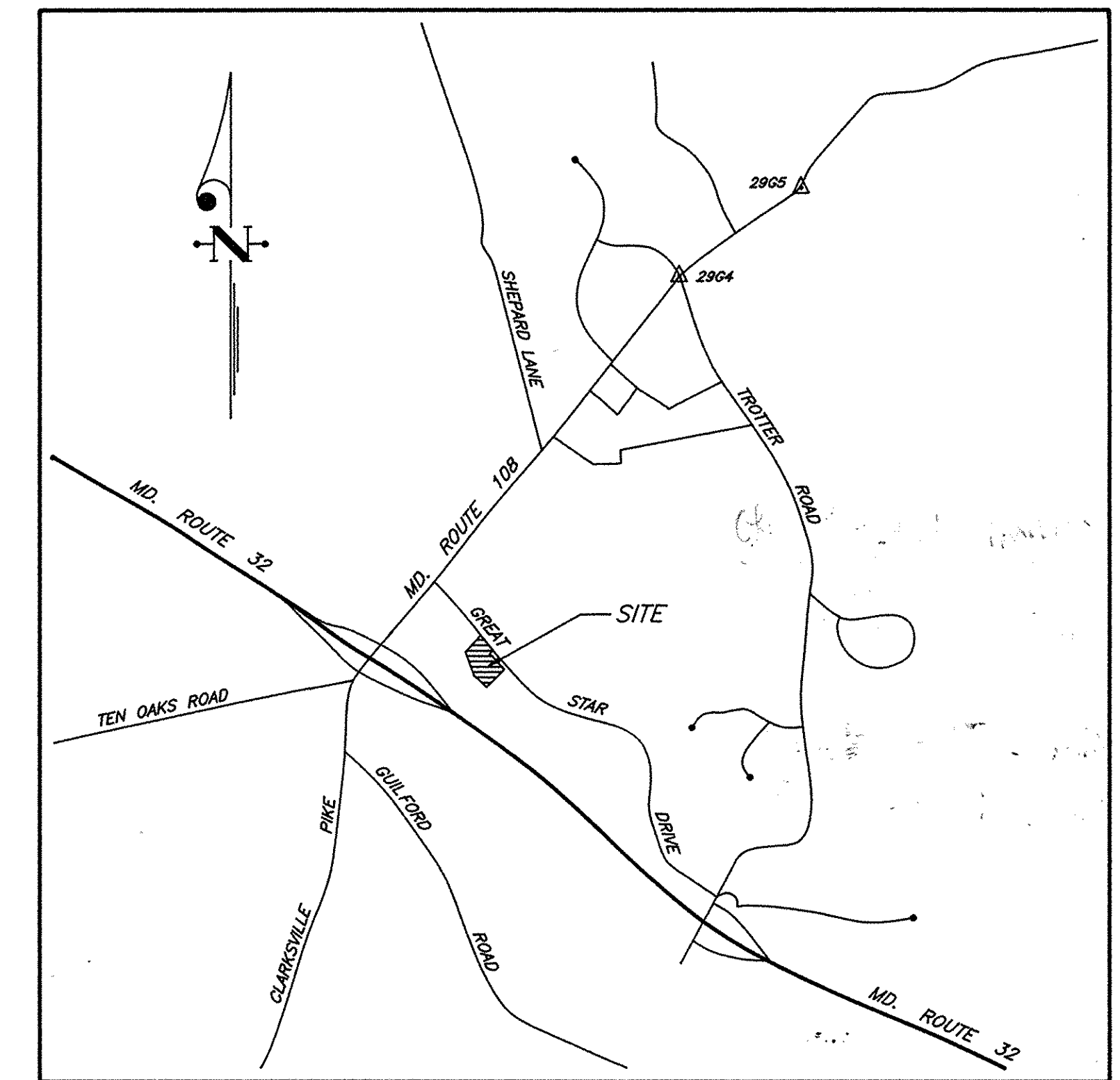


COLUMBIA VILLAGE OF RIVER HILL SECTION 4 AREA 1

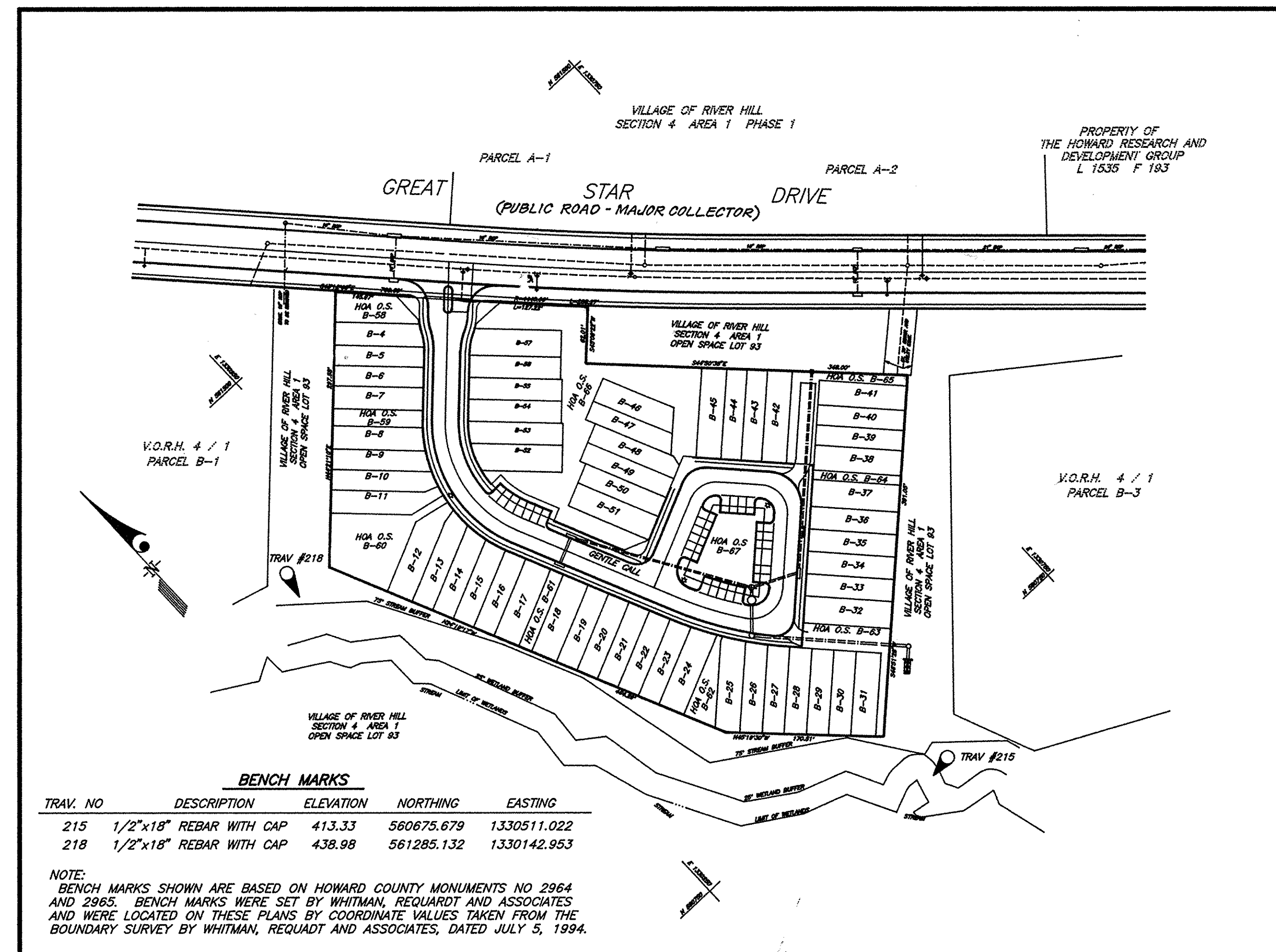


VICINITY MAP
SCALE: 1" = 2,000'

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 at least five (5) working days prior to the start of work.
3. The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work.
4. Project Background:
Zoning: FDP Phase 222-A, Part 1, New Town- S.F.A.
Total Tract Area: 5.1 Ac
Number of Proposed lots: 54 Buildable, 10 Open Space
5. Preliminary Plan Reference: #SP-97-06
6. Other County File Nos.:
S 93-21, P-95-10, WP 95-78, WP 95-32,
WP 95-114, F 96-89, F 96-110
7. 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.
8. Topographic survey was field run at 2' contour intervals by Clark, Finefrock & Sackett, Inc., dated December 1996.
9. Horizontal and vertical control based on Howard County Control Stations 29GA, elev. 450.70 and 29G5, elev. 388.12.
10. Street lights will be required in this development in accordance with the Design Manual. Street light placement and the type of fixture and pole selected shall be in accordance with the latest Howard County Design Manual, Volume III (1993) and as modified by "Guidelines for Street Lights in Residential Developments (June 1993). The June 1993 policy includes guidelines for lateral and longitudinal placement. A minimum spacing of 20' shall be maintained between any street light and any tree.
11. Public water and sewer are to be utilized.
Contract # 34-3524-D
Middle Patuxent Drainage Area
12. Stormwater Management for this project is being provided off site for quantity under F-96-110. Quality Control for this site is proposed by a system known as "Stormceptors".
13. The following studies were prepared and approved under F-96-100:
a. Floodplain Study by Whitman Requardt & Assoc - 1/20/95
b. Wetland Delineation by Exploration Research, Inc. - 1/20/95
c. Noise Study by Stalano Engineering, Inc. - 1/20/95
d. Traffic Study by Wells & Associates - 1/20/95
e. Geotechnical report by Robert Baltor Inc.
14. Existing utilities & improvements shown are taken from available records.
15. 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
16. All compacted fill shall be in accordance with AASHTO T-180 requirements.
17. All fillet radii are 5 ft. unless indicated otherwise.
18. Sag and crest vertical curves were designed in accordance with "Howard County Design Manual, Vol. III.
19. Concrete sidewalk ramps shall be provided at all intersections and as indicated on the plans. The ramps shall conform to the Americans with Disabilities Act (ADA) 1992, and shall be constructed in accordance with "Howard County Design Manual", Vol. IV.
20. Street tree locations shown are tentative and are to be used for bond purposes only. The final location and variety of trees may vary to accommodate field conditions and builder landscape program.
21. 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.
22. Street Tree & Landscape Bonding
a. Final location of street trees and design of required internal landscaping and buffers shall be prepared in accordance with the New Town Alternative Compliance Provision of the Landscape Manual and shall be specified, approved and bonded under the builder's site and landscape plans.
b. Street trees shown are for bond purposes only and are included in the cost estimate and engineering fee submitted with these road construction plans.

* To allow limited grading within the stream and wetland buffers for storm drainage construction.



SHEET INDEX	
SHEET	DESCRIPTION
1	COVER SHEET
2	ROAD CONSTRUCTION PLAN AND ROAD PROFILE
3	STORM DRAIN PROFILES AND DETAILS
4	PAVING DETAILS
5	SEDIMENT EROSION CONTROL AND GRADING PLAN
6	SEDIMENT AND EROSION CONTROL DETAILS

ROAD CONSTRUCTION PLANS LOTS B-4 THRU B-67



7-3-97

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Jamel 7-28-97
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
Cathy Hamilton 7/29/97
CHIEF, DIVISION OF LAND DEVELOPMENT

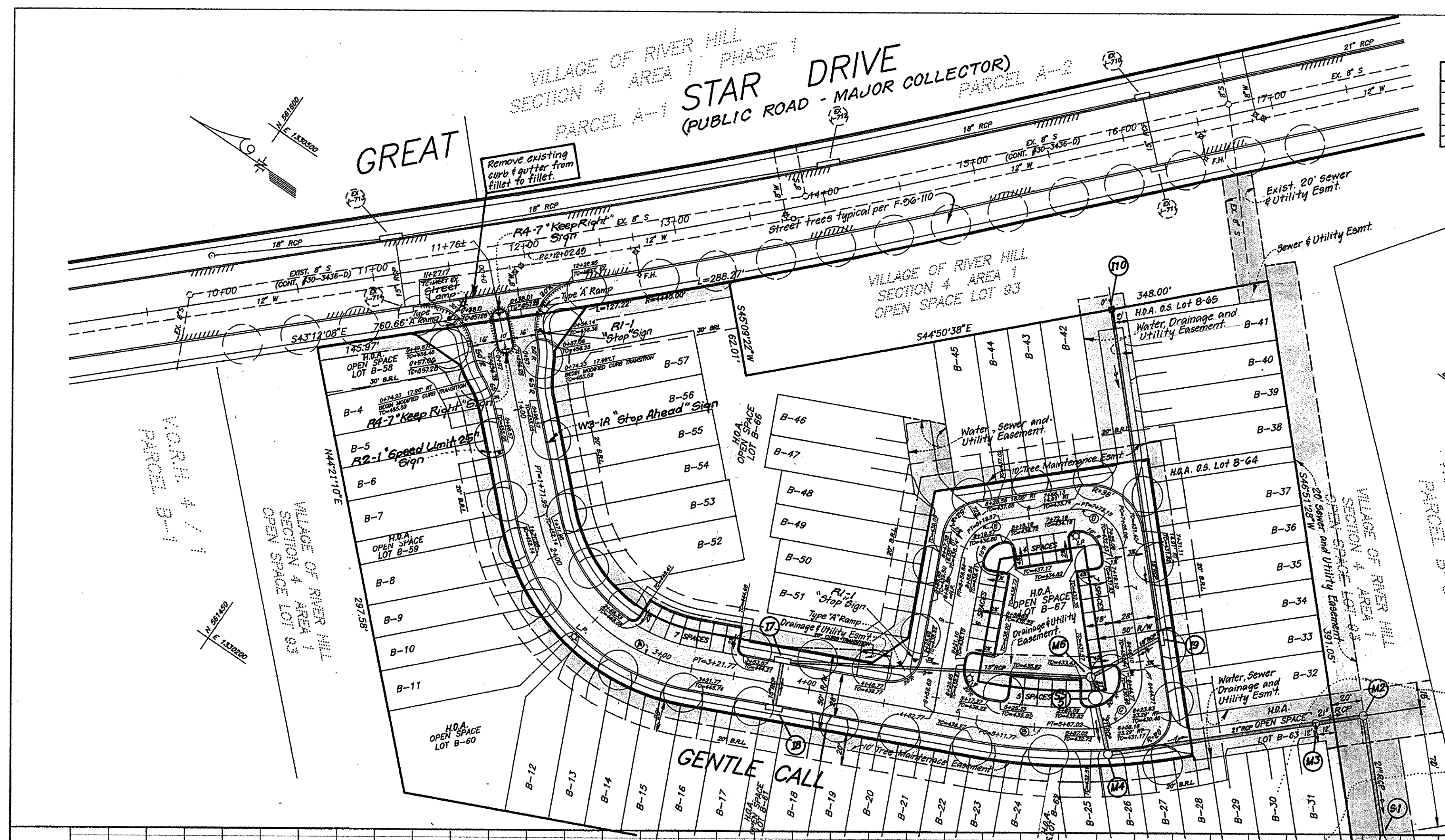
APPROVED: *[Signature]* 7/29/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION

OWNER:
HOWARD RESEARCH AND DEVELOPMENT, CO.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

C:\ZM\186185\COVER

CLARK • FINEFROCK & SACKETT, INC. ENGINEERS • PLANNERS • SURVEYORS 7135 MINSTREL WAY • COLUMBIA, MD. 21045 • (410) 381-7500 - BALTO. • (301) 621-8100 - WASH.		
DESIGNED DAB	COVER SHEET LOTS B-4 THRU B-67 AND OPEN SPACE LOTS B-58 THRU B-67 A RESUBDIVISION OF PARCEL B-2 COLUMBIA VILLAGE OF RIVER HILL SECTION 4 AREA 1 TAX MAP 35, GRID 7, PARCELS 3.22 & 59 FIFTH (5TH) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE 1"=100'
DRAWN ZAH		DRAWING 186
CHECKED [Signature]		JOB NO. 96-191
DATE 7-3-97	FOR: TROUTMAN COMPANY 8815 CENTRE PARK DRIVE, SUITE 104 COLUMBIA, MARYLAND 21045	FILE NO. 96-191-D

F97.168



CENTERLINE CURVE DATA						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
A	125.00'	149.82'	85.39'	141.02'	S10°00'57" W	68°40'27"
B	375.00'	75.25'	37.75'	75.12'	S30°04'12" E	11°29'49"
C	34.00'	57.75'	38.65'	51.08'	S84°28'48" E	97°13'28"
D	30.00'	47.12'	30.00'	42.43'	N01°51'28" E	90°00'00"
E	30.00'	37.27'	21.47'	34.92'	N78°43'55" W	71°10'45"

STREET LIGHT INFORMATION
 LIGHT TYPE TO BE 110 WATT HIGH PRESSURE SODIUM VAPOR MODERN POST TOP FIXTURES (BRONZE) MOUNTED ON A 1 1/2" BRONZE FIBERGLASS EMBEDDED POLE 5 FEET FROM FACE OF CURB UNLESS OTHERWISE NOTED.
 NOTE: 20' MINIMUM SPACING BETWEEN STREET LIGHTS AND STREET LIGHTS.

STREET LIGHT LOCATION CHART	
STREET NAME	STATION / OFFSET
GENTLE CALL	2+47.58 17' 0/3 RIGHT
GENTLE CALL	7+72.09 17' 0/3 LEFT
GENTLE CALL	8+34.89 18.6' 0/5 LEFT

CURB LEGEND
 STANDARD 6" CURB AND GUTTER
 STANDARD 7" CURB AND GUTTER
 MODIFIED CURB AND GUTTER

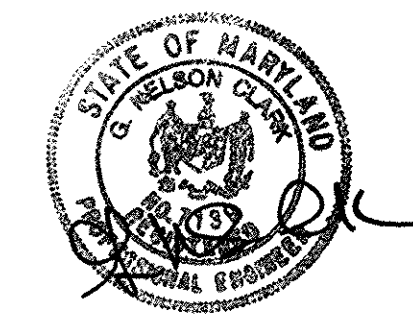
ENGINEER'S CERTIFICATE
 I hereby certify that this plan for Sediment and Erosion Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
G. NELSON CLARK 5-7-97
 G. NELSON CLARK DATE

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."
Clark 5-7-97
 NAME DATE

OWNER:
 HOWARD RESEARCH AND DEVELOPMENT, CO.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 C:\ZAH\98185\STORAGE

Reviewed for HOWARD S.C.D. and meets Technical Requirements
Charles Summers 7/2/97
 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.
John P. Robinson 7/2/97
 Approved



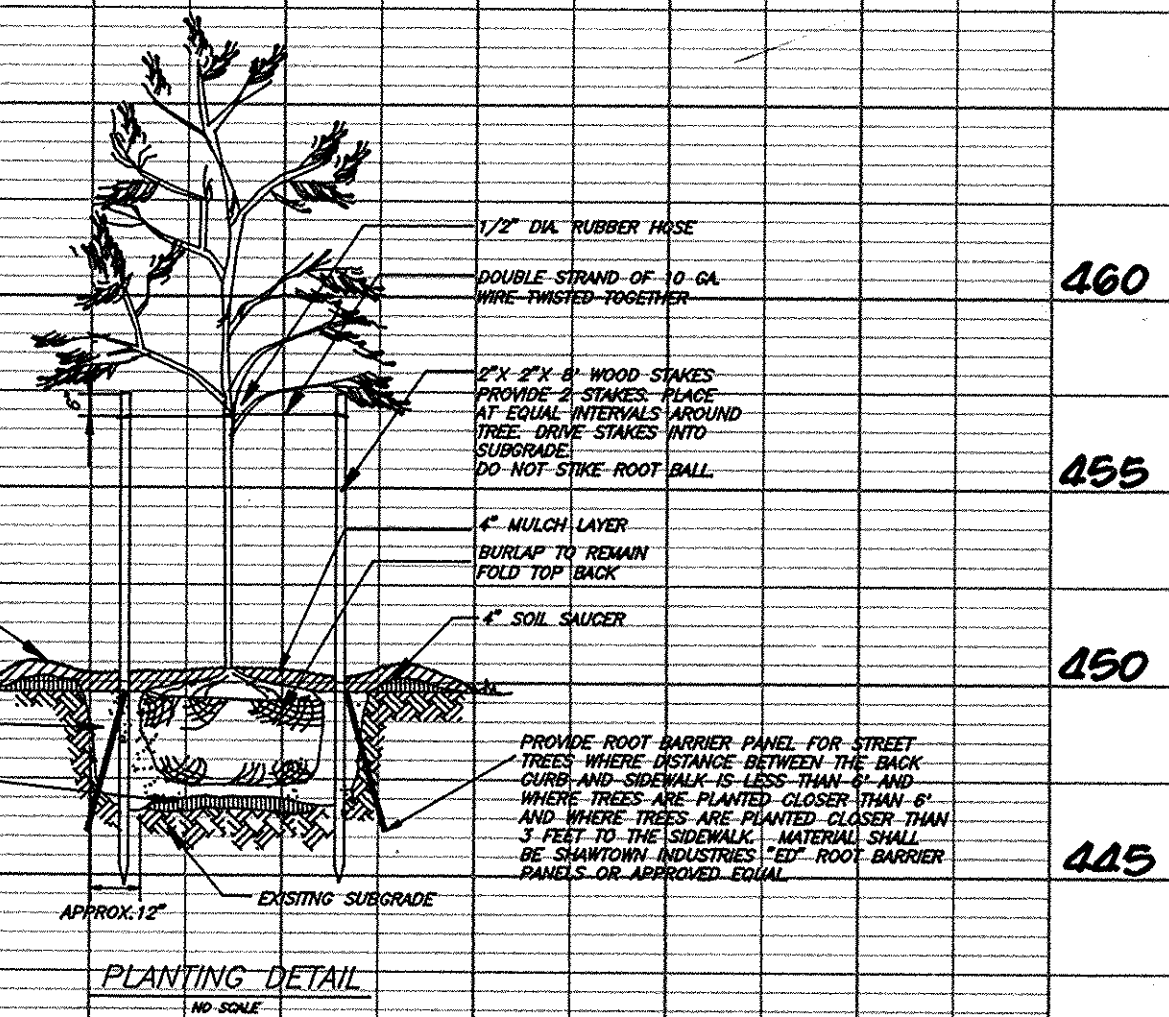
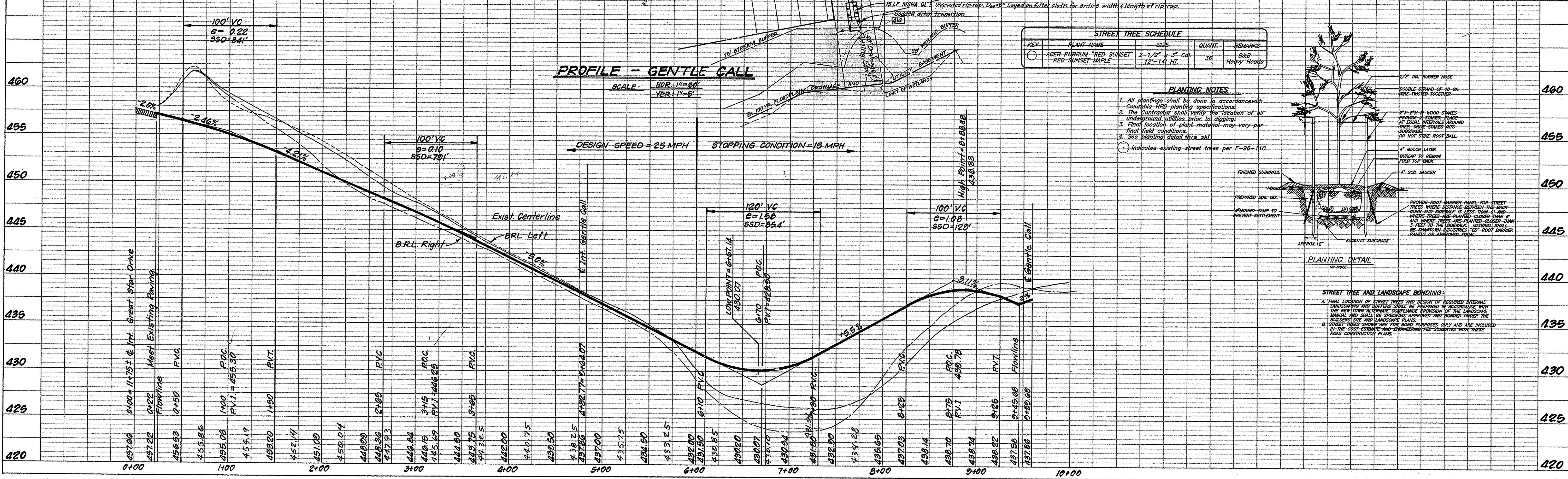
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Dore 7-28-97
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
Cindy Hammit 7/2/97
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

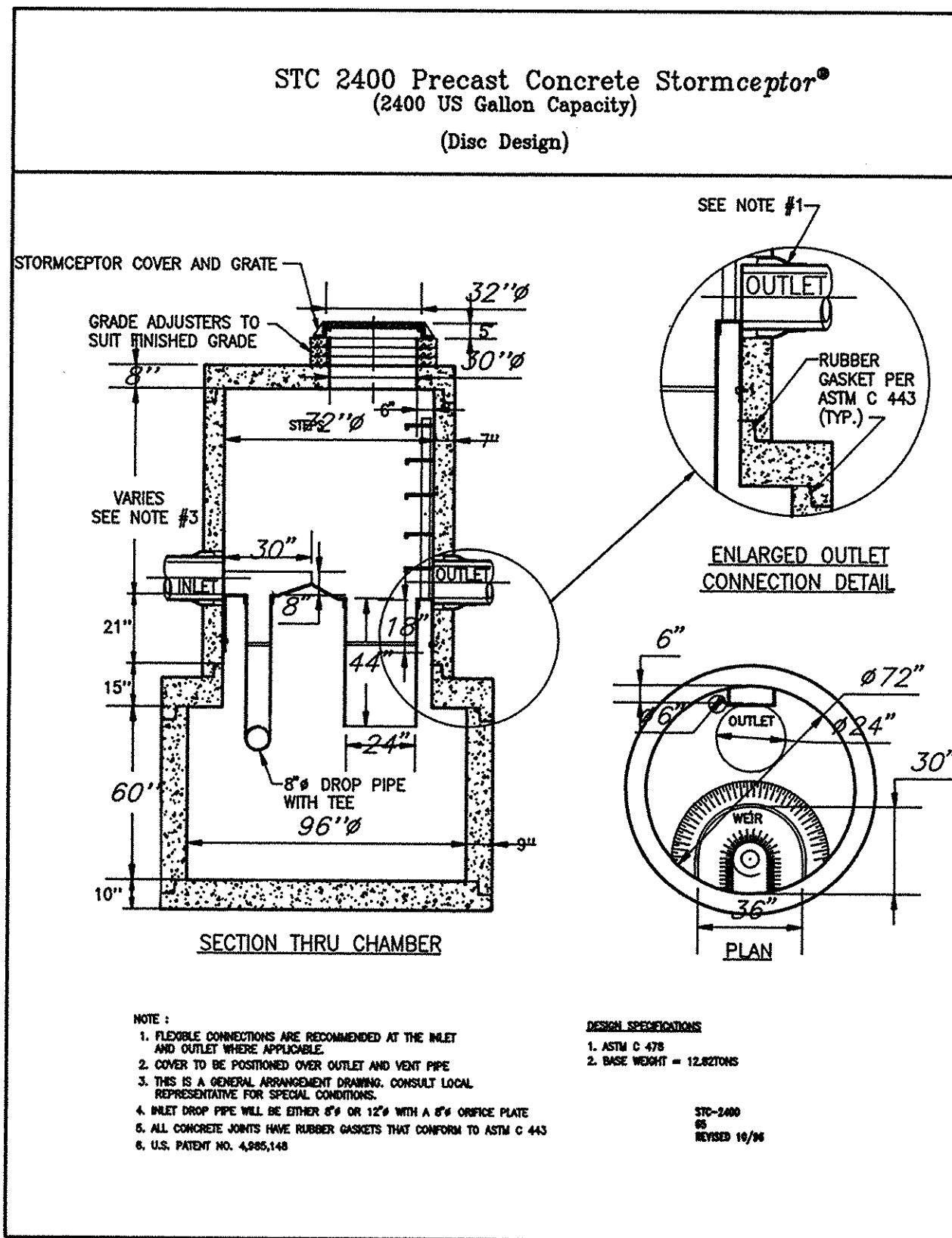
APPROVED: 7/28/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

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

DESIGNED	STORM DRAINAGE AND ROAD CONSTRUCTION PLAN AND PROFILE FOR GENTLE WAY LOTS B-4 THRU B-7 AND OPEN SPACE LOTS B-58 THRU B-67 A RESUBDIVISION OF PARCEL B-2 COLUMBIA VILLAGE OF RIVER HILL SECTION 4 AREA 1 TAX MAP 35, GRID 7, PARCELS 3, 22 & 59 FIFTH (5TH) ELECTION DISTRICT HOWARD COUNTY, MARYLAND FOR: TROUTMAN COMPANY 8815 CENTRE PARK DRIVE, SUITE 104 COLUMBIA, MARYLAND 21045	SCALE
DRAWN		AS SHOWN
ZAH		DRAWING
CHECKED		2 of 6
DATE		JOB NO.
7-3-97	98-191	FILE NO.
		96-191-D



STREET TREE AND LANDSCAPE BONDING:
 A. FINAL LOCATION OF STREET TREES AND DESIGN OF REQUIRED INTERNAL LANDSCAPING AND BUFFERING SHALL BE PREPARED IN ACCORDANCE WITH THE NEW TOWN ALTERNATE COMPLIANCE PROVISION OF THE LANDSCAPE MANUAL AND SHALL BE SPECIFIED, APPROVED AND BONDING UNDER THE BUILDERS SITE AND LANDSCAPE PLANS.
 B. STREET TREES SHOWN ARE FOR BONDING PURPOSES ONLY AND ARE INCLUDED IN THE COST ESTIMATE AND ENGINEERING FEE SUBMITTED WITH THESE ROAD CONSTRUCTION PLANS.



- MAINTENANCE NOTES**
(WATER QUALITY STRUCTURE WASTE)
- 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.
 - THE STORMCEPTOR WATER QUALITY STRUCTURE SHALL BE CHECKED AND CLEANED IMMEDIATELY AFTER PETROLEUM SPILLS. THE OWNER SHALL CONTACT THE APPROPRIATE REGULATORY AGENCIES.
 - 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.
 - 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.
 - THE OWNER SHALL RETAIN AND MAKE THE STORMCEPTOR INSPECTION/MONITORING FORMS AVAILABLE TO HOWARD COUNTY OFFICIALS UPON THEIR REQUEST.

- CONSTRUCTION NOTES**
- 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.
 - ALL OPENINGS TO STRUCTURES SHALL BE PROTECTED WITH THE APPROPRIATE SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.
 - THE STORMCEPTOR MUST BE PUMPED OUT AND CLEANED AT THE END OF THE CONSTRUCTION PHASE OF THE PROJECT.

- RECOMMENDED INSPECTION NOTES: PRECAST CONCRETE STORMCEPTOR**
- 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).
 - THE HO. CO. CONSTRUCTION DIVISION INSPECTOR SHOULD BE NOTIFIED AT (313-1880) EACH OF THE FOLLOWING STAGES:
 - APPROVAL OF SUBGRADE: PREPARE A COMPACTED GRAVEL BED AT THE BOTTOM OF THE EXCAVATION (6" DEEP). ENSURE PROPER COMPACTON OF BASE.
 - 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 PERSONWAY, LEVELING RINGS AND MANHOLE FRAME AND COVER.
 - 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.
 - 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.
 - FINAL INSPECTION.

Reviewed for: HOWARD S.C.D. and meets Technical Requirements
Signature: [Signature] Date: 7/15/97
U.S. Natural Resources Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Approved: [Signature] Date: 7/15/97
John K. Liberton

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Signature: [Signature] Date: 7-28-97
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
Signature: [Signature] Date: 7/29/97
CHIEF, DIVISION OF LAND DEVELOPMENT

CHIEF, DEVELOPMENT ENGINEERING DIVISION

AS MANUFACTURED BY CSR-HYDRO CONDUIT AND STORMCEPTOR CORPORATION. MODEL STC-2400, PRECAST CONCRETE

FOR TECHNICAL INFORMATION CALL STORMCEPTOR AT 301-762-8361. TO ORDER CONTACT CSR-HYDRO CONDUIT REPRESENTATIVE, AT 908-277-2420 OR FAX ORDER TO 908-277-3006.

STRUCTURE SS-5
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 EQUIPMENT		
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 STAGE. CALL 313-1880 PRIOR TO 12:00 NOON ON THE PROCEEDING DAY TO ARRANGE FOR NOTIFICATION/INSPECTION.

- INSTALLATION INSTRUCTIONS**
PRECAST CONCRETE STORMCEPTOR
- PRIOR TO THE START OF INSTALLING THE STORMCEPTOR, HOWARD COUNTY CONSTRUCTION DIVISION INSPECTOR MUST BE CALLED 48 HOURS IN ADVANCE (PRE-CONSTRUCTION MEETING).
 - THE COUNTY INSPECTOR MUST BE NOTIFIED AT EACH OF THE FOLLOWING STAGES MARKED WITH A DOUBLE STAR (***) AND CONDITIONS SHOULD BE DOCUMENTED WITH PHOTOS, IF INSPECTOR IS NOT AVAILABLE.

- 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 OR SHORING AS NEEDED.
- 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.
- SECURE INSPECTOR APPROVAL OF SUBGRADE AND SUBBASE. ALL LIFTING APPARATUS IS TO BE PROVIDED BY THE INSTALLATION CONTRACTOR.
- 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 CRANE, LIFT AND PLACE THE BASE SECTION OF THE STORAGE CHAMBER IN THE EXCAVATED HOLE ON THE SUBBASE. MAKE SURE THAT THE BASE IS LEVEL. SPECIFIC ALIGNMENT OF THIS PART IS NOT REQUIRED. INSTALL RUBBER GASKET ON BASE UNIT AND COAT WITH LUBRICATING GREASE (PROVIDED IN SHIPMENT), IF NOT PRELUBRICATED. INSTALL ADDITIONAL STORAGE CHAMBER SECTIONS, AS REQUIRED (PROCEDURE IS SAME AS STEP 8). (FOR STORMCEPTOR MODELS STC-900, STC-1200 AND STC-1800 SKIP STEP 5 AND GO TO STEP 6)

- 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).
- 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 V-SHAPED FIBERGLASS WEIRS (INSIDE INSERT). INSTALL RUBBER GASKET ON TOP OF BYPASS SECTION AND COAT WITH LUBRICATING GREASE, IF NOT PRELUBRICATED.
- INSTALL STORMCEPTOR DROP PIPES ACCORDING TO STC PIPE INSTALLATION PROCEDURE ON REVERSE SIDE OF THESE INSTRUCTIONS.
- 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. ALIGN STEPS ABOVE INLET INSPECTION PORT. NOTE, FOR SHALLOW INSTALLATIONS THIS SECTION MAY NOT BE REQUIRED.

- 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).
- 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.
- INSTALL AND SET GRADE ADJUSTING RINGS, AS NEEDED. PLUG ALL LIFT HOLES WITH TAPERED FLEXIBLE PLUG AND KNOCK IN TO PLACE. PLUGS IN STORAGE CHAMBER MUST BE GROUTED INSIDE AND OUTSIDE WITH GROUT.
- INSTALL AND SET STORMCEPTOR FRAME AND COVER.
- 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 PROCEDURES: 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 SCREW AT THE TOP. TIGHTEN THE PIPE CLAMP SCREW TO 80 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.
- THE STORMCEPTOR SHOULD BE PUMPED OUT WHEN THE SEDIMENT CONTROL MEASURES ARE REMOVED (SITE PERMANENTLY STABILIZED).
- 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.

Precast Concrete Stormceptor® Order Request Form

CONTRACTOR INFORMATION

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

OWNER INFORMATION

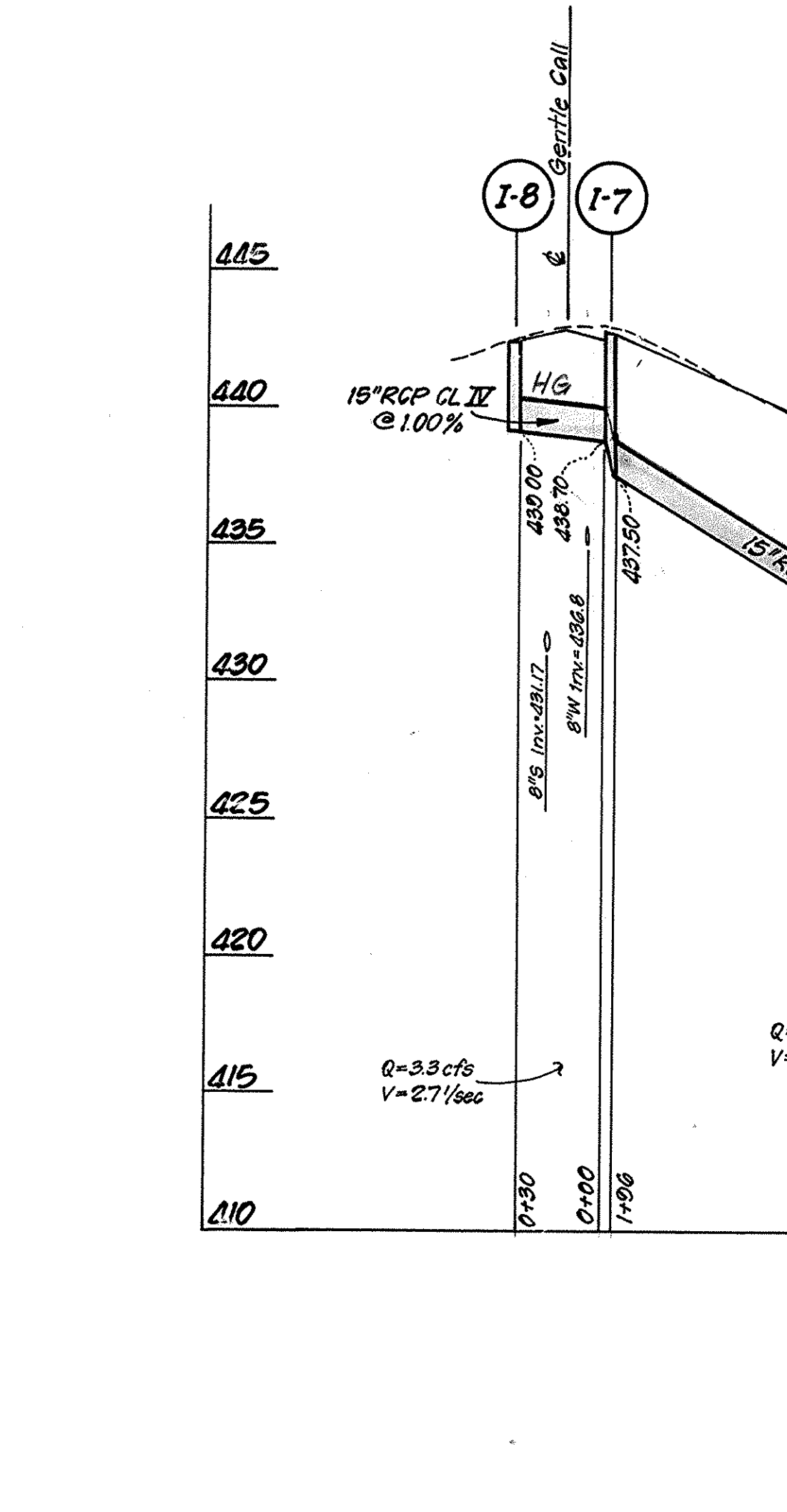
Name: TROUTMAN COMPANY
Phone: 410-238-7095
Fax: 410-992-5951

IMPERVIOUS DRAINAGE AREA FOR THIS UNIT: 1.78 AC.

Stormceptor® Model	Insert Size	Disc
STC X STCL	DISC	<input type="checkbox"/>
900 <input type="checkbox"/> 3600 <input type="checkbox"/>	22" <input type="checkbox"/>	<input type="checkbox"/>
1200 <input type="checkbox"/> 4800 <input type="checkbox"/>	32" <input type="checkbox"/>	<input type="checkbox"/>
1800 <input type="checkbox"/> 6000 <input type="checkbox"/>	44" <input type="checkbox"/>	<input type="checkbox"/>
2400 <input checked="" type="checkbox"/> 7200 <input type="checkbox"/>	CUSTOM <input type="checkbox"/>	<input type="checkbox"/>

Project Name: VILLAGE OF RIVERHILL SECTION 4 AREA 1 PARCEL B-2
Approximate time frame of delivery (weeks): _____
Delivery Address: Street _____
City: _____ State: _____ Zip Code: _____
Designer Company: CLARK, FINEFROCK AND SACKETT, INC.
Designer Contact: DAVID BAUER Phone: 410-381-7500 Fax: 410-381-7533

PLEASE FILL OUT COMPLETELY AND FAX TO: CSR Hydro Conduit
ATTN: ED O'MALLEY FAX: (703) 922-3659, PHONE: (703) 971-1900
FOR TECHNICAL ASSISTANCE PLEASE CALL MIKE BARG, PHONE (703) 971-1900



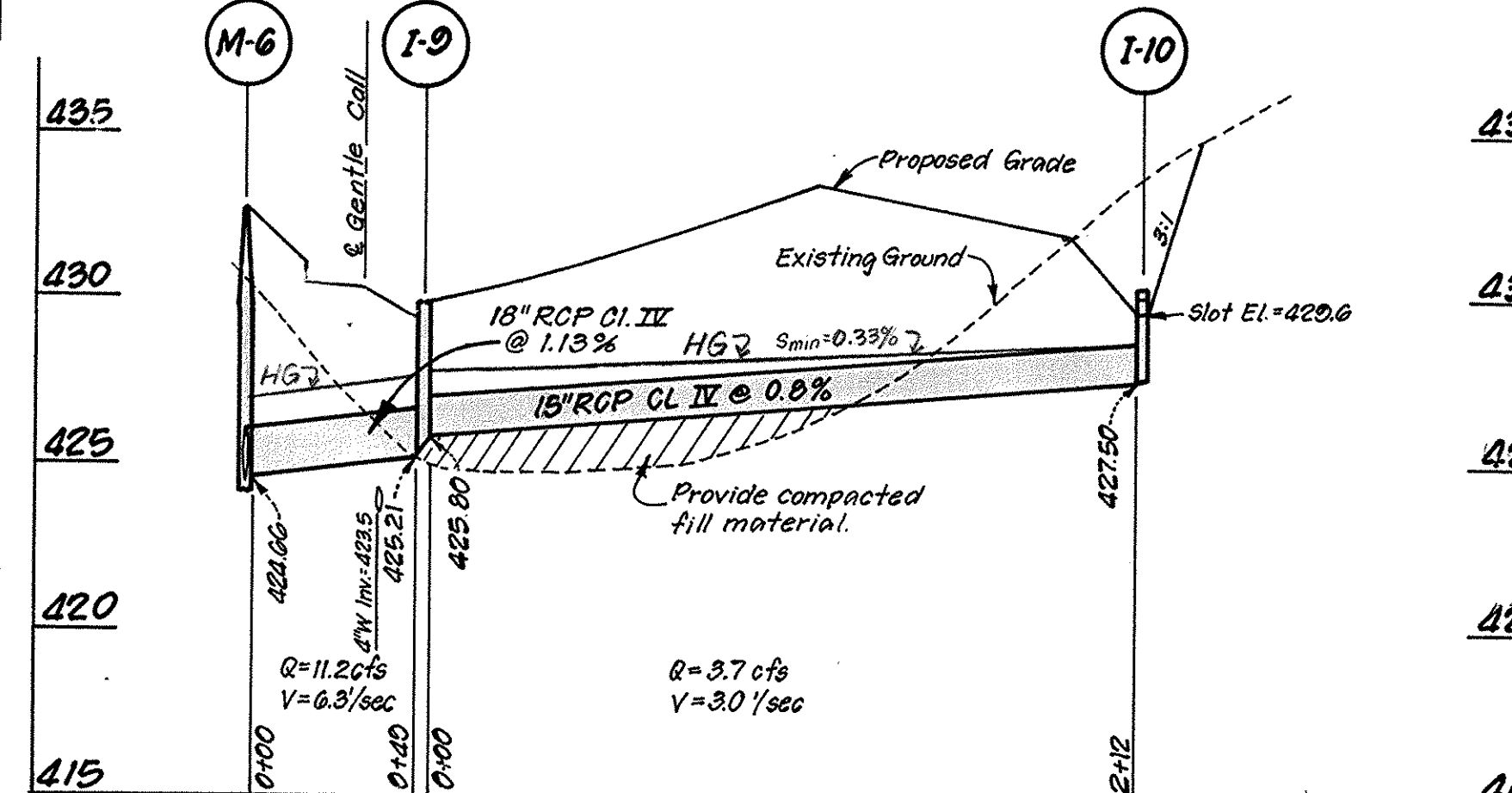
STRUCTURE SCHEDULE

No	TYPE	INVERT		TOP ELEVATION		REMARKS	LOCATION
		IN	OUT	UPPER	LOWER		
S-1	End Section 21" dia.	414.20	414.14			Ho. Co. Std. SD-5.52	See Plan
M-2	Shallow Brick Manhole 4' dia.	415.25	415.11	Top = 420.00		Ho. Co. Std. G-5.05	See Plan
M-3	Precast Manhole 48" dia.	421.00	419.00	Top = 421.30		Ho. Co. Std. G-6.12	See Plan
M-4	Precast Manhole 48" dia.	423.67	423.57	Top = 432.00		Ho. Co. Std. G-6.12	Gentle Call & Sta. 5+92.03 10.14' Rt. & str.
S-5	"Stormceptor" STC 2400	424.10	424.02	Top = 432.60		See special detail this sheet	Gentle Call & Sta. 5+94.84 20' Lt. & str.
M-6	Precast Manhole 48" dia.	424.66	424.21	Top = 432.90		Ho. Co. Std. G-6.12	Gentle Call & Sta. 5+87.02 34' Lt. & str.
I-7	A-10 Inlet Precast	436.70	437.5			Ho. Co. Std. SD 4.1	Gentle Call & Sta. 3+79.27 18' Lt. Face Curb
I-8	A-10 Inlet Precast	425.80	425.2	425.93	425.93	Ho. Co. Std. SD 4.1	Gentle Call & Sta. 3+78.27 18' Lt. Face Curb
I-9	"D" Inlet Grate	427.50	427.50	Top = 430.43		Ho. Co. Std. SD 4.11	See Plan

* Cast inlet frame in 4" top slab per Ho. Co. Std. "D" Inlet SD 4.11

PIPE SCHEDULE

SIZE	TYPE	LENGTH
15"	RCP CL II	438'
18"	RCP CL II	49'
21"	RCP CL II	280'



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: [Signature] Date: 5-7-97
G. NELSON CLARK

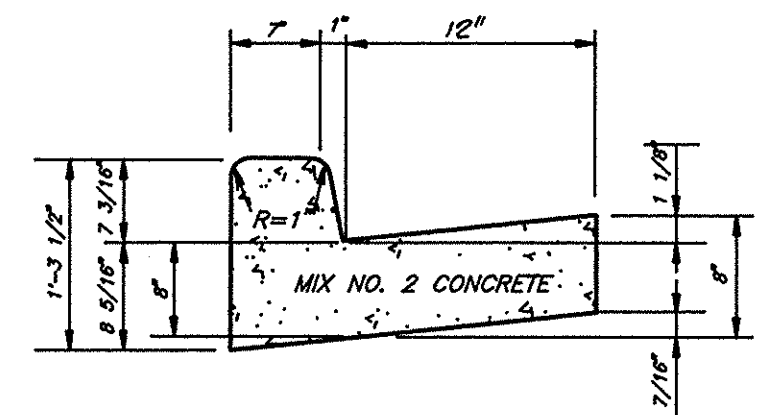


CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD. 21045 • (410) 381-7500 • BALTO. • (301) 621-8100 • WASH.

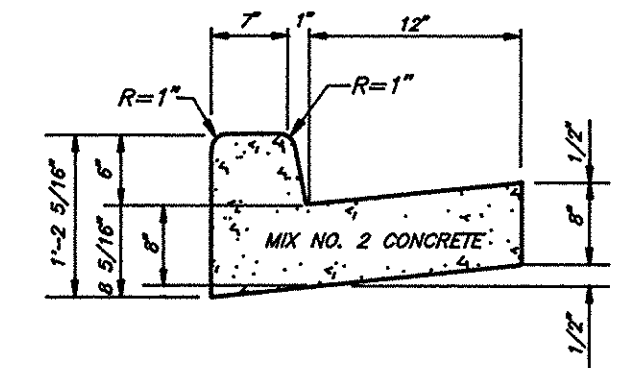
DESIGNED: DAB
DRAWN: ZAH
CHECKED: UHA
DATE: 7-3-97

SCALE: AS SHOWN
DRAWING: 3 of 6
JOB NO.: 96-191
FILE NO.: 06-191-D

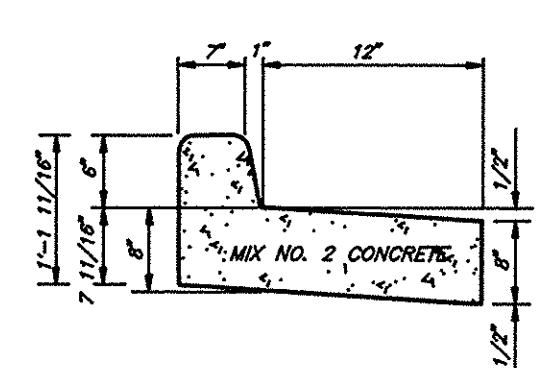
STORM DRAIN PROFILES AND STORMCEPTOR DETAIL
LOTS B-4 THRU B-7 AND OPEN SPACE LOTS B-58 THRU B-67
A RESUBDIVISION OF PARCEL B-2
COLUMBIA VILLAGE OF RIVER HILL
SECTION 4 AREA 1
TAX MAP NO. GR-2; PARCELS 3, 22 & 59
FIFTH (5TH) ELECTION DISTRICT HOWARD COUNTY, MARYLAND
FOR: TROUTMAN COMPANY
8815 CENTRE PARK DRIVE, SUITE 104
COLUMBIA, MARYLAND 21045



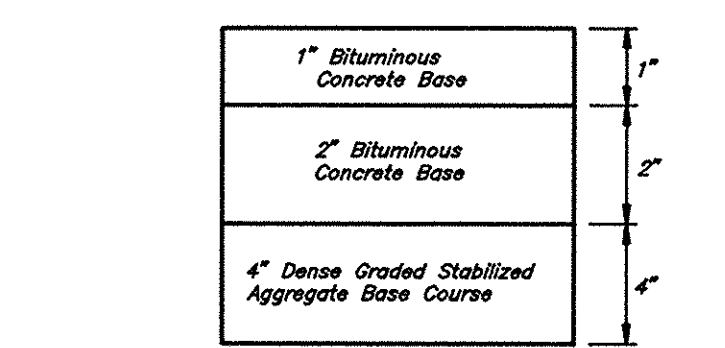
STANDARD 7" COMBINATION CURB AND GUTTER
NO SCALE



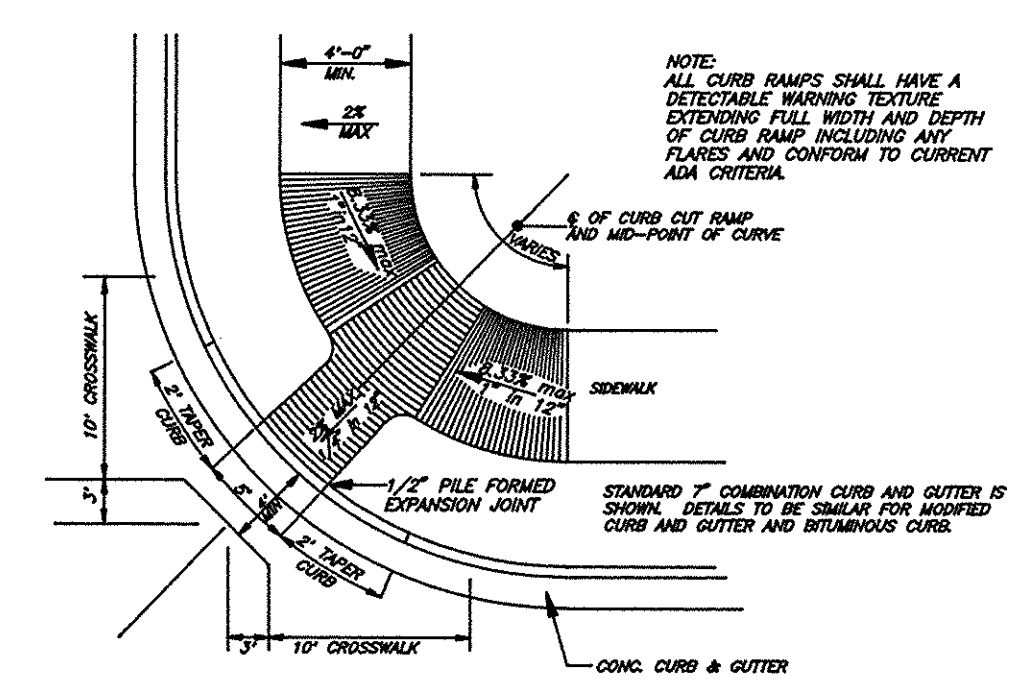
STANDARD 6" COMBINATION CURB AND GUTTER
NO SCALE



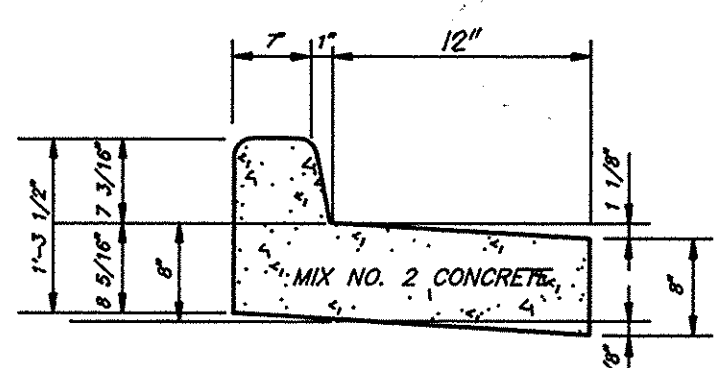
REVERSE 6" COMBINATION CURB AND GUTTER
NO SCALE



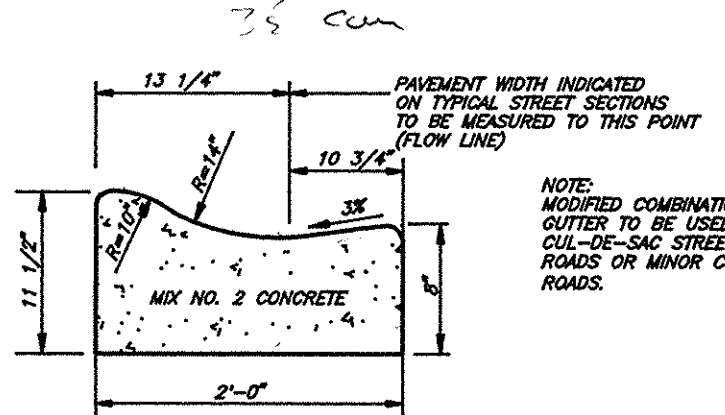
ALTERNATE PAVING SECTION FOR PARKING AREAS
NO SCALE (SECTION P-1)



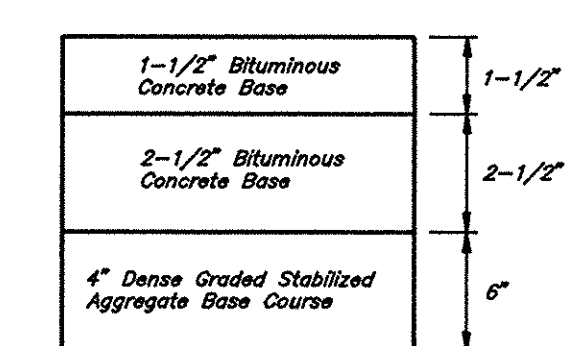
CURB / SIDEWALK RAMP - HO. CO. STANDARD TYPE "A"
NO SCALE



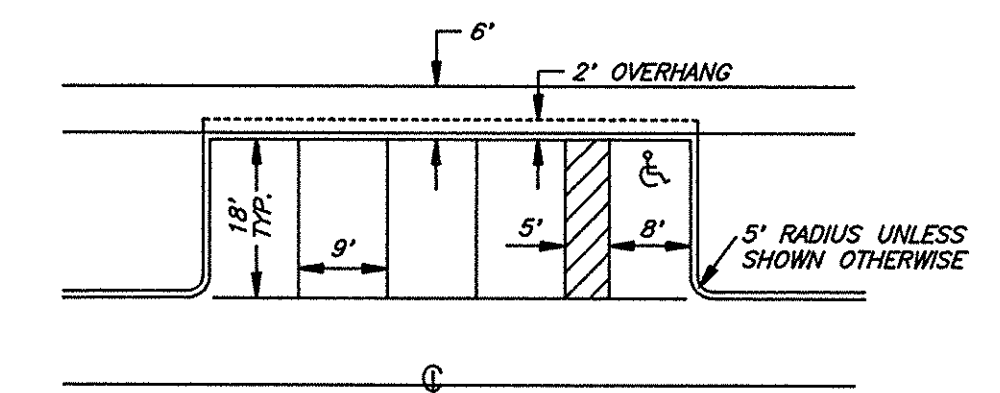
REVERSE 7" COMBINATION CURB AND GUTTER
NO SCALE



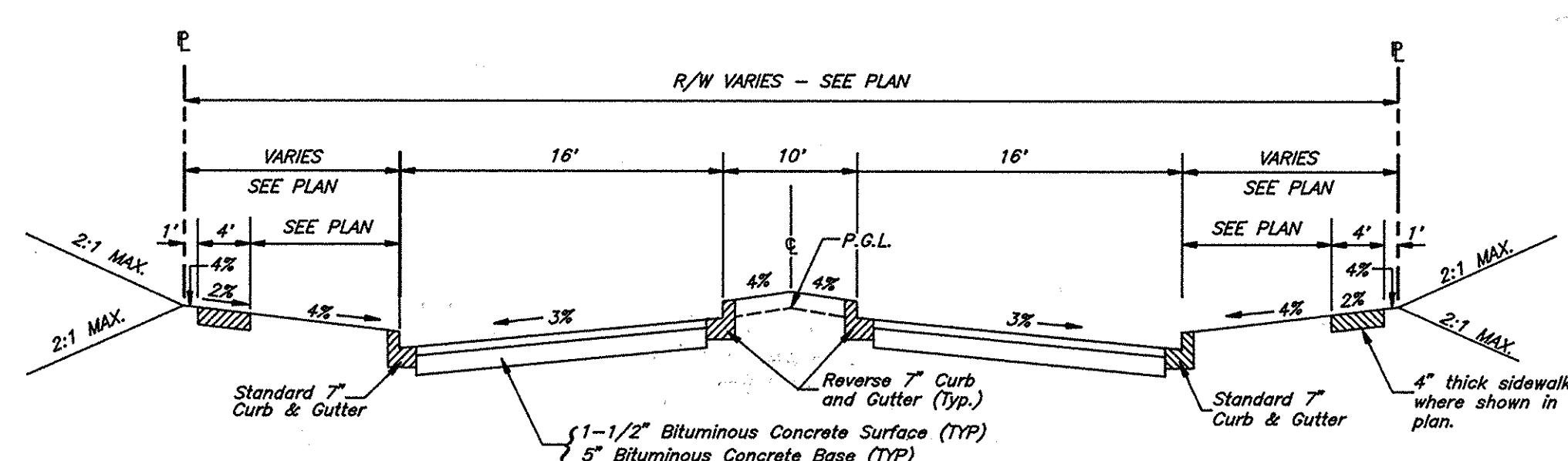
MODIFIED COMBINATION CURB AND GUTTER
NO SCALE



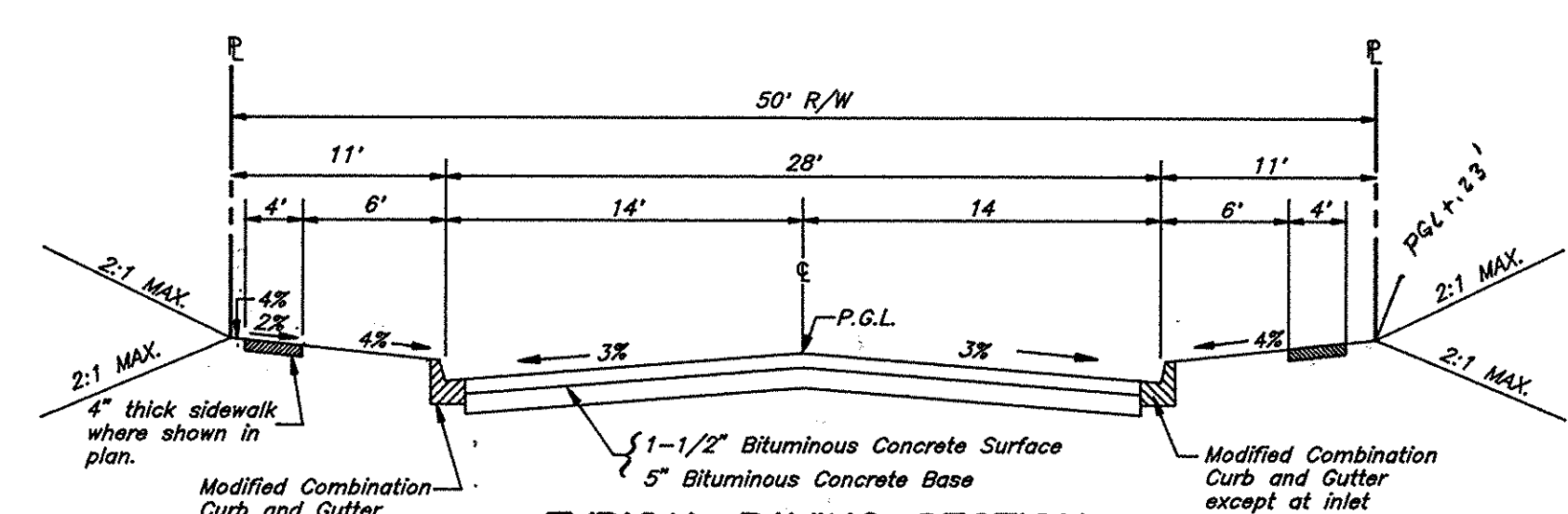
ALTERNATE PAVING SECTION FOR PUBLIC ROADS
NO SCALE (SECTION P-2)



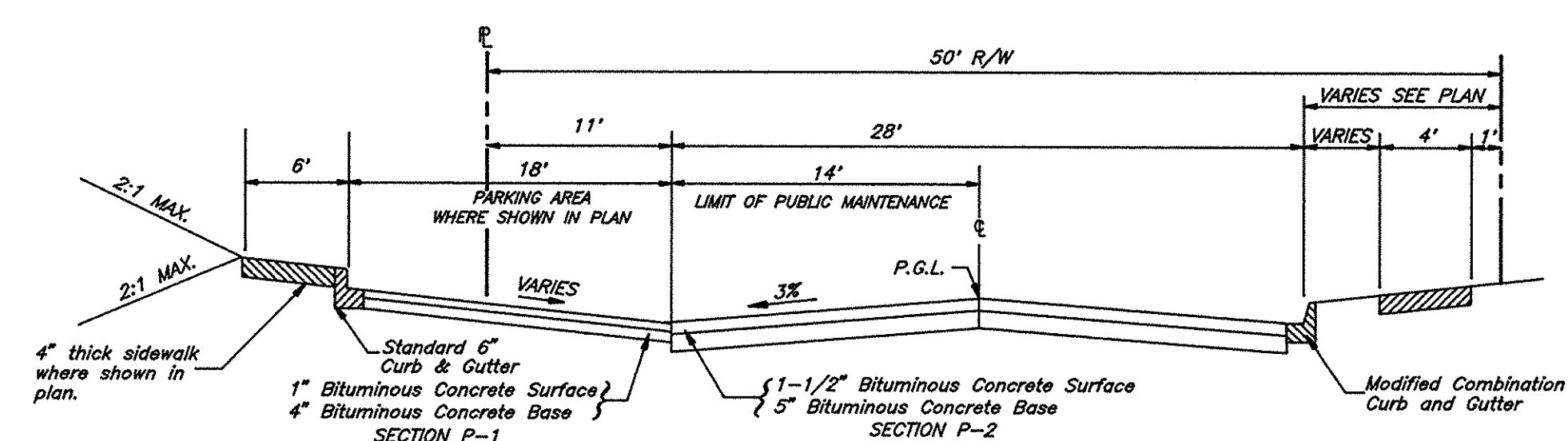
TYPICAL PARKING DETAIL
NO SCALE



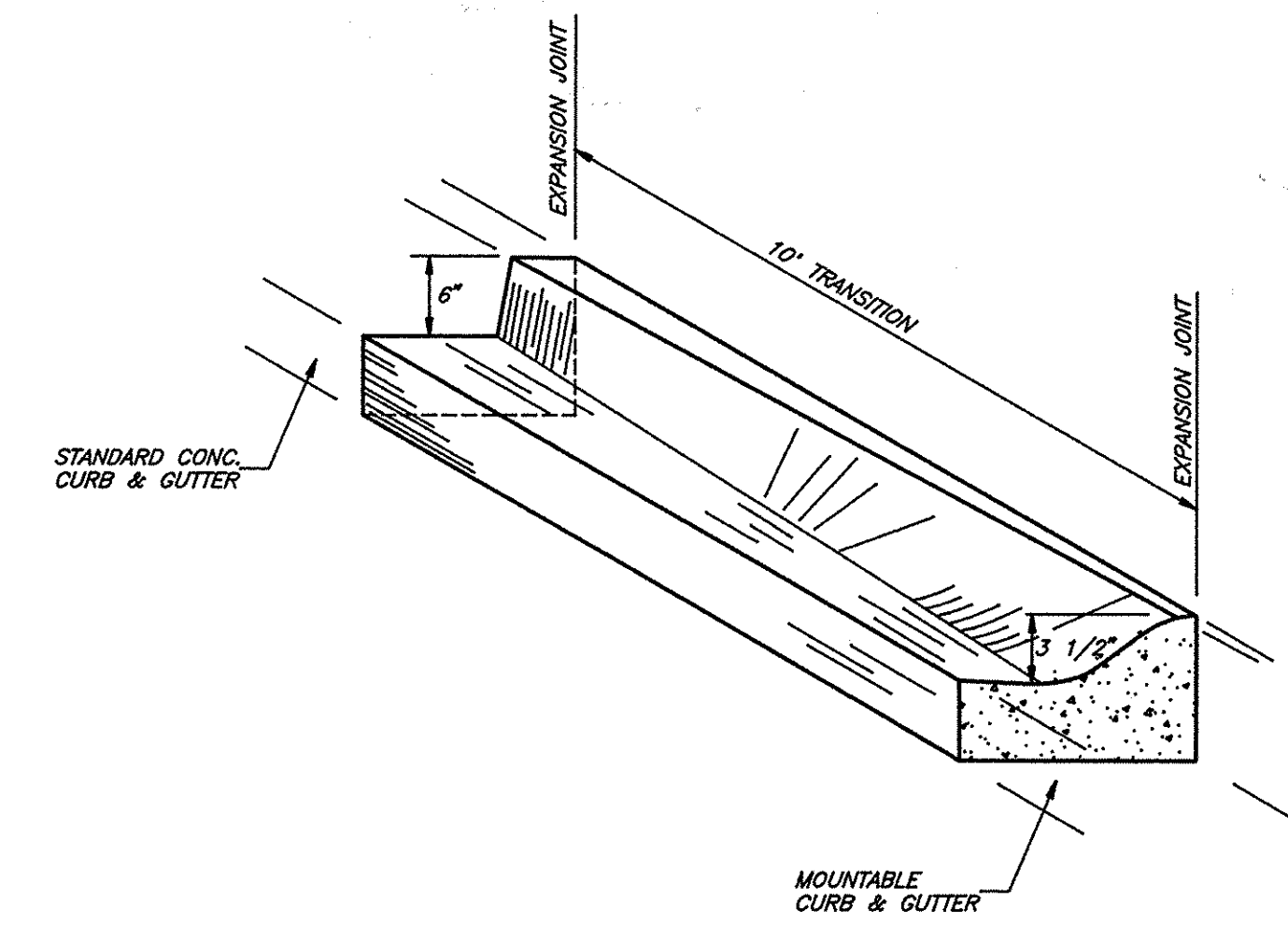
TYPICAL PAVING SECTION GENTLE CALL
NO SCALE
Sta. 0+38 To Sta. 0+57
DESIGN SPEED = 25 MPH



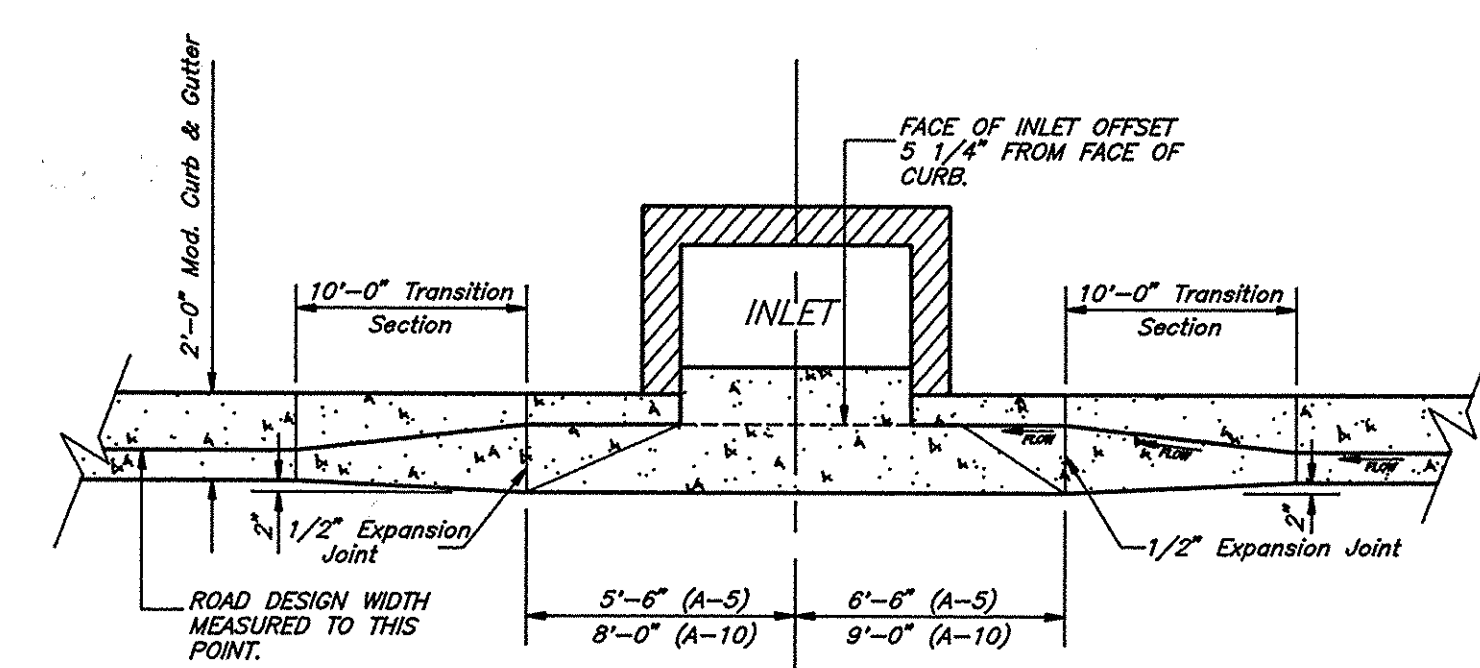
TYPICAL PAVING SECTION GENTLE CALL
NO SCALE
Sta. 0+46.57 To Sta. 2+68.33
Sta. 3+53.57 To Sta. 4+48.77
DESIGN SPEED = 25 MPH



TYPICAL PAVING SECTION GENTLE CALL
NO SCALE
Sta. 2+48.33 To Sta. 3+53.57
Sta. 5+25.95 To Sta. 5+26.69
Provide sidewalk per typical parking detail above.
STOPPING CONDITIONS
DESIGN SPEED = 15 MPH



CONCRETE CURB AND GUTTER TRANSITION
NO SCALE



MODIFIED COMBINATION CURB AND GUTTER TRANSITION CURB SECTION AT "A" TYPE INLETS
NO SCALE



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Sanchez 7-28-97
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
Charles Hamilton 7/29/97
CHIEF, DIVISION OF LAND DEVELOPMENT

7/29/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION

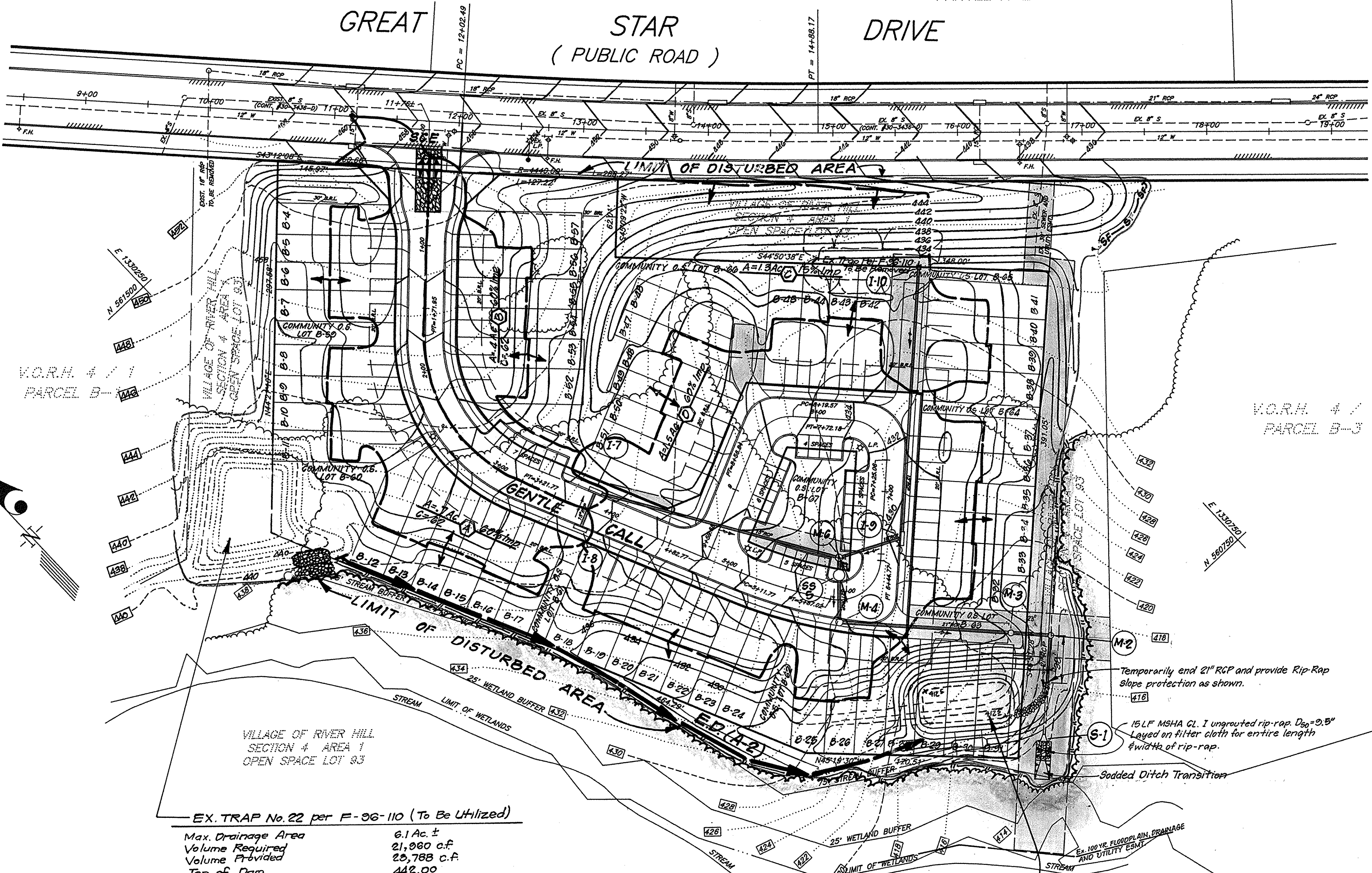
CLARK • FINEFROCK & SACKETT, INC. ENGINEERS • PLANNERS • SURVEYORS 7135 MINSTREL WAY • COLUMBIA, MD. 21045 • (410) 381-7500 - BALTO. • (301) 621-8100 - WASH.		
DESIGNED KWM	PAVING DETAILS VILLAGE OF RIVER HILL SECTION 4 AREA 1 FIFTH (5TH) ELECTION DISTRICT HOWARD COUNTY, MARYLAND FOR: TROUTMAN COMPANY 2815 CENTRE PARK DRIVE, SUITE 104 COLUMBIA, MARYLAND 21045	SCALE AS SHOWN
DRAWN ZAH		DRAWING 4 of 6
CHECKED WHT		JOB NO. 96-191
DATE 7-3-97		FILE NO. 96-191-D
OWNER: HOWARD RESEARCH AND DEVELOPMENT, CO. 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044		

F97-168

VILLAGE OF RIVER HILL
SECTION 4 AREA 1 PHASE 1

PROPERTY OF
THE HOWARD RESEARCH AND
DEVELOPMENT GROUP
L 1535 F 193

PARCEL A-1
GREAT STAR DRIVE
(PUBLIC ROAD)
PARCEL A-2

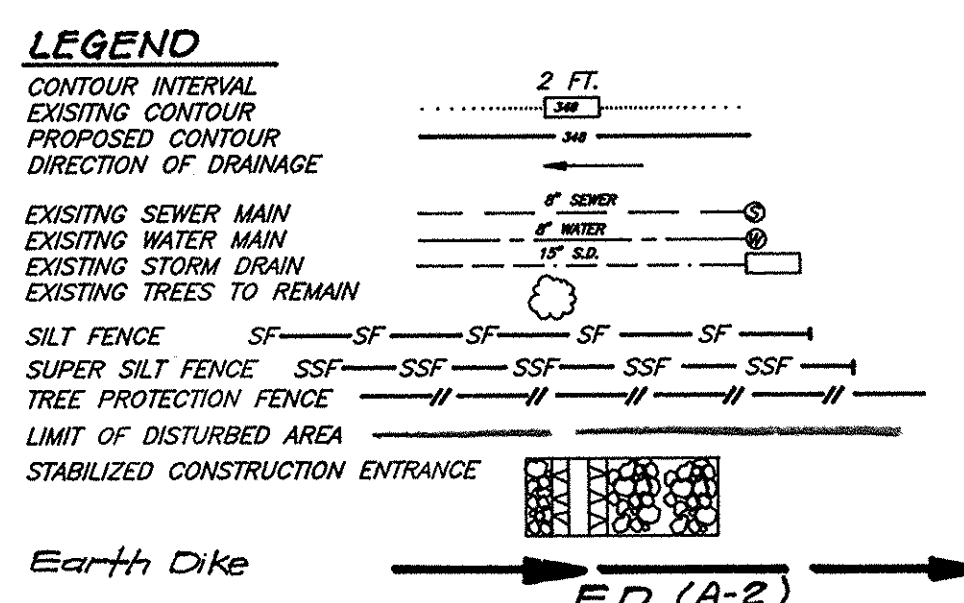


EX. TRAP No. 22 per F-96-110 (To Be Utilized)

Max. Drainage Area	6.1 Ac. ±
Volume Required	21,000 c.f.
Volume Provided	23,788 c.f.
Top of Dam	442.00
Weir Crest	440.00
Limit of Storage	439.50
Bottom Elev.	434.00
Depth	5.5'
Cleanout Elev.	436.75
Weir Length	24'

TRAP #1 S/RROST (ST II)

D.A. = 5.3 Ac.
Storage Req'd = 5.3 x 3600 = 19,080 CF
Storage Prov'd = 20' x 60' x 6' = 10,080 CF
Stone Crest El. = 410.50
Bottom El. = 412.5
Cleanout El. = 415.5
Bottom Dim. = 20' x 60' x 6' deep
Weir Length = 22'
Side Slope = 2:1



Reviewed for HOWARD S.C.D.
and meets Technical Requirements
Chris Simmons 7/29/97
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.
John R. Robinson 7/21/97
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."

John R. Robinson NAME
7/21/97 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.

G. Nelson Clark G. NELSON CLARK
7-3-97 DATE



OWNER:
HOWARD RESEARCH AND DEVELOPMENT, CO.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

CLARK • FINEROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD. 21045 • (410) 981-7500 - BALTO. • (301) 621-8100 - WASH.

DESIGNED	SEDIMENT EROSION CONTROL AND GRADING PLAN LOTS B-4 THRU B-37 AND OPEN SPACE LOTS B-58 THRU B-67 A RESUBDIVISION OF PARCEL B-2 COLUMBIA VILLAGE OF RIVER HILL SECTION 4 AREA 1 TAX MAP 35, GRID 7, PARCELS 3,22 & 59 FIFTH (5TH) ELECTION DISTRICT HOWARD COUNTY, MARYLAND FOR: TROUTMAN COMPANY 8815 CENTRE PARK DRIVE, SUITE 104 COLUMBIA, MARYLAND 21045	SCALE
DRAWN		1"=50'
CHECKED		DRAWING
DATE		5 of 6
		JOB NO.
		96-191
		FILE NO.
		96-191-D

F97768

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 unacceptably soil gradation.

Conditions Where Practice Applies

I. This practice is limited to areas having 2:1 or flatter slopes where:

- a. The texture of the exposed subsoil/parent material is 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 toxic to plant growth.
- d. The soil is so acidic that treatment with limestone is not feasible.

II. 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.

Construction and Material Specifications

I. Topsoil salvaged from the existing site may be used provided that it meets the standards 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-NRCS in cooperation with Maryland Agricultural Experiment Station.

II. Topsoil Specifications - Soil to be used as topsoil must meet the following:

I. 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 clinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 and 1/2" in diameter.

II. Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.

III. 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. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

IV. For sites having disturbed areas under 5 acres:

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

V. Topsoil Application

I. When topsoiling, maintain erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.

II. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, about 4" - 6" higher in elevation.

III. Topsoil shall be uniformly distributed in a 4" - 6" 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 topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.

IV. 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.

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS WANTED.

SEEDBED PREPARATION: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.

SOIL AMENDMENTS: In lieu of soil test recommendations, use one of the following schedules:

- 1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs./100 sq.ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (.05 lbs./1000 sq.ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by Option (1) 2 tons per acre well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use straw with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.
- 2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs./1000 sq.ft.) and apply 1000 lbs. per acre 10-10-10 fertilizer (23 lbs./1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil.

SEEDING: For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs./1000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (.05 lbs./1000 sq.ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by Option (1) 2 tons per acre well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use straw with 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 unrattled small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 2 1/8 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 reseeding.

TEMPORARY SEEDING NOTES

SEEDBED PREPARATION: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.

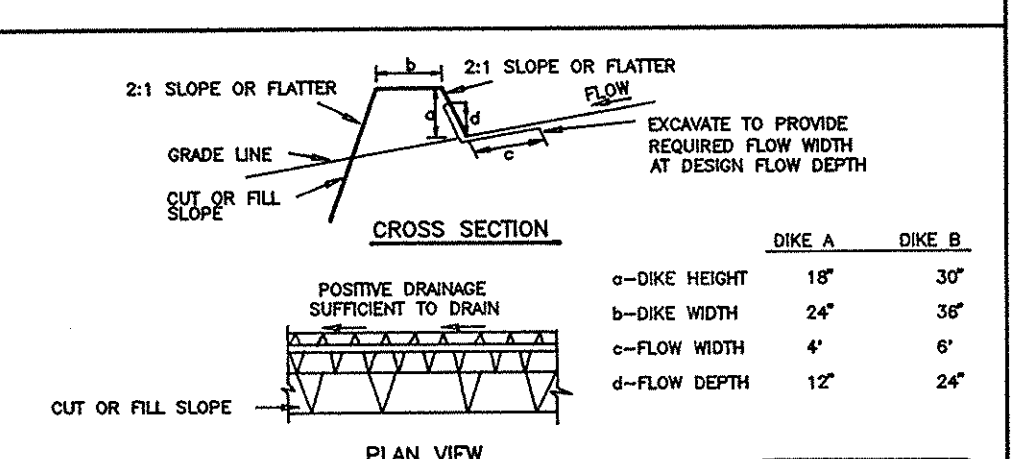
SOIL AMENDMENTS: Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.)

SEEDING: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2 1/2 tons/acre of annual ryegrass (2.2 lbs./1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (.07 lbs./1000 sq.ft.). For the period November 1 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

MULCHING: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq. ft.) of unrattled small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 2 1/8 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 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

DETAIL 1 - EARTH DIKE



DIKE A	DIKE B
a-DIKE HEIGHT 18"	30"
b-DIKE WIDTH 24"	36"
c-FLOW WIDTH 4"	6"
d-FLOW DEPTH 12"	24"

Construction Specifications
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 placed into the soil 7" minimum.

1. All temporary earth dikes shall have unimpaired 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-erodible velocity.
4. All trees, brush, stumps, obstructions, and other objectionable 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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE A-1-5	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
---	---------------	---

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 (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 1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.

3. Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within:
 - a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 2:1
 - b) 14 days or to all other disturbed or graded areas on the project site.
4. All sediment traps/basins shall be fenced and warning signs posted around their perimeters in accordance with Vol. 1, Chapter 7, 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 1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings, sod, temporary seeding and mulching (Sec 0).

6. Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.

7. 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.

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 SPN Sediment Control Inspector.

10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.

11. Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized within one working day, whichever is shorter.

12. The total amount of silt fence = 20LF
13. The total amount of super silt fence = 0LF

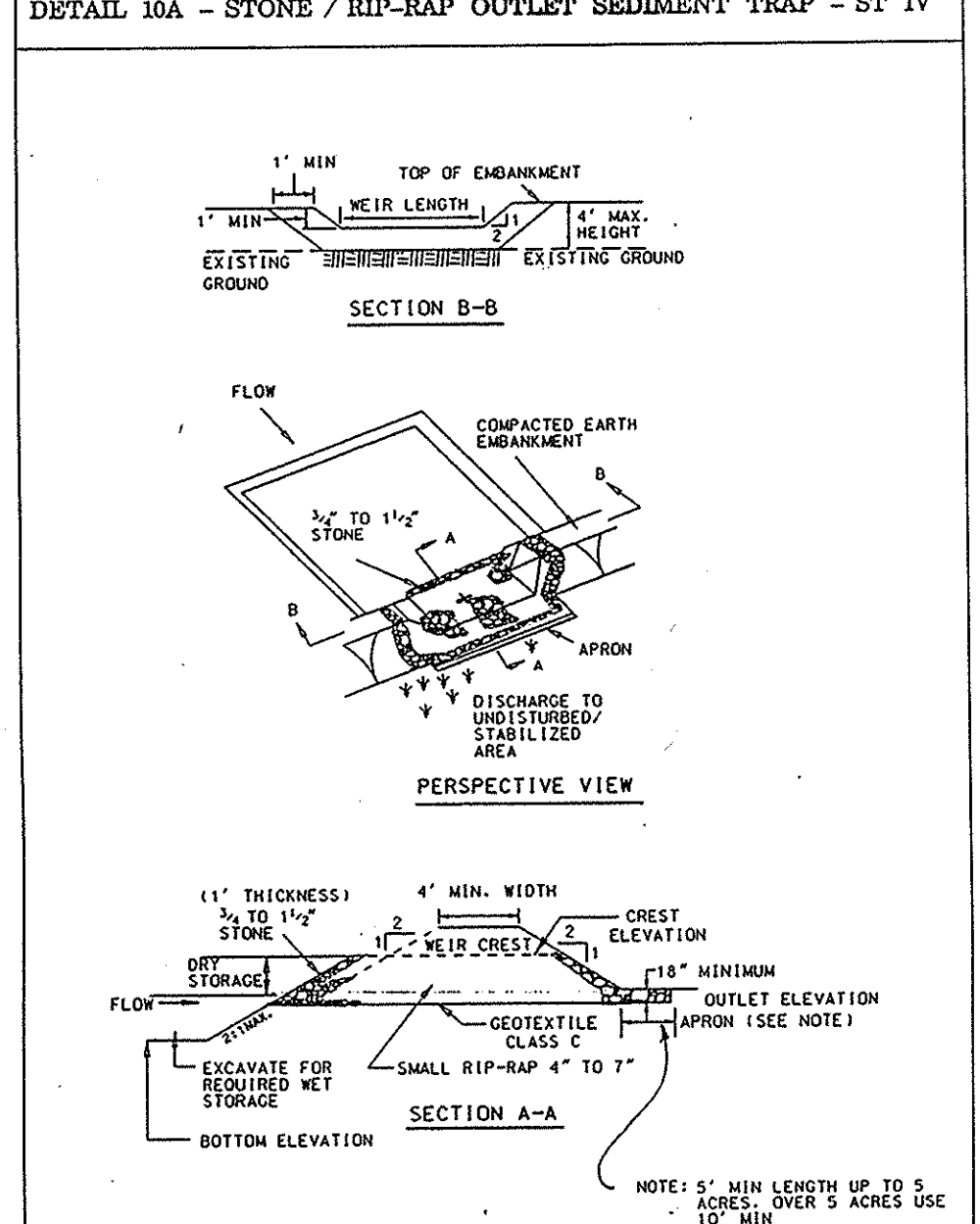
It is the responsibility of the contractor to identify the spoil/borrow site and notify and gain approval from the sediment control inspector of the site and it's grading permit number at the time of construction.

CONSTRUCTION SEQUENCE

- 1) Obtain a grading permit 7
- 2) Install all sediment and erosion control devices and stabilize 7
- 3) Rough grade site 7
- 4) Construct all storm drainage structures and block inlets 20
- 5) Construct all utilities 30
- 6) Construct paving, sidewalks and structures 60
- 7) Final grade and stabilize 14
- 8) Obtain approval from the Sediment Control Inspector, remove all sediment and erosion control devices and stabilize. 7

* Delay construction on lots B-27 to B-31 until permission is received from the Sediment Control Inspector to remove proposed Trap No. 1.

DETAIL 10A - STONE / RIP-RAP OUTLET SEDIMENT TRAP - ST IV



Construction Specifications
1. The area under 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 over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed. Maximum height of embankment shall be 4' measured at centerline of embankment.

3. All cut and fill slopes shall be 2:1 or flatter.

4. Elevation of the top of any dike directing water into trap must equal or exceed the height of trap embankment.

5. Storage area provided shall be figured by computing the volume measured from top of excavation. (For storage requirements see Table 9).

6. Geotextile Class C shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Section of fabric must overlap at least 1' with section nearest the entrance placed on top. Fabric shall be embedded at least 6" into existing ground at entrance of outlet channel.

7. 4" - 7" stone shall be used to construct the weir and 4" - 12" or Class I rip-rap shall be used to construct the outlet channel.

8. Outlet - An outlet shall include a means of conveying the discharge in an erosion free manner to an existing stable channel. Protection against scour at the discharge point shall be provided as necessary.

9. Outlet channel must have positive drainage from the trap.

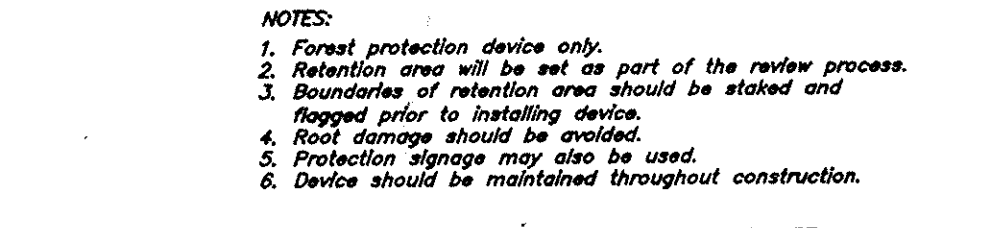
10. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 of the wet storage depth of the trap (900 cf/00). Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

11. The structure shall be inspected periodically after each rain and repaired as needed.

12. Construction of traps shall be carried out in such a manner that sediment pollution is 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 Erosion 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 for the life of the trap.

13. The structure shall be dewatered by approved methods, removed and the area stabilized when the drainage area has been properly stabilized.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C-9-10A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
---	-----------------	---



Construction Specifications
1. Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3" (min.) bottom width. The channel shall be lined with 4" to 12" rip-rap to a depth of 18".

2. Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.

3. Entrance and exit structures shall be installed as shown on the detail section.

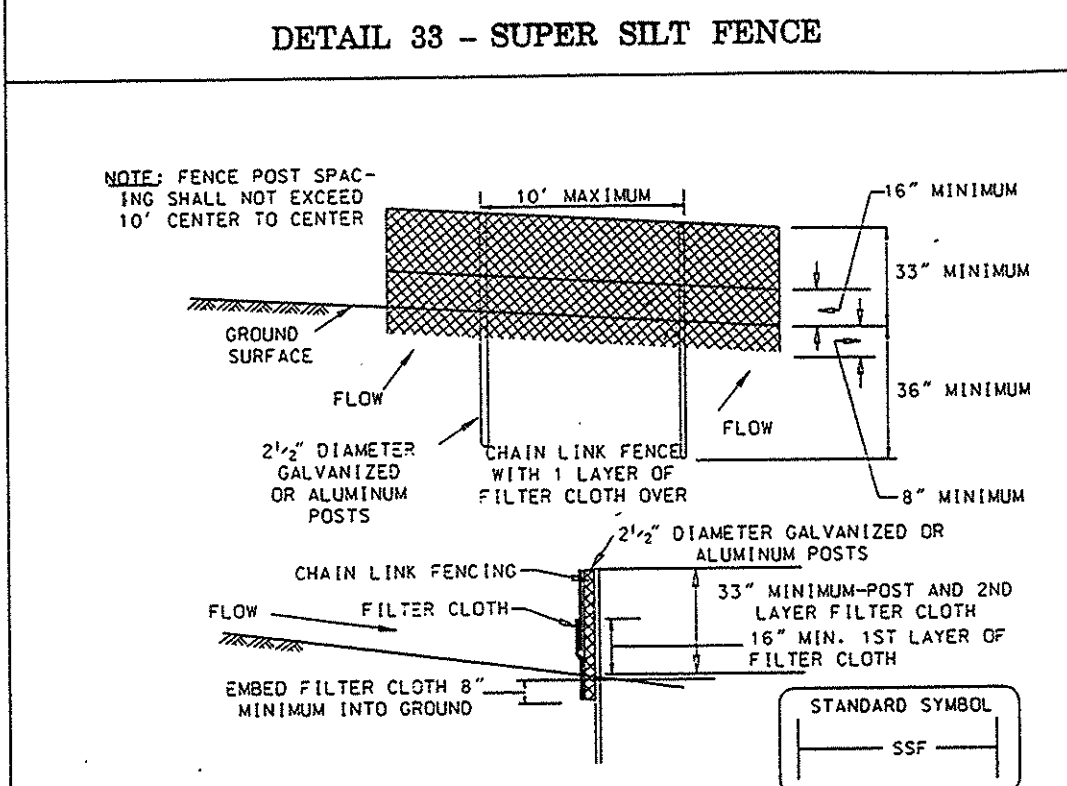
4. Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.

5. Gabion Inflow Protection may be used in lieu of Rip-rap Inflow Protection.

6. Rip-rap should blend into existing ground.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE B-6-1	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
---	---------------	---

DETAIL 38 - SUPER SILT FENCE



Construction Specifications
Fencing shall be 42 inches in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6 foot fence post will be substituted 42 inch fabric and 6 foot length posts.

1. The poles do not need to be set in concrete.

2. Chain link fence shall be fastened securely to the fence posts with wire ties or staples.

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.

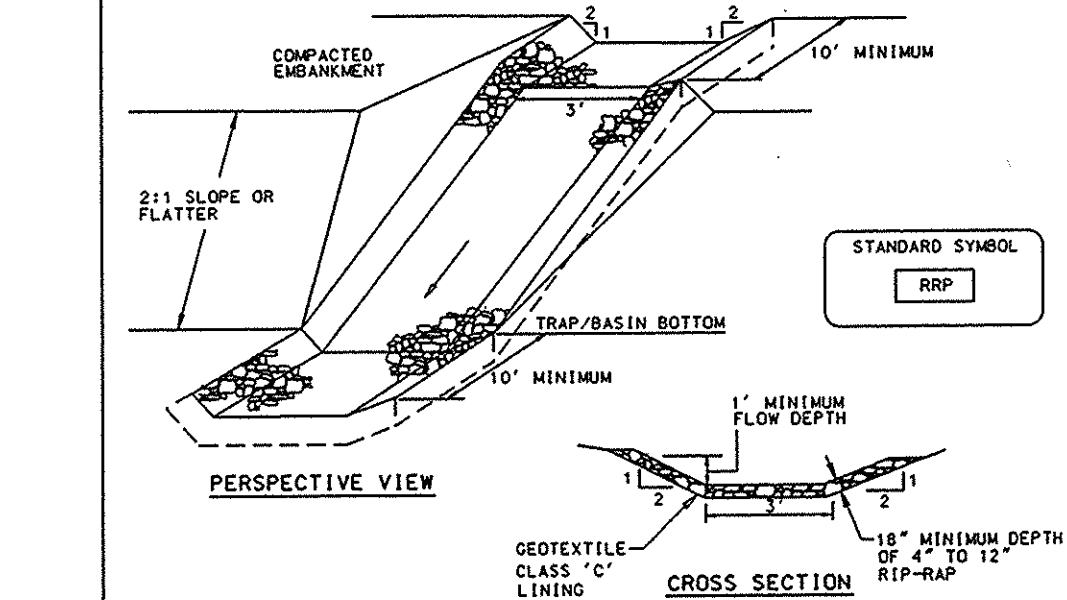
4. Filter cloth shall be embedded a minimum of 6" into the ground.

5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.

6. Maintenance shall be performed as needed and silt buildups removed when "bunches" develop in the silt fence.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E-36-3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
---	----------------	---

DETAIL 5 - RIP-RAP INFLOW PROTECTION



Construction Specifications
1. Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3" (min.) bottom width. The channel shall be lined with 4" to 12" rip-rap to a depth of 18".

2. Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.

3. Entrance and exit structures shall be installed as shown on the detail section.

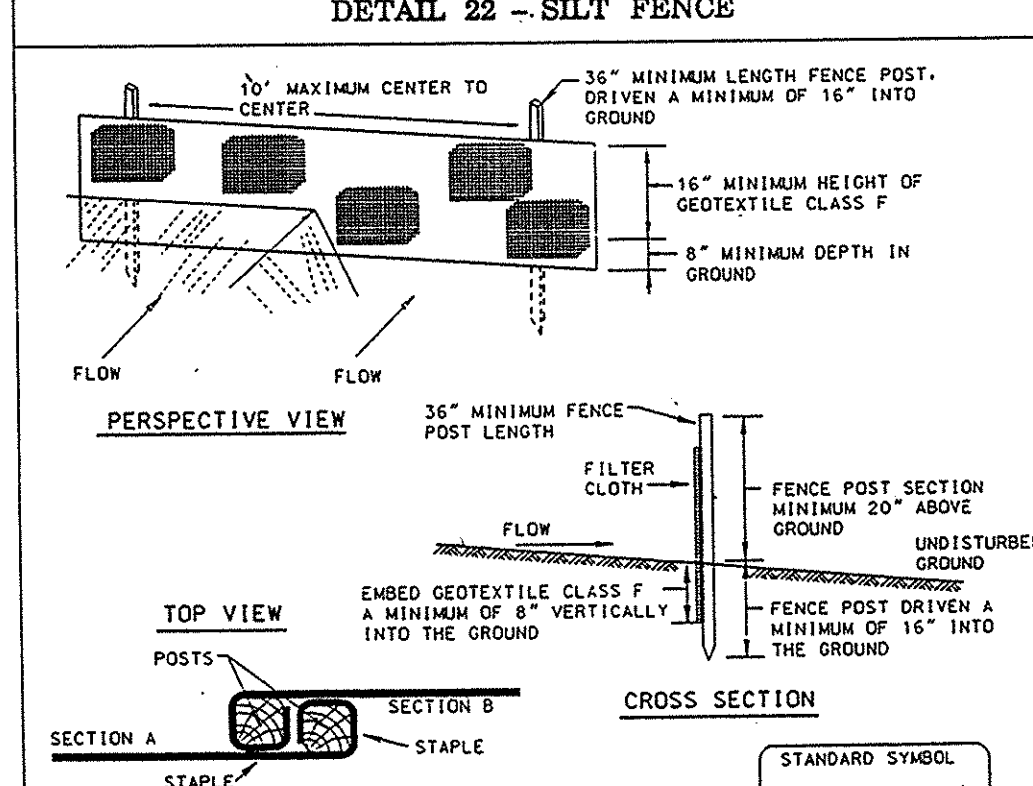
4. Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.

5. Gabion Inflow Protection may be used in lieu of Rip-rap Inflow Protection.

6. Rip-rap should blend into existing ground.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE B-6-1	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
---	---------------	---

DETAIL 22 - SILT FENCE



Construction Specifications
1. Fence posts shall be a minimum of 36" long or given 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 1/2" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighing not less than 1.00 pound per linear foot.

2. Geotextile shall be fastened securely to each fence post with wire ties or staples on top and mid-section and shall meet the following requirements for Geotextile Class F:

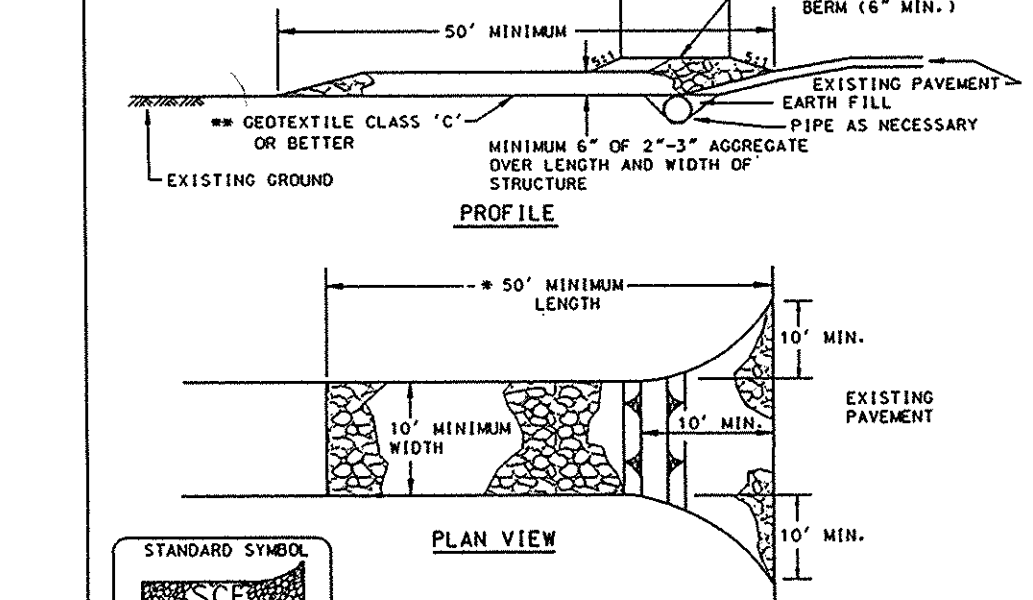
Tensile Strength 50 lbs/in (min.) Test: MSMT 509
Tensile Modulus 20 lbs/in (min.) Test: MSMT 509
Flow Rate 0.3 gal #1/2 minute (max.) Test: MSMT 322
Filtering Efficiency 75% (min.) Test: MSMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reaches 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E-18-3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
---	----------------	---

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



Construction Specifications
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. Obtain 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 shall be stabilized through the entrance. 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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F-17-3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
---	----------------	---

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Sankle 7-28-97
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
Candy Hamilton 7/21/97
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: *[Signature]* 7/21/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Reviewed for HOWARD S.C.D. and meets Technical Requirements
Clay Simmons 7/21/97
Signature Date
U.S. Natural Resources Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY CONSERVATION DISTRICT.
John R. Polunsky 7/21/97
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.
Paul J. [Signature] 5-7-97
NAME 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.
G. Nelson Clark 5-7-97
DATE

CLARK • FINEFROCK & SACKETT, INC.
7135 MINTREL WAY • COLUMBIA, MD. 21045 • (410) 381-7500 - BALTO. • (301) 621-8100 - WASH.

DESIGNED: DAB
DRAWN: ZAH
CHECKED: BHT
DATE: 7-3-97

SCALE: 6" = 1'-0"

JOB NO.: 96-191

FILE NO.: 96-191-D

FOR: TROUTMAN COMPANY
SUITE CENTER PARK DRIVE, SUITE 104
COLUMBIA, MARYLAND 21045

F97-168