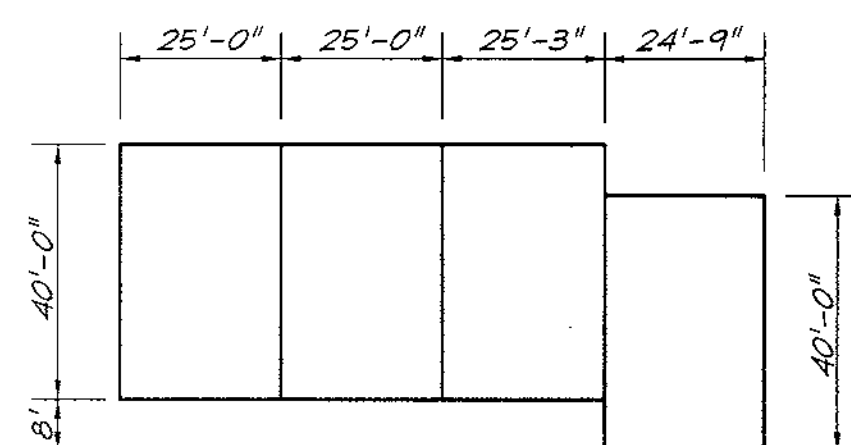
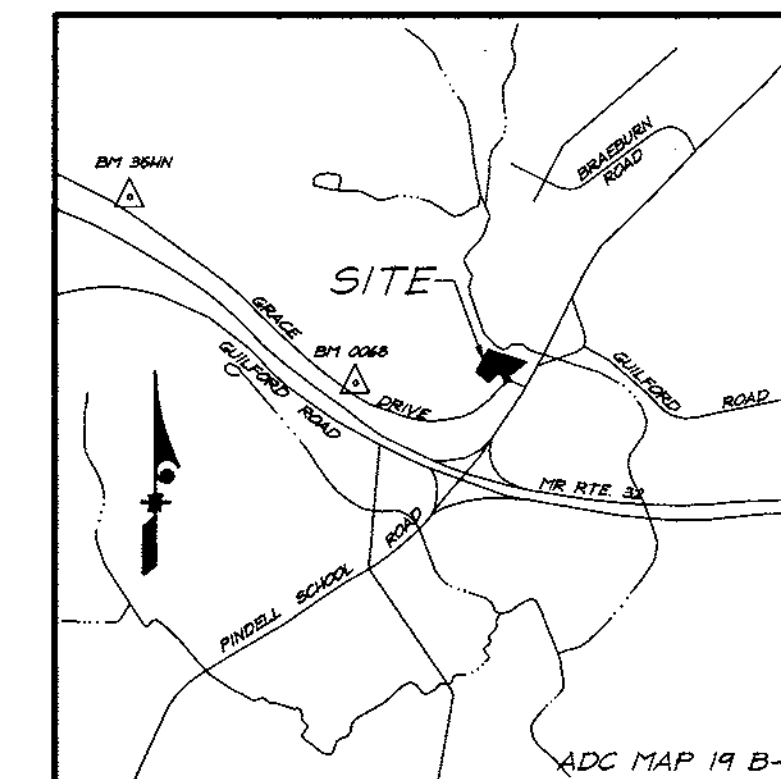


BUILDING FOOTPRINT
SCALE: 1"=30'



GRACE PROPERTY



VICINITY MAP
SCALE: 1"=2000'

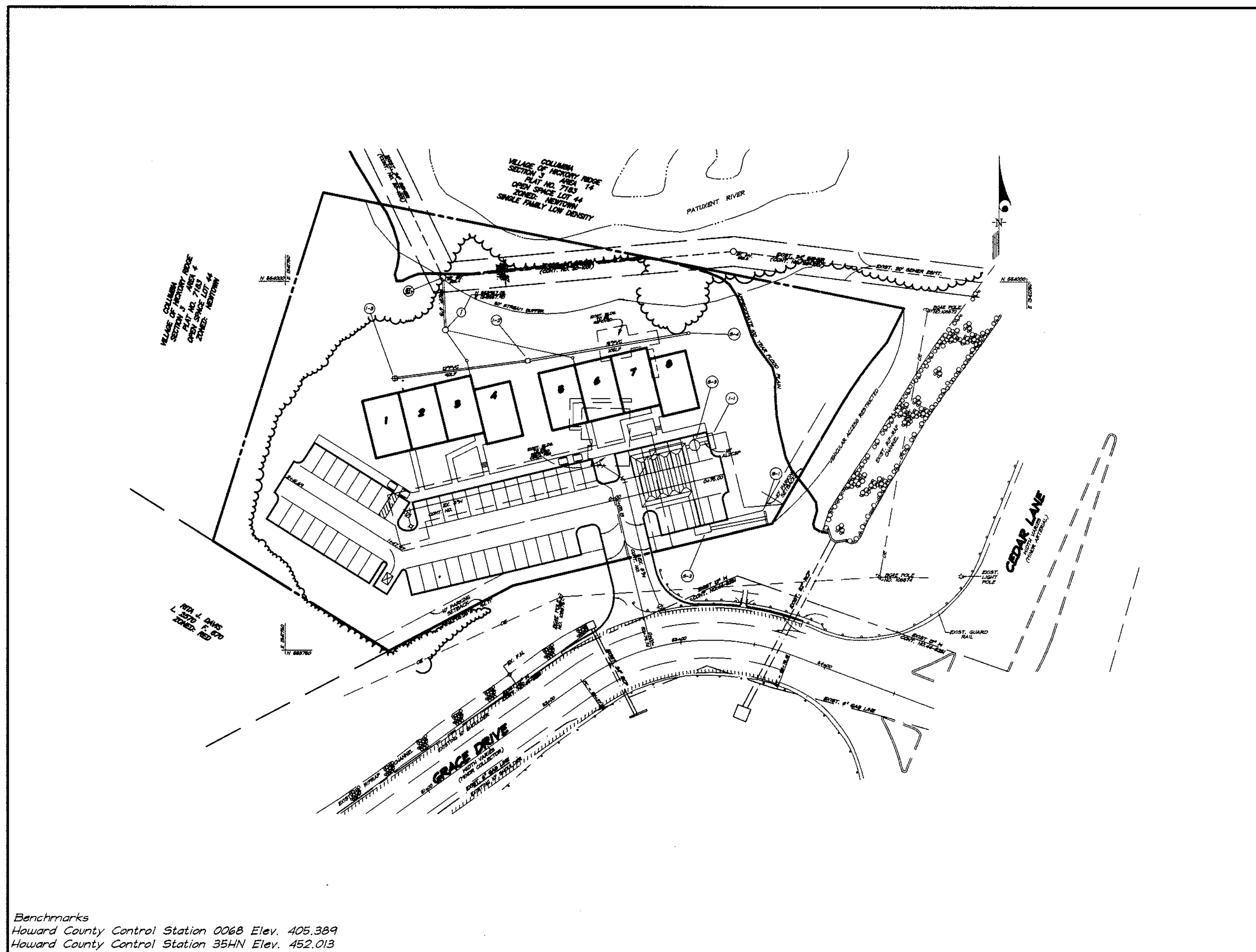
SHEET INDEX	
SHEET	DESCRIPTION
1	COVER SHEET
2	SITE DEVELOPMENT PLAN
3	PAVING DETAILS
4	DETAILS & STORM DRAIN PROFILES
5	STORM WATER MANAGEMENT DETAILS
6	STORM WATER MANAGEMENT DETAILS
7	GRADING, SEDIMENT & EROSION CONTROL, SLOPES PLAN
8	SEDIMENT EROSION CONTROL DETAILS
9	DRAINAGE AREA MAP
10	LANDSCAPE PLAN

STREET ADDRESS CHART		
BLDG. NO.	ADDRESS	
1	7300	GRACE DRIVE
2	7310	GRACE DRIVE
3	7320	GRACE DRIVE
4	7330	GRACE DRIVE
5	7340	GRACE DRIVE
6	7350	GRACE DRIVE
7	7360	GRACE DRIVE
8	7370	GRACE DRIVE

WATER AND SEWER NOTES

- All construction methods and materials for on-site water and sewer systems shall follow the current editions of the Howard County Plumbing Code, supplemented by the Howard County Standard Details and Specifications where necessary.
- 4" and 6" Sewer house connections shall be built to within 5' of the building at a slope of 2.00%.
- 6" and 8" P.V.C. Pipe shall meet the requirements of A.S.T.M. D.3034, wall thickness classification SDR-35.
- Water meter shall be located inside the building.
- Area where water house connections are to be built shall be at final grade and the water house connections shall be laid with a minimum of 3.5' of cover. Water house connection shall be 4" diameter, Ductile-Iron, Class 52.
- Water house connection shall be built to within 5' of the building.

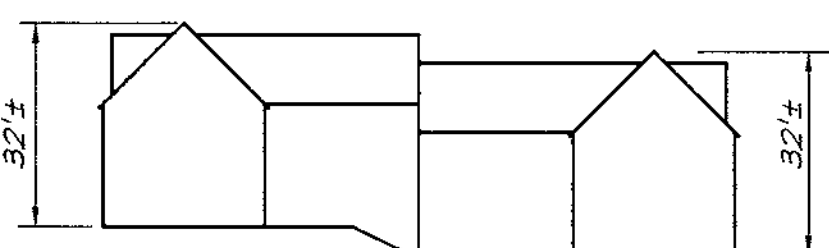
SEWER HOUSE CONNECTION TABLE		
UNITS	SHC INV. AT C.O.	MIN. CGL. ELEV.
1 THRU 4	285.6	289.6
5 THRU 8	284.0	288.0



Benchmarks
Howard County Control Station 0068 Elev. 405.389
Howard County Control Station 35HN Elev. 452.013

GENERAL NOTES:

- All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications, if applicable.
- The contractor shall notify the Department of Public Works/Bureau of Engineering, Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to the start of work.
- The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work.
- Project Background:
Zoning: B-1
Total Tract Area: 2.0351 Ac (88,649 SF)
Number of Proposed Units: 8, 1,000 SF per floor each, 2 floors each.
- Total Disturbed Area: 1.34 Acres
- County File Nos.: 2B-980-17
- Traffic control devices, markings, and signing shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
- Topographic survey was field run at 2' contour intervals by Clark, Finefrock & Sackett, Inc., 8/96.
- Horizontal and vertical control based on Howard County Control Stations 0068 and 35HN.
- Public water and sewer are to be utilized.
Contract # 30-1002 and 44-3283-D
Middle Patuxent Drainage Area
- Stormwater Management for this project is being provided on site for quantity and quality. Quality control for this site is proposed by Stormceptor. Quantity control is by private underground detention facility. Stormwater management facility will be privately owned and maintained.
- Existing utilities & improvements shown are taken from available records.
- Trench compaction for storm drains within the road or street rights of way limits shall be in accordance with Howard County Design Manual, Vol IV, Std. No. G-2.01
- All compacted fill shall be in accordance with AASHTO T-180 requirements.
- All fillet radii are 5 ft. unless indicated otherwise.
- Street trees shall be planted a minimum of five (5) feet from storm drain, waterline or sewer pipe manholes; also a minimum of twenty (20) feet from street lights.
- Proposed use of the site is commercial office, no residential uses.
- Maximum number of employees: 56
- Number of parking spaces required: 53
- Number of parking spaces provided: 56 (4HC)
- Building coverage of site: .09 Acres (4.5%)
- No wetlands exist on site as determined by an investigation by Wildman Assoc. on 11/6/96.
- All dimensions are to the face of curb unless otherwise noted.
- MOE Tracking Number 1998060882.
- The Forest Conservation Program obligations associated with this project were fulfilled through the submission of a Declaration of Intent (dated 9/29/98) for a single lot clearing less than 40,000 sq. feet of forest resources.

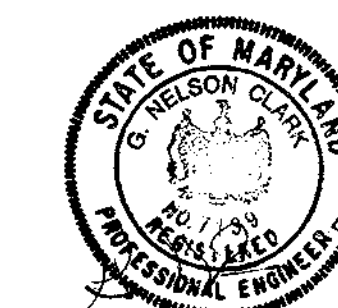


SCHEMATIC PROFILES
SCALE: 1"=30'

SITE DEVELOPMENT PLAN

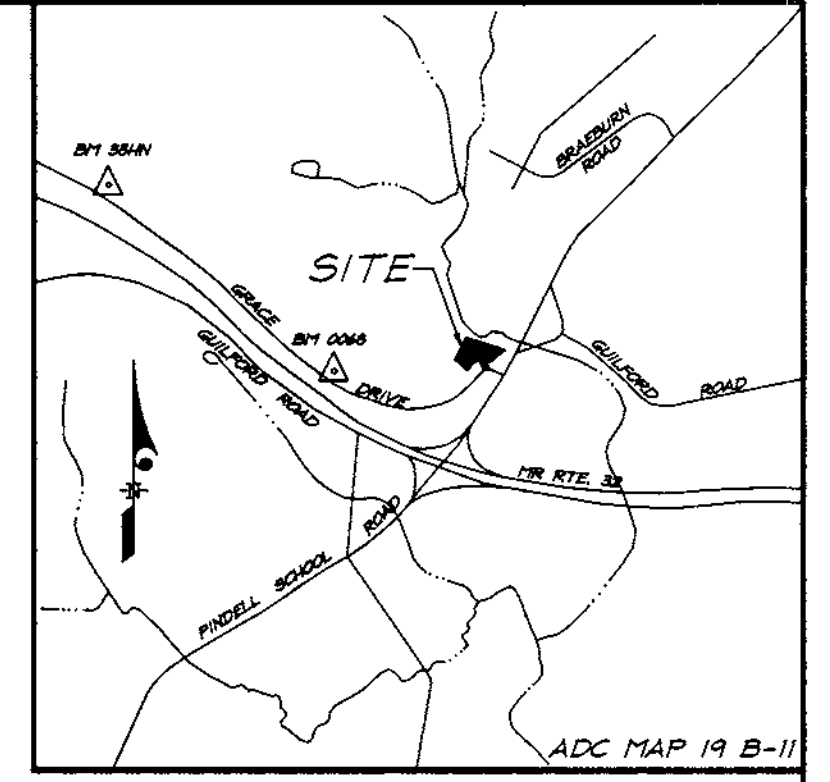
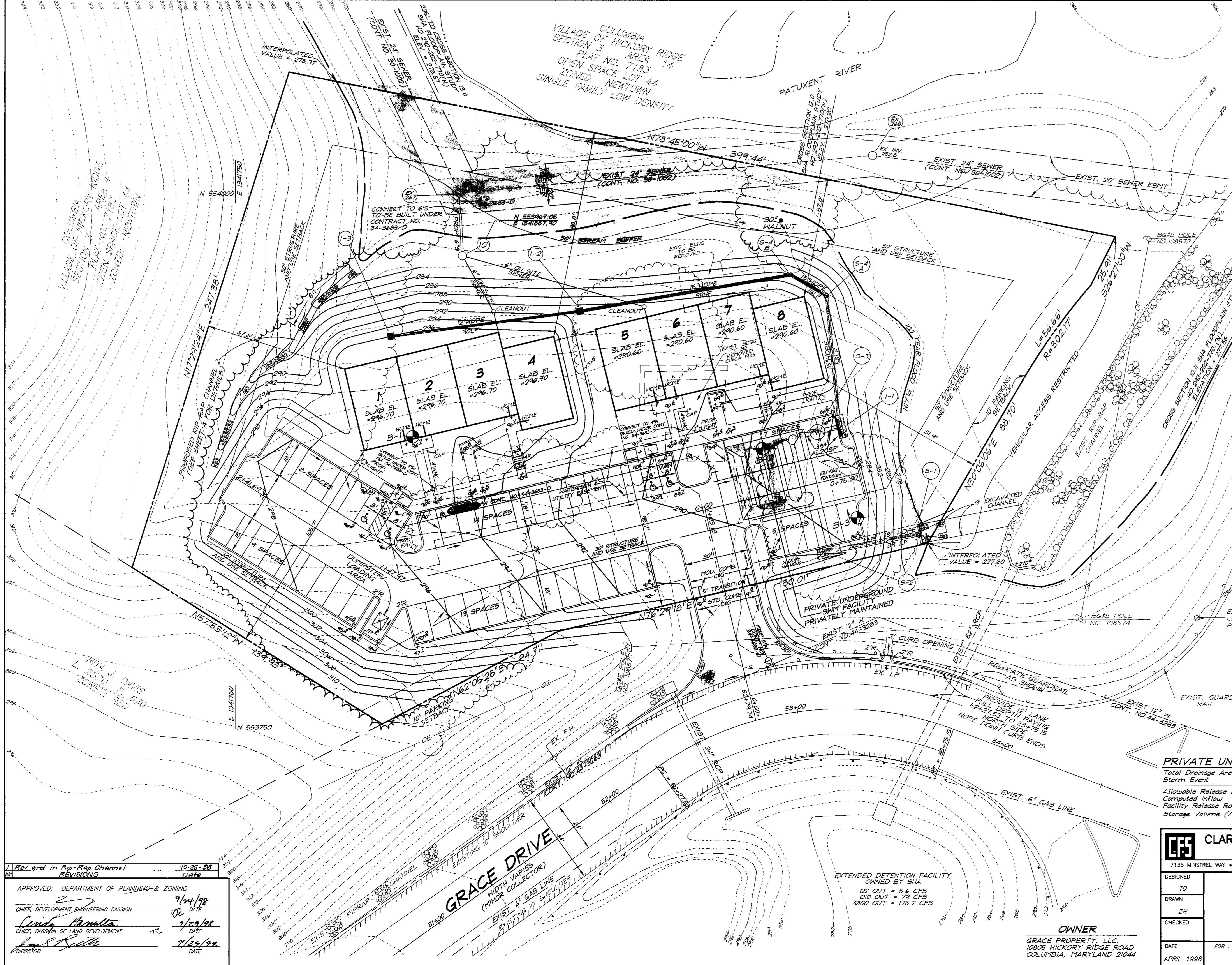
APPROVED: DEPARTMENT OF PLANNING & ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 9/24/98 DATE
 9/29/98 DATE
 9/29/98 DATE

No	Revision	Date
1	Modified address chart	9-25-98



OWNER
GRACE PROPERTY, LLC
10805 HICKORY RIDGE ROAD
COLUMBIA, MARYLAND 21044

SUBDIVISION NAME		SECTION/AREA	LOTS/PARCELS	
GRACE PROPERTY		N/A	P. 81	
PLAT NO.	BLOCK NO.	ZONE	TAX MAP NO.	ELECTION DIST.
N/A	22	B-1	35	5th
WATER CODE		SEWER CODE		
E 24		6580000		
CLARK • FINEFROCK & SACKETT, INC. ENGINEERS • PLANNERS • SURVEYORS 7135 MINSTREL WAY • COLUMBIA, MD 21045 • (410) 381-7500 BALT. • (301) 621-8100 WASH.				
DESIGNED	COVER SHEET			SCALE
TD	GRACE PROPERTY			1" = 50'
DRAWN	8 COMMERCIAL UNITS			DRAWING
ZH	TAX MAP 35 GRID 22 PARCEL 81			1 of 10
CHECKED	FIFTH (5th) ELECTION DISTRICT			JOB NO.
TD	HOWARD COUNTY, MARYLAND			96-121
DATE	FOR: LAND DESIGN & DEVELOPMENT, INC.			FILE NO.
APRIL 1998	10805 HICKORY RIDGE ROAD, SUITE 215 COLUMBIA, MARYLAND 21044 PHONE: 703-442-8592			96-121-X



VICINITY MAP
SCALE: 1" = 2000'

- LEGEND**
- Contour Interval 2 feet
 - Existing Contours - - - - - 244
 - Proposed Contours - - - - - 244
 - Proposed Spot Elevations +94.2
 - Direction of Flow →
 - Soil Borings ●
 - 100 Yr. Flood Plain
 - Proposed Storm Drain 16" RCP
 - Existing Storm Drain EXIST. 16" RCP
 - Existing Water EXIST. 8" W
 - Existing Sewer EXIST. 8" S
 - Existing Gas EXIST. 8" GAS
 - Prop. Combination C & G
 - Existing Edge of Paving
 - Dumpster Location
 - 14" 150W HPS
 - Post Top Modern Light
 - Main Entrance To Be Used By Handicapped Persons HCME
 - Hand Rails
 - 30" 150W HPS VANDER PENTON STRUCTURE, OUTLET, 10" DIA.

PRIVATE UNDERGROUND SWM FACILITY SUMMARY

Total Drainage Area to Facility = 1.26 Acres

Storm Event	2	10	100
Allowable Release Rate	1	4	N/A
Computed Inflow	3	6	9
Facility Release Rate	1	2	11
Storage Volume (AcFt)	.08	1.8	0.15

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS

7135 MINSTREL WAY • COLUMBIA, MD 21045 • (410) 381-7500 BALT. • (301) 621-8100 WASH.

DESIGNED	TD	SCALE	1" = 20'
DRAWN	ZH	DRAWING	2 of 10
CHECKED		JOB NO.	96-121
DATE	APRIL 1998	FILE NO.	96-121X

SITE DEVELOPMENT PLAN
8 COMMERCIAL UNITS
GRACE PROPERTY

TAX MAP 35 GRID 21 PARCEL 81
FIFTH (5th) ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

FOR: LAND DESIGN & DEVELOPMENT, INC.
10805 HICKORY RIDGE ROAD, SUITE 215
COLUMBIA, MARYLAND 21044
PHONE: 703-442-8992

1 Rev. grad in Rip-Rap Channel
REVISIONS

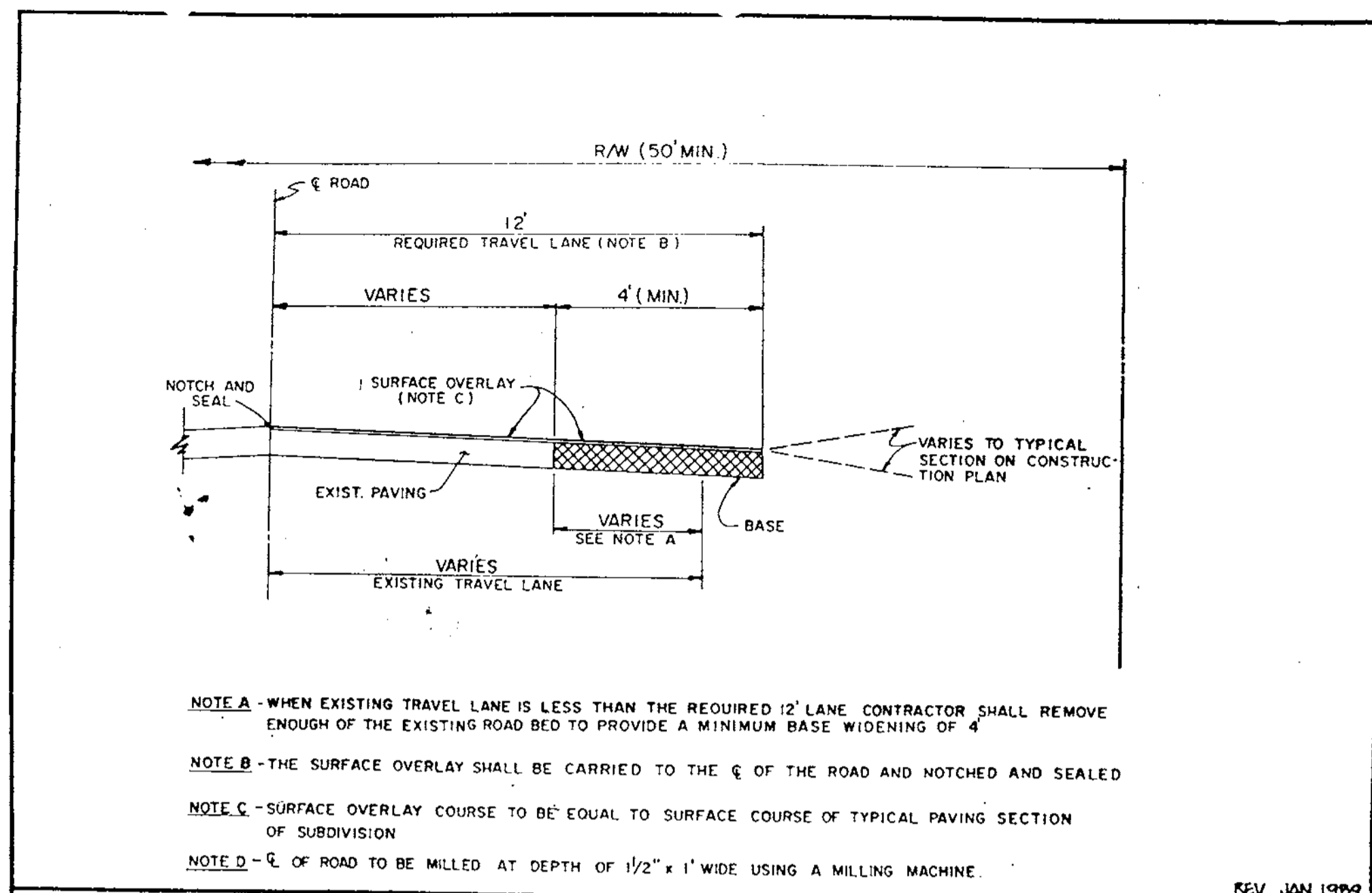
NO.	DESCRIPTION	DATE
1	Rev. grad in Rip-Rap Channel	10-26-98

APPROVED: DEPARTMENT OF PLANNING & ZONING

3/24/98 DATE
3/29/98 DATE
7/29/98 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION
CHIEF, DIVISION OF LAND DEVELOPMENT
DIRECTOR





NOTE A - WHEN EXISTING TRAVEL LANE IS LESS THAN THE REQUIRED 12' LANE, CONTRACTOR SHALL REMOVE ENOUGH OF THE EXISTING ROAD BED TO PROVIDE A MINIMUM BASE WIDENING OF 4'

NOTE B - THE SURFACE OVERLAY SHALL BE CARRIED TO THE ϵ OF THE ROAD AND NOTCHED AND SEALED

NOTE C - SURFACE OVERLAY COURSE TO BE EQUAL TO SURFACE COURSE OF TYPICAL PAVING SECTION OF SUBDIVISION

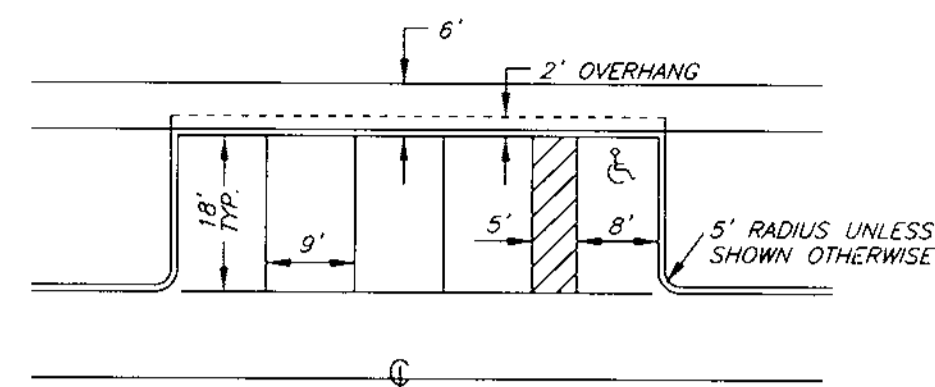
NOTE D - ϵ OF ROAD TO BE MILLED AT DEPTH OF 1/2" x 1' WIDE USING A MILLING MACHINE.

REV. JAN. 1989

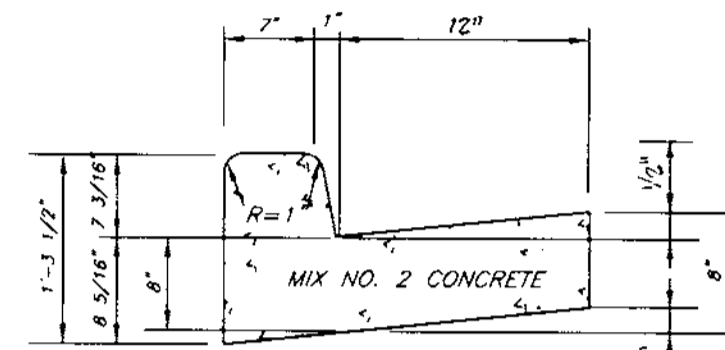
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved: *[Signature]*
DATE: 9/29/98

WIDENING STRIPS ALONG EXISTING ROADWAYS
NO SCALE

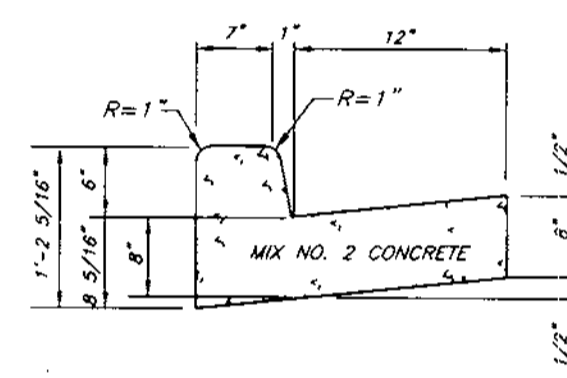
DRAWN BY
R.K.H.
CHK. BY
W.M.H.
NO SCALE
R10 01



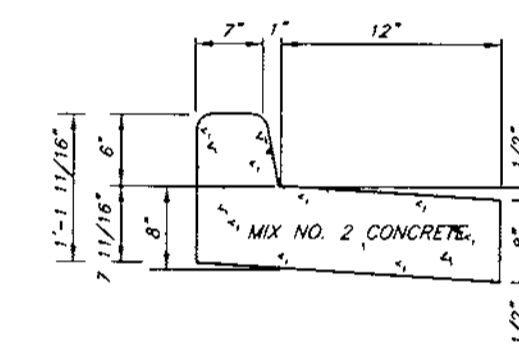
TYPICAL PARKING DETAIL
NO SCALE



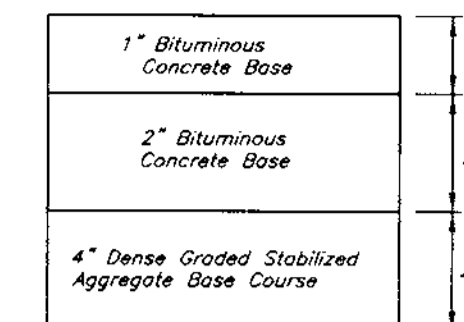
STANDARD 7" COMBINATION
CURB AND GUTTER
NO SCALE



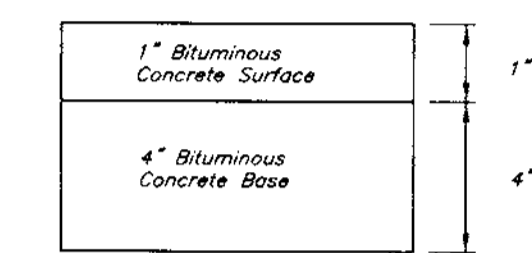
MODIFIED 6" COMBINATION
CURB AND GUTTER
NO SCALE



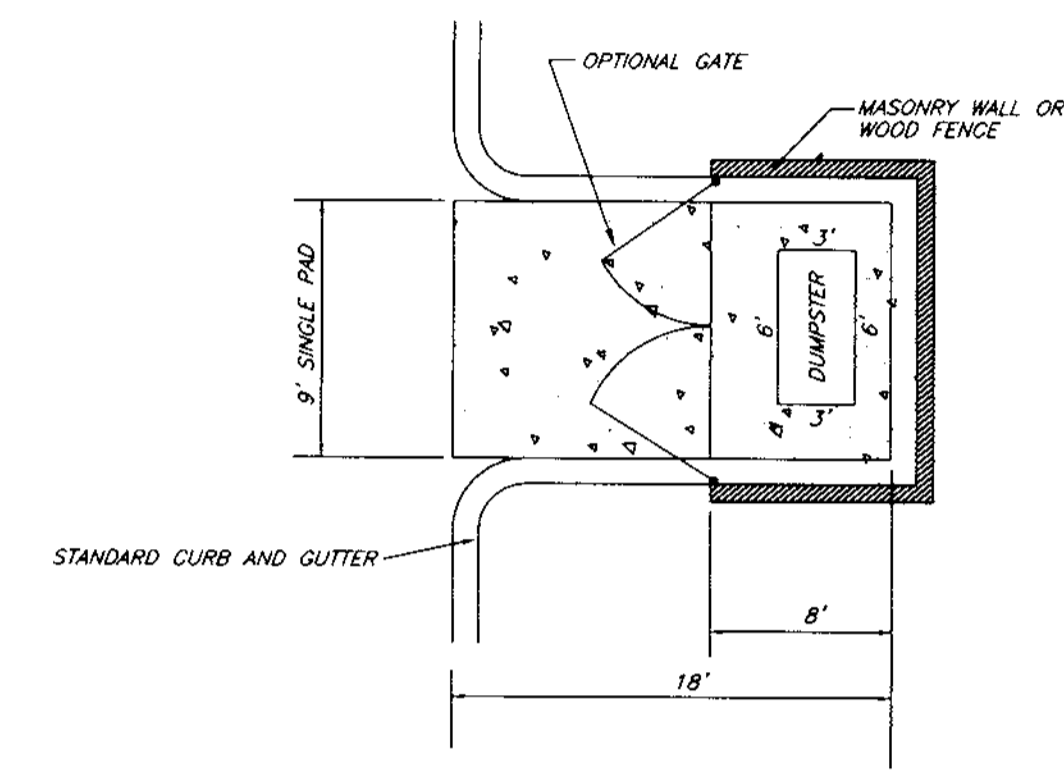
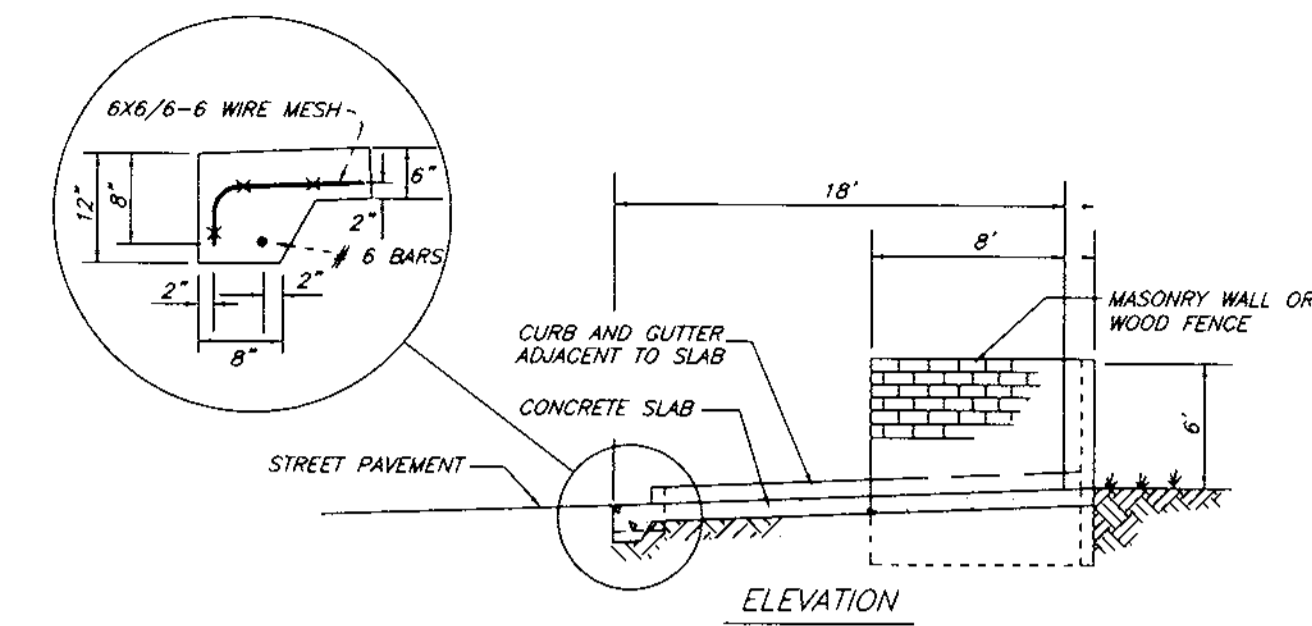
MODIFIED 6" COMBINATION
CURB AND GUTTER
NO SCALE



ALTERNATE PAVING SECTION
FOR PARKING AREAS
NO SCALE
(SECTION P-1)



ALTERNATE PAVING SECTION
FOR PARKING AREAS
NO SCALE
(SECTION P-1)

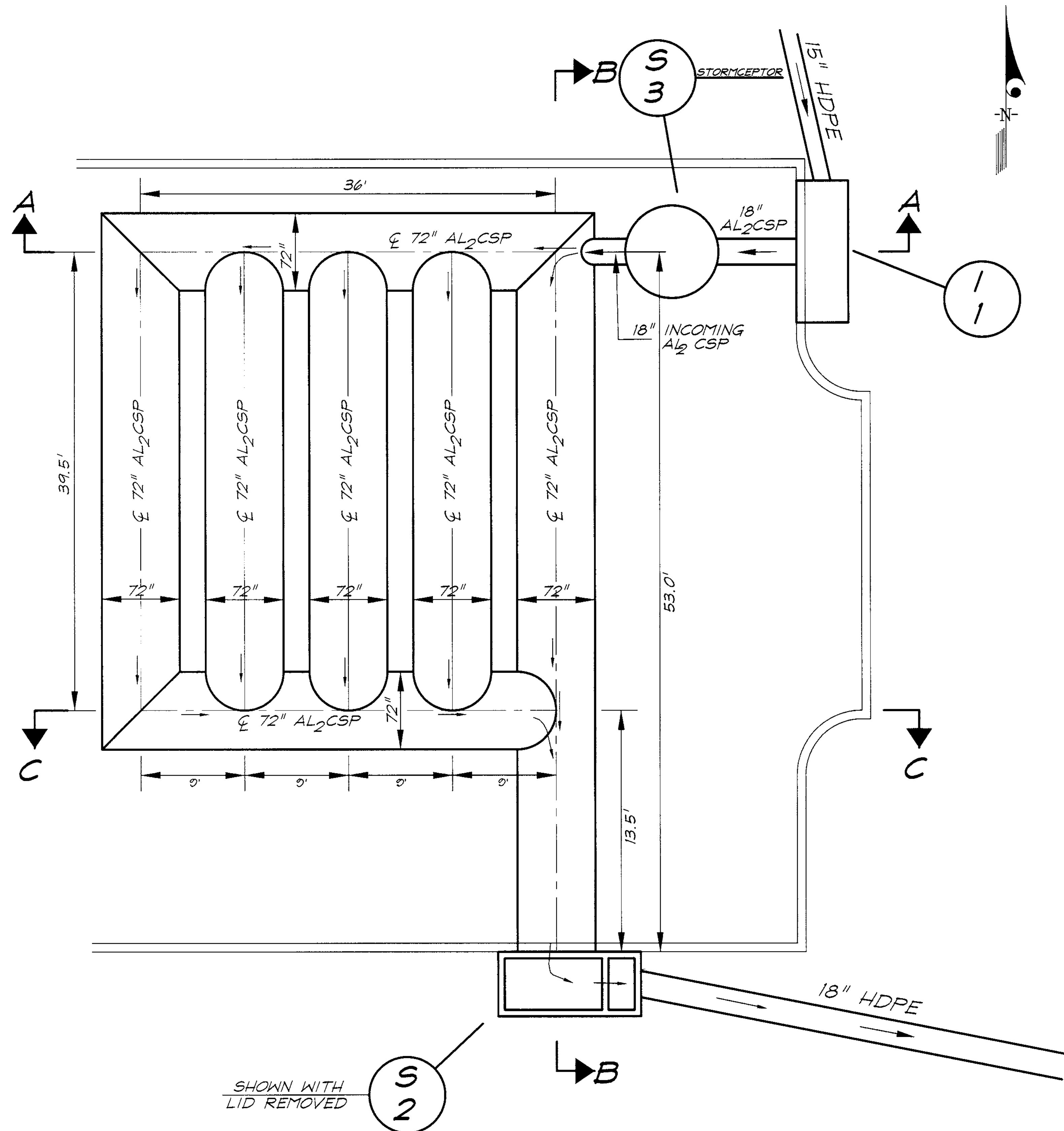


DUMPSTER PAD & ENCLOSURE
NO SCALE



CLARK • FINEFROCK & SACKETT, INC. ENGINEERS • PLANNERS • SURVEYORS 7135 MINSTREL WAY • COLUMBIA, MD 21045 • (410) 381-7500 BALT. • (301) 621-8100 WASH.	
DESIGNED TD	SCALE AS SHOWN
DRAWN ZH	DRAWING 3 of 10
CHECKED	JOB NO. 96-121
DATE FEB. 1998	FILE NO. 96-121-X
PAVING DETAILS GRACE PROPERTY TAX MAP 35 PARCEL B1 FIFTH (5th) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
FOR: LAND DESIGN & DEVELOPMENT, INC. 10805 HICKORY RIDGE ROAD, SUITE 215 COLUMBIA, MARYLAND 21044 PHONE: 703-442-8892	

APPROVED: DEPARTMENT OF PLANNING & ZONING
 9/24/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
[Signature] DATE
 9/29/98
 CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature] DATE
 9/29/98
 DIRECTOR



PLAN VIEW
NOT TO SCALE

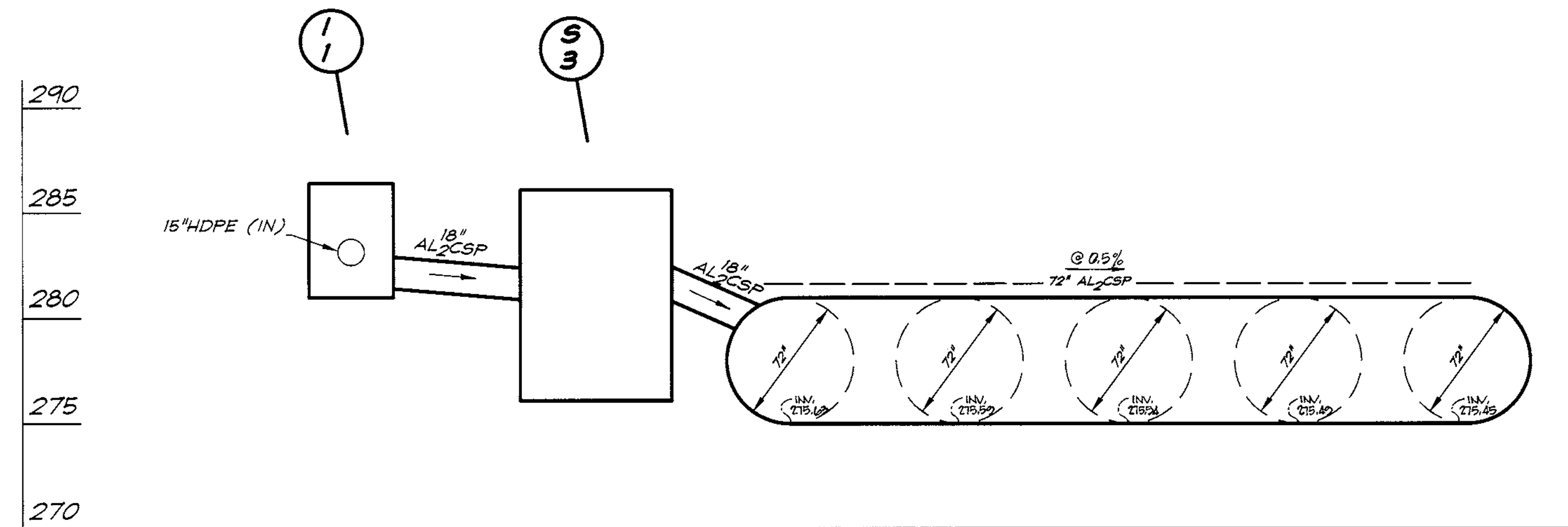
MATERIAL SPECIFICATIONS

Materials are 72" Diameter 12 Gauge Aluminized Type 2 Corrugated Metal Pipe with 5 x 1 corrugations and 18" Diameter 14 Gauge Aluminized Type 2 Corrugated Metal Pipe with 2-2/3" x 1/2" corrugations manufactured in accordance with AASHTO M-274 and AASHTO M-36.

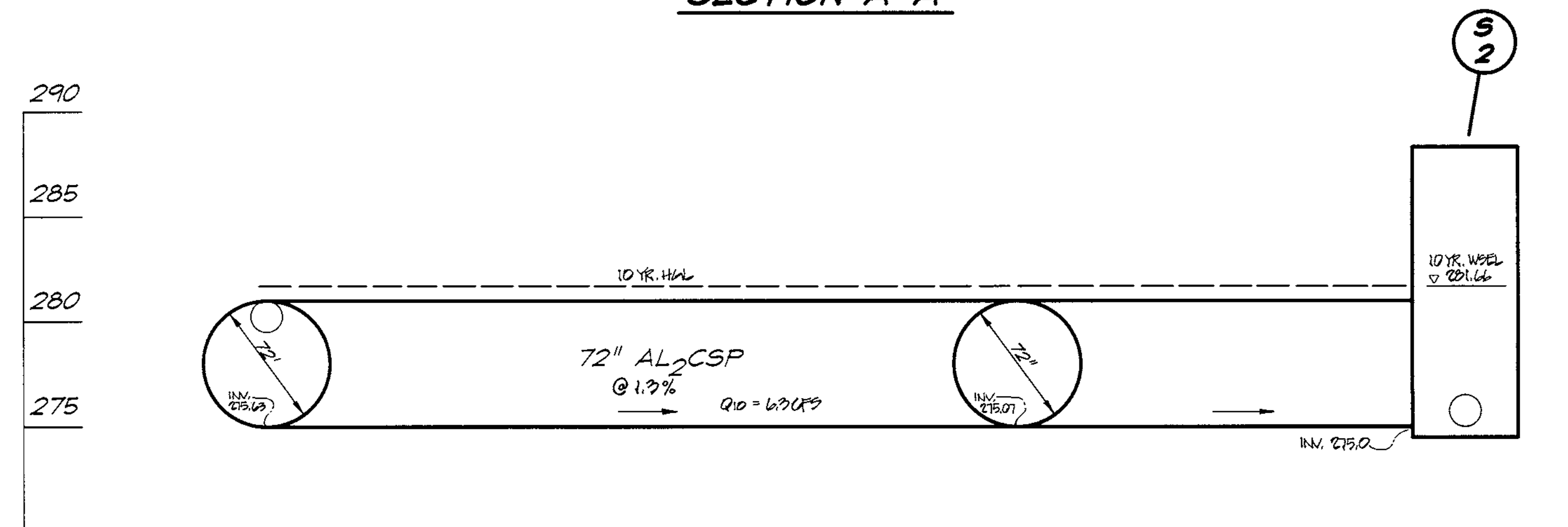
Coupling Bands shall be AASHTO M-36 Hugger Type H-12 with single bar, bolt and strap. Two (2) each "O" Ring Gaskets shall be provided for each Connecting Band.

All Elbows, Tees, and Stubs will be as shown on manufacturer's drawings. Refer to specific manufacturer's drawings for fitting details.

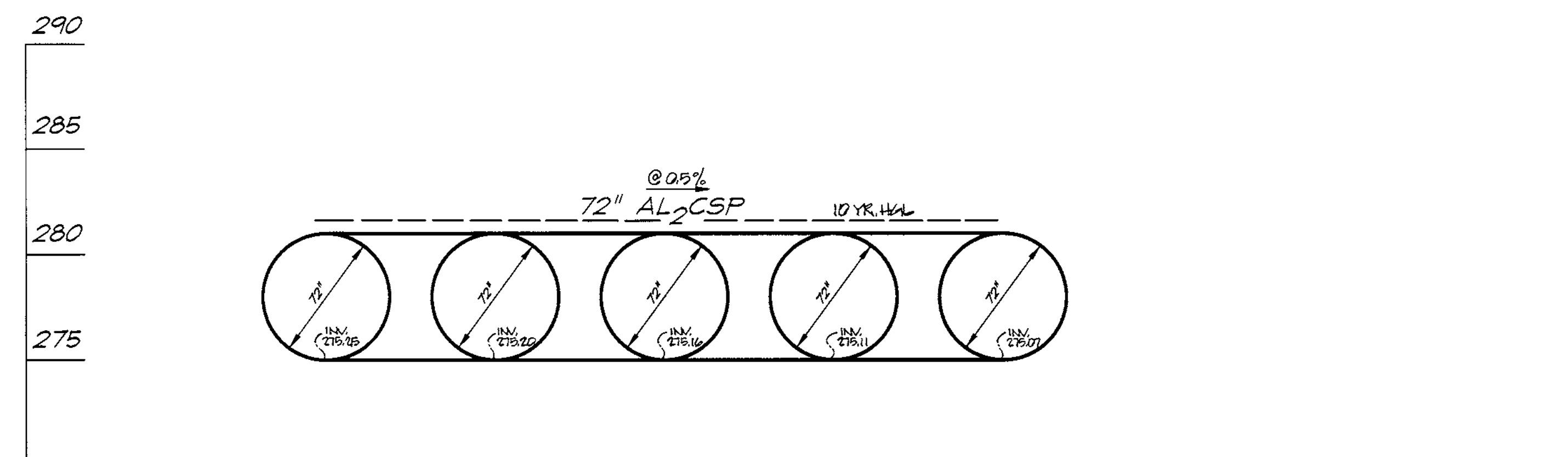
All dimensions are centerline dimensions.



SECTION A-A



SECTION B-B



SECTION C-C

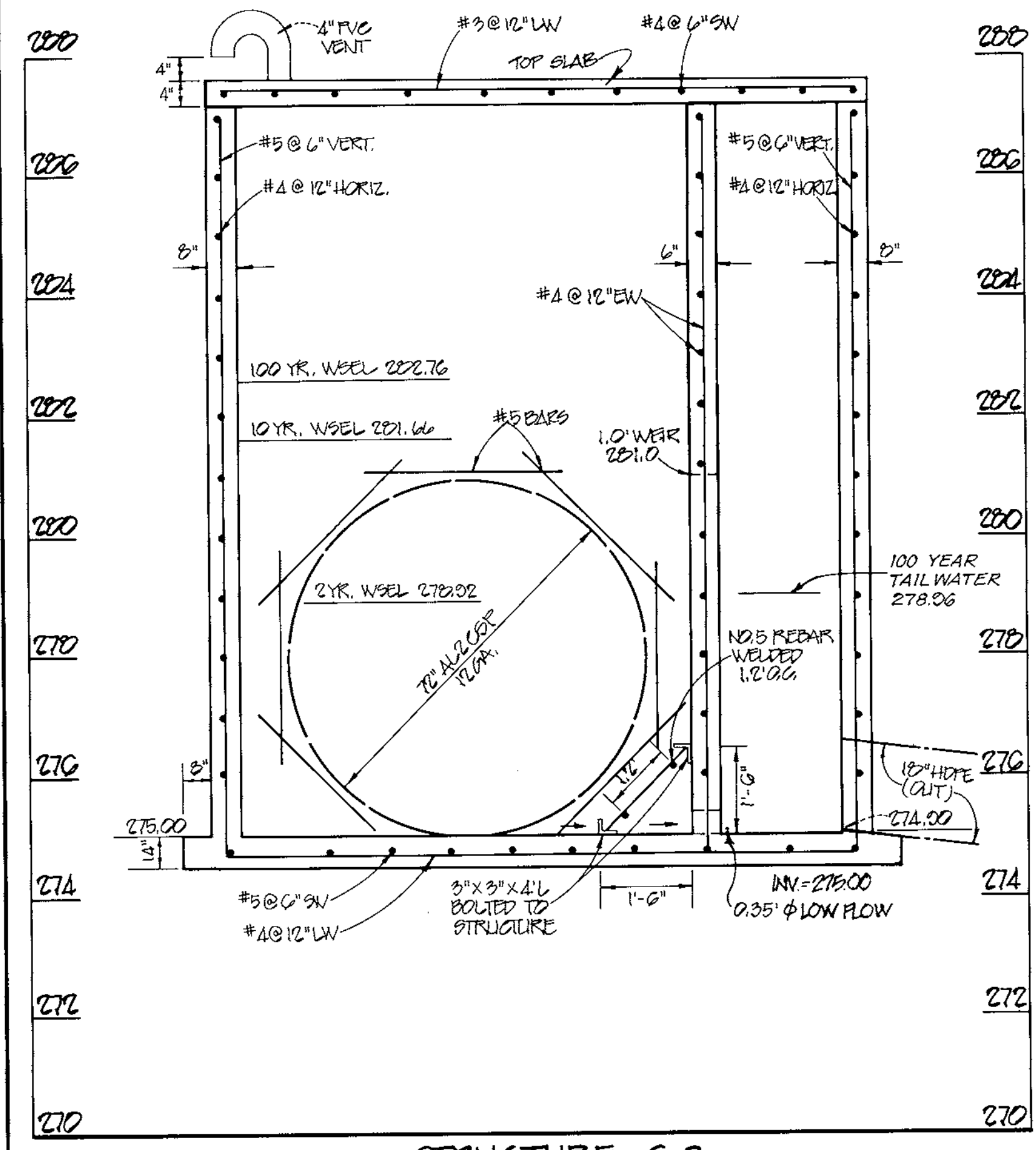
APPROVED: DEPARTMENT OF PLANNING & ZONING
 9/24/98
 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 Cady Hamilton
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE
 9/29/98
 DATE
 9/29/98
 DATE



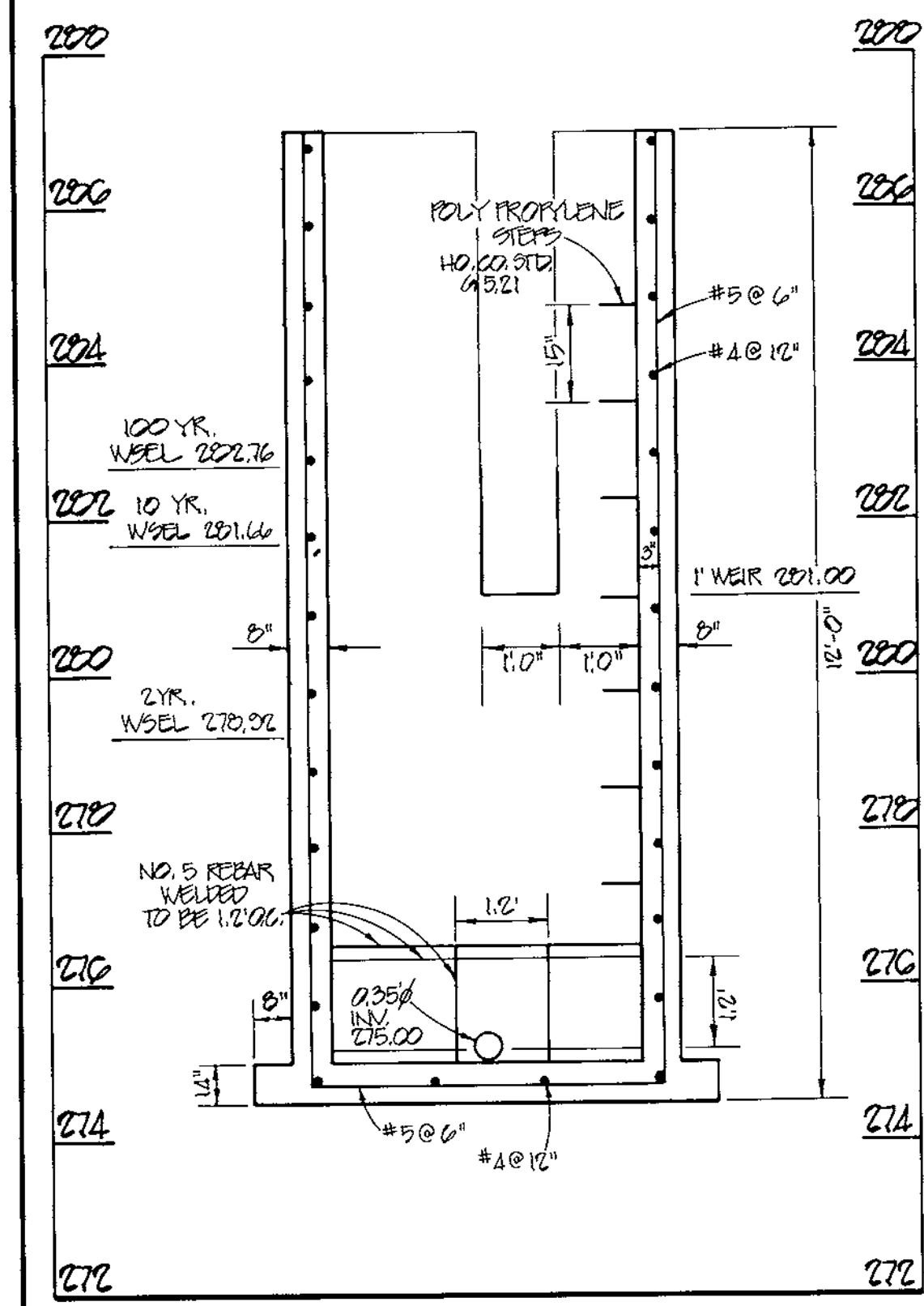
OWNER

GRACE PROPERTY, LLC.
 10805 HICKORY RIDGE ROAD
 COLUMBIA, MARYLAND 21044

CLARK • FINEFROCK & SACKETT, INC. ENGINEERS • PLANNERS • SURVEYORS 7135 MINSTREL WAY • COLUMBIA, MD 21045 • (410) 381-7500 BALT. • (301) 621-8100 WASH.		
DESIGNED	STORM WATER MANAGEMENT DETAILS	SCALE
TD		1" = 5'
DRAWN	GRACE PROPERTY	DRAWING
ZH		5 of 10
CHECKED	TAX MAP 35 PARCEL 81	JOB NO.
	FIFTH (5th) ELECTION DISTRICT	96-121
	HOWARD COUNTY, MARYLAND	FILE NO.
DATE	FOR: LAND DESIGN & DEVELOPMENT, INC.	96-121-x
APRIL 1998	10805 HICKORY RIDGE ROAD, SUITE 215 COLUMBIA, MARYLAND 21044 PHONE: 703-442-8882	



STRUCTURE 9-2 SECTION A-A
SCALE: HORIZ: 1" = 2'
VERT: 1" = 2'



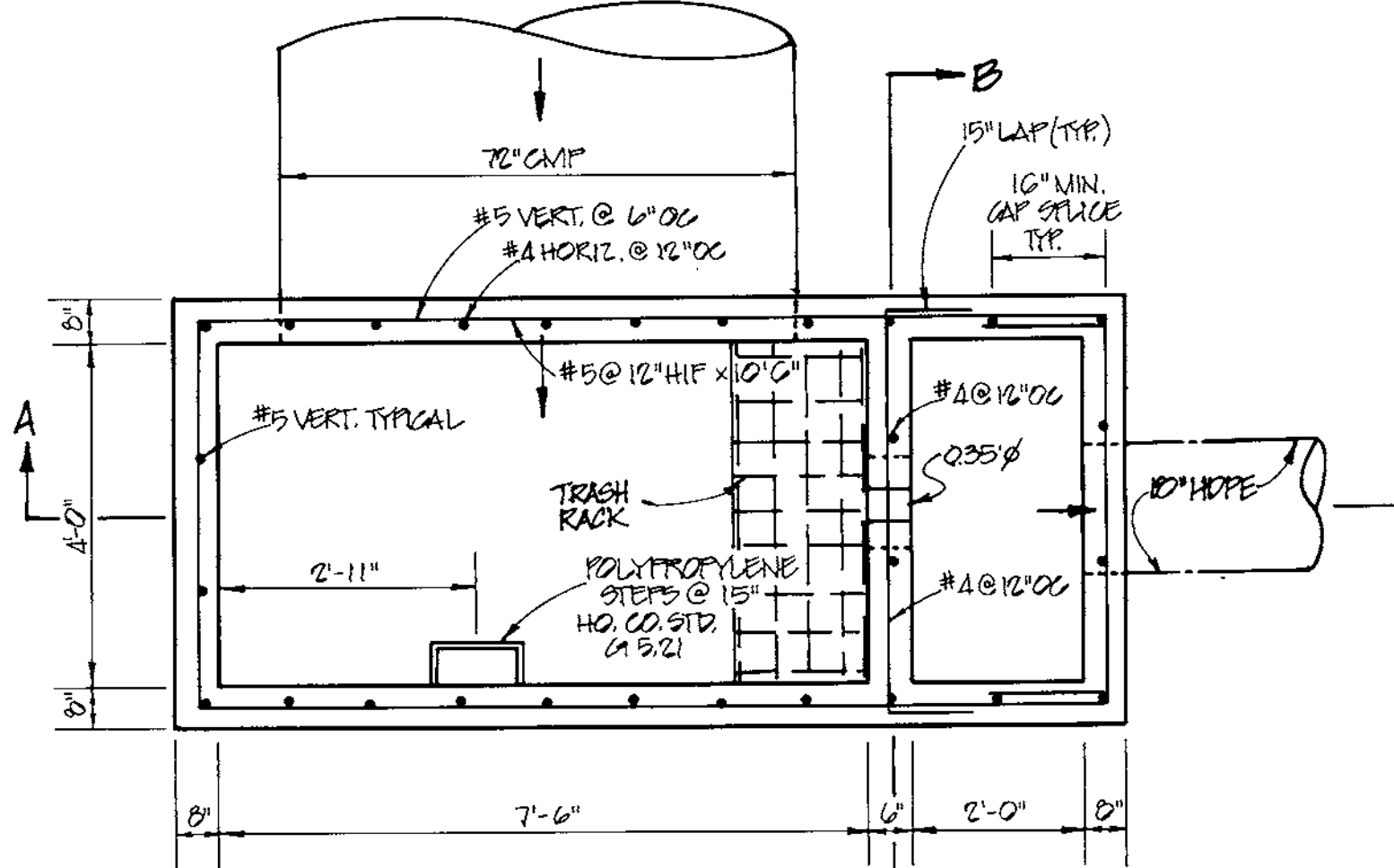
STRUCTURE 9-2 SECTION B-B
SCALE: HORIZ: 1" = 2'
VERT: 1" = 2'
(SHOWN WITHOUT TOP SLAB)

APPROVED: DEPARTMENT OF PLANNING & ZONING
DATE: 9/24/98
DATE: 9/24/98
DATE: 9/29/98

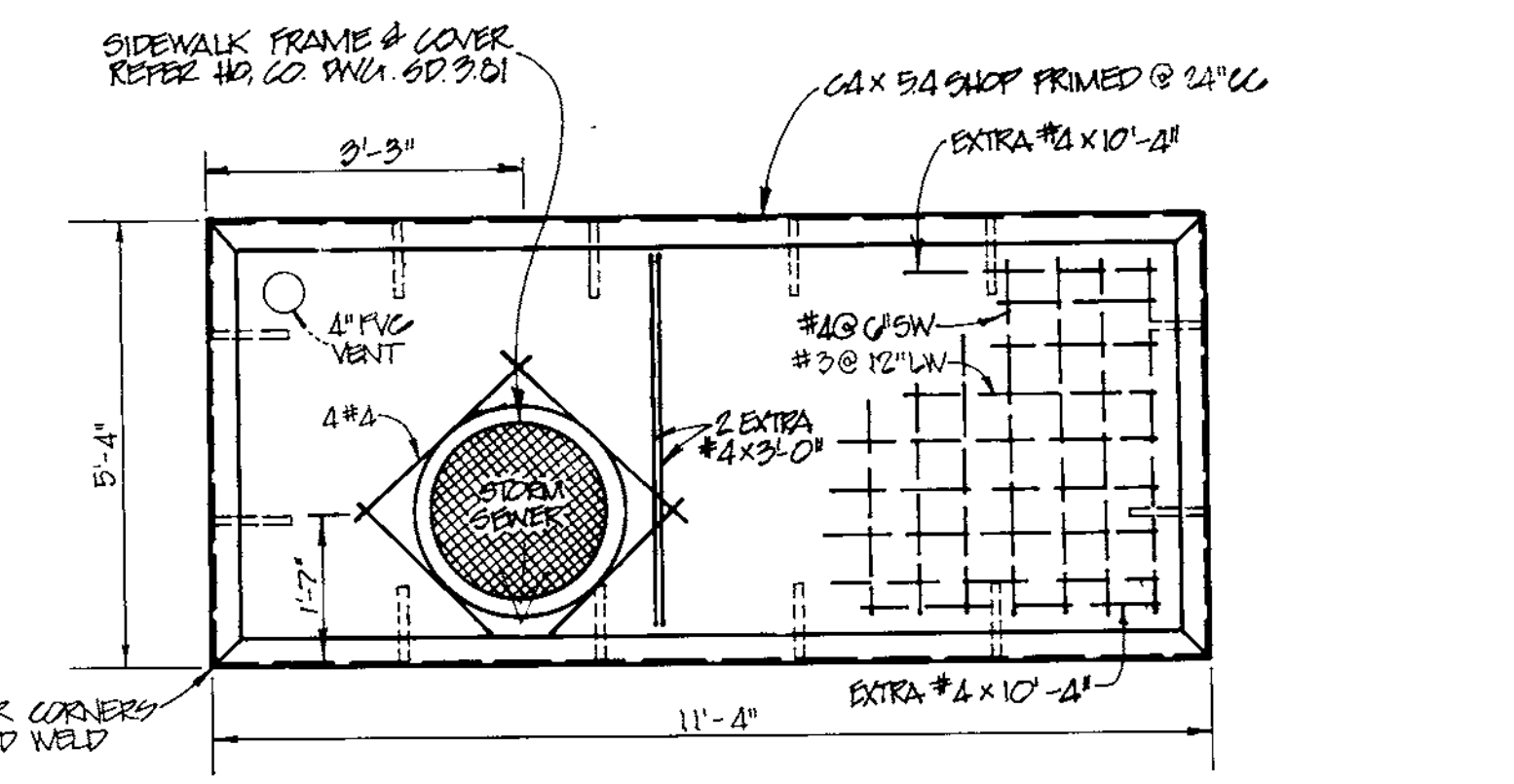
- CONSTRUCTION NOTES**
- UNLESS OTHERWISE NOTED, ALL METAL PIPE SHALL BE ALUMINUM.
 - ALL DEBRIS IS TO BE KEPT OUT OF THE FACILITY DURING AND AFTER CONSTRUCTION.
 - TRASH RACK IS TO BE GALVANIZED AND PAINTED WITH TWO COATS OF BATTLESHIP GREY.
 - ALL MATERIALS SHALL MEET HOWARD COUNTY STANDARDS.

- OPERATION AND MAINTENANCE SCHEDULE STORMWATER MANAGEMENT FACILITY**
- THE FACILITY SHALL BE INSPECTED BY THE OWNER ANNUALLY FOR STRUCTURAL INTEGRITY AND DEBRIS ACCUMULATION. ALL DEBRIS SHALL BE REMOVED. ANY STRUCTURAL DEFECTS SHALL BE REPAIRED.
 - THE LOW FLOW TRASH RACK AND ORIFICE SHALL BE INSPECTED BY THE OWNER ANNUALLY AND AFTER LARGE STORMS TO INSURE FREE OUTFLOW OF WATER FROM THE STRUCTURE. ANY DEBRIS SHALL BE REMOVED AND THE ORIFICE CLEARED OF OBSTRUCTIONS.

- BACKFILL AND BEDDING SPECIFICATION**
- BACKFILL**
- THE FILL MATERIAL SHALL BE FREE OF ROCKS, FROZEN LUMPS AND FOREIGN MATTER THAT COULD CAUSE HARD SPOTS IN BACKFILL OR THAT COULD DECOMPOSE AND CREATE VOIDS.
 - BACKFILL MATERIAL SHALL BE A WELL GRADED GRANULAR MATERIAL.
 - HIGHLY PLASTIC SILTS, HEAVY PLASTIC CLAYS, ORGANIC SILTS, ORGANIC CLAYS AND PEATS SHALL NOT BE USED AS BACKFILL MATERIALS.
 - BACKFILL SHALL BE PLACED SYMMETRICALLY ON EACH SIDE OF THE STRUCTURE IN SIX INCH TO EIGHT INCH LOOSE LAYERS TO ONE FOOT ABOVE THE TOP OF THE PIPE. EACH LAYER IS TO BE COMPACTED TO THE SPECIFIED DENSITY (MINIMUM 90%) BEFORE PLACING THE NEXT LAYER. REFERENCE ASTM A709.
 - RETENTION/REGULATIVE SYSTEMS BACKFILL SHALL BE A-1 (AASHTO M-145) OR A-2, A-3 PER MSHA 1000.01.
 - STORM SEWERS/CULVERTS BACKFILL SHALL BE WELL GRADED MATERIAL AS DESCRIBED IN 1.5 OR MAY INCLUDE A-2.4 PER MSHA 1000.01.
- BEDDING**
- THE BED SHALL BE PLACED TO UNIFORM GRADE AND LINE TO ENSURE GOOD VERTICAL ALIGNMENT AND TO AVOID EXCESSIVE STRESSES AT PIPE JOINTS. THE BEDDING SHALL BE FREE OF ROCK FORMATIONS, PROTRUDING STONES, FROZEN LUMPS, ROOTS AND OTHER FOREIGN MATERIAL. THE BEDDING FOUNDATION MUST BE A STABLE, WELL GRADED GRANULAR MATERIAL. ANY MATERIAL THAT HAS INADEQUATE BEARING CAPABILITY MUST BE REMOVED AND REPLACED WITH A COMPACTED SELECT FILL APPROVED BY THE ENGINEER.
 - MATERIALS DESCRIBED IN 1.5 AND 1.6 ARE ACCEPTABLE.



STRUCTURE 9-2 PLAN VIEW
NOT TO SCALE



TOP SLAB
NOT TO SCALE

Stormceptor® Order Request Form

Contractor Information

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

Owner Information

Name: GRACE PROPERTY LLC
Phone: 410-740-2100
Fax: 410-740-0114

Stormceptor® Model

900 3600
1200 4800
1800 6000
2400 7200

Insert Size

22"
32"
44"
Custom

Manhole Number

Top Elevation (ft) 286.37
Inlet Pipe Invert (ft) 281.18
Outlet Pipe Invert (ft) 281.10
Pipe Type: Conc. PVC CMP
Pipe Inside Diameter (in) [ID] 18
Pipe Outside Diameter (in) [OD] _____

Project Name GRACE PROPERTY, PARCEL B1, HOWARD COUNTY, MARYLAND
Approximate time frame until required delivery (weeks) _____
Delivery Address: Street GRACE DRIVE
City COLUMBIA State MD Zip Code 21044
Designer Company CLARK, FINEFROCK & SACKETT, INC.
Designer Contact TRIP DOWMAN Phone 410-381-7500 Fax 410-381-7533

Please fax this sheet back to Hydro Conduit/Precast at (804) 798-3426
Attn: Scott Crumpler / Bryant Lovery (Phone: 1-800-999-2278)
For credit information/application contact Carole Broadus at (804) 798-6068
For Technical Assistance Please Call Stormceptor Corporation at (301) 762-8361 or toll free at 1 (800) 762-4703

* TO BE INCLUDED ON SWM PLAN BY DESIGNER

B-2 BORING LOG

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

Project Name: Grace Property, Location: Howard County, Maryland, Boring #: B-2, Job #: 9800A

ELEV.	SOIL DESCRIPTION	DEPTH SCALE	DEPTH SCALE	SAMPLE NO.	NO.	REC.	BORING & SAMPLING NOTES
286.37	Change to brown, moist, medium dense to very dense silty sand (SM) (Loamy Sand)	0.0	0.0	1-3-4	1	12"	1' Topsoil
285.5	Change to green, moist to dry, dense to very dense silty sand (SM) (Loamy Sand)	5.5	5.5	3-4-6	2	12"	No groundwater encountered while drilling
284.0	Change to green, moist to dry, dense to very dense silty sand (SM) (Loamy Sand)	10.0	10.0	14-23-24	3	12"	Cased in at 18.5' at Completion
282.0	Change to green, moist to dry, dense to very dense silty sand (SM) (Loamy Sand)	15.0	15.0	16-16-20	4	14"	Cased in at 15' after 48 hours
280.0	Change to green, moist to dry, dense to very dense silty sand (SM) (Loamy Sand)	20.0	20.0	4-7-20	5	16"	
278.0	Change to green, moist to dry, dense to very dense silty sand (SM) (Loamy Sand)	25.0	25.0	12-15-20	6	15"	

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

Project Name: Grace Property, Location: Howard County, Maryland, Boring #: B-2, Job #: 9800A

ELEV.	SOIL DESCRIPTION	DEPTH SCALE	DEPTH SCALE	SAMPLE NO.	NO.	REC.	BORING & SAMPLING NOTES
286.37	Change to green, moist to dry, dense to very dense silty sand (SM) (Loamy Sand)	0.0	0.0	6-5-9	7	14"	
285.5	Change to green, moist to dry, dense to very dense silty sand (SM) (Loamy Sand)	5.5	5.5	28-45-41	8	14"	
284.0	Change to green, moist to dry, dense to very dense silty sand (SM) (Loamy Sand)	10.0	10.0				
282.0	Change to green, moist to dry, dense to very dense silty sand (SM) (Loamy Sand)	15.0	15.0				
280.0	Change to green, moist to dry, dense to very dense silty sand (SM) (Loamy Sand)	20.0	20.0				
278.0	Change to green, moist to dry, dense to very dense silty sand (SM) (Loamy Sand)	25.0	25.0				

B-3 BORING LOG

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

Project Name: Grace Property, Location: Howard County, Maryland, Boring #: B-3, Job #: 9800A

ELEV.	SOIL DESCRIPTION	DEPTH SCALE	DEPTH SCALE	SAMPLE NO.	NO.	REC.	BORING & SAMPLING NOTES
286.37	Change to brown, moist, medium dense to very dense silty sand (SM) (Loamy Sand)	0.0	0.0	1-0-0	1	14"	1' Topsoil
285.5	Change to brown, moist, medium dense to very dense silty sand (SM) (Loamy Sand)	5.5	5.5	2-2-3	2	12"	Groundwater encountered at 18.0' while drilling
284.0	Change to brown, moist, medium dense to very dense silty sand (SM) (Loamy Sand)	10.0	10.0	7-8-7	3	4"	Cased in at 17.0' at Completion
282.0	Change to brown, moist, medium dense to very dense silty sand (SM) (Loamy Sand)	15.0	15.0	23-20-18	4	12"	Cased in at 7' after 48 hours
280.0	Change to brown, moist, medium dense to very dense silty sand (SM) (Loamy Sand)	20.0	20.0	6-7-7	5	16"	
278.0	Change to brown, moist, medium dense to very dense silty sand (SM) (Loamy Sand)	25.0	25.0	13-23-28	6	16"	

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

Project Name: Grace Property, Location: Howard County, Maryland, Boring #: B-3, Job #: 9800A

ELEV.	SOIL DESCRIPTION	DEPTH SCALE	DEPTH SCALE	SAMPLE NO.	NO.	REC.	BORING & SAMPLING NOTES
286.37	Change to brown, moist, medium dense to very dense silty sand (SM) (Loamy Sand)	0.0	0.0	7-28-14	7	16"	
285.5	Change to brown, moist, medium dense to very dense silty sand (SM) (Loamy Sand)	5.5	5.5				
284.0	Change to brown, moist, medium dense to very dense silty sand (SM) (Loamy Sand)	10.0	10.0				
282.0	Change to brown, moist, medium dense to very dense silty sand (SM) (Loamy Sand)	15.0	15.0				
280.0	Change to brown, moist, medium dense to very dense silty sand (SM) (Loamy Sand)	20.0	20.0				
278.0	Change to brown, moist, medium dense to very dense silty sand (SM) (Loamy Sand)	25.0	25.0				

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS

7135 MINSTREL WAY • COLUMBIA, MD 21045 • (410) 381-7500 BALT • (301) 621-8100 WASH.

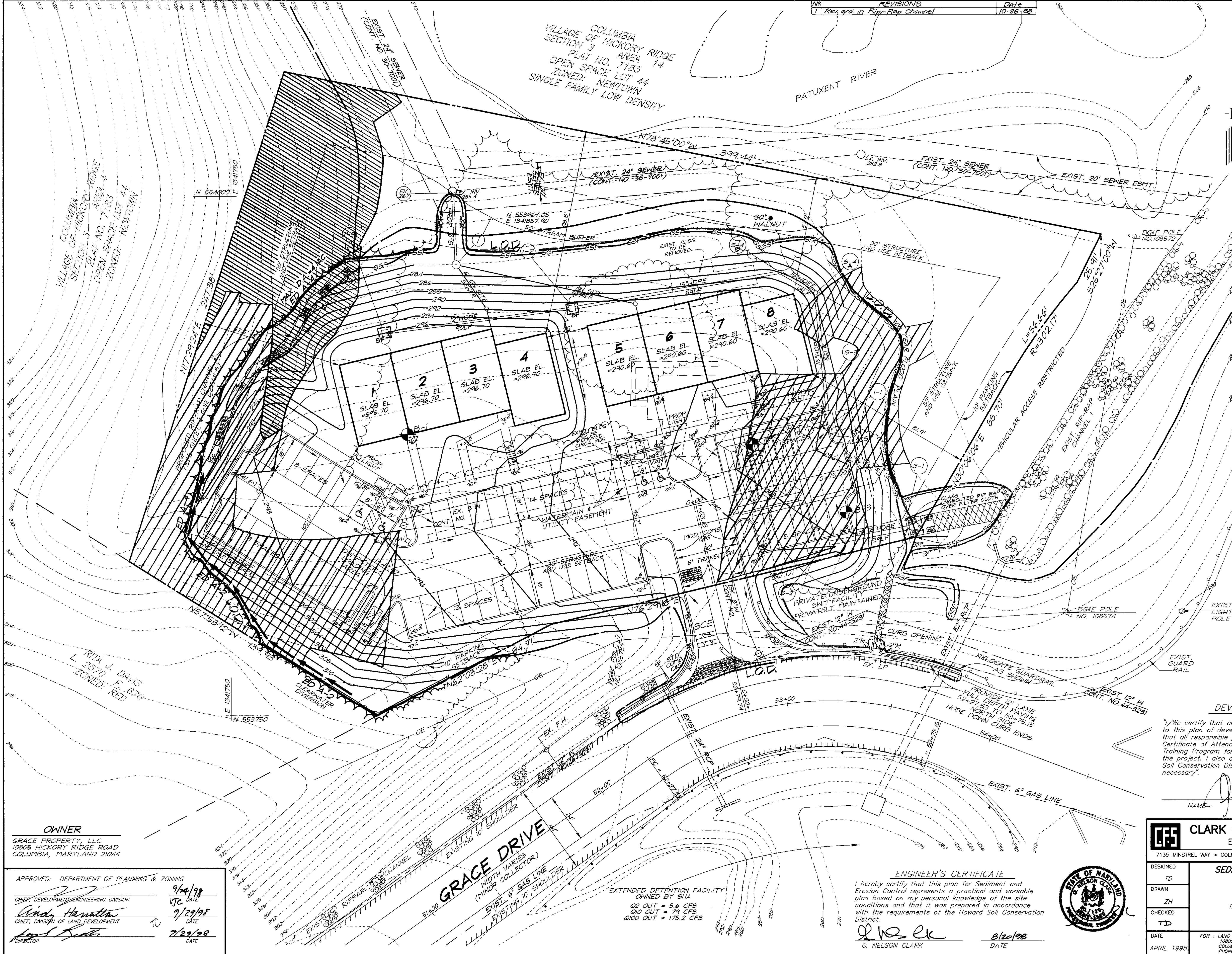
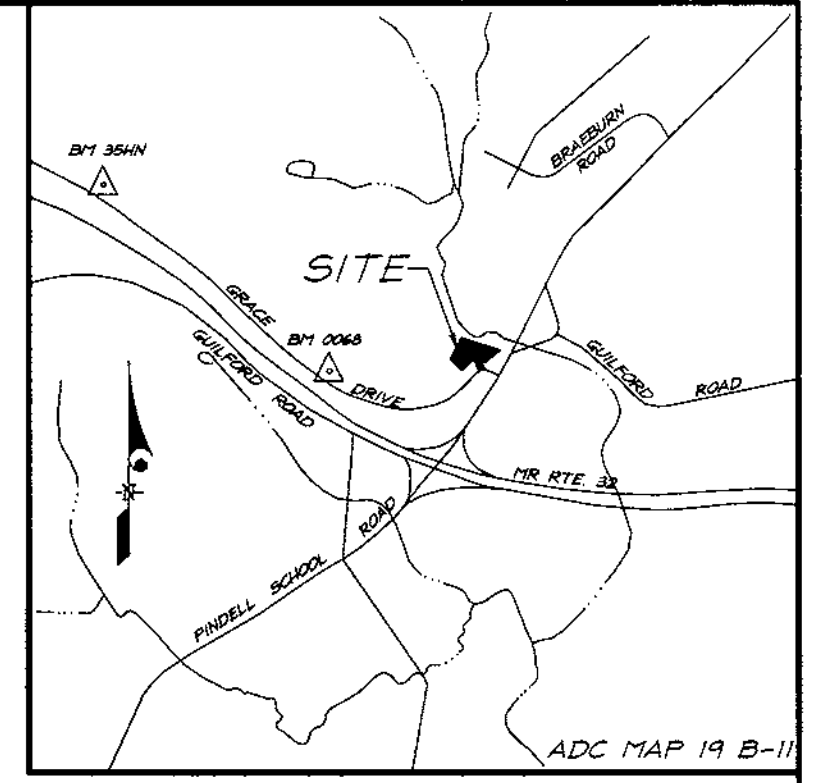
DESIGNED: TD
DRAWN: BLP
CHECKED: _____
DATE: JAN. 1998

STORMWATER MANAGEMENT DETAILS
GRACE PROPERTY
TAX MAP 35 PARCEL B1
FIFTH (5th) ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN
DRAWING: 6 of 10
JOB NO.: 96-121
FILE NO.: 96-121-X

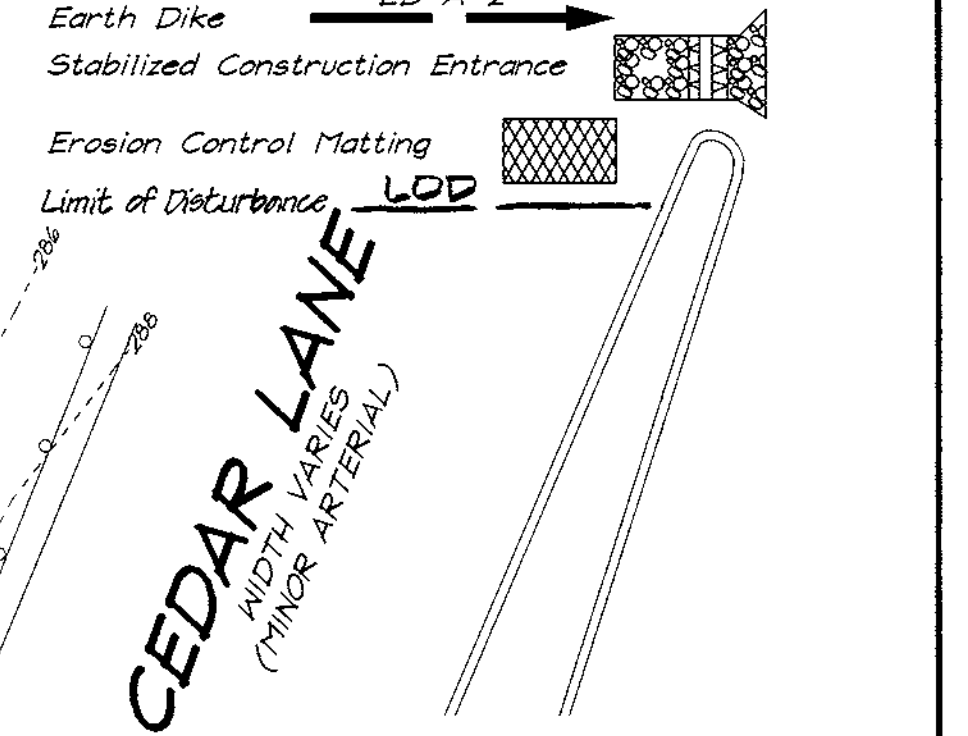
FOR: LAND DESIGN & DEVELOPMENT, INC.
10805 HICKORY RIDGE ROAD, SUITE 215
COLUMBIA, MARYLAND 21044
PHONE: 703-442-8892

NO.	REVISIONS	Date
1	Rev. grad. in Rip-Rep Channel	10-26-98



LEGEND

Contour Interval 2 feet
 Existing Contours --- 244 ---
 Proposed Contours --- 244 ---
 Proposed Spot Elevations +94.2
 Direction of Flow →
 Soil Borings ●
 100 Yr. Flood Plain --- 10' RCP ---
 Proposed Storm Drain --- EXIST. 10' RCP ---
 Existing Storm Drain --- EXIST. 8" W ---
 Existing Water --- EXIST. 8" W ---
 Existing Sewer --- EXIST. 8" GAS ---
 Existing Gas --- EXIST. 8" GAS ---
 Tree Protection Fence --- 11' ---
 Silt Fence --- SF ---
 Super Silt Fence --- SSF ---



Reviewed for HOWARD S.C.D.
 and meets Technical Requirements
Chad Sumner 9/22/98
 Signature Date
 U.S. Natural Resources Conservation Service

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

Mark Sly 9/22/98
 Approved

DEVELOPER'S/BUILDER'S CERTIFICATE

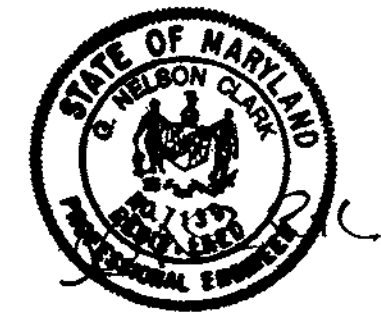
"I/We certify that all development and construction will be done according to this plan of development and plan for sediment and erosion control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training 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 or their authorized agents, as are deemed necessary."

NAME: _____ DATE: 9/20/98

OWNER
 GRACE PROPERTY, LLC
 10805 HICKORY RIDGE ROAD
 COLUMBIA, MARYLAND 21044

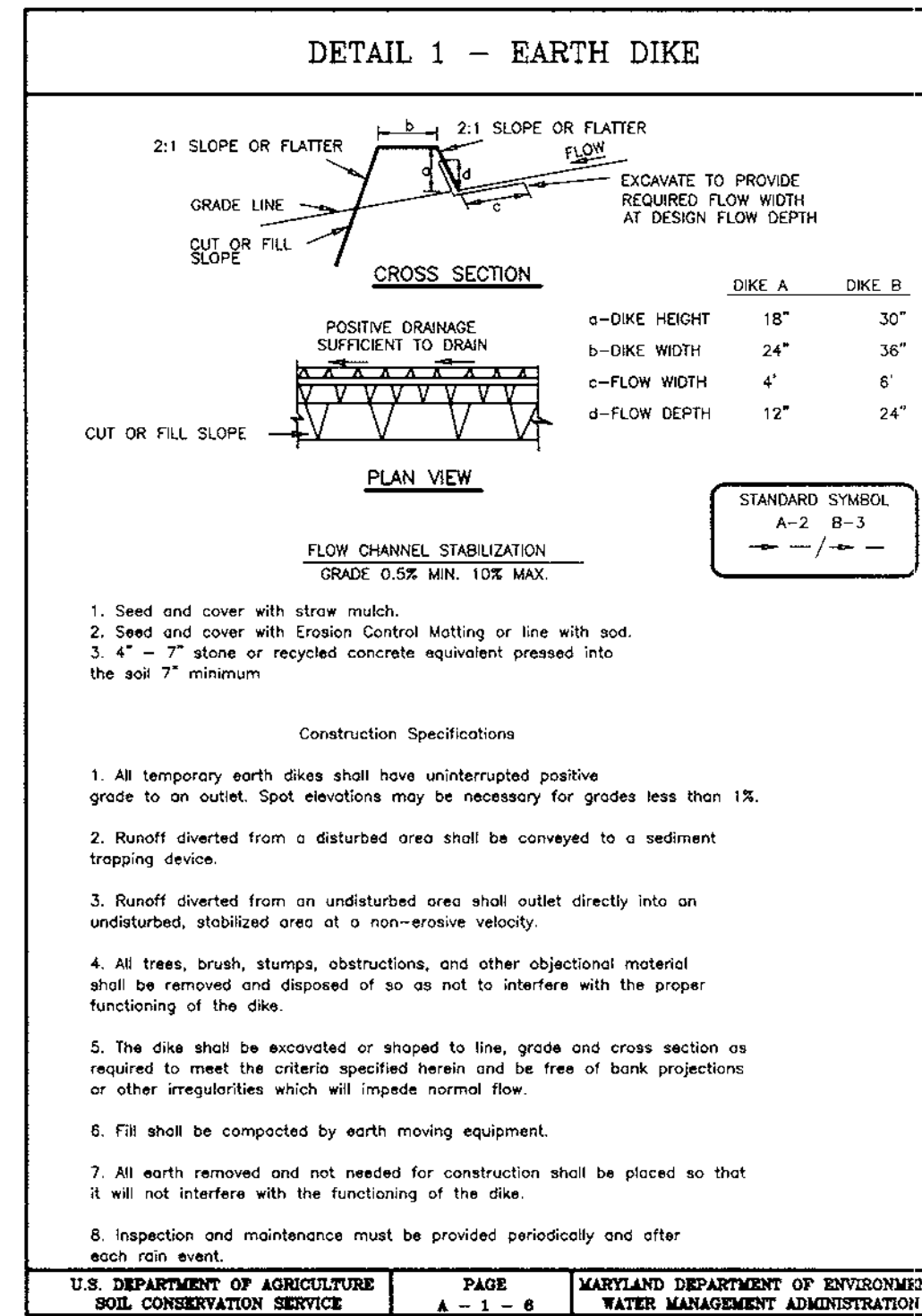
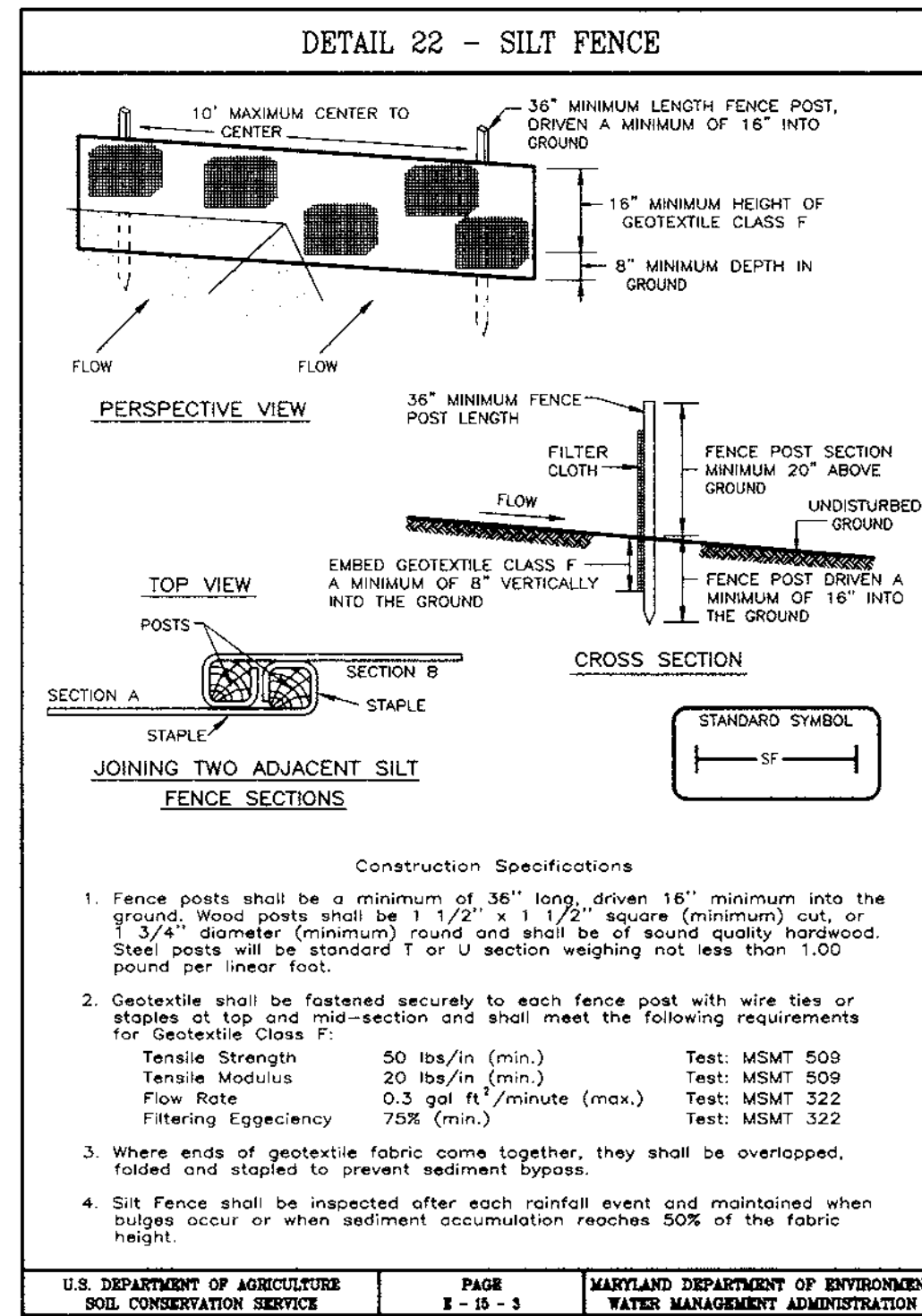
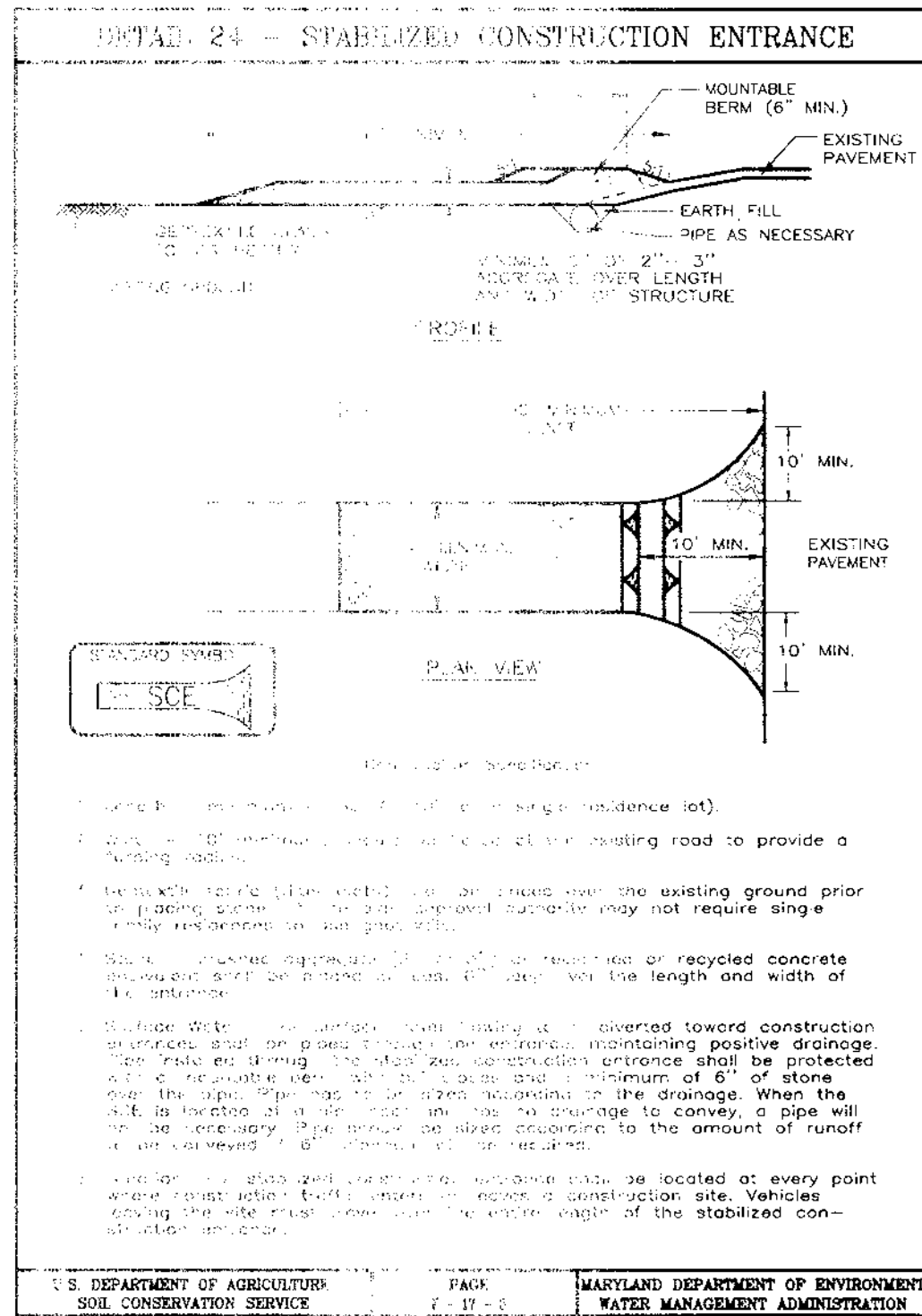
APPROVED: DEPARTMENT OF PLANNING & ZONING
 9/24/98
 DATE
 VTC
 9/29/98
 DATE
Andy Hamilton
 CHIEF, DIVISION OF LAND DEVELOPMENT
 9/29/98
 DATE
Paul Rutter
 DIRECTOR

ENGINEER'S CERTIFICATE
 I hereby certify that this plan for Sediment and Erosion Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
G. Nelson Clark
 G. NELSON CLARK
 8/20/98
 DATE



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 ENGINEERS • PLANNERS • SURVEYORS
 7135 MINSTREL WAY • COLUMBIA, MD 21045 • (410) 381-7500 BALT. • (301) 621-8100 WASH.

DESIGNED TD	SEDIMENT CONTROL & GRADING PLAN 8 COMMERCIAL UNITS GRACE PROPERTY TAX MAP 35 GRID 21 PARCEL 81 FIFTH (5th) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE 1" = 20'
DRAWN ZH		DRAWING 7 of 10
CHECKED TD		JOB NO. 96-121
DATE APRIL 1998		FILE NO. 96-121X
		FOR: LAND DESIGN & DEVELOPMENT, INC. 10805 HICKORY RIDGE ROAD, SUITE 215 COLUMBIA, MARYLAND 21044 PHONE: 703-442-8992



SEDIMENT AND EROSION CONTROL NOTES

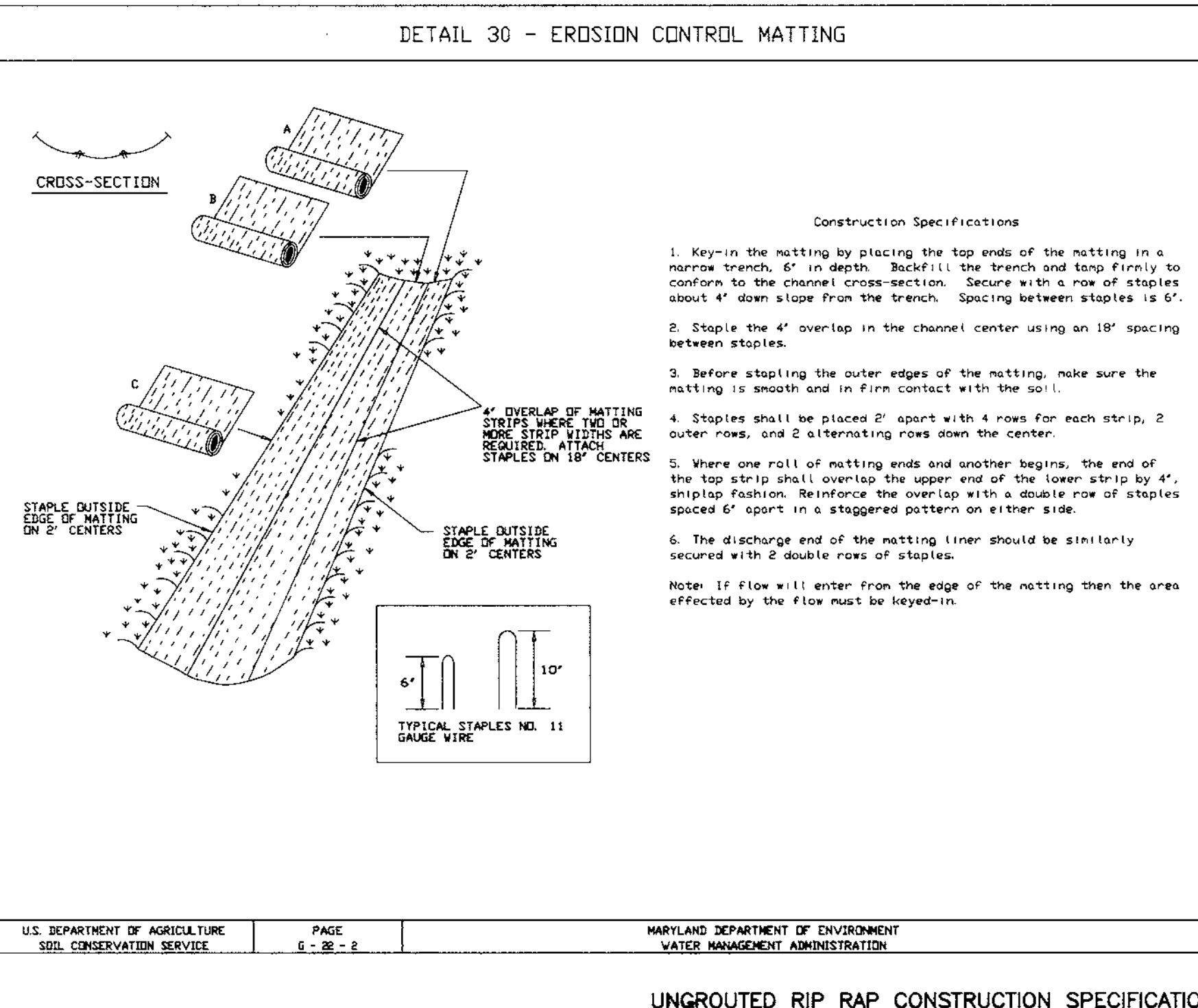
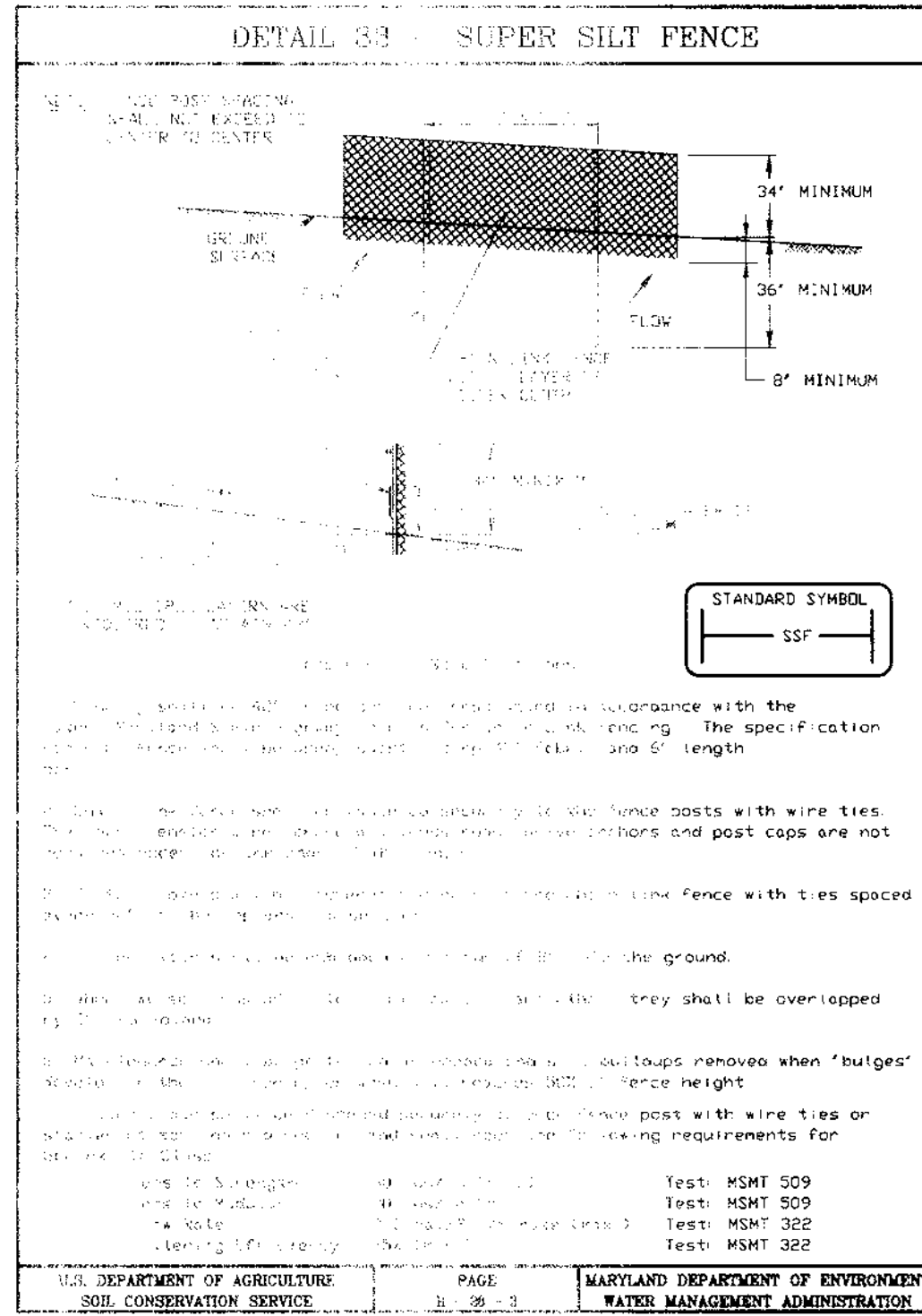
- A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction (1313-1855).
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.
- Following initial soil disturbance or disturbance, permanent or temporary stabilization shall be completed within:
 - 7 calendar days for all perimeter sediment control structures, dikes, berms, slopes and all slopes greater than 3:1.
 - 14 days for all other disturbed or graded areas on the project site.
- All sediment traps/basins must be fenced and warning signs posted around their perimeters in accordance with Vol. 1, Chapter 7 of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above, in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings, soil, temporary seeding and mulching (5-G).
- Temporary stabilization with mulch alone can only be done when recommended seeding rates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- SITE ANALYSIS**

Total Area of Site:	2,035.1 Acres
Area Disturbed:	1,742 Acres
Area to be seeded or paved:	1,622 Acres
Area to be vegetatively stabilized:	677 Acres
Total Cut:	471.1 Cubic Yards
Total Fill:	453.3 Cubic Yards

 Off-site Waste/Borrow Area Location: _____
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Runoff diverted from a disturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.
- 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.
- 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.
- Fill shall be compacted by each moving equipment.
- All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.
- Inspection and maintenance must be provided periodically and after each rain event.

21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL

- Definition**
Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.
- Purpose**
To provide a suitable soil medium for vegetable 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**
- This practice is limited to areas having 2:1 or flatter slopes where:
 - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - 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.
 - The original soil to be vegetated contains material toxic to plant growth.
 - 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 the appropriate stabilization shown on the plans.
 - When topsoiling, maintain erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
 - Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.
 - Topsoil shall be uniformly distributed in a 4" - 6" layer and lightly compacted 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 topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
 - Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet, or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.
 - Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutgrass, ivy, thistle, or others as specified.
 - Where the subsoil is either highly acidic or composed of heavy clay, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Limestone shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
 - Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet, or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.
- Construction and Material Specifications**
- Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey, published by USDA-SCS in cooperation with Maryland Agricultural Experiment Station.
 - Topsoil Specifications - Soil to be used as topsoil must meet the following:
 - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting 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 and 1/2" in diameter.
 - Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutgrass, ivy, thistle, or others as specified.
 - Where the subsoil is either highly acidic or composed of heavy clay, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Limestone shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
 - Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet, or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.



CONSTRUCTION SEQUENCE

NO.	DESCRIPTION	NO. OF DAYS
1.	Obtain grading permit	
2.	Install Rip Rap Channel 2 and perimeter controls, stabilize any remaining areas disturbed by channel construction.	
3.	Grade site	14
4.	Install utilities and SWM facility. See Stormwater construction notes for detailed sequence. (Block inlet 1 x 1 size)	30
5.	Construct curbs and gutter, paving, sidewalks	60
6.	Stabilize all disturbed areas	30
7.	Upon approval of sediment control inspector, unblock inlets and avert stormwater as per stormwater notes.	7
8.	Remove remaining sediment control devices and stabilize any remaining disturbed areas	7

PERMANENT SEEDING NOTES

- APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.
- SEEDBED PREPARATION:** Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.
- SOIL AMENDMENTS:** In lieu of soil test recommendations, use one of the following schedules:
- Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs./1000 sq.ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At the time of seeding, apply 400 lbs. per acre 30-30-30 ureaform fertilizer (9 lbs./1000 sq.ft.).
 - Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs./1000 sq.ft.) and apply 1000 lbs. per acre 10-10-10 fertilizer (23 lbs./1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil.
- SEEDING:** For periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs./1000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 80 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (.05 lbs./1000 sq.ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by Option (1) 2 tons per acre well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use seed Option (2) use 60 lbs/acre Kentucky 31 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 uninfested small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 3 feet or higher, use 348 gallons per acre (8 gal/1000 sq.ft.) for anchoring.
- MAINTENANCE:** Inspect all seeded areas and make needed repairs, replacements and reseedings.

TEMPORARY SEEDING NOTES

- SEEDBED PREPARATION:** Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.
- SOIL AMENDMENTS:** Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.).
- SEEDING:** For periods March 1 thru April 30, and from August 1 thru November 15, seed with 1/2 bushel per acre of annual rye (3.2 lbs./1000 sq.ft.) for the period May 1 thru August 14, seed with 1 lbs. per acre of weeping lovegrass (.07 lbs./1000 sq.ft.). For the period November 1 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.
- MULCHING:** Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq.ft.) of uninfested small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 3 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 RATE AND METHODS NOT COVERED.



APPROVED: DEPARTMENT OF PLANNING & ZONING

9/24/98 DATE

9/24/98 DATE

9/24/98 DATE

9/24/98 DATE

Reviewed for HOWARD SCD
City of Howard
9/24/98 DATE

U.S. Natural Resources Conservation Service

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

9/24/98 DATE

DEVELOPER/BUILDER'S CERTIFICATE

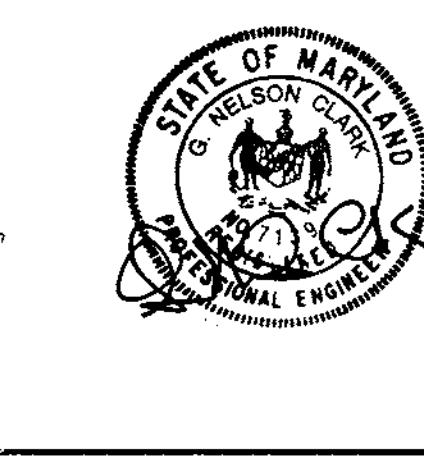
I/We certify that all development and construction will be done according to this plan of development and plan for sediment and erosion control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I/We also authorize periodic on-site inspection by the Howard County Soil Conservation District or their authorized agents as is deemed necessary.

2/12/98 DATE

ENGINEER'S CERTIFICATE

I hereby certify that this plan for Sediment and Erosion Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

2/12/98 DATE



CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS

7135 MINTREL WAY • COLUMBIA, MD 21045 • (410) 381-7500 BALT. • (301) 621-8100 WASH.

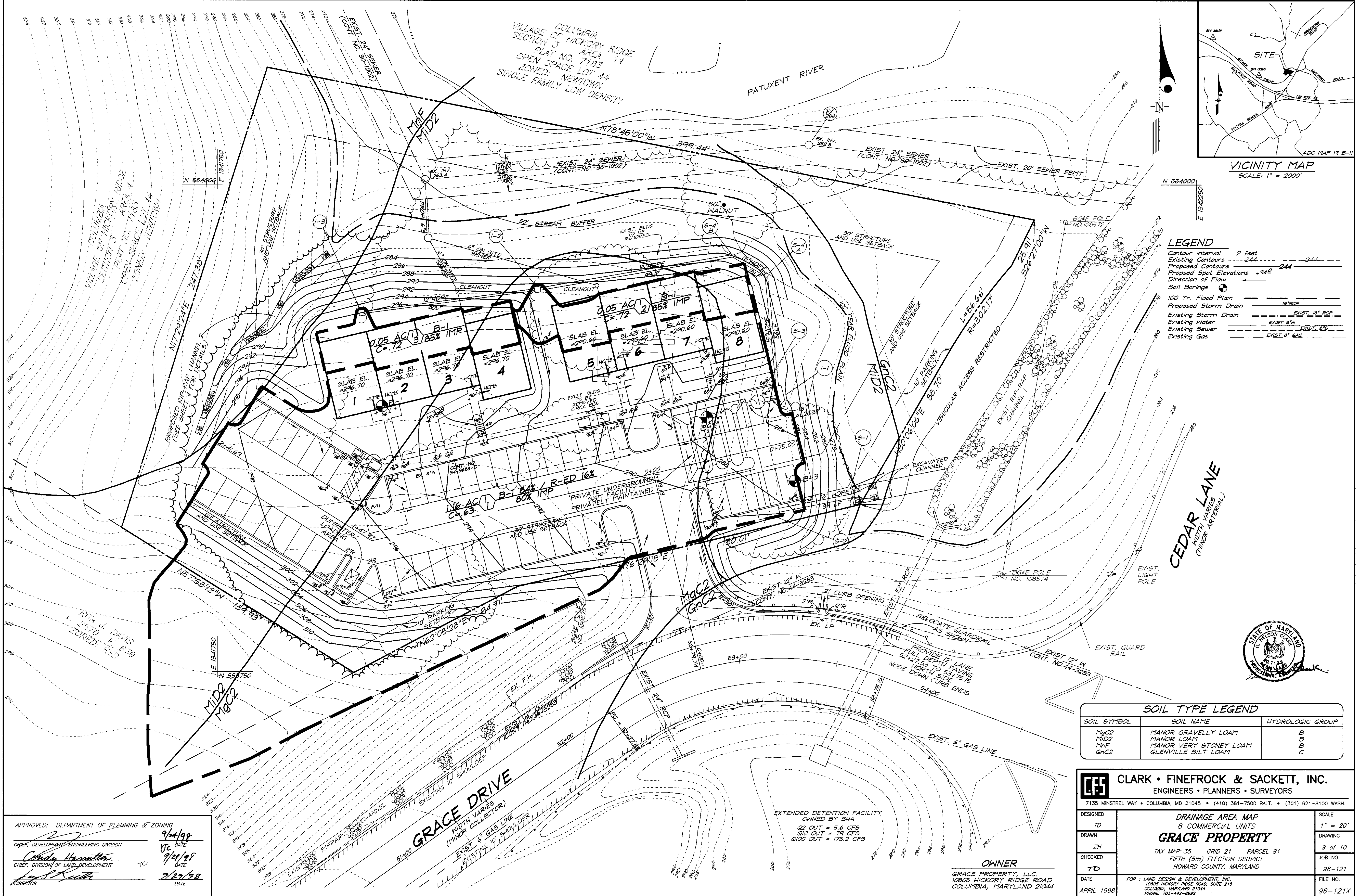
DESIGNED TD	SCALE N.T.S.
DRAWN ZH	DRAWING B of 10
CHECKED TD	JOB NO. 96-121
DATE	FILE NO. 96-121-x

SEDIMENT AND EROSION CONTROL DETAILS

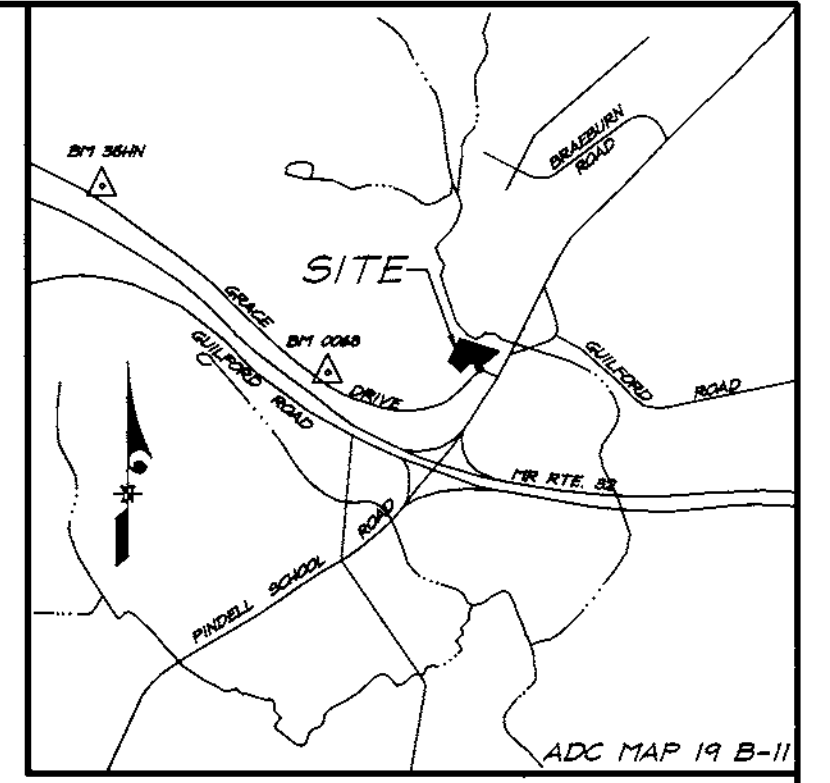
GRACE PROPERTY

TAX MAP 35 PARCEL 61
FIFTH (5th) ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

FOR: LAND DESIGN & DEVELOPMENT, INC.
10806 HICKORY HIDE ROAD, SUITE 215
COLUMBIA, MARYLAND 21044
PHONE: 703-442-8992



VILLAGE OF COLUMBIA
SECTION 3 HICKORY RIDGE
PLAT NO. 7183
OPEN SPACE LOT #4
ZONED: NEWTOWN
SINGLE FAMILY LOW DENSITY



VICINITY MAP
SCALE: 1" = 2000'

N 554000
E 1342250

LEGEND

Contour Interval 2 feet
 Existing Contours 244
 Proposed Contours 244
 Proposed Spot Elevations +942
 Direction of Flow
 Soil Borings
 100 Yr. Flood Plain
 Proposed Storm Drain
 Existing Storm Drain
 Existing Water
 Existing Sewer
 Existing Gas

CEDAR LANE
(MINOR ARTERIAL)



SOIL TYPE LEGEND

SOIL SYMBOL	SOIL NAME	HYDROLOGIC GROUP
MgC2	MANOR GRAVELLY LOAM	B
MID2	MANOR LOAM	B/D
MhF	MANOR VERY STONEY LOAM	C
GnC2	GLENVILLE SILT LOAM	C

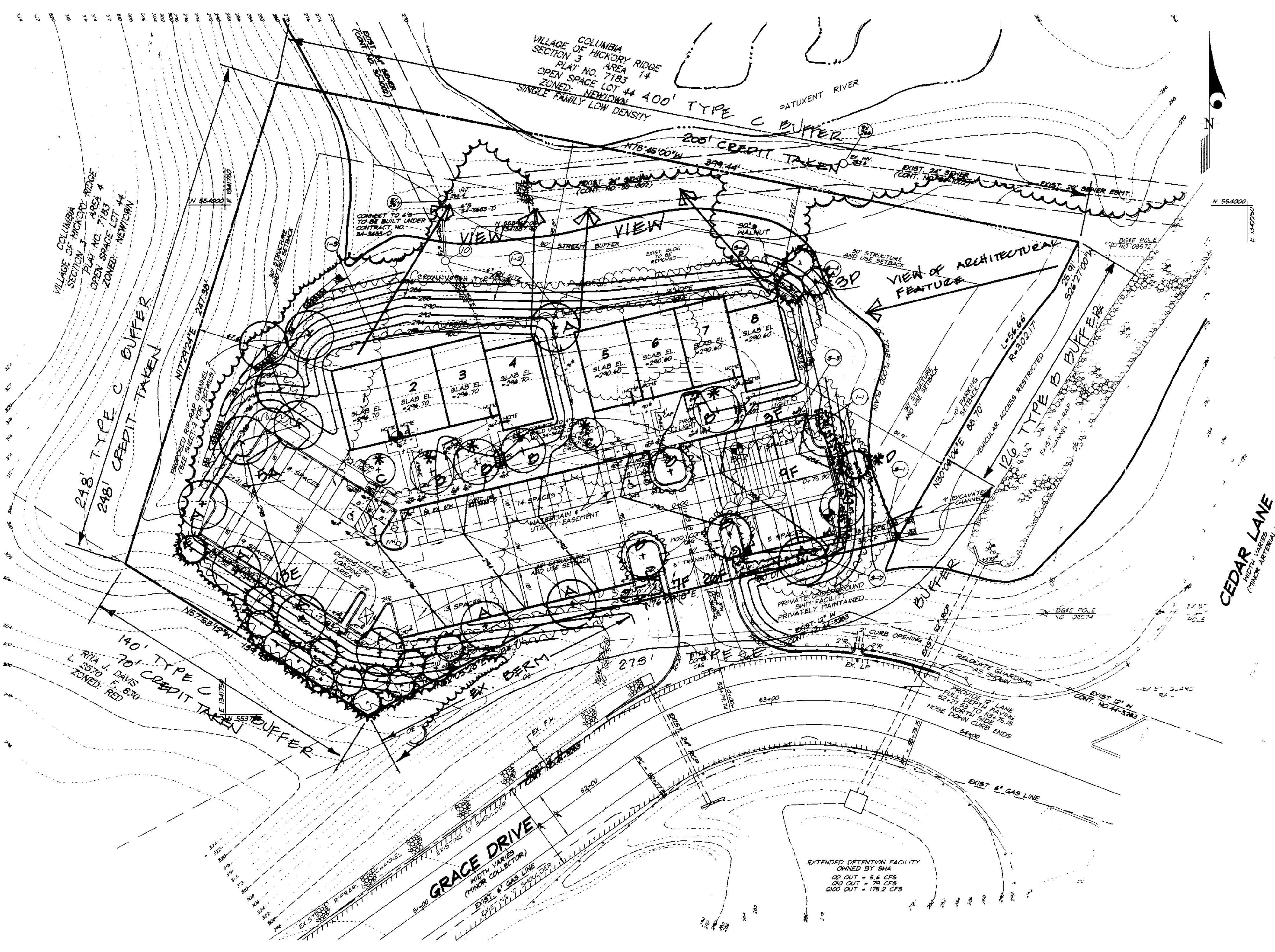
CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD 21045 • (410) 381-7500 BALT. • (301) 621-8100 WASH.

DESIGNED TD	DRAINAGE AREA MAP 8 COMMERCIAL UNITS GRACE PROPERTY TAX MAP 35 GRID 21 PARCEL 81 FIFTH (5th) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE 1" = 20'
DRAWN ZH		DRAWING 9 of 10
CHECKED TD		JOB NO. 96-121
DATE APRIL 1998		FILE NO. 96-121X
FOR: LAND DESIGN & DEVELOPMENT, INC. 10805 HICKORY RIDGE ROAD, SUITE 215 COLUMBIA, MARYLAND 21044 PHONE: 703-442-8892		

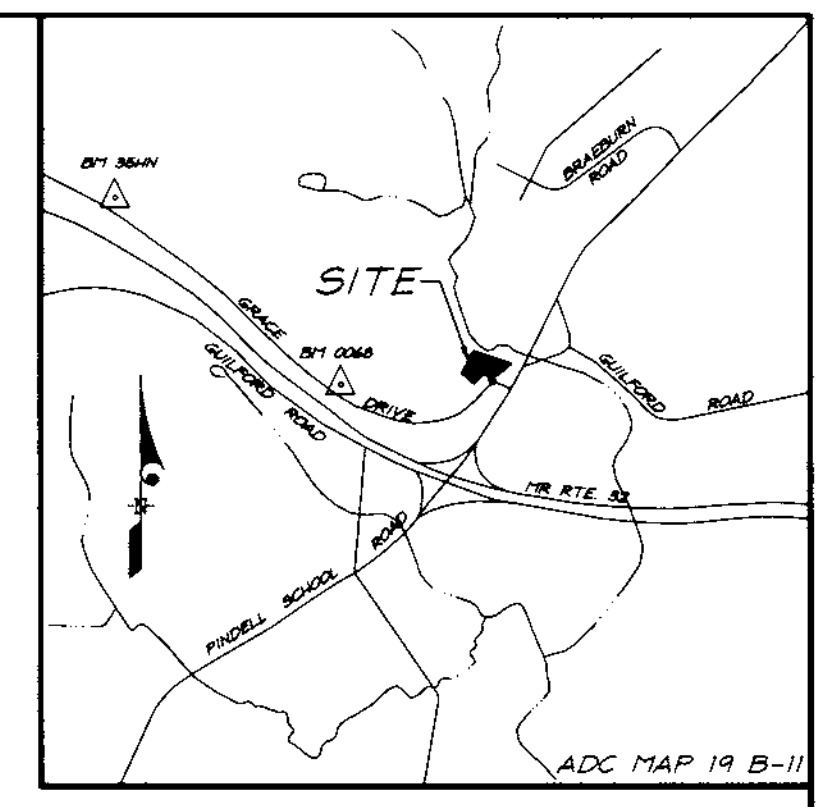
APPROVED: DEPARTMENT OF PLANNING & ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 9/24/98 DATE
 9/29/98 DATE
 9/29/98 DATE

EXTENDED DETENTION FACILITY
OWNED BY SHA
 Q2 OUT = 5.6 CFS
 Q10 OUT = 79 CFS
 Q100 OUT = 176.2 CFS

OWNER
 GRACE PROPERTY, LLC
 10805 HICKORY RIDGE ROAD
 COLUMBIA, MARYLAND 21044



SCHED. A - PERIMETER LANDSCAPE EDGE				
CATEGORY		ADJ. TO ROADS	ADJ. TO PER. PROP.	TOTALS
LANDSCAPE TYPE		B	E	C
LINEAR FEET OF FRONTAGE		126'	320'	788'
CREDIT FOR EX. VEGETATION		NO	NO	YES, 518'
CREDIT FOR BERM, (1)		NO	YES, 140'	NO
NUMBER OF PLANTS REQUIRED		(180')	(270')	
Shade Trees	3	5	7	15
Evergreen Trees	3	na	14	17
Shrubs		45		45
NUMBER OF PLANTS PROV.				
Shade Trees	3	5	7	15
Evergreen Trees	3	na	14	17
Shrubs		45		45



- (1) THE EXISTING BERM IS 6 TO 18 FEET HIGHER THAN GRACE DRIVE AND THE PROPOSED PARKING LOT. THEREFORE, CREDIT IS BEING TAKEN TOWARDS PROVISION OF REQUIRED PLANT MATERIALS.
- (2) OPEN SPACE LOT 44 PROVIDES ATTRACTIVE VIEWS FROM THE NORTHERN SIDE OF THE TOWNHOUSES. THESE VIEWS WILL BE ENHANCED BY SELECTIVE TREE PLANTING AND ALLOWING THE GROUND PLANE TO REMAIN OPEN.

SCHEDULE B - PARKING LOT INTERNAL LANDSCAPING	
NUMBER OF PARKING SPACES	56
NUMBER OF TREES REQUIRED (1:20 spaces)	3
NUMBER OF TREES PROVIDED	
Shade Trees	3
Other Trees (2:1 substitution)	

FINANCIAL SURETY:
 THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH PROVISION OF SECTION 16-124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 35 (schedules A & B) LANDSCAPE TREES IN THE AMOUNT OF \$7950 IS PART OF THE DEVELOPERS' AGREEMENT.
 (18 SHADE TREES AT \$50.00 + 17 EVERGREEN TREES AT \$50.00 = \$7,950.00)

KEY	QUANT	PLANT NAME	SIZE	REMARKS
SHADE TREES				
A	15	ACER RUBRUM 'RED SUNSET' Red Sunset Red Maple	2 1/2 - 3" Cal. 12 - 14' Ht.	B&B Heavy
B	3	CERCIDIPHYLLUM JAPONICUM Katsura Tree	2 1/2 - 3" Cal. 12 - 14' Ht.	B&B Plant in Spring
FLOWERING / INTERMEDIATE SCALE TREES				
C	1	ACER GRISEUM Paperbark Maple	1.5 - 2" Cal. 5 - 7' Ht.	B&B Heavy
EVERGREEN TREES				
D	3	PICEA ABIES Norway Spruce	6 - 8' Ht.	B&B Heavy
E	14	PINUS STROBUS Eastern White Pine	6 - 8' Ht.	B&B Heavy
SHRUBS				
F	45	EUONYMUS ALATUS 'COMPACTA' Dwarf Winged Euonymus	2 - 2.5' Ht.	B & B or Container

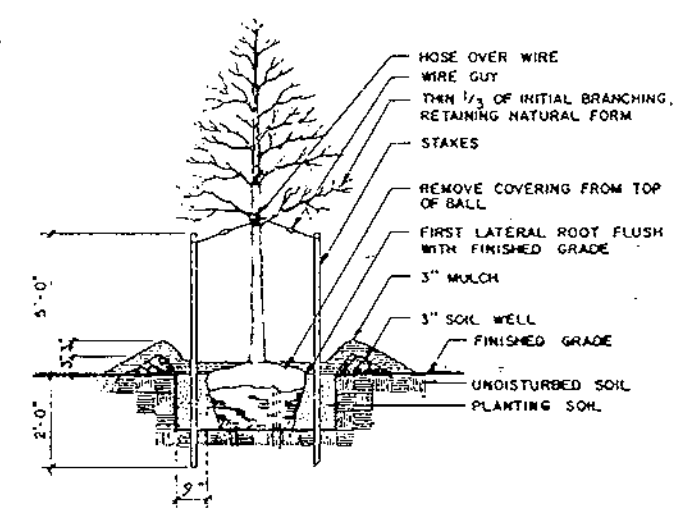
* ASTERISK INDICATES EXTRA TREES TO BE INSTALLED AT THE OWNER'S OPTION AND ARE NOT INCLUDED IN THE REQUIRED SURETY AMOUNT.

- NOTES:**
1. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT A.A.N. SPECIFICATIONS, AND BE INSTALLED IN ACCORDANCE WITH L.C.A.M.W. LANDSCAPE SPECIFICATIONS.
 2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
 3. FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
 4. SLOPES GREATER THAN 3 TO 1 SHALL BE SEEDDED WITH CROWN VETCH.

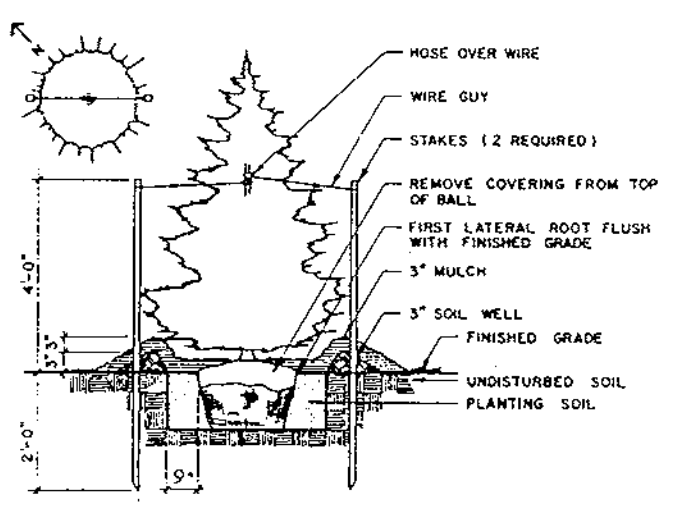
APPROVED: DEPARTMENT OF PLANNING & ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
Chris Hamilton
 CHIEF, DIVISION OF LAND DEVELOPMENT
Joseph K. White
 DIRECTOR

9/24/98
 DATE
 9/29/98
 DATE
 9/29/98
 DATE

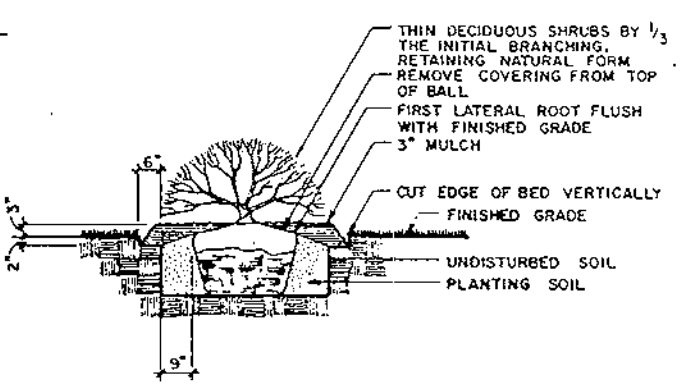
Planting Detail - Deciduous Tree



Planting Detail - Evergreen Tree

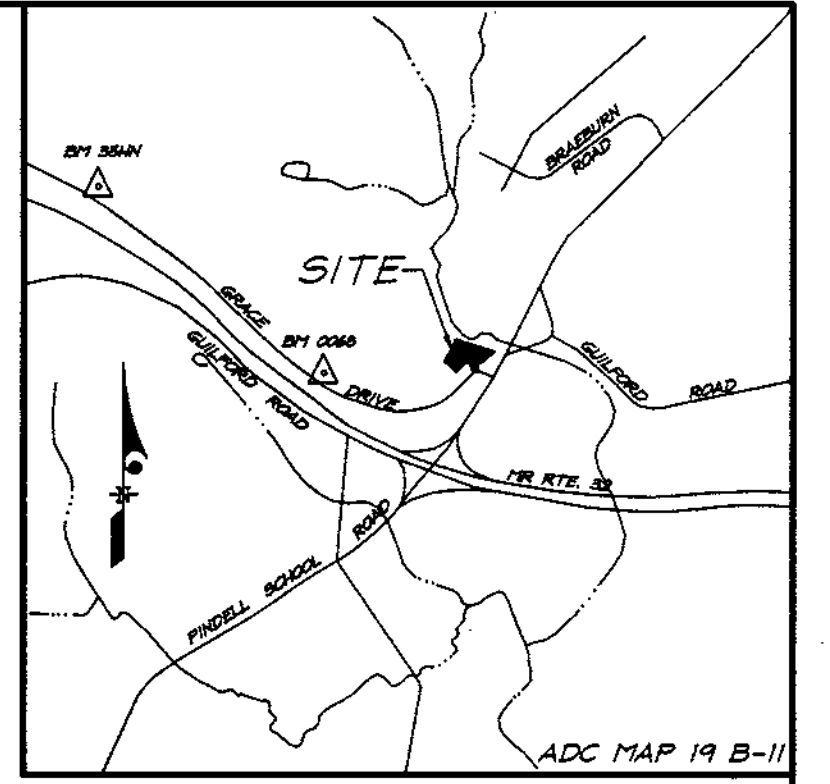
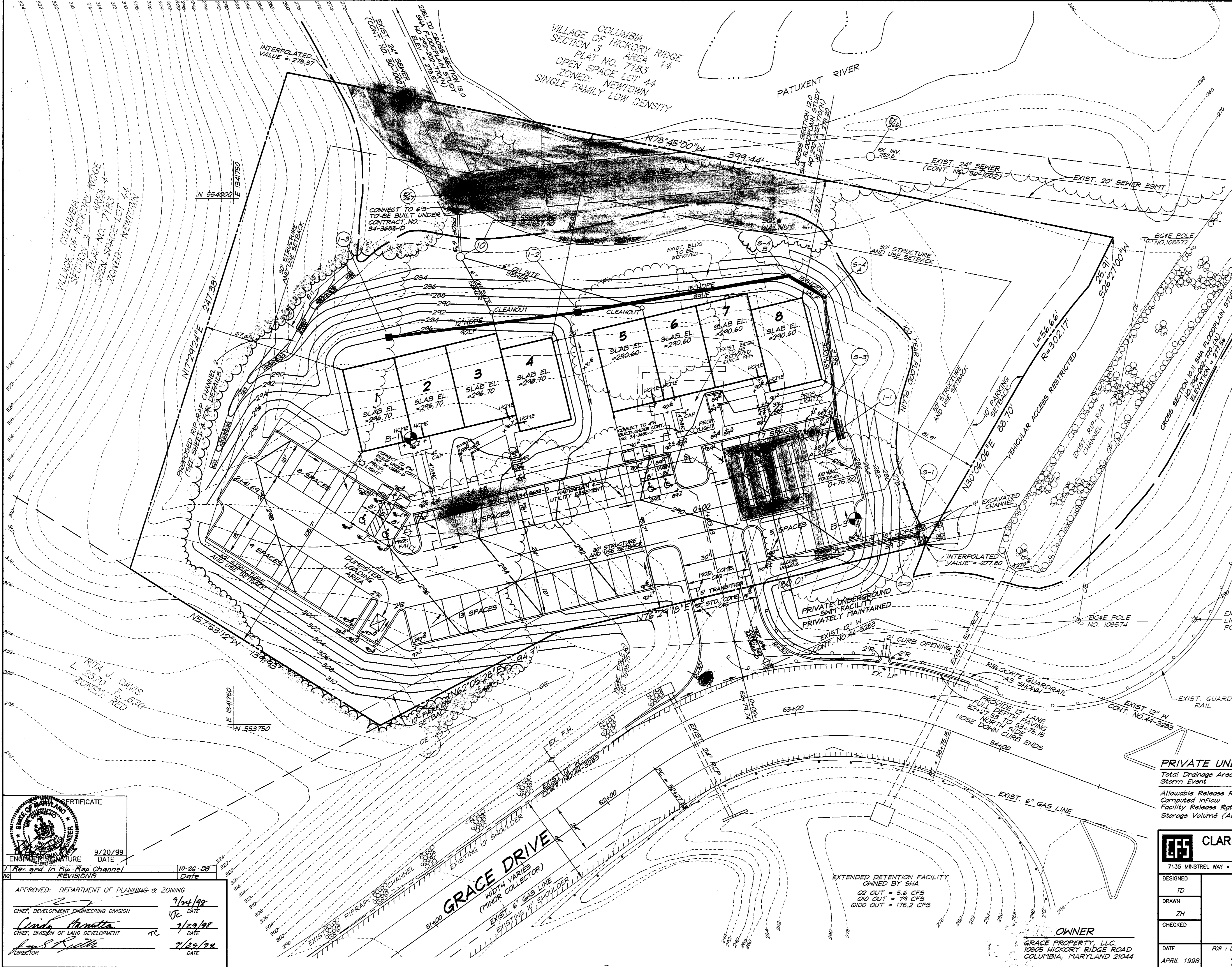


Planting Details - Shrub



OWNER
 GRACE PROPERTY, LLC
 10805 HICKORY RIDGE ROAD
 COLUMBIA, MARYLAND 21044

CLARK • FINEFROCK & SACKETT, INC. ENGINEERS • PLANNERS • SURVEYORS 7135 MINSTREL WAY • COLUMBIA, MD 21045 • (410) 381-7500 BALT. • (301) 621-8100 WASH.		SCALE
		1" = 30'
DESIGNED	LANDSCAPE PLAN 8 COMMERCIAL UNITS GRACE PROPERTY TAX MAP 35 PARCEL 81 FIFTH (5th) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	DRAWING
DRAWN		10 of 10
CHECKED		JOB NO.
DATE		96-121
5-22-1998	FOR: LAND DESIGN & DEVELOPMENT, INC. 10805 HICKORY RIDGE ROAD, SUITE 215 COLUMBIA, MARYLAND 21044 PHONE: 703-442-8992	FILE NO.
		96-121-LS



- LEGEND**
- Contour Interval 2 feet
 - Existing Contours - - - - - 244
 - Proposed Contours - - - - - 244
 - Proposed Spot Elevations +.942
 - Direction of Flow
 - Soil Borings
 - 100 Yr. Flood Plain
 - Proposed Storm Drain
 - Existing Storm Drain
 - Existing Water
 - Existing Sewer
 - Existing Gas
 - Prop. Combination C & G
 - Existing Edge of Paving
 - Dumpster Location
 - 14' 150W HPS
 - Post Top Modern Light
 - Main Entrance To Be Used By Handicapped Persons
 - Hand Rails
 - 30' 150W HPS VANDER PENTON PICTURE, CUTOFF, 12 ARM

CEDAR LANE
WIDTH VARIES
(MINOR ARTERIAL)

PRIVATE UNDERGROUND SWM FACILITY SUMMARY

Total Drainage Area to Facility = 1.26 Acres

Storm Event	2	10	100
Allowable Release Rate	1	4	N/A
Computed Inflow	3	6	9
Facility Release Rate	1	2	11
Storage Volume (AcFt)	.08	1.78	0.15

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS

7135 MINSTREL WAY • COLUMBIA, MD 21045 • (410) 381-7500 BALT. • (301) 621-8100 WASH.

DESIGNED	TD	SITE DEVELOPMENT PLAN 8 COMMERCIAL UNITS GRACE PROPERTY TAX MAP 35 GRID 21 PARCEL 81 FIFTH (5th) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE
DRAWN	ZH		1" = 20'
CHECKED			DRAWING
DATE	APRIL 1998		2 of 10
		JOB NO.	96-121
		FILE NO.	96-121X

FOR: LAND DESIGN & DEVELOPMENT, INC.
10805 HICKORY RIDGE ROAD, SUITE 215
COLUMBIA, MARYLAND 21044
PHONE: 703-442-8892

CERTIFICATE

9/20/99 DATE

10-26-98 DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING

9/24/98 DATE

1/29/98 DATE

7/22/98 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION

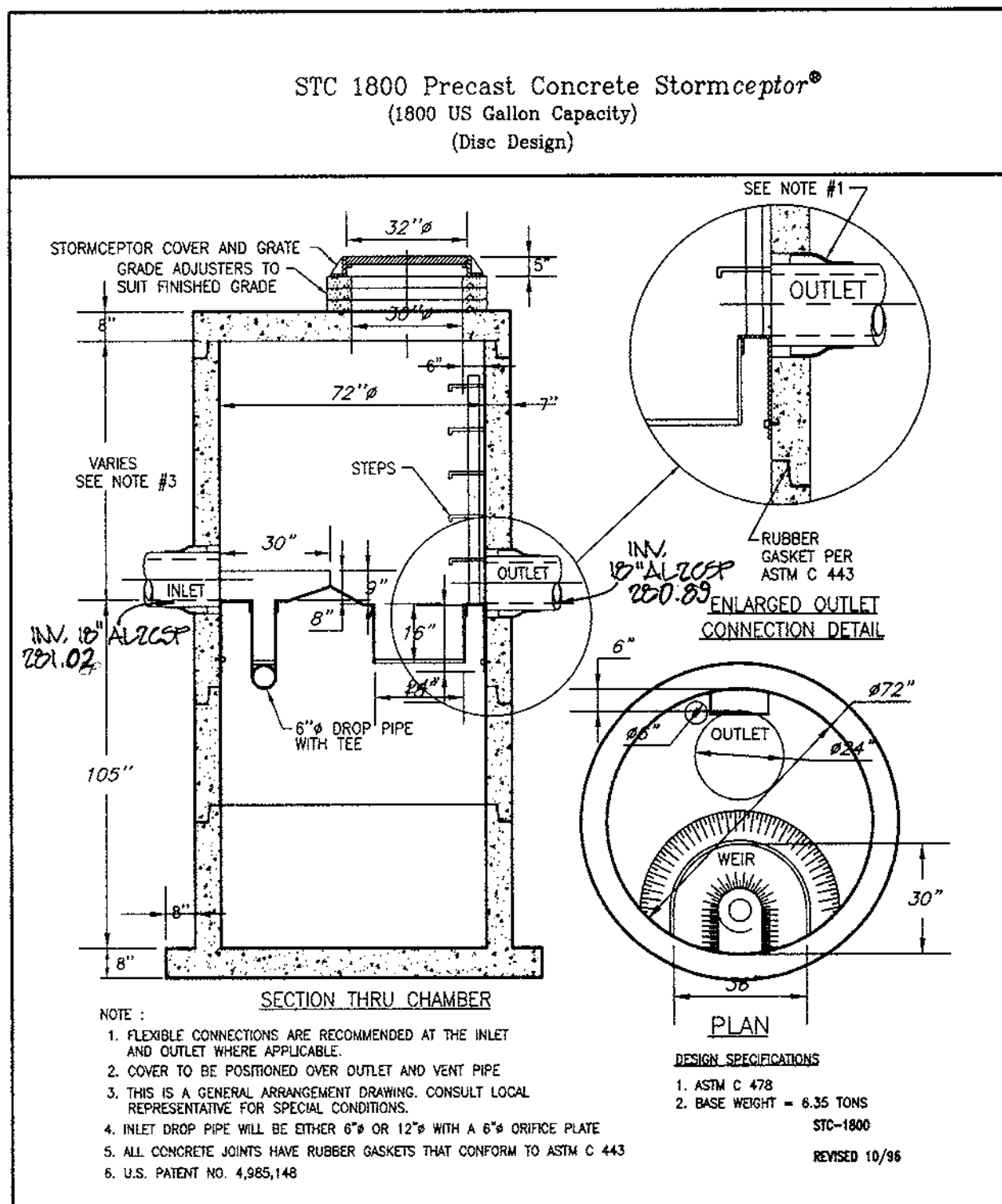
CHIEF, DIVISION OF LAND DEVELOPMENT

DIRECTOR

OWNER

GRACE PROPERTY, LLC
10805 HICKORY RIDGE ROAD
COLUMBIA, MARYLAND 21044

SEE SHEET 6 FOR STORMCEPTOR ORDER FORM



MAINTENANCE NOTES
(WATER QUALITY STRUCTURE WASTE)

1. THE STORMCEPTOR WATER QUALITY STRUCTURE SHALL BE PERIODICALLY INSPECTED AND CLEANED TO MAINTAIN OPERATION AND FUNCTION. THE OWNER SHALL INSPECT THE STORMCEPTOR UNIT YEARLY AT A MINIMUM, UTILIZING THE STORMCEPTOR INSPECTION/MONITORING FORM. INSPECTIONS SHALL BE DONE BY USING A CLEAR PLEXIGLASS TUBE ("SLUDGE JUDGE") TO EXTRACT A WATER COLUMN SAMPLE. WHEN THE SEDIMENT DEPTHS EXCEED THE LEVEL SPECIFIED IN TABLE 6 OF THE STORMCEPTOR TECHNICAL MANUAL, THE UNIT MUST BE CLEANED.
2. THE STORMCEPTOR WATER QUALITY STRUCTURE SHALL BE CHECKED AND CLEANED IMMEDIATELY AFTER PETROLEUM SPILLS. THE OWNER SHALL CONTACT THE APPROPRIATE REGULATORY AGENCIES.
3. THE MAINTENANCE OF THE STORMCEPTOR UNIT SHALL BE DONE USING A VACUUM TRUCK WHICH WILL REMOVE WATER, SEDIMENT, DEBRIS, FLOATING HYDROCARBONS AND OTHER MATERIALS IN THE UNIT. PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIALS AND LIQUID MUST BE FOLLOWED BY THE OWNER.
4. THE INLET AND OUTLET PIPES SHALL BE CHECKED FOR ANY OBSTRUCTIONS AT LEAST ONCE EVERY SIX MONTHS. IF OBSTRUCTIONS ARE FOUND THE OWNER SHALL HAVE THEM REMOVED. STRUCTURAL PARTS OF THE STORMCEPTOR UNIT SHALL BE REPAIRED AS NEEDED.
5. THE OWNER SHALL RETAIN AND MAKE THE STORMCEPTOR INSPECTION/MONITORING FORMS AVAILABLE TO HOWARD COUNTY OFFICIALS UPON THEIR REQUEST.

CONSTRUCTION NOTES

1. SILT AND DEBRIS SHALL NOT BE ALLOWED TO ENTER THE STORMCEPTOR UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED. SILT MAY BE ALLOWED TO ENTER STORMCEPTOR IF IT IS BEING USED AS A FINAL SEDIMENT CONTROL FILTERING DEVICE DURING CONSTRUCTION.
2. ALL OPENINGS TO STRUCTURES SHALL BE PROTECTED WITH THE APPROPRIATE SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.
3. THE STORMCEPTOR MUST BE PUMPED OUT AND CLEANED AT THE END OF THE CONSTRUCTION PHASE OF THE PROJECT.

RECOMMENDED INSPECTION NOTES: PRECAST CONCRETE STORMCEPTOR

1. PRIOR TO THE START OF INSTALLING THE STORMCEPTOR, THE HOWARD COUNTY CONSTRUCTION DIVISION MUST BE CALLED 48 HOURS IN ADVANCE AT 313-1880 (PRE-CONSTRUCTION MEETING).
2. THE HO. CO. CONSTRUCTION DIVISION INSPECTOR SHOULD BE NOTIFIED AT (313-1880) EACH OF THE FOLLOWING STAGES:
 - A. APPROVAL OF SUBGRADE: PREPARE A COMPACTED GRAVEL BED AT THE BOTTOM OF THE EXCAVATION (6" DEEP). ENSURE PROPER COMPACTION OF BASE.
 - B. PLACE STORMCEPTOR IN EXCAVATION AT CORRECT ELEVATION AND AT CORRECT ALIGNMENT AND GRADE FOR INLET AND OUTLET STORM DRAINS. LEVEL UNIT. INSTALL BASE AND LOWER TANK, (REDUCING SLAB), MIDDLE SECTION WITH STORMCEPTOR INSERT, RISER SECTION, TOP SLAB WITH STORMCEPTOR LEVELING RINGS AND MANHOLE FRAME AND COVER.
 - C. BACKFILL STORMCEPTOR WITH SUITABLE NATIVE SOIL (NO ORGANIC OR TOPSOIL IS TO BE USED FOR BACKFILL). BACKFILL AND COMPACT IN 8 INCH LIFTS. BACKFILL SHOULD BE TO PROPER DENSITY.
 - D. WHEN SITE IS PERMANENTLY STABILIZED AND SEDIMENT CONTROL MEASURES HAVE BEEN REMOVED AND STABILIZED, THEN THE STORMCEPTOR WILL BE PUMPED OUT AND CLEANED AND PLACED IN OPERATION.
 - E. FINAL INSPECTION.

AS MANUFACTURED BY CSR-HYDRO CONDUIT AND STORMCEPTOR CORPORATION, MODEL STC-2400, PRECAST CONCRETE STORMCEPTOR UNIT.
FOR TECHNICAL INFORMATION CALL STORMCEPTOR AT 301-762-8361. TO ORDER CONTACT CSR-HYDRO CONDUIT REPRESENTATIVE, AT 909-277-2420 OR FAX ORDER TO 909-277-3006.

STRUCTURE S-3
SEQUENCE OF CONSTRUCTION AND INSPECTOR'S CHECK-OFF-LIST FOR STORMWATER MANAGEMENT STORMCEPTOR

STAGE	DEVELOPER'S ENGINEER'S APPROVAL	DEP. INSPECTOR APPROVAL
1. PRE-CONSTRUCTION MEETING		
2. INSTALLATION OF "STORMCEPTOR" A ASSOCIATED STORM DRAINAGE: <ol style="list-style-type: none"> a. OBTAIN APPROVAL OF SUBGRADE b. INSTALLATION OF PRECAST BASE & LOWER TANK. c. INSTALLATION OF PRECAST MIDDLE SECTION WITH STORMCEPTOR INSERT d. INSTALLATION OF PRECAST TOP SLAB e. INSTALLATION OF ADJUSTMENT RINGS AND FRAME AND COVER. 		
3. BACKFILLING OPERATION AND COMPACTION		
4. SITE IS PERMANENTLY STABILIZED, SEDIMENT CONTROL MEASURES REMOVED AND ALL SEDIMENT AND DEBRIS REMOVED FROM STORMCEPTOR.		
4. FINAL INSPECTION		

MANDATORY NOTIFICATION/APPROVAL OF HO. CO. CONSTRUCTION DIVISION INSPECTOR PRIOR TO PROCEEDING WITH NEXT 313-1880 PRIOR TO 12:00 NOON ON THE PROCEEDING DAY TO ARRANGE FOR NOTIFICATION/INSPECTION.

INSTALLATION INSTRUCTIONS
PRECAST CONCRETE STORMCEPTOR

1. PRIOR TO THE START OF INSTALLING THE STORMCEPTOR, HOWARD COUNTY CONSTRUCTION DIVISION INSPECTOR MUST BE CALLED 48 HOURS IN ADVANCE (PRE-CONSTRUCTION MEETING).
2. THE COUNTY INSPECTOR MUST BE NOTIFIED AT EACH OF THE FOLLOWING INSTALLATION STAGES MARKED WITH A DOUBLE STAR (***) AND CONDITIONS SHOULD BE DOCUMENTED WITH PHOTOS, IF INSPECTOR IS NOT AVAILABLE.
 - A. STAKE-OUT THE LOCATION OF THE STORMCEPTOR AND EXCAVATE HOLE. EXCAVATE ADEQUATE SPACE TO CONNECT INLET AND OUTLET PIPES TO UNIT. INSTALL A 12" DEEP (OR AS REQUIRED) LAYER OF COMPACTED AGGREGATE SUBBASE AT THE BOTTOM OF THE EXCAVATION. INSTALL TRENCH BOX OF SIZING AS NEEDED.
 - B. CHECK ELEVATION OF UNIT BY MEASURING ITS SECTIONS FROM BASE OF THE STORAGE CHAMBER (BOTTOM OF UNITS SLAB) TO THE INVERT OF STORMCEPTOR BYPASS CHAMBER INLET ELEVATION (FIBERGLASS INSERT). SUBTRACT THIS DISTANCE FROM DESIGN INVERT ELEVATION TO DETERMINE TOP OF SUBBASE ELEVATION. CHECK ELEVATION OF INSTALLED SUBBASE AND ADJUST AS NEEDED.
 - C. SECURE INSPECTOR APPROVAL OF SUBGRADE AND SUBBASE. ALL LIFTING APPARATUS IS TO BE PROVIDED BY THE INSTALLATION CONTRACTOR.
 - D. INSTALL STORAGE CHAMBER. (INSTALL SCREW LIFTING PINS INTO BASE OF STORAGE CHAMBER.) ATTACH CABLES OR CHAINS TO ALL 3 LIFT LUGS ON THE BASE SLAB. USING LARGE EQUIPMENT OR CRAN TO LIFT AND PLACE THE BASE SECTION OF THE STORAGE CHAMBER IN THE EXCAVATED HOLE ON THE SUBBASE. MAKE SURE THAT THE BASE IS LEVEL. SPECIFIC ALIGNMENT OF THIS PART IS NOT REQUIRED. INSTALL RUBBER GASKET ON BASE UNIT AND COAT WITH LUBRICATING GREASE (PROVIDED IN SHIPMENT). IF NOT PRELUBRICATED. INSTALL ADDITIONAL STORAGE CHAMBER SECTIONS, AS REQUIRED (PROCEDURE IS SAME AS STEP B). (FOR STORMCEPTOR MODELS STC-900, STC-1200 AND STC-1800 SKIP STEP 5 AND GO TO STEP 6).
 - E. INSTALL REDUCING SLAB. (STORMCEPTOR MODELS STC-2400, STC-3600, STC-4800, STC-6000 AND STC-7200) CHECK THAT SECTION IS SET FLUSH LEVEL AND IS AT THE PROPER ELEVATION. INSTALL RUBBER GASKET ON THE TRANSITION SLAB SPIGOT AND COAT WITH LUBRICATING GREASE (PROVIDED IN SHIPMENT).
 - F. INSTALL BYPASS SECTION OF STORMCEPTOR WITH FACTORY INSTALLED STORMCEPTOR INSERT. LIFT BYPASS SECTION AND INSTALL WHILE CHECKING ALIGNMENT AND GRADE OF INLET AND OUTLET DRAINAGE PIPES. CHECK TO MAKE SURE THE BYPASS CHAMBER IS SET FLUSH LEVEL AND IS AT THE PROPER ELEVATION. THE BYPASS SECTION MUST BE ORIENTED SUCH THAT INLET PIPE DISCHARGES INTO THE U-SHAPED FIBERGLASS WEIRS (INSIDE INSERT). INSTALL RUBBER GASKET ON TOP OF BYPASS SECTION AND COAT WITH LUBRICATING GREASE, IF NOT PRELUBRICATED.
 - G. INSTALL STORMCEPTOR DROP PIPES ACCORDING TO STC PIPE INSTALLATION PROCEDURE ON REVERSE SIDE OF THESE INSTRUCTIONS.
 - H. INSTALL RISER SECTION. LIFT RISER SECTION AND INSTALL, WHILE CHECKING THAT SECTION IS SET FLUSH AND IS AT PROPER ELEVATION AND THAT UNIT IS LEVEL. SPECIFIC ALIGNMENT OF THIS PART IS REQUIRED, IF STEP(S) ARE INCLUDED ALONG STEPS ABOVE INLET INSPECTION PORT. NOTE: FOR SHALLOW INSTALLATIONS THIS SECTION MAY NOT BE REQUIRED.
 - I. INSTALL TOP SLAB WITH OPENING FOR STORMCEPTOR FRAME AND COVER. IF OPENING IS OFFSET (NOT CENTERED) THE TOP SLAB OPENING SHOULD BE ORIENTED ABOVE THE STORMCEPTOR INLET INSPECTION PORT (PLUG).
 - J. BACKFILL STORMCEPTOR WITH APPROVED BACKFILL MATERIAL (NO ORGANIC OR TOPSOIL IS TO BE USED FOR BACKFILL). BACKFILL AND COMPACT IN 8 INCH LIFTS. BACKFILL SHOULD BE COMPACTED TO LOCAL/STATE REQUIREMENTS.
 - K. INSTALL AND SET GRADE ADJUSTING RINGS, AS NEEDED. PLUG ALL LEFT HOLES WITH TAPERED PLUG AND KNOCK IN TO PLACE. PLUGS IN STORAGE CHAMBER MUST BE GROUDED INSIDE AND OUTSIDE WITH GROUT.
 - L. INSTALL AND SET STORMCEPTOR FRAME AND COVER.
 - M. INSTALL INLET AND OUTLET STORM DRAIN PIPES. CONNECT INLET AND OUTLET STORM DRAIN PIPES WITH FLEXIBLE BOOTS (WHEN PROVIDED) AND WITH NON-SHRINK GROUT WHEN NO FLEXIBLE BOOTS ARE PROVIDED. THE INVERT OF THE INLET AND OUTLET PIPE IS TO MATCH UP WITH THE INVERT OF THE STORMCEPTOR INSERT. FLEXIBLE BOOT INSTALLATION PROCEDURE: CENTER THE PIPE IN BOOT OPENING. LUBRICATE THE OUTSIDE OF THE PIPE AND/OR THE INSIDE OF THE BOOT, IF THE PIPE OUTSIDE DIAMETER IS THE SAME AS THE INSIDE DIAMETER OF THE BOOT. POSITION THE PIPE CLAMP IN THE GROOVE OF THE BOOT WITH THE SCREWS AT THE TOP. TIGHTEN THE PIPE CLAMP SCREW TO 60 INCH POUNDS. IF THE PIPE IS MUCH SMALLER THAN THE BOOT, LIFT THE BOOT SUCH THAT IT CONTACTS THE BOTTOM OF THE PIPE WHILE TIGHTENING THE CLAMP TO ENSURE EVEN CONTRACTION OF THE RUBBER. MOVE PIPE HORIZONTALLY AND/OR VERTICALLY TO BRING TO GRADE.
3. THE STORMCEPTOR SHOULD BE PUMPED OUT WHEN THE SEDIMENT CONTROL MEASURES ARE REMOVED (SITE PERMANENTLY STABILIZED).
4. FINAL INSPECTION.

FOR TECHNICAL INFORMATION CALL STORMCEPTOR AT 310-762-8361 TO ORDER, AND FOR DELIVERY CONTACT CSR-HYDRO CONDUIT, SPRINGFIELD, VIRGINIA AT 703-971-1900 OR FAX AT 703-922-3659 AT LEAST 3 WEEKS PRIOR TO NEEDED DELIVERY.

STATE OF MARYLAND ENGINEER'S SIGNATURE
 [Signature]
 DATE: 9/20/99

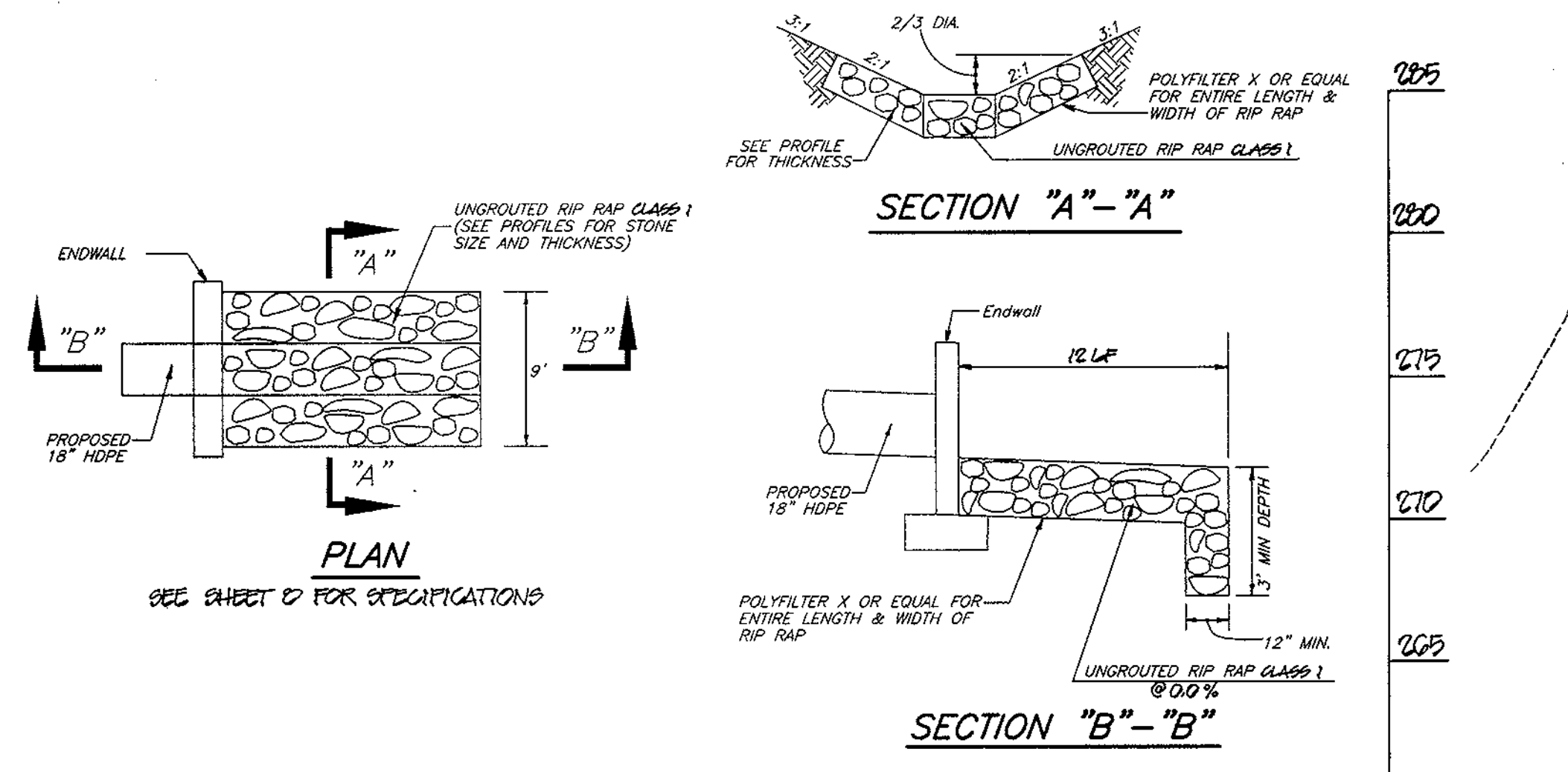
APPROVAL CERTIFICATE
 I hereby certify that all development and construction will be done according to this plan of development and plan for sediment and erosion control and that all responsible personnel involved in the construction project will have a Certificate of Attendance of a Department of the 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 or their authorized agents, as are deemed necessary.

ENGINEER'S CERTIFICATE
 I hereby certify that this plan for Sediment and Erosion Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

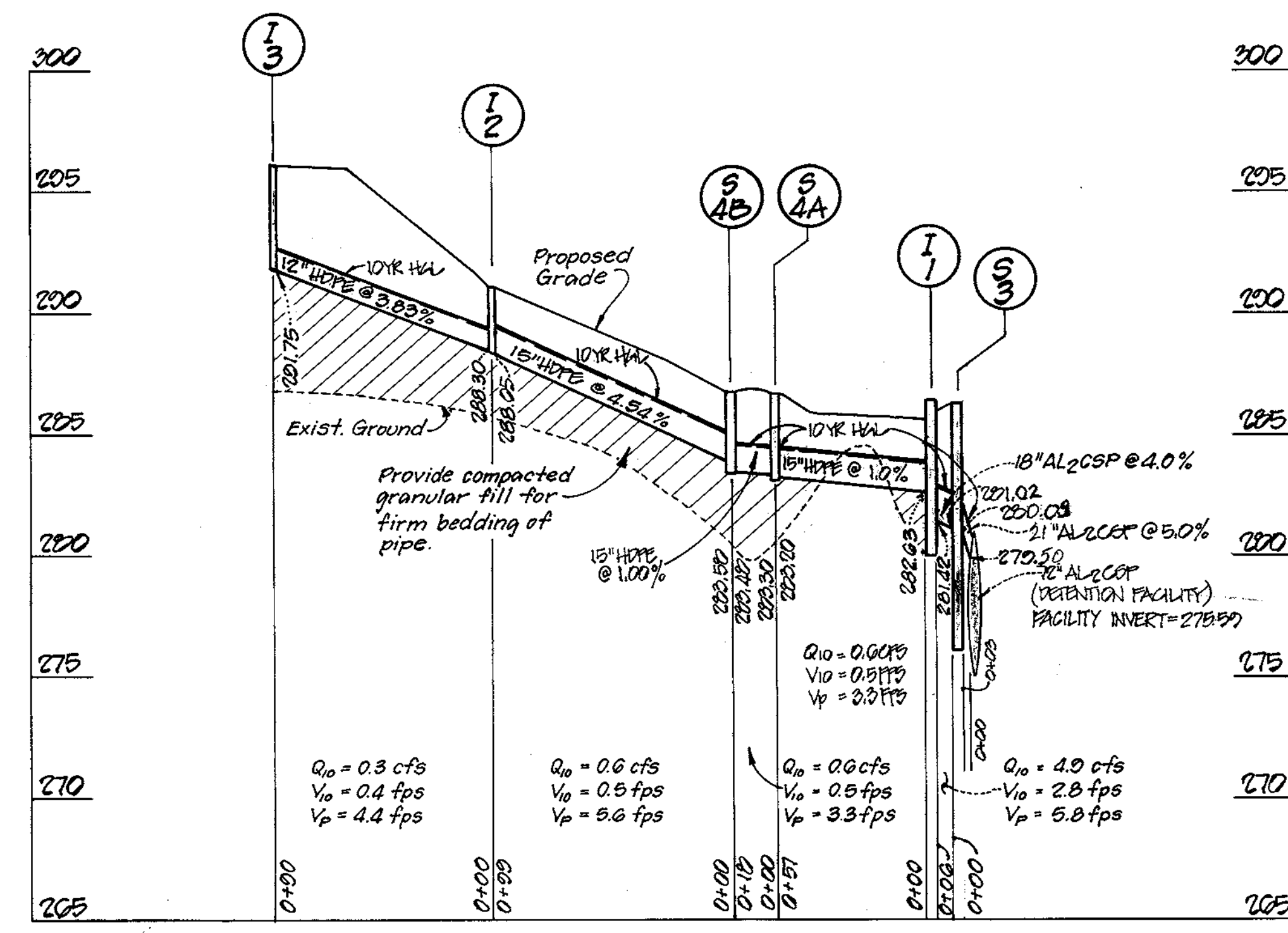
[Signature] DATE: 8/20/98
 G. NELSON CLARK

STRUCTURE SCHEDULE

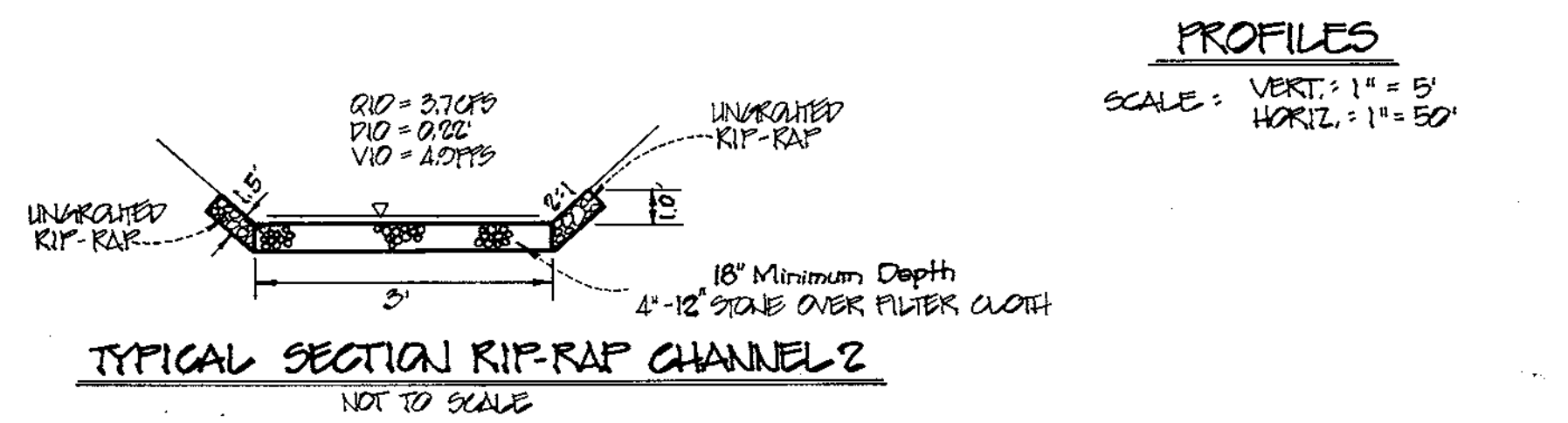
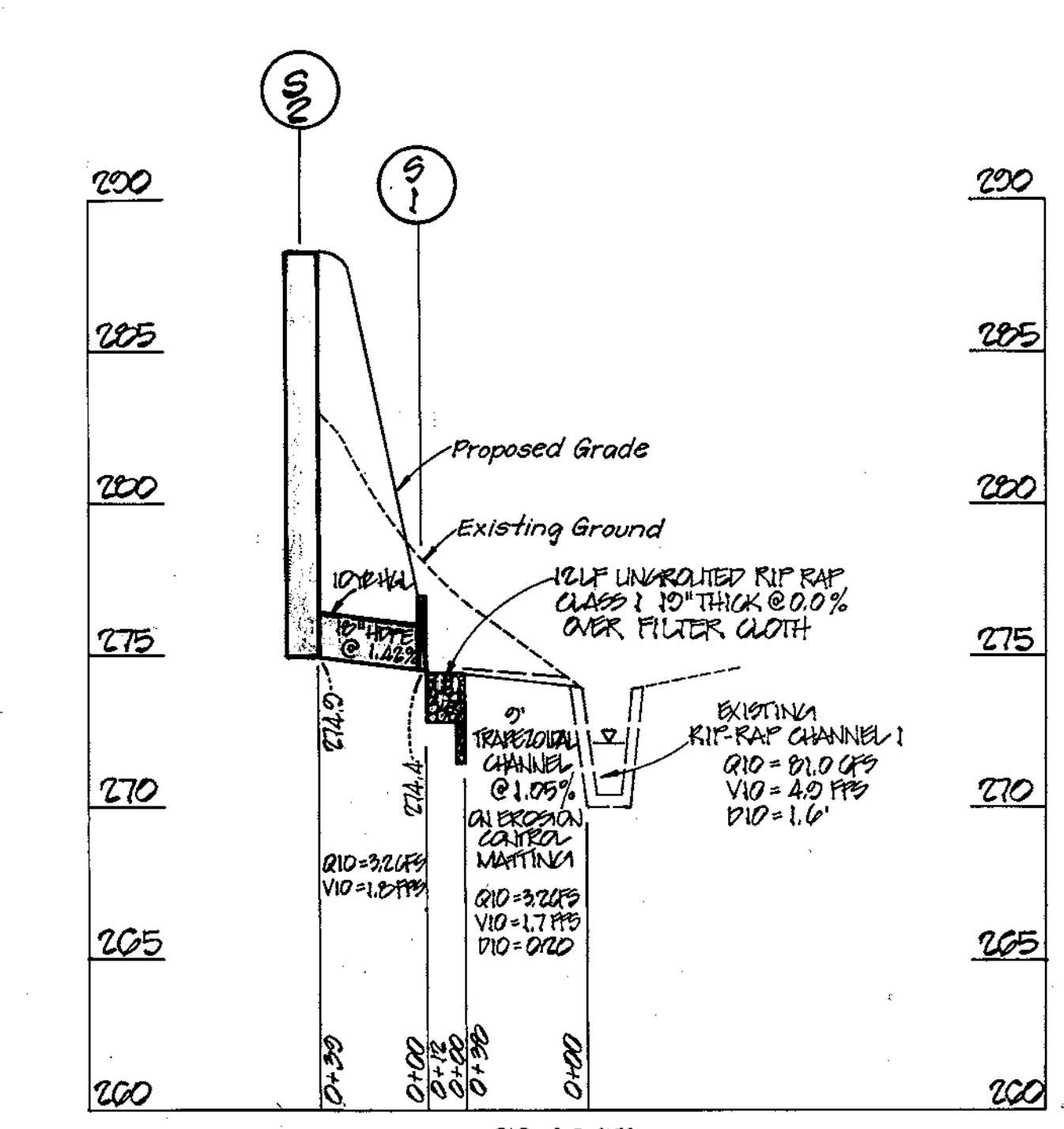
NO.	TYPE	TOP ELEVATIONS		REMARKS	LOCATION		Invert In	Invert Out
		UPPER	LOWER		C.L.	E.		
S-1	18" Endwall	270.00	270.00	MD Detail 354.01	C.L. N. 553839.6038	E. 1342113.2988	274.40	274.40
S-2	Modified A-10	270.76	270.76	See Sheet 6	RFC N. 553839.6038	E. 1342025.57	275.00	274.90
S-3	Stormceptor	270.23	270.23	STC 1800	N. 553839.6038	E. 1342026.01	281.02	280.89
S-4A	Shallow Manhole	270.90	270.90	Ho. Co. Std Detail g 5.05	N. 553839.6038	E. 1342030.36	283.30	283.20
I-1	A-10	270.40	270.40	SD 4.02	LFC N. 553839.6038	E. 1342034.04	282.03	281.42
I-2	D Inlet	291.00	291.00	Ho. Co. Std Detail 4.11	N. 553946.1656	E. 1341913.48	288.30	288.05
I-3	D Inlet	296.00	296.00	Ho. Co. Std Detail 4.11	N. 553934.1681	E. 1341823.80	288.30	287.78
S-4B	Shallow Manhole	270.90	270.90	Ho. Co. Std Detail g 5.05	N. 553839.6038	E. 1342019.30	283.80	283.48



UNGROUTED RIP RAP DETAIL
NOT TO SCALE
See Sheet 8 For Construction Specifications



PROFILE PRIVATE SEWER
SCALE: VERT. 1" = 5'
HORIZ. 1" = 50'



TYPICAL SECTION - TRAPEZOIDAL CHANNEL @ S-1
NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING & ZONING
 [Signature] DATE: 9/24/98
 [Signature] DATE: 9/29/98
 [Signature] DATE: 9/29/98

Reviewed for HOWARD S.C.D. and meets Technical Requirements
 [Signature] DATE: 9/24/98
 U.S. Natural Resources Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 [Signature] DATE: 9/24/98

STATE OF MARYLAND ENGINEER'S SIGNATURE
 [Signature] DATE: 9/20/99

APPROVAL CERTIFICATE
 I hereby certify that all development and construction will be done according to this plan of development and plan for sediment and erosion control and that all responsible personnel involved in the construction project will have a Certificate of Attendance of 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 or their authorized agents, as are deemed necessary.

[Signature] DATE: 8/20/98
 G. NELSON CLARK

DEVELOPER'S/BUILDER'S CERTIFICATE
 I/we certify that all development and construction will be done according to this plan of development and plan for sediment and erosion control and that all responsible personnel involved in the construction project will have a Certificate of Attendance of 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 or their authorized agents, as are deemed necessary.

[Signature] DATE: 8/20/98
 G. NELSON CLARK

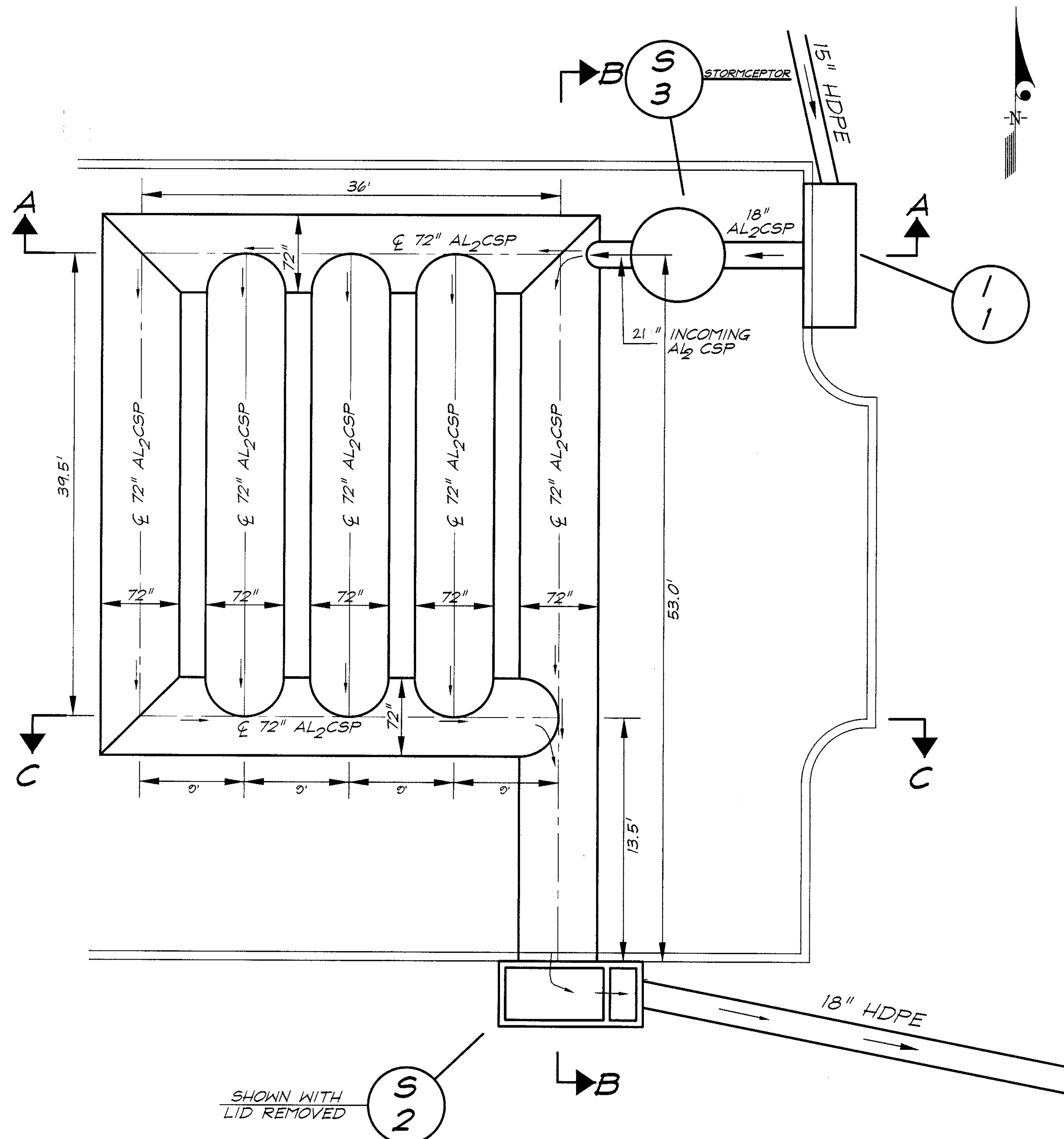
CLARK • FINEFROCK & SACKETT, INC.
 ENGINEERS • PLANNERS • SURVEYORS
 7135 MINSTREL WAY • COLUMBIA, MD 21045 • (410) 381-7500 BALT. • (301) 621-8100 WASH.

DESIGNED: TD
 DRAWN: ZH
 CHECKED: [Signature]
 DATE: JAN. 8/98

DETAILS AND STORM DRAIN PROFILES
GRACE PROPERTY
 TAX MAP 35 PARCEL 81
 FIFTH (5th) ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN
 DRAWING: 4 of 10
 JOB NO.: 96-121
 FILE NO.: 96-121-X

FOR: LAND DESIGN & DEVELOPMENT, INC.
 10805 HICKORY RIDGE ROAD, SUITE 215
 COLUMBIA, MARYLAND 21044
 PHONE: 703-442-8992



PLAN VIEW
NOT TO SCALE

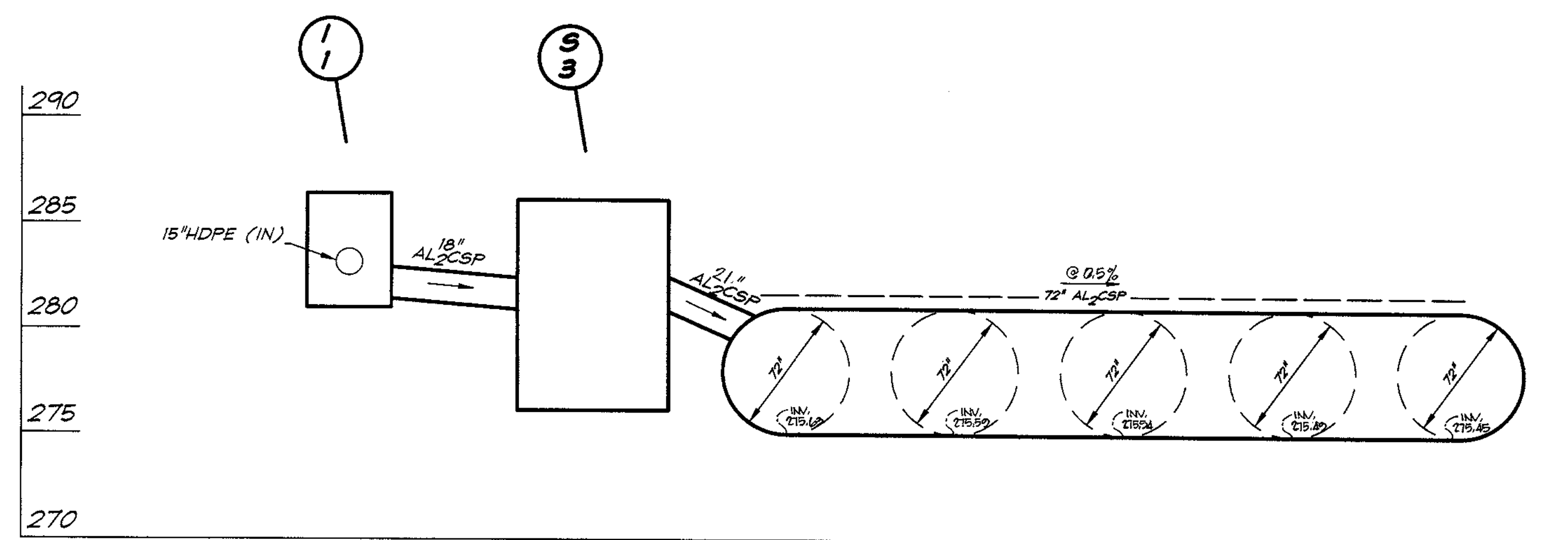
MATERIAL SPECIFICATIONS

Materials are 72" Diameter 12 Gauge Aluminized Type 2 Corrugated Metal Pipe with 5 x 1 corrugations and 18" Diameter 14 Gauge Aluminized Type 2 Corrugated Metal Pipe with 2-2/3" x 1/2" corrugations manufactured in accordance with AASHTO M-274 and AASHTO M-36.

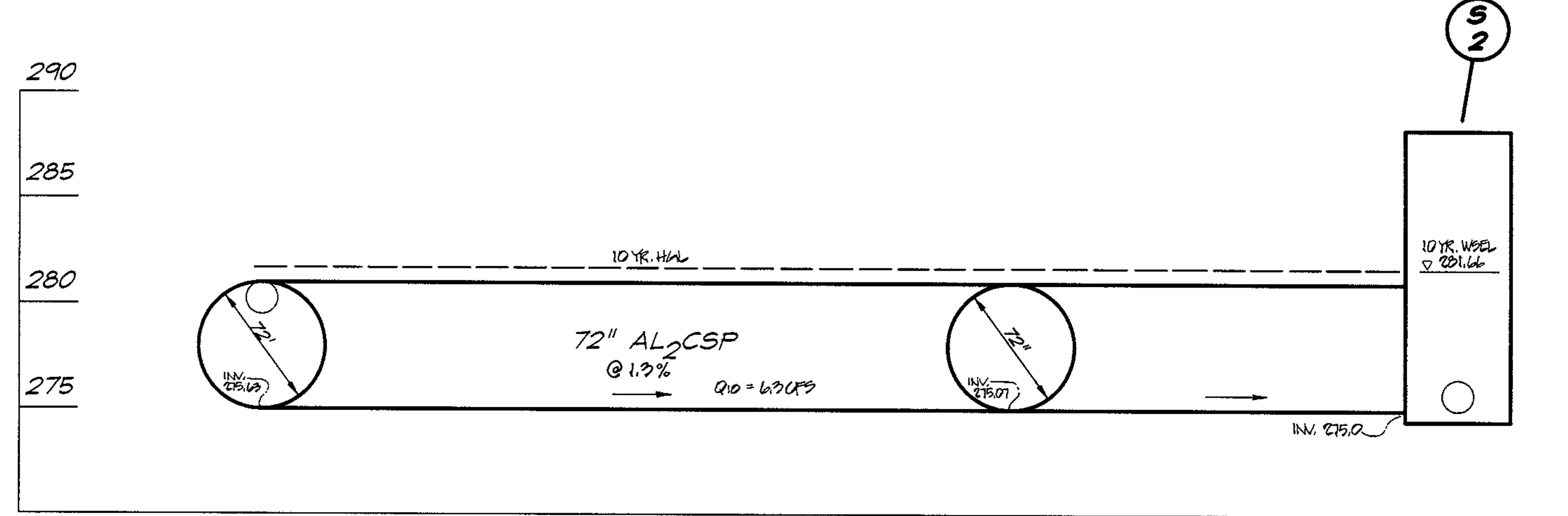
Coupling Bands shall be AASHTO M-36 Hugger Type H-12 with single bar, bolt and strap. Two (2) each "O" Ring Gaskets shall be provided for each Connecting Band.

All Elbows, Tees, and Stubs will be as shown on manufacturer's drawings. Refer to specific manufacturer's drawings for fitting details.

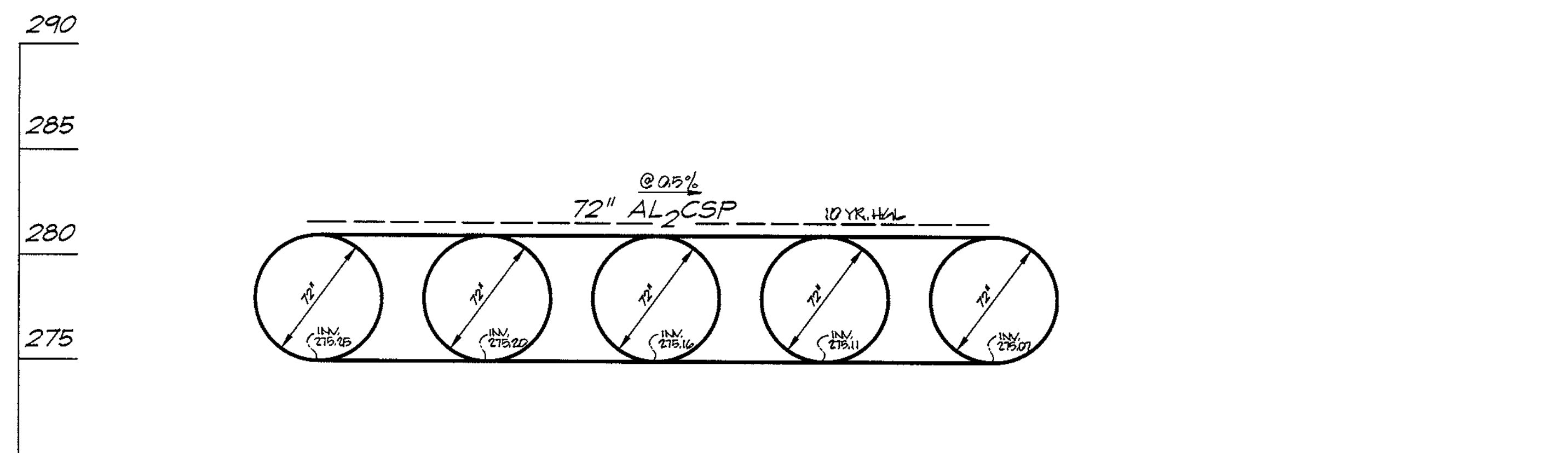
All dimensions are centerline dimensions.



SECTION A-A



SECTION B-B



SECTION C-C

CERTIFICATE

DESIGNED: TD
DRAWN: ZH
CHECKED: [Signature]
DATE: APRIL 1998

APPROVED: DEPARTMENT OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION: [Signature] 9/24/98
CHIEF, DIVISION OF LAND DEVELOPMENT: [Signature] 9/29/98
DIRECTOR: [Signature] 9/29/98

OWNER
GRACE PROPERTY, LLC.
10805 HICKORY RIDGE ROAD
COLUMBIA, MARYLAND 21044

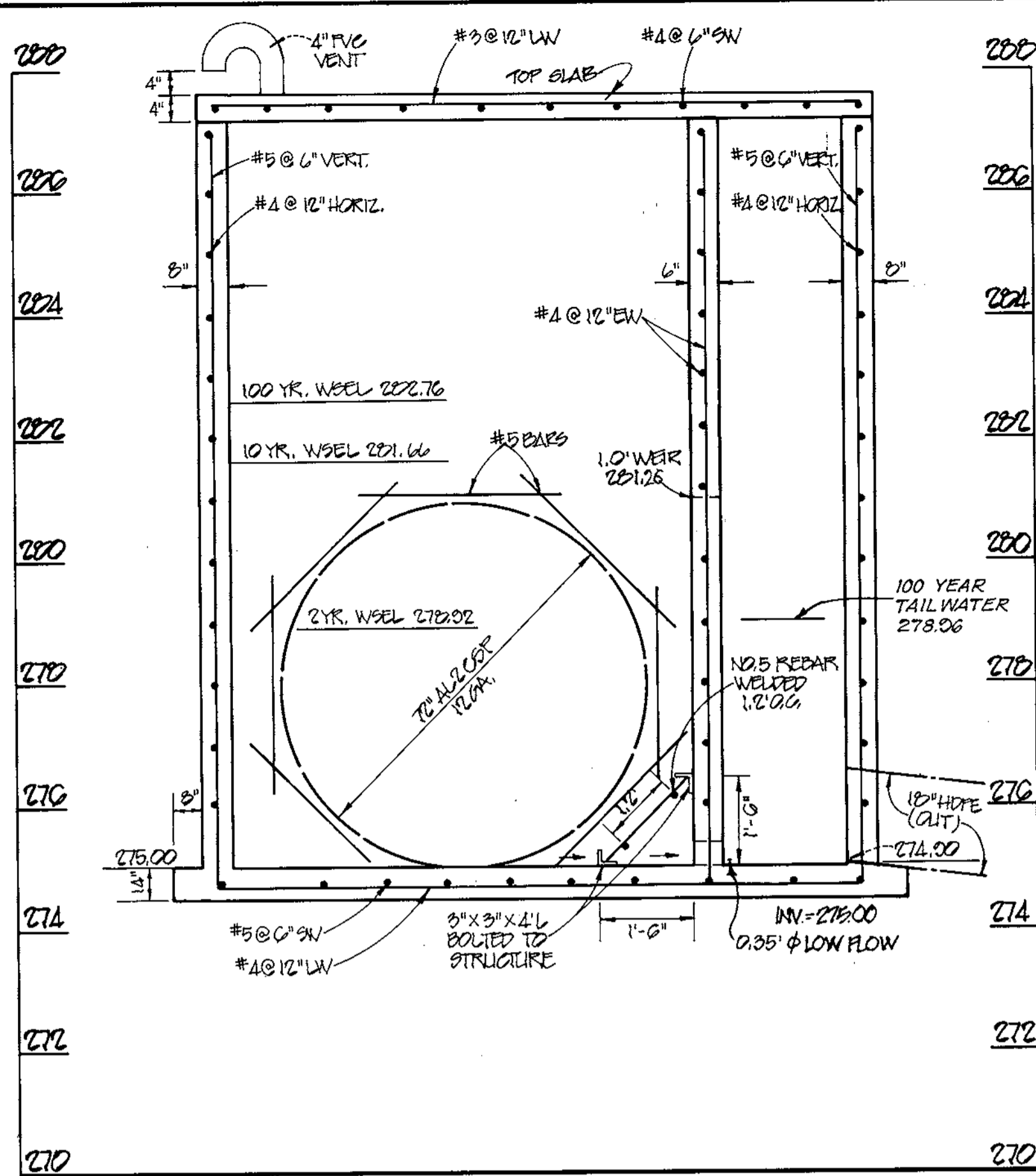


CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS

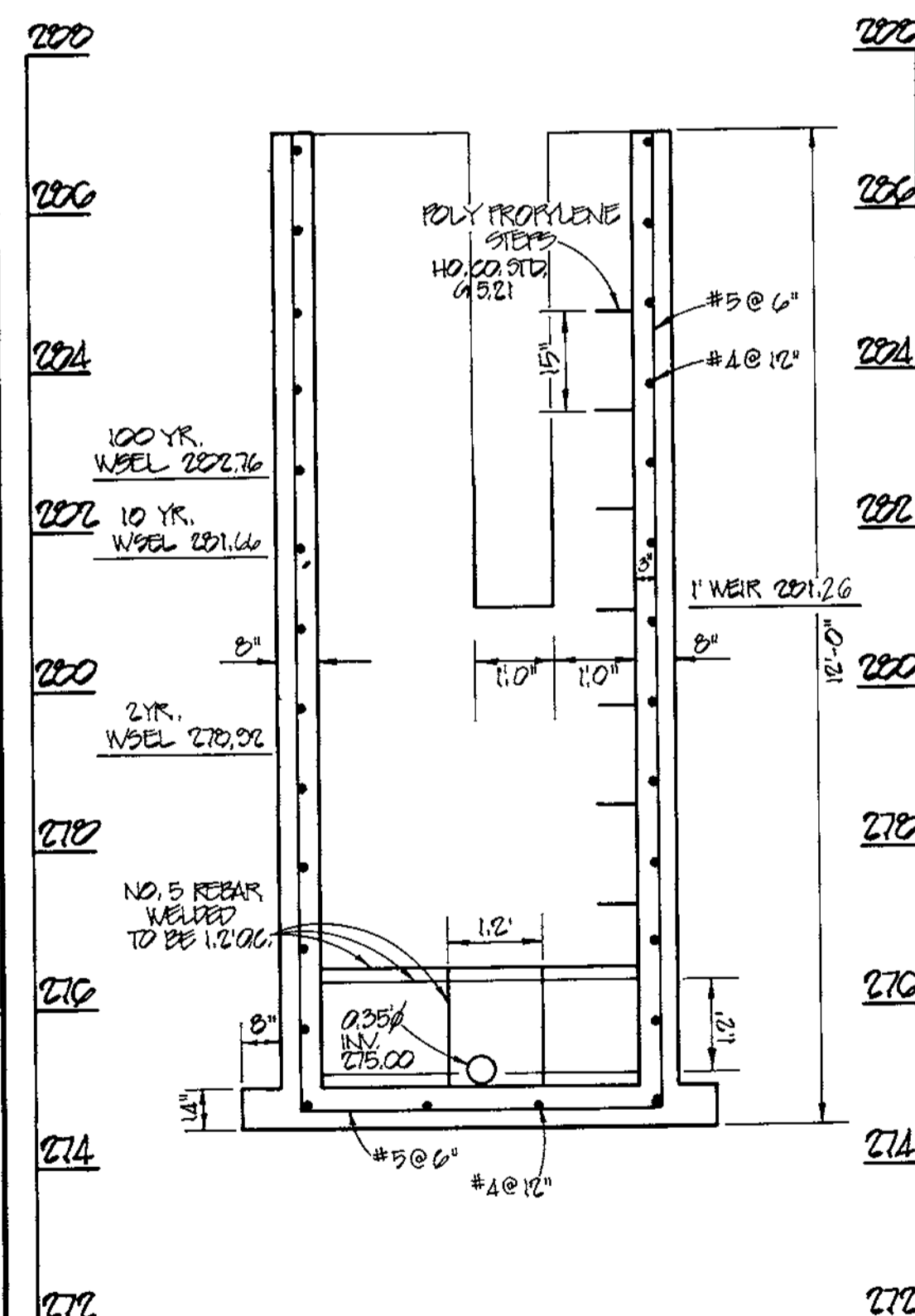
7135 MINSTREL WAY • COLUMBIA, MD 21045 • (410) 381-7500 BALT. • (301) 621-8100 WASH.

DESIGNED: TD	STORM WATER MANAGEMENT DETAILS GRACE PROPERTY TAX MAP 35 PARCEL 81 FIFTH (5th) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE: 1" = 5'
DRAWN: ZH		DRAWING: 5 of 10
CHECKED: [Signature]		JOB NO.: 96-121
DATE: APRIL 1998		FILE NO.: 96-121-x

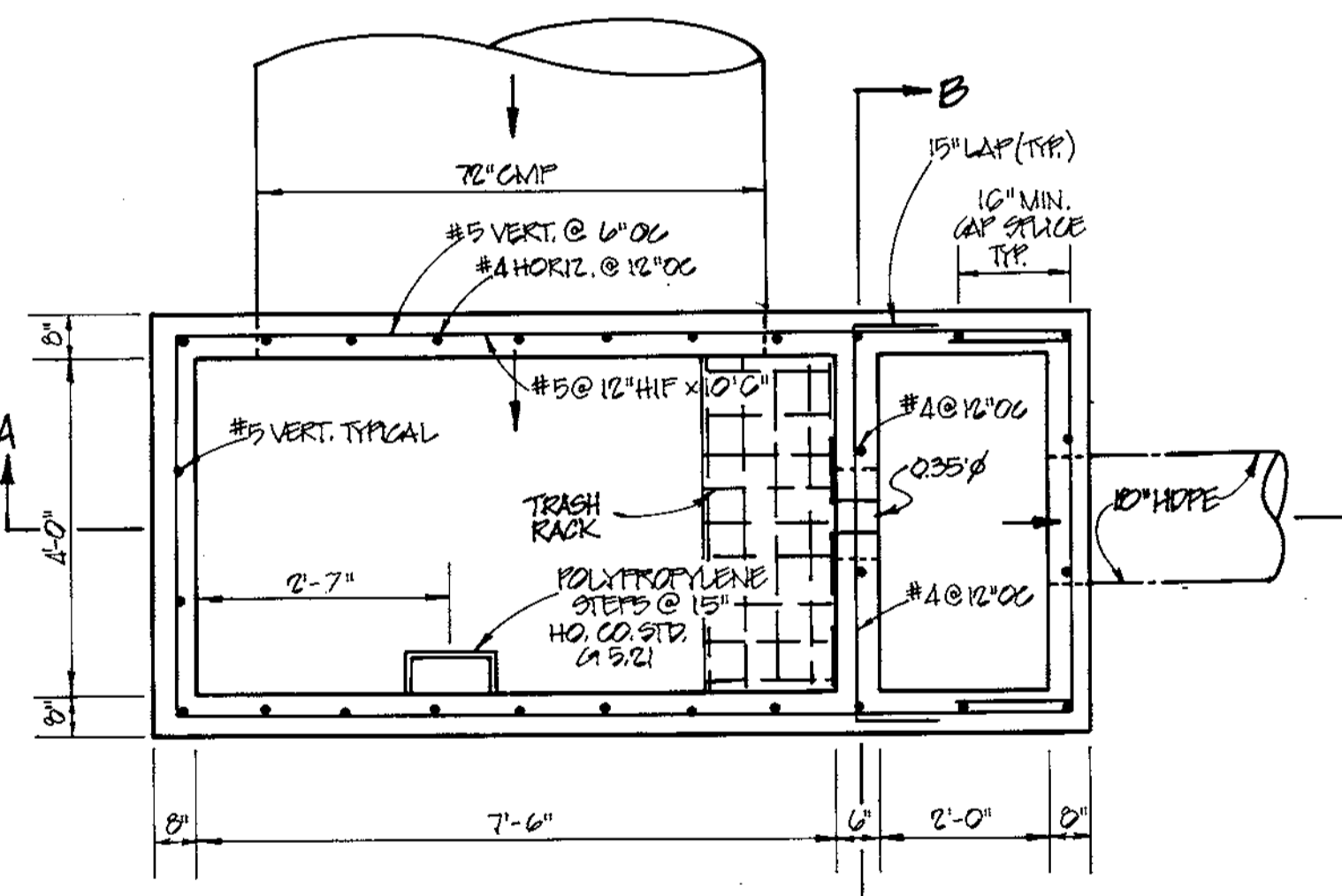
FOR: LAND DESIGN & DEVELOPMENT, INC.
10805 HICKORY RIDGE ROAD, SUITE 213
COLUMBIA, MARYLAND 21044
PHONE: 703-442-8882



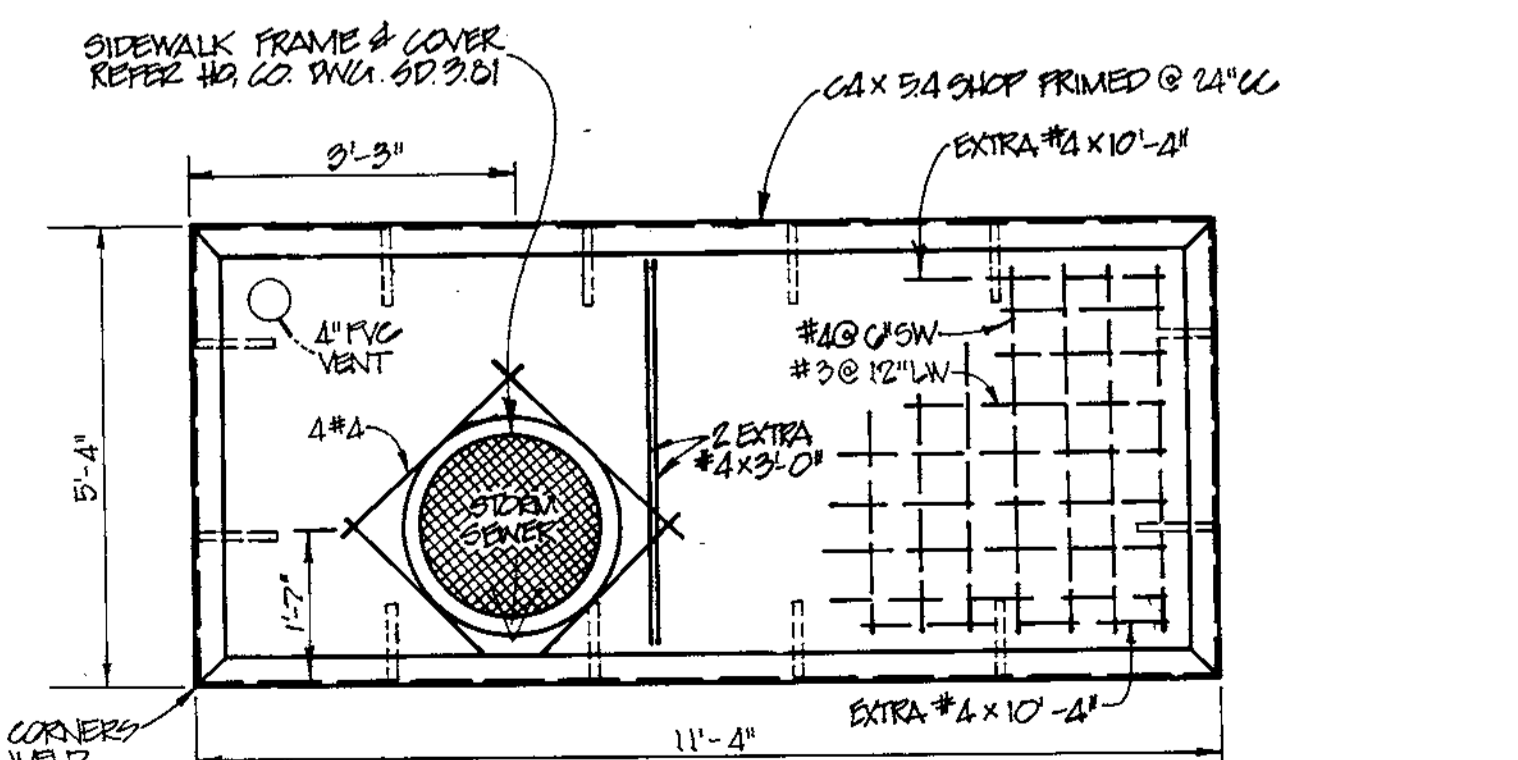
**STRUCTURE 5-2
SECTION A-A**
SCALE: HORIZ: 1" = 2'
VERT: 1" = 2'



**STRUCTURE 5-2
SECTION B-B**
SCALE: HORIZ: 1" = 2'
VERT: 1" = 2'
(SHOWN WITHOUT TOP SLAB)

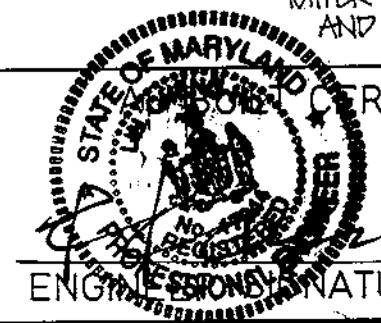


**STRUCTURE 5-2
PLAN VIEW
NOT TO SCALE**



**TOP SLAB
NOT TO SCALE**

APPROVED: DEPARTMENT OF PLANNING & ZONING
DATE: 9/20/98
DATE: 9/20/98
DATE: 9/20/98



ENGIN... SIGNATURE
DATE: 9/20/98

CONSTRUCTION NOTES

- UNLESS OTHERWISE NOTED, ALL METAL PIPE SHALL BE ALUMINUM
- ALL DEBRIS IS TO BE KEPT OUT OF THE FACILITY DURING AND AFTER CONSTRUCTION.
- TRASH RACK IS TO BE GALVANIZED AND PAINTED WITH TWO COATS OF BUTYLSEAL OR EX.
- ALL MATERIALS SHALL MEET HOWARD COUNTY STANDARDS.

**OPERATION AND MAINTENANCE SCHEDULE
STORMWATER MANAGEMENT FACILITY**

- THE FACILITY SHALL BE INSPECTED BY THE OWNER ANNUALLY FOR STRUCTURAL INTEGRITY AND DEBRIS ACCUMULATION. ALL DEBRIS SHALL BE REMOVED. ANY STRUCTURAL DEFECTS SHALL BE REPAIRED.
- THE LOW FLOW TRASH RACK AND ORIFACE SHALL BE INSPECTED BY THE OWNER ANNUALLY AND AFTER LARGE STORMS TO INSURE FREE OUTFLOW OF WATER FROM THE STRUCTURE. ANY DEBRIS SHALL BE REMOVED AND THE ORIFACE CLEARED OF OBSTRUCTIONS.

BACKFILL AND BEDDING SPECIFICATION

BACKFILL

- THE FILL MATERIAL SHALL BE FREE OF ROCKS, FROZEN LUMPS AND FOREIGN MATTER THAT COULD CAUSE HARD SPOTS IN BACKFILL OR THAT COULD DECOMPOSE AND CREATE VOIDS.
- BACKFILL MATERIAL SHALL BE A WELL GRADED GRANULAR MATERIAL.
- HIGHLY PLASTIC SILTS, HIGHLY PLASTIC CLAYS, ORGANIC SILTS, ORGANIC CLAYS AND PEATS SHALL NOT BE USED AS BACKFILL MATERIALS.
- BACKFILL SHALL BE PLACED SYMMETRICALLY ON EACH SIDE OF THE STRUCTURE IN SIX- INCH TO EIGHT-INCH LOOSE LAYERS TO ONE FOOT ABOVE THE TOP OF THE PIPE. EACH LAYER IS TO BE COMPACTED TO THE SPECIFIED DENSITY (MINIMUM 90%) BEFORE PLACING THE NEXT LAYER. REFERENCE ASTM A700.
- RETENTION/RECHARGE SYSTEMS
- BACKFILL SHALL BE A-1 (AASHTO M-145) OR A-2, A-3 PER MSHA MOOD.01.
- STORM SEWERS/CULVERTS
- BACKFILL SHALL BE WELL GRADED MATERIAL AS DESCRIBED IN 1.5 OR MAY INCLUDE A-2-4 PER MSHA MOOD.01.

BEDDING

- THE BED SHALL BE PLACED TO UNIFORM GRADE AND LINE TO ENSURE GOOD VERTICAL ALIGNMENT AND TO AVOID EXCESSIVE STRESSES AT PIPE JOINTS. THE BEDDING SHALL BE FREE OF ROCK FORMATIONS, PROTRUDING STONES, FROZEN LUMPS, ROOTS AND OTHER FOREIGN MATERIAL. THE BEDDING FOUNDATION MUST BE A STABLE, WELL GRADED GRANULAR MATERIAL. ANY MATERIAL THAT HAS INADEQUATE BEARING CAPABILITY MUST BE REMOVED AND REPLACED WITH A COMPACTED SELECT FILL APPROVED BY THE ENGINEER.
- MATERIALS DESCRIBED IN 1.5 AND 1.6 ARE ACCEPTABLE.

Stormceptor® Order Request Form

Contractor Information
Name: CONSOLIDATED CONSTRUCTION SERVICES
Address: 542 MAIN ST.
City: GLYDON
State: MD
Zip Code: 21071
Contact: _____
Phone: _____
Fax: _____

Owner Information
Name: GRACE PROPERTY LLC
Phone: 410-740-2100
Fax: 410-740-0114

Stormceptor® Model:
900 3600
1200 4800
1800 6000
2400 7200

Insert Size:
22"
32"
44"
Custom

Manhole Number: 5-3
Top Elevation (ft): 280.07
Inlet Pipe Invert (ft): 281.02
Outlet Pipe Invert (ft): 280.80
Pipe Type: Conc. PVC CMP
Pipe Inside Diameter (in) [ID]: 18
Pipe Outside Diameter (in) [OD]: 18

Project Name: GRACE PROPERTY, PARCEL 81, HOWARD COUNTY, MARYLAND
Approximate time frame until required delivery (weeks): _____
Delivery Address: Street: GRACE DRIVE
City: COLUMBIA State: MD Zip Code: 21044
Designer Company: CLARK, FINEFROCK & SACKETT, INC.
Designer Contact: TRIP DONOHAN Phone: 410-381-7800 Fax: 410-381-7633

Please fax this sheet back to Hydro Conduit/Virginia Precast at (804) 798-3426
Attn: Scott Crumpler / Bryant Lowery (Phone: 1-800-999-2278)
For credit information/application contact Carole Broadus at (804) 798-6068
For Technical Assistance Please Call Stormceptor Corporation at (301) 762-8361 or toll free at 1 (800) 762-4703

* TO BE INCLUDED ON SWM PLAN BY DESIGNER

B-2 BORING LOG

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION Page 1 of 2

Project Name: Popo Property Location: Howard County, Maryland Boring # B-2 Job # 98008A

ELEV.	SOIL DESCRIPTION	DEPTH (FEET)	SCALE	CON	SAMPLE NO.	REC.	NOTES
281.75	SURFACE	0.0					Order 5.5' towards house
281.75	Orange to brown, moist, medium stiff sand and clay with quartz rock fragments, trace organic (S)	1-3.4	D		1	12"	1' Topsoil
281.75		3-4.6	D		2	16"	No groundwater encountered while drilling
281.75		14-20-24	D		3	14"	Caved in at 16.5' at Completion
281.75		16-16-20	D		4	14"	Caved in at 15' after 48 hours
281.75		4-7-32	D		5	16"	
281.75		12-15-23	D		6	16"	

SAMPLER TYPE: OVERHEAD SPOOL UNLESS OTHERWISE NOTED
SAMPLE CONDITIONS: C-ORIENTED UNLESS OTHERWISE NOTED
GROUND WATER DEPTH: AT COMPLETION
BORING METHOD: HSA-HOLLOW STEEL AUGERS

B-3 BORING LOG

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION Page 1 of 2

Project Name: Popo Property Location: Howard County, Maryland Boring # B-3 Job # 98008A

ELEV.	SOIL DESCRIPTION	DEPTH (FEET)	SCALE	CON	SAMPLE NO.	REC.	NOTES
281.75	SURFACE	0.0					Order at 5.5' East
281.75	Topsoil	1.0	D		1	14"	1.0' Topsoil
281.75	Brown, very moist, silt sandy soil, little mica with some (S)	2-2-3	D		2	12"	Groundwater encountered at 18.0' while drilling
281.75	Brown, clay, medium dense to dense quartz rock fragments, little silt and sand (S)	7-9-7	D		3	4"	Caved in at 17.0' at Completion
281.75		23-20-18	D		4	12"	Caved in at 7' after 48 hours
281.75		6-7-7	D		5	16"	
281.75		13-23-28	D		6	16"	

SAMPLER TYPE: OVERHEAD SPOOL UNLESS OTHERWISE NOTED
SAMPLE CONDITIONS: C-ORIENTED UNLESS OTHERWISE NOTED
GROUND WATER DEPTH: AT COMPLETION
BORING METHOD: HSA-HOLLOW STEEL AUGERS

B-4 BORING LOG

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION Page 2 of 2

Project Name: Popo Property Location: Howard County, Maryland Boring # B-2 Job # 98008A

ELEV.	SOIL DESCRIPTION	DEPTH (FEET)	SCALE	CON	SAMPLE NO.	REC.	NOTES
281.75	Change to green, moist to dry, dense to very dense silty sand (SM) (Loamy Sand)	6-5-9	D		7	14"	
281.75		28-45-41	D		8	14"	
281.75	Bottom of Test Hole at 26.5'	26.5					

SAMPLER TYPE: OVERHEAD SPOOL UNLESS OTHERWISE NOTED
SAMPLE CONDITIONS: C-ORIENTED UNLESS OTHERWISE NOTED
GROUND WATER DEPTH: AT COMPLETION
BORING METHOD: HSA-HOLLOW STEEL AUGERS

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION Page 2 of 2

Project Name: Popo Property Location: Howard County, Maryland Boring # B-3 Job # 98008A

ELEV.	SOIL DESCRIPTION	DEPTH (FEET)	SCALE	CON	SAMPLE NO.	REC.	NOTES
281.75	Greenish brown, moist to wet, medium dense to dense micaceous silty sand (SM) (Loamy Sand)	7-28-14	D		7	10"	
281.75	Bottom of Test Hole at 21.5'	21.5					

SAMPLER TYPE: OVERHEAD SPOOL UNLESS OTHERWISE NOTED
SAMPLE CONDITIONS: C-ORIENTED UNLESS OTHERWISE NOTED
GROUND WATER DEPTH: AT COMPLETION
BORING METHOD: HSA-HOLLOW STEEL AUGERS

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD 21045 • (410) 381-7500 BALT. • (301) 621-8100 WASH.

DESIGNED: TD
DRAWN: BLP
CHECKED: _____
DATE: JAN. 1998

STORMWATER MANAGEMENT DETAILS
GRACE PROPERTY
TAX MAP 35 PARCEL 81
FIFTH (5th) ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN
DRAWING: 6 of 10
JOB NO.: 96-121
FILE NO.: 96-121-X

FOR: LAND DESIGN & DEVELOPMENT, INC.
10805 HICKORY RIDGE ROAD, SUITE 215
COLUMBIA, MARYLAND 21044
PHONE: 703-442-8932

SDP-98-92