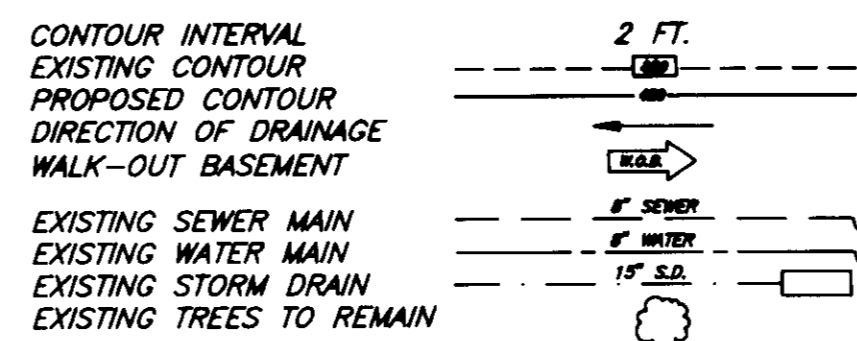


BENCHMARKS:

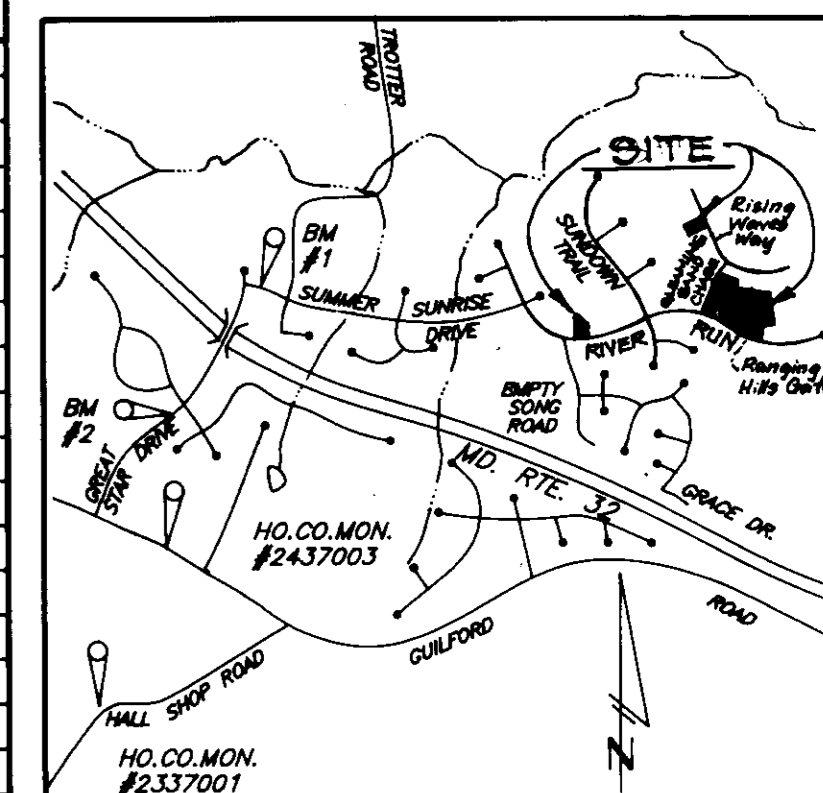
BM#1
 Railroad Spike in Pole #525680
 Trotter Road Elevation 393.27
 N496697.02 E822026.81

BM#2
 Railroad Spike in Poplar
 Elevation 438.92
 N495551.90 E820727.80

LEGEND



| ADDRESS CHART | |
|---------------|--------------------------|
| LOT NUMBER | STREET ADDRESS |
| 67 | Q473 RIVER RUN |
| 118 | Q200 RISING WAVES WAY |
| 125 | Q200 GLEAMING SAND CHASE |
| 126 | Q200 GLEAMING SAND CHASE |
| 127 | Q200 GLEAMING SAND CHASE |
| 128 | Q200 RIVER RUN |
| 129 | Q200 RIVER RUN |
| 130 | Q200 RANGING HILLS GATE |
| 131 | Q200 RANGING HILLS GATE |
| 132 | Q200 RANGING HILLS GATE |
| 133 | Q200 RANGING HILLS GATE |
| 134 | Q200 RANGING HILLS GATE |
| 135 | Q200 RANGING HILLS GATE |
| 136 | Q200 RANGING HILLS GATE |
| 137 | Q200 RIVER RUN |
| 138 | Q200 RIVER RUN |



VICINITY MAP
 Scale: 1"=2000'

GENERAL NOTES:

- Subject property is zoned: N.T.S.F.M.D. per 10-18-93 Comprehensive Zoning Plan.
- The total area included in this submission is: 5.0211 Ac. 5.0211 A.
- The total number of lots included in this submission is: 16
- Improvement to property: Single Family Detached
- The maximum lot coverage permitted is: 30%
- Department of Planning and Zoning reference file numbers are: S-91-03, P-94-01, F-96-98, F-96-138
- Utilities shown as existing are taken from approved Water and Sewer plans Contract # 34-3561-D, approved Road Construction plans F-96-138, and actual field survey.
- Any damage to county owned rights-of-way shall be corrected at the developer's expense.
- All roadways are public and existing.
- The existing topography was field run by Clark, Finerock & Sackett, Inc. on March 25, 1997.
- The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System - Howard County Monument Nos.: 2337001 and 2437003.
- The contractor shall notify the Department of Public Works/Division of Construction Inspection at (410) 313-1880 at least twenty-four (24) hours 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.
- For driveway entrance details, refer to Ho. Co. Design Manual Volume IV details R-6.03 and R-6.05.
- Stormwater Management is provided per: F-96-138
- In accordance with FDP-Phase 209 Part VI, bay windows or chimneys not more than 10 feet in width may project not more than 4 feet into any setbacks; porches and decks may project not more than 3 feet into the front or rear setbacks.
- 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 req'd 14 landscape trees in the amount of \$400 is part of the builders grading permit application. If separate permits see Schedule "A" on sheet 2 for separate landscape sureties.
- Stormwater Management Quantity Control is provided by the Maryland Route 32 stream crossing. Water Quality is provided by publicly owned Bioretention Area.
- SHC elevations shown are located at the property line.

SPECIAL NOTES:

This plan is for house siting and lot grading only. Improvements shown within the rights-of-way on this S.D.P. are not to be used for construction. For construction, see approved Road Construction Plans F-96-138 and/or approved Water and Sewer Plans Contract # 34-3561-D

| SUBDIVISION NAME | | SECTION/AREA | LOTS/PARCELS |
|--------------------------------|-----------|----------------|------------------|
| COLUMBIA VILLAGE OF RIVER HILL | | TWO/SIX | 67, 118, 125-138 |
| PLAT NO. | BLOCK NO. | ZONE | TAX MAP NO. |
| 12416, 12410 | 15421 | N.T.S.F.M.D. | 37 |
| WATER CODE | | ELECTION DIST. | CENSUS TRACT |
| I-12 | | 6TH | 6055 |
| SEWER CODE | | 6652500 | |

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

SHEET INDEX

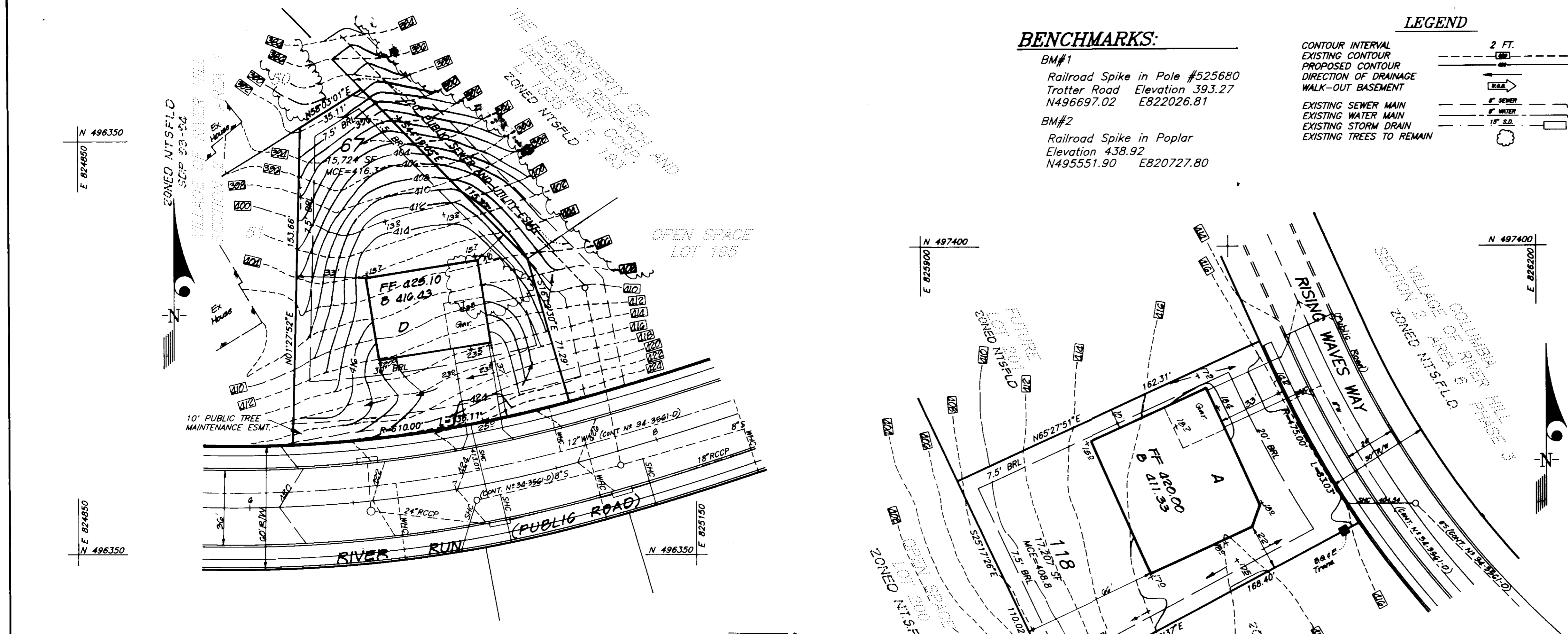
| DESCRIPTION | SHEET No. |
|-----------------------------------|-----------|
| SITE DEVELOPMENT PLAN | 142 |
| SEDIMENT AND EROSION CONTROL PLAN | 3, 4 & 5 |

OWNER / DEVELOPER
 THE HOWARD RESEARCH AND DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

DESIGNED J.M.E.
DRAWN ZAH
CHECKED J.M.E.
DATE 4-20-97

SITE DEVELOPMENT PLAN
 LOTS 67, 118, 125-138
COLUMBIA VILLAGE OF RIVER HILL
 SECTION 2 AREA 6 PHASE 2
 SIXTH (6th) ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE 1"=30'
DRAWING 1 OF 5
JOB NO. 97-038
FILE NO. 97-038-X



APPROVED: DEPARTMENT OF PLANNING AND ZONING

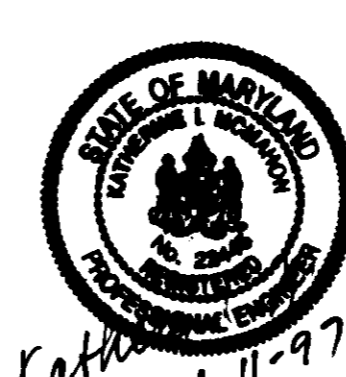
Chief, Development Engineering Division: *[Signature]* 6/18/97
 Division of Land Development and Research: *[Signature]* 6/19/97
 Director: *[Signature]* 6/20/97

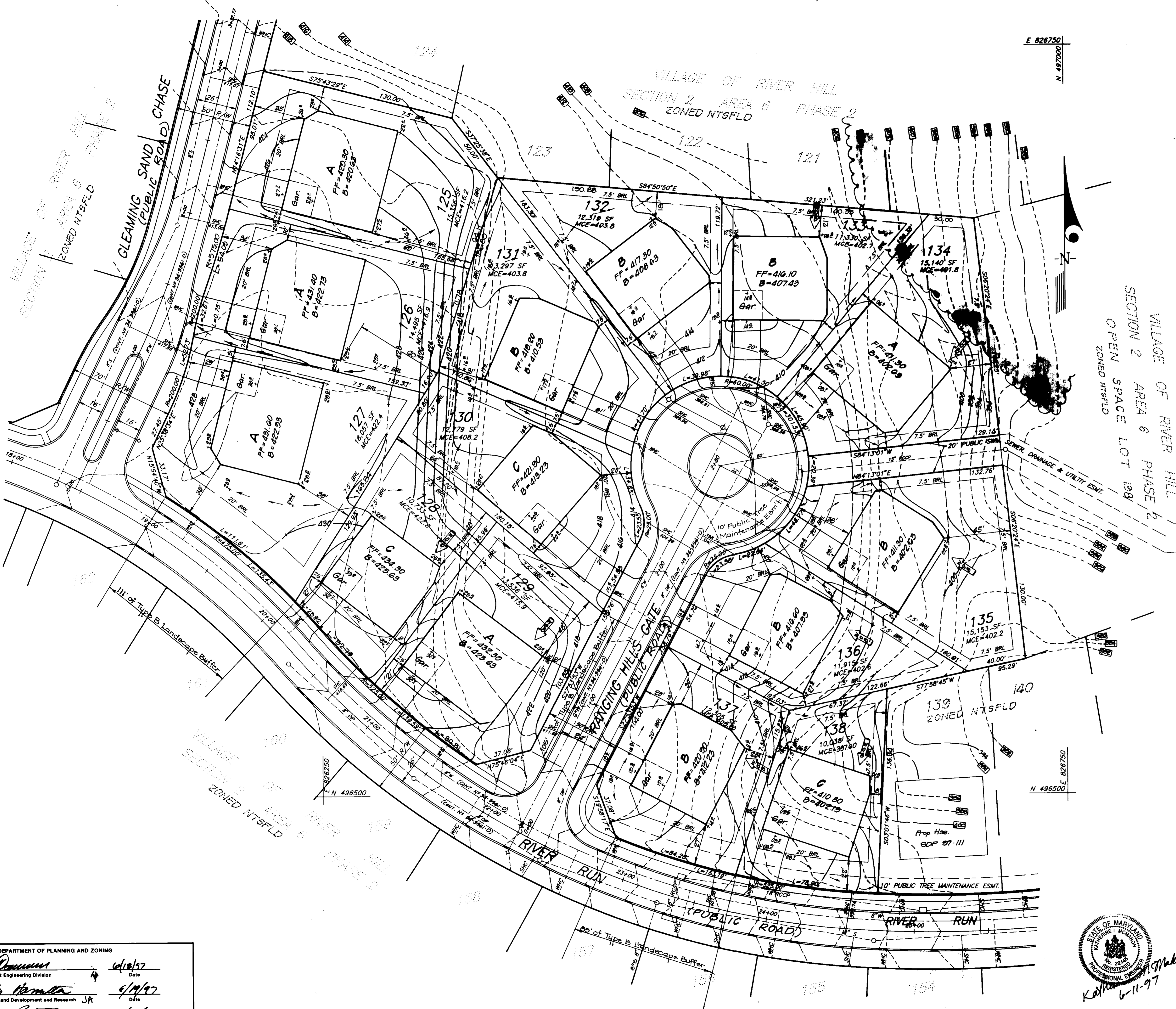
HOUSE OPTIONS:

- GREENBRIAR**: 2752 SF, 9178.33 SF Min Lot Size w/all options. Features: 4.0' Arterway, 10'x5' Stoop.
- STERLING**: 3168 SF, 10,926.67 SF Min Lot Size w/all options. Features: 12'x24' Deck, 2'x10' Bay Window.
- PLYMOUTH**: 2806 SF, 7893.33 SF Min Lot Size w/all options. Features: 2'x10' Bay Window, 5'x12' Stoop.
- ASTER**: 2200 SF, 9,666.67 SF Min Lot Size w/all options. Features: 24' Deck, 2'x10' Bay Window.
- CARROLLTON I**: 2701 SF, 9,203.33 SF Min Lot Size w/all options. Features: 2'x5' Chimney, 6'x7' Stoop, 2'x10' Bay Window.
- WESTCHESTER**: 2000 SF, 8000.47 SF Min Lot Size w/all options. Features: 12'x12' Deck, 2'x10' Bay Window, 10'x5' Stoop.
- OAKWOOD**: 3007.08 SF, 10,926.67 SF Min Lot Size. Features: 12'x12' Deck, 2'x10' Bay Window, 10'x5' Stoop.
- CHANDLER**: 2506 SF, 7893.33 SF Min Lot Size w/all options. Features: 2'x14' Bay Window, 2'x10' Bay Window, 8'x4' Stoop.
- BRENTWOOD/CARROLLTON II**: 2185.48 SF, 7878.17 SF Min Lot Size w/all options. Features: 10'x10' Deck, 2'x10' Bay Window, 5x20' OPT. Porch.
- NEWBURY**: 2203.42 SF, 7349.40 SF Min Lot Size w/all options. Features: 9.0' Arterway, 2'x10' Bay Window, 5'x10' Conc. Porch.

LOT GROUPINGS:

- A**: All houses, all options
- B**: Aster, Carrollton I (No 3 car gar.), Carrollton II, Brentwood, Chandler, Greenbriar, Newbury, Plymouth, Sterling (No 3 Car Gar.), Westchester (No 3 Car Gar.)
- C**: Aster, Carrollton I (No 3 car gar.), Carrollton II, Brentwood, Chandler, Newbury, Plymouth, Sterling (No 3 car gar.), Westchester (No 3 car gar.)
- D**: Carrollton I (No 3 car gar.), Carrollton II, Brentwood, Chandler, Newbury





E 826750
N 497000

| SCHEDULE A PERIMETER LANDSCAPE EDGE | | LOTS | | |
|---|----------------------|-------|-------|-------|
| Category | Adjacent to Roadways | 127 | 128 | 137 |
| Landscape Type | B | | | |
| Frontage/Perimeter | 501 | 111' | 105' | 85' |
| Number of Plants Required | | | | |
| Shade Trees | G (1/50) | 2 | 2 | 2 |
| Evergreen Trees | B (1/40) | 3 | 3 | 2 |
| Shrubs | - | | | |
| Number of Plants Provided | | | | |
| Shade Trees | * | | | |
| Evergreen trees | * | | | |
| COMMENTS: PLANTING WILL PROVIDED PER THE NEW TOWN ALTERNATIVE COMPLIANCE METHOD (SEE GENERAL NOTE NO. 22) | | | | |
| SURETY AMOUNTS | \$1,400 | \$500 | \$500 | \$400 |

OWNER / DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
7136 MINSTREL WAY • COLUMBIA, MD. 21045 • (410) 381-7500 - BALTO. • (301) 621-8100 - WASH.

| | | |
|--------------------|--|---|
| DESIGNED J.M.E. | SITE DEVELOPMENT PLAN LOTS 67, 118, 125-138 COLUMBIA VILLAGE OF RIVER HILL SECTION 2 AREA 6 PHASE 2 SIXTH (6TH) ELECTION DISTRICT HOWARD COUNTY, MARYLAND | SCALE 1"=30' |
| DRAWN ZAH | | DRAWING 2 OF 5 |
| CHECKED J.M.E. | | JOB NO. 97-038 |
| DATE 4-20-97 | | FILE NO. 97-038-X |
| | | FOR: DOUGLAS HOMES P.O. BOX 629 BLUDDY CITY, MARYLAND 21043 |



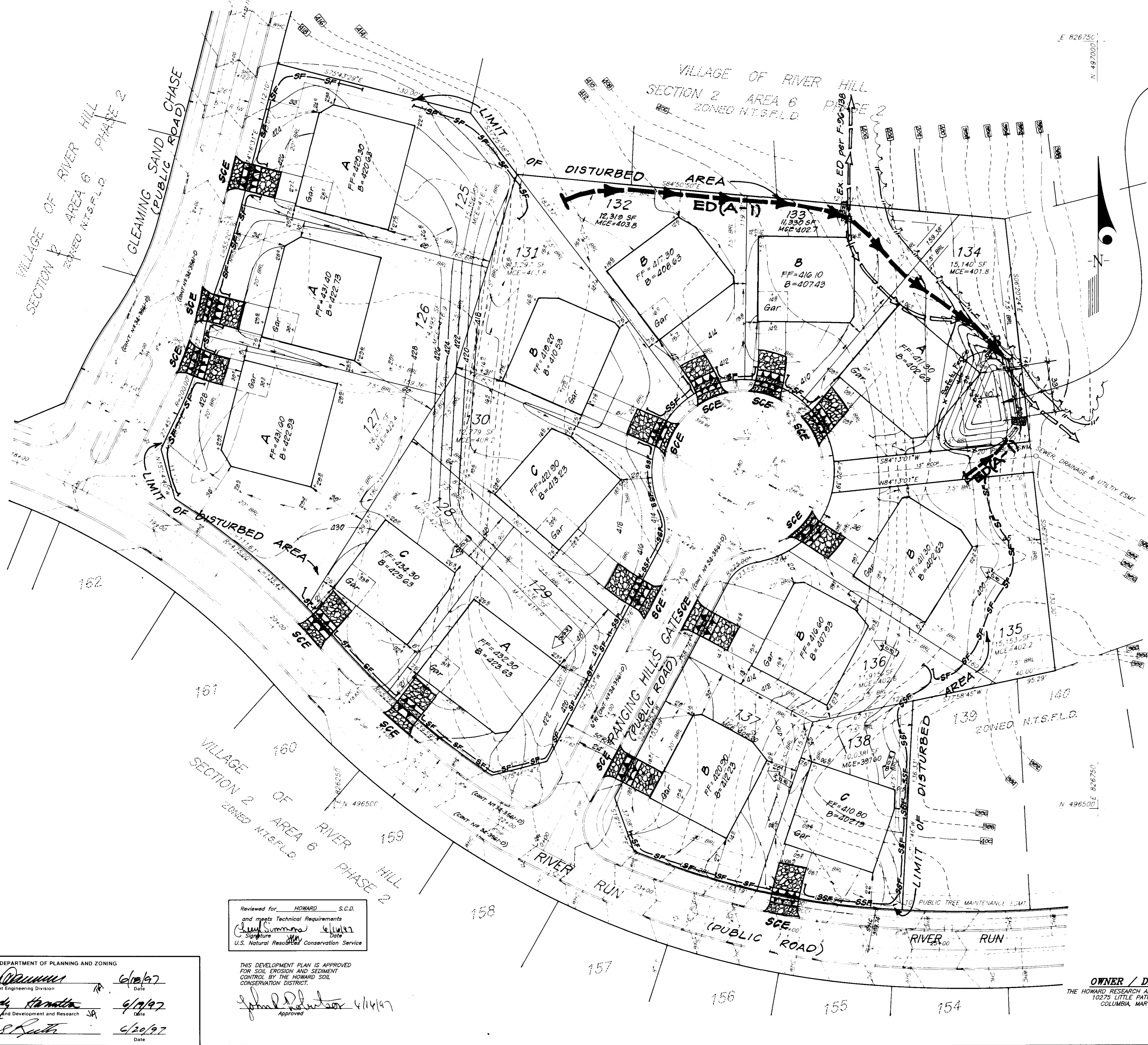
APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 6/18/97
Chief, Development Engineering Division

[Signature] 6/19/97
Chief, Division of Land Development and Research

[Signature] 6/20/97
Director

SP-07-136



TRAP #1 SOST (ST-II)
 DA = 0.7 Ac. Ex.
 OA = 0.6 Ac. Prop.
 Storage Required = 7(3600) = 25200 cf.
 Storage Provided = 3200 cf.
 Top of Embankment = 305.0
 Top of Stone Weir = 304.0
 Clean out Elev. = 301.0
 Bottom Elev. = 300.0
 Storage Depth = 4'
 1:1 side slopes
 L = 4'

VILLAGE OF RIVER HILL
 SECTION 2 AREA 6 PHASE 2
 OPEN SPACE LOT 109
 ZONED N.T.S.F.L.D.

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.
 Douglas Homes 4-30-97
 NAME DATE

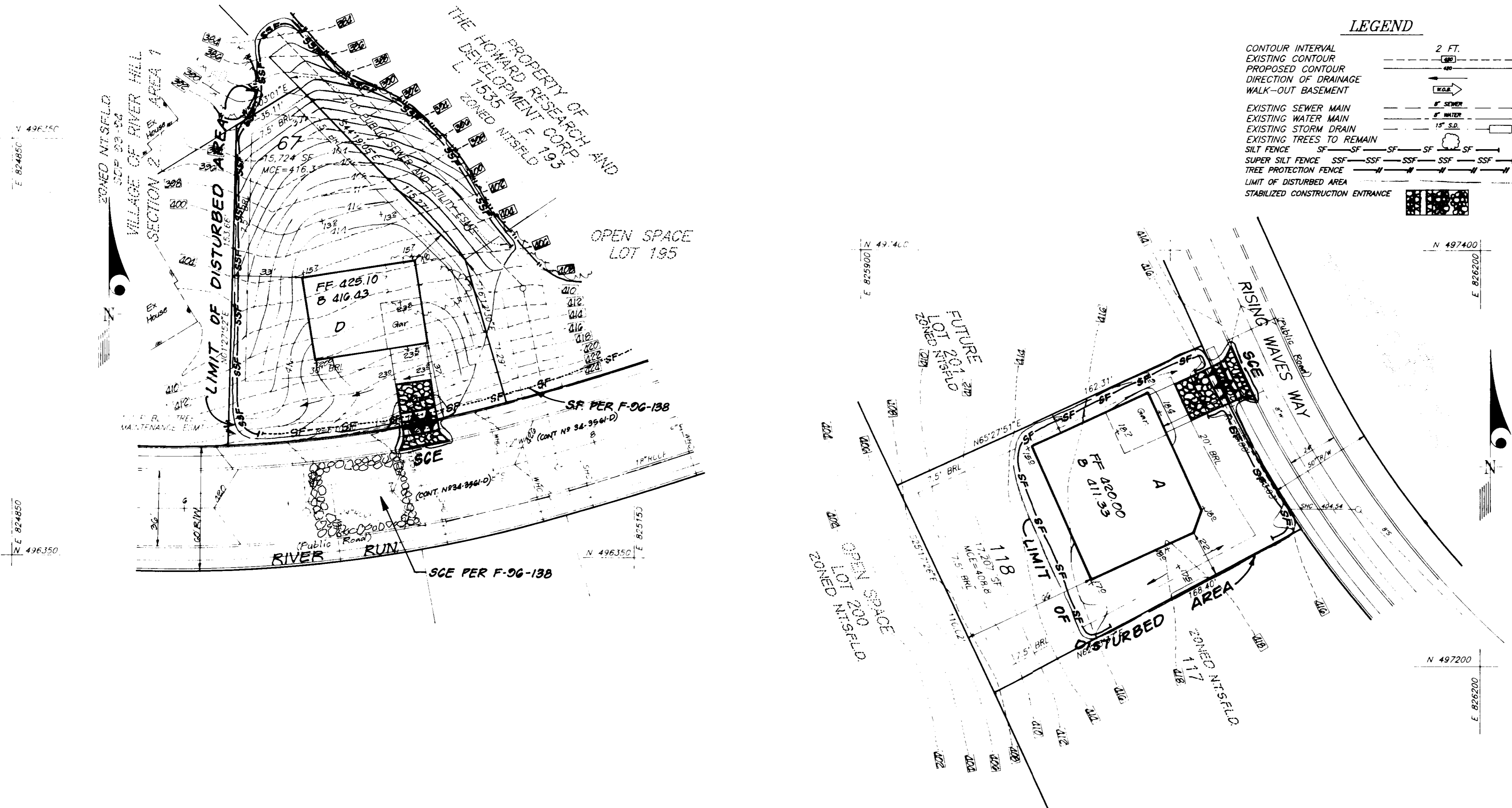
ENGINEER'S CERTIFICATE
 I hereby certify that this plan for Sediment and Erosion Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
 G. Nelson Clark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

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

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature: [Signature] Date: 6/14/97
 Approved

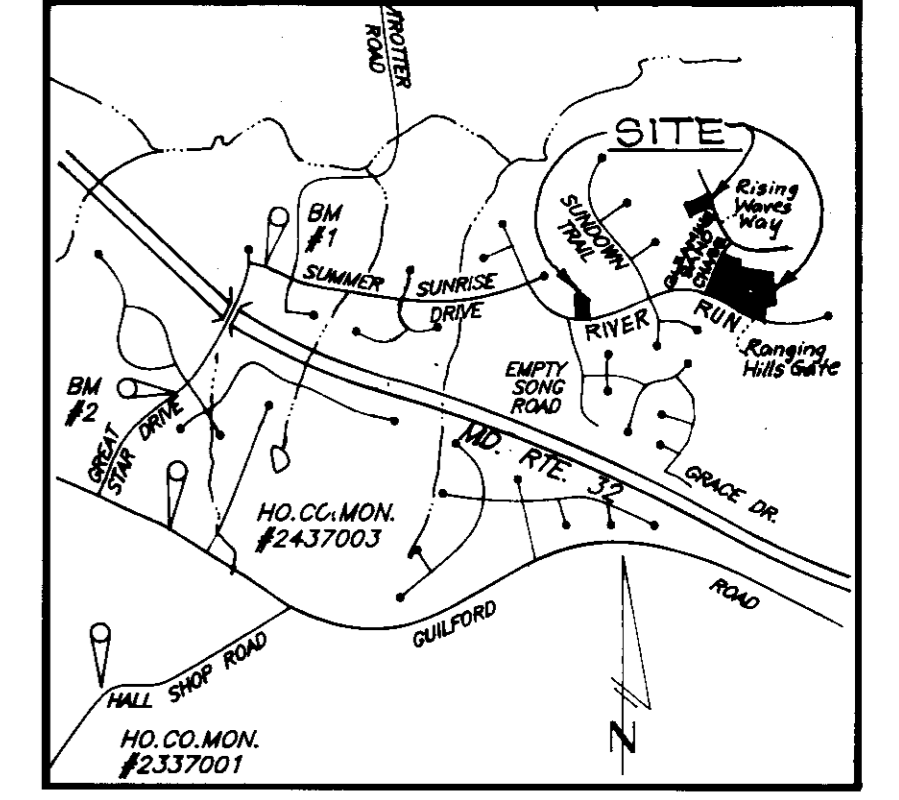
APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division 6/10/97
 Deputy Chief, Planning and Zoning 6/19/97
 Director 6/20/97

| | | |
|--|--|----------------------|
| CLARK • FINEROCK & SACKETT, INC. ENGINEERS • PLANNERS • SURVEYORS 7135 MINSTREL WAY • COLUMBIA, MD 21045 • (410) 381-7500 BALTO • (301) 621-8100 WASH | | |
| DESIGNED KIWM | SEDIMENT AND EROSION CONTROL PLAN LOTS 67, 118, 125-138 | SCALE 1"=30' |
| DRAWN ZAH | COLUMBIA VILLAGE OF RIVER HILL SECTION 2 AREA 6 PHASE 2 SIXTH (6th) ELECTION DISTRICT HOWARD COUNTY, MARYLAND | DRAWING 4 OF 5 |
| CHECKED KM | OWNER / DEVELOPER THE HOWARD RESEARCH AND DEVELOPMENT CORP. 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044 | JOB NO 97-038 |
| DATE | FOR: DOUGLAS HOMES P.O. BOX 628 ELICOTT CITY, MARYLAND 21043 | FILE NO 97-038-5E |



LEGEND

| | |
|----------------------------------|------------|
| CONTOUR INTERVAL | 2 FT. |
| EXISTING CONTOUR | --- |
| PROPOSED CONTOUR | - - - - |
| DIRECTION OF DRAINAGE | → |
| WALK-OUT BASEMENT | ▭ |
| EXISTING SEWER MAIN | — S.F. — |
| EXISTING WATER MAIN | — W.F. — |
| EXISTING STORM DRAIN | — S.D. — |
| EXISTING TREES TO REMAIN | ⊕ |
| SILT FENCE | SF |
| SUPER SILT FENCE | SSF |
| TREE PROTECTION FENCE | — T.P.F. — |
| LIMIT OF DISTURBED AREA | — L.D.A. — |
| STABILIZED CONSTRUCTION ENTRANCE | ▨ |



VICINITY MAP
Scale: 1"=2000'

OWNER / DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

Reviewed for HOWARD S.C.D.
and meets Technical Requirements
Charles Simmons
Signature Date
U.S. Natural Resources Conservation Service

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."
Joseph J. Perry
NAME DATE 4-30-97

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
NAME DATE

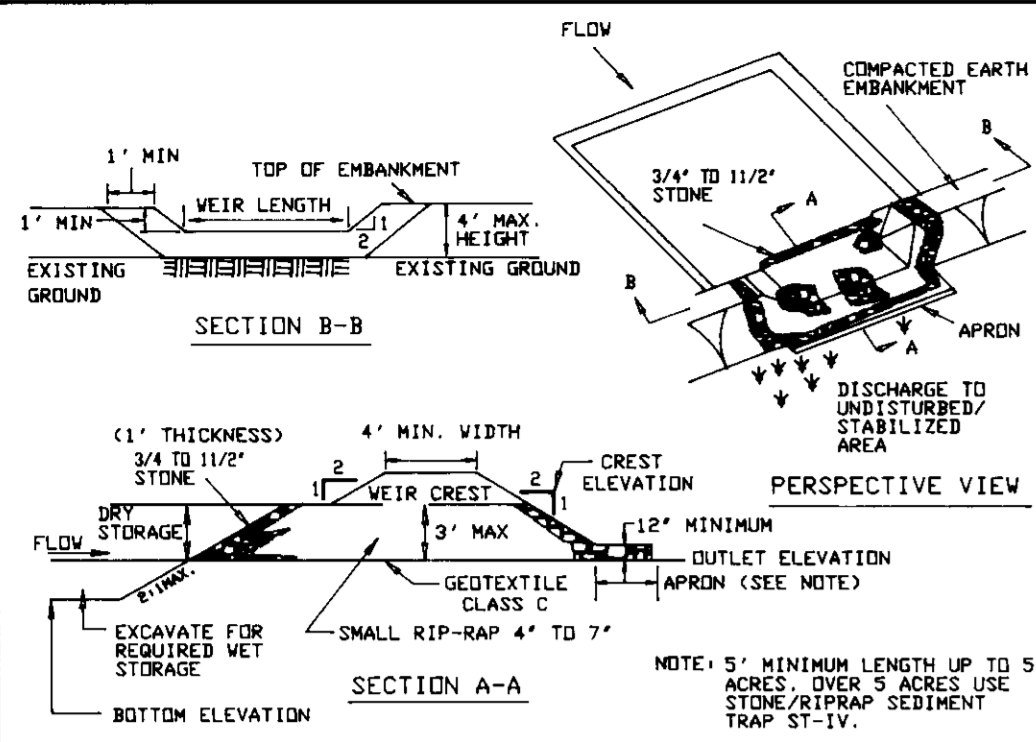


APPROVED: DEPARTMENT OF PLANNING AND ZONING
John P. Roberts 6/10/97
Chief, Development Engineering Division Date
Candy Hamilton 6/19/97
Special Division of Land Development and Research Date
James P. Suttis 6/20/97
Director Date

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
John P. Roberts 6/10/97
Approved

| | | |
|---|--|-----------|
| CLARK • FINEFROCK & SACKETT, INC. ENGINEERS • PLANNERS • SURVEYORS 7135 MINSTREL WAY • COLUMBIA, MD 21045 • (410) 381-7500 BALTO. • (301) 621-8100 WASH. | | |
| DESIGNED | SEDIMENT AND EROSION CONTROL PLAN LOTS 67, 118, 125-138 COLUMBIA VILLAGE OF RIVER HILL SECTION 2 AREA 6 PHASE 2 SIXTH (6th) ELECTION DISTRICT HOWARD COUNTY, MARYLAND FOR: DOUGLAS HOMES P.O. BOX 628 ELLCOTT CITY, MARYLAND 21043 | SCALE |
| DRAWN | | 1"=30' |
| CHECKED | | DRAWING |
| DATE | | 3 of 5 |
| | | JOB NO. |
| | 97-038 | FILE NO. |
| | | 97-038-8E |

DETAIL 9 - STONE OUTLET SEDIMENT TRAP - ST II



Construction Specifications

- Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
- The fill material for the embankment shall be free of roots and 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.
- All cut and fill slopes shall be 2:1 or flatter.
- The stone used in the outlet shall be small rip-rap 4" to 7" in size with a 1" thick layer of 3/4" to 1 1/2" washed aggregate placed on the upstream face of the outlet. Stone facing shall be as necessary to prevent clogging. Geotextile Class C may be substituted for the stone facing by placing it on the inside face of the stone outlet.
- Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to one half of the wet storage depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

Construction Specifications

- The area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
- The fill material for the embankment shall be free of roots and 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.
- All cut and fill slopes shall be 2:1 or flatter.
- Elevation of the top of any dike directing water into trap must equal or exceed the height of trap embankment.
- Storage area provided shall be figured by computing the volume measured from top of excavation. (For storage requirements see Table 10).
- Filter cloth 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.
- Stone used in the outlet channel shall be 4" - 7" placed 18" thick.
- Outlet - An outlet shall be provided, which includes a means of conveying the discharge in an erosion free manner to an existing stable channel. Protection against scour at the discharge and shall be provided as necessary.
- Outlet channel must have positive drainage from the trap.
- Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/4 of the wet storage depth of the trap (1350 cu/ft). Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
- The structure shall be inspected periodically after each rain and repaired as needed.
- 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 Grade Stabilization Structure criteria. The remainder of the interior slopes should be stabilized (one time) with seed and mulch upon trap completion and non-tended and maintained erosion free during the life of the trap.
- 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 - 10 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION |
|---|--------------------|---|

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 (11-1-85).
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECS. FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within:
 - 7 calendar days for all perimeter sediment control structures, dikes, perimeter 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 shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 7, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainages.
- All disturbed areas must be stabilized within the time period specified above, in accordance with the 1983 MARYLAND STANDARDS AND SPECS. FOR SOIL EROSION AND SEDIMENT CONTROL, and temporary seeding and mulching (Sec. 9).
- 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:

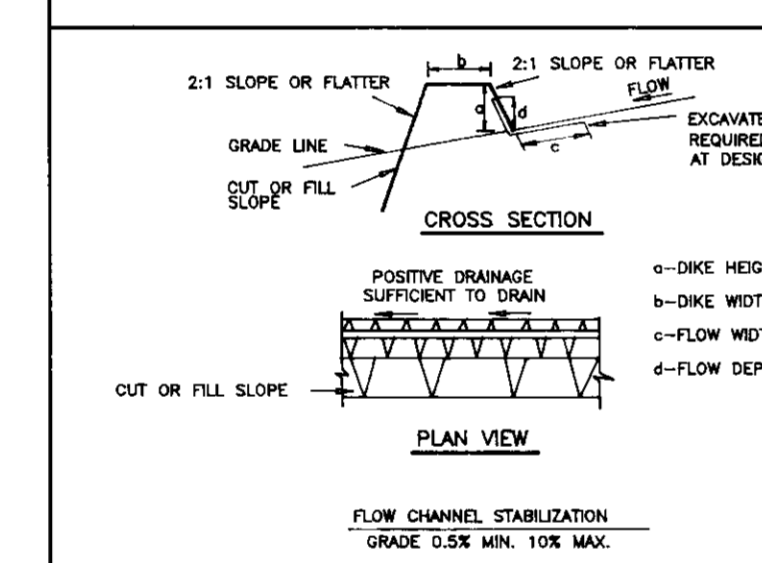
| | |
|-------------------------------------|--------------|
| Total Area of Site: | 5,036 ac. |
| Area Disturbed: | 490 ac. |
| Area to be reseeded or paved: | 119 ac. |
| Area to be vegetatively stabilized: | 378 ac. |
| Total Cut: | 3,000 cu yd. |
| Total Fill: | 1,507 cu yd. |
| Offsite Waste/Borrow Area Location: | |
- Any sediment control structure which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control must be provided, if deemed necessary by the Howard County DPW Sediment Control Inspector.
- On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- Tranches 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.
- The total amount of all fence = 860 LF
The total amount of super all fence = 800 LF
The total amount of earth dike = 260 LF
It is the responsibility of the contractor to identify the soil/borrow site and notify and gain approval from the sediment control inspector of the site and its grading permit number at the time of construction.

CONSTRUCTION SEQUENCE

| | NO. OF DAYS |
|--|-------------|
| 1. Obtain grading permit. | 7 |
| 2. Install free protection fence. | 14 |
| 3. Install sediment and erosion control devices and stabilize. | 14 |
| 4. Excavate for foundations, rough grade and temporarily stabilize. | 30 |
| 5. Construct structures, sidewalks and driveways. | 60 |
| 6. Final grade and stabilize in accordance with Sids. and Specs. | 12 |
| 7. Upon approval of the sediment control inspector, remove sediment and erosion control devices and stabilize. | 7 |

* Delay construction of houses on lots: 154

DETAIL 1 - EARTH DIKE



Construction Specifications

- Seed and cover with straw mulch.
- Seed and cover with Erosion Control Matting or line with sod.
- 4" - 6" stone or recycled concrete equivalent pressed into the soil 7" minimum.

| DIKE A | DIKE B |
|---------------|---------|
| 0-DIKE HEIGHT | 18" 30" |
| 0-DIKE WIDTH | 24" 36" |
| 0-FLOW WIDTH | 4' 8' |
| 0-FLOW DEPTH | 12" 24" |

STANDARD SYMBOL
A-2 B-3

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

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, 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:

- 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.) before seeding. Harrow or disc into upper three inches of soil. At the time of seeding, apply 400 lbs. per acre 30-0-0 ureaform fertilizer (9 lbs./1000 sq.ft.)
- Acceptable—Apply 2 tons per acre dolomitic limestone (92 lbs./1000 sq.ft.) and apply 1000 lbs. per acre 10-10-10 fertilizer (21 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 50 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.5 lbs./1000 sq.ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by applying (1) 2 tons per acre well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use sod. Option (3) Seed with 60 lbs./acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

MULCHING: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 8 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, 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 1 1/2 bushel per acre of annual ryegrass (3.2 lbs./1000 sq.ft.) For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.7 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 unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq.ft.) for anchoring.

REFER TO THE 1983 MARYLAND STANDARDS AND SPECS. FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

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.

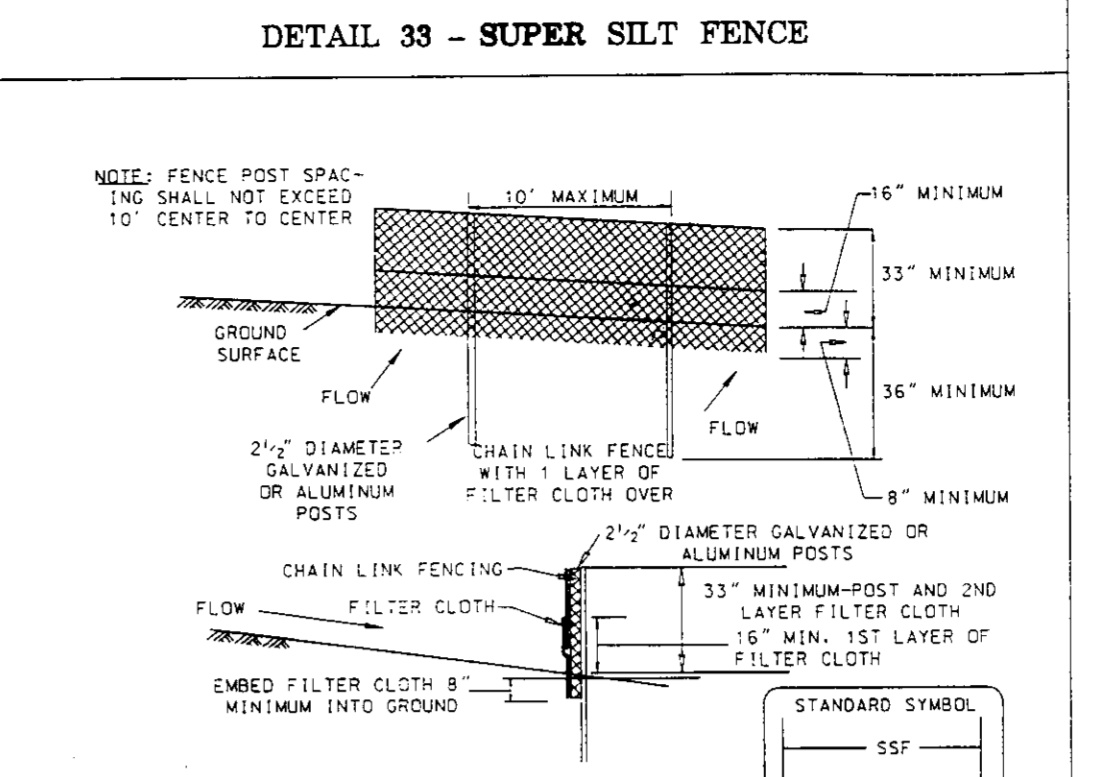
Conditions Where Practice Applies
This practice is limited to areas having 2:1 or flatter slopes where:

- 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.

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 a soil scientist and approved by the appropriate approval authority. Topsoil shall not be a mixture of contrasting textures, 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, poison ivy, thistle, or others as specified.
 - Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
 - Topsoil shall be free of plants or plant parts such as Bermuda grass, quackgrass, johnsongrass, nutgrass, poison ivy, thistle, or others as specified.

DETAIL 33 - SUPER SILT FENCE



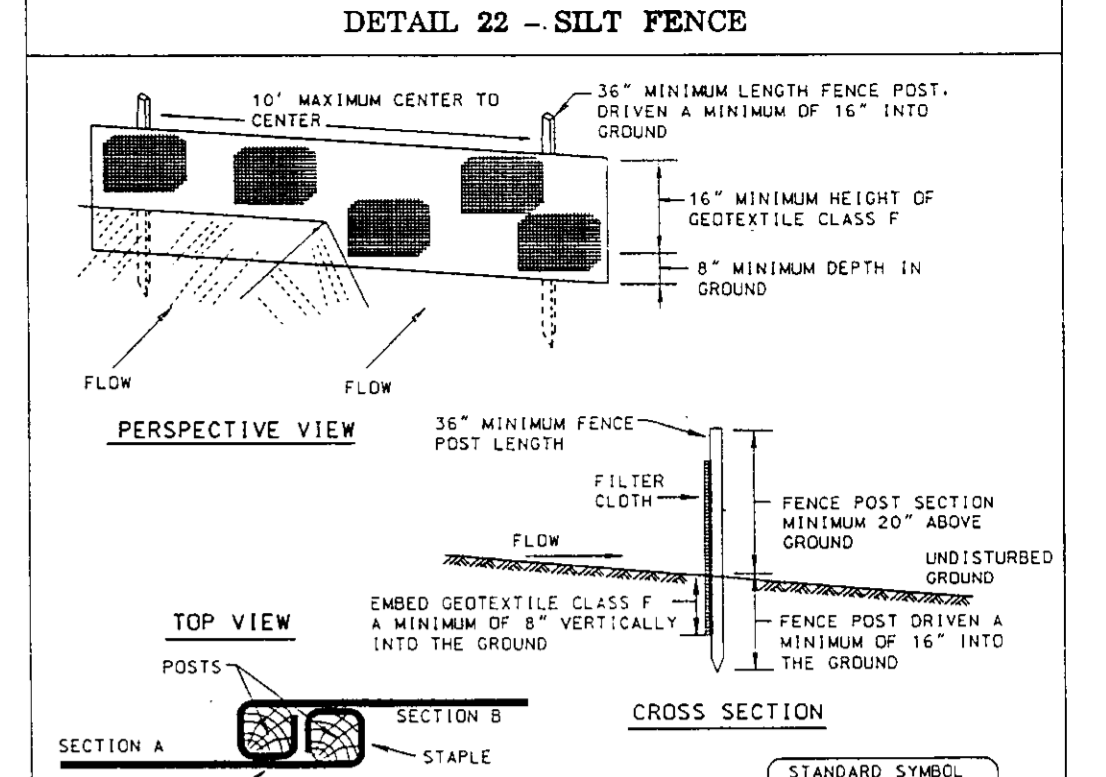
Construction Specifications

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 shall be used, substituting 42 inch fabric and 6 foot length posts.

- The poles do not need to be set in concrete.
- Chain link fence shall be fastened securely to the fence posts with wire ties or staples.
- Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" of the top and mid section.
- Filter cloth shall be embedded a minimum of 6" into the ground.
- When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
- Silt fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reaches 50% of the fabric height.
- Maintenance shall be performed as needed and silt builds removed when "bulges" develop in the silt fence.

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DETAIL 22 - SILT FENCE



Construction Specifications

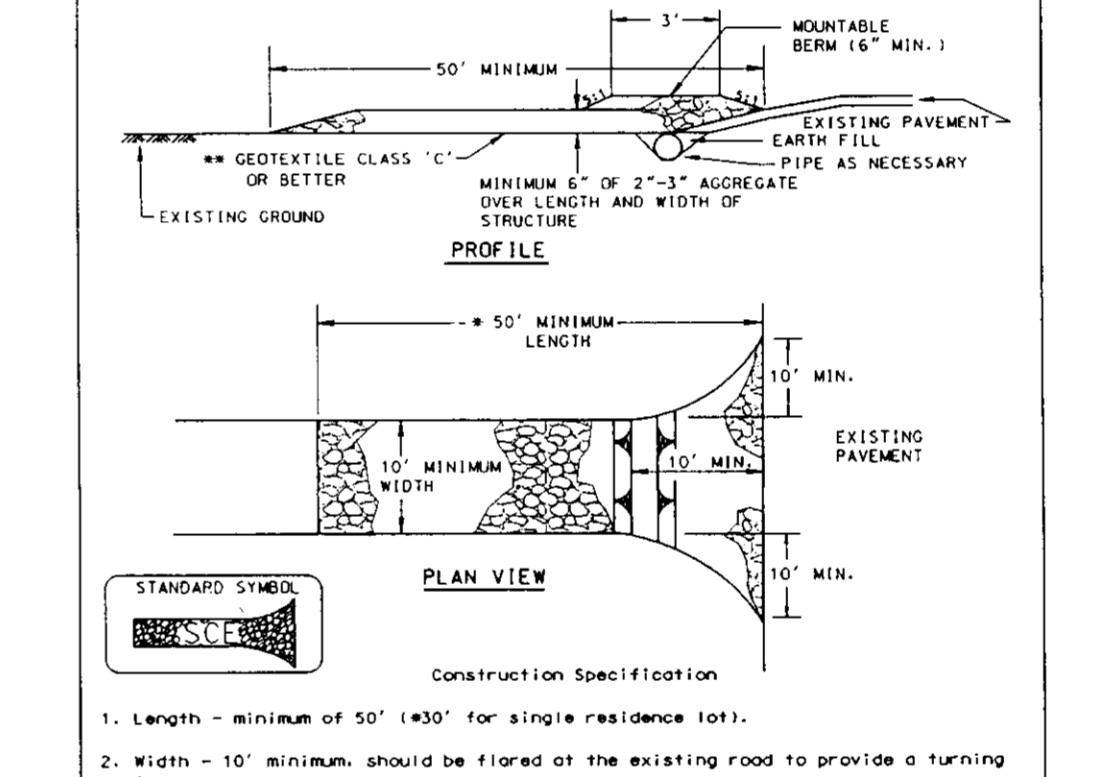
- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum cut) or 4x2 slotted (minimum round) and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples at 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/minute (max.) | Test: MSMT 322 |
| Filtering Efficiency | 75% (min.) | Test: MSMT 322 |

- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reaches 50% of the fabric height.

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DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

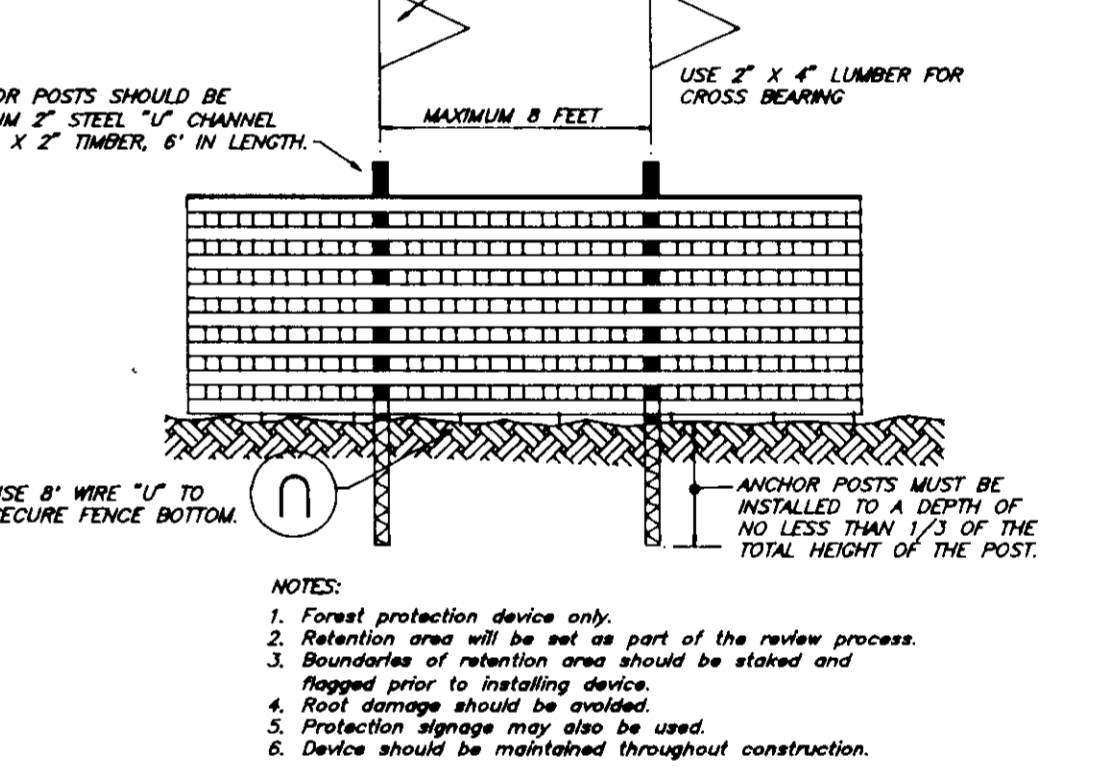


Construction Specifications

- Length - minimum of 50' (±30' for single residence lots).
- Width - 10' minimum, should be flared at the existing road to provide a turning radius.
- Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. The plan approval authority may not require single family residences to use geotextile.
- Stone - crushed aggregate (2" to 3") or recycled or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
- Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SEE is located at a right 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.
- 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.

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BLAZE ORANGE PLASTIC MESH TYPICAL TREE PROTECTION FENCE DETAIL



NOTES:

- Forest protection device only.
- Retention area will be set as part of the review process.
- Boundaries of retention area should be staked and flagged prior to installing device.
- Root damage should be avoided.
- Protection storage may also be used.
- Device should be maintained throughout construction.

OWNER / DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

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

7135 MINSTREL WAY • COLUMBIA, MD 21044 • (410) 381-7400 • BALTO • (301) 621-8100 • WASH

| | | |
|--|--|----------------------|
| DESIGNED K/WM | SEDIMENT AND EROSION CONTROL DETAILS LOTS 67, 118, 125-138 COLUMBIA VILLAGE OF RIVER HILL SECTION 2 AREA 6 PHASE 2 SIXTH (6th) ELECTION DISTRICT HOWARD COUNTY, MARYLAND | SCALE - |
| DRAWN Z/AH | | DRAWING 5 of 5 |
| CHECKED R/ML | | JOB NO 97-038 |
| DATE 6-97 | | FILE NO 97-038-5E |
| FOR: DOUGLAS HOMES P.O. BOX 828 ELLCOTT CITY, MARYLAND 21043 | | |

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division
Date: 6/10/97

Specialist, Planning and Development
Date: 6/17/97

Director
Date: 6/20/97

Reviewed for HOWARD S.C.D.
and made Technical Requirements
Signature: [Signature] Date: 6/14/97
U.S. Natural Resources Conservation Service

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."

Signature: [Signature] DATE: 4-30-97

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: [Date]