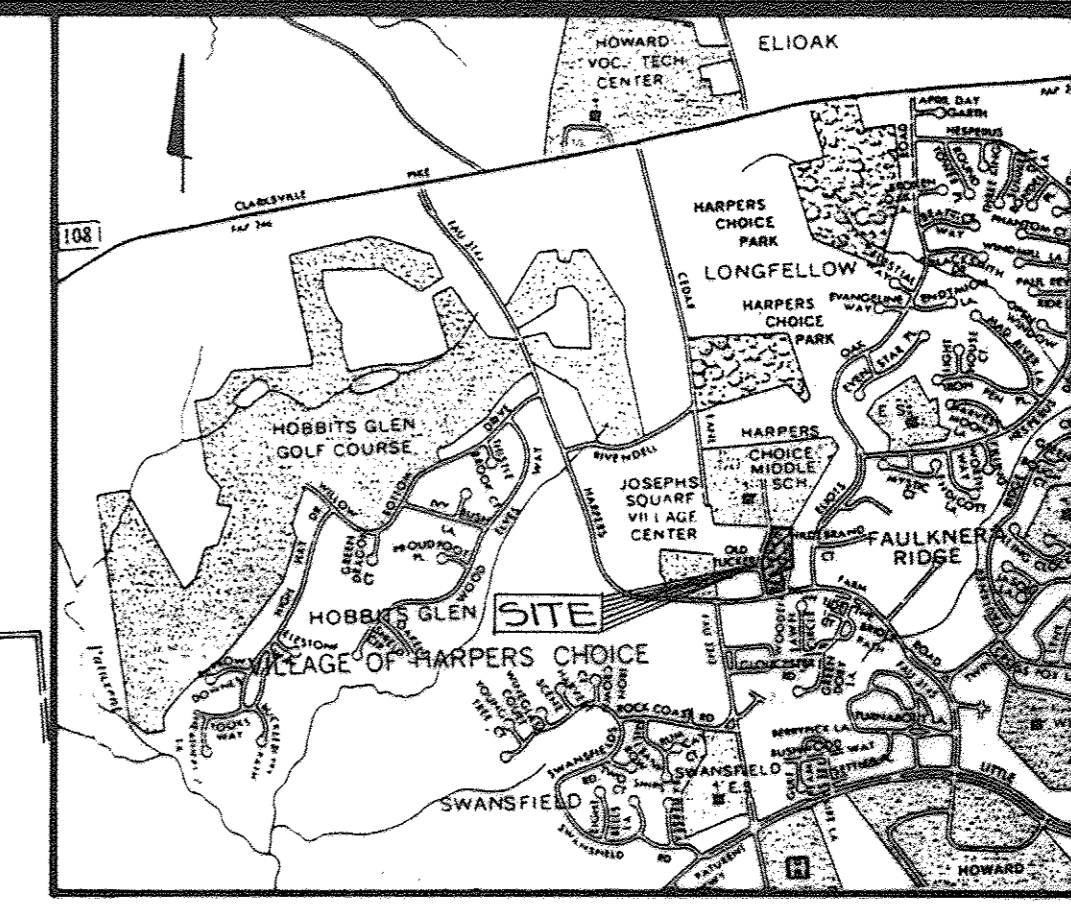


ELIOT'S OAK ROAD

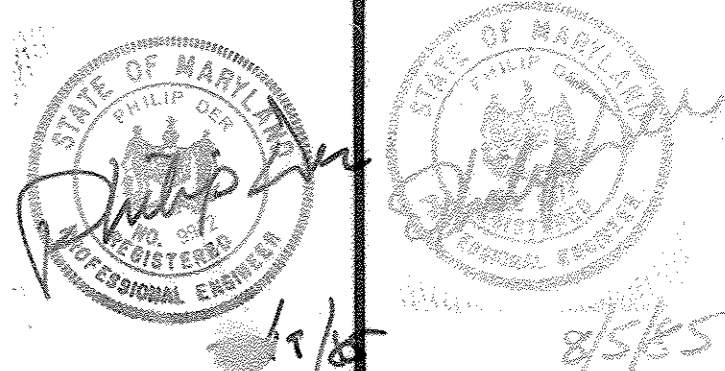
HARPER'S APARTMENT CO.
CMP 533/499
PARCEL 'A' V.H.C.
VILLAGE CORNER
SECT. 5 AREA 2
P/B 18/12

BOARD OF EDUCATION
OF
C.M. HOWARD CO.
LOT NO. 2
V.H.C. 23/64



gva
george vaeth
associates, inc.
architect

5501 twin knolls road suite 108
columbia, maryland 21045



**WHITNEY, BAILEY,
COX AND MAGNANI**

STRUCTURAL ENGINEERS
1850 YORK ROAD
TIMONIUM MARYLAND 21093

**SIEGEL &
RUTHERFORD, INC.**

MECHANICAL/
ELECTRICAL ENGINEERS
125 MARYLAND AVE
BALTIMORE MD 21218

**WHITNEY, BAILEY,
COX AND MAGNANI**

CIVIL ENGINEERS
1850 YORK ROAD
TIMONIUM, MARYLAND 21093

REVISIONS

NO	DATE	ITEM
1	2-20-18	Added Building Addition, Driveway, Dumpster pad & Sewer Facility
2	2-20-17	Added mechanical equip., stairs & sidewalk, by GLW
3	5-6-11	VOLUNTARY ESD RETROFIT
4	1-10-05	ADDED FIRE CONNECTION
5	9-1-04	ADDED 8104 SF BUILDING ADDITION

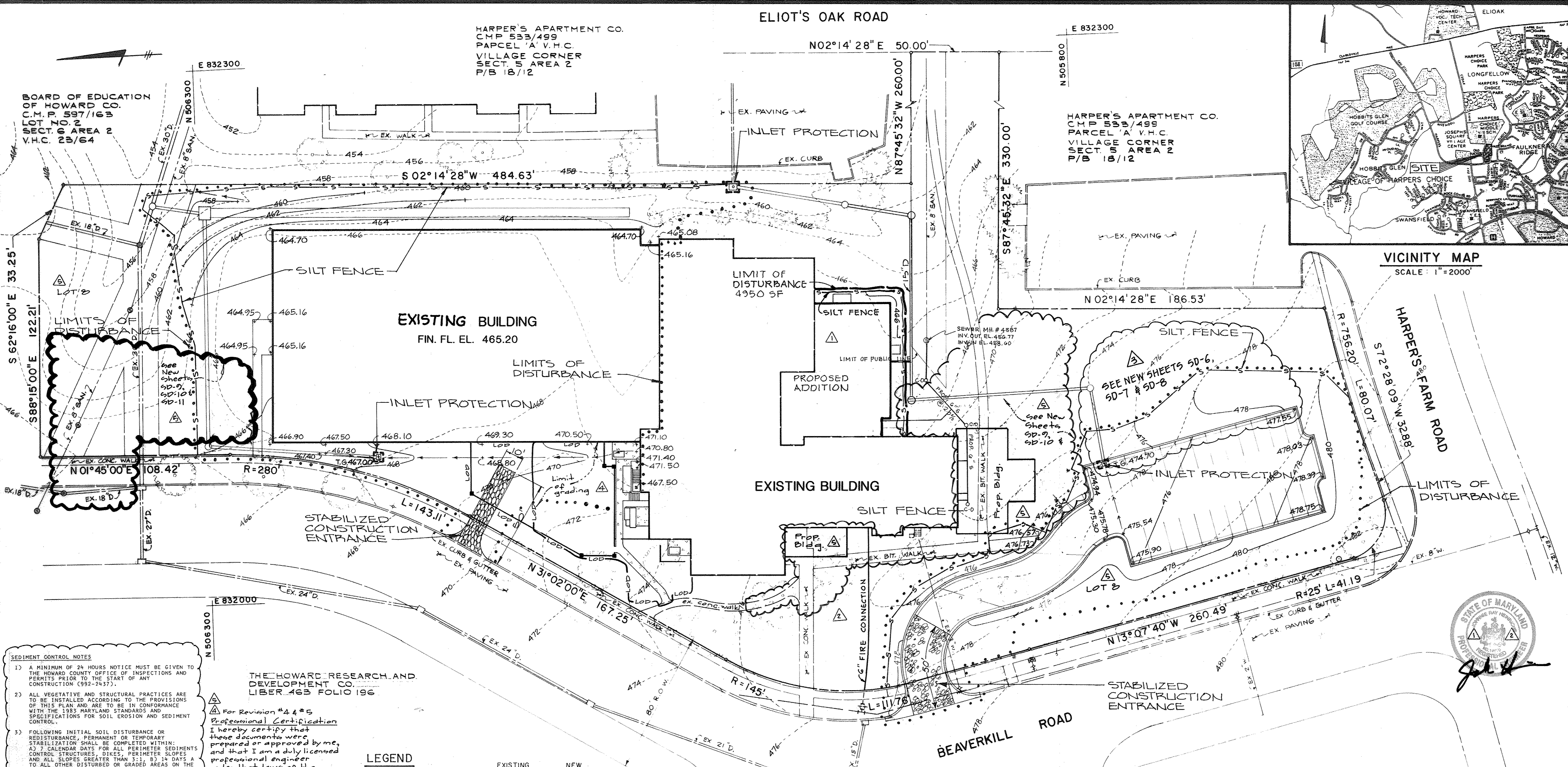
PROJECT:
HARPER'S CHOICE TENNIS BARN
5th ELECTION DISTRICT, HOWARD COUNTY, MD.

**VILLAGE OF HARPER'S CHOICE
VILLAGE CENTER**
SECTION 5 AREA 2 LOT 2

TITLE: **SEDIMENT & EROSION
CONTROL PLAN**

PROJECT NUMBER: **SDP-86-33c**
DRAWING NUMBER: **SD-3**

CONSTRUCTION ISSUE: **8-13-85**
SCALE: **AS SHOWN**

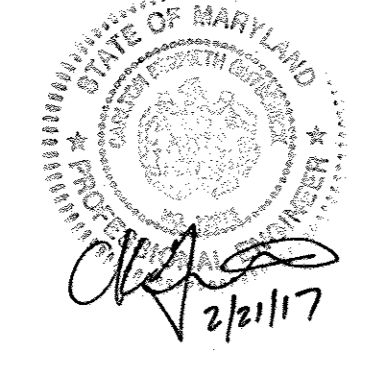


SEDIMENT CONTROL NOTES

- A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS PRIOR TO THE START OF ANY CONSTRUCTION (592-2437).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1985 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 1:1; B) 14 DAYS & TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1985 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 51) SOD (SEC. 52), TEMPORARY SEEDING (SEC. 53) AND MULCHING (SEC. 57). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:
TOTAL AREA OF SITE: 3.43 ACRES
AREA TO BE ROOFED OR PAVED: 1.85 ACRES
AREA TO BE VEGETATIVELY STABILIZED: 0.78 ACRES
TOTAL CUT: 2500 CU. YD.
TOTAL FILL: 2200 CU. YD.
OFFSITE WASTE/BORROW AREA LOCATION: CONTRACTOR LOCATED
CUT AND FILL QUANTITIES ARE FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT USE ONLY. CONTRACTOR SHALL DETERMINE CUT AND FILL QUANTITIES TO HIS OWN SATISFACTION.
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY, BY THE HOWARD COUNTY OFFICE OF SEDIMENT CONTROL INSPECTOR.

THE HOWARD RESEARCH AND DEVELOPMENT CO.
LIBER 463 FOLIO 196

For Revision #4 & 5
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. 120715
Expiration Date: May 16, 2018



SEE NEW SHEETS 50-6 & 50-8

LEGEND

	EXISTING	NEW
BITUMINOUS CONCRETE PAVING	[Symbol]	[Symbol]
CONCRETE PAVING	[Symbol]	[Symbol]
CURB AND GUTTER	[Symbol]	[Symbol]
STORM DRAIN	[Symbol]	[Symbol]
SANITARY	[Symbol]	[Symbol]
WATER	[Symbol]	[Symbol]
PARKING SPACE AMOUNT	[Symbol]	[Symbol]
CONTOURS	[Symbol]	[Symbol]
SILT FENCE	[Symbol]	[Symbol]
STABILIZED CONSTRUCTION ENTRANCE	[Symbol]	[Symbol]
LIMITS OF DISTURBANCE	[Symbol]	[Symbol]

TEMPORARY SEEDING NOTES

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

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.

SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT).

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 15 THRU NOVEMBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS OF WEEPING LOVEGRASS (.07 LBS/1000 SQ FT). FOR THE PERIOD NOVEMBER 15 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF HELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OR UNROOTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/100 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 3 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.

REFER TO THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

SEQUENCE OF OPERATIONS FOR EROSION AND SEDIMENT CONTROL

- NOTIFY HOWARD COUNTY SEDIMENT CONTROL INSPECTOR TWO WORKING DAYS PRIOR TO BEGINNING ANY WORK (592-2437).
- BEGIN MINOR CLEARING OPERATIONS FOR CONSTRUCTION OF SEDIMENT CONTROL MEASURES..... 2 DAYS
- BEGIN MINOR GRADING AS REQUIRED FOR SEDIMENT CONTROL..... 2 DAYS
- INSTALL STABILIZED CONSTRUCTION ENTRANCE AND SILT FENCE AND EARTH DIKES..... 1 WEEK
- CLEAR & GRUB SITE, STRIP TOPSOIL..... 2 DAYS
- INSTALL STORM DRAINS AND STORM WATER MANAGEMENT FACILITY AND INLET PROTECTION..... 1 WEEK
- GRADE SITE..... 1 WEEK
- CONSTRUCTION..... 5 MONTHS
- SEED AND MULCH OR SOD ALL DISTURBED AREAS OUTSIDE BUILDING AND PAVING AREAS, UNLESS NOTED OTHERWISE ON THE PLANS..... 3 DAYS
- UPON APPROVAL OF SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL MEASURES PRIOR TO SUBSTANTIAL COMPLETION..... 1 WEEK
- ALL TIMES FOR COMPLETION ARE SUBJECT TO MODIFICATION.

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. 9972, Exp. Date: 06/01/12.



BY THE DEVELOPER:
"I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT."

SIGNATURE OF DEVELOPER: *John J. Kucera* DATE: 2/18/86
THE COLUMBIA ASSOCIATION
1 KNOLL NORTH DRIVE SUITE 900
COLUMBIA, MARYLAND 21045
PHONE: 301-997-0250

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

SIGNATURE OF ENGINEER: *Philip J. ...* DATE: 2/19/86
PHILIP J. ...
1850 YORK ROAD
TIMONIUM, MARYLAND 21093
PHONE: 301-252-6060

REVIEWED FOR MEETS TECHNICAL REQUIREMENTS: *Sharon ...* S.C.D. AND DATE: 2/25/86
James M. ... DATE: 2/25/86
S.C.D. SERVICE DATE: 2/25/86

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY CONSERVATION DISTRICT.
Stephen L. ... DATE: 2/24/86
STEPHEN L. ...
HOWARD S.C.D. DATE: 2/24/86

APPROVED
PLANNING BOARD
OF HOWARD COUNTY
DATE: 9-18-85
M. H. ...

COLUMBIA ASSOCIATION
ONE KNOLL NORTH SUITE 400
COLUMBIA MD 21045

BUILDING ADDITION TO SDP-77-20

SUBDIVISION NAME	SECT./AREA	LOT/PARCEL
VILLAGE OF HARPER'S CHOICE	5/2	Lot 2

PLAT # 18-95, BLOCK 1 23, ZONE N.T., TAX/ZONE MAP 29, ELEC. DIST. 5, CENSUS TR. 6052.01

WATER CODE I 02, SEWER CODE 5583400

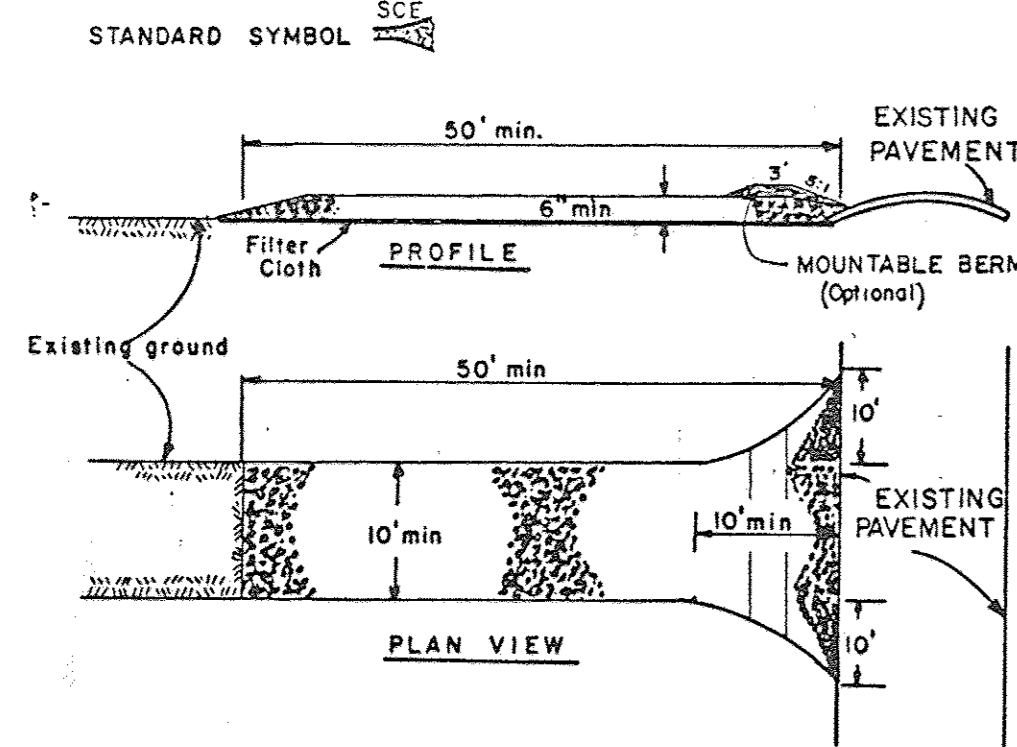
APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE AND STORM DRAINAGE SYSTEMS AND ROADS:
Robert B. ... DATE: 2-26-86
DIRECTOR

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS:
John ... DATE: 2-24-86
CHIEF, BUREAU OF ENGINEERING

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS:
John ... DATE: 2-27-86
COUNTY HEALTH OFFICER

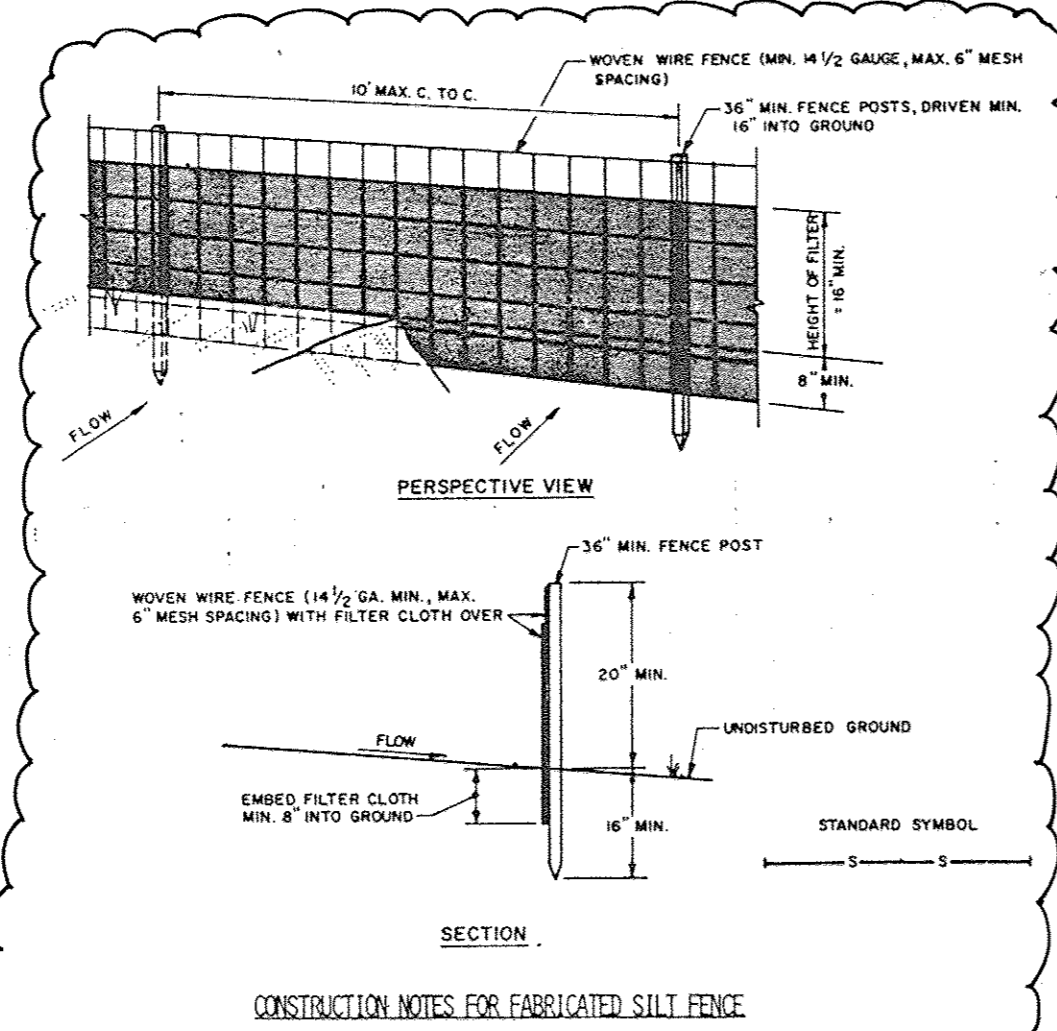
APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
John ... DATE: 2-28-86
PLANNING DIRECTOR

APPROVED: DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION
John ... DATE: 2-28-86



- CONSTRUCTION SPECIFICATIONS**
- Stone Size - Use 2" stone, or reclaimed or recycled concrete equivalent.
 - Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
 - Thickness - Not less than six (6) inches.
 - Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
 - Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residence lot.
 - Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
 - Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
 - Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
 - Periodic inspection and needed maintenance shall be provided after each rain.

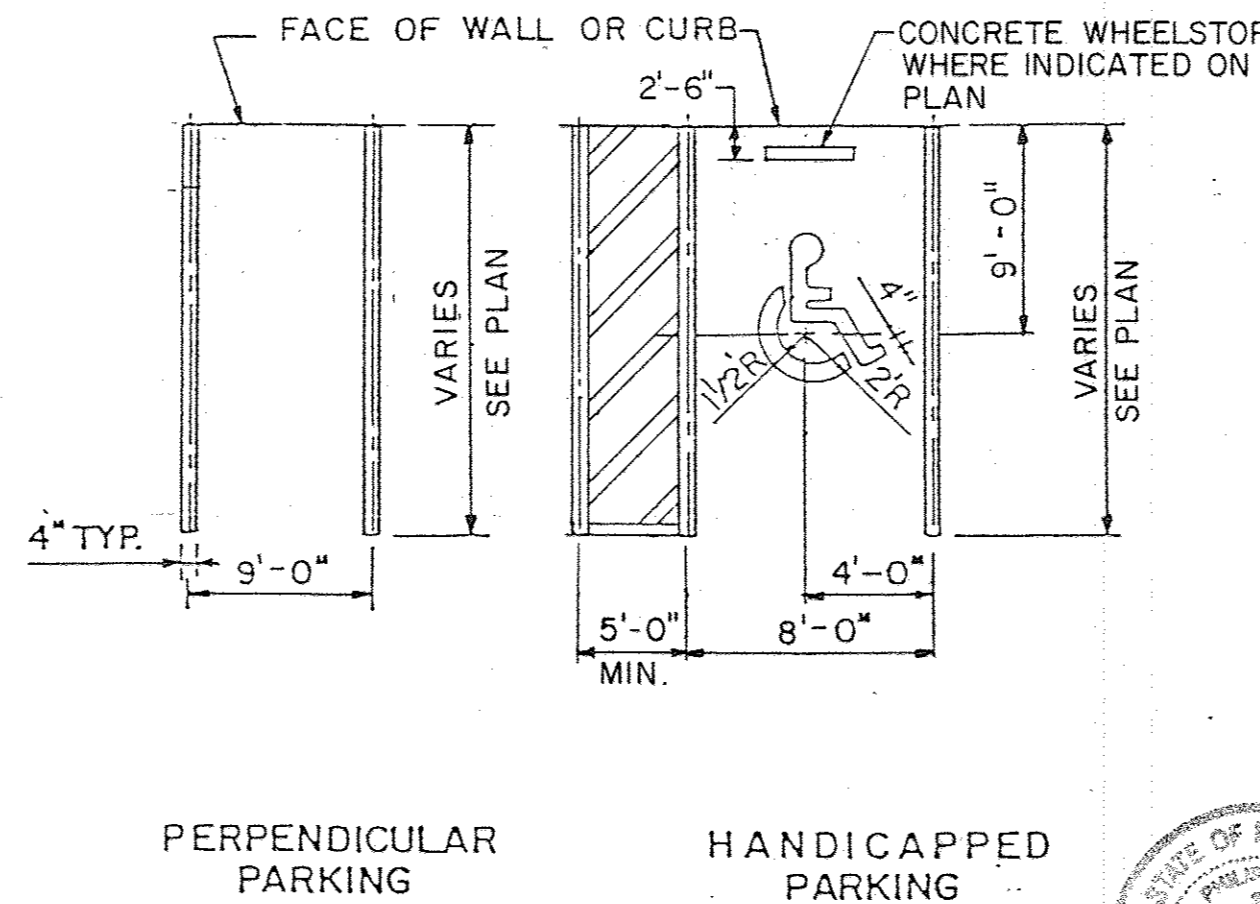
1 STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



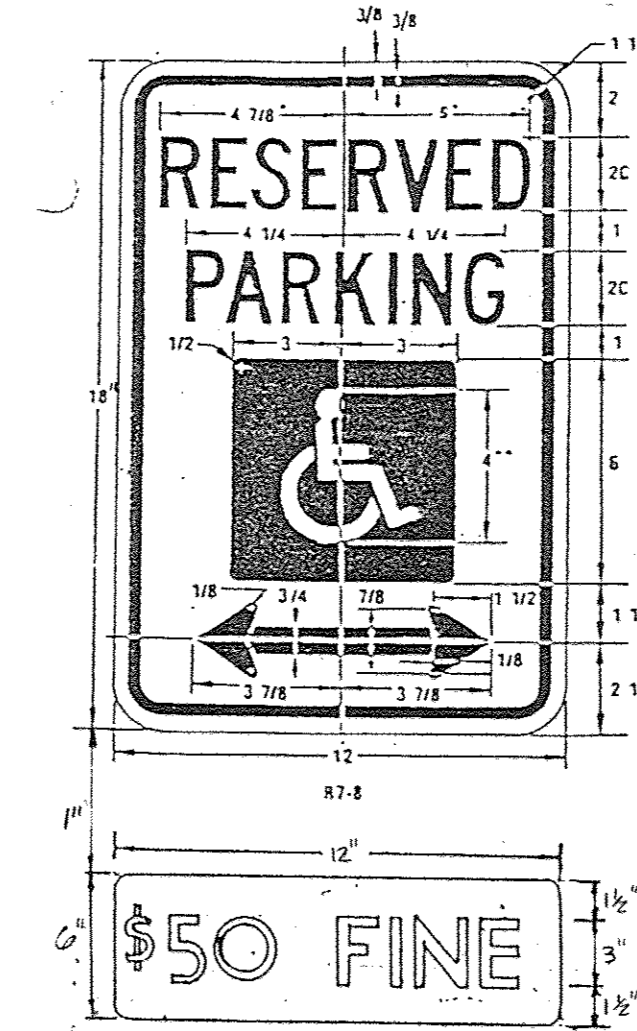
- CONSTRUCTION NOTES FOR FABRICATED SILT FENCE**
- Woven wire fence to be fastened securely to fence posts with wire ties or staples.
 - Filter cloth to be fastened securely to woven wire fence with ties spaced every 24" at top and mid section.
 - When two sections of filter cloth adjoin each other they shall be overlapped by six inches and folded.
 - Maintenance shall be performed as needed and material removed when "bulges" develop in the silt fence.
- POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD
FENCE: WOVEN WIRE, 1/2" GA. 6" MAX. MESH OPENING EQUAL
FILTER CLOTH: FILTER X, MIRAFIL 1000, STABILINKA 1140N OR APPROVED EQUAL
PRE-FABRICATED UNIT: GEOPAB, SWIFFENCE, OR APPROVED EQUAL

2 SILT FENCE
NOT TO SCALE

PAINT IS TO BE YELLOW TRAFFIC PAINT APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. (TWO (2) COATS REQUIRED)



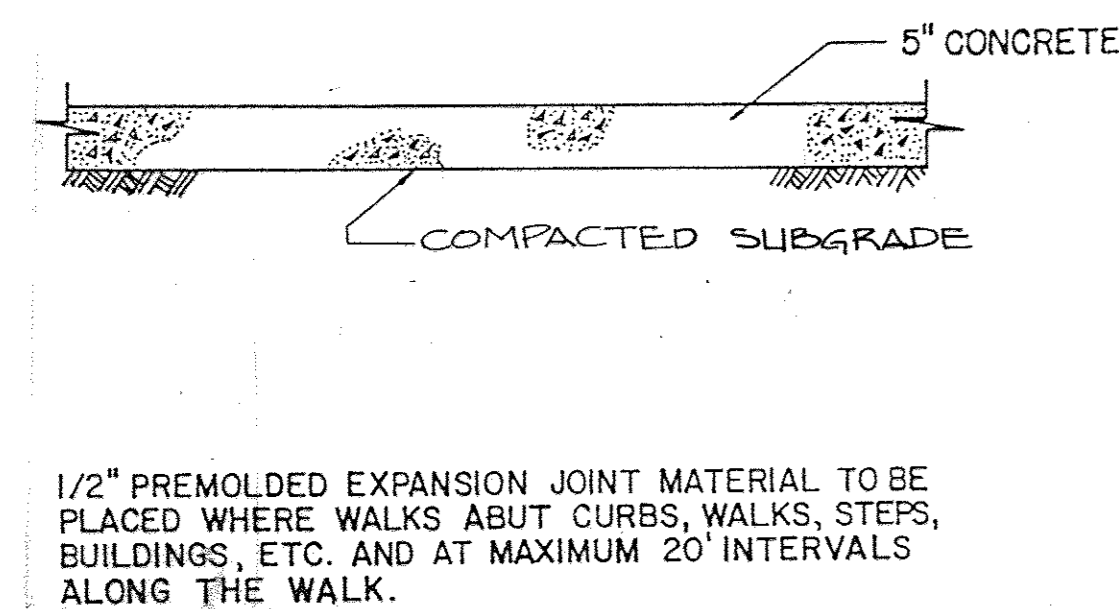
3 PAVEMENT MAKING
NOT TO SCALE



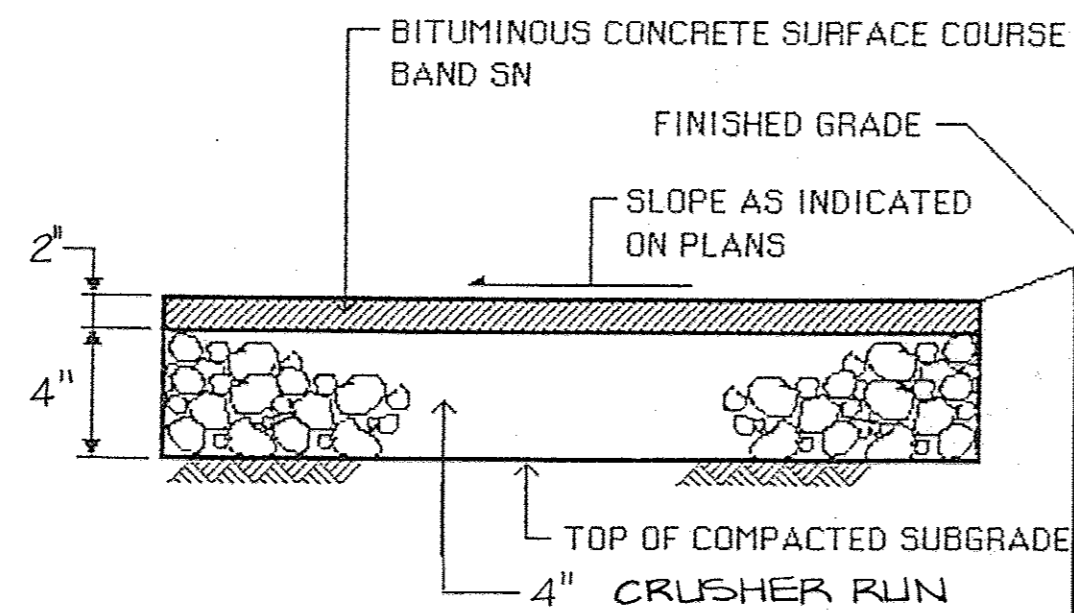
4 HANDICAP SIGN AND POST
NOT TO SCALE

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. 9972, Exp. Date: 08/01/12.

SEE NEW SHEET SD-6

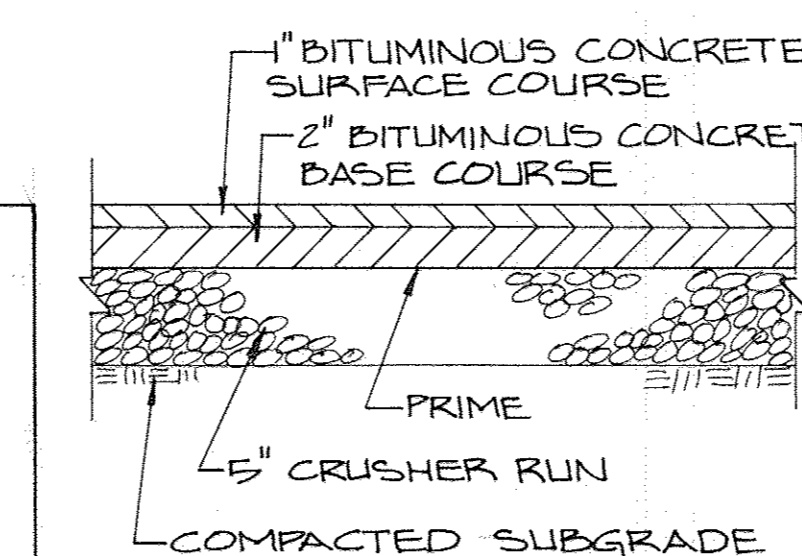


5 CONCRETE SIDEWALK
NOT TO SCALE

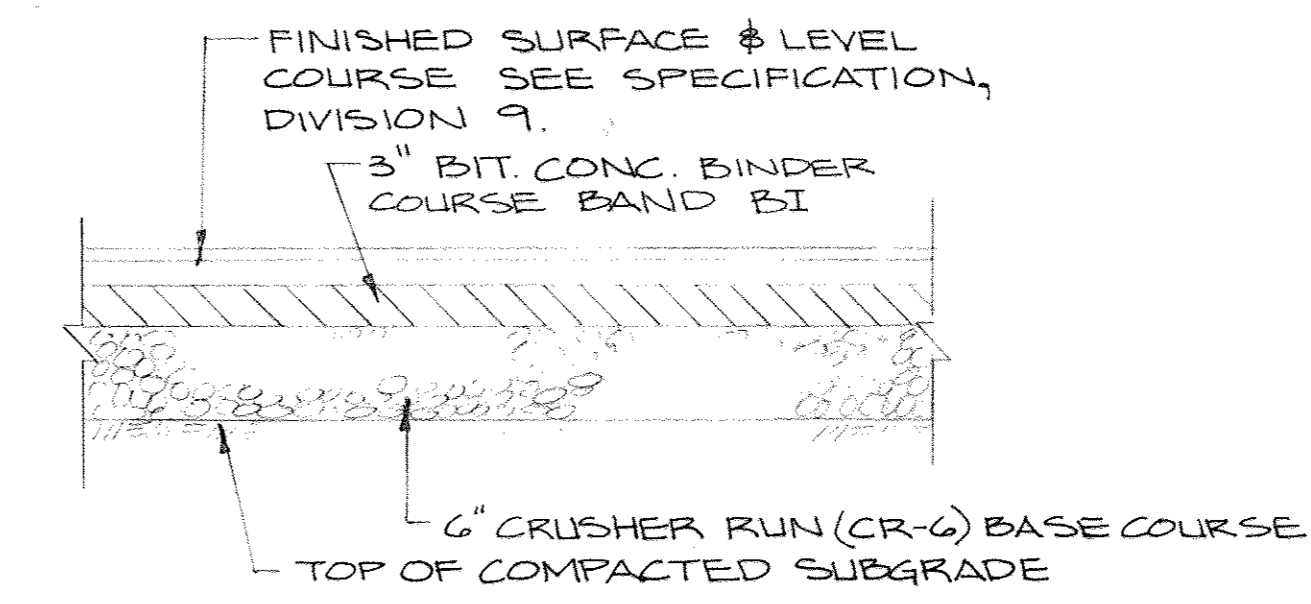


6 BITUMINOUS SIDEWALK
NOT TO SCALE

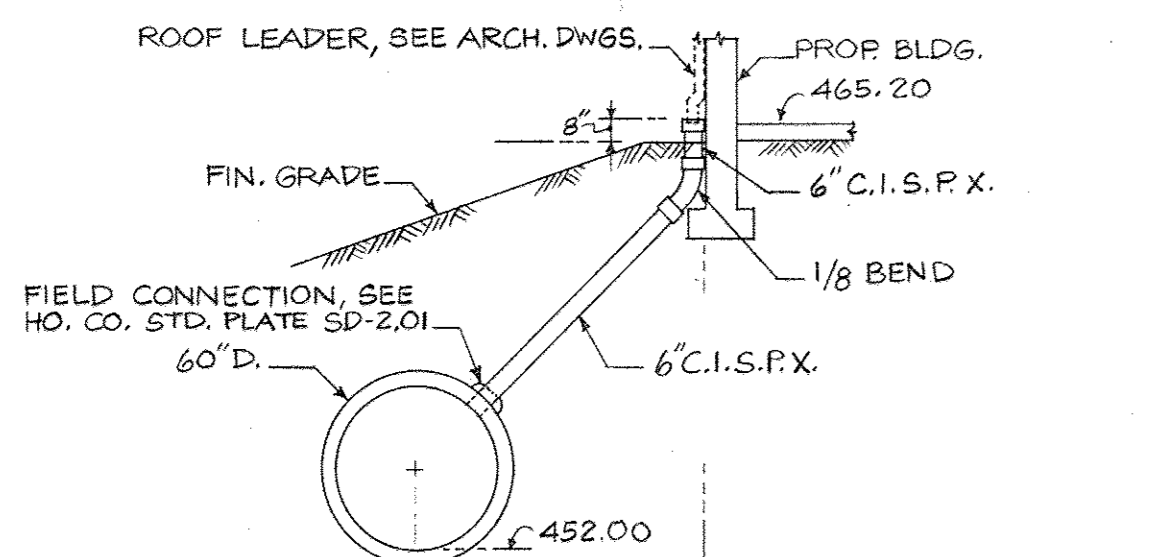
For Revision #5 only. Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 12975, Expiration Date: May 26, 2018.



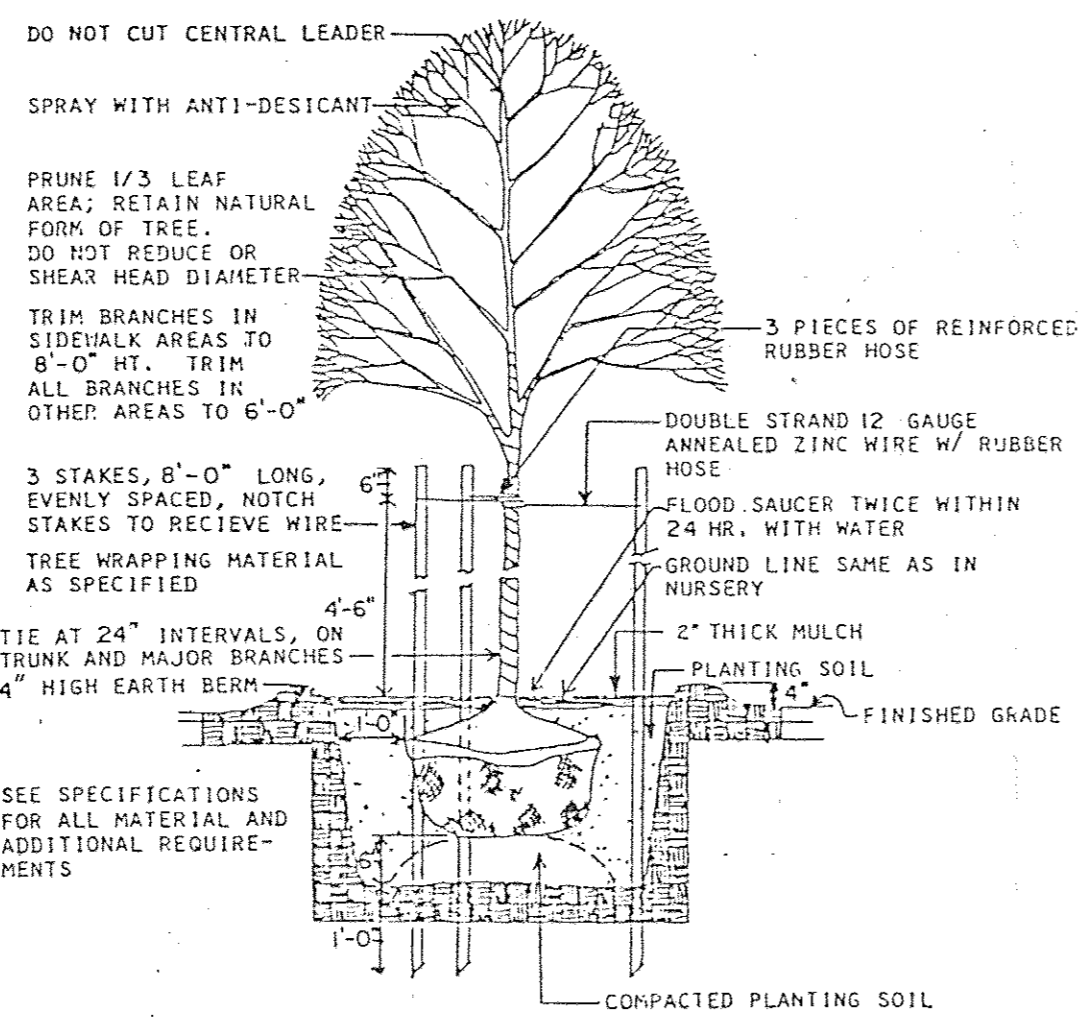
7 PAVING SECTION
NOT TO SCALE



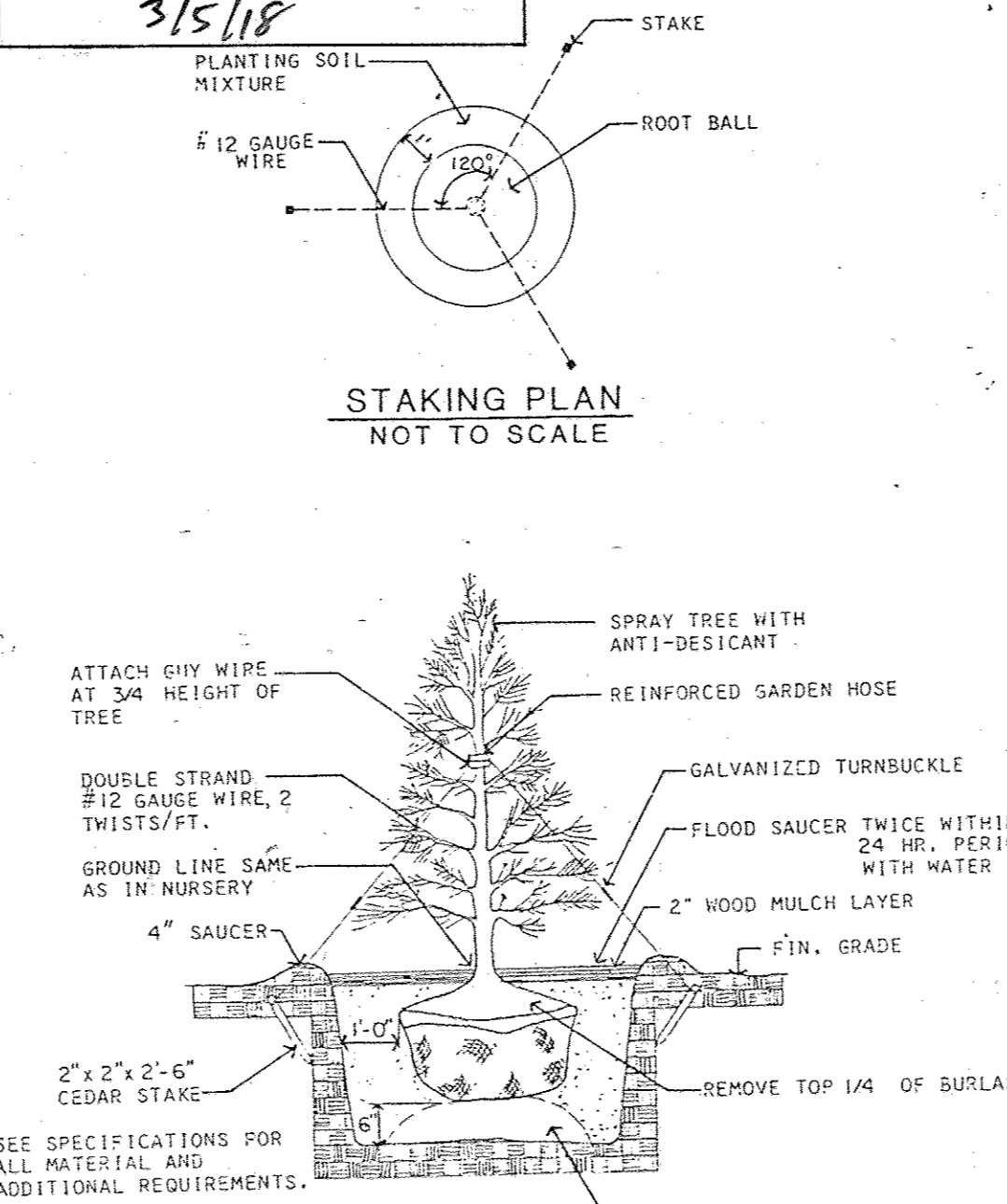
8 TENNIS COURT PAVING SECTION
NOT TO SCALE



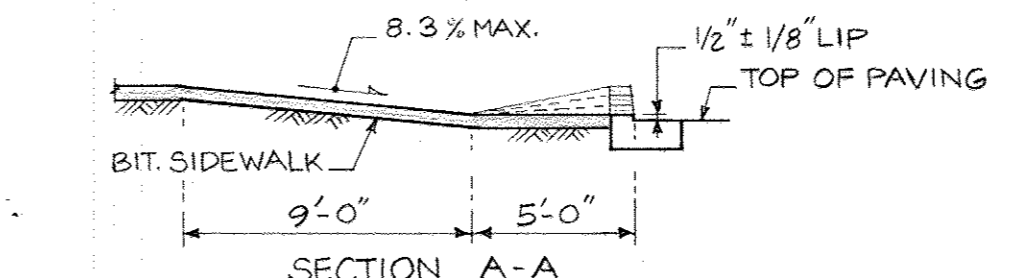
9 ROOF LEADER CONNECTION
NOT TO SCALE



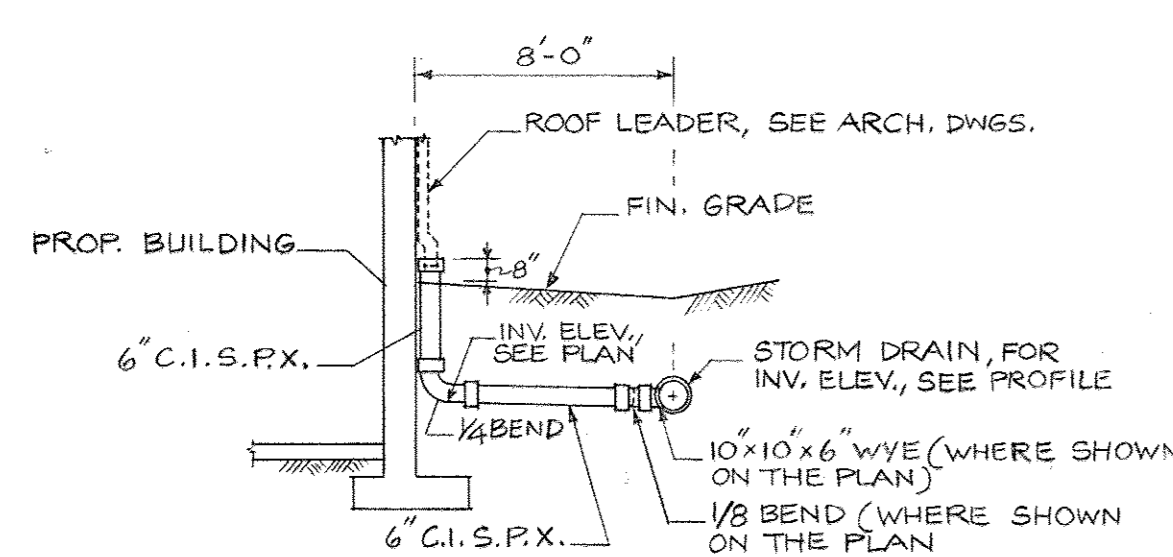
11 TREE PLANTING DETAIL
NOT TO SCALE



12 EVERGREEN TREE DETAIL
NOT TO SCALE



13 SIDEWALK RAMP
NOT TO SCALE



10 ROOF LEADER CONNECTION
NOT TO SCALE

APPROVED
PLANNING BOARD
OF HOWARD COUNTY
DATE 9-18-85
M. J. DUMM

COLUMBIA ASSOCIATION
ONE KNOLL NORTH SUITE 400
COLUMBIA MD 21045

BUILDING ADDITION TO SDP-7710					
SUBDIVISION NAME	SECT./AREA	LOT/PARCEL			
VILLAGE OF HARPER'S CHOICE	5/2	Lot B			
PLAT #	BLOCK #	ZONE	TAX/ZONE MAP	ELEC. DIST.	CENSUS TR.
18-95	23	N.T.	29	5	6052.01
WATER CODE 102			SEWER CODE 5523400		

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE AND STORM DRAINAGE SYSTEMS AND ROADS.
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Director: R. M. Bumpf, Jr. 2-26-86
Chief, Bureau of Engineering: M. S. 2-26-86

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT
County Health Officer: Joseph J. Jones 2-27-86

APPROVED: HOWARD COUNTY OFFICES OF PLANNING AND ZONING
PLANNING DIRECTOR: J. D. Marshall 2-28-86
Chief, Division of Land Development and Zoning Administration: J. M. 2-28-86

gva
george vaeth
associates, inc.
architect

5501 twin knolls road suite 108
columbia, maryland 21045

STATE OF MARYLAND
PROFESSIONAL ENGINEER
2/19/86

WHITNEY, BAILEY,
COX AND MAGNANI
STRUCTURAL ENGINEERS

1250 YORK ROAD
TIMONIUM, MD 21093

SIEGEL &
RUTHERFORD, INC.
MECHANICAL/
ELECTRICAL ENGINEERS

2125 MARYLAND AVE.
BALTIMORE, MD. 21218

WHITNEY, BAILEY,
COX AND MAGNANI
CIVIL ENGINEERS

1850 YORK ROAD
TIMONIUM, MARYLAND 21093

REVISIONS

NO.	DATE	ITEM
1	10/7/85	REV HAND. SIGN DETAIL
2	5/6/11	VOLUNTARY ESD RETROFIT
3	2/2018	Added Building Addition, Driveway, Dumpster pad & Sewer Facility

PROJECT:
HARPER'S CHOICE TENNIS BARN
5th ELECTION DISTRICT, HOWARD COUNTY, MD.
VILLAGE OF HARPER'S CHOICE
VILLAGE CENTER
SECTION 5 AREA 2 LOT B

SEDIMENT & EROSION
CONTROL DETAILS &
MISC. DETAILS

PROJECT NUMBER
SDP-86-33
DRAWING NUMBER
SD-4

PRELIMINARY ISSUE
CONSTRUCTION ISSUE
DATE 8-13-85
SCALE AS NOTED

MAINTENANCE/LIABILITY FOR STORM WATER MANAGEMENT

THE STORM WATER MANAGEMENT FACILITY FOR THIS SITE IS PRIVATE AND SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER TO MAINTAIN THE FACILITY TO DESIGN CAPACITY AND BE LIABLE FOR ANY DAMAGE AS A RESULT OF A LACK OF PERIODIC MAINTENANCE. (AN ANNUAL INSPECTION OF THE FACILITY WILL BE REQUIRED)

SITE PREPARATION

THE CLOSED STORM WATER MANAGEMENT SYSTEM SHALL BE INSTALLED AS PART OF THE STORM DRAIN SYSTEM. THE TOPSOIL STRIPPED TO REMOVE ALL TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL. ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

EARTH FILL

MATERIAL - THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS OR AREAS OF THE SITE. THE FILL SHALL BE FREE OF STUMPS, HOODS, RUBBISH, OVERSIZE STONES, FROZEN OR OTHER OBJECTIONABLE MATERIALS.

PLACEMENT - AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN 8-INCH MAXIMUM THICKNESS (EXPOSED COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST POROUS MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT.

COMPACTION - THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF THE EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIRRED OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION CAN BE OBTAINED WITH THE EQUIPMENT USED.

STRUCTURAL BACKFILL

BACKFILL MATERIAL SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTION BY HAND TAMPERS OR OTHER COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR DRIVE EQUIPMENT OVER ANY PART OF THE FILL UNLESS THERE IS A COMPACTED FILL OF TWENTY-FOUR INCHES OR GREATER OVER THE PIPE.

CONCRETE

- MATERIALS
- CEMENT - NORMAL PORTLAND CEMENT SHALL CONFORM TO THE LATEST ASTM SPECIFICATION C-150.
 - WATER - THE WATER USED IN CONCRETE SHALL BE CLEAN, FREE FROM OIL, ACID, ALKALI, SCALES, ORGANIC MATTER OR OTHER OBJECTIONABLE SUBSTANCES.
 - SAND - THE SAND USED IN CONCRETE SHALL BE CLEAN, HARD, STRONG AND DURABLE, AND SHALL BE WELL GRADED WITH 100 PERCENT PASSING A ONE-QUARTER INCH SIEVE. LIMESTONE SAND SHALL NOT BE USED.
 - COARSE AGGREGATE - THE COARSE AGGREGATE SHALL BE CLEAN, HARD, STRONG AND DURABLE, AND FREE FROM CLAY, DIRT, IT SHALL BE WELL GRADED WITH A MAXIMUM SIZE OF ONE AND ONE-HALF (1-1/2) INCHES.
 - REINFORCING STEEL - THE REINFORCING STEEL SHALL BE DEFORMED BARS OF INTERMEDIATE GRADE BILLET STEEL AND WIRE FABRIC CONFORMING TO ASTM SPECIFICATION A-615, GRADE 60.

DESIGN MIX - THE CONCRETE SHALL BE MIXED IN THE FOLLOWING PROPORTIONS, MEASURED BY WEIGHT. THE WATER CEMENT RATIO SHALL BE 5-1/2 TO 8 U.S. GALLONS OF WATER PER 94 POUND BAG OF CEMENT. THE PROPORTION OF MATERIALS FOR THE TRIAL MIX SHALL BE 1:2:1 1/2. THE COMBINATION OF AGGREGATES MAY BE ADJUSTED TO PRODUCE A PLASTIC AND WORKABLE MIX THAT WILL NOT PRODUCE HARDNESS OR PLACING OR MONITORING IN THE STRUCTURE. (S.H.A. MIX #3)

MIXING - THE CONCRETE INGREDIENTS SHALL BE MIXED IN BATCH WAGERS UNTIL THE MIXTURE IS HOMOGENEOUS AND OF UNIFORM CONSISTENCY. THE MIXING OF EACH BATCH SHALL CONTINUE FOR NOT LESS THAN ONE AND ONE-HALF (1 1/2) MINUTES AFTER ALL THE INGREDIENTS, EXCEPT THE FULL AMOUNT OF WATER, ARE IN THE MIXER. THE MINIMUM MIXING TIME IS PREDICATED ON PROPER CONTROL OF THE SPEED OF ROTATION OF THE MIXER AND OF THE INTRODUCTION OF THE MATERIALS, INCLUDING WATER, INTO THE MIXER. WATER SHALL BE ADDED PRIOR TO, DURING, AND FOLLOWING THE MIXER-CHARGING OPERATIONS. EXCESSIVE OVERMIXING REQUIRING THE ADDITION OF WATER TO PRESERVE THE REQUIRED CONCRETE CONSISTENCY SHALL NOT BE PERMITTED. TRUCK MIXING WILL BE ALLOWED PROVIDED THAT THE USE OF THIS METHOD SHALL CAUSE NO VIOLATION OF ANY APPLICABLE PROVISIONS OF THE SPECIFICATIONS GIVEN HERE.

REINFORCING STEEL - ALL REINFORCING MATERIAL SHALL BE FREE OF DIRT, RUST, SCALE, OIL, PAINT OR ANY OTHER COATINGS. THE STEEL SHALL BE ACCURATELY PLACED AND SECURELY TIED AND LOCKED INTO POSITION SO THAT NO MOVEMENT OF THE STEEL WILL OCCUR DURING PLACEMENT OF CONCRETE.

CONSOLIDATING - CONCRETE SHALL BE CONSOLIDATED WITH INTERNAL TYPE MECHANICAL VIBRATORS. VIBRATION SHALL BE SUPPLEMENTED BY SPADING AND HAND TAMPING AS NECESSARY TO INSURE SMOOTH AND DENSE CONCRETE ALONG FORM SURFACES, IN CORNERS, AND AROUND EMBEDDED ITEMS.

FINISHING - DEFECTIVE CONCRETE, HONEYCOMBED AREAS, Voids LEFT BY THE REMOVAL OF THE FORMS, RIDGES ON ALL CONCRETE SURFACES PERMANENTLY EXPOSED TO VIEW OR EXPOSED TO WATER ON THE FINISHED STRUCTURE, SHALL BE REPAIRED IMMEDIATELY AFTER THE REMOVAL OF FORMS. ALL VOIDS SHALL BE BRANDED AND COMPLETELY FILLED WITH DOT-PATCHING MORTAR.

PROTECTION AND CURING - EXPOSED SURFACES OF CONCRETE SHALL BE PROTECTED FROM THE DIRECT RAYS OF THE SUN FOR AT LEAST THE FIRST THREE (3) DAYS. ALL CONCRETE SHALL BE KEPT CONTINUOUSLY MOIST FOR AT LEAST TEN (10) DAYS AFTER BEING PLACED. MOISTURE MAY BE MAINTAINED BY SPRAYING OR SPRINKLING AS NECESSARY TO PREVENT THE CONCRETE FROM DRYING. CONCRETE SHALL NOT BE EXPOSED TO FREEZING DURING THE CURING PERIOD. CURING COMPOUNDS MAY ALSO BE USED.

PLACING TEMPERATURE - CONCRETE MAY NOT BE PLACED AT TEMPERATURE BELOW 32°F WITH THE TEMPERATURE FALLING, OR 3°F WITH THE TEMPERATURE RISING.

STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SLIGHTLY CONDENSED. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPOILS AND BORROW AREAS, AND BENCH SHALL BE STABILIZED BY SEEDING, FERTILIZING AND MULCHING (IF REQUIRED) IN ACCORDANCE WITH THE VEGETATIVE TREATMENT SPECIFICATIONS SHOWN ON OR ACCOMPANYING THE DRAWINGS.

COLUMBIA ASSOCIATION
ONE KNOLL NORTH SUITE 400
COLUMBIA MD 21045

BUILDING ADDITION TO SDP 77-20
DIVISION NAME: VILLAGE OF HARPER'S CHOICE
SECT./AREA: 5/2
LOT/PARCEL: 10 ±

PLAT: 10-95
BLOCK: 23
ZONE: N.J.
TAX/ZONE MAP: 29
ELEC. DIST.: 5
CENSUS TR.: 6052.01

WATER CODE: I 0 2
SEWER CODE: 5833400

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE AND STORM DRAINAGE SYSTEMS AND ROADS.
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Director: R. M. Bennett / J. G. W. DATE: 2-26-86

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT
Director: J. J. ... DATE: 2-27-86

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
PLANNING DIRECTOR: J. ... DATE: 2-28-86

APPROVED: DIVISION OF ENGINEERING AND ZONING ADMINISTRATION
Director: J. ... DATE: 2-28-86

gva
george vaeth
associates, inc
architect

5501 twin knolls road suite 108
columbia, maryland 21045

WHITNEY, BAILEY,
COX AND MAGNANI

1850 YORK ROAD
TIMONIUM MARYLAND 21093

SIEGEL &
RUTHERFORD, INC.

MECHANICAL/
ELECTRICAL ENGINEERS

2125 MARYLAND AVE.
BALTIMORE, MD. 21218

WHITNEY, BAILEY,
COX AND MAGNANI

CIVIL ENGINEERS

1850 YORK ROAD
TIMONIUM, MARYLAND 21093

REVISIONS

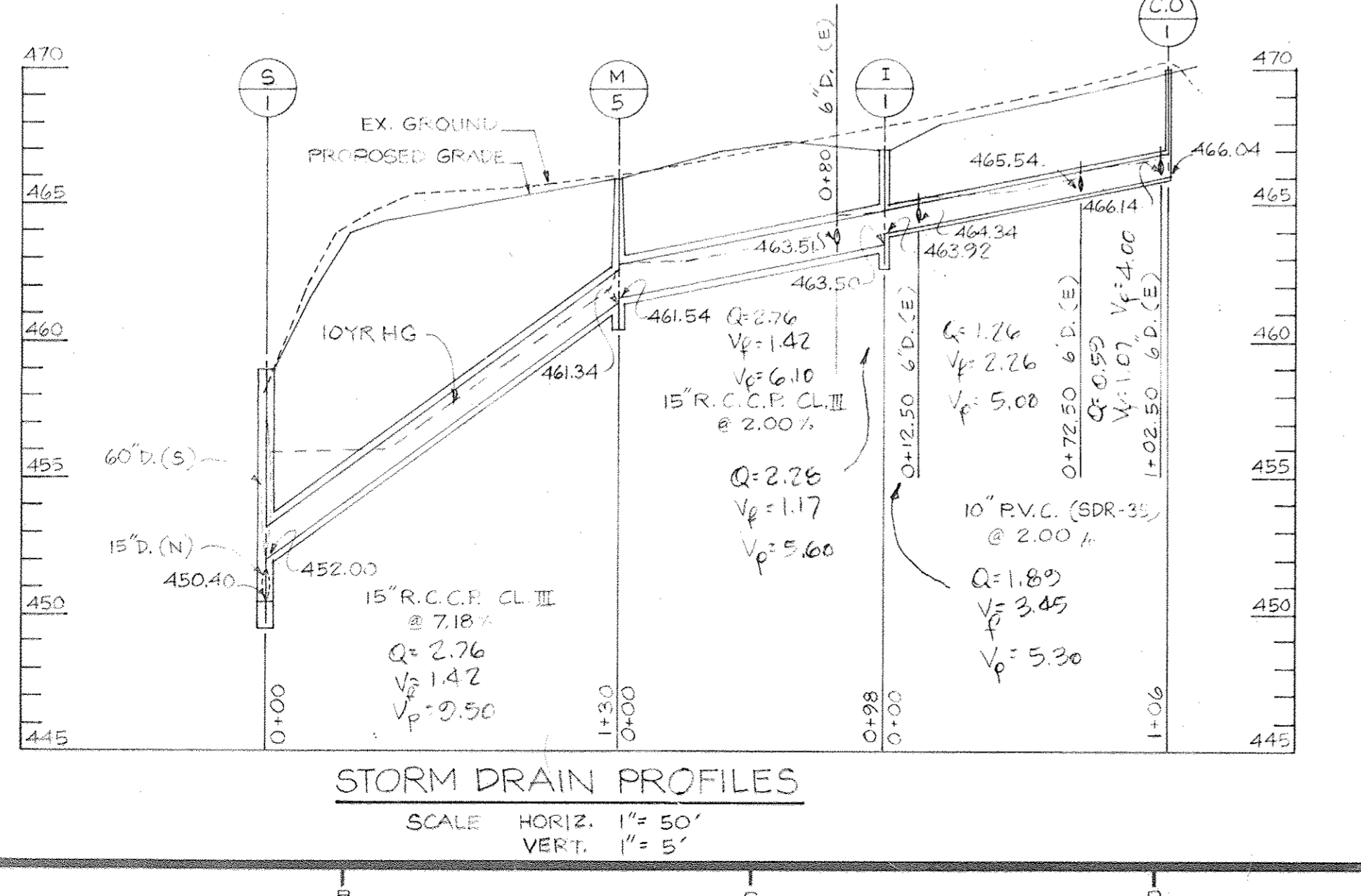
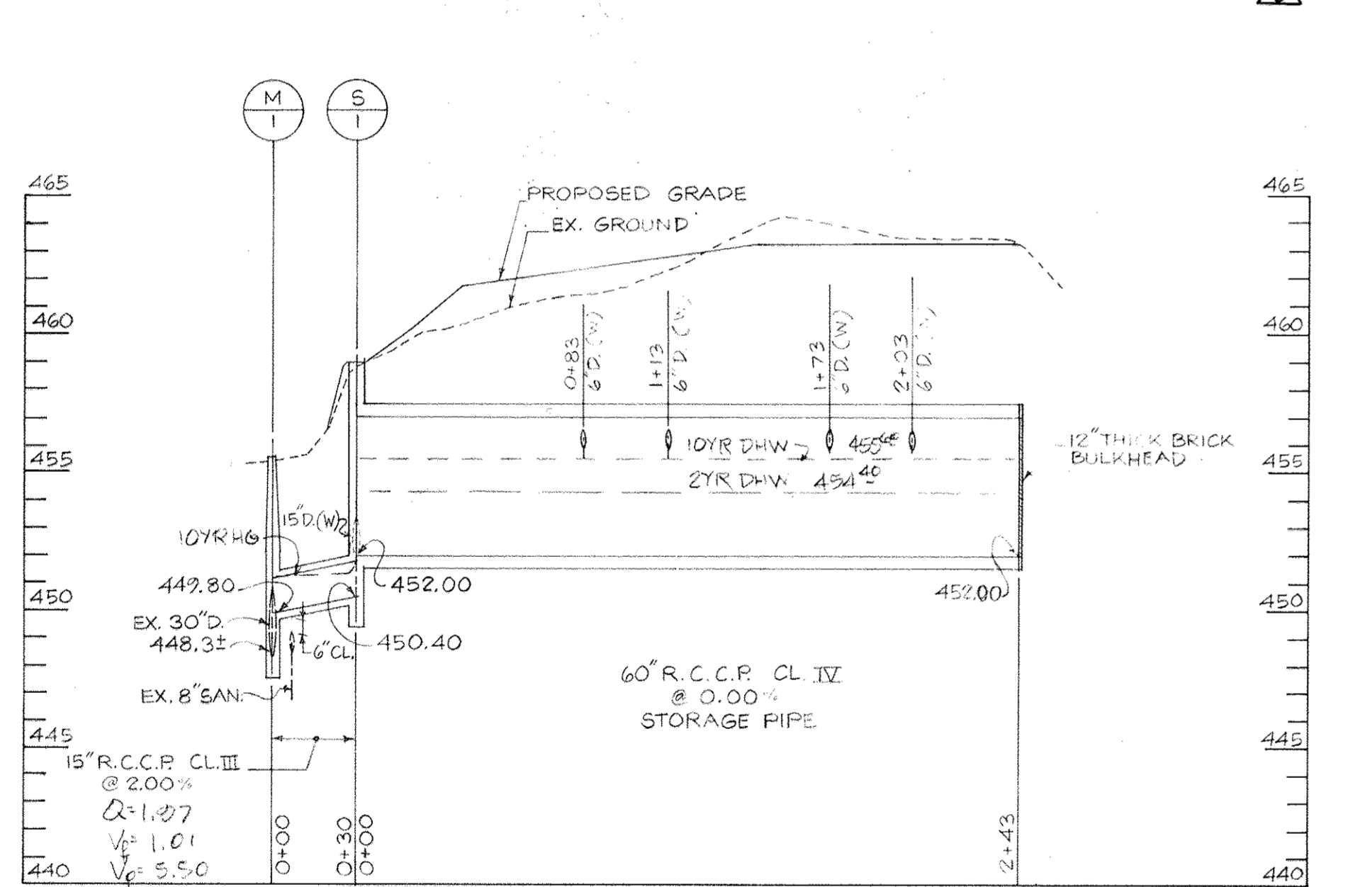
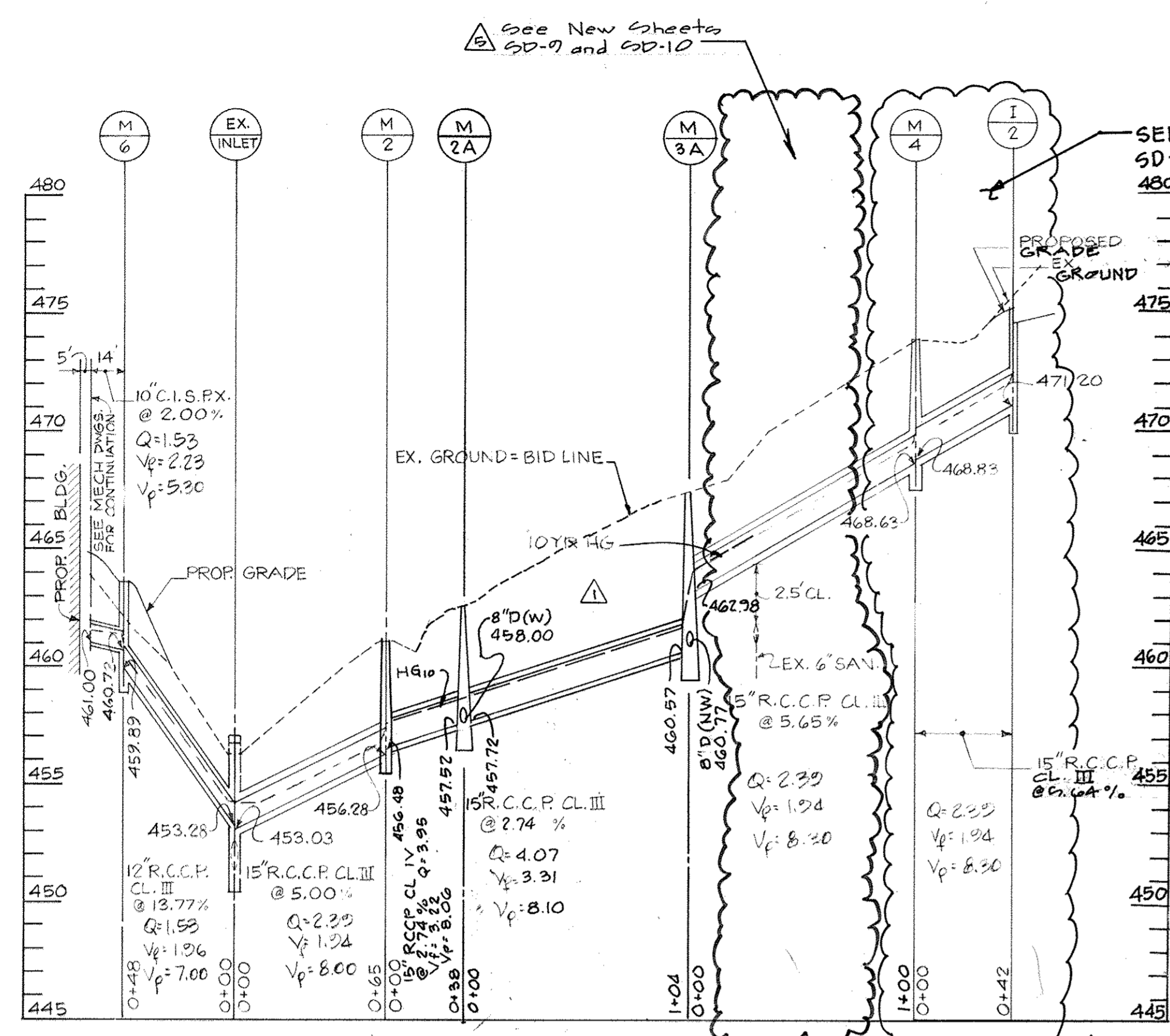
NO.	DATE	DESC.
1-2-10		Added Building Addition, Driveway, Dumpster pad & SWM Facility
5-6-11		VOLUNTARY ESD RETROFIT
9-1-04		ADDED 8104 SF BUILDING ADDITION

PROJECT:
HARPER'S CHOICE TENNIS BARN
5th ELECTION DISTRICT, HOWARD COUNTY, MD.
VILLAGE OF HARPER'S CHOICE
VILLAGE CENTER
SECTION 5 AREA 2 LOT 8

UTILITY PROFILES
STORM WATER MANAGEMENT
DETAILS AND NOTES

PRELIMINARY NUMBER: SDP-86-33c
DRAWING NUMBER: SD-5

SCALE: AS NOTED OF 5/8" = 1'



For Revision #5 only.
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. 12715 Expiration Date: May 20, 2010

3/5/18

STRUCTURE SCHEDULE

NO.	TYPE	INV. IN	INV. OUT	TOP ELEV.
S-1	SPECIAL RELEASE STRUCTURE SEE DETAIL THIS SHEET	452.00	450.40	459.00
M-1	PRECAST CONC. M.H. BUILT OVER EX. SEWER, SEE HO. CO. STD. G 5.14	447.90	448.30	445.50
M-2	4'-0" SHALLOW PRECAST MANHOLE HO. CO. STD. PLATE G 5.12	456.48	456.28	461.00
M-3A	4'-0" PRECAST MANHOLE HO. CO. STD. PLATE G 5.12	462.98	460.57	EXISTING GROUND
M-4	4'-0" SHALLOW PRECAST MANHOLE HO. CO. STD. PLATE G 5.12	468.93	468.63	474.00
M-5	4'-0" SHALLOW PRECAST MANHOLE HO. CO. STD. PLATE G 5.12	461.54	461.34	465.90
CO-1	MAIN LINE CLEANOUT HO. CO. STD. PLATE S 3.21	-	466.04	470.00
M-6	4'-0" SHALLOW PRECAST MANHOLE HO. CO. STD. PLATE G 5.12	460.72	459.89	463.67
M-2A	4'-0" PRECAST MANHOLE HO. CO. STD. PLATE G 5.12	457.72	457.52	EXISTING GROUND

INLET SCHEDULE

NO.	TYPE	INV. IN	INV. OUT	TOP ELEV.
I-1	TYPE 'S' INLET HO. CO. STD. PLATE SD-4.22	-	463.50	467.00
I-2	TYPE 'S' COMB. INLET HO. CO. STD. PLATE SD-4.32	-	471.32	474.70

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. 9972, Exp. Date: 08/01/12.

6/22/11

APPROVED
PLANNING BOARD
OF HOWARD COUNTY

DATE: 9-18-85

Professional Engineer Seal for Philip J. ...

REINFORCED CONCRETE PIPE

MATERIALS - THIS PIPE AND ITS APPURTENANCES SHALL BE REINFORCED CONCRETE PIPE AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM M-170, CLASS IV.

CONNECTIONS - ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATER-TIGHT.

BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSUITABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

GENERAL NOTES

- DRAINAGE AREA 0.84 ACRES
- HYDROLOGIC CRITERIA
A. 2 & 10 YEAR MANAGEMENT PROVIDED
B. UNDERGROUND PIPE STORAGE
- INFLOW & OUTFLOW RATE

FREQUENCY	INFLOW	OUTFLOW	ALLOWED	WATER ELEV.
2 YR.	2.40 CFS	0.90 CFS	0.94 CFS	454.40
10 YR.	4.60 CFS	1.99 CFS	1.97 CFS	455.60

ENGINEER'S CERTIFICATION

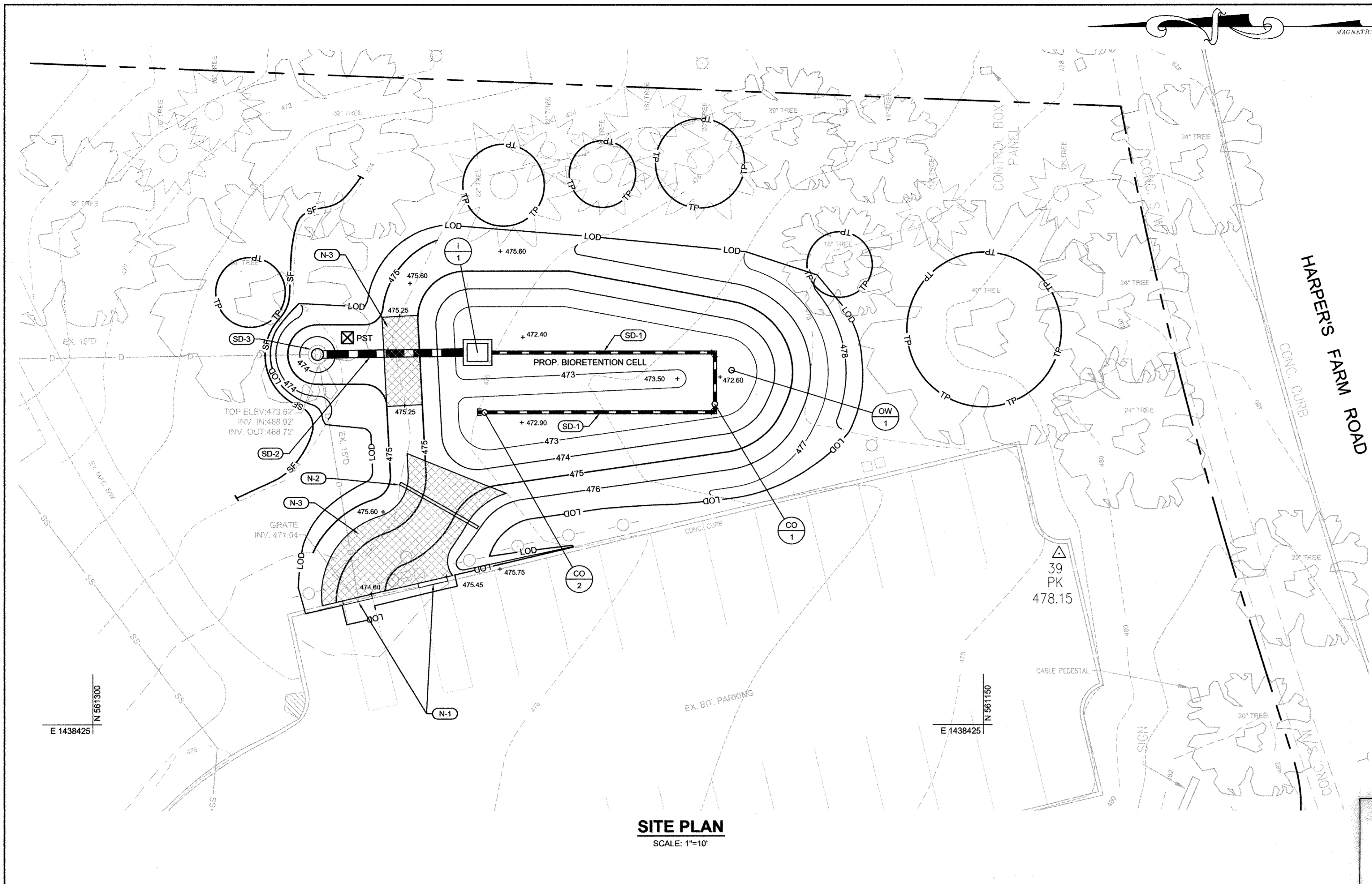
I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED BY ME OR UNDER MY SUPERVISION AND MEETS THE MINIMUM STANDARD OF THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS AND THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

SIGNED: Philip J. ... DATE: 2/19/86

DEVELOPER'S/LANDOWNER'S CERTIFICATION

I HEREBY CERTIFY THAT ALL PROPOSED WORK SHOWN ON THESE CONSTRUCTION DRAWING(S) AND ON THE APPROVED SEDIMENT CONTROL DRAWING(S) WILL BE ACCOMPLISHED PURSUANT TO THESE PLANS. I AM ALSO UNDERSTANDING THAT IT IS MY/OUR RESPONSIBILITY TO HAVE THE CONSTRUCTION SUPERVISED AND CERTIFIED, INCLUDING THE SUBMITTAL OF "AS-BUILT" PLANS WITHIN THIRTY (30) DAYS OF COMPLETION, BY A REGISTERED PROFESSIONAL ENGINEER.

SIGNED: ... DATE: ...



SITE PLAN

SCALE: 1"=10'

DESCRIPTION	EXISTING	NEW
BUILDING	EX. BLDG.	
CONCRETE WALK	CONC. WALK	
PROPERTY LINE	---	---
CURB	---	---
FENCE	---	---
CONTOUR	---	---
SPOT ELEVATION	x 14.85	+ 475.50
STORM DRAIN	---	---
SANITARY	---	---
WATER	---	---
MANHOLE	⊕	⊕
INLET	⊕	⊕
CLEANOUT	⊕	⊕
STREET LIGHT	⊕	⊕
POWER POLE	⊕	⊕
WATER VALVE	⊕	⊕
FIRE HYDRANT	⊕	⊕
SIGN	⊕	⊕
TREES	⊕	⊕
TURF REINFORCING MATTING	---	---
SILT FENCE	---	---
LIMIT OF DISTURBANCE	---	---
TREE PROTECTION	---	---
PORTABLE SEDIMENT TANK	⊕	⊕

CONSTRUCTION NOTES

- N-1 5' CURB CUT
- N-2 TIMBER LEVEL SPREADER
- N-3 TURF REINFORCING MATTING (NORTH AMERICAN GREEN SC250 OR EQUAL)

STORMWATER MANAGEMENT NOTES

- I-1 NEW MD SHA TYPE 'K' YARD INLET
- CO-1 NEW PVC CLEANOUT
- CO-2 NEW PVC CLEANOUT
- OW-1 NEW PVC OBSERVATION WELL
- SD-1 NEW 6"Ø PERFORATED SCH. 40 PVC PIPE
- SD-2 NEW 15"Ø RCP PIPE
- SD-3 NEW BEEHIVE GRATE (NEENAH FOUNDRY R-2564 OR EQUAL)

SEQUENCE OF CONSTRUCTION:

1. PRIOR TO ANY EARTH DISTURBANCE, DEMOLITION, VEGETATION REMOVAL OR SEDIMENT CONTROL INSTALLATION A PRECONSTRUCTION MEETING MUST BE CONDUCTED WITH THE CONTRACTOR, OWNER'S REPRESENTATIVE AND ENGINEER.
2. INSTALL SILT FENCE, TREE PROTECTION FENCE AND STAKE THE LOD.
3. BEGIN GRADING ACTIVITIES AND INSTALLATION OF PROPOSED PIPING AND STRUCTURES. LOCATE THE PORTABLE SEDIMENT TANK AS NEEDED FOR DEWATERING. DIRECT DISCHARGE TO A STABLE POINT.
4. ONCE FINAL GRADES ARE ACHIEVED PERMANENTLY STABILIZE ALL DISTURBED AREAS AND INSTALL PROPOSED PLANTINGS.
5. PROVIDE CURB CUTS AND BULKHEAD EXISTING PIPE AND FILL EXISTING INLET WITH FLOWABLE FILL MATERIAL.
6. UPON COMPLETION OF ALL WORK AND WITH THE APPROVAL OF THE OWNER AND ENGINEER, REMOVE ALL SEDIMENT CONTROLS AND PERMANENTLY STABILIZE ALL AREAS DISTURBED BY SAID REMOVAL.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE STORMWATER BEST MANAGEMENT PRACTICE (PRACTICES) SHOWN ON THE PLANS AND INDIVIDUALLY IDENTIFIED BELOW HAS (HAVE) BEEN CONSTRUCTED IN ACCORDANCE WITH THE PLANS, EXCEPT AS NOTED IN RED ON THE "AS BUILT" DRAWINGS.

NAME (PRINTED) _____ SIGNATURE _____

MARYLAND REGISTRATION NUMBER _____ DATE _____

FACILITY IDENTIFICATION: PROPOSED BIORETENTION CELL

"CERTIFY" MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED ON SUFFICIENT AND APPROPRIATE ONSITE INSPECTIONS AND MATERIAL TESTS CONDUCTED DURING CONSTRUCTION.

OPERATION AND MAINTENANCE SCHEDULE FOR PROPOSED BIORETENTION CELL

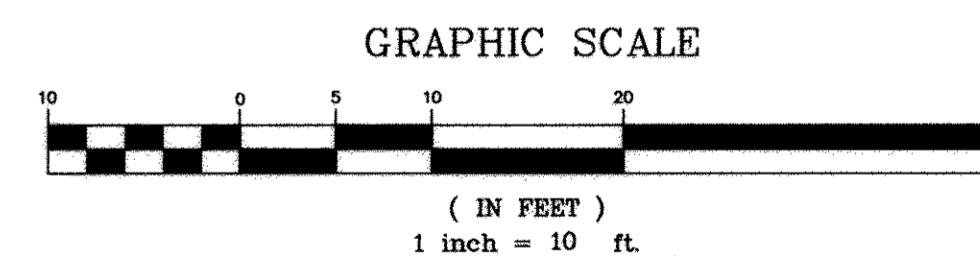
1. Annual maintenance of plant material, mulch layer and soil layer is required. Maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will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

For Revision #3 only.
 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. 12473
 Expiration Date: May 26, 2013
 9/5/18
 [Signature]



DISTURBED AREA = 4283 SF / 0.098 Ac.

NOTE TO CONTRACTOR: EROSION AND SEDIMENT CONTROL SHALL BE STRICTLY ENFORCED.



OWNER:
 COLUMBIA ASSOCIATION
 JAN CLARK, RLA
 9450 GERWIG LANE
 COLUMBIA, MD 21046
 (410) 381-0312

VILLAGE OF HARPER'S CHOICE
 SECTION 5, AREA 2, LOT B
 5th ELECTION DISTRICT HOWARD COUNTY, MD
 TM 29, GRID 23, TM PAR. 289

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 7/2/11
 HOWARD COUNTY DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 7/2/11
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

1-10-12	Added building addition, driveway	GLW
05-06-11	VOLUNTARY ESD RETROFIT	
NO.	DATE	REVISION

COLUMBIA ATHLETIC CLUB PARKING AREA ENVIRONMENTAL SITE DESIGN RETROFIT

COLUMBIA, MARYLAND
 REVISED SITE DEVELOPMENT PLAN - LAYOUT, GRADING & EROSION AND SEDIMENT CONTROL

WHITNEY BAILEY COX & MAGNANI, LLC
 840 Fairmount Ave Suite 100, Baltimore, MD 21288
 PHONE 410.512.4500 FAX 410.324.4100
 www.wbcm.com

WBCM
 ARCHITECTURE ENGINEERING CONSTRUCTION

DESIGNED: B.W.L. PROJECT #: 2011.0166.00.0
 DRAWN: H.H. DRAWING:
 CHECKED: P.D.
 SCALE: AS SHOWN
 DATE: 06/22/11 SHEET: 6 OF 11

SD-6
 SHEET: 6 OF 11
 SDP-86-033c

DETAIL 31 - TREE PROTECTION

NOTE: ALL PROTECTIVE FENCING SHALL EXTEND BEYOND THE TREE DRIPLINE.

NOTE: ALL PROTECTIVE MEASURES SHALL EXTEND BEYOND THE TREE DRIPLINE.

TEMPORARY MEASURES

TEMPORARY AND PERMANENT MEASURES

CUT AREAS

IMPROPER PROCEDURE

PROPER PROCEDURE

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE C-22-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 21 - PORTABLE SEDIMENT TANK

PERFORATE 60" CMP WITH 1" HOLES AT 6" ON CENTER

ELEVATION

PLAN VIEW

STANDARD SYMBOL

CONSTRUCTION SPECIFICATIONS

1. THE FOLLOWING FORMULA SHOULD BE USED IN DETERMINING THE STORAGE VOLUME OF THE SEDIMENT TANK: 1 CUBIC FOOT OF STORAGE FOR EACH GALLON PER MINUTE OF PUMP DISCHARGE CAPACITY.
2. AN EXAMPLE OF A TYPICAL SEDIMENT TANK IS SHOWN ABOVE. OTHER CONTAINER DESIGNS CAN BE USED IF THE STORAGE VOLUME IS ADEQUATE AND APPROVAL IS OBTAINED FROM THE LOCAL APPROVING AGENCY.
3. TANKS MAY BE CONNECTED IN SERIES.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE C-14-2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 22 - SILT FENCE

10" MAXIMUM CENTER TO CENTER

36" MIN. LENGTH FENCE POST, DRIVEN A MIN. OF 16" INTO GROUND

16" MIN. HEIGHT OF GEOTEXTILE CLASS F

3" MIN. DEPTH IN GROUND

PERSPECTIVE VIEW

CROSS SECTION

SECTION A

SECTION B

STAPLE

TOP VIEW

JOINING TWO ADJACENT SILT FENCE SECTIONS

STANDARD SYMBOL

CONSTRUCTION SPECIFICATIONS

1. FENCE POSTS SHALL BE A MINIMUM OF 36" LONG DRIVEN 16" MINIMUM INTO THE GROUND. WOOD POSTS SHALL BE 1 1/2" X 1 1/2" SQUARE (MINIMUM) CUT, OR 1 1/2" DIAMETER (MINIMUM) ROUND AND SHALL BE OF SOUND QUALITY HARDWOOD. STEEL POSTS WILL BE STANDARD T OR U SECTION WEIGHING NOT LESS THAN 1.00 POUND PER LINEAR FOOT. GEOTEXTILE SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F:
 TENSILE STRENGTH: 50 LBS/IN (MIN.) TEST: MSMT 509
 TENSILE MODULUS: 20 LBS/IN (MIN.) TEST: MSMT 509
 FLOW RATE: 0.3 GAL FT² / MINUTE (MAX.) TEST: MSMT 322
 FILTERING EFFICIENCY: 75% (MIN.) TEST: MSMT 322
2. WHERE ENDS OF GEOTEXTILE FABRIC COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS.
3. SILT FENCE SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND MAINTAINED WHEN BULGES OCCUR OR WHEN SEDIMENT ACCUMULATION REACHED 50% OF THE FABRIC HEIGHT.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE C-15-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SILT FENCE (continued)

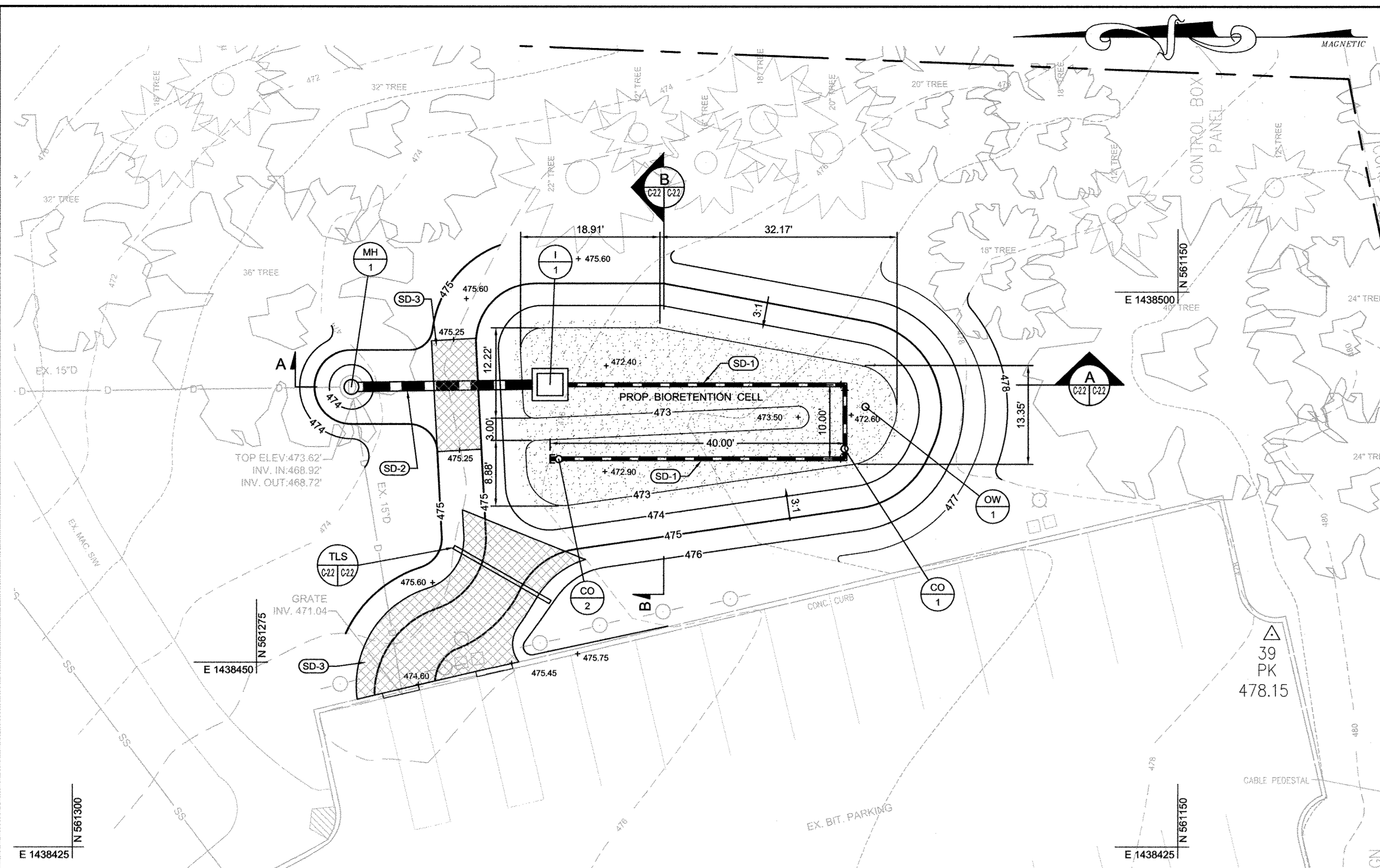
SILT FENCE DESIGN CRITERIA

SLOPE STEEPNESS	SLOPE LENGTH (MAXIMUM)	SILT FENCE LENGTH (MAXIMUM)
FLATTER THAN 5:1	UNLIMITED	UNLIMITED
5:1 TO 10:1	125 FEET	1,000 FEET
10:1 TO 5:1	100 FEET	750 FEET
5:1 TO 3:1	60 FEET	500 FEET
3:1 TO 2:1	40 FEET	250 FEET
2:1 AND STEEPER	20 FEET	125 FEET

NOTE: IN AREAS OF LESS THAN 2% SLOPE AND SANDY SOILS (USDA GENERAL CLASSIFICATION SYSTEM, SOIL CLASS A) MAXIMUM SLOPE LENGTH AND SILT FENCE LENGTH WILL BE UNLIMITED. IN THESE AREAS A SILT FENCE MAY BE THE ONLY PERIMETER CONTROL REQUIRED.

PURPOSE STATEMENT:
 THE PURPOSE OF THIS PLAN IS TO REVISE THE EXISTING SDP-86-33c TO PROVIDE AN ENVIRONMENTAL SITE DESIGN RETROFIT FOR 0.25 ACRES OF EXISTING PAVED PARKING AREA.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE C-15-3A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



PART PLAN
SCALE: 1"=10'

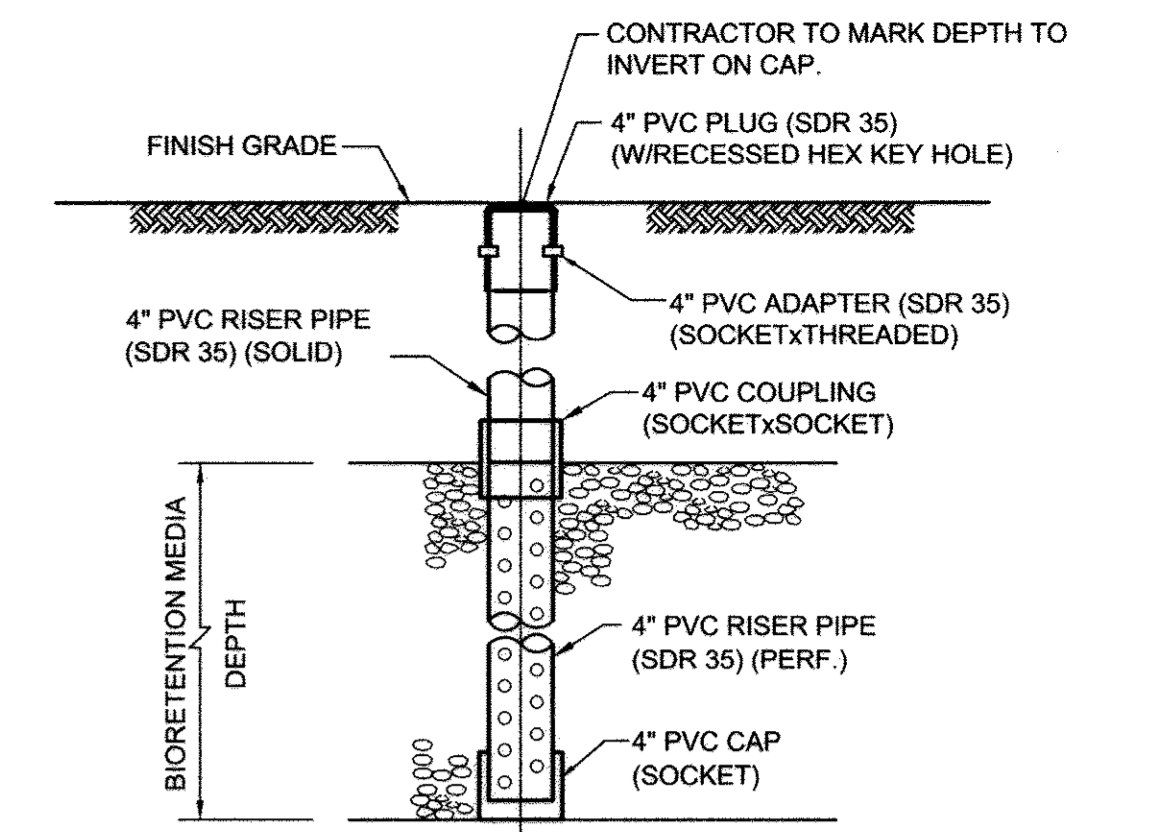
STORMWATER MANAGEMENT NOTES

- SD-1 NEW 6"Ø PERFORATED SCH. 40 PVC PIPE
- SD-2 NEW 15"Ø RCP PIPE
- SD-3 NEW REINFORCED TURF WEIR

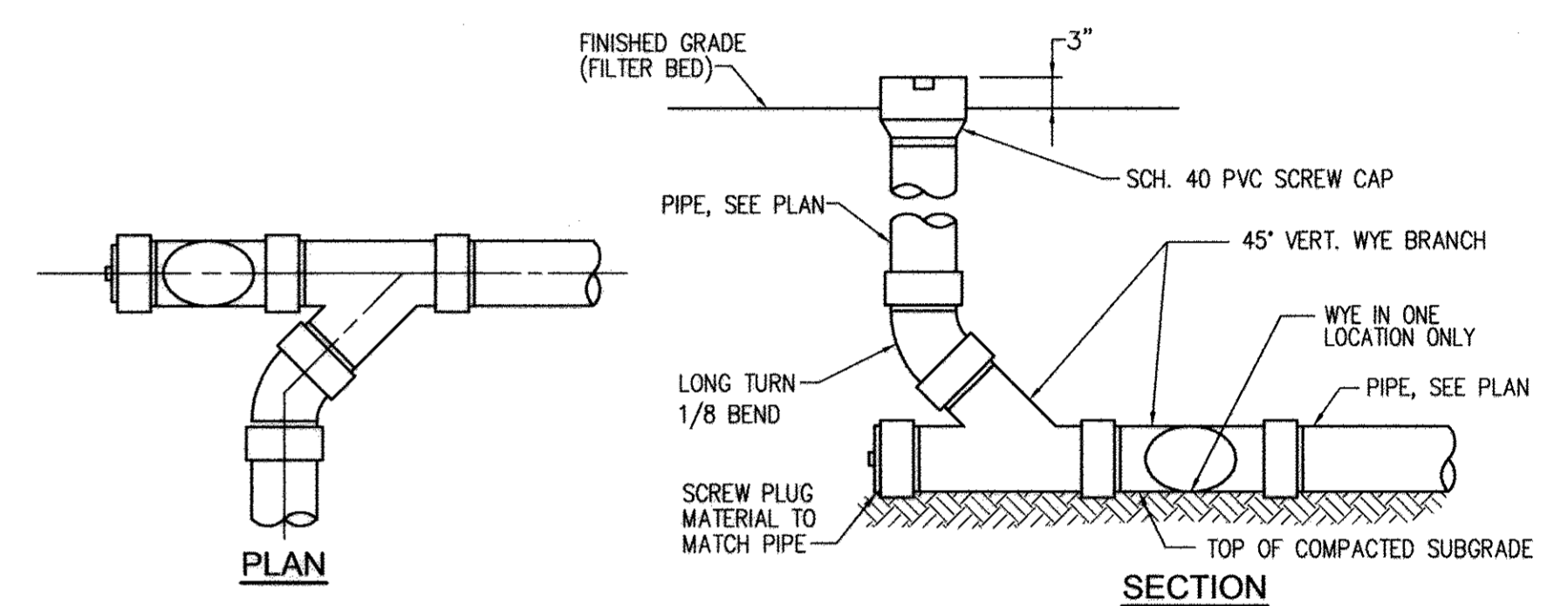
STORMWATER MANAGEMENT SCHEDULE					
NO.	DESCRIPTION	RIM/TG	WEIR	NORTHING	EASTING
CO-1	6" PVC CLEANOUT, SEE DETAIL THIS SHT.	-	N/A	561195.23	1438478.84
CO-2	6" PVC CLEANOUT, SEE DETAIL THIS SHT.	-	N/A	561234.00	1438477.44
I-1	SHA TYPE "K" YARD INLET MD 378.05	474.25	474.00	561235.19	1438487.51
OW-1	OBSERVATION WELL, SEE DET. THIS SHT.	-	N/A	561192.39	1438494.52
MH-1	NEW BEEHIVE GRATE	473.62	N/A	561262.15	1438487.18

LEGEND

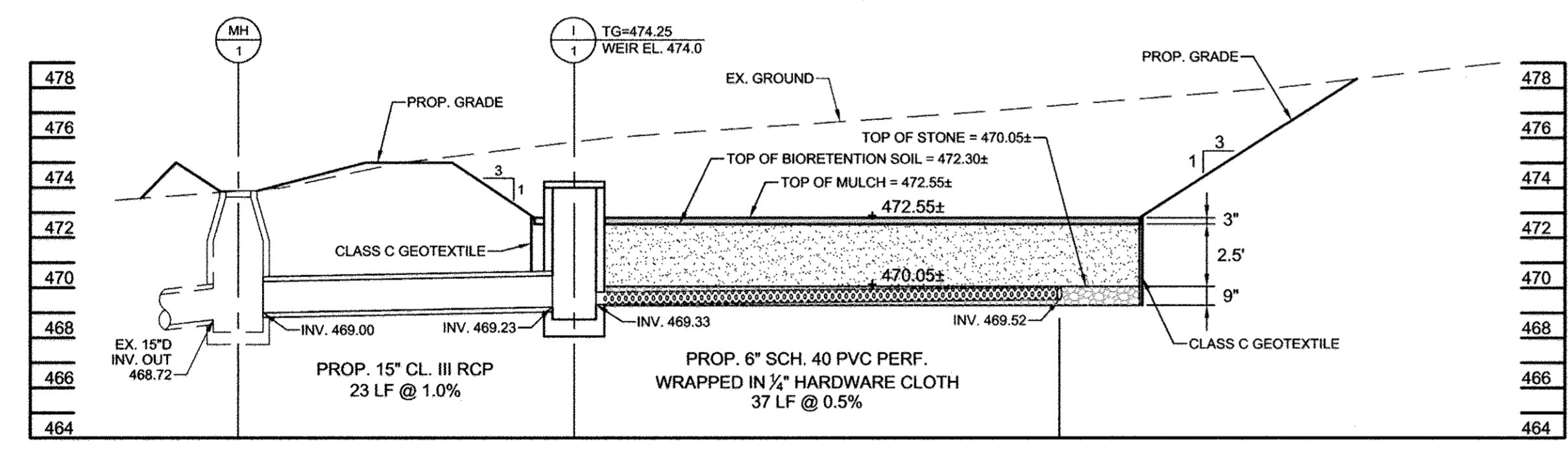
DESCRIPTION	EXISTING	NEW
BUILDING	EX. BLDG.	
CONCRETE WALK	EX. CURB	
PROPERTY LINE		
CURB		
FENCE		
CONTOUR	473 474	474 475
SPOT ELEVATION	x 14.85	+ 475.60
STORM DRAIN	D	
SANITARY	SS	
WATER	W	
MANHOLE	⊙	⊙
INLET	⊠	⊠
CLEANOUT	⊠	⊠
STREET LIGHT	⊙	
POWER POLE	⊙	
WATER VALVE	⊙	
FIRE HYDRANT	⊙	
SIGN	⊙	
TREES	⊙	
TURF REINFORCING MATTING		



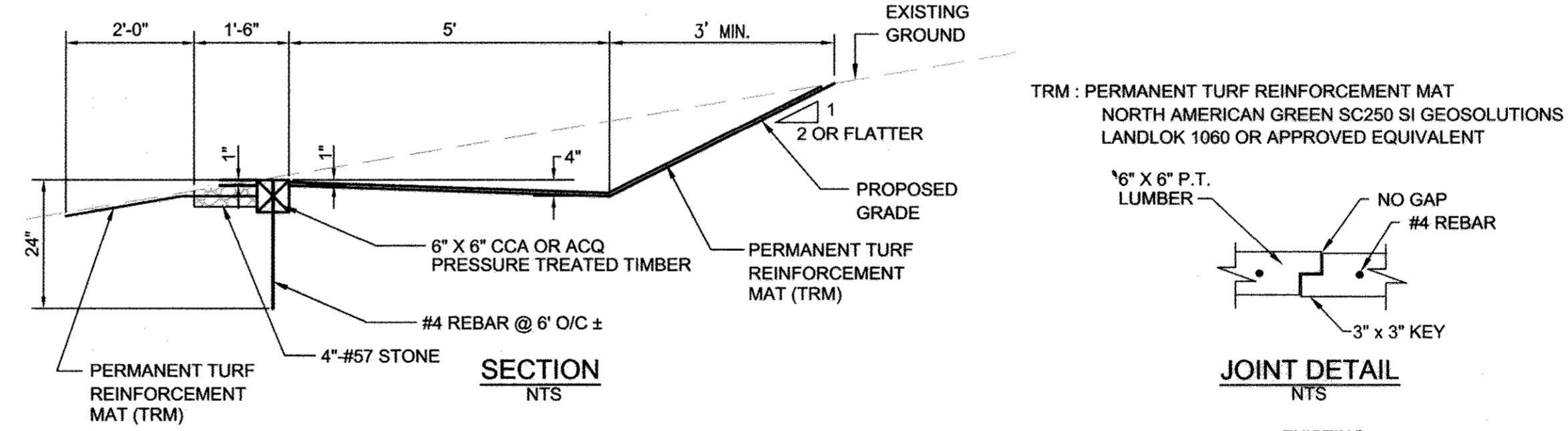
SWM OBSERVATION WELL
SCALE: 1" = 1'-0"



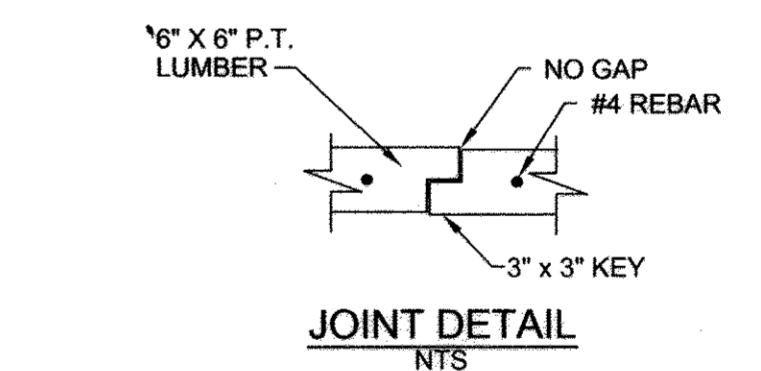
6" CLEANOUT DETAIL
NOT TO SCALE



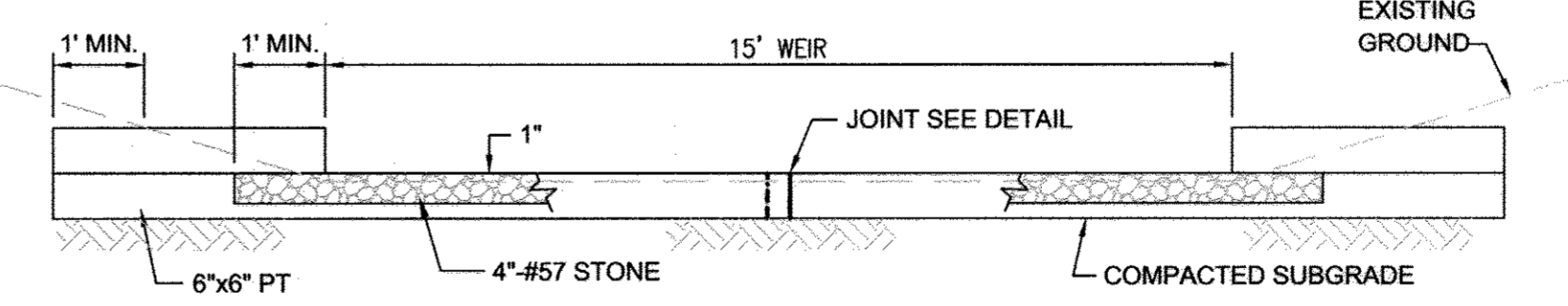
SECTION A
SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'



SECTION
NTS

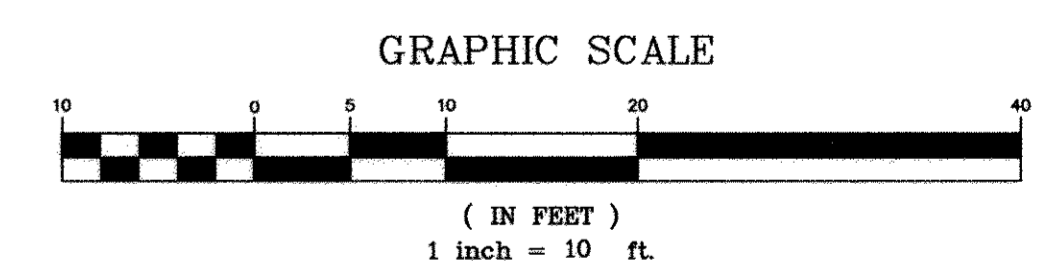
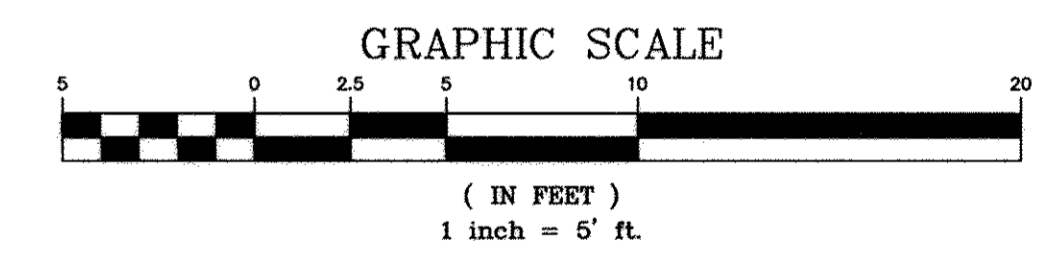


JOINT DETAIL
NTS

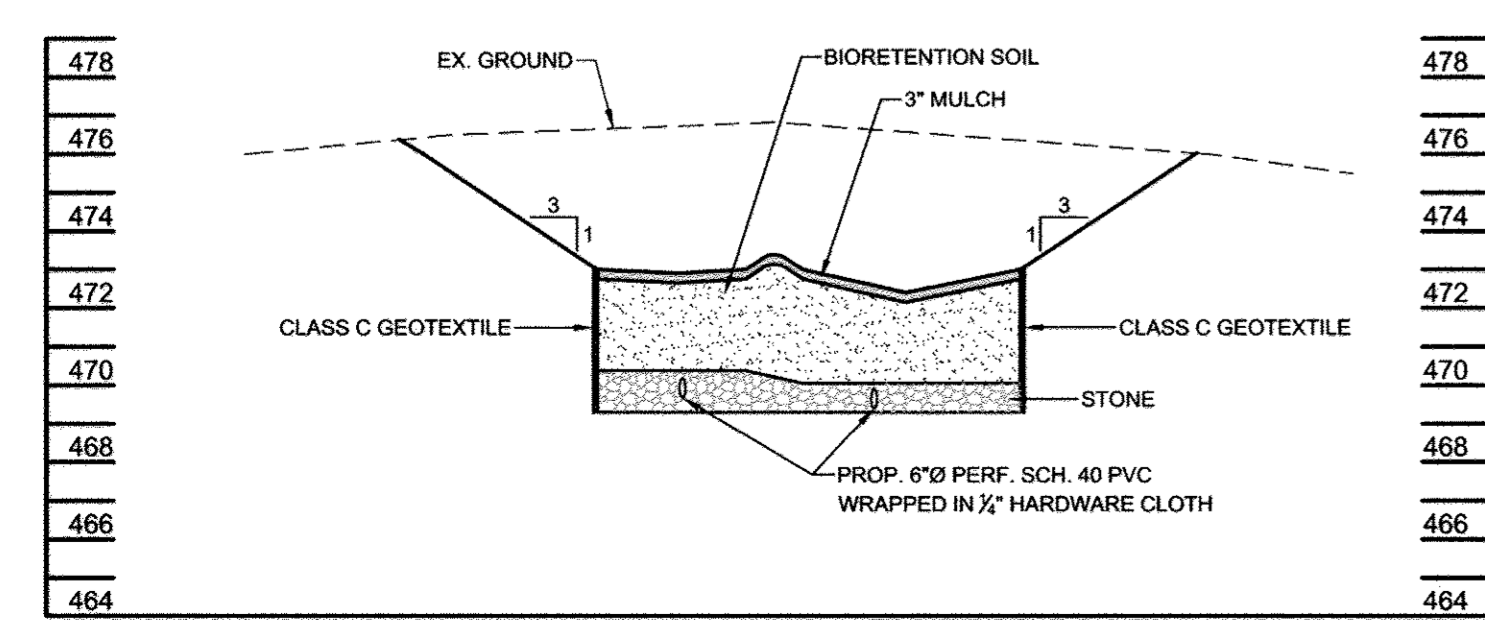


ELEVATION
NTS

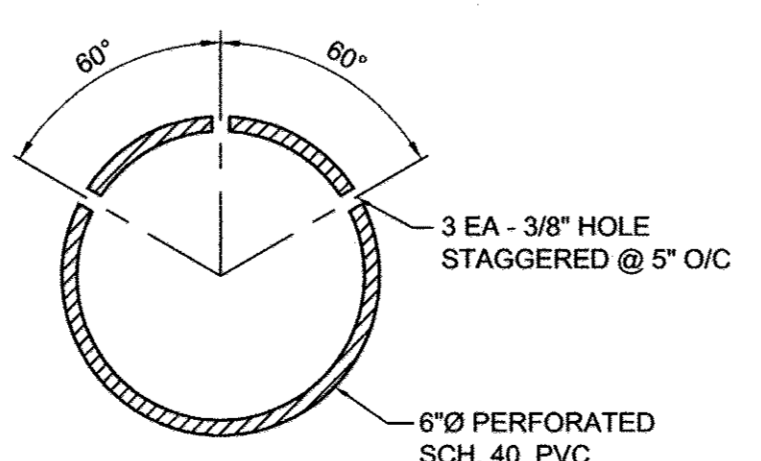
DETAIL - TIMBER LEVEL SPREADER
NOT TO SCALE



OWNER:
COLUMBIA ASSOCIATION
JAN CLARK, RLA
9450 GERWIG LANE
COLUMBIA, MD 21046
(410) 381-0312

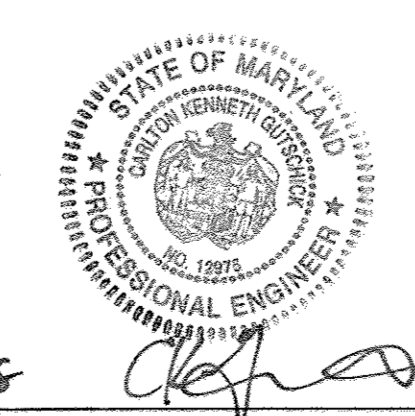


SECTION B
SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'



DETAIL - PERFORATED PIPE
SCALE: 3" = 1'-0"

For Revision #5 only.
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. 12475
Expiration Date: May 16, 2018
3/5/18



VILLAGE OF HARPER'S CHOICE
SECTION 5, AREA 2, LOT 2
5th ELECTION DISTRICT HOWARD COUNTY, MD
TM 29, GRID 23, TM PAR. 289

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 7/19/11
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 7/28/11
DIRECTOR
DATE: 7/28/11

PURPOSE STATEMENT:
THE PURPOSE OF THIS PLAN IS TO REVISE THE EXISTING SDP-86-33c TO PROVIDE AN ENVIRONMENTAL SITE DESIGN RETROFIT FOR 0.25 ACRES OF EXISTING PAVED PARKING AREA.

1-101B	Added building addition, driveway dumpster pad & snow facility	G.L.W.
3	05-06-11 VOLUNTARY ESD RETROFIT	BY
NO.	DATE	REVISION

COLUMBIA ATHLETIC CLUB PARKING AREA ENVIRONMENTAL SITE DESIGN RETROFIT
COLUMBIA, MARYLAND

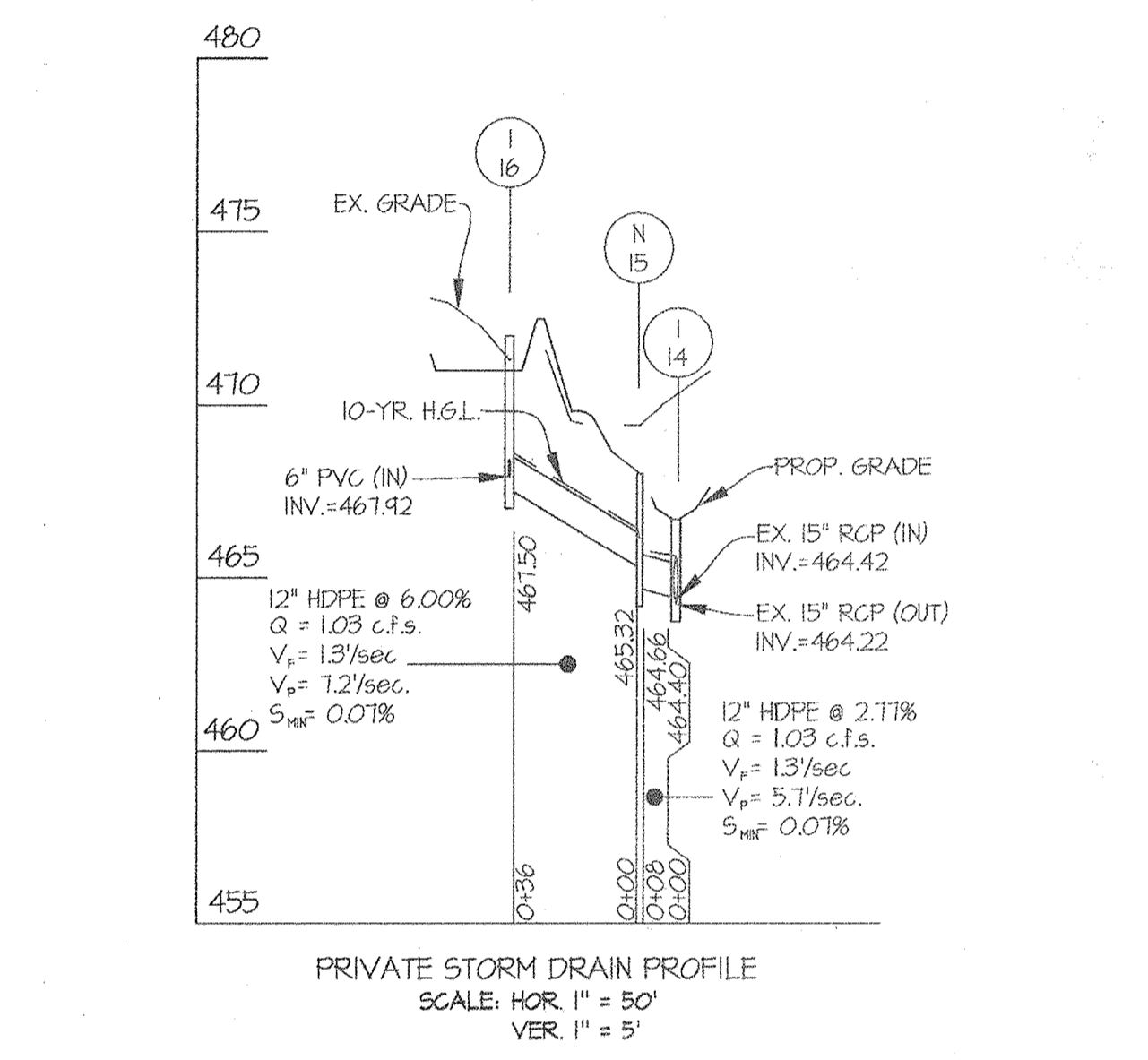
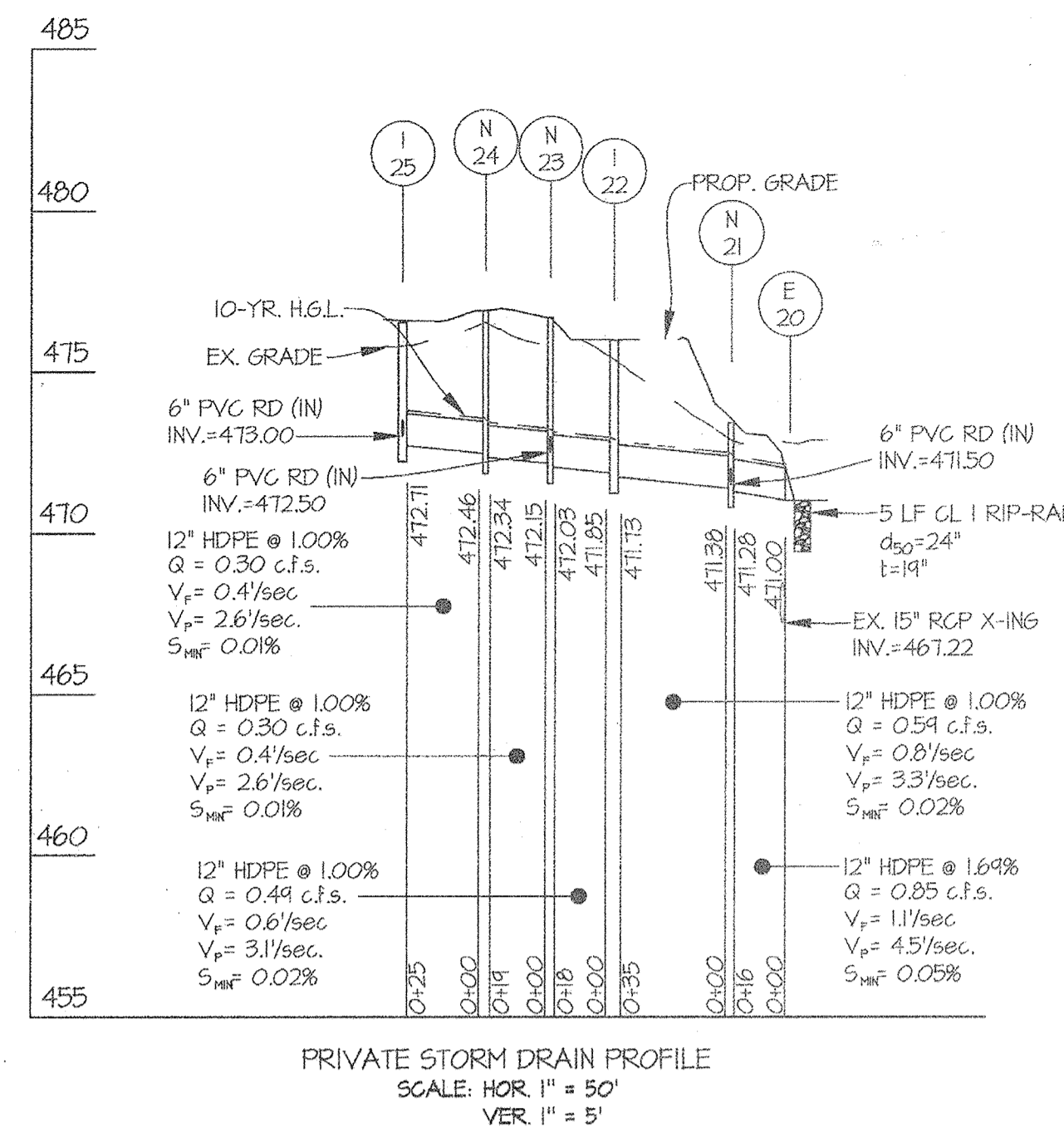
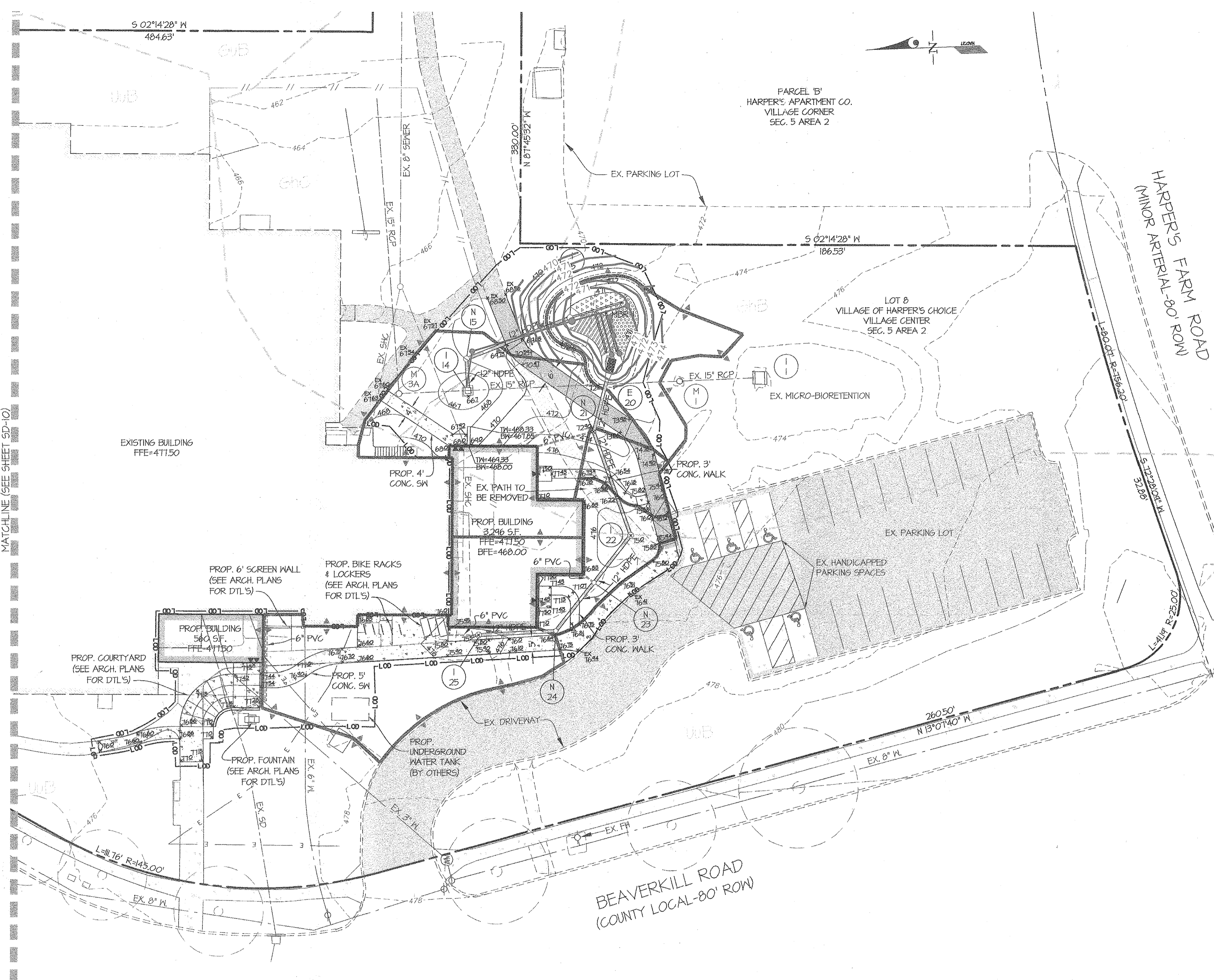
REVISED SITE DEVELOPMENT PLAN - STORMWATER MANAGEMENT

WHITNEY BAILEY COX & MAGNANI, LLC
849 Fairmount Ave. Suite 100 Baltimore, MD 21286
PHONE 410.512.4500 FAX 410.324.4100
www.wbcm.com

WBCM
ARCHITECTURE ENGINEERING CONSTRUCTION

DESIGNED: B.W.L. PROJECT #: 2011.0166.00.0
DRAWN: H.H. DRAWING:
CHECKED: P.D. SCALE: AS SHOWN
DATE: 06/22/11 SHEET: 7 OF 11

SD-7
SDP-86-033c



48 Hours
Before You Dig
Call
"MISS UTILITY"
Service Protection Center
MEMBER
ONE CALL SYSTEMS INTERNATIONAL
CALL TOLL FREE
1-800-257-7777

VICINITY MAP
SCALE: 1" = 2,000'
ADC MAP: 26
GRID: C7

- EXISTING UTILITY NOTES
- For marking locations of existing utilities, notify "MISS UTILITY" at 1-800-257-7777, 48 hours prior to any excavation or construction.
 - Information concerning underground utilities was obtained from available records. The contractor must determine the exact locations and elevations of the utilities by digging test pits by hand at all utility crossings well in advance of trenching. If clearances are less than specified on this plan or less than 12 inches when not specified, contact the Engineer, and the owner of the other involved utility before proceeding with construction.
 - For field location of gas line services, notify Washington Gas Light Co., 703-750-1000, 48 hours prior to the start of any excavation or construction.
 - Omissions and/or additions of utilities found during construction shall be the sole responsibility of any contractor engaged in excavation at this site. Gutschick, Little & Weber, P.A., shall be notified immediately of any and all utility information, omissions and additions found by any contractor.
 - Due to the proximity of live underground and overhead utilities, we are not responsible for any damage or injury sustained during construction by any persons, trucks, trailers, or equipment used on or adjacent to the site.

LEGEND

- 460 EXISTING CONTOUR
- 400 PROPOSED CONTOUR
- EX TREE LINE
- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- EX 8" S
- EXISTING SANITARY SEWER
- EX 8" W
- EXISTING WATERLINE
- FIRE HYDRANT
- EXISTING CURB & GUTTER TO REMAIN
- PROPOSED ASPHALT WALK
- PROPOSED CONCRETE WALK
- EXISTING ASPHALT WALK
- EXISTING ASPHALT WALK T.B.R.
- EXISTING CONCRETE WALK
- LOO LIMIT OF DISTURBANCE
- PROPOSED BUILDING
- EXISTING BUILDING
- SOIL BOUNDARY
- SOIL TYPE
- PROP. DRAINAGE DIVIDE
- EX STORM DRAIN STRUCTURE
- PROP. STORM DRAIN STRUCTURE

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. 129175, Expiration Date: May 26, 2020.
Date: 1/10/19
Carl K. Gutschick
Professional Engineer
Maryland Reg. No. 129175

NOTE: EROSION AND SEDIMENT CONTROL FOR THIS REVISION TO BE COMPLETED UNDER THE HOWARD SOIL CONSERVATION DISTRICT STANDARD EROSION AND SEDIMENT CONTROL PLAN.

NO	TYPE	WIDTH (INSIDE)	TOP ELEVATION				INVERT				STD. DETAIL	LOCATION	REMARKS
			PROPOSED		AS-BUILT		PROPOSED		AS-BUILT				
			UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER			
I-14	YARD INLET	2'-0"	466.70	466.70	466.42	466.42	464.42	464.22			HO. CO. D-414	N 505,864 E 832J01	
N-15	NYLOPLAST DRAIN BASIN	2'-0"	468.00	468.00	467.96	465.32	464.66	465.47	464.81	NYLOPLAST DRAIN	N 505,864 E 832J11	N 505,864 E 832J11	SOLID TOP GRATE
I-16	NYLOPLAST DRAIN BASIN	2'-0"	472.00	472.00	472.13	467.92	467.50	467.94	467.45	NYLOPLAST DRAIN	N 505,824 E 832J23	N 505,824 E 832J23	DOME GRATE
E-20	HDPE END SECTION	1'-0"	472.00	472.00			471.00			HO. CO. D-551	N 505,818 E 832I02	N 505,818 E 832I02	
N-21	NYLOPLAST DRAIN BASIN	1'-6"	472.90	472.90		471.50	471.28			NYLOPLAST DRAIN	N 505,822 E 832,085	N 505,822 E 832,085	STD. SLOTTED GRATE
I-22	NYLOPLAST DRAIN BASIN	2'-0"	475.00	475.00		471.85	471.73			NYLOPLAST DRAIN	N 505,811 E 832,051	N 505,811 E 832,051	STD. SLOTTED GRATE
N-23	NYLOPLAST DRAIN BASIN	1'-6"	476.40	476.40		472.50	472.03			NYLOPLAST DRAIN	N 505,824 E 832,035	N 505,824 E 832,035	SOLID TOP GRATE
N-24	NYLOPLAST DRAIN BASIN	1'-6"	476.70	476.70		472.46	472.34			NYLOPLAST DRAIN	N 505,831 E 832,020	N 505,831 E 832,020	SOLID TOP GRATE
I-25	NYLOPLAST DRAIN BASIN	2'-0"	475.50	475.50		473.00	472.71			NYLOPLAST DRAIN	N 505,863 E 832,014	N 505,863 E 832,014	STD. SLOTTED GRATE

SIZE	TYPE	QUANTITY (L.F.)	REMARKS
12"	HDPE	151	
6"	PVC	33	ROOF DRAIN
6"	SLOTTED PVC	31	MER-1

STR. NO.	D.A. (AC.)	IMP. AREA (AC.)	C-FACTOR
I-14	0.06	0.01	0.45
I-16	0.04	0.00	0.40
N-21	0.04	0.03	0.52
I-22	0.02	0.01	0.51
N-23	0.02	0.02	0.47
I-25	0.01	0.02	0.54

NOTE: HDPE INDICATES HIGH DENSITY POLYETHYLENE PIPE, SUCH AS N-12 BY ADS, OR HI-Q BY HANGOR OR AN APPROVED EQUAL.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Director: *Valerie J. Jolin* 3-29-18
Date: 3-29-18
J. Manhardt, P.E. 3-28-18
Date: 3-28-18
Chief, Division of Land Development
Chad Edwards 3-12-18
Date: 3-12-18
Chief, Development Engineering Division

GLWGUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20886
TEL: 301-421-4024 BALTIMORE: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

PREPARED FOR:
RRMM LUKMIRE ARCHITECTS
2700 SOUTH QUINCY STREET
SUITE 300
ARLINGTON, VIRGINIA
ATTN: DAVID HALLETT
(703)-998-0101

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. 129175, EXPIRATION DATE: MAY 26, 2020.
Date: 3/16/18
Carl K. Gutschick

ASBUILTS
REVISED GRADING AND UTILITY PLAN
COLUMBIA ASSOCIATION ATHLETIC CENTER
COLUMBIA-VILLAGE OF HARPERS CHOICE VILLAGE CENTER
SECTION 5 AREA 2 - LOT 8
ELECTION DISTRICT No. 5
HOWARD COUNTY, MARYLAND

GRAPHIC SCALE
0 10 20 40 60
ASBUILT SHEET 2 OF 3
SCALE: 1"=20'
ZONING: NT
G. L. W. FILE NO.: 16071
DATE: DEC 2018
TAX MAP - GRID: 29 - 23
SHEET: SD-9
AUG 2017

GENERAL NOTES
 1. MATERIAL SPECIFICATIONS
 THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.41.

2. PLANTING SOIL
 THE SOIL SHALL BE A UNIFORM MIX FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF GERMINA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED IN EXHIBIT B.20.B.01.C.

THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:
 • SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (SDA) SOIL TEXTURAL CLASSIFICATION
 • ORGANIC CONTENT - MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (25% TO 40%) OR SANDY LOAM (30%), COARSE SAND (30%), AND COMPOST (10%).
 • CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 3%.
 • PH RANGE - SHOULD BE BETWEEN 5.5 - 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE FLUO SULFUR) MAY BE MIXED INTO THE SOIL TO INCREASE OR DECREASE PH.

THERE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH AND ADDITIONAL TESTS OF ORGANIC MATTER AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKPILED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.

3. COMPACTION
 IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING A LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TIRE TREADS. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.

COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS A SHELL FILLER. TILLING OPERATIONS ARE TO REFRACTURE THE SOIL TO REDUCE THE EFFECTS OF COMPACTION. TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

ROTOILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY POONDED WATER BEFORE PREPARING (ROTOILLING) BASE.

WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE. WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO APPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZERS/LOADER WITH MARSH TRACKS.

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

5. PLANT INSTALLATION
 COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SUBORDINATE TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.

ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/10TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION.

TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.

GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.

THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS, DEFLETS, OR AT A MINIMUM, INFERS THIS GOAL. ONLY ADD FERTILIZER IF MOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.

6. UNDERDRAINS
 UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:
 • PIPES SHOULD BE 4" TO 4" DIAMETER SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F 756, TYPE PS 20, OR AASHTO M 219) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OR HDPE).
 • PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 3" (NO. 4 OR 444) GALVANIZED HARDWARE CLOTH.
 • GRAVEL - THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.
 • THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.
 • A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 10000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.
 • A 4" LAYER OF 3/8" GRAVEL (MIN. TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".

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

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

APPENDIX B.11 - SUPPLEMENTAL POND SPECIFICATIONS (NON-318)
 SUPPLEMENTAL STORMWATER PONDS AND WETLAND SPECIFICATIONS (NON-318)

THESE NOTES AND SPECIFICATIONS ARE IN ADDITION TO THE MD-318 SPECIFICATIONS. IF THERE IS ANY QUESTION AS TO THE APPLICABILITY, THE MD-318 SPECIFICATIONS SUPERSEDE.

1. IT IS PREFERRED TO USE THE SAME MATERIAL IN THE EMBANKMENT AS IS BEING INSTALLED FOR THE CORE TRENCH. IF THIS IS NOT POSSIBLE BECAUSE THE APPROPRIATE MATERIAL IS NOT AVAILABLE, A DAM CORE WITH A SHALL MAY BE USED. THE CROSS-SECTION OF THE STORMWATER FACILITY SHOULD SHOW THE LIMITS OF THE DAM CORE UP TO 10-YEAR WATER SURFACE ELEVATION AS WELL AS THE ACCEPTABLE MATERIALS FOR THE SHELL. THE SHAPE OF THE DAM CORE AND THE MATERIAL TO BE USED IN THE SHELL SHOULD BE PROVIDED BY THE GEOTECHNICAL ENGINEER.

2. IF THE COMPACTION TESTS FOR THE SITE IMPROVEMENTS IS USING MODIFIED PROCTOR (AASHTO T-99), THEN TO MAINTAIN ON-SITE CONSISTENCY, THE MODIFIED PROCTOR MAY BE USED IN LIEU OF A STANDARD PROCTOR (AASHTO T-99). THE MINIMUM DENSITY USING THE MODIFIED PROCTOR TEST METHOD SHALL BE AT LEAST 42% OF THE MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT OF 12% OF THE OPTIMUM. THE MINIMUM REQUIRED DENSITY USING THE STANDARD PROCTOR TEST METHOD SHALL BE AT LEAST 95% OF THE MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT OF 12% OF THE OPTIMUM.

3. FOR ALL STORMWATER MANAGEMENT FACILITIES, A GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE MUST BE PRESENT TO VERIFY COMPACTION IN ACCORDANCE WITH THE SELECTED TEST METHOD. THIS INFORMATION NEEDS TO BE PROVIDED IN A REPORT TO THE DESIGN ENGINEER, SO THAT CERTIFICATION OF THE CONSTRUCTION OF THE FACILITY, IN ACCORDANCE WITH MD-318 SPECIFICATIONS, CAN BE MADE.

4. A 4-INCH LAYER OF TOPSOIL SHALL BE PLACED ON ALL DISTURBED AREAS OF THE DAM EMBANKMENT. SEEDING, LIMING, FERTILIZING, MULCHING, ETC. SHALL BE IN ACCORDANCE WITH MARYLAND SOIL CONSERVATION SERVICE MD-342 OR THE 1984 NARS AND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL PERMANENT SEEDING, SECTION IN CHAPTER 20. THE PURPOSE OF THE TOPSOIL IS TO ESTABLISH A GOOD GROWTH OF GRASS, WHICH IS NOT ALWAYS POSSIBLE WITH SOME OF THE MATERIALS THAT MAY BE PLACED FOR THE EMBANKMENT FILL.

5. GEOTEXTILE PLACED BENEATH RIP-RAP SHALL BE CLASS 'C' GEOTEXTILE OR BETTER (SEE SECTION 24.0). MATERIAL SPECIFICATIONS, 1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL (MSE, 1994), SOME ACCEPTABLE GEOTEXTILES THAT MEET THE CLASS 'C' CRITERIA INCLUDE:

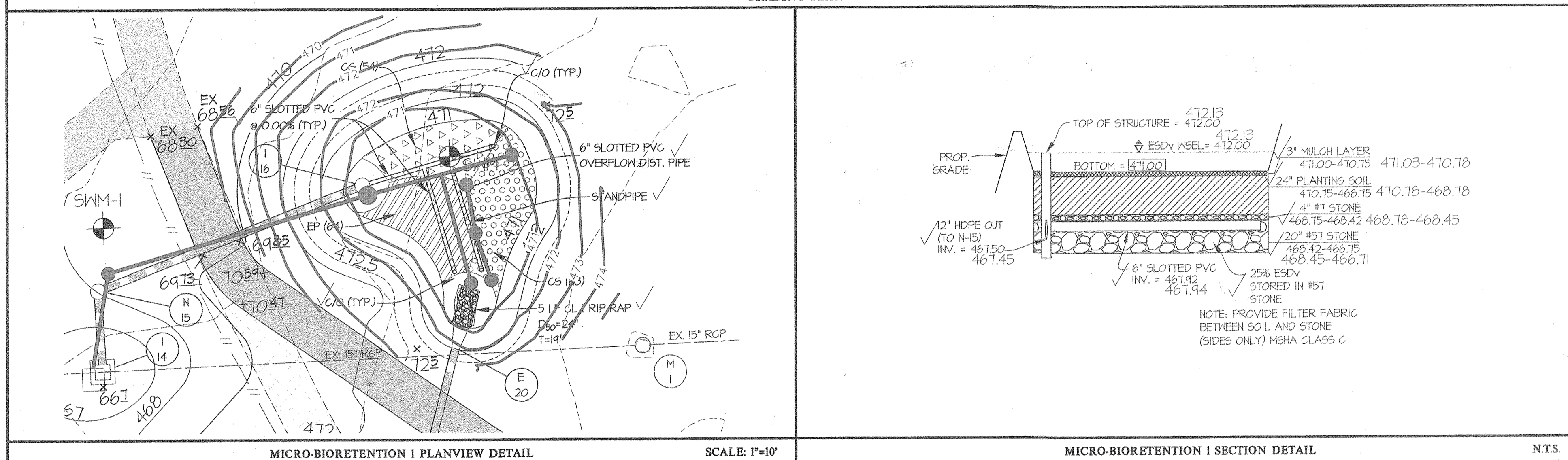
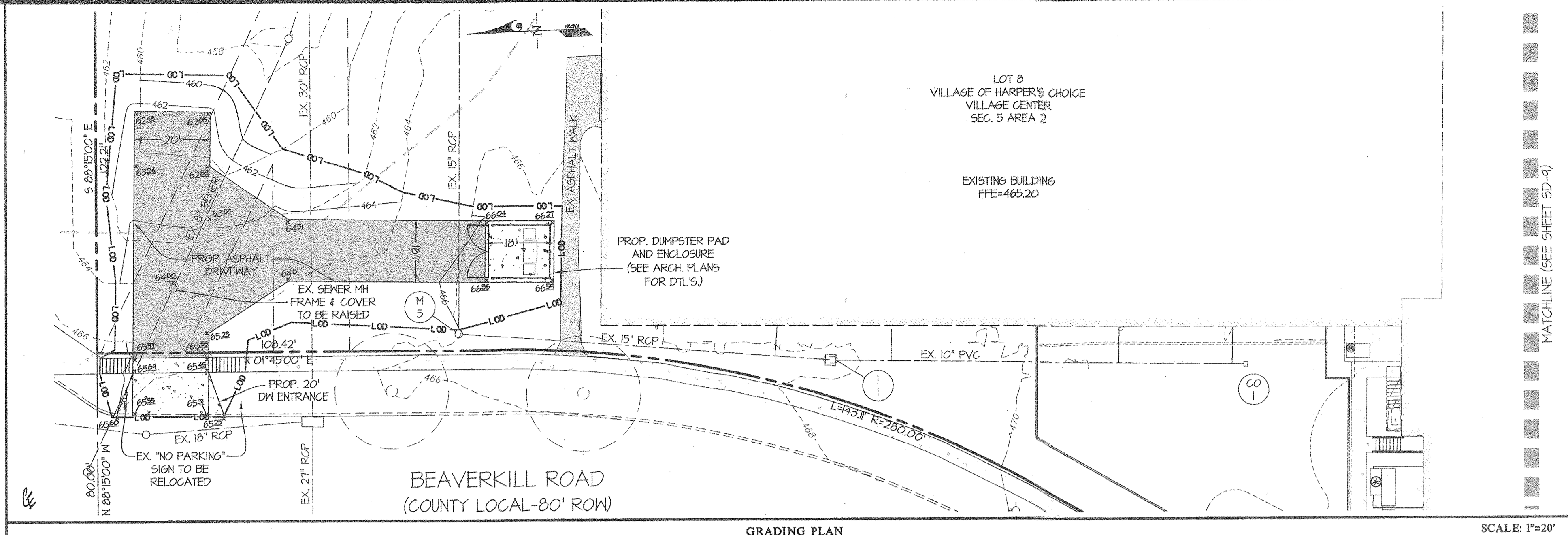
AMCO 452	CARTHAGE FX-105
GEOLON 100	MIRAFI 80-11
NEBTEC 107	

THIS IS ONLY A PARTIAL LISTING OF AVAILABLE GEOTEXTILES BASED ON INFORMATION PROVIDED BY THE MANUFACTURERS OF THE 1991 SPECIFIER'S GUIDE DATED DECEMBER 1996. IT IS THE RESPONSIBILITY OF THE ENGINEER TO VERIFY THE ADEQUACY OF THE MATERIAL AS THERE ARE CHANGES IN THE MANUFACTURING PROCESS AND THE TYPE OF FABRIC USED, WHICH MAY AFFECT THE CONTINUED ACCEPTANCE.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Neil A. J. Smith 3-29-18
 Director Date
J. Marshall 3-28-18
 Chief, Division of Land Development Date
John P. Smith 3-27-18
 Chief, Development Engineering Division Date

GLWGUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3900 NATIONAL DRIVE - SUITE 250 - BURTONVILLE OFFICE PARK
 BURTONVILLE, MARYLAND 20866
 TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DES. EWM DRN. EWM CHK. CKG DATE REVISION BY APP'R



MICRO-BIORETENTION I PLANVIEW DETAIL SCALE: 1"=10'

MICRO-BIORETENTION I SECTION DETAIL N.T.S.

APPENDIX B.11 - SUPPLEMENTAL POND SPECIFICATIONS (NON-318) (CONTINUED)

6. A RULE OF THUMB TO DETERMINE WHEN AN EXCAVATED POND MAY NEED TO BE CONSIDERED AN EMBANKMENT POND IS AS FOLLOWS:
 PROVIDE CALCULATION OF 10' x 20' FEET x 11' WHERE H HEIGHT FROM POND BOTTOM TO TOP OF DAM. IF THE PROJECTION OF L DOWNSTREAM IS A HORIZONTAL LINE FROM THE UPSTREAM TOE OF SLOPE IS BELOW EXISTING GROUND, THE POND CAN BE CONSIDERED AN EXCAVATED POND. IN ADDITION, THE EXISTING GROUND SLOPE, DOWNSTREAM OF THE TOE, MUST BE LESS THAN 10%.

1. THE DESIGN ENGINEER AND GEOTECHNICAL ENGINEER SHOULD MAKE THE DETERMINATION THAT THE SETTLEMENT OF THE POND WILL NOT CAUSE EXCESSIVE JOINT EXTENSION. FOR FURTHER INFORMATION ON JOINT ANALYSIS, SEE NRCE PUBLICATION TR-8.

2. FILL PLACEMENT SHALL NOT EXCEED A MAXIMUM 8-INCH. EACH LIFT SHALL BE CONTINUOUS FOR THE ENTIRE LENGTH OF THE EMBANKMENT.

4. THE EMBANKMENT FILL SHALL NOT BE PLACED HIGHER THAN THE CENTERLINE OF THE PRINCIPAL SPILLWAY UNTIL AFTER THE PRINCIPAL SPILLWAY HAS BEEN INSTALLED. IF THE EMBANKMENT NEEDS TO BE EXCAVATED TO INSTALL THE PRINCIPAL SPILLWAY, THE SIDE SLOPE SHALL BE NO LESS THAN 2:1.

10. THE SIDE SLOPES OF A CUT TO REPAIR A DAM, INSTALL A PRINCIPAL SPILLWAY FOR AN EXCAVATED POND, OR OTHER REPAIR WORK, SHALL BE NO LESS THAN 2:1.

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

- 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 FRUING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME II, TABLES A.1 AND 2.
- THE OWNER SHALL PERFORM A PLANT INSPECTION 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.
- 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.
- THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.
- THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE UNDERDRAINS WITHIN THE BIO-RETENTION LAYERS.
- THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL STORM DRAIN PIPES AND STRUCTURES.

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	COMMENTS
PERENNIALS (127)						
EP	64	EUTROCHUM PURPUREUM	NATIVE JOE PYE WEED	12-18" HT.	1 GAL.	18" ON CENTER
CG	54	CHELONE GLABRA	NATIVE WHITE TURTLEHEAD	12-18" HT.	1 GAL.	18" ON CENTER
CS	63	CAREX STRICTA	NATIVE TUSSOCK SEDGE	12-18" HT.	1 GAL.	18" ON CENTER

MICRO-BIORETENTION I PLANTING SCHEDULE

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. 12975, Expiration Date: May 26, 2020.

1/10/19
 Date
 Carl K. Gutschick
 Professional Engineer
 Maryland Reg. No. 12975

ASBUILTS
 REVISED GRADING AND STORMWATER MANAGEMENT PLAN
COLUMBIA ASSOCIATION ATHLETIC CENTER
COLUMBIA-VILLAGE OF HARPERS CHOICE VILLAGE CENTER
 SECTION 5 AREA 2 · LOT 8
 HOWARD COUNTY, MARYLAND
 ELECTION DISTRICT No. 5

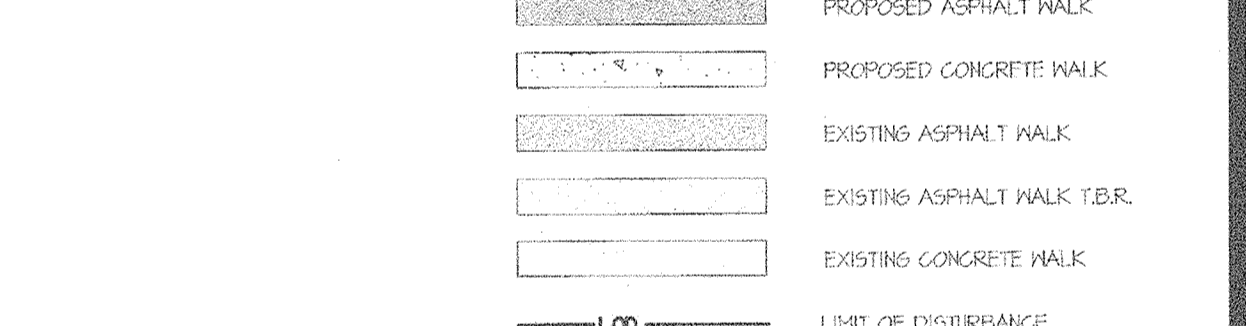
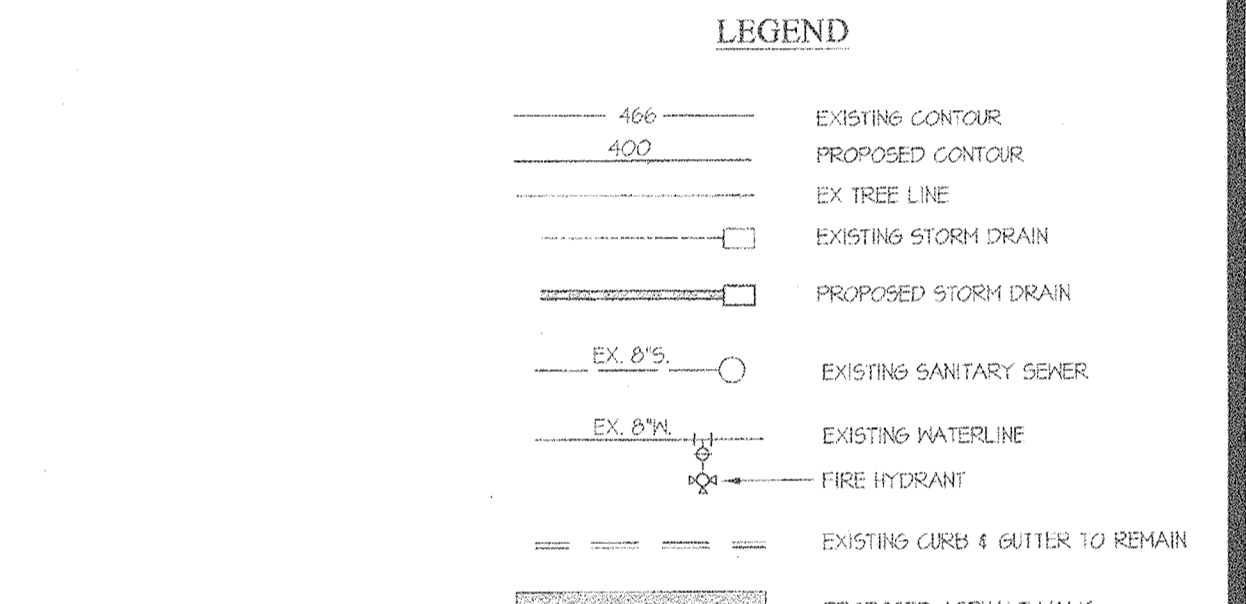
48 Hours
Before You Dig
 Call
"MISS UTILITY"
 Service Protection Center

MEMBER
 ONE CALL SYSTEMS INTERNATIONAL

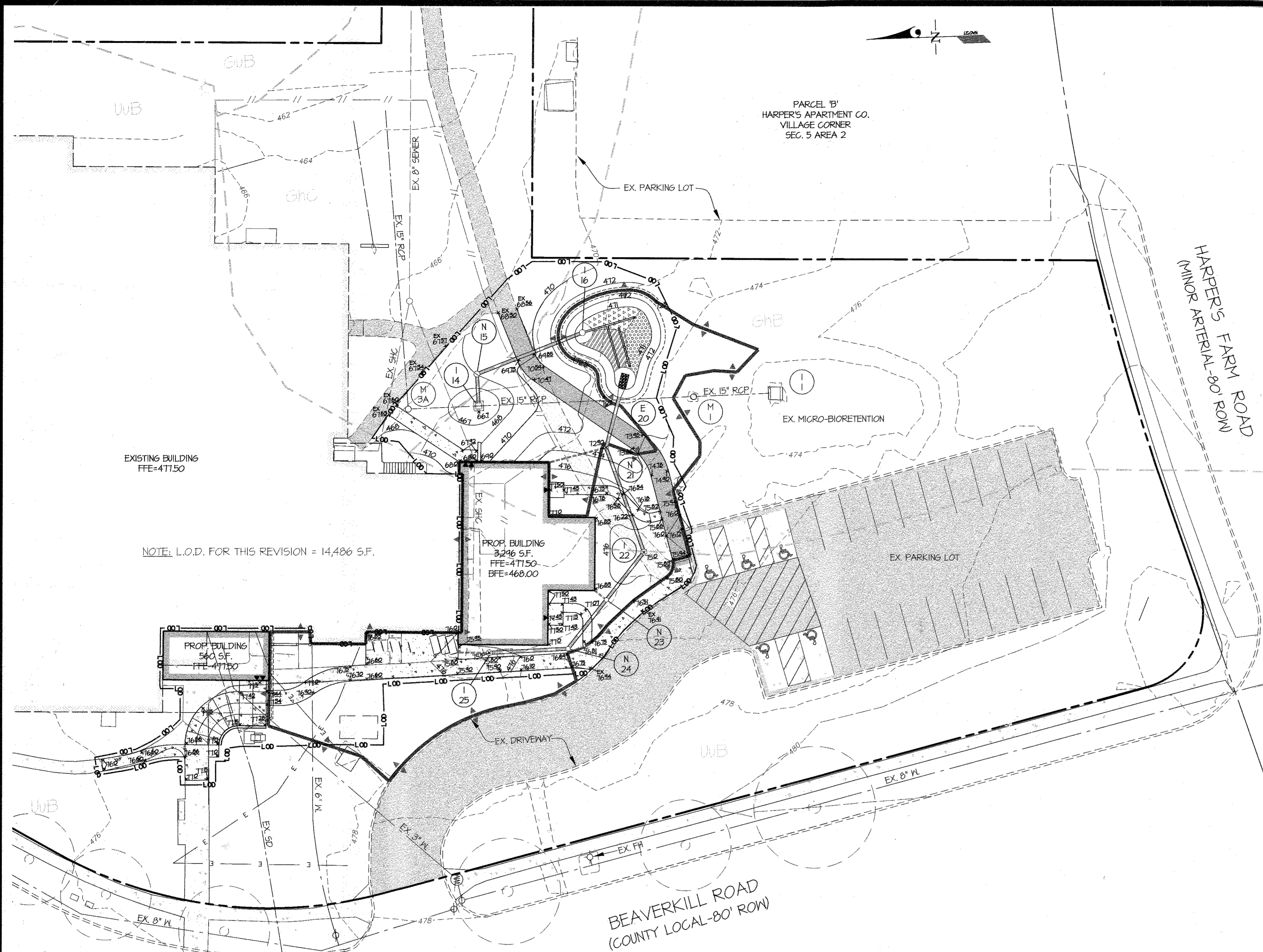
CALL TOLL FREE
 1-800-257-7777

VICINITY MAP
 SCALE: 1" = 2,000'
 EXISTING UTILITY NOTES

- For marking locations of existing utilities, notify "MISS UTILITY" at 1-800-257-7777, 48 hours prior to any excavation or construction.
- Information concerning underground utilities was obtained from available records. The contractor must determine the exact locations and elevations of the utilities by digging test pits by hand at all utility crossings well in advance of trenching. If clearances are less than specified on this plan or less than 12 inches when not specified, contact the Engineer, and the owner of the other involved utility before proceeding with construction.
- For field location of gas line services, notify Washington Gas Light Co., 703-750-1000, 48 hours prior to the start of any excavation or construction.
- Omissions and/or additions of utilities found during construction shall be the sole responsibility of any contractor engaged in excavation at this site. Gutschick, Little & Weber, P.A., shall be notified immediately of any and all utility information, omissions and additions found by any contractor.
- Due to the proximity of live underground and overhead utilities, we are not responsible for any damage or injury sustained during construction by any persons, trucks, trailers, or equipment used on or adjacent to the site.



SCALE	ZONING	G. L. W. FILE NO.
1"=20'	NT	16071
DATE	TAX MAP - GRID	SHEET
DEC. 2018 AUG 2017	29 - 23	SD-10



SOIL TYPES

GUB	GLENELEG-URBAN LAND COMPLEX, 0 to 8 percent slopes	B
GNC	GLENELEG-URBAN LAND COMPLEX, 8 to 15 percent slopes	B
GUB	GLENNVILLE-URBAN LAND-UDORTHERTS COMPLEX, 0 to 8 percent slopes	C
WUB	URBAN LAND-UDORTHERTS COMPLEX, 0 to 8 percent slopes	D

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VICINITY MAP
SCALE: 1" = 2,000'

- EXISTING UTILITY NOTES**
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NOTE: L.O.D. FOR THIS REVISION = 14,486 S.F.

PROP. BUILDING
3,296 SF
FFE=47150
BFE=46800

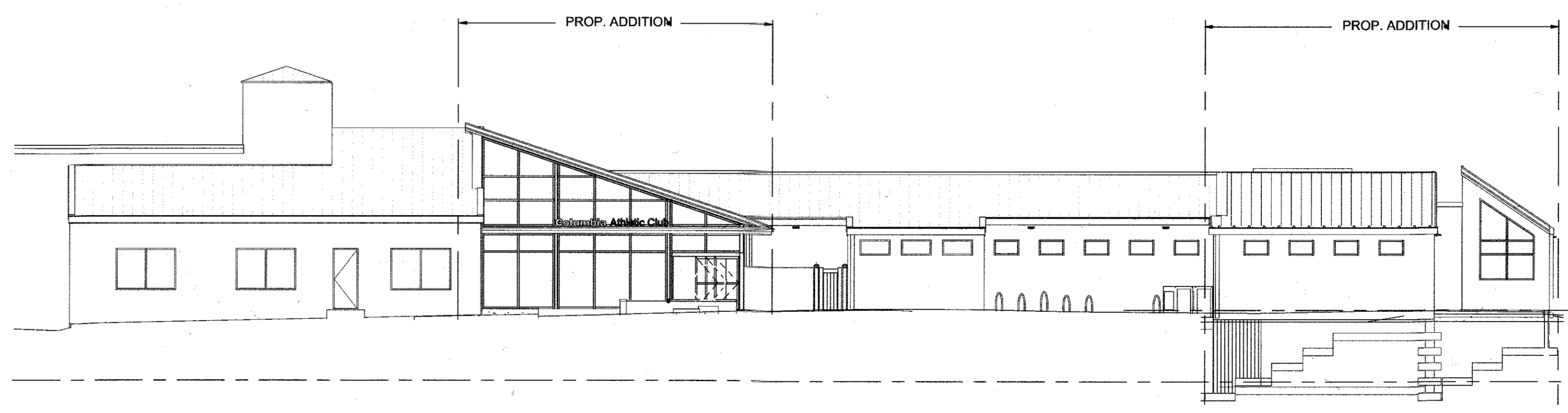
BEAVERKILL ROAD
(COUNTY LOCAL-80' ROW)

LEGEND

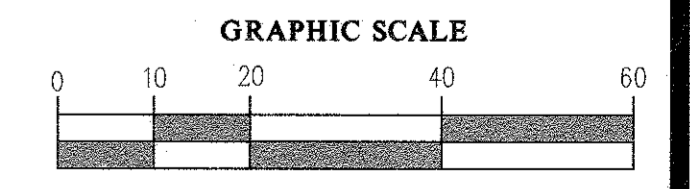
466	EXISTING CONTOUR
400	PROPOSED CONTOUR
(Symbol)	EX TREE LINE
(Symbol)	EXISTING STORM DRAIN
(Symbol)	PROPOSED STORM DRAIN
EX. 8"	EXISTING SANITARY SEWER
EX. 8" W	EXISTING WATERLINE
(Symbol)	FIRE HYDRANT
(Symbol)	EXISTING CURB & GUTTER TO REMAIN
(Symbol)	PROPOSED ASPHALT WALK
(Symbol)	PROPOSED CONCRETE WALK
(Symbol)	EXISTING ASPHALT WALK
(Symbol)	EXISTING CONCRETE WALK
LOD	LIMIT OF DISTURBANCE
(Symbol)	PROPOSED BUILDING
(Symbol)	EXISTING BUILDING
(Symbol)	SOIL BOUNDARY
(Symbol)	SOIL TYPE
(Symbol)	PROP. DRAINAGE DIVIDE
(Symbol)	EX. STORM DRAIN STRUCTURE
(Symbol)	PROP. STORM DRAIN STRUCTURE

STORMWATER MANAGEMENT SUMMARY TABLE

ESD FACILITY	TOTAL DRAINAGE AREA (SF)	ESD SURFACE AREA (SF)	NET DRAINAGE AREA (SF)	MIN. ESDV (Pe=1.00") (CF)	ESDV PROVIDED (CF)	BOTTOM ELEVATION	MAXIMUM VOLUME (CF)
MEB-1	8,661	407	8,254	288	726	471.00	749
				TOTAL ESDV REQ.	667		
				TOTAL ESDV PROV.	726		



Upper Level (477'-6")
Lower Level (468'-0")



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Valerie J. ... 3-29-18
Director Date

J. Maunhardt 3-28-18
Chief, Division of Land Development Date

David ... 3-27-18
Chief, Development Engineering Division Date

GLWGUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTNSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.

PREPARED FOR:
RRMM LUKMIRE ARCHITECTS
2700 SOUTH QUINCY STREET
SUITE 300
ARLINGTON, VIRGINIA
ATTN: DAVID HALLETT
(703)-998-0101

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. 12512 EXPIRATION DATE: MAY 26, 2018

3/5/18

REVISED DRAINAGE AREA MAP & BUILDING ELEVATION

COLUMBIA ASSOCIATION ATHLETIC CENTER
COLUMBIA-VILLAGE OF HARPERS CHOICE VILLAGE CENTER
SECTION 5 AREA 2 - LOT 8

ELECTION DISTRICT No. 5

HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE NO.
1"=20'	NT	16071
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AUG 2017	29 - 23	SD-11