

SHEET INDEX	
NO.	DESCRIPTION
1	TITLE SHEET
2	SITE DEVELOPMENT PLAN - GRADING PLAN
3	SEDIMENT AND EROSION CONTROL PLAN
4	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
5	LANDSCAPE PLAN, NOTES AND DETAILS
6	STORM DRAINAGE AREA MAP AND DETAILS
7	STORM DRAIN PROFILES, NOTES AND DETAILS
8	WATER QUALITY FACILITY #1
9	WATER QUALITY FACILITY #2
10	MISCELLANEOUS DETAILS

# SITE DEVELOPMENT PLAN

## DORSEY BUSINESS CENTER

### SECTION 1

#### PARCEL 'A'

#### 1st ELECTION DISTRICT

#### HOWARD COUNTY, MARYLAND

BENCH MARKS - (NAD'83)	
TRAV. PT. 1	EL. 157.73
TRY. MAG. 18.0' NORTHEAST OF CONC. CURB OF SOUTHEASTBOUND LANE OF DEERPATH ROAD; 20.3' NORTH OF EX. INLET N 553.149.12	E 1,381,844.44
TRAV. PT. 2	EL. 154.64
TRY. MAG. 3.1' NORTHEAST OF CONC. CURB OF SOUTHEASTBOUND LANE OF DEERPATH ROAD; 20.3' NORTH OF EX. INLET N 553.037.81	E 1,381,953.46



#### GENERAL NOTES

- THE SUBJECT PROPERTY IS ZONED TO PER THE 2/02/04 COMPREHENSIVE ZONING PLAN.
- THERE IS NO FLOOD PLAIN ON THIS SITE.
- THERE ARE NOT WETLANDS ON THIS SITE.
- ALL LANDSCAPING REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL AND SECTION 16.124 OF THE SUBDIVISION REGULATIONS.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT FOR SDP-05-29 IN THE AMOUNT OF \$30,730.00.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY, PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST FIVE(5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" @ 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- THE CONTOURS SHOWN HEREON HAVE BEEN TAKEN FROM FIELD RUN TOPOGRAPHIC SURVEYS AT 2' INTERVALS PREPARED BY MILDENBERG BOENDER & ASSOCIATES, INC., ON OR ABOUT SEPTEMBER, 2003.
- VERTICAL CONTROL AND HORIZONTAL CONTROL BASED UPON HOWARD COUNTY NAD '83 CONTROL.
- THIS PROPERTY IS WITHIN THE METROPOLITAN WATER AND SEWER DISTRICT.
- WATER SERVICE FOR THIS PROJECT IS PUBLIC UNDER CONTR. No. R-3357 CONNECTING TO CONTR. No. 14-1447-D, SEWER SERVICE FOR THIS PROJECT IS PUBLIC CONTR. No. 14-1447-D DRAINAGE AREA IS IN THE PATAPSCO WATERSHED.
- STORMWATER MANAGEMENT QUANTITY CONTROL FOR THIS SITE IS PROVIDED UNDER F-86-151, DORSEY BUSINESS CENTER, PHASE 1. STORMWATER MANAGEMENT QUALITY CONTROL IS BEING PROVIDED BY NON-STRUCTURAL GRASS SWALES AND TWO UNDERGROUND FILTER CHAMBERS. THESE FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED. ALSO REFER TO THE SWM SUPPLEMENT REPORT DATED OCTOBER 28, 2004.
- AN ADEQUATE PUBLIC FACILITIES ORDINANCE TRAFFIC ANALYSIS FOR THIS PROJECT WAS PREPARED BY MARS GROUP INC. DATED JULY 2004. ALSO REFER TO SUPPLEMENTAL INFORMATION IN THE LETTER FROM MARS GROUP INC. DATED JANUARY 5, 2005.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE MOST CURRENT 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.
- ALL PROPOSED EXTERIOR LIGHTING SHALL BE DIRECTED/REFLECTED AWAY FROM ALL ADJACENT PUBLIC ROADS AND RESIDENTIAL ZONING DISTRICTS IN ACCORDANCE WITH SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS.
- EXISTING UTILITIES SHOWN WERE LOCATED BY RECORD DRAWINGS AND FIELD LOCATIONS.
- UNLESS NOTED AS "PRIVATE", ALL EASEMENTS ARE PUBLIC.
- CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO ANY CONSTRUCTION ACTIVITY AND SHALL ADJUST ALL UTILITIES AND RIM ELEVATIONS AS NEEDED TO MATCH THIS PLAN.
- ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
- BRL INDICATES BUILDING RESTRICTION LINE.
- ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE BUILDERS EXPENSE.
- TO THE BEST OF OUR KNOWLEDGE THERE ARE NO CEMETERY LOCATIONS ON-SITE.
- THERE ARE NO EXISTING STRUCTURES LOCATED ON-SITE.
- THIS PLAN CONFORMS TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION REGULATIONS. PER COUNCIL BILL NO. 45-2003 EFFECTIVE 10/2/03. DEVELOPMENT OR CONSTRUCTION ON THIS PARCEL MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN WAIVER PETITION APPLICATION, OR BUILDING PERMIT.
- THE BOUNDARY SHOWN HEREON IS TAKEN FROM THE BOUNDARY SURVEY PREPARED BY MILDENBERG BOENDER & ASSOCIATES, INC., ON OR ABOUT SEPTEMBER, 2003.
- PREVIOUS DEPARTMENT OF PLANNING AND ZONING REFERENCE NUMBERS INCLUDE: F-05-25, F-86-151 (PLATS 6916), AND STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION PLAT 49955.
- A LETTER REQUESTING ALTERNATIVE COMPLIANCE FROM THE ROUTE 1 MANUAL SUBMITTED ON AUGUST 18, 2004 AND A RESPONSE LETTER SUBMITTED ON OCTOBER 28, 2004 ADDRESSED THE FOLLOWING ISSUES:
  - Requirement 4, Building Location, Chapter 4, Site Design - Maximum building setback of ten feet (10') from the design right-of-way.
  - Requirement 1, Parking Areas, Chapter 4, Site Design - Parking must be at the side or rear of the building.
  - Requirement 2, On-Site Pedestrian Circulation, Chapter 4, Site Design - Provide clearly defined paved pedestrian connections between a public right-of-way and building entrances.
  - Requirement 1, Site Amenities and Features, Chapter 4, Site Design - 10% of the net site area must be devoted to a pedestrian amenity area.
  - Requirement 1, Door and Window Openings, Chapter 5, Building Design - Provide street-oriented primary entrances.
  - Requirement 2, Door and Window Openings, Chapter 5, Building Design - Maximize transparency and windows on the ground floor for pedestrian interest.
- A WAIVER TO THE MINIMUM CLEARANCE REQUIREMENTS FOR UTILITY EASEMENTS WAS APPROVED SEPTEMBER 27, 2004.
- THIS PROJECT IS EXEMPT FROM THE FOREST CONSERVATION REQUIREMENTS BECAUSE THE PROPERTY WAS PREVIOUSLY MASS GRADED UNDER GP-87-05 AS DETERMINED BY A GRADING EXHIBIT PLAN SUBMITTED AS EVIDENCE WITH THIS SDP IN ACCORDANCE WITH SECTION 16.1202(B)(1)(iii) OF THE HOWARD COUNTY CODE.
- A WAIVER TO THE RETAINING WALL GUIDELINES SECTION II, ITEM D, REQUIRING A 10' WIDE SETBACK FROM THE FACE OF THE WALL WAS APPROVED FEBRUARY 3, 2005 BASED ON AN 8'-6" SETBACK FOR A WALL WITH A HEIGHT NO GREATER THAN 6'-6". IS SUFFICIENT FOR FUTURE MAINTENANCE.

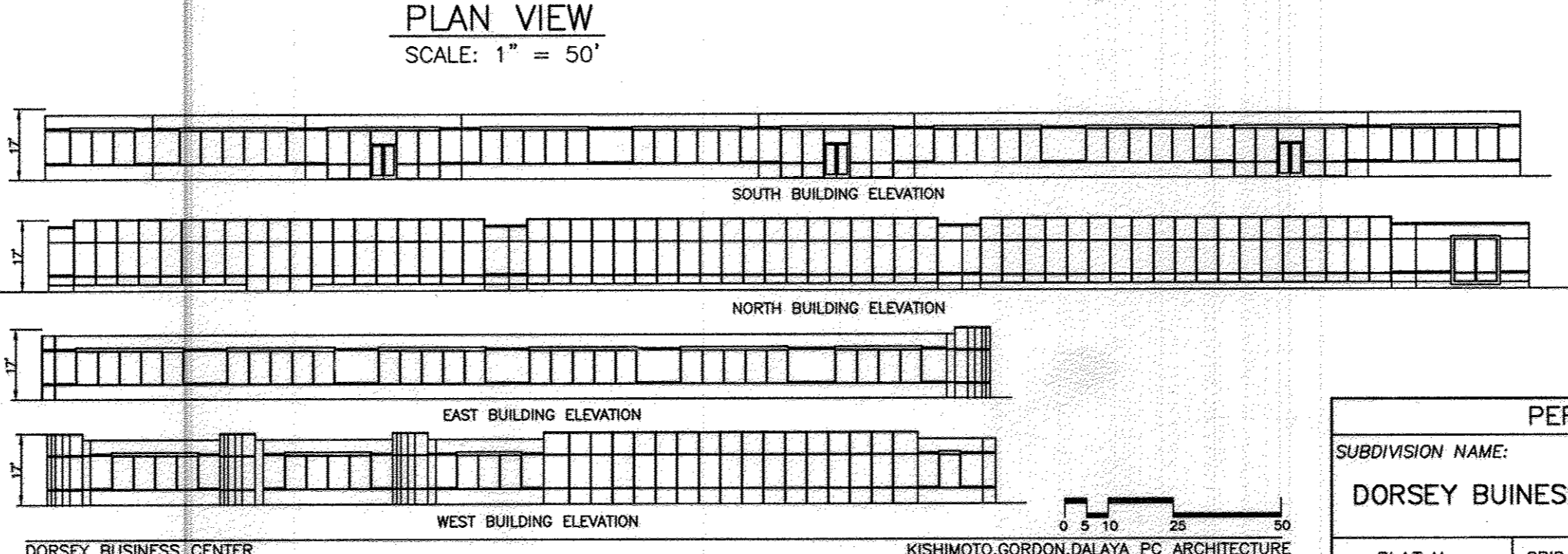
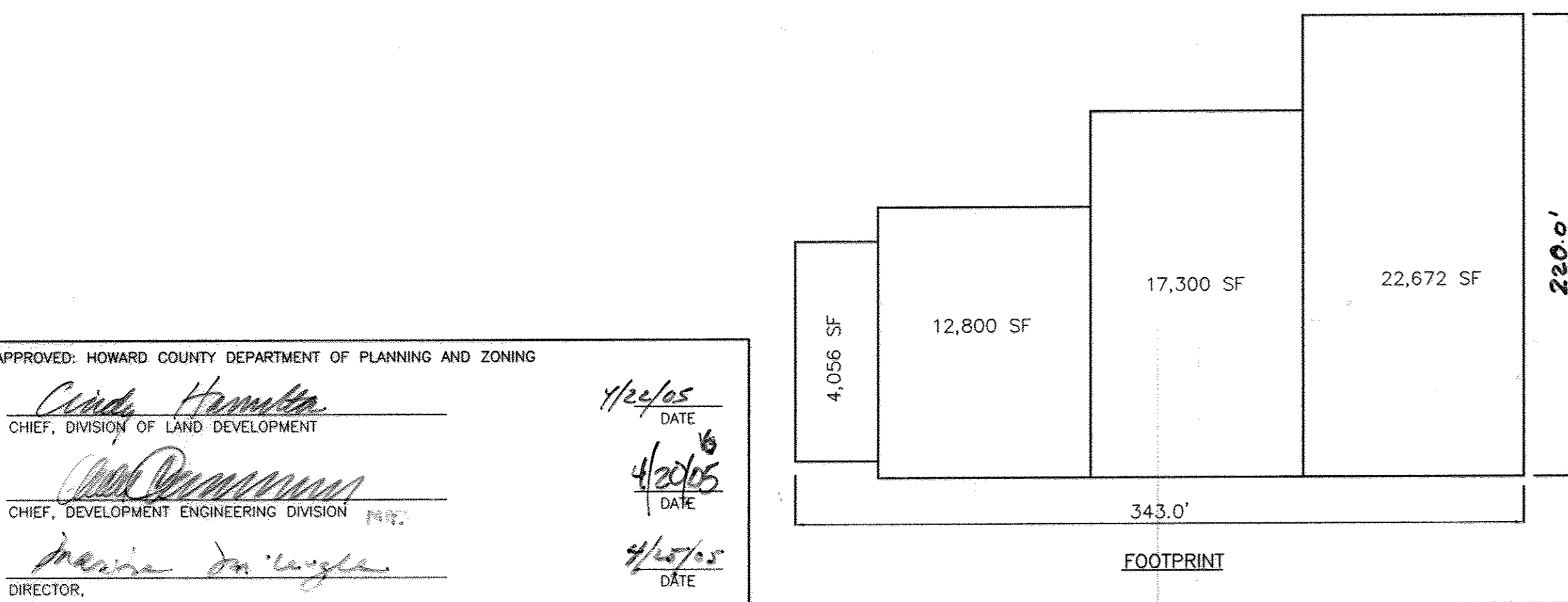
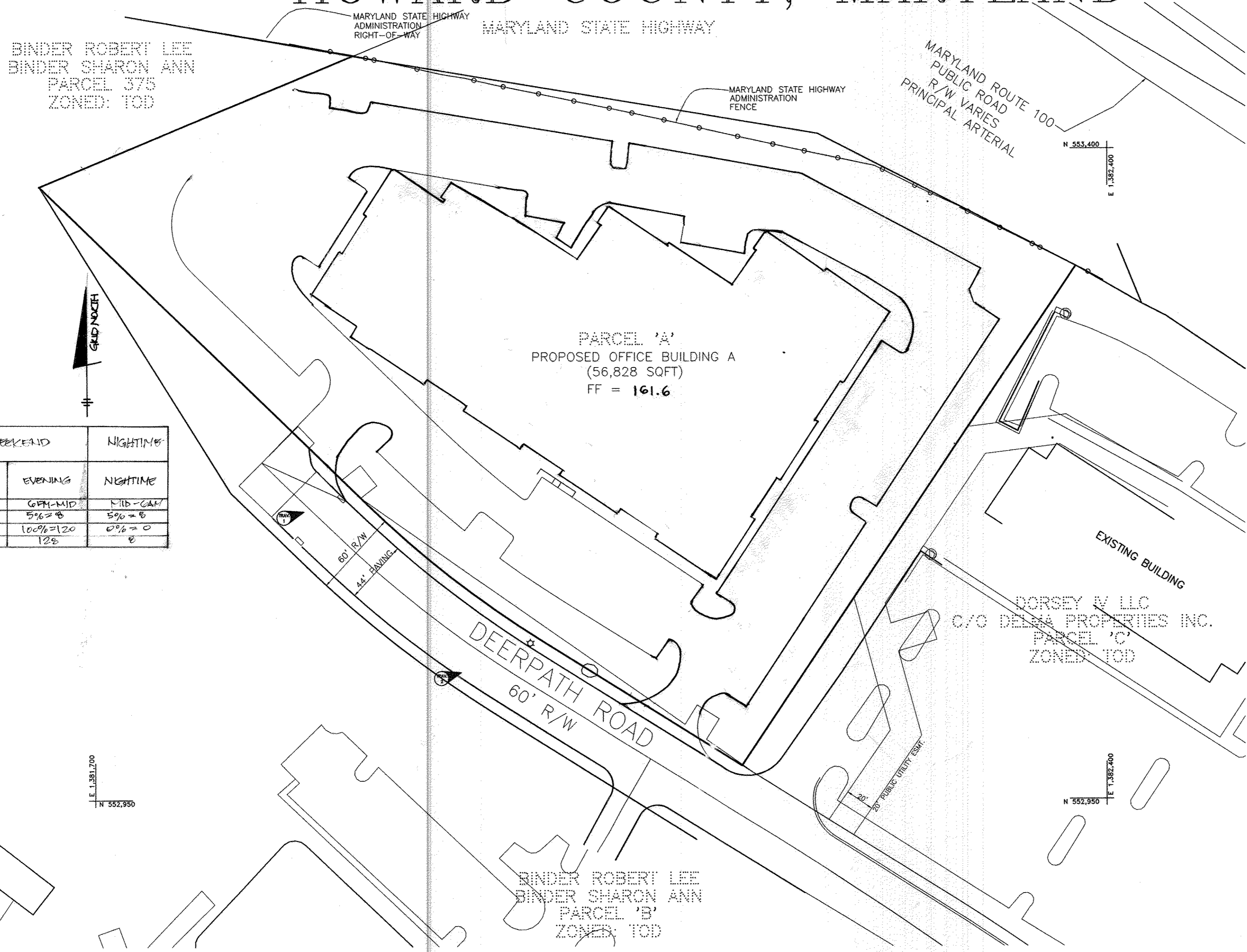
#### LEGEND

SOILS CLASSIFICATION	AbC1
SOILS VEGETATION	
EXISTING CONTOUR '85	999
PROPOSED CONTOURS	999
EXISTING WOODS LINE	
PROPOSED WOODS LINE	
EXISTING STRUCTURE	
PROPOSED STRUCTURE	
DRAINAGE AREA	
DRAINAGE DIVIDE	
LIMIT OF DISTURBANCE	
STABILIZED CONSTRUCTION ENTRANCE	
SILT DIVERSION FENCE	SDF
SUPER SILT FENCE	SSF
EARTH DIKE	
INLET PROTECTION	

DORSEY BUSINESS CENTER SHARED PARKING	WEEKDAY				WEEKEND		NIGHTTIME
	MORNING	MID-DAY	AFTERNOON	EVENING	DAYTIME	EVENING	NIGHTTIME
OFFICE 44,828 SF							
CHURCH 10,734 SF							
TOTAL	120	149	149	135	135	126	0

#### SITE ANALYSIS DATA/TABULATION

- A) TOTAL PROJECT AREA..... 4.31±AC.
- B) AREA OF 100-YR. FLOODPLAIN..... N/A
- C) AREA OF STEEP SLOPES..... N/A
- D) NET AREA OF SITE(S)..... 4.31±AC.
- E) NUMBER OF UNITS ALLOWED..... N/A
- F) NUMBER OF RESIDENTIAL UNITS PROPOSED..... N/A
- G) AREA OF PLAN SUBMISSION..... 4.26±AC.
- H) LIMIT OF DISTURBED AREA..... 4.26±AC.
- I) AMENITY AREA REQUIRED (10% OF 4.31±AC.)..... 0.43±AC.
- J) AMENITY AREA PROVIDED..... 0.34±AC (83%)  
SEE GENERAL NOTE 28 CONCERNING ALTERNATIVE COMPLIANCE APPROVAL
- K) PRESENT ZONING DESIGNATION..... TOD
- L) PROPOSED USES FOR THE SITE AND STRUCTURES..... GENERAL OFFICE/RETAIL/RECREATION FACILITY
- M) FLOOR SPACE ON EACH LEVEL OF BUILDING..... 56,828 S.F.
- N) MINIMUM LOT SIZE REQUIRED..... N/A
- O) NUMBER OF PARKING SPACES REQUIRED BY ZONING REGULATIONS AND/OR FDP CRITERIA..... 188  
GENERAL OFFICE (3.3 SPACES PER 1,000 SQFT) :: 188  
RETAIL/RECREATION FACILITY (1.5 SPACES PER 1,000 SQFT) :: 120 \*
- P) TOTAL NUMBER OF PARKING SPACES PROVIDED..... 188  
ON-SITE TOTAL = 188  
OFF-SITE SHARED PARKING SPACES = 0  
TOTAL SPACES = 188 (INCLUDING 6 HANDICAPPED PARKINGS w/ TWO VAN ACCESS)
- Q) APPLICABLE DPZ FILE REFERENCES: 14-1447-D, F-86-151, F-05-25
- R) BUILDING COVERAGE AREA..... 56,828 SQFT (±30%)



ADDRESS CHART	
LOT No.	STREET ADDRESS
PARCEL A	6800 DEERPATH ROAD

PERMIT INFORMATION CHART					
SUBDIVISION NAME: DORSEY BUSINESS CENTER			SECTION/AREA: SECTION 1 PARCEL 'A'		LOT/PARCEL # 634
PLAT No. 6916	GRID No. 24	ZONE TOD	TAX MAP 37	ELECTION DISTRICT 1st	CENSUS TRACT 6012.02
WATER CODE 14-4248-D			SEWER CODE 14-4248-D		

NO.	DATE	REVISION
4	4-27-17	REMOVE PARKING AS SHOWN ON VOIDED SDP-07-16. PROVIDE SHARED PARKING TAB.
9	4-07	REVISE PARKING LOT TO SHOW ACCESS TO OFF-SITE PARKING PER SDP-07-16
12	14-05	REVISED BUILDING LAYOUT & ELEVATIONS & CURB LAYOUT

**BENCHMARK**  
ENGINEERS & LAND SURVEYORS & PLANNERS  
**ENGINEERING, INC.**

8480 BALTIMORE NATIONAL PIKE & SUITE 418  
ELLICOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 FAX: 410-465-6644

*Donald Mason*  
4/10/05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Cinda Hamilton*  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE: 4/10/05

*Mark Levy*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 4/10/05

*Marina DeLuca*  
DIRECTOR  
DATE: 4/10/05

OWNER/DEVELOPER: MARK LEVY  
C/O SPEEDWAY ROCK, LLC  
C/O ROCK REALTY INC.  
25 MAIN STREET  
REISTERSTOWN, MD 21136

PROJECT: DORSEY BUSINESS CENTER  
PARCEL 'A'

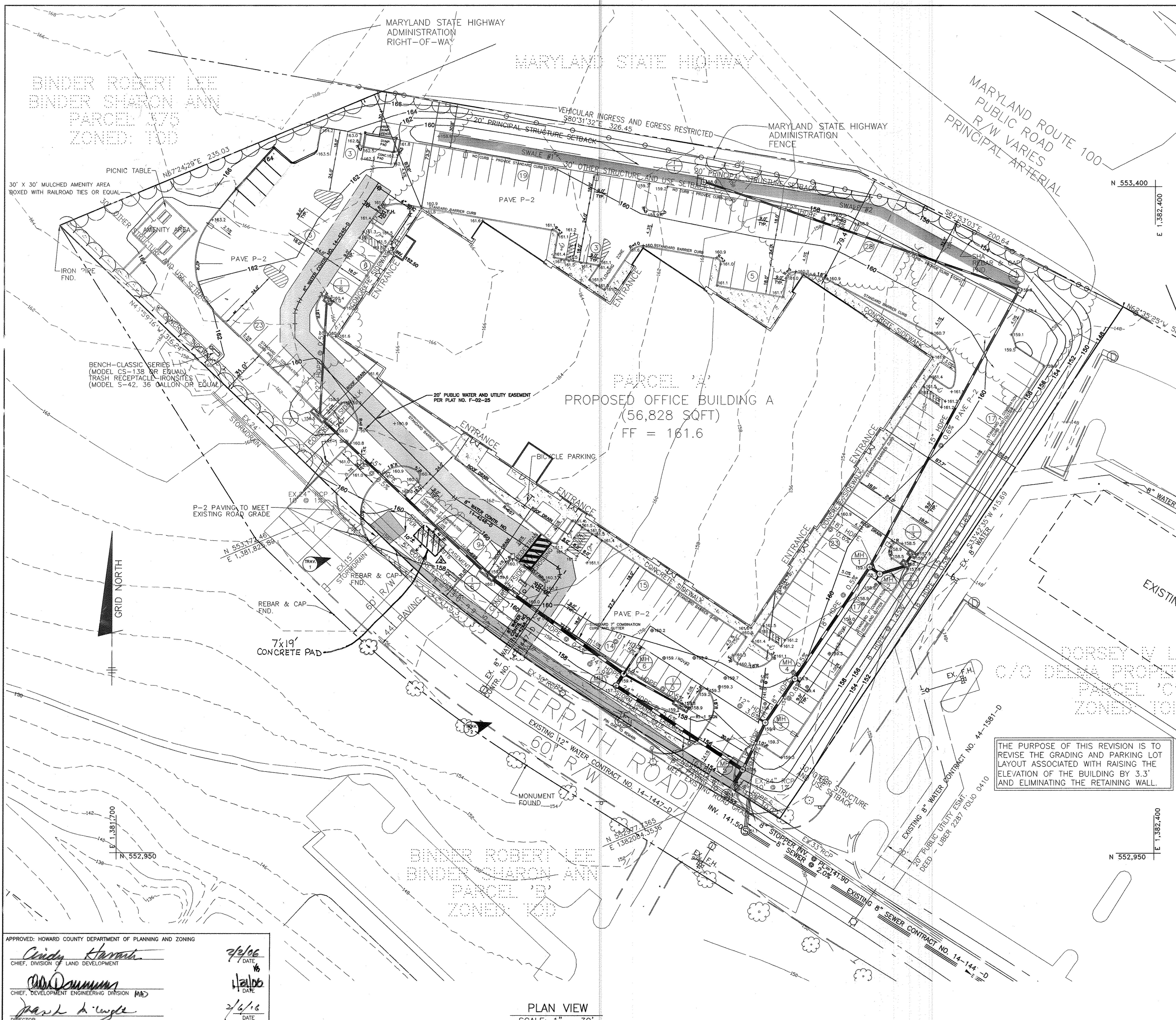
LOCATION: TAX MAP 37 - GRID 24 - PARCEL - 634  
1st ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

TITLE: TITLE SHEET  
SITE DEVELOPMENT PLAN  
OFFICE BUILDING

DATE: APRIL 2005 PROJECT NO. 1709  
SHEET 1 OF 10

DESIGN: BFC DRAFT: BFC CHECK: DAM SCALE: AS SHOWN

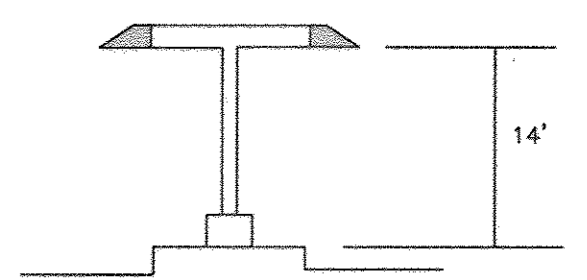




STREET LIGHT SCHEDULE		
SYMBOL	DESCRIPTION	LOCATION
	250-WATT HPS VAPOR "TEAR DROP" FIXTURE MOUNTED AT 23' ON A BLACK FIBERGLASS POLE (INCLUDING A SHROUD) USING A 4" ARM	AS SHOWN

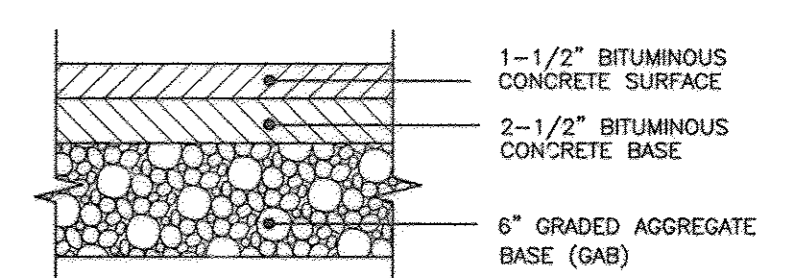
NOTE: STREET LIGHTS TO BE INSTALLED BY THE COUNTY OR COUNTY CONTRACTOR.

**PARKING LOT LIGHTS:**  
THE LIGHTS IN THE PARKING AREA ARE TO BE HID CUT-OFF LUMINAIRE, 200 WATT PARTIALLY SHIELDED METAL HALIDE, TYPE III. THEY ARE ARRANGED IN SINGLE AREAS. ANY LIGHTS IN THE PARKING ARE TO BE INSTALLED ON CONCRETE COLUMNS. ALL OUTDOOR LIGHTING SHALL COMPLY WITH THE REQUIREMENTS OF ZONING SECTION 134.

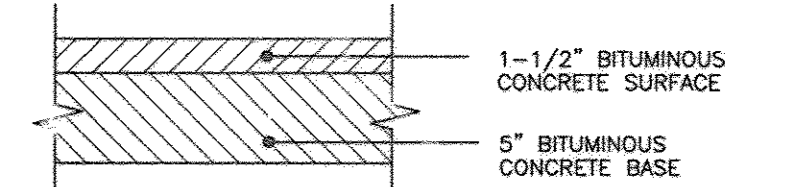


LIGHTING DETAIL  
NOT TO SCALE

PARKING LOT LIGHT



ALTERNATIVE SECTION

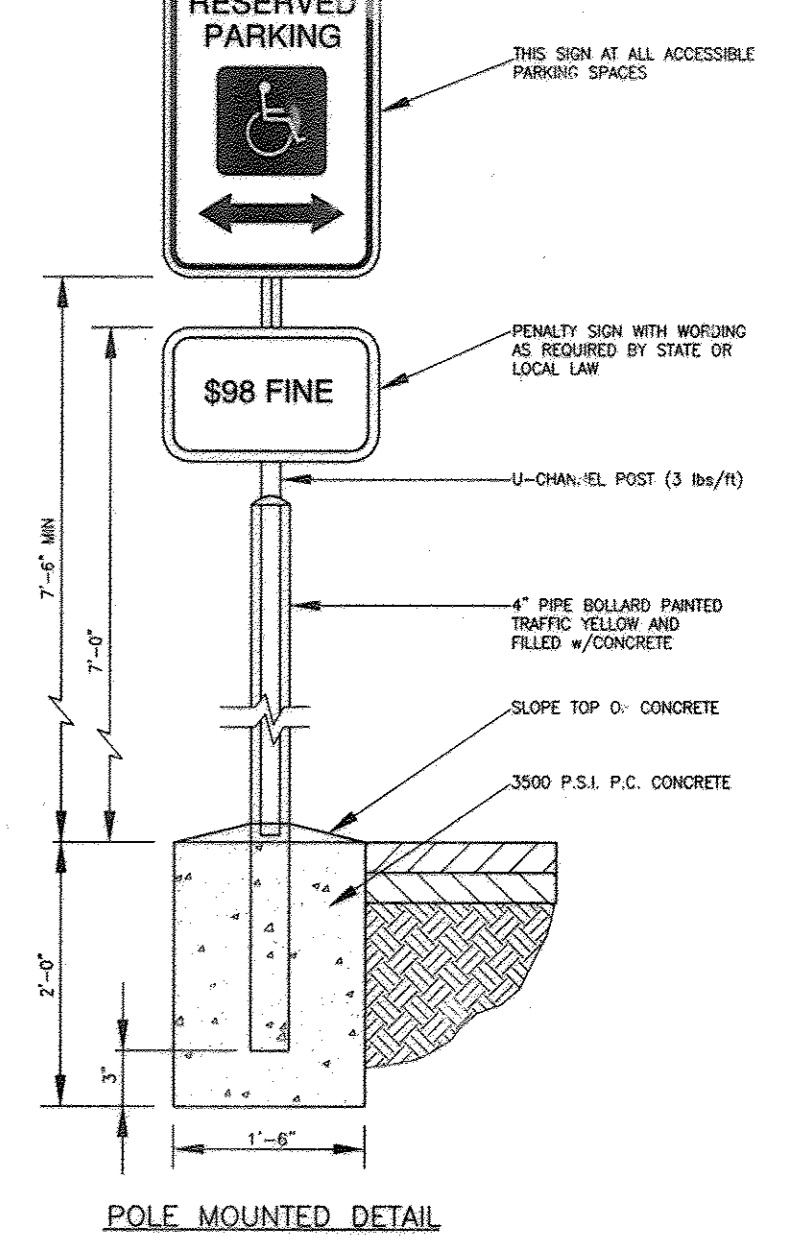


TYPICAL SECTION

P-2 PAVEMENT DETAIL  
NOT TO SCALE

**LEGEND**

- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING WOODS LINE
- PROPOSED WOODS LINE
- PROPOSED STRUCTURE



POLE MOUNTED DETAIL

HANDICAP PARKING SIGN DETAIL  
NOT TO SCALE

THE PURPOSE OF THIS REVISION IS TO REVISE THE GRADING AND PARKING LOT LAYOUT ASSOCIATED WITH RAISING THE ELEVATION OF THE BUILDING BY 3.3' AND ELIMINATING THE RETAINING WALL.

NO.	DATE	REVISION
4	4-27-17	REMOVE PARKING AS SHOWN ON VOIDED SDP-07-16
3	2-6-12	ADD A NEW 7'x19' CONCRETE PAD
2	10-21-09	BLDG LOCATION & ELEV. REV. TO REMOVE RETAINING WALL AND BALANCE SITE.
1	9-4-07	ADD 2 HANDICAP PARKING SPACES FOR ADDITIONAL PARKING PROVIDED BY SDP-07-16 AND PARKING LOT REV.

**BENCHMARK ENGINEERING, INC.**  
ENGINEERS • LAND SURVEYORS • PLANNERS

8480 BALTIMORE NATIONAL PIKE • SUITE 418  
ELLCOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 • FAX: 410-465-6644

*Donald Mason*  
1/5/06

OWNER/DEVELOPER: MARK LEVY C/O SPEEDWAY ROCK, LLC C/O ROCK REALTY INC. 25 MAIN STREET REISTERSTOWN, MD 21136	PROJECT: <b>DORSEY BUSINESS CENTER</b> PARCEL 'A'
LOCATION: TAX MAP 37 - GRID 24 - PARCEL - 634 18 <sup>TH</sup> ELECTION DISTRICT HOWARD COUNTY, MARYLAND	TITLE: <b>SITE DEVELOPMENT PLAN</b> GRADING PLAN GENERAL OFFICE BUILDING
DATE: APRIL, 2005	PROJECT NO.: 1709
DESIGN: BFC	DRAFT: BFC
SCALE: AS SHOWN	DRAWING <u>2</u> OF <u>10</u>

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

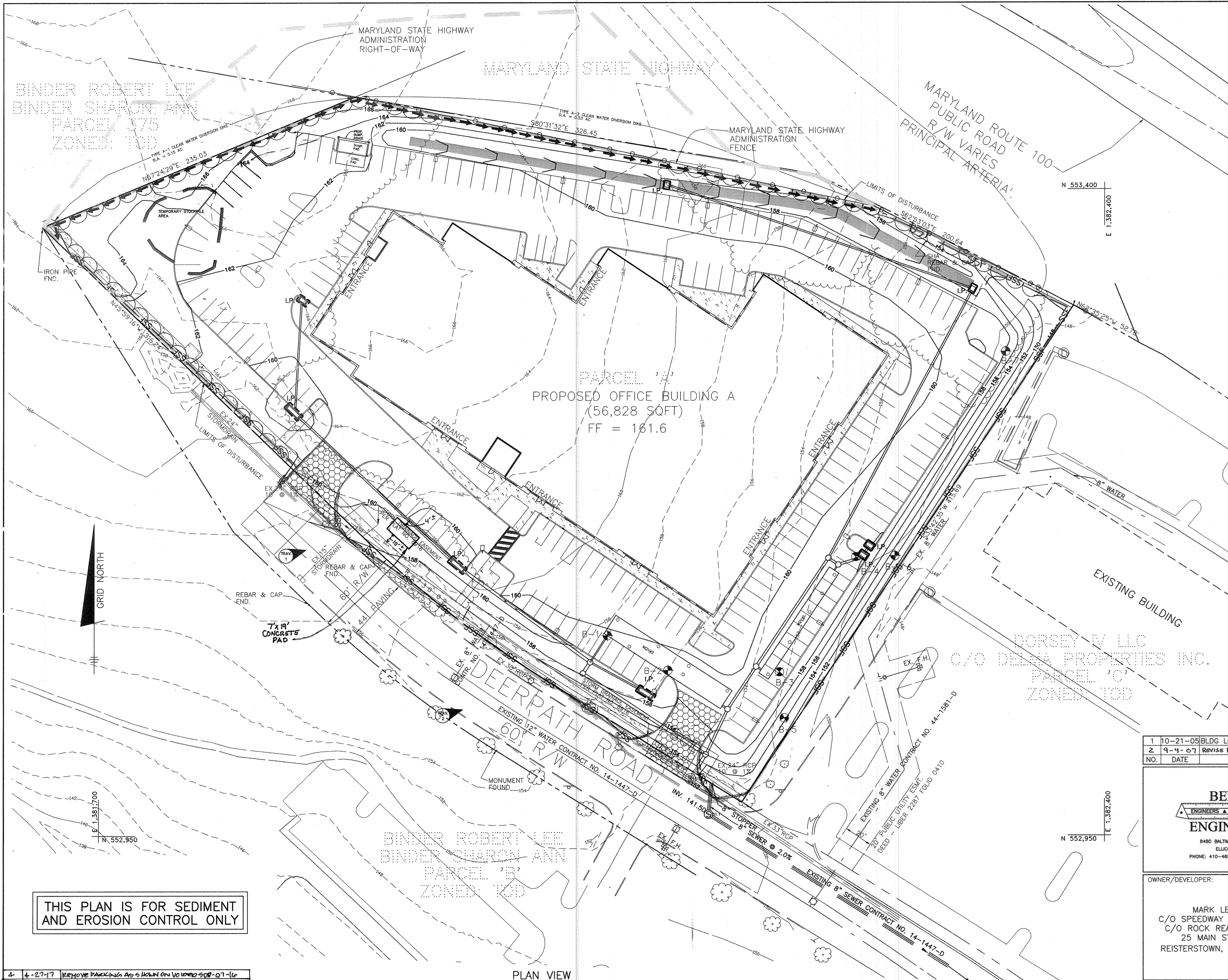
*Cindy Harrah*  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE: 2/6/06

*Mark Cummings*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 1/21/06

*Mark A. Long*  
DIRECTOR  
DATE: 2/6/06

PLAN VIEW  
SCALE: 1" = 30'





**LEGEND**

- SOILS CLASSIFICATION AbC1
- SOILS DELINEATION
- EXISTING CONTOURS 999
- PROPOSED CONTOURS 999
- EXISTING WOODS LINE
- PROPOSED WOODS LINE
- EXISTING STRUCTURE
- PROPOSED STRUCTURE
- DRAINAGE AREA
- DRAINAGE DIVIDE
- LIMIT OF DISTURBANCE
- STABILIZED CONSTRUCTION ENTRANCE
- SUPER SILT FENCE SSF
- INLET PROTECTION
- EARTH DIKE

**GENERAL NOTES**

1. AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR, AN ADDITIONAL ROW OF "SUPER" SILT FENCE IS TO BE PLACED AT THE EASTERN L.O.D.
2. STOCKPILING IN TEMPORARY STOCKPILE AREA.

**ENGINEER'S CERTIFICATE**  
 I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
*Donald Mason* 1/5/06  
 ENGINEER - DONALD A. MASON, P.E. # 21443 DATE

**DEVELOPER'S CERTIFICATE**  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*Mark Levy* 1/16/06  
 DEVELOPER DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS  
*Jim Mayers* 1/26/06  
 USER - NATURAL RESOURCES CONSERVATION DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*John R. Rhoton* 1/24/06  
 HOWARD SCD DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Cristy Hamel* 2/9/06 DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
*David M. Munn* 1/31/06 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
*Paul A. Hugg* 2/6/06 DATE  
 DIRECTOR

1	10-21-05	BLDG LOCATION & ELEV. REV. TO REMOVE RETAINING WAL AND BALANCE SITE.
2	9-4-07	REVISE PARKING LOT PER SDP-07-16
NO.	DATE	REVISION

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 8480 BALTIMORE NATIONAL PIKE A SUITE 418  
 ELICOTT CITY, MARYLAND 21043  
 PHONE: 410-465-6105 • FAX: 410-465-6644

*Donald Mason* 1/5/06

OWNER/DEVELOPER: MARK LEVY C/O SPEEDWAY ROCK, LLC C/O ROCK REALTY INC. 25 MAIN STREET REISTERSTOWN, MD 21136	PROJECT: REVISED SITE DEVELOPMENT PLAN DORSEY BUSINESS CENTER PARCEL 'A'
LOCATION: TAX MAP 37 - GRID 24 - PARCEL- 634 1st ELECTION DISTRICT HOWARD COUNTY, MARYLAND	TITLE: SEDIMENT AND EROSION CONTROL PLAN GENERAL OFFICE BUILDING
DATE: APRIL 2005	PROJECT NO. 1709
DESIGN: BFC	DRAFT: BFC
SCALE: 1" = 30'	DRAWING 3 OF 10

THIS PLAN IS FOR SEDIMENT AND EROSION CONTROL ONLY

4	4-27-17	REMOVE PACKINGS AS SHOWN ON VOLUME SDP-07-16
3	2-6-12	SHOW 7'x19' CONCRETE PAD
NO.	DATE	REVISION

PLAN VIEW  
 SCALE: 1" = 30'



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1	ADD	10/10/05	DL	ADD
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NO.	DESCRIPTION	DATE	BY	REVISION
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20	ADD	10/10/05	DL	ADD

**SEDIMENT CONTROL NOTES**

- A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION, (313-1850).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL", REVISIONS THEREOF.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: (A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1 (B) 14-DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- 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 SEEDINGS (SEC. 51) SO (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING RATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:
 

TOTAL AREA OF SITE (THIS SUBMISSION)	4.31	ACRES
AREA DISTURBED	4.26	ACRES
AREA TO BE ROOFED OR PAVED	3.24	ACRES
AREA TO BE VEGETATIVELY STABILIZED	1.02	ACRES
TOTAL CUT	8,815	CY
TOTAL FILL	8,800	CY

 OFFSITE WASTE/BORROW AREA LOCATION: \*IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY THE SPILL/BORROW SITE AND NOTIFY AND OBTAIN APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR OF THE SITE AND ITS GRADING PERMIT NUMBER AT THE TIME OF CONSTRUCTION.
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 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.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR, AN ADDITIONAL ROW OF "SUPER" SILT FENCE IS TO BE PLACED AT THE EASTERN L.O.D.

**TOPSOIL SPECIFICATIONS**

- Topsoil salvaged from the existing site may be used provided that it meets standards set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type is found in the representative profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experiment Station.
- Topsoil Specifications - Soil to be used as topsoil must meet the following:
  - 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 soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting texture subsoils and shall contain less than 2% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash or other materials larger than 1-1/2" in diameter.
  - Topsoil must be free of plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nutgrass, poison ivy, hickies, or others as specified.
  - 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 as described in the following procedures.
- For sites having disturbed areas under 5 acres:
  - Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
- For sites having disturbed areas over 5 acres:
  - On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
    - pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
    - Organic content or topsoil shall be not less than 1.5 percent by weight.
    - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
    - No soil or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.
  - Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
- Topsoil Application:
  - When topsoiling, maintain needed erosion and sediment control practices such as diversion grade stabilization structures, earth dikes, slope silt fence and sediment traps and basins.
  - Grades on the areas to be topsoiled, which have been previously established, shall be maintained, about 4" - 8" higher in elevation.
  - Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that seedling or seeding can proceed with a minimum of additional soil and topsoil. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
  - Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.
- Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
  - Composted Sludge Material for use as a soil conditioner for sites having distributed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
    - Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
    - Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
    - Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
  - Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal time application rate.

**SEQUENCE OF CONSTRUCTION**

- NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF CONSTRUCTION
- |             |  |
|-------------|--|
| DAY 1       | OBTAIN GRADING PERMIT.   |
| DAY 2-9     | CLEAR & GRUB FOR SEDIMENT CONTROL DEVICES.   |
| DAY 10-15   | UPON APPROVAL OF HOWARD COUNTY SEDIMENT CONTROL INSPECTOR CLEAR AND GRUB REMAINDER OF THE SITE.  |
| DAY 16-26   | UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, BEGIN MASS GRADING OF THE SITE.   |
| DAY 27-28   | STABILIZE IN ACCORDANCE WITH TEMPORARY SEEDBED NOTES.  |
| DAY 29-49   | INSTALL STORM DRAINS AND OTHER UTILITIES INCLUDING THE UNDERGROUND STORMWATER MANAGEMENT FACILITIES AND SAND FILTERS. (NOTE: DIVERSIFIED PILES ENTERING THE SAND FILTERS SHALL BE BLOCKED UNTIL THE SITE IS STABILIZED.) |
| DAY 50-55   | INSTALL CURB AND GUTTER.   |
| DAY 56-61   | INSTALL BASE COURSE PAVING FOR PARKING LOT.  |
| DAY 62-162  | CONSTRUCT OFFICE BUILDING.   |
| DAY 163-166 | FINAL GRADE REMAINDER OF SITE AND STABILIZE IN ACCORDANCE WITH PERMANENT SEEDING NOTES.  |
| DAY 167-170 | INSTALL FINAL PAVING.  |
| DAY 171-172 | INSTALL REQUIRED LANDSCAPING AS SPECIFIED ON THESE PLANS.  |
| DAY 173-183 | UPON APPROVAL OF HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE REMAINING SEDIMENT CONTROL DEVICES AND PERMANENTLY STABILIZE ANY REMAINING DISTURBED AREAS.  |
- NOTE: 1. SEDIMENT CONTROL LOCATION AND IMPLEMENTATION SHOWN ON THESE PLANS IS SUBJECT TO REVISION IN THE FIELD AT THE DISCRETION OF THE SEDIMENT CONTROL INSPECTOR.  
2. EROSION CONTROL MATTING SHALL BE PLACED IN SWALES WHERE DEEMED NECESSARY UNTIL VEGETATION IS ESTABLISHED OR SOLID SOIL SHOULD BE USED.

**TEMPORARY SEEDBED PREPARATIONS**

- APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED UNDER A SHORT-TERM VEGETATIVE COVER IS NEEDED.
- SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
- SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING:
- PREFERRED - APPLY 2 TONS PER ACRE DOLOMITE LIMESTONE (92 LBS/1000 SQ FT) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT) BEFORE SEEDING. NARROW OR DISC INTO UPPER THREE INCHES OF SOIL AT TIME OF SEEDING. APPLY 400 LBS PER ACRE 30-0-0-0 UREA-FORM FERTILIZER (9 LBS/1000 SQ FT).
  - ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITE LIMESTONE (92 LBS/1000 SQ FT) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ FT) BEFORE SEEDING. NARROW OR DISC INTO UPPER THREE INCHES OF SOIL.
- SEEDING: FOR THE PERIODS MARCH 1 THROUGH APRIL 30 AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SQ FT) OF KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (0.5 LBS/1000 SQ FT) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY: OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOLO OPTION (2) SEED WITH 60 LBS PER ACRE OF KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS PER ACRE OF WELL ANCHORED STRAW.
- MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL CRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER REPRESENTING USING MULCH ANCHORING TOOL, OR 216 GALLONS PER ACRE (5 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS, OR 360 LBS PER ACRE (8 LBS/1000 SQ FT) FOR ANCHORING.
- MAINTENANCE: INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND

**30.0 DUST CONTROL**

**Definition**  
Controlling dust blowing and movement on construction sites and roads.

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

**Conditions Where Practice Applies**  
This practice is applicable to areas subject to dust blowing and movement where on and off-site damage is likely without treatment.

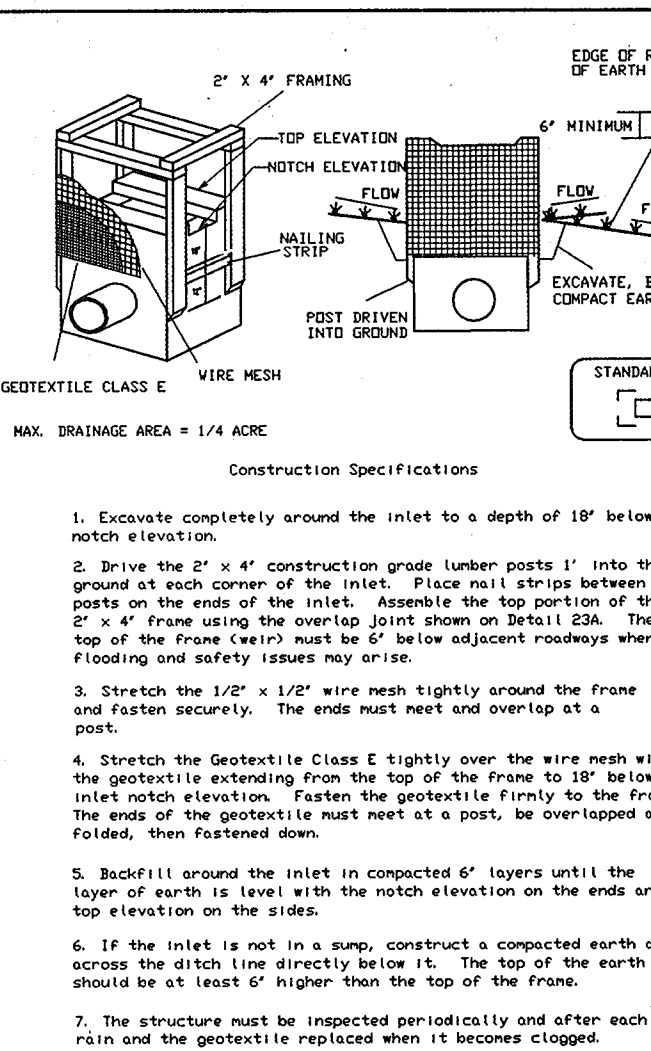
**Specifications**

- Temporary Methods**
- Mulches - See standards for vegetative stabilization with mulches only. Mulch should be crimped or tracked to prevent blowing.
  - Vegetative Cover - See standards for temporary vegetative cover.
  - Tillage - To roughen surface and bring clods to the surface. This is an emergency measure which should be used before soil blowing starts. Begin plowing on windward side of site. Chisel-type plows spaced about 12' apart, spring-toothed harrows, and similar plows are examples of equipment which may produce the desired effect.
  - Irrigation - This is generally done as an emergency treatment. Site is irrigated with water to the point that runoff begins to flow.
  - Barriers - Solid board fences, all fences, snow fences, burlap fences, straw bales, and similar material can be used to control air currents and soil blowing. Barriers placed at right angles to prevailing currents at intervals of about 10 times their height are effective in controlling soil blowing.
  - Calcium Chloride - Apply at rates that will keep surface moist. May need retreatment.
- Permanent Methods**
- Permanent Vegetation - See standards for permanent vegetative cover, and permanent stabilization with soil. Existing trees or large shrubs may afford valuable protection if left in place.
  - Topsoiling - Covering with less erosive soil materials. See standards for topsoiling.
  - Stone - Cover surface with crushed stone or coarse gravel.

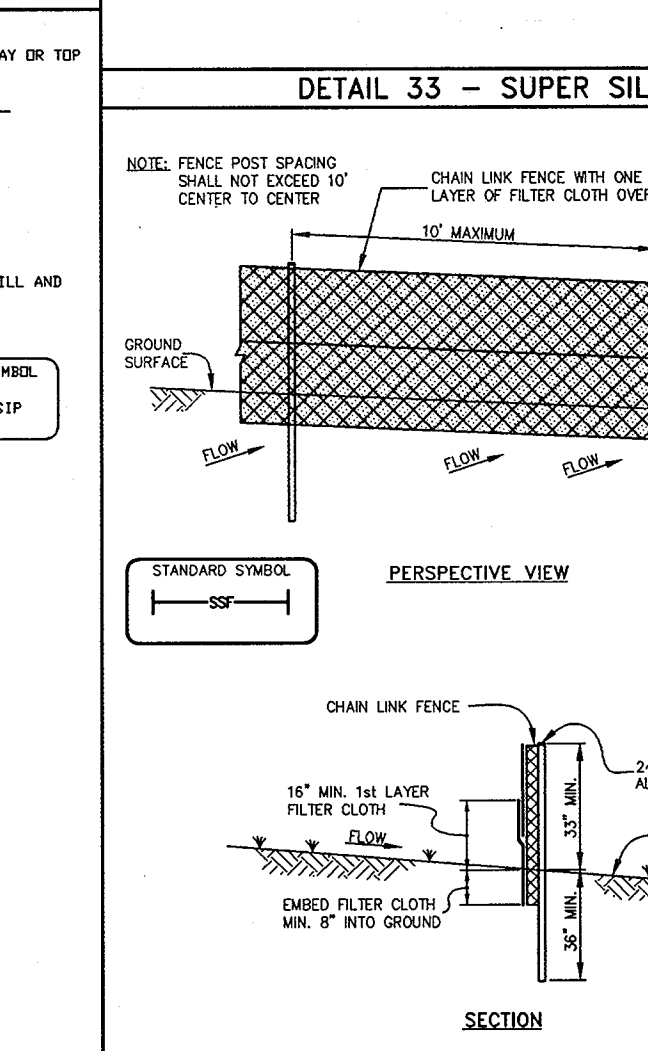
**References**

- Agriculture Handbook 346. Wind Erosion Forces in the United States and Their Use in Predicting Soil Loss.
- Agriculture Information Bulletin 354. How to Control Wind Erosion, USDA-ARS.

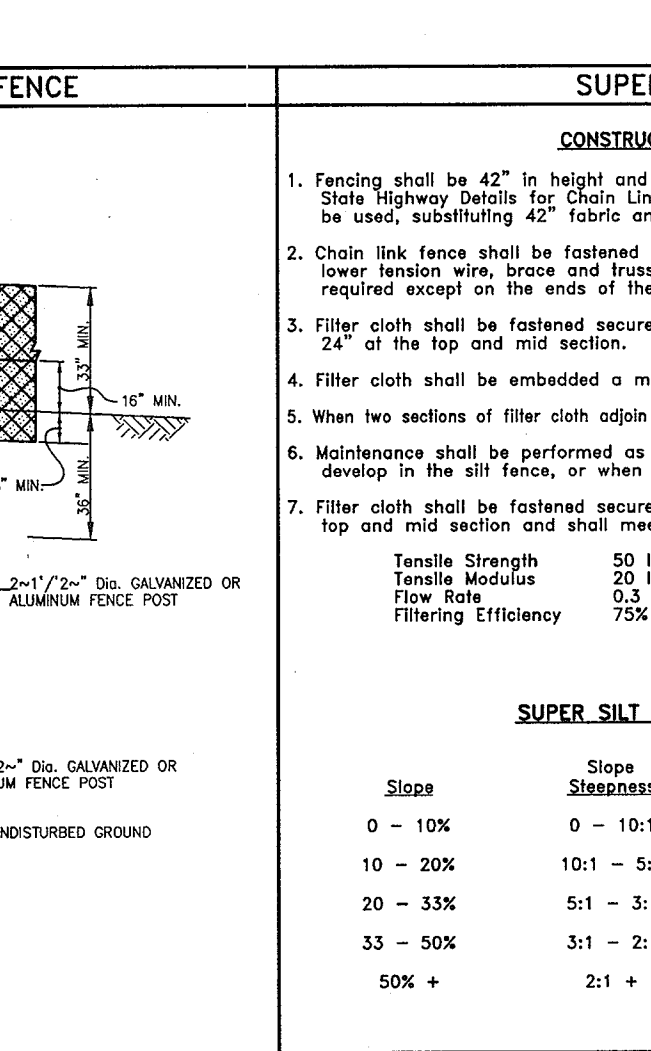
**DETAIL 23A - STANDARD INLET PROTECTION**



**DETAIL 33 - SUPER SILT FENCE**



**DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE**



**CONSTRUCTION SPECIFICATIONS**

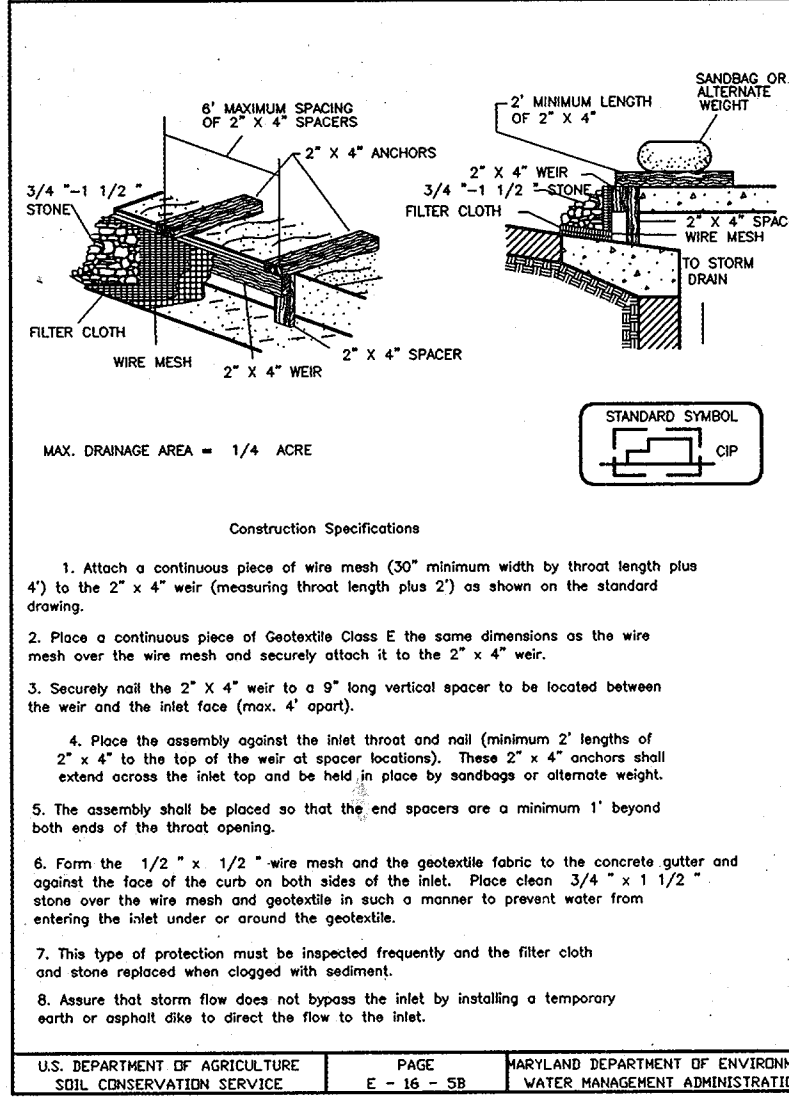
- Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. Post specification for a 6" fence shall be used, substituting 42" fabric and 6" length.
- Chain link fence shall be fastened to the fence posts with wire ties. The lower tension wire, brace and frass rods, drive anchors and post caps are not required except on the ends of the fence.
- Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" of the top and mid section.
- Filter cloth shall be embedded a minimum of 8" into the ground.
- When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
- Maintenance shall be performed as needed and silt burlaps removed when "bulges" develop in the silt fence, or when silt reaches 20% of fence height.
- Filter cloth shall be fastened securely to each fence post with wire ties or staples of top and mid section and shall meet the following requirements for Geotextile Class F:
 

Tensile Strength	50 lb/ft (min.)	Test: MSMT 509
Tensile Modulus	20 lb/ft (min.)	Test: MSMT 332
Flow Rate	0.5 gal/ft <sup>2</sup> /minute (max.)	Test: MSMT 332
Filtering Efficiency	70% (min.)	Test: MSMT 332

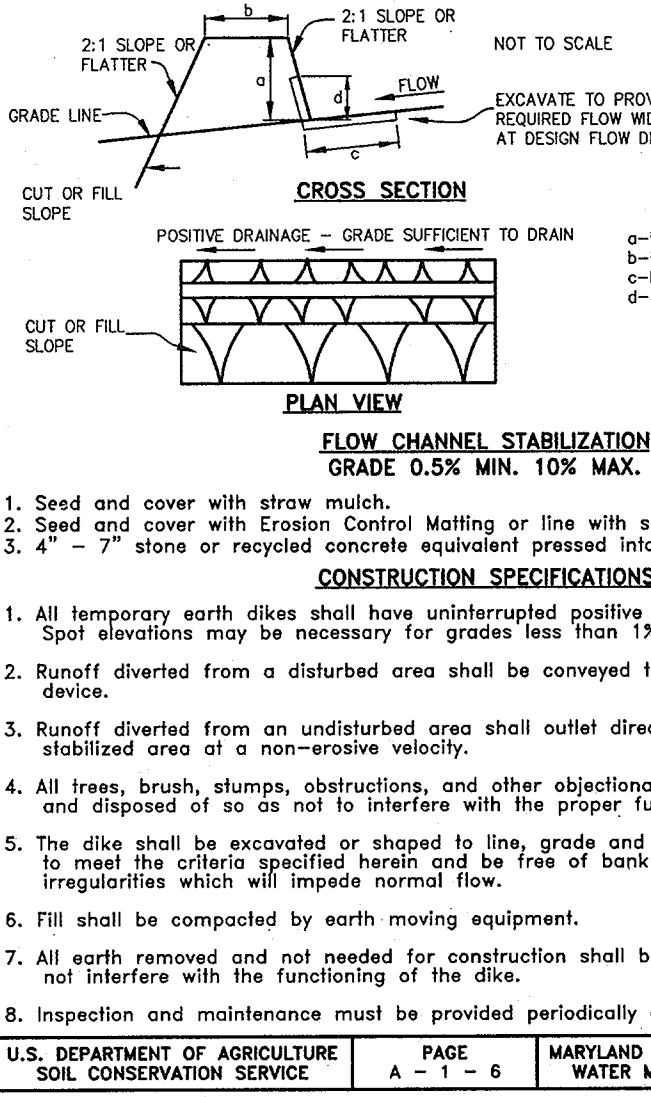
**SUPER SILT FENCE DESIGN CRITERIA**

Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 - 10%	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet
20 - 33%	5:1 - 3:1	100 feet
33 - 50%	3:1 - 2:1	50 feet
50% +	2:1 +	25 feet

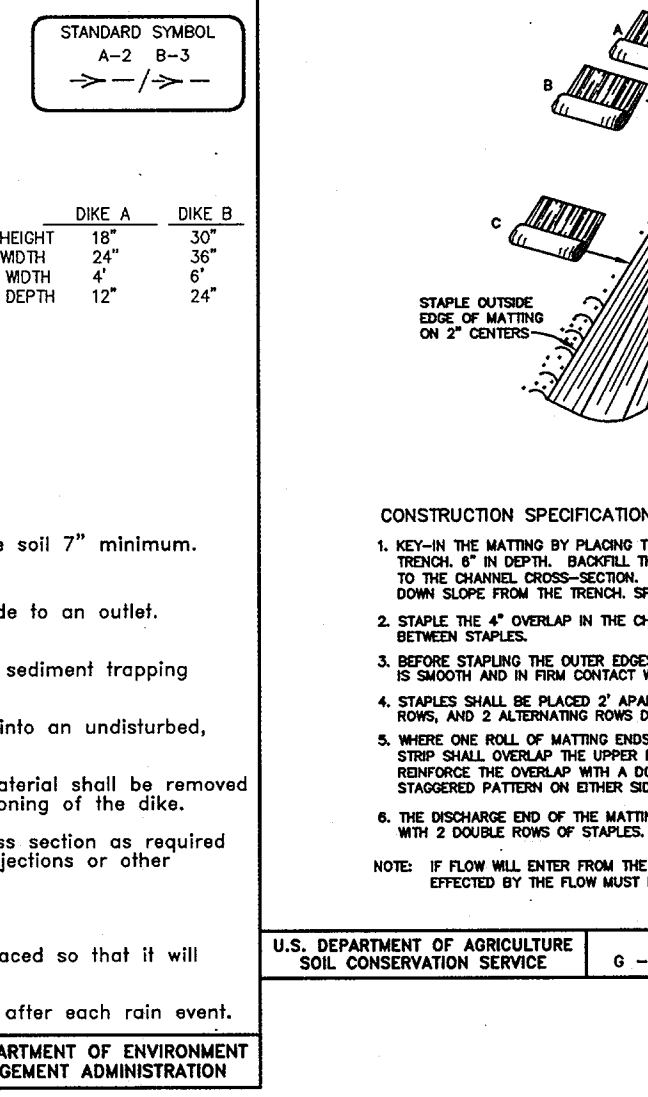
**DETAIL 23C - CURB INLET PROTECTION (CDS OR CDS INLETS)**



**DETAIL 1 - EARTH DIKE**



**DETAIL 30 - EROSION CONTROL MATTING**



**ENGINEER'S CERTIFICATE**

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

*Donald M. Mason* 4/8/04  
ENGINEER - DONALD A. MASON, P.E. # 21443 DATE

**DEVELOPER'S CERTIFICATE**

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

*John R. Robertson* 4/14/05  
DIRECTOR DATE

**REVIEWED FOR HOWARD SCD MEETS TECHNICAL REQUIREMENTS**

*Jim Meyer* 4/19/05  
LEAD - NATURAL RESOURCES PRESERVATION SERVICE DATE

*John R. Robertson* 4/19/05  
HOWARD SCD DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Cathy Kinnick* 4/20/05  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Donna Mason* 4/20/05  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Donna Mason* 4/20/05  
DIRECTOR DATE

NO.	DATE	REVISION
12-14-05	REVISED SITE EARTHWORKS # BASED ON REVISED BLDG ELEVATIONS	

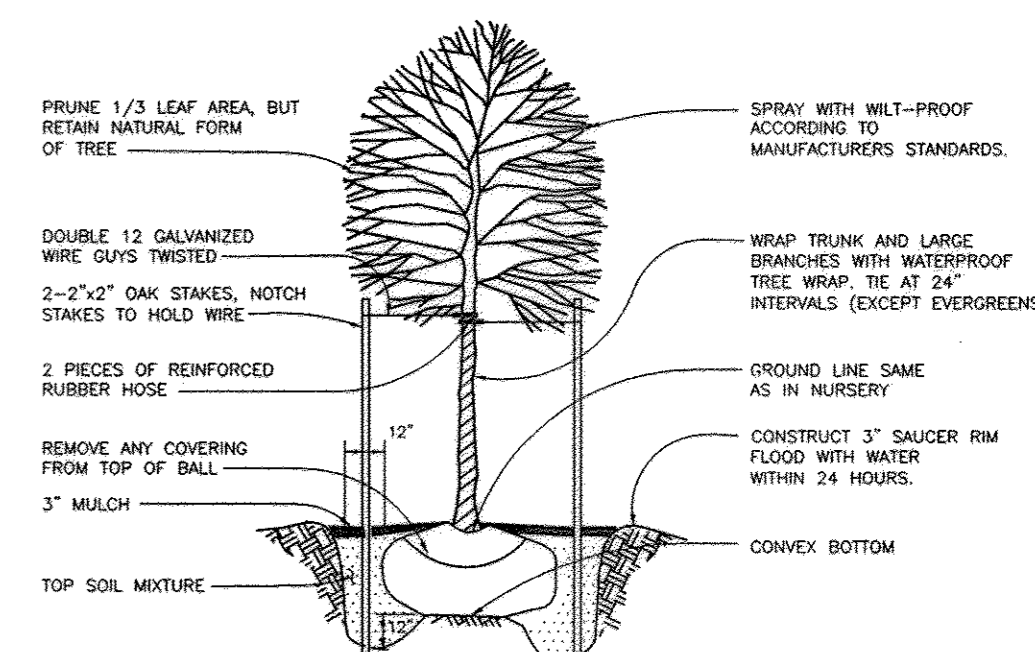
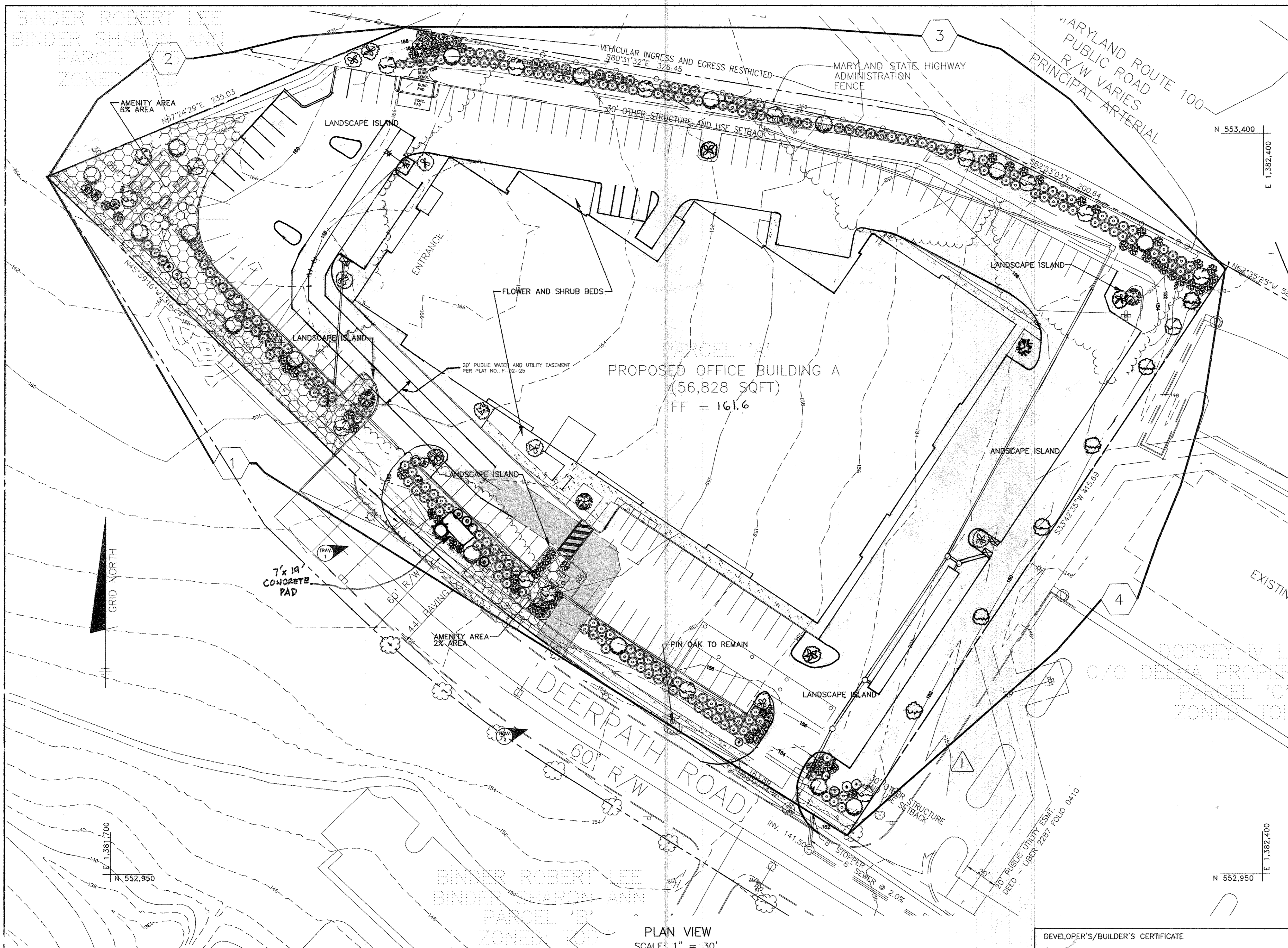
**BENCHMARK ENGINEERS, LAND SURVEYORS & PLANNERS**

8480 BALTIMORE NATIONAL PIKE # SUITE 418  
ELLICOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 FAX: 410-465-6644

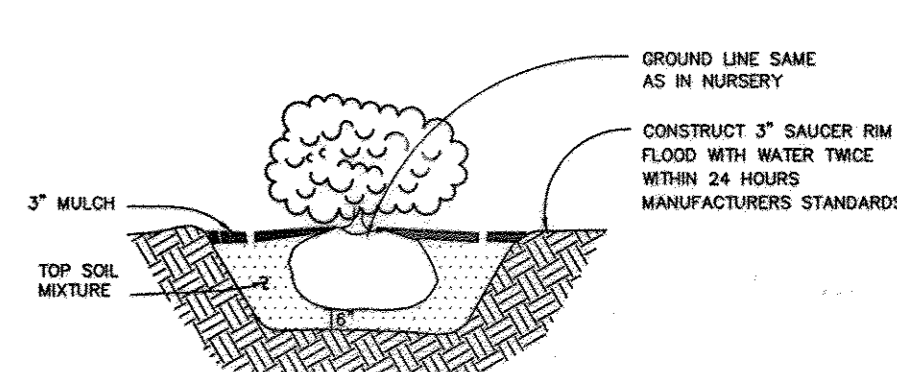
*Donald M. Mason* 4/8/04  
DATE

OWNER/DEVELOPER:	PROJECT:
MARK LEVY C/O SPEEDWAY ROCK, LLC C/O ROCK REALTY INC. 25 MAIN STREET REISTERSTOWN, MD 21136	DORSEY BUSINESS CENTER PARCEL 'A'
LOCATION	



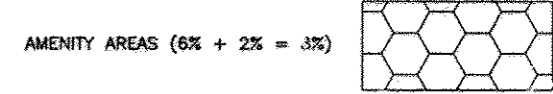


TREE PLANTING DETAIL  
NOT TO SCALE



SHRUB PLANTING DETAIL  
NOT TO SCALE

AMENITY LEGEND:



NOTES:  
AREAS CONSIDERED AMENITY AREAS INCLUDED THOSE AREAS THAT EMPLOYEES COULD GATHER AND SOCIALIZE (8% TOTAL SITE AREA).

PROPOSED OFFICE BUILDING A  
(56,828 SQFT)  
FF = 161.6

PLAN VIEW  
SCALE: 1" = 30'

SCHEDULE A - PERIMETER LANDSCAPE EDGE				
CATEGORY	ADJACENT TO ROADWAY	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO ROADWAY	ADJACENT TO PERIMETER PROPERTIES
PERIMETER NO. / LANDSCAPE TYPE	(1) E (2) A (3) E (4) A	(1) E (2) A (3) E (4) A	(1) E (2) A (3) E (4) A	(1) E (2) A (3) E (4) A
LINEAR FEET OF ROADWAY (ROADSIDE/PERIMETER)	634' 235'	527'	416'	
CREDIT FOR EXISTING VEGETATION: NO OR YES (✓/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)				
CREDIT FOR WALL FENCE OR BERM: NO OR YES (✓/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)				
NUMBER OF PLANTS PROVIDED:	16	4	14	7
SHADE TREES	-	-	-	-
EVERGREEN TREES	-	-	-	-
OTHER TREES (2:1 SUBSTITUTION)	159	-	132	-
SHRUBS	-	-	-	-
NUMBER OF PLANTS PROVIDED:	16	4	14	7
SHADE TREES	-	-	-	-
EVERGREEN TREES	-	-	-	-
OTHER TREES (2:1 SUBSTITUTION)	159	-	132	-
SHRUBS (10:1 SUBSTITUTION)	-	-	-	-
(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)				

PERIMETER PLANTING LIST			
SYMBOL	QUANTITY	NAME	REMARKS
(Symbol)	17	Tilia cordata 'Greenspire' (GREENSPIRE LITTLELEAF LINDEN)	2-1/2" TO 3" CALIPER B & B FULL HEAD
(Symbol)	24	Quercus rubra (RED OAK)	2-1/2" TO 3" CALIPER B & B FULL HEAD
(Symbol)	74	Azalea 'Hershey Red' (HERSHEY RED AZALEA)	18" - 24" SP.
(Symbol)	217	Choisya speciosa 'Texas Scarlet' (FLOWERING QUINCE)	18" - 24" SP.

SCHEDULE B - PARKING LOT INTERNAL LANDSCAPING			
SYMBOL	QUANTITY	NAME	REMARKS
(Symbol)	188		NUMBER OF PARKING SPACES
(Symbol)	10		NUMBER OF TREES/15'-ISLES REQUIRED
(Symbol)	16		NUMBER OF TREES PROVIDED:
(Symbol)	-		SHADE TREES
(Symbol)	-		OTHER TREES (2:1 SUBSTITUTION)
(Symbol)	-		SHRUBS (10:1 SUBSTITUTION)

PARKING LOT INTERNAL PLANTING LIST			
SYMBOL	QUANTITY	NAME	REMARKS
(Symbol)	16	Quercus rubra (RED OAK)	2-1/2" TO 3" CALIPER B & B FULL HEAD

LANDSCAPING NOTES:

- TREES MUST BE A MINIMUM OF FOUR(4) FEET FROM THE CURB OR SIDEWALK AND MUST BE A MINIMUM OF FIVE(5) FEET FROM ANY STORM DRAIN.
- A MINIMUM DISTANCE OF TWENTY(20) FEET MUST BE MAINTAINED BETWEEN ANY TREES LOCATED ALONG THE CURB LINE AND ANY STREET LIGHTS.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING IN THE AMOUNT OF \$30,730 SHALL BE POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT UNDER SDP-05-29 FOR THE REQUIRED LANDSCAPING FOR 55 SHADE TREES (\$16,500.00), 291 SHRUBS (\$8,730.00) AND 27% OF WALL/FENCE (\$8,500.00) FOR THE COUNTY FEE SCHEDULE.
- STREET TREE WERE PROVIDED IN THE F-88-151 PLANS
- AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELIQUATIONS OF THE REQUIRED PLANTINGS MAY BE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.

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 LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

DEVELOPER: *Mark Levy* DATE: 4/10/05  
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Clayton Dammann* DATE: 4/10/05  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
*Curtis Hamstra* DATE: 4/10/05  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
*David L. Langley* DATE: 4/10/05  
 DIRECTOR

NO.	DATE	REVISION
1	2-27-11	REMOVE PARKING AS SHOWN ON VOIDED SDP-07-16
2	2-6-12	SHOW 7'x19' CONCRETE PAD & RELOCATE EFFECTED LANDSCAPING
3	9-3-07	REVISED PARKING LOT PER SDP-07-16
4	12-15-05	SHIFT PROPOSED BUILDING & PARKING TO WEST, ADJUST LANDSCAPING

**BENCHMARK ENGINEERING, INC.**  
 ENGINEERS • LAND SURVEYORS • PLANNERS  
 8480 BALTIMORE NATIONAL PIKE • SUITE 418  
 ELLICOTT CITY, MARYLAND 21043  
 PHONE: 410-465-8105 • FAX: 410-465-8644

*Donald Mason*  
 PROFESSIONAL ENGINEER  
 4/8/05

OWNER/DEVELOPER: MARK LEVY  
 C/O SPEEDWAY ROCK, LLC  
 C/O ROCK REALTY INC.  
 25 MAIN STREET  
 REISTERSTOWN, MD 21136

PROJECT: DORSEY BUSINESS CENTER  
 PARCEL 'A'

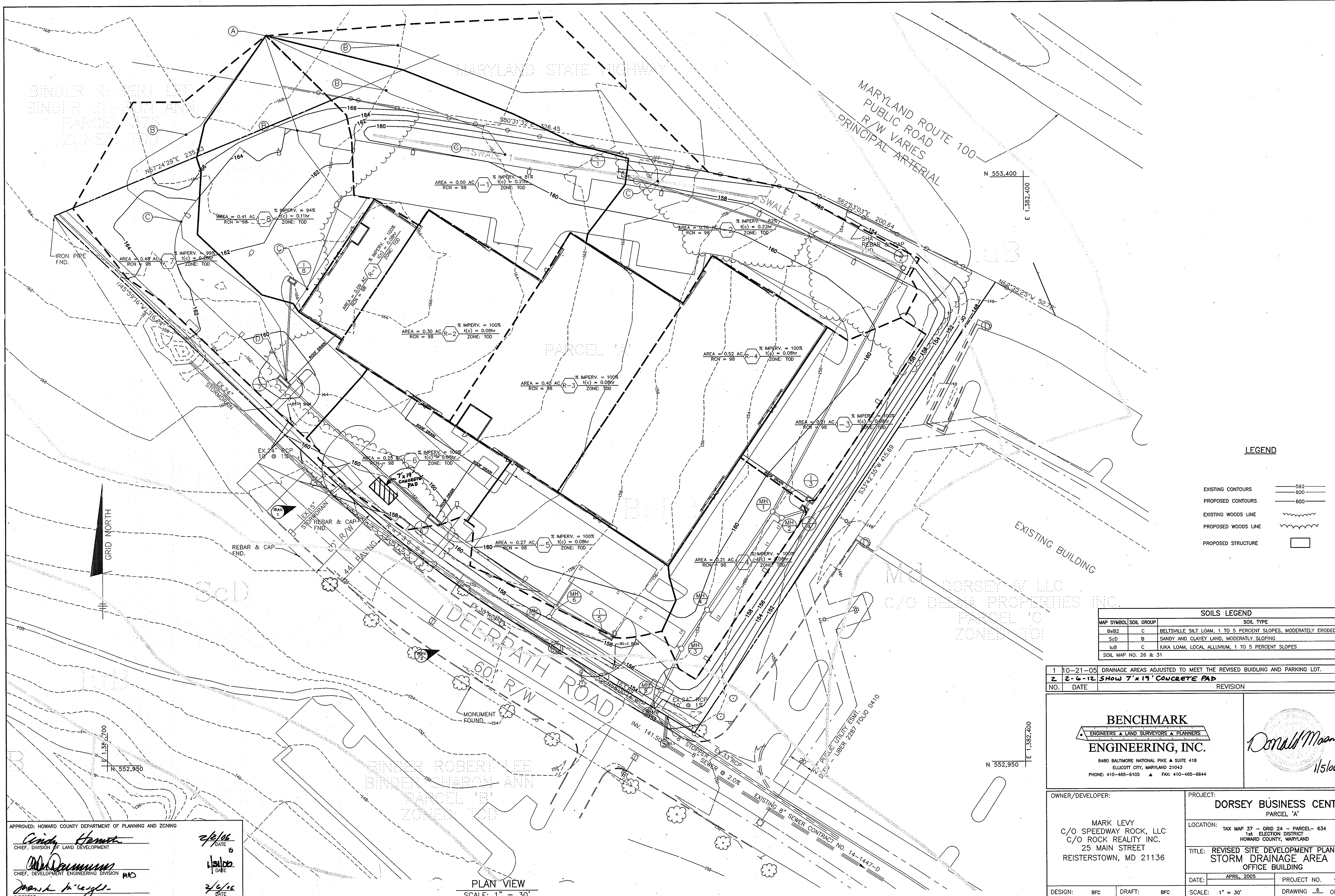
LOCATION: TAX MAP 37 - GRID 24 - PARCEL 634  
 1st ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

TITLE: LANDSCAPING PLAN  
 NOTES AND DETAILS  
 GENERAL OFFICE BUILDING

DATE: APRIL, 2005 PROJECT NO. 1709  
 SCALE: 1" = 30' DRAWING 5 OF 10

DESIGN: BFC DRAFT: BFC





**LEGEND**

- EXISTING CONTOURS ——— 502
- PROPOSED CONTOURS ——— 600
- EXISTING WOODS LINE ———
- PROPOSED WOODS LINE ———
- PROPOSED STRUCTURE □

**SOILS LEGEND**

MAP SYMBOL	SOIL GROUP	SOIL TYPE
BeB2	C	BELTSVILLE SILT LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED
ScD	B	SANDY AND CLAYEY LAND, MODERATELY SLOPING
IuB	C	IUKA LOAM, LOCAL ALLUVIUM, 1 TO 5 PERCENT SLOPES

SOIL MAP NO. 26 & 31

NO.	DATE	REVISION
1	10-21-05	DRAINAGE AREAS ADJUSTED TO MEET THE REVISED BUILDING AND PARKING LOT.
2	2-6-12	SHOW 7' x 19' CONCRETE PAD

**BENCHMARK**  
ENGINEERS • LAND SURVEYORS • PLANNERS

**ENGINEERING, INC.**

8480 BALTIMORE NATIONAL PIKE & SUITE 418  
ELLICOTT CITY, MARYLAND 21043  
PHONE: 410-465-8105 • FAX: 410-465-8644

OWNER/DEVELOPER:		PROJECT:	
MARK LEVY C/O SPEEDWAY ROCK, LLC C/O ROCK REALTY INC. 25 MAIN STREET REISTERSTOWN, MD 21136		DORSEY BUSINESS CENTER PARCEL 'A'	
DESIGN: BFC		PROJECT NO. 1709	
DRAFT: BFC		DRAWING 6 OF 10	
DATE: APRIL, 2005		SCALE: 1" = 30'	

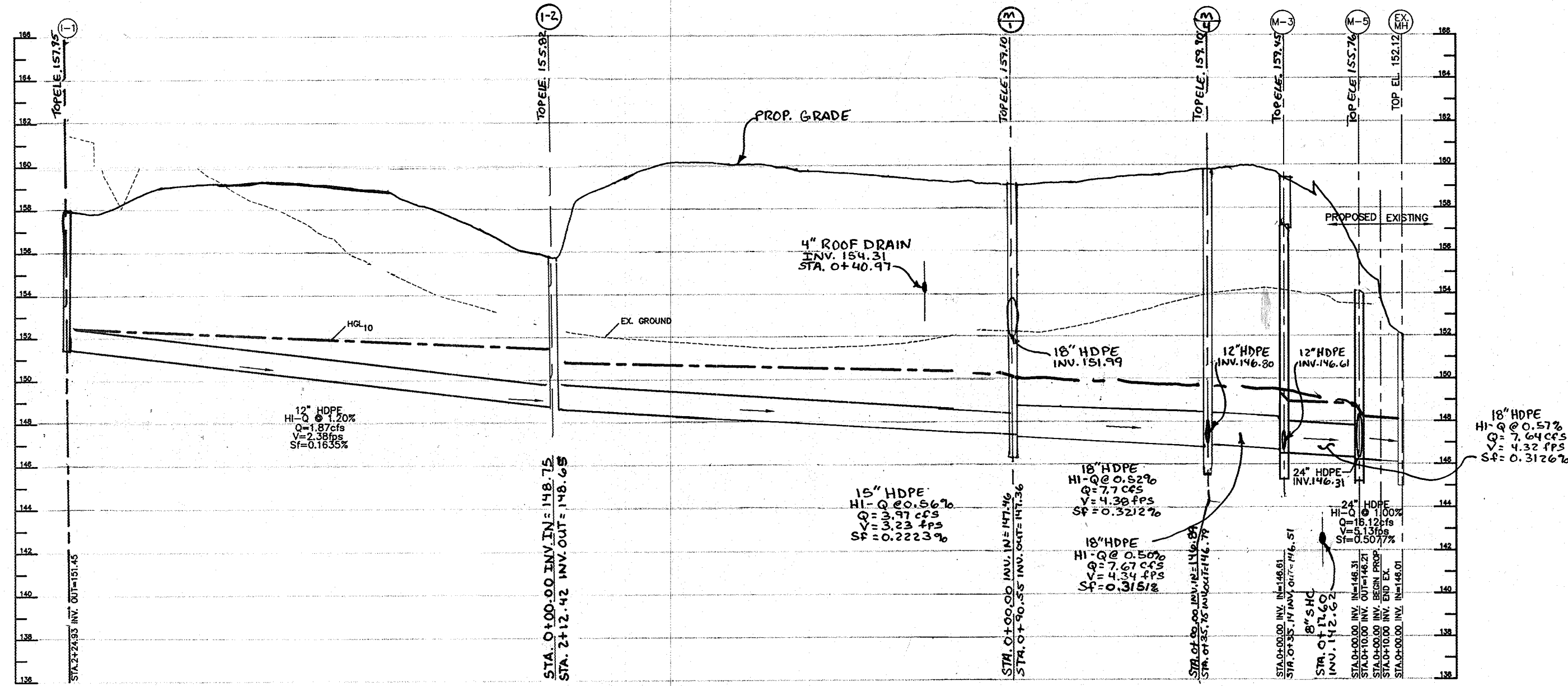
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Andy Hamstra*  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE: 2/6/12

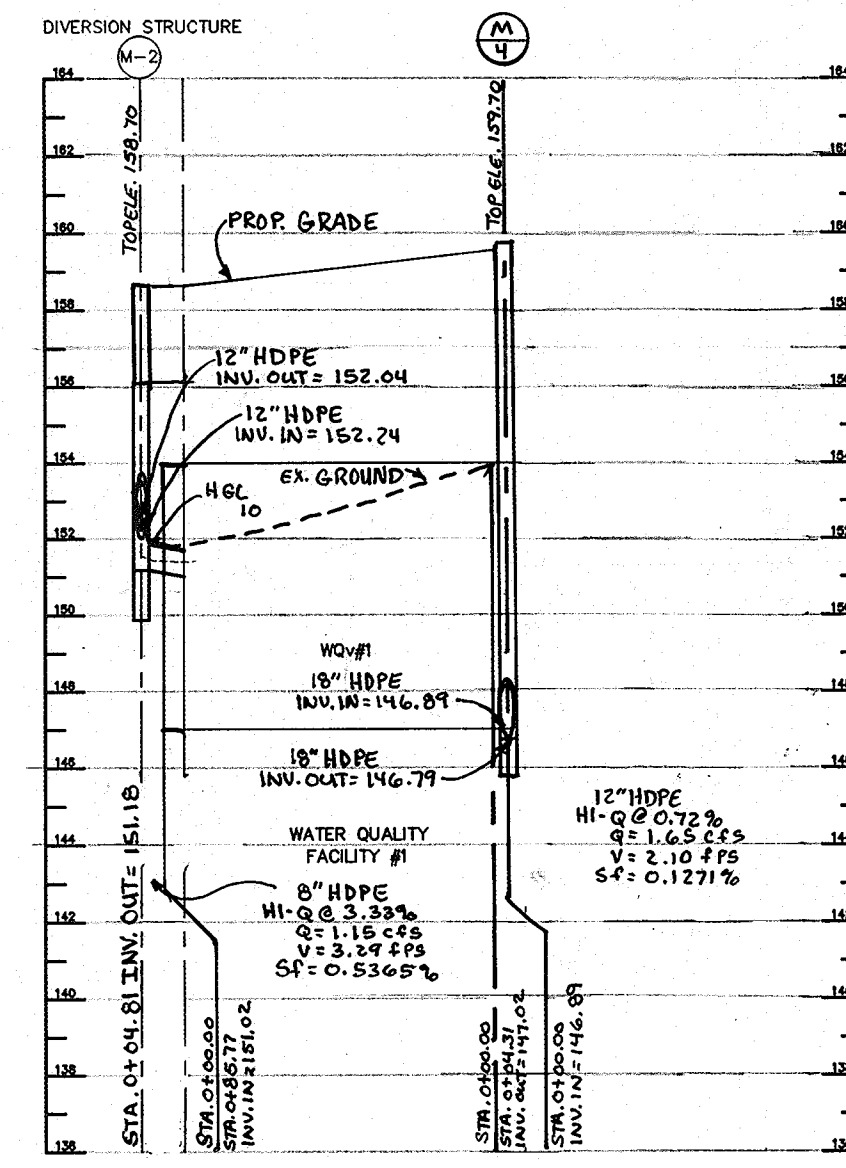
*Mark LeVey*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 2/6/12

PLAN VIEW  
SCALE: 1" = 30'

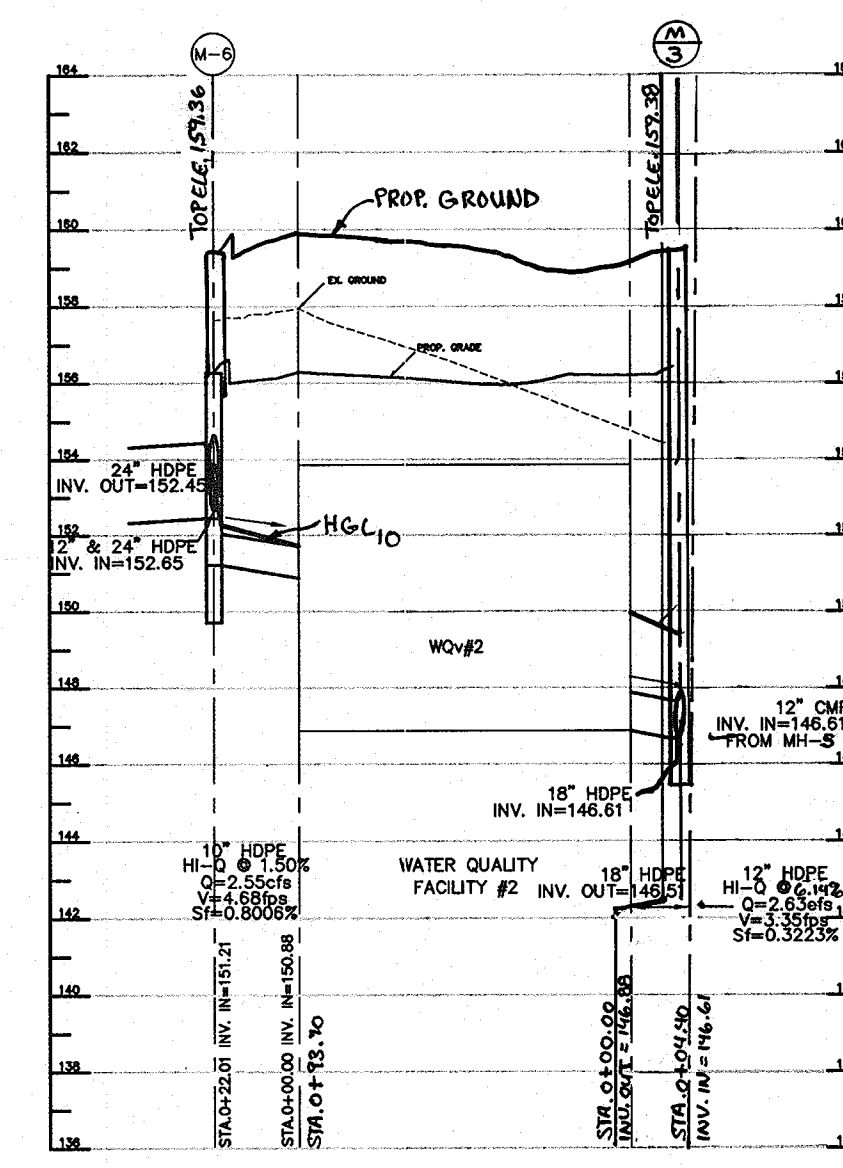




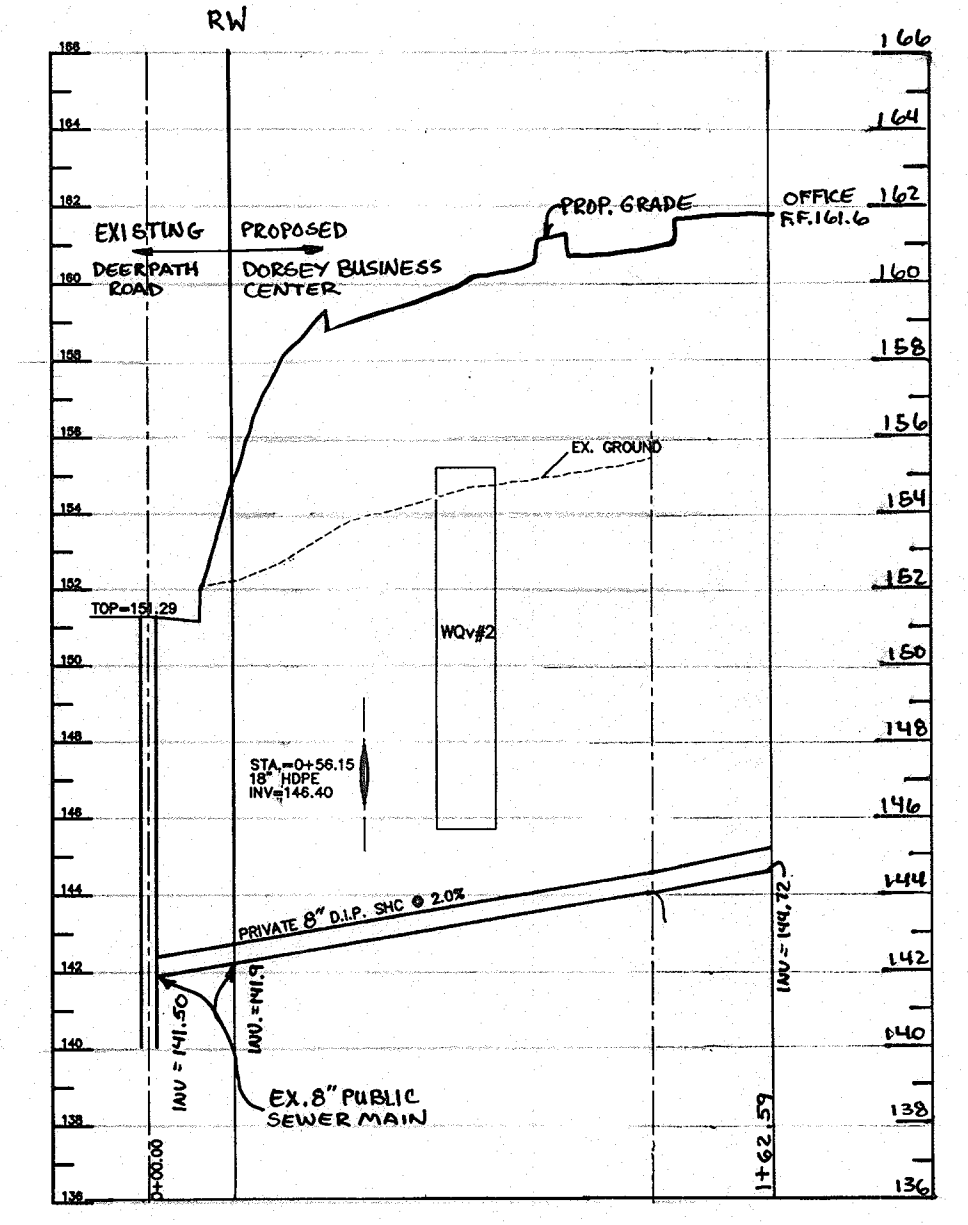
△ STORM DRAIN PROFILE I-1 TO EXISTING MANHOLE  
HORIZONTAL SCALE: 1" = 50'  
VERTICAL SCALE: 1" = 5'



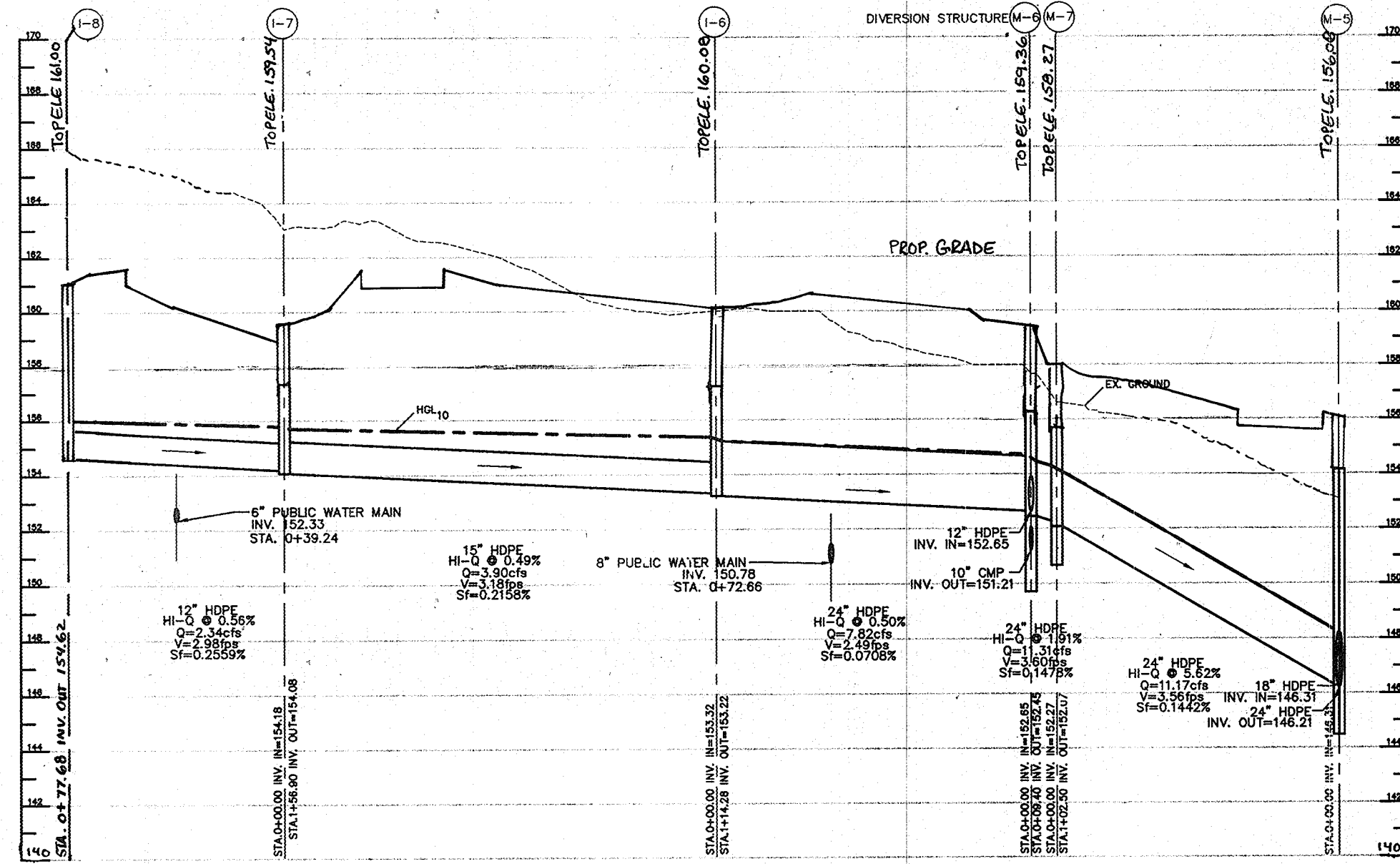
△ STORM DRAIN PROFILE MH-2 THROUGH WQV#1 TO MH-4  
HORIZONTAL SCALE: 1" = 50'  
VERTICAL SCALE: 1" = 5'



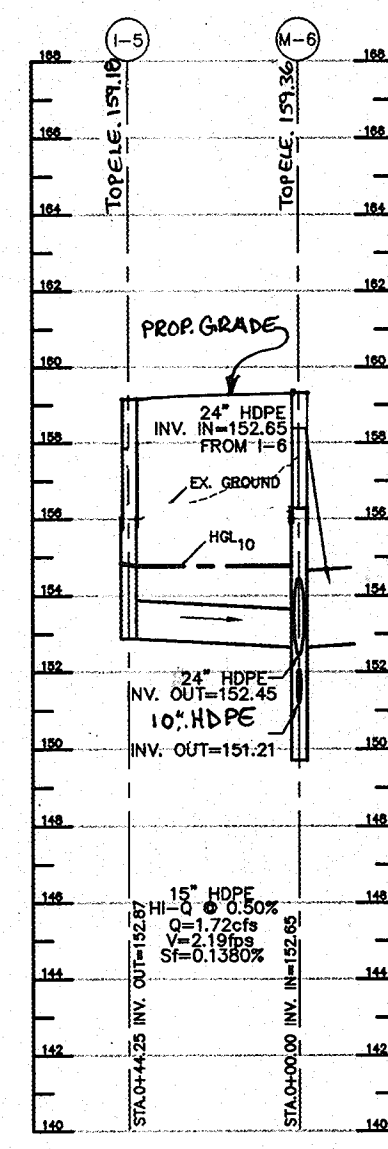
△ STORM DRAIN PROFILE MH-6 THROUGH WQV#2 TO MH-3  
HORIZONTAL SCALE: 1" = 50'  
VERTICAL SCALE: 1" = 5'



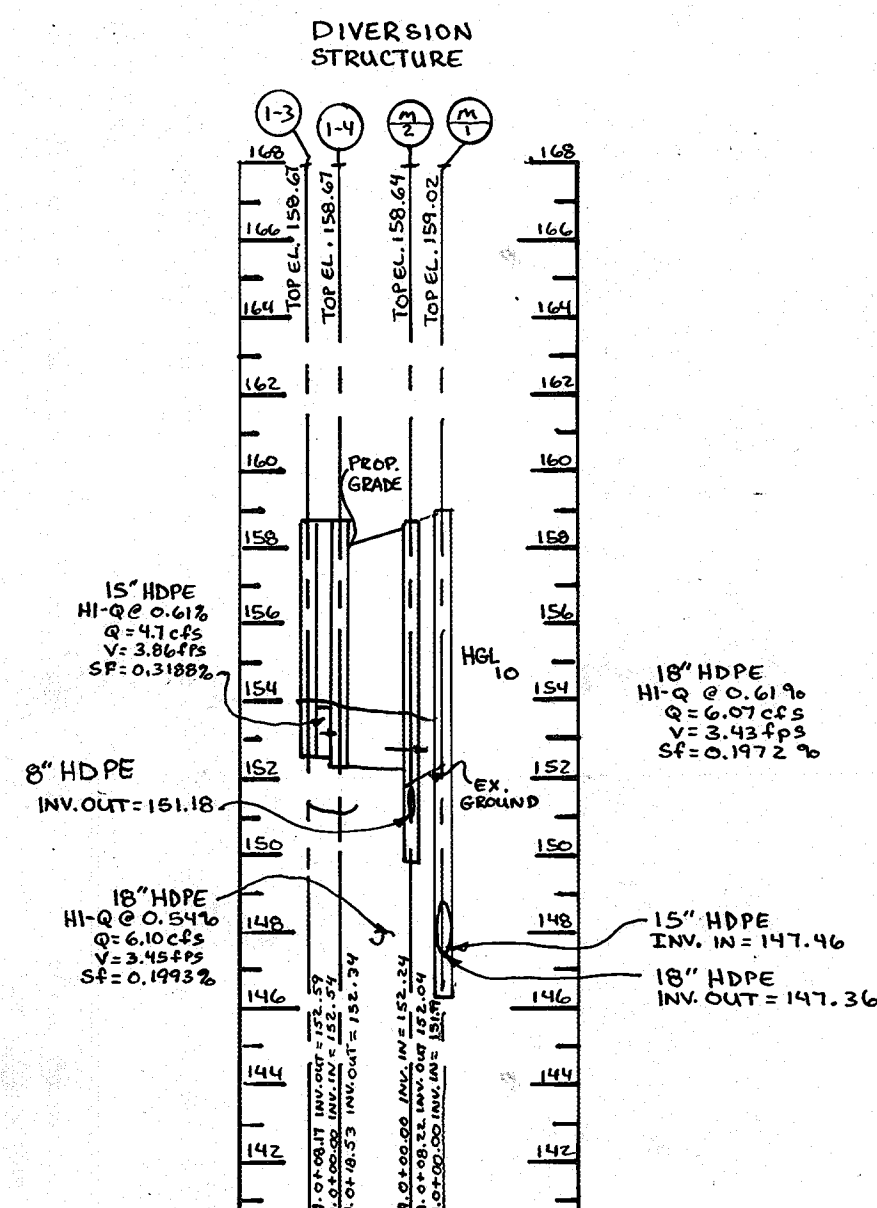
△ PRIVATE SHC  
HORIZONTAL SCALE: 1" = 50'  
VERTICAL SCALE: 1" = 5'



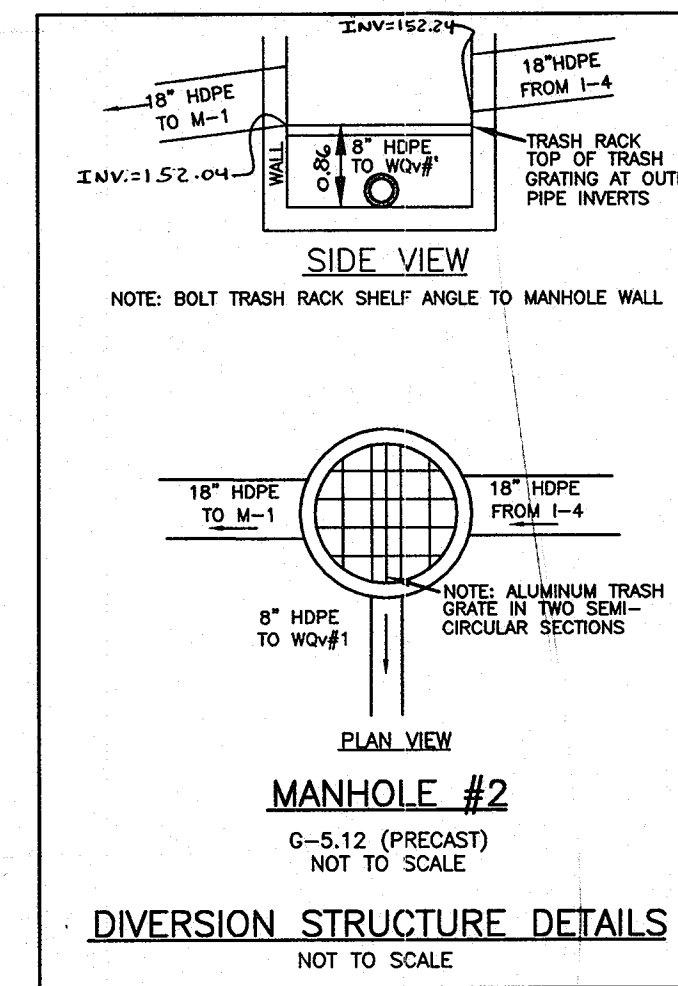
△ STORM DRAIN PROFILE I-8 TO EXISTING MH-5  
HORIZONTAL SCALE: 1" = 50'  
VERTICAL SCALE: 1" = 5'



△ STORM DRAIN PROFILE I-5 TO MH-6  
HORIZONTAL SCALE: 1" = 50'  
VERTICAL SCALE: 1" = 5'

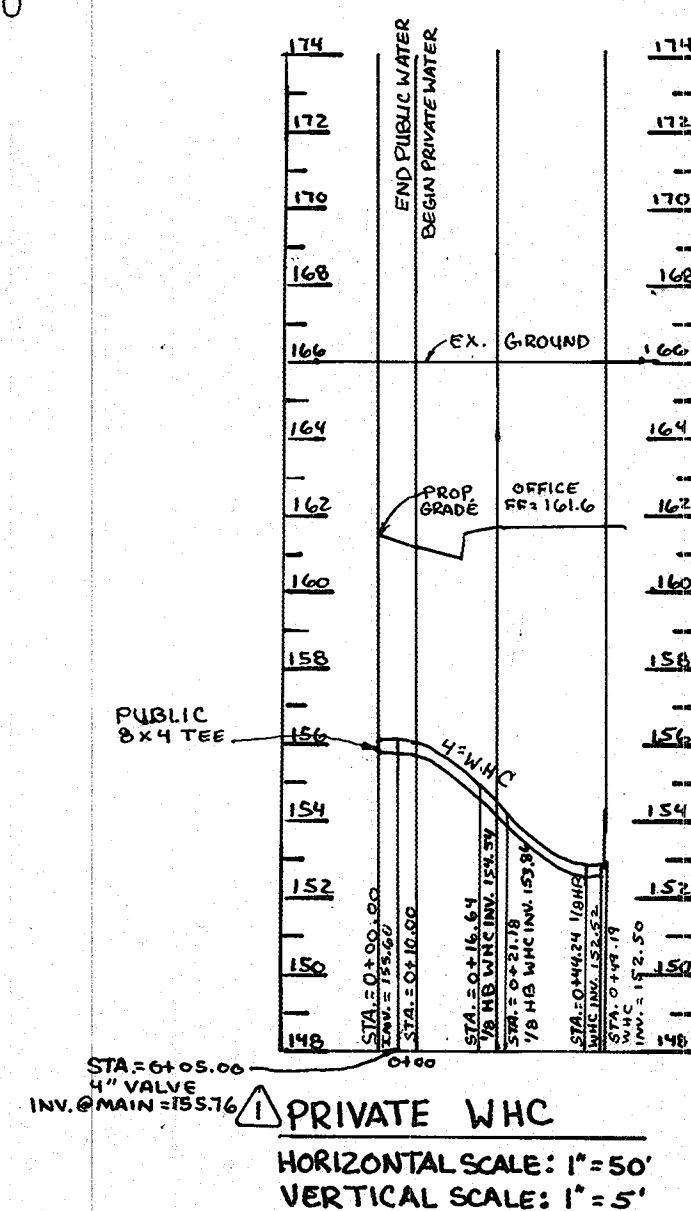
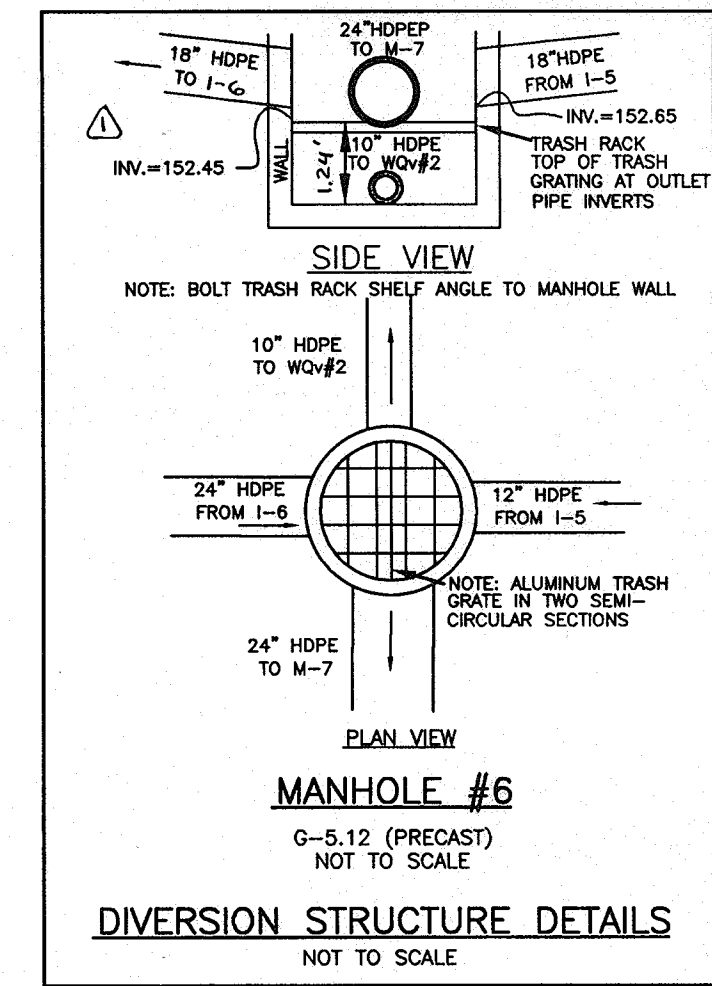


△ STORM DRAIN PROFILE I-3 TO MH-1  
HORIZONTAL SCALE: 1" = 50'  
VERTICAL SCALE: 1" = 5'



△ PIPE SCHEDULES

SIZE	LENGTH	TYPE & CLASS
24"	23.8'	HDPE HI-Q
18"	19.1'	HDPE HI-Q
15"	42.4'	HDPE HI-Q
12"	30.6'	HDPE HI-Q
10"	2.3'	HDPE HI-Q
8"	5'	HDPE HI-Q



△ PRIVATE WHC  
HORIZONTAL SCALE: 1" = 50'  
VERTICAL SCALE: 1" = 5'

△ STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	THROAT INV.	INVERT IN	INVERT OUT	TOP ELEV.	HO. CO. STD.	REMARKS
I-1	YARD INLET	N 553,402.96 E 1,382,095.47			151.45	151.95	Ho.Co.STD. SD-4.14	YARD INLET
I-2	YARD INLET	N 553,330.26 E 1,382,308.32		148.75	148.65	155.82	Ho.Co.STD. SD-4.14, SD-4.41	YARD INLET
I-3	TYPE "A-5"	N 553,151.79 E 1,382,736.67			152.59	158.67	Ho.Co.STD. SD-4.01	INTERIOR WIDTH = 2.5'
I-4	TYPE "A-5"	N 553,145.0007 E 1,382,232.14		152.51	152.34	158.67	Ho.Co.STD. SD-4.01	INTERIOR WIDTH = 2.5'
I-5	TYPE "A-10"	N 553,049.16 E 1,382,080.93			152.87	159.18	Ho.Co.STD. SD-4.02	INTERIOR WIDTH = 2.5'
I-6	TYPE "A-10"	N 553,138.05 E 1,381,999.95		153.32	153.22	160.08	Ho.Co.STD. SD-4.02	INTERIOR WIDTH = 2.5'
I-7	TYPE "A-10"	N 553,245.45 E 1,381,835.57		154.18	154.08	159.54	Ho.Co.STD. SD-4.02	INTERIOR WIDTH = 2.5'
I-8	TYPE "A-5"	N 553,322.83 E 1,381,842.21			154.58	161.00	Ho.Co.STD. SD-4.02	INTERIOR WIDTH = 2.5'
M-1		N 553,143.01 E 1,382,208.02	147.46	151.99	147.36	159.10	Ho.Co.STD. G-5.12	
M-2		N 553,138.39 E 1,382,214.82	152.24	151.18	152.04	158.70	Ho.Co.STD. G-5.12	DIVERSION STRUCTURE, SEE DETAILS OPEN 2 SIDES
M-3		N 553,037.95 E 1,382,131.93	146.61, 146.61	146.51	146.51	159.45	Ho.Co.STD. G-5.12	
M-4		N 553,067.69 E 1,382,157.77	146.89	146.89	146.79	159.90	Ho.Co.STD. G-5.12	
M-5		N 553,006.29 E 1,382,122.67	146.31	146.31	146.21	155.76	Ho.Co.STD. G-5.12	
M-6		N 553,010.74 E 1,382,042.31	152.65	152.65	151.21	152.45	Ho.Co.STD. G-5.12	DIVERSION STRUCTURE, SEE DETAILS OPEN 2 SIDES
M-7		N 553,062.85 E 1,382,037.19		152.27	152.07	158.27	Ho.Co.STD. G-5.12	

- STRUCTURE TOP ELEVATION AND LOCATION FOR MANHOLES IS AT THE TOP AND CENTER OF RIM.
- STRUCTURE TOP ELEVATION AND LOCATION FOR INLETS IS AT THE TOP, CENTER FACE OF THE INLET FOR CURB INLETS AND AT THE CENTER TOP FOR YARD INLETS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Charles Hamilton*  
CHIEF, DIVISION OF LAND DEVELOPMENT  
4/24/05 DATE

*David R. Williams*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
4/22/05 DATE

*David L. Leight*  
DIRECTOR  
4/22/05 DATE

△ 12-15-05 REVISED PROFILES BASED ON REVISED BLDG ELEV. & RELOCATION OF STORM DRAIN STRUCTURES

NO.	DATE	REVISION

**BENCHMARK ENGINEERING, INC.**  
ENGINEERS • LAND SURVEYORS • PLANNERS  
8480 BALTIMORE NATIONAL PIKE SUITE 418  
ELLICOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 FAX: 410-465-6644

*Donald Maan*  
4/18/05

OWNER/DEVELOPER: MARK LEVY  
C/O SPEEDWAY ROCK, LLC  
C/O ROCK REALTY INC.  
25 MAIN STREET  
REISTERSTOWN, MD 21136

PROJECT: DORSEY BUSINESS CENTER  
PARCEL 'A'

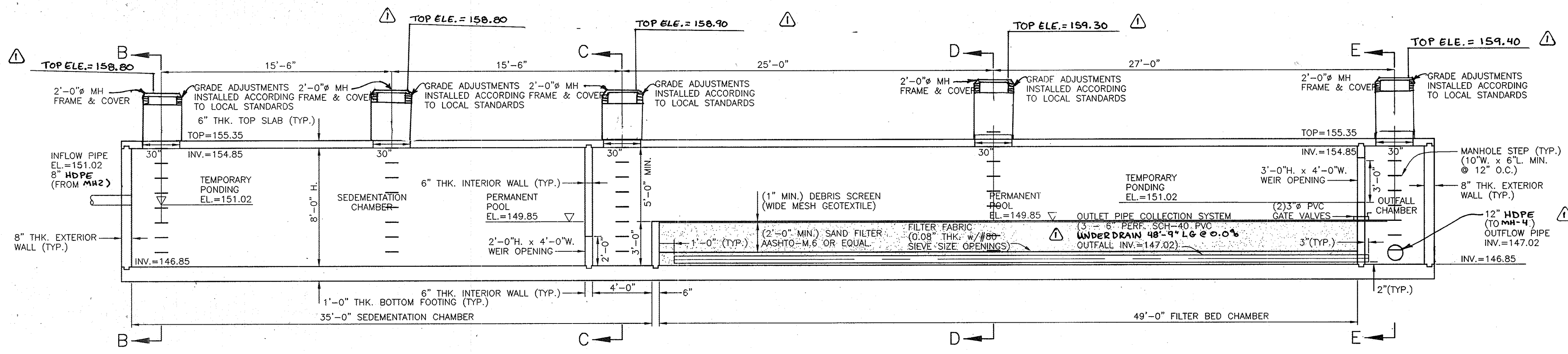
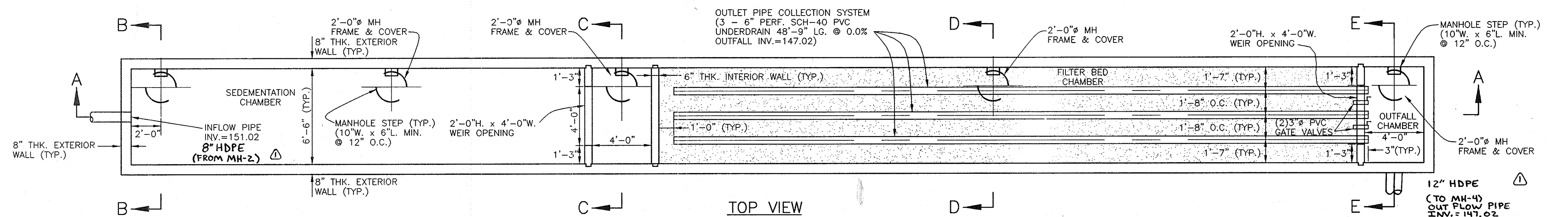
LOCATION: TAX MAP 37 - GRID 24 - PARCEL- 634  
1st ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

TITLE: STORM DRAIN PROFILES  
NOTES AND DETAILS  
GENERAL OFFICE BUILDING

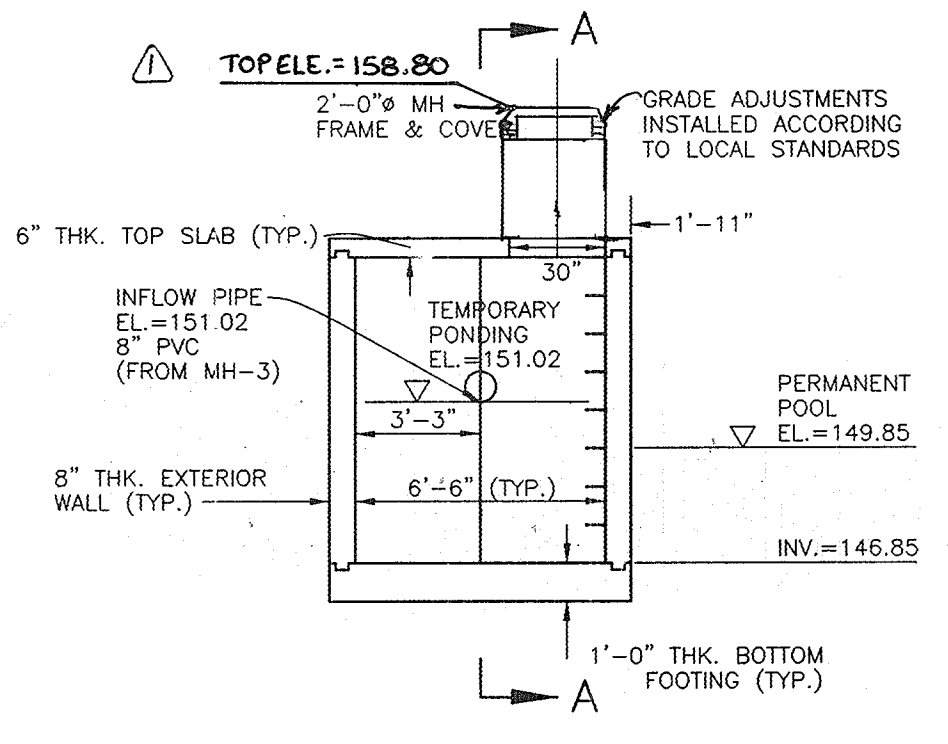
DATE: APRIL, 2005 PROJECT NO. 1709

DESIGN: BFC DRAFT: BFC SCALE: AS SHOWN DRAWING 7 OF 10

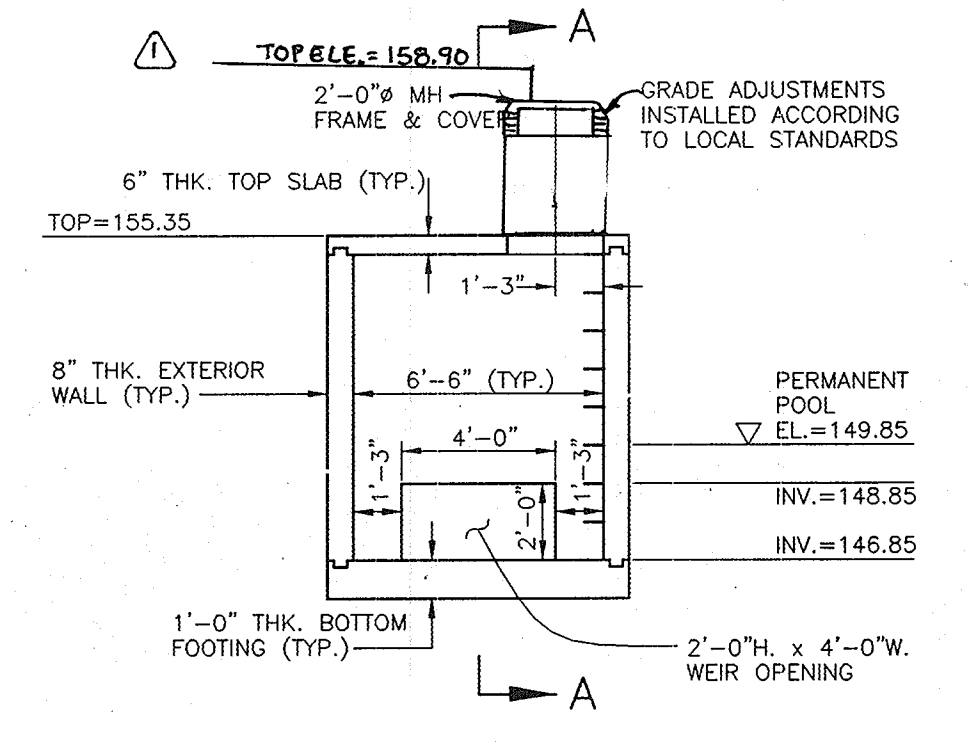




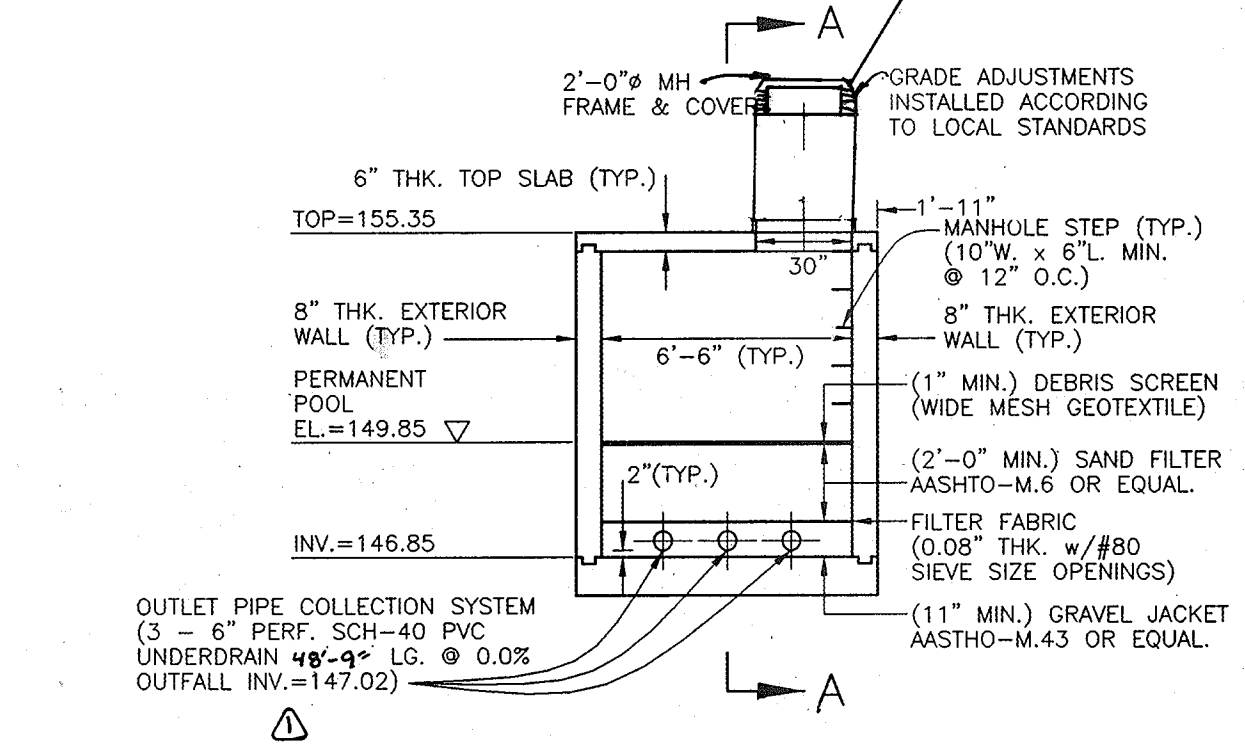
SECTION A-A  
FRONT VIEW



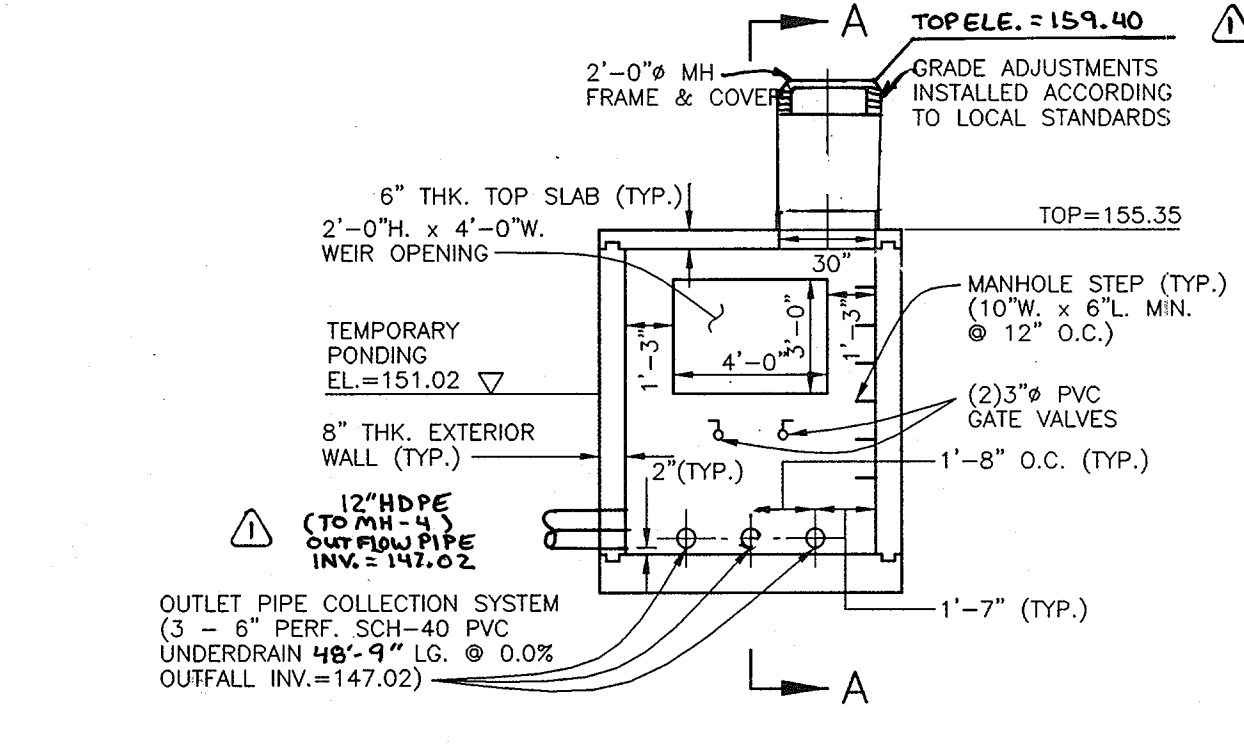
SECTION B-B  
SIDE VIEW-INFLOW



SECTION C-C  
SIDE VIEW-WEIR



SECTION D-D  
SIDE VIEW-CHAMBER



SECTION E-E  
SIDE VIEW-OVERFLOW

UNDERGROUND WATER QUALITY FACILITY #1

SCALE: 1"=5'

NOTE: STRUCTURE SHALL BE MADE ENTIRELY OF MSHA MIX NO.3 CONC. ACCORDING TO TABLE B.3.1 THIS SHEET

NOTE: THE INCOMING PIPE TO THE FACILITIES SHALL BE CAPPED OFF UNTIL THE CONTRIBUTING AREAS HAVE BEEN STABILIZED

MATERIAL	SPECIFICATION	SIZE	NOTES:
NON-REBAR STEEL	ASTM A-36	N/A	STRUCTURAL STEEL TO BE HOT-DIPPED GALVANIZED ASTM A-153
GRAVEL	PER AASHTO M-43	NO. 6	
GEOTEXTILE (GLASS 'C')	APPARENT OPENING SIZE: (ASTM D-4751) 0.075" (3/4")	0.075" (3/4")	MUST MAINTAIN 125 GPM / SQ. FT. FLOW RATE. NOTE: A PEA GRAVEL LAYER MAY BE SUBSTITUTED FOR GEOTEXTILES MEANT TO 'SEPERATE' SAND FILTER LAYERS
UNDERDRAIN GRAVEL	AASHTO M-43	0.375" TO 0.750"	
UNDERDRAIN PIPING	F758 TYPE PS28 OR AASHTO M-219	4" TO 6" RIGID SCH-40 PVC OR SDR35	3/8" PERF. @ 6" O.C. 4 HOLES PER ROW. MINIMUM OF 3" OF GRAVEL OVER PIPES. NOT NECESSARY UNDERNEATH PIPES
POURED-IN-PLACE CONC. (IF REQUIRED)	MSHA MIX NO.3, FC=3500psi @ 28 DAYS, NORMAL WEIGHT, AIR ENTRAINED, REINFORCING TO MEET ASTM 615-60	N/A	ON-SITE TESTING OF POURED-IN-PLACE CONC. REQUIRED: 28 DAY STRENGTH TEST AND SLUMP TEST. ALL CONC. DESIGN (CAST IN-PLACE OF PRE-CAST) NOT USING PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS. DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND.
SAND (3.0" DEEP)	AASHTO M-6 OR ASTM C-33	0.02" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DATABASE AND GRANITONITE ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR POLYMERIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "ROCK DUST" CAN BE USED FOR SAND

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED UNDERGROUND STORMWATER FILTRATION SYSTEMS SAND FILTER (WQV#1, WQV#2)

- THE SEDIMENT CHAMBER OUTLET DEVICES SHALL BE CLEANED AND/OR REPAIRED WHEN DRAWDOWN TIMES WITHIN THE CHAMBER EXCEEDS 36 HOURS.
- DEBRIS & LITTER SHALL BE REMOVED AS NECESSARY TO INSURE PROPER OPERATION OF THE SYSTEM.
- SEDIMENT SHALL BE CLEANED-OUT OF THE SEDIMENTATION CHAMBER WHEN IT ACCUMULATES TO A DEPTH OF 6 INCHES.
- WHEN WATER POUNDS 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 & LIQUIDS MUST BE FOLLOWED BY THE OWNER.
- A LOGBOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
- THE MAINTENANCE LOGBOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
- 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.

FACILITY SUMMARY

Facility	Type	Pretreatment Area		WqV	
		Required	Provided	Required	Provided
WQV#1	Underground Sand Filter	666cf	683cf	2,678cf	2,683cf

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Chris Hamilton*  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE: 4/2/05

*Donald M. Moore*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 4/20/05

*Donald L. Wiggles*  
DIRECTOR  
DATE: 4/20/05

NO.	DATE	REVISION
12-15-05		TOP OF MANHOLE ELEVATIONS REVISED / LOCATION OF PIPE OUT

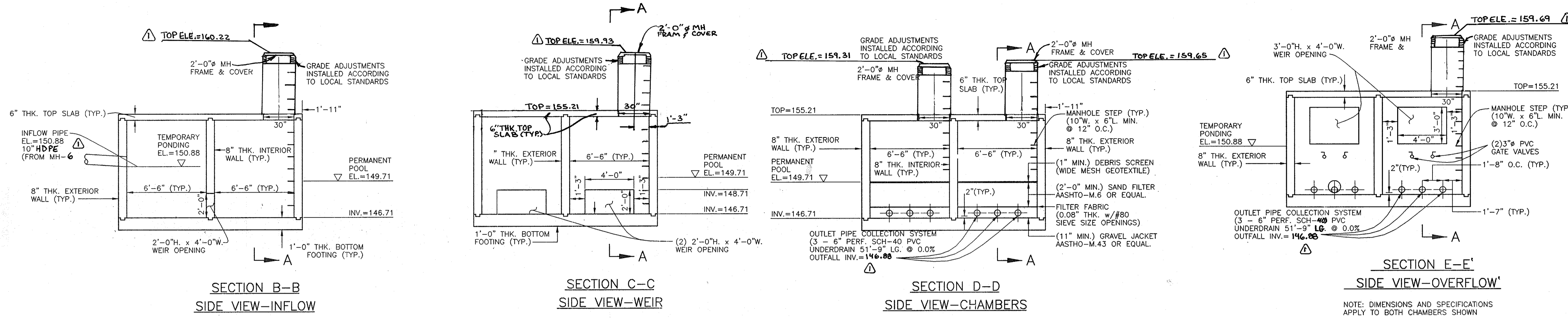
**BENCHMARK ENGINEERING, INC.**  
ENGINEERS • LAND SURVEYORS • PLANNERS

8480 BALTIMORE NATIONAL PIKE • SUITE 418  
ELLICOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 • FAX: 410-465-6644

*Donald M. Moore*  
4/20/05

OWNER/DEVELOPER: MARK LEVY C/O SPEEDWAY ROCK, LLC C/O ROCK REALTY INC. 25 MAIN STREET REISTERSTOWN, MD 21136	PROJECT: DORSEY BUSINESS CENTER PARCEL 'A'
LOCATION: TAX MAP 37 - GRID 24 - PARCEL- 634 1st ELECTION DISTRICT HOWARD COUNTY, MARYLAND	TITLE: WATER QUALITY FACILITY #1 GENERAL OFFICE BUILDING
DATE: APRIL, 2005	PROJECT NO. 1709
DESIGN: BFC	DRAFT: BFC
SCALE: 1" = 5'	DRAWING: 8 OF 10





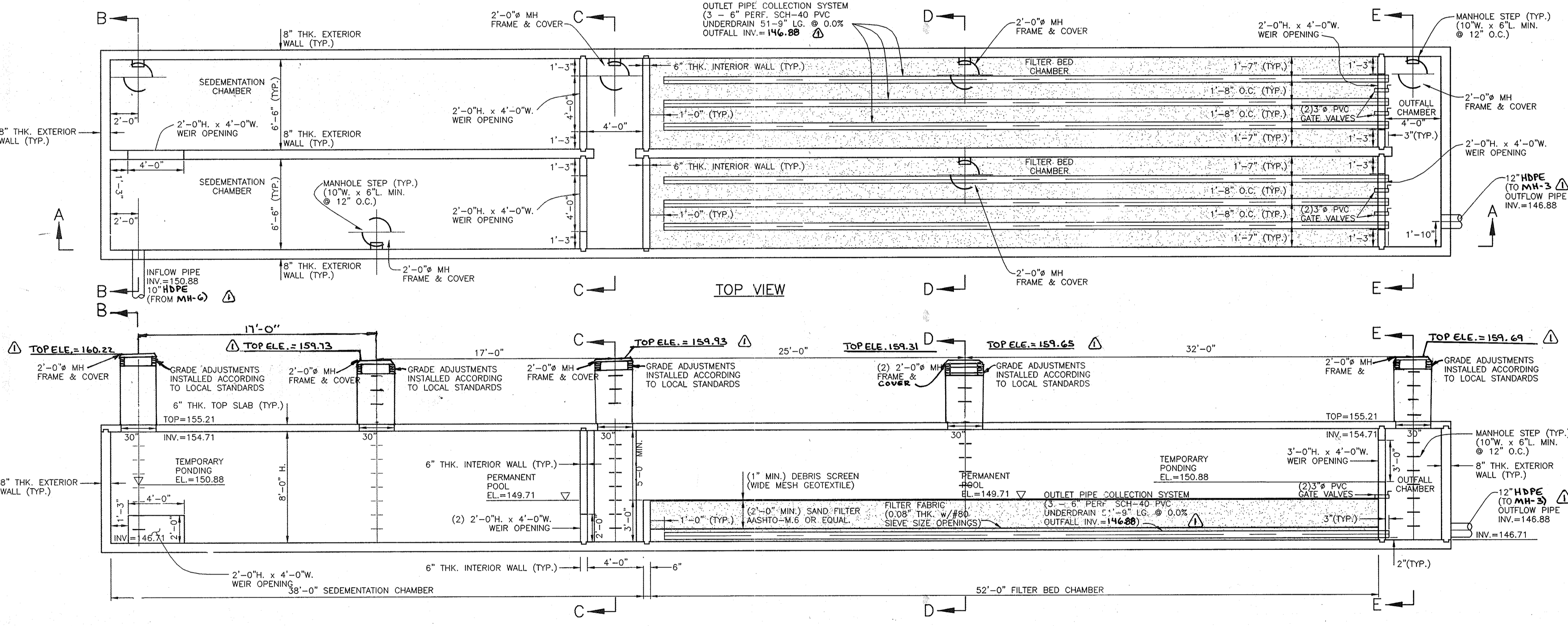
MATERIAL	SPECIFICATION	SIZE	NOTES:
NON-REBAR STEEL	ASTM A-36	N/A	STRUCTURAL STEEL TO BE HOT-DIPPED GALVANIZED ASTM A-123
GRAVEL	PEA GRAVEL: ASTM D-449 ORNAMENTAL STONE: WASHED COBBLES	PEA GRAVEL: NO. 4 STONE: 2" TO 5"	
GEOTEXTILE (CLASS "C")	APPARENT OPENING SIZE: (ASTM D-4751) GRAB TENSILE STRENGTH: (ASTM D-4853) PUNCTURE RESISTANCE: (ASTM D-4853)	0.8" THK. EQUIVALENT OPENING SIZE OF #80 SIEVE	MUST MAINTAIN 125 GPM / 50. FT. FLOW RATE. NOTE: A PEA GRAVEL LAYER MAY BE SUBSTITUTED FOR GEOTEXTILES MEANT TO "SEPERATE" SAND FILTER LAYERS
UNDERDRAIN GRAVEL	AASHTO M-43	0.375" TO 0.750"	
UNDERDRAIN PIPING	F758, TYPE P238 OR AASHTO M-278	4" TO 6" RIGID SCH 40 PVC OR SDR35	3/8" PERF. @ 6" O.C., 4 HOLES PER ROW; MINIMUM OF 3" OF GRAVEL OVER PIPES; NOT NECESSARY UNDERNEATH PIPES
POURED-IN-PLACE CONC. (IF REQUIRED)	MSHA MIX NO. 3 (F-3000) @ 28 DAYS, NORMAL WEIGHT, AIR ENTRAINED; REINFORCING TO MEET ASTM 615-60	N/A	ON-SITE TESTING OF POURED-IN-PLACE CONC. REQUIRED; 28 DAY STRENGTH TEST AND SLUMP TEST; ALL CONC. DESIGN (CAST -IN-PLACE OR PRE-CAST) NOT USING PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS REQUIRES DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND
SAND (3.0" DEEP)	AASHTO M-6 OR ASTM C-33	0.02" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRANITOPHIO ARE NOT ACCEPTABLE; NO CALCIUM CARBONATE OR DOLOMITE SAND SUBSTITUTIONS ARE ACCEPTABLE; NO "ROCK DUST" CAN BE USED FOR SAND

**OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED UNDERGROUND STORMWATER FILTRATION SYSTEMS SAND FILTER (WQV#1, WQV#2)**

1. THE SEDIMENT CHAMBER OUTLET DEVICES SHALL BE CLEANED AND/OR REPAIRED WHEN DRAWDOWN TIMES WITHIN THE CHAMBER EXCEEDS 36 HOURS.
2. DEBRIS & 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.
4. WHEN WATER POUNDS 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 & LIQUIDS 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.

**FACILITY SUMMARY**

Facility	Type	Pretreatment Area		Wqv	
		Required	Provided	Required	Provided
WQV#2	Underground Sand Filter	1,479cf	1,482cf	5,917cf	5,926cf



**UNDERGROUND WATER QUALITY FACILITY #2**  
SCALE: 1"=5'

NOTE: STRUCTURE SHALL BE MADE ENTIRELY OF MSHA MIX NO.3 CONC. ACCORDING TO TABLE B.3.1 THIS SHEET

NOTE: THE INCOMING PIPE TO THE FACILITIES SHALL BE CAPPED OFF UNTIL THE CONTRIBUTING AREAS HAVE BEEN STABILIZED

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Cynthia Hamilton* 4/22/05  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*John P. ...* 4/20/05  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*...* 4/25/05  
DIRECTOR, DATE

NO.	DATE	REVISION
1	12-15-05	REVISED MANHOLE TOP ELEVATIONS & PERFORATED UNDER DRAIN ELEVATIONS

**BENCHMARK ENGINEERING, INC.**  
ENGINEERS • LAND SURVEYORS • PLANNERS  
8480 BALTIMORE NATIONAL PIKE • SUITE 418  
ELLCOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 • FAX: 410-465-6644



OWNER/DEVELOPER: MARK LEVY C/O SPEEDWAY ROCK, LLC C/O ROCK REALTY INC. 25 MAIN STREET REISTERSTOWN, MD 21136	PROJECT: <b>DORSEY BUSINESS CENTER</b> PARCEL 'A' LOCATION: TAX MAP 37 - GRID 24 - PARCEL- 634 1st ELECTION DISTRICT HOWARD COUNTY, MARYLAND TITLE: <b>WATER QUALITY FACILITY #2</b> GENERAL OFFICE BUILDING DATE: APRIL, 2005 PROJECT NO. 1709 SCALE: 1" = 5' DRAWING 9 OF 10
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**GENERAL KEYSTONE INSTALLATION PROCEDURE**

**STEP 1: PREPARE SITE**

REMOVE ALL SURFACE VEGETATION, DEBRIS, AND ORGANIC MATERIAL. THIS MATERIAL SHOULD NOT BE USED AS STRUCTURAL BACKFILL. AS REQUIRED, EXCAVATE SITES TO ALLOW FOR PLACEMENT OF THE KEYSTONE UNITS AND SOIL REINFORCEMENT. IF A WALL IS BEING BUILT ON FILL, THIS STEP MAY NOT BE NECESSARY.

**STEP 2: INSTALL ARCH CULVERT PER SITE PLANS AND CONTECH PLATE ASSEMBLY INSTRUCTIONS**

**STEP 3: EXCAVATE BASE TRENCH/DESIGN AND CONSTRUCTION PROCEDURES**

AFTER SELECTING THE LOCATION AND LENGTH OF THE WALL, EXCAVATE THE BASE LEVELING PAD TRENCH. THE TOP OF LEVELING PAD MUST BE A MINIMUM OF 2" (51 mm) BELOW FINISHED GRADE. SOILS MAY REQUIRE THE WALL EXTEND MORE DEEPLY OR THAT SOIL PROTECTION BE USED. THE BASE TRENCH SHOULD BE A MINIMUM OF 3" (76 mm) BELOW THE KEYSTONE UNIT AND DRAINAGE FILL ZONE. THE BASE TRENCH SHOULD BE A MINIMUM OF 3" (76 mm) BELOW FOR STANDARD UNITS. THE BASE TRENCH MUST BE DUG DEEP ENOUGH TO ALLOW FOR PLACEMENT OF THE BASE LEVELING PAD AND THE BURIED KEYSTONE UNITS. LEVEL AND COMPACT SOILS IN THE BASE TRENCH PRIOR TO INSTALLATION OF THE LEVELING PAD.

NOTE: THE NUMBER OF BURIED KEYSTONE UNITS IS TYPICALLY THREE UNITS FOR THESE APPLICATIONS UNLESS OTHERWISE SPECIFIED BY THE ENGINEER. THE COMBINED DEPTH OF THE BASE LEVELING PAD AND BURIED UNITS IS THE TOTAL DEPTH OF THE BASE TRENCH.

- POOR SOIL CONDITIONS MAY REQUIRE A MUCH LARGER DEPTH OF BASE LEVELING PAD MATERIAL OR SOIL REINFORCEMENT. THIS EXTRA MATERIAL WOULD BE USED TO INCREASE THE BEARING CAPACITY OF THE SUBGRADE TO FULLY SUPPORT THE WEIGHT OF THE RETAINING WALL.
- A GEOTECHNICAL ENGINEER SHOULD EVALUATE SUCH CONCERNS.
- CONSTRUCTION OF A WALL ON A SLOPE, WHEN USING THE STANDARD BASE TRENCH COMBINES, THE AMOUNT OF PASSIVE SOIL IN FRONT OF THE WALL CONSTRUCTED ON A SLOPE IS REDUCED SIGNIFICANTLY. THIS REQUIRES AN INCREASED BASE TRENCH TO MEET MINIMUM REQUIREMENTS AS DETERMINED BY THE ENGINEER.
- STEPPING UNITS UP ALONG A SLOPING GRADE, WHEN THE GRADE RUNNING PARALLEL WITH THE WALL IS NOT LEVEL WITH THE TOP OR BOTTOM OF THE KEYSTONE UNITS, THE DEPTH OF THE BASE TRENCH AND DEPTH OF THE UNITS BELOW GRADE WILL VARY. MAINTAIN THE MINIMUM DEPTH OF BURIED KEYSTONE UNITS.

**STEP 4: CONSTRUCT BASE LEVELING PAD**

BEGIN FIRST BY SELECTING THE PROPER BASE LEVELING PAD MATERIAL. A REINFORCED CONCRETE PAD IS TYPICALLY UTILIZED WHERE SCOUR POTENTIAL EXISTS. THICKNESS OF MIN. DEPTH CRUSHED STONE BASE IS USED (I.E. CLASS #2) BURNAL ROAD BASE). THE MAXIMUM PARTICLE SIZE IS 1" (25 mm). THE MINIMUM PARTICLE SIZE IS NO MORE THAN 10% OF THE VOLUME PASSING A NO. 200 SIEVE. LARGER MATERIAL WILL MAKE LEVING MORE DIFFICULT.

- 3/8" TO 3/4" (10 - 20 mm) CLEAN CRUSHED STONE IN AREAS WITH HIGHER MOISTURE LEVELS.
- A 2000# PSI (14 MPa) NON-REINFORCED CONCRETE LEVELING PAD (6" THICK).
- 3500 PSI CONCRETE FOOTING. THIS OPTION IS USED ONLY IN CRITICAL APPLICATIONS AS RECOMMENDED BY THE ENGINEER.

NOTE: DO NOT USE PEA ROCK OR ROUNDED AGGREGATE FOR THIS OPTION IS USING ONLY IN CRITICAL APPLICATIONS AS RECOMMENDED BY THE ENGINEER.

PLACE CRUSHED STONE BASE LEVELING PAD MATERIAL AND COMPACT WITH APPROPRIATE EQUIPMENT TO ACHIEVE PROPER DENSITY. COMPACT BACK MATERIALS TO MEET STANDARD PROCTOR OR MODIFIED PROCTOR (SEE TESTING STANDARDS TO DETERMINE % OF MAXIMUM SOIL DENSITY). CRUSHED STONE SHOULD BE COMPACTED TO YIELD OF PROCTOR TESTING CAN NOT BE PERFORMED ON CRUSHED STONE MATERIALS. REQUIREMENTS FOR PROCTOR TESTING AND FREQUENCY OF TESTING ARE THE RESPONSIBILITY OF THE RECORD OR OWNER. COMPACT THE BASE LEVELING PAD TO A LEVEL CONDITION. CHECK FOR ACCURACY USING A LEVEL/TERRAIN OR HAND LEVEL. USE SAND OR FINE GRANULAR MATERIAL FOR MINOR ADJUSTMENTS. WHEN CONCRETE (NON-REINFORCED) LEVELING PAD IS BEING USED, SET BATTER BLOCKS, PINE CONCRETE AND SCAFFOLD LEVEL.

WHEN BUILDING ON A LEVEL GRADE CONDITION, THE BASE LEVELING PAD IS PLACED FOR THE FULL LENGTH OF THE WALL BEFORE KEYSTONE UNITS ARE INSTALLED. WALLS BUILT ON A SLOPING LATERAL GRADE MAY REQUIRE A STEPPED BASE. IN THESE CONDITIONS, THE BASE LEVELING PAD AND THE FIRST COURSE OF KEYSTONE UNITS ARE INSTALLED FOR EACH LENGTH OF A STEP IN GRADE. BEGINNING AT THE LOWEST ELEVATION, PLACE AND COMPACT THE BASE LEVELING PAD MATERIAL. THEN PLACE THE FIRST COURSE OF KEYSTONE UNITS. AFTER LEVELING AND ALIGNMENT OF THESE UNITS IS COMPLETE, PLACE AND COMPACT THE BASE LEVELING PAD FOR THE NEXT STEP IN GRADE. WHILE DOING SO, PLACE THE SAME MATERIAL AROUND THE UNITS CLOSEST TO THE STEP IN GRADE TO STABILIZE THEIR POSITION. THE TOP OF THE LAST KEYSTONE UNIT BECOMES THE GRADE LEVEL FOR THE TOP OF THE BASE LEVELING PAD. THIS UNIT RETAINS THE BASE LEVELING PAD MATERIAL FOR THE NEXT STEP IN GRADE.

**STEP 5: SET AND ALIGN THE BASE COURSE**

BEGIN AT THE LOWEST WALL ELEVATION. PLACE ALL UNITS PARALLEL TO THE ALIGNMENT LINE. THE MACHINED EDGES OF ADJOINING UNITS SHOULD CONTACT EACH OTHER. THIS PROCEDURE APPLIES TO STRAIGHT WALLS. SEE CONSTRUCTION MANUAL ON "CURVES" FOR RELATED INFORMATION. BE SURE ALL UNITS ARE SET TOP SIDE UP. THE TOP SIDE HAS 4 PIN HOLES CENTERED BETWEEN TWO KIDNEY RECEIVING HOLES. ALL UNITS SHOULD REST FIRMLY ON THE BASE LEVELING PAD. IF ANY ROCKING MOTION OCCURS, ADJUST BASE LEVELING PAD MATERIAL OR UNITS TO ACHIEVE SOLID CONTACT WITH THIS SURFACE.

CHECK AND ADJUST THE LEVEL AND ALIGNMENT OF ALL UNITS. THE POSITION OF THE BASE COURSE DETERMINES THE ALIGNMENT OF ALL SUCCEEDING COURSES. ADJUSTMENTS TO ALIGNMENT MUST BE MADE AT THIS TIME. DO NOT ALIGN THE UNITS USING THE SPLIT FACE SURFACE. INSTEAD, VERIFY THE PROPER POSITION OF ALL KEYSTONE UNITS BY EXAMINING A STRAIGHT LINE ACROSS THE BACK OF THE UNITS OR OVER THE TOP OF THE UNIT HEADS.

LEVEL KEYSTONE UNITS SIDE TO SIDE USING A 4" (1.2 m) OR LONGER LEVEL. UNITS CAN BE LEVELED FROM FRONT TO BACK USING A MINIMUM 24" (610 mm) LEVEL. IF A LEVEL TRANSIT IS USED, SPOT CHECK EVERY 4th OR 5th UNIT. THE TOP SURFACE OF TWO ADJOINING UNITS SHOULD ALIGN 1/8" (3 mm). MINOR HEIGHT ADJUSTMENTS CAN BE MADE BY TAPPING THE UNIT WITH A RUBBER Mallet OR BY PLACING SMALL AMOUNTS OF COURSE SAND UNDER THE UNITS. APPLYING EXCESSIVE VERTICAL FORCE IN AN ATTEMPT TO ADJUST THE HEIGHT ALIGNMENT COULD PRODUCE STRESS FRACTURES. PLACEMENT OF MORE THAN 3/4" (20 mm) OF LOOSE MATERIAL COULD LEAD TO UNACCEPTABLE MOVEMENT.

ALL BASE COURSE UNITS CAN BE PLACED FOR AN ENTIRE WALL LENGTH OR FOR A SMALL SECTION OF THE FULL LENGTH. TO REDUCE THE MOVEMENT OF BASE UNITS FROM CONSTRUCTION EQUIPMENT, PLACE UNIT DRAINAGE FILL MATERIAL AFTER PLACEMENT AND LEVELING OF EACH TEN UNITS. WHEN PLACING THE BASE COURSE FOR A WALL WITH A SLOPING GRADE, SET ALL UNITS AT THE LOWEST GRADE ELEVATION FIRST. SECURE THE POSITION OF THESE UNITS (AS DESCRIBED IN THE "PREPARATION, EXCAVATION, BLOCK EMBLEMMENT NOTES"). PLACEMENT OF THE BASE COURSE FOR THE NEXT STEP BEGINS BY PLACING A MINIMUM OF 1-1/2 OVERLAPPING UNITS. THIS WILL ENSURE PROPER INTERLOCK POSITION FOR ADDITIONAL UNITS.

**STEP 6: INSERT FIBERGLASS CONNECTING PINS**

BEFORE INSTALLING THE PINS SELECT A BATTER OPTION. "BATTER" IS THE SLOPE OF THE FACE OF THE WALL UPWARD AND BACKWARD SO THAT THE WALL LEANS INTO THE EMBLEMMENT BATTER. BATTER IS MECHANICALLY CONTROLLED BY THE PIN POSITION. UNITS WITH FOUR PIN HOLES APPEARING IN THE TOP OF THE KEYSTONE UNIT HAVE THREE BATTER OPTIONS: 8.8° (1-1/4" (30 mm)), 4.4° (5/8" (16 mm)), OR NEAR VERTICAL. A 8.8° OR 4.4° BATTER MAY BE USED FOR SOME INSTALLATIONS. STRAIGHT WALLS ARE WELL SUITED FOR THIS BATTER OPTION. A NEAR VERTICAL BATTER WORKS WELL FOR TALL GEORGRID REINFORCED WALLS WITH TIGHT RADIUS CURVES, CORNERS AND WORKING AROUND CULVERTS AND HEADWALLS.

PLACE TWO KEYSTONE PINS INTO TWO OF THE PREFORMED HOLES IN THE TOP OF EACH KEYSTONE UNIT. IN SOME CASES A LIGHT SLUG FILL MAY COVER PART OR ALL OF THE HOLE. IN THESE CONDITIONS, USE A HAMMER TO TAP THE PIN THROUGH THE CONCRETE SLUG AND INTO THE OPENING. ONCE IN POSITION, A MINIMUM 1-1/4" (30 mm) SECTION OF THE PIN SHOULD PROTRUDE OUT OF THE OPENING ABOVE THE TOP SURFACE OF THE UNIT.

**STEP 7: PLACE UNIT/DRAINAGE MATERIAL**

FILL THE KEYSTONE UNIT VOIDS AND DRAINAGE ZONE WITH 3/8" (10 mm) TO 3/4" (20 mm) UNIT DRAINAGE FILL MATERIAL. THE UNITS VOIDS ARE THE OPENINGS AND SPACES BETWEEN UNITS. THE DRAINAGE ZONE IS THE COMBINED AREA OF THE UNIT VOIDS AND/OR ADDITIONAL AREA BEHIND THE UNIT. THE WIDTH OF UNIFORMITY MATERIAL SHOULD BE A MINIMUM OF 24" (610 mm), MEASURED FROM THE WALL FACE. CERTAIN SITE CONDITIONS MAY REQUIRE A GREATER WIDTH OF THIS MATERIAL. PLACE MATERIAL INTO THE SPECIFIED AREA. A CLEAN CRUSHED STONE MATERIAL WILL CONSOLIDATE NATURALLY. DO NOT OPERATE ANY AUTOMATED CONSTRUCTION EQUIPMENT DIRECTLY OVER THE KEYSTONE UNITS IN AN ATTEMPT TO COMPACT THIS MATERIAL. THIS MAY RESULT IN DAMAGE TO THE UNITS.

PROPER PLACEMENT OF THE UNIT/DRAINAGE MATERIAL SERVES THREE IMPORTANT PURPOSES. FIRST, PLACING THIS MATERIAL BETWEEN UNITS ON ADJOINING COURSES CREATES A POSITIVE INTERLOCK BETWEEN UNITS IF GEORGRID REINFORCEMENT IS USED. FRICTION INTERLOCK WITH THE WALL FACE IS SIGNIFICANTLY IMPROVED. IN ADDITION, THIS MATERIAL WILL INCREASE THE OVERALL WEIGHT OF EACH KEYSTONE UNIT. A VERY IMPORTANT FEATURE. FINALLY, IT WILL PERMIT THE RELEASE OF HYDROSTATIC PRESSURES WHICH MAY BUILD UP BEHIND THE WALL FACE.

INSTALL GEOTEXTILE FABRIC BETWEEN UNIT DRAINAGE FILL AND WALL BACKFILL AS REQUIRED IN WATER CONDITIONS.

**STEP 8: GEORGRID INSTALLATION**

THE BASIC INSTALLATION TECHNIQUES FOR USE OF A TENSAR GEORGRID WITH A KEYSTONE RETAINING WALL ARE OUTLINED IN THE FOLLOWING STEPS. CONSULT THE GEORGRID MANUFACTURER FOR ADDITIONAL INSTALLATION DETAILS.

1. FOLLOW THE INSTRUCTIONS IN THE PREVIOUS INSTALLATION NOTES UNTIL YOU HAVE REACHED THE LOWEST WALL ELEVATION WHERE A GEORGRID LAYER WILL BE PLACED. THIS ELEVATION, ALONG WITH THE ELEVATION OF ANY ADDITIONAL GEORGRID LAYERS, WILL BE SPECIFIED IN THE ENGINEERING DESIGN FOR THE WALL. AT THIS POINT, THE BASE TRENCH WILL HAVE BEEN EXCAVATED, THE BASE LEVELING PAD WILL HAVE BEEN PLACED, THE LATERAL COURSES OF KEYSTONE UNITS WILL HAVE BEEN INSTALLED AND THE UNIT DRAINAGE FILL AND RETAINED BACKFILL WILL HAVE BEEN PLACED AND COMPACTED UP TO THE FIRST ELEVATION WHERE A GEORGRID LAYER IS SPECIFIED.

2. MEASURE AND CUT THE GEORGRID MATERIAL TO THE SPECIFIED LENGTH. REFER TO SITE SPECIFIC ENGINEERING DOCUMENTS FOR LENGTH OF GEORGRID LAYERS AND TYPE OF GEORGRID MATERIAL. FOR INFORMATION ON PROPER PLACEMENT OF GEORGRID ALONG CURVES OR CORNERS, CONSULT THE GEORGRID MANUFACTURER'S RECOMMENDATIONS. SOME GEORGRID MATERIALS ARE AVAILABLE IN ROLLS AND MORE THAN ONE LENGTH FOR THE "FOURD" LAYERS. IT IS CRITICAL TO CONFIRM THIS INFORMATION BEFORE PROCEEDING. IF MULTIPLE TYPES AND/OR LENGTHS OF GEORGRID ARE USED, PREVENTING OVERLAPPING OR GAPPING OF GEORGRID MATERIALS. LEVEL AND COMPACT SOILS IN THE BASE TRENCH PRIOR TO PLACEMENT OF THE GEORGRID. THE GEORGRID IS TYPICALLY PARALLEL TO THE DIRECTION OF THE ROLL OF GEORGRID. GEORGRID CAN EITHER BE FIELD CUT OR PRECUT TO THE LENGTH OF THE TIE. THE TIE OF GEORGRID MATERIALS, THESE ARE CALLED UNIFORM GEORGRIDS. THE DIRECTION OF DESIGN STRENGTH OF A UNIFORM GEORGRID IS TYPICALLY PARALLEL TO THE DIRECTION OF THE ROLL OF GEORGRID. 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