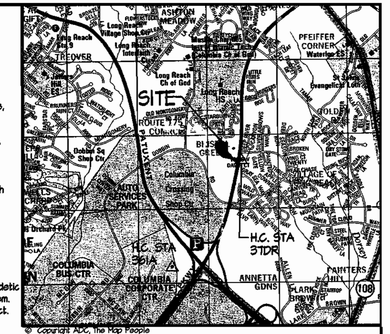
GENERAL NOTES

1. All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications, if applicable.
2. The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313-1880 24 hours in advance of commencement of work.
3. The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
4. Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to placement of any asphalt.
5. All plan dimensions are to face of curb unless otherwise noted.
6. The existing topography is taken from field run survey with 2 foot contour intervals prepared by Schmid, Pfeltz & McDonald dated 9/14/01 and a field survey by Shandeberger and Lane dated 1/29/03.
7. The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System. Howard County Monument Nos. 36IA and 3TDR were used for this project.
8. Water is public. See Contract Nos. 24-3713-D. This project is in the Little Patuxent drainage area.
9. Sewer is public.Contract No. 24-3713-D.
10. Stormwater Management quantity control is provided in the Existing Detention Facility on Parcel D-3 and Open Space Lot 4, see SDP 01-04. Water Quality is provided by a sand filter. Both facilities are private.
11. Existing utilities are based on as-built plans and drawings of record, but the contractor must determine the exact location of utilities by digging test pits, by hand, at all crossings prior to construction.
12. There is no floodplain as defined by Howard County on this site.
13. There are no wetlands on this site.
14. The Traffic Letter was prepared by Mells & Associates LLC, dated 9/13/03. Geotechnical Study was performed by Hardin Kight Associates, Inc. dated 12/21/02.
15. In accordance with the cemetery inventory lists and maps prepared by Howard County, no cemeteries exist on this site.
16. Building will be sprinklered.
17. This subdivision is exempt from the requirements of section 16.1202(b)(1)(iv) of the Howard County Code for Forest Conservation because the subject property is zoned New Town.
18. The subject property is zoned NT per the 1993 comprehensive zoning plan.
19. No clearing, grading or construction is permitted within the required wetland, and stream, buffers and floodplain.
20. Sewer, water and storm drainage is privately maintained unless noted otherwise.
21. The recording reference for the age restriction covenants and documents is L. 7514 F. 338 . The units shown are rental units, maintenance will be the responsibility of the owner or his representative.
22. Any damage to the County's right-of-way shall be corrected at the developer's expense.
23. SHC elevations are located at the property line.



VICINITY MAP

1"=2000'

THE HORIZONTAL AND VERTICAL CONTROL USED IN THIS SURVEY IS BASED ON HOWARD COUNTY GEODETIC CONTROL POINTS 36IA & 3TDR'.

3TDR ELEV. = 371.40

SITE ANALYSIS

AREA OF SITE: 2.4265 Ac.+/- (121,478 SqFt)
LIMIT OF DISTURBED AREA: 3.05 Ac.+/-
(INCLUDES P/O PARCEL D-3 FOR SWM)
PRESENT ZONING DESIGNATION: NEW TOWN EMPLOYMENT CENTER COMMERCIAL, FDP 235
PROPOSED USE: AGE RESTRICTED ADULT HOUSING
FLOOR SPACE TABULATION

Existing	0 SF	0 Ac.
Proposed	22590 SF	0.52 Ac.
TOTAL	22590 SF	0.52 Ac.
BLDG. COVERAGE		18 %

TOTAL UNITS PROPOSED : 100 ELDERLY HOUSING UNITS (RENTAL)
PROPOSED 4 STORY BLDG.

PARKING TABULATION

Parking Spaces Required : 1 Space Per Three Units	100/3 = 34	
Existing Spaces:	0 spaces	0 HC
Proposed Spaces:	73 spaces	4 HC
TOTAL SPACES :	77 spaces	

AREA TABULATION:

Proposed Building Coverage	0.52 Ac+/-	(18%)
Paved Parking Area	1.08 Ac+/-	
Green Area	1.45 Ac.+/-	

SEE DEPARTMENT OF PLANNING AND ZONING FILE NUMBERS :
S-99-06, FDP-235 , PB-337 (I) , WP-99-117 , WP-00-24 (II) , WP-99-41 (IV)
SDP-01-09 , F-01-16 , F-00-149 , F-02-141 , F-02-153, FDP PHASE 235.
F-03-22 , SDP-03-137, F-03-211

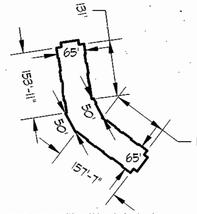
LEGEND

RIGHT-OF-WAY LINE
EXIST. BOUNDARY LINE
EASEMENT LINE
PROPOSED CURBING
316 EXIST. CONTOUR
314 PROPOSED CONTOUR
EX. 8" W EXIST. WATER LINE
EXIST. FIRE HYDRANT
EX. 8" S EXIST. SANITARY SEWER
18" CMP EXIST. STORM DRAIN
EXIST. ELECTRIC
EXIST. WOODSLINE
STREAM
100 YR. FLOODPLAIN
25 WETLAND BUFFER
50 STREAM BUFFER
15" HDPE PROPOSED STORMDRAIN
PROPOSED SIDEWALK
PROPOSED ASPHALT PATH
8" W PROP. WATER LINE
8" S. PROP. SANITARY SEWER
2' CONTOUR INTERVAL
PROPOSED SITE LIGHTING

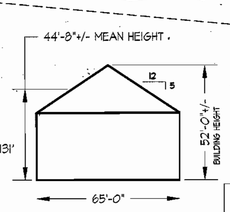
SHEET INDEX

SHEET #	DRAWING TITLE
1	SITE DEVELOPMENT PLAN
2	SEDIMENT AND EROSION CONTROL PLAN
3	SEDIMENT AND EROSION CONTROL DETAILS
4	SEDIMENT AND EROSION CONTROL NOTES
5	SITE DETAILS
6	SITE DETAILS
7	UTILITY PROFILES
8	STORM DRAIN PROFILES
9	DRAINAGE AREA MAP
10	SWM DETAILS
11	SWM DETAILS
12	LAYOUT PLAN
13	LANDSCAPE PLAN
14	LANDSCAPE NOTES AND DETAILS
15	RETAINING WALL PLAN

PROP. BUILDING LAYOUT
NOT TO SCALE



PROP. BUILDING ELEVATION
NOT TO SCALE



APPROVED: DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	MK	9/3/03 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT		9/4/03 DATE
DIRECTOR		9/6/03 DATE

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 09/06/03

ADDRESS CHART	
PARCEL #	STREET ADDRESS
D-1	8610 SNOWDEN RIVER PARKWAY

PERMIT INFORMATION CHART					
SUBDIVISION NAME: ROUTE 175 COMMERCIAL			SECTION / AREA: 1 / 2		LOTS / PARCELS: PARCEL D-1
PLAT No. or L/F: 16084	GRID No.: 18	ZONE: NT-EC.C.	TAX MAP No.: 36	ELECT. DIST.: 6 th	CENSUS TRACT: 6067.03
WATER CODE: E06			SEWER CODE: 3460000		

OWNER: Snowden River LLLP
218 N. Charles Street , Suite 220
Baltimore, MD. 21201 Phone: 410-462-0545

Park View At Snowden River
Site Development Plan

Route 175 Commercial
Section I Area 2
Parcel D-1
8610 Snowden River Parkway, Columbia, Maryland 21045
6 th Election District Howard County, Maryland
Tax Map 36 Grid 18 Parcel 321 Lot D-1 Zoning: NT Deed Ref. 6752/231

REVISIONS

SITE RESOURCES
incorporated
Comprehensive Land Planning & Site Design Services
14507 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

DRAWN BY: CGS	CONTRACT NO.:
DESIGNED BY: JLS	SCALE: 1" = 40'
CHECKED BY: JLS	SRI PROJECT NO: 01130
DATE: AUGUST 19, 2003	SHEET 1 OF 15

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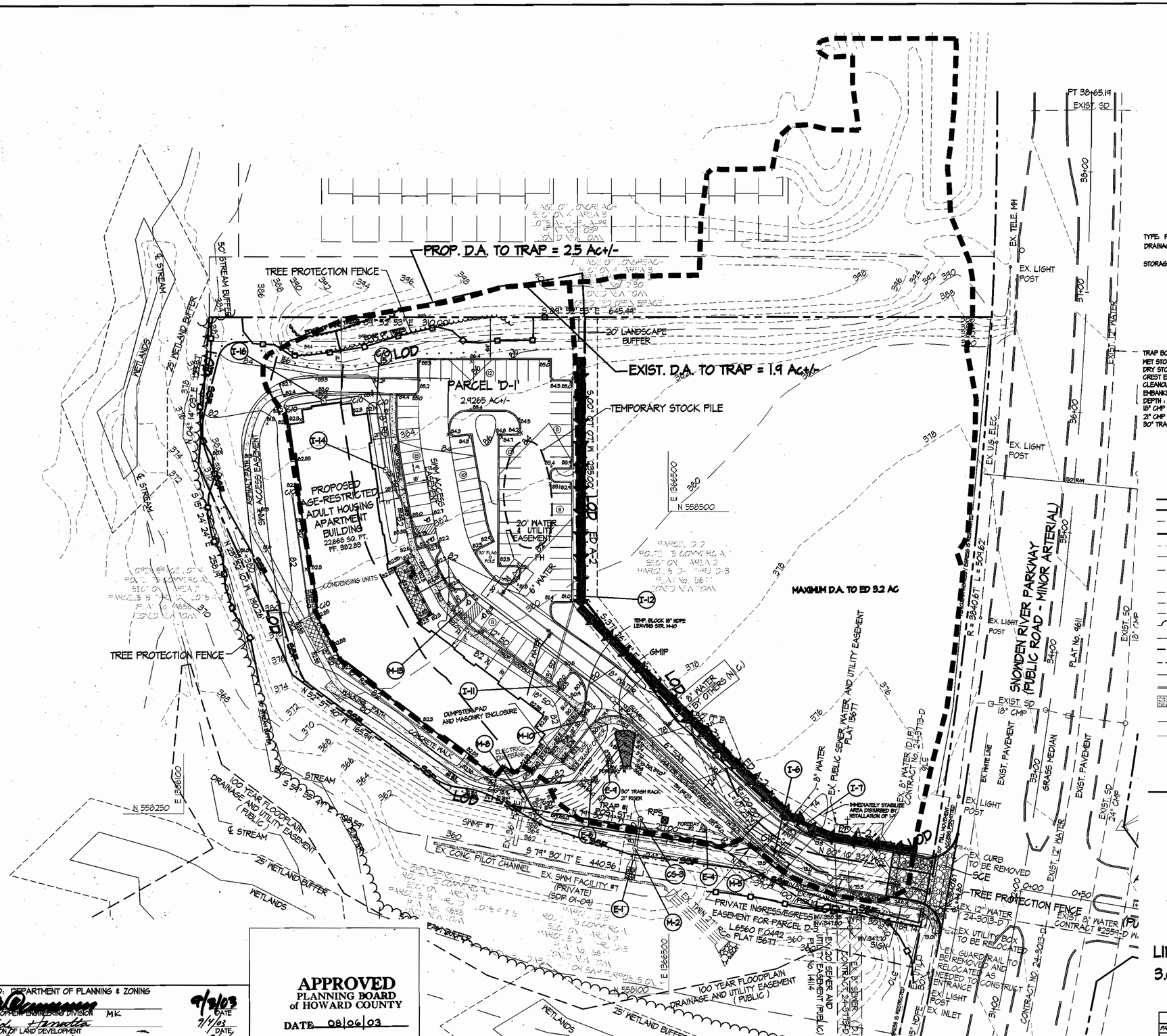
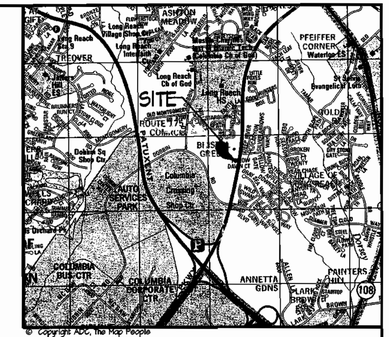
SDP-03-142





VICINITY MAP 1"=2000'

SEDIMENT TRAP #1

TYPE: Pipe Outlet Sediment Trap, ST-1

DRAINAGE AREA:		Exist. 1.9 Ac. Prop. 2.5 Ac.
STORAGE:	Met Req'd	4800 ft³
	Met Prov'd	5016 ft³
	Dry Req'd	4800 ft³
	Dry Prov'd	6328 ft³
	Total Storage Req'd:	9000 ft³
	Provided :	11,344 ft³
	Cleanout Req'd	2250 ft³
	Cleanout Prov'd	1672 ft³
TRAP BOTTOM:		366.0
WET STORAGE ZONE:		366.0 - 367.5
DRY STORAGE ZONE:		367.5 - 369.0
CREST ELEVATION:		369.0
CLEANOUT ELEVATION:		366.5
EMBANKMENT ELEVATION:		370.0
DEPTH :		3'
18" CMP BARREL		
21" CMP RISER		
30" TRASH RACK		

TRAP #1 STORAGE vs ELEV.

366	0
368	6668 ft³
370	16,000 ft³

NOTE : See Trap inset on Sht. 4 for conversion to SWM Facility. Contractor shall coordinate installation of ESC measures with those shown on SDP-03-137 for parcel D-2

LEGEND

- RIGHT-OF-WAY LINE
- EXIST. BOUNDARY LINE
- EASEMENT LINE
- PROPOSED CURBING
- 376 EXIST. CONTOUR
- 374 PROPOSED CONTOUR
- EX. 8" W EXIST. WATER LINE
- EXIST. FIRE HYDRANT
- EX. 8" S EXIST. SANITARY SEWER
- 18" CMP EXIST. STORM DRAIN
- EXIST. ELECTRIC
- EXIST. WOODSLINE
- STREAM
- 100 YR. FLOODPLAIN
- 25 WETLAND BUFFER
- 50 STREAM BUFFER
- 15" HDPE PROPOSED STORMDRAIN
- PROPOSED SIDEWALK
- 8" W PROP. WATER LINE
- 8" S. PROP. SANITARY SEWER
- 2' CONTOUR INTERVAL
- ED A-2 PROPOSED EARTH DIKE
- SSF PROPOSED SUPER SILT FENCE
- SCE PROPOSED STONE CONSTRUCTION ENTRANCE
- CIP PROPOSED CURB INLET PROTECTION
- GMIP GABION MATTRESS INFLOW PROTECTION

NORTH

LIMIT OF DISTURBANCE = 3.05 Ac+/- (132952 Sq.Ft.)

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.

USDA – NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/10/03

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

HOWARD SCD — DATE 9/10/03

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."

SIGNATURE OF ENGINEER (Print Name Below Signature) Jeffrey L. Schaub — DATE 8/19/03

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."

DEVELOPER (Print, Name, Below Signature) — DATE 8/18/03

OWNER:
Snowden River LLLP
218 N. Charles Street, Suite 220
Baltimore, MD. 21201 Phone: 410-962-0545

Park View At Snowden River Sediment And Erosion Control Plan

Route 175 Commercial
Section 1 Area 2
Parcel D-1
8610 Snowden River Parkway, Columbia, Maryland 21045
6 th Election District Howard County, Maryland
Tax Map 36 Grid 18 Parcel 321 Lot D-1 Zoning: NT Deed Ref. 6752/231

REVISIONS

APPROVED: DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/2/03
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9/1/03
DIRECTOR — DATE 9/2/03

APPROVED
PLANNING BOARD of HOWARD COUNTY
DATE 08/06/03

ADDRESS CHART	
PARCEL #	STREET ADDRESS
D-1	8610 SNOWDEN RIVER PARKWAY

PERMIT INFORMATION CHART					
SUBDIVISION NAME: ROUTE 175 COMMERCIAL				SECTION / AREA 1 / 2	LOTS / PARCELS PARCEL D-1
PLAT No. or L/F 16084	GRID No. 18	ZONE NT-ECC	TAX MAP No. 36	ELECT. DIST. 6 th	CENSUS TRACT 6061.03
WATER CODE E06			SEWER CODE 3460000		

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14307 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

DRAWN BY: CGS	CONTRACT NO.:
DESIGNED BY: JLS	SCALE: 1" = 40'
CHECKED BY: JLS	SRI PROJECT NO: 01130
DATE: Aug 19, 2003	SHEET 2 OF 15

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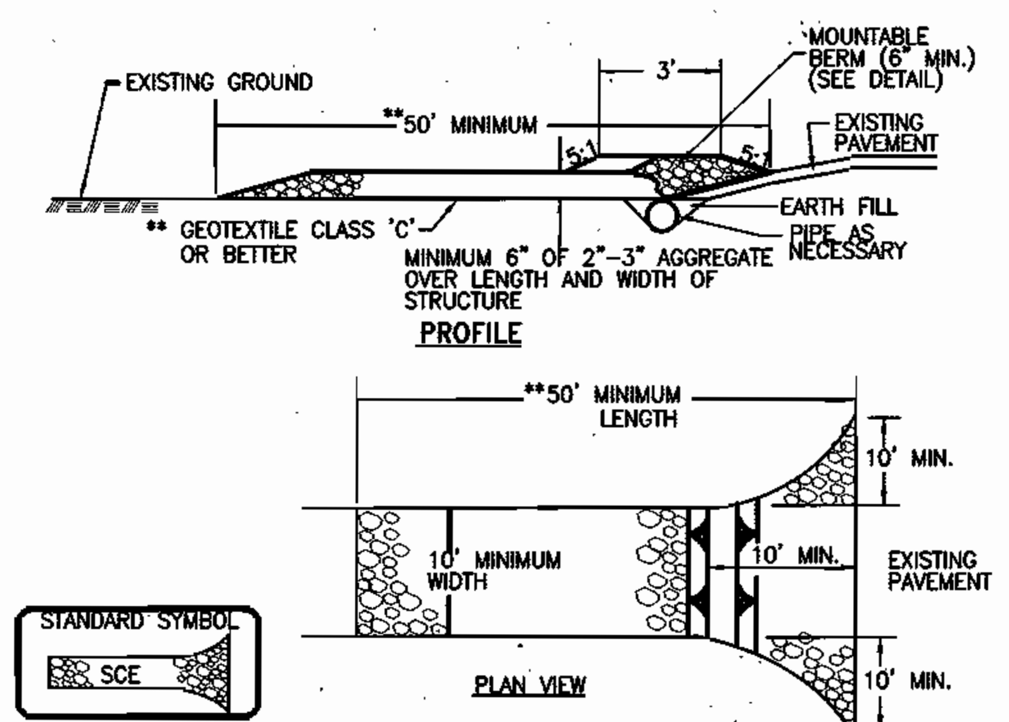


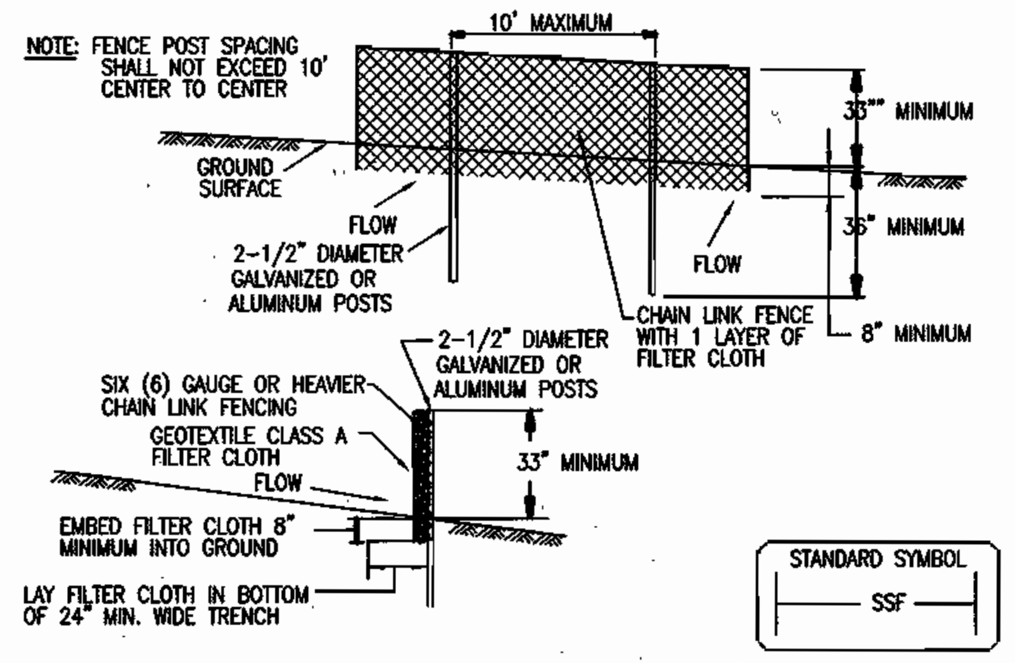
CONSTRUCTION SPECIFICATION

1. LENGTH – MINIMUM OF 50' (*30' FOR SINGLE RESIDENCE LOT).
2. WIDTH – 10' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
3. GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE. **THE PLAN APPROVAL AUTHORITY MAY NOT REQUIRE SINGLE FAMILY RESIDENCES TO USE GEOTEXTILE.
4. STONE – CRUSHED AGGREGATE (2" TO 3") OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT LEAST 6" DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE.
5. SURFACE WATER – ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE. PIPE HAS TO BE SIZED ACCORDING TO THE DRAINAGE. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM WILL BE REQUIRED.
6. LOCATION – A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE.

STABILIZED CONSTRUCTION ENTRANCE

F-173

NOT TO SCALE



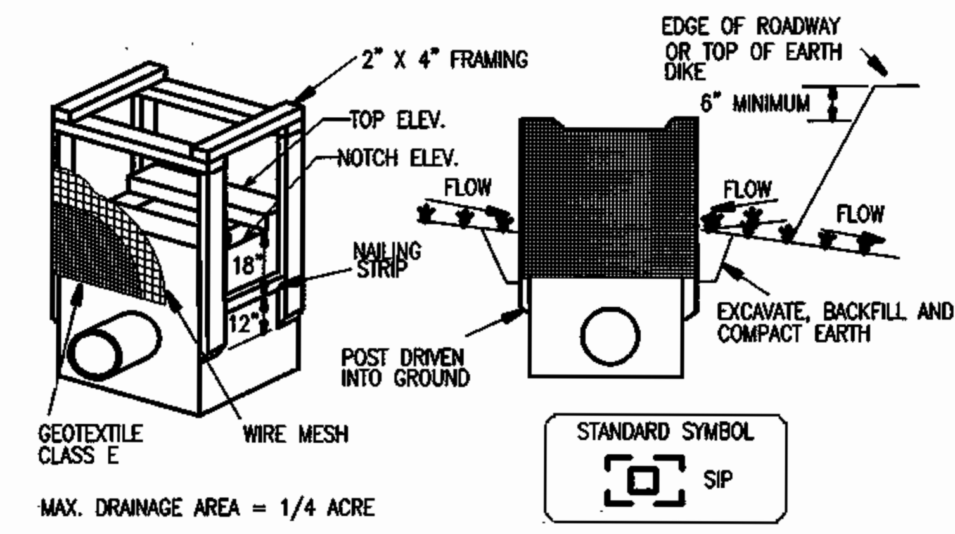
CONSTRUCTION SPECIFICATIONS

1. FENCING SHALL BE 42" IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY DETAILS FOR CHAIN LINK FENCING. THE SPECIFICATION FOR A 6' FENCE SHALL BE USED, SUBSTITUTING 42" FABRIC AND 6' LENGTH POSTS.
2. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
3. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES OR STAPLES. THE LOWER TENSION WIRE, BRACE AND TRUSS RODS, DRIVE ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE. THE CHAIN LINK FENCING SHALL BE SIX (6) GAUGE OR HEAVIER.
4. FILTER CLOTH SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT THE TOP AND MID SECTION.
5. FILTER CLOTH SHALL BE EMBEDDED A MINIMUM OF 8" INTO THE GROUND.
6. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
7. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SILT BUILDUPS REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE, OR WHEN SILT REACHES 50% OF FENCE HEIGHT

DETAIL H-26-3

SUPER SILT FENCE

NOT TO SCALE



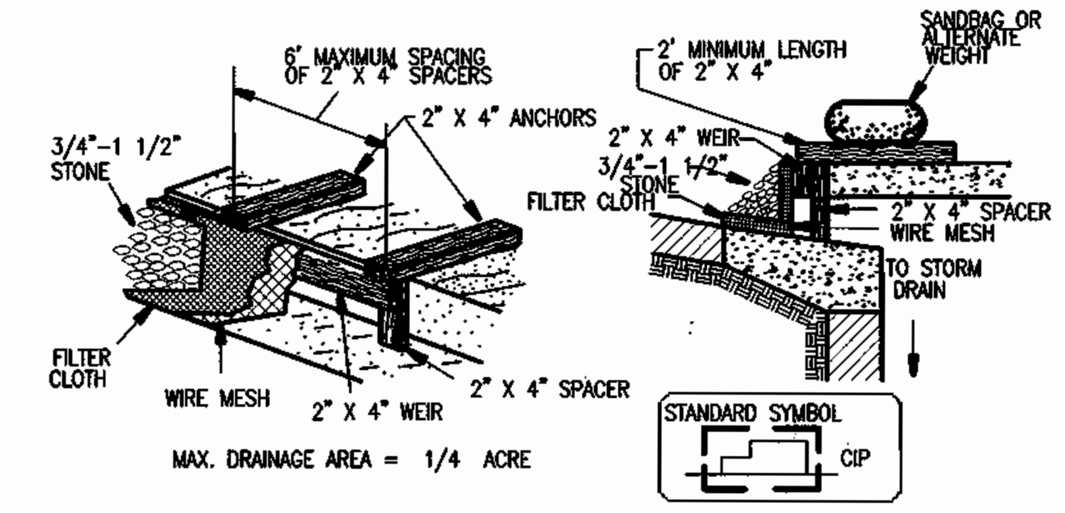
MAX. DRAINAGE AREA = 1/4 ACRE

CONSTRUCTION SPECIFICATIONS

1. EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18" BELOW THE NOTCH ELEVATION.
2. DRIVE THE 2" X 4" CONSTRUCTION GRADE LUMBER POSTS 1' INTO THE GROUND AT EACH CORNER OF THE INLET. PLACE NAIL STRIPS BETWEEN THE POSTS ON THE ENDS OF THE INLET. ASSEMBLE THE TOP PORTION OF THE 2" X 4" FRAME USING THE OVERLAP JOINT SHOWN ON DETAIL 23A. THE TOP OF THE FRAME (WEIR) MUST BE 6" BELOW ADJACENT ROADWAYS WHERE FLOODING AND SAFETY ISSUES MAY ARISE.
3. STRETCH THE 1/2" X 1/2" WIRE MESH TIGHTLY AROUND THE FRAME AND FASTEN SECURELY. THE ENDS MUST MEET AND OVERLAP AT A POST.
4. STRETCH THE GEOTEXTILE CLASS E TIGHTLY OVER THE WIRE MESH WITH THE GEOTEXTILE EXTENDING FROM THE TOP OF THE FRAME TO 18" BELOW THE INLET NOTCH ELEVATION. FASTEN THE GEOTEXTILE FIRMLY TO THE FRAME. THE ENDS OF THE GEOTEXTILE MUST MEET AT A POST, BE OVERLAPPED AND FOLDED, THEN FASTENED DOWN.
5. BACKFILL AROUND THE INLET IN COMPACTED 6" LAYERS UNTIL THE LAYER OF EARTH IS LEVEL WITH THE NOTCH ELEVATION ON THE ENDS AND TOP ELEVATION ON THE SIDES.
6. IF THE INLET IS NOT IN A SUMP, CONSTRUCT A COMPACTED EARTH DIKE ACROSS THE DITCH LINE DIRECTLY BELOW IT. THE TOP OF THE EARTH DIKE SHOULD BE AT LEAST 6" HIGHER THAN THE TOP OF THE FRAME.
7. THE STRUCTURE MUST BE INSPECTED PERIODICALLY AND AFTER EACH RAIN AND THE GEOTEXTILE REPLACED WHEN IT BECOMES CLOGGED.

STANDARD INLET PROTECTION

NOT TO SCALE



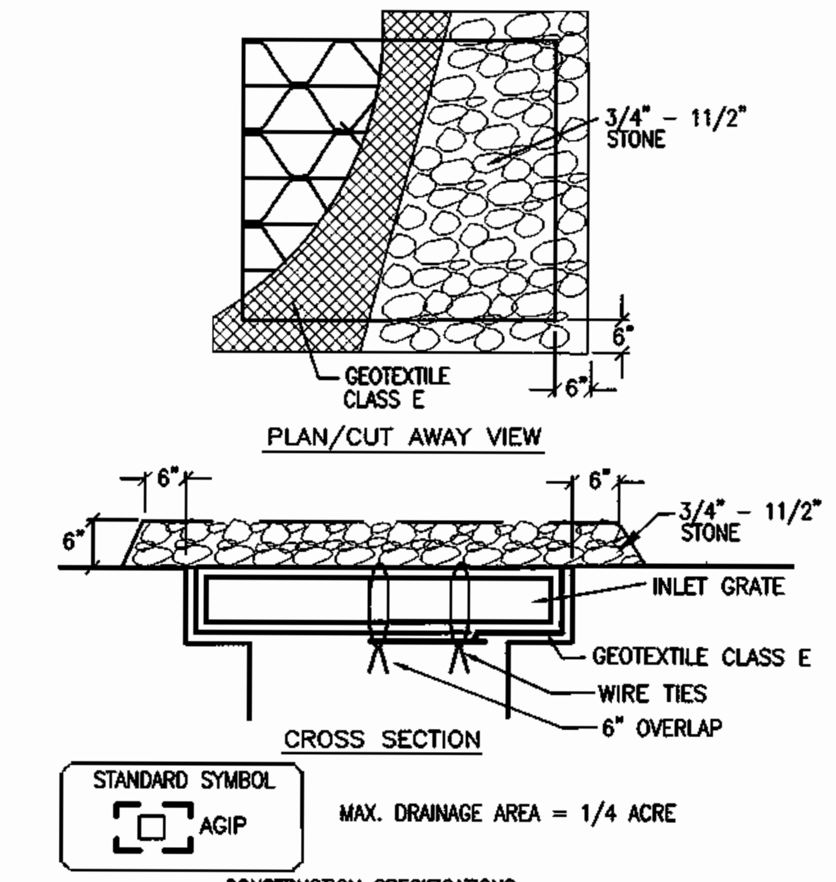
MAX. DRAINAGE AREA = 1/4 ACRE

CONSTRUCTION SPECIFICATIONS

1. ATTACH A CONTINUOUS PIECE OF WIRE MESH (30" MINIMUM WIDTH BY THROAT LENGTH PLUS 4') TO THE 2" X 4" WEIR (MEASURING THROAT LENGTH PLUS 2') AS SHOWN ON THE STANDARD DRAWING.
2. PLACE A CONTINUOUS PIECE OF GEOTEXTILE CLASS E THE SAME DIMENSIONS AS THE WIRE MESH OVER THE WIRE MESH AND SECURELY ATTACH IT TO THE 2" X 4" WEIR.
3. SECURELY NAIL THE 2" X 4" WEIR TO A 9" LONG VERTICAL SPACER TO BE LOCATED BETWEEN THE WEIR AND THE INLET FACE (MAX. 4' APART).
4. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL (MINIMUM 2' LENGTHS OF 2" X 4" TO THE TOP OF THE WEIR AT SPACER LOCATIONS). THESE 2" X 4" ANCHORS SHALL EXTEND ACROSS THE INLET TOP AND BE HELD IN PLACE BY SANDBAGS OR ALTERNATE WEIGHT.
5. THE ASSEMBLY SHALL BE PLACED SO THAT THE END SPACERS ARE A MINIMUM 1' BEYOND BOTH ENDS OF THE THROAT OPENING.
6. FORM THE 1/2 " X 1/2 " WIRE MESH AND THE GEOTEXTILE FABRIC TO THE CONCRETE GUTTER & AGAINST THE FACE OF THE CURB ON BOTH SIDES OF THE INLET. PLACE CLEAN 3/4 " X 1 1/2 " STONE OVER THE WIRE MESH AND GEOTEXTILE IN SUCH A MANNER TO PREVENT WATER FROM ENTERING THE INLET UNDER OR AROUND THE GEOTEXTILE.
7. THIS TYPE OF PROTECTION MUST BE INSPECTED FREQUENTLY AND THE FILTER CLOTH AND STONE REPLACED WHEN CLOGGED WITH SEDIMENT.
8. ASSURE THAT STORM FLOW DOES NOT BYPASS THE INLET BY INSTALLING A TEMPORARY EARTH OR ASPHALT DIKE TO DIRECT THE FLOW TO THE INLET.

CURB INLET PROTECTION

NOT TO SCALE



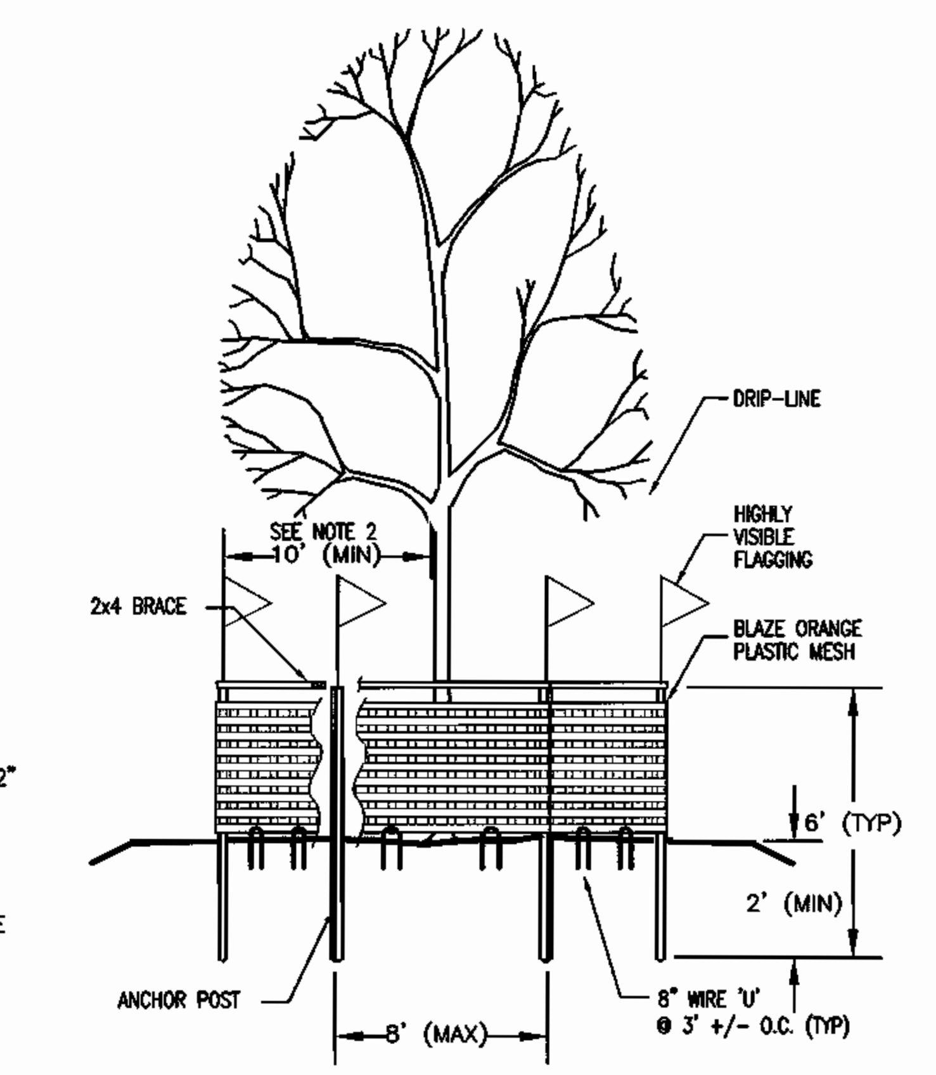
MAX. DRAINAGE AREA = 1/4 ACRE

CONSTRUCTION SPECIFICATIONS

1. LIFT GRATE AND WRAP WITH GEOTEXTILE CLASS E TO COMPLETELY COVER ALL OPENINGS THEN SET GRATE BACK IN PLACE.
2. PLACE 3/4" TO 11/2" STONE, 4"-6" THICK ON THE GRATE TO SECURE THE FABRIC AND PROVIDE ADDITIONAL FILTRATION.

AT GRADE INLET PROTECTION

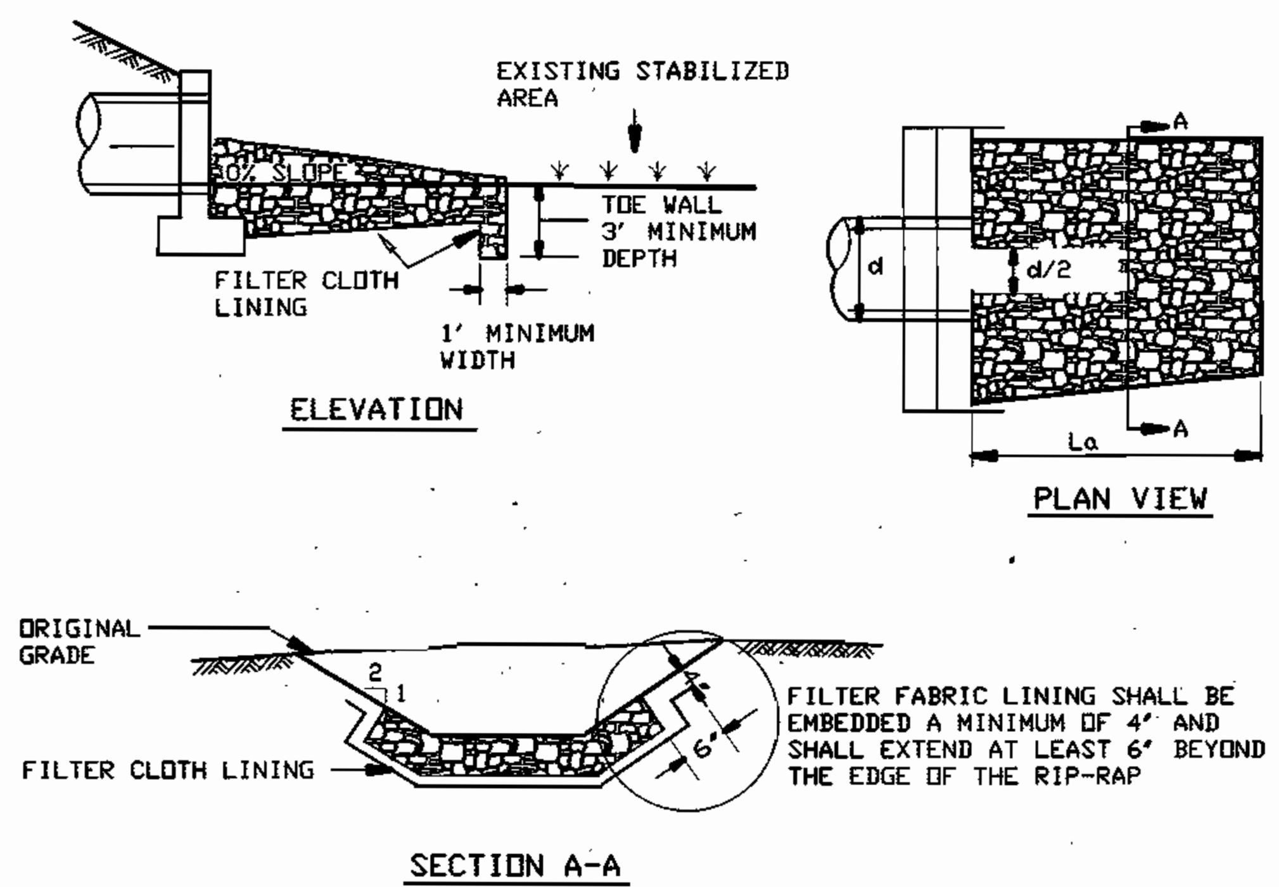
NOT TO SCALE



1. Forest protection device only.
2. Retention area will be set as part of the review process.
3. Boundaries of retention area to be staked and flagged prior to installing device.
4. Root damage should be avoided.
5. Protection signage may also be used.
6. Maintain tree protection devices throughout construction.
7. This fence is a tree protection device only.

TREE PROTECTION FENCE

NOT TO SCALE



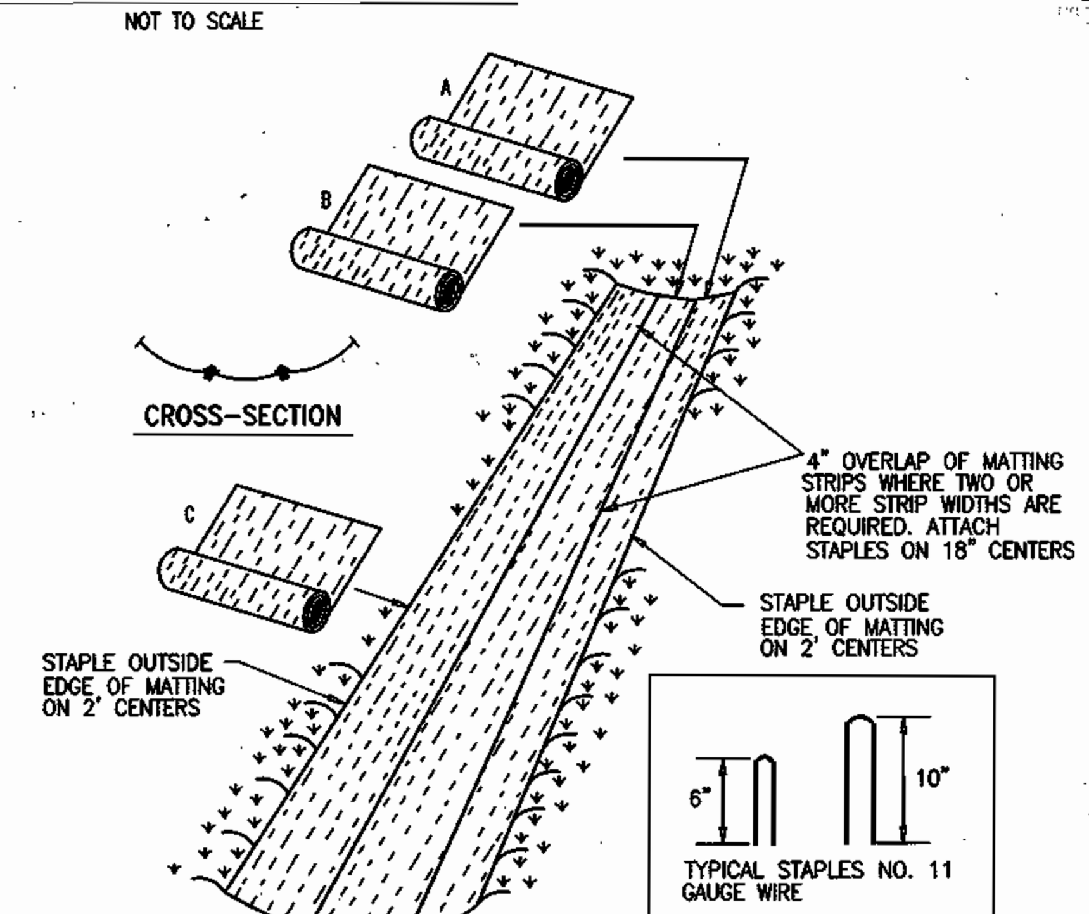
NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

Construction Specifications

1. The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
2. The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
3. Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.
4. Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

ROCK OUTLET PROTECTION III

NOT TO SCALE



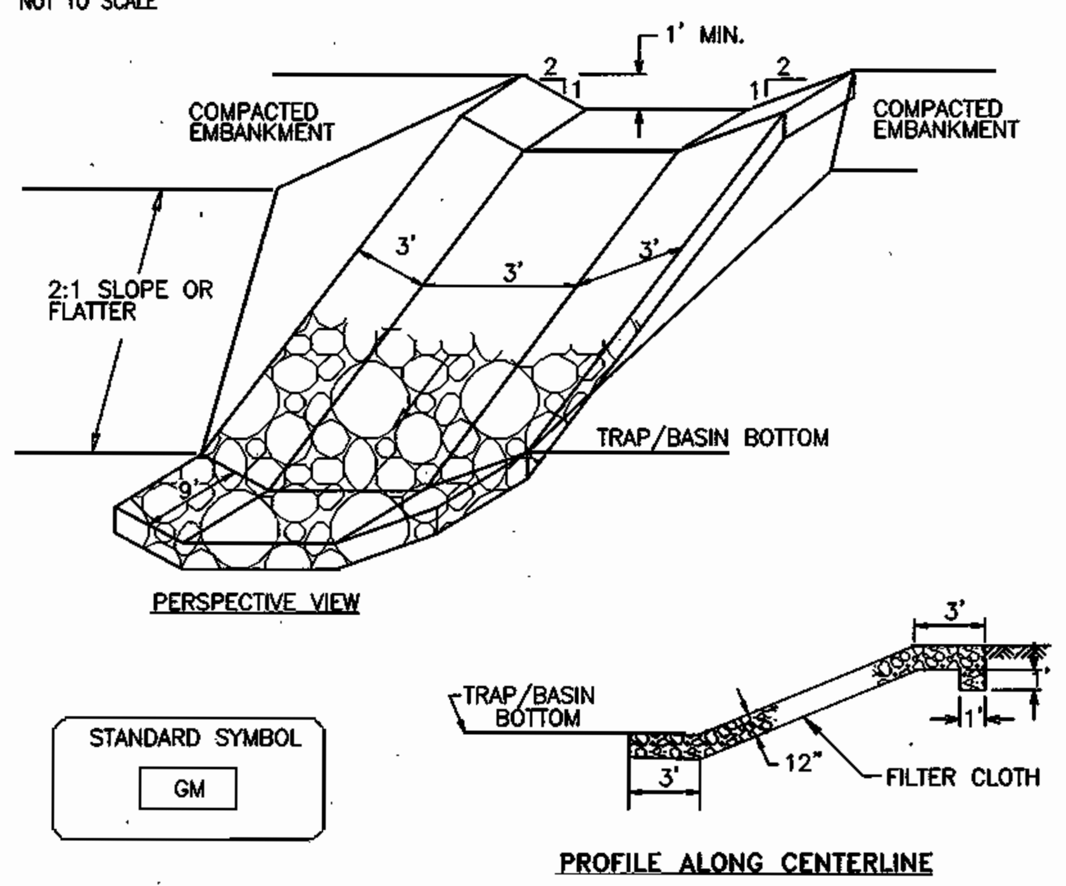
CONSTRUCTION SPECIFICATIONS

1. KEY-IN THE MATTING BY PLACING THE TOP ENDS OF THE MATTING IN A NARROW TRENCH, 6" IN DEPTH. BACKFILL THE TRENCH AND TAMP FIRMLY TO CONFORM TO THE CHANNEL CROSS-SECTION. SECURE WITH A ROW OF STAPLES ABOUT 4" DOWN SLOPE FROM THE TRENCH. SPACING BETWEEN STAPLES IS 6".
2. STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES.
3. BEFORE STAPLING THE OUTER EDGES OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL.
4. STAPLES SHALL BE PLACED 2' APART WITH 4 ROWS FOR EACH STRIP, 2 OUTER ROWS, AND 2 ALTERNATING ROWS DOWN THE CENTER.
5. WHERE ONE ROLL OF MATTING ENDS AND ANOTHER BEGINS, THE END OF THE TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4", SHIPLAP FASHION. REINFORCE THE OVERLAP WITH A DOUBLE ROW OF STAPLES SPACED 6" APART IN A STAGGERED PATTERN ON EITHER SIDE.
6. THE DISCHARGE END OF THE MATTING LINER SHOULD BE SIMILARLY SECURED WITH 2 DOUBLE ROWS OF STAPLES.

NOTE: IF FLOW WILL ENTER FROM THE EDGE OF THE MATTING THEN THE AREA EFFECTED BY THE FLOW MUST BE KEYED-IN.

EROSION CONTROL MATTING

NOT TO SCALE

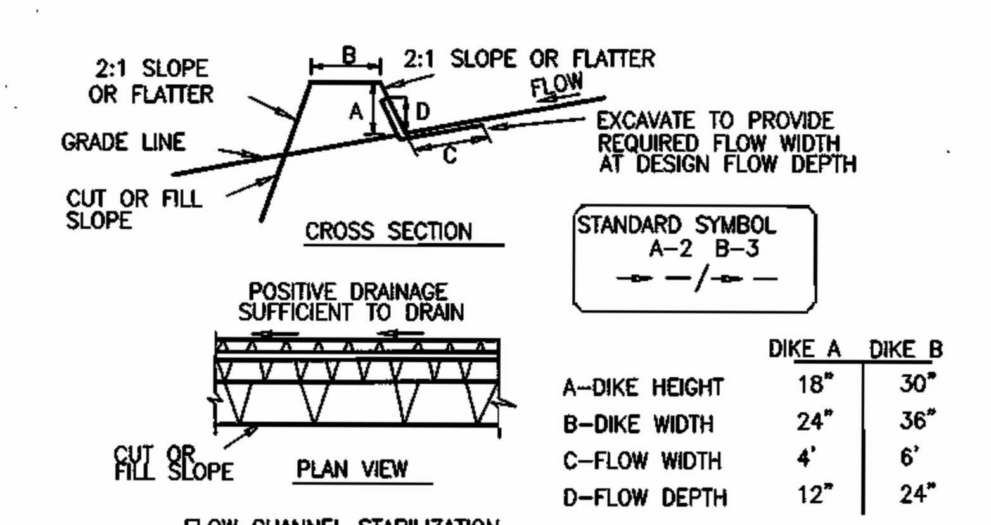


CONSTRUCTION SPECIFICATIONS

1. GABION INFLOW PROTECTION SHALL BE CONSTRUCTED OF 9' X 3' X 9" GABION BASKETS FORMING A TRAPEZOIDAL CROSS SECTION 1' DEEP, WITH 2:1 SIDE SLOPES, AND A 3' BOTTOM WIDTH.
2. GEOTEXTILE CLASS C SHALL BE INSTALLED UNDER ALL GABION BASKETS.
3. THE STONE USED TO FILL THE GABION BASKETS SHALL BE 4" – 7".
4. GABIONS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
5. GABION INFLOW PROTECTION SHALL BE USED WHERE CONCENTRATED FLOW IS PRESENT ON SLOPES STEEPER THAN 4:1.

GABION INFLOW PROTECTION

NOT TO SCALE



	DIKE A	DIKE B
A–DIKE HEIGHT	18"	30"
B–DIKE WIDTH	24"	36"
C–FLOW WIDTH	4'	6'
D–FLOW DEPTH	12"	24"

FLOW CHANNEL STABILIZATION
GRADE 0.5% MIN. 10% MAX.

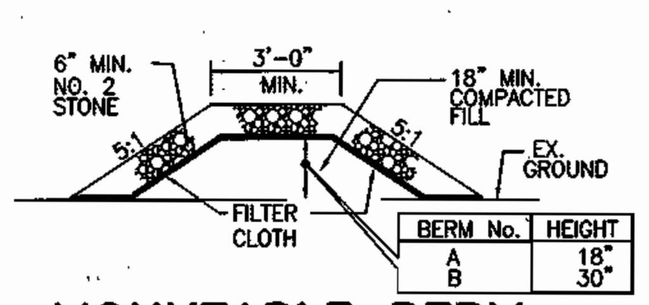
1. SEED AND COVER WITH STRAW MULCH.
2. SEED AND COVER WITH EROSION CONTROL MATTING OR LINE WITH SOD.
3. 4" – 7" STONE OR RECYCLED CONCRETE EQUIVALENT PRESSED INTO THE SOIL 7" MINIMUM

CONSTRUCTION SPECIFICATIONS

1. ALL TEMPORARY EARTH DIKES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET. SPOT ELEVATIONS MAY BE NECESSARY FOR GRADES LESS THAN 1%.
2. RUNOFF DIVERTED FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. RUNOFF DIVERTED FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED, STABILIZED AREA AT A NON-EROSIVE VELOCITY.
4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONAL MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE DIKE.
5. THE DIKE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
6. FILL SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.
7. ALL EARTH REMOVED AND NOT NEEDED FOR CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE DIKE.
8. INSPECTION AND MAINTENANCE MUST BE PROVIDED PERIODICALLY AND AFTER EACH RAIN EVENT.

EARTH DIKE

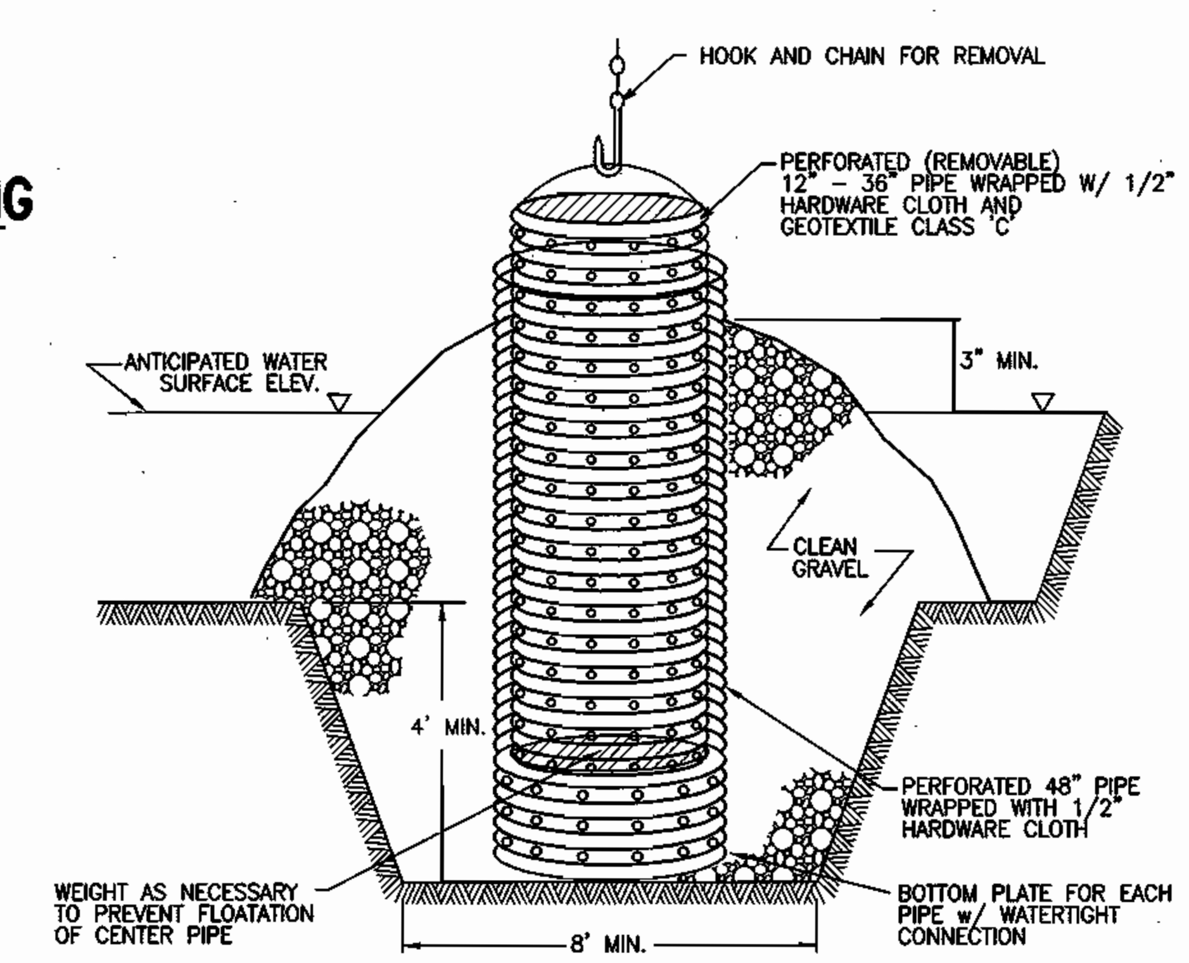
NOT TO SCALE



BERM No.	HEIGHT
A	18"
B	30"

MOUNTABLE BERM

NOT TO SCALE

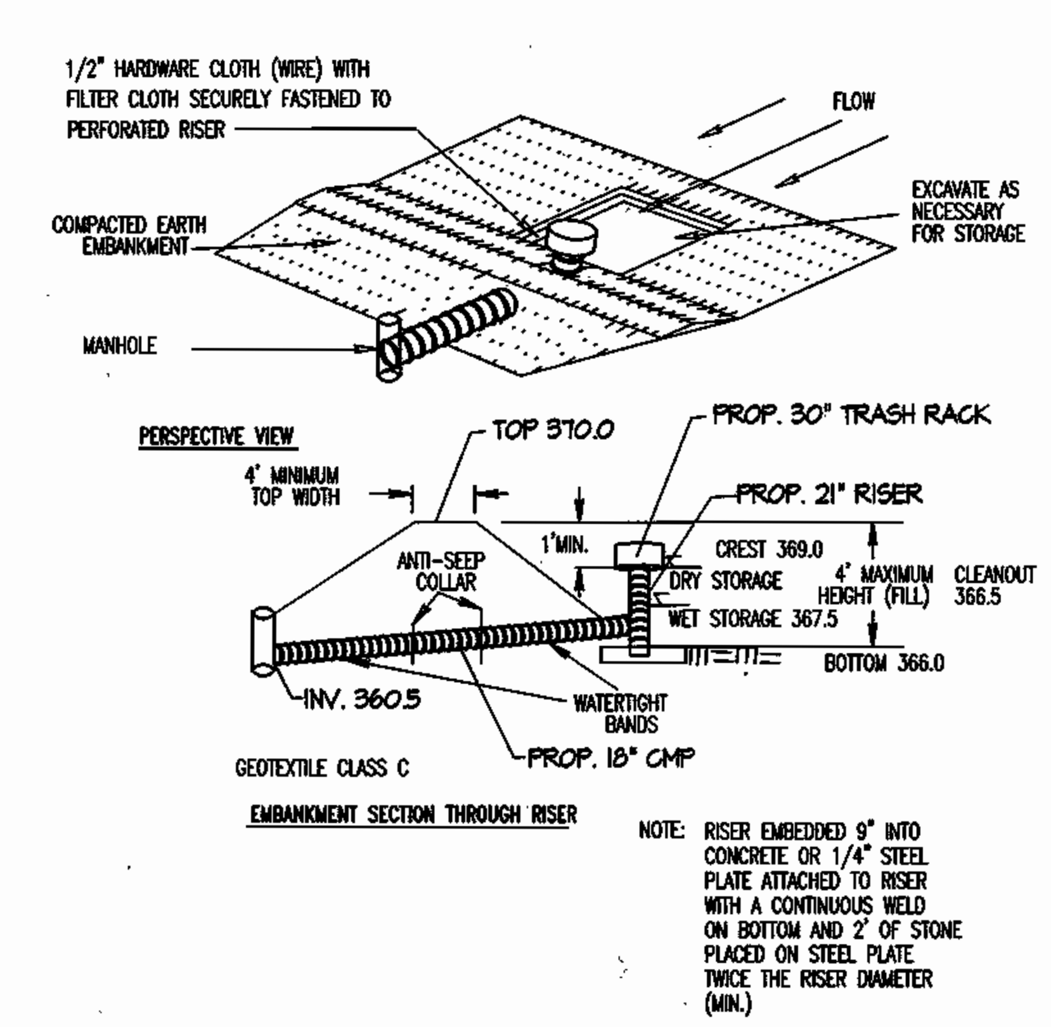


CONSTRUCTION SPECIFICATIONS

1. THE OUTER PIPE SHOULD BE 48" DIA. OR SHALL, IN ANY CASE, BE AT LEAST 4" GREATER IN DIAMETER THAN THE CENTER PIPE. THE OUTER PIPE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH TO PREVENT BACKFILL MATERIAL FROM ENTERING THE PERFORATIONS.
2. AFTER INSTALLING THE OUTER PIPE, BACKFILL AROUND OUTER PIPE WITH 2" AGGREGATE OR CLEAN GRAVEL.
3. THE INSIDE STAND PIPE (CENTER PIPE) SHOULD BE CONSTRUCTED BY PERFORATING A CORRUGATED OR PVC PIPE BETWEEN 12" AND 36" IN DIAMETER. THE PERFORATIONS SHALL BE 1/2" X 6" SLITS OR 1" DIAMETER HOLES 6" ON CENTER. THE CENTER PIPE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH FIRST, THEN WRAPPED AGAIN WITH GEOTEXTILE CLASS C.
4. THE CENTER PIPE SHOULD EXTEND 12" TO 18" ABOVE THE ANTICIPATED WATER SURFACE ELEVATION OR RISER CREST ELEVATION WHEN DEWATERING A BASIN.

REMOVABLE PUMPING STATION

NOT TO SCALE



NOTE: RISER EMBEDDED 9" INTO CONCRETE OR 1/4" STEEL PLATE ATTACHED TO RISER WITH A CONTINUOUS WELD ON BOTTOM AND 2' OF STONE PLACED ON STEEL PLATE TWICE THE RISER DIAMETER (MIN.)

PIPE OUTLET SEDIMENT TRAP – ST I

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. THE AREA UNDER THE EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVERSIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
3. THE TOTAL TRAP VOLUME AS MEASURED FROM THE BOTTOM TO RISER CREST ELEVATION SHALL BE 3600 CUBIC FEET PER ACRE OF DRAINAGE AREA (SEE TABLE 9). THE TOP OF EMBANKMENT MUST BE ≥ 1' ABOVE THE RISER CREST ELEVATION.
4. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF OF THE WET STORAGE DEPTH OF THE TRAP (900CF/AC). THE SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
5. THE STRUCTURE SHALL BE INSPECTED PERIODICALLY AND AFTER EACH RAIN AND REPAIRS MADE AS NECESSARY.
6. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE ABATED. ONCE CONSTRUCTED, THE TOP AND OUTSIDE FACE OF THE EMBANKMENT SHALL BE STABILIZED WITH SEED AND MULCH. POINTS OF CONCENTRATED INFLOW SHALL BE PROTECTED IN ACCORDANCE WITH GRADE STABILIZATION STRUCTURE CRITERIA. THE REMAINDER OF THE INTERIOR SLOPES SHOULD BE STABILIZED (ONE TIME) WITH SEED AND MULCH UPON TRAP COMPLETION AND MONITORED AND MAINTAINED EROSION FREE DURING THE LIFE OF THE TRAP.
7. THE STRUCTURE SHALL BE REMOVED AND AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
8. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.
9. ALL PIPE CONNECTIONS SHALL BE WATERTIGHT.
10. ABOVE THE WET STORAGE ELEVATION, THE RISER SHALL BE PERFORATED WITH 1/2" WIDE BY 6" LONG SLITS OR 1" DIAMETER HOLES SPACED 6" VERTICALLY AND HORIZONTALLY. NO PERFORATIONS WILL BE ALLOWED WITHIN 6" OF THE HORIZONTAL BARREL.
11. THE RISER SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH (WIRE) THEN WRAPPED WITH GEOTEXTILE CLASS E. THE FILTER CLOTH SHALL EXTEND 6" ABOVE THE HIGHEST SLIT AND 6" BELOW THE LOWEST SLIT. WHERE ENDS OF FILTER CLOTH COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED AND FASTENED TO PREVENT BYPASS. FILTER CLOTH SHALL BE REPLACED AS NECESSARY TO PREVENT CLOGGING.
12. STRAPS OR CONNECTING BANDS SHALL BE USED TO HOLD THE FILTER CLOTH AND WIRE FABRIC IN PLACE. THEY SHALL BE PLACED AT THE TOP AND BOTTOM OF THE CLOTH.
13. FILL MATERIAL AROUND THE PIPE SPILLWAY SHALL BE HAND COMPACTED IN 4" LAYERS. A MINIMUM OF 2' OF HAND-COMPACTED BACKFILL SHALL BE PLACED OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT.
14. THE RISER SHALL BE ANCHORED WITH EITHER A CONCRETE BASE OR STEEL PLATE BASE TO PREVENT FLOTATION. CONCRETE BASES SHALL BE AT LEAST TWICE THE RISER DIAMETER AND 12" DEEP WITH THE RISER EMBEDDED 9". STEEL PLATE BASES SHALL BE AT LEAST TWICE THE RISER DIAMETER, 1/4" MINIMUM THICKNESS AND ATTACHED TO THE BOTTOM OF THE RISER BY A CONTINUOUS WELD TO FORM A WATERTIGHT CONNECTION. THEN PLACE 2' OF STONE, GRAVEL OR TAMPED EARTH ON THE PLATE.
15. ANTI SEEP COLLARS SHALL BE CONSTRUCTED IN ACCORDANCE WITH PLANS (REF. TABLE 16 AND DETAILS 13 AND 14).
16. CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE DESIGN DETAILS ARE ON DETAIL 16.
17. REFER TO SECTION D FOR DEWATERING REQUIREMENTS OF SEDIMENT TRAPS.
18. OUTLET – AN OUTLET SHALL BE PROVIDED, WHICH INCLUDES A MEANS OF CONVEYING THE DISCHARGE IN AN EROSION FREE MANNER TO AN EXISTING STABLE CHANNEL.
19. WHERE DISCHARGE OCCURS AT THE PROPERTY LINE, LOCAL ORDINANCES AND DRAINAGE EASEMENT REQUIREMENTS SHALL BE MET.

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.

USDA – NATURAL RESOURCES CONSERVATION SERVICE — 9/10/03 DATE

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

HOWARD SOIL CONSERVATION DISTRICT — 9/10/03 DATE

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."

ENGINEER Jeffrey L. Schwab — 8/19/03 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."

DEVELOPER President — 8/18/03 DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — 9/3/03 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 9/4/03 DATE

DIRECTOR — 9/5/03 DATE

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 08/06/03

OWNER: Snowden River LLLP
218 N. Charles Street, Suite 220
Baltimore, MD. 21201 Phone: 410-462-0545

Park View At Snowden River
Sediment Control Details

Route 175 Commercial
Section I Area 2
Parcel D-1
8610 Snowden River Parkway, Columbia, Maryland 21045
6 th Election District Howard County, Maryland
Tax Map 36 Grid 18 Parcel 521 Lot D-1 Zoning: NT Deed Ref. 6752/231

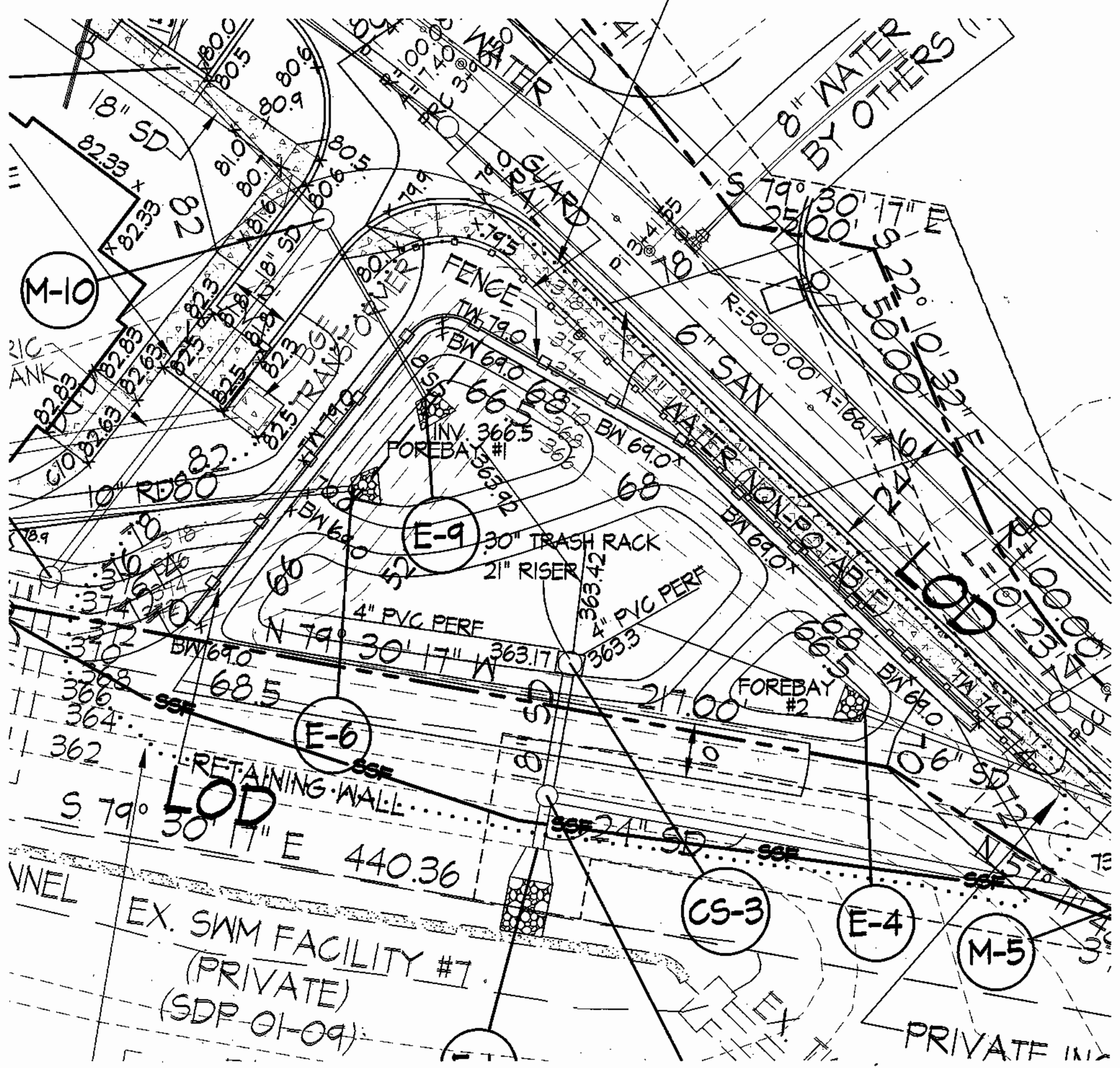
REVISIONS

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14307 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

DRAWN BY: CGS	CONTRACT NO.:
DESIGNED BY: JLS	SCALE: AS SHOWN
CHECKED BY: JLS	SRI PROJECT NO: 01130
DATE: AUG 19, 2003	SHEET 3 OF 15

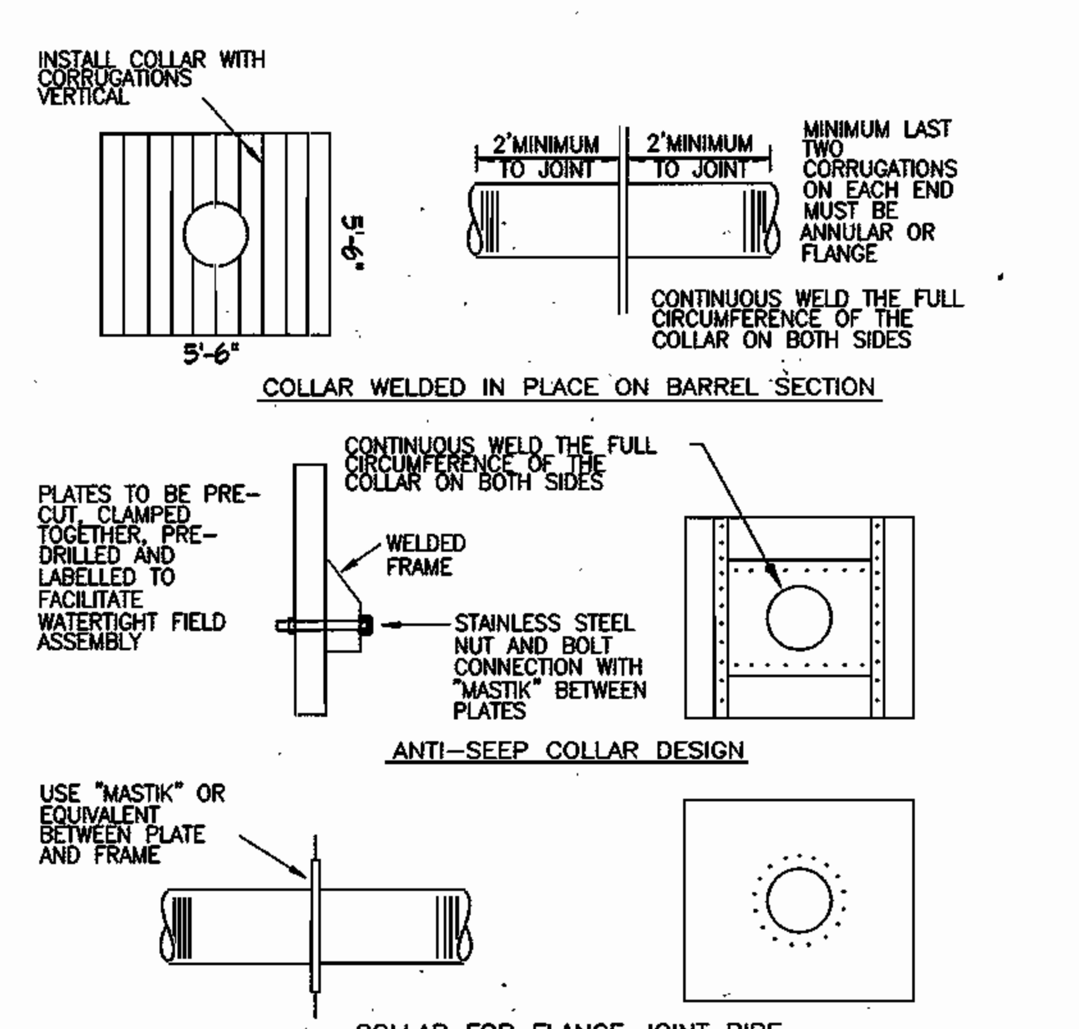
SDP-03-142

LOD FOR CONVERSION OF TRAP TO SWM



PLAN

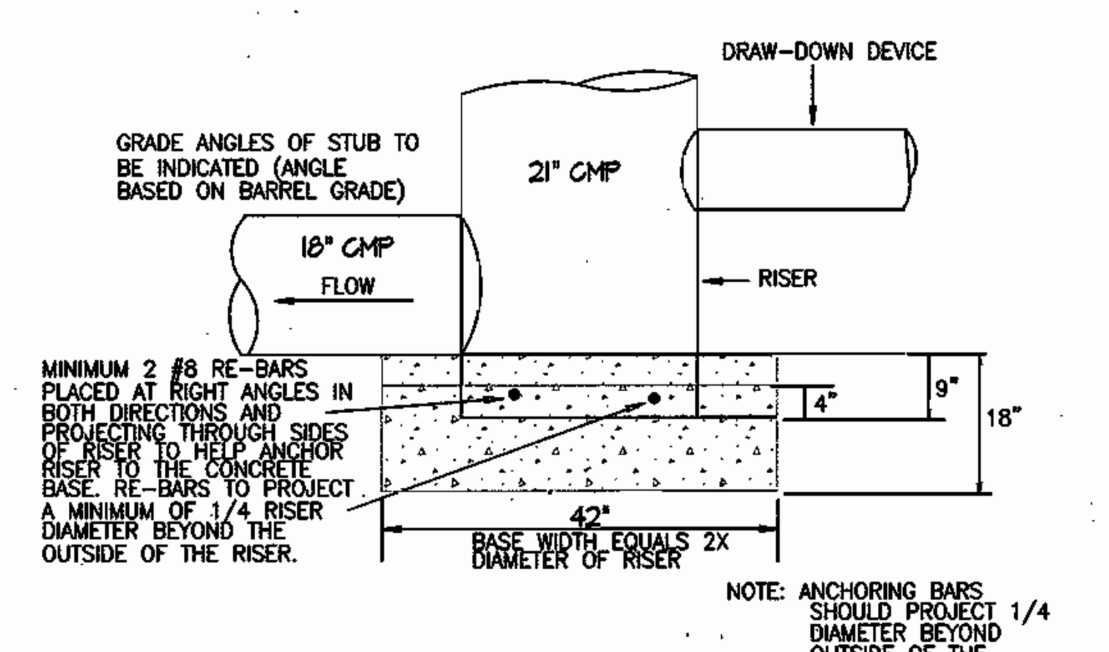
SCALE : 1"=20'



TYPICAL ANTI-SEEP COLLARS

NOT TO SCALE

NOTE: PROVIDE ONE COLLAR FOR P.O.S.T.



CONSTRUCTION SPECIFICATIONS

THE RISER SHALL HAVE A BASE ATTACHED WITH A WATERTIGHT CONNECTION AND SHALL HAVE SUFFICIENT WEIGHT TO PREVENT FLOTATION OF THE RISER. TWO APPROVED BASES FOR RISERS 10" OR LESS IN HEIGHT ARE:

1. A CONCRETE BASE 18" THICK WITH THE RISER EMBEDDED 9" IN THE BASE.
2. A 1/4" MINIMUM THICKNESS STEEL PLATE ATTACHED TO THE RISER BY A CONTINUOUS WELD AROUND THE CIRCUMFERENCE OF THE RISER TO FORM A WATERTIGHT CONNECTION. THE PLATE SHALL HAVE 2' OF STONE, GRAVEL, OR COMPACTED EARTH PLACED ON IT TO PREVENT FLOTATION. IN EITHER CASE, EACH SIDE OF THE SQUARE BASE SHALL BE TWICE THE RISER DIAMETER.

NOTE: FOR RISERS GREATER THAN TEN FEET HIGH COMPUTATIONS SHALL BE MADE TO DESIGN A BASE WHICH WILL PREVENT FLOATATION. THE MINIMUM FACTOR OF SAFETY SHALL BE 1.20 (DOWNWARD FORCES = 1.20 X UPWARD FORCES).

RISER BASE DETAIL

NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK 9/3/03 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT 9/4/03 DATE
DIRECTOR 9/6/03 DATE

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 08/06/03

MATERIALS SPECIFICATIONS

Geotextile Fabrics

CLASS	APPARENT OPENING SIZE MM. MAX.	GRAB TENSILE STRENGTH LB. MIN.	BURST STRENGTH PSI. MIN.
A	0.30**	250	500
B	0.60	200	320
C	0.30	200	320
D	0.60	90	145
E	0.30	90	145
F (SILT FENCE)	0.40-0.80*	90	190

*US Std Sieve CW-02215 **.50 mm. max. for Super Silt Fence

The properties shall be determined in accordance with the following procedures:

- -Apparent opening size MSMT 323
- -Grab tensile strength ASTM D 1682: 4x8" specimen, 1x2" clamps, 12"/min. strain rate in both principal directions of geotextile fabric.
- -Burst strength ASTM D 3786

The fabric shall be inert to commonly encountered chemicals and hydrocarbons, and will be rot and mildew resistant. It shall be manufactured from fibers consisting of long chain synthetic polymers, and composed of a minimum of 85% by weight of polyolephins, polyesters, or polyamides. The geotextile fabric shall resist deterioration from ultraviolet exposure.

In addition, Classes A through E shall have a 0.01 cm/sec. minimum permeability when tested in accordance with MSMT 507, and an apparent minimum elongation of 20 percent (20%) when tested in accordance with the grab tensile strength requirements listed above.

Silt Fence
Class F geotextile fabrics for silt fence shall have a 50 lb./in. minimum tensile strength and a 20 lb./in. minimum tensile modules when tested in accordance with MSMT 509. The material shall also have a 0.3 gal./sf./min. flow rate and seventy-five percent (75%) minimum filtering efficiency when tested in accordance with MSMT 322.

Geotextile fabrics used in the construction of silt fence shall resist deterioration from ultraviolet exposure. The fabric shall contain sufficient amounts of ultraviolet ray inhibitors and stabilizers to provide a minimum of 12 months of expected usable construction life at a temperature range of 0 to 120 degrees F.

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previosly loosened.

Soil Amendments: In lieu of soil test recommendations, use one of the following schedules

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

Seeding -- For the periods March 1 -- April 30, and August 1 -- October 15, seed with 60 lbs/acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 -- July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs/acre (.05 lbs/1000 sq. ft.) of weeping lovegrass. During the period of October 16 -- February 28, protect site by: Option 1 -- Two tons per acre of 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 30 Tall Fescue and mulch with 2 tons/acre well anchored straw.

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 slope 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq. ft.) for anchoring.

Maintenance -- Inspect all seeding areas and make needed repairs, replacements and reseedings.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be re-disturbed where a short-term vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previosly loosened.

Soil Amendments: -- Apply 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.)

Seeding -- For the periods March 1 -- April 30, and August 1 -- October 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs/1000 sq. ft.). For the period May 1 -- August 14, seed with 3 lbs/acre of weeping lovegrass (.07 lbs/1000 sq. ft.). For the period November 16 -- February 28, protect site by apply 2 tons/acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching -- Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted weed-free, 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 slope 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq. ft.) for anchoring.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods not covered.

SEQUENCE OF CONSTRUCTION	NUMBER OF DAYS
1. Obtain grading permit.	7
2. Install Stone Construction Entrance, Super Silt Fence and Tree Protection Fence where shown.	7
3. Construct storm drainage I-7 through E-1 and install Curb Inlet Protection. Install Earth Dikes after storm drainage I-7 to E-1 is installed and functioning.	14
4. Install Pipe Outlet Sediment Trap (Trap #1).	14
5. Upon approval of the sediment control inspector, rough grade site and excavate for building foundation.	14
6. Begin building construction.	180
7. Install utilities.	30
8. Construct remaining storm drainage. Temporarily block 18" SD leaving Str. M-10.	30
9. Construct access drive, parking lot and walkways.	90
10. Fine grade and stabilize all pervious areas in accordance with standard specifications.	30
*11. Flush storm drain system and with permission from the Sediment Control Inspector, remove sediment and erosion control measures (except SSF).	30
12. Convert Trap to SWM Facility and remove blocking at M-10. Construct retaining wall, install guard rail and fence, and temporarily block storm drains entering WQ facility. Temporarily block 8" pipe leaving M-10 and 6" pipe leaving I-6.	30
13. Install Sand Filter and stabilize.	30
*14. With permission from the Sediment Control Inspector remove sediment and erosion control measures, pipe and blocking and stabilize all areas disturbed by this process.	30

*NOTE : Contractor is responsible for removing any sediment from the site deposited into SWM Facility #7.

SEDIMENT AND EROSION CONTROL NOTES

1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction (410-313-1855).
2. 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 SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.
3. Following initial soil disturbance or re-disturbance, 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 12, of the 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 seedings (Sec.51), sod (Sec.54), temporary seeding (Sec.50) and mulching (Sec.52). Temporary stabilization with mulch alone can only 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 conditions until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7. SITE ANALYSIS:
   - Total Area of Site: 2.93 Ac+/-
   - Area Disturbed: 3.05 Ac+/-
   - Area to be roofed or paved: 1.60 Ac+/-
   - Area to be vegetatively stabilized: 1.45 Ac+/-
   - Total Cut: 3500 CY
   - Total Fill: 3500 CY
   - Offsite Waste/Borrow Area Location: N/A
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 control 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 by the end of each work day, whichever is shorter.

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

Definition

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose

I. To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies

II. This practice is limited to areas having 2:1 or flatter slopes where:
  a. The texture of the exposed subsoil/parent materials not adequate to produce vegetative growth.
  b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients
  c. The original soil to be vegetated contains material too toxic to plant growth.
  d. the soil is so acidic that treatment with limestone is not feasible.

For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have appropriate stabilization shown on the plans.

Construction And Material Specifications

I. 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 type of soil can be found in the representative soil profile section in the Soil Survey published by USDA in cooperation with Maryland Agricultural Experimental Station.

II. Topsoil Specifications - Soil to be used must meet the following:
  1. 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 textured subsoils and shall contain less than 5% by volume of cinders stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1.5" in diameter.
  2. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, johnsongrass, nutsedge, poison ivy, thistle, or others as specified.
  3. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons per acre (200-400 pounds per 1000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and be worked into the soil in conjunction with tillage operations as described in the following procedures.

III. For site shaving disturbed areas under 5 acres:
  1. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Vegetative Stabilization Methods and Materials.

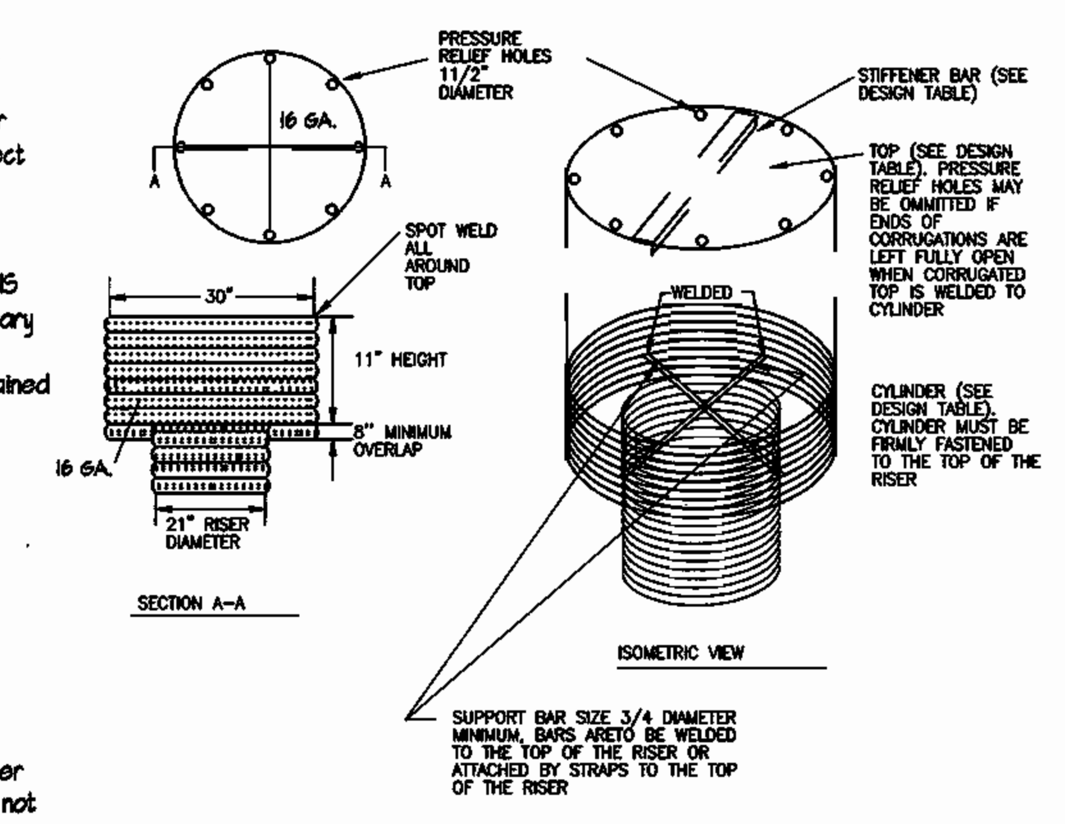
IV. For sites having disturbed areas over 5 acres:
  1. On soil meeting topsoil specifications, obtain test results dictating fertilizer and lime amendments required to to bring the soil into compliance with the following:
    a. pH for topsoil shall not be between 6.0 and 7.5 . If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
    b. Organic content of topsoil shall not be less than 1.5 percent by weight.
    c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
    d. No sod 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 phyto-toxic materials.

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

  2. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Vegetative Stabilization Methods and Materials.

V. Topsoil Application
  1. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
  2. Grades on the areas to be topsoiled , which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.
  3. 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 sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from top soiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
  4. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition that may otherwise be detrimental to proper grading and seedbed preparation.

VI. 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:
  1. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall confirm to the following requirements:
    a. 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.
    b. 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 prior to use.
    c. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1000 square feet, and 1/3 the normal lime application rate.



RISER DIAM., IN.	TRASH RACK CYLINDER DIAM. IN.	THICK., GAGE	H, IN.	MINIMUM SIZE SUPPORT BAR	MINIMUM TOP THICKNESS	STIFFENER
21	30	16	11	#6 REBAR	16 GA.	--

NOTE: THE ABOVE TRASH RACK AND ANTI-VORTEX DEVICE INFORMATION IS ONLY FOR CORRUGATED METAL PIPE. CONCRETE RISERS MUST MEET THE REQUIREMENTS OF MD 378.

CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE

NOT TO SCALE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.
USDA – NATURAL RESOURCES CONSERVATION SERVICE 9/10/03 DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD SOIL CONSERVATION DISTRICT 9/10/03 DATE

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."

ENGINEER Jeffrey L. Schaub 8/19/03 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."

DEVELOPER Shelter Development LLC 8/18/03 DATE

OWNER: Snowden River LLLP
218 N. Charles Street , Suite 220
Baltimore, MD. 21201 Phone: 410-962-0595

Park View At Snowden River Sediment And Erosion Control Details

Route 175 Commercial
Section 1 Area 2
Parcel D-1
8610 Snowden River Parkway, Columbia, Maryland 21045
6 th Election District Howard County, Maryland
Tax Map 36 Grid 18 Parcel 521 Lot D-1 Zoning: NT Deed Ref. 6752/231

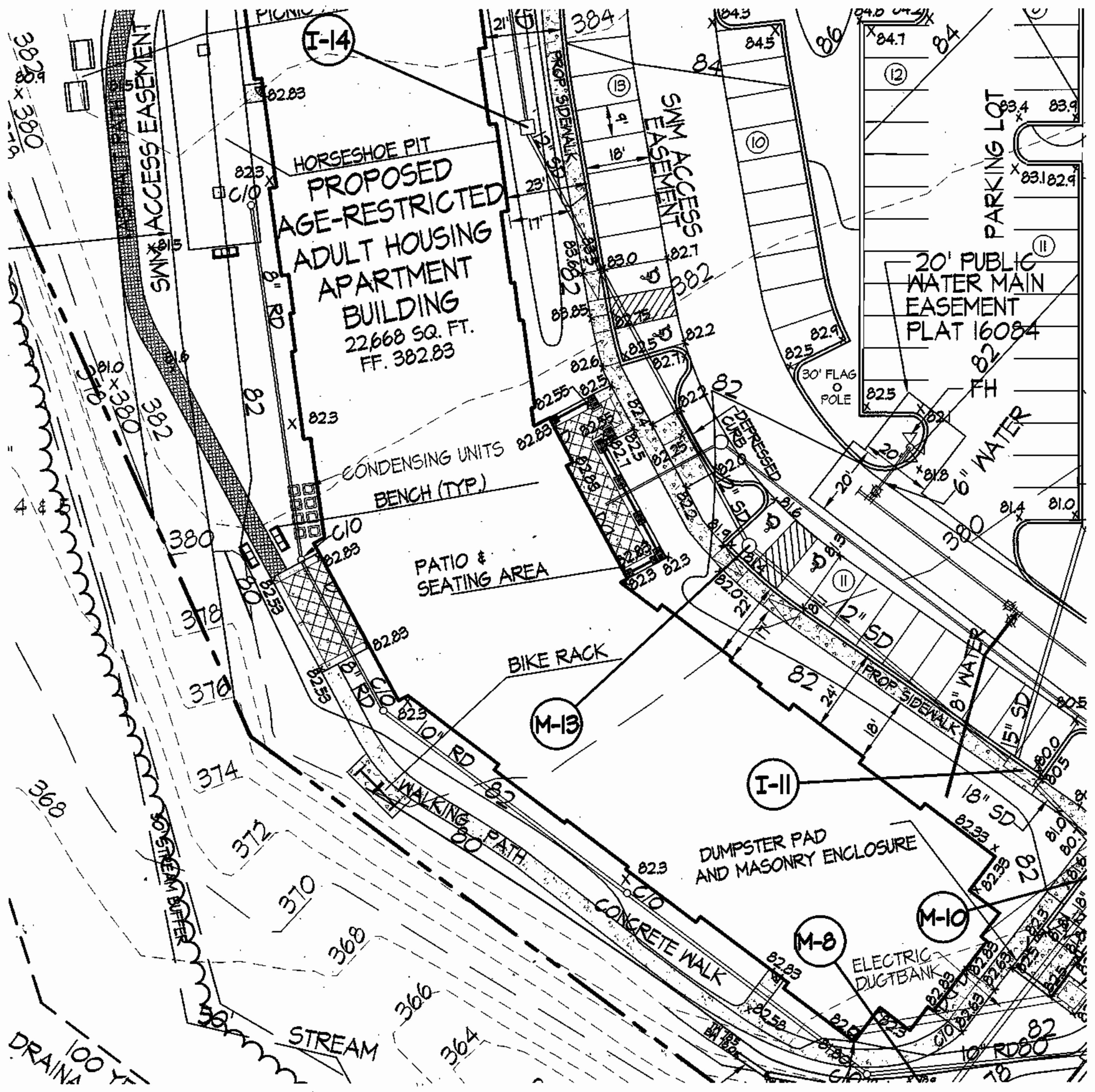
REVISIONS

STATE OF MARYLAND JEFFREY LYNN SCHAUB No. 14223 REGISTERED PROFESSIONAL ENGINEER

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14307 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

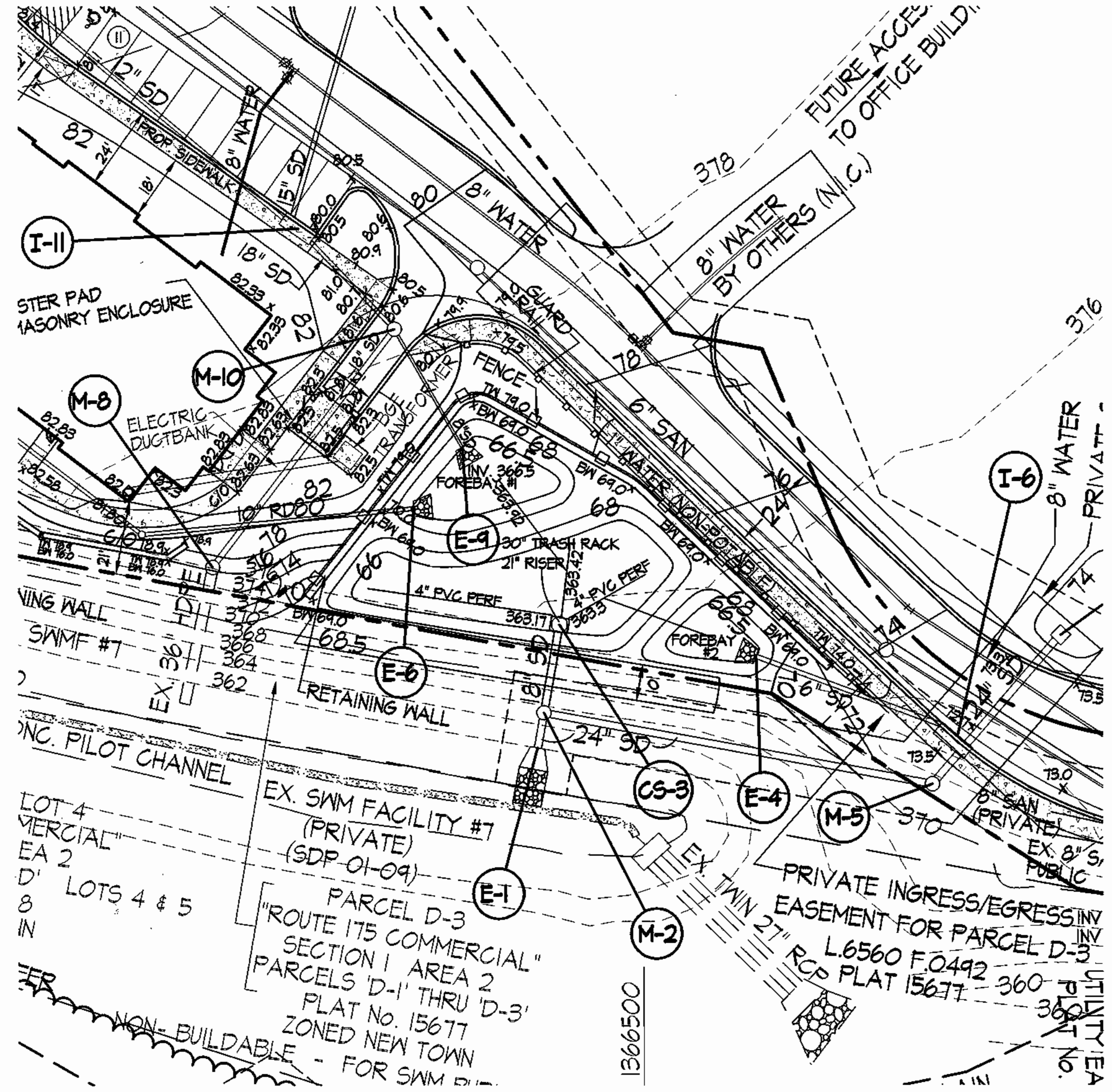
DRAWN BY: CGS	CONTRACT NO.:
DESIGNED BY: JLS	SCALE:
CHECKED BY: JLS	SRI PROJECT NO: 01130
DATE: Aug 19, 2003	SHEET 4 OF 15

SDP-03-142



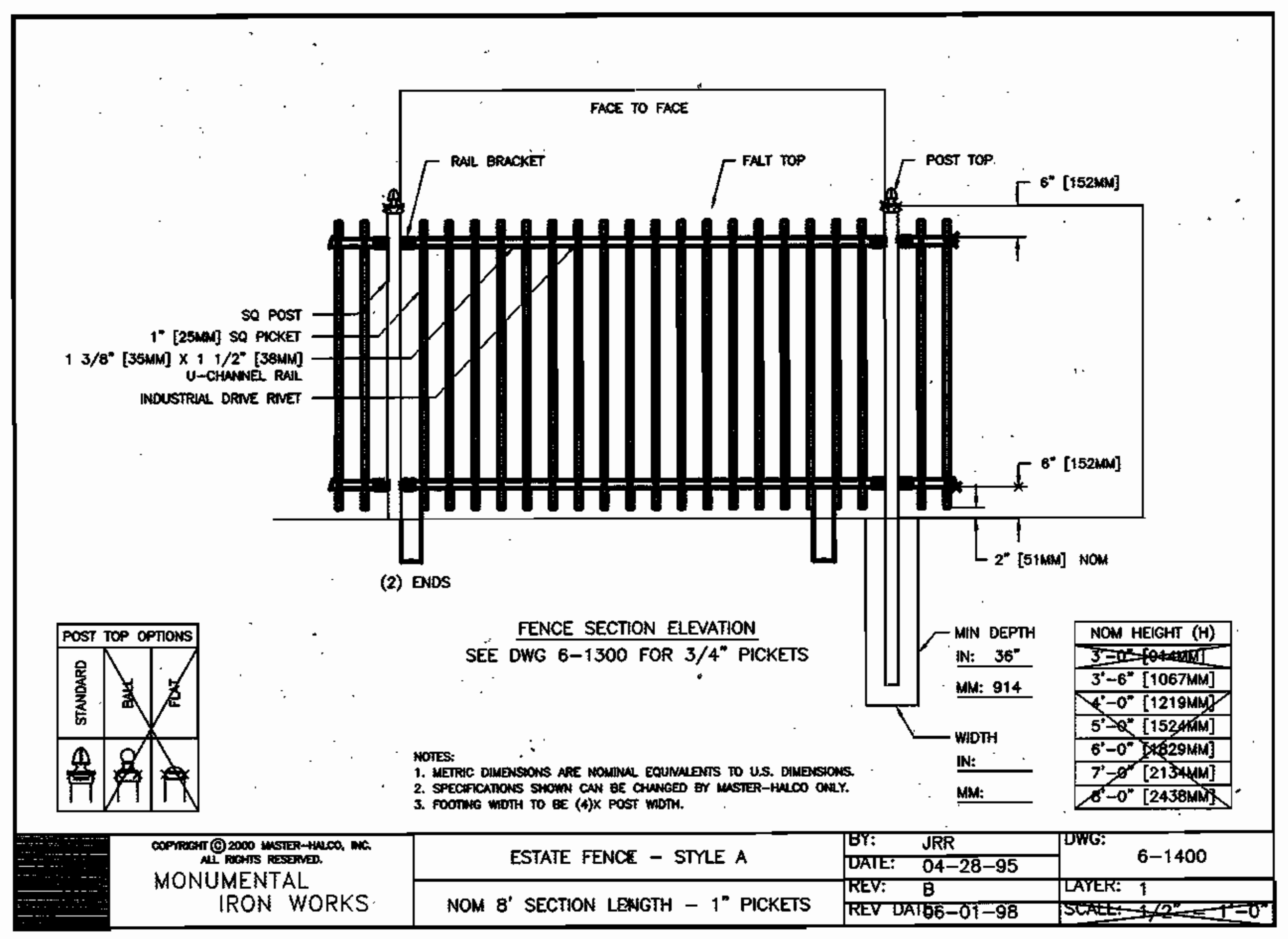
PLAN

SCALE : 1"=20'



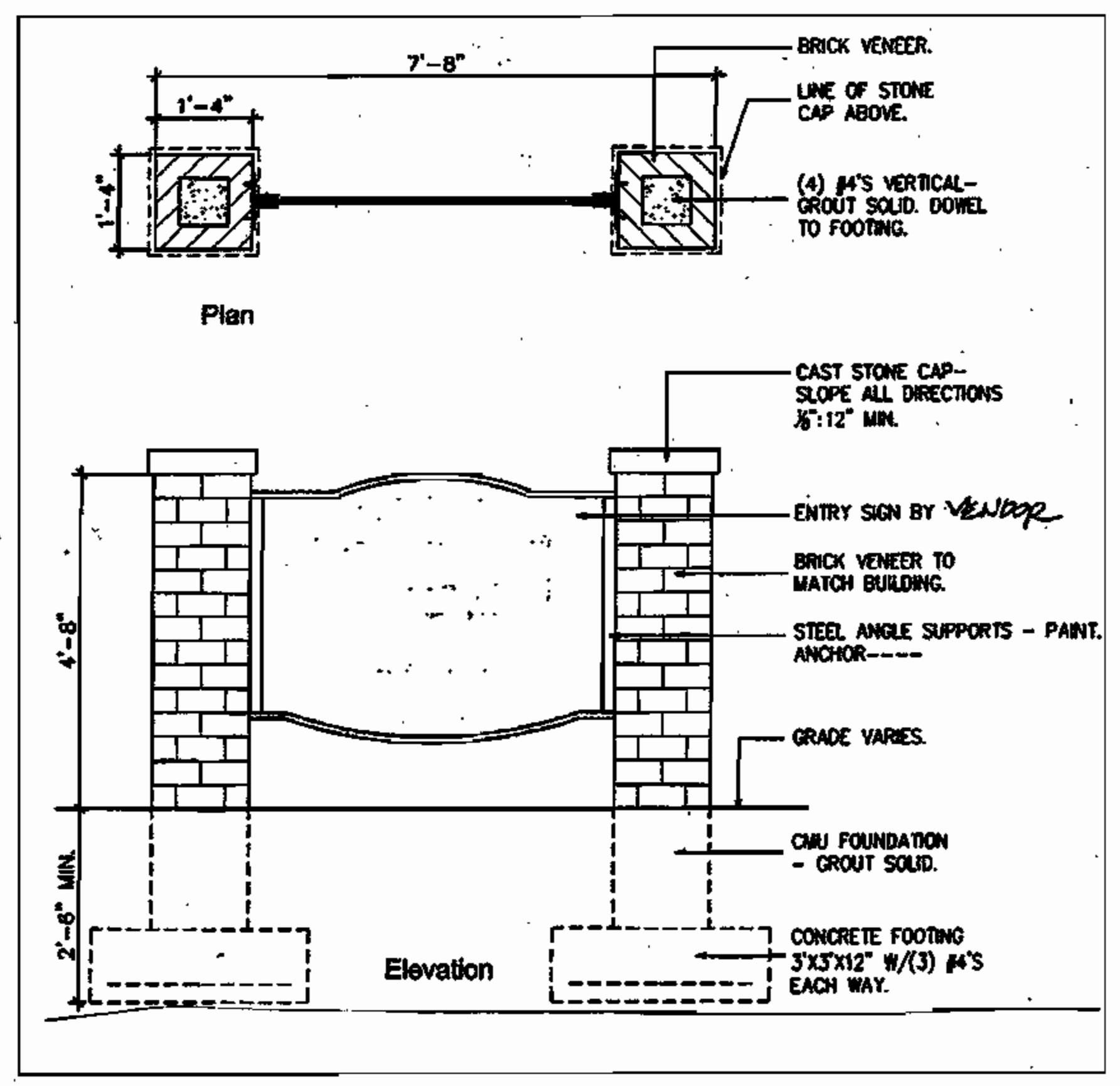
PLAN

SCALE : 1"=20'



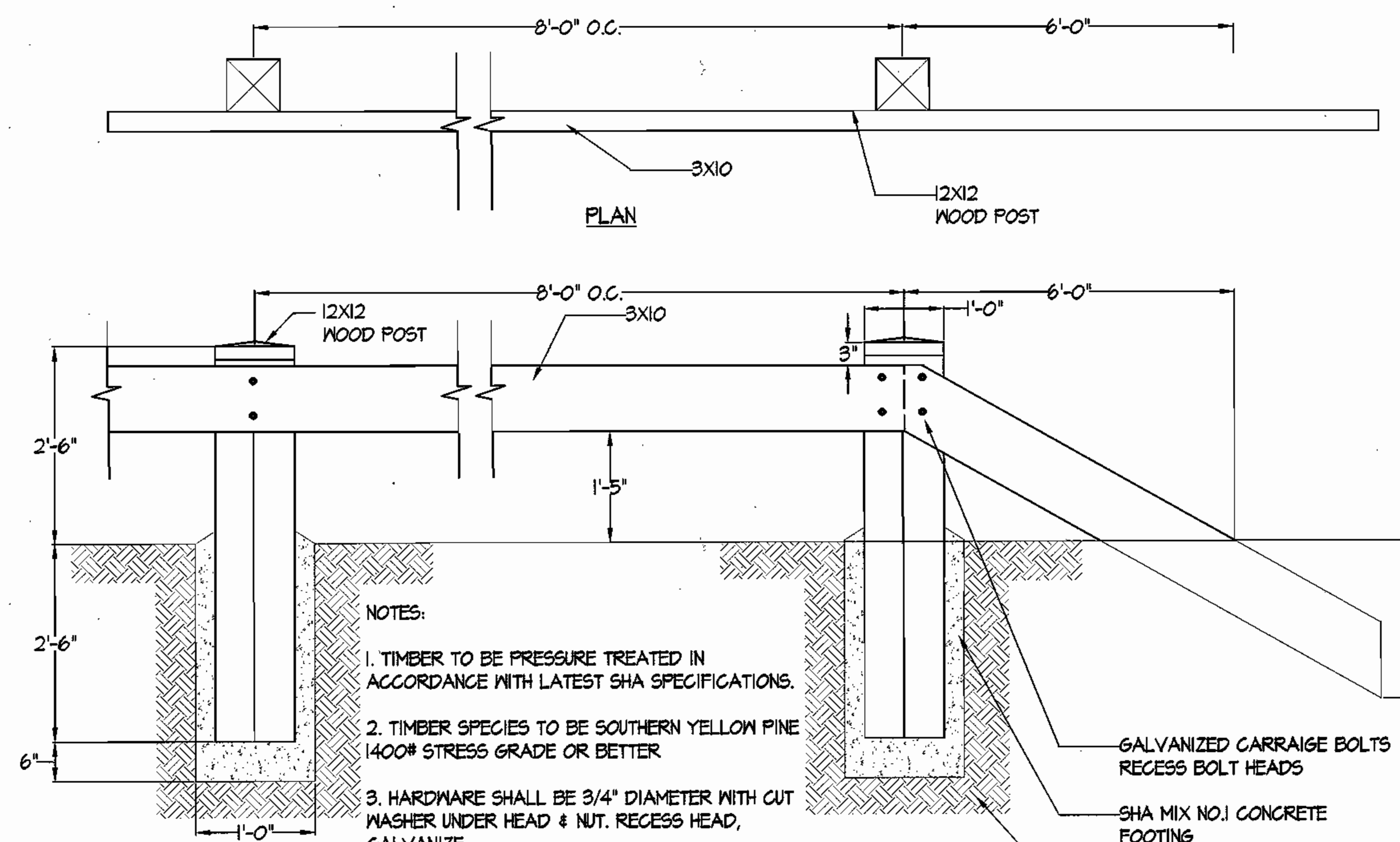
9 FENCE DETAIL

NOT TO SCALE



1 PROPOSED SIGN

NOT TO SCALE



NOTES:

1. TIMBER TO BE PRESSURE TREATED IN ACCORDANCE WITH LATEST SHA SPECIFICATIONS.
2. TIMBER SPECIES TO BE SOUTHERN YELLOW PINE 1400# STRESS GRADE OR BETTER
3. HARDWARE SHALL BE 3/4" DIAMETER WITH CUT WASHER UNDER HEAD & NUT. RECESS HEAD, GALVANIZE.
4. CONCRETE FOOTING SHALL BE SHA MIX NO.1
5. CO-ORDINATE FOOTINGS WITH GEO GRID WHERE ADJACENT TO RETAINING WALL.

DIA. TYPICAL
SECTION / ELEVATION

NOTE: DIMENSIONS TO BE VERIFIED IN FIELD

2 TIMBER GUARD RAIL

NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	9/3/03 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	9/4/03 DATE
DIRECTOR	9/9/03 DATE

APPROVED
PLANNING BOARD
of HOWARD COUNTY

DATE 08/06/03

OWNER: Snowden River LLLP
218 N. Charles Street, Suite 220
Baltimore, MD. 21201 Phone: 410-462-0595

Park View At Snowden River Site Details Plan

Route 175 Commercial
Section 1 Area 2
Parcel D-1
8610 Snowden River Parkway, Columbia, Maryland 21045
6 th Election District Howard County, Maryland
Tax Map 36 Grid 18 Parcel 521 Lot D-1 Zoning: NT Deed Ref. 6732/231

REVISIONS

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14307 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

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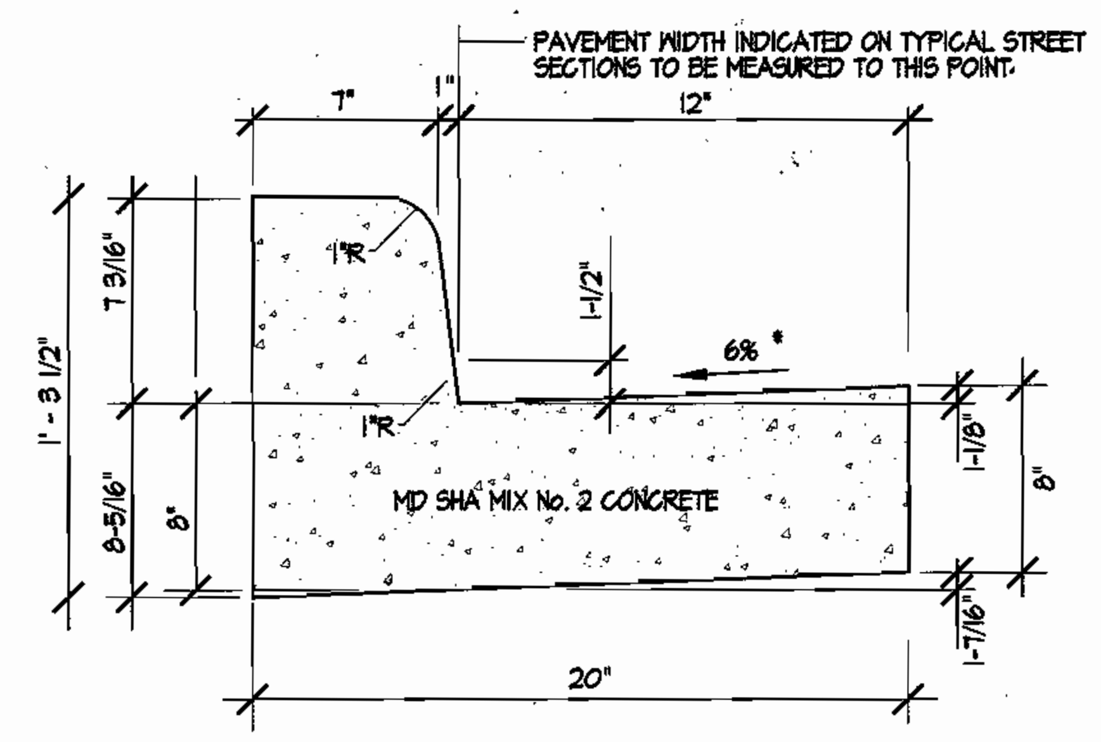
DATE: AUGUST 19, 2003	SHEET 5 OF 15

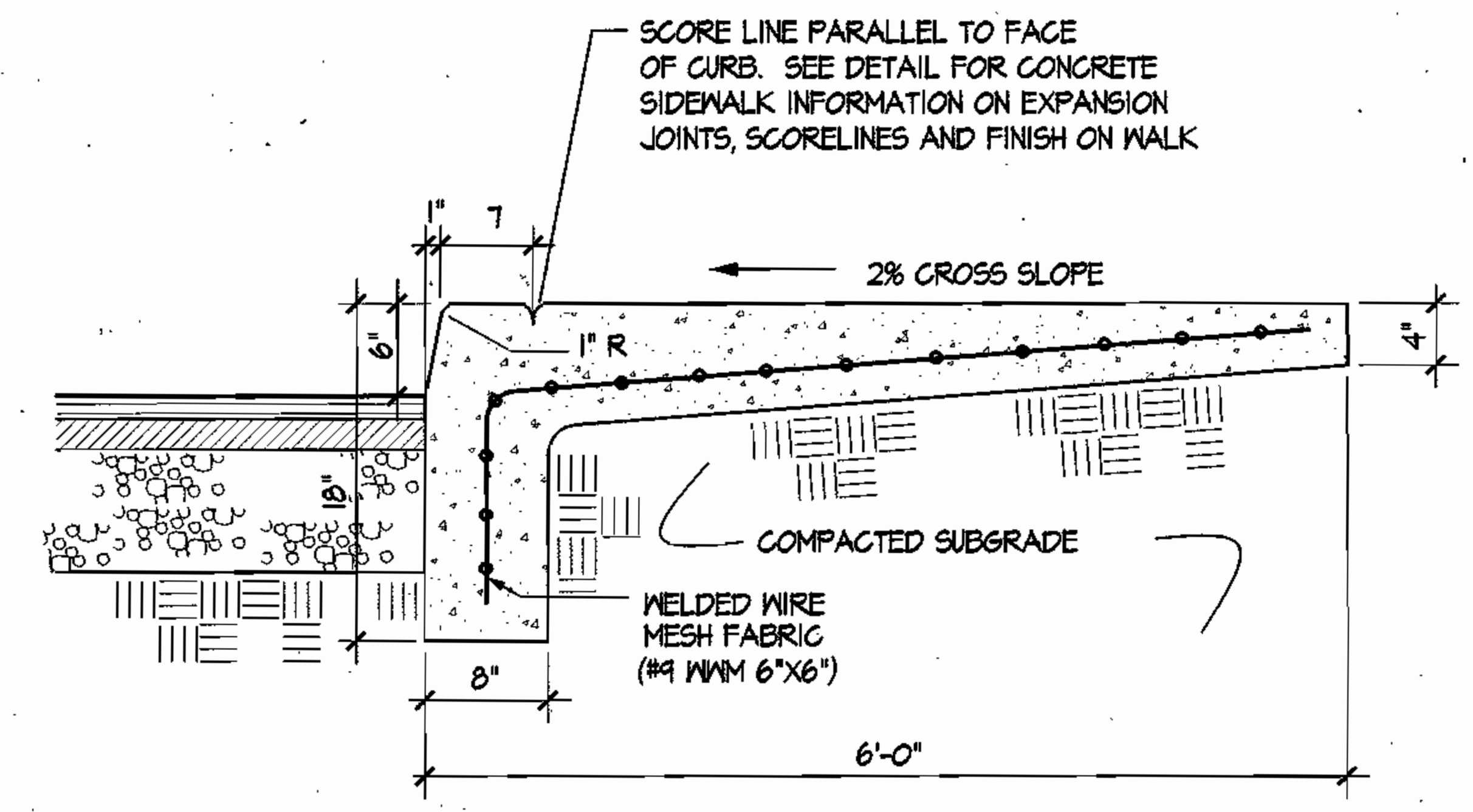
SDP-03-142



* WHERE PAVING IS SLOPED AWAY FROM CURB GUTTER PAN SHALL BE SLOPED TO MATCH PAVING

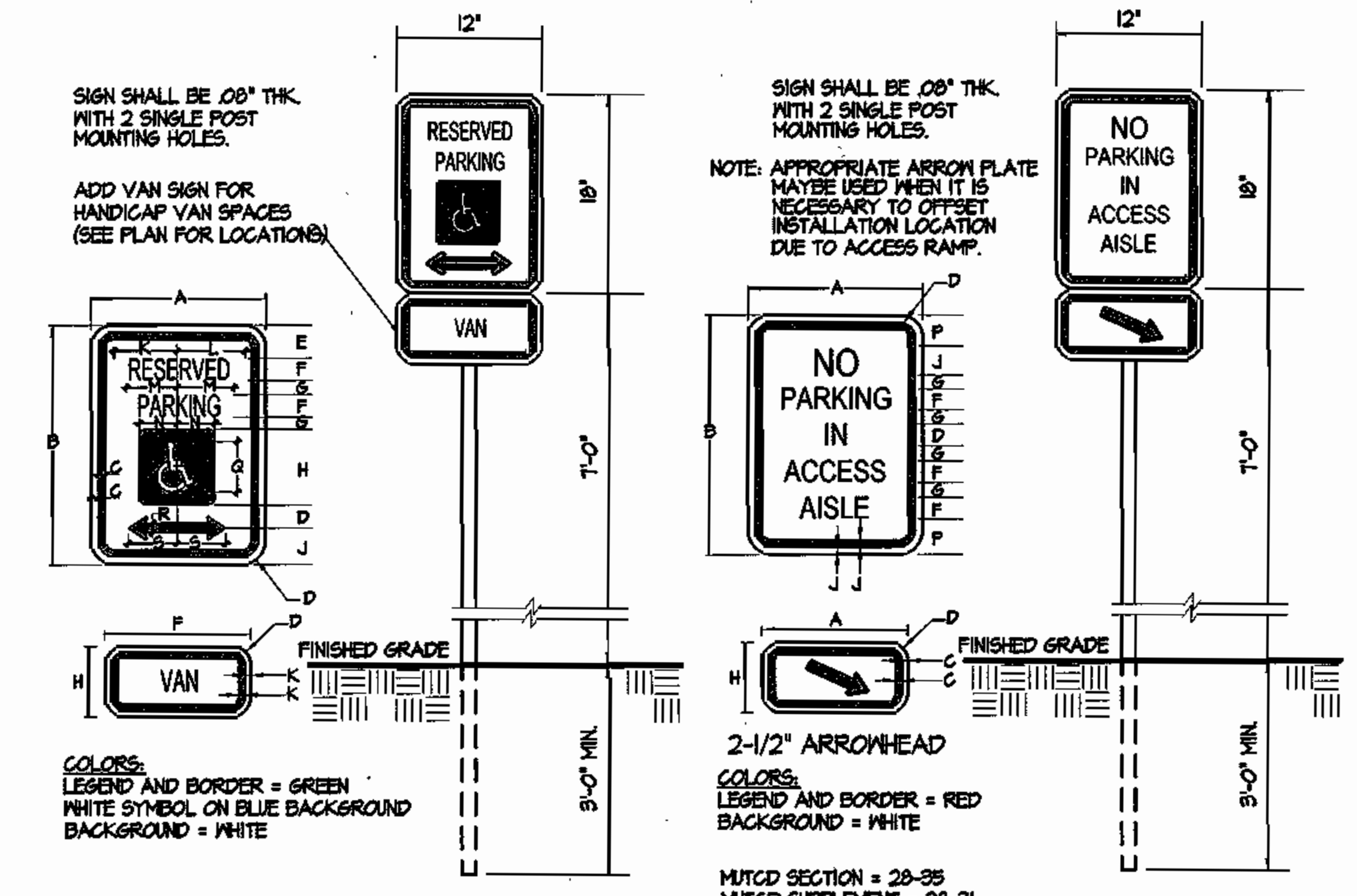
① STD. 6" COMB. CURB & GUTTER

NOT TO SCALE



② MONOLITHIC CURB AND SIDEWALK

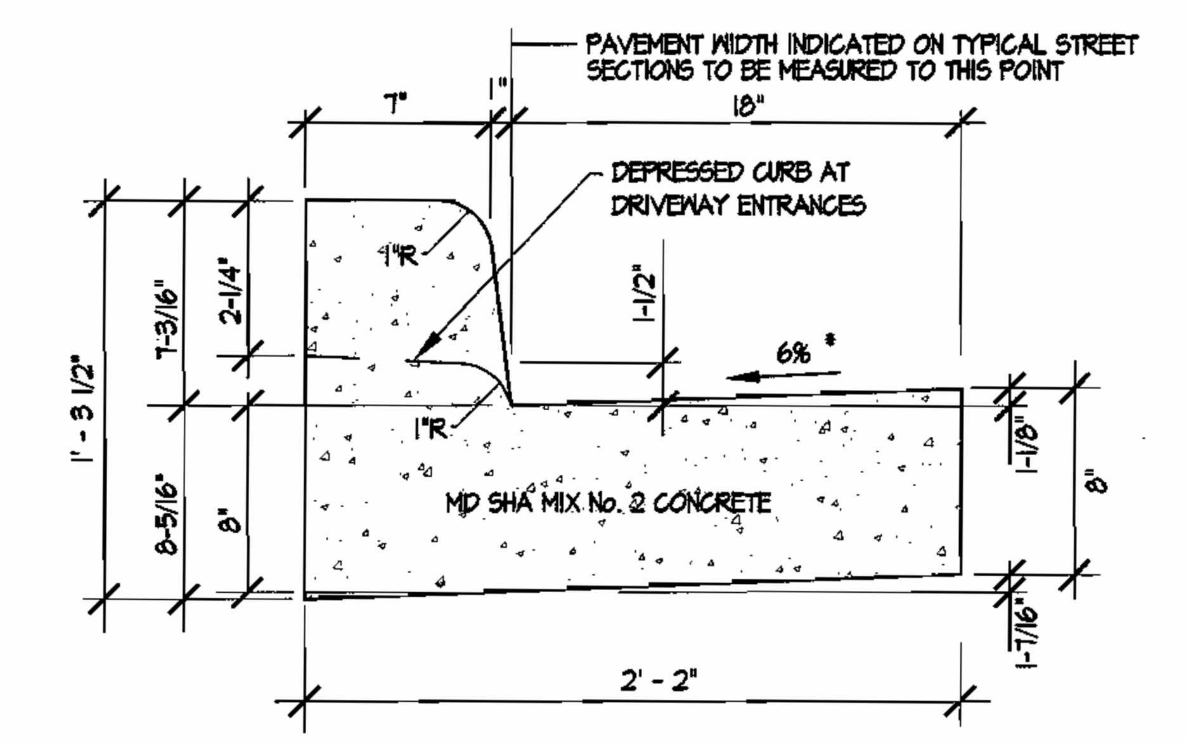
NOT TO SCALE



SIGN SIZE	DIMENSIONS (INCHES)																
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S
STD	12	18	1/2	1-1/2	2	2 C	1	6	2-1/2	4-7/8	5	4-1/4	3	1-3/4	4	3/4	3-7/8

③ HANDICAPPED SIGN DETAIL

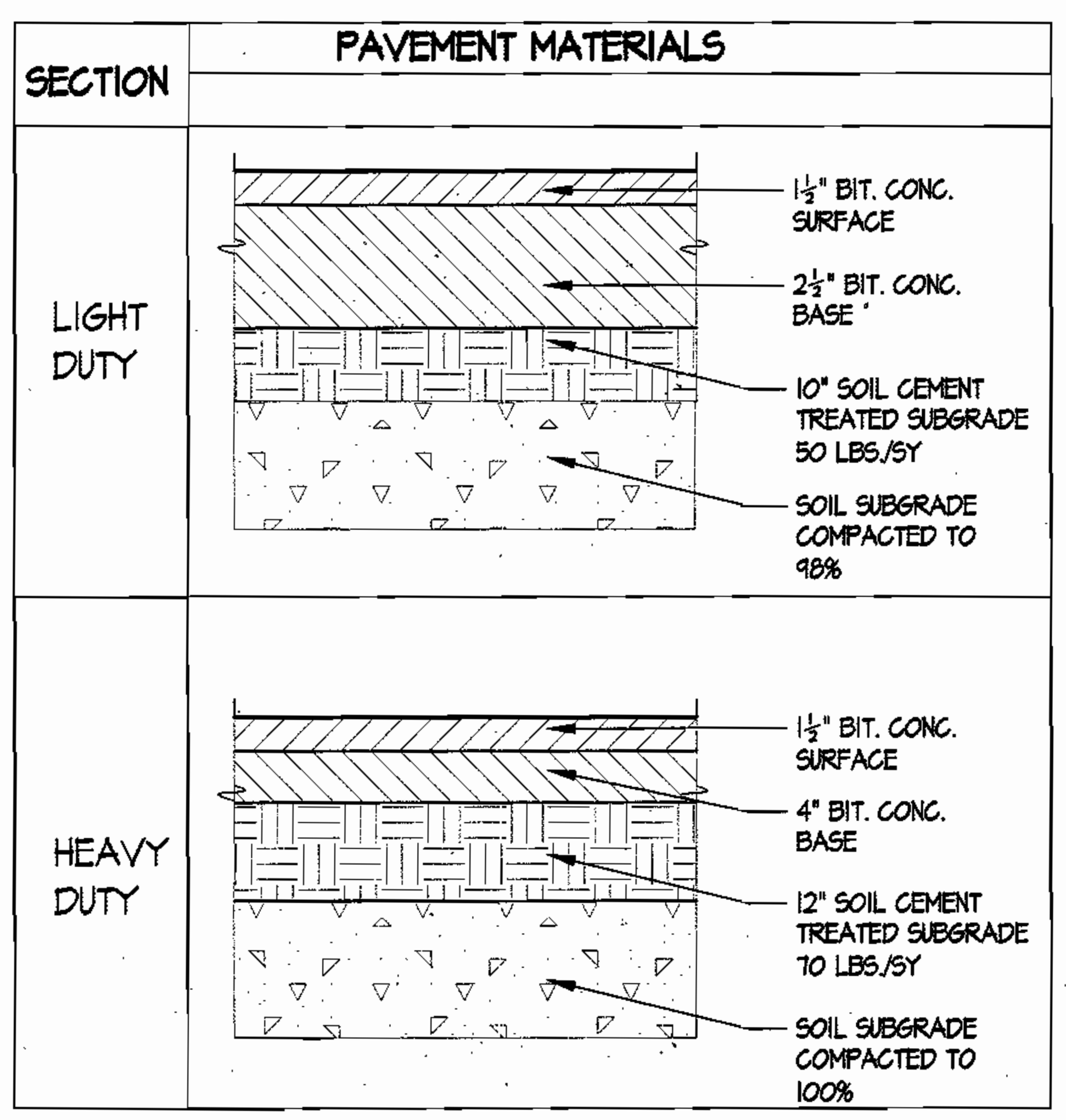
MD STD. NO. (R7-8) NOT TO SCALE



* GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AND IN THE SAME DIRECTION AS THE PAVEMENT. MATCH PAVEMENT CROSS SLOPE WHEN CURB IS LOCATED ON THE LOW SIDE OF SUPERELEVATED SECTION AND THE RATE OF SUPERELEVATION IS GREATER THAN 3% FOR MODIFIED CURB AND GUTTER.

④ STD. 7" COMB. CURB & GUTTER

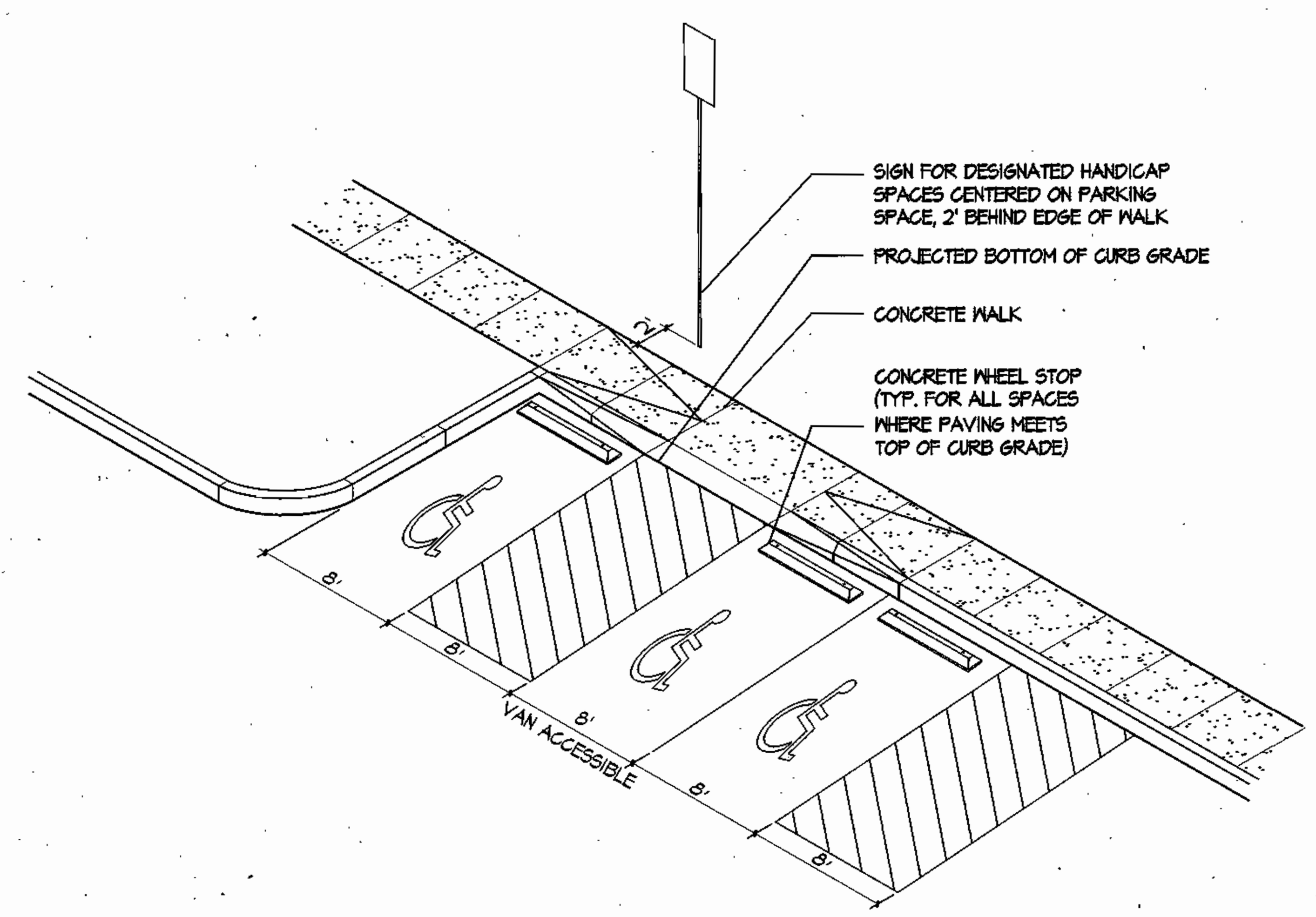
NOT TO SCALE



NOTE : PAVEMENT DESIGN TAKEN FROM GEOTECHNICAL REPORT DATED 12/21/02 PREPARED BY HARDIN-KNIGHT ASSOC.,INC.

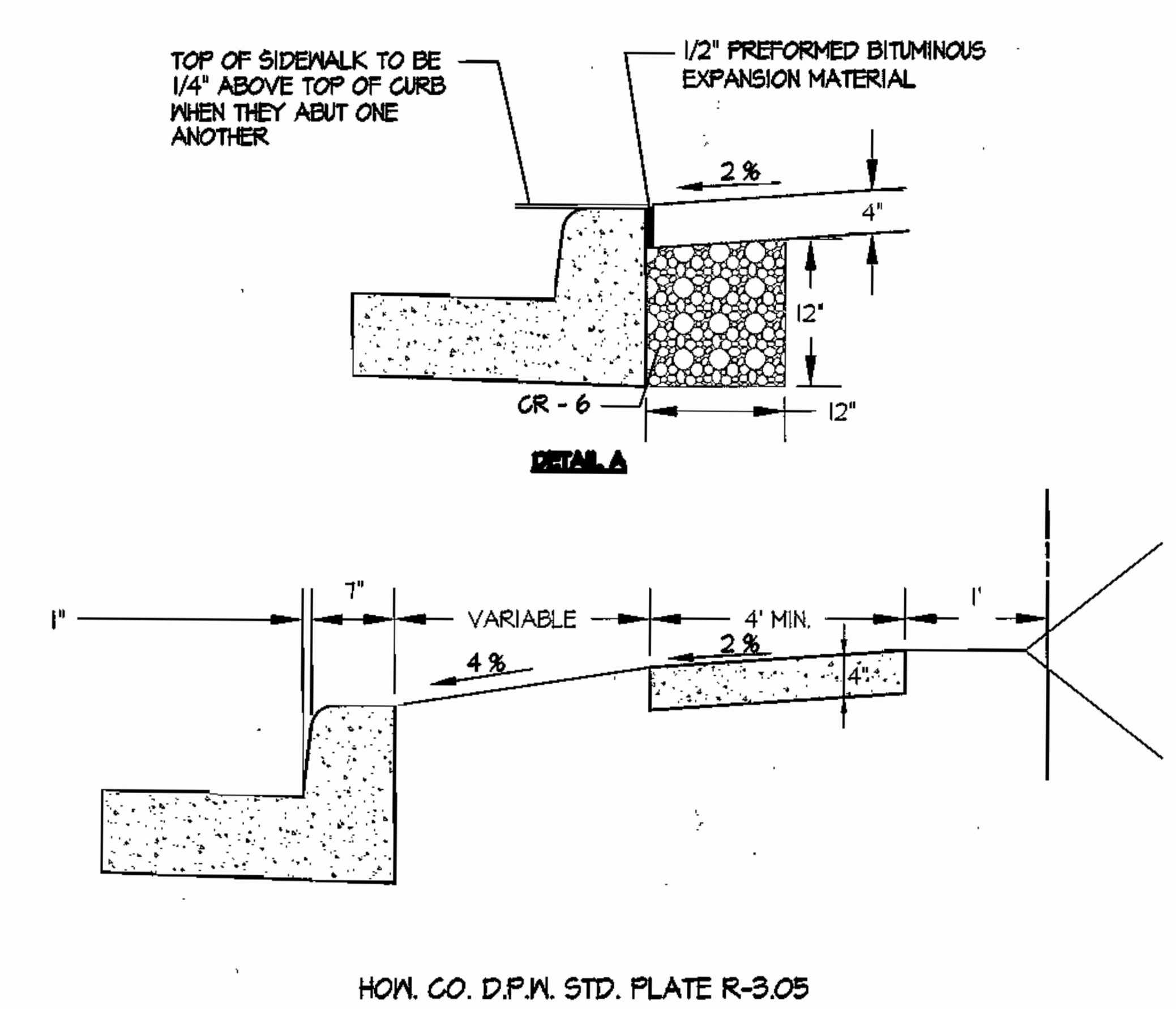
⑤ PAVING SECTIONS

NOT TO SCALE



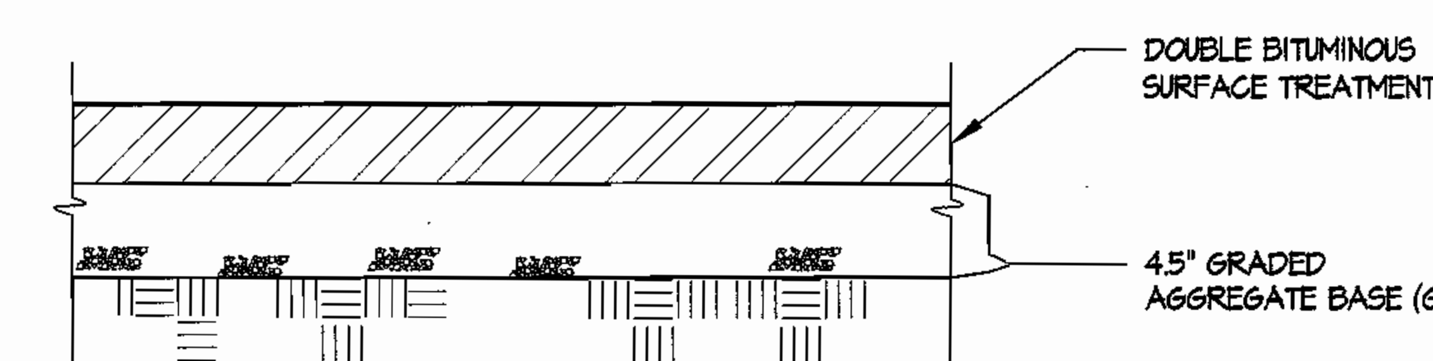
⑥ HANDICAPPED PARKING LAYOUT

NOT TO SCALE



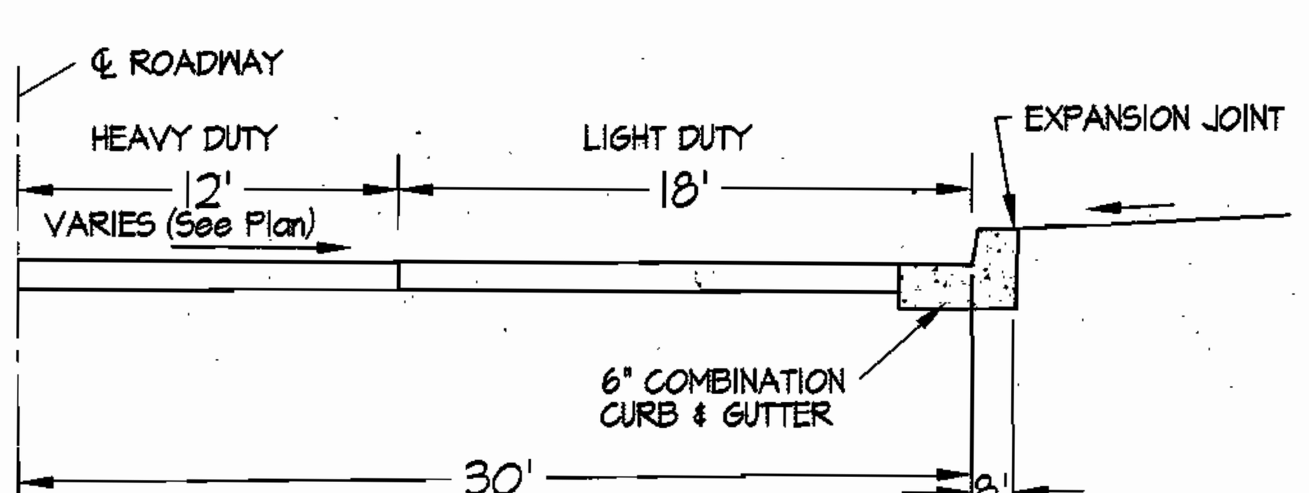
⑦ CONCRETE SIDEWALK

NOT TO SCALE



⑧ HOWARD COUNTY PAVING SECTION P-7 FOR ASPHALT PATH

NOT TO SCALE



⑨ TYPICAL PARKING SECTION

NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING & ZONING

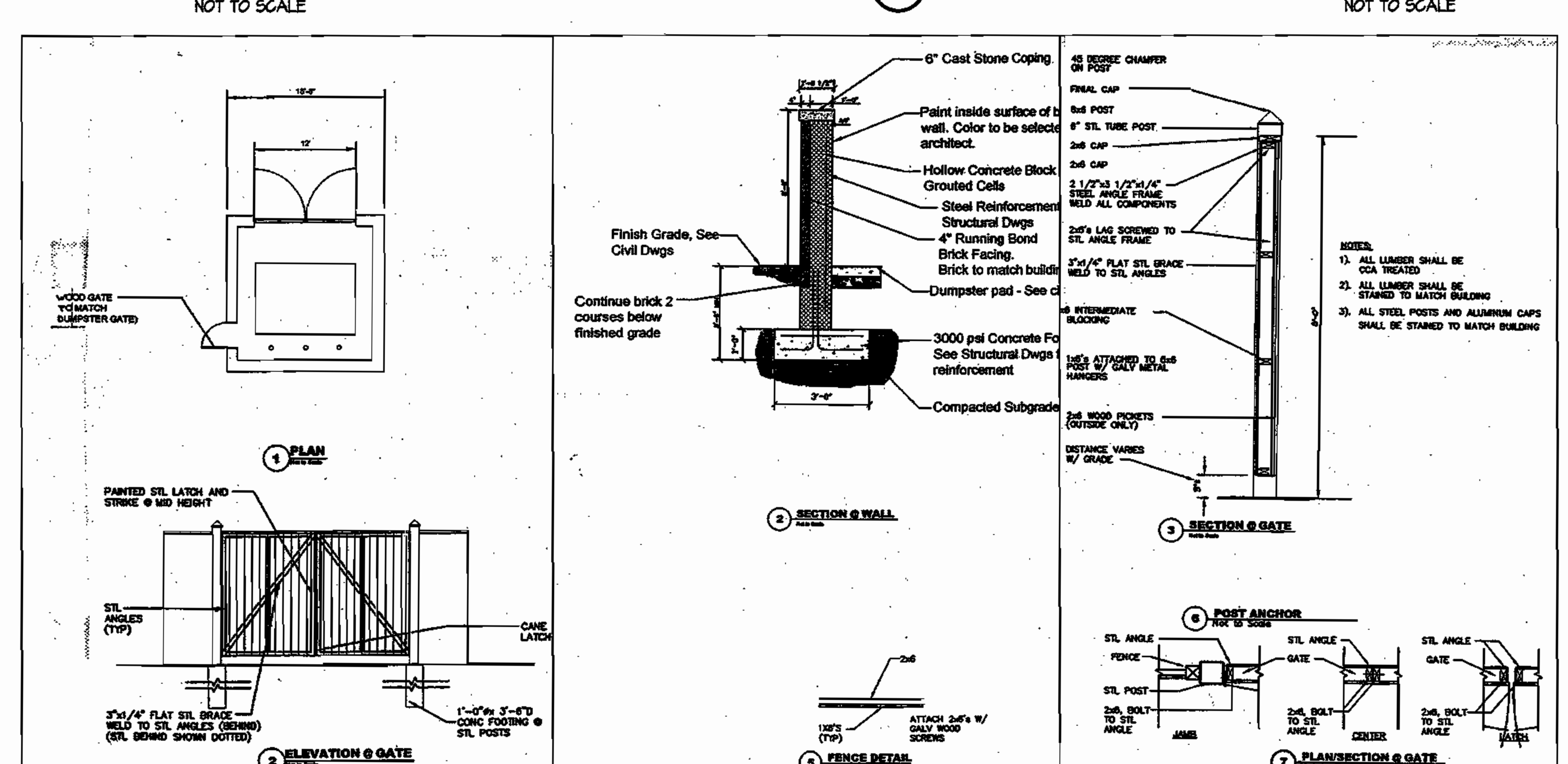
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE 9/2/03

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 9/4/03

DIRECTOR DATE 9/10/03

APPROVED
PLANNING BOARD
of HOWARD COUNTY

DATE 08/06/03



⑩ DUMPSTER ENCLOSURE

NOT TO SCALE

OWNER: Snowden River LLLP
218 N. Charles Street , Suite 220
Baltimore, MD. 21201 Phone: 410-962-0595

Park View At Snowden River Site Details Plan

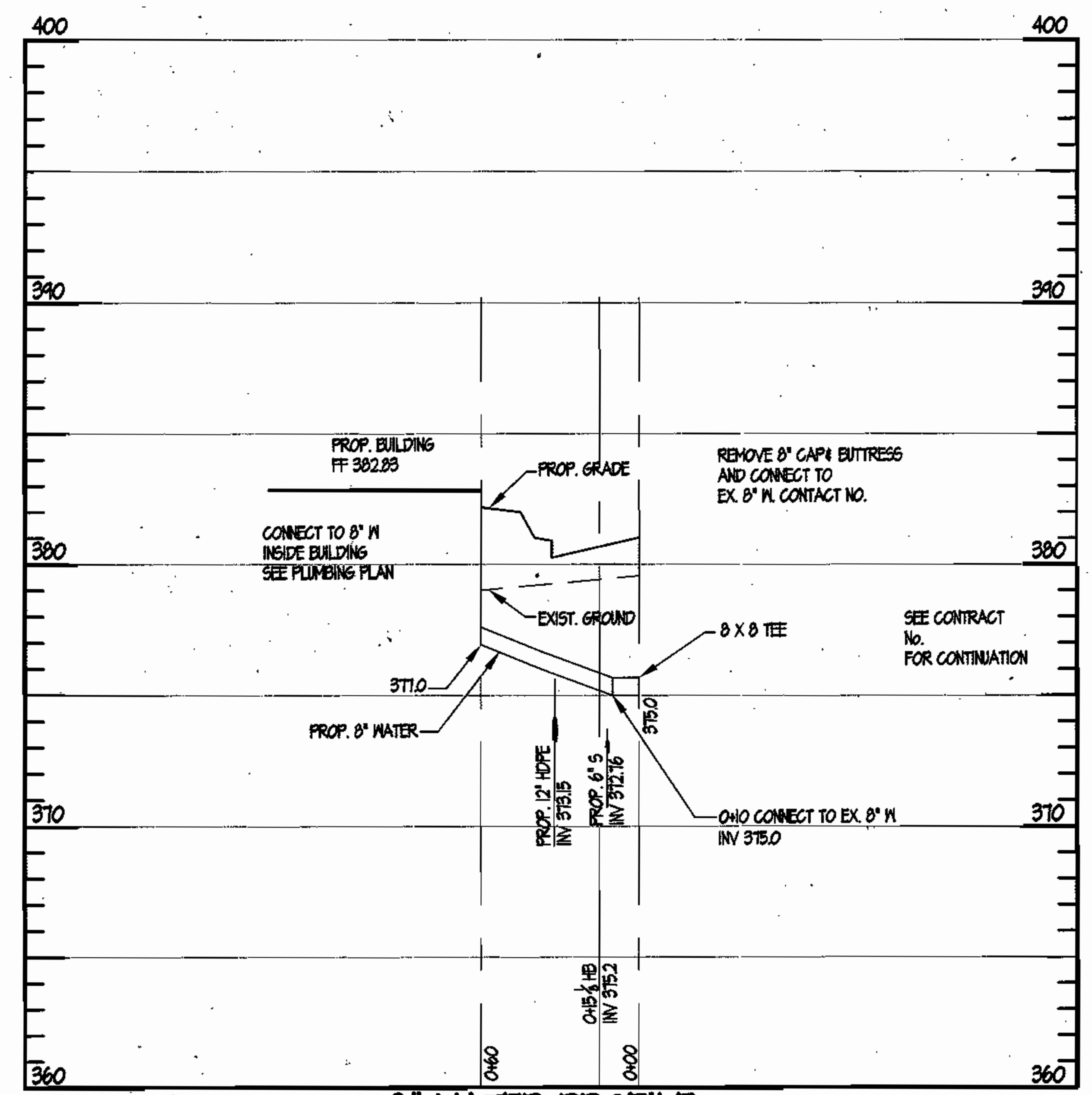
Route 175 Commercial
Section I Area 2
Parcel D-1
8610 Snowden River Parkway, Columbia, Maryland 21045
6 th Election District Howard County, Maryland
Tax Map 36 Grid 18 Parcel 521 Lot D-1 Zoning: NT Deed Ref. 6752/231

REVISIONS

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14307 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

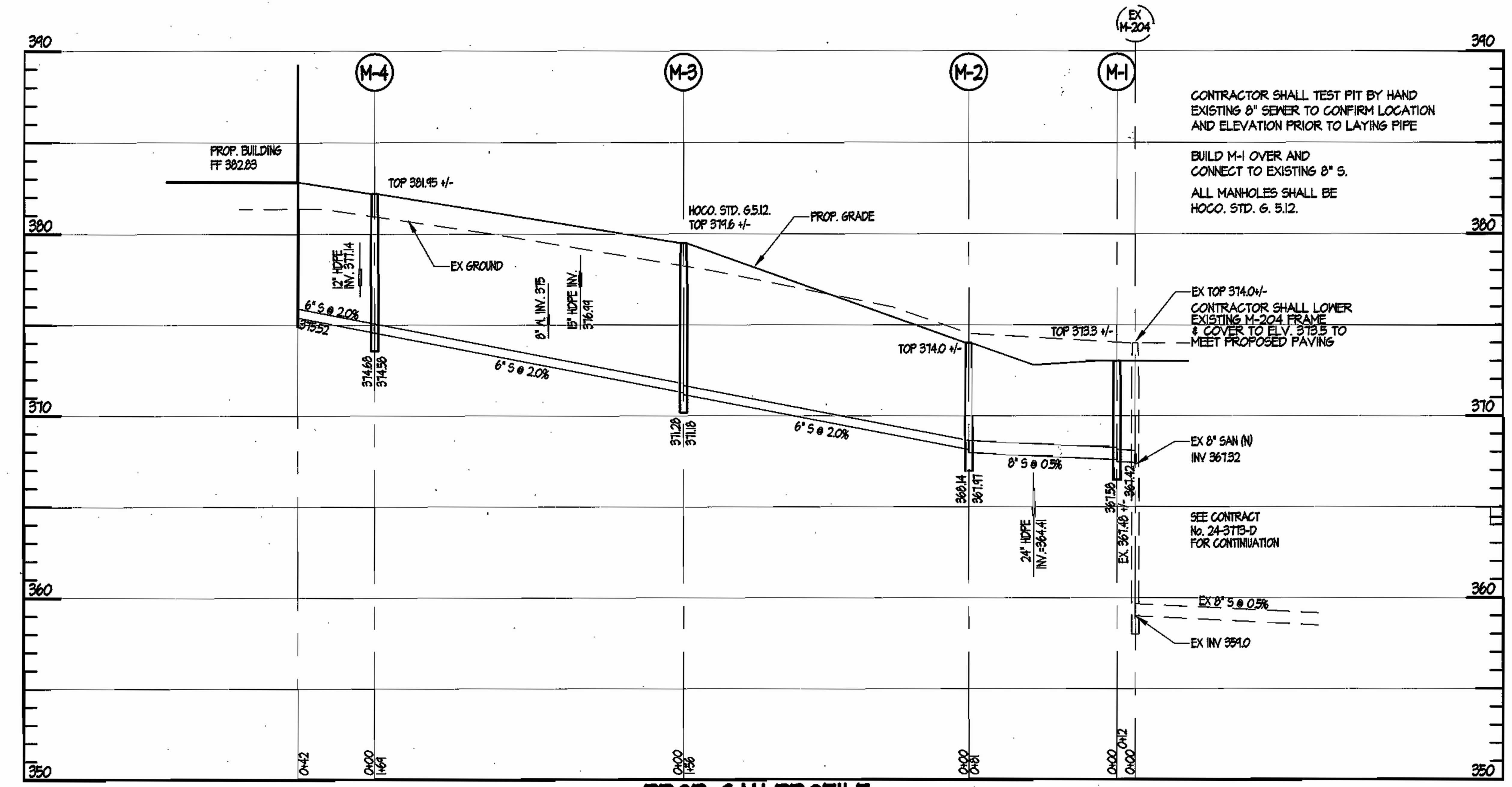
DRAWN BY: CGS	CONTRACT NO.:
DESIGNED BY: JLS	SCALE: AS SHOWN
CHECKED BY: JLS	SRI PROJECT NO: 01130
DATE: AUGUST 19, 2003	SHEET 6 OF 15

SDP-03-142



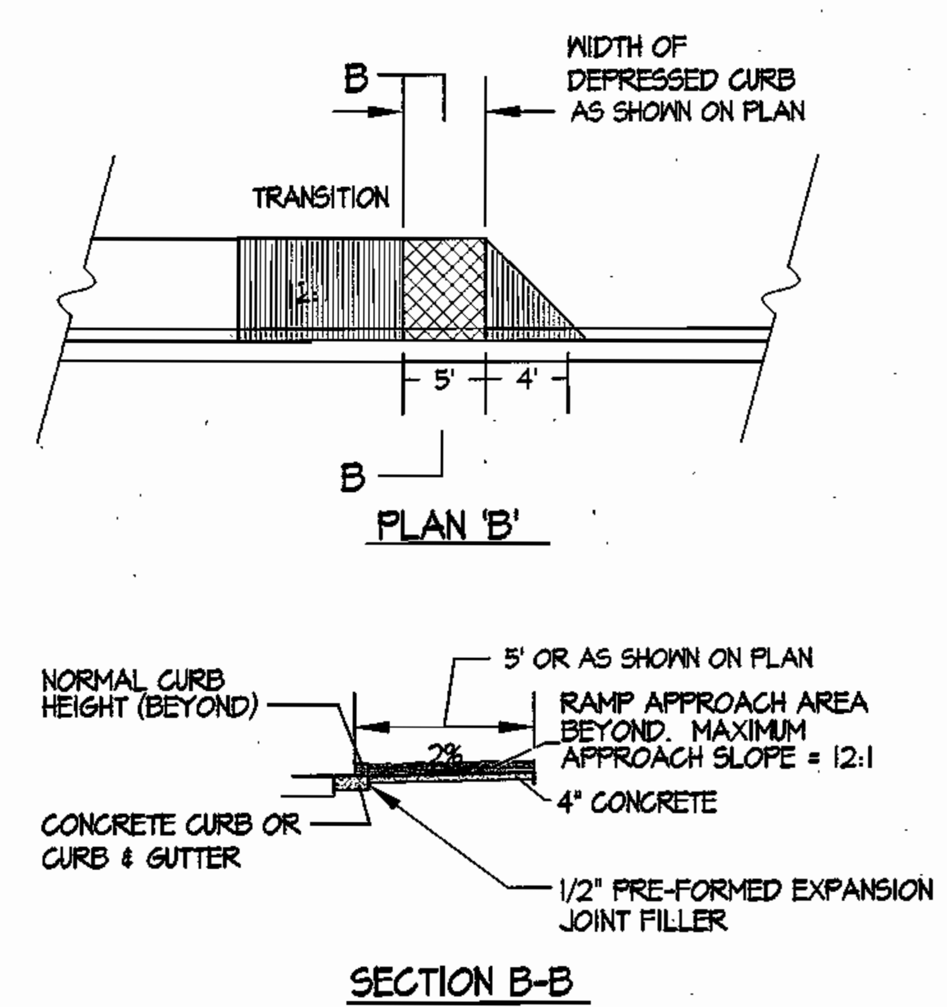
8" WATER PROFILE

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



PROP. SAN PROFILE

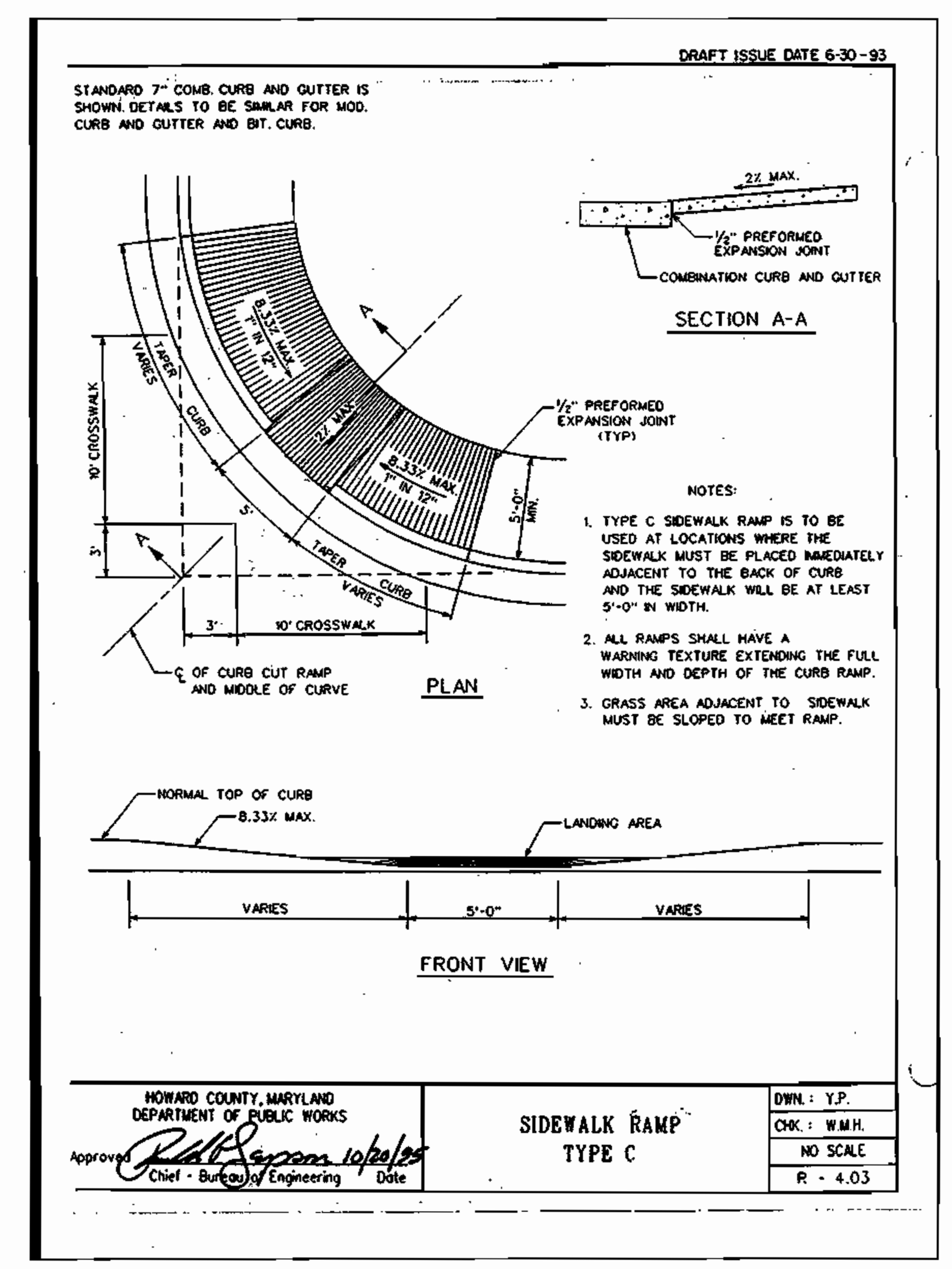
SCALE: HOR. 1" = 50' VERT. 1" = 5'



SURFACE TEXTURE OF ALL CONCRETE RAMPS SHALL BE COARSE BROOMING OR OTHER NON-SKID TYPE FINISH

CURB RAMP DETAILS

NOT TO SCALE



APPROVED: DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	9/3/03 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	9/4/03 DATE
DIRECTOR	9/4/03 DATE

APPROVED
PLANNING BOARD
of HOWARD COUNTY

DATE 08/06/03

OWNER: Snowden River LLLP
218 N. Charles Street, Suite 220
Baltimore, MD. 21201 Phone: 410-962-0595

Park View At Snowden River
Storm Drain Profiles

Route 175 Commercial
Section 1 Area 2
Parcel D-1
8610 Snowden River Parkway, Columbia, Maryland 21045
6 th Election District Howard County, Maryland
Tax Map 36 Grid 18 Parcel 521 Lot D-1 Zoning: NT Deed Ref. 6752/231

REVISIONS

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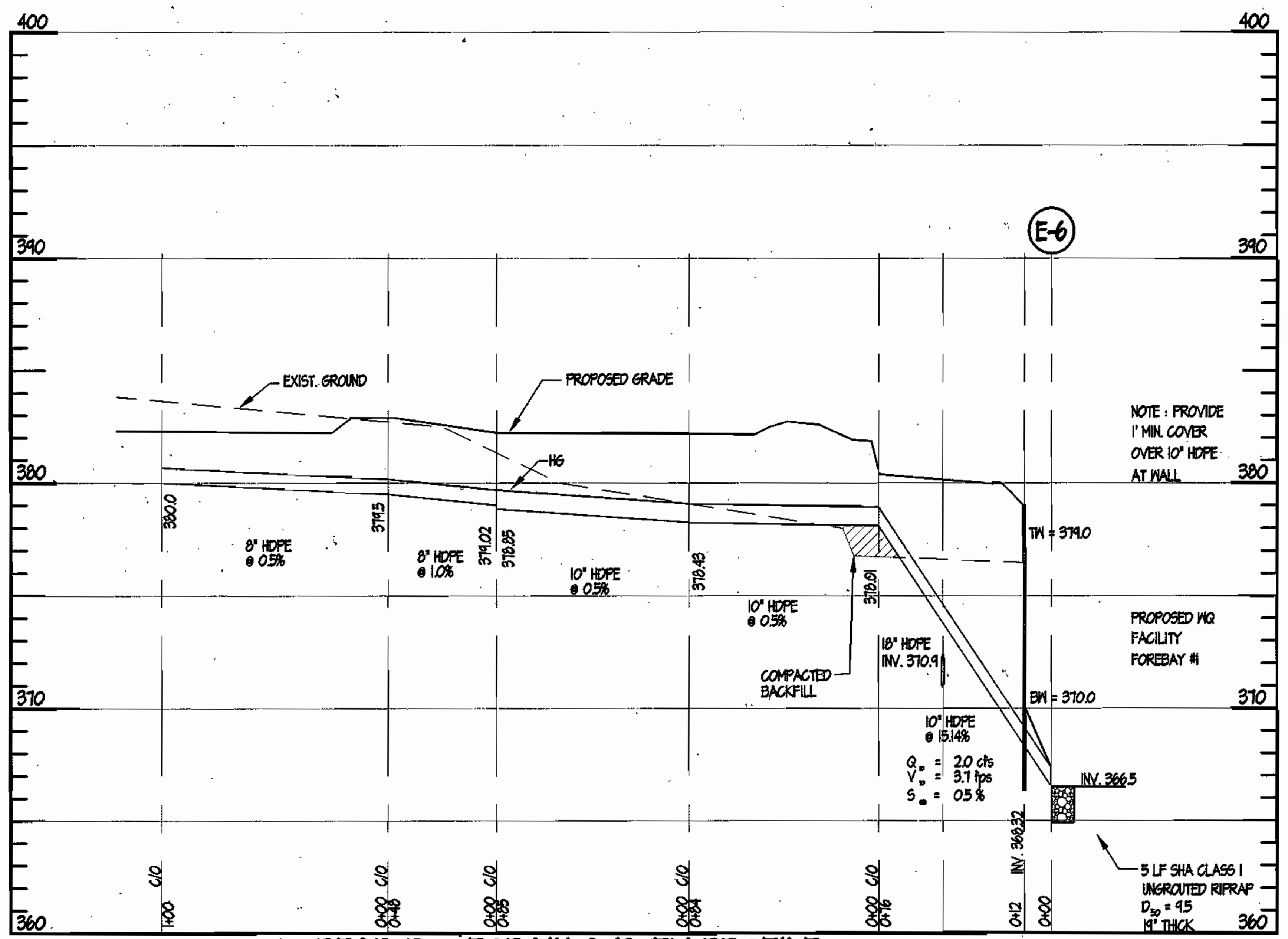
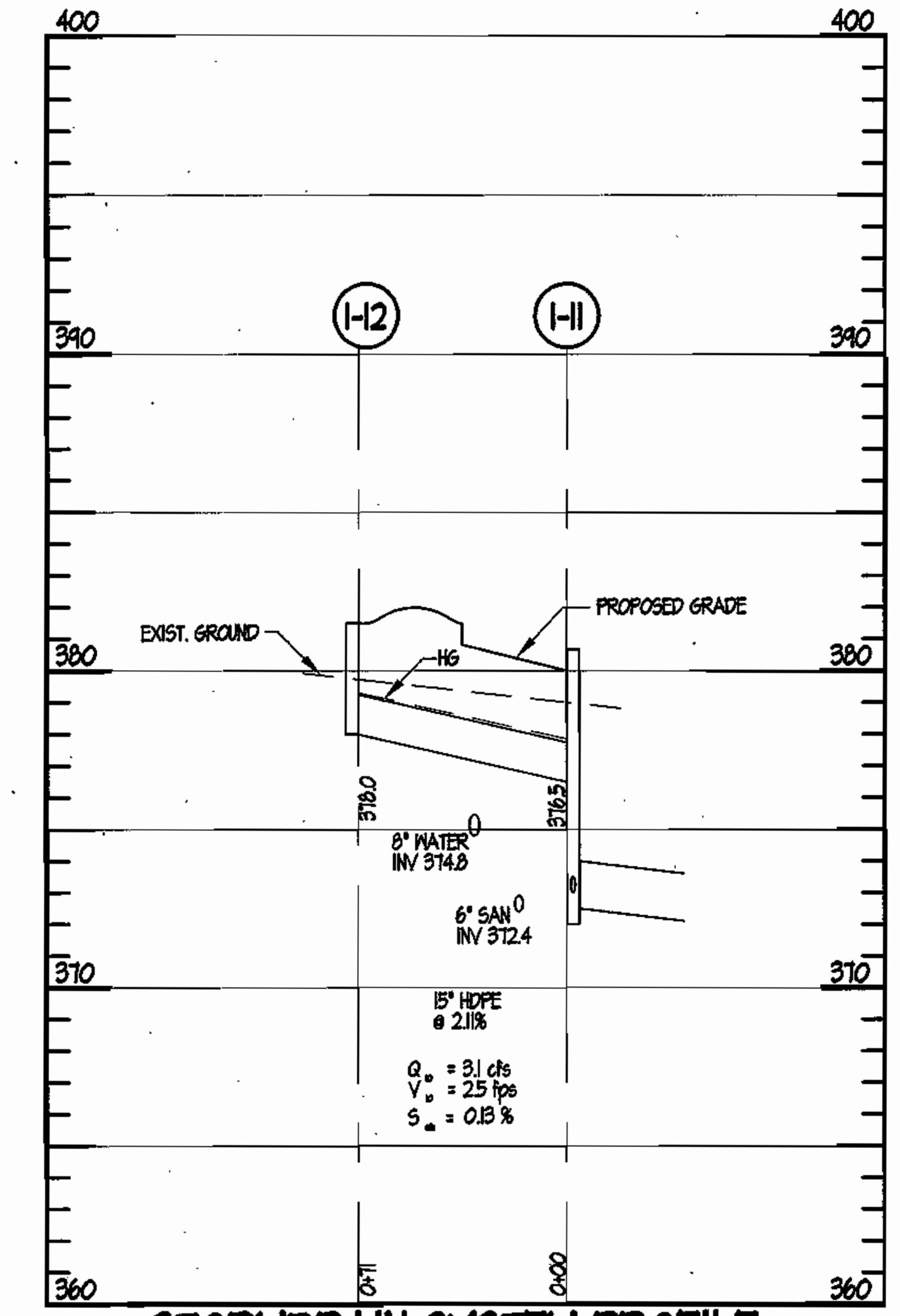


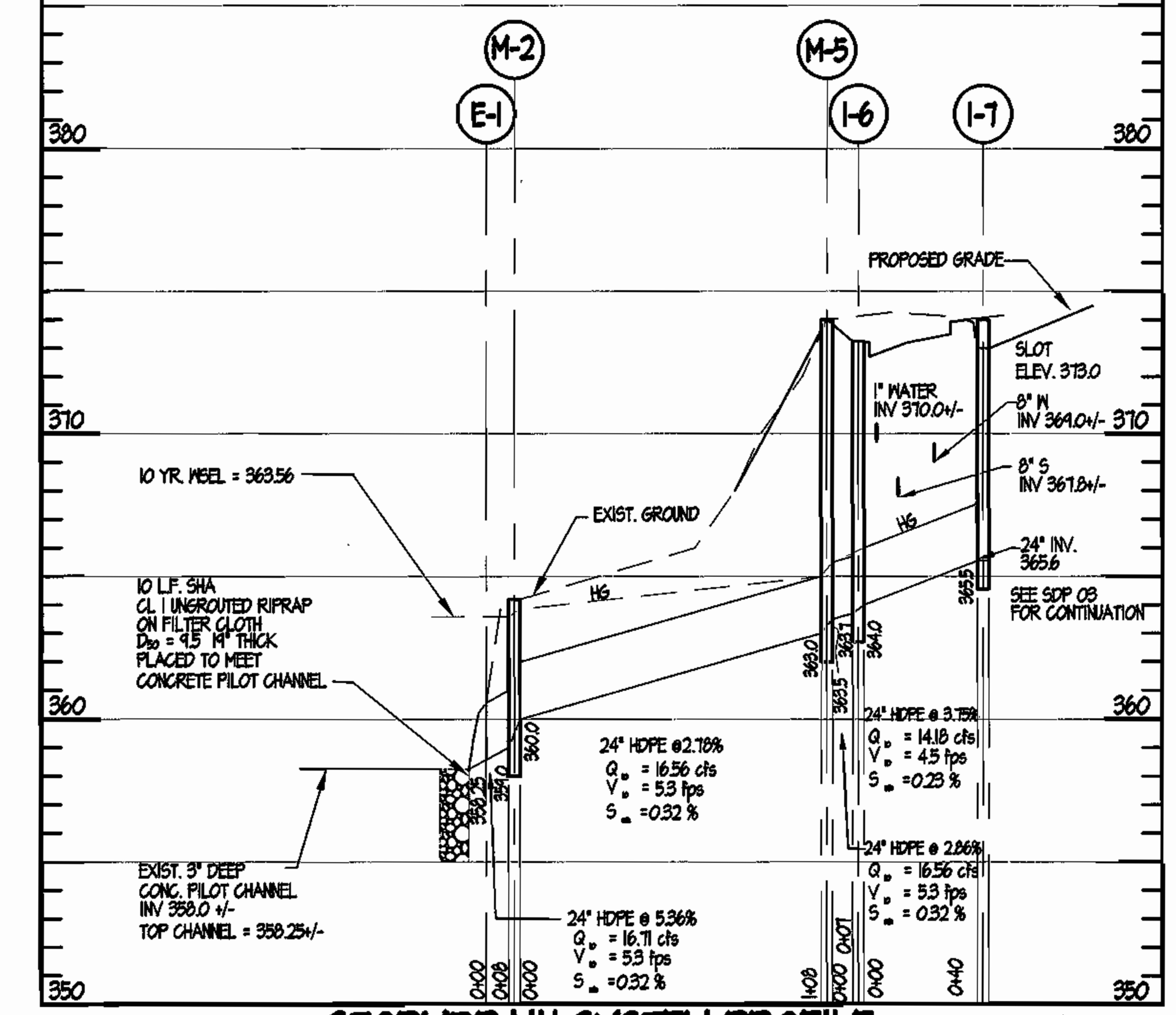
REAR ROOFDRAIN SYSTEM PROFILE

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



STORMDRAIN SYSTEM PROFILE

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



STORMDRAIN SYSTEM PROFILE

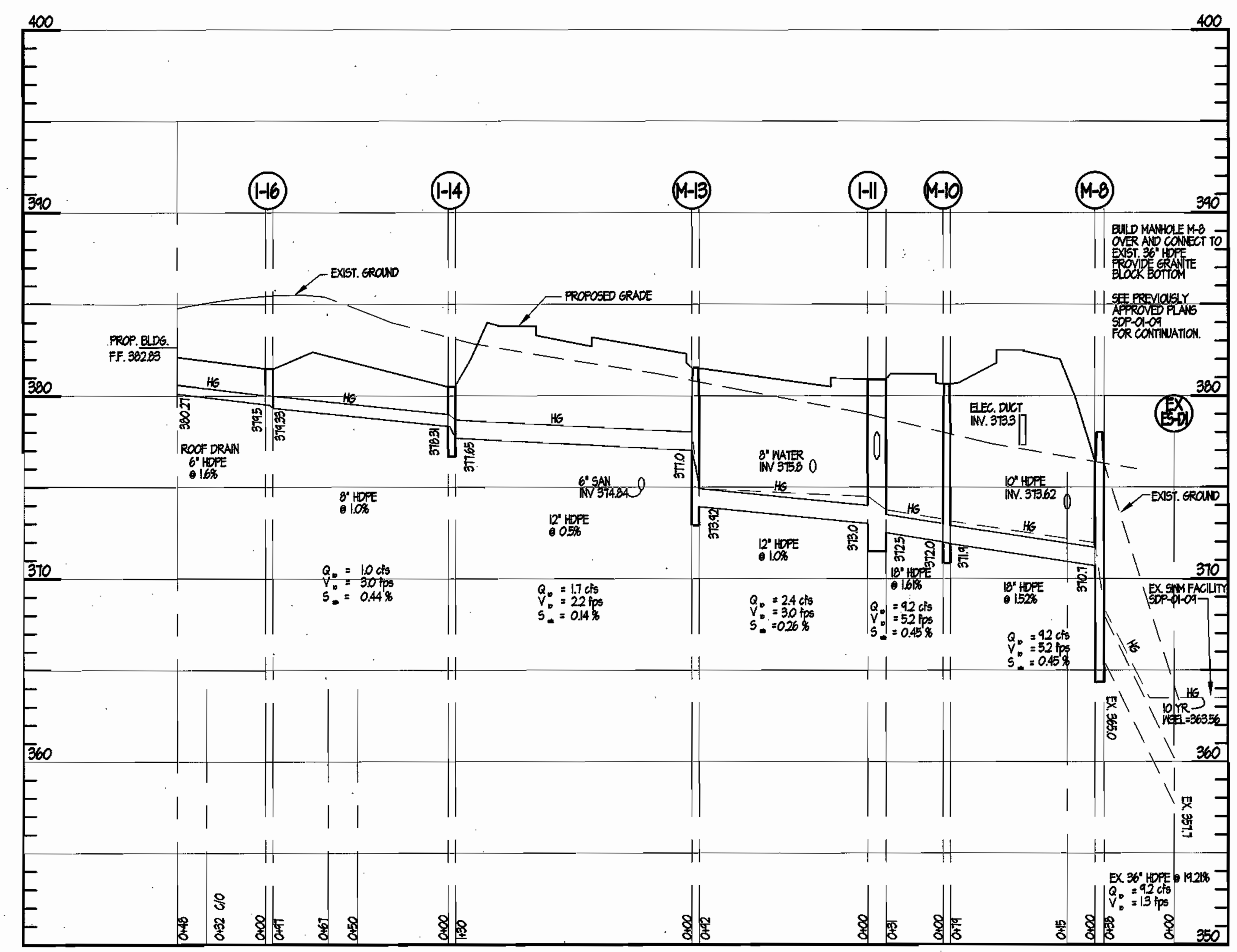
SCALE: HOR. 1" = 50' VERT. 1" = 5'

PIPE SCHEDULE		
SIZE	TYPE	LENGTH
6"	HDPE	104' LF
8"	HDPE	281' LF
12"	HDPE	222' LF
15"	HDPE	71' LF
18"	HDPE	131' LF
24"	HDPE	163 LF
4"	PERF PVC	164 LF
10"	HDPE	245 LF

STRUCTURE SCHEDULE

No.	TYPE	INV. IN	INV. OUT	TOP ELEVATION UPPER / LOWER	REMARKS	LOCATION
E-1	END SECTION	358.57	358.25	—	PER MANUFACTURER 24" DIA.	SEE PLAN
M-2	PRECAST MH	360.0	359.0	366.0	Ho. Co. Std. G5.13 5'-0" DIA.	SEE PLAN
E-6	END SECTION	-	366.5	—	PER MANUFACTURER 10" DIA.	SEE PLAN
E-4	END SECTION	-	366.5	—	PER MANUFACTURER 6" DIA.	SEE PLAN
M-5	PRECAST MH	363.5	363.0	374.0	Ho. Co. Std. G5.13 5'-0" DIA.	SEE PLAN
I-6	A-10 INLET	364.0	363.7	373.0	SEE DETAIL W = 2'-6"	SEE PLAN
I-7	D-INLET *	365.6	365.5	373.83	Ho. Co. Std. SD 4.39 2'-7" Sq.	SEE PLAN
M-8	PRECAST MH	370.7	EX. 365.0+/-	376.0	Ho. Co. Std. G.13 5'-0" DIA.	SEE PLAN
E-9	END SECTION	-	366.5	—	PER MANUFACTURER 8" DIA.	SEE PLAN
M-10	PRECAST MH	372.0	370.73 / 371.9	380.2	Ho. Co. Std. G5.12 4'-0" DIA.	SEE PLAN
I-11	A-10 INLET	376.5 / 373.0	372.5	380.5	Ho. Co. Std. SD 4.41 W = 3'-0"	SEE PLAN
I-12	A-10 INLET		378.0	381.5	Ho. Co Std. SD 4.41 W = 2'-6"	SEE PLAN
M-13	PRECAST MH	377.0	373.92	381.4	Ho. Co Std. G5.12 48" DIA.	SEE PLAN
I-14	YARD INLET	378.31	377.65	380.5	Ho. Co Std. SD 4.14 2' Rd.	SEE PLAN
I-16	YARD INLET	379.50	379.33	381.3	Ho. Co Std. SD 4.14 2' Rd.	SEE PLAN
CS-3	D INLET	363.31 / 363.3 / 363.17	362.0	367.83	Ho. Co Std. SD 4.39 2'-7" Sq.	SEE PLAN

* PROVIDE SLOTS IN ALL SIDES @ ELEV. 373.0



STORMDRAIN SYSTEM PROFILE

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

NOTE:
CONTRACTOR SHALL TEST PIT EXISTING 36" HDPE AND VERIFY INVERT AND LOCATION PRIOR TO BEGINNING WORK AND SHALL NOTIFY ENGINEER IF THERE ARE DISCREPENCIES.

APPROVED: DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 9/3/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9/4/03

DIRECTOR — DATE 9/2/03

APPROVED
PLANNING BOARD
of HOWARD COUNTY

DATE 08/06/03

OWNER: Snowden River LLLP
218 N. Charles Street, Suite 220
Baltimore, MD. 21201 Phone: 410-962-0595

Park View At Snowden River
Storm Drain Profiles

Route 175 Commercial
Section 1 Area 2
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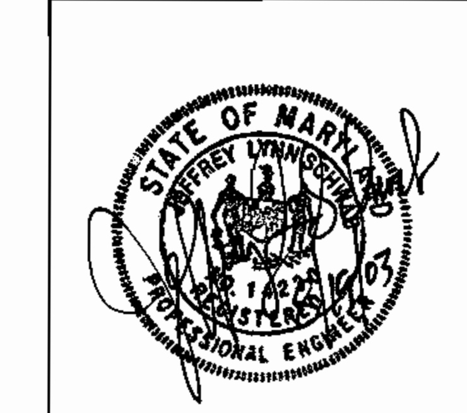
REVISIONS



SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14307 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

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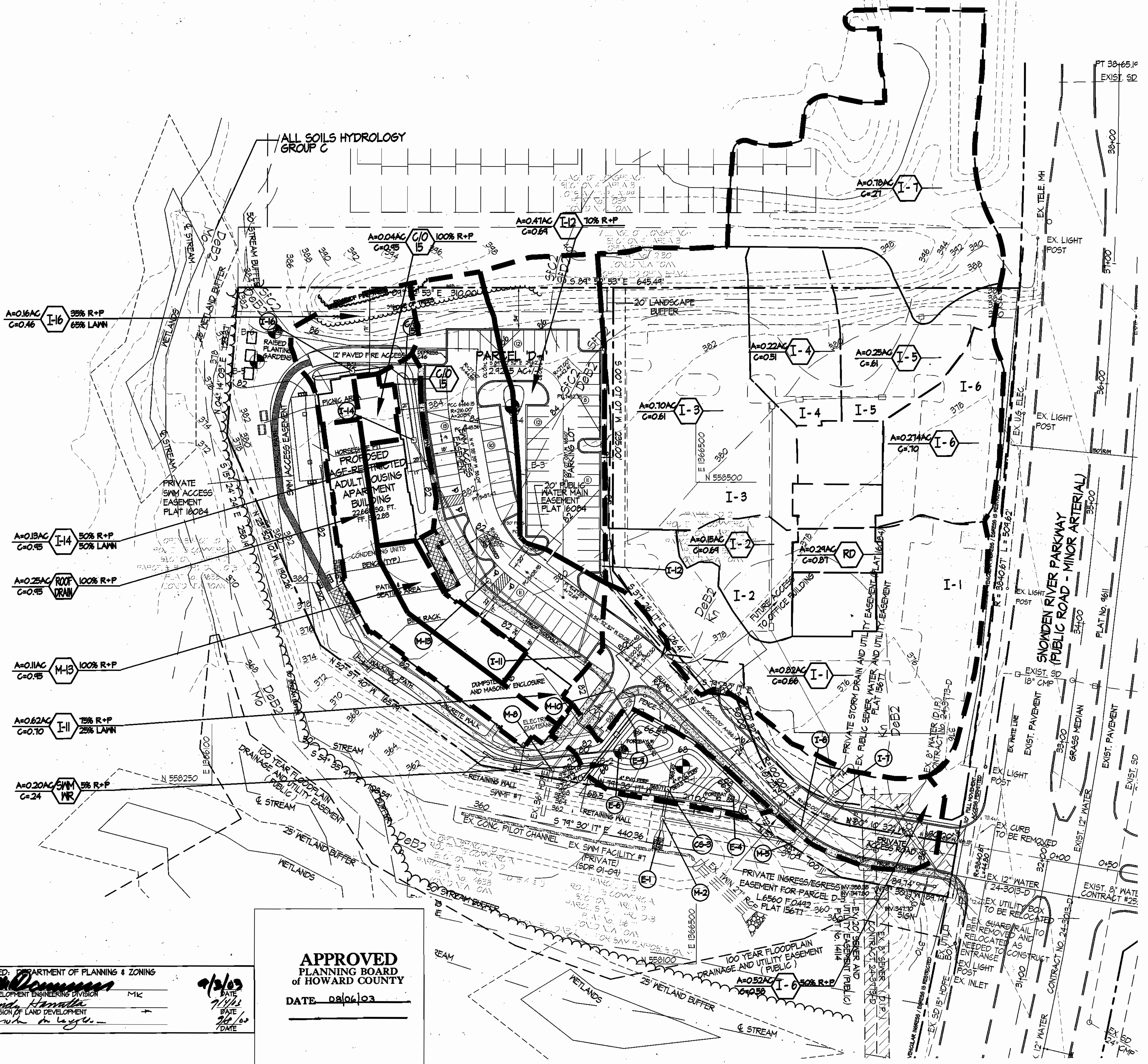

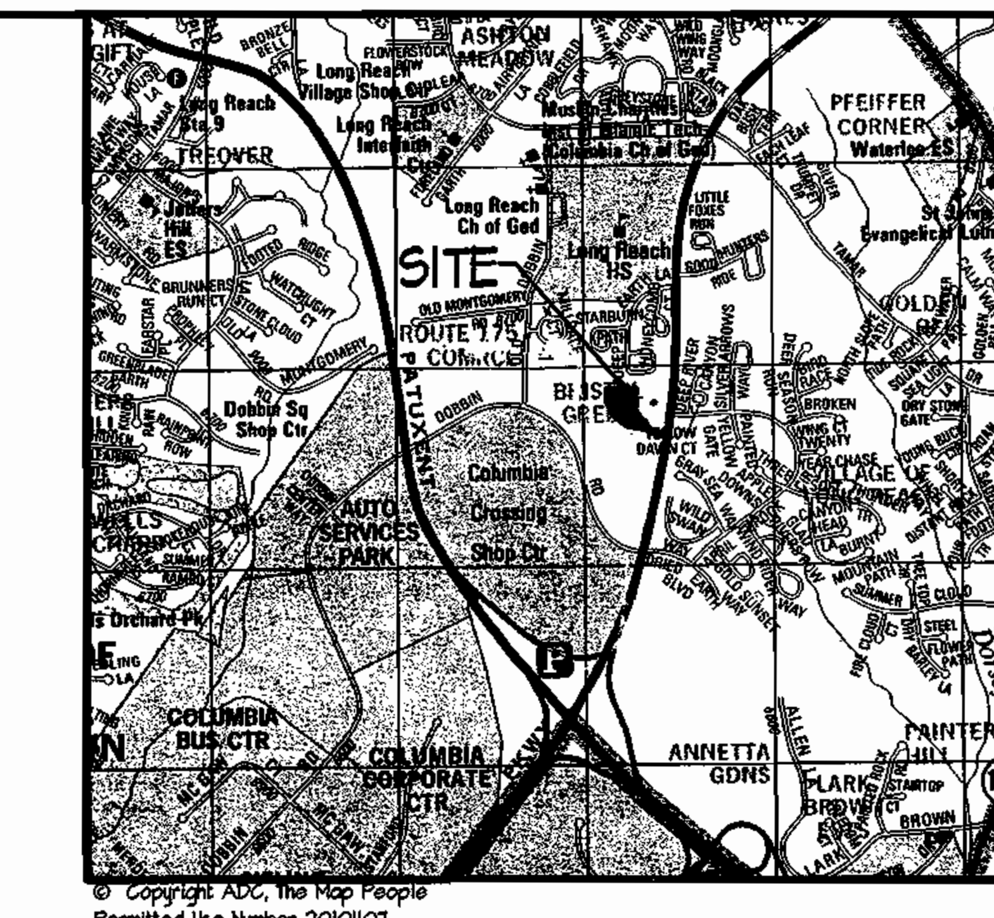

VICINITY MAP 1"=2000'

LEGEND

- RIGHT-OF-WAY LINE
- EXIST. BOUNDARY LINE
- EASEMENT LINE
- PROPOSED CURBING
- EXIST. CONTOUR (376)
- PROPOSED CONTOUR (374)
- EXIST. WATER LINE (EX. 8" W)
- EXIST. FIRE HYDRANT
- EXIST. SANITARY SEWER (EX. 8" S)
- EXIST. STORM DRAIN (18" CMP)
- EXIST. ELECTRIC
- EXIST. WOODSLINE
- STREAM
- 100 YR. FLOODPLAIN
- 25 WETLAND BUFFER
- 50 STREAM BUFFER
- PROPOSED STORMDRAIN (15" HDPE)
- PROPOSED SIDEWALK
- PROPOSED ASPHALT PATH
- PROP. WATER LINE
- PROP. SANITARY SEWER
- CONTOUR INTERVAL
- PROPOSED BORINGS (B-1)
- PROPOSED SITE LIGHTING

NOTE: AREA FOR PARCEL D-2
TAKEN FROM PLANS
BY PHRA SDP 03-

APPROVED: DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 9/3/03
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 9/4/03
DIRECTOR	DATE 9/8/03

APPROVED
PLANNING BOARD
of HOWARD COUNTY

DATE 08/06/03

ADDRESS CHART	
PARCEL #	STREET ADDRESS
D-1	8610 SNOWDEN RIVER PARKWAY

PERMIT INFORMATION CHART

SUBDIVISION NAME				SECTION / AREA	LOTS / PARCELS
ROUTE 175 COMMERCIAL				1 / 2	PARCEL D-1
PLAT No. or L/F	GRID No.	ZONE	TAX MAP No.	ELECT. DIST.	CENSUS TRACT
16084	18	NT-ECC	36	6 th	6067.03
WATER CODE	E06		SEWER CODE	3460000	

OWNER: Snowden River LLLP
218 N. Charles Street, Suite 220
Baltimore, MD. 21201 Phone: 410-962-0595

Park View At Snowden River
Dainage Area Map

Route 175 Commercial
Section 1 Area 2
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REVISIONS

STATE OF MARYLAND — JEFFREY LYNN SCHMIDT — REGISTERED PROFESSIONAL ENGINEER

SITE RESOURCES incorporated
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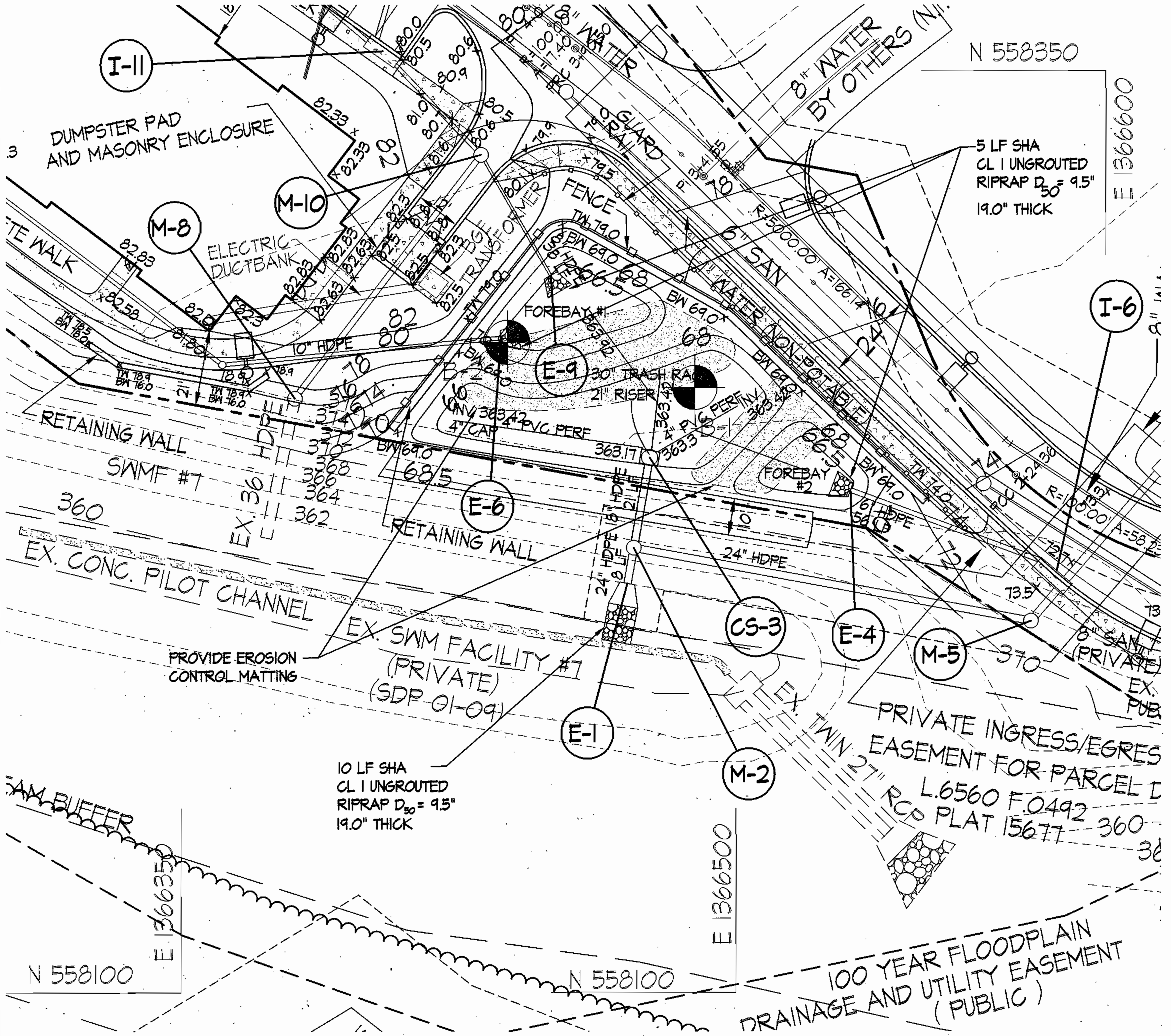
(410) 683-3388 • fax (410) 683-3389

DRAWN BY: CGS	CONTRACT NO.:
DESIGNED BY: JLS	SCALE: 1" = 40'
CHECKED BY: JLS	SRI PROJECT NO: 01130
DATE: AUGUST 19, 2003	SHEET 9 OF 15

2/20/03 4:29 PM 09_DAM.dwg

SDP-03-142



PLAN - SAND FILTER

SCALE : 1" = 20'

Appendix B.3. Construction Specifications for Sand Filters, Bioretention and Open Channels

B.3.A Sand Filter Specifications

1. Material Specifications for Sand Filters

The allowable materials for sand filter construction are detailed in Table B.3.1.

2. Sand Filter Testing Specifications

Underground sand filters, facilities within sensitive groundwater aquifers, and filters deigned to serve urban hot spots are to be tested for water tightness prior to placement of filter media. Entrances and exits should be plugged and the system completely filed with water to demonstrate water tightness. Water tightness means no leakage for a period of 8 hours.

All overflow weirs, multiple orifices and flow distribution slots are to be field-tested to verify adequate distribution of flows.

3. Sand Filter Construction Specifications

Provide sufficient maintenance access (i.e. 12-foot-wide road with legally recorded easement). Vegetated access slopes are to be a maximum of 10%; gravel slopes to 15%; paved slopes to 25%.

Absolutely no runoff is to enter the filter until all contributing drainage areas have been stabilized.

Surface of filter bed is to be level.

All underground sand filters should be clearly delineated with signs so that they may be located when maintenance is due.

Surface sand filters may be planted with appropriate grasses; see Appendix A.

"Pocket" and filters (and residential bioretention facilities treating areas larger than an acre) shall be sized with a stone "window" that covers approximately 10% of the filter area. This "window" shall be filled pea gravel (3/4 inch stone).

B.3.1.

Table B.3.1 Material Specifications for Sand Filters

Material	Specification/Test Method	Size	Notes
sand	clean AASHTO-M-6 or ASTM-C-33 concrete sand	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.
peat	ash content: < 15% pH range: 5.2 to 4.9 loose bulk density 0.12 to 0.15 g/cc	n/a	The material must be reed-sedge hemic peat, shredded, uncompacted, uniform, and clean.
leaf compost		n/a	
underdrain gravel	AASHTO-M-43	0.375" to 0.75"	
geotextile fabric (if required)	ASTM-D-4833 (puncture strength - 125 lb.) ASTM-D-4632 (Tensile Strength - 300 lb.)	0.08" thick equivalent opening size of #80 sieve	Must maintain 125 gpm per sq. ft. flow rate. Note: a 4" pea gravel layer may be substituted for geotextiles meant to "separate" sand filter layers.
impermeable liner (if required)	ASTM-D-4833 (thickness) ASTM-D-412 (tensile strength 1,100 lb., elongation 200%) ASTM-D-624 (Tear resistance - 150 lb./in) ASTM-D-471 (water adsorption: +8 to -2% mass)	30 mil thickness	Liner to be ultraviolet resistant. A geotextile fabric should be used to protect the liner from puncture.
underdrain piping	F 758, Type PS 28 or AASHTO-M-278	4" - 6" rigid schedule 40 PVC or SDR35	3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes
concrete (cast-in-place)	MSHA Standards and Specs. Section 902, Mix No. 3, f'_c = 3500 psi, normal weight, air-entrained; re-inforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete 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
concrete (pre-cast)	per pre-cast manufacturer	n/a	SEE ABOVE NOTE
non-rebar steel	ASTM A-36	n/a	structural steel to be hot-dipped galvanized ASTM-A-123

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SAND FILTER

A. THE SAND FILTER SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTION SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE FACILITY IS FUNCTIONING PROPERLY.

B. THE FILTER AREA SHALL BE MOWED AS NEEDED DURING THE GROWING SEASON TO MAINTAIN A MAXIMUM GRASS HEIGHT OF LESS THAN 6 INCHES.

C. DEBRIS AND LITER SHALL BE REMOVED DURING REGULAR MOWING OPERATION AND AS NEEDED.

D. VISIBLE SIGNS OF EROSION IN THE SAND FILTER SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

E. REMOVE SILT IN THE FOREBAYS AND FILTER SYSTEM WHEN IT EXCEEDS 25% OF THE ORIGINAL WQv.

Hardin-Kight Associates, Inc
7524 W B & A Road, Suite 100
Glen Burnie, Maryland 21061

Office: (410) 553-0802
Fax: (410) 553-0808

Record of Soil Exploration

Contracted With: SHELTER DEVELOPMENT
Projects Name: PARKVIEW AT SNOWDEN
Location: HOWARD COUNTY, MARYLAND

Boring: B-1
Job #: 02265

Datum
Surf. Elev. 378.5 (est.)
Date Started 12/17/02
Hammer Wt. 140 lbs.
Hammer Drop 30 in.
Pipe Size in.
Rock Core Dia. --
Hole Diameter 6.0"
Boring Method HSA
Foreman J. Sordelillo
Inspector J. Daiger
Date Finished 12/17/02

Elev. in ft.	Soil Description* (Color, Moisture, Density, Plasticity, Size Proportions)	Strata Depth	Depth Scale	Cond	Blows / 6"	No.	Type	Rec.	Boring & Sample Notes
	Light orange brown and green, moist, silty, fine to medium SAND with silt layers (FILL) (SM)*		0.0						*Visual
				I	4-3-6	1	DS	18"	5" of Topsoil
	trace gravel			I	4-6-7	2	DS	14"	
			5.0	I	6-7-10	3	DS	17"	
	loose		10.0	I	4-2-2	4	DS	18"	
364.0		12.5							
361.5	Orange brown, green, black, moist, fine to medium, sandy SILT (ML)*	15.0	15.0	I	4-3-6	5	DS	18"	
	Bottom of Hole at 15.0'		20.0						
			25.0						
			30.0						

Sampler Type: DS- Driven Split Spoon; PT- Pressed Shelby Tube; CA- Continuous Flight Auger; RC- Rock Core
Sample Conditions: D- Disintegrated; I- Intact; U- Undisturbed; L- Lost
Boring Method: HSA- Hollow Stem Augers; CFA- Continuous Flight Augers; DC- Driven Casing; MD- Mud Drilling

STANDARD PENETRATION TEST - DRIVING 2" OD SAMPLER WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

Hardin-Kight Associates, Inc
7524 W B & A Road, Suite 100
Glen Burnie, Maryland 21061

Office: (410) 553-0802
Fax: (410) 553-0808

Record of Soil Exploration

Contracted With: SHELTER DEVELOPMENT
Projects Name: PARKVIEW AT SNOWDEN
Location: HOWARD COUNTY, MARYLAND

Boring: B-2
Job #: 02265

Datum
Surf. Elev. 377.0 (est.)
Date Started 12/17/02
Hammer Wt. 140 lbs.
Hammer Drop 30 in.
Pipe Size in.
Rock Core Dia. --
Hole Diameter 6.0"
Boring Method HSA
Foreman J. Sordelillo
Inspector J. Daiger
Date Finished 12/17/02

Elev. in ft.	Soil Description* (Color, Moisture, Density, Plasticity, Size Proportions)	Strata Depth	Depth Scale	Cond	Blows / 6"	No.	Type	Rec.	Boring & Sample Notes
	Orange brown, moist, stiff, sandy clayey SILT with gravel (CL-ML)* (FILL)		0.0						*Visual
374.0		3.0		I	5-3-7	1	DS	16"	5.5" of Topsoil
	Light orange brown, brown, tan, white, dry, silty, fine to medium SAND with sandy silt layers (FILL) with gravel (SM)*		5.0	I	5-6-9	2	DS	16"	
				I	9-8-10	3	DS	18"	
			10.0	I	7-6-6	4	DS	18"	
364.5		12.5							
362.0	Peppered orange brown, black, green, moist, fine, sandy SILT (ML)*	15.0	15.0	I	2-4-5	5	DS	18"	
	Bottom of Hole at 15.0'		20.0						
			25.0						
			30.0						

Sampler Type: DS- Driven Split Spoon; PT- Pressed Shelby Tube; CA- Continuous Flight Auger; RC- Rock Core
Sample Conditions: D- Disintegrated; I- Intact; U- Undisturbed; L- Lost
Boring Method: HSA- Hollow Stem Augers; CFA- Continuous Flight Augers; DC- Driven Casing; MD- Mud Drilling

STANDARD PENETRATION TEST - DRIVING 2" OD SAMPLER WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

APPROVED: DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	9/3/03 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	9/4/03 DATE
DIRECTOR	9/8/03 DATE

APPROVED
PLANNING BOARD
of HOWARD COUNTY

DATE 08/06/03

ADDRESS CHART

PARCEL #	STREET ADDRESS
D-1	8610 SNOWDEN RIVER PARKWAY

PERMIT INFORMATION CHART

SUBDIVISION NAME				SECTION / AREA	LOTS / PARCELS
ROUTE 175 COMMERCIAL				1 / 2	PARCEL D-1
PLAT No. or L/F	GRID No.	ZONE	TAX MAP No.	ELECT. DIST.	CENSUS TRACT
16084	18	NT-ECC	36	6 th	6067.03
WATER CODE E06			SEWER CODE 3460000		

OWNER: Snowden River LLLP
218 N. Charles Street, Suite 220
Baltimore, MD. 21201 Phone: 410-962-0595

Park View At Snowden River SWM Details

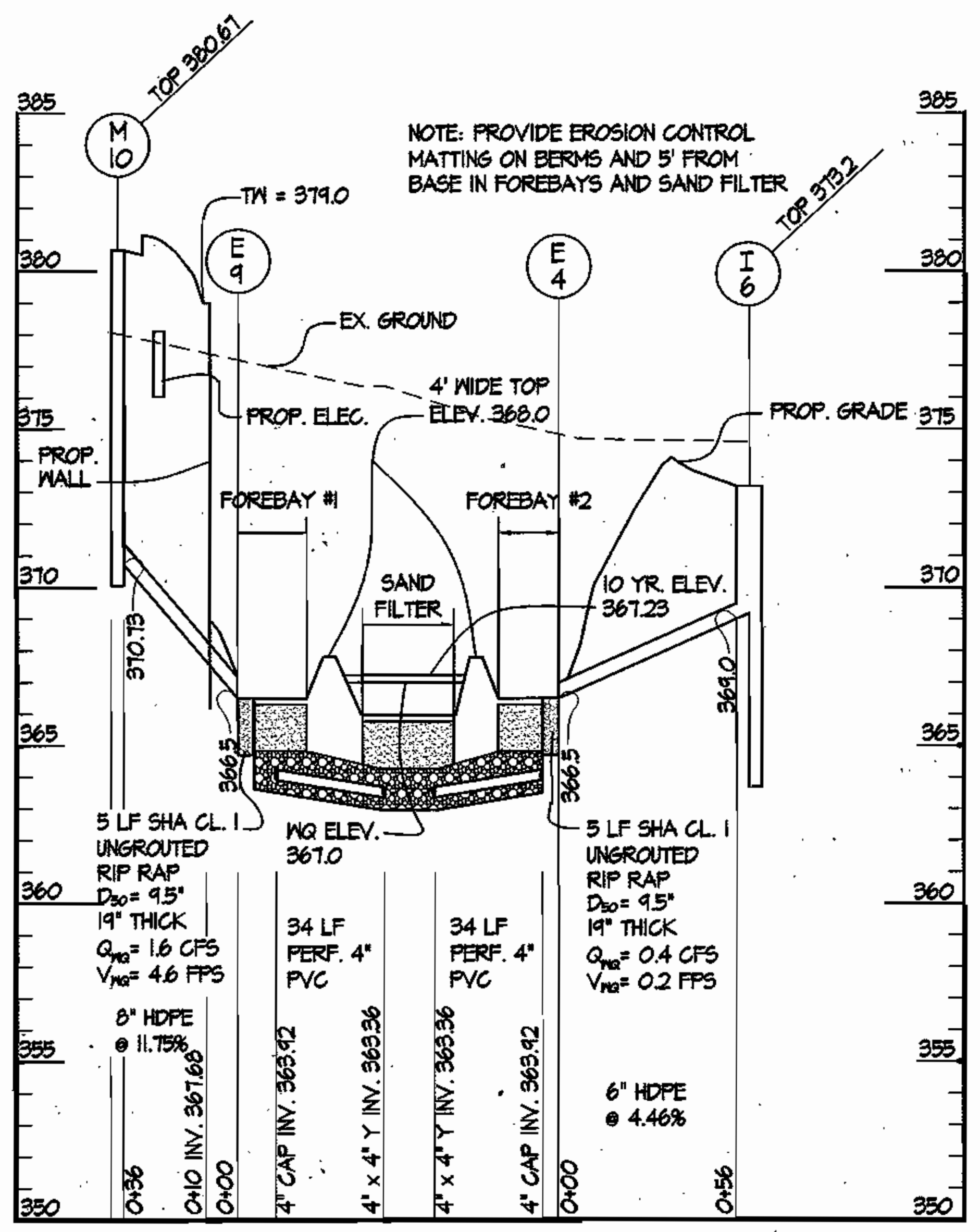
Route 175 Commercial
Section I Area 2
Parcel D-1
8610 Snowden River Parkway, Columbia, Maryland 21045
6 th Election District Howard County, Maryland
Tax Map 36 Grid 18 Parcel 521 Lot D-1 Zoning: NT Deed Ref. 6752/231

REVISIONS

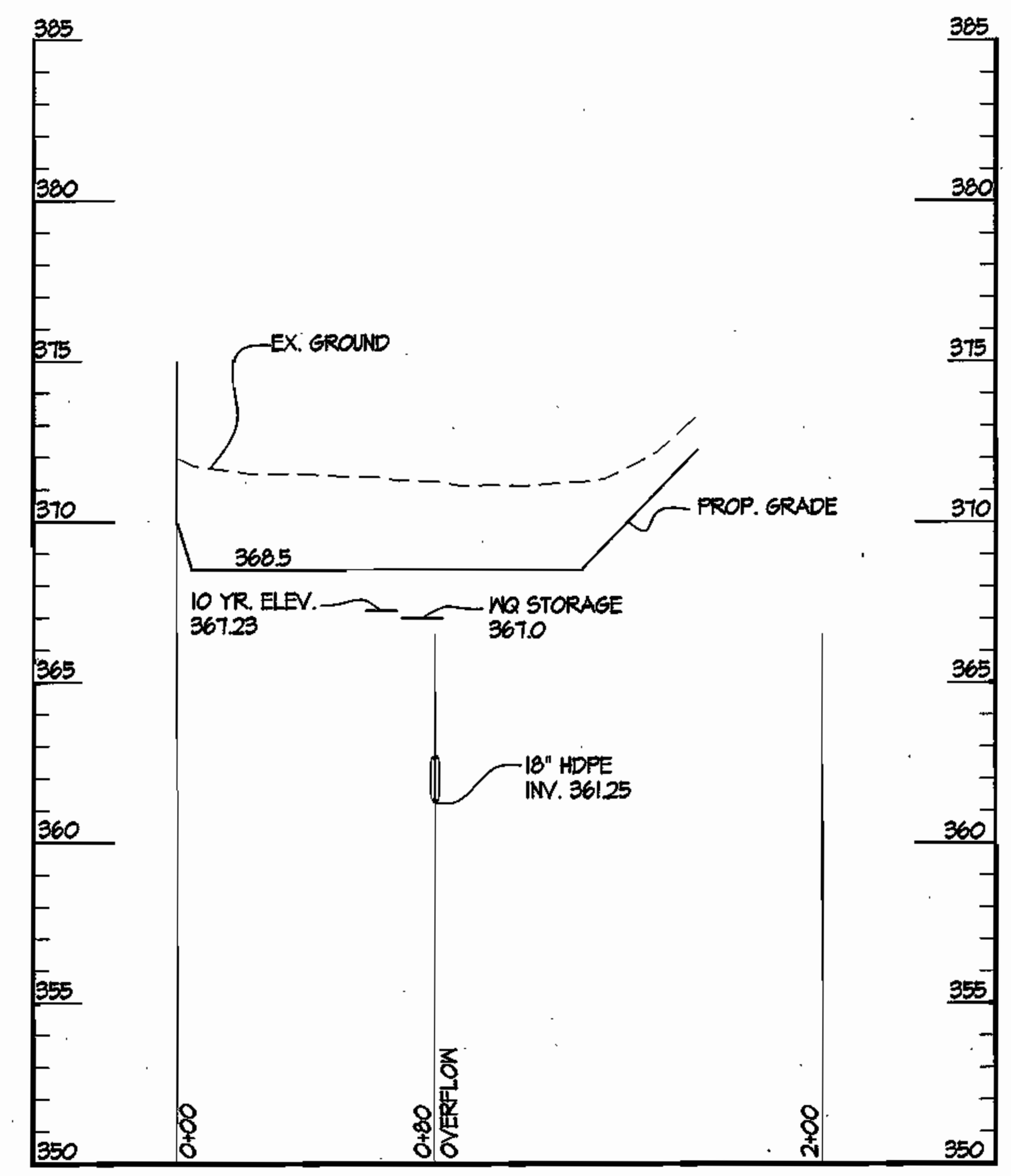
SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14307 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

DRAWN BY: CGS	CONTRACT NO.:
DESIGNED BY: JLS	SCALE: AS SHOWN
CHECKED BY: JLS	SRI PROJECT NO: 01130
DATE: AUGUST 19, 2003	SHEET 10 OF 15

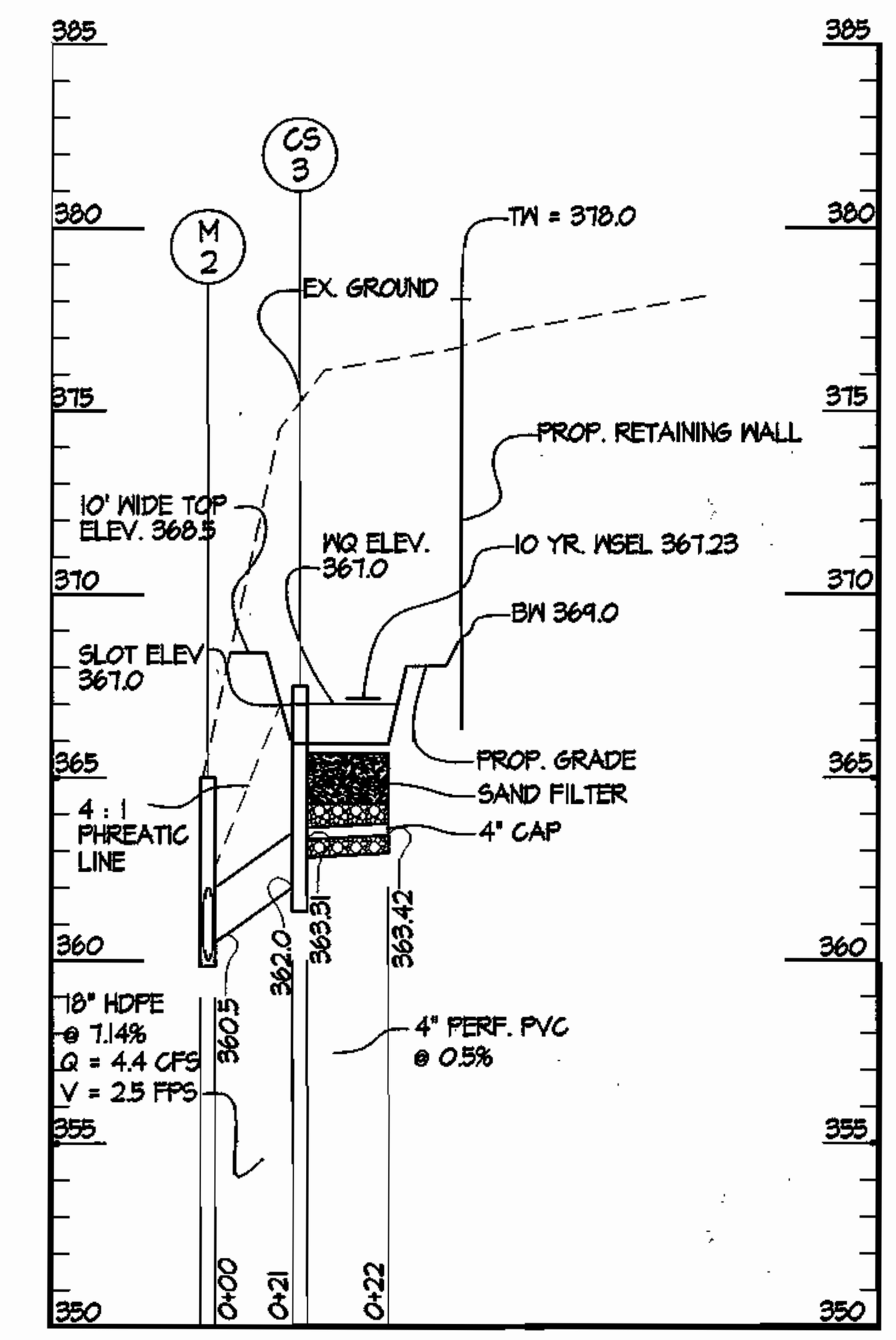
SDP-03-142



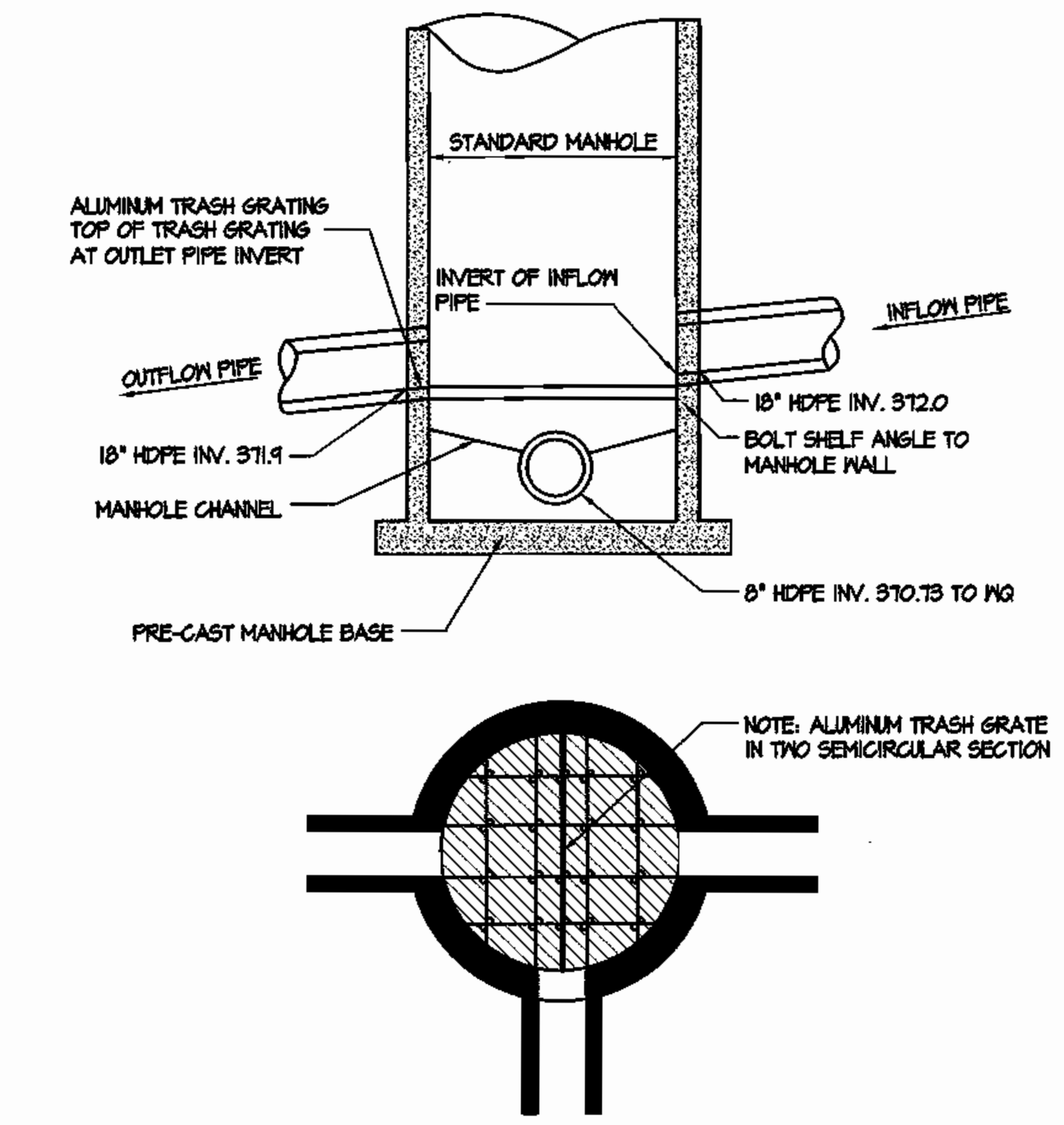
CROSS SECTION THROUGH FOREBAYS AND SAND FILTER
SCALE: HOR. 1" = 50'
VERT. 1" = 5'



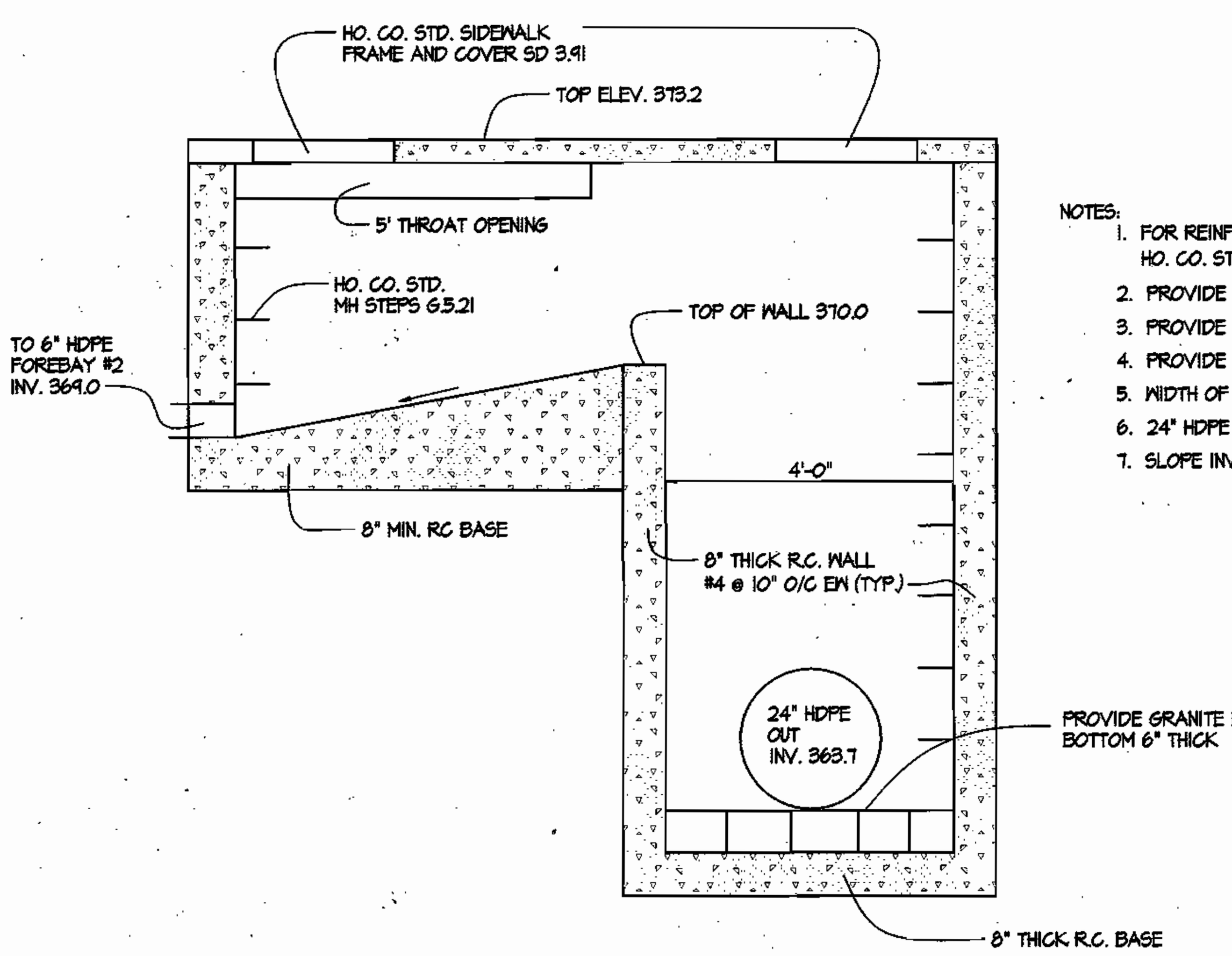
PROFILE ALONG ℄ EMBANKMENT
SCALE: HOR. 1" = 50'
VERT. 1" = 5'



SAND FILTER OVERFLOW PROFILE
SCALE: HOR. 1" = 50'
VERT. 1" = 5'

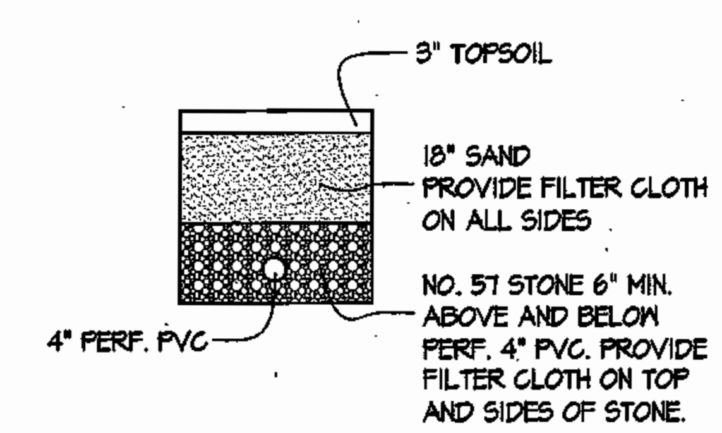


TYPICAL ISOLATION / DIVERSION MANHOLE (M-10)
NOT TO SCALE



DETAIL OF I-6 (MODIFIED A-10 INLET)
NOT TO SCALE

NOTES:
1. FOR REINFORCING AND DETAILS NOT SHOWN SEE HO. CO. STD. SD.4.02
2. PROVIDE 5' THROAT OPENING
3. PROVIDE 2 HO. CO. STD. SIDEWALK FRAME AND COVERS.
4. PROVIDE 2 SETS HO. CO. STD. MANHOLE STEP.
5. WIDTH OF STR. SHALL BE 2'-6".
6. 24" HDPE IN INV. 364.0. (SEE PROFILES)
7. SLOPE INV. @ 12:1 @ 6" HDPE



TYPICAL CROSS SECTION SAND FILTER
NOT TO SCALE

WATER QUALITY FACILITY SUMMARY TABLE									
10 YR. ELEV.	WQ ELEV.	FOREBAY VOLUME		TEMP STORAGE		AREA OF FILTER		AREA OF PRETREATMENT	
		REQ.	PROV.	REQ.	PROV.	REQ.	PROV.	REQ.	PROV.
367.23 1.27' FREEBOARD	367.0	581 ft^3	1968 ft^3	4290 ft^3	5194 ft^3	587 ft^2	1696 ft^2	378 ft^2	896 ft^2

HAZARD CLASS 'A'

APPROVED: DEPARTMENT OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK 9/3/03 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT 9/4/03 DATE
DIRECTOR 9/6/03 DATE

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 08/06/03

ADDRESS CHART

PARCEL #	STREET ADDRESS
D-1	8610 SNOWDEN RIVER PARKWAY

PERMIT INFORMATION CHART

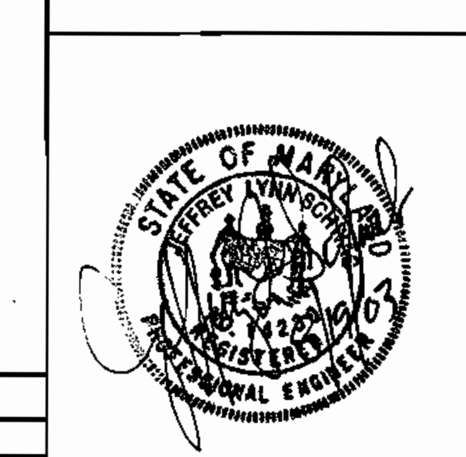
SUBDIVISION NAME				SECTION / AREA	LOTS / PARCELS
ROUTE 175 COMMERCIAL				1 / 2	PARCEL D-1
PLAT No. or L/F	GRID No.	ZONE	TAX MAP No.	ELECT. DIST.	CENSUS TRACT
16084	18	NT-ECC	36	6 th	6067.03
WATER CODE	E06		SEWER CODE	3460000	

OWNER: Snowden River LLLP
218 N. Charles Street, Suite 220
Baltimore, MD. 21201 Phone: 410-962-0595

Park View At Snowden River SWM Details

Route 175 Commercial
Section 1 Area 2
Parcel D-1
8610 Snowden River Parkway, Columbia, Maryland 21045
6 th Election District Howard County, Maryland
Tax Map 36 Grid 18 Parcel 521 Lot D-1 Zoning: NT Deed Ref. 6752/231

REVISIONS



SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14307 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

DRAWN BY:	CGS	CONTRACT NO.:	
DESIGNED BY:	JLS	SCALE:	AS SHOWN
CHECKED BY:	JLS	SRI PROJECT NO:	01130
DATE:	AUGUST 19, 2003	SHEET	11 OF 15

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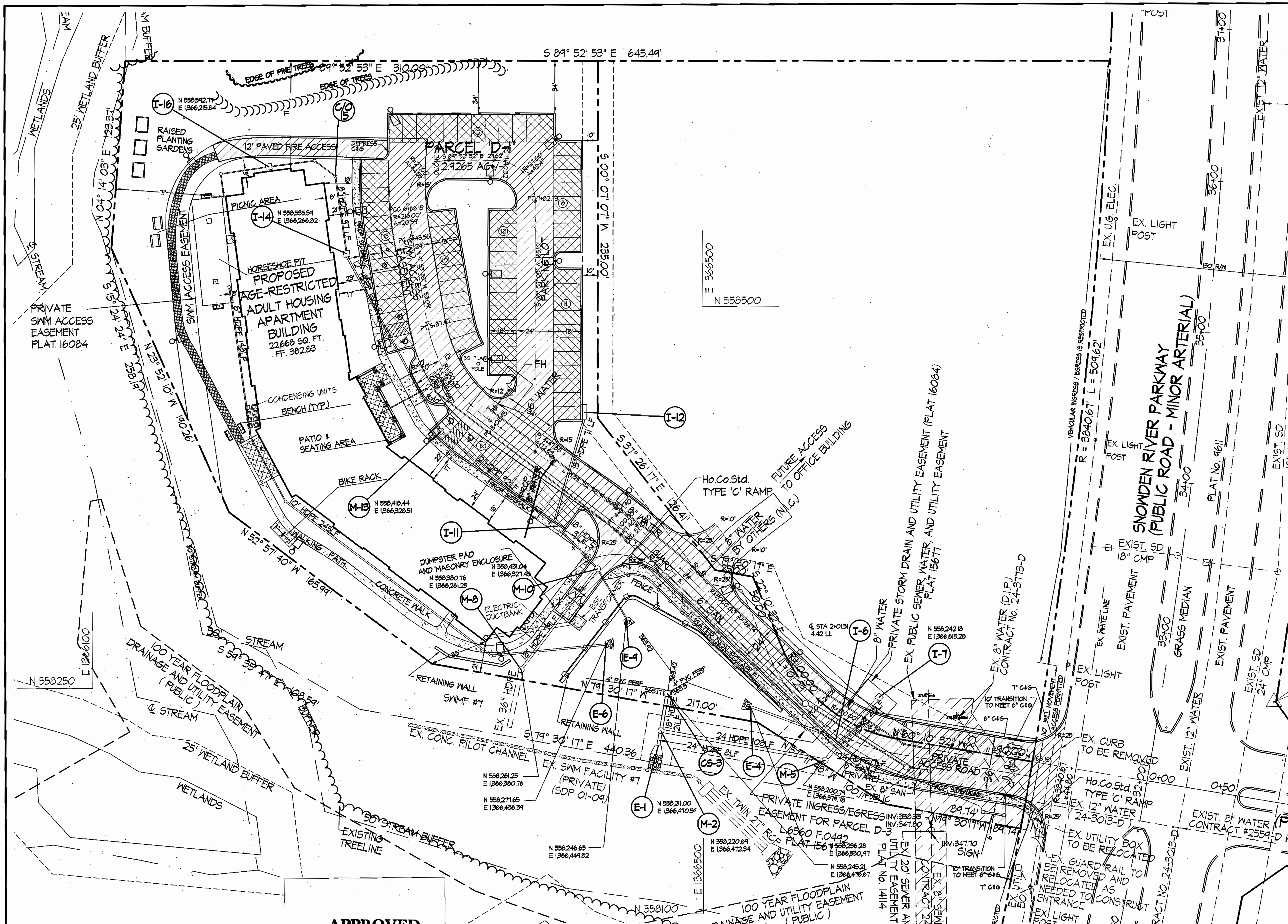
SDP-03-142



NOTES
1. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE TO FACE CURB.
2. ALL CURB RADIUS TO BE 5' UNLESS NOTED.

LIGHT DUTY PAVING

HEAVY DUTY PAVING

PLAN

SCALE : 1" = 30'

APPROVED: DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	MK	9/3/03 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT		9/4/03 DATE
DIRECTOR		9/8/03 DATE

APPROVED
PLANNING BOARD of HOWARD COUNTY
DATE 08/06/03

ADDRESS CHART

PARCEL #	STREET ADDRESS
D-1	8610 SNOWDEN RIVER PARKWAY

PERMIT INFORMATION CHART

SUBDIVISION NAME				SECTION / AREA	LOTS / PARCELS
ROUTE 175 COMMERCIAL				1 / 2	PARCEL D-1
PLAT No. or L/F	GRID No.	ZONE	TAX MAP No.	ELECT. DIST.	CENSUS TRACT
16084	18	NT-ECC	36	6 th	6067.03
WATER CODE E06			SEWER CODE 3460000		

OWNER: Snowden River LLLP
218 N. Charles Street, Suite 220
Baltimore, MD. 21201 Phone: 410-962-0545

Park View At Snowden River
LAYOUT PLAN

Route 175 Commercial
Section 1 Area 2
Parcel D-1
8610 Snowden River Parkway, Columbia, Maryland 21045
6 th Election District Howard County, Maryland
Tax Map 36 Grid 18 Parcel 521 Lot D-1 Zoning: NT Deed Ref. 6752/231

REVISIONS

STATE OF MARYLAND JEFFREY LYNN SCHOTT 14234 REGISTERED PROFESSIONAL ENGINEER

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14307 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

DRAWN BY:	CGS	CONTRACT NO.:	
DESIGNED BY:	JLS	SCALE:	1" = 30'
CHECKED BY:	JLS	SRI PROJECT NO:	01130
DATE:	AUGUST 19, 2003	SHEET 12	OF 15

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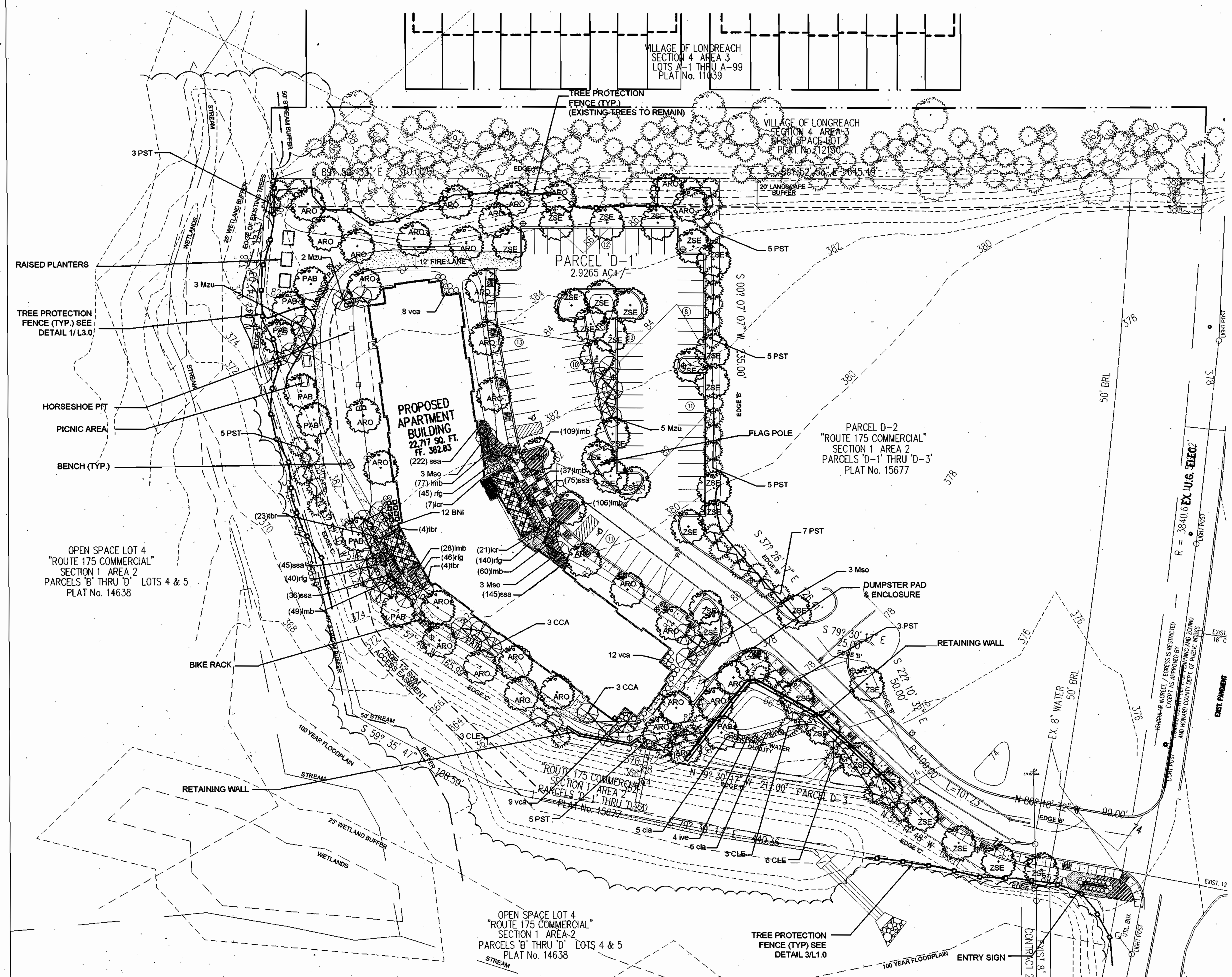
SDP-03-142



PLANT LIST

QTY.	SYM.	BOTANICAL NAME	COMMON NAME	SIZE	CONT.	REMARKS
DECIDUOUS SHADE TREES						
31	ARO	Acer rubrrum 'October Glory'	October Glory Red Maple	2 1/2"- 3" cal.	B & B	
12	BNI	Betula nigra	River Birch	12' - 14' Ht.	B & B	Multistem
8	PAB	Platanus x acerifolia 'Bloodgood'	Bloodgood Londonplane Tree	2 1/2"- 3" cal.	B & B	Matched Specimen
2	QPH	Quercus phellos	Willow Oak	2 1/2"- 3" cal.	B & B	Matched Specimen
35	ZSE	Zelkova serrata 'Village Green' (credit @ 1:2 for larger caliper per Dennis Dunn, ACC)	Village Green Zelkova	3"- 3 1/2" cal.	B & B	
123 Shade Trees						
EVERGREEN TREES (credit @ 2:1)						
12	CLE	Cupressus x 'Laylandii'	Layland Cypress	6' - 8' Ht.	B & B	Full
38	PST	Pinus strobus	White Pine	6' - 8' Ht.	B & B	Semi-sheared
25 Evergreen Trees						
ORNAMENTAL TREES (credit @ 2:1)						
6	Cca	Cercis canadensis	Eastern Redbud	8' - 10' Ht.	B & B	
9	Mso	Magnolia x soulangiana	Saucer Magnolia	10' - 12' Ht.	B & B	
10	Mzu	Malus 'Zumi' calacarpa	Zumi crabapple	8' - 10' Ht.	B & B	Heavy
12.5 Ornamental Trees						
EVERGREEN SHRUBS						
28	icr	Ilex cornuta x rugosa 'China Girl'	China Girl Holly	30" - 36"	B & B	
31	tbr	Taxus baccata repandens	Weeping English Yew	30" - 36"	B & B	30" O.C.
DECIDUOUS SHRUBS						
10	cla	Clethra anifolia	Summersweet Clethra	30" - 36"	B & B	
4	ivs	Ilex verticulatta 'Sparkleberry'	Sparklbery Holly	30" - 36"	B & B	30" O.C.
29	vca	Viburnum carlesii	Korean Spice Viburnum	30" - 36"	B & B	
PERENNIALS & GROUNDCOVER						
578	lmb	Liriope muscari 'Big Blue'	Big Blue Liriope	1 gal.		18" O.C.
411	rfg	Rudbeckia fulgida 'Goldsturm'	Black Eyed Susan	1 Qt.		15" O.C.
523	ssa	Sedum spec. 'Autumn Joy'	Pink Stonecrop	1 Qt.		12" O.C.

160.5 Shade Tree Equivalent

Hord Coplan Macht INC
ARCHITECTURE
LANDSCAPE ARCHITECTURE
PLANNING
INTERIOR DESIGN

111 MARKET PLACE SUITE 710
BALTIMORE MARYLAND 21202
410 837 7311 FAX 410 837 6530

OWNER: Snowden River LLLP
218 N. Charles Street, Suite 220
Baltimore, MD. 21201 Phone: 410-962-0595

Park View At Snowden River Planting Plan

Route 175 Commercial
Section 1 Area 2
Parcel D-1
8610 Snowden River Parkway, Columbia, Maryland 21045
6 th Election District Howard County, Maryland
Tax Map 36 Grid 18 Parcel 521 Lot D-1 Zoning: NT Deed Ref. 6752/231

REVISIONS

04/23/03 Revise per HRDC Comments
05/30/03 Revise per Howard County Comments

APPROVED: DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 9/3/03
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9/4/03
DIRECTOR — DATE 9/8/03

APPROVED PLANNING BOARD of HOWARD COUNTY
DATE 08/06/03

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services

DRAWN BY:	TDT	CONTRACT NO.:	
DESIGNED BY:	TDT	SCALE:	1" = 40'
CHECKED BY:		HCM PROJECT NO:	21083.00
DATE:	Aug 19, 2003	SHEET	13 OF 15

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SDP-03-142

PLANT MATERIALS AND PLANTING METHODS

A. Plant Materials

The landscape contractor shall furnish and install and/or dig, ball, burlap and transplant all of the plant materials called for on drawings and/or listed in the Plant Schedule.

1. Plant Names

Plant names used in the Plant Schedule shall conform with "Standardized Plant Names," latest edition.

2. Plant Standards

All plant material shall be equal to or better than the requirements of the "USA Standard for Nursery Stock" latest edition, as published by the American Association of Nurserymen (hereafter referred to as AAN Standards). All plants shall be typical of their species and variety, shall have a normal habit of growth and shall be first quality, sound, vigorous, well-branched and with healthy, well-furnished root systems. They shall be free of disease, insect pests and mechanical injuries.

All plants shall be nursery grown and shall have been grown under the same climate conditions as the location of this project for at least two years before planting. Neither heeled-in plants nor plants from cold storage will be accepted.

3. Plant Measurements

All plants shall conform to the measurements specified in the Plant Schedule as approved by the ARC.

a. Caliper measurements shall be taken six inches (6") above grade for trees under four-inch (4") caliper and twelve (12") above grade for trees four inches (4") in caliper and over.

b. Minimum branching height for all shade trees shall be six feet (6'), maximum eight feet (8').

c. Caliper, height, spread and size of ball shall be generally as follows:

CALIPER	HEIGHT	SPREAD	SIZE OF BALL
3" – 3.5"	14'-16'	6'-8'	32" diameter
3.5"– 4"	14'-16'	8'-10'	36" diameter
4" – 4.5"	16'-18'	8'-10'	40" diameter
4.5"– 5"	16'-17'	10'-12'	44" diameter
5" – 5.5"	16'-20'	10'-12'	48" diameter
5.5"– 6"	18'-20'	12'-14'	52" diameter

All plant material shall generally average the median for the size ranges indicated above as indicated in the "AAN Standards".

4. Plant Identification

Legible labels shall be attached to all shade trees, minor trees, specimen shrubs and bundles or boxes of other plant material giving the botanical and common names, size and quantity of each. Each shipment of plants shall bear certificates of inspection as required by Federal, State and County authorities.

5. Plant Inspection

The ARC may, upon request by the builder or developer, at least ten (10) days prior to the installation of any proposed plant material, inspect all proposed plant material at the source of origin.

B. Planting Methods

All proposed plant materials that meet the specifications in Section A are to be planted in accordance with the following methods during the proper planting seasons as described in the following:

1. Planting Seasons

The planting of deciduous trees, shrubs and vines shall be from March 1st to June 15th and from September 15th to December 15th. Planting of deciduous material may be continued during the winter months providing there is no frost in the ground and frost-free topsoil planting mixtures are used.

The planting of evergreen material shall be from March 15th to June 15th and from August 15th to December 1st. No planting shall be done when ground is frozen or excessively moist. No frozen or wet topsoil shall be used at any time.

3. Excavation of Plant Pits

The landscaping contractor shall excavate all plant pits, vine pits, hedge trenches and shrub beds in accordance with the following schedule:

a. Locations of all proposed plant material shall be staked and approved in the field by the landscape architect before any of the proposed plant material is installed by the landscape contractor.

b. All pits shall be generally circular in outline, vertical sides; depth shall not be less than 6" deeper than the root ball, diameter shall not be less than two times the diameter of the root ball as set forth in the following schedule.

c. If areas are designated as shrub beds or hedge trenches, they shall be excavated to at least 18" depth minimum. Areas designated for ground covers and vines shall be excavated to at least 12" in depth minimum.

d. Diameter and depth of tree pits shall generally be as follows:

PLANT SIZE	ROOT BALL	PIT DIAMETER	PIT DEPTH
3" – 3.5"cal.	32"	64"	28"
3.5"– 4" cal.	36"	72"	32"
4" – 4.5"cal.	40"	80"	36"
4.5"– 5" cal.	44"	88"	40"
5" – 5.5"cal.	48"	96"	44"
5.5"– 6" cal.	52"	104"	48"

A 20% compaction figure of the soil to be removed is assumed and will be allowed in calculation of extra topsoil. The tabulated pit sizes are for purposes of uniform calculation and shall not override the specified depths below the bottoms of the root balls.

4. Staking, Guying and Wrapping

All plant material shall be staked or guyed, and wrapped in accordance with the following specifications:

a. Stakes: Shall be sound wood 2" x 2" rough sawn oak or similar durable woods, or lengths, minimum 7'-0" for major trees and 5'-0" minimum for minor trees.

b. Wire and Cable: Wire shall be #10 ga. galvanized or bethanized annealed steel wire. For trees over 3" caliper, provide 5/16" turn buckles, eye and eye with 4" take-up. For trees over 5" caliper, provide 3/16", 7 strand cable cadmium plated steel, with galvanized "eye"' thimbles of wire and hose on trees up to 3" in caliper.

c. Hose: Shall be new, 2 ply reinforced rubber hose, minimum 1/2" I.D. "Plastic Lock Ties" or "Paul's Trees Braces" may be used in place of wire and hose on trees up to 3" in caliper.

d. All trees under 3" in caliper are to be planted and staked in accordance with the attached "Typical Tree Staking Detail".

5. Plant Pruning, Edging and Mulching

a. Each tree, shrub or vine shall be pruned in an appropriate manner to its particular requirements, in accordance with accepted standard practice. Broken or bruised branches shall be removed with clean cuts flush with the adjacent trunk or branches. All cuts over 1" in diameter shall be painted with an approved antiseptic tree wound dressing.

b. All trenches and shrub beds shall be edged and cultivated to the lines shown on the drawing. The areas around isolated plants shall be edged and cultivated to the full diameter of the pit. Sod which has been removed and stacked shall be used to trim the edges of all excavated areas to the neat lines of the plant pit saucers, the edges of shrub areas, hedge trenches and vine pockets.

c. After cultivation, all plant materials shall be mulched with a 2" layer of fine, shredded pine bark, peat moss, or another approved material over the entire area of the bed or saucer.

6. Plant Inspection and Acceptance

The ARC shall be responsible for inspecting all planting projects on a periodic basis to assure that all work is proceeding in accordance with the approved plans and specifications.

7. Plant Guarantee

All plant material shall be guaranteed for the duration of one full growing season, after final inspection and acceptance of the work in the planting project. Plants shall be alive and in satisfactory growing condition at the end of the guarantee period.

a. For this purpose, the "growing season" shall be that period between the end of the "Spring" planting season, and the commencement of the "Fall" planting season.

b. Guarantee for planting performed after the specified end of the "Spring" planting season, shall be extended through the end of the next following "Spring" planting season.

Sodding

All sodding shall be in accordance to the "Landscape Specification Guidelines for Baltimore-Washington metropolitan Areas" latest edition, approved by the Landscape Contractors Association of Metropolitan Washington and the American Society of Landscape Architects.

All sod shall be strongly rooted sod, not less than two years old and free of weeds and undesirable native grasses. Provide only sod capable of growth development when planted and in strips not more than 18" wide x 4" long. Provide sod composed principally of improved strain Kentucky bluegrass, such as, Columbia, Victa, or Escort.

LANDSCAPING NOTES

1. This plan has been prepared in accordance with the New Town Alternative Compliance provisions of Section 16.124 of the Howard County Code and the Howard County Landscape Manual.
2. Contractor shall notify all utilities at least (5) five days before starting work. All General Notes, especially those regarding utilities, on Sheet 1 shall apply.
3. Field verify underground utility locations and existing conditions before starting planting work. Contact engineer / landscape architect if any relocation's are required.
4. Plant quantities shown on Plant List are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on the plan and those shown on the plant list, the quantities on the plan shall take precedence.
5. All plant material shall be full, heavy, well formed, and symmetrical, and conform to the A.A.N. Specifications, and be installed in accordance with project specifications.
6. No substitution shall be made without written consent of the owner or his representative.
7. All areas disturbed by construction activities but not otherwise planted, paved, or mulched shall be seeded or sodded in accordance with the project specifications.
8. The contractor shall notify the owner in writing if he/she encounters soil drainage conditions which may be detrimental to the growth of the plants.
9. All exposed earth within limits of planting beds shall be mulched with shredded hardwood mulch per Planting Details.
10. Financial surety for the required landscaping per schedule A and B shall be posted with the developers' agreement in the amount of $19,800.00.
11. Tabulation for landscape shown:
    The area of the facility is 2.92 acres.
    Required planting by HRD for 2.92 acres of facility combined at 24 trees/acre = 70 trees

    Planting provided:

Shade Trees	123
Ornamental Trees	25 = 12.5 E.S.T. @ 2:1
Evergreen Trees	50 = 25 E.S.T. @ 2:1
Shrubs provided:	102 = 10.2 E.S.T. @ 10:1
Total E.S.T. = *E.S.T., or Equivalent Shade Tree	= 170.7

12. The owner, tenant, and /or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and berms, fences and walls. All plant materials shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.

SCHEDULE A PERIMETER LANDSCAPE EDGE Category	EDGE A	EDGE B	EDGE C
	Buffer Bldg. from Adjacent Land Use	Interior Edge	Interior Edge
Landscape Buffer Type	C	N/A	N/A
Linear Feet of Roadway/ Perimeter Frontage	305'	540'	883'
Credit for Ex. Vegetation (Yes, No, Linear Feet) (describe below if needed)	200' LF exg. woods	NO	215'
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (describe below if needed)	No	No	No
Number of Plants Required Shade Trees Evergreen Trees Shrubs	 6 6 0	 0 0 0	 0 0 0
Number of Plants Provided Shade Trees Evergreen Trees Other Trees (2:1 subst.) Shrubs (10:1 subst.) (describe plant substitution credits below if needed)	 6 9 0 0	 12 9 0 0	 5 6 0 0

Schedule 'A' Number of required Shade Trees for bonding: 6 x $300 = $1,800.00
Schedule 'A' Number of required Evergreen Trees for bonding: 6 x $150 = $900.00

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING		
Number of Parking Spaces = 77 Spaces (Provided)		
Number of Shade Trees Required = 8 Trees @ 1 per 10 spaces		
Number of Shade Trees Provided Other Trees (2:1 substitution)	Shade Trees	36
NOTE: NUMBER OF LANDSCAPED ISLANDS REQUIRED: 8 @ 1 PER 10 SPACES NUMBER OF LANDSCAPED ISLANDS PROVIDED: 8 @ 1 PER 10 SPACES		

Schedule 'B' Number of required Shade Trees for bonding: 8 x $300 = $2,400.00

SCHEDULE C Residential Development Interior Landscaping		
Number of Units = 100		
Number of Shade Trees Required = 34 Trees @ 1 per 3 Units		
Number of Shade Trees Provided Other Trees (2:1 substitution)	Shade Trees Other Trees Total	123 47.7 170.7

Schedule 'C' Number of required Shade Trees for bonding: 34 x $300 = $10,200.00

SCHEDULE D Stormwater Management Area Landscaping	
Perimeter Length	450 LF
Existing Woods	N/A
Buffer Length	450 LF
Buffer Type	B
Trees required: 1 Shade Tree per 50 LF = 9 1 Evergreen Tree per 40 LF = 12	
Perimeter Lanscape Provided: Shade Trees Evergreen Trees	 9 12

Schedule 'D' Number of required Shade Trees for bonding: 9 x $300 = $2,700.00
Schedule 'D' Number of required Evergreen Trees for bonding: 12 x $150 = $1,800.00

BOND REQUIREMENT

Schedule 'A' Number of required Shade Trees for bonding: 6 x $300 = $1,800.00
Schedule 'A' Number of required Evergreen Trees for bonding: 6 x $150 = $900.00

Schedule 'B' Number of required Shade Trees for bonding: 8 x $300 = $2,400.00

Schedule 'C' Number of required Shade Trees for bonding: 34 x $300 = $10,200.00

Schedule 'D' Number of required Shade Trees for bonding: 9 x $300 = $2,700.00
Schedule 'D' Number of required Evergreen Trees for bonding: 12 x $150 = $1,800.00

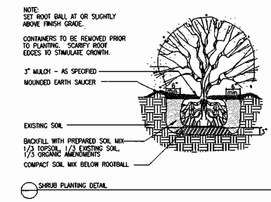
TOTAL Estimate for Surety: $19,800.00
COMMENTS:

DEVELOPER'S / BUILDER'S CERTIFICATE

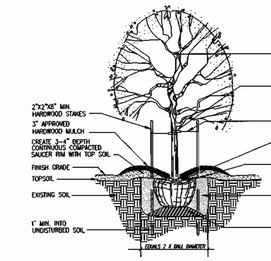
I/We certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code and the Howard County Landscape manual. I/We further cerify that upon completion,a Certification of Landscape Installation, accompanies by an executed one-year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

President — 8/18/2003
Name (Developer's /Builder's) Shelter Development LLC — Date

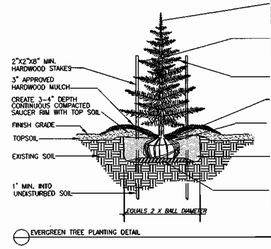
Financial surety for the required landscaping has been posted as part of the DPW Developer's Agreement in the amount of $19,800.00.



SHRUB PLANTING DETAIL NTS



DECIDUOUS TREE PLANTING DETAIL FOR PLANTING MATERIAL UP TO 3 1/2" CALIPER NTS



EVERGREEN TREE PLANTING DETAIL NTS

hcm
Hord Coplan Macht INC
ARCHITECTURE
LANDSCAPE ARCHITECTURE
PLANNING
INTERIOR DESIGN
111 MARKET PLACE SUITE 710
BALTIMORE MARYLAND 21202
410 837 7311 FAX 410 637 6530

OWNER: Snowden River LLLP
218 N. Charles Street , Suite 220
Baltimore, MD. 21201 Phone: 410-962-0595

Park View At Snowden River Landscape Notes & Details

Route 175 Commercial
Section 1 Area 2
Parcel D-1
8610 Snowden River Parkway, Columbia, Maryland 21045
6 th Election District Howard County, Maryland
Tax Map 36 Grid 18 Parcel 521 Lot D-1 Zoning: NT Deed Ref. 6752/231

REVISIONS

04/23/03 Revise per HRDC Comments
05/30/03 Revise per Howard County Comments

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14387 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3300 • fax (410) 683-3200

DRAWN BY:	TDT	CONTRACT NO.:	
DESIGNED BY:	TDT	SCALE:	As Shown
CHECKED BY:		HCM PROJECT NO:	21083.00
DATE:	Aug 19, 2003	SHEET	14 OF 15

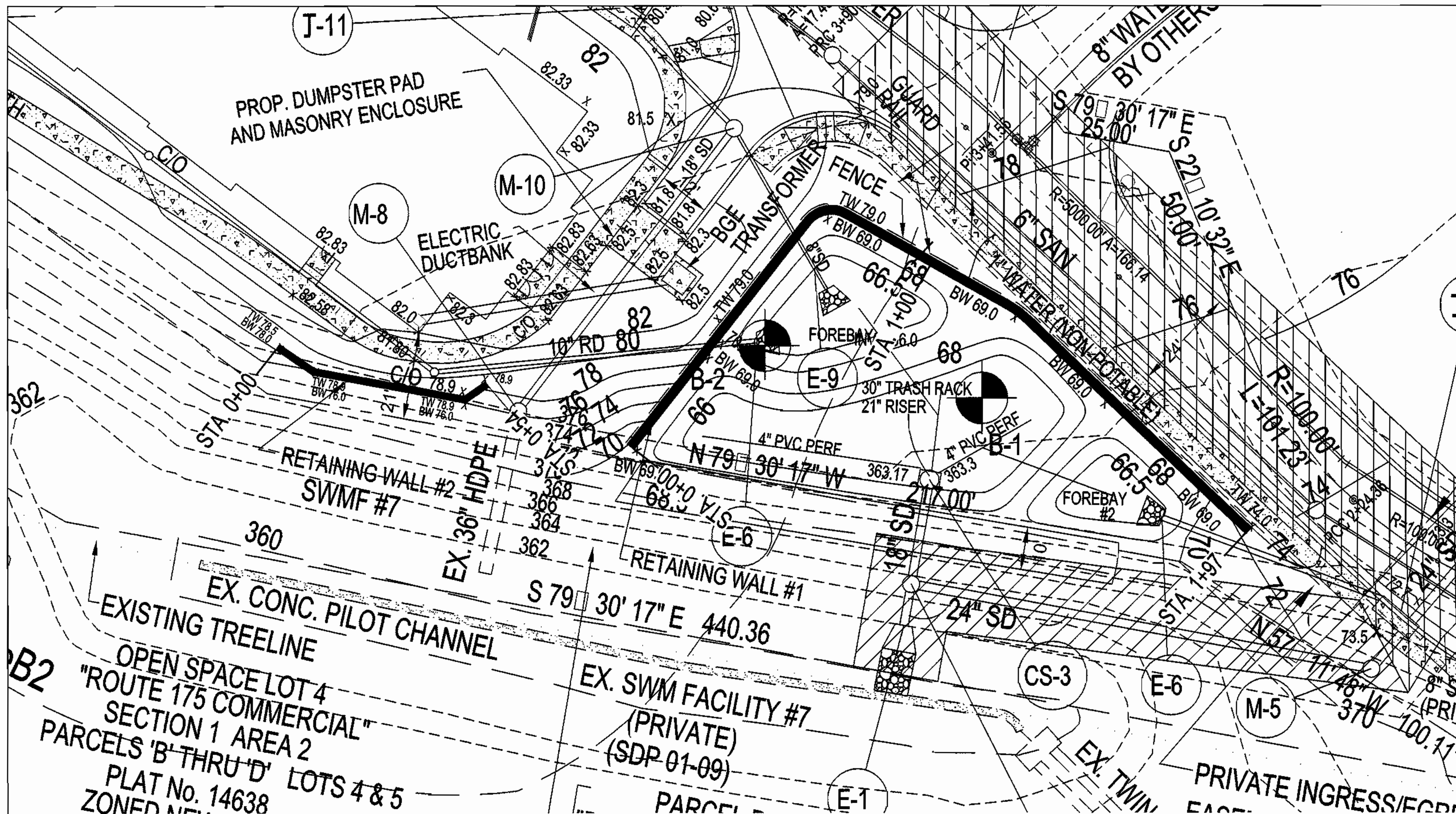
SDP - 03-142

APPROVED
BY BOARD OF APPEALS
OF HOWARD COUNTY
DATE 08/06/03

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 9/4/03
Chief, Division of Land Development — Date 9/4/03
Chief, Development Engineering Division MK — Date 9/3/03

PROFESSIONAL LANDSCAPE DESIGNER 3102 THOMAS DAVID TAYLOR STATE OF MARYLAND — 08-18-03



PLAN

SCALE : 1"=20'

SPECIFICATIONS

KEYSTONE MODULAR CONCRETE BLOCK RETAINING WALL

PART 1: GENERAL

1.01 Description

A. Work shall consist of furnishing and construction of a KEYSTONE Retaining Wall System in accordance with these specifications and in reasonably close conformity with the lines, grades, design, and dimensions shown on the plans.

B. Work includes preparing foundation soil, furnishing and installing leveling pad, unit drainage fill and backfill to the lines and grades shown on the construction drawings.

C. Work includes furnishing and installing geogrid soil reinforcement of the type, size, location, and lengths designated on the construction drawings.

1.02 Delivery, Storage and Handling

A. Contractor shall check all materials upon delivery to assure that the proper type, grade, color, and certification has been received.

B. Contractor shall protect all materials from damage due to job site conditions and in accordance with manufacturer's recommendations. Damaged materials shall not be incorporated into the work.

PART 2: PRODUCTS

2.01 Modular Concrete Retaining Wall Units

A. Modular concrete units shall conform to the following architectural requirements:
face color - concrete gray - standard manufacturers' color may be specified by the Owner.
face finish - sculptured rock face in angular tri-planer configuration. Other face finishes will not be allowed without written approval of Owner.
bond configuration - running with bonds nominally located at midpoint vertically adjacent units, in both straight and curved alignments.
exposed surfaces of units shall be free of chips, cracks or other imperfections when viewed from a distance of 10 feet under diffused lighting.

B. Modular concrete materials shall conform to the requirements of ASTM C1372 - Standard Specifications for Segmental Retaining Wall Units.

C. Modular concrete units shall conform to the following structural and geometric requirements measured in accordance with appropriate references:
compressive strength = 3000 psi minimum;
absorption = 8 % maximum (6 % in northern states) for standard weight aggregates;
dimensional tolerances = ± 1/8" from nominal unit dimensions not including rough split face, ±1/16" unit height - top and bottom planes;
unit size - 8" (H) x 18" (W) x 22" (D) minimum;
unit weight - 100 lbs/unit minimum for standard weight aggregates;
inter-unit shear strength - 1000 plf minimum at 2 psi normal pressure;
geogrid/unit peak connection strength - 1000 plf minimum at 2 psi normal force.

D. Modular concrete units shall conform to the following constructability requirements:
vertical setback = 1/8"± per course (near vertical) or 1"+ per course per the design;
alignment and grid positioning mechanism - fiberglass pins, two per unit minimum;
maximum horizontal gap between erected units shall be - 1/2 inch.

2.02 Shear Connectors

A. Shear connectors shall be 1/2 inch diameter thermoset isopthalic polyester resin-protruded fiberglass reinforcement rods or equivalent to provide connection between vertically and horizontally adjacent units. Strength of shear connectors between vertical adjacent units shall be applicable over a design temperature of 10 degrees F to + 100 degrees F.

B. Shear connectors shall be capable of holding the geogrid in the proper design position during grid pre-tensioning and backfilling.

2.03 Base Leveling Pad Material

A. Material shall consist of a compacted #57 crushed stone base as shown on the construction drawings.

2.04 Unit Drainage Fill

A. Unit drainage fill shall consist of #57crushed stone

B. One cubic foot, minimum, of drainage fill shall be used for each square foot of wall face. Drainage fill shall be placed within cores of, between, and behind units to meet this requirement.

2.05 Reinforced Backfill

A. Reinforced backfill shall type SM, be free of debris and meet the following gradation tested in accordance with ASTM D-422 and meet other properties shown on the plan:

Sieve Size	Percent Passing
2 inch	100-75
3/4 inch	100-75
No. 40	0-60
No. 200	0-35

Plasticity Index (PI) <15 and Liquid Limit <40 per ASTM D-4318.

B. Material can be site excavated soils where the above requirements can be met. Unsuitable soils for backfill (high plastic clays or organic soils) shall not be used in the reinforced soil mass.

2.06 Geogrid Soil Reinforcement

A. Geosynthetic reinforcement shall consist of geogrids manufactured specifically for soil reinforcement applications and shall be manufactured from high tenacity polyester yarn.

2.07 Drainage Pipe

A. The drainage pipe shall be perforated corrugated HDPE pipe manufactured in accordance with ASTM D-1248.

PART 3 EXECUTION

3.01 Excavation

A. Contractor shall excavate to the lines and grades shown on the construction drawings. Owner's representative shall be responsible for inspecting and approving the excavation prior to placement of leveling material or fill soils.

3.02 Base Leveling Pad

A. Leveling pad material shall be placed to the lines and grades shown on the construction drawings, to a minimum thickness of 6 inches and extend laterally a minimum of 6" in front and behind the modular wall unit.

B. Leveling pad shall be prepared to insure full contact to the base surface of the concrete units.

3.03 Modular Unit Installation

A. First course of units shall be placed on the leveling pad at the appropriate line and grade. Alignment and level shall be checked in all directions and insure that all units are in full contact with the base and properly seated.

B. Place the front of units side-by-side. Do not leave gaps between adjacent units. Layout of corners and curves shall be in accordance with manufacturer's recommendations.

C. Install shear/connecting devices per manufacturer's recommendations.

D. Place and compact drainage fill within and behind wall units. Place and compact backfill soil behind drainage fill. Follow wall erection and drainage fill closely with structure backfill.

E. Maximum stacked vertical height of wall units, prior to unit drainage fill and backfill placement and compaction, shall not exceed three courses.

3.04 Structural Geogrid Installation

A. Geogrid shall be oriented with the highest strength axis perpendicular to the wall alignment.

B. Geogrid reinforcement shall be placed at the strengths, lengths, and elevations shown on the construction design drawings or as directed by the Engineer.

C. The geogrid shall be laid horizontally on compacted backfill and attached to the modular wall units. Place the next course of modular concrete units over the geogrid. The geogrid shall be pulled taut, and anchored prior to backfill placement on the geogrid.

D. Geogrid reinforcements shall be continuous throughout their embedment lengths and placed side-by-side to provide 100% coverage at each level. Spliced connections between shorter pieces of geogrid or gaps between adjacent pieces of geogrid are not permitted.

3.05 Reinforced Backfill Placement

A. Reinforced backfill shall be placed, spread, and compacted in such a manner that minimizes the development of slack in the geogrid and installation damage.

B. Reinforced backfill shall be placed and compacted in lifts not to exceed 6 inches where hand compaction is used, or 8 - 10 inches where heavy compaction equipment is used. Lift thickness shall be decreased to achieve the required density as required.

C. Reinforced backfill shall be compacted to 95 % of the maximum density as determined by ASTM D698. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be + 3 % to - 3% of optimum.

D. Only lightweight hand-operated equipment shall be allowed within 3 feet from the tail of the modular concrete unit.

E. Tracked construction equipment shall not be operated directly upon the geogrid reinforcement. A minimum fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.

F. Rubber tired equipment may pass over geogrid reinforcement at slow speeds, less than 10 MPH. Sudden braking and sharp turning shall be avoided.

G. At the end of each day's operation, the Contractor shall slope the last lift of reinforced backfill away from the wall units to direct runoff away from wall face. The Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

3.06 Cap Installation

A. Cap units shall be glued to underlying units with an all-weather adhesive recommended by the manufacturer.

3.07 Field Quality Control

A. The Owner shall engage inspection and testing services, including independent laboratories, to provide quality assurance and testing services during construction.

B. As a minimum, quality assurance testing should include foundation soil inspection, soil and backfill testing, verification of design parameters, and observation of construction for general compliance with design drawings and specifications.

NOTES:

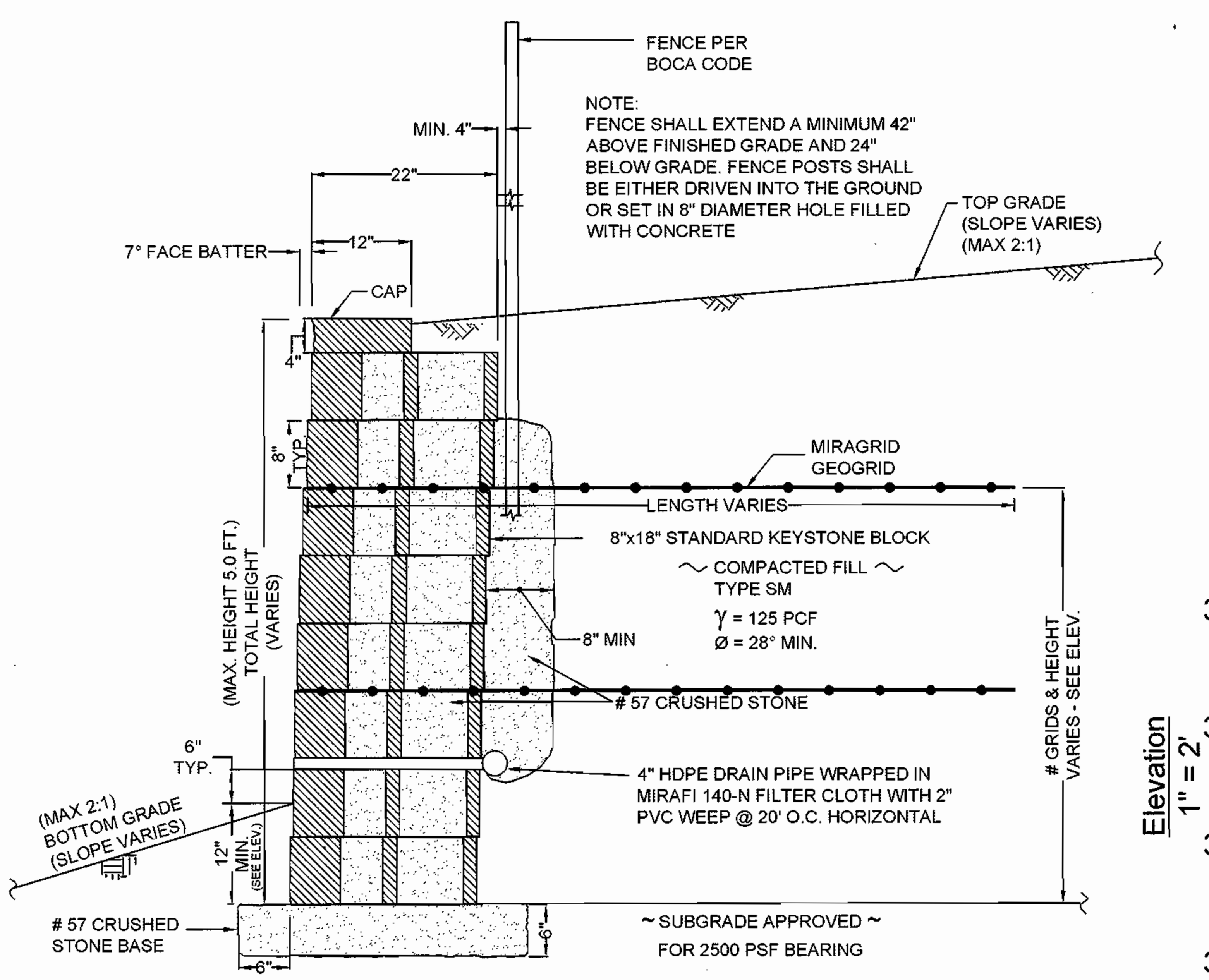
1.) No trees shall be planted within 10 feet of the top of the retaining wall.

2.) Retaining walls shall only be constructed under the observation of a registered professional engineer and a (NICET, WACEL, or equiv.) certified soils technician.

3.) The required bearing pressure beneath the wall system shall be verified in the field by a certified soils technician. Testing documentation must be provided to the Howard County Inspector prior to start of construction. The required bearing test shall be the Dynamic Cone Penetrometer test ASTM STP-399.

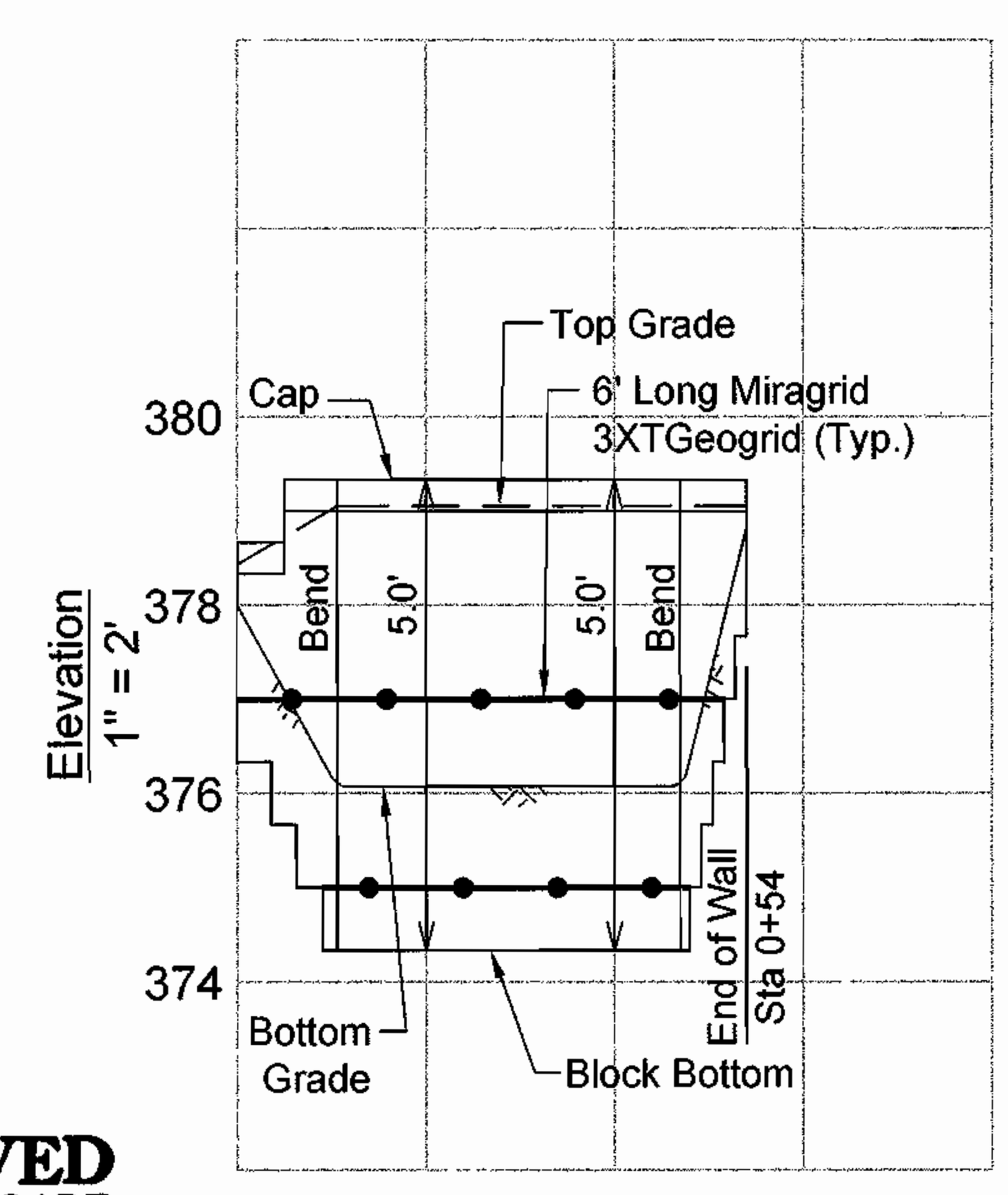
4.) The suitability of fill material shall be confirmed by the on-site soils technician. Each 8" lift must be compacted to a minimum 95% standard proctor density and the testing report shall be made available to the Howard County Inspector upon completion of construction.

5.) One soil boring is required every one hundred feet along the length of the wall. Copies of the boring reports shall be provided to the Howard County Inspector prior to the start of the construction.



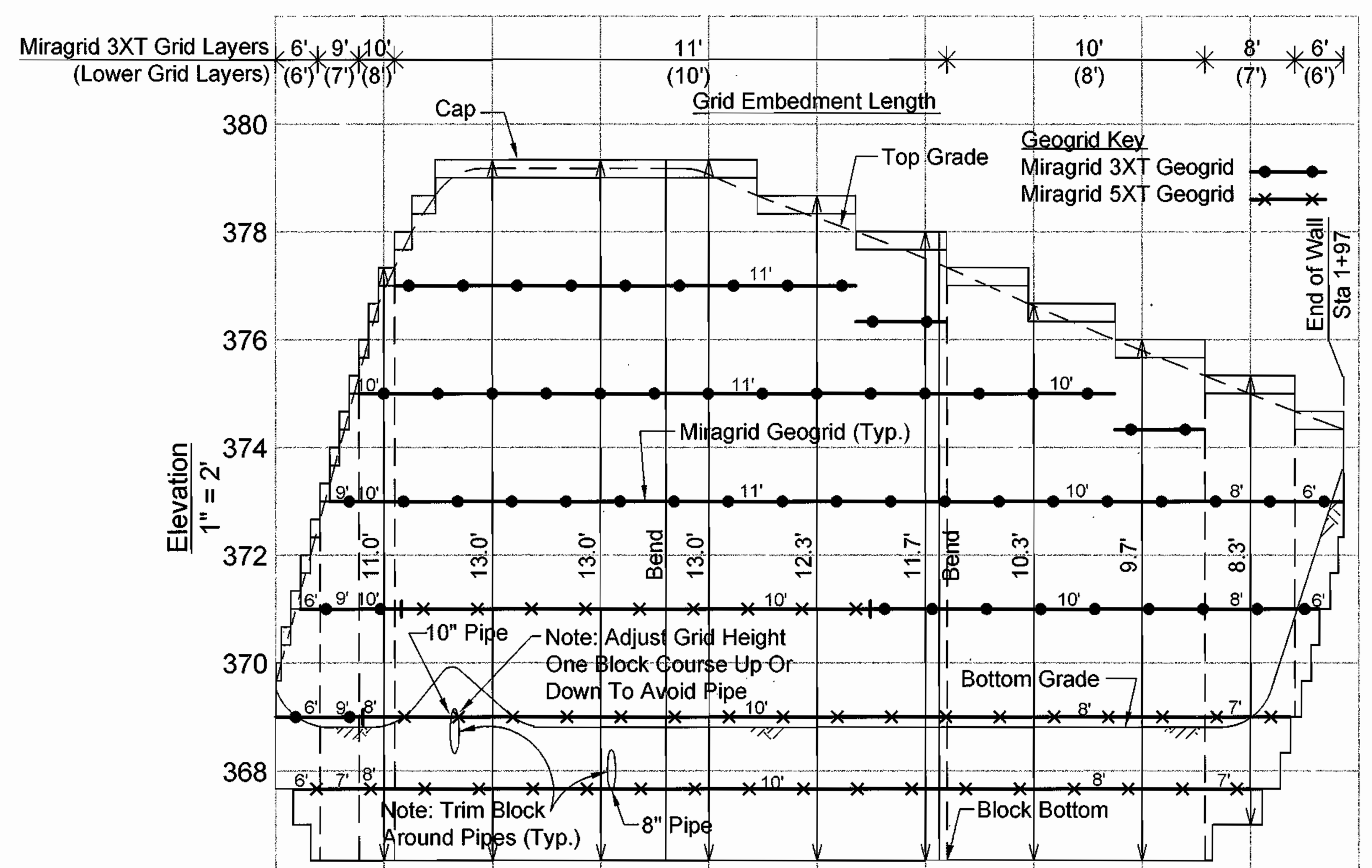
TYPICAL SECTION

NTS



Wall #2 Station

1" = 20'



Wall #1 Station

1" = 20'

APPROVED: DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 9/3/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9/4/03

DIRECTOR — DATE 9/6/03

APPROVED
PLANNING BOARD
of HOWARD COUNTY

DATE 08/06/03

OWNER: Snowden River LLLP
218 N. Charles Street , Suite 220
Baltimore, MD. 21201 Phone: 410-962-0595

Park View At Snowden River
Retaining Wall Plan

Route 175 Commercial
Section 1 Area 2
Parcel D-1
8610 Snowden River Parkway, Columbia, Maryland 21045
6 th Election District Howard County, Maryland
Tax Map 36 Grid 18 Parcel 521 Lot D-1 Zoning: NT Deed Ref. 6752/231

REVISIONS

HILLIS-CARNES ENGINEERING ASSOCIATES, INC.
12011 Guilford Road Suite 106
Annapolis Junction, MD 20701
(410) 880-4788 Fax: (410)880-4098

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14307 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

DRAWN BY: AM	CONTRACT NO.:
DESIGNED BY: RWS	SCALE: AS SHOWN
CHECKED BY: RMH	HCEA PROJECT NO: 03028-A
DATE: Aug 19, 2003	SHEET 15 OF 15

SDP-03-142