ADAPTER. EXTRA PRECAUTIONS MUST BE TAKEN TO PREVENT DIFFERENTIAL SETTLEMENT BETWEEN THE PIPE AND MANHOLE.

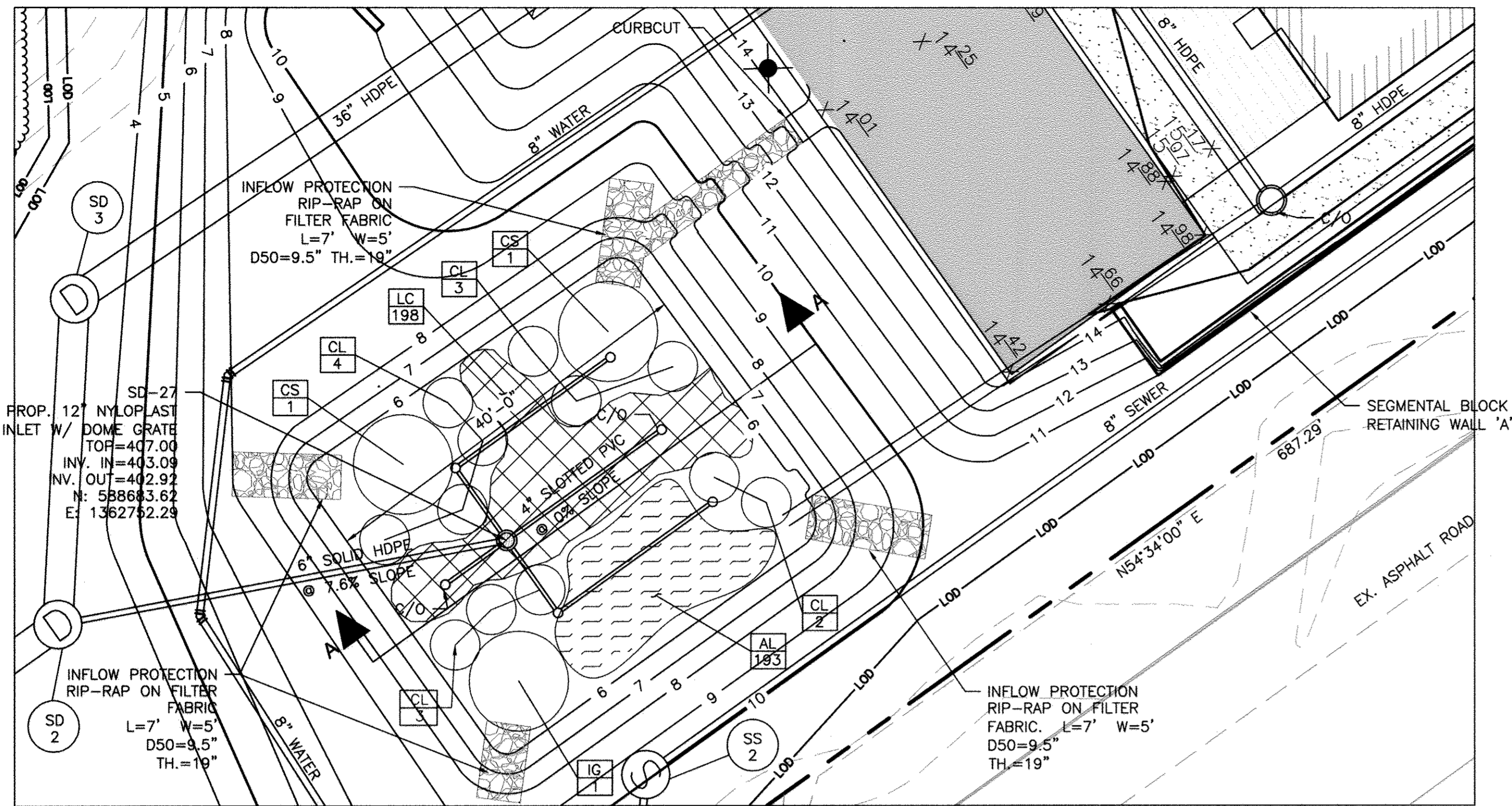


Table with columns: NO., DATE, REVISIONS, OWNER/DEVELOPER (LEGACY AT ELLICOTT'S RETREAT), DESIGN (NAB), DATE (01/06/17), DRAWN (BRA), SCALE (VARIES), SHEET NO. (19 OF 45), SHEET NO. (C-2.05).

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. Signatures and dates for Chief of Land Development and Engineering Division.

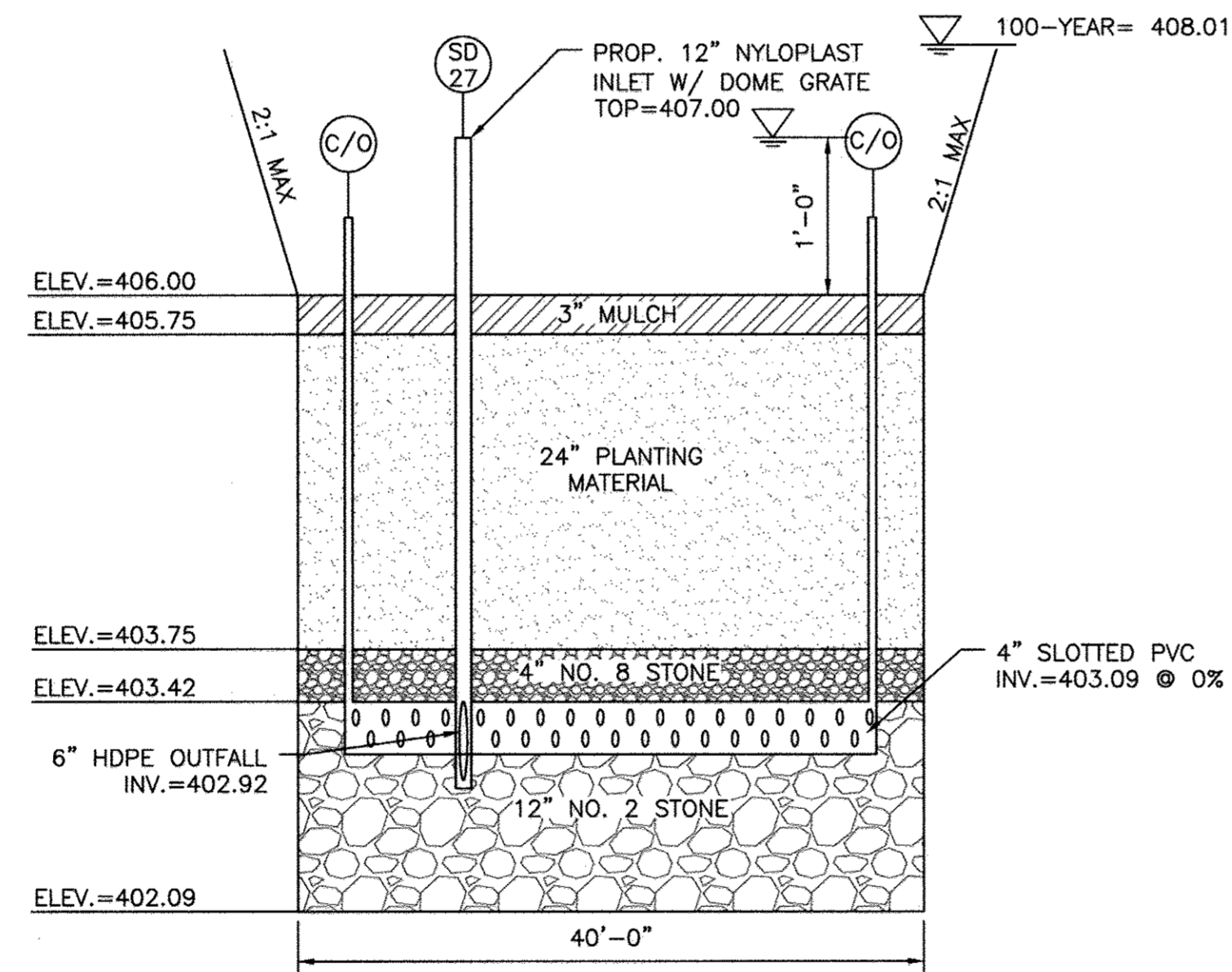
DISPOSITION OF BARS DETAIL



(SWM-1) M-6 MICRO-BIORETENTION FACILITY PLAN
SCALE: 1" = 10'

DESIGN SUMMARY

1. FACILITY NUMBER: SWM-1
2. FACILITY TYPE: M-6 MICRO-BIORETENTION FACILITY
3. DRAINAGE AREA: 25,350 SQ. FT
4. BOTTOM ELEVATION: 402.09
5. TOP OF BANK ELEVATION: 409.00
6. STORAGE VOLUME PROVIDED: 1,402 CU. FT
7. WATER SURFACE ELEVATION:
100-YEAR: 408.01
8. DISCHARGE:
100-YEAR: 2.38 cfs
9. OVERFLOW INLET SIZE & TYPE: 12" NYLOPLAST INLET WITH DOME GRATE
10. CLEANOUT 6" ABOVE GRADE WITH WATERTIGHT SCREW LID.
11. FILTER FABRIC ADDED ON SIDES OF FACILITY ONLY
12. MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED & MAINTAINED BY THE OWNER.
13. THIS FACILITY IS EXEMPT FROM MD378 GUIDELINES IN THAT THE IMPOUNDED DESIGN HIGHWATER DEPTH IS LESS THAN 3 FEET AT THE EMBANKMENT



(SWM-1) M-6 MICRO-BIORETENTION FACILITY SECTION
SCALE: HOR: 1" = 10'
VERT: 1" = 1'

(SWM-1) PLANT SCHEDULE

KEY	QTY	BOTANICAL NAME / COMMON NAME	SIZE	COND.	COMMENTS
SHRUBS					
IG	1	ILEX GLABRA / INKBERRY HOLLY	18" HT.	CONT.	PLANT AT 5' O.C.
CS	2	CORNUS SERICEA / REDOSIER DOGWOOD	18" HT.	CONT.	PLANT AT 5' O.C.
PERENNIALS / ORNAMENTAL GRASSES					
AL	193	ASCLEPIAS TUBEROSA / BUTTERFLY MILKWEED	2" HT.	PLUG	PLANT AT 18" O.C.
LC	198	LOBELIA CARDINALIS / CARDINAL FLOWER	2" HT.	PLUG	PLANT AT 18" O.C.
CL	12	CHASMANTHIUM LATIFOLIUM / NORTHERN SEA OATS	1 GAL.	CONT.	PLANT AT 3' O.C.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Veronica 5-15-17
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
John 5-12-17
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
John 5-16-17
 DIRECTOR DATE

KCI TECHNOLOGIES
 ENGINEERS
 PLANNERS
 SCIENTISTS
 CONSTRUCTION MANAGERS
 11850 WEST MARKET PLACE
 SUITE A
 FULTON, MD 20759
 TELEPHONE: (410) 792-8086
 FAX: (410) 792-7419

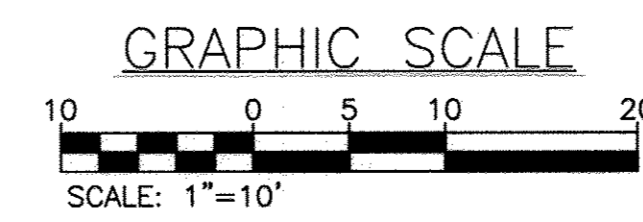
REVISIONS		
NO.	DATE	BY
1	04/05/2017	BA
2	12/22/17	BA

OWNER/DEVELOPER:
 COMMERCIAL CONTRACTORS INC.
 1205 YORK ROAD
 LUTHERVILLE-TIMONIUM,
 MD 21093
 (410)-825-8400

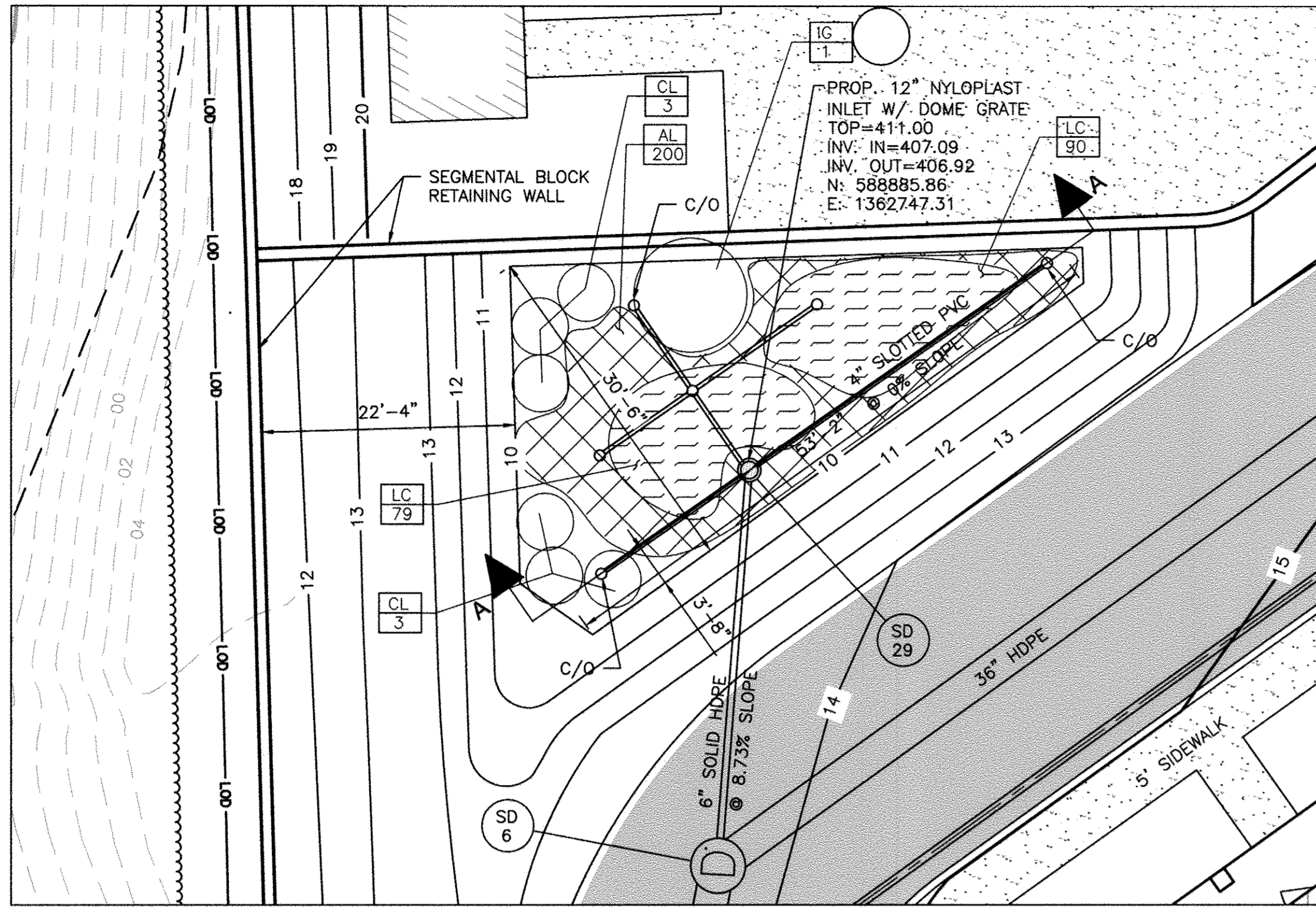
LEGACY AT ELLICOTT'S RETREAT
 STORMWATER MANAGEMENT
 MICRO-BIORETENTION FACILITY PLANS

AGE RESTRICTED ADULT HOUSING
 TAX MAP: 24 GRID: 06 PARCEL: 1085
 ZONED: FOR
 ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

DESIGN: NAB DATE: 09/06/17 KCI PROJECT NO. 27134772 SHEET NO. C-2.06
 DRAWN: BRA SCALE: AS SHOWN SHEET NO. 10 OF 45



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 33772 EXP. DATE: 06/16/2017

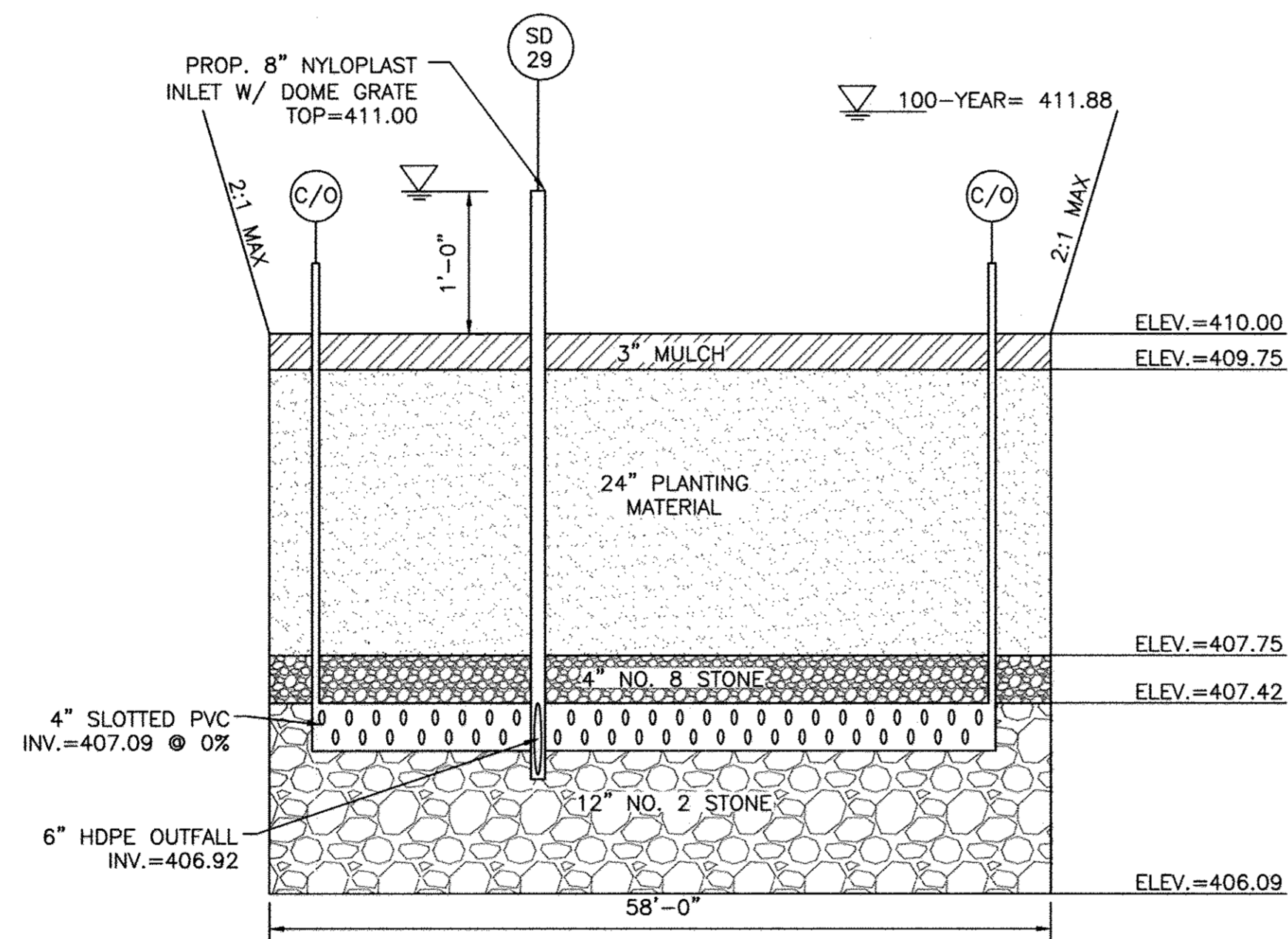


(SWM-3) M-6 MICRO-BIORETENTION FACILITY PLAN

SCALE: 1" = 10'

DESIGN SUMMARY

1. FACILITY NUMBER: SWM-3
2. FACILITY TYPE: M-6 MICRO-BIORETENTION FACILITY
3. DRAINAGE AREA: 23,176 SQ. FT
4. BOTTOM ELEVATION: 406.09
5. TOP OF BANK ELEVATION: 412.50
6. STORAGE VOLUME PROVIDED: 1,225 CU. FT
7. WATER SURFACE ELEVATION:
100-YEAR: 411.88
8. DISCHARGE:
100-YEAR: 3.37 cfs
9. OVERFLOW INLET SIZE & TYPE: 8" NYLOPLAST INLET WITH DOME GRATE
10. CLEANOUT 6" ABOVE GRADE WITH WATERTIGHT SCREW LID.
11. FILTER FABRIC ADDED ON SIDES OF FACILITY ONLY.
12. MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED & MAINTAINED BY THE OWNER.
13. THIS FACILITY IS EXEMPT FROM MD378 GUIDELINES IN THAT THE IMPOUNDED DESIGN HIGHWATER DEPTH IS LESS THAN 3 FEET AT THE EMBANKMENT



(SWM-3) M-6 MICRO-BIORETENTION FACILITY SECTION

SCALE: HOR: 1" = 10'
VERT: 1" = 1'

(SWM-3) PLANT SCHEDULE

KEY	QTY	BOTANICAL NAME / COMMON NAME	SIZE	COND.	COMMENTS
SHRUBS					
IG	1	ILEX GLABRA / INKBERRY HOLLY	18" HT.	CONT.	PLANT AT 5' O.C.
PERENNIALS / ORNAMENTAL GRASSES					
AL	200	ASCLEPIAS TUBEROSA / BUTTERFLY MILKWEED	2" HT.	PLUG	PLANT AT 18" O.C.
LC	169	LOBELIA CARDINALIS / CARDINAL FLOWER	2" HT.	PLUG	PLANT AT 18" O.C.
CL	6	CHASMANTHIUM LATIFOLIUM / NORTHERN SEA OATS	1 GAL.	CONT.	PLANT AT 3' O.C.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 5-15-17

 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 5-12-17

 DIRECTOR
 DATE: 5-16-17

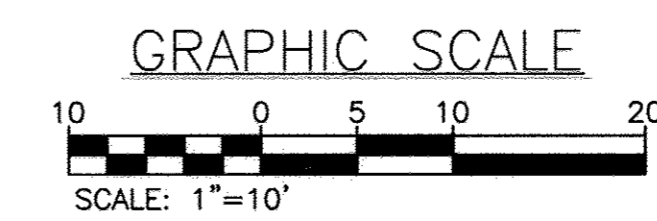


REVISIONS			
NO.	DATE	REVISIONS	BY
1	04/06/2017	UPDATED SWM-3, REMOVED SWM-4	BA
2	12/22/17	REVISED PAGE NUMBERING	BA

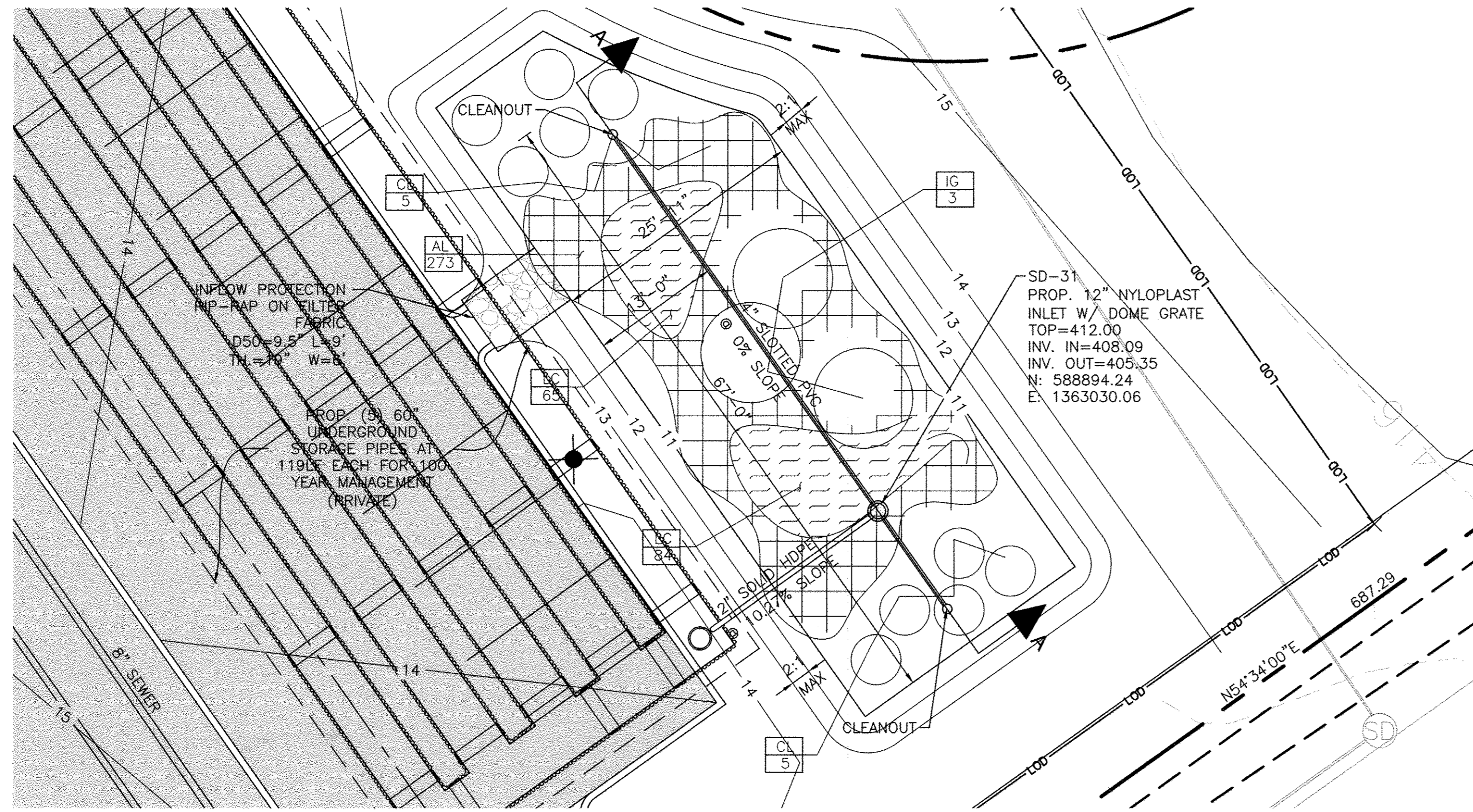


OWNER/DEVELOPER: LEGACY AT ELLICOTT'S RETREAT
 COMMERCIAL CONTRACTORS INC.
 1205 YORK ROAD
 LUTHERVILLE-TIMONIUM, MD 21093
 (410)-825-8400
 AGE RESTRICTED ADULT HOUSING
 TAX MAP: 24 GRID: 06 PARCEL: 1085
 ZONED: POR ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

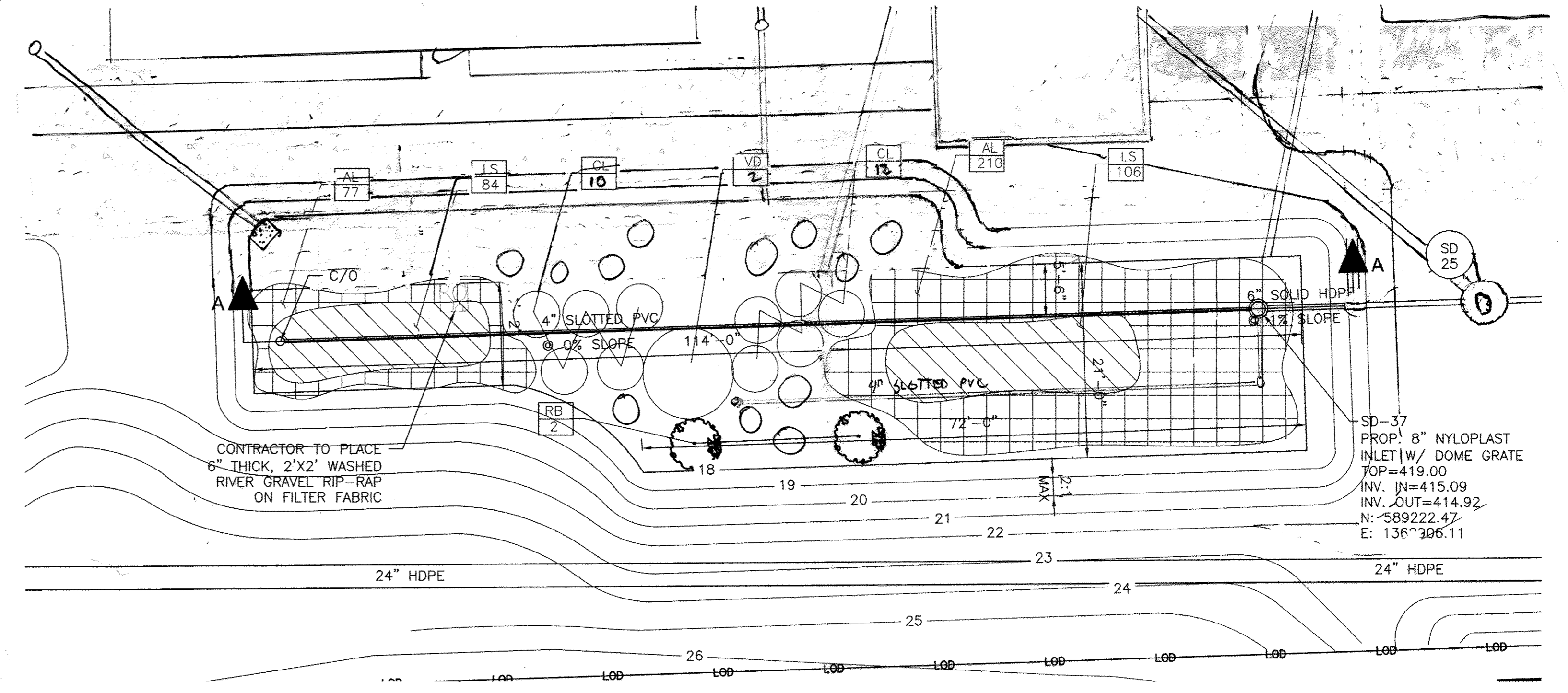
DESIGN NAB	DATE 04/06/17	KCI PROJECT NO. 27134772	SHEET NO. C-2.07
DRAWN BRA	SCALE AS SHOWN	SHEET NO. 21 OF 45	



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

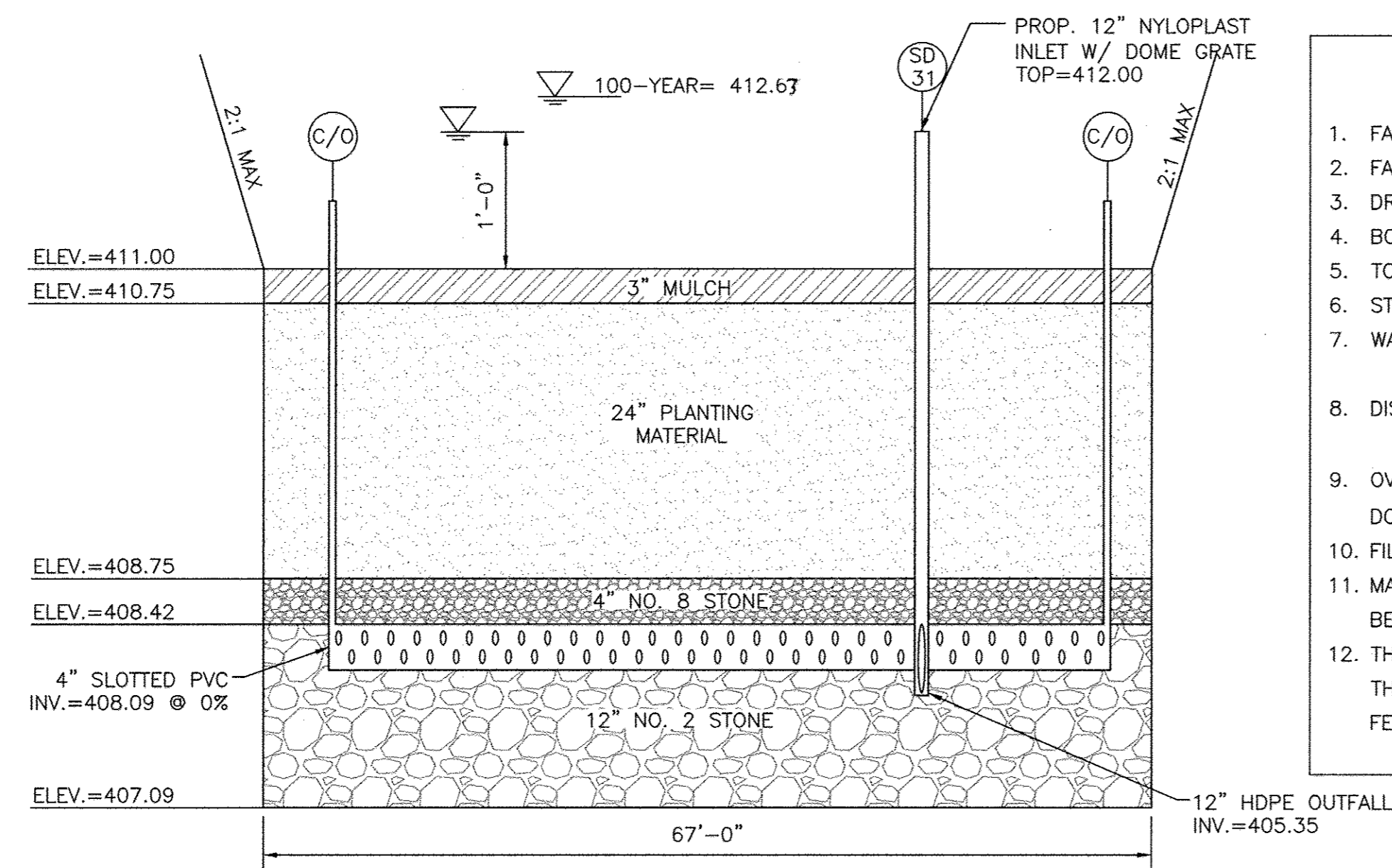


(SWM-5) M-6 MICRO-BIORETENTION FACILITY PLAN
SCALE: 1" = 10'



(SWM-6) M-6 MICRO-BIORETENTION FACILITY PLAN
SCALE: 1" = 10'

- ### DESIGN SUMMARY
- FACILITY NUMBER: SWM-5
 - FACILITY TYPE: M-6 MICRO-BIORETENTION FACILITY
 - DRAINAGE AREA: 13,221 SQ. FT
 - BOTTOM ELEVATION: 407.09
 - TOP OF BANK ELEVATION: 413.50
 - STORAGE VOLUME PROVIDED: 2,136 CU. FT
 - WATER SURFACE ELEVATION:
100-YEAR: 412.63
 - DISCHARGE:
100-YEAR: 1.69 cfs
 - OVERFLOW INLET SIZE & TYPE: 12" NYLOPLAST INLET WITH DOME GRATE
 - FILTER FABRIC ADDED ON SIDES OF FACILITY ONLY
 - MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED & MAINTAINED BY THE OWNER.
 - THIS FACILITY IS EXEMPT FROM MD378 GUIDELINES IN THAT THE IMPOUNDED DESIGN HIGHWATER DEPTH IS LESS THAN 3 FEET AT THE EMBANKMENT

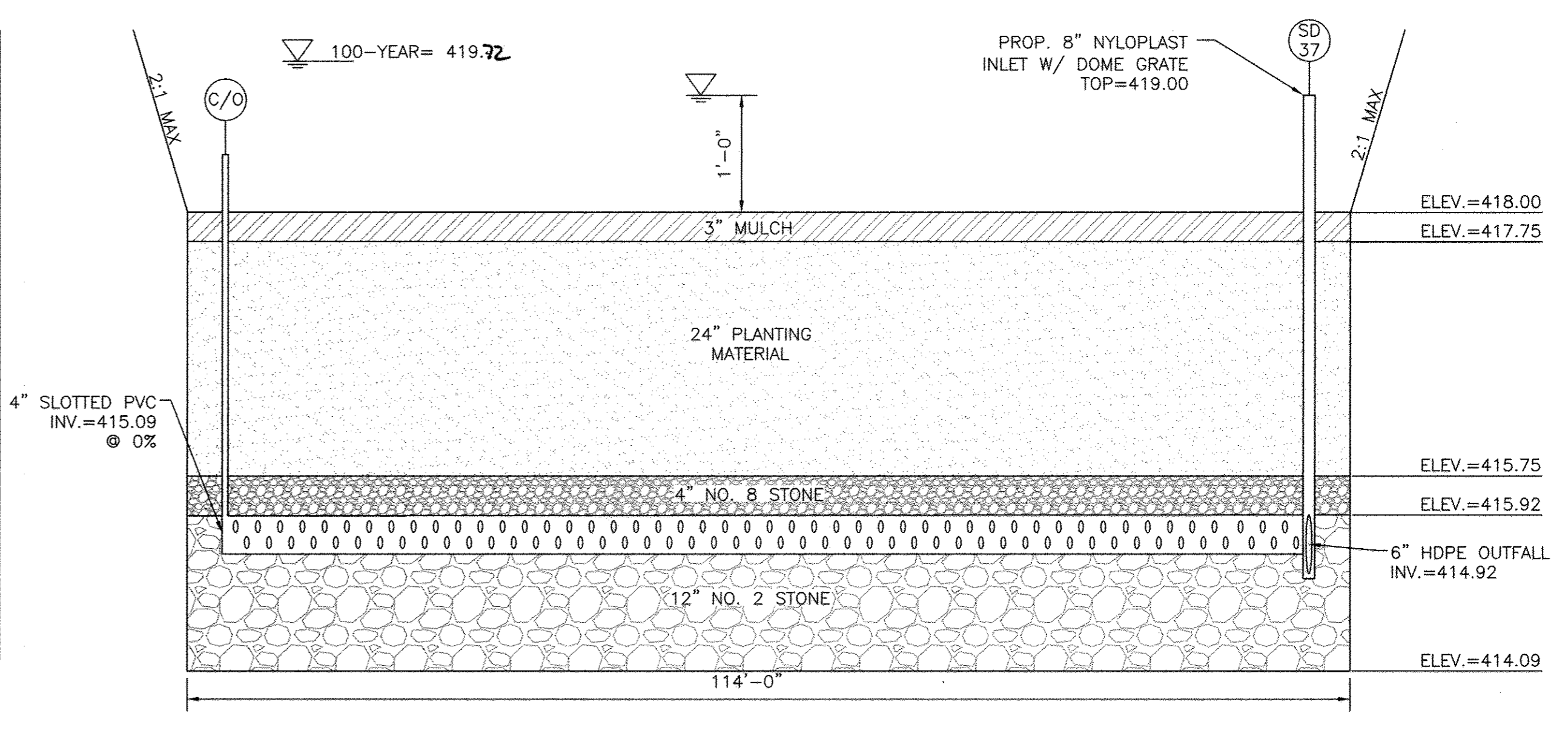


(SWM-5) M-6 MICRO-BIORETENTION FACILITY SECTION
SCALE: HOR: 1" = 10'
VERT: 1" = 1'

(SWM-5) PLANT SCHEDULE

KEY	QTY	BOTANICAL NAME / COMMON NAME	SIZE	COND.	COMMENTS
SHRUBS					
IG	3	ILEX GLABRA / INKBERRY HOLLY	18" HT.	CONT.	PLANT AT 5' O.C.
PERENNIALS / ORNAMENTAL GRASSES					
AL	273	ASCLEPIAS TUBEROSA / BUTTERFLY MILKWEED	2" HT.	PLUG	PLANT AT 18" O.C.
LC	149	LOBELIA CARDINALIS / CARDINAL FLOWER	2" HT.	PLUG	PLANT AT 18" O.C.
CL	10	CHASMANTHIUM LATIFOLIUM / NORTHERN SEA OATS	1 GAL.	CONT.	PLANT AT 3' O.C.

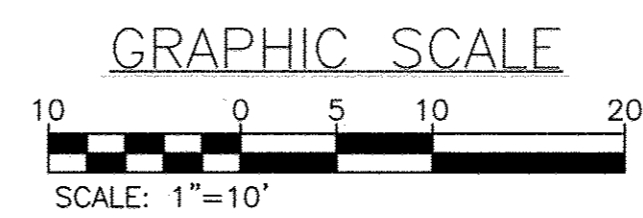
- ### DESIGN SUMMARY
- FACILITY NUMBER: SWM-6
 - FACILITY TYPE: M-6 MICRO-BIORETENTION FACILITY
 - DRAINAGE AREA: 33,493 SQ. FT
 - BOTTOM ELEVATION: 414.09
 - TOP OF BANK ELEVATION: 420.00
 - STORAGE VOLUME PROVIDED: 2,628 CU. FT
 - WATER SURFACE ELEVATION:
100-YEAR: 419.72
 - DISCHARGE:
100-YEAR: 4.14 cfs
 - OVERFLOW INLET SIZE & TYPE: 8" NYLOPLAST INLET WITH DOME GRATE
 - FILTER FABRIC ADDED ON SIDES OF FACILITY ONLY
 - MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED & MAINTAINED BY THE OWNER.
 - THIS FACILITY IS EXEMPT FROM MD378 GUIDELINES IN THAT THE IMPOUNDED DESIGN HIGHWATER DEPTH IS LESS THAN 3 FEET AT THE EMBANKMENT



(SWM-6) M-6 MICRO-BIORETENTION FACILITY SECTION
SCALE: NOT TO SCALE

(SWM-6) PLANT SCHEDULE

KEY	QTY	BOTANICAL NAME / COMMON NAME	SIZE	COND.	COMMENTS
SHRUBS					
VD	2	VIBURNUM DENTATUM 'BLUE MUFFIN' / ARROWWOOD	18" HT.	CONT.	PLANT AT 5' O.C.
PERENNIALS / ORNAMENTAL GRASSES					
AL	287	ASCLEPIAS TUBEROSA / BUTTERFLY MILKWEED	2" HT.	PLUG	PLANT AT 18" O.C.
CL	22	CHASMANTHIUM LATIFOLIUM / NORTHERN SEA OATS	1 GAL.	CONT.	PLANT AT 3' O.C.
LS	190	LIATRIS SPICATA / BLAZING STAR	2" HT.	PLUG	PLANT AT 18" O.C.
TREES					
RB	2	RIVER BIRCH	2" CAL	B&B	FULL SUN



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REVISIONS			
NO.	DATE	DESCRIPTION	BY
1	4/5/2017	ENLARGED SWM-6	BA
2	12/22/17	REVISED PAGE NUMBERING	BA

OWNER/DEVELOPER:
COMMERCIAL CONTRACTORS INC.
1205 YORK ROAD
LUTHERVILLE-TIMONIUM,
MD 21093
(410)-825-8400

LEGACY AT ELLICOTT'S RETREAT
STORMWATER MANAGEMENT
MICRO-BIORETENTION FACILITY PLANS

AGE RESTRICTED ADULT HOUSING
TAX MAP: 24 GRID: 06 PARCEL: 1085
ZONED: POR
ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

DESIGN: NAB DATE: 7/24/15
DRAWN: BRA SCALE: AS SHOWN

KCI PROJECT NO. 27134772 SHEET NO. C-2.08
SHEET NO. 22 OF 45

ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

KCI TECHNOLOGIES

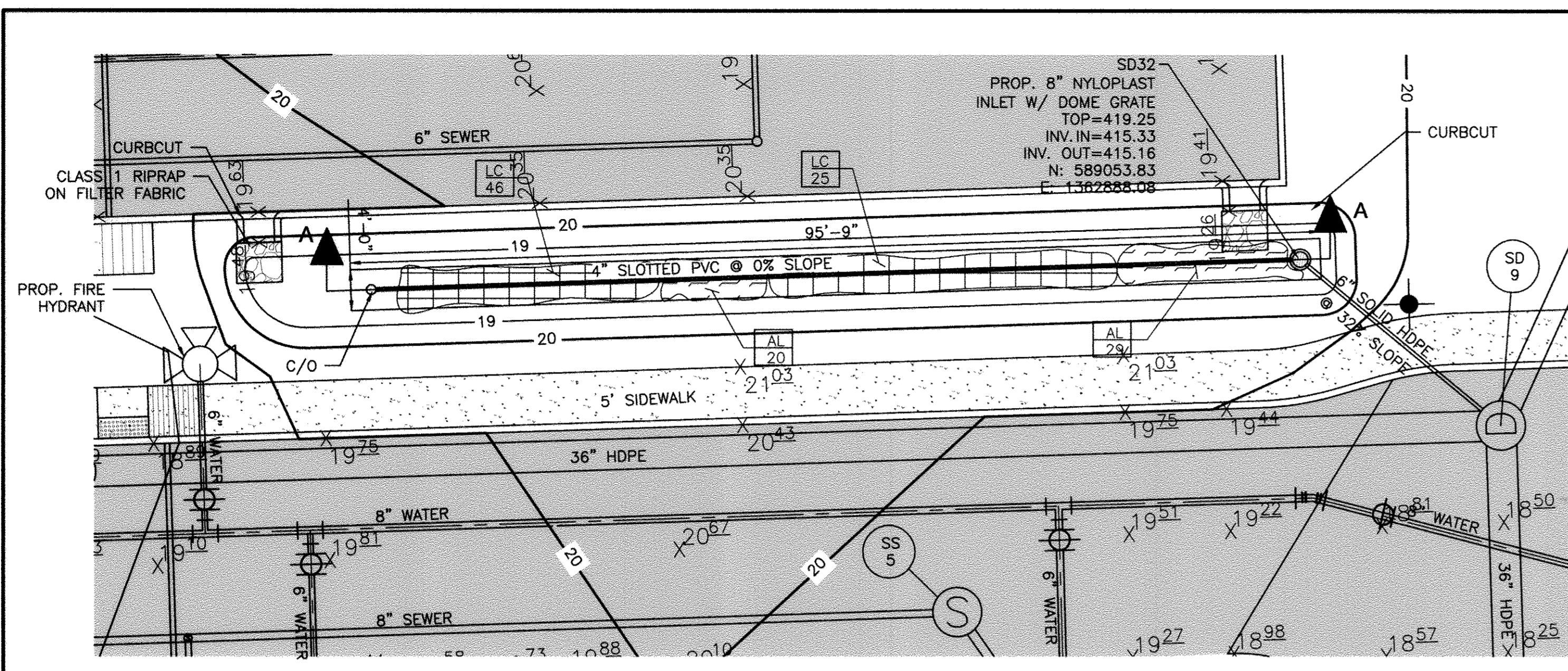
11850 WEST MARKET PLACE
SUITE A
FULTON, MD 20759
TELEPHONE: (410) 792-8086
FAX: (410) 792-7419

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

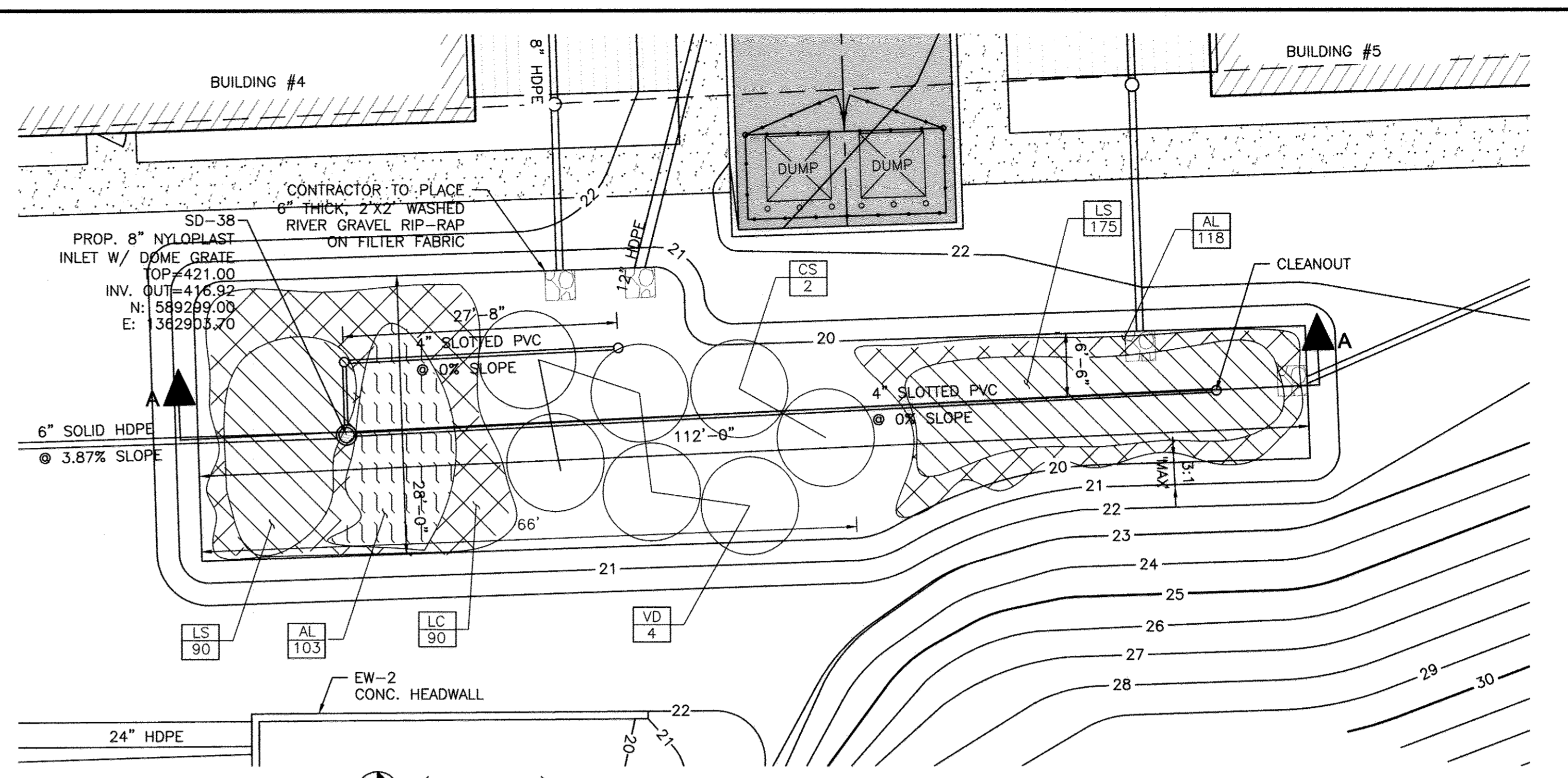
Howard County Department of Planning and Zoning
CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 9-21-15

Howard County Department of Planning and Zoning
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 9-17-15

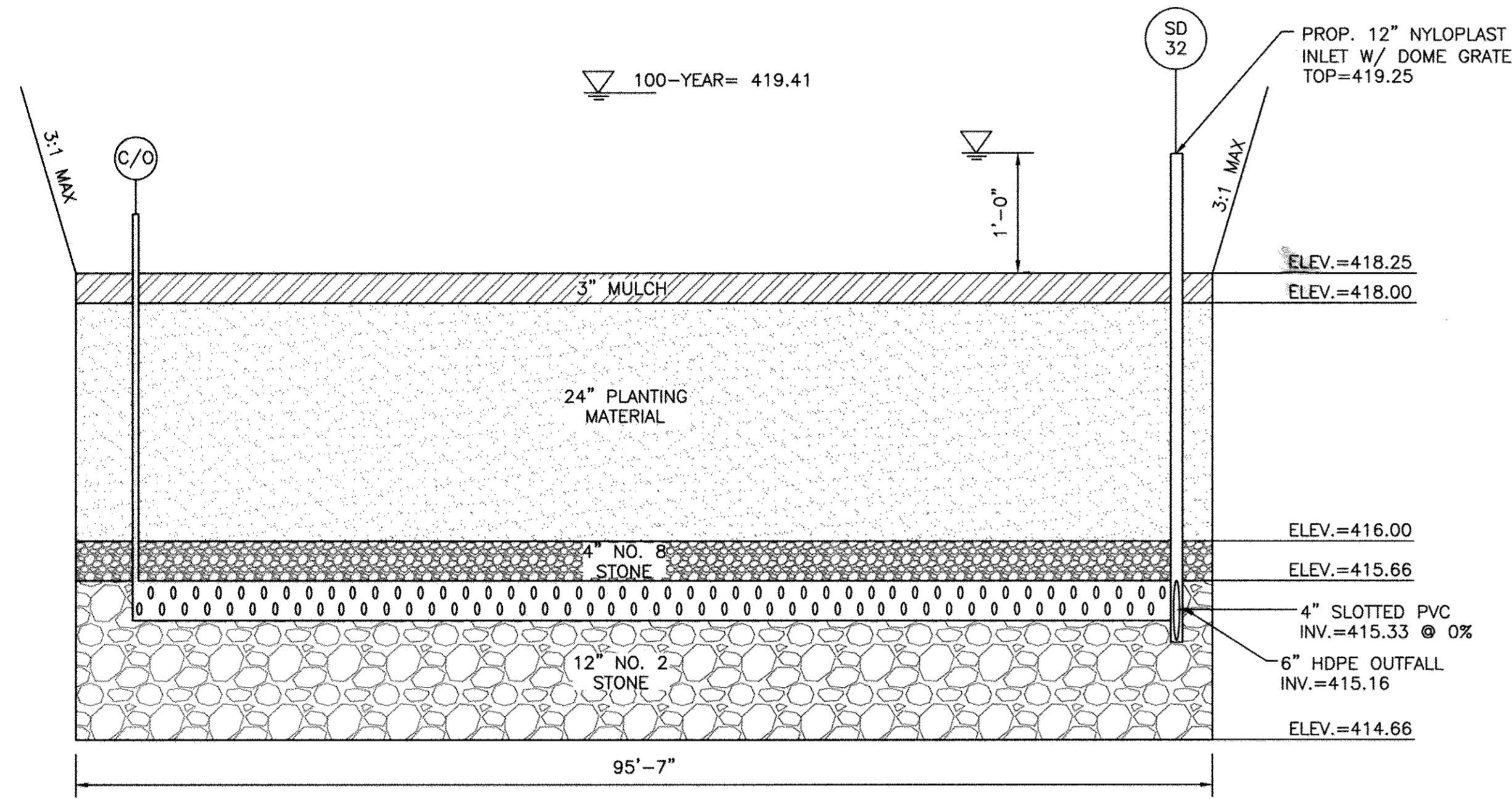
Howard County Department of Planning and Zoning
DIRECTOR DATE: 9-23-15



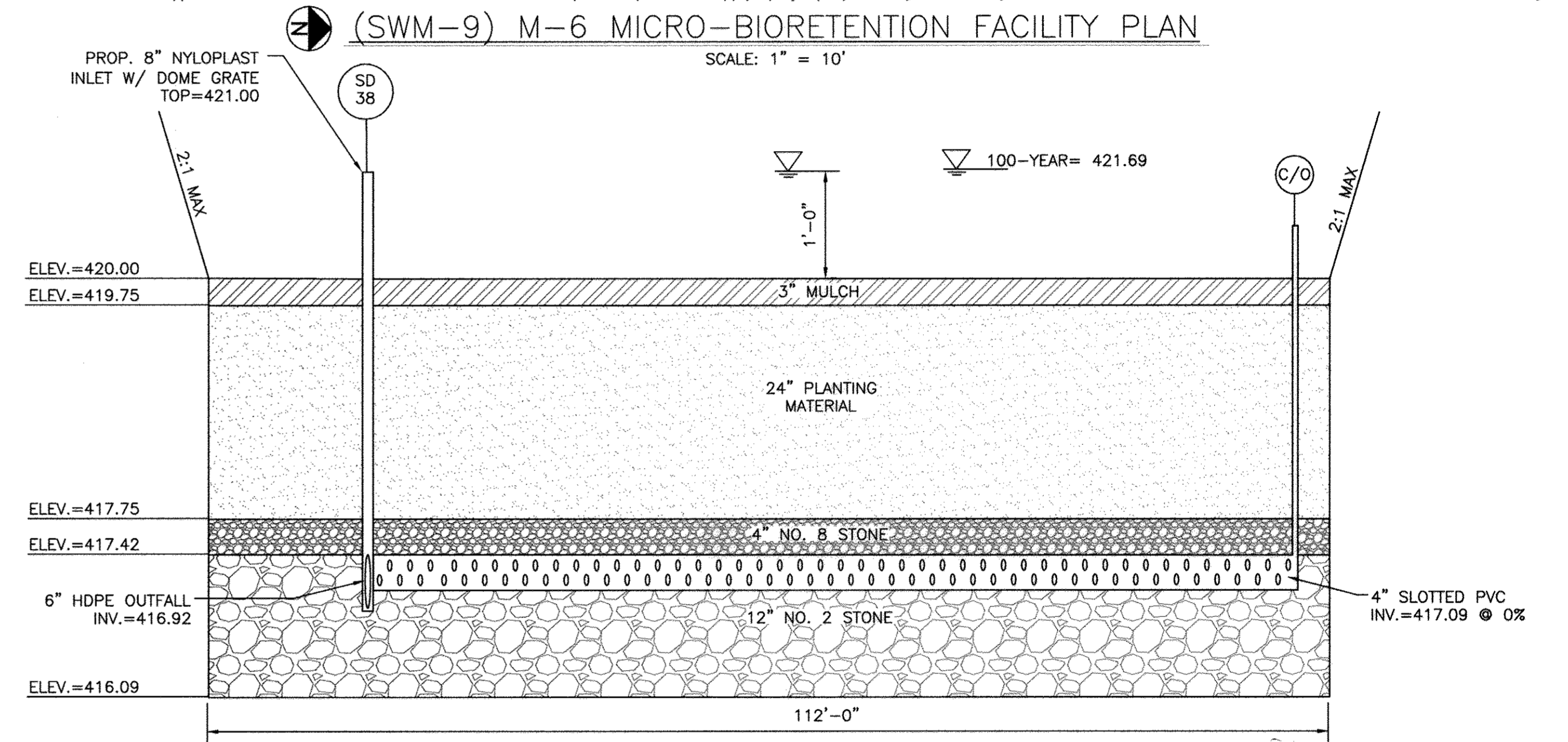
(SWM-7) M-6 MICRO-BIORETENTION FACILITY PLAN
SCALE: 1" = 10'



(SWM-9) M-6 MICRO-BIORETENTION FACILITY PLAN
SCALE: 1" = 10'



(SWM-7) M-6 MICRO-BIORETENTION FACILITY SECTION
SCALE: HOR: 1" = 10', VERT: 1" = 1'



(SWM-9) M-6 MICRO-BIORETENTION FACILITY SECTION
SCALE: HOR: 1" = 10', VERT: 1" = 1'

DESIGN SUMMARY

1. FACILITY NUMBER: SWM-7
2. FACILITY TYPE: M-6 MICRO-BIORETENTION FACILITY
3. DRAINAGE AREA: 7,938 SQ. FT
4. BOTTOM ELEVATION: 414.66
5. TOP OF BANK ELEVATION: 420.25
6. STORAGE VOLUME PROVIDED: 383 CU. FT
7. WATER SURFACE ELEVATION: 100-YEAR: 419.41
8. DISCHARGE: 100-YEAR: 1.50 cfs
9. OVERFLOW INLET SIZE & TYPE: 8" NYLOPLAST INLET WITH DOME GRATE
10. FILTER FABRIC ADDED ON SIDES OF FACILITY ONLY.
11. MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED & MAINTAINED BY THE OWNER.
12. THIS FACILITY IS EXEMPT FROM MD378 GUIDELINES IN THAT THE IMPOUNDED DESIGN HIGHWATER DEPTH IS LESS THAN 3 FEET AT THE EMBANKMENT

DESIGN SUMMARY

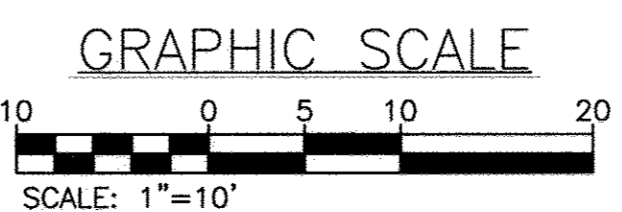
1. FACILITY NUMBER: SWM-9
2. FACILITY TYPE: M-6 MICRO-BIORETENTION FACILITY
3. DRAINAGE AREA: 30,795 SQ. FT
4. BOTTOM ELEVATION: 416.09
5. TOP OF BANK ELEVATION: 421.50
6. STORAGE VOLUME PROVIDED: 2,384 CU. FT
7. WATER SURFACE ELEVATION: 100-YEAR: 421.69
8. DISCHARGE: 100-YEAR: 3.90 cfs
9. OVERFLOW INLET SIZE & TYPE: 8" NYLOPLAST INLET WITH DOME GRATE
10. CLEANOUT 6" ABOVE GRADE WITH WATERTIGHT SCREW LID.
11. FILTER FABRIC ADDED ON SIDES OF FACILITY ONLY.
12. MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED & MAINTAINED BY THE OWNER.
13. THIS FACILITY IS EXEMPT FROM MD378 GUIDELINES IN THAT THE IMPOUNDED DESIGN HIGHWATER DEPTH IS LESS THAN 3 FEET AT THE EMBANKMENT

(SWM-9) PLANT SCHEDULE

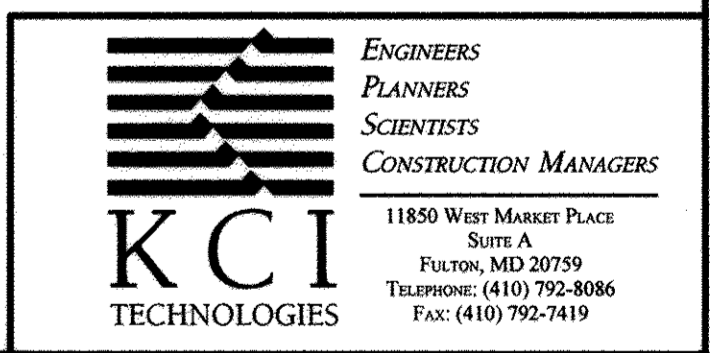
KEY	QTY	BOTANICAL NAME / COMMON NAME	SIZE	COND.	COMMENTS
SHRUBS					
CS	2	CORNUS SERICEA / REDOSIER DOGWOOD	18" HT.	CONT.	PLANT AT 5' O.C.
VD	4	VIBURNUM DENTATUM 'BLUE MUFFIN' / ARROWWOOD	18" HT.	CONT.	PLANT AT 5' O.C.
PERENNIALS / ORNAMENTAL GRASSES					
AL	221	ASCLEPIAS TUBEROSA / BUTTERFLY MILKWEED	2" HT.	PLUG	PLANT AT 18" O.C.
LC	90	LOBELIA CARDINALIS / CARDINAL FLOWER	2" HT.	PLUG	PLANT AT 18" O.C.
LS	265	LIATRIS SPICATA / BLAZING STAR	2" HT.	PLUG	PLANT AT 18" O.C.

(SWM-7) PLANT SCHEDULE

KEY	QTY	BOTANICAL NAME / COMMON NAME	SIZE	COND.	COMMENTS
PERENNIALS / ORNAMENTAL GRASSES					
AL	49	ASCLEPIAS TUBEROSA / BUTTERFLY MILKWEED	2" HT.	PLUG	PLANT AT 18" O.C.
LC	71	LOBELIA CARDINALIS / CARDINAL FLOWER	2" HT.	PLUG	PLANT AT 18" O.C.



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017



REVISIONS		
NO.	DATE	BY
1	04/05/2017	BA
2	12/22/17	BA

OWNER/DEVELOPER: COMMERCIAL CONTRACTORS INC. 1205 YORK ROAD, LUTHERVILLE-TIMONIUM, MD 21093 (410)-825-8400

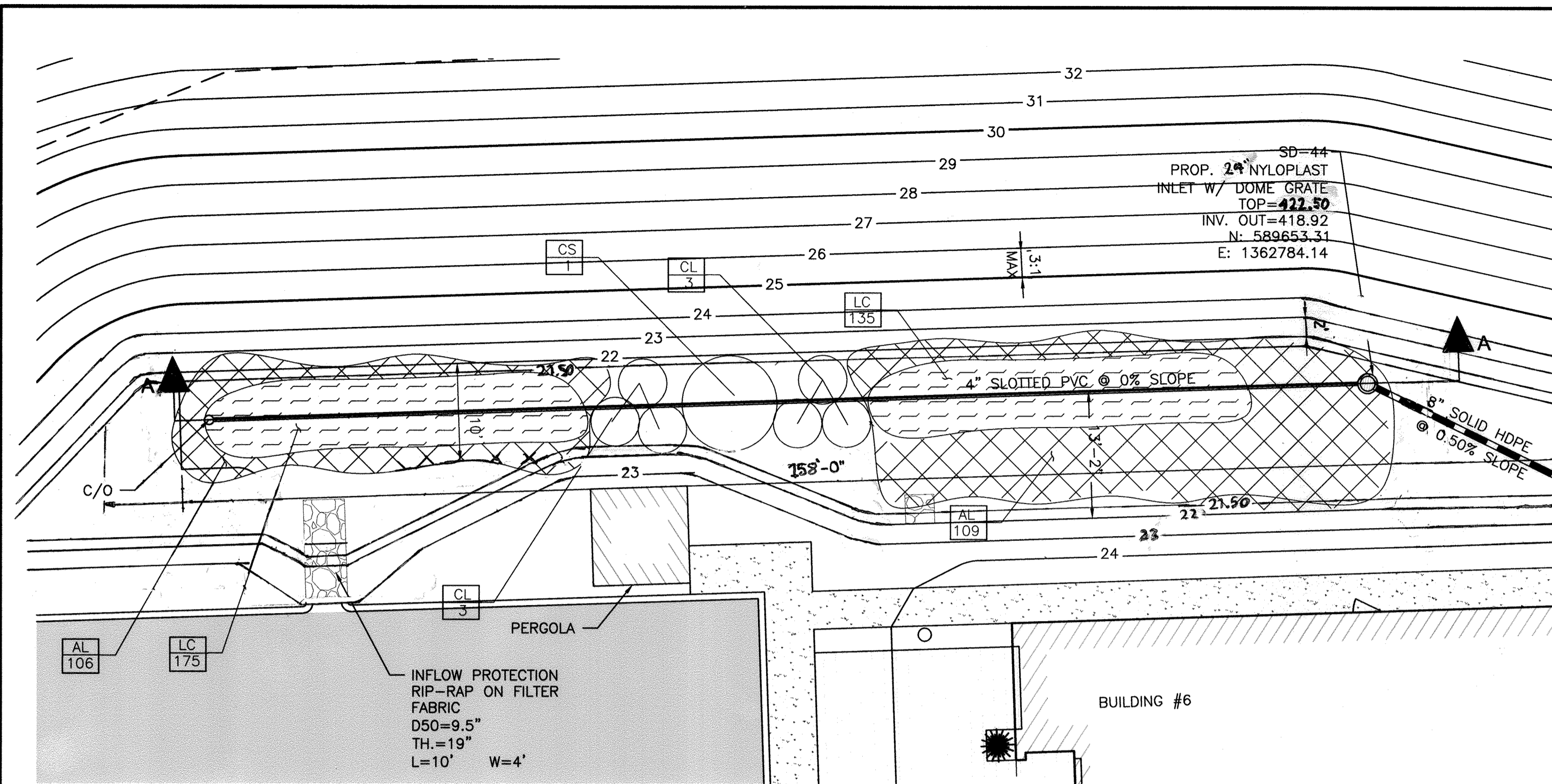
LEGACY AT ELLICOTT'S RETREAT
STORMWATER MANAGEMENT MICRO-BIORETENTION FACILITY PLANS

AGE RESTRICTED ADULT HOUSING
TAX MAP: 24 GRID: 06 PARCEL: 1085
ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

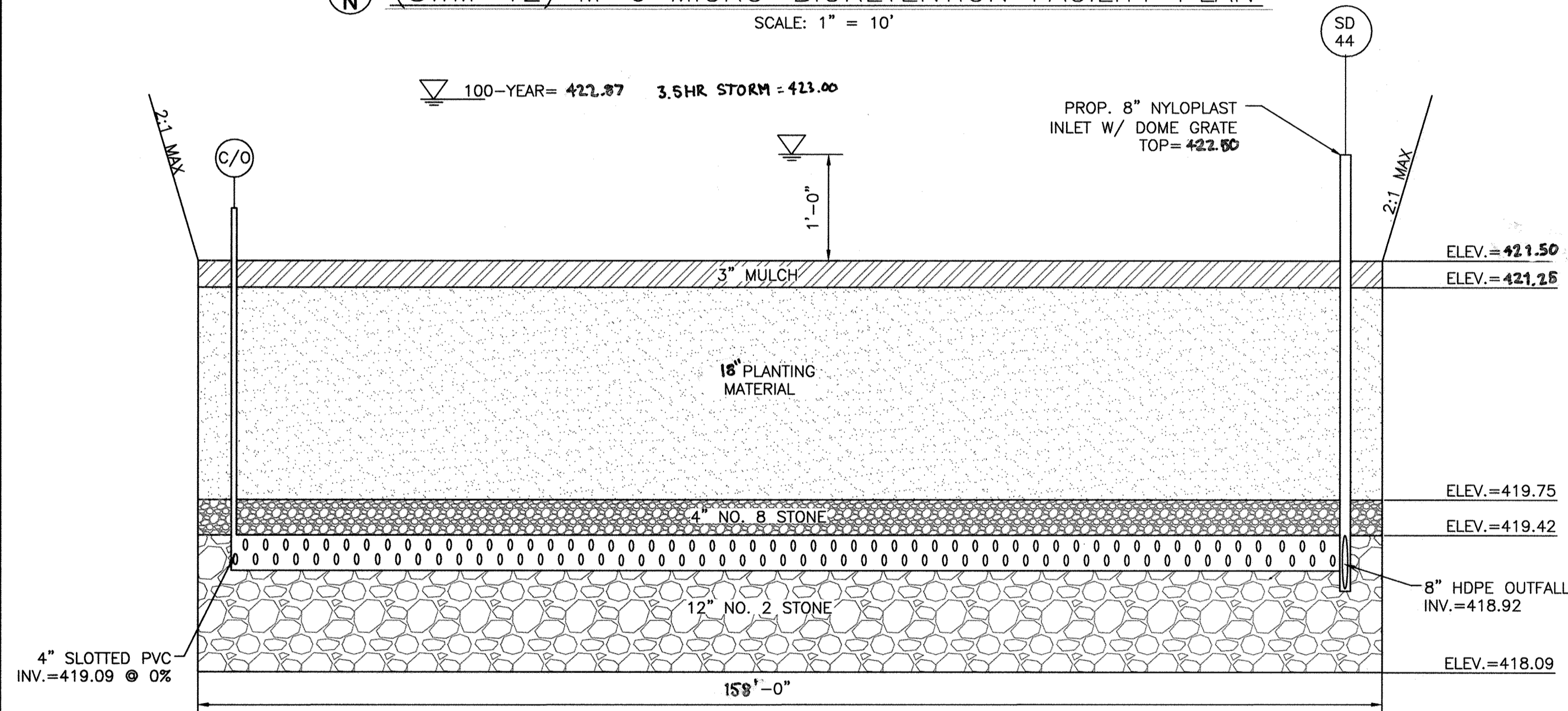
DESIGN: NAB DATE: 04/05/17 SCALE: AS SHOWN
DRAWN: BRA SHEET NO. 23 OF 45

KCI PROJECT NO. 27134772 SHEET NO. C-2.09

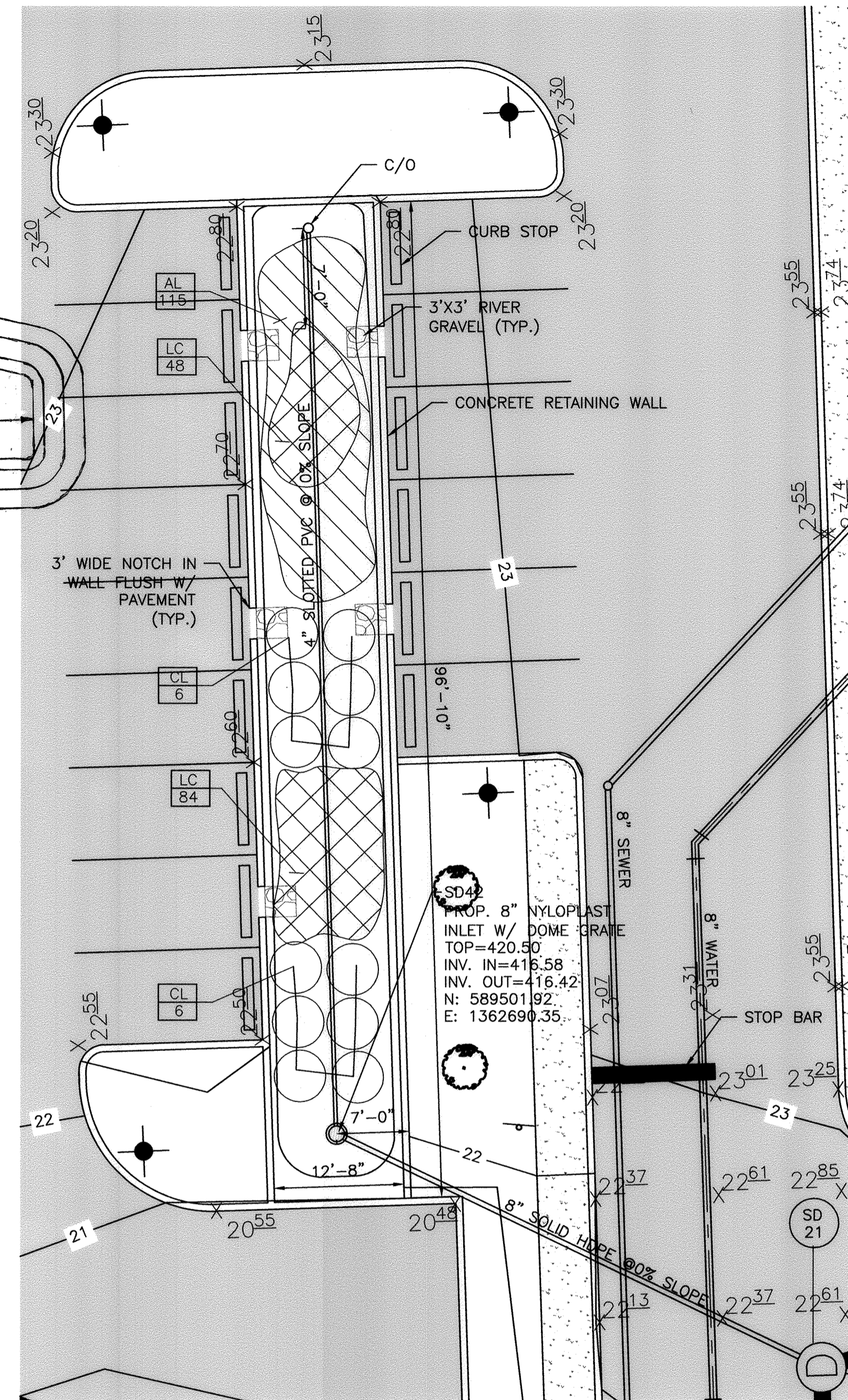
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development: *Kevin L. Smith* DATE: 5-15-17
 Chief, Development Engineering Division: *Michael J. Smith* DATE: 5-12-17
 Director: *Michael J. Smith* DATE: 5-16-17



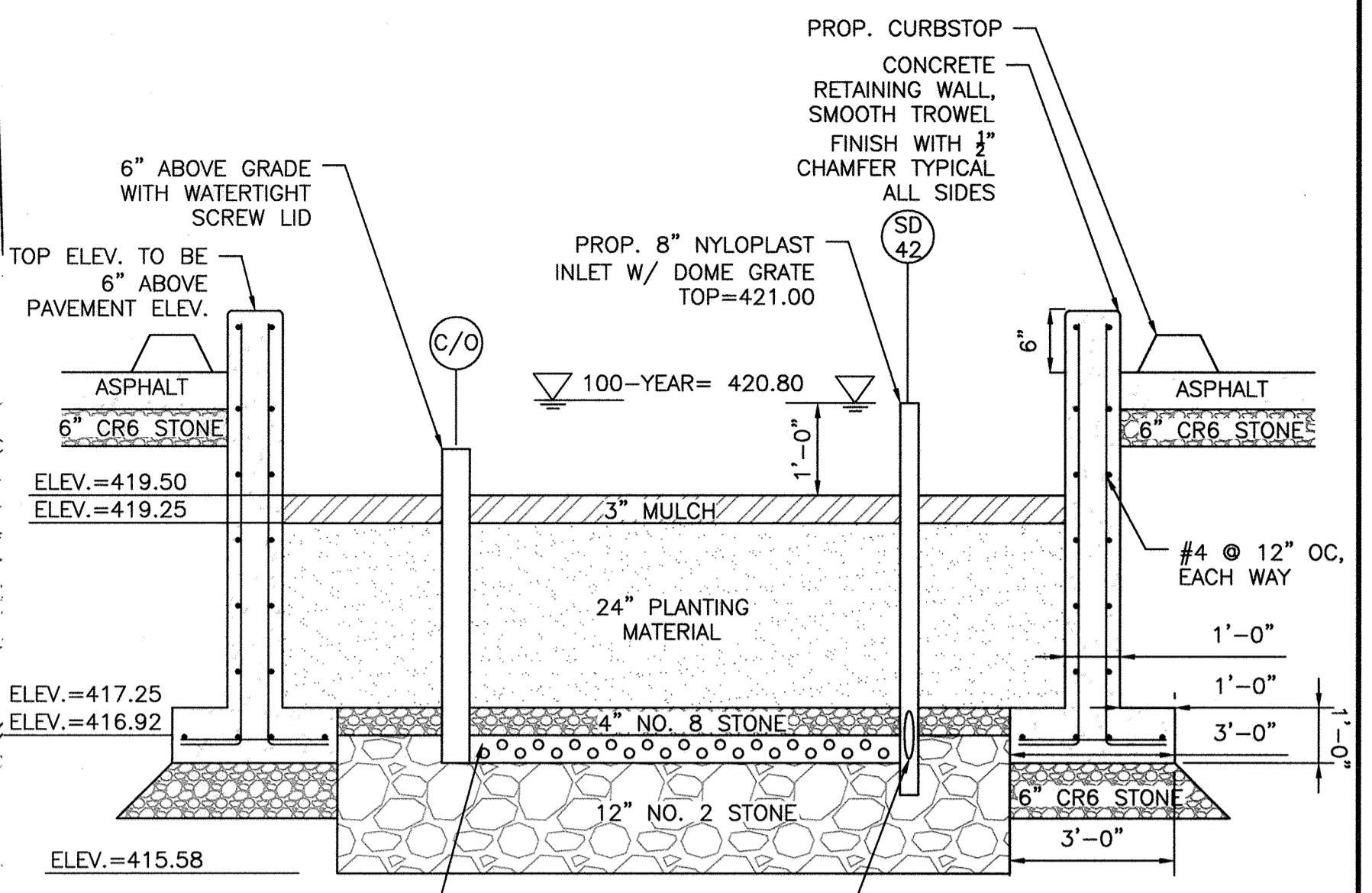
(SWM-12) M-6 MICRO-BIORETENTION FACILITY PLAN
SCALE: 1" = 10'



(SWM-12) M-6 MICRO-BIORETENTION FACILITY SECTION
SCALE: HOR: 1" = 10', VERT: 1" = 1'



(SWM-14) M-6 MICRO-BIORETENTION FACILITY PLAN
SCALE: 1" = 10'



(SWM-14) M-6 MICRO-BIORETENTION FACILITY SECTION
SCALE: NOT TO SCALE

- ### DESIGN SUMMARY
- FACILITY NUMBER: SWM-14
 - FACILITY TYPE: M-6 MICRO-BIORETENTION FACILITY
 - DRAINAGE AREA: 16,000 SQ. FT
 - BOTTOM ELEVATION: 415.58
 - TOP OF BANK ELEVATION: 421.25
 - STORAGE VOLUME PROVIDED: 1,562 CU. FT
 - WATER SURFACE ELEVATION:
 - 100-YEAR: 420.80
 - DISCHARGE: 100-YEAR: 2.70 cfs
 - OVERFLOW INLET SIZE & TYPE: 8" NYLOPLAST INLET WITH DOME GRATE
 - WATERPROOFING MEMBRANE TO BE INSTALLED ALONG BUILDING FACE EXTENDING A FOOT BELOW FACILITY BOTTOM TO THE TOP OF CONCRETE WALL.
 - FILTER FABRIC ADDED ON SIDES OF FACILITY ONLY
 - MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED & MAINTAINED BY THE OWNER.
 - THIS FACILITY IS EXEMPT FROM MD378 GUIDELINES IN THAT THE IMPOUNDED DESIGN HIGHWATER DEPTH IS LESS THAN 3 FEET AT THE EMBANKMENT

- ### DESIGN SUMMARY
- FACILITY NUMBER: SWM-12
 - FACILITY TYPE: M-6 MICRO-BIORETENTION FACILITY
 - DRAINAGE AREA: 33,534 SQ. FT
 - BOTTOM ELEVATION: 418.09
 - TOP OF BANK ELEVATION: 424.00
 - STORAGE VOLUME PROVIDED: 2,220 CU. FT
 - WATER SURFACE ELEVATION: 100-YEAR: 422.87 3.5HR STORM = 423.00
 - DISCHARGE: 100-YEAR: 4.99 cfs 3.5HR STORM = 6.25 CFS
 - OVERFLOW INLET SIZE & TYPE: 24" NYLOPLAST INLET WITH DOME GRATE
 - CLEANOUT 6" ABOVE GRADE WITH WATERTIGHT SCREW LID.
 - FILTER FABRIC ADDED ON SIDES OF FACILITY ONLY.
 - MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED & MAINTAINED BY THE OWNER.
 - THIS FACILITY IS EXEMPT FROM MD378 GUIDELINES IN THAT THE IMPOUNDED DESIGN HIGHWATER DEPTH IS LESS THAN 3 FEET AT THE EMBANKMENT

(SWM-12) PLANT SCHEDULE

KEY	QTY	BOTANICAL NAME / COMMON NAME	SIZE	COND.	COMMENTS
SHRUBS					
CS	1	CORNUS SERICEA / REDOSIER DOGWOOD	18" HT.	CONT.	PLANT AT 5' O.C.
PERENNIALS / ORNAMENTAL GRASSES					
AL	215	ASCLEPIAS TUBEROSA / BUTTERFLY MILKWEED	2" HT.	PLUG	PLANT AT 18" O.C.
CL	6	CHASMANTHIUM LATIFOLIUM / NORTHERN SEA OATS	1 GAL.	CONT.	PLANT AT 3' O.C.
LC	310	LOBELIA CARDINALIS / CARDINAL FLOWER	2" HT.	PLUG	PLANT AT 18" O.C.

(SWM-14) PLANT SCHEDULE

KEY	QTY	BOTANICAL NAME / COMMON NAME	SIZE	COND.	COMMENTS
PERENNIALS / ORNAMENTAL GRASSES					
AL	115	ASCLEPIAS TUBEROSA / BUTTERFLY MILKWEED	2" HT.	PLUG	PLANT AT 18" O.C.
LC	132	LOBELIA CARDINALIS / CARDINAL FLOWER	2" HT.	PLUG	PLANT AT 18" O.C.
CL	12	CHASMANTHIUM LATIFOLIUM / NORTHERN SEA OATS	1 GAL.	CONT.	PLANT AT 3' O.C.



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. 51972, Expiration Date: 12/12/17



REVISIONS

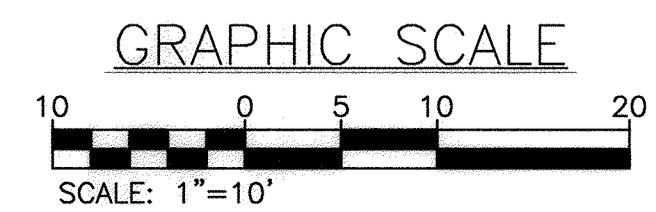
NO.	DATE	DESCRIPTION	BY
1	04/05/2017	SWM-14 ADDED AND SWM-12 ENLARGED DUE TO LAYOUT CHANGE	BA
2	12/21/17	REVISED PAGE NUMBERING	BA
3	2/28/2020	SWM-12 MODIFICATIONS FOR NEW STORM REGULATION	BA

OWNER/DEVELOPER: COMMERCIAL CONTRACTORS INC.
1205 YORK ROAD, LUTHERVILLE-TIMONIUM, MD 21093
(410)-825-8400

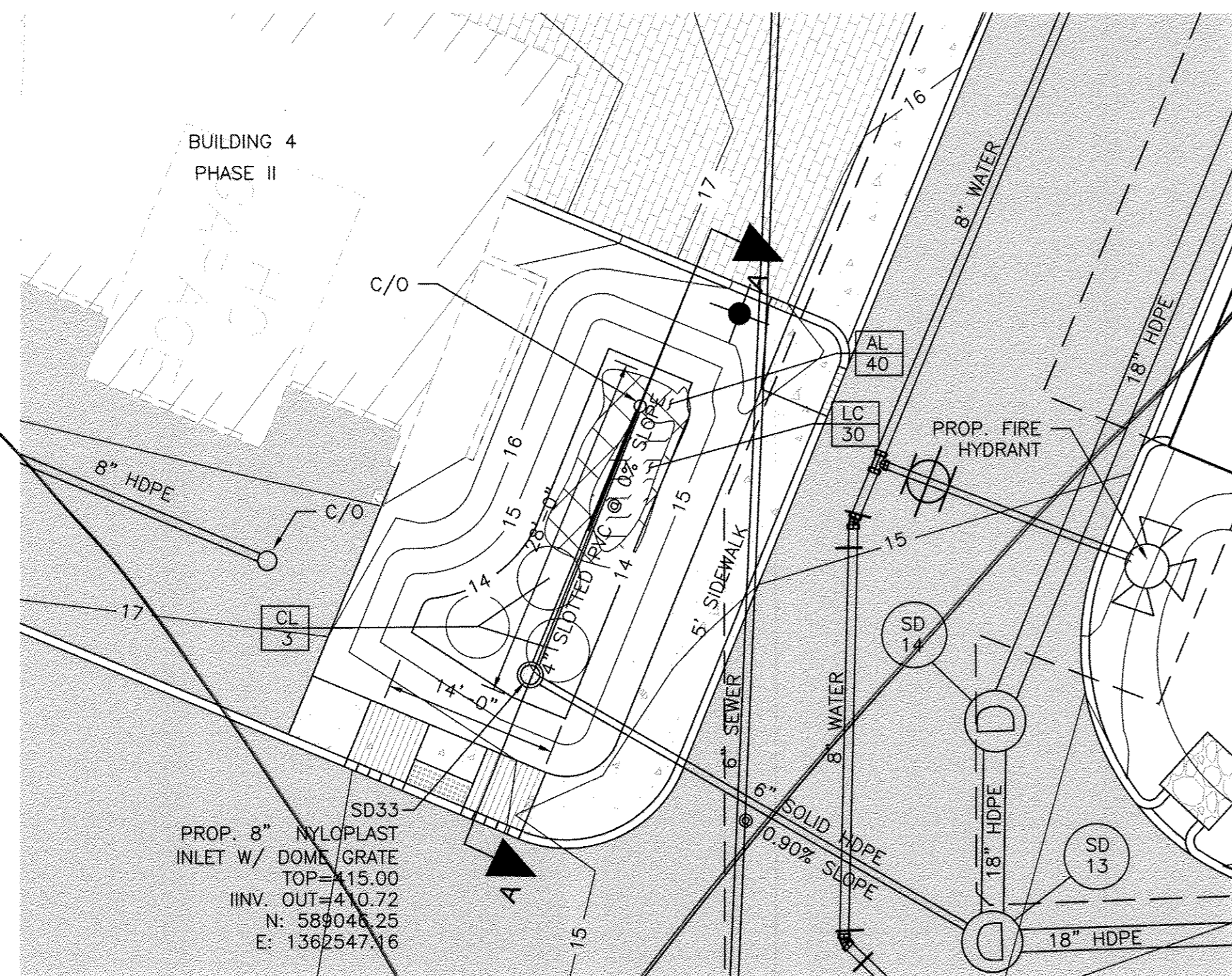
LEGACY AT ELLICOTT'S RETREAT
STORMWATER MANAGEMENT MICRO-BIORETENTION FACILITY PLANS
AGE RESTRICTED ADULT HOUSING
TAX MAP: 24 GRID: 06 PARCEL: 1085
ZONED: POR ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

DESIGN NAB DATE 04/05/17 KCI PROJECT NO. 27134772 SHEET NO. C-2.10
DRAWN BRA SCALE AS SHOWN SHEET NO. 24 OF 45

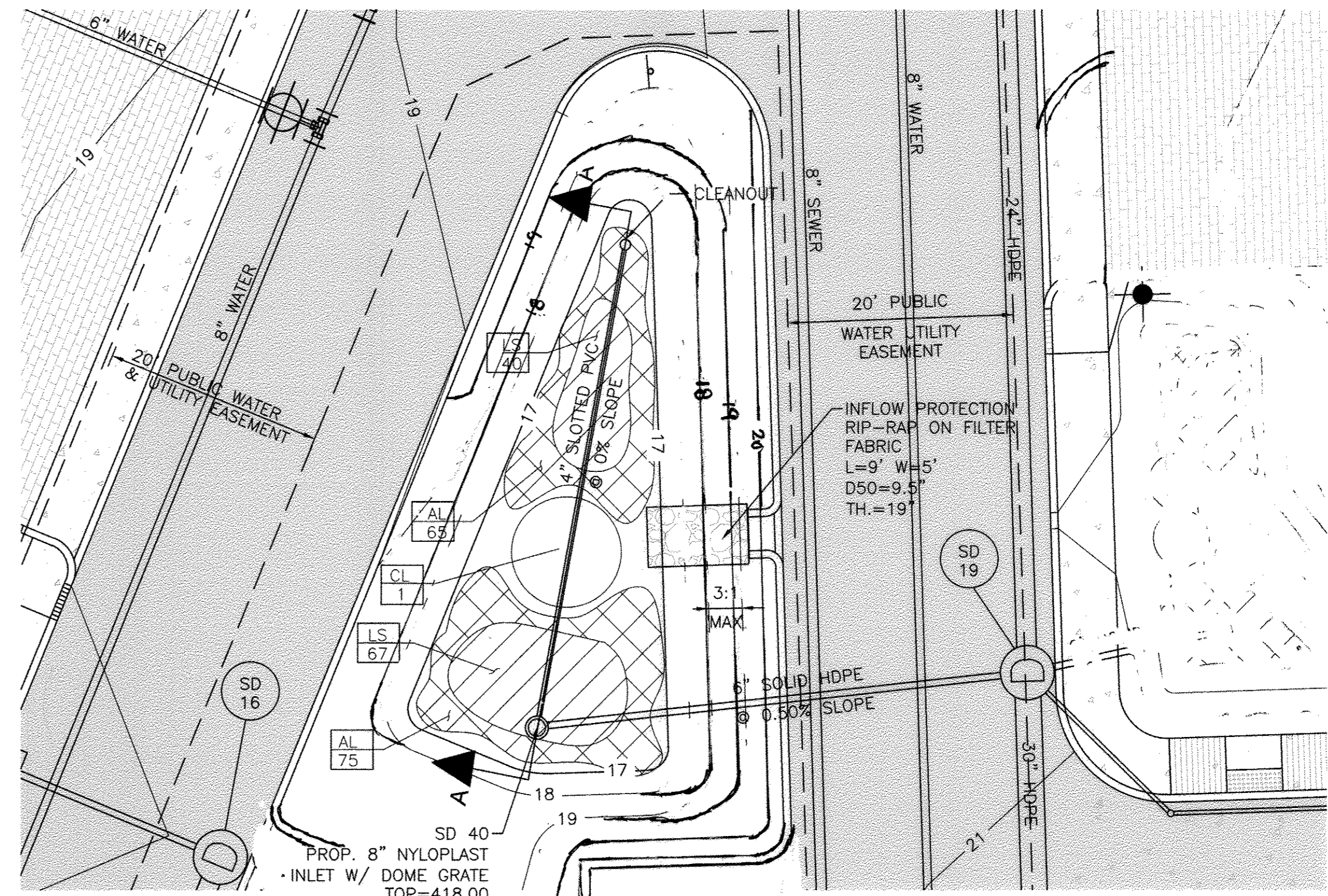
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Karl DeLund
CHIEF, DIVISION OF LAND DEVELOPMENT 5-15-17 DATE
Diana
CHIEF, DEVELOPMENT ENGINEERING DIVISION 5-12-17 DATE
Valerie J. J... 5-16-17 DATE



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

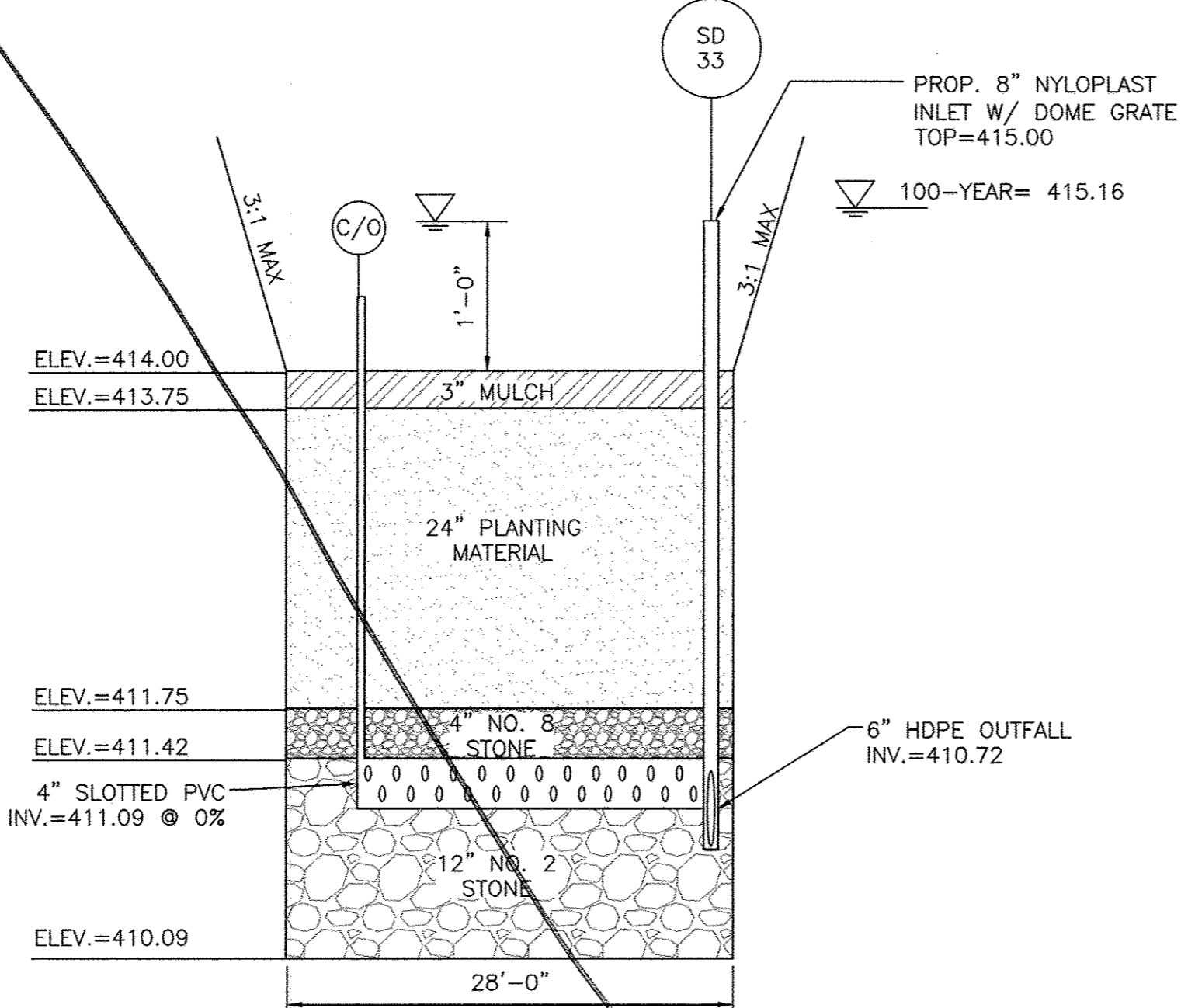


(SWM-17) M-6 MICRO-BIORETENTION FACILITY PLAN
SCALE: 1" = 10'



(SWM-20) M-6 MICRO-BIORETENTION FACILITY SECTION
SCALE: 1" = 10'

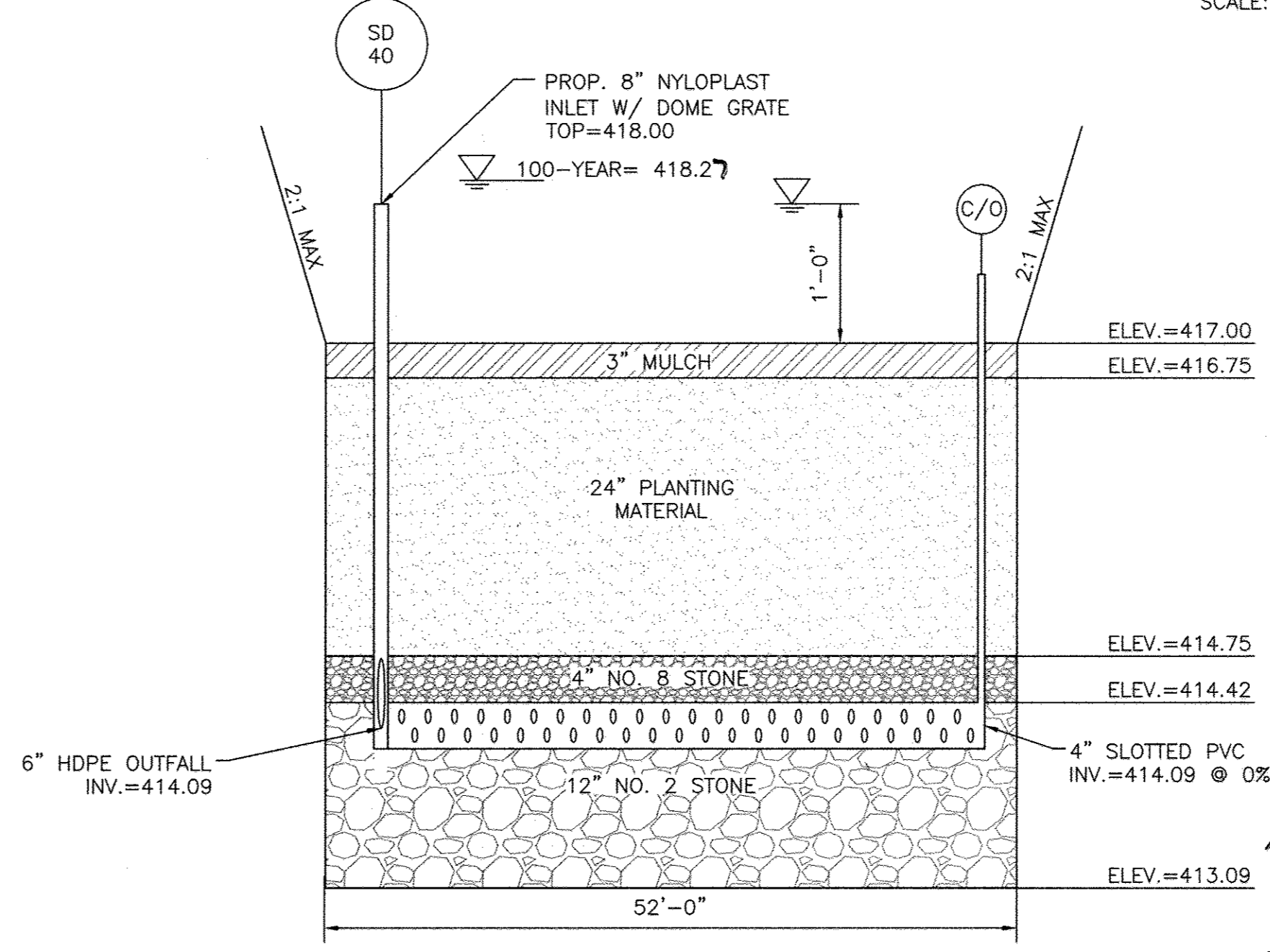
- DESIGN SUMMARY**
1. FACILITY NUMBER: SWM-17
 2. FACILITY TYPE: M-6 MICRO-BIORETENTION FACILITY
 3. DRAINAGE AREA: 4,176 SQ. FT
 4. BOTTOM ELEVATION: 410.09
 5. TOP OF BANK ELEVATION: 415.50
 6. STORAGE VOLUME PROVIDED: 261 CU. FT
 7. WATER SURFACE ELEVATION:
100-YEAR: 415.16
 8. DISCHARGE:
100-YEAR: 0.71 cfs
 9. OVERFLOW INLET SIZE & TYPE: 8" NYLOPLAST INLET WITH DOME GRATE
 10. FILTER FABRIC ADDED ON SIDES OF FACILITY ONLY
 11. MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED & MAINTAINED BY THE OWNER.
 12. THIS FACILITY IS EXEMPT FROM MD378 GUIDELINES IN THAT THE IMPOUNDED DESIGN HIGHWATER DEPTH IS LESS THAN 3 FEET AT THE EMBANKMENT



(SWM-17) M-6 MICRO-BIORETENTION FACILITY SECTION
SCALE: HOR: 1" = 10'
VERT: 1" = 1'

(SWM-17) PLANT SCHEDULE

KEY	QTY	BOTANICAL NAME / COMMON NAME	SIZE	COND.	COMMENTS
PERENNIALS / ORNAMENTAL GRASSES					
AL	40	ASCLEPIAS TUBEROSA / BUTTERFLY MILKWEED	2" HT.	PLUG	PLANT AT 18" O.C.
LC	30	LOBELIA CARDINALIS / CARDINAL FLOWER	2" HT.	PLUG	PLANT AT 18" O.C.
CL	3	CHASMANTHIUM LATIFOLIUM / NORTHERN SEA OATS	1 GAL.	CONT.	PLANT AT 3' O.C.

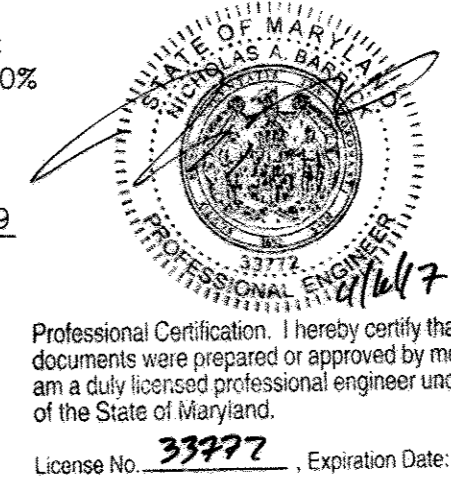
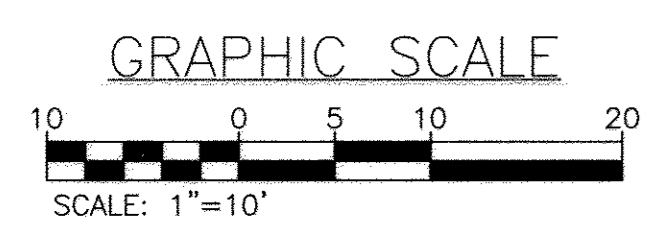


(SWM-20) M-6 MICRO-BIORETENTION FACILITY SECTION
SCALE: HOR: 1" = 10'
VERT: 1" = 1'

(SWM-20) PLANT SCHEDULE

KEY	QTY	BOTANICAL NAME / COMMON NAME	SIZE	COND.	COMMENTS
SHRUBS					
CL	1	CORNUS SERICEA / REDOSIER DOGWOOD	18" HT.	CONT.	PLANT AT 5' O.C.
PERENNIALS / ORNAMENTAL GRASSES					
AL	140	ASCLEPIAS TUBEROSA / BUTTERFLY MILKWEED	2" HT.	PLUG	PLANT AT 18" O.C.
LS	107	LIATRIS SPICATA / BLAZING STAR	2" HT.	PLUG	PLANT AT 18" O.C.

- DESIGN SUMMARY**
1. FACILITY NUMBER: SWM-20
 2. FACILITY TYPE: M-6 MICRO-BIORETENTION FACILITY
 3. DRAINAGE AREA: 2,005 SQ. FT
 4. BOTTOM ELEVATION: 413.09
 5. TOP OF BANK ELEVATION: 418.50
 6. STORAGE VOLUME PROVIDED: 1,461 CU. FT
 7. WATER SURFACE ELEVATION:
100-YEAR: 418.27
 8. DISCHARGE:
100-YEAR: 1.24 cfs
 9. OVERFLOW INLET SIZE & TYPE: 8" NYLOPLAST INLET WITH DOME GRATE
 10. FILTER FABRIC ADDED ON SIDES OF FACILITY ONLY.
 11. MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED & MAINTAINED BY THE OWNER.
 12. THIS FACILITY IS EXEMPT FROM MD378 GUIDELINES IN THAT THE IMPOUNDED DESIGN HIGHWATER DEPTH IS LESS THAN 3 FEET AT THE EMBANKMENT



REVISIONS

NO.	DATE	REVISIONS	BY
1	4/15/2017	REVISED SWM-20, DELETED SWM-17	
2	12/22/17	REVISED PAGE NUMBERING	BA

OWNER/DEVELOPER:
COMMERCIAL CONTRACTORS INC.
1205 YORK ROAD
LUTHERVILLE-TIMONIUM,
MD 21093
(410)-825-8400

LEGACY AT ELLICOTT'S RETREAT
STORMWATER MANAGEMENT
MICRO-BIORETENTION FACILITY PLANS
AGE RESTRICTED ADULT HOUSING
TAX MAP: 24 GRID: 06 PARCEL: 1085
ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

DESIGN DATE: NAB 7/24/15
DRAWN SCALE: BRA AS SHOWN

KCI PROJECT NO. 27134772
SHEET NO. 25 OF 45
SHEET NO. C-2.11

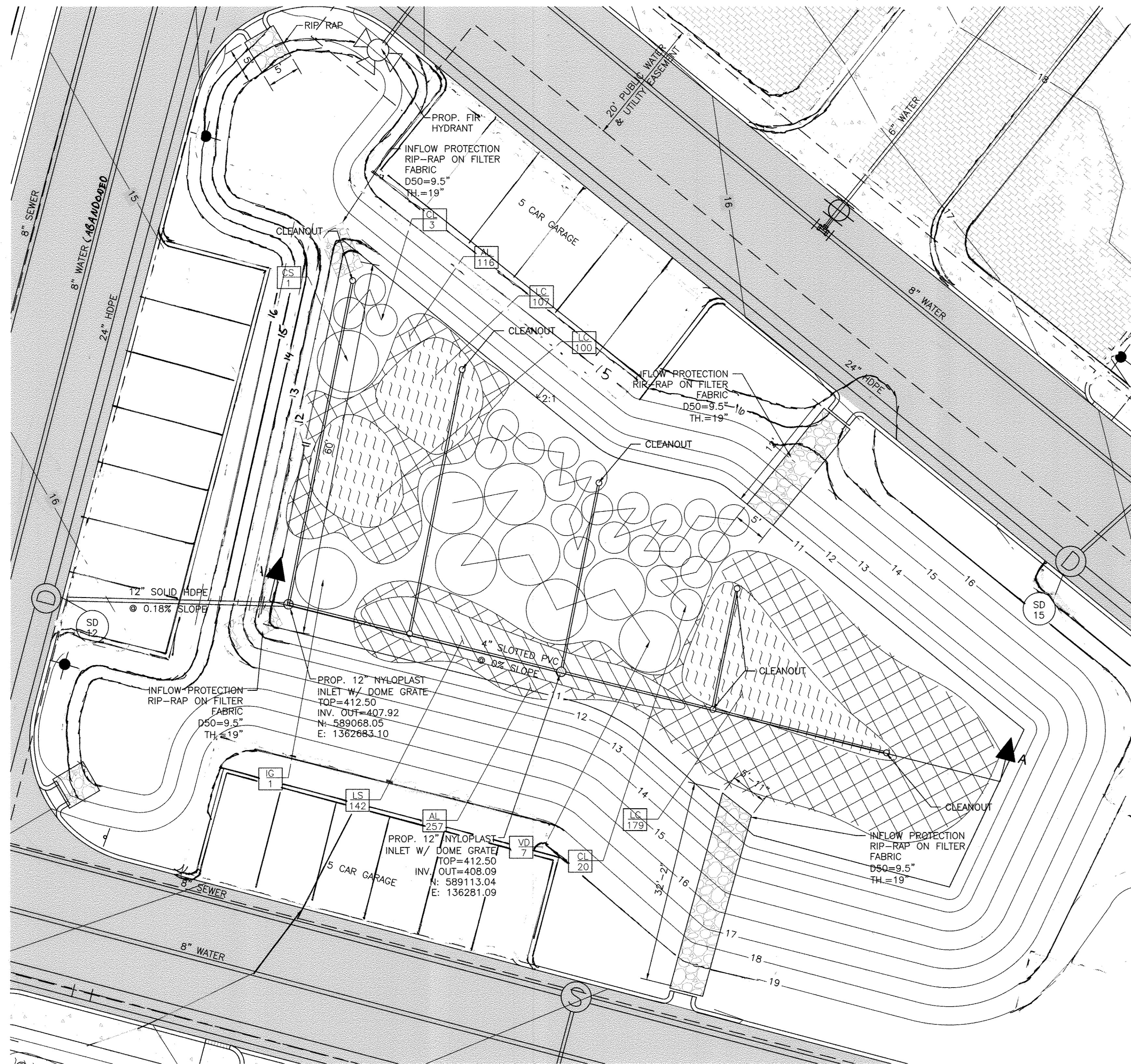
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Watsle Jacob 9-21-15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

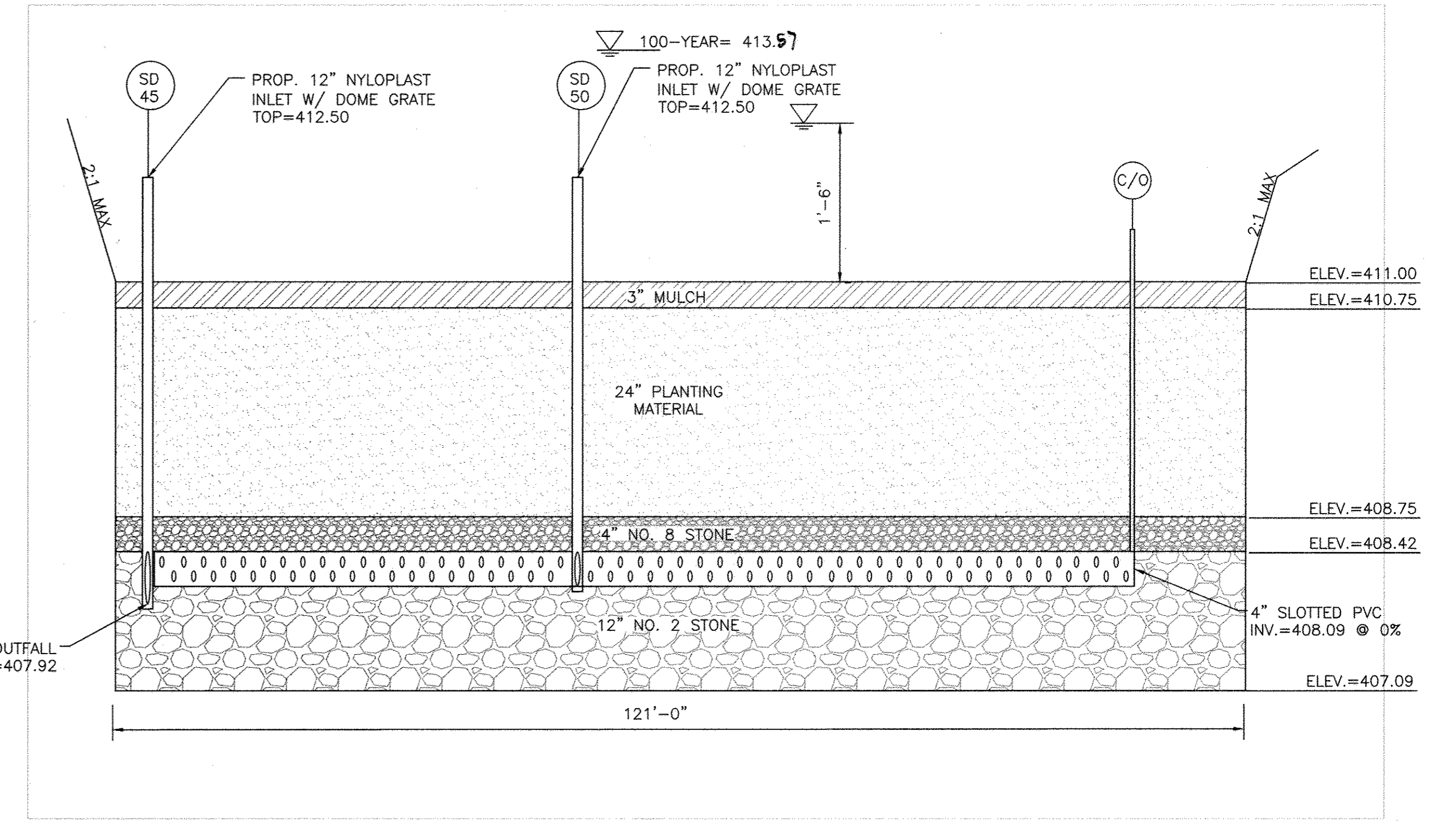
Chad Ed 9-17-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Val... 9-29-15
DIRECTOR DATE

PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017



(SWM-19) M-6 MICRO-BIORETENTION FACILITY PLAN
SCALE: 1" = 10'



(SWM-19) M-6 MICRO-BIORETENTION FACILITY SECTION
SCALE: HOR: 1" = 10'
VERT: 1" = 1'

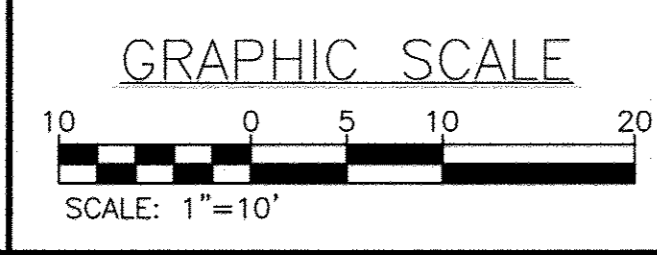
DESIGN SUMMARY

1. FACILITY NUMBER: SWM-19
2. FACILITY TYPE: M-6 MICRO-BIORETENTION FACILITY
3. DRAINAGE AREA: 86,761 SQ. FT
4. BOTTOM ELEVATION: 407.09
5. TOP OF BANK ELEVATION: 414.00
6. STORAGE VOLUME PROVIDED: 8,010 CU. FT
7. WATER SURFACE ELEVATION:
100-YEAR: 413.57
8. DISCHARGE:
100-YEAR: 7.12 cfs
9. OVERFLOW INLET SIZE & TYPE: 12" NYLOPLAST INLET WITH DOME GRATE
10. FILTER FABRIC ADDED ON SIDES OF FACILITY ONLY
11. MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED & MAINTAINED BY THE OWNER.
12. THIS FACILITY IS EXEMPT FROM MD378 GUIDELINES IN THAT THE IMPOUNDED DESIGN HIGHWATER DEPTH IS LESS THAN 3 FEET AT THE EMBANKMENT

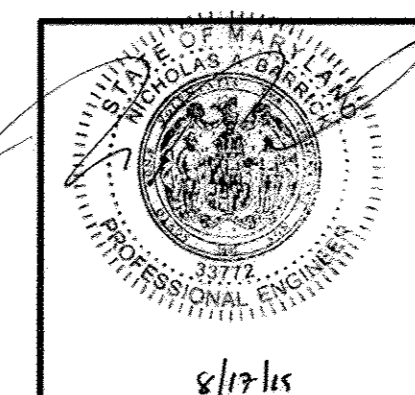
(SWM-19) PLANT SCHEDULE

KEY	QTY	BOTANICAL NAME / COMMON NAME	SIZE	COND.	COMMENTS
SHRUBS					
CS	1	CORNUS SERICEA / REDOSIER DOGWOOD	18" HT.	CONT.	PLANT AT 5' O.C.
IG	1	ILEX GLABRA / INKBERRY HOLLY	18" HT.	CONT.	PLANT AT 5' O.C.
VD	7	VIBURNUM DENTATUM 'BLUE MUFFIN' / ARROWWOOD	18" HT.	CONT.	PLANT AT 5' O.C.
PERENNIALS / ORNAMENTAL GRASSES					
AL	373	ASCLEPIAS TUBEROSA / BUTTERFLY MILKWEED	2" HT.	PLUG	PLANT AT 18" O.C.
CL	20	CHASMANTHIUM LATIFOLIUM / NORTHERN SEA OATS	1 GAL.	CONT.	PLANT AT 3' O.C.
LC	386	LOBELIA CARDINALIS / CARDINAL FLOWER	2" HT.	PLUG	PLANT AT 18" O.C.
LS	142	LIATRIS SPICATA / BLAZING STAR	2" HT.	PLUG	PLANT AT 18" O.C.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 9-21-15
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 9-17-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 9-29-15
 DIRECTOR



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. 33722, Expiration Date: 06/16/2017



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 33772 EXP. DATE: 06/16/2017

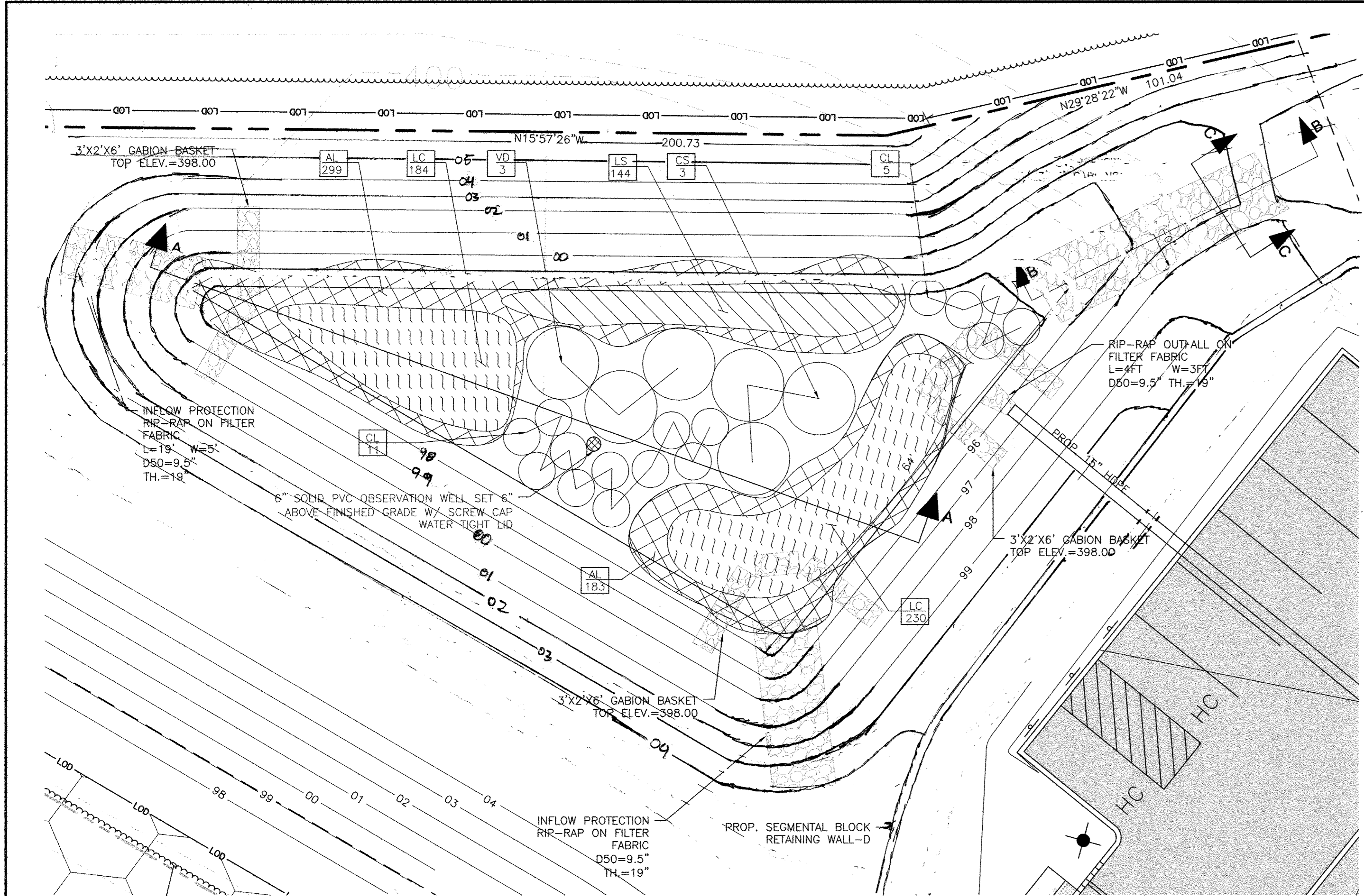


REVISIONS			
NO.	DATE	DESCRIPTION	BY
1	04/15/17	SWM-19 GRADING CHANGED LAYOUT AROUND SWA-19 CHANGED	BA
2	12/22/17	REVISED PAGE NUMBERING	BA

OWNER/DEVELOPER:
 COMMERCIAL CONTRACTORS INC.
 1205 YORK ROAD
 LUTHERVILLE-TIMONIUM, MD 21093
 (410)-825-8400

LEGACY AT ELLICOTT'S RETREAT
 STORMWATER MANAGEMENT
 MICRO-BIORETENTION FACILITY PLANS
 AGE RESTRICTED ADULT HOUSING
 TAX MAP: 24 GRID: 06 PARCEL: 1085
 ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

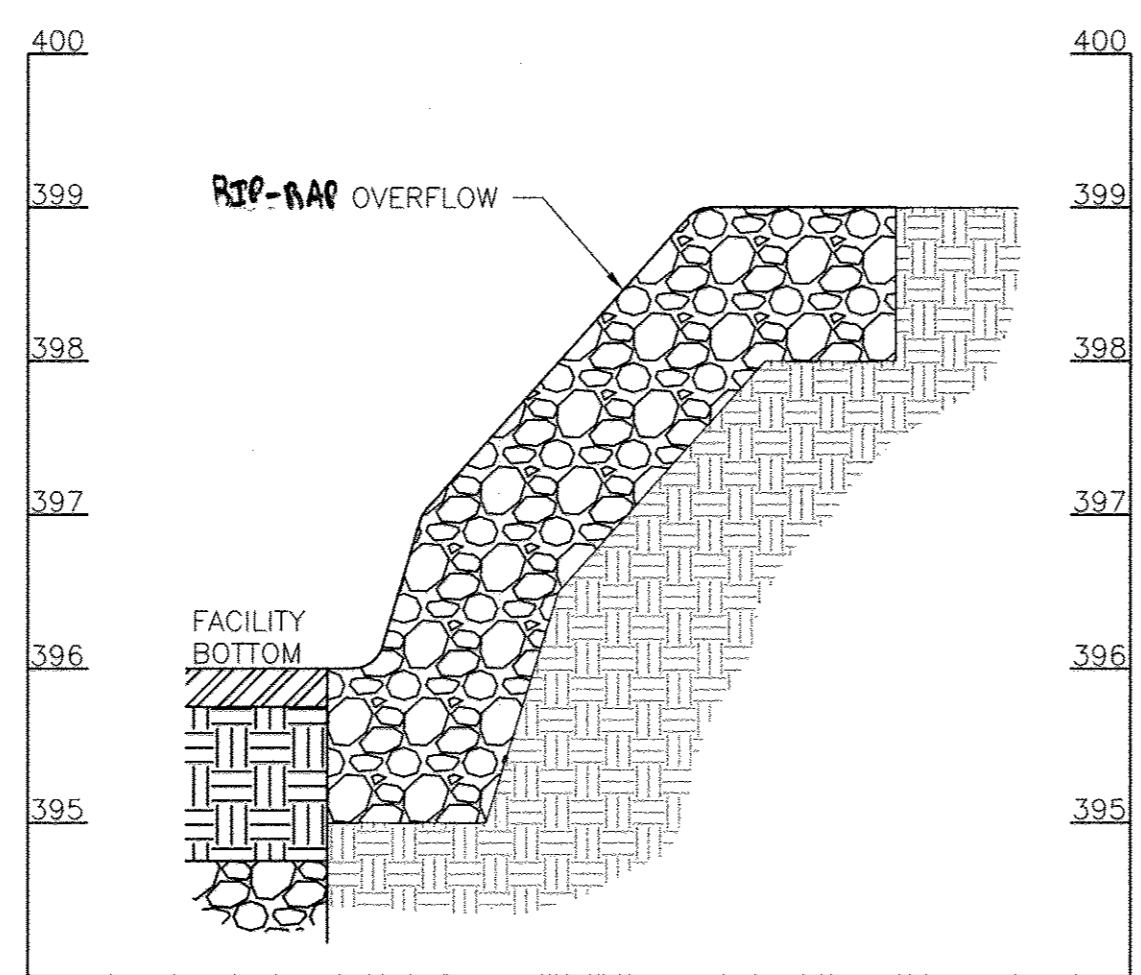
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 DRAWN: BRA SCALE: AS SHOWN SHEET NO. 26 OF 45



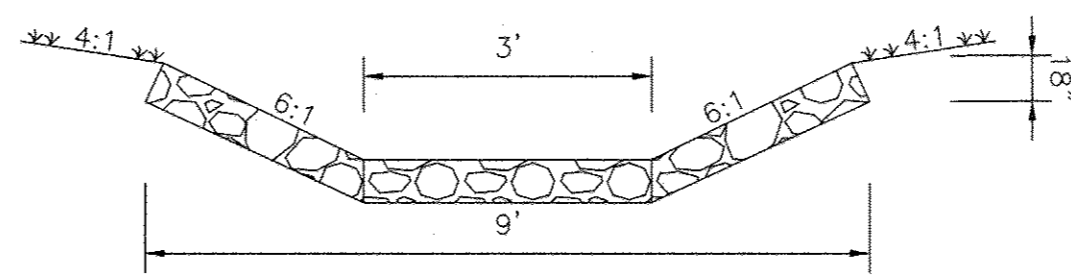
(SWM-18) M-3 LANDSCAPE INFILTRATION FACILITY PLAN
SCALE: HOR: 1" = 10'
VERT: 1" = 1'

DESIGN SUMMARY

1. FACILITY NUMBER: SWM-18
2. FACILITY TYPE: M-3 LANDSCAPE INFILTRATION FACILITY
3. DRAINAGE AREA: 72,900 SQ. FT
4. BOTTOM ELEVATION: 392.75
5. TOP OF BANK ELEVATION: 396.00
6. STORAGE VOLUME PROVIDED: 12,519 CU. FT
7. WATER SURFACE ELEVATION:
100-YEAR: 400.28
8. DISCHARGE:
100-YEAR: 0.16
9. OVERFLOW TO GABBION OUTFALL.
10. MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED & MAINTAINED BY THE OWNER.
11. THIS FACILITY IS EXEMPT FROM MD378 GUIDELINES IN THAT THE IMPOUNDED DESIGN HIGHWATER DEPTH IS LESS THAN 3 FEET AT THE EMBANKMENT



GABION OUTFALL SECTION B-B
SCALE: NTS

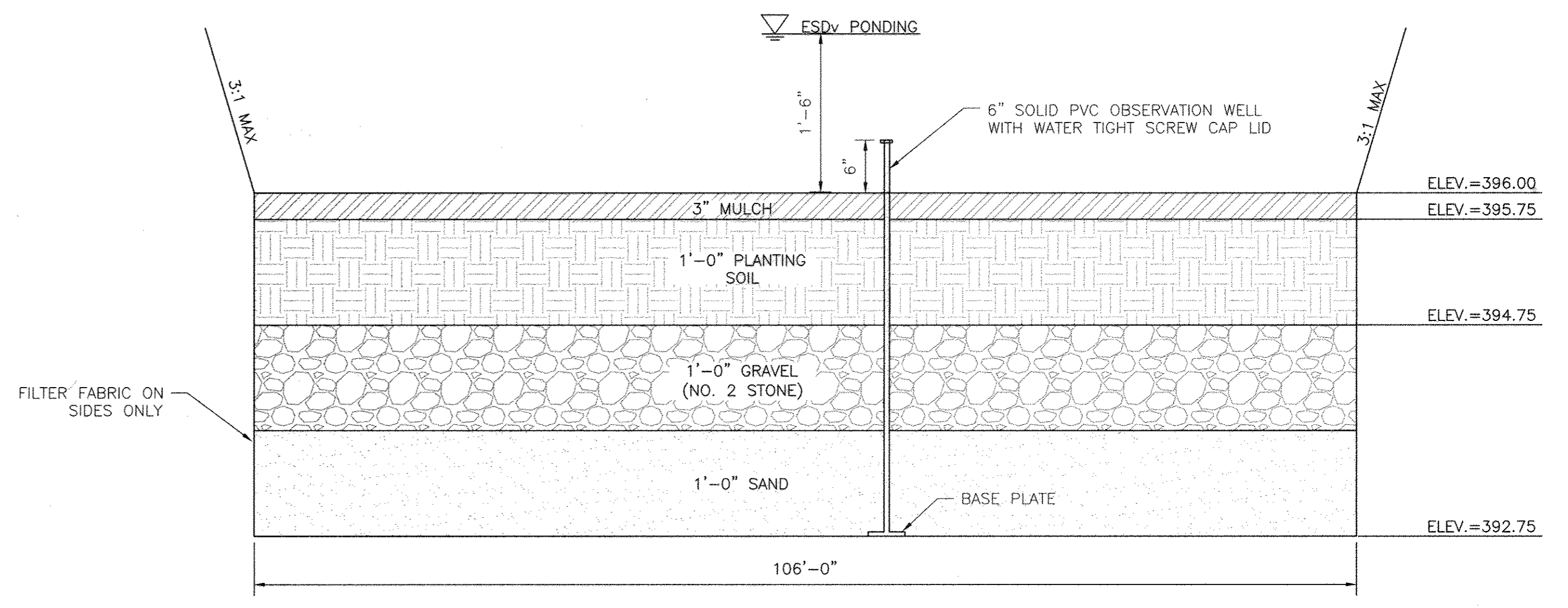


GABION OUTFALL SECTION C-C
SCALE: NTS

OPERATION AND MAINTENANCE SCHEDULE FOR LANDSCAPE INFILTRATION

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

▽ 100-YEAR=400.28

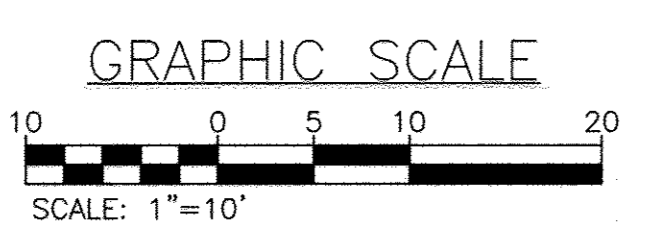


(SWM-18) LANDSCAPE INFILTRATION FACILITY SECTION
SCALE: HOR: 1" = 10'
VERT: 1" = 1'

(SWM-18) PLANT SCHEDULE

KEY	QTY	BOTANICAL NAME / COMMON NAME	SIZE	COND.	COMMENTS
SHRUBS					
CS	3	CORNUS SERICEA / REDOSIER DOGWOOD	18" HT.	CONT.	PLANT AT 5' O.C.
VD	3	VIBURNUM DENTATUM 'BLUE MUFFIN' / ARROWWOOD	18" HT.	CONT.	PLANT AT 5' O.C.
PERENNIALS / ORNAMENTAL GRASSES					
AL	482	ASCLEPIAS TUBEROSA / BUTTERFLY MILKWEED	2" HT.	PLUG	PLANT AT 18" O.C.
CL	16	CHASMANTHIUM LATIFOLIUM / NORTHERN SEA OATS	1 GAL.	CONT.	PLANT AT 3' O.C.
LC	414	LOBELIA CARDINALIS / CARDINAL FLOWER	2" HT.	PLUG	PLANT AT 18" O.C.
LS	144	LIATRIS SPICATA / BLAZING STAR	2" HT.	PLUG	PLANT AT 18" O.C.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Howard County Department of Planning and Zoning
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 9-21-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 9-29-15
 DIRECTOR



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. 33772, Expiration Date: 8/19/15

REVISIONS		
NO.	DATE	BY
1	4/05/17	BA
2	12/22/17	BA

OWNER/DEVELOPER:
 COMMERCIAL CONTRACTORS INC.
 1205 YORK ROAD
 LUTHERVILLE-TIMONIUM, MD 21093
 (410)-825-8400

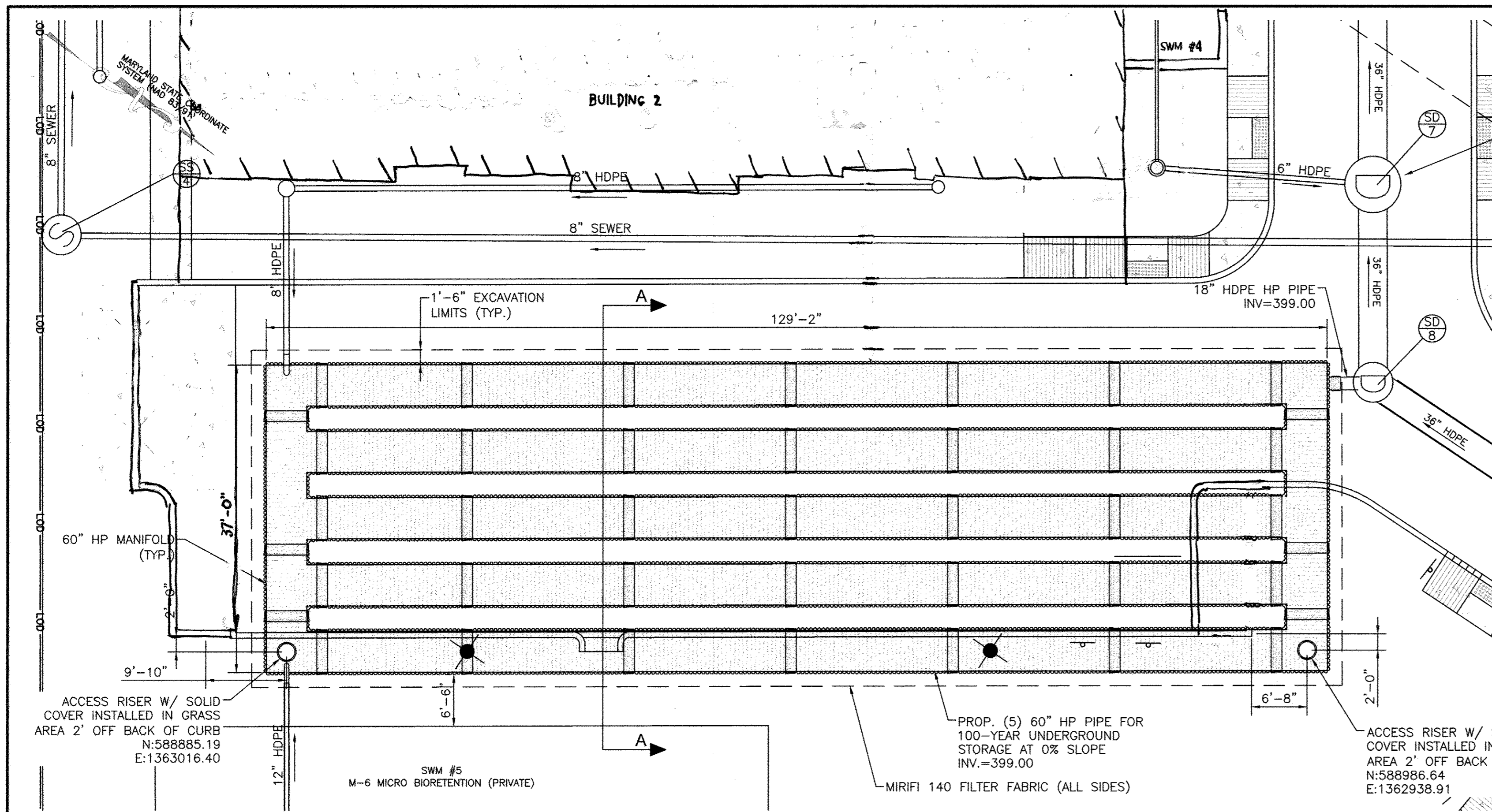
LEGACY AT ELLICOTT'S RETREAT
 LANDSCAPE INFILTRATION PLAN

AGE RESTRICTED ADULT HOUSING
 TAX MAP: 24 GRID: 06 PARCEL: 1085
 ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

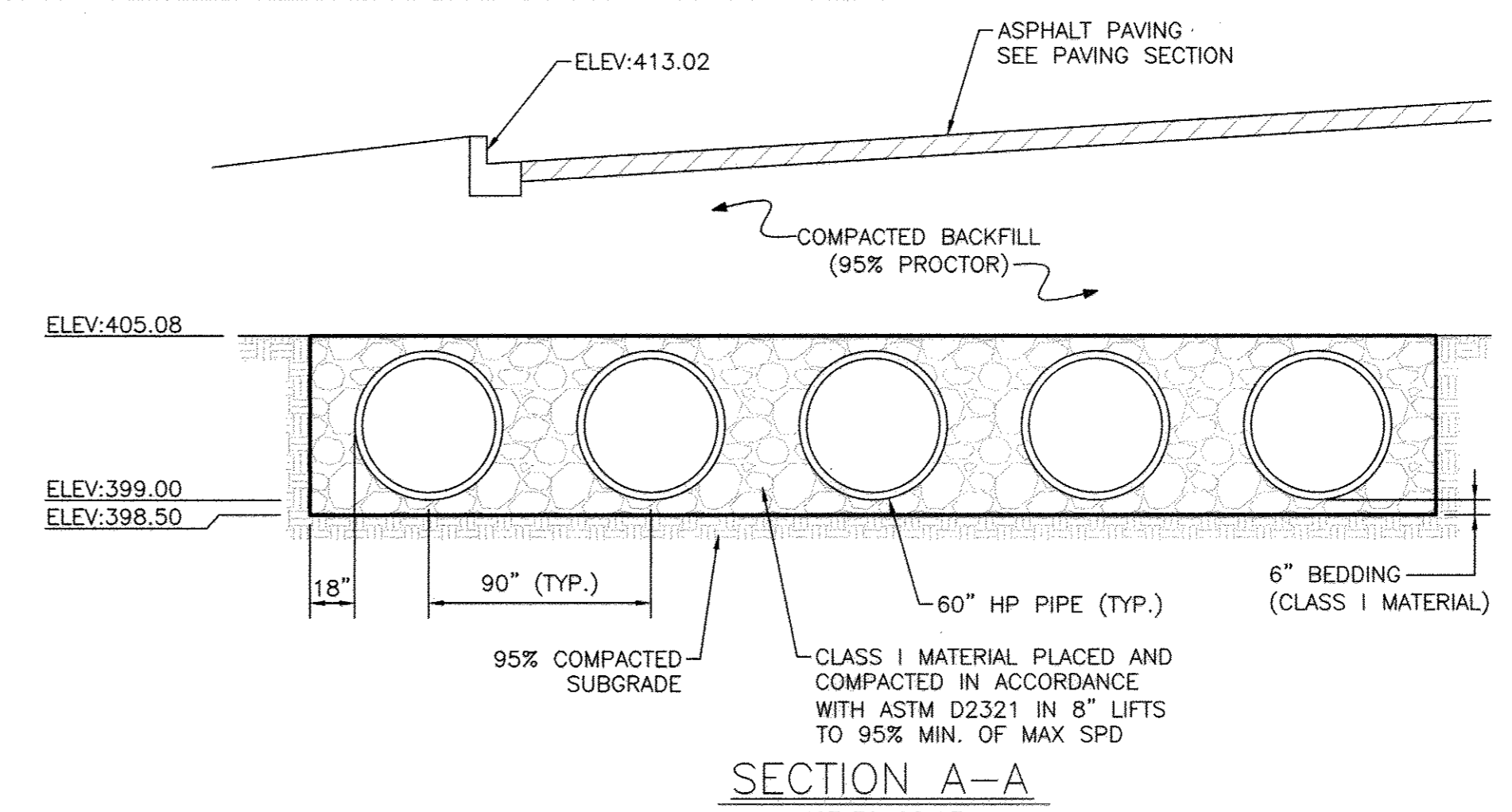
DESIGN: NAB DATE: 7/24/15
 DRAWN: BRA SCALE: AS SHOWN

KCI PROJECT NO. 27134772
 SHEET NO. 27 OF 45

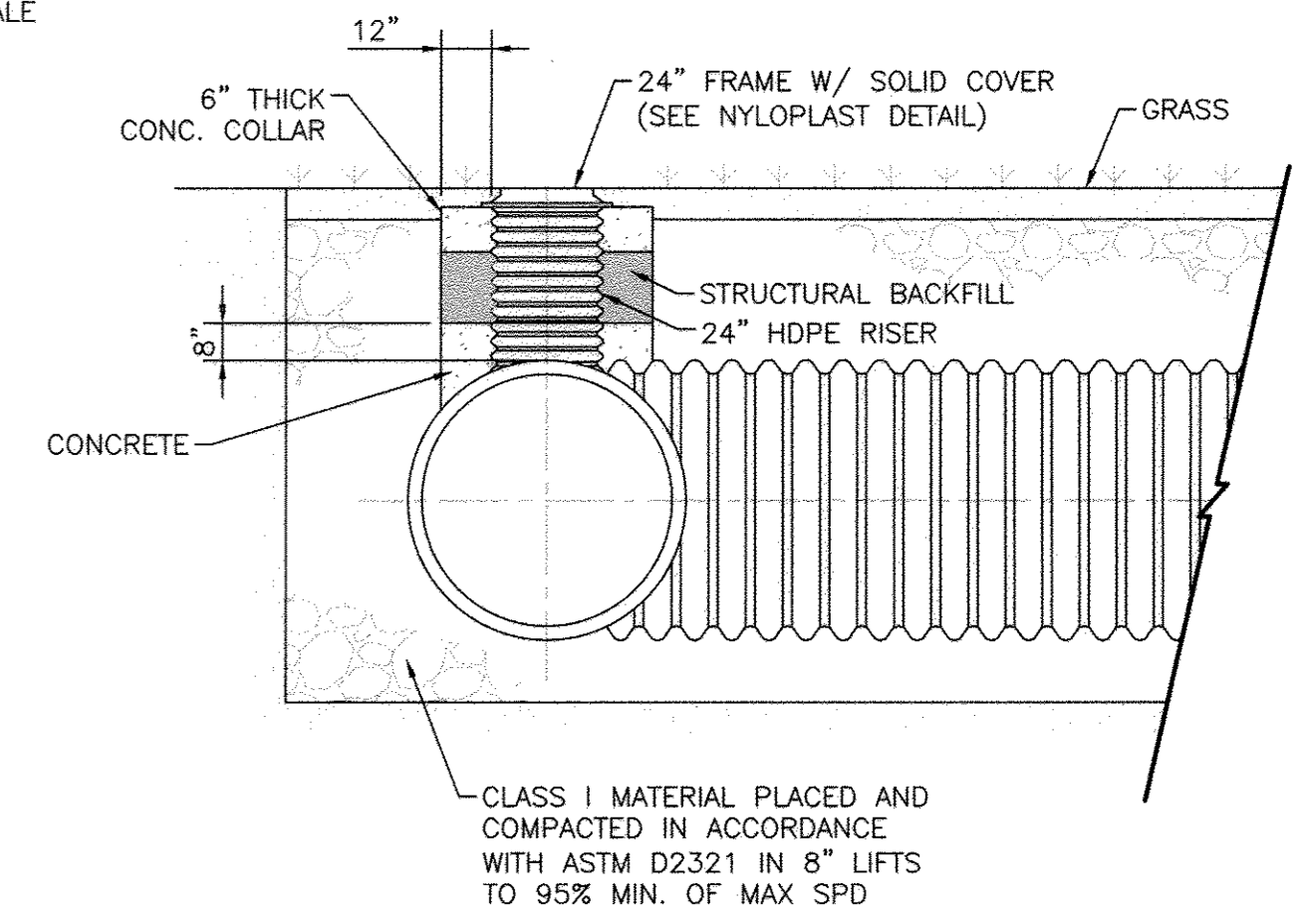
SHEET NO. C-2.13



UNDERGROUND STORAGE PIPES - PLAN VIEW
SCALE: 1"=10'



SECTION A-A
NOT TO SCALE



RISER TYPICAL SECTION
NOT TO SCALE

- GENERAL NOTES**
- ALL REFERENCES TO CLASS I MATERIAL ARE PER ASTM D2321 "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION.
 - ALL RETENTION AND DETENTION SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, LATEST EDITION AND THE MANUFACTURER'S PUBLISHED INSTALLATION GUIDELINES.
 - MEASURES SHOULD BE TAKEN TO PREVENT THE MIGRATION OF NATIVE FINES INTO THE BACKFILL MATERIAL, WHEN REQUIRED. SEE ASTM D2321.
 - FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE THE CONTRACTOR IS TO NOTIFY THE ENGINEER IMMEDIATELY BEFORE PROCEEDING WITH WORK.
 - BEDDING: SUITABLE MATERIAL SHALL BE CLASS I. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" FOR 4"-24"; 6" FOR 30"-60".
 - INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
 - COVER: MINIMUM COVER OVER ALL RETENTION/DETENTION SYSTEMS IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER IS 12" UP TO 36" DIAMETER PIPE AND 24" OF COVER FOR 42"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT. MAXIMUM FILL HEIGHT LIMITED TO 8 FT OVER FITTINGS FOR STANDARD INSTALLATIONS. CONTACT A SALES REPRESENTATIVE WHEN MAXIMUM FILL HEIGHTS EXCEED 8 FT FOR INSTALLATION CONSIDERATIONS.
 - DURING CONSTRUCTION: ALL DEBRIS IS TO BE KEPT OUT OF THE FACILITY DURING AND AFTER CONSTRUCTION.

ADS HP RETENTION/DETENTION PIPE SYSTEM SPECIFICATION

PIPE REQUIREMENTS
ADS RETENTION/DETENTION SYSTEMS MAY UTILIZE ANY OF THE VARIOUS PIPE PRODUCTS BELOW:
- HP STORM AND SANITITE HP PIPE SHALL MEET ASTM F2736 FOR APPLICABLE DIAMETERS
- HP STORM AND SANITITE HP PIPE SHALL MEET ASTM F2764 FOR APPLICABLE DIAMETERS
ALL PRODUCTS SHALL HAVE A SMOOTH INTERIOR AND EITHER ANNULAR EXTERIOR CORRUGATIONS OR SMOOTH EXTERIOR WITH ANNULAR INNER CORRUGATIONS. PRODUCT-SPECIFIC PIPE SPECIFICATIONS ARE AVAILABLE IN THE DRAINAGE HANDBOOK SECTION 1 "SPECIFICATIONS".

JOINT PERFORMANCE
HP PIPE PRODUCTS PIPE SHALL BE JOINED USING A BELL AND SPIGOT JOINT. THE JOINT SHALL BE WATERTIGHT ACCORDING TO THE REQUIREMENTS OF ASTM D3212. SPIGOTS SHALL HAVE GASKETS MEETING THE REQUIREMENTS OF ASTM F477. 12-60 INCH DIAMETERS SHALL HAVE A BELL REINFORCED WITH A POLYMER COMPOSITE BAND. THE BELL TOLERANCE DEVICE SHALL BE INSTALLED BY THE MANUFACTURER. PIPE AND FITTING CONNECTIONS SHALL UTILIZE A SPUN-ON, WELDED OR INTEGRAL BELL AND SPIGOT. DETENTION SYSTEMS ARE SUBJECT TO GREATER LEAKAGE THAN TYPICAL STORM SEWER APPLICATIONS AND THEREFORE ARE NOT APPROPRIATE FOR APPLICATIONS REQUIRING LONG-TERM FLUID CONTAINMENT OR HYDROSTATIC PRESSURE.

FITTINGS
FITTINGS SHALL CONFORM TO ASTM F2736 FOR APPLICABLE DIAMETERS AND MEET JOINT PERFORMANCE INDICATED ABOVE FOR FITTING CONNECTIONS. CUSTOM FITTINGS ARE AVAILABLE AND MAY REQUIRE SPECIAL INSTALLATION CRITERION.

INSTALLATION
INSTALLATION SHALL BE IN ACCORDANCE WITH ASTM D2321 AND ADS RECOMMENDED INSTALLATION GUIDELINES, WITH THE EXCEPTION THAT MINIMUM COVER IN NON-TRAFFIC AREAS FOR 12-60 INCH DIAMETERS SHALL BE 1 FT. MINIMUM COVER IN TRAFFICKED AREAS FOR 12-36 INCH DIAMETERS SHALL BE 1 FT AND FOR 42-60 INCH DIAMETERS, THE MINIMUM COVER SHALL BE 2 FT. BACKFILL SHALL CONSIST OF CLASS I (COMPACTED), OR CLASS II (MINIMUM 90% SPD) MATERIAL, WITH THE EXCEPTION THAT 60 INCH SYSTEMS SHALL USE CLASS I MATERIAL ONLY. MINIMUM COVER HEIGHTS DO NOT ACCOUNT FOR PIPE BUOYANCY. REFER TO ADS TECHNICAL NOTE 5.05 "PIPE FLOTATION" FOR BUOYANCY DESIGN CONSIDERATIONS. MAXIMUM COVER OVER SYSTEM USING STANDARD BACK FILL IS 8 FT; CONTACT A REPRESENTATIVE WHEN MAXIMUM FILL HEIGHT MAY BE EXCEEDED.

ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED UNDERGROUND FACILITIES

- THE UNDERGROUND STORMWATER MANAGEMENT FACILITY IS PRIVATELY OWNED AND IT SHALL BE THE RESPONSIBILITY OF THE OWNER TO PERIODICALLY INSPECT AND CLEAN THE FACILITY TO MAINTAIN ITS OPERATION AND FUNCTION.
- THE UNDERGROUND STORMWATER MANAGEMENT FACILITY SHALL BE INSPECTED YEARLY AT A MINIMUM AND AFTER ESPECIALLY SEVERE STORM EVENTS.
- WHEN SEDIMENT ACCUMULATION OF MORE THAN 2" IS OBSERVED OR ANY DEBRIS THAT MIGHT OBSTRUCT THE OUTFALL IS OBSERVED, THE FACILITY SHALL BE CLEANED.
- THE FACILITY SHALL BE CLEANED IMMEDIATELY AFTER PETROLEUM SPILLS. THE OWNER SHALL CONTACT THE APPROPRIATE REGULATORY AGENCIES NOTIFYING THEM OF THE SPILL AND CLEANUP OPERATION.
- THE SEDIMENT AND DEBRIS SHALL BE REMOVED FROM THE UNDERGROUND STORMWATER MANAGEMENT FACILITY BY VACUUM TRUCK OR OTHER MANUAL MEANS. THE OWNER SHALL FOLLOW PR

KCI TECHNOLOGIES
ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS
11850 WOOD MARKET PLACE
SUITE A
FULTON, MD 20759
TELEPHONE: (410) 792-8086
FAX: (410) 792-7419

REVISIONS			
NO.	DATE	BY	
1	04/05/17	REVISED CURB FOR FACILITY + ADJUST BUILDING	BA
2	12/22/17	REVISED PAGE NUMBERING	BA

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. 33772, Expiration Date: 6/16/20

Professional Certification. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

OWNER/DEVELOPER:
COMMERCIAL CONTRACTORS INC.
1205 YORK ROAD
LUTHERVILLE-TIMONIUM, MD 21093
(410)-825-8400

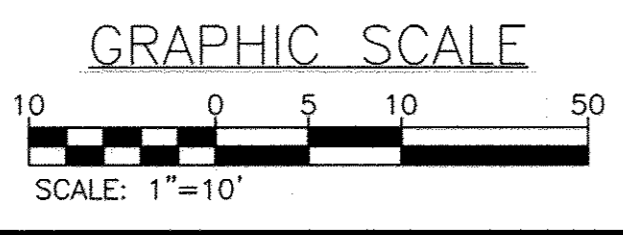
LEGACY AT ELLICOTT'S RETREAT
STORMWATER MANAGEMENT
UNDERGROUND STORAGE PIPE DETAIL
AGE RESTRICTED ADULT HOUSING
TAX MAP: 24 GRID: 06 PARCEL: 1085
ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

DESIGN NAB DATE 7/24/15
DRAWN BRA SCALE 1"=50'

KCI PROJECT NO. 27134772
SHEET NO. 28 OF 45

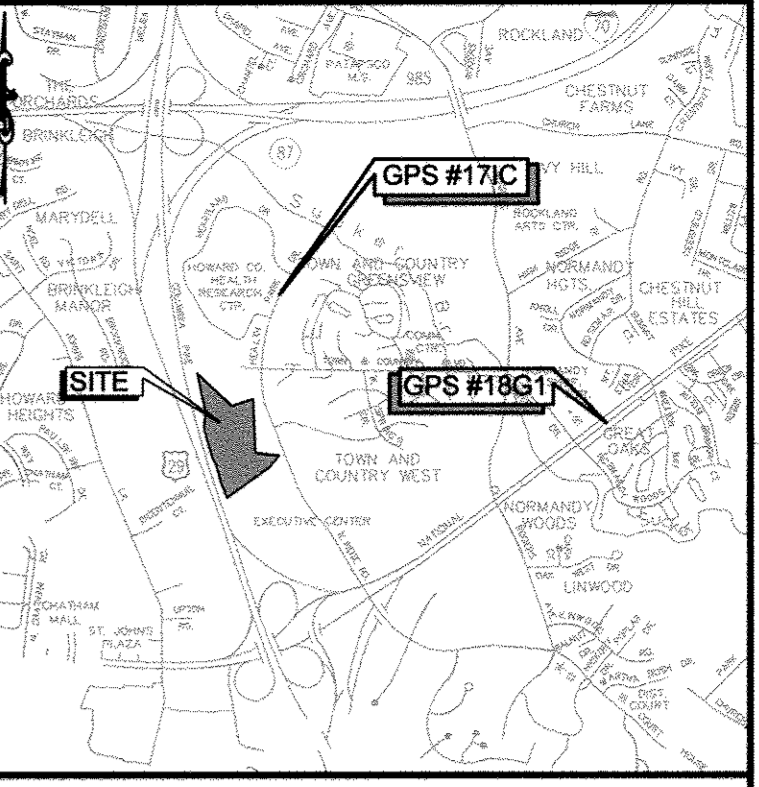
SHEET NO. C-2.14

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
9-21-15 DATE
9-17-15 DATE
9-29-15 DATE



BENCHMARK DATA			
No.	NORTHING	EASTING	ELEV.
1	588971.65	1362993.12	416.20
2	589778.33	1362905.76	441.80
3	589416.22	1362495.27	418.27

POINT	NORTHING	EASTING	ELEVATION
#17C	591056.92	1363154.63	415.41
#18G1	589985.06	1367750.24	407.74

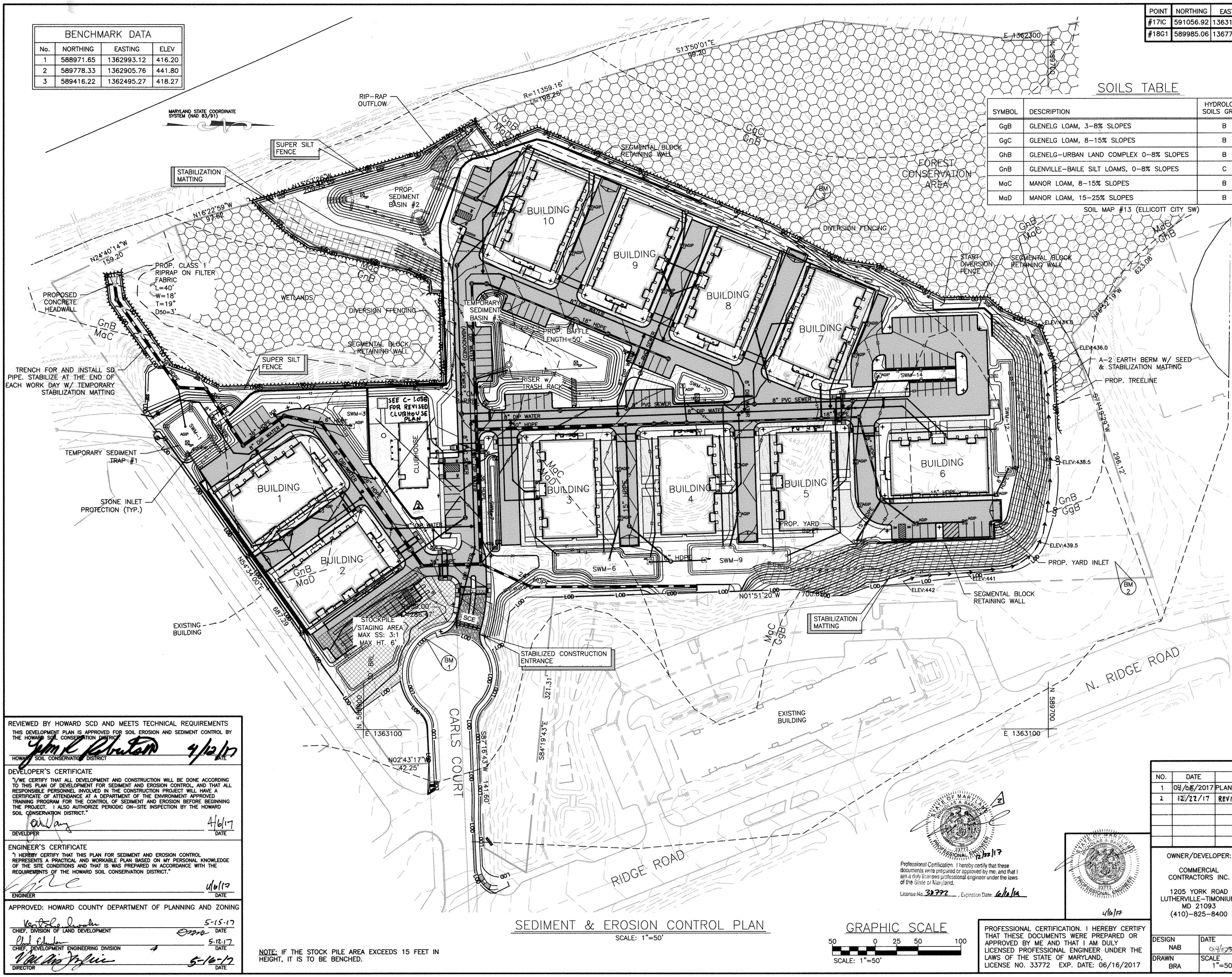


SOILS TABLE			
SYMBOL	DESCRIPTION	HYDROLOGIC SOILS GROUP	K-VALUE
GgB	GLENELG LOAM, 3-8% SLOPES	B	0.20
GgC	GLENELG LOAM, 8-15% SLOPES	B	0.20
GhB	GLENELG-URBAN LAND COMPLEX 0-8% SLOPES	B	0.20
GnB	GLENVILLE-BAILE SILT LOAMS, 0-8% SLOPES	C	0.37
MaC	MANOR LOAM, 8-15% SLOPES	B	0.24
MaD	MANOR LOAM, 15-25% SLOPES	B	0.24

VICINITY MAP
SCALE: 1" = 2000'
ADC MAP 21B6

LEGEND	
	PROPERTY LINE
	ADJOINING PROPERTY LINE
	BUILDING OUTLINE
	EXISTING CONTOUR
	EXISTING TREELINE
	EXISTING EDGE OF PAVEMENT
	EXISTING TREE
	PROPOSED IMPERVIOUS PAVEMENT
	PROPOSED STABILIZATION MATTING
	LIMIT OF DISTURBANCE
	SOILS LINE
	AT GRADE INLET PROTECTION

NOTE: CONSTRUCTION CANNOT BEGIN UNTIL ALL MATERIALS NEEDED TO CONSTRUCT THE BASINS ARE ON SITE.



REVIEWED BY HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
John R. Kauter 4/12/17
HOWARD SOIL CONSERVATION DISTRICT DATE

DEVELOPER'S CERTIFICATE
"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT 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."
Alan 4/6/17
DEVELOPER DATE

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 IS WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."
John R. Kauter 4/6/17
ENGINEER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Keith A. Lander 5-15-17
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
John R. Kauter 5-12-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
William J. Griffin 5-10-17
DIRECTOR DATE

ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

KCI
TECHNOLOGIES

11850 West Market Place
SUITE A
FULTON, MD 20759
TELEPHONE: (410) 792-8086
FAX: (410) 792-7419

REVISIONS			
NO.	DATE	BY	
1	08/05/2017	PLANS HAVE BEEN UPDATED TO SHOW 10 BUILDINGS	BA
2	12/27/17	REVISIONS TO THE CLUBHOUSE	BA

OWNER/DEVELOPER: LEGACY AT ELLICOTT'S RETREAT
COMMERCIAL CONTRACTORS INC.
1205 YORK ROAD
LUTHERVILLE-TIMONIUM, MD 21093
(410)-825-8400

AGE RESTRICTED ADULT HOUSING
TAX MAP: 24 GRID: 06 PARCEL: 1085
ZONED: POR
ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

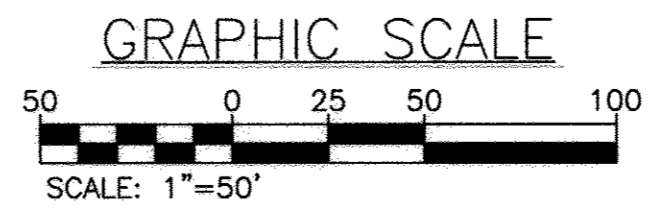
DESIGN: NAB DATE: 04/05/17
DRAWN: BRA SCALE: 1"=50'

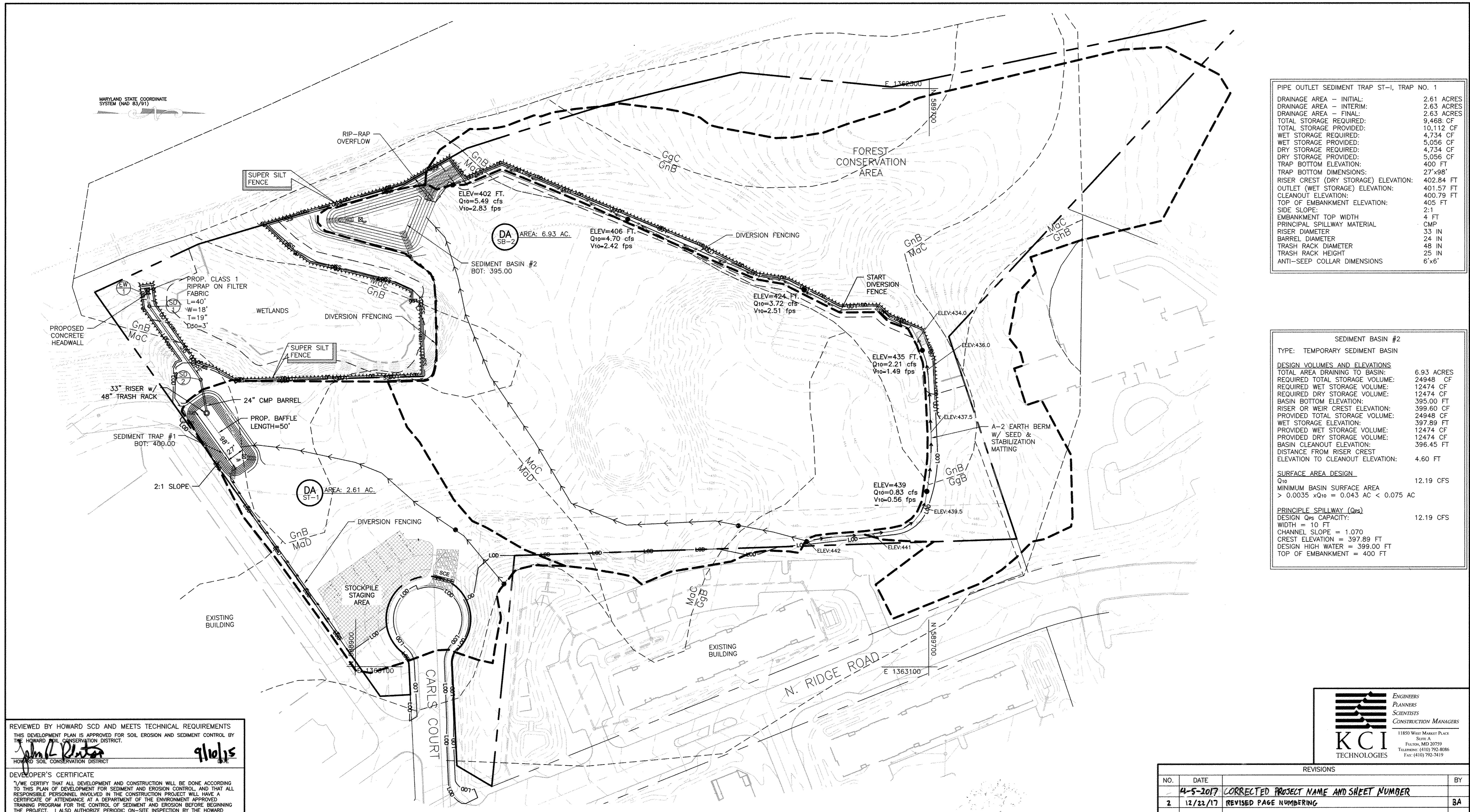
PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 33772 EXP. DATE: 06/16/2017

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 32792, EXPIRATION DATE: 6/16/18

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 33772, EXP. DATE: 06/16/2017

SEDIMENT & EROSION CONTROL PLAN
SCALE: 1"=50'





PIPE OUTLET SEDIMENT TRAP ST-1, TRAP NO. 1

DRAINAGE AREA - INITIAL:	2.61 ACRES
DRAINAGE AREA - INTERIM:	2.63 ACRES
DRAINAGE AREA - FINAL:	2.63 ACRES
TOTAL STORAGE REQUIRED:	9,468 CF
TOTAL STORAGE PROVIDED:	10,112 CF
WET STORAGE REQUIRED:	4,734 CF
WET STORAGE PROVIDED:	5,056 CF
DRY STORAGE REQUIRED:	4,734 CF
DRY STORAGE PROVIDED:	5,056 CF
TRAP BOTTOM ELEVATION:	400 FT
TRAP BOTTOM DIMENSIONS:	27'x98'
RISER CREST (DRY STORAGE) ELEVATION:	402.84 FT
OUTLET (WET STORAGE) ELEVATION:	401.57 FT
CLEANOUT ELEVATION:	400.79 FT
TOP OF EMBANKMENT ELEVATION:	405 FT
SIDE SLOPE:	2:1
EMBANKMENT TOP WIDTH:	4 FT
PRINCIPAL SPILLWAY MATERIAL:	CMP
RISER DIAMETER:	33 IN
BARREL DIAMETER:	24 IN
TRASH RACK DIAMETER:	48 IN
TRASH RACK HEIGHT:	25 IN
ANTI-SLEEP COLLAR DIMENSIONS:	6'x6'

SEDIMENT BASIN #2

TYPE: TEMPORARY SEDIMENT BASIN

DESIGN VOLUMES AND ELEVATIONS

TOTAL AREA DRAINING TO BASIN:	6.93 ACRES
REQUIRED TOTAL STORAGE VOLUME:	24948 CF
REQUIRED WET STORAGE VOLUME:	12474 CF
REQUIRED DRY STORAGE VOLUME:	12474 CF
BASIN BOTTOM ELEVATION:	395.00 FT
RISER OR WEIR CREST ELEVATION:	399.60 FT
PROVIDED TOTAL STORAGE VOLUME:	24948 CF
WET STORAGE ELEVATION:	397.89 FT
PROVIDED WET STORAGE VOLUME:	12474 CF
PROVIDED DRY STORAGE VOLUME:	12474 CF
BASIN CLEANOUT ELEVATION:	396.45 FT
DISTANCE FROM RISER CREST ELEVATION TO CLEANOUT ELEVATION:	4.60 FT

SURFACE AREA DESIGN

Q10	12.19 CFS
MINIMUM BASIN SURFACE AREA	> 0.0035 x Q10 = 0.043 AC < 0.075 AC

PRINCIPLE SPILLWAY (Qps)

DESIGN Qps CAPACITY:	12.19 CFS
WIDTH = 10 FT	
CHANNEL SLOPE = 1.070	
CREST ELEVATION = 397.89 FT	
DESIGN HIGH WATER = 399.00 FT	
TOP OF EMBANKMENT = 400 FT	

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

[Signature] 9/10/15
HOWARD SOIL CONSERVATION DISTRICT

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."

[Signature] 8/31/15
DEVELOPER

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."

[Signature] 8/31/15
ENGINEER

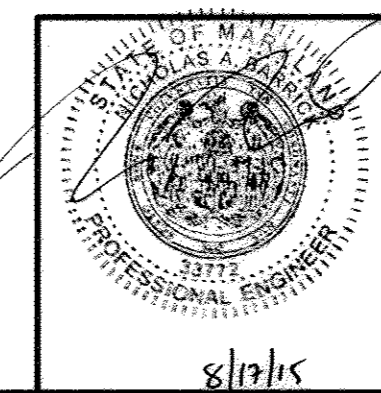
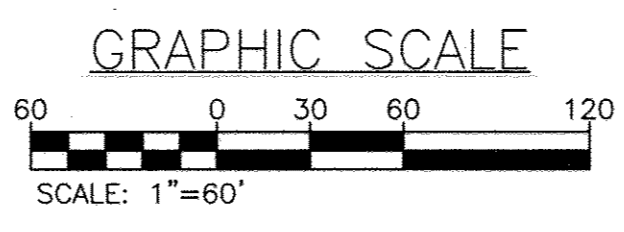
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 9-21-15
CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 9-17-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 9-29-15
DIRECTOR

SEDIMENT & EROSION CONTROL EXISTING DRAINAGE AREA MAP
SCALE: 1"=60'



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

REVISIONS

NO.	DATE	BY
1	4-5-2017	CORRECTED PROJECT NAME AND SHEET NUMBER
2	12/22/17	REVISED PAGE NUMBERING

OWNER/DEVELOPER:
COMMERCIAL CONTRACTORS INC.
1205 YORK ROAD
LUTHERVILLE-TIMONIUM, MD 21093
(410)-825-8400

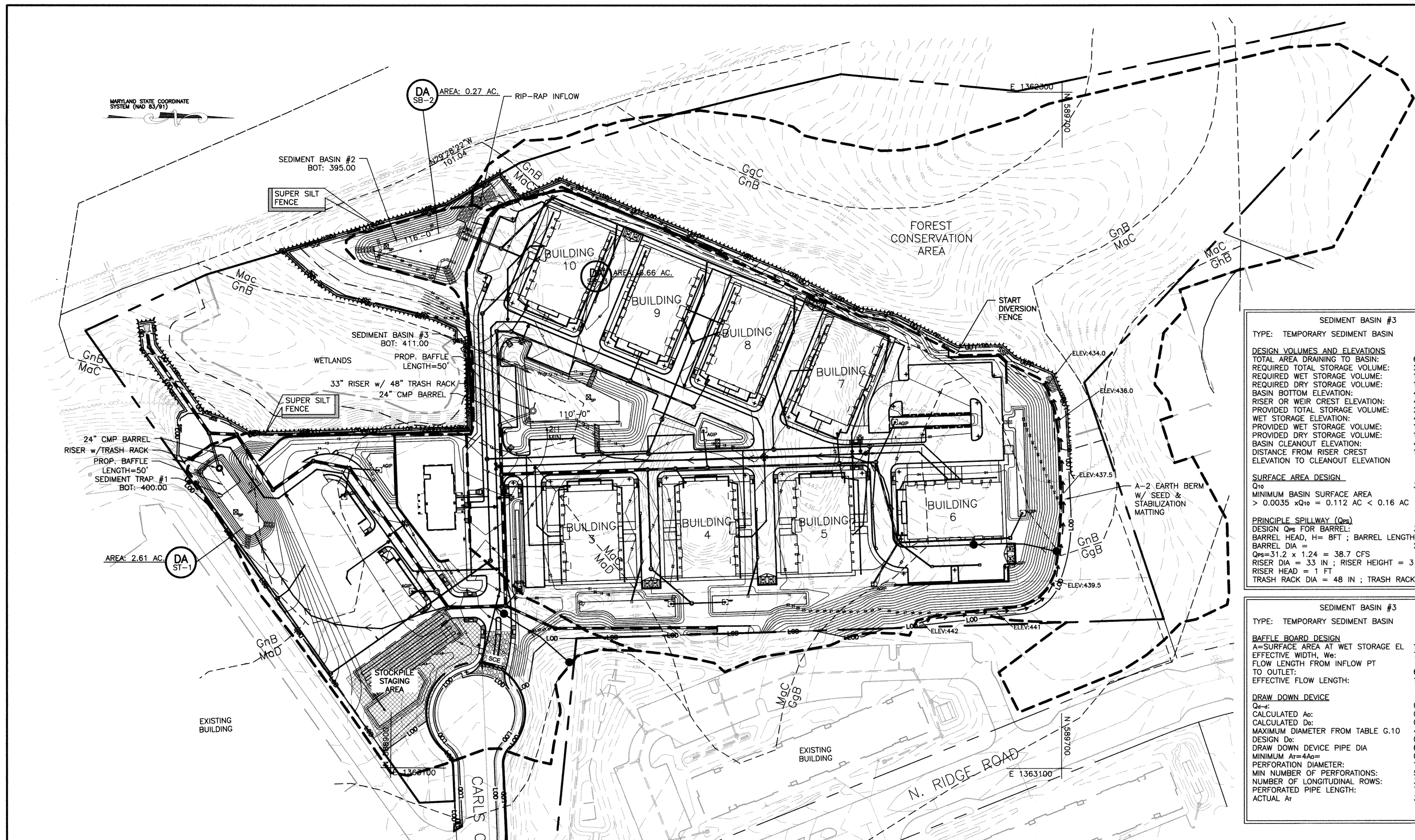
LEGACY AT ELLICOTT'S RETREAT
SEDIMENT AND EROSION CONTROL EXISTING DRAINAGE AREA MAP
AGE RESTRICTED ADULT HOUSING
TAX MAP: 24 GRID: 06 PARCEL: 1085
ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

DESIGN NAB DATE 7/24/15
DRAWN BRA SCALE 1"=60'

KCI PROJECT NO. 27134772
SHEET NO. 30 OF 46

SHEET NO. C-3.01





PIPE OUTLET SEDIMENT TRAP ST-1, TRAP NO. 1

DRAINAGE AREA - INITIAL:	2.61 ACRES
DRAINAGE AREA - INTERIM:	2.63 ACRES
DRAINAGE AREA - FINAL:	2.63 ACRES
TOTAL STORAGE REQUIRED:	9,468 CF
TOTAL STORAGE PROVIDED:	10,112 CF
WET STORAGE REQUIRED:	4,734 CF
WET STORAGE PROVIDED:	5,056 CF
DRY STORAGE REQUIRED:	4,734 CF
DRY STORAGE PROVIDED:	5,056 CF
TRAP BOTTOM ELEVATION:	400 FT
TRAP DIMENSIONS:	27'x98'
RISER CREST (DRY STORAGE) ELEVATION:	402.84 FT
OUTLET (WET STORAGE) ELEVATION:	401.57 FT
CLEANOUT ELEVATION:	400.79 FT
TOP OF EMBANKMENT ELEVATION:	405 FT
SIDE SLOPE:	2:1
EMBANKMENT TOP WIDTH:	4 FT
PRINCIPAL SPILLWAY MATERIAL:	CMP
RISER DIAMETER:	33 IN
BARREL DIAMETER:	24 IN
TRASH RACK DIAMETER:	48 IN
TRASH RACK HEIGHT:	25 IN
ANTI-SEEP COLLAR DIMENSIONS:	6'x6'

SEDIMENT BASIN #3

TYPE: TEMPORARY SEDIMENT BASIN

DESIGN VOLUMES AND ELEVATIONS

TOTAL AREA DRAINING TO BASIN:	6.66 ACRES
REQUIRED TOTAL STORAGE VOLUME:	23,976 CF
REQUIRED WET STORAGE VOLUME:	11,988 CF
REQUIRED DRY STORAGE VOLUME:	11,988 CF
BASIN BOTTOM ELEVATION:	411 FT
RISER OR WEIR CREST ELEVATION:	413.89 CF
PROVIDED TOTAL STORAGE VOLUME:	23,976 CF
WET STORAGE ELEVATION:	412.60 FT
PROVIDED WET STORAGE VOLUME:	11,988 CF
PROVIDED DRY STORAGE VOLUME:	11,988 CF
BASIN CLEANOUT ELEVATION:	411.80 FT
DISTANCE FROM RISER CREST ELEVATION TO CLEANOUT ELEVATION:	1.50 FT

SURFACE AREA DESIGN

Q ₁₀	32.00 CFS
MINIMUM BASIN SURFACE AREA	> 0.0035 x Q ₁₀ = 0.112 AC < 0.16 AC

PRINCIPLE SPILLWAY (Q_{ps})

DESIGN Q _{ps} FOR BARREL:	32.00 CFS
BARREL HEAD, H = 8 FT; BARREL LENGTH, L = 30 FT	
BARREL DIA =	24 IN
Q _{ps} = 31.2 x 1.24 =	38.7 CFS
RISER DIA = 33 IN; RISER HEIGHT = 3 FT	
RISER HEAD = 1 FT	
TRASH RACK DIA = 48 IN; TRASH RACK HT = 25 IN	

SEDIMENT BASIN #2

TYPE: TEMPORARY SEDIMENT BASIN

DESIGN VOLUMES AND ELEVATIONS

TOTAL AREA DRAINING TO BASIN:	0.27 ACRES
REQUIRED TOTAL STORAGE VOLUME:	972 CF
REQUIRED WET STORAGE VOLUME:	486 CF
REQUIRED DRY STORAGE VOLUME:	486 CF
BASIN BOTTOM ELEVATION:	397.00 FT
RISER OR WEIR CREST ELEVATION:	399.50 FT
PROVIDED TOTAL STORAGE VOLUME:	24948 CF
WET STORAGE ELEVATION:	397.52 FT
PROVIDED WET STORAGE VOLUME:	14420 CF
PROVIDED DRY STORAGE VOLUME:	14420 CF
BASIN CLEANOUT ELEVATION:	397.51 FT
DISTANCE FROM RISER CREST ELEVATION TO CLEANOUT ELEVATION:	0.01 FT

SURFACE AREA DESIGN

Q ₁₀	1.29 CFS
MINIMUM BASIN SURFACE AREA	> 0.0035 x Q ₁₀ = 0.005 AC < 0.075 AC

PRINCIPLE SPILLWAY (Q_{ps})

DESIGN Q _{ps} CAPACITY:	12.19 CFS
WIDTH =	10 FT
CHANNEL SLOPE =	1.070
CREST ELEVATION =	399.89 FT
DESIGN HIGH WATER =	401.00 FT
TOP OF EMBANKMENT =	402.00 FT

SEDIMENT BASIN #3

TYPE: TEMPORARY SEDIMENT BASIN

BAFFLE BOARD DESIGN

A = SURFACE AREA AT WET STORAGE EL	11988 SQFT
EFFECTIVE WIDTH, W _e :	78 FT
FLOW LENGTH FROM INFLOW PT TO OUTLET:	60 FT
EFFECTIVE FLOW LENGTH:	160 FT

DRAW DOWN DEVICE

Q _d =	0.333 CFS
CALCULATED A _d :	0.069 FT
CALCULATED D _d :	0.030 IN
MAXIMUM DIAMETER FROM TABLE G.10	4 IN
DESIGN D _d :	0.030 IN
DRAW DOWN DEVICE PIPE DIA	6 IN
MINIMUM A _d = 4A _d	0.276 SQ FT
PERFORATION DIAMETER:	1 IN
MIN NUMBER OF PERFORATIONS:	50
NUMBER OF LONGITUDINAL ROWS:	3
PERFORATED PIPE LENGTH:	7 FT
ACTUAL A _d	3.85 SQ FT

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

HOWARD SOIL CONSERVATION DISTRICT _____ 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 _____ DATE 4/5/17

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 IS WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

ENGINEER _____ DATE 4/5/17

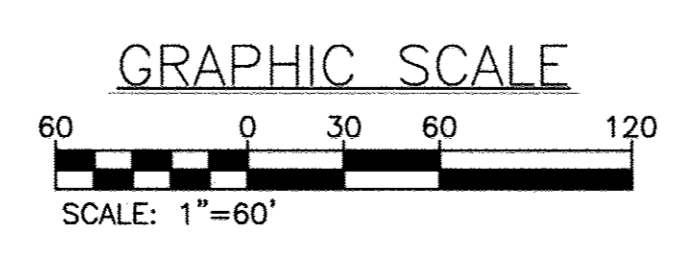
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT _____ DATE _____

CHIEF, DEVELOPMENT ENGINEERING DIVISION _____ DATE _____

DIRECTOR _____ DATE _____

SEDIMENT & EROSION CONTROL
PROPOSED INTERIM DRAINAGE AREA MAP
SCALE: 1"=60'



REVISIONS

NO.	DATE	DESCRIPTION	BY
1	04/05/2017	PLANS HAVE BEEN UPDATED TO SHOW 10 BUILDINGS	BA
2	12/22/17	REVISED PAGE NUMBERING	BA

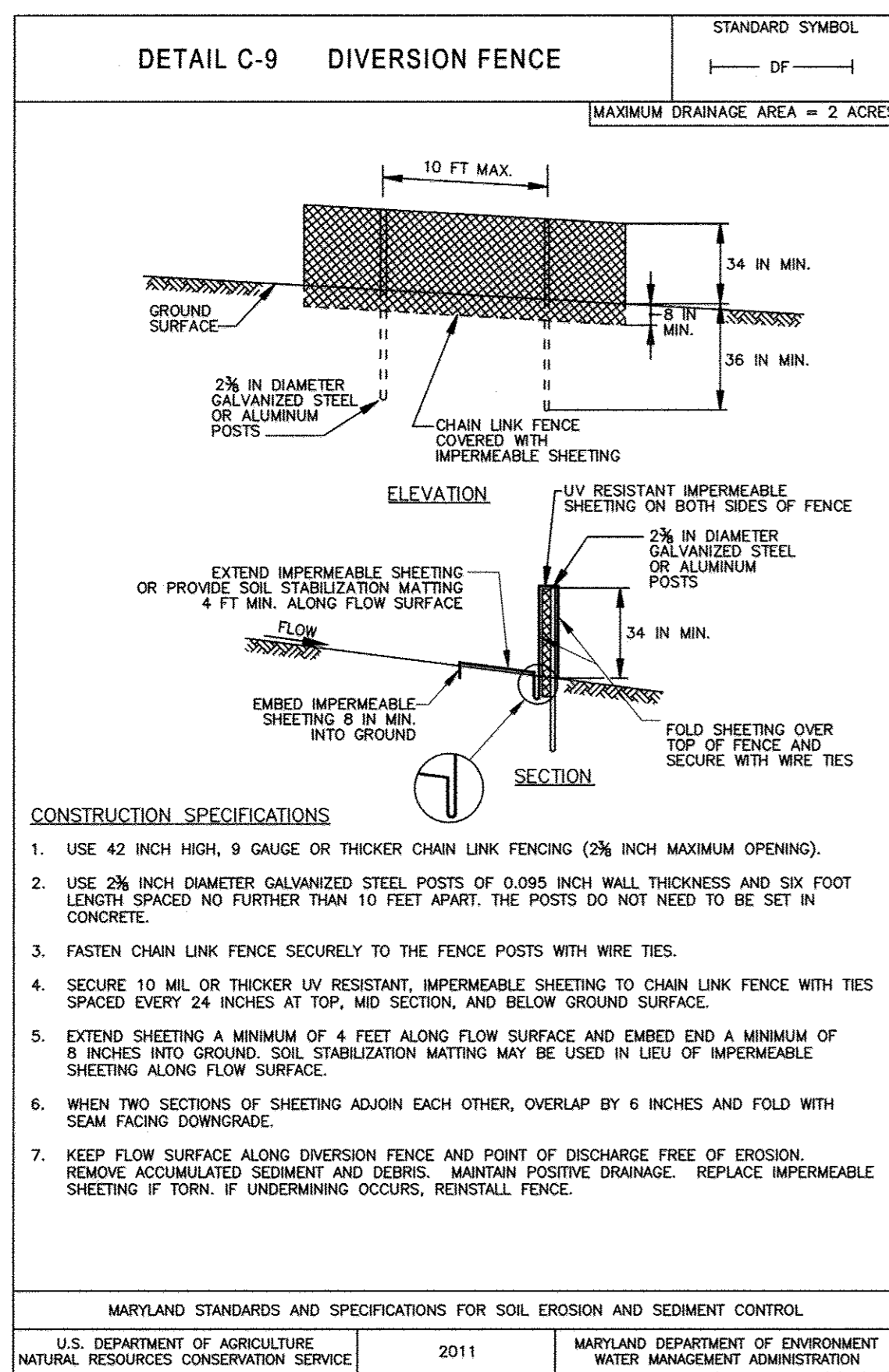
OWNER/DEVELOPER: **LEGACY AT ELLICOTT'S RETREAT**

COMMERCIAL CONTRACTORS INC.
1205 YORK ROAD
LUTHERVILLE-TIMONIUM,
MD 21093
(410)-825-8400

AGE RESTRICTED ADULT HOUSING
TAX MAP: 24 GRID: 06 PARCEL: 1085
ZONED: POR
ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

DESIGN: NAB DATE: 04/05/17 KCI PROJECT NO. 27134772 SHEET NO. C-3.02
DRAWN: BRA SCALE: 1"=60' SHEET NO. 31 OF 45

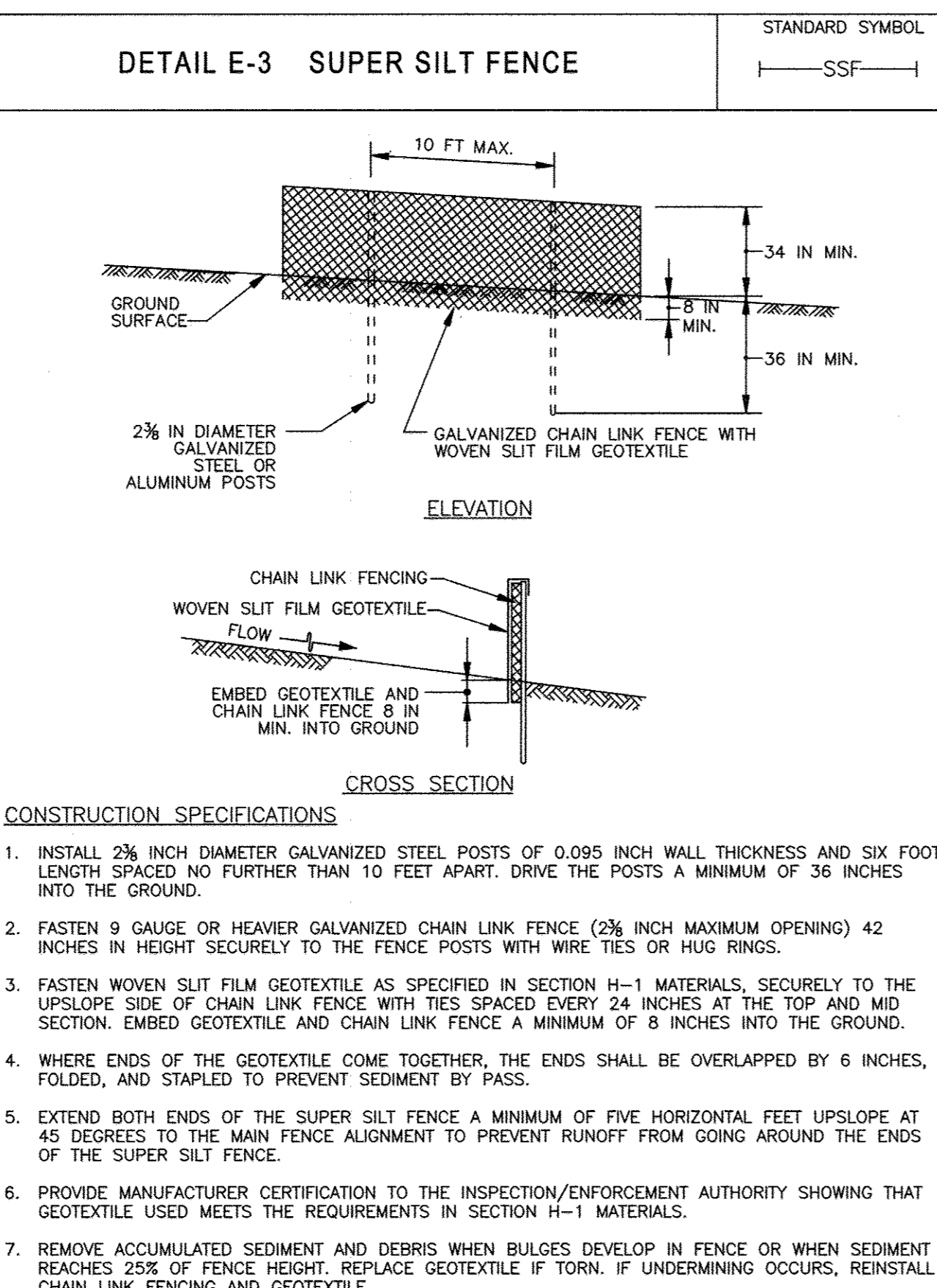
PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 33772 EXP. DATE: 06/16/2017



CONSTRUCTION SPECIFICATIONS

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

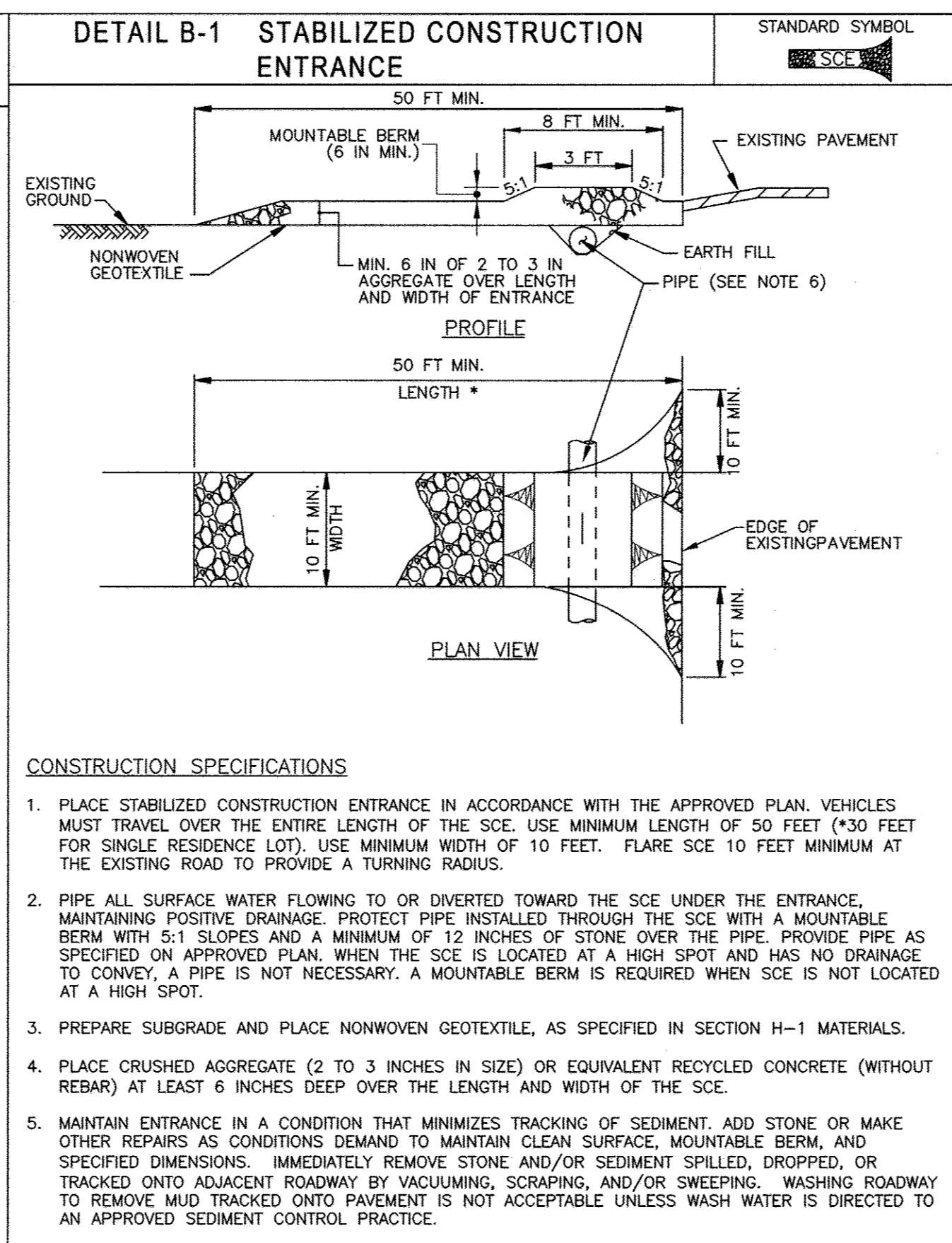
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



CONSTRUCTION SPECIFICATIONS

- INSTALL 2 1/2 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
- FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2% INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
- FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
- WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
- EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
- PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

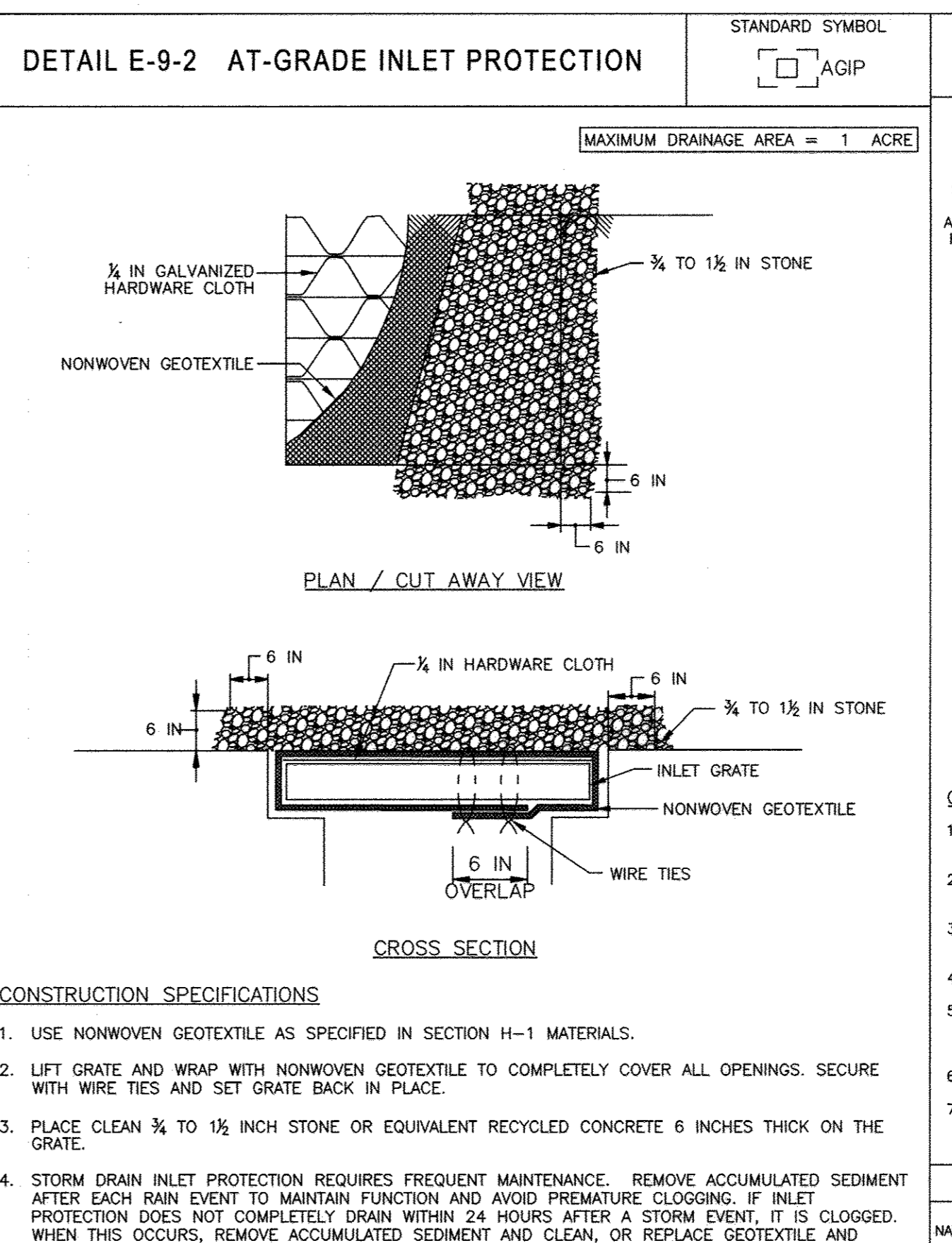
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



CONSTRUCTION SPECIFICATIONS

- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
- MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

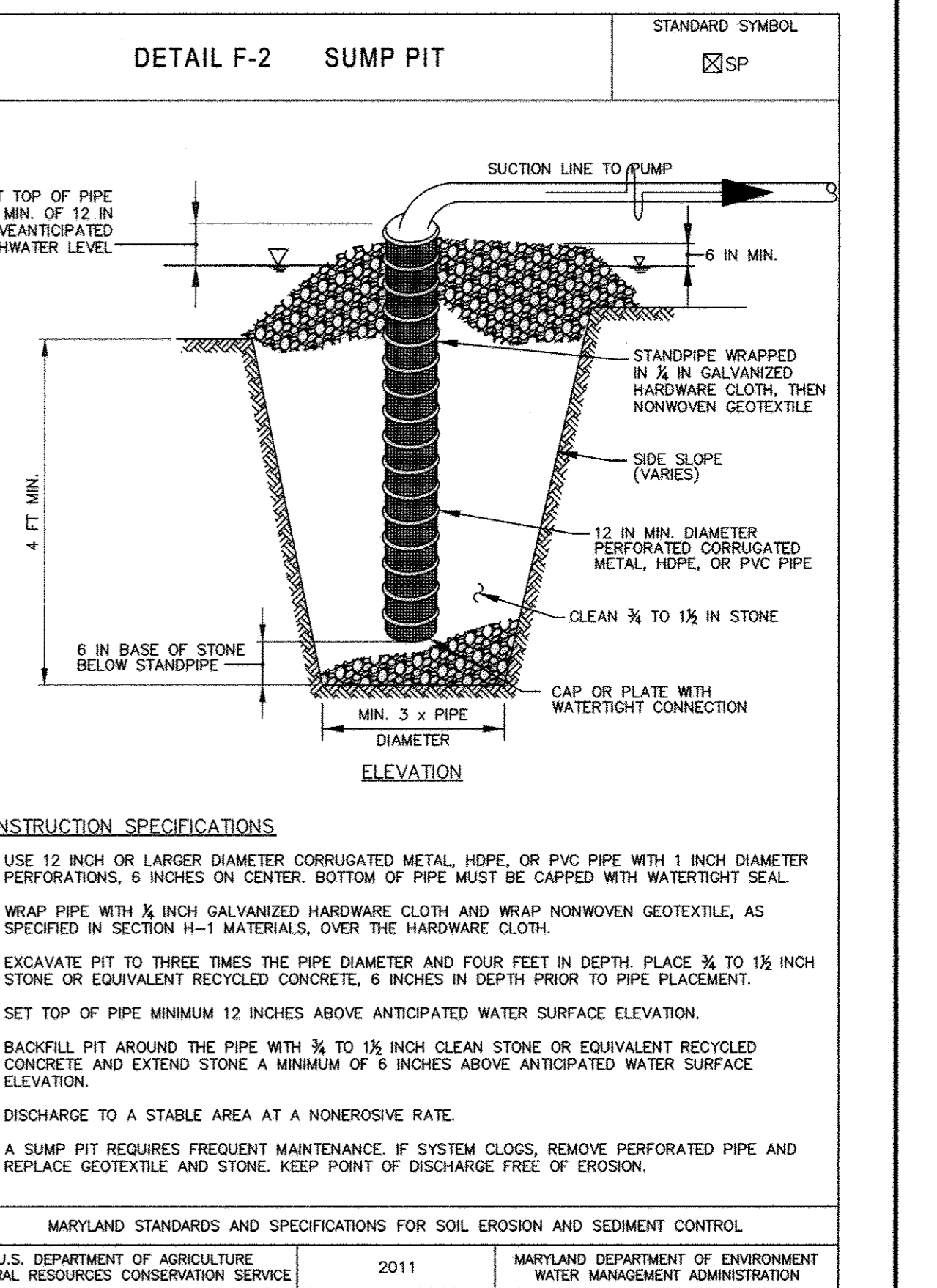
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



CONSTRUCTION SPECIFICATIONS

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

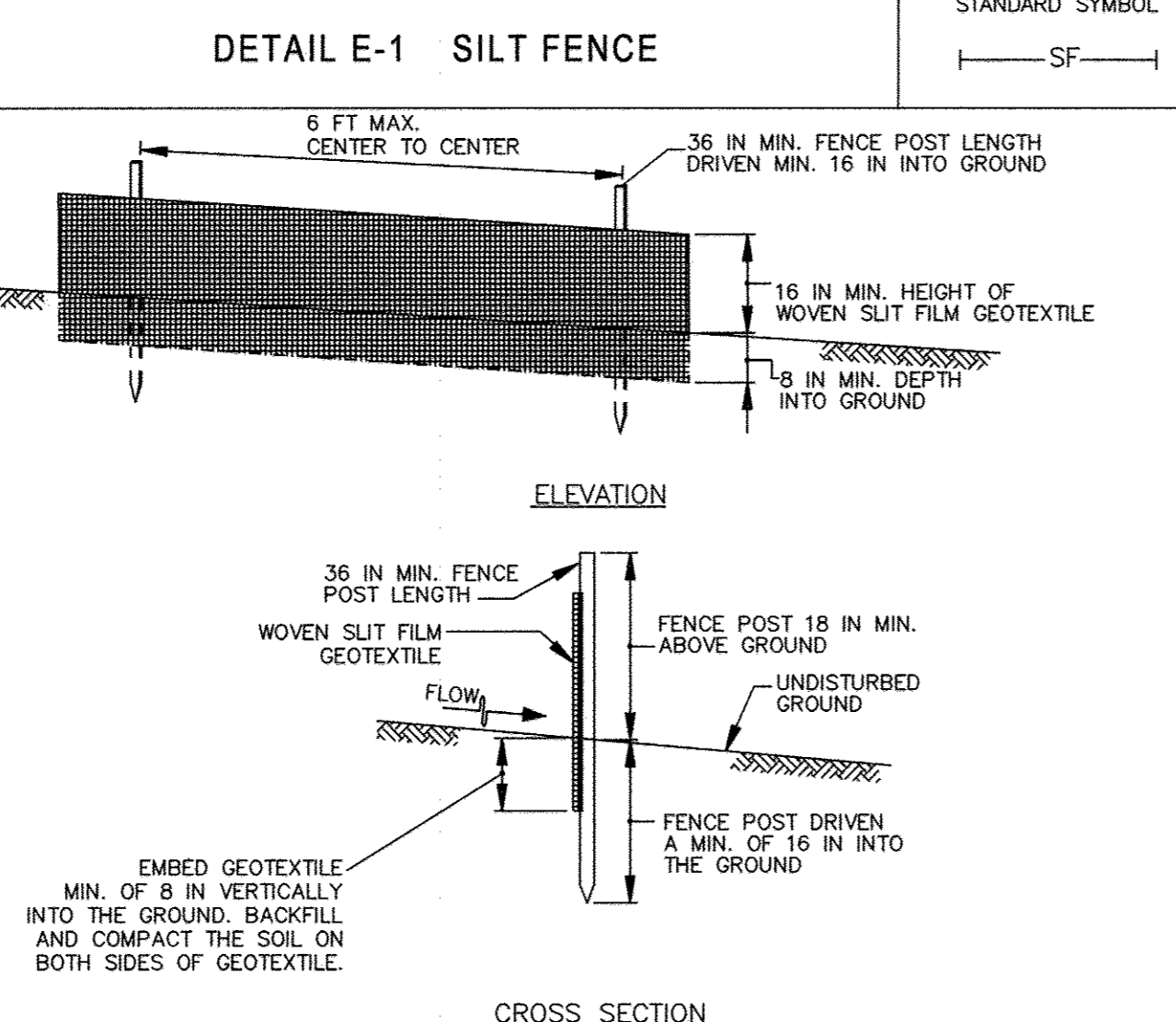
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



CONSTRUCTION SPECIFICATIONS

- USE 12 INCH OR LARGER DIAMETER CORRUGATED METAL, HDPE, OR PVC PIPE WITH 1 INCH DIAMETER PERFORATIONS, 6 INCHES ON CENTER. BOTTOM OF PIPE MUST BE CAPPED WITH WATER TIGHT SEAL.
- WRAP PIPE WITH 1/2 INCH GALVANIZED HARDWARE CLOTH AND WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE HARDWARE CLOTH.
- EXCAVATE PIT TO THREE TIMES THE PIPE DIAMETER AND FOUR FEET IN DEPTH. PLACE 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
- SET TOP OF PIPE MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
- BACKFILL PIT AROUND THE PIPE WITH 3/4 TO 1 1/2 INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
- DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
- A SUMP PIT REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, REMOVE PERFORATED PIPE AND REPLACE GEOTEXTILE AND STONE. KEEP POINT OF DISCHARGE FREE OF EROSION.

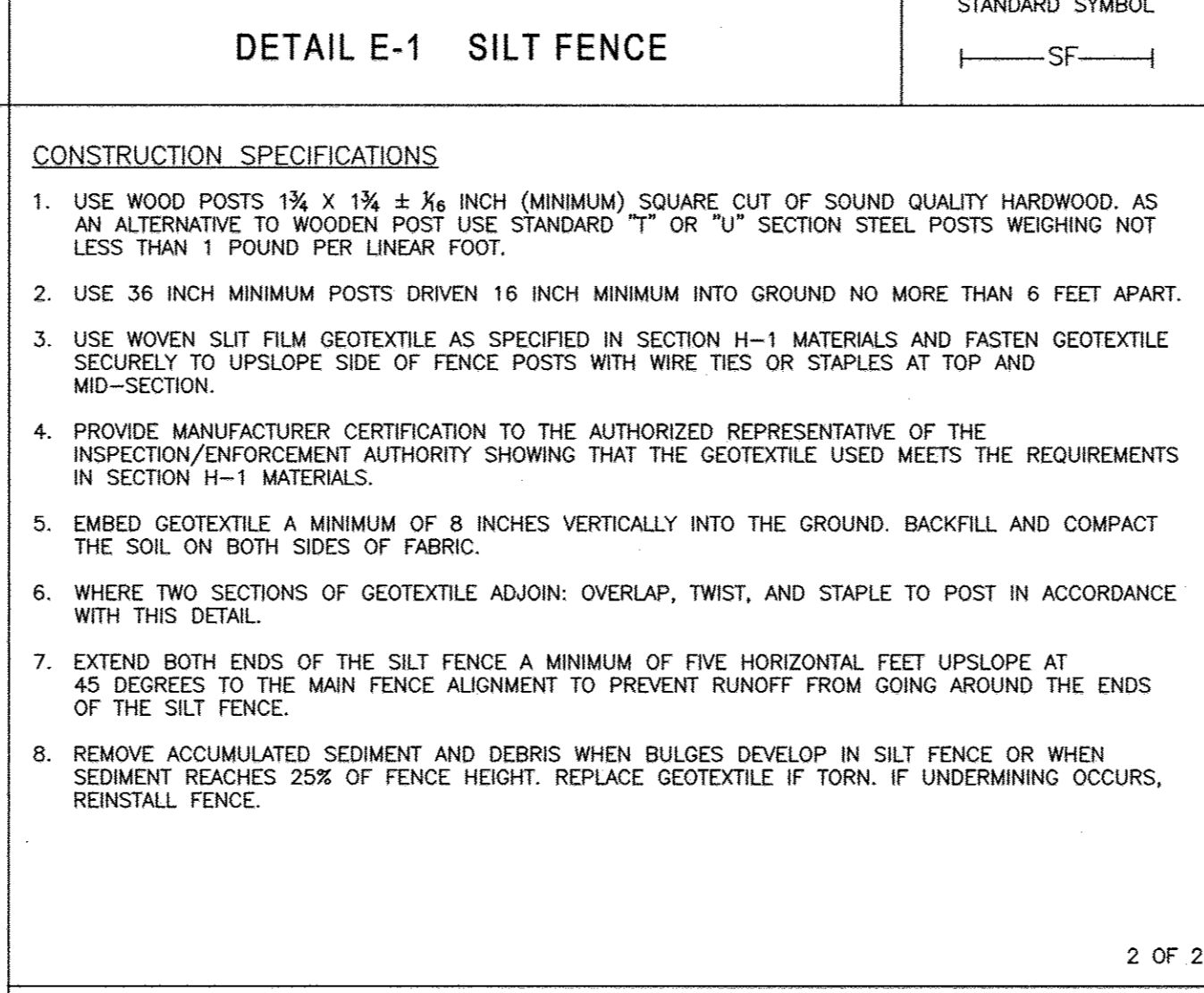
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 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



CONSTRUCTION SPECIFICATIONS

- USE WOOD POSTS 1 1/2 X 1 1/2 X 1/2 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
- USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
- USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
- PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
- WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
- EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

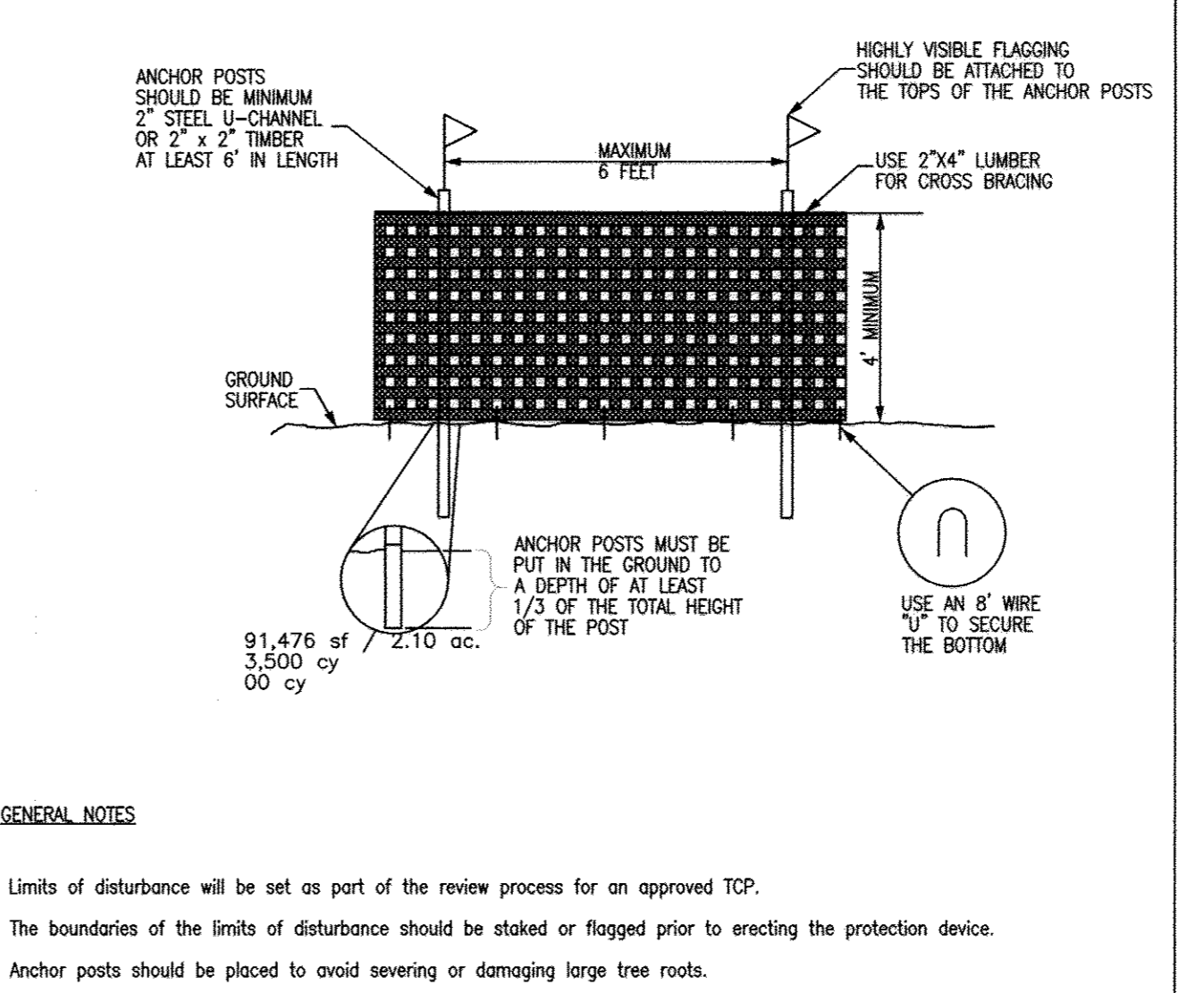
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



CONSTRUCTION SPECIFICATIONS

- USE WOOD POSTS 1 1/2 X 1 1/2 X 1/2 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
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- PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
- WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
- EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

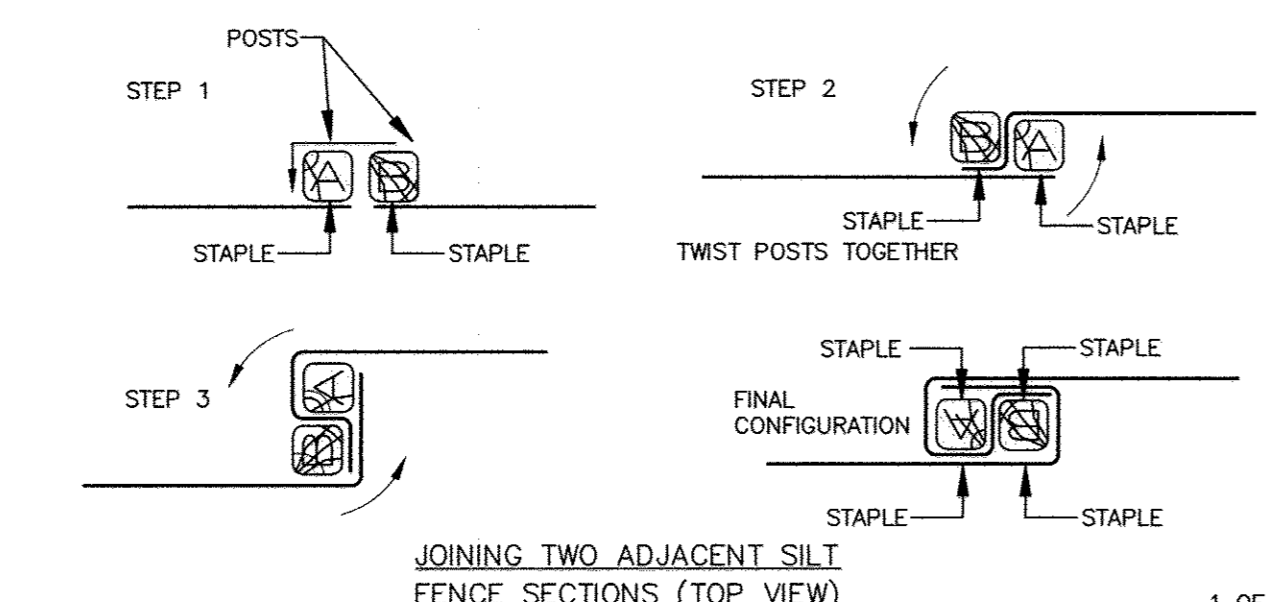
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



GENERAL NOTES

- Limits of disturbance will be set as part of the review process for an approved TCP.
- The boundaries of the limits of disturbance should be staked or flagged prior to erecting the protection device.
- Anchor posts should be placed to avoid severing or damaging large tree roots.
- Fencing material shall be fastened securely to the anchor posts, cross bracing and ground.

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



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

REVIEWED BY HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
 DEVELOPER'S CERTIFICATE
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT 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.
 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 IS WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DIRECTOR

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

REVISIONS		
NO.	DATE	BY
1	4-5-2017	CORRECT PROJECT NAME AND SHEET NUMBER
2	12/22/17	REVISED PAGE NUMBERING

OWNER/DEVELOPER:
 COMMERCIAL CONTRACTORS INC.
 1205 YORK ROAD
 LUTHERVILLE-TIMONIUM, MD 21093
 (410)-825-8400

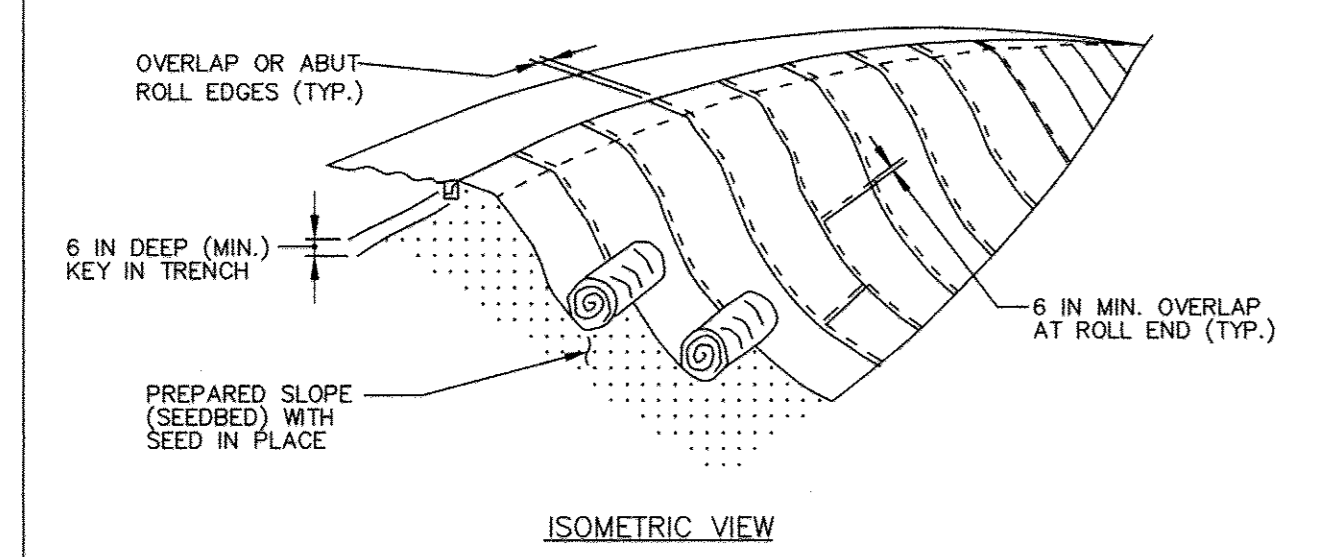
LEGACY AT ELLICOTT'S RETREAT
 SEDIMENT AND EROSION CONTROL NOTES & DETAILS
 AGE RESTRICTED ADULT HOUSING
 TAX MAP: 24 GRID: 06 PARCEL: 1085
 ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

DESIGN DATE: NAB 04/05/17
 DRAWN SCALE: BRA 1"=50'
 SHEET NO. 34 OF 45
 KCI PROJECT NO. 27134772
 SHEET NO. C-3.05

ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS
KCI TECHNOLOGIES
 11850 West Market Place
 Suite A
 FULTON, MD 20759
 Telephone: (410) 792-8086
 Fax: (410) 792-7419

DETAIL B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION

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

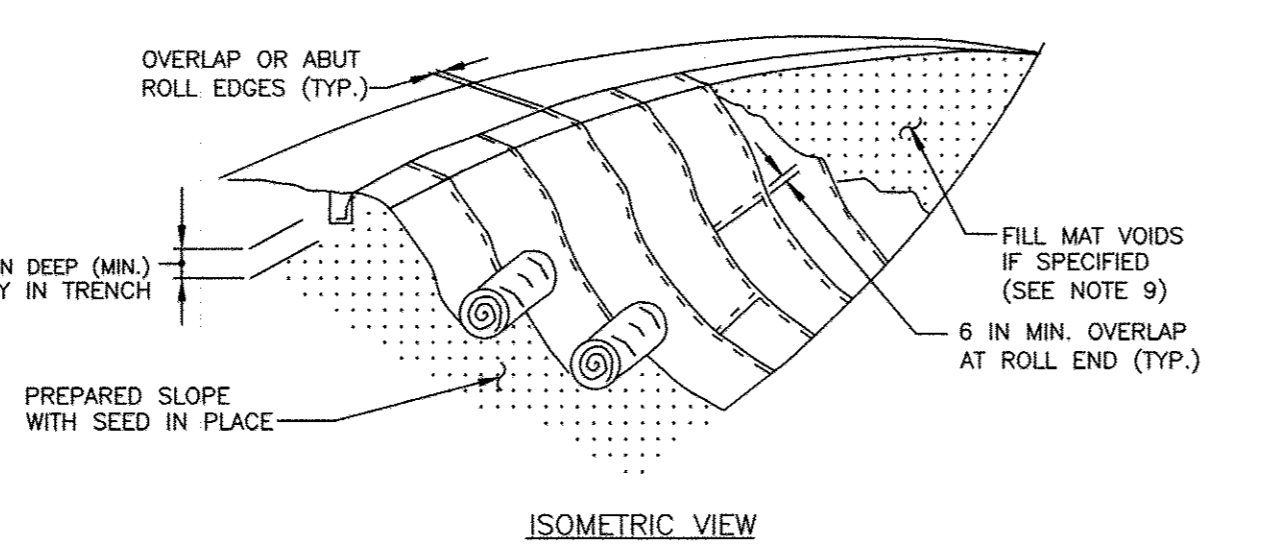


- CONSTRUCTION SPECIFICATIONS**
- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
 - USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
 - SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 1/2 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
 - PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
 - UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDBED SURFACE. AVOID STRETCHING THE MATTING.
 - OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
 - KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
 - STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
 - ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

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

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

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

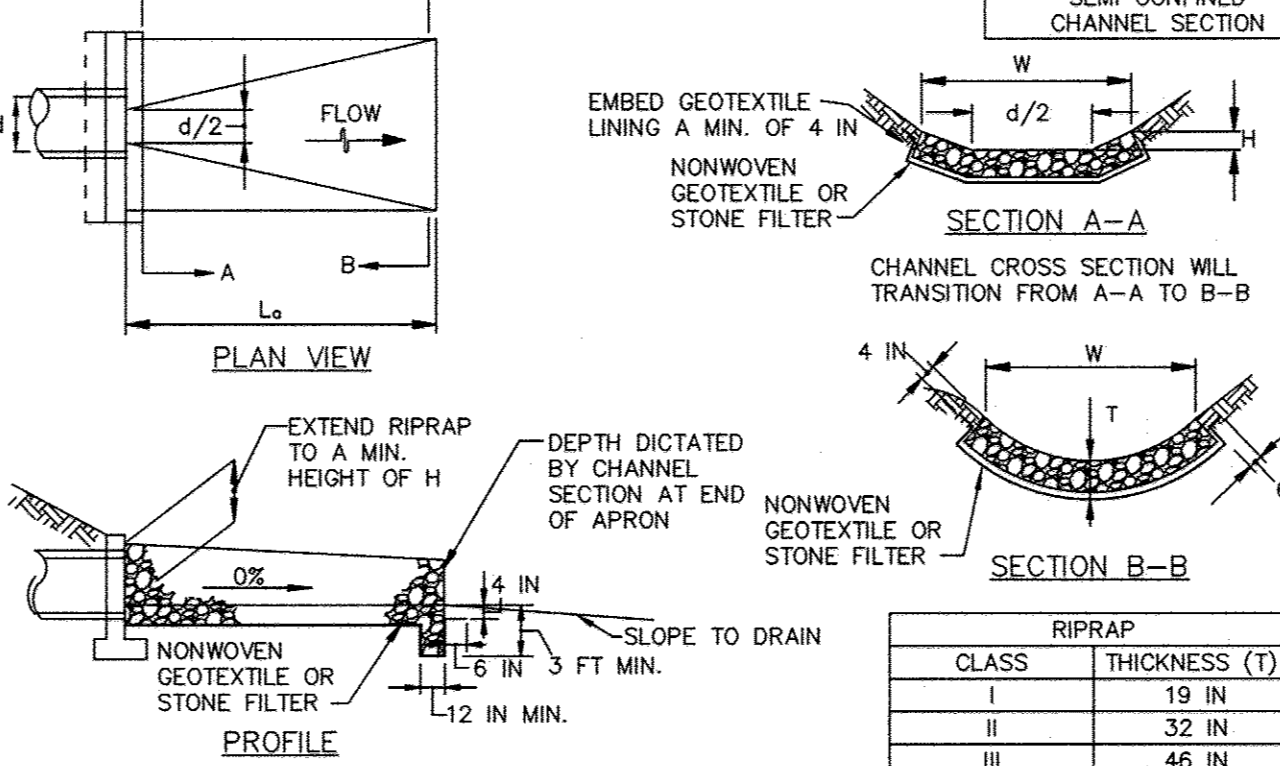


- CONSTRUCTION SPECIFICATIONS**
- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
 - USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
 - SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 1/2 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
 - PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
 - UNROLL MATTING DOWN SLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDBED SURFACE. AVOID STRETCHING THE MATTING.
 - OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
 - KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
 - STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
 - IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYS AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
 - ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

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

DETAIL D-4-1-A ROCK OUTLET PROTECTION I

STANDARD SYMBOL
ROP1
DISCHARGE TO SEMI-CONFINED CHANNEL SECTION

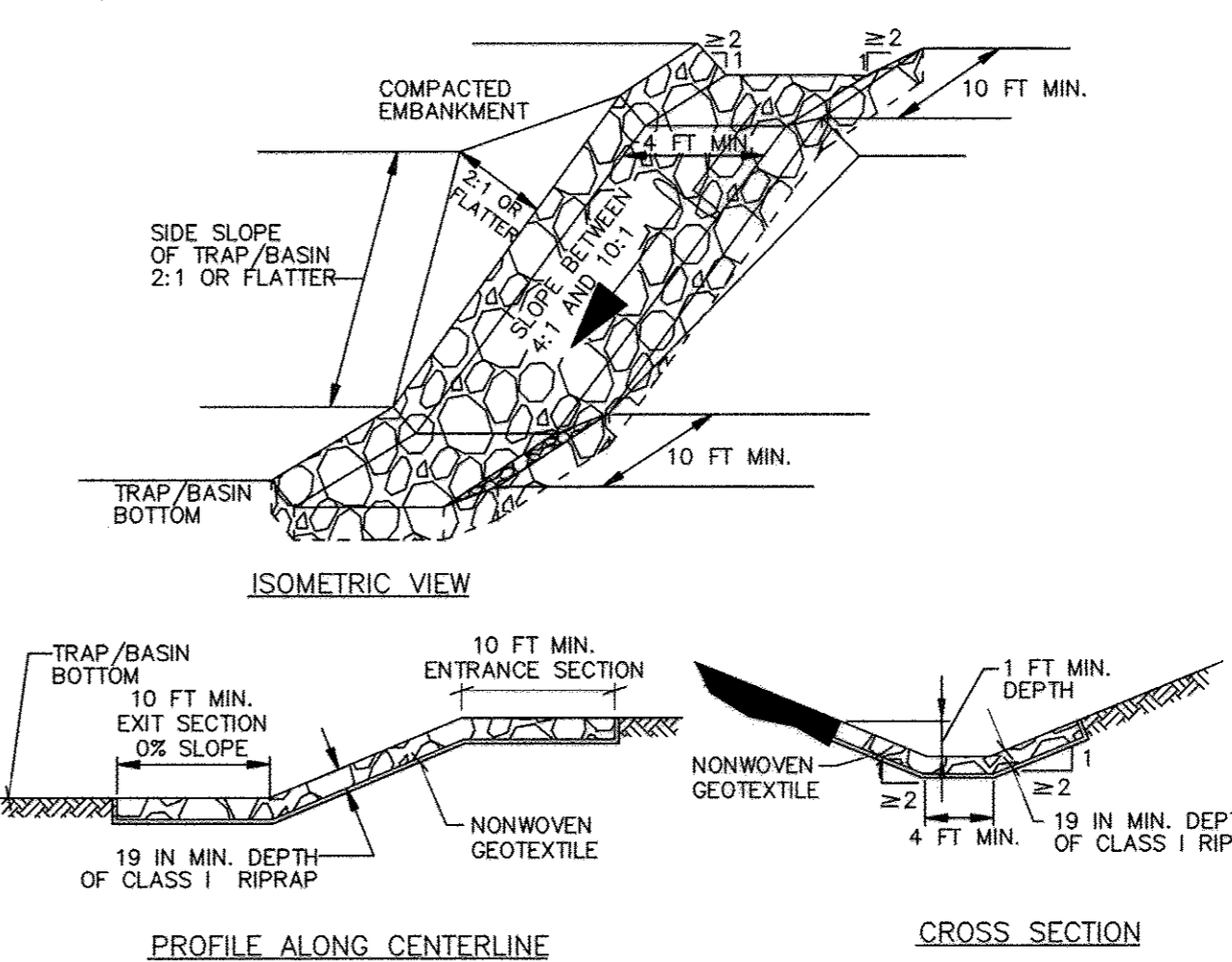


- CONSTRUCTION SPECIFICATIONS**
- RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
 - USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
 - PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (3/8 TO 1/2 INCH STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
 - EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF THE RIPRAP.
 - CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE STONE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
 - WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
 - CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
 - MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLOGGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

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

DETAIL D-3-1 RIPRAP INFLOW PROTECTION

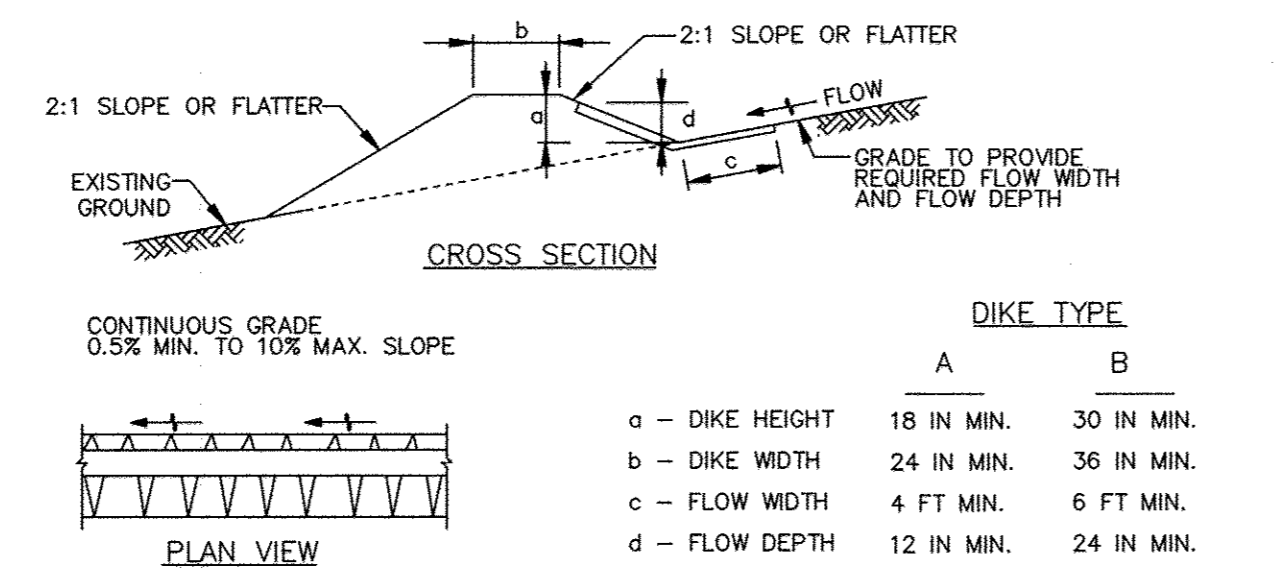
STANDARD SYMBOL
RRP1



- CONSTRUCTION SPECIFICATIONS**
- PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL RIPRAP.
 - CONSTRUCT INFLOW CHANNEL WITH CLASS I RIPRAP OR EQUIVALENT RECYCLED CONCRETE LINING TO A MINIMUM DEPTH OF 19 INCHES (2 x d₅₀) AND A 1 FOOT DEEP FLOW CHANNEL. INFLOW RIPRAP PROTECTION CHANNEL MUST HAVE A TRAPEZOIDAL CROSS SECTION WITH 2:1 OR FLATTER SIDE SLOPES AND A 4 FOOT MINIMUM BOTTOM WIDTH.
 - INSTALL ENTRANCE AND EXIT SECTIONS AS SHOWN ON THE PROFILE.
 - BLEND RIPRAP INTO EXISTING GROUND.
 - MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. KEEP POINTS OF INFLOW AND OUTFLOW FREE OF EROSION.

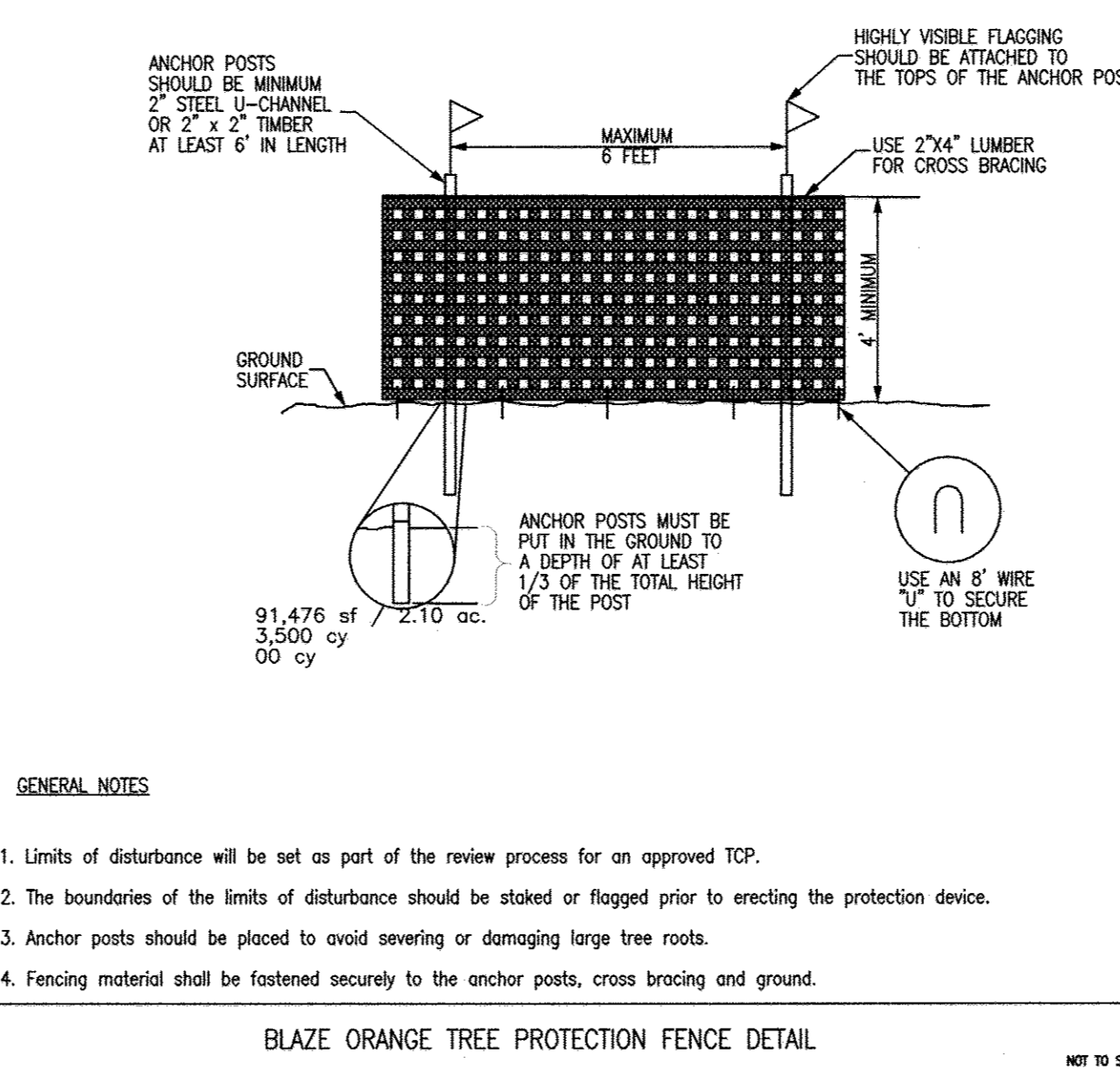
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
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DETAIL C-1 EARTH DIKE



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

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GENERAL NOTES

- Limits of disturbance will be set as part of the review process for an approved TCR.
- The boundaries of the limits of disturbance should be staked or flagged prior to erecting the protection device.
- Anchor posts should be placed to avoid severing or damaging large tree roots.
- Fencing material shall be fastened securely to the anchor posts, cross bracing and ground.

BLAZE ORANGE TREE PROTECTION FENCE DETAIL
NOT TO SCALE

REVIEWED BY HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
John L. Johnston 9/14/15 DATE
HOWARD SOIL CONSERVATION DISTRICT

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."
[Signature] 8/31/15 DATE
DEVELOPER

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 IS WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."
[Signature] 8/31/15 DATE
ENGINEER

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Heather DeLoach 9-21-15 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT
Chad Edwards 9-17-15 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION
Valerie Jaffe 9-29-15 DATE
DIRECTOR



REVISIONS			
NO.	DATE	BY	DESCRIPTION
1	4-5-2017	BA	CORRECT PROJECT NAME AND SHEET NUMBER
2	12/22/17	BA	REVISED PAGE NUMBERING

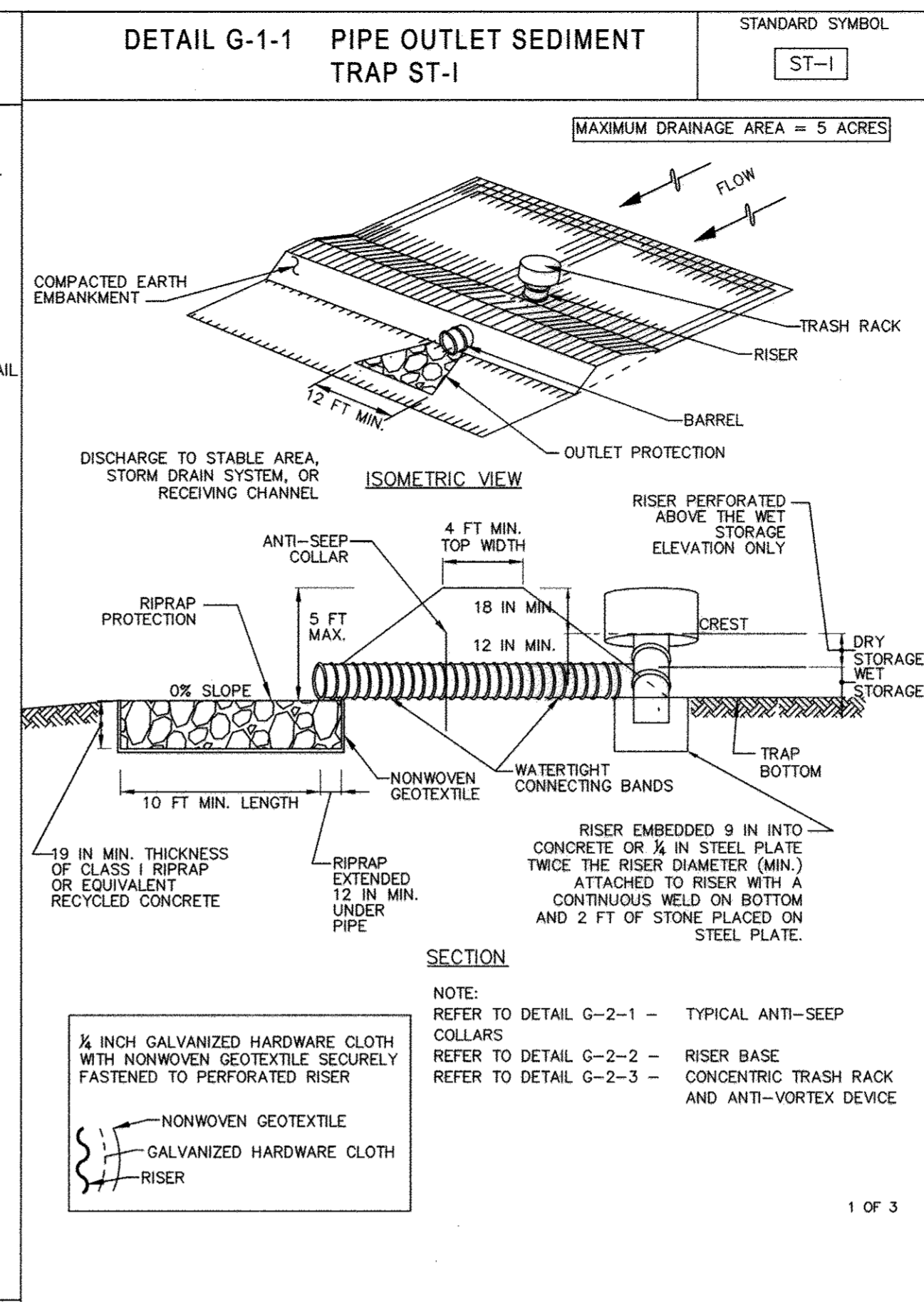
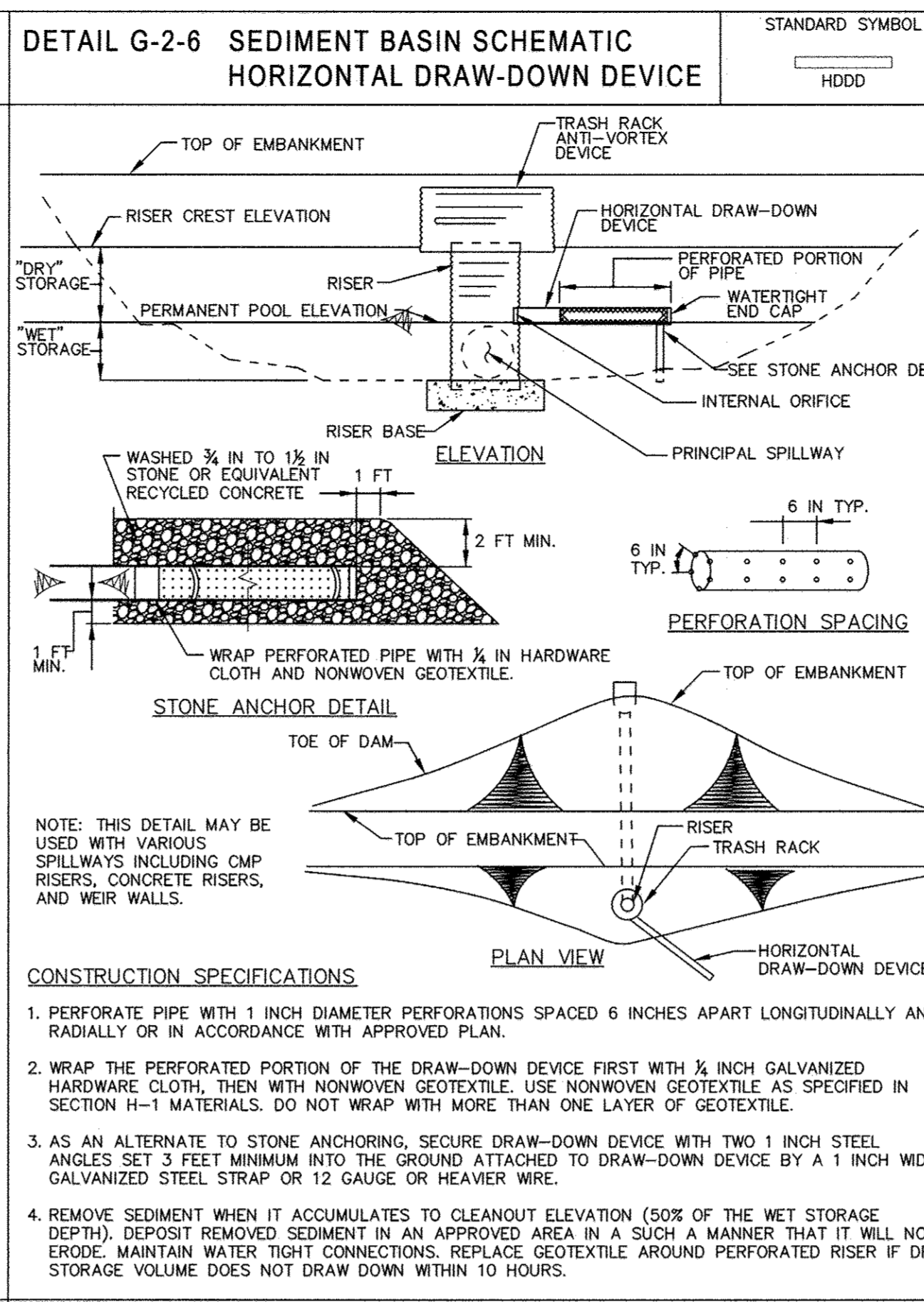
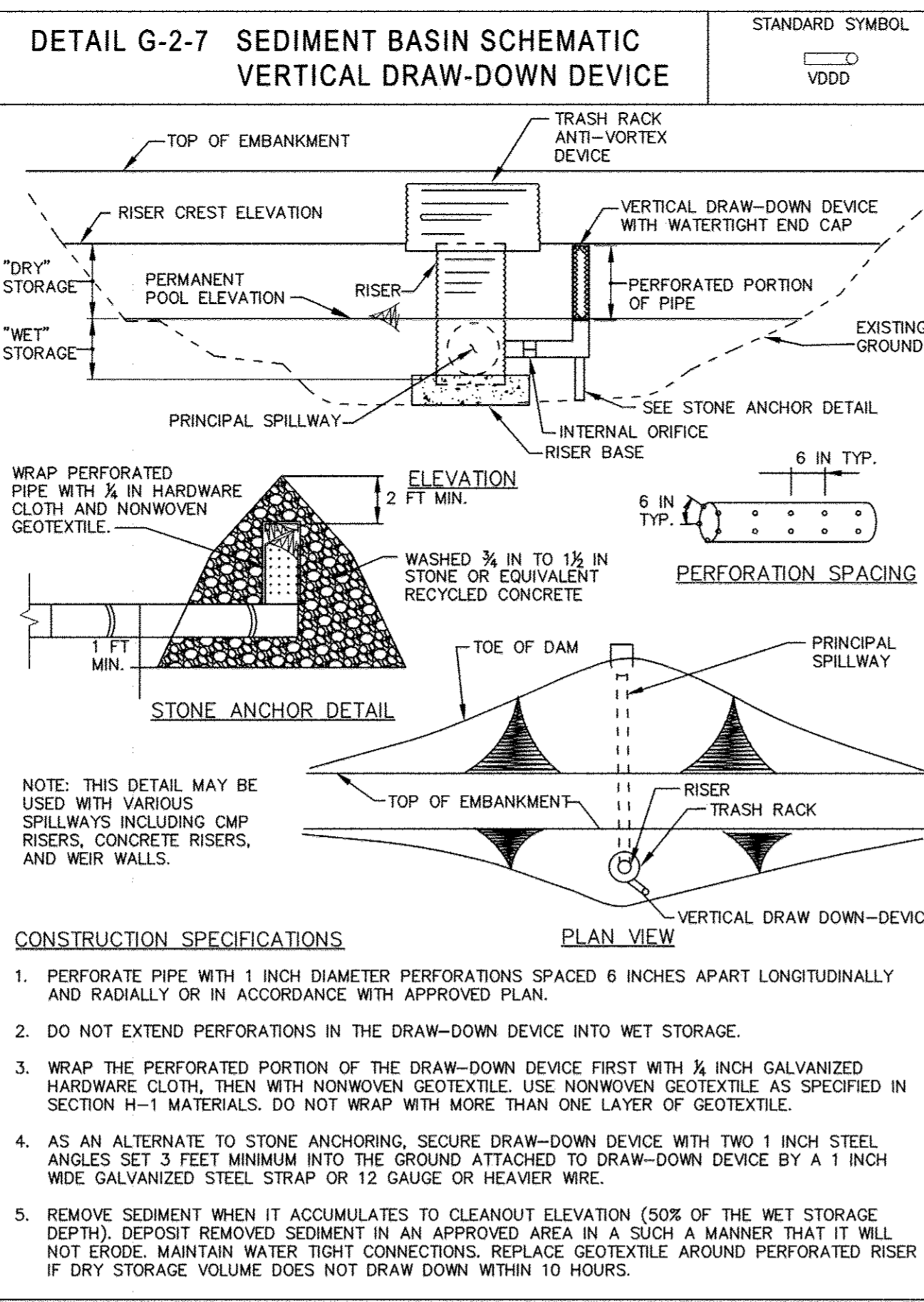
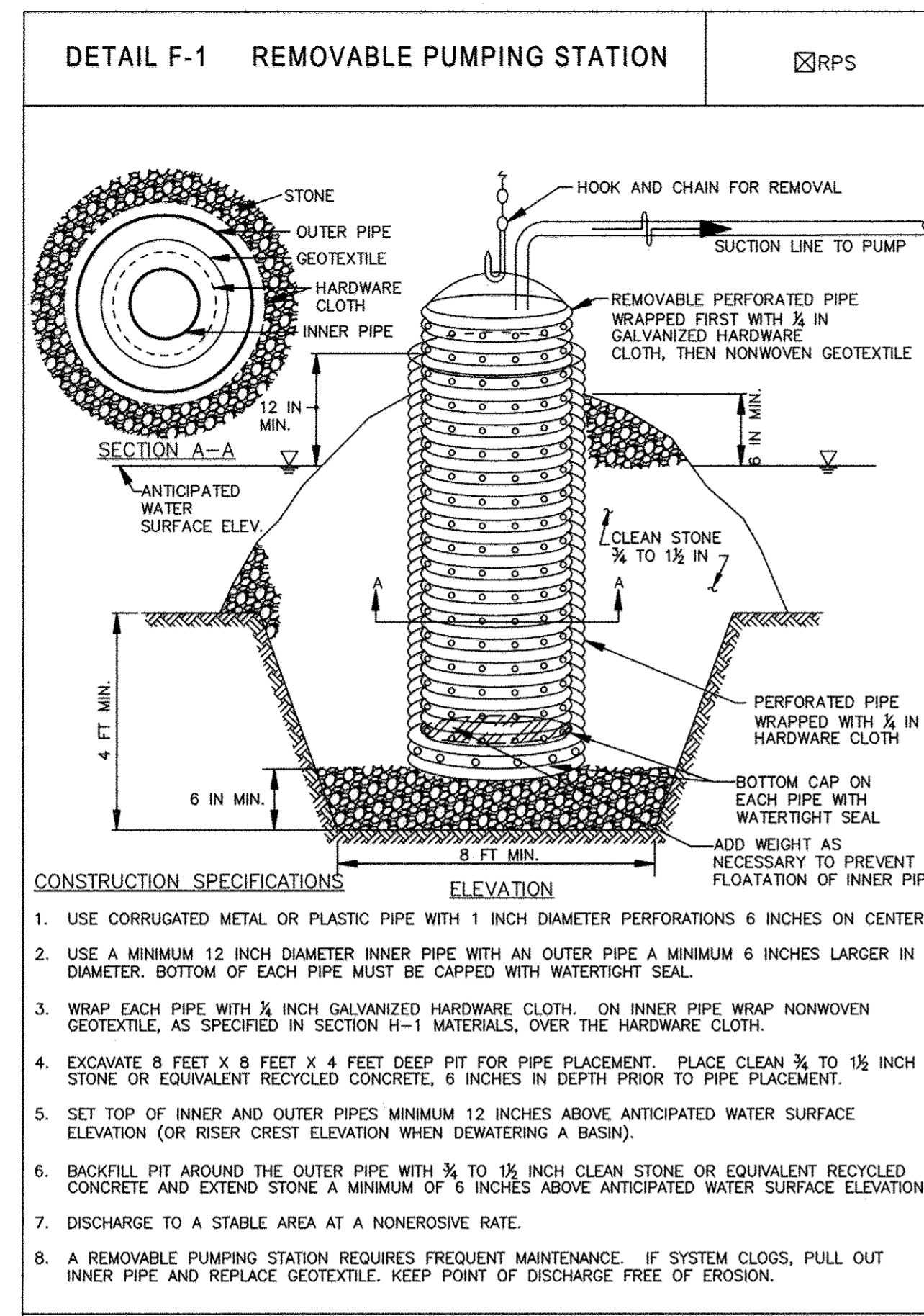
OWNER/DEVELOPER:
COMMERCIAL CONTRACTORS INC.
1205 YORK ROAD
LUTHERVILLE-TIMONIUM,
MD 21093
(410)-825-8400

LEGACY AT ELLICOTT'S RETREAT
SEDIMENT AND EROSION CONTROL
NOTES & DETAILS
AGE RESTRICTED ADULT HOUSING
TAX MAP: 24 GRID: 06 PARCEL: 1085
ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

DESIGN NAB DATE 04/08/17
DRAWN BRA SCALE SHEET NO. 35 OF 45 SHEET NO. C-3.06

KCI PROJECT NO. 27134772

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017
[Signature] 8/17/15



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

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

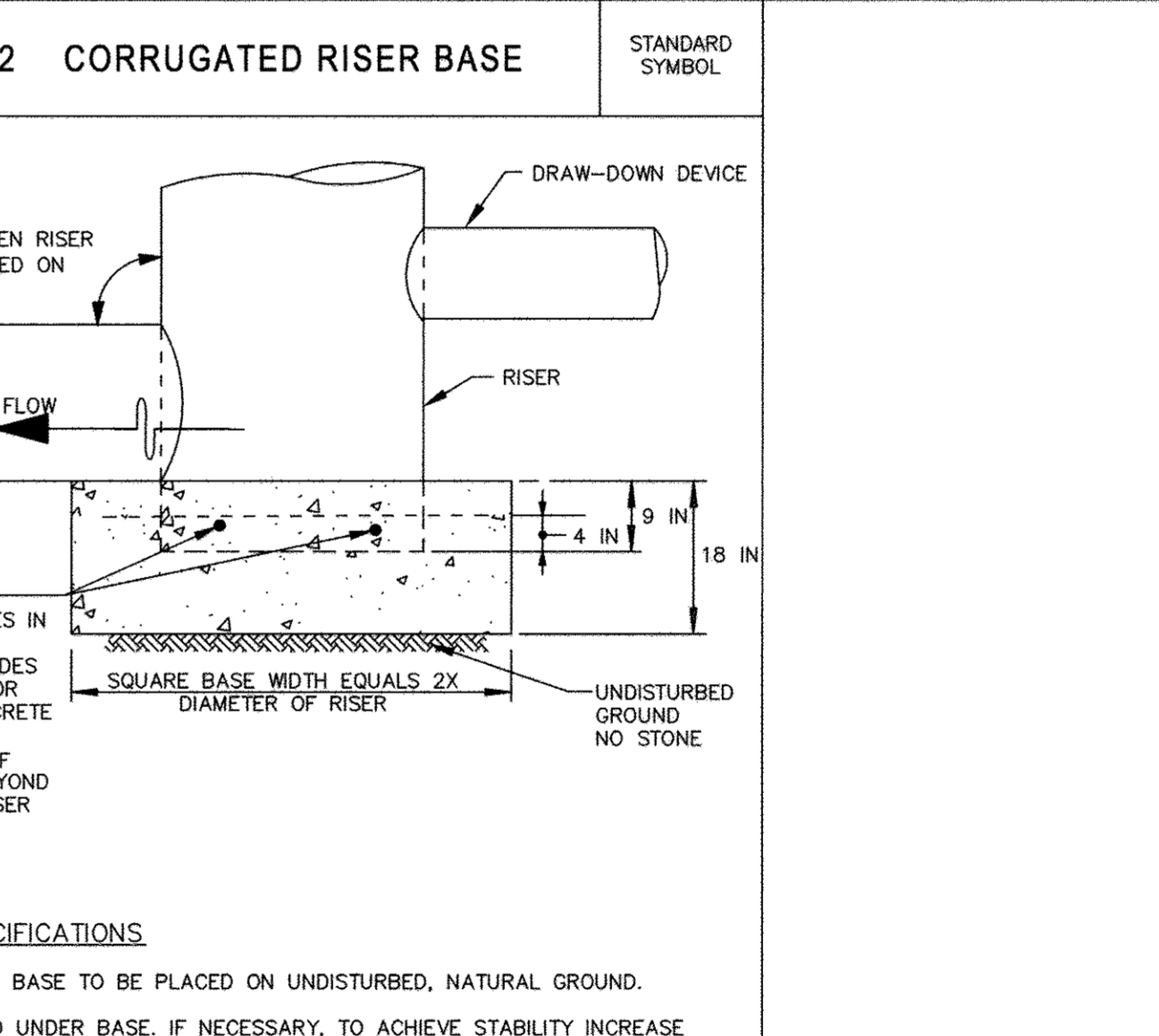
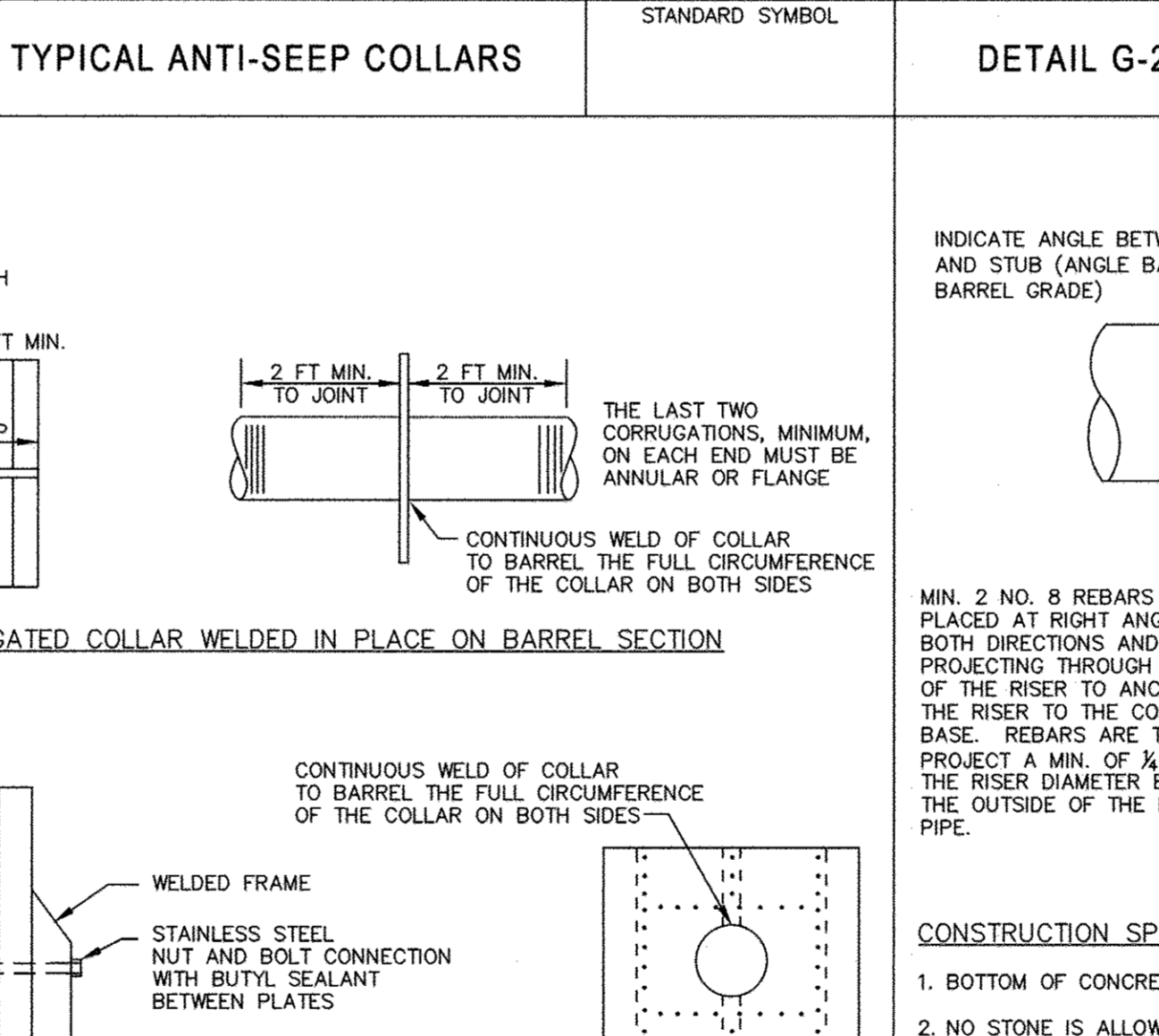
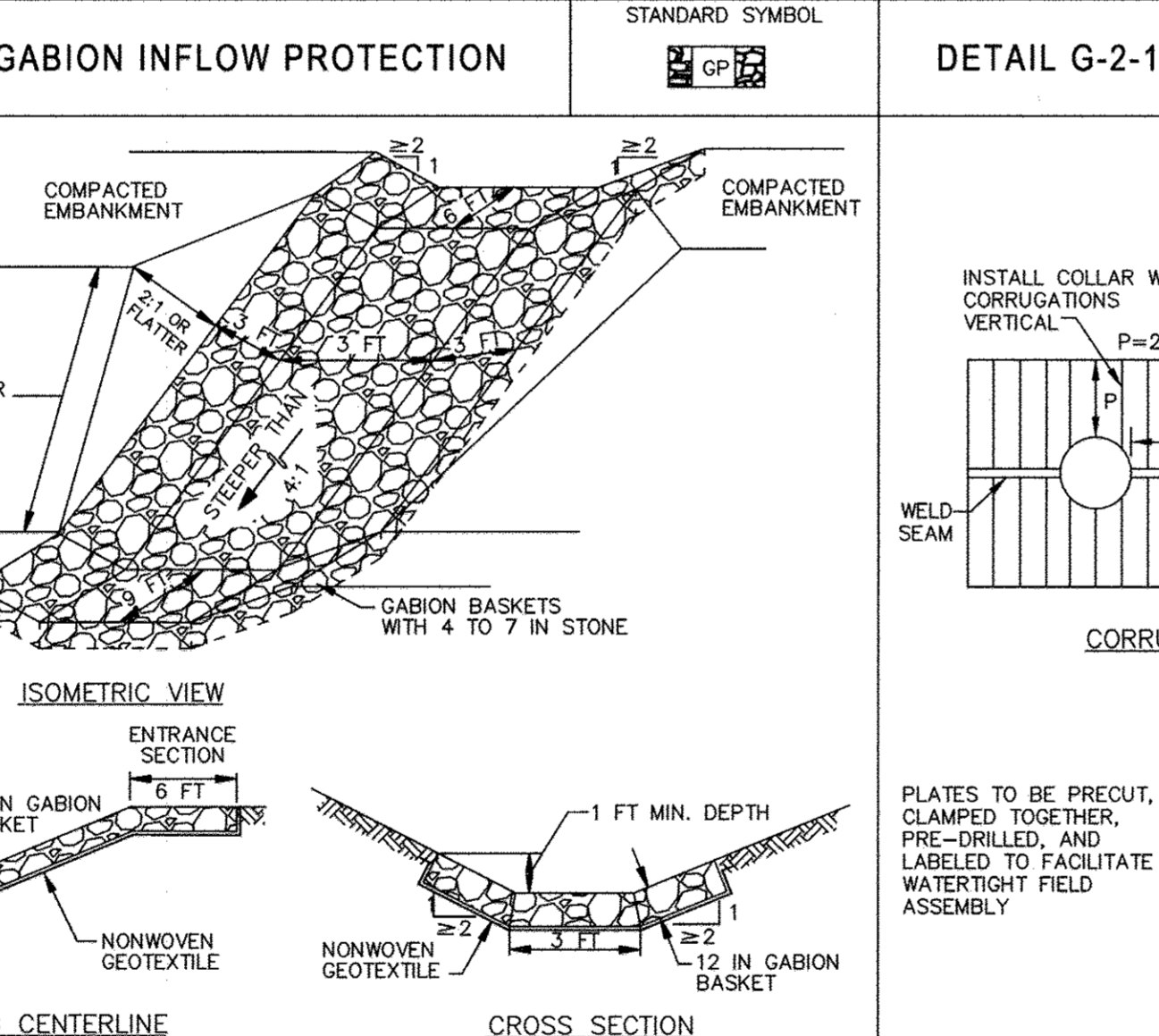
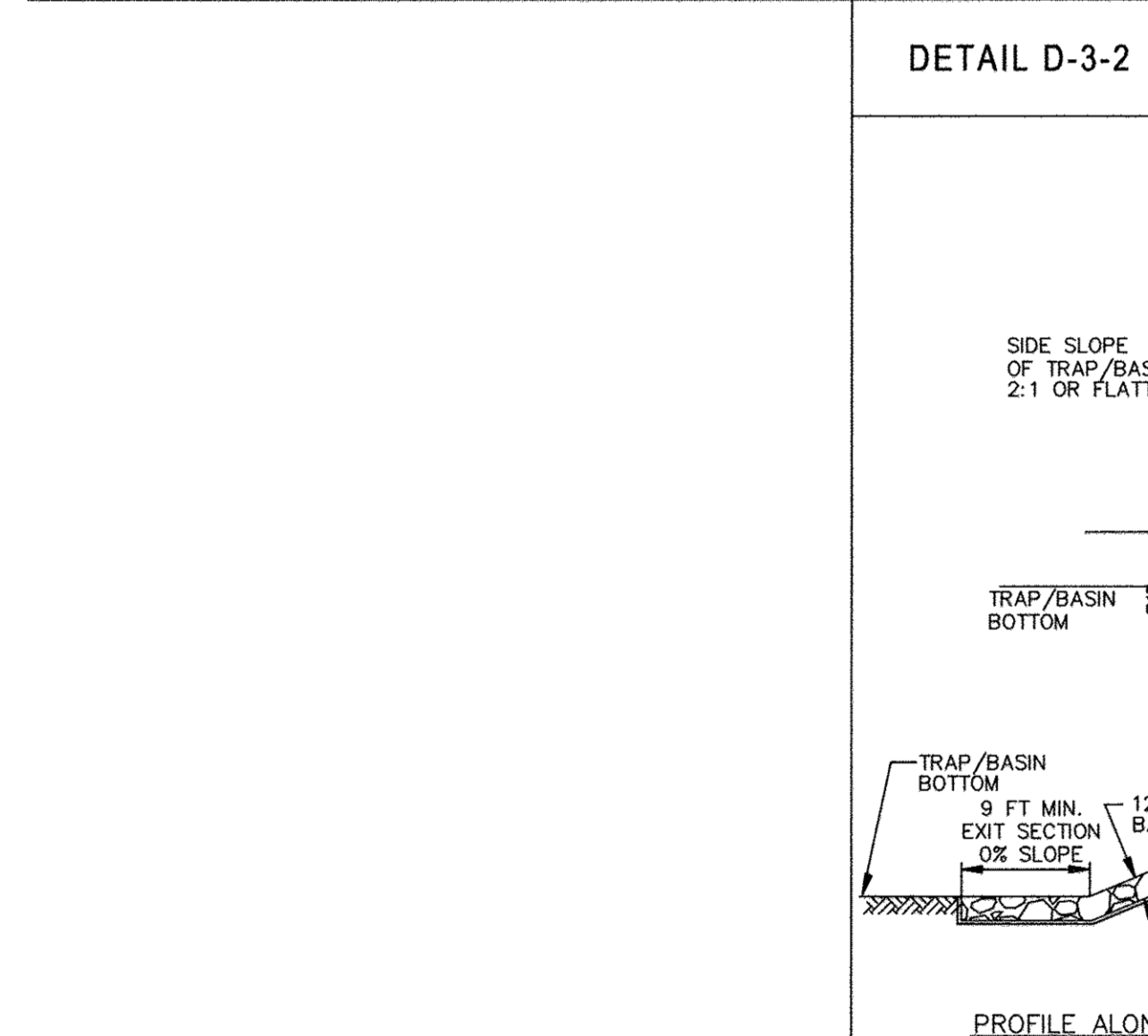
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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

CONSTRUCTION SPECIFICATIONS

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

2 OF 3



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

REVIEWED BY HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
John L. Blanton 9/16/15
HOWARD SOIL CONSERVATION DISTRICT DATE

DEVELOPER'S CERTIFICATE
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT 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 L. Blanton 8/31/15
DEVELOPER DATE

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.
John L. Blanton 8/17/15
ENGINEER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
John L. Blanton 9-21-15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
John L. Blanton 9-17-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
John L. Blanton 9-29-15
DIRECTOR DATE

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

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

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

ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS
KCI TECHNOLOGIES
11850 WISDOM PLACE
SUITE A
FLEXTON, MD 20759
TELEPHONE: (410) 792-8086
FAX: (410) 792-2419

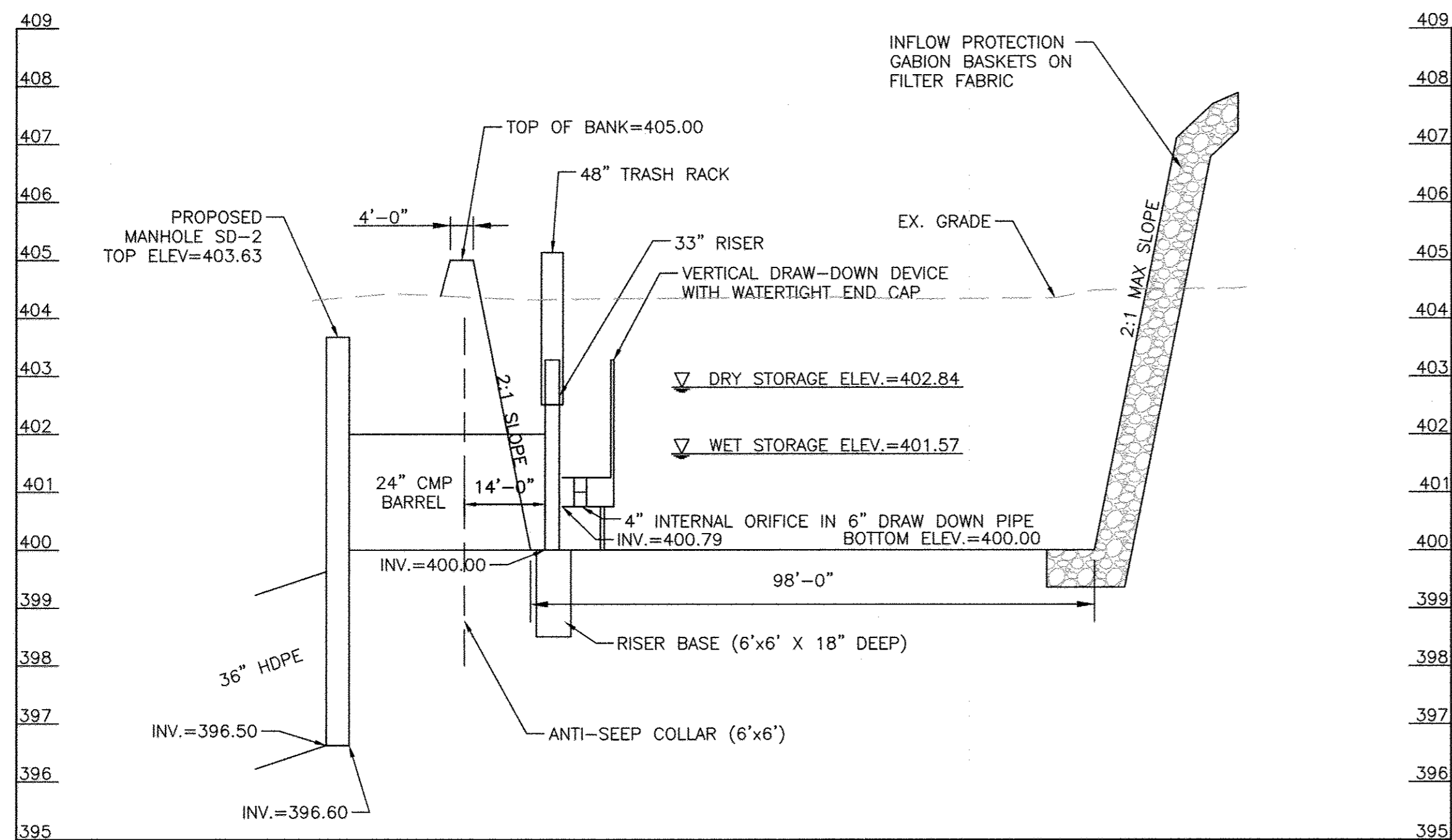
NO.	DATE	BY
1	4-5-2017	CORRECT PROJECT NAME AND SHEET NUMBER
2	12/22/17	REVISED PAGE NUMBERING

OWNER/DEVELOPER: LEGACY AT ELLICOTT'S RETREAT
COMMERCIAL CONTRACTORS INC.
1205 YORK ROAD LUTHERVILLE-TIMONIUM, MD 21093 (410)-825-8400

AGE RESTRICTED ADULT HOUSING
TAX MAP: 24 GRID: 06 ZONED: POR ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

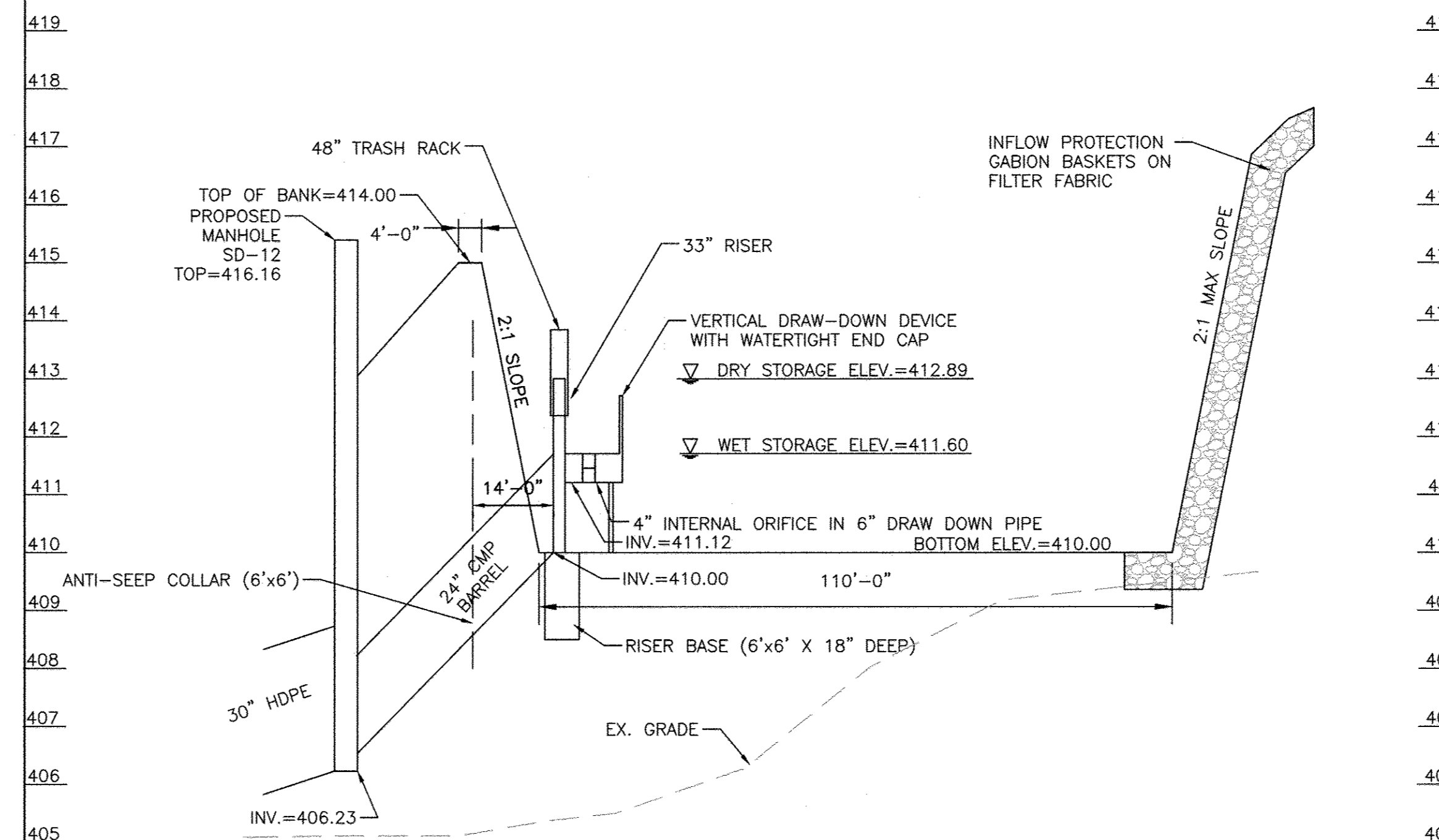
DESIGN NAB DATE 04/05/17 KCI PROJECT NO. 27134772 SHEET NO. C-3.07
DRAWN BRA SCALE SHEET NO. 36 OF 45

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017



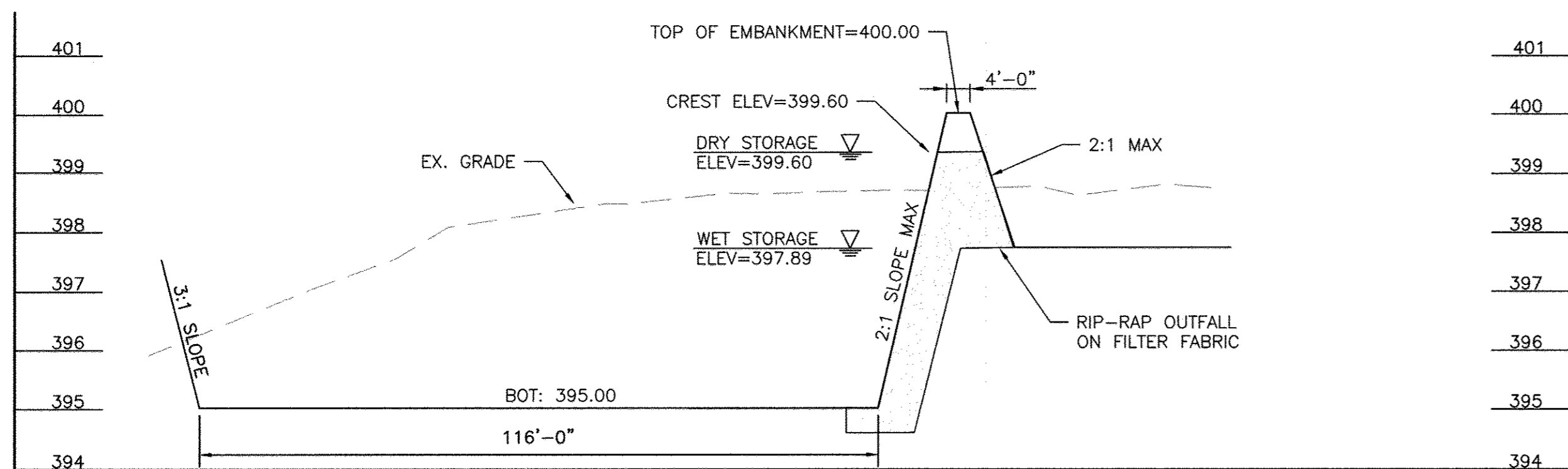
SEDIMENT TRAP '1' SECTION

SCALE: HOR: 1" = 20'
VERT: 1" = 2'



SEDIMENT BASIN '3' SECTION

SCALE: HOR: 1" = 20'
VERT: 1" = 2'



SEDIMENT BASIN '2' SECTION

SCALE: HOR: 1" = 20'
VERT: 1" = 2'

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: The Gatherings at Ellicott's Retreat
Location: Howard County, MD
Boring No.: B-18
Job #: 14225A

Date: 5/31/14
Samp. Date: 5/31/14
Samp. Time: 10:30 AM
Samp. Location: 15A
Samp. Method: HSA
Date Completed: 5/31/14

Depth	SOIL SAMPLE LOCATION	Description	Boring and Sampling	Acc.	INPTS	SPT Blows	GPT Blow/ft
0	15A	Gray/Dark Brown, moist, loose silty SAND (SM)	1"	10	4-5-1	10	10
1	15A	Gray/White to Brown/Pink, dry to moist, very dense silty fine SAND with some well-sorted material	2"	501"	501"	501"	501"
2	15A	Decomposed Rock	3"	503"	503"	503"	503"
3	15A	No groundwater encountered while drilling	4"	504"	504"	504"	504"
4	15A	Bottom of boring at 12 FT	5"	504"	504"	504"	504"

STANDARD PENETRATION TEST (SPT) DATA: 2" O.D. SAMPLER WITH 140 POUNDS FALLING 30" COUNT MADE AT 4" INTERVALS.

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

John C. Ketchum 9/14/15
HOWARD SOIL CONSERVATION DISTRICT

DEVELOPER'S CERTIFICATE
"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT 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 C. Ketchum 8/31/15
DEVELOPER

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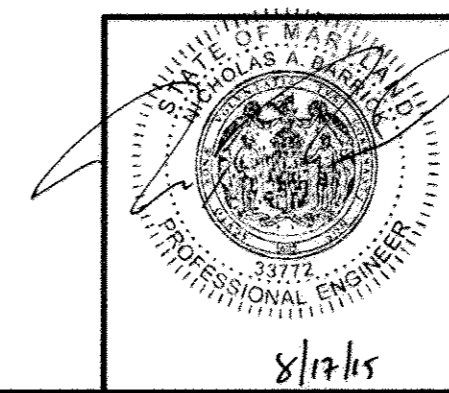
John C. Ketchum 8/29/15
ENGINEER

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Ketcho Dinkel 9-21-15
CHIEF, DIVISION OF LAND DEVELOPMENT

Chris... 9-17-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION

N. M. ... 9-29-15
DIRECTOR

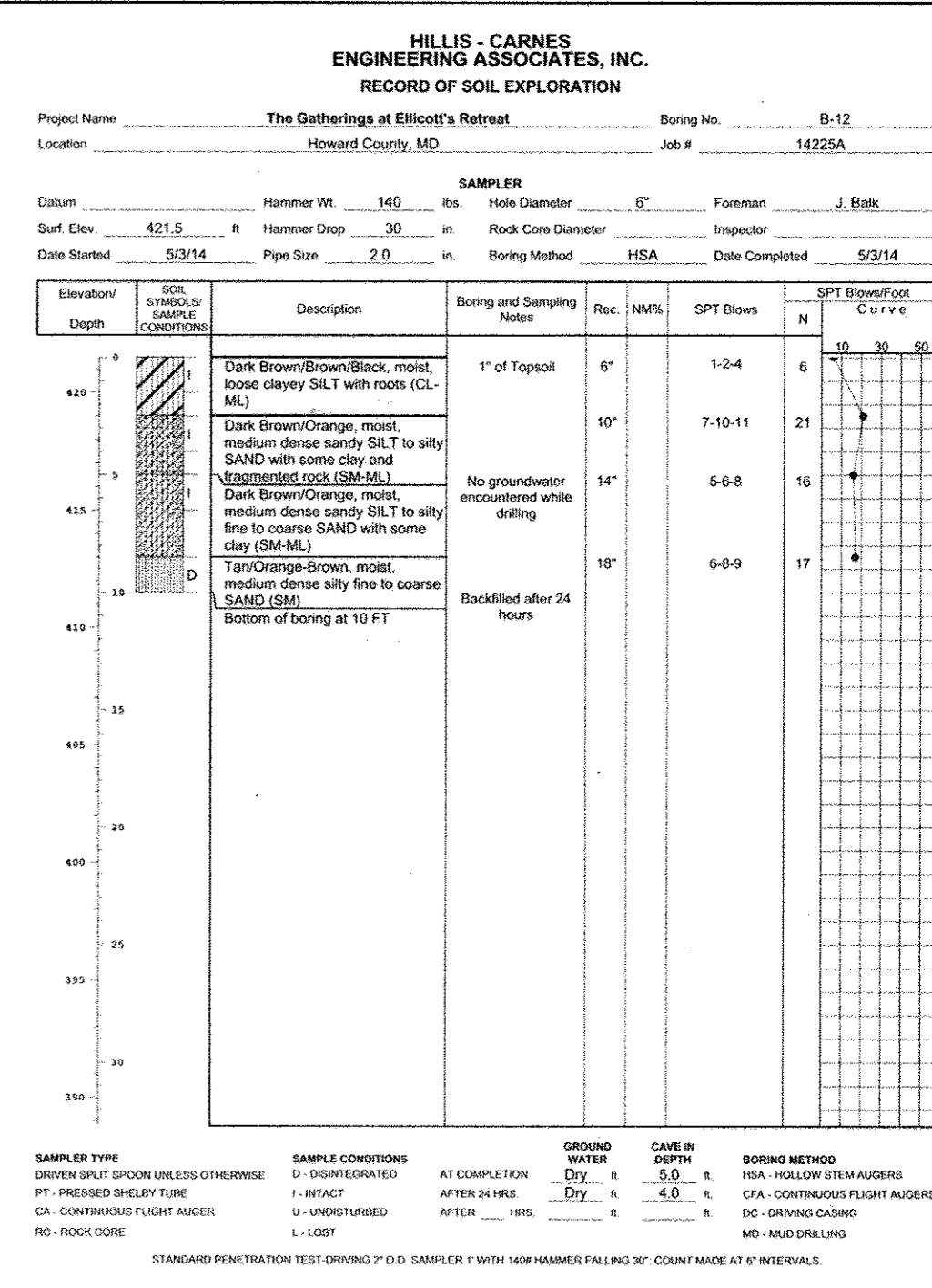
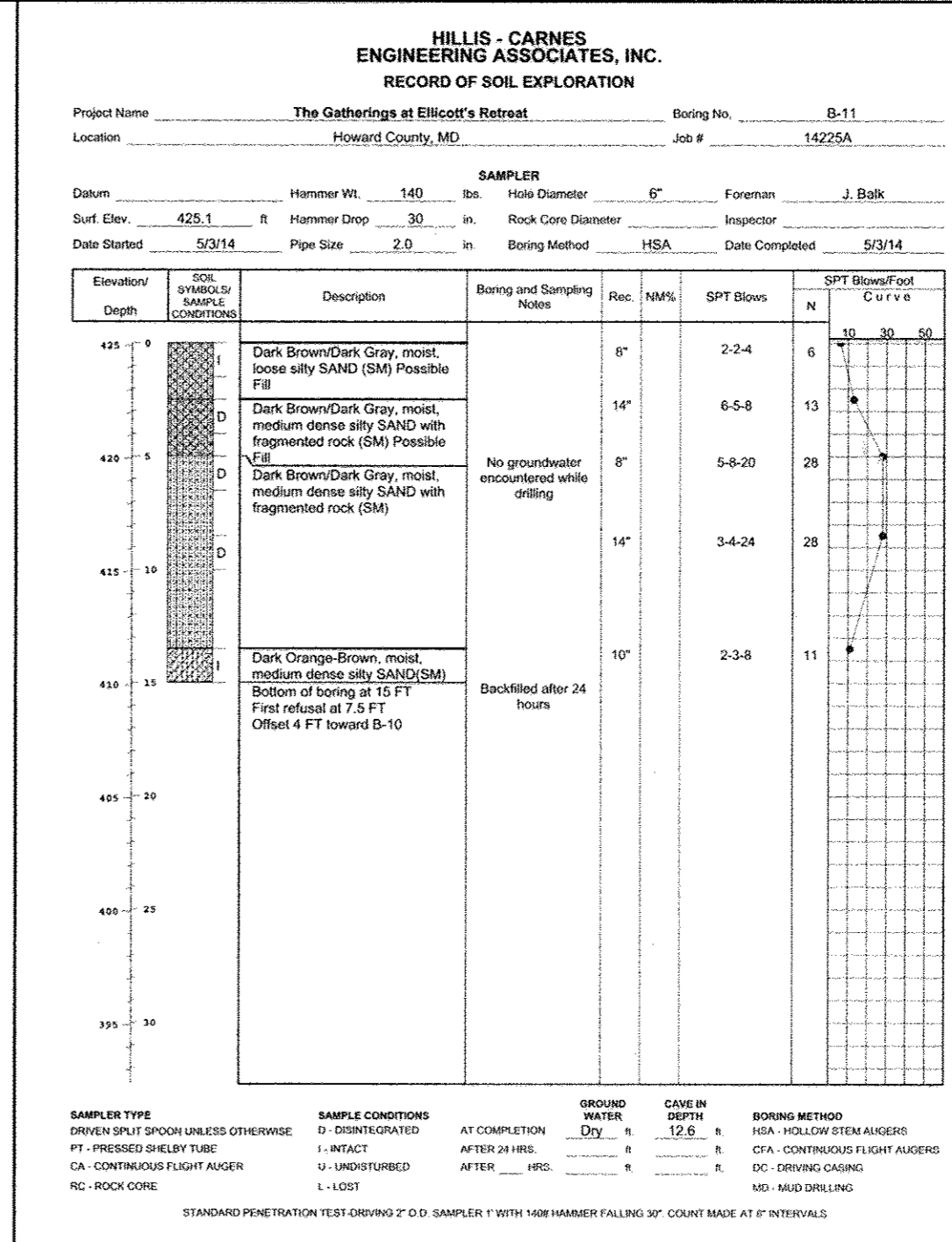
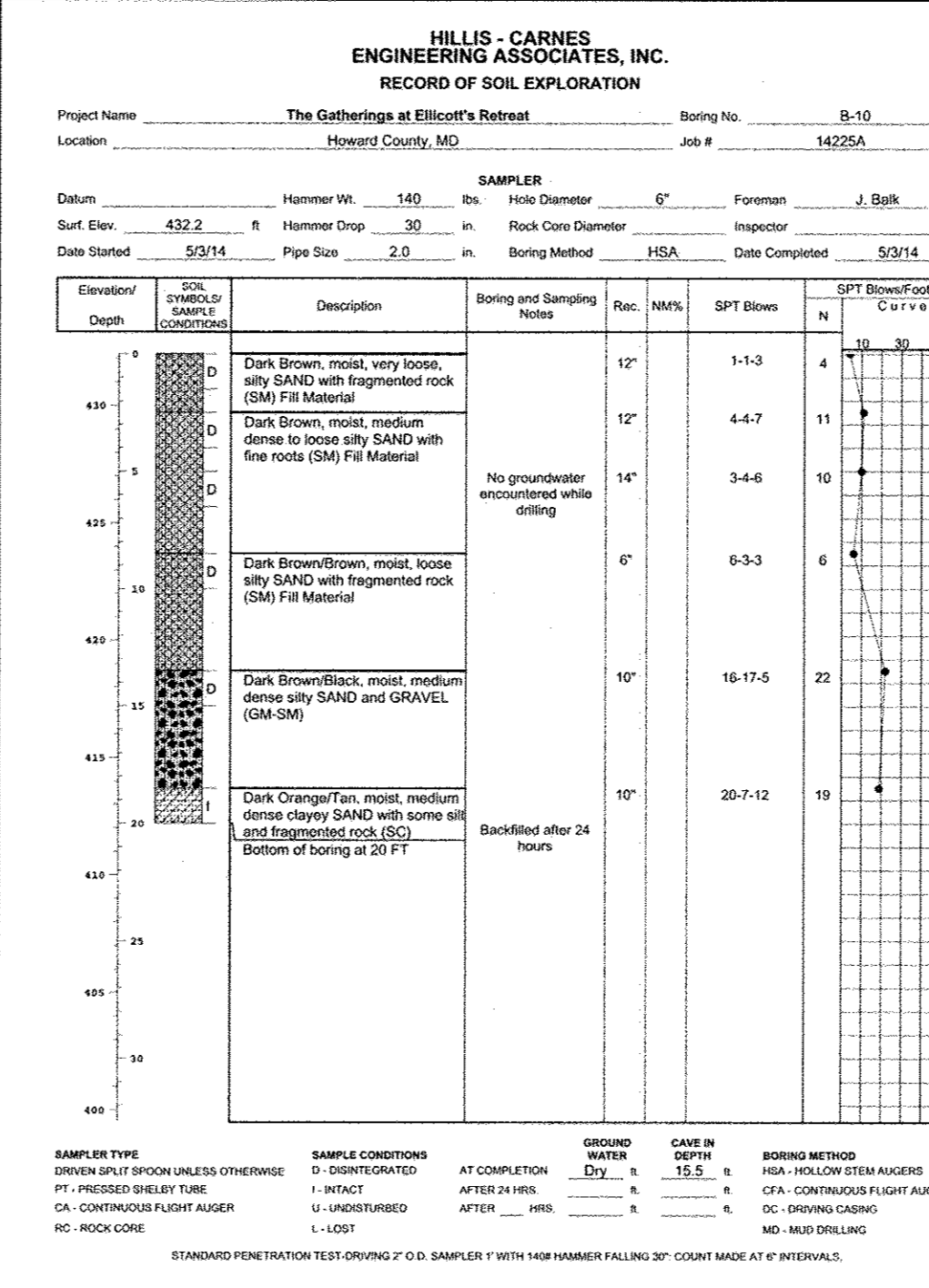
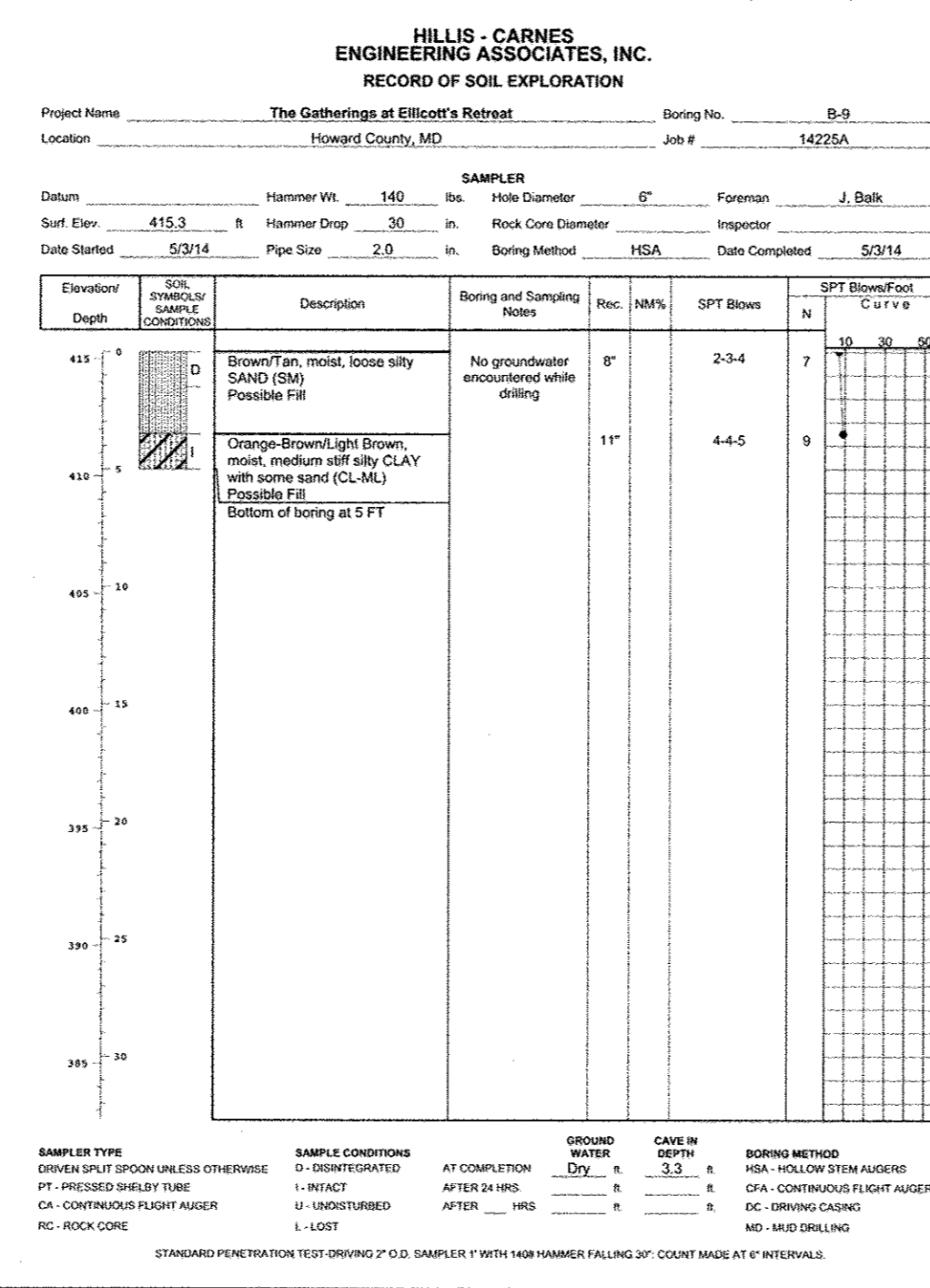
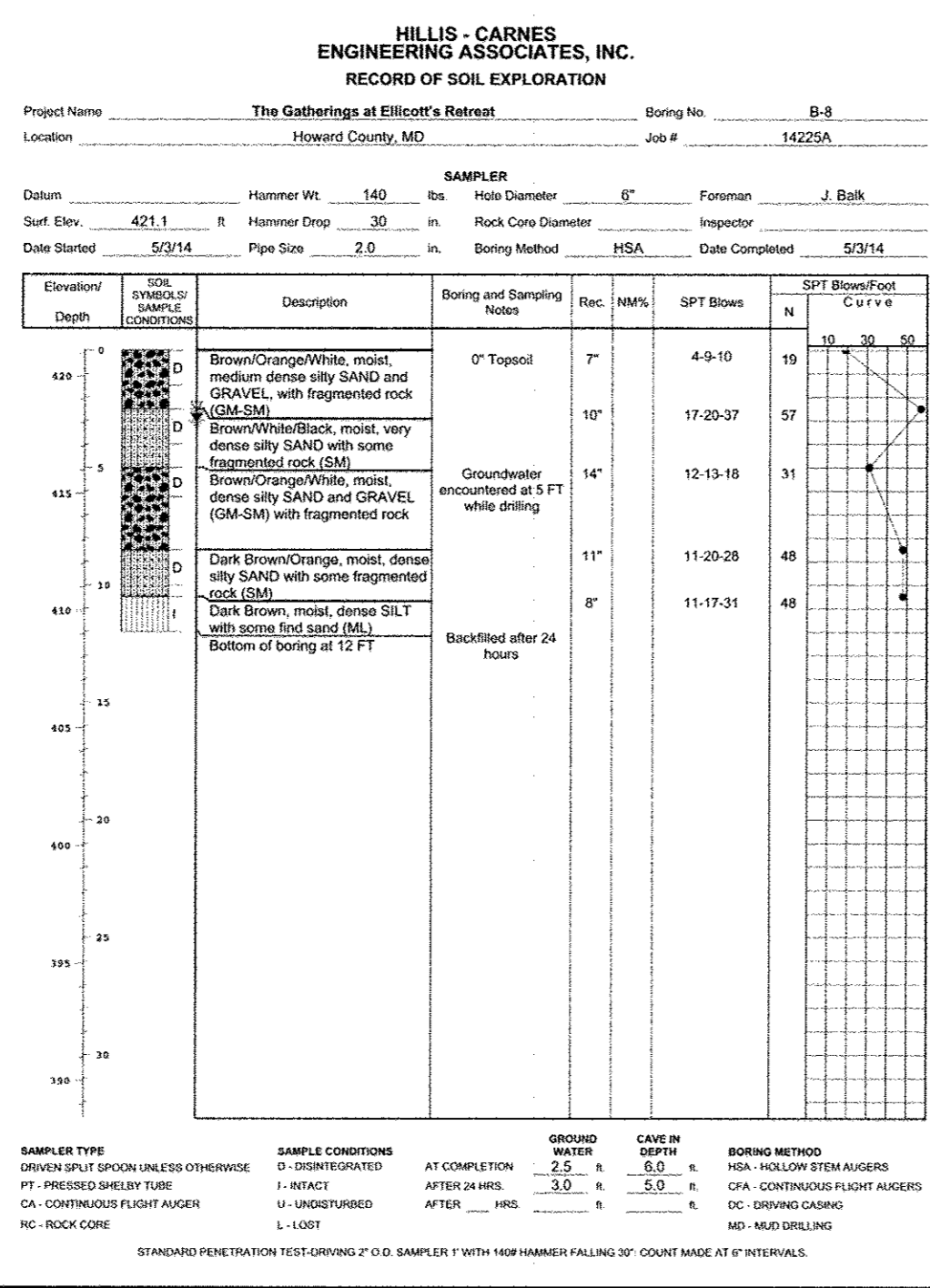
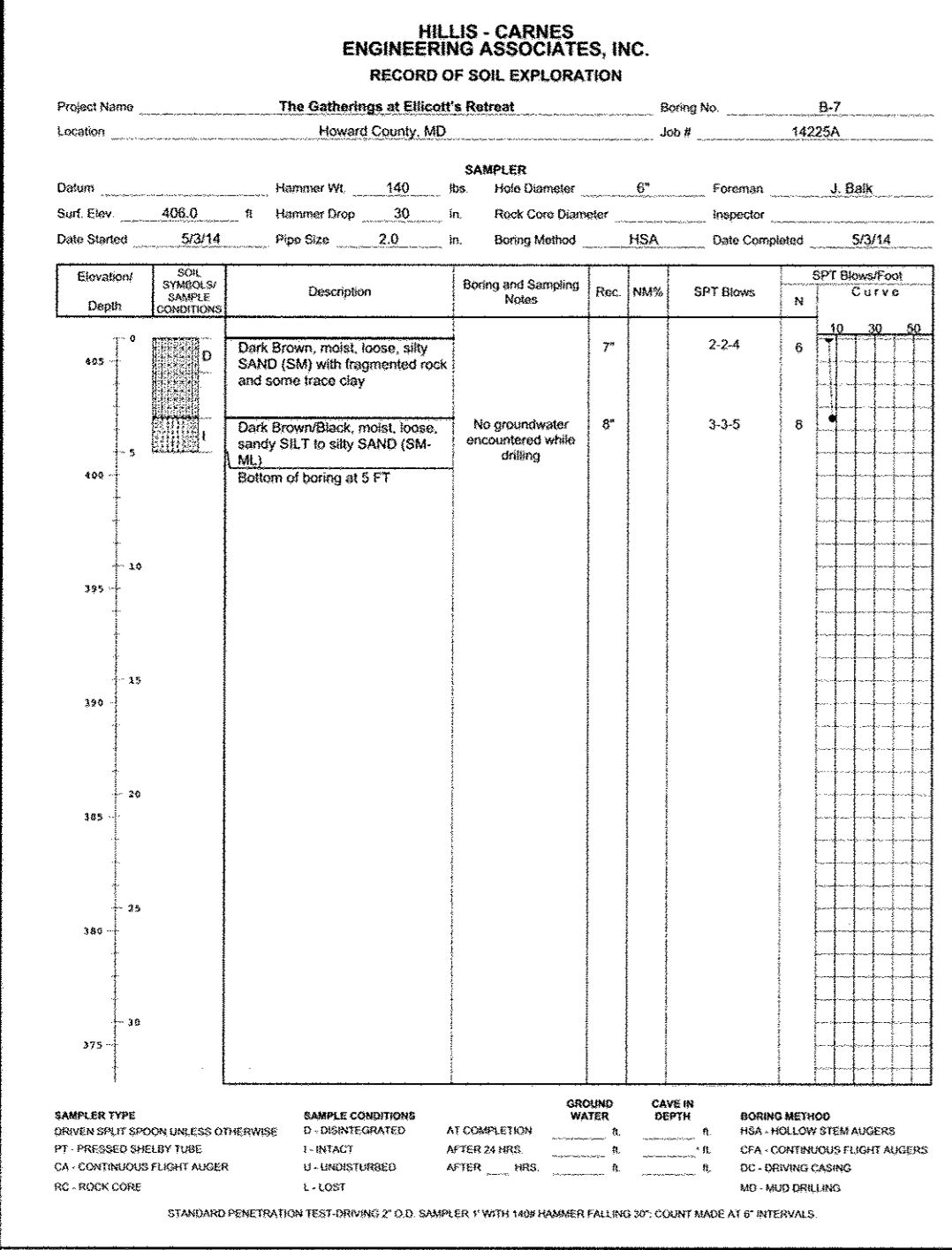
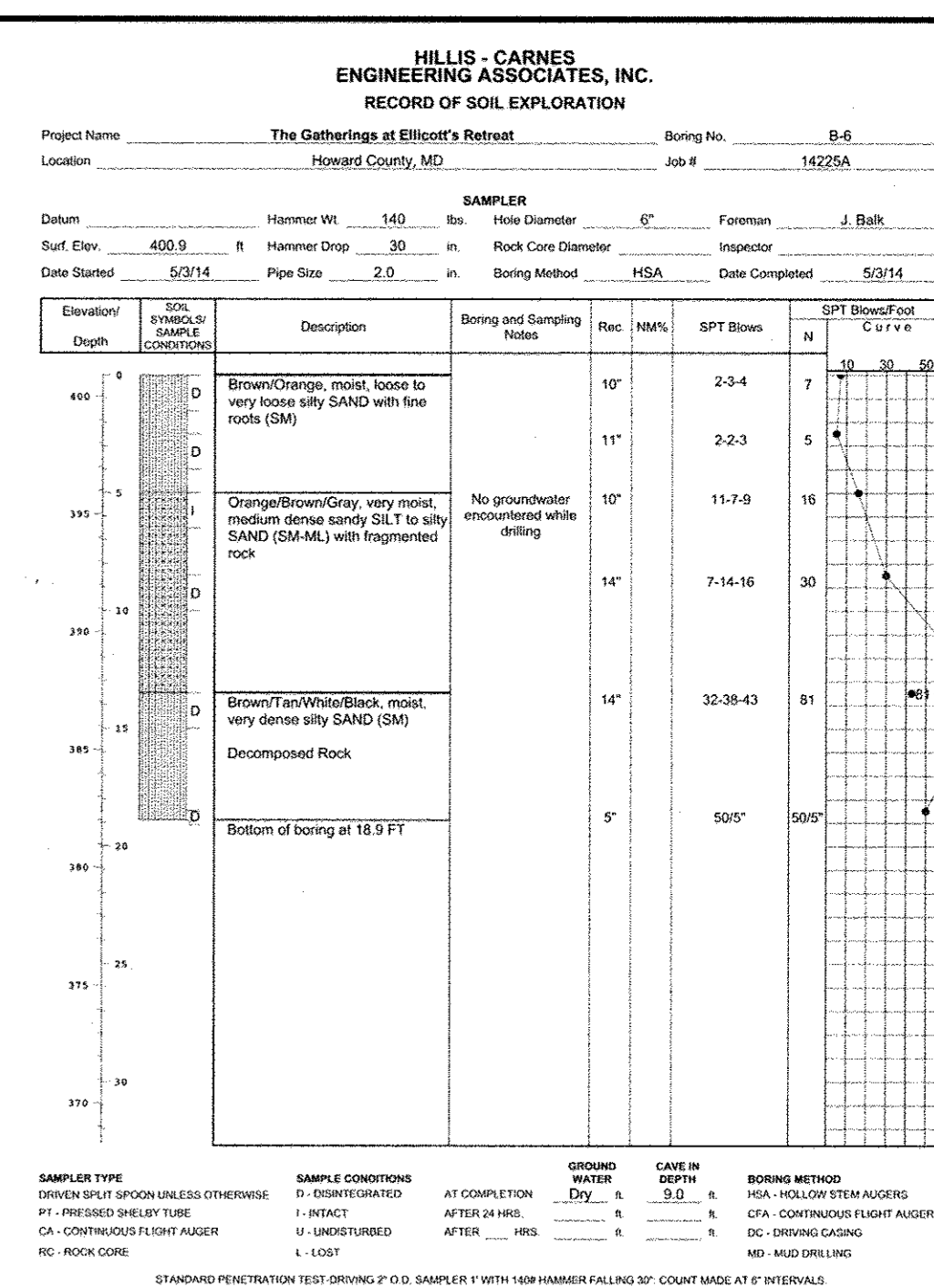
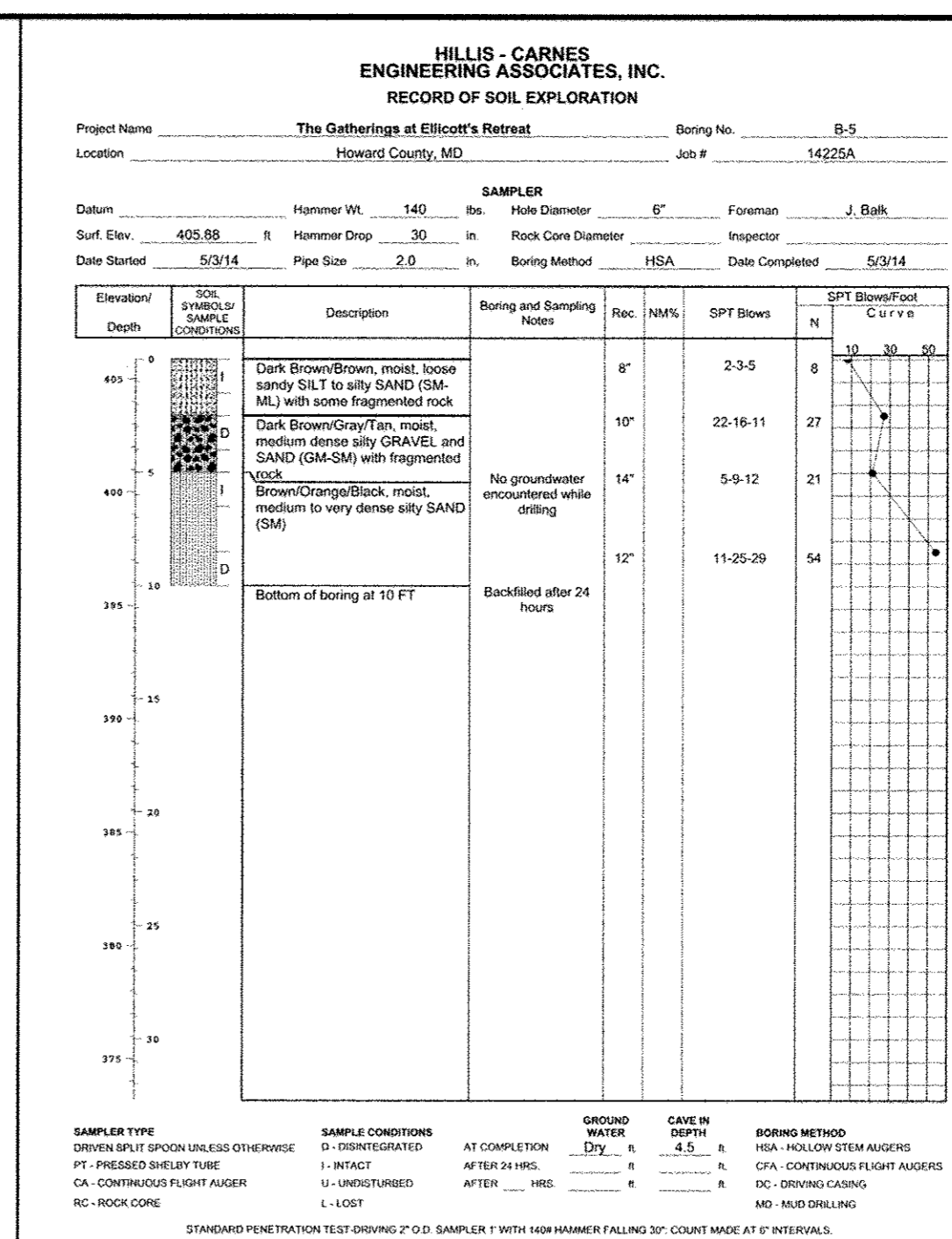
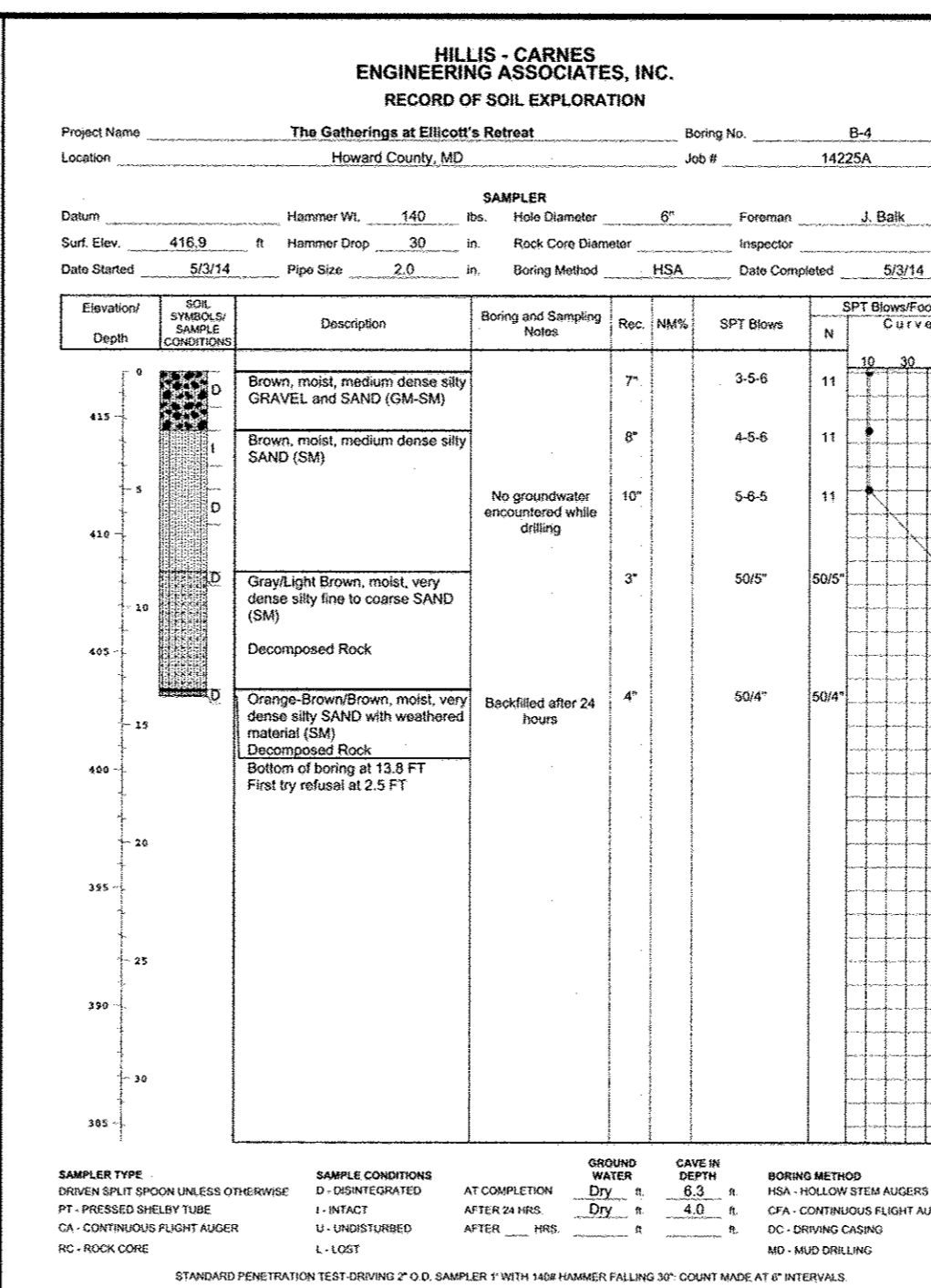
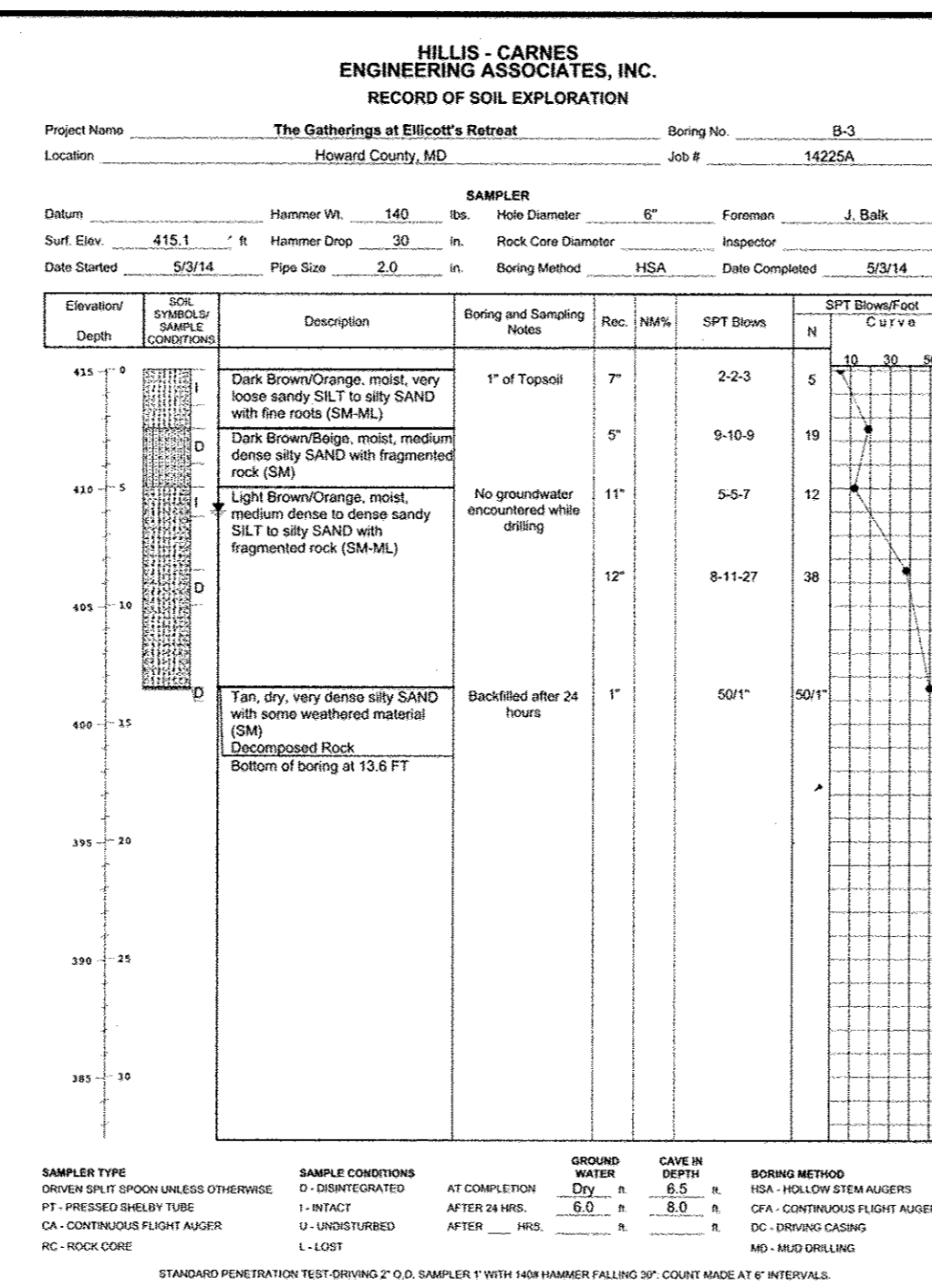
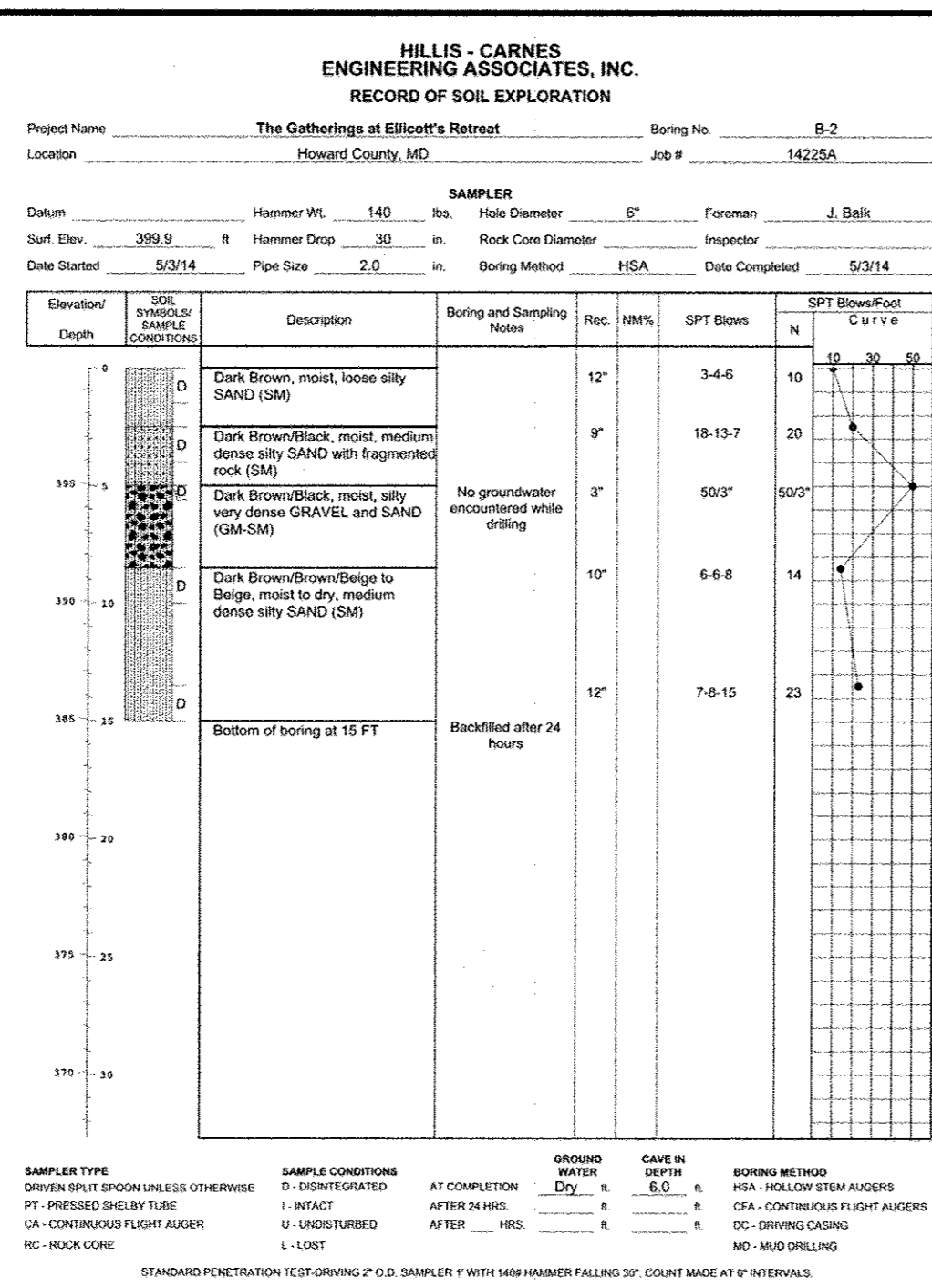
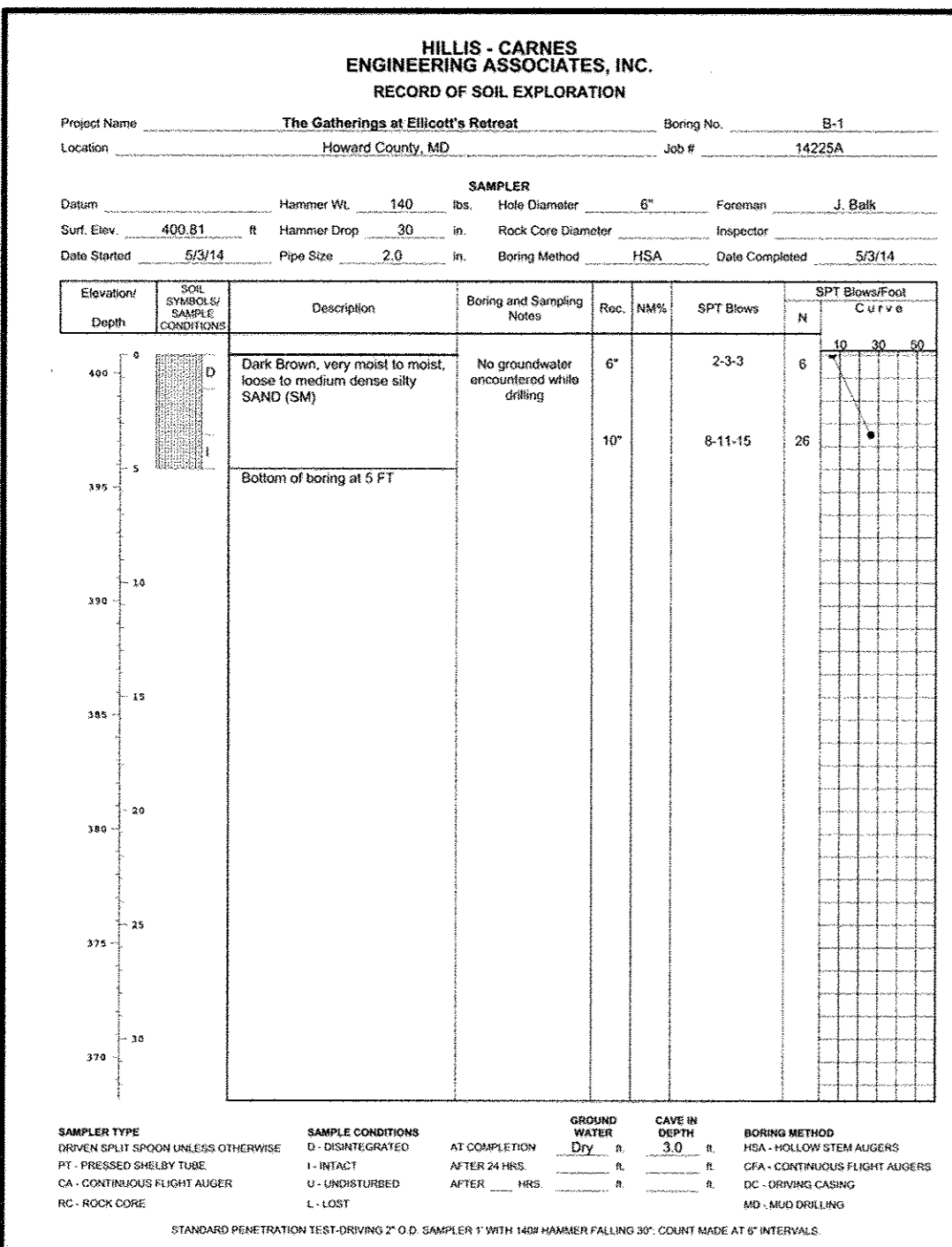


PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 33772 EXP. DATE: 06/16/2017

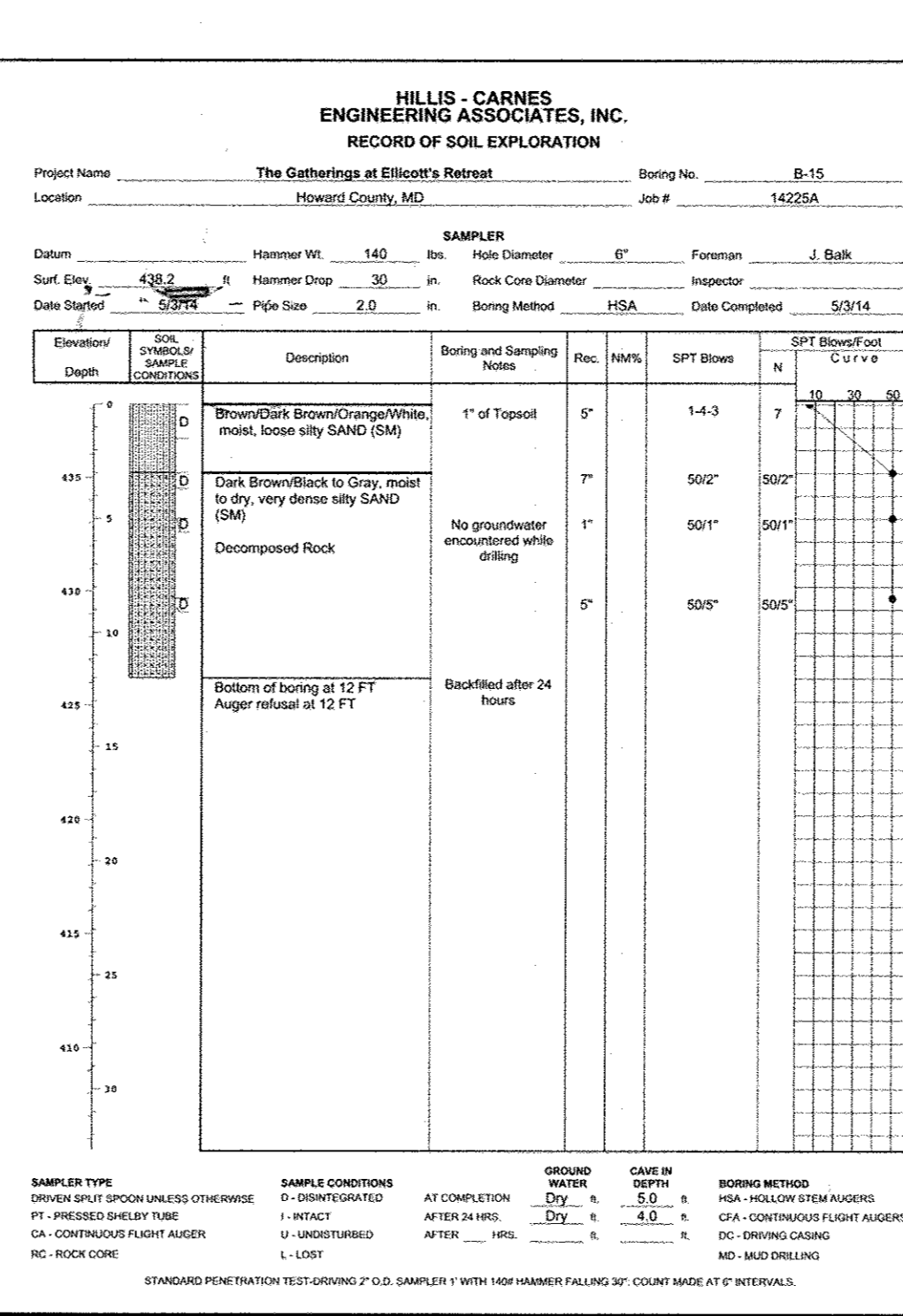
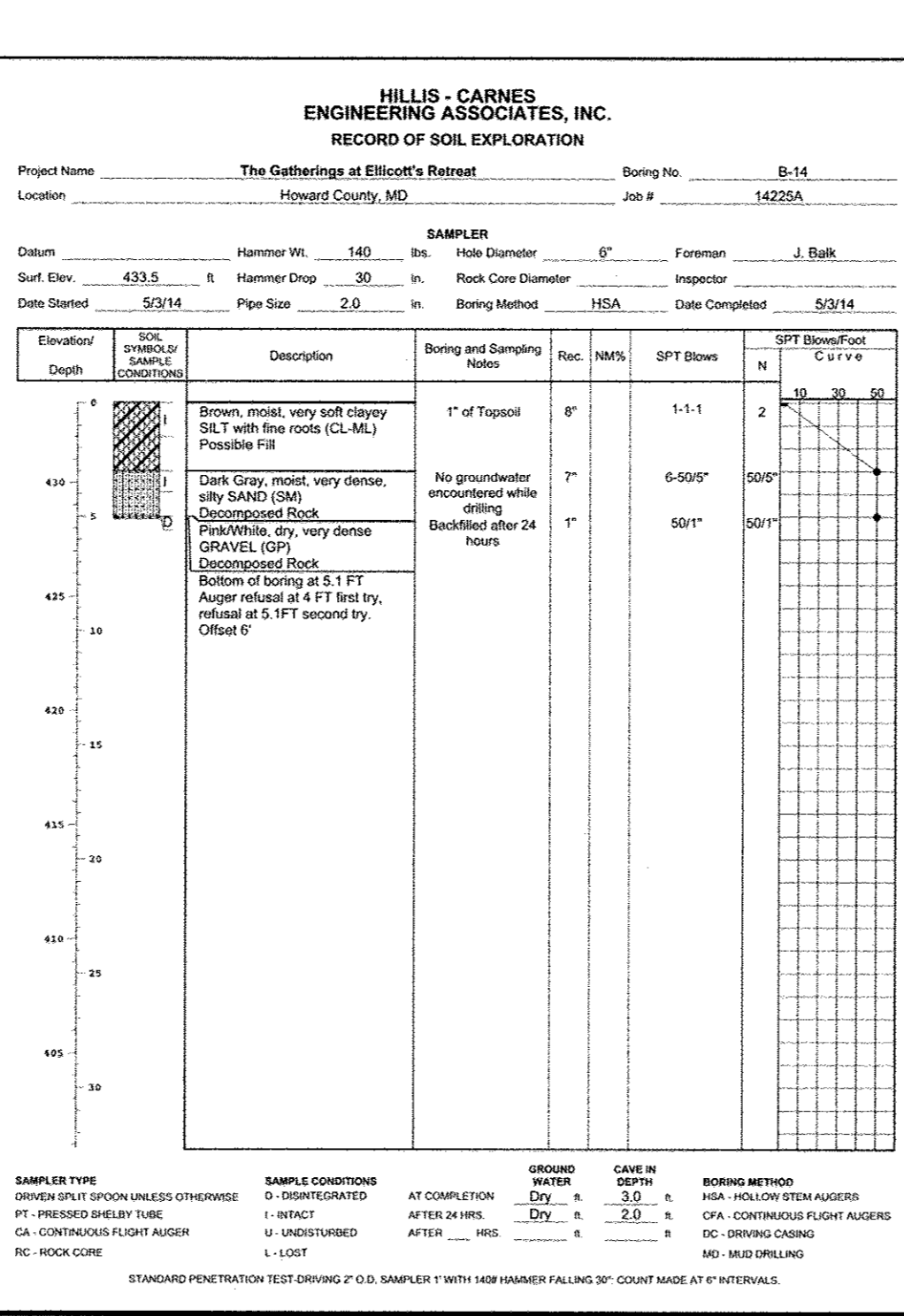
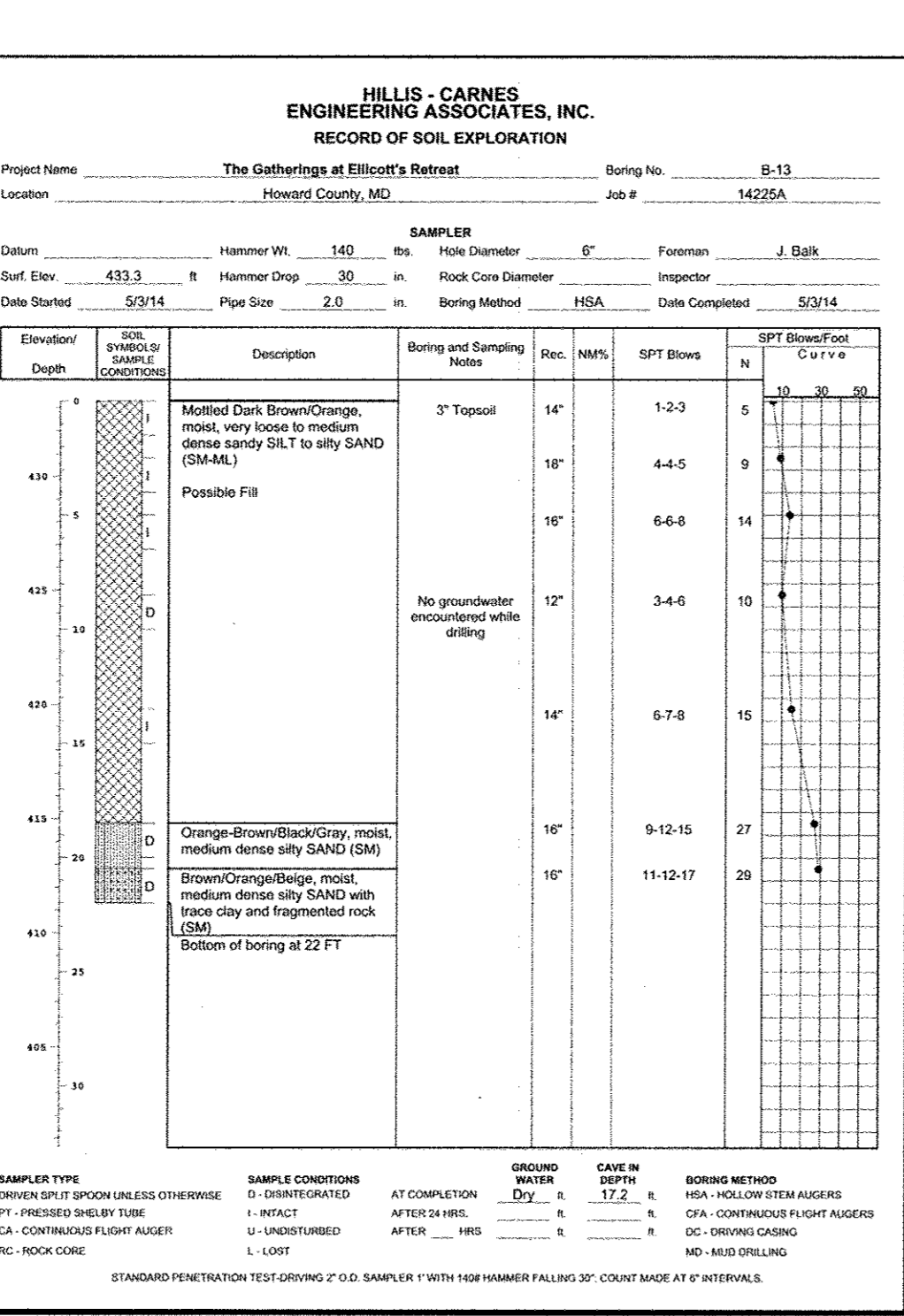
REVISIONS		
NO.	DATE	BY
1	4-5-17	CORRECT PROJECT NAME AND SHEET NUMBER
2	12/22/17	REVISED PAGE NUMBERING

OWNER/DEVELOPER: COMMERCIAL CONTRACTORS INC. 1205 YORK ROAD LUTHERVILLE-TIMONIUM, MD 21093 (410)-825-8400	LEGACY AT ELLICOTT'S RETREAT SEDIMENT AND EROSION CONTROL PROFILES AGE RESTRICTED ADULT HOUSING TAX MAP: 24 GRID: 06 PARCEL: 1085 ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND	
DESIGN NAB DRAWN BRA	DATE 04/05/17 SCALE 1"=20'	KCI PROJECT NO. 27134772 SHEET NO. 37 OF 45
SHEET NO. C-3.08		

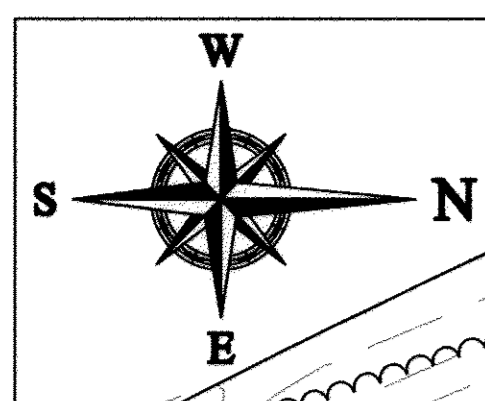
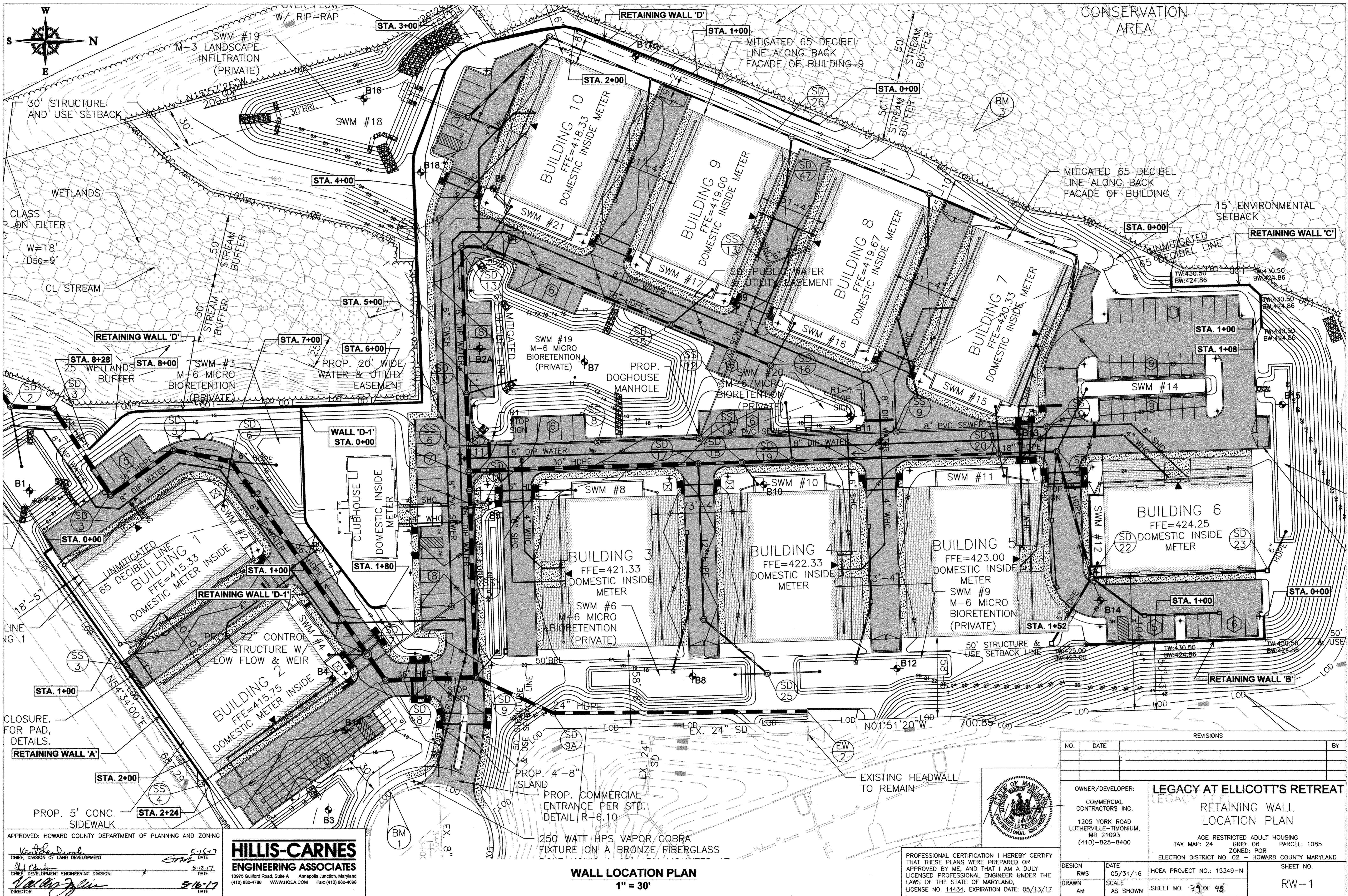




REVIEWED BY HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS... DEVELOPER'S CERTIFICATE... ENGINEER'S CERTIFICATE... APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING



ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS... KCI TECHNOLOGIES... REVISIONS... LEGACY AT ELLICOTT'S RETREAT... SEDIMENT AND EROSION CONTROL BORING LOGS... PROFESSIONAL CERTIFICATION... EXP. DATE: 06/16/2017



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Keith D. Dumb
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 5-15-17

Valerie Zylins
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 5-16-17

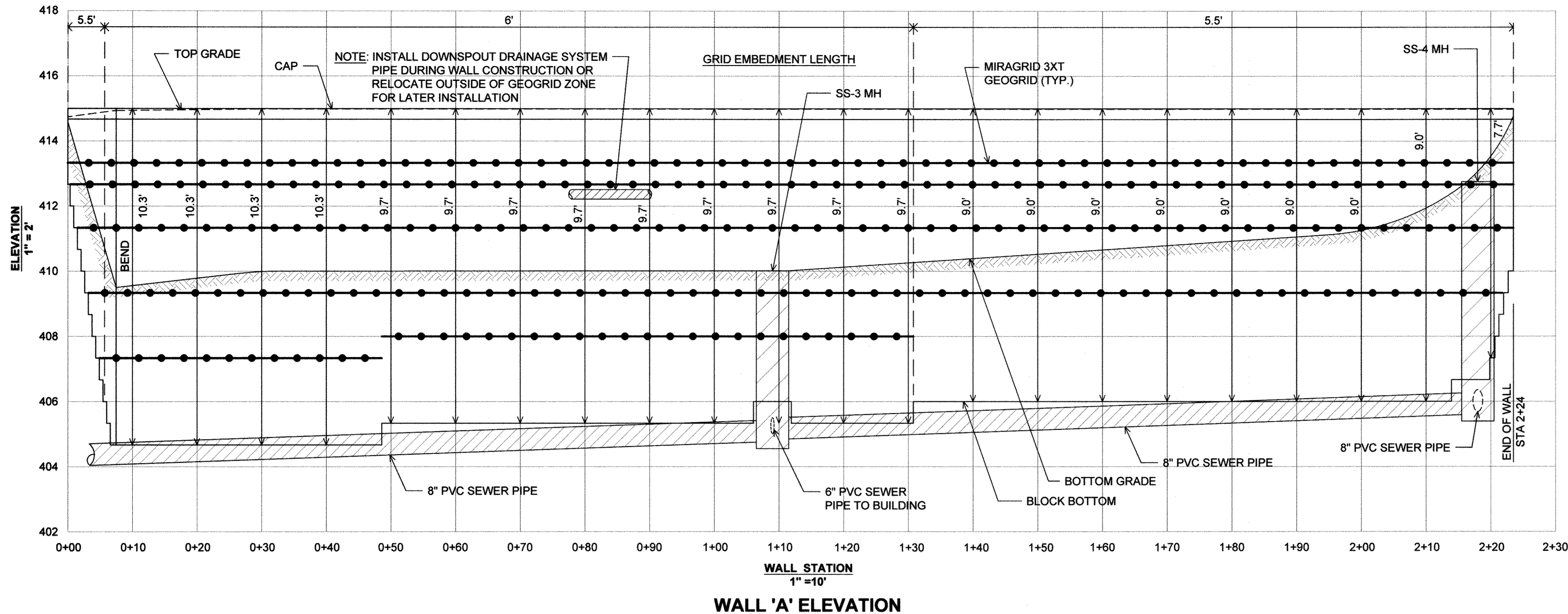
HILLIS-CARNES
ENGINEERING ASSOCIATES
 10975 Guilford Road, Suite A Annapolis Junction, Maryland
 (410) 880-4788 WWW.HCEA.COM Fax: (410) 880-4096

WALL LOCATION PLAN
 1" = 30'

PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE PLANS 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. 14434, EXPIRATION DATE: 05/13/17.

REVISIONS			
NO.	DATE	BY	

OWNER/DEVELOPER: COMMERCIAL CONTRACTORS INC. 1205 YORK ROAD LUTHERVILLE-TIMONIUM, MD 21093 (410)-825-8400	LEGACY AT ELLICOTT'S RETREAT RETAINING WALL LOCATION PLAN
DESIGN RWS DATE 05/31/16 DRAWN AM SCALE AS SHOWN	HCEA PROJECT NO.: 15349-N SHEET NO. 39 OF 45
AGE RESTRICTED ADULT HOUSING TAX MAP: 24 GRID: 06 ZONED: POR ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND	PARCEL: 1085 SHEET NO. RW-1



NOTE:
FIELD CONFIRM FINAL TOP AND
BOTTOM WALL GRADES AND ADJUST
WALL BLOCK ACCORDINGLY.

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 - COLOR MAY BE SPECIFIED BY THE OWNER.
FACE FINISH - SCULPTURED ROCK FACE IN ANGULAR TRI-PLANNER OR FLAT CONFIGURATION. OTHER FACE FINISHES WILL NOT BE ALLOWED WITHOUT WRITTEN APPROVAL OF OWNER.

- 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 (6% 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 16" (W) x 12" (D) MINIMUM.

UNIT WEIGHT - 75 LBS/UNIT MINIMUM FOR STANDARD WEIGHT AGGREGATES.

INTER-UNIT SHEAR STRENGTH - 1000 PLF MINIMUM AT 2 PSI NORMAL PRESSURE; AT 2 PSI NORMAL FORCE.

GEOGRID/UNIT PEAK CONNECTION STRENGTH - 1000 PLF MINIMUM.

D. MODULAR CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING CONSTRUCTABILITY REQUIREMENTS:

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

A. SHEAR CONNECTORS SHALL BE 1/2 INCH DIAMETER THERMOSET ISOPHTHALIC POLYESTER RESIN-PROTRUDED 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 BE TYPE SM (UNLESS OTHERWISE NOTED), 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	0-60
NO. 200	0-35

PLASTICITY INDEX (PI) <10 AND LIQUID LIMIT <35 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 D998. 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 LIGHTWEIGHT 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.

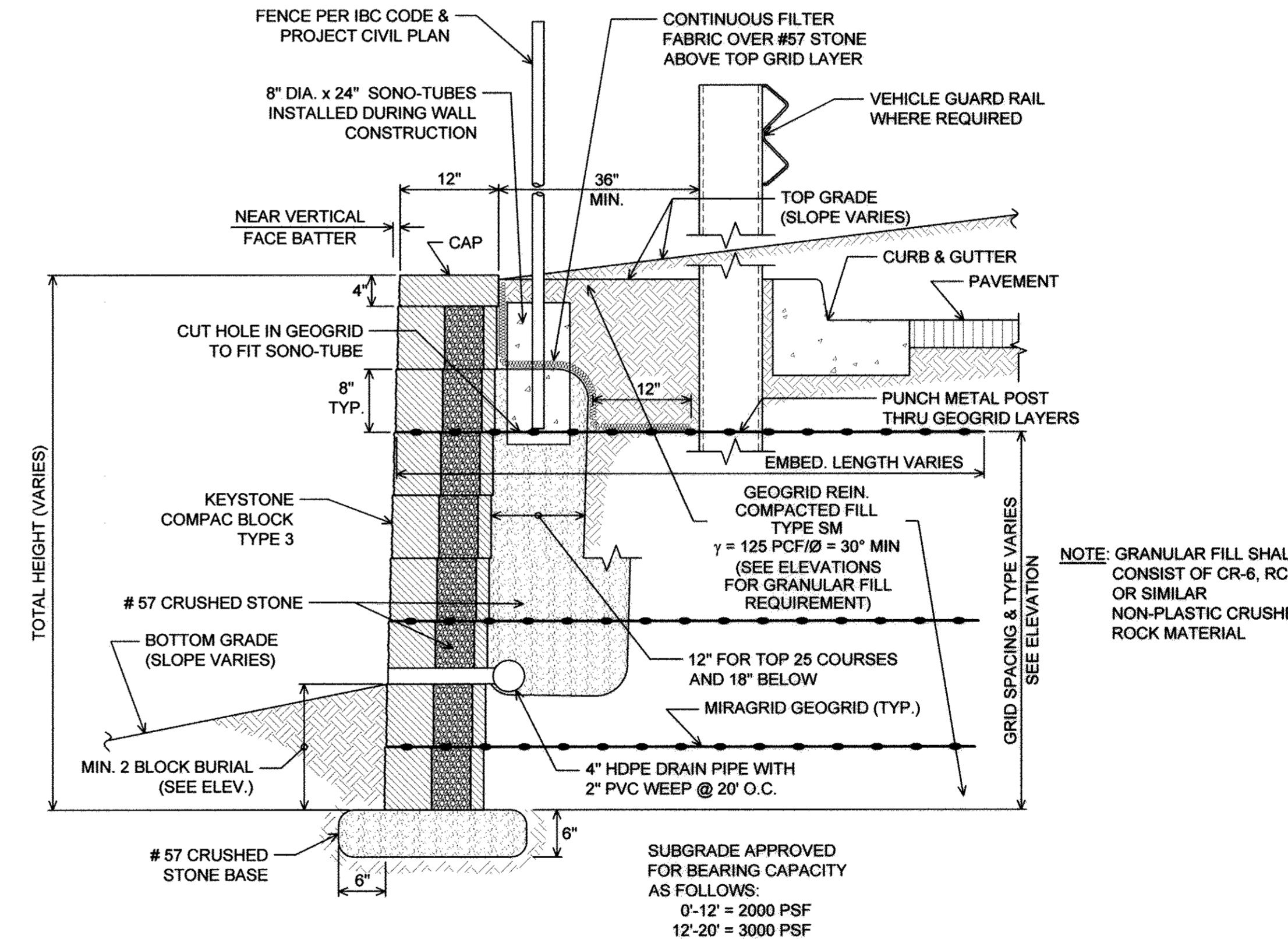
3.06 CAP INSTALLATION

A. CAP UNITS SHALL BE GLUED TO UNDERLYING UNITS WITH AN ALL-WEATHER ADHESIVE RECOMMENDED BY THE MANUFACTURER.

3.07 FIELD QUALITY CONTROL

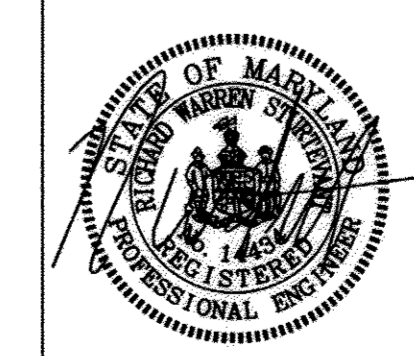
A. THE OWNER SHALL ENGAGE INSPECTION AND TESTING SERVICES, INCLUDING INDEPENDENT LABORATORIES, TO PROVIDE QUALITY ASSURANCE AND TESTING SERVICES DURING CONSTRUCTION.

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.



NOTE: GRANULAR FILL SHALL CONSIST OF CR-6, RC-6 OR SIMILAR NON-PLASTIC CRUSHED ROCK MATERIAL

TYPICAL WALL SECTION N.T.S.



PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE PLANS 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. 14434, EXPIRATION DATE: 05/13/17.

REVISIONS		
NO.	DATE	BY

OWNER/DEVELOPER:
COMMERCIAL CONTRACTORS INC.
1205 YORK ROAD
LUTHERVILLE-TIMONIUM,
MD 21093
(410)-825-8400

LEGACY AT ELLICOTT'S RETREAT
RETAINING WALL 'A' & WALL
CONSTRUCTION DETAILS

AGE RESTRICTED ADULT HOUSING
GRID: 06
TAX MAP: 24
ZONED: POR
ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

DESIGN RWS DATE 05/31/16 HCEA PROJECT NO.: 15349-N SHEET NO.
DRAWN AM SCALE AS SHOWN SHEET NO. 40 OF 45 RW-2

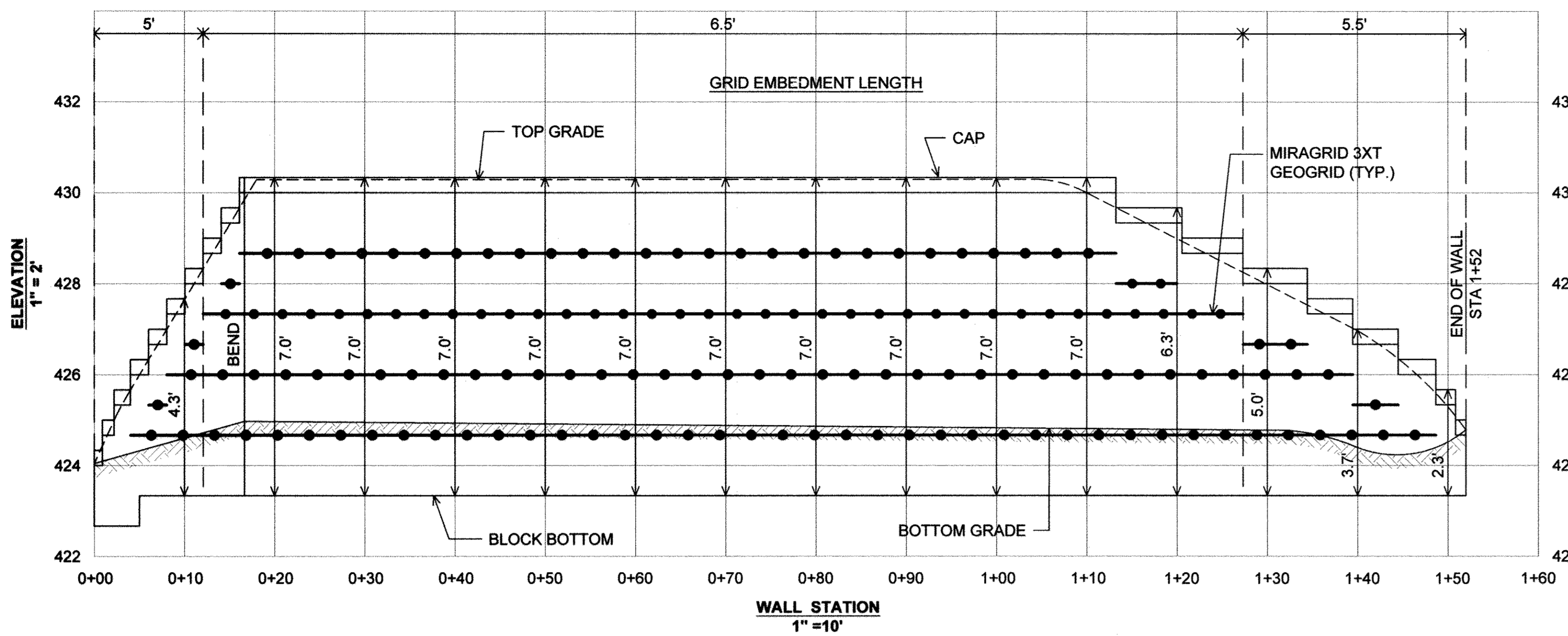
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Kate Schuler 5-15-17
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

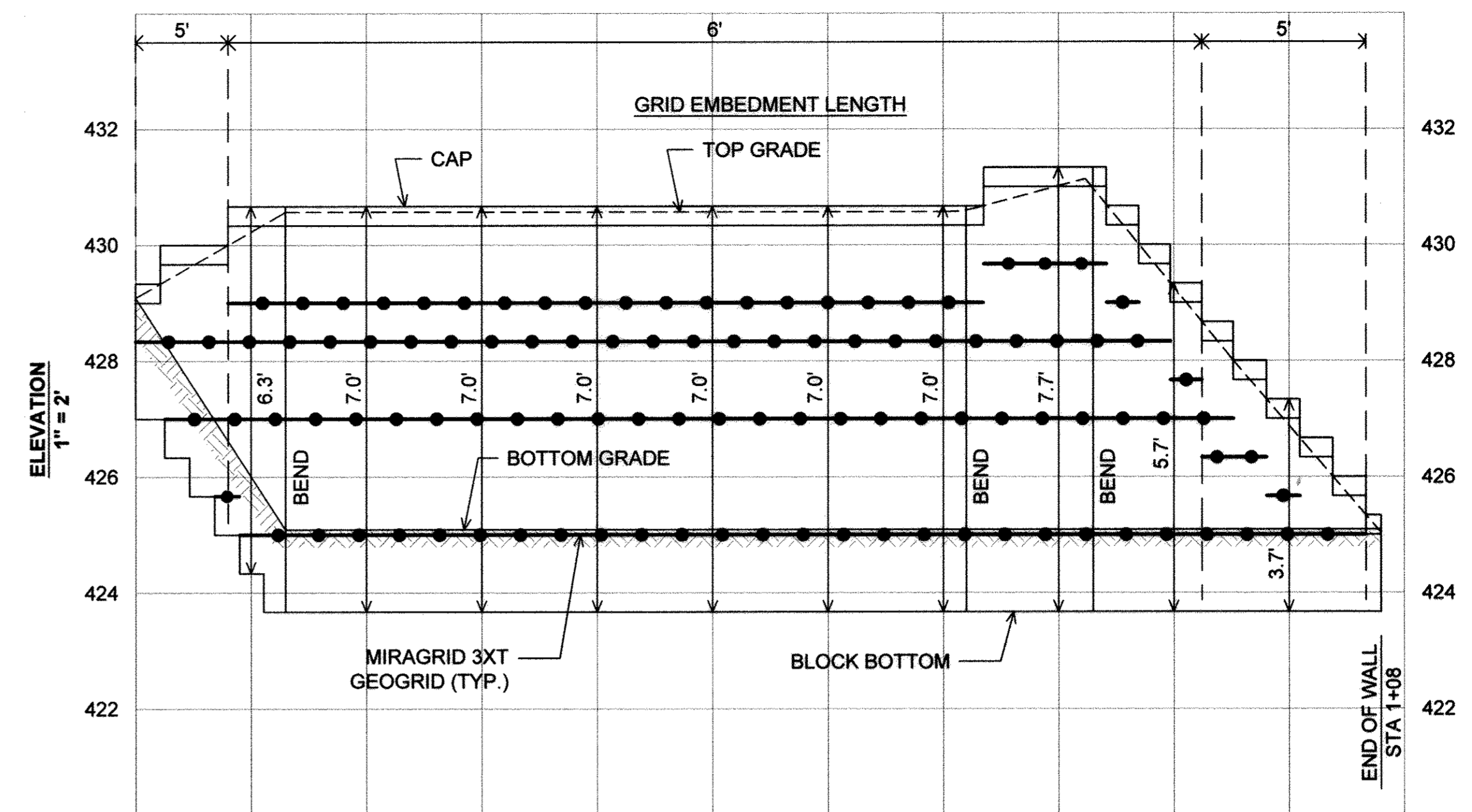
Valdis J. Miller 5-16-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Valdis J. Miller 5-16-17
DIRECTOR DATE

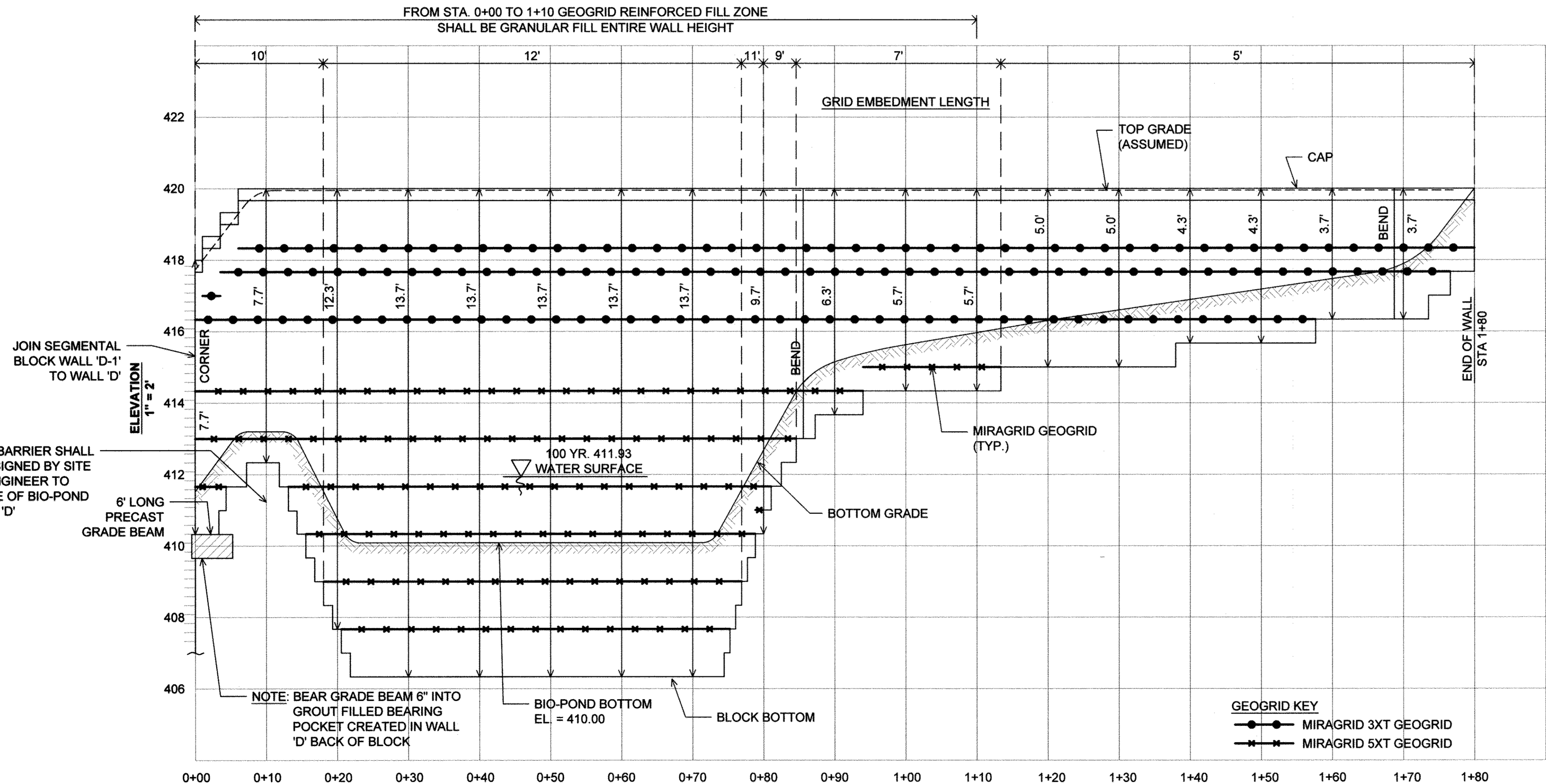
HILLIS-CARNES
ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A Annapolis Junction, Maryland
(410) 880-4788 WWW.HCEA.COM Fax: (410) 880-4098



WALL 'B' ELEVATION



WALL 'C' ELEVATION



WALL 'D-1' ELEVATION

NOTE: AN IMPERMEABLE BARRIER SHALL BE PLACED AS DESIGNED BY SITE GEOTECHNICAL ENGINEER TO PREVENT SEEPAGE OF BIO-POND WATER INTO WALL 'D'

NOTE: BEAR GRADE BEAM 6" INTO GROUT FILLED BEARING POCKET CREATED IN WALL 'D' BACK OF BLOCK

GEOGRID KEY
 ●●● MIRAGRID 3XT GEOGRID
 ××× MIRAGRID 5XT GEOGRID

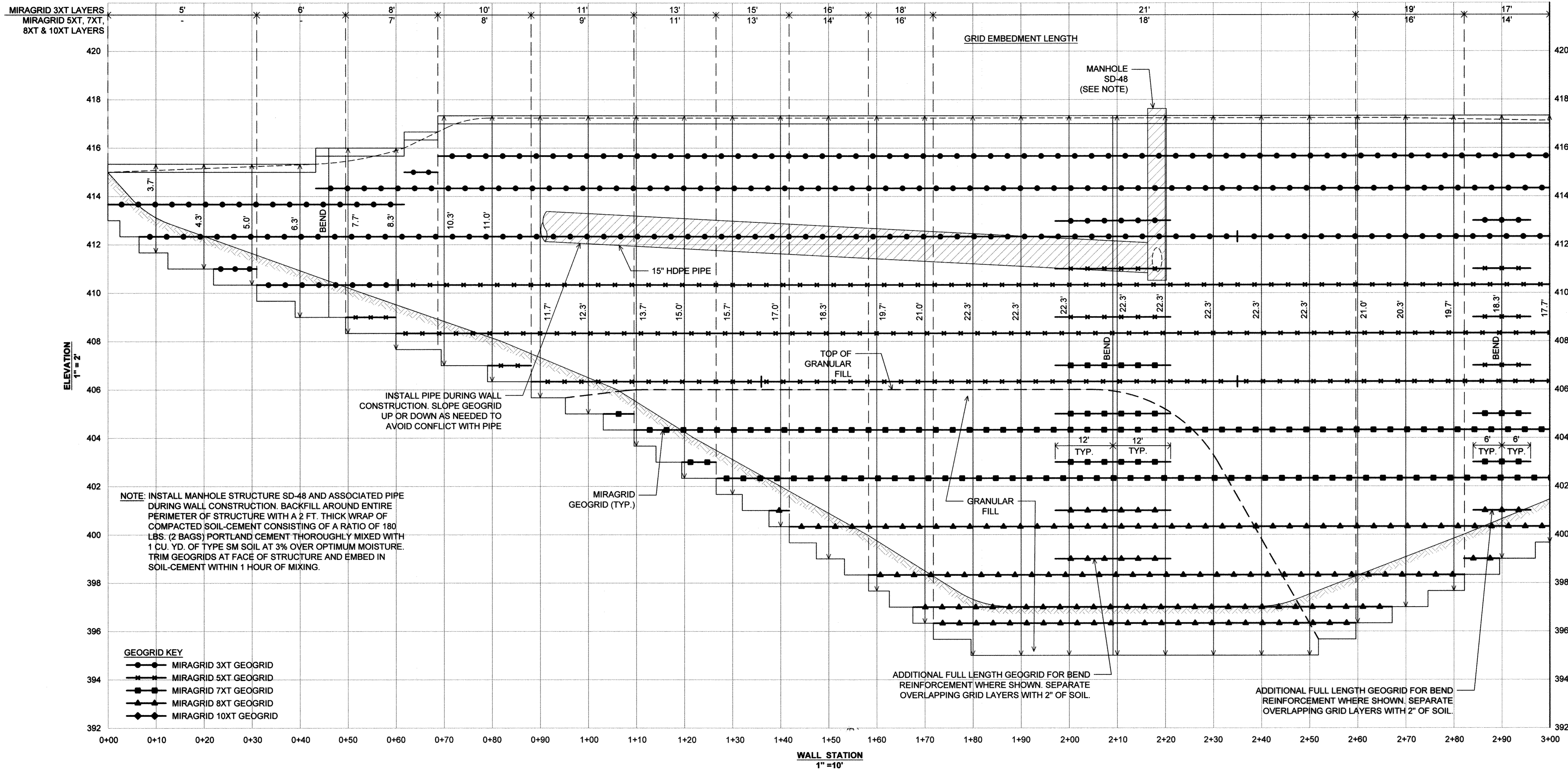
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 Chief, Development Engineering Division
 Director

HILLIS-CARNES ENGINEERING ASSOCIATES
 10975 Guilford Road, Suite A Annapolis Junction, Maryland
 (410) 860-4788 WWW.HCEA.COM Fax: (410) 860-4098

PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE PLANS 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. 14434, EXPIRATION DATE: 05/13/17.

REVISIONS		
NO.	DATE	BY

OWNER/DEVELOPER: COMMERCIAL CONTRACTORS INC. 1205 YORK ROAD LUTHERVILLE-TIMONIUM, MD 21093 (410)-825-8400	LEGACY AT ELLICOTT'S RETREAT RETAINING WALL 'B', 'C' & "D-1" ELEVATIONS AGE RESTRICTED ADULT HOUSING TAX MAP: 24 GRID: 06 PARCEL: 1085 ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND	
DESIGN RWS DRAWN AM	DATE 05/31/16 SCALE AS SHOWN	HCEA PROJECT NO.: 15349-N SHEET NO. 41 OF 45
SHEET NO.		RW-3



MATCH LINE SHEET RW-5

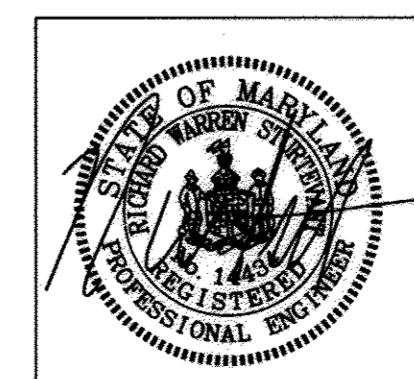
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Kurt Schuchman 5-15-17
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Walter J. Griffin 5-12-17
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Walter J. Griffin 5-16-17
 DIRECTOR DATE

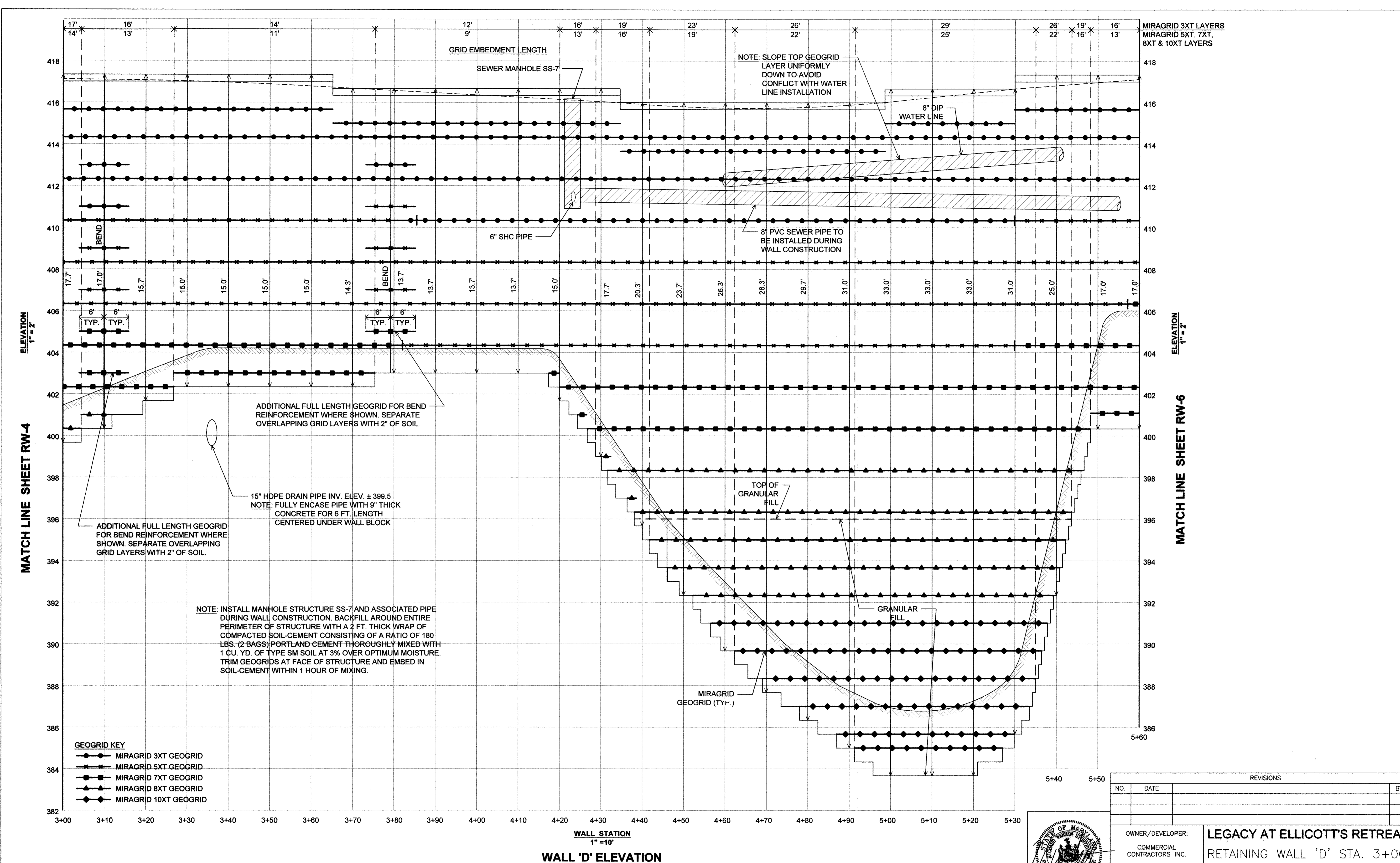
HILLIS-CARNES
ENGINEERING ASSOCIATES
 10975 Guilford Road, Suite A Annapolis Junction, Maryland
 (410) 880-4788 WWW.HCEA.COM Fax: (410) 880-4098



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REVISIONS		
NO.	DATE	BY

OWNER/DEVELOPER: COMMERCIAL CONTRACTORS INC. 1205 YORK ROAD LUTHERVILLE-TIMONIUM, MD 21093 (410)-825-8400	LEGACY AT ELLICOTT'S RETREAT RETAINING WALL 'D' STA. 0+00 TO 3+00 ELEVATION AGE RESTRICTED ADULT HOUSING TAX MAP: 24 GRID: 06 PARCEL: 1085 ZONED: POR ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND
DESIGN RWS DATE 05/31/16 DRAWN AM SCALE AS SHOWN	HCEA PROJECT NO.: 15349-N SHEET NO. RW-4 SHEET NO. 42 OF 45



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Handwritten signature
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 5-15-17

Handwritten signature
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 5-12-17

Handwritten signature
 DIRECTOR
 DATE: 5-16-17

HILLIS-CARNES ENGINEERING ASSOCIATES
 10975 Guilford Road, Suite A Annapolis Junction, Maryland
 (410) 860-4788 WWW.HCEA.COM Fax: (410) 860-4098

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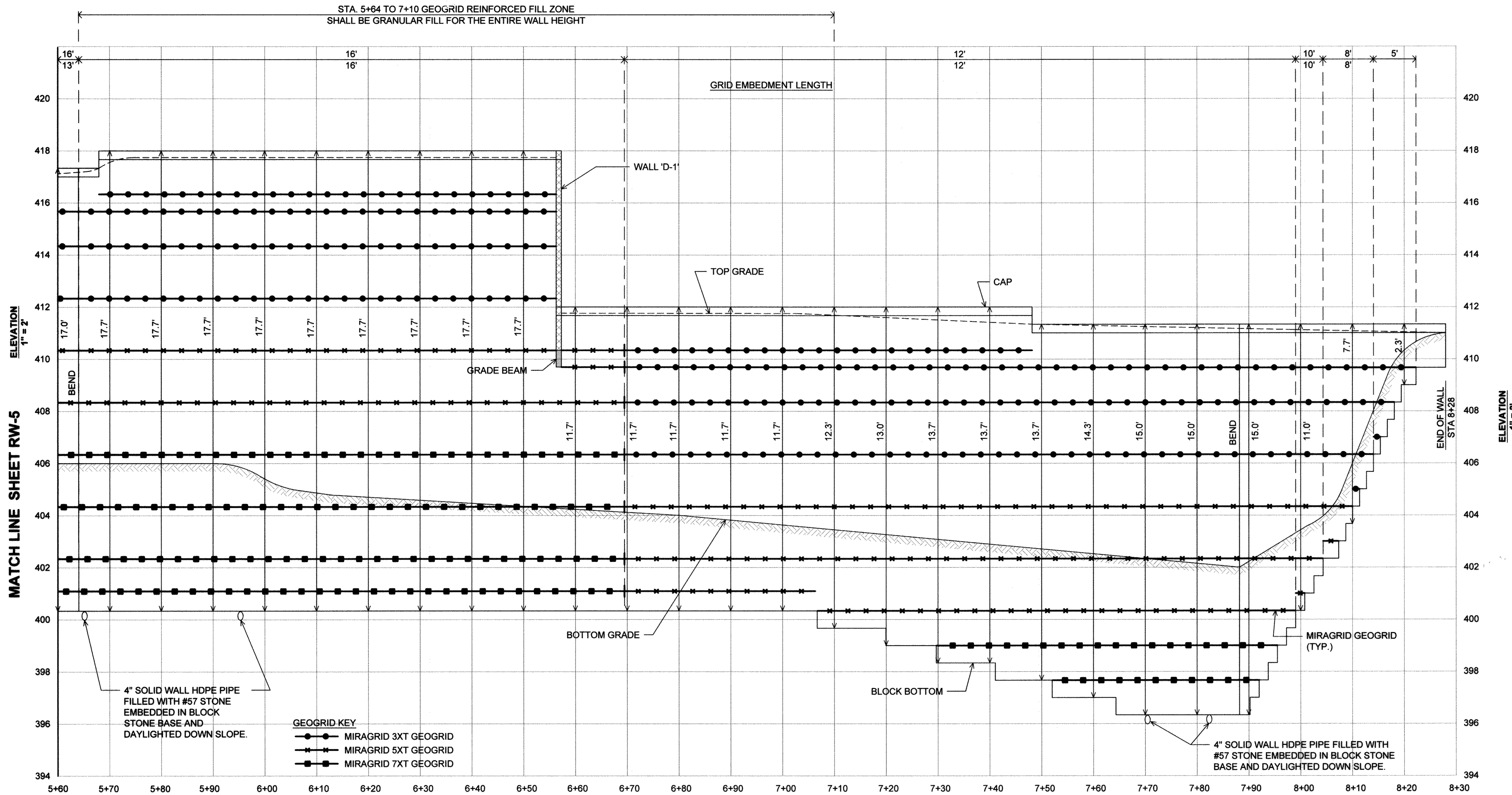
OWNER/DEVELOPER:
 COMMERCIAL CONTRACTORS INC.
 1205 YORK ROAD
 LUTHERVILLE-TIMONIUM,
 MD 21093
 (410)-825-8400

LEGACY AT ELLICOTT'S RETREAT
 RETAINING WALL 'D' STA. 3+00
 TO 5+60 ELEVATION

AGE RESTRICTED ADULT HOUSING
 TAX MAP: 24 GRID: 06 PARCEL: 1085
 ZONED: POR
 ELECTION DISTRICT NO. 02 HOWARD COUNTY MARYLAND

DESIGN RWS DATE 05/31/16
 DRAWN AM SCALE AS SHOWN
 SHEET NO. 43 OF 45

HCEA PROJECT NO.: 15349-N SHEET NO. RW-5



NOTE:
FOR ALL WALLS FIELD CONFIRM FINAL
TOP AND BOTTOM WALL GRADES AND
ADJUST WALL BLOCK LOCATION AND
ELEVATION ACCORDINGLY.

GEOGRID KEY
 ●●●●● MIRAGRID 3XT GEOGRID
 ××××× MIRAGRID 5XT GEOGRID
 ■■■■■ MIRAGRID 7XT GEOGRID

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature]
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 5-15-17
 [Signature]
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 5-12-17
 [Signature]
 DIRECTOR
 DATE: 5-16-17

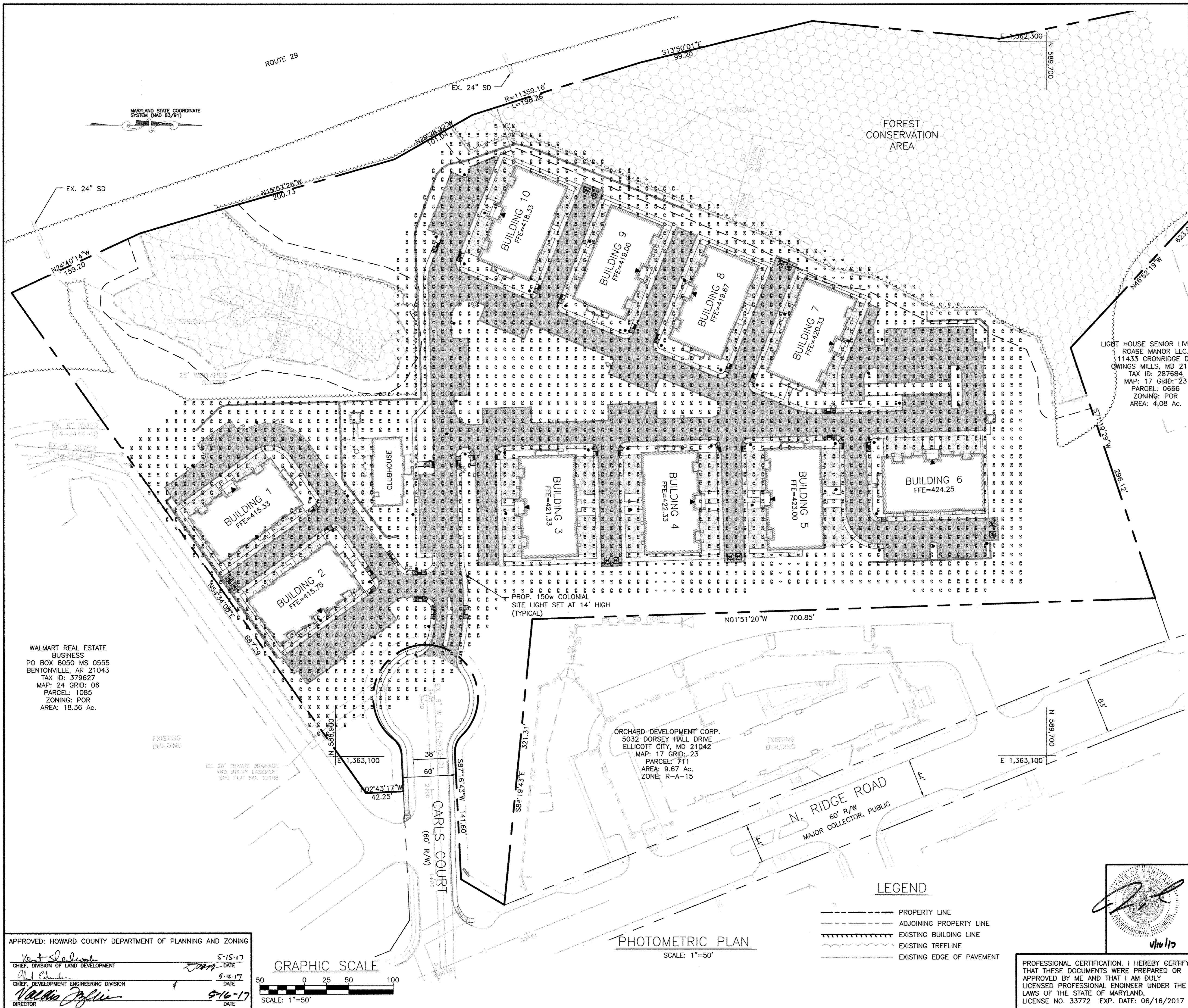
HILLIS-CARNES
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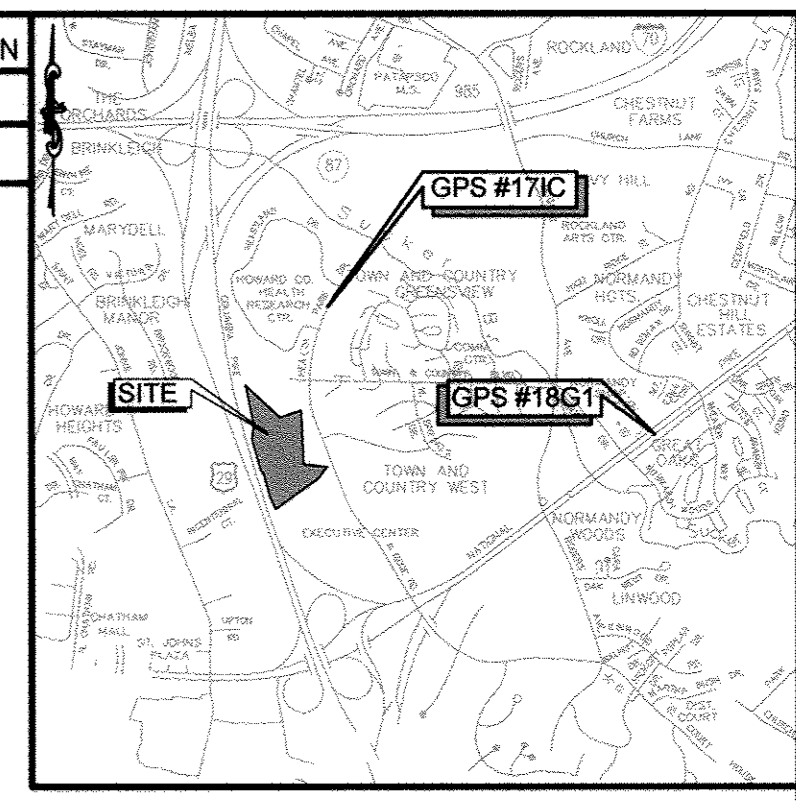
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REVISIONS			
NO.	DATE		BY

OWNER/DEVELOPER: COMMERCIAL CONTRACTORS INC. 1205 YORK ROAD LUTHERVILLE-TIMONIUM, MD 21093 (410)-825-8400	LEGACY AT ELLICOTT'S RETREAT RETAINING WALL 'D' STA. 5+60 TO 8+28 ELEVATION AGE RESTRICTED ADULT HOUSING TAX MAP: 24 GRID: 06 PARCEL: 1085 ZONED: POR ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND		
DESIGN RWS DRAWN AM	DATE 05/31/16 SCALE AS SHOWN	HCEA PROJECT NO.: 15349-N SHEET NO. 44 OF 45	SHEET NO. RW-6



POINT	NORTHING	EASTING	ELEVATION
#171C	591056.92	1363154.63	415.41
#18G1	589985.06	1367750.24	407.74



VICINITY MAP
SCALE: 1" = 2000'
ADC MAP 21B6

BGE OUTDOOR LIGHTING

Colonial/Premier

Where they're often used:

- Residential condo and apartment complexes
- Townhouses
- Single-family homes
- Outdoor walkways in commercial settings, such as business parks, shopping centers, and streetscape or specialty uses

WATTS	LAMP
100	Sodium Vapor
150	Sodium Vapor
100	Metal Halide
150	Metal Halide

Typical Photometrics-Colonial
Sodium Vapor 150 Watt

Typical Photometrics-Premier
Sodium Vapor 150 Watt

BGE
An Exelon Company

410.470.2448 | 800.685.0123
BGE.COM/OUTDOORLIGHTING

LIGHT HOUSE SENIOR LIVING AT ROASE MANOR LLC.
11433 CRONRIDGE DR
OWINGS MILLS, MD 21117
TAX ID: 287684
MAP: 17 GRID: 23
PARCEL: 0666
ZONING: POR
AREA: 4.08 Ac.

TYPICAL SITE LIGHT FIXTURE

WALMART REAL ESTATE BUSINESS
PO BOX 8050 MS 0555
BENTONVILLE, AR 21043
TAX ID: 379627
MAP: 24 GRID: 06
PARCEL: 1085
ZONING: POR
AREA: 18.36 Ac.

ORCHARD DEVELOPMENT CORP.
5032 DORSEY HALL DRIVE
ELLCOTT CITY, MD 21042
MAP: 17 GRID: 23
PARCEL: 711
AREA: 9.67 Ac.
ZONE: R-A-15

- NOTES:
- THE PHOTOMETRIC PLAN SHOWN DOES NOT INCLUDE SITE BUILDING LIGHTING. BUILDING LIGHTING WILL BE SHOWN ON THE BUILDING PERMIT.
 - LANDSCAPING WAS NOT TAKEN INTO CONSIDERATION WITH THE PHOTOMETRICS SHOWN.

KCI TECHNOLOGIES

ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

11850 West Market Place
Suite A
Fulton, MD 20759
Telephone: (410) 792-8086
Fax: (410) 792-7419

REVISIONS			
NO.	DATE	DESCRIPTION	BY
1	04/05/2017	BUILDING AND LIGHT LOCATIONS CHANGED	BA
2	12/22/17	REVISED PACE NUMBERING	BA

OWNER/DEVELOPER: **LEGACY AT ELLICOTT'S RETREAT**

COMMERCIAL CONTRACTORS INC.
1205 YORK ROAD
LUTHERVILLE-TIMONIUM, MD 21093
(410)-825-8400

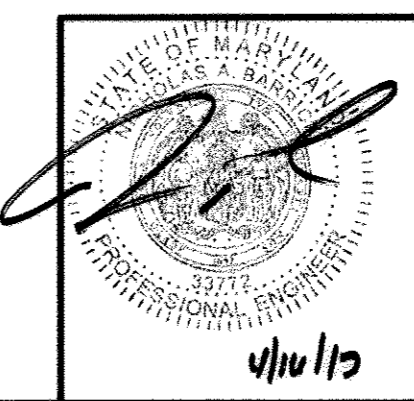
PHOTOMETRIC PLAN

AGE RESTRICTED ADULT HOUSING
TAX MAP: 24 GRID: 06 PARCEL: 1085
ZONED: POR
ELECTION DISTRICT NO. 02 - HOWARD COUNTY MARYLAND

DESIGN NAB	DATE 04/05/17	KCI PROJECT NO. 27134772	SHEET NO.
DRAWN BRA	SCALE 1"=50'	SHEET NO. 45 OF 45	C-5.00

LEGEND

- PROPERTY LINE
- - - - ADJOINING PROPERTY LINE
- ▬▬▬ EXISTING BUILDING LINE
- ~~~~~ EXISTING TREELINE
- ▬▬▬ EXISTING EDGE OF PAVEMENT



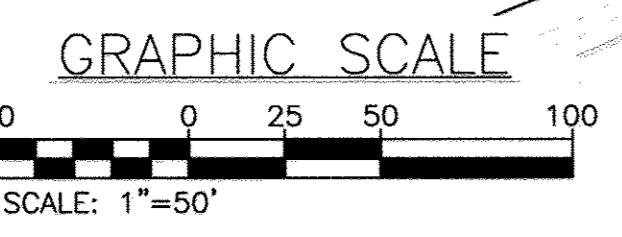
PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 33772 EXP. DATE: 06/16/2017

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Scott Salame 5-15-17
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Valerie Joffe 5-16-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Valerie Joffe 5-16-17
DIRECTOR DATE



PHOTOMETRIC PLAN
SCALE: 1"=50'