

GENERAL NOTES

- All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications, if applicable.
- The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work.
- The contractor is to notify the following utilities or agencies at least five days before starting work on these drawings:
 - Miss Utility 1-800-257-7777
 - Verizon 410-754-6281
 - Howard County Bureau of Utilities: 313-2366
 - AT&T Cable Location Division: 393-3553
 - B.G.&E. Co. Contractor Services: 850-4620
 - B.G.&E. Co. Underground Damage Control: 787-4620
 - State Highway Administration: 531-5533
- Site analysis:
 - Area of parcel: 3.4235 Ac.
 - Present zoning: B2
 - Use of structure:
 - Automobile Sales: 15,747 sf
 - Automobile Service (Including Car Wash): 12,180 sf
 - Building area: 27,927 sf
 - Disturbed area: 138,050sf
 - Building coverage on site: 0.641 Ac. or 18.72 % of gross area
 - Paved parking lot/area: 1.73 Ac. or 50.2 % of gross area
 - Area of landscape island: .108 Ac. = 4,701 sf
 - Cut: 1,350 CY Fill: 12,700 CY
- Project background:
 - Location: Columbia, Md.; Tax Map 34, Block 6, Parcel L-1
 - Zoning: B-2
 - Subdivision: Holweck Subdivision
 - Section/Area: 1/1
 - Site Area: 3.4235 Acres
 - DPZ references: Plat# 11182, and DPZ file#: F-01-29
- The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to start of work.
- Any damage to public right-of-ways, paving, or existing utilities will be corrected at the contractor's expense.
- Existing utilities located from Road Construction Plans, Field Surveys, Public Water and Sewer Extension Plans and available record drawings. Approximate location of existing utilities are shown for the contractor's information. Contractor shall locate existing utilities well in advance of construction activities and take all necessary precautions to protect the existing utilities and to maintain uninterrupted service. Any damage incurred due to contractor's operation shall be repaired immediately at the contractor's expense.
- All reinforced concrete for storm drain structures shall have a minimum of 28 days strength of 3,500 p.s.i.
- Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
- Estimates of earthwork quantities are provided solely for the purpose of calculating fees.
- Soil compaction specifications, requirements, methods and materials are to be in accordance with the recommendations of the project Geotechnical Engineer. Geotechnical Engineer to confirm acceptability of proposed paving section, based on soil test prior to construction.
- All storm drain pipe bedding shall be Class 'C'.
- The existing topography is taken from field run survey with two foot contour intervals prepared by Frederick Ward & Associates, Inc. dated 5/22/01. The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System.
- A noise study is not required for this project.
- All paving to be P-2 paving per Howard County standard details. (See note #12)
- All curb and gutter to be Howard County Standard concrete Detail 3.01 unless otherwise specified.
- Contractor responsible to construct all handicap parking and handicap access in accordance with current ADA requirements.
- Where drainage flows away from curb, contractor to reverse the gutter pan.
- All elevations are to flowline/bottom of curb unless otherwise noted.
- All dimensions are to face of curb unless otherwise noted.
- Public Water available along Auto Drive (8" Water) Contract #44-3323-D.
- Public Sewer available along Auto Drive (1 1/2" Sewer (FM)) Contract #30-3687-D.
- Stormwater Management shall be provided by an underground detention system for quantity attenuation. Water quality shall be provided by a sand filter structure, and existing Stormceptor will be utilized to provide pre-treatment. The proposed stormwater management system will be privately owned and maintained by Antwerpen Nissan.
- All exterior lighting shall conform to Zoning Regulations Section 134.
- Building to have inside Water Meter setting.
- Traffic Impact Study prepared by The Traffic Group, dated November 14, 2002.
- See sheet 4 for lighting detail. Lighting details provided for informational purposes only. See electrical and architectural plans for additional lighting information.
- There are no wetlands on-site.
- Department of Planning and Zoning related DPZ file: SF 93-14, WP 93-90, WP 01-20, F 92-161, F 94-38, ZB 947M, ZB1008M, Plat #11584, #11181, #11183, #11182, #14864
- There will be no mezzanine levels permitted unless adequate parking has been provided and approved by the Department of Planning and Zoning.
- Geotech report prepared by Herbst/Benson & Associates on July 11, 2000.
- Financial Surety for the required landscaping must be posted with the developer agreement in the amount of \$18,900 for 35 shade trees, 53 evergreen trees, and 15 shrubs. The landscape surety will be posted with the developer's agreement.
- Reference ZB 947M and ZB 1008M for zoning cases for this site:
 - A) ZB 947M:
 - Date of approval for Decision and Order: March 11, 1994
 - Rezoned 2.05 acres from B-2 to RC, and 1.99 acres from RC to B-2.
 - Conditions of approval: A 300' private easement buffer area between the zoned B-2 use on lot 4 and the existing residential house on lot 3.
 - B) ZB 1008M:
 - Date of approval for Decision and Order: December 4, 2000
 - Rezoned 0.48 acres of Parcel "L" from B-2 to RC, which became part of Lot 4 and was included in the Agricultural Preservation Easement for that property.
 - Conditions of approval: No conditions of approval were specified.
- Debris is to be kept out of all stormwater management facilities during and after construction.
- Forest Conservation requirements for parcel L-1 are provided in conjunction with F-01-29.
- Existing Stormwater Management Facility was bonded under F-01-029 by 108 Limited Partnership, C/O Win Kelly Chevrolet.

ANTWERPEN NISSAN

SITE DEVELOPMENT PLAN

PARCEL L-1

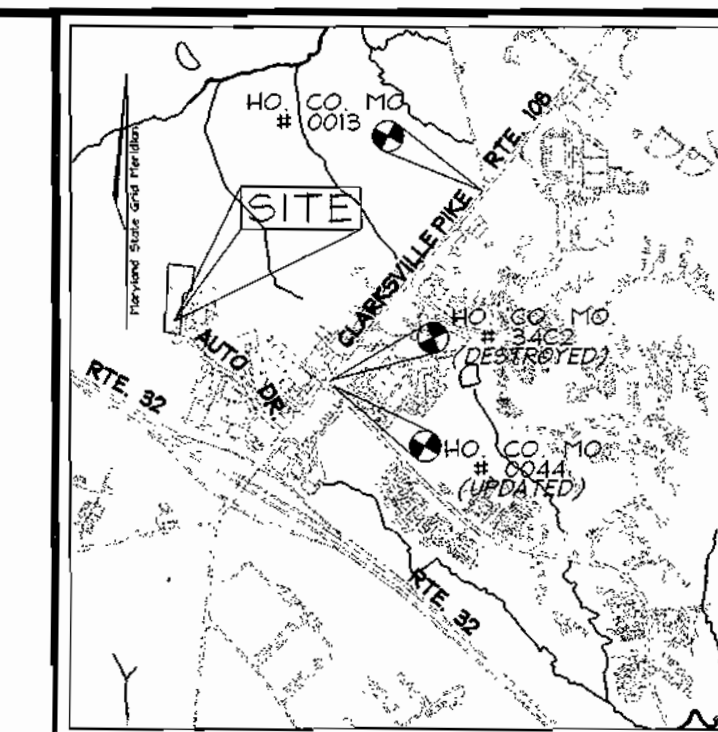
LEGEND

- Existing Contour
- Proposed Contour
- Existing Spot Elevation
- Proposed Spot Elevation
- Direction of Flow
- Existing Trees to Remain
- Light Poles: O-S Single Overhead, O-O Double Overhead
- Concrete

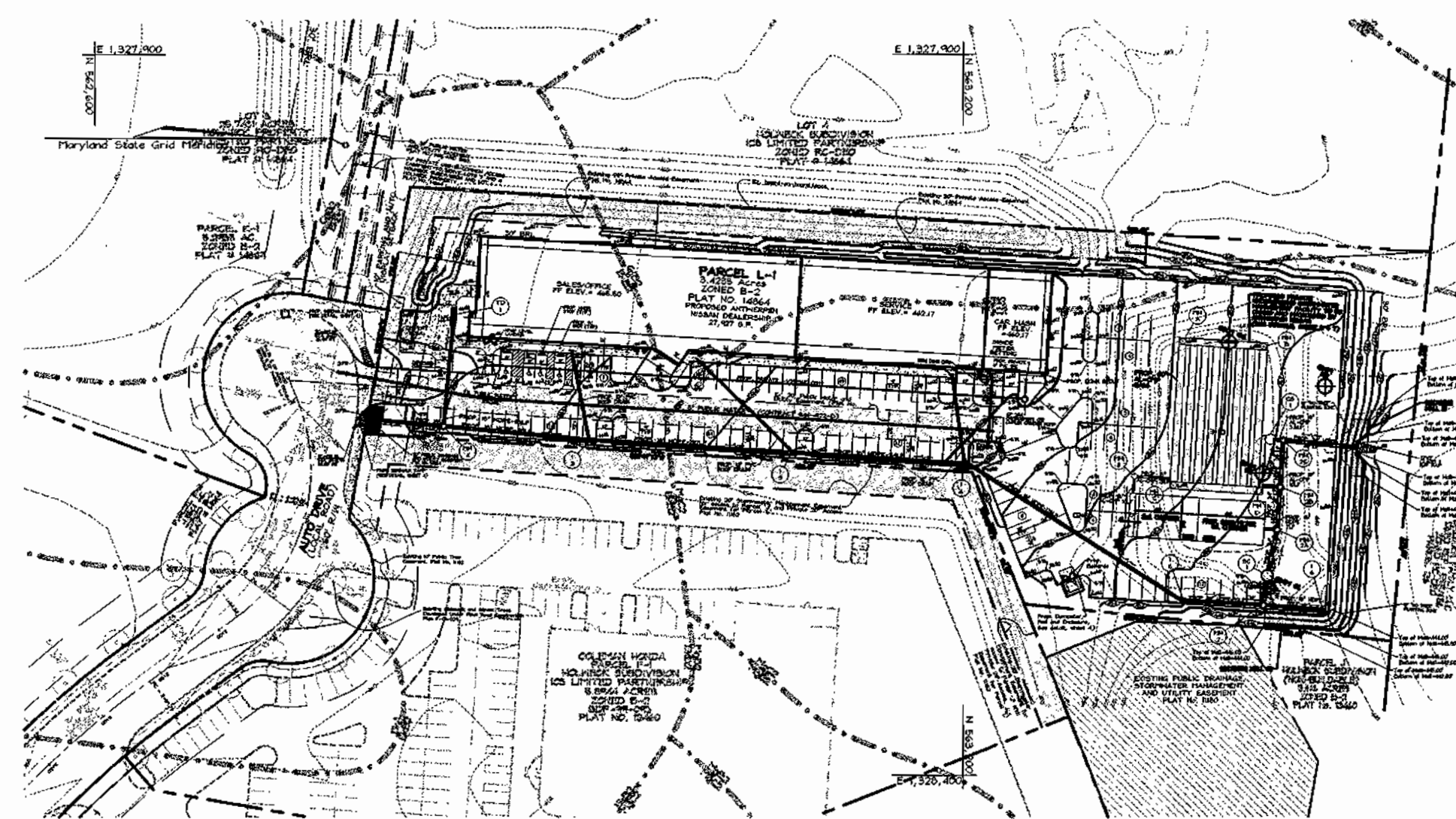
BENCHMARKS

HOWARD COUNTY BENCHMARK 34C2 (DESTROYED)
 N 562321.798 E 1324750.722
 UPDATED: BENCHMARK 0044
 N 562176.474 E 1324641.868 ELEV. 485.252

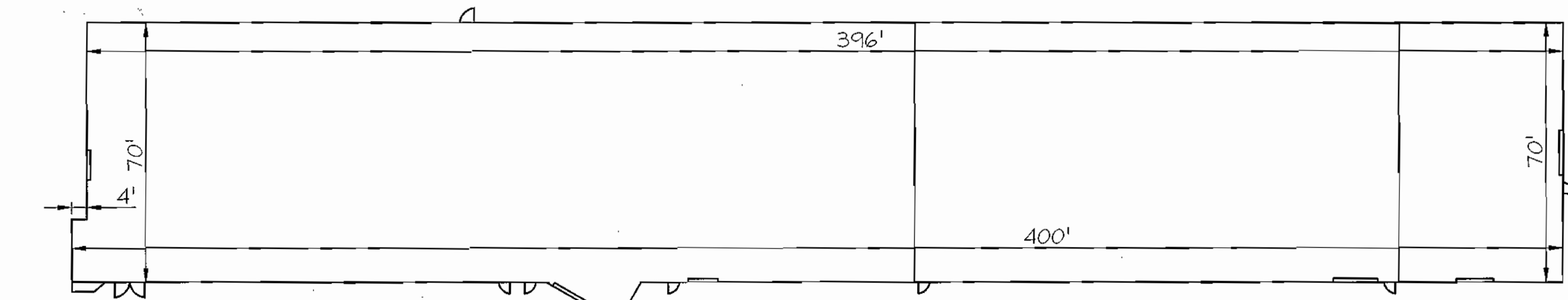
HOWARD COUNTY BENCHMARK 0013
 N 564285.946 E 1331309.715 ELEV. 484.671'



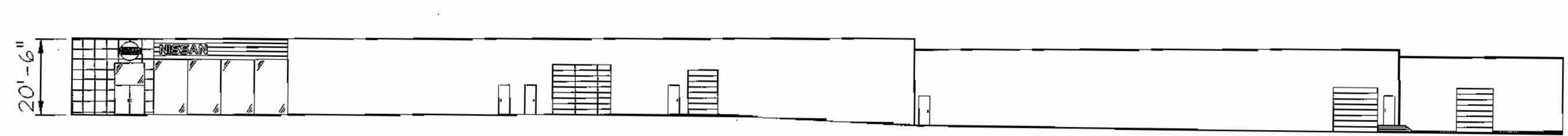
VICINITY MAP
SCALE: 1"=2000'



LOCATION MAP
SCALE: 1"=100'



PROPOSED BUILDING PLAN VIEW
NOT TO SCALE



PROPOSED BUILDING ELEVATION
NOT TO SCALE

OWNER/DEVELOPER

Antoy LLC
 12451 Auto Drive
 Clarksville, MD 21029-1266

ADDRESS CHART

LOT/PARCEL#	STREET ADDRESS
L-1	12451 AUTO DRIVE

PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	PARCEL NUMBER			
Holweck Subdivision		L-1			
PLAT REF.	BLOCK NO.	ZONE	TAX/ZONE ELEC.	DIST.	CENSUS TR.
14864	6	B2	34	5th	6051
WATER CODE: J07			SEWER CODE: 665300		

NO.	REVISION	DATE

COVER SHEET

SITE DEVELOPMENT PLAN
ANTWERPEN NISSAN
PARCEL L-1, HOLWECK SUBDIVISION

TAX MAP #34 BLOCK #6 PARCEL L-1
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND



FREDERICK WARD ASSOCIATES, INC.

7125 Riverwood Drive Columbia, Maryland 21046-2354
 Phone: 410-290-9550 Fax: 410-720-6226
 Bel Air, Maryland Columbia, Maryland Warrenton, Virginia



DESIGN BY: MMR
 DRAWN BY: DZ
 CHECKED BY: RHY
 DATE: SEPT 2003
 SCALE: AS SHOWN
 W.O. NO.: 2024056

1 SHEET OF 9

SHEET INDEX

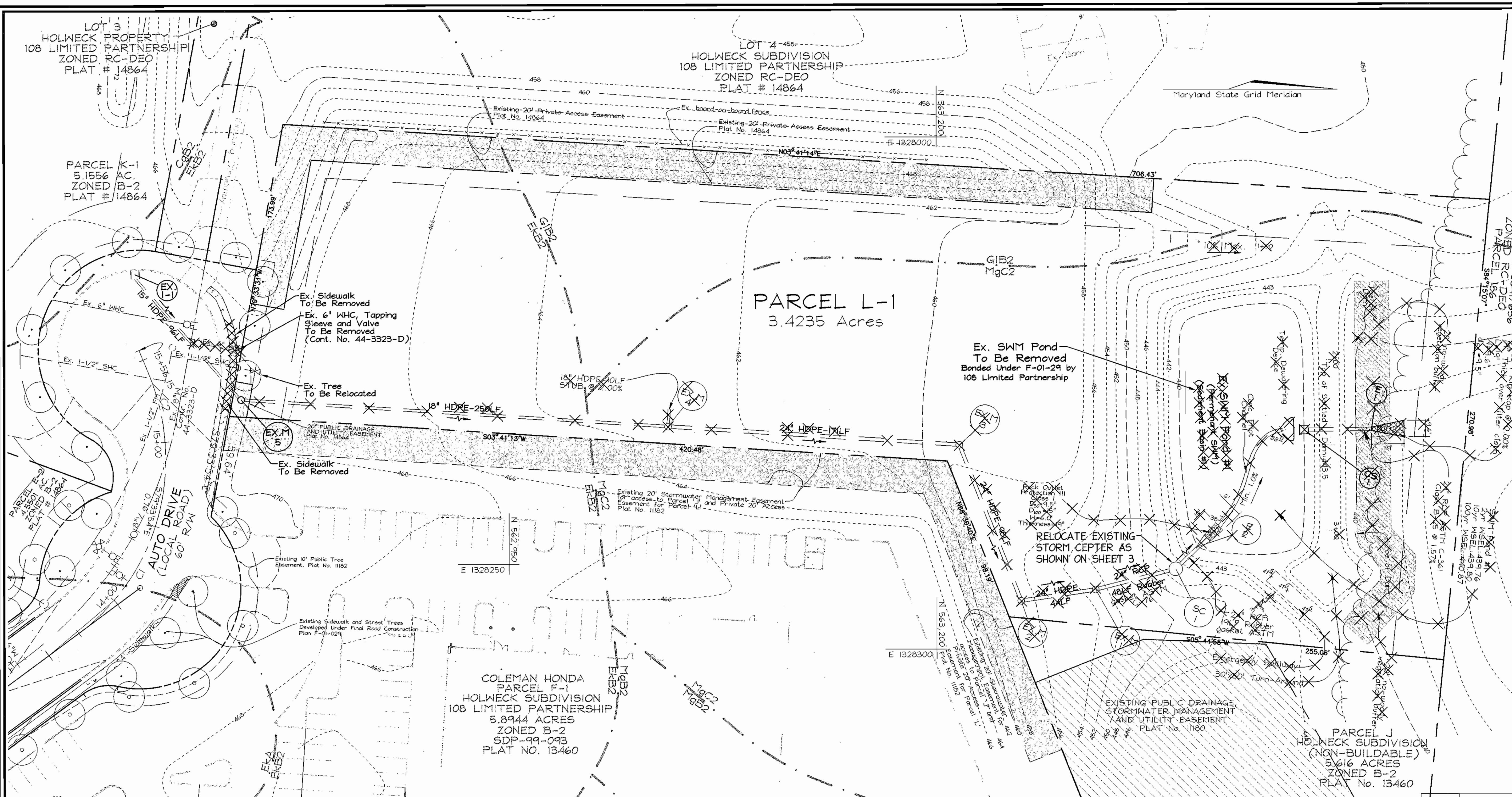
DESCRIPTION	SHEET NO.
Cover Sheet	1 of 9
Existing Conditions and Demolition Plan	2 of 9
Site Development, Grading, and Sediment and Erosion Control Plan	3 of 9
Sediment Control Details And Miscellaneous Details	4 of 9
Storm Drain Plan, Drainage Area Map, And SWM Details	5 of 9
Site Landscape Plan	6 of 9
Water & Sewer Profiles and Details, SWM Notes and Details	7 of 9
Cornerstone Retaining Wall Designs	8 of 9
Cornerstone Retaining Wall Designs	9 of 9

PARKING TABULATION

AUTOMOBILE DISPLAY: 27,943 SF	REQUIRED	28 SPACES
@ 1 SPACE/1000 SF		
SALES/OFFICE: 15,747 SF		
@ 2 SPACES/1000 SF		
SERVICE BAYS: 18 BAY AUTOMOBILE SERVICE AREA		32 SPACES
@ 3 SPACES/SERVICE BAY		
(SEE SCHEMATIC FOR DOOR LOCATIONS)		
TOTAL PARKING SPACES REQUIRED:		114 SPACES
TOTAL PARKING SPACES PROVIDED:		114 SPACES INCLUDING 5 HANDICAP SPACES

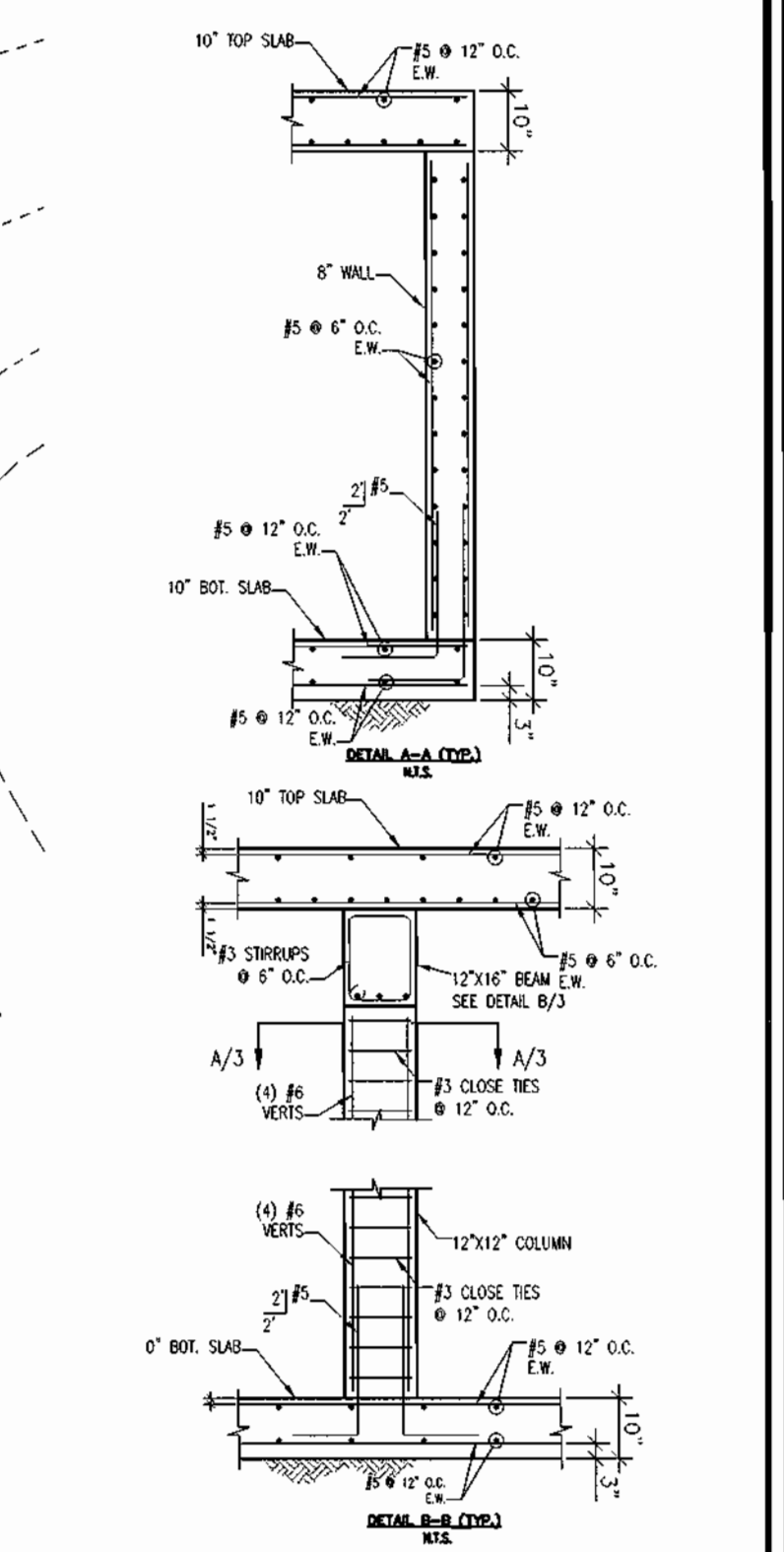
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chris Hamilton 10/16/03
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
Condy Hamilton 10/6/03
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
Jack Dwyer 10/13/03
 DIRECTOR DATE



LEGEND:

	EXISTING CONTOUR
	EXISTING SPOT ELEVATION
	EXISTING CURB AND GUTTER
	EXISTING GUY WIRE
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	EXISTING MAILBOX
	EXISTING SIGN
	EXISTING BOLLARD
	EXISTING SANITARY MANHOLE
	EXISTING SANITARY LINE
	EXISTING CLEANOUT
	EXISTING FIRE HYDRANT
	EXISTING WATER LINE
	EXISTING SD MANHOLE
	EXISTING STORM DRAIN
	EXISTING TREES (FIELD LOCATED)
	EXISTING TREELINE (FIELD LOCATED)
	EXISTING VEGETATION (APPROPRIATE LOCATION)
	EXISTING FENCE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	SOILS BOUNDARY
	TO BE REMOVED



REINFORCING STEEL

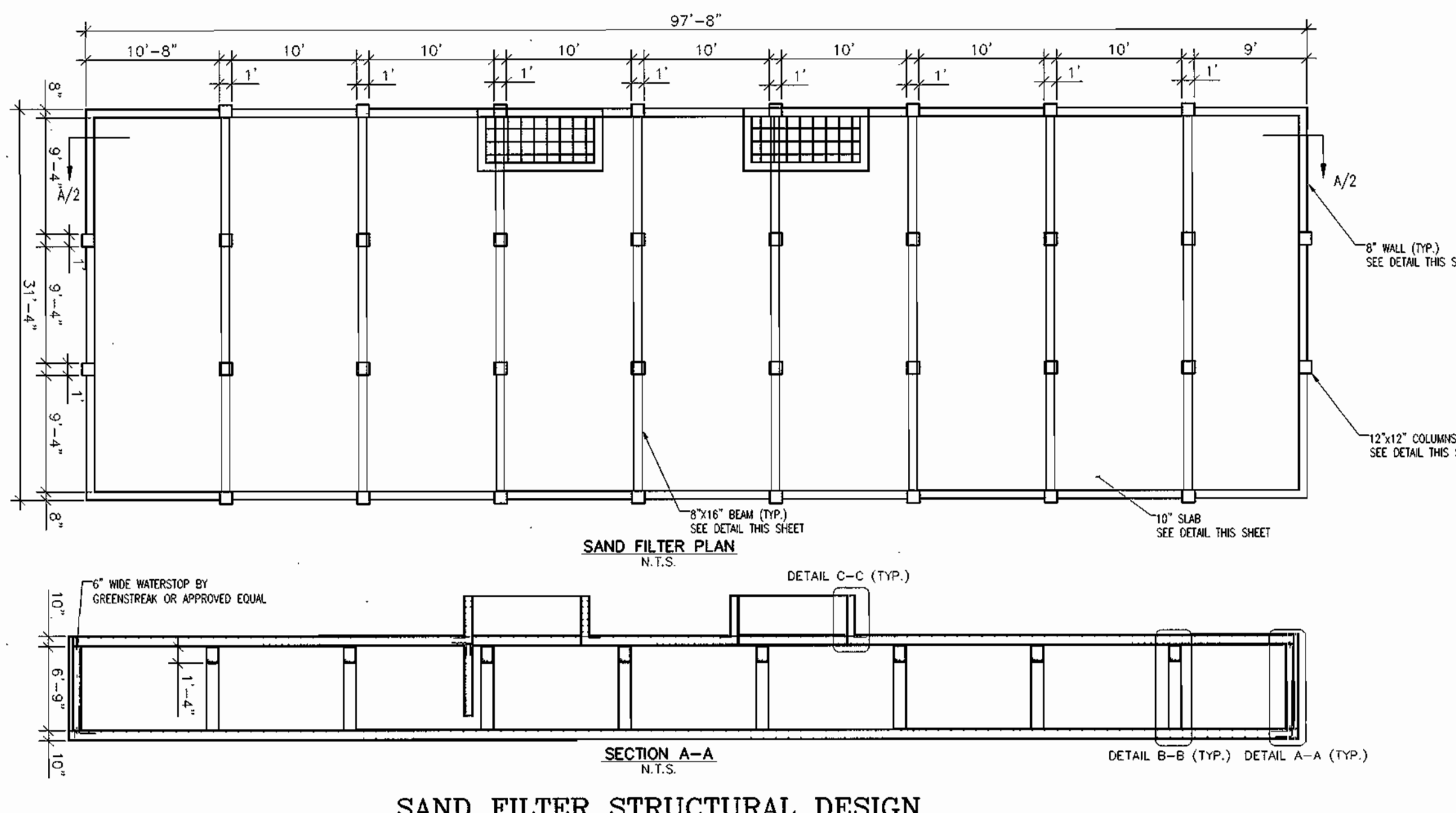
- REINFORCING BARS SHALL BE DEFORMED BILLET STEEL CONFORMING TO ASTM A615, GRADE 60. ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185. BARS SHALL BE GRANTED BY THE MANUFACTURER WITH BAR SIZE AND GRADE OF STEEL AND CERTIFIED MILL REPORTS SHALL BE SUBMITTED FOR RECORD. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", LATEST EDITION. PROVIDE CORNER BARS AT JUNCTIONS OF CONCRETE WALLS AND WALL FOOTINGS AND LAP CONTINUOUSLY AROUND CORNERS AND LAPPED AS NECESSARY. PROVIDE STANDARD HOOKS AT DISCONTINUOUS ENDS. TENSION AND COMPRESSION LAP SPACES SHALL NOT BE LESS THAN THE SPURCE LENGTHS AS GIVEN IN ACI-318. GENERALLY LAP TOP BARS AT MID SPAN AND BOTTOM BARS AT SUPPORTS. PROVIDE LAPPING ACCESSORIES IN ACCORDANCE WITH ACI RECOMMENDATIONS.
- ALL REINFORCING TO BE LAPPED 48 X BAR DIA. ZIGZAG ALL LAPS IN THE SLAB.

FOOTINGS

- ALL FOOTINGS ARE BASED ON AN ALLOWABLE SOIL BEARING PRESSURE OF 3,000 PSF. ANY SOIL CONDITION ENCOUNTERED DURING EXCAVATION THAT IS CONTRARY TO THOSE USED FOR DESIGN OF FOOTINGS AS OUTLINED IN WORKING DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING.
- BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF 2'-0" BELOW FINISHED EXTERIOR GRADE, UNLESS A LOWER ELEVATION IS NOTED. FOOTING ELEVATIONS NOTED ARE ESTIMATED BASED ON AVAILABLE GEOTECHNICAL AND GRADING INFORMATION. ALL FOOTINGS ADJACENT TO EXISTING FOOTINGS SHALL BE LOWERED TO MATCH EXISTING FOOTING ELEVATION.
- ALL FOUNDATION SUBGRADES SHALL BE INSPECTED AND APPROVED UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER PRIOR TO BEING CONCRETED. FOOTINGS MAY BE LOWERED TO ACHIEVE BEARING CAPACITY.

CONCRETE

- ALL FOOTINGS, FOUNDATIONS AND INTERIOR SLABS SHALL BE NORMAL WT CONCRETE WITH A COMPRESSIVE STRENGTH EQUAL TO AT LEAST 3,000 PSI WITHIN 28 DAYS AFTER POURING. THE WATER/CEMENT RATIO SHALL BE NO GREATER THAN 0.50 AND SLUMP SHALL BE 3 IN. OR LESS. MIN CEMENT CONTENT SHALL BE 504 LBS PER CU YARD.
- UNLESS OTHERWISE NOTED, ALL CONSTRUCTION JOINTS SHALL BE KEPT WITH A 1/2" DEEP, A LENGTH 2 IN. LESS THAN THE MEMBER, AND A WIDTH 1/2" OF THE MEMBER. REINFORCING SHALL BE CONTINUOUS THRU JOINT.
- ALL CONCRETE WORK SHALL BE PLACED, CURED, SHIPPED, AND PROTECTED AS DIRECTED BY THE SPECIFICATIONS AND ACI STANDARDS AND PRACTICES.
- BEFORE CONCRETE IS POURED CHECK WITH ALL TRADES TO INSURE PROPER PLACEMENT OF ALL OPENINGS, SLEEVES, CURBS, CONDUITS, BULBS, INSERTS, ETC. RELATIVE TO WORK.
- CONTRACTOR IS RESPONSIBLE FOR ALL SHORING AND FORMWORK.
- REFER TO CIVIL DRAWINGS FOR MOLDS, GROOVES, ORNAMENT, CLIPS OR GROUNDS, REQUIRED TO BE ENCASED IN CONCRETE AND FLOOR LOCATION OF FLOOR FINISHES AND SLAB DEPRESSIONS.
- CONCRETE DESIGN AND DETAILING SHALL CONFORM TO THE REQUIREMENTS OF ACI 318-02. CONTRACTOR SHALL SUBMIT MIX DESIGNS ACCOMPANIED BY APPROPRIATE GRAPHS AND BACKGROUND DATA FOR APPROVAL. MIX DESIGN SHALL INDICATE 7 AND 28 DAY STRENGTHS, CEMENT CONTENT, AIR CONTENT, WATER-CEMENT RATIO, AMOUNT OF FINE AND COARSE AGGREGATES, AND ADJUTURES. MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:
 SLABS ON GRADE: 3000 PSI
 FOOTINGS AND PEDESTALS: 3000 PSI
 PEA-GRAVEL CONCRETE (OR GROUT): 3000 PSI (FOR FILLING CMU UNITS)
 ALL OTHER CONCRETE: 3000 PSI
- ALL EXTERIOR CONCRETE AND CONCRETE EXPOSED TO WEATHER SHALL BE AIR-ENTRAINED.
- CONTRACTOR TO SUPPLY SHOP DRAWINGS OF ALL STRUCTURAL COMPONENTS FOR APPROVAL PRIOR TO CONSTRUCTION.
- USE OF ADJUTIVES SHALL NOT BE PERMITTED UNLESS SPECIFICALLY APPROVED BY THE STRUCTURAL ENGINEER.
- THE CONCRETE SUBCONTRACTOR SHALL NOT REPRODUCE ANY PORTION OF THE STRUCTURAL CONTRACT DRAWINGS FOR UTILIZATION AS SHOP DRAWINGS.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 10/16/03
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 10/16/03
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 10/17/03
 DIRECTOR DATE

NO.	REVISION	DATE

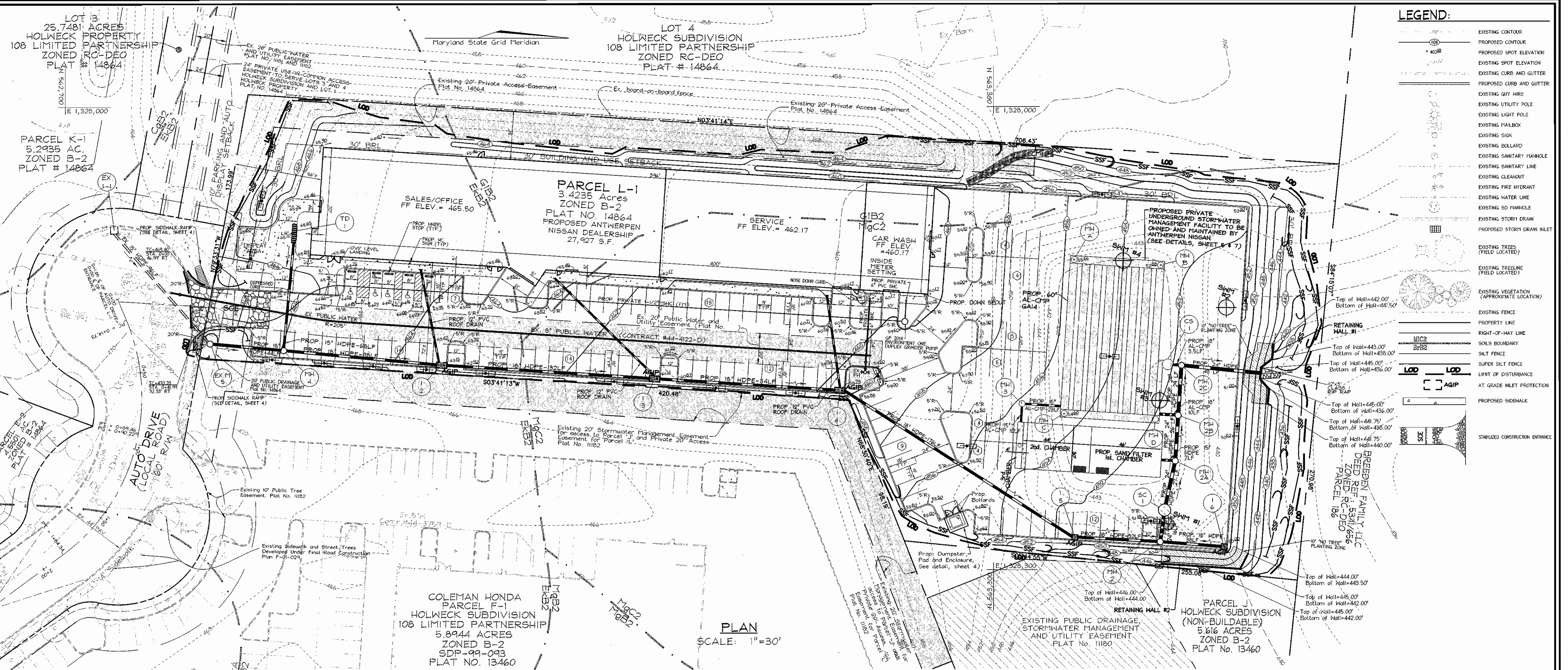
EXISTING CONDITIONS & DEMOLITION PLAN
SITE DEVELOPMENT PLAN
ANTWERPEN NISSAN
PARCEL L-1, HOLWECK SUBDIVISION

TAX MAP #34 BLOCK #6 PARCEL L-1
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.
 ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354
 ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6226
 SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: MTR
 DRAWN BY: DZ
 CHECKED BY: RHY
 DATE: SEPT 2003
 SCALE: 1"=30'
 I.W.O. NO.: 2024056

2 SHEET OF 9



LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING GUY WIRE
- EXISTING GUY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING BOLLARD
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING SD MANHOLE
- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN INLET
- EXISTING TREES (FIELD LOCATED)
- EXISTING TREELINE (FIELD LOCATED)
- EXISTING VEGETATION (APPROXIMATE LOCATION)
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- SOILS BOUNDARY
- SILT FENCE
- SUPER SILT FENCE
- LIGHT OF DISTURBANCE
- AT GRADE INLET PROTECTION
- PROPOSED SIDEWALK
- STABILIZED CONSTRUCTION ENTRANCE

PLAN
SCALE: 1"=30'

- NOTES:**
- DEMOLITION IS ONLY REQUIRED ON EXISTING CURB AND GUTTER AND SIDEWALK SECTION LOCATED AT THE PROPOSED SITE ENTRANCE.
 - UNDERGROUND STORMWATER MANAGEMENT FACILITY TO BE PRIVATELY OWNED AND MAINTAINED BY ANTWERPEN NISSAN.
 - ALL DEBRIS IS TO BE KEPT OUT OF ALL STORMWATER MANAGEMENT FACILITIES DURING AND AFTER CONSTRUCTION.

SOILS CHART

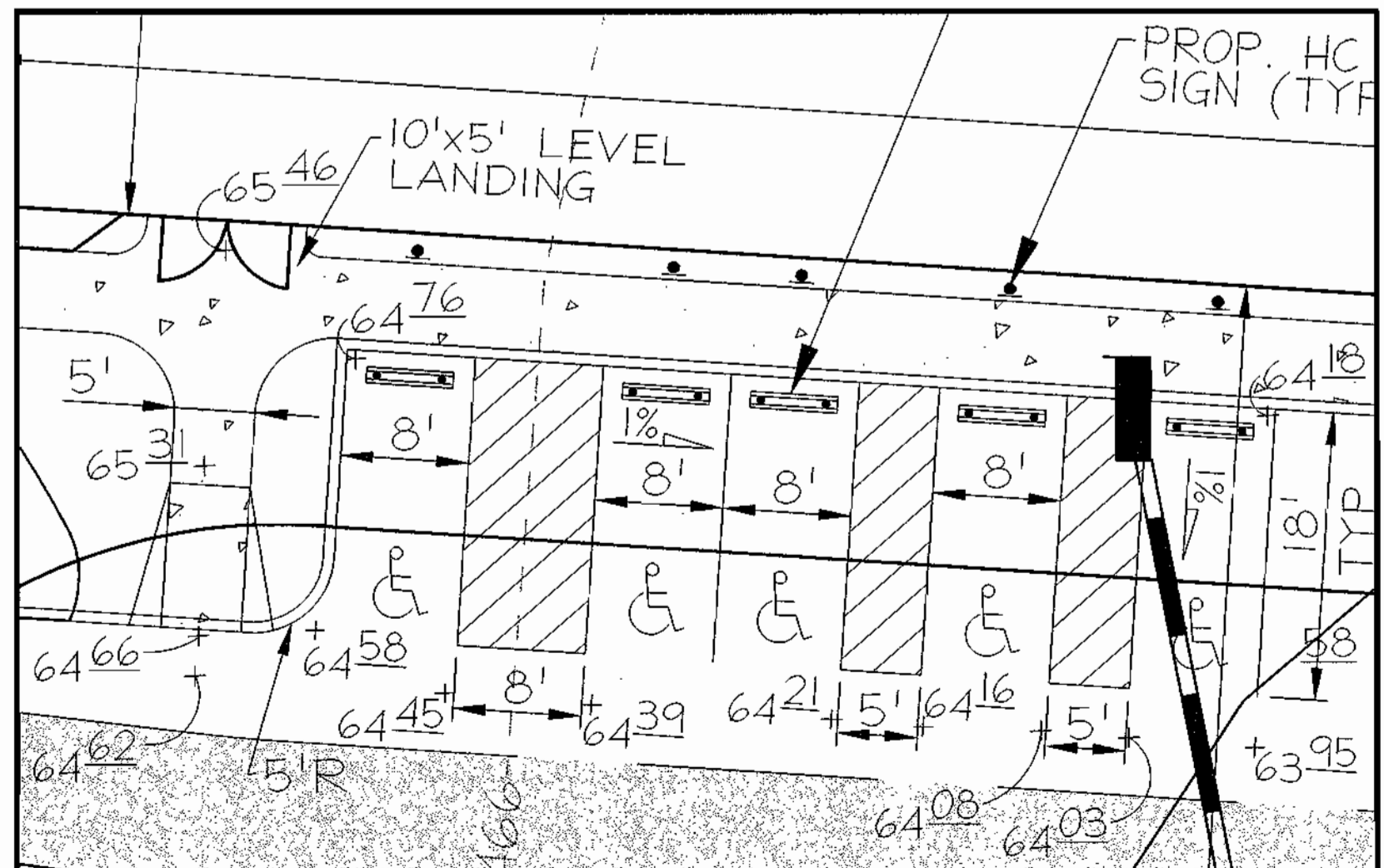
SYMBOL	NAME / DESCRIPTION	TYPE
EKB2	ELOAK SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATLY ERODED	C
GIB2	GLENELG LOAM, 3 TO 8 PERCENT SLOPES, MODERATLY ERODED	B
MIG2	MANOR GRAVELLY LOAM, 3 TO 15 PERCENT SLOPES, MODERATLY ERODED	B
MIB2	MANOR GRAVELLY LOAM, 3 TO 8 PERCENT SLOPE, MODERATLY ERODED	B

HOWARD SOIL SURVEY MAP NUMBER 23.
NOTE: THIS SITE DOES NOT INCLUDE SOILS DESIGNATED AS HYDRIC OR SOILS WITH HYDRIC INCLUSIONS. SOILS ARE NOT CLASSIFIED AS HIGHLY ERODIBLE.

SUMMARY TABLE

CONDITION	CN	tc	RUNOFF Qu 1YR STORM	Q 1YR	Q 10YR	Q 100YR
		HR.	INCHES	CFS	CFS	CFS
EXISTING	64	0.2	0.31	1.00	8.00	17.00
IMPROVED	88	0.07	1.47	11.00	28.00	44.00

STEP	REQUIREMENT	VOLUME REQUIREMENT	VOLUME PROVIDED	NOTES
1	WATER QUALITY VOLUME WQV	0.286 AC. FT 11,587 CU. FT	0.286 AC. FT 11,587 CU. FT	WATER QUALITY VOLUME PROVIDED IN PROPOSED SAND FILTER
2	RECHARGE VOLUME REV	0.07 AC. FT 3,011 CU. FT	0.07 AC. FT 3,011 CU. FT	WATER VOLUME PROVIDED IN PROPOSED SAND FILTER
3	CHANNEL PROTECTION VOLUME CPV	15,246 CU. FT 0.35 AC. FT	17,276 CU. FT 0.396 AC. FT	CPV WILL BE PROVIDED IN PROPOSED DETENTION FACILITY
4	OVERHEAD FLOOD PROTECTION, Q10p	N/A	N/A	
5	EXTREME FLOOD VOLUME, Q100p	N/A	N/A	



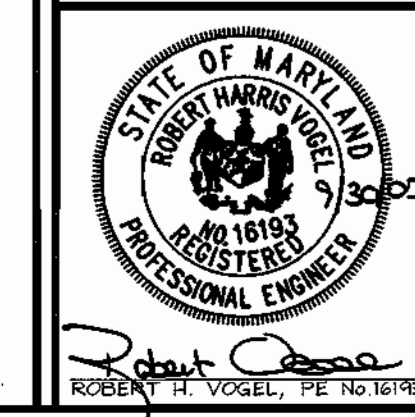
HANDICAP RAMP DETAIL
SCALE: 1"=10'

NOTE: DEBRIS IS TO BE KEPT OUT OF ALL STORMWATER MANAGEMENT FACILITIES DURING AND AFTER CONSTRUCTION.
FOR PARKING AND DISPLAY DESIGN, SEE SHEET 6

NO.	REVISION	DATE

SITE LAYOUT, AND SEDIMENT AND EROSION CONTROL PLAN
SITE DEVELOPMENT PLAN
ANTWERPEN NISSAN
PARCEL L-1, HOLWECK SUBDIVISION
TAX MAP #34 BLOCK #6 PARCEL L-1
5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.
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ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6226
SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia



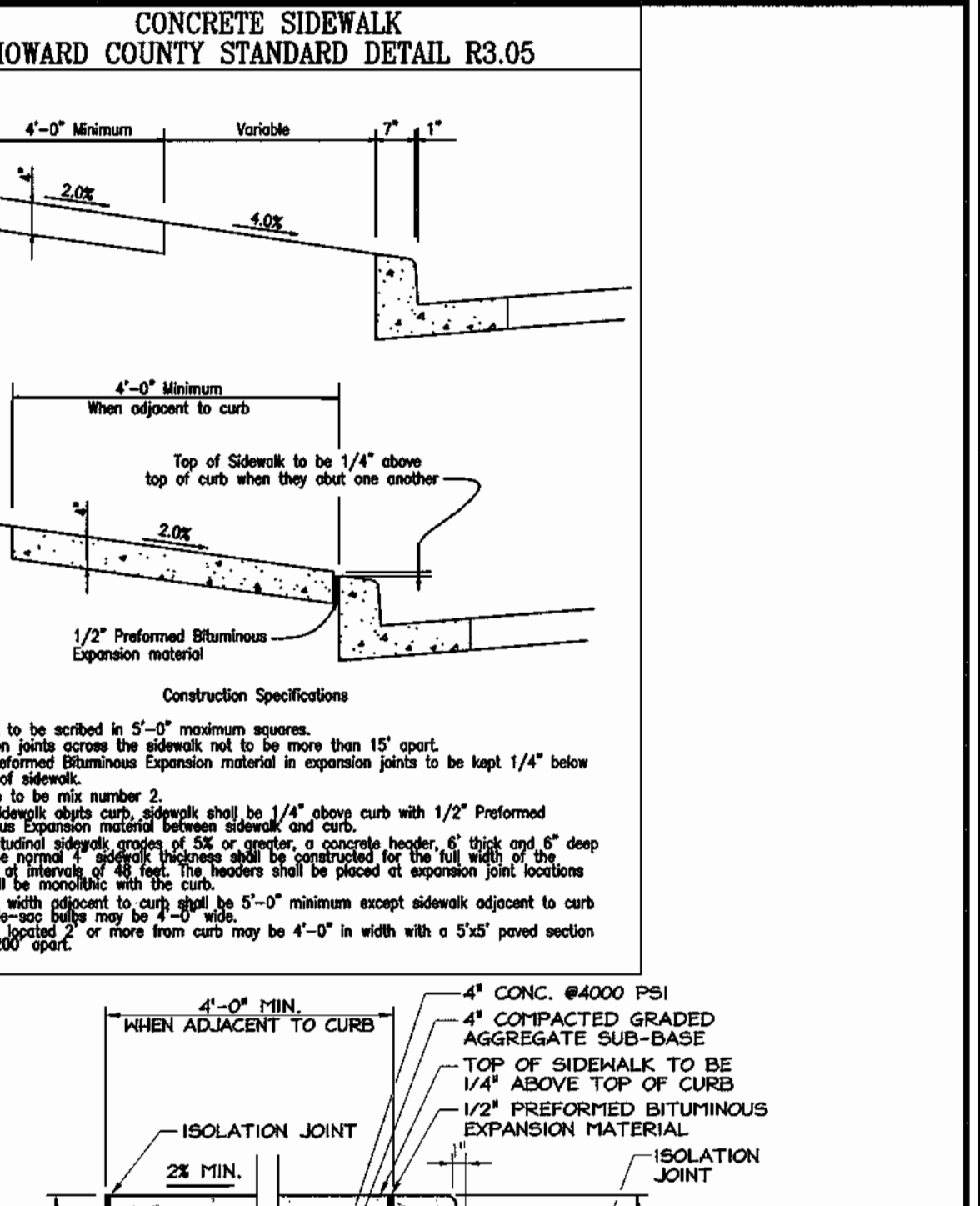
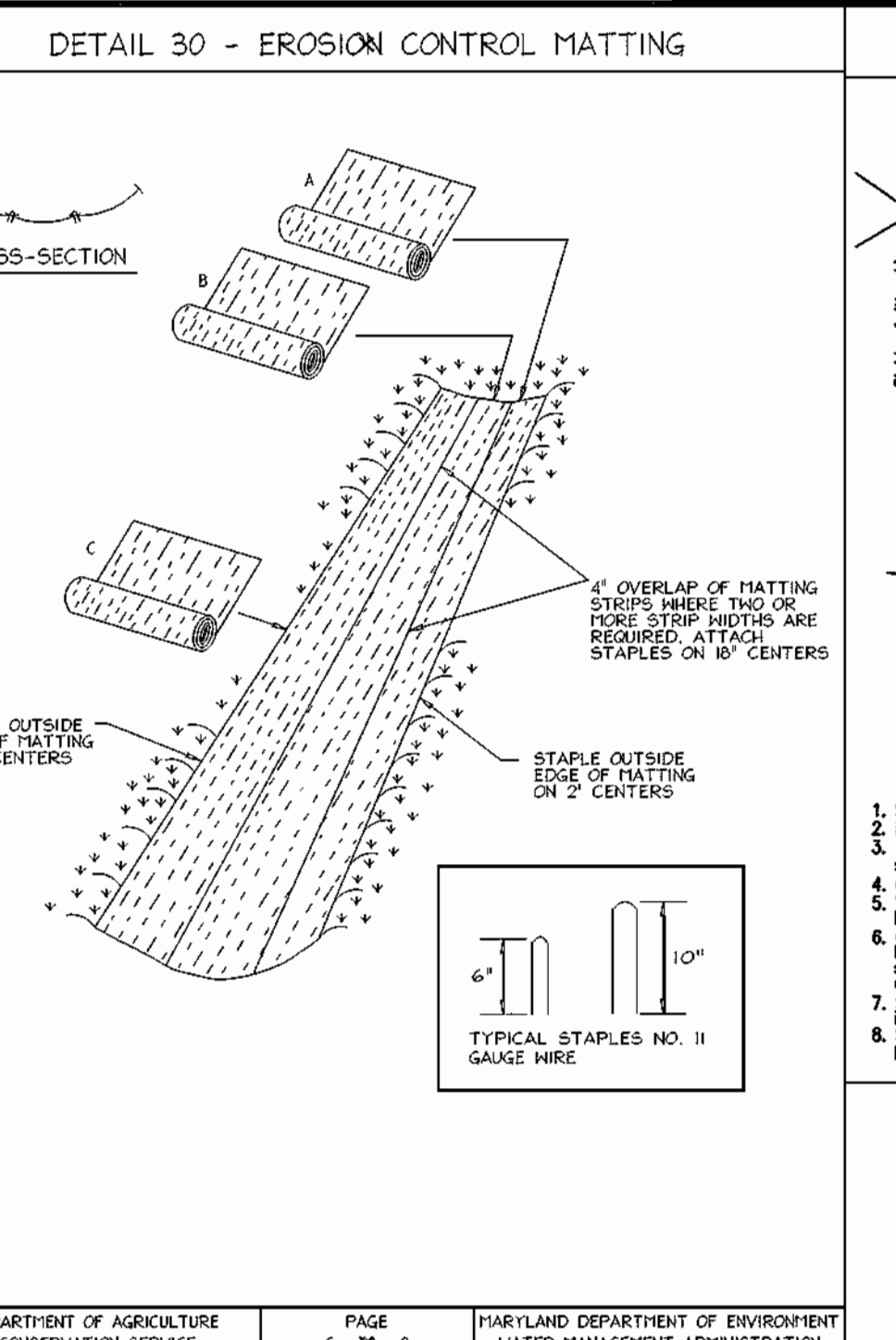
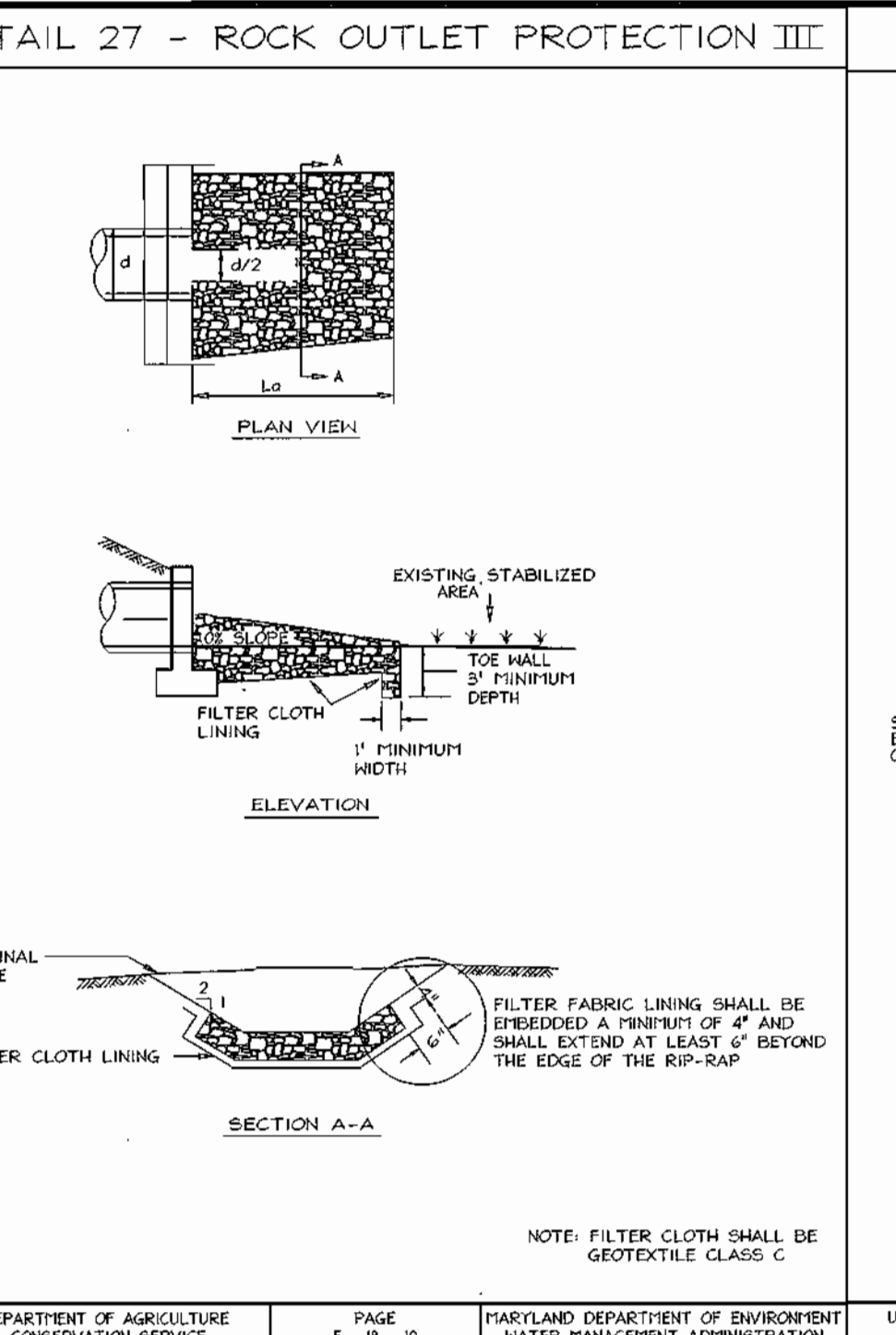
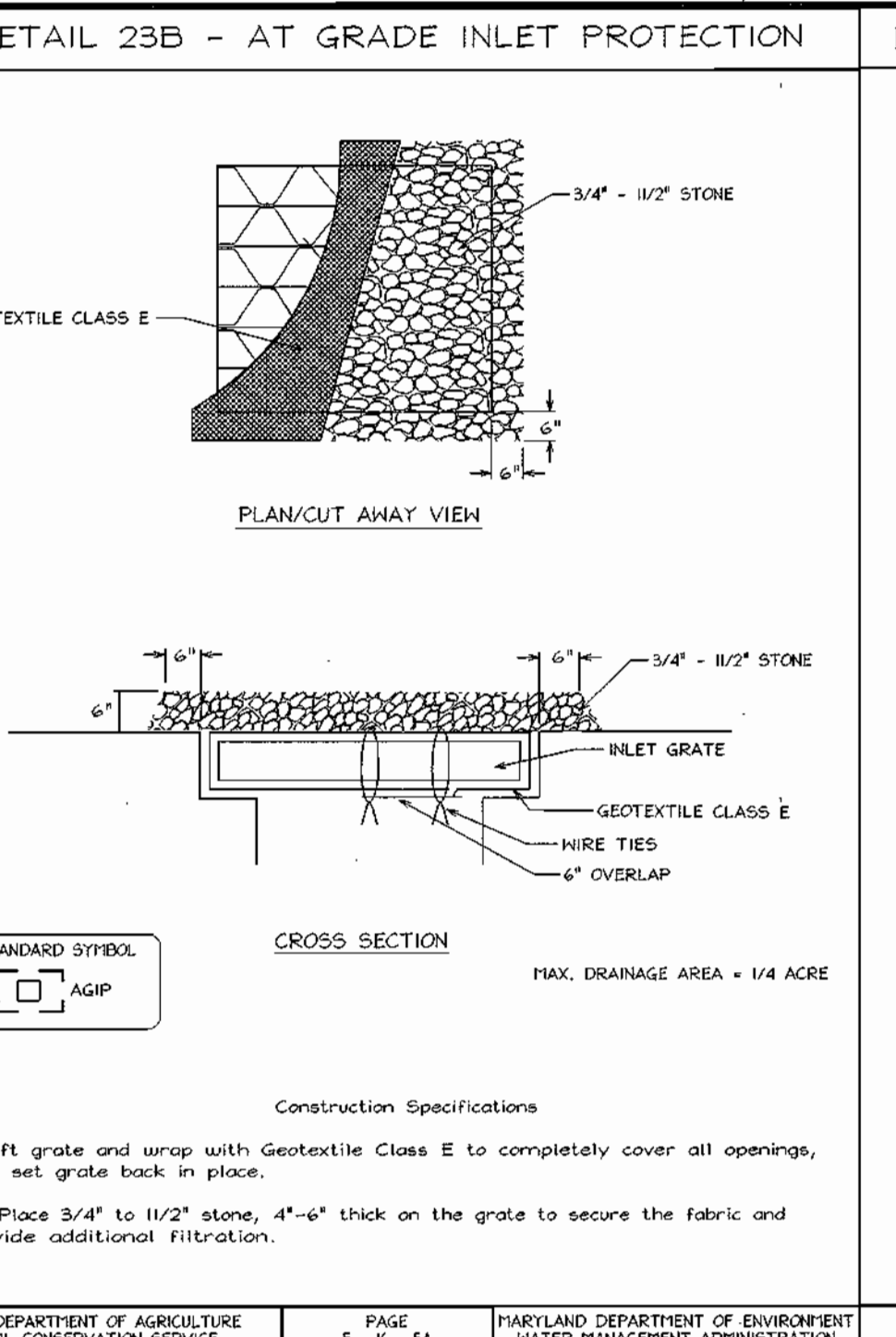
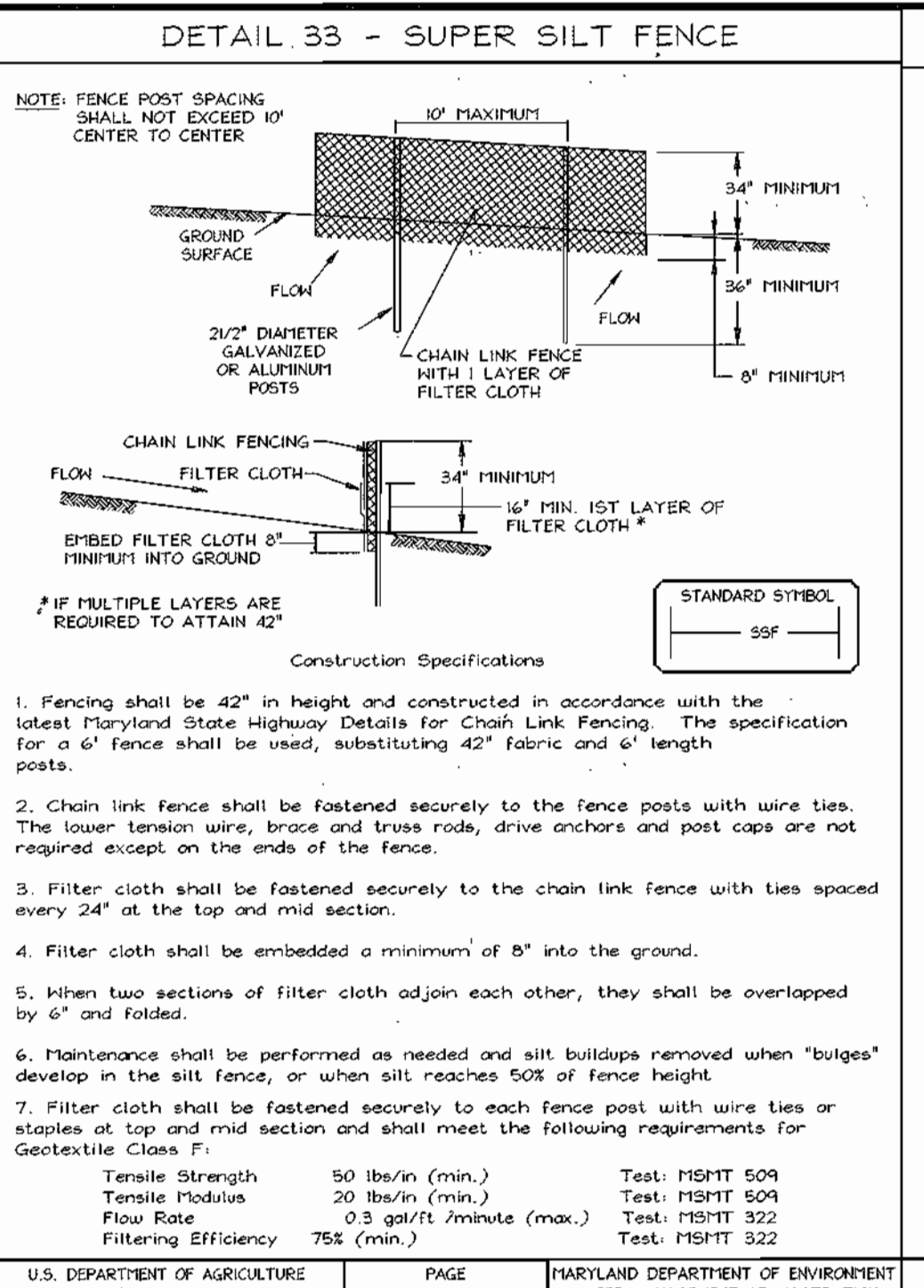
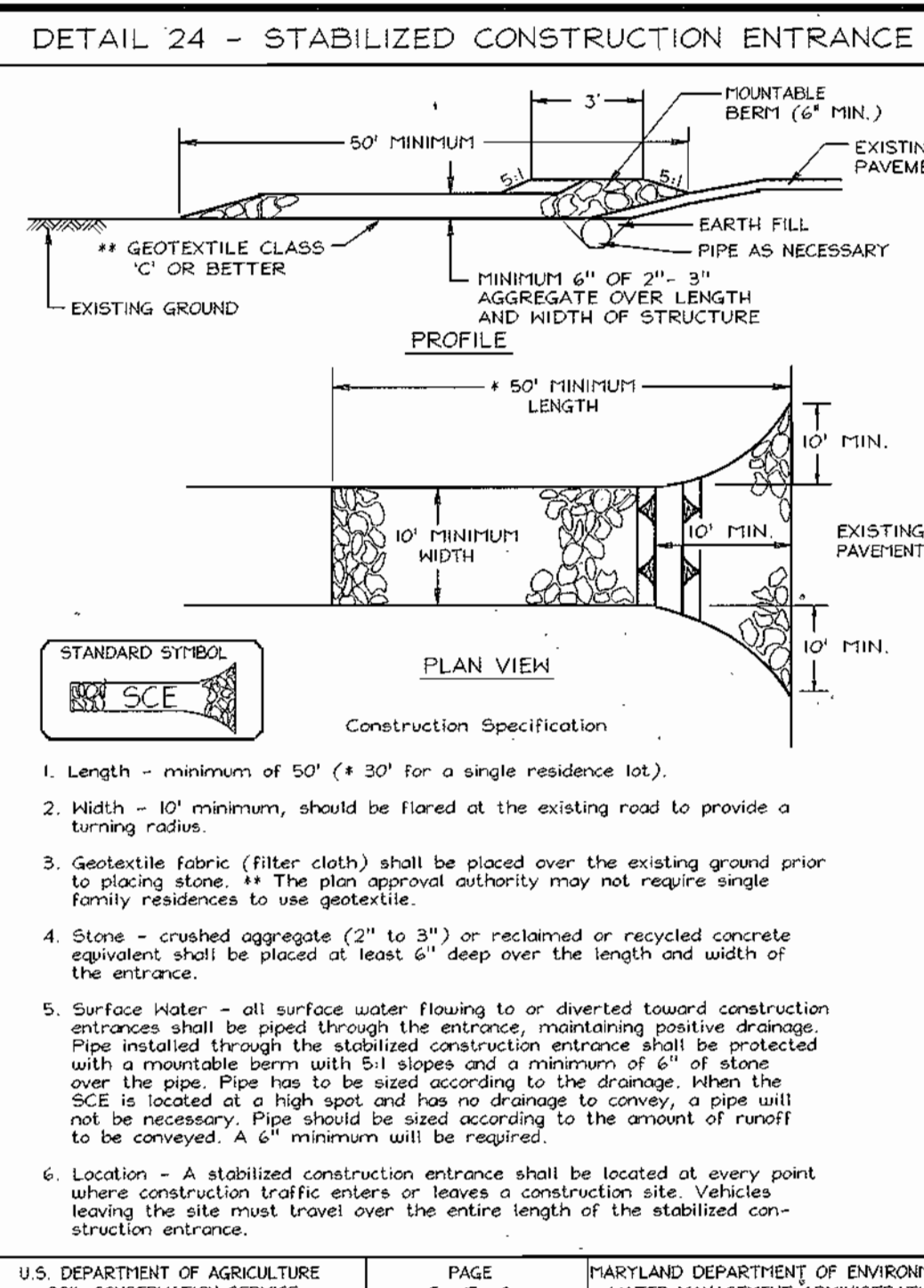
DESIGN BY: MMR
DRAWN BY: DZ
CHECKED BY: RHY
DATE: SEPT 2003
SCALE: 1"=30'
H.O. NO.: 2024056
3 SHEET OF 9

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] 10/16/03
CHIEF, DEVELOPMENT ENGINEERING DIVISION
[Signature] 10/16/03
CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature] 10/16/03
DIRECTOR

REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.
[Signature] 10/15/03
DATE
HOWARD S.C.D.

BY THE DEVELOPER:
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
[Signature] 10/15/03
DATE
SIGNATURE OF DEVELOPER

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 SOIL CONSERVATION DISTRICT.
[Signature] 9/30/03
DATE
SIGNATURE OF ENGINEER
ROBERT H. VOGEL, P.E.



PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE SEEDBED PREPARATION: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously SOIL AMENDMENTS: In lieu of soil test recommendations, use one of the following:

1. Preferred—Apply 2 tons per acre dolomitic limestone (92 lbs./1000 sq.ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At the time of seeding, apply 400 lbs. per acre 30-0-0 ureaform fertilizer (9 lbs./1000 sq.ft.).
2. Acceptable—Apply 2 tons per acre dolomitic limestone (92 lbs./1000 sq.ft.) and apply 1000 lbs. per acre 10-10-10 fertilizer (23 lbs./1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil.

SEEDING: For periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs./1000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (.05 lbs./1000 sq.ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by Option (1) 2 tons per acre well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use sod. Option (3) Seed with 60 lbs./acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre.

MAINTENANCE: Inspect all seeded areas and make needed repairs.

TEMPORARY SEEDING NOTES

SEEDBED PREPARATION: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously SOIL AMENDMENTS: Apply 600 lbs. per acre 10-10-10 fertilizer SEEDING: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2 1/2 bushel per acre of annual ryegrass (3.2 lbs./1000 sq.ft.) For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (.07 lbs./1000 sq.ft.). For the period November 1 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible MULCHING: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre. REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. FOR RATE AND METHODS NOT

21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL

Placement of topsoil over a prepared subsoil prior to: To provide a suitable soil medium for vegetable growth. Sites of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or

Construction and Material Specifications

1. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section of the Soil Survey published by USDA-SCS in cooperation with Maryland
2. Topsoil Specifications - Soil to be used as topsoil
 - a. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or a soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsols and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 and 1/2" in size.
 - b. Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutgrass, poison ivy, etc. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described
 - c. For sites having disturbed areas under 5 acres:
 - i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

SEDIMENT CONTROL NOTES

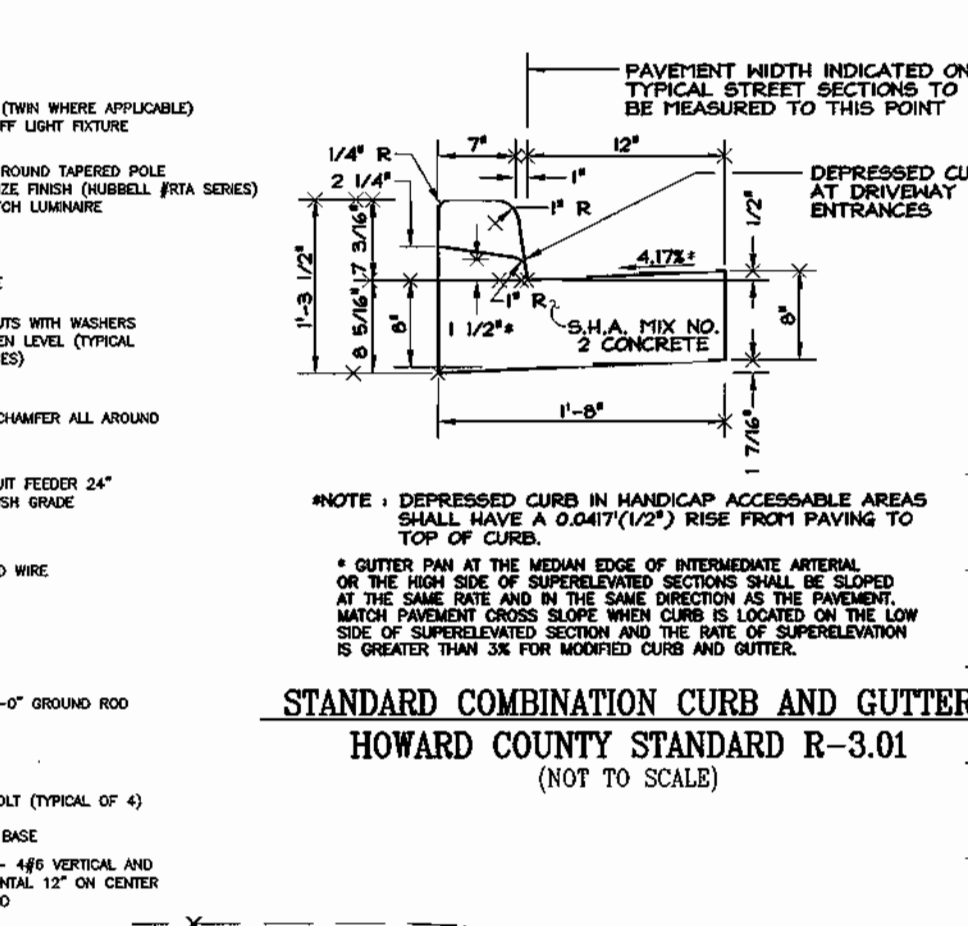
1. A minimum of 48 hours notice must be given to the Howard County Department of Inspection, License and Permits Sediment Control Division prior to the start of any construction (313-1855).
2. All vegetation and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.
3. Following initial soil disturbance or redistribution, 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 3:1, (b) 14 days as to all other disturbed or graded areas on the project site.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 7, HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, for permanent seeding, sod, temporary seeding, and mulching (Sec. C). Temporary stabilization with mulch alone shall be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7. Site Analysis

Total Area	3.42 Acres
Area Disturbed	3.12 Acres
Area to be roofed or paved	2.00 Acres
Area to be vegetatively stabilized	0.92 Acres
Total Cut	1,350 CY
Total Fill	12,700 CY
8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
9. Additional sediment controls must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
11. Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized within one working day, whichever is shorter.
 - a. To be determined by contractor, with pre-approval of the Sediment Control Inspector with an approved active grading permit

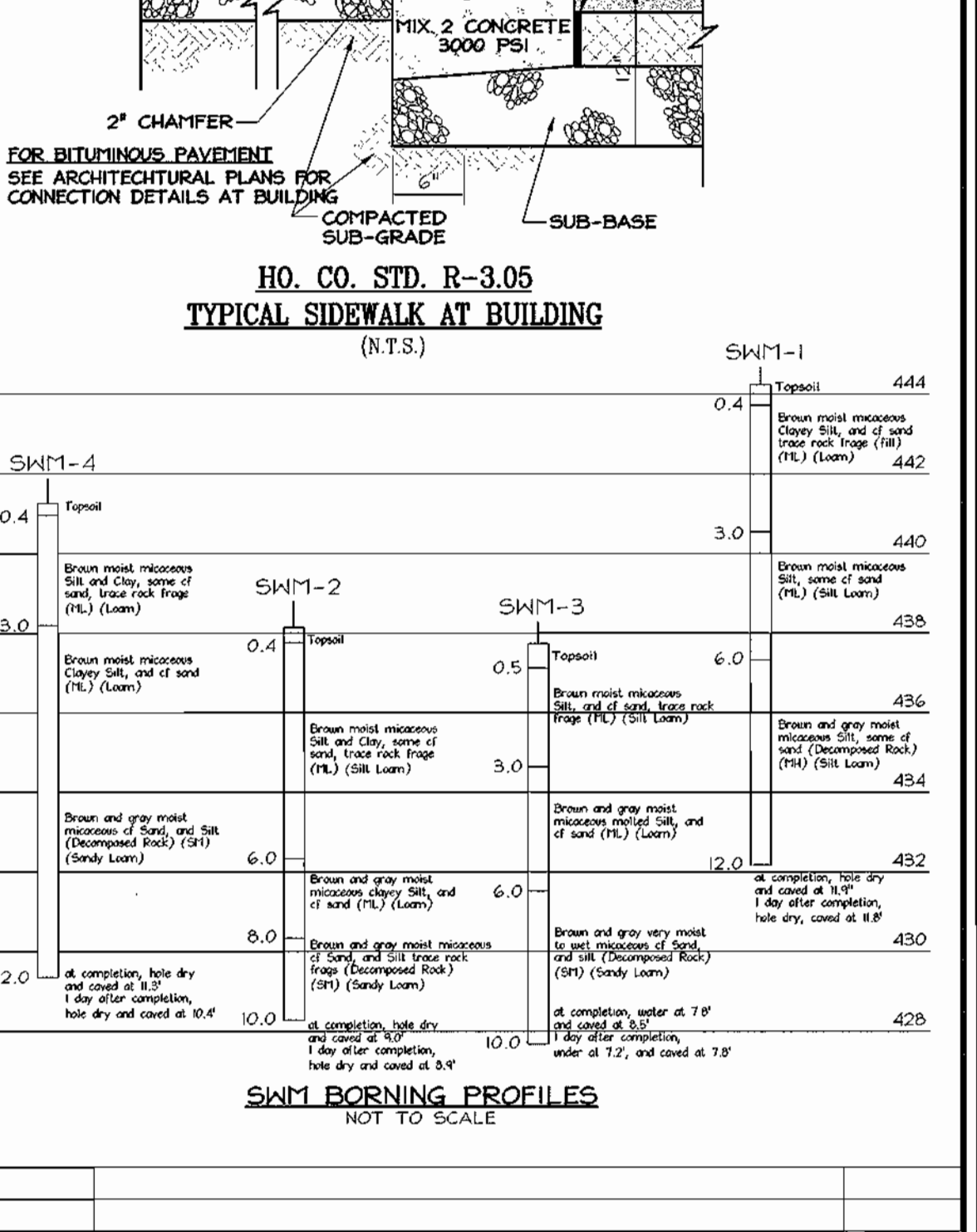
SEQUENCE OF CONSTRUCTION

1. OBTAIN HOWARD COUNTY GRADING PERMIT. (WEEK 1)
2. NOTIFY HOWARD COUNTY AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION. (WEEK 1)
3. CONDUCT A PRE-CONSTRUCTION MEETING WITH THE SEDIMENT CONTROL INSPECTOR PRIOR TO ANY LAND DISTURBANCE. (WEEK 1)
4. INSTALL ALL SILT FENCE AS INDICATED ON PLANS. (WEEK 2)
5. INSTALL STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM. (WEEK 2)
6. ROUGH GRADE SITE. (WEEK 3)
7. SEED AND STOCKPILE TOPSOIL. STABILIZE STOCKPILE WITH SEED AND MULCH. (WEEK 3)
8. INSTALL STORM DRAIN UTILITIES AND STORMWATER MANAGEMENT FACILITY. STABILIZE INLET WITH PROTECTION, IMMEDIATELY UPON COMPLETION OF STORM DRAIN INSTALLATION. SUMP PITS ALONG WITH PUMPS, FOR Dewatering. (WEEK 4)
9. COMPLETE INSTALLATION OF STORM DRAIN/SWM FACILITY SYSTEM AND REMAINING ON-SITE UTILITIES. STORM DRAINS SHALL BE INSTALLED, BLOCKED OR INLET PROTECTION SHALL BE ADDED TO PREVENT SEDIMENT FROM ENTERING THE SYSTEM. (WEEK 4)
10. INSTALL CURB AND GUTTER. (WEEK 6)
11. BEGIN BUILDING CONSTRUCTION. (WEEK 6)
12. INSTALL PAVING BASE COURSE. REMOVE INLET PROTECTION PER THE SEDIMENT CONTROL INSPECTOR AS WORK PROGRESSES. (WEEK 26)
13. COMPLETE BUILDING CONSTRUCTION. (WEEK 27)
14. INSTALL PAVING SURFACE COURSE. (WEEK 28)
15. FINE GRADE AND STABILIZE REMAINING SITE. INSTALL LANDSCAPING. (WEEK 29)
16. CLEAN AND FLUSH OUT STORM DRAIN SYSTEM. DISPOSE OF SEDIMENT LADEN MATERIAL CLEANED OUT OF STORM DRAIN IN A MANNER APPROVED BY THE SEDIMENT CONTROL INSPECTOR. (WEEK 30)
17. REMOVE ALL SEDIMENT CONTROL MEASURES AFTER RECEIVING APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR. (WEEK 30)

STANDARD COMBINATION CURB AND GUTTER HOWARD COUNTY STANDARD R-3.01 (NOT TO SCALE)



HO. CO. STD. R-3.05 TYPICAL SIDEWALK AT BUILDING (N.T.S.)



PIPE SCHEDULE

SIZE	TYPE	LENGTH
15"	HDPE	80 LF
18"	HDPE	660 LF
24"	HDPE	150 LF
15"	AL-CHIP	50 LF
18"	AL-CHIP	7 LF

STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	TOP ELEV.	INV. ELEV.	REMARKS		
1-2	Double Type 'S' Combination Inlet	N 562,948	E 1,328,167	463.15	459.10	SD 4.34	
1-3	Double Type 'S' Combination Inlet	N 563,081	E 1,328,176	461.14	457.00	SD 4.34	
1-4	Double Type 'S' Combination Inlet	N 563,201	E 1,328,184	460.00	455.60	SD 4.34	
1-5	Double Type 'S' Combination Inlet	N 563,359	E 1,328,279	451.80	449.73	SD 4.34	
1-6	Double Type 'S' Combination Inlet	N 563,449	E 1,328,285	450.00	446.49	SD 4.34	
PH-2	Precast Manhole (4')	N 563,407	E 1,328,282	450.71	445.71	G 5.12	
PH-2A	Precast Manhole (4')	N 563,417	E 1,328,228	451.26	445.26	G 5.12	
PH-2B	Precast Manhole (4')	N 563,419	E 1,328,200	451.71	444.96	G 5.12	
PH-2C	Precast Manhole (4')	N 563,421	E 1,328,168	451.85	444.54	G 5.12	
PH-3	Precast Manhole (4')	N 563,301	E 1,328,191	455.90	451.88	G 5.12	
PH-4	Precast Manhole (4')	N 562,841	E 1,328,158	466.00	462.25	G 5.12	
TD-1	Trench Drain	N 562,841	E 1,328,158	465.10	-	462.25	-

NOTE: 1. Top elevations are to the center of the structure at top of curb for Double Type 'S' Comb. Inlets, center top of grate for Double Type 'S' inlet and top of manhole cover for Precast Manholes.
2. For top slab slopes see grading plan.
3. See Architectural plans for roof drain details.
4. See SDD-94-132 for existing storm drain information.

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

10/16/03
 10/16/03
 10/17/03

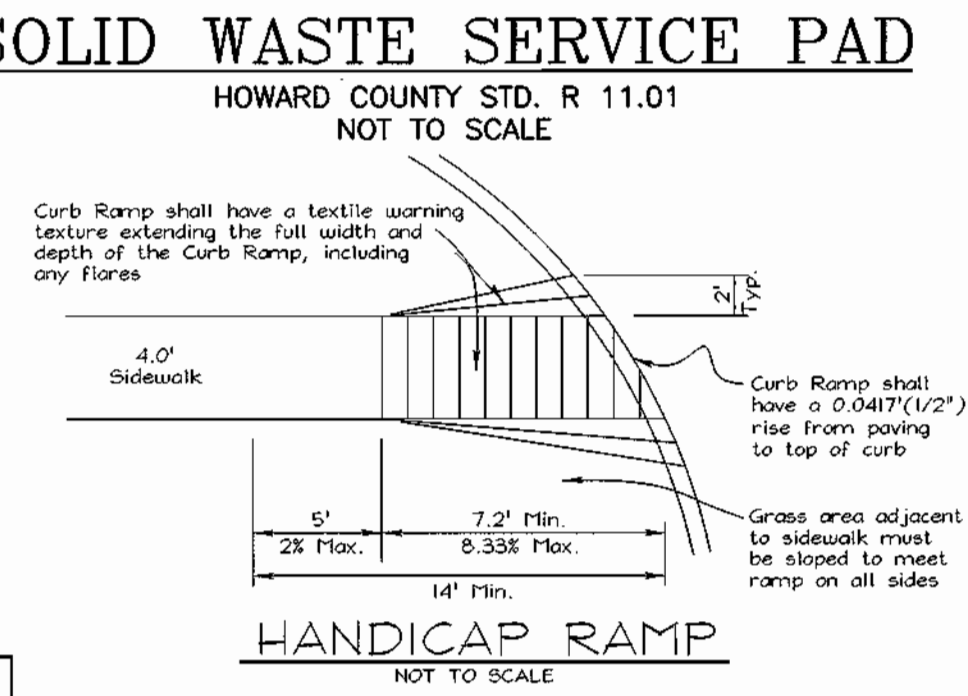
REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.
 BY THE DEVELOPER:
 I, JIM M. RUSSELL, CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION OF THIS PROJECT HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING COURSE FOR CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

10-15-03
 10-15-03

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

9/30/03

SOLID WASTE SERVICE PAD HOWARD COUNTY STD. R 11.01 (NOT TO SCALE)



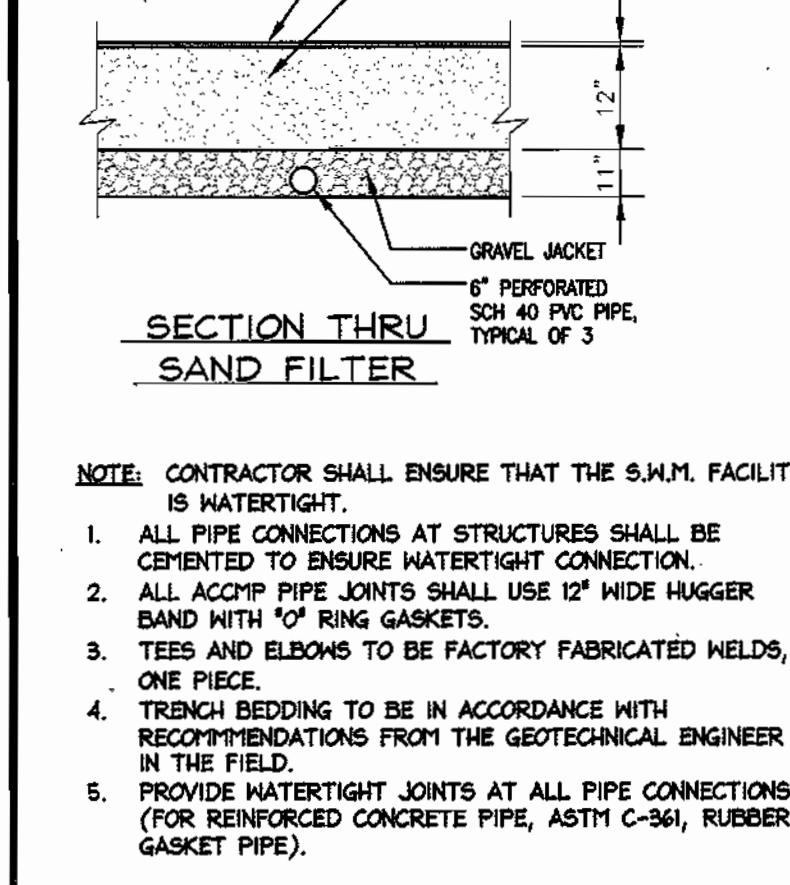
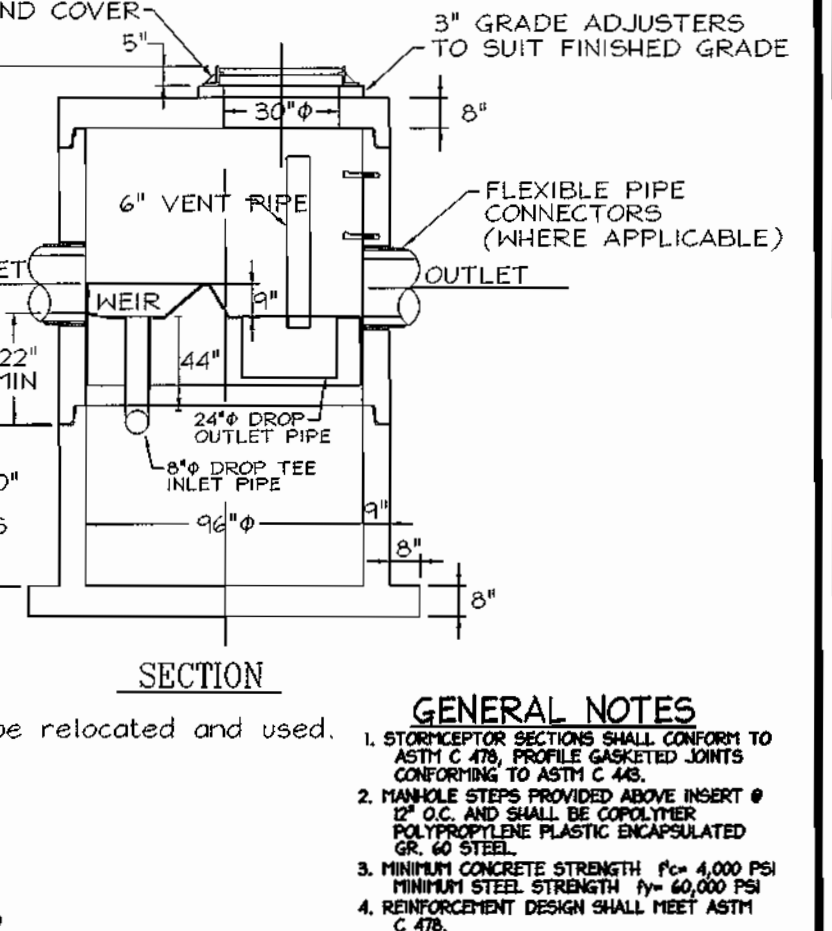
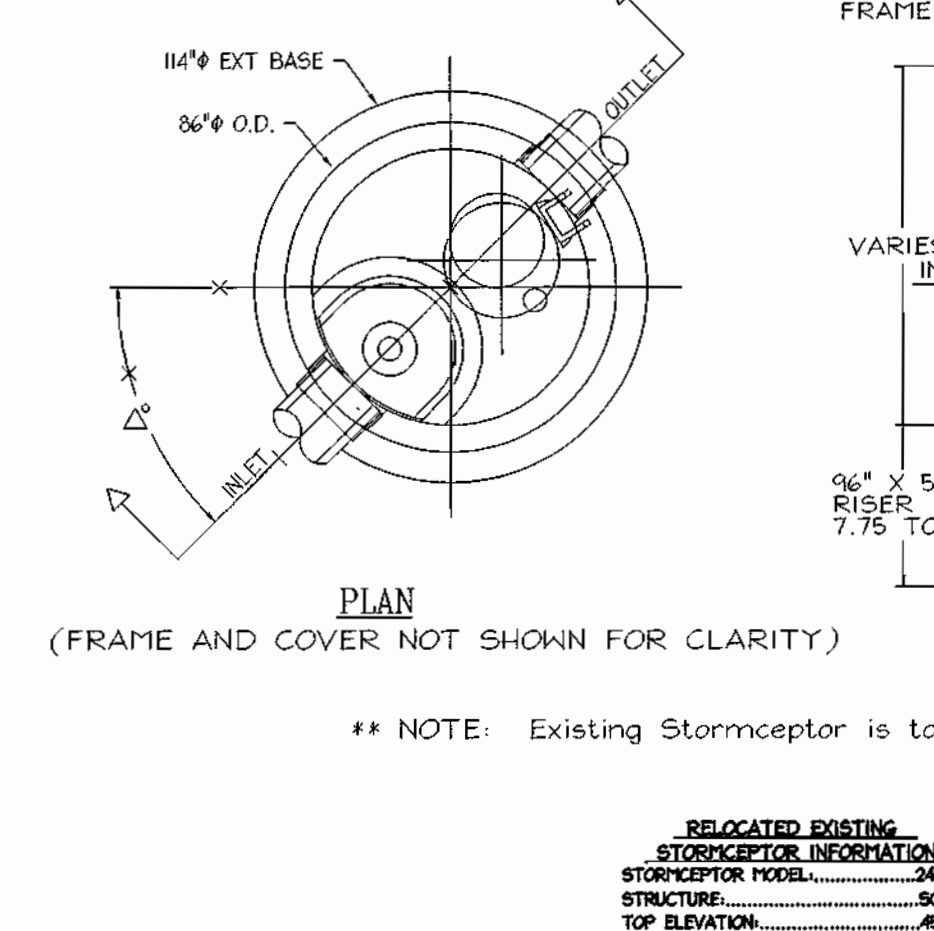
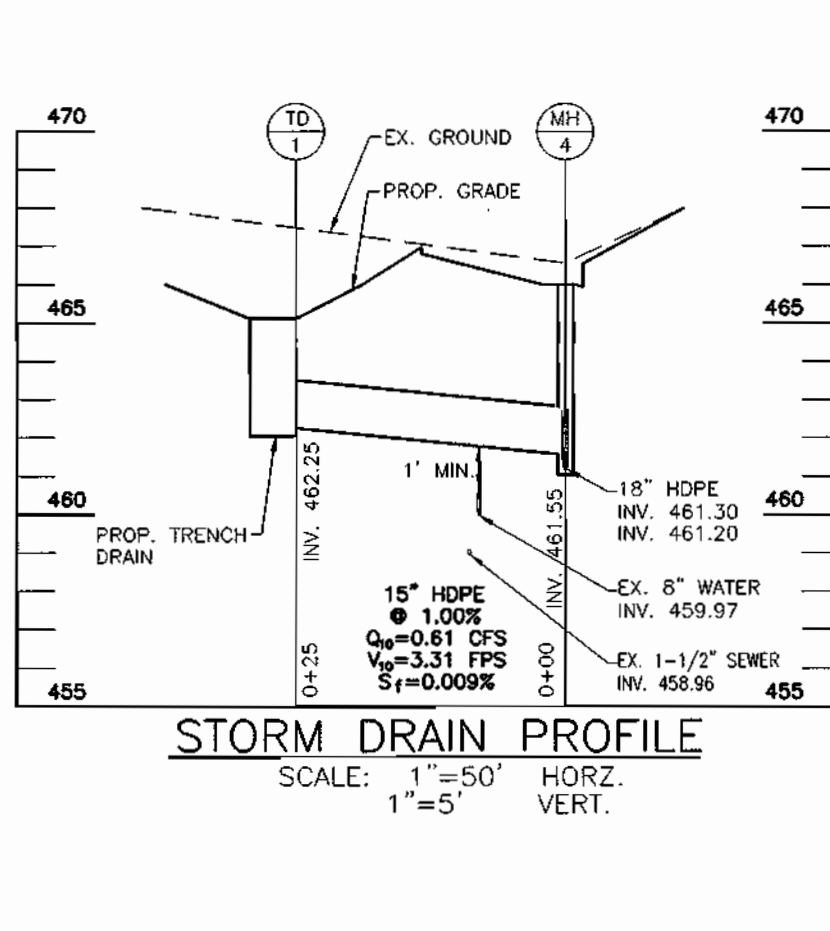
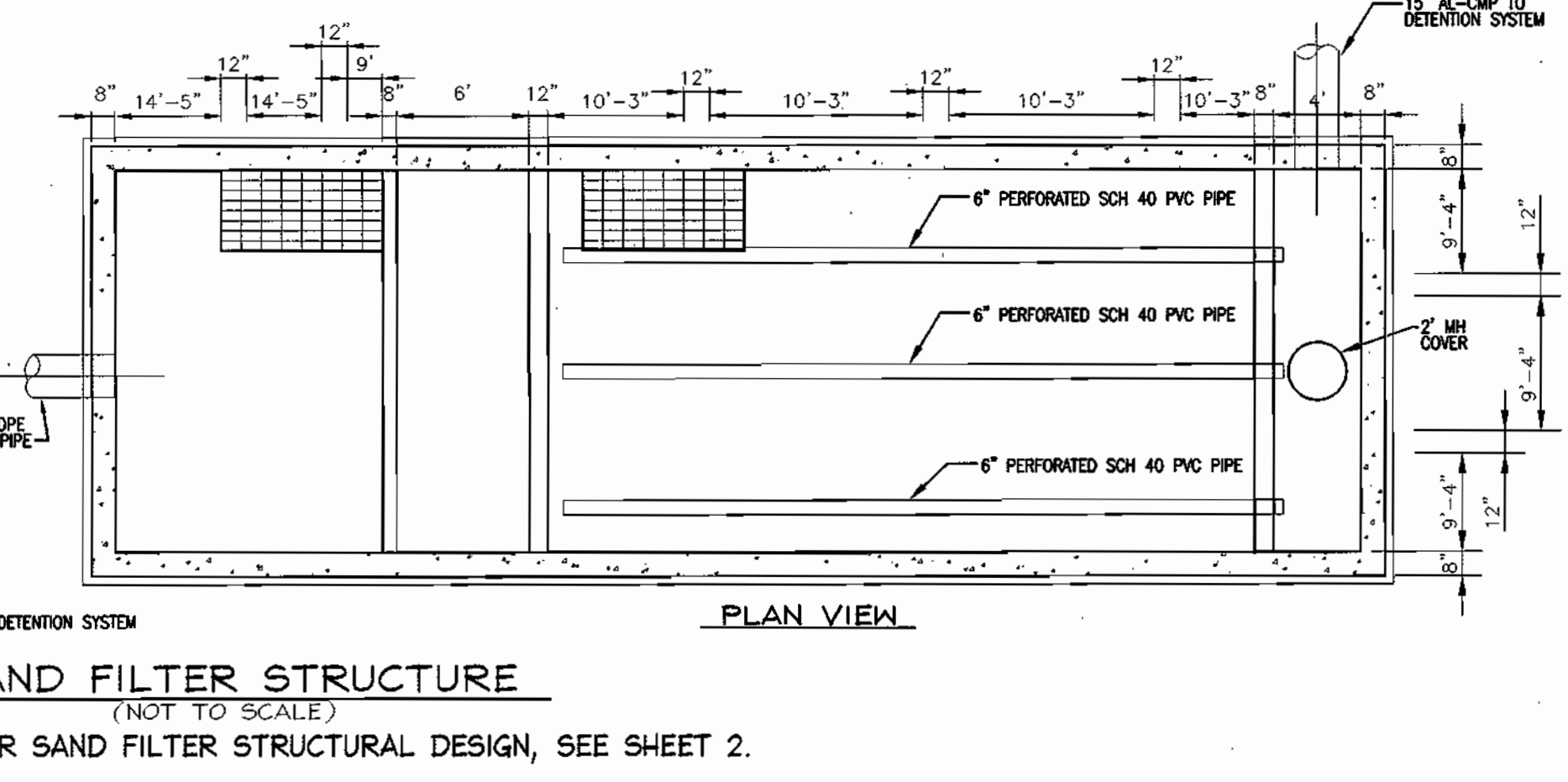
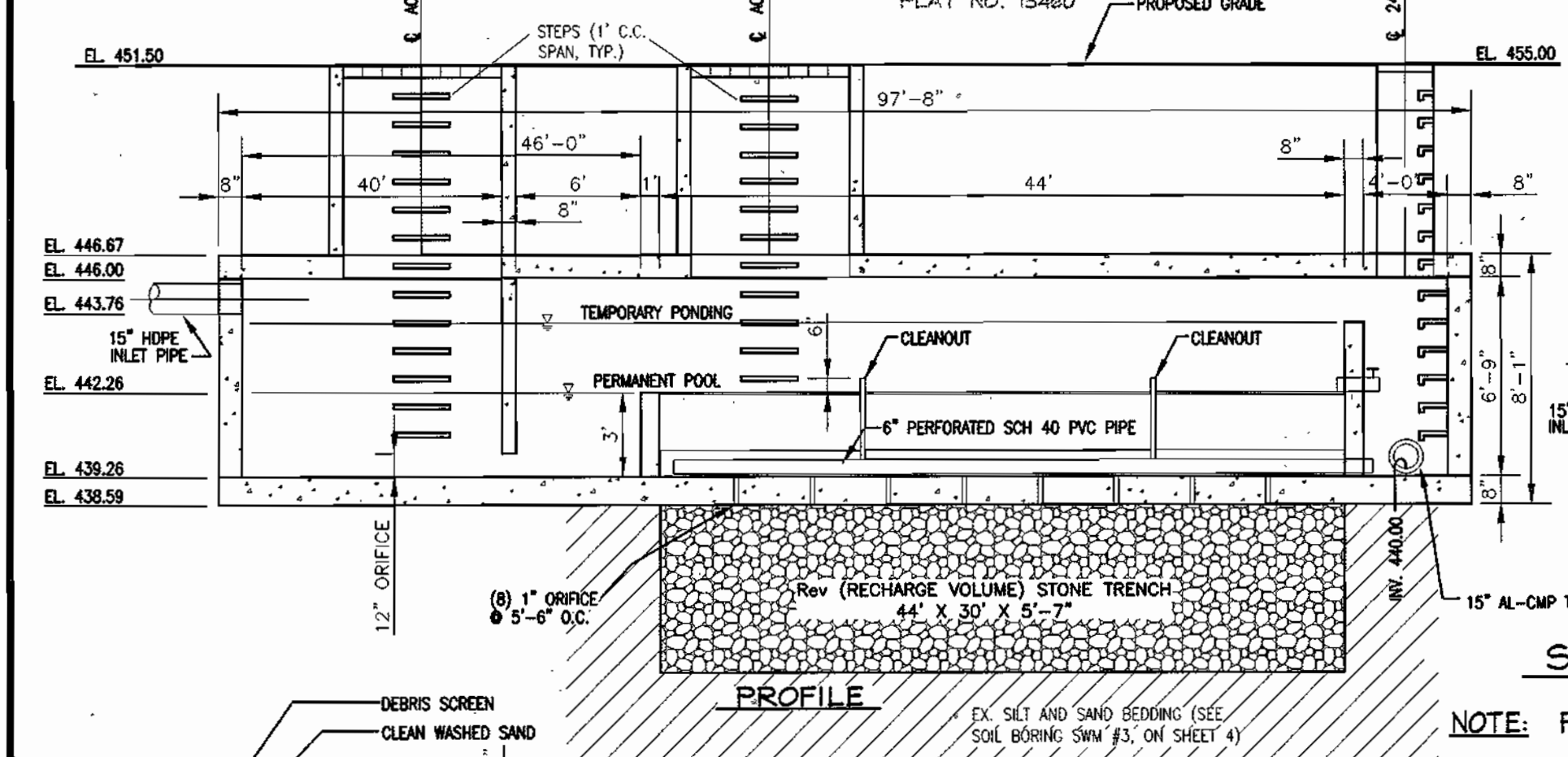
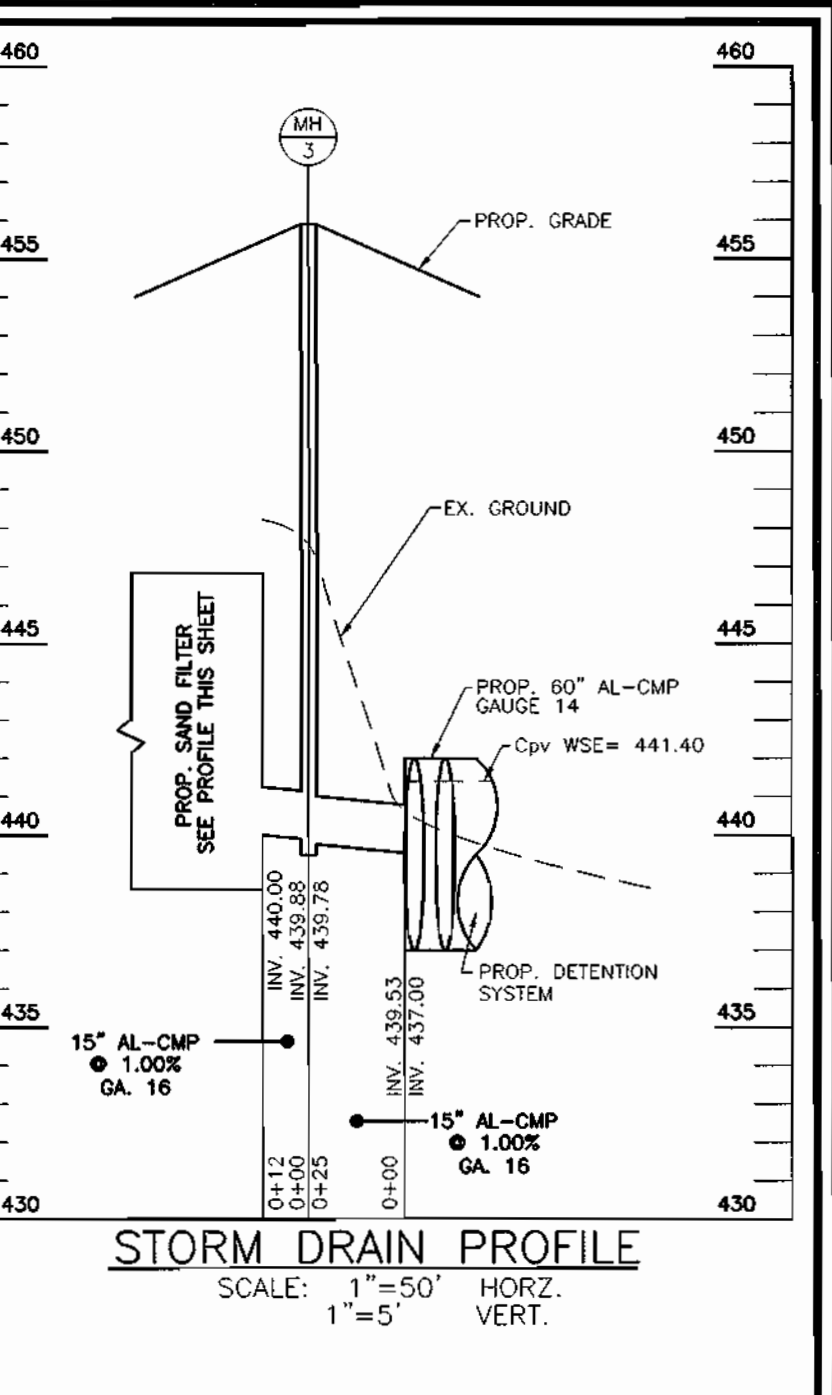
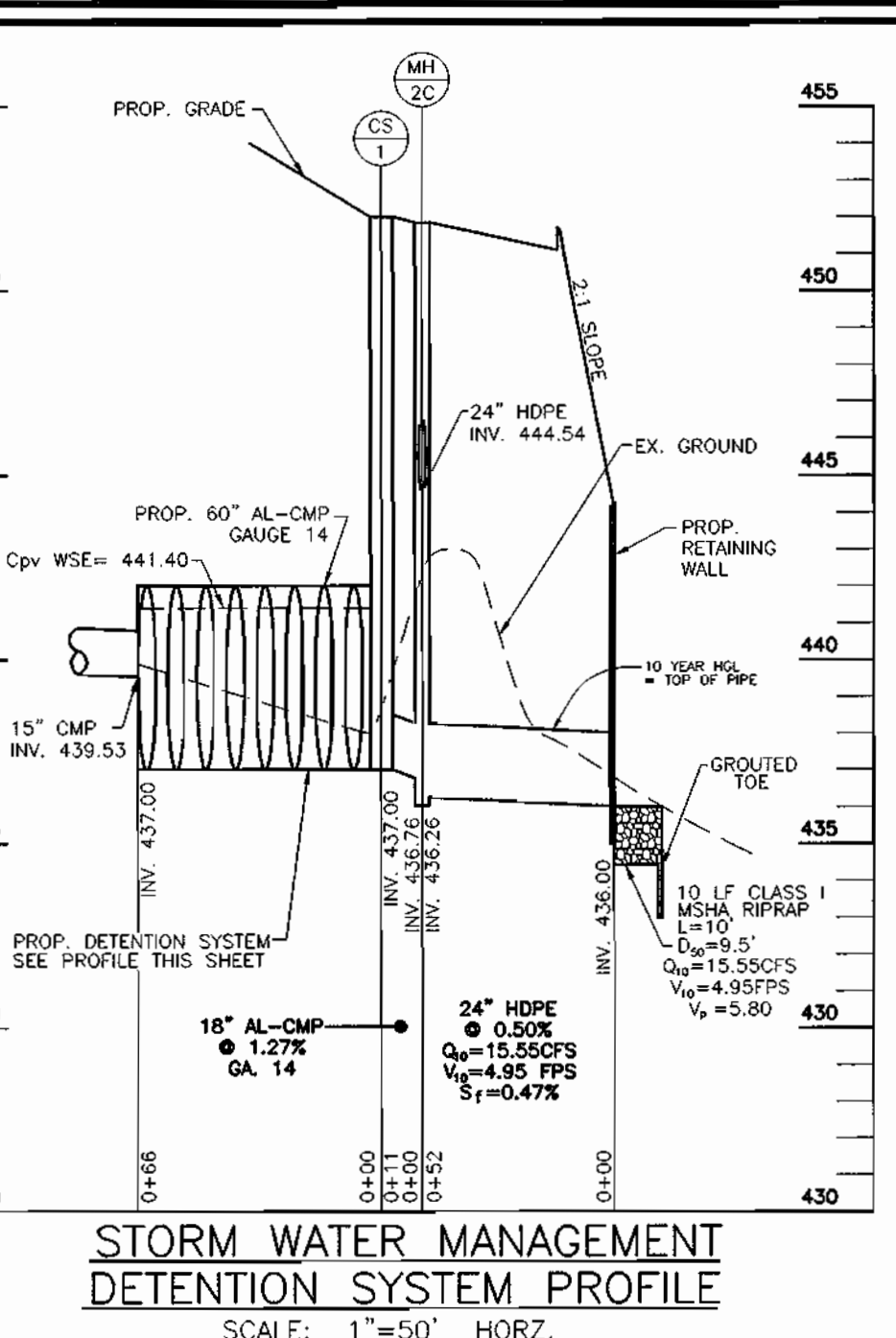
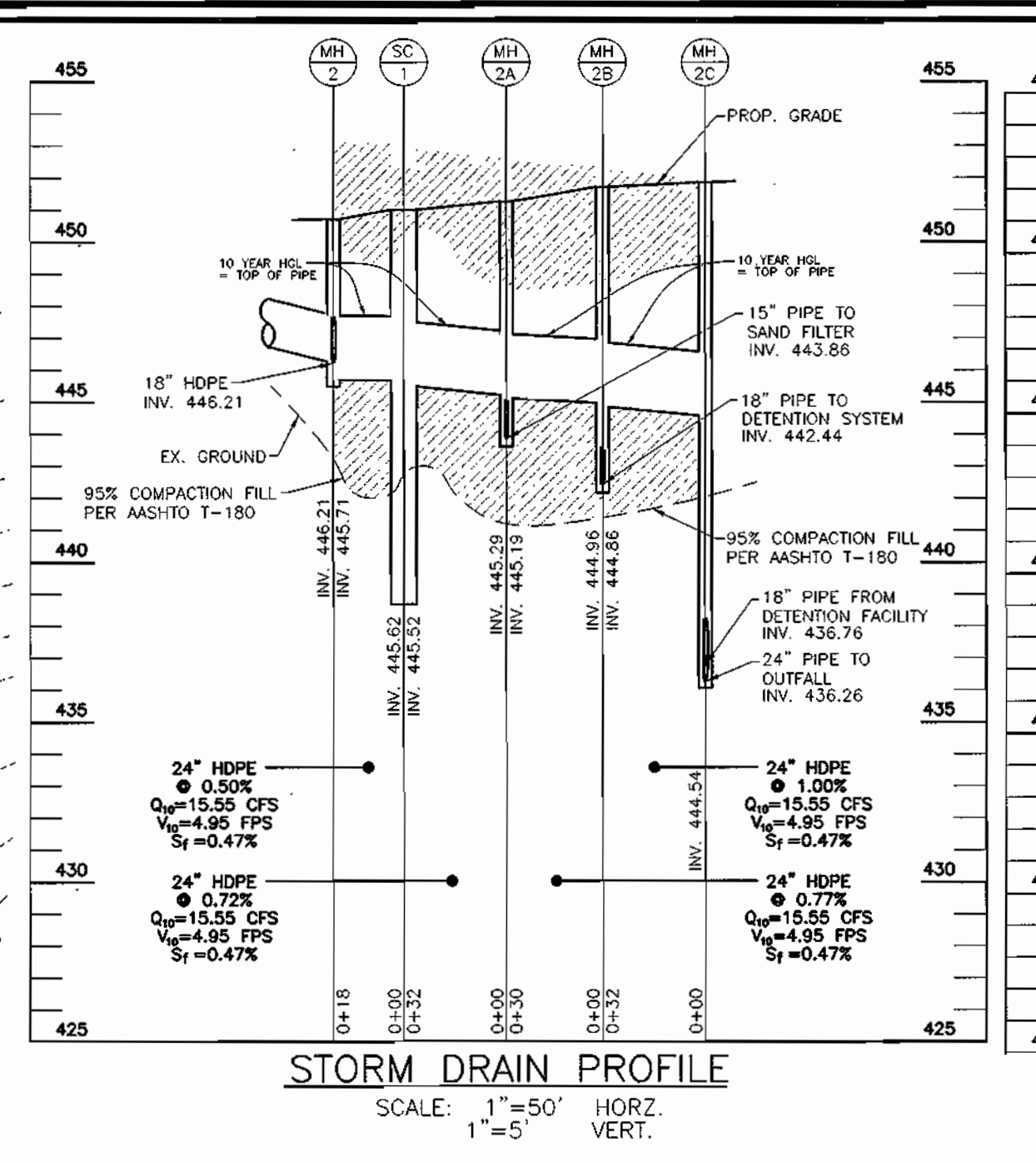
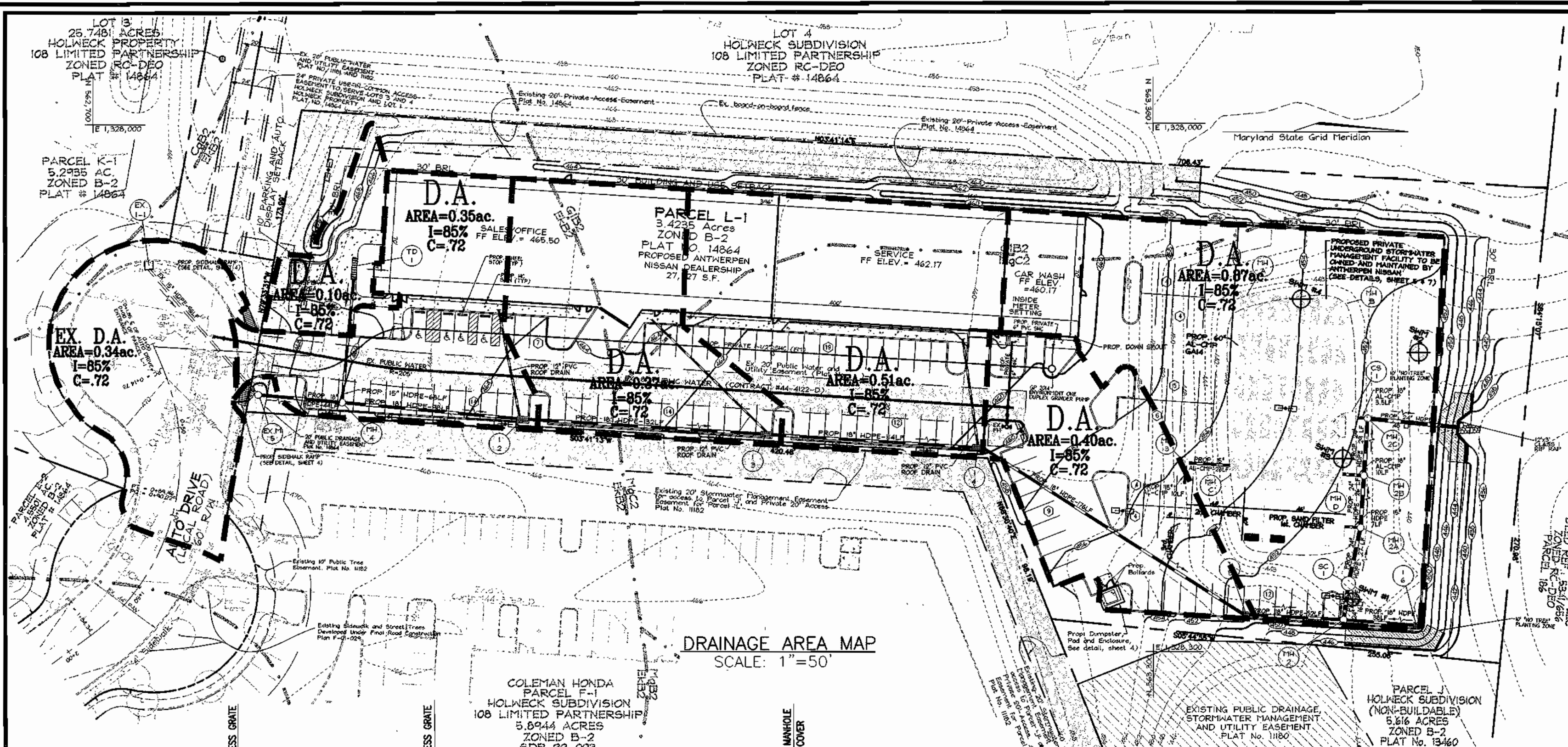
SEDIMENT CONTROL DETAILS, SCHEDULES AND SITE DETAILS SITE DEVELOPMENT PLAN ANTWERPEN NISSAN PARCEL L-1, HOLWICK SUBDIVISION

TAX MAP #34 BLOCK #6 PARCEL L-1
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.
 7125 Riverwood Drive Columbia, Maryland 21046-2354
 Phone: 410-290-9550 Fax: 410-720-6226
 Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: FWR
 DRAWN BY: DZ
 CHECKED BY: RHV
 DATE: SEPT 2003
 SCALE: AS SHOWN
 H.O. NO.: 2024066

4 SHEET OF 9



Precast Concrete Stormceptor Order Request Form

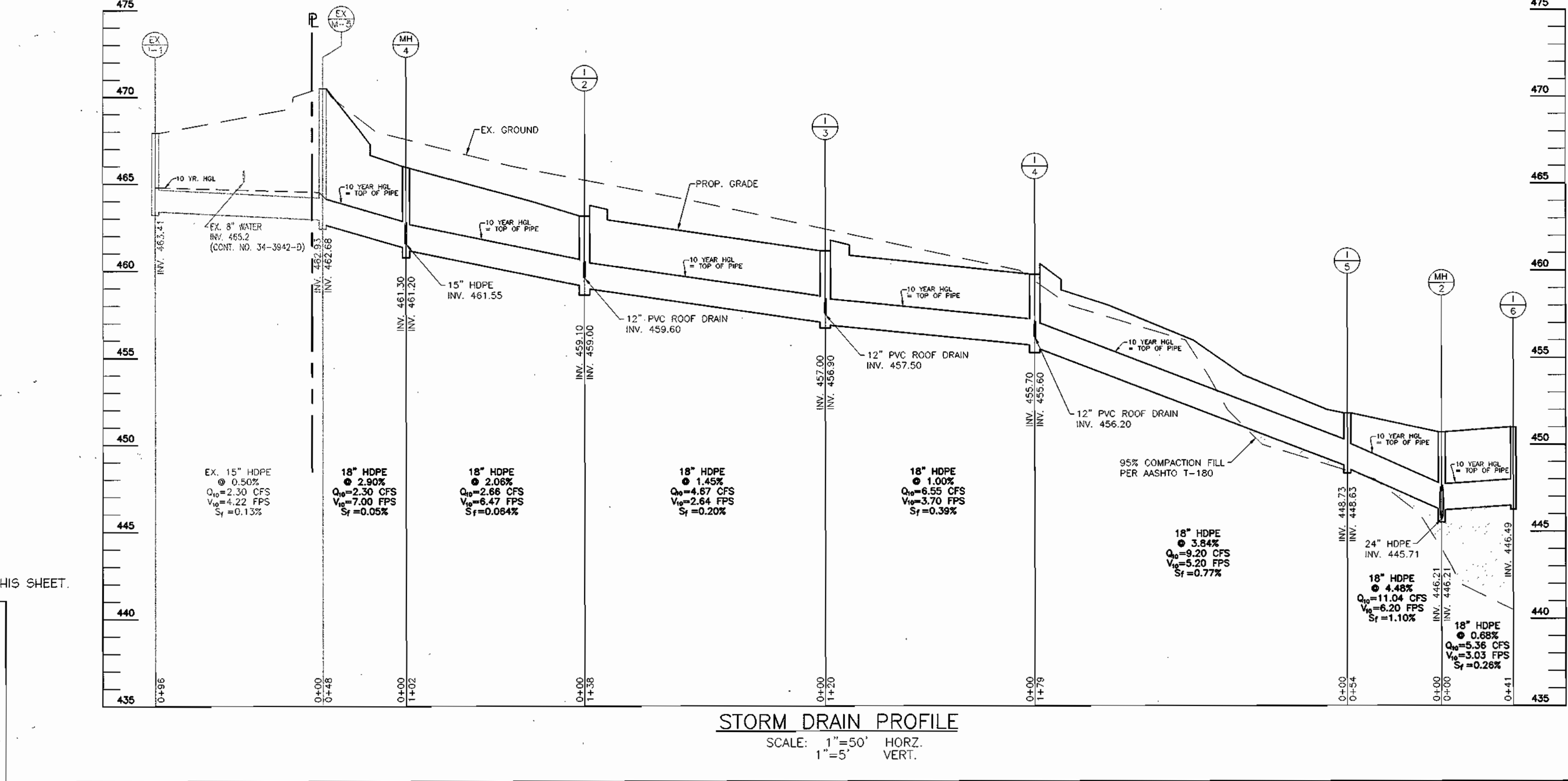
CONTRACTOR INFORMATION
Name: _____
Address: _____
City: _____
State: _____
Zip Code: _____
Contact: _____
Phone: _____
Fax: _____

OWNER INFORMATION
Name: 108 Limited Partnership
Phone: _____
Fax: _____

INFORMATION FOR THIS UNIT
Stormceptor Model: _____
Structural Strength: _____
Top Elevation: _____
Inlet Pipe Invert: _____
Outlet Pipe Invert: _____
Pipe Size: _____

EXISTING STORMCEPTOR INFORMATION
Stormceptor Model: _____
Structural Strength: _____
Top Elevation: _____
Inlet Pipe Invert: _____
Outlet Pipe Invert: _____
Pipe Size: _____

NOTE: SEE SHEET THREE FOR FULL SOILS DESCRIPTION



NO.	REVISION	DATE

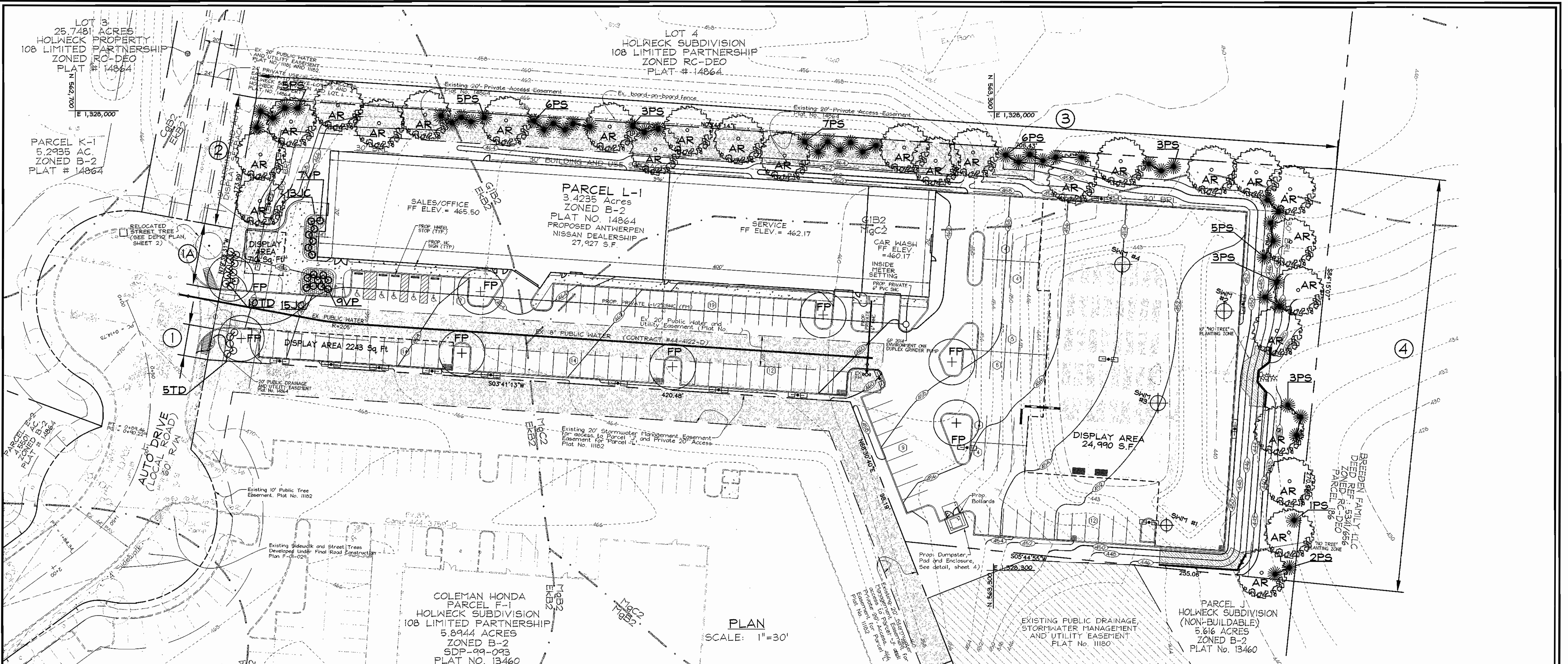
STORM DRAIN PLAN, DA MAP, STORM DRAIN PROFILES, AND SWM DETAILS
SITE DEVELOPMENT PLAN
ANTWERPEN NISSAN
PARCEL L-1, HOLWEEK SUBDIVISION
TAX MAP #34 BLOCK #6 PARCEL L-1
5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.
ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354
ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6226
SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: MHR
DRAWN BY: DZ
CHECKED BY: RHW
DATE: SEPT 2003
SCALE: AS SHOWN
W.O. NO.: 2024056

5 SHEET OF 9

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
DATE: 10/16/03
DATE: 10/16/03
DATE: 10/16/03

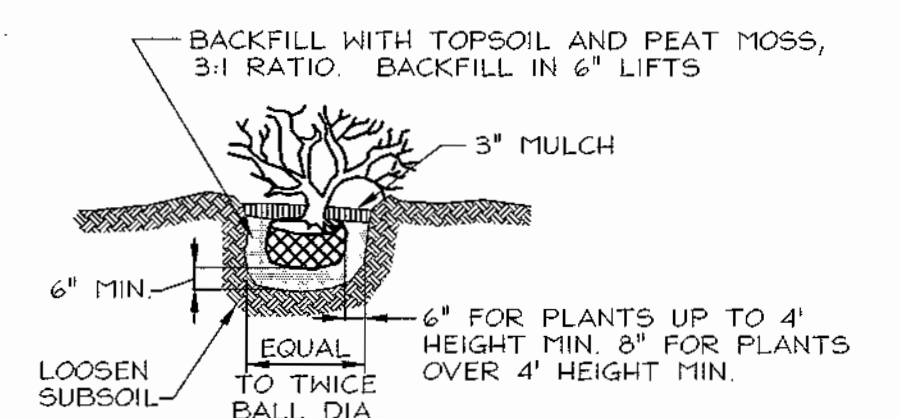
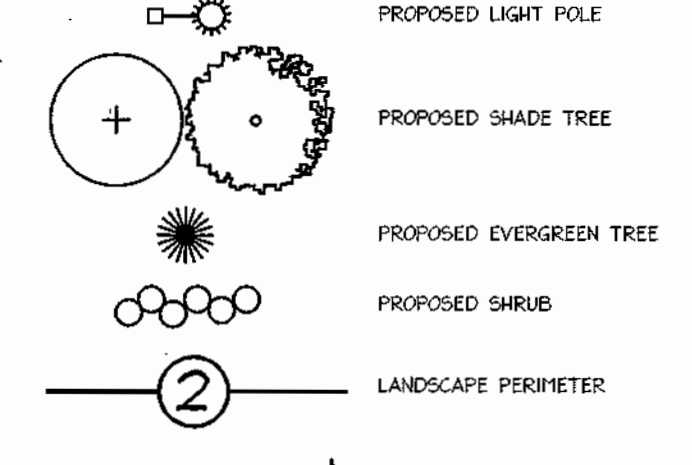


PLAN
SCALE: 1"=30'

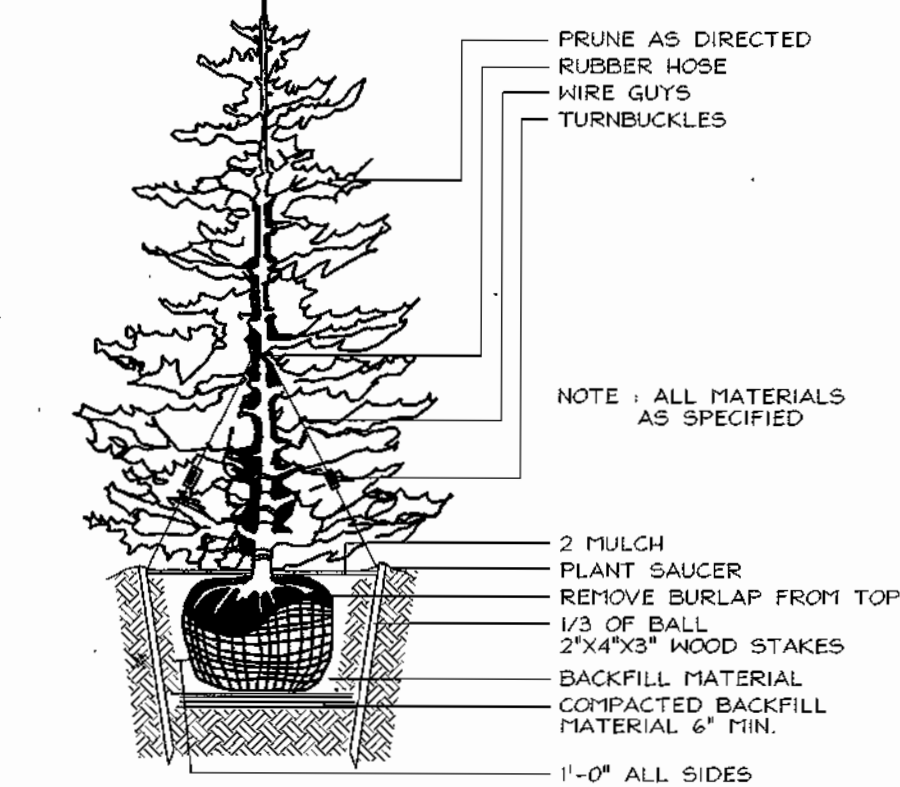
LANDSCAPE SCHEDULE NOTE:

1. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAM SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH LCAPIV PLANTING SPECIFICATIONS.
2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
3. FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SHALES.
4. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.
5. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING MUST BE POSTED WITH THE DEVELOPER AGREEMENT IN THE AMOUNT OF \$18,900 FOR 35 SHADE TREES, 53 EVERGREEN TREES AND 15 SHRUBS. THE LANDSCAPE SURETY SHALL BE POSTED WITH THE DEVELOPMENT AGREEMENT.

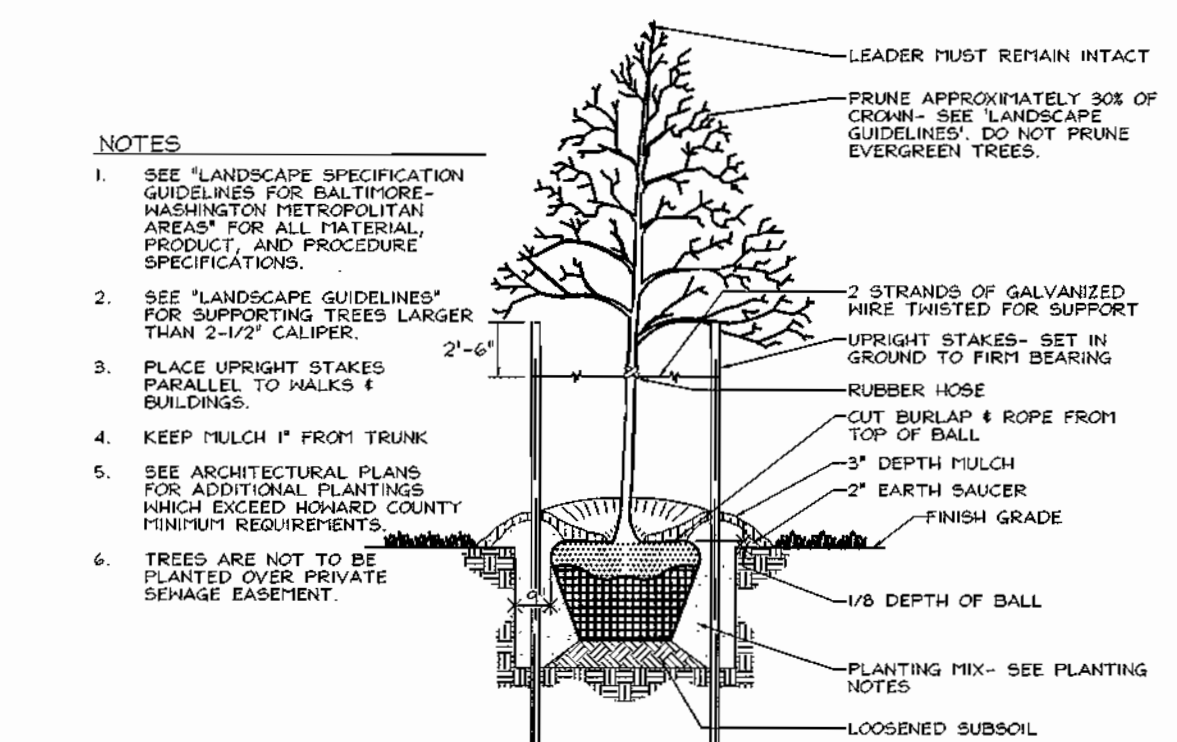
LEGEND:



SHRUB PLANTING DETAIL
NOT TO SCALE



TYPICAL EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE



TREE PLANTING AND STAKING
DECIDUOUS TREES UP TO 2-1/2\"/>

LANDSCAPE SCHEDULE				
KEY	QUAN.	BOTANICAL NAME	SIZE	REM
AR	27	ACER RUERUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	2 1/2" - 3" CAL.	B & B
FP	7	FRAXINUS P. 'MARSHALLS SEEDLESS'	2 1/2" - 3" CAL.	B & B
PS	53	PINUS STROBUS PINE WHITE	6' - 8' HT.	B & B
TD	15	TAXUS X MEDIA 'DENSIFORMIS' DENSIFORMIS YEW	36" HT.	B & B OR CONT.
VP	16	VIBURNUM PLICATUM 'MARIESSI' MARIESSI'S DOUBLE FILE VIBURNUM	30" - 36" HT.	B & B OR CONT.
JC	28	JUNIPERUS HORIZONTALIS 'WILTONII' BLUE RUG JUNIPER	1 GAL.	CONT.

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING		
	QUAN.	REMARKS
Number of parking spaces	114	
Number of trees and islands required	6	
Number of trees and islands provided	6	
Shade Trees (2:1 Substitution)	-	
Other Trees	-	

SCHEDULE A PERIMETER LANDSCAPE EDGE					
CATEGORY	ADJACENT TO ROADWAYS		ADJACENT TO PERIMETER PROPERTIES		
	1	2	3	4	5
Perimeter/Frontage Designation	E	W	1	2	3
Linear Feet of Roadway	20	34	87	706	271
Frontage/Perimeter					
Credit for Existing Vegetation (Yes, No, Linear Feet Describe below if needed)	No	No	No	No	No
Credit for Wall, Fence or Berm (Yes, No, Linear Feet Describe below if needed)	No	No	No	No	No
Number of Plants Required					
Shade Trees	1:40	1:40	1:40	1:40	1:40
Evergreen Trees	1:20	1:20	1:20	1:20	1:20
Shrubs	1:04	1:04	1:04	1:04	1:04
Number of Plants Provided					
Shade Trees	1	1	2	18	7
Evergreen Trees	-	-	4	35	14
Other Trees (2:1 Substitution)	-	-	-	-	-
Shrubs (10:1 Substitution)	5	10	-	-	-
Describe Plant Substitution Credits Below if needed					

DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Signature: *Jack M. Antwerpen* Date: *10/16/2003*

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Signature: *Mark A. Dwyer* Date: *10/16/2003*

Signature: *Mark A. Dwyer* Date: *10/16/2003*

SITE LANDSCAPE PLAN AND PARKING DESIGNATION
SITE DEVELOPMENT PLAN
ANTWERPEN NISSAN
PARCEL L-1, HOLWECK SUBDIVISION

TAX MAP #34 BLOCK #6
5TH ELECTION DISTRICT

PARCEL L-1
HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.

ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354
ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6226
SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

STATE OF MARYLAND
REGISTERED PROFESSIONAL ENGINEER

DESIGN BY: MIM
DRAWN BY: DZ
CHECKED BY: RHV
DATE: SEPT 2003
SCALE: 1"=30'
W.O. NO.: 2024056

6 SHEET OF 9

CONTROL STRUCTURE NOTES:

1. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M 199.
2. CONCRETE SHALL BE MIX NO. 6 (4500 P.S.I.).
3. WALL REINFORCEMENT FOR BASE UNITS AND RISER UNITS SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.21 IN²/FT FOR THE 6" DIAMETER MANHOLES. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 65 AND A 82.
4. BASE REINFORCEMENT TO BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.27 IN²/FT. THE BASE SHALL BE CAST MONOLITHIC WITH THE BASE UNIT OR JOINTED PER MANUFACTURER'S DESIGN.
5. THE MANUFACTURER SHALL FORM MALE AND FEMALE ENDS OF JOINTS USING THEIR OWN DESIGN. THE JOINTS SHALL BE SEALED BY THE CONTRACTOR AND MADE WATER TIGHT USING (WHERE APPLICABLE) PORTLAND RUBBER O-RING GASKETS MEETING ASTM C561 AND C 448 OR FLEXIBLE PLASTIC GASKETS MEETING AASHTO M 198 TYPE B.
6. LADDER RUNGS SHALL BE INSTALLED IN VERTICAL ALIGNMENT AT 1'-4" MAXIMUM C/C. RUNG TYPES SHALL BE IN ACCORDANCE WITH STANDARDS MD-300.91 OR MD-300.92. LADDER RUNGS SHALL BE INCIDENTAL TO THE COST OF THE MANHOLE.
7. WHEN THE DISTANCE BETWEEN MULTIPLE PIPE OPENINGS IN THE BASE UNIT OR ANY RISER UNIT IS LESS THAN 6" ADDITIONAL NO. 5 BARS ARE REQUIRED AROUND OPENINGS.
8. LIFT HOLES OR LIFT EYES SHALL BE PROVIDED IN EACH SECTION FOR HANDLING.
9. MIX NO. 2 CONCRETE OR BRICK CHANNEL SHALL BE PROVIDED IN THE FIELD AND SHALL SLOPE 2" PER FOOT TOWARD OUTLET OR AS DIRECTED BY THE ENGINEER.
10. THE DRIP STONE LANDING SHALL BE USED ONLY WHEN THERE ARE PIPES CONNECTED TO THE RISER UNITS. SEE STD.MD-304.13 FOR DETAILS.
11. MINIMUM DEPTH PAYMENT PER EACH SHALL BE 10'-1" MEASURED FROM THE BOTTOM OF THE BASE UNIT TO THE TOP OF THE MANHOLE COVER. VERTICAL DEPTH PAYMENT PER LINEAR FOOT SHALL INCLUDE ALL DEPTHS IN EXCESS OF 10'-1" AT THE COST OF THE DRIP STONE LANDING, NO. 57 AGGREGATE GROUT, SEALANT, AND ALL NECESSARY APPURTENANCES SHALL BE INCIDENTAL TO THE PRICE BID.

UNDERGROUND SAND FILTER CONSTRUCTION SPECIFICATIONS

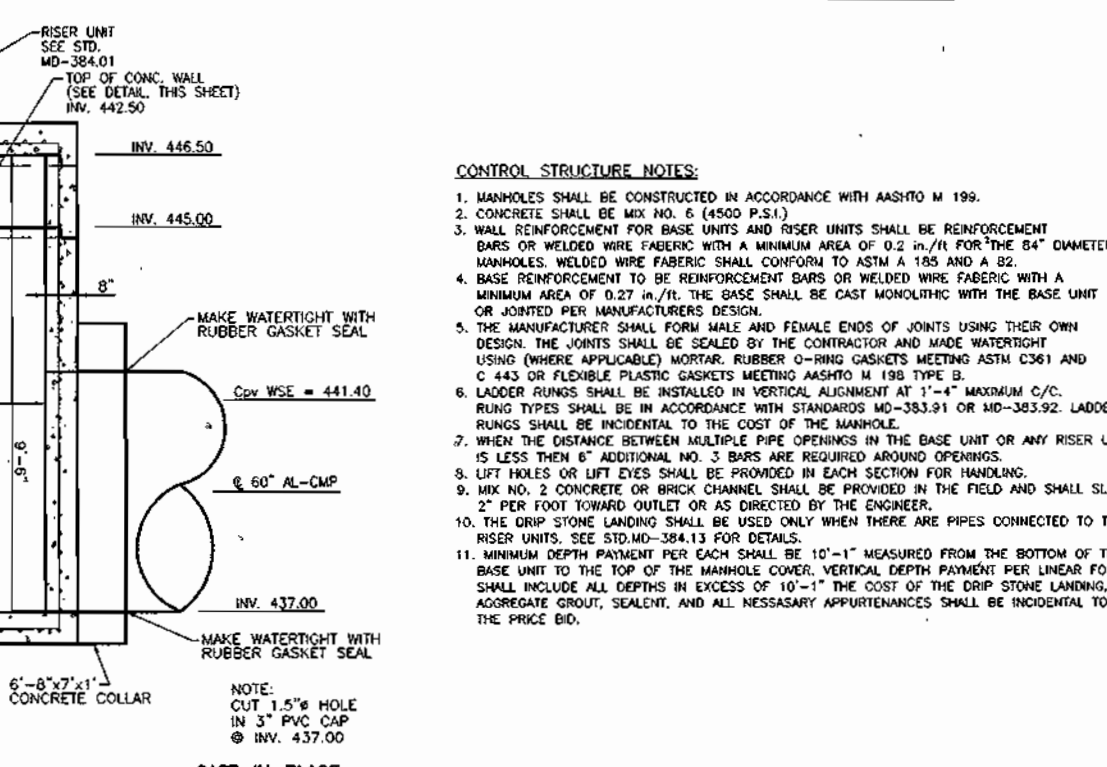
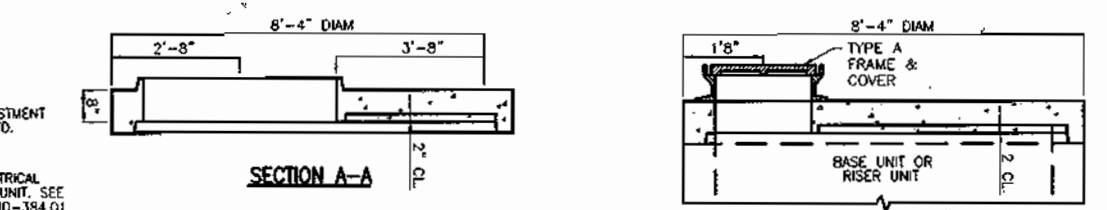
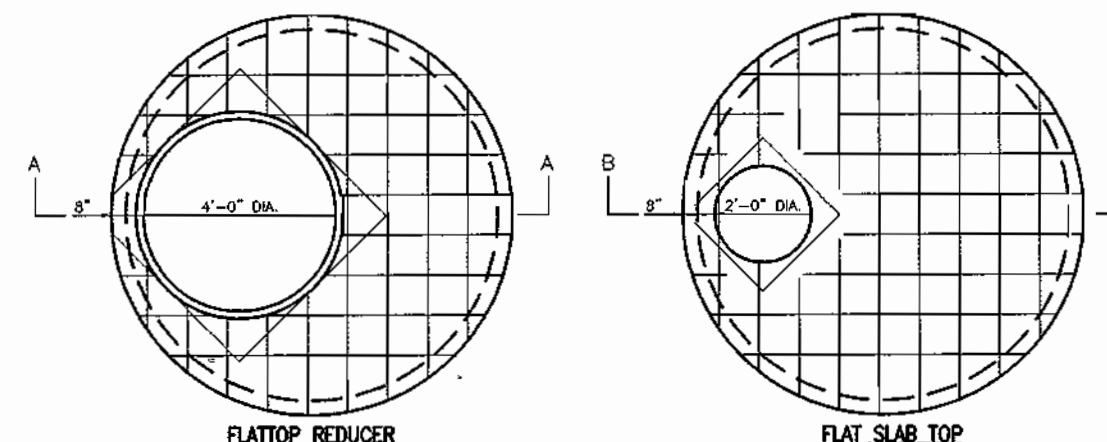
1. PROVIDE MANHOLE AND/OR GRATES TO ALL UNDERGROUND AND BELOW GRADE STRUCTURES. MANHOLES SHALL BE IN COMPLIANCE WITH STANDARD SPECIFICATIONS FOR EACH COUNTY, BUT DIAMETERS SHOULD BE 30" MINIMUM (TO COMPLY WITH OSHA CONFINED SPACE REQUIREMENTS). ALUMINUM AND STEEL LOUVERED DOORS ARE ALSO ACCEPTABLE. TEN INCH WIDE (MINIMUM) MANHOLE STEPS (120°C.C.) SHALL BE CAST IN PLACE OR DRILLED AND PORTLAND TO THE WALL BELOW EACH MANHOLE. A 3" MINIMUM HEIGHT CLEARANCE FROM THE TOP OF THE SAND LAYER TO THE BOTTOM OF THE UPPER/SURFACE SLAB IS REQUIRED FOR ALL PERMANENT UNDERGROUND STRUCTURES. LIFT RINGS ARE TO BE SUPPLIED TO REMOVE/REPLACE TOP SLABS ON WIRE-FABRICATED STRUCTURES. MANHOLE COVERS SHALL ALLOW FOR PROPER VENTILATION.
2. UNDERGROUND SANDFILTERS SHOULD BE CONSTRUCTED WITH A GATE VALVE LOCATED JUST ABOVE THE TOP OF THE FILTER BED FOR DEMATERING IN THE EVENT THAT CLOGGING OCCURS.
3. UNDERGROUND SAND BEDS SHALL BE PROTECTED FROM TRASH ACCUMULATION BY A WIDE MESH GEOTEXTILE SCREEN TO BE PLACED ON THE SURFACE OF THE SAND BED. SCREEN IS TO BE ROLLED UP, REMOVED, CLEANED AND RE-INSTALLED DURING MAINTENANCE OPERATIONS.

PROCEDURE FOR RELOCATING EXISTING STORMCEPTOR

1. HAVE THE UNIT THOROUGHLY CLEANED ACCORDING TO MAINTENANCE PROCEDURES.
2. EXCAVATE AROUND THE UNIT, BEING CAREFUL NOT TO DAMAGE THE COMPONENTS OF THE UNIT OR DISTURB THE PIPE GOING INTO THE STRUCTURE.
3. CAREFULLY DISASSEMBLE THE UNIT FROM THE TOP DOWN, WITHOUT DISTURBING THE INTERNAL FIBERGLASS COMPONENTS.
4. INSTALL THE UNIT IN THE NEW LOCATION, FOLLOWING THE PROCEDURES LISTED ON THIS SHEET.

IMPORTANT FACTORS WHEN RELOCATING THE STORMCEPTOR

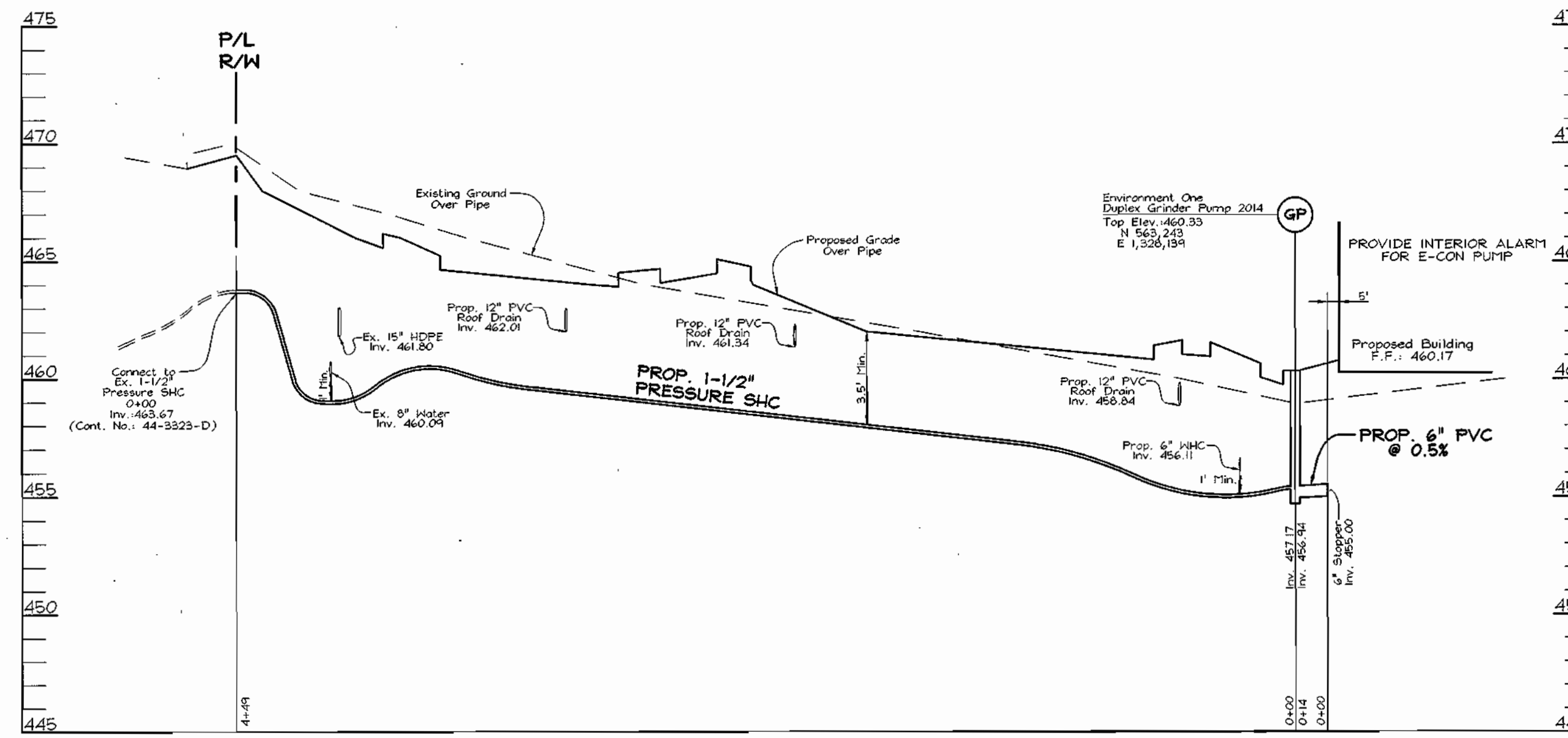
1. THE OLD GASKETS SHOULD BE DISCARDED AND THE JOINTS THOROUGHLY CLEANED BEFORE ASSEMBLING THE STRUCTURE WITH NEW GASKETS.
2. THE 2" RISER AT THE TOP OF THE CURRENT UNIT WILL NOT BE NEEDED AT THE NEW LOCATION. THIS DOES NOT EFFECT THE UNIT IN ANY WAY.
3. THE 4" RISER AT THE TOP OF THE UNIT NEED TO BE FIELD CUT TO MEET THE REQUIRED GRADE. THE FLATTOP MAY BE REATTACHED BY BOLTING OR GROUTING IT IN PLACE. AGAIN, THIS WILL NOT EFFECT THE PERFORMANCE OF THE UNIT.
4. EXTREME CARE SHOULD BE TAKEN NOT TO DAMAGE ANY PART OF THE STRUCTURE DURING THE DISASSEMBLY/REASSEMBLY PROCESS.
5. THE INLET AND OUTLET ANGLES WILL NOT MATCH THE NEW CONFIGURATION EXACTLY. THE INLET PIPE SHOULD BE PERPENDICULAR TO THE UNIT. ANY VARIATION CAN BE ACHIEVED BY PUTTING THE OUTLET PIPE AT THE ANGLE NEEDED. THE INTERNAL COMPONENTS ALLOW FOR ADJUSTMENT TO THE OUTLET ANGLE.



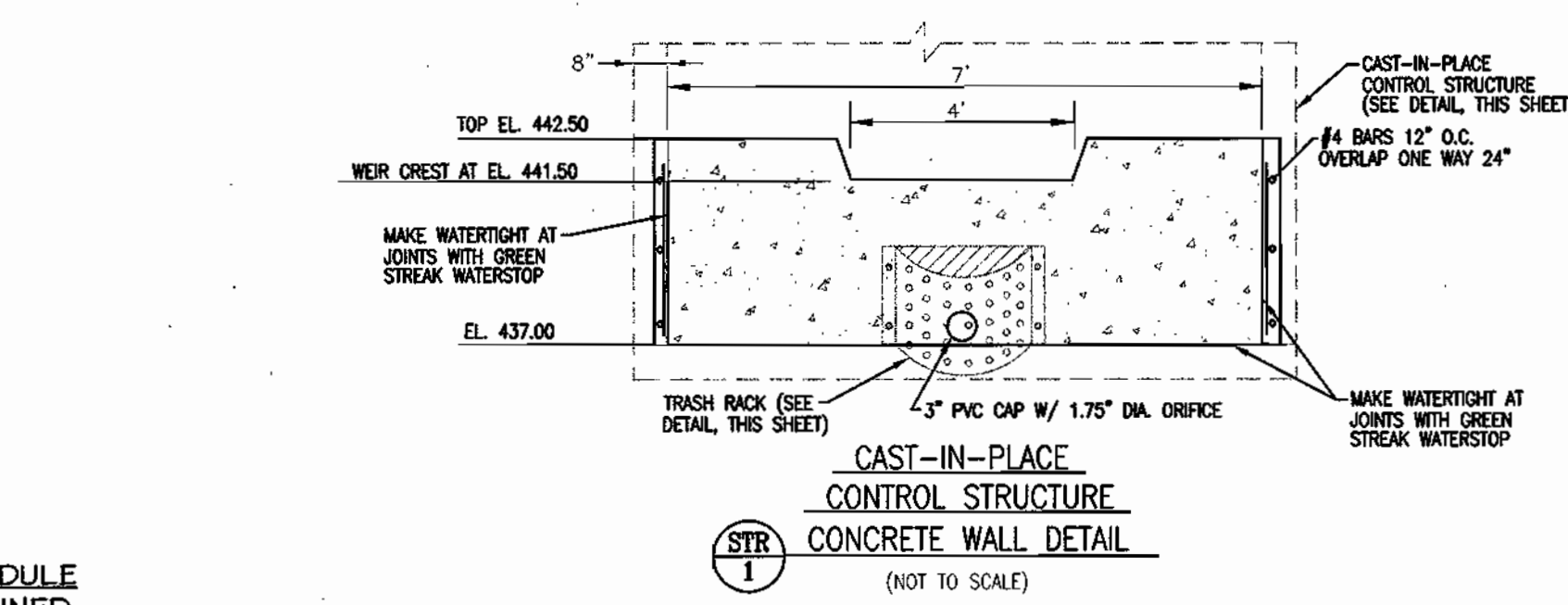
CAST-IN-PLACE CONTROL STRUCTURE
MD SHA STD. 384.07
DATE: 10/16/03

**CONTRACTOR INSTALLATION INSTRUCTIONS:
PRECAST CONCRETE STORMCEPTOR**

1. STAKE-OUT THE LOCATION OF THE STORMCEPTOR AND EXCAVATE HOLE. EXCAVATE ADEQUATE SPACE TO CONNECT INLET AND OUTLET PIPES TO UNIT. INSTALL A 12" DEEP (OR AS REQUIRED) LAYER OF COMPACTED (SEE STANDARD PROCTOR DENSITY OR LOCAL AND STATE REQUIREMENTS, AS DIRECTED BY THE INSPECTOR) AGGREGATE SUBBASE AT BOTTOM OF EXCAVATION. INSTALL MULE OR SHORING, AS NEEDED.
2. CHECK ELEVATION OF UNIT BY MEASURING ITS SECTIONS FROM BASE OF THE STORAGE CHAMBER (BOTTOM OF UNIT'S SLAB) TO THE INVERT OF STORMCEPTOR BYPASS CHAMBER INLET ELEVATION (FIBERGLASS INSERT). SUBTRACT THIS DISTANCE FROM DESIGN INVERT ELEVATION TO DETERMINE TOP OF SUBBASE ELEVATION. CHECK ELEVATION OF INSTALLED SUBBASE AND ADJUST AS NEEDED.
3. SECURE INSPECTOR APPROVAL OF SUBGRADE AND SUBBASE.
4. INSTALL STORAGE CHAMBER, INSTALL SCREW INSERTS INTO BASE OF STORAGE CHAMBER. ATTACH CABLES OR CHAINS TO ALL 3 LIFTING LUGS ON THE BASE SLAB. USING LARGE EQUIPMENT OR CRANE LIFT AND PLACE THE BASE SECTION OF THE STORAGE CHAMBER IN THE EXCAVATED HOLE ON THE SUBBASE. MAKE SURE THAT THE BASE IS LEVEL SPECIFIC ALIGNMENT OF THIS PART IS NOT REQUIRED. INSTALL RUBBER GASKET ON BASE UNIT AND COAT WITH LUBRICATING GREASE (PROVIDED IN SHIPMENT), IF NOT PRELUBRICATED. INSTALL ADDITIONAL STORAGE CHAMBER SECTIONS, AS REQUIRED (PROCEDURE IS SAME AS STEP 4).
5. INSTALL REDUCING SLAB. (STORMCEPTOR MODELS STC-2400, STC-3600, STC-4800, STC-8000 AND STC-7200) CHECK THAT SECTION IS SET FLUSH, LEVEL AND IS AT THE PROPER ELEVATION. INSTALL RUBBER GASKET ON THE TRANSITION SLAB SPOGOT AND COAT WITH LUBRICATING GREASE (PROVIDED IN SHIPMENT).
6. INSTALL BYPASS CHAMBER OF STORMCEPTOR WITH FACTORY INSTALLED STORMCEPTOR INSERT. LIFT BYPASS SECTION AND INSTALL, WHILE CHECKING ALIGNMENT AND GRADE OF INLET AND OUTLET DRAINAGE PIPES. CHECK TO MAKE SURE THE BYPASS CHAMBER IS SET FLUSH, LEVEL AND IS AT THE PROPER ELEVATION. THE BYPASS CHAMBER MUST BE ORIENTED SUCH THAT INLET PIPE DISCHARGES INTO THE V-SHAPED FIBERGLASS WEIRS (INSIDE INSERT). INSTALL RUBBER GASKET ON TOP OF BYPASS SECTION AND COAT WITH LUBRICATING GREASE, IF NOT PRELUBRICATED.
7. INSTALL STORMCEPTOR DROP PIPES ACCORDING TO STC PIPE INSTALLATION PROCEDURE.
8. INSTALL RISER SECTION. LIFT RISER SECTION AND INSTALL, WHILE CHECKING THAT SECTION IS SET FLUSH AND IS AT PROPER ELEVATION AND THAT UNIT IS LEVEL. SPECIFIC ALIGNMENT OF THIS PART IS REQUIRED IF STEPS 5 ARE INCLUDED. ALIGN STEPS ABOVE INLET INSPECTION PORT. NOTE: FOR SHALLOW INSTALLATIONS THIS SECTION MAY NOT BE REQUIRED.
9. INSTALL TOP CAP WITH OPENING FOR STORMCEPTOR COVER. IF OPENING IS OFFSET (NOT CENTERED) THE TOP CAP OPENING SHOULD BE ORIENTED ABOVE THE STORMCEPTOR INLET INSPECTION PORT (PLUG).
10. BACKFILL STORMCEPTOR WITH APPROVED BACKFILL MATERIAL (NO ORGANIC OR TOPSOIL IS TO BE USED FOR BACKFILL). BACKFILL AND COMPACT IN 8 INCH LIFTS. BACKFILL SHOULD BE COMPACTED TO 95% OF STANDARD PROCTOR DENSITY, OR LOCAL AND STATE REQUIREMENTS, AS DIRECTED BY THE INSPECTOR.
11. INSTALL AND SET GRADE ADJUSTING RINGS, AS NEEDED.
12. INSTALL AND SET STORMCEPTOR FRAME AND COVER.
13. INSTALL INLET AND OUTLET STORM DRAIN PIPES. CONNECT INLET AND OUTLET STORM DRAIN PIPES WITH FLEXIBLE BOOTS (WHEN PROVIDED) AND WITH NON-SHRINK GROUT WHEN NO FLEXIBLE BOOTS ARE PROVIDED. THE INVERT OF THE INLET AND OUTLET PIPE IS TO MATCH WITH THE INVERT OF THE STORMCEPTOR INSERT. FLEXIBLE BOOT INSTALLATION PROCEDURES: CENTER THE PIPE IN THE BOOT OPENING. LUBRICATE THE OUTSIDE OF THE PIPE AND/OR THE INSIDE OF THE BOOT IF THE PIPE OUTSIDE DIAMETER IS THE SAME AS THE INSIDE DIAMETER OF THE BOOT. POSITION THE PIPE CLAMP IN THE GROOVE OF THE BOOT WITH THE SCREW AT THE TOP. TIGHTEN THE PIPE CLAMP SCREW TO 60 INCH POUNDS. IF THE PIPE IS MUCH SMALLER THAN THE BOOT, LIFT THE BOOT SUCH THAT IT CONTACTS THE BOTTOM OF THE PIPE WHILE TIGHTENING THE CLAMP TO ENSURE EVEN CONTRACTION OF THE RUBBER. MOVE THE PIPE HORIZONTALLY AND/OR VERTICALLY TO BRING IT TO GRADE.
14. THE STORMCEPTOR SHOULD BE PUMPED OUT WHEN THE SEDIMENT CONTROL MEASURES ARE REMOVED (SITE PERMANENTLY STABILIZED).
15. FINAL INSPECTION.



SEWER HOUSE CONNECTION PROFILE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



CONTROL STRUCTURE CONCRETE WALL NOTES

1. CONCRETE WALL SHALL BE MIX NO. 6 (4500 P.S.I.)
2. WALL REINFORCEMENT SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MIN. AREA OF 0.21 IN²/FT WELDED WIRE FABRIC.
3. WALL SHALL BE CAST-IN-PLACE, POURED MONOLITHIC USING FORMS. IN LIEU OF MONOLITHIC POUR, WALL SHALL BE CONNECTED BY OVERLAPPING BARS ONE WAY 24", AND SEALED WITH GREEN STREAK WATERSTOP (OR APPROVED EQUIVALENT)

OPERATION AND MAINTENANCE SCHEDULE FOR STORMCEPTOR WATER QUALITY STRUCTURE

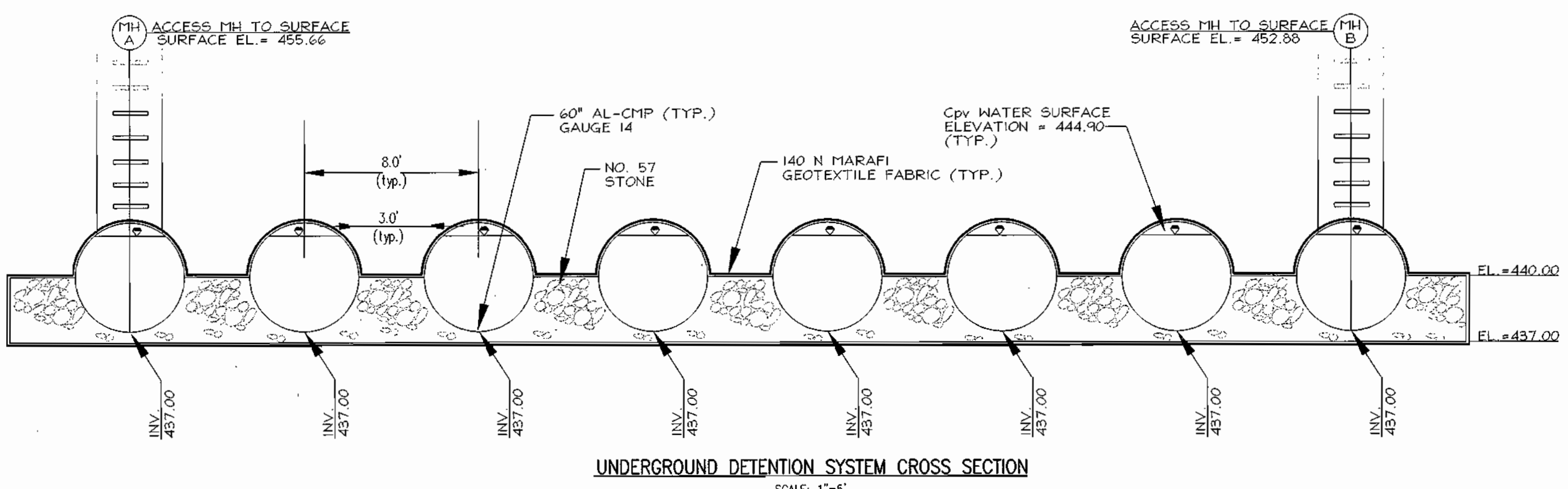
1. The stormceptor water quality structure shall be periodically inspected and cleaned to maintain operation and function. The owner shall inspect the stormceptor unit yearly at a minimum, utilizing the stormceptor inspection/monitoring form. Inspections shall be done using a clear Plexiglass tube ("sluider/jug") to extract a water column sample. When the sediment depths exceed the level specified in Table 6 of the Stormceptor Technical Manual, the unit must be cleaned.
2. The stormceptor water quality structure shall be checked and cleaned immediately after petroleum spills. The owner shall contact the appropriate regulatory agencies.
3. The maintenance of the stormceptor unit shall be done using a vacuum truck which will remove the water, sediment, debris, floating hydrocarbons, and other materials in the unit. Proper cleaning and disposal of the removed materials and liquid must follow by the owner.
4. The inlet and outlet pipes shall be checked for any obstructions at least once every six months. If obstructions are found, the owner shall have them removed. Structural parts of the stormceptor unit shall be repaired as needed.
5. The owner shall retain and make the stormceptor inspections/monitoring forms available to the Howard County officials upon their request.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED UNDERGROUND FACILITIES

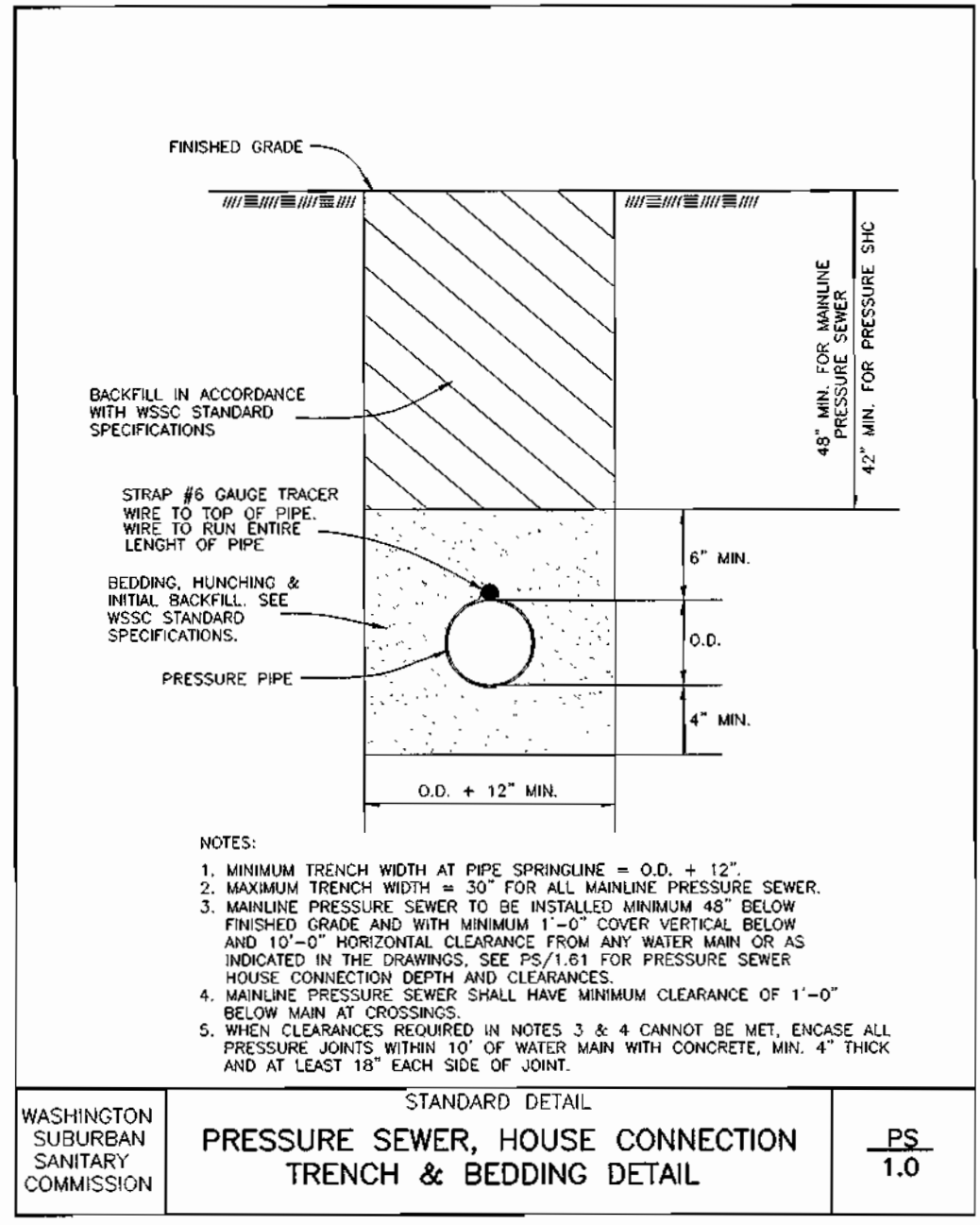
1. THE SEDIMENT CHAMBER OUTLET DEVICES SHALL BE CLEANED AND/OR REPAIRED WHEN DRAWDOWN TIMES WITHIN THE CHAMBER EXCEED 36 HOURS.
2. DEBRIS AND LITTER SHALL BE REMOVED AS NECESSARY TO INSURE PROPER OPERATION OF THE SYSTEM.
3. SEDIMENT SHALL BE CLEANED OUT OF THE SEDIMENTATION CHAMBER WHEN IT ACCUMULATES TO A DEPTH OF 6 INCHES. VEGETATION WITHIN THE SEDIMENT CHAMBER SHALL BE LIMITED TO THE HEIGHT OF 18 INCHES.
4. WHEN WATER PONDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 72 HOURS, THE TOP FEW INCHES OF DISCOLORED MATERIAL SHALL BE REPLACED WITH FRESH MATERIAL. PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIALS AND LIQUID MUST BE FOLLOWED BY THE OWNER.
5. A LOGBOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
6. THE MAINTENANCE LOGBOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
7. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION SYSTEM HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED UNDERGROUND FACILITIES

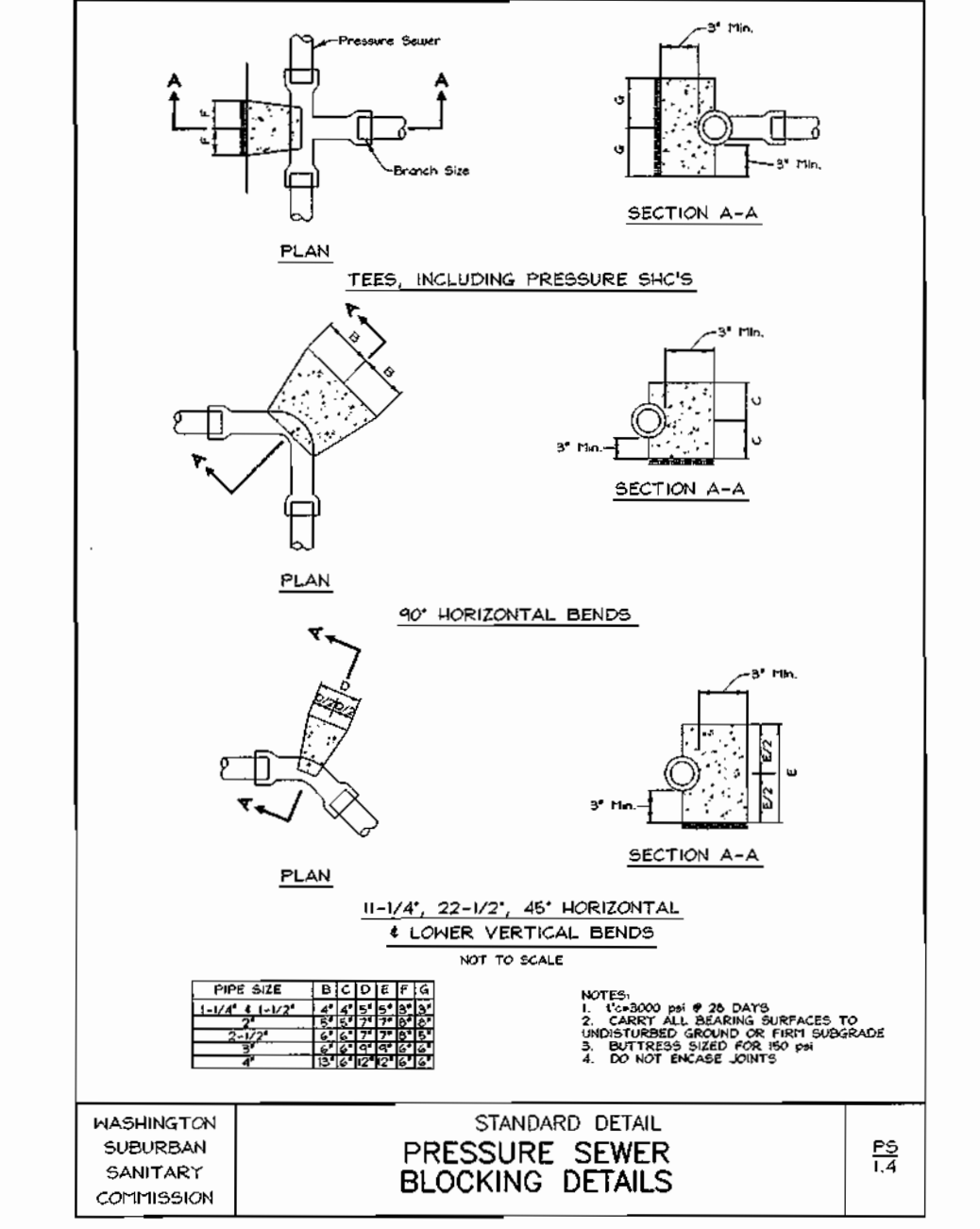
- A. THE UNDERGROUND STORMWATER MANAGEMENT FACILITY IS PRIVATELY OWNED AND IT SHALL BE THE RESPONSIBILITY OF THE OWNER TO PERIODICALLY INSPECT AND CLEAN THE FACILITY TO MAINTAIN ITS OPERATION AND FUNCTION.
- B. THE UNDERGROUND STORMWATER MANAGEMENT FACILITY SHALL BE INSPECTED YEARLY AT A MINIMUM AND AFTER ESPECIALLY SEVERE STORM EVENTS.
- C. WHEN SEDIMENT ACCUMULATION OF MORE THAN 2" IS OBSERVED OR ANY DEBRIS THAT MIGHT OBSTRUCT THE OUTFALL IS OBSERVED, THE FACILITY SHALL BE CLEANED.
- D. 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.
- E. THE SEDIMENT AND DEBRIS SHALL BE REMOVED FROM THE UNDERGROUND STORMWATER MANAGEMENT FACILITY BY VACUUM TRUCK OR OTHER MANUAL MEANS. THE OWNER SHALL FOLLOW PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIAL AND LIQUID.
- F. THE INLET AND OUTLET PIPES SHALL BE CHECKED FOR ANY OBSTRUCTIONS AT LEAST ONCE EVERY SIX (6) MONTHS. IF OBSTRUCTIONS ARE FOUND, THE OWNER SHALL HAVE THEM REMOVED AND PROPERLY DISPOSED OF.



UNDERGROUND DETENTION SYSTEM CROSS SECTION
SCALE: 1"=5'



STANDARD DETAIL PRESSURE SEWER, HOUSE CONNECTION TRENCH & BEDDING DETAIL
PS 1.0



WATER HOUSE CONNECTION PROFILE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

NOTE: DEBRIS IS TO BE KEPT OUT OF ALL STORMWATER MANAGEMENT FACILITIES DURING AND AFTER CONSTRUCTION.

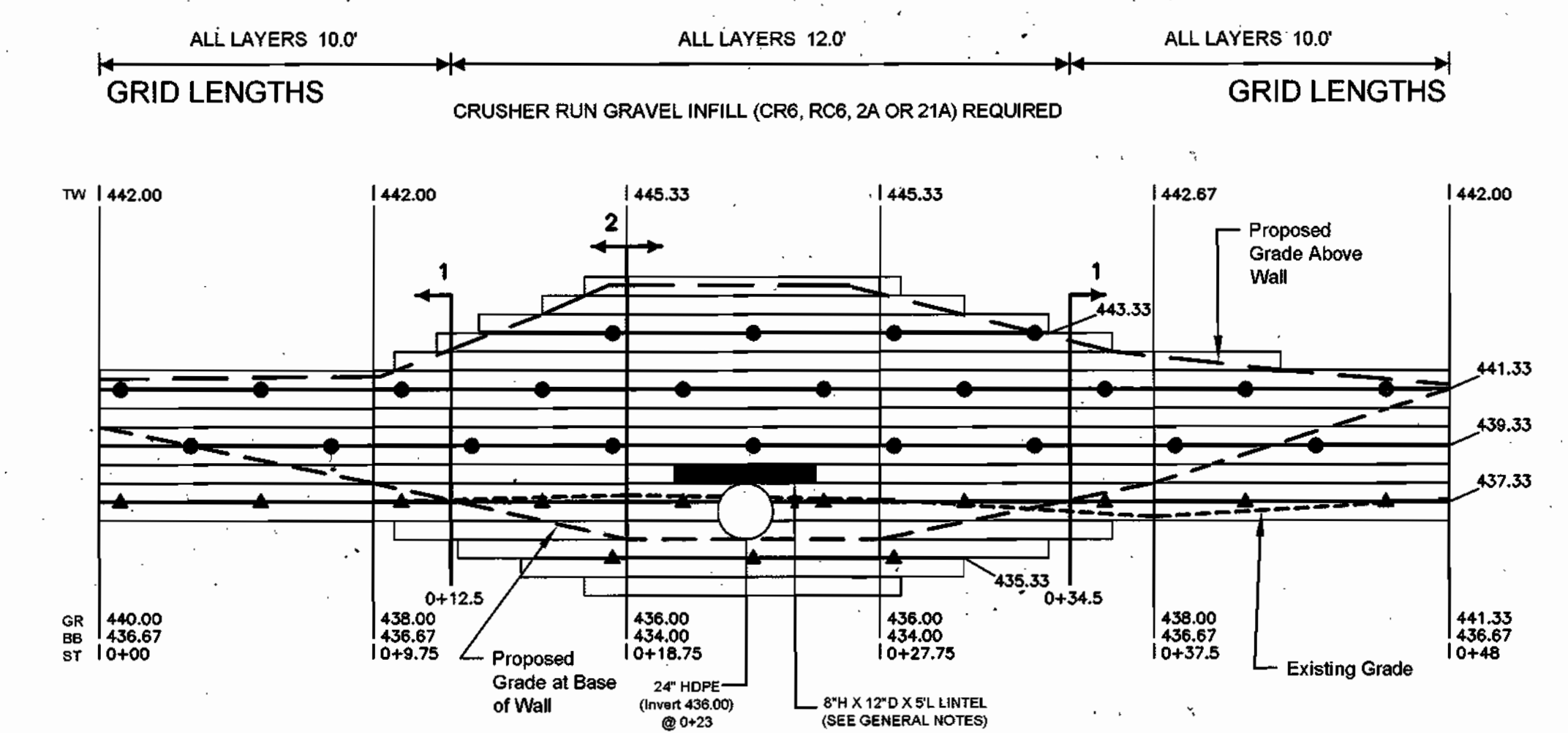
NO.	REVISION	DATE

WATER AND SEWER PROFILES AND DETAILS SITE DEVELOPMENT PLAN ANTWERPEN NISSAN PARCEL L-1, HOLWECK SUBDIVISION
TAX MAP #34 BLOCK #6 PARCEL L-1
5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.
7125 Riverwood Drive Columbia, Maryland 21046-2354
Phone: 410-290-9550 Fax: 410-720-6226
Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

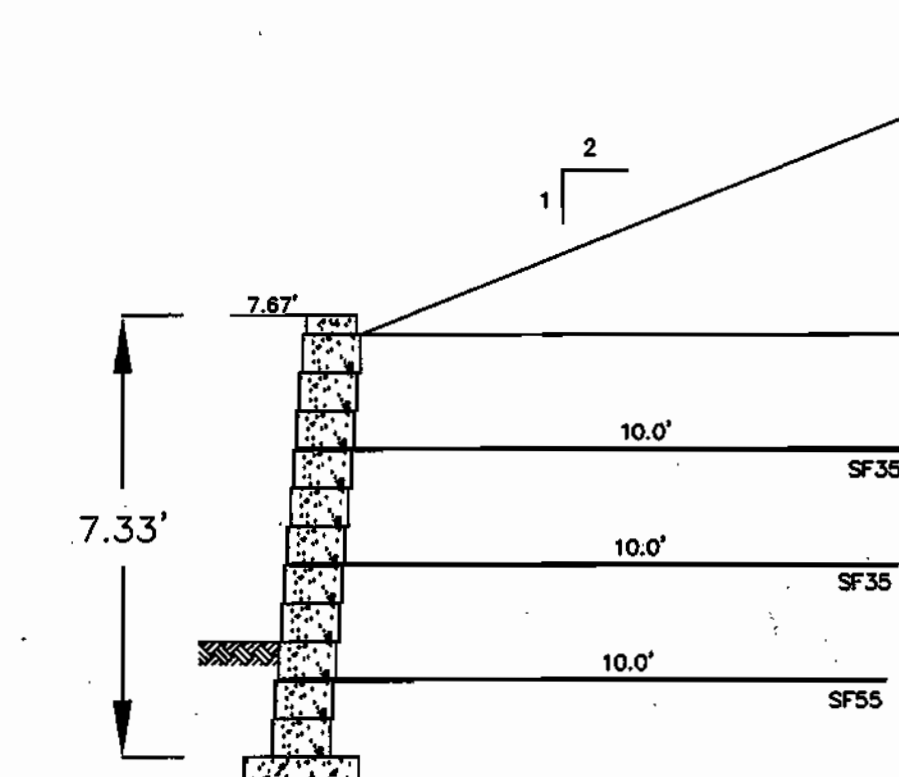
DESIGN BY: MHR
DRAWN BY: DZ
CHECKED BY: RLV
DATE: SEPT 2003
SCALE: AS SHOWN
W.O. NO.: 2024056

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Charles D. ... 10/16/03
CHIEF, DEVELOPMENT ENGINEERING DIVISION
... 10/16/03
CHIEF, DIVISION OF LAND DEVELOPMENT
... 10/16/03
DIRECTOR



TW = TOP OF WALL (NOT INCLUDING CAP)
 GR = PROPOSED FINISHED GRADE AT BASE OF WALL
 BB = BOTTOM OF BLOCK / TOP OF LEVELING PAD
 ST = WALL STATION

GRID KEY: SYNTEEN SF35
 SYNTEEN SF55



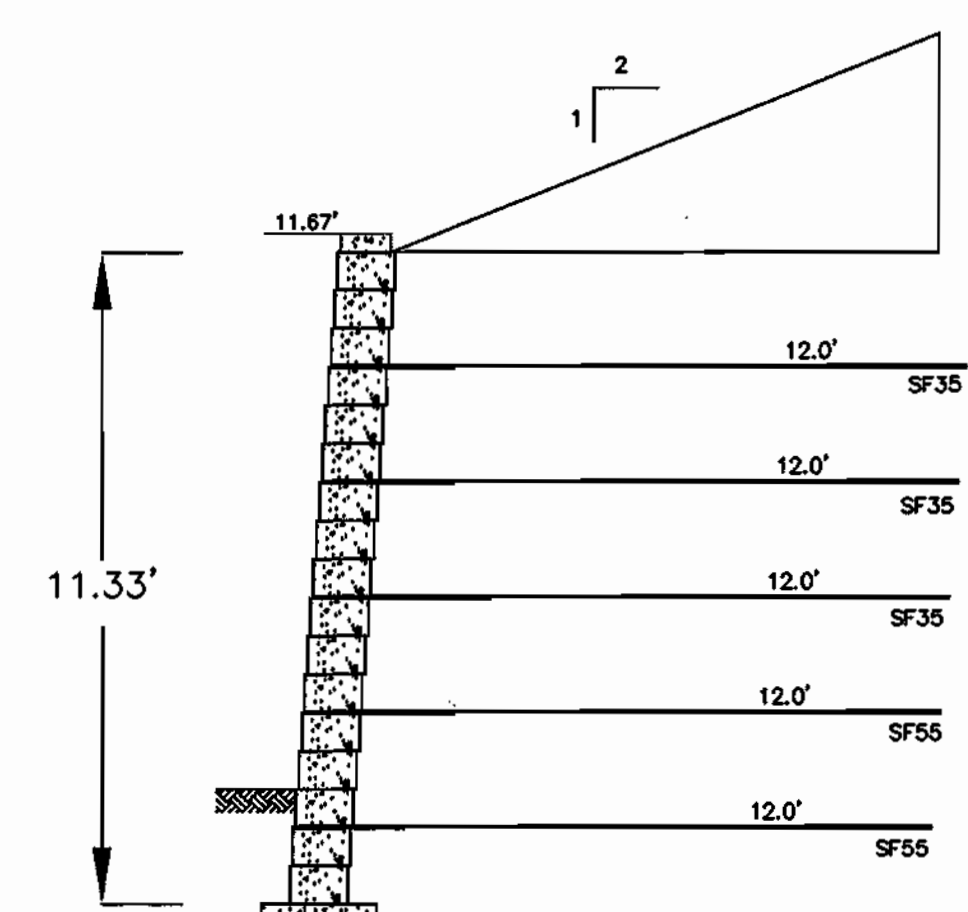
Block Dimensions
 Total Wall Height = 7.33'
 Angle of Setback = 4.5°
 Length of Block = 1.50'

Block Height = .667'
Depth of Block = 1.00'

SOIL PARAMETERS
 Infill: Friction Angle = 35° Unit Weight = 135 PSF
 Retained: Friction Angle = 28° Unit Weight = 126 PSF
 Foundation: Friction Angle = 28° Unit Weight = 126 PSF

MINIMUM ALLOWABLE BEARING CAPACITY = 2,500 PSF

Safety Factors Static & Seismic
 Minimum Sliding = 1.5 Actual Sliding = 1.61
 Minimum Overturning = 2.0 Actual Overturning = 4.55



Block Dimensions
 Total Wall Height = 11.33'
 Angle of Setback = 4.5°
 Length of Block = 1.50'

Block Height = .667'
Depth of Block = 1.00'

SOIL PARAMETERS
 Infill: Friction Angle = 35° Unit Weight = 135 PSF
 Retained: Friction Angle = 28° Unit Weight = 126 PSF
 Foundation: Friction Angle = 28° Unit Weight = 126 PSF

MINIMUM ALLOWABLE BEARING CAPACITY = 2,500 PSF

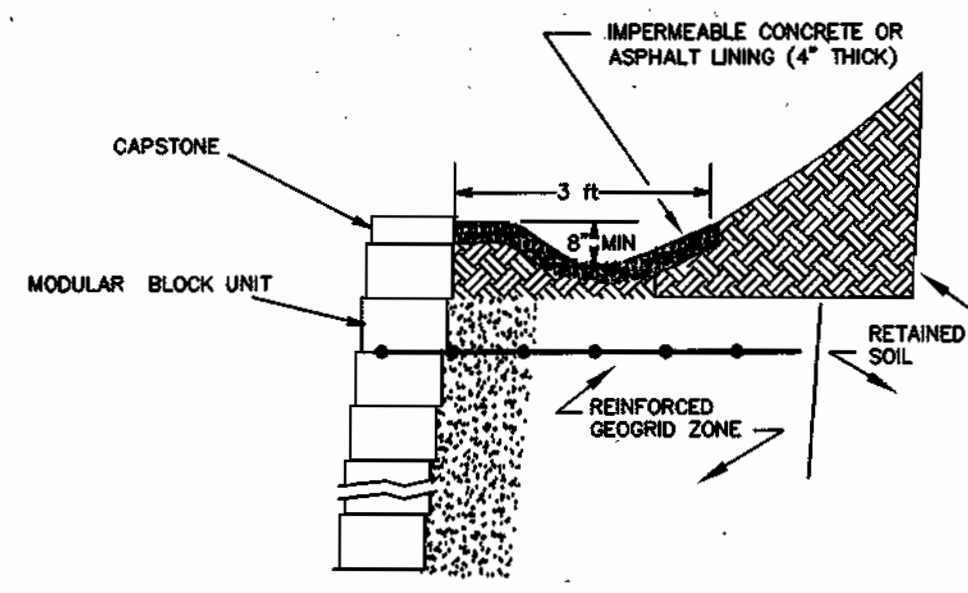
Safety Factors Static & Seismic
 Minimum Sliding = 1.5 Actual Sliding = 1.80
 Minimum Overturning = 2.0 Actual Overturning = 3.72

WALL #1 (N of underground SWM facility)

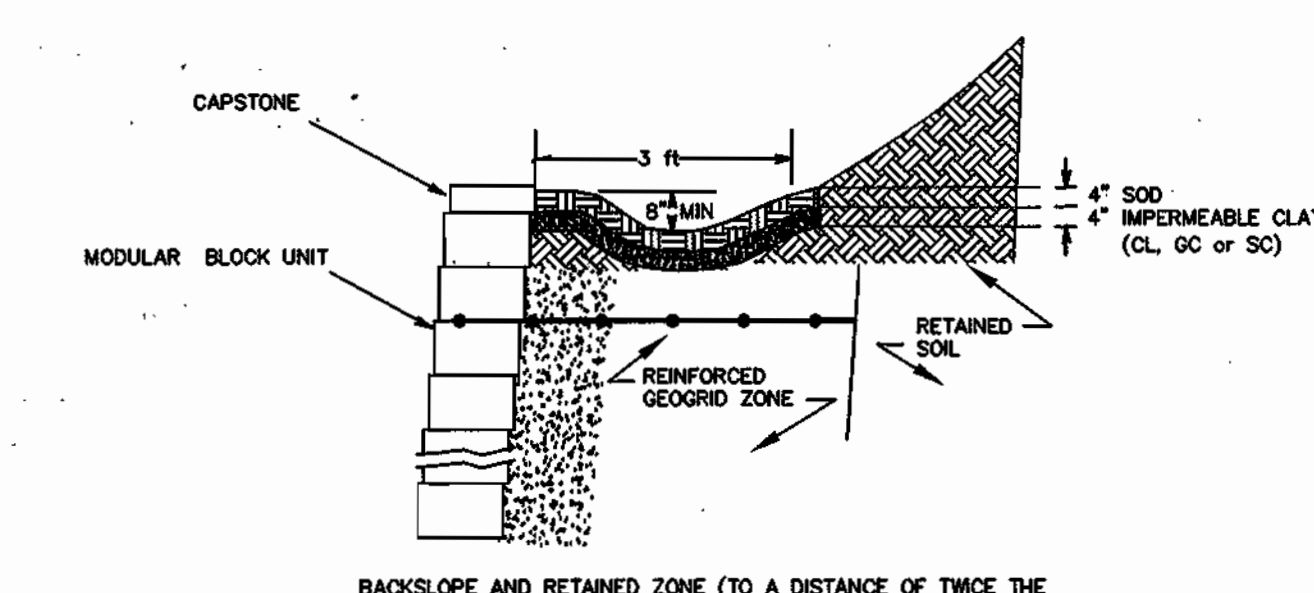
Scale 1" = 5'

WALL #1, SECTION 1
 N.T.S.

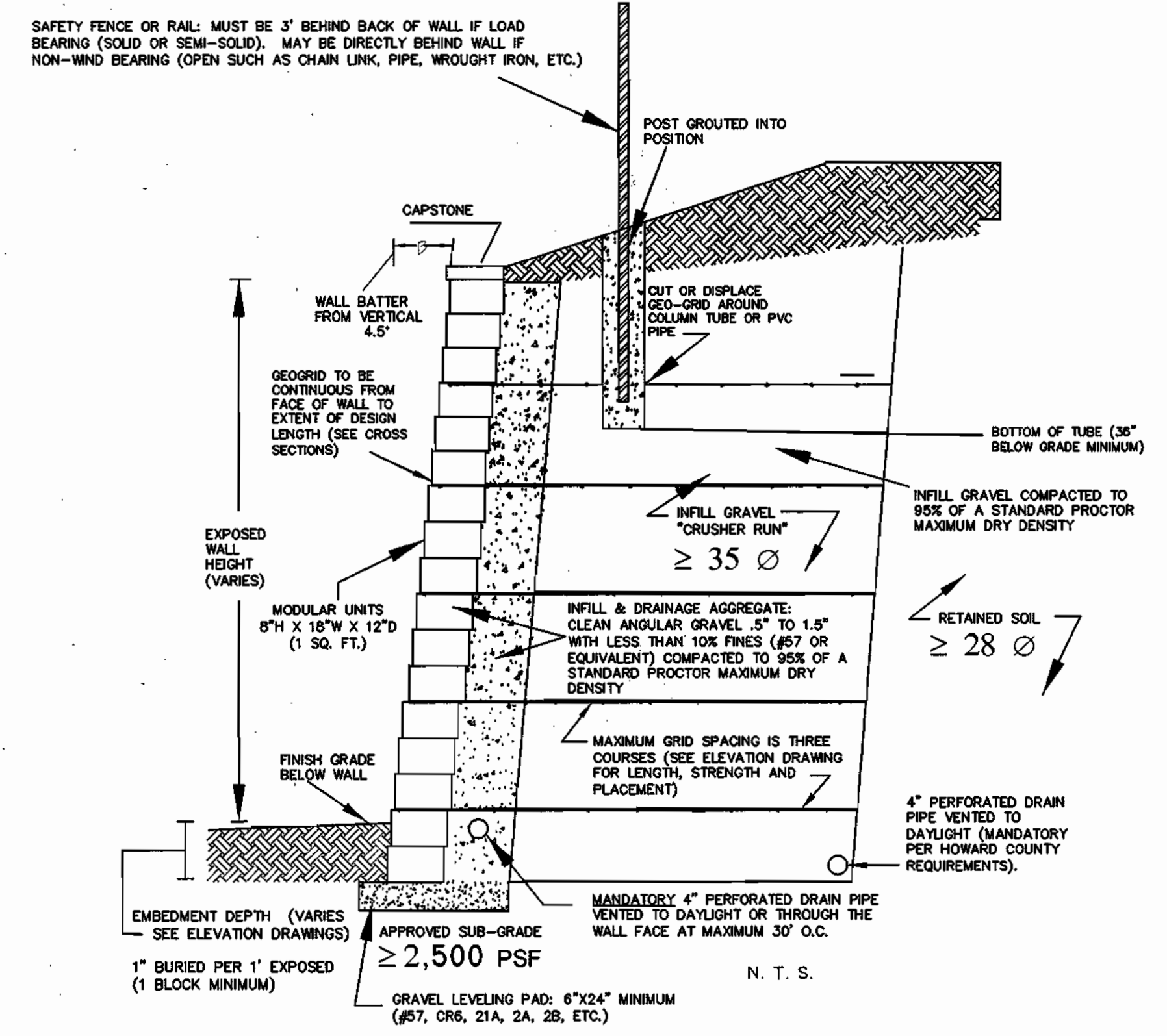
WALL #1, SECTION 2
 N.T.S.



CONCRETE LINED SWALE
 N.T.S.



CLAY LINED SWALE
 N.T.S.



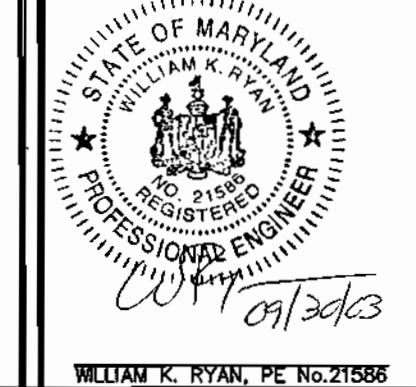
1	Added grade line above wall & revised typical section	02/21/03
2	Revised typical section	02/24/03
3	Revised wall profile and cross sections	03/24/03
4	Redesigned Wall #1	05/05/03

NO.	REVISION	DATE
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CORNERSTONE RETAINING WALL DESIGNS ANTWERPEN NISSAN

TAX MAP #34 BLOCK #6 PARCEL L-1
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.
 ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354
 ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6228
 SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia



DESIGN BY: MMR
 DRAWN BY: DZ
 CHECKED BY: MMR
 DATE: NOVEMBER 2002
 SCALE: AS SHOWN
 W.Q. NO.: 2019158

SDP-03-92
 9 SHEET OF 9

DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

SIGNATURE OF DEVELOPER _____ DATE _____

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Chad Dammann 10/16/03
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
Andy Krametz 10/16/03
 CHIEF, DIVISION OF LAND DEVELOPMENT
Mark A. Vogel 10/16/03
 DIRECTOR

REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.
 USDA-NATURAL RESOURCES CONSERVATION SERVICE
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 HOWARD S.C.D. DATE _____

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

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 SOIL CONSERVATION DISTRICT.
Robert H. Vogel
 SIGNATURE OF ENGINEER ROBERT H. VOGEL, P.E. DATE 10/17/03

GENERAL NOTES

- All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications, if applicable.
- The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work.
- The contractor is to notify the following utilities or agencies at least five days before starting work on these drawings:
 - Miss Utility: 1-800-257-7777
 - Verizon: 410-754-6281
 - Howard County Bureau of Utilities: 313-2366
 - AT&T Cable Location Division: 393-3553
 - B.G.&E. Co. Contractor Services: 850-4620
 - B.G.&E. Co. Underground Damage Control: 787-4620
 - State Highway Administration: 531-5533
- Site analysis:
 - Area of parcel: 3.4235 Ac.
 - Present zoning: B2
 - Use of structure:
 - Automobile Sales: 15,747 sf
 - Automobile Service (Including Car Wash): 12,180 sf
 - Building area: 27,927 sf
 - Disturbed area: 138,050sf
 - Building coverage on site: 0.641 Ac. or 18.72 % of gross area
 - Paved parking lot/area: 1.73 Ac. or 50.2 % of gross area
 - Area of landscape island: 108 Ac. = 4,701 sf
 - Cut: 1,350 CY Fill: 12,700 CY
- Project background:
 - Location: Columbia, Md., Tax Map 34, Block 6, Parcel L-1
 - Zoning: B-2
 - Subdivision: Holweck Subdivision
 - Section/Area: 1/1
 - Site Area: 3.4235 Acres
 - DPZ references: Plat# 11182, and DPZ file#: F-01-29
- The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to start of work.
- Any damage to public right-of-ways, paving, or existing utilities will be corrected at the contractor's expense.
- Existing utilities located from Road Construction Plans, Field Surveys, Public Water and Sewer Extension Plans and available record drawings. Approximate location of existing utilities are shown for the contractor's information. Contractor shall locate existing utilities well in advance of construction activities and take all necessary precautions to protect the existing utilities and to maintain uninterrupted service. Any damage incurred due to contractor's operation shall be repaired immediately at the contractor's expense.
- All reinforced concrete for storm drain structures shall have a minimum of 28 days strength of 3,500 p.s.i.
- Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
- Estimates of earthwork quantities are provided solely for the purpose of calculating fees.
- Soil compaction specifications, requirements, methods and materials are to be in accordance with the recommendations of the project Geotechnical Engineer. Geotechnical Engineer to confirm acceptability of proposed paving section, based on soil test prior to construction.
- All storm drain pipe bedding shall be Class 'C'.
- The existing topography is taken from field run survey with two foot contour intervals prepared by Frederick Ward & Associates, Inc. dated 5/22/01. The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System.
- A noise study is not required for this project.
- All paving to be P-2 paving per Howard County standard details. (See note #12)
- All curb and gutter to be Howard County Standard concrete Detail 3.01 unless otherwise specified.
- Contractor responsible to construct all handicap parking and handicap access in accordance with current ADA requirements.
- Where drainage flows away from curb, contractor to reverse the gutter pan.
- All elevations are to flowline/bottom of curb unless otherwise noted.
- All dimensions are to face of curb unless otherwise noted.
- Public Water available along Auto Drive (8" Water) Contract #44-3323-D.
- Public Sewer available along Auto Drive (1 1/2" Sewer (FM)) Contract #30-3687-D.
- Stormwater Management shall be provided by an underground detention system for quantity attenuation. Water quality shall be provided by a sand filter structure, and existing Stormceptor will be utilized to provide pre-treatment. The proposed stormwater management system will be privately owned and maintained by Antwerpen Nissan.
- All exterior lighting shall conform to Zoning Regulations Section 134.
- Building to have inside Water Meter setting.
- Traffic Impact Study prepared by The Traffic Group, dated November 14, 2002.
- See sheet 4 for lighting detail. Lighting details provided for informational purposes only. See electrical and architectural plans for additional lighting information.
- There are no wetlands on-site.
- Department of Planning and Zoning related DPZ file: SP 93-14, WP 93-90, WP 01-20, F 92-161, F 94-38, ZB 947M, ZB1008M, Plat #11584, #11181, #11183, #11182, #14864
- There will be no mezzanine levels permitted unless adequate parking has been provided and approved by the Department of Planning and Zoning.
- Geotech report prepared by Herbst/Benson & Associates on July 11, 2000.
- Financial Surety for the required landscaping must be posted with the developer agreement in the amount of \$18,900 for 35 shade trees, 53 evergreen trees, and 15 shrubs. The landscape surety will be posted with the developer's agreement.
- Reference ZB 947M and ZB 1008M for zoning cases for this site:
 - A) ZB 947M:
 - Date of approval for Decision and Order: March 11, 1994
 - Rezoned 2.05 acres from B-2 to RC, and 1.99 acres from RC to B-2.
 - Conditions of approval: A 300' private easement buffer area between the zoned B-2 use on lot 4 and the existing residential house on lot 3.
 - B) ZB 1008M:
 - Date of approval for Decision and Order: December 4, 2000
 - Rezoned 0.48 acres of Parcel "L" from B-2 to RC, which became part of Lot 4 and was included in the Agricultural Preservation Easement for that property.
 - Conditions of approval: No conditions of approval were specified.
- Debris is to be kept out of all stormwater management facilities during and after construction.
- Forest Conservation requirements for parcel L-1 are provided in conjunction with F-01-29.
- Existing Stormwater Management Facility was bonded under F-01-029 by 108 Limited Partnership, C/O Win Kelly Chevrolet.

ANTWERPEN NISSAN

SITE DEVELOPMENT PLAN

PARCEL L-1

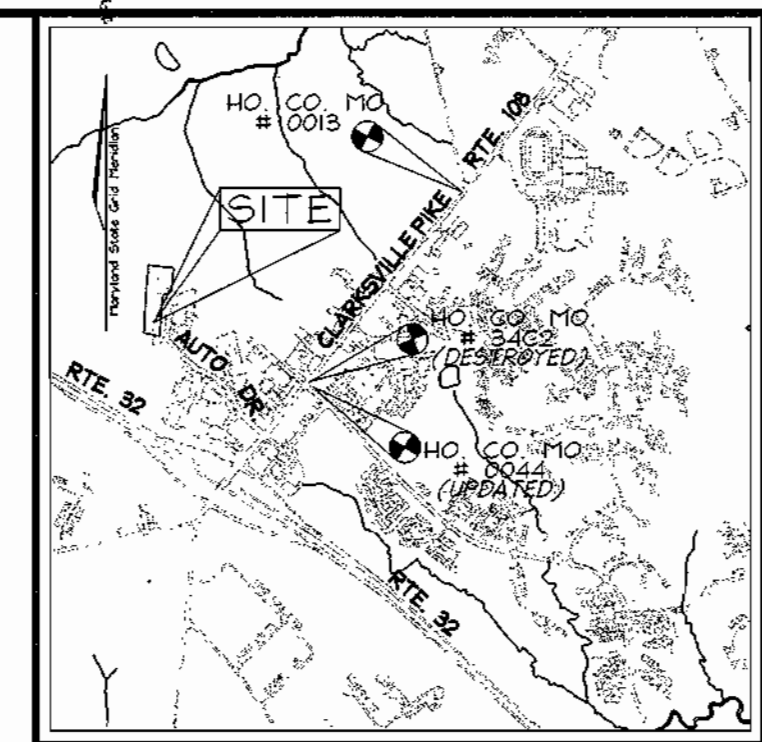
LEGEND

- Existing Contour:
- Proposed Contour:
- Existing Spot Elevation:
- Proposed Spot Elevation:
- Direction of Flow:
- Existing Trees to Remain:
- Light Poles: Single Overhead Double Overhead
- Concrete:

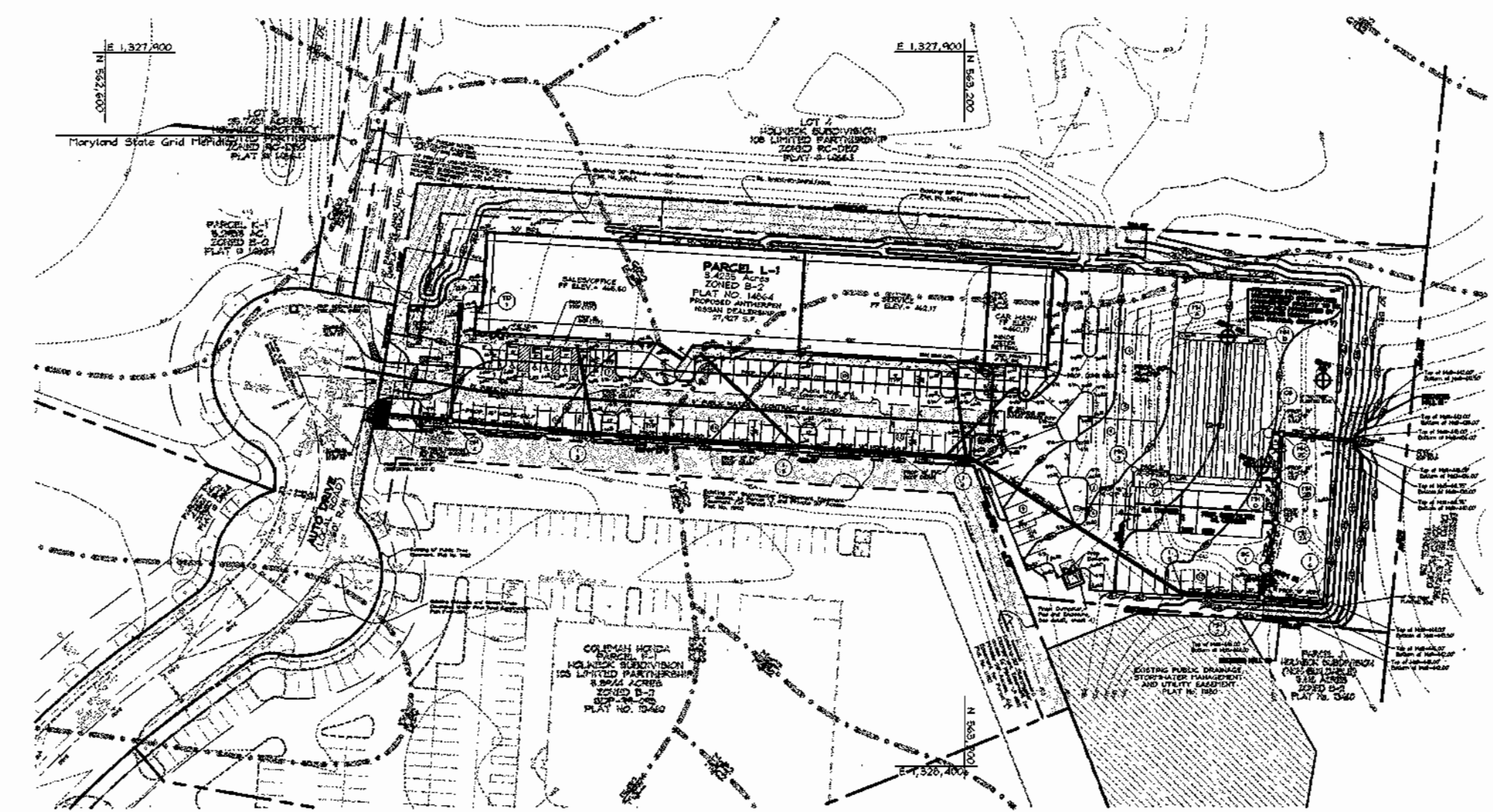
BENCHMARKS

HOWARD COUNTY BENCHMARK 34C2 (DESTROYED)
 N 562321.798 E 1329750.722
 UPDATED: BENCHMARK 0044
 N 562176.474 E 1329641.868 ELEV. 485.252

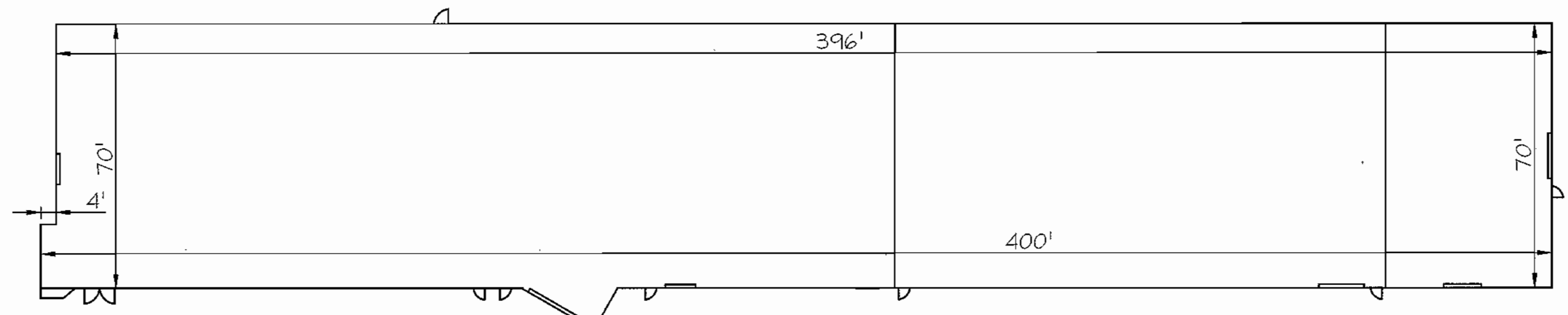
HOWARD COUNTY BENCHMARK 0013
 N 564285.946 E 1331309.715 ELEV. 484.671'



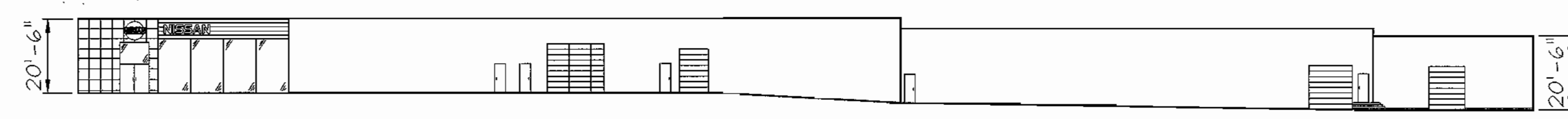
VICINITY MAP
SCALE: 1"=2000'



LOCATION MAP
SCALE: 1"=100'



PROPOSED BUILDING PLAN VIEW
NOT TO SCALE



PROPOSED BUILDING ELEVATION
NOT TO SCALE

OWNER/DEVELOPER

Antoy LLC
 12451 Auto Drive
 Clarksville, MD 21029-1266

ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
L-1	12451 AUTO DRIVE

PERMIT INFORMATION CHART				
SUBDIVISION NAME	SECTION/AREA	PARCEL NUMBER		
Holweck Subdivision		L-1		
PLAT REF.	BLOCK NO.	ZONE	TAX/ZONE ELECT. DIST.	CENSUS TR.
14864	6	B2	34	5th 6051
WATER CODE: J07		SEWER CODE: 665300		

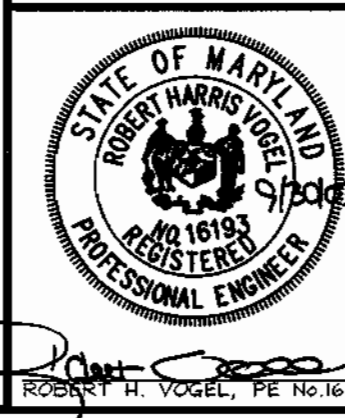
NO	REVISION	DATE
1	Revised Grading	12-29-03

COVER SHEET
 SITE DEVELOPMENT PLAN
 ANTWERPEN NISSAN
 PARCEL L-1, HOLWECK SUBDIVISION

TAX MAP #34 BLOCK #6 PARCEL L-1
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND



FREDERICK WARD ASSOCIATES, INC.
 ENGINEERS: 7125 Riverwood Drive Columbia, Maryland 21046-2354
 ARCHITECTS: Phone: 410-290-9550 Fax: 410-720-6226
 SURVEYORS: Bel Air, Maryland Columbia, Maryland Warrenton, Virginia



DESIGN BY: FWR
 DRAWN BY: DZ
 CHECKED BY: RHW
 DATE: SEPT 2003
 SCALE: AS SHOWN
 W.O. NO.: 2024056

SHEET INDEX	
DESCRIPTION	SHEET NO.
Cover Sheet	1 of 9
Existing Conditions and Demolition Plan	2 of 9
Site Development, Grading, and Sediment and Erosion Control Plan	3 of 9
Sediment Control Details And Miscellaneous Details	4 of 9
Storm Drain Plan, Drainage Area Map, And SWM Details	5 of 9
Site Landscape Plan	6 of 9
Water & Sewer Profiles and Details, SWM Notes and Details	7 of 9
Cornerstone Retaining Wall Designs	8 of 9
Cornerstone Retaining Wall Designs	9 of 9

PARKING TABULATION	
AUTOMOBILE DISPLAY: 27,943 SF	REQUIRED 28 SPACES
@ 1 SPACE/1000 SF	
SALES/OFFICE: 15,747 SF	32 SPACES
@ 2 SPACES/1000 SF	
SERVICE BAYS: 18 BAY AUTOMOBILE SERVICE AREA	54 SPACES
@ 3 SPACES/SERVICE BAY	
(SEE SCHEMATIC FOR DOOR LOCATIONS)	
TOTAL PARKING SPACES REQUIRED:	114 SPACES
TOTAL PARKING SPACES PROVIDED:	114 SPACES INCLUDING 5 HANDICAP SPACES

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Mike Damann 10/16/03
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Andy Hernandez 10/16/03
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Derek D. Lytle 10/17/03
 DIRECTOR DATE

LOT 3
25.748 ACRES
HOLWECK PROPERTY
108 LIMITED PARTNERSHIP
ZONED RC-DEO
PLAT # 14864

LOT 4
HOLWECK SUBDIVISION
108 LIMITED PARTNERSHIP
ZONED RC-DEO
PLAT # 14864

PARCEL K-1
5.2935 AC.
ZONED B-2
PLAT # 14864

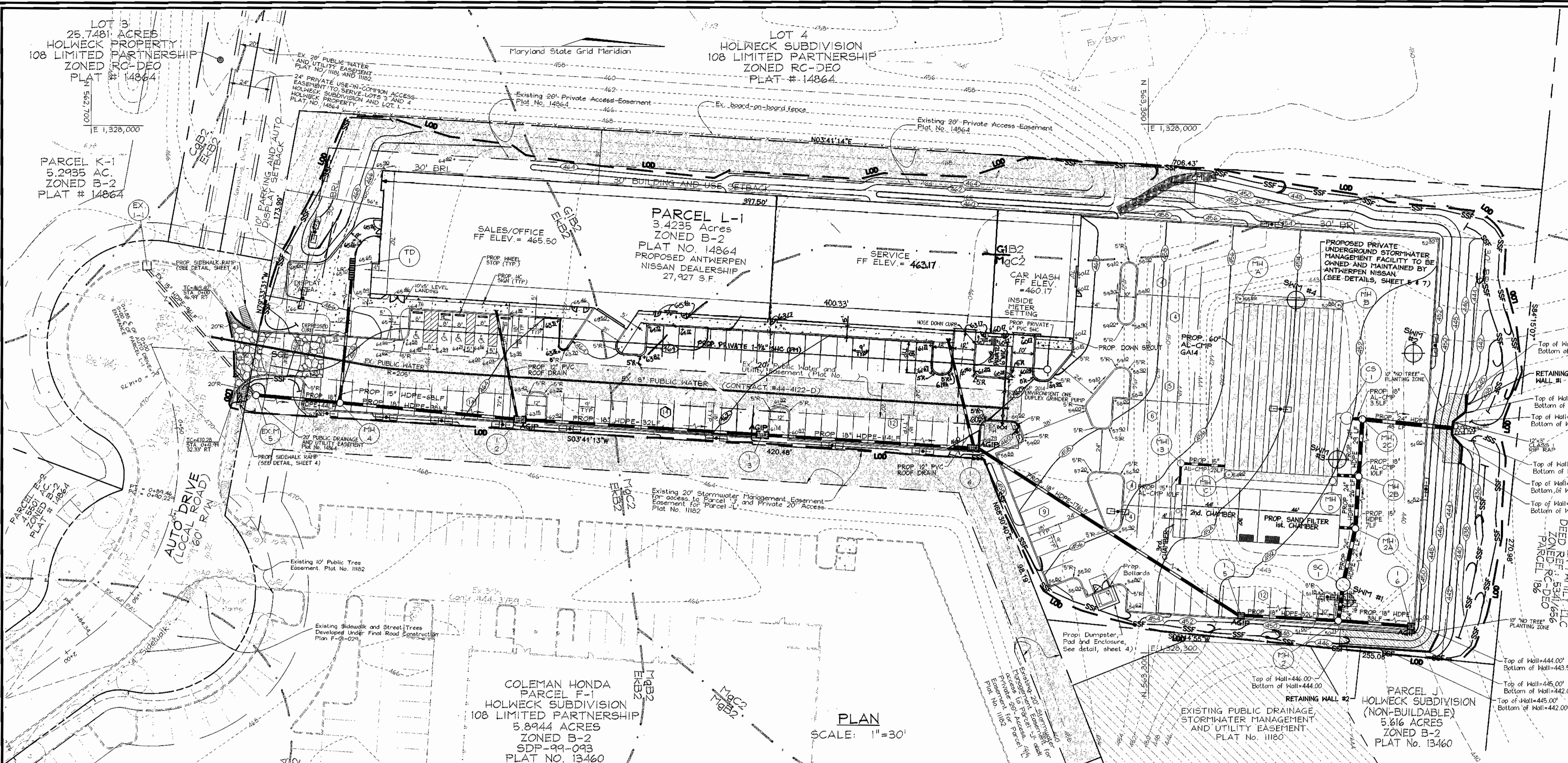
PARCEL L-1
3.4235 Acres
ZONED B-2
PLAT NO. 14864
PROPOSED ANTWERPEN
NISSAN DEALERSHIP
27,927 S.F.

COLEMAN HONDA
PARCEL F-1
HOLWECK SUBDIVISION
108 LIMITED PARTNERSHIP
5.8944 ACRES
ZONED B-2
SDP-99-093
PLAT NO. 13460

PARCEL J
HOLWECK SUBDIVISION
(NON-BUILDABLE)
5.616 ACRES
ZONED B-2
PLAT NO. 13460

LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING GUY WIRE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING BOLLARD
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING 50" MANHOLE
- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN INLET
- EXISTING TREES (FIELD LOCATED)
- EXISTING TREELINE (FIELD LOCATED)
- EXISTING VEGETATION (APPROPRIATE LOCATION)
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- SOILS BOUNDARY
- SILT FENCE
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- AT GRADE INLET PROTECTION
- PROPOSED SIDEWALK
- STABILIZED CONSTRUCTION ENTRANCE



PLAN
SCALE: 1"=30'

- NOTES:**
- DEMOLITION IS ONLY REQUIRED ON EXISTING CURB AND GUTTER AND SIDEWALK SECTION LOCATED AT THE PROPOSED SITE ENTRANCE.
 - UNDERGROUND STORMWATER MANAGEMENT FACILITY TO BE PRIVATELY OWNED AND MAINTAINED BY ANTWERPEN NISSAN
 - ALL DEBRIS IS TO BE KEPT OUT OF ALL STORMWATER MANAGEMENT FACILITIES DURING AND AFTER CONSTRUCTION.

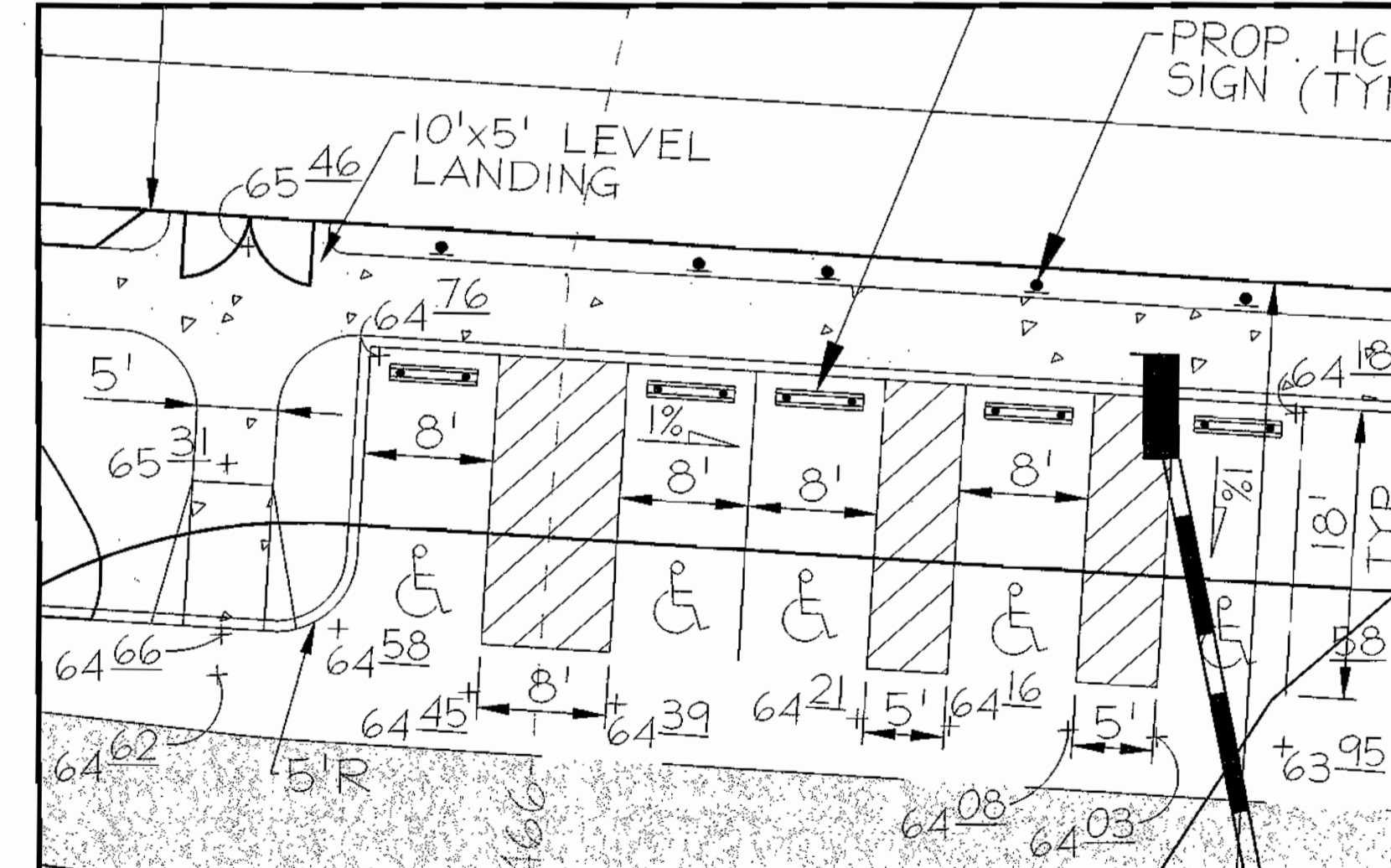
CONDITION	CN	tc	RUNOFF Q ₁₀₀ 1/1R STORM		
			INCHES	CFS	CFS
EXISTING	64	0.2	0.31	1.00	17.00
IMPROVED	88	0.07	1.47	11.00	44.00

SOILS CHART

SYMBOL	NAME / DESCRIPTION	TYPE
EKB2	ELIOAK SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATLY ERODED	C
GIB2	GLENELG LOAM, 3 TO 8 PERCENT SLOPES, MODERATLY ERODED	B
MqC2	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, MODERATLY ERODED	B
MqB2	MANOR GRAVELLY LOAM, 3 TO 8 PERCENT SLOPE, MODERATLY ERODED	B

SUMMARY TABLE

STEP	REQUIREMENT	VOLUME REQUIREMENT	VOLUME PROVIDED	NOTES
1	WATER QUALITY VOLUME WQV	0.266 AC. FT 11,587 CU. FT	0.266 AC. FT 11,587 CU. FT	WATER QUALITY VOLUME PROVIDED IN PROPOSED SAND FILTER
2	RECHARGE VOLUME REV	0.07 AC. FT 3,011 CU. FT	0.07 AC. FT 3,011 CU. FT	WATER VOLUME PROVIDED IN PROPOSED SAND FILTER
3	CHANNEL PROTECTION VOLUME CPV	15,246 CU. FT 0.35 AC. FT	17,276 CU. FT 0.396 AC. FT	CPV WILL BE PROVIDED IN PROPOSED DETENTION FACILITY
4	OVERHEAD FLOOD PROTECTION, Q10p	N/A	N/A	
5	EXTREME FLOOD VOLUME, Q100p	N/A	N/A	



HANDICAP RAMP DETAIL
SCALE: 1"=10'

NOTE: DEBRIS IS TO BE KEPT OUT OF ALL STORMWATER MANAGEMENT FACILITIES DURING AND AFTER CONSTRUCTION.

FOR PARKING AND DISPLAY DESIGN, SEE SHEET 6

NO.	REVISION	DATE
1	REVISED GRADING	12-29-03

SITE LAYOUT, AND SEDIMENT AND EROSION CONTROL PLAN
SITE DEVELOPMENT PLAN
ANTWERPEN NISSAN
PARCEL L-1, HOLWECK SUBDIVISION

TAX MAP #34 BLOCK #6 PARCEL L-1
5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.
7125 Riverwood Drive Columbia, Maryland 21046-2354
Phone: 410-290-9550 Fax: 410-720-6226
Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: MIMR
DRAWN BY: DZ
CHECKED BY: RHV
DATE: SEPT 2003
SCALE: 1"=30'
W.O. NO.: 2024056

3 SHEET OF 9

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chris Dammann 10/16/03
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Chris Dammann 10/16/03
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Paul D'Arcy 10/16/03
DIRECTOR DATE

REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.

Jim Meyer 10/15/03
USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John R. Roberts 10/15/03
HOWARD S.C.D. DATE

BY THE DEVELOPER:

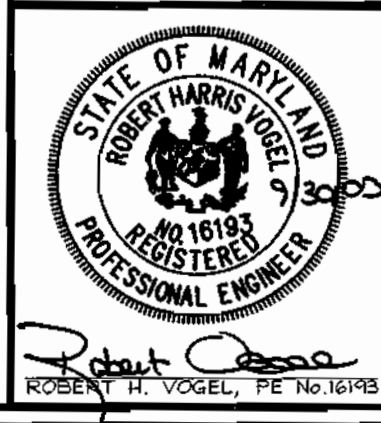
1/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL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

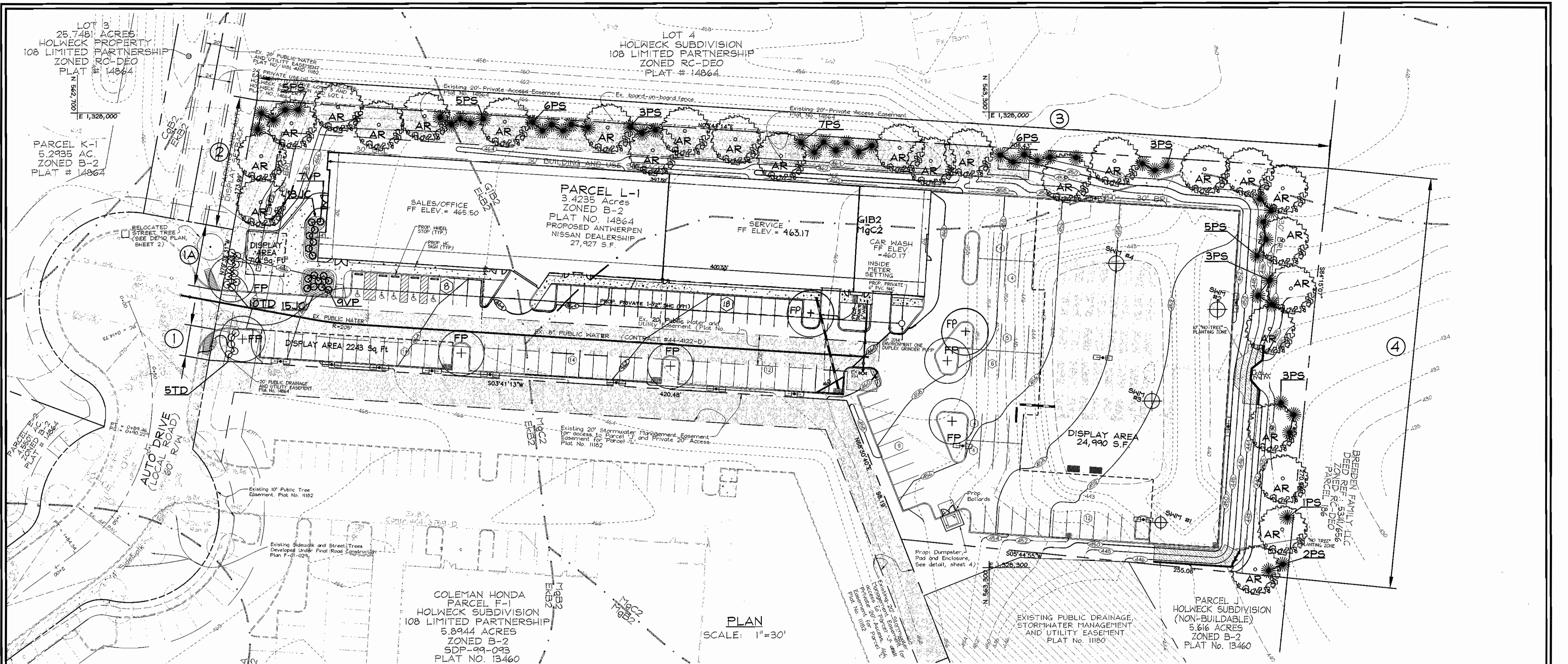
Judith M. Anderson 10/15/03
SIGNATURE OF DEVELOPER DATE

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 SOIL CONSERVATION DISTRICT.

Robert H. Vogel, P.E. 9/30/03
SIGNATURE OF ENGINEER DATE





LANDSCAPE SCHEDULE NOTE:

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH LCAMW PLANTING SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SHALES.
- CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING MUST BE POSTED WITH THE DEVELOPER AGREEMENT IN THE AMOUNT OF \$18,900 FOR 35 SHADE TREES, 53 EVERGREEN TREES AND 15 SHRUBS. THE LANDSCAPE SURETY SHALL BE POSTED WITH THE DEVELOPMENT AGREEMENT.

LEGEND:

- PROPOSED LIGHT POLE
- PROPOSED SHADE TREE
- PROPOSED EVERGREEN TREE
- PROPOSED SHRUB
- LANDSCAPE PERIMETER

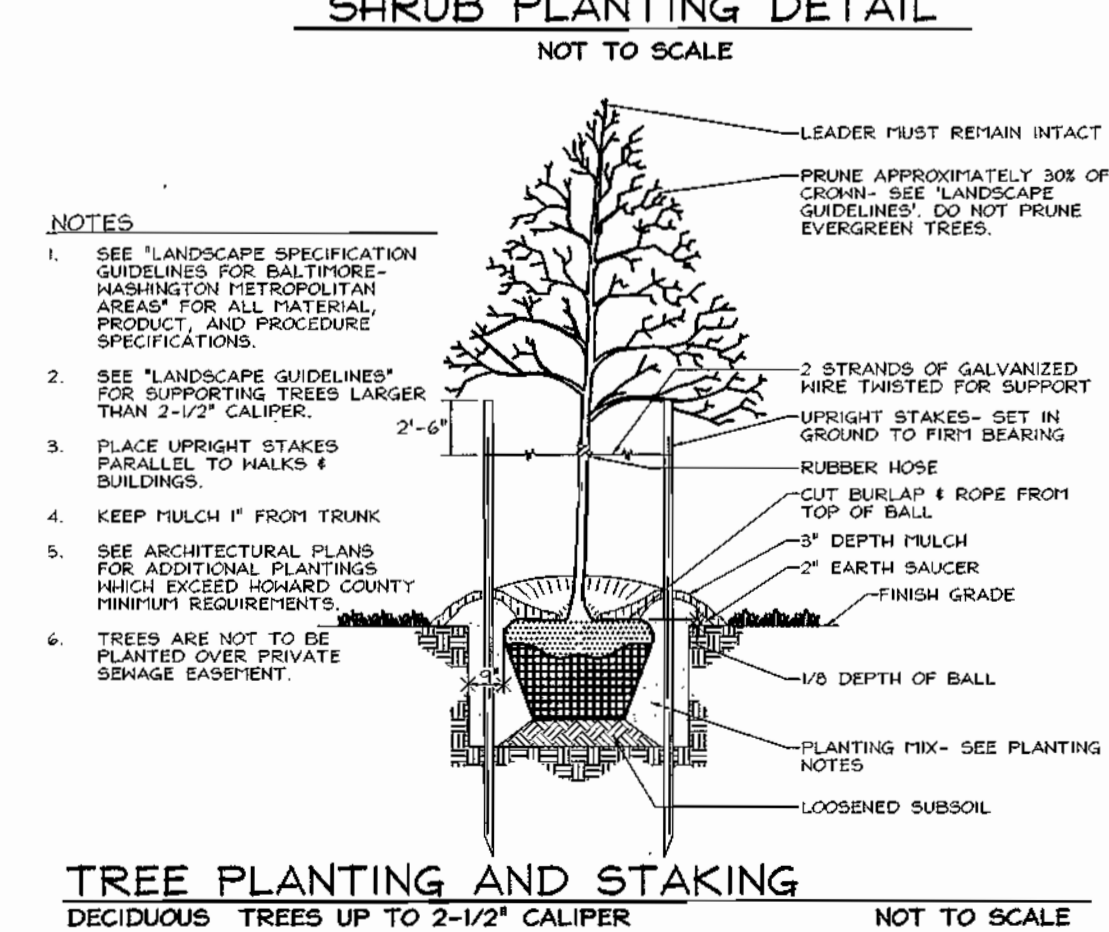
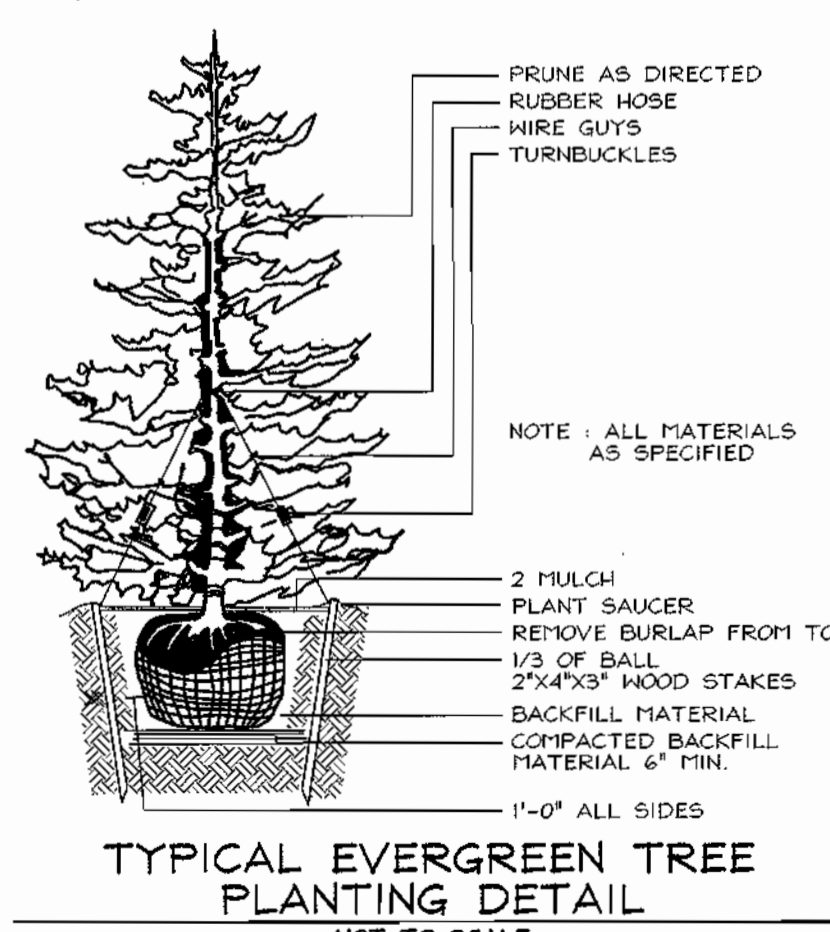
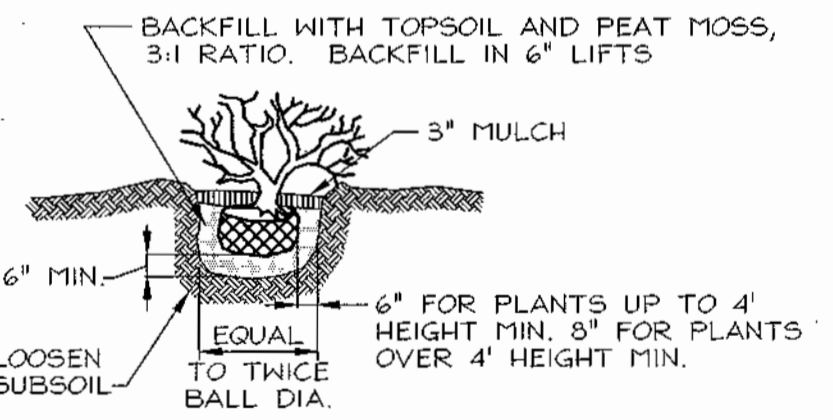
**SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING**

Number of parking spaces	114
Number of trees and islands required	6
Number of trees and islands provided	6
Shade Trees	6
Other Trees (2:1 Substitution)	-

**SCHEDULE A
PERIMETER LANDSCAPE EDGE**

CATEGORY	ADJACENT TO ROADWAY'S		ADJACENT TO PERIMETER PROPERTIES			
	I	IA	2	3	4	5
Perimeter/Frontage Designation	I	IA	2	3	4	5
Linear Feet of Roadway	20	39	97	706	271	
Linear Feet of Roadway/Frontage/Perimeter						
Credit for Existing Vegetation (Yes, No, Linear Feet. Describe below if needed)	No	No	No	No	No	No
Credit for Wall, Fence or Berm (Yes, No, Linear Feet. Describe below if needed)	No	No	No	No	No	No
Number of Plants Required	1:40	1:40	1:40	1:40	1:40	1:40
Shade Trees	1:20	1:20	1:20	1:20	1:20	1:20
Evergreen Trees	1:04	1:04	1:04	1:04	1:04	1:04
Number of Plants Provided						
Shade Trees	1	1	2	16	7	
Evergreen Trees	-	-	4	35	14	
Other Trees (2:1 Substitution)	-	-	-	-	-	
Shrubs (10:1 Substitution)	5	10	-	-	-	
Describe Plant Substitution Credits Below if needed						

* Existing Woods to Remain
Note: Parcel F-1 and Parcel J are internal parcels in the same subdivision as Parcel L-1. No perimeter landscaping is required between them.



LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	REM.
AR	27	ACER RUERUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	2 1/2" - 3" CAL.	B & B
FP	7	FRAXINUS P. 'MARSHALL'S SEEDLESS'	2 1/2" - 3" CAL.	B & B
PS	53	PINUS STROBUS PINE WHITE	6' - 8' HT.	B & B
TD	15	TAXUS X MEDIA 'DENSIFORMIS' DENSIFORMIS YEW	36" HT.	B & B OR CONT.
VP	16	VIBURNUM FLICATUM 'MARISSA' MARISSA'S DOUBLE FILE VIBURNUM	30" - 36" HT.	B & B OR CONT.
JC	26	JUNIPERUS HORIZONTALIS 'WILTONII' BLUE RUG JUNIPER	1 GAL.	CONT.

DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Joseph M. Wadsworth DATE: 10/16/2003
SIGNATURE OF DEVELOPER

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Mark D. Wyle DATE: 10/16/2003
DIRECTOR

NO.	REVISION	DATE
1	REVISED GRADING	12-29-03

SITE LANDSCAPE PLAN AND PARKING DESIGNATION
SITE DEVELOPMENT PLAN
ANTWERPEN NISSAN
PARCEL L-1, HOLWECK SUBDIVISION

TAX MAP #34 BLOCK #6 PARCEL L-1
5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.
ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354
ARCHITECTS Phone: 410-290-9550 Fax: 410-720-8226
SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: MMR
DRAWN BY: DZ
CHECKED BY: RHV
DATE: SEPT 2003
SCALE: 1"=30'
W.O. NO.: 2024056

6 SHEET OF 9

CONTROL STRUCTURE NOTES:

1. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M 194.
2. CONCRETE SHALL BE MIX NO. 6 (4500 P.S.I.)
3. WALL REINFORCEMENT FOR BASE UNITS AND RISER UNITS SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.21 IN²/FT FOR THE 6" DIAMETER MANHOLES. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 105 AND A 62.
4. BASE REINFORCEMENT TO BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.27 IN²/FT. THE BASE SHALL BE CAST MONOLITHIC WITH THE BASE UNIT OR JOINED PER MANUFACTURER'S DESIGN.
5. THE MANUFACTURER SHALL FORM MALE AND FEMALE ENDS OF JOINTS USING THEIR OWN DESIGN. THE JOINTS SHALL BE SEALED BY THE CONTRACTOR AND MADE WATER TIGHT USING (WHERE APPLICABLE) MORTAR, RUBBER O-RING GASKETS MEETING ASTM C361 AND C 443 OR FLEXIBLE PLASTIC GASKETS MEETING AASHTO M 190 TYPE B.
6. LADDER RUNGS SHALL BE INSTALLED IN VERTICAL ALIGNMENT AT 1'-4" MAXIMUM C/C. RUNG TYPES SHALL BE IN ACCORDANCE WITH STANDARDS HD-303.91 OR MD-303.92. LADDER RUNGS SHALL BE INCIDENTAL TO THE COST OF THE MANHOLE.
7. WHEN THE DISTANCE BETWEEN MULTIPLE PIPE OPENINGS IN THE BASE UNIT OR ANY RISER UNIT IS LESS THAN 6" ADDITIONAL NO. 3 BARS ARE REQUIRED AROUND OPENINGS.
8. LIFT HOLES OR LIFT EYES SHALL BE PROVIDED IN EACH SECTION FOR HANDLING.
9. MIX NO. 2 CONCRETE OR BRICK CHANNEL SHALL BE PROVIDED IN THE FIELD AND SHALL SLOPE 2" PER FOOT TOWARD OUTLET OR AS DIRECTED BY THE ENGINEER.
10. THE DRIP STONE LANDING SHALL BE USED ONLY WHEN THERE ARE PIPES CONNECTED TO THE RISER UNITS. SEE STD. MD-384.13 FOR DETAILS.
11. MINIMUM DEPTH PAYMENT PER EACH SHALL BE 10"-1" MEASURED FROM THE BOTTOM OF THE BASE UNIT TO THE TOP OF THE MANHOLE COVER. VERTICAL DEPTH PAYMENT PER LINEAR FOOT SHALL INCLUDE ALL DEPTHS IN EXCESS OF 10"-1" THE COST OF THE DRIP STONE LANDING, NO. 57 AGGREGATE GROUT, SEALANT, AND ALL NECESSARY APPURTENANCES SHALL BE INCIDENTAL TO THE PRICE BID.

UNDERGROUND SAND FILTER CONSTRUCTION SPECIFICATIONS

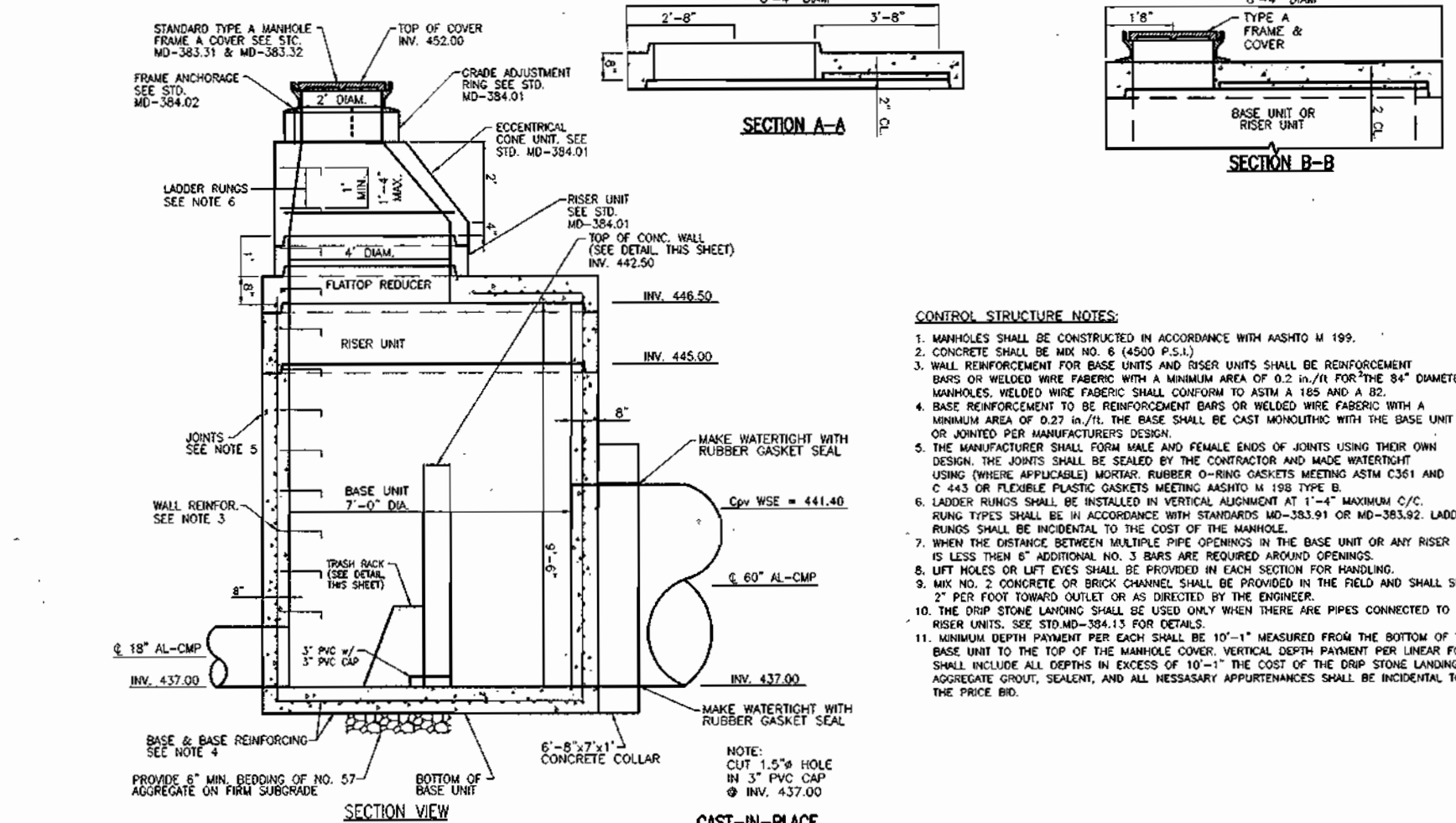
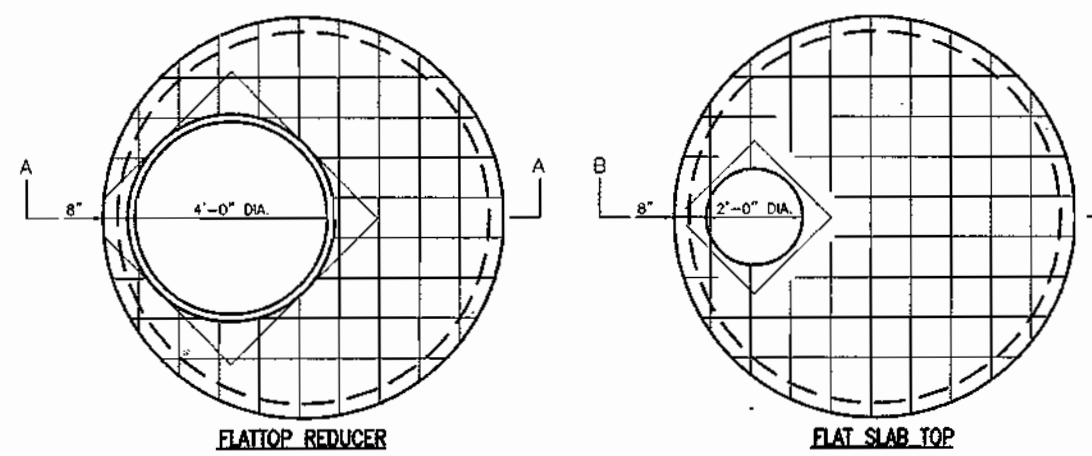
1. PROVIDE MANHOLE AND/OR GRATES TO ALL UNDERGROUND AND BELOW GRADE STRUCTURES. MANHOLES SHALL BE IN COMPLIANCE WITH STANDARD SPECIFICATIONS FOR EACH COUNTY, BUT DIAMETERS SHOULD BE 30" MINIMUM (TO COMPLY WITH OSHA CONFINED SPACE REQUIREMENTS). ALUMINUM AND STEEL COVERED DOORS ARE ALSO ACCEPTABLE. TEN INCH WIDE (MINIMUM) MANHOLE STEPS (2" O.C.) SHALL BE CAST IN PLACE OR DRILLED AND MORTARED INTO THE WALL BETWEEN EACH MANHOLE. A 5" MINIMUM HEIGHT CLEARANCE (FROM THE TOP OF THE SAND LAYER TO THE BOTTOM OF THE UPPER/SURFACE SLAB) IS REQUIRED FOR ALL PERMANENT UNDERGROUND STRUCTURES. LIFT RINGS ARE TO BE SUPPLIED TO REMOVE/REPLACE TOP SLABS ON PRE-FABRICATED STRUCTURES. MANHOLE COVERS SHOULD ALLOW FOR PROPER VENTILATION.
2. UNDERGROUND SAND FILTERS SHOULD BE CONSTRUCTED WITH A GATE VALVE LOCATED JUST ABOVE THE TOP OF THE FILTER BED FOR DEWATERING IN THE EVENT THAT CLOGGING OCCURS.
3. UNDERGROUND SAND BEDS SHALL BE PROTECTED FROM TRASH ACCUMULATION BY A WIDE MESH GEOTEXTILE SCREEN TO BE PLACED ON THE SURFACE OF THE SAND BED; SCREEN IS TO BE ROLLED UP, REMOVED, CLEANED AND RE-INSTALLED DURING MAINTENANCE OPERATIONS.

PROCEDURE FOR RELOCATING EXISTING STORMCEPTOR

1. HAVE THE UNIT THOROUGHLY CLEANED ACCORDING TO MAINTENANCE PROCEDURES.
2. EXCAVATE AROUND THE UNIT, BEING CAREFUL NOT TO DAMAGE THE COMPONENTS OF THE UNIT OR DISTURB THE PIPE GOING INTO THE STRUCTURE.
3. CAREFULLY DISASSEMBLE THE UNIT FROM THE TOP DOWN, WITHOUT DISTURBING THE INTERNAL FIBERGLASS COMPONENTS.
4. INSTALL THE UNIT IN THE NEW LOCATION, FOLLOWING THE PROCEDURES LISTED ON THIS SHEET.

IMPORTANT FACTORS WHEN RELOCATING THE STORMCEPTOR

1. THE OLD GASKETS SHOULD BE DISCARDED AND THE JOINTS THOROUGHLY CLEANED BEFORE ASSEMBLING THE UNIT.
2. THE 2" RISER AT THE TOP OF THE CURRENT UNIT WILL NOT BE NEEDED AT THE NEW LOCATION THIS DOES NOT EFFECT THE UNIT IN ANY WAY.
3. THE 6" RISER AT THE TOP OF THE UNIT MAY NEED TO BE FIELD CUT TO MEET THE REQUIRED GRADE THE FLATTOP MAY BE REATTACHED BY BOLTING OR GROUTING IT IN PLACE. AGAIN, THIS WILL NOT EFFECT THE PERFORMANCE OF THE UNIT.
4. EXTREME CARE SHOULD BE TAKEN NOT TO DAMAGE ANY PART OF THE STRUCTURE DURING THE DISASSEMBLY/REASSEMBLY PROCESS.
5. THE INLET AND OUTLET ANGLES WILL NOT MATCH THE NEW CONFIGURATION EXACTLY. THE INLET PIPE SHOULD BE PERPENDICULAR TO THE UNIT. ANY VARIATION CAN BE ACHIEVED BY PUTTING THE OUTLET PIPE AT THE ANGLE NEEDED. THE INTERNAL COMPONENTS ALLOW FOR ADJUSTMENT TO THE OUTLET ANGLE.



CAST-IN-PLACE CONTROL STRUCTURE
SCALE: 1/4" = 1'-0"

**CONTRACTOR INSTALLATION INSTRUCTIONS:
PRECAST CONCRETE STORMCEPTOR**

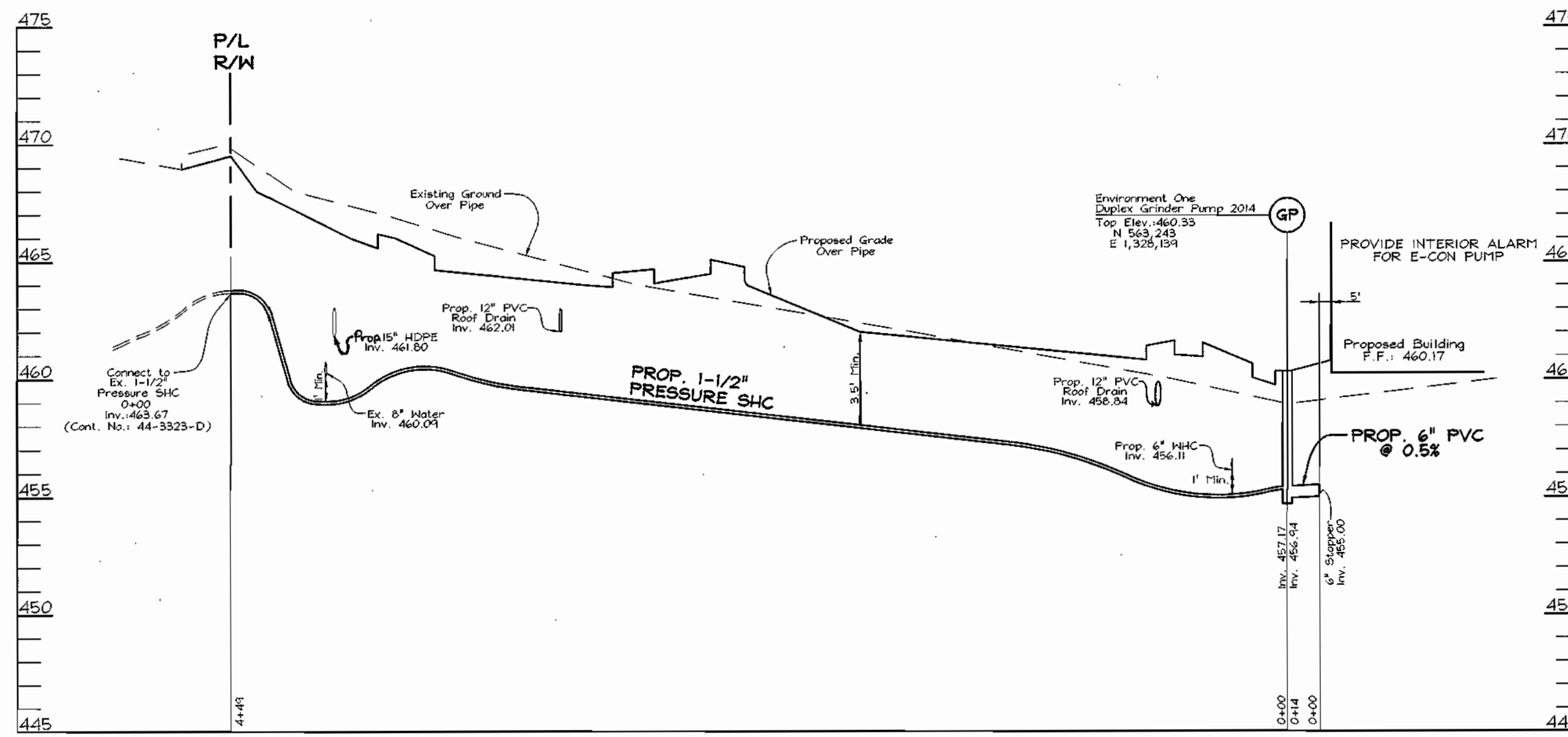
1. STAKE-OUT THE LOCATION OF THE STORMCEPTOR AND EXCAVATE HOLE. EXCAVATE ADEQUATE SPACE TO CONNECT INLET AND OUTLET PIPES TO UNIT. INSTALL A 12" DEEP (OR AS REQUIRED) LAYER OF COMPACTED (95% STANDARD PROCTOR DENSITY OR LOCAL AND STATE REQUIREMENTS, AS DIRECTED BY THE INSPECTOR) AGGREGATE SUBBASE AT BOTTOM OF EXCAVATION. INSTALL MULE OR SHORING, AS NEEDED.
2. CHECK ELEVATION OF UNIT BY MEASURING ITS SECTIONS FROM BASE OF STORAGE CHAMBER (BOTTOM OF UNIT'S SLAB) TO THE INVERT OF STORMCEPTOR BYPASS CHAMBER INLET ELEVATION (FIBERGLASS INSERT). SUBTRACT THIS DISTANCE FROM DESIGN INVERT ELEVATION TO DETERMINE TOP OF SUBBASE ELEVATION. CHECK ELEVATION OF INSTALLED SUBBASE AND ADJUST AS NEEDED.
3. SECURE INSPECTOR APPROVAL OF SUBGRADE AND SUBBASE.
4. INSTALL STORAGE CHAMBER. INSTALL SCREW INSERTS INTO BASE OF STORAGE CHAMBER. ATTACH CABLES OR CHAINS TO ALL 3 LIFTING LUGS ON THE BASE SLAB. USING LARGE EQUIPMENT OR CRANE LIFT AND PLACE THE BASE SECTION OF THE STORAGE CHAMBER IN THE EXCAVATED HOLE ON THE SUBBASE. MAKE SURE THAT THE BASE IS LEVEL. SPECIFIC ALIGNMENT OF THIS PART IS NOT REQUIRED. INSTALL RUBBER GASKET ON BASE UNIT AND COAT WITH LUBRICATING GREASE (PROVIDED IN SHIPMENT), IF NOT PRELUBRICATED. INSTALL ADDITIONAL STORAGE CHAMBER SECTIONS, AS REQUIRED (PROCEDURE IS SAME AS STEP 4).
5. INSTALL REDUCING SLAB. (STORMCEPTOR MODELS STC-2400, STC-3600, STC-4800, STC-6000 AND STC-7200) CHECK THAT SECTION IS SET FLUSH, LEVEL AND IS AT THE PROPER ELEVATION. INSTALL RUBBER GASKET ON THE TRANSITION SLAB SPIGOT AND COAT WITH LUBRICATING GREASE (PROVIDED IN SHIPMENT).
6. INSTALL BYPASS CHAMBER OF STORMCEPTOR WITH FACTORY INSTALLED STORMCEPTOR INSERT. LIFT BYPASS SECTION AND INSTALL, WHILE CHECKING ALIGNMENT AND GRADE OF INLET AND OUTLET DRAINAGE PIPES. CHECK TO MAKE SURE THE BYPASS CHAMBER IS SET FLUSH, LEVEL AND IS AT THE PROPER ELEVATION. THE BYPASS CHAMBER SHOULD BE ORIENTED SUCH THAT INLET PIPE DISCHARGES INTO THE V-SHAPED FIBERGLASS WEIRS (INSIDE INSERT). INSTALL RUBBER GASKET ON THE BYPASS SECTION AND COAT WITH LUBRICATING GREASE, IF NOT PRELUBRICATED.
7. INSTALL STORMCEPTOR DROP PIPES ACCORDING TO STC PIPE INSTALLATION PROCEDURE.
8. INSTALL RISER SECTION. LIFT RISER SECTION AND INSTALL, WHILE CHECKING THAT SECTION IS SET FLUSH AND IS AT PROPER ELEVATION AND THAT UNIT IS LEVEL. SPECIFIC ALIGNMENT OF THIS PART IS REQUIRED IF STEPS ARE INCLUDED. ALIGN STEPS ABOVE INLET INSPECTION PORT. NOTE: FOR SHALLOW INSTALLATIONS THIS SECTION MAY NOT BE REQUIRED.
9. INSTALL (NOT CENTERED) THE TOP CAP OPENING SHOULD BE ORIENTED ABOVE THE STORMCEPTOR INLET INSPECTION PORT (PLUG).
10. BACKFILL STORMCEPTOR WITH APPROVED BACKFILL MATERIAL (NO ORGANIC OR TOPSOIL IS TO BE USED FOR BACKFILL). BACKFILL AND COMPACT IN 8 INCH LIFTS. BACKFILL SHOULD BE COMPACTED TO 95% OF STANDARD PROCTOR DENSITY, OR LOCAL AND STATE REQUIREMENTS, AS DIRECTED BY THE INSPECTOR.
11. INSTALL AND SET GRADE ADJUSTING RINGS, AS NEEDED.
12. INSTALL AND SET STORMCEPTOR FRAME AND COVER.
13. INSTALL INLET AND OUTLET STORM DRAIN PIPES. CONNECT INLET AND OUTLET STORM DRAIN PIPES WITH FLEXIBLE BOOTS (WHEN PROVIDED) AND WITH NON-SHRINK GROUT WHEN NO FLEXIBLE BOOTS ARE PROVIDED. THE INVERT OF THE INLET AND OUTLET PIPE IS TO MATCH WITH THE INVERT OF THE STORMCEPTOR INSERT. FLEXIBLE BOOT INSTALLATION PROCEDURES: CENTER THE PIPE IN THE BOOT OPENING. LUBRICATE THE OUTSIDE OF THE PIPE AND/OR THE INSIDE OF THE BOOT IF THE PIPE OUTSIDE DIAMETER IS THE SAME AS THE INSIDE DIAMETER OF THE BOOT. POSITION THE PIPE CLAMP IN THE GROOVE OF THE BOOT WITH THE SCREW AT THE TOP. TIGHTEN THE PIPE CLAMP SCREW TO 60 INCH POUNDS. IF THE PIPE IS MUCH SMALLER THAN THE BOOT, LIFT THE BOOT SUCH THAT IT CONTACTS THE BOTTOM OF THE PIPE WHILE TIGHTENING THE CLAMP TO ENSURE EVEN CONTRACTION OF THE RUBBER. MOVE THE PIPE HORIZONTALLY AND/OR VERTICALLY TO BRING IT TO GRADE.
14. THE STORMCEPTOR SHOULD BE PUMPED OUT WHEN THE SEDIMENT CONTROL MEASURES ARE REMOVED (SITE PERMANENTLY STABILIZED).
15. FINAL INSPECTION.

**OPERATION AND MAINTENANCE SCHEDULE
FOR PRIVATELY OWNED AND MAINTAINED
UNDERGROUND FACILITIES**

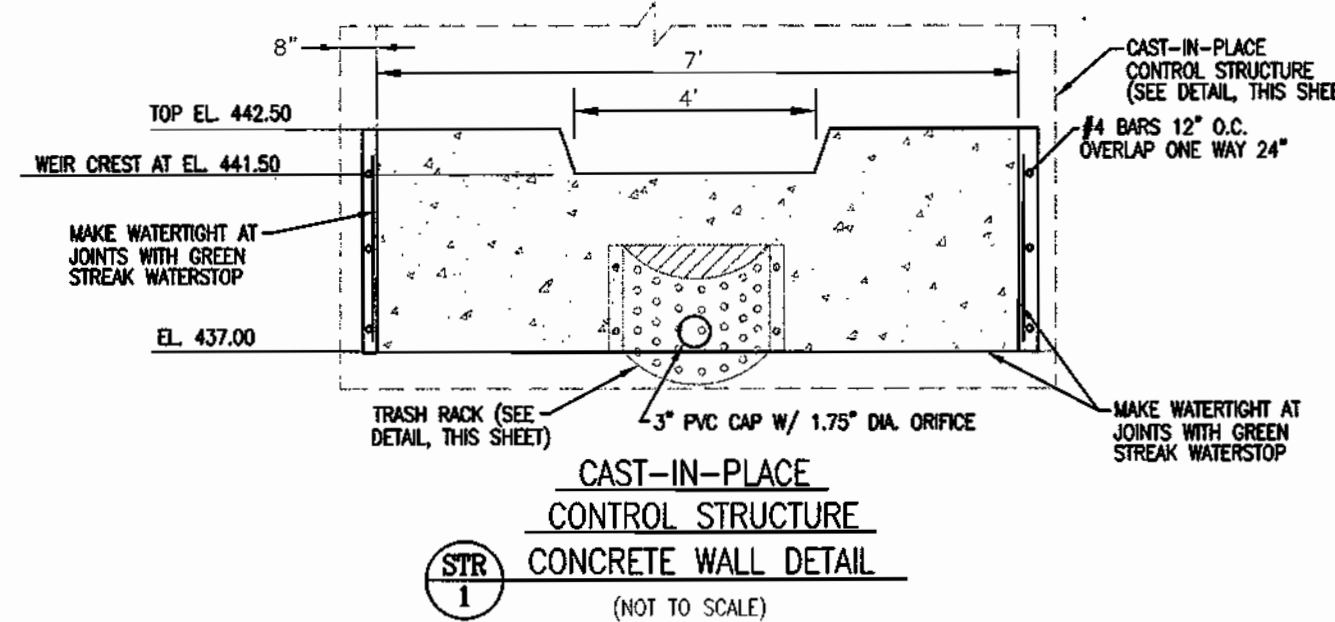
1. THE SEDIMENT CHAMBER OUTLET DEVICES SHALL BE CLEANED AND/OR REPAIRED WHEN DRAINDOWN TIMES WITHIN THE CHAMBER EXCEED 36 HOURS.
2. DEBRIS AND LITTER SHALL BE REMOVED AS NECESSARY TO INSURE PROPER OPERATION OF THE SYSTEM.
3. SEDIMENT SHALL BE CLEANED OUT OF THE SEDIMENTATION CHAMBER WHEN IT ACCUMULATES TO A DEPTH OF 6 INCHES. VEGETATION WITHIN THE SEDIMENT CHAMBER SHALL BE LIMITED TO THE HEIGHT OF 18 INCHES.
4. WHEN WATER PONDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 72 HOURS THE TOP FEW INCHES OF DISCOLORED MATERIAL SHALL BE REPLACED WITH FRESH MATERIAL. PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIALS AND LIQUID MUST BE FOLLOWED BY THE OWNER.
5. A LOGBOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
6. THE MAINTENANCE LOGBOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
7. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION SYSTEM HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

**OPERATION AND MAINTENANCE SCHEDULE
FOR PRIVATELY OWNED AND MAINTAINED
UNDERGROUND FACILITIES**

- A. 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.
- B. THE UNDERGROUND STORMWATER MANAGEMENT FACILITY SHALL BE INSPECTED YEARLY AT A MINIMUM AND AFTER ESPECIALLY SEVERE STORM EVENTS.
- C. WHEN SEDIMENT ACCUMULATION OF MORE THAN 2" IS OBSERVED OR ANY DEBRIS THAT MIGHT OBSTRUCT THE OUTFALL IS OBSERVED, THE FACILITY SHALL BE CLEANED.
- D. 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.
- E. THE SEDIMENT AND DEBRIS SHALL BE REMOVED FROM THE UNDERGROUND STORMWATER MANAGEMENT FACILITY BY VACUUM TRUCK OR OTHER MANUAL MEANS. THE OWNER SHALL FOLLOW PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIAL AND LIQUID.
- F. THE INLET AND OUTLET PIPES SHALL BE CHECKED FOR ANY OBSTRUCTIONS AT LEAST ONCE EVERY SIX (6) MONTHS. IF OBSTRUCTIONS ARE FOUND THE OWNER SHALL HAVE THEM REMOVED AND PROPERLY DISPOSED OF.



SEWER HOUSE CONNECTION PROFILE
SCALE: HORIZONTAL = 1" = 50'
VERTICAL = 1" = 5'



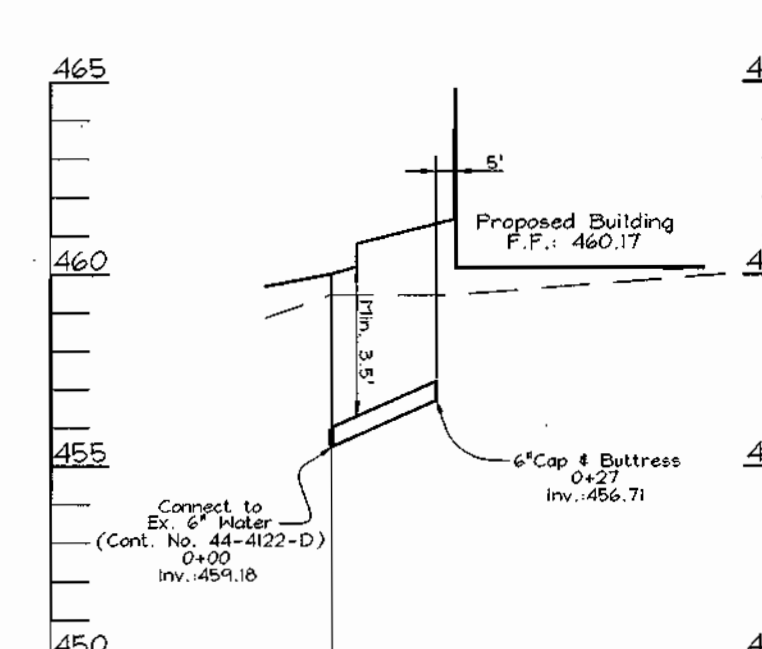
CAST-IN-PLACE CONTROL STRUCTURE
SCALE: 1/4" = 1'-0"

CONTROL STRUCTURE CONCRETE WALL NOTES

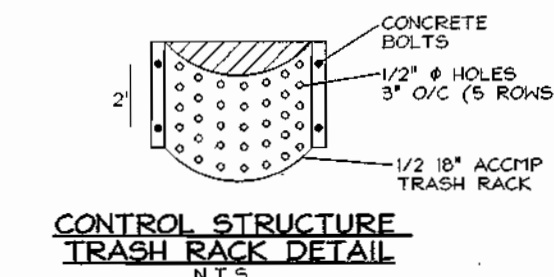
1. CONCRETE WALL SHALL BE MIX NO. 6 (4500 P.S.I.)
2. WALL REINFORCEMENT SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MIN. AREA OF 0.21 IN²/FT WELDED WIRE FABRIC.
3. WALL SHALL BE CAST-IN-PLACE, POURED MONOLITHIC USING FORMS. IN LIEU OF MONOLITHIC POUR, WALL SHALL BE CONNECTED BY OVERLAPPING BARS ONE WAY 24" AND SEALED WITH GREEN STREAK WATERSTOP (OR APPROVED EQUIVALENT)

**OPERATION AND MAINTENANCE SCHEDULE FOR
STORMCEPTOR WATER QUALITY STRUCTURE**

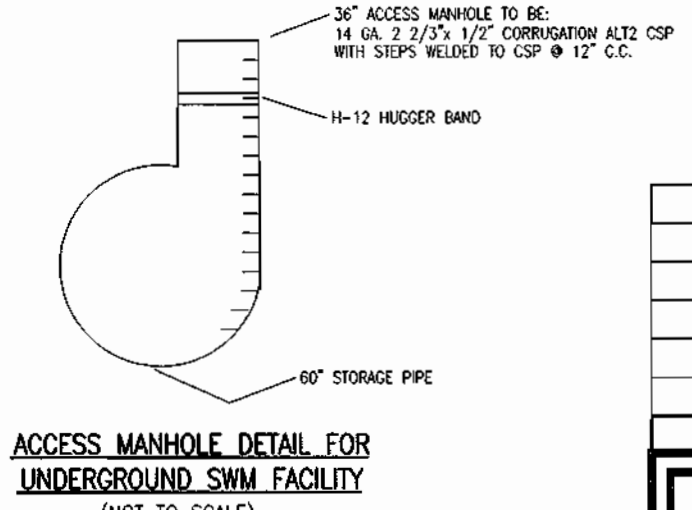
1. The stormceptor water quality structure shall be periodically inspected and cleaned to maintain operation and function. The owner shall inspect the stormceptor unit yearly at a minimum, utilizing the stormceptor inspection/monitoring form. Inspections shall be done using a clear Plexiglas tube ("sludge/judge") to extract a water column sample. When the sediment depths exceed the level specified in Table 6 of the Stormceptor Technical Manual, the unit must be cleaned.
2. The stormceptor water quality structure shall be checked and cleaned immediately after petroleum spills. The owner shall contact the appropriate regulatory agencies.
3. The maintenance of the stormceptor unit shall be done using a vacuum truck which will remove the water, sediment debris, floating hydrocarbons, and other materials in the unit. Proper cleaning and disposal of the removed materials and liquid must be followed by the owner.
4. The inlet and outlet pipes shall be checked for any obstructions at least once every six months. If obstructions are found, the owner shall have them removed. Structural parts of the stormceptor unit shall be repaired as needed.
5. The owner shall retain and make the stormceptor inspections/monitoring forms available to the Howard County officials upon their request.



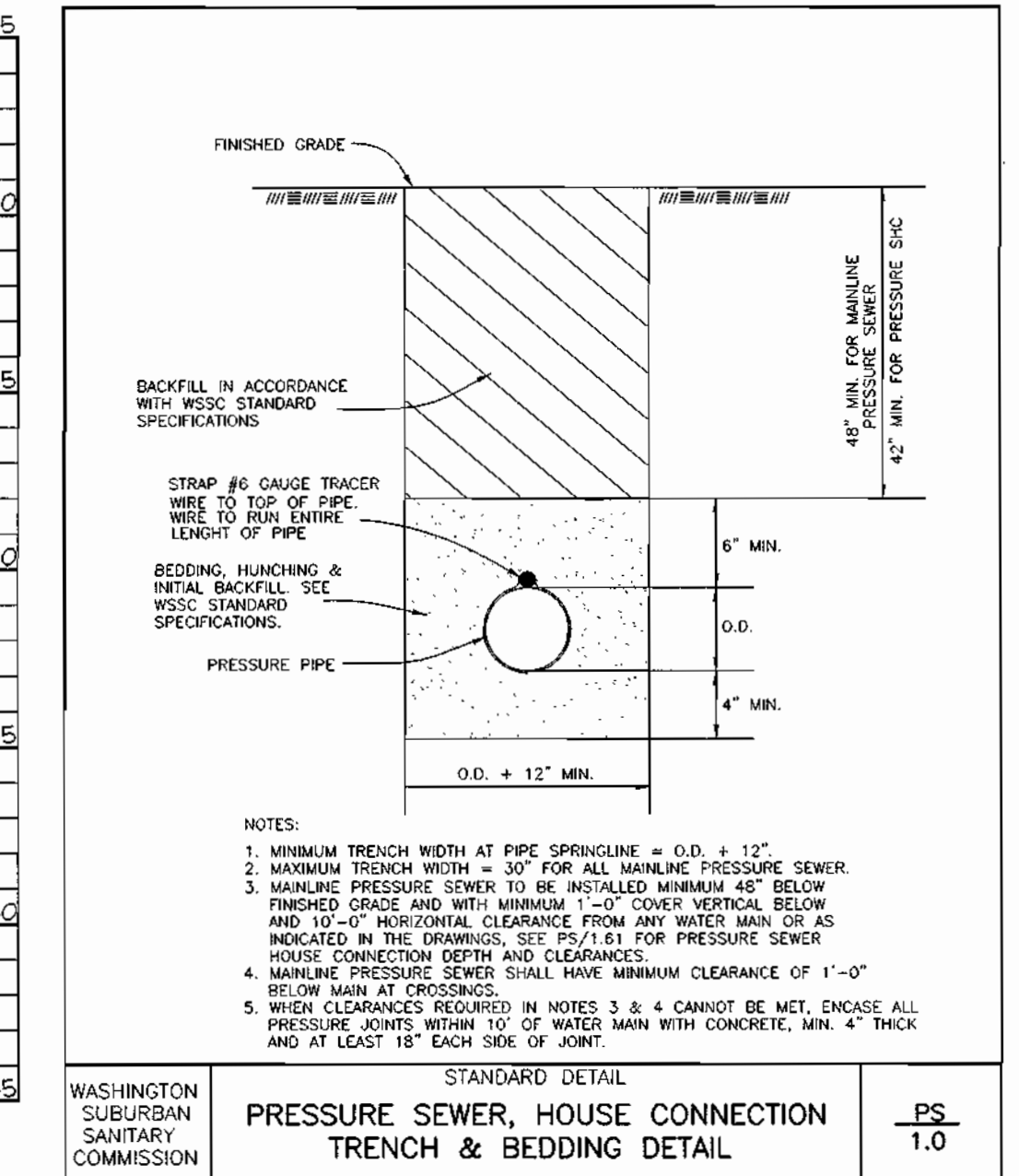
WATER HOUSE CONNECTION PROFILE
SCALE: HORIZONTAL = 1" = 50'
VERTICAL = 1" = 5'



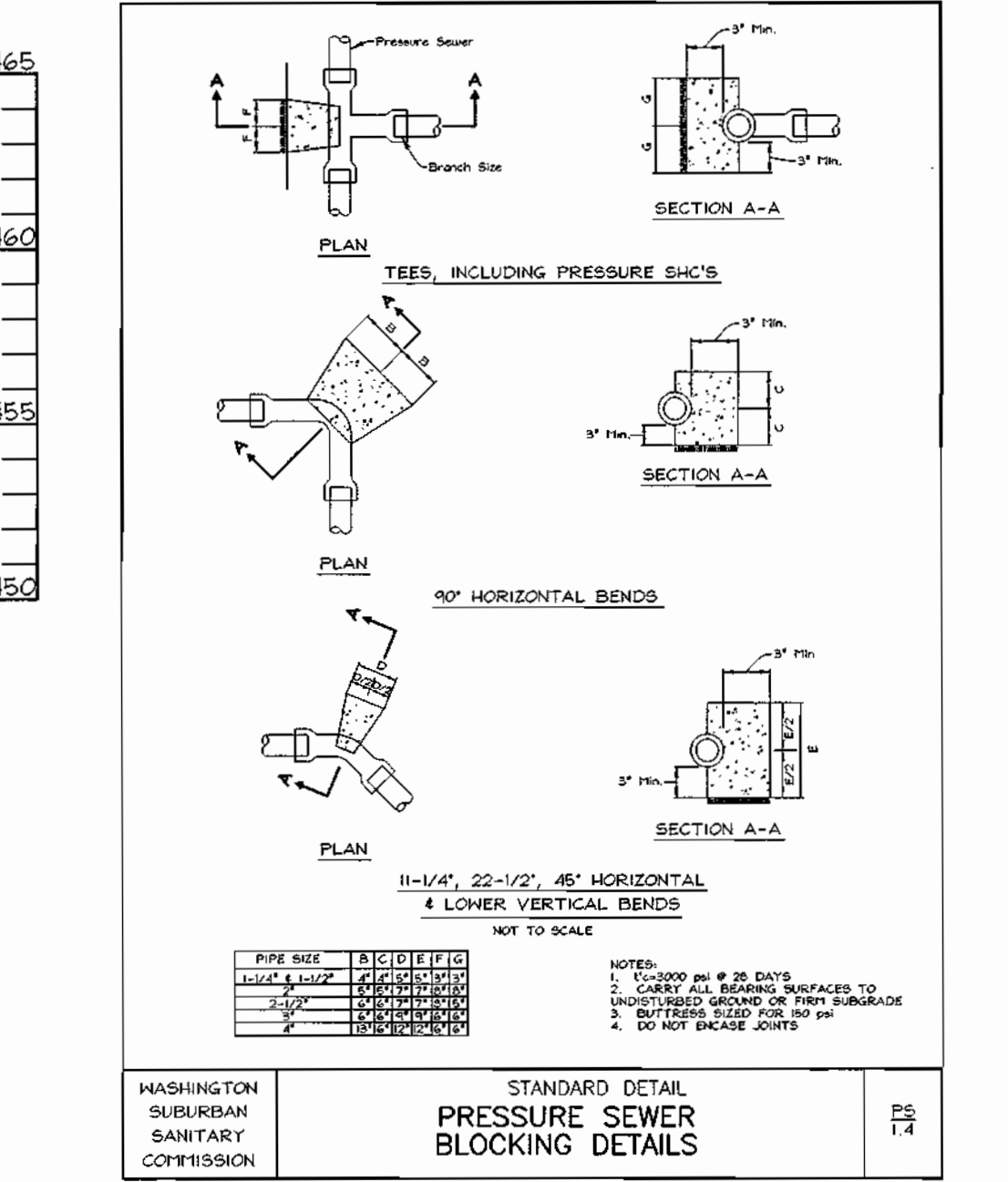
CONTROL STRUCTURE TRASH RACK DETAIL
SCALE: 1/4" = 1'-0"



ACCESS MANHOLE DETAIL FOR UNDERGROUND SWM FACILITY
(NOT TO SCALE)



STANDARD DETAIL PRESSURE SEWER, HOUSE CONNECTION TRENCH & BEDDING DETAIL
SCALE: 1/4" = 1'-0"



STANDARD DETAIL PRESSURE SEWER BLOCKING DETAILS
SCALE: 1/4" = 1'-0"

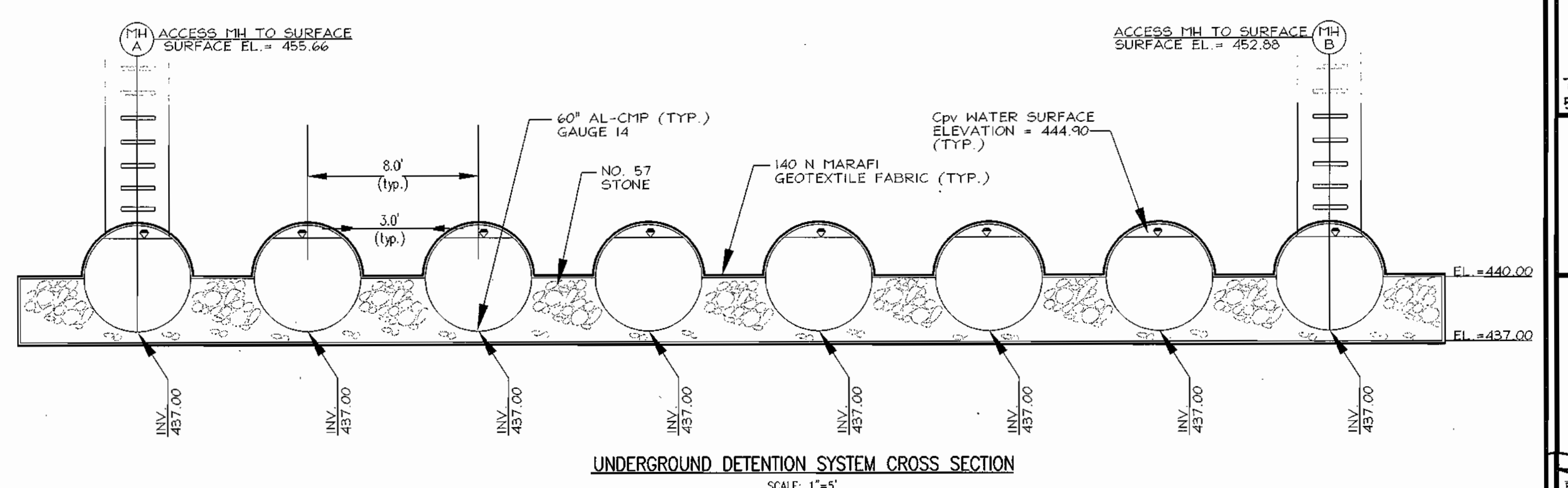
NOTE: DEBRIS IS TO BE KEPT OUT OF ALL STORMWATER MANAGEMENT FACILITIES DURING AND AFTER CONSTRUCTION.

NO.	REVISION	DATE
1	REVISED GRADING	12-29-03

WATER AND SEWER PROFILES AND DETAILS
SITE DEVELOPMENT PLAN
ANTWERPEN NISSAN
PARCEL L-1, HOLWECK SUBDIVISION
TAX MAP #34 BLOCK #6 PARCEL L-1
5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.
ENGINEERS ARCHITECTS SURVEYORS
7125 Riverwood Drive Columbia, Maryland 21046-2354
Phone: 410-290-9550 Fax: 410-720-6226
Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: P/MR
DRAWN BY: DZ
CHECKED BY: R/VV
DATE: SEPT 2003
SCALE: AS SHOWN
N.O. NO.: 2024056
7 SHEET OF 9



UNDERGROUND DETENTION SYSTEM CROSS SECTION
SCALE: 1" = 5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Chad Dammann, 10/10/03
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
David Hamilton, 10/10/03
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
Mark A. Leight, 10/10/03
DIRECTOR DATE